FINAL REPORT

WASTE MANAGEMENT OF CANADA CORPORATION

WATFORD, ONTARIO

TWIN CREEKS ENVIRONMENTAL CENTRE: 2024 FOURTH QUARTER & ANNUAL MONITORING REPORT VOLUME 2B OF 5 – COMPLIANCE MONITORING

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APPENDIX H:

Groundwater Chemical Results

APPENDIX H:

Table H1 to H3 - Groundwater Field Chemistry

Table H-1
Groundwater - Field Chemical Results (Active Aquitard)
Twin Creeks Environmental Centre

Location	Temperature (^{0}C)	pH	Conductivity (µS/cm)	Turbidity (NTU)
May 2024				
OW16-6	14.7	7.1	2,660	6.29
OW17-4	11.7	7.1	3,020	7.11
OW40E-4	15.6	6.6	3,390	16.0
OW54A-4	12.8	6.9	2,870	28.9
OW56-4	13.6	6.8	4,060	98.4
OW57-4	10.6	6.9	4,500	4.44
OW58-6	15.3	6.7	4,000	5.03
OW59-6	20.4	6.5	4,980	14.2
OW60-4	19.1	7.1	1,210	>999
OW67-4	12.3	6.8	1,180	>999
OW68-5	13.5	6.9	1,830	48.2
OW69-5	12.6	6.7	7,180	9.38
OW70B-5	12.7	7.1	3,150	65.4
OW71A-5	13.5	7.3	2,920	8.47
OW72-6	15.8	6.9	3,200	9.37
OW73-6	13.0	6.7	4,600	19.8
OW79-5	14.3	7.3	4,660	26.2
OW80-3	12.3	6.8	1,290	94.9
OW81-5	12.7	7.1	3,090	6.43
OW82-5	11.7	7.2	3,524	6.76
OW83-5	16.1	7.3	2,630	142
OW84-6	11.4	6.8	2,700	9.96
May 2024 - Verification Monitoring				
OW84-6	15.9	7.0	2,420	6.43
November 2024				
OW16-6	12.7	7.1	2,130	9.91
OW17-4	12.8	7.2	3,310	28.9
OW54A-4	12.6	7.3	1,180	38.7
OW56-4	12.4	7.2	4,280	313
OW57-4	12.1	7.0	3,540	3.22
OW58-6	12.5	7.2	3,680	4.33
OW59-6	11.1	7.2	4,630	5.23
OW67-4	13.2	7.1	1,880	>999
OW68-5	12.0	7.3	4,630	25.7
OW69-5	12.4	6.8	5,570	15.3
OW70B-5	13.1	7.6	2,250	13.1
OW71A-5	13.0	6.8	1,510	13.0
OW72-6	12.0	7.2	1,430	9.37
OW73-6	11.2	6.9	3,930	12.2
OW84-6	11.1	7.4	2,520	123

NOTES: 1) µS/cm denotes microsiemens per centimetre.
2) NTU denotes nephelometric turbidity unit.

Table H-2
Groundwater - Field Chemical Results (Interstadial Silt & Sand)
Twin Creeks Environmental Centre

Location	Temperature (^{0}C)	pH	Conductivity (µS/cm)	Turbidity (NTU)
May 2024				
OW16-7	14.6	7.3	1,850	32.1
OW40A-7	12.7	6.9	3,550	19.3
OW46-7	11.8	7.2	5,108	44.4
OW47-6	13.8	7.0	5,460	32.4
OW54-10	13.5	7.1	2,800	54.7
OW57-15	15.1	7.2	3,360	147
OW58-17	18.3	7.0	4,210	6.10
OW60-8	15.0	7.8	1,070	42.7
OW67-11	16.0	6.7	1,500	52.0
OW72-10	26.2	6.8	3,240	>999
OW73-9	14.2	7.3	4,400	14.9
OW79-7	12.0	7.3	3,120	31.9
OW80-6	11.9	6.7	1,820	39.1
OW81-7	11.6	6.8	2,740	5.11
OW82-14	15.3	7.6	2,942	41.0
OW83-9	12.9	7.6	2,811	53.3
OW84-11	14.4	7.3	3,100	27.3
November 2024				
OW16-7	12.9	7.1	1,400	43.9
OW46-7	12.0	7.2	4,720	30.7
OW47-6	11.8	7.5	4,570	18.6
OW54-10	12.1	7.5	2,610	6.20
OW57-15	11.2	8.0	3,070	25.4
OW58-17	11.4	7.7	3,880	20.9
OW67-11	11.1	7.4	1,430	79.1
OW72-10	11.0	7.0	2,760	284
OW73-9	10.1	7.7	3,850	48.7

NOTES: 1) µs/cm denotes microsiemens per centimetre.
2) NTU denotes nephelometric turbidity unit

Table H-3
Groundwater - Field Chemical Results (Interface Aquifer)
Twin Creeks Environmental Centre

Location	Temperature (^{0}C)	pH	Conductivity (µS/cm)	Turbidity (NTU)
May 2024				
OW19-29	13.5	7.4	3,150	8.00
OW39A-26	15.1	8.1	1,520	156
OW49-29	12.5	6.7	3,280	16.2
OW79-26	12.0	7.6	1,080	13.0
OW80-27	13.2	7.4	1,090	16.9
OW81-27	13.1	6.9	1,990	65.1
OW82-28	12.0	8.1	986	94.1
OW83-29	13.8	7.9	1,885	4.08
OW84-31	14.0	7.1	2,880	22.0
Cemetery Well	11.8	7.3	900	3.69

NOTES: 1) µs/cm denotes microsiemens per centimetre.
2) NTU denotes nephelometric turbidity unit

APPENDIX H:

Table H-4 - Groundwater Chemistry

Table H-4
Groundwater - General Analytical Results
Twin Creeks Environmental Centre

Parameter	Units	ODWQS	OW16-5	OW16-5	OW16-5	OW16-5	OW16-5	OW16-5	OW16-5	OW16-5	OW16-5	OW16-5	OW16-5	OW16-5	OW16-5
Date			23-Mar-84	04-Jul-84	24-Jul-84	18-Sep-84	26-Mar-85	11-Sep-85	30-Apr-86	08-Sep-86	30-Apr-87	27-May-88	03-Nov-88	07-Jun-89	01-Nov-89
Laboratory			Enviroclean	Enviroclean	Enviroclean	Enviroclean	Enviroclean	Enviroclean	Enviroclean	Enviroclean	Enviroclean	Enviroclean	Enviroclean	Enviroclean	Enviroclean
Alkalinity (Total as CaCO3)	mg/L	30-500***		496					506		500	488	498	467	539
Dissolved Boron (B)	mg/L	5.0*													
Dissolved Calcium (Ca)	mg/L		145	115	84	80	114	118	113	123	128	102	145	105	140
Dissolved Chloride (Cl)	mg/L	250**	13	36	14	27	1	1	1	1	29	44	45	44	40
Dissolved Iron (Fe)	mg/L	0.30**	<0.04	<0.04	<0.04	<0.04	<0.03	<0.04	<0.02	0.47	<0.02	<0.02	0.05	<0.01	0.08
Dissolved Magnesium (Mg)	mg/L		121	120	113	132	106	111	110	116	115	107	126	110	130
Dissolved Organic Carbon	mg/L	5**	3.3	3.3	2.3	2.4	2.1	1.8	2.4	1.8	2.6	2	1.8	2.3	1.7
Dissolved Potassium (K)	mg/L		10	3.7	9.7	3.9	4.3	2.7	1.9	2.8	4.4	2.86	8.8	2.2	47
Dissolved Sodium (Na)	mg/L	200**	80	50	77	60	50	53	43	57	56	45.4	58	72	67
Dissolved Sulphate (SO4)	mg/L	500**	400	338	385	390	330	330	270	360	330	270	289	320	267
Nitrate (N)	mg/L	10.0*													
Nitrite (N)	mg/L	1.0*													
NO3+NO2	mg/L	10.0*	0.33	0.18	0.42	0.75	0.7	0.96	0.69	0.5	0.45	0.67	0.3	0.28	0.53
Total Ammonia-N	mg/L			0.01	0.23	0.02	0.02	0.07	0.01	0.01	0.01	0.02	0.03	0.01	0.01
Total Kjeldahl Nitrogen (TKN)	mg/L			0.45	0.3	0.2	0.26	0.49	0.22	3.2	0.4	1.68	0.4	0.3	0.12
Ion Percentage	%			5.3					9.1		7.7	3.9	14.1	6.1	17.3

Parameter	Units	ODWQS	OW16-5	OW16-5	OW16-5	OW16-5	OW16-5	OW16-5	OW16-5	OW16-5	OW16-5	OW16-5	OW16-5	OW16-5	OW16-5
Date			27-May-90	11-Dec-90	22-May-91	14-Nov-91	29-May-92	12-Nov-92	17-Jun-93	16-Dec-93	12-May-94	06-Jun-95	02-Nov-95	08-May-96	11-Dec-96
Laboratory			Enviroclean	Enviroclean	Enviroclean	Enviroclean	Enviroclean	Enviroclean	Enviroclean	Enviroclean	Enviroclean	Zenon	Zenon	Zenon	Zenon
Alkalinity (Total as CaCO3)	mg/L	30-500***	484	466	508	506	462	480	444	451	453	570	510	470	510
Dissolved Boron (B)	mg/L	5.0*								0.22	0.08	0.16	0.19	0.2	
Dissolved Calcium (Ca)	mg/L		119	97	121	96	86.1	119	104	105	97.6	93	99	95	100
Dissolved Chloride (Cl)	mg/L	250**	43	43	25	31	27	52	42	34	34	37	31	32	31
Dissolved Iron (Fe)	mg/L	0.30**			0.03	<0.02	<0.02	<0.02	<0.02	0.08	0.02	<0.01	<0.01	<0.01	0.07
Dissolved Magnesium (Mg)	mg/L		142	101	111	103	100	128	114	111	108	100	110	100	110
Dissolved Organic Carbon	mg/L	5**	2	1.6	3.3	2.3	2.7	2.7	2						
Dissolved Potassium (K)	mg/L		2.8	2.71	2.74	3.38	2.28	3.03	2.91	4.84	2.79	2.3	3	2.5	3
Dissolved Sodium (Na)	mg/L	200**		56.1	63.4	57.8	54.2	58.2	52.3	62.4	53.3	47	54	54	59
Dissolved Sulphate (SO4)	mg/L	500**	270	310	380	340	350	320	370	340	230	300	330	330	330
Nitrate (N)	mg/L	10.0*													
Nitrite (N)	mg/L	1.0*													
NO3+NO2	mg/L	10.0*	0.4	0.28	0.26	0.33	0.25	0.01	0.02	0.33	0.13	0.12	0.091	0.16	0.19
Total Ammonia-N	mg/L		0.11		0.06	0.04	0.01	0.01	0.43	0.01	<0.01	0.05	<0.03	0.04	<0.03
Total Kjeldahl Nitrogen (TKN)	mg/L		0.33	0.3	0.33	3.03	0.21	0.15	0.43	0.3	0.21	0.56	0.18	0.51	0.27
Ion Percentage	%			1.4	3.3	0.9	2.0	9.1	2.5	5.7	10.5	4.9	1.3	0.0	2.1

Parameter	Units	ODWQS	OW16-5	OW16-5	OW16-5	OW16-5	OW16-5	OW16-5	OW16-5	OW16-5	OW16-5	OW16-5	OW16-5	OW16-5	OW16-5
Date			14-May-97	04-Dec-97	13-May-98	29-Mar-00	05-Dec-00	08-May-01	28-Nov-01	23-May-02	14-May-03	12-Nov-03	25-May-04	26-Nov-04	13-May-05
Laboratory			Zenon	Zenon	Zenon	Accutest	Accutest	Accutest	Accutest	Accutest	Accutest	Accutest	Accutest	Accutest	Accutest
Alkalinity (Total as CaCO3)	mg/L	30-500***	470	520	480	514	464	403	435	424	392	455	365	404	339
Dissolved Boron (B)	mg/L	5.0*							0.19	0.18	0.18	0.25	0.15	0.23	0.16
Dissolved Calcium (Ca)	mg/L		100	110	110	94	93	88	78	93	81	100	103	100	105
Dissolved Chloride (Cl)	mg/L	250**	30	23	24	16	22	23	19	24	19	18	33	28	38
Dissolved Iron (Fe)	mg/L	0.30**	<0.010	<0.01	0.015	0.97	1.67	0.14	<0.01	<0.01	0.17	0.42	<0.01	0.02	<0.01
Dissolved Magnesium (Mg)	mg/L		100	110	110	101	102	88	78	93	80	104	107	102	105
Dissolved Organic Carbon	mg/L	5**							2.1	2.2	2.0	1.6	2.7	3.0	2.9
Dissolved Potassium (K)	mg/L		3.3	4.2	3.4	4	4	2	3	2	3	6	2	4	2
Dissolved Sodium (Na)	mg/L	200**	54	64	56	57	54	45	46	48	45	56	55	54	50
Dissolved Sulphate (SO4)	mg/L	500**	310	330	310	282	298	251	206	265	232	261	354	321	404
Nitrate (N)	mg/L	10.0*		0.11	0.71	0.20	0.13	<0.1	<0.10	<0.10	<0.10	<0.10	0.13	<0.10	0.18
Nitrite (N)	mg/L	1.0*		<0.05	<0.05	<0.10	<0.1	<0.1							
NO3+NO2	mg/L	10.0*	0.4	0.11	0.71	0.20	0.13	<0.1							
Total Ammonia-N	mg/L		<0.03	0.04	<0.03	0.08	<0.2	0.05	0.05	0.02	0.03	0.20	0.16	<0.02	0.21
Total Kjeldahl Nitrogen (TKN)	mg/L		0.48	0.28	0.19	0.2	0.58	0.13	0.23	0.16	0.19	0.25	0.20	0.52	0.20
Ion Percentage	%		2.4	4.5	6.8	3.1	3.8	4.8	2.2	5.0	3.9	9.6	7.0	6.0	3.5

NOTES: 1) Blank denotes data not available.
2) ODWQS denotes O. Reg. 169/03: Ontario Drinking Water Quality Standards (as amended).
3) *denotes health related ODWQS.
** denotes aesthetic objective for ODWQS.
*** denotes operational guideline for ODWQS.
4) mg/L denotes milligrams per litre.

Table H-4
Groundwater - General Analytical Results
Twin Creeks Environmental Centre

Parameter	Units	ODWQS	OW16-6	OW16-6	OW16-6	OW16-6	OW16-6	OW16-6	OW16-6	OW16-6	OW16-6	OW16-6	OW16-6	OW16-6	OW16-6
Date			**30-Nov-05**	**19-May-06**	**24-Nov-06**	**05-May-07**	**16-Nov-07**	**22-May-08**	**05-Nov-08**	**16-May-09**	**18-Nov-09**	**20-May-10**	**23-Nov-10**	**11-May-11**	**3-Nov-11**
Laboratory			**Accutest**	**Accutest**	**Accutest**	**Accutest**	**Accutest**	**MAXXAM**	**MAXXAM**	**MAXXAM**	**MAXXAM**	**MAXXAM**	**MAXXAM**	**MAXXAM**	**MAXXAM**
Alkalinity (Total as CaCO3)	mg/L	30-500***	502	540	529	534	546	561	561	557	564	592	582	580	596
Conductivity	umho/cm							1600	1590	1550	1600	1820	1820	1850	1850
Dissolved Barium (Ba)	mg/L	1*						0.015	0.017	0.016	0.017	0.017	0.019	0.016	0.016
Dissolved Boron (B)	mg/L	5.0*	0.16	0.13	0.15	0.17	0.16	0.13	0.17	0.15	0.17	0.15	0.18	0.16	0.16
Dissolved Cadmium (Cd)	mg/L	0.005*						<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001
Dissolved Calcium (Ca)	mg/L		118	116	121	128	125	130	120	130	130	130	130	130	130
Dissolved Chloride (Cl)	mg/L	250**	22	33	31	33	28	31	33	33	33	32	32	33	31
Dissolved Iron (Fe)	mg/L	0.30**	0.18	<0.03	0.72	<0.03	<0.03	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Dissolved Lead (Pb)	mg/L	0.01*						0.0006	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
Dissolved Magnesium (Mg)	mg/L		90	97	101	101	101	110	100	110	120	110	120	110	110
Dissolved Organic Carbon	mg/L	5**	5.6	5.0	3.4	3.6	3.7	2.3	2.3	3.5	3.0	2.5	3.0	2.9	3
Dissolved Potassium (K)	mg/L		6	5	5	5	5	5.2	5.1	5	5.3	4.9	5.3	4.8	5.2
Dissolved Sodium (Na)	mg/L	200**	32	41	41	50	45	64	86	85	110	140	130	140	150
Dissolved Sulphate (SO4)	mg/L	500**	256	309	260	253	231	340	368	340	330	410	380	410	410
Nitrate (N)	mg/L	10.0*	<0.10	<0.10	<0.10	<0.10	<0.10	0.9	0.2	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
pH	(pH units)	6.5-8.5						8.0	8.0	8.0	7.7	8.1	7.8	8.0	7.6
Total Ammonia-N	mg/L		0.28	0.07	0.08	<0.02	0.04	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15
Total Dissolved Solids	mg/L	500						965	1000	975	1040	1170	1130	1070	1280
Total Kjeldahl Nitrogen (TKN)	mg/L		0.41	0.29	0.08	0.20	<0.10	<0.7	<0.7	<0.7	<0.7	<0.7	<0.7	<0.7	<0.7
Ion Percentage	%		2.7	1.3	4.6	6.9	7.2	4.0	1.1	6.4	11.4	6.6	9.6	7.0	1.7

Parameter	Units	ODWQS	OW16-6	OW16-6	OW16-6	OW16-6	OW16-6	OW16-6	OW16-6	OW16-6	OW16-6	OW16-6	OW16-6	OW16-6	OW16-6
Date			**15-May-12**	**08-Nov-12**	**09-May-13**	**05-Nov-13**	**06-May-14**	**24-Nov-14**	**13-May-15**	**11-Nov-15**	**25-May-16**	**16-Nov-16**	**16-May-17**	**07-Nov-17**	**08-May-18**
Laboratory			**MAXXAM**	**MAXXAM**	**MAXXAM**	**MAXXAM**	**MAXXAM**	**MAXXAM**	**MAXXAM**	**Maxxam**	**Maxxam**	**Maxxam**	**Maxxam**	**Maxxam**	**Maxxam**
Alkalinity (Total as CaCO3)	mg/L	30-500***	680	650	630	630	670	670	690	670	660	660	660	660	660
Conductivity	umho/cm		2300	2200	2100	2100	2300	2300	2500	2300	2200	2200	2300	2100	2200
Dissolved Barium (Ba)	mg/L	1*	0.02	0.017	0.014	0.014	0.014	0.015	0.013	0.01	0.01	0.01	0.01	0.013	0.012
Dissolved Boron (B)	mg/L	5.0*	0.19	0.19	0.16	0.17	0.17	0.22	0.18	0.17	0.19	0.19	0.19	0.2	0.18
Dissolved Cadmium (Cd)	mg/L	0.005*	<0.0001	<0.0001	<0.0001	<0.00010	<0.00010	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001
Dissolved Calcium (Ca)	mg/L		140	130	140	140	140	120	110	110	110	120	120	120	120
Dissolved Chloride (Cl)	mg/L	250**	36	35	36	35	42	41	77	63	47	47	48	47	44
Dissolved Iron (Fe)	mg/L	0.30**	<0.10	<0.10	<0.10	<0.10	<0.10	0.83	<0.10	<0.10	<0.1	<0.1	<0.1	<0.1	<0.1
Dissolved Lead (Pb)	mg/L	0.01*	<0.0005	<0.0005	<0.0005	<0.00050	<0.00050	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
Dissolved Magnesium (Mg)	mg/L		120	120	120	120	120	100	100	92	99	110	100	110	110
Dissolved Organic Carbon	mg/L	5**	4.1	3.1	2.8	3.3	5.6	3.7	3.7	3.7	3.1	3.4	3.7	3.3	3.3
Dissolved Potassium (K)	mg/L		5	5.2	4.9	5.1	4.9	5.7	6.7	5.1	7.0	5.5	6.2	5.5	5.3
Dissolved Sodium (Na)	mg/L	200**	250	230	190	200	280	180	330	310	300	280	260	250	240
Dissolved Sulphate (SO4)	mg/L	500**	590	510	530	510	560	530	500	510	510	460	530	480	440
Nitrate (N)	mg/L	10.0*	<0.10	<0.10	0.11	<0.10	<0.10	0.14	<0.10	0.58	<0.10	0.71	0.24	0.28	0.12
pH	(pH units)	6.5-8.5	7.7	7.8	8.0	7.2	7.2	7.9	8.1	7.7	7.9	7.8	7.7	7.6	7.8
Total Ammonia-N	mg/L		<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15
Total Dissolved Solids	mg/L	500	1510	1470	1420	1360	1530	1480	1600	1550	1480	1450	1490	1460	1320
Total Kjeldahl Nitrogen (TKN)	mg/L		<0.7	<0.7	<0.7	<0.7	<0.7	<0.7	<0.7	<0.7	<0.7	<0.7	<0.7	<0.7	<0.7
Ion Percentage	%		1.4	3.5	0.9	2.7	5.1	7.9	3.1	6.7	8.3	11.6	5.2	8.3	9.6

Parameter	Units	ODWQS	OW16-6	OW16-6	OW16-6	OW16-6	OW16-6	OW16-6	OW16-6	OW16-6	OW16-6	OW16-6	OW16-6	OW16-6	OW16-6
Date			**14-Nov-18**	**14-May-19**	**07-Nov-19**	**07-May-20**	**04-Nov-20**	**19-May-21**	**02-Nov-21**	**04-May-22**	**02-Nov-22**	**02-May-23**	**02-Nov-23**	**08-May-24**	**18-Nov-24**
Laboratory			**MAXXAM**	**MAXXAM**	**Bureau Veritas**	**Bureau Veritas**	**Bureau Veritas**	**Bureau Veritas**	**Bureau Veritas**	**Bureau Veritas**	**Bureau Veritas**	**Bureau Veritas**	**Bureau Veritas**	**Bureau Veritas**	**Bureau Veritas**
Alkalinity (Total as CaCO3)	mg/L	30-500***	620	630	630	630	630	610	610	630	650	610	590	620	320
Conductivity	umho/cm		2100	2100	2000	2000	2000	2000	1900	1900	2000	1800	1800	1900	1900
Dissolved Barium (Ba)	mg/L	1*	0.012	0.012	0.012	0.012	0.014	0.012	0.013	0.013	0.012	0.012	0.012	0.013	0.013
Dissolved Boron (B)	mg/L	5.0*	0.2	0.16	0.18	0.16	0.18	0.18	0.16	0.16	0.18	0.16	0.18	0.14	0.14
Dissolved Cadmium (Cd)	mg/L	0.005*	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001
Dissolved Calcium (Ca)	mg/L		130	120	120	110	120	120	120	130	120	120	120	110	100
Dissolved Chloride (Cl)	mg/L	250**	46	49	48	46	45	48	45	48	45	44	39	51	47
Dissolved Iron (Fe)	mg/L	0.30**	0.2	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	0.4	0.2	<0.1	0.1	<0.1	<0.1
Dissolved Lead (Pb)	mg/L	0.01*	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
Dissolved Magnesium (Mg)	mg/L		110	100	100	98	110	110	100	110	100	100	100	99	92
Dissolved Organic Carbon	mg/L	5**	3.3	3.1	3.1	3.4	3.4	2.9	2.9	3.0	4.7	3.4	3.3	4.6	8.7
Dissolved Potassium (K)	mg/L		5	4.6	4.9	4.4	4.8	4.8	4.7	4.7	7.2	5.2	5.1	4.6	4.6
Dissolved Sodium (Na)	mg/L	200**	230	230	220	200	210	210	190	190	180	170	170	220	170
Dissolved Sulphate (SO4)	mg/L	500**	460	450	430	390	430	410	410	410	390	390	380	370	350
Nitrate (N)	mg/L	10.0*	0.64	<0.10	<0.10	<0.10	0.1	<0.10	<0.10	<0.10	0.15	0.22	0.23	<0.10	0.15
pH	(pH units)	6.5-8.5	7.8	7.7	7.7	8.0	7.8	7.8	7.9	8.0	7.7	7.3	7.7	8.1	7.9
Total Ammonia-N	mg/L		<0.15	<0.15	<0.15	<0.15	<0.15	<0.050	<0.15	0.32	6.64	1.29	<0.15	<0.15	<0.15
Total Dissolved Solids	mg/L	500	1230	1370	1280	1250	1330	1080	1230	1130	1090	1020	1070	1210	1220
Total Kjeldahl Nitrogen (TKN)	mg/L		<0.7	<0.7	<0.7	<0.7	<0.7	0.1	<0.7	0.8	7.1	1.4	<0.7	<0.7	<0.7
Ion Percentage	%		10.1	7.3	7.5	6.4	8.5	10.2	6.8	8.6	5.4	6.0	7.8	9.6	18.3

NOTES: 1) Blank denotes data not available.
2) ODWQS denotes O. Reg. 169/03: Ontario Drinking Water Quality Standards (as amended).
3) *denotes health related ODWQS.
** denotes aesthetic objective for ODWQS.
*** denotes operational guideline for ODWQS.
4) mg/L denotes milligrams per litre.

Table H-4
Groundwater - General Analytical Results
Twin Creeks Environmental Centre

Parameter	Units	ODWQS	OW16-7	OW16-7	OW16-7	OW16-7	OW16-7	OW16-7	OW16-7	OW16-7	OW16-7	OW16-7	OW16-7	OW16-7
Date			20-Mar-84	04-Jul-84	27-Jul-84	18-Sep-84	26-Mar-85	11-Sep-85	09-Apr-86	08-Sep-86	30-Apr-87	27-May-88	03-Nov-88	07-Jun-89	01-Nov-89
Laboratory			Enviroclean	Enviroclean	Enviroclean	Enviroclean	Enviroclean	Enviroclean	Enviroclean	Enviroclean	Enviroclean	Enviroclean	Enviroclean	Enviroclean	Enviroclean
Alkalinity (Total as CaCO3)	mg/L	30-500***		508					522		494	488	481	488	478
Dissolved Boron (B)	mg/L	5.0*													
Dissolved Calcium (Ca)	mg/L		110	109	84	71	114	114	123	121	123	111	136	105	120
Dissolved Chloride (Cl)	mg/L	250**	4	3	2	5	1	1	1	1	5	3	8	8	5
Dissolved Iron (Fe)	mg/L	0.30**	0.12	<0.04	<0.04	<0.04	<0.03	0.04	0.02	3.88	<0.02	0.85	0.02	<0.01	<0.02
Dissolved Magnesium (Mg)	mg/L		67	86	78	90	77	87	83	80	80	81	89	79	90
Dissolved Organic Carbon	mg/L	5**	4.8	2.4	2.2	0.5	1.7	1.7	1.7	2.3	2.5	1.3	2.7	2.1	1.9
Dissolved Potassium (K)	mg/L		8	4.8	7.7	3.9	6.6	3.1	3.3	5.1	5.1	4	58	3.7	4.7
Dissolved Sodium (Na)	mg/L	200**	50	63	65	46	65	51	49	57	54	50.6	61	83	82
Dissolved Sulphate (SO4)	mg/L	500**	230	283	241	232	244	240	200	250	222	220	266	250	258
Nitrate (N)	mg/L	10.0*													
Nitrite (N)	mg/L	1.0*													
NO3+NO2	mg/L	10.0*	0.09	0.02	0.02	0.04	0.06	0.04	0.03	3.11	0.16	0.1	0.09	0.13	0.03
Total Ammonia-N	mg/L			0.2	0.27	0.21	0.18	0.28	0.17	2.74	0.79	0.7	0.51	0.43	0.57
Total Kjeldahl Nitrogen (TKN)	mg/L			0.64	0.43	0.43	0.26	0.39	0.26	3.6	0.99	0.82	0.77	0.76	0.58
Ion Percentage	%			4.0					9.3		8.8	7.3		7.4	12.6

Parameter	Units	ODWQS	OW16-7	OW16-7	OW16-7	OW16-7	OW16-7	OW16-7	OW16-7	OW16-7	OW16-7	OW16-7	OW16-7	OW16-7
Date			24-May-90	07-Dec-90	22-May-91	14-Nov-91	29-May-92	12-Nov-92	17-Jun-93	16-Dec-93	12-May-94	14-Dec-94	06-Jun-95	02-Nov-95	08-May-96
Laboratory			Enviroclean	Enviroclean	Enviroclean	Enviroclean	Enviroclean	Enviroclean	Enviroclean	Enviroclean	Enviroclean	Enviroclean	Zenon	Zenon	Zenon
Alkalinity (Total as CaCO3)	mg/L	30-500***	491	470	505	500	498	494	480	495	471	520	530	510	490
Dissolved Boron (B)	mg/L	5.0*								0.22	0.12	0.25	0.24	0.2	0.22
Dissolved Calcium (Ca)	mg/L		111	116	128	86.9	99.5	126	122	110	108	120	110	100	110
Dissolved Chloride (Cl)	mg/L	250**	6	3	2	2	1	1	3	4	2	3.2	3.3	3.1	3.1
Dissolved Iron (Fe)	mg/L	0.30**		0.03	0.03	<0.02	<0.02	0.02	<0.02	0.02	0.02	0.053	<0.01	<0.01	0.1
Dissolved Magnesium (Mg)	mg/L		85	79.2	77	74.1	71.9	69.5	88.9	81.8	80.9	80	78	74	78
Dissolved Organic Carbon	mg/L	5**	1.8	1.6	1.8	2.1	1.7	1.8	1.7						
Dissolved Potassium (K)	mg/L		3.7	4.53	3.07	3.87	3.68	4.1	3.98	4.56	3.98	4	3.7	3.4	3.4
Dissolved Sodium (Na)	mg/L	200**		62	61.6	<61.1	<58.7	53.3	50.1	57.6	52.8	66	64	59	50
Dissolved Sulphate (SO4)	mg/L	500**	210	210	250	280	280	240	3000	250	240	330	270	260	240
Nitrate (N)	mg/L	10.0*													
Nitrite (N)	mg/L	1.0*													
NO3+NO2	mg/L	10.0*	0.28	0.12	0.26	0.06	0.06	0.01	0.02	0.15	0.05	0.046	0.17	0.27	0.052
Total Ammonia-N	mg/L		0.26	0.42	0.39	0.49	0.4	0.37	0.46	0.38	0.25	0.28	0.24	0.03	0.34
Total Kjeldahl Nitrogen (TKN)	mg/L		0.37	0.43	0.43	0.66	0.49	0.39	0.55	0.54	0.49	0.44	0.43	<0.16	0.97
Ion Percentage	%			11.3	7.1			5.2	63.8	5.4	6.6	0.5	1.7	0.0	4.3

Parameter	Units	ODWQS	OW16-7	OW16-7	OW16-7	OW16-7	OW16-7	OW16-7	OW16-7	OW16-7	OW16-7	OW16-7	OW16-7	OW16-7
Date			11-Dec-96	14-May-97	04-Dec-97	11-Mar-98	13-May-98	22-Dec-99	29-Mar-00	05-Dec-00	08-May-01	28-Nov-01	22-May-02	06-Nov-02	14-May-03
Laboratory			Zenon	Zenon	Zenon	Maxxam	Zenon	Accutest	Accutest	Accutest	Accutest	Accutest	Accutest	Accutest	Accutest
Alkalinity (Total as CaCO3)	mg/L	30-500***	510	470	510	505	500	503	514	487	503	509	498	502	477
Dissolved Boron (B)	mg/L	5.0*										0.20	0.28	0.21	0.23
Dissolved Calcium (Ca)	mg/L		100	110	120	106	120	113	118	99	121	105	117	114	99
Dissolved Chloride (Cl)	mg/L	250**	3.9	3	2.8	2.8	2.9	3	3	3	4	4	3	4	4
Dissolved Iron (Fe)	mg/L	0.30**	0.13	0.067	0.77	2.32	0.59	3.09	0.05	2.3	0.01	0.61	1.28	0.04	0.67
Dissolved Magnesium (Mg)	mg/L		75	79	83	80.9	83	80	87	69	82	82	87	78	77
Dissolved Organic Carbon	mg/L	5**										2.2	1.8	2.1	1.6
Dissolved Potassium (K)	mg/L		3.5	3.9	4.4	4	3.9	3	4	4	4	4	4	5	4
Dissolved Sodium (Na)	mg/L	200**	48	48	52	44	51		48	43	55	44	44	56	60
Dissolved Sulphate (SO4)	mg/L	500**	240	240	230	223	230	218	206	221	234	210	218	222	241
Nitrate (N)	mg/L	10.0*			<0.05	0.1	<0.05	<0.10	<0.10	<0.1	0.25	<0.10	<0.10	0.03	<0.10
Nitrite (N)	mg/L	1.0*			<0.05	<0.1	<0.05	<0.10	<0.10	<0.1	<0.1				
NO3+NO2	mg/L	10.0*	<0.5	0.067	<0.5	0.1	<0.5	<0.10	<0.10	<0.1	0.25				
Total Ammonia-N	mg/L		0.37	0.28	0.35		0.24	0.29	0.26	0.24	0.04	0.24	0.38	0.03	0.10
Total Kjeldahl Nitrogen (TKN)	mg/L		0.79	0.48	0.38		0.25	0.37	0.26	0.37	0.07	0.43	0.49	0.22	0.20
Ion Percentage	%		0.0	5.6	7.4	4.1	7.8	1.7	9.2	0.2	7.7	4.9	8.5	6.7	4.3

NOTES: 1) Blank denotes data not available.
2) ODWQS denotes O. Reg. 169/03: Ontario Drinking Water Quality Standards (as amended).
3) *denotes health related ODWQS.
** denotes aesthetic objective for ODWQS.
*** denotes operational guideline for ODWQS.
4) mg/L denotes milligrams per litre.

Table H-4
Groundwater - General Analytical Results
Twin Creeks Environmental Centre

Parameter	Units	ODWQS	OW16-7	OW16-7	OW16-7	OW16-7	OW16-7	OW16-7	OW16-7	OW16-7	OW16-7	OW16-7	OW16-7	OW16-7	OW16-7
Date			**12-Nov-03**	**26-May-04**	**26-Nov-04**	**13-May-05**	**30-Nov-05**	**18-May-06**	**24-Nov-06**	**04-May-07**	**16-Nov-07**	**22-May-08**	**05-Nov-08**	**16-May-09**	**18-Nov-09**
Laboratory			**Accutest**	**Accutest**	**Accutest**	**Accutest**	**Accutest**	**Accutest**	**Accutest**	**Accutest**	**Accutest**	**MAXXAM**	**MAXXAM**	**MAXXAM**	**MAXXAM**
Alkalinity (Total as CaCO3)	mg/L	30-500***	485	473	447	472	492	490	486	439	437	479	496	452	460
Conductivity	umho/cm											1240	1290	1220	1260
Dissolved Barium (Ba)	mg/L	1*										0.014	0.016	0.014	0.016
Dissolved Boron (B)	mg/L	5.0*	0.24	0.25	0.26	0.30	0.26	0.25	0.26	0.27	0.28	0.27	0.26	0.27	0.28
Dissolved Cadmium (Cd)	mg/L	0.005*										<0.0001	<0.0001	<0.0001	<0.0001
Dissolved Calcium (Ca)	mg/L		109	103	94	114	98	103	111	90	92	100	110	100	110
Dissolved Chloride (Cl)	mg/L	250**	4	4	4	4	4	4	4	4	4	4	4	4	4
Dissolved Iron (Fe)	mg/L	0.30**	1.08	0.46	1.13	1.52	0.74	0.47	1.13	0.66	0.56	0.5	1.2	0.2	2.1
Dissolved Lead (Pb)	mg/L	0.01*										<0.0005	<0.0005	<0.0005	<0.0005
Dissolved Magnesium (Mg)	mg/L		87	83	85	81	72	76	81	80	78	82	77	88	82
Dissolved Organic Carbon	mg/L	5**	1.5	1.7	1.8	2.2	2.0	2.2	1.4	2.6	2.5	1.7	1.6	2.7	2.5
Dissolved Potassium (K)	mg/L		5	5	4	4	4	4	4	4	4	4.1	4	4	4.1
Dissolved Sodium (Na)	mg/L	200**	63	70	64	68	56	61	63	66	61	64	62	70	69
Dissolved Sulphate (SO4)	mg/L	500**	231	248	235	245	235	239	256	238	247	241	275	270	280
Nitrate (N)	mg/L	10.0*	<0.10	<0.10	<0.10	0.10	0.10	0.11	0.20	0.23	0.32	<0.1	<0.1	0.20	0.40
pH	(pH units)	6.5-8.5										8.2	7.9	8.0	7.8
Total Ammonia-N	mg/L		0.17	0.14	0.05	0.13	0.17	0.15	0.07	0.10	0.06	<0.15	<0.15	<0.15	0.2
Total Dissolved Solids	mg/L	500										764	820	785	844
Total Kjeldahl Nitrogen (TKN)	mg/L		0.25	0.18	0.17	0.15	0.19	0.25	0.21	0.15	<0.10	<0.7	<0.7	<0.7	<0.7
Ion Percentage	%		9.6	7.9	8.7	9.1	1.5	4.2	6.2	7.1	5.5	6.4	2.7	8.2	6.8

Parameter	Units	ODWQS	OW16-7	OW16-7	OW16-7	OW16-7	OW16-7	OW16-7	OW16-7	OW16-7	OW16-7	OW16-7	OW16-7	OW16-7	OW16-7
Date			**20-May-10**	**24-Nov-10**	**12-May-11**	**03-Nov-11**	**15-May-12**	**08-Nov-12**	**09-May-13**	**05-Nov-13**	**06-May-14**	**24-Nov-14**	**13-May-15**	**11-Nov-15**	**25-May-16**
Laboratory			**MAXXAM**	**MAXXAM**	**MAXXAM**	**MAXXAM**	**MAXXAM**	**MAXXAM**	**MAXXAM**	**MAXXAM**	**MAXXAM**	**MAXXAM**	**MAXXAM**	**MAXXAM**	**MAXXAM**
Alkalinity (Total as CaCO3)	mg/L	30-500***	453	475	477	489	460	470	480	630	490	490	440	500	490
Conductivity	umho/cm		1240	1300	1300	1300	1300	1300	1300	1300	1300	1300	1200	1300	1300
Dissolved Barium (Ba)	mg/L	1*	0.015	0.016	0.015	0.018	0.013	0.013	0.016	0.014	0.013	0.017	0.013	0.021	0.017
Dissolved Boron (B)	mg/L	5.0*	0.27	0.27	0.26	0.25	0.27	0.26	0.25	0.27	0.25	0.28	0.25	0.28	0.28
Dissolved Cadmium (Cd)	mg/L	0.005*	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.00010	<0.00010	<0.0001	<0.0001	<0.0001	<0.0001
Dissolved Calcium (Ca)	mg/L		110	100	110	120	110	95	120	110	110	110	100	110	110
Dissolved Chloride (Cl)	mg/L	250**	4.0	4.0	4.0	5.0	4.0	4.0	4.0	4.0	4.0	5.0	4.0	5.3	4.9
Dissolved Iron (Fe)	mg/L	0.30**	0.9	3.7	2.3	2.5	1.6	0.70	3.2	<0.10	1.1	3.1	1.4	1.2	2.0
Dissolved Lead (Pb)	mg/L	0.01*	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.00050	<0.00050	<0.0005	<0.0005	<0.0005	<0.0005
Dissolved Magnesium (Mg)	mg/L		84	74	83	84	82	84	83	88	86	79	82	86	84
Dissolved Organic Carbon	mg/L	5**	2.1	2.3	2.3	2.5	2.7	2.2	2.5	2.1	2.5	2.7	2	2.4	2.3
Dissolved Potassium (K)	mg/L		4.3	3.8	4.2	4.7	4.3	4.2	4.0	4.2	3.9	3.9	4.2	4.5	4.0
Dissolved Sodium (Na)	mg/L	200**	69	62	67	73	67	68	65	68	65	56	62	67	71
Dissolved Sulphate (SO4)	mg/L	500**	270	270	250	250	270	260	270	260	260	250	260	250	270
Nitrate (N)	mg/L	10.0*	0.4	0.6	0.2	0.8	1.2	0.52	0.21	0.29	<0.10	0.2	0.33	<0.10	0.29
pH	(pH units)	6.5-8.5	8.2	7.8	8.1	7.8	7.9	7.9	8.1	7.4	7.0	8.1	8.2	7.7	7.9
Total Ammonia-N	mg/L		<0.15	0.20	<0.15	0.41	<0.15	0.16	0.16	<0.15	<0.15	0.25	<0.15	1.67	0.19
Total Dissolved Solids	mg/L	500	810	796	756	788	802	804	864	792	790	804	782	850	860
Total Kjeldahl Nitrogen (TKN)	mg/L		<0.7	<0.7	<0.7	<0.7	<0.7	<0.7	<0.7	<0.7	<0.7	<0.7	<0.7	1.8	<0.7
Ion Percentage	%		8.6	1.7	1.4	3.4	0.9	1.0	1.1	7.7	0.3	4.5	7.0	7.4	6.5

NOTES: 1) Blank denotes data not available.
2) ODWQS denotes O. Reg. 169/03: Ontario Drinking Water Quality Standards (as amended).
3) *denotes health related ODWQS.
** denotes aesthetic objective for ODWQS.
*** denotes operational guideline for ODWQS.
4) mg/L denotes milligrams per litre.

Table H-4
Groundwater - General Analytical Results
Twin Creeks Environmental Centre

Parameter	Units	ODWQS	OW16-7	OW16-7	OW16-7	OW16-7	OW16-7	OW16-7	OW16-7	OW16-7	OW16-7	OW16-7	OW16-7	OW16-7
Date			16-Nov-16	16-May-17	07-Nov-17	08-May-18	14-Nov-18	14-May-19	05-Nov-19	07-May-20	04-Nov-20	19-May-21	02-Nov-21	04-May-22	02-Nov-22
Laboratory			MAXXAM	MAXXAM	MAXXAM	MAXXAM	MAXXAM	MAXXAM	Bureau Veritas	Bureau Veritas	Bureau Veritas	Bureau Veritas	Bureau Veritas	Bureau Veritas	Bureau Veritas
Alkalinity (Total as CaCO3)	mg/L	30-500***	500	490	490		490	470	490	450	470	470	490	440	480
Conductivity	umho/cm		1300	1300	1300	1400	1300	1300	1300	1200	1300	1300	1300	1200	1300
Dissolved Barium (Ba)	mg/L	1*	0.016	0.013	0.014	0.014	0.016	0.015	0.016	0.023	0.021	0.02	0.017	0.017	0.016
Dissolved Boron (B)	mg/L	5.0*	0.29	0.26	0.26	0.29	0.26	0.26	0.24	0.23	0.26	0.28	0.27	0.25	0.27
Dissolved Cadmium (Cd)	mg/L	0.005*	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001
Dissolved Calcium (Ca)	mg/L		120	100	110	110	110	110	99	100	120	110	120	100	110
Dissolved Chloride (Cl)	mg/L	250**	4.8	4.8	5.3	4.2	5.4	5.8	5.3	8.8	6.2	7.1	5.3	7.4	6.6
Dissolved Iron (Fe)	mg/L	0.30**	2.8	1.3	1.5	2	1.5	1.8	0.8	1	2.8	1.9	0.9	0.7	0.8
Dissolved Lead (Pb)	mg/L	0.01*	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
Dissolved Magnesium (Mg)	mg/L		85	76	78	87	78	82	76	70	82	81	85	78	80
Dissolved Organic Carbon	mg/L	5**	2.2	2.4	2.4	2.1	2.7	2.2	2.4	3.4	2.5	2.3	1.9	2.3	2.4
Dissolved Potassium (K)	mg/L		4.2	3.9	4.1	4.2	4	3.8	3.9	3.4	3.9	4	3.8	3.6	3.9
Dissolved Sodium (Na)	mg/L	200**	68	61	62	71	62	64	60	53	63	64	61	61	60
Dissolved Sulphate (SO4)	mg/L	500**	280	300	260	210	280	290	250	220	260	270	270	250	260
Nitrate (N)	mg/L	10.0*	0.11	0.29	0.41	0.3	0.41	0.24	<0.10	0.25	0.11	0.12	<0.10	0.57	0.29
pH	(pH units)	6.5-8.5	7.8	7.8	7.8	8.0	7.9	7.8	7.8	8.0	7.7	7.8	8.0	8.0	7.9
Total Ammonia-N	mg/L		0.23	<0.15	<0.15	<0.15	<0.15	0.18	0.34	<0.15	0.23	0.134	0.19	<0.15	0.26
Total Dissolved Solids	mg/L	500	850	806	845	810	790	810	805	770	860	640	785	730	730
Total Kjeldahl Nitrogen (TKN)	mg/L		<0.7	<0.7	<0.7	<0.7	<0.7	<0.7	<0.7	<0.7	<0.7	0.2	<0.7	<0.7	<0.7
Ion Percentage	%		6.6	1.1	4.3		2.8	4.5	2.3	4.1	8.3	5.7	6.9	6.1	5.0

Parameter	Units	ODWQS	OW16-7	OW16-7	OW16-7	OW16-7
Date			02-May-23	02-Nov-23	08-May-24	18-Nov-24
Laboratory			Bureau Veritas	Bureau Veritas	Bureau Veritas	Bureau Veritas
Alkalinity (Total as CaCO3)	mg/L	30-500***	450	470	440	480
Conductivity	umho/cm		1370	1300	1200	1300
Dissolved Barium (Ba)	mg/L	1*	0.014	0.016	0.015	0.017
Dissolved Boron (B)	mg/L	5.0*	0.27	0.28	0.29	0.28
Dissolved Cadmium (Cd)	mg/L	0.005*	<0.0001	<0.0001	<0.0001	<0.0001
Dissolved Calcium (Ca)	mg/L		100	110	100	100
Dissolved Chloride (Cl)	mg/L	250**	4.5	3.8	5.3	5.2
Dissolved Iron (Fe)	mg/L	0.30**	0.6	3.6	1.5	1.8
Dissolved Lead (Pb)	mg/L	0.01*	<0.0005	<0.0005	<0.0005	<0.0005
Dissolved Magnesium (Mg)	mg/L		77	81	86	80
Dissolved Organic Carbon	mg/L	5**	2.3	3.2	3.6	6.8
Dissolved Potassium (K)	mg/L		3.8	3.8	4.1	3.9
Dissolved Sodium (Na)	mg/L	200**	60	62	64	60
Dissolved Sulphate (SO4)	mg/L	500**	260	250	260	270
Nitrate (N)	mg/L	10.0*	0.37	0.18	0.14	<0.10
pH	(pH units)	6.5-8.5	8.2	8.1	8.2	7.9
Total Ammonia-N	mg/L		<0.15	0.22	0.27	0.36
Total Dissolved Solids	mg/L	500	765	715	815	825
Total Kjeldahl Nitrogen (TKN)	mg/L		<0.7	<0.7	<0.7	<0.7
Ion Percentage	%		4.5	7.3	8.2	2.7

NOTES: 1) Blank denotes data not available.
2) ODWQS denotes O. Reg. 169/03: Ontario Drinking Water Quality Standards (as amended).
3) *denotes health related ODWQS.
** denotes aesthetic objective for ODWQS.
*** denotes operational guideline for ODWQS.
4) mg/L denotes milligrams per litre.

Table H-4
Groundwater - General Analytical Results
Twin Creeks Environmental Centre

Parameter	Units	ODWQS	OW17-4	OW17-4	OW17-4	OW17-4	OW17-4	OW17-4	OW17-4	OW17-4	OW17-4	OW17-4	OW17-4	OW17-4	OW17-4
Date			22-Mar-84	08-Sep-86	30-Apr-87	14-Dec-94	06-Jun-95	11-Dec-96	14-May-97	04-Dec-97	13-May-98	08-Feb-99	09-Jun-99	22-Dec-99	29-Mar-00
Laboratory			Enviroclean	Enviroclean	Enviroclean	Enviroclean	Zenon	Zenon	Zenon	Zenon	Zenon	Maxxam	Maxxam	Accutest	Accutest
Alkalinity (Total as CaCO3)	mg/L	30-500***			502	510	180	460	460	510	460	397	422	366	440
Dissolved Boron (B)	mg/L	5.0*				0.5	0.37					0.504	0.404		
Dissolved Calcium (Ca)	mg/L		470	480	430	430	55	380	400	440	420	448	482	423	476
Dissolved Chloride (Cl)	mg/L	250**	12	1	6	6.3	0.99	6.3	7.4	6.5	7	4.4	5.3	6	6
Dissolved Iron (Fe)	mg/L	0.30**	<0.04	0.38	0.05	0.03	0.019	0.12	0.052	0.31	0.012	0.38	0.084	0.02	0.48
Dissolved Magnesium (Mg)	mg/L		835	792	765	770	15	680	700	780	740	725	767	768	789
Dissolved Organic Carbon	mg/L	5**	16.9	3.1	3.1							2.5	2.2		
Dissolved Potassium (K)	mg/L		25	6.8	6.6	6.4	1.4	6.1	6.2	7.8	6.6	7	5	5	6
Dissolved Sodium (Na)	mg/L	200**	260	212	202	210	5.1	200	200	230	220	213	238		227
Dissolved Sulphate (SO4)	mg/L	500**	4490	4250	4030	4900	77	4000	4100	4100	4200	3920	3990	3950	5000
Nitrate (N)	mg/L	10.0*								<0.05	<0.05	0.2	<0.1	<0.10	<0.10
Nitrite (N)	mg/L	1.0*								<0.05	<0.05	<0.1	<0.1	<0.10	<0.10
NO3+NO2	mg/L	10.0*	0.4	0.02	<0.01	0.12	0.26	0.085	<0.0500	<0.05	<0.05			<0.10	<0.10
Total Ammonia-N	mg/L			0.01	0.09	0.09	0.1	0.03	<0.03	0.03	<0.03	<0.05	<0.05	0.03	<0.02
Total Kjeldahl Nitrogen (TKN)	mg/L			0.3	0.51	2	3.9	2	0.74	0.76	0.73	2.7	0.2	0.12	0.22
Ion Percentage	%				0.1	8.5	3.3	4.6	4.2	0.8	2.4	1.3	3.5		6.5

Parameter	Units	ODWQS	OW17-4	OW17-4	OW17-4	OW17-4	OW17-4	OW17-4	OW17-4	OW17-4	OW17-4	OW17-4	OW17-4	OW17-4	OW17-4
Date			22-Jun-00	05-Dec-00	08-May-01	28-Nov-01	23-May-02	06-Nov-02	15-May-03	13-Nov-03	25-May-04	26-Nov-04	13-May-05	29-Nov-05	19-May-06
Laboratory			Accutest	Accutest	Accutest	Accutest	Accutest	Accutest	Accutest	Accutest	Accutest	Accutest	Accutest	Accutest	Accutest
Alkalinity (Total as CaCO3)	mg/L	30-500***	406	428	458	421	373	357	339	326	392	377	377	351	383
Dissolved Boron (B)	mg/L	5.0*	0.33			0.39	0.47	0.31	0.27	0.39	0.35	0.34	0.43	0.33	0.31
Dissolved Calcium (Ca)	mg/L		391	449	425	404	328	259	167	162	172	229	260	135	150
Dissolved Chloride (Cl)	mg/L	250**	5	7	8	7	16	28	41	35	32	28	31	37	34
Dissolved Iron (Fe)	mg/L	0.30**	<0.01	0.01	0.02	0.17	0.81	0.02	0.02	0.02	<0.01	0.10	0.10	0.03	<0.03
Dissolved Magnesium (Mg)	mg/L		656	709	710	729	467	331	176	175	161	257	264	114	159
Dissolved Organic Carbon	mg/L	5**	3.9			3.3	3.2	2.7	3.1	3.1	3.4	3.6	3.1	4.1	4.3
Dissolved Potassium (K)	mg/L		4	5	6	4	3	6	3	5	3	3	4	2	2
Dissolved Sodium (Na)	mg/L	200**	192	190	208	178	139	134	82	84	82	119	102	95	99
Dissolved Sulphate (SO4)	mg/L	500**	3700	3840	3990	3630	2460	1760	791	820	792	1550	1680	659	998
Nitrate (N)	mg/L	10.0*	0.40	<0.1	<0.1	<0.10	0.13	1.08	0.81	0.50	<0.10	<0.10	<0.10	0.48	0.16
Nitrite (N)	mg/L	1.0*	<0.10	<0.1	<0.1										
NO3+NO2	mg/L	10.0*	0.40	<0.1	<0.1										
Total Ammonia-N	mg/L		0.25	<0.2	<0.02	0.05	0.04	<0.02	<0.02	0.05	0.25	0.03	0.19	0.03	<0.02
Total Kjeldahl Nitrogen (TKN)	mg/L		0.27	0.18	0.07	0.18	0.05	0.31	0.40	0.28	0.26	0.22	0.36	0.18	0.27
Ion Percentage	%		1.6	0.7	1.5	2.7	2.2	2.9	6.5	5.6	3.3	2.1	3.7	0.6	6.0

Parameter	Units	ODWQS	OW17-4	OW17-4	OW17-4	OW17-4	OW17-4	OW17-4	OW17-4	OW17-4	OW17-4	OW17-4	OW17-4	OW17-4	OW17-4
Date			24-Nov-06	04-May-07	16-Nov-07	22-May-08	05-Nov-08	16-May-09	19-Nov-09	20-May-10	23-Nov-10	10-May-11	03-Nov-11	10-May-12	05-Nov-12
Laboratory			Accutest	Accutest	Accutest	MAXXAM	MAXXAM	MAXXAM	MAXXAM	MAXXAM	MAXXAM	MAXXAM	MAXXAM	MAXXAM	MAXXAM
Alkalinity (Total as CaCO3)	mg/L	30-500***	470	512	489	542	471	498	483	513	301	347	443	430	260
Conductivity	umho/cm					1680	2080	1900	2140	1750	1140	1020	1170	1100	890
Dissolved Barium (Ba)	mg/L	1*				0.01	0.013	0.012	0.011	0.010	0.012	0.013	0.018	0.016	0.014
Dissolved Boron (B)	mg/L	5.0*	0.37	0.48	0.37	0.35	0.41	0.41	0.41	0.33	0.32	0.24	0.37	0.28	0.27
Dissolved Cadmium (Cd)	mg/L	0.005*				<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001
Dissolved Calcium (Ca)	mg/L		166	176	196	130	210	230	250	220	130	110	120	130	110
Dissolved Chloride (Cl)	mg/L	250**	33	31	31	27	29	28	28	24	18	16	16	14	9
Dissolved Iron (Fe)	mg/L	0.30**	0.03	<0.03	0.05	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.10	<0.10
Dissolved Lead (Pb)	mg/L	0.01*				<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
Dissolved Magnesium (Mg)	mg/L		146	144	187	96	240	260	300	240	120	82	85	100	81
Dissolved Organic Carbon	mg/L	5**	4.5	4.9	5.0	3.5	3.2	4.9	3.6	3.3	3.4	3.3	4.3	3.3	3.4
Dissolved Potassium (K)	mg/L		3	2	2	1.7	3.5	3.3	3.3	2.7	2.3	1.9	2.3	2.2	2.2
Dissolved Sodium (Na)	mg/L	200**	133	131	125	120	130	130	120	110	90	74	65	70	62
Dissolved Sulphate (SO4)	mg/L	500**	779	684	964	402	751	580	770	450	290	190	200	180	200
Nitrate (N)	mg/L	10.0*	0.21	<0.10	<0.10	<0.1	0.1	<0.1	0.1	<0.1	0.5	<0.1	<0.1	<0.10	0.44
pH	(pH units)	6.5-8.5				8.0	8.0	8.0	7.9	8.1	8.0	8.2	7.9	7.9	7.7
Total Ammonia-N	mg/L		<0.02	<0.02	0.02	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15
Total Dissolved Solids	mg/L	500				997	1350	1140	1550	1140	722	618	746	668	594
Total Kjeldahl Nitrogen (TKN)	mg/L		0.32	0.21	0.35	<0.7	<0.7	<0.7	<0.7	<0.7	<0.7	<0.7	<0.7	<0.7	<0.7
Ion Percentage	%		2.5	5.8	2.7	4.6	19.6	29.6	26.4	31.9	28.0	16.1	8.4	17.4	22.2

NOTES: 1) Blank denotes data not available.
2) ODWQS denotes O. Reg. 169/03: Ontario Drinking Water Quality Standards (as amended).
3) *denotes health related ODWQS.
** denotes aesthetic objective for ODWQS.
*** denotes operational guideline for ODWQS.
4) mg/L denotes milligrams per litre.

Table H-4
Groundwater - General Analytical Results
Twin Creeks Environmental Centre

Parameter	Units	ODWQS	OW17-4	OW17-4	OW17-4	OW17-4	OW17-4	OW17-4	OW17-4	OW17-4	OW17-4	OW17-4	OW17-4	OW17-4
Date			**13-May-13**	**05-Nov-13**	**06-May-14**	**24-Nov-14**	**13-May-15**	**11-Nov-15**	**27-May-16**	**16-Nov-16**	**19-May-17**	**08-Nov-17**	**10-May-18**	**13-Nov-18**	**14-May-19**
Laboratory			**MAXXAM**	**MAXXAM**	**MAXXAM**	**MAXXAM**	**MAXXAM**	**MAXXAM**	**MAXXAM**	**MAXXAM**	**MAXXAM**	**MAXXAM**	**MAXXAM**	**MAXXAM**	**MAXXAM**
Alkalinity (Total as CaCO3)	mg/L	30-500***	360	420	420	430	440	340	320	410	190	430	450	400	400
Conductivity	umho/cm		1400	1500	1500	2100	1800	1700	1100	1500	2500	1300	1800	1000	1700
Dissolved Barium (Ba)	mg/L	1*	0.015	0.019	0.019	0.02	0.017	0.016	0.016	0.019	0.007	0.018	0.014	0.016	0.016
Dissolved Boron (B)	mg/L	5.0*	0.21	0.29	0.24	0.33	0.28	0.3	0.2	0.29	0.27	0.31	0.29	0.23	0.25
Dissolved Cadmium (Cd)	mg/L	0.005*	<0.0001	<0.00010	<0.00010	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001
Dissolved Calcium (Ca)	mg/L		130	130	160	150	160	190	130	150	180	150	190	100	190
Dissolved Chloride (Cl)	mg/L	250**	15	13	14	17	15	58	71	45	28	34	34	25	29
Dissolved Iron (Fe)	mg/L	0.30**	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	0.4	<0.1	0.3	<0.1	<0.1	<0.1
Dissolved Lead (Pb)	mg/L	0.01*	<0.0005	<0.00050	<0.00050	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
Dissolved Magnesium (Mg)	mg/L		120	110	140	140	150	180	100	120	91	130	180	64	180
Dissolved Organic Carbon	mg/L	5**	2.8	4.6	3.5	3.9	4.0	3.7	2.8	3.4	1.1	3.6	3.3	4.9	3.3
Dissolved Potassium (K)	mg/L		2.5	2.3	1.9	2	2.3	2.5	2.5	2.8	7.1	2.5	3	1.7	2.3
Dissolved Sodium (Na)	mg/L	200**	71	75	77	79	81	89	74	75	250	79	92	69	90
Dissolved Sulphate (SO4)	mg/L	500**	400	390	390	750	550	510	180	350	1200	310	460	200	530
Nitrate (N)	mg/L	10.0*	<0.10	<0.10	<0.10	<0.10	<0.10	0.36	<0.10	0.11	<0.10	0.16	<0.10	<0.10	0.13
pH	(pH units)	6.5-8.5	7.8	7.4	7.1	8.0	8.1	7.8	7.9	7.9	8.1	7.9	7.9	8.0	8.0
Total Ammonia-N	mg/L		<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	0.47	0.43	<0.15	<0.15	<0.15	<0.15
Total Dissolved Solids	mg/L	500	798	1010	968	2120	2130	1050	742	1000	2000	935	1310	625	1320
Total Kjeldahl Nitrogen (TKN)	mg/L		<0.7	<0.7	<0.7	<0.7	<0.7	<0.7	<0.7	<0.7	<0.7	<0.7	<0.7	<0.7	<0.7
Ion Percentage	%		14.3	10.4	19.8	1.5	11.3	22.6	24.5	15.3	2.9	20.2	22.7	8.0	21.2

Parameter	Units	ODWQS	OW17-4	OW17-4	OW17-4	OW17-4	OW17-4	OW17-4	OW17-4	OW17-4	OW17-4	OW17-4	OW17-4
Date			**05-Nov-19**	**08-May-20**	**03-Nov-20**	**20-May-21**	**03-Nov-21**	**03-May-22**	**02-Nov-22**	**03-May-23**	**03-Nov-23**	**08-May-24**	**19-Nov-24**
Laboratory			**Bureau Veritas**	**Bureau Veritas**	**Bureau Veritas**	**Bureau Veritas**	**Bureau Veritas**	**Bureau Veritas**	**Bureau Veritas**	**Bureau Veritas**	**Bureau Veritas**	**Bureau Veritas**	**Bureau Veritas**
Alkalinity (Total as CaCO3)	mg/L	30-500***	400	400	420	420	450	470	430	450	420	420	420
Conductivity	umho/cm		2300	2500	2400	2000	2000	1600	2100	1600	3000	2100	2900
Dissolved Barium (Ba)	mg/L	1*	0.015	0.013	0.013	0.021	0.017	0.014	0.012	0.012	0.018	0.018	0.015
Dissolved Boron (B)	mg/L	5.0*	0.34	0.35	0.36	0.23	0.26	0.24	0.33	0.25	0.20	0.2	0.31
Dissolved Cadmium (Cd)	mg/L	0.005*	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001
Dissolved Calcium (Ca)	mg/L		280	280	310	190	250	230	310	200	170	170	290
Dissolved Chloride (Cl)	mg/L	250**	30	31	33	35	32	32	28	21	24	24	23
Dissolved Iron (Fe)	mg/L	0.30**	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	0.3	0.2	<0.1	<0.1	0.6
Dissolved Lead (Pb)	mg/L	0.01*	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
Dissolved Magnesium (Mg)	mg/L		290	270	310	160	230	220	310	190	140	150	290
Dissolved Organic Carbon	mg/L	5**	3.8	3.4	3.5	3.2	3.1	3.1	7.8	3.4	6.7	3	3.3
Dissolved Potassium (K)	mg/L		3.8	3.1	3.8	1.6	2.3	2.0	3.6	2.2	2.7	1.3	3.1
Dissolved Sodium (Na)	mg/L	200**	120	110	120	79	98	93	120	82	66	72	110
Dissolved Sulphate (SO4)	mg/L	500**	880	1100	970	720	730	450	780	480	1500	830	1400
Nitrate (N)	mg/L	10.0*	<0.10	<0.10	<0.10	<0.10	0.29	0.16	0.14	<0.10	0.10	0.17	0.14
pH	(pH units)	6.5-8.5	7.7	7.9	7.9	8.0	8.1	8.1	7.8	8.1	7.8	8.0	7.8
Total Ammonia-N	mg/L		0.39	<0.15	<0.15	<0.050	<0.15	<0.15	0.31	<0.15	1.65	<0.15	<0.15
Total Dissolved Solids	mg/L	500	2190	1870	2350	1360	1230	1140	1800	1010	2920	2580	3720
Total Kjeldahl Nitrogen (TKN)	mg/L		<0.7	<0.7	<0.7	0.2	<0.7	<0.7	<0.7	<0.70	2.1	<0.7	<0.7
Ion Percentage	%		25.2	14.8	24.5	6.6	20.7	30.6	31.5	24.0	25.9	1.8	7.9

NOTES: 1) Blank denotes data not available.
2) ODWQS denotes O. Reg. 169/03: Ontario Drinking Water Quality Standards (as amended).
3) *denotes health related ODWQS.
** denotes aesthetic objective for ODWQS.
*** denotes operational guideline for ODWQS.
4) mg/L denotes milligrams per litre.

Table H-4
Groundwater - General Analytical Results
Twin Creeks Environmental Centre

Parameter	Units	ODWQS	OW19-29	OW19-29	OW19-29	OW19-29	OW19-29	OW19-29	OW19-29	OW19-29	OW19-29	OW19-29	OW19-29	OW19-29	OW19-29
Date			**07-Feb-99**	**03-Jun-99**	**02-Dec-99**	**19-Jun-00**	**13-Jun-02**	**22-May-08**	**14-May-09**	**20-May-10**	**10-May-11**	**09-May-12**	**09-May-13**	**06-May-14**	**12-May-15**
Laboratory			**Maxxam**	**Maxxam**	**Accutest**	**Accutest**	**Accutest**	**MAXXAM**	**MAXXAM**	**MAXXAM**	**MAXXAM**	**MAXXAM**	**MAXXAM**	**MAXXAM**	**MAXXAM**
Alkalinity (Total as CaCO3)	mg/L	30-500***	183	177	185	188	187	193	191	188	192	190	190	190	190
Conductivity	umho/cm		2490	2470	2300	2390		2460	2460	2470	2470	2500	2500	2500	1900
Dissolved Barium (Ba)	mg/L	1*	0.035	0.011				0.007	0.007	0.007	0.007	0.007	0.007	0.007	0.008
Dissolved Boron (B)	mg/L	5.0*	2.1	1.93	1.94	2.02	2.27	2.1	2.1	2.2	1.8	2.1	1.9	2.0	2.1
Dissolved Cadmium (Cd)	mg/L	0.005*	<0.003	<0.003		<0.005		<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001
Dissolved Calcium (Ca)	mg/L		182	196	202	209	185	190	190	180	190	190	180	200	190
Dissolved Chloride (Cl)	mg/L	250**	24.5	25.9	30	28	34	28	29	28	28	26	27	28	27
Dissolved Iron (Fe)	mg/L	0.30**	0.808	0.966	0.96	0.73	0.51	0.1	<0.1	0.5	0.3	0.19	0.16	0.74	<0.10
Dissolved Lead (Pb)	mg/L	0.01*	<0.025	<0.002	<0.002	<0.001		<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
Dissolved Magnesium (Mg)	mg/L		92	96.2	104	102	97	92	94	97	100	100	92	99	100
Dissolved Organic Carbon	mg/L	5**	0.7	0.7	1.2	1.8	0.6	1	2.4	1.2	0.8	0.9	1.3	1.5	1.9
Dissolved Potassium (K)	mg/L		8	7	8	8	7	7.1	7.1	7.3	7.3	7.4	6.8	7.0	7.5
Dissolved Sodium (Na)	mg/L	200**	245	263	274	268	251	250	250	260	280	280	250	260	280
Dissolved Sulphate (SO4)	mg/L	500**	1280	1270	1230	1210	1277	1180	1200	1200	1100	1100	1100	1100	1000
Nitrate (N)	mg/L	10.0*	<0.1	<0.1	<0.10	<0.10	0.14	<0.1	<0.1	<0.1	<0.1	<0.10	<0.10	<0.10	<0.10
pH	(pH units)	6.5-8.5	7.6	7.7	7.7	7.0		8.0	7.7	8.0	7.9	7.8	8.0	7.1	7.8
Total Ammonia-N	mg/L		0.47	0.5	0.54	0.62	0.5	0.52	0.54	0.48	0.48	0.79	0.51	0.5	0.48
Total Dissolved Solids	mg/L	500	2010	2090	1980	2080		1500	1550	1500	1490	2010	2050	1940	2070
Total Kjeldahl Nitrogen (TKN)	mg/L		0.9	0.5	0.55	0.67	0.68	<10	<4	1.4	0.7	<0.7	<0.7	<0.7	0.9
Ion Percentage	%		5.4	1.8	1.6	2.2	4.4	1.2	1.6	1.2	3.9	4.1	0.3	3.2	8.0

Parameter	Units	ODWQS	OW19-29	OW19-29	OW19-29	OW19-29	OW19-29	OW19-29	OW19-29	OW19-29	OW19-29
Date			**26-May-16**	**19-May-17**	**10-May-18**	**14-May-19**	**08-May-20**	**20-May-21**	**04-May-22**	**02-May-23**	**09-May-24**
Laboratory			**Maxxam**	**Maxxam**	**Maxxam**	**Maxxam**	**Bureau Veritas**	**Bureau Veritas**	**Bureau Veritas**	**Bureau Veritas**	**Bureau Veritas**
Alkalinity (Total as CaCO3)	mg/L	30-500***	200	190	210	190	190	190	190	190	190
Conductivity	umho/cm		2400	2500	2600	2400	2600	2500	2500	2500	2400
Dissolved Barium (Ba)	mg/L	1*	0.007	0.007	0.006	0.007	0.007	0.007	0.006	0.007	0.007
Dissolved Boron (B)	mg/L	5.0*	2.2	2.1	2.2	2	2	2.2	2.3	2.1	2.1
Dissolved Cadmium (Cd)	mg/L	0.005*	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001
Dissolved Calcium (Ca)	mg/L		190	180	200	190	180	190	200	190	190
Dissolved Chloride (Cl)	mg/L	250**	27	28	27	29	28	28	29	26	25
Dissolved Iron (Fe)	mg/L	0.30**	<0.10	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Dissolved Lead (Pb)	mg/L	0.01*	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
Dissolved Magnesium (Mg)	mg/L		100	91	97	95	94	96	93	94	94
Dissolved Organic Carbon	mg/L	5**	1.3	1.1	1.5	1.2	1.2	1.3	1.6	1.0	1.6
Dissolved Potassium (K)	mg/L		7.4	7.1	7.6	7	6.8	7.5	7.1	7.1	7.6
Dissolved Sodium (Na)	mg/L	200**	270	250	270	260	260	260	270	270	260
Dissolved Sulphate (SO4)	mg/L	500**	1100	1200	1100	1100	1100	1200	1100	1100	1200
Nitrate (N)	mg/L	10.0*	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
pH	(pH units)	6.5-8.5	8.0	8.1	8.0	7.9	7.9	8.0	8.0	7.9	7.9
Total Ammonia-N	mg/L		0.5	0.43	0.5	0.53	0.47	0.484	0.45	0.58	0.51
Total Dissolved Solids	mg/L	500	1940	2000	1870	2070	2000	1810	1810	1760	1930
Total Kjeldahl Nitrogen (TKN)	mg/L		<0.7	<0.7	<0.7	<0.7	<0.7	0.6	<0.7	0.7	<0.7
Ion Percentage	%		4.3	2.9	4.5	3.1	2.1	0.5	4.4	3.8	0.6

NOTES: 1) Blank denotes data not available.
2) ODWQS denotes O. Reg. 169/03: Ontario Drinking Water Quality Standards (as amended).
3) *denotes health related ODWQS.
** denotes aesthetic objective for ODWQS.
*** denotes operational guideline for ODWQS.
4) mg/L denotes milligrams per litre.

Table H-4
Groundwater - General Analytical Results
Twin Creeks Environmental Centre

Parameter	Units	ODWQS	OW39-26	OW39-26	OW39-26	OW39-26	OW39-26	OW39-26	OW39-26	OW39-26	OW39-26	OW39-26	OW39-26	OW39-26	OW39-26
Date			**04-Feb-99**	**03-Jun-99**	**30-Nov-99**	**21-Jun-00**	**22-May-08**	**20-May-09**	**20-May-10**	**12-May-11**	**16-May-12**	**08-May-13**	**05-May-14**	**14-May-15**	**27-May-16**
Laboratory			**Maxxam**	**Maxxam**	**Accutest**	**Accutest**	**MAXXAM**	**MAXXAM**	**MAXXAM**	**MAXXAM**	**MAXXAM**	**MAXXAM**	**MAXXAM**	**MAXXAM**	**MAXXAM**
Alkalinity (Total as CaCO3)	mg/L	30-500***	282	283	323	319	308	281	310	280	300	290	300	290	300
Conductivity	umho/cm		940	921	863	935	943	949	935	879	770	850	780	740	730
Dissolved Barium (Ba)	mg/L	1*	0.07	0.044	0.07	0.05	0.066	0.082	0.051	0.075	0.073	0.076	0.087	0.1	0.15
Dissolved Boron (B)	mg/L	5.0*	2.02	1.61	1.9	1.87	2.0	1.9	1.8	1.7	1.7	1.7	1.9	1.9	1.9
Dissolved Cadmium (Cd)	mg/L	0.005*	<0.003	<0.003	<0.005	<0.005	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001
Dissolved Calcium (Ca)	mg/L		26.9	24.5	21	27	26	23	26	16	15	17	19	16	19
Dissolved Chloride (Cl)	mg/L	250**	48.2	48.6	44	42	50	45	64	43	40	58	42	40	42
Dissolved Iron (Fe)	mg/L	0.30**	0.083	0.032	1.26	0.05	<0.1	<0.1	<0.1	<0.1	<0.10	<0.10	<0.10	<0.10	<0.10
Dissolved Lead (Pb)	mg/L	0.01*	<0.025	<0.002	<0.002	<0.001	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
Dissolved Magnesium (Mg)	mg/L		20.7	18.7	20	19	20	17	21	12	11	12	12	11	13
Dissolved Organic Carbon	mg/L	5**	0.6	0.5	1.3	0.7	0.9	2.4	1.5	2.0	1.6	1.6	2.5	1.9	1.6
Dissolved Potassium (K)	mg/L		5	2	3	3	2.7	2.7	2.6	2.5	2.5	2.5	2.4	2.3	2.5
Dissolved Sodium (Na)	mg/L	200**	151	144	165	146	150	160	160	150	150	140	150	130	150
Dissolved Sulphate (SO4)	mg/L	500**	121	102	123	169	146	130	100	110	37	44	39	26	18
Nitrate (N)	mg/L	10.0*	<0.1	<0.1	<0.10	<0.10	<0.1	<0.1	<0.1	<0.1	<0.10	<0.10	<0.10	<0.10	<0.10
pH	(pH units)	6.5-8.5	7.7	8.7	8.7	8.2	8.5	7.9	8.6	7.9	8.2	8.0	7.2	8.0	8.2
Total Ammonia-N	mg/L		0.2	0.23	0.27	0.19	0.34	0.39	0.25	0.38	0.18	0.36	0.27	0.38	0.51
Total Dissolved Solids	mg/L	500	575	635	520	636	611	580	610	512	408	476	420	400	406
Total Kjeldahl Nitrogen (TKN)	mg/L		0.7	0.3	0.33	0.22	<10	5	0.9	4	<0.7	<0.7	<0.7	1.1	<0.7
Ion Percentage	%		7.0	5.7	4.7	3.0	0.4	5.6	5.9	5.0	1.9	2.8	3.0	0.8	14.6

Parameter	Units	ODWQS	OW39A-26	OW39A-26	OW39A-26	OW39A-26	OW39A-26	OW39A-26	OW39A-26	OW39A-26
Date			**17-May-17**	**08-May-18**	**15-May-19**	**06-May-20**	**21-May-21**	**05-May-22**	**04-May-23**	**09-May-24**
Laboratory			**MAXXAM**	**MAXXAM**	**MAXXAM**	**Bureau Veritas**	**Bureau Veritas**	**Bureau Veritas**	**Bureau Veritas**	**Bureau Veritas**
Alkalinity (Total as CaCO3)	mg/L	30-500***	190	300	300	300	300	280	300	280
Conductivity	umho/cm		530	880	890	960	940	950	820	870
Dissolved Barium (Ba)	mg/L	1*	0.07	0.066	0.054	0.055	0.054	0.081	0.074	0.098
Dissolved Boron (B)	mg/L	5.0*	0.75	0.35	1.7	1.5	1.8	1.8	1.7	1.7
Dissolved Cadmium (Cd)	mg/L	0.005*	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001
Dissolved Calcium (Ca)	mg/L		24	33	30	29	32	21	26	23
Dissolved Chloride (Cl)	mg/L	250**	17	35	58	49	57	42	38	39
Dissolved Iron (Fe)	mg/L	0.30**	0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Dissolved Lead (Pb)	mg/L	0.01*	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
Dissolved Magnesium (Mg)	mg/L		12	9.3	18	19	22	14	17	16
Dissolved Organic Carbon	mg/L	5**	7.6	2.8	4.7	3.7	2.8	11	10	6.3
Dissolved Potassium (K)	mg/L		3.1	5.8	3.2	3.2	3.1	3.1	3.2	3.2
Dissolved Sodium (Na)	mg/L	200**	64	50	150	150	150	140	160	150
Dissolved Sulphate (SO4)	mg/L	500**	53	130	93	120	120	130	47	92
Nitrate (N)	mg/L	10.0*	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
pH	(pH units)	6.5-8.5	8.1	8.4	8.7	8.5	8.5	8.1	8.2	8.0
Total Ammonia-N	mg/L		0.29	0.23	0.39	0.18	0.278	0.22	0.33	0.32
Total Dissolved Solids	mg/L	500	328	535	585	500	475	495	485	570
Total Kjeldahl Nitrogen (TKN)	mg/L		0.8	<0.7	<0.7	<0.7	0.5	<0.7	<0.7	<0.7
Ion Percentage	%		4.0	28.7	6.3	4.7	5.4	0.5	17.0	9.0

NOTES: 1) Blank denotes data not available.
2) ODWQS denotes O. Reg. 169/03: Ontario Drinking Water Quality Standards (as amended).
3) *denotes health related ODWQS.
** denotes aesthetic objective for ODWQS.
*** denotes operational guideline for ODWQS.
4) mg/L denotes milligrams per litre.

Table H-4
Groundwater - General Analytical Results
Twin Creeks Environmental Centre

Parameter	Units	ODWS	OW40-6	OW40-6	OW40-6	OW40-6	OW40-6	OW40-6	OW40-6	OW40-6	OW40-6	OW40-6
Date			31-Oct-89	25-May-90	11-Dec-90	22-May-91	13-Nov-91	29-May-92	17-Jun-93	09-Feb-99	03-Jun-99	21-Jun-00
Laboratory			Enviroclean	Enviroclean	Enviroclean	Enviroclean	Enviroclean	Enviroclean	Enviroclean	Maxxam	Maxxam	Accutest
Alkalinity (Total as CaCO3)	mg/L	30-500***	521	528	496	507	506	502	451	498	479	501
Conductivity	mS/cm		1571	1430	1590	1510	1520	1320	1520	1630	1520	1420
Dissolved Barium (Ba)	mg/L	1*								0.023	0.023	0.02
Dissolved Boron (B)	mg/L	5.0*								0.459	0.348	0.34
Dissolved Cadmium (Cd)	mg/L	0.005*								<0.003	<0.003	<0.005
Dissolved Calcium (Ca)	mg/L		150	127	89	93.5	144	120	129	126	123	105
Dissolved Chloride (Cl)	mg/L	250**	3	2	2	2	2	1	3	3.8	3.2	2
Dissolved Iron (Fe)	mg/L	0.3**	0.65			0.03	<0.02	<0.02	<0.02	0.762	0.137	0.05
Dissolved Lead (Pb)	mg/L	0.01*								0.026	<0.002	<0.001
Dissolved Magnesium (Mg)	mg/L		150	148	127	136	136	128	142	112	134	105
Dissolved Organic Carbon	mg/L	5**	3.6	1.4	2.3	3.8	2.6	1.8	1.4	1.2	1.1	2.8
Dissolved Potassium (K)	mg/L		6.7	4.2	4.4	3.05	4.01	3.78	4.04	5	4	4
Dissolved Sodium (Na)	mg/L	200**	74		67	65.2		58.4	58.4	62	59.6	47
Dissolved Sulphate (SO4)	mg/L	500**	422	400	420	460	510	460	440	486	416	387
Nitrate (N)	mg/L	10.0*								0.2	0.4	<0.10
pH	pH units	6.5-8.5	7.6	7.2	7.9	7.2	7.4	7.2	7	7.1	7.2	7.4
Total Ammonia-N	mg/L		0.15	0.08	0.02	0.09	0.05	0.12	0.14	0.08	0.07	0.65
Total Dissolved Solids	mg/L	500								1170	1220	1028
Total Kjeldahl Nitrogen (TKN)	mg/L		0.43	0.42	0.08	0.37	0.24	0.14	0.23	0.1	<0.1	1.30
Ion Percentage	%		14.5	4.8	3.0	2.4	1.1	3.8	11.2	0.0	9.1	0.7

Parameter	Units	ODWS	OW40B-4	OW40B-4	OW40B-4	OW40B-4	OW40B-4	OW40B-4r	OW40B-4r	OW40B-4r	OW40D-4	OW40D-4	OW40D-4	OW40D-4	OW40D-4
Date			19-May-09	20-May-10	12-May-11	15-May-12	12-Jun-12	03-Dec-12	08-May-13	06-May-14	14-May-15	27-May-16	17-May-17	08-May-18	15-May-19
Laboratory			Maxxam	Maxxam	Maxxam	Maxxam	Maxxam	Maxxam	Maxxam	Maxxam	Maxxam	Maxxam	Maxxam	Maxxam	Maxxam
Alkalinity (Total as CaCO3)	mg/L	30-500***	412	454	460	310	360	400	370	380	420	450	450	400	370
Conductivity	mS/cm		1940	1890	1690	770	1100	4500	4300	4000	4600	4700	4700	2800	2100
Dissolved Barium (Ba)	mg/L	1*	0.015	0.011	0.020	0.02	0.029	0.031	0.023	0.017	0.012	0.011	0.008	0.012	0.012
Dissolved Boron (B)	mg/L	5.0*	0.25	0.28	0.24	0.11	0.16	0.55	0.48	0.4	0.67	0.68	0.68	0.6	0.39
Dissolved Cadmium (Cd)	mg/L	0.005*	<0.0001	0.0004	<0.0001	<0.0001	<0.0001	0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001
Dissolved Calcium (Ca)	mg/L		170	170	140	94	99	560	530	490	440	440	420	290	260
Dissolved Chloride (Cl)	mg/L	250**	6.0	6.0	5.0	4.0	4.0	6.0	6.0	6.0	11	11	11	8.3	7.8
Dissolved Iron (Fe)	mg/L	0.3**	<0.1	<0.1	<0.1	<0.10	<0.10	<0.10	0.10	<0.10	<0.10	0.1	<0.1	0.7	0.1
Dissolved Lead (Pb)	mg/L	0.01*	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	0.0015	<0.0005	<0.0005	<0.0005	<0.0005
Dissolved Magnesium (Mg)	mg/L		150	150	130	49	78	450	440	400	470	440	460	290	250
Dissolved Organic Carbon	mg/L	5**	12	5.5	3.7	6.0	5.1	3.8	3.7	3.4	2.8	2.6	2.4	2.9	3.6
Dissolved Potassium (K)	mg/L		6.4	4.7	4.5	5.6	4.2	8.6	6.2	6	6.7	6.5	6	5.2	4.4
Dissolved Sodium (Na)	mg/L	200**	77	97	69	80	71	140	130	120	200	230	210	160	150
Dissolved Sulphate (SO4)	mg/L	500**	730	700	490	86	220	3000	2700	2500	2900	2900	2900	1300	880
Nitrate (N)	mg/L	10.0*	<0.1	<0.1	0.4	3.4	2.0	<0.10	0.14	<0.10	<0.10	<0.10	<0.10	<0.10	0.23
pH	pH units	6.5-8.5	7.7	8.1	8.2	7.9	7.8	7.7	7.5	7.8	7.7	7.7	7.6	7.8	7.7
Total Ammonia-N	mg/L		<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15
Total Dissolved Solids	mg/L	500	1220	1190	1030	514	890	4760	4500	4030	4760	4750	4610	2360	1950
Total Kjeldahl Nitrogen (TKN)	mg/L		<4	1.6	<0.7	0.8	0.9	<0.7	0.7	<0.7	<0.7	<0.7	1.4	<0.7	<0.7
Ion Percentage	%		4.7	6.3	2.9	21.9	10.3	0.0	3.1	1.9	0.2	0.2	0.4	14.3	23.9

Parameter	Units	ODWS	OW40D-4	OW40D-4	OW40D-4	OW40D-4	OW40E-4
Date			07-May-20	20-May-21	05-May-22	04-May-23	04-May-24
Laboratory			Bureau Veritas	Bureau Veritas	Bureau Veritas	Bureau Veritas	Bureau Veritas
Alkalinity (Total as CaCO3)	mg/L	30-500***	440	350	390	390	320
Conductivity	mS/cm		3900	2000	2000	2100	3100
Dissolved Barium (Ba)	mg/L	1*	0.011	0.009	0.012	0.015	0.014
Dissolved Boron (B)	mg/L	5.0*	0.56	0.4	0.33	0.22	0.3
Dissolved Cadmium (Cd)	mg/L	0.005*	<0.0001	<0.0001	<0.0001	<0.0001	0.001
Dissolved Calcium (Ca)	mg/L		330	280	210	150	480
Dissolved Chloride (Cl)	mg/L	250**	10	4.6	6.2	5.2	2.5
Dissolved Iron (Fe)	mg/L	0.3**	1.1	0.3	0.5	1.0	<0.1
Dissolved Lead (Pb)	mg/L	0.01*	<0.0005	<0.0005	<0.0005	0.0006	<0.0005
Dissolved Magnesium (Mg)	mg/L		310	250	180	140	230
Dissolved Organic Carbon	mg/L	5**	2.9	3.1	3.9	3.5	6.1
Dissolved Potassium (K)	mg/L		5.4	4.9	4.2	3.6	7.4
Dissolved Sodium (Na)	mg/L	200**	170	140	120	88	78
Dissolved Sulphate (SO4)	mg/L	500**	2100	850	770	860	1800
Nitrate (N)	mg/L	10.0*	<0.10	0.34	<0.10	0.13	<0.10
pH	pH units	6.5-8.5	7.8	7.8	8.0	7.8	7.7
Total Ammonia-N	mg/L		<0.15	<0.050	<0.15	<0.15	<0.15
Total Dissolved Solids	mg/L	500	3400	1740	1830	1520	3070
Total Kjeldahl Nitrogen (TKN)	mg/L		<0.7	0.3	<0.7	<0.7	<0.7
Ion Percentage	%		2.0	26.6	15.0	3.4	3.8

NOTES: 1) Blank denotes data not available.
2) ODWQS denotes O. Reg. 169/03: Ontario Drinking Water Quality Standards (as amended).
3) *denotes health related ODWQS.
** denotes aesthetic objective for ODWQS.
*** denotes operational guideline for ODWQS.
4) mg/L denotes milligrams per litre.

Table H-4
Groundwater - General Analytical Results
Twin Creeks Environmental Centre

Parameter	Units	ODWQS	OW40A-7	OW40A-7	OW40A-7	OW40A-7	OW40A-7	OW40A-7	OW40A-7	OW40A-7	OW40A-7	OW40A-7	OW40A-7	OW40A-7	OW40A-7
Date			**19-May-09**	**20-May-10**	**12-May-11**	**15-May-12**	**09-May-13**	**05-May-14**	**14-May-15**	**27-May-16**	**17-May-17**	**08-May-18**	**15-May-19**	**07-May-20**	**20-May-21**
Laboratory			**Maxxam**	**Maxxam**	**Maxxam**	**Maxxam**	**Maxxam**	**Maxxam**	**Maxxam**	**Maxxam**	**Maxxam**	**Maxxam**	**Maxxam**	**Bureau Veritas**	**Bureau Veritas**
Alkalinity (Total as CaCO3)	mg/L	30-500***	423	393	352	370	360	360	360	350	330		330	340	330
Conductivity	umho/cm		2510	2650	2650	2700	2900	2900	2800	2800	2900	3000	2900	2900	2900
Dissolved Barium (Ba)	mg/L	1*	0.018	0.015	0.012	0.01	0.010	0.01	0.008	0.009	0.007	0.008	0.007	0.007	0.007
Dissolved Boron (B)	mg/L	5.0*	0.53	0.56	0.57	0.56	0.49	0.55	0.63	0.63	0.59	0.66	0.69	0.57	0.59
Dissolved Cadmium (Cd)	mg/L	0.005*	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001
Dissolved Calcium (Ca)	mg/L		260	260	250	240	270	290	260	270	250	280	260	270	270
Dissolved Chloride (Cl)	mg/L	250**	5	6	6	8	7	8	8	8.2	7.7	7.1	7.2	7.2	6.7
Dissolved Iron (Fe)	mg/L	0.30**	<0.1	<0.1	1.1	2.4	0.80	0.45	1.2	3.1	1.5	2.7	1.2	1.4	0.9
Dissolved Lead (Pb)	mg/L	0.01*	0.0007	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
Dissolved Magnesium (Mg)	mg/L		230	230	220	210	240	250	220	240	230	270	260	240	250
Dissolved Organic Carbon	mg/L	5**	5.2	2.0	2.2	3.1	2.4	5.5	2.7	1.8	2.2	1.8	2.1	2.1	1.6
Dissolved Potassium (K)	mg/L		7.1	5.8	5.8	5.5	5.6	5.6	5.6	5.7	5.4	5.7	6.0	5.4	5.6
Dissolved Sodium (Na)	mg/L	200**	120	110	110	110	110	130	110	130	120	130	130	120	130
Dissolved Sulphate (SO4)	mg/L	500**	1200	1300	1300	1300	1500	1400	1400	1400	1500	1500	1500	1400	1600
Nitrate (N)	mg/L	10.0*	<0.1	<0.1	0.1	0.14	0.14	<0.1	<0.10	<0.10	<0.10	0.1	0.16	0.16	0.2
pH	(pH units)	6.5-8.5	7.3	8.0	8.1	7.8	8.0	7.2	7.8	7.9	8.2	7.9	7.9	8.0	7.9
Total Ammonia-N	mg/L		0.23	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.050
Total Dissolved Solids	mg/L	500	1670	1700	1480	2250	2750	2530	2540	2550	2530	2470	2660	2530	2580
Total Kjeldahl Nitrogen (TKN)	mg/L		<4	2	<0.7	<0.7	<0.7	0.7	<0.7	<0.7	<0.7	<0.7	<0.7	<0.7	0.2
Ion Percentage	%		7.4	4.2	1.3	1.2	1.1	5.1	1.3	5.0	0.5	13.8	4.0	4.7	0.8

Parameter	Units	ODWQS	OW40A-7	OW40A-7	OW40A-7
Date			**05-May-22**	**04-May-23**	**04-May-24**
Laboratory			**Bureau Veritas**	**Bureau Veritas**	**Bureau Veritas**
Alkalinity (Total as CaCO3)	mg/L	30-500***	370	390	350
Conductivity	umho/cm		3000	3000	2900
Dissolved Barium (Ba)	mg/L	1*	0.007	0.008	0.007
Dissolved Boron (B)	mg/L	5.0*	0.61	0.61	0.65
Dissolved Cadmium (Cd)	mg/L	0.005*	<0.0001	<0.0001	<0.0001
Dissolved Calcium (Ca)	mg/L		280	330	280
Dissolved Chloride (Cl)	mg/L	250**	7.2	5.2	6.2
Dissolved Iron (Fe)	mg/L	0.30**	1	1.2	0.7
Dissolved Lead (Pb)	mg/L	0.01*	<0.0005	<0.0005	<0.0005
Dissolved Magnesium (Mg)	mg/L		250	280	270
Dissolved Organic Carbon	mg/L	5**	2.2	2.1	1.7
Dissolved Potassium (K)	mg/L		5.9	6.1	5.8
Dissolved Sodium (Na)	mg/L	200**	120	130	130
Dissolved Sulphate (SO4)	mg/L	500**	1500	1600	1600
Nitrate (N)	mg/L	10.0*	0.4	0.32	0.37
pH	(pH units)	6.5-8.5	8.07	7.9	8.0
Total Ammonia-N	mg/L		<0.15	<0.15	<0.15
Total Dissolved Solids	mg/L	500	2510	2610	2690
Total Kjeldahl Nitrogen (TKN)	mg/L		<0.7	<0.7	<0.7
Ion Percentage	%		2.8	6.1	3.1

NOTES: 1) Blank denotes data not available.
2) ODWQS denotes O. Reg. 169/03: Ontario Drinking Water Quality Standards (as amended).
3) *denotes health related ODWQS.
** denotes aesthetic objective for ODWQS.
*** denotes operational guideline for ODWQS.
4) mg/L denotes milligrams per litre.

Table H-4
Groundwater - General Analytical Results
Twin Creeks Environmental Centre

Parameter	Units	ODWQS	OW46-7	OW46-7	OW46-7	OW46-7	OW46-7	OW46-7	OW46-7	OW46-7	OW46-7	OW46-7	OW46-7	OW46-7
Date			11-Dec-90	22-May-91	14-Nov-91	29-May-92	12-Nov-92	17-Jun-93	16-Dec-93	12-May-94	14-Dec-94	06-Jun-95	03-Nov-95	11-Dec-96	14-May-97
Laboratory			Enviroclean	Enviroclean	Enviroclean	Enviroclean	Enviroclean	Enviroclean	Enviroclean	Enviroclean	Enviroclean	Zenon	Zenon	Zenon	Zenon
Alkalinity (Total as CaCO3)	mg/L	30-500***	376	331	362	356	364	336	35	366	360	360	380	380	380
Dissolved Boron (B)	mg/L	5.0*							1.05	0.76	1	0.93	0.96		
Dissolved Calcium (Ca)	mg/L		371	287	458	317	470	392	310	405	430	410	410	370	420
Dissolved Chloride (Cl)	mg/L	250**	14	11	11	6	14	7	13	11	14	13	14	15	14
Dissolved Iron (Fe)	mg/L	0.3**	0.05	0.08	<0.02	0.02	0.02	0.02	0.19	0.02	0.34	<0.01	0.076	0.62	0.11
Dissolved Magnesium (Mg)	mg/L		461	467	467	430	573	508	330	465	410	440	440	410	450
Dissolved Organic Carbon	mg/L	5**	1.1	1.9	1.6	1.8	2.2	1.1							
Dissolved Potassium (K)	mg/L		9.84	5.5	9.07	8.91	8.91	8.49	8.62	8.98	7.5	9.2	8.8	8.1	8.8
Dissolved Sodium (Na)	mg/L	200**	279	222	<204	<253	241	248	269	300	290	300	280	270	270
Dissolved Sulphate (SO4)	mg/L	500**	2700	2400	3000	2700	3800	3100	2700	3100	3700	3300	3300	3100	3200
Nitrate (N)	mg/L	10.0*													
Nitrite (N)	mg/L	1.0*													
NO3+NO2	mg/L	10.0*	0.08	0.36	0.16	0.16	0.07	0.07	0.23	0.07	0.027	0.074	0.11	<0.05	0.16
Total Ammonia-N	mg/L		0.37	0.25	0.27	0.12	0.22	0.22	0.2	0.17	0.16	<0.03	0.03	0.31	0.22
Total Kjeldahl Nitrogen (TKN)	mg/L		0.51	0.3	0.43	0.17	0.33	0.33	0.39	0.35	0.77	1.1	0.36	1.3	0.51
Ion Percentage	%		4.2	5.3			3.0	1.0		0.2	10.6	3.9	4.8	5.7	2.7

Parameter	Units	ODWQS	OW46-7	OW46-7	OW46-7	OW46-7	OW46-7	OW46-7	OW46-7	OW46-7	OW46-7	OW46-7	OW46-7	OW46-7	OW46-7
Date			04-Dec-97	11-Mar-98	13-May-98	22-Dec-99	29-Mar-00	05-Dec-00	08-May-01	28-Nov-01	23-May-02	06-Nov-02	15-May-03	16-Jun-03	14-Nov-03
Laboratory			Zenon	Maxxam	Zenon	Accutest	Accutest	Accutest	Accutest	Accutest	Accutest	Accutest	Accutest	Accutest	Accutest
Alkalinity (Total as CaCO3)	mg/L	30-500***	380	339	380	275	278	318	353	374	370	353	225	221	297
Dissolved Boron (B)	mg/L	5.0*								0.81	1.32	0.77	0.12	0.10	0.43
Dissolved Calcium (Ca)	mg/L		440	386	430	298	239	323	405	461	467	379	168	149	261
Dissolved Chloride (Cl)	mg/L	250**	13	11.3	13	18	15	15	15	16	12	14	15	15	13
Dissolved Iron (Fe)	mg/L	0.3**	1.9	1.18	0.016	1.76	0.02	1.41	0.04	3.92	4.95	0.09	0.01	<0.01	0.03
Dissolved Magnesium (Mg)	mg/L		460	457	460	379	285	329	341	423	496	420	224	172	270
Dissolved Organic Carbon	mg/L	5**								5.8	1.4	1.6	2.8	3.2	2.7
Dissolved Potassium (K)	mg/L		8.7	10	8.5	6	6	7	8	9	8	14	5	4	10
Dissolved Sodium (Na)	mg/L	200**	290	239	300		237	246	283	314	287	263	146	114	210
Dissolved Sulphate (SO4)	mg/L	500**	3200	2980	3400	2740	2020	2580	2840	2980	3290	3020	1160	993	1740
Nitrate (N)	mg/L	10.0*	<0.05	0.2	<0.05	0.44	0.83	0.57	0.12	0.32	<0.10	<0.10	5.32	5.18	1.08
Nitrite (N)	mg/L	1.0*	<0.05	<0.1	<0.05	<0.05	<0.05	<0.1	<0.1						
NO3+NO2	mg/L	10.0*	<0.05	0.2	<0.05	0.44	0.83	0.57	0.12						
Total Ammonia-N	mg/L		0.33		0.35	0.15	0.02	0.22	0.2	0.32	0.49	0.25	<0.02	<0.02	0.19
Total Kjeldahl Nitrogen (TKN)	mg/L		0.68		0.89	0.37	0.36	0.46	0.27	0.35	0.49	0.35	0.44	0.60	0.23
Ion Percentage	%		0.8	0.7	3.7		1.7	5.1	4.1	1.8	0.8	3.3	7.8	3.4	3.3

Parameter	Units	ODWQS	OW46-7	OW46-7	OW46-7	OW46-7	OW46-7	OW46-7	OW46-7	OW46-7	OW46-7	OW46-7	OW46-7	OW46-7	OW46-7
Date			26-May-04	26-Nov-04	13-May-05	29-Nov-05	19-May-06	24-Nov-06	04-May-07	16-Nov-07	22-May-08	05-Nov-08	16-May-09	18-Nov-09	19-May-10
Laboratory			Accutest	Accutest	Accutest	Accutest	Accutest	Accutest	Accutest	Accutest	MAXXAM	MAXXAM	MAXXAM	MAXXAM	MAXXAM
Alkalinity (Total as CaCO3)	mg/L	30-500***	245	246	244	262	288	289	285	284	273	284	291	297	309
Conductivity	umho/cm										2830	2940	3140	3380	3250
Dissolved Barium (Ba)	mg/L	1*									<0.005	<0.005	<0.005	<0.005	<0.005
Dissolved Boron (B)	mg/L	5.0*	0.17	0.11	0.16	0.16	0.14	0.18	0.19	0.16	0.18	0.2	0.23	0.22	0.21
Dissolved Cadmium (Cd)	mg/L	0.005*									<0.0001	<0.0001	<0.0001	<0.0001	<0.0001
Dissolved Calcium (Ca)	mg/L		192	244	211	252	210	223	240	261	230	230	260	280	260
Dissolved Chloride (Cl)	mg/L	250**	14	14	13	14	18	18	17	18	18	17	17	16	16
Dissolved Iron (Fe)	mg/L	0.3**	0.02	<0.01	<0.01	0.02	<0.01	<0.03	0.20	<0.03	<0.1	<0.1	<0.1	<0.1	<0.1
Dissolved Lead (Pb)	mg/L	0.01*									<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
Dissolved Magnesium (Mg)	mg/L		223	271	244	257	230	256	260	278	270	250	320	330	300
Dissolved Organic Carbon	mg/L	5**	2.6	3.5	3.2	3.5	3.9	3.0	4.0	4.4	3.5	3.5	6.3	4.4	4.4
Dissolved Potassium (K)	mg/L		6	5	5	6	5	5	5	5	5.2	5.3	5.8	6.0	5.2
Dissolved Sodium (Na)	mg/L	200**	153	157	135	149	126	144	152	151	150	130	170	170	150
Dissolved Sulphate (SO4)	mg/L	500**	1280	1430	1430	1620	1300	1570	1700	1690	1580	1710	1800	1900	1800
Nitrate (N)	mg/L	10.0*	1.08	0.81	<0.10	<0.10	<0.10	<0.10	0.50	0.43	0.1	<0.1	<0.1	<0.1	<0.1
pH	(pH units)	6.5-8.5									8.4	8.3	8.3	8.3	8.3
Total Ammonia-N	mg/L		0.19	0.02	0.03	<0.02	0.05	<0.02	0.23	<0.02	<0.15	<0.15	<0.15	<0.15	<0.15
Total Dissolved Solids	mg/L	500									1610	2000	1960	2170	2000
Total Kjeldahl Nitrogen (TKN)	mg/L		0.32	0.32	0.10	0.18	0.25	0.25	3.08	<0.10	`	<0.7	<0.7	<0.7	<0.7
Ion Percentage	%		5.2	9.2	3.1	2.1	3.7	0.5	0.9	2.3	2.8	4.1	4.2	3.7	1.1

NOTES: 1) Blank denotes data not available.
2) ODWQS denotes O. Reg. 169/03: Ontario Drinking Water Quality Standards (as amended).
3) *denotes health related ODWQS.
** denotes aesthetic objective for ODWQS.
*** denotes operational guideline for ODWQS.
4) mg/L denotes milligrams per litre.

Table H-4
Groundwater - General Analytical Results
Twin Creeks Environmental Centre

Parameter	Units	ODWQS	OW46-7	OW46-7	OW46-7	OW46-7	OW46-7	OW46-7	OW46-7	OW46-7	OW46-7	OW46-7	OW46-7	OW46-7	OW46-7
Date			23-Nov-10	10-May-11	03-Nov-11	10-May-12	06-Nov-12	13-May-13	05-Nov-13	06-May-14	24-Nov-14	13-May-15	11-Nov-15	27-May-16	16-Nov-16
Laboratory			MAXXAM	MAXXAM	MAXXAM	MAXXAM	MAXXAM	MAXXAM	MAXXAM	MAXXAM	MAXXAM	MAXXAM	MAXXAM	MAXXAM	MAXXAM
Alkalinity (Total as CaCO3)	mg/L	30-500***	323	327	331	330	330	300	310	320	320	320	360	320	320
Conductivity	umho/cm		3330	2490	2790	2900	3100	2700	2900	2900	3200	3500	4200	3300	3400
Dissolved Barium (Ba)	mg/L	1*	0.005	<0.005	0.005	0.005	<0.01	0.007	0.0086	0.009	0.012	0.011	0.014	0.012	0.012
Dissolved Boron (B)	mg/L	5.0*	0.23	0.20	0.22	0.24	0.25	0.20	0.25	0.24	0.28	0.29	0.6	0.33	0.33
Dissolved Cadmium (Cd)	mg/L	0.005*	<0.0001	<0.0001	<0.0001	<0.0001	<0.0002	<0.0001	<0.00010	<0.00010	0.0003	<0.0001	<0.0001	<0.0001	<0.0001
Dissolved Calcium (Ca)	mg/L		270	190	240	220	250	230	240	240	220	270	390	280	280
Dissolved Chloride (Cl)	mg/L	250**	15	21	20	17	16	15	14	13	14	14	13	15	16
Dissolved Iron (Fe)	mg/L	0.3**	<0.1	<0.1	<0.1	<0.10	<0.20	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.1
Dissolved Lead (Pb)	mg/L	0.01*	<0.0005	<0.0005	<0.0005	<0.0005	<0.001	<0.0005	<0.00050	<0.00050	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
Dissolved Magnesium (Mg)	mg/L		310	230	260	280	290	270	300	280	270	310	410	350	350
Dissolved Organic Carbon	mg/L	5**	4.6	4.4	4.6	4.7	4.4	6.7	4.7	4.2	4.7	4.1	3.2	4.1	4.2
Dissolved Potassium (K)	mg/L		5.5	4.4	5.4	5.0	5.2	5.0	5.1	4.7	4.6	5.6	8	5.7	5.9
Dissolved Sodium (Na)	mg/L	200**	150	120	130	130	140	120	130	130	110	150	280	160	160
Dissolved Sulphate (SO4)	mg/L	500**	1800	1200	1400	1600	1500	1400	1500	1500	1600	1900	2700	1800	1800
Nitrate (N)	mg/L	10.0*	<0.1	<0.1	<0.1	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
pH	(pH units)	6.5-8.5	8.3	8.5	8.3	8.3	8.3	8.3	7.9	6.9	8.3	8.3	7.8	8.3	8.1
Total Ammonia-N	mg/L		<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15
Total Dissolved Solids	mg/L	500	1980	1550	2080	2510	2860	2430	2570	2600	2900	3210	3850	3140	3060
Total Kjeldahl Nitrogen (TKN)	mg/L		<0.7	<0.7	<0.7	1.2	<0.7	<0.7	<0.7	<0.7	<0.7	<0.7	<0.7	<0.7	<0.7
Ion Percentage	%		2.4	2.0	3.3	1.3	4.9	4.2	5.4	3.1	3.1	1.3	2.0	6.9	6.8

Parameter	Units	ODWQS	OW46-7	OW46-7	OW46-7	OW46-7	OW46-7	OW46-7	OW46-7	OW46-7	OW46-7	OW46-7	OW46-7	OW46-7	OW46-7
Date			19-May-17	08-Nov-17	10-May-18	14-Nov-18	14-May-19	05-Nov-19	11-May-20	03-Nov-20	18-May-21	03-Nov-21	04-May-22	02-Nov-22	03-May-23
Laboratory			MAXXAM	MAXXAM	MAXXAM	MAXXAM	MAXXAM	Bureau Veritas	Bureau Veritas	Bureau Veritas	Bureau Veritas	Bureau Veritas	Bureau Veritas	Bureau Veritas	Bureau Veritas
Alkalinity (Total as CaCO3)	mg/L	30-500***	320	330	320	310	300	360	310	330	300	370	340	390	340
Conductivity	umho/cm		2900	2700	2900	2800	3200	4300	3600	3600	3700	4500	4500	4900	4590
Dissolved Barium (Ba)	mg/L	1*	0.015	0.012	0.018	0.022	0.019	0.02	0.02	0.022	0.022	0.021	0.017	0.014	0.015
Dissolved Boron (B)	mg/L	5.0*	0.27	0.28	0.28	0.27	0.31	0.53	0.36	0.65	0.34	0.7	0.58	0.8	0.56
Dissolved Cadmium (Cd)	mg/L	0.005*	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001
Dissolved Calcium (Ca)	mg/L		220	220	230	230	270	360	300	390	300	430	410	470	390
Dissolved Chloride (Cl)	mg/L	250**	14	14	13	14	14	13	14	13	14	13	14	13	12
Dissolved Iron (Fe)	mg/L	0.3**	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Dissolved Lead (Pb)	mg/L	0.01*	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
Dissolved Magnesium (Mg)	mg/L		260	260	270	280	300	390	330	400	360	450	420	490	420
Dissolved Organic Carbon	mg/L	5**	4.3	4.5	4.0	4.6	4	2.9	4.1	2.9	3.8	2.0	2.7	2.7	2.9
Dissolved Potassium (K)	mg/L		4.6	4.7	4.8	4.7	5.0	7.0	5.4	7.2	5.6	7.6	6.9	8.7	6.9
Dissolved Sodium (Na)	mg/L	200**	110	110	120	110	140	230	150	230	150	270	250	300	230
Dissolved Sulphate (SO4)	mg/L	500**	1500	1500	1400	1500	1800	2500	2000	2200	2200	3100	2800	3100	2800
Nitrate (N)	mg/L	10.0*	<0.10	<0.10	<0.10	<0.10	0.11	<0.10	<0.10	0.11	<0.10	0.15	0.15	0.17	0.14
pH	(pH units)	6.5-8.5	8.4	8.2	8.3	8.2	8.2	7.8	8.2	7.9	8.3	8.1	8.1	7.8	7.5
Total Ammonia-N	mg/L		<0.15	<0.15	<0.15	<0.15	<0.15	0.21	<0.15	<0.15	<0.050	<0.15	<0.15	<0.15	<0.15
Total Dissolved Solids	mg/L	500	2500	2470	2400	2590	3010	4720	3210	3590	3600	3670	3960	4470	4090
Total Kjeldahl Nitrogen (TKN)	mg/L		<0.7	<0.7	<0.7	<0.7	<0.7	<0.7	<0.7	<0.7	0.2	<0.7	<0.7	<0.7	<0.7
Ion Percentage	%		0.2	0.0	5.5	3.2	1.4	1.2	1.4	9.2	0.3	0.8	0.9	3.4	0.4

Parameter	Units	ODWQS	OW46-7	OW46-7	OW46-7
Date			03-Nov-23	08-May-24	19-Nov-24
Laboratory			Bureau Veritas	Bureau Veritas	Bureau Veritas
Alkalinity (Total as CaCO3)	mg/L	30-500***	330	290	360
Conductivity	umho/cm		4400	4100	4800
Dissolved Barium (Ba)	mg/L	1*	0.027	0.033	<0.03
Dissolved Boron (B)	mg/L	5.0*	0.59	0.49	0.7
Dissolved Cadmium (Cd)	mg/L	0.005*	<0.0001	<0.0001	<0.0005
Dissolved Calcium (Ca)	mg/L		390	370	420
Dissolved Chloride (Cl)	mg/L	250**	9.5	11	10
Dissolved Iron (Fe)	mg/L	0.3**	<0.1	<0.1	<0.5
Dissolved Lead (Pb)	mg/L	0.01*	<0.0005	<0.0005	<0.003
Dissolved Magnesium (Mg)	mg/L		460	440	440
Dissolved Organic Carbon	mg/L	5**	3.7	3.2	3.0
Dissolved Potassium (K)	mg/L		7	6.6	8
Dissolved Sodium (Na)	mg/L	200**	230	210	260
Dissolved Sulphate (SO4)	mg/L	500**	2700	2500	2800
Nitrate (N)	mg/L	10.0*	0.17	0.17	0.17
pH	(pH units)	6.5-8.5	8.0	8.1	7.8
Total Ammonia-N	mg/L		<0.15	<0.15	<0.15
Total Dissolved Solids	mg/L	500	4450	4230	4810
Total Kjeldahl Nitrogen (TKN)	mg/L		<0.7	<0.7	<0.7
Ion Percentage	%		3.9	5.2	2.7

NOTES: 1) Blank denotes data not available.
2) ODWQS denotes O. Reg. 169/03: Ontario Drinking Water Quality Standards (as amended).
3) *denotes health related ODWQS.
** denotes aesthetic objective for ODWQS.
*** denotes operational guideline for ODWQS.
4) mg/L denotes milligrams per litre.

Table H-4
Groundwater - General Analytical Results
Twin Creeks Environmental Centre

Parameter	Units	ODWQS	OW47-6	OW47-6	OW47-6	OW47-6	OW47-6	OW47-6	OW47-6	OW47-6	OW47-6	OW47-6	OW47-6	OW47-6
Date			11-Dec-90	22-May-91	14-Nov-91	29-May-92	11-Nov-92	17-Jun-93	16-Dec-93	12-May-94	14-Dec-94	06-Jun-95	02-Nov-95	08-May-96	11-Dec-96
Laboratory			Enviroclean	Enviroclean	Enviroclean	Enviroclean	Enviroclean	Enviroclean	Enviroclean	Enviroclean	Enviroclean	Zenon	Zenon	Zenon	Zenon
Alkalinity (Total as CaCO3)	mg/L	30-500***	401	412	408	410	410	385	405	406	410	430	450	410	430
Dissolved Boron (B)	mg/L	5.0*							0.91	0.71	0.99	0.98	0.86	0.87	
Dissolved Calcium (Ca)	mg/L		344	287	457	374	474	536	477	424	490	460	420	390	410
Dissolved Chloride (Cl)	mg/L	250**	5	4	3	1	1	2	6	4	6.7	5.6	6.8	6	6.6
Dissolved Iron (Fe)	mg/L	0.3**		0.08	<0.2	<0.2	0.03	<0.02	0.02	0.02	0.46	<0.01	0.16	0.036	0.15
Dissolved Magnesium (Mg)	mg/L		490	505	496	488	514	548	488	501	430	510	460	440	460
Dissolved Organic Carbon	mg/L	5**	1	3.2	1.8	1.7	2.1	1.6							
Dissolved Potassium (K)	mg/L		8.87	7.61	7.37	7.26	7.71	7.36	7.08	7.54	7.2	8.3	8.6	6.9	7.1
Dissolved Sodium (Na)	mg/L	200**	186	175	<155	<170	170	174	182	181	190	190	180	160	180
Dissolved Sulphate (SO4)	mg/L	500**	2800	2500	3200	2800	3400	3400	3400	3100	3800	3200	3200	3200	3300
Nitrate (N)	mg/L	10.0*													
Nitrite (N)	mg/L	1.0*													
NO3+NO2	mg/L	10.0*	0.09	0.5	0.13	0.38	0.01	0.08	0.76	0.11	0.085	0.18	0.092	0.13	0.083
Total Ammonia-N	mg/L		0.32	0.23	0.39	0.2	0.23	0.27	0.2	0.14	0.15	<0.03	1.4	0.27	0.33
Total Kjeldahl Nitrogen (TKN)	mg/L		0.57	0.24	0.58	0.28	3.42	0.29	0.46	1.99	0.81	0.75	4.7	1.8	1.6
Ion Percentage	%		0.2	3.5			3.1	1.1	4.1	1.0	11.9	0.7	5.6	8.3	7.2

Parameter	Units	ODWQS	OW47-6	OW47-6	OW47-6	OW47-6	OW47-6	OW47-6	OW47-6	OW47-6	OW47-6	OW47-6	OW47-6	OW47-6
Date			14-May-97	04-Dec-97	11-Mar-98	13-May-98	22-Dec-99	29-Mar-00	05-Dec-00	08-May-01	28-Nov-01	23-May-02	06-Nov-02	15-May-03	13-Nov-03
Laboratory			Zenon	Zenon	Maxxam	Zenon	Accutest	Accutest	Accutest	Accutest	Accutest	Accutest	Accutest	Accutest	Accutest
Alkalinity (Total as CaCO3)	mg/L	30-500***	410	410	418	420	453	402	414	399	418	407	416	385	400
Dissolved Boron (B)	mg/L	5.0*									0.80	1.38	0.90	0.98	0.91
Dissolved Calcium (Ca)	mg/L		430	450	443	460	98	509	486	476	488	478	455	464	459
Dissolved Chloride (Cl)	mg/L	250**	6.1	6.3	4	5.8	2	5	5	5	5	5	5	5	5
Dissolved Iron (Fe)	mg/L	0.3**	0.12	0.16	1.6	0.049	5.09	<0.01	6.28	<0.01	3.75	0.88	4.00	<0.01	0.97
Dissolved Magnesium (Mg)	mg/L		470	490	531	510	136	558	512	468	484	516	511	534	533
Dissolved Organic Carbon	mg/L	5**									2.8	1.9	2.2	1.8	2.0
Dissolved Potassium (K)	mg/L		7.9	7.9	8	8	3	8	8	7	8	7	12	8	13
Dissolved Sodium (Na)	mg/L	200**	180	190	175	190		220	198	200	199	200	221	224	235
Dissolved Sulphate (SO4)	mg/L	500**	3200	3300	3260	3300	1100	4000	3100	3200	3080	3200	2990	3000	3070
Nitrate (N)	mg/L	10.0*		0.079	<0.1	0.077	<0.10	<0.10	<0.1	0.12	<0.10	<0.10	<0.10	0.35	0.19
Nitrite (N)	mg/L	1.0*		<0.05	<0.1	<0.05	<0.10	<0.10	<0.1	<0.1					
NO3+NO2	mg/L	10.0*	0.21	0.079	<0.1	0.077	<0.10	<0.10	<0.1	0.12					
Total Ammonia-N	mg/L		0.23	0.23		0.11	8.26	0.86	0.88	<0.02	<0.02	0.22	0.47	<0.02	0.20
Total Kjeldahl Nitrogen (TKN)	mg/L		0.61	0.86		0.68	<0.10	1.36	1.09	0.11	0.48	0.30	0.60	0.14	0.37
Ion Percentage	%		4.2	3.4	1.2	2.0		5.7	2.1	1.9	0.9	0.8	3.4	5.2	4.1

Parameter	Units	ODWQS	OW47-6	OW47-6	OW47-6	OW47-6	OW47-6	OW47-6	OW47-6	OW47-6	OW47-6	OW47-6	OW47-6	OW47-6
Date			26-May-04	26-Nov-04	13-May-05	29-Nov-05	18-May-06	24-Nov-06	04-May-07	16-Nov-07	22-May-08	05-Nov-08	16-May-09	18-Nov-09	19-May-10
Laboratory			Accutest	Accutest	Accutest	Accutest	Accutest	Accutest	Accutest	Accutest	MAXXAM	MAXXAM	MAXXAM	MAXXAM	MAXXAM
Alkalinity (Total as CaCO3)	mg/L	30-500***	396	389	376	387	381	401	368	375	360	411	388	406	350
Conductivity	umho/cm										4360	4870	4700	4820	4760
Dissolved Barium (Ba)	mg/L	1*									<0.03	0.01	0.009	0.009	<0.05
Dissolved Boron (B)	mg/L	5.0*	0.99	0.69	1.03	0.85	0.85	0.84	0.86	1.07	1.1	0.94	1.0	0.96	1.10
Dissolved Cadmium (Cd)	mg/L	0.005*									<0.0005	<0.0001	<0.0001	<0.0001	<0.001
Dissolved Calcium (Ca)	mg/L		474	423	453	420	454	443	417	460	430	470	480	460	460
Dissolved Chloride (Cl)	mg/L	250**	5	5	6	6	5	6	5	6	7	5	6	6	6
Dissolved Iron (Fe)	mg/L	0.3**	0.01	<0.01	0.01	0.01	<0.03	<0.03	<0.03	<0.30	6.9	9.4	3.7	<0.1	2
Dissolved Lead (Pb)	mg/L	0.01*									<0.003	<0.0005	<0.0005	<0.0005	<0.005
Dissolved Magnesium (Mg)	mg/L		528	476	479	456	483	479	462	495	440	440	510	450	480
Dissolved Organic Carbon	mg/L	5**	1.1	2.0	1.7	2.3	1.9	1.5	2.7	2.4	1.8	1.9	3.6	2.4	2.4
Dissolved Potassium (K)	mg/L		10	8	7	7	7	8	7	8	7	7.6	8.1	7.7	7
Dissolved Sodium (Na)	mg/L	200**	262	253	236	219	218	232	229	246	230	220	240	240	230
Dissolved Sulphate (SO4)	mg/L	500**	3330	3290	3070	2890	3050	3070	2990	3130	2730	3230	3000	3200	3100
Nitrate (N)	mg/L	10.0*	0.38	0.32	0.24	0.24	0.27	0.25	0.32	0.35	0.3	<0.1	0.5	0.3	0.5
pH	(pH units)	6.5-8.5									8.0	7.8	7.9	7.7	7.9
Total Ammonia-N	mg/L		0.09	<0.02	0.10	0.03	0.04	<0.02	0.23	<0.02	0.16	0.41	<0.15	<0.15	<0.15
Total Dissolved Solids	mg/L	500									3010	3200	2920	3060	3000
Total Kjeldahl Nitrogen (TKN)	mg/L		0.13	0.25	0.18	0.18	0.16	0.20	0.28	<0.10	<0.7	<0.7	<0.7	<0.7	<0.7
Ion Percentage	%		1.4	2.9	1.1	0.7	1.1	0.4	0.0	1.7	3.3	3.7	4.8	2.4	1.1

NOTES: 1) Blank denotes data not available.
2) ODWQS denotes O. Reg. 169/03: Ontario Drinking Water Quality Standards (as amended).
3) *denotes health related ODWQS.
** denotes aesthetic objective for ODWQS.
*** denotes operational guideline for ODWQS.
4) mg/L denotes milligrams per litre.

Table H-4
Groundwater - General Analytical Results
Twin Creeks Environmental Centre

Parameter	Units	ODWQS	OW47-6	OW47-6	OW47-6	OW47-6	OW47-6	OW47-6	OW47-6	OW47-6	OW47-6	OW47-6	OW47-6	OW47-6	OW47-6
Date			23-Nov-10	10-May-11	03-Nov-11	10-May-12	08-Nov-12	13-May-13	05-Nov-13	06-May-14	24-Nov-14	13-May-15	11-Nov-15	27-May-16	16-Nov-16
Laboratory			MAXXAM	MAXXAM	MAXXAM	MAXXAM	MAXXAM	MAXXAM	MAXXAM	MAXXAM	MAXXAM	MAXXAM	MAXXAM	MAXXAM	MAXXAM
Alkalinity (Total as CaCO3)	mg/L	30-500***	399	356	556	430	460	380	450	400	480	410	480	460	530
Conductivity	umho/cm		4900	4780	4850	4800	4900	4800	4800	4900	4900	4900	4800	4900	5000
Dissolved Barium (Ba)	mg/L	1*	0.009	0.009	0.012	0.009	0.011	0.010	0.010	0.007	0.009	0.008	0.009	0.010	0.010
Dissolved Boron (B)	mg/L	5.0*	0.97	0.85	0.91	0.96	0.96	0.83	0.98	1	0.98	0.83	0.96	1.00	0.99
Dissolved Cadmium (Cd)	mg/L	0.005*	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.00010	<0.00010	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001
Dissolved Calcium (Ca)	mg/L		460	440	490	440	460	470	490	480	440	410	470	470	460
Dissolved Chloride (Cl)	mg/L	250**	5.0	6.0	7.0	6.0	6.0	6.0	7.0	6.0	7.0	6.0	6.9	6.0	7.4
Dissolved Iron (Fe)	mg/L	0.3**	<0.1	4.5	<0.1	1.2	0.31	8.8	0.36	<0.1	<0.10	3.2	0.33	0.2	<0.1
Dissolved Lead (Pb)	mg/L	0.01*	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.00050	<0.00050	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
Dissolved Magnesium (Mg)	mg/L		510	490	510	510	440	520	480	530	510	450	490	460	440
Dissolved Organic Carbon	mg/L	5**	2.3	2.2	3.7	2.8	3.0	2.8	6	2.8	4.4	2.8	4.2	3.8	5.5
Dissolved Potassium (K)	mg/L		7.3	7.3	10	7.8	8.4	8.2	13	7.6	9.1	7.8	10	9.4	11
Dissolved Sodium (Na)	mg/L	200**	220	250	250	240	240	230	260	230	200	190	240	240	230
Dissolved Sulphate (SO4)	mg/L	500**	3100	3000	2800	3000	2900	3100	2900	3200	2900	3000	3100	3100	3000
Nitrate (N)	mg/L	10.0*	0.4	0.4	<0.1	<0.10	<0.10	0.32	<0.10	<0.10	<0.10	1.06	0.26	<0.10	<0.10
pH	(pH units)	6.5-8.5	7.7	8.1	7.6	7.7	7.8	7.7	7.1	7.3	7.9	8.0	7.7	7.8	7.7
Total Ammonia-N	mg/L		<0.15	<0.15	11.2 †	1.28	2.65	0.27	4.24	<0.15	5.55	1.0	6.47	3.93	12.3
Total Dissolved Solids	mg/L	500	2850	2830	4360	4690	4860	4910	4500	4950	4990	4940	4990	5120	4910
Total Kjeldahl Nitrogen (TKN)	mg/L		<0.7	<0.7	10 †	1.5	3.7	<0.7	4.3	<0.7	5.7	16	6.9	4.6	13
Ion Percentage	%		1.9	2.0	5.0	1.8	0.5	2.3	3.7	1.4	1.4	4.1	0.9	0.6	1.7

Parameter	Units	ODWQS	OW47-6	OW47-6	OW47-6	OW47-6	OW47-6	OW47-6	OW47-6	OW47-6	OW47-6	OW47-6	OW47-6	OW47-6	OW47-6
Date			19-May-17	08-Nov-17	10-May-18	13-Nov-18	14-May-19	05-Nov-19	11-May-20	03-Nov-20	18-May-21	03-Nov-21	04-May-22	02-Nov-22	03-May-23
Laboratory			MAXXAM	MAXXAM	MAXXAM	MAXXAM	MAXXAM	Bureau Veritas	Bureau Veritas	Bureau Veritas	Bureau Veritas	Bureau Veritas	Bureau Veritas	Bureau Veritas	Bureau Veritas
Alkalinity (Total as CaCO3)	mg/L	30-500***	490	440	430	390	380	410	400	400	400	420	340	400	380
Conductivity	umho/cm		5000	4700	4800	4200	4500	4800	4800	4400	4800	4600	4400	4800	4700
Dissolved Barium (Ba)	mg/L	1*	0.011	0.009	<0.03	0.011	0.01	0.009	0.008	0.009	0.008	0.008	0.017	0.007	0.007
Dissolved Boron (B)	mg/L	5.0*	0.91	0.92	1.0	0.95	0.92	0.84	1.1	1.1	0.91	0.96	0.58	1.0	1.0
Dissolved Cadmium (Cd)	mg/L	0.005*	<0.0001	<0.0001	<0.0005	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001
Dissolved Calcium (Ca)	mg/L		470	450	460	460	450	450	450	450	450	480	400	470	460
Dissolved Chloride (Cl)	mg/L	250**	6.4	6.0	5.6	6.2	6.5	5.4	5.9	5.9	6.4	5.4	14	5.9	4.0
Dissolved Iron (Fe)	mg/L	0.3**	0.2	3.1	6.5	8.0	1.7	1.7	2.3	<0.1	0.2	3.1	<0.1	<0.1	<0.1
Dissolved Lead (Pb)	mg/L	0.01*	<0.0005	<0.0005	<0.003	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
Dissolved Magnesium (Mg)	mg/L		510	460	490	450	470	480	460	460	470	490	420	490	530
Dissolved Organic Carbon	mg/L	5**	4.4	2.8	2.8	2.6	2.7	2.4	2.6	2.6	2.2	2.1	3.3	2.4	2.1
Dissolved Potassium (K)	mg/L		10	7.3	8	7.3	7.2	7.1	7.9	7.7	7.5	7.0	6.9	7.6	7.9
Dissolved Sodium (Na)	mg/L	200**	220	190	220	210	220	210	220	220	230	220	240	220	230
Dissolved Sulphate (SO4)	mg/L	500**	3200	2900	2800	2600	2900	2900	2900	2900	3100	3200	2800	3100	3200
Nitrate (N)	mg/L	10.0*	0.17	<0.10	0.13	0.78	0.96	0.12	0.7	0.79	0.37	0.38	0.15	0.33	0.38
pH	(pH units)	6.5-8.5	7.9	7.6	7.7	7.7	7.9	7.5	8.0	7.8	8.0	7.8	8.1	7.9	8.0
Total Ammonia-N	mg/L		4.32	1.82	1.62	0.77	0.15	0.67	<0.15	<0.15	0.115	<0.15	<0.15	<0.15	<0.15
Total Dissolved Solids	mg/L	500	5000	4770	4580	4190	4700	4580	4820	4860	4950	4330	4140	4210	4630
Total Kjeldahl Nitrogen (TKN)	mg/L		5.4	2.3	1.8	1.0	<0.7	0.7	<0.7	<0.7	0.3	1.0	<0.7	<0.7	<0.7
Ion Percentage	%		0.119260584	0.345166138	5.055492743	6.229146399	2.557287239	2.497299651	1.762060013	1.758340651	0.388083824	0.168499972	0.237243713	1.153357039	2.109673125

Parameter	Units	ODWQS	OW47-6	OW47-6	OW47-6
Date			03-Nov-23	08-May-24	19-Nov-24
Laboratory			Bureau Veritas	Bureau Veritas	Bureau Veritas
Alkalinity (Total as CaCO3)	mg/L	30-500***	390	390	390
Conductivity	umho/cm		4400	4600	4900
Dissolved Barium (Ba)	mg/L	1*	0.01	0.008	<0.03
Dissolved Boron (B)	mg/L	5.0*	0.44	1.0	1.0
Dissolved Cadmium (Cd)	mg/L	0.005*	<0.0001	<0.0001	<0.0005
Dissolved Calcium (Ca)	mg/L		470	460	440
Dissolved Chloride (Cl)	mg/L	250**	4.1	5.2	3.7
Dissolved Iron (Fe)	mg/L	0.3**	0.2	<0.1	<0.5
Dissolved Lead (Pb)	mg/L	0.01*	<0.0005	<0.0005	<0.003
Dissolved Magnesium (Mg)	mg/L		440	510	460
Dissolved Organic Carbon	mg/L	5**	3.6	2.5	3.2
Dissolved Potassium (K)	mg/L		3.1	7.6	7
Dissolved Sodium (Na)	mg/L	200**	100	230	210
Dissolved Sulphate (SO4)	mg/L	500**	2700	3000	3000
Nitrate (N)	mg/L	10.0*	<0.10	0.37	0.28
pH	(pH units)	6.5-8.5	7.7	7.9	7.8
Total Ammonia-N	mg/L		<0.15	<0.15	<0.15
Total Dissolved Solids	mg/L	500	4390	4800	5020
Total Kjeldahl Nitrogen (TKN)	mg/L		<0.7	<0.7	<0.7
Ion Percentage	%		0.7	3.8	0.3

NOTES: 1) Blank denotes data not available.
2) ODWQS denotes O. Reg. 169/03: Ontario Drinking Water Quality Standards (as amended).
3) *denotes health related ODWQS.
** denotes aesthetic objective for ODWQS.
*** denotes operational guideline for ODWQS.
4) mg/L denotes milligrams per litre.

Table H-4
Groundwater - General Analytical Results
Twin Creeks Environmental Centre

Parameter	Units	ODWQS	OW49-29	OW49-29	OW49-29	OW49-29	OW49-29	OW49-29	OW49-29	OW49-29	OW49-29	OW49-29	OW49-29	OW49-29	OW49-29
Date			**19-May-09**	**18-May-10**	**12-May-11**	**09-May-12**	**09-May-13**	**06-May-14**	**12-May-15**	**25-May-16**	**17-May-17**	**08-May-18**	**13-May-19**	**07-May-20**	**18-May-21**
Laboratory			**MAXXAM**	**MAXXAM**	**MAXXAM**	**MAXXAM**	**MAXXAM**	**MAXXAM**	**MAXXAM**	**MAXXAM**	**MAXXAM**	**MAXXAM**	**MAXXAM**	**Bureau Veritas**	**Bureau Veritas**
Alkalinity (Total as CaCO3)	mg/L	30-500***	146	132	124	130	120	110	110	130	110	110	110	110	110
Conductivity	umho/cm		1600	1670	1800	1900	2000	2000	1600	2000	2200	2200	2100	2100	2100
Dissolved Barium (Ba)	mg/L	1*	0.015	0.015	0.016	0.017	0.015	0.015	0.016	0.015	0.012	0.012	0.011	0.011	0.011
Dissolved Boron (B)	mg/L	5.0*	1.6	1.5	1.5	1.5	1.4	1.4	1.4	1.5	1.5	1.6	1.4	1.5	1.5
Dissolved Cadmium (Cd)	mg/L	0.005*	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001
Dissolved Calcium (Ca)	mg/L		84	86	100	110	110	110	110	120	110	120	130	130	130
Dissolved Chloride (Cl)	mg/L	250**	29	27	33	32	33	35	36	36	34	30	29	28	29
Dissolved Iron (Fe)	mg/L	0.3**	<0.1	0.5	0.5	0.36	0.31	0.29	0.25	0.6	0.3	0.3	0.2	<0.1	<0.1
Dissolved Lead (Pb)	mg/L	0.01*	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
Dissolved Magnesium (Mg)	mg/L		55	54	59	65	62	65	62	74	63	72	71	68	69
Dissolved Organic Carbon	mg/L	5**	3.6	1.2	1.5	1.5	1.6	1.9	3.2	1.6	1.5	1.5	1.4	1.8	1.6
Dissolved Potassium (K)	mg/L		4.7	4.4	6.1	6.8	6.8	6.7	7.3	7.5	6.9	7.5	6.3	6.5	6.3
Dissolved Sodium (Na)	mg/L	200**	220	210	230	260	250	260	250	270	250	260	250	250	240
Dissolved Sulphate (SO4)	mg/L	500**	610	630	720	780	850	870	840	830	950	910	910	940	940
Nitrate (N)	mg/L	10.0*	<0.1	<0.1	<0.1	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
pH	(pH units)	6.5-8.5	7.2	8.2	7.9	7.8	8.0	7.9	7.8	8.0	7.9	8.0	7.9	7.9	8.0
Total Ammonia-N	mg/L		0.35	0.40	0.51	0.59	0.61	0.74	0.83	0.77	0.75	0.79	0.89	0.71	0.75
Total Dissolved Solids	mg/L	500	1020	1050	1080	1360	1480	1460	1510	1530	1570	1510	1580	1590	1470
Total Kjeldahl Nitrogen (TKN)	mg/L		<4	1.1	1.2	<0.7	0.9	0.8	1.0	0.8	0.9	0.8	0.8	0.8	0.8
Ion Percentage	%		6.8	5.2	3.6	5.6	0.8	0.8	0.8	7.6	2.4	3.5	3.5	1.6	0.7

Parameter	Units	ODWQS	OW49-29	OW49-29	OW49-29
Date			**03-May-22**	**01-May-23**	**07-May-24**
Laboratory			**Bureau Veritas**	**Bureau Veritas**	**Bureau Veritas**
Alkalinity (Total as CaCO3)	mg/L	30-500***	100	110	120
Conductivity	umho/cm		2100	2100	2000
Dissolved Barium (Ba)	mg/L	1*	0.01	0.01	0.009
Dissolved Boron (B)	mg/L	5.0*	1.7	1.5	1.6
Dissolved Cadmium (Cd)	mg/L	0.005*	<0.0001	<0.0001	<0.0001
Dissolved Calcium (Ca)	mg/L		140	140	140
Dissolved Chloride (Cl)	mg/L	250**	27	26	32
Dissolved Iron (Fe)	mg/L	0.3**	0.2	0.4	0.4
Dissolved Lead (Pb)	mg/L	0.01*	<0.0005	<0.0005	<0.0005
Dissolved Magnesium (Mg)	mg/L		66	75	74
Dissolved Organic Carbon	mg/L	5**	1.5	1.1	1.4
Dissolved Potassium (K)	mg/L		6.6	6.3	6.2
Dissolved Sodium (Na)	mg/L	200**	250	250	250
Dissolved Sulphate (SO4)	mg/L	500**	950	960	940
Nitrate (N)	mg/L	10.0*	<0.10	<0.10	0.19
pH	(pH units)	6.5-8.5	7.9	8.0	8.0
Total Ammonia-N	mg/L		0.63	0.77	0.81
Total Dissolved Solids	mg/L	500	1370	1430	1600
Total Kjeldahl Nitrogen (TKN)	mg/L		0.7	1	0.8
Ion Percentage	%		2.3	3.0	3.1

NOTES: 1) Blank denotes data not available.
2) ODWQS denotes O. Reg. 169/03: Ontario Drinking Water Quality Standards (as amended).
3) *denotes health related ODWQS.
** denotes aesthetic objective for ODWQS.
*** denotes operational guideline for ODWQS.
4) mg/L denotes milligrams per litre.

Table H-4
Groundwater - General Analytical Results
Twin Creeks Environmental Centre

Parameter	Units	ODWQS	OW54-4	OW54-4	OW54-4	OW54-4	OW54-4	OW54-4	OW54-4	OW54-4	OW54-4	OW54-4	OW54-4	OW54-4	OW54-4
Date			22-Dec-99	29-Mar-00	07-Dec-00	10-May-01	23-May-02	06-Nov-02	15-May-03	14-Nov-03	26-May-04	26-Nov-04	13-May-05	29-Nov-05	19-May-06
Laboratory			Accutest	Accutest	Accutest	Accutest	Accutest	Accutest	Accutest	Accutest	Accutest	Accutest	Accutest	Accutest	Accutest
Alkalinity (Total as CaCO3)	mg/L	30-500***					586	586							
Dissolved Barium (Ba)	mg/L	1*		0.01	0.03	0.02	<0.005	0.02	0.05	0.02	0.01	0.02	0.02	0.01	0.01
Dissolved Boron (B)	mg/L	5.0*		0.31	0.32	0.31	0.49	0.32	0.31	0.34	0.36	0.28	0.37	0.35	0.29
Dissolved Cadmium (Cd)	mg/L	0.005*	<0.005	<0.00015	<0.005	<0.005	<0.001	<0.001	0.001	<0.001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001
Dissolved Calcium (Ca)	mg/L		105	145	114	141	136	131		133				130	
Dissolved Chloride (Cl)	mg/L	250**					7	8							
Dissolved Iron (Fe)	mg/L	0.3**			24	1.66	11.4	3.14	6.83	3.75	7.55	10.1	8.58	6.54	6.34
Dissolved Lead (Pb)	mg/L	0.01*	<0.02	<0.002	<0.001	<0.001	<0.001	<0.001	0.007	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
Dissolved Magnesium (Mg)	mg/L			250	180	211	216	193		220				204	
Dissolved Organic Carbon	mg/L	5**					4.7	4.8							
Dissolved Potassium (K)	mg/L				4		4	7		6				4	
Dissolved Sodium (Na)	mg/L	200**					106	121		116				102	
Dissolved Sulphate (SO4)	mg/L	500**					863	838							
Nitrate (N)	mg/L	10.0*					<0.10	<0.10							
Total Ammonia-N	mg/L						0.60	0.24							
Total Kjeldahl Nitrogen (TKN)	mg/L						0.75	0.55							
Ion Percentage	%						2.6	1.0							

Parameter	Units	ODWQS	OW54-4	OW54-4	OW54-4	OW54A-4	OW54A-4	OW54A-4	OW54A-4	OW54A-4	OW54A-4	OW54A-4	OW54A-4	OW54A-4	OW54A-4
Date			24-Nov-06	04-May-07	16-Nov-07	22-May-08	05-Nov-08	19-May-09	19-Nov-09	20-May-10	22-Nov-10	11-May-11	02-Nov-11	09-May-12	05-Nov-12
Laboratory			Accutest	Accutest	Accutest	MAXXAM	MAXXAM	MAXXAM	MAXXAM	MAXXAM	MAXXAM	MAXXAM	MAXXAM	MAXXAM	MAXXAM
Alkalinity (Total as CaCO3)	mg/L	30-500***				517	549	570	DRY	554	542	539	542	600	590
Conductivity	umho/cm					2350	2120	2200		2140	2000	1950	1930	2100	2000
Dissolved Barium (Ba)	mg/L	1*	0.02	0.01	0.02	0.033	0.02	0.016		0.014	0.013	0.012	0.014	0.014	0.013
Dissolved Boron (B)	mg/L	5.0*	0.32	0.42	0.30	0.43	0.33	0.30		0.25	0.28	0.21	0.29	0.25	0.27
Dissolved Cadmium (Cd)	mg/L	0.005*	<0.0001	<0.0001	<0.0001	0.0003	<0.0001	<0.0001		<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001
Dissolved Calcium (Ca)	mg/L					170	130	140		130	130	120	120	120	110
Dissolved Chloride (Cl)	mg/L	250**				14	9	9		13	10	11	11	11	10
Dissolved Iron (Fe)	mg/L	0.3**	4.74	6.83	3.99	0.3	<0.1	<0.1		<0.1	0.1	0.2	0.2	<0.10	0.21
Dissolved Lead (Pb)	mg/L	0.01*	0.001	<0.001	<0.001	0.0007	<0.0005	<0.0005		<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
Dissolved Magnesium (Mg)	mg/L					200	180	200		190	200	190	210	200	180
Dissolved Organic Carbon	mg/L	5**				12.1	5.5	5.4		3.9	3.7	3.7	3.8	4.1	3.7
Dissolved Potassium (K)	mg/L					13.0	6	5.1		4.1	4.2	3.5	4	3.6	3.6
Dissolved Sodium (Na)	mg/L	200**				110	93	110		110	100	96	100	130	110
Dissolved Sulphate (SO4)	mg/L	500**				946	763	780		750	600	590	570	630	530
Nitrate (N)	mg/L	10.0*				<0.1	<0.1	<0.1		<0.1	<0.1	<0.1	<0.1	<0.10	<0.10
pH	(pH units)	6.5-8.5				8.1	8.2	7.8		8.1	7.8	8.1	7.4	7.9	7.6
Total Ammonia-N	mg/L					<0.15	<0.15	<0.15		<0.15	<0.15	<0.15	<0.15	<0.15	<0.15
Total Dissolved Solids	mg/L	500				1380	1360	1330		1370	1250	1170	1260	1630	1480
Total Kjeldahl Nitrogen (TKN)	mg/L					<0.7	<4	<4		1.1	<0.7	<0.7	<0.7	<0.7	0.9
Ion Percentage	%					2.5	0.7	4.6		3.7	11.8	4.9	9.3	5.0	4.1

NOTES: 1) Blank denotes data not available.
2) ODWQS denotes O. Reg. 169/03: Ontario Drinking Water Quality Standards (as amended).
3) *denotes health related ODWQS.
** denotes aesthetic objective for ODWQS.
*** denotes operational guideline for ODWQS.
4) mg/L denotes milligrams per litre.

Table H-4
Groundwater - General Analytical Results
Twin Creeks Environmental Centre

Parameter	Units	ODWQS	OW54A-4	OW54A-4	OW54A-4	OW54A-4	OW54A-4	OW54A-4	OW54A-4	OW54A-4	OW54A-4	OW54A-4	OW54A-4	OW54A-4	OW54A-4
Date			**10-May-13**	**06-Nov-13**	**06-May-14**	**19-Nov-14**	**12-May-15**	**11-Nov-15**	**25-May-16**	**16-Nov-16**	**19-May-17**	**07-Nov-17**	**09-May-18**	**12-Nov-18**	**14-May-19**
Laboratory			**MAXXAM**	**MAXXAM**	**MAXXAM**	**MAXXAM**	**MAXXAM**	**MAXXAM**	**MAXXAM**	**MAXXAM**	**MAXXAM**	**MAXXAM**	**MAXXAM**	**MAXXAM**	**MAXXAM**
Alkalinity (Total as CaCO3)	mg/L	30-500***	620	620	620	620	610	620	610	620	620	620	640	610	600
Conductivity	umho/cm		2200	2100	2200	2200	1700	2100	2200	2200	2400	2200	2300	2100	2200
Dissolved Barium (Ba)	mg/L	1*	0.016	0.015	0.013	0.013	0.013	0.013	0.014	0.015	0.014	0.015	0.014	0.016	0.014
Dissolved Boron (B)	mg/L	5.0*	0.23	0.26	0.20	0.24	0.23	0.24	0.22	0.26	0.22	0.24	0.23	0.26	0.19
Dissolved Cadmium (Cd)	mg/L	0.005*	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001
Dissolved Calcium (Ca)	mg/L		120	110	120	110	110	120	110	120	110	120	130	130	120
Dissolved Chloride (Cl)	mg/L	250**	12	11	11	12	18	14	20	18	24	20	22	23	29
Dissolved Iron (Fe)	mg/L	0.3**	<0.10	0.44	<0.10	0.11	<0.10	0.36	<0.10	<0.1	<0.1	1.3	<0.1	0.1	<0.1
Dissolved Lead (Pb)	mg/L	0.01*	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
Dissolved Magnesium (Mg)	mg/L		190	180	190	190	190	180	190	200	180	180	210	190	190
Dissolved Organic Carbon	mg/L	5**	4.5	3.7	3.3	4	4	3.7	3.5	3.4	3.4	3.5	3.6	3.8	3.9
Dissolved Potassium (K)	mg/L		3.0	3.3	3.2	3.4	3.5	3.6	2.9	3.6	2.9	3.5	3.2	3.2	2.9
Dissolved Sodium (Na)	mg/L	200**	160	140	150	140	150	140	160	160	150	140	160	160	150
Dissolved Sulphate (SO4)	mg/L	500**	630	650	670	640	610	610	690	630	730	640	670	680	700
Nitrate (N)	mg/L	10.0*	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
pH	(pH units)	6.5-8.5	8.0	7.4	8.0	7.9	7.9	7.7	8.1	7.8	7.8	7.7	7.9	7.9	7.8
Total Ammonia-N	mg/L		<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15
Total Dissolved Solids	mg/L	500	1580	1490	1550	1500	1560	1520	1640	1570	1680	1600	1540	1570	1670
Total Kjeldahl Nitrogen (TKN)	mg/L		<0.7	<0.7	<0.7	<0.7	<0.7	<0.7	<0.7	<0.7	<0.7	<0.7	<0.7	<0.7	<0.7
Ion Percentage	%		5.0	0.0	2.6	2.0	4.2	7.5	6.1	10.8	1.6	5.8	10.4	8.1	5.6

Parameter	Units	ODWQS	OW54A-4	OW54A-4	OW54A-4	OW54A-4	OW54A-4	OW54A-4	OW54A-4	OW54A-4	OW54A-4	OW54A-4	OW54A-4
Date			**07-Nov-19**	**08-May-20**	**03-Nov-20**	**19-May-21**	**02-Nov-21**	**04-May-22**	**01-Nov-22**	**02-May-23**	**01-Nov-23**	**07-May-24**	**18-Nov-24**
Laboratory			**Bureau Veritas**	**Bureau Veritas**	**Bureau Veritas**	**Bureau Veritas**	**Bureau Veritas**	**Bureau Veritas**	**Bureau Veritas**	**Bureau Veritas**	**Bureau Veritas**	**Bureau Veritas**	**Bureau Veritas**
Alkalinity (Total as CaCO3)	mg/L	30-500***	610	610	610	590	630	600	650	620	630	610	670
Conductivity	umho/cm		2300	2400	2300	2200	2200	2300	2200	2200	2300	2200	2300
Dissolved Barium (Ba)	mg/L	1*	0.016	0.013	0.014	0.013	0.016	0.014	0.017	0.015	0.016	0.017	0.016
Dissolved Boron (B)	mg/L	5.0*	0.24	0.18	0.25	0.23	0.23	0.18	0.24	0.20	0.22	0.20	0.21
Dissolved Cadmium (Cd)	mg/L	0.005*	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001
Dissolved Calcium (Ca)	mg/L		130	130	130	130	130	140	140	130	130	140	130
Dissolved Chloride (Cl)	mg/L	250**	26	29	26	24	23	28	25	23	21	28	23
Dissolved Iron (Fe)	mg/L	0.3**	1.2	<0.1	0.2	<0.1	1.1	<0.1	0.2	0.3	<0.1	3.0	<0.1
Dissolved Lead (Pb)	mg/L	0.01*	<0.0005	<0.0005	<0.0005	0.0023	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
Dissolved Magnesium (Mg)	mg/L		200	190	190	200	200	200	200	200	200	200	190
Dissolved Organic Carbon	mg/L	5**	3.9	4.2	4.4	3.9	3.9	4.0	6.6	4.7	5.5	10	12
Dissolved Potassium (K)	mg/L		3.4	2.9	3.6	3.3	3.3	2.9	3.9	3.1	4.2	2.8	4.1
Dissolved Sodium (Na)	mg/L	200**	150	150	140	130	140	140	140	140	130	130	130
Dissolved Sulphate (SO4)	mg/L	500**	670	710	700	720	690	760	710	740	710	730	660
Nitrate (N)	mg/L	10.0*	0.16	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	0.30	0.16	<0.10
pH	(pH units)	6.5-8.5	7.7	7.9	7.7	7.9	8.0	8.0	7.9	8.0	7.9	8.1	8.0
Total Ammonia-N	mg/L		<0.15	<0.15	<0.15	0.059	<0.15	<0.15	1.37	0.81	3.09	0.22	3.74
Total Dissolved Solids	mg/L	500	1610	1660	1670	1660	1560	1620	1540	1430	1690	1660	1710
Total Kjeldahl Nitrogen (TKN)	mg/L		<0.7	<0.7	<0.7	0.1	<0.7	<0.7	1.6	1.1	3.5	<0.7	4.3
Ion Percentage	%		9.0	5.8	5.6	6.2	7.0	5.6	6.3	5.3	5.6	5.8	4.8

NOTES: 1) Blank denotes data not available.
2) ODWQS denotes O. Reg. 169/03: Ontario Drinking Water Quality Standards (as amended).
3) *denotes health related ODWQS.
** denotes aesthetic objective for ODWQS.
*** denotes operational guideline for ODWQS.
4) mg/L denotes milligrams per litre.

Table H-4
Groundwater - General Analytical Results
Twin Creeks Environmental Centre

Parameter	Units	ODWQS	OW54-10	OW54-10	OW54-10	OW54-10	OW54-10	OW54-10	OW54-10	OW54-10	OW54-10	OW54-10	OW54-10	OW54-10	OW54-10
Date			14-May-09	19-Nov-09	17-May-10	22-Nov-10	11-May-11	02-Nov-11	09-May-12	06-Nov-12	10-May-13	06-Nov-13	06-May-14	24-Nov-14	12-May-15
Laboratory			MAXXAM	MAXXAM	MAXXAM	MAXXAM	MAXXAM	MAXXAM	MAXXAM	MAXXAM	MAXXAM	MAXXAM	MAXXAM	MAXXAM	MAXXAM
Alkalinity (Total as CaCO3)	mg/L	30-500***	271	276	262	265	254	260	280	270	280	310	290	320	340
Conductivity	umho/cm		2500	2480	2500	2490	2460	2450	2500	2500	2400	2500	2400	2500	1900
Dissolved Barium (Ba)	mg/L	1*	0.011	0.012	0.016	0.013	0.012	0.013	0.013	0.012	0.013	0.012	0.012	0.014	0.014
Dissolved Boron (B)	mg/L	5.0*	1.2	1.1	1.0	1.0	0.95	1.1	1.1	1.0	1.0	0.9	0.9	0.96	0.9
Dissolved Cadmium (Cd)	mg/L	0.005*	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.00010	<0.0001	<0.0001	<0.0001
Dissolved Calcium (Ca)	mg/L		190	200	190	190	190	200	180	170	180	160	180	160	160
Dissolved Chloride (Cl)	mg/L	250**	7	8	8	8	9	9	8	7	9	9	8	9	9
Dissolved Iron (Fe)	mg/L	0.3**	2.30	4.50	3.0	0.1	0.8	1.7	1.3	0.26	2.7	2.2	1	2.3	0.86
Dissolved Lead (Pb)	mg/L	0.01*	0.0008	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.00050	<0.0005	<0.0005	<0.0005
Dissolved Magnesium (Mg)	mg/L		200	210	200	200	200	210	200	180	180	170	180	170	170
Dissolved Organic Carbon	mg/L	5**	4.6	1.7	2.5	1.6	1.4	1.8	2.3	2.0	2.8	4.8	2.3	2.5	2.0
Dissolved Potassium (K)	mg/L		5.2	5.4	5.1	5.1	5.0	5.3	4.9	4.7	4.8	4.5	4.5	4.3	4.3
Dissolved Sodium (Na)	mg/L	200**	130	150	140	140	150	150	150	140	170	190	190	180	190
Dissolved Sulphate (SO4)	mg/L	500**	1300	1300	1200	1200	1200	1200	1200	1100	1100	1200	1100	1100	1000
Nitrate (N)	mg/L	10.0*	<0.1	<0.1	<0.1	0.3	0.1	0.1	<0.10	0.11	0.13	0.12	0.15	0.15	0.11
pH	(pH units)	6.5-8.5	7.7	7.9	8.0	7.7	8.1	7.5	7.9	7.7	8.0	7.8	8.1	8.1	7.8
Total Ammonia-N	mg/L		0.72	0.65	0.72	0.31	0.21	0.2	<0.15	0.17	0.23	<0.15	<0.15	0.18	0.19
Total Dissolved Solids	mg/L	500	1550	1600	1550	1500	1520	1590	2090	2080	2060	1970	1990	1990	2110
Total Kjeldahl Nitrogen (TKN)	mg/L		8	<40	14	2	0.9	<0.7	<0.7	<0.7	<0.7	<0.7	<0.7	<0.7	<0.7
Ion Percentage	%		0.3	2.8	4.0	3.9	3.2	5.0	1.5	1.2	3.8	2.3	4.9	0.1	3.8

Parameter	Units	ODWQS	OW54-10	OW54-10	OW54-10	OW54-10	OW54-10	OW54-10	OW54-10	OW54-10	OW54-10	OW54-10	OW54-10	OW54-10	OW54-10
Date			11-Nov-15	25-May-16	16-Nov-16	18-May-17	7-Nov-17	9-May-18	12-Nov-18	14-May-19	7-Nov-19	8-May-20	3-Nov-20	18-May-21	2-Nov-21
Laboratory			MAXXAM	MAXXAM	MAXXAM	MAXXAM	MAXXAM	MAXXAM	MAXXAM	MAXXAM	Bureau Veritas	Bureau Veritas	Bureau Veritas	Bureau Veritas	Bureau Veritas
Alkalinity (Total as CaCO3)	mg/L	30-500***	300	330	300	290	290		290	320	300	310	300	320	330
Conductivity	umho/cm		2400	2400	2400	2500	2300	2500	2400	2400	2500	2500	2400	2324	2300
Dissolved Barium (Ba)	mg/L	1*	0.014	0.014	0.014	0.014	0.016	0.013	0.012	0.011	0.011	0.011	0.01	0.01	0.014
Dissolved Boron (B)	mg/L	5.0*	1.0	0.9	1.0	1.0	0.96	1.1	0.99	0.95	1.00	0.88	0.97	0.96	0.95
Dissolved Cadmium (Cd)	mg/L	0.005*	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001
Dissolved Calcium (Ca)	mg/L		170	160	160	160	170	180	180	170	180	170	170	160	190
Dissolved Chloride (Cl)	mg/L	250**	9	8.5	8.8	8.5	7.8	8.3	8.8	9.1	8.6	8.8	8.3	8.9	8.5
Dissolved Iron (Fe)	mg/L	0.3**	<0.10	1.80	0.60	0.30	6.6	5.5	4.4	1.8	0.2	0.6	<0.1	0.7	5.3
Dissolved Lead (Pb)	mg/L	0.01*	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
Dissolved Magnesium (Mg)	mg/L		180	170	180	170	170	200	180	180	180	180	180	180	180
Dissolved Organic Carbon	mg/L	5**	2.1	2.4	1.8	1.5	2.1	1.7	2	1.6	1.9	1.8	2.0	1.5	2.0
Dissolved Potassium (K)	mg/L		4.5	4.1	4.4	4.2	4.3	4.5	4.4	4.3	4.6	4.3	4.5	4.6	4.6
Dissolved Sodium (Na)	mg/L	200**	190	200	190	170	160	150	150	160	170	170	170	170	160
Dissolved Sulphate (SO4)	mg/L	500**	1100	1100	1100	1200	890	1100	1200	1100	1100	1100	1100	1200	1100
Nitrate (N)	mg/L	10.0*	0.26	0.16	0.27	0.19	0.25	0.23	0.28	0.17	0.29	0.27	0.34	0.18	0.35
pH	(pH units)	6.5-8.5	7.9	7.9	8.0	8.0	7.9	7.9	7.8	7.9	8.0	8.0	7.9	8.2	8.0
Total Ammonia-N	mg/L		<0.15	0.24	<0.15	0.17	0.2	0.31	0.39	0.16	<0.15	<0.15	<0.15	0.209	0.29
Total Dissolved Solids	mg/L	500	1980	1980	1890	1990	1940	1940	2030	1970	1920	2000	1940	2040	1850
Total Kjeldahl Nitrogen (TKN)	mg/L		<0.7	<0.7	<0.7	<0.7	<0.7	<0.7	<0.7	<0.7	<0.7	<0.7	<0.7	0.3	<0.7
Ion Percentage	%		5.7	3.4	4.9	1.2	11.1		0.4	3.0	5.1	4.0	4.3	0.6	4.4

Parameter	Units	ODWQS	OW54-10	OW54-10	OW54-10	OW54-10	OW54-10	OW54-10
Date			3-May-22	1-Nov-22	2-May-23	1-Nov-23	7-May-24	19-Nov-24
Laboratory			Bureau Veritas	Bureau Veritas	Bureau Veritas	Bureau Veritas	Bureau Veritas	Bureau Veritas
Alkalinity (Total as CaCO3)	mg/L	30-500***	330	330	320	330	330	330
Conductivity	umho/cm		2400	2400	2400	2400	2300	2400
Dissolved Barium (Ba)	mg/L	1*	0.011	0.013	0.012	0.011	0.012	0.017
Dissolved Boron (B)	mg/L	5.0*	0.95	1	0.95	0.97	1.1	1.1
Dissolved Cadmium (Cd)	mg/L	0.005*	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001
Dissolved Calcium (Ca)	mg/L		170	180	180	170	180	170
Dissolved Chloride (Cl)	mg/L	250**	9.2	8.8	6.5	7.4	8.0	8.1
Dissolved Iron (Fe)	mg/L	0.3**	2.3	0.7	1.8	1.3	2.0	4.9
Dissolved Lead (Pb)	mg/L	0.01*	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
Dissolved Magnesium (Mg)	mg/L		180	180	190	180	180	170
Dissolved Organic Carbon	mg/L	5**	2	2.1	1.8	2.4	1.6	6.9
Dissolved Potassium (K)	mg/L		4.5	4.5	4.6	4.6	4.9	4.6
Dissolved Sodium (Na)	mg/L	200**	160	150	150	160	170	150
Dissolved Sulphate (SO4)	mg/L	500**	1100	1100	1100	1000	1100	1100
Nitrate (N)	mg/L	10.0*	0.57	0.27	0.45	0.41	0.37	<0.10
pH	(pH units)	6.5-8.5	8.0	7.9	8.1	7.8	8.1	7.9
Total Ammonia-N	mg/L		<0.15	0.26	0.16	<0.15	0.20	0.42
Total Dissolved Solids	mg/L	500	1920	1710	1710	1940	1910	1940
Total Kjeldahl Nitrogen (TKN)	mg/L		<0.7	<0.7	<0.7	<0.7	<0.7	<0.7
Ion Percentage	%		2.7	2.9	4.6	6.6	4.3	0.7

NOTES: 1) Blank denotes data not available.
2) ODWQS denotes O. Reg. 169/03: Ontario Drinking Water Quality Standards (as amended).
3) *denotes health related ODWQS.
** denotes aesthetic objective for ODWQS.
*** denotes operational guideline for ODWQS.
4) mg/L denotes milligrams per litre.

Table H-4
Groundwater - General Analytical Results
Twin Creeks Environmental Centre

Parameter	Units	ODWQS	OW56-4	OW56-4	OW56-4	OW56-4	OW56-4	OW56-4	OW56-4	OW56-4	OW56-4	OW56-4	OW56-4	OW56-4	OW56-4
Date			**11-Feb-99**	**08-Jun-99**	**21-Jun-00**	**05-Dec-00**	**08-May-01**	**28-Nov-01**	**23-May-02**	**06-Nov-02**	**15-May-03**	**16-Jun-03**	**14-Nov-03**	**18-Dec-03**	**25-May-04**
Laboratory			**Maxxam**	**Maxxam**	**Accutest**	**Accutest**	**Accutest**	**Accutest**	**Accutest**	**Accutest**	**Accutest**	**Accutest**	**Accutest**	**Accutest**	**Accutest**
Alkalinity (Total as CaCO3)	mg/L	30-500***	368	428	383	402	378	392	399	336	288	296	143	159	239
Dissolved Boron (B)	mg/L	5.0*	0.582	0.529	0.46			0.40	0.59	0.33	0.16	0.21	0.17	0.15	0.29
Dissolved Calcium (Ca)	mg/L		378	428	423	461	452	414	422	348	333	333	70	104	238
Dissolved Chloride (Cl)	mg/L	250**	3.5	4.1	4	5	6	5	4	7	7	7	6	5	6
Dissolved Iron (Fe)	mg/L	0.3**	0.172	1.32	<0.01	0.38	0.37	0.31	0.78	0.03	0.02	<0.01	0.01	0.02	<0.01
Dissolved Magnesium (Mg)	mg/L		580	685	660	615	563	559	565	472	269	292	25	61	195
Dissolved Organic Carbon	mg/L	5**	5.3	3.9	5.9			4.3	3.9	4.3	3.3	2.9	8.1		4.0
Dissolved Potassium (K)	mg/L		7	3	5	4	3	4	4	6	3	2	3	3	3
Dissolved Sodium (Na)	mg/L	200**	118	151	127	111	124	107	107	127	82	80	12	22	57
Dissolved Sulphate (SO4)	mg/L	500**	3220	3370	3200	3280	3200	2920	2830	2350	2060	1780	145	276	1170
Nitrate (N)	mg/L	10.0*	<0.1	0.2	0.14	<0.1	0.29	<0.10	<0.10	1.12	5.15	4.31	3.24	4.97	3.75
Nitrite (N)	mg/L	1.0*	<0.1	<0.1	<0.10	<0.1	<0.1								
NO3+NO2	mg/L	10.0*	<0.1		0.14	<0.1	0.29								
Total Ammonia-N	mg/L		<0.05	<0.05	0.13	0.04	0.04	0.05	0.07	0.05	0.07	0.06	<0.02	<0.02	0.05
Total Kjeldahl Nitrogen (TKN)	mg/L		2.4	0.7	0.84	0.26	0.14	0.17	0.28	0.31	0.59	0.50	0.82	0.78	0.34
Ion Percentage	%		1.3	4.0	4.8	1.9	0.5	2.5	4.5	5.8	6.4	2.1	5.5	13.9	3.1

Parameter	Units	ODWQS	OW56-4	OW56-4	OW56-4	OW56-4	OW56-4	OW56-4	OW56-4	OW56-4	OW56-4	OW56-4	OW56-4	OW56-4	OW56-4
Date			**27-Nov-04**	**13-May-05**	**29-Nov-05**	**18-May-06**	**24-Nov-06**	**05-Jan-07**	**05-May-07**	**16-Nov-07**	**22-May-08**	**05-Nov-08**	**16-May-09**	**19-Nov-09**	**19-May-10**
Laboratory			**Accutest**	**Accutest**	**Accutest**	**Accutest**	**Accutest**	**Accutest**	**Accutest**	**Accutest**	**MAXXAM**	**MAXXAM**	**MAXXAM**	**MAXXAM**	**MAXXAM**
Alkalinity (Total as CaCO3)	mg/L	30-500***	218	246	238	279	274	287	269	DRY	271	276	320	315	308
Conductivity	umho/cm										2950	3400	3920	3350	3040
Dissolved Barium (Ba)	mg/L	1*									0.018	0.016	0.013	0.013	0.011
Dissolved Boron (B)	mg/L	5.0*	0.26	0.35	0.29	0.20	0.32	0.29	0.36		0.25	0.41	0.41	0.43	0.34
Dissolved Cadmium (Cd)	mg/L	0.005*									<0.0001	<0.0001	<0.0001	<0.0001	<0.0001
Dissolved Calcium (Ca)	mg/L		252	303	103	306	224	199	217		330	430	480	430	440
Dissolved Chloride (Cl)	mg/L	250**	7	7	17	10	13	12	14		8	7	7	7	8
Dissolved Iron (Fe)	mg/L	0.3**	0.01	0.01	<0.01	<0.03	0.16	0.07	<0.03		<0.1	<0.1	<0.1	<0.1	0.3
Dissolved Lead (Pb)	mg/L	0.01*									0.0007	<0.0005	<0.0005	<0.0005	<0.0005
Dissolved Magnesium (Mg)	mg/L		165	261	51	213	153	130	155		270	350	440	370	380
Dissolved Organic Carbon	mg/L	5**	3.9	3.8	6.0	4.4	3.8	5.8	4.0		3.6	3.7	5.2	4.0	2.9
Dissolved Potassium (K)	mg/L		2	3	1	2	2	2	2		2.6	3.2	3.2	2.8	2.7
Dissolved Sodium (Na)	mg/L	200**	51	70	32	56	45	42	50		74	79	100	79	85
Dissolved Sulphate (SO4)	mg/L	500**	993	1400	288	1340	958	713	1040		1800	2150	2500	2100	2300
Nitrate (N)	mg/L	10.0*	5.26	2.56	0.88	0.51	5.34	3.85	2.21		0.4	0.3	<0.1	0.8	1.9
pH	(pH units)	6.5-8.5									8.0	7.9	7.8	7.8	7.9
Total Ammonia-N	mg/L		0.03	<0.02	<0.02	0.05	<0.02	0.05	<0.02		<0.15	<0.15	<0.15	<0.15	<0.15
Total Dissolved Solids	mg/L	500									1630	2300	2360	950	2070
Total Kjeldahl Nitrogen (TKN)	mg/L		0.33	0.19	0.28	0.35	0.30	0.37	0.34		<0.7	<0.7	<1	<0.7	<0.7
Ion Percentage	%		7.3	8.3	1.9	3.4	1.7	6.1	1.5		0.6	3.8	5.4	5.7	3.1

Parameter	Units	ODWQS	OW56-4	OW56-4	OW56-4	OW56-4	OW56-4	OW56-4	OW56-4	OW56-4	OW56-4	OW56-4	OW56-4	OW56-4	OW56-4
Date			**23-Nov-10**	**10-May-11**	**03-Nov-11**	**10-May-12**	**08-Nov-12**	**03-Dec-12**	**13-May-13**	**10-Jun-13**	**05-Nov-13**	**06-May-14**	**24-Nov-14**	**13-May-15**	**11-Nov-15**
Laboratory			**MAXXAM**	**MAXXAM**	**MAXXAM**	**MAXXAM**	**MAXXAM**	**MAXXAM**	**MAXXAM**	**MAXXAM**	**MAXXAM**	**MAXXAM**	**MAXXAM**	**MAXXAM**	**MAXXAM**
Alkalinity (Total as CaCO3)	mg/L	30-500***	330	308	308	330	300	DRY	310	330	300	330	400	330	380
Conductivity	umho/cm		3610	3920	3690	4100	3300		4100	4100	3300	4000	4500	4100	4300
Dissolved Barium (Ba)	mg/L	1*	0.013	0.011	0.011	0.011	0.012		0.008	0.01	0.012	0.009	0.013	0.007	0.009
Dissolved Boron (B)	mg/L	5.0*	0.46	0.35	0.41	0.38	0.45		0.35	0.42	0.32	0.41	0.32	0.41	0.52
Dissolved Cadmium (Cd)	mg/L	0.005*	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001		0.0001	<0.0001	<0.00010	<0.0001	<0.0001	<0.0001	<0.0001
Dissolved Calcium (Ca)	mg/L		460	480	470	470	480		460	490	380	480	430	400	470
Dissolved Chloride (Cl)	mg/L	250**	8	8	10	8	15		8	7	7	7	8	7	7.5
Dissolved Iron (Fe)	mg/L	0.3**	0.2	0.2	0.4	1.2	1.0		<0.10	<0.10	<0.10	0.23	<0.10	0.82	0.84
Dissolved Lead (Pb)	mg/L	0.01*	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005		<0.0005	<0.0005	<0.00050	<0.0005	<0.0005	<0.0005	<0.0005
Dissolved Magnesium (Mg)	mg/L		440	450	400	490	420		510	480	340	480	390	460	480
Dissolved Organic Carbon	mg/L	5**	3.7	3.6	4	3.6	3.9		3.7	5.3	11	4.4	4.3	3.7	4
Dissolved Potassium (K)	mg/L		3.5	2.9	3.3	3.3	4.1		3.6	3.6	4	3.1	3	3.5	4
Dissolved Sodium (Na)	mg/L	200**	96	99	85	100	100		100	110	87	100	94	96	110
Dissolved Sulphate (SO4)	mg/L	500**	2100	2400	2200	2600	1700		2700	2700	1800	2600	2800	2500	2800
Nitrate (N)	mg/L	10.0*	0.6	0.2	0.3	0.19	9.9		0.95	0.55	0.62	<0.10	<0.10	<0.10	<0.10
pH	(pH units)	6.5-8.5	7.6	7.9	7.6	7.6	7.7		7.6	7.6	7.1	7.8	7.8	7.9	7.6
Total Ammonia-N	mg/L		<0.15	<0.15	<0.15	<0.15	2.86		<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	1.04
Total Dissolved Solids	mg/L	500	1990	2390	3330	3980	3600		4230	4300	3060	4050	4410	4410	4350
Total Kjeldahl Nitrogen (TKN)	mg/L		<0.7	<0.7	<0.7	<0.7	4.3		<0.7	<0.7	1	<0.7	<0.7	<0.7	1.3
Ion Percentage	%		12.1	7.0	6.6	5.2	20.0		5.6	5.0	8.5	5.0	7.7	2.2	2.0

NOTES: 1) Blank denotes data not available.
2) ODWQS denotes O. Reg. 169/03: Ontario Drinking Water Quality Standards (as amended).
3) *denotes health related ODWQS.
** denotes aesthetic objective for ODWQS.
*** denotes operational guideline for ODWQS.
4) mg/L denotes milligrams per litre.

Table H-4
Groundwater - General Analytical Results
Twin Creeks Environmental Centre

Parameter	Units	ODWQS	OW56-4	OW56-4	OW56-4	OW56-4	OW56-4	OW56-4	OW56-4	OW56-4	OW56-4	OW56-4	OW56-4	OW56-4	OW56-4
Date			**27-May-16**	**16-Nov-16**	**19-May-17**	**08-Nov-17**	**10-May-18**	**14-Nov-18**	**12-Dec-18**	**14-May-19**	**05-Nov-19**	**08-May-20**	**03-Nov-20**	**19-May-21**	**03-Nov-21**
Laboratory			**MAXXAM**	**MAXXAM**	**MAXXAM**	**MAXXAM**	**MAXXAM**	**MAXXAM**	**MAXXAM**	**MAXXAM**	**Bureau Veritas**	**Bureau Veritas**	**Bureau Veritas**	**Bureau Veritas**	**Bureau Veritas**
Alkalinity (Total as CaCO3)	mg/L	30-500***	380	380	350	390	370	260	370	350	370	370	390	350	370
Conductivity	umho/cm		4400	4300	4200	4000	4200	1800	4300	4000	4300	4200	4400	4100	4100
Dissolved Barium (Ba)	mg/L	1*	0.014	0.011	0.007	0.007	<0.03	0.011	0.007	0.013	0.012	<0.03	0.012	<0.03	0.011
Dissolved Boron (B)	mg/L	5.0*	0.32	0.38	0.5	0.52	0.5	0.42	0.19	0.44	0.43	0.5	0.58	0.4	0.49
Dissolved Cadmium (Cd)	mg/L	0.005*	<0.0001	<0.0001	<0.0001	<0.0001	<0.0005	<0.0001	<0.0001	<0.0001	<0.0001	<0.0005	<0.0001	<0.0005	<0.0001
Dissolved Calcium (Ca)	mg/L		360	470	450	460	470	480	240	480	460	450	460	460	480
Dissolved Chloride (Cl)	mg/L	250**	7.1	7.6	7.5	7.4	7.3	10	7.3	7.8	6.6	7.7	7.9	8.6	7.6
Dissolved Iron (Fe)	mg/L	0.3**	0.1	0.3	0.6	0.9	0.5	0.6	<0.1	3.2	4	2.4	3.3	2	2.5
Dissolved Lead (Pb)	mg/L	0.01*	<0.0005	<0.0005	<0.0005	<0.0005	<0.003	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
Dissolved Magnesium (Mg)	mg/L		330	420	480	550	480	420	160	500	490	450	470	460	490
Dissolved Organic Carbon	mg/L	5**	3.8	3.9	3.7	3.8	3.3	4.6	10	3.7	4.5	3.8	4.3	3.7	3.8
Dissolved Potassium (K)	mg/L		8.2	3.9	4.3	3.9	4	4.3	28	3.4	3.8	3	4.2	3	3.9
Dissolved Sodium (Na)	mg/L	200**	85	110	100	100	100	100	63	100	98	93	100	99	100
Dissolved Sulphate (SO4)	mg/L	500**	2800	2600	2600	2700	2500	780	2700	2600	2500	2600	2700	2600	2800
Nitrate (N)	mg/L	10.0*	0.1	0.19	0.12	<0.10	0.17	14.9	0.68	0.97	<0.10	0.54	<0.10	0.31	0.11
pH	(pH units)	6.5-8.5	7.62	7.62	7.58	7.63	7.67	7.66	7.5	7.59	7.49	7.77	7.51	7.61	7.82
Total Ammonia-N	mg/L		<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	0.24	<0.15	0.5	0.131	0.16
Total Dissolved Solids	mg/L	500	4380	4420	4280	4240	4070	1480	4490	3570	4250	4170	4400	3700	3950
Total Kjeldahl Nitrogen (TKN)	mg/L		<0.7	<0.7	<0.7	<0.7	<0.7	<0.7	<0.7	<0.7	<0.7	<0.7	0.8	0.5	1.0
Ion Percentage	%		14.2	1.5	4.6	6.9	6.9	50.2	37.5	6.9	7.0	2.2	2.2	3.7	2.7

Parameter	Units	ODWQS	OW56-4	OW56-4	OW56-4	OW56-4	OW56-4	OW56-4
Date			**04-May-22**	**02-Nov-22**	**03-May-23**	**03-Nov-23**	**08-May-24**	**19-Nov-24**
Laboratory			**Bureau Veritas**	**Bureau Veritas**	**Bureau Veritas**	**Bureau Veritas**	**Bureau Veritas**	**Bureau Veritas**
Alkalinity (Total as CaCO3)	mg/L	30-500***	390	370	360	400	410	320
Conductivity	umho/cm		4800	4200	4100	4800	4100	4400
Dissolved Barium (Ba)	mg/L	1*	0.011	0.012	0.012	0.008	0.009	0.010
Dissolved Boron (B)	mg/L	5.0*	0.35	0.5	0.42	0.99	0.42	0.45
Dissolved Cadmium (Cd)	mg/L	0.005*	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001
Dissolved Calcium (Ca)	mg/L		470	450	460	440	470	470
Dissolved Chloride (Cl)	mg/L	250**	5.8	7.4	5.4	5.1	6.8	6.4
Dissolved Iron (Fe)	mg/L	0.3**	0.3	2.3	0.9	0.5	1.7	<0.1
Dissolved Lead (Pb)	mg/L	0.01*	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
Dissolved Magnesium (Mg)	mg/L		420	470	460	450	480	460
Dissolved Organic Carbon	mg/L	5**	3.1	3.7	3.2	3.7	5.2	4.5
Dissolved Potassium (K)	mg/L		2.9	3.7	3.3	7.1	3.6	4.1
Dissolved Sodium (Na)	mg/L	200**	99	98	100	220	100	95
Dissolved Sulphate (SO4)	mg/L	500**	3000	2800	2100	3100	2500	2400
Nitrate (N)	mg/L	10.0*	0.36	0.14	0.37	0.36	<0.10	<0.10
pH	(pH units)	6.5-8.5	8	7.5	7.8	7.9	7.8	8.0
Total Ammonia-N	mg/L		<0.15	<0.15	<0.15	<0.15	1.33	0.76
Total Dissolved Solids	mg/L	500	4340	3630	3740	4880	4180	4670
Total Kjeldahl Nitrogen (TKN)	mg/L		<0.7	0.8	0.7	<0.7	2.2	0.9
Ion Percentage	%		5.4	0.3	13.1	2.2	6.3	8.0

NOTES: 1) Blank denotes data not available.
2) ODWQS denotes O. Reg. 169/03: Ontario Drinking Water Quality Standards (as amended).
3) *denotes health related ODWQS.
** denotes aesthetic objective for ODWQS.
*** denotes operational guideline for ODWQS.
4) mg/L denotes milligrams per litre.

Table H-4
Groundwater - General Analytical Results
Twin Creeks Environmental Centre

Parameter	Units	ODWQS	OW57-4	OW57-4	OW57-4	OW57-4	OW57-4	OW57-4	OW57-4	OW57-4	OW57-4	OW57-4	OW57-4	OW57-4	OW57-4
Date			**29-Jun-00**	**28-Nov-01**	**23-May-02**	**06-Nov-02**	**15-May-03**	**13-Nov-03**	**26-May-04**	**27-Nov-04**	**12-May-05**	**29-Nov-05**	**19-May-06**	**24-Nov-06**	**05-May-07**
Laboratory			**Accutest**	**Accutest**	**Accutest**	**Accutest**	**Accutest**	**Accutest**	**Accutest**	**Accutest**	**Accutest**	**Accutest**	**Accutest**	**Accutest**	**Accutest**
Alkalinity (Total as CaCO3)	mg/L	30-500***	177	490	478	491	471	495	479	490	497	494	492	494	469
Dissolved Boron (B)	mg/L	5.0*	1.14	0.35	0.39	0.38	0.33	0.39	0.22	0.31	0.39	0.38	0.29	0.38	0.46
Dissolved Calcium (Ca)	mg/L		327	355	370	319	318	318	330	412	313	310	329	330	342
Dissolved Chloride (Cl)	mg/L	250**	6	4	4	5	5	6	5	4	5	6	5	5	5
Dissolved Iron (Fe)	mg/L	0.3**	0.02	2.03	4.69	2.18	3.81	1.54	4.61	1.65	0.86	0.86	8.90	1.77	1.28
Dissolved Magnesium (Mg)	mg/L		222	359	416	375	382	387	382	432	332	336	348	351	359
Dissolved Organic Carbon	mg/L	5**	3.5	5.5	5.8	4.7	3.4	3.3	2.5	3.2	2.7	3.4	5.6	2.5	3.0
Dissolved Potassium (K)	mg/L		6	5	6	8	4	8	5	6	4	5	4	5	4
Dissolved Sodium (Na)	mg/L	200**	152	109	132	134	116	132	131	143	117	110	105	114	116
Dissolved Sulphate (SO4)	mg/L	500**	2896	2040	2190	2120	2620	2140	2100	2240	1990	1850	1990	2090	1860
Nitrate (N)	mg/L	10.0*	0.21	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
Nitrite (N)	mg/L	1.0*	<0.10												
NO3+NO2	mg/L	10.0*	0.21												
Total Ammonia-N	mg/L		0.47	0.07	0.36	0.11	0.05	0.17	0.09	0.07	0.04	0.05	0.07	0.11	<0.02
Total Kjeldahl Nitrogen (TKN)	mg/L		0.8	0.16	1.13	0.51	0.28	0.39	0.23	0.38	0.24	0.22	0.49	0.30	0.35
Ion Percentage	%		21.5	1.2	4.2	0.1	9.0	0.5	1.6	6.3	1.9	1.0	0.2	1.6	5.0

Parameter	Units	ODWQS	OW57-4	OW57-4	OW57-4	OW57-4	OW57-4	OW57-4	OW57-4	OW57-4	OW57-4	OW57-4	OW57-4	OW57-4	OW57-4
Date			**16-Nov-07**	**22-May-08**	**05-Nov-08**	**16-May-09**	**19-Nov-09**	**19-May-10**	**23-Nov-10**	**10-May-11**	**02-Nov-11**	**09-May-12**	**05-Nov-12**	**13-May-13**	**05-Nov-13**
Laboratory			**Accutest**	**MAXXAM**	**MAXXAM**	**MAXXAM**	**MAXXAM**	**MAXXAM**	**MAXXAM**	**MAXXAM**	**MAXXAM**	**MAXXAM**	**MAXXAM**	**MAXXAM**	**MAXXAM**
Alkalinity (Total as CaCO3)	mg/L	30-500***	470	DRY	555	524	487	493	489	511	537	540	530	500	520
Conductivity	umho/cm				3570	3560	3530	3600	3630	3570	3590	3600	3600	3600	3600
Dissolved Barium (Ba)	mg/L	1*			0.007	0.007	0.006	0.005	0.007	0.006	0.007	0.007	<0.01	0.006	0.0071
Dissolved Boron (B)	mg/L	5.0*	0.5		0.41	0.36	0.40	0.34	0.41	0.33	0.4	0.35	0.42	0.29	0.42
Dissolved Cadmium (Cd)	mg/L	0.005*			<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0002	<0.0001	<0.00010
Dissolved Calcium (Ca)	mg/L		342		330	340	340	340	330	340	360	330	330	340	360
Dissolved Chloride (Cl)	mg/L	250**	5		5	5	3	6	5	5	6	5	5	6	5
Dissolved Iron (Fe)	mg/L	0.3**	1.8		3.2	3.7	2.3	5.0	1.9	3.2	2.2	4.8	1.5	2.8	0.16
Dissolved Lead (Pb)	mg/L	0.01*			<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.001	<0.0005	<0.00050
Dissolved Magnesium (Mg)	mg/L		368		330	380	360	370	340	380	360	360	350	350	390
Dissolved Organic Carbon	mg/L	5**	3.5		3.7	5.1	3.7	3.0	3.9	4.2	4.0	3.5	3.4	4.1	12
Dissolved Potassium (K)	mg/L		4		4.7	4.2	4.9	4.2	4.6	4.2	5.3	4.3	4.8	4.1	5.4
Dissolved Sodium (Na)	mg/L	200**	116		110	130	120	120	110	130	130	120	120	120	130
Dissolved Sulphate (SO4)	mg/L	500**	1930		1960	2000	2000	2000	1900	1900	1800	1800	1700	2000	1800
Nitrate (N)	mg/L	10.0*	<0.10		<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.10	<0.10	<0.10	<0.10
pH	(pH units)	6.5-8.5			7.8	7.9	8.0	7.8	7.6	7.9	7.4	7.7	7.4	7.6	7.3
Total Ammonia-N	mg/L		0.14		0.18	<0.15	0.23	<0.15	0.16	<0.15	0.22	<0.15	0.24	<0.15	0.18
Total Dissolved Solids	mg/L	500			2250	2250	2260	2340	2220	2040	3000	3430	3350	3440	3380
Total Kjeldahl Nitrogen (TKN)	mg/L		0.24		<0.7	0.8	<0.7	0.8	<0.7	<0.7	1.0	<0.7	0.8	<0.7	<0.70
Ion Percentage	%		4.2		1.8	3.2	1.9	2.5	1.4	3.5	4.6	2.6	4.3	1.2	7.2

NOTES: 1) Blank denotes data not available.
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3) *denotes health related ODWQS.
** denotes aesthetic objective for ODWQS.
*** denotes operational guideline for ODWQS.
4) mg/L denotes milligrams per litre.

Table H-4
Groundwater - General Analytical Results
Twin Creeks Environmental Centre

Parameter	Units	ODWQS	OW57-4	OW57-4	OW57-4	OW57-4	OW57-4	OW57-4	OW57-4	OW57-4	OW57-4	OW57-4	OW57-4	OW57-4	OW57-4
Date			**06-May-14**	**24-Nov-14**	**12-May-15**	**11-Nov-15**	**26-May-16**	**16-Nov-16**	**19-May-17**	**08-Nov-17**	**10-May-18**	**13-Nov-18**	**14-May-19**	**05-Nov-19**	**08-May-20**
Laboratory			**MAXXAM**	**MAXXAM**	**MAXXAM**	**MAXXAM**	**MAXXAM**	**MAXXAM**	**MAXXAM**	**MAXXAM**	**MAXXAM**	**MAXXAM**	**MAXXAM**	**Bureau Veritas**	**Bureau Veritas**
Alkalinity (Total as CaCO3)	mg/L	30-500***	680	540	560	540	550	560	520	550	610	560	620	600	610
Conductivity	umho/cm		3100	3600	2700	2700	3600	3600	3700	3300	3600	3400	3600	3600	3800
Dissolved Barium (Ba)	mg/L	1*	0.005	0.009	0.005	0.007	0.006	0.006	0.006	0.008	0.007	0.006	0.006	0.007	0.006
Dissolved Boron (B)	mg/L	5.0*	0.30	0.37	0.34	0.41	0.39	0.41	0.37	0.42	0.35	0.4	0.33	0.37	0.32
Dissolved Cadmium (Cd)	mg/L	0.005*	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001
Dissolved Calcium (Ca)	mg/L		340	300	310	320	320	330	320	340	330	330	330	320	330
Dissolved Chloride (Cl)	mg/L	250**	5	6	6	4.4	5.7	5.8	5.3	5.5	5.7	5.5	5.7	5.4	5.5
Dissolved Iron (Fe)	mg/L	0.3**	0.76	0.75	0.85	1.6	1.2	0.7	1.9	2.5	0.8	0.6	2	1.6	1.3
Dissolved Lead (Pb)	mg/L	0.01*	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
Dissolved Magnesium (Mg)	mg/L		370	330	350	340	360	370	340	340	350	350	340	320	350
Dissolved Organic Carbon	mg/L	5**	3.3	3.9	4.9	3.4	2.7	3.1	3.0	3.3	3	3.3	3.1	3.5	3.3
Dissolved Potassium (K)	mg/L		4	4.4	4.7	4.8	4.3	4.7	4.2	4.7	4.3	4.6	4.2	4.7	4.1
Dissolved Sodium (Na)	mg/L	200**	130	130	140	120	130	140	120	120	140	140	160	130	140
Dissolved Sulphate (SO4)	mg/L	500**	1200	1800	1800	1100	1900	1800	2000	1900	1900	1800	1800	1600	1700
Nitrate (N)	mg/L	10.0*	0.98	<0.10	<0.10	1.69	<0.10	<0.10	<0.10	<0.10	<0.10	0.1	<0.10	<0.10	<0.10
pH	(pH units)	6.5-8.5	8.0	7.7	7.8	7.7	7.8	7.6	7.7	7.6	7.7	7.6	7.6	7.6	7.7
Total Ammonia-N	mg/L		0.16	0.16	<0.15	<0.15	<0.15	0.15	<0.15	<0.15	<0.15	0.16	0.15	0.55	<0.15
Total Dissolved Solids	mg/L	500	2290	3220	3400	2950	3410	3310	3410	3240	3210	3300	3360	3120	3450
Total Kjeldahl Nitrogen (TKN)	mg/L		<0.7	<0.7	<0.7	<0.7	<0.7	<0.7	<0.7	<0.7	<0.7	<0.7	<0.7	<0.7	<0.7
Ion Percentage	%		18.8	1.2	3.5	21.4	2.4	6.1	1.3	1.3	1.5	4.5	3.5	5.0	5.9

Parameter	Units	ODWQS	OW57-4	OW57-4	OW57-4	OW57-4	OW57-4	OW57-4	OW57-4	OW57-4	OW57-4
Date			**03-Nov-20**	**19-May-21**	**03-Nov-21**	**03-May-22**	**02-Nov-22**	**02-May-23**	**03-Nov-23**	**08-May-24**	**19-Nov-24**
Laboratory			**Bureau Veritas**	**Bureau Veritas**	**Bureau Veritas**	**Bureau Veritas**	**Bureau Veritas**	**Bureau Veritas**	**Bureau Veritas**	**Bureau Veritas**	**Bureau Veritas**
Alkalinity (Total as CaCO3)	mg/L	30-500***	590	570	590	580	590	580	550	610	600
Conductivity	umho/cm		3600	3600	3500	3500	3600	3500	3600	3400	3500
Dissolved Barium (Ba)	mg/L	1*	0.006	0.007	0.007	0.007	0.009	0.006	0.005	0.006	0.008
Dissolved Boron (B)	mg/L	5.0*	0.43	0.37	0.39	0.35	0.45	0.37	0.34	0.36	0.41
Dissolved Cadmium (Cd)	mg/L	0.005*	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001
Dissolved Calcium (Ca)	mg/L		340	340	340	360	340	340	260	320	310
Dissolved Chloride (Cl)	mg/L	250**	5.5	6.6	6.4	6.0	6.1	4.0	2.8	5.0	3.7
Dissolved Iron (Fe)	mg/L	0.3**	1.3	2.2	2.4	1.6	1.9	<0.1	0.2	1.5	1.6
Dissolved Lead (Pb)	mg/L	0.01*	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
Dissolved Magnesium (Mg)	mg/L		340	360	350	360	360	350	290	350	330
Dissolved Organic Carbon	mg/L	5**	3.5	3.6	3.2	3.1	3.8	3.3	3.4	3.6	3.9
Dissolved Potassium (K)	mg/L		4.7	4.3	4.8	4.1	4.6	4.1	4.4	4.5	5.1
Dissolved Sodium (Na)	mg/L	200**	130	140	130	140	130	130	110	140	130
Dissolved Sulphate (SO4)	mg/L	500**	1700	1900	1900	1800	1800	1900	1700	1700	1600
Nitrate (N)	mg/L	10.0*	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	0.45	<0.10	<0.10
pH	(pH units)	6.5-8.5	7.6	7.6	7.8	8.0	7.6	7.9	7.8	8.0	7.7
Total Ammonia-N	mg/L		<0.15	<0.050	0.25	<0.15	0.2	<0.15	<0.15	<0.15	<0.15
Total Dissolved Solids	mg/L	500	3410	2880	2920	3160	2820	2740	3220	3270	3390
Total Kjeldahl Nitrogen (TKN)	mg/L		<0.7	0.2	0.7	<0.7	0.9	0.7	<0.7	<0.7	<0.7
Ion Percentage	%		5.5	3.4	1.9	6.3	4.8	2.1	3.4	5.4	5.4

NOTES: 1) Blank denotes data not available.
2) ODWQS denotes O. Reg. 169/03: Ontario Drinking Water Quality Standards (as amended).
3) *denotes health related ODWQS.
** denotes aesthetic objective for ODWQS.
*** denotes operational guideline for ODWQS.
4) mg/L denotes milligrams per litre.

Table H-4
Groundwater - General Analytical Results
Twin Creeks Environmental Centre

Parameter	Units	ODWQS	OW57-15	OW57-15	OW57-15	OW57-15	OW57-15	OW57-15	OW57-15	OW57-15	OW57-15	OW57-15	OW57-15	OW57-15	OW57-15
Date			**09-Jun-99**	**07-Dec-99**	**21-Jun-00**	**28-Nov-01**	**23-May-02**	**06-Nov-02**	**15-May-03**	**13-Nov-03**	**26-May-04**	**27-Nov-04**	**12-May-05**	**29-Nov-05**	**19-May-06**
Laboratory			**Maxxam**	**Accutest**	**Accutest**	**Accutest**	**Accutest**	**Accutest**	**Accutest**	**Accutest**	**Accutest**	**Accutest**	**Accutest**	**Accutest**	**Accutest**
Alkalinity (Total as CaCO3)	mg/L	30-500***	183	171	163	163	165	172	165	164	161	157	158	157	157
Dissolved Boron (B)	mg/L	5.0*	1.11	1.13	1.03	0.96	1.54	1.07	1.13	1.07	1.17	0.84	1.31	0.99	0.79
Dissolved Calcium (Ca)	mg/L		326	287	316	310	311	287	319	284	290	265	271	270	292
Dissolved Chloride (Cl)	mg/L	250**	7.19	9	6	8	7	8	8	8	8	8	8	8	8
Dissolved Iron (Fe)	mg/L	0.3**	0.051	0.05	0.03	0.19	0.48	0.16	0.06	0.08	0.02	0.14	1.65	1.54	1.44
Dissolved Magnesium (Mg)	mg/L		243	227	228	207	221	190	237	228	212	253	219	215	206
Dissolved Organic Carbon	mg/L	5**	2.8	4.8	3.5	3.0	2.2	2.8	2.4	1.9	1.1	1.9	1.7	2.4	2.3
Dissolved Potassium (K)	mg/L		9	8	6	6	5	9	5	8	6	5	5	5	5
Dissolved Sodium (Na)	mg/L	200**	181	176	156	164	148	181	169	177	182	190	172	168	169
Dissolved Sulphate (SO4)	mg/L	500**	4010	1820	2270	1770	1730	1730	2260	1780	1770	1920	1740	1610	1690
Nitrate (N)	mg/L	10.0*	0.3	<0.10	0.63	0.12	0.14	0.17	0.27	0.10	0.13	0.14	0.15	0.17	0.24
Nitrite (N)	mg/L	1.0*	<0.1	<0.10	<0.10										
NO3+NO2	mg/L	10.0*			0.63										
Total Ammonia-N	mg/L		0.41	0.54	0.56	0.44	0.75	0.42	0.03	0.21	0.08	0.09	0.28	0.17	0.11
Total Kjeldahl Nitrogen (TKN)	mg/L		0.8	0.85	1.14	0.45	0.75	0.49	0.16	0.25	0.16	0.23	0.25	0.37	0.16
Ion Percentage	%			0.6	9.9	0.4	1.3	1.8	8.1	0.6	0.1	0.9	0.3	2.6	0.9

Parameter	Units	ODWQS	OW57-15	OW57-15	OW57-15	OW57-15	OW57-15	OW57-15	OW57-15	OW57-15	OW57-15	OW57-15	OW57-15	OW57-15	OW57-15
Date			**24-Nov-06**	**05-May-07**	**16-Nov-07**	**22-May-08**	**05-Nov-08**	**16-May-09**	**18-Nov-09**	**19-May-10**	**23-Nov-10**	**10-May-11**	**02-Nov-11**	**09-May-12**	**06-Nov-12**
Laboratory			**Accutest**	**Accutest**	**Accutest**	**MAXXAM**	**MAXXAM**	**MAXXAM**	**MAXXAM**	**MAXXAM**	**MAXXAM**	**MAXXAM**	**MAXXAM**	**MAXXAM**	**MAXXAM**
Alkalinity (Total as CaCO3)	mg/L	30-500***	153	154	151	151	149	159	148	144	145	142	145	150	150
Conductivity	umho/cm					3000	2980	3000	3010	3000	3030	2990	2970	3000	3000
Dissolved Barium (Ba)	mg/L	1*				0.01	0.01	0.01	0.011	0.010	0.010	0.010	0.010	0.009	<0.01
Dissolved Boron (B)	mg/L	5.0*	1.17	0.95	1.19	1.1	1.1	1.3	1.2	1.1	1.2	1.0	1.1	1.1	1.1
Dissolved Cadmium (Cd)	mg/L	0.005*				<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0002
Dissolved Calcium (Ca)	mg/L		286	264	276	280	280	310	290	280	280	280	260	270	270
Dissolved Chloride (Cl)	mg/L	250**	8	8	9	8	8	7	8	8	8	8	7	8	8
Dissolved Iron (Fe)	mg/L	0.3**	1.49	1.08	1.57	0.8	1.7	1.2	1.6	1.4	1.3	1.1	1.2	1.7	1.6
Dissolved Lead (Pb)	mg/L	0.01*				<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.001
Dissolved Magnesium (Mg)	mg/L		213	207	218	220	200	230	220	200	210	210	180	210	200
Dissolved Organic Carbon	mg/L	5**	1.8	2.5	2.6	2	1.9	2.9	2.6	2.1	2.1	2.1	2.0	2.1	2.2
Dissolved Potassium (K)	mg/L		5	5	5	5	4.6	5.2	5.1	4.8	4.7	4.7	4.3	4.7	4.5
Dissolved Sodium (Na)	mg/L	200**	180	181	185	190	170	200	200	180	180	200	160	190	180
Dissolved Sulphate (SO4)	mg/L	500**	1790	1760	1720	1740	1790	1800	1700	1600	1600	1600	1100	1700	1500
Nitrate (N)	mg/L	10.0*	0.22	0.23	0.34	0.3	0.2	0.4	0.4	0.3	0.4	0.3	0.3	0.3	0.29
pH	(pH units)	6.5-8.5				8.1	7.9	7.8	7.9	7.9	7.8	8.0	7.8	7.9	7.4
Total Ammonia-N	mg/L		0.25	0.12	0.06	<0.15	0.28	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	0.18
Total Dissolved Solids	mg/L	500				1710	1950	1950	1900	1910	1840	1780	2510	2780	2730
Total Kjeldahl Nitrogen (TKN)	mg/L		0.38	0.22	<0.10	<0.7	<0.7	<0.7	<0.7	<0.7	<0.7	<0.7	<0.7	<0.7	<0.7
Ion Percentage	%		0.8	2.0	1.2	1.5	3.0	3.1	3.7	2.9	3.9	4.3	14.2	0.1	4.2

NOTES: 1) Blank denotes data not available.
2) ODWQS denotes O. Reg. 169/03: Ontario Drinking Water Quality Standards (as amended).
3) *denotes health related ODWQS.
** denotes aesthetic objective for ODWQS.
*** denotes operational guideline for ODWQS.
4) mg/L denotes milligrams per litre.

Table H-4
Groundwater - General Analytical Results
Twin Creeks Environmental Centre

Parameter	Units	ODWQS	OW57-15	OW57-15	OW57-15	OW57-15	OW57-15	OW57-15	OW57-15	OW57-15	OW57-15	OW57-15	OW57-15	OW57-15
Date			13-May-13	05-Nov-13	06-May-14	24-Nov-14	12-May-15	11-Nov-15	26-May-16	16-Nov-16	19-May-17	08-Nov-17	10-May-18	13-Nov-18	14-May-19
Laboratory			MAXXAM	MAXXAM	MAXXAM	MAXXAM	MAXXAM	MAXXAM	MAXXAM	MAXXAM	MAXXAM	MAXXAM	MAXXAM	MAXXAM	MAXXAM
Alkalinity (Total as CaCO3)	mg/L	30-500***	140	150	150	150	150	150	150	150	150	160	150	150	140
Conductivity	umho/cm		3000	3000	3000	3000	2300	3000	3000	3000	3100	3000	3100	2900	3000
Dissolved Barium (Ba)	mg/L	1*	0.009	0.01	0.0	0.01	0.009	0.01	0.009	0.009	0.009	0.008	0.01	0.01	0.008
Dissolved Boron (B)	mg/L	5.0*	1.0	1.1	1.0	1.2	1.1	1.2	1.2	1.2	1.2	1.1	1.2	1.1	1.1
Dissolved Cadmium (Cd)	mg/L	0.005*	<0.0001	<0.00010	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001
Dissolved Calcium (Ca)	mg/L		300	290	310	270	280	290	270	280	270	280	290	280	290
Dissolved Chloride (Cl)	mg/L	250**	8	8	9	9	8	8.5	8.6	8.9	8.2	8.2	8.2	8.6	8.8
Dissolved Iron (Fe)	mg/L	0.3**	1.6	<0.10	1.9	0.3	<0.10	1.5	0.8	1.4	1.5	2.2	1.1	2	0.4
Dissolved Lead (Pb)	mg/L	0.01*	<0.0005	<0.00050	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
Dissolved Magnesium (Mg)	mg/L		220	220	210	210	210	220	210	220	200	200	200	200	200
Dissolved Organic Carbon	mg/L	5**	2.6	9.3	3.1	2.4	3.1	2.5	2.0	1.9	1.8	2.3	2	2.3	1.9
Dissolved Potassium (K)	mg/L		4.9	5.1	4.7	4.8	5	5	4.5	4.9	4.6	4.5	4.6	4.7	4.4
Dissolved Sodium (Na)	mg/L	200**	200	210	200	180	190	200	190	200	180	180	190	180	180
Dissolved Sulphate (SO4)	mg/L	500**	1700	1600	1600	1600	1700	1600	1700	1700	1700	1600	1600	1700	1700
Nitrate (N)	mg/L	10.0*	0.32	0.12	0.4	0.29	0.38	0.42	0.29	0.24	0.41	<0.10	0.58	0.37	0.56
pH	(pH units)	6.5-8.5	7.9	7.7	7.9	7.9	7.7	7.7	7.9	7.8	7.9	7.8	7.9	7.7	7.9
Total Ammonia-N	mg/L		0.17	0.46	<0.15	0.16	0.21	0.2	0.3	0.33	0.26	0.33	0.28	0.22	<0.15
Total Dissolved Solids	mg/L	500	2720	2670	2650	2690	2790	2700	2760	2610	3470	2530	2590	2650	2680
Total Kjeldahl Nitrogen (TKN)	mg/L		<0.7	0.7	<0.7	<0.7	<0.7	<0.7	<0.7	<0.7	0.7	<0.7	<0.7	<0.7	<0.7
Ion Percentage	%		4.5	7.0	6.7	3.1	1.5	6.5	0.9	3.1	0.7	2.5	3.9	0.1	0.7

Parameter	Units	ODWQS	OW57-15	OW57-15	OW57-15	OW57-15	OW57-15	OW57-15	OW57-15	OW57-15	OW57-15	OW57-15	OW57-15
Date			05-Nov-19	08-May-20	03-Nov-20	18-May-21	03-Nov-21	03-May-22	02-Nov-22	02-May-23	03-Nov-23	08-May-24	19-Nov-24
Laboratory			Bureau Veritas	Bureau Veritas	Bureau Veritas	Bureau Veritas	Bureau Veritas	Bureau Veritas	Bureau Veritas	Bureau Veritas	Bureau Veritas	Bureau Veritas	Bureau Veritas
Alkalinity (Total as CaCO3)	mg/L	30-500***	150	150	150	150	160	150	170	160	150	150	150
Conductivity	umho/cm		3000	3100	3000	2714	2900	3000	3000	3000	2900	2900	3000
Dissolved Barium (Ba)	mg/L	1*	0.009	0.009	0.009	0.009	0.01	0.009	0.01	0.009	0.009	0.009	0.010
Dissolved Boron (B)	mg/L	5.0*	1	1	1.2	1.1	1.1	1.2	1.2	1.1	1.4	1.2	1.3
Dissolved Cadmium (Cd)	mg/L	0.005*	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001
Dissolved Calcium (Ca)	mg/L		270	280	290	290	300	290	310	270	280	290	290
Dissolved Chloride (Cl)	mg/L	250**	8.0	8.4	7.7	8.8	8.4	8.8	8.7	7.5	5.5	7.3	6.1
Dissolved Iron (Fe)	mg/L	0.3**	1.7	0.5	2.2	1.2	1.7	1.8	3.1	0.4	1.7	1.3	1.8
Dissolved Lead (Pb)	mg/L	0.01*	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
Dissolved Magnesium (Mg)	mg/L		190	210	210	200	210	210	220	200	210	210	200
Dissolved Organic Carbon	mg/L	5**	2.3	1.9	2.2	1.7	1.8	2.0	2.5	2.0	3.0	2.6	2.7
Dissolved Potassium (K)	mg/L		4.5	4.6	4.7	4.7	4.5	4.4	5	4.9	5	5.1	4.8
Dissolved Sodium (Na)	mg/L	200**	170	190	180	180	180	190	190	170	180	180	180
Dissolved Sulphate (SO4)	mg/L	500**	1500	1700	1600	1600	1800	1700	1600	1800	1600	1600	1600
Nitrate (N)	mg/L	10.0*	0.37	0.38	0.36	0.44	<0.10	0.80	<0.10	0.4	0.79	0.9	0.49
pH	(pH units)	6.5-8.5	7.7	7.9	7.7	8.1	7.9	7.9	7.8	7.9	7.8	8.0	7.8
Total Ammonia-N	mg/L		0.23	0.17	0.24	0.053	0.53	<0.15	1.08	0.18	0.5	<0.15	0.31
Total Dissolved Solids	mg/L	500	2500	2750	2590	2710	2380	2570	2370	2410	2660	2640	2690
Total Kjeldahl Nitrogen (TKN)	mg/L		<0.7	<0.7	<0.7	0.2	1.1	<0.7	1.2	<0.7	1.4	<0.7	<0.7
Ion Percentage	%		3.4	1.5	4.4	3.4	0.6	2.1	6.7	4.1	3.9	4.5	3.5

Parameter	Units	ODWQS	OW58-4	OW58-4	OW58-4	OW58-4	OW58-4	OW58-4	OW58-4	OW58-4
Date			15-Jun-02 to 2-Jul-02	16-Jul-02 to 22-Jul-02	06-Aug-02	06-Nov-02	13-Nov-03	30-Sep-04	27-Nov-04	12-May-05
Laboratory			Accutest	Accutest	Accutest	Accutest	Accutest	Accutest	Accutest	Accutest
Alkalinity (Total as CaCO3)	mg/L	30-500***	251	310	320	349	295	289	292	361
Dissolved Boron (B)	mg/L	5.0*	0.6	0.44	0.43	0.34	0.17	0.41	0.25	0.26
Dissolved Calcium (Ca)	mg/L		462	569	531	242	70	137	157	200
Dissolved Chloride (Cl)	mg/L	250**	1	3	4	12	18	12	21	15
Dissolved Iron (Fe)	mg/L	0.3**	0.12	0.03	0.03	1.02	0.03	1.62	0.17	0.20
Dissolved Magnesium (Mg)	mg/L		284	299	339	127	42	78	93	112
Dissolved Organic Carbon	mg/L	5**	10.3	110	4	8.9	8.9	6.5	7.9	5.4
Dissolved Potassium (K)	mg/L		7	9	6	7	4	3	4	4
Dissolved Sodium (Na)	mg/L	200**	84	86	85	99	120	99	112	88
Dissolved Sulphate (SO4)	mg/L	500**	2120	2060	2580	933	275	487	628	681
Nitrate (N)	mg/L	10.0*	<0.10	0.17	<0.10	<0.10	<0.10	0.15	0.11	<0.10
Total Ammonia-N	mg/L		<0.02	0.13	<0.02	0.04	0.08	0.11	<0.02	0.12
Total Kjeldahl Nitrogen (TKN)	mg/L		0.31	0.35	0.29	0.49	0.61	487	0.31	0.10
Ion Percentage	%		1.6	8.2	1.1	2.7	5.2	7.3	5.0	5.9

NOTES: 1) Blank denotes data not available.

2) ODWQS denotes O. Reg. 169/03: Ontario Drinking Water Quality Standards (as amended).

3) *denotes health related ODWQS.

** denotes aesthetic objective for ODWQS.

4) mg/L denotes milligrams per litre.

Table H-4
Groundwater - General Analytical Results
Twin Creeks Environmental Centre

Parameter	Units	ODWQS	OW58-6	OW58-6	OW58-6	OW58-6	OW58-6	OW58-6	OW58-6	OW58-6	OW58-6	OW58-6	OW58-6	OW58-6	OW58-6
Date			29-Nov-05	19-May-06	24-Nov-06	05-May-07	16-Nov-07	22-May-08	05-Nov-08	19-May-09	19-Nov-09	19-May-10	23-Nov-10	10-May-11	02-Nov-11
Laboratory			Accutest	Accutest	Accutest	Accutest	Accutest	MAXXAM	MAXXAM	MAXXAM	MAXXAM	MAXXAM	MAXXAM	MAXXAM	MAXXAM
Alkalinity (Total as CaCO3)	mg/L	30-500***	313	300	357	416	452	416	452	439	464	437	445	416	433
Conductivity	umho/cm							4040	4160	4100	4180	4070	4090	3910	3900
Dissolved Barium (Ba)	mg/L	1*						0.011	0.011	0.010	0.012	0.011	0.012	0.010	0.011
Dissolved Boron (B)	mg/L	5.0*	0.59	0.41	0.75	0.75	0.7	0.59	0.63	0.60	0.69	0.60	0.66	0.56	0.63
Dissolved Cadmium (Cd)	mg/L	0.005*						<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001
Dissolved Calcium (Ca)	mg/L		383	425	331	295	281	320	300	310	290	320	310	330	370
Dissolved Chloride (Cl)	mg/L	250**	6	5	5	6	6	5	5	5	5	6	5	5	5
Dissolved Iron (Fe)	mg/L	0.3**	5.85	3.29	2.66	0.24	1.4	0.3	1.0	1.6	2.9	2.7	2.8	<0.1	4.5
Dissolved Lead (Pb)	mg/L	0.01*						<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
Dissolved Magnesium (Mg)	mg/L		261	275	225	204	183	220	190	200	210	220	210	230	230
Dissolved Organic Carbon	mg/L	5**	5.6	4.2	2.5	2.3	2.4	1.5	1.5	1.9	2.2	1.5	1.8	1.4	1.7
Dissolved Potassium (K)	mg/L		11	8	8	7	7	7.1	6.7	6.8	7.3	6.8	6.9	6.5	7.6
Dissolved Sodium (Na)	mg/L	200**	88	86	362	551	606	460	460	490	530	460	450	410	410
Dissolved Sulphate (SO4)	mg/L	500**	1870	1990	2320	2220	2110	2200	2240	270	2300	2100	2000	1900	1900
Nitrate (N)	mg/L	10.0*	<0.10	<0.10	<0.10	<0.10	<0.10	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
pH	(pH units)	6.5-8.5						7.8	7.9	7.6	7.7	7.9	7.6	8.1	7.5
Total Ammonia-N	mg/L		0.37	0.19	0.36	0.45	0.54	0.26	0.48	0.35	0.44	0.35	0.43	0.23	0.36
Total Dissolved Solids	mg/L	500						2420	2800	2560	2660	2590	2450	2350	2960
Total Kjeldahl Nitrogen (TKN)	mg/L		1.95	0.37	0.48	0.57	0.52	<0.7	<0.7	0.8	<0.7	0.7	<0.7	<0.7	<0.7
Ion Percentage	%		0.2	1.0	3.6	1.8	3.4	0.9	3.7	61.1	1.1	2.6	2.9	4.8	6.4

Parameter	Units	ODWQS	OW58-6	OW58-6	OW58-6	OW58-6	OW58-6	OW58-6	OW58-6	OW58-6	OW58-6	OW58-6	OW58-6	OW58-6	OW58-6
Date			09-May-12	05-Nov-12	13-May-13	05-Nov-13	06-May-14	24-Nov-14	12-May-15	11-Nov-15	26-May-16	17-Nov-16	19-May-17	08-Nov-17	10-May-18
Laboratory			MAXXAM	MAXXAM	MAXXAM	MAXXAM	MAXXAM	MAXXAM	MAXXAM	MAXXAM	MAXXAM	MAXXAM	MAXXAM	MAXXAM	MAXXAM
Alkalinity (Total as CaCO3)	mg/L	30-500***	420	420	400	410	390	410	390	410	400	400	390	410	430
Conductivity	umho/cm		3900	3900	3800	3700	3700	3800	2800	3800	3800	3800	3800	3400	4000
Dissolved Barium (Ba)	mg/L	1*	0.010	0.011	0.009	0.01	0.008	0.011	0.007	0.009	0.007	0.009	0.008	0.009	0.008
Dissolved Boron (B)	mg/L	5.0*	0.61	0.65	0.53	0.66	0.58	0.69	0.64	0.63	0.67	0.67	0.67	0.62	0.58
Dissolved Cadmium (Cd)	mg/L	0.005*	<0.0001	<0.0001	<0.0001	<0.00010	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001
Dissolved Calcium (Ca)	mg/L		340	330	390	360	390	350	370	370	380	380	370	380	410
Dissolved Chloride (Cl)	mg/L	250**	5	4	5	4	4	5	4	4.7	4.1	4.7	4.2	4.5	5.1
Dissolved Iron (Fe)	mg/L	0.3**	0.32	5.0	0.12	1.1	<0.10	3	<0.10	2.7	<0.1	1.2	<0.1	5	<0.1
Dissolved Lead (Pb)	mg/L	0.01*	<0.0005	<0.0005	<0.0005	<0.00050	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
Dissolved Magnesium (Mg)	mg/L		250	230	260	250	260	250	260	260	270	280	250	250	270
Dissolved Organic Carbon	mg/L	5**	1.6	1.7	1.8	8.3	1.7	2.2	3.7	2.7	1.5	4.3	1.3	1.6	1.5
Dissolved Potassium (K)	mg/L		6.7	6.9	6.9	7	6.1	6.8	7.1	6.7	6.5	7	6.5	6.5	6.2
Dissolved Sodium (Na)	mg/L	200**	390	360	320	320	290	270	290	300	300	300	260	250	290
Dissolved Sulphate (SO4)	mg/L	500**	1900	1800	2100	1900	2000	2000	1900	2000	2000	2000	2100	2000	2100
Nitrate (N)	mg/L	10.0*	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	0.11	<0.10	0.13	<0.10	<0.10	<0.10	<0.10
pH	(pH units)	6.5-8.5	7.7	7.4	7.6	7.4	7.7	7.9	7.96	7.46	7.88	7.62	7.66	7.6	7.72
Total Ammonia-N	mg/L		0.16	0.40	0.25	0.38	<0.15	0.33	<0.15	0.3	<0.15	0.75	<0.15	0.28	<0.15
Total Dissolved Solids	mg/L	500	3610	3590	3410	3350	3340	3360	3410	3430	3450	3370	2660	3360	3440
Total Kjeldahl Nitrogen (TKN)	mg/L		0.8	<0.7	<0.7	<0.7	<0.7	<0.7	<0.7	<0.7	<0.7	<0.7	<0.7	<0.7	<0.7
Ion Percentage	%		5.9	4.9	2.4	4.3	3.5	0.6	4.7	4.1	5.5	6.3	0.1	1.7	3.9

Parameter	Units	ODWQS	OW58-6	OW58-6	OW58-6	OW58-6	OW58-6	OW58-6	OW58-6	OW58-6	OW58-6	OW58-6	OW58-6	OW58-6	OW58-6
Date			12-Nov-18	14-May-19	05-Nov-19	08-May-20	03-Nov-20	19-May-21	03-Nov-21	04-May-22	02-Nov-22	02-May-23	02-Nov-23	07-May-24	19-Nov-24
Laboratory			MAXXAM	MAXXAM	Bureau Veritas	Bureau Veritas	Bureau Veritas	Bureau Veritas	Bureau Veritas	Bureau Veritas	Bureau Veritas	Bureau Veritas	Bureau Veritas	Bureau Veritas	Bureau Veritas
Alkalinity (Total as CaCO3)	mg/L	30-500***	410	390	400	390	400	380	400	400	380	370	360	370	370
Conductivity	umho/cm		3600	3800	3800	3900	3800	3700	3600	4900	3600	3700	3600	3500	3700
Dissolved Barium (Ba)	mg/L	1*	0.01	0.008	0.008	0.008	0.009	0.008	0.012	0.010	0.009	0.008	0.008	0.008	0.010
Dissolved Boron (B)	mg/L	5.0*	0.64	0.55	0.51	0.5	0.66	0.62	0.59	0.41	0.69	0.65	0.69	0.61	0.62
Dissolved Cadmium (Cd)	mg/L	0.005*	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001
Dissolved Calcium (Ca)	mg/L		390	390	370	390	400	400	390	470	410	400	410	410	390
Dissolved Chloride (Cl)	mg/L	250**	5.3	5.7	5	4.9	5.3	6.1	5.3	5.5	4.6	5.6	2.2	4.1	3.3
Dissolved Iron (Fe)	mg/L	0.3**	3.8	<0.1	0.5	<0.1	2.3	<0.1	9.2	1.4	3.1	<0.1	1.2	<0.1	0.4
Dissolved Lead (Pb)	mg/L	0.01*	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
Dissolved Magnesium (Mg)	mg/L		270	260	250	260	260	270	270	460	270	270	280	270	260
Dissolved Organic Carbon	mg/L	5**	1.6	1.5	1.7	1.7	1.6	1.4	2.0	3.3	3.3	1.2	5	3.0	2.2
Dissolved Potassium (K)	mg/L		6.5	5.9	6	5.9	6.6	6.3	6.7	3.2	6.5	5.9	6.5	6.3	6.2
Dissolved Sodium (Na)	mg/L	200**	280	260	250	250	230	230	220	100	210	200	200	190	180
Dissolved Sulphate (SO4)	mg/L	500**	2100	2200	2000	2100	2100	2000	2100	3000	2100	2200	2000	2000	1900
Nitrate (N)	mg/L	10.0*	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	0.47	<0.10	<0.10	<0.10	0.15	<0.10
pH	(pH units)	6.5-8.5	7.6	7.7	7.5	7.8	7.7	7.6	7.9	8.0	7.5	7.87	7.52	8.0	7.7
Total Ammonia-N	mg/L		0.22	<0.15	0.5	<0.15	0.22	<0.050	0.56	<0.15	0.16	<0.15	<0.15	<0.15	<0.15
Total Dissolved Solids	mg/L	500	3510	3580	3170	3580	3480	2880	3000	3310	2950	2900	3330	2400	3460
Total Kjeldahl Nitrogen (TKN)	mg/L		<0.7	<0.7	<0.7	<0.7	<0.7	<0.1	1.1	0.9	<0.7	<0.7	<0.7	<0.7	<0.7
Ion Percentage	%		2.9	0.4	1.4	1.2	0.7	3.9	0.6	2.9	1.5	1.3	4.4	3.0	3.0

NOTES: 1) Blank denotes data not available.
2) ODWQS denotes O. Reg. 169/03: Ontario Drinking Water Quality Standards (as amended).
3) *denotes health related ODWQS.
** denotes aesthetic objective for ODWQS.
*** denotes operational guideline for ODWQS.
4) mg/L denotes milligrams per litre.

Table H-4
Groundwater - General Analytical Results
Twin Creeks Environmental Centre

Parameter	Units	ODWQS	OW58-14	OW58-14	OW58-14	OW58-14	OW58-14	OW58-14	OW58-14	OW58-14	OW58-14	OW58-14	OW58-14	OW58-14	OW58-14
Date			09-Jun-99	07-Dec-99	21-Jun-00	14-Jun-02	22-May-08	20-Jun-08	3-Jul-08	6-Nov-08	4-Dec-08	15-Dec-08	19-May-09	11-Jun-09	25-Nov-09
Laboratory			Maxxam	Accutest	Accutest	Accutest	MAXXAM	MAXXAM	MAXXAM	MAXXAM	MAXXAM	MAXXAM	MAXXAM	MAXXAM	MAXXAM
Alkalinity (Total as CaCO3)	mg/L	30-500***	88	91	93	84	86	109	81	87	131	117	93	89	80
Conductivity	umho/cm		3760	3460	3770		3900	3840	3890	3870	4240	3920	3860	3850	3850
Dissolved Barium (Ba)	mg/L	1*	0.022	0.01	<0.01		0.007	0.008	0.01	0.007	<0.005	0.007	0.007	0.007	0.006
Dissolved Boron (B)	mg/L	5.0*	1.63	1.53	1.32	3.72	6	3.5	3.9	2.5	2.4	2.1	2.1	2.0	1.9
Dissolved Cadmium (Cd)	mg/L	0.005*	<0.003	<0.005	<0.005		<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001
Dissolved Calcium (Ca)	mg/L		427	432	476	429	400	370	430	400	260	360	420	410	410
Dissolved Chloride (Cl)	mg/L	250**	6.67	8	6	10	14	14	10	9	9	9	8	8	7
Dissolved Iron (Fe)	mg/L	0.3**	0.04	0.04	0.22	0.54	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Dissolved Lead (Pb)	mg/L	0.01*	<0.002	<0.002	<0.001		<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
Dissolved Magnesium (Mg)	mg/L		342	288	321	294	260	250	280	250	290	280	310	300	270
Dissolved Organic Carbon	mg/L	5**	2.4	3.1	3.2	3	1.6	4.3	1.8	2.6	2.4	1.8	2.8	4.4	2.5
Dissolved Potassium (K)	mg/L		9	7	6	6	6.8	6.4	7.7	5.3	7.8	6.4	5.5	5.4	4.7
Dissolved Sodium (Na)	mg/L	200**	190	169	170	198	250	270	260	210	470	340	260	250	200
Dissolved Sulphate (SO4)	mg/L	500**	4940	2690	2200	2620	2490	2500	2280	2620	2720	2530	2400	2400	2400
Nitrate (N)	mg/L	10.0*	<0.1	<0.10	0.21	0.18	0.1	0.3	<0.1	0.3	0.3	0.4	0.3	0.4	0.5
pH	(pH units)	6.5-8.5	7.43	7.58	6.87		7.8	7.8	7.9	7.9	8.2	7.9	7.2	7.7	7.8
Total Ammonia-N	mg/L		0.54	0.53	1.03	0.58	0.16	0.60	0.17	0.26	<0.15	<0.15	0.21	0.20	<0.15
Total Dissolved Solids	mg/L	500	3600	3940	3900		2410	2690	2750	2410	2700	2600	2400	2360	2430
Total Kjeldahl Nitrogen (TKN)	mg/L		1.7	0.67	1.43	0.75	<0.7	<7	<1	<4	<4	4.0	<4	<4	<0.7
Ion Percentage	%		29.1	5.0	9.2	2.2	1.7	3.7	6.1	6.6	2.0	0.4	5.1	3.6	0.5

Parameter	Units	ODWQS	OW58-14	OW58-14	OW58-14	OW58-14	OW58-14	OW58-14	OW58-14	OW58-14	OW58-14	OW58-14	OW58-14	OW58-14	OW58-14
Date			20-May-10	23-Nov-10	10-May-11	02-Nov-11	09-May-12	06-Nov-12	13-May-13	10-Jun-13	05-Nov-13	13-Dec-13	06-May-14	19-Nov-14	12-May-15
Laboratory			Maxxam	Maxxam	Maxxam	Maxxam	Maxxam	Maxxam	Maxxam	Maxxam	Maxxam	Maxxam	Maxxam	Maxxam	Maxxam
Alkalinity (Total as CaCO3)	mg/L	30-500***	105	89	92	94	93	120	110	110	110	100	110	110	120
Conductivity	umho/cm		4060	3920	3870	3830	3900	3800	3800	3800	3800	3800	3900	3800	2900
Dissolved Barium (Ba)	mg/L	1*	0.007	0.007	0.006	0.006	0.006	<0.03	0.006	0.007	0.0063	0.006	0.006	0.007	0.007
Dissolved Boron (B)	mg/L	5.0*	1.7	1.8	2.0	2.1	2.1	2.0	2.9	3.6	3.1	3	3.9	3.7	3.4
Dissolved Cadmium (Cd)	mg/L	0.005*	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0005	<0.0001	<0.0001	<0.00010	<0.00010	<0.0001	<0.0001	<0.0001
Dissolved Calcium (Ca)	mg/L		320	390	410	470	420	410	450	460	460	400	450	440	430
Dissolved Chloride (Cl)	mg/L	250**	9	8	9	9	8	8	10	10	9	9	10	10	11
Dissolved Iron (Fe)	mg/L	0.3**	<0.1	<0.1	<0.1	<0.1	<0.10	<0.50	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
Dissolved Lead (Pb)	mg/L	0.01*	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.003	<0.0005	<0.0005	<0.00050	<0.00050	<0.0005	<0.0005	<0.0005
Dissolved Magnesium (Mg)	mg/L		270	280	290	300	310	280	290	290	310	270	290	290	280
Dissolved Organic Carbon	mg/L	5**	2.8	1.9	1.7	2.1	1.7	1.7	2.2	3.7	4.7	3.3	2	2.1	3.6
Dissolved Potassium (K)	mg/L		6.5	5.0	5.4	5.9	5.1	4.5	6.3	6.9	6.5	6	6.4	6.6	6.6
Dissolved Sodium (Na)	mg/L	200**	340	220	240	230	220	200	210	220	220	190	210	210	210
Dissolved Sulphate (SO4)	mg/L	500**	2600	2500	2400	2400	2500	2300	2500	2400	2400	2400	2300	2500	2300
Nitrate (N)	mg/L	10.0*	0.4	0.3	0.2	0.2	0.11	<0.10	0.24	0.24	0.19	0.18	0.29	0.31	0.36
pH	(pH units)	6.5-8.5	7.9	7.8	7.8	7.8	7.8	7.3	7.8	7.8	7.2	7.2	7.9	7.8	7.8
Total Ammonia-N	mg/L		<0.15	<0.15	<0.15	<0.15	0.52	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15
Total Dissolved Solids	mg/L	500	2500	2340	2300	3250	3840	3800	3760	3750	3690	3680	3620	3710	3800
Total Kjeldahl Nitrogen (TKN)	mg/L		1.2	<0.7	<0.7	<0.7	<0.7	<0.7	<0.7	<0.7	1.2	<0.7	<0.7	<0.7	<0.7
Ion Percentage	%		3.3	2.0	2.1	5.1	1.3	1.2	0.5	3.3	4.7	2.1	4.4	4.2	4.2

Parameter	Units	ODWQS	OW58-14	OW58-14
Date			11-Nov-15	26-May-16
Laboratory			Maxxam	Maxxam
Alkalinity (Total as CaCO3)	mg/L	30-500***	110	130
Conductivity	umho/cm		3800	3900
Dissolved Barium (Ba)	mg/L	1*	0.006	0.007
Dissolved Boron (B)	mg/L	5.0*	3.8	4.2
Dissolved Cadmium (Cd)	mg/L	0.005*	<0.0001	<0.0001
Dissolved Calcium (Ca)	mg/L		440	430
Dissolved Chloride (Cl)	mg/L	250**	11	12
Dissolved Iron (Fe)	mg/L	0.3**	<0.10	<0.10
Dissolved Lead (Pb)	mg/L	0.01*	<0.0005	<0.0005
Dissolved Magnesium (Mg)	mg/L		290	290
Dissolved Organic Carbon	mg/L	5**	1.9	1.7
Dissolved Potassium (K)	mg/L		6.8	7
Dissolved Sodium (Na)	mg/L	200**	220	220
Dissolved Sulphate (SO4)	mg/L	500**	2500	2400
Nitrate (N)	mg/L	10.0*	0.26	0.41
pH	(pH units)	6.5-8.5	7.7	7.9
Total Ammonia-N	mg/L		<0.15	<0.15
Total Dissolved Solids	mg/L	500	3730	3770
Total Kjeldahl Nitrogen (TKN)	mg/L		<0.7	<0.7
Ion Percentage	%		3.3	2.0

NOTES: 1) Blank denotes data not available.
2) ODWQS denotes O. Reg. 169/03: Ontario Drinking Water Quality Standards (as amended).
3) *denotes health related ODWQS.
** denotes aesthetic objective for ODWQS.
*** denotes operational guideline for ODWQS.
4) mg/L denotes milligrams per litre.
5) The November 16, 2007 lab sample was labelled as OW58-4.

Table H-4
Groundwater - General Analytical Results
Twin Creeks Environmental Centre

Parameter	Units	ODWQS	OW58-17	OW58-17	OW58-17	OW58-17	OW58-17	OW58-17	OW58-17	OW58-17	OW58-17	OW58-17	OW58-17	OW58-17	OW58-17
Date			27-May-14	19-Nov-14	12-May-15	11-Nov-15	27-May-16	16-Nov-16	19-May-17	08-Nov-17	10-May-18	12-Nov-18	14-May-19	05-Nov-19	08-May-20
Laboratory			Maxxam	Maxxam	Maxxam	Maxxam	Maxxam	Maxxam	Maxxam	Maxxam	Maxxam	Maxxam	Maxxam	Bureau Veritas	Bureau Veritas
Alkalinity (Total as CaCO3)	mg/L	30-500***	71	74	73	56	61	67	69	80	75	74	72	70	67
Conductivity	umho/cm		3800	3800	2900	3800	3800	3900	3900	3600	4000	3700	3800	3800	4000
Dissolved Barium (Ba)	mg/L	1*	0.023	0.024	0.021	0.022	0.018	0.018	0.017	0.015	<0.03	0.015	0.014	0.015	0.014
Dissolved Boron (B)	mg/L	5.0*	1.2	1.4	1.2	1.3	1.3	1.4	1.3	1.3	1.4	1.2	1.2	1.1	1.2
Dissolved Cadmium (Cd)	mg/L	0.005*	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0005	<0.0001	<0.0001	<0.0001	<0.0001
Dissolved Calcium (Ca)	mg/L		480	490	440	490	470	500	460	480	490	450	480	470	470
Dissolved Chloride (Cl)	mg/L	250**	11	10	11	9.5	9.8	8.8	9.6	8.8	8.8	8.8	9.1	8.3	8.7
Dissolved Iron (Fe)	mg/L	0.3**	0.16	0.99	0.14	<0.10	<0.1	0.1	0.1	<0.1	<0.5	0.3	0.1	0.9	0.2
Dissolved Lead (Pb)	mg/L	0.01*	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.003	<0.0005	<0.0005	<0.0005	<0.0005
Dissolved Magnesium (Mg)	mg/L		270	270	240	280	270	290	250	260	260	240	270	250	270
Dissolved Organic Carbon	mg/L	5**	3.7	4.4	3.6	3.1	2.4	2.5	3.3	2	1.9	2.2	2.1	2.1	2.2
Dissolved Potassium (K)	mg/L		11	9.1	7.3	6	5.7	5.6	5.1	5.3	5	4.7	4.7	4.6	4.7
Dissolved Sodium (Na)	mg/L	200**	190	190	180	190	190	200	180	190	180	170	190	180	190
Dissolved Sulphate (SO4)	mg/L	500**	2600	2500	2300	2500	2500	2400	2600	2400	2400	2500	2600	2300	2400
Nitrate (N)	mg/L	10.0*	<0.10	<0.10	<0.10	<0.10	0.2	<0.10	0.15	0.11	<0.10	<0.10	<0.10	<0.10	<0.10
pH	(pH units)	6.5-8.5	7.3	7.7	7.39	7.38	7.61	7.69	7.71	7.75	7.77	7.51	7.69	7.69	7.66
Total Ammonia-N	mg/L		0.51	0.52	0.64	0.6	0.35	0.62	0.39	0.35	0.37	0.45	0.43	0.47	0.41
Total Dissolved Solids	mg/L	500	3940	3750	3780	3670	3830	3730	3820	3500	3540	3770	3890	3510	3830
Total Kjeldahl Nitrogen (TKN)	mg/L		1.0	1	1.1	0.9	0.7	<0.7	1	<0.7	<0.7	<0.7	<0.7	<0.7	<0.7
Ion Percentage	%		1.3	1.0	0.2	1.9	0.2	5.3	4.3	1.6	1.7	4.2	1.4	2.2	2.1

Parameter	Units	ODWQS	OW58-17	OW58-17	OW58-17	OW58-17	OW58-17	OW58-17	OW58-17	OW58-17	OW58-17
Date			03-Nov-20	18-May-21	03-Nov-21	03-May-22	02-Nov-22	02-May-23	02-Nov-23	07-May-24	19-Nov-24
Laboratory			Bureau Veritas	Bureau Veritas	Bureau Veritas	Bureau Veritas	Bureau Veritas	Bureau Veritas	Bureau Veritas	Bureau Veritas	Bureau Veritas
Alkalinity (Total as CaCO3)	mg/L	30-500***	66	69	65	64	64	68	66	65	61
Conductivity	umho/cm		3800	3545	3700	3800	3800	3900	3800	3700	3900
Dissolved Barium (Ba)	mg/L	1*	0.015	0.014	0.016	0.014	0.014	0.014	0.014	0.015	<0.03
Dissolved Boron (B)	mg/L	5.0*	1.4	1.3	1.3	1.4	1.3	1.3	1.3	1.5	1.5
Dissolved Cadmium (Cd)	mg/L	0.005*	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0005
Dissolved Calcium (Ca)	mg/L		460	470	480	480	470	440	450	470	450
Dissolved Chloride (Cl)	mg/L	250**	8.6	9.5	8.4	8.4	9.5	7.7	6.1	7.6	6.4
Dissolved Iron (Fe)	mg/L	0.3**	0.6	0.5	0.9	0.9	<0.1	0.2	0.2	0.2	<0.5
Dissolved Lead (Pb)	mg/L	0.01*	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.003
Dissolved Magnesium (Mg)	mg/L		270	260	270	270	260	250	250	260	240
Dissolved Organic Carbon	mg/L	5**	2.1	1.8	1.9	1.5	2	1.7	5.7	2.2	2.3
Dissolved Potassium (K)	mg/L		4.8	4.6	4.5	4.3	4.9	4.2	4.1	4.8	4
Dissolved Sodium (Na)	mg/L	200**	190	190	190	200	200	180	180	200	180
Dissolved Sulphate (SO4)	mg/L	500**	2500	2500	2600	2400	2400	2500	2300	2500	2400
Nitrate (N)	mg/L	10.0*	<0.10	<0.10	<0.10	0.25	<0.10	0.25	0.36	0.33	0.20
pH	(pH units)	6.5-8.5	7.48	7.83	7.73	7.65	7.8	7.7	7.7	7.8	7.5
Total Ammonia-N	mg/L		0.53	0.194	0.31	0.31	0.24	<0.15	0.35	0.46	0.31
Total Dissolved Solids	mg/L	500	3660	3070	3490	3660	3370	3360	3670	3650	3810
Total Kjeldahl Nitrogen (TKN)	mg/L		<0.7	0.3	0.8	0.9	<0.7	<0.7	0.8	0.8	<0.7
Ion Percentage	%		0.3	0.7	1.3	3.0	1.8	3.3	1.3	0.2	1.5

Parmeter	Units	ODWQS	OW59-4	OW59-4	OW59-4	OW59-4
Date			15-Jun-02	30-Sep-04	27-Nov-04 to 30-Nov-04	02-Jun-05 to 27-Jun-05
Laboratory			Accutest	Accutest	Accutest	Accutest
Alkalinity (Total as CaCO3)	mg/L	30-500***	309	325	343	332
Dissolved Boron (B)	mg/L	5.0*	0.89	0.77	0.67	0.47
Dissolved Calcium (Ca)	mg/L		465	427	558	456
Dissolved Chloride (Cl)	mg/L	250**	5	6	6	6
Dissolved Iron (Fe)	mg/L	0.3**	0.02	<0.01	0.01	<0.03
Dissolved Magnesium (Mg)	mg/L		530	530	623	531
Dissolved Organic Carbon	mg/L	5**	5.5	2.1	3.1	1.9
Dissolved Potassium (K)	mg/L		7	6	9	7
Dissolved Sodium (Na)	mg/L	200**	176	186	212	168
Dissolved Sulphate (SO4)	mg/L	500**		3510	3370	2740
Nitrate (N)	mg/L	10.0*		<0.10	<0.10	0.10
Nitrite (N)	mg/L	1.0*				
NO3+NO2	mg/L	10.0*				
Total Ammonia-N	mg/L		0.03	0.02	0.04	0.03
Total Kjeldahl Nitrogen (TKN)	mg/L		0.35	0.12	0.66	0.24
Ion Percentage	%			4.0	7.2	7.8

NOTES: 1) Blank denotes data not available.
2) ODWQS denotes O. Reg. 169/03: Ontario Drinking Water Quality Standards (as amended).
3) *denotes health related ODWQS.
** denotes aesthetic objective for ODWQS.
*** denotes operational guideline for ODWQS.
4) mg/L denotes milligrams per litre.

Table H-4
Groundwater - General Analytical Results
Twin Creeks Environmental Centre

Parameter	Units	ODWQS	OW59-6	OW59-6	OW59-6	OW59-6	OW59-6	OW59-6	OW59-6	OW59-6	OW59-6	OW59-6	OW59-6	OW59-6	OW59-6
Date			29-Nov-05	19-May-06	24-Nov-06	05-May-07	16-Nov-07	22-May-08	05-Nov-08	16-May-09	11-Jun-09	18-Nov-09	19-May-10	23-Nov-10	10-May-11
Laboratory			Accutest	Accutest	Accutest	Accutest	Accutest	MAXXAM	MAXXAM	MAXXAM	MAXXAM	MAXXAM	MAXXAM	MAXXAM	MAXXAM
Alkalinity (Total as CaCO3)	mg/L	30-500***	367	375	375	368	504	373	368	348	375	383	390	370	387
Conductivity	umho/cm							3620	3560	3710	4090	4320	4840	4640	4700
Dissolved Barium (Ba)	mg/L	1*						0.008	0.008	<0.03	0.009	0.009	0.009	0.009	0.008
Dissolved Boron (B)	mg/L	5.0*	0.75	0.57	0.81	0.82	0.38	0.82	0.82	1.0	0.83	0.85	0.76	0.83	0.70
Dissolved Cadmium (Cd)	mg/L	0.005*						<0.0001	<0.0001	<0.0005	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001
Dissolved Calcium (Ca)	mg/L		292	314	307	324	473	320	310	340	330	340	360	350	360
Dissolved Chloride (Cl)	mg/L	250**	9	7	7	8	13	7	5	6	7	7	7	7	7
Dissolved Iron (Fe)	mg/L	0.3**	2.87	<0.03	0.61	0.05	<0.3	<0.1	0.4	<0.1	<0.1	0.7	1.0	1.9	0.2
Dissolved Lead (Pb)	mg/L	0.01*						<0.0005	<0.0005	<0.003	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
Dissolved Magnesium (Mg)	mg/L		298	326	329	342	589	360	320	370	380	360	380	360	380
Dissolved Organic Carbon	mg/L	5**	5.6	2.8	1.4	1.9	3.0	1.4	1.3	3.7	2.6	2.2	2.0	2.5	2.3
Dissolved Potassium (K)	mg/L		10	7	7	7	8	6.9	6.3	6.9	7.6	7.6	7.6	7.5	7.2
Dissolved Sodium (Na)	mg/L	200**	164	160	161	164	195	170	150	220	360	350	490	440	420
Dissolved Sulphate (SO4)	mg/L	500**	1900	2000	2160	2090	3230	2170	2200	2100	2300	2700	2800	2600	2700
Nitrate (N)	mg/L	10.0*	<0.10	<0.10	<0.10	0.21	<0.10	0.1	<0.1	0.2	<0.1	<0.1	<0.1	0.2	<0.1
pH	(pH units)	6.5-8.5						8.1	7.9	7.8	7.6	7.7	7.9	7.6	7.9
Total Ammonia-N	mg/L		0.34	0.19	0.22	0.03	0.06	<0.15	<0.15	<0.15	<0.15	0.26	0.37	0.28	0.30
Total Dissolved Solids	mg/L	500						2230	2400	2400	2460	2600	3000	2920	2800
Total Kjeldahl Nitrogen (TKN)	mg/L		0.52	0.46	0.22	0.08	0.16	<0.7	<0.7	<0.7	<0.7	<0.7	0.7	<0.7	<0.7
Ion Percentage	%		0.4	1.3	2.1	1.5	2.7	1.2	3.9	6.7	7.5	1.0	3.8	4.3	2.1

Parameter	Units	ODWQS	OW59-6	OW59-6	OW59-6	OW59-6	OW59-6	OW59-6	OW59-6	OW59-6	OW59-6	OW59-6	OW59-6	OW59-6	OW59-6
Date			02-Nov-11	09-May-12	06-Nov-12	10-May-13	05-Nov-13	06-May-14	19-Nov-14	12-May-15	12-Nov-15	26-May-16	16-Nov-16	18-May-17	07-Nov-17
Laboratory			MAXXAM	MAXXAM	MAXXAM	MAXXAM	MAXXAM	MAXXAM	MAXXAM	MAXXAM	MAXXAM	MAXXAM	MAXXM	MAXXAM	MAXXM
Alkalinity (Total as CaCO3)	mg/L	30-500***	389	390	380	390	400	380	390	400	400	400	410	400	410
Conductivity	umho/cm		4790	4900	4700	4600	4700	4700	4800	3800	4800	4900	4800	4900	4800
Dissolved Barium (Ba)	mg/L	1*	0.010	0.009	<0.03	0.008	0.009	0.008	0.008	0.008	0.008	0.007	0.007	0.007	0.007
Dissolved Boron (B)	mg/L	5.0*	0.90	0.77	0.8	0.85	0.85	0.74	0.86	0.82	0.79	0.78	0.79	0.79	0.79
Dissolved Cadmium (Cd)	mg/L	0.005*	<0.0001	<0.0001	<0.0005	<0.0001	<0.00010	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001
Dissolved Calcium (Ca)	mg/L		400	370	350	390	400	390	400	410	410	390	400	380	400
Dissolved Chloride (Cl)	mg/L	250**	7	7	6	6	6	6	7	6	6.6	6.9	6.8	6.3	6.1
Dissolved Iron (Fe)	mg/L	0.3**	3.3	2.9	3.6	0.20	<0.10	<0.10	<0.10	<0.10	0.27	0.4	<0.10	<0.1	0.5
Dissolved Lead (Pb)	mg/L	0.01*	<0.0005	<0.0005	<0.003	<0.0005	<0.00050	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
Dissolved Magnesium (Mg)	mg/L		420	400	370	390	370	410	410	400	410	400	410	400	400
Dissolved Organic Carbon	mg/L	5**	2.4	2.6	2.6	3.3	4.3	2.5	2.4	2.8	2.9	2.3	2.2	2.4	3.3
Dissolved Potassium (K)	mg/L		8.4	7.3	7.0	7.3	7.8	6.9	7.4	7.3	7.4	6.9	7.4	6.8	6.9
Dissolved Sodium (Na)	mg/L	200**	490	480	390	370	400	370	380	370	400	380	380	320	320
Dissolved Sulphate (SO4)	mg/L	500**	2700	2900	2600	2700	2800	2700	2900	2800	3000	2900	2900	3000	2900
Nitrate (N)	mg/L	10.0*	<0.1	<0.10	<0.10	<0.10	<0.10	0.18	0.13	0.13	0.14	<0.10	<0.10	<0.10	<0.10
pH	(pH units)	6.5-8.5	7.0	7.7	7.4	7.8	7.7	7.8	7.8	7.76	7.55	7.79	7.64	7.65	7.67
Total Ammonia-N	mg/L		0.33	0.30	0.40	0.20	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15
Total Dissolved Solids	mg/L	500	3290	4830	4360	4490	4500	4440	4570	4770	4590	4940	4580	4670	4510
Total Kjeldahl Nitrogen (TKN)	mg/L		<0.7	<0.7	<0.7	<0.7	<0.7	<0.7	<0.7	<0.7	<0.7	<0.7	<0.7	<0.7	<0.7
Ion Percentage	%		8.0	2.3	1.9	2.2	0.6	3.6	0.9	1.8	1.4	1.0	1.8	2.8	0.7

Parameter	Units	ODWQS	OW59-6	OW59-6	OW59-6	OW59-6	OW59-6	OW59-6	OW59-6	OW59-6	OW59-6	OW59-6	OW59-6	OW59-6	OW59-6
Date			10-May-18	12-Nov-18	14-May-19	05-Nov-19	08-May-20	03-Nov-20	19-May-21	03-Nov-21	04-May-22	02-Nov-22	02-May-23	03-Nov-23	07-May-24
Laboratory			MAXXAM	MAXXAM	MAXXAM	Bureau Veritas	Bureau Veritas	Bureau Veritas	Bureau Veritas	Bureau Veritas	Bureau Veritas	Bureau Veritas	Bureau Veritas	Bureau Veritas	Bureau Veritas
Alkalinity (Total as CaCO3)	mg/L	30-500***	420	400	390	400	420	410	410	420	420	430	430	420	420
Conductivity	umho/cm		5000	4500	4800	4900	5100	4900	4900	4800	4900	4900	5100	4900	4700
Dissolved Barium (Ba)	mg/L	1*	<0.03	0.006	0.007	0.007	0.007	0.007	<0.03	0.007	0.007	0.007	0.007	<0.03	0.007
Dissolved Boron (B)	mg/L	5.0*	0.8	0.8	0.7	0.65	0.71	0.86	0.8	0.72	0.72	0.74	0.75	0.8	0.80
Dissolved Cadmium (Cd)	mg/L	0.005*	<0.0005	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0005	<0.0001	<0.0001	<0.0001	<0.0001	<0.0005	<0.0001
Dissolved Calcium (Ca)	mg/L		420	430	440	420	430	440	430	460	450	430	460	430	480
Dissolved Chloride (Cl)	mg/L	250**	6	6.4	6.6	6.0	6.2	6.6	7	6.5	6.2	6.4	4.5	3.5	5.4
Dissolved Iron (Fe)	mg/L	0.3**	<0.5	<0.1	<0.1	<0.1	0.1	<0.1	<0.5	0.2	<0.1	<0.1	<0.1	<0.5	0.1
Dissolved Lead (Pb)	mg/L	0.01*	<0.003	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.003	<0.0005
Dissolved Magnesium (Mg)	mg/L		430	410	460	430	440	440	470	470	460	460	460	440	510
Dissolved Organic Carbon	mg/L	5**	2.3	2.4	2.3	2.8	2.6	2.6	2.2	2.4	2.4	2.8	2.4	3.0	2.6
Dissolved Potassium (K)	mg/L		7	7.1	6.6	6.8	6.4	6.8	7	6.9	6.6	6.4	6.2	6.0	7.0
Dissolved Sodium (Na)	mg/L	200**	330	340	330	310	320	310	310	300	290	290	270	260	280
Dissolved Sulphate (SO4)	mg/L	500**	3000	3000	3100	2700	3000	2900	3000	3100	3100	3200	3300	3000	3200
Nitrate (N)	mg/L	10.0*	<0.10	0.11	<0.10	0.10	<0.10	0.1	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
pH	(pH units)	6.5-8.5	7.7	7.6	7.7	7.6	7.7	7.6	7.6	7.8	7.8	7.5	7.9	7.8	8.2
Total Ammonia-N	mg/L		<0.15	<0.15	<0.15	0.40	<0.15	<0.15	<0.050	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15
Total Dissolved Solids	mg/L	500	4570	4800	5000	4700	4860	4720	4280	4670	4830	4370	4370	4960	5090
Total Kjeldahl Nitrogen (TKN)	mg/L		<0.7	<0.7	<0.7	<0.7	<0.7	<0.7	0.2	0.8	<0.7	0.7	0.7	<0.7	<0.7
Ion Percentage	%		0.5	0.2	1.8	4.9	1.1	2.8	2.6	1.8	0.6	1.6	2.6	0.7	2.6

NOTES: 1) Blank denotes data not available.
2) ODWQS denotes O. Reg. 169/03: Ontario Drinking Water Quality Standards (as amended).
3) *denotes health related ODWQS.
** denotes aesthetic objective for ODWQS.
*** denotes operational guideline for ODWQS.
4) mg/L denotes milligrams per litre.

Table H-4
Groundwater - General Analytical Results
Twin Creeks Environmental Centre

Parameter	Units	ODWQS	OW59-6
Date			**18-Nov-24**
Laboratory			**Bureau Veritas**
Alkalinity (Total as CaCO3)	mg/L	30-500***	430
Conductivity	umho/cm		4900
Dissolved Barium (Ba)	mg/L	1*	0.006
Dissolved Boron (B)	mg/L	5.0*	0.73
Dissolved Cadmium (Cd)	mg/L	0.005*	<0.0001
Dissolved Calcium (Ca)	mg/L		430
Dissolved Chloride (Cl)	mg/L	250**	4.6
Dissolved Iron (Fe)	mg/L	0.3**	<0.1
Dissolved Lead (Pb)	mg/L	0.01*	<0.0005
Dissolved Magnesium (Mg)	mg/L		470
Dissolved Organic Carbon	mg/L	5**	7.4
Dissolved Potassium (K)	mg/L		6.1
Dissolved Sodium (Na)	mg/L	200**	250
Dissolved Sulphate (SO4)	mg/L	500**	3000
Nitrate (N)	mg/L	10.0*	<0.10
pH	(pH units)	6.5-8.5	7.7
Total Ammonia-N	mg/L		<0.15
Total Dissolved Solids	mg/L	500	5090
Total Kjeldahl Nitrogen (TKN)	mg/L		<0.7
Ion Percentage	%		0.7

Parameter	Units	ODWQS	OW60-4	OW60-4	OW60-4	OW60-4	OW60-4	OW60-4	OW60-4	OW60-4	OW60-4	OW60-4	OW60-4	OW60-4	OW60-4
Date			**10-Feb-99**	**03-Jun-99**	**22-Jun-00**	**23-May-08**	**19-May-09**	**21-May-10**	**12-May-11**	**15-May-12**	**09-May-13**	**06-May-14**	**13-May-15**	**18-Jun-15**	**27-May-16**
Laboratory			**Maxxam**	**Maxxam**	**Accutest**	**MAXXAM**	**MAXXAM**	**MAXXAM**	**MAXXAM**	**MAXXAM**	**MAXXAM**	**MAXXAM**	**MAXXAM**	**MAXXAM**	**MAXXAM**
Alkalinity (Total as CaCO3)	mg/L	30-500***	372	541	238	242	357	325	207	270	240	430	320	310	250
Conductivity	umho/cm		840	790	570	594	821	782	627	700	620	1400	750		610
Dissolved Barium (Ba)	mg/L	1*	0.068	0.051	0.04	0.04	0.06	0.048	0.044	0.049	0.041	0.021	0.055		0.047
Dissolved Boron (B)	mg/L	5.0*	0.205	0.15	0.06	0.04	0.04	0.04	0.03	0.05	0.03	0.2	0.04		0.06
Dissolved Cadmium (Cd)	mg/L	0.005*	<0.003	<0.003	<0.005	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001		<0.0001
Dissolved Calcium (Ca)	mg/L		104	99	77	71	120	97	84	91	85	130	100	100	86
Dissolved Chloride (Cl)	mg/L	250**	8.4	11.8	14	18	29	24	21	16	13	14	11	12	8.7
Dissolved Iron (Fe)	mg/L	0.3**	0.027	0.01	0.32	<0.1	<0.1	<0.1	<0.1	<0.10	<0.10	<0.10	<0.10		0.1
Dissolved Lead (Pb)	mg/L	0.01*	<0.025	<0.002	<0.001	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	0.0023	<0.0005	0.008		0.0061
Dissolved Magnesium (Mg)	mg/L		41.7	40.2	22	22	32	31	23	27	23	93	31	29	23
Dissolved Organic Carbon	mg/L	5**	1.4	1.3	6.2	4.0	5.8	3.9	3.1	4.2	4.1	3.6	3.2		3.3
Dissolved Potassium (K)	mg/L		3	3	2	1.5	1.6	1.9	1.4	1.7	1.4	1.4	1.8	1.6	1.6
Dissolved Sodium (Na)	mg/L	200**	25.1	27.3	11	13	14	15	12	14	14	68	17	17	15
Dissolved Sulphate (SO4)	mg/L	500**	90.3	97.2	56	59	56	70	81	88	72	370	67	74	69
Nitrate (N)	mg/L	10.0*	<0.1	0.3	0.42	<0.1	<0.1	<0.1	<0.1	<0.10	<0.10	<0.10	<0.10		<0.10
pH	(pH units)	6.5-8.5	7.2	7.3	7.1	8.0	7.4	8.0	8.2	7.8	8.1	8.1	7.8		7.9
Total Ammonia-N	mg/L		<0.05	<0.05	0.07	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15		<0.15
Total Dissolved Solids	mg/L	500	666	447	368	375	530	500	318	396	404	1120	444		372
Total Kjeldahl Nitrogen (TKN)	mg/L		1.4	0.4	0.52	<1	1	4	<0.7	<0.7	0.7	<0.7	0.6		<0.7
Ion Percentage	%		9.5	7.5	6.9	2.9	9.2	4.8	8.5	5.7	8.5	6.4	9.8	8.7	9.4

Parameter	Units	ODWQS	OW60-4	OW60-4	OW60-4	OW60-4	OW60-4	OW60-4	OW60-4	OW60-4
Date			**16-May-17**	**08-May-18**	**15-May-19**	**07-May-20**	**19-May-21**	**05-May-22**	**04-May-23**	**08-May-24**
Laboratory			**MAXXAM**	**MAXXAM**	**MAXXAM**	**Bureau Veritas**	**Bureau Veritas**	**Bureau Veritas**	**Bureau Veritas**	**Bureau Veritas**
Alkalinity (Total as CaCO3)	mg/L	30-500***	260	260	300	280	230	280	270	310
Conductivity	umho/cm		620	610	710	680	560	730	980	930
Dissolved Barium (Ba)	mg/L	1*	0.039	0.04	0.049	0.048	0.038	0.046	0.14	0.063
Dissolved Boron (B)	mg/L	5.0*	0.04	0.03	0.04	0.04	0.03	0.04	0.04	0.05
Dissolved Cadmium (Cd)	mg/L	0.005*	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	0.0002	<0.0001
Dissolved Calcium (Ca)	mg/L		80	81	93	94	79	97	210	140
Dissolved Chloride (Cl)	mg/L	250**	8.2	7.1	9.2	8.0	6.5	8.3	4.9	6.0
Dissolved Iron (Fe)	mg/L	0.3**	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	8.7	<0.1
Dissolved Lead (Pb)	mg/L	0.01*	0.013	0.0086	0.0055	0.0047	0.0081	0.012	0.47	0.0036
Dissolved Magnesium (Mg)	mg/L		23	23	30	26	24	29	51	42
Dissolved Organic Carbon	mg/L	5**	3.7	3.4	3.0	3.7	3.3	3.4	6.9	10
Dissolved Potassium (K)	mg/L		1.4	1.4	1.5	1.5	1.5	1.5	2.7	2.1
Dissolved Sodium (Na)	mg/L	200**	13	12	15	13	12	13	15	16
Dissolved Sulphate (SO4)	mg/L	500**	61	55	71	79	67	99	260	190
Nitrate (N)	mg/L	10.0*	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
pH	(pH units)	6.5-8.5	8.0	8.0	7.8	8.0	7.9	8.1	7.9	8.0
Total Ammonia-N	mg/L		<0.15	<0.15	<0.15	<0.15	<0.050	<0.15	<0.15	<0.15
Total Dissolved Solids	mg/L	500	338	300	455	370	340	415	635	685
Total Kjeldahl Nitrogen (TKN)	mg/L		<0.7	<0.7	<0.7	<0.7	0.1	<0.7	<0.7	<0.7
Ion Percentage	%		6.7	8.1	8.7	7.7	10.3	7.1	21.6	10.2

NOTES: 1) Blank denotes data not available.
2) ODWQS denotes O. Reg. 169/03: Ontario Drinking Water Quality Standards (as amended).
3) *denotes health related ODWQS.
** denotes aesthetic objective for ODWQS.
*** denotes operational guideline for ODWQS.
4) mg/L denotes milligrams per litre.

Table H-4
Groundwater - General Analytical Results
Twin Creeks Environmental Centre

Parameter	Units	ODWQS	OW60-8	OW60-8	OW60-8	OW60-8	OW60-8	OW60-8	OW60-8	OW60-8	OW60-8	OW60-8	OW60-8	OW60-8	OW60-8
Date			**10-Feb-99**	**03-Jun-99**	**01-Dec-99**	**22-Jun-00**	**23-May-08**	**14-May-09**	**21-May-10**	**12-May-11**	**15-May-12**	**09-May-13**	**06-May-14**	**13-May-15**	**27-May-16**
Laboratory			**Maxxam**	**Maxxam**	**Accutest**	**Accutest**	**MAXXAM**	**MAXXAM**	**MAXXAM**	**MAXXAM**	**MAXXAM**	**MAXXAM**	**MAXXAM**	**MAXXAM**	**MAXXAM**
Alkalinity (Total as CaCO3)	mg/L	30-500***	205	207	213	178	247	254	252	241	240	240	630	230	260
Conductivity	umho/cm		895	752	744	839	834	839	825	803	790	790	4800	770	750
Dissolved Barium (Ba)	mg/L	1*	0.044	0.03	0.03	0.02	0.019	0.021	0.020	0.019	0.018	0.019	0.008	0.019	0.015
Dissolved Boron (B)	mg/L	5.0*	0.847	0.773	0.82	0.74	0.86	0.81	0.83	0.81	0.86	0.80	0.97	0.85	0.77
Dissolved Cadmium (Cd)	mg/L	0.005*	<0.003	<0.003		<0.005	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001
Dissolved Calcium (Ca)	mg/L		86.6	54.8	51	46	43	44	45	46	45	44	450	45	33
Dissolved Chloride (Cl)	mg/L	250**	9.6	5.8	7	5	7	7	7	7	7	7	10	7	6.9
Dissolved Iron (Fe)	mg/L	0.3**	0.291	0.13	0.33	0.02	<0.1	<0.1	<0.1	<0.1	<0.10	<0.10	20	<0.10	<0.10
Dissolved Lead (Pb)	mg/L	0.01*	<0.025	<0.002	<0.002	<0.001	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	0.0007	0.0005
Dissolved Magnesium (Mg)	mg/L		29.5	28.6	30	28	28	30	30	30	29	29	560	29	24
Dissolved Organic Carbon	mg/L	5**	2.9	2.4	3.5	3.9	1.6	3.7	1.8	1.8	2.1	1.7	3.8	2.4	1.9
Dissolved Potassium (K)	mg/L		7	4	3	3	2	2.6	2.3	2.2	2.1	2.0	5.6	2.1	4.6
Dissolved Sodium (Na)	mg/L	200**	72.7	74.4	80	86	87	110	100	93	89	86	280	84	97
Dissolved Sulphate (SO4)	mg/L	500**	248	177	180	392	195	180	180	170	160	160	2900	150	130
Nitrate (N)	mg/L	10.0*	<0.1	<0.1	<0.10	0.47	<0.1	0.2	0.1	<0.1	<0.10	<0.10	<0.10	<0.10	0.13
pH	(pH units)	6.5-8.5	7.5	7.8	7.8	7.0	8.2	8.0	8.2	8.1	8.1	8.3	7.6	8.1	8.4
Total Ammonia-N	mg/L		0.09	0.22	0.28	0.18	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15
Total Dissolved Solids	mg/L	500	659	508	456	560	548	530	524	500	456	482	5090	460	442
Total Kjeldahl Nitrogen (TKN)	mg/L		<0.1	0.3	0.4	0.41	<0.7	<1	1.0	<0.7	<0.7	<0.7	<0.7	<0.7	<0.7
Ion Percentage	%		6.9	7.7	7.2	14.5	0.02	8.1	6.2	7.3	7.0	5.9	6.2	8.3	5.5

Parameter	Units	ODWQS	OW60-8	OW60-8	OW60-8	OW60-8	OW60-8	OW60-8	OW60-8	OW60-8
Date			**16-May-17**	**08-May-18**	**15-May-19**	**07-May-20**	**19-May-21**	**05-May-22**	**04-May-23**	**08-May-24**
Laboratory			**MAXXAM**	**MAXXAM**	**MAXXAM**	**Bureau Veritas**	**Bureau Veritas**	**Bureau Veritas**	**Bureau Veritas**	**Bureau Veritas**
Alkalinity (Total as CaCO3)	mg/L	30-500***	250		240	250	240	240	250	260
Conductivity	umho/cm		780	800	760	770	760	780	760	790
Dissolved Barium (Ba)	mg/L	1*	0.014	0.018	0.017	0.018	0.02	0.018	0.020	0.016
Dissolved Boron (B)	mg/L	5.0*	0.74	0.91	0.87	0.85	0.85	0.85	0.80	0.83
Dissolved Cadmium (Cd)	mg/L	0.005*	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001
Dissolved Calcium (Ca)	mg/L		31	41	41	41	43	43	41	30
Dissolved Chloride (Cl)	mg/L	250**	7.6	8	8.1	8.6	8.8	8.8	6.6	7.0
Dissolved Iron (Fe)	mg/L	0.3**	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Dissolved Lead (Pb)	mg/L	0.01*	<0.0005	<0.0005	<0.0005	<0.0005	0.0007	<0.0005	<0.0005	<0.0005
Dissolved Magnesium (Mg)	mg/L		23	29	29	28	28	26	27	24
Dissolved Organic Carbon	mg/L	5**	2	1.7	1.6	1.9	1.2	1.5	1.5	3.1
Dissolved Potassium (K)	mg/L		4.6	2.6	2.1	2.0	2.1	2.0	2.0	3.7
Dissolved Sodium (Na)	mg/L	200**	96	92	91	87	87	82	85	110
Dissolved Sulphate (SO4)	mg/L	500**	150	140	150	150	150	150	140	120
Nitrate (N)	mg/L	10.0*	<0.10	0.1	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
pH	(pH units)	6.5-8.5	8.2	8.3	8.2	8.3	8.2	8.3	8.3	8.4
Total Ammonia-N	mg/L		<0.15	<0.15	<0.15	<0.15	<0.050	<0.15	<0.15	<0.15
Total Dissolved Solids	mg/L	500	430	420	470	475	445	415	425	460
Total Kjeldahl Nitrogen (TKN)	mg/L		<0.7	<0.7	<0.7	<0.7	<0.1	<0.7	<0.7	<0.7
Ion Percentage	%		2.1		7.6	4.8	6.5	4.1	5.6	9.3

NOTES: 1) Blank denotes data not available.
2) ODWQS denotes O. Reg. 169/03: Ontario Drinking Water Quality Standards (as amended).
3) *denotes health related ODWQS.
** denotes aesthetic objective for ODWQS.
*** denotes operational guideline for ODWQS.
4) mg/L denotes milligrams per litre.

Table H-4
Groundwater - General Analytical Results
Twin Creeks Environmental Centre

Parameter	Units	ODWQS	OW67-4	OW67-4	OW67-4	OW67-4	OW67-4	OW67-4	OW67-4	OW67-4	OW67-4	OW67-4	OW67-4	OW67-4	OW67-4
Date			02-Dec-99	19-Jun-00	28-Nov-01	22-May-02	05-Nov-02	15-May-03	13-Nov-03	26-May-04	27-Nov-04	12-May-05	30-Nov-05	19-May-06	24-Nov-06
Laboratory			Accutest	Accutest	Accutest	Accutest	Accutest	Accutest	Accutest	Accutest	Accutest	Accutest	Accutest	Accutest	Accutest
Alkalinity (Total as CaCO3)	mg/L	30-500***	535	527	456	491	459	260	301	339	373	298	203	268	267
Dissolved Boron (B)	mg/L	5.0*	0.44	0.35	0.38	1.36	0.65	0.41	0.82	0.78	0.48	0.61	0.95	0.69	0.91
Dissolved Calcium (Ca)	mg/L		192	150	257	293	262	175	164	232	232	201	178	179	210
Dissolved Chloride (Cl)	mg/L	250**	70	102	56	56	47	41	35	41	44	34	28	33	33
Dissolved Iron (Fe)	mg/L	0.3**	<0.01	<0.01	<0.01	0.08	0.02	0.01	0.01	0.02	1.35	0.29	<0.01	<0.03	<0.03
Dissolved Magnesium (Mg)	mg/L		75	54	83	114	92	70	63	83	85	73	55	68	77
Dissolved Organic Carbon	mg/L	5**	4.8	4.8	5.0	5.4	5.4	3.6	<0.5	3.6	3.0	2.4	4.7	3.9	4.0
Dissolved Potassium (K)	mg/L		2	1	2	2	3	2	3	2	2	1	2	1	2
Dissolved Sodium (Na)	mg/L	200**	178	139	90	161	96	91	95	104	75	76	125	79	90
Dissolved Sulphate (SO4)	mg/L	500**	492	590	705	976	654	759	467	653	567	580	708	644	704
Nitrate (N)	mg/L	10.0*	6.05	10.1	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
Nitrite (N)	mg/L	1.0*	0.25	<0.10											
NO3+NO2	mg/L	10.0*		10.1											
Total Ammonia-N	mg/L		0.07	0.09	0.04	0.07	0.04	0.03	0.02	0.08	<0.02	<0.02	<0.02	<0.02	<0.02
Total Kjeldahl Nitrogen (TKN)	mg/L		0.46	0.51	0.47	0.57	0.42	0.28	0.45	0.26	0.14	0.12	0.39	0.42	0.22
Ion Percentage	%		5.9	13.8	0.2	1.7	5.2	7.0	5.8	6.1	6.7	3.8	0.2	2.1	1.9

Parameter	Units	ODWQS	OW67-4	OW67-4	OW67-4	OW67-4	OW67-4	OW67-4	OW67-4	OW67-4	OW67-4	OW67-4	OW67-4	OW67-4	OW67-4
Date			04-May-07	16-Nov-07	22-May-08	05-Nov-08	04-Dec-08	16-May-09	11-Jun-09	18-Nov-09	15-Dec-09	20-May-10	22-Nov-10	23-Dec-10	12-May-11
Laboratory			Accutest	Accutest	MAXXAM	MAXXAM	MAXXAM	MAXXAM	MAXXAM	MAXXAM	MAXXAM	MAXXAM	MAXXAM	MAXXAM	MAXXAM
Alkalinity (Total as CaCO3)	mg/L	30-500***	303	DRY	DRY	140	162	196	269	281	330	333	268	300	338
Conductivity	umho/cm		1830			1590	1600	870	1160	1150	1340	1320	960	1090	1270
Dissolved Barium (Ba)	mg/L	1*	0.01			0.037	0.034	0.026	0.025	0.026	0.026	0.026	0.025	0.025	0.027
Dissolved Boron (B)	mg/L	5.0*	0.81			0.86	0.72	0.59	0.77	0.77	0.83	0.72	0.66	0.59	0.53
Dissolved Cadmium (Cd)	mg/L	0.005*	<0.0001			<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001
Dissolved Calcium (Ca)	mg/L		252			180	190	160	140	140	160	170	160	120	150
Dissolved Chloride (Cl)	mg/L	250**	34			54	47	26	27	27	26	22	18	19	22
Dissolved Iron (Fe)	mg/L	0.3**	<0.03			<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Dissolved Lead (Pb)	mg/L	0.01*	<0.0005			<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
Dissolved Magnesium (Mg)	mg/L		85			60	69	61	56	51	55	67	62	48	56
Dissolved Organic Carbon	mg/L	5**	4.2			1.8	3.5	7.8	4.9	4.0	4.7	3.2	5.0	4.2	4.4
Dissolved Potassium (K)	mg/L		2			2.2	1.9	1.5	1.7	1.9	1.9	1.5	1.9	1.6	1.4
Dissolved Sodium (Na)	mg/L	200**	83			75	77	68	71	64	66	63	58	61	54
Dissolved Sulphate (SO4)	mg/L	500**	686			643	686	230	350	340	360	390	210	260	340
Nitrate (N)	mg/L	10.0*	<0.10			3.4	3.1	2.9	0.5	0.3	0.2	<0.1	2.4	0.7	<0.1
pH	(pH units)	6.5-8.5	8.2			8.0	8.0	7.8	8.0	8.0	8.0	8.1	8.0	7.8	7.9
Total Ammonia-N	mg/L		<0.02			<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15
Total Dissolved Solids	mg/L	500	1090			1030	1050	565	710	745	854	836	610	674	772
Total Kjeldahl Nitrogen (TKN)	mg/L		0.27			<4	<7	1	<4	<1	<0.7	<0.7	1.4	0.7	<0.7
Ion Percentage	%		6.9			0.2	0.6	29.5	8.4	6.0	6.3	8.4	25.9	7.7	4.7

NOTES: 1) Blank denotes data not available.
2) ODWQS denotes O. Reg. 169/03: Ontario Drinking Water Quality Standards (as amended).
3) *denotes health related ODWQS.
** denotes aesthetic objective for ODWQS.
*** denotes operational guideline for ODWQS.
4) mg/L denotes milligrams per litre.

Table H-4
Groundwater - General Analytical Results
Twin Creeks Environmental Centre

Parameter	Units	ODWQS	OW67-4	OW67-4	OW67-4	OW67-4	OW67-4	OW67-4	OW67-4	OW67-4	OW67-4	OW67-4	OW67-4	OW67-4	OW67-4
Date			2-Nov-11	9-May-12	6-Nov-12	9-May-13	6-Nov-13	06-May-14	6-Nov-14	12-May-15	12-Nov-15	25-May-16	15-Nov-16	17-May-17	7-Nov-17
Laboratory			MAXXAM	MAXXAM	MAXXAM	MAXXAM	MAXXAM	MAXXAM	MAXXAM	MAXXAM	MAXXAM	MAXXAM	MAXXAM	MAXXAM	MAXXAM
Alkalinity (Total as CaCO3)	mg/L	30-500***	208	300	220	330	270	450	310	290	180	310	290	380	270
Conductivity	umho/cm		613	990	800	1200	770	1500	890	940	950	1300	850	1300	1100
Dissolved Barium (Ba)	mg/L	1*	0.037	0.038	0.039	0.051	0.037	0.1	0.034	0.049	0.043	0.071	0.066	0.057	0.049
Dissolved Boron (B)	mg/L	5.0*	0.48	0.38	0.20	0.49	0.34	0.6	0.42	0.39	0.32	0.39	0.36	0.38	0.32
Dissolved Cadmium (Cd)	mg/L	0.005*	<0.0001	<0.0001	<0.0001	<0.0001	<0.00010	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001
Dissolved Calcium (Ca)	mg/L		100	120	91	130	71	160	88	110	97	120	96	130	86
Dissolved Chloride (Cl)	mg/L	250**	8	18	17	21	16	18	11	26	71	45	36	38	40
Dissolved Iron (Fe)	mg/L	0.3**	0.5	0.85	0.24	2.0	0.3	0.4	<0.10	4.2	1.5	1.7	1.9	1.8	0.3
Dissolved Lead (Pb)	mg/L	0.01*	<0.0005	<0.0005	<0.0005	<0.0005	<0.00050	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
Dissolved Magnesium (Mg)	mg/L		35	51	24	43	22	56	42	42	32	46	30	43	26
Dissolved Organic Carbon	mg/L	5**	5.5	4.1	10.5	6.7	10	6.6	9.1	7.5	8.7	7.0	13	9.2	12
Dissolved Potassium (K)	mg/L		1.7	1.4	2.9	2.5	3.1	2.7	3.3	2.6	3	3.2	4.8	3	3.6
Dissolved Sodium (Na)	mg/L	200**	41	48	41	73	61	110	65	66	65	70	52	55	110
Dissolved Sulphate (SO4)	mg/L	500**	92	210	160	330	110	360	160	220	210	360	100	300	230
Nitrate (N)	mg/L	10.0*	0.5	<0.10	1.4	<0.10	0.67	<0.10	0.42	0.1	1.4	0.24	<0.10	<0.10	0.72
pH	(pH units)	6.5-8.5	7.6	7.9	7.7	8.0	7.4	8.0	8.2	7.89	7.84	7.89	7.98	8.12	8.04
Total Ammonia-N	mg/L		<0.15	<0.15	0.24	0.66	0.22	<0.15	<0.15	<0.15	<0.15	0.25	<0.15	<0.15	<0.15
Total Dissolved Solids	mg/L	500	408	492	572	884	482	958	542	402	578	952	540	818	760
Total Kjeldahl Nitrogen (TKN)	mg/L		3	<0.7	2.5	7	2.8	0.8	1.9	<0.7	<1 (1)	<0.7	0.8	<0.7	2.7
Ion Percentage	%		27.7	11.7	6.4	1.7	6.5	6.5	10.8	8.5	5.4	3.4	10.8	3.8	4.6

Parameter	Units	ODWQS	OW67-4	OW67-4	OW67-4	OW67-4	OW67-4	OW67-4	OW67-4	OW67-4	OW67-4	OW67-4	OW67-4	OW67-4	OW67-4
Date			8-May-18	12-Nov-18	13-May-19	07-Nov-19	06-May-20	03-Nov-20	20-May-21	02-Nov-21	05-May-22	01-Nov-22	01-May-23	25-May-23	01-Nov-23
Laboratory			MAXXAM	MAXXAM	MAXXAM	Bureau Veritas	Bureau Veritas	Bureau Veritas	Bureau Veritas	Bureau Veritas	Bureau Veritas	Bureau Veritas	Bureau Veritas	Bureau Veritas	Bureau Veritas
Alkalinity (Total as CaCO3)	mg/L	30-500***	340	290	370	300	230	290	250	300	400	240	230	220	260
Conductivity	umho/cm		1300	770	970	840	600	880	690	780	1500	880	590	640	790
Dissolved Barium (Ba)	mg/L	1*	0.059	0.023	0.051	0.037	0.048	0.038	0.043	0.037	0.019	0.048	0.029	0.049	0.036
Dissolved Boron (B)	mg/L	5.0*	0.37	0.12	0.29	0.26	0.25	0.32	0.17	0.21	0.68	0.21	0.05	0.09	0.14
Dissolved Cadmium (Cd)	mg/L	0.005*	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001
Dissolved Calcium (Ca)	mg/L		130	37	110	67	98	82	88	58	150	89	25	56	51
Dissolved Chloride (Cl)	mg/L	250**	31	15	15	12	8.1	14	12	18	23	60	13	18	<50
Dissolved Iron (Fe)	mg/L	0.3**	2.5	<0.1	0.1	<0.1	3.8	0.2	11	0.2	0.5	0.7	0.2	1.2	0.6
Dissolved Lead (Pb)	mg/L	0.01*	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	0.0019	0.0008	<0.0005
Dissolved Magnesium (Mg)	mg/L		44	12	36	21	33	24	28	17	110	24	5.9	15	13
Dissolved Organic Carbon	mg/L	5**	6.8	9	7	11	7.1	10	10	13	2.4	12	16	13	9.4
Dissolved Potassium (K)	mg/L		2.3	2.1	2.1	2.4	1.9	2.3	2.3	4.4	4.3	2.2	2.6	2.9	2
Dissolved Sodium (Na)	mg/L	200**	73	53	83	85	57	66	59	95	64	62	51	56	51
Dissolved Sulphate (SO4)	mg/L	500**	310	130	150	130	71	160	95	92	430	140	78	74	97
Nitrate (N)	mg/L	10.0*	0.29	0.74	0.46	0.37	0.62	1.05	1.21	0.78	0.20	0.16	<5.0	0.10	<1.0
pH	(pH units)	6.5-8.5	7.9	7.9	7.8	8.0	7.9	7.8	8.0	8.2	8.0	8.0	7.9	7.7	8.0
Total Ammonia-N	mg/L		0.25	0.21	<0.15	0.23	<0.15	<0.15	0.574	0.23	0.63	<0.15	0.48	1.48	<0.15
Total Dissolved Solids	mg/L	500	770	500	610	495	465	615	350	495	1010	625	595	1070	ND
Total Kjeldahl Nitrogen (TKN)	mg/L		3.7	<0.7	<0.7	2.0	<0.7	2.7	<2	1.2	1.0	<0.7	<1	13.0	<0.7
Ion Percentage	%		1.9	20.2	12.0	5.5	30.4	3.3	19.0	8.0	9.3	3.9	17.4	7.7	8.1

Parameter	Units	ODWQS	OW67-4	OW67-4
Date			7-May-24	19-Nov-24
Laboratory			Bureau Veritas	Bureau Veritas
Alkalinity (Total as CaCO3)	mg/L	30-500***	180	230
Conductivity	umho/cm		400	680
Dissolved Barium (Ba)	mg/L	1*	0.038	0.065
Dissolved Boron (B)	mg/L	5.0*	0.05	0.16
Dissolved Cadmium (Cd)	mg/L	0.005*	<0.0001	<0.0001
Dissolved Calcium (Ca)	mg/L		32	71
Dissolved Chloride (Cl)	mg/L	250**	22	13
Dissolved Iron (Fe)	mg/L	0.3**	1.0	1.5
Dissolved Lead (Pb)	mg/L	0.01*	<0.0005	<0.0005
Dissolved Magnesium (Mg)	mg/L		7.0	19
Dissolved Organic Carbon	mg/L	5**	16	16
Dissolved Potassium (K)	mg/L		4.8	3.3
Dissolved Sodium (Na)	mg/L	200**	44	47
Dissolved Sulphate (SO4)	mg/L	500**	23	110
Nitrate (N)	mg/L	10.0*	0.16	0.30
pH	(pH units)	6.5-8.5	8.0	8.2
Total Ammonia-N	mg/L		1.1	0.32
Total Dissolved Solids	mg/L	500	1140	460
Total Kjeldahl Nitrogen (TKN)	mg/L		22	2
Ion Percentage	%		2.6	6.3

NOTES: 1) Blank denotes data not available.
2) ODWQS denotes O. Reg. 169/03: Ontario Drinking Water Quality Standards (as amended).
3) *denotes health related ODWQS.
** denotes aesthetic objective for ODWQS.
*** denotes operational guideline for ODWQS.
4) mg/L denotes milligrams per litre.
5) ND denotes Not able to be Determined due to sample matrix interference.

Table H-4
Groundwater - General Analytical Results
Twin Creeks Environmental Centre

Parameter	Units	ODWQS	OW67-11	OW67-11	OW67-11	OW67-11	OW67-11	OW67-11	OW67-11	OW67-11	OW67-11	OW67-11	OW67-11	OW67-11	OW67-11
Date			**02-Dec-99**	**19-Jun-00**	**28-Nov-01**	**22-May-02**	**07-Nov-02**	**15-May-03**	**16-Jun-03**	**13-Nov-03**	**26-May-04**	**27-Nov-04**	**12-May-05**	**30-Nov-05**	**19-May-06**
Laboratory			**Accutest**	**Accutest**	**Accutest**	**Accutest**	**Accutest**	**Accutest**	**Accutest**	**Accutest**	**Accutest**	**Accutest**	**Accutest**	**Accutest**	**Accutest**
Alkalinity (Total as CaCO3)	mg/L	30-500***	383	384	386	376	427	385	374	372	379	371	348	371	342
Dissolved Boron (B)	mg/L	5.0*	0.95	1.00	0.70	1.17	0.85	0.81	0.77	1.00	1.33	0.89	1.12	1.00	0.93
Dissolved Calcium (Ca)	mg/L		91	95	84	90	75	30	19	85	71	76	94	85	83
Dissolved Chloride (Cl)	mg/L	250**	7	5	8	6	9	34	41	9	25	19	27	12	21
Dissolved Iron (Fe)	mg/L	0.3**	1.77	2.46	<0.01	0.68	0.36	0.13	0.07	2.24	0.65	<0.01	1.25	1.85	0.05
Dissolved Magnesium (Mg)	mg/L		120	120	101	117	98	38	20	116	81	96	100	102	88
Dissolved Organic Carbon	mg/L	5**	2.4	1.8	176	1.0	3.4	3.4	3.5	1.2	2.8	2.1	2.2	1.6	2.7
Dissolved Potassium (K)	mg/L		4	4	5	4	7	3	2	5	3	3	3	3	2
Dissolved Sodium (Na)	mg/L	200**	120	116	124	111	136	397	423	158	286	239	228	139	160
Dissolved Sulphate (SO4)	mg/L	500**	559	531	502	539	446	809	591	581	690	645	707	544	534
Nitrate (N)	mg/L	10.0*	<0.10	<0.10	<0.10	<0.10	<0.10	1.27	0.92	<0.10	0.36	0.28	0.17	<0.10	0.37
Nitrite (N)	mg/L	1.0*	<0.10	<0.10											
NO3+NO2	mg/L	10.0*		<0.10											
Total Ammonia-N	mg/L		0.40	0.52	0.26	0.63	5.05	0.87	0.91	0.66	0.60	0.11	0.41	0.63	0.08
Total Kjeldahl Nitrogen (TKN)	mg/L		0.60	0.82	0.33	0.66	6.56	1.11	1.20	0.72	0.79	0.24	0.50	0.79	0.22
Ion Percentage	%		4.2	6.1	2.9	4.0	4.0	5.1	3.2	5.8	3.0	4.8	3.7	2.7	2.9

Parameter	Units	ODWQS	OW67-11	OW67-11	OW67-11	OW67-11	OW67-11	OW67-11	OW67-11	OW67-11	OW67-11	OW67-11	OW67-11	OW67-11	OW67-11
Date			**24-Nov-06**	**04-May-07**	**16-Nov-07**	**22-May-08**	**05-Nov-08**	**19-May-09**	**18-Nov-09**	**19-May-10**	**22-Nov-10**	**12-May-11**	**02-Nov-11**	**09-May-12**	**06-Nov-12**
Laboratory			**Accutest**	**Accutest**	**Accutest**	**MAXXAM**	**MAXXAM**	**MAXXAM**	**MAXXAM**	**MAXXAM**	**MAXXAM**	**MAXXAM**	**MAXXAM**	**MAXXAM**	**MAXXAM**
Alkalinity (Total as CaCO3)	mg/L	30-500***	334	340	414	415	393	373	369	359	364	374	352	390	390
Conductivity	umho/cm		1830			1570	1510	1510	1530	1590	1570	1590	1530	1600	1600
Dissolved Barium (Ba)	mg/L	1*	0.01			0.02	0.018	0.018	0.016	0.018	0.016	0.018	0.018	0.017	0.017
Dissolved Boron (B)	mg/L	5.0*	1.17	1.00	1.01	1	0.96	0.99	1.0	0.99	0.92	0.92	0.93	0.8	0.84
Dissolved Cadmium (Cd)	mg/L	0.005*	<0.0001			<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001
Dissolved Calcium (Ca)	mg/L		80	91	76	88	83	87	89	86	87	95	88	96	92
Dissolved Chloride (Cl)	mg/L	250**	23	24	23	16	11	9	11	19	14	30	24	30	24
Dissolved Iron (Fe)	mg/L	0.3**	0.07	0.33	0.11	<0.1	0.2	0.4	0.7	1.8	0.9	0.9	0.6	0.65	1.1
Dissolved Lead (Pb)	mg/L	0.01*	<0.0005			<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
Dissolved Magnesium (Mg)	mg/L		86	92	79	100	89	100	110	100	110	110	98	110	100
Dissolved Organic Carbon	mg/L	5**	2.7	3.6	5.6	2.7	2.2	3.2	2.1	2.4	2.2	2.5	2.6	2.3	2.4
Dissolved Potassium (K)	mg/L		2	2	3	3.4	2.8	3.1	3.1	2.8	2.8	2.8	2.7	2.8	2.8
Dissolved Sodium (Na)	mg/L	200**	158	150	126	150	110	120	120	120	110	110	100	110	110
Dissolved Sulphate (SO4)	mg/L	500**	534	533	455	446	443	450	470	500	460	550	430	430	400
Nitrate (N)	mg/L	10.0*	0.46	0.31	<0.10	<0.1	<0.1	0.8	0.5	0.1	0.5	0.2	0.5	0.19	0.35
pH	(pH units)	6.5-8.5	8.2			8.2	8.0	8.0	8.2	8.0	7.9	7.7	7.6	7.9	7.8
Total Ammonia-N	mg/L		0.26	0.55	7.31	3.07	1.79	0.50	0.58	0.76	0.53	0.64	0.34	0.53	0.61
Total Dissolved Solids	mg/L	500	1090			1000	970	955	980	1020	962	974	988	1110	1170
Total Kjeldahl Nitrogen (TKN)	mg/L		0.34	0.71	8.26	4	2.1	<4	<4	1.2	0.8	2	<0.7	0.9	1.0
Ion Percentage	%		2.0	3.6	3.2	7.5	1.1	6.3	7.6	2.8	6.7	3.5	0.2	2.8	2.2

NOTES: 1) Blank denotes data not available.
2) ODWQS denotes O. Reg. 169/03: Ontario Drinking Water Quality Standards (as amended).
3) *denotes health related ODWQS.
** denotes aesthetic objective for ODWQS.
*** denotes operational guideline for ODWQS.
4) mg/L denotes milligrams per litre.
5) ND denotes Not able to be Determined due to sample matrix interference.

Table H-4
Groundwater - General Analytical Results
Twin Creeks Environmental Centre

Parameter	Units	ODWQS	OW67-11	OW67-11	OW67-11	OW67-11	OW67-11	OW67-11	OW67-11	OW67-11	OW67-11	OW67-11	OW67-11	OW67-11
Date			09-May-13	06-Nov-13	06-May-14	24-Nov-14	12-May-15	12-Nov-15	25-May-16	16-Nov-16	17-May-17	07-Nov-17	08-May-18	12-Nov-18	13-May-19
Laboratory			MAXXAM	MAXXAM	MAXXAM	MAXXAM	MAXXAM	MAXXAM	MAXXAM	MAXXAM	MAXXAM	MAXXAM	MAXXAM	MAXXAM	MAXXAM
Alkalinity (Total as CaCO3)	mg/L	30-500***	390	410	400	400	400	380	400	400	410	420		420	410
Conductivity	umho/cm		1600	1500	1600	1600	1200	1600	1600	1600	1700	1600	1800	1600	1600
Dissolved Barium (Ba)	mg/L	1*	0.019	0.018	0.0	0.019	0.02	0.017	0.018	0.024	0.023	0.018	0.023	0.021	0.021
Dissolved Boron (B)	mg/L	5.0*	0.61	0.64	0.6	0.67	0.59	0.63	0.60	0.62	0.47	0.53	0.56	0.46	0.5
Dissolved Cadmium (Cd)	mg/L	0.005*	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001
Dissolved Calcium (Ca)	mg/L		110	110	120	120	120	110	120	120	140	120	160	150	150
Dissolved Chloride (Cl)	mg/L	250**	34	33	33	34	33	32	38	35	41	37	38	34	33
Dissolved Iron (Fe)	mg/L	0.3**	1.4	1	1.0	0.69	0.37	<0.10	0.10	0.40	0.70	0.2	0.4	0.7	1.1
Dissolved Lead (Pb)	mg/L	0.01*	<0.0005	0.0006	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
Dissolved Magnesium (Mg)	mg/L		110	110	120	120	130	120	120	120	110	110	130	110	110
Dissolved Organic Carbon	mg/L	5**	3.0	2.6	2.5	3.1	2.6	2.7	2.8	2.7	2.6	3.4	2.8	3.1	3
Dissolved Potassium (K)	mg/L		2.8	2.8	2.8	3.3	3.3	3.1	3.3	3.8	3.9	4	4.3	4.1	4.2
Dissolved Sodium (Na)	mg/L	200**	90	89	89	88	89	89	83	80	63	73	66	57	57
Dissolved Sulphate (SO4)	mg/L	500**	430	410	420	430	440	440	460	410	470	430	450	430	430
Nitrate (N)	mg/L	10.0*	0.30	0.30	0.6	0.5	0.35	0.90	0.24	<0.10	0.60	<0.10	0.52	<0.10	0.23
pH	(pH units)	6.5-8.5	8.0	7.3	8.0	8.0	7.9	7.9	7.9	7.8	7.9	7.9	7.9	7.8	7.9
Total Ammonia-N	mg/L		0.83	0.82	0.6	0.82	0.84	0.69	0.98	2.42	0.84	1.73	0.97	1.03	0.78
Total Dissolved Solids	mg/L	500	1100	1040	1080	1090	1180	1080	1220	1130	1210	1120	1230	1100	1130
Total Kjeldahl Nitrogen (TKN)	mg/L		1.1	1.1	1.0	1.5	1	0.8	1.1	2.6	1	1.8	1.2	1	1.1
Ion Percentage	%		6.5	6.7	10.0	9.2	10.8	8.5	6.5	9.6	3.4	4.2		6.6	7.2

Parameter	Units	ODWQS	OW67-11	OW67-11	OW67-11	OW67-11	OW67-11	OW67-11	OW67-11	OW67-11	OW67-11	OW67-11	OW67-11
Date			07-Nov-19	06-May-20	03-Nov-20	18-May-21	02-Nov-21	03-May-22	01-Nov-22	01-May-23	01-Nov-23	06-May-24	18-Nov-24
Laboratory			Bureau Veritas	Bureau Veritas	Bureau Veritas	Bureau Veritas	Bureau Veritas	Bureau Veritas	Bureau Veritas	Bureau Veritas	Bureau Veritas	Bureau Veritas	Bureau Veritas
Alkalinity (Total as CaCO3)	mg/L	30-500***	420	410	410	400	420	410	420	380	380	410	440
Conductivity	umho/cm		1500	1500	1500	1500	1500	1500	1500	1400	1400	1200	1400
Dissolved Barium (Ba)	mg/L	1*	0.0	0.0	0.018	0.019	0.022	0.019	0.019	0.018	0.02	0.020	0.025
Dissolved Boron (B)	mg/L	5.0*	0.5	0.5	0.56	0.51	0.53	0.47	0.58	0.43	0.44	0.44	0.47
Dissolved Cadmium (Cd)	mg/L	0.005*	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001
Dissolved Calcium (Ca)	mg/L		140	150	140	140	150	150	140	140	130	130	130
Dissolved Chloride (Cl)	mg/L	250**	33	32	32	24	31	30	25	29	27	23	22
Dissolved Iron (Fe)	mg/L	0.3**	0.4	0.6	0.2	0.7	3.0	0.8	0.3	<0.1	0.8	0.5	0.1
Dissolved Lead (Pb)	mg/L	0.01*	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
Dissolved Magnesium (Mg)	mg/L		110	110	100	100	100	110	100	97	94	83	81
Dissolved Organic Carbon	mg/L	5**	2.8	2.8	3.2	2.8	2.8	2.8	2.8	3.0	4.1	8.6	9.9
Dissolved Potassium (K)	mg/L		4.3	4.6	4.3	4.5	4.3	4.3	4.4	4.4	5.3	4.4	4.3
Dissolved Sodium (Na)	mg/L	200**	59	56	57	53	54	53	57	48	48	42	40
Dissolved Sulphate (SO4)	mg/L	500**	390	410	400	410	410	430	430	390	360	280	290
Nitrate (N)	mg/L	10.0*	<0.10	0.3	0.43	0.14	<0.10	0.26	0.1	0.43	0.31	0.11	<0.10
pH	(pH units)	6.5-8.5	7.8	7.9	7.8	8.1	8.0	7.9	7.9	8.0	7.8	8.1	7.9
Total Ammonia-N	mg/L		0.6	0.5	0.37	0.652	1.01	0.43	0.62	0.36	5.43	0.24	2.42
Total Dissolved Solids	mg/L	500	1030	1070	1050	1010	1010	1070	980	915	950	835	910
Total Kjeldahl Nitrogen (TKN)	mg/L		1.0	0.7	<0.7	0.8	1.3	<0.7	0.7	<0.7	5.2	<0.7	2.6
Ion Percentage	%		8.2	8.5	5.7	5.8	5.6	7.0	3.8	6.4	6.5	7.6	4.3

NOTES: 1) Blank denotes data not available.
2) ODWQS denotes O. Reg. 169/03: Ontario Drinking Water Quality Standards (as amended).
3) *denotes health related ODWQS.
** denotes aesthetic objective for ODWQS.
*** denotes operational guideline for ODWQS.
4) mg/L denotes milligrams per litre.

Table H-4
Groundwater - General Analytical Results
Twin Creeks Environmental Centre

Parameter	Units	ODWQS	OW68-5	OW68-5	OW68-5	OW68-5	OW68-5	OW68-5	OW68-5	OW68-5	OW68-5	OW68-5	OW68-5	OW68-5	OW68-5
Date			**22-May-02**	**13-Jun-02**	**06-Nov-02**	**15-May-03**	**13-Nov-03**	**26-May-04**	**27-Nov-04**	**13-May-05**	**08-Dec-05**	**18-May-06**	**24-Nov-06**	**04-May-07**	**16-Nov-07**
Laboratory			**Accutest**	**Accutest**	**Accutest**	**Accutest**	**Accutest**	**Accutest**	**Accutest**	**Accutest**	**Accutest**	**Accutest**	**Accutest**	**Accutest**	**Accutest**
Alkalinity (Total as CaCO3)	mg/L	30-500***	422	422	430	391	394	403	394	397	412	378	384	394	
Dissolved Boron (B)	mg/L	5.0*	0.14	0.24	0.11	0.09	0.12	0.08	0.08	0.06	0.08	0.06	0.09	0.07	
Dissolved Calcium (Ca)	mg/L		90	90	101	81	86	81	87	81	95	66	87	84	
Dissolved Chloride (Cl)	mg/L	250**	10	11	9	9	8	8	7	8	12	7	8	7	
Dissolved Iron (Fe)	mg/L	0.3**	0.03	<0.01	0.32	0.01	0.09	0.01	0.32	<0.01	0.03	<0.03	0.17	<0.03	
Dissolved Magnesium (Mg)	mg/L		65	64	64	68	67	66	69	62	66	52	62	64	
Dissolved Organic Carbon	mg/L	5**	3.3	3.2	3.1	2.4	1.9	2.2	2.3	1.9	2.5	2.4	2.0	2.4	
Dissolved Potassium (K)	mg/L		3	3	4	2	3	3	2	2	3	2	2	2	DRY
Dissolved Sodium (Na)	mg/L	200**	53	45	33	41	41	50	46	43	34	32	34	40	
Dissolved Sulphate (SO4)	mg/L	500**	171	181	153	214	165	174	154	142	175	124	148	138	
Nitrate (N)	mg/L	10.0*	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	0.23	<0.10	<0.10	
Nitrite (N)	mg/L	1.0*													
NO3+NO2	mg/L	10.0*													
Total Ammonia-N	mg/L		0.04	0.03	<0.02	<0.02	<0.02	0.02	<0.02	0.16	0.03	<0.02	<0.02	<0.02	
Total Kjeldahl Nitrogen (TKN)	mg/L		0.32	0.20	0.38	0.06	0.14	0.17	<0.05	0.15	0.10	0.05	0.09	0.16	
Ion Percentage	%		6.9	4.0	6.7	2.0	7.6	6.2	10.6	7.2	4.9	0.8	7.2	8.8	

Parameter	Units	ODWQS	OW68-5	OW68-5	OW68-5	OW68-5	OW68-5	OW68-5	OW68-5	OW68-5	OW68-5	OW68-5	OW68-5	OW68-5	OW68-5
Date			**22-May-08**	**05-Nov-08**	**16-May-09**	**18-Nov-09**	**20-May-10**	**22-Nov-10**	**23-Dec-10**	**12-May-11**	**03-Nov-11**	**15-May-12**	**08-Nov-12**	**03-Dec-12**	**13-May-13**
Laboratory			**MAXXAM**	**MAXXAM**	**MAXXAM**	**MAXXAM**	**MAXXAM**	**MAXXAM**	**MAXXAM**	**MAXXAM**	**MAXXAM**	**MAXXAM**	**MAXXAM**	**MAXXAM**	**MAXXAM**
Alkalinity (Total as CaCO3)	mg/L	30-500***	409	431	421	413	429		367	387	411	440			370
Conductivity	umho/cm		980	1020	998	997	1040		968	999	1020	1000			980
Dissolved Barium (Ba)	mg/L	1*	0.038	0.039	0.035	0.035	0.035		0.037	0.036	0.035	0.034			0.034
Dissolved Boron (B)	mg/L	5.0*	0.06	0.08	0.08	0.08	0.07		0.07	0.53	0.08	0.08			0.06
Dissolved Cadmium (Cd)	mg/L	0.005*	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001		<0.0001	<0.0001	<0.0001	<0.0001			<0.0001
Dissolved Calcium (Ca)	mg/L		85	79	86	88	82		84	87	91	83			87
Dissolved Chloride (Cl)	mg/L	250**	7	8	7	8	9		7	8	8	7			8
Dissolved Iron (Fe)	mg/L	0.3**	<0.1	3.9	<0.1	1.5	<0.1		<0.1	<0.1	0.1	<0.10			<0.10
Dissolved Lead (Pb)	mg/L	0.01*	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005		<0.0005	<0.0005	<0.0005	<0.0005			<0.0005
Dissolved Magnesium (Mg)	mg/L		67	60	75	72	69		71	68	69	70			70
Dissolved Organic Carbon	mg/L	5**	2.3	2.3	3.4	2.8	2.1	DRY	2.8	2.8	3	2.6	DRY	DRY	9.5
Dissolved Potassium (K)	mg/L		2.4	2.3	2.2	2.4	1.9		2.4	2.1	2.6	2			2.3
Dissolved Sodium (Na)	mg/L	200**	46	46	51	51	51		48	41	47	49			41
Dissolved Sulphate (SO4)	mg/L	500**	158	146	150	150	160		140	160	150	150			160
Nitrate (N)	mg/L	10.0*	<0.1	<0.1	<0.1	0.1	<0.1		<0.1	<0.1	<0.1	<0.10			<0.10
pH	(pH units)	6.5-8.5	8.3	8	8.1	7.9	8.2		7.9	8.2	7.8	7.9			7.9
Total Ammonia-N	mg/L		<0.15	0.19	<0.15	<0.15	<0.15		<0.15	<0.15	<0.15	<0.15			<0.15
Total Dissolved Solids	mg/L	500	641	645	640	660	646		636	616	628	604			620
Total Kjeldahl Nitrogen (TKN)	mg/L		<0.7	<0.7	<0.7	<0.7	<0.7		<0.7	<0.7	<0.7	<0.7			<0.7
Ion Percentage	%		7.9	3.4	11.5	11.4	6.8		14.8	2.0	3.2	0.4			4.4

NOTES: 1) Blank denotes data not available.
2) ODWQS denotes O. Reg. 169/03: Ontario Drinking Water Quality Standards (as amended).
3) *denotes health related ODWQS.
** denotes aesthetic objective for ODWQS.
*** denotes operational guideline for ODWQS.
4) mg/L denotes milligrams per litre.

Table H-4
Groundwater - General Analytical Results
Twin Creeks Environmental Centre

Parameter	Units	ODWQS	OW68-5	OW68-5	OW68-5	OW68-5	OW68-5	OW68-5	OW68-5	OW68-5	OW68-5	OW68-5	OW68-5	OW68-5	OW68-5
Date			**5-Nov-13**	**06-May-14**	**24-Nov-14**	**13-May-15**	**12-Nov-15**	**25-May-16**	**16-May-17**	**8-Nov-17**	**8-May-18**	**14-Nov-18**	**14-May-19**	**05-Nov-19**	**07-May-20**
Laboratory			**MAXXAM**	**MAXXAM**	**MAXXAM**	**MAXXAM**	**MAXXAM**	**MAXXAM**	**MAXXAM**	**MAXXAM**	**MAXXAM**	**MAXXAM**	**MAXXAM**	**Bureau Veritas**	**Bureau Veritas**
Alkalinity (Total as CaCO3)	mg/L	30-500***	410	420	440	430	430	420	420	460	470	460	460	460	470
Conductivity	umho/cm		1000	1000	1000	1000	1000	1000	1100	1100	1200	1100	1100	1100	1100
Dissolved Barium (Ba)	mg/L	1*	0.036	0.0	0.033	0.035	0.037	0.033	0.032	0.034	0.038	0.035	0.035	0.035	0.032
Dissolved Boron (B)	mg/L	5.0*	0.089	0.1	0.08	0.04	0.09	0.07	0.07	0.09	0.08	0.09	0.07	0.09	0.08
Dissolved Cadmium (Cd)	mg/L	0.005*	<0.00010	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001
Dissolved Calcium (Ca)	mg/L		94	83	80	77	90	81	79	91	91	98	97	95	98
Dissolved Chloride (Cl)	mg/L	250**	7	8	8	8	8.1	7.4	7.8	8.1	8	8	8.5	7.8	8.6
Dissolved Iron (Fe)	mg/L	0.3**	<0.10	<0.10	<0.10	<0.10	<0.10	<0.1	<0.1	0.1	<0.1	0.4	<0.1	0.2	<0.1
Dissolved Lead (Pb)	mg/L	0.01*	<0.00050	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
Dissolved Magnesium (Mg)	mg/L		77	72	70	68	77	70	69	73	77	78	79	74	77
Dissolved Organic Carbon	mg/L	5**	6.1	4.8	4.2	2.4	3.3	2.5	2.9	3.3	2.8	3	2.7	4.8	2.7
Dissolved Potassium (K)	mg/L		2.7	1.8	2.2	1.7	2.3	2	1.9	2.2	1.8	2.3	1.7	2.4	2
Dissolved Sodium (Na)	mg/L	200**	45	50.0	47	45	50	41	40	40	43	41	42	35	38
Dissolved Sulphate (SO4)	mg/L	500**	160	150	150	150	160	160	180	170	180	190	180	180	180
Nitrate (N)	mg/L	10.0*	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
pH	(pH units)	6.5-8.5	8.0	8.0	8.11	8.09	7.9	7.96	8	7.88	8	7.83	7.89	7.78	8.02
Total Ammonia-N	mg/L		<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15
Total Dissolved Solids	mg/L	500	588	576	598	618	634	656	602	690	580	660	650	660	660
Total Kjeldahl Nitrogen (TKN)	mg/L		<0.7	<0.7	<0.7	<0.7	<0.7	<0.7	<0.7	<0.7	<0.7	<0.7	<0.7	<0.7	<0.7
Ion Percentage	%		12.5	9.7	6.3	5.3	10.9	6.0	3.0	4.9	5.1	6.3	7.3	4.3	5.6

Parameter	Units	ODWQS	OW68-5	OW68-5	OW68-5	OW68-5	OW68-5	OW68-5	OW68-5	OW68-5	OW68-5
Date			**4-Nov-20**	**20-May-21**	**2-Nov-21**	**4-May-22**	**2-Nov-22**	**2-May-23**	**2-Nov-23**	**8-May-24**	**19-Nov-24**
Laboratory			**Bureau Veritas**	**Bureau Veritas**	**Bureau Veritas**	**Bureau Veritas**	**Bureau Veritas**	**Bureau Veritas**	**Bureau Veritas**	**Bureau Veritas**	**Bureau Veritas**
Alkalinity (Total as CaCO3)	mg/L	30-500***	460	470	470	480	480	500	470	490	200
Conductivity	umho/cm		1100	1100	1100	1100	1100	1000	1200	1200	4900
Dissolved Barium (Ba)	mg/L	1*	0.033	0.034	0.034	0.035	0.037	0.038	0.033	0.035	0.007
Dissolved Boron (B)	mg/L	5.0*	0.09	0.08	0.09	0.08	0.1	0.09	0.10	0.08	0.99
Dissolved Cadmium (Cd)	mg/L	0.005*	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001
Dissolved Calcium (Ca)	mg/L		100	100	100	110	110	110	110	110	440
Dissolved Chloride (Cl)	mg/L	250**	8.6	9.1	8.5	9.9	9.8	7.6	6.1	9.0	4.0
Dissolved Iron (Fe)	mg/L	0.3**	0.2	<0.1	0.2	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Dissolved Lead (Pb)	mg/L	0.01*	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
Dissolved Magnesium (Mg)	mg/L		82	84	79	85	81	91	82	91	480
Dissolved Organic Carbon	mg/L	5**	3	2.8	2.6	2.6	2.9	2.6	2.5	4.6	8.9
Dissolved Potassium (K)	mg/L		2.5	2.1	2.5	1.9	2.6	2.0	2.6	2.1	6.9
Dissolved Sodium (Na)	mg/L	200**	38	39	36	39	36	36	37	39	210
Dissolved Sulphate (SO4)	mg/L	500**	180	180	180	180	180	170	170	170	2900
Nitrate (N)	mg/L	10.0*	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	0.32
pH	(pH units)	6.5-8.5	7.9	8.0	8.0	8.0	7.8	7.6	7.7	8.0	8.0
Total Ammonia-N	mg/L		<0.15	<0.050	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15
Total Dissolved Solids	mg/L	500	660	615	655	590	590	630	630	700	5020
Total Kjeldahl Nitrogen (TKN)	mg/L		<0.7	0.1	<0.7	<0.7	<0.7	<0.7	<0.7	<0.7	<0.7
Ion Percentage	%		8.2	8.2	6.3	9.5	7.9	10.5	10.4	11.5	4.7

NOTES: 1) Blank denotes data not available.
2) ODWQS denotes O. Reg. 169/03: Ontario Drinking Water Quality Standards (as amended).
3) *denotes health related ODWQS.
** denotes aesthetic objective for ODWQS.
*** denotes operational guideline for ODWQS.
4) mg/L denotes milligrams per litre.

Table H-4
Groundwater - General Analytical Results
Twin Creeks Environmental Centre

Parameter	Units	ODWQS	OW69-5	OW69-5	OW69-5	OW69-5	OW69-5	OW69-5	OW69-5	OW69-5	OW69-5	OW69-5	OW69-5	OW69-5	OW69-5
Date			**23-May-02**	**13-Jun-02**	**06-Nov-02**	**15-May-03**	**13-Nov-03**	**26-May-04**	**27-Nov-04**	**13-May-05**	**29-Nov-05**	**19-May-06**	**24-Nov-06**	**05-May-07**	**16-Nov-07**
Laboratory			**Accutest**	**Accutest**	**Accutest**	**Accutest**	**Accutest**	**Accutest**	**Accutest**	**Accutest**	**Accutest**	**Accutest**	**Accutest**	**Accutest**	**Accutest**
Alkalinity (Total as CaCO3)	mg/L	30-500***	461	468	517	467	509	509	594	554	558	519	562	540	599
Dissolved Boron (B)	mg/L	5.0*	1.25	1.15	0.96	0.96	0.98	0.71	0.79	0.93	1	1	1	1	1
Dissolved Chloride (Cl)	mg/L	250**	9	9	9	8	7	8	8	9	9	8	8	10	8
Dissolved Sulphate (SO4)	mg/L	500**	3840	5100	3870		3630	3690	4570	3700	3520	3500	3770	3540	3730
Dissolved Calcium (Ca)	mg/L		444	441	412	531	451	447	546	452	440	455	451	493	477
Dissolved Magnesium (Mg)	mg/L		641	574	603	660	689	622	790	654	616	618	651	680	678
Dissolved Potassium (K)	mg/L		8	8	15	7	14	10	9	7	7	6	7	7	7
Dissolved Sodium (Na)	mg/L	200**	322	348	327	328	297	288	384	298	284	251	286	291	331
Dissolved Iron (Fe)	mg/L	0.3**	2.14	1.55	6.20	1.85	5.67	2.23	3.73	1.26	3.12	1.66	3.17	0.7	3.98
Total Ammonia-N	mg/L		0.19	0.16	0.11	0.12	0.19	0.29	0.08	0.13	0.12	0.08	0.15	0.13	0.14
Total Kjeldahl Nitrogen (TKN)	mg/L		0.45	0.29	0.30	0.33	0.24	0.82	0.23	0.23	0.28	0.66	0.20	0.57	0.29
Nitrite (N)	mg/L	10.0*	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
Nitrate (N)	mg/L	10.0*													
NO3+NO2	mg/L	5**	6.0	4.7	3.1	3.4	1.9	3.6	2.7	2.7	3.0	3.2	2.3	2.6	3.1
Dissolved Organic Carbon	mg/L	5.0*	1.25	1.15	0.96	0.96	0.98	0.71	0.79	0.93	1.00	0.68	1.29	1.0	0.91
Ion Percentage	%		0.3	15.3	3.0		4.3	0.1	1.5	1.4	1.1	1.4	0.0	5.6	3.1

Parameter	Units	ODWQS	OW69-5	OW69-5	OW69-5	OW69-5	OW69-5	OW69-5	OW69-5	OW69-5	OW69-5	OW69-5	OW69-5	OW69-5	OW69-5
Date			**22-May-08**	**05-Nov-08**	**16-May-09**	**11-Jun-09**	**19-Nov-09**	**19-May-10**	**23-Nov-10**	**10-May-11**	**02-Nov-11**	**10-May-12**	**06-Nov-12**	**13-May-13**	**05-Nov-13**
Laboratory			**MAXXAM**	**MAXXAM**	**MAXXAM**	**MAXXAM**	**MAXXAM**	**MAXXAM**	**MAXXAM**	**MAXXAM**	**MAXXAM**	**MAXXAM**	**MAXXAM**	**MAXXAM**	**MAXXAM**
Alkalinity (Total as CaCO3)	mg/L	30-500***	520	552	556	571	657	648	665	626	674	670	670	610	680
Conductivity	umho/cm		5680	5680	5650	5710	5900	5880	6000	5820	5870	5900	5900	5700	5800
Dissolved Barium (Ba)	mg/L	1*	0.009	0.01	<0.03	0.009	0.01	<0.05	0.010	0.008	0.01	0.008	<0.03	0.008	0.0086
Dissolved Boron (B)	mg/L	5.0*	1	1	1.1	1	1.1	0.9	1.0	0.87	1.0	0.94	1.1	0.76	1.1
Dissolved Cadmium (Cd)	mg/L	0.005*	<0.0001	<0.0001	<0.0005	<0.0001	<0.0001	<0.001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0005	<0.0001	<0.00010
Dissolved Calcium (Ca)	mg/L		480	460	490	470	480	460	460	470	500	470	430	470	490
Dissolved Chloride (Cl)	mg/L	250**	8	9	9	9	9	9	9	9	9	9	8	9	9
Dissolved Iron (Fe)	mg/L	0.3**	0.7	3.4	1.7	2.2	2.7	2.0	2.7	0.3	3.5	2.0	4.4	0.54	<0.10
Dissolved Lead (Pb)	mg/L	0.01*	<0.0005	<0.0005	<0.003	<0.0005	<0.0005	<0.005	<0.0005	<0.0005	<0.0005	<0.0005	<0.003	<0.0005	<0.00050
Dissolved Magnesium (Mg)	mg/L		630	580	700	590	670	700	710	660	710	750	630	740	640
Dissolved Organic Carbon	mg/L	5**	1.7	2.3	2.9	2.6	2.0	1.6	2.1	2.1	2.1	1.7	2.0	2.2	9.3
Dissolved Potassium (K)	mg/L		7.4	7.3	7.3	7.4	7.5	6	6.9	6.5	8.3	6.8	6.4	6.2	7.6
Dissolved Sodium (Na)	mg/L	200**	320	270	310	310	340	310	300	320	330	320	280	260	320
Dissolved Sulphate (SO4)	mg/L	500**	3820	3830	3700	3700	3900	3900	3800	3800	3700	3700	3600	3700	3600
Nitrate (N)	mg/L	10.0*	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.10	<0.10	<0.10	<0.10
pH	(pH units)	6.5-8.5	7.7	7.7	7.7	7.7	7.6	7.6	7.4	7.8	7.3	7.4	7.2	7.4	7.1
Total Ammonia-N	mg/L		<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	0.15
Total Dissolved Solids	mg/L	500	3520	3800	3550	3440	3700	3610	3520	3440	4900	6030	6460	5990	5950
Total Kjeldahl Nitrogen (TKN)	mg/L		<0.7	<0.7	<0.7	<0.7	<0.7	<0.7	<0.7	<0.7	<0.7	<0.7	<0.7	<0.7	<0.7
Ion Percentage	%		0.5	4.2	4.7	1.0	0.6	0.7	2.0	0.6	3.3	4.1	2.2	2.9	0.8

NOTES: 1) Blank denotes data not available.
2) ODWQS denotes O. Reg. 169/03: Ontario Drinking Water Quality Standards (as amended).
3) *denotes health related ODWQS.
** denotes aesthetic objective for ODWQS.
*** denotes operational guideline for ODWQS.
4) mg/L denotes milligrams per litre.

Table H-4
Groundwater - General Analytical Results
Twin Creeks Environmental Centre

Parameter	Units	ODWQS	OW69-5	OW69-5	OW69-5	OW69-5	OW69-5	OW69-5	OW69-5	OW69-5	OW69-5	OW69-5	OW69-5	OW69-5
Date			06-May-14	24-Nov-14	17-Dec-14	12-May-15	18-Jun-15	12-Nov-15	27-May-16	16-Nov-16	19-May-17	08-Nov-17	10-May-18	13-Nov-18	14-May-19
Laboratory			MAXXAM	MAXXAM	MAXXAM	MAXXAM	MAXXAM	MAXXAM	MAXXAM	MAXXAM	MAXXAM	MAXXAM	MAXXAM	MAXXAM	MAXXAM
Alkalinity (Total as CaCO3)	mg/L	30-500***	630	660	630	660	650	620	590	630	600	650	690	680	670
Conductivity	umho/cm		5000	5600	5600	4000	4600	5300	5400	5500	5600	5600	5800	5300	5600
Dissolved Barium (Ba)	mg/L	1*	0.008	0.011	0.011	0.009	0.009	0.01	0.008	0.008	0.007	0.009	<0.03	0.009	0.008
Dissolved Boron (B)	mg/L	5.0*	0.98	1.2	1.3	1.1	1	1	1.1	1.1	1.1	1.1	1	1.1	0.91
Dissolved Cadmium (Cd)	mg/L	0.005*	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0005	<0.0001	<0.0001
Dissolved Calcium (Ca)	mg/L		480	450	480	490	460	470	440	450	450	470	480	490	500
Dissolved Chloride (Cl)	mg/L	250**	9	9	10	10	12	11	10	11	10	11	10	11	11
Dissolved Iron (Fe)	mg/L	0.3**	8.2	4.1	6.1	1.9	7.3	6.9	4	3.3	2.2	5.1	4.6	4.3	4.4
Dissolved Lead (Pb)	mg/L	0.01*	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.003	<0.0005	<0.0005
Dissolved Magnesium (Mg)	mg/L		690	620	610	690	600	560	570	580	580	580	620	630	680
Dissolved Organic Carbon	mg/L	5**	2.8	3.4	2.5	8.2	3.4	2.7	2.4	2.5	2.2	2.3	2.3	2.5	2.4
Dissolved Potassium (K)	mg/L		6.2	6.8	7	7.4	6	6.6	6.2	6.7	6.6	6.7	6	6.8	6.1
Dissolved Sodium (Na)	mg/L	200**	290	270	290	320	270	270	260	290	270	280	280	290	290
Dissolved Sulphate (SO4)	mg/L	500**	3100	3500	3600	3100	2900	3300	3400	3400	3600	3400	3500	3600	3600
Nitrate (N)	mg/L	10.0*	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
pH	(pH units)	6.5-8.5	7.6	7.6	7.49	7.74	7.59	7.36	7.48	7.47	7.42	7.54	7.47	7.42	7.43
Total Ammonia-N	mg/L		<0.15	0.19	0.2	<0.15	0.22	0.29	0.21	0.27	0.16	0.21	0.2	0.33	0.19
Total Dissolved Solids	mg/L	500	5330	5770	5820	5390	5320	5350	5570	5520	5650	5690	5550	5730	6150
Total Kjeldahl Nitrogen (TKN)	mg/L		<0.7	<0.7	<0.7	<0.7	<0.7	<0.7	<0.7	<0.7	0.9	<0.7	<0.7	<0.7	<0.7
Ion Percentage	%		10.5	0.5	0.4	11.2	7.9	1.0	0.6	0.6	2.2	0.7	1.3	1.1	3.8

Parameter	Units	ODWQS	OW69-5	OW69-5	OW69-5	OW69-5	OW69-5	OW69-5	OW69-5	OW69-5	OW69-5	OW69-5	OW69-5
Date			05-Nov-19	08-May-20	03-Nov-20	20-May-21	03-Nov-21	05-May-22	02-Nov-22	02-May-23	03-Nov-23	08-May-24	19-Nov-24
Laboratory			Bureau Veritas	Bureau Veritas	Bureau Veritas	Bureau Veritas	Bureau Veritas	Bureau Veritas	Bureau Veritas	Bureau Veritas	Bureau Veritas	Bureau Veritas	Bureau Veritas
Alkalinity (Total as CaCO3)	mg/L	30-500***	700	730	720	690	720	710	720	690	690	690	710
Conductivity	umho/cm		5700	5800	5800	5800	5800	5800	5800	5900	5700	5600	6000
Dissolved Barium (Ba)	mg/L	1*	0.009	<0.03	0.009	<0.03	0.009	0.007	0.009	0.008	0.009	0.008	0.010
Dissolved Boron (B)	mg/L	5.0*	0.83	0.9	1.1	1.0	0.9	0.94	1.1	0.9	0.99	0.93	0.99
Dissolved Cadmium (Cd)	mg/L	0.005*	<0.0001	<0.0005	<0.0001	<0.0005	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001
Dissolved Calcium (Ca)	mg/L		450	450	460	460	470	500	460	480	470	480	470
Dissolved Chloride (Cl)	mg/L	250**	10	11	11	11	11	12	11	8.9	6.9	9.7	8.1
Dissolved Iron (Fe)	mg/L	0.3**	2.2	3.1	3.2	3.5	3.4	3.3	3.1	1.6	3.3	2.7	2.9
Dissolved Lead (Pb)	mg/L	0.01*	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
Dissolved Magnesium (Mg)	mg/L		620	630	620	660	640	640	650	650	630	710	710
Dissolved Organic Carbon	mg/L	5**	2.8	2.6	2.8	2.3	2.7	2.8	3	2.5	3.2	4.4	3.2
Dissolved Potassium (K)	mg/L		6.2	6.0	6.8	6.0	6.7	5.9	6.6	5.9	6.3	6.1	6.6
Dissolved Sodium (Na)	mg/L	200**	270	280	290	290	290	300	290	290	290	300	290
Dissolved Sulphate (SO4)	mg/L	500**	3100	3300	3600	3800	3700	3500	3700	3900	3500	3500	3500
Nitrate (N)	mg/L	10.0*	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	0.12	<0.10	<0.10
pH	(pH units)	6.5-8.5	7.3	7.5	7.4	7.5	7.7	7.7	7.4	7.7	7.6	7.7	7.6
Total Ammonia-N	mg/L		0.36	0.15	0.16	0.162	0.15	<0.15	0.17	<0.15	<0.15	<0.15	0.15
Total Dissolved Solids	mg/L	500	5690	5590	6160	5440	5430	5780	4950	5790	5990	5860	6260
Total Kjeldahl Nitrogen (TKN)	mg/L		<0.7	<0.7	<0.7	0.3	0.9	0.9	0.9	1.0	<0.7	0.8	<0.7
Ion Percentage	%		5.3	3.0	0.5	0.8	0.5	3.0	0.3	1.8	1.8	5.8	5.2

NOTES: 1) Blank denotes data not available.
2) ODWQS denotes O. Reg. 169/03: Ontario Drinking Water Quality Standards (as amended).
3) *denotes health related ODWQS.
** denotes aesthetic objective for ODWQS.
*** denotes operational guideline for ODWQS.
4) mg/L denotes milligrams per litre.

Table H-4
Groundwater - General Analytical Results
Twin Creeks Environmental Centre

Parameter	Units	ODWQS	OW70-5	OW70-5	OW70-5	OW70-5	OW70-5	OW70-5	OW70-5	OW70-5	OW70-5	OW70-5	OW70-5	OW70-5	OW70A-5
Date			22-May-02	13-Jun-02	07-Nov-02	14-May-03	13-Nov-03	26-May-04	27-Nov-04	13-May-05	29-Nov-05	19-May-06	24-Nov-06	04-May-07	15-Nov-07
Laboratory			Accutest	Accutest	Accutest	Accutest	Accutest	Accutest	Accutest	Accutest	Accutest	Accutest	Accutest	Accutest	
Alkalinity (Total as CaCO3)	mg/L	30-500***	533	532	549	563	564	569	565	574	573	579	564	571	
Dissolved Boron (B)	mg/L	5.0*	0.64	0.72	0.38	0.31	0.47	0.29	0.41	0.58	0.40	0.37	0.57	0.42	
Dissolved Calcium (Ca)	mg/L		230	228	180	213	209	234	265	269	241	199	217	239	
Dissolved Chloride (Cl)	mg/L	250**	5	6	6	6	3	5	5	5	5	6	5	5	
Dissolved Iron (Fe)	mg/L	0.3**	1.32	<0.01	0.74	0.25	1.79	1.68	1.7	1.8	0.49	0.93	1.37	0.66	
Dissolved Magnesium (Mg)	mg/L		383	358	257	320	349	319	268	343	315	321	318	320	
Dissolved Organic Carbon	mg/L	5**	4.8	3.7	3.1	3.3	2.5	2.3	2.9	2.4	2.8	2.8	2.6	3.1	
Dissolved Potassium (K)	mg/L		6	6	7	5	8	6	5	5	5	4	5	4	
Dissolved Sodium (Na)	mg/L	200**	143	129	120	111	123	129	123	126	113	103	114	111	
Dissolved Sulphate (SO4)	mg/L	500**	1660	1630	1220	1900	1460	1480	1510	1500	1590	1510	1570	1430	
Nitrate (N)	mg/L	10.0*	<0.10	0.04	<0.10	0.11	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	
Nitrite (N)	mg/L	1.0*													
NO3+NO2	mg/L	10.0*													
Total Ammonia-N	mg/L		0.08	0.04	0.03	0.07	0.08	0.05	0.02	0.20	<0.02	<0.02	0.02	0.03	
Total Kjeldahl Nitrogen (TKN)	mg/L		0.24	0.13	0.17	<0.05	1.96	0.13	0.07	0.26	0.20	0.20	0.10	<0.05	
Ion Percentage	%		6.1	4.0	1.2	8.0	5.7	3.9	0.3	7.2	0.2	0.4	0.2	4.6	

COMPROMISED DURING CONSTRUCTION ACTIVITIES

Parameter	Units	ODWQS	OW70B-5	OW70B-5	OW70B-5	OW70B-5	OW70B-5	OW70B-5	OW70B-5	OW70B-5	OW70B-5	OW70B-5	OW70B-5	OW70B-5	OW70B-5
Date			22-May-08	05-Nov-08	14-May-09	19-Nov-09	20-May-10	17-Nov-10	12-May-11	2-Nov-11	9-May-12	6-Nov-12	9-May-13	6-Nov-13	06-May-14
Laboratory			MAXXAM	MAXXAM	MAXXAM	MAXXAM	MAXXAM	MAXXAM	MAXXAM	MAXXAM	MAXXAM	MAXXAM	MAXXAM	MAXXAM	MAXXAM
Alkalinity (Total as CaCO3)	mg/L	30-500***			498	547	542	552	566	573	590	590	590	610	600
Conductivity	umho/cm				2750	2620	2470	2310	2250	2130	2200	2200	2100	2100	2100
Dissolved Barium (Ba)	mg/L	1*			0.020	0.020	0.016	0.019	0.017	0.019	0.016	0.017	0.014	0.016	0.013
Dissolved Boron (B)	mg/L	5.0*			0.70	0.66	0.56	0.50	0.52	0.58	0.46	0.54	0.40	0.55	0.49
Dissolved Cadmium (Cd)	mg/L	0.005*			<0.0001	<0.0001	<0.0001	0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.00010	<0.0001
Dissolved Calcium (Ca)	mg/L				190	160	160	130	140	140	130	130	120	130	130
Dissolved Chloride (Cl)	mg/L	250**			7	6	6	6	5	6	5	5	5	6	5
Dissolved Iron (Fe)	mg/L	0.3**			1.6	1.8	<0.1	<0.1	1.0	1.9	0.3	2.6	<0.10	3.5	2.1
Dissolved Lead (Pb)	mg/L	0.01*			<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.00050	<0.0005
Dissolved Magnesium (Mg)	mg/L				280	280	270	230	240	210	240	220	220	220	230
Dissolved Organic Carbon	mg/L	5**	DRY	DRY	7.4	5.9	3.4	3.4	3.1	3.5	2.9	2.8	3.8	3	3.3
Dissolved Potassium (K)	mg/L				8.3	8.2	6.9	6.4	6.0	5.8	5.6	5.7	4.9	5.5	5
Dissolved Sodium (Na)	mg/L	200**			100	100	98	85	87	81	93	87	82	89	92
Dissolved Sulphate (SO4)	mg/L	500**			1300	1200	1000	840	780	700	740	670	740	660	690
Nitrate (N)	mg/L	10.0*			<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.10	<0.10	<0.10	<0.10	<0.10
pH	(pH units)	6.5-8.5			7.8	7.8	8.1	7.7	8.1	7.2	7.9	7.5	8.0	7.3	8.0
Total Ammonia-N	mg/L				<0.15	0.2	<0.15	<0.15	<0.15	<0.15	<0.15	0.18	<0.15	<0.15	<0.15
Total Dissolved Solids	mg/L	500			1750	1700	1590	1440	1340	1470	1660	1650	1650	1620	1550
Total Kjeldahl Nitrogen (TKN)	mg/L				<4	<7	2.0	<0.7	<0.7	<0.7	<0.7	0.8	<0.7	<0.7	<0.7
Ion Percentage	%				2.1	1.9	7.3	4.6	8.9	7.4	9.4	9.2	4.9	9.0	9.7

NOTES: 1) Blank denotes data not available.
2) ODWQS denotes O. Reg. 169/03: Ontario Drinking Water Quality Standards (as amended).
3) *denotes health related ODWQS.
** denotes aesthetic objective for ODWQS.
*** denotes operational guideline for ODWQS.
4) mg/L denotes milligrams per litre.

Table H-4
Groundwater - General Analytical Results
Twin Creeks Environmental Centre

Parameter	Units	ODWQS	OW70B-5	OW70B-5	OW70B-5	OW70B-5	OW70B-5	OW70B-5	OW70B-5	OW70B-5	OW70B-5	OW70B-5	OW70B-5	OW70B-5	OW70B-5
Date			**19-Nov-14**	**12-May-15**	**12-Nov-15**	**25-May-16**	**14-Nov-16**	**17-May-17**	**08-Nov-17**	**08-May-18**	**12-Nov-18**	**13-May-19**	**07-Nov-19**	**06-May-20**	**04-Nov-20**
Laboratory			**MAXXAM**	**MAXXAM**	**MAXXAM**	**MAXXAM**	**MAXXAM**	**MAXXAM**	**MAXXAM**	**MAXXAM**	**MAXXAM**	**MAXXAM**	**Bureau Veritas**	**Bureau Veritas**	**Bureau Veritas**
Alkalinity (Total as CaCO3)	mg/L	30-500***	610	590	600	600	620	600	630	620	610	590	620	610	610
Conductivity	umho/cm		2200	1600	2100	2100	2200	2100	2100	2200	2000	2100	2100	2100	2000
Dissolved Barium (Ba)	mg/L	1*	0.013	0.013	0.014	0.013	0.012	0.011	0.012	0.012	0.014	0.011	0.013	0.01	0.012
Dissolved Boron (B)	mg/L	5.0*	0.47	0.47	0.52	0.53	0.55	0.45	0.5	0.44	0.53	0.42	0.51	0.43	0.51
Dissolved Cadmium (Cd)	mg/L	0.005*	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001
Dissolved Calcium (Ca)	mg/L		120	130	130	130	120	110	130	120	130	120	130	120	130
Dissolved Chloride (Cl)	mg/L	250**	6	6	5.6	5.9	6.3	6.8	6.3	6.1	6.2	6.3	6.4	6.4	6.8
Dissolved Iron (Fe)	mg/L	0.3**	0.66	1.80	2.10	1.90	2.10	0.50	1.6	<0.1	2.5	0.1	2.5	<0.1	0.8
Dissolved Lead (Pb)	mg/L	0.01*	0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
Dissolved Magnesium (Mg)	mg/L		220	220	230	230	220	200	210	200	210	200	210	210	220
Dissolved Organic Carbon	mg/L	5**	3.5	3.0	3.2	2.6	2.7	3.0	2.7	2.8	3	2.8	2.9	2.8	2.9
Dissolved Potassium (K)	mg/L		5.1	5.0	5.5	5.1	5.3	4.6	5.1	4.5	5.1	4.3	5.0	4.4	5.2
Dissolved Sodium (Na)	mg/L	200**	88	90	94	92	90	93	90	88	92	87	90	90	93
Dissolved Sulphate (SO4)	mg/L	500**	730	690	690	670	660	670	620	640	690	640	630	660	650
Nitrate (N)	mg/L	10.0*	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
pH	(pH units)	6.5-8.5	7.9	8.0	7.7	7.9	7.8	7.8	7.8	7.9	7.8	7.7	7.8	7.8	7.8
Total Ammonia-N	mg/L		<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15
Total Dissolved Solids	mg/L	500	1690	1550	1640	1570	1550	1580	1430	1470	1480	1500	1500	1480	1540
Total Kjeldahl Nitrogen (TKN)	mg/L		<0.7	<0.7	<0.7	<0.7	<0.7	<0.7	<0.7	<0.7	<0.7	<0.7	<0.7	<0.7	<0.7
Ion Percentage	%		5.1	8.4	9.8	10.5	7.9	4.3	8.7	5.6	6.5	6.5	8.6	6.7	9.7

Parameter	Units	ODWQS	OW70B-5	OW70B-5	OW70B-5	OW70B-5	OW70B-5	OW70B-5	OW70B-5	OW70B-5
Date			**18-May-21**	**02-Nov-21**	**05-May-22**	**01-Nov-22**	**01-May-23**	**13-Nov-23**	**07-May-24**	**18-Nov-24**
Laboratory			**Bureau Veritas**	**Bureau Veritas**	**Bureau Veritas**	**Bureau Veritas**	**Bureau Veritas**	**Bureau Veritas**	**Bureau Veritas**	**Bureau Veritas**
Alkalinity (Total as CaCO3)	mg/L	30-500***	600	630	610	650	620	590	610	630
Conductivity	umho/cm		2100	2000	2100	2000	2100	2000	2000	2100
Dissolved Barium (Ba)	mg/L	1*	0.011	0.012	0.011	0.012	0.01	0.012	0.011	0.012
Dissolved Boron (B)	mg/L	5.0*	0.43	0.46	0.42	0.51	0.39	0.42	0.43	0.50
Dissolved Cadmium (Cd)	mg/L	0.005*	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001
Dissolved Calcium (Ca)	mg/L		110	120	120	130	110	120	120	120
Dissolved Chloride (Cl)	mg/L	250**	7.0	6.4	6.8	7.2	6	5.5	9.4	4.8
Dissolved Iron (Fe)	mg/L	0.3**	<0.1	0.3	0.1	1.4	<0.1	0.2	<0.1	0.6
Dissolved Lead (Pb)	mg/L	0.01*	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
Dissolved Magnesium (Mg)	mg/L		200	210	210	220	190	200	200	200
Dissolved Organic Carbon	mg/L	5**	2.7	2.6	2.7	2.7	2.8	8.2	3.4	8.2
Dissolved Potassium (K)	mg/L		4.3	4.9	4.1	5.2	4.1	4.4	4.5	4.7
Dissolved Sodium (Na)	mg/L	200**	90	88	92	94	82	89	89	87
Dissolved Sulphate (SO4)	mg/L	500**	620	650	630	590	630	650	660	630
Nitrate (N)	mg/L	10.0*	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
pH	(pH units)	6.5-8.5	7.8	7.9	7.99	7.9	8.19	8.3	8.1	7.9
Total Ammonia-N	mg/L		<0.050	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15
Total Dissolved Solids	mg/L	500	1300	1330	1390	1320	1360	1550	1490	1590
Total Kjeldahl Nitrogen (TKN)	mg/L		<0.1	<0.7	<0.7	<0.7	<0.70	<0.7	<0.7	<0.7
Ion Percentage	%		6.3	6.3	8.1	11.1	2.9	6.2	4.9	5.7

NOTES: 1) Blank denotes data not available.
2) ODWQS denotes O. Reg. 169/03: Ontario Drinking Water Quality Standards (as amended).
3) *denotes health related ODWQS.
** denotes aesthetic objective for ODWQS.
*** denotes operational guideline for ODWQS.
4) mg/L denotes milligrams per litre.

Table H-4
Groundwater - General Analytical Results
Twin Creeks Environmental Centre

Parameter	Units	ODWQS	OW71-5	OW71-5	OW71-5	OW71-5	OW71-5	OW71-5	OW71-5	OW71-5	OW71-5	OW71-5	OW71-5
Date			**21-Jun-04**	**27-Nov-04**	**13-May-05**	**24-Nov-06**	**05-May-07**	**16-Nov-07**	**22-May-08**	**04-Nov-08**	**19-May-09**	**18-Nov-09**	**17-May-10**
Laboratory			**Accutest**	**Accutest**	**Accutest**	**Accutest**	**Accutest**	**Accutest**	**MAXXAM**	**MAXXAM**	**MAXXAM**	**MAXXAM**	**MAXXAM**
Alkalinity (Total as CaCO3)	mg/L	30-500***	371	452	467	472	484	469	438	458	350	314	255
Dissolved Chloride (Cl)	mg/L	250**	11	<1	6	9	10	7	13	11	20	22	11
Dissolved Sulphate (SO4)	mg/L	500**	191	122	167	236	252	200	406	351	230	230	120
Dissolved Calcium (Ca)	mg/L		96	89	101	108	117	98	130	110	87	81	58
Dissolved Magnesium (Mg)	mg/L		67	77	78	79	77	75	86	75	50	42	27
Dissolved Potassium (K)	mg/L		7	5	5	4	4	4	4.3	4.6	3.2	3.4	2.2
Dissolved Sodium (Na)	mg/L	200**	30	30	34	57	86	47	82	70	84	85	50
Dissolved Iron (Fe)	mg/L	0.3**	0.29	2.71	<0.01	0.03	<0.03	<0.03	<0.1	0.1	0.1	1.1	0.5
Total Ammonia-N	mg/L		0.08	0.05	<0.02	0.02	0.06	0.04	<0.15	<0.15	<0.15	<0.15	1.00
Total Kjeldahl Nitrogen (TKN)	mg/L		0.64	0.16	0.12	0.09	0.13	<0.10	<0.7	<0.7	<4	<4	2.5
Nitrate (N)	mg/L	10.0*	<0.10	<0.10	<0.10	<0.10	0.26	<0.10	<0.1	<0.1	<0.1	<0.1	0.7
Dissolved Organic Carbon	mg/L	5**	11.6	3.3	1.8	1.8	2.0	2.4	1.5	1.4	3.1	4.7	3.4
Dissolved Boron (B)	mg/L	5.0*	0.20	0.18	0.24	0.23	0.15	0.20	0.16	0.18	0.13	0.16	0.09
Conductivity	umho/cm								1500	1370	1080	1030	739
Total Dissolved Solids	mg/L	500							932	880	695	675	472
pH	(pH units)	6.5-8.5							8.0	8.0	7.6	8.0	8.2
Dissolved Barium (Ba)	mg/L	1*							0.039	0.034	0.031	0.031	0.024
Dissolved Cadmium (Cd)	mg/L	0.005*							<0.0001	<0.0001	<0.0001	<0.0001	<0.0001
Dissolved Lead (Pb)	mg/L	0.01*							0.00	<0.0005	<0.0005	<0.0005	<0.0005
Ion Percentage	%		6.9	10.8	7.8	6.2	9.0	5.1	3.9	0.8	5.0	3.5	96.2

Parameter	Units	ODWQS	OW71A-5	OW71A-5	OW71A-5	OW71A-5	OW71A-5	OW71A-5	OW71A-5	OW71A-5	OW71A-5	OW71A-5	OW71A-5	OW71A-5	OW71A-5
Date			**12-May-11**	**02-Nov-11**	**09-May-12**	**06-Nov-12**	**09-May-13**	**06-Nov-13**	**06-May-14**	**24-Nov-14**	**12-May-15**	**12-Nov-15**	**25-May-16**	**16-Nov-16**	**17-May-17**
Laboratory			**MAXXAM**	**MAXXAM**	**MAXXAM**	**MAXXAM**	**MAXXAM**	**MAXXAM**	**MAXXAM**	**MAXXAM**	**MAXXAM**	**MAXXAM**	**MAXXAM**	**MAXXAM**	**MAXXAM**
Alkalinity (Total as CaCO3)	mg/L	30-500***	407	412	450	450	440	460	440	440	430	440	420	430	430
Conductivity	umho/cm		1130	998	1100	1000	1100	1100	1100	1100	870	1100	1100	1100	1200
Dissolved Barium (Ba)	mg/L	1*	0.044	0.066	0.083	0.092	0.093	0.096	0.094	0.092	0.095	0.095	0.091	0.100	0.087
Dissolved Boron (B)	mg/L	5.0*	0.14	0.17	0.13	0.16	0.12	0.13	0.12	0.16	0.13	0.14	0.15	0.15	0.12
Dissolved Cadmium (Cd)	mg/L	0.005*	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.00010	<0.0001	0.0002	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001
Dissolved Calcium (Ca)	mg/L		100	100	95	90	97	97	100	93	100	99	95	100	99
Dissolved Chloride (Cl)	mg/L	250**	11	11	10	10	11	14	14	16	17	16	19	20	22
Dissolved Iron (Fe)	mg/L	0.3**	0.1	0.9	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.1	<0.1	<0.1
Dissolved Lead (Pb)	mg/L	0.01*	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.00050	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
Dissolved Magnesium (Mg)	mg/L		73	81	79	68	76	73	78	74	77	75	77	81	76
Dissolved Organic Carbon	mg/L	5**	3.9	3.3	2.3	2.4	3.0	2.5	2	3.1	3.6	2.3	2.3	2.5	2.4
Dissolved Potassium (K)	mg/L		4.7	4.5	3.5	3.3	2.8	3.1	2.6	2.9	2.7	2.9	2.6	3.0	2.4
Dissolved Sodium (Na)	mg/L	200**	51	46	38	31	29	42	42	38	39	35	37	42	35
Dissolved Sulphate (SO4)	mg/L	500**	210	140	130	110	160	170	180	170	180	170	190	180	210
Nitrate (N)	mg/L	10.0*	<0.1	<0.1	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
pH	(pH units)	6.5-8.5	8.0	7.1	7.9	7.6	8.0	7.2	8.0	7.9	7.9	7.8	7.9	7.9	7.9
Total Ammonia-N	mg/L		<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15
Total Dissolved Solids	mg/L	500	690	680	578	652	666	648	486	640	688	652	716	656	698
Total Kjeldahl Nitrogen (TKN)	mg/L		<0.7	<0.7	<0.7	<0.7	<0.7	<0.7	<0.7	<0.7	<0.7	<0.7	<0.7	<0.7	<0.7
Ion Percentage	%		8.4	16.5	11.8	8.0	7.3	5.8	8.4	5.8	8.0	6.8	6.2	9.3	3.4

NOTES: 1) Blank denotes data not available.
2) ODWQS denotes O. Reg. 169/03: Ontario Drinking Water Quality Standards (as amended).
3) *denotes health related ODWQS.
** denotes aesthetic objective for ODWQS.
*** denotes operational guideline for ODWQS.
4) mg/L denotes milligrams per litre.

Table H-4
Groundwater - General Analytical Results
Twin Creeks Environmental Centre

Parameter	Units	ODWQS	OW71A-5	OW71A-5	OW71A-5	OW71A-5	OW71A-5	OW71A-5	OW71A-5	OW71A-5	OW71A-5	OW71A-5	OW71A-5	OW71A-5	OW71A-5
Date			07-Nov-17	09-May-18	12-Nov-18	13-May-19	07-Nov-19	06-May-20	03-Nov-20	19-May-21	02-Nov-21	05-May-22	01-Nov-22	01-May-23	02-Nov-23
Laboratory			MAXXAM	MAXXAM	MAXXAM	MAXXAM	Bureau Veritas	Bureau Veritas	Bureau Veritas	Bureau Veritas	Bureau Veritas	Bureau Veritas	Bureau Veritas	Bureau Veritas	Bureau Veritas
Alkalinity (Total as CaCO3)	mg/L	30-500***	440	430	450	430	470	440	460	430	460	430	480	420	440
Conductivity	umho/cm		1200	1200	1100	1200	1200	1300	1300	1300	1300	1300	1300	1400	1400
Dissolved Barium (Ba)	mg/L	1*	0.09	0.082	0.096	0.099	0.099	0.084	0.087	0.087	0.086	0.073	0.076	0.077	0.063
Dissolved Boron (B)	mg/L	5.0*	0.14	0.12	0.15	0.11	0.14	0.12	0.16	0.12	0.14	0.12	0.13	0.11	0.14
Dissolved Cadmium (Cd)	mg/L	0.005*	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001
Dissolved Calcium (Ca)	mg/L		100	100	110	110	110	110	120	120	120	130	120	140	130
Dissolved Chloride (Cl)	mg/L	250**	22	24	26	27	26	27	28	29	29	30	32	30	25
Dissolved Iron (Fe)	mg/L	0.3**	<0.1	<0.1	0.2	4.5	0.1	1.6	0.1	3.5	0.3	1.7	0.1	0.7	0.6
Dissolved Lead (Pb)	mg/L	0.01*	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
Dissolved Magnesium (Mg)	mg/L		79	74	80	84	84	88	88	92	92	95	91	100	97
Dissolved Organic Carbon	mg/L	5**	2.5	2.8	3.6	2.9	4.9	3.0	4.4	3.3	3.2	3.6	3.8	3.5	6.5
Dissolved Potassium (K)	mg/L		2.7	2.4	3	2.3	2.9	2.5	2.8	2.6	2.9	2.7	2.7	2.6	3.1
Dissolved Sodium (Na)	mg/L	200**	38	37	39	35	39	36	37	40	41	41	39	42	41
Dissolved Sulphate (SO4)	mg/L	500**	190	210	210	230	190	240	230	280	270	300	270	340	300
Nitrate (N)	mg/L	10.0*	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	0.27
pH	(pH units)	6.5-8.5	7.8	7.9	7.8	7.9	7.7	7.8	7.7	7.8	8.0	8.1	7.9	8.1	7.8
Total Ammonia-N	mg/L		<0.15	<0.15	0.74	0.15	1.46	0.20	1.33	0.25	0.68	<0.15	0.98	<0.15	0.27
Total Dissolved Solids	mg/L	500	690	675	675	750	745	775	830	730	805	810	665	845	875
Total Kjeldahl Nitrogen (TKN)	mg/L		<0.7	<0.7	0.8	<0.7	2.1	<0.7	2.1	0.4	1.0	<0.7	1.1	<0.7	<0.7
Ion Percentage	%		6.2	3.1	5.6	5.6	7.2	5.5	6.8	6.1	5.3	7.0	3.3	7.5	7.4

Parameter	Units	ODWQS	OW71A-5	OW71A-5
Date			10-May-24	18-Nov-24
Laboratory			Bureau Veritas	Bureau Veritas
Alkalinity (Total as CaCO3)	mg/L	30-500***	420	440
Conductivity	umho/cm		1400	1400
Dissolved Barium (Ba)	mg/L	1*	0.066	0.054
Dissolved Boron (B)	mg/L	5.0*	0.13	0.15
Dissolved Cadmium (Cd)	mg/L	0.005*	<0.0001	<0.0001
Dissolved Calcium (Ca)	mg/L		140	120
Dissolved Chloride (Cl)	mg/L	250**	31	28
Dissolved Iron (Fe)	mg/L	0.3**	0.2	0.4
Dissolved Lead (Pb)	mg/L	0.01*	<0.0005	<0.0005
Dissolved Magnesium (Mg)	mg/L		100	94
Dissolved Organic Carbon	mg/L	5**	8.7	5.9
Dissolved Potassium (K)	mg/L		2.4	3.4
Dissolved Sodium (Na)	mg/L	200**	42	38
Dissolved Sulphate (SO4)	mg/L	500**	350	300
Nitrate (N)	mg/L	10.0*	<0.10	0.56
pH	(pH units)	6.5-8.5	7.8	7.9
Total Ammonia-N	mg/L		<0.15	<0.15
Total Dissolved Solids	mg/L	500	935	970
Total Kjeldahl Nitrogen (TKN)	mg/L		<0.7	<0.7
Ion Percentage	%		6.7	4.4

NOTES: 1) Blank denotes data not available.
2) ODWQS denotes O. Reg. 169/03: Ontario Drinking Water Quality Standards (as amended).
3) *denotes health related ODWQS.
** denotes aesthetic objective for ODWQS.
*** denotes operational guideline for ODWQS.
4) mg/L denotes milligrams per litre.

Table H-4
Groundwater - General Analytical Results
Twin Creeks Environmental Centre

Parameter	Units	ODWQS	OW72-6	OW72-6	OW72-6	OW72-6	OW72-6	OW72-6	OW72-6	OW72-6	OW72-6	OW72-6	OW72-6	OW72-6	OW72-6
Date			**08-Dec-05**	**19-May-06**	**24-Nov-06**	**05-May-07**	**16-Nov-07**	**22-May-08**	**05-Nov-08**	**16-May-09**	**19-Nov-09**	**20-May-10**	**22-Nov-10**	**10-May-11**	**02-Nov-11**
Laboratory			**Accutest**	**Accutest**	**Accutest**	**Accutest**	**Accutest**	**MAXXAM**	**MAXXAM**	**MAXXAM**	**MAXXAM**	**MAXXAM**	**MAXXAM**	**MAXXAM**	**MAXXAM**
Alkalinity (Total as CaCO3)	mg/L	30-500***	345	426	350	491	518	521	517	525	536	522	530	519	503
Conductivity	umho/cm							2960	2940	2930	2940	2910	2920	2890	2840
Dissolved Barium (Ba)	mg/L	1*						0.007	0.008	0.008	0.008	0.008	0.008	0.008	0.009
Dissolved Boron (B)	mg/L	5.0*	0.45	0.42	0.73	0.65	0.67	0.68	0.65	0.65	0.69	0.68	0.66	0.59	0.74
Dissolved Cadmium (Cd)	mg/L	0.005*						<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001
Dissolved Calcium (Ca)	mg/L		272	264	239	268	234	220	220	220	220	220	210	210	200
Dissolved Chloride (Cl)	mg/L	250**	10	5	5	4	4	4	4	4	4	5	4	4	5
Dissolved Iron (Fe)	mg/L	0.3**	0.02	0.85	3.60	3.53	3.07	0.5	2.1	<0.1	0.5	0.5	1.1	0.3	0.6
Dissolved Lead (Pb)	mg/L	0.01*						0.00	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
Dissolved Magnesium (Mg)	mg/L		344	325	294	322	312	300	280	330	320	330	310	310	270
Dissolved Organic Carbon	mg/L	5**	6.0	6.6	6.4	5.7	5.2	3.9	3.8	4.5	4.1	3.7	4.2	3.7	4.5
Dissolved Potassium (K)	mg/L		12	8	6	6	6	5.8	5.9	5.7	5.8	5.8	5.7	5.4	5.3
Dissolved Sodium (Na)	mg/L	200**	123	115	110	114	108	110	110	120	120	120	120	120	100
Dissolved Sulphate (SO4)	mg/L	500**	1800	1720	1760	1590	1500	1480	1480	1400	1500	1400	1300	1300	1300
Nitrate (N)	mg/L	10.0*	<0.10	<0.10	<0.10	<0.10	<0.10	<0.1	<0.1	<0.1	<0.1	<0.1	0.2	<0.1	<0.1
pH	(pH units)	6.5-8.5						8.1	7.9	7.9	7.7	8.1	7.7	8.0	7.1
Total Ammonia-N	mg/L		0.16	0.05	0.09	0.08	0.06	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15
Total Dissolved Solids	mg/L	500						1720	1900	1860	1880	1850	1810	1770	1880
Total Kjeldahl Nitrogen (TKN)	mg/L		0.27	0.24	0.38	0.24	<0.10	<0.7	<0.7	<0.7	<0.7	<0.7	<0.7	<0.7	<0.7
Ion Percentage	%		4.2	2.2	2.1	4.1	2.7	1.2	0.8	6.7	2.9	6.7	6.9	7.2	1.5

Parameter	Units	ODWQS	OW72-6	OW72-6	OW72-6	OW72-6	OW72-6	OW72-6	OW72-6	OW72-6	OW72-6	OW72-6	OW72-6	OW72-6	OW72-6
Date			**09-May-12**	**06-Nov-12**	**10-May-13**	**06-Nov-13**	**06-May-14**	**24-Nov-14**	**12-May-15**	**12-Nov-15**	**26-May-16**	**16-Nov-16**	**18-May-17**	**07-Nov-17**	**09-May-18**
Laboratory			**MAXXAM**	**MAXXAM**	**MAXXAM**	**MAXXAM**	**MAXXAM**	**MAXXAM**	**MAXXAM**	**MAXXAM**	**MAXXAM**	**MAXXAM**	**MAXXAM**	**MAXXAM**	**MAXXAM**
Alkalinity (Total as CaCO3)	mg/L	30-500***	530	540	530	550	540	570	540	550	560	570	560	580	570
Conductivity	umho/cm		2900	2900	2800	2800	2900	3000	2200	2800	2900	2900	2900	2600	3000
Dissolved Barium (Ba)	mg/L	1*	0.01	0.009	0.009	0.008	0.009	0.008	0.009	0.01	0.009	0.009	0.009	0.01	0.009
Dissolved Boron (B)	mg/L	5.0*	0.71	0.69	0.72	0.71	0.66	0.69	0.66	0.71	0.69	0.73	0.7	0.69	0.73
Dissolved Cadmium (Cd)	mg/L	0.005*	<0.0001	<0.0001	<0.0001	<0.00010	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001
Dissolved Calcium (Ca)	mg/L		210	210	210	210	210	190	200	210	210	200	200	210	210
Dissolved Chloride (Cl)	mg/L	250**	4	4	4	5	4	5	4	4.6	4.8	5.1	4.9	4.7	4.6
Dissolved Iron (Fe)	mg/L	0.3**	0.74	0.70	0.40	0.28	0.23	<0.10	0.24	0.29	0.3	0.3	0.3	3.1	1.2
Dissolved Lead (Pb)	mg/L	0.01*	<0.0005	<0.0005	<0.0005	<0.00050	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
Dissolved Magnesium (Mg)	mg/L		330	290	300	300	300	290	300	310	310	310	280	290	320
Dissolved Organic Carbon	mg/L	5**	3.9	4.0	4.8	4	4.2	5.3	5.6	4.2	4.2	3.8	3.7	4.2	3.9
Dissolved Potassium (K)	mg/L		5.7	5.4	5.2	5.4	4.8	4.9	5.2	5.4	5.3	5.2	4.9	5.3	5.1
Dissolved Sodium (Na)	mg/L	200**	120	110	110	110	110	100	110	120	120	120	110	110	120
Dissolved Sulphate (SO4)	mg/L	500**	1300	1200	1300	1300	1200	1300	1200	1300	1300	1300	1300	1300	1300
Nitrate (N)	mg/L	10.0*	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
pH	(pH units)	6.5-8.5	7.8	7.5	7.9	7.0	7.9	7.91	7.86	7.64	7.93	7.72	7.72	7.72	7.81
Total Ammonia-N	mg/L		<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15
Total Dissolved Solids	mg/L	500	2420	2590	2470	2410	2480	2480	2690	2420	2470	2610	2460	2290	2390
Total Kjeldahl Nitrogen (TKN)	mg/L		<0.7	<0.7	<0.7	<0.7	<0.7	<0.7	<0.7	<0.7	<0.7	<0.7	<0.7	<0.7	<0.7
Ion Percentage	%		8.9	7.1	5.4	4.9	8.1	1.5	7.5	6.4	6.2	5.4	1.9	3.2	7.0

Parameter	Units	ODWQS	OW72-6	OW72-6	OW72-6	OW72-6	OW72-6	OW72-6	OW72-6	OW72-6	OW72-6	OW72-6	OW72-6	OW72-6	OW72-6
Date			**12-Nov-18**	**14-May-19**	**07-Nov-19**	**08-May-20**	**03-Nov-20**	**21-May-21**	**02-Nov-21**	**05-May-22**	**01-Nov-22**	**02-May-23**	**02-Nov-23**	**07-May-24**	**18-Nov-24**
Laboratory			**MAXXAM**	**MAXXAM**	**Bureau Veritas**	**Bureau Veritas**	**Bureau Veritas**	**Bureau Veritas**	**Bureau Veritas**	**Bureau Veritas**	**Bureau Veritas**	**Bureau Veritas**	**Bureau Veritas**	**Bureau Veritas**	**Bureau Veritas**
Alkalinity (Total as CaCO3)	mg/L	30-500***	560	540	560	560	560	550	560	620	570	550	540	550	560
Conductivity	umho/cm		2700	2800	2900	3000	2800	2900	2700	2100	2800	2800	2800	2700	2800
Dissolved Barium (Ba)	mg/L	1*	0.009	0.008	0.009	0.007	0.01	0.007	0.009	0.011	0.008	0.008	0.007	0.007	0.008
Dissolved Boron (B)	mg/L	5.0*	0.73	0.63	0.71	0.58	0.74	0.62	0.67	0.43	0.7	0.68	0.77	0.74	0.66
Dissolved Cadmium (Cd)	mg/L	0.005*	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001
Dissolved Calcium (Ca)	mg/L		210	210	200	200	200	200	200	110	210	210	200	200	190
Dissolved Chloride (Cl)	mg/L	250**	4.6	5.1	4.8	4.8	4.7	5.1	4.7	6.5	4.8	3.9	3.1	4.9	3.2
Dissolved Iron (Fe)	mg/L	0.3**	1.5	<0.1	0.9	<0.1	0.1	<0.1	<0.1	<0.1	0.2	<0.1	<0.1	<0.1	<0.1
Dissolved Lead (Pb)	mg/L	0.01*	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
Dissolved Magnesium (Mg)	mg/L		300	290	290	290	280	280	290	200	300	290	290	280	260
Dissolved Organic Carbon	mg/L	5**	4.1	4	3.8	4.2	3.8	3.7	3.7	3.0	3.9	3.6	8.1	6.0	8.0
Dissolved Potassium (K)	mg/L		5.4	4.6	5.1	4.7	4.9	5	5.1	4.4	5.4	4.8	5.1	5.0	4.6
Dissolved Sodium (Na)	mg/L	200**	120	110	110	110	110	110	110	87	120	110	120	110	110
Dissolved Sulphate (SO4)	mg/L	500**	1300	1300	1200	1300	1200	1300	1300	620	1200	1200	1200	1200	1200
Nitrate (N)	mg/L	10.0*	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
pH	(pH units)	6.5-8.5	7.7	7.8	7.6	7.8	7.7	7.8	7.8	8.1	7.8	8.1	7.7	8.0	7.9
Total Ammonia-N	mg/L		<0.15	<0.15	<0.15	<0.15	<0.15	<0.050	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15
Total Dissolved Solids	mg/L	500	2290	2480	2470	2470	2530	2230	2350	1400	2230	2150	2270	2400	2440
Total Kjeldahl Nitrogen (TKN)	mg/L		<0.7	<0.7	<0.7	<0.7	<0.7	<0.1	<0.7	<0.7	<0.7	<0.7	<0.7	<0.7	<0.7
Ion Percentage	%		5.2	4.1	6.0	3.0	4.9	2.1	3.0	5.4	7.9	6.9	7.0	5.1	2.0

NOTES: 1) Blank denotes data not available.
2) ODWQS denotes O. Reg. 169/03: Ontario Drinking Water Quality Standards (as amended).
3) *denotes health related ODWQS.
** denotes aesthetic objective for ODWQS.
*** denotes operational guideline for ODWQS.
4) mg/L denotes milligrams per litre.

Table H-4
Groundwater - General Analytical Results
Twin Creeks Environmental Centre

Parameter	Units	ODWQS	OW72-10	OW72-10	OW72-10	OW72-10	OW72-10	OW72-10	OW72-10	OW72-10	OW72-10	OW72-10	OW72-10	OW72-10	OW72-10
Date			30-Nov-05	19-May-06	24-Nov-06	05-May-07	16-Nov-07	22-May-08	05-Nov-08	19-May-09	18-Nov-09	19-May-10	22-Nov-10	10-May-11	02-Nov-11
Laboratory			Accutest	Accutest	Accutest	Accutest	Accutest	MAXXAM	MAXXAM	MAXXAM	MAXXAM	MAXXAM	MAXXAM	MAXXAM	MAXXAM
Alkalinity (Total as CaCO3)	mg/L	30-500***	338	337	331	321	329	326	332	329	331	326	326	326	320
Conductivity	umho/cm							2270	2260	2250	2230	2220	2230	2230	2210
Dissolved Barium (Ba)	mg/L	1*						0.01	0.011	0.01	0.010	0.010	0.010	0.009	0.01
Dissolved Boron (B)	mg/L	5.0*	0.92	0.87	1.23	0.90	1.07	1.1	1.1	1.1	1.1	1.1	1.0	0.93	1.1
Dissolved Cadmium (Cd)	mg/L	0.005*						<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001
Dissolved Calcium (Ca)	mg/L		204	212	200	201	195	190	180	190	190	180	190	180	190
Dissolved Chloride (Cl)	mg/L	250**	7	6	5	6	5	5	5	5	5	5	5	5	6
Dissolved Iron (Fe)	mg/L	0.3**	0.09	0.17	0.43	0.15	5.22	0.7	3.7	0.8	4.1	1.8	1.9	0.6	2.3
Dissolved Lead (Pb)	mg/L	0.01*						<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
Dissolved Magnesium (Mg)	mg/L		187	186	186	186	175	190	170	190	190	170	180	180	190
Dissolved Organic Carbon	mg/L	5**	2.1	1.8	2.3	2.6	1.9	1.2	1.3	2.5	1.8	1.4	1.6	1.2	1.5
Dissolved Potassium (K)	mg/L		7	6	6	6	5	5.1	4.6	5.2	5.0	4.7	4.8	4.8	5.1
Dissolved Sodium (Na)	mg/L	200**	105	108	109	119	107	120	99	120	120	110	120	120	120
Dissolved Sulphate (SO4)	mg/L	500**	1130	1010	1180	1050	1080	1070	1100	1000	1100	1000	980	990	950
Nitrate (N)	mg/L	10.0*	<0.10	<0.10	<0.10	0.40	0.23	0.3	0.1	0.4	<0.1	0.4	0.1	0.2	0.2
pH	(pH units)	6.5-8.5						8	7.9	7.9	7.8	7.8	7.64	8.01	7.51
Total Ammonia-N	mg/L		0.51	0.47	0.33	0.18	0.48	0.15	0.49	0.18	0.4	<0.15	0.25	<0.15	<0.15
Total Dissolved Solids	mg/L	500						1270	1400	1390	1430	1410	1310	1350	1430
Total Kjeldahl Nitrogen (TKN)	mg/L		0.85	0.78	0.42	0.17	0.88	<4	<4	<4	<4	<0.7	<0.7	<0.7	<0.7
Ion Percentage	%		1.5	6.8	0.2	5.6	1.3	4.4	2.2	7.0	3.1	2.7	6.5	5.3	9.2

Parameter	Units	ODWQS	OW72-10	OW72-10	OW72-10	OW72-10	OW72-10	OW72-10	OW72-10	OW72-10	OW72-10	OW72-10	OW72-10	OW72-10	OW72-10
Date			09-May-12	06-Nov-12	10-May-13	06-Nov-13	06-May-14	24-Nov-14	12-May-15	12-Nov-15	26-May-16	16-Nov-16	18-May-17	07-Nov-17	09-May-18
Laboratory			MAXXAM	MAXXAM	MAXXAM	MAXXAM	MAXXAM	MAXXAM	MAXXAM	MAXXAM	MAXXAM	Maxxam	MAXXAM	Maxxam	Maxxam
Alkalinity (Total as CaCO3)	mg/L	30-500***	320	340	310	340	320	340	330	340	350	350	340	340	
Conductivity	umho/cm		2200	2300	2200	2300	2300	2400	1800	2400	2500	2500	2500	2300	2700
Dissolved Barium (Ba)	mg/L	1*	0.01	0.011	0.011	0.011	0.010	0.014	0.011	0.011	0.010	0.011	0.011	0.01	0.011
Dissolved Boron (B)	mg/L	5.0*	1.1	1.0	1.1	1.1	1.1	1.1	1.0	1.1	1.1	1.1	1.1	1	1.2
Dissolved Cadmium (Cd)	mg/L	0.005*	<0.0001	<0.0001	<0.0001	<0.00010	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001
Dissolved Calcium (Ca)	mg/L		180	170	190	180	190	200	190	200	190	200	190	200	210
Dissolved Chloride (Cl)	mg/L	250**	5	5	6	6	5	6	5	6	5.6	5.9	5.6	5.5	5.5
Dissolved Iron (Fe)	mg/L	0.3**	0.98	1.3	2.0	0.6	1.5	0.94	0.7	2.0	2.3	1.9	7.5	1.8	2.7
Dissolved Lead (Pb)	mg/L	0.01*	<0.0005	<0.0005	<0.0005	<0.00050	<0.0005	0.0014	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
Dissolved Magnesium (Mg)	mg/L		180	160	170	180	170	180	180	190	190	200	180	190	230
Dissolved Organic Carbon	mg/L	5**	1.4	1.3	1.7	1.7	2.0	2.2	3.2	1.9	1.7	1.7	1.8	1.7	1.7
Dissolved Potassium (K)	mg/L		4.9	4.8	4.8	5.1	4.7	5	5.3	5.1	5.0	5.2	4.9	4.9	5.1
Dissolved Sodium (Na)	mg/L	200**	120	140	110	140	130	140	150	160	150	160	140	150	160
Dissolved Sulphate (SO4)	mg/L	500**	1000	940	930	1000	940	1100	1000	1100	1100	1100	1200	1100	1200
Nitrate (N)	mg/L	10.0*	0.24	0.21	0.39	0.21	0.43	0.31	0.26	0.36	0.13	0.34	0.39	0.56	0.28
pH	(pH units)	6.5-8.5	7.91	7.65	8.01	7.19	8.03	7.85	7.89	7.75	7.96	7.77	7.83	7.89	7.88
Total Ammonia-N	mg/L		<0.15	<0.15	0.22	0.37	<0.15	0.21	0.22	0.15	0.49	0.37	0.26	0.18	0.42
Total Dissolved Solids	mg/L	500	1940	1940	1870	1840	1830	1900	1950	1950	2060	1980	2020	2020	2080
Total Kjeldahl Nitrogen (TKN)	mg/L		<0.7	<0.7	<0.7	0.9	<0.7	<0.7	<0.7	<0.7	<0.7	<0.7	<0.7	<0.7	<0.7
Ion Percentage	%		5.0	4.6	6.9	5.8	7.7	3.7	7.7	6.3	4.6	7.3	0.6	5.7	

Parameter	Units	ODWQS	OW72-10	OW72-10	OW72-10	OW72-10	OW72-10	OW72-10	OW72-10	OW72-10	OW72-10	OW72-10	OW72-10	OW72-10	OW72-10
Date			12-Nov-18	14-May-19	07-Nov-19	08-May-20	03-Nov-20	18-May-21	02-Nov-21	03-May-22	01-Nov-22	02-May-23	02-Nov-23	06-May-24	18-Nov-24
Laboratory			MAXXAM	MAXXAM	Bureau Veritas	Bureau Veritas	Bureau Veritas	Bureau Veritas	Bureau Veritas	Bureau Veritas	Bureau Veritas	Bureau Veritas	Bureau Veritas	Bureau Veritas	Bureau Veritas
Alkalinity (Total as CaCO3)	mg/L	30-500***	370	340	340	340	330	350	380	340	390	380	330	370	350
Conductivity	umho/cm		2600	2600	2600	2600	2500	2700	2600	2700	2700	3130	2700	2700	2700
Dissolved Barium (Ba)	mg/L	1*	0.010	0.011	0.010	0.011	0.01	0.01	0.009	0.010	0.01	0.01	0.009	0.010	0.009
Dissolved Boron (B)	mg/L	5.0*	1.0	1.1	1.1	1.0	1.2	1.1	1.1	1.2	1.1	1.1	1.1	1.1	1.1
Dissolved Cadmium (Cd)	mg/L	0.005*	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001
Dissolved Calcium (Ca)	mg/L		210	230	210	220	220	230	230	240	240	220	220	240	210
Dissolved Chloride (Cl)	mg/L	250**	5.6	5.9	5.5	5.2	5.3	6.3	5.3	5.7	5.4	4.4	3.4	4.9	3.4
Dissolved Iron (Fe)	mg/L	0.3**	1.6	2.9	0.9	2.5	0.5	2.4	3.5	5.1	3.3	4.0	0.8	1.9	1.2
Dissolved Lead (Pb)	mg/L	0.01*	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
Dissolved Magnesium (Mg)	mg/L		200	210	210	220	210	230	220	240	240	230	230	230	210
Dissolved Organic Carbon	mg/L	5**	1.7	1.9	1.8	3.2	1.9	1.5	1.6	1.5	1.8	1.7	7.5	1.8	6.7
Dissolved Potassium (K)	mg/L		5.0	4.8	5.1	5.0	5.3	5.3	5.1	5.1	5.3	5.3	5	5.7	5.2
Dissolved Sodium (Na)	mg/L	200**	140	150	150	150	150	150	140	150	140	140	140	150	140
Dissolved Sulphate (SO4)	mg/L	500**	1200	1200	1200	1200	1200	1300	1300	1300	1300	1500	1300	1400	1200
Nitrate (N)	mg/L	10.0*	0.32	0.27	0.38	0.33	0.5	0.34	<0.10	0.38	<0.10	0.13	0.40	0.32	0.26
pH	(pH units)	6.5-8.5	7.8	7.7	7.9	7.9	7.7	8.1	8.0	7.8	7.8	8.0	8.0	7.9	7.9
Total Ammonia-N	mg/L		0.23	0.47	0.38	0.18	0.44	0.189	0.44	0.46	0.15	0.17	0.29	0.35	0.35
Total Dissolved Solids	mg/L	500	2180	2320	2070	2210	2230	1850	2110	2210	1900	1960	2230	2490	2340
Total Kjeldahl Nitrogen (TKN)	mg/L		<0.7	<0.7	<0.7	<0.7	<0.7	0.4	0.7	0.9	<0.7	<0.7	<0.7	0.7	<0.7
Ion Percentage	%		2.8	6.8	5.4	7.3	6.4	5.5	3.1	7.5	5.8	2.3	4.9	2.7	4.6

NOTES: 1) Blank denotes data not available.
2) ODWQS denotes O. Reg. 169/03: Ontario Drinking Water Quality Standards (as amended).
3) *denotes health related ODWQS.
** denotes aesthetic objective for ODWQS.
*** denotes operational guideline for ODWQS.
4) mg/L denotes milligrams per litre.

Table H-4
Groundwater - General Analytical Results
Twin Creeks Environmental Centre

Parameter	Units	ODWQS	OW73-6	OW73-6	OW73-6	OW73-6	OW73-6	OW73-6	OW73-6	OW73-6	OW73-6	OW73-6	OW73-6	OW73-6	OW73-6
Date			**30-Nov-05**	**19-May-06**	**24-Nov-06**	**05-May-07**	**16-Nov-07**	**22-May-08**	**05-Nov-08**	**16-May-09**	**11-Jun-09**	**19-Nov-09**	**19-May-10**	**22-Jun-10**	**22-Nov-10**
Laboratory			**Accutest**	**Accutest**	**Accutest**	**Accutest**	**Accutest**	**MAXXAM**	**MAXXAM**	**MAXXAM**	**MAXXAM**	**MAXXAM**	**MAXXAM**	**MAXXAM**	**MAXXAM**
Alkalinity (Total as CaCO3)	mg/L	30-500***	329	499	673	542	482	451	452	416	419	427	402		414
Conductivity	umho/cm							5240	5140	5130	5190	5130	5120		5080
Dissolved Barium (Ba)	mg/L	1*						0.013	0.014	<0.03	0.014	0.012	<0.05		0.011
Dissolved Boron (B)	mg/L	5.0*	0.62	0.50	0.85	1.1	1.00	0.93	0.96	1.1	1	1	0.9		1.0
Dissolved Cadmium (Cd)	mg/L	0.005*						<0.0001	<0.0001	<0.0005	<0.0001	<0.0001	<0.001		<0.0001
Dissolved Calcium (Ca)	mg/L		416	474	446	516	459	470	450	470	470	480	450		440
Dissolved Chloride (Cl)	mg/L	250**	10	8	8	6	6	7	6	6	6	6	6		6
Dissolved Iron (Fe)	mg/L	0.3**	1.44	1.38	1.21	3.3	3.37	0.2	2.4	3.3	3.0	1.0	2.0		1.4
Dissolved Lead (Pb)	mg/L	0.01*						<0.0005	<0.0005	<0.003	<0.0005	<0.0005	<0.005	<0.0005	<0.0005
Dissolved Magnesium (Mg)	mg/L		371	500	419	526	538	480	540	630	560	580	600		540
Dissolved Organic Carbon	mg/L	5**	7.0	4.0	4.1	3.9	4.0	3	2.9	4.5	4.1	3.4	2.9		3.2
Dissolved Potassium (K)	mg/L		11	9	9	9	9	8.8	8.2	8.9	8.9	8.8	8		7.9
Dissolved Sodium (Na)	mg/L	200**	191	189	563	344	267	320	200	230	230	230	210		190
Dissolved Sulphate (SO4)	mg/L	500**	2810	2980	3340	3190	3320	3430	3510	3300	3500	3500	3500		3200
Nitrate (N)	mg/L	10.0*	<0.10	<0.10	<0.10	<0.10	<0.10	<0.1	<0.1	0.1	0.1	0.2	0.1		0.1
pH	(pH units)	6.5-8.5						7.7	7.8	7.6	7.8	7.7	7.8		7.6
Total Ammonia-N	mg/L		0.41	0.27	0.38	0.25	0.32	<0.15	0.22	<0.15	<0.15	<0.15	<0.15		<0.15
Total Dissolved Solids	mg/L	500						3210	3250	3200	3160	3250	3040		1510
Total Kjeldahl Nitrogen (TKN)	mg/L		1.12	0.75	0.53	0.42	0.42	<0.7	<0.7	<0.7	<0.7	<0.7	<0.7		<0.7
Ion Percentage	%		3.9	1.6	0.0	5.1	0.8	1.7	3.5	5.7	0.5	0.7	0.5		0.4

Parameter	Units	ODWQS	OW73-6	OW73-6	OW73-6	OW73-6	OW73-6	OW73-6	OW73-6	OW73-6	OW73-6	OW73-6	OW73-6	OW73-6	OW73-6
Date			**10-May-11**	**02-Nov-11**	**09-May-12**	**06-Nov-12**	**10-May-13**	**05-Nov-13**	**06-May-14**	**24-Nov-14**	**12-May-15**	**12-Nov-15**	**26-May-16**	**16-Nov-16**	**18-May-17**
Laboratory			**MAXXAM**	**MAXXAM**	**MAXXAM**	**MAXXAM**	**MAXXAM**	**MAXXAM**	**MAXXAM**	**MAXXAM**	**MAXXAM**	**MAXXAM**	**MAXXAM**	**MAXXAM**	**MAXXAM**
Alkalinity (Total as CaCO3)	mg/L	30-500***	393	400	400	400	390	410	400	410	390	400	400	410	400
Conductivity	umho/cm		5040	5020	5100	5000	4900	5000	5000	5200	3900	4900	5100	5100	5200
Dissolved Barium (Ba)	mg/L	1*	0.010	0.011	0.010	<0.03	0.011	0.009	0.0	0.008	0.009	0.009	0.009	0.009	0.009
Dissolved Boron (B)	mg/L	5.0*	0.83	1.1	0.96	1.0	1.1	0.99	1.0	1	0.9	0.96	1	1.1	1
Dissolved Cadmium (Cd)	mg/L	0.005*	<0.0001	<0.0001	<0.0001	<0.0005	<0.0001	<0.00010	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001
Dissolved Calcium (Ca)	mg/L		460	480	460	430	490	490	480	430	470	470	460	470	440
Dissolved Chloride (Cl)	mg/L	250**	6	6	6	5	6	6	6.0	6	6	5.9	5.5	5.8	5.7
Dissolved Iron (Fe)	mg/L	0.3**	0.8	1.3	1.4	1.1	2.7	<0.10	2.6	0.25	0.44	2.8	3.3	3.2	3.3
Dissolved Lead (Pb)	mg/L	0.01*	<0.0005	<0.0005	<0.0005	<0.003	<0.0005	<0.00050	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
Dissolved Magnesium (Mg)	mg/L		580	640	630	540	540	530	630	510	540	600	550	550	590
Dissolved Organic Carbon	mg/L	5**	2.9	3.3	3.1	3.0	3.5	10	2.9	3.2	3.3	3.1	3	3	2.8
Dissolved Potassium (K)	mg/L		7.8	9	8.2	7.4	8.3	8.6	7.5	7.5	8.2	7.8	8.1	8.6	7.7
Dissolved Sodium (Na)	mg/L	200**	220	230	220	190	200	210	200	180	190	200	200	210	190
Dissolved Sulphate (SO4)	mg/L	500**	3200	3200	3400	3000	3200	3300	3400	3200	3200	3300	3300	3300	3400
Nitrate (N)	mg/L	10.0*	<0.1	<0.1	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	0.14	0.15	<0.10	<0.10	<0.10
pH	(pH units)	6.5-8.5	7.9	7.0	7.8	7.4	7.9	7.2	7.8	7.8	7.76	7.59	7.9	7.76	8.04
Total Ammonia-N	mg/L		<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15
Total Dissolved Solids	mg/L	500	2950	3360	6650	5350	5240	5160	3310	5340	5600	5130	5280	5290	5240
Total Kjeldahl Nitrogen (TKN)	mg/L		<0.7	<0.7	0.8	<0.7	<0.7	<0.7	<0.7	<0.7	<0.7	<0.7	<0.7	<0.7	<0.7
Ion Percentage	%		4.3	8.0	3.9	3.2	2.6	0.8	4.0	1.8	1.7	3.6	0.7	1.2	0.5

NOTES: 1) Blank denotes data not available.
2) ODWQS denotes O. Reg. 169/03: Ontario Drinking Water Quality Standards (as amended).
3) *denotes health related ODWQS.
** denotes aesthetic objective for ODWQS.
*** denotes operational guideline for ODWQS.
4) mg/L denotes milligrams per litre.
5) OW73-6 resampled for lead on June 22, 2010 due to elevated lead reportable detection limit for May 19, 2010.

Table H-4
Groundwater - General Analytical Results
Twin Creeks Environmental Centre

Parameter	Units	ODWQS	OW73-6	OW73-6	OW73-6	OW73-6	OW73-6	OW73-6	OW73-6	OW73-6	OW73-6	OW73-6	OW73-6	OW73-6	OW73-6
Date			**07-Nov-17**	**10-May-18**	**12-Nov-18**	**14-May-19**	**06-Nov-19**	**08-May-20**	**03-Nov-20**	**21-May-21**	**03-Nov-21**	**05-May-22**	**01-Nov-22**	**02-May-23**	**02-Nov-23**
Laboratory			**MAXXAM**	**MAXXAM**	**MAXXAM**	**MAXXAM**	**Bureau Veritas**	**Bureau Veritas**	**Bureau Veritas**	**Bureau Veritas**	**Bureau Veritas**	**Bureau Veritas**	**Bureau Veritas**	**Bureau Veritas**	**Bureau Veritas**
Alkalinity (Total as CaCO3)	mg/L	30-500***	410	410	430	400	430	460	460	490	510	710	530	500	480
Conductivity	umho/cm		5100	5100	4500	4700	4800	4800	4700	4500	4400	5800	4400	4750	4400
Dissolved Barium (Ba)	mg/L	1*	0.009	<0.03	0.008	0.007	0.007	0.008	0.009	<0.03	0.008	<0.03	0.008	0.008	0.009
Dissolved Boron (B)	mg/L	5.0*	1.1	1.1	1	0.81	0.76	0.78	1	0.9	0.84	1.0	0.86	0.75	0.84
Dissolved Cadmium (Cd)	mg/L	0.005*	<0.0001	<0.0005	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0005	<0.0001	<0.0005	<0.0001	<0.0001	<0.0001
Dissolved Calcium (Ca)	mg/L		470	470	470	490	460	460	460	460	480	450	520	500	480
Dissolved Chloride (Cl)	mg/L	250**	6.1	5.5	6.4	6.2	5.8	6.3	6.5	7.3	8.6	12	8.2	7.6	5.1
Dissolved Iron (Fe)	mg/L	0.3**	2.6	2.7	1.2	0.1	0.8	0.5	1.9	<0.5	0.5	2.9	0.5	0.1	0.5
Dissolved Lead (Pb)	mg/L	0.01*	<0.0005	<0.003	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.003	<0.0005	<0.0005	<0.0005
Dissolved Magnesium (Mg)	mg/L		550	580	520	510	490	450	440	410	400	650	410	350	360
Dissolved Organic Carbon	mg/L	5**	3	3.1	3.1	2.6	3	3	2.6	2.7	3.1	2.8	3.7	3.2	3.3
Dissolved Potassium (K)	mg/L		7.9	8	7.9	7	7.2	7	7.7	7	7.4	6	8.1	6.8	7.5
Dissolved Sodium (Na)	mg/L	200**	190	200	190	200	190	220	220	230	250	280	260	250	260
Dissolved Sulphate (SO4)	mg/L	500**	3200	3300	3100	3000	2800	2800	2800	2800	2600	3600	2600	2500	2500
Nitrate (N)	mg/L	10.0*	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
pH	(pH units)	6.5-8.5	7.7	7.7	7.6	7.6	7.6	7.8	7.6	7.7	7.8	7.7	7.6	7.1	7.6
Total Ammonia-N	mg/L		<0.15	<0.15	<0.15	<0.15	0.24	<0.15	<0.15	<0.050	<0.15	<0.15	<0.15	<0.15	<0.15
Total Dissolved Solids	mg/L	500	4930	5000	4890	4850	4770	4730	4630	4030	3220	5720	3670	3820	4310
Total Kjeldahl Nitrogen (TKN)	mg/L		<0.7	<0.7	<0.7	<0.7	<0.7	<0.7	<0.7	0.1	0.7	<0.7	<0.7	0.8	<0.7
Ion Percentage	%		2.0	2.5	1.6	3.8	4.1	2.4	1.8	0.1	3.6	0.4	5.7	3.1	3.7

Parameter	Units	ODWQS	OW73-6	OW73-6
Date			**07-May-24**	**18-Nov-24**
Laboratory			**Bureau Veritas**	**Bureau Veritas**
Alkalinity (Total as CaCO3)	mg/L	30-500***	520	290
Conductivity	umho/cm		4000	4100
Dissolved Barium (Ba)	mg/L	1*	0.008	0.009
Dissolved Boron (B)	mg/L	5.0*	0.7	0.67
Dissolved Cadmium (Cd)	mg/L	0.005*	<0.0001	<0.0001
Dissolved Calcium (Ca)	mg/L		470	460
Dissolved Chloride (Cl)	mg/L	250**	8.0	7.5
Dissolved Iron (Fe)	mg/L	0.3**	<0.1	0.3
Dissolved Lead (Pb)	mg/L	0.01*	<0.0005	<0.0005
Dissolved Magnesium (Mg)	mg/L		320	290
Dissolved Organic Carbon	mg/L	5**	4.9	8.7
Dissolved Potassium (K)	mg/L		6.9	6.8
Dissolved Sodium (Na)	mg/L	200**	260	250
Dissolved Sulphate (SO4)	mg/L	500**	2300	2100
Nitrate (N)	mg/L	10.0*	<0.10	<0.10
pH	(pH units)	6.5-8.5	7.8	7.6
Total Ammonia-N	mg/L		<0.15	<0.15
Total Dissolved Solids	mg/L	500	4030	4210
Total Kjeldahl Nitrogen (TKN)	mg/L		<0.7	<0.7
Ion Percentage	%		3.6	8.2

NOTES: 1) Blank denotes data not available.
2) ODWQS denotes O. Reg. 169/03: Ontario Drinking Water Quality Standards (as amended).
3) *denotes health related ODWQS.
** denotes aesthetic objective for ODWQS.
*** denotes operational guideline for ODWQS.
4) mg/L denotes milligrams per litre.
5) OW73-6 resampled for lead on June 22, 2010 due to elevated lead reportable detection limit for May 19, 2010.

Table H-4
Groundwater - General Analytical Results
Twin Creeks Environmental Centre

Parameter	Units	ODWQS	OW73-9	OW73-9	OW73-9	OW73-9	OW73-9	OW73-9	OW73-9	OW73-9	OW73-9	OW73-9	OW73-9	OW73-9
Date			30-Nov-05	19-May-06	24-Nov-06	05-Jan-07	05-May-07	16-Nov-07	22-May-08	05-Nov-08	19-May-09	18-Nov-09	19-May-10	22-Nov-10	10-May-11
Laboratory			Accutest	Accutest	Accutest	Accutest	Accutest	Accutest	MAXXAM	MAXXAM	MAXXAM	MAXXAM	MAXXAM	MAXXAM	MAXXAM
Alkalinity (Total as CaCO3)	mg/L	30-500***	258	306	297	288	273	261	270	260	260	262	253	254	252
Conductivity	umho/cm								3610	3480	3510	3490	3480	3490	3480
Dissolved Barium (Ba)	mg/L	1*							0.007	0.006	0.006	0.006	0.007	0.006	0.006
Dissolved Boron (B)	mg/L	5.0*	0.96	1.02	1.54	0.28	1.07	1.29	1.2	1.1	1.2	1.2	1.2	1.2	1.0
Dissolved Cadmium (Cd)	mg/L	0.005*							<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001
Dissolved Calcium (Ca)	mg/L		356	399	381	406	375	382	380	360	360	350	360	340	350
Dissolved Chloride (Cl)	mg/L	250**	9	9	9	8	8	9	8	8	8	8	8	8	8
Dissolved Iron (Fe)	mg/L	0.3**	0.85	4.66	5.00	8.15	9.71	6.33	6.2	1.7	1.7	1.2	5.2	0.7	0.6
Dissolved Lead (Pb)	mg/L	0.01*							<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
Dissolved Magnesium (Mg)	mg/L		281	296	288	308	286	297	280	260	300	280	280	260	290
Dissolved Organic Carbon	mg/L	5**	2.1	2.5	1.3	2.4	2.0	2.0	1.4	1.4	3.3	1.9	1.6	1.9	1.4
Dissolved Potassium (K)	mg/L		7	6	6	6	6	6	5.8	5.8	6	5.8	5.9	5.6	5.8
Dissolved Sodium (Na)	mg/L	200**	186	181	185	185	192	186	170	160	190	180	180	170	190
Dissolved Sulphate (SO4)	mg/L	500**	2030	2210	2340	2290	2100	2180	2120	2240	2000	2100	1900	1900	2000
Nitrate (N)	mg/L	10.0*	<0.10	<0.10	<0.10	<0.10	0.12	0.36	0.4	0.4	0.4	0.4	0.5	0.2	0.4
pH	(pH units)	6.5-8.5							8.0	7.7	7.6	7.7	7.9	7.8	7.9
Total Ammonia-N	mg/L		0.70	0.61	0.62	0.67	0.54	0.25	0.19	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15
Total Dissolved Solids	mg/L	500							2280	2300	2170	2210	2200	2080	1970
Total Kjeldahl Nitrogen (TKN)	mg/L		1.26	0.89	0.59	0.68	0.63	0.29	<0.7	<0.7	<0.7	<0.7	<0.7	<0.7	<0.7
Ion Percentage	%		2.1	0.6	3.2	0.7	1.9	1.4	0.4	5.2	4.7	0.2	5.0	1.8	3.5

Parameter	Units	ODWQS	OW73-9	OW73-9	OW73-9	OW73-9	OW73-9	OW73-9	OW73-9	OW73-9	OW73-9	OW73-9	OW73-9	OW73-9
Date			02-Nov-11	09-May-12	06-Nov-12	10-May-13	06-Nov-13	06-May-14	24-Nov-14	12-May-15	12-Nov-15	26-May-16	16-Nov-16	18-May-17	07-Nov-17
Laboratory			MAXXAM	MAXXAM	MAXXAM	MAXXAM	MAXXAM	MAXXAM	MAXXAM	MAXXAM	MAXXAM	MAXXAM	Maxxam	MAXXAM	Maxxam
Alkalinity (Total as CaCO3)	mg/L	30-500***	237	250	260	250	260	250	270	250	260	260	260	260	270
Conductivity	umho/cm		3400	3500	3500	3400	3500	3500	3700	2800	3600	3700	3700	3700	3700
Dissolved Barium (Ba)	mg/L	1*	0.007	0.006	<0.01	0.006	0.007	0.008	0.008	0.007	0.007	0.008	0.008	0.007	0.007
Dissolved Boron (B)	mg/L	5.0*	1.3	1.2	1.2	1.3	1.2	1.2	1.2	1.2	1.2	1.3	1.2	1.2	1.2
Dissolved Cadmium (Cd)	mg/L	0.005*	<0.0001	<0.0001	<0.0002	<0.0001	<0.00010	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001
Dissolved Calcium (Ca)	mg/L		370	350	340	360	350	380	340	350	360	390	380	350	360
Dissolved Chloride (Cl)	mg/L	250**	9	8	8	7	13	9	9	8	8.8	8.9	8.1	8.2	8.5
Dissolved Iron (Fe)	mg/L	0.3**	0.8	1.1	0.65	0.78	1.5	6.4	1.2	<0.10	3.3	6.1	3.8	2.1	3.5
Dissolved Lead (Pb)	mg/L	0.01*	<0.0005	<0.0005	<0.001	<0.0005	<0.00050	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
Dissolved Magnesium (Mg)	mg/L		310	300	270	280	280	290	280	290	280	330	310	280	290
Dissolved Organic Carbon	mg/L	5**	1.7	1.7	1.4	1.8	2.2	2.2	2.2	2	2.7	2	1.8	1.9	2
Dissolved Potassium (K)	mg/L		6.3	5.9	5.6	6.0	5.9	5.5	6	6.1	5.9	6.5	6.5	5.9	5.9
Dissolved Sodium (Na)	mg/L	200**	200	190	180	180	190	190	180	190	200	220	220	190	210
Dissolved Sulphate (SO4)	mg/L	500**	1900	1900	1800	2000	1900	2000	2000	2000	2100	2100	2100	2200	2100
Nitrate (N)	mg/L	10.0*	0.4	0.39	0.39	0.39	0.35	0.51	<0.10	0.57	0.63	0.55	0.54	0.67	0.69
pH	(pH units)	6.5-8.5	7.2	7.9	7.6	8.0	7.3	8.0	7.8	7.9	7.67	7.98	7.74	7.89	7.8
Total Ammonia-N	mg/L		<0.15	<0.15	<0.15	0.16	<0.15	0.25	0.19	<0.15	<0.15	0.3	0.3	<0.15	<0.15
Total Dissolved Solids	mg/L	500	2240	3350	3370	3300	3210	5270	3350	3460	3340	3510	3360	3500	3220
Total Kjeldahl Nitrogen (TKN)	mg/L		<0.7	<0.7	<0.7	<0.7	<0.7	<0.7	<0.7	<0.7	<0.7	0.9	<0.7	<0.7	<0.7
Ion Percentage	%		9.0	6.7	5.4	2.8	4.7	5.0	1.4	3.5	1.2	7.3	5.4	1.8	2.3

Parameter	Units	ODWQS	OW73-9	OW73-9	OW73-9	OW73-9	OW73-9	OW73-9	OW73-9	OW73-9	OW73-9	OW73-9	OW73-9	OW73-9
Date			10-May-18	12-Nov-18	14-May-19	06-Nov-19	08-May-20	03-Nov-20	18-May-21	03-Nov-21	03-May-22	01-Nov-22	02-May-23	02-Nov-23	07-May-24
Laboratory			MAXXAM	MAXXAM	MAXXAM	Bureau Veritas	Bureau Veritas	Bureau Veritas	Bureau Veritas	Bureau Veritas	Bureau Veritas	Bureau Veritas	Bureau Veritas	Bureau Veritas	Bureau Veritas
Alkalinity (Total as CaCO3)	mg/L	30-500***	270	370	260	270	270	280	280	280	270	290	280	260	290
Conductivity	umho/cm		3900	2600	3700	3800	3900	3700	3900	3800	3900	3900	3780	4000	3900
Dissolved Barium (Ba)	mg/L	1*	<0.03	0.01	0.006	0.007	0.007	0.008	0.006	0.007	0.006	0.007	0.007	0.006	0.006
Dissolved Boron (B)	mg/L	5.0*	1.3	1	1.1	1.1	1.1	1.4	1.1	1.2	1.2	1.3	1.1	1.1	1.2
Dissolved Cadmium (Cd)	mg/L	0.005*	<0.0005	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001
Dissolved Calcium (Ca)	mg/L		380	210	390	390	380	400	390	420	420	390	410	390	420
Dissolved Chloride (Cl)	mg/L	250**	8.1	5.6	8.4	7.8	8.2	8.2	8.9	8.1	8.3	7.7	6.4	7.1	7.1
Dissolved Iron (Fe)	mg/L	0.3**	4.9	1.6	0.6	3.7	2.4	3.5	1.1	2.5	3.1	2.1	0.3	1.3	0.1
Dissolved Lead (Pb)	mg/L	0.01*	<0.003	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
Dissolved Magnesium (Mg)	mg/L		310	200	300	310	310	320	320	330	340	340	330	320	340
Dissolved Organic Carbon	mg/L	5**	1.7	1.7	1.8	2	1.9	2.2	1.7	1.7	1.8	2	1.7	2.7	3.5
Dissolved Potassium (K)	mg/L		6	5	6	6.2	5.9	6.3	6.3	6.1	6.1	6.2	6.3	5.9	6.6
Dissolved Sodium (Na)	mg/L	200**	220	140	210	230	220	220	230	230	240	230	230	210	230
Dissolved Sulphate (SO4)	mg/L	500**	2200	1200	2300	2200	2200	2300	2400	2500	2400	2400	2300	2400	2500
Nitrate (N)	mg/L	10.0*	0.61	0.32	0.56	0.54	0.57	0.42	0.45	0.6	0.61	0.6	0.57	0.72	0.63
pH	(pH units)	6.5-8.5	7.9	7.75	7.89	7.65	7.98	7.68	8.04	7.94	7.93	7.87	8	8	8.1
Total Ammonia-N	mg/L		0.17	0.23	<0.15	0.46	<0.15	0.31	0.108	<0.15	<0.15	<0.15	<0.15	0.23	<0.15
Total Dissolved Solids	mg/L	500	3340	2180	3750	3500	3660	3780	2940	3620	3680	3280	3360	3790	3870
Total Kjeldahl Nitrogen (TKN)	mg/L		<0.7	<0.7	<0.7	<0.7	<0.7	<0.7	0.3	1.1	<0.7	<0.7	<0.7	<0.7	<0.7
Ion Percentage	%		3.1	2.8	0.6	4.0	3.1	2.6	0.6	0.8	3.9	1.9	4.2	0.2	1.4

NOTES: 1) Blank denotes data not available.
2) ODWQS denotes O. Reg. 169/03: Ontario Drinking Water Quality Standards (as amended).
3) *denotes health related ODWQS.
** denotes aesthetic objective for ODWQS.
*** denotes operational guideline for ODWQS.
4) mg/L denotes milligrams per litre.
5) OW73-6 resampled for lead on June 22, 2010 due to elevated lead reportable detection limit for May 19, 2010.

Table H-4
Groundwater - General Analytical Results
Twin Creeks Environmental Centre

Parameter	Units	ODWQS	OW73-9
Date			**18-Nov-24**
Laboratory			**Bureau Veritas**
Alkalinity (Total as CaCO3)	mg/L	30-500***	290
Conductivity	umho/cm		4100
Dissolved Barium (Ba)	mg/L	1*	<0.03
Dissolved Boron (B)	mg/L	5.0*	1.3
Dissolved Cadmium (Cd)	mg/L	0.005*	<0.0005
Dissolved Calcium (Ca)	mg/L		410
Dissolved Chloride (Cl)	mg/L	250**	5.6
Dissolved Iron (Fe)	mg/L	0.3**	0.8
Dissolved Lead (Pb)	mg/L	0.01*	<0.003
Dissolved Magnesium (Mg)	mg/L		330
Dissolved Organic Carbon	mg/L	5**	6.0
Dissolved Potassium (K)	mg/L		6
Dissolved Sodium (Na)	mg/L	200**	220
Dissolved Sulphate (SO4)	mg/L	500**	2300
Nitrate (N)	mg/L	10.0*	0.55
pH	(pH units)	6.5-8.5	7.9
Total Ammonia-N	mg/L		0.29
Total Dissolved Solids	mg/L	500	3730
Total Kjeldahl Nitrogen (TKN)	mg/L		<0.7
Ion Percentage	%		3.7

Parameter	Units	ODWQS	OW79-5	OW79-5	OW79-5	OW79-5	OW79-5	OW79-5	OW79-5	OW79-5	OW79-5	OW79-5	OW79-5	OW79-5	OW79-5
Date			**20-May-09**	**17-May-10**	**12-May-11**	**16-May-12**	**08-May-13**	**05-May-14**	**13-May-15**	**27-May-16**	**17-May-17**	**08-May-18**	**15-May-19**	**06-May-20**	**21-May-21**
Laboratory			**MAXXAM**	**MAXXAM**	**MAXXAM**	**MAXXAM**	**MAXXAM**	**MAXXAM**	**MAXXAM**	**MAXXAM**	**MAXXAM**	**MAXXAM**	**MAXXAM**	**Bureau Veritas**	**Bureau Veritas**
Alkalinity (Total as CaCO3)	mg/L	30-500***	478	446	412	490	420	470	480	490	510	520	480	480	420
Conductivity	umho/cm		1610	1710	1670	1800	1600	2000	1700	1600	1700	1700	1700	1500	1200
Dissolved Barium (Ba)	mg/L	1*	0.010	0.013	0.017	0.022	0.022	0.024	0.021	0.026	0.023	0.024	0.023	0.023	0.020
Dissolved Boron (B)	mg/L	5.0*	0.13	0.12	0.13	0.12	0.10	0.09	0.08	0.16	0.13	0.12	0.09	0.09	0.09
Dissolved Cadmium (Cd)	mg/L	0.005*	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001
Dissolved Calcium (Ca)	mg/L		160	140	140	140	130	160	130	140	120	130	120	120	110
Dissolved Chloride (Cl)	mg/L	250**	15	17	17	27	33	36	36	60	73	77	38	43	26
Dissolved Iron (Fe)	mg/L	0.3**	<0.1	<0.1	<0.1	<0.10	<0.10	<0.10	<0.10	<0.10	<0.1	<0.1	<0.1	<0.1	<0.1
Dissolved Lead (Pb)	mg/L	0.01*	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
Dissolved Magnesium (Mg)	mg/L		110	110	110	120	100	140	120	120	100	100	110	97	92
Dissolved Organic Carbon	mg/L	5**	3.5	2.2	2.1	2.5	2.4	4.0	2.9	2.7	2.9	2.7	3.3	3.1	2.8
Dissolved Potassium (K)	mg/L		3.7	3.3	2.9	3.1	3.0	2.7	2.7	3.1	3.0	3.1	2.4	2.5	2.6
Dissolved Sodium (Na)	mg/L	200**	61	76	96	110	110	130	100	110	91	87	110	94	90
Dissolved Sulphate (SO4)	mg/L	500**	430	460	470	520	430	600	410	340	380	320	400	340	250
Nitrate (N)	mg/L	10.0*	<0.1	0.3	0.5	0.39	0.29	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
pH	(pH units)	6.5-8.5	7.5	8.1	7.9	7.9	7.9	8.0	8.0	7.8	8.0	8.0	7.7	8.0	8.0
Total Ammonia-N	mg/L		<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.050
Total Dissolved Solids	mg/L	500	1020	1050	1010	1210	1200	1430.0	1170	1080	1100	935	1110	980	625
Total Kjeldahl Nitrogen (TKN)	mg/L		<4	1.3	<0.7	<0.7	<0.7	<0.7	<0.7	<0.7	<0.7	<0.7	<0.7	<0.7	0.1
Ion Percentage	%		7.2	5.7	8.8	5.2	7.8	8.7	9.0	13.0	0.0	3.7	7.2	6.0	14.4

Parameter	Units	ODWQS	OW79-5	OW79-5	OW79-5
Date			**05-May-22**	**04-May-23**	**09-May-24**
Laboratory			**Bureau Veritas**	**Bureau Veritas**	**Bureau Veritas**
Alkalinity (Total as CaCO3)	mg/L	30-500***	460	450	420
Conductivity	umho/cm		1400	1200	1100
Dissolved Barium (Ba)	mg/L	1*	0.023	0.022	0.021
Dissolved Boron (B)	mg/L	5.0*	0.06	0.07	0.05
Dissolved Cadmium (Cd)	mg/L	0.005*	<0.0001	<0.0001	<0.0001
Dissolved Calcium (Ca)	mg/L		110	95	86
Dissolved Chloride (Cl)	mg/L	250**	26	24	14
Dissolved Iron (Fe)	mg/L	0.3**	<0.1	<0.1	<0.1
Dissolved Lead (Pb)	mg/L	0.01*	<0.0005	<0.0005	<0.0005
Dissolved Magnesium (Mg)	mg/L		93	85	74
Dissolved Organic Carbon	mg/L	5**	3.3	2.8	5.8
Dissolved Potassium (K)	mg/L		2	2.3	1.8
Dissolved Sodium (Na)	mg/L	200**	90	83	62
Dissolved Sulphate (SO4)	mg/L	500**	310	230	160
Nitrate (N)	mg/L	10.0*	<0.10	0.11	<0.10
pH	(pH units)	6.5-8.5	8.04	7.9	7.9
Total Ammonia-N	mg/L		<0.15	<0.15	<0.15
Total Dissolved Solids	mg/L	500	830	695	665
Total Kjeldahl Nitrogen (TKN)	mg/L		<0.7	<0.70	<0.7
Ion Percentage	%		7.7	9.4	11.1

NOTES: 1) Blank denotes data not available.
2) ODWQS denotes O. Reg. 169/03: Ontario Drinking Water Quality Standards (as amended).
3) *denotes health related ODWQS.
** denotes aesthetic objective for ODWQS.
*** denotes operational guideline for ODWQS.
4) mg/L denotes milligrams per litre.

Table H-4
Groundwater - General Analytical Results
Twin Creeks Environmental Centre

Parameter	Units	ODWQS	OW79-7	OW79-7	OW79-7	OW79-7	OW79-7	OW79-7	OW79-7	OW79-7	OW79-7	OW79-7	OW79-7	OW79-7	OW79-7
Date			**14-May-09**	**17-May-10**	**22-Jun-10**	**23-Dec-10**	**12-May-11**	**28-Jun-11**	**16-May-12**	**08-May-13**	**05-May-14**	**13-May-15**	**27-May-16**	**17-May-17**	**08-May-18**
Laboratory			**MAXXAM**	**MAXXAM**	**MAXXAM**	**MAXXAM**	**MAXXAM**	**MAXXAM**	**MAXXAM**	**MAXXAM**	**MAXXAM**	**MAXXAM**	**MAXXAM**	**MAXXAM**	**MAXXAM**
Alkalinity (Total as CaCO3)	mg/L	30-500***	516	550	520	525	500	545	560	540	550	530	560	550	
Conductivity	umho/cm		1490	1650	1600	1580	1650	1740	1700	1700	1700	1600	1600	1600	1700
Dissolved Barium (Ba)	mg/L	1*	0.023	0.033	0.031	0.030	0.028	0.028	0.026	0.025	0.026	0.025	0.025	0.025	0.024
Dissolved Boron (B)	mg/L	5.0*	0.26	0.21	0.23	0.25	0.22	0.23	0.23	0.22	0.25	0.21	0.25	0.24	0.25
Dissolved Cadmium (Cd)	mg/L	0.005*	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	0.0002	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001
Dissolved Calcium (Ca)	mg/L		130	140	140	140	150	150	140	140	150	130	130	130	140
Dissolved Chloride (Cl)	mg/L	250**	100	140	140	130	160	160	130	140	130	130	120	140	130
Dissolved Iron (Fe)	mg/L	0.3**	2.2	1.9	<0.1	2.0	1.2	0.8	1.0	0.49	0.21	<0.10	<0.10	<0.1	<0.1
Dissolved Lead (Pb)	mg/L	0.01*	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
Dissolved Magnesium (Mg)	mg/L		100	110	110	110	110	100	110	100	110	100	100	98	110
Dissolved Organic Carbon	mg/L	5**	4.4	5.1	3.4	3.0	2.9	3.0	2.9	2.7	3.6	3.1	3.1	3.3	2.9
Dissolved Potassium (K)	mg/L		4.3	4.3	4.4	4.2	3.9	3.9	3.8	3.7	3.7	3.9	3.5	3.5	3.8
Dissolved Sodium (Na)	mg/L	200**	60	59	58	64	63	63	65	61	66	63	60	58	64
Dissolved Sulphate (SO4)	mg/L	500**	190	180	200	160	180	170	190	190	170	140	140	150	150
Nitrate (N)	mg/L	10.0*	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
pH	(pH units)	6.5-8.5	7.8	7.9	7.9	7.5	7.9	7.7	7.9	7.7	7.8	7.9	7.8	7.9	7.8
Total Ammonia-N	mg/L		0.28	0.34	0.28	0.25	<0.15	<0.15	<0.15	0.21	<0.15	<0.15	<0.15	<0.15	<0.15
Total Dissolved Solids	mg/L	500	970	1030	1000	1040	1040	1050	1010	1040	976	932	954	982	930
Total Kjeldahl Nitrogen (TKN)	mg/L		<0.7	13	3	1.0	2	<2	<0.7	1.1	<0.7	<0.7	<0.7	<0.7	<0.7
Ion Percentage	%		7.2	6.2	6.2	10.2	8.6	4.9	6.5	4.0	9.7	7.5	6.5	3.8	47.1

Parameter	Units	ODWQS	OW79-7	OW79-7	OW79-7	OW79-7	OW79-7	OW79-7
Date			**15-May-19**	**06-May-20**	**21-May-21**	**05-May-22**	**04-May-23**	**09-May-24**
Laboratory			**MAXXAM**	**Bureau Veritas**	**Bureau Veritas**	**Bureau Veritas**	**Bureau Veritas**	**Bureau Veritas**
Alkalinity (Total as CaCO3)	mg/L	30-500***	520	550	530	540	550	510
Conductivity	umho/cm		1600	1600	1600	1700	1770	1600
Dissolved Barium (Ba)	mg/L	1*	0.024	0.025	0.023	0.027	0.026	0.026
Dissolved Boron (B)	mg/L	5.0*	0.24	0.22	0.22	0.21	0.2	0.19
Dissolved Cadmium (Cd)	mg/L	0.005*	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001
Dissolved Calcium (Ca)	mg/L		130	130	130	150	140	140
Dissolved Chloride (Cl)	mg/L	250**	150	140	140	160	140	150
Dissolved Iron (Fe)	mg/L	0.3**	0.3	0.2	<0.1	<0.1	<0.1	<0.1
Dissolved Lead (Pb)	mg/L	0.01*	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
Dissolved Magnesium (Mg)	mg/L		110	100	98	98	110	100
Dissolved Organic Carbon	mg/L	5**	3.0	3.4	2.8	2.9	3.4	5.2
Dissolved Potassium (K)	mg/L		3.6	3.6	3.5	3.5	3.8	3.5
Dissolved Sodium (Na)	mg/L	200**	68	62	62	59	65	61
Dissolved Sulphate (SO4)	mg/L	500**	140	140	140	130	120	120
Nitrate (N)	mg/L	10.0*	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
pH	(pH units)	6.5-8.5	7.7	7.7	7.7	8.0	7.9	8.0
Total Ammonia-N	mg/L		<0.15	<0.15	0.069	<0.15	<0.15	<0.15
Total Dissolved Solids	mg/L	500	975	905	965	900	935	1150
Total Kjeldahl Nitrogen (TKN)	mg/L		<0.7	<0.7	0.1	<0.7	<0.7	<0.7
Ion Percentage	%		9.1	5.4	6.0	6.8	10.8	9.3

NOTES: 1) Blank denotes data not available.
2) ODWQS denotes O. Reg. 169/03: Ontario Drinking Water Quality Standards (as amended).
3) *denotes health related ODWQS.
** denotes aesthetic objective for ODWQS.
*** denotes operational guideline for ODWQS.
4) mg/L denotes milligrams per litre.

Table H-4
Groundwater - General Analytical Results
Twin Creeks Environmental Centre

Parameter	Units	ODWQS	OW79-26	OW79-26	OW79-26	OW79-26	OW79-26	OW79-26	OW79-26	OW79-26	OW79-26	OW79-26	OW79-26	OW79-26	OW79-26
Date			**20-May-09**	**18-May-10**	**12-May-11**	**16-May-12**	**08-May-13**	**05-May-14**	**13-May-15**	**27-May-16**	**17-May-17**	**08-May-18**	**15-May-19**	**06-May-20**	**21-May-21**
Laboratory			**MAXXAM**	**MAXXAM**	**MAXXAM**	**MAXXAM**	**MAXXAM**	**MAXXAM**	**MAXXAM**	**MAXXAM**	**MAXXAM**	**MAXXAM**	**MAXXAM**	**Bureau Veritas**	**Bureau Veritas**
Alkalinity (Total as CaCO3)	mg/L	30-500***	261	270	263	280	270	270	260	260	270	280	260	270	270
Conductivity	umho/cm		747	713	789	770	810	830	830	820	840	870	850	860	840
Dissolved Barium (Ba)	mg/L	1*	0.025	0.018	0.026	0.025	0.022	0.027	0.023	0.021	0.020	0.022	0.021	0.023	0.022
Dissolved Boron (B)	mg/L	5.0*	1.6	1.5	1.6	1.6	1.5	1.6	1.5	1.6	1.5	1.6	1.5	1.5	1.7
Dissolved Cadmium (Cd)	mg/L	0.005*	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001
Dissolved Calcium (Ca)	mg/L		22	19	24	26	26	28	27	28	25	28	28	32	31
Dissolved Chloride (Cl)	mg/L	250**	31	27	32	29	30	30	29	28	29	28	28	28	28
Dissolved Iron (Fe)	mg/L	0.3**	<0.1	0.3	0.3	0.43	<0.10	<0.10	<0.10	<0.10	<0.1	<0.1	0.1	<0.1	<0.1
Dissolved Lead (Pb)	mg/L	0.01*	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
Dissolved Magnesium (Mg)	mg/L		11	10	11	13	10	11	12	13	12	15	15	15	15
Dissolved Organic Carbon	mg/L	5**	3.6	1.8	1.8	2.6	2.9	2.0	1.5	1.7	1.7	1.5	1.6	1.8	1.4
Dissolved Potassium (K)	mg/L		6.0	4.4	6.3	6.9	5.7	5.6	6.4	6.1	5.6	5.7	6.1	5.7	6.6
Dissolved Sodium (Na)	mg/L	200**	220	130	140	150	130	140	140	140	130	140	140	130	140
Dissolved Sulphate (SO4)	mg/L	500**	72	57	86	83	86	98	100	110	110	110	120	120	120
Nitrate (N)	mg/L	10.0*	<0.1	<0.1	<0.1	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
pH	(pH units)	6.5-8.5	8.1	8.3	8.1	8.2	8.1	8.2	8.3	8.1	8.1	8.2	8.1	8.1	8.2
Total Ammonia-N	mg/L		0.33	0.31	<0.15	<0.15	0.16	0.24	0.15	<0.15	<0.15	<0.15	0.18	<0.15	0.166
Total Dissolved Solids	mg/L	500	480	454	468	444	462	458	486	488	562	480	510	465	405
Total Kjeldahl Nitrogen (TKN)	mg/L		<4	4	2	<0.7	<0.7	<0.7	<0.7	<0.7	<0.7	<0.7	<0.7	<0.7	0.3
Ion Percentage	%		27.9	8.7	9.1	12.2	6.0	8.0	9.3	8.7	3.4	7.5	8.3	5.8	8.1

Parameter	Units	ODWQS	OW79-26	OW79-26	OW79-26
Date			**05-May-22**	**04-May-23**	**09-May-24**
Laboratory			**Bureau Veritas**	**Bureau Veritas**	**Bureau Veritas**
Alkalinity (Total as CaCO3)	mg/L	30-500***	260	270	270
Conductivity	umho/cm		860	990	830
Dissolved Barium (Ba)	mg/L	1*	0.022	0.023	0.022
Dissolved Boron (B)	mg/L	5.0*	1.6	1.5	1.6
Dissolved Cadmium (Cd)	mg/L	0.005*	<0.0001	<0.0001	<0.0001
Dissolved Calcium (Ca)	mg/L		29	31	30
Dissolved Chloride (Cl)	mg/L	250**	28	20	24
Dissolved Iron (Fe)	mg/L	0.3**	<0.1	<0.1	<0.1
Dissolved Lead (Pb)	mg/L	0.01*	<0.0005	<0.0005	<0.0005
Dissolved Magnesium (Mg)	mg/L		13	16	15
Dissolved Organic Carbon	mg/L	5**	1.5	1.6	5.2
Dissolved Potassium (K)	mg/L		5.4	5.8	5.7
Dissolved Sodium (Na)	mg/L	200**	130	140	140
Dissolved Sulphate (SO4)	mg/L	500**	130	93	120
Nitrate (N)	mg/L	10.0*	0.16	<0.10	0.18
pH	(pH units)	6.5-8.5	8.1	7.1	8.1
Total Ammonia-N	mg/L		<0.15	<0.15	<0.15
Total Dissolved Solids	mg/L	500	470	465	540
Total Kjeldahl Nitrogen (TKN)	mg/L		<0.7	<0.7	<0.7
Ion Percentage	%		3.6	13.9	8.4

NOTES: 1) Blank denotes data not available.
2) ODWQS denotes O. Reg. 169/03: Ontario Drinking Water Quality Standards (as amended).
3) *denotes health related ODWQS.
** denotes aesthetic objective for ODWQS.
*** denotes operational guideline for ODWQS.
4) mg/L denotes milligrams per litre.

Table H-4
Groundwater - General Analytical Results
Twin Creeks Environmental Centre

Parameter	Units	ODWQS	OW80-3	OW80-3	OW80-3	OW80-3	OW80-3	OW80-3	OW80-3	OW80-3	OW80-3	OW80-3	OW80-3	OW80-3
Date			**19-May-09**	**11-Jun-09**	**16-Dec-09**	**17-May-10**	**29-Jun-10**	**12-May-11**	**16-May-12**	**09-May-13**	**05-May-14**	**14-May-15**	**27-May-16**	**16-May-17**	**08-May-18**
Laboratory			**MAXXAM**	**MAXXAM**	**MAXXAM**	**MAXXAM**	**MAXXAM**	**MAXXAM**	**MAXXAM**	**MAXXAM**	**MAXXAM**	**MAXXAM**	**MAXXAM**	**MAXXAM**	**MAXXAM**
Alkalinity (Total as CaCO3)	mg/L	30-500***	333	327	358	338	353	339	370	320	460	430	340	400	410
Conductivity	umho/cm		3450	3470	3550	3540	3440	3530	3500	920	1900	1400	2000	2600	3000
Dissolved Barium (Ba)	mg/L	1*	0.12	0.11	0.12	0.13	0.13	0.11	0.11	0.031	0.068	0.05	0.073	0.09	0.1
Dissolved Boron (B)	mg/L	5.0*	0.09	0.12	0.11	0.09	0.09	0.09	0.09	0.05	0.06	0.06	0.07	0.07	0.08
Dissolved Cadmium (Cd)	mg/L	0.005*	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001
Dissolved Calcium (Ca)	mg/L		220	210	200	200	200	190	180	92	140	110	150	150	170
Dissolved Chloride (Cl)	mg/L	250**	830	840	820	870	830	860	750	81	260	150	340	470	590
Dissolved Iron (Fe)	mg/L	0.3**	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.10	0.28	<0.10	0.17	<0.10	<0.1	<0.1
Dissolved Lead (Pb)	mg/L	0.01*	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
Dissolved Magnesium (Mg)	mg/L		160	180	160	160	150	150	160	35	76	48	83	91	100
Dissolved Organic Carbon	mg/L	5**	4.0	5.3	3.3	3.2	3.1	3.0	3.3	8.9	7.5	8	5.7	5.3	4.3
Dissolved Potassium (K)	mg/L		2.9	3.6	2.9	2.6	2.5	2.2	2.1	2.8	2.5	2.7	2.8	2.5	2.5
Dissolved Sodium (Na)	mg/L	200**	240	300	270	280	260	310	310	76	180	110	180	220	240
Dissolved Sulphate (SO4)	mg/L	500**	150	160	160	160	180	180	180	39	96	55	110	160	160
Nitrate (N)	mg/L	10.0*	0.8	0.6	0.3	0.2	0.2	<0.1	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
pH	(pH units)	6.5-8.5	7.5	7.9	7.9	8.1	7.9	8.0	7.8	8.0	7.8	7.9	7.9	8.2	7.8
Total Ammonia-N	mg/L		<0.15	<0.15	<0.15	0.18	<0.15	<0.15	<0.15	0.32	<0.15	<0.15	<0.15	<0.15	<0.15
Total Dissolved Solids	mg/L	500	2150	2110	2260	2200	2200	2030	2210	684	1010	832	1190	1500	1650
Total Kjeldahl Nitrogen (TKN)	mg/L		<1	<4	<7	5.1	1.5	<0.7	<0.7	0.9	0.7	<1	<0.7	<0.7	<0.7
Ion Percentage	%		4.2	8.7	4.1	3.1	1.3	2.8	7.3	13.7	11.6	7.6	12.3	3.3	1.2

Parameter	Units	ODWQS	OW80-3	OW80-3	OW80-3	OW80-3	OW80-3	OW80-3	OW80-3
Date			**15-May-19**	**06-May-20**	**21-May-21**	**05-May-22**	**05-May-22**	**04-May-23**	**09-May-24**
Laboratory			**MAXXAM**	**Bureau Veritas**	**Bureau Veritas**	**Bureau Veritas**	**Bureau Veritas**	**Bureau Veritas**	**Bureau Veritas**
Alkalinity (Total as CaCO3)	mg/L	30-500***	450	380	320	320	320	230	250
Conductivity	umho/cm		2200	1200	1200	830	830	650	710
Dissolved Barium (Ba)	mg/L	1*	0.064	0.059	0.046	0.037	0.037	0.035	0.061
Dissolved Boron (B)	mg/L	5.0*	0.07	0.04	0.04	0.03	0.03	<0.02	0.03
Dissolved Cadmium (Cd)	mg/L	0.005*	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001
Dissolved Calcium (Ca)	mg/L		130	110	110	110	110	70	96
Dissolved Chloride (Cl)	mg/L	250**	360	140	160	67	67	46	54
Dissolved Iron (Fe)	mg/L	0.3**	<0.1	2.3	0.3	<0.1	<0.1	<0.1	5.9
Dissolved Lead (Pb)	mg/L	0.01*	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
Dissolved Magnesium (Mg)	mg/L		83	49	47	24	24	17	31
Dissolved Organic Carbon	mg/L	5**	5.3	6.9	6.5	8.9	8.9	6.9	8.4
Dissolved Potassium (K)	mg/L		2.1	2.4	3.1	4.7	4.7	4.3	3.5
Dissolved Sodium (Na)	mg/L	200**	230	130	130	70	70	56	80
Dissolved Sulphate (SO4)	mg/L	500**	130	39	35	23	23	28	17
Nitrate (N)	mg/L	10.0*	<0.10	<0.10	0.12	0.22	0.22	0.25	<0.10
pH	(pH units)	6.5-8.5	7.7	7.8	7.9	8.1	8.1	7.9	8.0
Total Ammonia-N	mg/L		<0.15	<0.15	<0.050	<0.15	<0.15	0.50	0.37
Total Dissolved Solids	mg/L	500	1260	650	555	445	445	320	325
Total Kjeldahl Nitrogen (TKN)	mg/L		<0.7	<0.7	0.4	<0.7	<0.7	0.9	0.7
Ion Percentage	%		7.5	16.7	18.5	17.3	17.3	14.3	29.9

NOTES: 1) Blank denotes data not available.
2) ODWQS denotes O. Reg. 169/03: Ontario Drinking Water Quality Standards (as amended).
3) *denotes health related ODWQS.
** denotes aesthetic objective for ODWQS.
*** denotes operational guideline for ODWQS.
4) mg/L denotes milligrams per litre.

Table H-4
Groundwater - General Analytical Results
Twin Creeks Environmental Centre

Parameter	Units	ODWQS	OW80-6	OW80-6	OW80-6	OW80-6	OW80-6	OW80-6	OW80-6	OW80-6	OW80-6	OW80-6	OW80-6	OW80-6	OW80-6
Date			**19-May-09**	**11-Jun-09**	**16-Dec-09**	**18-May-10**	**29-Jun-10**	**12-May-11**	**16-May-12**	**09-May-13**	**05-May-14**	**14-May-15**	**27-May-16**	**16-May-17**	**08-May-18**
Laboratory			**MAXXAM**	**MAXXAM**	**MAXXAM**	**MAXXAM**	**MAXXAM**	**MAXXAM**	**MAXXAM**	**MAXXAM**	**MAXXAM**	**MAXXAM**	**MAXXAM**	**MAXXAM**	**MAXXAM**
Alkalinity (Total as CaCO3)	mg/L	30-500***	399	410	421	411	409	395	410	410	410	410	410	410	
Conductivity	umho/cm		1330	1350	1360	1460	1400	1390	1400	1400	1400	1400	1400	1400	1500
Dissolved Barium (Ba)	mg/L	1*	0.049	0.054	0.052	0.061	0.067	0.062	0.061	0.063	0.064	0.064	0.061	0.057	0.058
Dissolved Boron (B)	mg/L	5.0*	0.22	0.22	0.24	0.20	0.20	0.21	0.21	0.20	0.20	0.22	0.23	0.20	0.22
Dissolved Cadmium (Cd)	mg/L	0.005*	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001
Dissolved Calcium (Ca)	mg/L		130	130	130	120	130	130	120	130	140	130	130	120	130
Dissolved Chloride (Cl)	mg/L	250**	170	160	160	170	180	180	140	150	170	180	160	170	160
Dissolved Iron (Fe)	mg/L	0.3**	<0.1	1.10	1.20	<0.1	0.1	<0.1	0.14	0.11	<0.10	<0.10	<0.10	<0.1	<0.1
Dissolved Lead (Pb)	mg/L	0.01*	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
Dissolved Magnesium (Mg)	mg/L		77	82	78	76	76	78	79	75	84	75	81	71	84
Dissolved Organic Carbon	mg/L	5**	3.6	3.3	2.3	2.2	2.5	1.9	1.9	2.1	3.3	2.2	1.9	1.9	2
Dissolved Potassium (K)	mg/L		6.5	6.4	6.5	5.5	5.1	4.4	4.1	3.8	3.6	3.7	3.6	3.4	3.7
Dissolved Sodium (Na)	mg/L	200**	49	50	48	47	46	48	49	47	52	49	52	47	56
Dissolved Sulphate (SO4)	mg/L	500**	73	75	75	76	91	72	76	73	70	74	71	73	68
Nitrate (N)	mg/L	10.0*	<0.1	<0.1	<0.1	<0.1	0.1	<0.1	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
pH	(pH units)	6.5-8.5	7.9	7.7	7.9	8.0	7.8	8.1	8.0	8.1	7.9	7.9	7.8	7.9	7.9
Total Ammonia-N	mg/L		0.20	0.20	0.22	0.24	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15
Total Dissolved Solids	mg/L	500	850	840	851	900	900	832	822	866	868	784	794	810	850
Total Kjeldahl Nitrogen (TKN)	mg/L		<4	<1	<7	7	<0.7	<0.7	<0.7	<0.7	<0.7	<0.7	<0.7	<0.7	<0.7
Ion Percentage	%		8.7	10.4	8.4	5.4	4.8	7.9	9.8	9.2	11.8	6.1	10.5	4.0	45.8

Parameter	Units	ODWQS	OW80-6	OW80-6	OW80-6	OW80-6	OW80-6	OW80-6
Date			**15-May-19**	**06-May-20**	**20-May-21**	**05-May-22**	**04-May-23**	**09-May-24**
Laboratory			**MAXXAM**	**Bureau Veritas**	**Bureau Veritas**	**Bureau Veritas**	**Bureau Veritas**	**Bureau Veritas**
Alkalinity (Total as CaCO3)	mg/L	30-500***	410	410	410	240	410	400
Conductivity	umho/cm		1400	1500	1400	450	1520	1500
Dissolved Barium (Ba)	mg/L	1*	0.056	0.058	0.055	0.020	0.056	0.059
Dissolved Boron (B)	mg/L	5.0*	0.21	0.20	0.21	0.05	0.19	0.21
Dissolved Cadmium (Cd)	mg/L	0.005*	<0.0001	<0.0001	<0.0001	0.0017	<0.0001	<0.0001
Dissolved Calcium (Ca)	mg/L		130	130	130	59	130	140
Dissolved Chloride (Cl)	mg/L	250**	180	180	190	4.2	160	200
Dissolved Iron (Fe)	mg/L	0.3**	<0.1	1.9	<0.1	0.2	<0.1	<0.1
Dissolved Lead (Pb)	mg/L	0.01*	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
Dissolved Magnesium (Mg)	mg/L		81	76	76	17	80	81
Dissolved Organic Carbon	mg/L	5**	1.9	1.8	1.6	4.5	2.0	1.9
Dissolved Potassium (K)	mg/L		3.4	3.4	3.4	3.4	3.7	3.8
Dissolved Sodium (Na)	mg/L	200**	54	53	55	3.4	57	59
Dissolved Sulphate (SO4)	mg/L	500**	73	73	71	3.7	59	75
Nitrate (N)	mg/L	10.0*	<0.10	<0.10	<0.10	0.36	<0.10	<0.10
pH	(pH units)	6.5-8.5	7.8	7.8	7.8	8.3	8.0	7.9
Total Ammonia-N	mg/L		<0.15	<0.15	<0.050	<0.15	<0.15	<0.15
Total Dissolved Solids	mg/L	500	865	795	890	230	825	1160
Total Kjeldahl Nitrogen (TKN)	mg/L		<0.7	<0.7	<0.1	<0.7	<0.7	<0.7
Ion Percentage	%		8.4	7.0	6.4	6.3	11.9	9.1

NOTES: 1) Blank denotes data not available.
2) ODWQS denotes O. Reg. 169/03: Ontario Drinking Water Quality Standards (as amended).
3) *denotes health related ODWQS.
** denotes aesthetic objective for ODWQS.
*** denotes operational guideline for ODWQS.
4) mg/L denotes milligrams per litre.

Table H-4
Groundwater - General Analytical Results
Twin Creeks Environmental Centre

Parameter	Units	ODWQS	OW80-27	OW80-27	OW80-27	OW80-27	OW80-27	OW80-27	OW80-27	OW80-27	OW80-27	OW80-27	OW80-27	OW80-27	OW80-27
Date			**19-May-09**	**18-May-10**	**12-May-11**	**16-May-12**	**09-May-13**	**05-May-14**	**14-May-15**	**27-May-16**	**16-May-17**	**08-May-18**	**15-May-19**	**06-May-20**	**20-May-21**
Laboratory			**MAXXAM**	**MAXXAM**	**MAXXAM**	**MAXXAM**	**MAXXAM**	**MAXXAM**	**MAXXAM**	**MAXXAM**	**MAXXAM**	**MAXXAM**	**MAXXAM**	**Bureau Veritas**	**Bureau Veritas**
Alkalinity (Total as CaCO3)	mg/L	30-500***	286	313	285	300	290	290	290	300	290	300	290	290	280
Conductivity	umho/cm		779	1050	832	790	790	770	780	750	780	810	770	770	760
Dissolved Barium (Ba)	mg/L	1*	0.044	0.059	0.035	0.032	0.032	0.032	0.033	0.039	0.040	0.042	0.042	0.043	0.046
Dissolved Boron (B)	mg/L	5.0*	2.0	1.6	1.6	1.7	1.7	1.7	1.9	1.8	1.7	2	1.8	1.9	1.8
Dissolved Cadmium (Cd)	mg/L	0.005*	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001
Dissolved Calcium (Ca)	mg/L		13	38	25	21	15	18	15	18	14	15	15	14	14
Dissolved Chloride (Cl)	mg/L	250**	49	120	57	45	45	48	48	48	47	46	46	45	47
Dissolved Iron (Fe)	mg/L	0.3**	<0.1	0.1	0.7	0.82	0.34	<0.10	<0.10	<0.10	<0.1	<0.1	<0.1	<0.1	<0.1
Dissolved Lead (Pb)	mg/L	0.01*	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
Dissolved Magnesium (Mg)	mg/L		7.3	23	14	11	7.9	8.4	7.8	8.2	7.7	8.2	9	7.7	7.6
Dissolved Organic Carbon	mg/L	5**	2.0	1.3	1.9	2.1	1.3	9.0	1.9	1.8	1.9	1.3	2.1	1.4	1.4
Dissolved Potassium (K)	mg/L		2.1	2.8	2.5	2.6	2.3	2.3	2.2	2.5	2.2	2.3	2.3	2.2	2.3
Dissolved Sodium (Na)	mg/L	200**	160	150	140	160	150	160	140	150	140	160	150	150	150
Dissolved Sulphate (SO4)	mg/L	500**	49	50	44	36	30	30	31	30	32	30	31	28	30
Nitrate (N)	mg/L	10.0*	<0.1	<0.1	<0.1	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
pH	(pH units)	6.5-8.5	8.1	8.3	8.4	8.3	8.4	8.3	8.2	8.2	8.2	8.3	8.2	8.2	8.4
Total Ammonia-N	mg/L		0.27	0.19	<0.15	<0.15	0.24	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	0.087
Total Dissolved Solids	mg/L	500	520	660	504	424	462	392	434	430	426	415	465	410	325
Total Kjeldahl Nitrogen (TKN)	mg/L		<4	0.9	1	<0.7	<0.7	<0.7	<0.7	<0.7	<0.7	<0.7	<0.7	<0.7	0.2
Ion Percentage	%		8.0	4.5	9.0	13.3	9.5	12.6	5.9	8.8	5.6	10.9	9.7	9.4	9.9

Parameter	Units	ODWQS	OW80-27	OW80-27	OW80-27
Date			**05-May-22**	**04-May-23**	**10-May-24**
Laboratory			**Bureau Veritas**	**Bureau Veritas**	**Bureau Veritas**
Alkalinity (Total as CaCO3)	mg/L	30-500***	280	290	280
Conductivity	umho/cm		760	820	750
Dissolved Barium (Ba)	mg/L	1*	0.047	0.047	0.052
Dissolved Boron (B)	mg/L	5.0*	1.9	1.7	1.8
Dissolved Cadmium (Cd)	mg/L	0.005*	<0.0001	<0.0001	<0.0001
Dissolved Calcium (Ca)	mg/L		14	15	14
Dissolved Chloride (Cl)	mg/L	250**	47	45	46
Dissolved Iron (Fe)	mg/L	0.3**	<0.1	<0.1	<0.1
Dissolved Lead (Pb)	mg/L	0.01*	<0.0005	<0.0005	<0.0005
Dissolved Magnesium (Mg)	mg/L		7.0	7.6	6.7
Dissolved Organic Carbon	mg/L	5**	1.5	1.5	8.3
Dissolved Potassium (K)	mg/L		2.2	2.3	2.1
Dissolved Sodium (Na)	mg/L	200**	140	150	150
Dissolved Sulphate (SO4)	mg/L	500**	27	22	27
Nitrate (N)	mg/L	10.0*	<0.10	<0.10	<0.10
pH	(pH units)	6.5-8.5	8.2	7.9	8.3
Total Ammonia-N	mg/L		<0.15	<0.15	<0.15
Total Dissolved Solids	mg/L	500	415	415	485
Total Kjeldahl Nitrogen (TKN)	mg/L		<0.7	<0.7	<0.7
Ion Percentage	%		7.2	10.7	10.1

NOTES: 1) Blank denotes data not available.
2) ODWQS denotes O. Reg. 169/03: Ontario Drinking Water Quality Standards (as amended).
3) *denotes health related ODWQS.
** denotes aesthetic objective for ODWQS.
*** denotes operational guideline for ODWQS.
4) mg/L denotes milligrams per litre.

Table H-4
Groundwater - General Analytical Results
Twin Creeks Environmental Centre

Parameter	Units	ODWQS	OW81-5	OW81-5	OW81-5	OW81-5	OW81-5
Date			11-May-20	21-May-21	05-May-22	04-May-23	10-May-24
Laboratory			Bureau Veritas	Bureau Veritas	Bureau Veritas	Bureau Veritas	Bureau Veritas
Alkalinity (Total as CaCO3)	mg/L	30-500***	420	400	400	400	390
Conductivity	umho/cm		2900	2900	2800	2800	2800
Dissolved Barium (Ba)	mg/L	1*	0.031	0.026	0.022	0.022	0.02
Dissolved Boron (B)	mg/L	5.0*	0.61	0.54	0.54	0.54	0.57
Dissolved Cadmium (Cd)	mg/L	0.005*	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001
Dissolved Calcium (Ca)	mg/L		290	270	280	260	280
Dissolved Chloride (Cl)	mg/L	250**	20	20	20	19	19
Dissolved Iron (Fe)	mg/L	0.3**	<0.1	<0.1	<0.1	<0.1	<0.1
Dissolved Lead (Pb)	mg/L	0.01*	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
Dissolved Magnesium (Mg)	mg/L		190	190	190	180	190
Dissolved Organic Carbon	mg/L	5**	2.2	2.1	2.0	1.8	2.1
Dissolved Potassium (K)	mg/L		6.2	5.6	5.0	5.2	5.1
Dissolved Sodium (Na)	mg/L	200**	170	170	180	160	180
Dissolved Sulphate (SO4)	mg/L	500**	1300	1400	1300	1300	1400
Nitrate (N)	mg/L	10.0*	0.11	<0.10	<0.10	<0.10	<0.10
pH	(pH units)	6.5-8.5	7.8	7.8	7.9	7.8	7.8
Total Ammonia-N	mg/L		<0.15	<0.050	<0.15	<0.15	<0.15
Total Dissolved Solids	mg/L	500	2420	2130	2270	2110	2360
Total Kjeldahl Nitrogen (TKN)	mg/L		<0.7	0.1	<0.7	<0.7	<0.7
Ion Percentage	%		4.1	0.2	4.4	0.8	1.7

Parameter	Units	ODWQS	OW81-7	OW81-7	OW81-7	OW81-7	OW81-7	OW81-7	OW81-7	OW81-7	OW81-7	OW81-7
Date			11-May-20	22-Jul-20	03-Nov-20	20-May-21	09-Jun-21	02-Nov-21	05-May-22	02-Jun-22	04-May-23	10-May-24
Laboratory			Bureau Veritas	Bureau Veritas	Bureau Veritas	Bureau Veritas	Bureau Veritas	Bureau Veritas	Bureau Veritas	Bureau Veritas	Bureau Veritas	Bureau Veritas
Alkalinity (Total as CaCO3)	mg/L	30-500***	360	350	370	360	350	360	340	350	340	330
Conductivity	umho/cm		2600	2800	2600	2600	2800	2500	2500	2207	2590	2400
Dissolved Barium (Ba)	mg/L	1*	0.026	0.024	0.026	0.026	0.023	0.023	0.022	0.019	0.020	0.020
Dissolved Boron (B)	mg/L	5.0*	0.56	0.58	0.61	0.53	0.56	0.55	0.54	0.58	0.55	0.58
Dissolved Cadmium (Cd)	mg/L	0.005*	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001
Dissolved Calcium (Ca)	mg/L		240	260	240	220	240	250	220	230	230	230
Dissolved Chloride (Cl)	mg/L	250**	210	250	210	220	260	210	200	210	200	190
Dissolved Iron (Fe)	mg/L	0.3**	0.7	2.3	1.3	0.7	0.9	1.1	1.1	1.6	1.4	<0.1
Dissolved Lead (Pb)	mg/L	0.01*	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
Dissolved Magnesium (Mg)	mg/L		170	200	160	160	180	170	160	160	170	170
Dissolved Organic Carbon	mg/L	5**	2.8	3	3.4	2.8	3	2.8	3.0	2.9	3.0	2.7
Dissolved Potassium (K)	mg/L		5.5	5.8	5.3	5.1	5.3	4.8	5.1	5.1	5.3	5.4
Dissolved Sodium (Na)	mg/L	200**	110	120	110	120	120	120	120	110	120	130
Dissolved Sulphate (SO4)	mg/L	500**	780	840	790	810	880	810	760	840	800	890
Nitrate (N)	mg/L	10.0*	0.13	<0.10	<0.10	0.1	<0.10	<0.10	0.16	0.12	0.16	0.18
pH	(pH units)	6.5-8.5	7.9	7.7	7.7	7.7	7.6	8.0	8.1	7.2	8.1	7.9
Total Ammonia-N	mg/L		<0.15	0.29	0.65	0.129	0.34	0.23	<0.15	<0.15	<0.15	<0.15
Total Dissolved Solids	mg/L	500	1930	2240	1990	1730	2120	1770	1810	1880	1760	2100
Total Kjeldahl Nitrogen (TKN)	mg/L		<0.7	<0.7	<0.7	0.2	<0.7	<0.7	<0.7	<0.7	<0.7	<0.7
Ion Percentage	%		4.7	6.9	2.7	0.8	1.1	5.1	4.3	0.6	4.9	3.1

Parameter	Units	ODWQS	OW81-27	OW81-27	OW81-27	OW81-27	OW81-27
Date			11-May-20	20-May-21	05-May-22	04-May-23	10-May-24
Laboratory			Bureau Veritas	Bureau Veritas	Bureau Veritas	Bureau Veritas	Bureau Veritas
Alkalinity (Total as CaCO3)	mg/L	30-500***	280	260	330	300	380
Conductivity	umho/cm		1500	1100	1400	1610	1600
Dissolved Barium (Ba)	mg/L	1*	0.1	0.062	0.072	0.048	0.031
Dissolved Boron (B)	mg/L	5.0*	1.8	1.9	1.9	1.3	0.49
Dissolved Cadmium (Cd)	mg/L	0.005*	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001
Dissolved Calcium (Ca)	mg/L		47	48	30	89	210
Dissolved Chloride (Cl)	mg/L	250**	40	48	30	16	21
Dissolved Iron (Fe)	mg/L	0.3**	<0.1	<0.1	<0.1	<0.1	<0.1
Dissolved Lead (Pb)	mg/L	0.01*	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
Dissolved Magnesium (Mg)	mg/L		38	40	19	56	88
Dissolved Organic Carbon	mg/L	5**	2.1	2	1.9	4.0	6.9
Dissolved Potassium (K)	mg/L		2.7	2.4	2.6	2.3	1.7
Dissolved Sodium (Na)	mg/L	200**	190	190	180	140	75
Dissolved Sulphate (SO4)	mg/L	500**	370	280	370	260	490
Nitrate (N)	mg/L	10.0*	<0.10	<0.10	<0.10	<0.10	<0.10
pH	(pH units)	6.5-8.5	8.2	8.3	7.8	6.8	7.7
Total Ammonia-N	mg/L		0.23	0.346	<0.15	<0.15	<0.15
Total Dissolved Solids	mg/L	500	965	615	895	1000	1300
Total Kjeldahl Nitrogen (TKN)	mg/L		<0.7	0.5	<0.7	<0.7	<0.7
Ion Percentage	%		4.7	4.7	4.7	4.7	4.7

NOTES: 1) Blank denotes data not available.
2) ODWQS denotes O. Reg. 169/03: Ontario Drinking Water Quality Standards (as amended).
3) *denotes health related ODWQS.
** denotes aesthetic objective for ODWQS.
*** denotes operational guideline for ODWQS.
4) mg/L denotes milligrams per litre.

Table H-4
Groundwater - General Analytical Results
Twin Creeks Environmental Centre

Parameter	Units	ODWQS	OW82-5	OW82-5
Date			**03-May-23**	**09-May-24**
Laboratory			**Bureau Veritas**	**Bureau Veritas**
Alkalinity (Total as CaCO3)	mg/L	30-500***	350	340
Conductivity	umho/cm		8	4000
Dissolved Barium (Ba)	mg/L	1*	0.015	0.013
Dissolved Boron (B)	mg/L	5.0*	0.53	0.58
Dissolved Cadmium (Cd)	mg/L	0.005*	<0.0001	<0.0001
Dissolved Calcium (Ca)	mg/L		450	480
Dissolved Chloride (Cl)	mg/L	250**	8	8.1
Dissolved Iron (Fe)	mg/L	0.3**	<0.1	<0.1
Dissolved Lead (Pb)	mg/L	0.01*	<0.0005	<0.0005
Dissolved Magnesium (Mg)	mg/L		350	360
Dissolved Organic Carbon	mg/L	5**	3.8	3.7
Dissolved Potassium (K)	mg/L		7.1	7.1
Dissolved Sodium (Na)	mg/L	200**	150	160
Dissolved Sulphate (SO4)	mg/L	500**	2400	2600
Nitrate (N)	mg/L	10.0*	<0.10	<0.10
pH	(pH units)	6.5-8.5	8.0	8.0
Total Ammonia-N	mg/L		<0.15	<0.15
Total Dissolved Solids	mg/L	500	3540	3990
Total Kjeldahl Nitrogen (TKN)	mg/L		<0.7	<0.7
Ion Percentage	%		1.4	0.3

Parameter	Units	ODWQS	OW82-14	OW82-14
Date			**03-May-23**	**09-May-24**
Laboratory			**Bureau Veritas**	**Bureau Veritas**
Alkalinity (Total as CaCO3)	mg/L	30-500***	100	100
Conductivity	umho/cm		2890	2700
Dissolved Barium (Ba)	mg/L	1*	0.027	0.021
Dissolved Boron (B)	mg/L	5.0*	1.2	1.1
Dissolved Cadmium (Cd)	mg/L	0.005*	<0.0001	<0.0001
Dissolved Calcium (Ca)	mg/L		240	250
Dissolved Chloride (Cl)	mg/L	250**	28	31
Dissolved Iron (Fe)	mg/L	0.3**	<0.1	<0.1
Dissolved Lead (Pb)	mg/L	0.01*	<0.0005	<0.0005
Dissolved Magnesium (Mg)	mg/L		130	140
Dissolved Organic Carbon	mg/L	5**	4.4	5.3
Dissolved Potassium (K)	mg/L		12	11
Dissolved Sodium (Na)	mg/L	200**	240	260
Dissolved Sulphate (SO4)	mg/L	500**	1400	1500
Nitrate (N)	mg/L	10.0*	1.12	1.00
pH	(pH units)	6.5-8.5	7.6	7.86
Total Ammonia-N	mg/L		0.42	<0.15
Total Dissolved Solids	mg/L	500	2070	2310
Total Kjeldahl Nitrogen (TKN)	mg/L		0.8	<0.7
Ion Percentage	%		2.3	2.1

Parameter	Units	ODWQS	OW82-28	OW82-28
Date			**03-May-23**	**09-May-24**
Laboratory			**Bureau Veritas**	**Bureau Veritas**
Alkalinity (Total as CaCO3)	mg/L	30-500***	250	260
Conductivity	umho/cm		1140	1100
Dissolved Barium (Ba)	mg/L	1*	0.023	0.017
Dissolved Boron (B)	mg/L	5.0*	1	2.0
Dissolved Cadmium (Cd)	mg/L	0.005*	<0.0001	<0.0001
Dissolved Calcium (Ca)	mg/L		25	22
Dissolved Chloride (Cl)	mg/L	250**	38	43
Dissolved Iron (Fe)	mg/L	0.3**	<0.1	0.2
Dissolved Lead (Pb)	mg/L	0.01*	<0.0005	<0.0005
Dissolved Magnesium (Mg)	mg/L		8.6	8.3
Dissolved Organic Carbon	mg/L	5**	2.4	2.2
Dissolved Potassium (K)	mg/L		6.3	4.2
Dissolved Sodium (Na)	mg/L	200**	100	200
Dissolved Sulphate (SO4)	mg/L	500**	200	200
Nitrate (N)	mg/L	10.0*	<0.10	0.12
pH	(pH units)	6.5-8.5	8.3	8.2
Total Ammonia-N	mg/L		0.32	0.21
Total Dissolved Solids	mg/L	500	585	780
Total Kjeldahl Nitrogen (TKN)	mg/L		<0.7	<0.7
Ion Percentage	%		18.1	4.6

NOTES: 1) Blank denotes data not available.
2) ODWQS denotes O. Reg. 169/03: Ontario Drinking Water Quality Standards (as amended).
3) *denotes health related ODWQS.
** denotes aesthetic objective for ODWQS.
*** denotes operational guideline for ODWQS.
4) mg/L denotes milligrams per litre.

Table H-4
Groundwater - General Analytical Results
Twin Creeks Environmental Centre

Parameter	Units	ODWQS	OW83-5	OW83-5
Date			**03-May-23**	**09-May-24**
Laboratory			**Bureau Veritas**	**Bureau Veritas**
Alkalinity (Total as CaCO3)	mg/L	30-500***	660	570
Conductivity	umho/cm		2300	1900
Dissolved Barium (Ba)	mg/L	1*	0.021	0.022
Dissolved Boron (B)	mg/L	5.0*	0.21	0.12
Dissolved Cadmium (Cd)	mg/L	0.005*	<0.0001	<0.0001
Dissolved Calcium (Ca)	mg/L		100	99
Dissolved Chloride (Cl)	mg/L	250**	59	81
Dissolved Iron (Fe)	mg/L	0.3**	1.3	0.2
Dissolved Lead (Pb)	mg/L	0.01*	0.019	<0.0005
Dissolved Magnesium (Mg)	mg/L		120	49
Dissolved Organic Carbon	mg/L	5**	31	9.4
Dissolved Potassium (K)	mg/L		5.4	2.6
Dissolved Sodium (Na)	mg/L	200**	270	110
Dissolved Sulphate (SO4)	mg/L	500**	570	330
Nitrate (N)	mg/L	10.0*	<0.10	<0.10
pH	(pH units)	6.5-8.5	8.1	8.1
Total Ammonia-N	mg/L		<0.15	0.18
Total Dissolved Solids	mg/L	500	1410	920
Total Kjeldahl Nitrogen (TKN)	mg/L		<0.70	<0.7
Ion Percentage	%		4.7	14.2

Parameter	Units	ODWQS	OW83-9	OW83-9
Date			**03-May-23**	**09-May-24**
Laboratory			**Bureau Veritas**	**Bureau Veritas**
Alkalinity (Total as CaCO3)	mg/L	30-500***	540	520
Conductivity	umho/cm		1880	1700
Dissolved Barium (Ba)	mg/L	1*	0.013	0.012
Dissolved Boron (B)	mg/L	5.0*	0.41	0.37
Dissolved Cadmium (Cd)	mg/L	0.005*	<0.0001	<0.0001
Dissolved Calcium (Ca)	mg/L		120	140
Dissolved Chloride (Cl)	mg/L	250**	15	29
Dissolved Iron (Fe)	mg/L	0.3**	<0.1	2.8
Dissolved Lead (Pb)	mg/L	0.01*	<0.0005	<0.0005
Dissolved Magnesium (Mg)	mg/L		140	160
Dissolved Organic Carbon	mg/L	5**	2.6	2.6
Dissolved Potassium (K)	mg/L		4.2	4.8
Dissolved Sodium (Na)	mg/L	200**	79	89
Dissolved Sulphate (SO4)	mg/L	500**	490	470
Nitrate (N)	mg/L	10.0*	<0.10	0.18
pH	(pH units)	6.5-8.5	7.5	8.1
Total Ammonia-N	mg/L		0.50	<0.15
Total Dissolved Solids	mg/L	500	1260	1350
Total Kjeldahl Nitrogen (TKN)	mg/L		<0.7	<0.7
Ion Percentage	%		4.1	11.8

Parameter	Units	ODWQS	OW83-29	OW83-29
Date			**03-May-23**	**09-May-24**
Laboratory			**Bureau Veritas**	**Bureau Veritas**
Alkalinity (Total as CaCO3)	mg/L	30-500***	220	230
Conductivity	umho/cm		810	870
Dissolved Barium (Ba)	mg/L	1*	0.077	0.078
Dissolved Boron (B)	mg/L	5.0*	0.93	1.2
Dissolved Cadmium (Cd)	mg/L	0.005*	<0.0001	<0.0001
Dissolved Calcium (Ca)	mg/L		29	30
Dissolved Chloride (Cl)	mg/L	250**	25	33
Dissolved Iron (Fe)	mg/L	0.3**	<0.1	<0.1
Dissolved Lead (Pb)	mg/L	0.01*	<0.0005	<0.0005
Dissolved Magnesium (Mg)	mg/L		19	19
Dissolved Organic Carbon	mg/L	5**	4.0	3.9
Dissolved Potassium (K)	mg/L		6.5	7.4
Dissolved Sodium (Na)	mg/L	200**	100	130
Dissolved Sulphate (SO4)	mg/L	500**	140	150
Nitrate (N)	mg/L	10.0*	<0.10	<0.10
pH	(pH units)	6.5-8.5	8.2	8.1
Total Ammonia-N	mg/L		0.96	1.09
Total Dissolved Solids	mg/L	500	450	580
Total Kjeldahl Nitrogen (TKN)	mg/L		1.1	1.2
Ion Percentage	%		2.2	6.5

NOTES: 1) Blank denotes data not available.
2) ODWQS denotes O. Reg. 169/03: Ontario Drinking Water Quality Standards (as amended).
3) *denotes health related ODWQS.
** denotes aesthetic objective for ODWQS.
*** denotes operational guideline for ODWQS.
4) mg/L denotes milligrams per litre.

Table H-4
Groundwater - General Analytical Results
Twin Creeks Environmental Centre

Parameter	Units	ODWQS	OW84-6	OW84-6	OW84-6	OW84-6
Date			03-May-23	09-May-24	28-May-24	19-Nov-24
Laboratory			Bureau Veritas	Bureau Veritas	Bureau Veritas	Bureau Veritas
Alkalinity (Total as CaCO3)	mg/L	30-500***	600	450	510	500
Conductivity	umho/cm		4300	1500	1600	2100
Dissolved Barium (Ba)	mg/L	1*	0.021	0.032	0.032	0.031
Dissolved Boron (B)	mg/L	5.0*	0.41	0.14	0.21	0.27
Dissolved Cadmium (Cd)	mg/L	0.005*	<0.0001	<0.0001	<0.0001	<0.0001
Dissolved Calcium (Ca)	mg/L		360	190	240	240
Dissolved Chloride (Cl)	mg/L	250**	59	9.1	10	21
Dissolved Iron (Fe)	mg/L	0.3**	0.5	0.4	1.1	6.7
Dissolved Lead (Pb)	mg/L	0.01*	0.001	<0.0005	<0.0005	<0.0005
Dissolved Magnesium (Mg)	mg/L		260	64	98	130
Dissolved Organic Carbon	mg/L	5**	26	8.4	12	14
Dissolved Potassium (K)	mg/L		11	3.8	4.8	6.3
Dissolved Sodium (Na)	mg/L	200**	520	79	110	130
Dissolved Sulphate (SO4)	mg/L	500**	2200	410	450	650
Nitrate (N)	mg/L	10.0*	0.45	4.25	2.18	1.12
pH	(pH units)	6.5-8.5	7.8	8.0	8.0	7.6
Total Ammonia-N	mg/L		<0.15	<0.15	<0.15	1.02
Total Dissolved Solids	mg/L	500	3630	1120	1110	2200
Total Kjeldahl Nitrogen (TKN)	mg/L		<0.70	<0.7	1.0	1.5
Ion Percentage	%		3.8	6.4	16.4	12.2

Parameter	Units	ODWQS	OW84-11	OW84-11
Date			03-May-23	09-May-24
Laboratory			Bureau Veritas	Bureau Veritas
Alkalinity (Total as CaCO3)	mg/L	30-500***	300	360
Conductivity	umho/cm		3050	2900
Dissolved Barium (Ba)	mg/L	1*	0.019	0.017
Dissolved Boron (B)	mg/L	5.0*	0.94	0.82
Dissolved Cadmium (Cd)	mg/L	0.005*	<0.0001	<0.0001
Dissolved Calcium (Ca)	mg/L		180	180
Dissolved Chloride (Cl)	mg/L	250**	22	26
Dissolved Iron (Fe)	mg/L	0.3**	1.5	1.4
Dissolved Lead (Pb)	mg/L	0.01*	<0.0005	<0.0005
Dissolved Magnesium (Mg)	mg/L		190	220
Dissolved Organic Carbon	mg/L	5**	9.8	8.5
Dissolved Potassium (K)	mg/L		9.6	10
Dissolved Sodium (Na)	mg/L	200**	220	210
Dissolved Sulphate (SO4)	mg/L	500**	1400	1500
Nitrate (N)	mg/L	10.0*	<0.10	0.11
pH	(pH units)	6.5-8.5	7.6	8.0
Total Ammonia-N	mg/L		4.64	3.31
Total Dissolved Solids	mg/L	500	2190	2410
Total Kjeldahl Nitrogen (TKN)	mg/L		5.3	3.7
Ion Percentage	%		0.8	2.2

Parameter	Units	ODWQS	OW84-31	OW84-31	OW84-31	OW84-31
Date			03-May-23	23-May-23	03-Nov-23	09-May-24
Laboratory			Bureau Veritas	Bureau Veritas	Bureau Veritas	Bureau Veritas
Alkalinity (Total as CaCO3)	mg/L	30-500***	310	400	380	210
Conductivity	umho/cm		2340	2200	2200	2100
Dissolved Barium (Ba)	mg/L	1*	0.016	0.053	0.036	0.024
Dissolved Boron (B)	mg/L	5.0*	1.9	0.52	1.1	1.5
Dissolved Cadmium (Cd)	mg/L	0.005*	<0.0001	<0.0001	<0.0001	<0.0001
Dissolved Calcium (Ca)	mg/L		100	280	190	140
Dissolved Chloride (Cl)	mg/L	250**	34	21	19	36
Dissolved Iron (Fe)	mg/L	0.3**	<0.1	<0.1	<0.1	0.2
Dissolved Lead (Pb)	mg/L	0.01*	<0.0005	<0.0005	<0.0005	<0.0005
Dissolved Magnesium (Mg)	mg/L		51	79	61	52
Dissolved Organic Carbon	mg/L	5**	5.0	17.0	8.4	7.9
Dissolved Potassium (K)	mg/L		16	6.5	8.7	8.1
Dissolved Sodium (Na)	mg/L	200**	330	140	240	270
Dissolved Sulphate (SO4)	mg/L	500**	870	760	850	850
Nitrate (N)	mg/L	10.0*	6.22	6.45	5.08	0.15
pH	(pH units)	6.5-8.5	8.0	7.6	7.9	7.9
Total Ammonia-N	mg/L		0.45	0.35	0.7	1.74
Total Dissolved Solids	mg/L	500	1550	1710	1760	1590
Total Kjeldahl Nitrogen (TKN)	mg/L		1.2	0.7	1.2	1.9
Ion Percentage	%		0.8	7.5	1.2	1.9

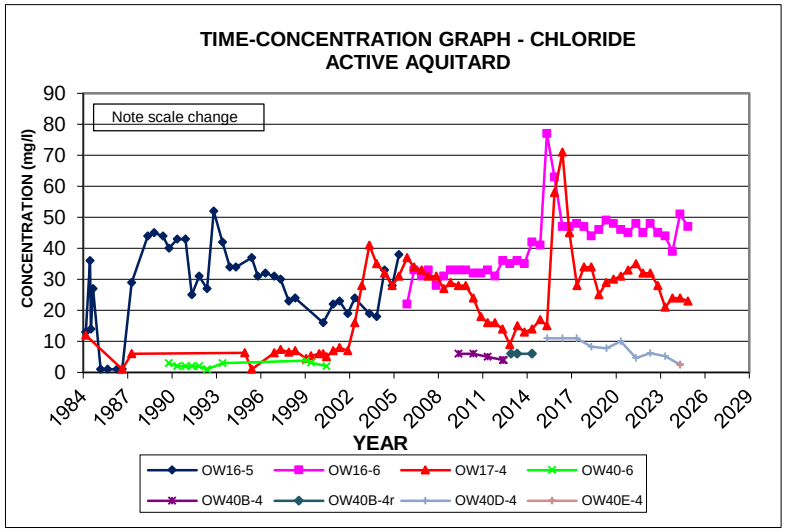
NOTES: 1) Blank denotes data not available.
2) ODWQS denotes O. Reg. 169/03: Ontario Drinking Water Quality Standards (as amended).
3) *denotes health related ODWQS.
** denotes aesthetic objective for ODWQS.
*** denotes operational guideline for ODWQS.
4) mg/L denotes milligrams per litre.

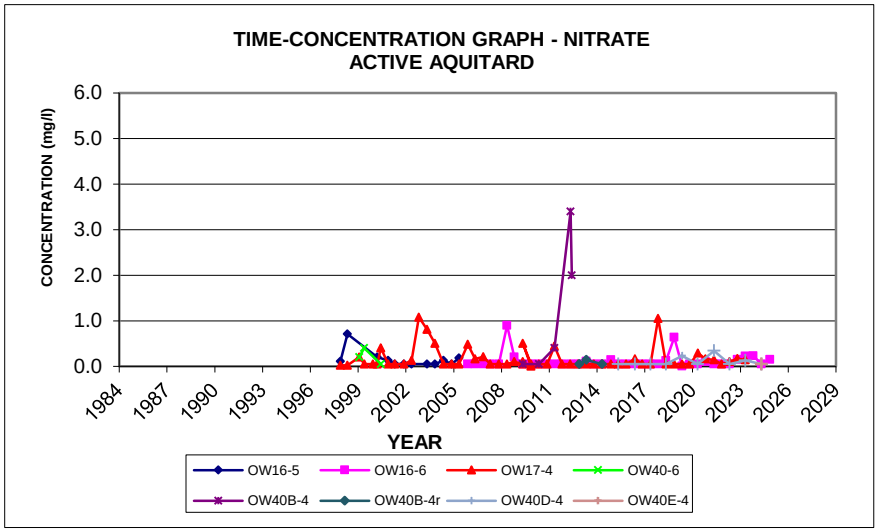
Table H-4
Groundwater - General Analytical Results
Twin Creeks Environmental Centre

Parameter	Units	ODWQS	Cemetery Well	Cemetery Well	Cemetery Well	Cemetery Well	Cemetery Well	Cemetery Well	Cemetery Well	Cemetery Well	Cemetery Well	Cemetery Well	Cemetery Well	Cemetery Well	Cemetery Well
Date			**23-May-08**	**20-May-09**	**18-May-10**	**12-May-11**	**16-May-12**	**09-May-13**	**05-May-14**	**14-May-15**	**27-May-16**	**16-May-17**	**08-May-18**	**15-May-19**	**06-May-20**
Laboratory			**MAXXAM**	**MAXXAM**	**MAXXAM**	**MAXXAM**	**MAXXAM**	**MAXXAM**	**MAXXAM**	**MAXXAM**	**MAXXAM**	**MAXXAM**	**MAXXAM**	**MAXXAM**	**Bureau Veritas**
Alkalinity (Total as CaCO3)	mg/L	30-500***	160	221	250	204	240	180	210	190	210	230	230	230	230
Conductivity	umho/cm		349	431	483	418	460	370	420	420	430	470	460	460	450
Total Barium (Ba)	mg/L	1*	0.015	0.022	0.023	0.019	0.021	0.017	0.020	0.020	0.022	0.023	0.02	0.022	0.02
Total Boron (B)	mg/L	5.0*	0.019	0.02	0.02	<0.02	0.03	0.02	0.024	0.034	0.03	0.03	0.03	0.03	0.03
Total Cadmium (Cd)	mg/L	0.005*	0.0001	0.0003	0.0002	0.0001	<0.0001	0.0002	0.00015	0.00023	0.00010	0.00030	0.0005	0.0002	0.0003
Total Calcium (Ca)	mg/L		45	60	66	57	64	51	63	59	60	64	59	70	59
Total Chloride (Cl)	mg/L	250**	5	6	6	6	4	4	5	15	8.4	6.2	5.2	4.3	2.9
Total Iron (Fe)	mg/L	0.3**	<0.1	<0.1	<0.1	<0.1	<0.10	<0.10	<0.10	0.16	0.10	0.40	0.5	0.6	0.4
Total Lead (Pb)	mg/L	0.01*	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.00050	0.00051	<0.0005	0.0015	0.0019	0.0008	0.001
Total Magnesium (Mg)	mg/L		14	17	21	17	19	15	19	17	17	19	17	20	18
Dissolved Organic Carbon	mg/L	5**	2.6	4.6	2.5	3.2	3.5	4.1	3.7	3.6	12	4.4	3	3.6	3.1
Total Potassium (K)	mg/L		3.4	3.6	3.6	3.4	3.7	3.1	3.6	4.1	3.9	3.6	3.5	4.0	3.5
Total Sodium (Na)	mg/L	200**	3.3	3.7	4.3	3.5	3.7	3.1	3.9	6.5	4.1	4.1	3.5	3.7	3.3
Total Sulphate (SO4)	mg/L	500**	9	7	6	7	6	8	7	7	5.9	6.1	5.9	5.5	5.2
Nitrate (N)	mg/L	10.0*	0.5	0.6	0.3	0.9	0.38	0.77	0.83	0.92	<0.10	0.43	0.33	0.93	0.43
pH	(pH units)	6.5-8.5	7.9	8.5	8.3	8.3	8.2	8.2	8.1	8.1	8.1	8.1	8.2	8.1	8.2
Total Ammonia-N	mg/L		<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15
Total Dissolved Solids	mg/L	500	226	285	320	254	254	250	240	244	238	250	235	255	245
Total Kjeldahl Nitrogen (TKN)	mg/L		<0.7	<0.7	<0.7	<0.7	<0.7	<0.7	<0.7	<0.7	<0.7	<0.7	<0.7	<0.7	<0.7
Ion Percentage	%		11.3	9.4	10.5	11.2	10.3	11.7	15.3	13.5	11.4	11.6	7.5	16.0	9.2

Parameter	Units	ODWQS	Cemetery Well	Cemetery Well	Cemetery Well	Cemetery Well
Date			**21-May-21**	**06-May-22**	**02-May-23**	**10-May-24**
Laboratory			**Bureau Veritas**	**Bureau Veritas**	**Bureau Veritas**	**Bureau Veritas**
Alkalinity (Total as CaCO3)	mg/L	30-500***	230	230	240	260
Conductivity	umho/cm		450	450	590	500
Total Barium (Ba)	mg/L	1*	0.021	0.020	0.020	0.024
Total Boron (B)	mg/L	5.0*	0.03	0.03	0.06	0.03
Total Cadmium (Cd)	mg/L	0.005*	0.0001	0.0021	<0.0001	<0.0001
Total Calcium (Ca)	mg/L		61	61	64	70
Total Chloride (Cl)	mg/L	250**	4.4	3.8	2.6	3.8
Total Iron (Fe)	mg/L	0.3**	<0.1	1.0	0.1	<0.1
Total Lead (Pb)	mg/L	0.01*	<0.0005	0.0060	0.0006	<0.0005
Total Magnesium (Mg)	mg/L		19	18	19	20
Dissolved Organic Carbon	mg/L	5**	7.6	4.7	4.8	3.8
Total Potassium (K)	mg/L		4.4	3.3	3.5	3.7
Total Sodium (Na)	mg/L	200**	3.6	3.5	3.5	3.8
Total Sulphate (SO4)	mg/L	500**	7	4.4	3.7	3.9
Nitrate (N)	mg/L	10.0*	0.98	0.33	0.25	0.23
pH	(pH units)	6.5-8.5	8.0	8.1	8.2	8.2
Total Ammonia-N	mg/L		<0.050	<0.15	<0.15	<0.15
Total Dissolved Solids	mg/L	500	185	235	235	315
Total Kjeldahl Nitrogen (TKN)	mg/L		0.1	<0.7	<0.7	<0.7
Ion Percentage	%		10.5	10.2	11.2	10.8

NOTES: 1) Blank denotes data not available.
2) ODWQS denotes O. Reg. 169/03: Ontario Drinking Water Quality Standards (as amended).
3) *denotes health related ODWQS.
** denotes aesthetic objective for ODWQS.
*** denotes operational guideline for ODWQS.
4) mg/L denotes milligrams per litre.
5) OW85-5 resampled for lead on June 22, 2010 due to elevated lead reportable detection limit for May 20, 2010.
6) Metals analysis for Cemetery Well is for Total Metals


TIME-CONCENTRATION GRAPH - CHLORIDE
ACTIVE AQUITARD
Note scale change
CONCENTRATION (mg/l)
YEAR
OW16-5
OW16-6
OW17-4
OW40-6
OW40B-4
OW40B-4r
OW40D-4
OW40E-4


TIME-CONCENTRATION GRAPH - NITRATE
ACTIVE AQUITARD
CONCENTRATION (mg/l)
YEAR
OW16-5
OW16-6
OW17-4
OW40-6
OW40B-4
OW40B-4r
OW40D-4
OW40E-4

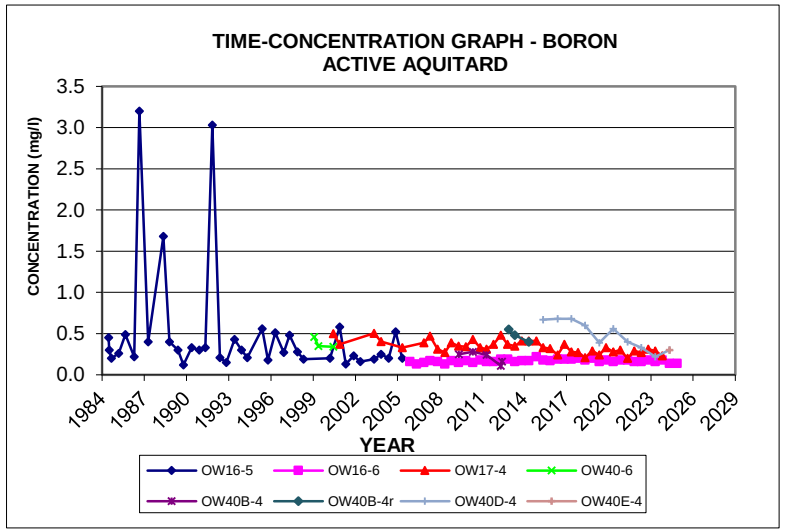
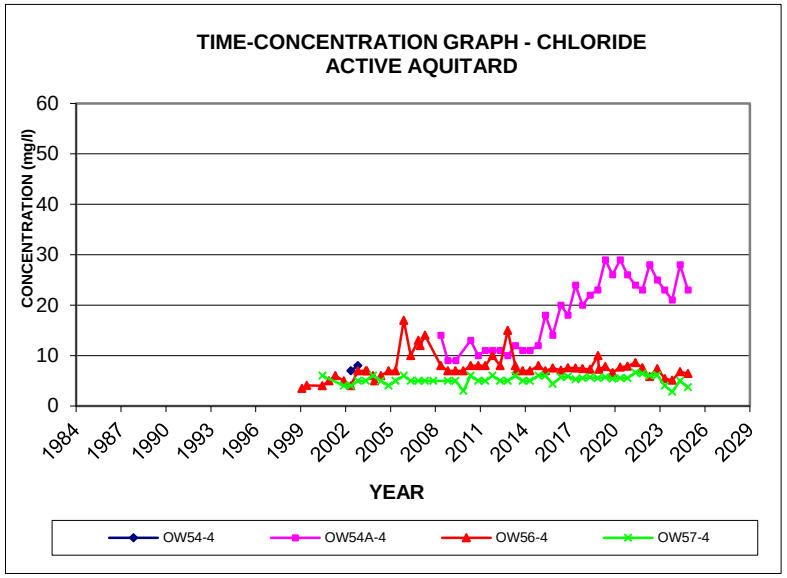
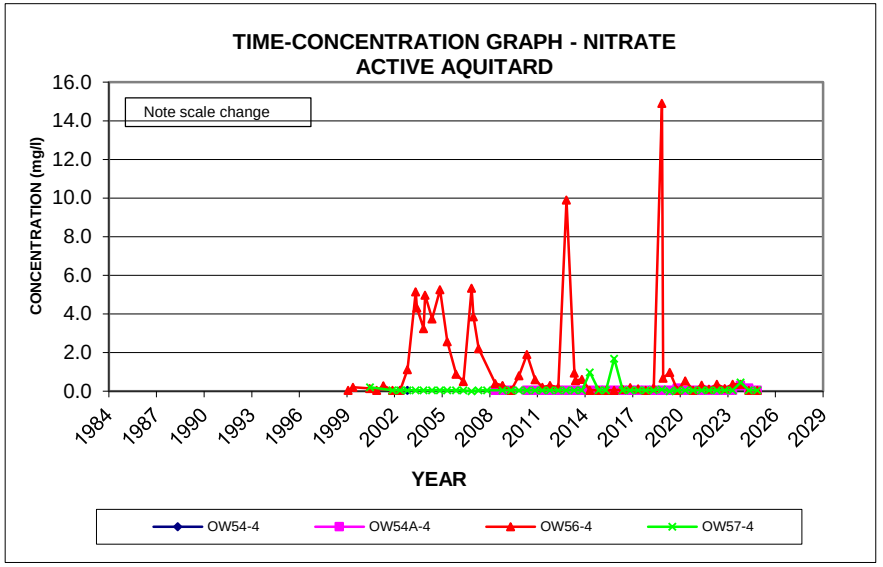

TIME-CONCENTRATION GRAPH - BORON
ACTIVE AQUITARD
CONCENTRATION (mg/l)
YEAR
OW16-5
OW16-6
OW17-4
OW40-6
OW40B-4
OW40B-4r
OW40D-4
OW40E-4

FIGURE H-1


TIME-CONCENTRATION GRAPH - CHLORIDE
ACTIVE AQUITARD
CONCENTRATION (mg/l)
60
50
40
30
20
10
0
1984
1987
1990
1993
1996
1999
2002
2005
2008
2011
2014
2017
2020
2023
2026
2029
YEAR
OW54-4
OW54A-4
OW56-4
OW57-4


TIME-CONCENTRATION GRAPH - NITRATE
ACTIVE AQUITARD
Note scale change
CONCENTRATION (mg/l)
16.0
14.0
12.0
10.0
8.0
6.0
4.0
2.0
0.0
1984
1987
1990
1993
1996
1999
2002
2005
2008
2011
2014
2017
2020
2023
2026
2029
YEAR
OW54-4
OW54A-4
OW56-4
OW57-4

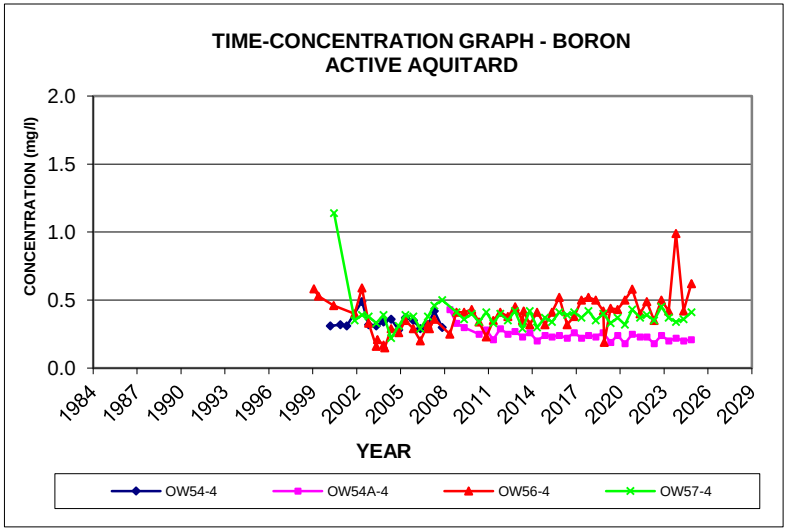
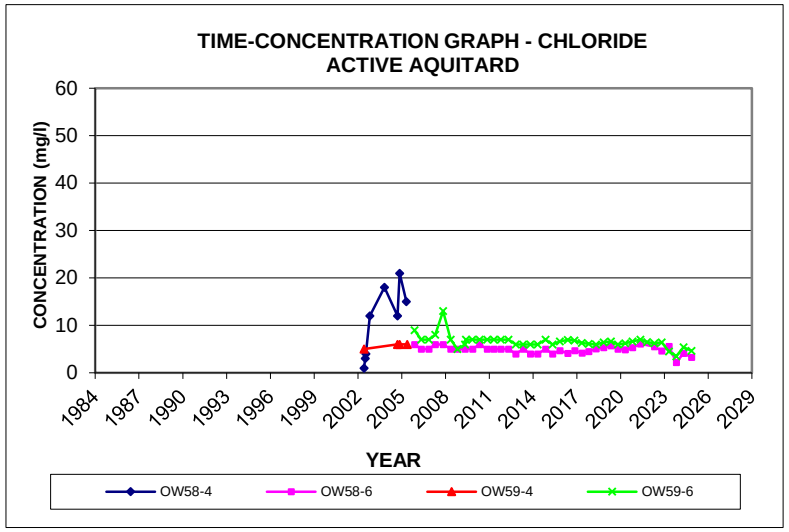
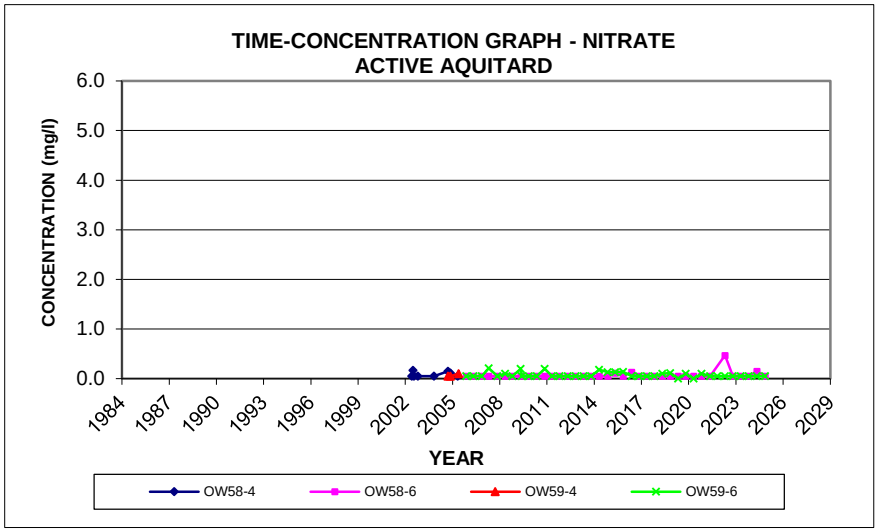

TIME-CONCENTRATION GRAPH - BORON
ACTIVE AQUITARD
CONCENTRATION (mg/l)
2.0
1.5
1.0
0.5
0.0
1984
1987
1990
1993
1996
1999
2002
2005
2008
2011
2014
2017
2020
2023
2026
2029
YEAR
OW54-4
OW54A-4
OW56-4
OW57-4

FIGURE H-2


TIME-CONCENTRATION GRAPH - CHLORIDE
ACTIVE AQUITARD
CONCENTRATION (mg/l)
60
50
40
30
20
10
0
1984
1987
1990
1993
1996
1999
2002
2005
2008
2011
2014
2017
2020
2023
2026
2029
YEAR
OW58-4
OW58-6
OW59-4
OW59-6


TIME-CONCENTRATION GRAPH - NITRATE
ACTIVE AQUITARD
CONCENTRATION (mg/l)
6.0
5.0
4.0
3.0
2.0
1.0
0.0
1984
1987
1990
1993
1996
1999
2002
2005
2008
2011
2014
2017
2020
2023
2026
2029
YEAR
OW58-4
OW58-6
OW59-4
OW59-6

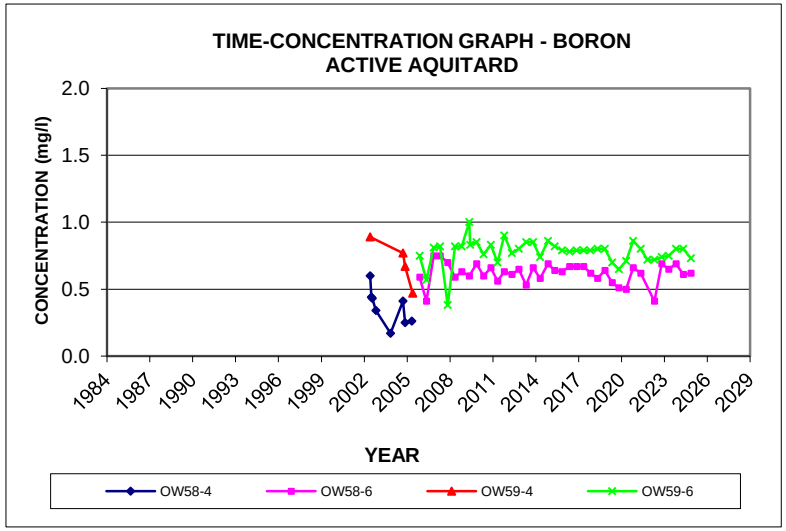
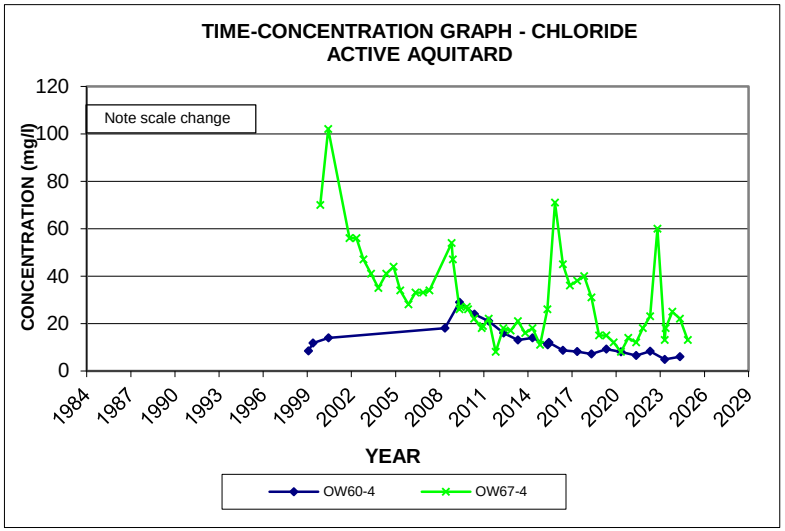
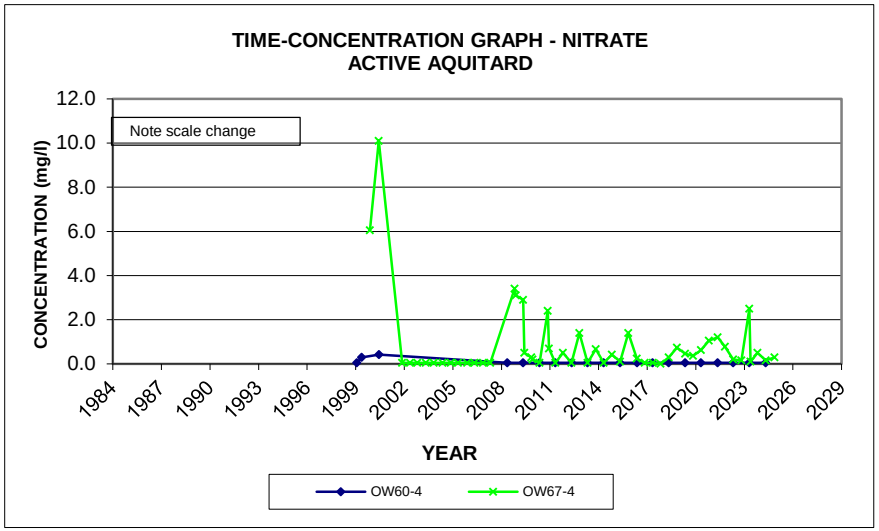

TIME-CONCENTRATION GRAPH - BORON
ACTIVE AQUITARD
CONCENTRATION (mg/l)
2.0
1.5
1.0
0.5
0.0
1984
1987
1990
1993
1996
1999
2002
2005
2008
2011
2014
2017
2020
2023
2026
2029
YEAR
OW58-4
OW58-6
OW59-4
OW59-6

FIGURE H-3


TIME-CONCENTRATION GRAPH - CHLORIDE
ACTIVE AQUITARD
Note scale change
CONCENTRATION (mg/l)
YEAR
OW60-4
OW67-4


TIME-CONCENTRATION GRAPH - NITRATE
ACTIVE AQUITARD
Note scale change
CONCENTRATION (mg/l)
YEAR
OW60-4
OW67-4

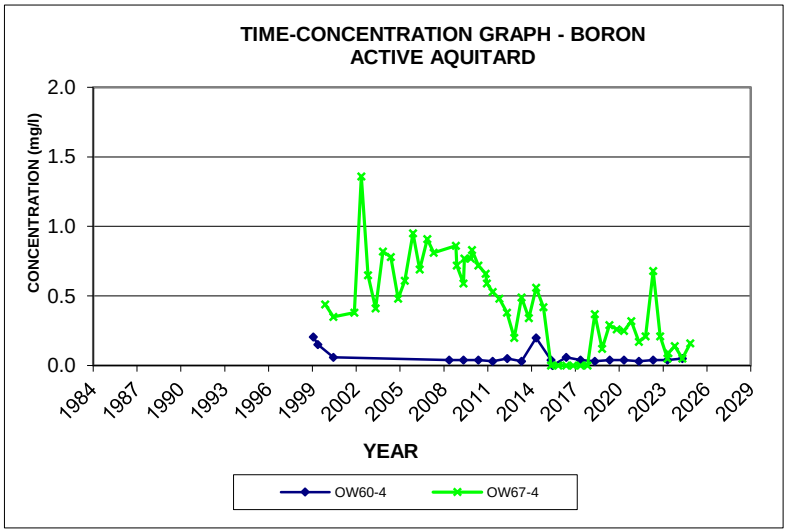
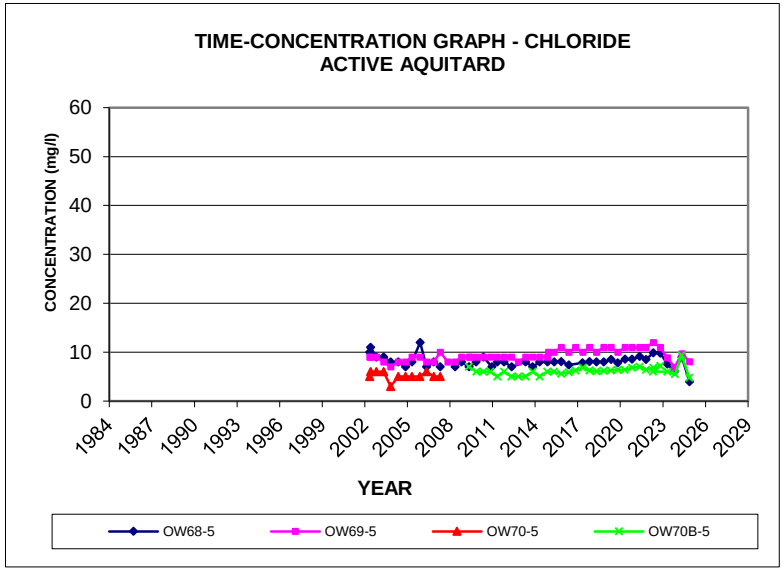
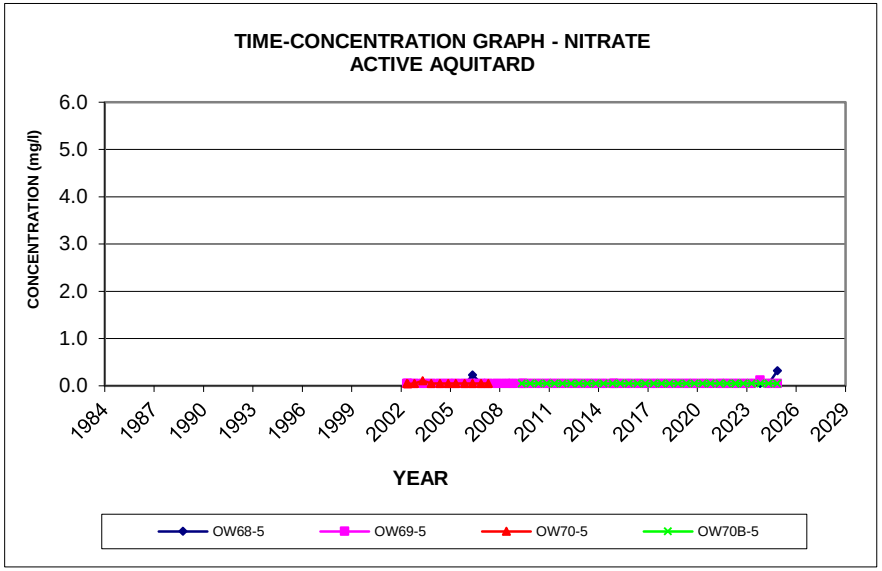

TIME-CONCENTRATION GRAPH - BORON
ACTIVE AQUITARD
CONCENTRATION (mg/l)
YEAR
OW60-4
OW67-4

FIGURE H-4


TIME-CONCENTRATION GRAPH - CHLORIDE
ACTIVE AQUITARD
CONCENTRATION (mg/l)
60
50
40
30
20
10
0
1984
1987
1990
1993
1996
1999
2002
2005
2008
2011
2014
2017
2020
2023
2026
2029
YEAR
OW68-5
OW69-5
OW70-5
OW70B-5


TIME-CONCENTRATION GRAPH - NITRATE
ACTIVE AQUITARD
CONCENTRATION (mg/l)
6.0
5.0
4.0
3.0
2.0
1.0
0.0
1984
1987
1990
1993
1996
1999
2002
2005
2008
2011
2014
2017
2020
2023
2026
2029
YEAR
OW68-5
OW69-5
OW70-5
OW70B-5

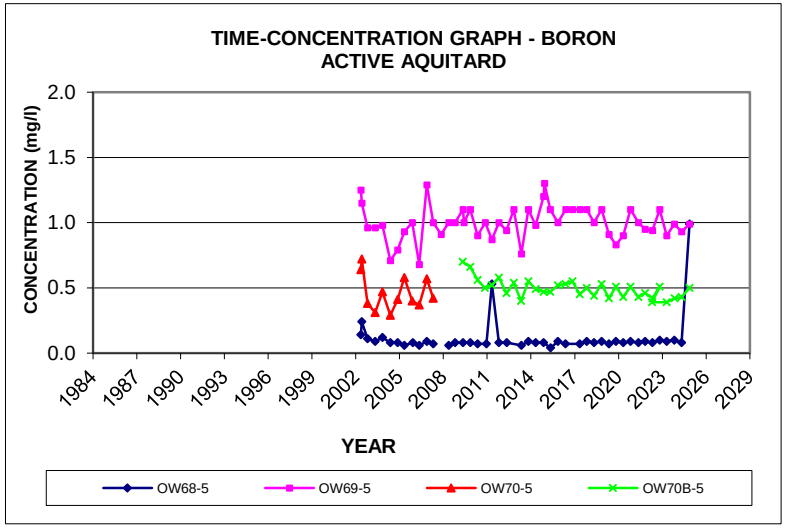
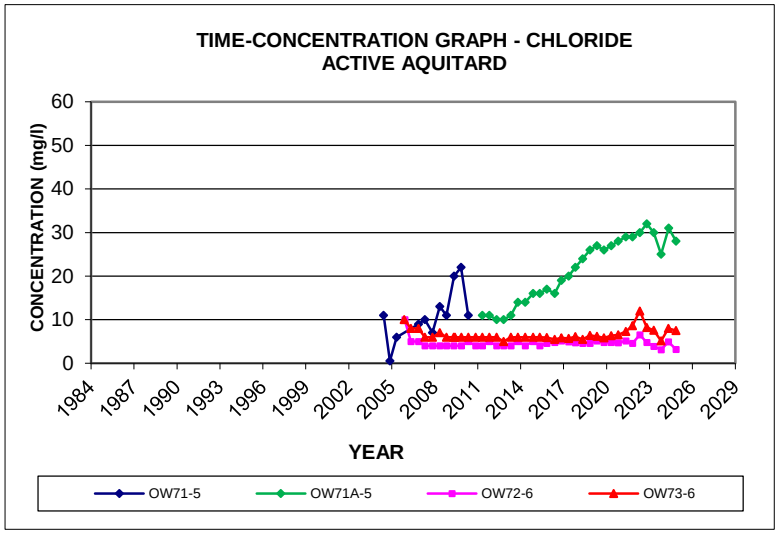
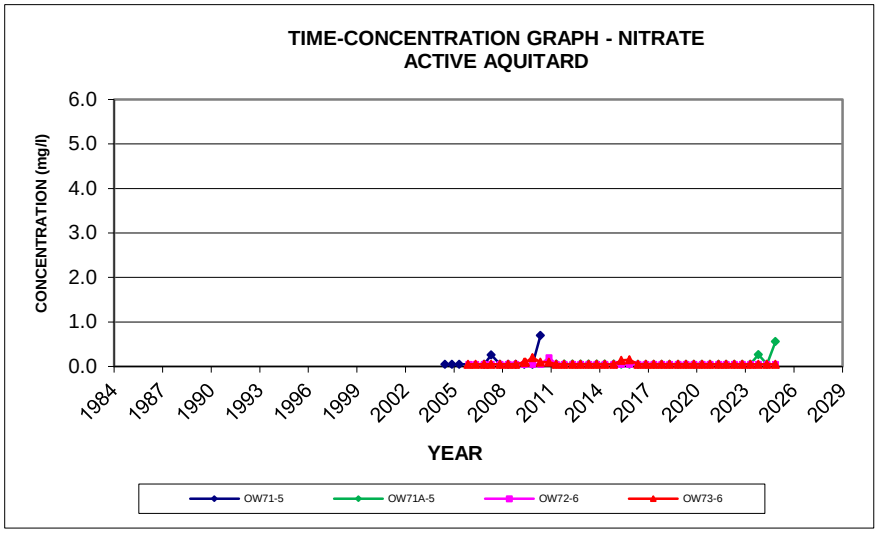

TIME-CONCENTRATION GRAPH - BORON
ACTIVE AQUITARD
CONCENTRATION (mg/l)
2.0
1.5
1.0
0.5
0.0
1984
1987
1990
1993
1996
1999
2002
2005
2008
2011
2014
2017
2020
2023
2026
2029
YEAR
OW68-5
OW69-5
OW70-5
OW70B-5

FIGURE H-5


TIME-CONCENTRATION GRAPH - CHLORIDE
ACTIVE AQUITARD
CONCENTRATION (mg/l)
60
50
40
30
20
10
0
1984
1987
1990
1993
1996
1999
2002
2005
2008
2011
2014
2017
2020
2023
2026
2029
YEAR
OW71-5
OW71A-5
OW72-6
OW73-6


TIME-CONCENTRATION GRAPH - NITRATE
ACTIVE AQUITARD
CONCENTRATION (mg/l)
6.0
5.0
4.0
3.0
2.0
1.0
0.0
1984
1987
1990
1993
1996
1999
2002
2005
2008
2011
2014
2017
2020
2023
2026
2029
YEAR
OW71-5
OW71A-5
OW72-6
OW73-6

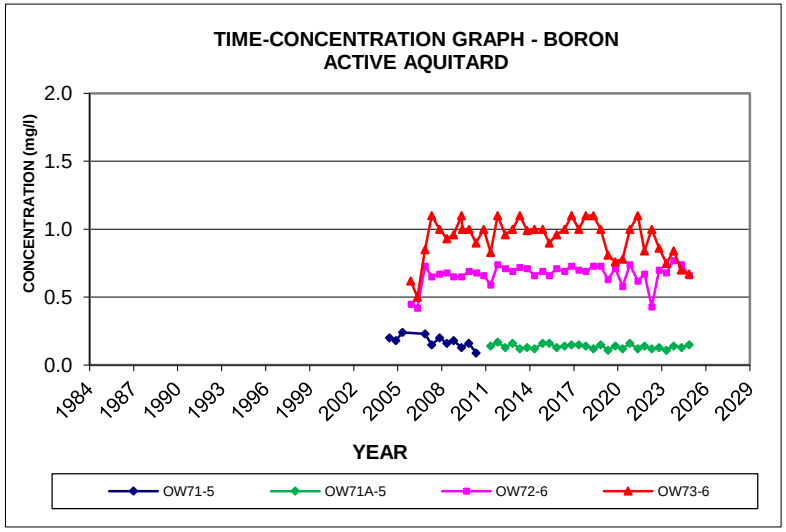
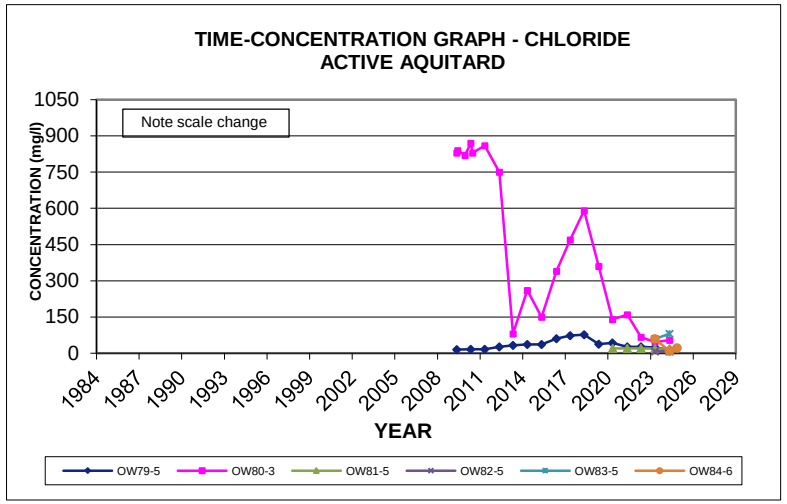
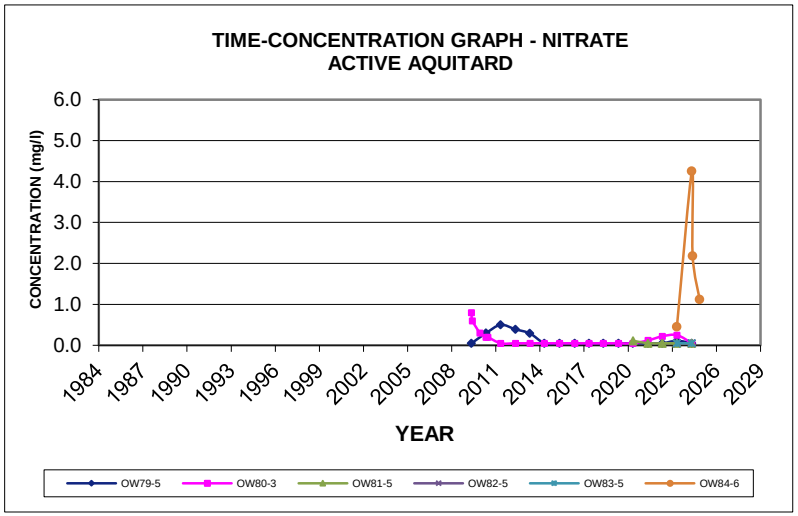

TIME-CONCENTRATION GRAPH - BORON
ACTIVE AQUITARD
CONCENTRATION (mg/l)
2.0
1.5
1.0
0.5
0.0
1984
1987
1990
1993
1996
1999
2002
2005
2008
2011
2014
2017
2020
2023
2026
2029
YEAR
OW71-5
OW71A-5
OW72-6
OW73-6

FIGURE H-6


TIME-CONCENTRATION GRAPH - CHLORIDE
ACTIVE AQUITARD
Note scale change
CONCENTRATION (mg/l)
1050
900
750
600
450
300
150
0
1984
1987
1990
1993
1996
1999
2002
2005
2008
2011
2014
2017
2020
2023
2026
2029
YEAR
OW79-5
OW80-3
OW81-5
OW82-5
OW83-5
OW84-6


TIME-CONCENTRATION GRAPH - NITRATE
ACTIVE AQUITARD
CONCENTRATION (mg/l)
6.0
5.0
4.0
3.0
2.0
1.0
0.0
1984
1987
1990
1993
1996
1999
2002
2005
2008
2011
2014
2017
2020
2023
2026
2029
YEAR
OW79-5
OW80-3
OW81-5
OW82-5
OW83-5
OW84-6

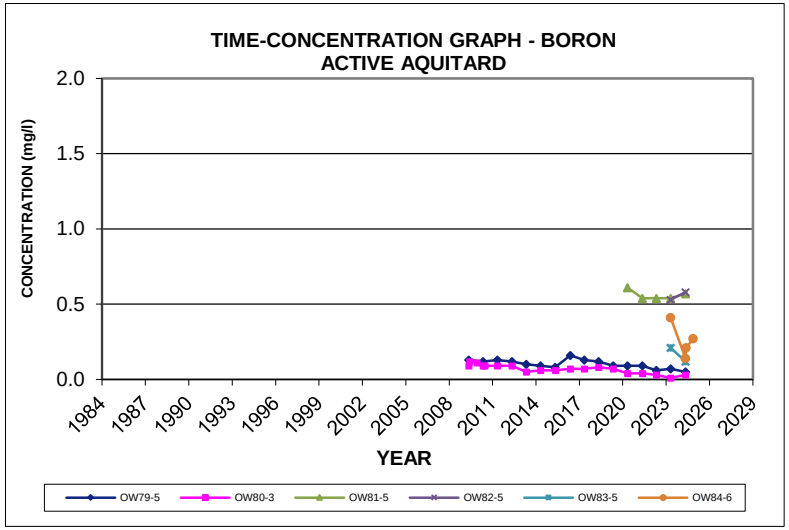
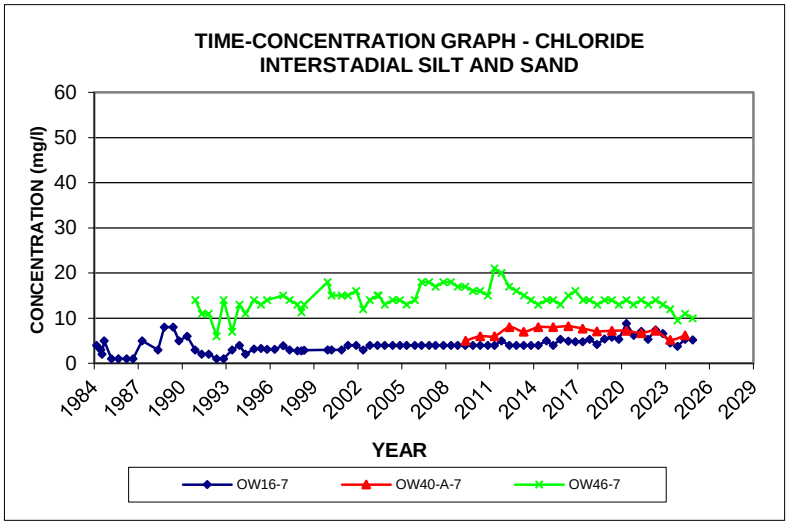
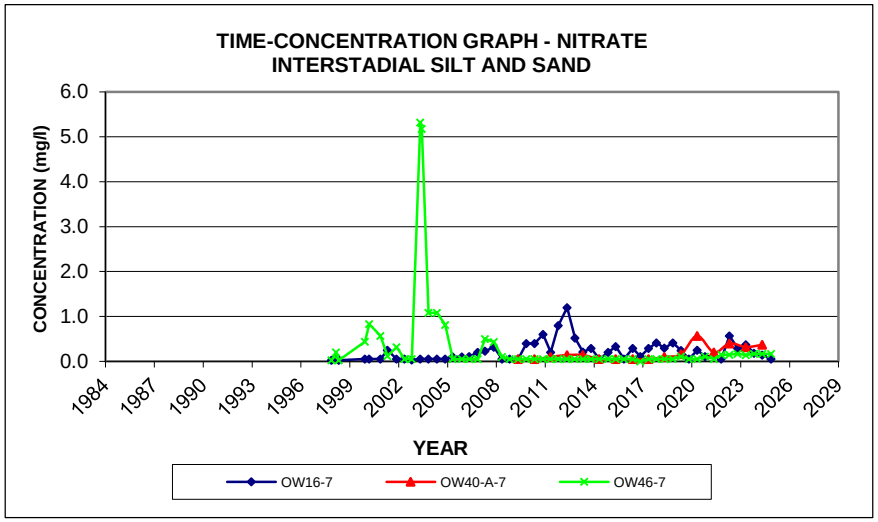

TIME-CONCENTRATION GRAPH - BORON
ACTIVE AQUITARD
CONCENTRATION (mg/l)
2.0
1.5
1.0
0.5
0.0
1984
1987
1990
1993
1996
1999
2002
2005
2008
2011
2014
2017
2020
2023
2026
2029
YEAR
OW79-5
OW80-3
OW81-5
OW82-5
OW83-5
OW84-6

FIGURE H-7


TIME-CONCENTRATION GRAPH - CHLORIDE
INTERSTADIAL SILT AND SAND
CONCENTRATION (mg/l)
60
50
40
30
20
10
0
1984
1987
1990
1993
1996
1999
2002
2005
2008
2011
2014
2017
2020
2023
2026
2029
YEAR
OW16-7
OW40-A-7
OW46-7


TIME-CONCENTRATION GRAPH - NITRATE
INTERSTADIAL SILT AND SAND
CONCENTRATION (mg/l)
6.0
5.0
4.0
3.0
2.0
1.0
0.0
1984
1987
1990
1993
1996
1999
2002
2005
2008
2011
2014
2017
2020
2023
2026
2029
YEAR
OW16-7
OW40-A-7
OW46-7

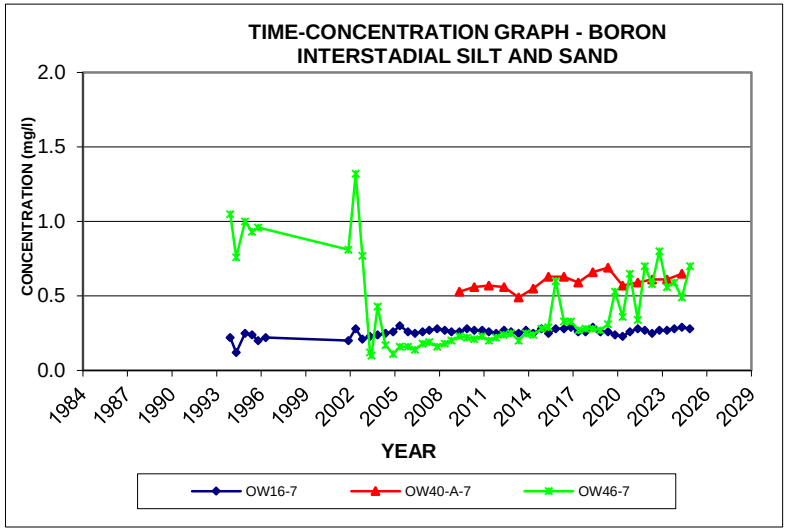
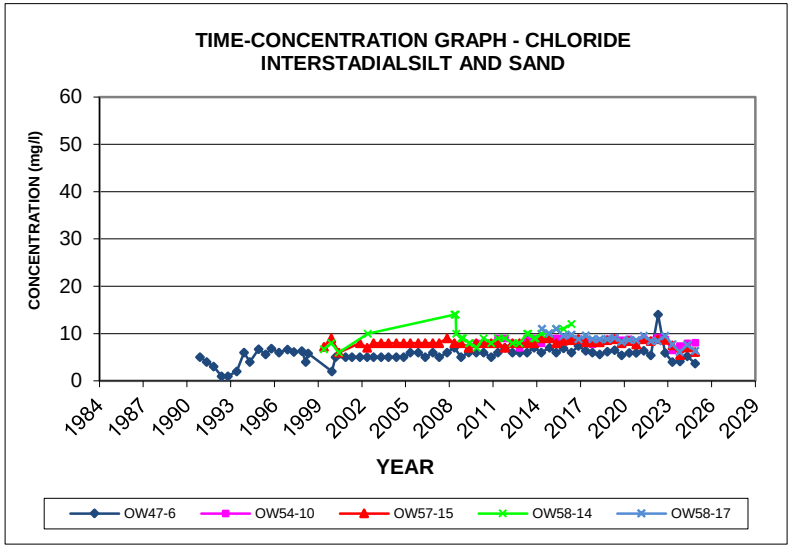
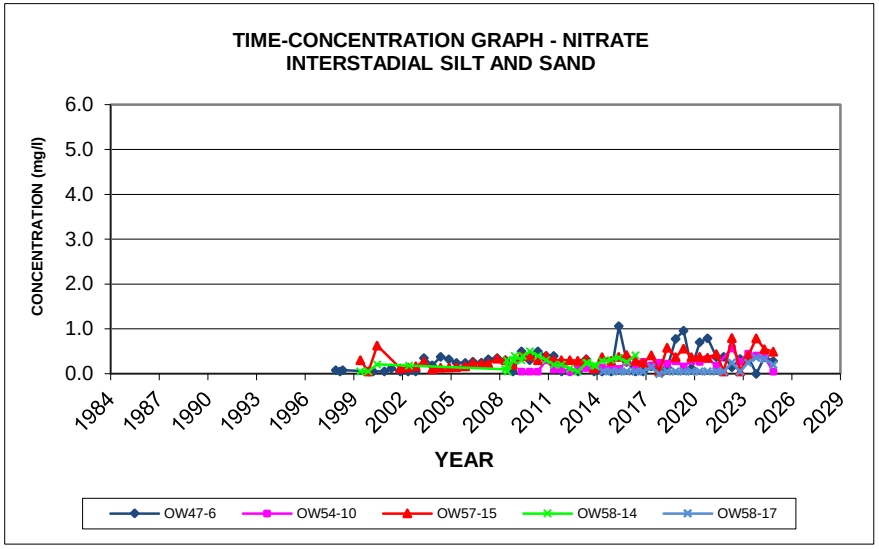

TIME-CONCENTRATION GRAPH - BORON
INTERSTADIAL SILT AND SAND
CONCENTRATION (mg/l)
2.0
1.5
1.0
0.5
0.0
1984
1987
1990
1993
1996
1999
2002
2005
2008
2011
2014
2017
2020
2023
2026
2029
YEAR
OW16-7
OW40-A-7
OW46-7

FIGURE H-8


TIME-CONCENTRATION GRAPH - CHLORIDE
INTERSTADIALSILT AND SAND
CONCENTRATION (mg/l)
60
50
40
30
20
10
0
1984
1987
1990
1993
1996
1999
2002
2005
2008
2011
2014
2017
2020
2023
2026
2029
YEAR
OW47-6
OW54-10
OW57-15
OW58-14
OW58-17


TIME-CONCENTRATION GRAPH - NITRATE
INTERSTADIAL SILT AND SAND
CONCENTRATION (mg/l)
6.0
5.0
4.0
3.0
2.0
1.0
0.0
1984
1987
1990
1993
1996
1999
2002
2005
2008
2011
2014
2017
2020
2023
2026
2029
YEAR
OW47-6
OW54-10
OW57-15
OW58-14
OW58-17

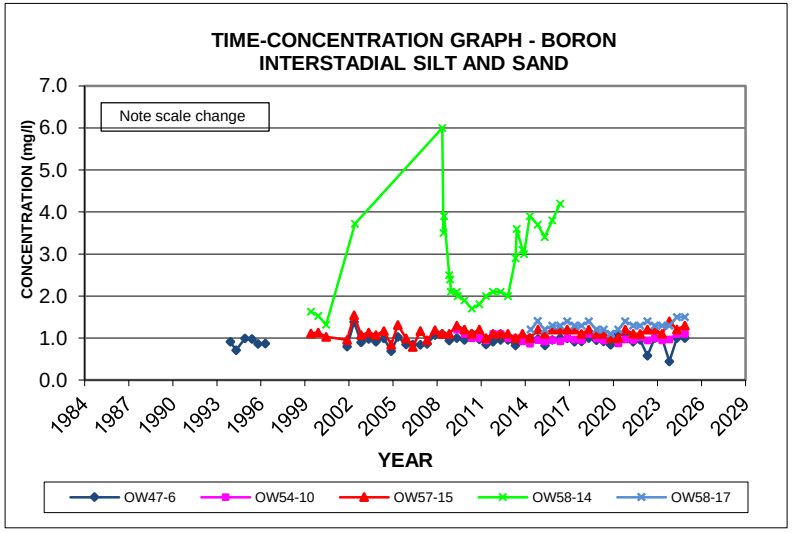
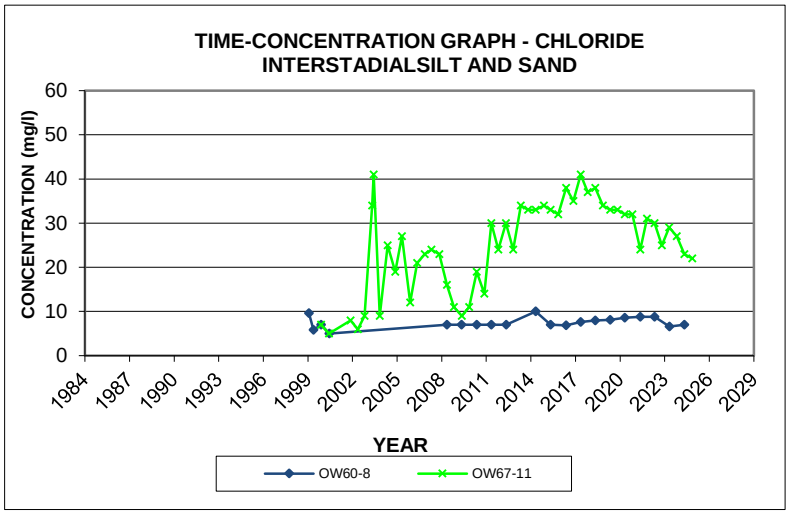
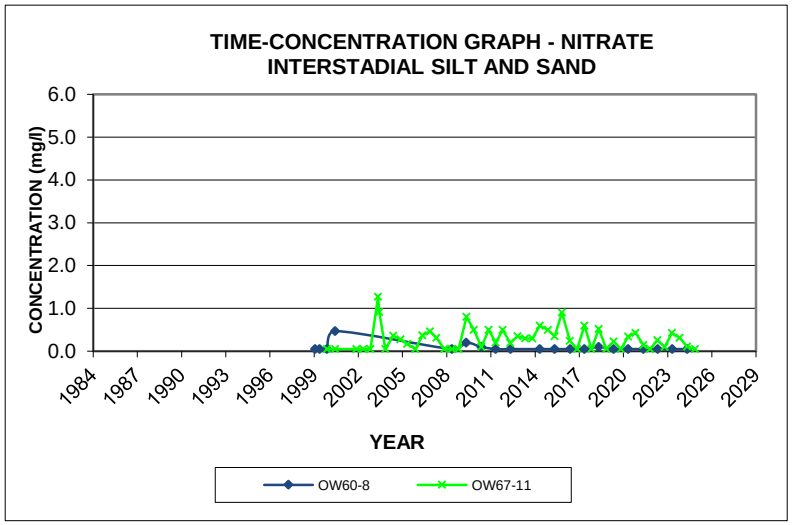

TIME-CONCENTRATION GRAPH - BORON
INTERSTADIAL SILT AND SAND
Note scale change
CONCENTRATION (mg/l)
7.0
6.0
5.0
4.0
3.0
2.0
1.0
0.0
1984
1987
1990
1993
1996
1999
2002
2005
2008
2011
2014
2017
2020
2023
2026
2029
YEAR
OW47-6
OW54-10
OW57-15
OW58-14
OW58-17

FIGURE H-9


TIME-CONCENTRATION GRAPH - CHLORIDE
INTERSTADIALSILT AND SAND
CONCENTRATION (mg/l)
60
50
40
30
20
10
0
1984
1987
1990
1993
1996
1999
2002
2005
2008
2011
2014
2017
2020
2023
2026
2029
YEAR
OW60-8
OW67-11


TIME-CONCENTRATION GRAPH - NITRATE
INTERSTADIAL SILT AND SAND
CONCENTRATION (mg/l)
6.0
5.0
4.0
3.0
2.0
1.0
0.0
1984
1987
1990
1993
1996
1999
2002
2005
2008
2011
2014
2017
2020
2023
2026
2029
YEAR
OW60-8
OW67-11

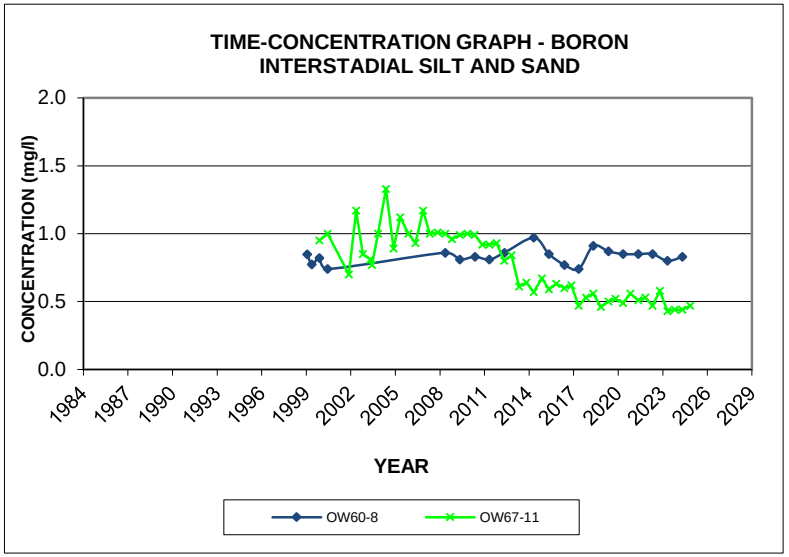
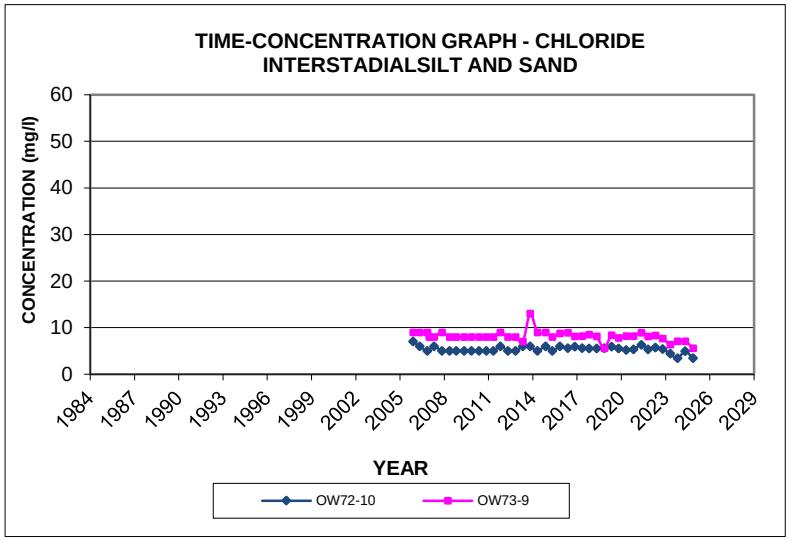
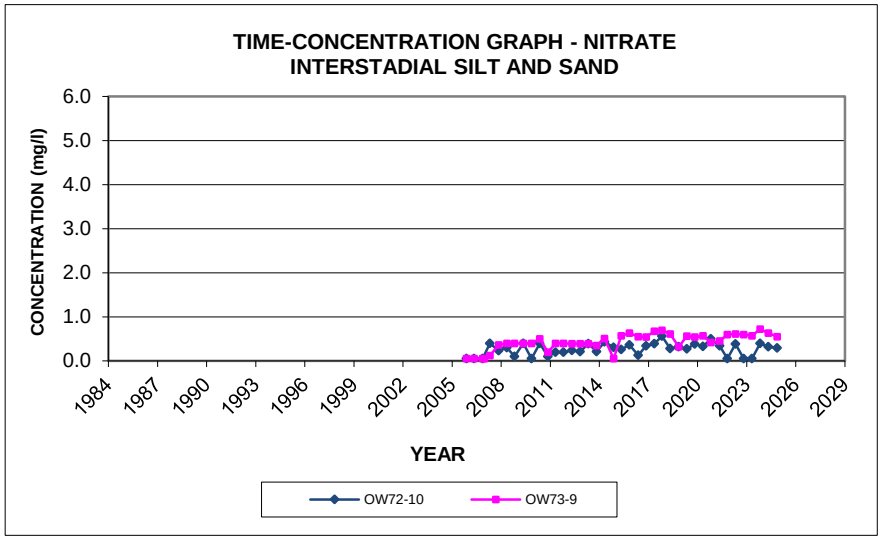

TIME-CONCENTRATION GRAPH - BORON
INTERSTADIAL SILT AND SAND
CONCENTRATION (mg/l)
2.0
1.5
1.0
0.5
0.0
1984
1987
1990
1993
1996
1999
2002
2005
2008
2011
2014
2017
2020
2023
2026
2029
YEAR
OW60-8
OW67-11

FIGURE H-10


TIME-CONCENTRATION GRAPH - CHLORIDE
INTERSTADIALSILT AND SAND
CONCENTRATION (mg/l)
60
50
40
30
20
10
0
1984
1987
1990
1993
1996
1999
2002
2005
2008
2011
2014
2017
2020
2023
2026
2029
YEAR
OW72-10
OW73-9


TIME-CONCENTRATION GRAPH - NITRATE
INTERSTADIAL SILT AND SAND
CONCENTRATION (mg/l)
6.0
5.0
4.0
3.0
2.0
1.0
0.0
1984
1987
1990
1993
1996
1999
2002
2005
2008
2011
2014
2017
2020
2023
2026
2029
YEAR
OW72-10
OW73-9

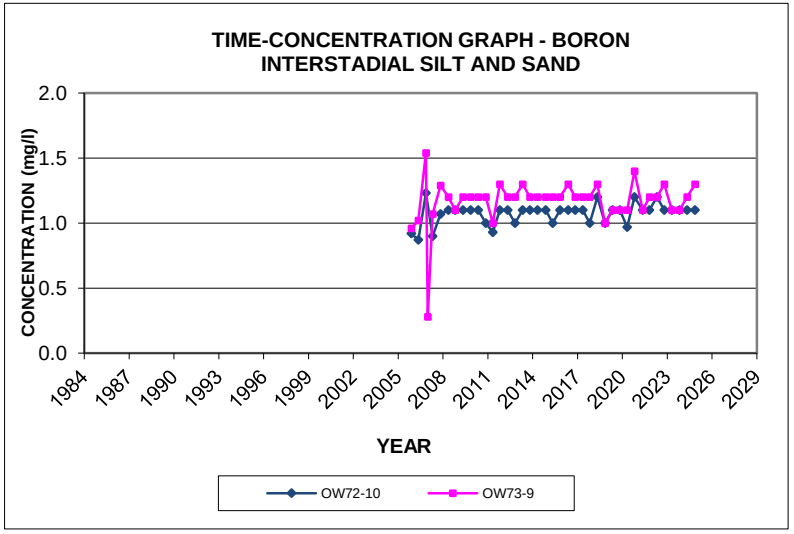
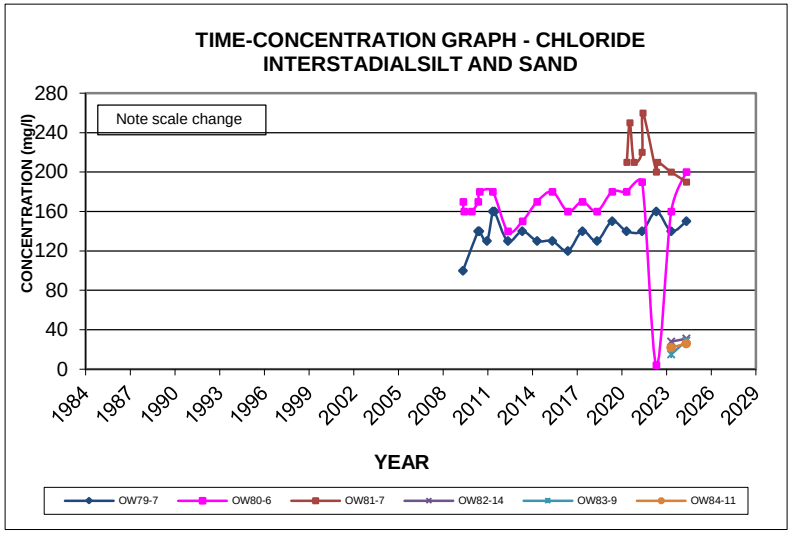
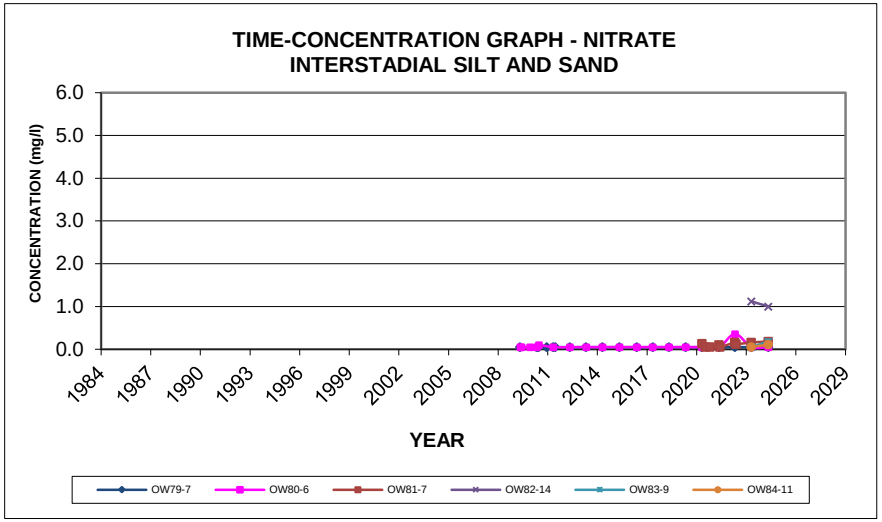

TIME-CONCENTRATION GRAPH - BORON
INTERSTADIAL SILT AND SAND
CONCENTRATION (mg/l)
2.0
1.5
1.0
0.5
0.0
1984
1987
1990
1993
1996
1999
2002
2005
2008
2011
2014
2017
2020
2023
2026
2029
YEAR
OW72-10
OW73-9

FIGURE H-11


TIME-CONCENTRATION GRAPH - CHLORIDE
INTERSTADIALSILT AND SAND
Note scale change
CONCENTRATION (mg/l)
280
240
200
160
120
80
40
0
1984
1987
1990
1993
1996
1999
2002
2005
2008
2011
2014
2017
2020
2023
2026
2029
YEAR
OW79-7
OW80-6
OW81-7
OW82-14
OW83-9
OW84-11


TIME-CONCENTRATION GRAPH - NITRATE
INTERSTADIAL SILT AND SAND
CONCENTRATION (mg/l)
6.0
5.0
4.0
3.0
2.0
1.0
0.0
1984
1987
1990
1993
1996
1999
2002
2005
2008
2011
2014
2017
2020
2023
2026
2029
YEAR
OW79-7
OW80-6
OW81-7
OW82-14
OW83-9
OW84-11

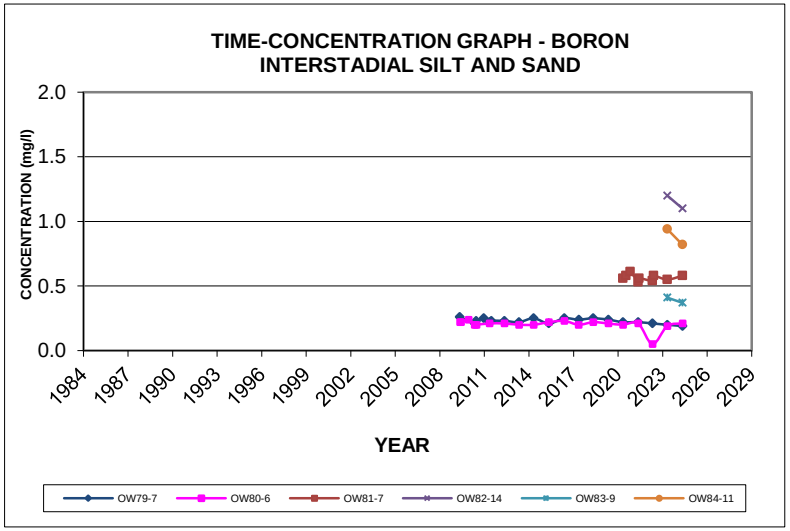
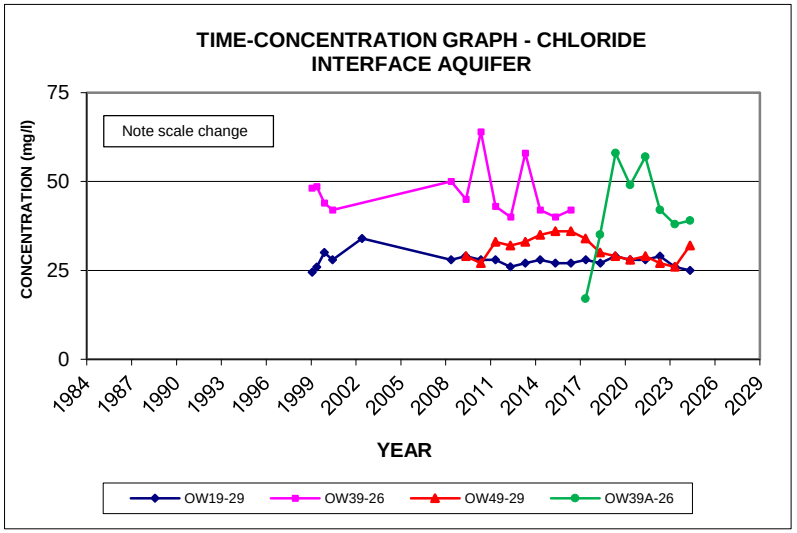
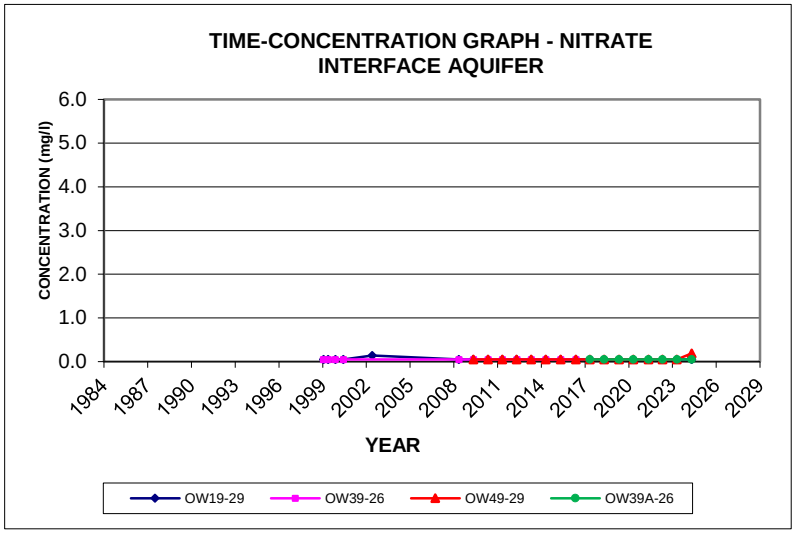

TIME-CONCENTRATION GRAPH - BORON
INTERSTADIAL SILT AND SAND
CONCENTRATION (mg/l)
2.0
1.5
1.0
0.5
0.0
1984
1987
1990
1993
1996
1999
2002
2005
2008
2011
2014
2017
2020
2023
2026
2029
YEAR
OW79-7
OW80-6
OW81-7
OW82-14
OW83-9
OW84-11

FIGURE H-12


TIME-CONCENTRATION GRAPH - CHLORIDE
INTERFACE AQUIFER
Note scale change
CONCENTRATION (mg/l)
75
50
25
0
1984
1987
1990
1993
1996
1999
2002
2005
2008
2011
2014
2017
2020
2023
2026
2029
YEAR
OW19-29
OW39-26
OW49-29
OW39A-26


TIME-CONCENTRATION GRAPH - NITRATE
INTERFACE AQUIFER
CONCENTRATION (mg/l)
6.0
5.0
4.0
3.0
2.0
1.0
0.0
1984
1987
1990
1993
1996
1999
2002
2005
2008
2011
2014
2017
2020
2023
2026
2029
YEAR
OW19-29
OW39-26
OW49-29
OW39A-26

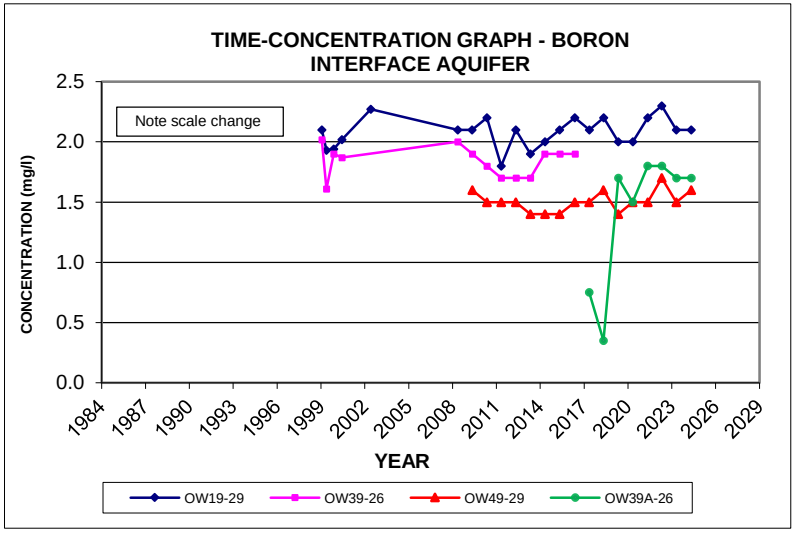
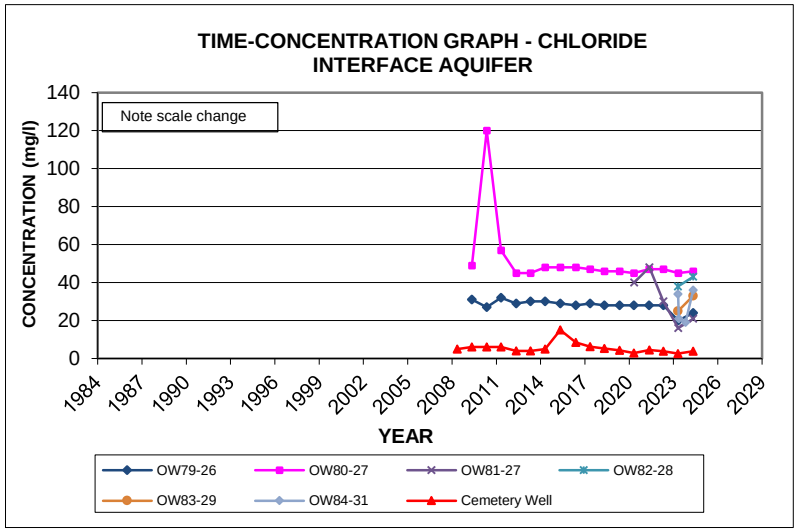
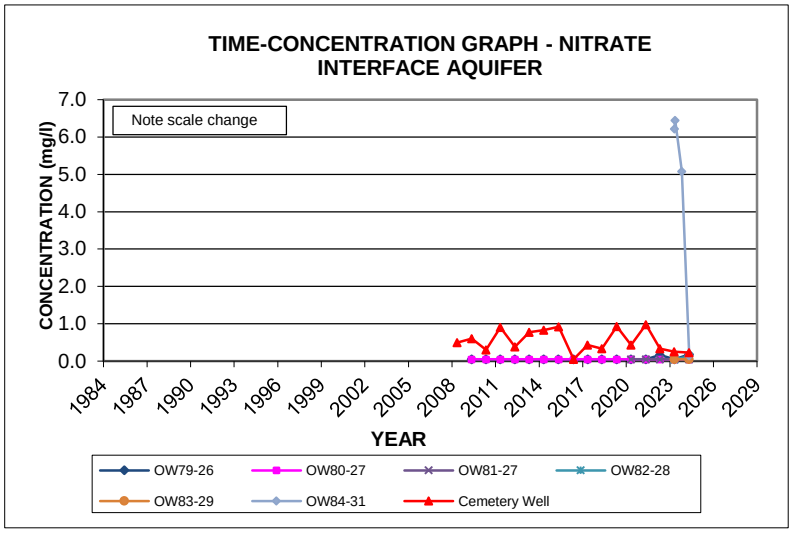

TIME-CONCENTRATION GRAPH - BORON
INTERFACE AQUIFER
Note scale change
CONCENTRATION (mg/l)
2.5
2.0
1.5
1.0
0.5
0.0
1984
1987
1990
1993
1996
1999
2002
2005
2008
2011
2014
2017
2020
2023
2026
2029
YEAR
OW19-29
OW39-26
OW49-29
OW39A-26

FIGURE H-13


TIME-CONCENTRATION GRAPH - CHLORIDE
INTERFACE AQUIFER
Note scale change
CONCENTRATION (mg/l)
YEAR
OW79-26
OW80-27
OW81-27
OW82-28
OW83-29
OW84-31
Cemetery Well


TIME-CONCENTRATION GRAPH - NITRATE
INTERFACE AQUIFER
Note scale change
CONCENTRATION (mg/l)
YEAR
OW79-26
OW80-27
OW81-27
OW82-28
OW83-29
OW84-31
Cemetery Well

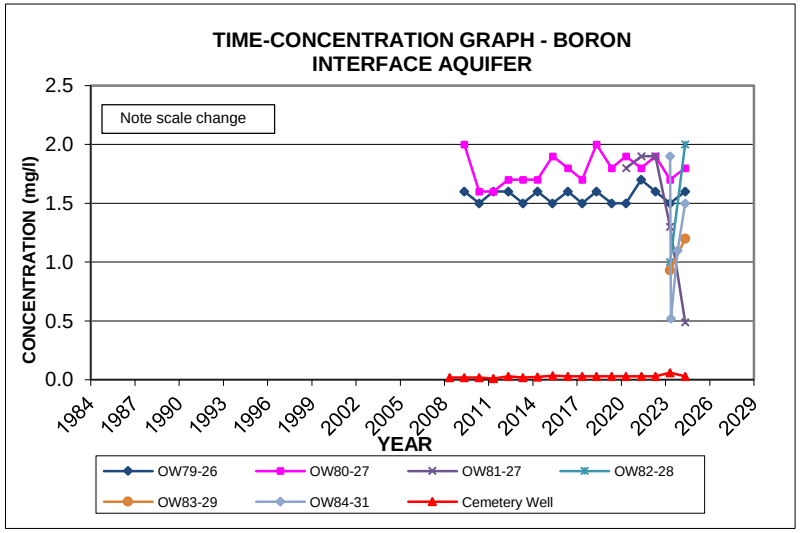

TIME-CONCENTRATION GRAPH - BORON
INTERFACE AQUIFER
Note scale change
CONCENTRATION (mg/l)
YEAR
OW79-26
OW80-27
OW81-27
OW82-28
OW83-29
OW84-31
Cemetery Well

FIGURE H-14

APPENDIX H:

Table H-5 - Groundwater Organic Chemistry

Table H-5
Groundwater - Organic Analytical Results
Twin Creeks Environmental Centre

Parameter	Units	ODWQS	OW16-5	OW16-5	OW16-5	OW16-5	OW16-5	OW16-5	OW16-5	OW16-5	OW16-5	OW16-5
Date			29-May-92	17-Jun-93	6-Jun-95	22-May-02	11-Jun-02	14-May-03	25-May-04	13-May-05	19-May-06	5-May-07
Laboratory			Enviroclean	Enviroclean	Enviroclean	Accutest	Accutest	Accutest	Accutest	Accutest	Accutest	Accutest
Benzene	µg/L	1	<0.2	<0.2	<0.2	<1.3	<0.5	<1.3	<1.3	<1.3	<0.5	<0.5
Toluene	µg/L	60	<0.2	<0.2	<0.4	<1.5	<0.5	<1.5	<1.5	<1.6	<0.5	<0.5
Ethylbenzene	µg/L	140	<0.2	<0.2	<0.4	<1.6	<0.5	<1.6	<1.6	<1.5	<0.5	<0.5
m&p-Xylenes	µg/L	90	<0.2	<0.2	<0.5	<3.4	<1.0	<3.4	<3.4	<3.4	<1.0	<1.0
o-Xylene	µg/L	90	<0.2	<0.2		<2.7	<0.5	<2.7	<2.7	<2.7	<0.5	<0.5
1,4-Dichlorobenzene	µg/L	5	<0.2	<0.2								
Dichloromethane	µg/L	50	<1.0	<1.0								
Vinyl Chloride	µg/L	1	<0.5	<0.5								

Parameter	Units	ODWQS	OW16-6	OW16-6	OW16-6	OW16-6	OW16-6	OW16-6	OW16-6	OW16-6	OW16-6	OW16-6	OW16-6
Date			22-May-08	5-Nov-08	16-May-09	18-Nov-09	20-May-10	23-Nov-10	11-May-11	3-Nov-11	15-May-12	8-Nov-12	9-May-13
Laboratory			MAXXAM	MAXXAM	MAXXAM	MAXXAM	MAXXAM	MAXXAM	MAXXAM	MAXXAM	MAXXAM	MAXXAM	MAXXAM
Benzene	µg/L	1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.10	<0.10	<0.10
Toluene	µg/L	60	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.20	<0.20	<0.20
Ethylbenzene	µg/L	140	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.10	<0.10	<0.10
m&p-Xylenes	µg/L	90	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.10	<0.10	<0.10
o-Xylene	µg/L	90	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.10	<0.10	<0.10
1,4-Dichlorobenzene	µg/L	5	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.20	<0.20	<0.20
Dichloromethane	µg/L	50	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.50	<0.50	<0.50
Vinyl Chloride	µg/L	1	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.20	<0.20	<0.20

Parameter	Units	ODWQS	OW16-6	OW16-6	OW16-6	OW16-6	OW16-6	OW16-6	OW16-6	OW16-6	OW16-6	OW16-6	OW16-6
Date			6-May-14	24-Nov-14	13-May-15	12-Nov-15	25-May-16	16-Nov-16	16-May-17	7-Nov-17	8-May-18	14-Nov-18	14-May-19
Laboratory			MAXXAM	MAXXAM	MAXXAM	MAXXAM	MAXXAM	MAXXAM	MAXXAM	MAXXAM	MAXXAM	MAXXAM	MAXXAM
Benzene	µg/L	1	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.20		<0.20
Toluene	µg/L	60	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20		<0.20
Ethylbenzene	µg/L	140	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.20		<0.20
m&p-Xylenes	µg/L	90	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.20		<0.20
o-Xylene	µg/L	90	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.20		<0.20
1,4-Dichlorobenzene	µg/L	5	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.50		<0.50
Dichloromethane	µg/L	50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<2.0		<2.0
Vinyl Chloride	µg/L	1	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20		<0.20

Parameter	Units	ODWQS	OW16-6	OW16-6	OW16-6	OW16-6	OW16-6	OW16-6	OW16-6	OW16-6	OW16-6	OW16-6	OW16-6
Date			7-Nov-19	7-May-20	4-Nov-20	19-May-21	2-Nov-21	4-May-22	2-Nov-22	2-May-23	2-Nov-23	8-May-24	18-Nov-24
Laboratory			Bureau Veritas	Bureau Veritas	Bureau Veritas	Bureau Veritas	Bureau Veritas	Bureau Veritas	Bureau Veritas	Bureau Veritas	Bureau Veritas	Bureau Veritas	Bureau Veritas
Benzene	µg/L	1	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Toluene	µg/L	60	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Ethylbenzene	µg/L	140	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
m&p-Xylenes	µg/L	90	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
o-Xylene	µg/L	90	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
1,4-Dichlorobenzene	µg/L	5	<0.50	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40
Dichloromethane	µg/L	50	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
Vinyl Chloride	µg/L	1	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20

NOTES: 1) Blank denotes data not available.
2) ODWQS denotes O. Reg. 169/03: Ontario Drinking Water Quality Standards (as amended).
3) All units are in µg/L.
4) µg/L denotes micrograms per litre.

Table H-5
Groundwater - Organic Analytical Results
Twin Creeks Environmental Centre

Parameter	Units	ODWQS	OW16-7	OW16-7	OW16-7	OW16-7	OW16-7	OW16-7	OW16-7	OW16-7	OW16-7	OW16-7	OW16-7
Date			**14-Nov-91**	**29-May-92**	**17-Jun-93**	**12-May-94**	**22-May-08**	**5-Nov-08**	**16-May-09**	**18-Nov-09**	**20-May-10**	**24-Nov-10**	**12-May-11**
Laboratory			**Enviroclean**	**Enviroclean**	**Enviroclean**	**Enviroclean**	**MAXXAM**	**MAXXAM**	**MAXXAM**	**MAXXAM**	**MAXXAM**	**MAXXAM**	**MAXXAM**
Benzene	µg/L	1	<0.2	<0.2	<0.2	<0.2	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Toluene	µg/L	60	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Ethylbenzene	µg/L	140	<0.2	<0.2	<0.2	<0.2	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
m&p-Xylenes	µg/L	90	<0.2	<0.2	<0.2	<0.2	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
o-Xylene	µg/L	90	<0.2	<0.2	<0.2	<0.2	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
1,4-Dichlorobenzene	µg/L	5	<0.2	<0.2	<0.2		<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Dichloromethane	µg/L	50	<1.0	<1.0	<1.1	<1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Vinyl Chloride	µg/L	1	<0.5	<0.5	<0.5		<0.2	<0.2	<0.2	0.3	<0.2	<0.2	<0.2

Parameter	Units	ODWQS	OW16-7	OW16-7	OW16-7	OW16-7	OW16-7	OW16-7	OW16-7	OW16-7	OW16-7	OW16-7	OW16-7
Date			**3-Nov-11**	**15-May-12**	**8-Nov-12**	**9-May-13**	**6-May-14**	**24-Nov-14**	**13-May-15**	**12-Nov-15**	**25-May-16**	**16-Nov-16**	**16-May-17**
Laboratory			**MAXXAM**	**MAXXAM**	**MAXXAM**	**MAXXAM**	**MAXXAM**	**MAXXAM**	**MAXXAM**	**MAXXAM**	**MAXXAM**	**MAXXAM**	**MAXXAM**
Benzene	µg/L	1	<0.1	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
Toluene	µg/L	60	<0.2	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Ethylbenzene	µg/L	140	<0.1	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
m&p-Xylenes	µg/L	90	<0.1	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
o-Xylene	µg/L	90	<0.1	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
1,4-Dichlorobenzene	µg/L	5	<0.2	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Dichloromethane	µg/L	50	<0.5	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Vinyl Chloride	µg/L	1	0.3	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20

Parameter	Units	ODWQS	OW16-7	OW16-7	OW16-7	OW16-7	OW16-7	OW16-7	OW16-7	OW16-7	OW16-7	OW16-7	OW16-7
Date			**7-Nov-17**	**8-May-18**	**14-Nov-18**	**14-May-19**	**5-Nov-19**	**7-May-20**	**4-Nov-20**	**19-May-21**	**2-Nov-21**	**4-May-22**	**2-Nov-22**
Laboratory			**MAXXAM**	**MAXXAM**	**MAXXAM**	**MAXXAM**	**Bureau Veritas**	**Bureau Veritas**	**Bureau Veritas**	**Bureau Veritas**	**Bureau Veritas**	**Bureau Veritas**	**Bureau Veritas**
Benzene	µg/L	1	<0.10	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Toluene	µg/L	60	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Ethylbenzene	µg/L	140	<0.10	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
m&p-Xylenes	µg/L	90	<0.10	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
o-Xylene	µg/L	90	<0.10	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
1,4-Dichlorobenzene	µg/L	5	<0.20	<0.50	<0.50	<0.50	<0.50	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40
Dichloromethane	µg/L	50	<0.50	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
Vinyl Chloride	µg/L	1	0.22	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20

Parameter	Units	ODWQS	OW16-7	OW16-7	OW16-7	OW16-7
Date			**2-May-23**	**2-Nov-23**	**8-May-24**	**18-Nov-24**
Laboratory			**Bureau Veritas**	**Bureau Veritas**	**Bureau Veritas**	**Bureau Veritas**
Benzene	µg/L	1	<0.20	<0.20	<0.20	<0.20
Toluene	µg/L	60	<0.20	<0.20	<0.20	<0.20
Ethylbenzene	µg/L	140	<0.20	<0.20	<0.20	<0.20
m&p-Xylenes	µg/L	90	<0.20	<0.20	<0.20	<0.20
o-Xylene	µg/L	90	<0.20	<0.20	<0.20	<0.20
1,4-Dichlorobenzene	µg/L	5	<0.40	<0.40	<0.40	<0.40
Dichloromethane	µg/L	50	<2.0	<2.0	<2.0	<2.0
Vinyl Chloride	µg/L	1	<0.20	<0.20	<0.20	<0.20

NOTES: 1) Blank denotes data not available.
2) ODWQS denotes O. Reg. 169/03: Ontario Drinking Water Quality Standards (as amended).
3) All units are in µg/L.
4) µg/L denotes micrograms per litre.

Table H-5
Groundwater - Organic Analytical Results
Twin Creeks Environmental Centre

Parameter	Units	ODWQS	OW17-4	OW17-4	OW17-4	OW17-4	OW17-4	OW17-4	OW17-5	OW17-4	OW17-4	OW17-4
Date			**22-May-02**	**14-Jun-02**	**5-Nov-02**	**14-May-03**	**25-May-04**	**13-May-05**	**19-May-06**	**4-May-07**	**22-May-08**	**16-May-09**
Laboratory			**Accutest**	**Accutest**	**Accutest**	**Accutest**	**Accutest**	**Accutest**	**Accutest**	**Accutest**	**MAXXAM**	**MAXXAM**
Benzene	µg/L	1	<1.3	<0.5	<1.3	<1.3	<1.3	<1.3	<0.5	<0.5	<0.1	<0.1
Toluene	µg/L	60	<1.5	<0.5	<1.5	<1.5	<1.5	<1.6	<0.5	<0.5	<0.2	<0.2
Ethylbenzene	µg/L	140	<1.6	<0.5	<1.6	<1.6	<1.6	<1.5	<0.5	<0.5	<0.1	<0.1
m&p-Xylenes	µg/L	90	<3.4	<1.0	<3.4	<3.4	<3.4	<3.4	<1.0	<1.0	<0.1	<0.1
o-Xylene	µg/L	90	<2.7	<0.5	<2.7	<2.7	<2.7	<2.7	<0.5	<0.5	<0.1	<0.1
1,4-Dichlorobenzene	µg/L	5									<0.2	<0.2
Dichloromethane	µg/L	50									<0.5	<0.5
Vinyl Chloride	µg/L	1									<0.2	<0.2

Parameter	Units	ODWQS	OW17-4	OW17-4	OW17-4	OW17-4	OW17-4	OW17-4	OW17-4	OW17-4	OW17-4	OW17-4	OW17-4
Date			**20-May-10**	**10-May-11**	**10-May-12**	**13-May-13**	**6-May-14**	**13-May-15**	**27-May-16**	**19-May-17**	**10-May-18**	**14-May-19**	**11-May-20**
Laboratory			**MAXXAM**	**MAXXAM**	**MAXXAM**	**MAXXAM**	**MAXXAM**	**MAXXAM**	**MAXXAM**	**MAXXAM**	**MAXXAM**	**MAXXAM**	**Bureau Veritas**
Benzene	µg/L	1	<0.1	<0.1	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.20	<0.20	<0.20
Toluene	µg/L	60	<0.2	<0.2	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Ethylbenzene	µg/L	140	<0.1	<0.1	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.20	<0.20	<0.20
m&p-Xylenes	µg/L	90	<0.1	<0.1	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.20	<0.20	<0.20
o-Xylene	µg/L	90	<0.1	<0.1	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.20	<0.20	<0.20
1,4-Dichlorobenzene	µg/L	5	<0.2	<0.2	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.50	<0.50	<0.40
Dichloromethane	µg/L	50	<0.5	<0.5	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<2.0	<2.0	<2.0
Vinyl Chloride	µg/L	1	<0.2	<0.2	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20

Parameter	Units	ODWQS	OW17-4	OW17-4	OW17-4
Date			**20-May-21**	**3-May-23**	**8-May-24**
Laboratory			**Bureau Veritas**	**Bureau Veritas**	**Bureau Veritas**
Benzene	µg/L	1	<0.20	<0.20	<0.20
Toluene	µg/L	60	<0.20	<0.20	<0.20
Ethylbenzene	µg/L	140	<0.20	<0.20	<0.20
m&p-Xylenes	µg/L	90	<0.20	<0.20	<0.20
o-Xylene	µg/L	90	<0.20	<0.20	<0.20
1,4-Dichlorobenzene	µg/L	5	<0.40	<0.40	<0.40
Dichloromethane	µg/L	50	<2.0	<2.0	<2.0
Vinyl Chloride	µg/L	1	<0.20	<0.20	1.2

NOTES: 1) Blank denotes data not available.
2) ODWQS denotes O. Reg. 169/03: Ontario Drinking Water Quality Standards (as amended).
3) All units are in µg/L.
4) µg/L denotes micrograms per litre.

Table H-5
Groundwater - Organic Analytical Results
Twin Creeks Environmental Centre

Parameter	Units	ODWQS	OW19-29	OW19-29	OW19-29	OW19-29	OW19-29	OW19-29	OW19-29	OW19-29	OW19-29	OW19-29	OW19-29
Date			2-Dec-99	11-Jun-02	22-May-08	19-May-10	10-May-11	9-May-12	6-May-14	12-May-15	26-May-16	10-May-18	8-May-20
Laboratory			Accutest	Accutest	MAXXAM	MAXXAM	MAXXAM	MAXXAM	MAXXAM	MAXXAM	MAXXAM	MAXXAM	Bureau Veritas
Benzene	µg/L	1	<1.3	<0.5	<0.1	<0.1	<0.1	<0.10	<0.10	<0.10	<0.10	<0.20	<0.20
Toluene	µg/L	60	<1.5	<0.5	<0.2	<0.2	<0.2	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Ethylbenzene	µg/L	140	<1.6	<0.5	<0.1	<0.1	<0.1	<0.10	<0.10	<0.10	<0.10	<0.20	<0.20
m&p-Xylenes	µg/L	90	<3.4	<1.0	<0.1	<0.1	<0.1	<0.10	<0.10	<0.10	<0.10	<0.20	<0.20
o-Xylene	µg/L	90	<2.7	<0.5	<0.1	<0.1	<0.1	<0.10	<0.10	<0.10	<0.10	<0.20	<0.20
1,4-Dichlorobenzene	µg/L	5			<0.2	<0.2	<0.2	<0.20	<0.20	<0.20	<0.20	<0.50	<0.40
Dichloromethane	µg/L	50			<0.5	<0.5	<0.5	<0.50	<0.50	<0.50	<0.50	<2.0	<2.0
Vinyl Chloride	µg/L	1			<0.2	<0.2	<0.2	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20

Parameter	Units	ODWQS	OW19-29	OW19-29
Date			4-May-22	9-May-24
Laboratory			Bureau Veritas	Bureau Veritas
Benzene	µg/L	1	<0.20	<0.20
Toluene	µg/L	60	<0.20	<0.20
Ethylbenzene	µg/L	140	<0.20	<0.20
m&p-Xylenes	µg/L	90	<0.20	<0.20
o-Xylene	µg/L	90	<0.20	<0.20
1,4-Dichlorobenzene	µg/L	5	<0.40	<0.40
Dichloromethane	µg/L	50	<2.0	<2.0
Vinyl Chloride	µg/L	1	<0.20	<0.20

Parameter	Units	ODWQS	OW39-26	OW39-26	OW39-26	OW39-26	OW39-26	OW39-26	OW39-26	OW39-26	OW39-26	OW39-26	OW39-26
Date			20-Nov-99	10-Jun-02	22-May-08	18-May-10	11-May-11	16-May-12	5-May-14	14-May-15	27-May-16	8-May-18	6-May-20
Laboratory			Accutest	Accutest	MAXXAM	MAXXAM	MAXXAM	MAXXAM	MAXXAM	MAXXAM	MAXXAM	MAXXAM	Bureau Veritas
Benzene	µg/L	1	<1.3	<0.5	<0.1	<0.1	<0.1	<0.10	<0.10	<0.10	<0.10	0.33	<0.20
Toluene	µg/L	60	<1.5	<0.5	<0.2	<0.2	<0.2	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Ethylbenzene	µg/L	140	<1.6	<0.5	<0.1	<0.1	<0.1	<0.10	<0.10	<0.10	<0.10	<0.20	<0.20
m&p-Xylenes	µg/L	90	<3.4	<1.0	<0.1	<0.1	<0.1	<0.10	<0.10	<0.10	<0.10	0.21	<0.20
o-Xylene	µg/L	90	<2.7	<0.5	<0.1	<0.1	<0.1	<0.10	<0.10	<0.10	<0.10	<0.20	<0.20
1,4-Dichlorobenzene	µg/L	5			<0.2	<0.2	<0.2	<0.20	<0.20	<0.20	<0.20	<0.50	<0.40
Dichloromethane	µg/L	50			<0.5	<0.5	<0.5	<0.50	<0.50	<0.50	<0.50	<2.0	<2.0
Vinyl Chloride	µg/L	1			<0.2	<0.2	<0.2	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20

Parameter	Units	ODWQS	OW39-26	OW39A-26
Date			5-May-22	9-May-24
Laboratory			Bureau Veritas	Bureau Veritas
Benzene	µg/L	1	<0.20	<0.20
Toluene	µg/L	60	<0.20	<0.20
Ethylbenzene	µg/L	140	<0.20	<0.20
m&p-Xylenes	µg/L	90	<0.20	<0.20
o-Xylene	µg/L	90	<0.20	<0.20
1,4-Dichlorobenzene	µg/L	5	<0.40	<0.40
Dichloromethane	µg/L	50	<2.0	<2.0
Vinyl Chloride	µg/L	1	<0.20	<0.20

NOTES: 1) Blank denotes data not available.
2) ODWQS denotes O. Reg. 169/03: Ontario Drinking Water Quality Standards (as amended).
3) All units are in µg/L.
4) µg/L denotes micrograms per litre.

Table H-5
Groundwater - Organic Analytical Results
Twin Creeks Environmental Centre

Parameter	Units	ODWQS	OW40B-4	OW40B-4	OW40B-4	OW40B-4	OW40B-4	OW40B-4r	OW40B-4r	OW40B-4r	OW40D-4	OW40D-4	OW40D-4
Date			19-May-09	21-May-10	12-May-11	15-May-12	12-Jun-12	3-Dec-12	8-May-13	6-May-14	14-May-15	27-May-16	17-May-17
Laboratory			MAXXAM	MAXXAM	MAXXAM	MAXXAM	MAXXAM	MAXXAM	MAXXAM	MAXXAM	MAXXAM	MAXXAM	MAXXAM
Benzene	µg/L	1	<0.1	<0.1	<0.1	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
Toluene	µg/L	60	<0.2	<0.2	<0.2	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Ethylbenzene	µg/L	140	<0.1	<0.1	<0.1	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
m&p-Xylenes	µg/L	90	<0.1	<0.1	<0.1	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
o-Xylene	µg/L	90	<0.1	<0.1	<0.1	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
1,4-Dichlorobenzene	µg/L	5	<0.2	<0.2	<0.2	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Dichloromethane	µg/L	50	<0.5	<0.5	<0.5	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Vinyl Chloride	µg/L	1	<0.2	<0.2	<0.2	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20

Parameter	Units	ODWQS	OW40D-4	OW40D-4	OW40D-4	OW40D-4	OW40D-4	OW40D-4	OW40E-4
Date			8-May-18	15-May-19	7-May-20	20-May-21	5-May-22	4-May-23	8-May-24
Laboratory			MAXXAM	MAXXAM	Bureau Veritas	Bureau Veritas	Bureau Veritas	Bureau Veritas	Bureau Veritas
Benzene	µg/L	1	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Toluene	µg/L	60	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Ethylbenzene	µg/L	140	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
m&p-Xylenes	µg/L	90	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
o-Xylene	µg/L	90	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
1,4-Dichlorobenzene	µg/L	5	<0.50	<0.50	<0.40	<0.40	<0.40	<0.40	<0.40
Dichloromethane	µg/L	50	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
Vinyl Chloride	µg/L	1	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20

Parameter	Units	ODWQS	OW40A-7	OW40A-7	OW40A-7	OW40A-7	OW40A-7	OW40A-7	OW40A-7	OW40A-7	OW40A-7	OW40A-7	OW40A-7
Date			19-May-09	20-May-10	12-May-11	15-May-12	9-May-13	5-May-14	14-May-15	27-May-16	17-May-17	8-May-18	15-May-19
Laboratory			MAXXAM	MAXXAM	MAXXAM	MAXXAM	MAXXAM	MAXXAM	MAXXAM	MAXXAM	MAXXAM	MAXXAM	MAXXAM
Benzene	µg/L	1	<0.1	<0.1	<0.1	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<1.0	<0.20
Toluene	µg/L	60	<0.2	<0.2	<0.2	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<1.0	<0.20
Ethylbenzene	µg/L	140	<0.1	<0.1	<0.1	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<1.0	<0.20
m&p-Xylenes	µg/L	90	<0.1	<0.1	<0.1	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<1.0	<0.20
o-Xylene	µg/L	90	<0.1	<0.1	<0.1	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<1.0	<0.20
1,4-Dichlorobenzene	µg/L	5	<0.2	<0.2	<0.2	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<2.5	<0.50
Dichloromethane	µg/L	50	<0.5	<0.5	<0.5	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<10	<2.0
Vinyl Chloride	µg/L	1	<0.2	<0.2	<0.2	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<1.0	<0.20

Parameter	Units	ODWQS	OW40A-7	OW40A-7	OW40A-7	OW40A-7	OW40A-7
Date			7-May-20	20-May-21	5-May-22	4-May-23	8-May-24
Laboratory			Bureau Veritas	Bureau Veritas	Bureau Veritas	Bureau Veritas	Bureau Veritas
Benzene	µg/L	1	<0.20	<0.20	<0.20	<0.20	<0.20
Toluene	µg/L	60	<0.20	<0.20	<0.20	<0.20	<0.20
Ethylbenzene	µg/L	140	<0.20	<0.20	<0.20	<0.20	<0.20
m&p-Xylenes	µg/L	90	<0.20	<0.20	<0.20	<0.20	<0.20
o-Xylene	µg/L	90	<0.20	<0.20	<0.20	<0.20	<0.20
1,4-Dichlorobenzene	µg/L	5	<0.40	<0.40	<0.40	<0.40	<0.40
Dichloromethane	µg/L	50	<2.0	<2.0	<2.0	<2.0	<2.0
Vinyl Chloride	µg/L	1	<0.20	<0.20	<0.20	<0.20	<0.20

NOTES: 1) Blank denotes data not available.
2) ODWQS denotes O. Reg. 169/03: Ontario Drinking Water Quality Standards (as amended).
3) All units are in µg/L.
4) µg/L denotes micrograms per litre.

Table H-5
Groundwater - Organic Analytical Results
Twin Creeks Environmental Centre

Parameter	Units	ODWQS	OW46-7	OW46-7	OW46-7	OW46-7	OW46-7	OW46-7	OW46-7	OW46-7	OW46-7	OW46-7	OW46-7
Date			**6-Jun-95**	**22-May-08**	**16-May-09**	**19-May-10**	**10-May-11**	**10-May-12**	**13-May-13**	**6-May-14**	**13-May-15**	**27-May-16**	**19-May-17**
Laboratory			**Enviroclean**	**MAXXAM**	**MAXXAM**	**MAXXAM**	**MAXXAM**	**MAXXAM**	**MAXXAM**	**MAXXAM**	**MAXXAM**	**MAXXAM**	**MAXXAM**
Benzene	µg/L	1	<0.2	<0.1	<0.1	<0.1	<0.1	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
Toluene	µg/L	60	<0.4	<0.2	<0.2	<0.2	<0.2	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Ethylbenzene	µg/L	140	<0.4	<0.1	<0.1	<0.1	<0.1	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
m&p-Xylenes	µg/L	90	<0.5	<0.1	<0.1	<0.1	<0.1	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
o-Xylene	µg/L	90	<0.4	<0.1	<0.1	<0.1	<0.1	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
1,4-Dichlorobenzene	µg/L	5		<0.2	<0.2	<0.2	<0.2	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Dichloromethane	µg/L	50		<0.5	<0.5	<0.5	<0.5	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Vinyl Chloride	µg/L	1		<0.2	<0.2	<0.2	<0.2	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20

Parameter	Units	ODWQS	OW46-7	OW46-7	OW46-7	OW46-7	OW46-7	OW46-7	OW46-7
Date			**10-May-18**	**14-May-19**	**11-May-20**	**18-May-21**	**4-May-22**	**3-May-23**	**8-May-24**
Laboratory			**MAXXAM**	**MAXXAM**	**Bureau Veritas**	**Bureau Veritas**	**Bureau Veritas**	**Bureau Veritas**	**Bureau Veritas**
Benzene	µg/L	1	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Toluene	µg/L	60	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Ethylbenzene	µg/L	140	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
m&p-Xylenes	µg/L	90	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
o-Xylene	µg/L	90	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
1,4-Dichlorobenzene	µg/L	5	<0.50	<0.50	<0.40	<0.40	<0.40	<0.40	<0.40
Dichloromethane	µg/L	50	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
Vinyl Chloride	µg/L	1	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20

Parameter	Units	ODWQS	OW47-6	OW47-6	OW47-6	OW47-6	OW47-6	OW47-6	OW47-6	OW47-6	OW47-6	OW47-6	OW47-6
Date			**6-Jun-95**	**22-May-08**	**16-May-09**	**19-May-10**	**10-May-11**	**10-May-12**	**13-May-13**	**6-May-14**	**13-May-15**	**27-May-16**	**19-May-17**
Laboratory			**Zenon**	**MAXXAM**	**MAXXAM**	**MAXXAM**	**MAXXAM**	**MAXXAM**	**MAXXAM**	**MAXXAM**	**MAXXAM**	**MAXXAM**	**MAXXAM**
Benzene	µg/L	1	<0.2	<0.1	<0.1	<0.1	<0.1	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
Toluene	µg/L	60	<0.4	<0.2	<0.2	<0.2	<0.2	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Ethylbenzene	µg/L	140	<0.4	<0.1	<0.1	<0.1	<0.1	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
m&p-Xylenes	µg/L	90	<0.5	<0.1	<0.1	<0.1	<0.1	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
o-Xylene	µg/L	90	<0.4	<0.1	<0.1	<0.1	<0.1	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
1,4-Dichlorobenzene	µg/L	5		<0.2	<0.2	<0.2	<0.2	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Dichloromethane	µg/L	50		<0.5	<0.5	<0.5	<0.5	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Vinyl Chloride	µg/L	1		<0.2	<0.2	<0.2	<0.2	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20

Parameter	Units	ODWQS	OW47-6	OW47-6	OW47-6	OW47-6	OW47-6	OW47-6	OW47-6
Date			**10-May-18**	**14-May-19**	**11-May-20**	**18-May-21**	**4-May-22**	**3-May-23**	**8-May-24**
Laboratory			**MAXXAM**	**MAXXAM**	**Bureau Veritas**	**Bureau Veritas**	**Bureau Veritas**	**Bureau Veritas**	**Bureau Veritas**
Benzene	µg/L	1	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Toluene	µg/L	60	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Ethylbenzene	µg/L	140	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
m&p-Xylenes	µg/L	90	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
o-Xylene	µg/L	90	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
1,4-Dichlorobenzene	µg/L	5	<0.50	<0.50	<0.40	<0.40	<0.40	<0.40	<0.40
Dichloromethane	µg/L	50	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
Vinyl Chloride	µg/L	1	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20

NOTES: 1) Blank denotes data not available.
2) ODWQS denotes O. Reg. 169/03: Ontario Drinking Water Quality Standards (as amended).
3) All units are in µg/L.
4) µg/L denotes micrograms per litre.

Table H-5
Groundwater - Organic Analytical Results
Twin Creeks Environmental Centre

Parameter	Units	ODWQS	OW49-29	OW49-29	OW49-29	OW49-29	OW49-29	OW49-29	OW49-29	OW49-29	OW49-29	OW49-29	OW49-29
Date			**19-May-09**	**18-May-10**	**11-May-11**	**9-May-12**	**6-May-14**	**12-May-15**	**25-May-16**	**8-May-18**	**7-May-20**	**3-May-22**	**7-May-24**
Laboratory			**MAXXAM**	**MAXXAM**	**MAXXAM**	**MAXXAM**	**MAXXAM**	**MAXXAM**	**MAXXAM**	**MAXXAM**	**Bureau Veritas**	**Bureau Veritas**	**Bureau Veritas**
Benzene	µg/L	1	<0.1	<0.1	<0.1	<0.10	<0.10	<0.10	<0.10	<0.20	<0.20	<0.20	<0.20
Toluene	µg/L	60	<0.2	<0.2	<0.2	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Ethylbenzene	µg/L	140	<0.1	<0.1	<0.1	<0.10	<0.10	<0.10	<0.10	<0.20	<0.20	<0.20	<0.20
m&p-Xylenes	µg/L	90	<0.1	<0.1	<0.1	<0.10	<0.10	<0.10	<0.10	<0.20	<0.20	<0.20	<0.20
o-Xylene	µg/L	90	<0.1	<0.1	<0.1	<0.10	<0.10	<0.10	<0.10	<0.20	<0.20	<0.20	<0.20
1,4-Dichlorobenzene	µg/L	5	<0.2	<0.2	<0.2	<0.20	<0.20	<0.20	<0.20	<0.50	<0.40	<0.40	<0.40
Dichloromethane	µg/L	50	<0.5	<0.5	<0.5	<0.50	<0.50	<0.50	<0.50	<2.0	<2.0	<2.0	<2.0
Vinyl Chloride	µg/L	1	<0.2	<0.2	<0.2	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20

Parameter	Units	ODWQS	OW54-4	OW54-4	OW54-4	OW54-4	OW54-4	OW54-4	OW54-4	OW54-4	OW54-4	OW54A-4
Date			**22-Dec-99**	**29-Mar-00**	**23-May-02**	**6-Nov-02**	**15-May-03**	**26-May-04**	**12-May-05**	**19-May-06**	**4-May-07**	**22-May-08**
Laboratory					**Accutest**	**Accutest**	**Accutest**	**Accutest**	**Accutest**	**Accutest**	**Accutest**	**MAXXAM**
Benzene	µg/L	1	<1.3	<1.3	<1.3	<1.3	<1.3	<1.3	<1.3	<0.5	<0.5	<0.1
Toluene	µg/L	60	<1.5	<1.5	<1.5	<1.5	<1.5	<1.5	<1.6	<0.5	<0.5	<0.2
Ethylbenzene	µg/L	140	<1.6	<1.6	<1.6	<1.6	<1.6	<1.6	<1.5	<0.5	<0.5	<0.1
m&p-Xylenes	µg/L	90	<3.4	<3.4	<3.4	<3.4	<3.4	<3.4	<3.4	<1.0	<1.0	<0.1
o-Xylene	µg/L	90	<2.7	<2.7	<2.7	<2.7	<2.7	<2.7	<2.7	<0.5	<0.5	<0.1
1,4-Dichlorobenzene	µg/L	5										<0.2
Dichloromethane	µg/L	50										<0.5
Vinyl Chloride	µg/L	1										<0.2

Parameter	Units	ODWQS	OW54A-4	OW54A-4	OW54A-4	OW54A-4	OW54A-4	OW54A-4	OW54A-4	OW54A-4	OW54A-4	OW54A-4	OW54A-4
Date			**19-May-09**	**20-May-10**	**11-May-11**	**9-May-12**	**10-May-13**	**6-May-14**	**12-May-15**	**25-May-16**	**18-May-17**	**9-May-18**	**14-May-19**
Laboratory			**MAXXAM**	**MAXXAM**	**MAXXAM**	**MAXXAM**	**MAXXAM**	**MAXXAM**	**MAXXAM**	**MAXXAM**	**MAXXAM**	**MAXXAM**	**MAXXAM**
Benzene	µg/L	1	<0.1	<0.1	<0.1	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.20	<0.20
Toluene	µg/L	60	3.1	<0.2	<0.2	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Ethylbenzene	µg/L	140	<0.1	<0.1	<0.1	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.20	<0.20
m&p-Xylenes	µg/L	90	<0.1	<0.1	<0.1	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.20	<0.20
o-Xylene	µg/L	90	<0.1	<0.1	<0.1	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.20	<0.20
1,4-Dichlorobenzene	µg/L	5	<0.2	<0.2	<0.2	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.50	<0.50
Dichloromethane	µg/L	50	<0.5	<0.5	<0.5	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<2.0	<2.0
Vinyl Chloride	µg/L	1	<0.2	<0.2	<0.2	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20

Parameter	Units	ODWQS	OW54A-4	OW54A-4	OW54A-4	OW54A-4	OW54A-4
Date			**8-May-20**	**19-May-21**	**4-May-22**	**2-May-23**	**7-May-24**
Laboratory			**Bureau Veritas**	**Bureau Veritas**	**Bureau Veritas**	**Bureau Veritas**	**Bureau Veritas**
Benzene	µg/L	1	<0.20	<0.20	<0.20	<0.20	<0.20
Toluene	µg/L	60	<0.20	<0.20	<0.20	<0.20	<0.20
Ethylbenzene	µg/L	140	<0.20	<0.20	<0.20	<0.20	<0.20
m&p-Xylenes	µg/L	90	<0.20	<0.20	<0.20	<0.20	<0.20
o-Xylene	µg/L	90	<0.20	<0.20	<0.20	<0.20	<0.20
1,4-Dichlorobenzene	µg/L	5	<0.40	<0.40	<0.40	<0.40	<0.40
Dichloromethane	µg/L	50	<2.0	<2.0	<2.0	<2.0	<2.0
Vinyl Chloride	µg/L	1	<0.20	<0.20	<0.20	<0.20	<0.20

NOTES: 1) Blank denotes data not available.
2) ODWQS denotes O. Reg. 169/03: Ontario Drinking Water Quality Standards (as amended).
3) All units are in µg/L.
4) µg/L denotes micrograms per litre.

Table H-5
Groundwater - Organic Analytical Results
Twin Creeks Environmental Centre

Parameter	Units	ODWQS	OW54-10	OW54-10	OW54-10	OW54-10	OW54-10	OW54-10	OW54-10	OW54-10	OW54-10	OW54-10	OW54-10
Date			**14-May-09**	**17-May-10**	**11-May-11**	**9-May-12**	**10-May-13**	**6-May-14**	**12-May-15**	**25-May-16**	**18-May-17**	**9-May-18**	**14-May-19**
Laboratory			**MAXXAM**	**MAXXAM**	**MAXXAM**	**MAXXAM**	**MAXXAM**	**MAXXAM**	**MAXXAM**	**MAXXAM**	**MAXXAM**	**MAXXAM**	**MAXXAM**
Benzene	µg/L	1	<0.1	<0.1	<0.1	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.20	<0.20
Toluene	µg/L	60	<0.2	<0.2	<0.2	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Ethylbenzene	µg/L	140	<0.1	<0.1	<0.1	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.20	<0.20
m&p-Xylenes	µg/L	90	<0.1	<0.1	<0.1	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.20	<0.20
o-Xylene	µg/L	90	<0.1	<0.1	<0.1	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.20	<0.20
1,4-Dichlorobenzene	µg/L	5	<0.2	<0.2	<0.2	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.50	<0.50
Dichloromethane	µg/L	50	<0.5	<0.5	<0.5	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<2.0	<2.0
Vinyl Chloride	µg/L	1	<0.2	<0.2	<0.2	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20

Parameter	Units	ODWQS	OW54-10	OW54-10	OW54-10	OW54-10	OW54-10
Date			**8-May-20**	**18-May-21**	**3-May-22**	**2-May-23**	**7-May-24**
Laboratory			**Bureau Veritas**	**Bureau Veritas**	**Bureau Veritas**	**Bureau Veritas**	**Bureau Veritas**
Benzene	µg/L	1	<0.20	<0.20	<0.20	<0.20	<0.20
Toluene	µg/L	60	<0.20	<0.20	<0.20	<0.20	<0.20
Ethylbenzene	µg/L	140	<0.20	<0.20	<0.20	<0.20	<0.20
m&p-Xylenes	µg/L	90	<0.20	<0.20	<0.20	<0.20	<0.20
o-Xylene	µg/L	90	<0.20	<0.20	<0.20	<0.20	<0.20
1,4-Dichlorobenzene	µg/L	5	<0.40	<0.40	<0.40	<0.40	<0.40
Dichloromethane	µg/L	50	<2.0	<2.0	<2.0	<2.0	<2.0
Vinyl Chloride	µg/L	1	<0.20	<0.20	<0.20	<0.20	<0.20

Parameter	Units	ODWQS	OW56-4	OW56-4	OW56-4	OW56-4	OW56-4	OW56-4	OW56-4	OW56-4	OW56-4	OW56-4
Date			**22-May-02**	**10-Jun-02**	**6-Nov-02**	**15-May-03**	**16-Jun-03**	**25-May-04**	**12-May-05**	**18-May-06**	**5-May-07**	**22-May-08**
Laboratory			**Accutest**	**Accutest**	**Accutest**	**Accutest**	**Accutest**	**Accutest**	**Accutest**	**Accutest**	**Accutest**	**MAXXAM**
Benzene	µg/L	1	<1.3	<0.5	<1.3	<1.3	<1.3	<1.3	<1.3	<0.5	<0.5	<0.1
Toluene	µg/L	60	<1.5	<0.5	<1.5	<1.5	<1.5	<1.5	<1.6	<0.5	<0.5	<0.2
Ethylbenzene	µg/L	140	<1.6	<0.5	<1.6	<1.6	<1.6	<1.6	<1.5	<0.5	<0.5	<0.1
m&p-Xylenes	µg/L	90	<3.4	<1.0	<3.4	<3.4	<3.4	<3.4	<3.4	<1.0	<1.0	<0.1
o-Xylene	µg/L	90	<2.7	<0.5	<2.7	<2.7	<2.7	<2.7	<2.7	<0.5	<0.5	<0.1
1,4-Dichlorobenzene	µg/L	5										<0.2
Dichloromethane	µg/L	50										<0.5
Vinyl Chloride	µg/L	1										<0.2

Parameter	Units	ODWQS	OW56-4	OW56-4	OW56-4	OW56-4	OW56-4	OW56-4	OW56-4	OW56-4	OW56-4	OW56-4	OW56-4
Date			**16-May-09**	**19-May-10**	**10-May-11**	**10-May-12**	**13-May-13**	**6-May-14**	**13-May-15**	**27-May-16**	**19-May-17**	**10-May-18**	**14-May-19**
Laboratory			**MAXXAM**	**MAXXAM**	**MAXXAM**	**MAXXAM**	**MAXXAM**	**MAXXAM**	**MAXXAM**	**MAXXAM**	**MAXXAM**	**MAXXAM**	**MAXXAM**
Benzene	µg/L	1	<0.1	<0.1	<0.1	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.20	<0.20
Toluene	µg/L	60	<0.2	<0.2	<0.2	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Ethylbenzene	µg/L	140	<0.1	<0.1	<0.1	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.20	<0.20
m&p-Xylenes	µg/L	90	<0.1	<0.1	<0.1	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.20	<0.20
o-Xylene	µg/L	90	<0.1	<0.1	<0.1	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.20	<0.20
1,4-Dichlorobenzene	µg/L	5	<0.2	<0.2	<0.2	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.50	<0.50
Dichloromethane	µg/L	50	<0.5	<0.5	<0.5	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<2.0	<2.0
Vinyl Chloride	µg/L	1	<0.2	<0.2	<0.2	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20

Parameter	Units	ODWQS	OW56-4	OW56-4	OW56-4	OW56-4	OW56-4
Date			**11-May-20**	**19-May-21**	**4-May-22**	**3-May-23**	**8-May-24**
Laboratory			**Bureau Veritas**	**Bureau Veritas**	**Bureau Veritas**	**Bureau Veritas**	**Bureau Veritas**
Benzene	µg/L	1	<0.20	<0.20	<0.20	<0.20	<0.20
Toluene	µg/L	60	<0.20	<0.20	<0.20	<0.20	<0.20
Ethylbenzene	µg/L	140	<0.20	<0.20	<0.20	<0.20	<0.20
m&p-Xylenes	µg/L	90	<0.20	<0.20	<0.20	<0.20	<0.20
o-Xylene	µg/L	90	<0.20	<0.20	<0.20	<0.20	<0.20
1,4-Dichlorobenzene	µg/L	5	<0.40	<0.40	<0.40	<0.40	<0.40
Dichloromethane	µg/L	50	<2.0	<2.0	<2.0	<2.0	<2.0
Vinyl Chloride	µg/L	1	<0.20	<0.20	<0.20	<0.20	<0.20

NOTES: 1) Blank denotes data not available.
2) ODWQS denotes O. Reg. 169/03: Ontario Drinking Water Quality Standards (as amended).
3) All units are in µg/L.
4) µg/L denotes micrograms per litre.

Table H-5
Groundwater - Organic Analytical Results
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Parameter	Units	ODWQS	OW57-4	OW57-4	OW57-4	OW57-4	OW57-4	OW57-4	OW57-5	OW57-4	OW57-4	OW57-4
Date			**22-May-02**	**10-Jun-02**	**6-Nov-02**	**15-May-03**	**26-May-04**	**12-May-05**	**19-May-06**	**5-May-07**	**22-May-08**	**16-May-09**
Laboratory			**Accutest**	**Accutest**	**Accutest**	**Accutest**	**Accutest**	**Accutest**	**Accutest**	**Accutest**	**MAXXAM**	**MAXXAM**
Benzene	µg/L	1	<1.3	<0.5	<1.3	<1.3	<1.3	<1.3	<0.5	<0.5	DRY	<0.1
Toluene	µg/L	60	<1.5	<0.5	<1.5	<1.5	<1.5	<1.6	<0.5	<0.5		<0.2
Ethylbenzene	µg/L	140	<1.6	<0.5	<1.6	<1.6	<1.6	<1.5	<0.5	<0.5		<0.1
m&p-Xylenes	µg/L	90	<3.4	<1.0	<3.4	<3.4	<3.4	<3.4	<1.0	<1.0		<0.1
o-Xylene	µg/L	90	<2.7	<0.5	<2.7	<2.7	<2.7	<2.7	<0.5	<0.5		<0.1
1,4-Dichlorobenzene	µg/L	5										<0.2
Dichloromethane	µg/L	50										<0.5
Vinyl Chloride	µg/L	1										<0.2

Parameter	Units	ODWQS	OW57-4	OW57-4	OW57-4	OW57-4	OW57-4	OW57-4	OW57-4	OW57-4	OW57-4	OW57-4	OW57-4
Date			**19-May-10**	**10-May-11**	**9-May-12**	**13-May-13**	**6-May-14**	**12-May-15**	**26-May-16**	**19-May-17**	**10-May-18**	**14-May-19**	**8-May-20**
Laboratory			**MAXXAM**	**MAXXAM**	**MAXXAM**	**MAXXAM**	**MAXXAM**	**MAXXAM**	**MAXXAM**	**MAXXAM**	**MAXXAM**	**MAXXAM**	**Bureau Veritas**
Benzene	µg/L	1	<0.1	<0.1	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.20	<0.20	<0.20
Toluene	µg/L	60	<0.2	<0.2	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Ethylbenzene	µg/L	140	<0.1	<0.1	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.20	<0.20	<0.20
m&p-Xylenes	µg/L	90	<0.1	<0.1	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.20	<0.20	<0.20
o-Xylene	µg/L	90	<0.1	<0.1	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.20	<0.20	<0.20
1,4-Dichlorobenzene	µg/L	5	<0.2	<0.2	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.50	<0.50	<0.40
Dichloromethane	µg/L	50	<0.5	<0.5	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<2.0	<2.0	<2.0
Vinyl Chloride	µg/L	1	<0.2	<0.2	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20

Parameter	Units	ODWQS	OW57-4	OW57-4	OW57-4	OW57-4
Date			**19-May-21**	**3-May-22**	**2-May-23**	**8-May-24**
Laboratory			**Bureau Veritas**	**Bureau Veritas**	**Bureau Veritas**	**Bureau Veritas**
Benzene	µg/L	1	<0.20	<0.20	<0.20	<0.20
Toluene	µg/L	60	<0.20	<0.20	<0.20	<0.20
Ethylbenzene	µg/L	140	<0.20	<0.20	<0.20	<0.20
m&p-Xylenes	µg/L	90	<0.20	<0.20	<0.20	<0.20
o-Xylene	µg/L	90	<0.20	<0.20	<0.20	<0.20
1,4-Dichlorobenzene	µg/L	5	<0.40	<0.40	<0.40	<0.40
Dichloromethane	µg/L	50	<2.0	<2.0	<2.0	<2.0
Vinyl Chloride	µg/L	1	<0.20	<0.20	<0.20	<0.20

NOTES: 1) Blank denotes data not available.
2) ODWQS denotes O. Reg. 169/03: Ontario Drinking Water Quality Standards (as amended).
3) All units are in µg/L.
4) µg/L denotes micrograms per litre.

Table H-5
Groundwater - Organic Analytical Results
Twin Creeks Environmental Centre

PARAMETER	UNITS	ODWQS	OW57-15	OW57-15	OW57-15	OW57-15	OW57-15	OW57-15	OW57-15	OW57-15	OW57-15	OW57-15	OW57-15
Date			**22-May-08**	**16-May-09**	**19-May-10**	**10-May-11**	**9-May-12**	**13-May-13**	**6-May-14**	**12-May-15**	**26-May-16**	**19-May-17**	**10-May-18**
Laboratory			**MAXXAM**	**MAXXAM**	**MAXXAM**	**MAXXAM**	**MAXXAM**	**MAXXAM**	**MAXXAM**	**MAXXAM**	**MAXXAM**	**MAXXAM**	**MAXXAM**
Benzene	µg/L	1	<0.1	<0.1	<0.1	<0.1	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.20
Toluene	µg/L	60	<0.2	<0.2	<0.2	<0.2	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Ethylbenzene	µg/L	140	<0.1	<0.1	<0.1	<0.1	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.20
m&p-Xylenes	µg/L	90	<0.1	<0.1	<0.1	<0.1	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.20
o-Xylene	µg/L	90	<0.1	<0.1	<0.1	<0.1	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.20
1,4-Dichlorobenzene	µg/L	5	<0.2	<0.2	<0.2	<0.2	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.50
Dichloromethane	µg/L	50	<0.5	<0.5	<0.5	<0.5	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<2.0
Vinyl Chloride	µg/L	1	<0.2	<0.2	<0.2	<0.2	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20

PARAMETER	UNITS	ODWQS	OW57-15	OW57-15	OW57-15	OW57-15	OW57-15	OW57-15	OW57-15
Date			**22-May-08**	**16-May-19**	**8-May-20**	**18-May-21**	**3-May-22**	**2-May-23**	**8-May-24**
Laboratory			**MAXXAM**	**MAXXAM**	**Bureau Veritas**	**Bureau Veritas**	**Bureau Veritas**	**Bureau Veritas**	**Bureau Veritas**
Benzene	µg/L	1	<0.1	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Toluene	µg/L	60	<0.2	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Ethylbenzene	µg/L	140	<0.1	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
m&p-Xylenes	µg/L	90	<0.1	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
o-Xylene	µg/L	90	<0.1	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
1,4-Dichlorobenzene	µg/L	5	<0.2	<0.50	<0.40	<0.40	<0.40	<0.40	<0.40
Dichloromethane	µg/L	50	<0.5	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
Vinyl Chloride	µg/L	1	<0.2	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20

PARAMETER	UNITS	ODWQS	OW58-4	OW58-4	OW58-4	OW58-4
Date			**15-Jun-02**	**22-Jul-02**	**6-Aug-02**	**12-May-05**
Laboratory			**Accutest**	**Accutest**	**Accutest**	**Accutest**
Benzene	µg/L	1	<0.5	<1.3	<1.3	<1.3
Toluene	µg/L	60	<0.5	<1.5	<1.5	<1.6
Ethylbenzene	µg/L	140	<0.5	<1.6	<1.6	<1.5
m&p-Xylenes	µg/L	90	<1.0	<3.4	<3.4	<3.4
o-Xylene	µg/L	90	<0.5	<2.7	<2.7	<2.7

PARAMETER	UNITS	ODWQS	OW58-6	OW58-6	OW58-6	OW58-6	OW58-6	OW58-6	OW58-6	OW58-6	OW58-6	OW58-6
Date			**19-May-06**	**5-May-07**	**22-May-08**	**19-May-09**	**19-May-10**	**10-May-11**	**9-May-12**	**13-May-13**	**6-May-14**	**12-May-15**
Laboratory			**Accutest**	**Accutest**	**MAXXAM**	**MAXXAM**	**MAXXAM**	**MAXXAM**	**MAXXAM**	**MAXXAM**	**MAXXAM**	**MAXXAM**
Benzene	µg/L	1	<0.5	<0.5	<0.1	<0.1	<0.2	<0.1	<0.10	<0.10	<0.10	<0.10
Toluene	µg/L	60	<0.5	<0.5	<0.2	<0.2	<0.4	<0.2	<0.20	<0.20	<0.20	<0.20
Ethylbenzene	µg/L	140	<0.5	<0.5	<0.1	<0.1	<0.2	<0.1	<0.10	<0.10	<0.10	<0.10
m&p-Xylenes	µg/L	90	<1.0	<1.0	<0.1	<0.1	<0.2	<0.1	<0.10	<0.10	<0.10	<0.10
o-Xylene	µg/L	90	<0.5	<0.5	<0.1	<0.1	<0.2	<0.1	<0.10	<0.10	<0.10	<0.10
1,4-Dichlorobenzene	µg/L	5			<0.2	<0.2	<0.4	<0.2	<0.20	<0.20	<0.20	<0.20
Dichloromethane	µg/L	50			<0.5	<0.5	<1	<0.5	<0.50	<0.50	<0.50	<0.50
Vinyl Chloride	µg/L	1			<0.2	<0.2	<0.4	<0.2	<0.20	<0.20	<0.20	<0.20

PARAMETER	UNITS	ODWQS	OW58-6	OW58-6	OW58-6	OW58-6	OW58-6	OW58-6	OW58-6	OW58-6	OW58-6
Date			**26-May-16**	**19-May-17**	**10-May-18**	**14-May-19**	**8-May-20**	**19-May-21**	**4-May-22**	**2-May-23**	**7-May-24**
Laboratory			**MAXXAM**	**MAXXAM**	**MAXXAM**	**MAXXAM**	**Bureau Veritas**	**Bureau Veritas**	**Bureau Veritas**	**Bureau Veritas**	**Bureau Veritas**
Benzene	µg/L	1	<0.10	<0.10	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Toluene	µg/L	60	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Ethylbenzene	µg/L	140	<0.10	<0.10	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
m&p-Xylenes	µg/L	90	<0.10	<0.10	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
o-Xylene	µg/L	90	<0.10	<0.10	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
1,4-Dichlorobenzene	µg/L	5	<0.20	<0.20	<0.50	<0.50	<0.40	<0.40	<0.40	<0.40	<0.40
Dichloromethane	µg/L	50	<0.50	<0.50	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
Vinyl Chloride	µg/L	1	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20

NOTES: 1) Blank denotes data not available.
2) ODWQS denotes O. Reg. 169/03: Ontario Drinking Water Quality Standards (as amended).
3) All units are in µg/L.
4) µg/L denotes micrograms per litre.

Table H-5
Groundwater - Organic Analytical Results
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PARAMETER	UNITS	ODWQS	OW58-14	OW58-14	OW58-14	OW58-14	OW58-14	OW58-14	OW58-14	OW58-14	OW58-14	OW58-14
Date			**22-May-08**	**19-May-09**	**11-Jun-09**	**20-May-10**	**10-May-11**	**9-May-12**	**13-May-13**	**6-May-14**	**12-May-15**	**26-May-16**
Laboratory			**MAXXAM**	**MAXXAM**	**MAXXAM**	**MAXXAM**	**MAXXAM**	**MAXXAM**	**MAXXAM**	**MAXXAM**	**MAXXAM**	**MAXXAM**
Benzene	µg/L	1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.10	<0.10	<0.10	<0.10	<0.10
Toluene	µg/L	60	<0.2	<0.2	<0.2	<0.2	<0.2	<0.20	<0.20	<0.20	<0.20	<0.20
Ethylbenzene	µg/L	140	<0.1	<0.1	<0.1	<0.1	<0.1	<0.10	<0.10	<0.10	<0.10	<0.10
m&p-Xylenes	µg/L	90	<0.1	<0.1	<0.1	<0.1	<0.1	<0.10	<0.10	<0.10	<0.10	<0.10
o-Xylene	µg/L	90	<0.1	<0.1	<0.1	<0.1	<0.1	<0.10	<0.10	<0.10	<0.10	<0.10
1,4-Dichlorobenzene	µg/L	5	<0.2	<0.2	<0.2	<0.2	<0.2	<0.20	<0.20	<0.20	<0.20	<0.20
Dichloromethane	µg/L	50	<0.5	<0.5	<0.5	<0.5	<0.5	<0.50	<0.50	<0.50	<0.50	<0.50
Vinyl Chloride	µg/L	1	<0.2	<0.2	<0.2	<0.2	<0.2	<0.20	<0.20	<0.20	<0.20	<0.20

PARAMETER	UNITS	ODWQS	OW58-17	OW58-17	OW58-17	OW58-17	OW58-17	OW58-17	OW58-17	OW58-17	OW58-17	OW58-17
Date			**27-May-14**	**12-May-15**	**27-May-16**	**19-May-17**	**10-May-18**	**14-May-19**	**8-May-20**	**18-May-21**	**3-May-22**	**6-May-24**
Laboratory			**MAXXAM**	**MAXXAM**	**MAXXAM**	**MAXXAM**	**MAXXAM**	**MAXXAM**	**Bureau Veritas**	**Bureau Veritas**	**Bureau Veritas**	**Bureau Veritas**
Benzene	µg/L	1	0.13	0.11	<0.10	0.12	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Toluene	µg/L	60	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Ethylbenzene	µg/L	140	<0.10	<0.10	<0.10	<0.10	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
m&p-Xylenes	µg/L	90	<0.10	<0.10	<0.10	<0.10	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
o-Xylene	µg/L	90	<0.10	<0.10	<0.10	<0.10	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
1,4-Dichlorobenzene	µg/L	5	<0.20	<0.20	<0.20	<0.20	<0.50	<0.50	<0.40	<0.40	<0.40	<0.40
Dichloromethane	µg/L	50	<0.50	<0.50	<0.50	<0.50	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
Vinyl Chloride	µg/L	1	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20

Parameter	Units	ODWQS	OW59-6	OW59-6	OW59-6	OW59-6	OW59-6	OW59-6	OW59-6	OW59-6	OW59-6	OW59-6
Date			**19-May-06**	**5-May-07**	**22-May-08**	**16-May-09**	**11-Jun-09**	**19-May-10**	**10-May-11**	**9-May-12**	**10-May-13**	**6-May-14**
Laboratory			**Accutest**	**Accutest**	**MAXXAM**	**MAXXAM**	**MAXXAM**	**MAXXAM**	**MAXXAM**	**MAXXAM**	**MAXXAM**	**MAXXAM**
Benzene	µg/L	1	<0.5	<0.5	<0.1	<0.1	<0.1	<0.1	<0.1	<0.10	<0.10	<0.10
Toluene	µg/L	60	<0.5	<0.5	<0.2	<0.2	<0.2	<0.2	<0.2	<0.20	<0.20	<0.20
Ethylbenzene	µg/L	140	<0.5	<0.5	<0.1	<0.1	<0.1	<0.1	<0.1	<0.10	<0.10	<0.10
m&p-Xylenes	µg/L	90	<1.0	<1.0	<0.1	<0.1	<0.1	<0.1	<0.1	<0.10	<0.10	<0.10
o-Xylene	µg/L	90	<0.5	<0.5	<0.1	<0.1	<0.1	<0.1	<0.1	<0.10	<0.10	<0.10
1,4-Dichlorobenzene	µg/L	5			<0.2	<0.2	<0.2	<0.2	<0.2	<0.20	<0.20	<0.20
Dichloromethane	µg/L	50			<0.5	<0.5	<0.5	<0.5	<0.5	<0.50	<0.50	<0.50
Vinyl Chloride	µg/L	1			<0.2	<0.2	<0.2	<0.2	<0.2	<0.20	<0.20	<0.20

Parameter	Units	ODWQS	OW59-6	OW59-6	OW59-6	OW59-6	OW59-6	OW59-6	OW59-6	OW59-6	OW59-6	OW59-6
Date			**12-May-15**	**26-May-16**	**18-May-17**	**10-May-18**	**14-May-19**	**8-May-20**	**19-May-21**	**4-May-22**	**2-May-23**	**7-May-24**
Laboratory			**MAXXAM**	**MAXXAM**	**MAXXAM**	**MAXXAM**	**MAXXAM**	**Bureau Veritas**	**Bureau Veritas**	**Bureau Veritas**	**Bureau Veritas**	**Bureau Veritas**
Benzene	µg/L	1	<0.10	<0.10	<0.10	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Toluene	µg/L	60	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Ethylbenzene	µg/L	140	<0.10	<0.10	<0.10	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
m&p-Xylenes	µg/L	90	<0.10	<0.10	<0.10	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
o-Xylene	µg/L	90	<0.10	<0.10	<0.10	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
1,4-Dichlorobenzene	µg/L	5	<0.20	<0.20	<0.20	<0.50	<0.50	<0.40	<0.40	<0.40	<0.40	<0.40
Dichloromethane	µg/L	50	<0.50	<0.50	<0.50	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
Vinyl Chloride	µg/L	1	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20

NOTES: 1) Blank denotes data not available.
2) ODWQS denotes O. Reg. 169/03: Ontario Drinking Water Quality Standards (as amended).
3) All units are in µg/L.
4) µg/L denotes micrograms per litre.

Table H-5
Groundwater - Organic Analytical Results
Twin Creeks Environmental Centre

Parameter	Units	ODWQS	OW60-4	OW60-4	OW60-4	OW60-4	OW60-4	OW60-4	OW60-4	OW60-4	OW60-4	OW60-4
Date			**23-May-08**	**19-May-09**	**21-May-10**	**12-May-11**	**15-May-12**	**9-May-13**	**6-May-14**	**13-May-15**	**27-May-16**	**16-May-17**
Laboratory			**MAXXAM**	**MAXXAM**	**MAXXAM**	**MAXXAM**	**MAXXAM**	**MAXXAM**	**MAXXAM**	**MAXXAM**	**MAXXAM**	**MAXXAM**
Benzene	µg/L	1	<0.1	<0.1	<0.1	<0.1	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
Toluene	µg/L	60	<0.2	<0.2	<0.2	<0.2	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Ethylbenzene	µg/L	140	<0.1	<0.1	<0.1	<0.1	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
m&p-Xylenes	µg/L	90	<0.1	<0.1	<0.1	<0.1	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
o-Xylene	µg/L	90	<0.1	<0.1	<0.1	<0.1	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
1,4-Dichlorobenzene	µg/L	5	<0.2	<0.2	<0.2	<0.2	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Dichloromethane	µg/L	50	<0.5	<0.5	<0.5	<0.5	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Vinyl Chloride	µg/L	1	<0.2	<0.2	<0.2	<0.2	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20

Parameter	Units	ODWQS	OW60-4	OW60-4	OW60-4	OW60-4	OW60-4	OW60-4	OW60-4
Date			**8-May-18**	**15-May-19**	**7-May-20**	**19-May-21**	**5-May-22**	**4-May-23**	**8-May-24**
Laboratory			**MAXXAM**	**MAXXAM**	**Bureau Veritas**	**Bureau Veritas**	**Bureau Veritas**	**Bureau Veritas**	**Bureau Veritas**
Benzene	µg/L	1	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Toluene	µg/L	60	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Ethylbenzene	µg/L	140	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
m&p-Xylenes	µg/L	90	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
o-Xylene	µg/L	90	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
1,4-Dichlorobenzene	µg/L	5	<0.50	<0.50	<0.40	<0.40	<0.40	<0.40	<0.40
Dichloromethane	µg/L	50	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
Vinyl Chloride	µg/L	1	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20

Parameter	Units	ODWQS	OW60-8	OW60-8	OW60-8	OW60-8	OW60-8	OW60-8	OW60-8	OW60-8	OW60-8	OW60-8
Date			**23-May-08**	**14-May-09**	**21-May-10**	**12-May-11**	**15-May-12**	**9-May-13**	**6-May-14**	**13-May-15**	**27-May-16**	**16-May-17**
Laboratory			**MAXXAM**	**MAXXAM**	**MAXXAM**	**MAXXAM**	**MAXXAM**	**MAXXAM**	**MAXXAM**	**MAXXAM**	**MAXXAM**	**MAXXAM**
Benzene	µg/L	1	<0.1	<0.1	<0.1	<0.1	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
Toluene	µg/L	60	<0.2	<0.2	<0.2	<0.2	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Ethylbenzene	µg/L	140	<0.1	<0.1	<0.1	<0.1	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
m&p-Xylenes	µg/L	90	<0.1	<0.1	<0.1	<0.1	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
o-Xylene	µg/L	90	<0.1	<0.1	<0.1	<0.1	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
1,4-Dichlorobenzene	µg/L	5	<0.2	<0.2	<0.2	<0.2	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Dichloromethane	µg/L	50	<0.5	<0.5	<0.5	<0.5	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Vinyl Chloride	µg/L	1	<0.2	<0.2	<0.2	<0.2	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20

Parameter	Units	ODWQS	OW60-8	OW60-8	OW60-8	OW60-8	OW60-8	OW60-8	OW60-8
Date			**8-May-18**	**15-May-19**	**7-May-20**	**19-May-21**	**5-May-22**	**4-May-23**	**8-May-24**
Laboratory			**MAXXAM**	**MAXXAM**	**Bureau Veritas**	**Bureau Veritas**	**Bureau Veritas**	**Bureau Veritas**	**Bureau Veritas**
Benzene	µg/L	1	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Toluene	µg/L	60	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Ethylbenzene	µg/L	140	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
m&p-Xylenes	µg/L	90	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
o-Xylene	µg/L	90	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
1,4-Dichlorobenzene	µg/L	5	<0.50	<0.50	<0.40	<0.40	<0.40	<0.40	<0.40
Dichloromethane	µg/L	50	<2.0	<2.0	<2.0	13	<2.0	<2.0	<2.0
Vinyl Chloride	µg/L	1	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20

NOTES: 1) Blank denotes data not available.
2) ODWQS denotes O. Reg. 169/03: Ontario Drinking Water Quality Standards (as amended).
3) All units are in µg/L.
4) µg/L denotes micrograms per litre.

Table H-5
Groundwater - Organic Analytical Results
Twin Creeks Environmental Centre

Parameter	Units	ODWQS	OW67-4	OW67-4	OW67-4	OW67-4	OW67-4	OW67-4	OW67-4	OW67-4	OW67-4	OW67-4
Date			**22-May-02**	**12-Jun-02**	**6-Nov-02**	**15-May-03**	**25-May-04**	**12-May-05**	**19-May-06**	**4-May-07**	**22-May-08**	**16-May-09**
Laboratory			**Accutest**	**Accutest**	**Accutest**	**Accutest**	**Accutest**	**Accutest**	**Accutest**	**Accutest**	**MAXXAM**	**MAXXAM**
Benzene	µg/L	1	<1.3	<0.5	<1.3	<1.3	<1.3	<1.3	<0.5	<0.5	DRY	<0.1
Toluene	µg/L	60	<1.5	<0.5	<1.5	<1.5	<1.5	<1.5	<0.5	<0.5		<0.2
Ethylbenzene	µg/L	140	<1.6	<0.5	<1.6	<1.6	<1.6	<1.6	<0.5	<0.5		<0.1
Vinyl Chloride	µg/L	1										<0.2

Parameter	Units	ODWQS	OW67-4	OW67-4	OW67-4	OW67-4	OW67-4	OW67-4	OW67-4	OW67-4	OW67-4	OW67-4
Date			**11-Jun-09**	**15-Dec-09**	**20-May-10**	**11-May-11**	**9-May-12**	**9-May-13**	**6-May-14**	**12-May-15**	**25-May-16**	**17-May-17**
Laboratory			**MAXXAM**	**MAXXAM**	**MAXXAM**	**MAXXAM**	**MAXXAM**	**MAXXAM**	**MAXXAM**	**MAXXAM**	**MAXXAM**	**MAXXAM**
Benzene	µg/L	1	<0.1	<0.1	<0.1	<0.1	<0.10	<0.20	<0.10	<0.10	<0.10	<0.10
Toluene	µg/L	60	<0.2	<0.2	<0.2	<0.2	<0.20	<0.40	<0.20	<0.20	<0.20	<0.20
Ethylbenzene	µg/L	140	<0.1	<0.1	<0.1	<0.1	<0.10	<0.20	<0.10	<0.10	<0.10	<0.10
m&p-Xylenes	µg/L	90	<0.1	<0.1	<0.1	<0.1	<0.10	<0.20	<0.10	<0.10	<0.10	<0.10
o-Xylene	µg/L	90	<0.1	<0.1	<0.1	<0.1	<0.10	<0.20	<0.10	<0.10	<0.10	<0.10
1,4-Dichlorobenzene	µg/L	5	<0.2	<0.2	<0.2	<0.2	<0.20	<0.40	<0.20	<0.20	<0.20	<0.20
Dichloromethane	µg/L	50	<0.5	<0.5	<0.5	<0.5	<0.50	<1.0	<0.50	<0.50	<0.50	<0.50
Vinyl Chloride	µg/L	1	<0.2	<0.2	<0.2	<0.2	<0.20	<0.40	<0.20	<0.20	<0.20	<0.20

Parameter	Units	ODWQS	OW67-4	OW67-4	OW67-4	OW67-4	OW67-4	OW67-4	OW67-4	OW67-4
Date			**8-May-18**	**13-May-19**	**6-May-20**	**20-May-21**	**5-May-22**	**1-May-23**	**25-May-23**	**7-May-24**
Laboratory			**MAXXAM**	**MAXXAM**	**Bureau Veritas**	**Bureau Veritas**	**Bureau Veritas**	**Bureau Veritas**	**Bureau Veritas**	**Bureau Veritas**
Benzene	µg/L	1	<0.20	<0.20	<0.20	<0.20	<0.20	*<10*	<0.20	<0.20
Toluene	µg/L	60	<0.20	<0.20	<0.20	<0.20	<0.20	<10	<0.20	<0.20
Ethylbenzene	µg/L	140	<0.20	<0.20	<0.20	<0.20	<0.20	<10	<0.20	<0.20
m&p-Xylenes	µg/L	90	<0.20	<0.20	<0.20	<0.20	<0.20	<10	<0.20	<0.20
o-Xylene	µg/L	90	<0.20	<0.20	<0.20	<0.20	<0.20	<10	<0.20	<0.20
1,4-Dichlorobenzene	µg/L	5	<0.50	<0.50	<0.40	<0.40	<0.40	*<20*	<0.40	<0.40
Dichloromethane	µg/L	50	<2.0	<2.0	<2.0	<2.0	<2.0	*<100*	<2.0	<2.0
Vinyl Chloride	µg/L	1	<0.20	<0.20	<0.20	<0.20	<0.20	*<10*	<0.20	<0.20

NOTES: 1) Blank denotes data not available.
2) ODWQS denotes O. Reg. 169/03: Ontario Drinking Water Quality Standards (as amended).
3) All units are in µg/L.
4) µg/L denotes micrograms per litre.
5) *Italics* denotes parameter concentration was below the laboratory reportable detection limit (RDL), where the RDL exceeds the relevant ODWQS.

Table H-5
Groundwater - Organic Analytical Results
Twin Creeks Environmental Centre

Parameter	Units	ODWQS	OW67-11	OW67-11	OW67-11	OW67-11	OW67-11	OW67-11	OW67-11	OW67-11	OW67-11	OW67-11
Date			22-May-08	19-May-09	20-May-10	11-May-11	9-May-12	9-May-13	6-May-14	12-May-15	25-May-16	17-May-17
Laboratory			MAXXAM	MAXXAM	MAXXAM	MAXXAM	MAXXAM	MAXXAM	MAXXAM	MAXXAM	MAXXAM	MAXXAM
Benzene	µg/L	1	<0.1	<0.1	<0.1	<0.1	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
Toluene	µg/L	60	<0.2	<0.2	<0.2	<0.2	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Ethylbenzene	µg/L	140	<0.1	<0.1	<0.1	<0.1	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
m&p-Xylenes	µg/L	90	<0.1	<0.1	<0.1	<0.1	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
o-Xylene	µg/L	90	<0.1	<0.1	<0.1	<0.1	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
1,4-Dichlorobenzene	µg/L	5	<0.2	<0.2	<0.2	<0.2	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Dichloromethane	µg/L	50	<0.5	<0.5	<0.5	<0.5	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Vinyl Chloride	µg/L	1	<0.2	<0.2	<0.2	<0.2	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20

Parameter	Units	ODWQS	OW67-11	OW67-11	OW67-11	OW67-11	OW67-11	OW67-11	OW67-11	OW67-11
Date			14-Nov-18	8-May-18	13-May-19	6-May-20	18-May-21	3-May-22	1-May-23	6-May-24
Laboratory			MAXXAM	MAXXAM	MAXXAM	Bureau Veritas	Bureau Veritas	Bureau Veritas	Bureau Veritas	Bureau Veritas
Benzene	µg/L	1	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Toluene	µg/L	60	0.21	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Ethylbenzene	µg/L	140	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
m&p-Xylenes	µg/L	90	0.58	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
o-Xylene	µg/L	90	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
1,4-Dichlorobenzene	µg/L	5	<0.50	<0.50	<0.50	<0.40	<0.40	<0.40	<0.40	<0.40
Dichloromethane	µg/L	50	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
Vinyl Chloride	µg/L	1	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20

Parameter	Units	ODWQS	OW68-5	OW68-5	OW68-5	OW68-5	OW68-4	OW68-4	OW68-4	OW68-5	OW68-5	OW68-5
Date			22-May-02	12-Jun-02	5-Nov-02	15-May-03	25-May-04	25-May-04	13-May-05	18-May-06	4-May-07	22-May-08
Laboratory			Accutest	Accutest	Accutest	Accutest	Accutest	Accutest	Accutest	Accutest	Accutest	MAXXAM
Benzene	µg/L	1	<1.3	<0.5	<1.3	<1.3	<1.3	<1.3	<1.3	<0.5	<0.5	<0.1
Toluene	µg/L	60	<1.5	<0.5	<1.5	<1.5	<1.5	<1.5	<1.6	<0.5	<0.5	<0.2
Ethylbenzene	µg/L	140	<1.6	<0.5	<1.6	<1.6	<1.6	<1.6	<1.5	<0.5	<0.5	<0.1
m&p-Xylenes	µg/L	90	<3.4	<1.0	<3.4	<3.4	<3.4	<3.4	<3.4	<1.0	<1.0	<0.1
o-Xylene	µg/L	90	<2.7	<0.5	<2.7	<2.7	<2.7	<2.7	<2.7	<0.5	<0.5	<0.1
1,4-Dichlorobenzene	µg/L	5										<0.2
Dichloromethane	µg/L	50										<0.5
Vinyl Chloride	µg/L	1										<0.2

Parameter	Units	ODWQS	OW68-5	OW68-5	OW68-5	OW68-5	OW68-5	OW68-5	OW68-5	OW68-5	OW68-5	OW68-5	OW68-5
Date			16-May-09	20-May-10	11-May-11	15-May-12	13-May-13	6-May-14	13-May-15	25-May-16	16-May-17	8-May-18	14-May-19
Laboratory			MAXXAM	MAXXAM	MAXXAM	MAXXAM	MAXXAM	MAXXAM	MAXXAM	MAXXAM	MAXXAM	MAXXAM	MAXXAM
Benzene	µg/L	1	<0.1	<0.1	<0.1	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.20	<0.20
Toluene	µg/L	60	<0.2	<0.2	<0.2	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Ethylbenzene	µg/L	140	<0.1	<0.1	<0.1	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.20	<0.20
m&p-Xylenes	µg/L	90	<0.1	<0.1	<0.1	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.20	<0.20
o-Xylene	µg/L	90	<0.1	<0.1	<0.1	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.20	<0.20
1,4-Dichlorobenzene	µg/L	5	<0.2	<0.2	<0.2	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.50	<0.50
Dichloromethane	µg/L	50	<0.5	<0.5	<0.5	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<2.0	<2.0
Vinyl Chloride	µg/L	1	<0.2	<0.2	<0.2	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20

Parameter	Units	ODWQS	OW68-5	OW68-5	OW68-5	OW68-5	OW68-5
Date			7-May-20	20-May-21	4-May-22	2-May-23	8-May-24
Laboratory			Bureau Veritas	Bureau Veritas	Bureau Veritas	Bureau Veritas	Bureau Veritas
Benzene	µg/L	1	<0.20	<0.20	<0.20	<0.20	<0.20
Toluene	µg/L	60	<0.20	<0.20	<0.20	<0.20	<0.20
Ethylbenzene	µg/L	140	<0.20	<0.20	<0.20	<0.20	<0.20
m&p-Xylenes	µg/L	90	<0.20	<0.20	<0.20	<0.20	<0.20
o-Xylene	µg/L	90	<0.20	<0.20	<0.20	<0.20	<0.20
1,4-Dichlorobenzene	µg/L	5	<0.40	<0.40	<0.40	<0.40	<0.40
Dichloromethane	µg/L	50	<2.0	<2.0	<2.0	<2.0	<2.0
Vinyl Chloride	µg/L	1	<0.20	<0.20	<0.20	<0.20	<0.20

NOTES: 1) Blank denotes data not available.
2) ODWQS denotes O. Reg. 169/03: Ontario Drinking Water Quality Standards (as amended).
3) All units are in µg/L.
4) µg/L denotes micrograms per litre.

Table H-5
Groundwater - Organic Analytical Results
Twin Creeks Environmental Centre

Parameter	Units	ODWQS	OW69-5	OW69-5	OW69-5	OW69-5	OW69-5	OW69-5	OW69-6	OW69-5	OW69-5	OW69-5
Date			**22-May-02**	**12-Jun-02**	**5-Nov-02**	**15-May-03**	**26-May-04**	**13-May-05**	**19-May-06**	**5-May-07**	**22-May-08**	**16-May-09**
Laboratory			**Accutest**	**Accutest**	**Accutest**	**Accutest**	**Accutest**	**Accutest**	**Accutest**	**Accutest**	**MAXXAM**	**MAXXAM**
Benzene	µg/L	1	<1.3	<0.5	<1.3	<1.3	<1.3	<1.3	<0.5	<0.5	<0.1	<0.1
Toluene	µg/L	60	<1.5	<0.5	<1.5	<1.5	<1.5	<1.6	<0.5	<0.5	<0.2	<0.2
Ethylbenzene	µg/L	140	<1.6	<0.5	<1.6	<1.6	<1.6	<1.5	<0.5	<0.5	<0.1	<0.1
m&p-Xylenes	µg/L	90	<3.4	<1.0	<3.4	<3.4	<3.4	<3.4	<1.0	<1.0	<0.1	<0.1
o-Xylene	µg/L	90	<2.7	<0.5	<2.7	<2.7	<2.7	<2.7	<0.5	<0.5	<0.1	<0.1
1,4-Dichlorobenzene	µg/L	5									<0.2	<0.2
Dichloromethane	µg/L	50									<0.5	<0.5
Vinyl Chloride	µg/L	1									<0.2	<0.2

Parameter	Units	ODWQS	OW69-5	OW69-5	OW69-5	OW69-5	OW69-5	OW69-5	OW69-5	OW69-5	OW69-5	OW69-5	OW69-5
Date			**11-Jun-09**	**19-May-10**	**10-May-11**	**10-May-12**	**13-May-13**	**6-May-14**	**12-May-15**	**27-May-16**	**19-May-17**	**10-May-18**	**14-May-19**
Laboratory			**MAXXAM**	**MAXXAM**	**MAXXAM**	**MAXXAM**	**MAXXAM**	**MAXXAM**	**MAXXAM**	**MAXXAM**	**MAXXAM**	**MAXXAM**	**MAXXAM**
Benzene	µg/L	1	<0.1	<0.1	<0.1	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.20	<0.20
Toluene	µg/L	60	<0.2	<0.2	<0.2	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Ethylbenzene	µg/L	140	<0.1	<0.1	<0.1	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.20	<0.20
m&p-Xylenes	µg/L	90	<0.1	<0.1	<0.1	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.20	<0.20
o-Xylene	µg/L	90	<0.1	<0.1	<0.1	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.20	<0.20
1,4-Dichlorobenzene	µg/L	5	<0.2	<0.2	<0.2	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.50	<0.50
Dichloromethane	µg/L	50	<0.5	<0.5	<0.5	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<2.0	<2.0
Vinyl Chloride	µg/L	1	<0.2	<0.2	<0.2	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20

Parameter	Units	ODWQS	OW69-5	OW69-5	OW69-5	OW69-5	OW69-5
Date			**11-May-20**	**20-May-21**	**5-May-22**	**2-May-23**	**8-May-24**
Laboratory			**Bureau Veritas**	**Bureau Veritas**	**Bureau Veritas**	**Bureau Veritas**	**Bureau Veritas**
Benzene	µg/L	1	<0.20	<0.20	<0.20	<0.20	<0.20
Toluene	µg/L	60	<0.20	<0.20	<0.20	<0.20	<0.20
Ethylbenzene	µg/L	140	<0.20	<0.20	<0.20	<0.20	<0.20
m&p-Xylenes	µg/L	90	<0.20	<0.20	<0.20	<0.20	<0.20
o-Xylene	µg/L	90	<0.20	<0.20	<0.20	<0.20	<0.20
1,4-Dichlorobenzene	µg/L	5	<0.40	<0.40	<0.40	<0.40	<0.40
Dichloromethane	µg/L	50	<2.0	<2.0	<2.0	<2.0	<2.0
Vinyl Chloride	µg/L	1	<0.20	<0.20	<0.20	<0.20	<0.20

NOTES: 1) Blank denotes data not available.
2) ODWQS denotes O. Reg. 169/03: Ontario Drinking Water Quality Standards (as amended).
3) All units are in µg/L.
4) µg/L denotes micrograms per litre.

Table H-5
Groundwater - Organic Analytical Results
Twin Creeks Environmental Centre

Parameter	Units	ODWQS	OW70-5	OW70-5	OW70-5	OW70-5	OW70-5	OW70-5	OW70-6	OW70-5	OWB70-5	OW70B-5
Date			**22-May-02**	**12-Jun-02**	**5-Nov-02**	**14-May-03**	**26-May-04**	**13-May-05**	**19-May-06**	**4-May-07**	**17-Jul-08**	**14-May-09**
Laboratory			**Accutest**	**Accutest**	**Accutest**	**Accutest**	**Accutest**	**Accutest**	**Accutest**	**Accutest**		**MAXXAM**
Benzene	µg/L	1	<1.3	<0.5	<1.3	<1.3	<1.3	<1.3	<0.5	<0.5	DRY	<0.1
Toluene	µg/L	60	<1.5	<0.5	<1.5	<1.5	<1.5	<1.6	<0.5	<0.5		<0.2
Ethylbenzene	µg/L	140	<1.6	<0.5	<1.6	<1.6	<1.6	<1.5	<0.5	<0.5		<0.1
m&p-Xylenes	µg/L	90	<3.4	<1.0	<3.4	<3.4	<3.4	<3.4	<1.0	<1.0		<0.1
o-Xylene	µg/L	90										<0.1
1,4-Dichlorobenzene	µg/L	5										<0.2
Dichloromethane	µg/L	50										<0.5
Vinyl Chloride	µg/L	1	<2.7	<0.5	<2.7	<2.7	<2.7	<2.7	<0.5	<0.5		<0.2

Parameter	Units	ODWQS	OW70B-5	OW70B-5	OW70B-5	OW70B-5	OW70B-5	OW70B-5	OW70B-5	OW70B-5	OW70B-5	OW70B-5	OW70B-5
Date			**20-May-10**	**11-May-11**	**9-May-12**	**9-May-13**	**6-May-14**	**12-May-15**	**25-May-16**	**17-May-17**	**8-May-18**	**13-May-19**	**6-May-20**
Laboratory			**MAXXAM**	**MAXXAM**	**MAXXAM**	**MAXXAM**	**MAXXAM**	**MAXXAM**	**MAXXAM**	**MAXXAM**	**MAXXAM**	**MAXXAM**	**Bureau Veritas**
Benzene	µg/L	1	<0.1	<0.1	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.20	<0.20	<0.20
Toluene	µg/L	60	<0.2	<0.2	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Ethylbenzene	µg/L	140	<0.1	<0.1	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.20	<0.20	<0.20
m&p-Xylenes	µg/L	90	<0.1	<0.1	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.20	<0.20	<0.20
o-Xylene	µg/L	90	<0.1	<0.1	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.20	<0.20	<0.20
1,4-Dichlorobenzene	µg/L	5	<0.2	<0.2	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.50	<0.50	<0.40
Dichloromethane	µg/L	50	<0.5	<0.5	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<2.0	<2.0	<2.0
Vinyl Chloride	µg/L	1	<0.2	<0.2	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20

Parameter	Units	ODWQS	OW70B-5	OW70B-5	OW70B-5	OW70B-5	OW70B-5
Date			**18-May-21**	**5-May-22**	**1-Nov-22**	**1-May-23**	**7-May-24**
Laboratory			**Bureau Veritas**	**Bureau Veritas**	**Bureau Veritas**	**Bureau Veritas**	**Bureau Veritas**
Benzene	µg/L	1	<0.20	<0.20	<0.20	<0.20	<0.20
Toluene	µg/L	60	<0.20	<0.20	<0.20	<0.20	<0.20
Ethylbenzene	µg/L	140	<0.20	<0.20	<0.20	<0.20	<0.20
m&p-Xylenes	µg/L	90	<0.20	<0.20	<0.20	<0.20	<0.20
o-Xylene	µg/L	90	<0.20	<0.20	<0.20	<0.20	<0.20
1,4-Dichlorobenzene	µg/L	5	<0.40	<0.40	<0.40	<0.40	<0.40
Dichloromethane	µg/L	50	<2.0	<2.0	<2.0	<2.0	<2.0
Vinyl Chloride	µg/L	1	<0.20	<0.20	<0.20	<0.20	<0.20

Parameter	Units	ODWQS	OW71-5	OW71-5	OW71-5	OW71-5	OW71-5	OW71A-5	OW71A-5	OW71A-5	OW71A-5	OW71A-5
Date			**21-Jun-04**	**5-May-07**	**22-May-08**	**19-May-09**	**17-May-10**	**11-May-11**	**9-May-12**	**9-May-13**	**6-May-14**	**12-May-15**
Laboratory			**Accutest**	**Accutest**	**MAXXAM**	**MAXXAM**	**MAXXAM**	**MAXXAM**	**MAXXAM**	**MAXXAM**	**MAXXAM**	**MAXXAM**
Benzene	µg/L	1	<1.3	<0.5	<0.1	<0.1	<0.3	<0.1	<0.10	<0.10	<0.10	<0.10
Toluene	µg/L	60	<1.5	<0.5	<0.2	<0.2	<0.5	<0.2	<0.20	<0.20	<0.20	<0.20
Ethylbenzene	µg/L	140	<1.6	<0.5	<0.1	<0.1	<0.3	<0.1	<0.10	<0.10	<0.10	<0.10
m&p-Xylenes	µg/L	90	<3.4	<1.0	<0.1	<0.1	<0.3	<0.1	<0.10	<0.10	<0.10	<0.10
o-Xylene	µg/L	90	<2.7	<0.5	<0.1	<0.1	<0.3	<0.1	<0.10	<0.10	<0.10	<0.10
1,4-Dichlorobenzene	µg/L	5			<0.2	<0.2	<0.5	<0.2	<0.20	<0.20	<0.20	<0.20
Dichloromethane	µg/L	50			<0.5	<5	<1	<0.5	<0.50	<0.50	<0.50	<0.50
Vinyl Chloride	µg/L	1			<0.2	<0.2	<0.5	<0.2	<0.20	<0.20	<0.20	<0.20

Parameter	Units	ODWQS	OW71A-5	OW71A-5	OW71A-5	OW71A-5	OW71A-5	OW71A-5	OW71A-5	OW71A-5	OW71A-5
Date			**25-May-16**	**17-May-17**	**9-May-18**	**13-May-19**	**6-May-20**	**19-May-21**	**5-May-22**	**1-May-23**	**10-May-24**
Laboratory			**MAXXAM**	**MAXXAM**	**MAXXAM**	**MAXXAM**	**Bureau Veritas**	**Bureau Veritas**	**Bureau Veritas**	**Bureau Veritas**	**Bureau Veritas**
Benzene	µg/L	1	<0.10	<0.10	<1.0	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Toluene	µg/L	60	<0.20	<0.20	<1.0	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Ethylbenzene	µg/L	140	<0.10	<0.10	<1.0	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
m&p-Xylenes	µg/L	90	<0.10	<0.10	<1.0	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
o-Xylene	µg/L	90	<0.10	<0.10	<1.0	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
1,4-Dichlorobenzene	µg/L	5	<0.20	<0.20	<2.5	<0.50	<0.40	<0.40	<0.40	<0.40	<0.40
Dichloromethane	µg/L	50	<0.50	<0.50	<10	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
Vinyl Chloride	µg/L	1	<0.20	<0.20	<1.0	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20

NOTES: 1) Blank denotes data not available.
2) ODWQS denotes O. Reg. 169/03: Ontario Drinking Water Quality Standards (as amended).
3) All units are in µg/L.
4) µg/L denotes micrograms per litre.

Table H-5
Groundwater - Organic Analytical Results
Twin Creeks Environmental Centre

Parameter	Units	ODWQS	OW72-6	OW72-6	OW72-6	OW72-6	OW72-6	OW72-6	OW72-6	OW72-6	OW72-6	OW72-6
Date			19-May-06	5-May-07	22-May-08	16-May-09	20-May-10	10-May-11	9-May-12	10-May-13	6-May-14	12-May-15
Laboratory			Accutest	Accutest	MAXXAM	MAXXAM	MAXXAM	MAXXAM	MAXXAM	MAXXAM	MAXXAM	MAXXAM
Benzene	µg/L	1	<0.5	<0.5	<0.1	<0.1	<0.1	<0.1	<0.10	<0.10	<0.10	<0.10
Toluene	µg/L	60	<0.5	<0.5	<0.2	<0.2	<0.2	<0.2	<0.20	<0.20	<0.20	<0.20
Ethylbenzene	µg/L	140	<0.5	<0.5	<0.1	<0.1	<0.1	<0.1	<0.10	<0.10	<0.10	<0.10
m&p-Xylenes	µg/L	90	<1.0	<1.0	<0.1	<0.1	<0.1	<0.1	<0.10	<0.10	<0.10	<0.10
o-Xylene	µg/L	90	<0.5	<0.5	<0.1	<0.1	<0.1	<0.1	<0.10	<0.10	<0.10	<0.10
1,4-Dichlorobenzene	µg/L	5			<0.2	<0.2	<0.2	<0.2	<0.20	<0.20	<0.20	<0.20
Dichloromethane	µg/L	50			<0.5	<0.5	<0.5	<0.5	<0.50	<0.50	<0.50	1.2
Vinyl Chloride	µg/L	1			<0.2	<0.2	<0.2	<0.2	<0.20	<0.20	<0.20	<0.20

Parameter	Units	ODWQS	OW72-6	OW72-6	OW72-6	OW72-6	OW72-6	OW72-6	OW72-6	OW72-6	OW72-6
Date			26-May-16	18-May-17	9-May-18	14-May-19	8-May-20	21-May-21	5-May-22	2-May-23	7-May-24
Laboratory			MAXXAM	MAXXAM	MAXXAM	MAXXAM	Bureau Veritas	Bureau Veritas	Bureau Veritas	Bureau Veritas	Bureau Veritas
Benzene	µg/L	1	<0.10	<0.10	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Toluene	µg/L	60	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Ethylbenzene	µg/L	140	<0.10	<0.10	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
m&p-Xylenes	µg/L	90	<0.10	<0.10	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
o-Xylene	µg/L	90	<0.10	<0.10	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
1,4-Dichlorobenzene	µg/L	5	<0.20	<0.20	<0.50	<0.50	<0.40	<0.40	<0.40	<0.40	<0.40
Dichloromethane	µg/L	50	<0.50	<0.50	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
Vinyl Chloride	µg/L	1	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20

Parameter	Units	ODWQS	OW72-10	OW72-10	OW72-10	OW72-10	OW72-10	OW72-10	OW72-10	OW72-10	OW72-10	OW72-10
Date			22-May-08	19-May-09	19-May-10	10-May-11	9-May-12	10-May-13	6-May-14	12-May-15	26-May-16	18-May-17
Laboratory			MAXXAM	MAXXAM	MAXXAM	MAXXAM	MAXXAM	MAXXAM	MAXXAM	MAXXAM	MAXXAM	MAXXAM
Benzene	µg/L	1	<0.1	<0.1	<0.1	<0.1	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
Toluene	µg/L	60	<0.2	<0.2	<0.2	<0.2	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Ethylbenzene	µg/L	140	<0.1	<0.1	<0.1	<0.1	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
m&p-Xylenes	µg/L	90	<0.1	<0.1	<0.1	<0.1	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
o-Xylene	µg/L	90	<0.1	<0.1	<0.1	<0.1	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
1,4-Dichlorobenzene	µg/L	5	<0.2	<0.2	<0.2	<0.2	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Dichloromethane	µg/L	50	<0.5	<0.5	<0.5	<0.5	<0.50	<0.50	<0.50	1.1	<0.50	<0.50
Vinyl Chloride	µg/L	1	<0.2	<0.2	<0.2	<0.2	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20

Parameter	Units	ODWQS	OW72-10	OW72-10	OW72-10	OW72-10	OW72-10	OW72-10	OW72-10
Date			9-May-18	14-May-19	8-May-20	18-May-21	3-May-22	2-May-23	6-May-24
Laboratory			MAXXAM	MAXXAM	Bureau Veritas	Bureau Veritas	Bureau Veritas	Bureau Veritas	Bureau Veritas
Benzene	µg/L	1	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Toluene	µg/L	60	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Ethylbenzene	µg/L	140	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
m&p-Xylenes	µg/L	90	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
o-Xylene	µg/L	90	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
1,4-Dichlorobenzene	µg/L	5	<0.50	<0.50	<0.40	<0.40	<0.40	<0.40	<0.40
Dichloromethane	µg/L	50	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
Vinyl Chloride	µg/L	1	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20

NOTES: 1) Blank denotes data not available.
2) ODWQS denotes O. Reg. 169/03: Ontario Drinking Water Quality Standards (as amended).
3) All units are in µg/L.
4) µg/L denotes micrograms per litre.

Table H-5
Groundwater - Organic Analytical Results
Twin Creeks Environmental Centre

Parameter	Units	ODWQS	OW73-6	OW73-6	OW73-6	OW73-6	OW73-6	OW73-6	OW73-6	OW73-6	OW73-6	OW73-6
Date			19-May-06	5-May-07	22-May-08	16-May-09	11-Jun-09	19-May-10	10-May-11	9-May-12	10-May-13	6-May-14
Laboratory			Accutest	Accutest	MAXXAM	MAXXAM	MAXXAM	MAXXAM	MAXXAM	MAXXAM	MAXXAM	MAXXAM
Benzene	µg/L	1	<0.5	<0.5	<0.1	<0.1	<0.1	<0.1	<0.1	<0.10	<0.10	<0.10
Toluene	µg/L	60	<0.5	<1.0	<0.2	<0.2	<0.2	<0.2	<0.2	<0.20	<0.20	<0.20
Ethylbenzene	µg/L	140	<0.5	<0.5	<0.1	<0.1	<0.1	<0.1	<0.1	<0.10	<0.10	<0.10
m&p-Xylenes	µg/L	90	<1.0	<0.5	<0.1	<0.1	<0.1	<0.1	<0.1	<0.10	<0.10	<0.10
o-Xylene	µg/L	90	<0.5	<0.5	<0.1	<0.1	<0.1	<0.1	<0.1	<0.10	<0.10	<0.10
1,4-Dichlorobenzene	µg/L	5			<0.2	<0.2	<0.2	<0.2	<0.2	<0.20	<0.20	<0.20
Dichloromethane	µg/L	50			<0.5	<0.5	<0.5	<0.5	<0.5	<0.50	<0.50	<0.50
Vinyl Chloride	µg/L	1			<0.2	<0.2	<0.2	<0.2	<0.2	<0.20	<0.20	<0.20

Parameter	Units	ODWQS	OW73-6	OW73-6	OW73-6	OW73-6	OW73-6	OW73-6	OW73-6	OW73-6	OW73-6	OW73-6
Date			12-May-15	26-May-16	18-May-17	10-May-18	14-May-19	8-May-20	21-May-21	5-May-22	2-May-23	7-May-24
Laboratory			MAXXAM	MAXXAM	MAXXAM	MAXXAM	MAXXAM	Bureau Veritas	Bureau Veritas	Bureau Veritas	Bureau Veritas	Bureau Veritas
Benzene	µg/L	1	<0.10	<0.10	<0.10	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Toluene	µg/L	60	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Ethylbenzene	µg/L	140	<0.10	<0.10	<0.10	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
m&p-Xylenes	µg/L	90	<0.10	<0.10	<0.10	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
o-Xylene	µg/L	90	<0.10	<0.10	<0.10	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
1,4-Dichlorobenzene	µg/L	5	<0.20	<0.20	<0.20	<0.50	<0.50	<0.40	<0.40	<0.40	<0.40	<0.40
Dichloromethane	µg/L	50	1.4	<0.50	<0.50	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
Vinyl Chloride	µg/L	1	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20

Parameter	Units	ODWQS	OW73-9	OW73-9	OW73-9	OW73-9	OW73-9	OW73-9	OW73-9	OW73-9	OW73-9	OW73-9
Date			22-May-08	19-May-09	19-May-10	10-May-11	9-May-12	10-May-13	6-May-14	12-May-15	26-May-16	18-May-17
Laboratory			MAXXAM	MAXXAM	MAXXAM	MAXXAM	MAXXAM	MAXXAM	MAXXAM	MAXXAM	MAXXAM	MAXXAM
Benzene	µg/L	1	<0.1	<0.1	<0.1	<0.1	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
Toluene	µg/L	60	<0.2	<0.2	<0.2	<0.2	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Ethylbenzene	µg/L	140	<0.1	<0.1	<0.1	<0.1	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
m&p-Xylenes	µg/L	90	<0.1	<0.1	<0.1	<0.1	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
o-Xylene	µg/L	90	<0.1	<0.1	<0.1	<0.1	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
1,4-Dichlorobenzene	µg/L	5	<0.2	<0.2	<0.2	<0.2	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Dichloromethane	µg/L	50	<0.5	<0.5	<0.5	<0.5	<0.50	<0.50	<0.50	1.1	<0.50	<0.50
Vinyl Chloride	µg/L	1	0.2	0.3	<0.2	<0.2	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20

Parameter	Units	ODWQS	OW73-9	OW73-9	OW73-9	OW73-9	OW73-9	OW73-9	OW73-9
Date			10-May-18	14-May-19	8-May-20	18-May-21	3-May-22	2-May-23	7-May-24
Laboratory			MAXXAM	MAXXAM	Bureau Veritas	Bureau Veritas	Bureau Veritas	Bureau Veritas	Bureau Veritas
Benzene	µg/L	1	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Toluene	µg/L	60	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Ethylbenzene	µg/L	140	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
m&p-Xylenes	µg/L	90	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
o-Xylene	µg/L	90	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
1,4-Dichlorobenzene	µg/L	5	<0.50	<0.50	<0.40	<0.40	<0.40	<0.40	<0.40
Dichloromethane	µg/L	50	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
Vinyl Chloride	µg/L	1	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20

NOTES: 1) Blank denotes data not available.
2) ODWQS denotes O. Reg. 169/03: Ontario Drinking Water Quality Standards (as amended).
3) All units are in µg/L.
4) µg/L denotes micrograms per litre.

Table H-5
Groundwater - Organic Analytical Results
Twin Creeks Environmental Centre

Parameter	Units	ODWQS	OW74-6	OW74-6
Date			19-May-06	5-May-07
Laboratory			Accutest	Accutest
Benzene	µg/L	1	<0.5	<0.5
Toluene	µg/L	60	<0.5	<1.0
Ethylbenzene	µg/L	140	<0.5	<0.5
m&p-Xylenes	µg/L	90	<1.0	<0.5
o-Xylene	µg/L	90	<0.5	<0.5

Parameter	Units	ODWQS	OW79-5	OW79-5	OW79-5	OW79-5	OW79-5	OW79-5	OW79-5	OW79-5	OW79-5	OW79-5	OW79-5
Date			15-May-09	17-May-10	12-May-11	16-May-12	8-May-13	5-May-14	13-May-15	27-May-16	17-May-17	8-May-18	15-May-19
Laboratory			MAXXAM	MAXXAM	MAXXAM	MAXXAM	MAXXAM	MAXXAM	MAXXAM	MAXXAM	MAXXAM	MAXXAM	MAXXAM
Benzene	µg/L	1	<0.1	<0.1	<0.1	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.20	<0.20
Toluene	µg/L	60	<0.2	<0.2	<0.2	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Ethylbenzene	µg/L	140	<0.1	<0.1	<0.1	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.20	<0.20
m&p-Xylenes	µg/L	90	<0.1	<0.1	<0.1	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.20	<0.20
o-Xylene	µg/L	90	<0.1	<0.1	<0.1	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.20	<0.20
1,4-Dichlorobenzene	µg/L	5	<0.2	<0.2	<0.2	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.50	<0.50
Dichloromethane	µg/L	50	<0.5	<0.5	<0.5	<0.50	<0.50	<0.50	1.5	<0.50	<0.50	<2.0	<2.0
Vinyl Chloride	µg/L	1	<0.2	<0.2	<0.2	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20

Parameter	Units	ODWQS	OW79-5	OW79-5	OW79-5	OW79-5	OW79-5
Date			6-May-20	21-May-21	5-May-22	4-May-23	9-May-24
Laboratory			Bureau Veritas	Bureau Veritas	Bureau Veritas	Bureau Veritas	Bureau Veritas
Benzene	µg/L	1	<0.20	<0.20	<0.20	<0.20	<0.20
Toluene	µg/L	60	<0.20	<0.20	<0.20	<0.20	<0.20
Ethylbenzene	µg/L	140	<0.20	<0.20	<0.20	<0.20	<0.20
m&p-Xylenes	µg/L	90	<0.20	<0.20	<0.20	<0.20	<0.20
o-Xylene	µg/L	90	<0.20	<0.20	<0.20	<0.20	<0.20
1,4-Dichlorobenzene	µg/L	5	<0.40	<0.40	<0.40	<0.40	<0.40
Dichloromethane	µg/L	50	<2.0	<2.0	<2.0	<2.0	<2.0
Vinyl Chloride	µg/L	1	<0.20	<0.20	<0.20	<0.20	<0.20

NOTES: 1) Blank denotes data not available.
2) ODWQS denotes O. Reg. 169/03: Ontario Drinking Water Quality Standards (as amended).
3) All units are in µg/L.
4) µg/L denotes micrograms per litre.

Table H-5
Groundwater - Organic Analytical Results
Twin Creeks Environmental Centre

Parameter	Units	ODWQS	OW79-7	OW79-7	OW79-7	OW79-7	OW79-7	OW79-7	OW79-7	OW79-7	OW79-7	OW79-7
Date			**14-May-09**	**17-May-10**	**22-Jun-10**	**23-Dec-10**	**12-May-11**	**28-Jun-11**	**16-May-12**	**8-May-13**	**5-May-14**	**13-May-15**
Laboratory			**MAXXAM**	**MAXXAM**	**MAXXAM**	**MAXXAM**	**MAXXAM**	**MAXXAM**	**MAXXAM**	**MAXXAM**	**MAXXAM**	**MAXXAM**
Benzene	µg/L	1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.10	<0.10	<0.10	<0.10
Toluene	µg/L	60	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.20	<0.20	<0.20	<0.20
Ethylbenzene	µg/L	140	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.10	<0.10	<0.10	<0.10
m&p-Xylenes	µg/L	90	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.10	<0.10	<0.10	<0.10
o-Xylene	µg/L	90	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.10	<0.10	<0.10	<0.10
1,4-Dichlorobenzene	µg/L	5	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.20	<0.20	<0.20	<0.20
Dichloromethane	µg/L	50	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.50	<0.50	<0.50	1.1
Vinyl Chloride	µg/L	1	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.20	<0.20	<0.20	<0.20

Parameter	Units	ODWQS	OW79-7	OW79-7	OW79-7	OW79-7	OW79-7	OW79-7	OW79-7	OW79-7	OW79-7
Date			**27-May-16**	**17-May-17**	**8-May-18**	**15-May-19**	**6-May-20**	**21-May-21**	**5-May-22**	**4-May-23**	**9-May-24**
Laboratory			**MAXXAM**	**MAXXAM**	**MAXXAM**	**MAXXAM**	**Bureau Vertias**	**Bureau Vertias**	**Bureau Vertias**	**Bureau Vertias**	**Bureau Vertias**
Benzene	µg/L	1	<0.10	<0.10	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Toluene	µg/L	60	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Ethylbenzene	µg/L	140	<0.10	<0.10	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
m&p-Xylenes	µg/L	90	<0.10	<0.10	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
o-Xylene	µg/L	90	<0.10	<0.10	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
1,4-Dichlorobenzene	µg/L	5	<0.20	<0.20	<0.50	<0.50	<0.40	<0.40	<0.40	<0.40	<0.40
Dichloromethane	µg/L	50	<0.50	<0.50	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
Vinyl Chloride	µg/L	1	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20

Parameter	Units	ODWQS	OW79-26	OW79-26	OW79-26	OW79-26	OW79-26	OW79-26	OW79-26	OW79-26	OW79-26	OW79-26	OW79-26
Date			**20-May-09**	**18-May-10**	**12-May-11**	**16-May-12**	**5-May-14**	**13-May-15**	**27-May-16**	**27-May-16**	**8-May-18**	**6-May-20**	**5-May-22**
Laboratory			**MAXXAM**	**MAXXAM**	**MAXXAM**	**MAXXAM**	**MAXXAM**	**MAXXAM**	**MAXXAM**	**MAXXAM**	**MAXXAM**	**Bureau Veritas**	**Bureau Veritas**
Benzene	µg/L	1	<0.1	<0.1	<0.1	<0.10	<0.10	<0.10	<0.10	<0.10	<0.20	<0.20	<0.20
Toluene	µg/L	60	<0.2	<0.2	<0.2	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Ethylbenzene	µg/L	140	<0.1	<0.1	<0.1	<0.10	<0.10	<0.10	<0.10	<0.10	<0.20	<0.20	<0.20
m&p-Xylenes	µg/L	90	<0.1	<0.1	<0.1	<0.10	<0.10	<0.10	<0.10	<0.10	<0.20	<0.20	<0.20
o-Xylene	µg/L	90	<0.1	<0.1	<0.1	<0.10	<0.10	<0.10	<0.10	<0.10	<0.20	<0.20	<0.20
1,4-Dichlorobenzene	µg/L	5	<0.2	<0.2	<0.2	<0.20	<0.20	<0.20	<0.20	<0.20	<0.50	<0.40	<0.40
Dichloromethane	µg/L	50	<0.5	<0.5	<0.5	<0.50	<0.50	<0.50	<0.50	<0.50	<2.0	<2.0	<2.0
Vinyl Chloride	µg/L	1	<0.2	<0.2	<0.2	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20

Parameter	Units	ODWQS	OW79-26
Date			**9-May-24**
Laboratory			**Bureau Veritas**
Benzene	µg/L	1	<0.20
Toluene	µg/L	60	<0.20
Ethylbenzene	µg/L	140	<0.20
m&p-Xylenes	µg/L	90	<0.20
o-Xylene	µg/L	90	<0.20
1,4-Dichlorobenzene	µg/L	5	<0.40
Dichloromethane	µg/L	50	<2.0
Vinyl Chloride	µg/L	1	<0.20

NOTES: 1) Blank denotes data not available.
2) ODWQS denotes O. Reg. 169/03: Ontario Drinking Water Quality Standards (as amended).
3) All units are in µg/L.
4) µg/L denotes micrograms per litre.

Table H-5
Groundwater - Organic Analytical Results
Twin Creeks Environmental Centre

Parameter	Units	ODWQS	OW80-3	OW80-3	OW80-3	OW80-3	OW80-3	OW80-3	OW80-3	OW80-3	OW80-3	OW80-3
Date			19-May-09	11-Jun-09	16-Dec-09	17-May-10	29-Jun-10	11-May-11	16-May-12	9-May-13	5-May-14	14-May-15
Laboratory			MAXXAM	MAXXAM	MAXXAM	MAXXAM	MAXXAM	MAXXAM	MAXXAM	MAXXAM	MAXXAM	MAXXAM
Benzene	µg/L	1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.10	<0.10	<0.10	<0.10
Toluene	µg/L	60	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.20	<0.20	<0.20	<0.20
Ethylbenzene	µg/L	140	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.10	<0.10	<0.10	<0.10
m&p-Xylenes	µg/L	90	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.10	<0.10	<0.10	<0.10
o-Xylene	µg/L	90	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.10	<0.10	<0.10	<0.10
1,4-Dichlorobenzene	µg/L	5	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.20	<0.20	<0.20	<0.20
Dichloromethane	µg/L	50	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.50	<0.50	<0.50	<0.50
Vinyl Chloride	µg/L	1	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.20	<0.20	<0.20	<0.20

Parameter	Units	ODWQS	OW80-3	OW80-3	OW80-3	OW80-3	OW80-3	OW80-3	OW80-3	OW80-3	OW80-3
Date			27-May-16	16-May-17	8-May-18	15-May-19	6-May-20	21-May-21	5-May-22	4-May-23	9-May-24
Laboratory			MAXXAM	MAXXAM	MAXXAM	MAXXAM	Bureau Veritas	Bureau Veritas	Bureau Veritas	Bureau Veritas	Bureau Veritas
Benzene	µg/L	1	<0.10	<0.10	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Toluene	µg/L	60	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Ethylbenzene	µg/L	140	<0.10	<0.10	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
m&p-Xylenes	µg/L	90	<0.10	<0.10	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
o-Xylene	µg/L	90	<0.10	<0.10	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
1,4-Dichlorobenzene	µg/L	5	<0.20	<0.20	<0.50	<0.50	<0.40	<0.40	<0.40	<0.40	<0.40
Dichloromethane	µg/L	50	<0.50	<0.50	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
Vinyl Chloride	µg/L	1	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20

Parameter	Units	ODWQS	OW80-6	OW80-6	OW80-6	OW80-6	OW80-6	OW80-6	OW80-6	OW80-6	OW80-6	OW80-6
Date			19-May-09	11-Jun-09	16-Dec-09	18-May-10	29-Jun-10	11-May-11	16-May-12	9-May-13	5-May-14	14-May-15
Laboratory			MAXXAM	MAXXAM	MAXXAM	MAXXAM	MAXXAM	MAXXAM	MAXXAM	MAXXAM	MAXXAM	MAXXAM
Benzene	µg/L	1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.10	<0.10	<0.10	<0.10
Toluene	µg/L	60	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.20	<0.20	<0.20	<0.20
Ethylbenzene	µg/L	140	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.10	<0.10	<0.10	<0.10
m&p-Xylenes	µg/L	90	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.10	<0.10	<0.10	<0.10
o-Xylene	µg/L	90	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.10	<0.10	<0.10	<0.10
1,4-Dichlorobenzene	µg/L	5	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.20	<0.20	<0.20	<0.20
Dichloromethane	µg/L	50	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.50	<0.50	<0.50	<0.50
Vinyl Chloride	µg/L	1	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.20	<0.20	<0.20	<0.20

Parameter	Units	ODWQS	OW80-6	OW80-6	OW80-6	OW80-6	OW80-6	OW80-6	OW80-6	OW80-6	OW80-6
Date			27-May-16	16-May-17	8-May-18	15-May-19	6-May-20	20-May-21	5-May-22	4-May-23	9-May-24
Laboratory			MAXXAM	MAXXAM	MAXXAM	MAXXAM	Bureau Veritas	Bureau Veritas	Bureau Veritas	Bureau Veritas	Bureau Veritas
Benzene	µg/L	1	<0.10	<0.10	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Toluene	µg/L	60	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Ethylbenzene	µg/L	140	<0.10	<0.10	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
m&p-Xylenes	µg/L	90	<0.10	<0.10	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
o-Xylene	µg/L	90	<0.10	<0.10	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
1,4-Dichlorobenzene	µg/L	5	<0.20	<0.20	<0.50	<0.50	<0.40	<0.40	<0.40	<0.40	<0.40
Dichloromethane	µg/L	50	<0.50	<0.50	<2.0	<2.0	<2.0	6.3	<2.0	<2.0	<2.0
Vinyl Chloride	µg/L	1	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20

Parameter	Units	ODWQS	OW80-27	OW80-27	OW80-27	OW80-27	OW80-27	OW80-27	OW80-27	OW80-27	OW80-27	OW80-27	OW80-27
Date			14-May-09	18-May-10	11-May-11	16-May-12	5-May-14	14-May-15	27-May-16	8-May-18	6-May-20	5-May-22	9-May-24
Laboratory			MAXXAM	MAXXAM	MAXXAM	MAXXAM	MAXXAM	MAXXAM	MAXXAM	MAXXAM	Bureau Veritas	Bureau Veritas	Bureau Veritas
Benzene	µg/L	1	<0.1	<0.1	<0.1	<0.10	<0.10	<0.10	<0.10	<0.20	<0.20	<0.20	<0.20
Toluene	µg/L	60	<0.2	<0.2	<0.2	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Ethylbenzene	µg/L	140	<0.1	<0.1	<0.1	<0.10	<0.10	<0.10	<0.10	<0.20	<0.20	<0.20	<0.20
m&p-Xylenes	µg/L	90	<0.1	<0.1	<0.1	<0.10	<0.10	<0.10	<0.10	<0.20	<0.20	<0.20	<0.20
o-Xylene	µg/L	90	<0.1	<0.1	<0.1	<0.10	<0.10	<0.10	<0.10	<0.20	<0.20	<0.20	<0.20
1,4-Dichlorobenzene	µg/L	5	<0.2	<0.2	<0.2	<0.20	<0.20	<0.20	<0.20	<0.50	<0.40	<0.40	<0.40
Dichloromethane	µg/L	50	<0.5	<0.5	<0.5	<0.50	<0.50	<0.50	<0.50	<2.0	<2.0	<2.0	<2.0
Vinyl Chloride	µg/L	1	<0.2	<0.2	<0.2	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20

NOTES: 1) Blank denotes data not available.
2) ODWQS denotes O. Reg. 169/03: Ontario Drinking Water Quality Standards (as amended).
3) All units are in µg/L.
4) µg/L denotes micrograms per litre.

Table H-5
Groundwater - Organic Analytical Results
Twin Creeks Environmental Centre

Parameter	Units	ODWQS	OW81-5	OW81-5	OW81-5	OW81-5	OW81-5
Date			11-May-20	20-May-21	5-May-22	4-May-23	10-May-24
Laboratory			Bureau Veritas	Bureau Veritas	Bureau Veritas	Bureau Veritas	Bureau Veritas
Benzene	µg/L	1	<0.20	<0.20	<0.20	<0.20	<0.20
Toluene	µg/L	60	<0.20	<0.20	<0.20	<0.20	<0.20
Ethylbenzene	µg/L	140	<0.20	<0.20	<0.20	<0.20	<0.20
m&p-Xylenes	µg/L	90	<0.20	<0.20	<0.20	<0.20	<0.20
o-Xylene	µg/L	90	<0.20	<0.20	<0.20	<0.20	<0.20
1,4-Dichlorobenzene	µg/L	5	<0.40	<0.40	<0.40	<0.40	<0.40
Dichloromethane	µg/L	50	<2.0	<2.0	<2.0	<2.0	<2.0
Vinyl Chloride	µg/L	1	<0.20	<0.20	<0.20	<0.20	<0.20

Parameter	Units	ODWQS	OW81-7	OW81-7	OW81-7	OW81-7	OW81-7	OW81-7	OW81-7	OW81-7	OW81-7	OW81-7
Date			11-May-20	22-Jul-20	3-Nov-20	20-May-21	9-Jun-21	2-Nov-21	5-May-22	2-Jun-22	4-May-23	10-May-24
Laboratory			Bureau Veritas	Bureau Veritas	Bureau Veritas	Bureau Veritas	Bureau Veritas	Bureau Veritas	Bureau Veritas	Bureau Veritas	Bureau Veritas	Bureau Veritas
Benzene	µg/L	1	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Toluene	µg/L	60	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Ethylbenzene	µg/L	140	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
m&p-Xylenes	µg/L	90	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
o-Xylene	µg/L	90	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
1,4-Dichlorobenzene	µg/L	5	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40
Dichloromethane	µg/L	50	<2.0	<2.0	<2.0	9	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
Vinyl Chloride	µg/L	1	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20

Parameter	Units	ODWQS	OW81-27	OW81-27	OW81-27	OW81-27
Date			11-May-20	20-May-21	5-May-22	10-May-24
Laboratory			Bureau Veritas	Bureau Veritas	Bureau Veritas	Bureau Veritas
Benzene	µg/L	1	<0.20	<0.20	<0.20	<0.20
Toluene	µg/L	60	<0.20	<0.20	<0.20	<0.20
Ethylbenzene	µg/L	140	<0.20	<0.20	<0.20	<0.20
m&p-Xylenes	µg/L	90	<0.20	<0.20	<0.20	<0.20
o-Xylene	µg/L	90	<0.20	<0.20	<0.20	<0.20
1,4-Dichlorobenzene	µg/L	5	<0.40	<0.40	<0.40	<0.40
Dichloromethane	µg/L	50	<2.0	<2.0	<2.0	<2.0
Vinyl Chloride	µg/L	1	<0.20	<0.20	<0.20	<0.20

NOTES: 1) Blank denotes data not available.
2) ODWQS denotes O. Reg. 169/03: Ontario Drinking Water Quality Standards (as amended).
3) All units are in µg/L.
4) µg/L denotes micrograms per litre.

Table H-5
Groundwater - Organic Analytical Results
Twin Creeks Environmental Centre

Parameter	Units	ODWQS	OW82-5	OW82-5
Date			**3-May-23**	**9-May-24**
Laboratory			**Bureau Veritas**	**Bureau Veritas**
Benzene	µg/L	1	<0.20	<0.20
Toluene	µg/L	60	<0.20	<0.20
Ethylbenzene	µg/L	140	<0.20	<0.20
m&p-Xylenes	µg/L	90	<0.20	<0.20
o-Xylene	µg/L	90	<0.20	<0.20
1,4-Dichlorobenzene	µg/L	5	<0.40	<0.40
Dichloromethane	µg/L	50	<2.0	<2.0
Vinyl Chloride	µg/L	1	<0.20	<0.20

Parameter	Units	ODWQS	OW82-14	OW82-14
Date			**3-May-23**	**9-May-24**
Laboratory			**Bureau Veritas**	**Bureau Veritas**
Benzene	µg/L	1	<0.20	<0.20
Toluene	µg/L	60	<0.20	<0.20
Ethylbenzene	µg/L	140	<0.20	<0.20
m&p-Xylenes	µg/L	90	<0.20	<0.20
o-Xylene	µg/L	90	<0.20	<0.20
1,4-Dichlorobenzene	µg/L	5	<0.40	<0.40
Dichloromethane	µg/L	50	<2.0	<2.0
Vinyl Chloride	µg/L	1	<0.20	<0.20

Parameter	Units	ODWQS	OW82-29
Date			**9-May-24**
Laboratory			**Bureau Veritas**
Benzene	µg/L	1	<0.20
Toluene	µg/L	60	<0.20
Ethylbenzene	µg/L	140	<0.20
m&p-Xylenes	µg/L	90	<0.20
o-Xylene	µg/L	90	<0.20
1,4-Dichlorobenzene	µg/L	5	<0.40
Dichloromethane	µg/L	50	<2.0
Vinyl Chloride	µg/L	1	<0.20

NOTES: 1) Blank denotes data not available.
2) ODWQS denotes O. Reg. 169/03: Ontario Drinking Water Quality Standards (as amended).
3) All units are in µg/L.
4) µg/L denotes micrograms per litre.

Table H-5
Groundwater - Organic Analytical Results
Twin Creeks Environmental Centre

Parameter	Units	ODWQS	OW83-5	OW83-5
Date			**3-May-23**	**9-May-24**
Laboratory			**Bureau Veritas**	**Bureau Veritas**
Benzene	µg/L	1	<0.20	<0.20
Toluene	µg/L	60	<0.20	<0.20
Ethylbenzene	µg/L	140	<0.20	<0.20
m&p-Xylenes	µg/L	90	<0.20	<0.20
o-Xylene	µg/L	90	<0.20	<0.20
1,4-Dichlorobenzene	µg/L	5	<0.40	<0.40
Dichloromethane	µg/L	50	<2.0	<2.0
Vinyl Chloride	µg/L	1	<0.20	<0.20

Parameter	Units	ODWQS	OW83-9	OW83-9
Date			**3-May-23**	**9-May-24**
Laboratory			**Bureau Veritas**	**Bureau Veritas**
Benzene	µg/L	1	<0.20	<0.20
Toluene	µg/L	60	<0.20	<0.20
Ethylbenzene	µg/L	140	<0.20	<0.20
m&p-Xylenes	µg/L	90	<0.20	<0.20
o-Xylene	µg/L	90	<0.20	<0.20
1,4-Dichlorobenzene	µg/L	5	<0.40	<0.40
Dichloromethane	µg/L	50	<2.0	<2.0
Vinyl Chloride	µg/L	1	<0.20	<0.20

Parameter	Units	ODWQS	OW83-29
Date			**9-May-24**
Laboratory			**Bureau Veritas**
Benzene	µg/L	1	<0.20
Toluene	µg/L	60	<0.20
Ethylbenzene	µg/L	140	<0.20
m&p-Xylenes	µg/L	90	<0.20
o-Xylene	µg/L	90	<0.20
1,4-Dichlorobenzene	µg/L	5	<0.40
Dichloromethane	µg/L	50	<2.0
Vinyl Chloride	µg/L	1	<0.20

NOTES: 1) Blank denotes data not available.
2) ODWQS denotes O. Reg. 169/03: Ontario Drinking Water Quality Standards (as amended).
3) All units are in µg/L.
4) µg/L denotes micrograms per litre.

Table H-5
Groundwater - Organic Analytical Results
Twin Creeks Environmental Centre

Parameter	Units	ODWQS	OW84-6	OW84-6	OW84-6	OW84-6
Date			**3-May-23**	**9-May-24**	**28-May-24**	**19-Nov-24**
Laboratory			**Bureau Veritas**	**Bureau Veritas**	**Bureau Veritas**	**Bureau Veritas**
Benzene	µg/L	1	<0.20	<0.20	<0.20	<0.20
Toluene	µg/L	60	<0.20	<0.20	<0.20	<0.20
Ethylbenzene	µg/L	140	<0.20	<0.20	<0.20	<0.20
m&p-Xylenes	µg/L	90	<0.20	<0.20	<0.20	<0.20
o-Xylene	µg/L	90	<0.20	<0.20	<0.20	<0.20
1,4-Dichlorobenzene	µg/L	5	<0.40	<0.40	<0.40	<0.40
Dichloromethane	µg/L	50	<2.0	<2.0	<2.0	<2.0
Vinyl Chloride	µg/L	1	<0.20	<0.20	<0.20	<0.20

Parameter	Units	ODWQS	OW84-11	OW84-11
Date			**3-May-23**	**9-May-24**
Laboratory			**Bureau Veritas**	**Bureau Veritas**
Benzene	µg/L	1	<0.20	<0.20
Toluene	µg/L	60	<0.20	<0.20
Ethylbenzene	µg/L	140	<0.20	<0.20
m&p-Xylenes	µg/L	90	<0.20	<0.20
o-Xylene	µg/L	90	<0.20	<0.20
1,4-Dichlorobenzene	µg/L	5	<0.40	<0.40
Dichloromethane	µg/L	50	<2.0	<2.0
Vinyl Chloride	µg/L	1	<0.20	<0.20

Parameter	Units	ODWQS	OW84-31
Date			**9-May-24**
Laboratory			**Bureau Veritas**
Benzene	µg/L	1	<0.20
Toluene	µg/L	60	<0.20
Ethylbenzene	µg/L	140	<0.20
m&p-Xylenes	µg/L	90	<0.20
o-Xylene	µg/L	90	<0.20
1,4-Dichlorobenzene	µg/L	5	<0.40
Dichloromethane	µg/L	50	<2.0
Vinyl Chloride	µg/L	1	<0.20

Parameter	Units	ODWQS	Cemetery Well	Cemetery Well	Cemetery Well	Cemetery Well	Cemetery Well	Cemetery Well	Cemetery Well	Cemetery Well	Cemetery Well	Cemetery Well	Cemetery Well
Date			**23-May-08**	**18-May-10**	**11-May-11**	**16-May-12**	**5-May-14**	**14-May-15**	**27-May-16**	**8-May-18**	**15-May-19**	**6-May-20**	**6-May-22**
Laboratory			**MAXXAM**	**MAXXAM**	**MAXXAM**	**MAXXAM**	**MAXXAM**	**MAXXAM**	**MAXXAM**	**MAXXAM**	**MAXXAM**	**Bureau Veritas**	**Bureau Veritas**
Benzene	µg/L	1	<0.1	<0.1	<0.1	<0.10	<0.10	<0.10	<0.10	<0.20	<0.20	<0.20	<0.20
Toluene	µg/L	60	<0.2	<0.2	<0.2	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Ethylbenzene	µg/L	140	<0.1	<0.1	<0.1	<0.10	<0.10	<0.10	<0.10	<0.20	<0.20	<0.20	<0.20
m&p-Xylenes	µg/L	90	<0.1	<0.1	<0.1	<0.10	<0.10	<0.10	<0.10	<0.20	<0.20	<0.20	<0.20
o-Xylene	µg/L	90	<0.1	<0.1	<0.1	<0.10	<0.10	<0.10	<0.10	<0.20	<0.20	<0.20	<0.20
1,4-Dichlorobenzene	µg/L	5	<0.2	<0.2	<0.2	<0.20	<0.20	<0.20	<0.20	<0.50	<0.50	<0.40	<0.40
Dichloromethane	µg/L	50	<0.5	<0.5	<0.5	<0.50	<0.50	<0.50	<0.50	<2.0	<2.0	<2.0	<2.0
Vinyl Chloride	µg/L	1	<0.2	<0.2	<0.2	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20

Parameter	Units	ODWQS	Cemetery Well
Date			**10-May-24**
Laboratory			**Bureau Veritas**
Benzene	µg/L	1	<0.20
Toluene	µg/L	60	<0.20
Ethylbenzene	µg/L	140	<0.20
m&p-Xylenes	µg/L	90	<0.20
o-Xylene	µg/L	90	<0.20
1,4-Dichlorobenzene	µg/L	5	<0.40
Dichloromethane	µg/L	50	<2.0
Vinyl Chloride	µg/L	1	<0.20

NOTES: 1) Blank denotes data not available.
2) ODWQS denotes O. Reg. 169/03: Ontario Drinking Water Quality Standards (as amended).
3) All units are in µg/L.
4) µg/L denotes micrograms per litre.

APPENDIX H6:

Laboratory Reports

Your P.O. #: 13254256
Your Project #: 2402553.01
Site#: 200
Site Location: ON07
Your C.O.C. #: 999203

Attention: Khalid Hussein - Twin Creeks

RWDI Inc.
600 Southgate Drive
Guelph, ON
Canada N1G 4P6

Report Date: 2024/11/29
Report #: R8425374
Version: 1 - Final

CERTIFICATE OF ANALYSIS

BUREAU VERITAS JOB #: C4AI543
Received: 2024/11/21, 10:10

Sample Matrix: Ground Water
Samples Received: 10

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Analytical Method
Alkalinity	10	N/A	2024/11/26	CAM SOP-00448	SM 24 2320 B m
Chloride by Automated Colourimetry	3	N/A	2024/11/26	CAM SOP-00463	SM 24 4500-Cl E m
Chloride by Automated Colourimetry	7	N/A	2024/11/28	CAM SOP-00463	SM 24 4500-Cl E m
Conductance in Water - On-site	10	N/A	2024/11/28		
Conductivity	10	N/A	2024/11/26	CAM SOP-00414	SM 24 2510 m
Dissolved Organic Carbon (DOC) (1)	10	N/A	2024/11/27	CAM SOP-00446	SM 24 5310 B m
Dissolved Metals by ICPMS	5	N/A	2024/11/26	CAM SOP-00447	EPA 6020B m
Dissolved Metals by ICPMS	5	N/A	2024/11/27	CAM SOP-00447	EPA 6020B m
Ammonia-N	10	N/A	2024/11/28	CAM SOP-00441	USGS I-2522-90 m
Nitrate & Nitrite as Nitrogen in Water (2)	10	N/A	2024/11/25	CAM SOP-00440	SM 24 4500-NO3I/NO2B
pH (3)	10	2024/11/23	2024/11/26	CAM SOP-00413	SM 24th - 4500H+ B
Field Measured pH (4)	10	N/A	2024/11/28		Field pH Meter
Sulphate by Automated Turbidimetry	3	N/A	2024/11/26	CAM SOP-00464	SM 24 4500-SO42- E m
Sulphate by Automated Turbidimetry	7	N/A	2024/11/28	CAM SOP-00464	SM 24 4500-SO42- E m
Total Dissolved Solids	10	2024/11/23	2024/11/25	CAM SOP-00428	SM 24 2540C m
Field Temperature (4)	10	N/A	2024/11/28		Field Thermometer
Total Kjeldahl Nitrogen in Water	1	2024/11/25	2024/11/27	CAM SOP-00938	SM 4500-N B m
Total Kjeldahl Nitrogen in Water	1	2024/11/25	2024/11/28	CAM SOP-00938	SM 4500-N B m
Total Kjeldahl Nitrogen in Water	7	2024/11/26	2024/11/27	CAM SOP-00938	SM 4500-N B m
Total Kjeldahl Nitrogen in Water	1	2024/11/26	2024/11/28	CAM SOP-00938	SM 4500-N B m
Turbidity - On-site	10	N/A	2024/11/28		
Volatile Organic Compounds in Water	2	N/A	2024/11/25	CAM SOP-00228	EPA 8260D

Sample Matrix: Water
Samples Received: 1

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Analytical Method
Alkalinity	1	N/A	2024/11/26	CAM SOP-00448	SM 24 2320 B m
Chloride by Automated Colourimetry	1	N/A	2024/11/28	CAM SOP-00463	SM 24 4500-Cl E m
Conductivity	1	N/A	2024/11/26	CAM SOP-00414	SM 24 2510 m
Dissolved Organic Carbon (DOC) (1)	1	N/A	2024/11/27	CAM SOP-00446	SM 24 5310 B m
Dissolved Metals by ICPMS	1	N/A	2024/11/27	CAM SOP-00447	EPA 6020B m

Your P.O. #: 13254256
Your Project #: 2402553.01
Site#: 200
Site Location: ON07
Your C.O.C. #: 999203

Attention: Khalid Hussein - Twin Creeks

RWDI Inc.
600 Southgate Drive
Guelph, ON
Canada N1G 4P6

Report Date: 2024/11/29
Report #: R8425374
Version: 1 - Final

CERTIFICATE OF ANALYSIS

BUREAU VERITAS JOB #: C4AI543
Received: 2024/11/21, 10:10

Sample Matrix: Water
Samples Received: 1

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Analytical Method
Ammonia-N	1	N/A	2024/11/28	CAM SOP-00441	USGS I-2522-90 m
Nitrate & Nitrite as Nitrogen in Water (2)	1	N/A	2024/11/25	CAM SOP-00440	SM 24 4500-NO3I/NO2B
pH (3)	1	2024/11/23	2024/11/26	CAM SOP-00413	SM 24th - 4500H+ B
Sulphate by Automated Turbidimetry	1	N/A	2024/11/28	CAM SOP-00464	SM 24 4500-SO42- E m
Total Dissolved Solids	1	2024/11/23	2024/11/25	CAM SOP-00428	SM 24 2540C m
Total Kjeldahl Nitrogen in Water	1	2024/11/25	2024/11/27	CAM SOP-00938	SM 4500-N B m
Volatile Organic Compounds in Water	1	N/A	2024/11/25	CAM SOP-00228	EPA 8260D

Remarks:

Bureau Veritas is accredited to ISO/IEC 17025 for specific parameters on scopes of accreditation. Unless otherwise noted, procedures used by Bureau Veritas are based upon recognized Provincial, Federal or US method compendia such as CCME, EPA, APHA or the Quebec Ministry of Environment.

All work recorded herein has been done in accordance with procedures and practices ordinarily exercised by professionals in Bureau Veritas' profession using accepted testing methodologies, quality assurance and quality control procedures (except where otherwise agreed by the client and Bureau Veritas in writing). All data is in statistical control and has met quality control and method performance criteria unless otherwise noted. All method blanks are reported; unless indicated otherwise, associated sample data are not blank corrected. Where applicable, unless otherwise noted, Measurement Uncertainty has not been accounted for when stating conformity to the referenced standard.

Bureau Veritas liability is limited to the actual cost of the requested analyses, unless otherwise agreed in writing. There is no other warranty expressed or implied. Bureau Veritas has been retained to provide analysis of samples provided by the Client using the testing methodology referenced in this report. Interpretation and use of test results are the sole responsibility of the Client and are not within the scope of services provided by Bureau Veritas, unless otherwise agreed in writing. Bureau Veritas is not responsible for the accuracy or any data impacts, that result from the information provided by the customer or their agent.

Solid sample results, except biota, are based on dry weight unless otherwise indicated. Organic analyses are not recovery corrected except for isotope dilution methods.
Results relate to samples tested. When sampling is not conducted by Bureau Veritas, results relate to the supplied samples tested.
This Certificate shall not be reproduced except in full, without the written approval of the laboratory.
Reference Method suffix “m” indicates test methods incorporate validated modifications from specific reference methods to improve performance.
* RPDs calculated using raw data. The rounding of final results may result in the apparent difference.
(1) Dissolved Organic Carbon (DOC) present in the sample should be considered as non-purgeable DOC.
(2) Values for calculated parameters may not appear to add up due to rounding of raw data and significant figures.
(3) "The CCME method and Analytical Protocol (O. Reg 153/04, O. Reg. 406/19) requires pH to be analyzed within 15 minutes of sampling and therefore field analysis is required for compliance. All Laboratory pH analyses in this report are reported past the CCME and Analytical Protocol (O. Reg 153/04, O. Reg. 406/19) holding time. Bureau Veritas endeavors

Bureau Veritas 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.bvna.com

Microbiology testing is conducted at 6660 Campobello Rd. Chemistry testing is conducted at 6740 Campobello Rd.

Your P.O. #: 13254256
Your Project #: 2402553.01
Site#: 200
Site Location: ON07
Your C.O.C. #: 999203

Attention: Khalid Hussein - Twin Creeks

RWDI Inc.
600 Southgate Drive
Guelph, ON
Canada N1G 4P6

Report Date: 2024/11/29
Report #: R8425374
Version: 1 - Final

CERTIFICATE OF ANALYSIS

BUREAU VERITAS JOB #: C4AI543
Received: 2024/11/21, 10:10

to analyze samples as soon as possible after receipt."

(4) This is a field test, therefore, the results relate to items that were not analysed at Bureau Veritas.

Encryption Key

Please direct all questions regarding this Certificate of Analysis to:
Patricia Legette, Project Manager
Email: Patricia.Legette@bureauveritas.com
Phone# (905)817-5799

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Bureau Veritas has procedures in place to guard against improper use of the electronic signature and have the required "signatories", as per ISO/IEC 17025, signing the reports. For Service Group specific validation, please refer to the Validation Signatures page if included, otherwise available by request. For Department specific Analyst/Supervisor validation names, please refer to the Test Summary section if included, otherwise available by request. This report is authorized by Rodney Major, General Manager responsible for Ontario Environmental laboratory operations.

Bureau Veritas Job #: C4AI543
Report Date: 2024/11/29

RWDI Inc.
Client Project #: 2402553.01
Site Location: ON07
Your P.O. #: 13254256
Sampler Initials: JA

RESULTS OF ANALYSES OF GROUND WATER

Bureau Veritas ID		AJRH63		AJRH64			AJRH66		
Sampling Date		2024/11/18 11:40		2024/11/18 11:40			2024/11/19 13:15		
COC Number		999203		999203			999203		
	UNITS	OW16-7	QC Batch	GWDUP-2	RDL	QC Batch	OW46-7	RDL	QC Batch
Field Measurements									
Field Conductivity	uS/cm	1400	ONSITE	1400	N/A	ONSITE	4720	N/A	ONSITE
Field Temperature	Celsius	12.9	ONSITE	12.9	N/A	ONSITE	12.0	N/A	ONSITE
Field Measured Field Turbidity	NTU	43.9	ONSITE	43.9	N/A	ONSITE	30.7	N/A	ONSITE
Field Measured pH	pH	7.1	ONSITE	7.1		ONSITE	7.2		ONSITE
Inorganics									
Total Ammonia-N	mg/L	0.36	9786727	0.36	0.15	9786727	<0.15	0.15	9786727
Conductivity	umho/cm	1300	9785257	1300	1.0	9785257	4800	1.0	9785257
Total Dissolved Solids	mg/L	825	9784833	865	10	9784823	4810	10	9784833
Total Kjeldahl Nitrogen (TKN)	mg/L	<0.7	9786509	<0.7	0.7	9786509	<0.7	0.7	9788828
Dissolved Organic Carbon	mg/L	6.8	9786648	2.8	0.4	9786648	3.0	0.4	9786648
pH	pH	7.86	9785256	7.82		9785256	7.81		9785256
Dissolved Sulphate (SO4)	mg/L	270	9785297	270	1.0	9785297	2800	10	9785289
Alkalinity (Total as CaCO3)	mg/L	480	9785255	470	1.0	9785255	360	1.0	9785255
Dissolved Chloride (Cl-)	mg/L	5.2	9785296	5.2	1.0	9785296	10	1.0	9785288
Nitrate (N)	mg/L	<0.10	9784942	0.14	0.10	9784942	0.17	0.10	9784942

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
N/A = Not Applicable

Bureau Veritas 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.bvna.com

Microbiology testing is conducted at 6660 Campobello Rd. Chemistry testing is conducted at 6740 Campobello Rd.

Bureau Veritas Job #: C4AI543
Report Date: 2024/11/29

RWDI Inc.
Client Project #: 2402553.01
Site Location: ON07
Your P.O. #: 13254256
Sampler Initials: JA

RESULTS OF ANALYSES OF GROUND WATER

Bureau Veritas ID		AJRH67			AJRH68			AJRH69		
Sampling Date		2024/11/19 14:50			2024/11/19 14:40			2024/11/19 12:15		
COC Number		999203			999203			999203		
	UNITS	**OW47-6**	**RDL**	**QC Batch**	**OW54-10**	**RDL**	**QC Batch**	**OW57-15**	**RDL**	**QC Batch**
Field Measurements										
Field Conductivity	uS/cm	4570	N/A	ONSITE	2610	N/A	ONSITE	3070	N/A	ONSITE
Field Temperature	Celsius	11.8	N/A	ONSITE	12.1	N/A	ONSITE	11.2	N/A	ONSITE
Field Measured Field Turbidity	NTU	18.6	N/A	ONSITE	62.2	N/A	ONSITE	25.4	N/A	ONSITE
Field Measured pH	pH	7.5		ONSITE	7.5		ONSITE	8.0		ONSITE
Inorganics										
Total Ammonia-N	mg/L	<0.15	0.15	9786727	0.42	0.15	9786727	0.31	0.15	9786727
Conductivity	umho/cm	4900	1.0	9785257	2400	1.0	9785257	3000	1.0	9785257
Total Dissolved Solids	mg/L	5020	10	9784823	1940	10	9784833	2690	10	9784833
Total Kjeldahl Nitrogen (TKN)	mg/L	<0.7	0.7	9788828	<0.7	0.7	9788828	<0.7	0.7	9788828
Dissolved Organic Carbon	mg/L	3.2	0.4	9786648	6.9	0.4	9786648	2.7	0.4	9786648
pH	pH	7.87		9785256	7.96		9785256	7.81		9785256
Dissolved Sulphate (SO4)	mg/L	3000	15	9785289	1100	10	9785297	1600	5.0	9785289
Alkalinity (Total as CaCO3)	mg/L	390	1.0	9785255	330	1.0	9785255	150	1.0	9785255
Dissolved Chloride (Cl-)	mg/L	3.7	1.0	9785288	8.1	1.0	9785296	6.1	1.0	9785288
Nitrate (N)	mg/L	0.28	0.10	9784942	<0.10	0.10	9784942	0.49	0.10	9784942

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
N/A = Not Applicable

Bureau Veritas 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.bvna.com

Microbiology testing is conducted at 6660 Campobello Rd. Chemistry testing is conducted at 6740 Campobello Rd.

Bureau Veritas Job #: C4AI543
Report Date: 2024/11/29

RWDI Inc.
Client Project #: 2402553.01
Site Location: ON07
Your P.O. #: 13254256
Sampler Initials: JA

RESULTS OF ANALYSES OF GROUND WATER

Bureau Veritas ID		AJRH70		AJRH71		AJRH72			AJRH73		
Sampling Date		2024/11/19 11:55		2024/11/18 14:10		2024/11/18 15:25			2024/11/18 15:55		
COC Number		999203		999203		999203			999203		
	UNITS	OW58-17	RDL	OW67-11	RDL	OW72-10	RDL	QC Batch	OW73-9	RDL	QC Batch
Field Measurements											
Field Conductivity	uS/cm	3880	N/A	1430	N/A	2760	N/A	ONSITE	3890	N/A	ONSITE
Field Temperature	Celsius	11.4	N/A	11.1	N/A	11.0	N/A	ONSITE	10.1	N/A	ONSITE
Field Measured Field Turbidity	NTU	20.9	N/A	79.1	N/A	284	N/A	ONSITE	48.7	N/A	ONSITE
Field Measured pH	pH	7.7		7.4		7.5		ONSITE	7.7		ONSITE
Inorganics											
Total Ammonia-N	mg/L	0.31	0.15	2.42	0.15	0.35	0.15	9786727	0.29	0.15	9786727
Conductivity	umho/cm	3900	1.0	1400	1.0	2700	1.0	9785257	4100	1.0	9785257
Total Dissolved Solids	mg/L	3810	10	910	10	2340	10	9784823	3730	10	9784833
Total Kjeldahl Nitrogen (TKN)	mg/L	<0.7	0.7	2.6	0.7	<0.7	0.7	9788828	<0.7	0.7	9788828
Dissolved Organic Carbon	mg/L	2.3	0.4	9.9	0.4	6.7	0.4	9786648	6.0	0.4	9786648
pH	pH	7.53		7.90		7.90		9785256	7.85		9785256
Dissolved Sulphate (SO4)	mg/L	2400	10	290	1.0	1200	5.0	9785289	2300	10	9785289
Alkalinity (Total as CaCO3)	mg/L	61	1.0	440	1.0	350	1.0	9785255	290	1.0	9785255
Dissolved Chloride (Cl-)	mg/L	6.4	1.0	22	1.0	3.4	1.0	9785288	5.6	1.0	9785288
Nitrate (N)	mg/L	0.20	0.10	<0.10	0.10	0.26	0.10	9784942	0.55	0.10	9784942

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
N/A = Not Applicable

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Microbiology testing is conducted at 6660 Campobello Rd. Chemistry testing is conducted at 6740 Campobello Rd.

Bureau Veritas Job #: C4AI543
Report Date: 2024/11/29

RWDI Inc.
Client Project #: 2402553.01
Site Location: ON07
Your P.O. #: 13254256
Sampler Initials: JA

ELEMENTS BY ATOMIC SPECTROSCOPY (GROUND WATER)

Bureau Veritas ID		AJRH63	AJRH64			AJRH66	AJRH67		
Sampling Date		2024/11/18 11:40	2024/11/18 11:40			2024/11/19 13:15	2024/11/19 14:50		
COC Number		999203	999203			999203	999203		
	UNITS	OW16-7	GWDUP-2	RDL	QC Batch	OW46-7	OW47-6	RDL	QC Batch
Metals									
Dissolved Barium (Ba)	mg/L	0.017	0.017	0.005	9788377	<0.03	<0.03	0.03	9788385
Dissolved Boron (B)	mg/L	0.28	0.27	0.02	9788377	0.7	1.0	0.1	9788385
Dissolved Cadmium (Cd)	mg/L	<0.0001	<0.0001	0.0001	9788377	<0.0005	<0.0005	0.0005	9788385
Dissolved Calcium (Ca)	mg/L	100	100	0.2	9788377	420	440	1	9788385
Dissolved Iron (Fe)	mg/L	1.8	1.8	0.1	9788377	<0.5	<0.5	0.5	9788385
Dissolved Lead (Pb)	mg/L	<0.0005	<0.0005	0.0005	9788377	<0.003	<0.003	0.003	9788385
Dissolved Magnesium (Mg)	mg/L	80	78	0.05	9788377	440	460	0.3	9788385
Dissolved Potassium (K)	mg/L	3.9	4.0	0.2	9788377	8	7	1	9788385
Dissolved Sodium (Na)	mg/L	60	60	0.1	9788377	260	210	0.5	9788385

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

Bureau Veritas ID		AJRH68	AJRH69		AJRH70		AJRH71		AJRH72		
Sampling Date		2024/11/19 14:40	2024/11/19 12:15		2024/11/19 11:55		2024/11/18 14:10		2024/11/18 15:25		
COC Number		999203	999203		999203		999203		999203		
	UNITS	OW54-10	OW57-15	RDL	OW58-17	RDL	OW67-11	RDL	OW72-10	RDL	QC Batch
Metals											
Dissolved Barium (Ba)	mg/L	0.017	0.010	0.005	<0.03	0.03	0.025	0.005	0.009	0.005	9788385
Dissolved Boron (B)	mg/L	1.1	1.3	0.02	1.5	0.1	0.47	0.02	1.1	0.02	9788385
Dissolved Cadmium (Cd)	mg/L	<0.0001	<0.0001	0.0001	<0.0005	0.0005	<0.0001	0.0001	<0.0001	0.0001	9788385
Dissolved Calcium (Ca)	mg/L	170	290	0.4	450	1	130	0.2	210	0.4	9788385
Dissolved Iron (Fe)	mg/L	4.9	1.8	0.1	<0.5	0.5	0.1	0.1	1.2	0.1	9788385
Dissolved Lead (Pb)	mg/L	<0.0005	<0.0005	0.0005	<0.003	0.003	<0.0005	0.0005	<0.0005	0.0005	9788385
Dissolved Magnesium (Mg)	mg/L	170	200	0.05	240	0.3	81	0.05	210	0.05	9788385
Dissolved Potassium (K)	mg/L	4.6	4.8	0.2	4	1	4.3	0.2	5.2	0.2	9788385
Dissolved Sodium (Na)	mg/L	150	180	0.1	180	0.5	40	0.1	140	0.1	9788385

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

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Microbiology testing is conducted at 6660 Campobello Rd. Chemistry testing is conducted at 6740 Campobello Rd.

Bureau Veritas Job #: C4AI543
Report Date: 2024/11/29

RWDI Inc.
Client Project #: 2402553.01
Site Location: ON07
Your P.O. #: 13254256
Sampler Initials: JA

ELEMENTS BY ATOMIC SPECTROSCOPY (GROUND WATER)

Bureau Veritas ID		AJRH73		
Sampling Date		2024/11/18 15:55		
COC Number		999203		
	UNITS	OW73-9	RDL	QC Batch
Metals				
Dissolved Barium (Ba)	mg/L	<0.03	0.03	9788385
Dissolved Boron (B)	mg/L	1.3	0.1	9788385
Dissolved Cadmium (Cd)	mg/L	<0.0005	0.0005	9788385
Dissolved Calcium (Ca)	mg/L	410	1	9788385
Dissolved Iron (Fe)	mg/L	0.8	0.5	9788385
Dissolved Lead (Pb)	mg/L	<0.003	0.003	9788385
Dissolved Magnesium (Mg)	mg/L	330	0.3	9788385
Dissolved Potassium (K)	mg/L	6	1	9788385
Dissolved Sodium (Na)	mg/L	220	0.5	9788385

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

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VOLATILE ORGANICS BY GC/MS (GROUND WATER)

Bureau Veritas ID		AJRH63	AJRH64		
Sampling Date		2024/11/18 11:40	2024/11/18 11:40		
COC Number		999203	999203		
	UNITS	OW16-7	GWDUP-2	RDL	QC Batch
Volatile Organics					
Benzene	ug/L	<0.20	<0.20	0.20	9786032
1,4-Dichlorobenzene	ug/L	<0.40	<0.40	0.40	9786032
Ethylbenzene	ug/L	<0.20	<0.20	0.20	9786032
Methylene Chloride(Dichloromethane)	ug/L	<2.0	<2.0	2.0	9786032
Toluene	ug/L	<0.20	<0.20	0.20	9786032
Vinyl Chloride	ug/L	<0.20	<0.20	0.20	9786032
p+m-Xylene	ug/L	<0.20	<0.20	0.20	9786032
o-Xylene	ug/L	<0.20	<0.20	0.20	9786032
Total Xylenes	ug/L	<0.20	<0.20	0.20	9786032
Surrogate Recovery (%)					
4-Bromofluorobenzene	%	99	99		9786032
D4-1,2-Dichloroethane	%	109	107		9786032
D8-Toluene	%	93	93		9786032

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

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Bureau Veritas Job #: C4AI543
Report Date: 2024/11/29

RWDI Inc.
Client Project #: 2402553.01
Site Location: ON07
Your P.O. #: 13254256
Sampler Initials: JA

RESULTS OF ANALYSES OF WATER

Bureau Veritas ID		AJRH65		
Sampling Date		2024/11/18 11:40		
COC Number		999203		
	UNITS	FIELD BLANK	RDL	QC Batch
Inorganics				
Total Ammonia-N	mg/L	<0.15	0.15	9788839
Conductivity	umho/cm	1.5	1.0	9785257
Total Dissolved Solids	mg/L	<10	10	9784833
Total Kjeldahl Nitrogen (TKN)	mg/L	<0.7	0.7	9786509
Dissolved Organic Carbon	mg/L	<0.4	0.4	9786648
pH	pH	6.46		9785256
Dissolved Sulphate (SO4)	mg/L	<1.0	1.0	9785289
Alkalinity (Total as CaCO3)	mg/L	1.4	1.0	9785255
Dissolved Chloride (Cl-)	mg/L	<1.0	1.0	9785288
Nitrate (N)	mg/L	<0.10	0.10	9784942

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

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Bureau Veritas Job #: C4AI543
Report Date: 2024/11/29

RWDI Inc.
Client Project #: 2402553.01
Site Location: ON07
Your P.O. #: 13254256
Sampler Initials: JA

ELEMENTS BY ATOMIC SPECTROSCOPY (WATER)

Bureau Veritas ID		AJRH65		
Sampling Date		2024/11/18 11:40		
COC Number		999203		
	UNITS	FIELD BLANK	RDL	QC Batch
Metals				
Dissolved Barium (Ba)	mg/L	<0.005	0.005	9788377
Dissolved Boron (B)	mg/L	<0.02	0.02	9788377
Dissolved Cadmium (Cd)	mg/L	<0.0001	0.0001	9788377
Dissolved Calcium (Ca)	mg/L	<0.2	0.2	9788377
Dissolved Iron (Fe)	mg/L	<0.1	0.1	9788377
Dissolved Lead (Pb)	mg/L	<0.0005	0.0005	9788377
Dissolved Magnesium (Mg)	mg/L	<0.05	0.05	9788377
Dissolved Potassium (K)	mg/L	<0.2	0.2	9788377
Dissolved Sodium (Na)	mg/L	<0.1	0.1	9788377

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

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Microbiology testing is conducted at 6660 Campobello Rd. Chemistry testing is conducted at 6740 Campobello Rd.

VOLATILE ORGANICS BY GC/MS (WATER)

Bureau Veritas ID		AJRH65		
Sampling Date		2024/11/18 11:40		
COC Number		999203		
	UNITS	FIELD BLANK	RDL	QC Batch
Volatile Organics				
Benzene	ug/L	<0.20	0.20	9786032
1,4-Dichlorobenzene	ug/L	<0.40	0.40	9786032
Ethylbenzene	ug/L	<0.20	0.20	9786032
Methylene Chloride(Dichloromethane)	ug/L	<2.0	2.0	9786032
Toluene	ug/L	<0.20	0.20	9786032
Vinyl Chloride	ug/L	<0.20	0.20	9786032
p+m-Xylene	ug/L	<0.20	0.20	9786032
o-Xylene	ug/L	<0.20	0.20	9786032
Total Xylenes	ug/L	<0.20	0.20	9786032
Surrogate Recovery (%)				
4-Bromofluorobenzene	%	98		9786032
D4-1,2-Dichloroethane	%	111		9786032
D8-Toluene	%	92		9786032

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

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GENERAL COMMENTS

Each temperature is the average of up to three cooler temperatures taken at receipt

Package 1	5.7°C
Package 2	6.3°C

Sample AJRH66 [OW46-7] : Metals Analysis: Due to the sample matrix, sample required dilution. Detection limits were adjusted accordingly.

Sample AJRH67 [OW47-6] : Metals Analysis: Due to the sample matrix, sample required dilution. Detection limits were adjusted accordingly.

Sample AJRH70 [OW58-17] : Metals Analysis: Due to the sample matrix, sample required dilution. Detection limits were adjusted accordingly.

Sample AJRH73 [OW73-9] : Metals Analysis: Due to the sample matrix, sample required dilution. Detection limits were adjusted accordingly.

Results relate only to the items tested.

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QUALITY ASSURANCE REPORT

			Matrix Spike		SPIKED BLANK		Method Blank		RPD		QC Standard	
QC Batch	Parameter	Date	% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits	% Recovery	QC Limits
9786032	4-Bromofluorobenzene	2024/11/25	98	70 - 130	103	70 - 130	104	%				
9786032	D4-1,2-Dichloroethane	2024/11/25	102	70 - 130	100	70 - 130	108	%				
9786032	D8-Toluene	2024/11/25	97	70 - 130	92	70 - 130	96	%				
9784823	Total Dissolved Solids	2024/11/25			98	80 - 120	<10	mg/L	0.41 (1)	20		
9784833	Total Dissolved Solids	2024/11/25			100	80 - 120	<10	mg/L	NC (2)	20		
9784942	Nitrate (N)	2024/11/25	90	80 - 120	92	80 - 120	<0.10	mg/L	NC (1)	20		
9785255	Alkalinity (Total as CaCO3)	2024/11/26			95	85 - 115	<1.0	mg/L	3.3 (3)	20		
9785256	pH	2024/11/26			101	98 - 103			0.87 (3)	N/A		
9785257	Conductivity	2024/11/26			100	85 - 115	<1.0	umho/cm	0 (3)	10		
9785288	Dissolved Chloride (Cl-)	2024/11/28	83 (4)	80 - 120	97	80 - 120	<1.0	mg/L	2.4 (5)	20		
9785289	Dissolved Sulphate (SO4)	2024/11/28	NC (4)	75 - 125	99	80 - 120	<1.0	mg/L	0.72 (5)	20		
9785296	Dissolved Chloride (Cl-)	2024/11/26	NC	80 - 120	98	80 - 120	<1.0	mg/L	0.15 (1)	20		
9785297	Dissolved Sulphate (SO4)	2024/11/26	NC	75 - 125	92	80 - 120	<1.0	mg/L	2.8 (1)	20		
9786032	1,4-Dichlorobenzene	2024/11/25	105	70 - 130	124	70 - 130	<0.40	ug/L	NC (1)	30		
9786032	Benzene	2024/11/25	107	70 - 130	103	70 - 130	<0.20	ug/L	NC (1)	30		
9786032	Ethylbenzene	2024/11/25	109	70 - 130	113	70 - 130	<0.20	ug/L	NC (1)	30		
9786032	Methylene Chloride(Dichloromethane)	2024/11/25	110	70 - 130	108	70 - 130	<2.0	ug/L	NC (1)	30		
9786032	o-Xylene	2024/11/25	111	70 - 130	119	70 - 130	<0.20	ug/L	NC (1)	30		
9786032	p+m-Xylene	2024/11/25	107	70 - 130	113	70 - 130	<0.20	ug/L	NC (1)	30		
9786032	Toluene	2024/11/25	102	70 - 130	95	70 - 130	<0.20	ug/L	NC (1)	30		
9786032	Total Xylenes	2024/11/25					<0.20	ug/L	NC (1)	30		
9786032	Vinyl Chloride	2024/11/25	101	70 - 130	97	70 - 130	<0.20	ug/L	15 (1)	30		
9786509	Total Kjeldahl Nitrogen (TKN)	2024/11/27	109 (6)	80 - 120	98	80 - 120	<0.7	mg/L	NC (7)	20	100	80 - 120
9786648	Dissolved Organic Carbon	2024/11/27	93 (8)	80 - 120	99	80 - 120	<0.4	mg/L	4.8 (9)	20		
9786727	Total Ammonia-N	2024/11/28	97 (10)	75 - 125	99	80 - 120	<0.15	mg/L	NC (11)	20		
9788377	Dissolved Barium (Ba)	2024/11/27	93	80 - 120	94	80 - 120	<0.005	mg/L	3.6 (1)	20		
9788377	Dissolved Boron (B)	2024/11/27	90	80 - 120	89	80 - 120	<0.02	mg/L	2.0 (1)	20		
9788377	Dissolved Cadmium (Cd)	2024/11/27	98	80 - 120	96	80 - 120	<0.0001	mg/L	NC (1)	20		
9788377	Dissolved Calcium (Ca)	2024/11/27	NC	80 - 120	95	80 - 120	<0.2	mg/L	0.38 (1)	20		

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Microbiology testing is conducted at 6660 Campobello Rd. Chemistry testing is conducted at 6740 Campobello Rd.

QUALITY ASSURANCE REPORT(CONT'D)

			Matrix Spike		SPIKED BLANK		Method Blank		RPD		QC Standard	
QC Batch	Parameter	Date	% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits	% Recovery	QC Limits
9788377	Dissolved Iron (Fe)	2024/11/27	97	80 - 120	95	80 - 120	<0.1	mg/L	NC (1)	20		
9788377	Dissolved Lead (Pb)	2024/11/27	91	80 - 120	94	80 - 120	<0.0005	mg/L	NC (1)	20		
9788377	Dissolved Magnesium (Mg)	2024/11/27	NC	80 - 120	95	80 - 120	<0.05	mg/L	1.7 (1)	20		
9788377	Dissolved Potassium (K)	2024/11/27	104	80 - 120	97	80 - 120	<0.2	mg/L	2.2 (1)	20		
9788377	Dissolved Sodium (Na)	2024/11/27	NC	80 - 120	93	80 - 120	<0.1	mg/L	0.059 (1)	20		
9788385	Dissolved Barium (Ba)	2024/11/26	98 (12)	80 - 120	102	80 - 120	<0.005	mg/L	1.1 (13)	20		
9788385	Dissolved Boron (B)	2024/11/26	NC (12)	80 - 120	96	80 - 120	<0.02	mg/L	5.1 (13)	20		
9788385	Dissolved Cadmium (Cd)	2024/11/26	99 (12)	80 - 120	98	80 - 120	<0.0001	mg/L	NC (13)	20		
9788385	Dissolved Calcium (Ca)	2024/11/26	NC (12)	80 - 120	102	80 - 120	<0.2	mg/L	0.78 (13)	20		
9788385	Dissolved Iron (Fe)	2024/11/26	97 (12)	80 - 120	99	80 - 120	<0.1	mg/L	NC (13)	20		
9788385	Dissolved Lead (Pb)	2024/11/26	98 (12)	80 - 120	100	80 - 120	<0.0005	mg/L	NC (13)	20		
9788385	Dissolved Magnesium (Mg)	2024/11/26	NC (12)	80 - 120	100	80 - 120	<0.05	mg/L	0.87 (13)	20		
9788385	Dissolved Potassium (K)	2024/11/26	96 (12)	80 - 120	101	80 - 120	<0.2	mg/L	0.63 (13)	20		
9788385	Dissolved Sodium (Na)	2024/11/26	NC (12)	80 - 120	99	80 - 120	<0.1	mg/L	0.67 (13)	20		
9788828	Total Kjeldahl Nitrogen (TKN)	2024/11/28	98	80 - 120	95	80 - 120	<0.7	mg/L	11 (1)	20	96	80 - 120

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QUALITY ASSURANCE REPORT(CONT'D)

			Matrix Spike		SPIKED BLANK		Method Blank		RPD		QC Standard	
QC Batch	Parameter	Date	% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits	% Recovery	QC Limits
9788839	Total Ammonia-N	2024/11/28	94	75 - 125	99	80 - 120	<0.15	mg/L	NC (1)	20		

N/A = Not Applicable

Duplicate: Paired analysis of a separate portion of the same sample. Used to evaluate the variance in the measurement.

Matrix Spike: A sample to which a known amount of the analyte of interest has been added. Used to evaluate sample matrix interference.

QC Standard: A sample of known concentration prepared by an external agency under stringent conditions. Used as an independent check of method accuracy.

Spiked Blank: A blank matrix sample to which a known amount of the analyte, usually from a second source, has been added. Used to evaluate method accuracy.

Method Blank: A blank matrix containing all reagents used in the analytical procedure. Used to identify laboratory contamination.

Surrogate: A pure or isotopically labeled compound whose behavior mirrors the analytes of interest. Used to evaluate extraction efficiency.

NC (Matrix Spike): The recovery in the matrix spike was not calculated. The relative difference between the concentration in the parent sample and the spike amount was too small to permit a reliable recovery calculation (matrix spike concentration was less than the native sample concentration)

NC (Duplicate RPD): The duplicate RPD was not calculated. The concentration in the sample and/or duplicate was too low to permit a reliable RPD calculation (absolute difference <= 2x RDL).

(1) Duplicate Parent ID

(2) Duplicate Parent ID [AJRH65-02]

(3) Duplicate Parent ID [AJRH70-01]

(4) Matrix Spike Parent ID [AJRH66-01]

(5) Duplicate Parent ID [AJRH66-01]

(6) Matrix Spike Parent ID [AJRH63-04]

(7) Duplicate Parent ID [AJRH63-04]

(8) Matrix Spike Parent ID [AJRH63-05]

(9) Duplicate Parent ID [AJRH63-05]

(10) Matrix Spike Parent ID [AJRH66-04]

(11) Duplicate Parent ID [AJRH66-04]

(12) Matrix Spike Parent ID [AJRH66-03]

(13) Duplicate Parent ID [AJRH66-03]

Bureau Veritas 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.bvna.com

Microbiology testing is conducted at 6660 Campobello Rd. Chemistry testing is conducted at 6740 Campobello Rd.

Bureau Veritas Job #: C4AI543
Report Date: 2024/11/29

RWDI Inc.
Client Project #: 2402553.01
Site Location: ON07
Your P.O. #: 13254256
Sampler Initials: JA

VALIDATION SIGNATURE PAGE

The analytical data and all QC contained in this report were reviewed and validated by:

Louise Harding, Scientific Specialist

Zunaira Allem, Project Manager Assistant

Bureau Veritas has procedures in place to guard against improper use of the electronic signature and have the required "signatories", as per ISO/IEC 17025, signing the reports. For Service Group specific validation, please refer to the Validation Signatures page if included, otherwise available by request. For Department specific Analyst/Supervisor validation names, please refer to the Test Summary section if included, otherwise available by request. This report is authorized by Rodney Major, General Manager responsible for Ontario Environmental laboratory operations.

Bureau Veritas 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.bvna.com

Microbiology testing is conducted at 6660 Campobello Rd. Chemistry testing is conducted at 6740 Campobello Rd.

FIELD INFORMATION FORM

BUREAU VERITAS

WASTE MANAGEMENT

Site Name: TCC

Site No.:

Sample: GW-16+7 (Sample ID)

This Waste Management Field Information Form is Required
This form is to be completed, in addition to any State Forms. The Field Form is submitted along with the Chain of Custody Forms that accompany the sample containers (i.e. with the cooler that is returned to the laboratory).

Laboratory Use Only/Lab ID:

PURGE INFO

PURGE DATE (MM DD YY)	PURGE TIME (2400 Hr Clock)	ELAPSED HRS (hrs:min)	WATER VOL IN CASING (Gallons)	ACTUAL VOL PURGED (Gallons)	WELL VOLs PURGED
11 18 24	1140			0.50 L	

Note: For Passive Sampling, replace "Water Vol in Casing" and "Well Vols Purged" w/ Water Vol in Tubing/Flow Cell and Tubing/Flow Cell Vols Purged. Mark Changes, Record field data below.

PURGE/SAMPLE EQUIPMENT

Purging and Sampling Equipment ... Dedicated: (Y) or N

Filter Device: (Y) or N (0.45) or ____ µ (circle or fill in)

Purging Device: C — A-Submersible Pump, B-Peristaltic Pump, C-QED Bladder Pump, D-Bailer, E-Piston Pump, F-Dipper/Bottle

Sampling Device: C

Filter Type: A — A-In-line Disposable, B-Pressure, C-Vacuum, X-Other: ____

X-Other:

Sample Tube Type: A — A-Teflon, B-Stainless Steel, C-PVC, D-Polypropylene, X-Other: ____

WELL DATA

Well Elevation (at TOC) (ft/msl)	Depth to Water (DTW) (from TOC)	Groundwater Elevation (GWE) (Site Datum, from TOC) (ft msl)
	2.95 (ft)	

Total Well Depth (from TOC) (ft)	Stick Up (from ground elevation) (ft)	Casing ID (in)	Casing Material

Note: Total Depth, Stick Up, Casing ID, etc. are optional and can be from historical data, unless required by Site/Permit. Well Elevation, DTW, and GWE must be current, obtained from site.

STABILIZATION DATA (Optional)

Sample Time (2400 Hr Clock)	Rate/Unit	pH (std)	Conductance (SC/EC) (µmhos/cm @ 25°C)	Temp. (°C)	Turbidity (ntu)	D.O. (mg/L - ppm)	eH/ORP (mV)	DTW (ft)
		1st	1st					
		2nd	2nd					
		3rd	3rd					
		4th	4th					
Input Range for 3 consec. readings or Permit/State requirements:		+/-	+/-	+/-	+/-	+/-	+/-	

Stabilization Data Fields are Optional *(i.e. complete stabilization readings for parameters required by WM, Site, or State). These fields can be used where four (4) field measurements are required by State/Permit/Site. If a Data Logger or other Electronic format is used, fill in final readings below and submit electronic data separately to Site. If more fields above are needed, use separate sheet or form.*

FIELD DATA

SAMPLE DATE (MM DD YY)	pH (std)	CONDUCTANCE (µmhos/cm @ 25°C)	TEMP. (°C)	TURBIDITY (ntu)	DO (mg/L - ppm)	eH/ORP (mV)	Other: Units
11 18 24	7.1	1.40	12.9	43.9			

Final Field Readings are required *(i.e. record field measurements, final stabilized readings, passive sample readings before sampling for all field parameters required by State/Permit/Site.)*

FIELD COMMENTS

Sample Appearance: transparent — Odor: n/a — Color: n/a — Other:

Weather Conditions (required daily, or as conditions change): 11°C — Direction/Speed: 8 km/hN — Outlook: Clear — Precipitation: Y or (N)

Specific Comments (including purge/well volume calculations if required):

6 u-Dup 2 taken

Field blank completed here.

I certify that sampling procedures were in accordance with applicable EPA, State, and WM protocols (if more than one sampler, all should sign):

Date	Name	Signature	Company
11/18/24	Jake Arbitelli		R-N-D

DISTRIBUTION: WHITE/ORIGINAL - Stays with Sample, YELLOW - Returned to Client, PINK - Field Copy

Field Information Form v-3.1 06/20

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FIELD INFORMATION FORM

BUREAU VERITAS

WASTE MANAGEMENT

Site Name: TCEC

Site No.:

Sample: OU46-7 (Sample ID)

This Waste Management Field Information Form is Required
This form is to be completed, in addition to any State Forms. The Field Form is submitted along with the Chain of Custody Forms that accompany the sample containers (i.e. with the cooler that is returned to the laboratory).

Laboratory Use Only/Lab ID:

PURGE INFO

PURGE DATE (MM DD YY)	PURGE TIME (2400 Hr Clock)	ELAPSED HRS (hrs:min)	WATER VOL IN CASING (Gallons)	ACTUAL VOL PURGED (Gallons)	WELL VOLs PURGED
11/19/24	1315			0.50	

Note: For Passive Sampling, replace "Water Vol in Casing" and "Well Vols Purged" w/ Water Vol in Tubing/Flow Cell and Tubing/Flow Cell Vols Purged. Mark Changes. Record field data below.

PURGE/SAMPLE EQUIPMENT

Purging and Sampling Equipment ... Dedicated: (Y) or N

Filter Device: (Y) or N — 0.45 µ or _____ µ (circle or fill in)

Purging Device: C — A-Submersible Pump, B-Peristaltic Pump, C-QED Bladder Pump, D-Bailer, E-Piston Pump, F-Dipper/Bottle

Sampling Device: C

Filter Type: A — A-In-line Disposable, B-Pressure, C-Vacuum, X-Other: _____

X-Other:

Sample Tube Type: A — A-Teflon, B-Stainless Steel, C-PVC, D-Polypropylene, X-Other: _____

WELL DATA

Well Elevation (at TOC): _____ (ft/msl)

Depth to Water (DTW) (from TOC): 1.66 (ft)

Groundwater Elevation (GWE) (Site Datum, from TOC): _____ (ft msl)

Total Well Depth (from TOC): _____ (ft)

Stick Up (from ground elevation): _____ (ft)

Casing ID: _____ (in)

Casing Material: _____

Note: Total Depth, Stick Up, Casing ID, etc. are optional and can be from historical data, unless required by Site/Permit. Well Elevation, DTW, and GWE must be current, obtained from site.

STABILIZATION DATA (Optional)

Sample Time (2400 Hr Clock)	Rate/Unit	pH (std)	Conductance (SC/EC) (µmhos/cm @ 25°C)	Temp. (°C)	Turbidity (ntu)	D.O. (mg/L - ppm)	eH/ORP (mV)	DTW (ft)
		1st	1st					
		2nd	2nd					
		3rd	3rd					
		4th	4th					
Input Range for 3 consec. readings or Permit/State requirements:		+/-	+/-	+/-	+/-	+/-	+/-	

Stabilization Data Fields are Optional *(i.e. complete stabilization readings for parameters required by WM, Site, or State). These fields can be used where four (4) field measurements are required by State/Permit/Site. If a Data Logger or other Electronic format is used, fill in final readings below and submit electronic data separately to Site. If more fields above are needed, use separate sheet or form.*

FIELD DATA

SAMPLE DATE (MM DD YY)	pH (std)	CONDUCTANCE (µmhos/cm @ 25°C)	TEMP. (°C)	TURBIDITY (ntu)	DO (mg/L - ppm)	eH/ORP (mV)	Other: Units
11/19/24	7.2	4.72	12.0	30.7			

Final Field Readings are required *(i.e. record field measurements, final stabilized readings, passive sample readings before sampling for all field parameters required by State/Permit/Site.)*

Sample Appearance: transparent — **Odor:** N/O — **Color:** N/C — **Other:**

Weather Conditions (required daily, or as conditions change): 8°C — **Direction/Speed:** 21 km/hSE — **Outlook:** light rain — **Precipitation:** (N) or ~~Y~~

Specific Comments (including purge/well volume calculations if required):

FIELD COMMENTS

I certify that sampling procedures were in accordance with applicable EPA, State, and WM protocols (if more than one sampler, all should sign):

Date	Name	Signature	Company
11/19/24	Jake Arbikell.		Rwdi
/ /			

DISTRIBUTION: WHITE/ORIGINAL - Stays with Sample, YELLOW - Returned to Client, PINK - Field Copy

Field Information Form v-3.1 06/20

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FIELD INFORMATION FORM

BUREAU VERITAS

WASTE MANAGEMENT

Site Name: TCEC

Site No.:

Sample: 0647-6 (Sample ID)

This Waste Management Field Information Form is Required
This form is to be completed, in addition to any State Forms. The Field Form is submitted along with the Chain of Custody Forms that accompany the sample containers (i.e. with the cooler that is returned to the laboratory).

Laboratory Use Only/Lab ID:

PURGE INFO

PURGE DATE (MM DD YY)	PURGE TIME (2400 Hr Clock)	ELAPSED HRS (hrs:min)	WATER VOL IN CASING (Gallons)	ACTUAL VOL PURGED (Gallons)	WELL VOLs PURGED
11924	1450			0.50	

Note: For Passive Sampling, replace "Water Vol in Casing" and "Well Vols Purged" w/ Water Vol in Tubing/Flow Cell and Tubing/Flow Cell Vols Purged. Mark Changes, Record field data below.

PURGE/SAMPLE EQUIPMENT

Purging and Sampling Equipment ... Dedicated: (Y) or N

Filter Device: (Y) or N (0.45 µ) or _____ µ (circle or fill in)

Purging Device: C — A-Submersible Pump, B-Peristaltic Pump, C-QED Bladder Pump, D-Bailer, E-Piston Pump, F-Dipper/Bottle

Sampling Device: C

X-Other:

Filter Type: A — A-In-line Disposable, B-Pressure, C-Vacuum, X-Other: _____

Sample Tube Type: A — A-Teflon, B-Stainless Steel, C-PVC, D-Polypropylene, X-Other: _____

WELL DATA

Well Elevation (at TOC) _____ (ft/msl)

Depth to Water (DTW) (from TOC) 2.46 (ft)

Groundwater Elevation (GWE) (Site Datum, from TOC) _____ (ft msl)

Total Well Depth (from TOC) _____ (ft)

Stick Up (from ground elevation) _____ (ft)

Casing ID _____ (in)

Casing Material _____

Note: Total Depth, Stick Up, Casing ID, etc. are optional and can be from historical data, unless required by Site/Permit. Well Elevation, DTW, and GWE must be current, obtained from site.

STABILIZATION DATA (Optional)

Sample Time (2400 Hr Clock)	Rate/Unit	pH (std)	Conductance (SC/EC) (µmhos/cm @ 25°C)	Temp. (°C)	Turbidity (ntu)	D.O. (mg/L - ppm)	eH/ORP (mV)	DTW (ft)
		1st	1st					
		2nd	2nd					
		3rd	3rd					
		4th	4th					
Input Range for 3 consec. readings or Permit/State requirements:		+/-	+/-	+/-	+/-	+/-	+/-	

Stabilization Data Fields are Optional *(i.e. complete stabilization readings for parameters required by WM, Site, or State). These fields can be used where four (4) field measurements are required by State/Permit/Site. If a Data Logger or other Electronic format is used, fill in final readings below and submit electronic data separately to Site. If more fields above are needed, use separate sheet or form.*

FIELD DATA

SAMPLE DATE (MM DD YY)	pH (std)	CONDUCTANCE (µmhos/cm @ 25°C)	TEMP. (°C)	TURBIDITY (ntu)	DO (mg/L - ppm)	eH/ORP (mV)	Other: Units
11924	7.05	4.57	11.8	18.6			

Final Field Readings are required *(i.e. record field measurements, final stabilized readings, passive sample readings before sampling for all field parameters required by State/Permit/Site.)*

FIELD COMMENTS

Sample Appearance: transparent **Odor:** N/O **Color:** n/c **Other:**

Weather Conditions (required daily, or as conditions change): 11°C **Direction/Speed:** 21 Km/h SE **Outlook:** Rain **Precipitation:** (Y) or N

Specific Comments (including purge/well volume calculations if required):

I certify that sampling procedures were in accordance with applicable EPA, State, and WM protocols (if more than one sampler, all should sign):

Date	Name	Signature	Company
11/19/24	John A. Tickell		KWBE
/ /			

DISTRIBUTION: WHITE/ORIGINAL - Stays with Sample, YELLOW - Returned to Client, PINK - Field Copy

Field Information Form v.3.1 06/20

2006

FIELD INFORMATION FORM

BUREAU VERITAS

WASTE MANAGEMENT

Site Name: TCCC

Site No.:

Sample: OW54-10 (Sample ID)

This Waste Management Field Information Form is Required
This form is to be completed, in addition to any State Forms. The Field Form is submitted along with the Chain of Custody Forms that accompany the sample containers (i.e. with the cooler that is returned to the laboratory).

Laboratory Use Only/Lab ID:

PURGE INFO

PURGE DATE (MM DD YY)	PURGE TIME (2400 Hr Clock)	ELAPSED HRS (hrs:min)	WATER VOL IN CASING (Gallons)	ACTUAL VOL PURGED (Gallons)	WELL VOLs PURGED
11/18/24	1440			0.80	

Note: For Passive Sampling, replace "Water Vol in Casing" and "Well Vols Purged" w/ Water Vol in Tubing/Flow Cell and Tubing/Flow Cell Vols Purged. Mark Changes, Record field data below.

PURGE/SAMPLE EQUIPMENT

Purging and Sampling Equipment ... Dedicated: Y or N

Purging Device: C

Sampling Device: C

X-Other:

A-Submersible Pump; B-Peristaltic Pump; C-QED Bladder Pump; D-Bailer; E-Piston Pump; F-Dipper/Bottle

Filter Device: Y or N — 0.45 µ or ____ µ (circle or fill in)

Filter Type: A (A-In-line Disposable; B-Pressure; C-Vacuum; X-Other: ____)

Sample Tube Type: A (A-Teflon; B-Stainless Steel; C-PVC; D-Polypropylene; X-Other: ____)

WELL DATA

Well Elevation (at TOC): ____ (ft/msl)

Depth to Water (DTW) (from TOC): 41.94 (ft)

Groundwater Elevation (GWE) (Site Datum, from TOC): ____ (ft msl)

Total Well Depth (from TOC): ____ (ft)

Stick Up (from ground elevation): ____ (ft)

Casing ID: ____ (in)

Casing Material: ____

Note: Total Depth, Stick Up, Casing ID, etc. are optional and can be from historical data, unless required by Site/Permit. Well Elevation, DTW, and GWE must be current, obtained from site.

STABILIZATION DATA (Optional)

Sample Time (2400 Hr Clock)	Rate/Unit	pH (std)	Conductance (SC/EC) (µmhos/cm @ 25°C)	Temp. (°C)	Turbidity (ntu)	D.O. (mg/L - ppm)	eH/ORP (mV)	DTW (ft)
		1st	1st					
		2nd	2nd					
		3rd	3rd					
		4th	4th					
Input Range for 3 consec. readings or Permit/State requirements:		+/-	+/-	+/-	+/-	+/-	+/-	

Stabilization Data Fields are Optional *(i.e. complete stabilization readings for parameters required by WM, Site, or State). These fields can be used where four (4) field measurements are required by State/Permit/Site. If a Data Logger or other Electronic format is used, fill in final readings below and submit electronic data separately to Site. If more fields above are needed, use separate sheet or form.*

FIELD DATA

SAMPLE DATE (MM DD YY)	pH (std)	CONDUCTANCE (µmhos/cm @ 25°C)	TEMP. (°C)	TURBIDITY (ntu)	DO (mg/L - ppm)	eH/ORP (mV)	Other: Units
11/18/24	7.5	2.61	12.1	62.2 4.44			

Final Field Readings are required *(i.e. record field measurements, final stabilized readings, passive sample readings before sampling for all field parameters required by State/Permit/Site.)*

FIELD COMMENTS

Sample Appearance: transparent — Odor: N/O — Color: N/C — Other: ____

Weather Conditions (required daily, or as conditions change): 40C — Direction/Speed: Steady — Outlook: Clear — Precipitation: Y or N

Specific Comments (including purge/well volume calculations if required): ____

I certify that sampling procedures were in accordance with applicable EPA, State, and WM protocols (if more than one sampler, all should sign):

Date	Name	Signature	Company
11/18/24	Jake Arbibi		KWDI

DISTRIBUTION: WHITE/ORIGINAL - Stays with Sample, YELLOW - Returned to Client, PINK - Field Copy

Field Information Form v.3.1 06/20

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FIELD INFORMATION FORM

BUREAU VERITAS

WASTE MANAGEMENT

Site Name: TCC

Site No.:

Sample: OU5-15
Sample ID

This Waste Management Field Information Form is Required
This form is to be completed, in addition to any State Forms. The Field Form is submitted along with the Chain of Custody Forms that accompany the sample containers (i.e. with the cooler that is returned to the laboratory).

Laboratory Use Only/Lab ID:

PURGE INFO

PURGE DATE (MM DD YY)	PURGE TIME (2400 Hr Clock)	ELAPSED HRS (hrs:min)	WATER VOL IN CASING (Gallons)	ACTUAL VOL PURGED (Gallons)	WELL VOLs PURGED
11/9/24	1215			1.00	

Note: For Passive Sampling, replace "Water Vol in Casing" and "Well Vols Purged" w/ Water Vol in Tubing/Flow Cell and Tubing/Flow Cell Vols Purged. Mark Changes, Record field data below.

PURGE/SAMPLE EQUIPMENT

Purging and Sampling Equipment ... Dedicated: (Y) or N

Filter Device: (Y) or N — (0.45 µ) or ____ µ (circle or fill in)

Purging Device: C
Sampling Device: C
X-Other:

A-Submersible Pump, B-Peristaltic Pump, C-QED Bladder Pump, D-Bailer, E-Piston Pump, F-Dipper/Bottle

Filter Type: A — A-In-line Disposable, B-Pressure, C-Vacuum, X-Other: ____

Sample Tube Type: A — A-Teflon, B-Stainless Steel, C-PVC, D-Polypropylene, X-Other: ____

WELL DATA

Well Elevation (at TOC) (ft/msl)	Depth to Water (DTW) (from TOC)	Groundwater Elevation (GWE) (Site Datum, from TOC) (ft msl)
	2.35 M (ft)	

Total Well Depth (from TOC) (ft)	Stick Up (from ground elevation) (ft)	Casing ID (in)	Casing Material

Note: Total Depth, Stick Up, Casing ID, etc. are optional and can be from historical data, unless required by Site/Permit. Well Elevation, DTW, and GWE must be current, obtained from site.

STABILIZATION DATA (Optional)

Sample Time (2400 Hr Clock)	Rate/Unit	pH (std)	Conductance (SC/EC) (µmhos/cm @ 25°C)	Temp. (°C)	Turbidity (ntu)	D.O. (mg/L - ppm)	eH/ORP (mV)	DTW (ft)
		1st	1st					
		2nd	2nd					
		3rd	3rd					
		4th	4th					
Input Range for 3 consec. readings or Permit/State requirements:		+/-	+/-	+/-	+/-	+/-	+/-	

Stabilization Data Fields are Optional *(i.e. complete stabilization readings for parameters required by WM, Site, or State). These fields can be used where four (4) field measurements are required by State/Permit/Site. If a Data Logger or other Electronic format is used, fill in final readings below and submit electronic data separately to Site. If more fields above are needed, use separate sheet or form.*

FIELD DATA

SAMPLE DATE (MM DD YY)	pH (std)	CONDUCTANCE (µmhos/cm @ 25°C)	TEMP. (°C)	TURBIDITY (ntu)	DO (mg/L - ppm)	eH/ORP (mV)	Other: Units
11/9/24	8.0	3.07	11.2	25.4			

Final Field Readings are required *(i.e. record field measurements, final stabilized readings, passive sample readings before sampling for all field parameters required by State/Permit/Site.)*

FIELD COMMENTS

Sample Appearance: transparent — Odor: N/O — Color: N/C — Other:

Weather Conditions (required daily, or as conditions change): 9°C — Direction/Speed: 27 km/SE — Outlook: Overcast — Precipitation: Y or (N)

Specific Comments (including purge/well volume calculations if required):

I certify that sampling procedures were in accordance with applicable EPA, State, and WM protocols (if more than one sampler, all should sign):

Date	Name	Signature	Company
11/17/24	Jake Arbick		RWDI

DISTRIBUTION: WHITE/ORIGINAL - Stays with Sample, YELLOW - Returned to Client, PINK - Field Copy

Field Information Form v-3.1 06/20

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FIELD INFORMATION FORM

BUREAU VERITAS

WASTE MANAGEMENT

Site Name: TCC

Site No.: Sample: 04581-17 (Sample ID)

This Waste Management Field Information Form is Required
This form is to be completed, in addition to any State Forms. The Field Form is submitted along with the Chain of Custody Forms that accompany the sample containers (i.e. with the cooler that is returned to the laboratory).

Laboratory Use Only/Lab ID:

PURGE INFO

PURGE DATE (MM DD YY)	PURGE TIME (2400 Hr Clock)	ELAPSED HRS (hrs:min)	WATER VOL IN CASING (Gallons)	ACTUAL VOL PURGED (Gallons)	WELL VOLs PURGED
111924	1155			1.25	

Note: For Passive Sampling, replace "Water Vol in Casing" and "Well Vols Purged" w/ Water Vol in Tubing/Flow Cell and Tubing/Flow Cell Vols Purged. Mark Changes, Record field data below.

PURGE/SAMPLE EQUIPMENT

Purging and Sampling Equipment ... Dedicated: [Y] or [N]

Filter Device: [Y] or [N] [0.45 µ] or [ ] µ (circle or fill in)

Purging Device: C — A-Submersible Pump, B-Peristaltic Pump, C-QED Bladder Pump, D-Bailer, E-Piston Pump, F-Dipper/Bottle

Sampling Device: C

Filter Type: A — A-In-line Disposable, B-Pressure, C-Vacuum, X-Other:

X-Other:

Sample Tube Type: A — A-Teflon, B-Stainless Steel, C-PVC, D-Polypropylene, X-Other:

WELL DATA

Well Elevation (at TOC) (ft/msl)	Depth to Water (DTW) (from TOC) (ft)	Groundwater Elevation (GWE) (Site Datum, from TOC) (ft msl)
	41.21 A	

Total Well Depth (from TOC) (ft)	Stick Up (from ground elevation) (ft)	Casing ID (in)	Casing Material

Note: Total Depth, Stick Up, Casing ID, etc. are optional and can be from historical data, unless required by Site/Permit. Well Elevation, DTW, and GWE must be current, obtained from site.

STABILIZATION DATA (Optional)

Sample Time (2400 Hr Clock)	Rate/Unit	pH (std)	Conductance (SC/EC) (µmhos/cm @ 25°C)	Temp. (°C)	Turbidity (ntu)	D.O. (mg/L - ppm)	eH/ORP (mV)	DTW (ft)
		1st	1st					
		2nd	2nd					
		3rd	3rd					
		4th	4th					
Input Range for 3 consec. readings or Permit/State requirements:		+/-	+/-	+/-	+/-	+/-	+/-	

Stabilization Data Fields are Optional *(i.e. complete stabilization readings for parameters required by WM, Site, or State). These fields can be used where four (4) field measurements are required by State/Permit/Site. If a Data Logger or other Electronic format is used, fill in final readings below and submit electronic data separately to Site. If more fields above are needed, use separate sheet or form.*

FIELD DATA

SAMPLE DATE (MM DD YY)	pH (std)	CONDUCTANCE (µmhos/cm @ 25°C)	TEMP. (°C)	TURBIDITY (ntu)	DO (mg/L - ppm)	eH/ORP (mV)	Other: Units
111924	7.77 M	3.88	11.4	20.9			

Final Field Readings are required *(i.e. record field measurements, final stabilized readings, passive sample readings before sampling for all field parameters required by State/Permit/Site.)*

FIELD COMMENTS

Sample Appearance: transferent Odor: NO Color: NIC Other:

Weather Conditions (required daily, or as conditions change): 10°C Direction/Speed: 25Kn/45E Outlook: Overcast Precipitation: Y or N

Specific Comments (including purge/well volume calculations if required):

I certify that sampling procedures were in accordance with applicable EPA, State, and WM protocols (if more than one sampler, all should sign):

Date	Name	Signature	Company
9/19/24	Jake Arbibell		FWPE

DISTRIBUTION: WHITE/ORIGINAL - Stays with Sample, YELLOW - Returned to Client, PINK - Field Copy

Field Information Form v-3.1 06/20

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FIELD INFORMATION FORM

BUREAU VERITAS

WASTE MANAGEMENT

Site Name: TCC

Site No.:

Sample: GW67-11

Sample ID

This Waste Management Field Information Form is Required
This form is to be completed, in addition to any State Forms. The Field Form is submitted along with the Chain of Custody Forms that accompany the sample containers (i.e. with the cooler that is returned to the laboratory).

Laboratory Use Only/Lab ID:

PURGE INFO

PURGE DATE (MM DD YY)	PURGE TIME (2400 Hr Clock)	ELAPSED HRS (hrs:min)	WATER VOL IN CASING (Gallons)	ACTUAL VOL PURGED (Gallons)	WELL VOLs PURGED
	14:10			0.75	

Note: For Passive Sampling, replace "Water Vol in Casing" and "Well Vols Purged" w/ Water Vol in Tubing/Flow Cell and Tubing/Flow Cell Vols Purged. Mark Changes, Record field data below.

PURGE/SAMPLE EQUIPMENT

Purging and Sampling Equipment ... Dedicated: (Y) or N

Filter Device: (Y) or N — 0.45 µ or ____ µ (circle or fill in)

Purging Device: C — A-Submersible Pump, B-Peristaltic Pump, C-QED Bladder Pump, D-Bailer, E-Piston Pump, F-Dipper/Bottle

Sampling Device: C

Filter Type: A — A-In-line Disposable, B-Pressure, C-Vacuum, X-Other: ____

X-Other:

Sample Tube Type: A — A-Teflon, B-Stainless Steel, C-PVC, D-Polypropylene, X-Other: ____

WELL DATA

Well Elevation (at TOC): ____ (ft/msl)

Depth to Water (DTW) (from TOC): 4.79 (ft)

Groundwater Elevation (GWE) (Site Datum, from TOC): ____ (ft msl)

Total Well Depth (from TOC): ____ (ft)

Stick Up (from ground elevation): ____ (ft)

Casing ID: ____ (in)

Casing Material: ____

Note: Total Depth, Stick Up, Casing ID, etc. are optional and can be from historical data, unless required by Site/Permit. Well Elevation, DTW, and GWE must be current, obtained from site.

STABILIZATION DATA (Optional)

Sample Time (2400 Hr Clock)	Rate/Unit	pH (std)	Conductance (SC/EC) (µmhos/cm @ 25°C)	Temp. (°C)	Turbidity (ntu)	D.O. (mg/L - ppm)	eH/ORP (mV)	DTW (ft)
		1st	1st					
		2nd	2nd					
		3rd	3rd					
		4th	4th					
Input Range for 3 consec. readings or Permit/State requirements:		+/-	+/-	+/-	+/-	+/-	+/-	

Stabilization Data Fields are Optional *(i.e. complete stabilization readings for parameters required by WM, Site, or State). These fields can be used where four (4) field measurements are required by State/Permit/Site. If a Data Logger or other Electronic format is used, fill in final readings below and submit electronic data separately to Site. If more fields above are needed, use separate sheet or form.*

FIELD DATA

SAMPLE DATE (MM DD YY)	pH (std)	CONDUCTANCE (µmhos/cm @ 25°C)	TEMP. (°C)	TURBIDITY (ntu)	DO (mg/L - ppm)	eH/ORP (mV)	Other: Units
111824	7.04	1.473	16.1	79.01			

Final Field Readings are required *(i.e. record field measurements, final stabilized readings, passive sample readings before sampling for all field parameters required by State/Permit/Site.)*

FIELD COMMENTS

Sample Appearance: opaque — Odor: Sulfur — Color: Black — Other: ____

Weather Conditions (required daily, or as conditions change): 11°C — Direction/Speed: 7 km/h N — Outlook: clear — Precipitation: Y or (N)

Specific Comments (including purge/well volume calculations if required): ____

I certify that sampling procedures were in accordance with applicable EPA, State, and WM protocols (if more than one sampler, all should sign):

Date	Name	Signature	Company
11/18/24	Jake Arthabb		RWPE
/ /			

DISTRIBUTION: WHITE/ORIGINAL - Stays with Sample, YELLOW - Returned to Client, PINK - Field Copy

Field Information Form v-3.1 06/20

2185

BUREAU VERITAS

FIELD INFORMATION FORM

WASTE MANAGEMENT

Site Name: TCE

Site No.:

Sample: GW72-10 (Sample ID)

This Waste Management Field Information Form is Required
This form is to be completed, in addition to any State Forms. The Field Form is submitted along with the Chain of Custody Forms that accompany the sample containers (i.e. with the cooler that is returned to the laboratory).

Laboratory Use Only/Lab ID:

PURGE INFO

PURGE DATE (MM DD YY)	PURGE TIME (2400 Hr Clock)	ELAPSED HRS (hrs:min)	WATER VOL IN CASING (Gallons)	ACTUAL VOL PURGED (Gallons)	WELL VOLs PURGED
11/18/24	1525			0.75	

Note: For Passive Sampling, replace "Water Vol in Casing" and "Well Vols Purged" w/ Water Vol in Tubing/Flow Cell and Tubing/Flow Cell Vols Purged. Mark Changes, Record field data below.

PURGE/SAMPLE EQUIPMENT

Purging and Sampling Equipment ... Dedicated: (Y) or N

Filter Device: (Y) or N (0.45µ) or ____ µ (circle or fill in)

Purging Device: C — A-Submersible Pump, B-Peristaltic Pump, C-QED Bladder Pump, D-Bailer, E-Piston Pump, F-Dipper/Bottle

Sampling Device: C

Filter Type: A — A-In-line Disposable, B-Pressure, C-Vacuum, X-Other: ____

X-Other:

Sample Tube Type: A — A-Teflon, B-Stainless Steel, C-PVC, D-Polypropylene, X-Other: ____

WELL DATA

Well Elevation (at TOC)	Depth to Water (DTW) (from TOC)	Groundwater Elevation (GWE) (Site Datum, from TOC)
(ft/msl)	4.51 (ft)	(ft msl)

Total Well Depth (from TOC)	Stick Up (from ground elevation)	Casing ID	Casing Material
(ft)	(ft)	(in)	

Note: Total Depth, Stick Up, Casing ID, etc. are optional and can be from historical data, unless required by Site/Permit. Well Elevation, DTW, and GWE must be current, obtained from site.

STABILIZATION DATA (Optional)

Sample Time (2400 Hr Clock)	Rate/Unit	pH (std)	Conductance (SC/EC) (µmhos/cm @ 25°C)	Temp. (°C)	Turbidity (ntu)	D.O. (mg/L - ppm)	eH/ORP (mV)	DTW (ft)
		1st	1st					
		2nd	2nd					
		3rd	3rd					
		4th	4th					
Input Range for 3 consec. readings or Permit/State requirements:		+/-	+/-	+/-	+/-	+/-	+/-	

Stabilization Data Fields are Optional *(i.e. complete stabilization readings for parameters required by WM, Site, or State). These fields can be used where four (4) field measurements are required by State/Permit/Site. If a Data Logger or other Electronic format is used, fill in final readings below and submit electronic data separately to Site. If more fields above are needed, use separate sheet or form.*

FIELD DATA

SAMPLE DATE (MM DD YY)	pH (std)	CONDUCTANCE (µmhos/cm @ 25°C)	TEMP. (°C)	TURBIDITY (ntu)	DO (mg/L - ppm)	eH/ORP (mV)	Other: Units
11/18/24	7.5	MS 2076	11.00	2.84			

Final Field Readings are required *(i.e. record field measurements, final stabilized readings, passive sample readings before sampling for all field parameters required by State/Permit/Site.)*

FIELD COMMENTS

Sample Appearance: transparent — Odor: N/O — Color: N/C — Other:

Weather Conditions (required daily, or as conditions change): 11°C — Direction/Speed: 8km/h N — Outlook: clear — Precipitation: Y or (N)

Specific Comments (including purge/well volume calculations if required):

I certify that sampling procedures were in accordance with applicable EPA, State, and WM protocols (if more than one sampler, all should sign):

Date	Name	Signature	Company
11/18/24	Jake Arlich		RVOI
/ /			

DISTRIBUTION: WHITE/ORIGINAL - Stays with Sample, YELLOW - Returned to Client, PINK - Field Copy

Field Information Form v-3.1 06/20

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FIELD INFORMATION FORM

BUREAU VERITAS

WASTE MANAGEMENT

Site Name: TLEC

Site No.: Sample: GW-73-9 (Sample ID)

This Waste Management Field Information Form is Required
This form is to be completed, in addition to any State Forms. The Field Form is submitted along with the Chain of Custody Forms that accompany the sample containers (i.e. with the cooler that is returned to the laboratory).

Laboratory Use Only/Lab ID:

PURGE INFO

PURGE DATE (MM DD YY)	PURGE TIME (2400 Hr Clock)	ELAPSED HRS (hrs:min)	WATER VOL IN CASING (Gallons)	ACTUAL VOL PURGED (Gallons)	WELL VOLs PURGED
11 18 24	1555			6.75	

Note: For Passive Sampling, replace "Water Vol in Casing" and "Well Vols Purged" w/ Water Vol in Tubing/Flow Cell and Tubing/Flow Cell Vols Purged. Mark Changes, Record field data below.

PURGE/SAMPLE EQUIPMENT

Purging and Sampling Equipment ... Dedicated: (Y) or N

Purging Device: C — A-Submersible Pump, B-Peristaltic Pump, C-QED Bladder Pump, D-Bailer, E-Piston Pump, F-Dipper/Bottle

Sampling Device: C

X-Other:

Filter Device: Y or N — 0.45 µ or _____ µ (circle or fill in)

Filter Type: A — A-In-line Disposable, B-Pressure, C-Vacuum, X-Other: _____

Sample Tube Type: A — A-Teflon, B-Stainless Steel, C-PVC, D-Polypropylene, X-Other: _____

WELL DATA

Well Elevation (at TOC) (ft/msl)	Depth to Water (DTW) (from TOC)	Groundwater Elevation (GWE) (Site Datum, from TOC) (ft msl)
	3.81 (ft)	

Total Well Depth (from TOC) (ft)	Stick Up (from ground elevation) (ft)	Casing ID (in)	Casing Material

Note: Total Depth, Stick Up, Casing ID, etc. are optional and can be from historical data, unless required by Site/Permit. Well Elevation, DTW, and GWE must be current, obtained from site.

STABILIZATION DATA (Optional)

Sample Time (2400 Hr Clock)	Rate/Unit	pH (std)	Conductance (SC/EC) (µmhos/cm @ 25°C)	Temp. (°C)	Turbidity (ntu)	D.O. (mg/L - ppm)	eH/ORP (mV)	DTW (ft)
		1st	1st					
		2nd	2nd					
		3rd	3rd					
		4th	4th					
Input Range for 3 consec. readings or Permit/State requirements:		+/-	+/-	+/-	+/-	+/-	+/-	

Stabilization Data Fields are Optional *(i.e. complete stabilization readings for parameters required by WM, Site, or State). These fields can be used where four (4) field measurements are required by State/Permit/Site. If a Data Logger or other Electronic format is used, fill in final readings below and submit electronic data separately to Site. If more fields above are needed, use separate sheet or form.*

FIELD DATA

SAMPLE DATE (MM DD YY)	pH (std)	CONDUCTANCE (µmhos/cm @ 25°C)	TEMP. (°C)	TURBIDITY (ntu)	DO (mg/L - ppm)	eH/ORP (mV)	Other: _____ Units _____
11 18 24	7.7	3.99	10.1	48.7			

Final Field Readings are required *(i.e. record field measurements, final stabilized readings, passive sample readings before sampling for all field parameters required by State/Permit/Site.)*

Sample Appearance: Transparent — Odor: NO — Color: N/C — Other: _____

Weather Conditions (required daily, or as conditions change): 11°C — Direction/Speed: 6Km/h NW — Outlook: partly cloudy — Precipitation: Y or (N)

Specific Comments (including purge/well volume calculations if required): _____

FIELD COMMENTS

I certify that sampling procedures were in accordance with applicable EPA, State, and WM protocols (if more than one sampler, all should sign):

Date	Name	Signature	Company
11/18/24	Jake Artikelb		KWDI

DISTRIBUTION: WHITE/ORIGINAL - Stays with Sample, YELLOW - Returned to Client, PINK - Field Copy

Field Information Form v-3.1 06/20

2190

Custody Tracking Form

T999203-H

Please use this form for custody tracking when submitting the work instructions via eCOC (electronic Chain of Custody). Please ensure your form has a barcode or a Bureau Veritas eCOC confirmation number in the top right hand side. This number links your electronic submission to your samples. This form should be placed in the cooler with your samples.

First Sample: OW16-7
Last Sample: OW73-9
Sample Count: 11

Relinquished By				Received By			
J. Artibelli		Date	21/11/24			Date	21/11/24
		Time (24 HR)	10:00			Time (24 HR)	1010
		Date				Date	
		Time (24 HR)				Time (24 HR)	
		Date				Date	
		Time (24 HR)				Time (24 HR)	

Unless otherwise agreed to, submissions and use of services are governed by Bureau Veritas' standard terms and conditions which can be found at www.bvna.com.

Triage Information

Sampled By (Print): J. Artibelli

# of Coolers/Pkgs: 2

Rush ☐ Immediate Test ☐ Food Residue ☐

Micro ☐ Food Chemistry ☐

*** LABORATORY USE ONLY ***

Received At: Mississauga L

Labeled By: [illegible]

21-Nov-24 10:10
Patricia Legette
C4AI543

Verified By: 18K ENV-564

Custody Seal		Cooling Media	Temperature °C		
Present (Y/N)	Intact (Y/N)	Present (Y/N)	1	2	3
Y	Y	Y	6	5	6
Y	Y	Y	5	6	6
Drinking Water Metals Preservation Check Done (Circle)				YES	NO

COR FCD-00383/4

Page 1 of 1

Your P.O. #: 13254256
Your Project #: 2402553.01
Site#: 200
Site Location: ON07
Your C.O.C. #: 999184

Attention: Khalid Hussein - Twin Creeks

RWDI Inc.
600 Southgate Drive
Guelph, ON
Canada N1G 4P6

Report Date: 2024/12/02
Report #: R8428327
Version: 1 - Final

CERTIFICATE OF ANALYSIS

BUREAU VERITAS JOB #: C4AI593
Received: 2024/11/21, 10:10

Sample Matrix: Water
Samples Received: 17

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Analytical Method
Alkalinity	7	N/A	2024/11/26	CAM SOP-00448	SM 24 2320 B m
Alkalinity	8	N/A	2024/11/27	CAM SOP-00448	SM 24 2320 B m
Alkalinity	1	N/A	2024/11/29	CAM SOP-00448	SM 24 2320 B m
Chloride by Automated Colourimetry	15	N/A	2024/11/28	CAM SOP-00463	SM 24 4500-Cl E m
Chloride by Automated Colourimetry	1	N/A	2024/11/29	CAM SOP-00463	SM 24 4500-Cl E m
Conductance in Water - On-site	16	N/A	2024/11/28		
Conductivity	16	N/A	2024/11/26	CAM SOP-00414	SM 24 2510 m
Dissolved Organic Carbon (DOC) (1)	16	N/A	2024/11/26	CAM SOP-00446	SM 24 5310 B m
Dissolved Metals by ICPMS	12	N/A	2024/11/27	CAM SOP-00447	EPA 6020B m
Dissolved Metals by ICPMS	3	N/A	2024/11/28	CAM SOP-00447	EPA 6020B m
Dissolved Metals by ICPMS	1	N/A	2024/11/29	CAM SOP-00447	EPA 6020B m
Ammonia-N	16	N/A	2024/11/28	CAM SOP-00441	USGS I-2522-90 m
Nitrate & Nitrite as Nitrogen in Water (2)	16	N/A	2024/11/25	CAM SOP-00440	SM 24 4500-NO3I/NO2B
pH (3)	16	2024/11/23	2024/11/26	CAM SOP-00413	SM 24th - 4500H+ B
Field Measured pH (4)	16	N/A	2024/11/28		Field pH Meter
Sulphate by Automated Turbidimetry	15	N/A	2024/11/28	CAM SOP-00464	SM 24 4500-SO42- E m
Sulphate by Automated Turbidimetry	1	N/A	2024/11/29	CAM SOP-00464	SM 24 4500-SO42- E m
Total Dissolved Solids	16	2024/11/23	2024/11/25	CAM SOP-00428	SM 24 2540C m
Field Temperature (4)	16	N/A	2024/11/28		Field Thermometer
Total Kjeldahl Nitrogen in Water	14	2024/11/25	2024/11/27	CAM SOP-00938	SM 4500-N B m
Total Kjeldahl Nitrogen in Water	1	2024/11/26	2024/11/27	CAM SOP-00938	SM 4500-N B m
Total Kjeldahl Nitrogen in Water	1	2024/11/26	2024/11/28	CAM SOP-00938	SM 4500-N B m
Turbidity - On-site	16	N/A	2024/11/28		
Volatile Organic Compounds in Water	3	N/A	2024/11/25	CAM SOP-00228	EPA 8260D

Remarks:

Bureau Veritas is accredited to ISO/IEC 17025 for specific parameters on scopes of accreditation. Unless otherwise noted, procedures used by Bureau Veritas are based upon recognized Provincial, Federal or US method compendia such as CCME, EPA, APHA or the Quebec Ministry of Environment.

All work recorded herein has been done in accordance with procedures and practices ordinarily exercised by professionals in Bureau Veritas' profession using accepted testing methodologies, quality assurance and quality control procedures (except where otherwise agreed by the client and Bureau Veritas in

Your P.O. #: 13254256
Your Project #: 2402553.01
Site#: 200
Site Location: ON07
Your C.O.C. #: 999184

Attention: Khalid Hussein - Twin Creeks

RWDI Inc.
600 Southgate Drive
Guelph, ON
Canada N1G 4P6

Report Date: 2024/12/02
Report #: R8428327
Version: 1 - Final

CERTIFICATE OF ANALYSIS

BUREAU VERITAS JOB #: C4AI593
Received: 2024/11/21, 10:10

writing). All data is in statistical control and has met quality control and method performance criteria unless otherwise noted. All method blanks are reported; unless indicated otherwise, associated sample data are not blank corrected. Where applicable, unless otherwise noted, Measurement Uncertainty has not been accounted for when stating conformity to the referenced standard.

Bureau Veritas liability is limited to the actual cost of the requested analyses, unless otherwise agreed in writing. There is no other warranty expressed or implied. Bureau Veritas has been retained to provide analysis of samples provided by the Client using the testing methodology referenced in this report. Interpretation and use of test results are the sole responsibility of the Client and are not within the scope of services provided by Bureau Veritas, unless otherwise agreed in writing. Bureau Veritas is not responsible for the accuracy or any data impacts, that result from the information provided by the customer or their agent.

Solid sample results, except biota, are based on dry weight unless otherwise indicated. Organic analyses are not recovery corrected except for isotope dilution methods.
Results relate to samples tested. When sampling is not conducted by Bureau Veritas, results relate to the supplied samples tested.
This Certificate shall not be reproduced except in full, without the written approval of the laboratory.
Reference Method suffix “m” indicates test methods incorporate validated modifications from specific reference methods to improve performance.
* RPDs calculated using raw data. The rounding of final results may result in the apparent difference.
(1) Dissolved Organic Carbon (DOC) present in the sample should be considered as non-purgeable DOC.
(2) Values for calculated parameters may not appear to add up due to rounding of raw data and significant figures.
(3) "The CCME method and Analytical Protocol (O. Reg 153/04, O. Reg. 406/19) requires pH to be analyzed within 15 minutes of sampling and therefore field analysis is required for compliance. All Laboratory pH analyses in this report are reported past the CCME and Analytical Protocol (O. Reg 153/04, O. Reg. 406/19) holding time. Bureau Veritas endeavors to analyze samples as soon as possible after receipt."

(4) This is a field test, therefore, the results relate to items that were not analysed at Bureau Veritas.

Encryption Key

Please direct all questions regarding this Certificate of Analysis to:
Patricia Legette, Project Manager
Email: Patricia.Legette@bureauveritas.com
Phone# (905)817-5799

==========

Bureau Veritas has procedures in place to guard against improper use of the electronic signature and have the required "signatories", as per ISO/IEC 17025, signing the reports. For Service Group specific validation, please refer to the Validation Signatures page if included, otherwise available by request. For Department specific Analyst/Supervisor validation names, please refer to the Test Summary section if included, otherwise available by request. This report is authorized by Rodney Major, General Manager responsible for Ontario Environmental laboratory operations.

Bureau Veritas 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.bvna.com

Microbiology testing is conducted at 6660 Campobello Rd. Chemistry testing is conducted at 6740 Campobello Rd.

Bureau Veritas Job #: C4AI593
Report Date: 2024/12/02

RWDI Inc.
Client Project #: 2402553.01
Site Location: ON07
Your P.O. #: 13254256
Sampler Initials: JA

RESULTS OF ANALYSES OF WATER

Bureau Veritas ID		AJRK73		AJRK74			AJRK75		AJRK76		
Sampling Date		2024/11/18 10:55		2024/11/18 10:55			2024/11/19 13:00		2024/11/18 14:50		
COC Number		999184		999184			999184		999184		
	UNITS	OW16-6	QC Batch	GWDUP-1	RDL	QC Batch	OW17-4	QC Batch	OW54A-4	RDL	QC Batch
Field Measurements											
Field Conductivity	uS/cm	2130	ONSITE	2130	N/A	ONSITE	3310	ONSITE	1180	N/A	ONSITE
Field Temperature	Celsius	12.7	ONSITE	12.7	N/A	ONSITE	12.8	ONSITE	12.6	N/A	ONSITE
Field Measured Field Turbidity	NTU	9.91	ONSITE	9.91	N/A	ONSITE	22.9	ONSITE	36.7	N/A	ONSITE
Field Measured pH	pH	7.1	ONSITE	7.1		ONSITE	7.2	ONSITE	7.3		ONSITE
Inorganics											
Total Ammonia-N	mg/L	<0.15	9788839	<0.15	0.15	9788839	<0.15	9786727	3.74	0.15	9788839
Conductivity	umho/cm	1900	9785261	1900	1.0	9785257	2900	9785261	2300	1.0	9785257
Total Dissolved Solids	mg/L	1220	9784823	1250	10	9784823	3720	9784823	1710	10	9784823
Total Kjeldahl Nitrogen (TKN)	mg/L	<0.7	9786509	<0.7	0.7	9786509	<0.7	9786509	4.3	0.7	9786509
Dissolved Organic Carbon	mg/L	8.7	9786705	4.7	0.4	9786705	3.3	9786705	12	0.4	9786705
pH	pH	7.87	9785262	8.12		9785256	7.75	9785262	7.98		9785256
Dissolved Sulphate (SO4)	mg/L	350	9785291	350	1.0	9785291	1400	9785291	660	5.0	9785289
Alkalinity (Total as CaCO3)	mg/L	320	9785259	610	1.0	9785255	420	9785259	670	1.0	9785255
Dissolved Chloride (Cl-)	mg/L	47	9785290	46	1.0	9785290	23	9785290	23	1.0	9785288
Nitrate (N)	mg/L	0.15	9785235	0.15	0.10	9785235	0.14	9785235	<0.10	0.10	9785235

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
N/A = Not Applicable

Bureau Veritas 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.bvna.com

Microbiology testing is conducted at 6660 Campobello Rd. Chemistry testing is conducted at 6740 Campobello Rd.

Bureau Veritas Job #: C4AI593
Report Date: 2024/12/02

RWDI Inc.
Client Project #: 2402553.01
Site Location: ON07
Your P.O. #: 13254256
Sampler Initials: JA

RESULTS OF ANALYSES OF WATER

Bureau Veritas ID		AJRK77			AJRK78			AJRK79		
Sampling Date		2024/11/19 14:30			2024/11/19 12:05			2024/11/19 10:45		
COC Number		999184			999184			999184		
	UNITS	Ow56-4	RDL	QC Batch	OW57-4	RDL	QC Batch	OW58-6	RDL	QC Batch
Field Measurements										
Field Conductivity	uS/cm	4280	N/A	ONSITE	3540	N/A	ONSITE	3680	N/A	ONSITE
Field Temperature	Celsius	12.4	N/A	ONSITE	12.1	N/A	ONSITE	12.5	N/A	ONSITE
Field Measured Field Turbidity	NTU	313	N/A	ONSITE	3.22	N/A	ONSITE	4.33	N/A	ONSITE
Field Measured pH	pH	7.2		ONSITE	7.0		ONSITE	7.2		ONSITE
Inorganics										
Total Ammonia-N	mg/L	0.76	0.15	9788839	<0.15	0.15	9786727	<0.15	0.15	9788839
Conductivity	umho/cm	4400	1.0	9785257	3500	1.0	9785257	3700	1.0	9785257
Total Dissolved Solids	mg/L	4670	10	9784823	3390	10	9784823	3460	10	9784823
Total Kjeldahl Nitrogen (TKN)	mg/L	0.9	0.7	9788828	<0.7	0.7	9786509	<0.7	0.7	9788828
Dissolved Organic Carbon	mg/L	4.5	0.4	9786705	3.9	0.4	9786705	2.2	0.4	9786705
pH	pH	8.04		9785256	7.71		9785256	7.72		9785256
Dissolved Sulphate (SO4)	mg/L	2400	10	9785291	1600	5.0	9785291	1900	10	9785291
Alkalinity (Total as CaCO3)	mg/L	320	1.0	9785255	600	1.0	9785255	370	1.0	9785255
Dissolved Chloride (Cl-)	mg/L	6.4	1.0	9785290	3.7	1.0	9785290	3.3	1.0	9785290
Nitrate (N)	mg/L	<0.10	0.10	9785235	<0.10	0.10	9785235	<0.10	0.10	9785235

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
N/A = Not Applicable

Bureau Veritas 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.bvna.com

Microbiology testing is conducted at 6660 Campobello Rd. Chemistry testing is conducted at 6740 Campobello Rd.

Bureau Veritas Job #: C4AI593
Report Date: 2024/12/02

RWDI Inc.
Client Project #: 2402553.01
Site Location: ON07
Your P.O. #: 13254256
Sampler Initials: JA

RESULTS OF ANALYSES OF WATER

Bureau Veritas ID		AJRK80			AJRK81			AJRK82	AJRK83		
Sampling Date		2024/11/18 16:15			2024/11/19 13:50			2024/11/19 13:30	2024/11/19 12:30		
COC Number		999184			999184			999184	999184		
	UNITS	OW59-6	RDL	QC Batch	OW67-4	RDL	QC Batch	OW68-5	OW69-5	RDL	QC Batch
Field Measurements											
Field Conductivity	uS/cm	4630	N/A	ONSITE	1880	N/A	ONSITE	4630	5570	N/A	ONSITE
Field Temperature	Celsius	11.1	N/A	ONSITE	13.2	N/A	ONSITE	12.0	12.4	N/A	ONSITE
Field Measured Field Turbidity	NTU	5.23	N/A	ONSITE	>999	N/A	ONSITE	25.7	15.3	N/A	ONSITE
Field Measured pH	pH	7.2		ONSITE	7.1		ONSITE	7.3	6.8		ONSITE
Inorganics											
Total Ammonia-N	mg/L	<0.15	0.15	9788839	0.32	0.15	9788839	<0.15	0.15	0.15	9788839
Conductivity	umho/cm	4900	1.0	9785261	680	1.0	9785257	4900	6000	1.0	9785257
Total Dissolved Solids	mg/L	5090	10	9784823	460	10	9784833	5020	6260	10	9784823
Total Kjeldahl Nitrogen (TKN)	mg/L	<0.7	0.7	9786509	2	1	9786509	<0.7	<0.7	0.7	9786509
Dissolved Organic Carbon	mg/L	7.4	0.4	9786705	16	0.4	9786705	8.9	3.2	0.4	9786705
pH	pH	7.72		9785262	8.17		9785256	8.01	7.62		9785256
Dissolved Sulphate (SO4)	mg/L	3000	15	9785291	110	1.0	9793252	2900	3500	10	9785291
Alkalinity (Total as CaCO3)	mg/L	430	1.0	9785259	230	1.0	9796273	200	710	1.0	9785255
Dissolved Chloride (Cl-)	mg/L	4.6	1.0	9785290	13	1.0	9793250	4.0	8.1	1.0	9785290
Nitrate (N)	mg/L	<0.10	0.10	9785235	0.30	0.10	9785235	0.32	<0.10	0.10	9785235

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
N/A = Not Applicable

Bureau Veritas 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.bvna.com

Microbiology testing is conducted at 6660 Campobello Rd. Chemistry testing is conducted at 6740 Campobello Rd.

Bureau Veritas Job #: C4AI593
Report Date: 2024/12/02

RWDI Inc.
Client Project #: 2402553.01
Site Location: ON07
Your P.O. #: 13254256
Sampler Initials: JA

RESULTS OF ANALYSES OF WATER

Bureau Veritas ID		AJRK84			AJRK85		AJRK86	AJRK87		
Sampling Date		2024/11/18 13:20			2024/11/18 13:30		2024/11/18 15:10	2024/11/18 15:10		
COC Number		999184			999184		999184	999184		
	UNITS	OW70B-5	RDL	QC Batch	OW71A-5	RDL	OW72-6	DWDUP-3	RDL	QC Batch
Field Measurements										
Field Conductivity	uS/cm	2250	N/A	ONSITE	1510	N/A	1430	1430	N/A	ONSITE
Field Temperature	Celsius	13.1	N/A	ONSITE	13.0	N/A	12.0	12.0	N/A	ONSITE
Field Measured Field Turbidity	NTU	13.3	N/A	ONSITE	11.1	N/A	9.37	9.37	N/A	ONSITE
Field Measured pH	pH	7.0		ONSITE	6.8		7.2	7.2		ONSITE
Inorganics										
Total Ammonia-N	mg/L	<0.15	0.15	9786727	<0.15	0.15	<0.15	<0.15	0.15	9788839
Conductivity	umho/cm	2100	1.0	9785261	1400	1.0	2800	2800	1.0	9785261
Total Dissolved Solids	mg/L	1590	10	9784823	970	10	2440	2450	10	9784823
Total Kjeldahl Nitrogen (TKN)	mg/L	<0.7	0.7	9786509	<0.7	0.7	<0.7	<0.7	0.7	9786509
Dissolved Organic Carbon	mg/L	8.2	0.4	9786705	5.9	0.4	8.0	4.6	0.4	9786705
pH	pH	7.89		9785262	7.93		7.92	7.97		9785262
Dissolved Sulphate (SO4)	mg/L	630	2.0	9785291	300	1.0	1200	1200	5.0	9785291
Alkalinity (Total as CaCO3)	mg/L	630	1.0	9785259	440	1.0	560	570	1.0	9785259
Dissolved Chloride (Cl-)	mg/L	4.8	1.0	9785290	28	1.0	3.2	3.1	1.0	9785290
Nitrate (N)	mg/L	<0.10	0.10	9785235	0.56	0.10	<0.10	<0.10	0.10	9785235

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
N/A = Not Applicable

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Bureau Veritas Job #: C4AI593
Report Date: 2024/12/02

RWDI Inc.
Client Project #: 2402553.01
Site Location: ON07
Your P.O. #: 13254256
Sampler Initials: JA

RESULTS OF ANALYSES OF WATER

Bureau Veritas ID		AJRK88		
Sampling Date		2024/11/18 15:45		
COC Number		999184		
	UNITS	**OW73-6**	**RDL**	**QC Batch**
Field Measurements				
Field Conductivity	uS/cm	3930	N/A	ONSITE
Field Temperature	Celsius	11.2	N/A	ONSITE
Field Measured Field Turbidity	NTU	12.2	N/A	ONSITE
Field Measured pH	pH	6.9		ONSITE
Inorganics				
Total Ammonia-N	mg/L	<0.15	0.15	9788839
Conductivity	umho/cm	4100	1.0	9785261
Total Dissolved Solids	mg/L	4210	10	9784823
Total Kjeldahl Nitrogen (TKN)	mg/L	<0.7	0.7	9786509
Dissolved Organic Carbon	mg/L	8.7	0.4	9786705
pH	pH	7.59		9785262
Dissolved Sulphate (SO4)	mg/L	2100	10	9785291
Alkalinity (Total as CaCO3)	mg/L	290	1.0	9785259
Dissolved Chloride (Cl-)	mg/L	7.5	1.0	9785290
Nitrate (N)	mg/L	<0.10	0.10	9785235

RDL = Reportable Detection Limit
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N/A = Not Applicable

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Bureau Veritas Job #: C4AI593
Report Date: 2024/12/02

RWDI Inc.
Client Project #: 2402553.01
Site Location: ON07
Your P.O. #: 13254256
Sampler Initials: JA

ELEMENTS BY ATOMIC SPECTROSCOPY (WATER)

Bureau Veritas ID		AJRK73	AJRK74	AJRK75	AJRK76		AJRK77		
Sampling Date		2024/11/18 10:55	2024/11/18 10:55	2024/11/19 13:00	2024/11/18 14:50		2024/11/19 14:30		
COC Number		999184	999184	999184	999184		999184		
	UNITS	OW16-6	GWDUP-1	OW17-4	OW54A-4	RDL	Ow56-4	RDL	QC Batch
Metals									
Dissolved Barium (Ba)	mg/L	0.013	0.014	0.015	0.016	0.005	0.010	0.005	9788377
Dissolved Boron (B)	mg/L	0.14	0.14	0.31	0.21	0.02	0.45	0.02	9788377
Dissolved Cadmium (Cd)	mg/L	<0.0001	<0.0001	<0.0001	<0.0001	0.0001	<0.0001	0.0001	9788377
Dissolved Calcium (Ca)	mg/L	100	110	290	130	0.2	470	0.4	9788377
Dissolved Iron (Fe)	mg/L	<0.1	<0.1	0.6	<0.1	0.1	<0.1	0.1	9788377
Dissolved Lead (Pb)	mg/L	<0.0005	0.0014	<0.0005	<0.0005	0.0005	<0.0005	0.0005	9788377
Dissolved Magnesium (Mg)	mg/L	92	93	290	190	0.05	460	0.3	9788377
Dissolved Potassium (K)	mg/L	4.6	4.6	3.1	4.1	0.2	4.1	0.2	9788377
Dissolved Sodium (Na)	mg/L	170	170	110	130	0.1	95	0.1	9788377

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

Bureau Veritas ID		AJRK78		AJRK79		AJRK80			AJRK81		
Sampling Date		2024/11/19 12:05		2024/11/19 10:45		2024/11/18 16:15			2024/11/19 13:50		
COC Number		999184		999184		999184			999184		
	UNITS	OW57-4	RDL	OW58-6	RDL	OW59-6	RDL	QC Batch	OW67-4	RDL	QC Batch
Metals											
Dissolved Barium (Ba)	mg/L	0.008	0.005	0.010	0.005	0.006	0.005	9788377	0.065	0.005	9796383
Dissolved Boron (B)	mg/L	0.41	0.02	0.62	0.02	0.73	0.02	9788377	0.16	0.02	9796383
Dissolved Cadmium (Cd)	mg/L	<0.0001	0.0001	<0.0001	0.0001	<0.0001	0.0001	9788377	<0.0001	0.0001	9796383
Dissolved Calcium (Ca)	mg/L	310	0.2	390	0.4	430	0.4	9788377	71	0.2	9796383
Dissolved Iron (Fe)	mg/L	1.6	0.1	0.4	0.1	<0.1	0.1	9788377	1.5	0.1	9796383
Dissolved Lead (Pb)	mg/L	<0.0005	0.0005	<0.0005	0.0005	<0.0005	0.0005	9788377	<0.0005	0.0005	9796383
Dissolved Magnesium (Mg)	mg/L	330	0.05	260	0.05	470	0.3	9788377	19	0.05	9796383
Dissolved Potassium (K)	mg/L	5.1	0.2	6.2	0.2	6.1	0.2	9788377	3.3	0.2	9796383
Dissolved Sodium (Na)	mg/L	130	0.1	180	0.1	250	0.1	9788377	47	0.1	9796383

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

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Bureau Veritas Job #: C4AI593
Report Date: 2024/12/02

RWDI Inc.
Client Project #: 2402553.01
Site Location: ON07
Your P.O. #: 13254256
Sampler Initials: JA

ELEMENTS BY ATOMIC SPECTROSCOPY (WATER)

Bureau Veritas ID		AJRK82	AJRK83		AJRK84	AJRK85	AJRK86	AJRK87		
Sampling Date		2024/11/19 13:30	2024/11/19 12:30		2024/11/18 13:20	2024/11/18 13:30	2024/11/18 15:10	2024/11/18 15:10		
COC Number		999184	999184		999184	999184	999184	999184		
	UNITS	OW68-5	OW69-5	RDL	OW70B-5	OW71A-5	OW72-6	DWDUP-3	RDL	QC Batch
Metals										
Dissolved Barium (Ba)	mg/L	0.007	0.010	0.005	0.012	0.054	0.008	0.008	0.005	9788377
Dissolved Boron (B)	mg/L	0.99	0.99	0.02	0.50	0.15	0.66	0.68	0.02	9788377
Dissolved Cadmium (Cd)	mg/L	<0.0001	<0.0001	0.0001	<0.0001	<0.0001	<0.0001	<0.0001	0.0001	9788377
Dissolved Calcium (Ca)	mg/L	440	470	0.4	120	120	190	190	0.2	9788377
Dissolved Iron (Fe)	mg/L	<0.1	2.9	0.1	0.6	0.4	<0.1	<0.1	0.1	9788377
Dissolved Lead (Pb)	mg/L	<0.0005	<0.0005	0.0005	<0.0005	<0.0005	<0.0005	<0.0005	0.0005	9788377
Dissolved Magnesium (Mg)	mg/L	480	710	0.3	200	94	260	260	0.05	9788377
Dissolved Potassium (K)	mg/L	6.9	6.6	0.2	4.7	3.4	4.6	4.5	0.2	9788377
Dissolved Sodium (Na)	mg/L	210	290	0.1	87	38	110	110	0.1	9788377

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

Bureau Veritas ID		AJRK88		
Sampling Date		2024/11/18 15:45		
COC Number		999184		
	UNITS	OW73-6	RDL	QC Batch
Metals				
Dissolved Barium (Ba)	mg/L	0.009	0.005	9788377
Dissolved Boron (B)	mg/L	0.67	0.02	9788377
Dissolved Cadmium (Cd)	mg/L	<0.0001	0.0001	9788377
Dissolved Calcium (Ca)	mg/L	460	0.4	9788377
Dissolved Iron (Fe)	mg/L	0.3	0.1	9788377
Dissolved Lead (Pb)	mg/L	<0.0005	0.0005	9788377
Dissolved Magnesium (Mg)	mg/L	290	0.05	9788377
Dissolved Potassium (K)	mg/L	6.8	0.2	9788377
Dissolved Sodium (Na)	mg/L	250	0.1	9788377

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Bureau Veritas Job #: C4AI593
Report Date: 2024/12/02

RWDI Inc.
Client Project #: 2402553.01
Site Location: ON07
Your P.O. #: 13254256
Sampler Initials: JA

VOLATILE ORGANICS BY GC/MS (WATER)

Bureau Veritas ID		AJRK73	AJRK74	AJRK89		
Sampling Date		2024/11/18 10:55	2024/11/18 10:55	2024/11/20 12:00		
COC Number		999184	999184	999184		
	UNITS	OW16-6	GWDUP-1	Trip Blank	RDL	QC Batch
Volatile Organics						
Benzene	ug/L	<0.20	<0.20	<0.20	0.20	9786032
1,4-Dichlorobenzene	ug/L	<0.40	<0.40	<0.40	0.40	9786032
Ethylbenzene	ug/L	<0.20	<0.20	<0.20	0.20	9786032
Methylene Chloride(Dichloromethane)	ug/L	<2.0	<2.0	<2.0	2.0	9786032
Toluene	ug/L	<0.20	<0.20	<0.20	0.20	9786032
Vinyl Chloride	ug/L	<0.20	<0.20	<0.20	0.20	9786032
p+m-Xylene	ug/L	<0.20	<0.20	<0.20	0.20	9786032
o-Xylene	ug/L	<0.20	<0.20	<0.20	0.20	9786032
Total Xylenes	ug/L	<0.20	<0.20	<0.20	0.20	9786032
Surrogate Recovery (%)						
4-Bromofluorobenzene	%	99	99	98		9786032
D4-1,2-Dichloroethane	%	107	108	109		9786032
D8-Toluene	%	92	91	94		9786032

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QC Batch = Quality Control Batch

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Bureau Veritas Job #: C4AI593
Report Date: 2024/12/02

RWDI Inc.
Client Project #: 2402553.01
Site Location: ON07
Your P.O. #: 13254256
Sampler Initials: JA

GENERAL COMMENTS

Each temperature is the average of up to three cooler temperatures taken at receipt

Package 1	5.0°C
Package 2	5.3°C

Results relate only to the items tested.

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Microbiology testing is conducted at 6660 Campobello Rd. Chemistry testing is conducted at 6740 Campobello Rd.

Bureau Veritas Job #: C4AI593
Report Date: 2024/12/02

QUALITY ASSURANCE REPORT

RWDI Inc.
Client Project #: 2402553.01
Site Location: ON07
Your P.O. #: 13254256
Sampler Initials: JA

			Matrix Spike		SPIKED BLANK		Method Blank		RPD		QC Standard	
QC Batch	Parameter	Date	% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits	% Recovery	QC Limits
9786032	4-Bromofluorobenzene	2024/11/25	98	70 - 130	103	70 - 130	104	%				
9786032	D4-1,2-Dichloroethane	2024/11/25	102	70 - 130	100	70 - 130	108	%				
9786032	D8-Toluene	2024/11/25	97	70 - 130	92	70 - 130	96	%				
9784823	Total Dissolved Solids	2024/11/25			98	80 - 120	<10	mg/L	0.41 (1)	20		
9784833	Total Dissolved Solids	2024/11/25			100	80 - 120	<10	mg/L	NC (2)	20		
9785235	Nitrate (N)	2024/11/25	95	80 - 120	96	80 - 120	<0.10	mg/L	0.16 (2)	20		
9785255	Alkalinity (Total as CaCO3)	2024/11/26			95	85 - 115	<1.0	mg/L	3.3 (2)	20		
9785256	pH	2024/11/26			101	98 - 103			0.87 (2)	N/A		
9785257	Conductivity	2024/11/26			100	85 - 115	<1.0	umho/cm	0 (2)	10		
9785259	Alkalinity (Total as CaCO3)	2024/11/27			99	85 - 115	<1.0	mg/L	1.2 (3)	20		
9785261	Conductivity	2024/11/26			101	85 - 115	<1.0	umho/cm	0.70 (3)	10		
9785262	pH	2024/11/26			101	98 - 103			2.1 (3)	N/A		
9785288	Dissolved Chloride (Cl-)	2024/11/28	83	80 - 120	97	80 - 120	<1.0	mg/L	2.4 (2)	20		
9785289	Dissolved Sulphate (SO4)	2024/11/28	NC	75 - 125	99	80 - 120	<1.0	mg/L	0.72 (2)	20		
9785290	Dissolved Chloride (Cl-)	2024/11/28	90 (4)	80 - 120	97	80 - 120	<1.0	mg/L	0.73 (5)	20		
9785291	Dissolved Sulphate (SO4)	2024/11/28	NC (4)	75 - 125	96	80 - 120	<1.0	mg/L	1.0 (5)	20		
9786032	1,4-Dichlorobenzene	2024/11/25	105	70 - 130	124	70 - 130	<0.40	ug/L	NC (2)	30		
9786032	Benzene	2024/11/25	107	70 - 130	103	70 - 130	<0.20	ug/L	NC (2)	30		
9786032	Ethylbenzene	2024/11/25	109	70 - 130	113	70 - 130	<0.20	ug/L	NC (2)	30		
9786032	Methylene Chloride(Dichloromethane)	2024/11/25	110	70 - 130	108	70 - 130	<2.0	ug/L	NC (2)	30		
9786032	o-Xylene	2024/11/25	111	70 - 130	119	70 - 130	<0.20	ug/L	NC (2)	30		
9786032	p+m-Xylene	2024/11/25	107	70 - 130	113	70 - 130	<0.20	ug/L	NC (2)	30		
9786032	Toluene	2024/11/25	102	70 - 130	95	70 - 130	<0.20	ug/L	NC (2)	30		
9786032	Total Xylenes	2024/11/25					<0.20	ug/L	NC (2)	30		
9786032	Vinyl Chloride	2024/11/25	101	70 - 130	97	70 - 130	<0.20	ug/L	15 (2)	30		
9786509	Total Kjeldahl Nitrogen (TKN)	2024/11/27	109	80 - 120	98	80 - 120	<0.7	mg/L	NC (2)	20	100	80 - 120
9786705	Dissolved Organic Carbon	2024/11/26	93 (6)	80 - 120	98	80 - 120	<0.4	mg/L	1.9 (7)	20		
9786727	Total Ammonia-N	2024/11/28	97	75 - 125	99	80 - 120	<0.15	mg/L	NC (2)	20		

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Microbiology testing is conducted at 6660 Campobello Rd. Chemistry testing is conducted at 6740 Campobello Rd.

QUALITY ASSURANCE REPORT(CONT'D)

			Matrix Spike		SPIKED BLANK		Method Blank		RPD		QC Standard	
QC Batch	Parameter	Date	% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits	% Recovery	QC Limits
9788377	Dissolved Barium (Ba)	2024/11/27	93 (8)	80 - 120	94	80 - 120	<0.005	mg/L	3.6 (9)	20		
9788377	Dissolved Boron (B)	2024/11/27	90 (8)	80 - 120	89	80 - 120	<0.02	mg/L	2.0 (9)	20		
9788377	Dissolved Cadmium (Cd)	2024/11/27	98 (8)	80 - 120	96	80 - 120	<0.0001	mg/L	NC (9)	20		
9788377	Dissolved Calcium (Ca)	2024/11/27	NC (8)	80 - 120	95	80 - 120	<0.2	mg/L	0.38 (9)	20		
9788377	Dissolved Iron (Fe)	2024/11/27	97 (8)	80 - 120	95	80 - 120	<0.1	mg/L	NC (9)	20		
9788377	Dissolved Lead (Pb)	2024/11/27	91 (8)	80 - 120	94	80 - 120	<0.0005	mg/L	NC (9)	20		
9788377	Dissolved Magnesium (Mg)	2024/11/27	NC (8)	80 - 120	95	80 - 120	<0.05	mg/L	1.7 (9)	20		
9788377	Dissolved Potassium (K)	2024/11/27	104 (8)	80 - 120	97	80 - 120	<0.2	mg/L	2.2 (9)	20		
9788377	Dissolved Sodium (Na)	2024/11/27	NC (8)	80 - 120	93	80 - 120	<0.1	mg/L	0.059 (9)	20		
9788828	Total Kjeldahl Nitrogen (TKN)	2024/11/28	98 (10)	80 - 120	95	80 - 120	<0.7	mg/L	11 (11)	20	96	80 - 120
9788839	Total Ammonia-N	2024/11/28	94 (12)	75 - 125	99	80 - 120	<0.15	mg/L	NC (13)	20		
9793250	Dissolved Chloride (Cl-)	2024/11/29	NC	80 - 120	93	80 - 120	<1.0	mg/L	0.60 (2)	20		
9793252	Dissolved Sulphate (SO4)	2024/11/29	NC	75 - 125	95	80 - 120	<1.0	mg/L	0.041 (2)	20		
9796273	Alkalinity (Total as CaCO3)	2024/11/29			96	85 - 115	<1.0	mg/L	NC (2)	20		
9796383	Dissolved Barium (Ba)	2024/11/29	97 (15)	80 - 120	96	80 - 120	<0.005	mg/L	3.6 (16)	20		
9796383	Dissolved Boron (B)	2024/11/29	96 (15)	80 - 120	95	80 - 120	<0.02	mg/L	1.6 (16)	20		
9796383	Dissolved Cadmium (Cd)	2024/11/29	97 (15)	80 - 120	96	80 - 120	<0.0001	mg/L	NC (16)	20		
9796383	Dissolved Calcium (Ca)	2024/11/29	NC (15)	80 - 120	100	80 - 120	<0.2	mg/L	0.25 (16)	20		
9796383	Dissolved Iron (Fe)	2024/11/29	97 (15)	80 - 120	98	80 - 120	<0.1	mg/L	0.70 (16)	20		
9796383	Dissolved Lead (Pb)	2024/11/29	99 (15)	80 - 120	97	80 - 120	<0.0005	mg/L	NC (16)	20		
9796383	Dissolved Magnesium (Mg)	2024/11/29	95 (15)	80 - 120	94	80 - 120	<0.05	mg/L	1.3 (16)	20		
9796383	Dissolved Potassium (K)	2024/11/29	95 (15)	80 - 120	95	80 - 120	<0.2	mg/L	0.82 (16)	20		
9796383	Dissolved Sodium (Na)	2024/11/29	NC (15)	80 - 120	98	80 - 120	<0.1	mg/L	2.4 (16)	20		

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Microbiology testing is conducted at 6660 Campobello Rd. Chemistry testing is conducted at 6740 Campobello Rd.

QUALITY ASSURANCE REPORT(CONT'D)

			Matrix Spike		SPIKED BLANK		Method Blank		RPD		QC Standard	
QC Batch	Parameter	Date	% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits	% Recovery	QC Limits

N/A = Not Applicable

Duplicate: Paired analysis of a separate portion of the same sample. Used to evaluate the variance in the measurement.

Matrix Spike: A sample to which a known amount of the analyte of interest has been added. Used to evaluate sample matrix interference.

QC Standard: A sample of known concentration prepared by an external agency under stringent conditions. Used as an independent check of method accuracy.

Spiked Blank: A blank matrix sample to which a known amount of the analyte, usually from a second source, has been added. Used to evaluate method accuracy.

Method Blank: A blank matrix containing all reagents used in the analytical procedure. Used to identify laboratory contamination.

Surrogate: A pure or isotopically labeled compound whose behavior mirrors the analytes of interest. Used to evaluate extraction efficiency.

NC (Matrix Spike): The recovery in the matrix spike was not calculated. The relative difference between the concentration in the parent sample and the spike amount was too small to permit a reliable recovery calculation (matrix spike concentration was less than the native sample concentration)

NC (Duplicate RPD): The duplicate RPD was not calculated. The concentration in the sample and/or duplicate was too low to permit a reliable RPD calculation (absolute difference <= 2x RDL).

(1) Duplicate Parent ID [AJRK87-02]

(2) Duplicate Parent ID

(3) Duplicate Parent ID [AJRK75-01]

(4) Matrix Spike Parent ID [AJRK88-01]

(5) Duplicate Parent ID [AJRK88-01]

(6) Matrix Spike Parent ID [AJRK78-05]

(7) Duplicate Parent ID [AJRK78-05]

(8) Matrix Spike Parent ID [AJRK73-03]

(9) Duplicate Parent ID [AJRK73-03]

(10) Matrix Spike Parent ID [AJRK77-04]

(11) Duplicate Parent ID [AJRK77-04]

(12) Matrix Spike Parent ID [AJRK87-06]

(13) Duplicate Parent ID [AJRK87-06]

(14) Duplicate Parent ID [AJRK81-01]

(15) Matrix Spike Parent ID [AJRK81-03]

(16) Duplicate Parent ID [AJRK81-03]

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Microbiology testing is conducted at 6660 Campobello Rd. Chemistry testing is conducted at 6740 Campobello Rd.

Bureau Veritas Job #: C4AI593
Report Date: 2024/12/02

RWDI Inc.
Client Project #: 2402553.01
Site Location: ON07
Your P.O. #: 13254256
Sampler Initials: JA

VALIDATION SIGNATURE PAGE

The analytical data and all QC contained in this report were reviewed and validated by:

Louise Harding, Scientific Specialist

Michael Damianidis, Project Manager Assistant

Bureau Veritas has procedures in place to guard against improper use of the electronic signature and have the required "signatories", as per ISO/IEC 17025, signing the reports. For Service Group specific validation, please refer to the Validation Signatures page if included, otherwise available by request. For Department specific Analyst/Supervisor validation names, please refer to the Test Summary section if included, otherwise available by request. This report is authorized by Rodney Major, General Manager responsible for Ontario Environmental laboratory operations.

Bureau Veritas 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.bvna.com

Microbiology testing is conducted at 6660 Campobello Rd. Chemistry testing is conducted at 6740 Campobello Rd.

Custody Tracking Form

T999184-H

Please use this form for custody tracking when submitting the work instructions via eCOC (electronic Chain of Custody). Please ensure your form has a barcode or a Bureau Veritas eCOC confirmation number in the top right hand side. This number links your electronic submission to your samples. This form should be placed in the cooler with your samples.

First Sample: OW16-6
Last Sample: Trip Blank
Sample Count: 17

Relinquished By				Received By			
J Artibello		Date	24/11/21			Date	21/11/24
		Time (24 HR)	10:00			Time (24 HR)	10:10
		Date				Date	
		Time (24 HR)				Time (24 HR)	
		Date				Date	
		Time (24 HR)				Time (24 HR)	

Unless otherwise agreed to, submissions and use of services are governed by Bureau Veritas' standard terms and conditions which can be found at www.bvna.com.

Triage Information

Sampled By (Print): J. Artibello

# of Coolers/Pkgs: 2

Rush ☐ Immediate Test ☐ Food Residue ☐

Micro ☐ Food Chemistry ☐

*** LABORATORY USE ONLY ***

Received At

Lab Comments:

Labeled By

Verified By

Custody Seal		Cooling Media	Temperature °C		
Present (Y/N)	Intact (Y/N)	Present (Y/N)	1	2	3
Y	Y	Y	5	5	5
Y	Y	Y	5	6	5

Drinking Water Metals Preservation Check Done (Circle) **YES** **NO**

21-Nov-24 10:10
Patricia Legette
C4AI593

KK5 ENV-569

COR FCD-00383/4

Page 1 of 1

Your P.O. #: 13254256
Your Project #: 2402553.01
Site#: 200
Site Location: ON07
Your C.O.C. #: 999212

Attention: Khalid Hussein - Twin Creeks

RWDI Inc.
600 Southgate Drive
Guelph, ON
Canada N1G 4P6

Report Date: 2024/11/29
Report #: R8425584
Version: 1 - Final

CERTIFICATE OF ANALYSIS

BUREAU VERITAS JOB #: C4AI680
Received: 2024/11/22, 10:10

Sample Matrix: Ground Water
Samples Received: 1

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Analytical Method
Alkalinity	1	N/A	2024/11/28	CAM SOP-00448	SM 24 2320 B m
Chloride by Automated Colourimetry	1	N/A	2024/11/27	CAM SOP-00463	SM 24 4500-Cl E m
Conductance in Water - On-site	1	N/A	2024/11/28		
Conductivity	1	N/A	2024/11/28	CAM SOP-00414	SM 24 2510 m
Dissolved Organic Carbon (DOC) (1)	1	N/A	2024/11/27	CAM SOP-00446	SM 24 5310 B m
Dissolved Metals by ICPMS	1	N/A	2024/11/27	CAM SOP-00447	EPA 6020B m
Ammonia-N	1	N/A	2024/11/28	CAM SOP-00441	USGS I-2522-90 m
Nitrate & Nitrite as Nitrogen in Water (2)	1	N/A	2024/11/25	CAM SOP-00440	SM 24 4500-NO3I/NO2B
pH (3)	1	2024/11/26	2024/11/28	CAM SOP-00413	SM 24th - 4500H+ B
Field Measured pH (4)	1	N/A	2024/11/28		Field pH Meter
Sulphate by Automated Turbidimetry	1	N/A	2024/11/27	CAM SOP-00464	SM 24 4500-SO42- E m
Total Dissolved Solids	1	2024/11/25	2024/11/26	CAM SOP-00428	SM 24 2540C m
Field Temperature (4)	1	N/A	2024/11/28		Field Thermometer
Total Kjeldahl Nitrogen in Water	1	2024/11/26	2024/11/27	CAM SOP-00938	SM 4500-N B m
Turbidity - On-site	1	N/A	2024/11/28		
Volatile Organic Compounds in Water	1	N/A	2024/11/26	CAM SOP-00228	EPA 8260D

Remarks:

Bureau Veritas is accredited to ISO/IEC 17025 for specific parameters on scopes of accreditation. Unless otherwise noted, procedures used by Bureau Veritas are based upon recognized Provincial, Federal or US method compendia such as CCME, EPA, APHA or the Quebec Ministry of Environment.

All work recorded herein has been done in accordance with procedures and practices ordinarily exercised by professionals in Bureau Veritas' profession using accepted testing methodologies, quality assurance and quality control procedures (except where otherwise agreed by the client and Bureau Veritas in writing). All data is in statistical control and has met quality control and method performance criteria unless otherwise noted. All method blanks are reported; unless indicated otherwise, associated sample data are not blank corrected. Where applicable, unless otherwise noted, Measurement Uncertainty has not been accounted for when stating conformity to the referenced standard.

Bureau Veritas liability is limited to the actual cost of the requested analyses, unless otherwise agreed in writing. There is no other warranty expressed or implied. Bureau Veritas has been retained to provide analysis of samples provided by the Client using the testing methodology referenced in this report. Interpretation and use of test results are the sole responsibility of the Client and are not within the scope of services provided by Bureau Veritas, unless otherwise agreed in writing. Bureau Veritas is not responsible for the accuracy or any data impacts, that result from the information provided by the customer or their agent.

Your P.O. #: 13254256
Your Project #: 2402553.01
Site#: 200
Site Location: ON07
Your C.O.C. #: 999212

Attention: Khalid Hussein - Twin Creeks

RWDI Inc.
600 Southgate Drive
Guelph, ON
Canada N1G 4P6

Report Date: 2024/11/29
Report #: R8425584
Version: 1 - Final

CERTIFICATE OF ANALYSIS

BUREAU VERITAS JOB #: C4AI680

Received: 2024/11/22, 10:10

Solid sample results, except biota, are based on dry weight unless otherwise indicated. Organic analyses are not recovery corrected except for isotope dilution methods.

Results relate to samples tested. When sampling is not conducted by Bureau Veritas, results relate to the supplied samples tested.

This Certificate shall not be reproduced except in full, without the written approval of the laboratory.

Reference Method suffix "m" indicates test methods incorporate validated modifications from specific reference methods to improve performance.

* RPDs calculated using raw data. The rounding of final results may result in the apparent difference.

(1) Dissolved Organic Carbon (DOC) present in the sample should be considered as non-purgeable DOC.

(2) Values for calculated parameters may not appear to add up due to rounding of raw data and significant figures.

(3) "The CCME method and Analytical Protocol (O. Reg 153/04, O. Reg. 406/19) requires pH to be analyzed within 15 minutes of sampling and therefore field analysis is required for compliance. All Laboratory pH analyses in this report are reported past the CCME and Analytical Protocol (O. Reg 153/04, O. Reg. 406/19) holding time. Bureau Veritas endeavors to analyze samples as soon as possible after receipt."

(4) This is a field test, therefore, the results relate to items that were not analysed at Bureau Veritas.

Encryption Key

Please direct all questions regarding this Certificate of Analysis to:
Patricia Legette, Project Manager
Email: Patricia.Legette@bureauveritas.com
Phone# (905)817-5799

==========

Bureau Veritas has procedures in place to guard against improper use of the electronic signature and have the required "signatories", as per ISO/IEC 17025, signing the reports. For Service Group specific validation, please refer to the Validation Signatures page if included, otherwise available by request. For Department specific Analyst/Supervisor validation names, please refer to the Test Summary section if included, otherwise available by request. This report is authorized by Rodney Major, General Manager responsible for Ontario Environmental laboratory operations.

Bureau Veritas Job #: C4AI680
Report Date: 2024/11/29

RWDI Inc.
Client Project #: 2402553.01
Site Location: ON07
Your P.O. #: 13254256
Sampler Initials: JA

RESULTS OF ANALYSES OF GROUND WATER

Bureau Veritas ID		AJRR35		
Sampling Date		2024/11/19 15:40		
COC Number		999212		
	UNITS	**OW84-6**	**RDL**	**QC Batch**
Field Measurements				
Field Conductivity	uS/cm	2.52	N/A	ONSITE
Field Temperature	Celsius	11.1	N/A	ONSITE
Field Measured Field Turbidity	NTU	123	N/A	ONSITE
Field Measured pH	pH	7.4		ONSITE
Inorganics				
Total Ammonia-N	mg/L	1.02	0.15	9786727
Conductivity	umho/cm	2100	1.0	9788391
Total Dissolved Solids	mg/L	2200	10	9783881
Total Kjeldahl Nitrogen (TKN)	mg/L	1.5	0.7	9788828
Dissolved Organic Carbon	mg/L	14	0.4	9786648
pH	pH	7.59		9788390
Dissolved Sulphate (SO4)	mg/L	650	2.0	9788189
Alkalinity (Total as CaCO3)	mg/L	500	1.0	9788387
Dissolved Chloride (Cl-)	mg/L	21	1.0	9788174
Nitrate (N)	mg/L	1.12	0.10	9786174

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
N/A = Not Applicable

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Microbiology testing is conducted at 6660 Campobello Rd. Chemistry testing is conducted at 6740 Campobello Rd.

Bureau Veritas Job #: C4AI680
Report Date: 2024/11/29

RWDI Inc.
Client Project #: 2402553.01
Site Location: ON07
Your P.O. #: 13254256
Sampler Initials: JA

ELEMENTS BY ATOMIC SPECTROSCOPY (GROUND WATER)

Bureau Veritas ID		AJRR35		
Sampling Date		2024/11/19 15:40		
COC Number		999212		
	UNITS	OW84-6	RDL	QC Batch
Metals				
Dissolved Barium (Ba)	mg/L	0.031	0.005	9788377
Dissolved Boron (B)	mg/L	0.27	0.02	9788377
Dissolved Cadmium (Cd)	mg/L	<0.0001	0.0001	9788377
Dissolved Calcium (Ca)	mg/L	240	0.2	9788377
Dissolved Iron (Fe)	mg/L	6.7	0.1	9788377
Dissolved Lead (Pb)	mg/L	<0.0005	0.0005	9788377
Dissolved Magnesium (Mg)	mg/L	130	0.05	9788377
Dissolved Potassium (K)	mg/L	6.3	0.2	9788377
Dissolved Sodium (Na)	mg/L	130	0.1	9788377

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

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Microbiology testing is conducted at 6660 Campobello Rd. Chemistry testing is conducted at 6740 Campobello Rd.

Bureau Veritas Job #: C4AI680
Report Date: 2024/11/29

RWDI Inc.
Client Project #: 2402553.01
Site Location: ON07
Your P.O. #: 13254256
Sampler Initials: JA

VOLATILE ORGANICS BY GC/MS (GROUND WATER)

Bureau Veritas ID		AJRR35		
Sampling Date		2024/11/19 15:40		
COC Number		999212		
	UNITS	**OW84-6**	**RDL**	**QC Batch**
Volatile Organics				
Benzene	ug/L	<0.20	0.20	9786701
1,4-Dichlorobenzene	ug/L	<0.40	0.40	9786701
Ethylbenzene	ug/L	<0.20	0.20	9786701
Methylene Chloride(Dichloromethane)	ug/L	<2.0	2.0	9786701
Toluene	ug/L	<0.20	0.20	9786701
Vinyl Chloride	ug/L	<0.20	0.20	9786701
p+m-Xylene	ug/L	<0.20	0.20	9786701
o-Xylene	ug/L	<0.20	0.20	9786701
Total Xylenes	ug/L	<0.20	0.20	9786701
Surrogate Recovery (%)				
4-Bromofluorobenzene	%	102		9786701
D4-1,2-Dichloroethane	%	115		9786701
D8-Toluene	%	94		9786701

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

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Microbiology testing is conducted at 6660 Campobello Rd. Chemistry testing is conducted at 6740 Campobello Rd.

Bureau Veritas Job #: C4AI680
Report Date: 2024/11/29

RWDI Inc.
Client Project #: 2402553.01
Site Location: ON07
Your P.O. #: 13254256
Sampler Initials: JA

GENERAL COMMENTS

Each temperature is the average of up to three cooler temperatures taken at receipt

Package 1	5.0°C
Package 2	5.3°C

Results relate only to the items tested.

Bureau Veritas 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.bvna.com

Microbiology testing is conducted at 6660 Campobello Rd. Chemistry testing is conducted at 6740 Campobello Rd.

QUALITY ASSURANCE REPORT

			Matrix Spike		SPIKED BLANK		Method Blank		RPD		QC Standard	
QC Batch	Parameter	Date	% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits	% Recovery	QC Limits
9786701	4-Bromofluorobenzene	2024/11/26	103	70 - 130	107	70 - 130	109	%				
9786701	D4-1,2-Dichloroethane	2024/11/26	103	70 - 130	96	70 - 130	96	%				
9786701	D8-Toluene	2024/11/26	109	70 - 130	106	70 - 130	97	%				
9783881	Total Dissolved Solids	2024/11/26			95	80 - 120	<10	mg/L	11 (1)	20		
9786174	Nitrate (N)	2024/11/25	92	80 - 120	94	80 - 120	<0.10	mg/L	NC (1)	20		
9786648	Dissolved Organic Carbon	2024/11/27	93	80 - 120	99	80 - 120	<0.4	mg/L	4.8 (1)	20		
9786701	1,4-Dichlorobenzene	2024/11/26	106	70 - 130	107	70 - 130	<0.40	ug/L				
9786701	Benzene	2024/11/26	103	70 - 130	102	70 - 130	<0.20	ug/L				
9786701	Ethylbenzene	2024/11/26	105	70 - 130	107	70 - 130	<0.20	ug/L				
9786701	Methylene Chloride(Dichloromethane)	2024/11/26	92	70 - 130	121	70 - 130	<2.0	ug/L				
9786701	o-Xylene	2024/11/26	117	70 - 130	118	70 - 130	<0.20	ug/L				
9786701	p+m-Xylene	2024/11/26	106	70 - 130	109	70 - 130	<0.20	ug/L				
9786701	Toluene	2024/11/26	112	70 - 130	108	70 - 130	<0.20	ug/L				
9786701	Total Xylenes	2024/11/26					<0.20	ug/L				
9786701	Vinyl Chloride	2024/11/26	87	70 - 130	104	70 - 130	<0.20	ug/L	25 (1)	30		
9786727	Total Ammonia-N	2024/11/28	97	75 - 125	99	80 - 120	<0.15	mg/L	NC (1)	20		
9788174	Dissolved Chloride (Cl-)	2024/11/27	NC (2)	80 - 120	97	80 - 120	<1.0	mg/L	1.4 (3)	20		
9788189	Dissolved Sulphate (SO4)	2024/11/27	NC (2)	75 - 125	93	80 - 120	<1.0	mg/L	0.83 (3)	20		
9788377	Dissolved Barium (Ba)	2024/11/27	93	80 - 120	94	80 - 120	<0.005	mg/L	3.6 (1)	20		
9788377	Dissolved Boron (B)	2024/11/27	90	80 - 120	89	80 - 120	<0.02	mg/L	2.0 (1)	20		
9788377	Dissolved Cadmium (Cd)	2024/11/27	98	80 - 120	96	80 - 120	<0.0001	mg/L	NC (1)	20		
9788377	Dissolved Calcium (Ca)	2024/11/27	NC	80 - 120	95	80 - 120	<0.2	mg/L	0.38 (1)	20		
9788377	Dissolved Iron (Fe)	2024/11/27	97	80 - 120	95	80 - 120	<0.1	mg/L	NC (1)	20		
9788377	Dissolved Lead (Pb)	2024/11/27	91	80 - 120	94	80 - 120	<0.0005	mg/L	NC (1)	20		
9788377	Dissolved Magnesium (Mg)	2024/11/27	NC	80 - 120	95	80 - 120	<0.05	mg/L	1.7 (1)	20		
9788377	Dissolved Potassium (K)	2024/11/27	104	80 - 120	97	80 - 120	<0.2	mg/L	2.2 (1)	20		
9788377	Dissolved Sodium (Na)	2024/11/27	NC	80 - 120	93	80 - 120	<0.1	mg/L	0.059 (1)	20		
9788387	Alkalinity (Total as CaCO3)	2024/11/28			96	85 - 115	<1.0	mg/L	1.3 (3)	20		
9788390	pH	2024/11/28			102	98 - 103			0.49 (3)	N/A		

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Microbiology testing is conducted at 6660 Campobello Rd. Chemistry testing is conducted at 6740 Campobello Rd.

QUALITY ASSURANCE REPORT(CONT'D)

			Matrix Spike		SPIKED BLANK		Method Blank		RPD		QC Standard	
QC Batch	Parameter	Date	% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits	% Recovery	QC Limits
9788391	Conductivity	2024/11/28			101	85 - 115	<1.0	umho/cm	0 (3)	10		
9788828	Total Kjeldahl Nitrogen (TKN)	2024/11/28	98	80 - 120	95	80 - 120	<0.7	mg/L	11 (1)	20	96	80 - 120

N/A = Not Applicable

Duplicate: Paired analysis of a separate portion of the same sample. Used to evaluate the variance in the measurement.

Matrix Spike: A sample to which a known amount of the analyte of interest has been added. Used to evaluate sample matrix interference.

QC Standard: A sample of known concentration prepared by an external agency under stringent conditions. Used as an independent check of method accuracy.

Spiked Blank: A blank matrix sample to which a known amount of the analyte, usually from a second source, has been added. Used to evaluate method accuracy.

Method Blank: A blank matrix containing all reagents used in the analytical procedure. Used to identify laboratory contamination.

Surrogate: A pure or isotopically labeled compound whose behavior mirrors the analytes of interest. Used to evaluate extraction efficiency.

NC (Matrix Spike): The recovery in the matrix spike was not calculated. The relative difference between the concentration in the parent sample and the spike amount was too small to permit a reliable recovery calculation (matrix spike concentration was less than the native sample concentration)

NC (Duplicate RPD): The duplicate RPD was not calculated. The concentration in the sample and/or duplicate was too low to permit a reliable RPD calculation (absolute difference <= 2x RDL).

(1) Duplicate Parent ID

(2) Matrix Spike Parent ID [AJRR35-01]

(3) Duplicate Parent ID [AJRR35-01]

Bureau Veritas 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.bvna.com

Microbiology testing is conducted at 6660 Campobello Rd. Chemistry testing is conducted at 6740 Campobello Rd.

Bureau Veritas Job #: C4AI680
Report Date: 2024/11/29

RWDI Inc.
Client Project #: 2402553.01
Site Location: ON07
Your P.O. #: 13254256
Sampler Initials: JA

VALIDATION SIGNATURE PAGE

The analytical data and all QC contained in this report were reviewed and validated by:

Cristina Carriere, Senior Scientific Specialist

Michael Damianidis, Project Manager Assistant

Bureau Veritas has procedures in place to guard against improper use of the electronic signature and have the required "signatories", as per ISO/IEC 17025, signing the reports. For Service Group specific validation, please refer to the Validation Signatures page if included, otherwise available by request. For Department specific Analyst/Supervisor validation names, please refer to the Test Summary section if included, otherwise available by request. This report is authorized by Rodney Major, General Manager responsible for Ontario Environmental laboratory operations.

Bureau Veritas 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.bvna.com

Microbiology testing is conducted at 6660 Campobello Rd. Chemistry testing is conducted at 6740 Campobello Rd.

FIELD INFORMATION FORM

BUREAU VERITAS

WASTE MANAGEMENT

Site Name: TCEC

Site No.:

Sample: W-34-6 (Sample ID)

This Waste Management Field Information Form is Required
This form is to be completed, in addition to any State Forms. The Field Form is submitted along with the Chain of Custody Forms that accompany the sample containers (i.e. with the cooler that is returned to the laboratory).

Laboratory Use Only/Lab ID:

PURGE INFO

PURGE DATE (MM DD YY)	PURGE TIME (2400 Hr Clock)	ELAPSED HRS (hrs:min)	WATER VOL IN CASING (Gallons)	ACTUAL VOL PURGED (Gallons)	WELL VOLs PURGED
	1540			6.75	

Note: For Passive Sampling, replace "Water Vol in Casing" and "Well Vols Purged" w/ Water Vol in Tubing/Flow Cell and Tubing/Flow Cell Vols Purged. Mark Changes, Record field data below.

PURGE/SAMPLE EQUIPMENT

Purging and Sampling Equipment ... Dedicated: (Y) or N

Filter Device: (Y) or N 0.45 µ or ____ µ (circle or fill in)

Purging Device: C — A-Submersible Pump, B-Peristaltic Pump, C-QED Bladder Pump, D-Bailer, E-Piston Pump, F-Dipper/Bottle

Sampling Device: C

Filter Type: A — A-In-line Disposable, B-Pressure, C-Vacuum, X-Other: ____

X-Other:

Sample Tube Type: A — A-Teflon, B-Stainless Steel, C-PVC, D-Polypropylene, X-Other: ____

WELL DATA

Well Elevation (at TOC) ____ (ft/msl)

Depth to Water (DTW) (from TOC) 3.76 (ft)

Groundwater Elevation (GWE) (Site Datum, from TOC) ____ (ft msl)

Total Well Depth (from TOC) ____ (ft)

Stick Up (from ground elevation) ____ (ft)

Casing ID ____ (in)

Casing Material ____

Note: Total Depth, Stick Up, Casing ID, etc. are optional and can be from historical data, unless required by Site/Permit. Well Elevation, DTW, and GWE must be current, obtained from site.

STABILIZATION DATA (Optional)

Sample Time (2400 Hr Clock)	Rate/Unit	pH (std)	Conductance (SC/EC) (µmhos/cm @ 25°C)	Temp. (°C)	Turbidity (ntu)	D.O. (mg/L - ppm)	eH/ORP (mV)	DTW (ft)
		1st	1st					
		2nd	2nd					
		3rd	3rd					
		4th	4th					
Input Range for 3 consec. readings or Permit/State requirements:		+/-	+/-	+/-	+/-	+/-	+/-	

Stabilization Data Fields are Optional *(i.e. complete stabilization readings for parameters required by WM, Site, or State). These fields can be used where four (4) field measurements are required by State/Permit/Site. If a Data Logger or other Electronic format is used, fill in final readings below and submit electronic data separately to Site. If more fields above are needed, use separate sheet or form.*

FIELD DATA

SAMPLE DATE (MM DD YY)	pH (std)	CONDUCTANCE (µmhos/cm @ 25°C)	TEMP. (°C)	TURBIDITY (ntu)	DO (mg/L - ppm)	eH/ORP (mV)	Other: Units
11 19 24	7.04	2.57	16.1	1.23			

Final Field Readings are required *(i.e. record field measurements, final stabilized readings, passive sample readings before sampling for all field parameters required by State/Permit/Site.)*

Sample Appearance: Opaque

Odor: Earthy odor

Color: Black

Other: ____

Weather Conditions (required daily, or as conditions change): 11°C

Direction/Speed: 21km/h SE

Outlook: Rain

Precipitation: (Y) or N

Specific Comments (including purge/well volume calculations if required): ____

FIELD COMMENTS

I certify that sampling procedures were in accordance with applicable EPA, State, and WM protocols (if more than one sampler, all should sign):

Date	Name	Signature	Company
11/19/24	Jake Aiken		KWOF
/ /			

DISTRIBUTION: WHITE/ORIGINAL - Stays with Sample, YELLOW - Returned to Client, PINK - Field Copy

Field Information Form v-3.1 06/20

2052

Custody Tracking Form

T999212

Please use this form for custody tracking when submitting the work instructions via eCOC (electronic Chain of Custody). Please ensure your form has a barcode or a Bureau Veritas eCOC confirmation number in the top right hand side. This number links your electronic submission to your samples. This form should be placed in the cooler with your samples.

First Sample: OW84-6
Last Sample: OW84-6
Sample Count: 1

Relinquished By				Received By			
J. Artibell		Date	27/11/24			Date	
		Time (24 HR)	10:00			Time (24 HR)	1010
		Date				Date	
		Time (24 HR)				Time (24 HR)	
		Date				Date	
		Time (24 HR)				Time (24 HR)	

Unless otherwise agreed to, submissions and use of services are governed by Bureau Veritas' standard terms and conditions which can be found at www.bvna.com.

Triage Information

Sampled By (Print): J. Artibell

# of Coolers/Pkgs: 1

Rush ☐ Immediate Test ☐ Food Residue ☐

Micro ☐ Food Chemistry ☐

*** LABORATORY USE ONLY ***

Received At

Lab Comments:

Labeled By

Verified By

22-Nov-24 10:10
Patricia Legette
C4AI680
KKS ENV-1228

Custody Seal		Cooling Media	Temperature °C		
Present (Y/N)	Intact (Y/N)	Present (Y/N)	1	2	3
Y	Y	Y	5	5	5
Y	Y	Y	5	6	5
Drinking Water Metals Preservation Check Done (Circle)				YES	NO

COR FCD-00383/4

Page 1 of 1

Your P.O. #: 13254256
Your Project #: 2402553.01
Site#: 200
Site Location: ON07
Your C.O.C. #: 894070

Attention: Khalid Hussein - Twin Creeks

RWDI Inc.
600 Southgate Drive
Guelph, ON
Canada N1G 4P6

Report Date: 2024/05/17
Report #: R8153525
Version: 1 - Final

CERTIFICATE OF ANALYSIS

BUREAU VERITAS JOB #: C4D9804
Received: 2024/05/09, 09:49

Sample Matrix: Water
Samples Received: 9

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Analytical Method
Alkalinity	8	N/A	2024/05/17	CAM SOP-00448	SM 24 2320 B m
Chloride by Automated Colourimetry	8	N/A	2024/05/13	CAM SOP-00463	SM 24 4500-Cl E m
Conductance in Water - On-site	8	N/A	2024/05/13		
Conductivity	8	N/A	2024/05/17	CAM SOP-00414	SM 24 2510 m
Dissolved Organic Carbon (DOC) (1)	8	N/A	2024/05/14	CAM SOP-00446	SM 24 5310 B m
Dissolved Metals by ICPMS	8	N/A	2024/05/13	CAM SOP-00447	EPA 6020B m
Ammonia-N	8	N/A	2024/05/15	CAM SOP-00441	USGS I-2522-90 m
Nitrate & Nitrite as Nitrogen in Water (2)	1	N/A	2024/05/11	CAM SOP-00440	SM 24 4500-NO3I/NO2B
Nitrate & Nitrite as Nitrogen in Water (2)	7	N/A	2024/05/13	CAM SOP-00440	SM 24 4500-NO3I/NO2B
pH (3)	8	2024/05/11	2024/05/17	CAM SOP-00413	SM 24th - 4500H+ B
Field Measured pH (4)	8	N/A	2024/05/13		Field pH Meter
Sulphate by Automated Turbidimetry	8	N/A	2024/05/13	CAM SOP-00464	SM 24 4500-SO42- E m
Total Dissolved Solids	8	2024/05/13	2024/05/14	CAM SOP-00428	SM 24 2540C m
Field Temperature (4)	8	N/A	2024/05/13		Field Thermometer
Total Kjeldahl Nitrogen in Water	8	2024/05/14	2024/05/14	CAM SOP-00938	OMOE E3516 m
Turbidity - On-site	8	N/A	2024/05/13		
Volatile Organic Compounds in Water	9	N/A	2024/05/15	CAM SOP-00228	EPA 8260D

Remarks:

Bureau Veritas is accredited to ISO/IEC 17025 for specific parameters on scopes of accreditation. Unless otherwise noted, procedures used by Bureau Veritas are based upon recognized Provincial, Federal or US method compendia such as CCME, EPA, APHA or the Quebec Ministry of Environment.

All work recorded herein has been done in accordance with procedures and practices ordinarily exercised by professionals in Bureau Veritas' profession using accepted testing methodologies, quality assurance and quality control procedures (except where otherwise agreed by the client and Bureau Veritas in writing). All data is in statistical control and has met quality control and method performance criteria unless otherwise noted. All method blanks are reported; unless indicated otherwise, associated sample data are not blank corrected. Where applicable, unless otherwise noted, Measurement Uncertainty has not been accounted for when stating conformity to the referenced standard.

Bureau Veritas liability is limited to the actual cost of the requested analyses, unless otherwise agreed in writing. There is no other warranty expressed or implied. Bureau Veritas has been retained to provide analysis of samples provided by the Client using the testing methodology referenced in this report. Interpretation and use of test results are the sole responsibility of the Client and are not within the scope of services provided by Bureau Veritas, unless otherwise agreed in writing. Bureau Veritas is not responsible for the accuracy or any data impacts, that result from the information provided by the

Your P.O. #: 13254256
Your Project #: 2402553.01
Site#: 200
Site Location: ON07
Your C.O.C. #: 894070

Attention: Khalid Hussein - Twin Creeks

RWDI Inc.
600 Southgate Drive
Guelph, ON
Canada N1G 4P6

Report Date: 2024/05/17
Report #: R8153525
Version: 1 - Final

CERTIFICATE OF ANALYSIS

BUREAU VERITAS JOB #: C4D9804
Received: 2024/05/09, 09:49
customer or their agent.

Solid sample results, except biota, are based on dry weight unless otherwise indicated. Organic analyses are not recovery corrected except for isotope dilution methods.
Results relate to samples tested. When sampling is not conducted by Bureau Veritas, results relate to the supplied samples tested.
This Certificate shall not be reproduced except in full, without the written approval of the laboratory.
Reference Method suffix "m" indicates test methods incorporate validated modifications from specific reference methods to improve performance.
* RPDs calculated using raw data. The rounding of final results may result in the apparent difference.
(1) Dissolved Organic Carbon (DOC) present in the sample should be considered as non-purgeable DOC.
(2) Values for calculated parameters may not appear to add up due to rounding of raw data and significant figures.
(3) "The CCME method and Analytical Protocol (O. Reg 153/04, O. Reg. 406/19) requires pH to be analyzed within 15 minutes of sampling and therefore field analysis is required for compliance. All Laboratory pH analyses in this report are reported past the CCME and Analytical Protocol (O. Reg 153/04, O. Reg. 406/19) holding time. Bureau Veritas endeavors to analyze samples as soon as possible after receipt."

(4) This is a field test, therefore, the results relate to items that were not analysed at Bureau Veritas.

Encryption Key

Please direct all questions regarding this Certificate of Analysis to:
Patricia Legette, Project Manager
Email: Patricia.Legette@bureauveritas.com
Phone# (905)817-5799
==========

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Bureau Veritas Job #: C4D9804
Report Date: 2024/05/17

RWDI Inc.
Client Project #: 2402553.01
Site Location: ON07
Your P.O. #: 13254256
Sampler Initials: JC

RESULTS OF ANALYSES OF WATER

Bureau Veritas ID		ZCZ324			ZCZ325			ZCZ326		
Sampling Date		2024/05/07 13:15			2024/05/07 11:30			2024/05/07 10:20		
COC Number		894070			894070			894070		
	UNITS	OW73-6	RDL	QC Batch	OW54A-4	RDL	QC Batch	OW67-4	RDL	QC Batch
Field Measurements										
Field Conductivity	uS/cm	4.6	N/A	ONSITE	2870	N/A	ONSITE	1180	N/A	ONSITE
Field Temperature	Celsius	13.0	N/A	ONSITE	12.8	N/A	ONSITE	12.3	N/A	ONSITE
Field Measured Field Turbidity	NTU	19.8	N/A	ONSITE	28.9	N/A	ONSITE	>999	N/A	ONSITE
Field Measured pH	pH	6.7		ONSITE	6.9		ONSITE	6.8		ONSITE
Inorganics										
Total Ammonia-N	mg/L	<0.15	0.15	9389564	0.22	0.15	9389564	1.10	0.15	9389564
Conductivity	umho/cm	4000	1.0	9387982	2200	1.0	9387982	400	1.0	9387982
Total Dissolved Solids	mg/L	4030	10	9389341	1660	10	9389341	1140	10	9389341
Total Kjeldahl Nitrogen (TKN)	mg/L	<0.7	0.7	9391375	<0.7	0.7	9391375	22	10	9391375
Dissolved Organic Carbon	mg/L	4.9	0.4	9390320	10	0.4	9383491	16	0.4	9390320
pH	pH	7.83		9387983	8.08		9387983	7.99		9387983
Dissolved Sulphate (SO4)	mg/L	2300	10	9388034	730	5.0	9388033	23	1.0	9388033
Alkalinity (Total as CaCO3)	mg/L	520	1.0	9387978	610	1.0	9387978	180	1.0	9387978
Dissolved Chloride (Cl-)	mg/L	8.0	1.0	9388037	28	1.0	9388032	22	1.0	9388032
Nitrate (N)	mg/L	<0.10	0.10	9388030	0.16	0.10	9388030	0.16	0.10	9387946

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
N/A = Not Applicable

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Microbiology testing is conducted at 6660 Campobello Rd. Chemistry testing is conducted at 6740 Campobello Rd.

Bureau Veritas Job #: C4D9804
Report Date: 2024/05/17

RWDI Inc.
Client Project #: 2402553.01
Site Location: ON07
Your P.O. #: 13254256
Sampler Initials: JC

RESULTS OF ANALYSES OF WATER

Bureau Veritas ID		ZCZ327			ZCZ328	ZCZ329		ZCZ330		
Sampling Date		2024/05/07 09:40			2024/05/07 12:30	2024/05/07 17:00		2024/05/07 16:30		
COC Number		894070			894070	894070		894070		
	UNITS	OW70B-5	RDL	QC Batch	OW72-6	OW58-6	QC Batch	OW59-6	RDL	QC Batch
Field Measurements										
Field Conductivity	uS/cm	3150	N/A	ONSITE	3.2	4000	ONSITE	4.98	N/A	ONSITE
Field Temperature	Celsius	12.7	N/A	ONSITE	15.8	15.3	ONSITE	20.4	N/A	ONSITE
Field Measured Field Turbidity	NTU	65.4	N/A	ONSITE	9.37	5.03	ONSITE	14.2	N/A	ONSITE
Field Measured pH	pH	7.1		ONSITE	6.9	6.7	ONSITE	6.5		ONSITE
Inorganics										
Total Ammonia-N	mg/L	<0.15	0.15	9389564	<0.15	<0.15	9389564	<0.15	0.15	9389564
Conductivity	umho/cm	2000	1.0	9387982	2700	3500	9387982	4700	1.0	9387982
Total Dissolved Solids	mg/L	1490	10	9389341	2400	3460	9389341	5090	10	9389341
Total Kjeldahl Nitrogen (TKN)	mg/L	<0.7	0.7	9391375	<0.7	<0.7	9391375	<0.7	0.7	9391375
Dissolved Organic Carbon	mg/L	3.4	0.4	9390320	6.0	3.0	9390320	2.6	0.4	9390320
pH	pH	8.11		9387983	8.00	8.00	9387983	8.16		9387983
Dissolved Sulphate (SO4)	mg/L	660	5.0	9388033	1200	2000	9388034	3200	10	9388033
Alkalinity (Total as CaCO3)	mg/L	610	1.0	9387978	550	370	9387978	420	1.0	9387978
Dissolved Chloride (Cl-)	mg/L	9.4	1.0	9388032	4.9	4.1	9388037	5.4	1.0	9388032
Nitrate (N)	mg/L	<0.10	0.10	9388030	<0.10	0.15	9388030	<0.10	0.10	9388030

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
N/A = Not Applicable

Bureau Veritas 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.bvna.com

Microbiology testing is conducted at 6660 Campobello Rd. Chemistry testing is conducted at 6740 Campobello Rd.

Bureau Veritas Job #: C4D9804
Report Date: 2024/05/17

RWDI Inc.
Client Project #: 2402553.01
Site Location: ON07
Your P.O. #: 13254256
Sampler Initials: JC

RESULTS OF ANALYSES OF WATER

Bureau Veritas ID		ZCZ332		
Sampling Date		2024/05/07 13:15		
COC Number		894070		
	UNITS	GWDUP1	RDL	QC Batch
Field Measurements				
Field Conductivity	uS/cm	4.6	N/A	ONSITE
Field Temperature	Celsius	13.0	N/A	ONSITE
Field Measured Field Turbidity	NTU	19.8	N/A	ONSITE
Field Measured pH	pH	6.9		ONSITE
Inorganics				
Total Ammonia-N	mg/L	<0.15	0.15	9389564
Conductivity	umho/cm	4000	1.0	9387982
Total Dissolved Solids	mg/L	4000	10	9389341
Total Kjeldahl Nitrogen (TKN)	mg/L	<0.7	0.7	9391375
Dissolved Organic Carbon	mg/L	4.9	0.4	9390320
pH	pH	7.80		9387983
Dissolved Sulphate (SO4)	mg/L	2300	10	9388034
Alkalinity (Total as CaCO3)	mg/L	520	1.0	9387978
Dissolved Chloride (Cl-)	mg/L	8.0	1.0	9388037
Nitrate (N)	mg/L	<0.10	0.10	9388030

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
N/A = Not Applicable

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Microbiology testing is conducted at 6660 Campobello Rd. Chemistry testing is conducted at 6740 Campobello Rd.

Bureau Veritas Job #: C4D9804
Report Date: 2024/05/17

RWDI Inc.
Client Project #: 2402553.01
Site Location: ON07
Your P.O. #: 13254256
Sampler Initials: JC

ELEMENTS BY ATOMIC SPECTROSCOPY (WATER)

Bureau Veritas ID		ZCZ324		ZCZ325	ZCZ326	ZCZ327	ZCZ328		
Sampling Date		2024/05/07 13:15		2024/05/07 11:30	2024/05/07 10:20	2024/05/07 09:40	2024/05/07 12:30		
COC Number		894070		894070	894070	894070	894070		
	UNITS	OW73-6	RDL	OW54A-4	OW67-4	OW70B-5	OW72-6	RDL	QC Batch
Metals									
Dissolved Barium (Ba)	mg/L	0.008	0.005	0.017	0.038	0.011	0.007	0.005	9389048
Dissolved Boron (B)	mg/L	0.7	0.1	0.20	0.05	0.43	0.74	0.02	9389048
Dissolved Cadmium (Cd)	mg/L	<0.0001	0.0001	<0.0001	<0.0001	<0.0001	<0.0001	0.0001	9389048
Dissolved Calcium (Ca)	mg/L	470	1	140	32	120	200	0.2	9389048
Dissolved Iron (Fe)	mg/L	<0.1	0.1	3.0	1.0	<0.1	<0.1	0.1	9389048
Dissolved Lead (Pb)	mg/L	<0.0005	0.0005	<0.0005	<0.0005	<0.0005	<0.0005	0.0005	9389048
Dissolved Magnesium (Mg)	mg/L	320	0.05	200	7.0	200	280	0.05	9389048
Dissolved Potassium (K)	mg/L	6.9	0.2	2.8	4.8	4.5	5.0	0.2	9389048
Dissolved Sodium (Na)	mg/L	260	0.1	130	44	89	110	0.1	9389048

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

Bureau Veritas ID		ZCZ329		ZCZ330		ZCZ332		
Sampling Date		2024/05/07 17:00		2024/05/07 16:30		2024/05/07 13:15		
COC Number		894070		894070		894070		
	UNITS	OW58-6	RDL	OW59-6	RDL	GWDUP1	RDL	QC Batch
Metals								
Dissolved Barium (Ba)	mg/L	0.008	0.005	0.007	0.005	0.009	0.005	9389048
Dissolved Boron (B)	mg/L	0.61	0.02	0.8	0.1	0.7	0.1	9389048
Dissolved Cadmium (Cd)	mg/L	<0.0001	0.0001	<0.0001	0.0001	<0.0001	0.0001	9389048
Dissolved Calcium (Ca)	mg/L	410	0.4	480	1	470	1	9389048
Dissolved Iron (Fe)	mg/L	<0.1	0.1	0.1	0.1	<0.1	0.1	9389048
Dissolved Lead (Pb)	mg/L	<0.0005	0.0005	<0.0005	0.0005	<0.0005	0.0005	9389048
Dissolved Magnesium (Mg)	mg/L	270	0.05	510	0.3	320	0.05	9389048
Dissolved Potassium (K)	mg/L	6.3	0.2	7.0	0.2	6.9	0.2	9389048
Dissolved Sodium (Na)	mg/L	190	0.1	280	0.1	270	0.1	9389048

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

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Bureau Veritas Job #: C4D9804
Report Date: 2024/05/17

RWDI Inc.
Client Project #: 2402553.01
Site Location: ON07
Your P.O. #: 13254256
Sampler Initials: JC

VOLATILE ORGANICS BY GC/MS (WATER)

Bureau Veritas ID		ZCZ324	ZCZ325	ZCZ326	ZCZ327	ZCZ328	ZCZ329		
Sampling Date		2024/05/07 13:15	2024/05/07 11:30	2024/05/07 10:20	2024/05/07 09:40	2024/05/07 12:30	2024/05/07 17:00		
COC Number		894070	894070	894070	894070	894070	894070		
	UNITS	OW73-6	OW54A-4	OW67-4	OW70B-5	OW72-6	OW58-6	RDL	QC Batch
Volatile Organics									
Benzene	ug/L	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	0.20	9388715
1,4-Dichlorobenzene	ug/L	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40	0.40	9388715
Ethylbenzene	ug/L	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	0.20	9388715
Methylene Chloride(Dichloromethane)	ug/L	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	2.0	9388715
Toluene	ug/L	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	0.20	9388715
Vinyl Chloride	ug/L	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	0.20	9388715
p+m-Xylene	ug/L	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	0.20	9388715
o-Xylene	ug/L	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	0.20	9388715
Total Xylenes	ug/L	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	0.20	9388715
Surrogate Recovery (%)									
4-Bromofluorobenzene	%	105	105	105	106	105	105		9388715
D4-1,2-Dichloroethane	%	115	114	112	114	114	113		9388715
D8-Toluene	%	87	87	87	86	86	86		9388715

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

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Microbiology testing is conducted at 6660 Campobello Rd. Chemistry testing is conducted at 6740 Campobello Rd.

Bureau Veritas Job #: C4D9804
Report Date: 2024/05/17

RWDI Inc.
Client Project #: 2402553.01
Site Location: ON07
Your P.O. #: 13254256
Sampler Initials: JC

VOLATILE ORGANICS BY GC/MS (WATER)

Bureau Veritas ID		ZCZ330	ZCZ331	ZCZ332		
Sampling Date		2024/05/07 16:30	2024/05/08 08:00	2024/05/07 13:15		
COC Number		894070	894070	894070		
	UNITS	OW59-6	TRIP BLANK	GWDUP1	RDL	QC Batch
Volatile Organics						
Benzene	ug/L	<0.20	<0.20	<0.20	0.20	9388715
1,4-Dichlorobenzene	ug/L	<0.40	<0.40	<0.40	0.40	9388715
Ethylbenzene	ug/L	<0.20	<0.20	<0.20	0.20	9388715
Methylene Chloride(Dichloromethane)	ug/L	<2.0	<2.0	<2.0	2.0	9388715
Toluene	ug/L	<0.20	<0.20	<0.20	0.20	9388715
Vinyl Chloride	ug/L	<0.20	<0.20	<0.20	0.20	9388715
p+m-Xylene	ug/L	<0.20	<0.20	<0.20	0.20	9388715
o-Xylene	ug/L	<0.20	<0.20	<0.20	0.20	9388715
Total Xylenes	ug/L	<0.20	<0.20	<0.20	0.20	9388715
Surrogate Recovery (%)						
4-Bromofluorobenzene	%	105	105	104		9388715
D4-1,2-Dichloroethane	%	115	111	114		9388715
D8-Toluene	%	87	87	87		9388715

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

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Microbiology testing is conducted at 6660 Campobello Rd. Chemistry testing is conducted at 6740 Campobello Rd.

RWDI Inc.
Client Project #: 2402553.01
Site Location: ON07
Your P.O. #: 13254256
Sampler Initials: JC

GENERAL COMMENTS

Each temperature is the average of up to three cooler temperatures taken at receipt

Package 1	2.0°C
Package 2	3.0°C

Sample ZCZ324 [OW73-6] : Metals Analysis: Due to the sample matrix, sample required dilution. Detection limits were adjusted accordingly.

Sample ZCZ330 [OW59-6] : Metals Analysis: Due to the sample matrix, sample required dilution. Detection limits were adjusted accordingly.

Results relate only to the items tested.

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Microbiology testing is conducted at 6660 Campobello Rd. Chemistry testing is conducted at 6740 Campobello Rd.

QUALITY ASSURANCE REPORT

			Matrix Spike		SPIKED BLANK		Method Blank		RPD		QC Standard	
QC Batch	Parameter	Date	% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits	% Recovery	QC Limits
9388715	4-Bromofluorobenzene	2024/05/15	106	70 - 130	106	70 - 130	108	%				
9388715	D4-1,2-Dichloroethane	2024/05/15	108	70 - 130	104	70 - 130	112	%				
9388715	D8-Toluene	2024/05/15	100	70 - 130	102	70 - 130	88	%				
9383491	Dissolved Organic Carbon	2024/05/14	NC	80 - 120	97	80 - 120	<0.4	mg/L	0.78 (1)	20		
9387946	Nitrate (N)	2024/05/11	NC	80 - 120	93	80 - 120	<0.10	mg/L	0.12 (1)	20		
9387978	Alkalinity (Total as CaCO3)	2024/05/17			101	85 - 115	<1.0	mg/L	0.26 (1)	20		
9387982	Conductivity	2024/05/17			99	85 - 115	<1.0	umho/cm	0.60 (1)	10		
9387983	pH	2024/05/17			102	98 - 103			1.1 (1)	N/A		
9388030	Nitrate (N)	2024/05/13	95	80 - 120	98	80 - 120	<0.10	mg/L	NC (1)	20		
9388032	Dissolved Chloride (Cl-)	2024/05/13	97	80 - 120	100	80 - 120	<1.0	mg/L	NC (1)	20		
9388033	Dissolved Sulphate (SO4)	2024/05/13	99	75 - 125	100	80 - 120	<1.0	mg/L	NC (1)	20		
9388034	Dissolved Sulphate (SO4)	2024/05/13	NC	75 - 125	97	80 - 120	<1.0	mg/L	3.1 (1)	20		
9388037	Dissolved Chloride (Cl-)	2024/05/13	NC	80 - 120	98	80 - 120	<1.0	mg/L	0.69 (1)	20		
9388715	1,4-Dichlorobenzene	2024/05/15	107	70 - 130	112	70 - 130	<0.40	ug/L	NC (1)	30		
9388715	Benzene	2024/05/15	95	70 - 130	97	70 - 130	<0.20	ug/L	NC (1)	30		
9388715	Ethylbenzene	2024/05/15	92	70 - 130	98	70 - 130	<0.20	ug/L	NC (1)	30		
9388715	Methylene Chloride(Dichloromethane)	2024/05/15	108	70 - 130	107	70 - 130	<2.0	ug/L	NC (1)	30		
9388715	o-Xylene	2024/05/15	84	70 - 130	92	70 - 130	<0.20	ug/L	NC (1)	30		
9388715	p+m-Xylene	2024/05/15	100	70 - 130	107	70 - 130	<0.20	ug/L	NC (1)	30		
9388715	Toluene	2024/05/15	94	70 - 130	99	70 - 130	<0.20	ug/L	NC (1)	30		
9388715	Total Xylenes	2024/05/15					<0.20	ug/L	NC (1)	30		
9388715	Vinyl Chloride	2024/05/15	94	70 - 130	97	70 - 130	<0.20	ug/L	NC (1)	30		
9389048	Dissolved Barium (Ba)	2024/05/13	104 (2)	80 - 120	102	80 - 120	<0.005	mg/L	0.14 (3)	20		
9389048	Dissolved Boron (B)	2024/05/13	NC (2)	80 - 120	101	80 - 120	<0.02	mg/L	4.3 (3)	20		
9389048	Dissolved Cadmium (Cd)	2024/05/13	106 (2)	80 - 120	102	80 - 120	<0.0001	mg/L	NC (3)	20		
9389048	Dissolved Calcium (Ca)	2024/05/13	NC (2)	80 - 120	102	80 - 120	<0.2	mg/L	2.3 (3)	20		
9389048	Dissolved Iron (Fe)	2024/05/13	110 (2)	80 - 120	102	80 - 120	<0.1	mg/L	NC (3)	20		
9389048	Dissolved Lead (Pb)	2024/05/13	103 (2)	80 - 120	99	80 - 120	<0.0005	mg/L	NC (3)	20		
9389048	Dissolved Magnesium (Mg)	2024/05/13	NC (2)	80 - 120	100	80 - 120	<0.05	mg/L	3.7 (3)	20		

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Microbiology testing is conducted at 6660 Campobello Rd. Chemistry testing is conducted at 6740 Campobello Rd.

QUALITY ASSURANCE REPORT(CONT'D)

			Matrix Spike		SPIKED BLANK		Method Blank		RPD		QC Standard	
QC Batch	Parameter	Date	% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits	% Recovery	QC Limits
9389048	Dissolved Potassium (K)	2024/05/13	110 (2)	80 - 120	103	80 - 120	<0.2	mg/L	3.7 (3)	20		
9389048	Dissolved Sodium (Na)	2024/05/13	NC (2)	80 - 120	100	80 - 120	<0.1	mg/L	4.6 (3)	20		
9389341	Total Dissolved Solids	2024/05/14			98	80 - 120	<10	mg/L	0.14 (4)	20		
9389564	Total Ammonia-N	2024/05/15	113	75 - 125	99	80 - 120	<0.15	mg/L	0.022 (1)	20		
9390320	Dissolved Organic Carbon	2024/05/14	93 (5)	80 - 120	96	80 - 120	<0.4	mg/L	1.6 (6)	20		
9391375	Total Kjeldahl Nitrogen (TKN)	2024/05/14	103	80 - 120	101	80 - 120	<0.7	mg/L	1.2 (1)	20	104	80 - 120

N/A = Not Applicable

Duplicate: Paired analysis of a separate portion of the same sample. Used to evaluate the variance in the measurement.

Matrix Spike: A sample to which a known amount of the analyte of interest has been added. Used to evaluate sample matrix interference.

QC Standard: A sample of known concentration prepared by an external agency under stringent conditions. Used as an independent check of method accuracy.

Spiked Blank: A blank matrix sample to which a known amount of the analyte, usually from a second source, has been added. Used to evaluate method accuracy.

Method Blank: A blank matrix containing all reagents used in the analytical procedure. Used to identify laboratory contamination.

Surrogate: A pure or isotopically labeled compound whose behavior mirrors the analytes of interest. Used to evaluate extraction efficiency.

NC (Matrix Spike): The recovery in the matrix spike was not calculated. The relative difference between the concentration in the parent sample and the spike amount was too small to permit a reliable recovery calculation (matrix spike concentration was less than the native sample concentration)

NC (Duplicate RPD): The duplicate RPD was not calculated. The concentration in the sample and/or duplicate was too low to permit a reliable RPD calculation (absolute difference <= 2x RDL).

(1) Duplicate Parent ID

(2) Matrix Spike Parent ID [ZCZ329-03]

(3) Duplicate Parent ID [ZCZ329-03]

(4) Duplicate Parent ID [ZCZ329-02]

(5) Matrix Spike Parent ID [ZCZ324-05]

(6) Duplicate Parent ID [ZCZ324-05]

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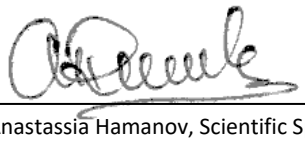
Microbiology testing is conducted at 6660 Campobello Rd. Chemistry testing is conducted at 6740 Campobello Rd.

Bureau Veritas Job #: C4D9804
Report Date: 2024/05/17

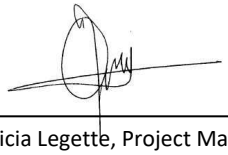
RWDI Inc.
Client Project #: 2402553.01
Site Location: ON07
Your P.O. #: 13254256
Sampler Initials: JC

VALIDATION SIGNATURE PAGE

The analytical data and all QC contained in this report were reviewed and validated by:



Anastassia Hamanov, Scientific Specialist



Patricia Legette, Project Manager

Bureau Veritas has procedures in place to guard against improper use of the electronic signature and have the required "signatories", as per ISO/IEC 17025, signing the reports. For Service Group specific validation, please refer to the Validation Signatures page if included, otherwise available by request. For Department specific Analyst/Supervisor validation names, please refer to the Test Summary section if included, otherwise available by request. This report is authorized by Rodney Major, General Manager responsible for Ontario Environmental laboratory operations.

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Microbiology testing is conducted at 6660 Campobello Rd. Chemistry testing is conducted at 6740 Campobello Rd.

BUREAU VERITAS

FIELD INFORMATION FORM

WASTE MANAGEMENT

Site Name: TCEC

Site No.: Sample: OW73-6 (Sample ID)

This Waste Management Field Information Form is Required
This form is to be completed, in addition to any State Forms. The Field Form is submitted along with the Chain of Custody Forms that accompany the sample containers (i.e. with the cooler that is returned to the laboratory).

Laboratory Use Only/Lab ID:

PURGE INFO

PURGE DATE (MM DD YY)	PURGE TIME (2400 Hr Clock)	ELAPSED HRS (hrs:min)	WATER VOL IN CASING (Gallons)	ACTUAL VOL PURGED (~~Gallons~~)	WELL VOLs PURGED
050724				0.66 L	

Note: For Passive Sampling, replace "Water Vol in Casing" and "Well Vols Purged" w/ Water Vol in Tubing/Flow Cell and Tubing/Flow Cell Vols Purged. Mark Changes, Record field data below.

PURGE/SAMPLE EQUIPMENT

Purging and Sampling Equipment ... Dedicated: (Y) or N

Purging Device: C
Sampling Device: C
X-Other:

A-Submersible Pump, B-Peristaltic Pump, C-QED Bladder Pump, D-Bailer, E-Piston Pump, F-Dipper/Bottle

Filter Device: (Y) or N (0.45 µ) or ____ µ (circle or fill in)

Filter Type: A (A-In-line Disposable, B-Pressure, C-Vacuum, X-Other: ____)

Sample Tube Type: (A-Teflon, B-Stainless Steel, C-PVC, D-Polypropylene, X-Other: ____)

WELL DATA

Well Elevation (at TOC) (ft/msl)
Depth to Water (DTW) (from TOC): 1.44 (ft)
Groundwater Elevation (GWE) (Site Datum, from TOC) (ft msl)
Total Well Depth (from TOC) (ft)
Stick Up (from ground elevation) (ft)
Casing ID (in)
Casing Material

Note: Total Depth, Stick Up, Casing ID, etc. are optional and can be from historical data, unless required by Site/Permit. Well Elevation, DTW, and GWE must be current, obtained from site.

STABILIZATION DATA (Optional)

Sample Time (2400 Hr Clock)	Rate/Unit	pH (std)	Conductance (SC/EC) (µmhos/cm @ 25°C)	Temp. (°C)	Turbidity (ntu)	D.O. (mg/L - ppm)	eH/ORP (mV)	DTW (ft)
1st		1st	1st					
2nd		2nd	2nd					
3rd		3rd	3rd					
4th		4th	4th					
Input Range for 3 consec. readings or Permit/State requirements:		+/-	+/-	+/-	+/-	+/-	+/-	

Stabilization Data Fields are Optional *(i.e. complete stabilization readings for parameters required by WM, Site, or State). These fields can be used where four (4) field measurements are required by State/Permit/Site. If a Data Logger or other Electronic format is used, fill in final readings below and submit electronic data separately to Site. If more fields above are needed, use separate sheet or form.*

FIELD DATA

SAMPLE DATE (MM DD YY)	pH (std)	CONDUCTANCE (µmhos/cm @ 25°C)	TEMP. (°C)	TURBIDITY (ntu)	DO (mg/L - ppm)	eH/ORP (mV)	Other: Units
050724	6.7	4.6	13	19.8			

Final Field Readings are required *(i.e. record field measurements, final stabilized readings, passive sample readings before sampling for all field parameters required by State/Permit/Site.)*

FIELD COMMENTS

Sample Appearance: transparent Odor: none Color: clear Other:

Weather Conditions (required daily, or as conditions change): 15°C Direction/Speed: 14km SE Outlook: clear Precipitation: Y or (N)

Specific Comments (including purge/well volume calculations if required):

GWDUP1 Taken

I certify that sampling procedures were in accordance with applicable EPA, State, and WM protocols (if more than one sampler, all should sign):

Date	Name	Signature	Company
05/07/24	Eric Wilson	E. Wilson	RWDI

DISTRIBUTION: WHITE/ORIGINAL - Stays with Sample, YELLOW - Returned to Client, PINK - Field Copy

Field Information Form v-3.1 06/20

2078

BUREAU VERITAS

FIELD INFORMATION FORM

WASTE MANAGEMENT

Site Name: TCEC

Site No.:

Sample: GW SHA-9 (Sample ID)

This Waste Management Field Information Form is Required
This form is to be completed, in addition to any State Forms. The Field Form is submitted along with the Chain of Custody Forms that accompany the sample containers (i.e. with the cooler that is returned to the laboratory).

Laboratory Use Only/Lab ID:

PURGE INFO

PURGE DATE (MM DD YY)	PURGE TIME (2400 Hr Clock)	ELAPSED HRS (hrs:min)	WATER VOL IN CASING (Gallons)	ACTUAL VOL PURGED (Gallons)	WELL VOLs PURGED
05 07 24				0.54 L	

Note: For Passive Sampling, replace "Water Vol in Casing" and "Well Vols Purged" w/ Water Vol in Tubing/Flow Cell and Tubing/Flow Cell Vols Purged. Mark Changes, Record field data below.

PURGE/SAMPLE EQUIPMENT

Purging and Sampling Equipment ... Dedicated: (Y) or N

Purging Device: C
Sampling Device: C
X-Other:

A-Submersible Pump, B-Peristaltic Pump, C-QED Bladder Pump, D-Bailer, E-Piston Pump, F-Dipper/Bottle

Filter Device: (Y) or N — 0.45 µ or ____ µ (circle or fill in)

Filter Type: A (A-In-line Disposable, B-Pressure, C-Vacuum, X-Other:)

Sample Tube Type: (A-Teflon, B-Stainless Steel, C-PVC, D-Polypropylene, X-Other:)

WELL DATA

Well Elevation (at TOC) (ft/msl)	Depth to Water (DTW) (from TOC) (ft)	Groundwater Elevation (GWE) (Site Datum, from TOC) (ft msl)
	0.95	

Total Well Depth (from TOC) (ft)	Stick Up (from ground elevation) (ft)	Casing ID (in)	Casing Material

Note: Total Depth, Stick Up, Casing ID, etc. are optional and can be from historical data, unless required by Site/Permit. Well Elevation, DTW, and GWE must be current, obtained from site.

STABILIZATION DATA (Optional)

Sample Time (2400 Hr Clock)	Rate/Unit	pH (std)	Conductance (SC/EC) (µmhos/cm @ 25°C)	Temp. (°C)	Turbidity (ntu)	D.O. (mg/L - ppm)	eH/ORP (mV)	DTW (ft)
		1st	1st					
		2nd	2nd					
		3rd	3rd					
		4th	4th					
Input Range for 3 consec. readings or Permit/State requirements:		+/-	+/-	+/-	+/-	+/-	+/-	

Stabilization Data Fields are Optional *(i.e. complete stabilization readings for parameters required by WM, Site, or State). These fields can be used where four (4) field measurements are required by State/Permit/Site. If a Data Logger or other Electronic format is used, fill in final readings below and submit electronic data separately to Site. If more fields above are needed, use separate sheet or form.*

FIELD DATA

SAMPLE DATE (MM DD YY)	pH (std)	CONDUCTANCE (µmhos/cm @ 25°C)	TEMP. (°C)	TURBIDITY (ntu)	DO (mg/L - ppm)	eH/ORP (mV)	Other: Units
05 07 24	6.9 mS	2.87	12.8	7.89			

Final Field Readings are required *(i.e. record field measurements, final stabilized readings, passive sample readings before sampling for all field parameters required by State/Permit/Site.)*

Sample Appearance: Clear Odor: N/O Color: Clear Other:

Weather Conditions (required daily, or as conditions change): 15°C Direction/Speed: 19 Kmh SE Outlook: Clear Precipitation: Y or (N)

Specific Comments (including purge/well volume calculations if required):

FIELD COMMENTS

I certify that sampling procedures were in accordance with applicable EPA, State, and WM protocols (if more than one sampler, all should sign):

Date	Name	Signature	Company
05/07/24	Eric Wilson	Eric Wilson	RWDI
/ /			

DISTRIBUTION: WHITE/ORIGINAL - Stays with Sample, YELLOW - Returned to Client, PINK - Field Copy

Field Information Form v-3.1 06/20

2075

S2437676

BUREAU VERITAS

FIELD INFORMATION FORM

WM WASTE MANAGEMENT

Site Name: TCEC

Site No.: Sample: GW 67-4 (Sample ID)

This Waste Management Field Information Form is Required
This form is to be completed, in addition to any State Forms. The Field Form is submitted along with the Chain of Custody Forms that accompany the sample containers (i.e. with the cooler that is returned to the laboratory).

Laboratory Use Only/Lab ID:

PURGE INFO

PURGE DATE (MM DD YY)	PURGE TIME (2400 Hr Clock)	ELAPSED HRS (hrs:min)	WATER VOL IN CASING (Gallons)	ACTUAL VOL PURGED (Gallons)	WELL VOLs PURGED
050724				0.84 L	

Note: For Passive Sampling, replace "Water Vol in Casing" and "Well Vols Purged" w/ Water Vol in Tubing/Flow Cell and Tubing/Flow Cell Vols Purged. Mark Changes. Record field data below.

PURGE/SAMPLE EQUIPMENT

Purging and Sampling Equipment ... Dedicated: (Y) or N

Purging Device: C — A-Submersible Pump, B-Peristaltic Pump, C-QED Bladder Pump, D-Bailer, E-Piston Pump, F-Dipper/Bottle

Sampling Device: C

X-Other:

Filter Device: (Y) or N — 0.45 µ or ____ µ (circle or fill in)

Filter Type: A — A-In-line Disposable, B-Pressure, C-Vacuum, X-Other: ____

Sample Tube Type: ____ — A-Teflon, B-Stainless Steel, C-PVC, D-Polypropylene, X-Other: ____

WELL DATA

Well Elevation (at TOC): ____ (ft/msl)

Depth to Water (DTW) (from TOC): 0.88 (ft) m

Groundwater Elevation (GWE) (Site Datum, from TOC): ____ (ft msl)

Total Well Depth (from TOC): ____ (ft)

Stick Up (from ground elevation): ____ (ft)

Casing ID: ____ (in)

Casing Material: ____

Note: Total Depth, Stick Up, Casing ID, etc. are optional and can be from historical data, unless required by Site/Permit. Well Elevation, DTW, and GWE must be current, obtained from site.

STABILIZATION DATA (Optional)

Sample Time (2400 Hr Clock)	Rate/Unit	pH (std)	Conductance (SC/EC) (µmhos/cm @ 25°C)	Temp. (°C)	Turbidity (ntu)	D.O. (mg/L - ppm)	eH/ORP (mV)	DTW (ft)
		1st	1st					
		2nd	2nd					
		3rd	3rd					
		4th	4th					
Input Range for 3 consec. readings or Permit/State requirements:		+/-	+/-	+/-	+/-	+/-	+/-	

Stabilization Data Fields are Optional *(i.e. complete stabilization readings for parameters required by WM, Site, or State). These fields can be used where four (4) field measurements are required by State/Permit/Site. If a Data Logger or other Electronic format is used, fill in final readings below and submit electronic data separately to Site. If more fields above are needed, use separate sheet or form.*

FIELD DATA

SAMPLE DATE (MM DD YY)	pH (std)	CONDUCTANCE (µmhos/cm @ 25°C)	TEMP. (°C)	TURBIDITY (ntu)	DO (mg/L - ppm)	eH/ORP (mV)	Other: Units
050724	6.8	1.18 mS	12.3	7999			

Final Field Readings are required *(i.e. record field measurements, final stabilized readings, passive sample readings before sampling for all field parameters required by State/Permit/Site.)*

FIELD COMMENTS

Sample Appearance: opaque — Odor: NO — Color: brown — Other: ____

Weather Conditions (required daily, or as conditions change): 15° — Direction/Speed: NW 5E — Outlook: Clear — Precipitation: Y or (N)

Specific Comments (including purge/well volume calculations if required): ____

I certify that sampling procedures were in accordance with applicable EPA, State, and WM protocols (if more than one sampler, all should sign):

Date	Name	Signature	Company
05/07/24	Eric Wilson	E.W/ours	RWDI

DISTRIBUTION: WHITE/ORIGINAL - Stays with Sample, YELLOW - Returned to Client, PINK - Field Copy

S2437676 X

BUREAU VERITAS

FIELD INFORMATION FORM

WM WASTE MANAGEMENT

Site Name: TCEC

Site No.: Sample: OW 708-6 (Sample ID)

This Waste Management Field Information Form is Required
This form is to be completed, in addition to any State Forms. The Field Form is submitted along with the Chain of Custody Forms that accompany the sample containers (i.e. with the cooler that is returned to the laboratory).

Laboratory Use Only/Lab ID:

PURGE INFO

PURGE DATE (MM DD YY)	PURGE TIME (2400 Hr Clock)	ELAPSED HRS (hrs:min)	WATER VOL IN CASING (Gallons)	ACTUAL VOL PURGED (Gallons)	WELL VOLs PURGED
050724				0.43 L	

Note: For Passive Sampling, replace "Water Vol in Casing" and "Well Vols Purged" w/ Water Vol in Tubing/Flow Cell and Tubing/Flow Cell Vols Purged. Mark Changes, Record field data below.

PURGE/SAMPLE EQUIPMENT

Purging and Sampling Equipment ... Dedicated: (Y) or N

Purging Device: C — Sampling Device: C — X-Other:

A-Submersible Pump, B-Peristaltic Pump, C-QED Bladder Pump, D-Bailer, E-Piston Pump, F-Dipper/Bottle

Filter Device: (Y) or N — 0.45 µ or _____ µ (circle or fill in)

Filter Type: A — A-In-line Disposable, B-Pressure, C-Vacuum, X-Other:

Sample Tube Type: — A-Teflon, B-Stainless Steel, C-PVC, D-Polypropylene, X-Other:

WELL DATA

Well Elevation (at TOC) (ft/msl) — Depth to Water (DTW) (from TOC): 0.72 (ft) M — Groundwater Elevation (GWE) (Site Datum, from TOC) (ft msl)

Total Well Depth (from TOC) (ft) — Stick Up (from ground elevation) (ft) — Casing ID (in) — Casing Material

Note: Total Depth, Stick Up, Casing ID, etc. are optional and can be from historical data, unless required by Site/Permit. Well Elevation, DTW, and GWE must be current, obtained from site.

STABILIZATION DATA (Optional)

Sample Time (2400 Hr Clock)	Rate/Unit	pH (std)	Conductance (SC/EC) (µmhos/cm @ 25°C)	Temp. (°C)	Turbidity (ntu)	D.O. (mg/L - ppm)	eH/ORP (mV)	DTW (ft)
		1st	1st					
		2nd	2nd					
		3rd	3rd					
		4th	4th					
Input Range for 3 consec. readings or Permit/State requirements:		+/-	+/-	+/-	+/-	+/-	+/-	

Stabilization Data Fields are Optional *(i.e. complete stabilization readings for parameters required by WM, Site, or State). These fields can be used where four (4) field measurements are required by State/Permit/Site. If a Data Logger or other Electronic format is used, fill in final readings below and submit electronic data separately to Site. If more fields above are needed, use separate sheet or form.*

FIELD DATA

SAMPLE DATE (MM DD YY)	pH (std)	CONDUCTANCE (µmhos/cm @ 25°C)	TEMP. (°C)	TURBIDITY (ntu)	DO (mg/L - ppm)	eH/ORP (mV)	Other: Units
050724	7.1	3.15 ms	17.7	65.4			

Final Field Readings are required *(i.e. record field measurements, final stabilized readings, passive sample readings before sampling for all field parameters required by State/Permit/Site.)*

FIELD COMMENTS

Sample Appearance: transparent — Odor: N/O — Color: clear — Other:

Weather Conditions (required daily, or as conditions change): 14°C — Direction/Speed: 14kmh SE — Outlook: Clear — Precipitation: Y or (N)

Specific Comments (including purge/well volume calculations if required):

I certify that sampling procedures were in accordance with applicable EPA, State, and WM protocols (if more than one sampler, all should sign):

Date	Name	Signature	Company
05/07/24	Eric Wilson	Eric Wilson	RWDI

DISTRIBUTION: WHITE/ORIGINAL - Stays with Sample, YELLOW - Returned to Client, PINK - Field Copy

Field Information Form v-3.1 06/20

FIELD INFORMATION FORM

BUREAU VERITAS

WASTE MANAGEMENT

Site Name: TCEC

Site No.:

Sample: MW12-16 (Sample ID)

This Waste Management Field Information Form is Required
This form is to be completed, in addition to any State Forms. The Field Form is submitted along with the Chain of Custody Forms that accompany the sample containers (i.e. with the cooler that is returned to the laboratory).

Laboratory Use Only/Lab ID:

PURGE INFO

PURGE DATE (MM DD YY)	PURGE TIME (2400 Hr Clock)	ELAPSED HRS (hrs:min)	WATER VOL IN CASING (Gallons)	ACTUAL VOL PURGED (Gallons)	WELL VOLs PURGED
050724				0.6	

Note: For Passive Sampling, replace "Water Vol in Casing" and "Well Vols Purged" w/ Water Vol in Tubing/Flow Cell and Tubing/Flow Cell Vols Purged. Mark Changes. Record field data below.

PURGE/SAMPLE EQUIPMENT

Purging and Sampling Equipment ... Dedicated: (Y) or N

Purging Device: C

Sampling Device: C

A-Submersible Pump, B-Peristaltic Pump, C-QED Bladder Pump, D-Bailer, E-Piston Pump, F-Dipper/Bottle

X-Other:

Filter Device: Y or N — 0.45 µ or ____ µ (circle or fill in)

Filter Type: A

A-In-line Disposable, B-Pressure, C-Vacuum, X-Other:

Sample Tube Type:

A-Teflon, B-Stainless Steel, C-PVC, D-Polypropylene, X-Other:

WELL DATA

Well Elevation (at TOC): (ft/msl)

Depth to Water (DTW) (from TOC): 2.30 (ft)

Groundwater Elevation (GWE) (Site Datum, from TOC): (ft msl)

Total Well Depth (from TOC): (ft)

Stick Up (from ground elevation): (ft)

Casing ID: (in)

Casing Material:

Note: Total Depth, Stick Up, Casing ID, etc. are optional and can be from historical data, unless required by Site/Permit. Well Elevation, DTW, and GWE must be current, obtained from site.

STABILIZATION DATA (Optional)

Sample Time (2400 Hr Clock)	Rate/Unit	pH (std)	Conductance (SC/EC) (µmhos/cm @ 25°C)	Temp. (°C)	Turbidity (ntu)	D.O. (mg/L - ppm)	eH/ORP (mV)	DTW (ft)
1st		1st	1st					
2nd		2nd	2nd					
3rd		3rd	3rd					
4th		4th	4th					
Input Range for 3 consec. readings or Permit/State requirements:		+/-	+/-	+/-	+/-	+/-	+/-	

Stabilization Data Fields are Optional *(i.e. complete stabilization readings for parameters required by WM, Site, or State). These fields can be used where four (4) field measurements are required by State/Permit/Site. If a Data Logger or other Electronic format is used, fill in final readings below and submit electronic data separately to Site. If more fields above are needed, use separate sheet or form.*

FIELD DATA

SAMPLE DATE (MM DD YY)	pH (std)	CONDUCTANCE (µmhos/cm @ 25°C)	TEMP. (°C)	TURBIDITY (ntu)	DO (mg/L - ppm)	eH/ORP (mV)	Other: Units
050724	6.9	3.2	15.8	9.37			

Final Field Readings are required *(i.e. record field measurements, final stabilized readings, passive sample readings before sampling for all field parameters required by State/Permit/Site.)*

FIELD COMMENTS

Sample Appearance: clear — Odor: N/O — Color: Clear — Other:

Weather Conditions (required daily, or as conditions change): 15C — Direction/Speed: 11 Km/h SE — Outlook: clear — Precipitation: Y or (N)

Specific Comments (including purge/well volume calculations if required):

I certify that sampling procedures were in accordance with applicable EPA, State, and WM protocols (if more than one sampler, all should sign):

Date	Name	Signature	Company
05/07/24	Eric Wilson	E. Wilson	KWDI

DISTRIBUTION: WHITE/ORIGINAL - Stays with Sample, YELLOW - Returned to Client, PINK - Field Copy

Field Information Form v-3.1 06/20

2077

S2437676

BUREAU VERITAS

FIELD INFORMATION FORM

WM WASTE MANAGEMENT

Site Name: TCEC

Site No.: Sample: OMS8-6 (Sample ID)

This Waste Management Field Information Form is Required
This form is to be completed, in addition to any State Forms. The Field Form is submitted along with the Chain of Custody Forms that accompany the sample containers (i.e. with the cooler that is returned to the laboratory).

Laboratory Use Only/Lab ID:

PURGE INFO

PURGE DATE (MM DD YY)	PURGE TIME (2400 Hr Clock)	ELAPSED HRS (hrs:min)	WATER VOL IN CASING (Gallons)	ACTUAL VOL PURGED (Gallons)	WELL VOLs PURGED
050724				0.64 L	

Note: For Passive Sampling, replace "Water Vol in Casing" and "Well Vols Purged" w/ Water Vol in Tubing/Flow Cell and Tubing/Flow Cell Vols Purged. Mark Changes, Record field data below.

PURGE/SAMPLE EQUIPMENT

Purging and Sampling Equipment ... Dedicated: (Y) or N

Purging Device: E

Sampling Device: E

A-Submersible Pump, B-Peristaltic Pump, D-Bailer, E-Piston Pump, (F)QED Bladder Pump, F-Dipper/Bottle

X-Other:

Filter Device: (Y) or N (0.45) or ____ µ (circle or fill in)

Filter Type: A (A-In-line Disposable, B-Pressure, C-Vacuum, X-Other:)

Sample Tube Type: (A-Teflon, B-Stainless Steel, C-PVC, D-Polypropylene, X-Other:)

WELL DATA

Well Elevation (at TOC) (ft/msl)

Depth to Water (DTW) (from TOC): 1.28 (ft) m

Groundwater Elevation (GWE) (Site Datum, from TOC) (ft msl)

Total Well Depth (from TOC) (ft)

Stick Up (from ground elevation) (ft)

Casing ID (in)

Casing Material

Note: Total Depth, Stick Up, Casing ID, etc. are optional and can be from historical data, unless required by Site/Permit. Well Elevation, DTW, and GWE must be current, obtained from site.

STABILIZATION DATA (Optional)

Sample Time (2400 Hr Clock)	Rate/Unit	pH (std)	Conductance (SC/EC) (µmhos/cm @ 25°C)	Temp. (°C)	Turbidity (ntu)	D.O. (mg/L - ppm)	eH/ORP (mV)	DTW (ft)
1st		1st	1st					
2nd		2nd	2nd					
3rd		3rd	3rd					
4th		4th	4th					
Input Range for 3 consec. readings or Permit/State requirements:		+/-	+/-	+/-	+/-	+/-	+/-	

Stabilization Data Fields are Optional *(i.e. complete stabilization readings for parameters required by WM, Site, or State). These fields can be used where four (4) field measurements are required by State/Permit/Site. If a Data Logger or other Electronic format is used, fill in final readings below and submit electronic data separately to Site. If more fields above are needed, use separate sheet or form.*

FIELD DATA

SAMPLE DATE (MM DD YY)	pH (std)	CONDUCTANCE (µmhos/cm @ 25°C)	TEMP. (°C)	TURBIDITY (ntu)	DO (mg/L - ppm)	eH/ORP (mV)	Other: Units
050724	6.7	mS 4.00	15.3	5.03			

Final Field Readings are required *(i.e. record field measurements, final stabilized readings, passive sample readings before sampling for all field parameters required by State/Permit/Site.)*

FIELD COMMENTS

Sample Appearance: transparent Odor: none Color: clear Other:

Weather Conditions (required daily, or as conditions change): 22°c Direction/Speed: 19 Km h S Outlook: cloudy Precipitation: Y or (N)

Specific Comments (including purge/well volume calculations if required):

I certify that sampling procedures were in accordance with applicable EPA, State, and WM protocols (if more than one sampler, all should sign):

Date	Name	Signature	Company
05/07/24	Eric Wilson		RWDI
/ /			

DISTRIBUTION: WHITE/ORIGINAL - Stays with Sample, YELLOW - Returned to Client, PINK - Field Copy

Field Information Form v-3.1 06/20

S2437676

BUREAU VERITAS

FIELD INFORMATION FORM

WASTE MANAGEMENT

Site Name: TCEC

Site No.: Sample: OWS9-6 (Sample ID)

This Waste Management Field Information Form is Required
This form is to be completed, in addition to any State Forms. The Field Form is submitted along with the Chain of Custody Forms that accompany the sample containers (i.e. with the cooler that is returned to the laboratory).

Laboratory Use Only/Lab ID:

PURGE INFO

PURGE DATE (MM DD YY)	PURGE TIME (2400 Hr Clock)	ELAPSED HRS (hrs:min)	WATER VOL IN CASING (Gallons)	ACTUAL VOL PURGED (Gallons)	WELL VOLs PURGED
050724				~~0.45~~ 0.67	

Note: For Passive Sampling, replace "Water Vol in Casing" and "Well Vols Purged" w/ Water Vol in Tubing/Flow Cell and Tubing/Flow Cell Vols Purged. Mark Changes, Record field data below.

PURGE/SAMPLE EQUIPMENT

Purging and Sampling Equipment ... Dedicated: (Y) or N

Purging Device: C — Sampling Device: C — X-Other:

A-Submersible Pump, B-Peristaltic Pump, C-QED Bladder Pump, D-Bailer, E-Piston Pump, F-Dipper/Bottle

Filter Device: (Y) or N — 0.45 µ or _____ µ (circle or fill in)

Filter Type: A — A-In-line Disposable, B-Pressure, C-Vacuum, X-Other: _____

Sample Tube Type: A — A-Teflon, B-Stainless Steel, C-PVC, D-Polypropylene, X-Other: _____

WELL DATA

Well Elevation (at TOC) _____ (ft/msl)

Depth to Water (DTW) (from TOC) 1.77 (ft)

Groundwater Elevation (GWE) (Site Datum, from TOC) _____ (ft msl)

Total Well Depth (from TOC) _____ (ft)

Stick Up (from ground elevation) _____ (ft)

Casing ID _____ (in)

Casing Material _____

Note: Total Depth, Stick Up, Casing ID, etc. are optional and can be from historical data, unless required by Site/Permit. Well Elevation, DTW, and GWE must be current, obtained from site.

STABILIZATION DATA (Optional)

Sample Time (2400 Hr Clock)	Rate/Unit	pH (std)	Conductance (SC/EC) (µmhos/cm @ 25°C)	Temp. (°C)	Turbidity (ntu)	D.O. (mg/L - ppm)	eH/ORP (mV)	DTW (ft)
		1st	1st					
		2nd	2nd					
		3rd	3rd					
		4th	4th					
Input Range for 3 consec. readings or Permit/State requirements:		+/-	+/-	+/-	+/-	+/-	+/-	

Stabilization Data Fields are Optional *(i.e. complete stabilization readings for parameters required by WM, Site, or State). These fields can be used where four (4) field measurements are required by State/Permit/Site. If a Data Logger or other Electronic format is used, fill in final readings below and submit electronic data separately to Site. If more fields above are needed, use separate sheet or form.*

FIELD DATA

SAMPLE DATE (MM DD YY)	pH (std)	CONDUCTANCE (µmhos/cm @ 25°C)	TEMP. (°C)	TURBIDITY (ntu)	DO (mg/L - ppm)	eH/ORP (mV)	Other: / Units
050724	6.5	4.98	20.4	14.2			

Final Field Readings are required *(i.e. record field measurements, final stabilized readings, passive sample readings before sampling for all field parameters required by State/Permit/Site.)*

Sample Appearance: transparent — Odor: none — Color: clear — Other: _____

Weather Conditions (required daily, or as conditions change): 22°C — Direction/Speed: 19 Kmh S — Outlook: Cloudy — Precipitation: Y or (N)

Specific Comments (including purge/well volume calculations if required): _____

FIELD COMMENTS

I certify that sampling procedures were in accordance with applicable EPA, State, and WM protocols (if more than one sampler, all should sign):

05/07/24 — Eric Wilson — E.M'/Bm — KWDI

Custody Tracking Form

T894070

Please use this form for custody tracking when submitting the work instructions via eCOC (electronic Chain of Custody). Please ensure your form has a barcode or a Bureau Veritas eCOC confirmation number in the top right hand side. This number links your electronic submission to your samples. This form should be placed in the cooler with your samples.

First Sample: OW73-6
Last Sample: GWDUP1
Sample Count: 9

Relinquished By				Received By			
Self Cleland		Date	2024/05/08			Date	2024/05/09
		Time (24 HR)	10:00			Time (24 HR)	09:49
		Date				Date	
		Time (24 HR)				Time (24 HR)	
		Date				Date	
		Time (24 HR)				Time (24 HR)	

Unless otherwise agreed to, submissions and use of services are governed by Bureau Veritas' standard terms and conditions which can be found at www.bvna.com.

Triage Information

Sampled By (Print): Eric Wilson

# of Coolers/Pkgs: 2

Rush ☐ Immediate Test ☐ Food Residue ☐

Micro ☐ Food Chemistry ☐

*** LABORATORY USE ONLY ***

Received At

Labeled By

Verified By

Lab Comments:

09-May-24 09:49
Patricia Legette
C4D9804
JDK ENV-726

Custody Seal		Cooling Media	Temperature °C		
Present (Y/N)	Intact (Y/N)	Present (Y/N)	1	2	3
			3	2	1
			3	3	3

Drinking Water Metals Preservation Check Done (Circle) YES NO

COR FCD-00383/4

Page 1 of 1

Your P.O. #: 13254256
Your Project #: 2402553.01
Site#: 200
Site Location: ON07
Your C.O.C. #: 894088

Attention: Khalid Hussein - Twin Creeks

RWDI Inc.
600 Southgate Drive
Guelph, ON
Canada N1G 4P6

Report Date: 2024/05/17
Report #: R8153520
Version: 1 - Final

CERTIFICATE OF ANALYSIS

BUREAU VERITAS JOB #: C4D9823
Received: 2024/05/09, 09:49

Sample Matrix: Water
Samples Received: 6

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Analytical Method
Alkalinity	6	N/A	2024/05/17	CAM SOP-00448	SM 24 2320 B m
Chloride by Automated Colourimetry	6	N/A	2024/05/13	CAM SOP-00463	SM 24 4500-Cl E m
Conductance in Water - On-site	6	N/A	2024/05/16		
Conductivity	6	N/A	2024/05/17	CAM SOP-00414	SM 24 2510 m
Dissolved Organic Carbon (DOC) (1)	6	N/A	2024/05/14	CAM SOP-00446	SM 24 5310 B m
Dissolved Metals by ICPMS	6	N/A	2024/05/13	CAM SOP-00447	EPA 6020B m
Ammonia-N	6	N/A	2024/05/15	CAM SOP-00441	USGS I-2522-90 m
Nitrate & Nitrite as Nitrogen in Water (2)	4	N/A	2024/05/11	CAM SOP-00440	SM 24 4500-NO3I/NO2B
Nitrate & Nitrite as Nitrogen in Water (2)	2	N/A	2024/05/13	CAM SOP-00440	SM 24 4500-NO3I/NO2B
pH (3)	6	2024/05/11	2024/05/17	CAM SOP-00413	SM 24th - 4500H+ B
Field Measured pH (4)	6	N/A	2024/05/16		Field pH Meter
Sulphate by Automated Turbidimetry	6	N/A	2024/05/13	CAM SOP-00464	SM 24 4500-SO42- E m
Total Dissolved Solids	6	2024/05/11	2024/05/13	CAM SOP-00428	SM 24 2540C m
Field Temperature (4)	6	N/A	2024/05/16		Field Thermometer
Total Kjeldahl Nitrogen in Water	6	2024/05/14	2024/05/14	CAM SOP-00938	OMOE E3516 m
Turbidity - On-site	6	N/A	2024/05/16		
Volatile Organic Compounds in Water	6	N/A	2024/05/15	CAM SOP-00228	EPA 8260D

Remarks:

Bureau Veritas is accredited to ISO/IEC 17025 for specific parameters on scopes of accreditation. Unless otherwise noted, procedures used by Bureau Veritas are based upon recognized Provincial, Federal or US method compendia such as CCME, EPA, APHA or the Quebec Ministry of Environment.

All work recorded herein has been done in accordance with procedures and practices ordinarily exercised by professionals in Bureau Veritas' profession using accepted testing methodologies, quality assurance and quality control procedures (except where otherwise agreed by the client and Bureau Veritas in writing). All data is in statistical control and has met quality control and method performance criteria unless otherwise noted. All method blanks are reported; unless indicated otherwise, associated sample data are not blank corrected. Where applicable, unless otherwise noted, Measurement Uncertainty has not been accounted for when stating conformity to the referenced standard.

Bureau Veritas liability is limited to the actual cost of the requested analyses, unless otherwise agreed in writing. There is no other warranty expressed or implied. Bureau Veritas has been retained to provide analysis of samples provided by the Client using the testing methodology referenced in this report. Interpretation and use of test results are the sole responsibility of the Client and are not within the scope of services provided by Bureau Veritas, unless otherwise agreed in writing. Bureau Veritas is not responsible for the accuracy or any data impacts, that result from the information provided by the

Your P.O. #: 13254256
Your Project #: 2402553.01
Site#: 200
Site Location: ON07
Your C.O.C. #: 894088

Attention: Khalid Hussein - Twin Creeks

RWDI Inc.
600 Southgate Drive
Guelph, ON
Canada N1G 4P6

Report Date: 2024/05/17
Report #: R8153520
Version: 1 - Final

CERTIFICATE OF ANALYSIS

BUREAU VERITAS JOB #: C4D9823
Received: 2024/05/09, 09:49
customer or their agent.

Solid sample results, except biota, are based on dry weight unless otherwise indicated. Organic analyses are not recovery corrected except for isotope dilution methods.
Results relate to samples tested. When sampling is not conducted by Bureau Veritas, results relate to the supplied samples tested.
This Certificate shall not be reproduced except in full, without the written approval of the laboratory.
Reference Method suffix "m" indicates test methods incorporate validated modifications from specific reference methods to improve performance.
* RPDs calculated using raw data. The rounding of final results may result in the apparent difference.
(1) Dissolved Organic Carbon (DOC) present in the sample should be considered as non-purgeable DOC.
(2) Values for calculated parameters may not appear to add up due to rounding of raw data and significant figures.
(3) "The CCME method and Analytical Protocol (O. Reg 153/04, O. Reg. 406/19) requires pH to be analyzed within 15 minutes of sampling and therefore field analysis is required for compliance. All Laboratory pH analyses in this report are reported past the CCME and Analytical Protocol (O. Reg 153/04, O. Reg. 406/19) holding time. Bureau Veritas endeavors to analyze samples as soon as possible after receipt."

(4) This is a field test, therefore, the results relate to items that were not analysed at Bureau Veritas.

Encryption Key

Please direct all questions regarding this Certificate of Analysis to:
Patricia Legette, Project Manager
Email: Patricia.Legette@bureauveritas.com
Phone# (905)817-5799

==========

Bureau Veritas has procedures in place to guard against improper use of the electronic signature and have the required "signatories", as per ISO/IEC 17025, signing the reports. For Service Group specific validation, please refer to the Validation Signatures page if included, otherwise available by request. For Department specific Analyst/Supervisor validation names, please refer to the Test Summary section if included, otherwise available by request. This report is authorized by Rodney Major, General Manager responsible for Ontario Environmental laboratory operations.

Bureau Veritas 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.bvna.com

Microbiology testing is conducted at 6660 Campobello Rd. Chemistry testing is conducted at 6740 Campobello Rd.

Bureau Veritas Job #: C4D9823
Report Date: 2024/05/17

RWDI Inc.
Client Project #: 2402553.01
Site Location: ON07
Your P.O. #: 13254256
Sampler Initials: JC

RESULTS OF ANALYSES OF WATER

Bureau Veritas ID		ZCZ444		ZCZ445			ZCZ446		
Sampling Date		2024/05/07 17:00		2024/05/06 15:21			2024/05/06 15:40		
COC Number		894088		894088			894088		
	UNITS	OW58-17	QC Batch	OW72-10	RDL	QC Batch	OW57-15	RDL	QC Batch
Field Measurements									
Field Conductivity	uS/cm	4210	ONSITE	3240	N/A	ONSITE	3360	N/A	ONSITE
Field Temperature	Celsius	18.3	ONSITE	26.2	N/A	ONSITE	15.1	N/A	ONSITE
Field Measured Field Turbidity	NTU	6.10	ONSITE	>999	N/A	ONSITE	147	N/A	ONSITE
Field Measured pH	pH	7.0	ONSITE	6.8		ONSITE	7.2		ONSITE
Inorganics									
Total Ammonia-N	mg/L	0.46	9389564	0.35	0.15	9389564	<0.15	0.15	9389564
Conductivity	umho/cm	3700	9387982	2700	1.0	9387982	2900	1.0	9387982
Total Dissolved Solids	mg/L	3650	9387743	2490	10	9387743	2630	10	9387760
Total Kjeldahl Nitrogen (TKN)	mg/L	0.8	9391375	0.7	0.7	9391375	<0.7	0.7	9391375
Dissolved Organic Carbon	mg/L	2.2	9383491	1.8	0.4	9383491	7.5	0.4	9383491
pH	pH	7.78	9387983	7.94		9387983	7.95		9387983
Dissolved Sulphate (SO4)	mg/L	2500	9388033	1400	10	9388034	1700	5.0	9388033
Alkalinity (Total as CaCO3)	mg/L	65	9387978	370	1.0	9387978	160	1.0	9387978
Dissolved Chloride (Cl-)	mg/L	7.6	9388032	4.9	1.0	9388037	7.1	1.0	9388032
Nitrate (N)	mg/L	0.33	9387946	0.32	0.10	9388030	0.55	0.10	9387946

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
N/A = Not Applicable

Bureau Veritas 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.bvna.com

Microbiology testing is conducted at 6660 Campobello Rd. Chemistry testing is conducted at 6740 Campobello Rd.

Bureau Veritas Job #: C4D9823
Report Date: 2024/05/17

RWDI Inc.
Client Project #: 2402553.01
Site Location: ON07
Your P.O. #: 13254256
Sampler Initials: JC

RESULTS OF ANALYSES OF WATER

Bureau Veritas ID		ZCZ447			ZCZ448			ZCZ449		
Sampling Date		2024/05/06 15:45			2024/05/07 12:00			2024/05/07 13:40		
COC Number		894088			894088			894088		
	UNITS	OW67-11	RDL	QC Batch	OW54-10	RDL	QC Batch	OW73-9	RDL	QC Batch
Field Measurements										
Field Conductivity	uS/cm	1.5	N/A	ONSITE	2.8	N/A	ONSITE	4.4	N/A	ONSITE
Field Temperature	Celsius	16.0	N/A	ONSITE	13.5	N/A	ONSITE	14.2	N/A	ONSITE
Field Measured Field Turbidity	NTU	52.0	N/A	ONSITE	54.7	N/A	ONSITE	14.9	N/A	ONSITE
Field Measured pH	pH	6.7		ONSITE	7.1		ONSITE	7.3		ONSITE
Inorganics										
Total Ammonia-N	mg/L	0.24	0.15	9389564	0.20	0.15	9389564	<0.15	0.15	9389564
Conductivity	umho/cm	1200	1.0	9387982	2300	1.0	9387982	3900	1.0	9387982
Total Dissolved Solids	mg/L	835	10	9387743	1910	10	9387760	3870	10	9387743
Total Kjeldahl Nitrogen (TKN)	mg/L	<0.7	0.7	9391375	<0.7	0.7	9391375	<0.7	0.7	9391375
Dissolved Organic Carbon	mg/L	8.6	0.4	9383491	1.6	0.4	9383491	3.5	0.4	9383491
pH	pH	8.07		9387983	8.11		9387983	8.07		9387983
Dissolved Sulphate (SO4)	mg/L	280	1.0	9388033	1100	5.0	9388033	2500	10	9388033
Alkalinity (Total as CaCO3)	mg/L	410	1.0	9387978	330	1.0	9387978	290	1.0	9387978
Dissolved Chloride (Cl-)	mg/L	23	1.0	9388032	8.0	1.0	9388032	7.1	1.0	9388032
Nitrate (N)	mg/L	0.11	0.10	9387946	0.37	0.10	9387946	0.63	0.10	9388030

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
N/A = Not Applicable

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Microbiology testing is conducted at 6660 Campobello Rd. Chemistry testing is conducted at 6740 Campobello Rd.

Bureau Veritas Job #: C4D9823
Report Date: 2024/05/17

RWDI Inc.
Client Project #: 2402553.01
Site Location: ON07
Your P.O. #: 13254256
Sampler Initials: JC

ELEMENTS BY ATOMIC SPECTROSCOPY (WATER)

Bureau Veritas ID		ZCZ444		ZCZ445	ZCZ446		ZCZ447		ZCZ448		
Sampling Date		2024/05/07 17:00		2024/05/06 15:21	2024/05/06 15:40		2024/05/06 15:45		2024/05/07 12:00		
COC Number		894088		894088	894088		894088		894088		
	UNITS	OW58-17	RDL	OW72-10	OW57-15	RDL	OW67-11	RDL	OW54-10	RDL	QC Batch
Metals											
Dissolved Barium (Ba)	mg/L	0.015	0.005	0.010	0.009	0.005	0.020	0.005	0.012	0.005	9389048
Dissolved Boron (B)	mg/L	1.5	0.1	1.1	1.2	0.02	0.44	0.02	1.1	0.02	9389048
Dissolved Cadmium (Cd)	mg/L	<0.0001	0.0001	<0.0001	<0.0001	0.0001	<0.0001	0.0001	<0.0001	0.0001	9389048
Dissolved Calcium (Ca)	mg/L	470	1	240	300	0.4	130	0.2	180	0.4	9389048
Dissolved Iron (Fe)	mg/L	0.2	0.1	1.9	0.3	0.1	0.5	0.1	2.0	0.1	9389048
Dissolved Lead (Pb)	mg/L	<0.0005	0.0005	<0.0005	<0.0005	0.0005	<0.0005	0.0005	<0.0005	0.0005	9389048
Dissolved Magnesium (Mg)	mg/L	260	0.05	230	210	0.05	83	0.05	180	0.05	9389048
Dissolved Potassium (K)	mg/L	4.8	0.2	5.7	5.1	0.2	4.4	0.2	4.9	0.2	9389048
Dissolved Sodium (Na)	mg/L	200	0.1	150	180	0.1	42	0.1	170	0.1	9389048

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

Bureau Veritas ID		ZCZ449		
Sampling Date		2024/05/07 13:40		
COC Number		894088		
	UNITS	OW73-9	RDL	QC Batch
Metals				
Dissolved Barium (Ba)	mg/L	0.006	0.005	9389048
Dissolved Boron (B)	mg/L	1.2	0.02	9389048
Dissolved Cadmium (Cd)	mg/L	<0.0001	0.0001	9389048
Dissolved Calcium (Ca)	mg/L	420	1	9389048
Dissolved Iron (Fe)	mg/L	0.1	0.1	9389048
Dissolved Lead (Pb)	mg/L	<0.0005	0.0005	9389048
Dissolved Magnesium (Mg)	mg/L	340	0.05	9389048
Dissolved Potassium (K)	mg/L	6.6	0.2	9389048
Dissolved Sodium (Na)	mg/L	230	0.1	9389048

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

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Bureau Veritas Job #: C4D9823
Report Date: 2024/05/17

RWDI Inc.
Client Project #: 2402553.01
Site Location: ON07
Your P.O. #: 13254256
Sampler Initials: JC

VOLATILE ORGANICS BY GC/MS (WATER)

Bureau Veritas ID		ZCZ444	ZCZ445	ZCZ446	ZCZ447	ZCZ448	ZCZ449		
Sampling Date		2024/05/07 17:00	2024/05/06 15:21	2024/05/06 15:40	2024/05/06 15:45	2024/05/07 12:00	2024/05/07 13:40		
COC Number		894088	894088	894088	894088	894088	894088		
	UNITS	OW58-17	OW72-10	OW57-15	OW67-11	OW54-10	OW73-9	RDL	QC Batch
Volatile Organics									
Benzene	ug/L	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	0.20	9388716
1,4-Dichlorobenzene	ug/L	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40	0.40	9388716
Ethylbenzene	ug/L	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	0.20	9388716
Methylene Chloride(Dichloromethane)	ug/L	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	2.0	9388716
Toluene	ug/L	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	0.20	9388716
Vinyl Chloride	ug/L	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	0.20	9388716
p+m-Xylene	ug/L	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	0.20	9388716
o-Xylene	ug/L	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	0.20	9388716
Total Xylenes	ug/L	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	0.20	9388716
Surrogate Recovery (%)									
4-Bromofluorobenzene	%	97	95	99	95	95	95		9388716
D4-1,2-Dichloroethane	%	123	126	121	127	124	128		9388716
D8-Toluene	%	90	89	89	89	88	88		9388716

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

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Microbiology testing is conducted at 6660 Campobello Rd. Chemistry testing is conducted at 6740 Campobello Rd.

RWDI Inc.
Client Project #: 2402553.01
Site Location: ON07
Your P.O. #: 13254256
Sampler Initials: JC

GENERAL COMMENTS

Each temperature is the average of up to three cooler temperatures taken at receipt

Package 1	2.0°C
Package 2	3.0°C

Sample ZCZ444 [OW58-17] : Metals Analysis: Due to the sample matrix, sample required dilution. Detection limits were adjusted accordingly.

Results relate only to the items tested.

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QUALITY ASSURANCE REPORT

			Matrix Spike		SPIKED BLANK		Method Blank		RPD		QC Standard	
QC Batch	Parameter	Date	% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits	% Recovery	QC Limits
9388716	4-Bromofluorobenzene	2024/05/15	106	70 - 130	102	70 - 130	102	%				
9388716	D4-1,2-Dichloroethane	2024/05/15	123	70 - 130	117	70 - 130	125	%				
9388716	D8-Toluene	2024/05/15	115	70 - 130	110	70 - 130	89	%				
9383491	Dissolved Organic Carbon	2024/05/14	NC	80 - 120	97	80 - 120	<0.4	mg/L	0.78 (1)	20		
9387743	Total Dissolved Solids	2024/05/13			95	80 - 120	<10	mg/L	0 (1)	20		
9387760	Total Dissolved Solids	2024/05/13			97	80 - 120	<10	mg/L	0.19 (2)	20		
9387946	Nitrate (N)	2024/05/11	NC	80 - 120	93	80 - 120	<0.10	mg/L	0.12 (1)	20		
9387978	Alkalinity (Total as CaCO3)	2024/05/17			101	85 - 115	<1.0	mg/L	0.26 (1)	20		
9387982	Conductivity	2024/05/17			99	85 - 115	<1.0	umho/cm	0.60 (1)	10		
9387983	pH	2024/05/17			102	98 - 103			1.1 (1)	N/A		
9388030	Nitrate (N)	2024/05/13	95	80 - 120	98	80 - 120	<0.10	mg/L	NC (1)	20		
9388032	Dissolved Chloride (Cl-)	2024/05/13	97	80 - 120	100	80 - 120	<1.0	mg/L	NC (1)	20		
9388033	Dissolved Sulphate (SO4)	2024/05/13	99	75 - 125	100	80 - 120	<1.0	mg/L	NC (1)	20		
9388034	Dissolved Sulphate (SO4)	2024/05/13	NC	75 - 125	97	80 - 120	<1.0	mg/L	3.1 (1)	20		
9388037	Dissolved Chloride (Cl-)	2024/05/13	NC	80 - 120	98	80 - 120	<1.0	mg/L	0.69 (1)	20		
9388716	1,4-Dichlorobenzene	2024/05/15	105	70 - 130	113	70 - 130	<0.40	ug/L	NC (1)	30		
9388716	Benzene	2024/05/15	96	70 - 130	102	70 - 130	<0.20	ug/L	NC (1)	30		
9388716	Ethylbenzene	2024/05/15	99	70 - 130	99	70 - 130	<0.20	ug/L				
9388716	Methylene Chloride(Dichloromethane)	2024/05/15	98	70 - 130	100	70 - 130	<2.0	ug/L	NC (1)	30		
9388716	o-Xylene	2024/05/15	87	70 - 130	93	70 - 130	<0.20	ug/L				
9388716	p+m-Xylene	2024/05/15	104	70 - 130	105	70 - 130	<0.20	ug/L				
9388716	Toluene	2024/05/15	106	70 - 130	103	70 - 130	<0.20	ug/L	NC (1)	30		
9388716	Total Xylenes	2024/05/15					<0.20	ug/L				
9388716	Vinyl Chloride	2024/05/15	91	70 - 130	98	70 - 130	<0.20	ug/L	NC (1)	30		
9389048	Dissolved Barium (Ba)	2024/05/13	104	80 - 120	102	80 - 120	<0.005	mg/L	0.14 (1)	20		
9389048	Dissolved Boron (B)	2024/05/13	NC	80 - 120	101	80 - 120	<0.02	mg/L	4.3 (1)	20		
9389048	Dissolved Cadmium (Cd)	2024/05/13	106	80 - 120	102	80 - 120	<0.0001	mg/L	NC (1)	20		
9389048	Dissolved Calcium (Ca)	2024/05/13	NC	80 - 120	102	80 - 120	<0.2	mg/L	2.3 (1)	20		
9389048	Dissolved Iron (Fe)	2024/05/13	110	80 - 120	102	80 - 120	<0.1	mg/L	NC (1)	20		

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QUALITY ASSURANCE REPORT(CONT'D)

			Matrix Spike		SPIKED BLANK		Method Blank		RPD		QC Standard	
QC Batch	Parameter	Date	% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits	% Recovery	QC Limits
9389048	Dissolved Lead (Pb)	2024/05/13	103	80 - 120	99	80 - 120	<0.0005	mg/L	NC (1)	20		
9389048	Dissolved Magnesium (Mg)	2024/05/13	NC	80 - 120	100	80 - 120	<0.05	mg/L	3.7 (1)	20		
9389048	Dissolved Potassium (K)	2024/05/13	110	80 - 120	103	80 - 120	<0.2	mg/L	3.7 (1)	20		
9389048	Dissolved Sodium (Na)	2024/05/13	NC	80 - 120	100	80 - 120	<0.1	mg/L	4.6 (1)	20		
9389564	Total Ammonia-N	2024/05/15	113 (3)	75 - 125	99	80 - 120	<0.15	mg/L	0.022 (4)	20		
9391375	Total Kjeldahl Nitrogen (TKN)	2024/05/14	103 (5)	80 - 120	101	80 - 120	<0.7	mg/L	1.2 (6)	20	104	80 - 120

N/A = Not Applicable

Duplicate: Paired analysis of a separate portion of the same sample. Used to evaluate the variance in the measurement.

Matrix Spike: A sample to which a known amount of the analyte of interest has been added. Used to evaluate sample matrix interference.

QC Standard: A sample of known concentration prepared by an external agency under stringent conditions. Used as an independent check of method accuracy.

Spiked Blank: A blank matrix sample to which a known amount of the analyte, usually from a second source, has been added. Used to evaluate method accuracy.

Method Blank: A blank matrix containing all reagents used in the analytical procedure. Used to identify laboratory contamination.

Surrogate: A pure or isotopically labeled compound whose behavior mirrors the analytes of interest. Used to evaluate extraction efficiency.

NC (Matrix Spike): The recovery in the matrix spike was not calculated. The relative difference between the concentration in the parent sample and the spike amount was too small to permit a reliable recovery calculation (matrix spike concentration was less than the native sample concentration)

NC (Duplicate RPD): The duplicate RPD was not calculated. The concentration in the sample and/or duplicate was too low to permit a reliable RPD calculation (absolute difference <= 2x RDL).

(1) Duplicate Parent ID

(2) Duplicate Parent ID [ZCZ446-02]

(3) Matrix Spike Parent ID [ZCZ444-06]

(4) Duplicate Parent ID [ZCZ444-06]

(5) Matrix Spike Parent ID [ZCZ444-04]

(6) Duplicate Parent ID [ZCZ444-04]

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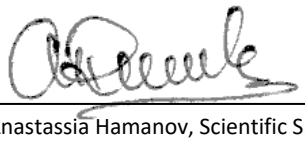
Microbiology testing is conducted at 6660 Campobello Rd. Chemistry testing is conducted at 6740 Campobello Rd.

Bureau Veritas Job #: C4D9823
Report Date: 2024/05/17

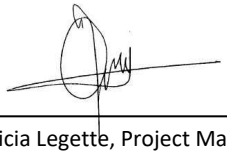
RWDI Inc.
Client Project #: 2402553.01
Site Location: ON07
Your P.O. #: 13254256
Sampler Initials: JC

VALIDATION SIGNATURE PAGE

The analytical data and all QC contained in this report were reviewed and validated by:



Anastassia Hamanov, Scientific Specialist



Patricia Legette, Project Manager

Bureau Veritas has procedures in place to guard against improper use of the electronic signature and have the required "signatories", as per ISO/IEC 17025, signing the reports. For Service Group specific validation, please refer to the Validation Signatures page if included, otherwise available by request. For Department specific Analyst/Supervisor validation names, please refer to the Test Summary section if included, otherwise available by request. This report is authorized by Rodney Major, General Manager responsible for Ontario Environmental laboratory operations.

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Microbiology testing is conducted at 6660 Campobello Rd. Chemistry testing is conducted at 6740 Campobello Rd.

FIELD INFORMATION FORM

BUREAU VERITAS

WM WASTE MANAGEMENT

Site Name: TCEC

Site No.: Sample: MW58-17 (Sample ID)

This Waste Management Field Information Form is Required
This form is to be completed, in addition to any State Forms. The Field Form is submitted along with the Chain of Custody Forms that accompany the sample containers (i.e. with the cooler that is returned to the laboratory).

Laboratory Use Only/Lab ID:

PURGE INFO

PURGE DATE (MM DD YY)	PURGE TIME (2400 Hr Clock)	ELAPSED HRS (hrs:min)	WATER VOL IN CASING (Gallons)	ACTUAL VOL PURGED (Gallons)	WELL VOLs PURGED
050724				1.25	

Note: For Passive Sampling, replace "Water Vol in Casing" and "Well Vols Purged" w/ Water Vol in Tubing/Flow Cell and Tubing/Flow Cell Vols Purged. Mark Changes, Record field data below.

PURGE/SAMPLE EQUIPMENT

Purging and Sampling Equipment ... Dedicated: (Y) or N

Purging Device: C

Sampling Device: C

A-Submersible Pump, B-Peristaltic Pump, C-QED Bladder Pump, D-Bailer, E-Piston Pump, F-Dipper/Bottle

X-Other:

Filter Device: (Y) or N (0.45 µ) or ____ µ (circle or fill in)

Filter Type: A (A-In-line Disposable, B-Pressure, C-Vacuum, X-Other:)

Sample Tube Type: (A-Teflon, B-Stainless Steel, C-PVC, D-Polypropylene, X-Other:)

WELL DATA

Well Elevation (at TOC) (ft/msl)

Depth to Water (DTW) (from TOC): 4.48 ft

Groundwater Elevation (GWE) (Site Datum, from TOC) (ft msl)

Total Well Depth (from TOC) (ft)

Stick Up (from ground elevation) (ft)

Casing ID (in)

Casing Material

Note: Total Depth, Stick Up, Casing ID, etc. are optional and can be from historical data, unless required by Site/Permit. Well Elevation, DTW, and GWE must be current, obtained from site.

STABILIZATION DATA (Optional)

Sample Time (2400 Hr Clock)	Rate/Unit	pH (std)	Conductance (SC/EC) (µmhos/cm @ 25°C)	Temp. (°C)	Turbidity (ntu)	D.O. (mg/L - ppm)	eH/ORP (mV)	DTW (ft)
		1st	1st					
		2nd	2nd					
		3rd	3rd					
		4th	4th					
Input Range for 3 consec. readings or Permit/State requirements:		+/-	+/-	+/-	+/-	+/-	+/-	

Stabilization Data Fields are Optional *(i.e. complete stabilization readings for parameters required by WM, Site, or State). These fields can be used where four (4) field measurements are required by State/Permit/Site. If a Data Logger or other Electronic format is used, fill in final readings below and submit electronic data separately to Site. If more fields above are needed, use separate sheet or form.*

FIELD DATA

SAMPLE DATE (MM DD YY)	pH (std)	CONDUCTANCE (µmhos/cm @ 25°C)	TEMP. (°C)	TURBIDITY (ntu)	DO (mg/L - ppm)	eH/ORP (mV)	Other: Units
050724	7.09	4.21	18.3	6.10			

Final Field Readings are required *(i.e. record field measurements, final stabilized readings, passive sample readings before sampling for all field parameters required by State/Permit/Site.)*

FIELD COMMENTS

Sample Appearance: transparent Odor: none Color: clear Other:

Weather Conditions (required daily, or as conditions change): 22°C Direction/Speed: 19 knots S Outlook: cloudy Precipitation: Y or (N)

Specific Comments (including purge/well volume calculations if required):

I certify that sampling procedures were in accordance with applicable EPA, State, and WM protocols (if more than one sampler, all should sign):

Date	Name	Signature	Company
05/07/24	Eric Wilson	E.W. Jones	RWDI

DISTRIBUTION: WHITE/ORIGINAL - Stays with Sample, YELLOW - Returned to Client, PINK - Field Copy

Field Information Form v-3.1 0

2082

S2437676

BUREAU VERITAS

FIELD INFORMATION FORM

WM WASTE MANAGEMENT

Site Name: TCEC

Site No.: Sample: GW72-10 (Sample ID)

This Waste Management Field Information Form is Required
This form is to be completed, in addition to any State Forms. The Field Form is submitted along with the Chain of Custody Forms that accompany the sample containers (i.e. with the cooler that is returned to the laboratory).

Laboratory Use Only/Lab ID:

PURGE INFO

PURGE DATE (MM DD YY)	PURGE TIME (2400 Hr Clock)	ELAPSED HRS (hrs:min)	WATER VOL IN CASING (Gallons)	ACTUAL VOL PURGED (Gallons)	WELL VOLs PURGED
050624				0.75 L	

Note: For Passive Sampling, replace "Water Vol in Casing" and "Well Vols Purged" w/ Water Vol in Tubing/Flow Cell and Tubing/Flow Cell Vols Purged. Mark Changes, Record field data below.

PURGE/SAMPLE EQUIPMENT

Purging and Sampling Equipment ... Dedicated: Y or N

Filter Device: Y or N 0.45 or ____ µ (circle or fill in)

Purging Device: ____ A-Submersible Pump, B-Peristaltic Pump, C-QED Bladder Pump, D-Bailer, E-Piston Pump, F-Dipper/Bottle

Sampling Device: ____

X-Other: ____

Filter Type: A (A-In-line Disposable, B-Pressure, C-Vacuum, X-Other: ____)

Sample Tube Type: ____ (A-Teflon, B-Stainless Steel, C-PVC, D-Polypropylene, X-Other: ____)

WELL DATA

Well Elevation (at TOC): ____ (ft/msl)

Depth to Water (DTW) (from TOC): 3.93 (ft) (Site Datum, from TOC)

Groundwater Elevation (GWE): ____ (ft msl)

Total Well Depth (from TOC): ____ (ft)

Stick Up (from ground elevation): ____ (ft)

Casing ID: ____ (in)

Casing Material: ____

Note: Total Depth, Stick Up, Casing ID, etc. are optional and can be from historical data, unless required by Site/Permit. Well Elevation, DTW, and GWE must be current, obtained from site.

STABILIZATION DATA (Optional)

Sample Time (2400 Hr Clock)	Rate/Unit	pH (std)	Conductance (SC/EC) (µmhos/cm @ 25°C)	Temp. (°C)	Turbidity (ntu)	D.O. (mg/L - ppm)	eH/ORP (mV)	DTW (ft)
		1st	1st					
		2nd	2nd					
		3rd	3rd					
		4th	4th					
Input Range for 3 consec. readings or Permit/State requirements:		+/-	+/-	+/-	+/-	+/-	+/-	

Stabilization Data Fields are Optional *(i.e. complete stabilization readings for parameters required by WM, Site, or State). These fields can be used where four (4) field measurements are required by State/Permit/Site. If a Data Logger or other Electronic format is used, fill in final readings below and submit electronic data separately to Site. If more fields above are needed, use separate sheet or form.*

FIELD DATA

SAMPLE DATE (MM DD YY)	pH (std)	CONDUCTANCE mS/µmhos/cm @ 25°C	TEMP. (°C)	TURBIDITY (ntu)	DO (mg/L - ppm)	eH/ORP (mV)	Other: Units
050624	6.8	3.29	16.2	>999			

Final Field Readings are required *(i.e. record field measurements, final stabilized readings, passive sample readings before sampling for all field parameters required by State/Permit/Site.)*

Sample Appearance: translucent Odor: N/A Color: brown Other: ____

Weather Conditions (required daily, or as conditions change): 19°C Direction/Speed: 14 km/h N Outlook: clear Precipitation: Y or (N)

Specific Comments (including purge/well volume calculations if required): ____

FIELD COMMENTS

I certify that sampling procedures were in accordance with applicable EPA, State, and WM protocols (if more than one sampler, all should sign):

05/06/24 Eric Wilson [signature] RWDI

S2437676

BUREAU VERITAS

FIELD INFORMATION FORM

WM WASTE MANAGEMENT

Site Name: TCEC

Site No.: Sample: OW57-15 (Sample ID)

This Waste Management Field Information Form is Required
This form is to be completed, in addition to any State Forms. The Field Form is submitted along with the Chain of Custody Forms that accompany the sample containers (i.e. with the cooler that is returned to the laboratory).

Laboratory Use Only/Lab ID:

PURGE INFO

PURGE DATE (MM DD YY)	PURGE TIME (2400 Hr Clock)	ELAPSED HRS (hrs:min)	WATER VOL IN CASING (Gallons)	ACTUAL VOL PURGED (Gallons)	WELL VOLs PURGED
050624				0.91 L	

Note: For Passive Sampling, replace "Water Vol in Casing" and "Well Vols Purged" w/ Water Vol in Tubing/Flow Cell and Tubing/Flow Cell Vols Purged. Mark Changes, Record field data below.

PURGE/SAMPLE EQUIPMENT

Purging and Sampling Equipment ... Dedicated: (Y) or N

Purging Device: C — A-Submersible Pump, B-Peristaltic Pump, C-QED Bladder Pump, D-Bailer, E-Piston Pump, F-Dipper/Bottle

Sampling Device: C

X-Other:

Filter Device: (Y) or N — 0.45 µ or _____ µ (circle or fill in)

Filter Type: A — A-In-line Disposable, B-Pressure, C-Vacuum, X-Other: _____

Sample Tube Type: _____ — A-Teflon, B-Stainless Steel, C-PVC, D-Polypropylene, X-Other: _____

WELL DATA

Well Elevation (at TOC) _____ (ft/msl)

Depth to Water (DTW) (from TOC) 2.03 (ft)

Groundwater Elevation (GWE) (Site Datum, from TOC) _____ (ft msl)

Total Well Depth (from TOC) _____ (ft)

Stick Up (from ground elevation) _____ (ft)

Casing ID _____ (in)

Casing Material _____

Note: Total Depth, Stick Up, Casing ID, etc. are optional and can be from historical data, unless required by Site/Permit. Well Elevation, DTW, and GWE must be current, obtained from site.

STABILIZATION DATA (Optional)

Sample Time (2400 Hr Clock)	Rate/Unit	pH (std)	Conductance (SC/EC) (µmhos/cm @ 25°C)	Temp. (°C)	Turbidity (ntu)	D.O. (mg/L - ppm)	eH/ORP (mV)	DTW (ft)
1st		1st	1st					
2nd		2nd	2nd					
3rd		3rd	3rd					
4th		4th	4th					
Input Range for 3 consec. readings or Permit/State requirements:		+/-	+/-	+/-	+/-	+/-	+/-	

Stabilization Data Fields are Optional *(i.e. complete stabilization readings for parameters required by WM, Site, or State). These fields can be used where four (4) field measurements are required by State/Permit/Site. If a Data Logger or other Electronic format is used, fill in final readings below and submit electronic data separately to Site. If more fields above are needed, use separate sheet or form.*

FIELD DATA

SAMPLE DATE (MM DD YY)	pH (std)	CONDUCTANCE (µmhos/cm @ 25°C)	TEMP. (°C)	TURBIDITY (ntu)	DO (mg/L - ppm)	eH/ORP (mV)	Other: Units
050624	7.2	3.36 mS	15.1	147			

Final Field Readings are required *(i.e. record field measurements, final stabilized readings, passive sample readings before sampling for all field parameters required by State/Permit/Site.)*

Sample Appearance: transparent — Odor: N10 — Color: clear — Other: _____

Weather Conditions (required daily, or as conditions change): 15°C — Direction/Speed: 14km/h N — Outlook: clear — Precipitation: Y or (N)

Specific Comments (including purge/well volume calculations if required): _____

FIELD COMMENTS

I certify that sampling procedures were in accordance with applicable EPA, State, and WM protocols (if more than one sampler, all should sign):

Date	Name	Signature	Company
05/06/24	Eric Wilson	E.Wilson	RWDI

DISTRIBUTION: WHITE/ORIGINAL - Stays with Sample, YELLOW - Returned to Client, PINK - Field Copy

S2437676

BUREAU VERITAS

FIELD INFORMATION FORM

WASTE MANAGEMENT

Site Name: TCEC

Site No.:

Sample: OW617+11 (Sample ID)

This Waste Management Field Information Form is Required
This form is to be completed, in addition to any State Forms. The Field Form is submitted along with the Chain of Custody Forms that accompany the sample containers (i.e. with the cooler that is returned to the laboratory).

Laboratory Use Only/Lab ID:

PURGE INFO

PURGE DATE (MM DD YY)	PURGE TIME (2400 Hr Clock)	ELAPSED HRS (hrs:min)	WATER VOL IN CASING (Gallons)	ACTUAL VOL PURGED (Gallons)	WELL VOLs PURGED
050624				0.80 L	

Note: For Passive Sampling, replace "Water Vol in Casing" and "Well Vols Purged" w/ Water Vol in Tubing/Flow Cell and Tubing/Flow Cell Vols Purged. Mark Changes, Record field data below.

PURGE/SAMPLE EQUIPMENT

Purging and Sampling Equipment ... Dedicated: Y or N

Purging Device:
Sampling Device:
X-Other:

A-Submersible Pump, B-Peristaltic Pump, C-QED Bladder Pump, D-Bailer, E-Piston Pump, F-Dipper/Bottle

Filter Device: A or N — 0.45 µ or ____ µ (circle or fill in)

Filter Type: A — A-In-line Disposable, B-Pressure, C-Vacuum, X-Other:

Sample Tube Type: A-Teflon, B-Stainless Steel, C-PVC, D-Polypropylene, X-Other:

WELL DATA

Well Elevation (at TOC): (ft/msl)
Depth to Water (DTW) (from TOC): 4.64 (ft)
Groundwater Elevation (GWE) (Site Datum, from TOC): (ft msl)
Total Well Depth (from TOC): (ft)
Stick Up (from ground elevation): (ft)
Casing ID: (in)
Casing Material:

Note: Total Depth, Stick Up, Casing ID, etc. are optional and can be from historical data, unless required by Site/Permit. Well Elevation, DTW, and GWE must be current, obtained from site.

STABILIZATION DATA (Optional)

Sample Time (2400 Hr Clock)	Rate/Unit	pH (std)	Conductance (SC/EC) (µmhos/cm @ 25°C)	Temp. (°C)	Turbidity (ntu)	D.O. (mg/L - ppm)	eH/ORP (mV)	DTW (ft)
		1st	1st					
		2nd	2nd					
		3rd	3rd					
		4th	4th					
Input Range for 3 consec. readings or Permit/State requirements:		+/-	+/-	+/-	+/-	+/-	+/-	

Stabilization Data Fields are Optional *(i.e. complete stabilization readings for parameters required by WM, Site, or State). These fields can be used where four (4) field measurements are required by State/Permit/Site. If a Data Logger or other Electronic format is used, fill in final readings below and submit electronic data separately to Site. If more fields above are needed, use separate sheet or form.*

FIELD DATA

SAMPLE DATE (MM DD YY)	pH (std)	CONDUCTANCE (µmhos/cm @ 25°C)	TEMP. (°C)	TURBIDITY (ntu)	DO (mg/L - ppm)	eH/ORP (mV)	Other: Units
050629	6.7	1.50	16.9	52.0			

Final Field Readings are required *(i.e. record field measurements, final stabilized readings, passive sample readings before sampling for all field parameters required by State/Permit/Site.)*

Sample Appearance: transparent Odor: n/o Color: clear Other:

Weather Conditions (required daily, or as conditions change): 19°c Direction/Speed: 19 Kmh N Outlook: clear Precipitation: Y or (N)

Specific Comments (including purge/well volume calculations if required):

FIELD COMMENTS

I certify that sampling procedures were in accordance with applicable EPA, State, and WM protocols (if more than one sampler, all should sign):

Date	Name	Signature	Company
05/06/24	Eric Wilson	E. Wilson	RWDI
/ /			

Company

S2437676 X

BUREAU VERITAS

FIELD INFORMATION FORM

WM WASTE MANAGEMENT

Site Name: TCEC

Site No.:

Sample: GW54-10 (Sample ID)

This Waste Management Field Information Form is Required
This form is to be completed, in addition to any State Forms. The Field Form is submitted along with the Chain of Custody Forms that accompany the sample containers (i.e. with the cooler that is returned to the laboratory).

Laboratory Use Only/Lab ID:

PURGE INFO

PURGE DATE (MM DD YY)	PURGE TIME (2400 Hr Clock)	ELAPSED HRS (hrs:min)	WATER VOL IN CASING (Gallons)	ACTUAL VOL PURGED (Gallons)	WELL VOLs PURGED
05 07 24				0.79 L	

Note: For Passive Sampling, replace "Water Vol in Casing" and "Well Vols Purged" w/ Water Vol in Tubing/Flow Cell and Tubing/Flow Cell Vols Purged. Mark Changes, Record field data below.

PURGE/SAMPLE EQUIPMENT

Purging and Sampling Equipment ... Dedicated: (Y) or N

Purging Device: C — A-Submersible Pump, B-Peristaltic Pump, C-QED Bladder Pump, D-Bailer, E-Piston Pump, F-Dipper/Bottle

Sampling Device: C

X-Other:

Filter Device: (Y) or N — (0.45 µ) or ____ µ (circle or fill in)

Filter Type: A — A-In-line Disposable, B-Pressure, C-Vacuum, X-Other: ____

Sample Tube Type: ____ — A-Teflon, B-Stainless Steel, C-PVC, D-Polypropylene, X-Other: ____

WELL DATA

Well Elevation (at TOC) ____ (ft/msl)

Depth to Water (DTW) (from TOC) 4.55 (ft) M

Groundwater Elevation (GWE) (Site Datum, from TOC) ____ (ft msl)

Total Well Depth (from TOC) ____ (ft)

Stick Up (from ground elevation) ____ (ft)

Casing ID ____ (in)

Casing Material ____

Note: Total Depth, Stick Up, Casing ID, etc. are optional and can be from historical data, unless required by Site/Permit. Well Elevation, DTW, and GWE must be current, obtained from site.

STABILIZATION DATA (Optional)

Sample Time (2400 Hr Clock)	Rate/Unit	pH (std)	Conductance (SC/EC) (µmhos/cm @ 25°C)	Temp. (°C)	Turbidity (ntu)	D.O. (mg/L - ppm)	eH/ORP (mV)	DTW (ft)
1st								
2nd								
3rd								
4th								
Input Range for 3 consec. readings or Permit/State requirements:		+/-	+/-	+/-	+/-	+/-	+/-	

Stabilization Data Fields are Optional *(i.e. complete stabilization readings for parameters required by WM, Site, or State). These fields can be used where four (4) field measurements are required by State/Permit/Site. If a Data Logger or other Electronic format is used, fill in final readings below and submit electronic data separately to Site. If more fields above are needed, use separate sheet or form.*

FIELD DATA

SAMPLE DATE (MM DD YY)	pH (std)	CONDUCTANCE (µmhos/cm @ 25°C)	TEMP. (°C)	TURBIDITY (ntu)	DO (mg/L - ppm)	eH/ORP (mV)	Other: Units
05 07 24	7.01	2.8	13.5	54.7			

Final Field Readings are required *(i.e. record field measurements, final stabilized readings, passive sample readings before sampling for all field parameters required by State/Permit/Site.)*

FIELD COMMENTS

Sample Appearance: transparent — Odor: NO — Color: clear — Other: ____

Weather Conditions (required daily, or as conditions change): 15°C — Direction/Speed: 14km/h SE — Outlook: clear — Precipitation: Y or (N)

Specific Comments (including purge/well volume calculations if required): ____

I certify that sampling procedures were in accordance with applicable EPA, State, and WM protocols (if more than one sampler, all should sign):

Date	Name	Signature	Company
05/07/24	Eric Wilson	E. Wilson	KWDI

Field Information Form v.3.1 06/20

S2437676

BUREAU VERITAS

FIELD INFORMATION FORM

WASTE MANAGEMENT

Site Name: TCEC

Site No.: ____ Sample: OW3-9 (Sample ID)

This Waste Management Field Information Form is Required
This form is to be completed, in addition to any State Forms. The Field Form is submitted along with the Chain of Custody Forms that accompany the sample containers (i.e. with the cooler that is returned to the laboratory).

Laboratory Use Only/Lab ID:

PURGE INFO

PURGE DATE (MM DD YY)	PURGE TIME (2400 Hr Clock)	ELAPSED HRS (hrs:min)	WATER VOL IN CASING (Gallons)	ACTUAL VOL PURGED (Gallons)	WELL VOLs PURGED
050724				0.73 L	

Note: For Passive Sampling, replace "Water Vol in Casing" and "Well Vols Purged" w/ Water Vol in Tubing/Flow Cell and Tubing/Flow Cell Vols Purged. Mark Changes. Record field data below.

PURGE/SAMPLE EQUIPMENT

Purging and Sampling Equipment ... Dedicated: (Y) or N

Purging Device: C
Sampling Device: C
X-Other:

A-Submersible Pump, B-Peristaltic Pump, C-QED Bladder Pump, D-Bailer, E-Piston Pump, F-Dipper/Bottle

Filter Device: (Y) or N — (0.45 µ) or ____ µ (circle or fill in)

Filter Type: A (A-In-line Disposable, B-Pressure, C-Vacuum, X-Other: ____)

Sample Tube Type: ____ (A-Teflon, B-Stainless Steel, C-PVC, D-Polypropylene, X-Other: ____)

WELL DATA

Well Elevation (at TOC) (ft/msl)	Depth to Water (DTW) (from TOC)	Groundwater Elevation (GWE) (Site Datum, from TOC) (ft msl)
	3.54 (ft) M	

Total Well Depth (from TOC) (ft)	Stick Up (from ground elevation) (ft)	Casing ID (in)	Casing Material

Note: Total Depth, Stick Up, Casing ID, etc. are optional and can be from historical data, unless required by Site/Permit. Well Elevation, DTW, and GWE must be current, obtained from site.

STABILIZATION DATA (Optional)

Sample Time (2400 Hr Clock)	Rate/Unit	pH (std)	Conductance (SC/EC) (µmhos/cm @ 25°C)	Temp. (°C)	Turbidity (ntu)	D.O. (mg/L - ppm)	eH/ORP (mV)	DTW (ft)
		1st	1st					
		2nd	2nd					
		3rd	3rd					
		4th	4th					
Input Range for 3 consec. readings or Permit/State requirements:		+/-	+/-	+/-	+/-	+/-	+/-	

Stabilization Data Fields are Optional *(i.e. complete stabilization readings for parameters required by WM, Site, or State). These fields can be used where four (4) field measurements are required by State/Permit/Site. If a Data Logger or other Electronic format is used, fill in final readings below and submit electronic data separately to Site. If more fields above are needed, use separate sheet or form.*

FIELD DATA

SAMPLE DATE (MM DD YY)	pH (std)	CONDUCTANCE (µmhos/cm @ 25°C)	TEMP. (°C)	TURBIDITY (ntu)	DO (mg/L - ppm)	eH/ORP (mV)	Other: Units
050724	7.3	4.4	14.2	14.9			

Final Field Readings are required *(i.e. record field measurements, final stabilized readings, passive sample readings before sampling for all field parameters required by State/Permit/Site.)*

FIELD COMMENTS

Sample Appearance: transparent Odor: none Color: clear Other: ____

Weather Conditions (required daily, or as conditions change): 15°C Direction/Speed: 14 Km SE Outlook: clear Precipitation: Y or (N)

Specific Comments (including purge/well volume calculations if required): ____

I certify that sampling procedures were in accordance with applicable EPA, State, and WM protocols (if more than one sampler, all should sign):

Date	Name	Signature	Company
050724	Eric Wilson	E. Wilson	RWDI

DISTRIBUTION: WHITE/ORIGINAL - Stays with Sample, YELLOW - Returned to Client, PINK - Field Copy

Custody Tracking Form

T894088-H

Please use this form for custody tracking when submitting the work instructions via eCOC (electronic Chain of Custody). Please ensure your form has a barcode or a Bureau Veritas eCOC confirmation number in the top right hand side. This number links your electronic submission to your samples. This form should be placed in the cooler with your samples.

First Sample: OW58-17
Last Sample: OW73-9
Sample Count: 6

Relinquished By				Received By			
Jess Cleland		Date	2024/05/02	Ashlie Stevenson	Ashlie Stevenson	Date	2024/05/09
		Time (24 HR)	10:00			Time (24 HR)	09:49
		Date				Date	
		Time (24 HR)				Time (24 HR)	
		Date				Date	
		Time (24 HR)				Time (24 HR)	

Unless otherwise agreed to, submissions and use of services are governed by Bureau Veritas' standard terms and conditions which can be found at www.bvna.com.

Triage Information

Sampled By (Print): Eric Wilson

# of Coolers/Pkgs: 2

Rush ☐ Immediate Test ☐ Food Residue ☐

Micro ☐ Food Chemistry ☐

*** LABORATORY USE ONLY ***

Received At

Labeled By

Verified By

Lab Comments:

09-May-24 09:49
Patricia Legette
C4D9823
JDK ENV-1374

Custody Seal		Cooling Media	Temperature °C		
Present (Y/N)	Intact (Y/N)	Present (Y/N)	1	2	3
			3	2	1
			3	3	3
Drinking Water Metals Preservation Check Done (Circle)				YES	NO

COR FCD-00383/4

Page 1 of 1

Your P.O. #: 13254256
Your Project #: 2402553.01
Site#: 200
Site Location: ON07
Your C.O.C. #: 894098

Attention: Khalid Hussein - Twin Creeks

RWDI Inc.
600 Southgate Drive
Guelph, ON
Canada N1G 4P6

Report Date: 2024/05/17
Report #: R8153584
Version: 1 - Final

CERTIFICATE OF ANALYSIS

BUREAU VERITAS JOB #: C4D9829
Received: 2024/05/09, 09:49

Sample Matrix: Water
Samples Received: 1

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Analytical Method
Alkalinity	1	N/A	2024/05/17	CAM SOP-00448	SM 24 2320 B m
Chloride by Automated Colourimetry	1	N/A	2024/05/13	CAM SOP-00463	SM 24 4500-Cl E m
Conductance in Water - On-site	1	N/A	2024/05/13		
Conductivity	1	N/A	2024/05/17	CAM SOP-00414	SM 24 2510 m
Dissolved Organic Carbon (DOC) (1)	1	N/A	2024/05/14	CAM SOP-00446	SM 24 5310 B m
Dissolved Metals by ICPMS	1	N/A	2024/05/13	CAM SOP-00447	EPA 6020B m
Ammonia-N	1	N/A	2024/05/15	CAM SOP-00441	USGS I-2522-90 m
Nitrate & Nitrite as Nitrogen in Water (2)	1	N/A	2024/05/13	CAM SOP-00440	SM 24 4500-NO3I/NO2B
pH (3)	1	2024/05/11	2024/05/17	CAM SOP-00413	SM 24th - 4500H+ B
Field Measured pH (4)	1	N/A	2024/05/13		Field pH Meter
Sulphate by Automated Turbidimetry	1	N/A	2024/05/13	CAM SOP-00464	SM 24 4500-SO42- E m
Total Dissolved Solids	1	2024/05/13	2024/05/14	CAM SOP-00428	SM 24 2540C m
Field Temperature (4)	1	N/A	2024/05/13		Field Thermometer
Total Kjeldahl Nitrogen in Water	1	2024/05/14	2024/05/14	CAM SOP-00938	OMOE E3516 m
Turbidity - On-site	1	N/A	2024/05/13		
Volatile Organic Compounds in Water	1	N/A	2024/05/15	CAM SOP-00228	EPA 8260D

Remarks:

Bureau Veritas is accredited to ISO/IEC 17025 for specific parameters on scopes of accreditation. Unless otherwise noted, procedures used by Bureau Veritas are based upon recognized Provincial, Federal or US method compendia such as CCME, EPA, APHA or the Quebec Ministry of Environment.

All work recorded herein has been done in accordance with procedures and practices ordinarily exercised by professionals in Bureau Veritas' profession using accepted testing methodologies, quality assurance and quality control procedures (except where otherwise agreed by the client and Bureau Veritas in writing). All data is in statistical control and has met quality control and method performance criteria unless otherwise noted. All method blanks are reported; unless indicated otherwise, associated sample data are not blank corrected. Where applicable, unless otherwise noted, Measurement Uncertainty has not been accounted for when stating conformity to the referenced standard.

Bureau Veritas liability is limited to the actual cost of the requested analyses, unless otherwise agreed in writing. There is no other warranty expressed or implied. Bureau Veritas has been retained to provide analysis of samples provided by the Client using the testing methodology referenced in this report. Interpretation and use of test results are the sole responsibility of the Client and are not within the scope of services provided by Bureau Veritas, unless otherwise agreed in writing. Bureau Veritas is not responsible for the accuracy or any data impacts, that result from the information provided by the customer or their agent.

Your P.O. #: 13254256
Your Project #: 2402553.01
Site#: 200
Site Location: ON07
Your C.O.C. #: 894098

Attention: Khalid Hussein - Twin Creeks

RWDI Inc.
600 Southgate Drive
Guelph, ON
Canada N1G 4P6

Report Date: 2024/05/17
Report #: R8153584
Version: 1 - Final

CERTIFICATE OF ANALYSIS

BUREAU VERITAS JOB #: C4D9829

Received: 2024/05/09, 09:49

Solid sample results, except biota, are based on dry weight unless otherwise indicated. Organic analyses are not recovery corrected except for isotope dilution methods.

Results relate to samples tested. When sampling is not conducted by Bureau Veritas, results relate to the supplied samples tested.

This Certificate shall not be reproduced except in full, without the written approval of the laboratory.

Reference Method suffix "m" indicates test methods incorporate validated modifications from specific reference methods to improve performance.

* RPDs calculated using raw data. The rounding of final results may result in the apparent difference.

(1) Dissolved Organic Carbon (DOC) present in the sample should be considered as non-purgeable DOC.

(2) Values for calculated parameters may not appear to add up due to rounding of raw data and significant figures.

(3) "The CCME method and Analytical Protocol (O. Reg 153/04, O. Reg. 406/19) requires pH to be analyzed within 15 minutes of sampling and therefore field analysis is required for compliance. All Laboratory pH analyses in this report are reported past the CCME and Analytical Protocol (O. Reg 153/04, O. Reg. 406/19) holding time. Bureau Veritas endeavors to analyze samples as soon as possible after receipt."

(4) This is a field test, therefore, the results relate to items that were not analysed at Bureau Veritas.

Encryption Key

Please direct all questions regarding this Certificate of Analysis to:
Patricia Legette, Project Manager
Email: Patricia.Legette@bureauveritas.com
Phone# (905)817-5799

==========

Bureau Veritas has procedures in place to guard against improper use of the electronic signature and have the required "signatories", as per ISO/IEC 17025, signing the reports. For Service Group specific validation, please refer to the Validation Signatures page if included, otherwise available by request. For Department specific Analyst/Supervisor validation names, please refer to the Test Summary section if included, otherwise available by request. This report is authorized by Rodney Major, General Manager responsible for Ontario Environmental laboratory operations.

Bureau Veritas Job #: C4D9829
Report Date: 2024/05/17

RWDI Inc.
Client Project #: 2402553.01
Site Location: ON07
Your P.O. #: 13254256
Sampler Initials: JC

RESULTS OF ANALYSES OF WATER

Bureau Veritas ID		ZCZ458		
Sampling Date		2024/05/07 09:00		
COC Number		894098		
	UNITS	**OW49-29**	**RDL**	**QC Batch**
Field Measurements				
Field Conductivity	uS/cm	3280	N/A	ONSITE
Field Temperature	Celsius	12.5	N/A	ONSITE
Field Measured Field Turbidity	NTU	16.2	N/A	ONSITE
Field Measured pH	pH	6.7		ONSITE
Inorganics				
Total Ammonia-N	mg/L	0.81	0.15	9389564
Conductivity	umho/cm	2000	1.0	9387982
Total Dissolved Solids	mg/L	1600	10	9389341
Total Kjeldahl Nitrogen (TKN)	mg/L	0.8	0.7	9391375
Dissolved Organic Carbon	mg/L	1.4	0.4	9389771
pH	pH	8.01		9387983
Dissolved Sulphate (SO4)	mg/L	940	5.0	9388033
Alkalinity (Total as CaCO3)	mg/L	120	1.0	9387978
Dissolved Chloride (Cl-)	mg/L	32	1.0	9388032
Nitrate (N)	mg/L	0.19	0.10	9388030

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
N/A = Not Applicable

Bureau Veritas 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.bvna.com

Microbiology testing is conducted at 6660 Campobello Rd. Chemistry testing is conducted at 6740 Campobello Rd.

Bureau Veritas Job #: C4D9829
Report Date: 2024/05/17

RWDI Inc.
Client Project #: 2402553.01
Site Location: ON07
Your P.O. #: 13254256
Sampler Initials: JC

ELEMENTS BY ATOMIC SPECTROSCOPY (WATER)

Bureau Veritas ID		ZCZ458		
Sampling Date		2024/05/07 09:00		
COC Number		894098		
	UNITS	OW49-29	RDL	QC Batch
Metals				
Dissolved Barium (Ba)	mg/L	0.009	0.005	9389048
Dissolved Boron (B)	mg/L	1.6	0.02	9389048
Dissolved Cadmium (Cd)	mg/L	<0.0001	0.0001	9389048
Dissolved Calcium (Ca)	mg/L	140	0.4	9389048
Dissolved Iron (Fe)	mg/L	0.4	0.1	9389048
Dissolved Lead (Pb)	mg/L	<0.0005	0.0005	9389048
Dissolved Magnesium (Mg)	mg/L	74	0.05	9389048
Dissolved Potassium (K)	mg/L	6.2	0.2	9389048
Dissolved Sodium (Na)	mg/L	250	0.1	9389048

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

Bureau Veritas 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.bvna.com

Microbiology testing is conducted at 6660 Campobello Rd. Chemistry testing is conducted at 6740 Campobello Rd.

Bureau Veritas Job #: C4D9829
Report Date: 2024/05/17

RWDI Inc.
Client Project #: 2402553.01
Site Location: ON07
Your P.O. #: 13254256
Sampler Initials: JC

VOLATILE ORGANICS BY GC/MS (WATER)

Bureau Veritas ID		ZCZ458		
Sampling Date		2024/05/07 09:00		
COC Number		894098		
	UNITS	OW49-29	RDL	QC Batch
Volatile Organics				
Benzene	ug/L	<0.20	0.20	9389866
1,4-Dichlorobenzene	ug/L	<0.40	0.40	9389866
Ethylbenzene	ug/L	<0.20	0.20	9389866
Methylene Chloride(Dichloromethane)	ug/L	<2.0	2.0	9389866
Toluene	ug/L	<0.20	0.20	9389866
Vinyl Chloride	ug/L	<0.20	0.20	9389866
p+m-Xylene	ug/L	<0.20	0.20	9389866
o-Xylene	ug/L	<0.20	0.20	9389866
Total Xylenes	ug/L	<0.20	0.20	9389866
Surrogate Recovery (%)				
4-Bromofluorobenzene	%	97		9389866
D4-1,2-Dichloroethane	%	105		9389866
D8-Toluene	%	97		9389866

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

Bureau Veritas 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.bvna.com

Microbiology testing is conducted at 6660 Campobello Rd. Chemistry testing is conducted at 6740 Campobello Rd.

GENERAL COMMENTS

Each temperature is the average of up to three cooler temperatures taken at receipt

Package 1	2.0°C
Package 2	3.0°C

Sample ZCZ458 [OW49-29] : TKN < Ammonia: Both values fall within the method uncertainty for duplicates and are likely equivalent.

Results relate only to the items tested.

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Microbiology testing is conducted at 6660 Campobello Rd. Chemistry testing is conducted at 6740 Campobello Rd.

Bureau Veritas Job #: C4D9829
Report Date: 2024/05/17

QUALITY ASSURANCE REPORT

RWDI Inc.
Client Project #: 2402553.01
Site Location: ON07
Your P.O. #: 13254256
Sampler Initials: JC

			Matrix Spike		SPIKED BLANK		Method Blank		RPD		QC Standard	
QC Batch	Parameter	Date	% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits	% Recovery	QC Limits
9389866	4-Bromofluorobenzene	2024/05/15	96	70 - 130	95	70 - 130	97	%				
9389866	D4-1,2-Dichloroethane	2024/05/15	105	70 - 130	104	70 - 130	104	%				
9389866	D8-Toluene	2024/05/15	99	70 - 130	99	70 - 130	98	%				
9387978	Alkalinity (Total as CaCO3)	2024/05/17			101	85 - 115	<1.0	mg/L	0.26 (1)	20		
9387982	Conductivity	2024/05/17			99	85 - 115	<1.0	umho/cm	0.60 (1)	10		
9387983	pH	2024/05/17			102	98 - 103			1.1 (1)	N/A		
9388030	Nitrate (N)	2024/05/13	95	80 - 120	98	80 - 120	<0.10	mg/L	NC (1)	20		
9388032	Dissolved Chloride (Cl-)	2024/05/13	97	80 - 120	100	80 - 120	<1.0	mg/L	NC (1)	20		
9388033	Dissolved Sulphate (SO4)	2024/05/13	99	75 - 125	100	80 - 120	<1.0	mg/L	NC (1)	20		
9389048	Dissolved Barium (Ba)	2024/05/13	104	80 - 120	102	80 - 120	<0.005	mg/L	0.14 (1)	20		
9389048	Dissolved Boron (B)	2024/05/13	NC	80 - 120	101	80 - 120	<0.02	mg/L	4.3 (1)	20		
9389048	Dissolved Cadmium (Cd)	2024/05/13	106	80 - 120	102	80 - 120	<0.0001	mg/L	NC (1)	20		
9389048	Dissolved Calcium (Ca)	2024/05/13	NC	80 - 120	102	80 - 120	<0.2	mg/L	2.3 (1)	20		
9389048	Dissolved Iron (Fe)	2024/05/13	110	80 - 120	102	80 - 120	<0.1	mg/L	NC (1)	20		
9389048	Dissolved Lead (Pb)	2024/05/13	103	80 - 120	99	80 - 120	<0.0005	mg/L	NC (1)	20		
9389048	Dissolved Magnesium (Mg)	2024/05/13	NC	80 - 120	100	80 - 120	<0.05	mg/L	3.7 (1)	20		
9389048	Dissolved Potassium (K)	2024/05/13	110	80 - 120	103	80 - 120	<0.2	mg/L	3.7 (1)	20		
9389048	Dissolved Sodium (Na)	2024/05/13	NC	80 - 120	100	80 - 120	<0.1	mg/L	4.6 (1)	20		
9389341	Total Dissolved Solids	2024/05/14			98	80 - 120	<10	mg/L	0.14 (1)	20		
9389564	Total Ammonia-N	2024/05/15	113	75 - 125	99	80 - 120	<0.15	mg/L	0.022 (1)	20		
9389771	Dissolved Organic Carbon	2024/05/13	91	80 - 120	95	80 - 120	<0.4	mg/L	3.9 (1)	20		
9389866	1,4-Dichlorobenzene	2024/05/15	108	70 - 130	113	70 - 130	<0.40	ug/L	NC (1)	30		
9389866	Benzene	2024/05/15	108	70 - 130	112	70 - 130	<0.20	ug/L	1.9 (1)	30		
9389866	Ethylbenzene	2024/05/15	101	70 - 130	105	70 - 130	<0.20	ug/L	NC (1)	30		
9389866	Methylene Chloride(Dichloromethane)	2024/05/15	121	70 - 130	124	70 - 130	<2.0	ug/L	NC (1)	30		
9389866	o-Xylene	2024/05/15	92	70 - 130	96	70 - 130	<0.20	ug/L	NC (1)	30		
9389866	p+m-Xylene	2024/05/15	105	70 - 130	109	70 - 130	<0.20	ug/L	NC (1)	30		
9389866	Toluene	2024/05/15	104	70 - 130	108	70 - 130	<0.20	ug/L	NC (1)	30		
9389866	Total Xylenes	2024/05/15					<0.20	ug/L	NC (1)	30		

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Microbiology testing is conducted at 6660 Campobello Rd. Chemistry testing is conducted at 6740 Campobello Rd.

QUALITY ASSURANCE REPORT(CONT'D)

			Matrix Spike		SPIKED BLANK		Method Blank		RPD		QC Standard	
QC Batch	Parameter	Date	% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits	% Recovery	QC Limits
9389866	Vinyl Chloride	2024/05/15	112	70 - 130	118	70 - 130	<0.20	ug/L	NC (1)	30		
9391375	Total Kjeldahl Nitrogen (TKN)	2024/05/14	103	80 - 120	101	80 - 120	<0.7	mg/L	1.2 (1)	20	104	80 - 120

N/A = Not Applicable

Duplicate: Paired analysis of a separate portion of the same sample. Used to evaluate the variance in the measurement.

Matrix Spike: A sample to which a known amount of the analyte of interest has been added. Used to evaluate sample matrix interference.

QC Standard: A sample of known concentration prepared by an external agency under stringent conditions. Used as an independent check of method accuracy.

Spiked Blank: A blank matrix sample to which a known amount of the analyte, usually from a second source, has been added. Used to evaluate method accuracy.

Method Blank: A blank matrix containing all reagents used in the analytical procedure. Used to identify laboratory contamination.

Surrogate: A pure or isotopically labeled compound whose behavior mirrors the analytes of interest. Used to evaluate extraction efficiency.

NC (Matrix Spike): The recovery in the matrix spike was not calculated. The relative difference between the concentration in the parent sample and the spike amount was too small to permit a reliable recovery calculation (matrix spike concentration was less than the native sample concentration)

NC (Duplicate RPD): The duplicate RPD was not calculated. The concentration in the sample and/or duplicate was too low to permit a reliable RPD calculation (absolute difference <= 2x RDL).

(1) Duplicate Parent ID

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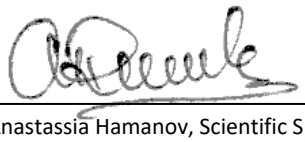
Microbiology testing is conducted at 6660 Campobello Rd. Chemistry testing is conducted at 6740 Campobello Rd.

Bureau Veritas Job #: C4D9829
Report Date: 2024/05/17

RWDI Inc.
Client Project #: 2402553.01
Site Location: ON07
Your P.O. #: 13254256
Sampler Initials: JC

VALIDATION SIGNATURE PAGE

The analytical data and all QC contained in this report were reviewed and validated by:



Anastassia Hamanov, Scientific Specialist



Zunaira Allem, Project Manager Assistant

Bureau Veritas has procedures in place to guard against improper use of the electronic signature and have the required "signatories", as per ISO/IEC 17025, signing the reports. For Service Group specific validation, please refer to the Validation Signatures page if included, otherwise available by request. For Department specific Analyst/Supervisor validation names, please refer to the Test Summary section if included, otherwise available by request. This report is authorized by Rodney Major, General Manager responsible for Ontario Environmental laboratory operations.

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Microbiology testing is conducted at 6660 Campobello Rd. Chemistry testing is conducted at 6740 Campobello Rd.

FIELD INFORMATION FORM

BUREAU VERITAS

WASTE MANAGEMENT

Site Name: TCEC

Site No.: Sample: OW49-29 (Sample ID)

This Waste Management Field Information Form is Required
This form is to be completed, in addition to any State Forms. The Field Form is submitted along with the Chain of Custody Forms that accompany the sample containers (i.e. with the cooler that is returned to the laboratory).

Laboratory Use Only/Lab ID:

PURGE INFO

PURGE DATE (MM DD YY)	PURGE TIME (2400 Hr Clock)	ELAPSED HRS (hrs:min)	WATER VOL IN CASING (Gallons)	ACTUAL VOL PURGED (Gallons)	WELL VOLs PURGED
050724				~~2.28~~ 2.12 L	

Note: For Passive Sampling, replace "Water Vol in Casing" and "Well Vols Purged" w/ Water Vol in Tubing/Flow Cell and Tubing/Flow Cell Vols Purged. Mark Changes, Record field data below.

PURGE/SAMPLE EQUIPMENT

Purging and Sampling Equipment ... Dedicated: (Y) or N

Purging Device: C

Sampling Device: C

X-Other:

A-Submersible Pump, B-Peristaltic Pump, C-QED Bladder Pump, D-Bailer, E-Piston Pump, F-Dipper/Bottle

Filter Device: (Y) or N — 0.45 µ or _____ µ (circle or fill in)

Filter Type: A — A-In-line Disposable, B-Pressure, C-Vacuum, X-Other: _____

Sample Tube Type: _____ — A-Teflon, B-Stainless Steel, C-PVC, D-Polypropylene, X-Other: _____

WELL DATA

Well Elevation (at TOC) _____ (ft/msl)

Depth to Water (DTW) (from TOC) 104 (ft) (m)

Groundwater Elevation (GWE) (Site Datum, from TOC) _____ (ft msl)

Total Well Depth (from TOC) _____ (ft)

Stick Up (from ground elevation) _____ (ft)

Casing ID _____ (in)

Casing Material _____

Note: Total Depth, Stick Up, Casing ID, etc. are optional and can be from historical data, unless required by Site/Permit. Well Elevation, DTW, and GWE must be current, obtained from site.

STABILIZATION DATA (Optional)

Sample Time (2400 Hr Clock)	Rate/Unit		pH (std)	Conductance (SC/EC) (µmhos/cm @ 25°C)	Temp. (°C)	Turbidity (ntu)	D.O. (mg/L - ppm)	eH/ORP (mV)	DTW (ft)
		1st							
		2nd							
		3rd							
		4th							
Input Range for 3 consec. readings or Permit/State requirements:			+/-	+/-	+/-	+/-	+/-	+/-	

Stabilization Data Fields are Optional *(i.e. complete stabilization readings for parameters required by WM, Site, or State). These fields can be used where four (4) field measurements are required by State/Permit/Site. If a Data Logger or other Electronic format is used, fill in final readings below and submit electronic data separately to Site. If more fields above are needed, use separate sheet or form.*

FIELD DATA

SAMPLE DATE (MM DD YY)	pH (std)	CONDUCTANCE (µmhos/cm @ 25°C)	TEMP. (°C)	TURBIDITY (ntu)	DO (mg/L - ppm)	eH/ORP (mV)	Other: Units
050724	6.7	3.28 mS	12.5	16.7			

Final Field Readings are required *(i.e. record field measurements, final stabilized readings, passive sample readings before sampling for all field parameters required by State/Permit/Site.)*

Sample Appearance: Clear Odor: N/O Color: Clear Other: _____

Weather Conditions (required daily, or as conditions change): 14°C Direction/Speed: 14 Kmh SE Outlook: Clear Precipitation: Y or (N)

Specific Comments (including purge/well volume calculations if required): _____

FIELD COMMENTS

I certify that sampling procedures were in accordance with applicable EPA, State, and WM protocols (if more than one sampler, all should sign):

Date	Name	Signature	Company
05/06/24	Eric Wilson	E Wilson	RWPI

DISTRIBUTION: WHITE/ORIGINAL - Stays with Sample, YELLOW - Returned to Client, PINK - Field Copy

Field Information Form v-3.1 06/20

2071

Custody Tracking Form

T894098

Please use this form for custody tracking when submitting the work instructions via eCOC (electronic Chain of Custody). Please ensure your form has a barcode or a Bureau Veritas eCOC confirmation number in the top right hand side. This number links your electronic submission to your samples. This form should be placed in the cooler with your samples.

First Sample: OW49-29
Last Sample: OW49-29
Sample Count: 1

Relinquished By				Received By			
Self Cleland		Date	2024/05/08			Date	2024/05/09
		Time (24 HR)	10:00			Time (24 HR)	09:49
		Date				Date	
		Time (24 HR)				Time (24 HR)	
		Date				Date	
		Time (24 HR)				Time (24 HR)	

Unless otherwise agreed to, submissions and use of services are governed by Bureau Veritas' standard terms and conditions which can be found at www.bvna.com.

Triage Information

Sampled By (Print): Eric Wilson

# of Coolers/Pkgs: 2

Rush ☐ Immediate Test ☐ Food Residue ☐

Micro ☐ Food Chemistry ☐

*** LABORATORY USE ONLY ***

Received At

Labeled By

Verified By

Lab Comments:

09-May-24 09:49
Patricia Legette
C4D9829

JDK ENV-1374

Custody Seal		Cooling Media	Temperature °C		
Present (Y/N)	Intact (Y/N)	Present (Y/N)	1	2	3
Y	Y	Y	3	2	1
Y	Y	Y	3	3	3
Drinking Water Metals Preservation Check Done (Circle)				YES	NO

COR FCD-00383/4

Page 1 of 1

Your P.O. #: 13254256
Your Project #: 2402553.01
Site#: 200
Site Location: ON07
Your C.O.C. #: 894793

Attention: Khalid Hussein - Twin Creeks

RWDI Inc.
600 Southgate Drive
Guelph, ON
Canada N1G 4P6

Report Date: 2024/05/21
Report #: R8156705
Version: 1 - Final

CERTIFICATE OF ANALYSIS

BUREAU VERITAS JOB #: C4E0890
Received: 2024/05/10, 08:30

Sample Matrix: Water
Samples Received: 8

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Analytical Method
Alkalinity	8	N/A	2024/05/17	CAM SOP-00448	SM 24 2320 B m
Chloride by Automated Colourimetry	3	N/A	2024/05/13	CAM SOP-00463	SM 24 4500-Cl E m
Chloride by Automated Colourimetry	5	N/A	2024/05/16	CAM SOP-00463	SM 24 4500-Cl E m
Conductance in Water - On-site	7	N/A	2024/05/16		
Conductivity	5	N/A	2024/05/16	CAM SOP-00414	SM 24 2510 m
Conductivity	3	N/A	2024/05/17	CAM SOP-00414	SM 24 2510 m
Dissolved Organic Carbon (DOC) (1)	8	N/A	2024/05/15	CAM SOP-00446	SM 24 5310 B m
Dissolved Metals by ICPMS	6	N/A	2024/05/15	CAM SOP-00447	EPA 6020B m
Dissolved Metals by ICPMS	2	N/A	2024/05/16	CAM SOP-00447	EPA 6020B m
Ammonia-N	3	N/A	2024/05/16	CAM SOP-00441	USGS I-2522-90 m
Ammonia-N	5	N/A	2024/05/17	CAM SOP-00441	USGS I-2522-90 m
Nitrate & Nitrite as Nitrogen in Water (2)	8	N/A	2024/05/13	CAM SOP-00440	SM 24 4500-NO3I/NO2B
pH (3)	8	2024/05/11	2024/05/17	CAM SOP-00413	SM 24th - 4500H+ B
Field Measured pH (4)	7	N/A	2024/05/16		Field pH Meter
Sulphate by Automated Turbidimetry	3	N/A	2024/05/13	CAM SOP-00464	SM 24 4500-SO42- E m
Sulphate by Automated Turbidimetry	5	N/A	2024/05/16	CAM SOP-00464	SM 24 4500-SO42- E m
Total Dissolved Solids	8	2024/05/14	2024/05/15	CAM SOP-00428	SM 24 2540C m
Field Temperature (4)	7	N/A	2024/05/16		Field Thermometer
Total Kjeldahl Nitrogen in Water	8	2024/05/14	2024/05/15	CAM SOP-00938	OMOE E3516 m
Turbidity - On-site	7	N/A	2024/05/16		
Volatile Organic Compounds in Water	8	N/A	2024/05/16	CAM SOP-00228	EPA 8260D

Remarks:

Bureau Veritas is accredited to ISO/IEC 17025 for specific parameters on scopes of accreditation. Unless otherwise noted, procedures used by Bureau Veritas are based upon recognized Provincial, Federal or US method compendia such as CCME, EPA, APHA or the Quebec Ministry of Environment.

All work recorded herein has been done in accordance with procedures and practices ordinarily exercised by professionals in Bureau Veritas' profession using accepted testing methodologies, quality assurance and quality control procedures (except where otherwise agreed by the client and Bureau Veritas in writing). All data is in statistical control and has met quality control and method performance criteria unless otherwise noted. All method blanks are reported; unless indicated otherwise, associated sample data are not blank corrected. Where applicable, unless otherwise noted, Measurement Uncertainty has not been accounted for when stating conformity to the referenced standard.

Your P.O. #: 13254256
Your Project #: 2402553.01
Site#: 200
Site Location: ON07
Your C.O.C. #: 894793

Attention: Khalid Hussein - Twin Creeks

RWDI Inc.
600 Southgate Drive
Guelph, ON
Canada N1G 4P6

Report Date: 2024/05/21
Report #: R8156705
Version: 1 - Final

CERTIFICATE OF ANALYSIS

BUREAU VERITAS JOB #: C4E0890
Received: 2024/05/10, 08:30

Bureau Veritas liability is limited to the actual cost of the requested analyses, unless otherwise agreed in writing. There is no other warranty expressed or implied. Bureau Veritas has been retained to provide analysis of samples provided by the Client using the testing methodology referenced in this report. Interpretation and use of test results are the sole responsibility of the Client and are not within the scope of services provided by Bureau Veritas, unless otherwise agreed in writing. Bureau Veritas is not responsible for the accuracy or any data impacts, that result from the information provided by the customer or their agent.

Solid sample results, except biota, are based on dry weight unless otherwise indicated. Organic analyses are not recovery corrected except for isotope dilution methods.
Results relate to samples tested. When sampling is not conducted by Bureau Veritas, results relate to the supplied samples tested.
This Certificate shall not be reproduced except in full, without the written approval of the laboratory.
Reference Method suffix “m” indicates test methods incorporate validated modifications from specific reference methods to improve performance.
* RPDs calculated using raw data. The rounding of final results may result in the apparent difference.
(1) Dissolved Organic Carbon (DOC) present in the sample should be considered as non-purgeable DOC.
(2) Values for calculated parameters may not appear to add up due to rounding of raw data and significant figures.
(3) "The CCME method and Analytical Protocol (O. Reg 153/04, O. Reg. 406/19) requires pH to be analyzed within 15 minutes of sampling and therefore field analysis is required for compliance. All Laboratory pH analyses in this report are reported past the CCME and Analytical Protocol (O. Reg 153/04, O. Reg. 406/19) holding time. Bureau Veritas endeavors to analyze samples as soon as possible after receipt."

(4) This is a field test, therefore, the results relate to items that were not analysed at Bureau Veritas.

Encryption Key

Please direct all questions regarding this Certificate of Analysis to:
Patricia Legette, Project Manager
Email: Patricia.Legette@bureauveritas.com
Phone# (905)817-5799

==========

Bureau Veritas has procedures in place to guard against improper use of the electronic signature and have the required "signatories", as per ISO/IEC 17025, signing the reports. For Service Group specific validation, please refer to the Validation Signatures page if included, otherwise available by request. For Department specific Analyst/Supervisor validation names, please refer to the Test Summary section if included, otherwise available by request. This report is authorized by Rodney Major, General Manager responsible for Ontario Environmental laboratory operations.

Bureau Veritas Job #: C4E0890
Report Date: 2024/05/21

RWDI Inc.
Client Project #: 2402553.01
Site Location: ON07
Your P.O. #: 13254256
Sampler Initials: JC

RESULTS OF ANALYSES OF WATER

Bureau Veritas ID		ZDF269		ZDF270		ZDF271			ZDF272		
Sampling Date		2024/05/08 15:50		2024/05/08 12:10		2024/05/08 11:38			2024/05/08 11:30		
COC Number		894793		894793		894793			894793		
	UNITS	OW40A-7	QC Batch	OW47-6	RDL	OW16-7	RDL	QC Batch	Field Blank	RDL	QC Batch
Field Measurements											
Field Conductivity	uS/cm	3550	ONSITE	5.46	N/A	1850	N/A	ONSITE			
Field Temperature	Celsius	12.7	ONSITE	13.8	N/A	14.6	N/A	ONSITE			
Field Measured Field Turbidity	NTU	19.3	ONSITE	32.4	N/A	32.1	N/A	ONSITE			
Field Measured pH	pH	6.9	ONSITE	7.0		7.3		ONSITE			
Inorganics											
Total Ammonia-N	mg/L	<0.15	9392227	<0.15	0.15	0.27	0.15	9392227	<0.15	0.15	9392227
Conductivity	umho/cm	2900	9388021	4600	1.0	1200	1.0	9388021	1.3	1.0	9388163
Total Dissolved Solids	mg/L	2690	9391664	4800	10	815	10	9391664	<10	10	9391664
Total Kjeldahl Nitrogen (TKN)	mg/L	<0.7	9393260	<0.7	0.7	<0.7	0.7	9393260	<0.7	0.7	9393260
Dissolved Organic Carbon	mg/L	1.7	9393085	2.5	0.4	3.6	0.4	9393085	<0.4	0.4	9393085
pH	pH	7.98	9388022	7.93		8.16		9388022	6.33		9388164
Dissolved Sulphate (SO4)	mg/L	1600	9388034	3000	10	260	1.0	9388034	<1.0	1.0	9388195
Alkalinity (Total as CaCO3)	mg/L	350	9388017	390	1.0	440	1.0	9388017	<1.0	1.0	9388154
Dissolved Chloride (Cl-)	mg/L	6.2	9388037	5.2	1.0	5.3	1.0	9388037	<1.0	1.0	9388190
Nitrate (N)	mg/L	0.37	9388030	0.37	0.10	0.14	0.10	9388148	<0.10	0.10	9388200

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
N/A = Not Applicable

Bureau Veritas 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.bvna.com

Microbiology testing is conducted at 6660 Campobello Rd. Chemistry testing is conducted at 6740 Campobello Rd.

Bureau Veritas Job #: C4E0890
Report Date: 2024/05/21

RWDI Inc.
Client Project #: 2402553.01
Site Location: ON07
Your P.O. #: 13254256
Sampler Initials: JC

RESULTS OF ANALYSES OF WATER

Bureau Veritas ID		ZDF273		ZDF274			ZDF275			ZDF276		
Sampling Date		2024/05/08 09:50		2024/05/08 09:00			2024/05/08 13:20			2024/05/08 15:50		
COC Number		894793		894793			894793			894793		
	UNITS	OW46-7	RDL	OW57-15	RDL	QC Batch	OW60-8	RDL	QC Batch	GW DUP3	RDL	QC Batch
Field Measurements												
Field Conductivity	uS/cm	5.18	N/A	3940	N/A	ONSITE	1070	N/A	ONSITE	3550	N/A	ONSITE
Field Temperature	Celsius	11.8	N/A	12.6	N/A	ONSITE	15.0	N/A	ONSITE	12.7	N/A	ONSITE
Field Measured Field Turbidity	NTU	44.4	N/A	13.4	N/A	ONSITE	42.7	N/A	ONSITE	19.3	N/A	ONSITE
Field Measured pH	pH	7.2		7.4		ONSITE	7.8		ONSITE	6.9		ONSITE
Inorganics												
Total Ammonia-N	mg/L	<0.15	0.15	<0.15	0.15	9392227	<0.15	0.15	9392227	<0.15	0.15	9392227
Conductivity	umho/cm	4100	1.0	2900	1.0	9388163	790	1.0	9388163	3000	1.0	9388163
Total Dissolved Solids	mg/L	4230	10	2640	10	9391664	460	10	9391664	2720	10	9391664
Total Kjeldahl Nitrogen (TKN)	mg/L	<0.7	0.7	<0.7	0.7	9393260	<0.7	0.7	9393260	<0.7	0.7	9393260
Dissolved Organic Carbon	mg/L	3.2	0.4	2.6	0.4	9393085	3.1	0.4	9393085	1.7	0.4	9393085
pH	pH	8.07		8.04		9388164	8.43		9388164	7.99		9388164
Dissolved Sulphate (SO4)	mg/L	2500	10	1600	5.0	9388195	120	1.0	9388189	1600	5.0	9388195
Alkalinity (Total as CaCO3)	mg/L	290	1.0	150	1.0	9388154	260	1.0	9388154	350	1.0	9388154
Dissolved Chloride (Cl-)	mg/L	11	1.0	7.3	1.0	9388190	7.0	1.0	9388187	5.9	1.0	9388190
Nitrate (N)	mg/L	0.17	0.10	0.90	0.10	9388148	<0.10	0.10	9388200	0.40	0.10	9388148

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
N/A = Not Applicable

Bureau Veritas 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.bvna.com

Microbiology testing is conducted at 6660 Campobello Rd. Chemistry testing is conducted at 6740 Campobello Rd.

Bureau Veritas Job #: C4E0890
Report Date: 2024/05/21

RWDI Inc.
Client Project #: 2402553.01
Site Location: ON07
Your P.O. #: 13254256
Sampler Initials: JC

ELEMENTS BY ATOMIC SPECTROSCOPY (WATER)

Bureau Veritas ID		ZDF269		ZDF270		ZDF271	ZDF272		ZDF273		
Sampling Date		2024/05/08 15:50		2024/05/08 12:10		2024/05/08 11:38	2024/05/08 11:30		2024/05/08 09:50		
COC Number		894793		894793		894793	894793		894793		
	UNITS	OW40A-7	RDL	OW47-6	RDL	OW16-7	Field Blank	RDL	OW46-7	RDL	QC Batch
Metals											
Dissolved Barium (Ba)	mg/L	0.007	0.005	0.008	0.005	0.015	<0.005	0.005	0.033	0.005	9389593
Dissolved Boron (B)	mg/L	0.65	0.02	1.0	0.02	0.29	<0.02	0.02	0.49	0.02	9389593
Dissolved Cadmium (Cd)	mg/L	<0.0001	0.0001	<0.0001	0.0001	<0.0001	<0.0001	0.0001	<0.0001	0.0001	9389593
Dissolved Calcium (Ca)	mg/L	280	0.4	460	0.4	100	<0.2	0.2	370	0.4	9389593
Dissolved Iron (Fe)	mg/L	0.7	0.1	<0.1	0.1	1.5	<0.1	0.1	<0.1	0.1	9389593
Dissolved Lead (Pb)	mg/L	<0.0005	0.0005	<0.0005	0.0005	<0.0005	<0.0005	0.0005	<0.0005	0.0005	9389593
Dissolved Magnesium (Mg)	mg/L	270	0.05	510	0.3	86	<0.05	0.05	440	0.3	9389593
Dissolved Potassium (K)	mg/L	5.8	0.2	7.6	0.2	4.1	<0.2	0.2	6.6	0.2	9389593
Dissolved Sodium (Na)	mg/L	130	0.1	230	0.1	64	<0.1	0.1	210	0.1	9389593

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

Bureau Veritas ID		ZDF274		ZDF275		ZDF276		
Sampling Date		2024/05/08 09:00		2024/05/08 13:20		2024/05/08 15:50		
COC Number		894793		894793		894793		
	UNITS	OW57-15	RDL	OW60-8	RDL	GW DUP3	RDL	QC Batch
Metals								
Dissolved Barium (Ba)	mg/L	0.009	0.005	0.016	0.005	0.006	0.005	9389593
Dissolved Boron (B)	mg/L	1.2	0.02	0.83	0.02	0.65	0.02	9389593
Dissolved Cadmium (Cd)	mg/L	<0.0001	0.0001	<0.0001	0.0001	<0.0001	0.0001	9389593
Dissolved Calcium (Ca)	mg/L	290	0.4	30	0.2	280	0.4	9389593
Dissolved Iron (Fe)	mg/L	1.3	0.1	<0.1	0.1	0.7	0.1	9389593
Dissolved Lead (Pb)	mg/L	<0.0005	0.0005	<0.0005	0.0005	<0.0005	0.0005	9389593
Dissolved Magnesium (Mg)	mg/L	210	0.05	24	0.05	270	0.05	9389593
Dissolved Potassium (K)	mg/L	5.1	0.2	3.7	0.2	5.8	0.2	9389593
Dissolved Sodium (Na)	mg/L	180	0.1	110	0.1	130	0.1	9389593

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

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Microbiology testing is conducted at 6660 Campobello Rd. Chemistry testing is conducted at 6740 Campobello Rd.

Bureau Veritas Job #: C4E0890
Report Date: 2024/05/21

RWDI Inc.
Client Project #: 2402553.01
Site Location: ON07
Your P.O. #: 13254256
Sampler Initials: JC

VOLATILE ORGANICS BY GC/MS (WATER)

Bureau Veritas ID		ZDF269	ZDF270	ZDF271	ZDF272	ZDF273	ZDF274		
Sampling Date		2024/05/08 15:50	2024/05/08 12:10	2024/05/08 11:38	2024/05/08 11:30	2024/05/08 09:50	2024/05/08 09:00		
COC Number		894793	894793	894793	894793	894793	894793		
	UNITS	**OW40A-7**	**OW47-6**	**OW16-7**	**Field Blank**	**OW46-7**	**OW57-15**	**RDL**	**QC Batch**
Volatile Organics									
Benzene	ug/L	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	0.20	9389589
1,4-Dichlorobenzene	ug/L	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40	0.40	9389589
Ethylbenzene	ug/L	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	0.20	9389589
Methylene Chloride(Dichloromethane)	ug/L	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	2.0	9389589
Toluene	ug/L	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	0.20	9389589
Vinyl Chloride	ug/L	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	0.20	9389589
p+m-Xylene	ug/L	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	0.20	9389589
o-Xylene	ug/L	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	0.20	9389589
Total Xylenes	ug/L	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	0.20	9389589
Surrogate Recovery (%)									
4-Bromofluorobenzene	%	101	102	103	102	102	101		9389589
D4-1,2-Dichloroethane	%	97	101	95	102	101	99		9389589
D8-Toluene	%	98	96	97	95	96	98		9389589

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

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Microbiology testing is conducted at 6660 Campobello Rd. Chemistry testing is conducted at 6740 Campobello Rd.

Bureau Veritas Job #: C4E0890
Report Date: 2024/05/21

RWDI Inc.
Client Project #: 2402553.01
Site Location: ON07
Your P.O. #: 13254256
Sampler Initials: JC

VOLATILE ORGANICS BY GC/MS (WATER)

Bureau Veritas ID		ZDF275	ZDF276		
Sampling Date		2024/05/08 13:20	2024/05/08 15:50		
COC Number		894793	894793		
	UNITS	OW60-8	GW DUP3	RDL	QC Batch
Volatile Organics					
Benzene	ug/L	<0.20	<0.20	0.20	9389589
1,4-Dichlorobenzene	ug/L	<0.40	<0.40	0.40	9389589
Ethylbenzene	ug/L	<0.20	<0.20	0.20	9389589
Methylene Chloride(Dichloromethane)	ug/L	<2.0	<2.0	2.0	9389589
Toluene	ug/L	<0.20	<0.20	0.20	9389589
Vinyl Chloride	ug/L	<0.20	<0.20	0.20	9389589
p+m-Xylene	ug/L	<0.20	<0.20	0.20	9389589
o-Xylene	ug/L	<0.20	<0.20	0.20	9389589
Total Xylenes	ug/L	<0.20	<0.20	0.20	9389589
Surrogate Recovery (%)					
4-Bromofluorobenzene	%	101	102		9389589
D4-1,2-Dichloroethane	%	99	98		9389589
D8-Toluene	%	97	97		9389589

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

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Microbiology testing is conducted at 6660 Campobello Rd. Chemistry testing is conducted at 6740 Campobello Rd.

GENERAL COMMENTS

Each temperature is the average of up to three cooler temperatures taken at receipt

Package 1	4.0°C
Package 2	3.3°C
Package 3	3.7°C

Results relate only to the items tested.

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Microbiology testing is conducted at 6660 Campobello Rd. Chemistry testing is conducted at 6740 Campobello Rd.

QUALITY ASSURANCE REPORT

			Matrix Spike		SPIKED BLANK		Method Blank		RPD		QC Standard	
QC Batch	Parameter	Date	% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits	% Recovery	QC Limits
9389589	4-Bromofluorobenzene	2024/05/16	102 (7)	70 - 130	103	70 - 130	101	%				
9389589	D4-1,2-Dichloroethane	2024/05/16	100 (7)	70 - 130	101	70 - 130	101	%				
9389589	D8-Toluene	2024/05/16	98 (7)	70 - 130	98	70 - 130	97	%				
9388017	Alkalinity (Total as CaCO3)	2024/05/16			99	85 - 115	<1.0	mg/L	1.6 (1)	20		
9388021	Conductivity	2024/05/16			99	85 - 115	<1.0	umho/cm	0.81 (1)	10		
9388022	pH	2024/05/16			102	98 - 103			0.048 (1)	N/A		
9388030	Nitrate (N)	2024/05/13	95	80 - 120	98	80 - 120	<0.10	mg/L	NC (1)	20		
9388034	Dissolved Sulphate (SO4)	2024/05/13	NC	75 - 125	97	80 - 120	<1.0	mg/L	3.1 (1)	20		
9388037	Dissolved Chloride (Cl-)	2024/05/13	NC	80 - 120	98	80 - 120	<1.0	mg/L	0.69 (1)	20		
9388148	Nitrate (N)	2024/05/13	94	80 - 120	98	80 - 120	<0.10	mg/L	NC (1)	20		
9388154	Alkalinity (Total as CaCO3)	2024/05/17			96	85 - 115	<1.0	mg/L	1.8 (2)	20		
9388163	Conductivity	2024/05/16			103	85 - 115	<1.0	umho/cm	0 (2)	10		
9388164	pH	2024/05/17			102	98 - 103			0.73 (2)	N/A		
9388187	Dissolved Chloride (Cl-)	2024/05/16	93 (3)	80 - 120	92	80 - 120	<1.0	mg/L	1.1 (4)	20		
9388189	Dissolved Sulphate (SO4)	2024/05/16	NC (3)	75 - 125	94	80 - 120	<1.0	mg/L	1.2 (4)	20		
9388190	Dissolved Chloride (Cl-)	2024/05/16	NC	80 - 120	93	80 - 120	<1.0	mg/L	0.73 (1)	20		
9388195	Dissolved Sulphate (SO4)	2024/05/16	NC	75 - 125	95	80 - 120	<1.0	mg/L	0.81 (1)	20		
9388200	Nitrate (N)	2024/05/13	89 (5)	80 - 120	95	80 - 120	<0.10	mg/L	NC (6)	20		
9389589	1,4-Dichlorobenzene	2024/05/16	95 (7)	70 - 130	89	70 - 130	<0.40	ug/L	NC (8)	30		
9389589	Benzene	2024/05/16	96 (7)	70 - 130	92	70 - 130	<0.20	ug/L	NC (8)	30		
9389589	Ethylbenzene	2024/05/16	93 (7)	70 - 130	89	70 - 130	<0.20	ug/L	NC (8)	30		
9389589	Methylene Chloride(Dichloromethane)	2024/05/16	105 (7)	70 - 130	102	70 - 130	<2.0	ug/L	NC (8)	30		
9389589	o-Xylene	2024/05/16	91 (7)	70 - 130	87	70 - 130	<0.20	ug/L	NC (8)	30		
9389589	p+m-Xylene	2024/05/16	90 (7)	70 - 130	87	70 - 130	<0.20	ug/L	NC (8)	30		
9389589	Toluene	2024/05/16	94 (7)	70 - 130	90	70 - 130	<0.20	ug/L	NC (8)	30		
9389589	Total Xylenes	2024/05/16					<0.20	ug/L	NC (8)	30		
9389589	Vinyl Chloride	2024/05/16	88 (7)	70 - 130	84	70 - 130	<0.20	ug/L	NC (8)	30		
9389593	Dissolved Barium (Ba)	2024/05/15	108	80 - 120	98	80 - 120	<0.005	mg/L	1.3 (1)	20		

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Microbiology testing is conducted at 6660 Campobello Rd. Chemistry testing is conducted at 6740 Campobello Rd.

QUALITY ASSURANCE REPORT(CONT'D)

			Matrix Spike		SPIKED BLANK		Method Blank		RPD		QC Standard	
QC Batch	Parameter	Date	% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits	% Recovery	QC Limits
9389593	Dissolved Boron (B)	2024/05/15	112	80 - 120	99	80 - 120	<0.02	mg/L				
9389593	Dissolved Cadmium (Cd)	2024/05/15	109	80 - 120	99	80 - 120	<0.0001	mg/L	NC (1)	20		
9389593	Dissolved Calcium (Ca)	2024/05/15	NC	80 - 120	101	80 - 120	<0.2	mg/L	0.90 (1)	20		
9389593	Dissolved Iron (Fe)	2024/05/15	107	80 - 120	101	80 - 120	<0.1	mg/L				
9389593	Dissolved Lead (Pb)	2024/05/15	106	80 - 120	100	80 - 120	<0.0005	mg/L	NC (1)	20		
9389593	Dissolved Magnesium (Mg)	2024/05/15	NC	80 - 120	99	80 - 120	<0.05	mg/L	0.33 (1)	20		
9389593	Dissolved Potassium (K)	2024/05/15	109	80 - 120	103	80 - 120	<0.2	mg/L	0.50 (1)	20		
9389593	Dissolved Sodium (Na)	2024/05/15	104	80 - 120	100	80 - 120	<0.1	mg/L	1.6 (1)	20		
9391664	Total Dissolved Solids	2024/05/15			95	80 - 120	<10	mg/L	1.1 (9)	20		
9392227	Total Ammonia-N	2024/05/16	96 (10)	75 - 125	101	80 - 120	<0.15	mg/L	NC (11)	20		
9393085	Dissolved Organic Carbon	2024/05/15	85	80 - 120	93	80 - 120	<0.4	mg/L	2.3 (1)	20		

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Microbiology testing is conducted at 6660 Campobello Rd. Chemistry testing is conducted at 6740 Campobello Rd.

QUALITY ASSURANCE REPORT(CONT'D)

			Matrix Spike		SPIKED BLANK		Method Blank		RPD		QC Standard	
QC Batch	Parameter	Date	% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits	% Recovery	QC Limits
9393260	Total Kjeldahl Nitrogen (TKN)	2024/05/15	105 (12)	80 - 120	99	80 - 120	<0.7	mg/L	NC (13)	20	108	80 - 120

N/A = Not Applicable

Duplicate: Paired analysis of a separate portion of the same sample. Used to evaluate the variance in the measurement.

Matrix Spike: A sample to which a known amount of the analyte of interest has been added. Used to evaluate sample matrix interference.

QC Standard: A sample of known concentration prepared by an external agency under stringent conditions. Used as an independent check of method accuracy.

Spiked Blank: A blank matrix sample to which a known amount of the analyte, usually from a second source, has been added. Used to evaluate method accuracy.

Method Blank: A blank matrix containing all reagents used in the analytical procedure. Used to identify laboratory contamination.

Surrogate: A pure or isotopically labeled compound whose behavior mirrors the analytes of interest. Used to evaluate extraction efficiency.

NC (Matrix Spike): The recovery in the matrix spike was not calculated. The relative difference between the concentration in the parent sample and the spike amount was too small to permit a reliable recovery calculation (matrix spike concentration was less than the native sample concentration)

NC (Duplicate RPD): The duplicate RPD was not calculated. The concentration in the sample and/or duplicate was too low to permit a reliable RPD calculation (absolute difference <= 2x RDL).

(1) Duplicate Parent ID

(2) Duplicate Parent ID [ZDF276-01]

(3) Matrix Spike Parent ID [ZDF275-01]

(4) Duplicate Parent ID [ZDF275-01]

(5) Matrix Spike Parent ID [ZDF272-01]

(6) Duplicate Parent ID [ZDF272-01]

(7) Matrix Spike Parent ID [ZDF269-07]

(8) Duplicate Parent ID [ZDF269-07]

(9) Duplicate Parent ID [ZDF275-02]

(10) Matrix Spike Parent ID [ZDF273-06]

(11) Duplicate Parent ID [ZDF273-06]

(12) Matrix Spike Parent ID [ZDF269-04]

(13) Duplicate Parent ID [ZDF269-04]

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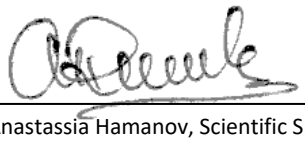
Microbiology testing is conducted at 6660 Campobello Rd. Chemistry testing is conducted at 6740 Campobello Rd.

Bureau Veritas Job #: C4E0890
Report Date: 2024/05/21

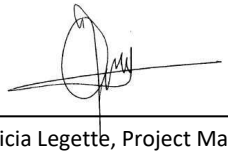
RWDI Inc.
Client Project #: 2402553.01
Site Location: ON07
Your P.O. #: 13254256
Sampler Initials: JC

VALIDATION SIGNATURE PAGE

The analytical data and all QC contained in this report were reviewed and validated by:



Anastassia Hamanov, Scientific Specialist



Patricia Legette, Project Manager

Bureau Veritas has procedures in place to guard against improper use of the electronic signature and have the required "signatories", as per ISO/IEC 17025, signing the reports. For Service Group specific validation, please refer to the Validation Signatures page if included, otherwise available by request. For Department specific Analyst/Supervisor validation names, please refer to the Test Summary section if included, otherwise available by request. This report is authorized by Rodney Major, General Manager responsible for Ontario Environmental laboratory operations.

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Microbiology testing is conducted at 6660 Campobello Rd. Chemistry testing is conducted at 6740 Campobello Rd.

S2437676

BUREAU VERITAS

FIELD INFORMATION FORM

WASTE MANAGEMENT

Site Name: TCEC

Site No.:

Sample: OW47-6 (Sample ID)

This Waste Management Field Information Form is Required
This form is to be completed, in addition to any State Forms. The Field Form is submitted along with the Chain of Custody Forms that accompany the sample containers (i.e. with the cooler that is returned to the laboratory).

Laboratory Use Only/Lab ID:

PURGE INFO

PURGE DATE (MM DD YY)	PURGE TIME (2400 Hr Clock)	ELAPSED HRS (hrs:min)	WATER VOL IN CASING (Gallons)	ACTUAL VOL PURGED ~~(Gallons)~~ L	WELL VOLs PURGED
050824				0.52	

Note: For Passive Sampling, replace "Water Vol in Casing" and "Well Vols Purged" w/ Water Vol in Tubing/Flow Cell and Tubing/Flow Cell Vols Purged. Mark Changes, Record field data below.

PURGE/SAMPLE EQUIPMENT

Purging and Sampling Equipment ... Dedicated: (Y) or N

Purging Device: C — A-Submersible Pump, B-Peristaltic Pump, C-QED Bladder Pump, D-Bailer, E-Piston Pump, F-Dipper/Bottle

Sampling Device: C

X-Other:

Filter Device: (Y) or N — 0.45 µ or ____ µ (circle or fill in)

Filter Type: A — A-In-line Disposable, B-Pressure, C-Vacuum, X-Other:

Sample Tube Type: ____ — A-Teflon, B-Stainless Steel, C-PVC, D-Polypropylene, X-Other:

WELL DATA

Well Elevation (at TOC): ____ (ft/msl)

Depth to Water (DTW) (from TOC): 1.91 M (ft)

Groundwater Elevation (GWE) (Site Datum, from TOC): ____ (ft msl)

Total Well Depth (from TOC): ____ (ft)

Stick Up (from ground elevation): ____ (ft)

Casing ID: ____ (in)

Casing Material: ____

Note: Total Depth, Stick Up, Casing ID, etc. are optional and can be from historical data, unless required by Site/Permit. Well Elevation, DTW, and GWE must be current, obtained from site.

STABILIZATION DATA (Optional)

Sample Time (2400 Hr Clock)	Rate/Unit	pH (std)	Conductance (SC/EC) (µmhos/cm @ 25°C)	Temp. (°C)	Turbidity (ntu)	D.O. (mg/L - ppm)	eH/ORP (mV)	DTW (ft)
		1st	1st					
		2nd	2nd					
		3rd	3rd					
		4th	4th					
Input Range for 3 consec. readings or Permit/State requirements:		+/-	+/-	+/-	+/-	+/-	+/-	

Stabilization Data Fields are Optional *(i.e. complete stabilization readings for parameters required by WM, Site, or State). These fields can be used where four (4) field measurements are required by State/Permit/Site. If a Data Logger or other Electronic format is used, fill in final readings below and submit electronic data segregately to Site. If more fields above are needed, use separate sheet or form.*

FIELD DATA

SAMPLE DATE (MM DD YY)	pH (std)	CONDUCTANCE (µmhos/cm @ 25°C)	TEMP. (°C)	TURBIDITY (ntu)	DO (mg/L - ppm)	eH/ORP (mV)	Other: Units
050824	7.0	5.46	13.8	32.4			

Final Field Readings are required *(i.e. record field measurements, final stabilized readings, passive sample readings before sampling for all field parameters required by State/Permit/Site.)*

Sample Appearance: transparent — Odor: none — Color: yellowish — Other:

Weather Conditions (required daily, or as conditions change): 15°C — Direction/Speed: 20 km/hr SW — Outlook: clear — Precipitation: Y or (N)

Specific Comments (including purge/well volume calculations if required):

FIELD COMMENTS

I certify that sampling procedures were in accordance with applicable EPA, State, and WM protocols (if more than one sampler, all should sign):

Date	Name	Signature	Company
05/08/24	Eric Wilson	E. Wilson	RWDI

DISTRIBUTION: WHITE/ORIGINAL - Stays with Sample, YELLOW - Returned to Client, PINK - Field Copy

Field Information Form v-3.1 06/20

2064

S2437676

FIELD INFORMATION FORM

BUREAU VERITAS

WASTE MANAGEMENT

Site Name: TCEC

Site No.: Sample: OW16-7 (Sample ID)

This Waste Management Field Information Form is Required
This form is to be completed, in addition to any State Forms. The Field Form is submitted along with the Chain of Custody Forms that accompany the sample containers (i.e. with the cooler that is returned to the laboratory).

Laboratory Use Only/Lab ID:

PURGE INFO

PURGE DATE (MM DD YY)	PURGE TIME (2400 Hr Clock)	ELAPSED HRS (hrs:min)	WATER VOL IN CASING (Gallons)	ACTUAL VOL PURGED (Gallons)	WELL VOLs PURGED
050824				0.67 L	

Note: For Passive Sampling, replace "Water Vol in Casing" and "Well Vols Purged" w/ Water Vol in Tubing/Flow Cell and Tubing/Flow Cell Vols Purged. Mark Changes, Record field data below.

PURGE/SAMPLE EQUIPMENT

Purging and Sampling Equipment ... Dedicated: Y or N

Purging Device: C — A-Submersible Pump, B-Peristaltic Pump, C-QED Bladder Pump, D-Bailer, E-Piston Pump, F-Dipper/Bottle

Sampling Device: C

X-Other:

Filter Device: Y or N — 0.45 µ or _____ µ (circle or fill in)

Filter Type: A — A-In-line Disposable, B-Pressure, C-Vacuum, X-Other: _____

Sample Tube Type: _____ — A-Teflon, B-Stainless Steel, C-PVC, D-Polypropylene, X-Other: _____

WELL DATA

Well Elevation (at TOC) (ft/msl)	Depth to Water (DTW) (from TOC)	Groundwater Elevation (GWE) (Site Datum, from TOC) (ft msl)
	2.35 (ft) M	

Total Well Depth (from TOC) (ft)	Stick Up (from ground elevation) (ft)	Casing ID (in)	Casing Material

Note: Total Depth, Stick Up, Casing ID, etc. are optional and can be from historical data, unless required by Site/Permit. Well Elevation, DTW, and GWE must be current, obtained from site.

STABILIZATION DATA (Optional)

Sample Time (2400 Hr Clock)	Rate/Unit	pH (std)	Conductance (SC/EC) (µmhos/cm @ 25°C)	Temp. (°C)	Turbidity (ntu)	D.O. (mg/L - ppm)	eH/ORP (mV)	DTW (ft)
		1st	1st					
		2nd	2nd					
		3rd	3rd					
		4th	4th					
Input Range for 3 consec. readings or Permit/State requirements:		+/-	+/-	+/-	+/-	+/-	+/-	

Stabilization Data Fields are Optional *(i.e. complete stabilization readings for parameters required by WM, Site, or State). These fields can be used where four (4) field measurements are required by State/Permit/Site. If a Data Logger or other Electronic format is used, fill in final readings below and submit electronic data separately to Site. If more fields above are needed, use separate sheet or form.*

FIELD DATA

SAMPLE DATE (MM DD YY)	pH (std)	CONDUCTANCE (µmhos/cm @ 25°C)	TEMP. (°C)	TURBIDITY (ntu)	DO (mg/L - ppm)	eH/ORP (mV)	Other: Units
050824	7.3 mS	1.85	19.6	32.1			

Final Field Readings are required *(i.e. record field measurements, final stabilized readings, passive sample readings before sampling for all field parameters required by State/Permit/Site.)*

FIELD COMMENTS

Sample Appearance: transparent Odor: none Color: clear Other: _____

Weather Conditions (required daily, or as conditions change): 19°C Direction/Speed: 28 Km/h W Outlook: clear Precipitation: Y or N

Specific Comments (including purge/well volume calculations if required):

Field Blank collected.

I certify that sampling procedures were in accordance with applicable EPA, State, and WM protocols (if more than one sampler, all should sign):

Date	Name	Signature	Company
05/08/24	Eric Wilson	E. Wilson	RMT

DISTRIBUTION: WHITE/ORIGINAL - Stays with Sample, YELLOW - Returned to Client, PINK - Field Copy

Field Information Form v-3.1 06/20

2088

S2437676

BUREAU VERITAS

FIELD INFORMATION FORM

WASTE MANAGEMENT

Site Name: TCEC

Site No.:

Sample: OW467 (Sample ID)

This Waste Management Field Information Form is Required
This form is to be completed, in addition to any State Forms. The Field Form is submitted along with the Chain of Custody Forms that accompany the sample containers (i.e. with the cooler that is returned to the laboratory).

Laboratory Use Only/Lab ID:

PURGE INFO

PURGE DATE (MM DD YY)	PURGE TIME (2400 Hr Clock)	ELAPSED HRS (hrs:min)	WATER VOL IN CASING (Gallons)	ACTUAL VOL PURGED (~~Gallons~~)	WELL VOLs PURGED
050824				0.51 L	

Note: For Passive Sampling, replace "Water Vol in Casing" and "Well Vols Purged" w/ Water Vol in Tubing/Flow Cell and Tubing/Flow Cell Vols Purged. Mark Changes, Record field data below.

PURGE/SAMPLE EQUIPMENT

Purging and Sampling Equipment ... Dedicated: (Y) or N — Filter Device: (Y) or N — (0.45 µ) or ____ µ (circle or fill in)

Purging Device: C — A-Submersible Pump, B-Peristaltic Pump, C-QED Bladder Pump, D-Bailer, E-Piston Pump, F-Dipper/Bottle

Sampling Device: C

Filter Type: A — A-In-line Disposable, B-Pressure, C-Vacuum, X-Other: ____

X-Other: ____ — Sample Tube Type: ____ — A-Teflon, B-Stainless Steel, C-PVC, D-Polypropylene, X-Other: ____

WELL DATA

Well Elevation (at TOC): ____ (ft/msl) — Depth to Water (DTW) (from TOC): 1.25 ~~ft~~ m — Groundwater Elevation (GWE) (Site Datum, from TOC): ____ (ft msl)

Total Well Depth (from TOC): ____ (ft) — Stick Up (from ground elevation): ____ (ft) — Casing ID: ____ (in) — Casing Material: ____

Note: Total Depth, Stick Up, Casing ID, etc. are optional and can be from historical data, unless required by Site/Permit. Well Elevation, DTW, and GWE must be current, obtained from site.

STABILIZATION DATA (Optional)

Sample Time (2400 Hr Clock)	Rate/Unit	pH (std)	Conductance (SC/EC) (µmhos/cm @ 25°C)	Temp. (°C)	Turbidity (ntu)	D.O. (mg/L - ppm)	eH/ORP (mV)	DTW (ft)
		1st	1st					
		2nd	2nd					
		3rd	3rd					
		4th	4th					
Input Range for 3 consec. readings or Permit/State requirements:		+/-	+/-	+/-	+/-	+/-	+/-	

Stabilization Data Fields are Optional *(i.e. complete stabilization readings for parameters required by WM, Site, or State). These fields can be used where four (4) field measurements are required by State/Permit/Site. If a Data Logger or other Electronic format is used, fill in final readings below and submit electronic data separately to Site. If more fields above are needed, use separate sheet or form.*

FIELD DATA

SAMPLE DATE (MM DD YY)	pH (std)	CONDUCTANCE (µmhos/cm @ 25°C)	TEMP. (°C)	TURBIDITY (ntu)	DO (mg/L - ppm)	eH/ORP (mV)	Other: Units
050824	7.12	5.18	11.8	44.4			

Final Field Readings are required *(i.e. record field measurements, final stabilized readings, passive sample readings before sampling for all field parameters required by State/Permit/Site.)*

Sample Appearance: transparent — Odor: none — Color: clear — Other: ____

Weather Conditions (required daily, or as conditions change): 15 C — Direction/Speed: 20 km/hr SW — Outlook: clear — Precipitation: Y or (N)

Specific Comments (including purge/well volume calculations if required): ____

FIELD COMMENTS

I certify that sampling procedures were in accordance with applicable EPA, State, and WM protocols (if more than one sampler, all should sign):

Date	Name	Signature	Company
05/08/24	Eric Wilson	E. Wilson	RWDI

DISTRIBUTION: WHITE/ORIGINAL - Stays with Sample, YELLOW - Returned to Client, PINK - Field Copy

Field Information Form v-3.1 06/20

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S2437676

BUREAU VERITAS

FIELD INFORMATION FORM

WM WASTE MANAGEMENT

Site Name: TCE.C

Site No.:

Sample: MW60-B (Sample ID)

This Waste Management Field Information Form is Required
This form is to be completed, in addition to any State Forms. The Field Form is submitted along with the Chain of Custody Forms that accompany the sample containers (i.e. with the cooler that is returned to the laboratory).

Laboratory Use Only/Lab ID:

PURGE INFO

PURGE DATE (MM DD YY)	PURGE TIME (2400 Hr Clock)	ELAPSED HRS (hrs:min)	WATER VOL IN CASING (Gallons)	ACTUAL VOL PURGED (Gallons)	WELL VOLs PURGED
050824				0.60 L	

Note: For Passive Sampling, replace "Water Vol in Casing" and "Well Vols Purged" w/ Water Vol in Tubing/Flow Cell and Tubing/Flow Cell Vols Purged. Mark Changes, Record field data below.

PURGE/SAMPLE EQUIPMENT

Purging and Sampling Equipment ... Dedicated: (Y) or N

Purging Device: C
Sampling Device: C
X-Other:

A-Submersible Pump, B-Peristaltic Pump, C-QED Bladder Pump, D-Bailer, E-Piston Pump, F-Dipper/Bottle

Filter Device: (Y) or N — 0.45 µ or ____ µ (circle or fill in)

Filter Type: A (A-In-line Disposable, B-Pressure, C-Vacuum, X-Other:)

Sample Tube Type: (A-Teflon, B-Stainless Steel, C-PVC, D-Polypropylene, X-Other:)

WELL DATA

Well Elevation (at TOC) (ft/msl)	Depth to Water (DTW) (from TOC)	Groundwater Elevation (GWE) (Site Datum, from TOC) (ft msl)
	0.64 M	

Total Well Depth (from TOC) (ft)	Stick Up (from ground elevation) (ft)	Casing ID (in)	Casing Material

Note: Total Depth, Stick Up, Casing ID, etc. are optional and can be from historical data, unless required by Site/Permit. Well Elevation, DTW, and GWE must be current, obtained from site.

STABILIZATION DATA (Optional)

Sample Time (2400 Hr Clock)	Rate/Unit	pH (std)	Conductance (SC/EC) (µmhos/cm @ 25°C)	Temp. (°C)	Turbidity (ntu)	D.O. (mg/L - ppm)	eH/ORP (mV)	DTW (ft)
		1st	1st					
		2nd	2nd					
		3rd	3rd					
		4th	4th					
Input Range for 3 consec. readings or Permit/State requirements:		+/-	+/-	+/-	+/-	+/-	+/-	

Stabilization Data Fields are Optional *(i.e. complete stabilization readings for parameters required by WM, Site, or State). These fields can be used where four (4) field measurements are required by State/Permit/Site. If a Data Logger or other Electronic format is used, fill in final readings below and submit electronic data separately to Site. If more fields above are needed, use separate sheet or form.*

FIELD DATA

SAMPLE DATE (MM DD YY)	pH (std)	CONDUCTANCE (µmhos/cm @ 25°C)	TEMP. (°C)	TURBIDITY (ntu)	DO (mg/L - ppm)	eH/ORP (mV)	Other: Units
050824	7.8	1.07 mS	15.6	42.7			

Final Field Readings are required *(i.e. record field measurements, final stabilized readings, passive sample readings before sampling for all field parameters required by State/Permit/Site.)*

Sample Appearance: transparent Odor: none Color: clear Other:

Weather Conditions (required daily, or as conditions change): 20°c Direction/Speed: 20kmh SW Outlook: clear Precipitation: Y or (N)

Specific Comments (including purge/well volume calculations if required):

FIELD COMMENTS

I certify that sampling procedures were in accordance with applicable EPA, State, and WM protocols (if more than one sampler, all should sign):

Date	Name	Signature	Company
05/08/24	Eric Wilson	E. Wilson	RWDI.

DISTRIBUTION: WHITE/ORIGINAL - Stays with Sample, YELLOW - Returned to Client, PINK - Field Copy

Field Information Form v-3.1 06/20

2067

S2437676

BUREAU VERITAS

FIELD INFORMATION FORM

WM WASTE MANAGEMENT

Site Name: TCEC

Site No.: Sample: OWS7-15 (Sample ID)

This Waste Management Field Information Form is Required
This form is to be completed, in addition to any State Forms. The Field Form is submitted along with the Chain of Custody Forms that accompany the sample containers (i.e. with the cooler that is returned to the laboratory).

Laboratory Use Only/Lab ID:

PURGE INFO

PURGE DATE (MM DD YY)	PURGE TIME (2400 Hr Clock)	ELAPSED HRS (hrs:min)	WATER VOL IN CASING (Gallons)	ACTUAL VOL PURGED (Gallons) L	WELL VOLs PURGED
050824				0.5	

Note: For Passive Sampling, replace "Water Vol in Casing" and "Well Vols Purged" w/ Water Vol in Tubing/Flow Cell and Tubing/Flow Cell Vols Purged. Mark Changes. Record field data below.

PURGE/SAMPLE EQUIPMENT

Purging and Sampling Equipment ... Dedicated: (Y) or N

Purging Device: C — A-Submersible Pump, B-Peristaltic Pump, C-QED Bladder Pump, D-Bailer, E-Piston Pump, F-Dipper/Bottle

Sampling Device: C

X-Other:

Filter Device: (Y) or N — (0.45 µ) or ____ µ (circle or fill in)

Filter Type: A — A-In-line Disposable, B-Pressure, C-Vacuum, X-Other:

Sample Tube Type: ____ — A-Teflon, B-Stainless Steel, C-PVC, D-Polypropylene, X-Other:

WELL DATA

Well Elevation (at TOC) ____ (ft/msl)

Depth to Water (DTW) (from TOC) 2.03 m

Groundwater Elevation (GWE) (Site Datum, from TOC) ____ (ft msl)

Total Well Depth (from TOC) ____ (ft)

Stick Up (from ground elevation) ____ (ft)

Casing ID ____ (in)

Casing Material ____

Note: Total Depth, Stick Up, Casing ID, etc. are optional and can be from historical data, unless required by Site/Permit. Well Elevation, DTW, and GWE must be current, obtained from site.

STABILIZATION DATA (Optional)

Sample Time (2400 Hr Clock)	Rate/Unit	pH (std)	Conductance (SC/EC) (µmhos/cm @ 25°C)	Temp. (°C)	Turbidity (ntu)	D.O. (mg/L - ppm)	eH/ORP (mV)	DTW (ft)
		1st	1st					
		2nd	2nd					
		3rd	3rd					
		4th	4th					
Input Range for 3 consec. readings or Permit/State requirements:		+/-	+/-	+/-	+/-	+/-	+/-	

Stabilization Data Fields are Optional *(i.e. complete stabilization readings for parameters required by WM, Site, or State). These fields can be used where four (4) field measurements are required by State/Permit/Site. If a Data Logger or other Electronic format is used, fill in final readings below and submit electronic data separately to Site. If more fields above are needed, use separate sheet or form.*

FIELD DATA

SAMPLE DATE (MM DD YY)	pH (std)	CONDUCTANCE (µmhos/cm @ 25°C)	TEMP. (°C)	TURBIDITY (ntu)	DO (mg/L - ppm)	eH/ORP (mV)	Other: Units
050824	7.4	3.94	12.6	13.4			

Final Field Readings are required *(i.e. record field measurements, final stabilized readings, passive sample readings before sampling for all field parameters required by State/Permit/Site.)*

FIELD COMMENTS

Sample Appearance: transparent — Odor: none — Color: clear — Other:

Weather Conditions (required daily, or as conditions change): 15°C — Direction/Speed: 20km/hr SW — Outlook: clear — Precipitation: Y or (N)

Specific Comments (including purge/well volume calculations if required):

I certify that sampling procedures were in accordance with applicable EPA, State, and WM protocols (if more than one sampler, all should sign):

Date	Name	Signature	Company
05/08/24	Eric Watson	Eric Watson	RMD1

DISTRIBUTION: WHITE/ORIGINAL - Stays with Sample, YELLOW - Returned to Client, PINK - Field Copy

Field Information Form v.3.1 06/20

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S2437676 X

FIELD INFORMATION FORM

BUREAU VERITAS

WASTE MANAGEMENT

Site Name: TCEC

Site No.:

Sample: DW40M7 (Sample ID)

This Waste Management Field Information Form is Required
This form is to be completed, in addition to any State Forms. The Field Form is submitted along with the Chain of Custody Forms that accompany the sample containers (i.e. with the cooler that is returned to the laboratory).

Laboratory Use Only/Lab ID:

PURGE INFO

PURGE DATE (MM DD YY)	PURGE TIME (2400 Hr Clock)	ELAPSED HRS (hrs:min)	WATER VOL IN CASING (Gallons)	ACTUAL VOL PURGED (Gallons)	WELL VOLs PURGED
050824				0.56	

Note: For Passive Sampling, replace "Water Vol in Casing" and "Well Vols Purged" w/ Water Vol in Tubing/Flow Cell and Tubing/Flow Cell Vols Purged. Mark Changes, Record field data below.

PURGE/SAMPLE EQUIPMENT

Purging and Sampling Equipment ... Dedicated: (Y) or N

Purging Device: C
Sampling Device: C
X-Other:

A-Submersible Pump, B-Peristaltic Pump, C-QED Bladder Pump, D-Bailer, E-Piston Pump, F-Dipper/Bottle

Filter Device: (Y) or N — (0.45 µ) or ____ µ (circle or fill in)

Filter Type: A — A-In-line Disposable, B-Pressure, C-Vacuum, X-Other:

Sample Tube Type: A-Teflon, B-Stainless Steel, C-PVC, D-Polypropylene, X-Other:

WELL DATA

Well Elevation (at TOC) (ft/msl)

Depth to Water (DTW) (from TOC): 1.84 (ft)

Groundwater Elevation (GWE) (Site Datum, from TOC) (ft msl)

Total Well Depth (from TOC) (ft)

Stick Up (from ground elevation) (ft)

Casing ID (in)

Casing Material

Note: Total Depth, Stick Up, Casing ID, etc. are optional and can be from historical data, unless required by Site/Permit. Well Elevation, DTW, and GWE must be current, obtained from site.

STABILIZATION DATA (Optional)

Sample Time (2400 Hr Clock)	Rate/Unit	pH (std)	Conductance (SC/EC) (µmhos/cm @ 25°C)	Temp. (°C)	Turbidity (ntu)	D.O. (mg/L - ppm)	eH/ORP (mV)	DTW (ft)
		1st	1st					
		2nd	2nd					
		3rd	3rd					
		4th	4th					
Input Range for 3 consec. readings or Permit/State requirements:		+/-	+/-	+/-	+/-	+/-	+/-	

Stabilization Data Fields are Optional *(i.e. complete stabilization readings for parameters required by WM, Site, or State). These fields can be used where four (4) field measurements are required by State/Permit/Site. If a Data Logger or other Electronic format is used, fill in final readings below and submit electronic data separately to Site. If more fields above are needed, use separate sheet or form.*

FIELD DATA

SAMPLE DATE (MM DD YY)	pH (std)	CONDUCTANCE (µmhos/cm @ 25°C)	TEMP. (°C)	TURBIDITY (ntu)	DO (mg/L - ppm)	eH/ORP (mV)	Other: Units
050824	6.9	NS 3.55	12.7	19.3			

Final Field Readings are required *(i.e. record field measurements, final stabilized readings, passive sample readings before sampling for all field parameters required by State/Permit/Site.)*

Sample Appearance: transparent Odor: none Color: Clear Other:

Weather Conditions (required daily, or as conditions change): 20°C Direction/Speed: 20 cm/h SW Outlook: Clear Precipitation: Y or (N)

Specific Comments (including purge/well volume calculations if required):

FIELD COMMENTS

GW-DUP 3 taken

I certify that sampling procedures were in accordance with applicable EPA, State, and WM protocols (if more than one sampler, all should sign):

Date	Name	Signature	Company
05/08/24	Eric Wilson	Eric Wilson	RWDI

DISTRIBUTION: WHITE/ORIGINAL - Stays with Sample, YELLOW - Returned to Client, PINK - Field Copy

Field Information Form v-3.1 06/20

2058

Custody Tracking Form

T894793

Please use this form for custody tracking when submitting the work instructions via eCOC (electronic Chain of Custody). Please ensure your form has a barcode or a Bureau Veritas eCOC confirmation number in the top right hand side. This number links your electronic submission to your samples. This form should be placed in the cooler with your samples.

First Sample: OW40A-7
Last Sample: GW DUP3
Sample Count: 8

Relinquished By				Received By			
Jeff Cleland		Date	2024/05/08	SUGAR SALVAN		Date	2024/05/10
		Time (24 HR)	8:00			Time (24 HR)	08:30
		Date				Date	
		Time (24 HR)				Time (24 HR)	
		Date				Date	
		Time (24 HR)				Time (24 HR)	

Unless otherwise agreed to, submissions and use of services are governed by Bureau Veritas' standard terms and conditions which can be found at www.bvna.com.

Triage Information

Sampled By (Print): Eric Wilson

# of Coolers/Pkgs: 3

Rush ☐ Immediate Test ☐ Food Residue ☐

Micro ☐ Food Chemistry ☐

*** LABORATORY USE ONLY ***

Received At

Labeled By

Verified By

Lab Comments:

10-May-24 08:30
Patricia Legette
C4E0890
VK ENV-907

Custody Seal		Cooling Media	Temperature °C		
Present (Y/N)	Intact (Y/N)	Present (Y/N)	1	2	3
N	Y	Y	3	4	5
Y	Y	Y	3	2	5
Y	Y	Y	5	4	4
Drinking Water Metals Preservation Check Done (Circle)				YES	NO

COR FCD-00383/4

Page 1 of 1

Your P.O. #: 13254256
Your Project #: 2402553.01
Site#: 200
Site Location: ON07
Your C.O.C. #: 894784

Attention: Khalid Hussein - Twin Creeks

RWDI Inc.
600 Southgate Drive
Guelph, ON
Canada N1G 4P6

Report Date: 2024/05/21
Report #: R8156650
Version: 1 - Final

CERTIFICATE OF ANALYSIS

BUREAU VERITAS JOB #: C4E0917
Received: 2024/05/10, 08:30

Sample Matrix: Water
Samples Received: 9

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Analytical Method
Alkalinity	9	N/A	2024/05/17	CAM SOP-00448	SM 24 2320 B m
Chloride by Automated Colourimetry	1	N/A	2024/05/13	CAM SOP-00463	SM 24 4500-Cl E m
Chloride by Automated Colourimetry	8	N/A	2024/05/16	CAM SOP-00463	SM 24 4500-Cl E m
Conductance in Water - On-site	9	N/A	2024/05/17		
Conductivity	8	N/A	2024/05/16	CAM SOP-00414	SM 24 2510 m
Conductivity	1	N/A	2024/05/17	CAM SOP-00414	SM 24 2510 m
Dissolved Organic Carbon (DOC) (1)	9	N/A	2024/05/15	CAM SOP-00446	SM 24 5310 B m
Dissolved Metals by ICPMS	7	N/A	2024/05/15	CAM SOP-00447	EPA 6020B m
Dissolved Metals by ICPMS	2	N/A	2024/05/16	CAM SOP-00447	EPA 6020B m
Ammonia-N	9	N/A	2024/05/16	CAM SOP-00441	USGS I-2522-90 m
Nitrate & Nitrite as Nitrogen in Water (2)	9	N/A	2024/05/13	CAM SOP-00440	SM 24 4500-NO3I/NO2B
pH (3)	9	2024/05/11	2024/05/17	CAM SOP-00413	SM 24th - 4500H+ B
Field Measured pH (4)	9	N/A	2024/05/17		Field pH Meter
Sulphate by Automated Turbidimetry	1	N/A	2024/05/13	CAM SOP-00464	SM 24 4500-SO42- E m
Sulphate by Automated Turbidimetry	8	N/A	2024/05/16	CAM SOP-00464	SM 24 4500-SO42- E m
Total Dissolved Solids	1	2024/05/13	2024/05/14	CAM SOP-00428	SM 24 2540C m
Total Dissolved Solids	8	2024/05/14	2024/05/15	CAM SOP-00428	SM 24 2540C m
Field Temperature (4)	9	N/A	2024/05/17		Field Thermometer
Total Kjeldahl Nitrogen in Water	6	2024/05/15	2024/05/16	CAM SOP-00938	OMOE E3516 m
Total Kjeldahl Nitrogen in Water	3	2024/05/15	2024/05/17	CAM SOP-00938	OMOE E3516 m
Turbidity - On-site	9	N/A	2024/05/17		
Volatile Organic Compounds in Water	8	N/A	2024/05/16	CAM SOP-00228	EPA 8260D
Volatile Organic Compounds in Water	1	N/A	2024/05/17	CAM SOP-00228	EPA 8260D

Remarks:

Bureau Veritas is accredited to ISO/IEC 17025 for specific parameters on scopes of accreditation. Unless otherwise noted, procedures used by Bureau Veritas are based upon recognized Provincial, Federal or US method compendia such as CCME, EPA, APHA or the Quebec Ministry of Environment.

All work recorded herein has been done in accordance with procedures and practices ordinarily exercised by professionals in Bureau Veritas' profession using accepted testing methodologies, quality assurance and quality control procedures (except where otherwise agreed by the client and Bureau Veritas in writing). All data is in statistical control and has met quality control and method performance criteria unless otherwise noted. All method blanks are reported; unless indicated otherwise, associated sample data are not blank corrected. Where applicable, unless otherwise noted, Measurement

Your P.O. #: 13254256
Your Project #: 2402553.01
Site#: 200
Site Location: ON07
Your C.O.C. #: 894784

Attention: Khalid Hussein - Twin Creeks

RWDI Inc.
600 Southgate Drive
Guelph, ON
Canada N1G 4P6

Report Date: 2024/05/21
Report #: R8156650
Version: 1 - Final

CERTIFICATE OF ANALYSIS

BUREAU VERITAS JOB #: C4E0917
Received: 2024/05/10, 08:30

Uncertainty has not been accounted for when stating conformity to the referenced standard.

Bureau Veritas liability is limited to the actual cost of the requested analyses, unless otherwise agreed in writing. There is no other warranty expressed or implied. Bureau Veritas has been retained to provide analysis of samples provided by the Client using the testing methodology referenced in this report. Interpretation and use of test results are the sole responsibility of the Client and are not within the scope of services provided by Bureau Veritas, unless otherwise agreed in writing. Bureau Veritas is not responsible for the accuracy or any data impacts, that result from the information provided by the customer or their agent.

Solid sample results, except biota, are based on dry weight unless otherwise indicated. Organic analyses are not recovery corrected except for isotope dilution methods.
Results relate to samples tested. When sampling is not conducted by Bureau Veritas, results relate to the supplied samples tested.
This Certificate shall not be reproduced except in full, without the written approval of the laboratory.
Reference Method suffix “m” indicates test methods incorporate validated modifications from specific reference methods to improve performance.
* RPDs calculated using raw data. The rounding of final results may result in the apparent difference.
(1) Dissolved Organic Carbon (DOC) present in the sample should be considered as non-purgeable DOC.
(2) Values for calculated parameters may not appear to add up due to rounding of raw data and significant figures.
(3) "The CCME method and Analytical Protocol (O. Reg 153/04, O. Reg. 406/19) requires pH to be analyzed within 15 minutes of sampling and therefore field analysis is required for compliance. All Laboratory pH analyses in this report are reported past the CCME and Analytical Protocol (O. Reg 153/04, O. Reg. 406/19) holding time. Bureau Veritas endeavors to analyze samples as soon as possible after receipt."

(4) This is a field test, therefore, the results relate to items that were not analysed at Bureau Veritas.

Encryption Key

Please direct all questions regarding this Certificate of Analysis to:
Patricia Legette, Project Manager
Email: Patricia.Legette@bureauveritas.com
Phone# (905)817-5799

==========

Bureau Veritas has procedures in place to guard against improper use of the electronic signature and have the required "signatories", as per ISO/IEC 17025, signing the reports. For Service Group specific validation, please refer to the Validation Signatures page if included, otherwise available by request. For Department specific Analyst/Supervisor validation names, please refer to the Test Summary section if included, otherwise available by request. This report is authorized by Rodney Major, General Manager responsible for Ontario Environmental laboratory operations.

Bureau Veritas Job #: C4E0917
Report Date: 2024/05/21

RWDI Inc.
Client Project #: 2402553.01
Site Location: ON07
Your P.O. #: 13254256
Sampler Initials: JC

RESULTS OF ANALYSES OF WATER

Bureau Veritas ID		ZDF365			ZDF366			ZDF367		
Sampling Date		2024/05/08 09:00			2024/05/08 16:00			2024/05/08 09:50		
COC Number		894784			894784			894784		
	UNITS	**OW57-4**	**RDL**	**QC Batch**	**OW40E-4**	**RDL**	**QC Batch**	**OW17-4**	**RDL**	**QC Batch**
Field Measurements										
Field Conductivity	uS/cm	4500	N/A	ONSITE	3390	N/A	ONSITE	3020	N/A	ONSITE
Field Temperature	Celsius	10.6	N/A	ONSITE	15.6	N/A	ONSITE	11.7	N/A	ONSITE
Field Measured Field Turbidity	NTU	4.44	N/A	ONSITE	16.0	N/A	ONSITE	7.11	N/A	ONSITE
Field Measured pH	pH	6.9		ONSITE	6.6		ONSITE	7.1		ONSITE
Inorganics										
Total Ammonia-N	mg/L	<0.15	0.15	9392227	<0.15	0.15	9392227	<0.15	0.15	9392227
Conductivity	umho/cm	3400	1.0	9388021	3100	1.0	9388163	2100	1.0	9388163
Total Dissolved Solids	mg/L	3270	10	9391664	3070	10	9391664	2580	10	9391664
Total Kjeldahl Nitrogen (TKN)	mg/L	<0.7	0.7	9395166	<0.7	0.7	9395166	<0.7	0.7	9395166
Dissolved Organic Carbon	mg/L	3.6	0.4	9393299	6.1	0.4	9393299	3.0	0.4	9393299
pH	pH	7.98		9388022	7.69		9388164	7.99		9388164
Dissolved Sulphate (SO4)	mg/L	1700	10	9388034	1800	5.0	9388189	830	3.0	9388189
Alkalinity (Total as CaCO3)	mg/L	610	1.0	9388017	320	1.0	9388154	420	1.0	9388154
Dissolved Chloride (Cl-)	mg/L	5.0	1.0	9388037	2.5	1.0	9388187	24	1.0	9388187
Nitrate (N)	mg/L	<0.10	0.10	9388148	<0.10	0.10	9388200	0.17	0.10	9388202

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
N/A = Not Applicable

Bureau Veritas 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.bvna.com

Microbiology testing is conducted at 6660 Campobello Rd. Chemistry testing is conducted at 6740 Campobello Rd.

Bureau Veritas Job #: C4E0917
Report Date: 2024/05/21

RWDI Inc.
Client Project #: 2402553.01
Site Location: ON07
Your P.O. #: 13254256
Sampler Initials: JC

RESULTS OF ANALYSES OF WATER

Bureau Veritas ID		ZDF368			ZDF369		ZDF370		ZDF371		
Sampling Date		2024/05/08 12:10			2024/05/08 11:45		2024/05/08 13:15		2024/05/08 12:30		
COC Number		894784			894784		894784		894784		
	UNITS	OW56-4	RDL	QC Batch	GWDUP2	QC Batch	OW60-4	QC Batch	OW68-5	RDL	QC Batch
Field Measurements											
Field Conductivity	uS/cm	4060	N/A	ONSITE	2660	ONSITE	1210	ONSITE	1830	N/A	ONSITE
Field Temperature	Celsius	13.6	N/A	ONSITE	14.7	ONSITE	19.1	ONSITE	13.5	N/A	ONSITE
Field Measured Field Turbidity	NTU	98.4	N/A	ONSITE	6.29	ONSITE	>999	ONSITE	48.2	N/A	ONSITE
Field Measured pH	pH	6.8		ONSITE	7.1	ONSITE	7.1	ONSITE	6.9		ONSITE
Inorganics											
Total Ammonia-N	mg/L	1.33	0.15	9392227	<0.15	9392227	<0.15	9392227	<0.15	0.15	9392233
Conductivity	umho/cm	4100	1.0	9388163	1900	9388163	930	9388163	1200	1.0	9388163
Total Dissolved Solids	mg/L	4180	10	9391664	1220	9389347	685	9391664	700	10	9391664
Total Kjeldahl Nitrogen (TKN)	mg/L	2.2	0.7	9395166	<0.7	9395166	<0.7	9395166	<0.7	0.7	9395166
Dissolved Organic Carbon	mg/L	5.2	0.4	9393299	4.6	9393299	10	9393299	4.6	0.4	9393299
pH	pH	7.75		9388164	7.96	9388164	8.03	9388164	7.98		9388164
Dissolved Sulphate (SO4)	mg/L	2500	10	9388189	370	9388189	190	9388195	170	1.0	9388195
Alkalinity (Total as CaCO3)	mg/L	410	1.0	9388154	620	9388154	310	9388154	490	1.0	9388154
Dissolved Chloride (Cl-)	mg/L	6.8	1.0	9388187	51	9388187	6.0	9388190	9.0	1.0	9388190
Nitrate (N)	mg/L	<0.10	0.10	9388200	<0.10	9388202	<0.10	9388200	<0.10	0.10	9388200

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
N/A = Not Applicable

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Microbiology testing is conducted at 6660 Campobello Rd. Chemistry testing is conducted at 6740 Campobello Rd.

Bureau Veritas Job #: C4E0917
Report Date: 2024/05/21

RWDI Inc.
Client Project #: 2402553.01
Site Location: ON07
Your P.O. #: 13254256
Sampler Initials: JC

RESULTS OF ANALYSES OF WATER

Bureau Veritas ID		ZDF372		ZDF373		
Sampling Date		2024/05/08 11:45		2024/05/08 09:30		
COC Number		894784		894784		
	UNITS	OW16-6	RDL	OW69-5	RDL	QC Batch
Field Measurements						
Field Conductivity	uS/cm	2660	N/A	7180	N/A	ONSITE
Field Temperature	Celsius	14.7	N/A	12.6	N/A	ONSITE
Field Measured Field Turbidity	NTU	6.29	N/A	9.38	N/A	ONSITE
Field Measured pH	pH	7.1		6.7		ONSITE
Inorganics						
Total Ammonia-N	mg/L	<0.15	0.15	<0.15	0.15	9392227
Conductivity	umho/cm	1900	1.0	5600	1.0	9388163
Total Dissolved Solids	mg/L	1210	10	5860	10	9391664
Total Kjeldahl Nitrogen (TKN)	mg/L	<0.7	0.7	0.8	0.7	9395166
Dissolved Organic Carbon	mg/L	4.6	0.4	4.4	0.4	9393299
pH	pH	8.11		7.69		9388164
Dissolved Sulphate (SO4)	mg/L	370	1.0	3500	10	9388189
Alkalinity (Total as CaCO3)	mg/L	620	1.0	690	1.0	9388154
Dissolved Chloride (Cl-)	mg/L	51	1.0	9.7	1.0	9388187
Nitrate (N)	mg/L	<0.10	0.10	<0.10	0.10	9388200

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
N/A = Not Applicable

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Microbiology testing is conducted at 6660 Campobello Rd. Chemistry testing is conducted at 6740 Campobello Rd.

Bureau Veritas Job #: C4E0917
Report Date: 2024/05/21

RWDI Inc.
Client Project #: 2402553.01
Site Location: ON07
Your P.O. #: 13254256
Sampler Initials: JC

ELEMENTS BY ATOMIC SPECTROSCOPY (WATER)

Bureau Veritas ID		ZDF365	ZDF366	ZDF367		ZDF368		ZDF369		
Sampling Date		2024/05/08 09:00	2024/05/08 16:00	2024/05/08 09:50		2024/05/08 12:10		2024/05/08 11:45		
COC Number		894784	894784	894784		894784		894784		
	UNITS	OW57-4	OW40E-4	OW17-4	RDL	OW56-4	RDL	GWDUP2	RDL	QC Batch
Metals										
Dissolved Barium (Ba)	mg/L	0.006	0.014	0.018	0.005	0.009	0.005	0.012	0.005	9389593
Dissolved Boron (B)	mg/L	0.36	0.30	0.20	0.02	0.42	0.02	0.14	0.02	9389593
Dissolved Cadmium (Cd)	mg/L	<0.0001	0.0010	<0.0001	0.0001	<0.0001	0.0001	<0.0001	0.0001	9389593
Dissolved Calcium (Ca)	mg/L	320	480	170	0.2	470	0.4	100	0.2	9389593
Dissolved Iron (Fe)	mg/L	1.5	<0.1	<0.1	0.1	1.7	0.1	<0.1	0.1	9389593
Dissolved Lead (Pb)	mg/L	<0.0005	<0.0005	<0.0005	0.0005	<0.0005	0.0005	<0.0005	0.0005	9389593
Dissolved Magnesium (Mg)	mg/L	350	230	150	0.05	480	0.3	99	0.05	9389593
Dissolved Potassium (K)	mg/L	4.5	7.4	1.3	0.2	3.6	0.2	4.5	0.2	9389593
Dissolved Sodium (Na)	mg/L	140	78	72	0.1	100	0.1	210	0.1	9389593

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

Bureau Veritas ID		ZDF370	ZDF371	ZDF372		ZDF373		
Sampling Date		2024/05/08 13:15	2024/05/08 12:30	2024/05/08 11:45		2024/05/08 09:30		
COC Number		894784	894784	894784		894784		
	UNITS	OW60-4	OW68-5	OW16-6	RDL	OW69-5	RDL	QC Batch
Metals								
Dissolved Barium (Ba)	mg/L	0.063	0.035	0.013	0.005	0.008	0.005	9389593
Dissolved Boron (B)	mg/L	0.05	0.08	0.14	0.02	0.93	0.02	9389593
Dissolved Cadmium (Cd)	mg/L	<0.0001	<0.0001	<0.0001	0.0001	<0.0001	0.0001	9389593
Dissolved Calcium (Ca)	mg/L	140	110	110	0.2	480	0.4	9389593
Dissolved Iron (Fe)	mg/L	<0.1	<0.1	<0.1	0.1	2.7	0.1	9389593
Dissolved Lead (Pb)	mg/L	0.0036	<0.0005	<0.0005	0.0005	<0.0005	0.0005	9389593
Dissolved Magnesium (Mg)	mg/L	42	91	99	0.05	710	0.3	9389593
Dissolved Potassium (K)	mg/L	2.1	2.1	4.6	0.2	6.1	0.2	9389593
Dissolved Sodium (Na)	mg/L	16	39	220	0.1	300	0.1	9389593

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

Bureau Veritas 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.bvna.com

Microbiology testing is conducted at 6660 Campobello Rd. Chemistry testing is conducted at 6740 Campobello Rd.

Bureau Veritas Job #: C4E0917
Report Date: 2024/05/21

RWDI Inc.
Client Project #: 2402553.01
Site Location: ON07
Your P.O. #: 13254256
Sampler Initials: JC

VOLATILE ORGANICS BY GC/MS (WATER)

Bureau Veritas ID		ZDF365	ZDF366	ZDF367	ZDF368	ZDF369	ZDF370		
Sampling Date		2024/05/08 09:00	2024/05/08 16:00	2024/05/08 09:50	2024/05/08 12:10	2024/05/08 11:45	2024/05/08 13:15		
COC Number		894784	894784	894784	894784	894784	894784		
	UNITS	OW57-4	OW40E-4	OW17-4	OW56-4	GWDUP2	OW60-4	RDL	QC Batch
Volatile Organics									
Benzene	ug/L	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	0.20	9389575
1,4-Dichlorobenzene	ug/L	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40	0.40	9389575
Ethylbenzene	ug/L	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	0.20	9389575
Methylene Chloride(Dichloromethane)	ug/L	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	2.0	9389575
Toluene	ug/L	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	0.20	9389575
Vinyl Chloride	ug/L	<0.20	<0.20	1.2	<0.20	<0.20	<0.20	0.20	9389575
p+m-Xylene	ug/L	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	0.20	9389575
o-Xylene	ug/L	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	0.20	9389575
Total Xylenes	ug/L	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	0.20	9389575
Surrogate Recovery (%)									
4-Bromofluorobenzene	%	102	101	102	101	101	101		9389575
D4-1,2-Dichloroethane	%	107	103	106	103	103	103		9389575
D8-Toluene	%	97	98	98	99	98	99		9389575

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

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Microbiology testing is conducted at 6660 Campobello Rd. Chemistry testing is conducted at 6740 Campobello Rd.

RWDI Inc.
Client Project #: 2402553.01
Site Location: ON07
Your P.O. #: 13254256
Sampler Initials: JC

VOLATILE ORGANICS BY GC/MS (WATER)

Bureau Veritas ID		ZDF371	ZDF372	ZDF373		
Sampling Date		2024/05/08 12:30	2024/05/08 11:45	2024/05/08 09:30		
COC Number		894784	894784	894784		
	UNITS	OW68-5	OW16-6	OW69-5	RDL	QC Batch
Volatile Organics						
Benzene	ug/L	<0.20	<0.20	<0.20	0.20	9389575
1,4-Dichlorobenzene	ug/L	<0.40	<0.40	<0.40	0.40	9389575
Ethylbenzene	ug/L	<0.20	<0.20	<0.20	0.20	9389575
Methylene Chloride(Dichloromethane)	ug/L	<2.0	<2.0	<2.0	2.0	9389575
Toluene	ug/L	<0.20	<0.20	<0.20	0.20	9389575
Vinyl Chloride	ug/L	<0.20	<0.20	<0.20	0.20	9389575
p+m-Xylene	ug/L	<0.20	<0.20	<0.20	0.20	9389575
o-Xylene	ug/L	<0.20	<0.20	<0.20	0.20	9389575
Total Xylenes	ug/L	<0.20	<0.20	<0.20	0.20	9389575
Surrogate Recovery (%)						
4-Bromofluorobenzene	%	100	99	100		9389575
D4-1,2-Dichloroethane	%	104	110	105		9389575
D8-Toluene	%	98	98	98		9389575

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

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Microbiology testing is conducted at 6660 Campobello Rd. Chemistry testing is conducted at 6740 Campobello Rd.

Bureau Veritas Job #: C4E0917
Report Date: 2024/05/21

RWDI Inc.
Client Project #: 2402553.01
Site Location: ON07
Your P.O. #: 13254256
Sampler Initials: JC

GENERAL COMMENTS

Each temperature is the average of up to three cooler temperatures taken at receipt

Package 1	4.0°C
Package 2	3.3°C
Package 3	4.3°C

Results relate only to the items tested.

Bureau Veritas 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.bvna.com

Microbiology testing is conducted at 6660 Campobello Rd. Chemistry testing is conducted at 6740 Campobello Rd.

QUALITY ASSURANCE REPORT

			Matrix Spike		SPIKED BLANK		Method Blank		RPD		QC Standard	
QC Batch	Parameter	Date	% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits	% Recovery	QC Limits
9389575	4-Bromofluorobenzene	2024/05/16	101 (2)	70 - 130	99	70 - 130	100	%				
9389575	D4-1,2-Dichloroethane	2024/05/16	101 (2)	70 - 130	96	70 - 130	101	%				
9389575	D8-Toluene	2024/05/16	100 (2)	70 - 130	101	70 - 130	99	%				
9388017	Alkalinity (Total as CaCO3)	2024/05/16			99	85 - 115	<1.0	mg/L	1.6 (1)	20		
9388021	Conductivity	2024/05/16			99	85 - 115	<1.0	umho/cm	0.81 (1)	10		
9388022	pH	2024/05/16			102	98 - 103			0.048 (1)	N/A		
9388034	Dissolved Sulphate (SO4)	2024/05/13	NC	75 - 125	97	80 - 120	<1.0	mg/L	3.1 (1)	20		
9388037	Dissolved Chloride (Cl-)	2024/05/13	NC	80 - 120	98	80 - 120	<1.0	mg/L	0.69 (1)	20		
9388148	Nitrate (N)	2024/05/13	94	80 - 120	98	80 - 120	<0.10	mg/L	NC (1)	20		
9388154	Alkalinity (Total as CaCO3)	2024/05/17			96	85 - 115	<1.0	mg/L	1.8 (1)	20		
9388163	Conductivity	2024/05/16			103	85 - 115	<1.0	umho/cm	0 (1)	10		
9388164	pH	2024/05/17			102	98 - 103			0.73 (1)	N/A		
9388187	Dissolved Chloride (Cl-)	2024/05/16	93	80 - 120	92	80 - 120	<1.0	mg/L	1.1 (1)	20		
9388189	Dissolved Sulphate (SO4)	2024/05/16	NC	75 - 125	94	80 - 120	<1.0	mg/L	1.2 (1)	20		
9388190	Dissolved Chloride (Cl-)	2024/05/16	NC	80 - 120	93	80 - 120	<1.0	mg/L	0.73 (1)	20		
9388195	Dissolved Sulphate (SO4)	2024/05/16	NC	75 - 125	95	80 - 120	<1.0	mg/L	0.81 (1)	20		
9388200	Nitrate (N)	2024/05/13	89	80 - 120	95	80 - 120	<0.10	mg/L	NC (1)	20		
9388202	Nitrate (N)	2024/05/13	96	80 - 120	99	80 - 120	<0.10	mg/L	NC (1)	20		
9389347	Total Dissolved Solids	2024/05/14			97	80 - 120	<10	mg/L	4.9 (1)	20		
9389575	1,4-Dichlorobenzene	2024/05/16	119 (2)	70 - 130	121	70 - 130	<0.40	ug/L	NC (3)	30		
9389575	Benzene	2024/05/16	111 (2)	70 - 130	110	70 - 130	<0.20	ug/L	NC (3)	30		
9389575	Ethylbenzene	2024/05/16	111 (2)	70 - 130	113	70 - 130	<0.20	ug/L	NC (3)	30		
9389575	Methylene Chloride(Dichloromethane)	2024/05/16	108 (2)	70 - 130	105	70 - 130	<2.0	ug/L	NC (3)	30		
9389575	o-Xylene	2024/05/16	108 (2)	70 - 130	111	70 - 130	<0.20	ug/L	NC (3)	30		
9389575	p+m-Xylene	2024/05/16	111 (2)	70 - 130	114	70 - 130	<0.20	ug/L	NC (3)	30		
9389575	Toluene	2024/05/16	110 (2)	70 - 130	111	70 - 130	<0.20	ug/L	NC (3)	30		
9389575	Total Xylenes	2024/05/16					<0.20	ug/L	NC (3)	30		
9389575	Vinyl Chloride	2024/05/16	106 (2)	70 - 130	114	70 - 130	<0.20	ug/L	NC (3)	30		

Bureau Veritas 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.bvna.com

Microbiology testing is conducted at 6660 Campobello Rd. Chemistry testing is conducted at 6740 Campobello Rd.

QUALITY ASSURANCE REPORT(CONT'D)

			Matrix Spike		SPIKED BLANK		Method Blank		RPD		QC Standard	
QC Batch	Parameter	Date	% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits	% Recovery	QC Limits
9389593	Dissolved Barium (Ba)	2024/05/15	108	80 - 120	98	80 - 120	<0.005	mg/L	1.3 (1)	20		
9389593	Dissolved Boron (B)	2024/05/15	112	80 - 120	99	80 - 120	<0.02	mg/L				
9389593	Dissolved Cadmium (Cd)	2024/05/15	109	80 - 120	99	80 - 120	<0.0001	mg/L	NC (1)	20		
9389593	Dissolved Calcium (Ca)	2024/05/15	NC	80 - 120	101	80 - 120	<0.2	mg/L	0.90 (1)	20		
9389593	Dissolved Iron (Fe)	2024/05/15	107	80 - 120	101	80 - 120	<0.1	mg/L				
9389593	Dissolved Lead (Pb)	2024/05/15	106	80 - 120	100	80 - 120	<0.0005	mg/L	NC (1)	20		
9389593	Dissolved Magnesium (Mg)	2024/05/15	NC	80 - 120	99	80 - 120	<0.05	mg/L	0.33 (1)	20		
9389593	Dissolved Potassium (K)	2024/05/15	109	80 - 120	103	80 - 120	<0.2	mg/L	0.50 (1)	20		
9389593	Dissolved Sodium (Na)	2024/05/15	104	80 - 120	100	80 - 120	<0.1	mg/L	1.6 (1)	20		
9391664	Total Dissolved Solids	2024/05/15			95	80 - 120	<10	mg/L	1.1 (1)	20		
9392227	Total Ammonia-N	2024/05/16	96	75 - 125	101	80 - 120	<0.15	mg/L	NC (1)	20		
9392233	Total Ammonia-N	2024/05/16	97 (4)	75 - 125	102	80 - 120	<0.15	mg/L	NC (5)	20		
9393299	Dissolved Organic Carbon	2024/05/15	89	80 - 120	95	80 - 120	<0.4	mg/L	4.7 (1)	20		

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Microbiology testing is conducted at 6660 Campobello Rd. Chemistry testing is conducted at 6740 Campobello Rd.

QUALITY ASSURANCE REPORT(CONT'D)

			Matrix Spike		SPIKED BLANK		Method Blank		RPD		QC Standard	
QC Batch	Parameter	Date	% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits	% Recovery	QC Limits
9395166	Total Kjeldahl Nitrogen (TKN)	2024/05/16	103 (6)	80 - 120	98	80 - 120	<0.7	mg/L	NC (7)	20	100	80 - 120

N/A = Not Applicable

Duplicate: Paired analysis of a separate portion of the same sample. Used to evaluate the variance in the measurement.

Matrix Spike: A sample to which a known amount of the analyte of interest has been added. Used to evaluate sample matrix interference.

QC Standard: A sample of known concentration prepared by an external agency under stringent conditions. Used as an independent check of method accuracy.

Spiked Blank: A blank matrix sample to which a known amount of the analyte, usually from a second source, has been added. Used to evaluate method accuracy.

Method Blank: A blank matrix containing all reagents used in the analytical procedure. Used to identify laboratory contamination.

Surrogate: A pure or isotopically labeled compound whose behavior mirrors the analytes of interest. Used to evaluate extraction efficiency.

NC (Matrix Spike): The recovery in the matrix spike was not calculated. The relative difference between the concentration in the parent sample and the spike amount was too small to permit a reliable recovery calculation (matrix spike concentration was less than the native sample concentration)

NC (Duplicate RPD): The duplicate RPD was not calculated. The concentration in the sample and/or duplicate was too low to permit a reliable RPD calculation (absolute difference <= 2x RDL).

(1) Duplicate Parent ID

(2) Matrix Spike Parent ID [ZDF365-07]

(3) Duplicate Parent ID [ZDF365-07]

(4) Matrix Spike Parent ID [ZDF371-06]

(5) Duplicate Parent ID [ZDF371-06]

(6) Matrix Spike Parent ID [ZDF372-04]

(7) Duplicate Parent ID [ZDF372-04]

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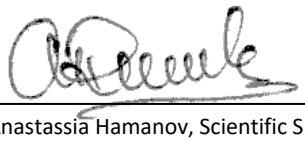
Microbiology testing is conducted at 6660 Campobello Rd. Chemistry testing is conducted at 6740 Campobello Rd.

Bureau Veritas Job #: C4E0917
Report Date: 2024/05/21

RWDI Inc.
Client Project #: 2402553.01
Site Location: ON07
Your P.O. #: 13254256
Sampler Initials: JC

VALIDATION SIGNATURE PAGE

The analytical data and all QC contained in this report were reviewed and validated by:



Anastassia Hamanov, Scientific Specialist



Zunaira Allem, Project Manager Assistant

Bureau Veritas has procedures in place to guard against improper use of the electronic signature and have the required "signatories", as per ISO/IEC 17025, signing the reports. For Service Group specific validation, please refer to the Validation Signatures page if included, otherwise available by request. For Department specific Analyst/Supervisor validation names, please refer to the Test Summary section if included, otherwise available by request. This report is authorized by Rodney Major, General Manager responsible for Ontario Environmental laboratory operations.

Bureau Veritas 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.bvna.com

Microbiology testing is conducted at 6660 Campobello Rd. Chemistry testing is conducted at 6740 Campobello Rd.

FIELD INFORMATION FORM

BUREAU VERITAS

WASTE MANAGEMENT

Site Name: TCE C

Site No.:

Sample: OWS7+4 (Sample ID)

This Waste Management Field Information Form is Required
This form is to be completed, in addition to any State Forms. The Field Form is submitted along with the Chain of Custody Forms that accompany the sample containers (i.e. with the cooler that is returned to the laboratory).

Laboratory Use Only/Lab ID:

PURGE INFO

PURGE DATE (MM DD YY)	PURGE TIME (2400 Hr Clock)	ELAPSED HRS (hrs:min)	WATER VOL IN CASING (Gallons)	ACTUAL VOL PURGED (Gallons)	WELL VOLs PURGED
050824				0.5 L	

Note: For Passive Sampling, replace "Water Vol in Casing" and "Well Vols Purged" w/ Water Vol in Tubing/Flow Cell and Tubing/Flow Cell Vols Purged. Mark Changes, Record field data below.

PURGE/SAMPLE EQUIPMENT

Purging and Sampling Equipment ... Dedicated: (Y) or N

Filter Device: (Y) or N — (0.45 µ) or _____ µ (circle or fill in)

Purging Device: C — A-Submersible Pump, B-Peristaltic Pump, C-QED Bladder Pump, D-Bailer, E-Piston Pump, F-Dipper/Bottle

Sampling Device: C

Filter Type: A — A-In-line Disposable, B-Pressure, C-Vacuum, X-Other: _____

X-Other:

Sample Tube Type: — A-Teflon, B-Stainless Steel, C-PVC, D-Polypropylene, X-Other: _____

WELL DATA

Well Elevation (at TOC): (ft/msl)

Depth to Water (DTW) (from TOC): 1.35 m (ft)

Groundwater Elevation (GWE) (Site Datum, from TOC): (ft msl)

Total Well Depth (from TOC): (ft)

Stick Up (from ground elevation): (ft)

Casing ID: (in)

Casing Material:

Note: Total Depth, Stick Up, Casing ID, etc. are optional and can be from historical data, unless required by Site/Permit. Well Elevation, DTW, and GWE must be current, obtained from site.

STABILIZATION DATA (Optional)

Sample Time (2400 Hr Clock)	Rate/Unit	pH (std)	Conductance (SC/EC) (µmhos/cm @ 25°C)	Temp. (°C)	Turbidity (ntu)	D.O. (mg/L - ppm)	eH/ORP (mV)	DTW (ft)
		1st	1st					
		2nd	2nd					
		3rd	3rd					
		4th	4th					
Input Range for 3 consec. readings or Permit/State requirements:		+/-	+/-	+/-	+/-	+/-	+/-	

Stabilization Data Fields are Optional *(i.e. complete stabilization readings for parameters required by WM, Site, or State). These fields can be used where four (4) field measurements are required by State/Permit/Site. If a Data Logger or other Electronic format is used, fill in final readings below and submit electronic data separately to Site. If more fields above are needed, use separate sheet or form.*

FIELD DATA

SAMPLE DATE (MM DD YY)	pH (std)	CONDUCTANCE (µmhos/cm @ 25°C)	TEMP. (°C)	TURBIDITY (ntu)	DO (mg/L - ppm)	eH/ORP (mV)	Other: Units
050824	6.9	4.5 mS	10.6	4.441			

Final Field Readings are required *(i.e. record field measurements, final stabilized readings, passive sample readings before sampling for all field parameters required by State/Permit/Site.)*

Sample Appearance: transparent Odor: none Color: clear Other:

Weather Conditions (required daily, or as conditions change): 15°C Direction/Speed: 20 km/hr SW Outlook: clear Precipitation: Y or (N)

Specific Comments (including purge/well volume calculations if required):

FIELD COMMENTS

I certify that sampling procedures were in accordance with applicable EPA, State, and WM protocols (if more than one sampler, all should sign):

Date	Name	Signature	Company
05/08/24	Eric W/ Jones	E.W/Jones	RWPI

DISTRIBUTION: WHITE/ORIGINAL - Stays with Sample, YELLOW - Returned to Client, PINK - Field Copy

Field Information Form v-3.1 06/20

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FIELD INFORMATION FORM

BUREAU VERITAS

WASTE MANAGEMENT

Site Name: TCEC

Site No.: Sample: OW 40 E-4 (Sample ID)

This Waste Management Field Information Form is Required
This form is to be completed, in addition to any State Forms. The Field Form is submitted along with the Chain of Custody Forms that accompany the sample containers (i.e. with the cooler that is returned to the laboratory).

Laboratory Use Only/Lab ID:

PURGE INFO

PURGE DATE (MM DD YY)	PURGE TIME (2400 Hr Clock)	ELAPSED HRS (hrs:min)	WATER VOL IN CASING (Gallons)	ACTUAL VOL PURGED (Gallons)	WELL VOLs PURGED
050824				0.67 L	

Note: For Passive Sampling, replace "Water Vol in Casing" and "Well Vols Purged" w/ Water Vol in Tubing/Flow Cell and Tubing/Flow Cell Vols Purged. Mark Changes, Record field data below.

PURGE/SAMPLE EQUIPMENT

Purging and Sampling Equipment ... Dedicated: (Y) or N

Filter Device: (Y) or N — 0.45 µ or ____ µ (circle or fill in)

Purging Device: C — A-Submersible Pump, B-Peristaltic Pump, C-QED Bladder Pump, D-Bailer, E-Piston Pump, F-Dipper/Bottle

Sampling Device: C

X-Other:

Filter Type: A — A-In-line Disposable, B-Pressure, C-Vacuum, X-Other:

Sample Tube Type: ____ — A-Teflon, B-Stainless Steel, C-PVC, D-Polypropylene, X-Other:

WELL DATA

Well Elevation (at TOC): ____ (ft/msl)

Depth to Water (DTW) (from TOC): 3.45 (ft) (m)

Groundwater Elevation (GWE) (Site Datum, from TOC): ____ (ft msl)

Total Well Depth (from TOC): ____ (ft)

Stick Up (from ground elevation): ____ (ft)

Casing ID: ____ (in)

Casing Material: ____

Note: Total Depth, Stick Up, Casing ID, etc. are optional and can be from historical data, unless required by Site/Permit. Well Elevation, DTW, and GWE must be current, obtained from site.

STABILIZATION DATA (Optional)

Sample Time (2400 Hr Clock)	Rate/Unit	pH (std)	Conductance (SC/EC) (µmhos/cm @ 25°C)	Temp. (°C)	Turbidity (ntu)	D.O. (mg/L - ppm)	eH/ORP (mV)	DTW (ft)
		1st	1st					
		2nd	2nd					
		3rd	3rd					
		4th	4th					
Input Range for 3 consec. readings or Permit/State requirements:		+/-	+/-	+/-	+/-	+/-	+/-	

Stabilization Data Fields are Optional *(i.e. complete stabilization readings for parameters required by WM, Site, or State). These fields can be used where four (4) field measurements are required by State/Permit/Site. If a Data Logger or other Electronic format is used, fill in final readings below and submit electronic data separately to Site. If more fields above are needed, use separate sheet or form.*

FIELD DATA

SAMPLE DATE (MM DD YY)	pH (std)	CONDUCTANCE (µmhos/cm @ 25°C)	TEMP. (°C)	TURBIDITY (ntu)	DO (mg/L - ppm)	eH/ORP (mV)	Other: / Units
050824	6.6 mS	3.39	15.6	16.0			

Final Field Readings are required *(i.e. record field measurements, final stabilized readings, passive sample readings before sampling for all field parameters required by State/Permit/Site.)*

FIELD COMMENTS

Sample Appearance: transparent — Odor: none — Color: clear — Other:

Weather Conditions (required daily, or as conditions change): 20°c — Direction/Speed: 20 km/h SW — Outlook: clear — Precipitation: Y or (N)

Specific Comments (including purge/well volume calculations if required):

I certify that sampling procedures were in accordance with applicable EPA, State, and WM protocols (if more than one sampler, all should sign):

Date	Name	Signature	Company
05/0824	Eric Wilson	E. Wilson	KWP

DISTRIBUTION: WHITE/ORIGINAL - Stays with Sample, YELLOW - Returned to Client, PINK - Field Copy

Field Information Form v-3.1 06/20

2061

FIELD INFORMATION FORM

BUREAU VERITAS

WASTE MANAGEMENT

Site Name: T-CEC

Site No.: Sample: 0W17-4 (Sample ID)

This Waste Management Field Information Form is Required
This form is to be completed, in addition to any State Forms. The Field Form is submitted along with the Chain of Custody Forms that accompany the sample containers (i.e. with the cooler that is returned to the laboratory).

Laboratory Use Only/Lab ID:

PURGE INFO

PURGE DATE (MM DD YY)	PURGE TIME (2400 Hr Clock)	ELAPSED HRS (hrs:min)	WATER VOL IN CASING (Gallons)	ACTUAL VOL PURGED (~~Gallons~~)	WELL VOLs PURGED
050824				0.4 L	

Note: For Passive Sampling, replace "Water Vol in Casing" and "Well Vols Purged" w/ Water Vol in Tubing/Flow Cell and Tubing/Flow Cell Vols Purged. Mark Changes, Record field data below.

PURGE/SAMPLE EQUIPMENT

Purging and Sampling Equipment ... Dedicated: (Y) or N

Filter Device: (Y) or N (0.45 µ) or _____ µ (circle or fill in)

Purging Device: C — A-Submersible Pump, B-Peristaltic Pump, C-QED Bladder Pump, D-Bailer, E-Piston Pump, F-Dipper/Bottle

Sampling Device: C

Filter Type: A — A-In-line Disposable, B-Pressure, C-Vacuum, X-Other: _____

X-Other: _____

Sample Tube Type: _____ — A-Teflon, B-Stainless Steel, C-PVC, D-Polypropylene, X-Other: _____

WELL DATA

Well Elevation (at TOC): _____ (ft/msl)

Depth to Water (DTW) (from TOC): 0.93 MS

Groundwater Elevation (GWE) (Site Datum, from TOC): _____ (ft msl)

Total Well Depth (from TOC): _____ (ft)

Stick Up (from ground elevation): _____ (ft)

Casing ID: _____ (in)

Casing Material: _____

Note: Total Depth, Stick Up, Casing ID, etc. are optional and can be from historical data, unless required by Site/Permit. Well Elevation, DTW, and GWE must be current, obtained from site.

STABILIZATION DATA (Optional)

Sample Time (2400 Hr Clock)	Rate/Unit		pH (std)		Conductance (SC/EC) (µmhos/cm @ 25°C)	Temp. (°C)	Turbidity (ntu)	D.O. (mg/L - ppm)	eH/ORP (mV)	DTW (ft)
		1st		1st						
		2nd		2nd						
		3rd		3rd						
		4th		4th						
Input Range for 3 consec. readings or Permit/State requirements:			+/-		+/-	+/-	+/-	+/-	+/-	

Stabilization Data Fields are Optional *(i.e. complete stabilization readings for parameters required by WM, Site, or State). These fields can be used where four (4) field measurements are required by State/Permit/Site. If a Data Logger or other Electronic format is used, fill in final readings below and submit electronic data separately to Site. If more fields above are needed, use separate sheet or form.*

FIELD DATA

SAMPLE DATE (MM DD YY)	pH (std)	CONDUCTANCE (µmhos/cm @ 25°C)	TEMP. (°C)	TURBIDITY (ntu)	DO (mg/L - ppm)	eH/ORP (mV)	Other: Units
050824	7.1	MS 3.02	11.7	7.11			

Final Field Readings are required *(i.e. record field measurements, final stabilized readings, passive sample readings before sampling for all field parameters required by State/Permit/Site.)*

FIELD COMMENTS

Sample Appearance: transparent Odor: none Color: Clear Other: _____

Weather Conditions (required daily, or as conditions change): 15°C Direction/Speed: 20 kmh SE Outlook: Clear Precipitation: Y or (N)

Specific Comments (including purge/well volume calculations if required): _____

I certify that sampling procedures were in accordance with applicable EPA, State, and WM protocols (if more than one sampler, all should sign):

Date	Name	Signature	Company
05/08/24	Eva Wilson	Eva Wilson	RWDI

DISTRIBUTION: WHITE/ORIGINAL - Stays with Sample, YELLOW - Returned to Client, PINK - Field Copy

Field Information Form v-3.1 06/20

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FIELD INFORMATION FORM

BUREAU VERITAS

WASTE MANAGEMENT

Site Name: TCEC

Site No.: Sample: MW 86-4 (Sample ID)

This Waste Management Field Information Form is Required
This form is to be completed, in addition to any State Forms. The Field Form is submitted along with the Chain of Custody Forms that accompany the sample containers (i.e. with the cooler that is returned to the laboratory).

Laboratory Use Only/Lab ID:

PURGE INFO

PURGE DATE (MM DD YY)	PURGE TIME (2400 Hr Clock)	ELAPSED HRS (hrs:min)	WATER VOL IN CASING (Gallons)	ACTUAL VOL PURGED (Gallons)	WELL VOLs PURGED
050824				0.45	

Note: For Passive Sampling, replace "Water Vol in Casing" and "Well Vols Purged" w/ Water Vol in Tubing/Flow Cell and Tubing/Flow Cell Vols Purged. Mark Changes. Record field data below.

PURGE/SAMPLE EQUIPMENT

Purging and Sampling Equipment ... Dedicated: (Y) or N

Filter Device: (Y) or N — (0.45) µ or ____ µ (circle or fill in)

Purging Device: C — A-Submersible Pump, B-Peristaltic Pump, C-QED Bladder Pump, D-Bailer, E-Piston Pump, F-Dipper/Bottle

Sampling Device: C

Filter Type: A — A-In-line Disposable, B-Pressure, C-Vacuum, X-Other: ____

X-Other: ____ Sample Tube Type: ____ — A-Teflon, B-Stainless Steel, C-PVC, D-Polypropylene, X-Other: ____

WELL DATA

Well Elevation (at TOC): ____ (ft/msl) — Depth to Water (DTW) (from TOC): 1.22 (ft) — Groundwater Elevation (GWE) (Site Datum, from TOC): ____ (ft msl)

Total Well Depth (from TOC): ____ (ft) — Stick Up (from ground elevation): ____ (ft) — Casing ID: ____ (in) — Casing Material: ____

Note: Total Depth, Stick Up, Casing ID, etc. are optional and can be from historical data, unless required by Site/Permit. Well Elevation, DTW, and GWE must be current, obtained from site.

STABILIZATION DATA (Optional)

Sample Time (2400 Hr Clock)	Rate/Unit	pH (std)	Conductance (SC/EC) (µmhos/cm @ 25°C)	Temp. (°C)	Turbidity (ntu)	D.O. (mg/L - ppm)	eH/ORP (mV)	DTW (ft)
		1st	1st					
		2nd	2nd					
		3rd	3rd					
		4th	4th					
Input Range for 3 consec. readings or Permit/State requirements:		+/-	+/-	+/-	+/-	+/-	+/-	

Stabilization Data Fields are Optional *(i.e. complete stabilization readings for parameters required by WM, Site, or State). These fields can be used where four (4) field measurements are required by State/Permit/Site. If a Data Logger or other Electronic format is used, fill in final readings below and submit electronic data separately to Site. If more fields above are needed, use separate sheet or form.*

FIELD DATA

SAMPLE DATE (MM DD YY)	pH (std)	CONDUCTANCE (µmhos/cm @ 25°C)	TEMP. (°C)	TURBIDITY (ntu)	DO (mg/L - ppm)	eH/ORP (mV)	Other: Units
050824	6.8	4.06 mS	13.6	98.4			

Final Field Readings are required *(i.e. record field measurements, final stabilized readings, passive sample readings before sampling for all field parameters required by State/Permit/Site.)*

FIELD COMMENTS

Sample Appearance: transparent — Odor: Sulfur — Color: clear — Other: ____

Weather Conditions (required daily, or as conditions change): 20°C — Direction/Speed: 29 Kmh SW — Outlook: clear — Precipitation: Y or (N)

Specific Comments (including purge/well volume calculations if required): ____

I certify that sampling procedures were in accordance with applicable EPA, State, and WM protocols (if more than one sampler, all should sign):

Date	Name	Signature	Company
050824	Eric Wilson	E.W/sm	KWP

DISTRIBUTION: WHITE/ORIGINAL - Stays with Sample, YELLOW - Returned to Client, PINK - Field Copy

Field Information Form v-3.1 06/20

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BUREAU VERITAS

FIELD INFORMATION FORM

WM WASTE MANAGEMENT

Site Name: TCEC

Site No.: Sample: GW16+6 (Sample ID)

This Waste Management Field Information Form is Required
This form is to be completed, in addition to any State Forms. The Field Form is submitted along with the Chain of Custody Forms that accompany the sample containers (i.e. with the cooler that is returned to the laboratory).

Laboratory Use Only/Lab ID:

PURGE INFO

PURGE DATE (MM DD YY)	PURGE TIME (2400 Hr Clock)	ELAPSED HRS (hrs:min)	WATER VOL IN CASING (Gallons)	ACTUAL VOL PURGED (Gallons)	WELL VOLs PURGED
05 08 24				0.54 L	

Note: For Passive Sampling, replace "Water Vol in Casing" and "Well Vols Purged" w/ Water Vol in Tubing/Flow Cell and Tubing/Flow Cell Vols Purged. Mark Changes. Record field data below.

PURGE/SAMPLE EQUIPMENT

Purging and Sampling Equipment ... Dedicated: (Y) or N — Filter Device: (Y) or N — (0.45 µ) or ____ µ (circle or fill in)

Purging Device: C — A-Submersible Pump, B-Peristaltic Pump, C-QED Bladder Pump, D-Bailer, E-Piston Pump, F-Dipper/Bottle

Sampling Device: C

Filter Type: A — A-In-line Disposable, B-Pressure, C-Vacuum, X-Other: ____

X-Other: ____ — Sample Tube Type: ____ — A-Teflon, B-Stainless Steel, C-PVC, D-Polypropylene, X-Other: ____

WELL DATA

Well Elevation (at TOC) ____ (ft/msl) — Depth to Water (DTW) (from TOC) 2.13 (ft) — Groundwater Elevation (GWE) (Site Datum, from TOC) ____ (ft msl)

Total Well Depth (from TOC) ____ (ft) — Stick Up (from ground elevation) ____ (ft) — Casing ID ____ (in) — Casing Material ____

Note: Total Depth, Stick Up, Casing ID, etc. are optional and can be from historical data, unless required by Site/Permit. Well Elevation, DTW, and GWE must be current, obtained from site.

STABILIZATION DATA (Optional)

Sample Time (2400 Hr Clock)	Rate/Unit	pH (std)	Conductance (SC/EC) (µmhos/cm @ 25°C)	Temp. (°C)	Turbidity (ntu)	D.O. (mg/L - ppm)	eH/ORP (mV)	DTW (ft)
		1st	1st					
		2nd	2nd					
		3rd	3rd					
		4th	4th					
Input Range for 3 consec. readings or Permit/State requirements:		+/-	+/-	+/-	+/-	+/-	+/-	

Stabilization Data Fields are Optional *(i.e. complete stabilization readings for parameters required by WM, Site, or State). These fields can be used where four (4) field measurements are required by State/Permit/Site. If a Data Logger or other Electronic format is used, fill in final readings below and submit electronic data separately to Site. If more fields above are needed, use separate sheet or form.*

FIELD DATA

SAMPLE DATE (MM DD YY)	pH (std)	CONDUCTANCE (µmhos/cm @ 25°C)	TEMP. (°C)	TURBIDITY (ntu)	DO (mg/L - ppm)	eH/ORP (mV)	Other: Units
05 08 24	7.1 MS	2.66	19.7	6.29			

Final Field Readings are required *(i.e. record field measurements, final stabilized readings, passive sample readings before sampling for all field parameters required by State/Permit/Site.)*

FIELD COMMENTS

Sample Appearance: transparent, particulates **Odor:** none **Color:** clear **Other:** ____

Weather Conditions (required daily, or as conditions change): 19°C **Direction/Speed:** 28 Kmh W **Outlook:** clear **Precipitation:** Y or (N)

Specific Comments (including purge/well volume calculations if required):

GW DUP 2 collected

I certify that sampling procedures were in accordance with applicable EPA, State, and WM protocols (if more than one sampler, all should sign):

Date	Name	Signature	Company
05/08/24	Eric Wilson	Eric Wilson	RMT

DISTRIBUTION: WHITE/ORIGINAL - Stays with Sample, YELLOW - Returned to Client, PINK - Field Copy

Field Information Form v.3.1 06/20

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FIELD INFORMATION FORM

BUREAU VERITAS

WASTE MANAGEMENT

Site Name: TCEC

Site No.: Sample: MW60-4 (Sample ID)

This Waste Management Field Information Form is Required
This form is to be completed, in addition to any State Forms. The Field Form is submitted along with the Chain of Custody Forms that accompany the sample containers (i.e. with the cooler that is returned to the laboratory).

Laboratory Use Only/Lab ID:

PURGE INFO

PURGE DATE (MM DD YY)	PURGE TIME (2400 Hr Clock)	ELAPSED HRS (hrs:min)	WATER VOL IN CASING (Gallons)	ACTUAL VOL PURGED (Gallons)	WELL VOLs PURGED
050824			8	0.41 L	

Note: For Passive Sampling, replace "Water Vol in Casing" and "Well Vols Purged" w/ Water Vol in Tubing/Flow Cell and Tubing/Flow Cell Vols Purged. Mark Changes, Record field data below.

PURGE/SAMPLE EQUIPMENT

Purging and Sampling Equipment ... Dedicated: (Y) or N

Filter Device: (Y) or N (0.45 µ) or _____ µ (circle or fill in)

Purging Device: C — A-Submersible Pump, B-Peristaltic Pump, C-QED Bladder Pump, D-Bailer, E-Piston Pump, F-Dipper/Bottle

Sampling Device: C

Filter Type: A — A-In-line Disposable, B-Pressure, C-Vacuum, X-Other: _____

X-Other: _____

Sample Tube Type: _____ — A-Teflon, B-Stainless Steel, C-PVC, D-Polypropylene, X-Other: _____

WELL DATA

Well Elevation (at TOC) (ft/msl)	Depth to Water (DTW) (from TOC)	Groundwater Elevation (GWE) (Site Datum, from TOC) (ft msl)
	0.92 (ft) M	

Total Well Depth (from TOC) (ft)	Stick Up (from ground elevation) (ft)	Casing ID (in)	Casing Material

Note: Total Depth, Stick Up, Casing ID, etc. are optional and can be from historical data, unless required by Site/Permit. Well Elevation, DTW, and GWE must be current, obtained from site.

STABILIZATION DATA (Optional)

Sample Time (2400 Hr Clock)	Rate/Unit	pH (std)	Conductance (SC/EC) (µmhos/cm @ 25°C)	Temp. (°C)	Turbidity (ntu)	D.O. (mg/L - ppm)	eH/ORP (mV)	DTW (ft)
		1st	1st					
		2nd	2nd					
		3rd	3rd					
		4th	4th					
Input Range for 3 consec. readings or Permit/State requirements:		+/-	+/-	+/-	+/-	+/-	+/-	

Stabilization Data Fields are Optional *(i.e. complete stabilization readings for parameters required by WM, Site, or State). These fields can be used where four (4) field measurements are required by State/Permit/Site. If a Data Logger or other Electronic format is used, fill in final readings below and submit electronic data separately to Site. If more fields above are needed, use separate sheet or form.*

FIELD DATA

SAMPLE DATE (MM DD YY)	pH (std)	CONDUCTANCE (MS) µmhos/cm @ 25°C)	TEMP. (°C)	TURBIDITY (ntu)	DO (mg/L - ppm)	eH/ORP (mV)	Other: Units
050824	7.1	1.21	19.1	>999			

Final Field Readings are required *(i.e. record field measurements, final stabilized readings, passive sample readings before sampling for all field parameters required by State/Permit/Site.)*

FIELD COMMENTS

Sample Appearance: transparent Odor: none Color: clear Other: _____

Weather Conditions (required daily, or as conditions change): 15°C Direction/Speed: 20 Km/hr SW Outlook: Clear Precipitation: Y or (N)

Specific Comments (including purge/well volume calculations if required): _____

I certify that sampling procedures were in accordance with applicable EPA, State, and WM protocols (if more than one sampler, all should sign):

Date	Name	Signature	Company
05 08 24	Eric Wilson	E-Wilson	RWDI

DISTRIBUTION: WHITE/ORIGINAL - Stays with Sample, YELLOW - Returned to Client, PINK - Field Copy

Field Information Form v-3.1 06/20

2066

FIELD INFORMATION FORM

BUREAU VERITAS

WASTE MANAGEMENT

Site Name: TCEC

Site No.: Sample: GW68-S (Sample ID)

This Waste Management Field Information Form is Required
This form is to be completed, in addition to any State Forms. The Field Form is submitted along with the Chain of Custody Forms that accompany the sample containers (i.e. with the cooler that is returned to the laboratory).

Laboratory Use Only/Lab ID:

PURGE INFO

PURGE DATE (MM DD YY)	PURGE TIME (2400 Hr Clock)	ELAPSED HRS (hrs:min)	WATER VOL IN CASING (Gallons)	ACTUAL VOL PURGED (Gallons)	WELL VOLs PURGED
050824				0.41 L	

Note: For Passive Sampling, replace "Water Vol in Casing" and "Well Vols Purged" w/ Water Vol in Tubing/Flow Cell and Tubing/Flow Cell Vols Purged. Mark Changes, Record field data below.

PURGE/SAMPLE EQUIPMENT

Purging and Sampling Equipment ... Dedicated: (Y) or N

Filter Device: (Y) or N 0.45 µ or _____ µ (circle or fill in)

Purging Device: C — A-Submersible Pump, B-Peristaltic Pump, C-QED Bladder Pump, D-Bailer, E-Piston Pump, F-Dipper/Bottle

Sampling Device: C

Filter Type: A — A-In-line Disposable, B-Pressure, C-Vacuum, X-Other: _____

X-Other:

Sample Tube Type: — A-Teflon, B-Stainless Steel, C-PVC, D-Polypropylene, X-Other: _____

WELL DATA

Well Elevation (at TOC) _____ (ft/msl)

Depth to Water (DTW) (from TOC) 2.06 (ft)

Groundwater Elevation (GWE) (Site Datum, from TOC) _____ (ft msl)

Total Well Depth (from TOC) _____ (ft)

Stick Up (from ground elevation) _____ (ft)

Casing ID _____ (in)

Casing Material _____

Note: Total Depth, Stick Up, Casing ID, etc. are optional and can be from historical data, unless required by Site/Permit. Well Elevation, DTW, and GWE must be current, obtained from site.

STABILIZATION DATA (Optional)

Sample Time (2400 Hr Clock)	Rate/Unit	pH (std)	Conductance (SC/EC) (µmhos/cm @ 25°C)	Temp. (°C)	Turbidity (ntu)	D.O. (mg/L - ppm)	eH/ORP (mV)	DTW (ft)
		1st	1st					
		2nd	2nd					
		3rd	3rd					
		4th	4th					
Input Range for 3 consec. readings or Permit/State requirements:		+/-	+/-	+/-	+/-	+/-	+/-	

Stabilization Data Fields are Optional *(i.e. complete stabilization readings for parameters required by WM, Site, or State). These fields can be used where four (4) field measurements are required by State/Permit/Site. If a Data Logger or other Electronic format is used, fill in final readings below and submit electronic data separately to Site. If more fields above are needed, use separate sheet or form.*

FIELD DATA

SAMPLE DATE (MM DD YY)	pH (std)	MS CONDUCTANCE (µmhos/cm @ 25°C)	TEMP. (°C)	TURBIDITY (ntu)	DO (mg/L - ppm)	eH/ORP (mV)	Other: Units
050824	6.9	1.83	13.5	48.2			

Final Field Readings are required *(i.e. record field measurements, final stabilized readings, passive sample readings before sampling for all field parameters required by State/Permit/Site.)*

FIELD COMMENTS

Sample Appearance: as appears

Odor: none

Color: clear

Other: _____

Weather Conditions (required daily, or as conditions change): 15°C

Direction/Speed: 20 km/hr SW

Outlook: clear

Precipitation: Y or (N)

Specific Comments (including purge/well volume calculations if required): _____

I certify that sampling procedures were in accordance with applicable EPA, State, and WM protocols (if more than one sampler, all should sign):

Date	Name	Signature	Company
05/08/24	Eric Wilson	E. Wilson	RWDI

DISTRIBUTION: WHITE/ORIGINAL - Stays with Sample, YELLOW - Returned to Client, PINK - Field Copy

Field Information Form v-3.1 06/20

2090

BUREAU VERITAS

FIELD INFORMATION FORM

WM WASTE MANAGEMENT

Site Name: TCEC

Site No.: Sample: OW69-5 (Sample ID)

This Waste Management Field Information Form is Required
This form is to be completed, in addition to any State Forms. The Field Form is submitted along with the Chain of Custody Forms that accompany the sample containers (i.e. with the cooler that is returned to the laboratory).

Laboratory Use Only/Lab ID:

PURGE INFO

PURGE DATE (MM DD YY)	PURGE TIME (2400 Hr Clock)	ELAPSED HRS (hrs:min)	WATER VOL IN CASING (Gallons)	ACTUAL VOL PURGED (~~Gallons~~ L)	WELL VOLs PURGED
05 08 24				0.56	

Note: For Passive Sampling, replace "Water Vol in Casing" and "Well Vols Purged" w/ Water Vol in Tubing/Flow Cell and Tubing/Flow Cell Vols Purged. Mark Changes, Record field data below.

PURGE/SAMPLE EQUIPMENT

Purging and Sampling Equipment ... Dedicated: (Y) or N

Filter Device: (Y) or N (0.45 µ) or _____ µ (circle or fill in)

Purging Device: C — A-Submersible Pump, B-Peristaltic Pump, C-QED Bladder Pump, D-Bailer, E-Piston Pump, F-Dipper/Bottle

Sampling Device: C

Filter Type: A — A-In-line Disposable, B-Pressure, C-Vacuum, X-Other: _____

X-Other:

Sample Tube Type: _____ — A-Teflon, B-Stainless Steel, C-PVC, D-Polypropylene, X-Other: _____

WELL DATA

Well Elevation (at TOC) _____ (ft/msl)

Depth to Water (DTW) (from TOC) 1.65 (ft)

Groundwater Elevation (GWE) (Site Datum, from TOC) _____ (ft msl)

Total Well Depth (from TOC) _____ (ft)

Stick Up (from ground elevation) _____ (ft)

Casing ID _____ (in)

Casing Material _____

Note: Total Depth, Stick Up, Casing ID, etc. are optional and can be from historical data, unless required by Site/Permit. Well Elevation, DTW, and GWE must be current, obtained from site.

STABILIZATION DATA (Optional)

Sample Time (2400 Hr Clock)	Rate/Unit	pH (std)	Conductance (SC/EC) (µmhos/cm @ 25°C)	Temp. (°C)	Turbidity (ntu)	D.O. (mg/L - ppm)	eH/ORP (mV)	DTW (ft)
		1st	1st					
		2nd	2nd					
		3rd	3rd					
		4th	4th					
Input Range for 3 consec. readings or Permit/State requirements:		+/-	+/-	+/-	+/-	+/-	+/-	

Stabilization Data Fields are Optional *(i.e. complete stabilization readings for parameters required by WM, Site, or State). These fields can be used where four (4) field measurements are required by State/Permit/Site. If a Data Logger or other Electronic format is used, fill in final readings below and submit electronic data separately to Site. If more fields above are needed, use separate sheet or form.*

FIELD DATA

SAMPLE DATE (MM DD YY)	pH (std)	CONDUCTANCE (~~µmhos~~/cm @ 25°C)	TEMP. (°C)	TURBIDITY (ntu)	DO (mg/L - ppm)	eH/ORP (mV)	Other: Units
05 08 24	6.7 mS	7.18	17.6	9.38			

Final Field Readings are required *(i.e. record field measurements, final stabilized readings, passive sample readings before sampling for all field parameters required by State/Permit/Site.)*

FIELD COMMENTS

Sample Appearance: transparent Odor: none Color: clear Other: _____

Weather Conditions (required daily, or as conditions change): 15°C Direction/Speed: 20Kmh SW Outlook: clear Precipitation: Y or (N)

Specific Comments (including purge/well volume calculations if required): _____

I certify that sampling procedures were in accordance with applicable EPA, State, and WM protocols (if more than one sampler, all should sign):

Date	Name	Signature	Company
05/08/24	Eric Wilson	E.W/Jam	RWDI

DISTRIBUTION: WHITE/ORIGINAL - Stays with Sample, YELLOW - Returned to Client, PINK - Field Copy

Field Information Form v 3.1 06/20

2085

Custody Tracking Form

T894784

Please use this form for custody tracking when submitting the work instructions via eCOC (electronic Chain of Custody). Please ensure your form has a barcode or a Bureau Veritas eCOC confirmation number in the top right hand side. This number links your electronic submission to your samples. This form should be placed in the cooler with your samples.

First Sample: OW57-4
Last Sample: OW69-5
Sample Count: 9

Relinquished By				Received By			
Jeff Cleland		Date	2024/05/09			Date	2024/05/10
		Time (24 HR)	8:00			Time (24 HR)	
		Date		SUGAR SALVAM		Date	2024/05/10
		Time (24 HR)				Time (24 HR)	08:30
		Date				Date	
		Time (24 HR)				Time (24 HR)	

Unless otherwise agreed to, submissions and use of services are governed by Bureau Veritas' standard terms and conditions which can be found at www.bvna.com.

Triage Information

Sampled By (Print): Eric Wilson

# of Coolers/Pkgs: 3

Rush ☐ Immediate Test ☐ Food Residue ☐

Micro ☐ Food Chemistry ☐

*** LABORATORY USE ONLY ***

Received At

Labeled By

Verified By

Lab Comments:

10-May-24 08:30
Patricia Legette
C4E0917
AK0 ENV-1220

Custody Seal		Cooling Media	Temperature °C		
Present (Y/N)	Intact (Y/N)	Present (Y/N)	1	2	3
Y	Y	Y	3	4	5
Y	Y	Y	3	2	5
Y	Y	Y	5	4	4
Drinking Water Metals Preservation Check Done (Circle)				YES	NO

COR FCD-00383/4

Page 1 of 1

Your P.O. #: 13254256
Your Project #: 2402553.01
Site#: 200
Site Location: ON07
Your C.O.C. #: 895731

Attention: Khalid Hussein - Twin Creeks

RWDI Inc.
600 Southgate Drive
Guelph, ON
Canada N1G 4P6

Report Date: 2024/05/22
Report #: R8158736
Version: 1 - Final

CERTIFICATE OF ANALYSIS

BUREAU VERITAS JOB #: C4E1879
Received: 2024/05/10, 13:35

Sample Matrix: Water
Samples Received: 8

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Analytical Method
Alkalinity	5	N/A	2024/05/18	CAM SOP-00448	SM 24 2320 B m
Alkalinity	3	N/A	2024/05/22	CAM SOP-00448	SM 24 2320 B m
Chloride by Automated Colourimetry	5	N/A	2024/05/16	CAM SOP-00463	SM 24 4500-Cl E m
Chloride by Automated Colourimetry	3	N/A	2024/05/22	CAM SOP-00463	SM 24 4500-Cl E m
Conductance in Water - On-site	8	N/A	2024/05/22		
Conductivity	5	N/A	2024/05/18	CAM SOP-00414	SM 24 2510 m
Conductivity	3	N/A	2024/05/22	CAM SOP-00414	SM 24 2510 m
Dissolved Organic Carbon (DOC) (1)	8	N/A	2024/05/15	CAM SOP-00446	SM 24 5310 B m
Dissolved Metals by ICPMS	5	N/A	2024/05/14	CAM SOP-00447	EPA 6020B m
Dissolved Metals by ICPMS	3	N/A	2024/05/22	CAM SOP-00447	EPA 6020B m
Ammonia-N	8	N/A	2024/05/16	CAM SOP-00441	USGS I-2522-90 m
Nitrate & Nitrite as Nitrogen in Water (2)	8	N/A	2024/05/14	CAM SOP-00440	SM 24 4500-NO3I/NO2B
pH (3)	8	2024/05/14	2024/05/18	CAM SOP-00413	SM 24th - 4500H+ B
Field Measured pH (4)	8	N/A	2024/05/22		Field pH Meter
Sulphate by Automated Turbidimetry	5	N/A	2024/05/16	CAM SOP-00464	SM 24 4500-SO42- E m
Sulphate by Automated Turbidimetry	3	N/A	2024/05/22	CAM SOP-00464	SM 24 4500-SO42- E m
Total Dissolved Solids	7	2024/05/14	2024/05/15	CAM SOP-00428	SM 24 2540C m
Total Dissolved Solids	1	2024/05/15	2024/05/16	CAM SOP-00428	SM 24 2540C m
Field Temperature (4)	8	N/A	2024/05/22		Field Thermometer
Total Kjeldahl Nitrogen in Water	7	2024/05/15	2024/05/16	CAM SOP-00938	OMOE E3516 m
Total Kjeldahl Nitrogen in Water	1	2024/05/15	2024/05/17	CAM SOP-00938	OMOE E3516 m
Turbidity - On-site	8	N/A	2024/05/22		
Volatile Organic Compounds in Water	8	N/A	2024/05/17	CAM SOP-00228	EPA 8260D

Remarks:

Bureau Veritas is accredited to ISO/IEC 17025 for specific parameters on scopes of accreditation. Unless otherwise noted, procedures used by Bureau Veritas are based upon recognized Provincial, Federal or US method compendia such as CCME, EPA, APHA or the Quebec Ministry of Environment.

All work recorded herein has been done in accordance with procedures and practices ordinarily exercised by professionals in Bureau Veritas' profession using accepted testing methodologies, quality assurance and quality control procedures (except where otherwise agreed by the client and Bureau Veritas in writing). All data is in statistical control and has met quality control and method performance criteria unless otherwise noted. All method blanks are reported; unless indicated otherwise, associated sample data are not blank corrected. Where applicable, unless otherwise noted, Measurement

Bureau Veritas 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.bvna.com

Microbiology testing is conducted at 6660 Campobello Rd. Chemistry testing is conducted at 6740 Campobello Rd.

Your P.O. #: 13254256
Your Project #: 2402553.01
Site#: 200
Site Location: ON07
Your C.O.C. #: 895731

Attention: Khalid Hussein - Twin Creeks

RWDI Inc.
600 Southgate Drive
Guelph, ON
Canada N1G 4P6

Report Date: 2024/05/22
Report #: R8158736
Version: 1 - Final

CERTIFICATE OF ANALYSIS

BUREAU VERITAS JOB #: C4E1879
Received: 2024/05/10, 13:35

Uncertainty has not been accounted for when stating conformity to the referenced standard.

Bureau Veritas liability is limited to the actual cost of the requested analyses, unless otherwise agreed in writing. There is no other warranty expressed or implied. Bureau Veritas has been retained to provide analysis of samples provided by the Client using the testing methodology referenced in this report. Interpretation and use of test results are the sole responsibility of the Client and are not within the scope of services provided by Bureau Veritas, unless otherwise agreed in writing. Bureau Veritas is not responsible for the accuracy or any data impacts, that result from the information provided by the customer or their agent.

Solid sample results, except biota, are based on dry weight unless otherwise indicated. Organic analyses are not recovery corrected except for isotope dilution methods.
Results relate to samples tested. When sampling is not conducted by Bureau Veritas, results relate to the supplied samples tested.
This Certificate shall not be reproduced except in full, without the written approval of the laboratory.
Reference Method suffix “m” indicates test methods incorporate validated modifications from specific reference methods to improve performance.
* RPDs calculated using raw data. The rounding of final results may result in the apparent difference.
(1) Dissolved Organic Carbon (DOC) present in the sample should be considered as non-purgeable DOC.
(2) Values for calculated parameters may not appear to add up due to rounding of raw data and significant figures.
(3) "The CCME method and Analytical Protocol (O. Reg 153/04, O. Reg. 406/19) requires pH to be analyzed within 15 minutes of sampling and therefore field analysis is required for compliance. All Laboratory pH analyses in this report are reported past the CCME and Analytical Protocol (O. Reg 153/04, O. Reg. 406/19) holding time. Bureau Veritas endeavors to analyze samples as soon as possible after receipt."

(4) This is a field test, therefore, the results relate to items that were not analysed at Bureau Veritas.

Encryption Key

Please direct all questions regarding this Certificate of Analysis to:
Patricia Legette, Project Manager
Email: Patricia.Legette@bureauveritas.com
Phone# (905)817-5799

==========

Bureau Veritas has procedures in place to guard against improper use of the electronic signature and have the required "signatories", as per ISO/IEC 17025, signing the reports. For Service Group specific validation, please refer to the Validation Signatures page if included, otherwise available by request. For Department specific Analyst/Supervisor validation names, please refer to the Test Summary section if included, otherwise available by request. This report is authorized by Rodney Major, General Manager responsible for Ontario Environmental laboratory operations.

Bureau Veritas Job #: C4E1879
Report Date: 2024/05/22

RWDI Inc.
Client Project #: 2402553.01
Site Location: ON07
Your P.O. #: 13254256
Sampler Initials: JC

RESULTS OF ANALYSES OF WATER

Bureau Veritas ID		ZDK046			ZDK047			ZDK048		
Sampling Date		2024/05/09 14:10			2024/05/09 13:20			2024/05/09 10:40		
COC Number		895731			895731			895731		
	UNITS	OW83-5	RDL	QC Batch	OW84-6	RDL	QC Batch	OW80-3	RDL	QC Batch
Field Measurements										
Field Conductivity	uS/cm	2630	N/A	ONSITE	2700	N/A	ONSITE	1290	N/A	ONSITE
Field Temperature	Celsius	16.1	N/A	ONSITE	11.4	N/A	ONSITE	12.3	N/A	ONSITE
Field Measured Field Turbidity	NTU	142	N/A	ONSITE	9.96	N/A	ONSITE	94.9	N/A	ONSITE
Field Measured pH	pH	7.3		ONSITE	6.8		ONSITE	6.8		ONSITE
Inorganics										
Total Ammonia-N	mg/L	0.18	0.15	9392233	<0.15	0.15	9392227	0.37	0.15	9392227
Conductivity	umho/cm	1900	1.0	9404202	1500	1.0	9391948	710	1.0	9404202
Total Dissolved Solids	mg/L	920	10	9393284	1120	10	9393284	325	10	9393284
Total Kjeldahl Nitrogen (TKN)	mg/L	<0.7	0.7	9395195	<0.7	0.7	9395195	0.7	0.7	9395195
Dissolved Organic Carbon	mg/L	9.4	0.4	9393085	8.4	0.4	9393085	8.4	0.4	9393085
pH	pH	8.07		9391951	8.03		9391951	7.95		9391951
Dissolved Sulphate (SO4)	mg/L	330	1.0	9402497	410	2.0	9392007	17	1.0	9402497
Alkalinity (Total as CaCO3)	mg/L	570	1.0	9404197	450	1.0	9391946	250	1.0	9404197
Dissolved Chloride (Cl-)	mg/L	81	1.0	9402496	9.1	1.0	9392001	54	1.0	9402496
Nitrate (N)	mg/L	<0.10	0.10	9389968	4.25	0.10	9389968	<0.10	0.10	9389968

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
N/A = Not Applicable

Bureau Veritas 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.bvna.com

Microbiology testing is conducted at 6660 Campobello Rd. Chemistry testing is conducted at 6740 Campobello Rd.

Bureau Veritas Job #: C4E1879
Report Date: 2024/05/22

RWDI Inc.
Client Project #: 2402553.01
Site Location: ON07
Your P.O. #: 13254256
Sampler Initials: JC

RESULTS OF ANALYSES OF WATER

Bureau Veritas ID		ZDK049		ZDK050			ZDK051		
Sampling Date		2024/05/09 08:50		2024/05/09 10:40			2024/05/09 15:15		
COC Number		895731		895731			895731		
	UNITS	OW79-5	QC Batch	GWDUP4	RDL	QC Batch	OW82-5	RDL	QC Batch
Field Measurements									
Field Conductivity	uS/cm	4660	ONSITE	1290	N/A	ONSITE	3524	N/A	ONSITE
Field Temperature	Celsius	14.3	ONSITE	12.3	N/A	ONSITE	11.7	N/A	ONSITE
Field Measured Field Turbidity	NTU	26.2	ONSITE	94.9	N/A	ONSITE	6.76	N/A	ONSITE
Field Measured pH	pH	7.3	ONSITE	6.8		ONSITE	7.2		ONSITE
Inorganics									
Total Ammonia-N	mg/L	<0.15	9392227	0.38	0.15	9392227	<0.15	0.15	9392233
Conductivity	umho/cm	1100	9391948	780	1.0	9404202	4000	1.0	9391948
Total Dissolved Solids	mg/L	665	9394433	365	10	9393284	3990	10	9393284
Total Kjeldahl Nitrogen (TKN)	mg/L	<0.7	9395195	0.8	0.7	9395195	<0.7	0.7	9395195
Dissolved Organic Carbon	mg/L	5.8	9393085	8.2	0.4	9393085	3.7	0.4	9393085
pH	pH	7.86	9391951	8.09		9391951	8.03		9391951
Dissolved Sulphate (SO4)	mg/L	160	9392007	19	1.0	9402497	2600	10	9392007
Alkalinity (Total as CaCO3)	mg/L	420	9391946	270	1.0	9404197	340	1.0	9391946
Dissolved Chloride (Cl-)	mg/L	14	9392001	63	1.0	9402496	8.1	1.0	9392001
Nitrate (N)	mg/L	<0.10	9391657	<0.10	0.10	9391657	<0.10	0.10	9391657

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
N/A = Not Applicable

Bureau Veritas 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.bvna.com

Microbiology testing is conducted at 6660 Campobello Rd. Chemistry testing is conducted at 6740 Campobello Rd.

Bureau Veritas Job #: C4E1879
Report Date: 2024/05/22

RWDI Inc.
Client Project #: 2402553.01
Site Location: ON07
Your P.O. #: 13254256
Sampler Initials: JC

RESULTS OF ANALYSES OF WATER

Bureau Veritas ID		ZDK052		ZDK053		
Sampling Date		2024/05/10 09:20		2024/05/10 09:00		
COC Number		895731		895731		
	UNITS	OW81-5	RDL	OW71A-5	RDL	QC Batch
Field Measurements						
Field Conductivity	uS/cm	3090	N/A	2920	N/A	ONSITE
Field Temperature	Celsius	12.7	N/A	13.5	N/A	ONSITE
Field Measured Field Turbidity	NTU	6.43	N/A	8.47	N/A	ONSITE
Field Measured pH	pH	7.1		7.3		ONSITE
Inorganics						
Total Ammonia-N	mg/L	<0.15	0.15	<0.15	0.15	9392233
Conductivity	umho/cm	2800	1.0	1400	1.0	9391948
Total Dissolved Solids	mg/L	2360	10	935	10	9393284
Total Kjeldahl Nitrogen (TKN)	mg/L	<0.7	0.7	<0.7	0.7	9395195
Dissolved Organic Carbon	mg/L	2.1	0.4	8.7	0.4	9393085
pH	pH	7.81		7.82		9391951
Dissolved Sulphate (SO4)	mg/L	1400	5.0	350	1.0	9392007
Alkalinity (Total as CaCO3)	mg/L	390	1.0	420	1.0	9391946
Dissolved Chloride (Cl-)	mg/L	19	1.0	31	1.0	9392001
Nitrate (N)	mg/L	<0.10	0.10	<0.10	0.10	9389968

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
N/A = Not Applicable

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Microbiology testing is conducted at 6660 Campobello Rd. Chemistry testing is conducted at 6740 Campobello Rd.

Bureau Veritas Job #: C4E1879
Report Date: 2024/05/22

RWDI Inc.
Client Project #: 2402553.01
Site Location: ON07
Your P.O. #: 13254256
Sampler Initials: JC

ELEMENTS BY ATOMIC SPECTROSCOPY (WATER)

Bureau Veritas ID		ZDK046		ZDK047		ZDK048		ZDK049		
Sampling Date		2024/05/09 14:10		2024/05/09 13:20		2024/05/09 10:40		2024/05/09 08:50		
COC Number		895731		895731		895731		895731		
	UNITS	OW83-5	QC Batch	OW84-6	QC Batch	OW80-3	QC Batch	OW79-5	RDL	QC Batch
Metals										
Dissolved Barium (Ba)	mg/L	0.022	9405651	0.032	9389685	0.061	9405651	0.021	0.005	9389685
Dissolved Boron (B)	mg/L	0.12	9405651	0.14	9389685	0.03	9405651	0.05	0.02	9389685
Dissolved Cadmium (Cd)	mg/L	<0.0001	9405651	<0.0001	9389685	<0.0001	9405651	<0.0001	0.0001	9389685
Dissolved Calcium (Ca)	mg/L	99	9405651	190	9389685	96	9405651	86	0.2	9389685
Dissolved Iron (Fe)	mg/L	0.2	9405651	0.4	9389685	5.9	9405651	<0.1	0.1	9389685
Dissolved Lead (Pb)	mg/L	<0.0005	9405651	<0.0005	9389685	<0.0005	9405651	<0.0005	0.0005	9389685
Dissolved Magnesium (Mg)	mg/L	49	9405651	64	9389685	31	9405651	74	0.05	9389685
Dissolved Potassium (K)	mg/L	2.6	9405651	3.8	9389685	3.5	9405651	1.8	0.2	9389685
Dissolved Sodium (Na)	mg/L	110	9405651	79	9389685	80	9405651	62	0.1	9389685

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

Bureau Veritas ID		ZDK050			ZDK051	ZDK052		ZDK053		
Sampling Date		2024/05/09 10:40			2024/05/09 15:15	2024/05/10 09:20		2024/05/10 09:00		
COC Number		895731			895731	895731		895731		
	UNITS	GWDUP4	RDL	QC Batch	OW82-5	OW81-5	RDL	OW71A-5	RDL	QC Batch
Metals										
Dissolved Barium (Ba)	mg/L	0.063	0.005	9405651	0.013	0.020	0.005	0.066	0.005	9389685
Dissolved Boron (B)	mg/L	0.03	0.02	9405651	0.58	0.57	0.02	0.13	0.02	9389685
Dissolved Cadmium (Cd)	mg/L	<0.0001	0.0001	9405651	<0.0001	<0.0001	0.0001	<0.0001	0.0001	9389685
Dissolved Calcium (Ca)	mg/L	94	0.2	9405651	480	280	0.4	140	0.2	9389685
Dissolved Iron (Fe)	mg/L	6.0	0.1	9405651	<0.1	<0.1	0.1	0.2	0.1	9389685
Dissolved Lead (Pb)	mg/L	<0.0005	0.0005	9405651	<0.0005	<0.0005	0.0005	<0.0005	0.0005	9389685
Dissolved Magnesium (Mg)	mg/L	32	0.05	9405651	360	190	0.05	100	0.05	9389685
Dissolved Potassium (K)	mg/L	3.5	0.2	9405651	7.1	5.1	0.2	2.4	0.2	9389685
Dissolved Sodium (Na)	mg/L	82	0.1	9405651	160	180	0.1	42	0.1	9389685

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

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Microbiology testing is conducted at 6660 Campobello Rd. Chemistry testing is conducted at 6740 Campobello Rd.

Bureau Veritas Job #: C4E1879
Report Date: 2024/05/22

RWDI Inc.
Client Project #: 2402553.01
Site Location: ON07
Your P.O. #: 13254256
Sampler Initials: JC

VOLATILE ORGANICS BY GC/MS (WATER)

Bureau Veritas ID		ZDK046	ZDK047	ZDK048	ZDK049	ZDK050	ZDK051		
Sampling Date		2024/05/09 14:10	2024/05/09 13:20	2024/05/09 10:40	2024/05/09 08:50	2024/05/09 10:40	2024/05/09 15:15		
COC Number		895731	895731	895731	895731	895731	895731		
	UNITS	OW83-5	OW84-6	OW80-3	OW79-5	GWDUP4	OW82-5	RDL	QC Batch
Volatile Organics									
Benzene	ug/L	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	0.20	9389846
1,4-Dichlorobenzene	ug/L	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40	0.40	9389846
Ethylbenzene	ug/L	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	0.20	9389846
Methylene Chloride(Dichloromethane)	ug/L	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	2.0	9389846
Toluene	ug/L	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	0.20	9389846
Vinyl Chloride	ug/L	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	0.20	9389846
p+m-Xylene	ug/L	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	0.20	9389846
o-Xylene	ug/L	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	0.20	9389846
Total Xylenes	ug/L	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	0.20	9389846
Surrogate Recovery (%)									
4-Bromofluorobenzene	%	98	100	99	100	97	99		9389846
D4-1,2-Dichloroethane	%	100	102	104	102	101	102		9389846
D8-Toluene	%	98	98	98	97	100	99		9389846

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

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Microbiology testing is conducted at 6660 Campobello Rd. Chemistry testing is conducted at 6740 Campobello Rd.

Bureau Veritas Job #: C4E1879
Report Date: 2024/05/22

RWDI Inc.
Client Project #: 2402553.01
Site Location: ON07
Your P.O. #: 13254256
Sampler Initials: JC

VOLATILE ORGANICS BY GC/MS (WATER)

Bureau Veritas ID		ZDK052	ZDK053		
Sampling Date		2024/05/10 09:20	2024/05/10 09:00		
COC Number		895731	895731		
	UNITS	OW81-5	OW71A-5	RDL	QC Batch
Volatile Organics					
Benzene	ug/L	<0.20	<0.20	0.20	9389846
1,4-Dichlorobenzene	ug/L	<0.40	<0.40	0.40	9389846
Ethylbenzene	ug/L	<0.20	<0.20	0.20	9389846
Methylene Chloride(Dichloromethane)	ug/L	<2.0	<2.0	2.0	9389846
Toluene	ug/L	<0.20	<0.20	0.20	9389846
Vinyl Chloride	ug/L	<0.20	<0.20	0.20	9389846
p+m-Xylene	ug/L	<0.20	<0.20	0.20	9389846
o-Xylene	ug/L	<0.20	<0.20	0.20	9389846
Total Xylenes	ug/L	<0.20	<0.20	0.20	9389846
Surrogate Recovery (%)					
4-Bromofluorobenzene	%	100	99		9389846
D4-1,2-Dichloroethane	%	102	103		9389846
D8-Toluene	%	97	98		9389846

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

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Microbiology testing is conducted at 6660 Campobello Rd. Chemistry testing is conducted at 6740 Campobello Rd.

GENERAL COMMENTS

Sample ZDK046 [OW83-5] : TKN < Ammonia: Both values fall within the method uncertainty for duplicates and are likely equivalent.

Results relate only to the items tested.

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Microbiology testing is conducted at 6660 Campobello Rd. Chemistry testing is conducted at 6740 Campobello Rd.

QUALITY ASSURANCE REPORT

			Matrix Spike		SPIKED BLANK		Method Blank		RPD		QC Standard	
QC Batch	Parameter	Date	% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits	% Recovery	QC Limits
9389846	4-Bromofluorobenzene	2024/05/16	100 (2)	70 - 130	101	70 - 130	101	%				
9389846	D4-1,2-Dichloroethane	2024/05/16	105 (2)	70 - 130	100	70 - 130	99	%				
9389846	D8-Toluene	2024/05/16	100 (2)	70 - 130	99	70 - 130	99	%				
9389685	Dissolved Barium (Ba)	2024/05/14	104 (1)	80 - 120	100	80 - 120	<0.005	mg/L				
9389685	Dissolved Boron (B)	2024/05/14	102 (1)	80 - 120	95	80 - 120	<0.02	mg/L				
9389685	Dissolved Cadmium (Cd)	2024/05/14	105 (1)	80 - 120	100	80 - 120	<0.0001	mg/L				
9389685	Dissolved Calcium (Ca)	2024/05/14	NC (1)	80 - 120	100	80 - 120	<0.2	mg/L				
9389685	Dissolved Iron (Fe)	2024/05/14	104 (1)	80 - 120	101	80 - 120	<0.1	mg/L				
9389685	Dissolved Lead (Pb)	2024/05/14	100 (1)	80 - 120	98	80 - 120	<0.0005	mg/L				
9389685	Dissolved Magnesium (Mg)	2024/05/14	NC (1)	80 - 120	101	80 - 120	<0.05	mg/L				
9389685	Dissolved Potassium (K)	2024/05/14	106 (1)	80 - 120	100	80 - 120	<0.2	mg/L				
9389685	Dissolved Sodium (Na)	2024/05/14	NC (1)	80 - 120	101	80 - 120	<0.1	mg/L				
9389846	1,4-Dichlorobenzene	2024/05/17	78 (2)	70 - 130	94	70 - 130	<0.40	ug/L	NC (3)	30		
9389846	Benzene	2024/05/17	85 (2)	70 - 130	92	70 - 130	<0.20	ug/L	NC (3)	30		
9389846	Ethylbenzene	2024/05/17	81 (2)	70 - 130	90	70 - 130	<0.20	ug/L	NC (3)	30		
9389846	Methylene Chloride(Dichloromethane)	2024/05/17	96 (2)	70 - 130	100	70 - 130	<2.0	ug/L	NC (3)	30		
9389846	o-Xylene	2024/05/17	80 (2)	70 - 130	88	70 - 130	<0.20	ug/L	NC (3)	30		
9389846	p+m-Xylene	2024/05/17	77 (2)	70 - 130	88	70 - 130	<0.20	ug/L	NC (3)	30		
9389846	Toluene	2024/05/17	84 (2)	70 - 130	91	70 - 130	<0.20	ug/L	NC (3)	30		
9389846	Total Xylenes	2024/05/17					<0.20	ug/L	NC (3)	30		
9389846	Vinyl Chloride	2024/05/17	77 (2)	70 - 130	85	70 - 130	<0.20	ug/L	NC (3)	30		
9389968	Nitrate (N)	2024/05/14	101	80 - 120	105	80 - 120	<0.10	mg/L	2.6 (4)	20		
9391657	Nitrate (N)	2024/05/14	89	80 - 120	94	80 - 120	<0.10	mg/L	1.2 (4)	20		
9391946	Alkalinity (Total as CaCO3)	2024/05/18			97	85 - 115	<1.0	mg/L	1.3 (4)	20		
9391948	Conductivity	2024/05/18			101	85 - 115	<1.0	umho/cm	0.11 (4)	10		
9391951	pH	2024/05/18			102	98 - 103			0.42 (4)	N/A		
9392001	Dissolved Chloride (Cl-)	2024/05/16	NC (5)	80 - 120	100	80 - 120	<1.0	mg/L				
9392007	Dissolved Sulphate (SO4)	2024/05/16	NC (5)	75 - 125	98	80 - 120	<1.0	mg/L				
9392227	Total Ammonia-N	2024/05/16	96	75 - 125	101	80 - 120	<0.15	mg/L	NC (4)	20		

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Microbiology testing is conducted at 6660 Campobello Rd. Chemistry testing is conducted at 6740 Campobello Rd.

QUALITY ASSURANCE REPORT(CONT'D)

			Matrix Spike		SPIKED BLANK		Method Blank		RPD		QC Standard	
QC Batch	Parameter	Date	% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits	% Recovery	QC Limits
9392233	Total Ammonia-N	2024/05/16	97	75 - 125	102	80 - 120	<0.15	mg/L	NC (4)	20		
9393085	Dissolved Organic Carbon	2024/05/15	85 (6)	80 - 120	93	80 - 120	<0.4	mg/L	2.3 (7)	20		
9393284	Total Dissolved Solids	2024/05/15			95	80 - 120	<10	mg/L	1.2 (4)	20		
9394433	Total Dissolved Solids	2024/05/16			100	80 - 120	<10	mg/L	0.26 (4)	20		
9395195	Total Kjeldahl Nitrogen (TKN)	2024/05/16	103	80 - 120	94	80 - 120	<0.7	mg/L	NC (4)	20	99	80 - 120
9402496	Dissolved Chloride (Cl-)	2024/05/22	NC	80 - 120	91	80 - 120	<1.0	mg/L	9.2 (4)	20		
9402497	Dissolved Sulphate (SO4)	2024/05/22	NC	75 - 125	94	80 - 120	<1.0	mg/L	0.37 (4)	20		
9404197	Alkalinity (Total as CaCO3)	2024/05/22			95	85 - 115	<1.0	mg/L	0.17 (4)	20		
9404202	Conductivity	2024/05/22			102	85 - 115	<1.0	umho/cm	0.58 (4)	10		
9405651	Dissolved Barium (Ba)	2024/05/22	104 (1)	80 - 120	97	80 - 120	<0.005	mg/L	1.9 (8)	20		
9405651	Dissolved Boron (B)	2024/05/22	97 (1)	80 - 120	92	80 - 120	<0.02	mg/L	1.0 (8)	20		
9405651	Dissolved Cadmium (Cd)	2024/05/22	104 (1)	80 - 120	98	80 - 120	<0.0001	mg/L	NC (8)	20		
9405651	Dissolved Calcium (Ca)	2024/05/22	NC (1)	80 - 120	103	80 - 120	<0.2	mg/L	5.9 (8)	20		
9405651	Dissolved Iron (Fe)	2024/05/22	105 (1)	80 - 120	100	80 - 120	<0.1	mg/L	3.9 (8)	20		
9405651	Dissolved Lead (Pb)	2024/05/22	101 (1)	80 - 120	97	80 - 120	<0.0005	mg/L	NC (8)	20		
9405651	Dissolved Magnesium (Mg)	2024/05/22	NC (1)	80 - 120	99	80 - 120	<0.05	mg/L	2.9 (8)	20		
9405651	Dissolved Potassium (K)	2024/05/22	106 (1)	80 - 120	102	80 - 120	<0.2	mg/L	5.1 (8)	20		

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Microbiology testing is conducted at 6660 Campobello Rd. Chemistry testing is conducted at 6740 Campobello Rd.

QUALITY ASSURANCE REPORT(CONT'D)

			Matrix Spike		SPIKED BLANK		Method Blank		RPD		QC Standard	
QC Batch	Parameter	Date	% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits	% Recovery	QC Limits
9405651	Dissolved Sodium (Na)	2024/05/22	NC (1)	80 - 120	99	80 - 120	<0.1	mg/L	2.6 (8)	20		

N/A = Not Applicable

Duplicate: Paired analysis of a separate portion of the same sample. Used to evaluate the variance in the measurement.

Matrix Spike: A sample to which a known amount of the analyte of interest has been added. Used to evaluate sample matrix interference.

QC Standard: A sample of known concentration prepared by an external agency under stringent conditions. Used as an independent check of method accuracy.

Spiked Blank: A blank matrix sample to which a known amount of the analyte, usually from a second source, has been added. Used to evaluate method accuracy.

Method Blank: A blank matrix containing all reagents used in the analytical procedure. Used to identify laboratory contamination.

Surrogate: A pure or isotopically labeled compound whose behavior mirrors the analytes of interest. Used to evaluate extraction efficiency.

NC (Matrix Spike): The recovery in the matrix spike was not calculated. The relative difference between the concentration in the parent sample and the spike amount was too small to permit a reliable recovery calculation (matrix spike concentration was less than the native sample concentration)

NC (Duplicate RPD): The duplicate RPD was not calculated. The concentration in the sample and/or duplicate was too low to permit a reliable RPD calculation (absolute difference <= 2x RDL).

(1) Matrix Spike Parent ID [ZDK046-03]

(2) Matrix Spike Parent ID [ZDK053-07]

(3) Duplicate Parent ID [ZDK053-07]

(4) Duplicate Parent ID

(5) Matrix Spike Parent ID [ZDK050-01]

(6) Matrix Spike Parent ID [ZDK052-05]

(7) Duplicate Parent ID [ZDK052-05]

(8) Duplicate Parent ID [ZDK046-03]

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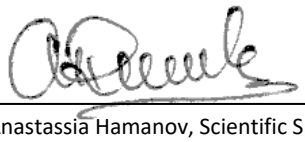
Microbiology testing is conducted at 6660 Campobello Rd. Chemistry testing is conducted at 6740 Campobello Rd.

Bureau Veritas Job #: C4E1879
Report Date: 2024/05/22

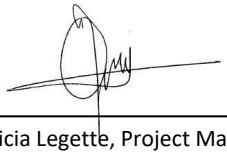
RWDI Inc.
Client Project #: 2402553.01
Site Location: ON07
Your P.O. #: 13254256
Sampler Initials: JC

VALIDATION SIGNATURE PAGE

The analytical data and all QC contained in this report were reviewed and validated by:



Anastassia Hamanov, Scientific Specialist



Patricia Legette, Project Manager

Bureau Veritas has procedures in place to guard against improper use of the electronic signature and have the required "signatories", as per ISO/IEC 17025, signing the reports. For Service Group specific validation, please refer to the Validation Signatures page if included, otherwise available by request. For Department specific Analyst/Supervisor validation names, please refer to the Test Summary section if included, otherwise available by request. This report is authorized by Rodney Major, General Manager responsible for Ontario Environmental laboratory operations.

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Microbiology testing is conducted at 6660 Campobello Rd. Chemistry testing is conducted at 6740 Campobello Rd.

Custody Tracking Form

T895731

Please use this form for custody tracking when submitting the work instructions via eCOC (electronic Chain of Custody). Please ensure your form has a barcode or a Bureau Veritas eCOC confirmation number in the top right hand side. This number links your electronic submission to your samples. This form should be placed in the cooler with your samples.

First Sample: OW83-5
Last Sample: OW71A-5
Sample Count: 8

Relinquished By				Received By			
Eric Wilson	E. Wilson	Date	2024/05/10	Soumya.Pagamoni		Date	2024/05/10
		Time (24 HR)	12:00			Time (24 HR)	13:35
		Date		VIYUSH71	VIY	Date	2024/05/10
		Time (24 HR)				Time (24 HR)	18:23
		Date				Date	
		Time (24 HR)				Time (24 HR)	

Unless otherwise agreed to, submissions and use of services are governed by Bureau Veritas' standard terms and conditions which can be found at www.bvna.com.

Triage Information

Sampled By (Print): Eric Wilson

# of Coolers/Pkgs: 3

Rush ☐ Immediate Test ☐ Food Residue ☐

Micro ☐ Food Chemistry ☐

*** LABORATORY USE ONLY ***

Received At

Labeled By

Verified By

Lab Comments:

10-May-24 13:35
Patricia Legette
C4E1879
VIY ENV-1085

Custody Seal		Cooling Media	Temperature °C		
Present (Y/N)	Intact (Y/N)	Present (Y/N)	1	2	3
Y	Y	Y	2	3	1
Y	Y	Y	4	6	7
Y	Y	Y	5	5	8
Drinking Water Metals Preservation Check Done (Circle)				YES	NO
Y	Y	Y	0	0	2

REC'D IN LONDON

COR FCD-00383/4

Page 1 of 1

Your P.O. #: 13254256
Your Project #: 2402553.01
Site#: 200
Site Location: ON07
Your C.O.C. #: 895782

Attention: Khalid Hussein - Twin Creeks

RWDI Inc.
600 Southgate Drive
Guelph, ON
Canada N1G 4P6

Report Date: 2024/05/21
Report #: R8156638
Version: 1 - Final

CERTIFICATE OF ANALYSIS

BUREAU VERITAS JOB #: C4E1883
Received: 2024/05/10, 13:36

Sample Matrix: Ground Water
Samples Received: 8

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Analytical Method
Alkalinity	8	N/A	2024/05/18	CAM SOP-00448	SM 24 2320 B m
Chloride by Automated Colourimetry	8	N/A	2024/05/16	CAM SOP-00463	SM 24 4500-Cl E m
Conductance in Water - On-site	8	N/A	2024/05/17		
Conductivity	8	N/A	2024/05/18	CAM SOP-00414	SM 24 2510 m
Dissolved Organic Carbon (DOC) (1)	5	N/A	2024/05/14	CAM SOP-00446	SM 24 5310 B m
Dissolved Organic Carbon (DOC) (1)	3	N/A	2024/05/15	CAM SOP-00446	SM 24 5310 B m
Dissolved Metals by ICPMS	8	N/A	2024/05/15	CAM SOP-00447	EPA 6020B m
Ammonia-N	8	N/A	2024/05/18	CAM SOP-00441	USGS I-2522-90 m
Nitrate & Nitrite as Nitrogen in Water (2)	8	N/A	2024/05/14	CAM SOP-00440	SM 24 4500-NO3I/NO2B
pH (3)	8	2024/05/14	2024/05/18	CAM SOP-00413	SM 24th - 4500H+ B
Field Measured pH (4)	8	N/A	2024/05/17		Field pH Meter
Sulphate by Automated Turbidimetry	8	N/A	2024/05/16	CAM SOP-00464	SM 24 4500-SO42- E m
Total Dissolved Solids	8	2024/05/15	2024/05/16	CAM SOP-00428	SM 24 2540C m
Field Temperature (4)	8	N/A	2024/05/17		Field Thermometer
Total Kjeldahl Nitrogen in Water	8	2024/05/15	2024/05/16	CAM SOP-00938	OMOE E3516 m
Turbidity - On-site	8	N/A	2024/05/17		
Volatile Organic Compounds in Water	7	N/A	2024/05/16	CAM SOP-00228	EPA 8260D
Volatile Organic Compounds in Water	1	N/A	2024/05/17	CAM SOP-00228	EPA 8260D

Remarks:

Bureau Veritas is accredited to ISO/IEC 17025 for specific parameters on scopes of accreditation. Unless otherwise noted, procedures used by Bureau Veritas are based upon recognized Provincial, Federal or US method compendia such as CCME, EPA, APHA or the Quebec Ministry of Environment.

All work recorded herein has been done in accordance with procedures and practices ordinarily exercised by professionals in Bureau Veritas' profession using accepted testing methodologies, quality assurance and quality control procedures (except where otherwise agreed by the client and Bureau Veritas in writing). All data is in statistical control and has met quality control and method performance criteria unless otherwise noted. All method blanks are reported; unless indicated otherwise, associated sample data are not blank corrected. Where applicable, unless otherwise noted, Measurement Uncertainty has not been accounted for when stating conformity to the referenced standard.

Bureau Veritas liability is limited to the actual cost of the requested analyses, unless otherwise agreed in writing. There is no other warranty expressed or implied. Bureau Veritas has been retained to provide analysis of samples provided by the Client using the testing methodology referenced in this report. Interpretation and use of test results are the sole responsibility of the Client and are not within the scope of services provided by Bureau Veritas, unless

Your P.O. #: 13254256
Your Project #: 2402553.01
Site#: 200
Site Location: ON07
Your C.O.C. #: 895782

Attention: Khalid Hussein - Twin Creeks

RWDI Inc.
600 Southgate Drive
Guelph, ON
Canada N1G 4P6

Report Date: 2024/05/21
Report #: R8156638
Version: 1 - Final

CERTIFICATE OF ANALYSIS

BUREAU VERITAS JOB #: C4E1883

Received: 2024/05/10, 13:36

otherwise agreed in writing. Bureau Veritas is not responsible for the accuracy or any data impacts, that result from the information provided by the customer or their agent.

Solid sample results, except biota, are based on dry weight unless otherwise indicated. Organic analyses are not recovery corrected except for isotope dilution methods.
Results relate to samples tested. When sampling is not conducted by Bureau Veritas, results relate to the supplied samples tested.
This Certificate shall not be reproduced except in full, without the written approval of the laboratory.
Reference Method suffix "m" indicates test methods incorporate validated modifications from specific reference methods to improve performance.
* RPDs calculated using raw data. The rounding of final results may result in the apparent difference.
(1) Dissolved Organic Carbon (DOC) present in the sample should be considered as non-purgeable DOC.
(2) Values for calculated parameters may not appear to add up due to rounding of raw data and significant figures.
(3) "The CCME method and Analytical Protocol (O. Reg 153/04, O. Reg. 406/19) requires pH to be analyzed within 15 minutes of sampling and therefore field analysis is required for compliance. All Laboratory pH analyses in this report are reported past the CCME and Analytical Protocol (O. Reg 153/04, O. Reg. 406/19) holding time. Bureau Veritas endeavors to analyze samples as soon as possible after receipt."

(4) This is a field test, therefore, the results relate to items that were not analysed at Bureau Veritas.

Encryption Key

Please direct all questions regarding this Certificate of Analysis to:
Patricia Legette, Project Manager
Email: Patricia.Legette@bureauveritas.com
Phone# (905)817-5799

==========

Bureau Veritas has procedures in place to guard against improper use of the electronic signature and have the required "signatories", as per ISO/IEC 17025, signing the reports. For Service Group specific validation, please refer to the Validation Signatures page if included, otherwise available by request. For Department specific Analyst/Supervisor validation names, please refer to the Test Summary section if included, otherwise available by request. This report is authorized by Rodney Major, General Manager responsible for Ontario Environmental laboratory operations.

Bureau Veritas Job #: C4E1883
Report Date: 2024/05/21

RWDI Inc.
Client Project #: 2402553.01
Site Location: ON07
Your P.O. #: 13254256
Sampler Initials: JC

RESULTS OF ANALYSES OF GROUND WATER

Bureau Veritas ID		ZDK063	ZDK064		ZDK065			ZDK066		
Sampling Date		2024/05/09 10:30	2024/05/09 14:00		2024/05/09 12:30			2024/05/09 09:00		
COC Number		895782	895782		895782			895782		
	UNITS	**OW80-27**	**OW83-29**	**RDL**	**OW19-29**	**RDL**	**QC Batch**	**OW79-26**	**RDL**	**QC Batch**
Field Measurements										
Field Conductivity	uS/cm	1090	1885	N/A	3150	N/A	ONSITE	1080	N/A	ONSITE
Field Temperature	Celsius	13.2	13.8	N/A	13.5	N/A	ONSITE	12.0	N/A	ONSITE
Field Measured Field Turbidity	NTU	16.9	4.08	N/A	8.00	N/A	ONSITE	13.0	N/A	ONSITE
Field Measured pH	pH	7.4	7.9		7.4		ONSITE	7.6		ONSITE
Inorganics										
Total Ammonia-N	mg/L	<0.15	1.09	0.15	0.51	0.15	9395624	<0.15	0.15	9395624
Conductivity	umho/cm	750	870	1.0	2400	1.0	9391948	830	1.0	9391948
Total Dissolved Solids	mg/L	485	580	10	1930	10	9394433	540	10	9394579
Total Kjeldahl Nitrogen (TKN)	mg/L	<0.7	1.2	0.7	<0.7	0.7	9395166	<0.7	0.7	9395166
Dissolved Organic Carbon	mg/L	8.3	3.9	0.4	1.6	0.4	9393231	5.2	0.4	9393231
pH	pH	8.26	8.11		7.87		9391951	8.07		9391951
Dissolved Sulphate (SO4)	mg/L	27	150	1.0	1200	5.0	9392007	120	1.0	9392007
Alkalinity (Total as CaCO3)	mg/L	280	230	1.0	190	1.0	9391946	270	1.0	9391946
Dissolved Chloride (Cl-)	mg/L	46	33	1.0	25	1.0	9392001	24	1.0	9392001
Nitrate (N)	mg/L	<0.10	<0.10	0.10	<0.10	0.10	9391657	0.18	0.10	9391657

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
N/A = Not Applicable

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Microbiology testing is conducted at 6660 Campobello Rd. Chemistry testing is conducted at 6740 Campobello Rd.

Bureau Veritas Job #: C4E1883
Report Date: 2024/05/21

RWDI Inc.
Client Project #: 2402553.01
Site Location: ON07
Your P.O. #: 13254256
Sampler Initials: JC

RESULTS OF ANALYSES OF GROUND WATER

Bureau Veritas ID		ZDK067		ZDK068			ZDK069		ZDK070		
Sampling Date		2024/05/09 15:00		2024/05/09 13:00			2024/05/10 09:30		2024/05/09 10:00		
COC Number		895782		895782			895782		895782		
	UNITS	OW82-28	RDL	OW84-31	RDL	QC Batch	OW81-27	RDL	OW39A-26	RDL	QC Batch
Field Measurements											
Field Conductivity	uS/cm	986	N/A	2880	N/A	ONSITE	1990	N/A	1520	N/A	ONSITE
Field Temperature	Celsius	12.0	N/A	14.0	N/A	ONSITE	13.1	N/A	15.1	N/A	ONSITE
Field Measured Field Turbidity	NTU	94.1	N/A	22.0	N/A	ONSITE	65.1	N/A	156	N/A	ONSITE
Field Measured pH	pH	8.1		7.1		ONSITE	6.9		8.1		ONSITE
Inorganics											
Total Ammonia-N	mg/L	0.21	0.15	1.74	0.15	9395624	<0.15	0.15	0.32	0.15	9395624
Conductivity	umho/cm	1100	1.0	2100	1.0	9391948	1600	1.0	870	1.0	9391948
Total Dissolved Solids	mg/L	780	10	1590	10	9394433	1300	10	570	10	9394433
Total Kjeldahl Nitrogen (TKN)	mg/L	<0.7	0.7	1.9	0.7	9395166	<0.7	0.7	<0.7	0.7	9395166
Dissolved Organic Carbon	mg/L	2.2	0.4	7.9	0.4	9393231	6.9	0.4	6.3	0.4	9393231
pH	pH	8.19		7.90		9391951	7.70		7.96		9391951
Dissolved Sulphate (SO4)	mg/L	200	1.0	850	5.0	9392007	490	3.0	92	1.0	9393458
Alkalinity (Total as CaCO3)	mg/L	260	1.0	210	1.0	9391946	380	1.0	280	1.0	9391946
Dissolved Chloride (Cl-)	mg/L	43	1.0	36	1.0	9392001	21	1.0	39	1.0	9393459
Nitrate (N)	mg/L	0.12	0.10	0.15	0.10	9391657	<0.10	0.10	<0.10	0.10	9391657

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
N/A = Not Applicable

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Microbiology testing is conducted at 6660 Campobello Rd. Chemistry testing is conducted at 6740 Campobello Rd.

Bureau Veritas Job #: C4E1883
Report Date: 2024/05/21

RWDI Inc.
Client Project #: 2402553.01
Site Location: ON07
Your P.O. #: 13254256
Sampler Initials: JC

ELEMENTS BY ATOMIC SPECTROSCOPY (GROUND WATER)

Bureau Veritas ID		ZDK063	ZDK064		ZDK065		ZDK066	ZDK067		
Sampling Date		2024/05/09 10:30	2024/05/09 14:00		2024/05/09 12:30		2024/05/09 09:00	2024/05/09 15:00		
COC Number		895782	895782		895782		895782	895782		
	UNITS	OW80-27	OW83-29	RDL	OW19-29	RDL	OW79-26	OW82-28	RDL	QC Batch
Metals										
Dissolved Barium (Ba)	mg/L	0.052	0.078	0.005	0.007	0.005	0.022	0.017	0.005	9391317
Dissolved Boron (B)	mg/L	1.8	1.2	0.02	2.1	0.02	1.6	2.0	0.02	9391317
Dissolved Cadmium (Cd)	mg/L	<0.0001	<0.0001	0.0001	<0.0001	0.0001	<0.0001	<0.0001	0.0001	9391317
Dissolved Calcium (Ca)	mg/L	14	30	0.2	190	0.4	30	22	0.2	9391317
Dissolved Iron (Fe)	mg/L	<0.1	<0.1	0.1	<0.1	0.1	<0.1	0.2	0.1	9391317
Dissolved Lead (Pb)	mg/L	<0.0005	<0.0005	0.0005	<0.0005	0.0005	<0.0005	<0.0005	0.0005	9391317
Dissolved Magnesium (Mg)	mg/L	6.7	19	0.05	94	0.05	15	8.3	0.05	9391317
Dissolved Potassium (K)	mg/L	2.1	7.4	0.2	7.6	0.2	5.7	4.2	0.2	9391317
Dissolved Sodium (Na)	mg/L	150	130	0.1	260	0.1	140	200	0.1	9391317

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

Bureau Veritas ID		ZDK068	ZDK069	ZDK070		
Sampling Date		2024/05/09 13:00	2024/05/10 09:30	2024/05/09 10:00		
COC Number		895782	895782	895782		
	UNITS	OW84-31	OW81-27	OW39A-26	RDL	QC Batch
Metals						
Dissolved Barium (Ba)	mg/L	0.024	0.031	0.098	0.005	9391317
Dissolved Boron (B)	mg/L	1.5	0.49	1.7	0.02	9391317
Dissolved Cadmium (Cd)	mg/L	<0.0001	<0.0001	<0.0001	0.0001	9391317
Dissolved Calcium (Ca)	mg/L	140	210	23	0.2	9391317
Dissolved Iron (Fe)	mg/L	0.2	<0.1	<0.1	0.1	9391317
Dissolved Lead (Pb)	mg/L	<0.0005	<0.0005	<0.0005	0.0005	9391317
Dissolved Magnesium (Mg)	mg/L	52	88	16	0.05	9391317
Dissolved Potassium (K)	mg/L	8.1	1.7	3.2	0.2	9391317
Dissolved Sodium (Na)	mg/L	270	75	150	0.1	9391317

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

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Microbiology testing is conducted at 6660 Campobello Rd. Chemistry testing is conducted at 6740 Campobello Rd.

Bureau Veritas Job #: C4E1883
Report Date: 2024/05/21

RWDI Inc.
Client Project #: 2402553.01
Site Location: ON07
Your P.O. #: 13254256
Sampler Initials: JC

VOLATILE ORGANICS BY GC/MS (GROUND WATER)

Bureau Veritas ID		ZDK063	ZDK064	ZDK065	ZDK066	ZDK067	ZDK068		
Sampling Date		2024/05/09 10:30	2024/05/09 14:00	2024/05/09 12:30	2024/05/09 09:00	2024/05/09 15:00	2024/05/09 13:00		
COC Number		895782	895782	895782	895782	895782	895782		
	UNITS	OW80-27	OW83-29	OW19-29	OW79-26	OW82-28	OW84-31	RDL	QC Batch
Volatile Organics									
Benzene	ug/L	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	0.20	9394140
1,4-Dichlorobenzene	ug/L	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40	0.40	9394140
Ethylbenzene	ug/L	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	0.20	9394140
Methylene Chloride(Dichloromethane)	ug/L	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	2.0	9394140
Toluene	ug/L	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	0.20	9394140
Vinyl Chloride	ug/L	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	0.20	9394140
p+m-Xylene	ug/L	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	0.20	9394140
o-Xylene	ug/L	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	0.20	9394140
Total Xylenes	ug/L	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	0.20	9394140
Surrogate Recovery (%)									
4-Bromofluorobenzene	%	101	101	100	101	101	101		9394140
D4-1,2-Dichloroethane	%	103	103	104	104	103	105		9394140
D8-Toluene	%	98	98	97	97	97	98		9394140

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

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Microbiology testing is conducted at 6660 Campobello Rd. Chemistry testing is conducted at 6740 Campobello Rd.

RWDI Inc.
Client Project #: 2402553.01
Site Location: ON07
Your P.O. #: 13254256
Sampler Initials: JC

VOLATILE ORGANICS BY GC/MS (GROUND WATER)

Bureau Veritas ID		ZDK069		ZDK070		
Sampling Date		2024/05/10 09:30		2024/05/09 10:00		
COC Number		895782		895782		
	UNITS	OW81-27	QC Batch	OW39A-26	RDL	QC Batch
Volatile Organics						
Benzene	ug/L	<0.20	9394140	<0.20	0.20	9398120
1,4-Dichlorobenzene	ug/L	<0.40	9394140	<0.40	0.40	9398120
Ethylbenzene	ug/L	<0.20	9394140	<0.20	0.20	9398120
Methylene Chloride(Dichloromethane)	ug/L	<2.0	9394140	<2.0	2.0	9398120
Toluene	ug/L	<0.20	9394140	<0.20	0.20	9398120
Vinyl Chloride	ug/L	<0.20	9394140	<0.20	0.20	9398120
p+m-Xylene	ug/L	<0.20	9394140	<0.20	0.20	9398120
o-Xylene	ug/L	<0.20	9394140	<0.20	0.20	9398120
Total Xylenes	ug/L	<0.20	9394140	<0.20	0.20	9398120
Surrogate Recovery (%)						
4-Bromofluorobenzene	%	101	9394140	102		9398120
D4-1,2-Dichloroethane	%	103	9394140	106		9398120
D8-Toluene	%	98	9394140	98		9398120

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

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Microbiology testing is conducted at 6660 Campobello Rd. Chemistry testing is conducted at 6740 Campobello Rd.

GENERAL COMMENTS

Sample ZDK067 [OW82-28] : TKN < Ammonia: Both values fall within the method uncertainty for duplicates and are likely equivalent.

Results relate only to the items tested.

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Microbiology testing is conducted at 6660 Campobello Rd. Chemistry testing is conducted at 6740 Campobello Rd.

Bureau Veritas Job #: C4E1883
Report Date: 2024/05/21

QUALITY ASSURANCE REPORT

RWDI Inc.
Client Project #: 2402553.01
Site Location: ON07
Your P.O. #: 13254256
Sampler Initials: JC

			Matrix Spike		SPIKED BLANK		Method Blank		RPD		QC Standard	
QC Batch	Parameter	Date	% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits	% Recovery	QC Limits
9394140	4-Bromofluorobenzene	2024/05/16	99	70 - 130	100	70 - 130	102	%				
9394140	D4-1,2-Dichloroethane	2024/05/16	101	70 - 130	100	70 - 130	100	%				
9394140	D8-Toluene	2024/05/16	99	70 - 130	101	70 - 130	99	%				
9398120	4-Bromofluorobenzene	2024/05/17	100	70 - 130	101	70 - 130	102	%				
9398120	D4-1,2-Dichloroethane	2024/05/17	105	70 - 130	102	70 - 130	101	%				
9398120	D8-Toluene	2024/05/17	98	70 - 130	100	70 - 130	99	%				
9391317	Dissolved Barium (Ba)	2024/05/15	104 (1)	80 - 120	98	80 - 120	<0.005	mg/L	0.052 (2)	20		
9391317	Dissolved Boron (B)	2024/05/15	NC (1)	80 - 120	92	80 - 120	<0.02	mg/L	0.23 (2)	20		
9391317	Dissolved Cadmium (Cd)	2024/05/15	100 (1)	80 - 120	95	80 - 120	<0.0001	mg/L	NC (2)	20		
9391317	Dissolved Calcium (Ca)	2024/05/15	102 (1)	80 - 120	102	80 - 120	<0.2	mg/L	1.7 (2)	20		
9391317	Dissolved Iron (Fe)	2024/05/15	105 (1)	80 - 120	100	80 - 120	<0.1	mg/L	NC (2)	20		
9391317	Dissolved Lead (Pb)	2024/05/15	99 (1)	80 - 120	96	80 - 120	<0.0005	mg/L	NC (2)	20		
9391317	Dissolved Magnesium (Mg)	2024/05/15	106 (1)	80 - 120	99	80 - 120	<0.05	mg/L	2.2 (2)	20		
9391317	Dissolved Potassium (K)	2024/05/15	108 (1)	80 - 120	101	80 - 120	<0.2	mg/L	2.2 (2)	20		
9391317	Dissolved Sodium (Na)	2024/05/15	NC (1)	80 - 120	100	80 - 120	<0.1	mg/L	0.24 (2)	20		
9391657	Nitrate (N)	2024/05/14	89 (3)	80 - 120	94	80 - 120	<0.10	mg/L	1.2 (4)	20		
9391946	Alkalinity (Total as CaCO3)	2024/05/18			97	85 - 115	<1.0	mg/L	1.3 (5)	20		
9391948	Conductivity	2024/05/18			101	85 - 115	<1.0	umho/cm	0.11 (5)	10		
9391951	pH	2024/05/18			102	98 - 103			0.42 (5)	N/A		
9392001	Dissolved Chloride (Cl-)	2024/05/16	NC	80 - 120	100	80 - 120	<1.0	mg/L				
9392007	Dissolved Sulphate (SO4)	2024/05/16	NC	75 - 125	98	80 - 120	<1.0	mg/L				
9393231	Dissolved Organic Carbon	2024/05/14	91	80 - 120	96	80 - 120	<0.4	mg/L	0.86 (5)	20		
9393458	Dissolved Sulphate (SO4)	2024/05/16	NC	75 - 125	95	80 - 120	<1.0	mg/L	1.2 (5)	20		
9393459	Dissolved Chloride (Cl-)	2024/05/16	NC	80 - 120	92	80 - 120	<1.0	mg/L	0.45 (5)	20		
9394140	1,4-Dichlorobenzene	2024/05/16	116	70 - 130	96	70 - 130	<0.40	ug/L	NC (5)	30		
9394140	Benzene	2024/05/16	119	70 - 130	98	70 - 130	<0.20	ug/L	NC (5)	30		
9394140	Ethylbenzene	2024/05/16	115	70 - 130	97	70 - 130	<0.20	ug/L	NC (5)	30		
9394140	Methylene Chloride(Dichloromethane)	2024/05/16	113	70 - 130	93	70 - 130	<2.0	ug/L	NC (5)	30		
9394140	o-Xylene	2024/05/16	113	70 - 130	97	70 - 130	<0.20	ug/L	NC (5)	30		

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Microbiology testing is conducted at 6660 Campobello Rd. Chemistry testing is conducted at 6740 Campobello Rd.

QUALITY ASSURANCE REPORT(CONT'D)

			Matrix Spike		SPIKED BLANK		Method Blank		RPD		QC Standard	
QC Batch	Parameter	Date	% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits	% Recovery	QC Limits
9394140	p+m-Xylene	2024/05/16	116	70 - 130	97	70 - 130	<0.20	ug/L	NC (5)	30		
9394140	Toluene	2024/05/16	113	70 - 130	95	70 - 130	<0.20	ug/L	NC (5)	30		
9394140	Total Xylenes	2024/05/16					<0.20	ug/L	NC (5)	30		
9394140	Vinyl Chloride	2024/05/16	111	70 - 130	90	70 - 130	<0.20	ug/L				
9394433	Total Dissolved Solids	2024/05/16			100	80 - 120	<10	mg/L	0.26 (6)	20		
9394579	Total Dissolved Solids	2024/05/16			97	80 - 120	<10	mg/L	0 (5)	20		
9395166	Total Kjeldahl Nitrogen (TKN)	2024/05/16	103	80 - 120	98	80 - 120	<0.7	mg/L	NC (5)	20	100	80 - 120
9395624	Total Ammonia-N	2024/05/18	94	75 - 125	101	80 - 120	<0.15	mg/L	0.81 (5)	20		
9398120	1,4-Dichlorobenzene	2024/05/17	101	70 - 130	99	70 - 130	<0.40	ug/L	NC (5)	30		
9398120	Benzene	2024/05/17	103	70 - 130	103	70 - 130	<0.20	ug/L	NC (5)	30		
9398120	Ethylbenzene	2024/05/17	97	70 - 130	99	70 - 130	<0.20	ug/L	NC (5)	30		
9398120	Methylene Chloride(Dichloromethane)	2024/05/17	100	70 - 130	97	70 - 130	<2.0	ug/L	NC (5)	30		
9398120	o-Xylene	2024/05/17	96	70 - 130	99	70 - 130	<0.20	ug/L	NC (5)	30		
9398120	p+m-Xylene	2024/05/17	98	70 - 130	100	70 - 130	<0.20	ug/L	NC (5)	30		
9398120	Toluene	2024/05/17	97	70 - 130	97	70 - 130	<0.20	ug/L	NC (5)	30		
9398120	Total Xylenes	2024/05/17					<0.20	ug/L	NC (5)	30		

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Microbiology testing is conducted at 6660 Campobello Rd. Chemistry testing is conducted at 6740 Campobello Rd.

QUALITY ASSURANCE REPORT(CONT'D)

			Matrix Spike		SPIKED BLANK		Method Blank		RPD		QC Standard	
QC Batch	Parameter	Date	% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits	% Recovery	QC Limits
9398120	Vinyl Chloride	2024/05/17	94	70 - 130	95	70 - 130	<0.20	ug/L	NC (5)	30		

N/A = Not Applicable

Duplicate: Paired analysis of a separate portion of the same sample. Used to evaluate the variance in the measurement.

Matrix Spike: A sample to which a known amount of the analyte of interest has been added. Used to evaluate sample matrix interference.

QC Standard: A sample of known concentration prepared by an external agency under stringent conditions. Used as an independent check of method accuracy.

Spiked Blank: A blank matrix sample to which a known amount of the analyte, usually from a second source, has been added. Used to evaluate method accuracy.

Method Blank: A blank matrix containing all reagents used in the analytical procedure. Used to identify laboratory contamination.

Surrogate: A pure or isotopically labeled compound whose behavior mirrors the analytes of interest. Used to evaluate extraction efficiency.

NC (Matrix Spike): The recovery in the matrix spike was not calculated. The relative difference between the concentration in the parent sample and the spike amount was too small to permit a reliable recovery calculation (matrix spike concentration was less than the native sample concentration)

NC (Duplicate RPD): The duplicate RPD was not calculated. The concentration in the sample and/or duplicate was too low to permit a reliable RPD calculation (absolute difference <= 2x RDL).

(1) Matrix Spike Parent ID [ZDK063-03]

(2) Duplicate Parent ID [ZDK063-03]

(3) Matrix Spike Parent ID [ZDK067-01]

(4) Duplicate Parent ID [ZDK067-01]

(5) Duplicate Parent ID

(6) Duplicate Parent ID [ZDK065-02]

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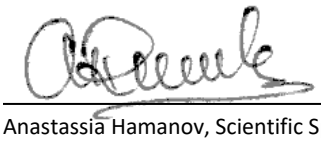
Microbiology testing is conducted at 6660 Campobello Rd. Chemistry testing is conducted at 6740 Campobello Rd.

Bureau Veritas Job #: C4E1883
Report Date: 2024/05/21

RWDI Inc.
Client Project #: 2402553.01
Site Location: ON07
Your P.O. #: 13254256
Sampler Initials: JC

VALIDATION SIGNATURE PAGE

The analytical data and all QC contained in this report were reviewed and validated by:



Anastassia Hamanov, Scientific Specialist



Michael Damianidis, Project Manager Assistant



Zunaira Allem, Project Manager Assistant

Bureau Veritas has procedures in place to guard against improper use of the electronic signature and have the required "signatories", as per ISO/IEC 17025, signing the reports. For Service Group specific validation, please refer to the Validation Signatures page if included, otherwise available by request. For Department specific Analyst/Supervisor validation names, please refer to the Test Summary section if included, otherwise available by request. This report is authorized by Rodney Major, General Manager responsible for Ontario Environmental laboratory operations.

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Microbiology testing is conducted at 6660 Campobello Rd. Chemistry testing is conducted at 6740 Campobello Rd.

Custody Tracking Form

T895782

Please use this form for custody tracking when submitting the work instructions via eCOC (electronic Chain of Custody). Please ensure your form has a barcode or a Bureau Veritas eCOC confirmation number in the top right hand side. This number links your electronic submission to your samples. This form should be placed in the cooler with your samples.

First Sample: OW80-27
Last Sample: OW39A-26
Sample Count: 8

Relinquished By				Received By			
Eric Wilson	E.W./sm	Date	2024/05/10	Soumya. Ragamoni		Date	2024/05/10
		Time (24 HR)	12:00			Time (24 HR)	13:36
		Date		MYRNO IBAN		Date	2024/05/10
		Time (24 HR)				Time (24 HR)	18:23
		Date				Date	
		Time (24 HR)				Time (24 HR)	

Unless otherwise agreed to, submissions and use of services are governed by Bureau Veritas' standard terms and conditions which can be found at www.bvna.com.

Triage Information

Sampled By (Print): Eric Wilson

# of Coolers/Pkgs: 3

Rush ☐ Immediate Test ☐ Food Residue ☐

Micro ☐ Food Chemistry ☐

*** LABORATORY USE ONLY ***

Received At

Labeled By

Verified By

Lab Comments: 1C7471.
10-May-24 13:36
Patricia Legette
C4E1883
VIY ENV-796

Custody Seal		Cooling Media	Temperature °C		
Present (Y/N)	Intact (Y/N)	Present (Y/N)	1	2	3
Y	Y	Y	3	5	7
Y	Y	Y	2	1	4/6/7
Y	Y	Y	5	5	8
Drinking Water Metals Preservation Check Done (Circle)				YES	NO
Y	Y	Y	0	0	2

REC'D IN LONDON

COR FCD-00383/4

Page 1 of 1

Your P.O. #: 13254256
Your Project #: 2402553.01
Site#: 200
Site Location: ON07
Your C.O.C. #: 895749

Attention: Khalid Hussein - Twin Creeks

RWDI Inc.
600 Southgate Drive
Guelph, ON
Canada N1G 4P6

Report Date: 2024/05/22
Report #: R8158611
Version: 1 - Final

CERTIFICATE OF ANALYSIS

BUREAU VERITAS JOB #: C4E1891
Received: 2024/05/10, 13:35

Sample Matrix: Water
Samples Received: 7

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Analytical Method
Alkalinity	1	N/A	2024/05/15	CAM SOP-00448	SM 24 2320 B m
Alkalinity	6	N/A	2024/05/17	CAM SOP-00448	SM 24 2320 B m
Chloride by Automated Colourimetry	5	N/A	2024/05/15	CAM SOP-00463	SM 24 4500-Cl E m
Chloride by Automated Colourimetry	2	N/A	2024/05/16	CAM SOP-00463	SM 24 4500-Cl E m
Conductance in Water - On-site	7	N/A	2024/05/17		
Conductivity	1	N/A	2024/05/15	CAM SOP-00414	SM 24 2510 m
Conductivity	6	N/A	2024/05/16	CAM SOP-00414	SM 24 2510 m
Dissolved Organic Carbon (DOC) (1)	7	N/A	2024/05/14	CAM SOP-00446	SM 24 5310 B m
Dissolved Metals by ICPMS	2	N/A	2024/05/14	CAM SOP-00447	EPA 6020B m
Dissolved Metals by ICPMS	4	N/A	2024/05/16	CAM SOP-00447	EPA 6020B m
Total Metals by ICPMS	1	N/A	2024/05/15	CAM SOP-00447	EPA 6020B m
Ammonia-N	7	N/A	2024/05/16	CAM SOP-00441	USGS I-2522-90 m
Nitrate & Nitrite as Nitrogen in Water (2)	7	N/A	2024/05/13	CAM SOP-00440	SM 24 4500-NO3I/NO2B
pH (3)	1	2024/05/11	2024/05/15	CAM SOP-00413	SM 24th - 4500H+ B
pH (3)	6	2024/05/11	2024/05/17	CAM SOP-00413	SM 24th - 4500H+ B
Field Measured pH (4)	7	N/A	2024/05/17		Field pH Meter
Sulphate by Automated Turbidimetry	5	N/A	2024/05/15	CAM SOP-00464	SM 24 4500-SO42- E m
Sulphate by Automated Turbidimetry	2	N/A	2024/05/16	CAM SOP-00464	SM 24 4500-SO42- E m
Total Dissolved Solids	7	2024/05/15	2024/05/16	CAM SOP-00428	SM 24 2540C m
Field Temperature (4)	6	N/A	2024/05/17		Field Thermometer
Field Temperature (4)	1	N/A	2024/05/22		Field Thermometer
Total Kjeldahl Nitrogen in Water	7	2024/05/15	2024/05/16	CAM SOP-00938	OMOE E3516 m
Turbidity - On-site	7	N/A	2024/05/17		
Volatile Organic Compounds in Water	7	N/A	2024/05/17	CAM SOP-00228	EPA 8260D

Remarks:

Bureau Veritas is accredited to ISO/IEC 17025 for specific parameters on scopes of accreditation. Unless otherwise noted, procedures used by Bureau Veritas are based upon recognized Provincial, Federal or US method compendia such as CCME, EPA, APHA or the Quebec Ministry of Environment.

All work recorded herein has been done in accordance with procedures and practices ordinarily exercised by professionals in Bureau Veritas' profession using accepted testing methodologies, quality assurance and quality control procedures (except where otherwise agreed by the client and Bureau Veritas in

Your P.O. #: 13254256
Your Project #: 2402553.01
Site#: 200
Site Location: ON07
Your C.O.C. #: 895749

Attention: Khalid Hussein - Twin Creeks

RWDI Inc.
600 Southgate Drive
Guelph, ON
Canada N1G 4P6

Report Date: 2024/05/22
Report #: R8158611
Version: 1 - Final

CERTIFICATE OF ANALYSIS

BUREAU VERITAS JOB #: C4E1891
Received: 2024/05/10, 13:35

writing). All data is in statistical control and has met quality control and method performance criteria unless otherwise noted. All method blanks are reported; unless indicated otherwise, associated sample data are not blank corrected. Where applicable, unless otherwise noted, Measurement Uncertainty has not been accounted for when stating conformity to the referenced standard.

Bureau Veritas liability is limited to the actual cost of the requested analyses, unless otherwise agreed in writing. There is no other warranty expressed or implied. Bureau Veritas has been retained to provide analysis of samples provided by the Client using the testing methodology referenced in this report. Interpretation and use of test results are the sole responsibility of the Client and are not within the scope of services provided by Bureau Veritas, unless otherwise agreed in writing. Bureau Veritas is not responsible for the accuracy or any data impacts, that result from the information provided by the customer or their agent.

Solid sample results, except biota, are based on dry weight unless otherwise indicated. Organic analyses are not recovery corrected except for isotope dilution methods.
Results relate to samples tested. When sampling is not conducted by Bureau Veritas, results relate to the supplied samples tested.
This Certificate shall not be reproduced except in full, without the written approval of the laboratory.
Reference Method suffix “m” indicates test methods incorporate validated modifications from specific reference methods to improve performance.
* RPDs calculated using raw data. The rounding of final results may result in the apparent difference.
(1) Dissolved Organic Carbon (DOC) present in the sample should be considered as non-purgeable DOC.
(2) Values for calculated parameters may not appear to add up due to rounding of raw data and significant figures.
(3) "The CCME method and Analytical Protocol (O. Reg 153/04, O. Reg. 406/19) requires pH to be analyzed within 15 minutes of sampling and therefore field analysis is required for compliance. All Laboratory pH analyses in this report are reported past the CCME and Analytical Protocol (O. Reg 153/04, O. Reg. 406/19) holding time. Bureau Veritas endeavors to analyze samples as soon as possible after receipt."

(4) This is a field test, therefore, the results relate to items that were not analysed at Bureau Veritas.

Encryption Key

Please direct all questions regarding this Certificate of Analysis to:
Patricia Legette, Project Manager
Email: Patricia.Legette@bureauveritas.com
Phone# (905)817-5799
==========
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Bureau Veritas Job #: C4E1891
Report Date: 2024/05/22

RWDI Inc.
Client Project #: 2402553.01
Site Location: ON07
Your P.O. #: 13254256
Sampler Initials: EW

RESULTS OF ANALYSES OF WATER

Bureau Veritas ID		ZDK162			ZDK163		ZDK164			ZDK165		
Sampling Date		2024/05/09 10:40			2024/05/09 13:10		2024/05/09 14:20			2024/05/09 15:20		
COC Number		895749			895749		895749			895749		
	UNITS	OW80-6	RDL	QC Batch	OW84-11	RDL	OW83-9	RDL	QC Batch	OW82-14	RDL	QC Batch
Field Measurements												
Field Conductivity	uS/cm	1820	N/A	ONSITE	3100	N/A	2811	N/A	ONSITE	2942	N/A	ONSITE
Field Temperature	Celsius	11.9	N/A	ONSITE	14.4	N/A	12.9	N/A	ONSITE	15.3	N/A	ONSITE
Field Measured Field Turbidity	NTU	39.1	N/A	ONSITE	27.3	N/A	53.3	N/A	ONSITE	41.0	N/A	ONSITE
Field Measured pH	pH	6.7		ONSITE	7.3		7.6		ONSITE	7.6		ONSITE
Inorganics												
Total Ammonia-N	mg/L	<0.15	0.15	9392233	3.31	0.15	<0.15	0.15	9392233	<0.15	0.15	9392233
Conductivity	umho/cm	1500	1.0	9388286	2900	1.0	1700	1.0	9388286	2700	1.0	9388286
Total Dissolved Solids	mg/L	1160	10	9394433	2410	10	1350	10	9394433	2310	10	9394579
Total Kjeldahl Nitrogen (TKN)	mg/L	<0.7	0.7	9395195	3.7	0.7	<0.7	0.7	9395195	<0.7	0.7	9395195
Dissolved Organic Carbon	mg/L	1.9	0.4	9383491	8.5	0.4	2.6	0.4	9383491	5.3	0.4	9383491
pH	pH	7.91		9388287	7.98		8.07		9388287	7.86		9388287
Dissolved Sulphate (SO4)	mg/L	75	1.0	9388248	1500	5.0	470	2.0	9388255	1500	5.0	9388255
Alkalinity (Total as CaCO3)	mg/L	400	1.0	9388282	360	1.0	520	1.0	9388282	100	1.0	9388282
Dissolved Chloride (Cl-)	mg/L	200	1.0	9388250	26	1.0	29	1.0	9388256	31	1.0	9388256
Nitrate (N)	mg/L	<0.10	0.10	9388258	0.11	0.10	0.18	0.10	9388258	1.00	0.10	9388258

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
N/A = Not Applicable

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Microbiology testing is conducted at 6660 Campobello Rd. Chemistry testing is conducted at 6740 Campobello Rd.

Bureau Veritas Job #: C4E1891
Report Date: 2024/05/22

RWDI Inc.
Client Project #: 2402553.01
Site Location: ON07
Your P.O. #: 13254256
Sampler Initials: EW

RESULTS OF ANALYSES OF WATER

Bureau Veritas ID		ZDK166			ZDK167		ZDK168		
Sampling Date		2024/05/09 08:50			2024/05/10 09:40		2024/05/10 10:00		
COC Number		895749			895749		895749		
	UNITS	OW79-7	RDL	QC Batch	OW81-7	RDL	Cemetery Well	RDL	QC Batch
Field Measurements									
Field Conductivity	uS/cm	3120	N/A	ONSITE	2.74	N/A	900	N/A	ONSITE
Field Temperature	Celsius	12.0	N/A	ONSITE	11.6	N/A	11.8	N/A	ONSITE
Field Measured Field Turbidity	NTU	31.9	N/A	ONSITE	5.11	N/A	3.69	N/A	ONSITE
Field Measured pH	pH	7.3		ONSITE	6.8		7.3		ONSITE
Inorganics									
Total Ammonia-N	mg/L	<0.15	0.15	9392233	<0.15	0.15	<0.15	0.15	9392233
Conductivity	umho/cm	1600	1.0	9388292	2400	1.0	500	1.0	9388286
Total Dissolved Solids	mg/L	1150	10	9394433	2100	10	315	10	9394433
Total Kjeldahl Nitrogen (TKN)	mg/L	<0.7	0.7	9395195	<0.7	0.7	<0.7	0.7	9395195
Dissolved Organic Carbon	mg/L	5.2	0.4	9383491	2.7	0.4	3.8	0.4	9383491
pH	pH	7.96		9388296	7.88		8.21		9388287
Dissolved Sulphate (SO4)	mg/L	120	1.0	9388248	890	5.0	3.9	1.0	9388255
Alkalinity (Total as CaCO3)	mg/L	510	1.0	9388290	330	1.0	260	1.0	9388282
Dissolved Chloride (Cl-)	mg/L	150	1.0	9388250	190	1.0	3.8	1.0	9388256
Nitrate (N)	mg/L	<0.10	0.10	9388302	0.18	0.10	0.23	0.10	9388258

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
N/A = Not Applicable

Bureau Veritas 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.bvna.com

Microbiology testing is conducted at 6660 Campobello Rd. Chemistry testing is conducted at 6740 Campobello Rd.

Bureau Veritas Job #: C4E1891
Report Date: 2024/05/22

RWDI Inc.
Client Project #: 2402553.01
Site Location: ON07
Your P.O. #: 13254256
Sampler Initials: EW

ELEMENTS BY ATOMIC SPECTROSCOPY (WATER)

Bureau Veritas ID		ZDK162			ZDK163			ZDK164		
Sampling Date		2024/05/09 10:40			2024/05/09 13:10			2024/05/09 14:20		
COC Number		895749			895749			895749		
	UNITS	OW80-6	RDL	QC Batch	OW84-11	RDL	QC Batch	OW83-9	RDL	QC Batch
Metals										
Dissolved Barium (Ba)	mg/L	0.059	0.005	9389480	0.017	0.005	9389616	0.012	0.005	9389480
Dissolved Boron (B)	mg/L	0.21	0.02	9389480	0.82	0.02	9389616	0.37	0.02	9389480
Dissolved Cadmium (Cd)	mg/L	<0.0001	0.0001	9389480	<0.0001	0.0001	9389616	<0.0001	0.0001	9389480
Dissolved Calcium (Ca)	mg/L	140	0.2	9389480	180	0.4	9389616	140	0.2	9389480
Dissolved Iron (Fe)	mg/L	<0.1	0.1	9389480	1.4	0.1	9389616	2.8	0.1	9389480
Dissolved Lead (Pb)	mg/L	<0.0005	0.0005	9389480	<0.0005	0.0005	9389616	<0.0005	0.0005	9389480
Dissolved Magnesium (Mg)	mg/L	81	0.05	9389480	220	0.05	9389616	160	0.05	9389480
Dissolved Potassium (K)	mg/L	3.8	0.2	9389480	10	0.2	9389616	4.8	0.2	9389480
Dissolved Sodium (Na)	mg/L	59	0.1	9389480	210	0.1	9389616	89	0.1	9389480

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

Bureau Veritas ID		ZDK165			ZDK166			ZDK167		
Sampling Date		2024/05/09 15:20			2024/05/09 08:50			2024/05/10 09:40		
COC Number		895749			895749			895749		
	UNITS	OW82-14	RDL	QC Batch	OW79-7	RDL	QC Batch	OW81-7	RDL	QC Batch
Metals										
Dissolved Barium (Ba)	mg/L	0.021	0.005	9389480	0.026	0.005	9389616	0.020	0.005	9389480
Dissolved Boron (B)	mg/L	1.1	0.02	9389480	0.19	0.02	9389616	0.58	0.02	9389480
Dissolved Cadmium (Cd)	mg/L	<0.0001	0.0001	9389480	<0.0001	0.0001	9389616	<0.0001	0.0001	9389480
Dissolved Calcium (Ca)	mg/L	250	0.4	9389480	140	0.2	9389616	230	0.4	9389480
Dissolved Iron (Fe)	mg/L	<0.1	0.1	9389480	<0.1	0.1	9389616	<0.1	0.1	9389480
Dissolved Lead (Pb)	mg/L	<0.0005	0.0005	9389480	<0.0005	0.0005	9389616	<0.0005	0.0005	9389480
Dissolved Magnesium (Mg)	mg/L	140	0.05	9389480	100	0.05	9389616	170	0.05	9389480
Dissolved Potassium (K)	mg/L	11	0.2	9389480	3.5	0.2	9389616	5.4	0.2	9389480
Dissolved Sodium (Na)	mg/L	260	0.1	9389480	61	0.1	9389616	130	0.1	9389480

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

Bureau Veritas 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.bvna.com

Microbiology testing is conducted at 6660 Campobello Rd. Chemistry testing is conducted at 6740 Campobello Rd.

Bureau Veritas Job #: C4E1891
Report Date: 2024/05/22

RWDI Inc.
Client Project #: 2402553.01
Site Location: ON07
Your P.O. #: 13254256
Sampler Initials: EW

ELEMENTS BY ATOMIC SPECTROSCOPY (WATER)

Bureau Veritas ID		ZDK168		
Sampling Date		2024/05/10 10:00		
COC Number		895749		
	UNITS	Cemetery Well	RDL	QC Batch
Metals				
Total Barium (Ba)	mg/L	0.024	0.005	9393921
Total Boron (B)	mg/L	0.03	0.02	9393921
Total Cadmium (Cd)	mg/L	<0.0001	0.0001	9393921
Total Calcium (Ca)	mg/L	70	0.2	9393921
Total Iron (Fe)	mg/L	<0.1	0.1	9393921
Total Lead (Pb)	mg/L	<0.0005	0.0005	9393921
Total Magnesium (Mg)	mg/L	20	0.05	9393921
Total Potassium (K)	mg/L	3.7	0.2	9393921
Total Sodium (Na)	mg/L	3.8	0.1	9393921

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

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Microbiology testing is conducted at 6660 Campobello Rd. Chemistry testing is conducted at 6740 Campobello Rd.

Bureau Veritas Job #: C4E1891
Report Date: 2024/05/22

RWDI Inc.
Client Project #: 2402553.01
Site Location: ON07
Your P.O. #: 13254256
Sampler Initials: EW

VOLATILE ORGANICS BY GC/MS (WATER)

Bureau Veritas ID		ZDK162	ZDK163	ZDK164	ZDK165	ZDK166	ZDK167		
Sampling Date		2024/05/09 10:40	2024/05/09 13:10	2024/05/09 14:20	2024/05/09 15:20	2024/05/09 08:50	2024/05/10 09:40		
COC Number		895749	895749	895749	895749	895749	895749		
	UNITS	OW80-6	OW84-11	OW83-9	OW82-14	OW79-7	OW81-7	RDL	QC Batch
Volatile Organics									
Benzene	ug/L	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	0.20	9389575
1,4-Dichlorobenzene	ug/L	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40	0.40	9389575
Ethylbenzene	ug/L	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	0.20	9389575
Methylene Chloride(Dichloromethane)	ug/L	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	2.0	9389575
Toluene	ug/L	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	0.20	9389575
Vinyl Chloride	ug/L	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	0.20	9389575
p+m-Xylene	ug/L	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	0.20	9389575
o-Xylene	ug/L	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	0.20	9389575
Total Xylenes	ug/L	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	0.20	9389575
Surrogate Recovery (%)									
4-Bromofluorobenzene	%	100	100	100	100	100	99		9389575
D4-1,2-Dichloroethane	%	104	105	104	106	109	105		9389575
D8-Toluene	%	99	99	98	98	98	99		9389575

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

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Bureau Veritas Job #: C4E1891
Report Date: 2024/05/22

RWDI Inc.
Client Project #: 2402553.01
Site Location: ON07
Your P.O. #: 13254256
Sampler Initials: EW

VOLATILE ORGANICS BY GC/MS (WATER)

Bureau Veritas ID		ZDK168		
Sampling Date		2024/05/10 10:00		
COC Number		895749		
	UNITS	Cemetery Well	RDL	QC Batch
Volatile Organics				
Benzene	ug/L	<0.20	0.20	9389575
1,4-Dichlorobenzene	ug/L	<0.40	0.40	9389575
Ethylbenzene	ug/L	<0.20	0.20	9389575
Methylene Chloride(Dichloromethane)	ug/L	<2.0	2.0	9389575
Toluene	ug/L	<0.20	0.20	9389575
Vinyl Chloride	ug/L	<0.20	0.20	9389575
p+m-Xylene	ug/L	<0.20	0.20	9389575
o-Xylene	ug/L	<0.20	0.20	9389575
Total Xylenes	ug/L	<0.20	0.20	9389575
Surrogate Recovery (%)				
4-Bromofluorobenzene	%	98		9389575
D4-1,2-Dichloroethane	%	105		9389575
D8-Toluene	%	99		9389575

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

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GENERAL COMMENTS

Results relate only to the items tested.

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QUALITY ASSURANCE REPORT

			Matrix Spike		SPIKED BLANK		Method Blank		RPD		QC Standard	
QC Batch	Parameter	Date	% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits	% Recovery	QC Limits
9389575	4-Bromofluorobenzene	2024/05/16	101	70 - 130	99	70 - 130	100	%				
9389575	D4-1,2-Dichloroethane	2024/05/16	101	70 - 130	96	70 - 130	101	%				
9389575	D8-Toluene	2024/05/16	100	70 - 130	101	70 - 130	99	%				
9383491	Dissolved Organic Carbon	2024/05/14	NC	80 - 120	97	80 - 120	<0.4	mg/L	0.78 (1)	20		
9388248	Dissolved Sulphate (SO4)	2024/05/16	97	75 - 125	98	80 - 120	<1.0	mg/L	0.96 (1)	20		
9388250	Dissolved Chloride (Cl-)	2024/05/16	NC	80 - 120	101	80 - 120	<1.0	mg/L	2.1 (1)	20		
9388255	Dissolved Sulphate (SO4)	2024/05/15	NC	75 - 125	101	80 - 120	<1.0	mg/L	0.32 (1)	20		
9388256	Dissolved Chloride (Cl-)	2024/05/15	NC	80 - 120	99	80 - 120	<1.0	mg/L	1.3 (1)	20		
9388258	Nitrate (N)	2024/05/13	91	80 - 120	98	80 - 120	<0.10	mg/L	NC (1)	20		
9388282	Alkalinity (Total as CaCO3)	2024/05/17			96	85 - 115	<1.0	mg/L	13 (1)	20		
9388286	Conductivity	2024/05/16			101	85 - 115	<1.0	umho/cm	4.2 (1)	10		
9388287	pH	2024/05/17			102	98 - 103			0.86 (1)	N/A		
9388290	Alkalinity (Total as CaCO3)	2024/05/15			96	85 - 115	<1.0	mg/L	2.2 (2)	20		
9388292	Conductivity	2024/05/15			101	85 - 115	<1.0	umho/cm	0.063 (2)	10		
9388296	pH	2024/05/15			102	98 - 103			0.31 (2)	N/A		
9388302	Nitrate (N)	2024/05/13	93	80 - 120	96	80 - 120	<0.10	mg/L	NC (1)	20		
9389480	Dissolved Barium (Ba)	2024/05/16	105	80 - 120	101	80 - 120	<0.005	mg/L	1.3 (1)	20		
9389480	Dissolved Boron (B)	2024/05/16	104	80 - 120	101	80 - 120	<0.02	mg/L	2.4 (1)	20		
9389480	Dissolved Cadmium (Cd)	2024/05/16	109	80 - 120	102	80 - 120	<0.0001	mg/L	NC (1)	20		
9389480	Dissolved Calcium (Ca)	2024/05/16	NC	80 - 120	108	80 - 120	<0.2	mg/L	2.4 (1)	20		
9389480	Dissolved Iron (Fe)	2024/05/16	111	80 - 120	107	80 - 120	<0.1	mg/L	NC (1)	20		
9389480	Dissolved Lead (Pb)	2024/05/16	105	80 - 120	100	80 - 120	<0.0005	mg/L	NC (1)	20		
9389480	Dissolved Magnesium (Mg)	2024/05/16	NC	80 - 120	108	80 - 120	<0.05	mg/L	0.30 (1)	20		
9389480	Dissolved Potassium (K)	2024/05/16	111	80 - 120	108	80 - 120	<0.2	mg/L	0.39 (1)	20		
9389480	Dissolved Sodium (Na)	2024/05/16	NC	80 - 120	109	80 - 120	<0.1	mg/L	1.5 (1)	20		
9389575	1,4-Dichlorobenzene	2024/05/16	119	70 - 130	121	70 - 130	<0.40	ug/L	NC (1)	30		
9389575	Benzene	2024/05/16	111	70 - 130	110	70 - 130	<0.20	ug/L	NC (1)	30		
9389575	Ethylbenzene	2024/05/16	111	70 - 130	113	70 - 130	<0.20	ug/L	NC (1)	30		

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QUALITY ASSURANCE REPORT(CONT'D)

			Matrix Spike		SPIKED BLANK		Method Blank		RPD		QC Standard	
QC Batch	Parameter	Date	% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits	% Recovery	QC Limits
9389575	Methylene Chloride(Dichloromethane)	2024/05/16	108	70 - 130	105	70 - 130	<2.0	ug/L	NC (1)	30		
9389575	o-Xylene	2024/05/16	108	70 - 130	111	70 - 130	<0.20	ug/L	NC (1)	30		
9389575	p+m-Xylene	2024/05/16	111	70 - 130	114	70 - 130	<0.20	ug/L	NC (1)	30		
9389575	Toluene	2024/05/16	110	70 - 130	111	70 - 130	<0.20	ug/L	NC (1)	30		
9389575	Total Xylenes	2024/05/16					<0.20	ug/L	NC (1)	30		
9389575	Vinyl Chloride	2024/05/16	106	70 - 130	114	70 - 130	<0.20	ug/L	NC (1)	30		
9389616	Dissolved Barium (Ba)	2024/05/14	100 (3)	80 - 120	98	80 - 120	<0.005	mg/L	1.5 (4)	20		
9389616	Dissolved Boron (B)	2024/05/14	NC (3)	80 - 120	92	80 - 120	<0.02	mg/L	2.3 (4)	20		
9389616	Dissolved Cadmium (Cd)	2024/05/14	104 (3)	80 - 120	98	80 - 120	<0.0001	mg/L	NC (4)	20		
9389616	Dissolved Calcium (Ca)	2024/05/14	NC (3)	80 - 120	101	80 - 120	<0.2	mg/L	0.75 (4)	20		
9389616	Dissolved Iron (Fe)	2024/05/14	104 (3)	80 - 120	98	80 - 120	<0.1	mg/L	1.9 (4)	20		
9389616	Dissolved Lead (Pb)	2024/05/14	102 (3)	80 - 120	100	80 - 120	<0.0005	mg/L	NC (4)	20		
9389616	Dissolved Magnesium (Mg)	2024/05/14	NC (3)	80 - 120	101	80 - 120	<0.05	mg/L	1.6 (4)	20		
9389616	Dissolved Potassium (K)	2024/05/14	104 (3)	80 - 120	99	80 - 120	<0.2	mg/L	1.5 (4)	20		
9389616	Dissolved Sodium (Na)	2024/05/14	NC (3)	80 - 120	98	80 - 120	<0.1	mg/L	0.35 (4)	20		
9392233	Total Ammonia-N	2024/05/16	97	75 - 125	102	80 - 120	<0.15	mg/L	NC (1)	20		
9393921	Total Barium (Ba)	2024/05/15	100 (5)	80 - 120	98	80 - 120	<0.005	mg/L	3.0 (6)	20		
9393921	Total Boron (B)	2024/05/15	100 (5)	80 - 120	98	80 - 120	<0.02	mg/L	0.18 (6)	20		
9393921	Total Cadmium (Cd)	2024/05/15	102 (5)	80 - 120	98	80 - 120	<0.0001	mg/L	9.5 (6)	20		
9393921	Total Calcium (Ca)	2024/05/15	NC (5)	80 - 120	101	80 - 120	<0.2	mg/L	2.3 (6)	20		
9393921	Total Iron (Fe)	2024/05/15	103 (5)	80 - 120	101	80 - 120	<0.1	mg/L	NC (6)	20		
9393921	Total Lead (Pb)	2024/05/15	101 (5)	80 - 120	101	80 - 120	<0.0005	mg/L	NC (6)	20		
9393921	Total Magnesium (Mg)	2024/05/15	100 (5)	80 - 120	101	80 - 120	<0.05	mg/L	1.1 (6)	20		
9393921	Total Potassium (K)	2024/05/15	102 (5)	80 - 120	99	80 - 120	<0.2	mg/L	1.5 (6)	20		
9393921	Total Sodium (Na)	2024/05/15	103 (5)	80 - 120	102	80 - 120	<0.1	mg/L	3.1 (6)	20		
9394433	Total Dissolved Solids	2024/05/16			100	80 - 120	<10	mg/L	0.26 (1)	20		
9394579	Total Dissolved Solids	2024/05/16			97	80 - 120	<10	mg/L	0 (1)	20		

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QUALITY ASSURANCE REPORT(CONT'D)

			Matrix Spike		SPIKED BLANK		Method Blank		RPD		QC Standard	
QC Batch	Parameter	Date	% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits	% Recovery	QC Limits
9395195	Total Kjeldahl Nitrogen (TKN)	2024/05/16	103 (7)	80 - 120	94	80 - 120	<0.7	mg/L	NC (8)	20	99	80 - 120

N/A = Not Applicable

Duplicate: Paired analysis of a separate portion of the same sample. Used to evaluate the variance in the measurement.

Matrix Spike: A sample to which a known amount of the analyte of interest has been added. Used to evaluate sample matrix interference.

QC Standard: A sample of known concentration prepared by an external agency under stringent conditions. Used as an independent check of method accuracy.

Spiked Blank: A blank matrix sample to which a known amount of the analyte, usually from a second source, has been added. Used to evaluate method accuracy.

Method Blank: A blank matrix containing all reagents used in the analytical procedure. Used to identify laboratory contamination.

Surrogate: A pure or isotopically labeled compound whose behavior mirrors the analytes of interest. Used to evaluate extraction efficiency.

NC (Matrix Spike): The recovery in the matrix spike was not calculated. The relative difference between the concentration in the parent sample and the spike amount was too small to permit a reliable recovery calculation (matrix spike concentration was less than the native sample concentration)

NC (Duplicate RPD): The duplicate RPD was not calculated. The concentration in the sample and/or duplicate was too low to permit a reliable RPD calculation (absolute difference <= 2x RDL).

(1) Duplicate Parent ID

(2) Duplicate Parent ID [ZDK166-01]

(3) Matrix Spike Parent ID [ZDK163-03]

(4) Duplicate Parent ID [ZDK163-03]

(5) Matrix Spike Parent ID [ZDK168-03]

(6) Duplicate Parent ID [ZDK168-03]

(7) Matrix Spike Parent ID [ZDK162-04]

(8) Duplicate Parent ID [ZDK162-04]

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Bureau Veritas Job #: C4E1891
Report Date: 2024/05/22

RWDI Inc.
Client Project #: 2402553.01
Site Location: ON07
Your P.O. #: 13254256
Sampler Initials: EW

VALIDATION SIGNATURE PAGE

The analytical data and all QC contained in this report were reviewed and validated by:

Cristina Carriere, Senior Scientific Specialist

Michael Damianidis, Project Manager Assistant

Patricia Legette, Project Manager

Bureau Veritas has procedures in place to guard against improper use of the electronic signature and have the required "signatories", as per ISO/IEC 17025, signing the reports. For Service Group specific validation, please refer to the Validation Signatures page if included, otherwise available by request. For Department specific Analyst/Supervisor validation names, please refer to the Test Summary section if included, otherwise available by request. This report is authorized by Rodney Major, General Manager responsible for Ontario Environmental laboratory operations.

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Custody Tracking Form

T895749

Please use this form for custody tracking when submitting the work instructions via eCOC (electronic Chain of Custody). Please ensure your form has a barcode or a Bureau Veritas eCOC confirmation number in the top right hand side. This number links your electronic submission to your samples. This form should be placed in the cooler with your samples.

First Sample: OW80-6
Last Sample: Cemetery Well
Sample Count: 7

Relinquished By				Received By			
Eric Wilson	E. Wilson	Date	2024/05/10	Sowmya. Pagamani		Date	2024/05/10
		Time (24 HR)	12:00			Time (24 HR)	13:35
		Date		APOLLO IDLE		Date	2024/05/10
		Time (24 HR)				Time (24 HR)	18:23
		Date				Date	
		Time (24 HR)				Time (24 HR)	

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Triage Information

Sampled By (Print): Eric Wilson

# of Coolers/Pkgs: 3

Rush ☐ Immediate Test ☐ Food Residue ☐

Micro ☐ Food Chemistry ☐

***** LABORATORY USE ONLY *****

Received At

Labeled By

Verified By

Lab Comment: 10-May-24 13:35 Patricia Legette C4E1891 VIY ENV-593 1

Custody Seal		Cooling Media	Temperature °C		
Present (Y/N)	Intact (Y/N)	Present (Y/N)	1	2	3
Y	Y	Y	3	1	5
Y	Y	Y	4	6	7
Y	Y	Y	5	5	8
Drinking Water Metals Preservation Check Done (Circle)				YES	NO

Y Y Y 0 0 2

REC'D IN LONDON

COR FCD-00383/4

Page 1 of 1

APPENDIX I:

Surface Water Chemical Results

APPENDIX I:

Table I-1 - Surface Water Field Chem

Table I-1
Precipitation Event Surface Water Quality - Field Chemical Results
Twin Creeks Environmental Centre

Station Number	Location	pH	Conductivity	Temperature	Turbidity	Dissolved Oxygen	Estimated Flow Rate
		(pH units)	(µS/cm)	(°C)	(NTU)	(mg/L)	(L/s)
First Quarter							
January 10, 2024 (Routine monitoring for January 9, 2024 precipitation event)							
SS1	Downstream of landfill 60m east of Lambton Road 79	7.8	585	1.8	>1000	11.8	28
SS10	Off-Site Flow into East Ditch Line - Background surface water quality	7.6	370	2.9	230	13.0	1
SS16	On-Site Flow from Township land to the south – Background surface water quality	7.4	667	2.0	>1000	11.7	18
SP1	Southeast Sedimentation Pond	7.0	626	3.0	628	10.9	96
SP2	Southwest Sedimentation Pond	7.2	733	4.6	47.5	14.6	2
SP3	Northwest Sedimentation Pond	Ins					
SP4	Northeast Sedimentation Pond	6.9	569	5.3	92.4	10.3	24
SS14A	On-Site Flow into East Ditch Line, Upstream of Poplar System	7.6	1070	2.5	55.0	12.2	2
SS14B	On-Site Flow into West Ditch Line, Background of Poplar System	7.8	1280	2.6	189	13.1	3
SS15A	On-Site Flow into Sedimentation Pond 1, intersecting point of East and West Ditch Line South of the Poplar System	7.5	1080	5.9	13.6	12.4	17
January 25, 2024 (Verification monitoring for January 10, 2024 routine monitoring event)							
SP2	Southwest Sedimentation Pond	7.3	586	4.6	19.5	11.6	34
January 26, 2024 (Routine monitoring for January 25, 2024 precipitation event)							
SP3	Northwest Sedimentation Pond	7.2	425	2.7	125	12.7	88
January 26, 2024 (Verification monitoring for January 10, 2024 routine monitoring event)							
SS1	Downstream of landfill 60m east of Lambton Road 79	7.4	390	3.7	>1000	13.3	46
Second Quarter							
April 12, 2024 (Routine monitoring for April 11, 2024 precipitation event)							
SS1	Downstream of landfill 60m east of Lambton Road 79	8.0	575	11.4	260	10.2	135
SS10	Off-Site Flow into East Ditch Line - Background surface water quality	8.1	300	11.5	246	10.2	7
SS16	On-Site Flow from Township land to the south – Background surface water quality	7.3	339	9.7	160	9.58	14
SP1	Southeast Sedimentation Pond	7.8	617	11.6	91.0	9.61	143
SP2	Southwest Sedimentation Pond	7.8	558	11.8	22.3	9.57	162
SP3	Northwest Sedimentation Pond	7.9	586	11.8	25.3	9.73	110
SP4	Northeast Sedimentation Pond	7.6	603	11.4	103	9.08	74
SS14A	On-Site Flow into East Ditch Line, Upstream of Poplar System	7.9	810	10.7	104	9.61	88
SS14B	On-Site Flow into West Ditch Line, Background of Poplar System	8.0	850	10.6	738	9.80	6
SS15A	On-Site Flow into Sedimentation Pond 1, intersecting point of East and West Ditch Line South of the Poplar System	7.8	770	10.2	234	9.41	23
April 24, 2024 (Verification monitoring for April 12, 2024 routine monitoring event)							
SP2	Southwest Sedimentation Pond	8.1	581	7.6	110	11.0	69
April 30, 2024 (Verification monitoring for April 12, 2024 routine monitoring event)							
SS1	Downstream of landfill 60m east of Lambton Road 79	7.8	676	21.0	749	10.5	7
Third Quarter							
July 10, 2024 (Routine monitoring for July 9, 2024 precipitation event)							
SS1	Downstream of landfill 60m east of Lambton Road 79	7.9	597	20.7	>999	8.73	10
SS10	Off-Site Flow into East Ditch Line - Background surface water quality	Ins					
SS16	On-Site Flow from Township land to the south – Background surface water quality	7.6	548	20.3	70.6	9.08	0.2
SP1	Southeast Sedimentation Pond	8.2	903	22.8	78.4	8.79	36
SP2	Southwest Sedimentation Pond	9.8	647	22.6	11.2	8.42	8
SP3	Northwest Sedimentation Pond	9.9	587	22.4	16.2	8.27	71
SP4	Northeast Sedimentation Pond	8.4	599	22.8	229	7.90	31
SS14A	On-Site Flow into East Ditch Line, Upstream of Poplar System	8.0	853	21.0	501	7.20	3
SS14B	On-Site Flow into West Ditch Line, Background of Poplar System	8.3	760	20.1	>999	8.83	2
SS15A	On-Site Flow into Sedimentation Pond 1, intersecting point of East and West Ditch Line South of the Poplar System	7.7	940	20.3	167	7.09	5
July 24, 2024 (Verification monitoring for July 10, 2024 routine monitoring event)							
SP2	Southwest Sedimentation Pond	7.6	558	23.4	13.3	5.72	20
July 30, 2024 (Verification monitoring for July 10, 2024 routine monitoring event)							
SS1	Downstream of landfill 60m east of Lambton Road 79	8.2	249	22.6	>999	7.30	51
Fourth Quarter							
October 14, 2024 (Routine monitoring for October 13, 2024 precipitation event)							
SS1	Downstream of landfill 60m east of Lambton Road 79	7.3	616	11.1	>999	10.7	18
SS10	Off-Site Flow into East Ditch Line - Background surface water quality	8.5	309	11.0	453	11.0	0.6
SS16	On-Site Flow from Township land to the south – Background surface water quality	7.9	345	10.1	83.7	10.4	0.2
SP1	Southeast Sedimentation Pond	8.9	674	11.0	99.0	11.0	7
SP2	Southwest Sedimentation Pond	9.2	631	11.3	353	10.3	173
SP3	Northwest Sedimentation Pond	8.5	600	11.8	10.8	10.4	31
SP4	Northeast Sedimentation Pond	8.5	468	11.9	155	10.5	27
SS14A	On-Site Flow into East Ditch Line, Upstream of Poplar System	8.4	722	10.9	266	10.6	3
SS14B	On-Site Flow into West Ditch Line, Background of Poplar System	8.6	1015	12.1	44.6	10.6	0.7
SS15A	On-Site Flow into Sedimentation Pond 1, intersecting point of East and West Ditch Line South of the Poplar System	8.3	650	10.0	12.0	10.3	24
October 28, 2024 (Verification monitoring for October 14, 2024 routine monitoring event)							
SP2	Southwest Sedimentation Pond	9.0	593	10.7	20.4	11.2	53
November 11, 2024 (Verification monitoring for October 14, 2024 routine monitoring event)							
SS1	Downstream of landfill 60m east of Lambton Road 79	8.1	1201	12.1	369	10.3	19

Notes:

1) Ins denotes insufficient volume to sample.
2) µS/cm denotes microsiemens per centimetre.
3) °C denotes degrees Celsius.
4) NTU denotes nephelometric turbidity unit.
5) mg/L denotes milligrams per litre.
6) L/s denotes litres per second.
7) Estimated Flow Rate = Average flow rate (m/s) x channel width (m) x channel depth (m) x 1000 L/m3
8) NR denotes not recorded

APPENDIX I:

Table I-2 - Precipitation Event Surface Water Quality - General Analytical Results - Compliance Monitoring

Table I-2
Precipitation Event Surface Water Quality - General Analytical Results - Compliance Monitoring
Twin Creeks Environmental Centre

Parameter	Units	PWQO	Downstream of Landfill 60 m East of Lambton Rd. 79 - SS1									
Date			09-Apr-02	04-Apr-03	13-Jun-03	15-Oct-03	AZ	30-Dec-03	03-May-04	31-Jul-04	01-Dec-04	02-Apr-05
Laboratory			Accutest	Accutest	Accutest	Accutest	Accutest	Accutest	Accutest	Accutest	Accutest	Accutest
Alkalinity (as $CaCO_3$)	mg/L	<25%***	99	71	138	134	112	109	170	222	184	125
Dissolved Chloride (Cl)	mg/L		14	14	35	168	15	10	7	24	17	12
Dissolved Sulphate (SO_4)	mg/L		102	74	53	23	109	94	107	151	122	43
Nitrate (N)	mg/L		2.66	6.82	0.61	0.28	2.94	1.75	<0.10	23.60	2.02	<0.10
Phenols-4AAP	mg/L	0.001	<0.001	0.001	0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
Total Ammonia-N	mg/L		<0.02	0.09	0.07	0.07	0.03	0.03	0.09	0.07	0.03	0.06
Total Boron (B)	mg/L	0.200	0.19	0.08	0.12	0.03	0.16	0.18	0.19	**0.28**	0.12	0.11
Total Calcium (Ca)	mg/L		53	52	59	44	63	58	71	116	99	51
Total Chromium (Cr)	mg/L	0.0089	<0.01	<0.005	<0.005	0.006	0.002	0.004	<0.005	<0.001	0.002	0.001
Total Iron (Fe)	mg/L	0.300	**0.41**	**0.53**	**0.89**	**0.89**	**1.01**	**0.51**	**0.53**	**0.42**	0.24	**0.39**
Total Magnesium (Mg)	mg/L		15	13	15	8	17	16	19	30	23	13
Total Nickel (Ni)	mg/L	0.025	<0.01	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Total Potassium (K)	mg/L		2	5	9	9	4	6	3	7	6	3
Total Sodium (Na)	mg/L		17	8	22	128	10	10	11	18	12	10
Total Un-ionized Ammonia	mg/L	0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
Total Zinc (Zn)	mg/L	0.020	<0.01	<0.005	<0.005	**0.06**	<0.01	<0.01	<0.01	0.02	<0.01	<0.01
Ion Percentage	%		3.1	7.3	5.5	4.0	3.0	4.5	2.3	5.5	5.7	6.0

NOTE: 1) PWQO denotes Provincial Water Quality Objectives (1994) with updates.
2) * denotes interim PWQO.
3) *** denotes change from background concentrations.
4) Unionized ammonia values are calculated based on field determined pH and temperature values.
5) mg/L denotes milligrams per litre.
6) umho/cm denotes microsiemens per centimeter.
7) BOD denotes biological oxygen demand.
8) COD denotes chemical oxygen demand.
9) Blank denotes parameter not analyzed.
10) **Bolded** text and shading denotes concentration exceeds PWQO.
11) *Italics* denotes parameter concentration was below the laboratory reportable detection limit (RDL), where the RDL exceeds the relevant PWQO.

Table I-2
Precipitation Event Surface Water Quality - General Analytical Results - Compliance Monitoring
Twin Creeks Environmental Centre

Parameter	Units	PWQO	Downstream of Landfill 60 m East of Lambton Rd. 79 - SS1									
Date			09-Nov-05	18-Jan-06	09-Mar-06	05-Oct-06	17-Nov-06	02-Mar-07	09-Jan-08	19-Mar-08	11-Apr-08	12-May-08
Laboratory			Accutest	Accutest	Accutest	Accutest	Accutest	Accutest	Maxxam	Maxxam	Maxxam	Maxxam
Alkalinity (Total as $CaCO_3$)	mg/L	<25%***	182	105	56	177	150	162		90	180	256
Conductivity	umho/cm									298		661
Dissolved Chloride (Cl)	mg/L		24	18	15	35	25	18	26	13	22	18
Dissolved Mercury (Hg)	mg/L	0.0002								<0.0002	<0.0002	<0.0002
Dissolved Sulphate (SO_4)	mg/L		156	102	40	122	78	64	98	41	84	75
Nitrate (N)	mg/L		1.94	3.09	2.79	<0.10	1.31	1.76	6.70	1.50	<0.1	0.40
Nitrite (N)	mg/L									0.02	<0.01	<0.01
pH	(pH units)	6.5-8.5								8.1		8.2
Phenols-4AAP	mg/L	0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
Total Ammonia-N	mg/L		0.13	0.04	0.28	0.03	0.05	0.69		0.09	<0.05	<0.15
Total Arsenic (As)	mg/L	0.100*								0.002	0.001	<0.001
Total Barium (Ba)	mg/L									0.052	0.037	0.042
Total BOD	mg/L									<2	<2	3
Total Boron (B)	mg/L	0.200	**0.24**	0.18	0.05	**0.21**	**0.26**	0.11	0.19	0.10	**0.23**	**0.23**
Total Cadmium (Cd)	mg/L	0.0002								<0.0001	<0.0001	<0.0001
Total Calcium (Ca)	mg/L		120	54	30	93	69	68	65	38	82	90
Total Chemical Oxygen Demand (COD)	mg/L									26		41
Total Chromium (Cr)	mg/L	0.0089	<0.001	0.002	0.002	0.002	0.001	0.001	**0.009**	**0.010**	<0.005	<0.005
Total Copper (Cu)	mg/L	0.005								**0.006**	0.002	0.003
Total Dissolved Solids	mg/L									204	355	440
Total Iron (Fe)	mg/L	0.300	0.22	**0.36**	**0.78**	0.23	**0.38**	**0.38**	**3.60**	**5.00**	**1.00**	**1.00**
Total Kjeldahl Nitrogen (TKN)	mg/L									1.1	0.8	2.0
Total Lead (Pb)	mg/L	0.005								0.004	0.0007	0.0007
Total Magnesium (Mg)	mg/L		25	15	8	22	19	18	17	10	21	25
Total Nickel (Ni)	mg/L	0.025	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	0.007	0.008	0.002	0.003
Total Phosphorus	mg/L	0.02*								**0.13**	**0.08**	
Total Potassium (K)	mg/L		3.0	3.0	5.0	7.0	5.0	5.0	4.3	3.3	4.1	8.6
Total Sodium (Na)	mg/L		17.0	12.0	9.0	19.0	17.0	15.0	16.0	7.7	17.0	17.0
Total Suspended Solids	mg/L									67.0	14.0	34.0
Total Un-ionized Ammonia	mg/L	0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
Total Zinc (Zn)	mg/L	0.020	<0.01	<0.01	0.01	<0.01	<0.01	<0.01	0.02	**0.03**	<0.01	<0.01
Ion Percentage	%		6.4	1.1	5.4	3.9	5.3	6.0		4.1	5.9	4.9

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7) BOD denotes biological oxygen demand.
8) COD denotes chemical oxygen demand.
9) Blank denotes parameter not analyzed.
10) **Bolded** text and shading denotes concentration exceeds PWQO.
11) *Italics* denotes parameter concentration was below the laboratory reportable detection limit (RDL), where the RDL exceeds the relevant PWQO.

Table I-2
Precipitation Event Surface Water Quality - General Analytical Results - Compliance Monitoring
Twin Creeks Environmental Centre

Parameter	Units	PWQO	Downstream of Landfill 60 m East of Lambton Rd. 79 - SS1									
Date			14-Jun-08	17-Jun-08	28-Jun-08	23-Jul-08	04-Nov-08	05-Dec-08	12-Feb-09	08-Mar-09	06-Apr-09	26-Apr-09
Laboratory			Maxxam	Maxxam	Maxxam	Maxxam	Maxxam	Maxxam	Maxxam	Maxxam	Maxxam	Maxxam
Alkalinity (Total as $CaCO_3$)	mg/L	<25%***	254		242	196	68	170	88	83	75	168
Dissolved Chloride (Cl)	mg/L		22	30	24	15	4	5	7	6	5	6
Dissolved Sulphate (SO_4)	mg/L		95		72	30	50	44	27	27	45	27
Total Ammonia-N	mg/L		<0.15		<0.15	<0.15	0.55	<0.15	0.16	<0.15	<0.15	<0.15
Total Un-ionized Ammonia	mg/L	0.02	<0.02		<0.02	<0.02	**0.03**	<0.02	<0.02	<0.02	<0.02	<0.02
Nitrate (N)	mg/L		<0.1		<0.1	<0.1	1.7	0.3	0.7	0.8	0.7	0.3
Phenols-4AAP	mg/L	0.001	**0.003**	**0.006**	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
Total Boron (B)	mg/L	0.200	**0.36**		**0.28**	**0.2**	**0.4**	0.07	0.07	0.06	0.06	0.06
Total Calcium (Ca)	mg/L		100		82	59	970	61	45	34	120	76
Total Chromium (Cr)	mg/L	0.0089	<0.005		<0.005	<0.005	**0.67**	0.008	**0.023**	**0.012**	**0.071**	**0.028**
Total Iron (Fe)	mg/L	0.300	**0.4**		**0.9**	**0.9**	**690.0**	**4.0**	**23.0**	**13.0**	**70.0**	**27.0**
Total Magnesium (Mg)	mg/L		24		22	19	280	16	14	9.2	35	21
Total Potassium (K)	mg/L		4.3		3.4	3.8	84.0	4.2	5.7	4.3	9.7	6.4
Total Sodium (Na)	mg/L		19.0		17.0	13.0	10.0	5.5	5.4	4.4	2.8	5.2
Total Nickel (Ni)	mg/L	0.025	0.003		0.003	0.002	**0.90**	0.005	**0.030**	0.017	**0.091**	**0.037**
Total Zinc (Zn)	mg/L	0.020	<0.01		<0.01	<0.01	**1.60**	0.01	**0.06**	**0.03**	**0.15**	**0.60**
pH	(pH units)	6.5-8.5	8.1	8.0	8.2	8.2	8.0	8.0	7.7	7.1	7.5	8.0
Conductivity	umho/cm		700		629	469	268	424	229	225	254	367
Total BOD	mg/L		3		<2	2	<2	<2	<2	<2	<2	<2
Total Chemical Oxygen Demand (COD)	mg/L		45		41	37	300	16	16	16	40	35
Total Dissolved Solids	mg/L		444		415	310	180	280	142	150	165	230
Total Kjeldahl Nitrogen (TKN)	mg/L		<1		1.3	1.3	14.0	0.5	1.8	1.3	3.0	1.8
Total Phosphorus	mg/L	0.02*	**0.14**		**0.10**	**0.22**	**9.30**	<0.15	**0.31**	**0.22**	**0.79**	**0.48**
Total Suspended Solids	mg/L		4		19	19	13000	45	330	300	1400	630
Nitrite (N)	mg/L		<0.01		<0.01	<0.01	0.02	<0.01	0.01	0.02	0.01	0.02
Dissolved Mercury (Hg)	mg/L	0.0002	<0.0002		<0.0002	<0.0002	<0.0002	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001
Total Arsenic (As)	mg/L	0.100*	0.003		0.003	0.002	**0.190**	0.001	0.007	0.004	0.018	0.009
Total Barium (Ba)	mg/L		0.037		0.030	0.026	2.400	0.051	0.095	0.057	0.240	0.110
Total Cadmium (Cd)	mg/L	0.0002	<0.0001		<0.0001	<0.0001	**0.003**	<0.0001	0.0001	<0.0001	**0.0003**	**0.0001**
Total Copper (Cu)	mg/L	0.005	0.002		0.002	<0.002	**0.550**	0.003	**0.020**	**0.010**	**0.047**	**0.022**
Total Lead (Pb)	mg/L	0.005	<0.0005		0.001	<0.0005	**0.260**	0.002	**0.010**	0.004	**0.024**	**0.010**
Ion Percentage	%		4.2		2.6	5.2	47.1	5.4	13.5	7.2	30.2	13.3

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5) mg/L denotes milligrams per litre.
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7) BOD denotes biological oxygen demand.
8) COD denotes chemical oxygen demand.
9) Blank denotes parameter not analyzed.
10) **Bolded** text and shading denotes concentration exceeds PWQO.
11) *Italics* denotes parameter concentration was below the laboratory reportable detection limit (RDL), where the RDL exceeds the relevant PWQO.

Table I-2
Precipitation Event Surface Water Quality - General Analytical Results - Compliance Monitoring
Twin Creeks Environmental Centre

Parameter	Units	PWQO	Downstream of Landfill 60 m East of Lambton Rd. 79 - SS1									
Date			09-May-09	09-Aug-09	10-Oct-09	25-Jan-10	06-Apr-10	16-Jul-10	14-Oct-10	06-Nov-10	28-Feb-11	20-Apr-11
Laboratory			Maxxam	Maxxam	Maxxam	Maxxam	Maxxam	Maxxam	Maxxam	Maxxam	Maxxam	Maxxam
Alkalinity (Total as $CaCO_3$)	mg/L	<25%***	97	86	139	94	104	141	109	104	114	132
Conductivity	umho/cm		274	447	578	479	917	700	484	455	490	526
Dissolved Chloride (Cl)	mg/L		4	7	11	31	180	35	32	17	45	29
Dissolved Mercury (Hg)	mg/L	0.0002	0.0002	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001
Dissolved Sulphate (SO_4)	mg/L		44	120	120	88	78	160	79	92	50	90
Nitrate (N)	mg/L		0.9	3.0	4.9	1.7	2.0	0.3	<0.1	<0.1	0.8	<0.1
Nitrite (N)	mg/L		0.03	0.10	0.01	0.03	0.02	0.04	<0.01	0.02	0.01	0.01
pH	(pH units)	6.5-8.5	6.8	7.8	7.8	7.9	7.9	7.9	7.9	8.0	7.9	8.1
Phenols-4AAP	mg/L	0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
Total Ammonia-N	mg/L		0.36	<0.15	<0.15	0.17	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15
Total Arsenic (As)	mg/L	0.100*	0.002	0.002	<0.001	0.001	0.001	0.001	0.003	0.001	<0.001	0.001
Total Barium (Ba)	mg/L		0.630	0.045	0.033	0.045	0.050	0.044	0.083	0.028	0.044	0.033
Total BOD	mg/L		<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
Total Boron (B)	mg/L	0.200	0.09	0.07	0.07	0.13	0.07	0.19	0.07	0.09	0.06	0.19
Total Cadmium (Cd)	mg/L	0.0002	**0.0011**	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001
Total Calcium (Ca)	mg/L		380	58	74	54	98	100	65	62	56	67
Total Chemical Oxygen Demand (COD)	mg/L		130	20	16	14	30	31	19	21	19	23
Total Chromium (Cr)	mg/L	0.0089	**0.061**	<0.005	<0.005	0.006	<0.005	<0.005	**0.013**	<0.005	<0.005	<0.005
Total Copper (Cu)	mg/L	0.005	**0.086**	0.005	0.004	0.004	0.003	**0.006**	**0.006**	0.003	0.002	0.003
Total Dissolved Solids	mg/L		180	290	370	315	600	450	300	282	284	306
Total Iron (Fe)	mg/L	0.300	**140.0**	**4.1**	**1.7**	**3.8**	**2.0**	**0.7**	**7.3**	**2.2**	**1.4**	**1.8**
Total Kjeldahl Nitrogen (TKN)	mg/L		8.0	1.0	1.0	1.1	1.1	0.9	0.8	0.9	0.9	1.1
Total Lead (Pb)	mg/L	0.005	**0.067**	0.001	0.001	0.002	0.001	<0.0005	0.003	0.001	0.001	0.001
Total Magnesium (Mg)	mg/L		83	15	18	18	25	22	15	19	14	20
Total Nickel (Ni)	mg/L	0.025	**0.130**	0.007	0.002	0.006	0.002	0.002	0.009	0.004	0.003	0.004
Total Phosphorus	mg/L	0.02*	**3.2**	**0.09**	**0.09**	**0.10**	**0.07**	**0.08**	**0.20**	**0.08**	**0.05**	**0.07**
Total Potassium (K)	mg/L		13.0	3.4	2.4	5.4	4.7	3.6	9.3	3.1	3.6	3.6
Total Sodium (Na)	mg/L		4.9	6.6	6.5	18.0	51.0	19.0	16.0	14.0	23.0	20.0
Total Suspended Solids	mg/L		8400	90	32	65	37	16	38	36	15	35
Total Un-ionized Ammonia	mg/L	0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
Total Zinc (Zn)	mg/L	0.020	**0.26**	<0.01	<0.01	0.01	0.01	<0.01	0.02	0.02	<0.01	0.01
Ion Percentage	%		40.9	0.4	0.4	2.7	1.5	2.0	3.6	4.6	2.4	2.8

NOTE: 1) PWQO denotes Provincial Water Quality Objectives (1994) with updates.
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5) mg/L denotes milligrams per litre.
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7) BOD denotes biological oxygen demand.
8) COD denotes chemical oxygen demand.
9) Blank denotes parameter not analyzed.
10) **Bolded** text and shading denotes concentration exceeds PWQO.
11) *Italics* denotes parameter concentration was below the laboratory reportable detection limit (RDL), where the RDL exceeds the relevant PWQO.

Table I-2
Precipitation Event Surface Water Quality - General Analytical Results - Compliance Monitoring
Twin Creeks Environmental Centre

Parameter	Units	PWQO	Downstream of Landfill 60 m East of Lambton Rd. 79 - SS1									
Date			9-Aug-11	20-Oct-11	23-Nov-11	6-Dec-11	13-Mar-12	22-Jun-12	30-Oct-12	21-Dec-12	13-Jan-13	30-Jan-13
Laboratory			Maxxam	Maxxam	Maxxam	Maxxam	Maxxam	Maxxam	Maxxam	Maxxam	Maxxam	Maxxam
Alkalinity (Total as $CaCO_3$)	mg/L	<25%***	144	149	116	121	120	150	110	140	93	95
Conductivity	umho/cm		545	408	423	406	490	590	470	660	380	330
Dissolved Chloride (Cl)	mg/L		33	17	17	12	20	29	18	25	13	14
Dissolved Mercury (Hg)	mg/L	0.0002	<0.0001	<0.0001	<0.0001	<0.0001	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
Dissolved Sulphate (SO_4)	mg/L		81	37	68	61	99	100	87	160	75	55
Nitrate (N)	mg/L		<0.1	<0.1	0.7	0.3	0.5	<0.10	0.48	0.36	0.64	0.51
Nitrite (N)	mg/L		<0.01	<0.01	0.01	<0.01	<0.010	<0.010	<0.010	<0.010	<0.010	0.075
pH	(pH units)	6.5-8.5	8.0	8.0	8.0	7.9	8.0	8.0	7.4	7.8	7.7	7.5
Phenols-4AAP	mg/L	0.001	0.001	**0.002**	<0.001	**0.004**	**0.0013**	<0.0010	<0.0010	<0.0010	<0.0010	**0.004**
Total Ammonia-N	mg/L		<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	0.29	<0.15	<0.15	0.29
Total Arsenic (As)	mg/L	0.100*	0.002	0.002	0.003	0.004	0.002	0.002	0.026	0.002	0.003	0.003
Total Barium (Ba)	mg/L		0.038	0.032	0.057	0.110	0.053	0.041	0.320	0.047	0.059	0.048
Total BOD	mg/L		<2	2	3	5	<2.0	<2.0	2.0	<2.0	<2.0	4
Total Boron (B)	mg/L	0.200	0.090	0.040	0.160	**0.220**	0.190	0.170	0.170	0.180	0.140	0.120
Total Cadmium (Cd)	mg/L	0.0002	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	**0.0004**	<0.0001	<0.0001	<0.0001
Total Calcium (Ca)	mg/L		72	53	60	55	63	75	310	90	56	57
Total Chemical Oxygen Demand (COD)	mg/L		22	28	32	25	27	39	90	22	28	22
Total Chromium (Cr)	mg/L	0.0089	<0.005	<0.005	0.010	**0.025**	0.007	<0.005	**0.13**	0.005	**0.012**	**0.010**
Total Copper (Cu)	mg/L	0.005	0.005	0.005	**0.009**	**0.008**	**0.007**	**0.006**	**0.091**	0.005	**0.009**	**0.011**
Total Dissolved Solids	mg/L		382	298	258	286	378	398	296	348	332	256
Total Iron (Fe)	mg/L	0.300	**1.9**	**2.6**	**9.6**	**12**	**7.0**	**1.3**	**120.0**	**4.3**	**11.0**	**9.5**
Total Kjeldahl Nitrogen (TKN)	mg/L		0.9	1.0	2.0	2.0	1.3	0.9	2.3	1.2	1.9	1.6
Total Lead (Pb)	mg/L	0.005	0.001	0.001	0.004	0.004	0.003	0.001	**0.047**	0.002	0.005	0.004
Total Magnesium (Mg)	mg/L		15	12	16	18	19	18	77	29	17	16
Total Nickel (Ni)	mg/L	0.025	0.003	0.004	0.013	0.015	0.009	0.003	**0.18**	0.007	0.014	0.014
Total Phosphorus	mg/L	0.02*	**0.10**	**0.20**	**0.30**	**0.30**	**0.19**	**0.05**	**2.20**	**0.10**	**0.24**	**0.29**
Total Potassium (K)	mg/L		4.5	6.0	8.0	11.0	4.9	4.7	17.0	5.3	5.5	7.1
Total Sodium (Na)	mg/L		20	12	11	11	15	21	15	20	11	9.8
Total Suspended Solids	mg/L		33	39	120	100	75	20	2200	65	170	180
Total Un-ionized Ammonia	mg/L	0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
Total Zinc (Zn)	mg/L	0.020	<0.01	0.010	**0.030**	**0.030**	**0.030**	0.010	**0.300**	0.020	**0.040**	**0.040**
Ion Percentage	%		1.4	0.5	4.5	5.8	2.2	1.5	34.6	3.6	6.3	8.6

NOTE: 1) PWQO denotes Provincial Water Quality Objectives (1994) with updates.
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4) Unionized ammonia values are calculated based on field determined pH and temperature values.
5) mg/L denotes milligrams per litre.
6) umho/cm denotes microsiemens per centimeter.
7) BOD denotes biological oxygen demand.
8) COD denotes chemical oxygen demand.
9) Blank denotes parameter not analyzed.
10) **Bolded** text and shading denotes concentration exceeds PWQO.
11) *Italics* denotes parameter concentration was below the laboratory reportable detection limit (RDL), where the RDL exceeds the relevant PWQO.

Table I-2
Precipitation Event Surface Water Quality - General Analytical Results - Compliance Monitoring
Twin Creeks Environmental Centre

Parameter	Units	PWQO	Downstream of Landfill 60 m East of Lambton Rd. 79 - SS1									
Date			10-Apr-13	29-May-13	5-Jul-13	12-Sep-13	7-Oct-13	11-Jan-14	8-Apr-14	30-Apr-14	7-Jul-14	6-Sep-14
Laboratory			Maxxam	Maxxam	Maxxam	Maxxam	Maxxam	Maxxam	Maxxam	Maxxam	Maxxam	Maxxam
Routine/Verification Event								Routine	Routine	Verification	Routine	Verification
Alkalinity (Total as $CaCO_3$)	mg/L	<25%***	94	61	94	120	140	94	160	140	100	88
Conductivity	umho/cm		360	330	300	470	480	250	460	460	580	400
Dissolved Chloride (Cl)	mg/L		17	10	24	20	18	8	18	13	20	15
Dissolved Mercury (Hg)	mg/L	0.0002	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
Dissolved Sulphate (SO_4)	mg/L		60	81	40	81	77	19	48	76	170	81
Nitrate (N)	mg/L		0.54	0.18	<0.10	<0.10	<0.10	0.64	0.14	0.84	<0.10	0.79
Nitrite (N)	mg/L		0.026	<0.010	<0.010	<0.010	<0.010	0.015	0.024	0.012	<0.010	0.038
pH	(pH units)	6.5-8.5	7.9	7.9	8.2	8.0	8.0	8.1	8.2	8.1	7.7	7.8
Phenols-4AAP	mg/L	0.001	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	0.0012	**0.0032**	<0.0010	**0.0016**	<0.0010
Total Ammonia-N	mg/L		<0.15	<0.15	<0.15	<0.15	<0.15	0.26	<0.15	<0.15	<0.15	0.15
Total Arsenic (As)	mg/L	0.100*	0.004	0.002	0.004	0.003	0.002	<0.001	0.001	0.001	0.002	0.004
Total Barium (Ba)	mg/L		0.058	0.024	0.062	0.033	0.041	0.014	0.027	0.038	0.048	0.064
Total BOD	mg/L		<2.0	<2.0	2.0	<2.0	3.0	3.0	<2.0	<2.0	<2.0	2.0
Total Boron (B)	mg/L	0.200	0.080	0.190	0.080	**0.330**	**0.270**	<0.02	0.070	0.180	0.110	0.190
Total Cadmium (Cd)	mg/L	0.0002	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001
Total Calcium (Ca)	mg/L		58	40	55	54	58	32	63	67	74	60
Total Chemical Oxygen Demand (COD)	mg/L		34	26	25	32	28	25	29	28	21	27
Total Chromium (Cr)	mg/L	0.0089	**0.0130**	<0.005	**0.0140**	<0.005	<0.005	<0.005	<0.005	<0.005	0.0050	**0.0120**
Total Copper (Cu)	mg/L	0.005	**0.013**	0.005	**0.020**	0.004	0.002	<0.002	0.003	**0.013**	**0.009**	**0.011**
Total Dissolved Solids	mg/L		288	206	312	286	282	84	326	324	392	294
Total Iron (Fe)	mg/L	0.300	**13.0**	**2.50**	**14.0**	**1.70**	**1.40**	**0.38**	**2.00**	**3.40**	**5.20**	**12.0**
Total Kjeldahl Nitrogen (TKN)	mg/L		1.9	0.8	1.6	2.0	1.2	1.1	1.5	1.2	1.2	1.3
Total Lead (Pb)	mg/L	0.005	**0.006**	0.001	**0.011**	0.001	0.001	<0.0005	0.001	0.002	0.002	0.004
Total Magnesium (Mg)	mg/L		14	16	13	21	18	9.5	16	18	16	19
Total Nickel (Ni)	mg/L	0.025	0.021	0.005	0.022	0.005	0.004	<0.001	0.004	0.012	0.008	0.016
Total Phosphorus	mg/L	0.02*	**0.45**	**0.09**	**0.64**	**0.17**	**0.10**	**0.20**	**0.07**	**0.11**	**0.21**	**0.25**
Total Potassium (K)	mg/L		7.9	1.9	9.4	6.9	6.5	7.0	3.9	4.8	6.0	8.0
Total Sodium (Na)	mg/L		7.2	11.0	16.0	17.0	16.0	4.1	12.0	12.0	16.0	11.0
Total Suspended Solids	mg/L		1900	51	710	37	29	6	24	45	98	260
Total Un-ionized Ammonia	mg/L	0.02	<0.02	<0.02	<0.0092	<0.0053	<0.0019	0.0044	<0.0023	<0.003	<0.0051	0.0039
Total Zinc (Zn)	mg/L	0.020	**0.050**	<0.01	**0.100**	<0.01	<0.01	<0.01	0.010	0.010	0.010	**0.040**
Ion Percentage	%		6.2	4.7	9.0	3.6	1.7	2.5	2.0	3.7	1.2	7.9

NOTE: 1) PWQO denotes Provincial Water Quality Objectives (1994) with updates.

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6) umho/cm denotes microsiemens per centimeter.

7) BOD denotes biological oxygen demand.

8) COD denotes chemical oxygen demand.

9) Blank denotes parameter not analyzed.

10) **Bolded** text and shading denotes concentration exceeds PWQO.

11) *Italics* denotes parameter concentration was below the laboratory reportable detection limit (RDL), where the RDL exceeds the relevant PWQO.

Table I-2
Precipitation Event Surface Water Quality - General Analytical Results - Compliance Monitoring
Twin Creeks Environmental Centre

Parameter	Units	PWQO	Downstream of Landfill 60 m East of Lambton Rd. 79 - SS1									
Date			25-Dec-14	4-Jan-15	10-Apr-15	1-Jun-15	3-Aug-15	22-Dec-15	25-Feb-16	7-Apr-16	14-Jul-16	3-Nov-16
Laboratory			Maxxam	Maxxam	Maxxam	Maxxam	Maxxam	Maxxam	Maxxam	Maxxam	Maxxam	Maxxam
Routine/Verification Event			Routine	Routine	Routine/ Verification	Verification	Routine	Routine	Routine	Routine	Routine	Routine
Alkalinity (Total as $CaCO_3$)	mg/L	<25%***	120	130	100	95	100	170	110	130	110	160
Conductivity	umho/cm		470	460	310	480	510	840	450	400	600	560
Dissolved Chloride (Cl)	mg/L		15	12	9	12	21	36	9.6	6.1	13	12
Dissolved Mercury (Hg)	mg/L	0.0002	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
Dissolved Sulphate (SO_4)	mg/L		91	86	45	120	130	220	95	69	170	100
Nitrate (N)	mg/L		1.35	0.84	1.02	<0.10	<0.10	1.33	1.20	0.59	0.018	0.34
Nitrite (N)	mg/L		0.017	0.018	0.023	<0.010	<0.010	0.024	<0.010	<0.010	0.270	0.027
pH	(pH units)	6.5-8.5	7.9	8.3	7.0	7.9	7.8	8.1	8.1	7.9	7.9	8.0
Phenols-4AAP	mg/L	0.001	<0.001	**0.0058**	**0.0012**	<0.0010	<0.0010	**0.0015**	<0.0010	<0.0010	<0.0040	<0.0040
Total Ammonia-N	mg/L		<0.15	0.16	<0.15	0.15	<0.15	<0.15	<0.15	<0.15	<0.15	3.21
Total Arsenic (As)	mg/L	0.100*	0.003	<0.001	0.007	0.001	0.002	<0.001	0.002	0.003	0.001	0.003
Total Barium (Ba)	mg/L		0.100	0.032	0.110	0.027	0.038	0.035	0.077	0.048	0.047	0.037
Total BOD	mg/L		3.0	3.0	2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
Total Boron (B)	mg/L	0.200	0.13	0.06	0.11	0.10	0.07	0.05	0.13	0.10	0.10	**1.2**
Total Cadmium (Cd)	mg/L	0.0002	<0.0001	<0.0001	0.0002	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001
Total Calcium (Ca)	mg/L		61	61	54	60	69	100	60	63	79	60
Total Chemical Oxygen Demand (COD)	mg/L		23	21	24	22	13	25	22	34	22	31
Total Chromium (Cr)	mg/L	0.0089	**0.0190**	<0.005	**0.0250**	<0.005	<0.005	<0.005	**0.0130**	**0.0090**	<0.005	0.0050
Total Copper (Cu)	mg/L	0.005	**0.010**	0.003	**0.017**	0.005	**0.007**	0.004	**0.006**	**0.008**	**0.006**	**0.007**
Total Dissolved Solids	mg/L		354	292	240	342	360	510	262	272	418	404
Total Iron (Fe)	mg/L	0.300	**11.0**	**0.95**	**24.0**	**1.40**	**3.00**	**0.90**	**7.30**	**7.80**	**2.40**	**4.80**
Total Kjeldahl Nitrogen (TKN)	mg/L		1.20	0.83	1.30	0.86	0.34	0.68	0.48	0.49	<0.7	3.60
Total Lead (Pb)	mg/L	0.005	0.004	0.001	**0.010**	0.001	0.001	<0.0005	0.003	0.003	0.001	0.002
Total Magnesium (Mg)	mg/L		20	19	17	18	15	30	18	17	21	21
Total Nickel (Ni)	mg/L	0.025	0.013	0.002	**0.032**	0.004	0.005	0.002	0.009	0.011	0.004	0.009
Total Phosphorus	mg/L	0.02*	**0.22**	**0.10**	**0.47**	**0.10**	**0.09**	**0.04**	**0.16**	**0.21**	**0.15**	**0.08**
Total Potassium (K)	mg/L		11.0	7.4	6.4	2.4	6.1	6.3	7.7	4.7	8.4	9.0
Total Sodium (Na)	mg/L		8.1	7.4	5.3	11.0	15.0	30.0	7.5	6.6	13.0	24.0
Total Suspended Solids	mg/L		180	13	220	26	54	20	78	130	160	150
Total Un-ionized Ammonia	mg/L	0.02	<0.0034	0.004	<0.0031	0.0049	<0.0053	<0.003	<0.0013	<0.0005	<0.0052	**0.082**
Total Zinc (Zn)	mg/L	0.020	**0.030**	<0.01	**0.060**	<0.01	<0.01	<0.01	0.020	0.020	<0.01	0.010
Ion Percentage	%		3.2	2.1	9.1	1.4	0.8	0.3	3.0	4.3	1.3	1.7

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6) umho/cm denotes microsiemens per centimeter.
7) BOD denotes biological oxygen demand.
8) COD denotes chemical oxygen demand.
9) Blank denotes parameter not analyzed.
10) **Bolded** text and shading denotes concentration exceeds PWQO.
11) *Italics* denotes parameter concentration was below the laboratory reportable detection limit (RDL), where the RDL exceeds the relevant PWQO.

Table I-2
Precipitation Event Surface Water Quality - General Analytical Results - Compliance Monitoring
Twin Creeks Environmental Centre

Parameter	Units	PWQO	Downstream of Landfill 60 m East of Lambton Rd. 79 - SS1									
Date			27-Dec-16	12-Jan-17	8-Feb-17	6-Apr-17	13-Jul-17	19-Nov-17	23-Jan-18	4-Apr-18	8-Aug-18	26-Sep-18
Laboratory			Maxxam	Maxxam	Maxxam	Maxxam	Maxxam	Maxxam	Maxxam	Maxxam	Maxxam	Maxxam
Routine/Verification Event			Verification	Routine	Verification	Routine	Routine	Routine	Routine	Routine	Routine	Verification
Alkalinity (Total as $CaCO_3$)	mg/L	<25%***	120	110	120	140	110	100	120	130	93	88
Conductivity	umho/cm		440	430	440	490	320	620	440	500	400	470
Dissolved Chloride (Cl)	mg/L		11.0	12.0	9.6	9.7	11.0	11.0	9.0	7.4	16.0	11.0
Dissolved Mercury (Hg)	mg/L	0.0002	*<0.00010*	*<0.00010*	*<0.00010*	*<0.00010*	*<0.0001*	*<0.0001*	*<0.0001*	*<0.0001*	*<0.0001*	*<0.0001*
Dissolved Sulphate (SO_4)	mg/L		83	78	81	91	43	190	74	43	83	130
Nitrate (N)	mg/L		0.87	0.80	0.90	0.52	<0.10	2.14	1.87	0.87	<0.10	<0.10
Nitrite (N)	mg/L		0.024	0.046	0.018	0.015	<0.010	0.011	0.022	0.013	<0.010	0.011
pH	(pH units)	6.5-8.5	8.0	7.9	7.7	8.1	7.8	8.0	7.9	8.1	7.8	8.1
Phenols-4AAP	mg/L	0.001	*<0.004*	*<0.0040*	*<0.0040*	*<0.0040*	*<0.020*	***0.0023***	*<0.0010*	*<0.0010*	*<0.0010*	*<0.0010*
Total Ammonia-N	mg/L		1.42	1.12	0.37	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15
Total Arsenic (As)	mg/L	0.100*	0.002	0.006	0.002	0.002	0.003	0.001	0.003	0.003	0.026	0.003
Total Barium (Ba)	mg/L		0.044	0.140	0.040	0.046	0.049	0.035	0.046	0.053	0.300	0.027
Total BOD	mg/L		2.0	5.0	<2.0	<2.0	5.0	<2.0	<2.0	<2	<2	3.0
Total Boron (B)	mg/L	0.200	**0.500**	**0.400**	0.160	0.150	0.080	0.120	0.100	0.130	0.130	0.170
Total Cadmium (Cd)	mg/L	0.0002	<0.0001	<0.0001	<0.0001	<0.0001	0.0002	<0.0001	<0.0001	<0.0001	**0.0003**	<0.0001
Total Calcium (Ca)	mg/L		44	58	52	75	55	86	66	70	180	46
Total Chemical Oxygen Demand (COD)	mg/L		26	36	15	25	40	10	17	13	17	21
Total Chromium (Cr)	mg/L	0.0089	0.0070	**0.0300**	0.0060	0.0060	**0.0130**	<0.005	**0.0110**	**0.0100**	**0.0900**	<0.005
Total Copper (Cu)	mg/L	0.005	0.005	**0.014**	0.004	**0.007**	**0.039**	**0.006**	**0.010**	**0.009**	**0.076**	0.004
Total Dissolved Solids	mg/L		296	290	294	316	280	285	255	225	270	345
Total Iron (Fe)	mg/L	0.300	**4.10**	**18.0**	**3.50**	**6.10**	**9.60**	**3.20**	**9.30**	**9.40**	**92.0**	**1.00**
Total Kjeldahl Nitrogen (TKN)	mg/L		2.1	1.9	0.9	0.6	<0.7	<0.7	<0.7	<0.7	<0.7	<0.7
Total Lead (Pb)	mg/L	0.005	0.002	**0.007**	0.002	0.003	**0.016**	0.001	0.004	0.004	**0.031**	0.001
Total Magnesium (Mg)	mg/L		15	21	16	21	12	26	20	22	45	20
Total Nickel (Ni)	mg/L	0.025	0.006	0.024	0.006	0.010	0.018	0.006	0.013	0.013	**0.120**	0.003
Total Phosphorus	mg/L	0.02*	**0.14**	**0.34**	**0.09**	**0.15**	**0.30**	**0.08**	**0.18**	**0.17**	**1.10**	**0.04**
Total Potassium (K)	mg/L		7.5	16.0	6.4	5.4	9.0	5.2	5.6	5.2	16.0	4.2
Total Sodium (Na)	mg/L		11.0	9.4	6.3	8.2	9.4	12.0	8.0	9.4	13.0	9.8
Total Suspended Solids	mg/L		78	340	75	110	190	81	170	170	2100	26
Total Un-ionized Ammonia	mg/L	0.02	0.0053	0.0027	0.0008	<0.0012	<0.0047	<0.0029	<0.0025	<0.0005	<0.0005	<0.001
Total Zinc (Zn)	mg/L	0.020	0.010	0.050	0.010	0.020	**0.160**	0.010	0.030	**0.030**	**0.210**	<0.01
Ion Percentage	%		2.2	7.3	0.1	4.8	6.8	3.1	6.80	12.00	28.40	1.85

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7) BOD denotes biological oxygen demand.
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Precipitation Event Surface Water Quality - General Analytical Results - Compliance Monitoring
Twin Creeks Environmental Centre

Parameter	Units	PWQO	Downstream of Landfill 60 m East of Lambton Rd. 79 - SS1									
Date			**2-Oct-18**	**24-Jan-19**	**17-Apr-19**	**2-Oct-19**	**27-Oct-19**	**11-Jan-20**	**29-Mar-20**	**18-May-20**	**15-Nov-20**	**26-Nov-20**
Laboratory			**Maxxam**	**Maxxam**	**Maxxam**	**Bureau Veritas**	**Bureau Veritas**	**Bureau Veritas**	**Bureau Veritas**	**Bureau Veritas**	**Bureau Veritas**	**Bureau Veritas**
Routine/Verification Event			**Routine**	**Routine**	**Routine**	**Routine**	**Verification**	**Routine**	**Verification**	**Routine**	**Routine**	**Verification**
Alkalinity (Total as $CaCO_3$)	mg/L	<25%***	270	100	130	69	120	120	180	140	110	120
Conductivity	umho/cm		530	430	610	520	550	570	610	510	440	890
Dissolved Chloride (Cl)	mg/L		6.3	17.0	19.0	8.5	15.0	24.0	20.0	22.0	28	24
Dissolved Mercury (Hg)	mg/L	0.0002	*<0.0001*	*<0.0001*	*<0.0001*	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
Dissolved Sulphate (SO_4)	mg/L		25	73	140	160	130	140	170	93	72	300
Nitrate (N)	mg/L		<0.10	0.74	0.54	0.34	0.23	0.65	0.54	0.17	<0.10	1.09
Nitrite (N)	mg/L		<0.010	0.025	<0.010	<0.010	<0.010	0.014	0.053	<0.010	<0.010	0.031
pH	(pH units)	6.5-8.5	8.2	7.7	8.2	8.0	8.1	8.0	7.9	8.1	7.9	8.0
Phenols-4AAP	mg/L	0.001	*<0.0010*	*<0.0010*	*<0.0010*	**0.0012**	<0.0010	<0.0010	<0.0010	<0.0010	*0.0012*	<0.0010
Total Ammonia-N	mg/L		<0.15	0.50	<0.15	0.19	<0.15	<0.15	0.15	<0.15	<0.15	<0.15
Total Arsenic (As)	mg/L	0.100*	<0.001	<0.001	<0.001	0.040	0.002	0.003	0.037	0.002	0.005	0.003
Total Barium (Ba)	mg/L		0.027	0.022	0.026	0.560	0.022	0.062	0.390	0.0350	0.06	0.053
Total BOD	mg/L		<2	3.0	<2	<2	<2	<2	<2	3.0	5	<2
Total Boron (B)	mg/L	0.200	0.030	0.090	0.140	**0.300**	0.180	0.140	**0.210**	0.090	0.11	0.17
Total Cadmium (Cd)	mg/L	0.0002	<0.0001	<0.0001	<0.0001	<0.001	<0.0001	0.0001	**0.0006**	<0.0001	0.0001	<0.0001
Total Calcium (Ca)	mg/L		78	42	66	450	62	87	480	60	63	110
Total Chemical Oxygen Demand (COD)	mg/L		29.0	18.0	21.0	5.6	18.0	10.0	<4.0	38.0	38	14
Total Chromium (Cr)	mg/L	0.0089	<0.005	<0.005	<0.005	**0.190**	<0.005	**0.012**	**0.160**	<0.005	**0.014**	**0.010**
Total Copper (Cu)	mg/L	0.005	0.003	0.003	0.004	**0.130**	0.004	**0.023**	**0.130**	**0.009**	**0.024**	**0.009**
Total Dissolved Solids	mg/L		275	270	365	345	335	385	465	340	360	580
Total Iron (Fe)	mg/L	0.300	**0.3**	**0.800**	**0.700**	**180**	**1.7**	**8.9**	**150**	**3.1**	**12.0**	**7.4**
Total Kjeldahl Nitrogen (TKN)	mg/L		<0.7	1.0	<0.7	<0.7	<0.7	<0.7	<0.7	<0.7	<0.7	<0.7
Total Lead (Pb)	mg/L	0.005	<0.0005	0.0005	<0.0005	**0.066**	0.0007	**0.009**	**0.063**	0.002	**0.009**	0.0031
Total Magnesium (Mg)	mg/L		18	14	26	120	26	32	110	19.0	21	46
Total Nickel (Ni)	mg/L	0.025	0.001	0.002	0.003	**0.260**	0.005	0.015	0.240	0.0	0.019	0.012
Total Phosphorus	mg/L	0.02*	**0.10**	**0.09**	**0.05**	**2.80**	**0.07**	**0.29**	**2.90**	**0.11**	**0.53**	**0.16**
Total Potassium (K)	mg/L		3.5	6.9	4.2	44.0	5.2	8.4	18.0	4.9	15	8.6
Total Sodium (Na)	mg/L		6.2	8.9	13.0	13.0	15.0	17.0	16.0	15.0	12	23
Total Suspended Solids	mg/L		6	20	18	3200	30	270	6000	150	230	220
Total Un-ionized Ammonia	mg/L	0.02	<0.00073	<0.00061	<0.0079	0.016	<0.013	<0.0052	0.007	<0.0034	<0.00061	<0.00076
Total Zinc (Zn)	mg/L	0.020	<0.01	<0.01	<0.01	**0.40**	<0.01	**0.09**	**0.38**	0.02	**0.09**	0.02
Ion Percentage	%		1.7	1.4	0.1	38.7	2.1	7.2	32.5	0.2	6.8	2.9

NOTE: 1) PWQO denotes Provincial Water Quality Objectives (1994) with updates.
2) * denotes interim PWQO.
3) *** denotes change from background concentrations.
4) Unionized ammonia values are calculated based on field determined pH and temperature values.
5) mg/L denotes milligrams per litre.
6) umho/cm denotes microsiemens per centimeter.
7) BOD denotes biological oxygen demand.
8) COD denotes chemical oxygen demand.
9) Blank denotes parameter not analyzed.
10) **Bolded** text and shading denotes concentration exceeds PWQO.
11) *Italics* denotes parameter concentration was below the laboratory reportable detection limit (RDL), where the RDL exceeds the relevant PWQO.
12) "BV" Denotes Bureau Veritas Laboratories

Table I-2
Precipitation Event Surface Water Quality - General Analytical Results - Compliance Monitoring
Twin Creeks Environmental Centre

Parameter	Units	PWQO	Downstream of Landfill 60 m East of Lambton Rd. 79 - SS1									
Date			26-Mar-21	9-Apr-21	3-Jun-21	9-Jul-21	30-Jul-21	4-Oct-21	15-Oct-21	17-Feb-22	4-May-22	16-May-22
Laboratory			Bureau Veritas	Bureau Veritas	Bureau Veritas	Bureau Veritas	Bureau Veritas	Bureau Veritas	Bureau Veritas	Bureau Veritas	Bureau Veritas	Bureau Veritas
Routine/Verification Event			Routine	Verification	Routine	Routine	Verification	Routine	Verification	Routine	Routine	Verification
Alkalinity (Total as $CaCO_3$)	mg/L	<25%***	65	200	110	87	75	70	110	90	160	110
Conductivity	umho/cm		640	800	860	730	590	670	700	312	730	810
Dissolved Chloride (Cl)	mg/L		22	46	35	40	31	20	34	19	29	30
Dissolved Mercury (Hg)	mg/L	0.0002	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
Dissolved Sulphate (SO_4)	mg/L		230	150	310	220	180	250	200	58	180	340
Nitrate (N)	mg/L		0.86	<0.10	<0.010	<0.10	0.21	0.44	0.45	0.58	0.45	0.46
Nitrite (N)	mg/L		<0.010	<0.010	0.24	0.012	0.02	0.026	0.023	0.045	0.012	0.035
pH	(pH units)	6.5-8.5	8.0	8.1	8.0	8.1	7.9	7.8	7.9	8.0	8.3	7.4
Phenols-4AAP	mg/L	0.001	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	0.0010	<0.0010	<0.0010
Total Ammonia-N	mg/L		<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	1.17	<0.15	0.26
Total Arsenic (As)	mg/L	0.100*	**0.28**	0.002	0.001	0.003	0.003	<0.001	0.002	0.007	0.002	0.007
Total Barium (Ba)	mg/L		3.0	0.047	0.043	0.030	0.024	0.023	0.031	0.083	0.04	0.1
Total BOD	mg/L		3	5	<2	<2	2.0	<2	2	3	<2	3
Total Boron (B)	mg/L	0.200	**0.7**	**0.25**	0.1	**0.26**	**0.26**	**0.22**	**0.47**	0.08	**0.36**	0.19
Total Cadmium (Cd)	mg/L	0.0002	**0.004**	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	0.0001	<0.0001	<0.0001
Total Calcium (Ca)	mg/L		2900	90	110	63	50	64	72	75	80	140
Total Chemical Oxygen Demand (COD)	mg/L		<4.0	46	8.1	26	28	10	29	27	23	29
Total Chromium (Cr)	mg/L	0.0089	**1.1**	<0.005	0.006	<0.005	<0.005	<0.005	<0.005	**0.026**	<0.005	**0.019**
Total Copper (Cu)	mg/L	0.005	**0.88**	**0.009**	0.005	0.003	0.002	0.002	0.005	**0.023**	0.005	**0.02**
Total Dissolved Solids	mg/L		390	530	645	485	385	420	360	230	370	695
Total Iron (Fe)	mg/L	0.300	**1200**	**3.5**	**3**	1	<0.1	0.2	**2.1**	**26**	**4.4**	**21**
Total Kjeldahl Nitrogen (TKN)	mg/L		0.8	<0.7	<0.7	<0.7	<0.7	<0.7	<0.7	2.0	<0.7	<0.7
Total Lead (Pb)	mg/L	0.005	**0.42**	0.0018	0.0012	<0.0005	<0.0005	<0.0005	0.0009	**0.011**	0.0017	**0.0077**
Total Magnesium (Mg)	mg/L		650	31	35	35	29	31	33	23	34	52
Total Nickel (Ni)	mg/L	0.025	**1.6**	0.008	0.006	0.005	0.003	0.002	0.006	**0.039**	0.009	**0.032**
Total Phosphorus	mg/L	0.02*	**16**	**0.12**	**0.05**	**0.04**	**0.07**	**0.04**	**0.08**	**0.48**	**0.088**	**0.30**
Total Potassium (K)	mg/L		110	5.7	4.9	3.4	4.0	4.7	7.6	9.6	5.1	8
Total Sodium (Na)	mg/L		27	30	27	31	24	21	30	11	26	28
Total Suspended Solids	mg/L		32000	74	73	35	39	16	49	660	95	1200
Total Un-ionized Ammonia	mg/L	0.02	<0.00089	<0.0016	<0.0023	<0.0025	<0.0061	<0.0019	<0.0084	0.0089	<0.0047	0.0028
Total Zinc (Zn)	mg/L	0.020	**2.7**	0.01	<0.01	<0.01	<0.01	<0.01	<0.01	0.07	0.01	0.05
Ion Percentage	%		47.5	0.1	0.1	0.1	0.6	1.6	1.5	15.1	0.8	5.6

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Parameter	Units	PWQO	Downstream of Landfill 60 m East of Lambton Rd. 79 - SS1									
Date			4-Aug-22	18-Oct-22	28-Nov-22	10-Feb-23	17-Mar-23	2-Apr-23	3-May-23	3-Jul-23	13-Jul-23	2-Nov-23
Laboratory			Bureau Veritas	Bureau Veritas	Bureau Veritas	Bureau Veritas	Bureau Veritas	Bureau Veritas	Bureau Veritas	Bureau Veritas	Bureau Veritas	Bureau Veritas
Routine/Verification Event			Routine	Routine	Verification	Routine	Verification	Routine	Verification	Routine	Verification	Routine
Alkalinity (Total as $CaCO_3$)	mg/L	<25%***	110	55	110	130	110	110	93	77	81	130
Conductivity	umho/cm		922	700	1500	670	510	430	635	490	398	660
Dissolved Chloride (Cl)	mg/L		18	23	29	32	11	16	1.2	4.4	11	12
Dissolved Mercury (Hg)	mg/L	0.0002	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
Dissolved Sulphate (SO_4)	mg/L		390	290	660	160	130	79	35	140	110	180
Nitrate (N)	mg/L		1.07	0.41	2.06	1.61	0.46	0.60	0.56	0.45	0.18	0.66
Nitrite (N)	mg/L		0.043	0.037	0.022	0.016	0.016	<0.010	<0.010	0.020	0.017	0.012
pH	(pH units)	6.5-8.5	8.1	7.9	7.9	8.1	7.9	7.9	7.8	8.1	8.0	8.0
Phenols-4AAP	mg/L	0.001	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	0.0012	0.0015	<0.0010
Total Ammonia-N	mg/L		<0.15	0.47	<0.15	<0.15	0.22	<0.15	<0.15	<0.15	<0.15	<0.15
Total Arsenic (As)	mg/L	0.100*	0.002	0.016	0.001	0.002	0.08	0.003	0.03	0.04	0.006	0.001
Total Barium (Ba)	mg/L		0.038	0.19	0.043	0.050	0.93	0.060	0.33	0.51	0.046	0.031
Total BOD	mg/L		<2	5	2	<2	<2	<2	<2	3	5	<2
Total Boron (B)	mg/L	0.200	0.11	0.13	0.08	**0.29**	**0.4**	**0.25**	**0.3**	**0.3**	**0.23**	0.15
Total Cadmium (Cd)	mg/L	0.0002	<0.0001	**0.0003**	<0.0001	<0.0001	<0.001	<0.0001	<0.001	<0.001	<0.0001	<0.0001
Total Calcium (Ca)	mg/L		140	270	160	87	890	61	270	370	66	81
Total Chemical Oxygen Demand (COD)	mg/L		11	16	19	16	15	27	6.8	7.2	23	14
Total Chromium (Cr)	mg/L	0.0089	<0.005	0.062	<0.005	0.008	**0.34**	**0.012**	**0.11**	**0.17**	**0.010**	<0.005
Total Copper (Cu)	mg/L	0.005	**0.007**	**0.053**	**0.006**	**0.008**	**0.25**	**0.009**	**0.08**	**0.13**	**0.009**	0.002
Total Dissolved Solids	mg/L		715	390	1020	420	890	330	420	330	270	0.002
Total Iron (Fe)	mg/L	0.300	**3.1**	**64**	**3.0**	**7.2**	**330**	**10**	**100**	**170**	**9.8**	**1.2**
Total Kjeldahl Nitrogen (TKN)	mg/L		<0.7	<0.7	<0.7	0.8	<0.7	<0.7	<0.7	<0.7	<0.7	<0.7
Total Lead (Pb)	mg/L	0.005	0.0012	**0.026**	0.0010	0.0025	**0.12**	0.0036	**0.066**	**0.061**	0.0040	0.0005
Total Magnesium (Mg)	mg/L		51	61	85	30	210	18	77	100	26	30
Total Nickel (Ni)	mg/L	0.025	0.006	0.092	0.005	0.012	**0.47**	0.015	**0.15**	**0.25**	0.015	0.003
Total Phosphorus	mg/L	0.02*	**0.054**	**0.94**	**0.048**	**0.081**	**4.8**	**0.14**	**1.2**	**1.9**	**0.16**	**0.036**
Total Potassium (K)	mg/L		5	12	8.6	6.1	51	5.4	25	36	4.4	4.8
Total Sodium (Na)	mg/L		26	15	39	27	19	14	14	11	15	15
Total Suspended Solids	mg/L		98	1400	70	150	12000	150	2700	4300	270	28
Total Un-ionized Ammonia	mg/L	0.02	<0.0074	0.017	<0.00051	<0.013	0.0023	<0.00053	<0.0016	<0.0073	<0.0091	<0.00061
Total Zinc (Zn)	mg/L	0.020	0.01	**0.17**	<0.01	**0.03**	**0.8**	**0.03**	**0.3**	**0.4**	0.02	<0.01
Ion Percentage	%		3.4	21.7	0.0	4.5	43.5	5.4	40.7	37.4	9.8	2.1

NOTE: 1) PWQO denotes Provincial Water Quality Objectives (1994) with updates.
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6) umho/cm denotes microsiemens per centimeter.
7) BOD denotes biological oxygen demand.
8) COD denotes chemical oxygen demand.
9) Blank denotes parameter not analyzed.
10) **Bolded** text and shading denotes concentration exceeds PWQO.
11) *Italics* denotes parameter concentration was below the laboratory reportable detection limit (RDL), where the RDL exceeds the relevant PWQO.
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Precipitation Event Surface Water Quality - General Analytical Results - Compliance Monitoring
Twin Creeks Environmental Centre

Parameter	Units	PWQO	Downstream of Landfill 60 m East of Lambton Rd. 79 - SS1									
Date			10-Jan-24	26-Jan-24	12-Apr-24	30-Apr-24	10-Jul-24	30-Jul-24	14-Oct-24	11-Nov-24		
Laboratory			Bureau Veritas	Bureau Veritas	Bureau Veritas	Bureau Veritas	Bureau Veritas	Bureau Veritas	Bureau Veritas	Bureau Veritas		
Routine/Verification Event			Routine	Verification	Routine	Verification	Routine	Verification	Routine	Verification		
Alkalinity (Total as $CaCO_3$)	mg/L	<25%***	150	100	150	160	64	70	71	87		
Conductivity	umho/cm		650	370	640	580	350	230	470	700		
Dissolved Chloride (Cl)	mg/L		26	14	24	22	7.8	5.3	7.9	12		
Dissolved Mercury (Hg)	mg/L	0.0002	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010		
Dissolved Sulphate (SO_4)	mg/L		130	55	140	100	93	35	150	240		
Nitrate (N)	mg/L		0.76	0.65	0.66	1.43	0.32	0.27	0.27	0.14		
Nitrite (N)	mg/L		0.021	0.012	0.015	0.045	0.049	0.027	<0.010	<0.010		
pH	(pH units)	6.5-8.5	8.0	8.0	8.0	8.1	7.9	8.0	7.9	7.8		
Phenols-4AAP	mg/L	0.001	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010		
Total Ammonia-N	mg/L		<0.15	<0.15	<0.15	<0.15	<0.15	0.16	<0.15	<0.15		
Total Arsenic (As)	mg/L	0.100*	0.010	0.009	0.002	0.003	0.014	0.02	0.007	0.002		
Total Barium (Ba)	mg/L		0.14	0.12	0.037	0.053	0.16	0.28	0.086	0.038		
Total BOD	mg/L		3	<2	<2	4	4	6	<2	<2		
Total Boron (B)	mg/L	0.200	**0.29**	0.18	**0.30**	0.12	0.08	<0.2	0.09	0.13		
Total Cadmium (Cd)	mg/L	0.0002	0.0002	0.0001	<0.0001	<0.0001	0.0002	<0.001	<0.0001	<0.0001		
Total Calcium (Ca)	mg/L		150	110	79	85	110	190	86	95		
Total Chemical Oxygen Demand (COD)	mg/L		14	13	29	29	<4.0	23	<4.0	26		
Total Chromium (Cr)	mg/L	0.0089	**0.041**	**0.037**	0.005	0.008	**0.046**	**0.06**	**0.022**	<0.005		
Total Copper (Cu)	mg/L	0.005	**0.031**	**0.030**	**0.007**	**0.010**	**0.040**	**0.06**	**0.019**	0.004		
Total Dissolved Solids	mg/L		525	365	140	405	315	375	405	485		
Total Iron (Fe)	mg/L	0.300	**39**	**36**	**4.9**	**7.1**	**48**	**62**	**22**	**3.7**		
Total Kjeldahl Nitrogen (TKN)	mg/L		<0.7	<0.7	<0.7	<0.7	<0.7	<0.7	<0.7	<0.7		
Total Lead (Pb)	mg/L	0.005	**0.015**	**0.014**	0.0028	0.0037	**0.020**	**0.027**	**0.0093**	0.0018		
Total Magnesium (Mg)	mg/L		44	30	29	24	26	36	24	30		
Total Nickel (Ni)	mg/L	0.025	**0.057**	**0.052**	0.009	0.012	**0.065**	**0.08**	**0.031**	0.007		
Total Phosphorus	mg/L	0.02*	**0.75**	**0.50**	**0.10**	**0.15**	**0.60**	**0.71**	**0.28**	**0.066**		
Total Potassium (K)	mg/L		11	8.1	5.2	5.0	7.5	18	6.1	4.8		
Total Sodium (Na)	mg/L		20	12	21	15	7.3	5	7.7	15		
Total Suspended Solids	mg/L		1200	700	160	190	1200	1400	570	110		
Total Un-ionized Ammonia	mg/L	0.02	<0.0011	<0.0016	<0.0037	<0.0043	<0.0059	0.014	<0.00074	<0.0049		
Total Zinc (Zn)	mg/L	0.020	**0.09**	**0.10**	**0.03**	**0.04**	**0.15**	**0.2**	**0.07**	0.02		
Ion Percentage	%		16.3	22.1	2.9	4.4	21.1	37.0	8.9	3.0		

NOTE: 1) PWQO denotes Provincial Water Quality Objectives (1994) with updates.
2) * denotes interim PWQO.
3) *** denotes change from background concentrations.
4) Unionized ammonia values are calculated based on field determined pH and temperature values.
5) mg/L denotes milligrams per litre.
6) umho/cm denotes microsiemens per centimeter.
7) BOD denotes biological oxygen demand.
8) COD denotes chemical oxygen demand.
9) Blank denotes parameter not analyzed.
10) **Bolded** text and shading denotes concentration exceeds PWQO.
11) *Italics* denotes parameter concentration was below the laboratory reportable detection limit (RDL), where the RDL exceeds the relevant PWQO.
12) "BV" Denotes Bureau Veritas Laboratories

Table I-2
Precipitation Event Surface Water Quality - General Analytical Results - Compliance Monitoring
Twin Creeks Environmental Centre

Parameter	Units	PWQO	Off-Site Flow Into East Ditch Line (Background Surface Water Quality) - SS10									
Date			09-Apr-02	29-Apr-02	04-Apr-03	13-Jun-03	15-Oct-03	03-Nov-03	30-Dec-03	03-May-04	31-Jul-04	01-Dec-04
Laboratory			Accutest	Accutest	Accutest	Accutest	Accutest	Accutest	Accutest	Accutest	Accutest	Accutest
Alkalinity (Total as $CaCO_3$)	mg/L	<25%***	52	128	33	105	83	74	40	76	86	41
Dissolved Chloride (Cl)	mg/L		4	6	3	1	8	6	2	5	5	3
Dissolved Sulphate (SO_4)	mg/L		25	62	33	51	51	42	14	47	59	14
Nitrate (N)	mg/L		3.85	1.53	4.47	0.11	23.50	13.80	2.75	5.84	15.40	5.55
Phenols-4AAP	mg/L	0.001	0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
Total Ammonia-N	mg/L		0.12	0.26	0.06	0.07	<0.02	0.03	0.02	0.16	0.11	0.02
Total Boron (B)	mg/L	0.200	<0.05	0.08	<0.05	0.12	0.19	0.17	0.08	0.15	**0.39**	0.06
Total Calcium (Ca)	mg/L		24	49	22	32	84	46	17	38	60	29
Total Chromium (Cr)	mg/L	0.0089	<0.01	<0.01	<0.005	<0.005	0.004	0.002	0.003	<0.005	<0.001	0.002
Total Iron (Fe)	mg/L	0.300	**1.51**	**0.94**	**0.79**	**0.74**	**1.53**	**1.05**	**1.07**	**0.81**	**0.48**	**0.88**
Total Magnesium (Mg)	mg/L		5	15	6	7	13	8	4	7	10	5
Total Nickel (Ni)	mg/L	0.025	<0.01	<0.01	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Total Potassium (K)	mg/L		1	5	2	3	5	2	1	2	3	2
Total Sodium (Na)	mg/L		9	8	3	<2	6	3	2	3	4	4
Total Un-ionized Ammonia	mg/L	0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
Total Zinc (Zn)	mg/L	0.020	0.010	<0.01	<0.005	<0.005	0.010	<0.01	<0.01	<0.01	<0.01	0.020
Ion Percentage	%		7.9	4.1	7.6	4.8	18.3	8.4	6.6	3.1	9.6	16.8

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8) COD denotes chemical oxygen demand.
9) Blank denotes parameter not analyzed.
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Table I-2
Precipitation Event Surface Water Quality - General Analytical Results - Compliance Monitoring
Twin Creeks Environmental Centre

Parameter	Units	PWQO	Off-Site Flow Into East Ditch Line (Background Surface Water Quality) - SS10									
Date			02-Apr-05	09-Nov-05	18-Jan-06	09-Mar-06	05-Oct-06	17-Nov-06	02-Mar-07	09-Jan-08	19-Mar-08	11-Apr-08
Laboratory			Accutest	Accutest	Accutest	Accutest	Accutest	Accutest	Accutest	Maxxam	Maxxam	Maxxam
Alkalinity (Total as $CaCO_3$)	mg/L	<25%***	55	57	41	34	124	68	31	203	34	97
Conductivity	umho/cm										89	
Dissolved Chloride (Cl)	mg/L		3	24	4	3	40	9	5	24	4	4
Dissolved Sulphate (SO_4)	mg/L		11	23	13	8	41	16	9	203	10	11
Nitrate (N)	mg/L		0.45	10.50	0.58	1.14	45.60	1.34	2.24	0.50	0.40	<0.1
Nitrite (N)	mg/L										<0.01	<0.01
pH	(pH units)	6.5-8.5									7.6	7.0
Phenols-4AAP	mg/L	0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
Total Ammonia-N	mg/L		0.09	0.15	0.04	0.17	0.08	0.02	0.22		0.08	0.06
Total Arsenic (As)	mg/L	0.100*									<0.001	
Total Barium (Ba)	mg/L			0.080	0.020	0.020	0.360	0.030	0.010	0.083	0.023	
Total Boron (B)	mg/L	0.200	0.070	0.160	0.050	0.030	**0.210**	0.090	0.030	**0.480**	0.040	0.120
Total Cadmium (Cd)	mg/L	0.0002		<0.001	<0.0001	<0.0001	**0.0014**	<0.0001	<0.0001	<0.0001	<0.0001	
Total Calcium (Ca)	mg/L		22	52	15	14	120	27	16	110	13	36
Total Chromium (Cr)	mg/L	0.0089	0.0010	**0.0170**	0.0010	<0.001	0.0050	<0.001	<0.001	**0.0110**	<0.005	0.0080
Total Copper (Cu)	mg/L	0.005		**0.009**	0.002	0.002	**0.014**	0.003	0.002	**0.006**	0.002	
Total Dissolved Solids	mg/L										59	151
Total Iron (Fe)	mg/L	0.300	**0.700**	**12.400**	**0.540**	**0.530**	**3.040**	**0.360**	0.250	**4.400**	**2.100**	**3.900**
Total Kjeldahl Nitrogen (TKN)	mg/L										0.8	1.1
Total Lead (Pb)	mg/L	0.005		<0.01	<0.001	0.001	**0.012**	0.002	<0.001	0.002	0.001	
Total Magnesium (Mg)	mg/L		5.0	8.0	3.0	2.0	20.0	6.0	3.0	33.0	3.3	8.5
Total Nickel (Ni)	mg/L	0.025	<0.005	0.015	<0.005	<0.005	**0.028**	<0.005	<0.005	0.008	0.003	0.005
Total Phosphorus	mg/L	0.02*									<0.06	**0.15**
Total Potassium (K)	mg/L		1.0	4.0	2.0	3.0	5.0	3.0	2.0	6.0	2.3	5.7
Total Sodium (Na)	mg/L		2.0	<2	<2	<2	11.0	3.0	3.0	20.0	0.9	2.3
Total Suspended Solids	mg/L											
Total Un-ionized Ammonia	mg/L	0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
Total Zinc (Zn)	mg/L	0.020	<0.01	**0.04**	<0.01	<0.01	**0.04**	<0.01	0.02	0.02	<0.01	0.01
Ion Percentage	%		7.6	12.2	1.2	5.3	16.3	3.9	8.0	0.7	4.2	8.7

NOTE: 1) PWQO denotes Provincial Water Quality Objectives (1994) with updates.
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4) Unionized ammonia values are calculated based on field determined pH and temperature values.
5) mg/L denotes milligrams per litre.
6) umho/cm denotes microsiemens per centimeter.
7) BOD denotes biological oxygen demand.
8) COD denotes chemical oxygen demand.
9) Blank denotes parameter not analyzed.
10) **Bolded** text and shading denotes concentration exceeds PWQO.
11) *Italics* denotes parameter concentration was below the laboratory reportable detection limit (RDL), where the RDL exceeds the relevant PWQO.

Table I-2
Precipitation Event Surface Water Quality - General Analytical Results - Compliance Monitoring
Twin Creeks Environmental Centre

Parameter	Units	PWQO	Off-Site Flow Into East Ditch Line (Background Surface Water Quality) - SS10									
Date			14-Jun-08	23-Jul-08	04-Nov-08	12-Feb-09	6-Apr-09	9-Aug-09	3-Dec-09	25-Jan-10	6-Apr-10	17-Nov-10
Laboratory			Maxxam	Maxxam	Maxxam	Maxxam	Maxxam	Maxxam	Maxxam	Maxxam	Maxxam	Maxxam
Alkalinity (Total as $CaCO_3$)	mg/L	<25%***	90	31	157	38	52	82	94	27	62	64
Conductivity	umho/cm		194	89	410	110	147	625	202	65	400	541
Dissolved Chloride (Cl)	mg/L		2	4	21	5	5	23	2	1	1	46
Dissolved Mercury (Hg)	mg/L	0.0002	<0.0002				<0.0001				<0.0001	
Dissolved Sulphate (SO_4)	mg/L		3	2	21	12	7	220	10	3	9	27
Nitrate (N)	mg/L		0.1	0.4	0.9	1.2	3.0	0.6	0.3	0.5	29.0	24.0
Nitrite (N)	mg/L		<0.01	0.02	1.3	0.05	0.04	0.04	0.03	0.02	0.40	0.06
pH	(pH units)	6.5-8.5	8.0	7.5	7.8	7.3	7.1	7.3	7.8	7.2	7.7	7.6
Phenols-4AAP	mg/L	0.001	<0.001	0.001	0.001	<0.001	<0.001	<0.001	<0.001	0.001	<0.001	0.001
Total Ammonia-N	mg/L		<0.15	0.17	0.21	<0.15	<0.15	<0.15	<0.15	0.18	18.40	0.17
Total Arsenic (As)	mg/L	0.100*	0.001		0.007		0.005				0.010	
Total Barium (Ba)	mg/L		0.017		0.130		0.085				0.220	
Total BOD	mg/L		4				<2				<2	
Total Boron (B)	mg/L	0.200	0.150	0.060	0.130	0.050	0.060	0.090	0.090	0.030	0.070	0.150
Total Cadmium (Cd)	mg/L	0.0002	**0.0003**		0.0002		0.0001				0.0004	
Total Calcium (Ca)	mg/L		29.0	9.8	67.0	17.0	25.0	70.0	34.0	8.3	41.0	75.0
Total Chemical Oxygen Demand (COD)	mg/L		48		62		37				110.000	
Total Chromium (Cr)	mg/L	0.0089	<0.005	<0.005	**0.0250**	**0.0200**	**0.0200**	<0.005	**0.0260**	<0.005	**0.0560**	**0.0410**
Total Copper (Cu)	mg/L	0.005	0.004		**0.019**		**0.012**				0.029	
Total Dissolved Solids	mg/L		134	60	270	68	90		130	43	260	348
Total Iron (Fe)	mg/L	0.300	**1.700**	**1.600**	**27.000**	**19.000**	**20.000**	**3.900**	**26.000**	**3.000**	**55.000**	**20.000**
Total Kjeldahl Nitrogen (TKN)	mg/L		<4	1.9	5	2	<4	1	4	1.7	33	4
Total Lead (Pb)	mg/L	0.005	0.0008		**0.008**		**0.007**				0.024	
Total Magnesium (Mg)	mg/L		5.8	2.5	15.0	6.4	8.9	25.0	11.0	2.3	18.0	17.0
Total Nickel (Ni)	mg/L	0.025	0.003	0.002	**0.029**	0.021	0.024	0.007	**0.030**	0.004	**0.067**	0.021
Total Phosphorus	mg/L	0.02*	**<0.15**	**0.34**	**1.20**	**0.28**	**0.35**	**0.07**	**0.64**	**0.16**	**1.60**	**0.50**
Total Potassium (K)	mg/L		3.7	7.7	9.8	5.2	4.9	4.6	7.4	3.7	9.2	17
Total Sodium (Na)	mg/L		2.0	0.8	3.3	1.2	1.5	13	1.6	0.6	1.7	3.7
Total Suspended Solids	mg/L		18		270		240	410			980	
Total Un-ionized Ammonia	mg/L	0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	**0.06**	<0.02
Total Zinc (Zn)	mg/L	0.020	<0.01	<0.01	**0.07**	**0.04**	**0.06**	0.01	**0.06**	<0.01	**0.15**	**0.05**
Ion Percentage	%		2.7	5.7	4.9	8.5	13.4	2.7	8.1	4.1	24.8	16.0

NOTE: 1) PWQO denotes Provincial Water Quality Objectives (1994) with updates.
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5) mg/L denotes milligrams per litre.
6) umho/cm denotes microsiemens per centimeter.
7) BOD denotes biological oxygen demand.
8) COD denotes chemical oxygen demand.
9) Blank denotes parameter not analyzed.
10) **Bolded** text and shading denotes concentration exceeds PWQO.
11) *Italics* denotes parameter concentration was below the laboratory reportable detection limit (RDL), where the RDL exceeds the relevant PWQO.

Table I-2
Precipitation Event Surface Water Quality - General Analytical Results - Compliance Monitoring
Twin Creeks Environmental Centre

Parameter	Units	PWQO	Off-Site Flow Into East Ditch Line (Background Surface Water Quality) - SS10									
Date			28-Feb-11	20-Apr-11	20-Oct-11	30-Oct-12	13-Jan-13	10-Apr-13	5-Jul-13	7-Oct-13	11-Jan-14	8-Apr-14
Laboratory			Maxxam	Maxxam	Maxxam	Maxxam	Maxxam	Maxxam	Maxxam	Maxxam	Maxxam	Maxxam
Routine/Verification Event											Routine	Routine
Alkalinity (Total as $CaCO_3$)	mg/L	<25%***	50	78	88	69	45	40	70	78	22	69
Conductivity	umho/cm		164	197	190	230	120	110	350	190	62.0	170
Dissolved Chloride (Cl)	mg/L		4	9	3	11	9	2	4	4	2	6
Dissolved Mercury (Hg)	mg/L	0.0002		<0.0001				<0.00010				<0.00010
Dissolved Sulphate (SO_4)	mg/L		10	8	6	13	12	2	82	9	1	9
Nitrate (N)	mg/L		3.6	2.4	<0.1	6.1	<0.10	0.74	2.2	<0.10	0.55	<0.10
Nitrite (N)	mg/L		0.020	0.020	<0.01	<0.010	<0.010	0.035	0.051	<0.010	0.016	<0.010
pH	(pH units)	6.5-8.5	7.5	7.8	7.8	6.9	7.3	7.3	7.6	7.7	7.9	8.2
Phenols-4AAP	mg/L	0.001	<0.001	<0.001	**0.006**	<0.0010	<0.0010	<0.0010	<0.0010	**0.003**	<0.0010	**0.007**
Total Ammonia-N	mg/L		<0.15	<0.15	<0.15	0.25	<0.15	<0.15	<0.15	0.15	0.61	<0.15
Total Arsenic (As)	mg/L	0.100*		0.006				0.002				0.001
Total Barium (Ba)	mg/L			0.120				0.046				0.013
Total BOD	mg/L			<2				<2.0				3.0
Total Boron (B)	mg/L	0.200	0.050	0.100	0.090	0.180	0.060	0.070	0.130	0.090	<0.02	0.070
Total Cadmium (Cd)	mg/L	0.0002		0.0002				<0.0001				<0.0001
Total Calcium (Ca)	mg/L		25.0	35.0	35.0	32.0	19.0	18.0	49.0	28.0	5.4	25.0
Total Chemical Oxygen Demand (COD)	mg/L			55				44				48
Total Chromium (Cr)	mg/L	0.0089	0.005	**0.024**	**0.020**	**0.067**	**0.012**	0.008	<0.005	**0.013**	<0.005	<0.005
Total Copper (Cu)	mg/L	0.005		**0.039**				**0.007**				0.0029
Total Dissolved Solids	mg/L		98	110	122	604	194	288	258	216	26.0	192
Total Iron (Fe)	mg/L	0.300	**5.500**	**23.000**	**20.000**	**26.000**	**11.000**	**8.800**	**3.800**	**6.900**	0.320	**1.400**
Total Kjeldahl Nitrogen (TKN)	mg/L		2.0	2.7	3.0	2.7	1.8	2.1	1.5	2.2	1.6	1.6
Total Lead (Pb)	mg/L	0.005		**0.009**				0.004				0.001
Total Magnesium (Mg)	mg/L		5.7	11.0	10.0	10.0	5.8	5.1	12.0	7.3	1.6	5.0
Total Nickel (Ni)	mg/L	0.025	0.007	**0.027**	0.025	**0.048**	0.014	0.011	0.006	0.008	<0.001	0.002
Total Phosphorus	mg/L	0.02*	**0.23**	**0.53**	**0.50**	**0.85**	**0.27**	**0.27**	**0.12**	**0.36**	**0.36**	**0.14**
Total Potassium (K)	mg/L		3.2	6.6	7.0	12.0	4.9	4.3	5.2	9.7	4.8	4.7
Total Sodium (Na)	mg/L		2.0	1.9	1.3	1.7	1.1	1.3	5.1	1.2	0.5	1.5
Total Suspended Solids	mg/L			240				55				28
Total Un-ionized Ammonia	mg/L	0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.0089	0.0021	0.0064	<0.0021
Total Zinc (Zn)	mg/L	0.020	0.02	**0.06**	**0.05**	**0.10**	**0.03**	0.02	0.01	0.02	<0.01	<0.01
Ion Percentage	%		9.7	10.5	9.9	10.1	3.7	13.9	4.2	6.2	1.8	1.7

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5) mg/L denotes milligrams per litre.
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7) BOD denotes biological oxygen demand.
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9) Blank denotes parameter not analyzed.
10) **Bolded** text and shading denotes concentration exceeds PWQO.
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Table I-2
Precipitation Event Surface Water Quality - General Analytical Results - Compliance Monitoring
Twin Creeks Environmental Centre

Parameter	Units	PWQO	Off-Site Flow Into East Ditch Line (Background Surface Water Quality) - SS10									
Date			30-Apr-14	7-Jul-14	15-Oct-14	24-Nov-14	4-Jan-15	10-Apr-15	25-Oct-15	7-Apr-16	12-Jan-17	6-Apr-17
Laboratory			Maxxam	Maxxam	Maxxam	Maxxam	Maxxam	Maxxam	Maxxam	Maxxam	Maxxam	Maxxam
Routine/Verification Event			Verification	Routine	Routine	Verification	Routine	Routine	Routine	Routine	Routine	Routine
Alkalinity (Total as $CaCO_3$)	mg/L	<25%***	66	64	79	43	30	51	79	49	120	160
Conductivity	umho/cm		150	400	250	120	98	130	560	110	360	340
Dissolved Chloride (Cl)	mg/L		3	6	8	3	4	4	30	1.2	13	3.7
Dissolved Mercury (Hg)	mg/L	0.0002	<0.00010					<0.00010		<0.00010		<0.00010
Dissolved Sulphate (SO_4)	mg/L		1	120	34	11	12	15	150	1	35	19
Nitrate (N)	mg/L		<0.10	1.33	<0.10	<0.10	<0.10	<0.10	0.59	<0.10	0.48	<0.10
Nitrite (N)	mg/L		<0.010	0.109	0.016	<0.010	0.029	0.011	0.049	<0.010	0.021	<0.010
pH	(pH units)	6.5-8.5	7.7	7.8	7.7	7.3	8.2	6.7	7.8	7.1	7.9	8.1
Phenols-4AAP	mg/L	0.001	**0.002**	**0.002**	<0.001	<0.001	**0.005**	**0.002**	<0.0010	<0.0010	<0.0040	<0.0040
Total Ammonia-N	mg/L		<0.15	2.31	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	0.25	<0.15
Total Arsenic (As)	mg/L	0.100*	<0.001					<0.001		0.001		
Total Barium (Ba)	mg/L		0.02					0.015		0.027		
Total BOD	mg/L		3.0					<2.0		<2.0		<2.0
Total Boron (B)	mg/L	0.200	0.060	**0.300**	0.070	0.060	0.030	0.060	0.100	0.040	0.040	0.040
Total Cadmium (Cd)	mg/L	0.0002	<0.0001					<0.0001		<0.0001		
Total Calcium (Ca)	mg/L		24	63	39	17	14	20	63	17	45	61
Total Chemical Oxygen Demand (COD)	mg/L		55					40		44		34
Total Chromium (Cr)	mg/L	0.0089	<0.005	**0.016**	**0.011**	**0.012**	<0.005	<0.005	<0.005	0.007	0.005	0.008
Total Copper (Cu)	mg/L	0.005	0.003					0.003		0.004		
Total Dissolved Solids	mg/L		142	524	288	296	96	128	382	156	194	222
Total Iron (Fe)	mg/L	0.300	**1.500**	**15.000**	**10.000**	**12.000**	**1.300**	**2.000**	**1.500**	**4.900**	**3.600**	**6.700**
Total Kjeldahl Nitrogen (TKN)	mg/L		1.60	3.10	4.10	2.20	0.75	0.57	0.60	0.41	0.90	<0.7
Total Lead (Pb)	mg/L	0.005	0.001					0.001		0.002		
Total Magnesium (Mg)	mg/L		5.0	15.0	11.0	5.7	2.8	4.7	15.0	4.5	12.0	15.0
Total Nickel (Ni)	mg/L	0.025	0.003	0.020	0.014	0.014	0.002	0.003	0.004	0.007	0.005	0.010
Total Phosphorus	mg/L	0.02*	**0.12**	**0.33**	**0.91**	**0.37**	**0.18**	**0.12**	**0.066**	**0.15**	**0.32**	**0.16**
Total Potassium (K)	mg/L		4.2	6.3	15.0	7.1	4.9	3.2	11.0	3.2	12.0	4.7
Total Sodium (Na)	mg/L		1.4	7.2	1.5	0.9	0.6	1.5	16.0	1.1	4.1	4.0
Total Suspended Solids	mg/L		19					13		16		160
Total Un-ionized Ammonia	mg/L	0.02	<0.00074	**0.12**	<0.0036	*<0.024*	<0.0021	<0.0096	<0.0028	<0.0005	0.0007	<0.00051
Total Zinc (Zn)	mg/L	0.020	<0.01	**0.04**	**0.03**	**0.03**	<0.01	<0.01	0.01	0.01	0.02	0.02
Ion Percentage	%		6.3	5.3	7.7	7.7	3.3	1.6	1.0	7.5	1.8	5.8

NOTE: 1) PWQO denotes Provincial Water Quality Objectives (1994) with updates.
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6) umho/cm denotes microsiemens per centimeter.
7) BOD denotes biological oxygen demand.
8) COD denotes chemical oxygen demand.
9) Blank denotes parameter not analyzed.
10) **Bolded** text and shading denotes concentration exceeds PWQO.
11) *Italics* denotes parameter concentration was below the laboratory reportable detection limit (RDL), where the RDL exceeds the relevant PWQO.

Table I-2
Precipitation Event Surface Water Quality - General Analytical Results - Compliance Monitoring
Twin Creeks Environmental Centre

Parameter	Units	PWQO	Off-Site Flow Into East Ditch Line (Background Surface Water Quality) - SS10									
Date			13-Jul-17	28-Oct-17	23-Jan-18	4-Apr-18	8-Aug-18	2-Oct-18	24-Jan-19	17-Apr-19	2-Oct-19	11-Jan-20
Laboratory			Maxxam	Maxxam	Maxxam	Maxxam	Maxxam	Maxxam	Maxxam	Maxxam	Bureau Veritas	Bureau Veritas
Routine/Verification Event			Routine	Routine	Routine	Routine	Routine	Routine	Routine	Routine	Routine	Routine
Alkalinity (Total as $CaCO_3$)	mg/L	<25%***	48	71	42	150	64	190	50	200	80	55
Conductivity	umho/cm		370	470	130	300	1200	650	140	720	390	114
Dissolved Chloride (Cl)	mg/L		4.6	8.8	5.5	3.0	25.0	26.0	3.8	22.0	10.0	1.6
Dissolved Mercury (Hg)	mg/L	0.0002				<0.00010				<0.00010		
Dissolved Sulphate (SO_4)	mg/L		80.0	130.0	15.0	8.9	67.0	120.0	7.3	160.0	72.0	1.2
Nitrate (N)	mg/L		12.90	3.78	0.89	<0.10	102.00	2.33	0.47	<0.10	6.03	0.17
Nitrite (N)	mg/L		0.017	0.015	0.011	<0.010	3.980	0.014	0.014	0.013	0.024	0.084
pH	(pH units)	6.5-8.5	7.7	8.0	7.4	8.0	7.4	8.2	7.4	8.5	7.9	**8.7**
Phenols-4AAP	mg/L	0.001	*<0.0080*	*<0.0010*	**0.003**	*<0.0010*	*<0.0010*	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010
Total Ammonia-N	mg/L		<0.15	<0.050	0.050	0.056	0.094	<0.050	0.190	<0.050	0.100	0.084
Total Arsenic (As)	mg/L	0.100*				0.003				<0.001		
Total Barium (Ba)	mg/L					0.048				0.028		
Total BOD	mg/L					<2				<2		
Total Boron (B)	mg/L	0.200	0.080	0.050	0.040	0.020	0.140	**0.290**	<0.02	**0.240**	0.090	0.070
Total Cadmium (Cd)	mg/L	0.0002				<0.0001				<0.0001		
Total Calcium (Ca)	mg/L		69	71	19	54	170	87	15	95	60	39
Total Chemical Oxygen Demand (COD)	mg/L					18				81		
Total Chromium (Cr)	mg/L	0.0089	**0.0320**	**0.0060**	**0.0090**	**0.0090**	<0.005	<0.005	<0.005	<0.005	0.0050	**0.08**
Total Copper (Cu)	mg/L	0.005				**0.007**				0.003		
Total Dissolved Solids	mg/L		294	420	140	135	1010	450	115	460	275	630
Total Iron (Fe)	mg/L	0.300	**32.000**	**3.400**	**7.800**	**8.900**	**3.100**	**3.800**	**0.600**	**0.900**	**4.800**	**79**
Total Kjeldahl Nitrogen (TKN)	mg/L		<0.7	0.8	<0.7	<0.7	<5	0.7	0.8	<0.7	0.9	<0.7
Total Lead (Pb)	mg/L	0.005				0.003				<0.0005		
Total Magnesium (Mg)	mg/L		18	14	5.2	13	29	27	3.6	33	11	21
Total Nickel (Ni)	mg/L	0.025	**0.042**	0.005	0.010	0.012	0.006	0.007	0.001	0.003	0.007	**0.097**
Total Phosphorus	mg/L	0.02*	**0.51**	**0.10**	**0.19**	**0.27**	**0.13**	**0.16**	**0.14**	**0.05**	**0.20**	**1.40**
Total Potassium (K)	mg/L		5.6	2.8	3.2	4.6	5.0	7.0	5.0	4.5	2.8	11.0
Total Sodium (Na)	mg/L		3.2	3.6	1.2	3.9	14.0	15.0	1.1	15.0	4.1	1.1
Total Suspended Solids	mg/L					310				14		
Total Un-ionized Ammonia	mg/L	0.02	<0.013	*<0.00066*	0.0038	<0.0005	0.0013	<0.00061	<0.00061	<0.0008	0.0056	0.0056
Total Zinc (Zn)	mg/L	0.020	**0.070**	*<0.01*	0.020	**0.030**	<0.01	0.010	<0.01	<0.01	0.010	**0.2**
Ion Percentage	%		16.0	3.0	4.0	5.9	28.1	1.3	0.8	0.8	5.3	30.4

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7) BOD denotes biological oxygen demand.
8) COD denotes chemical oxygen demand.
9) Blank denotes parameter not analyzed.
10) **Bolded** text and shading denotes concentration exceeds PWQO.
11) *Italics* denotes parameter concentration was below the laboratory reportable detection limit (RDL), where the RDL exceeds the relevant PWQO.
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Table I-2
Precipitation Event Surface Water Quality - General Analytical Results - Compliance Monitoring
Twin Creeks Environmental Centre

Parameter	Units	PWQO	Off-Site Flow Into East Ditch Line (Background Surface Water Quality) - SS10									
Date			18-May-20	15-Nov-20	26-Mar-21	9-Jul-21	4-May-22	10-Feb-23	2-Apr-23	3-Jul-23	2-Nov-23	10-Jan-24
Laboratory			Bureau Veritas	Bureau Veritas	Bureau Veritas	Bureau Veritas	Bureau Veritas	Bureau Veritas	Bureau Veritas	Bureau Veritas	Bureau Veritas	Bureau Veritas
Routine/Verification Event			Routine	Routine	Routine	Routine	Routine	Routine	Routine	Routine	Routine	Routine
Alkalinity (Total as $CaCO_3$)	mg/L	<25%***	84	96	65	160	96	68	57	150	130	76
Conductivity	umho/cm		190	420	290	740	200	200	130	1000	340	180
Dissolved Chloride (Cl)	mg/L		2.1	29	8.9	16	2.5	4.5	6.3	7.3	2.7	5.0
Dissolved Mercury (Hg)	mg/L	0.0002	<0.00010				<0.00010		<0.00010			
Dissolved Sulphate (SO_4)	mg/L		*0.5*	29	41	180	0.5	25	8.4	290	32	8.9
Nitrate (N)	mg/L		61	9.51	5.04	8.24	0.3	0.68	0.12	21.7	<0.10	<0.10
Nitrite (N)	mg/L		0.012	0.078	0.046	0.03	0.016	0.015	0.014	0.062	<0.010	0.011
pH	(pH units)	6.5-8.5	7.9	7.5	7.8	8.0	8.3	7.9	7.8	8.0	7.8	7.9
Phenols-4AAP	mg/L	0.001	<0.0010	0.001	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	0.001	<0.0010	<0.0010
Total Ammonia-N	mg/L		0.13	0.53	0.097	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15
Total Arsenic (As)	mg/L	0.100*	0.002				0.003		<0.001			
Total Barium (Ba)	mg/L		0.03				0.048		0.005			
Total BOD	mg/L		4				<2		<2			
Total Boron (B)	mg/L	0.200	0.06	0.06	0.07	0.14	0.07	0.05	0.04	0.19	0.05	0.05
Total Cadmium (Cd)	mg/L	0.0002	<0.0001				0.0001		<0.0001			
Total Calcium (Ca)	mg/L		29	51	42	110	33.0	29	17	150	47	23
Total Chemical Oxygen Demand (COD)	mg/L		38				42		28			
Total Chromium (Cr)	mg/L	0.0089	0.006	0.007	**0.019**	0.008	**0.010**	**0.009**	<0.005	<0.005	<0.005	**0.011**
Total Copper (Cu)	mg/L	0.005	0.005				**0.007**		<0.002			
Total Dissolved Solids	mg/L		185	300	160	535	140.0	235	320	745	220	195
Total Iron (Fe)	mg/L	0.300	**5.0**	**5.7**	**17**	**5.5**	**9.7**	**8.9**	0.1	**1.4**	**2.0**	**8.7**
Total Kjeldahl Nitrogen (TKN)	mg/L		<0.7	1.6	<0.7	0.8	<0.7	1	0.8	<0.7	<0.7	<0.7
Total Lead (Pb)	mg/L	0.005	0.0022				0.0034		<0.0005			
Total Magnesium (Mg)	mg/L		6.8	13	12	25	8.3	7.9	3.6	32	11	6.7
Total Nickel (Ni)	mg/L	0.025	0.007	0.009	0.022	0.008	0.013	0.011	<0.001	0.003	0.003	0.011
Total Phosphorus	mg/L	0.02*	**0.21**	**0.80**	**0.34**	**0.25**	**0.22**	**0.10**	<0.030	**0.083**	**0.25**	**0.068**
Total Potassium (K)	mg/L		2.9	13	4.7	3.8	3.6	2.6	1.2	2.7	3.6	4.3
Total Sodium (Na)	mg/L		1.5	5.8	4.1	9.2	2.1	2.2	1.3	9.7	3.5	1.4
Total Suspended Solids	mg/L		95				94		100			
Total Un-ionized Ammonia	mg/L	0.02	0.014	0.014	0.00082	<0.0027	<0.031	<0.0044	<0.00061	<0.015	<0.00061	<0.00076
Total Zinc (Zn)	mg/L	0.020	0.02	**0.04**	**0.04**	0.02	0.02	0.02	<0.01	<0.01	<0.01	0.02
Ion Percentage	%		5.7	6.3	9.0	2.1	6.4	3.2	5.3	3.4	1.2	0.4

NOTE: 1) PWQO denotes Provincial Water Quality Objectives (1994) with updates.
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3) *** denotes change from background concentrations.
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6) umho/cm denotes microsiemens per centimeter.
7) BOD denotes biological oxygen demand.
8) COD denotes chemical oxygen demand.
9) Blank denotes parameter not analyzed.
10) **Bolded** text and shading denotes concentration exceeds PWQO.
11) *Italics* denotes parameter concentration was below the laboratory reportable detection limit (RDL), where the RDL exceeds the relevant PWQO.
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Table I-2
Precipitation Event Surface Water Quality - General Analytical Results - Compliance Monitoring
Twin Creeks Environmental Centre

Parameter	Units	PWQO	Off-Site Flow Into East Ditch Line (Background Surface Water Quality) - SS10									
Date			12-Apr-24	14-Oct-24								
Laboratory			Bureau Veritas	Bureau Veritas								
Routine/Verification Event			Routine	Routine								
Alkalinity (Total as $CaCO_3$)	mg/L	<25%***	97	76								
Conductivity	umho/cm		210	210								
Dissolved Chloride (Cl)	mg/L		6.0	5.5								
Dissolved Mercury (Hg)	mg/L	0.0002	<0.00010									
Dissolved Sulphate (SO_4)	mg/L		8.8	23								
Nitrate (N)	mg/L		1.76	<0.10								
Nitrite (N)	mg/L		0.014	<0.010								
pH	(pH units)	6.5-8.5	7.8	7.9								
Phenols-4AAP	mg/L	0.001	0.0013	<0.0010								
Total Ammonia-N	mg/L		<0.15	<0.15								
Total Arsenic (As)	mg/L	0.100*	0.002									
Total Barium (Ba)	mg/L		0.041									
Total BOD	mg/L		<2									
Total Boron (B)	mg/L	0.200	0.06	0.06								
Total Cadmium (Cd)	mg/L	0.0002	<0.0001									
Total Calcium (Ca)	mg/L		34	32								
Total Chemical Oxygen Demand (COD)	mg/L		39									
Total Chromium (Cr)	mg/L	0.0089	0.008	**0.015**								
Total Copper (Cu)	mg/L	0.005	**0.006**									
Total Dissolved Solids	mg/L		210	185								
Total Iron (Fe)	mg/L	0.300	**7.4**	**14**								
Total Kjeldahl Nitrogen (TKN)	mg/L		<0.7	<0.7								
Total Lead (Pb)	mg/L	0.005	0.0030									
Total Magnesium (Mg)	mg/L		8.4	8.1								
Total Nickel (Ni)	mg/L	0.025	0.010	0.017								
Total Phosphorus	mg/L	0.02*	**0.080**	**0.25**								
Total Potassium (K)	mg/L		3.1	4.2								
Total Sodium (Na)	mg/L		2.0	2.1								
Total Suspended Solids	mg/L		64									
Total Un-ionized Ammonia	mg/L	0.02	<0.0047	<0.011								
Total Zinc (Zn)	mg/L	0.020	0.02	**0.04**								
Ion Percentage	%		3.0	3.7								

NOTE: 1) PWQO denotes Provincial Water Quality Objectives (1994) with updates.
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5) mg/L denotes milligrams per litre.
6) umho/cm denotes microsiemens per centimeter.
7) BOD denotes biological oxygen demand.
8) COD denotes chemical oxygen demand.
9) Blank denotes parameter not analyzed.
10) **Bolded** text and shading denotes concentration exceeds PWQO.
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Table I-2
Precipitation Event Surface Water Quality - General Analytical Results - Compliance Monitoring
Twin Creeks Environmental Centre

Parameter	Units	PWQO	Off-Site Flow From Township Land to South (Background Surface Water Quality) - SS16									
Date			19-Mar-08	11-Apr-08	12-May-08	23-Jul-08	04-Nov-08	12-Feb-09	06-Apr-09	10-Oct-09	25-Jan-10	06-Apr-10
Laboratory			Maxxam	Maxxam	Maxxam	Maxxam	Maxxam	Maxxam	Maxxam	Maxxam	Maxxam	Maxxam
Alkalinity (Total as $CaCO_3$)	mg/L	<25%***	50	152	228	50	118	77	102	138	65	181
Conductivity	umho/cm		123		478	109	305	190	231	409	212	389
Dissolved Chloride (Cl)	mg/L		3	7	9	2	6	4	6	4	11	7
Dissolved Mercury (Hg)	mg/L	0.0002			<0.0002				<0.0001			<0.0001
Dissolved Sulphate (SO_4)	mg/L		12	22	15	2	35	11	14	58	21	20
Nitrate (N)	mg/L		0.3	<0.1	<0.1	<0.1	1.0	0.6	0.8	1.5	1.0	<0.1
Nitrite (N)	mg/L		<0.01	<0.01	<0.01	0.01	<0.01	<0.01	0.01	<0.01	0.02	0.02
pH	(pH units)	6.5-8.5	7.7	8.3	8.1	7.8	8.0	7.7	7.6	7.9	7.8	8.0
Phenols-4AAP	mg/L	0.001	<0.001	<0.001	<0.001	<0.001	0.001	<0.001	<0.001	<0.001	<0.001	<0.001
Total Ammonia-N	mg/L		0.05	0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15
Total Arsenic (As)	mg/L	0.100*			0.002		0.005		0.003			0.001
Total Barium (Ba)	mg/L				0.04		0.072		0.059			0.038
Total BOD	mg/L				<2				<2			3
Total Boron (B)	mg/L	0.200	<0.02	0.040	0.050	0.030	0.030	0.020	0.030	0.040	<0.02	0.040
Total Cadmium (Cd)	mg/L	0.0002			0.0001		0.0001		0.0001			<0.0001
Total Calcium (Ca)	mg/L		17	53	82	15	44	27	38	64	28	62
Total Chemical Oxygen Demand (COD)	mg/L				36		36		33			45
Total Chromium (Cr)	mg/L	0.0089	<0.005	<0.005	0.006	<0.005	**0.0140**	0.0080	**0.0130**	**0.0120**	<0.005	0.0060
Total Copper (Cu)	mg/L	0.005			0.004		**0.012**		**0.009**			0.003
Total Dissolved Solids	mg/L		84	238	290	70	200	120	142	265	135	250
Total Iron (Fe)	mg/L	0.300	**1.800**	**1.000**	**3.700**	**1.900**	**16.000**	**7.900**	**12.000**	**10.000**	**2.800**	**2.900**
Total Kjeldahl Nitrogen (TKN)	mg/L		<0.7	0.7	1.0	1.7	2.0	1.0	<4	2.2	0.7	1.0
Total Lead (Pb)	mg/L	0.005			0.003		**0.006**		0.004			0.001
Total Magnesium (Mg)	mg/L		4.6	12.0	22.0	3.3	13.0	7.1	11.0	14.0	7.4	15.0
Total Nickel (Ni)	mg/L	0.025	0.002	0.001	0.006	0.003	0.019	0.009	0.016	0.013	0.004	0.004
Total Phosphorus	mg/L	0.02*	<0.06	**0.06**		**0.22**	**0.50**	*<0.15*	*<0.15*	**0.27**	**0.10**	**0.15**
Total Potassium (K)	mg/L		3.1	3.2	4.2	4.8	8.8	4.2	5.3	4.7	4.3	5.4
Total Sodium (Na)	mg/L		2.3	8.6	14.0	2.6	3.2	4.2	4.6	4.6	6.1	6.4
Total Suspended Solids	mg/L				40		200		150			37
Total Un-ionized Ammonia	mg/L	0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
Total Zinc (Zn)	mg/L	0.020	0.010	<0.01	0.020	0.010	**0.040**	0.020	**0.030**	**0.030**	0.010	0.010
Ion Percentage	%		5.3	6.9	11.1	8.3	6.5	8.5	10.0	6.9	7.1	7.5

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7) BOD denotes biological oxygen demand.
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Table I-2
Precipitation Event Surface Water Quality - General Analytical Results - Compliance Monitoring
Twin Creeks Environmental Centre

Parameter	Units	PWQO	Off-Site Flow From Township Land to South (Background Surface Water Quality) - SS16									
Date			17-Nov-10	28-Feb-11	20-Apr-11	20-Oct-11	13-Mar-12	04-May-12	13-Jan-13	10-Apr-13	05-Jul-13	12-Sep-13
Laboratory			Maxxam	Maxxam	Maxxam	Maxxam	Maxxam	Maxxam	Maxxam	Maxxam	Maxxam	Maxxam
Alkalinity (Total as $CaCO_3$)	mg/L	<25%***	82	100	140	123	140	200	84	87	99	130
Conductivity	umho/cm		254	256	323	314	310	410	220	220	250	470
Dissolved Chloride (Cl)	mg/L		6	5	7	7	6	4	3	5	8	20
Dissolved Mercury (Hg)	mg/L	0.0002			<0.0001			<0.00010		<0.00010		
Dissolved Sulphate (SO_4)	mg/L		36	21	21	30	20	<1	23	19	31	80
Nitrate (N)	mg/L		<0.1	0.5	<0.1	<0.1	<0.10	<0.10	0.3	0.5	0.1	<0.10
Nitrite (N)	mg/L		<0.01	0.01	<0.01	<0.01	<0.010	<0.010	<0.010	0.027	<0.010	<0.010
pH	(pH units)	6.5-8.5	7.9	7.7	8.1	7.9	8.0	8.1	7.5	7.9	7.8	7.8
Phenols-4AAP	mg/L	0.001	0.001	0.001	<0.001	**0.005**	**0.002**	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010
Total Ammonia-N	mg/L		<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15
Total Arsenic (As)	mg/L	0.100*			0.001			0.002		0.003		
Total Barium (Ba)	mg/L				0.028			0.055		0.054		
Total BOD	mg/L				<2			3		<2.0		
Total Boron (B)	mg/L	0.200	0.040	0.020	0.020	0.030	0.030	0.050	0.020	0.040	0.170	**0.320**
Total Cadmium (Cd)	mg/L	0.0002			<0.0001			0.0001		<0.0001		
Total Calcium (Ca)	mg/L		34	38	52	46	47	61	31	39	320	55
Total Chemical Oxygen Demand (COD)	mg/L				32			51		32		
Total Chromium (Cr)	mg/L	0.0089	**0.0140**	<0.005	<0.005	<0.005	0.0050	0.0080	0.0060	**0.0090**	**0.2000**	<0.005
Total Copper (Cu)	mg/L	0.005			0.002			0.0045		**0.010**		
Total Dissolved Solids	mg/L		168	156	192	236	248	264	238	236	264	300
Total Iron (Fe)	mg/L	0.300	**8.000**	**0.900**	**2.600**	**2.100**	**4.500**	**4.500**	**5.200**	**11.000**	**200.000**	**1.300**
Total Kjeldahl Nitrogen (TKN)	mg/L		1.00	0.80	0.80	1.00	3.50	1.40	1.00	1.50	7.20	1.40
Total Lead (Pb)	mg/L	0.005			0.001			0.003		0.004		
Total Magnesium (Mg)	mg/L		9.1	9.0	12.0	9.9	11.0	16.0	7.5	9.2	85.0	20.0
Total Nickel (Ni)	mg/L	0.025	0.009	0.002	0.004	0.003	0.006	0.006	0.007	0.015	0.27	0.006
Total Phosphorus	mg/L	0.02*	**0.24**	**0.07**	**0.10**	**0.30**	**0.13**	**0.17**	**0.15**	*<0.3*	**3.10**	**0.17**
Total Potassium (K)	mg/L		8.6	3.4	3.2	6.1	4.4	5.6	4.3	5.3	25.0	6.9
Total Sodium (Na)	mg/L		3.8	4.0	5.8	4.4	4.6	5.1	3.1	3.5	5.0	17.0
Total Suspended Solids	mg/L				27			55		81		
Total Un-ionized Ammonia	mg/L	0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.0054	<0.0037
Total Zinc (Zn)	mg/L	0.020	0.020	<0.01	0.010	0.010	0.020	0.020	0.020	**0.030**	**0.400**	<0.01
Ion Percentage	%		2.7	3.1	3.6	1.4	1.4	3.7	1.9	7.3	39.9	2.4

NOTE: 1) PWQO denotes Provincial Water Quality Objectives (1994) with updates.
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3) *** denotes change from background concentrations.
4) Unionized ammonia values are calculated based on field determined pH and temperature values.
5) mg/L denotes milligrams per litre.
6) umho/cm denotes microsiemens per centimeter.
7) BOD denotes biological oxygen demand.
8) COD denotes chemical oxygen demand.
9) Blank denotes parameter not analyzed.
10) **Bolded** text and shading denotes concentration exceeds PWQO.
11) *Italics* denotes parameter concentration was below the laboratory reportable detection limit (RDL), where the RDL exceeds the relevant PWQO.

Table I-2
Precipitation Event Surface Water Quality - General Analytical Results - Compliance Monitoring
Twin Creeks Environmental Centre

Parameter	Units	PWQO	Off-Site Flow From Township Land to South (Background Surface Water Quality) - SS16									
Date			**7-Oct-13**	**11-Jan-14**	**8-Apr-14**	**30-Apr-14**	**7-Jul-14**	**6-Sep-14**	**15-Oct-14**	**24-Nov-14**	**25-Dec-14**	**4-Jan-15**
Laboratory			**Maxxam**	**Maxxam**	**Maxxam**	**Maxxam**	**Maxxam**	**Maxxam**	**Maxxam**	**Maxxam**	**Maxxam**	**Maxxam**
Routine/Verification Event				**Routine**	**Routine**	**Verification**	**Routine**	**Verification**	**Routine**	**Verifcation**	**Verification**	**Routine**
Alkalinity (Total as $CaCO_3$)	mg/L	<25%***	160	74	120	170	100	160	140	120	170	100
Conductivity	umho/cm		490	270	280	350	590	490	610	320	400	280
Dissolved Chloride (Cl)	mg/L		5	15	5	4	20	9	5	10	7	7
Dissolved Mercury (Hg)	mg/L	0.0002			<0.00010	<0.00010						
Dissolved Sulphate (SO_4)	mg/L		78	29	22	27	170	83	160	44	32	33
Nitrate (N)	mg/L		<0.10	1.30	0.22	0.12	<0.10	<0.10	<0.10	0.15	<0.50	0.12
Nitrite (N)	mg/L		<0.010	0.035	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	0.059	0.041
pH	(pH units)	6.5-8.5	8.0	8.0	7.4	8.1	8.0	8.0	7.8	7.8	7.9	7.9
Phenols-4AAP	mg/L	0.001	**0.002**	0.001	**0.004**	<0.0010	0.001	<0.0010	<0.001	<0.001	<0.001	**0.008**
Total Ammonia-N	mg/L		<0.15	0.19	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15
Total Arsenic (As)	mg/L	0.100*			0.001	0.002						
Total Barium (Ba)	mg/L				0.030	0.046						
Total BOD	mg/L				<2.0	<2.0						
Total Boron (B)	mg/L	0.200	0.040	0.030	0.020	0.030	0.140	0.050	0.050	0.090	0.020	0.030
Total Cadmium (Cd)	mg/L	0.0002			<0.0001	<0.0001						
Total Calcium (Ca)	mg/L		71	27	44	63	100	89	89	200	56	41
Total Chemical Oxygen Demand (COD)	mg/L				32	42						
Total Chromium (Cr)	mg/L	0.0089	<0.005	<0.005	<0.005	0.0060	**0.0140**	<0.005	<0.005	**0.0790**	<0.005	<0.005
Total Copper (Cu)	mg/L	0.005			0.004	**0.0053**						
Total Dissolved Solids	mg/L		320	134	284	304	410	316	442	166	354	178
Total Iron (Fe)	mg/L	0.300	**2.900**	0.300	**4.300**	**6.200**	**13.000**	**4.900**	**3.000**	**76.000**	<0.10	**1.800**
Total Kjeldahl Nitrogen (TKN)	mg/L		1.2	1.4	1.2	1.6	1.3	0.9	1.5	3.8	1.2	0.58
Total Lead (Pb)	mg/L	0.005			0.0016	0.003						
Total Magnesium (Mg)	mg/L		19.0	8.7	11.0	14.0	22.0	19.0	27.0	49.0	14.0	11.0
Total Nickel (Ni)	mg/L	0.025	0.004	0.001	0.005	0.01	0.018	0.008	0.004	**0.110**	<0.001	0.003
Total Phosphorus	mg/L	0.02*	**0.15**	**0.25**	**0.12**	**0.18**	**0.23**	**0.24**	**0.21**	**1.20**	**0.12**	**0.12**
Total Potassium (K)	mg/L		6.5	12.0	5.4	4.6	8.1	5.1	11.0	17.0	4.8	8.1
Total Sodium (Na)	mg/L		7.1	6.1	3.5	5.1	18.0	9.0	8.3	5.0		2.6
Total Suspended Solids	mg/L				33	120						
Total Un-ionized Ammonia	mg/L	0.02	<0.0038	0.0029	<0.00072	<0.0012	<0.0038	<0.0073	<0.0061	*<0.027*	<0.0014	<0.0011
Total Zinc (Zn)	mg/L	0.020	<0.01	<0.01	0.010	0.020	**0.040**	0.010	0.010	**0.180**	<0.01	0.010
Ion Percentage	%		3.1	1.3	3.3	3.5	6.1	6.0	3.9	31.1	1.3	3.4

NOTE: 1) PWQO denotes Provincial Water Quality Objectives (1994) with updates.
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4) Unionized ammonia values are calculated based on field determined pH and temperature values.
5) mg/L denotes milligrams per litre.
6) umho/cm denotes microsiemens per centimeter.
7) BOD denotes biological oxygen demand.
8) COD denotes chemical oxygen demand.
9) Blank denotes parameter not analyzed.
10) **Bolded** text and shading denotes concentration exceeds PWQO.
11) *Italics* denotes parameter concentration was below the laboratory reportable detection limit (RDL), where the RDL exceeds the relevant PWQO.

Table I-2
Precipitation Event Surface Water Quality - General Analytical Results - Compliance Monitoring
Twin Creeks Environmental Centre

Parameter	Units	PWQO	Off-Site Flow From Township Land to South (Background Surface Water Quality) - SS16									
Date			10-Apr-15	1-Jun-15	25-Feb-16	7-Apr-16	12-Jan-17	6-Apr-17	13-Jul-17	19-Nov-17	23-Jan-18	4-Apr-18
Laboratory			Maxxam	Maxxam	Maxxam	Maxxam	Maxxam	Maxxam	Maxxam	Maxxam	Maxxam	Maxxam
Routine/Verification Event			Routine	Verification	Routine	Routine	Routine	Routine	Routine	Routine	Routine	Routine
Alkalinity (Total as $CaCO_3$)	mg/L	<25%***	160	220	140	170	91	170	45	150	80	150
Conductivity	umho/cm		330	510	330	440	220	350	380	440	170	300
Dissolved Chloride (Cl)	mg/L		4.0	5.0	4.0	4.2	4.3	3.1	1.2	4.2	2.9	4.1
Dissolved Mercury (Hg)	mg/L	0.0002	<0.00010			<0.00010		<0.00010				<0.00010
Dissolved Sulphate (SO_4)	mg/L		27	41	33	47	19	18	120	69	1.0	17
Nitrate (N)	mg/L		<0.10	<0.10	0.15	0.38	0.27	<0.10	0.74	<0.10	<0.10	<0.10
Nitrite (N)	mg/L		<0.010	0.015	<0.010	<0.010	0.012	<0.010	<0.010	<0.010	<0.010	0.014
pH	(pH units)	6.5-8.5	7.4	8.0	8.0	8.0	8.0	8.1	7.8	8.0	7.7	8.0
Phenols-4AAP	mg/L	0.001	**0.002**	<0.0010	<0.0010	<0.0010	<0.0040	<0.0040	<0.0040	**0.002**	**0.002**	<0.0010
Total Ammonia-N	mg/L		<0.15	0.17	<0.15	<0.15	<0.15	<0.15	<0.15	<0.050	0.066	0.058
Total Arsenic (As)	mg/L	0.100*	0.001			0.002						0.003
Total Barium (Ba)	mg/L		0.032			0.039						0.057
Total BOD	mg/L		<2.0			<2.0		<2.0				<2
Total Boron (B)	mg/L	0.200	0.040	0.050	0.030	0.120	0.060	0.040	**0.400**	0.030	<0.02	0.030
Total Cadmium (Cd)	mg/L	0.0002	<0.0001			<0.0001						<0.0001
Total Calcium (Ca)	mg/L		56	77	50	62	150	61	1300	66	24	60
Total Chemical Oxygen Demand (COD)	mg/L		26			28		36				18
Total Chromium (Cr)	mg/L	0.0089	<0.005	<0.005	0.0070	0.0060	0.0470	0.0070	0.5200	<0.005	<0.005	**0.0100**
Total Copper (Cu)	mg/L	0.005	0.0035			**0.006**						**0.012**
Total Dissolved Solids	mg/L		246	364	212	720	164	254	188	180	140	130
Total Iron (Fe)	mg/L	0.300	**3.100**	**1.700**	**3.300**	**5.600**	**47.000**	**6.100**	**540.000**	**3.700**	**1.000**	**9.800**
Total Kjeldahl Nitrogen (TKN)	mg/L		0.55	0.97	0.31	0.39	<0.7	<0.7	<0.7	<0.7	<0.7	<0.7
Total Lead (Pb)	mg/L	0.005	0.002			0.002						0.004
Total Magnesium (Mg)	mg/L		12.0	20.0	12.0	20.0	33.0	15.0	290.0	16.0	4.8	14.0
Total Nickel (Ni)	mg/L	0.025	0.005	0.003	0.004	0.008	**0.067**	0.009	**0.790**	0.006	0.002	0.013
Total Phosphorus	mg/L	0.02*	**0.12**	**0.09**	**0.09**	**0.15**	**1.00**	**0.20**	**13.00**	**0.11**	**0.09**	**0.19**
Total Potassium (K)	mg/L		4.2	4.5	5.0	10.0	13.0	4.6	60.0	5.1	3.8	4.7
Total Sodium (Na)	mg/L		4.5	7.5	4.4	6.7	2.0	4.1	8.0	4.9	1.4	3.8
Total Suspended Solids	mg/L		45			94		140				2100
Total Un-ionized Ammonia	mg/L	0.02	<0.0013	0.0058	<0.0017	<0.0005	<0.0005	<0.0012	<0.015	<0.0005	0.0019	<0.0005
Total Zinc (Zn)	mg/L	0.020	0.010	<0.01	0.010	0.010	0.110	0.020	**1.200**	0.010	<0.01	**0.030**
Ion Percentage	%		1.4	2.5	1.5	4.4	33.8	4.7	47.2	2.2	0.9	6.7

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7) BOD denotes biological oxygen demand.
8) COD denotes chemical oxygen demand.
9) Blank denotes parameter not analyzed.
10) **Bolded** text and shading denotes concentration exceeds PWQO.
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Table I-2
Precipitation Event Surface Water Quality - General Analytical Results - Compliance Monitoring
Twin Creeks Environmental Centre

Parameter	Units	PWQO	Off-Site Flow From Township Land to South (Background Surface Water Quality) - SS16									
Date			**24-Jan-19**	**17-Apr-19**	**2-Oct-19**	**11-Jan-20**	**18-May-20**	**26-Mar-21**	**17-Feb-22**	**4-May-22**	**10-Feb-23**	**2-Apr-23**
Laboratory			**Maxxam**	**Maxxam**	**Bureau Veritas**	**Bureau Veritas**	**Bureau Veritas**	**Bureau Veritas**	**Bureau Veritas**	**Bureau Veritas**	**Bureau Veritas**	**Bureau Veritas**
Routine/Verification Event			**Routine**	**Routine**	**Routine**	**Routine**	**Routine**	**Routine**	**Routine**	**Routine**	**Routine**	**Routine**
Alkalinity (Total as $CaCO_3$)	mg/L	<25%***	96	200	91	74	170	120	40	190	130	200
Conductivity	umho/cm		290	400	620	221	190	290	224	370	330	420
Dissolved Chloride (Cl)	mg/L		9.2	3.9	2.1	2.7	3.4	7.0	3.0	3.3	3.9	2.6
Dissolved Mercury (Hg)	mg/L	0.0002		<0.00010			<0.00010			<0.00010		<0.00010
Dissolved Sulphate (SO_4)	mg/L		34	10	220	30	1.9	29	*0.5*	9.4	30	21
Nitrate (N)	mg/L		0.53	<0.10	0.30	0.15	0.23	0.21	0.29	<0.10	0.20	0.23
Nitrite (N)	mg/L		0.021	<0.010	0.014	0.026	<0.010	<0.010	0.012	<0.010	0.020	<0.010
pH	(pH units)	6.5-8.5	7.7	8.2	7.9	8.4	7.9	7.8	7.6	8.2	8.0	8.1
Phenols-4AAP	mg/L	0.001	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010
Total Ammonia-N	mg/L		0.300	<0.050	0.210	<0.050	<0.050	0.078	0.16	<0.15	<0.15	<0.15
Total Arsenic (As)	mg/L	0.100*		<0.001			0.002			0.001		0.001
Total Barium (Ba)	mg/L			0.028			0.031			0.027		0.042
Total BOD	mg/L			<2			4			<2		<2
Total Boron (B)	mg/L	0.200	0.02	0.03	0.05	0.03	0.06	0.03	<0.02	0.04	0.03	0.03
Total Cadmium (Cd)	mg/L	0.0002		<0.0001			<0.0001			<0.0001		<0.0001
Total Calcium (Ca)	mg/L		36	64	97	32	49	45	13	56	48	60
Total Chemical Oxygen Demand (COD)	mg/L			25			39			31		19
Total Chromium (Cr)	mg/L	0.0089	**0.0090**	<0.005	0.0060	0.006	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Total Copper (Cu)	mg/L	0.005		0.003			0.005			0.003		0.004
Total Dissolved Solids	mg/L		255	240	425	190	200	195	50	190	155	265
Total Iron (Fe)	mg/L	0.300	**7.0**	**1.5**	**5.8**	**5.3**	**5.0**	**2.9**	**0.5**	**2.7**	**2.1**	**3.0**
Total Kjeldahl Nitrogen (TKN)	mg/L		0.7	<0.7	<0.7	<0.7	<0.7	<0.7	<0.7	<0.7	<0.7	1.0
Total Lead (Pb)	mg/L	0.005		0.001			0.0022			0.0012		0.0016
Total Magnesium (Mg)	mg/L		10	14	25	8	12	10	2.4	12	11	13
Total Nickel (Ni)	mg/L	0.025	0.011	0.003	0.009	0.008	0.007	0.004	0.001	0.005	0.003	0.004
Total Phosphorus	mg/L	0.02*	**0.22**	**0.07**	**0.22**	**0.20**	**0.21**	**0.15**	**0.10**	**0.08**	**0.044**	**0.049**
Total Potassium (K)	mg/L		8.6	3.1	6.0	6.7	3.3	4.6	3.3	3.4	3.9	3.3
Total Sodium (Na)	mg/L		4.5	4.2	7.3	1.6	2.4	3.4	1.1	3.1	2.9	4.3
Total Suspended Solids	mg/L			21			95			40		62
Total Un-ionized Ammonia	mg/L	0.02	<0.00061	<0.0018	0.0062	<0.0023	0.014	<0.00061	<0.00061	<0.0026	<0.00092	<0.00061
Total Zinc (Zn)	mg/L	0.020	0.02	<0.01	0.02	0.02	0.01	0.01	<0.01	<0.01	<0.01	<0.01
Ion Percentage	%		1.4	1.8	3.3	4.0	0.7	1.1	2.6	0.6	1.5	1.1

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4) Unionized ammonia values are calculated based on field determined pH and temperature values.
5) mg/L denotes milligrams per litre.
6) umho/cm denotes microsiemens per centimeter.
7) BOD denotes biological oxygen demand.
8) COD denotes chemical oxygen demand.
9) Blank denotes parameter not analyzed.
10) **Bolded** text and shading denotes concentration exceeds PWQO.
11) *Italics* denotes parameter concentration was below the laboratory reportable detection limit (RDL), where the RDL exceeds the relevant PWQO.
12) "BV" denotes Bureau Veritas Laboratories

Table I-2
Precipitation Event Surface Water Quality - General Analytical Results - Compliance Monitoring
Twin Creeks Environmental Centre

Parameter	Units	PWQO	Off-Site Flow From Township Land to South (Background Surface Water Quality) - SS16									
Date			2-Nov-23	10-Jan-24	12-Apr-24	10-Jul-24	14-Oct-24					
Laboratory			Bureau Veritas	Bureau Veritas	Bureau Veritas	Bureau Veritas	Bureau Veritas					
Routine/Verification Event			Routine	Routine	Routine	Routine	Routine					
Alkalinity (Total as $CaCO_3$)	mg/L	<25%***	230	160	170	130	130					
Conductivity	umho/cm		590	660	350	380	320					
Dissolved Chloride (Cl)	mg/L		4.4	27	7.0	1.2	2.7					
Dissolved Mercury (Hg)	mg/L	0.0002			<0.00010							
Dissolved Sulphate (SO_4)	mg/L		77	130	9.0	56	29					
Nitrate (N)	mg/L		<0.10	0.76	0.47	<0.10	<0.10					
Nitrite (N)	mg/L		<0.010	0.018	<0.010	<0.010	<0.010					
pH	(pH units)	6.5-8.5	7.9	8.0	7.9	7.8	7.9					
Phenols-4AAP	mg/L	0.001	0.001	<0.0010	0.0013	<0.0010	<0.0010					
Total Ammonia-N	mg/L		<0.15	<0.15	<0.15	<0.15	<0.15					
Total Arsenic (As)	mg/L	0.100*			0.001							
Total Barium (Ba)	mg/L				0.033							
Total BOD	mg/L				<2							
Total Boron (B)	mg/L	0.200	0.04	**0.29**	0.03	0.05	0.04					
Total Cadmium (Cd)	mg/L	0.0002			<0.0001							
Total Calcium (Ca)	mg/L		88	150	56	58	55					
Total Chemical Oxygen Demand (COD)	mg/L				42							
Total Chromium (Cr)	mg/L	0.0089	<0.005	0.037	<0.005	<0.005	<0.005					
Total Copper (Cu)	mg/L	0.005			0.004							
Total Dissolved Solids	mg/L		405	525	210	245	235					
Total Iron (Fe)	mg/L	0.300	**1.8**	**35**	**3.6**	**4.3**	**1.9**					
Total Kjeldahl Nitrogen (TKN)	mg/L		<0.7	<0.7	<0.7	<0.7	<0.7					
Total Lead (Pb)	mg/L	0.005			0.0019							
Total Magnesium (Mg)	mg/L		21	42	12	12	9.6					
Total Nickel (Ni)	mg/L	0.025	0.004	**0.052**	0.006	0.007	0.003					
Total Phosphorus	mg/L	0.02*	**0.17**	**0.50**	**0.071**	**0.20**	**0.33**					
Total Potassium (K)	mg/L		8.8	11	3.9	7.1	9.5					
Total Sodium (Na)	mg/L		4.2	21	2.4	3.1	2.2					
Total Suspended Solids	mg/L				53							
Total Un-ionized Ammonia	mg/L	0.02	<0.0015	<0.00061	<0.00066	<0.0029	<0.0027					
Total Zinc (Zn)	mg/L	0.020	<0.01	**0.09**	0.01	0.02	0.02					
Ion Percentage	%		0.8	15.2	1.5	2.7	4.7					

NOTE: 1) PWQO denotes Provincial Water Quality Objectives (1994) with updates.
2) * denotes interim PWQO.
3) *** denotes change from background concentrations.
4) Unionized ammonia values are calculated based on field determined pH and temperature values.
5) mg/L denotes milligrams per litre.
6) umho/cm denotes microsiemens per centimeter.
7) BOD denotes biological oxygen demand.
8) COD denotes chemical oxygen demand.
9) Blank denotes parameter not analyzed.
10) **Bolded** text and shading denotes concentration exceeds PWQO.
11) *Italics* denotes parameter concentration was below the laboratory reportable detection limit (RDL), where the RDL exceeds the relevant PWQO.
12) "BV" denotes Bureau Veritas Laboratories

Table I-2
Precipitation Event Surface Water Quality - General Analytical Results - Compliance Monitoring
Twin Creeks Environmental Centre

Parameter	Units	PWQO	Sedimentation Pond Surface Water Quality - SP1									
Date			23-Nov-11	6-Dec-11	10-Jan-12	13-Mar-12	27-Mar-12	22-Jun-12	15-Aug-12	14-Oct-12	13-Jan-13	10-Apr-13
Laboratory			Maxxam	Maxxam	Lambton Sci	Maxxam	Maxxam	Maxxam	Maxxam	Maxxam	Maxxam	Maxxam
Alkalinity (Total as $CaCO_3$)	mg/L	<25%***	106	116		120	110	50	57	140	80	96
Conductivity	umho/cm		408	396		470	460	360	350	530	380	420
Dissolved Chloride (Cl)	mg/L		16	11	11	14	13	11	11	11	10	13
Dissolved Mercury (Hg)	mg/L	0.0002	<0.0001	<0.0001		<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
Dissolved Sulphate (SO_4)	mg/L		71	61		110	110	120	99	110	85	85
Nitrate (N)	mg/L		0.80	0.30		0.75	<0.10	<0.10	<0.10	<0.10	0.91	0.78
Nitrite (N)	mg/L		0.02	<0.01		<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	0.032
pH	(pH units)	6.5-8.5	8.0	8.0		8.0	8.4	**9.2**	**9.2**	7.7	7.6	7.9
Phenols-4AAP	mg/L	0.001	<0.001	**0.004**		**0.002**	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010
Total Ammonia-N	mg/L		<0.15	<0.15		<0.15	<0.15	<0.15	0.21	<0.15	<0.15	<0.15
Total Arsenic (As)	mg/L	0.100*	0.004	0.004		0.003	0.001	0.003	0.003	0.004	0.001	0.003
Total Barium (Ba)	mg/L		0.069	0.130		0.066	0.034	0.024	0.013	0.038	0.033	0.063
Total BOD	mg/L		4.00	<2		4.00	4.00	<2.0	<2.0	3.00	<2.0	<2.0
Total Boron (B)	mg/L	0.200	0.170	**0.220**	0.160	**0.210**	**0.240**	0.190	**0.210**	0.190	0.120	0.200
Total Cadmium (Cd)	mg/L	0.0002	<0.0001	<0.0001		0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001
Total Calcium (Ca)	mg/L		61	52		63	52	35	28	52	46	57
Total Chemical Oxygen Demand (COD)	mg/L		33	27		27	32	34	25	35	20	37
Total Chromium (Cr)	mg/L	0.0089	**0.0130**	**0.0270**	<0.005	**0.0110**	<0.005	<0.005	<0.005	<0.005	0.0060	**0.0110**
Total Copper (Cu)	mg/L	0.005	**0.010**	**0.009**		**0.008**	0.003	0.003	0.002	<0.002	0.004	**0.010**
Total Dissolved Solids	mg/L		262	296		328	294	248	262	334	316	344
Total Iron (Fe)	mg/L	0.300	**13.000**	**14.000**		**11.000**	**1.300**	**1.200**	**1.300**	**2.700**	**4.400**	**12.000**
Total Kjeldahl Nitrogen (TKN)	mg/L		2.00	2.00		1.70	1.10	0.93	0.59	1.30	1.20	2.00
Total Lead (Pb)	mg/L	0.005	0.005	0.005		0.005	0.001	0.001	0.001	0.001	0.002	0.005
Total Magnesium (Mg)	mg/L		17	17		20	20	18	21	25	15	17
Total Nickel (Ni)	mg/L	0.025	0.017	0.016	<0.01	0.014	0.003	0.003	0.003	0.006	0.006	0.017
Total Phosphorus	mg/L	0.02*	**0.40**	**0.30**		**0.25**	**0.08**	**0.05**	**0.06**	**0.10**	**0.13**	**0.25**
Total Potassium (K)	mg/L		8.2	11.0		5.1	3.9	1.7	3.5	3.5	4.2	5.6
Total Sodium (Na)	mg/L		10.0	9.7		13.0	13.0	13.0	14.0	13.0	9.6	11.0
Total Suspended Solids	mg/L		200	120		130	34	25	26	60	73	170
Total Un-ionized Ammonia	mg/L	0.02	<0.02	<0.02	<0.003	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
Total Zinc (Zn)	mg/L	0.020	**0.030**	**0.040**	0.012	**0.030**	<0.01	<0.01	<0.01	<0.01	0.010	**0.040**
Ion Percentage	%		5.9	4.9		1.9	0.2	0.0	2.0	0.6	2.6	4.7

NOTE: 1) PWQO denotes Provincial Water Quality Objectives (1994) with updates.
2) * denotes interim PWQO.
3) *** denotes change from background concentrations.
4) Unionized ammonia values are calculated based on field determined pH and temperature values.
5) mg/L denotes milligrams per litre.
6) umho/cm denotes microsiemens per centimeter.
7) BOD denotes biological oxygen demand.
8) COD denotes chemical oxygen demand.
9) Blank denotes parameter not analyzed.
10) **Bolded** text and shading denotes concentration exceeds PWQO.
11) *Italics* denotes parameter concentration was below the laboratory reportable detection limit (RDL), where the RDL exceeds the relevant PWQO.

Table I-2
Precipitation Event Surface Water Quality - General Analytical Results - Compliance Monitoring
Twin Creeks Environmental Centre

Parameter	Units	PWQO	Sedimentation Pond Surface Water Quality - SP1									
Date			**29-Apr-13**	**5-Jul-13**	**07-Oct-13**	**11-Jan-14**	**8-Apr-14**	**30-Apr-14**	**7-Jul-14**	**24-Nov-14**	**15-Dec-14**	**4-Jan-15**
Laboratory			**Maxxam**	**Maxxam**	**Maxxam**	**Maxxam**	**Maxxam**	**Maxxam**	**Maxxam**	**Maxxam**	**Maxxam**	**Maxxam**
Routine/Verification Event						**Routine**	**Routine**	**Verification**	**Routine**	**Routine**	**Verification**	**Routine**
Alkalinity (Total as $CaCO_3$)	mg/L	<25%***	120	50	130	190	130	130	65	110	110	130
Conductivity	umho/cm		430	260	460	720	470	480	260	430	420	560
Dissolved Chloride (Cl)	mg/L		9	5	18	25	16	14	7	16	13	13
Dissolved Mercury (Hg)	mg/L	0.0002	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
Dissolved Sulphate (SO_4)	mg/L		83	65	71	140	79	94	52	76	73	140
Nitrate (N)	mg/L		<0.10	<0.10	0.14	0.9	0.44	1.34	<0.10	1.66	0.47	1.64
Nitrite (N)	mg/L		<0.010	<0.010	0.020	0.020	<0.010	0.025	<0.010	0.012	0.013	0.025
pH	(pH units)	6.5-8.5	8.3	**8.5**	8.0	8.1	8.1	8.1	**9.6**	7.8	8.1	7.7
Phenols-4AAP	mg/L	0.001	<0.0010	<0.0010	<0.0010	<0.0010	**0.002**	<0.0010	0.0013	<0.001	<0.001	**0.004**
Total Ammonia-N	mg/L		<0.15	<0.15	<0.15	0.41	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15
Total Arsenic (As)	mg/L	0.100*	<0.001	0.003	0.003	<0.001	0.002	0.002	0.005	0.003	<0.001	0.001
Total Barium (Ba)	mg/L		0.030	0.014	0.06	0.061	0.037	0.052	0.023	0.068	0.036	0.048
Total BOD	mg/L		<2.0	<2.0	4.0	4.0	2.0	<2.0	<2.0	3.0	<2.0	3.0
Total Boron (B)	mg/L	0.200	**0.220**	0.180	**0.320**	**0.290**	0.170	**0.260**	**0.230**	0.140	0.100	0.120
Total Cadmium (Cd)	mg/L	0.0002	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	0.0001	<0.0001	<0.0001
Total Calcium (Ca)	mg/L		50	23	55	110	63	71	22	59	50	77
Total Chemical Oxygen Demand (COD)	mg/L		37	18	34	32	30	30	40	33	10	25
Total Chromium (Cr)	mg/L	0.0089	<0.005	<0.005	<0.005	<0.005	<0.005	0.0070	<0.005	**0.0100**	<0.005	<0.005
Total Copper (Cu)	mg/L	0.005	0.003	<0.002	0.002	0.003	0.004	**0.006**	<0.002	**0.009**	0.003	0.003
Total Dissolved Solids	mg/L		278	164	290	478	372	344	164	338	276	404
Total Iron (Fe)	mg/L	0.300	**0.670**	**0.380**	**3.000**	0.270	**3.400**	**6.300**	**0.590**	**9.900**	**0.970**	**1.600**
Total Kjeldahl Nitrogen (TKN)	mg/L		1.10	0.75	1.60	1.30	1.20	1.20	1.30	1.90	0.79	0.87
Total Lead (Pb)	mg/L	0.005	<0.0005	<0.0005	0.0015	<0.0005	0.0013	0.0028	<0.0005	0.004	0.0005	0.0008
Total Magnesium (Mg)	mg/L		18	14	17	32	18	21	14	19	16	26
Total Nickel (Ni)	mg/L	0.025	0.002	<0.001	0.006	0.003	0.006	0.010	0.002	0.014	0.002	0.003
Total Phosphorus	mg/L	0.02*	**0.06**	**0.03**	**0.08**	**0.06**	**0.14**	**0.18**	**0.07**	**0.24**	**0.05**	**0.06**
Total Potassium (K)	mg/L		3.7	0.8	7.1	10.0	4.3	5.8	2.0	8.5	5.1	7.5
Total Sodium (Na)	mg/L		11.0	8.8	15.0	21.0	11.0	14.0	12.0	6.8	7.2	9.6
Total Suspended Solids	mg/L		21	9	85	7	68	82	15	150	21	33
Total Un-ionized Ammonia	mg/L	0.02	<0.02	<0.097	<0.0085	0.0073	<0.0042	<0.0028	*<0.022*	<0.012	<0.012	<0.00079
Total Zinc (Zn)	mg/L	0.020	<0.01	<0.01	<0.01	<0.01	0.01	0.02	<0.01	**0.03**	<0.01	<0.01
Ion Percentage	%		0.9	1.9	2.1	8.2	5.4	7.5	4.7	6.9	3.8	5.0

NOTE: 1) PWQO denotes Provincial Water Quality Objectives (1994) with updates.
2) * denotes interim PWQO.
3) *** denotes change from background concentrations.
4) Unionized ammonia values are calculated based on field determined pH and temperature values.
5) mg/L denotes milligrams per litre.
6) umho/cm denotes microsiemens per centimeter.
7) BOD denotes biological oxygen demand.
8) COD denotes chemical oxygen demand.
9) Blank denotes parameter not analyzed.
10) **Bolded** text and shading denotes concentration exceeds PWQO.
11) *Italics* denotes parameter concentration was below the laboratory reportable detection limit (RDL), where the RDL exceeds the relevant PWQO.

Table I-2
Precipitation Event Surface Water Quality - General Analytical Results - Compliance Monitoring
Twin Creeks Environmental Centre

Parameter	Units	PWQO	Sedimentation Pond Surface Water Quality - SP1									
Date			10-Apr-15	30-Apr-15	3-Aug-15	25-Feb-16	7-Apr-16	1-Aug-16	3-Nov-16	24-Nov-16	12-Dec-16	12-Jan-17
Laboratory			Maxxam	Maxxam	Maxxam	Maxxam	Maxxam	Maxxam	Maxxam	Maxxam	Maxxam	Maxxam
Routine/Verification Event			Routine	Verification	Routine	Routine	Routine	Routine	Assessment	Assessment	Assessment	Routine
Alkalinity (Total as $CaCO_3$)	mg/L	<25%***	98	110	68	110	120	39	190			110
Conductivity	umho/cm		310	410	330	420	420	460	620			410
Dissolved Chloride (Cl)	mg/L		14	8	5.4	8.5	6	2.3	13	13	11	11
Dissolved Mercury (Hg)	mg/L	0.0002	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010			<0.00010
Dissolved Sulphate (SO_4)	mg/L		54	78	86	78	74	180	100			74
Nitrate (N)	mg/L		1.23	<0.10	<0.10	1.29	0.65	0.013	0.21			0.86
Nitrite (N)	mg/L		0.03	<0.010	<0.010	0.013	<0.010	0.17	0.053			0.045
pH	(pH units)	6.5-8.5	7.0	8.1	8.1	8.0	7.7	8.8	8.1			7.9
Phenols-4AAP	mg/L	0.001	0.001	<0.0010	<0.0010	<0.0010	<0.0010	<0.0040	<0.0040	<0.0010	<0.0010	<0.0040
Total Ammonia-N	mg/L		0.15	<0.15	<0.15	<0.15	<0.15	<0.15	7.98	6.30	4.20	1.26
Total Arsenic (As)	mg/L	0.100*	0.009	<0.001	0.005	0.002	0.003	0.003	0.004			0.003
Total Barium (Ba)	mg/L		0.140	0.025	0.052	0.068	0.050	0.020	0.037			0.088
Total BOD	mg/L		<2.0	<2.0	4.0	<2.0	<2.0	<2.0	3.0			4.0
Total Boron (B)	mg/L	0.200	0.130	0.130	0.130	0.120	0.110	0.130	**2.300**	**2.200**	**1.900**	**0.410**
Total Cadmium (Cd)	mg/L	0.0002	0.0002	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001			<0.0001
Total Calcium (Ca)	mg/L		64	43	34	54	60	45	46			47
Total Chemical Oxygen Demand (COD)	mg/L		31	20	33	21	29	9.8	40			36
Total Chromium (Cr)	mg/L	0.0089	**0.0360**	<0.005	0.0070	**0.0130**	**0.0090**	<0.005	<0.005	<0.005	<0.005	**0.0160**
Total Copper (Cu)	mg/L	0.005	**0.026**	0.003	**0.006**	0.005	0.007	<0.002	0.003			**0.008**
Total Dissolved Solids	mg/L		262	238	284	292	282	390	432			300
Total Iron (Fe)	mg/L	0.300	**35.000**	**0.870**	**6.700**	**6.000**	**8.400**	**1.100**	**2.700**			**8.900**
Total Kjeldahl Nitrogen (TKN)	mg/L		0.87	0.50	0.57	0.50	0.52	0.45	9.90			2.00
Total Lead (Pb)	mg/L	0.005	**0.015**	<0.0005	0.0034	0.0023	0.0035	0.0005	0.0012			0.0034
Total Magnesium (Mg)	mg/L		21	16	19	16	17	24	24			17
Total Nickel (Ni)	mg/L	0.025	**0.048**	0.002	0.010	0.007	0.012	<0.001	0.006	0.004	0.003	0.012
Total Phosphorus	mg/L	0.02*	**0.78**	**0.05**	**0.21**	**0.14**	**0.22**	**0.04**	**0.11**			0.30
Total Potassium (K)	mg/L		7.3	3.4	2.9	7.4	4.5	2.7	9.0			12.0
Total Sodium (Na)	mg/L		5.9	6.8	6.9	6.2	6.4	10.0	36.0			8.8
Total Suspended Solids	mg/L		530	32	170	18	98	31	59			140
Total Un-ionized Ammonia	mg/L	0.02	0.0059	<0.0005	*<0.074*	<0.00098	<0.0013	<0.00063	**0.610**	**0.290**	0.009	0.007
Total Zinc (Zn)	mg/L	0.020	**0.090**	<0.01	0.020	0.02	0.02	<0.01	<0.01	<0.005	0.006	0.020
Ion Percentage	%		13.4	1.5	4.4	2.5	4.0	0.5	0.9			2.4

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5) mg/L denotes milligrams per litre.
6) umho/cm denotes microsiemens per centimeter.
7) BOD denotes biological oxygen demand.
8) COD denotes chemical oxygen demand.
9) Blank denotes parameter not analyzed.
10) **Bolded** text and shading denotes concentration exceeds PWQO.
11) *Italics* denotes parameter concentration was below the laboratory reportable detection limit (RDL), where the RDL exceeds the relevant PWQO.

Table I-2
Precipitation Event Surface Water Quality - General Analytical Results - Compliance Monitoring
Twin Creeks Environmental Centre

Parameter	Units	PWQO	Sedimentation Pond Surface Water Quality - SP1									
Date			24-Jan-17	6-Apr-17	13-Jul-17	23-Jan-18	4-Apr-18	27-Aug-18	2-Oct-18	24-Jan-19	19-Apr-19	27-Oct-19
Laboratory			Maxxam	Maxxam	Maxxam	Maxxam	Maxxam	Maxxam	Maxxam	Maxxam	Maxxam	Bureau Veritas
Routine/Verification Event			Verification	Routine	Routine	Routine	Routine	Routine	Routine	Routine	Routine	Routine
Alkalinity (Total as $CaCO_3$)	mg/L	<25%***	55	130	49	110	120	46	190	81	140	120
Conductivity	umho/cm		180	490	360	450	480	460	650	320	610	560
Dissolved Chloride (Cl)	mg/L		4.2	8.7	2.1	13	9.5	9.2	26	14	18	20
Dissolved Mercury (Hg)	mg/L	0.0002	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
Dissolved Sulphate (SO_4)	mg/L		29	96	120	98	120	150	120	44	150	130
Nitrate (N)	mg/L		0.31	0.50	<0.10	2.09	0.94	0.81	2.33	0.79	0.75	1.31
Nitrite (N)	mg/L		0.016	0.040	<0.010	0.027	0.014	0.047	0.014	0.018	0.021	0.049
pH	(pH units)	6.5-8.5	7.7	8.1	8.1	7.7	8.1	8.7	8.2	7.6	8.2	8.2
Phenols-4AAP	mg/L	0.001	<0.0040	<0.0040	<0.0040	0.0025	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010
Total Ammonia-N	mg/L		0.590	<0.15	<0.15	0.160	0.110	0.064	<0.050	0.720	<0.050	<0.050
Total Arsenic (As)	mg/L	0.100*	<0.001	0.002	0.004	0.003	0.004	0.002	0.003	<0.001	0.001	0.002
Total Barium (Ba)	mg/L		0.023	0.041	0.050	0.050	0.072	0.009	0.025	0.017	0.039	0.023
Total BOD	mg/L		<2.0	3.0	2.0	<2	<2	<2	<2	4.0	4.0	<2
Total Boron (B)	mg/L	0.200	0.130	0.150	**0.210**	0.110	0.150	0.160	0.180	0.070	0.200	**0.230**
Total Cadmium (Cd)	mg/L	0.0002	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001
Total Calcium (Ca)	mg/L		27	69	43	61	74	43	52	32	77	58
Total Chemical Oxygen Demand (COD)	mg/L		12	13	15	20	15	15	23	25	26	18
Total Chromium (Cr)	mg/L	0.0089	<0.005	<0.005	0.0050	**0.0100**	**0.0150**	<0.005	<0.005	<0.005	0.0050	<0.005
Total Copper (Cu)	mg/L	0.005	0.003	0.005	0.005	0.008	**0.011**	0.003	0.004	0.003	0.005	<0.002
Total Dissolved Solids	mg/L		116	296	236	225	200	235	450	195	440	325
Total Iron (Fe)	mg/L	0.300	**1.700**	**4.500**	**4.100**	**8.600**	**14.000**	**0.800**	**1.900**	**1.000**	**3.300**	**1.000**
Total Kjeldahl Nitrogen (TKN)	mg/L		1.10	<0.70	0.49	0.35	0.35	0.40	0.70	1.40	0.57	0.50
Total Lead (Pb)	mg/L	0.005	0.0007	0.0024	0.0017	0.0034	**0.0057**	<0.0005	0.0009	0.0007	0.0013	<0.0005
Total Magnesium (Mg)	mg/L		8	20	20	19	25	25	23	11	28	27
Total Nickel (Ni)	mg/L	0.025	0.002	0.007	0.007	0.012	0.018	0.003	0.005	0.002	0.006	0.004
Total Phosphorus	mg/L	0.02*	**0.10**	<0.15	**0.20**	**0.26**	**0.31**	**0.04**	**0.16**	**0.17**	**0.08**	**0.05**
Total Potassium (K)	mg/L		5.6	4.9	3.1	5.5	5.9	3.8	4.9	7.3	5.0	4.7
Total Sodium (Na)	mg/L		3.6	7.6	8.6	7.5	8.9	12.0	11.0	6.9	12.0	17.0
Total Suspended Solids	mg/L		15	120	120	160	320	35	58	29	70	29
Total Un-ionized Ammonia	mg/L	0.02	0.004	<0.0005	<0.052	0.0015	<0.0005	0.0014	<0.00061	0.0013	<0.0036	<0.0069
Total Zinc (Zn)	mg/L	0.020	<0.01	0.01	0.01	0.02	**0.04**	<0.01	<0.01	0.01	<0.01	<0.01
Ion Percentage	%		6.4	3.5	4.5	2.5	5.1	2.8	8.7	0.5	1.4	1.3

NOTE: 1) PWQO denotes Provincial Water Quality Objectives (1994) with updates.
2) * denotes interim PWQO.
3) *** denotes change from background concentrations.
4) Unionized ammonia values are calculated based on field determined pH and temperature values.
5) mg/L denotes milligrams per litre.
6) umho/cm denotes microsiemens per centimeter.
7) BOD denotes biological oxygen demand.
8) COD denotes chemical oxygen demand.
9) Blank denotes parameter not analyzed.
10) **Bolded** text and shading denotes concentration exceeds PWQO.
11) *Italics* denotes parameter concentration was below the laboratory reportable detection limit (RDL), where the RDL exceeds the relevant PWQO.
12) "BV" denotes Bureau Veritas laboratories

Table I-2
Precipitation Event Surface Water Quality - General Analytical Results - Compliance Monitoring
Twin Creeks Environmental Centre

Parameter	Units	PWQO	Sedimentation Pond Surface Water Quality - SP1									
Date			11-Jan-20	18-May-20	15-Nov-20	26-Mar-21	9-Jul-21	4-Oct-21	17-Feb-22	4-May-22	20-Jul-22	2-Aug-22
Laboratory			Bureau Veritas	Bureau Veritas	Bureau Veritas	Bureau Veritas	Bureau Veritas	Bureau Veritas	Bureau Veritas	Bureau Veritas	Bureau Veritas	Bureau Veritas
Routine/Verification Event			Routine	Routine	Routine	Routine	Routine	Routine	Routine	Routine	Routine	Verification
Alkalinity (Total as $CaCO_3$)	mg/L	<25%***	160	89	110	130	63	57	82	160	52	42
Conductivity	umho/cm		762	600	930	750	700	660	320	730	760	850
Dissolved Chloride (Cl)	mg/L		44	25	18	48	40	21	17	29	28	26
Dissolved Mercury (Hg)	mg/L	0.0002	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
Dissolved Sulphate (SO_4)	mg/L		170	180	350	160	220	250	44	190	280	310
Nitrate (N)	mg/L		2.34	0.10	0.21	2.66	<0.10	0.60	0.56	0.46	<0.10	0.24
Nitrite (N)	mg/L		0.024	<0.010	<0.010	0.032	<0.010	0.026	0.043	0.012	<0.010	<0.010
pH	(pH units)	6.5-8.5	8.3	8.1	8.0	8.0	8.3	8.2	7.8	8.2	**8.7**	8.2
Phenols-4AAP	mg/L	0.001	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	**0.0012**	<0.0010	<0.0010	<0.0010
Total Ammonia-N	mg/L		<0.050	<0.050	0.083	0.096	<0.15	<0.15	1.3	<0.15	<0.15	<0.15
Total Arsenic (As)	mg/L	0.100*	0.002	0.001	0.003	0.003	0.004	0.001	0.004	0.001	0.002	0.001
Total Barium (Ba)	mg/L		0.053	0.016	0.043	0.061	0.037	0.020	0.05	0.037	0.026	0.022
Total BOD	mg/L		3	<2	<2	4	<2	2	3	<2	<2	<2
Total Boron (B)	mg/L	0.200	**0.32**	**0.25**	**0.23**	**0.39**	**0.27**	**0.25**	0.08	**0.37**	**0.43**	**0.35**
Total Cadmium (Cd)	mg/L	0.0002	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001
Total Calcium (Ca)	mg/L		99	46	110	84	53	64	41	76	53	67
Total Chemical Oxygen Demand (COD)	mg/L		19	37	11	27	29	14	30	22	20	19
Total Chromium (Cr)	mg/L	0.0089	0.0060	<0.005	**0.009**	**0.010**	<0.005	<0.005	**0.013**	<0.005	<0.005	<0.005
Total Copper (Cu)	mg/L	0.005	**0.006**	0.003	**0.007**	**0.009**	0.002	0.003	**0.012**	0.004	<0.002	<0.002
Total Dissolved Solids	mg/L		530	395	585	465	470	450	195	375	510	545
Total Iron (Fe)	mg/L	0.300	**4.9**	**1.6**	**8.1**	**8.7**	**1.7**	**0.9**	**13**	**2.8**	**0.6**	**0.9**
Total Kjeldahl Nitrogen (TKN)	mg/L		0.45	0.61	0.4	0.5	<0.7	<0.7	2.2	<0.7	<0.7	<0.7
Total Lead (Pb)	mg/L	0.005	0.002	0.0007	0.0032	0.0035	0.0007	<0.0005	**0.0052**	0.0011	<0.0005	<0.0005
Total Magnesium (Mg)	mg/L		35	32	56	32	35	33	14	34	45	48
Total Nickel (Ni)	mg/L	0.025	0.010	0.005	0.014	0.017	0.006	0.003	0.019	0.007	0.003	0.003
Total Phosphorus	mg/L	0.02*	**0.15**	**0.06**	**0.14**	**0.21**	**0.05**	**0.04**	**0.33**	**0.084**	0.015	0.009
Total Potassium (K)	mg/L		7.5	3.6	6.5	7.7	3.1	5.2	8.7	4.9	3.4	3.8
Total Sodium (Na)	mg/L		29	21	22	34	30	22	8.7	26	31	31
Total Suspended Solids	mg/L		150	42	250	220	46	39	250	19	13	81
Total Un-ionized Ammonia	mg/L	0.02	<0.0015	<0.0069	0.0022	0.00098	<0.0068	<0.013	0.0076	<0.0015	<0.082	<0.075
Total Zinc (Zn)	mg/L	0.020	0.02	<0.01	0.02	**0.03**	<0.01	<0.01	**0.04**	<0.01	<0.01	<0.01
Ion Percentage	%		15.2	5.7	11.1	15.5	1.6	0.2	23.3	2.2	0.8	7.7

NOTE: 1) PWQO denotes Provincial Water Quality Objectives (1994) with updates.
2) * denotes interim PWQO.
3) *** denotes change from background concentrations.
4) Unionized ammonia values are calculated based on field determined pH and temperature values.
5) mg/L denotes milligrams per litre.
6) umho/cm denotes microsiemens per centimeter.
7) BOD denotes biological oxygen demand.
8) COD denotes chemical oxygen demand.
9) Blank denotes parameter not analyzed.
10) **Bolded** text and shading denotes concentration exceeds PWQO.
11) *Italics* denotes parameter concentration was below the laboratory reportable detection limit (RDL), where the RDL exceeds the relevant PWQO.
12) "BV" denotes Bureau Veritas laboratories

Table I-2
Precipitation Event Surface Water Quality - General Analytical Results - Compliance Monitoring
Twin Creeks Environmental Centre

Parameter	Units	PWQO	Sedimentation Pond Surface Water Quality - SP1								
Date			**18-Oct-22**	**10-Feb-23**	**2-Apr-23**	**3-Jul-23**	**2-Nov-23**	**10-Jan-24**	**12-Apr-24**	**10-Jul-24**	**14-Oct-24**
Laboratory			**Bueau Veritas**	**Bueau Veritas**	**Bueau Veritas**	**Bueau Veritas**	**Bueau Veritas**	**Bueau Veritas**	**Bueau Veritas**	**Bueau Veritas**	**Bueau Veritas**
Routine/Verification Event			**Routine**	**Routine**	**Routine**	**Routine**	**Routine**	**Routine**	**Routine**	**Routine**	**Routine**
Alkalinity (Total as $CaCO_3$)	mg/L	<25%***	65	130	110	60	140	170	150	62	56
Conductivity	umho/cm		810	650	420	310	510	670	660	620	640
Dissolved Chloride (Cl)	mg/L		24	30	17	9.6	8.4	30	20	8.4	6.0
Dissolved Mercury (Hg)	mg/L	0.0002	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
Dissolved Sulphate (SO_4)	mg/L		320	150	77	73	98	120	150	230	240
Nitrate (N)	mg/L		<0.10	1.61	0.54	<0.10	0.14	0.75	0.42	<0.10	<0.10
Nitrite (N)	mg/L		<0.010	0.015	0.013	<0.010	0.012	0.011	0.012	<0.010	<0.010
pH	(pH units)	6.5-8.5	8.1	8.0	8.0	**9.0**	8.1	8.0	7.8	8.0	7.9
Phenols-4AAP	mg/L	0.001	<0.0010	<0.0010	<0.0010	**0.002**	<0.0010	<0.0010	0.0013	<0.0010	<0.0010
Total Ammonia-N	mg/L		<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15
Total Arsenic (As)	mg/L	0.100*	<0.001	0.001	0.002	0.005	0.001	0.002	0.001	0.002	0.001
Total Barium (Ba)	mg/L		0.022	0.038	0.047	0.024	0.040	0.045	0.024	0.018	0.021
Total BOD	mg/L		<2	<2	<2	<2	<2	3	5	3	<2
Total Boron (B)	mg/L	0.200	**0.33**	**0.29**	**0.25**	**0.31**	0.20	**0.31**	**0.33**	**0.21**	0.14
Total Cadmium (Cd)	mg/L	0.0002	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001
Total Calcium (Ca)	mg/L		65	75	48	27	63	75	72	61	71
Total Chemical Oxygen Demand (COD)	mg/L		9.3	21	13	16	20	22	39	<4.0	8.6
Total Chromium (Cr)	mg/L	0.0089	<0.005	<0.005	0.008	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Total Copper (Cu)	mg/L	0.005	<0.002	0.004	0.005	0.004	0.002	0.005	0.003	0.003	<0.002
Total Dissolved Solids	mg/L		510	395	295	195	315	420	415	445	445
Total Iron (Fe)	mg/L	0.300	0.3	**3.1**	**5.8**	**3.4**	**1.3**	**4.1**	**1.6**	**1.4**	**0.7**
Total Kjeldahl Nitrogen (TKN)	mg/L		<0.7	<0.7	<0.7	<0.7	<0.7	<0.7	<0.7	<0.7	<0.7
Total Lead (Pb)	mg/L	0.005	<0.0005	0.0012	0.0021	0.0018	0.0005	0.001	0.0007	0.0006	<0.0005
Total Magnesium (Mg)	mg/L		50	26	15	19	20	26	27	29	27
Total Nickel (Ni)	mg/L	0.025	0.002	0.006	0.009	0.006	0.003	0.007	0.004	0.003	0.002
Total Phosphorus	mg/L	0.02*	0.006	**0.049**	**0.058**	**0.086**	*<0.030*	**0.075**	**0.053**	**0.038**	*<0.030*
Total Potassium (K)	mg/L		3.5	5.3	4.7	2.4	4.6	6.8	5.0	4.8	3.4
Total Sodium (Na)	mg/L		30	25	13	16	11	23	21	14	10
Total Suspended Solids	mg/L		9	65	74	140	27	59	46	50	29
Total Un-ionized Ammonia	mg/L	0.02	<0.0067	<0.0024	<0.00061	<0.11	<0.00061	<0.00061	<0.0024	<0.013	*<0.025*
Total Zinc (Zn)	mg/L	0.020	<0.01	<0.01	0.01	0.01	<0.01	0.01	<0.01	<0.01	<0.01
Ion Percentage	%		0.5	7.7	0.5	20.5	5.9	4.4	2.2	2.4	0.7

NOTE: 1) PWQO denotes Provincial Water Quality Objectives (1994) with updates.
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3) *** denotes change from background concentrations.
4) Unionized ammonia values are calculated based on field determined pH and temperature values.
5) mg/L denotes milligrams per litre.
6) umho/cm denotes microsiemens per centimeter.
7) BOD denotes biological oxygen demand.
8) COD denotes chemical oxygen demand.
9) Blank denotes parameter not analyzed.
10) **Bolded** text and shading denotes concentration exceeds PWQO.
11) *Italics* denotes parameter concentration was below the laboratory reportable detection limit (RDL), where the RDL exceeds the relevant PWQO.
12) "BV" denotes Bureau Veritas laboratories

Table I-2
Precipitation Event Surface Water Quality - General Analytical Results - Compliance Monitoring
Twin Creeks Environmental Centre

Parameter	Units	PWQO	Sedimentation Pond Surface Water Quality - SP2									
Date			14-Sep-08	17-Oct-08	04-Nov-08	05-Dec-08	12-Feb-09	19-Feb-09	08-Mar-09	06-Apr-09	26-Apr-09	07-May-09
Laboratory			Maxxam	Maxxam	Maxxam	Maxxam	Maxxam	Maxxam	Maxxam	Maxxam	Maxxam	Maxxam
Alkalinity (Total as $CaCO_3$)	mg/L	<25%***	87	112	79	115	69		76	100	70	95
Conductivity	umho/cm		339	436	282	422	223		239	389	223	310
Dissolved Chloride (Cl)	mg/L		14	11	10	14	7	14	7	22	9	11
Dissolved Mercury (Hg)	mg/L	0.0002	<0.0002	<0.0002	<0.0002	<0.0001	<0.0001		<0.0001	0.0001	<0.0001	<0.0001
Dissolved Sulphate (SO_4)	mg/L		54	98	41	76	27		37	66	30	51
Nitrate (N)	mg/L		0.6	<0.1	1.6	1.0	1.1		1.2	1.2	1.1	0.7
Nitrite (N)	mg/L		0.03	<0.01	0.01	0.01	0.02		0.01	0.01	0.03	0.03
pH	(pH units)	6.5-8.5	7.9	7.7	8.0	8.0	7.8		7.1	8.0	7.5	7.6
Phenols-4AAP	mg/L	0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
Total Ammonia-N	mg/L		<0.15	<0.15	0.21	<0.15	<0.15		<0.15	<0.15	0.19	<0.15
Total Arsenic (As)	mg/L	0.100*	0.006	0.002	0.015	0.001	0.008		0.002	0.026	0.011	<0.001
Total Barium (Ba)	mg/L		0.075	0.042	0.200	0.038	0.110		0.032	0.360	0.140	0.022
Total BOD	mg/L		<2	2	<2	<2	<2		<2	<2	<2	<2
Total Boron (B)	mg/L	0.200	0.120	0.110	0.060	0.150	0.080		0.030	0.190	0.100	0.130
Total Cadmium (Cd)	mg/L	0.0002	<0.0001	<0.0001	**0.0003**	<0.0001	<0.0001		<0.0001	**0.0005**	0.0001	<0.0001
Total Calcium (Ca)	mg/L		48	43	60	51	46		42	320	49	39
Total Chemical Oxygen Demand (COD)	mg/L		30	12	26	16	12		20	99	28	18
Total Chromium (Cr)	mg/L	0.0089	**0.0160**	0.0060	**0.0530**	0.0070	**0.0250**		<0.005	**0.1000**	**0.0370**	<0.005
Total Copper (Cu)	mg/L	0.005	**0.014**	**0.006**	**0.041**	0.004	**0.021**		0.005	**0.086**	**0.029**	0.003
Total Dissolved Solids	mg/L		246	275	185	272	140		155	250	142	200
Total Iron (Fe)	mg/L	0.300	**16.000**	**5.100**	**54.000**	**2.800**	**26.000**		**3.800**	**110.000**	**36.000**	**0.400**
Total Kjeldahl Nitrogen (TKN)	mg/L		1.6	1.2	4.0	0.6	1.9		1.3	5.0	2.4	0.8
Total Lead (Pb)	mg/L	0.005	**0.006**	0.002	**0.021**	0.002	**0.010**		0.002	**0.047**	**0.013**	<0.0005
Total Magnesium (Mg)	mg/L		15	23	21	16	14		13	87	18	11
Total Nickel (Ni)	mg/L	0.025	0.022	0.008	**0.067**	0.004	**0.034**		0.006	**0.140**	**0.050**	0.002
Total Phosphorus	mg/L	0.02*	**0.32**	**0.26**	**1.30**	*<0.15*	**0.32**		*<0.15*	**2.00**	**0.57**	*<0.03*
Total Potassium (K)	mg/L		6.1	2.9	10.0	4.2	5.9		2.0	11.0	6.5	2.5
Total Sodium (Na)	mg/L		9.2	14.0	4.5	11.0	5.2		5.3	12.0	5.6	7.2
Total Suspended Solids	mg/L		140	190	1100	<10	450		45	5300	380	15
Total Un-ionized Ammonia	mg/L	0.02	<0.02	<0.02	<0.02	<0.02	<0.02		<0.02	<0.02	<0.02	<0.02
Total Zinc (Zn)	mg/L	0.020	**0.039**	0.018	**0.140**	0.013	**0.060**		<0.01	**0.240**	**0.080**	<0.01
Ion Percentage	%		8.9	3.1	18.3	3.7	17.2		11.2	36.9	18.4	2.7

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3) *** denotes change from background concentrations.
4) Unionized ammonia values are calculated based on field determined pH and temperature values.
5) mg/L denotes milligrams per litre.
6) umho/cm denotes microsiemens per centimeter.
7) BOD denotes biological oxygen demand.
8) COD denotes chemical oxygen demand.
9) Blank denotes parameter not analyzed.
10) **Bolded** text and shading denotes concentration exceeds PWQO.
11) *Italics* denotes parameter concentration was below the laboratory reportable detection limit (RDL), where the RDL exceeds the relevant PWQO.

Table I-2
Precipitation Event Surface Water Quality - General Analytical Results - Compliance Monitoring
Twin Creeks Environmental Centre

Parameter	Units	PWQO	Sedimentation Pond Surface Water Quality - SP2									
Date			24-Oct-09	25-Jan-10	06-Apr-10	14-Oct-10	28-Feb-11	20-Apr-11	08-Aug-11	20-Oct-11	13-Mar-12	27-Mar-12
Laboratory			Maxxam	Maxxam	Maxxam	Maxxam	Maxxam	Maxxam	Maxxam	Maxxam	Maxxam	Maxxam
Alkalinity (Total as $CaCO_3$)	mg/L	<25%***	75	84	82	91	105	98	52	75	110	84
Conductivity	umho/cm		574	543	487	509	510	472	428	417	620	640
Dissolved Chloride (Cl)	mg/L		28	34	35	22	32	35	25	18	60	61
Dissolved Mercury (Hg)	mg/L	0.0002	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.00010	<0.00010
Dissolved Sulphate (SO_4)	mg/L		160	120	100	120	87	76	110	95	120	130
Nitrate (N)	mg/L		2.00	1.60	0.20	<0.1	1.10	0.50	<0.1	0.30	0.91	<0.10
Nitrite (N)	mg/L		0.05	0.04	0.01	<0.01	0.03	0.01	<0.01	0.01	0.015	<0.010
pH	(pH units)	6.5-8.5	7.0	8.1	7.9	7.9	8.0	8.1	**9.3**	8.0	8.1	8.2
Phenols-4AAP	mg/L	0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	0.001	0.001	**0.002**	<0.0010
Total Ammonia-N	mg/L		<0.15	<0.15	<0.15	<0.15	0.34	<0.15	<0.15	<0.15	<0.15	<0.15
Total Arsenic (As)	mg/L	0.100*	<0.001	<0.001	<0.001	0.002	<0.001	0.001	0.004	0.003	0.001	0.001
Total Barium (Ba)	mg/L		0.032	0.025	0.026	0.040	0.027	0.037	0.008	0.046	0.037	0.034
Total BOD	mg/L		6.0	<2	<2	4.0	<2	<2	2.0	3.0	3.0	4.0
Total Boron (B)	mg/L	0.200	0.060	0.060	0.070	0.090	0.150	0.100	0.130	0.060	0.070	0.100
Total Cadmium (Cd)	mg/L	0.0002	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001
Total Calcium (Ca)	mg/L		57	64	48	52	54	53	26	51	65	56
Total Chemical Oxygen Demand (COD)	mg/L		19	19	29	31	18	11	23	22	20	26
Total Chromium (Cr)	mg/L	0.0089	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	0.0060	<0.005	<0.005
Total Copper (Cu)	mg/L	0.005	0.003	0.003	0.003	<0.002	0.003	0.003	<0.002	**0.008**	**0.006**	0.004
Total Dissolved Solids	mg/L		370	365	312	322	306	282	300	292	410	402
Total Iron (Fe)	mg/L	0.300	**1.300**	**1.000**	**1.000**	**0.800**	**0.900**	**2.300**	0.300	**6.200**	**3.600**	**1.300**
Total Kjeldahl Nitrogen (TKN)	mg/L		1.4	1.2	1.0	1.2	1.1	1.0	0.6	1.0	1.3	1.1
Total Lead (Pb)	mg/L	0.005	0.001	<0.0005	0.001	0.001	<0.0005	0.001	<0.0005	0.003	0.002	0.001
Total Magnesium (Mg)	mg/L		24	22	18	23	19	17	23	17	22	26
Total Nickel (Ni)	mg/L	0.025	0.003	0.003	0.002	0.002	0.006	0.004	0.002	0.010	0.006	0.003
Total Phosphorus	mg/L	0.02*	**0.09**	**0.05**	**0.05**	**0.08**	**0.03**	**0.06**	**0.04**	**0.19**	**0.06**	**0.07**
Total Potassium (K)	mg/L		3.8	4.1	3.5	3.4	4.1	3.7	2.4	4.9	4.0	4.0
Total Sodium (Na)	mg/L		14	23	24	17	24	24	23	13	39	43
Total Suspended Solids	mg/L		30	18	18	19	8	27	9	150	69	30
Total Un-ionized Ammonia	mg/L	0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
Total Zinc (Zn)	mg/L	0.020	<0.01	<0.01	<0.01	<0.01	<0.01	0.01	<0.01	0.02	0.010	<0.01
Ion Percentage	%		0.8	5.9	3.2	3.6	2.9	3.4	1.2	3.8	1.7	3.0

NOTE: 1) PWQO denotes Provincial Water Quality Objectives (1994) with updates.
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5) mg/L denotes milligrams per litre.
6) umho/cm denotes microsiemens per centimeter.
7) BOD denotes biological oxygen demand.
8) COD denotes chemical oxygen demand.
9) Blank denotes parameter not analyzed.
10) **Bolded** text and shading denotes concentration exceeds PWQO.
11) *Italics* denotes parameter concentration was below the laboratory reportable detection limit (RDL), where the RDL exceeds the relevant PWQO.

Table I-2
Precipitation Event Surface Water Quality - General Analytical Results - Compliance Monitoring
Twin Creeks Environmental Centre

Parameter	Units	PWQO	Sedimentation Pond Surface Water Quality - SP2									
Date			30-Oct-12	15-Nov-12	13-Jan-13	10-Apr-13	05-Jul-13	07-Oct-13	11-Jan-14	28-Jan-14	8-Apr-14	30-Apr-14
Laboratory			Maxxam	Maxxam	Maxxam	Maxxam	Maxxam	Maxxam	Maxxam	Maxxam	Maxxam	Maxxam
Routine/Verification Event									Routine	Verification	Routine	Verification
Alkalinity (Total as $CaCO_3$)	mg/L	<25%***	110	110	77	97	55	100	71	190	100	100
Conductivity	umho/cm		620	650	410	590	350	520	310	960	410	530
Dissolved Chloride (Cl)	mg/L		35	31	21	61	23	18	32	93	24	31
Dissolved Mercury (Hg)	mg/L	0.0002	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
Dissolved Sulphate (SO_4)	mg/L		140	150	79	88	81	120	29	170	55	100
Nitrate (N)	mg/L		0.79	2.00	1.90	0.78	<0.10	<0.10	0.92	0.27	0.34	0.86
Nitrite (N)	mg/L		<0.010	0.078	<0.010	0.030	<0.010	<0.010	0.014	<0.010	<0.010	0.015
pH	(pH units)	6.5-8.5	7.2	7.8	7.7	7.9	8.4	7.9	8.0	7.3	8.0	8.0
Phenols-4AAP	mg/L	0.001	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	**0.0013**	<0.0010	**0.002**	<0.0010
Total Ammonia-N	mg/L		0.36	0.25	<0.15	0.21	<0.15	0.18	0.45	0.52	0.17	0.17
Total Arsenic (As)	mg/L	0.100*	0.021	<0.001	0.001	0.001	0.004	0.004	0.004	<0.001	0.001	0.002
Total Barium (Ba)	mg/L		0.280	0.041	0.027	0.035	0.018	0.062	0.050	0.053	0.030	0.037
Total BOD	mg/L		4.0	5.0	<2.0	<2.0	<2.0	4.0	3.0	3.0	2.0	<2.0
Total Boron (B)	mg/L	0.200	0.130	0.080	0.060	0.080	0.070	0.110	0.050	0.090	0.050	0.100
Total Cadmium (Cd)	mg/L	0.0002	**0.0003**	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001
Total Calcium (Ca)	mg/L		200	73	48	60	34	63	37	100	50	61
Total Chemical Oxygen Demand (COD)	mg/L		74	22	17	10	11	32	13	20	18	18
Total Chromium (Cr)	mg/L	0.0089	**0.0800**	<0.005	<0.005	<0.005	<0.005	0.0050	**0.0170**	<0.005	<0.005	<0.005
Total Copper (Cu)	mg/L	0.005	**0.066**	0.002	0.005	**0.006**	0.003	0.004	**0.014**	0.004	0.004	**0.006**
Total Dissolved Solids	mg/L		410	402	274	374	196	316	234	578	282	338
Total Iron (Fe)	mg/L	0.300	**83.000**	**0.580**	**2.700**	**3.000**	**1.100**	**5.200**	**13.000**	**0.640**	**2.800**	**2.700**
Total Kjeldahl Nitrogen (TKN)	mg/L		6.3	1.0	1.2	1.5	1.0	2.0	<2.0	2.1	1.2	1.3
Total Lead (Pb)	mg/L	0.005	**0.033**	<0.0005	0.0013	0.0014	0.0006	0.0024	**0.0056**	<0.0005	0.0013	0.0013
Total Magnesium (Mg)	mg/L		56	23	14	17	16	23	11	31	13	20
Total Nickel (Ni)	mg/L	0.025	**0.110**	0.002	0.005	0.006	0.002	0.009	0.019	0.004	0.006	0.006
Total Phosphorus	mg/L	0.02*	**1.40**	**0.04**	**0.07**	**0.07**	**0.07**	**0.18**	**0.28**	**0.05**	**0.09**	**0.09**
Total Potassium (K)	mg/L		12.0	3.8	3.0	3.4	0.8	5.2	6.6	5.8	3.4	3.9
Total Sodium (Na)	mg/L		30	25	15	35	20	16	21	62	15	25
Total Suspended Solids	mg/L		1600	18	38	61	24	150	52	13	47	44
Total Un-ionized Ammonia	mg/L	0.02	<0.02	<0.02	<0.02	<0.02	<0.022	0.011	0.0056	0.0014	0.003	0.002
Total Zinc (Zn)	mg/L	0.020	**0.210**	<0.01	0.010	0.010	<0.01	0.010	**0.050**	0.020	<0.01	0.010
Ion Percentage	%		24.0	3.7	5.1	4.0	4.7	5.9	9.2	2.9	5.6	6.2

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7) BOD denotes biological oxygen demand.
8) COD denotes chemical oxygen demand.
9) Blank denotes parameter not analyzed.
10) **Bolded** text and shading denotes concentration exceeds PWQO.
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Table I-2
Precipitation Event Surface Water Quality - General Analytical Results - Compliance Monitoring
Twin Creeks Environmental Centre

Parameter	Units	PWQO	Sedimentation Pond Surface Water Quality - SP2									
Date			07-Jul-14	24-Jul-14	24-Nov-14	15-Dec-14	4-Jan-15	10-Apr-15	30-Apr-15	3-Aug-15	25-Oct-15	25-Feb-16
Laboratory			Maxxam	Maxxam	Maxxam	Maxxam	Maxxam	Maxxam	Maxxam	Maxxam	Maxxam	Maxxam
Routine/Verification Event			Routine	Verification	Routine	Verification	Routine	Routine	Verification	Routine	Routine	Routine
Alkalinity (Total as $CaCO_3$)	mg/L	<25%***	61	52	89	82	100	96	78	72	69	94
Conductivity	umho/cm		360	520	630	630	660	470	520	570	760	580
Dissolved Chloride (Cl)	mg/L		29	20	34	20	29	30	36	22	36	21
Dissolved Mercury (Hg)	mg/L	0.0002	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
Dissolved Sulphate (SO_4)	mg/L		69	170	160	200	190	100	110	180	270	150
Nitrate (N)	mg/L		<0.10	<0.10	0.90	0.59	1.31	1.24	<0.10	<0.10	<0.10	1.49
Nitrite (N)	mg/L		<0.010	<0.010	0.026	0.022	0.047	0.104	<0.010	<0.010	<0.010	0.023
pH	(pH units)	6.5-8.5	**9.1**	**8.9**	7.8	8.2	7.7	7.0	7.8	7.9	7.5	8.0
Phenols-4AAP	mg/L	0.001	**0.002**	<0.0010	<0.001	<0.001	**0.004**	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010
Total Ammonia-N	mg/L		<0.15	0.35	<0.15	0.26	0.24	0.58	<0.15	<0.15	<0.15	0.27
Total Arsenic (As)	mg/L	0.100*	0.006	0.005	0.002	<0.001	0.001	0.004	<0.001	0.003	0.002	<0.001
Total Barium (Ba)	mg/L		0.028	0.020	0.040	0.029	0.038	0.051	0.031	0.059	0.075	0.026
Total BOD	mg/L		<2.0	<2.0	3.0	5.0	3.0	<2.0	<2.0	<2.0	10	<2.0
Total Boron (B)	mg/L	0.200	0.080	0.090	0.080	0.080	0.080	0.060	0.070	0.110	0.140	0.050
Total Cadmium (Cd)	mg/L	0.0002	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001
Total Calcium (Ca)	mg/L		28	44	65	52	67	60	39	54	67	62
Total Chemical Oxygen Demand (COD)	mg/L		37	15	22	11	18	15	12	16	63	17
Total Chromium (Cr)	mg/L	0.0089	<0.005	<0.005	<0.005	<0.005	<0.005	**0.0110**	<0.005	<0.005	<0.005	<0.005
Total Copper (Cu)	mg/L	0.005	0.004	<0.002	**0.008**	0.003	0.004	**0.011**	0.002	0.002	0.002	0.003
Total Dissolved Solids	mg/L		270	388	410	416	420	290	318	428	550	342
Total Iron (Fe)	mg/L	0.300	**2.500**	**0.440**	**2.900**	0.290	**0.980**	**11.000**	**0.640**	**1.700**	**0.500**	**1.200**
Total Kjeldahl Nitrogen (TKN)	mg/L		1.20	0.88	1.30	1.20	1.00	1.60	0.43	0.46	1.30	0.81
Total Lead (Pb)	mg/L	0.005	0.001	<0.0005	0.001	<0.0005	0.001	0.004	<0.0005	0.001	<0.0005	0.001
Total Magnesium (Mg)	mg/L		17	28	27	30	29	20	20	27	38	21
Total Nickel (Ni)	mg/L	0.025	0.004	0.001	0.006	0.002	0.003	0.016	0.002	0.005	0.003	0.003
Total Phosphorus	mg/L	0.02*	**0.07**	0.02	**0.13**	**0.03**	**0.07**	**0.28**	**0.28**	**0.08**	**0.29**	**0.04**
Total Potassium (K)	mg/L		1.9	2.4	8.3	5.7	7.5	4.7	3.2	3.6	4.9	3.8
Total Sodium (Na)	mg/L		23	21	25	19	22	19	24	20	30	16
Total Suspended Solids	mg/L		42	9	100	6	14	180	24	50	38	21
Total Un-ionized Ammonia	mg/L	0.02	<0.0027	**0.060**	<0.01	**0.061**	0.001	**0.027**	<0.0019	*<0.039*	<0.0012	0.002
Total Zinc (Zn)	mg/L	0.020	<0.01	<0.01	0.010	<0.01	<0.01	**0.030**	<0.01	<0.01	<0.01	<0.01
Ion Percentage	%		4.2	2.4	4.1	0.2	1.8	5.5	0.8	1.4	0.6	0.0

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5) mg/L denotes milligrams per litre.
6) umho/cm denotes microsiemens per centimeter.
7) BOD denotes biological oxygen demand.
8) COD denotes chemical oxygen demand.
9) Blank denotes parameter not analyzed.
10) **Bolded** text and shading denotes concentration exceeds PWQO.
11) *Italics* denotes parameter concentration was below the laboratory reportable detection limit (RDL), where the RDL exceeds the relevant PWQO.

Table I-2
Precipitation Event Surface Water Quality - General Analytical Results - Compliance Monitoring
Twin Creeks Environmental Centre

Parameter	Units	PWQO	Sedimentation Pond Surface Water Quality - SP2									
Date			07-Apr-16	1-Aug-16	21-Oct-16	12-Jan-17	6-Apr-17	13-Jul-17	12-Oct-17	23-Jan-18	4-Apr-18	2-Oct-18
Laboratory			Maxxam	Maxxam	Maxxam	Maxxam	Maxxam	Maxxam	Maxxam	Maxxam	Maxxam	Maxxam
Routine/Verification Event			Routine	Routine	Routine	Routine	Routine	Routine	Routine	Routine	Routine	Routine
Alkalinity (Total as $CaCO_3$)	mg/L	<25%***	110	47	60	86	110	55	110	110	120	77
Conductivity	umho/cm		540	710	800	470	670	580	800	680	670	680
Dissolved Chloride (Cl)	mg/L		22	27	26	21	23	17	27	47	33	21
Dissolved Mercury (Hg)	mg/L	0.0002	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
Dissolved Sulphate (SO_4)	mg/L		130	260	320	100	190	190	270	130	100	250
Nitrate (N)	mg/L		1.03	0.03	<0.10	0.86	0.95	<0.10	<0.10	1.35	0.68	0.89
Nitrite (N)	mg/L		0.028	0.340	<0.010	0.054	0.046	<0.010	<0.010	0.030	0.017	0.050
pH	(pH units)	6.5-8.5	7.7	7.8	7.9	7.8	7.9	8.6	8.0	7.8	8.1	8.1
Phenols-4AAP	mg/L	0.001	<0.0010	<0.0040	<0.0040	<0.0040	<0.0040	<0.0040	<0.0010	0.0023	<0.0010	<0.0010
Total Ammonia-N	mg/L		0.18	<0.15	<0.15	0.54	0.22	<0.15	<0.050	0.44	0.27	0.11
Total Arsenic (As)	mg/L	0.100*	0.002	0.002	0.002	0.003	0.002	0.004	0.003	<0.001	0.002	0.001
Total Barium (Ba)	mg/L		0.047	0.040	0.063	0.050	0.045	0.029	0.030	0.029	0.042	0.019
Total BOD	mg/L		<2.0	<2.0	3.0	4.0	3.0	<2.0	<2.0	<2	<2	<2
Total Boron (B)	mg/L	0.200	0.060	0.100	0.130	0.040	0.090	0.080	0.170	0.070	0.080	0.140
Total Cadmium (Cd)	mg/L	0.0002	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001
Total Calcium (Ca)	mg/L		70	72	76	53	83	54	68	67	79	70
Total Chemical Oxygen Demand (COD)	mg/L		24	17	21	22	13	15	19	23	13	11
Total Chromium (Cr)	mg/L	0.0089	0.0080	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Total Copper (Cu)	mg/L	0.005	**0.008**	0.003	<0.002	0.005	0.005	0.002	<0.002	**0.010**	**0.007**	0.003
Total Dissolved Solids	mg/L		298	606	562	236	414	380	570	335	305	405
Total Iron (Fe)	mg/L	0.300	**7.400**	**0.600**	**1.100**	**3.400**	**2.100**	**0.500**	**0.500**	**0.700**	**4.100**	**0.600**
Total Kjeldahl Nitrogen (TKN)	mg/L		0.69	0.65	0.64	1.30	0.80	0.41	0.41	0.95	0.71	0.36
Total Lead (Pb)	mg/L	0.005	0.003	<0.0005	0.001	0.002	0.001	<0.0005	<0.0005	0.001	0.002	<0.0005
Total Magnesium (Mg)	mg/L		23	31	38	14	27	26	42	20	26	29
Total Nickel (Ni)	mg/L	0.025	0.012	0.001	0.003	0.005	0.006	0.002	0.003	0.003	0.007	0.003
Total Phosphorus	mg/L	0.02*	**0.18**	**0.04**	**0.05**	**0.19**	**0.05**	**0.04**	**0.04**	**0.07**	**0.12**	**0.03**
Total Potassium (K)	mg/L		4.0	4.3	4.9	7.1	5.1	1.3	6.5	5.4	4.7	4.8
Total Sodium (Na)	mg/L		17	24	23	22	19	19	26	35	30	19
Total Suspended Solids	mg/L		120	18	37	98	62	13	17	6.0	130	25
Total Un-ionized Ammonia	mg/L	0.02	0.0018	<0.0005	<0.002	0.0009	0.0014	<0.061	<0.0005	0.0019	0.0017	0.002
Total Zinc (Zn)	mg/L	0.020	0.020	<0.01	<0.01	0.020	<0.01	<0.01	<0.01	<0.01	0.020	<0.01
Ion Percentage	%		3.0	0.5	1.9	3.0	1.8	0.5	1.5	1.6	8.4	2.0

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8) COD denotes chemical oxygen demand.
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Table I-2
Precipitation Event Surface Water Quality - General Analytical Results - Compliance Monitoring
Twin Creeks Environmental Centre

Parameter	Units	PWQO	Sedimentation Pond Surface Water Quality - SP2									
Date			07-Feb-19	17-Apr-19	31-Oct-19	11-Jan-20	18-May-20	4-Jun-20	15-Nov-20	26-Nov-20	26-Mar-21	9-Apr-21
Laboratory			Maxxam	Maxxam	Bureau Veritas	Bureau Veritas	Bureau Veritas	Bureau Veritas	Bureau Veritas	Bureau Veritas	Bureau Veritas	Bureau Veritas
Routine/Verification Event			Routine	Routine	Routine	Routine	Routine	Verification	Routine	Verification	Routine	Verification
Alkalinity (Total as $CaCO_3$)	mg/L	<25%***	120	95	86	130	95	48	60	63	100	73
Conductivity	umho/cm		530	600	740	865	910	880	1100	1100	870	980
Dissolved Chloride (Cl)	mg/L		32	24	37	60	81	86	37	36	62	89
Dissolved Mercury (Hg)	mg/L	0.0002	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
Dissolved Sulphate (SO_4)	mg/L		82	150	210	270	230	260	420	400	250	280
Nitrate (N)	mg/L		0.54	0.57	1.92	0.77	<0.10	<0.10	0.33	0.61	0.79	0.65
Nitrite (N)	mg/L		0.056	0.020	0.136	0.024	<0.010	<0.010	<0.010	0.024	0.025	0.031
pH	(pH units)	6.5-8.5	7.7	8.1	7.9	7.9	8.1	**9.5**	7.7	7.9	8.0	7.9
Phenols-4AAP	mg/L	0.001	0.003	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010
Total Ammonia-N	mg/L		1.2	0.2	0.2	0.3	<0.050	<0.050	0.051	<0.050	0.12	<0.050
Total Arsenic (As)	mg/L	0.100*	<0.001	0.001	0.001	0.002	0.001	0.003	<0.001	<0.001	0.003	<0.001
Total Barium (Ba)	mg/L		0.024	0.030	0.050	0.049	0.016	0.022	0.029	0.028	0.053	0.027
Total BOD	mg/L		29	<2	<2	2	<2	<2	<2	<2	<2	<2
Total Boron (B)	mg/L	0.200	0.08	0.09	0.16	0.17	**0.24**	**0.43**	**0.22**	**0.22**	**0.21**	**0.33**
Total Cadmium (Cd)	mg/L	0.0002	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001
Total Calcium (Ca)	mg/L		54	59	72	93	49	51	110	110	91	69
Total Chemical Oxygen Demand (COD)	mg/L		55.0	8.7	16.0	11.0	30	32	12	13	10	19
Total Chromium (Cr)	mg/L	0.0089	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	**0.011**	<0.005
Total Copper (Cu)	mg/L	0.005	**0.006**	0.003	0.003	**0.006**	0.002	<0.002	<0.002	<0.002	**0.010**	0.003
Total Dissolved Solids	mg/L		360	350	440	590	620	545	765	750	500	615
Total Iron (Fe)	mg/L	0.300	**0.700**	**0.700**	**0.900**	**3.600**	**0.500**	**0.400**	0.2	0.1	**9.7**	**0.5**
Total Kjeldahl Nitrogen (TKN)	mg/L		1.9	0.8	0.7	0.7	0.63	0.77	0.46	0.36	0.41	0.59
Total Lead (Pb)	mg/L	0.005	0.0005	0.0007	<0.0005	0.002	<0.0005	<0.0005	<0.0005	<0.0005	0.0041	<0.0005
Total Magnesium (Mg)	mg/L		18	26	25	41	39	39	53	52	37	36
Total Nickel (Ni)	mg/L	0.025	0.005	0.004	0.005	0.009	0.005	0.005	0.003	0.003	0.018	0.006
Total Phosphorus	mg/L	0.02*	**0.05**	**0.04**	**0.04**	**0.10**	**0.03**	**0.04**	0.018	**0.02**	**0.19**	**0.04**
Total Potassium (K)	mg/L		5.6	3.8	6.1	6.7	4.6	4.6	6.8	7.3	7	5.4
Total Sodium (Na)	mg/L		23	21	25	39	52	60	34	35	45	56
Total Suspended Solids	mg/L		17	23	24	83	16	13	7	5	290	13
Total Un-ionized Ammonia	mg/L	0.02	0.007	0.130	0.001	0.003	<0.0068	<0.058	0.0014	<0.00061	0.0012	<0.0017
Total Zinc (Zn)	mg/L	0.020	<0.01	<0.01	<0.01	0.01	<0.01	<0.01	<0.01	<0.01	**0.03**	<0.01
Ion Percentage	%		1.5	1.6	1.0	0.2	3.0	1.1	1.0	1.8	2.0	2.4

NOTE: 1) PWQO denotes Provincial Water Quality Objectives (1994) with updates.
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5) mg/L denotes milligrams per litre.
6) umho/cm denotes microsiemens per centimeter.
7) BOD denotes biological oxygen demand.
8) COD denotes chemical oxygen demand.
9) Blank denotes parameter not analyzed.
10) **Bolded** text and shading denotes concentration exceeds PWQO.
11) *Italics* denotes parameter concentration was below the laboratory reportable detection limit (RDL), where the RDL exceeds the relevant PWQO.
12) "BV" denotes Bureau Veritas Laboratories

Table I-2
Precipitation Event Surface Water Quality - General Analytical Results - Compliance Monitoring
Twin Creeks Environmental Centre

Parameter	Units	PWQO	Sedimentation Pond Surface Water Quality - SP2									
Date			26-Jun-21	9-Jul-21	30-Jul-21	4-Oct-21	15-Oct-21	17-Feb-22	4-May-22	16-May-22	20-Jul-22	2-Aug-22
Laboratory			Bureau Veritas	Bureau Veritas	Bureau Veritas	Bureau Veritas	Bureau Veritas	Bureau Veritas	Bureau Veritas	Bureau Veritas	Bureau Veritas	Bureau Veritas
Routine/Verification Event			Routine	Verification	Routine	Routine	Verification	Routine	Routine	Verification	Routine	Verification
Alkalinity (Total as $CaCO_3$)	mg/L	<25%***	43	47	46	65	53	81	99	100	53	59
Conductivity	umho/cm		1096	1000	870	710	890	570	1000	952	1000	1000
Dissolved Chloride (Cl)	mg/L		85	48	23	24	28	34	84	70	71	70
Dissolved Mercury (Hg)	mg/L	0.0002	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
Dissolved Sulphate (SO_4)	mg/L		410	360	390	280	310	140	280	330	330	330
Nitrate (N)	mg/L		<0.010	<0.10	0.93	1.03	0.72	0.55	0.12	<0.10	<0.10	<0.10
Nitrite (N)	mg/L		<0.10	<0.010	0.060	0.017	0.027	0.035	<0.010	<0.010	<0.010	<0.010
pH	(pH units)	6.5-8.5	8.1	7.8	7.8	8.0	7.6	7.9	8.1	7.9	8.0	8.0
Phenols-4AAP	mg/L	0.001	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	**0.0011**	<0.0010	<0.0010	<0.0010	<0.0010
Total Ammonia-N	mg/L		<0.15	<0.15	<0.15	<0.15	<0.15	1.04	<0.15	<0.15	<0.15	<0.15
Total Arsenic (As)	mg/L	0.100*	0.002	0.002	0.002	0.001	0.002	0.003	<0.001	0.001	0.002	0.003
Total Barium (Ba)	mg/L		0.043	0.034	0.038	0.026	0.044	0.043	0.032	0.033	0.028	0.025
Total BOD	mg/L		<2	<2	<2	<2	<2	2	<2	<2	<2	6
Total Boron (B)	mg/L	0.200	**0.31**	0.20	0.18	**0.26**	**0.30**	0.09	**0.39**	**0.50**	**0.40**	**0.39**
Total Cadmium (Cd)	mg/L	0.0002	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001
Total Calcium (Ca)	mg/L		100	92	100	80	94	69	79	90	80	94
Total Chemical Oxygen Demand (COD)	mg/L		23	17	10	14	15	19	15	25	25	25
Total Chromium (Cr)	mg/L	0.0089	<0.005	<0.005	<0.005	<0.005	0.005	**0.013**	<0.005	<0.005	<0.005	<0.005
Total Copper (Cu)	mg/L	0.005	0.002	<0.002	0.006	0.004	0.004	**0.015**	0.004	0.004	<0.002	<0.002
Total Dissolved Solids	mg/L		795	700	590	500	595	280	465	720	725	630
Total Iron (Fe)	mg/L	0.300	**0.5**	<0.1	**3.7**	**1.3**	**3.1**	**12**	0.3	**0.4**	<0.1	<0.1
Total Kjeldahl Nitrogen (TKN)	mg/L		<0.7	<0.7	<0.7	<0.7	<0.7	1.9	<0.7	<0.7	<0.7	<0.7
Total Lead (Pb)	mg/L	0.005	<0.0005	<0.0005	0.0016	0.001	0.0014	0.0049	<0.0005	<0.0005	<0.0005	<0.0005
Total Magnesium (Mg)	mg/L		51	46	44	30	45	27	43	48	51	49
Total Nickel (Ni)	mg/L	0.025	0.004	0.002	0.007	0.004	0.007	0.021	0.005	0.005	0.003	0.003
Total Phosphorus	mg/L	0.02*	**0.04**	**0.04**	**0.10**	**0.05**	0.015	**0.20**	**0.029**	**0.052**	0.016	**0.028**
Total Potassium (K)	mg/L		4.7	4.8	6.6	6	7.5	7.2	5.4	6	2.5	2
Total Sodium (Na)	mg/L		61	45	26	22	28	25	60	59	56	56
Total Suspended Solids	mg/L		18	4	200	42	100	380	12	23	7	4
Total Un-ionized Ammonia	mg/L	0.02	<0.0074	<0.0068	<0.0017	<0.054	<0.016	0.0058	<0.0078	<0.0076	<0.013	<0.085
Total Zinc (Zn)	mg/L	0.020	<0.01	<0.01	0.01	<0.01	<0.01	**0.04**	<0.01	<0.01	<0.01	<0.01
Ion Percentage	%		0.2	1.5	0.4	1.0	4.0	5.9	0.03	0.6	1.7	2.6

NOTE: 1) PWQO denotes Provincial Water Quality Objectives (1994) with updates.
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4) Unionized ammonia values are calculated based on field determined pH and temperature values.
5) mg/L denotes milligrams per litre.
6) umho/cm denotes microsiemens per centimeter.
7) BOD denotes biological oxygen demand.
8) COD denotes chemical oxygen demand.
9) Blank denotes parameter not analyzed.
10) **Bolded** text and shading denotes concentration exceeds PWQO.
11) *Italics* denotes parameter concentration was below the laboratory reportable detection limit (RDL), where the RDL exceeds the relevant PWQO.
12) "BV" denotes Bureau Veritas Laboratories

Table I-2
Precipitation Event Surface Water Quality - General Analytical Results - Compliance Monitoring
Twin Creeks Environmental Centre

Parameter	Units	PWQO	Sedimentation Pond Surface Water Quality - SP2									
Date			18-Oct-22	13-Jan-22	10-Feb-23	2-Apr-23	17-Apr-23	3-Jul-23	13-Jul-23	2-Nov-23	10-Jan-24	25-Jan-24
Laboratory			Bureau Veritas	Bureau Veritas	Bureau Veritas	Bureau Veritas	Bureau Veritas	Bureau Veritas	Bureau Veritas	Bureau Veritas	Bureau Veritas	Bureau Veritas
Routine/Verification Event			Routine	Verification	Routine	Routine	Verification	Routine	Verification	Routine	Routine	Verification
Alkalinity (Total as $CaCO_3$)	mg/L	<25%***	140	120	82	89	96	47	48	82	130	110
Conductivity	umho/cm		740	980	690	520	490	500	461	380	810	460
Dissolved Chloride (Cl)	mg/L		34	56	35	26	23	30	25	13	38	9.5
Dissolved Mercury (Hg)	mg/L	0.0002	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
Dissolved Sulphate (SO_4)	mg/L		210	320	190	120	110	140	130	73	210	94
Nitrate (N)	mg/L		<0.10	3.65	2.23	1.05	0.42	<0.10	<0.10	<0.10	0.29	0.87
Nitrite (N)	mg/L		0.012	0.052	0.022	0.018	0.013	<0.010	<0.010	<0.010	0.017	0.025
pH	(pH units)	6.5-8.5	8.1	8.0	7.9	7.9	8.2	**8.7**	**8.9**	8.0	8.1	7.9
Phenols-4AAP	mg/L	0.001	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	0.0011	<0.0010	<0.0010	<0.0010	<0.0010
Total Ammonia-N	mg/L		0.84	<0.15	<0.15	0.22	<0.15	<0.15	<0.15	<0.15	<0.15	0.19
Total Arsenic (As)	mg/L	0.100*	0.005	0.002	<0.001	0.001	0.001	0.003	0.003	0.002	<0.001	<0.001
Total Barium (Ba)	mg/L		0.14	0.049	0.028	0.036	0.033	0.020	0.020	0.022	0.041	0.026
Total BOD	mg/L		2	<2	<2	3	<2	<2	<2	6	2	<2
Total Boron (B)	mg/L	0.200	0.18	**0.28**	0.16	**0.21**	**0.21**	**0.26**	**0.23**	0.18	**0.29**	0.09
Total Cadmium (Cd)	mg/L	0.0002	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001
Total Calcium (Ca)	mg/L		99	120	78	54	53	32	37	39	83	59
Total Chemical Oxygen Demand (COD)	mg/L		11	20	16	21	15	24	22	17	20	9.1
Total Chromium (Cr)	mg/L	0.0089	0.016	<0.005	<0.005	0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Total Copper (Cu)	mg/L	0.005	**0.013**	**0.008**	0.003	0.005	0.004	0.002	0.002	<0.002	0.003	<0.002
Total Dissolved Solids	mg/L		375	620	355	320	250	310	285	235	490	295
Total Iron (Fe)	mg/L	0.300	**15**	**3.3**	0.3	**3.2**	**1.7**	**0.6**	**0.4**	**0.4**	**0.5**	0.3
Total Kjeldahl Nitrogen (TKN)	mg/L		1.2	<0.7	<0.7	<0.7	<0.7	<0.7	<0.7	<0.7	<0.7	<0.7
Total Lead (Pb)	mg/L	0.005	**0.0063**	0.0018	<0.0005	0.0014	0.0007	0.0007	<0.0005	<0.0005	<0.0005	<0.0005
Total Magnesium (Mg)	mg/L		43	38	23	17	18	20	20	13	30	13
Total Nickel (Ni)	mg/L	0.025	0.025	0.008	0.002	0.006	0.004	0.003	0.002	0.002	0.003	0.002
Total Phosphorus	mg/L	0.02*	**0.27**	**0.081**	0.016	**0.044**	**0.032**	**0.063**	*<0.030*	*<0.030*	*<0.030*	*<0.030*
Total Potassium (K)	mg/L		8.4	6.6	4.1	4.3	4.2	1.4	2.0	3.1	5.9	2.6
Total Sodium (Na)	mg/L		30	44	29	21	22	30	29	14	32	8.6
Total Suspended Solids	mg/L		440	160	11	63	33	13	16	<10	11	<10
Total Un-ionized Ammonia	mg/L	0.02	**0.035**	<0.0057	<0.0044	<0.00061	<0.0017	<0.13	<0.075	<0.00061	<0.00061	<0.00061
Total Zinc (Zn)	mg/L	0.020	**0.04**	0.01	<0.01	0.01	<0.01	<0.01	<0.01	<0.01	<0.01	0.01
Ion Percentage	%		5.3	1.2	2.0	0.4	1.6	0.8	2.2	1.2	0.2	0.1

NOTE: 1) PWQO denotes Provincial Water Quality Objectives (1994) with updates.
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3) *** denotes change from background concentrations.
4) Unionized ammonia values are calculated based on field determined pH and temperature values.
5) mg/L denotes milligrams per litre.
6) umho/cm denotes microsiemens per centimeter.
7) BOD denotes biological oxygen demand.
8) COD denotes chemical oxygen demand.
9) Blank denotes parameter not analyzed.
10) **Bolded** text and shading denotes concentration exceeds PWQO.
11) *Italics* denotes parameter concentration was below the laboratory reportable detection limit (RDL), where the RDL exceeds the relevant PWQO.
12) "BV" denotes Bureau Veritas Laboratories

Table I-2
Precipitation Event Surface Water Quality - General Analytical Results - Compliance Monitoring
Twin Creeks Environmental Centre

Parameter	Units	PWQO	Sedimentation Pond Surface Water Quality - SP2									
Date			12-Apr-24	24-Apr-24	10-Jul-24	24-Jul-24	14-Oct-24	28-Oct-24				
Laboratory			Bureau Veritas	Bureau Veritas	Bureau Veritas	Bureau Veritas	Bureau Veritas	Bureau Veritas				
Routine/Verification Event			Routine	Verification	Routine	Verification	Routine	Verification				
Alkalinity (Total as $CaCO_3$)	mg/L	<25%***	65	78	57	140	55	65				
Conductivity	umho/cm		600	630	530	558	470	530				
Dissolved Chloride (Cl)	mg/L		47	45	49	34	27	33				
Dissolved Mercury (Hg)	mg/L	0.0002	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.0010				
Dissolved Sulphate (SO_4)	mg/L		150	160	120	140	120	140				
Nitrate (N)	mg/L		<0.10	<0.10	<0.10	<0.11	<0.10	<0.10				
Nitrite (N)	mg/L		<0.010	<0.010	<0.010	<0.010	<0.010	<0.010				
pH	(pH units)	6.5-8.5	7.8	7.9	**9.0**	7.6	7.9	7.9				
Phenols-4AAP	mg/L	0.001	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.15				
Total Ammonia-N	mg/L		<0.15	<0.15	<0.15	<0.15	<0.15	<0.15				
Total Arsenic (As)	mg/L	0.100*	<0.001	0.002	0.005	0.006	0.004	0.001				
Total Barium (Ba)	mg/L		0.019	0.023	0.012	0.033	0.041	0.027				
Total BOD	mg/L		<2	3	<2	6	<2	3				
Total Boron (B)	mg/L	0.200	**0.27**	**0.32**	**0.29**	**0.30**	**0.23**	**0.26**				
Total Cadmium (Cd)	mg/L	0.0002	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001				
Total Calcium (Ca)	mg/L		41	47	28	70	40	42				
Total Chemical Oxygen Demand (COD)	mg/L		19	27	<4.0	29	51	32				
Total Chromium (Cr)	mg/L	0.0089	<0.005	<0.005	<0.005	<0.005	0.006	<0.005				
Total Copper (Cu)	mg/L	0.005	0.003	0.005	<0.002	<0.002	0.007	<0.002				
Total Dissolved Solids	mg/L		340	370	305	425	325	400				
Total Iron (Fe)	mg/L	0.300	0.3	**2.2**	0.3	**0.3**	**5.6**	0.3				
Total Kjeldahl Nitrogen (TKN)	mg/L		<0.7	<0.7	<0.7	0.9	<0.7	<0.7				
Total Lead (Pb)	mg/L	0.005	<0.0005	0.0015	<0.0005	<0.0005	0.0048	<0.0005				
Total Magnesium (Mg)	mg/L		23	27	22	19	22	21				
Total Nickel (Ni)	mg/L	0.025	0.003	0.005	0.002	0.003	0.009	0.003				
Total Phosphorus	mg/L	0.02*	*<0.030*	**0.060**	*<0.030*	**0.050**	**0.20**	*<0.030*				
Total Potassium (K)	mg/L		3.3	3.6	6.6	7.4	6.7	5.6				
Total Sodium (Na)	mg/L		37	38	35	23	23	27				
Total Suspended Solids	mg/L		<10	110	28	15	490	11				
Total Un-ionized Ammonia	mg/L	0.02	<0.0024	<0.0035	*<0.14*	<0.0036	*<0.045*	*<0.03*				
Total Zinc (Zn)	mg/L	0.020	<0.01	<0.01	<0.01	<0.01	0.03	<0.01				
Ion Percentage	%		2.7	1.9	3.1	7.3	13.0	0.7				

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4) Unionized ammonia values are calculated based on field determined pH and temperature values.

5) mg/L denotes milligrams per litre.

6) umho/cm denotes microsiemens per centimeter.

7) BOD denotes biological oxygen demand.

8) COD denotes chemical oxygen demand.

9) Blank denotes parameter not analyzed.

10) **Bolded** text and shading denotes concentration exceeds PWQO.

11) *Italics* denotes parameter concentration was below the laboratory reportable detection limit (RDL), where the RDL exceeds the relevant PWQO.

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Table I-2
Precipitation Event Surface Water Quality - General Analytical Results - Compliance Monitoring
Twin Creeks Environmental Centre

Parameter	Units	PWQO	Sedimentation Pond Surface Water Quality - SP3									
Date			**04-Nov-08**	**12-Feb-09**	**08-Mar-09**	**06-Apr-09**	**26-Apr-09**	**07-May-09**	**24-Oct-09**	**25-Jan-10**	**08-Apr-10**	**16-Jul-10**
Laboratory			**Maxxam**	**Maxxam**	**Maxxam**	**Maxxam**	**Maxxam**	**Maxxam**	**Maxxam**	**Maxxam**	**Maxxam**	**Maxxam**
Alkalinity (Total as $CaCO_3$)	mg/L	<25%***	61	48	54	83	94	97	117	101	90	43
Conductivity	umho/cm		389	137	144	233	206	209	396	338	364	221
Dissolved Chloride (Cl)	mg/L		11	6	5	6	2	2	7	12	41	22
Dissolved Mercury (Hg)	mg/L	0.0002	<0.0002	*<0.0015*	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001
Dissolved Sulphate (SO_4)	mg/L		106	13	16	27	24	25	67	48	36	27
Nitrate (N)	mg/L		2.8	1.4	1.2	1.6	1.5	1.0	1.8	1.1	0.4	<0.1
Nitrite (N)	mg/L		0.02	0.02	0.02	0.02	0.04	0.05	0.03	0.03	0.04	0.02
pH	(pH units)	6.5-8.5	7.9	7.9	7.0	7.4	6.8	7.7	7.5	8.1	8.0	**9.7**
Phenols-4AAP	mg/L	0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
Total Ammonia-N	mg/L		<0.15	0.37	<0.15	<0.15	0.19	<0.15	<0.15	<0.15	<0.15	<0.15
Total Arsenic (As)	mg/L	0.100*	0.001	0.021	0.005	0.006	0.011	<0.001	0.001	<0.001	0.002	0.003
Total Barium (Ba)	mg/L		0.037	0.260	0.073	0.092	0.15	0.015	0.035	0.018	0.042	0.018
Total BOD	mg/L		<2	<2	<2	2	<2	<2	8	<2	<2	<2
Total Boron (B)	mg/L	0.200	0.02	0.05	<0.02	0.03	0.04	<0.02	0.02	<0.02	0.02	0.04
Total Cadmium (Cd)	mg/L	0.0002	<0.0001	**0.0003**	<0.0001	0.0001	0.0002	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001
Total Calcium (Ca)	mg/L		45	63	23	42	45	31	50	51	46	19
Total Chemical Oxygen Demand (COD)	mg/L		25	50	18	35	39	14	36	33	19	39
Total Chromium (Cr)	mg/L	0.0089	<0.005	**0.076**	**0.015**	**0.024**	**0.042**	<0.005	<0.005	<0.005	0.008	<0.005
Total Copper (Cu)	mg/L	0.005	0.004	**0.051**	**0.012**	**0.016**	**0.028**	0.002	0.003	0.003	**0.007**	0.002
Total Dissolved Solids	mg/L		250	87	94	155	118	30	255	220	250	140
Total Iron (Fe)	mg/L	0.300	**3.0**	**75.0**	**16.0**	**24.0**	**39.0**	**0.6**	**0.7**	**1.1**	**7.5**	**1.8**
Total Kjeldahl Nitrogen (TKN)	mg/L		1.5	4.0	1.6	2.4	2.4	0.8	2.0	1.1	1.4	1.2
Total Lead (Pb)	mg/L	0.005	0.001	**0.028**	**0.006**	**0.008**	**0.014**	<0.0005	<0.0005	0.001	0.003	0.001
Total Magnesium (Mg)	mg/L		14.0	24.0	6.7	13.0	15.0	6.2	16.0	14.0	13.0	9.2
Total Nickel (Ni)	mg/L	0.025	0.004	**0.096**	0.021	**0.030**	**0.052**	0.001	0.002	0.002	0.010	0.003
Total Phosphorus	mg/L	0.02*	**0.18**	**0.99**	**0.17**	**0.42**	*<0.15*	**0.04**	**0.10**	*<0.06*	**0.15**	*<0.15*
Total Potassium (K)	mg/L		3.6	9.3	3.8	4.9	6.7	1.9	2.5	2.4	3.6	1.3
Total Sodium (Na)	mg/L		5.3	2.2	1.4	2.3	2.0	1.9	5.7	7.3	21.0	14.0
Total Suspended Solids	mg/L		57	720	140	560	410	30	23	13	150	37
Total Un-ionized Ammonia	mg/L	0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
Total Zinc (Zn)	mg/L	0.020	0.010	**0.170**	**0.040**	**0.060**	**0.090**	<0.01	<0.01	<0.01	0.020	<0.01
Ion Percentage	%		1.4	31.9	8.1	12.2	14.4	0.7	4.3	7.9	6.6	5.6

NOTE: 1) PWQO denotes Provincial Water Quality Objectives (1994) with updates.
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4) Unionized ammonia values are calculated based on field determined pH and temperature values.
5) mg/L denotes milligrams per litre.
6) umho/cm denotes microsiemens per centimeter.
7) BOD denotes biological oxygen demand.
8) COD denotes chemical oxygen demand.
9) Blank denotes parameter not analyzed.
10) **Bolded** text and shading denotes concentration exceeds PWQO.
11) *Italics* denotes parameter concentration was below the laboratory reportable detection limit (RDL), where the RDL exceeds the relevant PWQO.

Table I-2
Precipitation Event Surface Water Quality - General Analytical Results - Compliance Monitoring
Twin Creeks Environmental Centre

Parameter	Units	PWQO	Sedimentation Pond Surface Water Quality - SP3									
Date			06-Nov-10	28-Feb-11	20-Apr-11	29-Jul-11	20-Oct-11	09-Nov-11	13-Mar-12	27-Mar-12	21-Dec-12	13-Jan-13
Laboratory			Maxxam	Maxxam	Maxxam	Maxxam	Maxxam	Maxxam	Maxxam	Maxxam	Maxxam	Maxxam
Alkalinity (Total as $CaCO_3$)	mg/L	<25%***	129	69	115	66	136	136	120	120	140	78
Conductivity	umho/cm		454	236	380	211	372	362	350	360	500	280
Dissolved Chloride (Cl)	mg/L		33	13	23	21	21	18	14	14	22	11
Dissolved Mercury (Hg)	mg/L	0.0002	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.00010	<0.00010	<0.00010	<0.00010
Dissolved Sulphate (SO_4)	mg/L		44	26	40	9	21	23	47	40	78	40
Nitrate (N)	mg/L		0.30	0.40	<0.1	<0.1	<0.1	<0.1	<0.10	<0.10	0.45	0.33
Nitrite (N)	mg/L		<0.01	0.02	<0.01	<0.01	<0.01	<0.01	<0.010	<0.010	<0.010	<0.010
pH	(pH units)	6.5-8.5	7.9	7.7	8.1	**9.5**	8.1	8.3	8.2	8.2	7.8	7.7
Phenols-4AAP	mg/L	0.001	<0.001	<0.001	<0.001	<0.001	**0.003**	<0.001	**0.0020**	<0.0010	<0.0010	<0.0010
Total Ammonia-N	mg/L		0.18	0.17	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15
Total Arsenic (As)	mg/L	0.100*	0.002	<0.001	<0.001	0.005	0.002	0.001	<0.001	0.002	0.001	<0.001
Total Barium (Ba)	mg/L		0.044	0.018	0.023	<0.005	0.017	0.005	0.009	0.007	0.032	0.019
Total BOD	mg/L		4.0	<2	<2	3.0	2.0	<2	<2.0	3.0	3.0	<2.0
Total Boron (B)	mg/L	0.200	0.03	<0.02	<0.02	0.02	0.03	0.05	<0.02	0.03	0.03	<0.02
Total Cadmium (Cd)	mg/L	0.0002	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001
Total Calcium (Ca)	mg/L		55	31	55	24	50	50	49	49	65	37
Total Chemical Oxygen Demand (COD)	mg/L		43	15	17	39	31	27	26	30	25	19
Total Chromium (Cr)	mg/L	0.0089	0.006	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Total Copper (Cu)	mg/L	0.005	0.005	**0.007**	<0.002	<0.002	<0.002	<0.002	0.002	<0.002	0.002	0.004
Total Dissolved Solids	mg/L		282	138	234	186	274	216	240	256	296	178
Total Iron (Fe)	mg/L	0.300	**5.80**	**1.20**	**1.10**	0.20	**0.80**	0.30	**1.00**	**0.72**	**0.48**	**1.60**
Total Kjeldahl Nitrogen (TKN)	mg/L		2.3	0.8	0.9	1.5	1.0	0.8	0.83	0.9	1.1	1.0
Total Lead (Pb)	mg/L	0.005	0.002	<0.0005	0.001	<0.0005	0.001	<0.0005	0.001	<0.0005	<0.0005	0.001
Total Magnesium (Mg)	mg/L		18.0	6.7	12.0	8.1	12.0	11.0	11.0	12.0	17.0	9.3
Total Nickel (Ni)	mg/L	0.025	0.008	0.002	0.002	<0.001	0.002	0.001	0.002	0.001	0.002	0.003
Total Phosphorus	mg/L	0.02*	**0.22**	**0.08**	**0.06**	**0.18**	**0.11**	**0.03**	**0.05**	**0.05**	**0.05**	**0.08**
Total Potassium (K)	mg/L		3.5	2.9	2.3	0.3	4.3	4.2	3.2	3.4	4.6	2.9
Total Sodium (Na)	mg/L		19.0	7.9	12.0	12.0	14.0	12.0	8.8	8.5	16.0	7.5
Total Suspended Solids	mg/L		150	3	32	14	9	4	15	11	11	19
Total Un-ionized Ammonia	mg/L	0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
Total Zinc (Zn)	mg/L	0.020	0.02	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	0.01
Ion Percentage	%		6.8	2.5	3.5	3.5	3.0	2.2	0.3	1.8	2.0	2.8

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7) BOD denotes biological oxygen demand.
8) COD denotes chemical oxygen demand.
9) Blank denotes parameter not analyzed.
10) **Bolded** text and shading denotes concentration exceeds PWQO.
11) *Italics* denotes parameter concentration was below the laboratory reportable detection limit (RDL), where the RDL exceeds the relevant PWQO.

Table I-2
Precipitation Event Surface Water Quality - General Analytical Results - Compliance Monitoring
Twin Creeks Environmental Centre

Parameter	Units	PWQO	Sedimentation Pond Surface Water Quality - SP3									
Date			10-Apr-13	05-Jul-13	07-Oct-13	11-Jan-14	8-Apr-14	30-Apr-14	7-Jul-14	15-Oct-14	4-Nov-14	4-Jan-15
Laboratory			Maxxam	Maxxam	Maxxam	Maxxam	Maxxam	Maxxam	Maxxam	Maxxam	Maxxam	Maxxam
Routine/Verification Event						Routine	Routine	Verification	Routine	Routine	Verification	Routine
Alkalinity (Total as $CaCO_3$)	mg/L	<25%***	110	55	130	110	82	85	92	160	150	160
Conductivity	umho/cm		370	350	360	330	280	370	350	440	450	520
Dissolved Chloride (Cl)	mg/L		29	23	21	22	24	38	40	23	24	26
Dissolved Mercury (Hg)	mg/L	0.0002	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
Dissolved Sulphate (SO_4)	mg/L		29	81	19	24	24	36	20	31	39	69
Nitrate (N)	mg/L		<0.10	<0.10	<0.10	0.68	<0.10	<0.10	<0.10	<0.10	<0.10	1.17
Nitrite (N)	mg/L		0.027	<0.010	<0.010	0.017	<0.010	<0.010	<0.010	<0.010	<0.010	0.028
pH	(pH units)	6.5-8.5	7.9	**8.8**	8.1	8.1	8.2	7.8	8.1	8.1	8.1	**8.6**
Phenols-4AAP	mg/L	0.001	<0.0010	<0.0010	<0.0010	<0.0010	**0.003**	<0.0010	**0.0011**	<0.001	<0.001	**0.003**
Total Ammonia-N	mg/L		<0.15	<0.15	<0.15	0.17	<0.15	<0.15	<0.15	0.17	0.35	<0.15
Total Arsenic (As)	mg/L	0.100*	0.001	0.004	0.002	<0.001	0.001	0.002	0.007	0.002	0.001	0.001
Total Barium (Ba)	mg/L		0.029	0.018	0.015	0.018	0.009	0.040	0.026	0.030	0.033	0.039
Total BOD	mg/L		<2.0	<2.0	3.0	4.0	2.0	<2.0	<2.0	3.0	<2.0	3.0
Total Boron (B)	mg/L	0.200	0.020	0.070	0.030	0.020	<0.02	<0.02	0.020	0.040	0.050	0.040
Total Cadmium (Cd)	mg/L	0.0002	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.001
Total Calcium (Ca)	mg/L		45	34	42	45	34	39	30	60	53	71
Total Chemical Oxygen Demand (COD)	mg/L		16	11	24	27	21	34	36	21	20	27
Total Chromium (Cr)	mg/L	0.0089	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Total Copper (Cu)	mg/L	0.005	0.003	0.003	<0.002	0.002	<0.002	0.003	<0.002	<0.002	<0.002	0.004
Total Dissolved Solids	mg/L		244	196	198	124	210	250	228	252	268	326
Total Iron (Fe)	mg/L	0.300	**1.700**	**1.100**	0.200	**0.310**	**0.850**	**2.200**	**1.400**	**0.380**	**0.390**	**0.750**
Total Kjeldahl Nitrogen (TKN)	mg/L		1.10	0.98	1.20	1.30	1.00	1.20	1.10	0.91	0.94	1.10
Total Lead (Pb)	mg/L	0.005	0.001	0.001	<0.0005	<0.0005	<0.0005	0.001	0.001	<0.0005	<0.0005	0.001
Total Magnesium (Mg)	mg/L		9.9	16.0	12.0	12.0	7.9	12.0	14.0	15.0	13.0	17.0
Total Nickel (Ni)	mg/L	0.025	0.002	0.002	<0.001	0.001	0.002	0.004	0.003	0.002	0.002	0.004
Total Phosphorus	mg/L	0.02*	**0.05**	**0.07**	**0.04**	**0.11**	**0.05**	**0.09**	**0.07**	**0.04**	**0.03**	**0.06**
Total Potassium (K)	mg/L		3.7	0.8	4.9	7.1	3.6	4.4	2.3	8.0	5.9	7.6
Total Sodium (Na)	mg/L		16	20	13	13	14	22	25	16	15	17
Total Suspended Solids	mg/L		20	24	6	7	20	44	34	7	7	13
Total Un-ionized Ammonia	mg/L	0.02	<0.02	*<0.022*	<0.006	0.0029	<0.0045	<0.0005	<0.0019	0.011	**0.021**	<0.0057
Total Zinc (Zn)	mg/L	0.020	0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Ion Percentage	%		1.6	3.2	1.4	8.0	5.0	5.7	5.7	7.1	3.7	5.4

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7) BOD denotes biological oxygen demand.
8) COD denotes chemical oxygen demand.
9) Blank denotes parameter not analyzed.
10) **Bolded** text and shading denotes concentration exceeds PWQO.
11) *Italics* denotes parameter concentration was below the laboratory reportable detection limit (RDL), where the RDL exceeds the relevant PWQO.

Table I-2
Precipitation Event Surface Water Quality - General Analytical Results - Compliance Monitoring
Twin Creeks Environmental Centre

Parameter	Units	PWQO	Sedimentation Pond Surface Water Quality - SP3									
Date			10-Apr-15	20-Aug-15	25-Oct-15	25-Feb-16	7-Apr-16	1-Aug-16	21-Oct-16	12-Jan-17	6-Apr-17	13-Jul-17
Laboratory			Maxxam	Maxxam	Maxxam	Maxxam	Maxxam	Maxxam	Maxxam	Maxxam	Maxxam	Maxxam
Routine/Verification Event			Routine	Routine	Routine	Routine	Routine	Routine	Routine	Routine	Routine	Routine
Alkalinity (Total as $CaCO_3$)	mg/L	<25%***	120	82	160	120	130	100	110	160	130	74
Conductivity	umho/cm		330	240	450	530	380	350	340	510	420	220
Dissolved Chloride (Cl)	mg/L		26	23	29	41	21	38	35	36	22	17
Dissolved Mercury (Hg)	mg/L	0.0002	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
Dissolved Sulphate (SO_4)	mg/L		31	7	27	61	40	13	12	35	42	14
Nitrate (N)	mg/L		0.29	<0.10	<0.10	1.21	0.59	0.015	<0.10	0.37	0.33	<0.10
Nitrite (N)	mg/L		0.016	<0.010	0.011	0.020	0.015	<0.10	<0.010	0.036	0.022	<0.010
pH	(pH units)	6.5-8.5	7.1	8.1	8.0	8.1	7.9	8.1	8.6	7.9	8.2	8.7
Phenols-4AAP	mg/L	0.001	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0040	<0.0040	<0.0040	<0.0040	<0.0040
Total Ammonia-N	mg/L		<0.15	<0.15	0.60	<0.15	0.27	0.48	<0.15	0.31	<0.15	<0.15
Total Arsenic (As)	mg/L	0.100*	0.001	0.004	0.004	<0.001	0.002	0.009	0.005	0.002	0.001	0.007
Total Barium (Ba)	mg/L		0.026	0.008	0.045	0.029	0.035	0.023	0.017	0.048	0.027	0.007
Total BOD	mg/L		<2.0	<2.0	5.0	<2.0	<2.0	2.0	5.0	3.0	<2.0	3.0
Total Boron (B)	mg/L	0.200	0.020	0.020	0.060	0.020	0.020	0.030	0.050	0.040	0.020	<0.02
Total Cadmium (Cd)	mg/L	0.0002	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001
Total Calcium (Ca)	mg/L		43	18	49	56	51	26	29	44	53	17
Total Chemical Oxygen Demand (COD)	mg/L		20	23	31	23	24	46	40	32	19	23
Total Chromium (Cr)	mg/L	0.0089	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	0.006	<0.005	<0.005
Total Copper (Cu)	mg/L	0.005	0.003	<0.002	0.003	0.002	0.005	<0.002	0.003	0.005	0.003	<0.002
Total Dissolved Solids	mg/L		214	146	244	292	224	240	216	242	226	132
Total Iron (Fe)	mg/L	0.300	**2.200**	0.300	**1.900**	**0.800**	**4.500**	**1.200**	**3.300**	**3.700**	**1.500**	**0.400**
Total Kjeldahl Nitrogen (TKN)	mg/L		0.71	0.68	1.50	0.67	0.70	1.70	0.81	0.98	<0.7	0.66
Total Lead (Pb)	mg/L	0.005	0.001	<0.005	0.001	<0.0005	0.002	0.001	0.002	0.002	0.001	<0.0005
Total Magnesium (Mg)	mg/L		11.0	9.5	15.0	14.0	12.0	12.0	13.0	12.0	12.0	9.0
Total Nickel (Ni)	mg/L	0.025	0.004	0.001	0.004	0.002	0.007	<0.001	0.006	0.006	0.003	0.001
Total Phosphorus	mg/L	0.02*	**0.08**	**0.04**	**0.10**	**0.06**	**0.13**	**0.11**	**0.10**	**0.16**	**0.05**	**0.06**
Total Potassium (K)	mg/L		4.2	3.3	7.2	4.8	3.7	4.3	3.4	12.0	4.0	1.0
Total Sodium (Na)	mg/L		15.0	14.0	18.0	26.0	14.0	26.0	24.0	4.1	15.0	15.0
Total Suspended Solids	mg/L		32	3	49	12	52	22	88	39	40	10
Total Un-ionized Ammonia	mg/L	0.02	<0.0048	*<0.042*	0.02	<0.0015	0.0026	0.0031	<0.0005	0.001	<0.0012	<0.012
Total Zinc (Zn)	mg/L	0.020	<0.01	<0.01	<0.01	<0.01	0.01	<0.01	<0.01	0.02	<0.01	<0.01
Ion Percentage	%		3.6	3.0	0.4	1.9	1.4	1.4	1.6	8.3	8.3	0.1

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4) Unionized ammonia values are calculated based on field determined pH and temperature values.

5) mg/L denotes milligrams per litre.

6) umho/cm denotes microsiemens per centimeter.

7) BOD denotes biological oxygen demand.

8) COD denotes chemical oxygen demand.

9) Blank denotes parameter not analyzed.

10) **Bolded** text and shading denotes concentration exceeds PWQO.

11) *Italics* denotes parameter concentration was below the laboratory reportable detection limit (RDL), where the RDL exceeds the relevant PWQO.

Table I-2
Precipitation Event Surface Water Quality - General Analytical Results - Compliance Monitoring
Twin Creeks Environmental Centre

Parameter	Units	PWQO	Sedimentation Pond Surface Water Quality - SP3									
Date			12-Oct-17	23-Jan-18	04-Apr-18	08-Aug-18	2-Oct-18	24-Jan-19	17-Apr-19	27-Oct-19	3-Dec-19	11-Jan-20
Laboratory			Maxxam	Maxxam	Maxxam	Maxxam	Maxxam	Maxxam	Maxxam	Bureau Veritas	Bureau Veritas	Bureau Veritas
Routine/Verification Event			Routine	Routine	Routine	Routine	Routine	Routine	Routine	Routine	Verification	Routine
Alkalinity (Total as $CaCO_3$)	mg/L	<25%***	160	130	140	84	110	130	97	80	110	93
Conductivity	umho/cm		420	420	470	300	460	690	540	830	880	881
Dissolved Chloride (Cl)	mg/L		26	31	36	37	16	42	49	19	25	26
Dissolved Mercury (Hg)	mg/L	0.0002	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
Dissolved Sulphate (SO_4)	mg/L		24.0	35.0	41.0	7.1	98.0	140.0	70.0	310.0	310.0	320.0
Nitrate (N)	mg/L		<0.10	0.50	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	0.12	0.18
Nitrite (N)	mg/L		0.017	0.020	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010
pH	(pH units)	6.5-8.5	8.1	7.9	8.1	8.4	8.2	8.1	8.5	8.2	8.1	8.4
Phenols-4AAP	mg/L	0.001	<0.0010	0.0036	<0.0010	<0.0010	<0.0010	<0.0010	0.0013	<0.0010	<0.0010	<0.0010
Total Ammonia-N	mg/L		0.280	0.290	0.087	<0.050	<0.050	0.057	0.052	**0.280**	<0.050	<0.050
Total Arsenic (As)	mg/L	0.100*	0.003	0.002	0.002	0.009	0.002	<0.001	<0.001	0.001	<0.001	<0.001
Total Barium (Ba)	mg/L		0.042	0.043	0.046	0.010	0.024	0.025	0.022	0.035	0.031	0.032
Total BOD	mg/L		<2.0	4.0	<2	<2	<2	<2	<2	<2	<2	<2
Total Boron (B)	mg/L	0.200	0.050	0.030	0.030	0.030	0.070	0.030	0.030	0.100	0.090	0.090
Total Cadmium (Cd)	mg/L	0.0002	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001
Total Calcium (Ca)	mg/L		43	51	59	19	44	59	46	81	90	87
Total Chemical Oxygen Demand (COD)	mg/L		30.0	30.0	13.0	40.0	7.7	14.0	15.0	8.5	<4.0	<4.0
Total Chromium (Cr)	mg/L	0.0089	<0.005	0.0070	0.0060	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Total Copper (Cu)	mg/L	0.005	<0.002	**0.013**	**0.006**	<0.002	<0.002	0.003	<0.002	<0.002	<0.002	0.002
Total Dissolved Solids	mg/L		290	195	165	180	230	375	305	545	640	695
Total Iron (Fe)	mg/L	0.300	**0.400**	**5.900**	**4.600**	0.100	0.100	0.100	0.300	0.200	0.200	**0.900**
Total Kjeldahl Nitrogen (TKN)	mg/L		1.00	0.68	0.31	1.10	0.27	0.37	0.35	0.29	0.44	0.31
Total Lead (Pb)	mg/L	0.005	<0.0005	0.005	0.0021	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
Total Magnesium (Mg)	mg/L		14	12	14	10	18	24	16	41	48	54
Total Nickel (Ni)	mg/L	0.025	0.002	0.010	0.006	<0.001	<0.001	0.001	0.001	0.001	0.002	0.003
Total Phosphorus	mg/L	0.02*	**0.07**	**0.26**	**0.10**	**0.04**	0.02	0.01	0.02	0.02	0.01	**0.03**
Total Potassium (K)	mg/L		5.3	6.1	5.5	3.6	3.6	4.1	2.3	4	4	4
Total Sodium (Na)	mg/L		21	21	23	25	17	30	35	25	27	30
Total Suspended Solids	mg/L		7	130	80	3	4	5	8	5	6	30
Total Un-ionized Ammonia	mg/L	0.02	0.001	*0.0065*	<0.0005	<0.0005	<0.0014	<0.00061	0.015	**0.021**	<0.0034	<0.0019
Total Zinc (Zn)	mg/L	0.020	<0.01	**0.04**	0.02	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Ion Percentage	%		0.6	2.4	3.1	0.6	1.2	1.6	2.1	0.1	0.8	2.3

NOTE: 1) PWQO denotes Provincial Water Quality Objectives (1994) with updates.
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3) *** denotes change from background concentrations.
4) Unionized ammonia values are calculated based on field determined pH and temperature values.
5) mg/L denotes milligrams per litre.
6) umho/cm denotes microsiemens per centimeter.
7) BOD denotes biological oxygen demand.
8) COD denotes chemical oxygen demand.
9) Blank denotes parameter not analyzed.
10) **Bolded** text and shading denotes concentration exceeds PWQO.
11) *Italics* denotes parameter concentration was below the laboratory reportable detection limit (RDL), where the RDL exceeds the relevant PWQO.
12) "BV" denotes Bureau Veritas Laboratories

Table I-2
Precipitation Event Surface Water Quality - General Analytical Results - Compliance Monitoring
Twin Creeks Environmental Centre

Parameter	Units	PWQO	Sedimentation Pond Surface Water Quality - SP3									
Date			18-May-20	15-Nov-20	26-Mar-21	03-Jun-21	9-Jul-21	4-Oct-21	15-Oct-21	17-Feb-22	4-May-22	2-Aug-22
Laboratory			Bureau Veritas	Bureau Veritas	Bureau Veritas	Bureau Veritas	Bureau Veritas	Bureau Veritas	Bureau Veritas	Bureau Veritas	Bureau Veritas	Bureau Veritas
Routine/Verification Event			Routine	Routine	Routine	Routine	Routine	Routine	Verification	Routine	Routine	Routine
Alkalinity (Total as $CaCO_3$)	mg/L	<25%***	53	99	100	54	61	68	82	100	71	120
Conductivity	umho/cm		760	880	690	740	890	710	700	680	740	900
Dissolved Chloride (Cl)	mg/L		29	36	32	31	43	21	16	71	37	60
Dissolved Mercury (Hg)	mg/L	0.0002	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
Dissolved Sulphate (SO_4)	mg/L		270	290	190	310	320	260	250	130	250	250
Nitrate (N)	mg/L		<0.10	<0.10	0.13	<0.10	<0.10	<0.10	<0.10	0.28	<0.10	<0.10
Nitrite (N)	mg/L		<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	0.02	<0.010	<0.010
pH	(pH units)	6.5-8.5	8.2	8.0	8.1	**9.9**	**9.1**	8.1	7.9	8.0	8.2	8.3
Phenols-4AAP	mg/L	0.001	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010
Total Ammonia-N	mg/L		<0.050	0.056	<0.050	<0.050	<0.15	<0.15	<0.15	0.46	<0.15	<0.15
Total Arsenic (As)	mg/L	0.100*	0.002	0.001	0.002	0.004	0.004	0.002	0.002	0.002	0.001	0.008
Total Barium (Ba)	mg/L		0.016	0.054	0.04	0.028	0.03	0.02	0.03	0.041	0.021	0.041
Total BOD	mg/L		<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
Total Boron (B)	mg/L	0.200	0.11	0.1	0.07	0.13	0.14	**0.22**	0.20	0.06	0.11	0.18
Total Cadmium (Cd)	mg/L	0.0002	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001
Total Calcium (Ca)	mg/L		44	86	60	48	58	74	77	64	58	61
Total Chemical Oxygen Demand (COD)	mg/L		22	11	14	18	22	18	15	20	8.8	37
Total Chromium (Cr)	mg/L	0.0089	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	0.007	<0.005	<0.005
Total Copper (Cu)	mg/L	0.005	<0.002	<0.002	0.003	<0.002	<0.002	<0.002	<0.002	**0.009**	<0.002	<0.002
Total Dissolved Solids	mg/L		560	515	395	490	635	480	435	325	420	560
Total Iron (Fe)	mg/L	0.300	0.300	**0.6**	**1.9**	<0.1	<0.1	0.20	0.30	**6.6**	0.3	0.2
Total Kjeldahl Nitrogen (TKN)	mg/L		0.48	0.33	0.35	0.47	<0.7	<0.7	<0.7	0.9	<0.7	0.8
Total Lead (Pb)	mg/L	0.005	<0.0005	<0.0005	0.0009	<0.0005	<0.0005	<0.0005	<0.0005	0.0050	<0.0005	<0.0005
Total Magnesium (Mg)	mg/L		46	41	29	42	48	33	33	24	36	46
Total Nickel (Ni)	mg/L	0.025	0.002	0.002	0.004	0.002	0.001	0.001	0.002	0.012	0.002	0.002
Total Phosphorus	mg/L	0.02*	0.02	**0.03**	**0.06**	0.02	<0.030	0.02	0.02	**0.17**	0.02	**0.027**
Total Potassium (K)	mg/L		2	5.1	3.3	2.1	3.9	4.3	4.0	4.8	2.7	12
Total Sodium (Na)	mg/L		36	33	27	38	45	25	23	45	36	43
Total Suspended Solids	mg/L		8	19	60	11	2	3	8	95	12	10
Total Un-ionized Ammonia	mg/L	0.02	<0.026	0.002	<0.00065	<0.055	<0.097	<0.031	<0.0068	0.003	<0.033	<0.045
Total Zinc (Zn)	mg/L	0.020	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	**0.03**	<0.01	<0.01
Ion Percentage	%		0.1	0.4	1.0	2.9	0.77	0.6	1.1	1.9	0.8	1.0

NOTE: 1) PWQO denotes Provincial Water Quality Objectives (1994) with updates.
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5) mg/L denotes milligrams per litre.
6) umho/cm denotes microsiemens per centimeter.
7) BOD denotes biological oxygen demand.
8) COD denotes chemical oxygen demand.
9) Blank denotes parameter not analyzed.
10) **Bolded** text and shading denotes concentration exceeds PWQO.
11) *Italics* denotes parameter concentration was below the laboratory reportable detection limit (RDL), where the RDL exceeds the relevant PWQO.
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Table I-2
Precipitation Event Surface Water Quality - General Analytical Results - Compliance Monitoring
Twin Creeks Environmental Centre

Parameter	Units	PWQO	Sedimentation Pond Surface Water Quality - SP3									
Date			**18-Oct-22**	**10-Feb-23**	**02-Apr-23**	**3-Jul-23**	**2-Nov-23**	**26-Jan-24**	**12-Apr-24**	**10-Jul-24**	**14-Oct-24**	
Laboratory			**Bureau Veritas**	**Bureau Veritas**	**Bureau Veritas**	**Bureau Veritas**	**Bureau Veritas**	**Bureau Veritas**	**Bureau Veritas**	**Bureau Veritas**	**Bureau Veritas**	
Routine/Verification Event			**Routine**	**Routine**	**Routine**	**Routine**	**Routine**	**Routine**	**Routine**	**Routine**	**Routine**	
Alkalinity (Total as $CaCO_3$)	mg/L	<25%***	44	42	73	54	100	82	120	41	89	
Conductivity	umho/cm		840	440	570	660	720	430	650	460	700	
Dissolved Chloride (Cl)	mg/L		33	19	30	21	14	27	23	28	12	
Dissolved Mercury (Hg)	mg/L	0.0002	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	
Dissolved Sulphate (SO_4)	mg/L		340	140	150	240	220	77	160	130	240	
Nitrate (N)	mg/L		<0.10	0.18	0.17	<0.10	0.16	0.41	0.48	<0.10	<0.10	
Nitrite (N)	mg/L		<0.010	<0.010	<0.010	<0.010	0.035	0.01	<0.010	<0.010	<0.010	
pH	(pH units)	6.5-8.5	**8.8**	8.0	7.9	**8.9**	8.0	7.8	8.0	**9.2**	8.0	
Phenols-4AAP	mg/L	0.001	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	
Total Ammonia-N	mg/L		<0.15	<0.15	<0.15	<0.15	0.68	0.35	<0.15	<0.15	<0.15	
Total Arsenic (As)	mg/L	0.100*	0.001	<0.001	<0.001	0.005	0.001	0.001	0.001	0.003	0.001	
Total Barium (Ba)	mg/L		0.023	0.016	0.025	0.018	0.04	0.03	0.039	0.016	0.029	
Total BOD	mg/L		<2	<2	<2	<2	6	<2	3	<2	<2	
Total Boron (B)	mg/L	0.200	0.15	0.05	0.06	0.17	0.11	0.03	0.05	0.06	0.12	
Total Cadmium (Cd)	mg/L	0.0002	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	
Total Calcium (Ca)	mg/L		73	43	52	40	76	49	74	33	77	
Total Chemical Oxygen Demand (COD)	mg/L		16	7.8	15	27	22	15	14	<4.0	10	
Total Chromium (Cr)	mg/L	0.0089	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	
Total Copper (Cu)	mg/L	0.005	<0.002	<0.002	0.002	<0.002	<0.002	0.005	0.003	<0.002	<0.002	
Total Dissolved Solids	mg/L		525	230	335	435	490	255	435	270	500	
Total Iron (Fe)	mg/L	0.300	0.1	<0.1	**1.5**	0.3	0.2	**2.7**	**0.4**	0.1	0.3	
Total Kjeldahl Nitrogen (TKN)	mg/L		<0.7	<0.7	1.0	0.9	1.3	<0.7	<0.7	<0.7	<0.7	
Total Lead (Pb)	mg/L	0.005	<0.0005	<0.0005	0.001	<0.0005	<0.0005	0.0018	<0.0005	<0.0005	<0.0005	
Total Magnesium (Mg)	mg/L		46	20	20	39	29	14	24	18	28	
Total Nickel (Ni)	mg/L	0.025	0.001	<0.001	0.003	0.003	0.002	0.005	0.002	<0.001	0.002	
Total Phosphorus	mg/L	0.02*	0.008	<0.004	*<0.030*	*<0.030*	*<0.030*	**0.048**	*<0.030*	*<0.030*	*<0.030*	
Total Potassium (K)	mg/L		4.9	2.7	3.1	4	3.7	2.8	2.6	1.1	3.4	
Total Sodium (Na)	mg/L		33	16	22	31	19	21	19	24	15	
Total Suspended Solids	mg/L		2	4	36	<10	<10	33	14	<10	<10	
Total Un-ionized Ammonia	mg/L	0.02	*<0.06*	<0.011	<0.00061	*<0.16*	0.00070	0.00071	<0.0031	*<0.14*	<0.012	
Total Zinc (Zn)	mg/L	0.020	<0.01	<0.01	<0.01	<0.01	<0.01	0.01	<0.01	<0.01	<0.01	
Ion Percentage	%		0.1	1.4	0.9	0.3	0.3	3.4	2.4	3.5	4.0	

NOTE: 1) PWQO denotes Provincial Water Quality Objectives (1994) with updates.
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3) *** denotes change from background concentrations.
4) Unionized ammonia values are calculated based on field determined pH and temperature values.
5) mg/L denotes milligrams per litre.
6) umho/cm denotes microsiemens per centimeter.
7) BOD denotes biological oxygen demand.
8) COD denotes chemical oxygen demand.
9) Blank denotes parameter not analyzed.
10) **Bolded** text and shading denotes concentration exceeds PWQO.
11) *Italics* denotes parameter concentration was below the laboratory reportable detection limit (RDL), where the RDL exceeds the relevant PWQO.
12) "BV" denotes Bureau Veritas Laboratories

Table I-2
Precipitation Event Surface Water Quality - General Analytical Results - Compliance Monitoring
Twin Creeks Environmental Centre

Parameter	Units	PWQO	Sedimentation Pond Surface Water Quality - SP4									
Date			6-May-10	16-Jul-10	01-Dec-10	28-Feb-11	20-Apr-11	09-Aug-11	13-Oct-11	13-Mar-12	27-Mar-12	21-Dec-12
Laboratory			Maxxam	Maxxam	Maxxam	Maxxam	Maxxam	Maxxam	Maxxam	Maxxam	Maxxam	Maxxam
Alkalinity (Total as $CaCO_3$)	mg/L	<25%***	107	142	99	72	82	46	82	92	85	160
Conductivity	umho/cm		475	489	402	381	446	301	342	360	350	570
Dissolved Chloride (Cl)	mg/L		30	31	24	39	46	42	38	26	27	39
Dissolved Mercury (Hg)	mg/L	0.0002	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.00010	<0.00010	<0.00010
Dissolved Sulphate (SO_4)	mg/L		85	62	62	42	55	23	19	54	45	62
Nitrate (N)	mg/L		0.2	<0.1	0.2	0.4	<0.1	<0.1	<0.1	<0.10	<0.10	0.22
Nitrite (N)	mg/L		0.02	<0.01	<0.01	0.02	<0.01	<0.01	<0.01	<0.010	<0.010	<0.010
pH	(pH units)	6.5-8.5	7.9	8.0	8.0	7.8	7.9	**9.7**	8.3	8.1	8.2	8.0
Phenols-4AAP	mg/L	0.001	<0.001	<0.001	<0.001	<0.001	<0.001	0.001	0.001	**0.0017**	<0.0010	<0.0010
Total Ammonia-N	mg/L		<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	0.15
Total Arsenic (As)	mg/L	0.100*	0.002	0.002	<0.001	<0.001	<0.001	0.004	0.002	<0.001	0.001	0.001
Total Barium (Ba)	mg/L		0.031	0.030	0.033	0.020	0.028	<0.005	0.005	0.019	0.015	0.048
Total BOD	mg/L		<2	<2	3	<2	<2	<2	<2	<2.0	<2.0	5.0
Total Boron (B)	mg/L	0.200	0.040	0.060	0.030	<0.02	0.020	0.020	0.040	0.020	0.030	0.050
Total Cadmium (Cd)	mg/L	0.0002	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001
Total Calcium (Ca)	mg/L		56	48	50	38	42	18	26	38	34	63
Total Chemical Oxygen Demand (COD)	mg/L		25	31	22	15	20	20	26	14	17	16
Total Chromium (Cr)	mg/L	0.0089	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Total Copper (Cu)	mg/L	0.005	0.004	0.003	0.003	<0.002	<0.002	<0.002	<0.002	<0.002	0.002	0.002
Total Dissolved Solids	mg/L		300	310	274	234	262	220	224	222	234	294
Total Iron (Fe)	mg/L	0.300	**3.000**	**2.100**	**1.400**	**0.700**	**0.700**	<0.1	0.300	**0.370**	**0.390**	**1.100**
Total Kjeldahl Nitrogen (TKN)	mg/L		0.9	1.1	0.7	0.6	0.7	0.6	0.6	0.5	0.48	1.6
Total Lead (Pb)	mg/L	0.005	0.001	0.001	0.001	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	0.001
Total Magnesium (Mg)	mg/L		18.0	23.0	14.0	8.1	12.0	7.9	9.6	12.0	12.0	18.0
Total Nickel (Ni)	mg/L	0.025	0.005	0.004	0.003	0.002	0.002	<0.001	0.001	<0.001	0.001	0.003
Total Phosphorus	mg/L	0.02*	**0.13**	**0.09**	**0.06**	*<0.03*	**0.03**	**0.03**	**0.02**	0.02	0.02	**0.07**
Total Potassium (K)	mg/L		2.60	3.20	2.50	2.10	1.90	0.60	1.30	1.50	0.87	4.40
Total Sodium (Na)	mg/L		19	22	15	25	30	27	24	19	22	29
Total Suspended Solids	mg/L		50	60	30	3	16	2	5	9	3	32
Total Un-ionized Ammonia	mg/L	0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
Total Zinc (Zn)	mg/L	0.020	0.02	<0.01	<0.01	0.02	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Ion Percentage	%		4.3	4.5	5.1	2.1	2.1	1.4	0.4	0.3	1.9	1.8

NOTE: 1) PWQO denotes Provincial Water Quality Objectives (1994) with updates.
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5) mg/L denotes milligrams per litre.
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7) BOD denotes biological oxygen demand.
8) COD denotes chemical oxygen demand.
9) Blank denotes parameter not analyzed.
10) **Bolded** text and shading denotes concentration exceeds PWQO.
11) *Italics* denotes parameter concentration was below the laboratory reportable detection limit (RDL), where the RDL exceeds the relevant PWQO.

Table I-2
Precipitation Event Surface Water Quality - General Analytical Results - Compliance Monitoring
Twin Creeks Environmental Centre

Parameter	Units	PWQO	Sedimentation Pond Surface Water Quality - SP4									
Date			**13-Jan-13**	**10-Apr-13**	**05-Jul-13**	**07-Oct-13**	**11-Jan-14**	**8-Apr-14**	**7-Jul-14**	**24-Nov-14**	**15-Dec-14**	**4-Jan-15**
Laboratory			**Maxxam**	**Maxxam**	**Maxxam**	**Maxxam**	**Maxxam**	**Maxxam**	**Maxxam**	**Maxxam**	**Maxxam**	**Maxxam**
Routine/Verification Event							**Routine**	**Routine**	**Routine**	**Routine**	**Verification**	**Routine**
Alkalinity (Total as $CaCO_3$)	mg/L	<25%***	69	130	110	100	120	87	130	110	64	98
Conductivity	umho/cm		240	450	360	430	470	330	590	730	360	600
Dissolved Chloride (Cl)	mg/L		12	33	33	25	26	19	72	95	36	68
Dissolved Mercury (Hg)	mg/L	0.0002	<0.00010	<0.00010	<0.00010	0.00012	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
Dissolved Sulphate (SO_4)	mg/L		28	41	19	60	61	45	52	110	44	92
Nitrate (N)	mg/L		0.38	0.17	<0.10	0.44	0.61	0.45	<0.10	0.36	0.19	0.35
Nitrite (N)	mg/L		<0.010	<0.010	<0.010	0.01	0.022	<0.010	<0.010	<0.010	0.013	0.012
pH	(pH units)	6.5-8.5	7.6	7.9	**8.9**	8.0	7.9	7.9	8.0	7.9	7.6	8.1
Phenols-4AAP	mg/L	0.001	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	0.001	<0.0010	<0.001	<0.001	**0.005**
Total Ammonia-N	mg/L		<0.15	<0.15	<0.15	<0.15	0.45	0.19	<0.15	<0.15	<0.15	<0.15
Total Arsenic (As)	mg/L	0.100*	<0.001	0.001	0.005	0.004	0.002	0.002	0.007	0.002	<0.001	<0.001
Total Barium (Ba)	mg/L		0.013	0.044	0.043	0.068	0.038	0.032	0.086	0.052	0.027	0.032
Total BOD	mg/L		<2.0	<2.0	<2.0	5.0	6.0	4.0	10.0	<2.0	<2.0	5.0
Total Boron (B)	mg/L	0.200	<0.02	0.030	0.060	0.050	0.030	0.020	0.070	0.040	0.030	0.040
Total Cadmium (Cd)	mg/L	0.0002	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001
Total Calcium (Ca)	mg/L		23	58	37	57	59	47	64	74	46	59
Total Chemical Oxygen Demand (COD)	mg/L		42	20	35	30	24	20	44	21	8.7	24
Total Chromium (Cr)	mg/L	0.0089	<0.005	<0.005	<0.005	0.0060	<0.005	<0.005	**0.0100**	0.0050	<0.005	<0.005
Total Copper (Cu)	mg/L	0.005	<0.002	0.004	0.002	0.005	0.002	0.004	**0.007**	**0.008**	0.002	0.003
Total Dissolved Solids	mg/L		126	276	204	258	210	248	382	456	220	378
Total Iron (Fe)	mg/L	0.300	**0.450**	**2.400**	**3.100**	**6.600**	**1.800**	**4.100**	**10.000**	**4.900**	**0.460**	**0.610**
Total Kjeldahl Nitrogen (TKN)	mg/L		0.72	1.40	1.50	2.00	1.60	1.50	2.50	1.10	0.58	0.87
Total Lead (Pb)	mg/L	0.005	0.001	0.002	0.002	0.004	0.001	0.002	**0.006**	0.002	<0.0005	<0.0005
Total Magnesium (Mg)	mg/L		5	13	13	15	14	10	19	20	12	16
Total Nickel (Ni)	mg/L	0.025	0.001	0.004	0.004	0.009	0.003	0.006	0.014	0.009	0.001	0.002
Total Phosphorus	mg/L	0.02*	**0.02**	**0.10**	**0.18**	**0.13**	**0.10**	**0.11**	**0.32**	**0.13**	**0.06**	**0.07**
Total Potassium (K)	mg/L		1.8	3.5	3.8	4.3	4.7	3.0	4.5	5.7	3.7	5.9
Total Sodium (Na)	mg/L		6.5	23.0	27.0	16.0	4.7	12.0	45.0	56.0	31.0	41.0
Total Suspended Solids	mg/L		4	68	52	150	39	73	260	99	61	21
Total Un-ionized Ammonia	mg/L	0.02	<0.02	<0.02	*<0.49*	<0.011	0.0055	0.0035	<0.0014	*<0.034*	<0.017	<0.0033
Total Zinc (Zn)	mg/L	0.020	<0.01	0.01	**0.03**	0.02	<0.01	0.01	**0.03**	**0.02**	<0.01	<0.01
Ion Percentage	%		1.8	6.6	7.5	7.8	0.1	4.1	4.6	2.5	9.8	1.7

NOTE: 1) PWQO denotes Provincial Water Quality Objectives (1994) with updates.
2) * denotes interim PWQO.
3) *** denotes change from background concentrations.
4) Unionized ammonia values are calculated based on field determined pH and temperature values.
5) mg/L denotes milligrams per litre.
6) umho/cm denotes microsiemens per centimeter.
7) BOD denotes biological oxygen demand.
8) COD denotes chemical oxygen demand.
9) Blank denotes parameter not analyzed.
10) **Bolded** text and shading denotes concentration exceeds PWQO.
11) *Italics* denotes parameter concentration was below the laboratory reportable detection limit (RDL), where the RDL exceeds the relevant PWQO.

Table I-2
Precipitation Event Surface Water Quality - General Analytical Results - Compliance Monitoring
Twin Creeks Environmental Centre

Parameter	Units	PWQO	Sedimentation Pond Surface Water Quality - SP4									
Date			**10-Apr-15**	**3-Aug-15**	**25-Oct-15**	**25-Feb-16**	**7-Apr-16**	**14-Jul-16**	**21-Oct-16**	**12-Jan-17**	**6-Apr-17**	**13-Jul-17**
Laboratory			**Maxxam**	**Maxxam**	**Maxxam**	**Maxxam**	**Maxxam**	**Maxxam**	**Maxxam**	**Maxxam**	**Maxxam**	**Maxxam**
Routine/Verification Event			**Routine**	**Routine**	**Routine**	**Routine**	**Routine**	**Routine**	**Routine**	**Routine**	**Routine**	**Routine**
Alkalinity (Total as $CaCO_3$)	mg/L	<25%***	100	130	150	93	120	120	140	110	120	130
Conductivity	umho/cm		490	460	540	420	430	450	460	390	440	320
Dissolved Chloride (Cl)	mg/L		47	39	49	20	15	28	31	26	16	15
Dissolved Mercury (Hg)	mg/L	0.0002	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
Dissolved Sulphate (SO_4)	mg/L		62	40	42	75	74	53	45	41	69	23
Nitrate (N)	mg/L		0.33	<0.10	<0.10	0.56	0.30	<0.010	<0.10	0.33	0.17	<0.10
Nitrite (N)	mg/L		0.034	<0.010	0.023	0.025	<0.010	<0.10	<0.010	0.018	0.025	<0.010
pH	(pH units)	6.5-8.5	7.0	7.9	8.2	8.1	7.9	8.0	8.0	7.9	8.1	7.9
Phenols-4AAP	mg/L	0.001	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0040	<0.0040	<0.0040	<0.0040	<0.0040
Total Ammonia-N	mg/L		<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	0.16	<0.15	<0.15
Total Arsenic (As)	mg/L	0.100*	0.004	0.004	0.003	<0.001	0.001	0.004	0.003	0.002	0.001	0.004
Total Barium (Ba)	mg/L		0.058	0.064	0.057	0.022	0.034	0.056	0.054	0.055	0.035	0.045
Total BOD	mg/L		<2.0	3.0	<2.0	<2.0	<2.0	<2.0	<2.0	4.0	<2.0	2.0
Total Boron (B)	mg/L	0.200	0.040	0.060	0.060	0.020	0.040	0.060	0.050	0.040	0.030	0.050
Total Cadmium (Cd)	mg/L	0.0002	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001
Total Calcium (Ca)	mg/L		58	55	54	49	60	50	54	45	59	41
Total Chemical Oxygen Demand (COD)	mg/L		20	28	29	13	21	48	23	29	20	30
Total Chromium (Cr)	mg/L	0.0089	**0.0120**	0.0070	0.0050	<0.005	<0.005	<0.005	<0.005	**0.0090**	<0.005	<0.005
Total Copper (Cu)	mg/L	0.005	**0.011**	0.005	0.004	0.003	0.005	0.004	0.003	**0.007**	0.005	0.003
Total Dissolved Solids	mg/L		292	332	256	222	264	328	272	210	272	188
Total Iron (Fe)	mg/L	0.300	**11.000**	**6.200**	**4.100**	**1.600**	**3.700**	**4.500**	**3.700**	**4.700**	**2.900**	**3.400**
Total Kjeldahl Nitrogen (TKN)	mg/L		1.40	0.50	0.77	0.33	0.44	<0.7	0.53	0.67	<0.7	0.48
Total Lead (Pb)	mg/L	0.005	0.005	0.003	0.003	0.001	0.002	0.003	0.003	0.003	0.002	0.002
Total Magnesium (Mg)	mg/L		16	14	17	13	16	17	16	11	16	13
Total Nickel (Ni)	mg/L	0.025	0.016	0.010	0.008	0.003	0.006	0.008	0.006	0.007	0.005	0.006
Total Phosphorus	mg/L	0.02*	**0.24**	**0.20**	**0.15**	**0.05**	**0.10**	**0.20**	**0.13**	**0.18**	*<0.060*	**0.16**
Total Potassium (K)	mg/L		4.8	3.8	4.1	3.1	3.3	3.5	3.2	8.5	3.9	3.4
Total Sodium (Na)	mg/L		32	26	35	13	12	22	21	13	13	13
Total Suspended Solids	mg/L		180	180	110	31	67	140	110	120	73	100
Total Un-ionized Ammonia	mg/L	0.02	<0.0057	<0.011	<0.0033	<0.0024	<0.0012	<0.014	<0.0025	<0.0005	<0.0005	<0.015
Total Zinc (Zn)	mg/L	0.020	**0.040**	0.020	<0.01	<0.01	0.010	0.010	<0.01	0.020	0.010	0.010
Ion Percentage	%		5.5	3.2	2.2	1.1	3.1	3.7	2.2	1.0	1.0	2.0

NOTE: 1) PWQO denotes Provincial Water Quality Objectives (1994) with updates.
2) * denotes interim PWQO.
3) *** denotes change from background concentrations.
4) Unionized ammonia values are calculated based on field determined pH and temperature values.
5) mg/L denotes milligrams per litre.
6) umho/cm denotes microsiemens per centimeter.
7) BOD denotes biological oxygen demand.
8) COD denotes chemical oxygen demand.
9) Blank denotes parameter not analyzed.
10) **Bolded** text and shading denotes concentration exceeds PWQO.
11) *Italics* denotes parameter concentration was below the laboratory reportable detection limit (RDL), where the RDL exceeds the relevant PWQO.

Table I-2
Precipitation Event Surface Water Quality - General Analytical Results - Compliance Monitoring
Twin Creeks Environmental Centre

Parameter	Units	PWQO	Sedimentation Pond Surface Water Quality - SP4									
Date			**12-Oct-17**	**23-Jan-18**	**04-Apr-18**	**08-Aug-18**	**31-Oct-18**	**24-Jan-19**	**19-Apr-19**	**2-Oct-19**	**11-Jan-20**	**18-May-20**
Laboratory			**Maxxam**	**Maxxam**	**Maxxam**	**Maxxam**	**Maxxam**	**Maxxam**	**Maxxam**	**Bureau Veritas**	**Bureau Veritas**	**Bureau Veritas**
Routine/Verification Event			**Routine**	**Routine**	**Routine**	**Routine**	**Routine**	**Routine**	**Routine**	**Routine**	**Routine**	**Routine**
Alkalinity (Total as $CaCO_3$)	mg/L	<25%***	160	87	120	130	150	97	150	160	130	150
Conductivity	umho/cm		430	310	490	380	450	360	590	440	583	700
Dissolved Chloride (Cl)	mg/L		23	11	20	20	17	17	25	21	27	34
Dissolved Mercury (Hg)	mg/L	0.0002	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
Dissolved Sulphate (SO_4)	mg/L		34	46	96	37	54	50	110	39	140	150
Nitrate (N)	mg/L		<0.10	0.46	0.24	<0.10	<0.10	0.47	0.33	<0.10	<0.10	<0.10
Nitrite (N)	mg/L		<0.010	0.015	<0.010	<0.010	<0.010	0.014	<0.010	<0.010	<0.010	<0.010
pH	(pH units)	6.5-8.5	8.2	7.8	8.0	8.0	8.0	7.8	8.2	8.3	8.3	8.2
Phenols-4AAP	mg/L	0.001	<0.0010	0.0013	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010
Total Ammonia-N	mg/L		<0.050	0.260	0.062	<0.050	0.093	0.750	<0.050	0.051	<0.050	<0.050
Total Arsenic (As)	mg/L	0.100*	0.002	<0.001	0.003	0.006	0.002	0.001	<0.001	0.004	<0.001	0.001
Total Barium (Ba)	mg/L		0.053	0.025	0.058	0.063	0.045	0.027	0.034	0.045	0.042	0.047
Total BOD	mg/L		<2.0	<2	<2	<2	<2	5	8	4	<2	3
Total Boron (B)	mg/L	0.200	0.070	0.020	0.040	0.070	0.050	0.030	0.050	0.110	0.040	0.050
Total Cadmium (Cd)	mg/L	0.0002	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001
Total Calcium (Ca)	mg/L		51	37	73	46	56	43	70	46	74	77
Total Chemical Oxygen Demand (COD)	mg/L		24	20	14	28	21	28	22	29	15	30
Total Chromium (Cr)	mg/L	0.0089	*<0.005*	<0.005	**0.0090**	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Total Copper (Cu)	mg/L	0.005	*<0.002*	**0.006**	**0.013**	0.003	0.003	**0.007**	0.004	<0.002	0.004	0.003
Total Dissolved Solids	mg/L		270	170	190	265	415	215	370	280	395	450
Total Iron (Fe)	mg/L	0.300	**1.800**	**2.300**	**8.800**	**3.900**	**2.000**	**2.400**	**0.900**	**2.300**	**1.300**	**2.200**
Total Kjeldahl Nitrogen (TKN)	mg/L		0.52	0.55	0.35	0.64	0.32	1.30	0.55	0.68	0.32	0.43
Total Lead (Pb)	mg/L	0.005	0.001	0.002	**0.005**	0.003	0.002	0.002	0.001	0.003	0.001	0.0012
Total Magnesium (Mg)	mg/L		16	10	21	16	13	12	22	18	24	25
Total Nickel (Ni)	mg/L	0.025	0.004	0.004	0.012	0.006	0.004	0.005	0.003	0.004	0.003	0.004
Total Phosphorus	mg/L	0.02*	**0.09**	**0.10**	**0.21**	**0.19**	**0.08**	**0.11**	**0.05**	**0.12**	**0.04**	**0.09**
Total Potassium (K)	mg/L		3.9	3.4	5.2	3.8	4.0	7.2	4.7	3.0	4.8	3.7
Total Sodium (Na)	mg/L		17.0	7.2	14.0	16.0	10.0	9.1	16.0	18.0	17	23
Total Suspended Solids	mg/L		49	36	230	97	33	41	26	61	35	69
Total Un-ionized Ammonia	mg/L	0.02	<0.0005	0.01	<0.0005	<0.0005	<0.00061	<0.00061	<0.0033	0.01	<0.0015	<0.0043
Total Zinc (Zn)	mg/L	0.020	*<0.01*	0.010	**0.030**	<0.01	<0.01	0.020	<0.01	<0.01	<0.01	<0.01
Ion Percentage	%		0.8	0.5	5.4	3.0	1.2	1.9	0.5	0.1	0.9	0.4

NOTE: 1) PWQO denotes Provincial Water Quality Objectives (1994) with updates.
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5) mg/L denotes milligrams per litre.
6) umho/cm denotes microsiemens per centimeter.
7) BOD denotes biological oxygen demand.
8) COD denotes chemical oxygen demand.
9) Blank denotes parameter not analyzed.
10) **Bolded** text and shading denotes concentration exceeds PWQO.
11) *Italics* denotes parameter concentration was below the laboratory reportable detection limit (RDL), where the RDL exceeds the relevant PWQO.
12) "BV" denotes Bureau Veritas Laboratories

Table I-2
Precipitation Event Surface Water Quality - General Analytical Results - Compliance Monitoring
Twin Creeks Environmental Centre

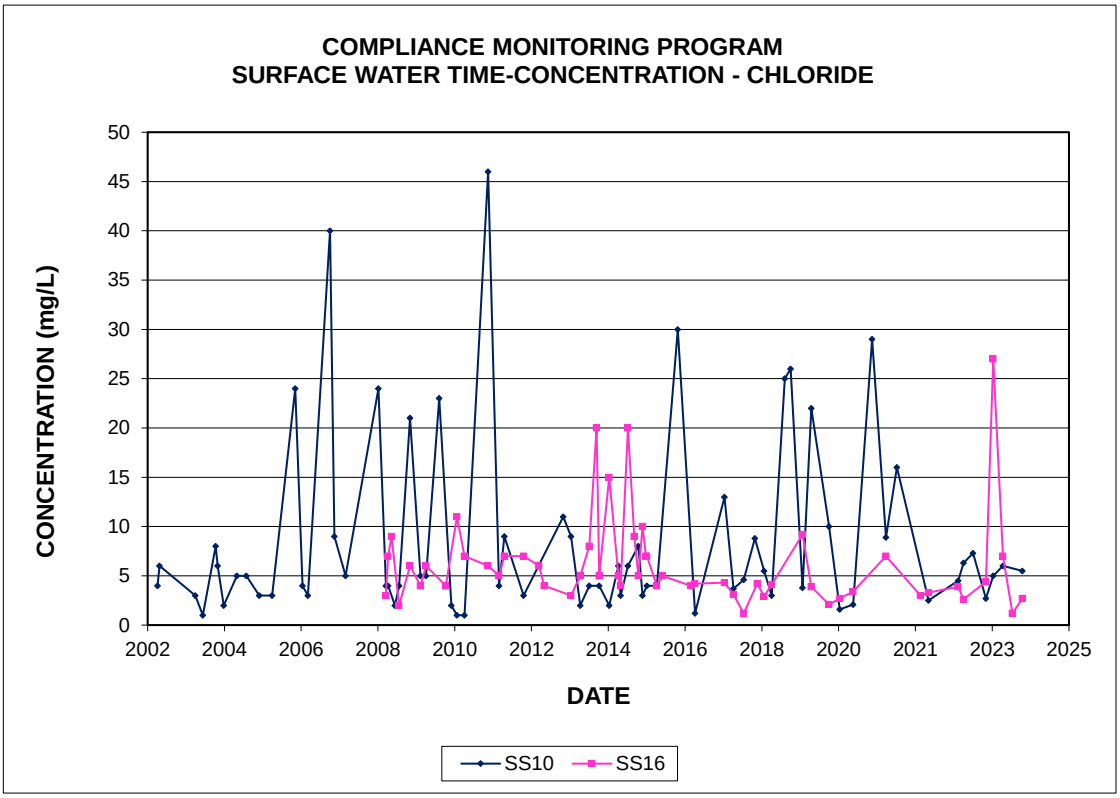
Parameter	Units	PWQO	Sedimentation Pond Surface Water Quality - SP4									
Date			15-Nov-20	26-Mar-21	03-Jun-21	09-Jul-21	04-Oct-21	17-Feb-22	04-May-22	18-Oct-22	10-Feb-23	02-Apr-23
Laboratory			Bureau Veritas	Bureau Veritas	Bureau Veritas	Bureau Veritas	Bureau Veritas	Bureau Veritas	Bureau Veritas	Bureaus Veritas	Bureaus Veritas	Bureaus Veritas
Routine/Verification Event			Routine	Routine	Routine	Routine	Routine	Routine	Routine	Routine	Routine	Routine
Alkalinity (Total as $CaCO_3$)	mg/L	<25%***	160	120	47	99	140	82	150	140	100	84
Conductivity	umho/cm		550	540	450	570	500	570	650	570	570	390
Dissolved Chloride (Cl)	mg/L		26	32	37	79	45	34	37	29	27	12
Dissolved Mercury (Hg)	mg/L	0.0002	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
Dissolved Sulphate (SO_4)	mg/L		78	92	120	58	43	140	130	110	140	87
Nitrate (N)	mg/L		<0.10	<0.10	<0.10	<0.10	<0.10	0.54	0.18	<0.10	0.37	0.88
Nitrite (N)	mg/L		<0.010	<0.010	<0.010	<0.010	<0.010	0.034	<0.010	<0.010	0.011	0.016
pH	(pH units)	6.5-8.5	8.1	8.1	**9.6**	8.5	8.1	8.0	8.2	8.1	8.1	8.0
Phenols-4AAP	mg/L	0.001	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	**0.0011**	<0.0010	<0.0010	<0.0010	<0.0010
Total Ammonia-N	mg/L		0.058	<0.050	<0.050	<0.15	<0.15	1.05	<0.15	<0.15	<0.15	<0.15
Total Arsenic (As)	mg/L	0.100*	0.002	0.001	0.001	0.005	0.002	0.003	0.001	0.003	<0.001	0.001
Total Barium (Ba)	mg/L		0.037	0.039	0.019	0.008	0.032	0.042	0.037	0.041	0.030	0.034
Total BOD	mg/L		<2	<2	<2	3	6	2	2	3	<2	<2
Total Boron (B)	mg/L	0.200	0.07	0.04	0.06	0.07	0.07	0.09	0.07	0.07	0.05	0.04
Total Cadmium (Cd)	mg/L	0.0002	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001
Total Calcium (Ca)	mg/L		68	65	32	35	52	67	74	65	70	47
Total Chemical Oxygen Demand (COD)	mg/L		19	17	21	42	47	20	21	5.1	17	<4.0
Total Chromium (Cr)	mg/L	0.0089	<0.005	<0.005	<0.005	<0.005	<0.005	**0.012**	<0.005	<0.005	<0.005	0.006
Total Copper (Cu)	mg/L	0.005	<0.002	0.004	<0.002	<0.002	<0.002	**0.015**	0.004	<0.002	0.003	0.004
Total Dissolved Solids	mg/L		300	310	280	355	275	315	350	305	295	260
Total Iron (Fe)	mg/L	0.300	**1.2**	**2.0**	**0.6**	**0.5**	**1.4**	**12**	**2**	**1.8**	**1.0**	**3.8**
Total Kjeldahl Nitrogen (TKN)	mg/L		0.44	0.32	0.95	<0.7	<0.7	1.9	<0.7	<0.7	<0.7	<0.7
Total Lead (Pb)	mg/L	0.005	0.0009	0.0013	<0.0005	<0.0005	0.00	0.0048	0.0011	0.0011	<0.0005	0.0013
Total Magnesium (Mg)	mg/L		17	17	19	19	13	26	26	20	23	15
Total Nickel (Ni)	mg/L	0.025	0.003	0.004	0.003	0.002	0.003	0.020	0.006	0.004	0.002	0.005
Total Phosphorus	mg/L	0.02*	**0.06**	**0.07**	**0.03**	**0.05**	**0.17**	**0.19**	**0.077**	**0.047**	0.016	**0.052**
Total Potassium (K)	mg/L		3.5	4.1	1.7	2.6	5.5	6.9	4.7	4.1	4.1	3.8
Total Sodium (Na)	mg/L		18	22	26	51	33	25	25	20	20	8
Total Suspended Solids	mg/L		38	64	16	11	45	360	41	32	23	71
Total Un-ionized Ammonia	mg/L	0.02	0.002	<0.00061	<0.048	<0.03	<0.014	0.0019	<0.0054	<0.0034	<0.0037	<0.00055
Total Zinc (Zn)	mg/L	0.020	*<0.01*	0.01	<0.01	<0.01	<0.01	**0.03**	<0.01	<0.01	<0.01	<0.01
Ion Percentage	%		0.5	2.3	1.0	0.76	1.4	5.1	1.0	0.3	2.9	1.2

NOTE: 1) PWQO denotes Provincial Water Quality Objectives (1994) with updates.
2) * denotes interim PWQO.
3) *** denotes change from background concentrations.
4) Unionized ammonia values are calculated based on field determined pH and temperature values.
5) mg/L denotes milligrams per litre.
6) umho/cm denotes microsiemens per centimeter.
7) BOD denotes biological oxygen demand.
8) COD denotes chemical oxygen demand.
9) Blank denotes parameter not analyzed.
10) **Bolded** text and shading denotes concentration exceeds PWQO.
11) *Italics* denotes parameter concentration was below the laboratory reportable detection limit (RDL), where the RDL exceeds the relevant PWQO.
12) "BV" denotes Bureau Veritas Laboratories

Table I-2
Precipitation Event Surface Water Quality - General Analytical Results - Compliance Monitoring
Twin Creeks Environmental Centre

Parameter	Units	PWQO	Sedimentation Pond Surface Water Quality - SP4									
Date			**07-Jul-23**	**02-Nov-23**	**10-Jan-24**	**12-Apr-24**	**10-Jul-24**	**14-Oct-24**				
Laboratory			**Bureau Veritas**	**Bureau Veritas**	**Bureau Veritas**	**Bureau Veritas**	**Bureau Veritas**	**Bureau Veritas**				
Routine/Verification Event			**Routine**	**Routine**	**Routine**	**Routine**	**Routine**	**Routine**				
Alkalinity (Total as $CaCO_3$)	mg/L	<25%***	90	93	130	140	120	110				
Conductivity	umho/cm		640	760	630	680	450	520				
Dissolved Chloride (Cl)	mg/L		32	8.4	16	18	10	10				
Dissolved Mercury (Hg)	mg/L	0.0002	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010				
Dissolved Sulphate (SO_4)	mg/L		170	260	160	170	90	130				
Nitrate (N)	mg/L		<0.10	0.45	0.56	0.29	<0.10	0.12				
Nitrite (N)	mg/L		<0.010	0.04	0.01	0.019	<0.010	0.024				
pH	(pH units)	6.5-8.5	7.9	7.9	8.1	7.9	8.1	8.0				
Phenols-4AAP	mg/L	0.001	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010				
Total Ammonia-N	mg/L		<0.15	0.34	0.15	0.35	<0.15	<0.15				
Total Arsenic (As)	mg/L	0.100*	0.003	<0.001	<0.001	0.002	0.004	0.002				
Total Barium (Ba)	mg/L		0.036	0.04	0.04	0.039	0.022	0.034				
Total BOD	mg/L		3	3	<2	3	3	<2				
Total Boron (B)	mg/L	0.200	0.07	0.12	0.05	0.10	0.07	0.09				
Total Cadmium (Cd)	mg/L	0.0002	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001				
Total Calcium (Ca)	mg/L		70	91	78	79	49	59				
Total Chemical Oxygen Demand (COD)	mg/L		17	15	16	22	<4.0	18				
Total Chromium (Cr)	mg/L	0.0089	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005				
Total Copper (Cu)	mg/L	0.005	0.002	0.002	0.004	0.004	<0.002	0.004				
Total Dissolved Solids	mg/L		440	545	405	450	285	390				
Total Iron (Fe)	mg/L	0.300	**1.7**	**1.6**	**2.2**	**2.5**	**2.0**	**3.9**				
Total Kjeldahl Nitrogen (TKN)	mg/L		<0.7	0.9	<0.7	0.9	<0.7	<0.7				
Total Lead (Pb)	mg/L	0.005	0.0008	0.0006	0.0008	0.0011	0.001	0.0014				
Total Magnesium (Mg)	mg/L		26	32	26	28	18	23				
Total Nickel (Ni)	mg/L	0.025	0.003	0.004	0.004	0.006	0.004	0.007				
Total Phosphorus	mg/L	0.02*	**0.04**	*<0.030*	**0.036**	**0.051**	**0.055**	**0.085**				
Total Potassium (K)	mg/L		2.9	3.9	4.8	4.6	2.6	2.7				
Total Sodium (Na)	mg/L		23	15	13	19	11	13				
Total Suspended Solids	mg/L		50	33	41	50	64	71				
Total Un-ionized Ammonia	mg/L	0.02	<0.042	<0.00061	<0.00061	0.0035	<0.02	<0.012				
Total Zinc (Zn)	mg/L	0.020	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01				
Ion Percentage	%		1.7	1.2	1.2	4.6	2.4	5.0				

NOTE: 1) PWQO denotes Provincial Water Quality Objectives (1994) with updates.
2) * denotes interim PWQO.
3) *** denotes change from background concentrations.
4) Unionized ammonia values are calculated based on field determined pH and temperature values.
5) mg/L denotes milligrams per litre.
6) umho/cm denotes microsiemens per centimeter.
7) BOD denotes biological oxygen demand.
8) COD denotes chemical oxygen demand.
9) Blank denotes parameter not analyzed.
10) **Bolded** text and shading denotes concentration exceeds PWQO.
11) *Italics* denotes parameter concentration was below the laboratory reportable detection limit (RDL), where the RDL exceeds the relevant PWQO.
12) "BV" denotes Bureau Veritas Laboratories


COMPLIANCE MONITORING PROGRAM
SURFACE WATER TIME-CONCENTRATION - CHLORIDE
CONCENTRATION (mg/L)
0
5
10
15
20
25
30
35
40
45
50
2002
2004
2006
2008
2010
2012
2014
2016
2018
2020
2021
2023
2025
DATE
SS10
SS16

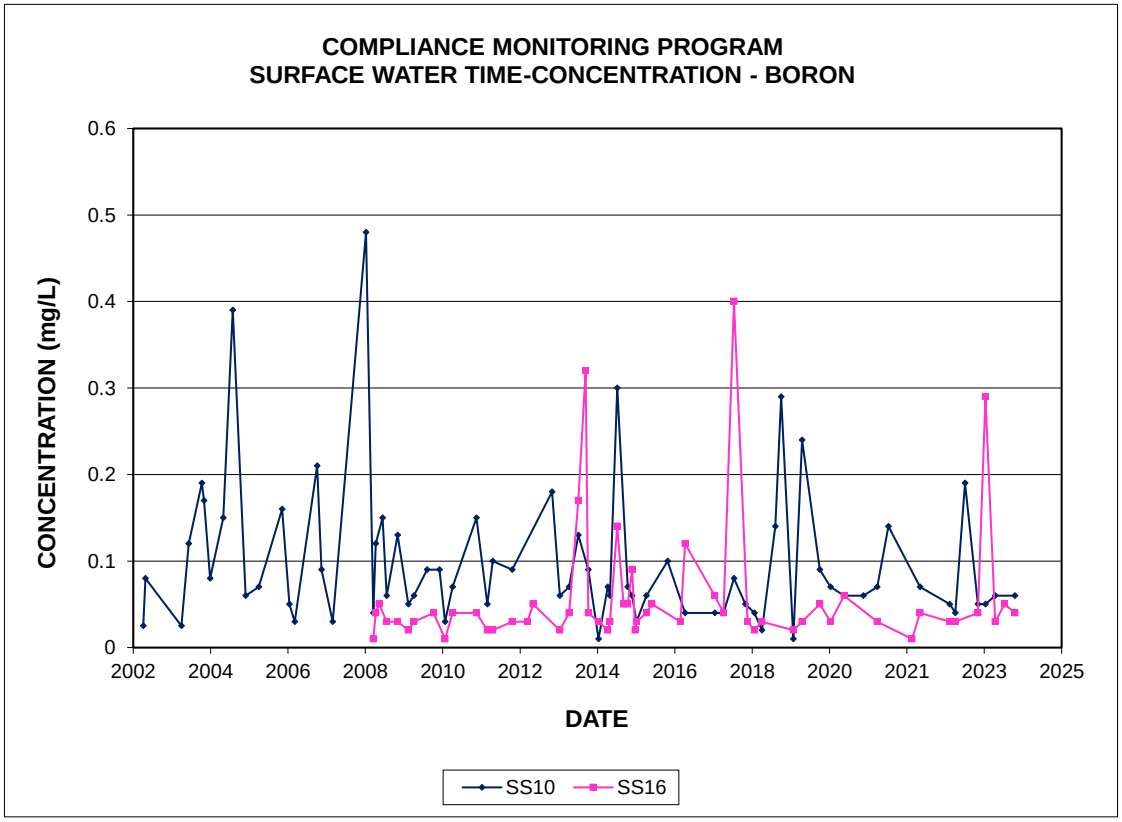
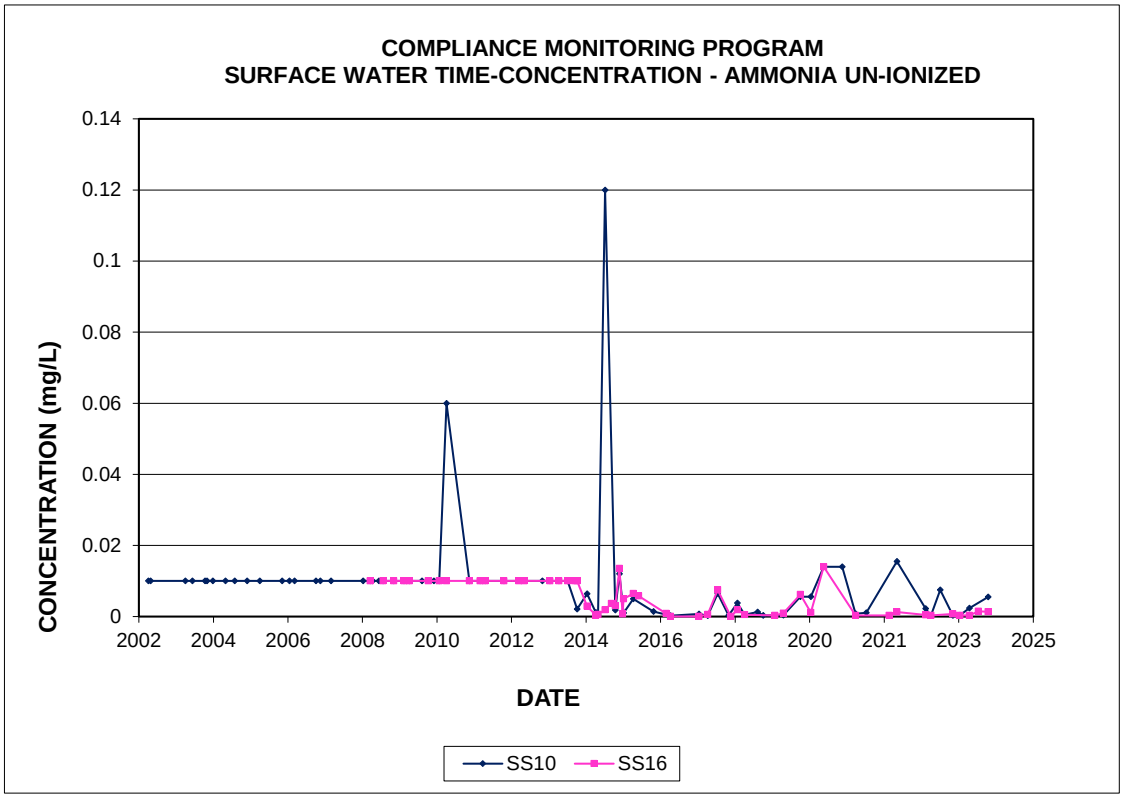

COMPLIANCE MONITORING PROGRAM
SURFACE WATER TIME-CONCENTRATION - BORON
CONCENTRATION (mg/L)
0
0.1
0.2
0.3
0.4
0.5
0.6
2002
2004
2006
2008
2010
2012
2014
2016
2018
2020
2021
2023
2025
DATE
SS10
SS16

FIGURE I-1


COMPLIANCE MONITORING PROGRAM
SURFACE WATER TIME-CONCENTRATION - AMMONIA UN-IONIZED
CONCENTRATION (mg/L)
0.14
0.12
0.1
0.08
0.06
0.04
0.02
0
2002
2004
2006
2008
2010
2012
2014
2016
2018
2020
2021
2023
2025
DATE
SS10
SS16

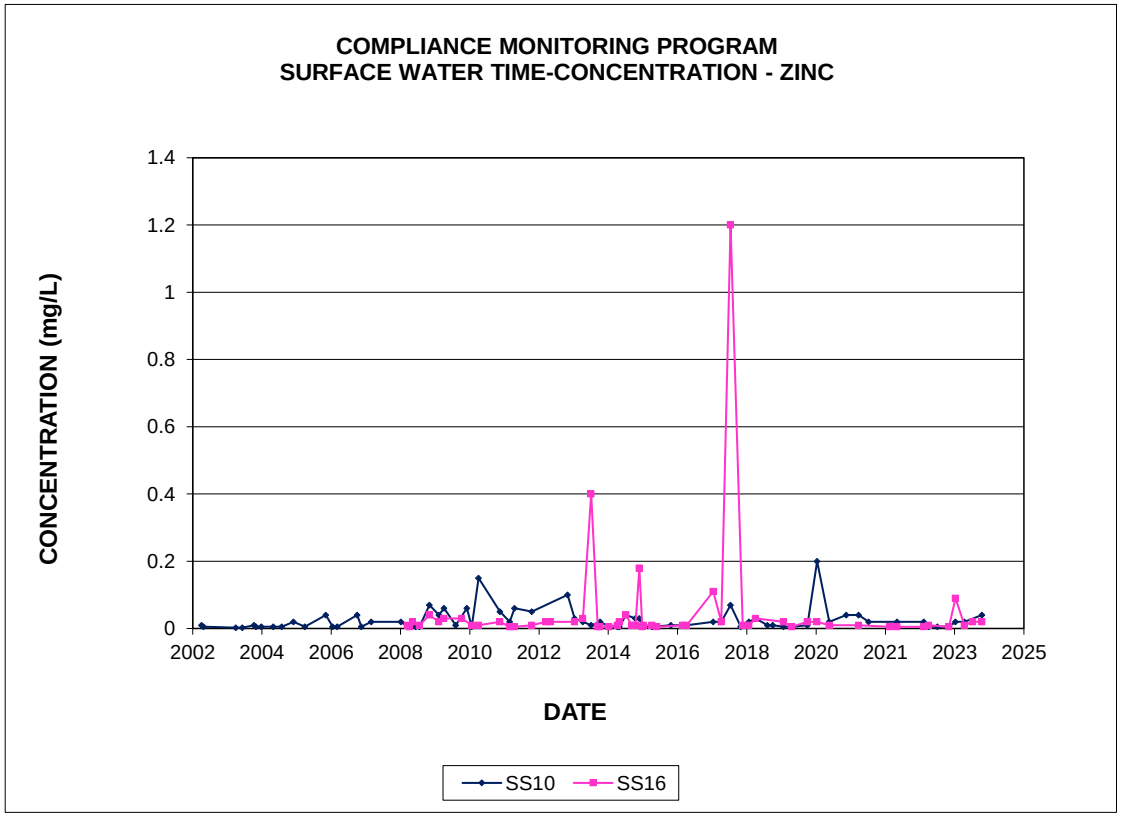
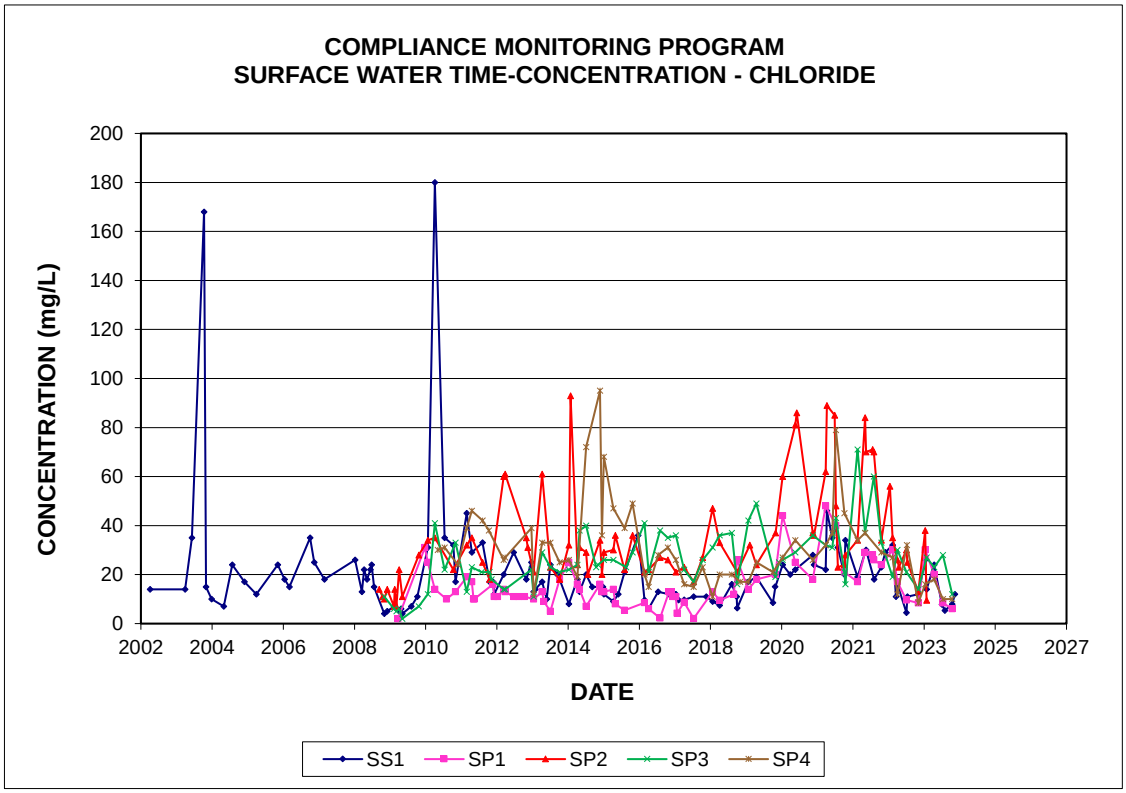

COMPLIANCE MONITORING PROGRAM
SURFACE WATER TIME-CONCENTRATION - ZINC
CONCENTRATION (mg/L)
1.4
1.2
1
0.8
0.6
0.4
0.2
0
2002
2004
2006
2008
2010
2012
2014
2016
2018
2020
2021
2023
2025
DATE
SS10
SS16

FIGURE I-2


COMPLIANCE MONITORING PROGRAM
SURFACE WATER TIME-CONCENTRATION - CHLORIDE
CONCENTRATION (mg/L)
200
180
160
140
120
100
80
60
40
20
0
2002
2004
2006
2008
2010
2012
2014
2016
2018
2020
2021
2023
2025
2027
DATE
SS1
SP1
SP2
SP3
SP4

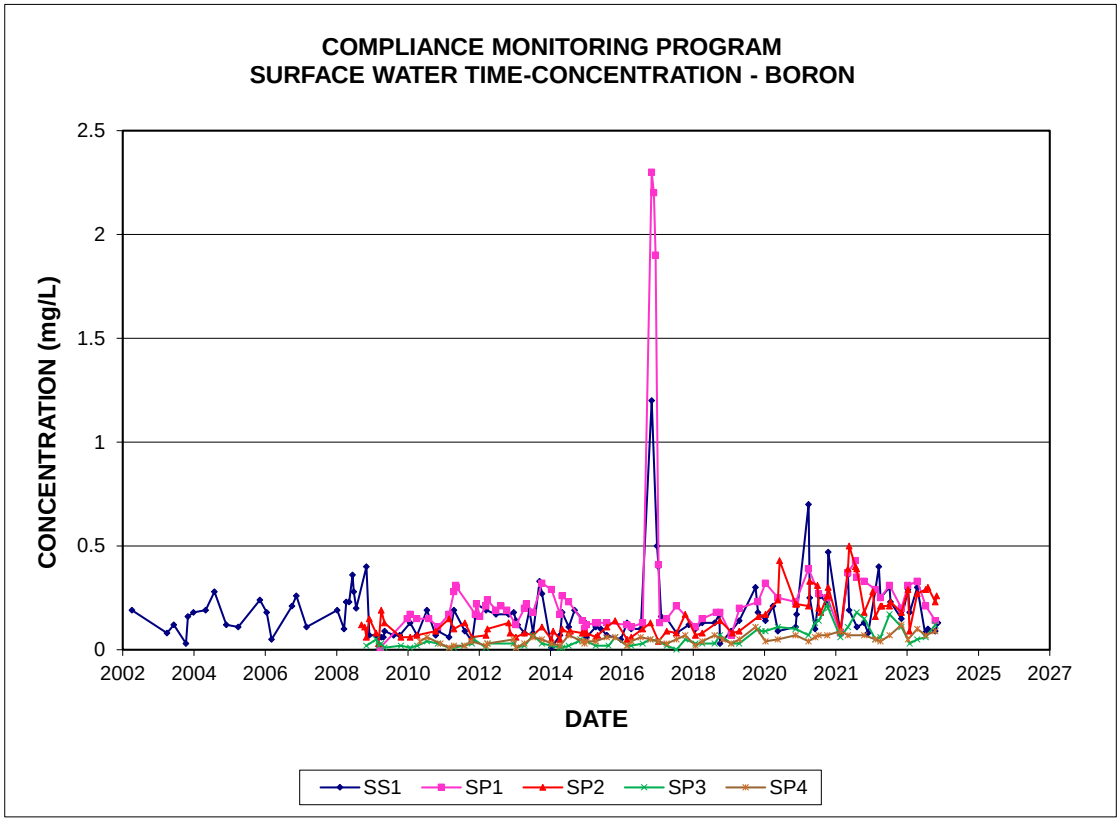
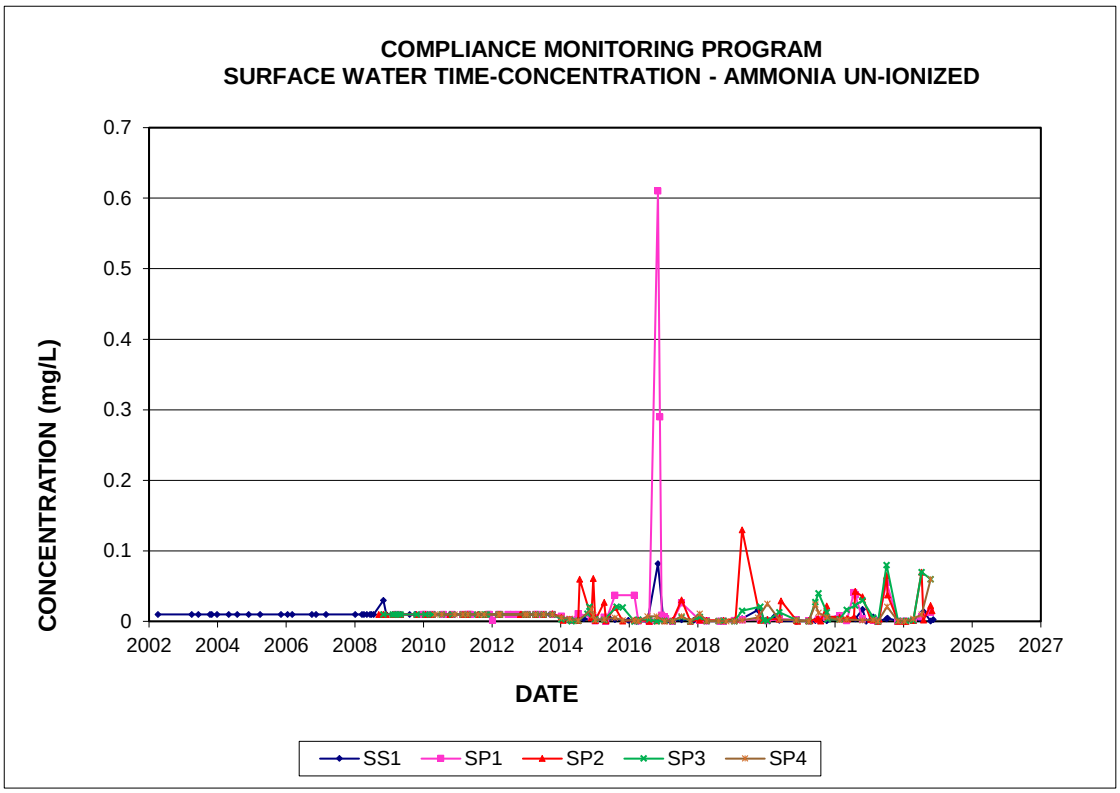

COMPLIANCE MONITORING PROGRAM
SURFACE WATER TIME-CONCENTRATION - BORON
CONCENTRATION (mg/L)
2.5
2
1.5
1
0.5
0
2002
2004
2006
2008
2010
2012
2014
2016
2018
2020
2021
2023
2025
2027
DATE
SS1
SP1
SP2
SP3
SP4

FIGURE I-3


COMPLIANCE MONITORING PROGRAM
SURFACE WATER TIME-CONCENTRATION - AMMONIA UN-IONIZED
CONCENTRATION (mg/L)
0.7
0.6
0.5
0.4
0.3
0.2
0.1
0
2002
2004
2006
2008
2010
2012
2014
2016
2018
2020
2021
2023
2025
2027
DATE
SS1
SP1
SP2
SP3
SP4

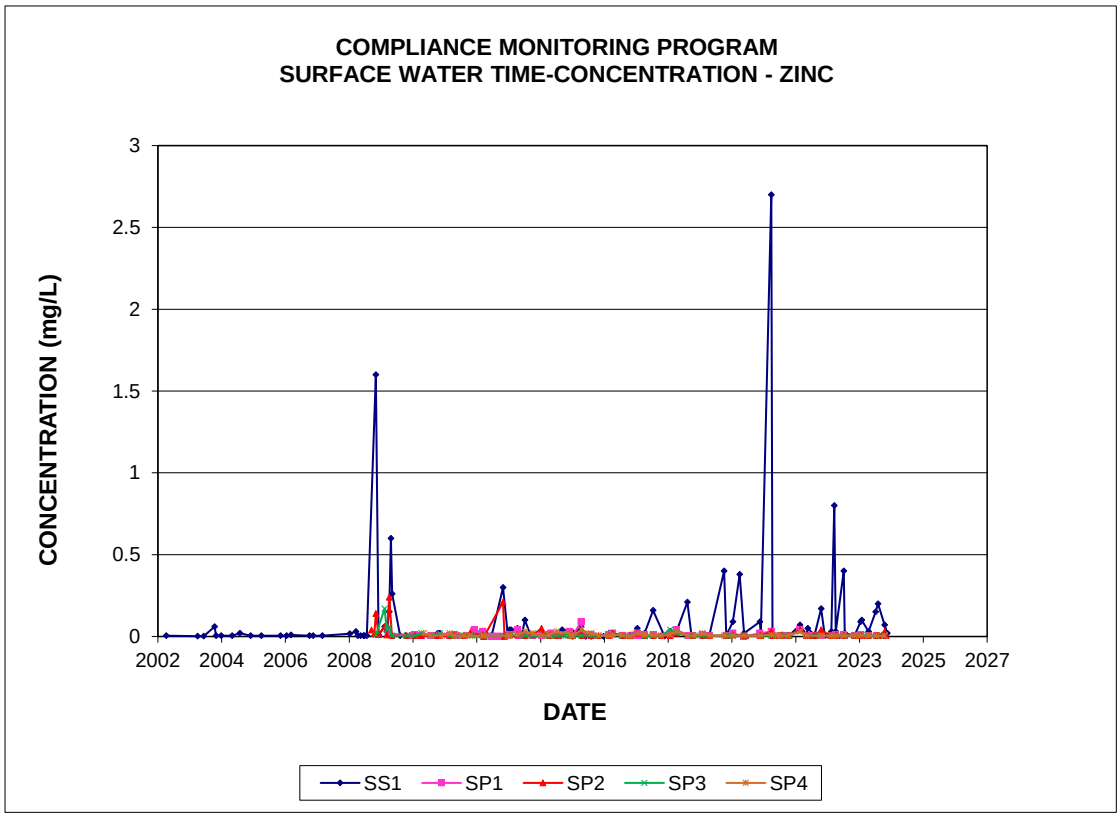

COMPLIANCE MONITORING PROGRAM
SURFACE WATER TIME-CONCENTRATION - ZINC
CONCENTRATION (mg/L)
3
2.5
2
1.5
1
0.5
0
2002
2004
2006
2008
2010
2012
2014
2016
2018
2020
2021
2023
2025
2027
DATE
SS1
SP1
SP2
SP3
SP4

FIGURE I-4

APPENDIX I:

Table I-3 - Precipitation Event Surface Water Quality -Organic Analytical Results - Compliance Monitoring

Table I-3
Precipitation Event Surface Water Quality - Organic Analytical Results - Compliance Monitoring
Twin Creeks Environmental Centre

Parameter	Units	PWQO	Downstream of Landfill 60m East of Lambton Rd 79 - SS1										
Date			19-Mar-08	11-Apr-08	12-May-08	14-Jun-08	29-Jun-08	23-Jul-08	4-Nov-08	5-Dec-08	12-Feb-09	8-Mar-09	6-Apr-09
Laboratory			Maxxam	Maxxam	Maxxam	Maxxam	Maxxam	Maxxam	Maxxam	Maxxam	Maxxam	Maxxam	Maxxam
Semivolatile Organics													
Benzo(a)pyrene	µg/L		<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
1,2-Dichlorobenzene	µg/L	2.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
1,3-Dichlorobenzene	µg/L	2.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
1,4-Dichlorobenzene	µg/L	4	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Hexachlorobenzene	µg/L	0.0065	*<0.5*	*<0.5*	*<0.5*	*<0.5*	*<0.5*	*<0.5*	*<0.5*	*<0.5*	*<0.5*	*<0.5*	*<0.5*
1,2,4-Trichlorobenzene	µg/L	0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
2,4-Dichlorophenol	µg/L	0.2	*<0.3*	*<0.3*	*<0.3*	*<0.3*	*<0.3*	*<0.3*	*<0.3*	*<0.3*	*<0.3*	*<0.3*	*<0.3*
Pentachlorophenol	µg/L	0.5	*<1*	*<1*	*<1*	*<1*	*<1*	*<1*	*<1*	*<1*	*<1*	*<1*	*<1*
Phenol	µg/L	5*	<0.5	<0.5	<0.5	1.7	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
2,4,6-Trichlorophenol	µg/L	18	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Di-N-butyl phthalate	µg/L	4	<2	<2		<2			<2	<2	<2	<2	<2
Diethyl phthalate	µg/L	0.2	*<1*	*<1*	*<1*	*<1*	*<1*	*<1*	*<1*	*<1*	*<1*	*<1*	*<1*
Dimethyl phthalate	µg/L	0.2	*<1*	*<1*	*<1*	*<1*	*<1*	*<1*	*<1*	*<1*	*<1*	*<1*	*<1*
Volatile Organics													
Benzene	µg/L	100*	<0.1	<0.1	<0.1	<0.2	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
1,4-Dichlorobenzene	µg/L	4	<0.2	<0.2	<0.2	<0.4	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Ethylbenzene	µg/L	8*	<0.1	<0.1	<0.1	<0.2	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Dichloromethane	µg/L	100*	<0.5	<0.5	<0.5	<1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Toluene	µg/L	0.8*	<0.2	<0.2	<0.2	<0.4	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Vinyl Chloride	µg/L	600*	<0.2	<0.2	<0.2	<0.4	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
p+m-Xylene	µg/L	32*	<0.1	<0.1	<0.1	<0.2	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
o-Xylene	µg/L	40*	<0.1	<0.1	<0.1	<0.2	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Xylene (Total)	µg/L		<0.1	<0.1	<0.1	<0.2	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1

NOTE: 1) PWQO denotes Provincial Water Quality Objectives (1994) with updates.
2) * denotes interim PWQO.
3) µg/L denotes micrograms per litre.
4) Blank denotes parameter not analyzed.
5) Bold indicates select parameter was detected at concentration greater than the laboratory reportable detection limit (RDL).
6) *Italics* denotes parameter concentration was below the laboratory reportable detection limit (RDL), where the RDL exceeds the relevant PWQO.

Table I-3
Precipitation Event Surface Water Quality - Organic Analytical Results - Compliance Monitoring
Twin Creeks Environmental Centre

Parameter	Units	PWQO	Downstream of Landfill 60m East of Lambton Rd 79 - SS1										
Date			26-Apr-09	9-May-09	9-Aug-09	10-Oct-09	25-Jan-10	6-Apr-10	16-Jul-10	14-Oct-10	28-Feb-11	20-Apr-11	9-Aug-11
Laboratory			Maxxam	Maxxam	Maxxam	Maxxam	Maxxam	Maxxam	Maxxam	Maxxam	Maxxam	Maxxam	Maxxam
Semivolatile Organics													
Benzo(a)pyrene	µg/L		<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
1,2-Dichlorobenzene	µg/L	2.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
1,3-Dichlorobenzene	µg/L	2.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
1,4-Dichlorobenzene	µg/L	4	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Hexachlorobenzene	µg/L	0.0065	*<0.5*	*<0.5*	*<0.5*	*<0.5*	*<0.5*	*<0.5*	*<0.5*	*<0.5*	*<0.5*	*<0.5*	*<0.5*
1,2,4-Trichlorobenzene	µg/L	0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
2,4-Dichlorophenol	µg/L	0.2	*<0.3*	*<0.3*	*<0.3*	*<0.3*	*<0.3*	*<0.3*	*<0.3*	*<0.3*	*<0.3*	*<0.3*	*<0.3*
Pentachlorophenol	µg/L	0.5	*<1*	*<1*	*<1*	*<1*	*<1*	*<1*	*<1*	*<1*	*<1*	*<1*	*<1*
Phenol	µg/L	5*	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
2,4,6-Trichlorophenol	µg/L	18	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Di-N-butyl phthalate	µg/L	4	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
Diethyl phthalate	µg/L	0.2	*<1*	*<1*	*<1*	*<1*	*<1*	*<1*	*<1*	*<1*	*<1*	*<1*	*<1*
Dimethyl phthalate	µg/L	0.2	*<1*	*<1*	*<1*	*<1*	*<1*	*<1*	*<1*	*<1*	*<1*	*<1*	*<1*
Volatile Organics													
Benzene	µg/L	100*	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.3	<0.1	<0.2
1,4-Dichlorobenzene	µg/L	4	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.5	<0.2	<0.4
Ethylbenzene	µg/L	8*	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.3	<0.1	<0.2
Dichloromethane	µg/L	100*	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1	<0.5	<1
Toluene	µg/L	0.8*	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.5	<0.2	<0.4
Vinyl Chloride	µg/L	600*	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.5	<0.2	<0.4
p+m-Xylene	µg/L	32*	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.3	<0.1	<0.2
o-Xylene	µg/L	40*	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.3	<0.1	<0.2
Xylene (Total)	µg/L		<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.3	<0.1	<0.2

NOTE: 1) PWQO denotes Provincial Water Quality Objectives (1994) with updates.
2) * denotes interim PWQO.
3) µg/L denotes micrograms per litre.
4) Blank denotes parameter not analyzed.
5) Bold indicates select parameter was detected at concentration greater than the laboratory reportable detection limit (RDL).
6) *Italics* denotes parameter concentration was below the laboratory reportable detection limit (RDL), where the RDL exceeds the relevant PWQO.

Table I-3
Precipitation Event Surface Water Quality - Organic Analytical Results - Compliance Monitoring
Twin Creeks Environmental Centre

Parameter	Units	PWQO	Downstream of Landfill 60m East of Lambton Rd 79 - SS1										
Date			20-Oct-11	23-Nov-11	6-Dec-11	13-Mar-12	22-Jun-12	30-Oct-12	21-Dec-12	13-Jan-13	30-Jan-13	10-Apr-13	29-May-13
Laboratory			Maxxam	Maxxam	Maxxam	Maxxam	Maxxam	Maxxam	Maxxam	Maxxam	Maxxam	Maxxam	Maxxam
Semivolatile Organics													
Benzo(a)pyrene	µg/L		<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
1,2-Dichlorobenzene	µg/L	2.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
1,3-Dichlorobenzene	µg/L	2.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
1,4-Dichlorobenzene	µg/L	4	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Hexachlorobenzene	µg/L	0.0065	*<0.5*	*<0.5*	*<0.5*	*<0.5*	*<0.5*	*<0.5*	*<0.5*	*<0.5*	*<0.5*	*<0.5*	*<0.5*
1,2,4-Trichlorobenzene	µg/L	0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
2,4-Dichlorophenol	µg/L	0.2	*<0.3*	*<0.3*	*<0.3*	*<0.3*	*<0.3*	*<0.3*	*<0.3*	*<0.3*	*<0.3*	*<0.3*	*<0.3*
Pentachlorophenol	µg/L	0.5	*<1*	*<1*	*<1*	*<1*	*<1*	*<1*	*<1*	*<1*	*<1*	*<1*	*<1*
Phenol	µg/L	5*	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	6.1	<0.5	<0.5	<0.5
2,4,6-Trichlorophenol	µg/L	18	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Di-N-butyl phthalate	µg/L	4	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
Diethyl phthalate	µg/L	0.2	*<1*	*<1*	*<1*	*<1*	*<1*	*<1*	*<1*	*<1*	*<1*	*<1*	*<1*
Dimethyl phthalate	µg/L	0.2	*<1*	*<1*	*<1*	*<1*	*<1*	*<1*	*<1*	*<1*	*<1*	*<1*	*<1*
Volatile Organics													
Benzene	µg/L	100*	<0.1	<0.5	<0.10	<0.20	<0.10	<0.10	<0.25	<0.10	<0.10	<0.10	<0.10
1,4-Dichlorobenzene	µg/L	4	<0.2	<1	<0.20	<0.40	<0.20	<0.20	<0.50	<0.20	<0.20	<0.20	<0.20
Ethylbenzene	µg/L	8*	<0.1	<0.5	<0.10	<0.20	<0.10	<0.10	<0.25	<0.10	<0.10	<0.10	<0.10
Dichloromethane	µg/L	100*	<0.5	<3	<0.50	<1.0	<0.50	<0.50	<1.3	<0.50	<0.50	<0.50	<0.50
Toluene	µg/L	0.8*	<0.2	<1	<0.20	<0.40	<0.20	<0.20	<0.50	<0.20	<0.20	<0.20	<0.20
Vinyl Chloride	µg/L	600*	<0.2	<1	<0.20	<0.40	<0.20	<0.20	<0.50	<0.20	<0.20	<0.20	<0.20
p+m-Xylene	µg/L	32*	<0.1	<0.5	<0.10	<0.20	<0.10	<0.10	<0.25	<0.10	<0.10	<0.10	<0.10
o-Xylene	µg/L	40*	<0.1	<0.5	<0.10	<0.20	<0.10	<0.10	<0.25	<0.10	<0.10	<0.10	<0.10
Xylene (Total)	µg/L		<0.1	<0.5	<0.10	<0.20	<0.10	<0.10	<0.25	<0.10	<0.10	<0.10	<0.10

NOTE: 1) PWQO denotes Provincial Water Quality Objectives (1994) with updates.
2) * denotes interim PWQO.
3) µg/L denotes micrograms per litre.
4) Blank denotes parameter not analyzed.
5) Bold indicates select parameter was detected at concentration greater than the laboratory reportable detection limit (RDL).
6) *Italics* denotes parameter concentration was below the laboratory reportable detection limit (RDL), where the RDL exceeds the relevant PWQO.

Table I-3
Precipitation Event Surface Water Quality - Organic Analytical Results - Compliance Monitoring
Twin Creeks Environmental Centre

Parameter	Units	PWQO	Downstream of Landfill 60m East of Lambton Rd 79 - SS1										
Date			5-Jul-13	12-Sep-13	7-Oct-13	11-Jan-14	8-Apr-14	30-Apr-14	7-Jul-14	6-Sep-14	25-Dec-14	4-Jan-15	10-Apr-15
Laboratory			Maxxam	Maxxam	Maxxam	Maxxam	Maxxam	Maxxam	Maxxam	Maxxam	Maxxam	Maxxam	Maxxam
Semivolatile Organics													
Benzo(a)pyrene	µg/L		<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.20	<0.20	<0.20
1,2-Dichlorobenzene	µg/L	2.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.50	<0.50	<0.50
1,3-Dichlorobenzene	µg/L	2.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.50	<0.50	<0.50
1,4-Dichlorobenzene	µg/L	4	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.50	<0.50	<0.50
Hexachlorobenzene	µg/L	0.0065	*<0.5*	*<0.5*	*<0.5*	*<0.5*	*<0.5*	*<0.5*	*<0.5*	*<0.5*	*<0.50*	*<0.50*	*<0.50*
1,2,4-Trichlorobenzene	µg/L	0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	*<0.50*	*<0.50*	*<0.50*
2,4-Dichlorophenol	µg/L	0.2	*<0.3*	*<0.3*	*<0.3*	*<0.3*	*<0.3*	*<0.3*	*<0.3*	*<0.3*	*<0.30*	*<0.30*	*<0.30*
Pentachlorophenol	µg/L	0.5	*<1*	*<1*	*<1*	*<1*	*<1*	*<1*	*<1*	*<1*	*<1.0*	*<1.0*	*<1.0*
Phenol	µg/L	5*	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.50	<0.50	<0.50
2,4,6-Trichlorophenol	µg/L	18	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.50	<0.50	<0.50
Di-N-butyl phthalate	µg/L	4	<2	<2	<2	<2	<2	<2	<2	<2	<2.0	<2.0	<2.0
Diethyl phthalate	µg/L	0.2	*<1*	*<1*	*<1*	*<1*	*<1*	*<1*	*<1*	*<1*	*<1.0*	*<1.0*	*<1.0*
Dimethyl phthalate	µg/L	0.2	*<1*	*<1*	*<1*	*<1*	*<1*	*<1*	*<1*	*<1*	*<1.0*	*<1.0*	*<1.0*
Volatile Organics													
Benzene	µg/L	100*	<0.25	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
1,4-Dichlorobenzene	µg/L	4	<0.50	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Ethylbenzene	µg/L	8*	<0.25	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
Dichloromethane	µg/L	100*	<1.3	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Toluene	µg/L	0.8*	<0.50	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Vinyl Chloride	µg/L	600*	<0.50	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
p+m-Xylene	µg/L	32*	<0.25	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
o-Xylene	µg/L	40*	<0.25	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
Xylene (Total)	µg/L		<0.25	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10

NOTE: 1) PWQO denotes Provincial Water Quality Objectives (1994) with updates.
2) * denotes interim PWQO.
3) µg/L denotes micrograms per litre.
4) Blank denotes parameter not analyzed.
5) Bold indicates select parameter was detected at concentration greater than the laboratory reportable detection limit (RDL).
6) *Italics* denotes parameter concentration was below the laboratory reportable detection limit (RDL), where the RDL exceeds the relevant PWQO.

Table I-3
Precipitation Event Surface Water Quality - Organic Analytical Results - Compliance Monitoring
Twin Creeks Environmental Centre

Parameter	Units	PWQO	Downstream of Landfill 60m East of Lambton Rd 79 - SS1										
Date			1-Jun-15	3-Aug-15	25-Feb-16	7-Apr-16	14-Jul-16	3-Nov-16	27-Dec-16	12-Jan-17	6-Apr-17	13-Jul-17	19-Nov-17
Laboratory			Maxxam	Maxxam	Maxxam	Maxxam	Maxxam	Maxxam	Maxxam	Maxxam	Maxxam	Maxxam	Maxxam
Semivolatile Organics													
Benzo(a)pyrene	µg/L		<0.20	<0.20	<0.20	<0.20	<0.20	<0.80	<0.20	<0.80	<0.20	<0.20	<0.20
1,2-Dichlorobenzene	µg/L	2.5	<0.50	<0.50	<0.50	<0.50	<0.50	<2.0	<0.50	<2.0	<0.50	<0.50	<0.50
1,3-Dichlorobenzene	µg/L	2.5	<0.50	<0.50	<0.50	<0.50	<0.50	<2.0	<0.50	<2.0	<0.50	<0.50	<0.50
1,4-Dichlorobenzene	µg/L	4	<0.50	<0.50	<0.50	<0.50	<0.50	<2.0	<0.50	<2.0	<0.50	<0.50	<0.50
Hexachlorobenzene	µg/L	0.0065	*<0.50*	*<0.50*	*<0.50*	*<0.50*	*<0.50*	*<2.0*	*<0.50*	*<2.0*	*<0.50*	*<0.50*	*<0.50*
1,2,4-Trichlorobenzene	µg/L	0.5	<0.50	<0.50	<0.50	<0.50	<0.50	*<2.0*	*<0.50*	*<2.0*	*<0.50*	*<0.50*	*<0.50*
2,4-Dichlorophenol	µg/L	0.2	*<0.30*	*<0.30*	*<0.30*	*<0.30*	*<0.30*	*<1.2*	*<0.30*	*<1.2*	*<0.30*	*<0.30*	*<0.30*
Pentachlorophenol	µg/L	0.5	*<1.0*	*<1.0*	*<1.0*	*<1.0*	*<1.0*	*<4.0*	*<1.0*	*<4.0*	*<1.0*	*<1.0*	*<1.0*
Phenol	µg/L	5*	<0.50	<0.50	<0.50	<0.50	<0.50	<2.0	<0.50	<2.0	<0.50	<0.50	<0.50
2,4,6-Trichlorophenol	µg/L	18	<0.50	<0.50	<0.50	<0.50	<0.50	<2.0	<0.50	<2.0	<0.50	<0.50	<0.50
Di-N-butyl phthalate	µg/L	4	<2.0	<2.0	<2.0	<2.0	<2.0	<8.0	<2.0	<8.0	<2.0	<2.0	<2.0
Diethyl phthalate	µg/L	0.2	*<1.0*	*<1.0*	*<1.0*	*<1.0*	*<1.0*	*<4.0*	*<1.0*	*<4.0*	*<1.0*	*<1.0*	*<1.0*
Dimethyl phthalate	µg/L	0.2	*<1.0*	*<1.0*	*<1.0*	*<1.0*	*<1.0*	*<4.0*	*<1.0*	*<4.0*	*<1.0*	*<1.0*	*<1.0*
Volatile Organics													
Benzene	µg/L	100*	<0.10	<0.10	<0.20	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
1,4-Dichlorobenzene	µg/L	4	<0.20	<0.20	<0.40	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.50	<0.20
Ethylbenzene	µg/L	8*	<0.10	<0.10	<0.20	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
Dichloromethane	µg/L	100*	<0.50	<0.50	<1.0	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Toluene	µg/L	0.8*	<0.20	<0.20	<0.40	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Vinyl Chloride	µg/L	600*	<0.20	<0.20	<0.40	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
p+m-Xylene	µg/L	32*	<0.10	<0.10	<0.20	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
o-Xylene	µg/L	40*	<0.10	<0.10	<0.20	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
Xylene (Total)	µg/L		<0.10	<0.10	<0.20	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10

NOTE: 1) PWQO denotes Provincial Water Quality Objectives (1994) with updates.
2) * denotes interim PWQO.
3) µg/L denotes micrograms per litre.
4) Blank denotes parameter not analyzed.
5) Bold indicates select parameter was detected at concentration greater than the laboratory reportable detection limit (RDL).
6) *Italics* denotes parameter concentration was below the laboratory reportable detection limit (RDL), where the RDL exceeds the relevant PWQO.

Table I-3
Precipitation Event Surface Water Quality - Organic Analytical Results - Compliance Monitoring
Twin Creeks Environmental Centre

Parameter	Units	PWQO	Downstream of Landfill 60m East of Lambton Rd 79 - SS1										
Date			23-Jan-18	4-Apr-18	8-Aug-18	26-Sep-18	2-Oct-18	24-Jan-19	17-Apr-19	2-Oct-19	27-Oct-19	11-Jan-20	29-Mar-20
Laboratory			Maxxam	Maxxam	Maxxam	Maxxam	Maxxam	Maxxam	Maxxam	Bureau Veritas	Bureau Veritas	Bureau Veritas	Bureau Veritas
Semivolatile Organics													
Benzo(a)pyrene	µg/L		<0.80	<0.20	<0.80	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
1,2-Dichlorobenzene	µg/L	2.5	<2.0	<0.50	<2.0	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
1,3-Dichlorobenzene	µg/L	2.5	<2.0	<0.50	<2.0	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
1,4-Dichlorobenzene	µg/L	4	<2.0	<0.50	<2.0	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Hexachlorobenzene	µg/L	0.0065	*<2.0*	*<0.50*	*<2.0*	*<0.50*	*<0.50*	*<0.50*	*<0.50*	*<0.50*	*<0.50*	*<0.50*	*<0.50*
1,2,4-Trichlorobenzene	µg/L	0.5	<2.0	<0.50	<2.0	<0.50	<0.50	*<0.50*	*<0.50*	*<0.50*	*<0.50*	*<0.50*	*<0.50*
2,4-Dichlorophenol	µg/L	0.2	*<1.2*	*<0.30*	*<1.2*	*<0.30*	*<0.30*	*<0.30*	*<0.30*	*<0.30*	*<0.30*	*<0.30*	*<0.30*
Pentachlorophenol	µg/L	0.5	*<4.0*	*<1.0*	*<4.0*	*<1.0*	*<1.0*	*<1.0*	*<1.0*	*<1.0*	*<1.0*	*<1.0*	*<1.0*
Phenol	µg/L	5*	<2.0	<0.50	<2.0	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
2,4,6-Trichlorophenol	µg/L	18	<2.0	<0.50	<2.0	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Di-N-butyl phthalate	µg/L	4	<8.0	<2.0	<8.0	<2.0	<2.0	4.4	<2.0	<2.0	<2.0	<2.0	<2.0
Diethyl phthalate	µg/L	0.2	*<4.0*	*<1.0*	*<4.0*	*<1.0*	*<1.0*	*<1.0*	*<1.0*	*<1.0*	*<1.0*	*<1.0*	*<1.0*
Dimethyl phthalate	µg/L	0.2	*<4.0*	*<1.0*	*<4.0*	*<1.0*	*<1.0*	*<1.0*	*<1.0*	*<1.0*	*<1.0*	*<1.0*	*<1.0*
Volatile Organics													
Benzene	µg/L	100*	<0.10	<0.10	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
1,4-Dichlorobenzene	µg/L	4	<0.20	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.40
Ethylbenzene	µg/L	8*	<0.10	<0.10	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Dichloromethane	µg/L	100*	<0.50	<0.50	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
Toluene	µg/L	0.8*	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Vinyl Chloride	µg/L	600*	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
p+m-Xylene	µg/L	32*	<0.10	<0.10	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
o-Xylene	µg/L	40*	<0.10	<0.10	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Xylene (Total)	µg/L		<0.10	<0.10	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20

NOTE: 1) PWQO denotes Provincial Water Quality Objectives (1994) with updates.
2) * denotes interim PWQO.
3) µg/L denotes micrograms per litre.
4) Blank denotes parameter not analyzed.
5) Bold indicates select parameter was detected at concentration greater than the laboratory reportable detection limit (RDL).
6) *Italics* denotes parameter concentration was below the laboratory reportable detection limit (RDL), where the RDL exceeds the relevant PWQO.

Table I-3
Precipitation Event Surface Water Quality - Organic Analytical Results - Compliance Monitoring
Twin Creeks Environmental Centre

Parameter	Units	PWQO	Downstream of Landfill 60m East of Lambton Rd 79 - SS1										
Date			18-May-20	15-Nov-20	26-Nov-20	26-Mar-21	9-Apr-21	3-Jun-21	9-Jul-21	30-Jul-21	4-Oct-21	15-Oct-21	17-Feb-22
Laboratory			Bureau Veritas	Bureau Veritas	Bureau Veritas	Bureau Veritas	Bureau Veritas	Bureau Veritas	Bureau Veritas	Bureau Veritas	Bureau Veritas	Bureau Veritas	Bureau Veritas
Semivolatile Organics													
Benzo(a)pyrene	µg/L		<0.20	<0.20	<0.20	<0.80	<0.20	<0.80	<0.20	<0.20	<0.20	<0.20	<0.80
1,2-Dichlorobenzene	µg/L	2.5	<0.50	<0.50	<0.50	<2.0	<0.50	<2.0	<0.50	<0.50	<0.50	<0.50	<2.0
1,3-Dichlorobenzene	µg/L	2.5	<0.50	<0.50	<0.50	<2.0	<0.50	<2.0	<0.50	<0.50	<0.50	<0.50	<2.0
1,4-Dichlorobenzene	µg/L	4	<0.50	<0.50	<0.50	<2.0	<0.50	<2.0	<0.50	<0.50	<0.50	<0.50	<2.0
Hexachlorobenzene	µg/L	0.0065	*<0.50*	*<0.50*	*<0.50*	*<2.0*	*<0.50*	*<2.0*	*<0.50*	*<0.50*	*<0.50*	*<0.50*	*<2.0*
1,2,4-Trichlorobenzene	µg/L	0.5	<0.50	<0.50	<0.50	*<2.0*	<0.50	*<2.0*	<0.50	<0.50	<0.50	<0.50	*<2.0*
2,4-Dichlorophenol	µg/L	0.2	*<0.30*	*<0.30*	*<0.30*	*<1.2*	*<0.30*	*<1.2*	*<0.30*	*<0.30*	*<0.30*	*<0.30*	*<1.2*
Pentachlorophenol	µg/L	0.5	*<1.0*	*<1.0*	*<1.0*	*<4.0*	*<1.0*	*<4.0*	*<1.0*	*<1.0*	*<1.0*	*<1.0*	*<4.0*
Phenol	µg/L	5*	<0.50	<0.50	<0.50	<2.0	0.63	<2.0	<0.50	<0.50	<0.50	<0.50	<2.0
2,4,6-Trichlorophenol	µg/L	18	<0.50	<0.50	<0.50	<2.0	<0.50	<2.0	<0.50	<0.50	<0.50	<0.50	<2.0
Di-N-butyl phthalate	µg/L	4	<2.0	<2.0	<2.0	*<8.0*	<2.0	<8.0	<2.0	<2.0	<2.0	<2.0	*<8.0*
Diethyl phthalate	µg/L	0.2	*<1.0*	*<1.0*	*<1.0*	*<4.0*	*<1.0*	*<4.0*	*<1.0*	*<1.0*	*<1.0*	*<1.0*	*<4.0*
Dimethyl phthalate	µg/L	0.2	*<1.0*	*<1.0*	*<1.0*	*<4.0*	*<1.0*	*<4.0*	*<1.0*	*<1.0*	*<1.0*	*<1.0*	*<4.0*
Volatile Organics													
Benzene	µg/L	100*	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
1,4-Dichlorobenzene	µg/L	4	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40
Ethylbenzene	µg/L	8*	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Dichloromethane	µg/L	100*	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
Toluene	µg/L	0.8*	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Vinyl Chloride	µg/L	600*	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
p+m-Xylene	µg/L	32*	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
o-Xylene	µg/L	40*	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Xylene (Total)	µg/L		<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20

NOTE: 1) PWQO denotes Provincial Water Quality Objectives (1994) with updates.
2) * denotes interim PWQO.
3) µg/L denotes micrograms per litre.
4) Blank denotes parameter not analyzed.
5) Bold indicates select parameter was detected at concentration greater than the laboratory reportable detection limit (RDL).
6) *Italics* denotes parameter concentration was below the laboratory reportable detection limit (RDL), where the RDL exceeds the relevant PWQO.

Table I-3
Precipitation Event Surface Water Quality - Organic Analytical Results - Compliance Monitoring
Twin Creeks Environmental Centre

Parameter	Units	PWQO	Downstream of Landfill 60m East of Lambton Rd 79 - SS1										
Date			4-May-22	16-May-22	4-Aug-22	18-Oct-22	28-Nov-22	10-Feb-23	17-Mar-23	2-Apr-23	3-May-23	3-Jul-23	13-Jul-23
Laboratory			Bureau Veritas	Bureau Veritas	Bureau Veritas	Bureau Veritas	Bureau Veritas	Bureau Veritas	Bureau Veritas	Bureau Veritas	Bureau Veritas	Bureau Veritas	Bureau Veritas
Semivolatile Organics													
Benzo(a)pyrene	µg/L		<0.20	<0.20	<0.20	<0.80	<0.80	<0.20	<0.80	<0.80	<0.20	<0.80	<0.20
1,2-Dichlorobenzene	µg/L	2.5	<0.50	<0.50	<0.50	<2.0	<2.0	<0.50	<2.0	<2.0	<0.50	<2.0	<0.50
1,3-Dichlorobenzene	µg/L	2.5	<0.50	<0.50	<0.50	<2.0	<2.0	<0.50	<2.0	<2.0	<0.50	<2.0	<0.50
1,4-Dichlorobenzene	µg/L	4	<0.50	<0.50	<0.50	<2.0	<2.0	<0.50	<2.0	<2.0	<0.50	<2.0	<0.50
Hexachlorobenzene	µg/L	0.0065	*<0.50*	*<0.50*	*<0.50*	*<2.0*	*<2.0*	*<0.50*	*<2.0*	*<2.0*	*<0.50*	*<2.0*	*<0.50*
1,2,4-Trichlorobenzene	µg/L	0.5	<0.50	<0.50	<0.50	*<2.0*	<2.0	<0.50	<2.0	<2.0	<0.50	<2.0	<0.50
2,4-Dichlorophenol	µg/L	0.2	*<0.30*	*<0.30*	*<0.30*	*<1.2*	*<1.2*	*<0.30*	*<1.2*	*<1.2*	*<0.30*	*<1.2*	*<0.30*
Pentachlorophenol	µg/L	0.5	*<1.0*	*<1.0*	*<1.0*	*<4.0*	*<4.0*	*<1.0*	*<4.0*	*<4.0*	*<1.0*	*<4.0*	*<1.0*
Phenol	µg/L	5*	<0.50	<0.50	<0.50	<2.0	<2.0	<0.50	<2.0	<2.0	<0.50	<2.0	<0.50
2,4,6-Trichlorophenol	µg/L	18	<0.50	<0.50	<0.50	<2.0	<2.0	<0.50	<2.0	<2.0	<0.50	<2.0	<0.50
Di-N-butyl phthalate	µg/L	4	<2.0	<2.0	<2.0	*<8.0*	<8.0	<2.0	*<8.0*	*<8.0*	<2.0	<8.0	*<2.0*
Diethyl phthalate	µg/L	0.2	*<1.0*	*<1.0*	*<1.0*	*<4.0*	*<4.0*	*<1.0*	*<4.0*	*<4.0*	*<1.0*	*<4.0*	*<1.0*
Dimethyl phthalate	µg/L	0.2	*<1.0*	*<1.0*	*<1.0*	*<4.0*	*<4.0*	*<1.0*	*<4.0*	*<4.0*	*<1.0*	*<4.0*	*<1.0*
Volatile Organics													
Benzene	µg/L	100*	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
1,4-Dichlorobenzene	µg/L	4	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40
Ethylbenzene	µg/L	8*	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Dichloromethane	µg/L	100*	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
Toluene	µg/L	0.8*	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Vinyl Chloride	µg/L	600*	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
p+m-Xylene	µg/L	32*	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
o-Xylene	µg/L	40*	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Xylene (Total)	µg/L		<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20

NOTE: 1) PWQO denotes Provincial Water Quality Objectives (1994) with updates.
2) * denotes interim PWQO.
3) µg/L denotes micrograms per litre.
4) Blank denotes parameter not analyzed.
5) Bold indicates select parameter was detected at concentration greater than the laboratory reportable detection limit (RDL).
6) *Italics* denotes parameter concentration was below the laboratory reportable detection limit (RDL), where the RDL exceeds the relevant PWQO.

Table I-3
Precipitation Event Surface Water Quality - Organic Analytical Results - Compliance Monitoring
Twin Creeks Environmental Centre

Parameter	Units	PWQO	Downstream of Landfill 60m East of Lambton Rd 79 - SS1										
Date			2-Nov-23	10-Jan-24	26-Jan-24	12-Apr-24	30-Apr-24	10-Jul-24	30-Jul-24	14-Oct-24	11-Nov-24		
Laboratory			Bureau Veritas	Bureau Veritas	Bureau Veritas	Bureau Veritas	Bureau Veritas	Bureau Veritas	Bureau Veritas	Bureau Veritas	Bureau Veritas		
Semivolatile Organics													
Benzo(a)pyrene	µg/L		<0.20	<0.80	<0.80	<0.20	<0.20	<0.80	<2.0	<0.20	<0.80		
1,2-Dichlorobenzene	µg/L	2.5	<0.50	<2.0	<2.0	<0.50	<0.50	<2.0	*<5.0*	<0.50	<2.0		
1,3-Dichlorobenzene	µg/L	2.5	<0.50	<2.0	<2.0	<0.50	<0.50	<2.0	*<5.0*	<0.50	<2.0		
1,4-Dichlorobenzene	µg/L	4	<0.50	<2.0	<2.0	<0.50	<0.50	<2.0	*<5.0*	<0.50	<2.0		
Hexachlorobenzene	µg/L	0.0065	*<0.50*	*<2.0*	*<2.0*	*<0.50*	*<0.50*	*<2.0*	*<5.0*	*<0.50*	*<2.0*		
1,2,4-Trichlorobenzene	µg/L	0.5	<0.50	*<2.0*	*<2.0*	<0.50	<0.50	*<2.0*	*<5.0*	<0.50	*<2.0*		
2,4-Dichlorophenol	µg/L	0.2	*<0.30*	*<1.2*	*<1.2*	*<0.30*	*<0.30*	*<1.2*	*<3.0*	*<0.30*	*<1.2*		
Pentachlorophenol	µg/L	0.5	*<1.0*	*<4.0*	*<4.0*	*<1.0*	*<1.0*	*<4.0*	*<10*	*<1.0*	*<4.0*		
Phenol	µg/L	5*	<0.50	<2.0	<2.0	<0.50	<0.50	<2.0	<5.0	<0.50	<2.0		
2,4,6-Trichlorophenol	µg/L	18	<0.50	<2.0	<2.0	<0.50	<0.50	<2.0	<5.0	<0.50	<2.0		
Di-N-butyl phthalate	µg/L	4	<2.0	*<8.0*	*<8.0*	*<2.0*	*<2.0*	*<8.0*	*<20*	<2.0	*<8.0*		
Diethyl phthalate	µg/L	0.2	*<1.0*	*<4.0*	*<88*	*<1.0*	*<1.0*	*<4.0*	*<10*	*<1.0*	*<4.0*		
Dimethyl phthalate	µg/L	0.2	*<1.0*	*<4.0*	*<4.0*	*<1.0*	*<1.0*	*<4.0*	*<10*	*<1.0*	*<4.0*		
Volatile Organics													
Benzene	µg/L	100*	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20		
1,4-Dichlorobenzene	µg/L	4	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40		
Ethylbenzene	µg/L	8*	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20		
Dichloromethane	µg/L	100*	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0		
Toluene	µg/L	0.8*	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	0.20	<0.20	<0.20		
Vinyl Chloride	µg/L	600*	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20		
p+m-Xylene	µg/L	32*	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20		
o-Xylene	µg/L	40*	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20		
Xylene (Total)	µg/L		<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20		

NOTE: 1) PWQO denotes Provincial Water Quality Objectives (1994) with updates.
2) * denotes interim PWQO.
3) µg/L denotes micrograms per litre.
4) Blank denotes parameter not analyzed.
5) Bold indicates select parameter was detected at concentration greater than the laboratory reportable detection limit (RDL).
6) *Italics* denotes parameter concentration was below the laboratory reportable detection limit (RDL), where the RDL exceeds the relevant PWQO.

Table I-3
Precipitation Event Surface Water Quality - Organic Analytical Results - Compliance Monitoring
Twin Creeks Environmental Centre

Parameter	Units	PWQO	Sedimentation Pond Surface Water Quality - SP1										
Date			25-Mar-09	26-Dec-09	25-Jan-10	6-Apr-10	5-Aug-10	6-Nov-10	28-Feb-11	20-Apr-11	9-May-11	16-May-11	23-Nov-11
Laboratory			Maxxam	Maxxam	Maxxam	Maxxam	Maxxam	Maxxam	Maxxam	Maxxam	Maxxam	Maxxam	Maxxam
Semivolatile Organics													
Benzo(a)pyrene	µg/L		<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
1,2-Dichlorobenzene	µg/L	2.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
1,3-Dichlorobenzene	µg/L	2.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
1,4-Dichlorobenzene	µg/L	4	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Hexachlorobenzene	µg/L	0.0065	*<0.5*	*<0.5*	*<0.5*	*<0.5*	*<0.5*	*<0.5*	*<0.5*	*<0.5*	*<0.5*	*<0.5*	*<0.5*
1,2,4-Trichlorobenzene	µg/L	0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
2,4-Dichlorophenol	µg/L	0.2	*<0.3*	*<0.3*	*<0.3*	*<0.3*	*<0.3*	*<0.3*	*<0.3*	*<0.3*	*<0.3*	*<0.3*	*<0.3*
Pentachlorophenol	µg/L	0.5	*<1*	*<1*	*<1*	*<1*	*<1*	*<1*	*<1*	*<1*	*<1*	*<1*	*<1*
Phenol	µg/L	5*	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
2,4,6-Trichlorophenol	µg/L	18	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Di-N-butyl phthalate	µg/L	4	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
Diethyl phthalate	µg/L	0.2	*<1*	*<1*	*<1*	*<1*	7	*<1*	*<1*	*<1*	*<1*	*<1*	*<1*
Dimethyl phthalate	µg/L	0.2	*<1*	*<1*	*<1*	*<1*	*<1*	*<1*	*<1*	*<1*	*<1*	*<1*	*<1*
Volatile Organics													
Benzene	µg/L	100*	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.2	<0.1	<0.1	<0.1	<0.3
1,4-Dichlorobenzene	µg/L	4	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.4	<0.2	<0.2	<0.2	<0.5
Ethylbenzene	µg/L	8*	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.2	<0.1	<0.1	<0.1	<0.3
Dichloromethane	µg/L	100*	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1	<0.5	<0.5	<0.5	<1
Toluene	µg/L	0.8*	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.4	<0.2	<0.2	<0.2	<0.5
Vinyl Chloride	µg/L	600*	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.4	<0.2	<0.2	<0.2	<0.5
p+m-Xylene	µg/L	32*	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.2	<0.1	<0.1	<0.1	<0.3
o-Xylene	µg/L	40*	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.2	<0.1	<0.1	<0.1	<0.3
Xylene (Total)	µg/L		<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.2	<0.1	<0.1	<0.1	<0.3

NOTE: 1) PWQO denotes Provincial Water Quality Objectives (1994) with updates.
2) * denotes interim PWQO.
3) µg/L denotes micrograms per litre.
4) Blank denotes parameter not analyzed.
5) Bold indicates select parameter was detected at concentration greater than the laboratory reportable detection limit (RDL).
6) *Italics* denotes parameter concentration was below the laboratory reportable detection limit (RDL), where the RDL exceeds the relevant PWQO.

Table I-3
Precipitation Event Surface Water Quality - Organic Analytical Results - Compliance Monitoring
Twin Creeks Environmental Centre

Parameter	Units	PWQO	Sedimentation Pond Surface Water Quality - SP1										
Date			6-Dec-11	13-Mar-12	27-Mar-12	22-Jun-12	15-Aug-12	14-Oct-12	13-Jan-13	10-Apr-13	29-Apr-13	5-Jul-13	7-Oct-13
Laboratory			Maxxam	Maxxam	Maxxam	Maxxam	Maxxam	Maxxam	Maxxam	Maxxam	Maxxam	Maxxam	Maxxam
Semivolatile Organics													
Benzo(a)pyrene	µg/L		<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
1,2-Dichlorobenzene	µg/L	2.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
1,3-Dichlorobenzene	µg/L	2.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
1,4-Dichlorobenzene	µg/L	4	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Hexachlorobenzene	µg/L	0.0065	*<0.5*	*<0.5*	*<0.5*	*<0.5*	*<0.5*	*<0.5*	*<0.5*	*<0.5*	*<0.5*	*<0.5*	*<0.5*
1,2,4-Trichlorobenzene	µg/L	0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
2,4-Dichlorophenol	µg/L	0.2	*<0.3*	*<0.3*	*<0.3*	*<0.3*	*<0.3*	*<0.3*	*<0.3*	*<0.3*	*<0.3*	*<0.3*	*<0.3*
Pentachlorophenol	µg/L	0.5	*<1*	*<1*	*<1*	*<1*	*<1*	*<1*	*<1*	*<1*	*<1*	*<1*	*<1*
Phenol	µg/L	5*	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	<0.5
2,4,6-Trichlorophenol	µg/L	18	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Di-N-butyl phthalate	µg/L	4	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
Diethyl phthalate	µg/L	0.2	*<1*	*<1*	*<1*	*<1*	*<1*	*<1*	*<1*	*<1*	*<1*	*<1*	*<1*
Dimethyl phthalate	µg/L	0.2	*<1*	*<1*	*<1*	*<1*	*<1*	*<1*	*<1*	*<1*	*<1*	*<1*	*<1*
Volatile Organics													
Benzene	µg/L	100*	<0.10	<0.10	<0.10	<0.10	<0.10	<0.25	<0.10	<0.10	<0.10	<0.10	<0.10
1,4-Dichlorobenzene	µg/L	4	<0.20	<0.20	<0.20	<0.20	<0.20	<0.50	<0.20	<0.20	<0.20	<0.20	<0.20
Ethylbenzene	µg/L	8*	<0.10	<0.10	<0.10	<0.10	<0.10	<0.25	<0.10	<0.10	<0.10	<0.10	<0.10
Dichloromethane	µg/L	100*	<0.50	<0.50	<0.50	<0.50	<0.50	<1.3	<0.50	<0.50	<0.50	<0.50	<0.50
Toluene	µg/L	0.8*	<0.20	<0.20	<0.20	<0.20	<0.20	<0.50	<0.20	<0.20	<0.20	<0.20	<0.20
Vinyl Chloride	µg/L	600*	<0.20	<0.20	<0.20	<0.20	<0.20	<0.50	<0.20	<0.20	<0.20	<0.20	<0.20
p+m-Xylene	µg/L	32*	<0.10	<0.10	<0.10	<0.10	<0.10	<0.25	<0.10	<0.10	<0.10	<0.10	<0.10
o-Xylene	µg/L	40*	<0.10	<0.10	<0.10	<0.10	<0.10	<0.25	<0.10	<0.10	<0.10	<0.10	<0.10
Xylene (Total)	µg/L		<0.10	<0.10	<0.10	<0.10	<0.10	<0.25	<0.10	<0.10	<0.10	<0.10	<0.10

NOTE: 1) PWQO denotes Provincial Water Quality Objectives (1994) with updates.
2) * denotes interim PWQO.
3) µg/L denotes micrograms per litre.
4) Blank denotes parameter not analyzed.
5) Bold indicates select parameter was detected at concentration greater than the laboratory reportable detection limit (RDL).
6) *Italics* denotes parameter concentration was below the laboratory reportable detection limit (RDL), where the RDL exceeds the relevant PWQO.

Table I-3
Precipitation Event Surface Water Quality - Organic Analytical Results - Compliance Monitoring
Twin Creeks Environmental Centre

Parameter	Units	PWQO	Sedimentation Pond Surface Water Quality - SP1										
Date			11-Jan-14	8-Apr-14	30-Apr-14	7-Jul-14	24-Nov-14	15-Dec-14	4-Jan-15	10-Apr-15	30-Apr-15	3-Aug-15	25-Feb-16
Laboratory			Maxxam	Maxxam	Maxxam	Maxxam	Maxxam	Maxxam	Maxxam	Maxxam	Maxxam	Maxxam	Maxxam
Semivolatile Organics													
Benzo(a)pyrene	µg/L		<0.8	<0.2	<0.2	<0.2	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
1,2-Dichlorobenzene	µg/L	2.5	<2	<0.5	<0.5	<0.5	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
1,3-Dichlorobenzene	µg/L	2.5	<2	<0.5	<0.5	<0.5	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
1,4-Dichlorobenzene	µg/L	4	<2	<0.5	<0.5	<0.5	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Hexachlorobenzene	µg/L	0.0065	*<2*	*<0.5*	*<0.5*	*<0.5*	*<0.50*	*<0.50*	*<0.50*	*<0.50*	*<0.50*	*<0.50*	*<0.50*
1,2,4-Trichlorobenzene	µg/L	0.5	*<2*	<0.5	<0.5	<0.5	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
2,4-Dichlorophenol	µg/L	0.2	*<1*	<0.3	*<0.3*	*<0.3*	*<0.30*	*<0.30*	*<0.30*	*<0.30*	*<0.30*	*<0.30*	*<0.30*
Pentachlorophenol	µg/L	0.5	*<4*	<1	*<1*	*<1*	*<1.0*	*<1.0*	*<1.0*	*<1.0*	*<1.0*	*<1.0*	*<1.0*
Phenol	µg/L	5*	<2	<0.5	<0.5	<0.5	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
2,4,6-Trichlorophenol	µg/L	18	<2	<0.5	<0.5	<0.5	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Di-N-butyl phthalate	µg/L	4	*<8*	<2	<2	<2	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
Diethyl phthalate	µg/L	0.2	*<4*	*<1*	*<1*	*<1*	*<1.0*	*<1.0*	*<1.0*	*<1.0*	*<1.0*	*<1.0*	*<1.0*
Dimethyl phthalate	µg/L	0.2	*<4*	*<1*	*<1*	*<1*	*<1.0*	*<1.0*	*<1.0*	*<1.0*	*<1.0*	*<1.0*	*<1.0*
Volatile Organics													
Benzene	µg/L	100*	<0.10	<0.10	<0.10	<0.10	<0.20	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
1,4-Dichlorobenzene	µg/L	4	<0.20	<0.20	<0.20	<0.20	<0.40	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Ethylbenzene	µg/L	8*	<0.10	<0.10	<0.10	<0.10	<0.20	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
Dichloromethane	µg/L	100*	<0.50	<0.50	<0.50	<0.50	<1.0	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Toluene	µg/L	0.8*	<0.20	<0.20	<0.20	<0.20	<0.40	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Vinyl Chloride	µg/L	600*	<0.20	<0.20	<0.20	<0.20	<0.40	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
p+m-Xylene	µg/L	32*	<0.10	<0.10	<0.10	<0.10	<0.20	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
o-Xylene	µg/L	40*	<0.10	<0.10	<0.10	<0.10	<0.20	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
Xylene (Total)	µg/L		<0.10	<0.10	<0.10	<0.10	<0.20	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10

NOTE: 1) PWQO denotes Provincial Water Quality Objectives (1994) with updates.
2) * denotes interim PWQO.
3) µg/L denotes micrograms per litre.
4) Blank denotes parameter not analyzed.
5) Bold indicates select parameter was detected at concentration greater than the laboratory reportable detection limit (RDL).
6) *Italics* denotes parameter concentration was below the laboratory reportable detection limit (RDL), where the RDL exceeds the relevant PWQO.

Table I-3
Precipitation Event Surface Water Quality - Organic Analytical Results - Compliance Monitoring
Twin Creeks Environmental Centre

Parameter	Units	PWQO	Sedimentation Pond Surface Water Quality - SP1										
Date			7-Apr-16	1-Aug-16	3-Nov-16	12-Jan-17	8-Feb-17	6-Apr-17	13-Jul-17	23-Jan-18	4-Apr-18	27-Aug-18	2-Oct-18
Laboratory			Maxxam	Maxxam	Maxxam	Maxxam	Maxxam	Maxxam	Maxxam	Maxxam	Maxxam	Maxxam	Maxxam
Semivolatile Organics													
Benzo(a)pyrene	µg/L		<0.20	<0.20	<0.80	<0.80	<0.20	<0.20	<0.20	<0.80	<0.20	<0.20	<0.20
1,2-Dichlorobenzene	µg/L	2.5	<0.50	<0.50	<2.0	<2.0	<0.50	<0.50	<0.50	<2.0	<0.50	<0.50	<0.50
1,3-Dichlorobenzene	µg/L	2.5	<0.50	<0.50	<2.0	<2.0	<0.50	<0.50	<0.50	<2.0	<0.50	<0.50	<0.50
1,4-Dichlorobenzene	µg/L	4	<0.50	<0.50	<2.0	<2.0	<0.50	<0.50	<0.50	<2.0	<0.50	<0.50	<0.50
Hexachlorobenzene	µg/L	0.0065	*<0.50*	*<0.50*	*<2.0*	*<2.0*	*<0.50*	*<0.50*	*<0.50*	*<2.0*	*<0.50*	*<0.50*	*<0.50*
1,2,4-Trichlorobenzene	µg/L	0.5	<0.50	<0.50	*<2.0*	*<2.0*	*<0.50*	<0.50	<0.50	<2.0	<0.50	<0.50	<0.50
2,4-Dichlorophenol	µg/L	0.2	*<0.30*	*<0.30*	*<1.2*	*<1.2*	*<0.30*	*<0.30*	*<0.30*	*<1.2*	*<0.30*	*<0.30*	*<0.30*
Pentachlorophenol	µg/L	0.5	*<1.0*	*<1.0*	*<4.0*	*<4.0*	*<1.0*	*<1.0*	*<1.0*	*<4.0*	*<1.0*	*<1.0*	*<1.0*
Phenol	µg/L	5*	<0.50	<0.50	<2.0	<2.0	<0.50	<0.50	<0.50	<2.0	<0.50	<0.50	<0.50
2,4,6-Trichlorophenol	µg/L	18	<0.50	<0.50	<2.0	<2.0	<0.50	<0.50	<0.50	<2.0	<0.50	<0.50	<0.50
Di-N-butyl phthalate	µg/L	4	<2.0	<2.0	*<8.0*	*<8.0*	*<2.0*	<2.0	<2.0	<8.0	<2.0	<2.0	<2.0
Diethyl phthalate	µg/L	0.2	*<1.0*	*<1.0*	*<4.0*	*<4.0*	*<1.0*	*<1.0*	*<1.0*	*<4.0*	*<1.0*	*<1.0*	*<1.0*
Dimethyl phthalate	µg/L	0.2	*<1.0*	*<1.0*	*<4.0*	*<4.0*	*<1.0*	*<1.0*	*<1.0*	*<4.0*	*<1.0*	*<1.0*	*<1.0*
Volatile Organics													
Benzene	µg/L	100*	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.20	<0.20
1,4-Dichlorobenzene	µg/L	4	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.50	<0.20	<0.50	<0.50	<0.50
Ethylbenzene	µg/L	8*	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.20	<0.20
Dichloromethane	µg/L	100*	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<2.0	<2.0
Toluene	µg/L	0.8*	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Vinyl Chloride	µg/L	600*	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
p+m-Xylene	µg/L	32*	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.20	<0.20
o-Xylene	µg/L	40*	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.20	<0.20
Xylene (Total)	µg/L		<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.20	<0.20

NOTE: 1) PWQO denotes Provincial Water Quality Objectives (1994) with updates.
2) * denotes interim PWQO.
3) µg/L denotes micrograms per litre.
4) Blank denotes parameter not analyzed.
5) Bold indicates select parameter was detected at concentration greater than the laboratory reportable detection limit (RDL).
6) *Italics* denotes parameter concentration was below the laboratory reportable detection limit (RDL), where the RDL exceeds the relevant PWQO.

Table I-3
Precipitation Event Surface Water Quality - Organic Analytical Results - Compliance Monitoring
Twin Creeks Environmental Centre

Parameter	Units	PWQO	Sedimentation Pond Surface Water Quality - SP1										
Date			24-Jan-19	19-Apr-19	27-Oct-19	11-Jan-20	18-May-20	15-Nov-20	26-Mar-21	9-Jul-21	4-Oct-21	17-Feb-22	4-May-22
Laboratory			Maxxam	Maxxam	Bureau Veritas	Bureau Veritas	Bureau Veritas	Bureau Veritas	Bureau Veritas	Bureau Veritas	Bureau Veritas	Bureau Veritas	Bureau Veritas
Semivolatile Organics													
Benzo(a)pyrene	µg/L		<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.80	<0.20
1,2-Dichlorobenzene	µg/L	2.5	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<2.0	<0.50
1,3-Dichlorobenzene	µg/L	2.5	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<2.0	<0.50
1,4-Dichlorobenzene	µg/L	4	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<2.0	<0.50
Hexachlorobenzene	µg/L	0.0065	*<0.50*	*<0.50*	*<0.50*	*<0.50*	*<0.50*	*<0.50*	*<0.50*	*<0.50*	*<0.50*	*<2.0*	*<0.50*
1,2,4-Trichlorobenzene	µg/L	0.5	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	*<2.0*	<0.50
2,4-Dichlorophenol	µg/L	0.2	*<0.30*	*<0.30*	*<0.30*	*<0.30*	*<0.30*	*<0.30*	*<0.30*	*<0.30*	*<0.30*	*<1.2*	*<0.30*
Pentachlorophenol	µg/L	0.5	*<1.0*	*<1.0*	*<1.0*	*<1.0*	*<1.0*	*<1.0*	*<1.0*	*<1.0*	*<1.0*	*<4.0*	*<1.0*
Phenol	µg/L	5*	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<2.0	<0.50
2,4,6-Trichlorophenol	µg/L	18	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<2.0	<0.50
Di-N-butyl phthalate	µg/L	4	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	*<8.0*	<2.0
Diethyl phthalate	µg/L	0.2	*<1.0*	*<1.0*	*<1.0*	*<1.0*	*<1.0*	*<1.0*	*<1.0*	*<1.0*	*<1.0*	*<4.0*	*<1.0*
Dimethyl phthalate	µg/L	0.2	*<1.0*	*<1.0*	*<1.0*	*<1.0*	*<1.0*	*<1.0*	*<1.0*	*<1.0*	*<1.0*	*<4.0*	*<1.0*
Volatile Organics													
Benzene	µg/L	100*	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
1,4-Dichlorobenzene	µg/L	4	<0.50	<0.50	<0.50	<0.50	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40
Ethylbenzene	µg/L	8*	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Dichloromethane	µg/L	100*	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
Toluene	µg/L	0.8*	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Vinyl Chloride	µg/L	600*	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
p+m-Xylene	µg/L	32*	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
o-Xylene	µg/L	40*	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Xylene (Total)	µg/L		<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20

NOTE: 1) PWQO denotes Provincial Water Quality Objectives (1994) with updates.
2) * denotes interim PWQO.
3) µg/L denotes micrograms per litre.
4) Blank denotes parameter not analyzed.
5) Bold indicates select parameter was detected at concentration greater than the laboratory reportable detection limit (RDL).
6) *Italics* denotes parameter concentration was below the laboratory reportable detection limit (RDL), where the RDL exceeds the relevant PWQO.

Table I-3
Precipitation Event Surface Water Quality - Organic Analytical Results - Compliance Monitoring
Twin Creeks Environmental Centre

Parameter	Units	PWQO	Sedimentation Pond Surface Water Quality - SP1										
Date			20-Jul-22	4-Aug-22	18-Oct-22	10-Feb-23	2-Apr-23	3-Jul-23	2-Nov-23	10-Jan-24	12-Apr-24	10-Jul-24	14-Oct-24
Laboratory			Bureau Veritas	Bureau Veritas	Bureau Veritas	Bureau Veritas	Bureau Veritas	Bureau Veritas	Bureau Veritas	Bureau Veritas	Bureau Veritas	Bureau Veritas	Bureau Veritas
Semivolatile Organics													
Benzo(a)pyrene	µg/L		<0.20	<0.20	<0.20	<0.20	<0.80	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
1,2-Dichlorobenzene	µg/L	2.5	<0.50	<0.50	<0.50	<0.50	<2.0	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
1,3-Dichlorobenzene	µg/L	2.5	<0.50	<0.50	<0.50	<0.50	<2.0	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
1,4-Dichlorobenzene	µg/L	4	<0.50	<0.50	<0.50	<0.50	<2.0	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Hexachlorobenzene	µg/L	0.0065	*<0.50*	*<0.50*	*<0.50*	*<0.50*	*<2.0*	*<0.50*	*<0.50*	*<0.50*	*<0.50*	*<0.50*	*<0.50*
1,2,4-Trichlorobenzene	µg/L	0.5	<0.50	<0.50	<0.50	<0.50	*<2.0*	<0.50	<0.50	<0.50	<0.50	*<0.50*	<0.50
2,4-Dichlorophenol	µg/L	0.2	*<0.30*	*<0.30*	*<0.30*	*<0.30*	*<1.2*	*<0.30*	*<0.30*	*<0.30*	*<0.30*	*<0.30*	*<0.30*
Pentachlorophenol	µg/L	0.5	*<1.0*	*<1.0*	*<1.0*	*<1.0*	*<4.0*	*<1.0*	*<1.0*	*<1.0*	*<1.0*	*<1.0*	*<1.0*
Phenol	µg/L	5*	<0.50	<0.50	<0.50	<0.50	<2.0	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
2,4,6-Trichlorophenol	µg/L	18	<0.50	<0.50	<0.50	<0.50	<2.0	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Di-N-butyl phthalate	µg/L	4	<2.0	<2.0	<2.0	<2.0	*<8.0*	<2.0	<2.0	<2.0	<2.0	*<2.0*	<2.0
Diethyl phthalate	µg/L	0.2	*<1.0*	*<1.0*	*<1.0*	*<1.0*	*<4.0*	*<1.0*	*<1.0*	*<1.0*	*<1.0*	*<1.0*	*<1.0*
Dimethyl phthalate	µg/L	0.2	*<1.0*	*<1.0*	*<1.0*	*<1.0*	*<4.0*	*<1.0*	*<1.0*	*<1.0*	*<1.0*	*<1.0*	*<1.0*
Volatile Organics													
Benzene	µg/L	100*	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
1,4-Dichlorobenzene	µg/L	4	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40
Ethylbenzene	µg/L	8*	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Dichloromethane	µg/L	100*	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
Toluene	µg/L	0.8*	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Vinyl Chloride	µg/L	600*	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
p+m-Xylene	µg/L	32*	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
o-Xylene	µg/L	40*	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Xylene (Total)	µg/L		<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20

NOTE: 1) PWQO denotes Provincial Water Quality Objectives (1994) with updates.
2) * denotes interim PWQO.
3) µg/L denotes micrograms per litre.
4) Blank denotes parameter not analyzed.
5) Bold indicates select parameter was detected at concentration greater than the laboratory reportable detection limit (RDL).
6) *Italics* denotes parameter concentration was below the laboratory reportable detection limit (RDL), where the RDL exceeds the relevant PWQO.

Table I-3
Precipitation Event Surface Water Quality - Organic Analytical Results - Compliance Monitoring
Twin Creeks Environmental Centre

Parameter	Units	PWQO	Sedimentation Pond Surface Water Quality - SP2										
Date			14-Sep-08	17-Oct-08	4-Nov-08	5-Dec-08	12-Feb-09	8-Mar-09	6-Apr-09	26-Apr-09	7-May-09	24-Oct-09	25-Jan-10
Laboratory			Maxxam	Maxxam	Maxxam	Maxxam	Maxxam	Maxxam	Maxxam	Maxxam	Maxxam	Maxxam	Maxxam
Semivolatile Organics													
Benzo(a)pyrene	µg/L		<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
1,2-Dichlorobenzene	µg/L	2.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
1,3-Dichlorobenzene	µg/L	2.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
1,4-Dichlorobenzene	µg/L	4	<0.5	<0.5	<0.5	<0.5	<0.5	,0.5	,0.5	,0.5	,0.5	<0.5	<0.5
Hexachlorobenzene	µg/L	0.0065	*<0.5*	*<0.5*	*<0.5*	*<0.5*	*<0.5*	*<0.5*	*<0.5*	*<0.5*	*<0.5*	*<0.5*	*<0.5*
1,2,4-Trichlorobenzene	µg/L	0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
2,4-Dichlorophenol	µg/L	0.2	*<0.3*	*<0.3*	*<0.3*	*<0.3*	*<0.3*	*<0.3*	*<0.3*	*<0.3*	*<0.3*	*<0.3*	*<0.3*
Pentachlorophenol	µg/L	0.5	*<1*	*<1*	*<1*	*<1*	*<1*	*<1*	*<1*	*<1*	*<1*	*<1*	*<1*
Phenol	µg/L	5*	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
2,4,6-Trichlorophenol	µg/L	18	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Di-N-butyl phthalate	µg/L	4	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
Diethyl phthalate	µg/L	0.2	*<1*	*<1*	*<1*	*<1*	*<1*	*<1*	*<1*	*<1*	*<1*	*<1*	*<1*
Dimethyl phthalate	µg/L	0.2	*<1*	*<1*	*<1*	*<1*	*<1*	*<1*	*<1*	*<1*	*<1*	*<1*	*<1*
Volatile Organics													
Benzene	µg/L	100*	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
1,4-Dichlorobenzene	µg/L	4	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Ethylbenzene	µg/L	8*	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Dichloromethane	µg/L	100*	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Toluene	µg/L	0.8*	<0.2	<0.2	<0.2	<0.2	<.02	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Vinyl Chloride	µg/L	600*	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
p+m-Xylene	µg/L	32*	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
o-Xylene	µg/L	40*	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Xylene (Total)	µg/L		<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1

NOTE: 1) PWQO denotes Provincial Water Quality Objectives (1994) with updates.
2) * denotes interim PWQO.
3) µg/L denotes micrograms per litre.
4) Blank denotes parameter not analyzed.
5) Bold indicates select parameter was detected at concentration greater than the laboratory reportable detection limit (RDL).
6) *Italics* denotes parameter concentration was below the laboratory reportable detection limit (RDL), where the RDL exceeds the relevant PWQO.

Table I-3
Precipitation Event Surface Water Quality - Organic Analytical Results - Compliance Monitoring
Twin Creeks Environmental Centre

Parameter	Units	PWQO	Sedimentation Pond Surface Water Quality - SP2										
Date			6-Apr-10	14-Oct-10	28-Feb-11	20-Apr-11	8-Aug-11	20-Oct-11	13-Mar-12	27-Mar-12	30-Oct-12	15-Nov-12	13-Jan-13
Laboratory			Maxxam	Maxxam	Maxxam	Maxxam	Maxxam	Maxxam	Maxxam	Maxxam	Maxxam	Maxxam	Maxxam
Semivolatile Organics													
Benzo(a)pyrene	µg/L		<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
1,2-Dichlorobenzene	µg/L	2.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
1,3-Dichlorobenzene	µg/L	2.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
1,4-Dichlorobenzene	µg/L	4	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Hexachlorobenzene	µg/L	0.0065	*<0.5*	*<0.5*	*<0.5*	*<0.5*	*<0.5*	*<0.5*	*<0.5*	*<0.5*	*<0.5*	*<0.5*	*<0.5*
1,2,4-Trichlorobenzene	µg/L	0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
2,4-Dichlorophenol	µg/L	0.2	*<0.3*	*<0.3*	*<0.3*	*<0.3*	*<0.3*	*<0.3*	*<0.3*	*<0.3*	*<0.3*	*<0.3*	*<0.3*
Pentachlorophenol	µg/L	0.5	*<1*	*<1*	*<1*	*<1*	*<1*	*<1*	*<1*	*<1*	*<1*	*<1*	*<1*
Phenol	µg/L	5*	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
2,4,6-Trichlorophenol	µg/L	18	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Di-N-butyl phthalate	µg/L	4	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
Diethyl phthalate	µg/L	0.2	*<1*	*<1*	*<1*	*<1*	*<1*	*<1*	*<1*	*<1*	*<1*	*<1*	*<1*
Dimethyl phthalate	µg/L	0.2	*<1*	*<1*	*<1*	*<1*	*<1*	*<1*	*<1*	*<1*	*<1*	*<1*	*<1*
Volatile Organics													
Benzene	µg/L	100*	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.10	<0.10	<0.10	<0.10	<0.10
1,4-Dichlorobenzene	µg/L	4	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.20	<0.20	<0.20	<0.20	<0.20
Ethylbenzene	µg/L	8*	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.10	<0.10	<0.10	<0.10	<0.10
Dichloromethane	µg/L	100*	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.50	<0.50	<0.50	<0.50	<0.50
Toluene	µg/L	0.8*	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.20	<0.20	<0.20	<0.20	<0.20
Vinyl Chloride	µg/L	600*	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.20	<0.20	<0.20	<0.20	<0.20
p+m-Xylene	µg/L	32*	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.10	<0.10	<0.10	<0.10	<0.10
o-Xylene	µg/L	40*	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.10	<0.10	<0.10	<0.10	<0.10
Xylene (Total)	µg/L		<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.10	<0.10	<0.10	<0.10	<0.10

NOTE: 1) PWQO denotes Provincial Water Quality Objectives (1994) with updates.
2) * denotes interim PWQO.
3) µg/L denotes micrograms per litre.
4) Blank denotes parameter not analyzed.
5) Bold indicates select parameter was detected at concentration greater than the laboratory reportable detection limit (RDL).
6) *Italics* denotes parameter concentration was below the laboratory reportable detection limit (RDL), where the RDL exceeds the relevant PWQO.

Table I-3
Precipitation Event Surface Water Quality - Organic Analytical Results - Compliance Monitoring
Twin Creeks Environmental Centre

Parameter	Units	PWQO	Sedimentation Pond Surface Water Quality - SP2										
Date			10-Apr-13	5-Jul-13	7-Oct-13	11-Jan-14	28-Jan-14	8-Apr-14	30-Apr-14	7-Jul-14	24-Jul-14	24-Nov-14	15-Dec-14
Laboratory			Maxxam	Maxxam	Maxxam	Maxxam	Maxxam	Maxxam	Maxxam	Maxxam	Maxxam	Maxxam	Maxxam
Semivolatile Organics													
Benzo(a)pyrene	µg/L		<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.20	<0.20
1,2-Dichlorobenzene	µg/L	2.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.50	<0.50
1,3-Dichlorobenzene	µg/L	2.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.50	<0.50
1,4-Dichlorobenzene	µg/L	4	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.50	<0.50
Hexachlorobenzene	µg/L	0.0065	*<0.5*	*<0.5*	*<0.5*	*<0.5*	*<0.5*	*<0.5*	*<0.5*	*<0.5*	*<0.5*	*<0.50*	*<0.50*
1,2,4-Trichlorobenzene	µg/L	0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.50	<0.50
2,4-Dichlorophenol	µg/L	0.2	*<0.3*	*<0.3*	*<0.3*	*<0.3*	*<0.3*	*<0.3*	*<0.3*	*<0.3*	*<0.3*	*<0.30*	*<0.30*
Pentachlorophenol	µg/L	0.5	*<1*	*<1*	*<1*	*<1*	*<1*	*<1*	*<1*	*<1*	*<1*	*<1.0*	*<1.0*
Phenol	µg/L	5*	<0.5	0.6	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.50	<0.50
2,4,6-Trichlorophenol	µg/L	18	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.50	<0.50
Di-N-butyl phthalate	µg/L	4	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2.0	<2.0
Diethyl phthalate	µg/L	0.2	*<1*	*<1*	*<1*	*<1*	*<1*	*<1*	*<1*	*<1*	*<1*	*<1.0*	*<1.0*
Dimethyl phthalate	µg/L	0.2	*<1*	*<1*	*<1*	*<1*	*<1*	*<1*	*<1*	*<1*	*<1*	*<1.0*	*<1.0*
Volatile Organics													
Benzene	µg/L	100*	<0.1	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
1,4-Dichlorobenzene	µg/L	4	<0.2	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Ethylbenzene	µg/L	8*	<0.1	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
Dichloromethane	µg/L	100*	<0.5	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Toluene	µg/L	0.8*	<0.2	<0.20	<0.20	0.48	<0.20	0.29	<0.20	<0.20	<0.20	<0.20	<0.20
Vinyl Chloride	µg/L	600*	<0.2	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
p+m-Xylene	µg/L	32*	<0.1	<0.10	<0.10	0.12	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
o-Xylene	µg/L	40*	<0.1	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
Xylene (Total)	µg/L		<0.1	<0.10	<0.10	0.12	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10

NOTE: 1) PWQO denotes Provincial Water Quality Objectives (1994) with updates.
2) * denotes interim PWQO.
3) µg/L denotes micrograms per litre.
4) Blank denotes parameter not analyzed.
5) Bold indicates select parameter was detected at concentration greater than the laboratory reportable detection limit (RDL).
6) *Italics* denotes parameter concentration was below the laboratory reportable detection limit (RDL), where the RDL exceeds the relevant PWQO.

Table I-3
Precipitation Event Surface Water Quality - Organic Analytical Results - Compliance Monitoring
Twin Creeks Environmental Centre

Parameter	Units	PWQO	Sedimentation Pond Surface Water Quality - SP2										
Date			4-Jan-15	10-Apr-15	30-Apr-15	3-Aug-15	25-Oct-15	25-Feb-16	7-Apr-16	1-Aug-16	21-Oct-16	12-Jan-17	6-Apr-17
Laboratory			Maxxam	Maxxam	Maxxam	Maxxam	Maxxam	Maxxam	Maxxam	Maxxam	Maxxam	Maxxam	Maxxam
Semivolatile Organics													
Benzo(a)pyrene	µg/L		<0.20	<0.20	<0.20	<0.20	<1.0	<0.20	<0.20	<0.20	<0.20	<0.80	<0.20
1,2-Dichlorobenzene	µg/L	2.5	<0.50	<0.50	<0.50	<0.50	<2.5	<0.50	<0.50	<0.50	<0.50	<2.0	<0.50
1,3-Dichlorobenzene	µg/L	2.5	<0.50	<0.50	<0.50	<0.50	<2.5	<0.50	<0.50	<0.50	<0.50	<2.0	<0.50
1,4-Dichlorobenzene	µg/L	4	<0.50	<0.50	<0.50	<0.50	<2.5	<0.50	<0.50	<0.50	<0.50	<2.0	<0.50
Hexachlorobenzene	µg/L	0.0065	*<0.50*	*<0.50*	*<0.50*	*<0.50*	*<2.5*	*<0.50*	*<0.50*	*<0.50*	*<0.50*	*<2.0*	*<0.50*
1,2,4-Trichlorobenzene	µg/L	0.5	<0.50	<0.50	<0.50	<0.50	<2.5	<0.50	<0.50	<0.50	<0.50	<2.0	<0.50
2,4-Dichlorophenol	µg/L	0.2	*<0.30*	*<0.30*	*<0.30*	*<0.30*	*<1.5*	*<0.30*	*<0.30*	*<0.30*	*<0.30*	*<1.2*	*<0.30*
Pentachlorophenol	µg/L	0.5	<1.0	*<1.0*	*<1.0*	*<1.0*	*<5.0*	*<1.0*	*<1.0*	*<1.0*	*<1.0*	*<4.0*	*<1.0*
Phenol	µg/L	5*	<0.50	<0.50	<0.50	<0.50	<2.5	<0.50	<0.50	<0.50	<0.50	<2.0	<0.50
2,4,6-Trichlorophenol	µg/L	18	<0.50	<0.50	<0.50	<0.50	<2.5	<0.50	<0.50	<0.50	<0.50	<2.0	<0.50
Di-N-butyl phthalate	µg/L	4	<2.0	<2.0	<2.0	<2.0	<10	3.0	<2.0	<2.0	<2.0	<8.0	<2.0
Diethyl phthalate	µg/L	0.2	*<1.0*	*<1.0*	*<1.0*	*<1.0*	*<5.0*	*<1.0*	*<1.0*	*<1.0*	*<1.0*	*<4.0*	*<1.0*
Dimethyl phthalate	µg/L	0.2	*<1.0*	*<1.0*	*<1.0*	*<1.0*	*<5.0*	*<1.0*	*<1.0*	*<1.0*	*<1.0*	*<4.0*	*<1.0*
Volatile Organics													
Benzene	µg/L	100*	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
1,4-Dichlorobenzene	µg/L	4	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Ethylbenzene	µg/L	8*	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
Dichloromethane	µg/L	100*	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Toluene	µg/L	0.8*	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Vinyl Chloride	µg/L	600*	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
p+m-Xylene	µg/L	32*	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
o-Xylene	µg/L	40*	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
Xylene (Total)	µg/L		<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10

NOTE: 1) PWQO denotes Provincial Water Quality Objectives (1994) with updates.
2) * denotes interim PWQO.
3) µg/L denotes micrograms per litre.
4) Blank denotes parameter not analyzed.
5) Bold indicates select parameter was detected at concentration greater than the laboratory reportable detection limit (RDL).
6) *Italics* denotes parameter concentration was below the laboratory reportable detection limit (RDL), where the RDL exceeds the relevant PWQO.

Table I-3
Precipitation Event Surface Water Quality - Organic Analytical Results - Compliance Monitoring
Twin Creeks Environmental Centre

Parameter	Units	PWQO	Sedimentation Pond Surface Water Quality - SP2										
Date			13-Jul-17	12-Oct-17	23-Jan-18	4-Apr-18	2-Oct-18	7-Feb-19	17-Apr-19	31-Oct-19	11-Jan-20	18-May-20	4-Jun-20
Laboratory			Maxxam	Maxxam	Maxxam	Maxxam	Maxxam	Maxxam	Maxxam	Bureau Veritas	Bureau Veritas	Bureau Veritas	Bureau Veritas
Semivolatile Organics													
Benzo(a)pyrene	µg/L		<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
1,2-Dichlorobenzene	µg/L	2.5	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
1,3-Dichlorobenzene	µg/L	2.5	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
1,4-Dichlorobenzene	µg/L	4	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Hexachlorobenzene	µg/L	0.0065	*<0.50*	*<0.50*	*<0.50*	*<0.50*	*<0.50*	*<0.50*	*<0.50*	*<0.50*	*<0.50*	*<0.50*	*<0.50*
1,2,4-Trichlorobenzene	µg/L	0.5	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
2,4-Dichlorophenol	µg/L	0.2	*<0.30*	*<0.30*	*<0.30*	*<0.30*	*<0.30*	*<0.30*	*<0.30*	*<0.30*	*<0.30*	*<0.30*	*<0.30*
Pentachlorophenol	µg/L	0.5	<1.0	<1.0	*<1.0*	*<1.0*	*<1.0*	*<1.0*	*<1.0*	*<1.0*	*<1.0*	*<1.0*	*<1.0*
Phenol	µg/L	5*	<0.50	<0.50	<0.50	<0.50	<0.50	0.51	<0.50	<0.50	<0.50	<0.50	<0.50
2,4,6-Trichlorophenol	µg/L	18	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Di-N-butyl phthalate	µg/L	4	<2.0	<2.0	<2.0	<2.0	<2.1	<2.0	4.9	<2.0	<2.0	<2.0	<2.0
Diethyl phthalate	µg/L	0.2	*<1.0*	*<1.0*	*<1.0*	*<1.0*	*<1.0*	*<1.0*	*<1.0*	*<1.0*	*<1.0*	*<1.0*	*<1.0*
Dimethyl phthalate	µg/L	0.2	*<1.0*	*<1.0*	*<1.0*	*<1.0*	*<1.0*	*<1.0*	*<1.0*	*<1.0*	*<1.0*	*<1.0*	*<1.0*
Volatile Organics													
Benzene	µg/L	100*	<0.10	<0.10	<0.10	<0.10	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
1,4-Dichlorobenzene	µg/L	4	<0.50	<0.20	<0.20	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.40	<0.40
Ethylbenzene	µg/L	8*	<0.10	<0.10	<0.10	<0.10	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Dichloromethane	µg/L	100*	<0.50	<0.50	<0.50	<0.50	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
Toluene	µg/L	0.8*	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Vinyl Chloride	µg/L	600*	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
p+m-Xylene	µg/L	32*	<0.10	<0.10	<0.10	<0.10	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
o-Xylene	µg/L	40*	<0.10	<0.10	<0.10	<0.10	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Xylene (Total)	µg/L		<0.10	<0.10	<0.10	<0.10	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20

NOTE: 1) PWQO denotes Provincial Water Quality Objectives (1994) with updates.
2) * denotes interim PWQO.
3) µg/L denotes micrograms per litre.
4) Blank denotes parameter not analyzed.
5) Bold indicates select parameter was detected at concentration greater than the laboratory reportable detection limit (RDL).
6) *Italics* denotes parameter concentration was below the laboratory reportable detection limit (RDL), where the RDL exceeds the relevant PWQO.

Table I-3
Precipitation Event Surface Water Quality - Organic Analytical Results - Compliance Monitoring
Twin Creeks Environmental Centre

Parameter	Units	PWQO	Sedimentation Pond Surface Water Quality - SP2										
Date			15-Nov-20	26-Nov-20	26-Mar-21	9-Apr-21	26-Jun-21	9-Jul-21	30-Jul-21	4-Oct-21	15-Oct-21	17-Feb-22	4-May-22
Laboratory			Bureau Veritas	Bureau Veritas	Bureau Veritas	Bureau Veritas	Bureau Veritas	Bureau Veritas	Bureau Veritas	Bureau Veritas	Bureau Veritas	Bureau Veritas	Bureau Veritas
Semivolatile Organics													
Benzo(a)pyrene	µg/L		<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.80	<0.80	<0.20
1,2-Dichlorobenzene	µg/L	2.5	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<2.0	<2.0	<0.50
1,3-Dichlorobenzene	µg/L	2.5	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<2.0	<2.0	<0.50
1,4-Dichlorobenzene	µg/L	4	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<2.0	<2.0	<0.50
Hexachlorobenzene	µg/L	0.0065	*<0.50*	*<0.50*	*<0.50*	*<0.50*	*<0.50*	*<0.50*	*<0.50*	*<0.50*	*<2.0*	*<2.0*	*<0.50*
1,2,4-Trichlorobenzene	µg/L	0.5	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	*<2.0*	*<2.0*	<0.50
2,4-Dichlorophenol	µg/L	0.2	*<0.30*	*<0.30*	*<0.30*	*<0.30*	*<0.30*	*<0.30*	*<0.30*	*<0.30*	*<1.2*	*<1.2*	*<0.30*
Pentachlorophenol	µg/L	0.5	<1.0	<1.0	*<1.0*	*<1.0*	*<1.0*	*<1.0*	*<1.0*	*<1.0*	*<4.0*	*<4.0*	*<1.0*
Phenol	µg/L	5*	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<2.0	<2.0	<0.50
2,4,6-Trichlorophenol	µg/L	18	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<2.0	<2.0	<0.50
Di-N-butyl phthalate	µg/L	4	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	*<8.0*	*<8.0*	<2.0
Diethyl phthalate	µg/L	0.2	*<1.0*	*<1.0*	*<1.0*	*<1.0*	*<1.0*	*<1.0*	*<1.0*	*<1.0*	*<4.0*	*<4.0*	*<1.0*
Dimethyl phthalate	µg/L	0.2	*<1.0*	*<1.0*	*<1.0*	*<1.0*	*<1.0*	*<1.0*	*<1.0*	*<1.0*	*<4.0*	*<4.0*	*<1.0*
Volatile Organics													
Benzene	µg/L	100*	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
1,4-Dichlorobenzene	µg/L	4	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40
Ethylbenzene	µg/L	8*	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Dichloromethane	µg/L	100*	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
Toluene	µg/L	0.8*	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Vinyl Chloride	µg/L	600*	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
p+m-Xylene	µg/L	32*	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
o-Xylene	µg/L	40*	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Xylene (Total)	µg/L		<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20

NOTE: 1) PWQO denotes Provincial Water Quality Objectives (1994) with updates.
2) * denotes interim PWQO.
3) µg/L denotes micrograms per litre.
4) Blank denotes parameter not analyzed.
5) Bold indicates select parameter was detected at concentration greater than the laboratory reportable detection limit (RDL).
6) *Italics* denotes parameter concentration was below the laboratory reportable detection limit (RDL), where the RDL exceeds the relevant PWQO.

Table I-3
Precipitation Event Surface Water Quality - Organic Analytical Results - Compliance Monitoring
Twin Creeks Environmental Centre

Parameter	Units	PWQO	Sedimentation Pond Surface Water Quality - SP2										
Date			16-May-22	20-Jul-22	4-Aug-22	18-Oct-22	13-Jan-23	10-Feb-23	2-Apr-23	17-Apr-23	3-Jul-23	13-Jul-23	2-Nov-23
Laboratory			Bureau Veritas	Bureau Veritas	Bureau Veritas	Bureau Veritas	Bureau Veritas	Bureau Veritas	Bureau Veritas	Bureau Veritas	Bureau Veritas	Bureau Veritas	Bureau Veritas
Semivolatile Organics													
Benzo(a)pyrene	µg/L		<0.20	<0.20	<0.20	<0.80	<0.80	<0.20	<0.80	<0.80	<0.20	<0.20	<0.20
1,2-Dichlorobenzene	µg/L	2.5	<0.50	<0.50	<0.50	<2.0	<2.0	<0.50	<2.0	<2.0	<0.50	<0.50	<0.50
1,3-Dichlorobenzene	µg/L	2.5	<0.50	<0.50	<0.50	<2.0	<2.0	<0.50	<2.0	<2.0	<0.50	<0.50	<0.50
1,4-Dichlorobenzene	µg/L	4	<0.50	<0.50	<0.50	<2.0	<2.0	<0.50	<2.0	<2.0	<0.50	<0.50	<0.50
Hexachlorobenzene	µg/L	0.0065	*<0.50*	*<0.50*	*<0.50*	*<2.0*	*<2.0*	*<0.50*	*<2.0*	*<2.0*	*<0.50*	*<0.50*	*<0.50*
1,2,4-Trichlorobenzene	µg/L	0.5	<0.50	<0.50	<0.50	<2.0	<2.0	<0.50	<2.0	<2.0	<0.50	<0.50	<0.50
2,4-Dichlorophenol	µg/L	0.2	*<0.30*	*<0.30*	*<0.30*	*<1.2*	*<1.2*	*<0.30*	*<1.2*	*<1.2*	*<0.30*	*<0.30*	*<0.30*
Pentachlorophenol	µg/L	0.5	*<1.0*	*<1.0*	*<1.0*	*<4.0*	*<4.0*	*<1.0*	*<4.0*	*<4.0*	*<1.0*	*<1.0*	*<1.0*
Phenol	µg/L	5*	<0.50	<0.50	<0.50	<2.0	<2.0	<0.50	<2.0	<2.0	<0.50	<0.50	<0.50
2,4,6-Trichlorophenol	µg/L	18	<0.50	<0.50	<0.50	<2.0	<2.0	<0.50	<2.0	<2.0	<0.50	<0.50	<0.50
Di-N-butyl phthalate	µg/L	4	<2.0	<2.0	<2.0	<8.0	<8.0	<2.0	<8.0	<8.0	*<2.0*	*<2.0*	<2.0
Diethyl phthalate	µg/L	0.2	*<1.0*	*<1.0*	*<1.0*	*<4.0*	<4.0	*<1.0*	*<4.0*	*<4.0*	*<1.0*	*<1.0*	*<1.0*
Dimethyl phthalate	µg/L	0.2	*<1.0*	*<1.0*	*<1.0*	*<4.0*	<4.0	*<1.0*	*<4.0*	*<4.0*	*<1.0*	*<1.0*	*<1.0*
Volatile Organics													
Benzene	µg/L	100*	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
1,4-Dichlorobenzene	µg/L	4	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40
Ethylbenzene	µg/L	8*	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Dichloromethane	µg/L	100*	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
Toluene	µg/L	0.8*	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Vinyl Chloride	µg/L	600*	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
p+m-Xylene	µg/L	32*	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
o-Xylene	µg/L	40*	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Xylene (Total)	µg/L		<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20

NOTE: 1) PWQO denotes Provincial Water Quality Objectives (1994) with updates.
2) * denotes interim PWQO.
3) µg/L denotes micrograms per litre.
4) Blank denotes parameter not analyzed.
5) Bold indicates select parameter was detected at concentration greater than the laboratory reportable detection limit (RDL).
6) *Italics* denotes parameter concentration was below the laboratory reportable detection limit (RDL), where the RDL exceeds the relevant PWQO.

Table I-3
Precipitation Event Surface Water Quality - Organic Analytical Results - Compliance Monitoring
Twin Creeks Environmental Centre

Parameter	Units	PWQO	Sedimentation Pond Surface Water Quality - SP2										
Date			10-Jan-24	25-Jan-24	12-Apr-24	24-Apr-24	10-Jul-24	29-Jul-24	14-Oct-24	28-Oct-24			
Laboratory			Bureau Veritas	Bureau Veritas	Bureau Veritas	Bureau Veritas	Bureau Veritas	Bureau Veritas	Bureau Veritas	Bureau Veritas			
Semivolatile Organics													
Benzo(a)pyrene	µg/L		<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20			
1,2-Dichlorobenzene	µg/L	2.5	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50			
1,3-Dichlorobenzene	µg/L	2.5	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50			
1,4-Dichlorobenzene	µg/L	4	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50			
Hexachlorobenzene	µg/L	0.0065	*<0.50*	*<0.50*	*<0.50*	*<0.50*	*<0.50*	*<0.50*	*<0.50*	*<0.50*			
1,2,4-Trichlorobenzene	µg/L	0.5	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50			
2,4-Dichlorophenol	µg/L	0.2	*<0.30*	*<0.30*	*<0.30*	*<0.30*	*<0.30*	*<0.30*	*<0.30*	*<0.30*			
Pentachlorophenol	µg/L	0.5	*<1.0*	*<1.0*	*<1.0*	*<1.0*	*<1.0*	*<1.0*	*<1.0*	*<1.0*			
Phenol	µg/L	5*	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50			
2,4,6-Trichlorophenol	µg/L	18	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50			
Di-N-butyl phthalate	µg/L	4	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0			
Diethyl phthalate	µg/L	0.2	*<1.0*	*<5.0*	*<1.0*	*<1.0*	*<1.0*	*<1.0*	*<1.0*	*<1.0*			
Dimethyl phthalate	µg/L	0.2	*<1.0*	*<1.0*	*<1.0*	*<1.0*	*<1.0*	*<1.0*	*<1.0*	*<1.0*			
Volatile Organics													
Benzene	µg/L	100*	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20			
1,4-Dichlorobenzene	µg/L	4	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40			
Ethylbenzene	µg/L	8*	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20			
Dichloromethane	µg/L	100*	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0			
Toluene	µg/L	0.8*	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20			
Vinyl Chloride	µg/L	600*	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20			
p+m-Xylene	µg/L	32*	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20			
o-Xylene	µg/L	40*	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20			
Xylene (Total)	µg/L		<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20			

NOTE: 1) PWQO denotes Provincial Water Quality Objectives (1994) with updates.
2) * denotes interim PWQO.
3) µg/L denotes micrograms per litre.
4) Blank denotes parameter not analyzed.
5) Bold indicates select parameter was detected at concentration greater than the laboratory reportable detection limit (RDL).
6) *Italics* denotes parameter concentration was below the laboratory reportable detection limit (RDL), where the RDL exceeds the relevant PWQO.

Table I-3
Precipitation Event Surface Water Quality - Organic Analytical Results - Compliance Monitoring
Twin Creeks Environmental Centre

Parameter	Units	PWQO	Sedimentation Pond Surface Water Quality - SP3										
Date			4-Nov-08	12-Feb-09	8-Mar-09	6-Apr-09	17-Apr-09	26-Apr-09	7-May-09	24-Oct-09	25-Jan-10	8-Apr-10	16-Jul-10
Laboratory			Maxxam	Maxxam	Maxxam	Maxxam	Maxxam	Maxxam	Maxxam	Maxxam	Maxxam	Maxxam	Maxxam
Semivolatile Organics													
Benzo(a)pyrene	µg/L		<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
1,2-Dichlorobenzene	µg/L	2.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
1,3-Dichlorobenzene	µg/L	2.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
1,4-Dichlorobenzene	µg/L	4	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Hexachlorobenzene	µg/L	0.0065	*<0.5*	*<0.5*	*<0.5*	*<0.5*	*<0.5*	*<0.5*	*<0.5*	*<0.5*	*<0.5*	*<0.5*	*<0.5*
1,2,4-Trichlorobenzene	µg/L	0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
2,4-Dichlorophenol	µg/L	0.2	*<0.3*	*<0.3*	*<0.3*	*<0.3*	*<0.3*	*<0.3*	*<0.3*	*<0.3*	*<0.3*	*<0.3*	*<0.3*
Pentachlorophenol	µg/L	0.5	*<1*	*<1*	*<1*	*<1*	*<1*	*<1*	*<1*	*<1*	*<1*	*<1*	*<1*
Phenol	µg/L	5*	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
2,4,6-Trichlorophenol	µg/L	18	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Di-N-butyl phthalate	µg/L	4	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
Diethyl phthalate	µg/L	0.2	*<1*	*<1*	*<1*	*<1*	*<1*	*<1*	*<1*	*<1*	*<1*	*<1*	*<1*
Dimethyl phthalate	µg/L	0.2	*<1*	*<1*	*<1*	*<1*	*<1*	*<1*	*<1*	*<1*	*<1*	*<1*	*<1*
Volatile Organics													
Benzene	µg/L	100*	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
1,4-Dichlorobenzene	µg/L	4	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Ethylbenzene	µg/L	8*	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Dichloromethane	µg/L	100*	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Toluene	µg/L	0.8*	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Vinyl Chloride	µg/L	600*	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
p+m-Xylene	µg/L	32*	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
o-Xylene	µg/L	40*	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Xylene (Total)	µg/L		<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1

NOTE: 1) PWQO denotes Provincial Water Quality Objectives (1994) with updates.
2) * denotes interim PWQO.
3) µg/L denotes micrograms per litre.
4) Blank denotes parameter not analyzed.
5) Bold indicates select parameter was detected at concentration greater than the laboratory reportable detection limit (RDL).
6) *Italics* denotes parameter concentration was below the laboratory reportable detection limit (RDL), where the RDL exceeds the relevant PWQO.

Table I-3
Precipitation Event Surface Water Quality - Organic Analytical Results - Compliance Monitoring
Twin Creeks Environmental Centre

Parameter	Units	PWQO	Sedimentation Pond Surface Water Quality - SP3										
Date			6-Nov-10	28-Feb-11	20-Apr-11	29-Jul-11	20-Oct-11	9-Nov-11	13-Mar-12	27-Mar-12	21-Dec-12	13-Jan-13	10-Apr-13
Laboratory			Maxxam	Maxxam	Maxxam	Maxxam	Maxxam	Maxxam	Maxxam	Maxxam	Maxxam	Maxxam	Maxxam
Semivolatile Organics													
Benzo(a)pyrene	µg/L		<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
1,2-Dichlorobenzene	µg/L	2.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
1,3-Dichlorobenzene	µg/L	2.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
1,4-Dichlorobenzene	µg/L	4	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Hexachlorobenzene	µg/L	0.0065	*<0.5*	*<0.5*	*<0.5*	*<0.5*	*<0.5*	*<0.5*	*<0.5*	*<0.5*	*<0.5*	*<0.5*	*<0.5*
1,2,4-Trichlorobenzene	µg/L	0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
2,4-Dichlorophenol	µg/L	0.2	*<0.3*	*<0.3*	*<0.3*	*<0.3*	*<0.3*	*<0.3*	*<0.3*	*<0.3*	*<0.3*	*<0.3*	*<0.3*
Pentachlorophenol	µg/L	0.5	*<1*	*<1*	*<1*	*<1*	*<1*	*<1*	*<1*	*<1*	*<1*	*<1*	*<1*
Phenol	µg/L	5*	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
2,4,6-Trichlorophenol	µg/L	18	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Di-N-butyl phthalate	µg/L	4	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
Diethyl phthalate	µg/L	0.2	*<1*	*<1*	*<1*	*<1*	*<1*	*<1*	*<1*	*<1*	*<1*	*<1*	*<1*
Dimethyl phthalate	µg/L	0.2	*<1*	*<1*	*<1*	*<1*	*<1*	*<1*	*<1*	*<1*	*<1*	*<1*	*<1*
Volatile Organics													
Benzene	µg/L	100*	<0.1	<0.2	<0.1	<0.1	<0.1	<0.1	<0.10	<0.10	<0.10	<0.10	<0.10
1,4-Dichlorobenzene	µg/L	4	<0.2	<0.4	<0.2	<0.2	<0.2	<0.2	<0.20	<0.20	<0.20	<0.20	<0.20
Ethylbenzene	µg/L	8*	<0.1	<0.2	<0.1	<0.1	<0.1	<0.1	<0.10	<0.10	<0.10	<0.10	<0.10
Dichloromethane	µg/L	100*	<0.5	<1	<0.5	<0.5	<0.5	<0.5	<0.50	<0.50	<0.50	<0.50	<0.50
Toluene	µg/L	0.8*	<0.2	<0.4	<0.2	<0.2	<0.2	<0.2	<0.20	<0.20	<0.20	<0.20	<0.20
Vinyl Chloride	µg/L	600*	<0.2	<0.4	<0.2	<0.2	<0.2	<0.2	<0.20	<0.20	<0.20	<0.20	<0.20
p+m-Xylene	µg/L	32*	<0.1	<0.2	<0.1	<0.1	<0.1	<0.1	<0.10	<0.10	<0.10	<0.10	<0.10
o-Xylene	µg/L	40*	<0.1	<0.2	<0.1	<0.1	<0.1	<0.1	<0.10	<0.10	<0.10	<0.10	<0.10
Xylene (Total)	µg/L		<0.1	<0.2	<0.1	<0.1	<0.1	<0.1	<0.10	<0.10	<0.10	<0.10	<0.10

NOTE: 1) PWQO denotes Provincial Water Quality Objectives (1994) with updates.
2) * denotes interim PWQO.
3) µg/L denotes micrograms per litre.
4) Blank denotes parameter not analyzed.
5) Bold indicates select parameter was detected at concentration greater than the laboratory reportable detection limit (RDL).
6) *Italics* denotes parameter concentration was below the laboratory reportable detection limit (RDL), where the RDL exceeds the relevant PWQO.

Table I-3
Precipitation Event Surface Water Quality - Organic Analytical Results - Compliance Monitoring
Twin Creeks Environmental Centre

Parameter	Units	PWQO	Sedimentation Pond Surface Water Quality - SP3										
Date			5-Jul-13	7-Oct-13	11-Jan-14	8-Apr-14	30-Apr-14	7-Jul-14	15-Oct-14	4-Nov-14	4-Jan-15	10-Apr-15	20-Aug-15
Laboratory			Maxxam	Maxxam	Maxxam	Maxxam	Maxxam	Maxxam	Maxxam	Maxxam	Maxxam	Maxxam	Maxxam
Semivolatile Organics													
Benzo(a)pyrene	µg/L		<0.2	<0.2	<0.8	<0.2	<0.2	<0.2	<0.2	<0.2	<0.20	<0.20	<0.20
1,2-Dichlorobenzene	µg/L	2.5	<0.5	<0.5	<2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.50	<0.50	<0.50
1,3-Dichlorobenzene	µg/L	2.5	<0.5	<0.5	<2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.50	<0.50	<0.50
1,4-Dichlorobenzene	µg/L	4	<0.5	<0.5	<2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.50	<0.50	<0.50
Hexachlorobenzene	µg/L	0.0065	*<0.5*	*<0.5*	*<2*	*<0.5*	*<0.5*	*<0.5*	*<0.5*	*<0.5*	*<0.50*	*<0.50*	*<0.50*
1,2,4-Trichlorobenzene	µg/L	0.5	<0.5	<0.5	<2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.50	<0.50	<0.50
2,4-Dichlorophenol	µg/L	0.2	*<0.3*	*<0.3*	*<1*	<0.3	<0.3	<0.3	*<0.3*	*<0.3*	*<0.30*	*<0.30*	*<0.30*
Pentachlorophenol	µg/L	0.5	*<1*	*<1*	*<4*	*<1*	*<1*	*<1*	*<1*	*<1*	*<1.0*	*<1.0*	*<1.0*
Phenol	µg/L	5*	<0.5	<0.5	<2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.50	<0.50	<0.50
2,4,6-Trichlorophenol	µg/L	18	<0.5	<0.5	<2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.50	<0.50	<0.50
Di-N-butyl phthalate	µg/L	4	<2	<2	<8	<2	<2	<2	<2	<2	<2.0	<2.0	<2.0
Diethyl phthalate	µg/L	0.2	*<1*	*<1*	*<4*	*<1*	*<1*	*<1*	*<1*	*<1*	*<1.0*	*<1.0*	*<1.0*
Dimethyl phthalate	µg/L	0.2	*<1*	*<1*	*<4*	*<1*	*<1*	*<1*	*<1*	*<1*	*<1.0*	*<1.0*	*<1.0*
Volatile Organics													
Benzene	µg/L	100*	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
1,4-Dichlorobenzene	µg/L	4	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Ethylbenzene	µg/L	8*	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
Dichloromethane	µg/L	100*	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Toluene	µg/L	0.8*	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Vinyl Chloride	µg/L	600*	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
p+m-Xylene	µg/L	32*	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
o-Xylene	µg/L	40*	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
Xylene (Total)	µg/L		<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10

NOTE: 1) PWQO denotes Provincial Water Quality Objectives (1994) with updates.
2) * denotes interim PWQO.
3) µg/L denotes micrograms per litre.
4) Blank denotes parameter not analyzed.
5) Bold indicates select parameter was detected at concentration greater than the laboratory reportable detection limit (RDL).
6) *Italics* denotes parameter concentration was below the laboratory reportable detection limit (RDL), where the RDL exceeds the relevant PWQO.

Table I-3
Precipitation Event Surface Water Quality - Organic Analytical Results - Compliance Monitoring
Twin Creeks Environmental Centre

Parameter	Units	PWQO	Sedimentation Pond Surface Water Quality - SP3										
Date			25-Oct-15	25-Feb-16	7-Apr-16	1-Aug-16	21-Oct-16	12-Jan-17	6-Apr-17	13-Jul-17	12-Oct-17	23-Jan-18	4-Apr-18
Laboratory			Maxxam	Maxxam	Maxxam	Maxxam	Maxxam	Maxxam	Maxxam	Maxxam	Maxxam	Maxxam	Maxxam
Semivolatile Organics													
Benzo(a)pyrene	µg/L		<0.20	<0.20	<0.20	<0.20	<0.20	<0.80	<0.20	<0.20	<0.20	<0.80	<0.20
1,2-Dichlorobenzene	µg/L	2.5	<0.50	<0.50	<0.50	<0.50	<0.50	<2.0	<0.50	<0.50	<0.50	<2.0	<0.50
1,3-Dichlorobenzene	µg/L	2.5	<0.50	<0.50	<0.50	<0.50	<0.50	<2.0	<0.50	<0.50	<0.50	<2.0	<0.50
1,4-Dichlorobenzene	µg/L	4	<0.50	<0.50	<0.50	<0.50	<0.50	<2.0	<0.50	<0.50	<0.50	<2.0	<0.50
Hexachlorobenzene	µg/L	0.0065	*<0.50*	*<0.50*	*<0.50*	*<0.50*	*<0.50*	*<2.0*	*<0.50*	*<0.50*	*<0.50*	*<2.0*	*<0.50*
1,2,4-Trichlorobenzene	µg/L	0.5	<0.50	<0.50	<0.50	<0.50	<0.50	<2.0	<0.50	<0.50	<0.50	<2.0	<0.50
2,4-Dichlorophenol	µg/L	0.2	*<0.30*	*<0.30*	*<0.30*	*<0.30*	*<0.30*	*<1.2*	*<0.30*	*<0.30*	*<0.30*	*<1.2*	*<0.30*
Pentachlorophenol	µg/L	0.5	*<1.0*	*<1.0*	*<1.0*	*<1.0*	<1.0	*<4.0*	*<1.0*	*<1.0*	*<1.0*	*<4.0*	*<1.0*
Phenol	µg/L	5*	<0.50	<0.50	<0.50	<0.50	<0.50	<2.0	<0.50	<0.50	<0.50	<2.0	<0.50
2,4,6-Trichlorophenol	µg/L	18	<0.50	<0.50	<0.50	<0.50	<0.50	<2.0	<0.50	<0.50	<0.50	<2.0	<0.50
Di-N-butyl phthalate	µg/L	4	<2.0	<2.0	<2.0	<2.0	<2.0	*<8.0*	<2.0	<2.0	<2.0	<8.0	<2.0
Diethyl phthalate	µg/L	0.2	*<1.0*	*<1.0*	*<1.0*	*<1.0*	*<1.0*	*<4.0*	*<1.0*	*<1.0*	*<1.0*	*<4.0*	*<1.0*
Dimethyl phthalate	µg/L	0.2	*<1.0*	*<1.0*	*<1.0*	*<1.0*	*<1.0*	*<4.0*	*<1.0*	*<1.0*	*<1.0*	*<4.0*	*<1.0*
Volatile Organics													
Benzene	µg/L	100*	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.25	<0.10
1,4-Dichlorobenzene	µg/L	4	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.50	<0.20	<0.50	<0.50
Ethylbenzene	µg/L	8*	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.25	<0.10
Dichloromethane	µg/L	100*	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<1.3	<0.50
Toluene	µg/L	0.8*	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.50	<0.20
Vinyl Chloride	µg/L	600*	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.50	<0.20
p+m-Xylene	µg/L	32*	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.25	<0.10
o-Xylene	µg/L	40*	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.25	<0.10
Xylene (Total)	µg/L		<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.25	<0.10

NOTE: 1) PWQO denotes Provincial Water Quality Objectives (1994) with updates.
2) * denotes interim PWQO.
3) µg/L denotes micrograms per litre.
4) Blank denotes parameter not analyzed.
5) Bold indicates select parameter was detected at concentration greater than the laboratory reportable detection limit (RDL).
6) *Italics* denotes parameter concentration was below the laboratory reportable detection limit (RDL), where the RDL exceeds the relevant PWQO.

Table I-3
Precipitation Event Surface Water Quality - Organic Analytical Results - Compliance Monitoring
Twin Creeks Environmental Centre

Parameter	Units	PWQO	Sedimentation Pond Surface Water Quality - SP3										
Date			8-Aug-18	2-Oct-18	24-Jan-19	17-Apr-19	27-Oct-19	11-Jan-20	18-May-20	15-Nov-20	26-Mar-21	3-Jun-21	9-Jul-21
Laboratory			Maxxam	Maxxam	Maxxam	Maxxam	Bureau Veritas	Bureau Veritas	Bureau Veritas	Bureau Veritas	Bureau Veritas	Bureau Veritas	Bureau Veritas
Semivolatile Organics													
Benzo(a)pyrene	µg/L		<0.80	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.80	<0.20
1,2-Dichlorobenzene	µg/L	2.5	<2.0	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<2.0	<0.50
1,3-Dichlorobenzene	µg/L	2.5	<2.0	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<2.0	<0.50
1,4-Dichlorobenzene	µg/L	4	<2.0	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<2.0	<0.50
Hexachlorobenzene	µg/L	0.0065	*<2.0*	*<0.50*	*<0.50*	*<0.50*	*<0.50*	*<0.50*	*<0.50*	*<0.50*	*<0.50*	*<2.0*	*<0.50*
1,2,4-Trichlorobenzene	µg/L	0.5	*<2.0*	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<2.0	<0.50
2,4-Dichlorophenol	µg/L	0.2	*<1.2*	*<0.30*	*<0.30*	*<0.30*	*<0.30*	*<0.30*	*<0.30*	*<0.30*	*<0.30*	*<1.2*	*<0.30*
Pentachlorophenol	µg/L	0.5	*<4.0*	*<1.0*	*<1.0*	*<1.0*	*<1.0*	*<1.0*	*<1.0*	*<1.0*	*<1.0*	*<4.0*	*<1.0*
Phenol	µg/L	5*	<2.0	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<2.0	<0.50
2,4,6-Trichlorophenol	µg/L	18	<2.0	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<2.0	<0.50
Di-N-butyl phthalate	µg/L	4	<8.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<8.0	<2.0
Diethyl phthalate	µg/L	0.2	*<4.0*	*<1.0*	*<1.0*	*<1.0*	*<1.0*	*<1.0*	*<1.0*	*<1.0*	*<1.0*	*<4.0*	*<1.0*
Dimethyl phthalate	µg/L	0.2	*<4.0*	*<1.0*	*<1.0*	*<1.0*	*<1.0*	*<1.0*	*<1.0*	*<1.0*	*<1.0*	*<4.0*	*<1.0*
Volatile Organics													
Benzene	µg/L	100*	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
1,4-Dichlorobenzene	µg/L	4	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.40	<0.40	<0.40	<0.40	<0.40
Ethylbenzene	µg/L	8*	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Dichloromethane	µg/L	100*	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
Toluene	µg/L	0.8*	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Vinyl Chloride	µg/L	600*	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
p+m-Xylene	µg/L	32*	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
o-Xylene	µg/L	40*	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Xylene (Total)	µg/L		<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20

NOTE: 1) PWQO denotes Provincial Water Quality Objectives (1994) with updates.
2) * denotes interim PWQO.
3) µg/L denotes micrograms per litre.
4) Blank denotes parameter not analyzed.
5) Bold indicates select parameter was detected at concentration greater than the laboratory reportable detection limit (RDL).
6) *Italics* denotes parameter concentration was below the laboratory reportable detection limit (RDL), where the RDL exceeds the relevant PWQO.

Table I-3
Precipitation Event Surface Water Quality - Organic Analytical Results - Compliance Monitoring
Twin Creeks Environmental Centre

Parameter	Units	PWQO	Sedimentation Pond Surface Water Quality - SP3										
Date			4-Oct-21	15-Oct-21	17-Feb-22	4-May-22	4-Aug-22	18-Oct-22	10-Feb-23	2-Apr-23	3-Jul-23	2-Nov-23	26-Jan-24
Laboratory			Bureau Veritas	Bureau Veritas	Bureau Veritas	Bureau Veritas	Bureau Veritas	Bureau Veritas	Bureau Veritas	Bureau Veritas	Bureau Veritas	Bureau Veritas	Bureau Veritas
Semivolatile Organics													
Benzo(a)pyrene	µg/L		<0.20	<0.20	<0.80	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
1,2-Dichlorobenzene	µg/L	2.5	<0.50	<0.50	<2.0	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
1,3-Dichlorobenzene	µg/L	2.5	<0.50	<0.50	<2.0	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
1,4-Dichlorobenzene	µg/L	4	<0.50	<0.50	<2.0	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Hexachlorobenzene	µg/L	0.0065	*<0.50*	*<0.50*	*<2.0*	*<0.50*	*<0.50*	*<0.50*	*<0.50*	*<0.50*	*<0.50*	*<0.50*	*<0.50*
1,2,4-Trichlorobenzene	µg/L	0.5	<0.50	<0.50	*<2.0*	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
2,4-Dichlorophenol	µg/L	0.2	*<0.30*	*<0.30*	*<1.2*	*<0.30*	*<0.30*	*<0.30*	*<0.30*	*<0.30*	*<0.30*	*<0.30*	*<0.30*
Pentachlorophenol	µg/L	0.5	*<1.0*	*<1.0*	*<4.0*	*<1.0*	*<1.0*	*<1.0*	*<1.0*	*<1.0*	*<1.0*	*<1.0*	*<1.0*
Phenol	µg/L	5*	<0.50	<0.50	<2.0	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
2,4,6-Trichlorophenol	µg/L	18	<0.50	<0.50	<2.0	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Di-N-butyl phthalate	µg/L	4	<2.0	<2.0	*<8.0*	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
Diethyl phthalate	µg/L	0.2	*<1.0*	*<1.0*	*<4.0*	*<1.0*	*<1.0*	*<1.0*	*<1.0*	*<1.0*	*<1.0*	*<1.0*	*<6.0*
Dimethyl phthalate	µg/L	0.2	*<1.0*	*<1.0*	*<4.0*	*<1.0*	*<1.0*	*<1.0*	*<1.0*	*<1.0*	*<1.0*	*<1.0*	*<1.0*
Volatile Organics													
Benzene	µg/L	100*	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
1,4-Dichlorobenzene	µg/L	4	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40
Ethylbenzene	µg/L	8*	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Dichloromethane	µg/L	100*	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
Toluene	µg/L	0.8*	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Vinyl Chloride	µg/L	600*	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
p+m-Xylene	µg/L	32*	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
o-Xylene	µg/L	40*	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Xylene (Total)	µg/L		<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20

NOTE: 1) PWQO denotes Provincial Water Quality Objectives (1994) with updates.
2) * denotes interim PWQO.
3) µg/L denotes micrograms per litre.
4) Blank denotes parameter not analyzed.
5) Bold indicates select parameter was detected at concentration greater than the laboratory reportable detection limit (RDL).
6) *Italics* denotes parameter concentration was below the laboratory reportable detection limit (RDL), where the RDL exceeds the relevant PWQO.

Table I-3
Precipitation Event Surface Water Quality - Organic Analytical Results - Compliance Monitoring
Twin Creeks Environmental Centre

Parameter	Units	PWQO	Sedimentation Pond Surface Water Quality - SP3										
Date			12-Apr-24	10-Jul-24	14-Oct-24								
Laboratory			Bureau Veritas	Bureau Veritas	Bureau Veritas								
Semivolatile Organics													
Benzo(a)pyrene	µg/L		<0.20	<0.20	<0.20								
1,2-Dichlorobenzene	µg/L	2.5	<0.50	<0.50	<0.50								
1,3-Dichlorobenzene	µg/L	2.5	<0.50	<0.50	<0.50								
1,4-Dichlorobenzene	µg/L	4	<0.50	<0.50	<0.50								
Hexachlorobenzene	µg/L	0.0065	*<0.50*	*<0.50*	*<0.50*								
1,2,4-Trichlorobenzene	µg/L	0.5	<0.50	<0.50	<0.50								
2,4-Dichlorophenol	µg/L	0.2	*<0.30*	*<0.30*	*<0.30*								
Pentachlorophenol	µg/L	0.5	*<1.0*	*<1.0*	*<1.0*								
Phenol	µg/L	5*	<0.50	<0.50	<0.50								
2,4,6-Trichlorophenol	µg/L	18	<0.50	<0.50	<0.50								
Di-N-butyl phthalate	µg/L	4	<2.0	<2.0	*<2.0*								
Diethyl phthalate	µg/L	0.2	*<1.0*	*<1.0*	*<1.0*								
Dimethyl phthalate	µg/L	0.2	*<1.0*	*<1.0*	*<1.0*								
Volatile Organics													
Benzene	µg/L	100*	<0.20	<0.20	<0.20								
1,4-Dichlorobenzene	µg/L	4	<0.40	<0.40	<0.40								
Ethylbenzene	µg/L	8*	<0.20	<0.20	<0.20								
Dichloromethane	µg/L	100*	<2.0	<2.0	<2.0								
Toluene	µg/L	0.8*	<0.20	<0.20	<0.20								
Vinyl Chloride	µg/L	600*	<0.20	<0.20	<0.20								
p+m-Xylene	µg/L	32*	<0.20	<0.20	<0.20								
o-Xylene	µg/L	40*	<0.20	<0.20	<0.20								
Xylene (Total)	µg/L		<0.20	<0.20	<0.20								

NOTE: 1) PWQO denotes Provincial Water Quality Objectives (1994) with updates.
2) * denotes interim PWQO.
3) µg/L denotes micrograms per litre.
4) Blank denotes parameter not analyzed.
5) Bold indicates select parameter was detected at concentration greater than the laboratory reportable detection limit (RDL).
6) *Italics* denotes parameter concentration was below the laboratory reportable detection limit (RDL), where the RDL exceeds the relevant PWQO.

Table I-3
Precipitation Event Surface Water Quality - Organic Analytical Results - Compliance Monitoring
Twin Creeks Environmental Centre

Parameter	Units	PWQO	Sedimentation Pond Surface Water Quality - SP4										
Date			6-May-10	16-Jul-10	1-Dec-10	28-Feb-11	20-Apr-11	9-Aug-11	13-Oct-11	13-Mar-12	27-Mar-12	21-Dec-12	13-Jan-13
Laboratory			Maxxam	Maxxam	Maxxam	Maxxam	Maxxam	Maxxam	Maxxam	Maxxam	Maxxam	Maxxam	Maxxam
Semivolatile Organics													
Benzo(a)pyrene	µg/L		<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
1,2-Dichlorobenzene	µg/L	2.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
1,3-Dichlorobenzene	µg/L	2.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
1,4-Dichlorobenzene	µg/L	4	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Hexachlorobenzene	µg/L	0.0065	*<0.5*	*<0.5*	*<0.5*	*<0.5*	*<0.5*	*<0.5*	*<0.5*	*<0.5*	*<0.5*	*<0.5*	*<0.5*
1,2,4-Trichlorobenzene	µg/L	0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
2,4-Dichlorophenol	µg/L	0.2	*<0.3*	*<0.3*	*<0.3*	*<0.3*	*<0.3*	*<0.3*	*<0.3*	*<0.3*	*<0.3*	*<0.3*	*<0.3*
Pentachlorophenol	µg/L	0.5	*<1*	*<1*	*<1*	*<1*	*<1*	*<1*	*<1*	*<1*	*<1*	*<1*	*<1*
Phenol	µg/L	5*	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
2,4,6-Trichlorophenol	µg/L	18	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Di-N-butyl phthalate	µg/L	4	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
Diethyl phthalate	µg/L	0.2	*<1*	*<1*	*<1*	*<1*	*<1*	*<1*	*<1*	*<1*	*<1*	*<1*	*<1*
Dimethyl phthalate	µg/L	0.2	*<1*	*<1*	*<1*	*<1*	*<1*	*<1*	*<1*	*<1*	*<1*	*<1*	*<1*
Volatile Organics													
Benzene	µg/L	100*	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.10	<0.10	<0.10	<0.10
1,4-Dichlorobenzene	µg/L	4	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.20	<0.20	<0.20	<0.20
Ethylbenzene	µg/L	8*	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.10	<0.10	<0.10	<0.10
Dichloromethane	µg/L	100*	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.50	<0.50	<0.50	<0.50
Toluene	µg/L	0.8*	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.20	<0.20	<0.20	<0.20
Vinyl Chloride	µg/L	600*	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.20	<0.20	<0.20	<0.20
p+m-Xylene	µg/L	32*	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.10	<0.10	<0.10	<0.10
o-Xylene	µg/L	40*	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.10	<0.10	<0.10	<0.10
Xylene (Total)	µg/L		<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.10	<0.10	<0.10	<0.10

NOTE: 1) PWQO denotes Provincial Water Quality Objectives (1994) with updates.
2) * denotes interim PWQO.
3) µg/L denotes micrograms per litre.
4) Blank denotes parameter not analyzed.
5) Bold indicates select parameter was detected at concentration greater than the laboratory reportable detection limit (RDL).
6) *Italics* denotes parameter concentration was below the laboratory reportable detection limit (RDL), where the RDL exceeds the relevant PWQO.

Table I-3
Precipitation Event Surface Water Quality - Organic Analytical Results - Compliance Monitoring
Twin Creeks Environmental Centre

Parameter	Units	PWQO	Sedimentation Pond Surface Water Quality - SP4										
Date			10-Apr-13	5-Jul-13	7-Oct-13	11-Jan-14	8-Apr-14	7-Jul-14	24-Nov-14	15-Dec-14	4-Jan-15	10-Apr-15	3-Aug-15
Laboratory			Maxxam	Maxxam	Maxxam	Maxxam	Maxxam	Maxxam	Maxxam	Maxxam	Maxxam	Maxxam	Maxxam
Semivolatile Organics													
Benzo(a)pyrene	µg/L		<0.2	<0.2	<0.2	<0.8	<0.2	<1	<0.20	<0.20	<0.20	<0.20	<0.20
1,2-Dichlorobenzene	µg/L	2.5	<0.5	<0.5	<0.5	<2	<0.5	<3	<0.50	<0.50	<0.50	<0.50	<0.50
1,3-Dichlorobenzene	µg/L	2.5	<0.5	<0.5	<0.5	<2	<0.5	<3	<0.50	<0.50	<0.50	<0.50	<0.50
1,4-Dichlorobenzene	µg/L	4	<0.5	<0.5	<0.5	<2	<0.5	<3	<0.50	<0.50	<0.50	<0.50	<0.50
Hexachlorobenzene	µg/L	0.0065	*<0.5*	*<0.5*	*<0.5*	*<2*	*<0.5*	*<3*	*<0.50*	*<0.50*	*<0.50*	*<0.50*	*<0.50*
1,2,4-Trichlorobenzene	µg/L	0.5	<0.5	<0.5	<0.5	*<2*	<0.5	*<3*	<0.50	<0.50	<0.50	<0.50	<0.50
2,4-Dichlorophenol	µg/L	0.2	*<0.3*	*<0.3*	*<0.3*	*<1*	*<0.3*	*<2*	*<0.30*	*<0.30*	*<0.30*	*<0.30*	*<0.30*
Pentachlorophenol	µg/L	0.5	*<1*	*<1*	*<1*	*<4*	*<1*	*<5*	*<1.0*	*<1.0*	*<1.0*	*<1.0*	*<1.0*
Phenol	µg/L	5*	<0.5	0.6	<0.5	<2	<0.5	<3	<0.50	<0.50	<0.50	<0.50	<0.50
2,4,6-Trichlorophenol	µg/L	18	<0.5	<0.5	<0.5	<2	<0.5	<3	<0.50	<0.50	<0.50	<0.50	<0.50
Di-N-butyl phthalate	µg/L	4	*<2*	*<2*	*<2*	*<8*	*<2*	*<10*	<2.0	<2.0	<2.0	<2.0	<2.0
Diethyl phthalate	µg/L	0.2	*<1*	*<1*	*<1*	*<4*	*<1*	*<5*	*<1.0*	*<1.0*	*<1.0*	*<1.0*	*<1.0*
Dimethyl phthalate	µg/L	0.2	*<1*	*<1*	*<1*	*<4*	*<1*	*<5*	*<1.0*	*<1.0*	*<1.0*	*<1.0*	*<1.0*
Volatile Organics													
Benzene	µg/L	100*	<0.1	<0.10	<0.10	<0.10	<0.10	<0.10	<0.20	<0.10	<0.10	<0.10	<0.10
1,4-Dichlorobenzene	µg/L	4	<0.2	<0.20	<0.20	<0.20	<0.20	<0.20	<0.40	<0.20	<0.20	<0.20	<0.20
Ethylbenzene	µg/L	8*	<0.1	<0.10	<0.10	<0.10	<0.10	<0.10	<0.20	<0.10	<0.10	<0.10	<0.10
Dichloromethane	µg/L	100*	<0.5	<0.50	<0.50	<0.50	<0.50	<0.50	<1.0	<0.50	<0.50	<0.50	<0.50
Toluene	µg/L	0.8*	<0.2	<0.20	<0.20	<0.20	0.21	<0.20	<0.40	<0.20	<0.20	<0.20	<0.20
Vinyl Chloride	µg/L	600*	<0.2	<0.20	<0.20	<0.20	<0.20	<0.20	<0.40	<0.20	<0.20	<0.20	<0.20
p+m-Xylene	µg/L	32*	<0.1	<0.10	<0.10	<0.10	<0.10	<0.10	<0.20	<0.10	<0.10	<0.10	<0.10
o-Xylene	µg/L	40*	<0.1	<0.10	<0.10	<0.10	<0.10	<0.10	<0.20	<0.10	<0.10	<0.10	<0.10
Xylene (Total)	µg/L		<0.1	<0.10	<0.10	<0.10	<0.10	<0.10	<0.20	<0.10	<0.10	<0.10	<0.10

NOTE: 1) PWQO denotes Provincial Water Quality Objectives (1994) with updates.
2) * denotes interim PWQO.
3) µg/L denotes micrograms per litre.
4) Blank denotes parameter not analyzed.
5) Bold indicates select parameter was detected at concentration greater than the laboratory reportable detection limit (RDL).
6) *Italics* denotes parameter concentration was below the laboratory reportable detection limit (RDL), where the RDL exceeds the relevant PWQO.
7) VOC's sampled on December 17, 2014 for SP4.

Table I-3
Precipitation Event Surface Water Quality - Organic Analytical Results - Compliance Monitoring
Twin Creeks Environmental Centre

Parameter	Units	PWQO	Sedimentation Pond Surface Water Quality - SP4										
Date			25-Oct-15	25-Feb-16	7-Apr-16	14-Jul-16	21-Oct-16	12-Jan-17	6-Apr-17	13-Jul-17	12-Oct-17	23-Jan-18	4-Apr-18
Laboratory			Maxxam	Maxxam	Maxxam	Maxxam	Maxxam	Maxxam	Maxxam	Maxxam	Maxxam	Maxxam	Maxxam
Semivolatile Organics													
Benzo(a)pyrene	µg/L		<0.20	<0.20	<0.20	<0.20	<0.20	<0.80	<0.20	<0.80	<0.20	<0.80	<0.20
1,2-Dichlorobenzene	µg/L	2.5	<0.50	<0.50	<0.50	<0.50	<0.50	*<2.0*	<0.50	<2.0	<0.50	<2.0	<0.50
1,3-Dichlorobenzene	µg/L	2.5	<0.50	<0.50	<0.50	<0.50	<0.50	*<2.0*	<0.50	<2.0	<0.50	<2.0	<0.50
1,4-Dichlorobenzene	µg/L	4	<0.50	<0.50	<0.50	<0.50	<0.50	<2.0	<0.50	<2.0	<0.50	<2.0	<0.50
Hexachlorobenzene	µg/L	0.0065	*<0.50*	*<0.50*	*<0.50*	*<0.50*	*<0.50*	*<2.0*	*<0.50*	*<2.0*	*<0.50*	*<2.0*	*<0.50*
1,2,4-Trichlorobenzene	µg/L	0.5	<0.50	<0.50	<0.50	<0.50	<0.50	*<2.0*	<0.50	*<2.0*	*<0.50*	<2.0	<0.50
2,4-Dichlorophenol	µg/L	0.2	*<0.30*	*<0.30*	*<0.30*	*<0.30*	*<0.30*	*<1.2*	*<0.30*	*<1.2*	*<0.30*	*<1.2*	*<0.30*
Pentachlorophenol	µg/L	0.5	*<1.0*	*<1.0*	*<1.0*	*<1.0*	*<1.0*	*<4.0*	*<1.0*	*<4.0*	*<1.0*	*<4.0*	*<1.0*
Phenol	µg/L	5*	<0.50	<0.50	<0.50	<0.50	<0.50	<2.0	<0.50	<2.0	<0.50	<2.0	<0.50
2,4,6-Trichlorophenol	µg/L	18	<0.50	<0.50	<0.50	<0.50	<0.50	<2.0	<0.50	<2.0	<0.50	<2.0	<0.50
Di-N-butyl phthalate	µg/L	4	<2.0	<2.0	<2.0	<2.0	<2.0	*<8.0*	<2.0	*<8.0*	*<2.0*	<8.0	<2.0
Diethyl phthalate	µg/L	0.2	*<1.0*	*<1.0*	*<1.0*	*<1.0*	*<1.0*	*<4.0*	*<1.0*	<4.0	<1.0	*<4.0*	*<1.0*
Dimethyl phthalate	µg/L	0.2	*<1.0*	1.2	*<1.0*	*<1.0*	*<1.0*	*<4.0*	*<1.0*	<4.0	<1.0	*<4.0*	1.3
Volatile Organics													
Benzene	µg/L	100*	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
1,4-Dichlorobenzene	µg/L	4	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<2.0	<0.20	<0.20	<0.50
Ethylbenzene	µg/L	8*	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
Dichloromethane	µg/L	100*	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Toluene	µg/L	0.8*	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Vinyl Chloride	µg/L	600*	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
p+m-Xylene	µg/L	32*	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
o-Xylene	µg/L	40*	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
Xylene (Total)	µg/L		<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10

NOTE: 1) PWQO denotes Provincial Water Quality Objectives (1994) with updates.
2) * denotes interim PWQO.
3) µg/L denotes micrograms per litre.
4) Blank denotes parameter not analyzed.
5) Bold indicates select parameter was detected at concentration greater than the laboratory reportable detection limit (RDL).
6) *Italics* denotes parameter concentration was below the laboratory reportable detection limit (RDL), where the RDL exceeds the relevant PWQO.

Table I-3
Precipitation Event Surface Water Quality - Organic Analytical Results - Compliance Monitoring
Twin Creeks Environmental Centre

Parameter	Units	PWQO	Sedimentation Pond Surface Water Quality - SP4										
Date			8-Aug-18	31-Oct-18	24-Jan-19	19-Apr-19	2-Oct-19	11-Jan-20	18-May-20	15-Nov-20	26-Mar-21	3-Jun-21	9-Jul-21
Laboratory			Maxxam	Maxxam	Maxxam	Maxxam	Bureau Veritas	Bureau Veritas	Bureau Veritas	Bureau Veritas	Bureau Veritas	Bureau Veritas	Bureau Veritas
Semivolatile Organics													
Benzo(a)pyrene	µg/L		<0.80	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.80	<0.20
1,2-Dichlorobenzene	µg/L	2.5	<2.0	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<2.0	<0.50
1,3-Dichlorobenzene	µg/L	2.5	<2.0	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<2.0	<0.50
1,4-Dichlorobenzene	µg/L	4	<2.0	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<2.0	<0.50
Hexachlorobenzene	µg/L	0.0065	*<2.0*	*<0.50*	*<0.50*	*<0.50*	*<0.50*	*<0.50*	*<0.50*	*<0.50*	*<0.50*	*<2.0*	*<0.50*
1,2,4-Trichlorobenzene	µg/L	0.5	*<2.0*	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	*<0.50*	<0.50	<2.0	<0.50
2,4-Dichlorophenol	µg/L	0.2	*<1.2*	*<0.30*	*<0.30*	*<0.30*	*<0.30*	*<0.30*	*<0.30*	*<0.30*	*<0.30*	*<1.2*	*<0.30*
Pentachlorophenol	µg/L	0.5	*<4.0*	*<1.0*	*<1.0*	*<1.0*	*<1.0*	*<1.0*	*<1.0*	*<1.0*	*<1.0*	*<4.0*	*<1.0*
Phenol	µg/L	5*	<2.0	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	3.7	<0.50
2,4,6-Trichlorophenol	µg/L	18	<2.0	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<2.0	<0.50
Di-N-butyl phthalate	µg/L	4	<8.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<8.0	<2.0
Diethyl phthalate	µg/L	0.2	*<4.0*	*<1.0*	*<1.0*	*<1.0*	*<1.0*	*<1.0*	*<1.0*	<1.0	*<1.0*	*<4.0*	*<1.0*
Dimethyl phthalate	µg/L	0.2	*<4.0*	<1.0	*<1.0*	*<1.0*	*<1.0*	*<1.0*	*<1.0*	<1.0	*<1.0*	*<4.0*	*<1.0*
Volatile Organics													
Benzene	µg/L	100*	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
1,4-Dichlorobenzene	µg/L	4	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.40	<0.40	<0.40	<0.40	<0.40
Ethylbenzene	µg/L	8*	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Dichloromethane	µg/L	100*	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
Toluene	µg/L	0.8*	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Vinyl Chloride	µg/L	600*	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
p+m-Xylene	µg/L	32*	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
o-Xylene	µg/L	40*	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Xylene (Total)	µg/L		<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20

NOTE: 1) PWQO denotes Provincial Water Quality Objectives (1994) with updates.
2) * denotes interim PWQO.
3) µg/L denotes micrograms per litre.
4) Blank denotes parameter not analyzed.
5) Bold indicates select parameter was detected at concentration greater than the laboratory reportable detection limit (RDL).
6) *Italics* denotes parameter concentration was below the laboratory reportable detection limit (RDL), where the RDL exceeds the relevant PWQO.

Table I-3
Precipitation Event Surface Water Quality - Organic Analytical Results - Compliance Monitoring
Twin Creeks Environmental Centre

Parameter	Units	PWQO	Sedimentation Pond Surface Water Quality - SP4										
Date			4-Oct-21	17-Feb-22	4-May-22	18-Oct-22	10-Feb-23	2-Apr-23	7-Jul-23	2-Nov-23	10-Jan-24	12-Apr-24	10-Jul-24
Laboratory			Bureau Veritas	Bureau Veritas	Bureau Veritas	Bureau Veritas	Bureau Veritas	Bureau Veritas	Bureau Veritas	Bureau Veritas	Bureau Veritas	Bureau Veritas	Bureau Veritas
Semivolatile Organics													
Benzo(a)pyrene	µg/L		<0.20	<0.80	<0.20	<0.80	<0.20	<0.80	<0.80	<0.20	<0.20	<0.20	<0.20
1,2-Dichlorobenzene	µg/L	2.5	<0.50	<2.0	<0.50	<2.0	<0.50	<2.0	<2.0	<0.50	<0.50	<0.50	<0.50
1,3-Dichlorobenzene	µg/L	2.5	<0.50	<2.0	<0.50	<2.0	<0.50	<2.0	<2.0	<0.50	<0.50	<0.50	<0.50
1,4-Dichlorobenzene	µg/L	4	<0.50	<2.0	<0.50	<2.0	<0.50	<2.0	<2.0	<0.50	<0.50	<0.50	<0.50
Hexachlorobenzene	µg/L	0.0065	*<0.50*	*<2.0*	*<0.50*	*<2.0*	*<0.50*	*<2.0*	*<2.0*	*<0.50*	*<0.50*	*<0.50*	*<0.50*
1,2,4-Trichlorobenzene	µg/L	0.5	<0.50	*<2.0*	<0.50	<2.0	<0.50	<2.0	<2.0	<0.50	<0.50	<0.50	<0.50
2,4-Dichlorophenol	µg/L	0.2	*<0.30*	*<1.2*	*<0.30*	*<1.2*	*<0.30*	*<1.2*	*<1.2*	*<0.30*	*<0.30*	*<0.30*	*<0.30*
Pentachlorophenol	µg/L	0.5	*<1.0*	*<4.0*	*<1.0*	*<4.0*	*<1.0*	*<4.0*	*<4.0*	*<1.0*	*<1.0*	*<1.0*	*<1.0*
Phenol	µg/L	5*	<0.50	<2.0	<0.50	<2.0	<0.50	<2.0	<2.0	<0.50	<0.50	<0.50	<0.50
2,4,6-Trichlorophenol	µg/L	18	<0.50	<2.0	<0.50	<2.0	<0.50	<2.0	<2.0	<0.50	<0.50	<0.50	<0.50
Di-N-butyl phthalate	µg/L	4	<2.0	*<8.0*	<2.0	<8.0	<2.0	<8.0	<8.0	<2.0	<2.0	<2.0	<2.0
Diethyl phthalate	µg/L	0.2	*<1.0*	*<4.0*	*<1.0*	*<4.0*	*<1.0*	*<4.0*	*<4.0*	*<1.0*	*<1.0*	*<1.0*	*<1.0*
Dimethyl phthalate	µg/L	0.2	*<1.0*	*<4.0*	*<1.0*	*<4.0*	*<1.0*	*<4.0*	*<4.0*	*<1.0*	*<1.0*	*<1.0*	*<1.0*
Volatile Organics													
Benzene	µg/L	100*	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
1,4-Dichlorobenzene	µg/L	4	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40
Ethylbenzene	µg/L	8*	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Dichloromethane	µg/L	100*	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
Toluene	µg/L	0.8*	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Vinyl Chloride	µg/L	600*	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
p+m-Xylene	µg/L	32*	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
o-Xylene	µg/L	40*	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Xylene (Total)	µg/L		<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20

NOTE: 1) PWQO denotes Provincial Water Quality Objectives (1994) with updates.
2) * denotes interim PWQO.
3) µg/L denotes micrograms per litre.
4) Blank denotes parameter not analyzed.
5) Bold indicates select parameter was detected at concentration greater than the laboratory reportable detection limit (RDL).
6) *Italics* denotes parameter concentration was below the laboratory reportable detection limit (RDL), where the RDL exceeds the relevant PWQO.

Table I-3
Precipitation Event Surface Water Quality - Organic Analytical Results - Compliance Monitoring
Twin Creeks Environmental Centre

Parameter	Units	PWQO	Sedimentation Pond Surface Water Quality - SP4										
Date			14-Oct-24										
Laboratory			Bureau Veritas										
Semivolatile Organics													
Benzo(a)pyrene	µg/L		<0.20										
1,2-Dichlorobenzene	µg/L	2.5	<0.50										
1,3-Dichlorobenzene	µg/L	2.5	<0.50										
1,4-Dichlorobenzene	µg/L	4	<0.50										
Hexachlorobenzene	µg/L	0.0065	*<0.50*										
1,2,4-Trichlorobenzene	µg/L	0.5	<0.50										
2,4-Dichlorophenol	µg/L	0.2	*<0.30*										
Pentachlorophenol	µg/L	0.5	*<1.0*										
Phenol	µg/L	5*	<0.50										
2,4,6-Trichlorophenol	µg/L	18	<0.50										
Di-N-butyl phthalate	µg/L	4	<2.0										
Diethyl phthalate	µg/L	0.2	*<1.0*										
Dimethyl phthalate	µg/L	0.2	*<1.0*										
Volatile Organics													
Benzene	µg/L	100*	<0.20										
1,4-Dichlorobenzene	µg/L	4	<0.40										
Ethylbenzene	µg/L	8*	<0.20										
Dichloromethane	µg/L	100*	<2.0										
Toluene	µg/L	0.8*	<0.20										
Vinyl Chloride	µg/L	600*	<0.20										
p+m-Xylene	µg/L	32*	<0.20										
o-Xylene	µg/L	40*	<0.20										
Xylene (Total)	µg/L		<0.20										

NOTE: 1) PWQO denotes Provincial Water Quality Objectives (1994) with updates.
2) * denotes interim PWQO.
3) µg/L denotes micrograms per litre.
4) Blank denotes parameter not analyzed.
5) Bold indicates select parameter was detected at concentration greater than the laboratory reportable detection limit (RDL).
6) *Italics* denotes parameter concentration was below the laboratory reportable detection limit (RDL), where the RDL exceeds the relevant PWQO.

APPENDIX I5:

Chemical Laboratory Reports

Your P.O. #: 13254256
Your Project #: 2402553.01
Site#: 700
Site Location: ON07
Your C.O.C. #: TCEC-SWCM-JAN

Attention: Khalid Hussein - Twin Creeks

RWDI Inc.
600 Southgate Drive
Guelph, ON
Canada N1G 4P6

Report Date: 2024/01/18
Report #: R7994354
Version: 1 - Final

CERTIFICATE OF ANALYSIS

BUREAU VERITAS JOB #: C410243
Received: 2024/01/11, 09:10

Sample Matrix: Water
Samples Received: 2

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Analytical Method
Alkalinity	2	N/A	2024/01/12	CAM SOP-00448	SM 24 2320 B m
Chloride by Automated Colourimetry	2	N/A	2024/01/12	CAM SOP-00463	SM 24 4500-Cl E m
Conductance in Water - On-site	2	N/A	2024/01/17		
Conductivity	2	N/A	2024/01/12	CAM SOP-00414	SM 24 2510 m
Field Measured Dissolved Oxygen in Water	2	N/A	2024/01/17		
Total Metals by ICPMS	2	N/A	2024/01/16	CAM SOP-00447	EPA 6020B m
Ammonia-N	2	N/A	2024/01/15	CAM SOP-00441	USGS I-2522-90 m
Nitrate & Nitrite as Nitrogen in Water (1)	2	N/A	2024/01/12	CAM SOP-00440	SM 24 4500-NO3I/NO2B
pH	2	2024/01/11	2024/01/12	CAM SOP-00413	SM 24th - 4500H+ B
Phenols (4AAP)	2	N/A	2024/01/12	CAM SOP-00444	OMOE E3179 m
Field Measured pH (2)	2	N/A	2024/01/17		Field pH Meter
Sulphate by Automated Turbidimetry	2	N/A	2024/01/12	CAM SOP-00464	SM 24 4500-SO42- E m
Total Dissolved Solids	2	2024/01/12	2024/01/15	CAM SOP-00428	SM 24 2540C m
Field Temperature (2)	2	N/A	2024/01/17		Field Thermometer
Total Kjeldahl Nitrogen in Water	2	2024/01/12	2024/01/15	CAM SOP-00938	OMOE E3516 m
Total Phosphorus (Colourimetric)	2	2024/01/12	2024/01/18	CAM SOP-00407	SM 24 4500-P I
Turbidity - On-site	2	N/A	2024/01/17		
Un-ionized Ammonia (3)	2	2024/01/11	2024/01/17	Auto Calc.	PWQO

Remarks:

Bureau Veritas is accredited to ISO/IEC 17025 for specific parameters on scopes of accreditation. Unless otherwise noted, procedures used by Bureau Veritas are based upon recognized Provincial, Federal or US method compendia such as CCME, EPA, APHA or the Quebec Ministry of Environment.

All work recorded herein has been done in accordance with procedures and practices ordinarily exercised by professionals in Bureau Veritas' profession using accepted testing methodologies, quality assurance and quality control procedures (except where otherwise agreed by the client and Bureau Veritas in writing). All data is in statistical control and has met quality control and method performance criteria unless otherwise noted. All method blanks are reported; unless indicated otherwise, associated sample data are not blank corrected. Where applicable, unless otherwise noted, Measurement Uncertainty has not been accounted for when stating conformity to the referenced standard.

Bureau Veritas liability is limited to the actual cost of the requested analyses, unless otherwise agreed in writing. There is no other warranty expressed or implied. Bureau Veritas has been retained to provide analysis of samples provided by the Client using the testing methodology referenced in this report. Interpretation and use of test results are the sole responsibility of the Client and are not within the scope of services provided by Bureau Veritas, unless

Bureau Veritas 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.bvna.com

Microbiology testing is conducted at 6660 Campobello Rd. Chemistry testing is conducted at 6740 Campobello Rd.

Your P.O. #: 13254256
Your Project #: 2402553.01
Site#: 700
Site Location: ON07
Your C.O.C. #: TCEC-SWCM-JAN

Attention: Khalid Hussein - Twin Creeks

RWDI Inc.
600 Southgate Drive
Guelph, ON
Canada N1G 4P6

Report Date: 2024/01/18
Report #: R7994354
Version: 1 - Final

CERTIFICATE OF ANALYSIS

BUREAU VERITAS JOB #: C410243
Received: 2024/01/11, 09:10

otherwise agreed in writing. Bureau Veritas is not responsible for the accuracy or any data impacts, that result from the information provided by the customer or their agent.

Solid sample results, except biota, are based on dry weight unless otherwise indicated. Organic analyses are not recovery corrected except for isotope dilution methods.
Results relate to samples tested. When sampling is not conducted by Bureau Veritas, results relate to the supplied samples tested.
This Certificate shall not be reproduced except in full, without the written approval of the laboratory.
Reference Method suffix "m" indicates test methods incorporate validated modifications from specific reference methods to improve performance.
* RPDs calculated using raw data. The rounding of final results may result in the apparent difference.
(1) Values for calculated parameters may not appear to add up due to rounding of raw data and significant figures.
(2) This is a field test, therefore, the results relate to items that were not analysed at Bureau Veritas.
(3) Un-ionized ammonia is calculated using the total ammonia result and field data provided by the client for pH and temperature.

Encryption Key

Please direct all questions regarding this Certificate of Analysis to:
Patricia Legette, Project Manager
Email: Patricia.Legette@bureauveritas.com
Phone# (905)817-5799

==========

Bureau Veritas has procedures in place to guard against improper use of the electronic signature and have the required "signatories", as per ISO/IEC 17025, signing the reports. For Service Group specific validation, please refer to the Validation Signatures page if included, otherwise available by request. For Department specific Analyst/Supervisor validation names, please refer to the Test Summary section if included, otherwise available by request. This report is authorized by Rodney Major, General Manager responsible for Ontario Environmental laboratory operations.

Bureau Veritas Job #: C410243
Report Date: 2024/01/18

RWDI Inc.
Client Project #: 2402553.01
Site Location: ON07
Your P.O. #: 13254256
Sampler Initials: EW

RESULTS OF ANALYSES OF WATER

Bureau Veritas ID		YCB982		YCB983		
Sampling Date		2024/01/10		2024/01/10		
COC Number		TCEC-SWCM-JAN		TCEC-SWCM-JAN		
	UNITS	SS10	RDL	SS16	RDL	QC Batch
Calculated Parameters						
Total Un-ionized Ammonia	mg/L	<0.00076	0.00076	<0.00061	0.00061	9156558
Field Measurements						
Field Conductivity	uS/cm	370	N/A	667	N/A	ONSITE
Field Dissolved Oxygen	mg/L	3.02	N/A	11.72	N/A	ONSITE
Field Temperature	Celsius	2.9	N/A	2.0	N/A	ONSITE
Field Measured Field Turbidity	NTU	230	N/A	>999	N/A	ONSITE
Field Measured pH	pH	7.6		7.4		ONSITE
Inorganics						
Total Ammonia-N	mg/L	<0.15	0.15	<0.15	0.15	9158852
Conductivity	umho/cm	180	1.0	660	1.0	9157833
Total Dissolved Solids	mg/L	195	10	525	10	9159147
Total Kjeldahl Nitrogen (TKN)	mg/L	<0.7	0.7	<0.7	0.7	9159052
pH	pH	7.86		8.02		9157834
Phenols-4AAP	mg/L	<0.0010	0.0010	<0.0010	0.0010	9158364
Total Phosphorus	mg/L	0.068	0.030	0.50	0.030	9159108
Dissolved Sulphate (SO4)	mg/L	8.9	1.0	130	1.0	9157601
Alkalinity (Total as CaCO3)	mg/L	76	1.0	160	1.0	9157829
Dissolved Chloride (Cl-)	mg/L	5.0	1.0	27	1.0	9157599
Nitrite (N)	mg/L	0.011	0.010	0.018	0.010	9157510
Nitrate (N)	mg/L	<0.10	0.10	0.76	0.10	9157510

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
N/A = Not Applicable

Bureau Veritas 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.bvna.com

Microbiology testing is conducted at 6660 Campobello Rd. Chemistry testing is conducted at 6740 Campobello Rd.

Bureau Veritas Job #: C410243
Report Date: 2024/01/18

RWDI Inc.
Client Project #: 2402553.01
Site Location: ON07
Your P.O. #: 13254256
Sampler Initials: EW

ELEMENTS BY ATOMIC SPECTROSCOPY (WATER)

Bureau Veritas ID		YCB982	YCB983		
Sampling Date		2024/01/10	2024/01/10		
COC Number		TCEC-SWCM-JAN	TCEC-SWCM-JAN		
	UNITS	SS10	SS16	RDL	QC Batch
Metals					
Total Boron (B)	mg/L	0.05	0.29	0.02	9164044
Total Calcium (Ca)	mg/L	23	150	0.2	9164044
Total Chromium (Cr)	mg/L	0.011	0.037	0.005	9164044
Total Iron (Fe)	mg/L	8.7	35	0.1	9164044
Total Magnesium (Mg)	mg/L	6.7	42	0.05	9164044
Total Nickel (Ni)	mg/L	0.011	0.052	0.001	9164044
Total Potassium (K)	mg/L	4.3	11	0.2	9164044
Total Sodium (Na)	mg/L	1.4	21	0.1	9164044
Total Zinc (Zn)	mg/L	0.02	0.09	0.01	9164044

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

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GENERAL COMMENTS

Each temperature is the average of up to three cooler temperatures taken at receipt

Package 1	8.0°C
Package 2	11.7°C
Package 3	11.0°C

Results relate only to the items tested.

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Bureau Veritas Job #: C410243
Report Date: 2024/01/18

QUALITY ASSURANCE REPORT

RWDI Inc.
Client Project #: 2402553.01
Site Location: ON07
Your P.O. #: 13254256
Sampler Initials: EW

			Matrix Spike		SPIKED BLANK		Method Blank		RPD		QC Standard	
QC Batch	Parameter	Date	% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits	% Recovery	QC Limits
9157510	Nitrate (N)	2024/01/12	97	80 - 120	98	80 - 120	<0.10	mg/L	0.37 (1)	20		
9157510	Nitrite (N)	2024/01/12	104	80 - 120	103	80 - 120	<0.010	mg/L	4.4 (1)	20		
9157599	Dissolved Chloride (Cl-)	2024/01/12	85	80 - 120	96	80 - 120	<1.0	mg/L	0.15 (1)	20		
9157601	Dissolved Sulphate (SO4)	2024/01/12	NC	75 - 125	97	80 - 120	<1.0	mg/L	0.058 (1)	20		
9157829	Alkalinity (Total as CaCO3)	2024/01/12			95	85 - 115	<1.0	mg/L	1.2 (1)	20		
9157833	Conductivity	2024/01/12			103	85 - 115	<1.0	umho/cm	0.15 (1)	10		
9157834	pH	2024/01/12			102	98 - 103			0.28 (1)	N/A		
9158364	Phenols-4AAP	2024/01/12	105	80 - 120	100	80 - 120	<0.0010	mg/L	NC (1)	20		
9158852	Total Ammonia-N	2024/01/15	98	75 - 125	96	80 - 120	<0.15	mg/L	NC (1)	20		
9159052	Total Kjeldahl Nitrogen (TKN)	2024/01/15	100	80 - 120	101	80 - 120	<0.7	mg/L	NC (1)	20	92	80 - 120
9159108	Total Phosphorus	2024/01/18	100	80 - 120	102	80 - 120	<0.030	mg/L	1.1 (1)	25	103	80 - 120
9159147	Total Dissolved Solids	2024/01/15			98	80 - 120	<10	mg/L	5.9 (1)	20		
9164044	Total Boron (B)	2024/01/16	97	80 - 120	92	80 - 120	<0.02	mg/L	3.2 (1)	20		
9164044	Total Calcium (Ca)	2024/01/16	NC	80 - 120	96	80 - 120	<0.2	mg/L				
9164044	Total Chromium (Cr)	2024/01/16	97	80 - 120	96	80 - 120	<0.005	mg/L	NC (1)	20		
9164044	Total Iron (Fe)	2024/01/16	97	80 - 120	96	80 - 120	<0.1	mg/L	3.9 (1)	20		
9164044	Total Magnesium (Mg)	2024/01/16	97	80 - 120	95	80 - 120	<0.05	mg/L				
9164044	Total Nickel (Ni)	2024/01/16	94	80 - 120	94	80 - 120	<0.001	mg/L				
9164044	Total Potassium (K)	2024/01/16	96	80 - 120	94	80 - 120	<0.2	mg/L				
9164044	Total Sodium (Na)	2024/01/16	NC	80 - 120	96	80 - 120	<0.1	mg/L				

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Microbiology testing is conducted at 6660 Campobello Rd. Chemistry testing is conducted at 6740 Campobello Rd.

QUALITY ASSURANCE REPORT(CONT'D)

			Matrix Spike		SPIKED BLANK		Method Blank		RPD		QC Standard	
QC Batch	Parameter	Date	% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits	% Recovery	QC Limits
9164044	Total Zinc (Zn)	2024/01/16	98	80 - 120	97	80 - 120	<0.01	mg/L	NC (1)	20		

N/A = Not Applicable

Duplicate: Paired analysis of a separate portion of the same sample. Used to evaluate the variance in the measurement.

Matrix Spike: A sample to which a known amount of the analyte of interest has been added. Used to evaluate sample matrix interference.

QC Standard: A sample of known concentration prepared by an external agency under stringent conditions. Used as an independent check of method accuracy.

Spiked Blank: A blank matrix sample to which a known amount of the analyte, usually from a second source, has been added. Used to evaluate method accuracy.

Method Blank: A blank matrix containing all reagents used in the analytical procedure. Used to identify laboratory contamination.

NC (Matrix Spike): The recovery in the matrix spike was not calculated. The relative difference between the concentration in the parent sample and the spike amount was too small to permit a reliable recovery calculation (matrix spike concentration was less than the native sample concentration)

NC (Duplicate RPD): The duplicate RPD was not calculated. The concentration in the sample and/or duplicate was too low to permit a reliable RPD calculation (absolute difference <= 2x RDL).

(1) Duplicate Parent ID

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Microbiology testing is conducted at 6660 Campobello Rd. Chemistry testing is conducted at 6740 Campobello Rd.

Bureau Veritas Job #: C410243
Report Date: 2024/01/18

RWDI Inc.
Client Project #: 2402553.01
Site Location: ON07
Your P.O. #: 13254256
Sampler Initials: EW

VALIDATION SIGNATURE PAGE

The analytical data and all QC contained in this report were reviewed and validated by:

Cristina Carriere, Senior Scientific Specialist

Patricia Legette, Project Manager

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Microbiology testing is conducted at 6660 Campobello Rd. Chemistry testing is conducted at 6740 Campobello Rd.

FIELD INFORMATION FORM

BUREAU VERITAS

WASTE MANAGEMENT

Site Name: TCEC

Site No.:

Sample: SS110 (Sample ID)

This Waste Management Field Information Form is Required
This form is to be completed, in addition to any State Forms. The Field Form is submitted along with the Chain of Custody Forms that accompany the sample containers (i.e. with the cooler that is returned to the laboratory).

Laboratory Use Only/Lab ID:

PURGE INFO

PURGE DATE (MM DD YY)	PURGE TIME (2400 Hr Clock)	ELAPSED HRS (hrs:min)	WATER VOL IN CASING (Gallons)	ACTUAL VOL PURGED (Gallons)	WELL VOLs PURGED

Note: For Passive Sampling, replace "Water Vol in Casing" and "Well Vols Purged" w/ Water Vol in Tubing/Flow Cell and Tubing/Flow Cell Vols Purged. Mark Changes. Record field data below.

PURGE/SAMPLE EQUIPMENT

Purging and Sampling Equipment ... Dedicated: [Y] or [N]

Purging Device: [ ]
Sampling Device: [ ]
X-Other:

A-Submersible Pump, B-Peristaltic Pump, C-QED Bladder Pump, D-Bailer, E-Piston Pump, F-Dipper/Bottle

Filter Device: [Y] or [N] [0.45 µ] or [ ] µ (circle or fill in)

Filter Type: [ ] A-In-line Disposable, B-Pressure, C-Vacuum, X-Other:

Sample Tube Type: [ ] A-Teflon, B-Stainless Steel, C-PVC, D-Polypropylene, X-Other:

WELL DATA

Well Elevation (at TOC) [ ] (ft/msl)
Depth to Water (DTW) (from TOC) [ ] (ft)
Groundwater Elevation (GWE) (Site Datum, from TOC) [ ] (ft msl)
Total Well Depth (from TOC) [ ] (ft)
Stick Up (From ground elevation) [ ] (ft)
Casing ID [ ] (in)
Casing Material [ ]

Note: Total Depth, Stick Up, Casing ID, etc. are optional and can be from historical data, unless required by Site/Permit. Well Elevation, DTW, and GWE must be current, obtained from site.

STABILIZATION DATA (Optional)

Sample Time (2400 Hr Clock)	Rate/Unit	pH (std)	Conductance (SC/EC) (µmhos/cm @ 25°C)	Temp. (°C)	Turbidity (ntu)	D.O. (mg/L - ppm)	eH/ORP (mV)	DTW (ft)
		1st	1st					
		2nd	2nd					
		3rd	3rd					
		4th	4th					
Input Range for 3 consec. readings or Permit/State requirements:		+/-	+/-	+/-	+/-	+/-	+/-	

Stabilization Data Fields are Optional *(i.e. complete stabilization readings for parameters required by WM, Site, or State). These fields can be used where four (4) field measurements are required by State/Permit/Site. If a Data Logger or other Electronic format is used, fill in final readings below and submit electronic data separately to Site. If more fields above are needed, use separate sheet or form.*

FIELD DATA

SAMPLE DATE (MM DD YY)	pH (std)	CONDUCTANCE (µmhos/cm @ 25°C)	TEMP. (°C)	TURBIDITY (ntu)	DO (mg/L - ppm)	eH/ORP (mV)	Other: Units
01/10/24	7.16	0.37	2.9	270	3.02		

Final Field Readings are required *(i.e. record final measurements, final stabilized readings, passive sample readings before sampling for all field parameters required by State/Permit/Site.)*

FIELD COMMENTS

Sample Appearance: translucent
Odor: N/O
Color: Light Brown
Other:
Weather Conditions (required daily, or as conditions change): -10C
Direction/Speed: 3 km/h W
Outlook: Overcast
Precipitation: Y or N

Specific Comments (including purge/well volume calculations if required):

Flow
time @ In T1: 16 — initial: 0.15m
T2: 15 — Depth: 0.15m
T3: 17

I certify that sampling procedures were in accordance with applicable EPA, State, and WM protocols (if more than one sampler, all should sign):

Date	Name	Signature	Company
01/10/24	Jake Arbizzo		RVDI
/ /			

DISTRIBUTION: WHITE/ORIGINAL - Stays with Sample, YELLOW - Returned to Client, PINK - Field Copy

Field Information Form v-2.1 06/20

2002

FIELD INFORMATION FORM

BUREAU VERITAS

WASTE MANAGEMENT

Site Name: TCEC

Site No.: Sample: SS16 (Sample ID)

This Waste Management Field Information Form is Required
This form is to be completed, in addition to any State Forms. The Field Form is submitted along with the Chain of Custody Forms that accompany the sample containers (i.e. with the cooler that is returned to the laboratory).

Laboratory Use Only/Lab ID:

PURGE INFO

PURGE DATE (MM DD YY)	PURGE TIME (2400 Hr Clock)	ELAPSED HRS (hrs:min)	WATER VOL IN CASING (Gallons)	ACTUAL VOL PURGED (Gallons)	WELL VOLs PURGED

Note: For Passive Sampling, replace "Water Vol in Casing" and "Well Vols Purged" w/ Water Vol in Tubing/Flow Cell and Tubing/Flow Cell Vols Purged. Mark Changes, Record field data below.

PURGE/SAMPLE EQUIPMENT

Purging and Sampling Equipment ... Dedicated: Y or N

Filter Device: Y or N [ ] or [ ] µ (circle or fill in)

Purging Device: A-Submersible Pump, B-Peristaltic Pump, C-QED Bladder Pump, D-Bailer, E-Piston Pump, F-Dipper/Bottle

Sampling Device:

X-Other:

Filter Type: A-In-line Disposable, B-Pressure, C-Vacuum, X-Other:

Sample Tube Type: A-Teflon, B-Stainless Steel, C-PVC, D-Polypropylene, X-Other:

WELL DATA

Well Elevation (at TOC) (ft/msl) | Depth to Water (DTW) (from TOC) (ft) | Groundwater Elevation (GWE) (Site Datum, from TOC) (ft msl)

Total Well Depth (from TOC) (ft) | Stick Up (from ground elevation) (ft) | Casing ID (in) | Casing Material

Note: Total Depth, Stick Up, Casing ID, etc. are optional and can be from historical data, unless required by Site/Permit. Well Elevation, DTW, and GWE must be current, obtained from site.

STABILIZATION DATA (Optional)

Sample Time (2400 Hr Clock)	Rate/Unit	pH (std)	Conductance (SC/EC) (µmhos/cm @ 25°C)	Temp. (°C)	Turbidity (ntu)	D.O. (mg/L - ppm)	eH/ORP (mV)	DTW (ft)
		1st	1st					
		2nd	2nd					
		3rd	3rd					
		4th	4th					
Input Range for 3 consec. readings or Permit/State requirements:		+/-	+/-	+/-	+/-	+/-	+/-	

Stabilization Data Fields are Optional *(i.e. complete stabilization readings for parameters required by WM, Site, or State). These fields can be used where four (4) field measurements are required by State/Permit/Site. If a Data Logger or other Electronic format is used, fill in final readings below and submit electronic data separately to Site. If more fields above are needed, use separate sheet or form.*

FIELD DATA

SAMPLE DATE (MM DD YY)	pH (std)	CONDUCTANCE (µmhos/cm @ 25°C)	TEMP. (°C)	TURBIDITY (ntu)	DO (mg/L - ppm)	eH/ORP (mV)	Other: Units
01 10 24	7.4	667	2.0	>999	11.72		

Final Field Readings are required *(i.e. record field measurements, final stabilized readings, passive sample readings before sampling for all field parameters required by State/Permit/Site.)*

FIELD COMMENTS

Sample Appearance: Cloudy Odor: N/O Color: brown Other:

Weather Conditions (required daily, or as conditions change): -1°C Direction/Speed: 30Kmh NW Outlook: overcast Precipitation: Y or (N)

Specific Comments (including purge/well volume calculations if required):

Time @ 1m: 5 sec
5 sec
6 sec

width: 1m
depth: 10cm

I certify that sampling procedures were in accordance with applicable EPA, State, and WM protocols (if more than one sampler, all should sign):

Date	Name	Signature	Company
01/10/24	Eric Wilson	E. Wilson	RWDI

DISTRIBUTION: WHITE/ORIGINAL - Stays with Sample, YELLOW - Returned to Client, PINK - Field Copy

Field Information Form v.3.1 06/20

2008

Maxxam Analytics Inc
6740 Campobello Road Mississauga, ON L5N 2L8
Phone: 905-817-5700 Fax: 905-817-5777 Toll Free: (800) 563-6266

CHAIN OF CUSTODY RECORD

Page 1 of 1

INVOICE INFORMATION:		REPORT INFORMATION (if differs from invoice):		PROJECT INFORMATION:		MAXXAM JOB NUMBER:
Company Name:	Waste Management of Canada Corporation	Company Name:	RWDI AIR Inc.	Quotation #		
Contact Name:	Lisa Mertick	Contact Name:	Brent Langille	P.O. #:	12285756	
Address:	5768 Nauvoo Rd, Watford, ON N0M 2S0	Address:	4510 Rhodes Drive, Unit 530 Windsor, ON, N8W 5K5	Project #:	2402553.01	CHAIN OF CUSTODY # :
Phone:	519-849-5810 Fax: 519-849-5811	Phone:	519-823-1311 x 2618 Fax: 519-823-1316	Project Name:	Twin Creeks SW	TCEC-SWCM-JAN
Email:	lmertick@wm.com	Email:	BJL@RWDI.com, JCL@RWDI.com	Location:	Twin Creeks	
				Sampled By:	EW	

REGULATORY CRITERIA

Note: For regulated drinking water samples - please use the Drinking Water Chain of Custody Form

- [ ] MISA
- [ ] Reg. 153 — [ ] Table 1 [ ] Table 2 [ ] Table 3
- Sewer Use — [ ] Sanitary [ ] Storm
- [ ] Other — specify
- [x] PWQO
- Region _____
- [ ] Reg. 558

Report Criteria on C of A ? [n]

SAMPLES MUST BE KEPT COOL (< 10 °C) FROM TIME OF SAMPLING UNTIL DELIVERY TO MAXXAM

ANALYSIS REQUESTED (Please be specific):

	Sample Identification	Date Sampled	Time Sampled	Matrix (GW, SW, Soil, etc.)	Regulated Drinking Water ? (Y / N)	Metals Field Filtered ? (Y / N)	ZH-ON-WLF-2024 TCLS - SW (BKGRND STATION) QUARTERLY	# of Cont.	COMMENTS / TAT COMMENTS
1	SS10	10-Jan-24	AM	SW	N	N	X	6	
2	SS16	10-Jan-24	AM	SW	N	N	X	6	
3									
4									
5									
6									
7									
8									
9									
10									
11									
12									See lab addendum for lab group coding

TURNAROUND TIME (TAT) REQUIRED:

PLEASE PROVIDE ADVANCE NOTICE FOR RUSH PROJECTS

Regular (Standard) TAT:
[x] 5 to 7 Working Days

Rush TAT: Rush Confirmation # _____ (call Lab for #)
[ ] 1 day [ ] 2 days [ ] 3 days
DATE Required: 19-Jan-24
TIME Required: 12:00 PM

Please note that TAT for certain tests such as BOD and Dioxins/Furans are > 5 days - contact your Project Manager for details.

NONT-2024-01-577

RELINQUISHED BY: (Signature/Print)	RECEIVED BY: (Signature/Print)	Date:	Time:
EW - January 10, 2024	[illegible] SAMRA BADOLA	2024/01/11	09:10

Laboratory Use Only

Temperature (°C) on Receipt: 7.1 9.8, 11.1 3.1 11.1 9.1 3 NOICE

Condition of Sample on Receipt: [ ] OK [ ] SIF

*** MANDATORY SECTIONS IN GREY MUST BE FILLED OUT. AN INCOMPLETE CHAIN OF CUSTODY MAY RESULT IN ANALYTICAL TAT DELAYS**

White: Maxxam Yellow: Mail Pink: Client

Your P.O. #: 13254256
Your Project #: 2402553.01
Site#: 200
Site Location: ON07
Your C.O.C. #: TCEC-SWCM-JAN

Attention: Khalid Hussein - Twin Creeks

RWDI Inc.
600 Southgate Drive
Guelph, ON
Canada N1G 4P6

Report Date: 2024/01/18
Report #: R7994350
Version: 1 - Final

CERTIFICATE OF ANALYSIS

BUREAU VERITAS JOB #: C410272
Received: 2024/01/11, 09:10

Sample Matrix: Water
Samples Received: 4

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Analytical Method
Alkalinity	4	N/A	2024/01/12	CAM SOP-00448	SM 24 2320 B m
Chloride by Automated Colourimetry	4	N/A	2024/01/12	CAM SOP-00463	SM 24 4500-Cl E m
Conductance in Water - On-site	4	N/A	2024/01/18		
Field Measured Dissolved Oxygen in Water	4	N/A	2024/01/18		
Total Metals by ICPMS	4	N/A	2024/01/16	CAM SOP-00447	EPA 6020B m
Total Ammonia-N	4	N/A	2024/01/15	CAM SOP-00441	USGS I-2522-90 m
Nitrate & Nitrite as Nitrogen in Water (1)	4	N/A	2024/01/12	CAM SOP-00440	SM 24 4500-NO3I/NO2B
Phenols (4AAP)	4	N/A	2024/01/12	CAM SOP-00444	OMOE E3179 m
Field Measured pH (2)	4	N/A	2024/01/18		Field pH Meter
Sulphate by Automated Turbidimetry	4	N/A	2024/01/12	CAM SOP-00464	SM 24 4500-SO42- E m
Field Temperature (2)	4	N/A	2024/01/18		Field Thermometer
Total Organic Carbon (TOC) (3)	4	N/A	2024/01/15	CAM SOP-00446	SM 24 5310B m
Turbidity - On-site	4	N/A	2024/01/18		
Un-ionized Ammonia (4)	4	2024/01/11	2024/01/18	Auto Calc.	PWQO
Volatile Organic Compounds in Water	4	N/A	2024/01/15	CAM SOP-00226	EPA 8260D m

Remarks:

Bureau Veritas is accredited to ISO/IEC 17025 for specific parameters on scopes of accreditation. Unless otherwise noted, procedures used by Bureau Veritas are based upon recognized Provincial, Federal or US method compendia such as CCME, EPA, APHA or the Quebec Ministry of Environment.

All work recorded herein has been done in accordance with procedures and practices ordinarily exercised by professionals in Bureau Veritas' profession using accepted testing methodologies, quality assurance and quality control procedures (except where otherwise agreed by the client and Bureau Veritas in writing). All data is in statistical control and has met quality control and method performance criteria unless otherwise noted. All method blanks are reported; unless indicated otherwise, associated sample data are not blank corrected. Where applicable, unless otherwise noted, Measurement Uncertainty has not been accounted for when stating conformity to the referenced standard.

Bureau Veritas liability is limited to the actual cost of the requested analyses, unless otherwise agreed in writing. There is no other warranty expressed or implied. Bureau Veritas has been retained to provide analysis of samples provided by the Client using the testing methodology referenced in this report. Interpretation and use of test results are the sole responsibility of the Client and are not within the scope of services provided by Bureau Veritas, unless otherwise agreed in writing. Bureau Veritas is not responsible for the accuracy or any data impacts, that result from the information provided by the customer or their agent.

Solid sample results, except biota, are based on dry weight unless otherwise indicated. Organic analyses are not recovery corrected except for isotope

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Microbiology testing is conducted at 6660 Campobello Rd. Chemistry testing is conducted at 6740 Campobello Rd.

Your P.O. #: 13254256
Your Project #: 2402553.01
Site#: 200
Site Location: ON07
Your C.O.C. #: TCEC-SWCM-JAN

Attention: Khalid Hussein - Twin Creeks

RWDI Inc.
600 Southgate Drive
Guelph, ON
Canada N1G 4P6

Report Date: 2024/01/18
Report #: R7994350
Version: 1 - Final

CERTIFICATE OF ANALYSIS

BUREAU VERITAS JOB #: C410272
Received: 2024/01/11, 09:10

dilution methods.
Results relate to samples tested. When sampling is not conducted by Bureau Veritas, results relate to the supplied samples tested.
This Certificate shall not be reproduced except in full, without the written approval of the laboratory.
Reference Method suffix "m" indicates test methods incorporate validated modifications from specific reference methods to improve performance.
* RPDs calculated using raw data. The rounding of final results may result in the apparent difference.
(1) Values for calculated parameters may not appear to add up due to rounding of raw data and significant figures.
(2) This is a field test, therefore, the results relate to items that were not analysed at Bureau Veritas.
(3) Total Organic Carbon (TOC) present in the sample should be considered as non-purgeable TOC.
(4) Un-ionized ammonia is calculated using the total ammonia result and field data provided by the client for pH and temperature.

Encryption Key

Please direct all questions regarding this Certificate of Analysis to:
Patricia Legette, Project Manager
Email: Patricia.Legette@bureauveritas.com
Phone# (905)817-5799

==========

Bureau Veritas has procedures in place to guard against improper use of the electronic signature and have the required "signatories", as per ISO/IEC 17025, signing the reports. For Service Group specific validation, please refer to the Validation Signatures page if included, otherwise available by request. For Department specific Analyst/Supervisor validation names, please refer to the Test Summary section if included, otherwise available by request. This report is authorized by Rodney Major, General Manager responsible for Ontario Environmental laboratory operations.

Bureau Veritas Job #: C410272
Report Date: 2024/01/18

RWDI Inc.
Client Project #: 2402553.01
Site Location: ON07
Your P.O. #: 13254256
Sampler Initials: EW

RESULTS OF ANALYSES OF WATER

Bureau Veritas ID		YCC154		YCC155		YCC156		
Sampling Date		2024/01/10		2024/01/10		2024/01/10		
COC Number		TCEC-SWCM-JAN		TCEC-SWCM-JAN		TCEC-SWCM-JAN		
	UNITS	SS14A	QC Batch	SS14B	QC Batch	SS15A	RDL	QC Batch
Calculated Parameters								
Total Un-ionized Ammonia	mg/L	<0.00061	9156558	<0.00061	9156558	<0.00061	0.00061	9156558
Field Measurements								
Field Conductivity	uS/cm	1070	ONSITE	1280	ONSITE	1080	N/A	ONSITE
Field Dissolved Oxygen	mg/L	12.21	ONSITE	13.12	ONSITE	12.43	N/A	ONSITE
Field Temperature	Celsius	2.5	ONSITE	2.6	ONSITE	5.9	N/A	ONSITE
Field Measured Field Turbidity	NTU	55.0	ONSITE	189	ONSITE	13.6	N/A	ONSITE
Field Measured pH	pH	7.6	ONSITE	7.5	ONSITE	7.5		ONSITE
Inorganics								
Total Ammonia-N	mg/L	<0.050	9159087	<0.050	9158839	0.12	0.050	9159087
Total Organic Carbon (TOC)	mg/L	6.0	9162204	9.2	9162204	9.4	0.40	9162204
Phenols-4AAP	mg/L	<0.0010	9158364	<0.0010	9158364	<0.0010	0.0010	9158364
Dissolved Sulphate (SO4)	mg/L	170	9157601	120	9157601	110	1.0	9157601
Alkalinity (Total as CaCO3)	mg/L	190	9157829	230	9157829	170	1.0	9157829
Dissolved Chloride (Cl-)	mg/L	14	9157599	78	9157599	29	1.0	9157599
Nitrate (N)	mg/L	0.98	9157510	1.18	9157510	1.06	0.10	9157838

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
N/A = Not Applicable

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Microbiology testing is conducted at 6660 Campobello Rd. Chemistry testing is conducted at 6740 Campobello Rd.

Bureau Veritas Job #: C410272
Report Date: 2024/01/18

RWDI Inc.
Client Project #: 2402553.01
Site Location: ON07
Your P.O. #: 13254256
Sampler Initials: EW

RESULTS OF ANALYSES OF WATER

Bureau Veritas ID		YCC157		
Sampling Date		2024/01/10		
COC Number		TCEC-SWCM-JAN		
	UNITS	PSSWDUP	RDL	QC Batch
Calculated Parameters				
Total Un-ionized Ammonia	mg/L	<0.00061	0.00061	9156558
Field Measurements				
Field Conductivity	uS/cm	1280	N/A	ONSITE
Field Dissolved Oxygen	mg/L	13.12	N/A	ONSITE
Field Temperature	Celsius	2.6	N/A	ONSITE
Field Measured Field Turbidity	NTU	189	N/A	ONSITE
Field Measured pH	pH	7.5		ONSITE
Inorganics				
Total Ammonia-N	mg/L	<0.050	0.050	9158839
Total Organic Carbon (TOC)	mg/L	9.4	0.40	9162204
Phenols-4AAP	mg/L	<0.0010	0.0010	9158364
Dissolved Sulphate (SO4)	mg/L	120	1.0	9157601
Alkalinity (Total as CaCO3)	mg/L	220	1.0	9157829
Dissolved Chloride (Cl-)	mg/L	77	1.0	9157599
Nitrate (N)	mg/L	1.19	0.10	9157838

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
N/A = Not Applicable

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Microbiology testing is conducted at 6660 Campobello Rd. Chemistry testing is conducted at 6740 Campobello Rd.

Bureau Veritas Job #: C410272
Report Date: 2024/01/18

RWDI Inc.
Client Project #: 2402553.01
Site Location: ON07
Your P.O. #: 13254256
Sampler Initials: EW

ELEMENTS BY ATOMIC SPECTROSCOPY (WATER)

Bureau Veritas ID		YCC154	YCC155	YCC156	YCC157		
Sampling Date		2024/01/10	2024/01/10	2024/01/10	2024/01/10		
COC Number		TCEC-SWCM-JAN	TCEC-SWCM-JAN	TCEC-SWCM-JAN	TCEC-SWCM-JAN		
	UNITS	SS14A	SS14B	SS15A	PSSWDUP	RDL	QC Batch
Metals							
Total Boron (B)	mg/L	0.06	0.59	0.34	0.59	0.02	9164044
Total Calcium (Ca)	mg/L	98	92	72	94	0.2	9164044
Total Chromium (Cr)	mg/L	<0.005	0.005	0.007	0.006	0.005	9164044
Total Iron (Fe)	mg/L	1.1	4.4	5.7	4.3	0.1	9164044
Total Magnesium (Mg)	mg/L	32	31	23	31	0.05	9164044
Total Nickel (Ni)	mg/L	0.003	0.010	0.009	0.010	0.001	9164044
Total Potassium (K)	mg/L	5.9	9.3	7.4	9.3	0.2	9164044
Total Sodium (Na)	mg/L	9.5	54	23	53	0.1	9164044
Total Zinc (Zn)	mg/L	<0.01	0.01	0.02	0.01	0.01	9164044

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

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Bureau Veritas Job #: C410272
Report Date: 2024/01/18

RWDI Inc.
Client Project #: 2402553.01
Site Location: ON07
Your P.O. #: 13254256
Sampler Initials: EW

VOLATILE ORGANICS BY GC/MS (WATER)

Bureau Veritas ID		YCC154	YCC155	YCC156	YCC157		
Sampling Date		2024/01/10	2024/01/10	2024/01/10	2024/01/10		
COC Number		TCEC-SWCM-JAN	TCEC-SWCM-JAN	TCEC-SWCM-JAN	TCEC-SWCM-JAN		
	UNITS	SS14A	SS14B	SS15A	PSSWDUP	RDL	QC Batch
Volatile Organics							
Benzene	ug/L	<0.10	<0.10	<0.10	<0.10	0.10	9161289
Ethylbenzene	ug/L	<0.10	<0.10	<0.10	<0.10	0.10	9161289
Toluene	ug/L	<0.20	<0.20	<0.20	<0.20	0.20	9161289
p+m-Xylene	ug/L	<0.10	<0.10	<0.10	<0.10	0.10	9161289
o-Xylene	ug/L	<0.10	<0.10	<0.10	<0.10	0.10	9161289
Total Xylenes	ug/L	<0.10	<0.10	<0.10	<0.10	0.10	9161289
Surrogate Recovery (%)							
4-Bromofluorobenzene	%	99	98	99	95		9161289
D4-1,2-Dichloroethane	%	102	101	101	101		9161289
D8-Toluene	%	101	100	100	102		9161289

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

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GENERAL COMMENTS

Each temperature is the average of up to three cooler temperatures taken at receipt

Package 1	8.0°C
Package 2	11.7°C
Package 3	11.0°C

Results relate only to the items tested.

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Bureau Veritas Job #: C410272
Report Date: 2024/01/18

QUALITY ASSURANCE REPORT

RWDI Inc.
Client Project #: 2402553.01
Site Location: ON07
Your P.O. #: 13254256
Sampler Initials: EW

			Matrix Spike		SPIKED BLANK		Method Blank		RPD	
QC Batch	Parameter	Date	% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits
9161289	4-Bromofluorobenzene	2024/01/15	98	70 - 130	99	70 - 130	100	%		
9161289	D4-1,2-Dichloroethane	2024/01/15	95	70 - 130	99	70 - 130	96	%		
9161289	D8-Toluene	2024/01/15	102	70 - 130	101	70 - 130	105	%		
9157510	Nitrate (N)	2024/01/12	97	80 - 120	98	80 - 120	<0.10	mg/L	0.37 (1)	20
9157599	Dissolved Chloride (Cl-)	2024/01/12	85	80 - 120	96	80 - 120	<1.0	mg/L	0.15 (1)	20
9157601	Dissolved Sulphate (SO4)	2024/01/12	NC	75 - 125	97	80 - 120	<1.0	mg/L	0.058 (1)	20
9157829	Alkalinity (Total as CaCO3)	2024/01/12			95	85 - 115	<1.0	mg/L	1.2 (1)	20
9157838	Nitrate (N)	2024/01/12	96 (2)	80 - 120	98	80 - 120	<0.10	mg/L	1.2 (3)	20
9158364	Phenols-4AAP	2024/01/12	105	80 - 120	100	80 - 120	<0.0010	mg/L	NC (1)	20
9158839	Total Ammonia-N	2024/01/15	97	75 - 125	97	80 - 120	<0.050	mg/L	3.8 (1)	20
9159087	Total Ammonia-N	2024/01/15	96 (4)	75 - 125	95	80 - 120	<0.050	mg/L	NC (5)	20
9161289	Benzene	2024/01/15	101	70 - 130	98	70 - 130	<0.10	ug/L	NC (1)	30
9161289	Ethylbenzene	2024/01/15	96	70 - 130	95	70 - 130	<0.10	ug/L	NC (1)	30
9161289	o-Xylene	2024/01/15	93	70 - 130	89	70 - 130	<0.10	ug/L	NC (1)	30
9161289	p+m-Xylene	2024/01/15	110	70 - 130	102	70 - 130	<0.10	ug/L	NC (1)	30
9161289	Toluene	2024/01/15	103	70 - 130	97	70 - 130	<0.20	ug/L	NC (1)	30
9161289	Total Xylenes	2024/01/15					<0.10	ug/L	NC (1)	30
9162204	Total Organic Carbon (TOC)	2024/01/15	91	80 - 120	99	80 - 120	<0.40	mg/L	6.5 (1)	20
9164044	Total Boron (B)	2024/01/16	97	80 - 120	92	80 - 120	<0.02	mg/L	3.2 (1)	20
9164044	Total Calcium (Ca)	2024/01/16	NC	80 - 120	96	80 - 120	<0.2	mg/L		
9164044	Total Chromium (Cr)	2024/01/16	97	80 - 120	96	80 - 120	<0.005	mg/L	NC (1)	20
9164044	Total Iron (Fe)	2024/01/16	97	80 - 120	96	80 - 120	<0.1	mg/L	3.9 (1)	20
9164044	Total Magnesium (Mg)	2024/01/16	97	80 - 120	95	80 - 120	<0.05	mg/L		
9164044	Total Nickel (Ni)	2024/01/16	94	80 - 120	94	80 - 120	<0.001	mg/L		
9164044	Total Potassium (K)	2024/01/16	96	80 - 120	94	80 - 120	<0.2	mg/L		
9164044	Total Sodium (Na)	2024/01/16	NC	80 - 120	96	80 - 120	<0.1	mg/L		

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QUALITY ASSURANCE REPORT(CONT'D)

			Matrix Spike		SPIKED BLANK		Method Blank		RPD	
QC Batch	Parameter	Date	% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits
9164044	Total Zinc (Zn)	2024/01/16	98	80 - 120	97	80 - 120	<0.01	mg/L	NC (1)	20

Duplicate: Paired analysis of a separate portion of the same sample. Used to evaluate the variance in the measurement.

Matrix Spike: A sample to which a known amount of the analyte of interest has been added. Used to evaluate sample matrix interference.

Spiked Blank: A blank matrix sample to which a known amount of the analyte, usually from a second source, has been added. Used to evaluate method accuracy.

Method Blank: A blank matrix containing all reagents used in the analytical procedure. Used to identify laboratory contamination.

Surrogate: A pure or isotopically labeled compound whose behavior mirrors the analytes of interest. Used to evaluate extraction efficiency.

NC (Matrix Spike): The recovery in the matrix spike was not calculated. The relative difference between the concentration in the parent sample and the spike amount was too small to permit a reliable recovery calculation (matrix spike concentration was less than the native sample concentration)

NC (Duplicate RPD): The duplicate RPD was not calculated. The concentration in the sample and/or duplicate was too low to permit a reliable RPD calculation (absolute difference <= 2x RDL).

(1) Duplicate Parent ID

(2) Matrix Spike Parent ID [YCC157-01]

(3) Duplicate Parent ID [YCC157-01]

(4) Matrix Spike Parent ID [YCC156-05]

(5) Duplicate Parent ID [YCC156-05]

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Microbiology testing is conducted at 6660 Campobello Rd. Chemistry testing is conducted at 6740 Campobello Rd.

Bureau Veritas Job #: C410272
Report Date: 2024/01/18

RWDI Inc.
Client Project #: 2402553.01
Site Location: ON07
Your P.O. #: 13254256
Sampler Initials: EW

VALIDATION SIGNATURE PAGE

The analytical data and all QC contained in this report were reviewed and validated by:

Cristina Carriere, Senior Scientific Specialist

Michael Damianidis, Project Manager Assistant

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FIELD INFORMATION FORM

BUREAU VERITAS

WASTE MANAGEMENT

Site Name: TCEC

Site No.: Sample: S514A (Sample ID)

This Waste Management Field Information Form is Required
This form is to be completed, in addition to any State Forms. The Field Form is submitted along with the Chain of Custody Forms that accompany the sample containers (i.e. with the cooler that is returned to the laboratory).

Laboratory Use Only/Lab ID:

PURGE INFO

PURGE DATE (MM DD YY)	PURGE TIME (2400 Hr Clock)	ELAPSED HRS (hrs:min)	WATER VOL IN CASING (Gallons)	ACTUAL VOL PURGED (Gallons)	WELL VOLs PURGED

Note: For Passive Sampling, replace "Water Vol in Casing" and "Well Vols Purged" w/ Water Vol in Tubing/Flow Cell and Tubing/Flow Cell Vols Purged. Mark Changes, Record field data below.

PURGE/SAMPLE EQUIPMENT

Purging and Sampling Equipment ... Dedicated: [Y] or [N]

Purging Device: [ ] A-Submersible Pump B-Peristaltic Pump C-QED Bladder Pump D-Bailer E-Piston Pump F-Dipper/Bottle

Sampling Device: [ ]

X-Other: [ ]

Filter Device: [Y] or [N] [0.45 µ] or [ ] µ (circle or fill in)

Filter Type: [ ] A-In-line Disposable B-Pressure C-Vacuum X-Other: ____

Sample Tube Type: [ ] A-Teflon B-Stainless Steel C-PVC D-Polypropylene X-Other: ____

WELL DATA

Well Elevation (at TOC) [ ] (ft/msl)

Depth to Water (DTW) (from TOC) [ ] (ft)

Groundwater Elevation (GWE) (Site Datum, from TOC) [ ] (ft msl)

Total Well Depth (from TOC) [ ] (ft)

Stick Up (from ground elevation) [ ] (ft)

Casing ID [ ] (in)

Casing Material [ ]

Note: Total Depth, Stick Up, Casing ID, etc. are optional and can be from historical data, unless required by Site/Permit. Well Elevation, DTW, and GWE must be current, obtained from site.

STABILIZATION DATA (Optional)

Sample Time (2400 Hr Clock)	Rate/Unit	pH (std)	Conductance (SC/EC) (µmhos/cm @ 25°C)	Temp. (°C)	Turbidity (ntu)	D.O. (mg/L - ppm)	eH/ORP (mV)	DTW (ft)
		1st	1st					
		2nd	2nd					
		3rd	3rd					
		4th	4th					
Input Range for 3 consec. readings or Permit/State requirements:		+/-	+/-	+/-	+/-	+/-	+/-	

Stabilization Data Fields are Optional *(i.e. complete stabilization readings for parameters required by WM, Site, or State). These fields can be used where four (4) field measurements are required by State/Permit/Site. If a Data Logger or other Electronic format is used, fill in final readings below and submit electronic data separately to Site. If more fields above are needed, use separate sheet or form.*

FIELD DATA

SAMPLE DATE (MM DD YY)	pH (std)	CONDUCTANCE (µmhos/cm @ 25°C)	TEMP. (°C)	TURBIDITY (ntu)	DO (mg/L - ppm)	eH/ORP (mV)	Other: Units
01 10 24	7	1.07	2.5	55.0	12.21		

Final Field Readings are required *(i.e. record field measurements, final stabilized readings, passive sample readings before sampling for all field parameters required by State/Permit/Site.)*

FIELD COMMENTS

Sample Appearance: transparent Odor: N/A Color: N/C Other: ____

Weather Conditions (required daily, or as change): -1°C Direction/Speed: 21 kg/hNW Outlook: Overcast Precipitation: Y or N

Specific Comments (including purge/well vol. calculations if required):

Flow

time/m T1: 22 width: 0.25m

T2: 21 Depth: 0.15 m

T3: 24

I certify that sampling procedures were in accordance with applicable EPA, State, and WM protocols (if more than one sampler, all should sign):

Date	Name	Signature	Company
01/10/24	Jake Ardelt		RUDE

DISTRIBUTION: WHITE/ORIGINAL - Stays with Sample, YELLOW - Returned to Client, PINK - Field Copy

Field Information Form v-3.1 06/20

2001

FIELD INFORMATION FORM

BUREAU VERITAS

WASTE MANAGEMENT

Site Name: TCC

Site No.:

Sample: SS14B (Sample ID)

This Waste Management Field Information Form is Required
This form is to be completed, in addition to any State Forms. The Field Form is submitted along with the Chain of Custody Forms that accompany the sample containers (i.e. with the cooler that is returned to the laboratory).

Laboratory Use Only/Lab ID:

PURGE INFO

PURGE DATE (MM DD YY)	PURGE TIME (2400 Hr Clock)	ELAPSED HRS (hrs:min)	WATER VOL IN CASING (Gallons)	ACTUAL VOL PURGED (Gallons)	WELL VOLs PURGED

Note: For Passive Sampling, replace "Water Vol in Casing" and "Well Vols Purged" w/ Water Vol in Tubing/Flow Cell and Tubing/Flow Cell Vols Purged. Mark Changes, Record field data below.

PURGE/SAMPLE EQUIPMENT

Purging and Sampling Equipment ... Dedicated: Y or N

Filter Device: Y or N — 0.45 µ or ____ µ (circle or fill in)

Purging Device: A-Submersible Pump, B-Peristaltic Pump, C-QED Bladder Pump, D-Bailer, E-Piston Pump, F-Dipper/Bottle

Sampling Device:

X-Other:

Filter Type: A-In-line Disposable, B-Pressure, C-Vacuum, X-Other:

Sample Tube Type: A-Teflon, B-Stainless Steel, C-PVC, D-Polypropylene, X-Other:

WELL DATA

Well Elevation (at TOC) (ft/msl)

Depth to Water (DTW) (from TOC) (ft)

Groundwater Elevation (GWE) (Site Datum, from TOC) (ft msl)

Total Well Depth (from TOC) (ft)

Stick Up (from ground elevation) (ft)

Casing ID (in)

Casing Material

Note: Total Depth, Stick Up, Casing ID, etc. are optional and can be from historical data, unless required by Site/Permit. Well Elevation, DTW, and GWE must be current, obtained from site.

STABILIZATION DATA (Optional)

Sample Time (2400 Hr Clock)	Rate/Unit	pH (std)	Conductance (SC/EC) (µmhos/cm @ 25°C)	Temp. (°C)	Turbidity (ntu)	D.O. (mg/L - ppm)	eH/ORP (mV)	DTW (ft)
		1st	1st					
		2nd	2nd					
		3rd	3rd					
		4th	4th					
Input Range for 3 consec. readings or Permit/State requirements:		+/-	+/-	+/-	+/-	+/-	+/-	

Stabilization Data Fields are Op *e. complete stabilization readings for parameters required by WM, Site, or State). These fields can be used where four (4) field measurements are required by State/Permit/Site. If a Data Log* *r Electronic format is used, fill in final readings below and submit electronic data separately to Site. If more fields above are needed, use separate sheet or form.*

FIELD DATA

SAMPLE DATE (MM DD YY)		CONDUCTANCE (µmhos/cm @ 25°C)	TEMP. (°C)	TURBIDITY (ntu)	DO (mg/L - ppm)	eH/ORP (mV)	Other: Units
01 10 24	7.	1.28	2.6	189	13.1k		

Final Field Readings are required *(i.e. record ... measurements, final stabilized readings, passive sample readings before sampling for all field parameters required by State/Permit/Site.)*

Sample Appearance: translucent Odor: N/O Color: Light Brown Other:

Weather Conditions (required daily, or as conditions change): -1°C Direction/Speed: 21 kg/h NW Outlook: Overcast Precipitation: Y or N

Specific Comments (including purge/well volume calculations if required):

FIELD COMMENTS

Flow

Sample In T1 10 W.Lvl: 0.65 * PSSDup taken *

T2 11 Depth: 0.05

T3 10

I certify that sampling procedures were in accordance with applicable EPA, State, and WM protocols (if more than one sampler, all should sign):

Date	Name	Signature	Company
01/10/24	Jake Albahl		RWDI
/ /			

DISTRIBUTION: WHITE/ORIGINAL - Stays with Sample, YELLOW - Returned to Client, PINK - Field Copy

Field Information Form v-3.1 06/20

0898

FIELD INFORMATION FORM

BUREAU VERITAS

WASTE MANAGEMENT

Site Name: TCLC

Site No.: [ ] - [ ] [ ]

Sample: SS15A (Sample ID)

This Waste Management Field Information Form is Required
This form is to be completed, in addition to any State Forms. The Field Form is submitted along with the Chain of Custody Forms that accompany the sample containers (i.e. with the cooler that is returned to the laboratory).

Laboratory Use Only/Lab ID:

PURGE INFO

PURGE DATE (MM DD YY)	PURGE TIME (2400 Hr Clock)	ELAPSED HRS (hrs:min)	WATER VOL IN CASING (Gallons)	ACTUAL VOL PURGED (Gallons)	WELL VOLs PURGED

Note: For Passive Sampling, replace "Water Vol in Casing" and "Well Vols Purged" w/ Water Vol in Tubing/Flow Cell and Tubing/Flow Cell Vols Purged. Mark Changes. Record field data below.

PURGE/SAMPLE EQUIPMENT

Purging and Sampling Equipment ... Dedicated: [Y] or [N]

Filter Device: [Y] or [N] [0.45 µ] or [ ] µ (circle or fill in)

Purging Device: [ ] A-Submersible Pump, B-Peristaltic Pump, C-QED Bladder Pump, D-Bailer, E-Piston Pump, F-Dipper/Bottle

Sampling Device: [ ]

X-Other:

Filter Type: [ ] A-In-line Disposable, B-Pressure, C-Vacuum, X-Other:

Sample Tube Type: [ ] A-Teflon, B-Stainless Steel, C-PVC, D-Polypropylene, X-Other:

WELL DATA

Well Elevation (at TOC): [ ] (ft/msl)

Depth to Water (DTW) (from TOC): [ ] (ft)

Groundwater Elevation (GWE) (Site Datum, from TOC): [ ] (ft msl)

Total Well Depth (from TOC): [ ] (ft)

Stick Up (from ground elevation): [ ] (ft)

Casing ID: [ ] (in)

Casing Material: [ ]

Note: Total Depth, Stick Up, Casing ID, etc. are optional and can be from historical data, unless required by Site/Permit. Well Elevation, DTW, and GWE must be current, obtained from site.

STABILIZATION DATA (Optional)

Sample Time (2400 Hr Clock)	Rate/Unit	pH (std)	Conductance (SC/EC) (µmhos/cm @ 25°C)	Temp. (°C)	Turbidity (ntu)	D.O. (mg/L - ppm)	eH/ORP (mV)	DTW (ft)
		1st	1st					
		2nd	2nd					
		3rd	3rd					
		4th	4th					
Input Range for 3 consec. readings or Permit/State requirements:		+/-	+/-	+/-	+/-	+/-	+/-	

Stabilization Data Fields are Optional *(i.e. complete stabilization readings for parameters required by WM, Site, or State). These fields can be used where four (4) field measurements are required by State/Permit/Site. If a Data Logger or other Electronic format is used, fill in final readings below and submit electronic data separately to Site. If more fields above are needed, use separate sheet or form.*

FIELD DATA

SAMPLE DATE (MM DD YY)	pH (std)	CONDUCTANCE (µmhos/cm @ 25°C)	TEMP. (°C)	TURBIDITY (ntu)	DO (mg/L - ppm)	eH/ORP (mV)	Other: Units
01 10 24	7.5	1.08	5.7	13.6	12.43		

Final Field Readings are required *(i.e. record field measurements, final stabilized readings, passive sample readings before sampling for all field parameters required by State/Permit/Site.)*

Sample Appearance: true Ivan Odor: n/o Color: Light Brown Other:

Weather Conditions (required daily, or as change): -1°C Direction/Speed: 21km/h NW Outlook: Overcast Precipitation: Y or N

Specific Comments (including purge/well vol ulations if required):

FIELD COMMENTS

Flow width: 1m

time @ 1m: T1 8 Depth: 0.15m

: T2 8

: T3 10

I certify that sampling procedures were in accordance with applicable EPA, State, and WM protocols (if more than one sampler, all should sign):

Date	Name	Signature	Company
01/10/24	Jake Attaball		RUPI
/ /			

DISTRIBUTION: WHITE/ORIGINAL - Stays with Sample, YELLOW - Returned to Client, PINK - Field Copy

Field Information Form v-3.1 06/20

0899

Maxxam Analytics Inc
6740 Campobello Road Mississauga, ON L5N 2L8
Phone: 905-817-5700 Fax: 905-817-5777 Toll Free: (800) 563-6266

CHAIN OF CUSTODY RECORD

INVOICE INFORMATION:		REPORT INFORMATION (if differs from invoice):		PROJECT INFORMATION:		MAXXAM JOB NUMBER:
Company Name:	Waste Management of Canada Corporation	Company Name:	RWDI AIR Inc.	Quotation #		
Contact Name:	Lisa Mertick	Contact Name:	Brent Langille	P.O. #:	12285756	
Address:	5768 Nauvoo Rd, Watford, ON N0M 2S0	Address:	4510 Rhodes Drive, Unit 530 Windsor, ON, N8W 5K5	Project #:	2402553.01	CHAIN OF CUSTODY # :
Phone:	519-849-5810 Fax: 519-849-5811	Phone:	519-823-1311 x 2618 Fax: 519-823-1316	Project Name:	Twin Creeks SW	TCEC-SWCM-JAN
Email:	lmertick@wm.com	Email:	BJL@RWDI.com, JCL@RWDI.com	Location:	Twin Creeks	
				Sampled By:	EW	

REGULATORY CRITERIA

Note: For regulated drinking water samples - please use the Drinking Water Chain of Custody Form

[ ] MISA Reg. 153 Sewer Use [ ] Other
[x] PWQO [ ] Table 1 [ ] Sanitary specify
[ ] Table 2 [ ] Storm
[ ] Table 3 Region
[ ] Reg. 558

Report Criteria on C of A ? [n]

SAMPLES MUST BE KEPT COOL (< 10 °C) FROM TIME OF SAMPLING UNTIL DELIVERY TO MAXXAM

ANALYSIS REQUESTED (Please be specific):

	Sample Identification	Date Sampled	Time Sampled	Matrix (GW, SW, Soil, etc.)	Regulated Drinking Water ? (Y / N)	Metals Field Filtered ? (Y / N)	ZP-ON-WLF-2024 TCLS - SW (POPLAR) QUARTERLY	# of Cont.	COMMENTS / TAT COMMENTS
1	SS14A	10-Jan-24	AM	SW	N	N	X	7	
2	SS14B	10-Jan-24	AM	SW	N	N	X	7	PSSWDUP taken
3	SS15A	10-Jan-24	AM	SW	N	N	X	7	
4	PSSWDUP	10-Jan-24	AM	SW	N	N	X	7	
5									
6									
7									
8									
9									
10									
11									
12									See lab addendum for lab group coding

TURNAROUND TIME (TAT) REQUIRED:

PLEASE PROVIDE ADVANCE NOTICE FOR RUSH PROJECTS

Regular (Standard) TAT:
[x] 5 to 7 Working Days

Rush TAT: Rush Confirmation # (call Lab for #)
[ ] 1 day [ ] 2 days [ ] 3 days
DATE Required: 19-Jan-24
TIME Required: 12:00 PM

Please note that TAT for certain tests such as BOD and Dioxins/Furans are > 5 days - contact your Project Manager for details.

NONT-2024-01-578

RELINQUISHED BY: (Signature/Print)	RECEIVED BY: (Signature/Print)	Date:	Time:	Laboratory Use Only
EW - January 10, 2024	BJJ SAMRA BASSOUA	2024/01/11	09:10	Temperature (°C) on Receipt 7.1/1.8, 11.1/3.1, 11.9/1.3 ice; Condition of Sample on Receipt [ ] OK [ ] SIF

*** MANDATORY SECTIONS IN GREY MUST BE FILLED OUT. AN INCOMPLETE CHAIN OF CUSTODY MAY RESULT IN ANALYTICAL TAT DELAYS**

White: Maxxam Yellow: Mail Pink: Client

Your P.O. #: 13254256
Your Project #: 2402553.01
Site#: 700
Site Location: ON07
Your C.O.C. #: TCEC-SWCM-JAN

Attention: Khalid Hussein - Twin Creeks

RWDI Inc.
600 Southgate Drive
Guelph, ON
Canada N1G 4P6

Report Date: 2024/01/18
Report #: R7994223
Version: 1 - Final

CERTIFICATE OF ANALYSIS

BUREAU VERITAS JOB #: C410286
Received: 2024/01/11, 09:10

Sample Matrix: Water
Samples Received: 4

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Analytical Method
ABN Compounds in Water by GC/MS	4	2024/01/11	2024/01/12	CAM SOP-00301	EPA 8270 m
Alkalinity	4	N/A	2024/01/12	CAM SOP-00448	SM 24 2320 B m
Biochemical Oxygen Demand (BOD)	4	2024/01/12	2024/01/17	CAM SOP-00427	SM 24 5210B m
Chloride by Automated Colourimetry	4	N/A	2024/01/12	CAM SOP-00463	SM 24 4500-Cl E m
Chemical Oxygen Demand	4	N/A	2024/01/12	CAM SOP-00416	SM 24 5220 D m
Conductance in Water - On-site	4	N/A	2024/01/16		
Conductivity	4	N/A	2024/01/12	CAM SOP-00414	SM 24 2510 m
Field Measured Dissolved Oxygen in Water	4	N/A	2024/01/16		
Dissolved Mercury in Water by CVAA	4	2024/01/12	2024/01/12	CAM SOP-00453	EPA 7470A m
Total Metals by ICPMS	4	N/A	2024/01/12	CAM SOP-00447	EPA 6020B m
Ammonia-N	4	N/A	2024/01/15	CAM SOP-00441	USGS I-2522-90 m
Nitrate & Nitrite as Nitrogen in Water (1)	4	N/A	2024/01/12	CAM SOP-00440	SM 24 4500-NO3I/NO2B
pH	4	2024/01/11	2024/01/12	CAM SOP-00413	SM 24th - 4500H+ B
Phenols (4AAP)	4	N/A	2024/01/12	CAM SOP-00444	OMOE E3179 m
Field Measured pH (2)	4	N/A	2024/01/16		Field pH Meter
Sulphate by Automated Turbidimetry	4	N/A	2024/01/12	CAM SOP-00464	SM 24 4500-SO42- E m
Total Dissolved Solids	4	2024/01/12	2024/01/15	CAM SOP-00428	SM 24 2540C m
Field Temperature (2)	4	N/A	2024/01/16		Field Thermometer
Total Kjeldahl Nitrogen in Water	4	2024/01/12	2024/01/15	CAM SOP-00938	OMOE E3516 m
Total Phosphorus (Colourimetric)	4	2024/01/12	2024/01/18	CAM SOP-00407	SM 24 4500-P I
Total Suspended Solids	4	2024/01/12	2024/01/15	CAM SOP-00428	SM 24 2540D m
Turbidity - On-site	4	N/A	2024/01/16		
Un-ionized Ammonia (3)	4	2024/01/11	2024/01/16	Auto Calc.	PWQO
Volatile Organic Compounds in Water	4	N/A	2024/01/16	CAM SOP-00228	EPA 8260D

Remarks:

Bureau Veritas is accredited to ISO/IEC 17025 for specific parameters on scopes of accreditation. Unless otherwise noted, procedures used by Bureau Veritas are based upon recognized Provincial, Federal or US method compendia such as CCME, EPA, APHA or the Quebec Ministry of Environment.

All work recorded herein has been done in accordance with procedures and practices ordinarily exercised by professionals in Bureau Veritas' profession using accepted testing methodologies, quality assurance and quality control procedures (except where otherwise agreed by the client and Bureau Veritas in

Bureau Veritas 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.bvna.com

Microbiology testing is conducted at 6660 Campobello Rd. Chemistry testing is conducted at 6740 Campobello Rd.

Your P.O. #: 13254256
Your Project #: 2402553.01
Site#: 700
Site Location: ON07
Your C.O.C. #: TCEC-SWCM-JAN

Attention: Khalid Hussein - Twin Creeks

RWDI Inc.
600 Southgate Drive
Guelph, ON
Canada N1G 4P6

Report Date: 2024/01/18
Report #: R7994223
Version: 1 - Final

CERTIFICATE OF ANALYSIS

BUREAU VERITAS JOB #: C410286
Received: 2024/01/11, 09:10

writing). All data is in statistical control and has met quality control and method performance criteria unless otherwise noted. All method blanks are reported; unless indicated otherwise, associated sample data are not blank corrected. Where applicable, unless otherwise noted, Measurement Uncertainty has not been accounted for when stating conformity to the referenced standard.

Bureau Veritas liability is limited to the actual cost of the requested analyses, unless otherwise agreed in writing. There is no other warranty expressed or implied. Bureau Veritas has been retained to provide analysis of samples provided by the Client using the testing methodology referenced in this report. Interpretation and use of test results are the sole responsibility of the Client and are not within the scope of services provided by Bureau Veritas, unless otherwise agreed in writing. Bureau Veritas is not responsible for the accuracy or any data impacts, that result from the information provided by the customer or their agent.

Solid sample results, except biota, are based on dry weight unless otherwise indicated. Organic analyses are not recovery corrected except for isotope dilution methods.
Results relate to samples tested. When sampling is not conducted by Bureau Veritas, results relate to the supplied samples tested.
This Certificate shall not be reproduced except in full, without the written approval of the laboratory.
Reference Method suffix “m” indicates test methods incorporate validated modifications from specific reference methods to improve performance.
* RPDs calculated using raw data. The rounding of final results may result in the apparent difference.
(1) Values for calculated parameters may not appear to add up due to rounding of raw data and significant figures.
(2) This is a field test, therefore, the results relate to items that were not analysed at Bureau Veritas.
(3) Un-ionized ammonia is calculated using the total ammonia result and field data provided by the client for pH and temperature.

Encryption Key

Please direct all questions regarding this Certificate of Analysis to:
Patricia Legette, Project Manager
Email: Patricia.Legette@bureauveritas.com
Phone# (905)817-5799

==========

Bureau Veritas has procedures in place to guard against improper use of the electronic signature and have the required "signatories", as per ISO/IEC 17025, signing the reports. For Service Group specific validation, please refer to the Validation Signatures page if included, otherwise available by request. For Department specific Analyst/Supervisor validation names, please refer to the Test Summary section if included, otherwise available by request. This report is authorized by Rodney Major, General Manager responsible for Ontario Environmental laboratory operations.

Bureau Veritas Job #: C410286
Report Date: 2024/01/18

RWDI Inc.
Client Project #: 2402553.01
Site Location: ON07
Your P.O. #: 13254256
Sampler Initials: EW

RESULTS OF ANALYSES OF WATER

Bureau Veritas ID		YCC212	YCC213		YCC214		
Sampling Date		2024/01/10	2024/01/10		2024/01/10		
COC Number		TCEC-SWCM-JAN	TCEC-SWCM-JAN		TCEC-SWCM-JAN		
	UNITS	SP1	SP2	QC Batch	SP4	RDL	QC Batch
Calculated Parameters							
Total Un-ionized Ammonia	mg/L	<0.00061	<0.00061	9156558	<0.00061	0.00061	9156558
Field Measurements							
Field Conductivity	uS/cm	626	733	ONSITE	569	N/A	ONSITE
Field Dissolved Oxygen	mg/L	10.93	14.62	ONSITE	10.31	N/A	ONSITE
Field Temperature	Celsius	3.0	4.6	ONSITE	5.3	N/A	ONSITE
Field Measured Field Turbidity	NTU	628	47.5	ONSITE	92.4	N/A	ONSITE
Field Measured pH	pH	7.0	7.2	ONSITE	6.9		ONSITE
Inorganics							
Total Ammonia-N	mg/L	<0.15	<0.15	9158852	0.15	0.15	9158852
Total BOD	mg/L	3	2	9158045	<2	2	9158045
Total Chemical Oxygen Demand (COD)	mg/L	22	20	9159111	16	4.0	9159111
Conductivity	umho/cm	670	810	9157547	630	1.0	9157547
Total Dissolved Solids	mg/L	420	490	9159147	405	10	9159147
Total Kjeldahl Nitrogen (TKN)	mg/L	<0.7	<0.7	9159052	<0.7	0.7	9159052
pH	pH	8.04	8.09	9157548	8.05		9157548
Phenols-4AAP	mg/L	<0.0010	<0.0010	9158364	<0.0010	0.0010	9158364
Total Phosphorus	mg/L	0.075	<0.030	9159108	0.036	0.030	9159108
Total Suspended Solids	mg/L	59	11	9159447	41	10	9158799
Dissolved Sulphate (SO4)	mg/L	120	210	9157601	160	1.0	9157601
Alkalinity (Total as CaCO3)	mg/L	170	130	9157539	130	1.0	9157539
Dissolved Chloride (Cl-)	mg/L	30	38	9157599	16	1.0	9157599
Nitrite (N)	mg/L	0.011	0.017	9156793	0.014	0.010	9157510
Nitrate (N)	mg/L	0.75	0.29	9156793	0.56	0.10	9157510

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
N/A = Not Applicable

Bureau Veritas 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.bvna.com

Microbiology testing is conducted at 6660 Campobello Rd. Chemistry testing is conducted at 6740 Campobello Rd.

Bureau Veritas Job #: C410286
Report Date: 2024/01/18

RWDI Inc.
Client Project #: 2402553.01
Site Location: ON07
Your P.O. #: 13254256
Sampler Initials: EW

RESULTS OF ANALYSES OF WATER

Bureau Veritas ID		YCC215		
Sampling Date		2024/01/10		
COC Number		TCEC-SWCM-JAN		
	UNITS	**SPDUP**	**RDL**	**QC Batch**
Calculated Parameters				
Total Un-ionized Ammonia	mg/L	<0.00061	0.00061	9156558
Field Measurements				
Field Conductivity	uS/cm	569	N/A	ONSITE
Field Dissolved Oxygen	mg/L	10.31	N/A	ONSITE
Field Temperature	Celsius	5.3	N/A	ONSITE
Field Measured Field Turbidity	NTU	92.4	N/A	ONSITE
Field Measured pH	pH	6.9		ONSITE
Inorganics				
Total Ammonia-N	mg/L	0.15	0.15	9158852
Total BOD	mg/L	<2	2	9158045
Total Chemical Oxygen Demand (COD)	mg/L	16	4.0	9159111
Conductivity	umho/cm	620	1.0	9157547
Total Dissolved Solids	mg/L	390	10	9159147
Total Kjeldahl Nitrogen (TKN)	mg/L	<0.7	0.7	9159052
pH	pH	7.97		9157548
Phenols-4AAP	mg/L	<0.0010	0.0010	9158364
Total Phosphorus	mg/L	0.043	0.030	9159108
Total Suspended Solids	mg/L	51	10	9159447
Dissolved Sulphate (SO4)	mg/L	150	1.0	9157601
Alkalinity (Total as CaCO3)	mg/L	140	1.0	9157539
Dissolved Chloride (Cl-)	mg/L	14	1.0	9157599
Nitrite (N)	mg/L	0.014	0.010	9156793
Nitrate (N)	mg/L	0.56	0.10	9156793

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
N/A = Not Applicable

Bureau Veritas 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.bvna.com

Microbiology testing is conducted at 6660 Campobello Rd. Chemistry testing is conducted at 6740 Campobello Rd.

Bureau Veritas Job #: C410286
Report Date: 2024/01/18

RWDI Inc.
Client Project #: 2402553.01
Site Location: ON07
Your P.O. #: 13254256
Sampler Initials: EW

ELEMENTS BY ATOMIC SPECTROSCOPY (WATER)

Bureau Veritas ID		YCC212	YCC213	YCC214	YCC215		
Sampling Date		2024/01/10	2024/01/10	2024/01/10	2024/01/10		
COC Number		TCEC-SWCM-JAN	TCEC-SWCM-JAN	TCEC-SWCM-JAN	TCEC-SWCM-JAN		
	UNITS	SP1	SP2	SP4	SPDUP	RDL	QC Batch
Metals							
Dissolved Mercury (Hg)	ug/L	<0.10	<0.10	<0.10	<0.10	0.10	9158086
Total Arsenic (As)	mg/L	0.002	<0.001	<0.001	0.001	0.001	9158112
Total Barium (Ba)	mg/L	0.045	0.041	0.040	0.038	0.005	9158112
Total Boron (B)	mg/L	0.31	0.29	0.05	0.05	0.02	9158112
Total Cadmium (Cd)	mg/L	<0.0001	<0.0001	<0.0001	<0.0001	0.0001	9158112
Total Calcium (Ca)	mg/L	75	83	78	82	0.2	9158112
Total Chromium (Cr)	mg/L	<0.005	<0.005	<0.005	<0.005	0.005	9158112
Total Copper (Cu)	mg/L	0.005	0.003	0.004	0.004	0.002	9158112
Total Iron (Fe)	mg/L	4.1	0.5	2.2	2.7	0.1	9158112
Total Lead (Pb)	mg/L	0.0013	<0.0005	0.0008	0.0010	0.0005	9158112
Total Magnesium (Mg)	mg/L	26	30	26	27	0.05	9158112
Total Nickel (Ni)	mg/L	0.007	0.003	0.004	0.005	0.001	9158112
Total Potassium (K)	mg/L	6.8	5.9	4.8	4.5	0.2	9158112
Total Sodium (Na)	mg/L	23	32	13	14	0.1	9158112
Total Zinc (Zn)	mg/L	0.01	<0.01	<0.01	<0.01	0.01	9158112

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

Bureau Veritas 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.bvna.com

Microbiology testing is conducted at 6660 Campobello Rd. Chemistry testing is conducted at 6740 Campobello Rd.

SEMI-VOLATILE ORGANICS BY GC-MS (WATER)

Bureau Veritas ID		YCC212	YCC213	YCC214	YCC215		
Sampling Date		2024/01/10	2024/01/10	2024/01/10	2024/01/10		
COC Number		TCEC-SWCM-JAN	TCEC-SWCM-JAN	TCEC-SWCM-JAN	TCEC-SWCM-JAN		
	UNITS	SP1	SP2	SP4	SPDUP	RDL	QC Batch
Semivolatile Organics							
Benzo(a)pyrene	ug/L	<0.20	<0.20	<0.20	<0.20	0.20	9157538
1,2-Dichlorobenzene	ug/L	<0.50	<0.50	<0.50	<0.50	0.50	9157538
1,3-Dichlorobenzene	ug/L	<0.50	<0.50	<0.50	<0.50	0.50	9157538
1,4-Dichlorobenzene	ug/L	<0.50	<0.50	<0.50	<0.50	0.50	9157538
Hexachlorobenzene	ug/L	<0.50	<0.50	<0.50	<0.50	0.50	9157538
1,2,4-Trichlorobenzene	ug/L	<0.50	<0.50	<0.50	<0.50	0.50	9157538
2,4-Dichlorophenol	ug/L	<0.30	<0.30	<0.30	<0.30	0.30	9157538
Pentachlorophenol	ug/L	<1.0	<1.0	<1.0	<1.0	1.0	9157538
Phenol	ug/L	<0.50	<0.50	<0.50	<0.50	0.50	9157538
2,4,6-Trichlorophenol	ug/L	<0.50	<0.50	<0.50	<0.50	0.50	9157538
Di-N-butyl phthalate	ug/L	<2.0	<2.0	<2.0	<2.0	2.0	9157538
Diethyl phthalate	ug/L	<1.0	<1.0	<1.0	<1.0	1.0	9157538
Dimethyl phthalate	ug/L	<1.0	<1.0	<1.0	<1.0	1.0	9157538
Surrogate Recovery (%)							
2,4,6-Tribromophenol	%	63	39	38	66		9157538
2-Fluorobiphenyl	%	64	64	65	67		9157538
2-Fluorophenol	%	29	12	16	24		9157538
D14-Terphenyl	%	101	105	104	105		9157538
D5-Nitrobenzene	%	87	89	86	87		9157538
D5-Phenol	%	27	17	19	23		9157538

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

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Microbiology testing is conducted at 6660 Campobello Rd. Chemistry testing is conducted at 6740 Campobello Rd.

Bureau Veritas Job #: C410286
Report Date: 2024/01/18

RWDI Inc.
Client Project #: 2402553.01
Site Location: ON07
Your P.O. #: 13254256
Sampler Initials: EW

VOLATILE ORGANICS BY GC/MS (WATER)

Bureau Veritas ID		YCC212	YCC213	YCC214	YCC215		
Sampling Date		2024/01/10	2024/01/10	2024/01/10	2024/01/10		
COC Number		TCEC-SWCM-JAN	TCEC-SWCM-JAN	TCEC-SWCM-JAN	TCEC-SWCM-JAN		
	UNITS	SP1	SP2	SP4	SPDUP	RDL	QC Batch
Volatile Organics							
Benzene	ug/L	<0.20	<0.20	<0.20	<0.20	0.20	9158358
1,4-Dichlorobenzene	ug/L	<0.40	<0.40	<0.40	<0.40	0.40	9158358
Ethylbenzene	ug/L	<0.20	<0.20	<0.20	<0.20	0.20	9158358
Methylene Chloride(Dichloromethane)	ug/L	<2.0	<2.0	<2.0	<2.0	2.0	9158358
Toluene	ug/L	<0.20	<0.20	<0.20	<0.20	0.20	9158358
Vinyl Chloride	ug/L	<0.20	<0.20	<0.20	<0.20	0.20	9158358
p+m-Xylene	ug/L	<0.20	<0.20	<0.20	<0.20	0.20	9158358
o-Xylene	ug/L	<0.20	<0.20	<0.20	<0.20	0.20	9158358
Total Xylenes	ug/L	<0.20	<0.20	<0.20	<0.20	0.20	9158358
Surrogate Recovery (%)							
4-Bromofluorobenzene	%	100	100	100	100		9158358
D4-1,2-Dichloroethane	%	112	112	111	112		9158358
D8-Toluene	%	88	88	87	87		9158358

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

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GENERAL COMMENTS

Each temperature is the average of up to three cooler temperatures taken at receipt

Package 1	8.0°C
Package 2	11.7°C
Package 3	11.0°C

Sample YCC214 [SP4] : TKN < Ammonia: Both values fall within the method uncertainty for duplicates and are likely equivalent.

Sample YCC215 [SPDUP] : TKN < Ammonia: Both values fall within the method uncertainty for duplicates and are likely equivalent.

Results relate only to the items tested.

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Microbiology testing is conducted at 6660 Campobello Rd. Chemistry testing is conducted at 6740 Campobello Rd.

QUALITY ASSURANCE REPORT

			Matrix Spike		SPIKED BLANK		Method Blank		RPD		QC Standard	
QC Batch	Parameter	Date	% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits	% Recovery	QC Limits
9157538	2,4,6-Tribromophenol	2024/01/12	115	10 - 130	108	10 - 130	84	%				
9157538	2-Fluorobiphenyl	2024/01/12	76	30 - 130	72	30 - 130	83	%				
9157538	2-Fluorophenol	2024/01/12	45	10 - 130	46	10 - 130	38	%				
9157538	D14-Terphenyl	2024/01/12	99	30 - 130	111	30 - 130	98	%				
9157538	D5-Nitrobenzene	2024/01/12	87	30 - 130	93	30 - 130	88	%				
9157538	D5-Phenol	2024/01/12	29	10 - 130	32	10 - 130	27	%				
9158358	4-Bromofluorobenzene	2024/01/16	102	70 - 130	102	70 - 130	104	%				
9158358	D4-1,2-Dichloroethane	2024/01/16	103	70 - 130	100	70 - 130	108	%				
9158358	D8-Toluene	2024/01/16	104	70 - 130	104	70 - 130	88	%				
9156793	Nitrate (N)	2024/01/12	94	80 - 120	96	80 - 120	<0.10	mg/L	NC (1)	20		
9156793	Nitrite (N)	2024/01/12	103	80 - 120	103	80 - 120	<0.010	mg/L	NC (1)	20		
9157510	Nitrate (N)	2024/01/12	97 (2)	80 - 120	98	80 - 120	<0.10	mg/L	0.37 (3)	20		
9157510	Nitrite (N)	2024/01/12	104 (2)	80 - 120	103	80 - 120	<0.010	mg/L	4.4 (3)	20		
9157538	1,2,4-Trichlorobenzene	2024/01/12	41	30 - 130	37	30 - 130	<0.50	ug/L	NC (1)	40		
9157538	1,2-Dichlorobenzene	2024/01/12	38	30 - 130	35	30 - 130	<0.50	ug/L	NC (1)	40		
9157538	1,3-Dichlorobenzene	2024/01/12	32	30 - 130	31	30 - 130	<0.50	ug/L	NC (1)	40		
9157538	1,4-Dichlorobenzene	2024/01/12	33	30 - 130	32	30 - 130	<0.50	ug/L	NC (1)	40		
9157538	2,4,6-Trichlorophenol	2024/01/12	97	10 - 130	89	10 - 130	<0.50	ug/L	NC (1)	40		
9157538	2,4-Dichlorophenol	2024/01/12	95	10 - 130	87	10 - 130	<0.30	ug/L	NC (1)	40		
9157538	Benzo(a)pyrene	2024/01/12	109	30 - 130	107	30 - 130	<0.20	ug/L	NC (1)	40		
9157538	Diethyl phthalate	2024/01/12	90	30 - 130	94	30 - 130	<1.0	ug/L	NC (1)	40		
9157538	Dimethyl phthalate	2024/01/12	85	30 - 130	87	30 - 130	<1.0	ug/L	NC (1)	40		
9157538	Di-N-butyl phthalate	2024/01/12	99	30 - 130	103	30 - 130	<2.0	ug/L	NC (1)	40		
9157538	Hexachlorobenzene	2024/01/12	101	30 - 130	102	30 - 130	<0.50	ug/L	NC (1)	40		
9157538	Pentachlorophenol	2024/01/12	109	10 - 130	106	10 - 130	<1.0	ug/L	NC (1)	40		
9157538	Phenol	2024/01/12	31	10 - 130	36	10 - 130	<0.50	ug/L	NC (1)	40		
9157539	Alkalinity (Total as CaCO3)	2024/01/12			94	85 - 115	<1.0	mg/L	0.52 (1)	20		
9157547	Conductivity	2024/01/12			101	85 - 115	<1.0	umho/cm	0.11 (1)	10		
9157548	pH	2024/01/12			102	98 - 103			0.44 (1)	N/A		

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Microbiology testing is conducted at 6660 Campobello Rd. Chemistry testing is conducted at 6740 Campobello Rd.

QUALITY ASSURANCE REPORT(CONT'D)

			Matrix Spike		SPIKED BLANK		Method Blank		RPD		QC Standard	
QC Batch	Parameter	Date	% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits	% Recovery	QC Limits
9157599	Dissolved Chloride (Cl-)	2024/01/12	85 (4)	80 - 120	96	80 - 120	<1.0	mg/L	0.15 (5)	20		
9157601	Dissolved Sulphate (SO4)	2024/01/12	NC (4)	75 - 125	97	80 - 120	<1.0	mg/L	0.058 (5)	20		
9158045	Total BOD	2024/01/17					<2	mg/L	NC (1)	30	93	80 - 120
9158086	Dissolved Mercury (Hg)	2024/01/12	100	75 - 125	100	80 - 120	<0.10	ug/L	NC (1)	20		
9158112	Total Arsenic (As)	2024/01/12	99 (6)	80 - 120	102	80 - 120	<0.001	mg/L	2.3 (7)	20		
9158112	Total Barium (Ba)	2024/01/12	99 (6)	80 - 120	97	80 - 120	<0.005	mg/L	0.17 (7)	20		
9158112	Total Boron (B)	2024/01/12	99 (6)	80 - 120	95	80 - 120	<0.02	mg/L	3.0 (7)	20		
9158112	Total Cadmium (Cd)	2024/01/12	97 (6)	80 - 120	95	80 - 120	<0.0001	mg/L	NC (7)	20		
9158112	Total Calcium (Ca)	2024/01/12	NC (6)	80 - 120	96	80 - 120	<0.2	mg/L	3.3 (7)	20		
9158112	Total Chromium (Cr)	2024/01/12	98 (6)	80 - 120	99	80 - 120	<0.005	mg/L	NC (7)	20		
9158112	Total Copper (Cu)	2024/01/12	96 (6)	80 - 120	94	80 - 120	<0.002	mg/L	1.8 (7)	20		
9158112	Total Iron (Fe)	2024/01/12	102 (6)	80 - 120	100	80 - 120	<0.1	mg/L	1.7 (7)	20		
9158112	Total Lead (Pb)	2024/01/12	93 (6)	80 - 120	94	80 - 120	<0.0005	mg/L	0.22 (7)	20		
9158112	Total Magnesium (Mg)	2024/01/12	NC (6)	80 - 120	103	80 - 120	<0.05	mg/L	2.2 (7)	20		
9158112	Total Nickel (Ni)	2024/01/12	94 (6)	80 - 120	99	80 - 120	<0.001	mg/L	5.2 (7)	20		
9158112	Total Potassium (K)	2024/01/12	108 (6)	80 - 120	102	80 - 120	<0.2	mg/L	1.1 (7)	20		
9158112	Total Sodium (Na)	2024/01/12	103 (6)	80 - 120	107	80 - 120	<0.1	mg/L	5.0 (7)	20		
9158112	Total Zinc (Zn)	2024/01/12	98 (6)	80 - 120	101	80 - 120	<0.01	mg/L	4.2 (7)	20		
9158358	1,4-Dichlorobenzene	2024/01/16	113	70 - 130	106	70 - 130	<0.40	ug/L	NC (1)	30		
9158358	Benzene	2024/01/16	97	70 - 130	91	70 - 130	<0.20	ug/L	NC (1)	30		
9158358	Ethylbenzene	2024/01/16	99	70 - 130	96	70 - 130	<0.20	ug/L	NC (1)	30		
9158358	Methylene Chloride(Dichloromethane)	2024/01/16	104	70 - 130	94	70 - 130	<2.0	ug/L	NC (1)	30		
9158358	o-Xylene	2024/01/16	89	70 - 130	90	70 - 130	<0.20	ug/L	NC (1)	30		
9158358	p+m-Xylene	2024/01/16	107	70 - 130	104	70 - 130	<0.20	ug/L	NC (1)	30		
9158358	Toluene	2024/01/16	102	70 - 130	96	70 - 130	<0.20	ug/L	NC (1)	30		
9158358	Total Xylenes	2024/01/16					<0.20	ug/L	NC (1)	30		
9158358	Vinyl Chloride	2024/01/16	91	70 - 130	86	70 - 130	<0.20	ug/L				
9158364	Phenols-4AAP	2024/01/12	105	80 - 120	100	80 - 120	<0.0010	mg/L	NC (1)	20		
9158799	Total Suspended Solids	2024/01/15			95	80 - 120	<10	mg/L	NC (1)	20		
9158852	Total Ammonia-N	2024/01/15	98 (8)	75 - 125	96	80 - 120	<0.15	mg/L	NC (9)	20		

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QUALITY ASSURANCE REPORT(CONT'D)

			Matrix Spike		SPIKED BLANK		Method Blank		RPD		QC Standard	
QC Batch	Parameter	Date	% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits	% Recovery	QC Limits
9159052	Total Kjeldahl Nitrogen (TKN)	2024/01/15	100 (10)	80 - 120	101	80 - 120	<0.7	mg/L	NC (11)	20	92	80 - 120
9159108	Total Phosphorus	2024/01/18	100 (10)	80 - 120	102	80 - 120	<0.030	mg/L	1.1 (11)	25	103	80 - 120
9159111	Total Chemical Oxygen Demand (COD)	2024/01/12	96	80 - 120	107	80 - 120	<4.0	mg/L	9.5 (1)	20		
9159147	Total Dissolved Solids	2024/01/15			98	80 - 120	<10	mg/L	5.9 (12)	20		

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QUALITY ASSURANCE REPORT(CONT'D)

			Matrix Spike		SPIKED BLANK		Method Blank		RPD		QC Standard	
QC Batch	Parameter	Date	% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits	% Recovery	QC Limits
9159447	Total Suspended Solids	2024/01/15			98	80 - 120	<10	mg/L	NC (1)	20		

N/A = Not Applicable

Duplicate: Paired analysis of a separate portion of the same sample. Used to evaluate the variance in the measurement.

Matrix Spike: A sample to which a known amount of the analyte of interest has been added. Used to evaluate sample matrix interference.

QC Standard: A sample of known concentration prepared by an external agency under stringent conditions. Used as an independent check of method accuracy.

Spiked Blank: A blank matrix sample to which a known amount of the analyte, usually from a second source, has been added. Used to evaluate method accuracy.

Method Blank: A blank matrix containing all reagents used in the analytical procedure. Used to identify laboratory contamination.

Surrogate: A pure or isotopically labeled compound whose behavior mirrors the analytes of interest. Used to evaluate extraction efficiency.

NC (Matrix Spike): The recovery in the matrix spike was not calculated. The relative difference between the concentration in the parent sample and the spike amount was too small to permit a reliable recovery calculation (matrix spike concentration was less than the native sample concentration)

NC (Duplicate RPD): The duplicate RPD was not calculated. The concentration in the sample and/or duplicate was too low to permit a reliable RPD calculation (absolute difference <= 2x RDL).

(1) Duplicate Parent ID

(2) Matrix Spike Parent ID [YCC214-02]

(3) Duplicate Parent ID [YCC214-02]

(4) Matrix Spike Parent ID [YCC215-02]

(5) Duplicate Parent ID [YCC215-02]

(6) Matrix Spike Parent ID [YCC212-05]

(7) Duplicate Parent ID [YCC212-05]

(8) Matrix Spike Parent ID [YCC212-09]

(9) Duplicate Parent ID [YCC212-09]

(10) Matrix Spike Parent ID [YCC212-06]

(11) Duplicate Parent ID [YCC212-06]

(12) Duplicate Parent ID [YCC213-03]

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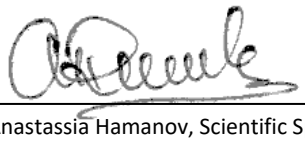
Microbiology testing is conducted at 6660 Campobello Rd. Chemistry testing is conducted at 6740 Campobello Rd.

Bureau Veritas Job #: C410286
Report Date: 2024/01/18

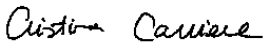
RWDI Inc.
Client Project #: 2402553.01
Site Location: ON07
Your P.O. #: 13254256
Sampler Initials: EW

VALIDATION SIGNATURE PAGE

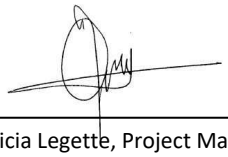
The analytical data and all QC contained in this report were reviewed and validated by:



Anastassia Hamanov, Scientific Specialist



Cristina Carriere, Senior Scientific Specialist



Patricia Legette, Project Manager

Bureau Veritas has procedures in place to guard against improper use of the electronic signature and have the required "signatories", as per ISO/IEC 17025, signing the reports. For Service Group specific validation, please refer to the Validation Signatures page if included, otherwise available by request. For Department specific Analyst/Supervisor validation names, please refer to the Test Summary section if included, otherwise available by request. This report is authorized by Rodney Major, General Manager responsible for Ontario Environmental laboratory operations.

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Microbiology testing is conducted at 6660 Campobello Rd. Chemistry testing is conducted at 6740 Campobello Rd.

BUREAU VERITAS

FIELD INFORMATION FORM

WASTE MANAGEMENT

Site Name: TCFC

Site No.: F

Sample: SP1 (Sample ID)

This Waste Management Field Information Form is Required
This form is to be completed, in addition to any State Forms. The Field Form is submitted along with the Chain of Custody Forms that accompany the sample containers (i.e. with the cooler that is returned to the laboratory).

Laboratory Use Only/Lab ID:

PURGE INFO

PURGE DATE (MM DD YY)	PURGE TIME (2400 Hr Clock)	ELAPSED HRS (hrs:min)	WATER VOL IN CASING (Gallons)	ACTUAL VOL PURGED (Gallons)	WELL VOLs PURGED

Note: For Passive Sampling, replace "Water Vol in Casing" and "Well Vols Purged" w/ Water Vol in Tubing/Flow Cell and Tubing/Flow Cell Vols Purged. Mark Changes, Record field data below.

PURGE/SAMPLE EQUIPMENT

Purging and Sampling Equipment ... Dedicated: Y or N

Purging Device:
Sampling Device:
X-Other:

A-Submersible Pump, B-Peristaltic Pump, C-QED Bladder Pump, D-Bailer, E-Piston Pump, F-Dipper/Bottle

Filter Device: Y or N — 0.45 µ or ____ µ (circle or fill in)

Filter Type: A (A-In-line Disposable, B-Pressure, C-Vacuum, X-Other:)

Sample Tube Type: (A-Teflon, B-Stainless Steel, C-PVC, D-Polypropylene, X-Other:)

WELL DATA

Well Elevation (at TOC) (ft/msl) | Depth to Water (DTW) (from TOC) (ft) | Groundwater Elevation (GWE) (Site Datum, from TOC) (ft msl)

Total Well Depth (from TOC) (ft) | Stick Up (from ground elevation) (ft) | Casing ID (in) | Casing Material

Note: Total Depth, Stick Up, Casing ID, etc. are optional and can be from historical data, unless required by Site/Permit. Well Elevation, DTW, and GWE must be current, obtained from site.

STABILIZATION DATA (Optional)

Sample Time (2400 Hr Clock)	Rate/Unit	pH (std)	Conductance (SC/EC) (µmhos/cm @ 25°C)	Temp. (°C)	Turbidity (ntu)	D.O. (mg/L - ppm)	eH/ORP (mV)	DTW (ft)
		1st	1st					
		2nd	2nd					
		3rd	3rd					
		4th	4th					
Input Range for 3 consec. readings or Permit/State requirements:		+/-	+/-	+/-	+/-	+/-	+/-	

Stabilization Data Fields are Optional *(i.e. complete stabilization readings for parameters required by WM, Site, or State). These fields can be used where four (4) field measurements are required by State/Permit/Site. If a Data Logger or other Electronic format is used, fill in final readings below and submit electronic data separately to Site. If more fields above are needed, use separate sheet or form.*

FIELD DATA

SAMPLE DATE (MM DD YY)	pH (std)	CONDUCTANCE (µmhos/cm @ 25°C)	TEMP. (°C)	TURBIDITY (ntu)	DO (mg/L - ppm)	eH/ORP (mV)	Other: Units
01 10 24	7.06	626	3.6	~~628~~	10.93		

Final Field Readings are required *(i.e. record field measurements, final stabilized readings, passive sample readings before sampling for all field parameters required by State/Permit/Site.)*

FIELD COMMENTS

Sample Appearance: cloudy — Odor: N/O — Color: brown — Other:

Weather Conditions (required daily, or as condi... nge): -1 — Direction/Speed: 30kmh NW — Outlook: overcast — Precipitation: Y or N

Specific Comments (including purge/well volume ... tions if required):

Time @ 1m: width: 1.5m
2 sec depth: 15cm
3 sec
2 sec

I certify that sampling procedures were in accordance with applicable EPA, State, and WM protocols (if more than one sampler, all should sign):

Date	Name	Signature	Company
01/10/23	Eric Wilson	E. Wilson	RWDI
/ /			

DISTRIBUTION: WHITE/ORIGINAL - Stays with Sample, YELLOW - Returned to Client, PINK - Field Copy

Field Information Form v 3.1 06/20

2009

FIELD INFORMATION FORM

BUREAU VERITAS

WASTE MANAGEMENT

Site Name: FCEC

Site No.:

Sample: SP2 (Sample ID)

This Waste Management Field Information Form is Required
This form is to be completed, in addition to any State Forms. The Field Form is submitted along with the Chain of Custody Forms that accompany the sample containers (i.e. with the cooler that is returned to the laboratory).

Laboratory Use Only/Lab ID:

PURGE INFO

PURGE DATE (MM DD YY)	PURGE TIME (2400 Hr Clock)	ELAPSED HRS (hrs:min)	WATER VOL IN CASING (Gallons)	ACTUAL VOL PURGED (Gallons)	WELL VOLs PURGED

Note: For Passive Sampling, replace "Water Vol in Casing" and "Well Vols Purged" w/ Water Vol in Tubing/Flow Cell and Tubing/Flow Cell Vols Purged. Mark Changes, Record field data below.

PURGE/SAMPLE EQUIPMENT

Purging and Sampling Equipment ... Dedicated: [Y] or [N]

Purging Device:

Sampling Device:

X-Other:

A-Submersible Pump, B-Peristaltic Pump, C-QED Bladder Pump, D-Bailer, E-Piston Pump, F-Dipper/Bottle

Filter Device: [Y] or [N] 0.45 or [ ] µ (circle or fill in)

Filter Type: A (A-In-line Disposable, B-Pressure, C-Vacuum, X-Other:)

Sample Tube Type: (A-Teflon, B-Stainless Steel, C-PVC, D-Polypropylene, X-Other:)

WELL DATA

Well Elevation (at TOC) (ft/msl)

Depth to Water (DTW) (from TOC) (ft)

Groundwater Elevation (GWE) (Site Datum, from TOC) (ft msl)

Total Well Depth (from TOC) (ft)

Stick Up (from ground elevation) (ft)

Casing ID (in)

Casing Material

Note: Total Depth, Stick Up, Casing ID, etc. are optional and can be from historical data, unless required by Site/Permit. Well Elevation, DTW, and GWE must be current, obtained from site.

STABILIZATION DATA (Optional)

Sample Time (2400 Hr Clock)	Rate/Unit	pH (std)	Conductance (SC/EC) (µmhos/cm @ 25°C)	Temp. (°C)	Turbidity (ntu)	D.O. (mg/L - ppm)	eH/ORP (mV)	DTW (ft)
	1st	1st	1st					
	2nd	2nd	2nd					
	3rd	3rd	3rd					
	4th	4th	4th					
Input Range for 3 consec. readings or Permit/State requirements:		+/-	+/-	+/-	+/-	+/-	+/-	

Stabilization Data Fields are Optional *(i.e. complete stabilization readings for parameters required by WM, Site, or State). These fields can be used where four (4) field measurements are required by State/Permit/Site. If a Data Logger or other Electronic format is used, fill in final readings below and submit electronic data separately to Site. If more fields above are needed, use separate sheet or form.*

FIELD DATA

SAMPLE DATE (MM DD YY)	pH (std)	CONDUCTANCE (µmhos/cm @ 25°C)	TEMP. (°C)	TURBIDITY (ntu)	DO (mg/L - ppm)	eH/ORP (mV)	Other: Units
01 10 24	[redacted]	µS 733	4.6	47.5	14.62		

Final Field Readings are required *(i.e. recommended measurements, final stabilized readings, passive sample readings before sampling for all field parameters required by State/Permit/Site.)*

Sample Appearance: Clear

Odor: N/O

Color: yellow

Other:

Weather Conditions (required daily, or as conditions change):

Direction/Speed: 3Kmh NW

Outlook: overcast

Precipitation: Y or (N)

FIELD COMMENTS

Specific Comments (including purge/well volume calculations if required):

Time @ 1m: 90 sec, 85 sec, 85 sec

width: 1m

depth: 20cm

I certify that sampling procedures were in accordance with applicable EPA, State, and WM protocols (if more than one sampler, all should sign):

Date	Name	Signature	Company
01/10/24	Eric Wilson	E Wilson	RWDI

DISTRIBUTION: WHITE/ORIGINAL - Stays with Sample, YELLOW - Returned to Client, PINK - Field Copy

Field Information Form v.3.1 06/20

2010

FIELD INFORMATION FORM

BUREAU VERITAS

WASTE MANAGEMENT

Site Name: ICEC

Site No.:

Sample: SP4 (Sample ID)

This Waste Management Field Information Form is Required
This form is to be completed, in addition to any State Forms. The Field Form is submitted along with the Chain of Custody Forms that accompany the sample containers (i.e. with the cooler that is returned to the laboratory).

Laboratory Use Only/Lab ID:

PURGE INFO

PURGE DATE (MM DD YY)	PURGE TIME (2400 Hr Clock)	ELAPSED HRS (hrs:min)	WATER VOL IN CASING (Gallons)	ACTUAL VOL PURGED (Gallons)	WELL VOLs PURGED

Note: For Passive Sampling, replace "Water Vol in Casing" and "Well Vols Purged" w/ Water Vol in Tubing/Flow Cell and Tubing/Flow Cell Vols Purged. Mark Changes, Record field data below.

PURGE/SAMPLE EQUIPMENT

Purging and Sampling Equipment ... Dedicated: Y or N

Purging Device: A-Submersible Pump, B-Peristaltic Pump, C-QED Bladder Pump, D-Bailer, E-Piston Pump, F-Dipper/Bottle

Sampling Device:

X-Other:

Filter Device: Y or N — 0.45 µ or ____ µ (circle or fill in)

Filter Type: A — A-In-line Disposable, B-Pressure, C-Vacuum, X-Other:

Sample Tube Type: A-Teflon, B-Stainless Steel, C-PVC, D-Polypropylene, X-Other:

WELL DATA

Well Elevation (at TOC) (ft/msl)	Depth to Water (DTW) (from TOC) (ft)	Groundwater Elevation (GWE) (Site Datum, from TOC) (ft msl)

Total Well Depth (from TOC) (ft)	Stick Up (from ground elevation) (ft)	Casing ID (in)	Casing Material

Note: Total Depth, Stick Up, Casing ID, etc. are optional and can be from historical data, unless required by Site/Permit. Well Elevation, DTW, and GWE must be current, obtained from site.

STABILIZATION DATA (Optional)

Sample Time (2400 Hr Clock)	Rate/Unit	pH (std)	Conductance (SC/EC) (µmhos/cm @ 25°C)	Temp. (°C)	Turbidity (ntu)	D.O. (mg/L - ppm)	eH/ORP (mV)	DTW (ft)
		1st	1st					
		2nd	2nd					
		3rd	3rd					
		4th	4th					
Input Range for 3 consec. readings or Permit/State requirements:		+/-	+/-	+/-	+/-	+/-	+/-	

Stabilization Data Fields are Optional *(i.e. complete stabilization readings for parameters required by WM, Site, or State). These fields can be used where four (4) field measurements are required by State/Permit/Site. If a Data Logger or other Electronic format is used, fill in final readings below and submit electronic data separately to Site. If more fields above are needed, use separate sheet or form.*

FIELD DATA

SAMPLE DATE (MM DD YY)	pH (std)	CONDUCTANCE (µmhos/cm @ 25°C)	TEMP. (°C)	TURBIDITY (ntu)	DO (mg/L - ppm)	eH/ORP (mV)	Other: Units
01 10 24	6.9	569	5.3	92.4	10.31		

Final Field Readings are required *(i.e. record field measurements, final stabilized readings, passive sample readings before sampling for all field parameters required by State/Permit/Site.)*

Sample Appearance: clear — Odor: NIO — Color: yellow — Other:

Weather Conditions (required daily, or as conditions change): -1 — Direction/Speed: 30 Kmh NW — Outlook: Overcast — Precipitation: Y or N

Specific Comments (including purge/well volume calculations if required):

FIELD COMMENTS

time @ 1m: width : 2m
30 sec depth : 30cm
20 sec
25 sec "SPDUP" collected

I certify that sampling procedures were in accordance with applicable EPA, State, and WM protocols (if more than one sampler, all should sign):

Date	Name	Signature	Company
01/10/24	Eric Wilson	E. Wilson	EWDI

DISTRIBUTION: WHITE/ORIGINAL - Stays with Sample, YELLOW - Returned to Client, PINK - Field Copy

Field Information Form v-3.1 06/20

2011

Maxxam Analytics Inc

6740 Campobello Road Mississauga, ON L5N 2L8
Phone: 905-817-5700 Fax: 905-817-5777 Toll Free: (800) 563-6266

CHAIN OF CUSTODY RECORD

INVOICE INFORMATION:		REPORT INFORMATION (if differs from invoice):		PROJECT INFORMATION:		MAXXAM JOB NUMBER:
Company Name:	Waste Management of Canada Corporation	Company Name:	RWDI AIR Inc.	Quotation #		
Contact Name:	Lisa Mertick	Contact Name:	Brent Langille	P.O. #:	12285756	
Address:	5768 Nauvoo Rd, Watford, ON N0M 2S0	Address:	4510 Rhodes Drive, Unit 530 Windsor, ON, N8W 5K5	Project #:	2402553.01	CHAIN OF CUSTODY # :
Phone:	519-849-5810 Fax: 519-849-5811	Phone:	519-823-1311 x 2618 Fax: 519-823-1316	Project Name:	Twin Creeks SW	TCEC-SWCM-JAN
Email:	lmertick@wm.com	Email:	BJL@RWDI.com, JCL@RWDI.com	Location:	Twin Creeks	
				Sampled By:	EW	

REGULATORY CRITERIA

Note: For regulated drinking water samples - please use the Drinking Water Chain of Custody Form

[ ] MISA Reg. 153 Sewer Use [ ] Other
[x] PWQO [ ] Table 1 [ ] Sanitary
[ ] Table 2 [ ] Storm
[ ] Table 3 Region _____ specify
[ ] Reg. 558

Report Criteria on C of A ? [n]

SAMPLES MUST BE KEPT COOL (< 10 °C) FROM TIME OF SAMPLING UNTIL DELIVERY TO MAXXAM

ANALYSIS REQUESTED (Please be specific):

	Sample Identification	Date Sampled	Time Sampled	Matrix (GW, SW, Soil, etc.)	Regulated Drinking Water ? (Y / N)	Metals Field Filtered ? (Y / N)	ZL-ON-WLF-2024 TCLS - SW (POND OUTLETS) QUARTERLY	# of Cont.	COMMENTS / TAT COMMENTS
1	SP1	10-Jan-24	AM	SW	N	N	X	12	
2	SP2	10-Jan-24	PM	SW	N	N	X	12	
3	SP4	10-Jan-24	PM	SW	N	N	X	12	
4	SPDUP	10-Jan-24	PM	SW	N	N	X	12	
5									
6									
7									
8									
9									
10									
11									
12									

TURNAROUND TIME (TAT) REQUIRED:

PLEASE PROVIDE ADVANCE NOTICE FOR RUSH PROJECTS

Regular (Standard) TAT:
[x] 5 to 7 Working Days

Rush TAT: Rush Confirmation # _____ (call Lab for #)
[ ] 1 day [ ] 2 days [ ] 3 days
DATE Required: 19-Jan-24
TIME Required: 12:00 PM

Please note that TAT for certain tests such as BOD and Dioxins/Furans are > 5 days - contact your Project Manager for details.

NONT-2024-01-579

All samples for Hg field filtered @ 45um
See lab addendum for lab group coding

RELINQUISHED BY: (Signature/Print)	RECEIVED BY: (Signature/Print)	Date:	Time:	Laboratory Use Only
EW - January 10, 2024	[illegible] SATIMA BASSOLA	2024/01/11	09:10	Temperature (°C) on Receipt: 7/9/8, 11/13/11, 11/9/13 Condition of Sample on Receipt: Noice [ ] OK [ ] SIF

*** MANDATORY SECTIONS IN GREY MUST BE FILLED OUT. AN INCOMPLETE CHAIN OF CUSTODY MAY RESULT IN ANALYTICAL TAT DELAYS**

White: Maxxam Yellow: Mail Pink: Client

Your P.O. #: 13254256
Your Project #: 2402553.01
Site#: 700
Site Location: ON07
Your C.O.C. #: TCEC-SWCM-JAN

Attention: Khalid Hussein - Twin Creeks

RWDI Inc.
600 Southgate Drive
Guelph, ON
Canada N1G 4P6

Report Date: 2024/01/18
Report #: R7994295
Version: 1 - Final

CERTIFICATE OF ANALYSIS

BUREAU VERITAS JOB #: C410292
Received: 2024/01/11, 09:10

Sample Matrix: Water
Samples Received: 2

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Analytical Method
ABN Compounds in Water by GC/MS	2	2024/01/15	2024/01/16	CAM SOP-00301	EPA 8270 m
Alkalinity	2	N/A	2024/01/12	CAM SOP-00448	SM 24 2320 B m
Biochemical Oxygen Demand (BOD)	2	2024/01/12	2024/01/17	CAM SOP-00427	SM 24 5210B m
Chloride by Automated Colourimetry	2	N/A	2024/01/12	CAM SOP-00463	SM 24 4500-Cl E m
Chemical Oxygen Demand	2	N/A	2024/01/12	CAM SOP-00416	SM 24 5220 D m
Conductance in Water - On-site	2	N/A	2024/01/18		
Conductivity	2	N/A	2024/01/12	CAM SOP-00414	SM 24 2510 m
Field Measured Dissolved Oxygen in Water	2	N/A	2024/01/18		
Dissolved Mercury in Water by CVAA	2	2024/01/15	2024/01/15	CAM SOP-00453	EPA 7470A m
Total Metals by ICPMS	2	N/A	2024/01/16	CAM SOP-00447	EPA 6020B m
Ammonia-N	2	N/A	2024/01/15	CAM SOP-00441	USGS I-2522-90 m
Nitrate & Nitrite as Nitrogen in Water (1)	2	N/A	2024/01/12	CAM SOP-00440	SM 24 4500-NO3I/NO2B
pH	2	2024/01/11	2024/01/12	CAM SOP-00413	SM 24th - 4500H+ B
Phenols (4AAP)	2	N/A	2024/01/12	CAM SOP-00444	OMOE E3179 m
Field Measured pH (2)	2	N/A	2024/01/18		Field pH Meter
Sulphate by Automated Turbidimetry	2	N/A	2024/01/12	CAM SOP-00464	SM 24 4500-SO42- E m
Total Dissolved Solids	2	2024/01/12	2024/01/15	CAM SOP-00428	SM 24 2540C m
Field Temperature (2)	2	N/A	2024/01/18		Field Thermometer
Total Kjeldahl Nitrogen in Water	2	2024/01/12	2024/01/15	CAM SOP-00938	OMOE E3516 m
Total Phosphorus (Colourimetric)	2	2024/01/12	2024/01/18	CAM SOP-00407	SM 24 4500-P I
Total Suspended Solids	2	2024/01/12	2024/01/15	CAM SOP-00428	SM 24 2540D m
Turbidity - On-site	2	N/A	2024/01/18		
Un-ionized Ammonia (3)	2	2024/01/11	2024/01/18	Auto Calc.	PWQO
Volatile Organic Compounds in Water	2	N/A	2024/01/16	CAM SOP-00228	EPA 8260D

Remarks:

Bureau Veritas is accredited to ISO/IEC 17025 for specific parameters on scopes of accreditation. Unless otherwise noted, procedures used by Bureau Veritas are based upon recognized Provincial, Federal or US method compendia such as CCME, EPA, APHA or the Quebec Ministry of Environment.

All work recorded herein has been done in accordance with procedures and practices ordinarily exercised by professionals in Bureau Veritas' profession using accepted testing methodologies, quality assurance and quality control procedures (except where otherwise agreed by the client and Bureau Veritas in

Bureau Veritas 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.bvna.com

Microbiology testing is conducted at 6660 Campobello Rd. Chemistry testing is conducted at 6740 Campobello Rd.

Your P.O. #: 13254256
Your Project #: 2402553.01
Site#: 700
Site Location: ON07
Your C.O.C. #: TCEC-SWCM-JAN

Attention: Khalid Hussein - Twin Creeks

RWDI Inc.
600 Southgate Drive
Guelph, ON
Canada N1G 4P6

Report Date: 2024/01/18
Report #: R7994295
Version: 1 - Final

CERTIFICATE OF ANALYSIS

BUREAU VERITAS JOB #: C410292
Received: 2024/01/11, 09:10

writing). All data is in statistical control and has met quality control and method performance criteria unless otherwise noted. All method blanks are reported; unless indicated otherwise, associated sample data are not blank corrected. Where applicable, unless otherwise noted, Measurement Uncertainty has not been accounted for when stating conformity to the referenced standard.

Bureau Veritas liability is limited to the actual cost of the requested analyses, unless otherwise agreed in writing. There is no other warranty expressed or implied. Bureau Veritas has been retained to provide analysis of samples provided by the Client using the testing methodology referenced in this report. Interpretation and use of test results are the sole responsibility of the Client and are not within the scope of services provided by Bureau Veritas, unless otherwise agreed in writing. Bureau Veritas is not responsible for the accuracy or any data impacts, that result from the information provided by the customer or their agent.

Solid sample results, except biota, are based on dry weight unless otherwise indicated. Organic analyses are not recovery corrected except for isotope dilution methods.
Results relate to samples tested. When sampling is not conducted by Bureau Veritas, results relate to the supplied samples tested.
This Certificate shall not be reproduced except in full, without the written approval of the laboratory.
Reference Method suffix “m” indicates test methods incorporate validated modifications from specific reference methods to improve performance.
* RPDs calculated using raw data. The rounding of final results may result in the apparent difference.
(1) Values for calculated parameters may not appear to add up due to rounding of raw data and significant figures.
(2) This is a field test, therefore, the results relate to items that were not analysed at Bureau Veritas.
(3) Un-ionized ammonia is calculated using the total ammonia result and field data provided by the client for pH and temperature.

Encryption Key

Please direct all questions regarding this Certificate of Analysis to:
Patricia Legette, Project Manager
Email: Patricia.Legette@bureauveritas.com
Phone# (905)817-5799

==========

Bureau Veritas has procedures in place to guard against improper use of the electronic signature and have the required "signatories", as per ISO/IEC 17025, signing the reports. For Service Group specific validation, please refer to the Validation Signatures page if included, otherwise available by request. For Department specific Analyst/Supervisor validation names, please refer to the Test Summary section if included, otherwise available by request. This report is authorized by Rodney Major, General Manager responsible for Ontario Environmental laboratory operations.

Bureau Veritas Job #: C410292
Report Date: 2024/01/18

RWDI Inc.
Client Project #: 2402553.01
Site Location: ON07
Your P.O. #: 13254256
Sampler Initials: EW

RESULTS OF ANALYSES OF WATER

Bureau Veritas ID		YCC229		YCC230		
Sampling Date		2024/01/10		2024/01/10		
COC Number		TCEC-SWCM-JAN		TCEC-SWCM-JAN		
	UNITS	SS1	RDL	SSDUP1	RDL	QC Batch
Calculated Parameters						
Total Un-ionized Ammonia	mg/L	<0.0011	0.0011	<0.0011	0.0011	9156558
Field Measurements						
Field Conductivity	uS/cm	585	N/A	585	N/A	ONSITE
Field Dissolved Oxygen	mg/L	11.82	N/A	11.82	N/A	ONSITE
Field Temperature	Celsius	1.8	N/A	1.8	N/A	ONSITE
Field Measured Field Turbidity	NTU	>999	N/A	>999	N/A	ONSITE
Field Measured pH	pH	7.8		7.8		ONSITE
Inorganics						
Total Ammonia-N	mg/L	<0.15	0.15	<0.15	0.15	9158852
Total BOD	mg/L	3	2	3	2	9158046
Total Chemical Oxygen Demand (COD)	mg/L	14	4.0	16	4.0	9159111
Conductivity	umho/cm	650	1.0	650	1.0	9157833
Total Dissolved Solids	mg/L	525	10	555	10	9159147
Total Kjeldahl Nitrogen (TKN)	mg/L	<0.7	0.7	<0.7	0.7	9159052
pH	pH	7.96		8.03		9157834
Phenols-4AAP	mg/L	<0.0010	0.0010	0.0014	0.0010	9158824
Total Phosphorus	mg/L	0.75	0.030	0.76	0.030	9159108
Total Suspended Solids	mg/L	1200	25	740	50	9159447
Dissolved Sulphate (SO4)	mg/L	130	1.0	130	1.0	9157601
Alkalinity (Total as CaCO3)	mg/L	150	1.0	160	1.0	9157829
Dissolved Chloride (Cl-)	mg/L	26	1.0	26	1.0	9157599
Nitrite (N)	mg/L	0.021	0.010	0.019	0.010	9157510
Nitrate (N)	mg/L	0.76	0.10	0.77	0.10	9157510

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
N/A = Not Applicable

Bureau Veritas 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.bvna.com

Microbiology testing is conducted at 6660 Campobello Rd. Chemistry testing is conducted at 6740 Campobello Rd.

Bureau Veritas Job #: C410292
Report Date: 2024/01/18

RWDI Inc.
Client Project #: 2402553.01
Site Location: ON07
Your P.O. #: 13254256
Sampler Initials: EW

ELEMENTS BY ATOMIC SPECTROSCOPY (WATER)

Bureau Veritas ID		YCC229	YCC230		
Sampling Date		2024/01/10	2024/01/10		
COC Number		TCEC-SWCM-JAN	TCEC-SWCM-JAN		
	UNITS	SS1	SSDUP1	RDL	QC Batch
Metals					
Dissolved Mercury (Hg)	ug/L	<0.10	<0.10	0.10	9161827
Total Arsenic (As)	mg/L	0.010	0.010	0.001	9164044
Total Barium (Ba)	mg/L	0.14	0.14	0.005	9164044
Total Boron (B)	mg/L	0.29	0.29	0.02	9164044
Total Cadmium (Cd)	mg/L	0.0002	0.0001	0.0001	9164044
Total Calcium (Ca)	mg/L	150	160	0.2	9164044
Total Chromium (Cr)	mg/L	0.041	0.041	0.005	9164044
Total Copper (Cu)	mg/L	0.031	0.034	0.002	9164044
Total Iron (Fe)	mg/L	39	40	0.1	9164044
Total Lead (Pb)	mg/L	0.015	0.015	0.0005	9164044
Total Magnesium (Mg)	mg/L	44	45	0.05	9164044
Total Nickel (Ni)	mg/L	0.057	0.058	0.001	9164044
Total Potassium (K)	mg/L	11	11	0.2	9164044
Total Sodium (Na)	mg/L	20	21	0.1	9164044
Total Zinc (Zn)	mg/L	0.09	0.10	0.01	9164044

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

Bureau Veritas 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.bvna.com

Microbiology testing is conducted at 6660 Campobello Rd. Chemistry testing is conducted at 6740 Campobello Rd.

RWDI Inc.
Client Project #: 2402553.01
Site Location: ON07
Your P.O. #: 13254256
Sampler Initials: EW

SEMI-VOLATILE ORGANICS BY GC-MS (WATER)

Bureau Veritas ID		YCC229	YCC230		
Sampling Date		2024/01/10	2024/01/10		
COC Number		TCEC-SWCM-JAN	TCEC-SWCM-JAN		
	UNITS	SS1	SSDUP1	RDL	QC Batch
Semivolatile Organics					
Benzo(a)pyrene	ug/L	<0.80	<0.80	0.80	9162691
1,2-Dichlorobenzene	ug/L	<2.0	<2.0	2.0	9162691
1,3-Dichlorobenzene	ug/L	<2.0	<2.0	2.0	9162691
1,4-Dichlorobenzene	ug/L	<2.0	<2.0	2.0	9162691
Hexachlorobenzene	ug/L	<2.0	<2.0	2.0	9162691
1,2,4-Trichlorobenzene	ug/L	<2.0	<2.0	2.0	9162691
2,4-Dichlorophenol	ug/L	<1.2	<1.2	1.2	9162691
Pentachlorophenol	ug/L	<4.0	<4.0	4.0	9162691
Phenol	ug/L	<2.0	<2.0	2.0	9162691
2,4,6-Trichlorophenol	ug/L	<2.0	<2.0	2.0	9162691
Di-N-butyl phthalate	ug/L	<8.0	<8.0	8.0	9162691
Diethyl phthalate	ug/L	<4.0	<4.0	4.0	9162691
Dimethyl phthalate	ug/L	<4.0	<4.0	4.0	9162691
Surrogate Recovery (%)					
2,4,6-Tribromophenol	%	52	59		9162691
2-Fluorobiphenyl	%	51	55		9162691
2-Fluorophenol	%	20	22		9162691
D14-Terphenyl	%	88	91		9162691
D5-Nitrobenzene	%	48	50		9162691
D5-Phenol	%	15	16		9162691

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

Bureau Veritas 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.bvna.com

Microbiology testing is conducted at 6660 Campobello Rd. Chemistry testing is conducted at 6740 Campobello Rd.

Bureau Veritas Job #: C410292
Report Date: 2024/01/18

RWDI Inc.
Client Project #: 2402553.01
Site Location: ON07
Your P.O. #: 13254256
Sampler Initials: EW

VOLATILE ORGANICS BY GC/MS (WATER)

Bureau Veritas ID		YCC229	YCC230		
Sampling Date		2024/01/10	2024/01/10		
COC Number		TCEC-SWCM-JAN	TCEC-SWCM-JAN		
	UNITS	SS1	SSDUP1	RDL	QC Batch
Volatile Organics					
Benzene	ug/L	<0.20	<0.20	0.20	9158358
1,4-Dichlorobenzene	ug/L	<0.40	<0.40	0.40	9158358
Ethylbenzene	ug/L	<0.20	<0.20	0.20	9158358
Methylene Chloride(Dichloromethane)	ug/L	<2.0	<2.0	2.0	9158358
Toluene	ug/L	<0.20	<0.20	0.20	9158358
Vinyl Chloride	ug/L	<0.20	<0.20	0.20	9158358
p+m-Xylene	ug/L	<0.20	<0.20	0.20	9158358
o-Xylene	ug/L	<0.20	<0.20	0.20	9158358
Total Xylenes	ug/L	<0.20	<0.20	0.20	9158358
Surrogate Recovery (%)					
4-Bromofluorobenzene	%	100	100		9158358
D4-1,2-Dichloroethane	%	111	112		9158358
D8-Toluene	%	88	87		9158358

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

Bureau Veritas 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.bvna.com

Microbiology testing is conducted at 6660 Campobello Rd. Chemistry testing is conducted at 6740 Campobello Rd.

GENERAL COMMENTS

Each temperature is the average of up to three cooler temperatures taken at receipt

Package 1	8.0°C
Package 2	11.7°C
Package 3	11.0°C

Sample YCC229 [SS1] : TSS analysis: Due to the nature of the sample, a smaller than usual portion of the sample was used.

ABN Analysis: Due to the sample matrix, a smaller amount was used for extraction. Detection limits were adjusted accordingly.

Sample YCC230 [SSDUP1] : TSS analysis: Due to the nature of the sample, a smaller than usual portion of the sample was used.

ABN Analysis: Due to the sample matrix, a smaller amount was used for extraction. Detection limits were adjusted accordingly.

Results relate only to the items tested.

Bureau Veritas 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.bvna.com

Microbiology testing is conducted at 6660 Campobello Rd. Chemistry testing is conducted at 6740 Campobello Rd.

Bureau Veritas Job #: C410292
Report Date: 2024/01/18

QUALITY ASSURANCE REPORT

RWDI Inc.
Client Project #: 2402553.01
Site Location: ON07
Your P.O. #: 13254256
Sampler Initials: EW

			Matrix Spike		SPIKED BLANK		Method Blank		RPD		QC Standard	
QC Batch	Parameter	Date	% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits	% Recovery	QC Limits
9158358	4-Bromofluorobenzene	2024/01/16	102	70 - 130	102	70 - 130	104	%				
9158358	D4-1,2-Dichloroethane	2024/01/16	103	70 - 130	100	70 - 130	108	%				
9158358	D8-Toluene	2024/01/16	104	70 - 130	104	70 - 130	88	%				
9162691	2,4,6-Tribromophenol	2024/01/16	91	10 - 130	99	10 - 130	63	%				
9162691	2-Fluorobiphenyl	2024/01/16	55	30 - 130	71	30 - 130	92	%				
9162691	2-Fluorophenol	2024/01/16	18	10 - 130	50	10 - 130	42	%				
9162691	D14-Terphenyl	2024/01/16	94	30 - 130	97	30 - 130	94	%				
9162691	D5-Nitrobenzene	2024/01/16	60	30 - 130	92	30 - 130	90	%				
9162691	D5-Phenol	2024/01/16	4.6 (5)	10 - 130	33	10 - 130	28	%				
9157510	Nitrate (N)	2024/01/12	97	80 - 120	98	80 - 120	<0.10	mg/L	0.37 (1)	20		
9157510	Nitrite (N)	2024/01/12	104	80 - 120	103	80 - 120	<0.010	mg/L	4.4 (1)	20		
9157599	Dissolved Chloride (Cl-)	2024/01/12	85	80 - 120	96	80 - 120	<1.0	mg/L	0.15 (1)	20		
9157601	Dissolved Sulphate (SO4)	2024/01/12	NC	75 - 125	97	80 - 120	<1.0	mg/L	0.058 (1)	20		
9157829	Alkalinity (Total as CaCO3)	2024/01/12			95	85 - 115	<1.0	mg/L	1.2 (2)	20		
9157833	Conductivity	2024/01/12			103	85 - 115	<1.0	umho/cm	0.15 (2)	10		
9157834	pH	2024/01/12			102	98 - 103			0.28 (2)	N/A		
9158046	Total BOD	2024/01/17					<2	mg/L	0 (1)	30	99	80 - 120
9158358	1,4-Dichlorobenzene	2024/01/16	113	70 - 130	106	70 - 130	<0.40	ug/L	NC (1)	30		
9158358	Benzene	2024/01/16	97	70 - 130	91	70 - 130	<0.20	ug/L	NC (1)	30		
9158358	Ethylbenzene	2024/01/16	99	70 - 130	96	70 - 130	<0.20	ug/L	NC (1)	30		
9158358	Methylene Chloride(Dichloromethane)	2024/01/16	104	70 - 130	94	70 - 130	<2.0	ug/L	NC (1)	30		
9158358	o-Xylene	2024/01/16	89	70 - 130	90	70 - 130	<0.20	ug/L	NC (1)	30		
9158358	p+m-Xylene	2024/01/16	107	70 - 130	104	70 - 130	<0.20	ug/L	NC (1)	30		
9158358	Toluene	2024/01/16	102	70 - 130	96	70 - 130	<0.20	ug/L	NC (1)	30		
9158358	Total Xylenes	2024/01/16					<0.20	ug/L	NC (1)	30		
9158358	Vinyl Chloride	2024/01/16	91	70 - 130	86	70 - 130	<0.20	ug/L				
9158824	Phenols-4AAP	2024/01/12	103	80 - 120	101	80 - 120	<0.0010	mg/L	0 (1)	20		
9158852	Total Ammonia-N	2024/01/15	98	75 - 125	96	80 - 120	<0.15	mg/L	NC (1)	20		
9159052	Total Kjeldahl Nitrogen (TKN)	2024/01/15	100	80 - 120	101	80 - 120	<0.7	mg/L	NC (1)	20	92	80 - 120

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Microbiology testing is conducted at 6660 Campobello Rd. Chemistry testing is conducted at 6740 Campobello Rd.

QUALITY ASSURANCE REPORT(CONT'D)

			Matrix Spike		SPIKED BLANK		Method Blank		RPD		QC Standard	
QC Batch	Parameter	Date	% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits	% Recovery	QC Limits
9159108	Total Phosphorus	2024/01/18	100	80 - 120	102	80 - 120	<0.030	mg/L	1.1 (1)	25	103	80 - 120
9159111	Total Chemical Oxygen Demand (COD)	2024/01/12	96	80 - 120	107	80 - 120	<4.0	mg/L	9.5 (1)	20		
9159147	Total Dissolved Solids	2024/01/15			98	80 - 120	<10	mg/L	5.9 (1)	20		
9159447	Total Suspended Solids	2024/01/15			98	80 - 120	<10	mg/L	NC (1)	20		
9161827	Dissolved Mercury (Hg)	2024/01/15	99 (3)	75 - 125	104	80 - 120	<0.10	ug/L	NC (4)	20		
9162691	1,2,4-Trichlorobenzene	2024/01/16	40	30 - 130	52	30 - 130	<0.50	ug/L				
9162691	1,2-Dichlorobenzene	2024/01/16	42	30 - 130	54	30 - 130	<0.50	ug/L				
9162691	1,3-Dichlorobenzene	2024/01/16	40	30 - 130	47	30 - 130	<0.50	ug/L				
9162691	1,4-Dichlorobenzene	2024/01/16	39	30 - 130	47	30 - 130	<0.50	ug/L				
9162691	2,4,6-Trichlorophenol	2024/01/16	83	10 - 130	97	10 - 130	<0.50	ug/L				
9162691	2,4-Dichlorophenol	2024/01/16	51	10 - 130	95	10 - 130	<0.30	ug/L				
9162691	Benzo(a)pyrene	2024/01/16	96	30 - 130	105	30 - 130	<0.20	ug/L				
9162691	Diethyl phthalate	2024/01/16	94	30 - 130	104	30 - 130	<1.0	ug/L				
9162691	Dimethyl phthalate	2024/01/16	86	30 - 130	102	30 - 130	<1.0	ug/L				
9162691	Di-N-butyl phthalate	2024/01/16	112	30 - 130	119	30 - 130	<2.0	ug/L	NC (1)	40		
9162691	Hexachlorobenzene	2024/01/16	86	30 - 130	96	30 - 130	<0.50	ug/L				
9162691	Pentachlorophenol	2024/01/16	71	10 - 130	75	10 - 130	<1.0	ug/L				
9162691	Phenol	2024/01/16	4.8 (5)	10 - 130	36	10 - 130	<0.50	ug/L				
9164044	Total Arsenic (As)	2024/01/16	98	80 - 120	97	80 - 120	<0.001	mg/L	NC (1)	20		
9164044	Total Barium (Ba)	2024/01/16	97	80 - 120	93	80 - 120	<0.005	mg/L	6.6 (1)	20		
9164044	Total Boron (B)	2024/01/16	97	80 - 120	92	80 - 120	<0.02	mg/L	3.2 (1)	20		
9164044	Total Cadmium (Cd)	2024/01/16	98	80 - 120	96	80 - 120	<0.0001	mg/L	NC (1)	20		
9164044	Total Calcium (Ca)	2024/01/16	NC	80 - 120	96	80 - 120	<0.2	mg/L				
9164044	Total Chromium (Cr)	2024/01/16	97	80 - 120	96	80 - 120	<0.005	mg/L	NC (1)	20		
9164044	Total Copper (Cu)	2024/01/16	96	80 - 120	94	80 - 120	<0.002	mg/L	NC (1)	20		
9164044	Total Iron (Fe)	2024/01/16	97	80 - 120	96	80 - 120	<0.1	mg/L	3.9 (1)	20		
9164044	Total Lead (Pb)	2024/01/16	96	80 - 120	96	80 - 120	<0.0005	mg/L	NC (1)	20		
9164044	Total Magnesium (Mg)	2024/01/16	97	80 - 120	95	80 - 120	<0.05	mg/L				
9164044	Total Nickel (Ni)	2024/01/16	94	80 - 120	94	80 - 120	<0.001	mg/L				
9164044	Total Potassium (K)	2024/01/16	96	80 - 120	94	80 - 120	<0.2	mg/L				

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Microbiology testing is conducted at 6660 Campobello Rd. Chemistry testing is conducted at 6740 Campobello Rd.

QUALITY ASSURANCE REPORT(CONT'D)

			Matrix Spike		SPIKED BLANK		Method Blank		RPD		QC Standard	
QC Batch	Parameter	Date	% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits	% Recovery	QC Limits
9164044	Total Sodium (Na)	2024/01/16	NC	80 - 120	96	80 - 120	<0.1	mg/L				
9164044	Total Zinc (Zn)	2024/01/16	98	80 - 120	97	80 - 120	<0.01	mg/L	NC (1)	20		

N/A = Not Applicable

Duplicate: Paired analysis of a separate portion of the same sample. Used to evaluate the variance in the measurement.

Matrix Spike: A sample to which a known amount of the analyte of interest has been added. Used to evaluate sample matrix interference.

QC Standard: A sample of known concentration prepared by an external agency under stringent conditions. Used as an independent check of method accuracy.

Spiked Blank: A blank matrix sample to which a known amount of the analyte, usually from a second source, has been added. Used to evaluate method accuracy.

Method Blank: A blank matrix containing all reagents used in the analytical procedure. Used to identify laboratory contamination.

Surrogate: A pure or isotopically labeled compound whose behavior mirrors the analytes of interest. Used to evaluate extraction efficiency.

NC (Matrix Spike): The recovery in the matrix spike was not calculated. The relative difference between the concentration in the parent sample and the spike amount was too small to permit a reliable recovery calculation (matrix spike concentration was less than the native sample concentration)

NC (Duplicate RPD): The duplicate RPD was not calculated. The concentration in the sample and/or duplicate was too low to permit a reliable RPD calculation (absolute difference <= 2x RDL).

(1) Duplicate Parent ID

(2) Duplicate Parent ID [YCC229-02]

(3) Matrix Spike Parent ID [YCC229-07]

(4) Duplicate Parent ID [YCC229-07]

(5) Recovery or RPD for this parameter is outside control limits. The overall quality control for this analysis meets acceptability criteria.

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Microbiology testing is conducted at 6660 Campobello Rd. Chemistry testing is conducted at 6740 Campobello Rd.

Bureau Veritas Job #: C410292
Report Date: 2024/01/18

RWDI Inc.
Client Project #: 2402553.01
Site Location: ON07
Your P.O. #: 13254256
Sampler Initials: EW

VALIDATION SIGNATURE PAGE

The analytical data and all QC contained in this report were reviewed and validated by:

Cristina Carriere, Senior Scientific Specialist

Michael Damianidis, Project Manager Assistant

Bureau Veritas has procedures in place to guard against improper use of the electronic signature and have the required "signatories", as per ISO/IEC 17025, signing the reports. For Service Group specific validation, please refer to the Validation Signatures page if included, otherwise available by request. For Department specific Analyst/Supervisor validation names, please refer to the Test Summary section if included, otherwise available by request. This report is authorized by Rodney Major, General Manager responsible for Ontario Environmental laboratory operations.

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BUREAU VERITAS

FIELD INFORMATION FORM

WASTE MANAGEMENT

Site Name: T.C.E.C

Site No.: Sample: SS1 (Sample ID)

This Waste Management Field Information Form is Required
This form is to be completed, in addition to any State Forms. The Field Form is submitted along with the Chain of Custody Forms that accompany the sample containers (i.e. with the cooler that is returned to the laboratory).

Laboratory Use Only/Lab ID:

PURGE INFO

PURGE DATE (MM DD YY)	PURGE TIME (2400 Hr Clock)	ELAPSED HRS (hrs:min)	WATER VOL IN CASING (Gallons)	ACTUAL VOL PURGED (Gallons)	WELL VOLs PURGED

Note: For Passive Sampling, replace "Water Vol in Casing" and "Well Vols Purged" w/ Water Vol in Tubing/Flow Cell and Tubing/Flow Cell Vols Purged. Mark Changes. Record field data below.

PURGE/SAMPLE EQUIPMENT

Purging and Sampling Equipment ... Dedicated: Y or N

Filter Device: Y or N 0.45 µ or ____ µ (circle or fill in)

Purging Device: ____ A-Submersible Pump B-Peristaltic Pump C-QED Bladder Pump D-Bailer E-Piston Pump F-Dipper/Bottle

Sampling Device: ____

Filter Type: A — A-In-line Disposable B-Pressure C-Vacuum X-Other: ____

X-Other: ____

Sample Tube Type: ____ — A-Teflon B-Stainless Steel C-PVC D-Polypropylene X-Other: ____

WELL DATA

Well Elevation (at TOC) ____ (ft/msl)

Depth to Water (DTW) (from TOC) ____ (ft)

Groundwater Elevation (GWE) (Site Datum, from TOC) ____ (ft msl)

Total Well Depth (from TOC) ____ (ft)

Stick Up (from ground elevation) ____ (ft)

Casing ID ____ (in)

Casing Material ____

Note: Total Depth, Stick Up, Casing ID, etc. are optional and can be from historical data, unless required by Site/Permit. Well Elevation, DTW, and GWE must be current, obtained from site.

STABILIZATION DATA (Optional)

Sample Time (2400 Hr Clock)	Rate/Unit	pH (std)	Conductance (SC/EC) (µmhos/cm @ 25°C)	Temp. (°C)	Turbidity (ntu)	D.O. (mg/L - ppm)	eH/ORP (mV)	DTW (ft)
		1st	1st					
		2nd	2nd					
		3rd	3rd					
		4th	4th					
Input Range for 3 consec. readings or Permit/State requirements:		+/-	+/-	+/-	+/-	+/-	+/-	

Stabilization Data Fields are Optional *(i.e. complete stabilization readings for parameters required by WM, Site, or State). These fields can be used where four (4) field measurements are required by State/Permit/Site. If a Data Logger or other Electronic format is used, fill in final readings below and submit electronic data separately to Site. If more fields above are needed, use separate sheet or form.*

FIELD DATA

SAMPLE DATE (MM DD YY)	pH (std)	CONDUCTANCE (µmhos/cm @ 25°C)	TEMP. (°C)	TURBIDITY (ntu)	DO (mg/L - ppm)	eH/ORP (mV)	Other: Units
01 10 24	7.8	585	1.8	7999	11.92		

Final Field Readings are required *(i.e. record field measurements, final stabilized readings, passive sample readings before sampling for all field parameters required by State/Permit/Site.)*

Sample Appearance: Cloudy Odor: N/O Color: brown Other: ____

Weather Conditions (required daily, or as conditions change): -1°C Direction/Speed: 30 km/h NW Outlook: overcast Precipitation: Y or N

Specific Comments (including purge/well volume calculations if required):

FIELD COMMENTS

Time @ 1m: 5sec
5sec
6sec

width: 1m
depth: 15cm

"SSDUP" collected

I certify that sampling procedures were in accordance with applicable EPA, State, and WM protocols (if more than one sampler, all should sign):

Date	Name	Signature	Company
01/10/24	Eric Wilson	E. Wilson	RMDI

DISTRIBUTION: WHITE/ORIGINAL - Stays with Sample, YELLOW - Returned to Client, PINK - Field Copy

Field Information Form v-3.1 06/20

2007

MaxXam Analytics Inc

6740 Campobello Road Mississauga, ON L5N 2L8
Phone: 905-817-5700 Fax: 905-817-5777 Toll Free: (800) 563-6266

CHAIN OF CUSTODY RECORD

Page 1 of 1

INVOICE INFORMATION:		REPORT INFORMATION (if differs from invoice):		PROJECT INFORMATION:		MAXXAM JOB NUMBER:
Company Name:	Waste Management of Canada Corporation	Company Name:	RWDI AIR Inc.	Quotation #		
Contact Name:	Lisa Mertick	Contact Name:	Brent Langille	P.O. #:	12285756	
Address:	5768 Nauvoo Rd, Watford, ON N0M 2S0	Address:	4510 Rhodes Drive, Unit 530 Windsor, ON, N8W 5K5	Project #:	2402553.01	CHAIN OF CUSTODY # :
Phone:	519-849-5810 Fax: 519-849-5811	Phone:	519-823-1311 x 2618 Fax: 519-823-1316	Project Name:	Twin Creeks SW	TCEC-SWCM-JAN
Email:	lmertick@wm.com	Email:	BJL@RWDI.com, JCL@RWDI.com	Location:	Twin Creeks	
				Sampled By:	EW	

REGULATORY CRITERIA

Note: For regulated drinking water samples - please use the Drinking Water Chain of Custody Form

- [ ] MISA — Reg. 153 — Table 1 / Table 2 / Table 3 — Sewer Use — Sanitary / Storm — Region _____
- [x] PWQO
- [ ] Reg. 558
- [ ] Other — specify _____

Report Criteria on C of A ? n

SAMPLES MUST BE KEPT COOL (< 10 °C) FROM TIME OF SAMPLING UNTIL DELIVERY TO MAXXAM

ANALYSIS REQUESTED (Please be specific):

TURNAROUND TIME (TAT) REQUIRED:

PLEASE PROVIDE ADVANCE NOTICE FOR RUSH PROJECTS

Regular (Standard) TAT:
- [x] 5 to 7 Working Days

Rush TAT: Rush Confirmation # _____ (call Lab for #)
- [ ] 1 day [ ] 2 days [ ] 3 days

DATE Required: 19-Jan-24
TIME Required: 12:00 PM

Please note that TAT for certain tests such as BOD and Dioxins/Furans are > 5 days - contact your Project Manager for details.

	Sample Identification	Date Sampled	Time Sampled	Matrix (GW, SW, Soil, etc.)	Regulated Drinking Water ? (Y / N)	Metals Field Filtered ? (Y / N)	ZJ-ON-WLF-2024 TCLS - SW (COMPLIANCE POINT) QUARTERLY	# of Cont.	COMMENTS / TAT COMMENTS
1	SS1	10-Jan-24	AM	SW	N	N	X	12	SSDUP1 taken
2	SSDUP1	10-Jan-24	AM	SW	N	N	X	12	
3									
4									
5									
6									
7									
8									
9									
10									
11									All samples for Hg field filtered @ 45um
12									See lab addendum for lab group coding

NONT-2024-01-576

RELINQUISHED BY: (Signature/Print)	RECEIVED BY: (Signature/Print)	Date:	Time:	Laboratory Use Only	
EW - January 10, 2024	[illegible]	2024/01/11	09:10	Temperature (°C) on Receipt: 7/9/8, 11/13/11/, 11/9/13	Condition of Sample on Receipt: [ ] OK [ ] SIF

*** MANDATORY SECTIONS IN GREY MUST BE FILLED OUT. AN INCOMPLETE CHAIN OF CUSTODY MAY RESULT IN ANALYTICAL TAT DELAYS**

White: Maxxam Yellow: Mail Pink: Client

Your P.O. #: 13254256
Your Project #: 2402553.01
Site#: 700
Site Location: ON07
Your C.O.C. #: TCEC-SWCM-JAN

Attention: Khalid Hussein - Twin Creeks

RWDI Inc.
600 Southgate Drive
Guelph, ON
Canada N1G 4P6

Report Date: 2024/02/05
Report #: R8015577
Version: 1 - Final

CERTIFICATE OF ANALYSIS

BUREAU VERITAS JOB #: C426978
Received: 2024/01/26, 13:20

Sample Matrix: Water
Samples Received: 1

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Analytical Method
ABN Compounds in Water by GC/MS	1	2024/01/30	2024/02/01	CAM SOP-00301	EPA 8270 m
Alkalinity	1	N/A	2024/01/30	CAM SOP-00448	SM 24 2320 B m
Biochemical Oxygen Demand (BOD)	1	2024/01/29	2024/02/03	CAM SOP-00427	SM 24 5210B m
Chloride by Automated Colourimetry	1	N/A	2024/01/30	CAM SOP-00463	SM 24 4500-Cl E m
Chemical Oxygen Demand	1	N/A	2024/01/31	CAM SOP-00416	SM 24 5220 D m
Conductance in Water - On-site	1	N/A	2024/01/31		
Conductivity	1	N/A	2024/01/30	CAM SOP-00414	SM 24 2510 m
Field Measured Dissolved Oxygen in Water	1	N/A	2024/01/31		
Dissolved Mercury in Water by CVAA	1	2024/02/01	2024/02/02	CAM SOP-00453	EPA 7470A m
Total Metals by ICPMS	1	N/A	2024/02/01	CAM SOP-00447	EPA 6020B m
Ammonia-N	1	N/A	2024/01/31	CAM SOP-00441	USGS I-2522-90 m
Nitrate & Nitrite as Nitrogen in Water (1)	1	N/A	2024/01/29	CAM SOP-00440	SM 24 4500-NO3I/NO2B
pH (2)	1	2024/01/29	2024/01/30	CAM SOP-00413	SM 24th - 4500H+ B
Phenols (4AAP)	1	N/A	2024/01/31	CAM SOP-00444	OMOE E3179 m
Field Measured pH (3)	1	N/A	2024/01/31		Field pH Meter
Sulphate by Automated Turbidimetry	1	N/A	2024/01/30	CAM SOP-00464	SM 24 4500-SO42- E m
Total Dissolved Solids	1	2024/02/01	2024/02/02	CAM SOP-00428	SM 24 2540C m
Field Temperature (3)	1	N/A	2024/01/31		Field Thermometer
Total Kjeldahl Nitrogen in Water	1	2024/01/30	2024/01/31	CAM SOP-00938	OMOE E3516 m
Total Phosphorus (Colourimetric)	1	2024/01/30	2024/01/31	CAM SOP-00407	SM 24 4500-P I
Total Suspended Solids	1	2024/01/31	2024/02/01	CAM SOP-00428	SM 24 2540D m
Turbidity - On-site	1	N/A	2024/01/31		
Un-ionized Ammonia (4)	1	2024/01/27	2024/02/01	Auto Calc.	PWQO
Volatile Organic Compounds in Water	1	N/A	2024/01/31	CAM SOP-00228	EPA 8260D

Remarks:

Bureau Veritas is accredited to ISO/IEC 17025 for specific parameters on scopes of accreditation. Unless otherwise noted, procedures used by Bureau Veritas are based upon recognized Provincial, Federal or US method compendia such as CCME, EPA, APHA or the Quebec Ministry of Environment.

All work recorded herein has been done in accordance with procedures and practices ordinarily exercised by professionals in Bureau Veritas' profession using accepted testing methodologies, quality assurance and quality control procedures (except where otherwise agreed by the client and Bureau Veritas in

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Microbiology testing is conducted at 6660 Campobello Rd. Chemistry testing is conducted at 6740 Campobello Rd.

Your P.O. #: 13254256
Your Project #: 2402553.01
Site#: 700
Site Location: ON07
Your C.O.C. #: TCEC-SWCM-JAN

Attention: Khalid Hussein - Twin Creeks

RWDI Inc.
600 Southgate Drive
Guelph, ON
Canada N1G 4P6

Report Date: 2024/02/05
Report #: R8015577
Version: 1 - Final

CERTIFICATE OF ANALYSIS

BUREAU VERITAS JOB #: C426978
Received: 2024/01/26, 13:20

writing). All data is in statistical control and has met quality control and method performance criteria unless otherwise noted. All method blanks are reported; unless indicated otherwise, associated sample data are not blank corrected. Where applicable, unless otherwise noted, Measurement Uncertainty has not been accounted for when stating conformity to the referenced standard.

Bureau Veritas liability is limited to the actual cost of the requested analyses, unless otherwise agreed in writing. There is no other warranty expressed or implied. Bureau Veritas has been retained to provide analysis of samples provided by the Client using the testing methodology referenced in this report. Interpretation and use of test results are the sole responsibility of the Client and are not within the scope of services provided by Bureau Veritas, unless otherwise agreed in writing. Bureau Veritas is not responsible for the accuracy or any data impacts, that result from the information provided by the customer or their agent.

Solid sample results, except biota, are based on dry weight unless otherwise indicated. Organic analyses are not recovery corrected except for isotope dilution methods.
Results relate to samples tested. When sampling is not conducted by Bureau Veritas, results relate to the supplied samples tested.
This Certificate shall not be reproduced except in full, without the written approval of the laboratory.
Reference Method suffix “m” indicates test methods incorporate validated modifications from specific reference methods to improve performance.
* RPDs calculated using raw data. The rounding of final results may result in the apparent difference.
(1) Values for calculated parameters may not appear to add up due to rounding of raw data and significant figures.
(2) "The CCME method and Analytical Protocol (O. Reg 153/04, O. Reg. 406/19) requires pH to be analyzed within 15 minutes of sampling and therefore field analysis is required for compliance. All Laboratory pH analyses in this report are reported past the CCME and Analytical Protocol (O. Reg 153/04, O. Reg. 406/19) holding time. Bureau Veritas endeavors to analyze samples as soon as possible after receipt."

(3) This is a field test, therefore, the results relate to items that were not analysed at Bureau Veritas.
(4) Un-ionized ammonia is calculated using the total ammonia result and field data provided by the client for pH and temperature.

Encryption Key

Please direct all questions regarding this Certificate of Analysis to:
Patricia Legette, Project Manager
Email: Patricia.Legette@bureauveritas.com
Phone# (905)817-5799

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Bureau Veritas Job #: C426978
Report Date: 2024/02/05

RWDI Inc.
Client Project #: 2402553.01
Site Location: ON07
Your P.O. #: 13254256
Sampler Initials: JRA

RESULTS OF ANALYSES OF WATER

Bureau Veritas ID		YFP027		
Sampling Date		2024/01/26		
COC Number		TCEC-SWCM-JAN		
	UNITS	SS1	RDL	QC Batch
Calculated Parameters				
Total Un-ionized Ammonia	mg/L	<0.0016	0.0016	9187182
Field Measurements				
Field Conductivity	uS/cm	390	N/A	ONSITE
Field Dissolved Oxygen	mg/L	13.25	N/A	ONSITE
Field Temperature	Celsius	3.7	N/A	ONSITE
Field Measured Field Turbidity	NTU	>1000	N/A	ONSITE
Field Measured pH	pH	7.9		ONSITE
Inorganics				
Total Ammonia-N	mg/L	<0.15	0.15	9188774
Total BOD	mg/L	<2	2	9188357
Total Chemical Oxygen Demand (COD)	mg/L	13	4.0	9191420
Conductivity	umho/cm	370	1.0	9188792
Total Dissolved Solids	mg/L	365	10	9195155
Total Kjeldahl Nitrogen (TKN)	mg/L	<0.7	0.7	9191339
pH	pH	7.97		9188791
Phenols-4AAP	mg/L	<0.0010	0.0010	9192869
Total Phosphorus	mg/L	0.50	0.030	9191350
Total Suspended Solids	mg/L	700	25	9192449
Dissolved Sulphate (SO4)	mg/L	55	1.0	9186958
Alkalinity (Total as CaCO3)	mg/L	100	1.0	9188780
Dissolved Chloride (Cl-)	mg/L	14	1.0	9186956
Nitrite (N)	mg/L	0.012	0.010	9188270
Nitrate (N)	mg/L	0.65	0.10	9188270

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
N/A = Not Applicable

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Microbiology testing is conducted at 6660 Campobello Rd. Chemistry testing is conducted at 6740 Campobello Rd.

Bureau Veritas Job #: C426978
Report Date: 2024/02/05

RWDI Inc.
Client Project #: 2402553.01
Site Location: ON07
Your P.O. #: 13254256
Sampler Initials: JRA

ELEMENTS BY ATOMIC SPECTROSCOPY (WATER)

Bureau Veritas ID		YFP027		
Sampling Date		2024/01/26		
COC Number		TCEC-SWCM-JAN		
	UNITS	SS1	RDL	QC Batch
Metals				
Dissolved Mercury (Hg)	ug/L	<0.10	0.10	9195516
Total Arsenic (As)	mg/L	0.009	0.001	9195181
Total Barium (Ba)	mg/L	0.12	0.005	9195181
Total Boron (B)	mg/L	0.18	0.02	9195181
Total Cadmium (Cd)	mg/L	0.0001	0.0001	9195181
Total Calcium (Ca)	mg/L	110	0.2	9195181
Total Chromium (Cr)	mg/L	0.037	0.005	9195181
Total Copper (Cu)	mg/L	0.030	0.002	9195181
Total Iron (Fe)	mg/L	36	0.1	9195181
Total Lead (Pb)	mg/L	0.014	0.0005	9195181
Total Magnesium (Mg)	mg/L	30	0.05	9195181
Total Nickel (Ni)	mg/L	0.052	0.001	9195181
Total Potassium (K)	mg/L	8.1	0.2	9195181
Total Sodium (Na)	mg/L	12	0.1	9195181
Total Zinc (Zn)	mg/L	0.10	0.01	9195181

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

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SEMI-VOLATILE ORGANICS BY GC-MS (WATER)

Bureau Veritas ID		YFP027		
Sampling Date		2024/01/26		
COC Number		TCEC-SWCM-JAN		
	UNITS	SS1	RDL	QC Batch
Semivolatile Organics				
Benzo(a)pyrene	ug/L	<0.80	0.80	9191184
1,2-Dichlorobenzene	ug/L	<2.0	2.0	9191184
1,3-Dichlorobenzene	ug/L	<2.0	2.0	9191184
1,4-Dichlorobenzene	ug/L	<2.0	2.0	9191184
Hexachlorobenzene	ug/L	<2.0	2.0	9191184
1,2,4-Trichlorobenzene	ug/L	<2.0	2.0	9191184
2,4-Dichlorophenol	ug/L	<1.2	1.2	9191184
Pentachlorophenol	ug/L	<4.0	4.0	9191184
Phenol	ug/L	<2.0	2.0	9191184
2,4,6-Trichlorophenol	ug/L	<2.0	2.0	9191184
Di-N-butyl phthalate	ug/L	<8.0	8.0	9191184
Diethyl phthalate	ug/L	<88	88	9191184
Dimethyl phthalate	ug/L	<4.0	4.0	9191184
Surrogate Recovery (%)				
2,4,6-Tribromophenol	%	42		9191184
2-Fluorobiphenyl	%	88		9191184
2-Fluorophenol	%	17		9191184
D14-Terphenyl	%	108		9191184
D5-Nitrobenzene	%	85		9191184
D5-Phenol	%	18		9191184

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

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RWDI Inc.
Client Project #: 2402553.01
Site Location: ON07
Your P.O. #: 13254256
Sampler Initials: JRA

VOLATILE ORGANICS BY GC/MS (WATER)

Bureau Veritas ID		YFP027		
Sampling Date		2024/01/26		
COC Number		TCEC-SWCM-JAN		
	UNITS	SS1	RDL	QC Batch
Volatile Organics				
Benzene	ug/L	<0.20	0.20	9187120
1,4-Dichlorobenzene	ug/L	<0.40	0.40	9187120
Ethylbenzene	ug/L	<0.20	0.20	9187120
Methylene Chloride(Dichloromethane)	ug/L	<2.0	2.0	9187120
Toluene	ug/L	<0.20	0.20	9187120
Vinyl Chloride	ug/L	<0.20	0.20	9187120
p+m-Xylene	ug/L	<0.20	0.20	9187120
o-Xylene	ug/L	<0.20	0.20	9187120
Total Xylenes	ug/L	<0.20	0.20	9187120
Surrogate Recovery (%)				
4-Bromofluorobenzene	%	103		9187120
D4-1,2-Dichloroethane	%	100		9187120
D8-Toluene	%	97		9187120

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

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GENERAL COMMENTS

Sample YFP027 [SS1] : TSS analysis: Due to the nature of the sample, a smaller than usual portion of the sample was used.

ABN Analysis: Due to the sample matrix, a smaller amount was used for extraction. Detection limits were adjusted accordingly.

Results relate only to the items tested.

Bureau Veritas Job #: C426978
Report Date: 2024/02/05

QUALITY ASSURANCE REPORT

RWDI Inc.
Client Project #: 2402553.01
Site Location: ON07
Your P.O. #: 13254256
Sampler Initials: JRA

			Matrix Spike		SPIKED BLANK		Method Blank		RPD		QC Standard	
QC Batch	Parameter	Date	% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits	% Recovery	QC Limits
9187120	4-Bromofluorobenzene	2024/01/31	104	70 - 130	102	70 - 130	103	%				
9187120	D4-1,2-Dichloroethane	2024/01/31	99	70 - 130	101	70 - 130	98	%				
9187120	D8-Toluene	2024/01/31	97	70 - 130	99	70 - 130	96	%				
9191184	2,4,6-Tribromophenol	2024/01/31	112	10 - 130	108	10 - 130	80	%				
9191184	2-Fluorobiphenyl	2024/01/31	75	30 - 130	74	30 - 130	78	%				
9191184	2-Fluorophenol	2024/01/31	44	10 - 130	52	10 - 130	38	%				
9191184	D14-Terphenyl	2024/01/31	108	30 - 130	114	30 - 130	102	%				
9191184	D5-Nitrobenzene	2024/01/31	88	30 - 130	94	30 - 130	81	%				
9191184	D5-Phenol	2024/01/31	14	10 - 130	35	10 - 130	27	%				
9186956	Dissolved Chloride (Cl-)	2024/01/30	NC	80 - 120	97	80 - 120	<1.0	mg/L	0.75 (1)	20		
9186958	Dissolved Sulphate (SO4)	2024/01/30	96	75 - 125	95	80 - 120	<1.0	mg/L	0.063 (1)	20		
9187120	1,4-Dichlorobenzene	2024/01/31	111	70 - 130	115	70 - 130	<0.40	ug/L				
9187120	Benzene	2024/01/31	93	70 - 130	92	70 - 130	<0.20	ug/L				
9187120	Ethylbenzene	2024/01/31	93	70 - 130	93	70 - 130	<0.20	ug/L				
9187120	Methylene Chloride(Dichloromethane)	2024/01/31	98	70 - 130	99	70 - 130	<2.0	ug/L				
9187120	o-Xylene	2024/01/31	87	70 - 130	87	70 - 130	<0.20	ug/L	0.46 (1)	30		
9187120	p+m-Xylene	2024/01/31	98	70 - 130	98	70 - 130	<0.20	ug/L	6.6 (1)	30		
9187120	Toluene	2024/01/31	92	70 - 130	92	70 - 130	<0.20	ug/L	NC (1)	30		
9187120	Total Xylenes	2024/01/31					<0.20	ug/L	4.5 (1)	30		
9187120	Vinyl Chloride	2024/01/31	84	70 - 130	87	70 - 130	<0.20	ug/L				
9188270	Nitrate (N)	2024/01/29	87	80 - 120	92	80 - 120	<0.10	mg/L	0.17 (1)	20		
9188270	Nitrite (N)	2024/01/29	103	80 - 120	104	80 - 120	<0.010	mg/L	3.2 (1)	20		
9188357	Total BOD	2024/02/03					<2	mg/L	NC (1)	30	94	80 - 120
9188774	Total Ammonia-N	2024/01/31	98	75 - 125	95	80 - 120	<0.15	mg/L	0.32 (1)	20		
9188780	Alkalinity (Total as CaCO3)	2024/01/30			93	85 - 115	<1.0	mg/L	9.4 (1)	20		
9188791	pH	2024/01/30			101	98 - 103			2.4 (1)	N/A		
9188792	Conductivity	2024/01/30			99	85 - 115	<1.0	umho/cm	NC (1)	10		
9191184	1,2,4-Trichlorobenzene	2024/01/31	66	30 - 130	63	30 - 130	<0.50	ug/L				
9191184	1,2-Dichlorobenzene	2024/01/31	68	30 - 130	66	30 - 130	<0.50	ug/L				

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QUALITY ASSURANCE REPORT(CONT'D)

			Matrix Spike		SPIKED BLANK		Method Blank		RPD		QC Standard	
QC Batch	Parameter	Date	% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits	% Recovery	QC Limits
9191184	1,3-Dichlorobenzene	2024/01/31	60	30 - 130	56	30 - 130	<0.50	ug/L				
9191184	1,4-Dichlorobenzene	2024/01/31	64	30 - 130	57	30 - 130	<0.50	ug/L				
9191184	2,4,6-Trichlorophenol	2024/01/31	93	10 - 130	92	10 - 130	<0.50	ug/L				
9191184	2,4-Dichlorophenol	2024/01/31	93	10 - 130	92	10 - 130	<0.30	ug/L				
9191184	Benzo(a)pyrene	2024/01/31	113	30 - 130	99	30 - 130	<0.20	ug/L				
9191184	Diethyl phthalate	2024/01/31	95	30 - 130	114	30 - 130	<5.0	ug/L				
9191184	Dimethyl phthalate	2024/01/31	94	30 - 130	95	30 - 130	<1.0	ug/L				
9191184	Di-N-butyl phthalate	2024/01/31	116	30 - 130	122	30 - 130	<2.0	ug/L	NC (1)	40		
9191184	Hexachlorobenzene	2024/01/31	106	30 - 130	109	30 - 130	<0.50	ug/L				
9191184	Pentachlorophenol	2024/01/31	107	10 - 130	71	10 - 130	<1.0	ug/L				
9191184	Phenol	2024/01/31	4.8 (2)	10 - 130	38	10 - 130	<0.50	ug/L				
9191339	Total Kjeldahl Nitrogen (TKN)	2024/01/31	98	80 - 120	95	80 - 120	<0.7	mg/L	NC (1)	20	96	80 - 120
9191350	Total Phosphorus	2024/01/31	99	80 - 120	101	80 - 120	<0.030	mg/L	NC (1)	25	102	80 - 120
9191420	Total Chemical Oxygen Demand (COD)	2024/01/31	95	80 - 120	99	80 - 120	<4.0	mg/L	2.5 (1)	20		
9192449	Total Suspended Solids	2024/02/01			95	80 - 120	<10	mg/L	9.8 (1)	20		
9192869	Phenols-4AAP	2024/01/31	103	80 - 120	101	80 - 120	<0.0010	mg/L	NC (1)	20		
9195155	Total Dissolved Solids	2024/02/02			95	80 - 120	<10	mg/L	6.5 (1)	20		
9195181	Total Arsenic (As)	2024/02/01	99	80 - 120	99	80 - 120	<0.001	mg/L	NC (1)	20		
9195181	Total Barium (Ba)	2024/02/01	94	80 - 120	95	80 - 120	<0.005	mg/L	7.0 (1)	20		
9195181	Total Boron (B)	2024/02/01	100	80 - 120	101	80 - 120	<0.02	mg/L	0.19 (1)	20		
9195181	Total Cadmium (Cd)	2024/02/01	97	80 - 120	98	80 - 120	<0.0001	mg/L	NC (1)	20		
9195181	Total Calcium (Ca)	2024/02/01	NC	80 - 120	94	80 - 120	<0.2	mg/L	0.21 (1)	20		
9195181	Total Chromium (Cr)	2024/02/01	94	80 - 120	94	80 - 120	<0.005	mg/L	NC (1)	20		
9195181	Total Copper (Cu)	2024/02/01	96	80 - 120	96	80 - 120	<0.002	mg/L	NC (1)	20		
9195181	Total Iron (Fe)	2024/02/01	93	80 - 120	94	80 - 120	<0.1	mg/L	2.5 (1)	20		
9195181	Total Lead (Pb)	2024/02/01	95	80 - 120	95	80 - 120	<0.0005	mg/L	NC (1)	20		
9195181	Total Magnesium (Mg)	2024/02/01	92	80 - 120	93	80 - 120	<0.05	mg/L	0.14 (1)	20		
9195181	Total Nickel (Ni)	2024/02/01	94	80 - 120	95	80 - 120	<0.001	mg/L	4.3 (1)	20		
9195181	Total Potassium (K)	2024/02/01	94	80 - 120	94	80 - 120	<0.2	mg/L	0.14 (1)	20		
9195181	Total Sodium (Na)	2024/02/01	93	80 - 120	94	80 - 120	<0.1	mg/L	0.23 (1)	20		

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QUALITY ASSURANCE REPORT(CONT'D)

			Matrix Spike		SPIKED BLANK		Method Blank		RPD		QC Standard	
QC Batch	Parameter	Date	% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits	% Recovery	QC Limits
9195181	Total Zinc (Zn)	2024/02/01	98	80 - 120	100	80 - 120	<0.01	mg/L	1.2 (1)	20		
9195516	Dissolved Mercury (Hg)	2024/02/02	106 (3)	75 - 125	108	80 - 120	<0.10	ug/L	NC (4)	20		

N/A = Not Applicable

Duplicate: Paired analysis of a separate portion of the same sample. Used to evaluate the variance in the measurement.

Matrix Spike: A sample to which a known amount of the analyte of interest has been added. Used to evaluate sample matrix interference.

QC Standard: A sample of known concentration prepared by an external agency under stringent conditions. Used as an independent check of method accuracy.

Spiked Blank: A blank matrix sample to which a known amount of the analyte, usually from a second source, has been added. Used to evaluate method accuracy.

Method Blank: A blank matrix containing all reagents used in the analytical procedure. Used to identify laboratory contamination.

Surrogate: A pure or isotopically labeled compound whose behavior mirrors the analytes of interest. Used to evaluate extraction efficiency.

NC (Matrix Spike): The recovery in the matrix spike was not calculated. The relative difference between the concentration in the parent sample and the spike amount was too small to permit a reliable recovery calculation (matrix spike concentration was less than the native sample concentration)

NC (Duplicate RPD): The duplicate RPD was not calculated. The concentration in the sample and/or duplicate was too low to permit a reliable RPD calculation (absolute difference <= 2x RDL).

(1) Duplicate Parent ID

(2) Recovery or RPD for this parameter is outside control limits. The overall quality control for this analysis meets acceptability criteria.

(3) Matrix Spike Parent ID [YFP027-06]

(4) Duplicate Parent ID [YFP027-06]

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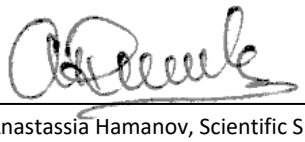
Microbiology testing is conducted at 6660 Campobello Rd. Chemistry testing is conducted at 6740 Campobello Rd.

Bureau Veritas Job #: C426978
Report Date: 2024/02/05

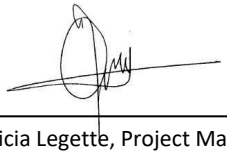
RWDI Inc.
Client Project #: 2402553.01
Site Location: ON07
Your P.O. #: 13254256
Sampler Initials: JRA

VALIDATION SIGNATURE PAGE

The analytical data and all QC contained in this report were reviewed and validated by:



Anastassia Hamanov, Scientific Specialist



Patricia Legette, Project Manager

Bureau Veritas has procedures in place to guard against improper use of the electronic signature and have the required "signatories", as per ISO/IEC 17025, signing the reports. For Service Group specific validation, please refer to the Validation Signatures page if included, otherwise available by request. For Department specific Analyst/Supervisor validation names, please refer to the Test Summary section if included, otherwise available by request. This report is authorized by Rodney Major, General Manager responsible for Ontario Environmental laboratory operations.

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FIELD INFORMATION FORM

BUREAU VERITAS

WASTE MANAGEMENT

Site Name: TCEC

Site No.: Sample: SS1 (Sample ID)

This Waste Management Field Information Form is Required
This form is to be completed, in addition to any State Forms. The Field Form is submitted along with the Chain of Custody Forms that accompany the sample containers (i.e. with the cooler that is returned to the laboratory).

Laboratory Use Only/Lab ID:

PURGE INFO

PURGE DATE (MM DD YY)	PURGE TIME (2400 Hr Clock)	ELAPSED HRS (hrs:min)	WATER VOL IN CASING (Gallons)	ACTUAL VOL PURGED (Gallons)	WELL VOLs PURGED

Note: For Passive Sampling, replace "Water Vol in Casing" and "Well Vols Purged" w/ Water Vol in Tubing/Flow Cell and Tubing/Flow Cell Vols Purged. Mark Changes, Record field data below.

PURGE/SAMPLE EQUIPMENT

Purging and Sampling Equipment ... Dedicated: [Y] or [N]

Filter Device: [Y] or [N] 0.45 µ or [ ] µ (circle or fill in)

Purging Device: [ ] A-Submersible Pump, B-Peristaltic Pump, C-QED Bladder Pump, D-Bailer, E-Piston Pump, F-Dipper/Bottle

Sampling Device: [ ]

X-Other:

Filter Type: [A] A-In-line Disposable, B-Pressure, C-Vacuum, X-Other:

Sample Tube Type: [A] A-Teflon, B-Stainless Steel, C-PVC, D-Polypropylene, X-Other:

WELL DATA

Well Elevation (at TOC): (ft/msl)

Depth to Water (DTW) (from TOC): (ft)

Groundwater Elevation (GWE) (Site Datum, from TOC): (ft msl)

Total Well Depth (from TOC): (ft)

Stick Up (from ground elevation): (ft)

Casing ID: (in)

Casing Material:

Note: Total Depth, Stick Up, Casing ID, etc. are optional and can be from historical data, unless required by Site/Permit. Well Elevation, DTW, and GWE must be current, obtained from site.

STABILIZATION DATA (Optional)

Sample Time (2400 Hr Clock)	Rate/Unit	pH (std)	Conductance (SC/EC) (µmhos/cm @ 25°C)	Temp. (°C)	Turbidity (ntu)	D.O. (mg/L - ppm)	eH/ORP (mV)	DTW (ft)
		1st	1st					
		2nd	2nd					
		3rd	3rd					
		4th	4th					
Input Range for 3 consec. readings or Permit/State requirements:		+/-	+/-	+/-	+/-	+/-	+/-	

Stabilization Data Fields are Optional *(i.e. complete stabilization readings for parameters required by WM, Site, or State). These fields can be used where four (4) field measurements are required by State/Permit/Site. If a Data Logger or other Electronic format is used, fill in final readings below and submit electronic data separately to Site. If more fields above are needed, use separate sheet or form.*

FIELD DATA

SAMPLE DATE (MM DD YY)	pH (std)	CONDUCTANCE (µmhos/cm @ 25°C)	TEMP. (°C)	TURBIDITY (ntu)	DO (mg/L - ppm)	eH/ORP (mV)	Other: Units
01 26 24	7.4	390	7.7	>1000 overlimit	13.25		

Final Field Readings are required *(i.e. record field measurements, final stabilized readings, passive sample readings before sampling for all field parameters required by State/Permit/Site.)*

Sample Appearance: cloudy opaque

Odor: N/O

Color: Light brown

Other:

Weather Conditions (required daily, or as conditions change): 2°C

Direction/Speed: 22km/hN

Outlook: overcast

Precipitation: Y or (N)

FIELD COMMENTS

Specific Comments (including purge/well volume calculations if required):

Width: 1.2m

Depth: 0.7m

time@1m t1: 7

t2: 9

t3: 7

I certify that sampling procedures were in accordance with applicable EPA, State, and WM protocols (if more than one sampler, all should sign):

Date	Name	Signature	Company
01/26/24	Jake Artibello		RWDS
/ /			

DISTRIBUTION: WHITE/ORIGINAL - Stays with Sample, YELLOW - Returned to Client, PINK - Field Copy

Field Information Form v-3.1 06/20

2018

Maxxam Analytics Inc

6740 Campobello Road Mississauga, ON L5N 2L8
Phone: 905-817-5700 Fax: 905-817-5777 Toll Free: (800) 563-6266

REC'D IN LONDON

CHAIN OF CUSTODY RECORD

INVOICE INFORMATION:		REPORT INFORMATION (if differs from invoice):		PROJECT INFORMATION:		MAXXAM JOB NUMBER:
Company Name:	Waste Management of Canada Corporation	Company Name:	RWDI AIR Inc.	Quotation #		
Contact Name:	Lisa Mertick	Contact Name:	Brent Langille	P.O. #:	12285756	
Address:	5768 Nauvoo Rd, Watford, ON N0M 2S0	Address:	4510 Rhodes Drive, Unit 530 Windsor, ON, N8W 5K5	Project #:	2402553.01	CHAIN OF CUSTODY # :
Phone:	519-849-5810 Fax: 519-849-5811	Phone:	519-823-1311 x 2618 Fax: 519-823-1316	Project Name:	Twin Creeks SW	TCEC-SWCM-JAN
Email:	lmertick@wm.com	Email:	BJL@RWDI.com, JCL@RWDI.com	Location:	Twin Creeks	
				Sampled By:	JRA	

REGULATORY CRITERIA

Note: For regulated drinking water samples - please use the Drinking Water Chain of Custody Form

☐ MISA ☐ Reg. 153 (☐ Table 1 ☐ Table 2 ☐ Table 3) Sewer Use (☐ Sanitary ☐ Storm Region ____) ☐ Other ____ specify

☒ PWQO

☐ Reg. 558

Report Criteria on C of A ? n

SAMPLES MUST BE KEPT COOL (< 10 °C) FROM TIME OF SAMPLING UNTIL DELIVERY TO MAXXAM

ANALYSIS REQUESTED (Please be specific):

TURNAROUND TIME (TAT) REQUIRED:

PLEASE PROVIDE ADVANCE NOTICE FOR RUSH PROJECTS

Regular (Standard) TAT:
☒ 5 to 7 Working Days

Rush TAT: Rush Confirmation # ____ (call Lab for #)
☐ 1 day ☐ 2 days ☐ 3 days

DATE Required: 5-Feb-24

TIME Required: 12:00 PM

Please note that TAT for certain tests such as BOD and Dioxins/Furans are > 5 days - contact your Project Manager for details.

	Sample Identification	Date Sampled	Time Sampled	Matrix (GW, SW, Soil, etc.)	Regulated Drinking Water ? (Y / N)	Metals Field Filtered ? (Y / N)	ZJ-ON-WLF-2024 TCLS - SW (COMPLIANCE POINT) QUARTERLY	# of Cont.	COMMENTS / TAT COMMENTS
1	SS1	26-Jan-24	AM	SW	N	N	X	12	
2									
3									
4									
5									
6									
7									
8									
9									
10									
11									All samples for Hg field filtered @ 45um
12									See lab addendum for lab group coding

NONT-2024-01-1539

RELINQUISHED BY: (Signature/Print)	RECEIVED BY: (Signature/Print)	Date:	Time:	Laboratory Use Only	
JRA 26-Jan-24	Edward Sowman, Ragamani	2024/01/26	13:20	Temperature (°C) on Receipt 2/4/4.	Condition of Sample on Receipt ☐ OK ☐ SIF
	VK Vikram Kyatam	2024/01/26	18:08		

*** MANDATORY SECTIONS IN GREY MUST BE FILLED OUT. AN INCOMPLETE CHAIN OF CUSTODY MAY RESULT IN ANALYTICAL TAT DELAYS**

727938

White: Maxxam Yellow: Mail Pink: Client

Your P.O. #: 13254256
Your Project #: 2402553.01
Site#: 700
Site Location: ON07
Your C.O.C. #: TCEC-SWCM-JAN

Attention: Khalid Hussein - Twin Creeks

RWDI Inc.
600 Southgate Drive
Guelph, ON
Canada N1G 4P6

Report Date: 2024/02/05
Report #: R8016338
Version: 1 - Final

CERTIFICATE OF ANALYSIS

BUREAU VERITAS JOB #: C427027
Received: 2024/01/27, 13:26

Sample Matrix: Water
Samples Received: 1

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Analytical Method
ABN Compounds in Water by GC/MS	1	2024/01/30	2024/02/01	CAM SOP-00301	EPA 8270 m
Alkalinity	1	N/A	2024/01/30	CAM SOP-00448	SM 24 2320 B m
Biochemical Oxygen Demand (BOD)	1	2024/01/29	2024/02/03	CAM SOP-00427	SM 24 5210B m
Chloride by Automated Colourimetry	1	N/A	2024/01/30	CAM SOP-00463	SM 24 4500-Cl E m
Chemical Oxygen Demand	1	N/A	2024/02/01	CAM SOP-00416	SM 24 5220 D m
Conductance in Water - On-site	1	N/A	2024/02/01		
Conductivity	1	N/A	2024/01/30	CAM SOP-00414	SM 24 2510 m
Field Measured Dissolved Oxygen in Water	1	N/A	2024/02/01		
Dissolved Mercury in Water by CVAA	1	2024/02/01	2024/02/02	CAM SOP-00453	EPA 7470A m
Total Metals by ICPMS	1	N/A	2024/02/02	CAM SOP-00447	EPA 6020B m
Ammonia-N	1	N/A	2024/01/31	CAM SOP-00441	USGS I-2522-90 m
Nitrate & Nitrite as Nitrogen in Water (1)	1	N/A	2024/01/29	CAM SOP-00440	SM 24 4500-NO3I/NO2B
pH (2)	1	2024/01/29	2024/01/30	CAM SOP-00413	SM 24th - 4500H+ B
Phenols (4AAP)	1	N/A	2024/01/31	CAM SOP-00444	OMOE E3179 m
Field Measured pH (3)	1	N/A	2024/02/01		Field pH Meter
Sulphate by Automated Turbidimetry	1	N/A	2024/01/30	CAM SOP-00464	SM 24 4500-SO42- E m
Total Dissolved Solids	1	2024/01/31	2024/02/01	CAM SOP-00428	SM 24 2540C m
Field Temperature (3)	1	N/A	2024/02/01		Field Thermometer
Total Kjeldahl Nitrogen in Water	1	2024/01/30	2024/01/31	CAM SOP-00938	OMOE E3516 m
Total Phosphorus (Colourimetric)	1	2024/01/30	2024/01/31	CAM SOP-00407	SM 24 4500-P I
Total Suspended Solids	1	2024/01/31	2024/02/02	CAM SOP-00428	SM 24 2540D m
Turbidity - On-site	1	N/A	2024/02/01		
Un-ionized Ammonia (4)	1	2024/01/27	2024/02/01	Auto Calc.	PWQO
Volatile Organic Compounds in Water	1	N/A	2024/01/31	CAM SOP-00228	EPA 8260D

Remarks:

Bureau Veritas is accredited to ISO/IEC 17025 for specific parameters on scopes of accreditation. Unless otherwise noted, procedures used by Bureau Veritas are based upon recognized Provincial, Federal or US method compendia such as CCME, EPA, APHA or the Quebec Ministry of Environment.

All work recorded herein has been done in accordance with procedures and practices ordinarily exercised by professionals in Bureau Veritas' profession using accepted testing methodologies, quality assurance and quality control procedures (except where otherwise agreed by the client and Bureau Veritas in

Bureau Veritas 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.bvna.com

Microbiology testing is conducted at 6660 Campobello Rd. Chemistry testing is conducted at 6740 Campobello Rd.

Your P.O. #: 13254256
Your Project #: 2402553.01
Site#: 700
Site Location: ON07
Your C.O.C. #: TCEC-SWCM-JAN

Attention: Khalid Hussein - Twin Creeks

RWDI Inc.
600 Southgate Drive
Guelph, ON
Canada N1G 4P6

Report Date: 2024/02/05
Report #: R8016338
Version: 1 - Final

CERTIFICATE OF ANALYSIS

BUREAU VERITAS JOB #: C427027
Received: 2024/01/27, 13:26

writing). All data is in statistical control and has met quality control and method performance criteria unless otherwise noted. All method blanks are reported; unless indicated otherwise, associated sample data are not blank corrected. Where applicable, unless otherwise noted, Measurement Uncertainty has not been accounted for when stating conformity to the referenced standard.

Bureau Veritas liability is limited to the actual cost of the requested analyses, unless otherwise agreed in writing. There is no other warranty expressed or implied. Bureau Veritas has been retained to provide analysis of samples provided by the Client using the testing methodology referenced in this report. Interpretation and use of test results are the sole responsibility of the Client and are not within the scope of services provided by Bureau Veritas, unless otherwise agreed in writing. Bureau Veritas is not responsible for the accuracy or any data impacts, that result from the information provided by the customer or their agent.

Solid sample results, except biota, are based on dry weight unless otherwise indicated. Organic analyses are not recovery corrected except for isotope dilution methods.
Results relate to samples tested. When sampling is not conducted by Bureau Veritas, results relate to the supplied samples tested.
This Certificate shall not be reproduced except in full, without the written approval of the laboratory.
Reference Method suffix “m” indicates test methods incorporate validated modifications from specific reference methods to improve performance.
* RPDs calculated using raw data. The rounding of final results may result in the apparent difference.
(1) Values for calculated parameters may not appear to add up due to rounding of raw data and significant figures.
(2) "The CCME method and Analytical Protocol (O. Reg 153/04, O. Reg. 406/19) requires pH to be analyzed within 15 minutes of sampling and therefore field analysis is required for compliance. All Laboratory pH analyses in this report are reported past the CCME and Analytical Protocol (O. Reg 153/04, O. Reg. 406/19) holding time. Bureau Veritas endeavors to analyze samples as soon as possible after receipt."

(3) This is a field test, therefore, the results relate to items that were not analysed at Bureau Veritas.
(4) Un-ionized ammonia is calculated using the total ammonia result and field data provided by the client for pH and temperature.

Encryption Key

Please direct all questions regarding this Certificate of Analysis to:
Patricia Legette, Project Manager
Email: Patricia.Legette@bureauveritas.com
Phone# (905)817-5799

==========

Bureau Veritas has procedures in place to guard against improper use of the electronic signature and have the required "signatories", as per ISO/IEC 17025, signing the reports. For Service Group specific validation, please refer to the Validation Signatures page if included, otherwise available by request. For Department specific Analyst/Supervisor validation names, please refer to the Test Summary section if included, otherwise available by request. This report is authorized by Rodney Major, General Manager responsible for Ontario Environmental laboratory operations.

Bureau Veritas Job #: C427027
Report Date: 2024/02/05

RWDI Inc.
Client Project #: 2402553.01
Site Location: ON07
Your P.O. #: 13254256
Sampler Initials: JRA

RESULTS OF ANALYSES OF WATER

Bureau Veritas ID		YFP472		
Sampling Date		2024/01/26		
COC Number		TCEC-SWCM-JAN		
	UNITS	**SP3**	**RDL**	**QC Batch**
Calculated Parameters				
Total Un-ionized Ammonia	mg/L	0.00071	0.00061	9187182
Field Measurements				
Field Conductivity	uS/cm	425	N/A	ONSITE
Field Dissolved Oxygen	mg/L	12.71	N/A	ONSITE
Field Temperature	Celsius	2.7	N/A	ONSITE
Field Measured Field Turbidity	NTU	12.5	N/A	ONSITE
Field Measured pH	pH	7.2		ONSITE
Inorganics				
Total Ammonia-N	mg/L	0.35	0.15	9188774
Total BOD	mg/L	<2	2	9188357
Total Chemical Oxygen Demand (COD)	mg/L	15	4.0	9194226
Conductivity	umho/cm	430	1.0	9188792
Total Dissolved Solids	mg/L	255	10	9192450
Total Kjeldahl Nitrogen (TKN)	mg/L	<0.7	0.7	9191339
pH	pH	7.83		9188791
Phenols-4AAP	mg/L	<0.0010	0.0010	9192869
Total Phosphorus	mg/L	0.048	0.030	9191350
Total Suspended Solids	mg/L	33	10	9193288
Dissolved Sulphate (SO4)	mg/L	77	1.0	9186958
Alkalinity (Total as CaCO3)	mg/L	82	1.0	9188780
Dissolved Chloride (Cl-)	mg/L	27	1.0	9186956
Nitrite (N)	mg/L	0.014	0.010	9188270
Nitrate (N)	mg/L	0.41	0.10	9188270

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
N/A = Not Applicable

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Microbiology testing is conducted at 6660 Campobello Rd. Chemistry testing is conducted at 6740 Campobello Rd.

RWDI Inc.
Client Project #: 2402553.01
Site Location: ON07
Your P.O. #: 13254256
Sampler Initials: JRA

ELEMENTS BY ATOMIC SPECTROSCOPY (WATER)

Bureau Veritas ID		YFP472		
Sampling Date		2024/01/26		
COC Number		TCEC-SWCM-JAN		
	UNITS	**SP3**	**RDL**	**QC Batch**
Metals				
Dissolved Mercury (Hg)	ug/L	<0.10	0.10	9195516
Total Arsenic (As)	mg/L	0.001	0.001	9197704
Total Barium (Ba)	mg/L	0.031	0.005	9197704
Total Boron (B)	mg/L	0.03	0.02	9197704
Total Cadmium (Cd)	mg/L	<0.0001	0.0001	9197704
Total Calcium (Ca)	mg/L	49	0.2	9197704
Total Chromium (Cr)	mg/L	<0.005	0.005	9197704
Total Copper (Cu)	mg/L	0.005	0.002	9197704
Total Iron (Fe)	mg/L	2.7	0.1	9197704
Total Lead (Pb)	mg/L	0.0018	0.0005	9197704
Total Magnesium (Mg)	mg/L	14	0.05	9197704
Total Nickel (Ni)	mg/L	0.005	0.001	9197704
Total Potassium (K)	mg/L	2.8	0.2	9197704
Total Sodium (Na)	mg/L	21	0.1	9197704
Total Zinc (Zn)	mg/L	0.01	0.01	9197704

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

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Microbiology testing is conducted at 6660 Campobello Rd. Chemistry testing is conducted at 6740 Campobello Rd.

SEMI-VOLATILE ORGANICS BY GC-MS (WATER)

Bureau Veritas ID		YFP472		
Sampling Date		2024/01/26		
COC Number		TCEC-SWCM-JAN		
	UNITS	SP3	RDL	QC Batch
Semivolatile Organics				
Benzo(a)pyrene	ug/L	<0.20	0.20	9191184
1,2-Dichlorobenzene	ug/L	<0.50	0.50	9191184
1,3-Dichlorobenzene	ug/L	<0.50	0.50	9191184
1,4-Dichlorobenzene	ug/L	<0.50	0.50	9191184
Hexachlorobenzene	ug/L	<0.50	0.50	9191184
1,2,4-Trichlorobenzene	ug/L	<0.50	0.50	9191184
2,4-Dichlorophenol	ug/L	<0.30	0.30	9191184
Pentachlorophenol	ug/L	<1.0	1.0	9191184
Phenol	ug/L	<0.50	0.50	9191184
2,4,6-Trichlorophenol	ug/L	<0.50	0.50	9191184
Di-N-butyl phthalate	ug/L	<2.0	2.0	9191184
Diethyl phthalate	ug/L	<6.0	6.0	9191184
Dimethyl phthalate	ug/L	<1.0	1.0	9191184
Surrogate Recovery (%)				
2,4,6-Tribromophenol	%	36		9191184
2-Fluorobiphenyl	%	63		9191184
2-Fluorophenol	%	10		9191184
D14-Terphenyl	%	101		9191184
D5-Nitrobenzene	%	71		9191184
D5-Phenol	%	16		9191184

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

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Microbiology testing is conducted at 6660 Campobello Rd. Chemistry testing is conducted at 6740 Campobello Rd.

RWDI Inc.
Client Project #: 2402553.01
Site Location: ON07
Your P.O. #: 13254256
Sampler Initials: JRA

VOLATILE ORGANICS BY GC/MS (WATER)

Bureau Veritas ID		YFP472		
Sampling Date		2024/01/26		
COC Number		TCEC-SWCM-JAN		
	UNITS	SP3	RDL	QC Batch
Volatile Organics				
Benzene	ug/L	<0.20	0.20	9187120
1,4-Dichlorobenzene	ug/L	<0.40	0.40	9187120
Ethylbenzene	ug/L	<0.20	0.20	9187120
Methylene Chloride(Dichloromethane)	ug/L	<2.0	2.0	9187120
Toluene	ug/L	<0.20	0.20	9187120
Vinyl Chloride	ug/L	<0.20	0.20	9187120
p+m-Xylene	ug/L	<0.20	0.20	9187120
o-Xylene	ug/L	<0.20	0.20	9187120
Total Xylenes	ug/L	<0.20	0.20	9187120
Surrogate Recovery (%)				
4-Bromofluorobenzene	%	102		9187120
D4-1,2-Dichloroethane	%	99		9187120
D8-Toluene	%	97		9187120

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

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GENERAL COMMENTS

Results relate only to the items tested.

Bureau Veritas 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.bvna.com

Microbiology testing is conducted at 6660 Campobello Rd. Chemistry testing is conducted at 6740 Campobello Rd.

Bureau Veritas Job #: C427027
Report Date: 2024/02/05

QUALITY ASSURANCE REPORT

RWDI Inc.
Client Project #: 2402553.01
Site Location: ON07
Your P.O. #: 13254256
Sampler Initials: JRA

			Matrix Spike		SPIKED BLANK		Method Blank		RPD		QC Standard	
QC Batch	Parameter	Date	% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits	% Recovery	QC Limits
9187120	4-Bromofluorobenzene	2024/01/31	104	70 - 130	102	70 - 130	103	%				
9187120	D4-1,2-Dichloroethane	2024/01/31	99	70 - 130	101	70 - 130	98	%				
9187120	D8-Toluene	2024/01/31	97	70 - 130	99	70 - 130	96	%				
9191184	2,4,6-Tribromophenol	2024/01/31	112	10 - 130	108	10 - 130	80	%				
9191184	2-Fluorobiphenyl	2024/01/31	75	30 - 130	74	30 - 130	78	%				
9191184	2-Fluorophenol	2024/01/31	44	10 - 130	52	10 - 130	38	%				
9191184	D14-Terphenyl	2024/01/31	108	30 - 130	114	30 - 130	102	%				
9191184	D5-Nitrobenzene	2024/01/31	88	30 - 130	94	30 - 130	81	%				
9191184	D5-Phenol	2024/01/31	14	10 - 130	35	10 - 130	27	%				
9186956	Dissolved Chloride (Cl-)	2024/01/30	NC	80 - 120	97	80 - 120	<1.0	mg/L	0.75 (1)	20		
9186958	Dissolved Sulphate (SO4)	2024/01/30	96	75 - 125	95	80 - 120	<1.0	mg/L	0.063 (1)	20		
9187120	1,4-Dichlorobenzene	2024/01/31	111	70 - 130	115	70 - 130	<0.40	ug/L				
9187120	Benzene	2024/01/31	93	70 - 130	92	70 - 130	<0.20	ug/L				
9187120	Ethylbenzene	2024/01/31	93	70 - 130	93	70 - 130	<0.20	ug/L				
9187120	Methylene Chloride(Dichloromethane)	2024/01/31	98	70 - 130	99	70 - 130	<2.0	ug/L				
9187120	o-Xylene	2024/01/31	87	70 - 130	87	70 - 130	<0.20	ug/L	0.46 (1)	30		
9187120	p+m-Xylene	2024/01/31	98	70 - 130	98	70 - 130	<0.20	ug/L	6.6 (1)	30		
9187120	Toluene	2024/01/31	92	70 - 130	92	70 - 130	<0.20	ug/L	NC (1)	30		
9187120	Total Xylenes	2024/01/31					<0.20	ug/L	4.5 (1)	30		
9187120	Vinyl Chloride	2024/01/31	84	70 - 130	87	70 - 130	<0.20	ug/L				
9188270	Nitrate (N)	2024/01/29	87	80 - 120	92	80 - 120	<0.10	mg/L	0.17 (1)	20		
9188270	Nitrite (N)	2024/01/29	103	80 - 120	104	80 - 120	<0.010	mg/L	3.2 (1)	20		
9188357	Total BOD	2024/02/03					<2	mg/L	NC (1)	30	94	80 - 120
9188774	Total Ammonia-N	2024/01/31	98	75 - 125	95	80 - 120	<0.15	mg/L	0.32 (1)	20		
9188780	Alkalinity (Total as CaCO3)	2024/01/30			93	85 - 115	<1.0	mg/L	9.4 (1)	20		
9188791	pH	2024/01/30			101	98 - 103			2.4 (1)	N/A		
9188792	Conductivity	2024/01/30			99	85 - 115	<1.0	umho/cm	NC (1)	10		
9191184	1,2,4-Trichlorobenzene	2024/01/31	66	30 - 130	63	30 - 130	<0.50	ug/L				
9191184	1,2-Dichlorobenzene	2024/01/31	68	30 - 130	66	30 - 130	<0.50	ug/L				

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Microbiology testing is conducted at 6660 Campobello Rd. Chemistry testing is conducted at 6740 Campobello Rd.

QUALITY ASSURANCE REPORT(CONT'D)

			Matrix Spike		SPIKED BLANK		Method Blank		RPD		QC Standard	
QC Batch	Parameter	Date	% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits	% Recovery	QC Limits
9191184	1,3-Dichlorobenzene	2024/01/31	60	30 - 130	56	30 - 130	<0.50	ug/L				
9191184	1,4-Dichlorobenzene	2024/01/31	64	30 - 130	57	30 - 130	<0.50	ug/L				
9191184	2,4,6-Trichlorophenol	2024/01/31	93	10 - 130	92	10 - 130	<0.50	ug/L				
9191184	2,4-Dichlorophenol	2024/01/31	93	10 - 130	92	10 - 130	<0.30	ug/L				
9191184	Benzo(a)pyrene	2024/01/31	113	30 - 130	99	30 - 130	<0.20	ug/L				
9191184	Diethyl phthalate	2024/01/31	95	30 - 130	114	30 - 130	<5.0	ug/L				
9191184	Dimethyl phthalate	2024/01/31	94	30 - 130	95	30 - 130	<1.0	ug/L				
9191184	Di-N-butyl phthalate	2024/01/31	116	30 - 130	122	30 - 130	<2.0	ug/L	NC (1)	40		
9191184	Hexachlorobenzene	2024/01/31	106	30 - 130	109	30 - 130	<0.50	ug/L				
9191184	Pentachlorophenol	2024/01/31	107	10 - 130	71	10 - 130	<1.0	ug/L				
9191184	Phenol	2024/01/31	4.8 (2)	10 - 130	38	10 - 130	<0.50	ug/L				
9191339	Total Kjeldahl Nitrogen (TKN)	2024/01/31	98	80 - 120	95	80 - 120	<0.7	mg/L	NC (1)	20	96	80 - 120
9191350	Total Phosphorus	2024/01/31	99	80 - 120	101	80 - 120	<0.030	mg/L	NC (1)	25	102	80 - 120
9192450	Total Dissolved Solids	2024/02/01			97	80 - 120	<10	mg/L	1.3 (1)	20		
9192869	Phenols-4AAP	2024/01/31	103	80 - 120	101	80 - 120	<0.0010	mg/L	NC (1)	20		
9193288	Total Suspended Solids	2024/02/02			97	80 - 120	<10	mg/L	NC (1)	20		
9194226	Total Chemical Oxygen Demand (COD)	2024/02/01	NC	80 - 120	97	80 - 120	<4.0	mg/L	6.4 (1)	20		
9195516	Dissolved Mercury (Hg)	2024/02/02	106	75 - 125	108	80 - 120	<0.10	ug/L	NC (1)	20		
9197704	Total Arsenic (As)	2024/02/02	96 (3)	80 - 120	96	80 - 120	<0.001	mg/L	0.83 (4)	20		
9197704	Total Barium (Ba)	2024/02/02	97 (3)	80 - 120	98	80 - 120	<0.005	mg/L	6.5 (4)	20		
9197704	Total Boron (B)	2024/02/02	98 (3)	80 - 120	94	80 - 120	<0.02	mg/L	3.8 (4)	20		
9197704	Total Cadmium (Cd)	2024/02/02	97 (3)	80 - 120	95	80 - 120	<0.0001	mg/L	NC (4)	20		
9197704	Total Calcium (Ca)	2024/02/02	NC (3)	80 - 120	94	80 - 120	<0.2	mg/L	5.3 (4)	20		
9197704	Total Chromium (Cr)	2024/02/02	95 (3)	80 - 120	98	80 - 120	<0.005	mg/L	NC (4)	20		
9197704	Total Copper (Cu)	2024/02/02	98 (3)	80 - 120	98	80 - 120	<0.002	mg/L	1.8 (4)	20		
9197704	Total Iron (Fe)	2024/02/02	97 (3)	80 - 120	98	80 - 120	<0.1	mg/L	2.9 (4)	20		
9197704	Total Lead (Pb)	2024/02/02	97 (3)	80 - 120	98	80 - 120	<0.0005	mg/L	3.6 (4)	20		
9197704	Total Magnesium (Mg)	2024/02/02	94 (3)	80 - 120	97	80 - 120	<0.05	mg/L	2.7 (4)	20		
9197704	Total Nickel (Ni)	2024/02/02	95 (3)	80 - 120	96	80 - 120	<0.001	mg/L	3.8 (4)	20		
9197704	Total Potassium (K)	2024/02/02	98 (3)	80 - 120	99	80 - 120	<0.2	mg/L	4.3 (4)	20		

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Microbiology testing is conducted at 6660 Campobello Rd. Chemistry testing is conducted at 6740 Campobello Rd.

QUALITY ASSURANCE REPORT(CONT'D)

			Matrix Spike		SPIKED BLANK		Method Blank		RPD		QC Standard	
QC Batch	Parameter	Date	% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits	% Recovery	QC Limits
9197704	Total Sodium (Na)	2024/02/02	96 (3)	80 - 120	97	80 - 120	<0.1	mg/L	3.3 (4)	20		
9197704	Total Zinc (Zn)	2024/02/02	98 (3)	80 - 120	98	80 - 120	<0.01	mg/L	4.5 (4)	20		

N/A = Not Applicable

Duplicate: Paired analysis of a separate portion of the same sample. Used to evaluate the variance in the measurement.

Matrix Spike: A sample to which a known amount of the analyte of interest has been added. Used to evaluate sample matrix interference.

QC Standard: A sample of known concentration prepared by an external agency under stringent conditions. Used as an independent check of method accuracy.

Spiked Blank: A blank matrix sample to which a known amount of the analyte, usually from a second source, has been added. Used to evaluate method accuracy.

Method Blank: A blank matrix containing all reagents used in the analytical procedure. Used to identify laboratory contamination.

Surrogate: A pure or isotopically labeled compound whose behavior mirrors the analytes of interest. Used to evaluate extraction efficiency.

NC (Matrix Spike): The recovery in the matrix spike was not calculated. The relative difference between the concentration in the parent sample and the spike amount was too small to permit a reliable recovery calculation (matrix spike concentration was less than the native sample concentration)

NC (Duplicate RPD): The duplicate RPD was not calculated. The concentration in the sample and/or duplicate was too low to permit a reliable RPD calculation (absolute difference <= 2x RDL).

(1) Duplicate Parent ID

(2) Recovery or RPD for this parameter is outside control limits. The overall quality control for this analysis meets acceptability criteria.

(3) Matrix Spike Parent ID [YFP472-07]

(4) Duplicate Parent ID [YFP472-07]

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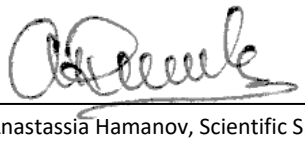
Microbiology testing is conducted at 6660 Campobello Rd. Chemistry testing is conducted at 6740 Campobello Rd.

Bureau Veritas Job #: C427027
Report Date: 2024/02/05

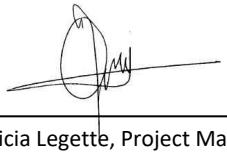
RWDI Inc.
Client Project #: 2402553.01
Site Location: ON07
Your P.O. #: 13254256
Sampler Initials: JRA

VALIDATION SIGNATURE PAGE

The analytical data and all QC contained in this report were reviewed and validated by:



Anastassia Hamanov, Scientific Specialist



Patricia Legette, Project Manager

Bureau Veritas has procedures in place to guard against improper use of the electronic signature and have the required "signatories", as per ISO/IEC 17025, signing the reports. For Service Group specific validation, please refer to the Validation Signatures page if included, otherwise available by request. For Department specific Analyst/Supervisor validation names, please refer to the Test Summary section if included, otherwise available by request. This report is authorized by Rodney Major, General Manager responsible for Ontario Environmental laboratory operations.

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Microbiology testing is conducted at 6660 Campobello Rd. Chemistry testing is conducted at 6740 Campobello Rd.

FIELD INFORMATION FORM

BUREAU VERITAS

WASTE MANAGEMENT

Site Name: TCEC

Site No.: Sample: SP3 (Sample ID)

This Waste Management Field Information Form is Required
This form is to be completed, in addition to any State Forms. The Field Form is submitted along with the Chain of Custody Forms that accompany the sample containers (i.e. with the cooler that is returned to the laboratory).

Laboratory Use Only/Lab ID:

PURGE INFO

PURGE DATE (MM DD YY)	PURGE TIME (2400 Hr Clock)	ELAPSED HRS (hrs:min)	WATER VOL IN CASING (Gallons)	ACTUAL VOL PURGED (Gallons)	WELL VOLs PURGED

Note: For Passive Sampling, replace "Water Vol in Casing" and "Well Vols Purged" w/ Water Vol in Tubing/Flow Cell and Tubing/Flow Cell Vols Purged. Mark Changes, Record field data below.

PURGE/SAMPLE EQUIPMENT

Purging and Sampling Equipment ... Dedicated: Y or N

Filter Device: Y or N — 0.45 µ or ____ µ (circle or fill in)

Purging Device: ____ A-Submersible Pump, B-Peristaltic Pump, C-QED Bladder Pump, D-Bailer, E-Piston Pump, F-Dipper/Bottle

Sampling Device: ____

X-Other: ____

Filter Type: A — A-In-line Disposable, B-Pressure, C-Vacuum, X-Other: ____

Sample Tube Type: A — A-Teflon, B-Stainless Steel, C-PVC, D-Polypropylene, X-Other: ____

WELL DATA

Well Elevation (at TOC): ____ (ft/msl)

Depth to Water (DTW) (from TOC): ____ (ft)

Groundwater Elevation (GWE) (Site Datum, from TOC): ____ (ft msl)

Total Well Depth (from TOC): ____ (ft)

Stick Up (from ground elevation): ____ (ft)

Casing ID: ____ (in)

Casing Material: ____

Note: Total Depth, Stick Up, Casing ID, etc. are optional and can be from historical data, unless required by Site/Permit. Well Elevation, DTW, and GWE must be current, obtained from site.

STABILIZATION DATA (Optional)

Sample Time (2400 Hr Clock)	Rate/Unit	pH (std)	Conductance (SC/EC) (µmhos/cm @ 25°C)	Temp. (°C)	Turbidity (ntu)	D.O. (mg/L - ppm)	eH/ORP (mV)	DTW (ft)
		1st	1st					
		2nd	2nd					
		3rd	3rd					
		4th	4th					
Input Range for 3 consec. readings or Permit/State requirements:		+/-	+/-	+/-	+/-	+/-	+/-	

Stabilization Data Fields are Optional *(i.e. complete stabilization readings for parameters required by WM, Site, or State). These fields can be used where four (4) field measurements are required by State/Permit/Site. If a Data Logger or other Electronic format is used, fill in final readings below and submit electronic data separately to Site. If more fields above are needed, use separate sheet or form.*

FIELD DATA

SAMPLE DATE (MM DD YY)	pH (std)	CONDUCTANCE (µmhos/cm @ 25°C)	TEMP. (°C)	TURBIDITY (ntu)	DO (mg/L - ppm)	eH/ORP (mV)	Other: Units
01 26 24	7.2	425	2.7	125	12.71		

Final Field Readings are required *(i.e. record field measurements, final stabilized readings, passive sample readings before sampling for all field parameters required by State/Permit/Site.)*

Sample Appearance: transparent — Odor: N/O — Color: N/C — Other: —

Weather Conditions (required daily, or as conditions change): 3°C — Direction/Speed: 18Km/hN — Outlook: overcast — Precipitation: Y or N

Specific Comments (including purge/well volume calculations if required):

FIELD COMMENTS

Width: 2m

Depth: 0.25

time/m t_1: 6

t_2: 6

t_3: 5

I certify that sampling procedures were in accordance with applicable EPA, State, and WM protocols (if more than one sampler, all should sign):

Date	Name	Signature	Company
01,26,24	Jake Artibelli		RWDI
/ /			

DISTRIBUTION: WHITE/ORIGINAL - Stays with Sample, YELLOW - Returned to Client, PINK - Field Copy

Field Information Form v.3.1 06/20

2019

Maxxam Analytics Inc
6740 Campobello Road Mississauga, ON L5N 2L8
Phone: 905-817-5700 Fax: 905-817-5777 Toll Free: (800) 563-6266

REC'D IN LONDON

CHAIN OF CUSTODY RECORD

Page 1 of 1

INVOICE INFORMATION:		REPORT INFORMATION (if differs from invoice):		PROJECT INFORMATION:	
Company Name:	Waste Management of Canada Corporation	Company Name:	RWDI AIR Inc.	Quotation #	
Contact Name:	Lisa Mertick	Contact Name:	Brent Langille	P.O. #:	12285756
Address:	5768 Nauvoo Rd, Watford, ON N0M 2S0	Address:	4510 Rhodes Drive, Unit 530 Windsor, ON, N8W 5K5	Project #:	2402553.01
				Project Name:	Twin Creeks SW
				Location:	Twin Creeks
Phone:	519-849-5810 Fax: 519-849-5811	Phone:	519-823-1311 x 2618 Fax: 519-823-1316	Sampled By:	JRA
Email:	lmertick@wm.com	Email:	BJL@RWDI.com, JCL@RWDI.com		

MAXXAM JOB NUMBER:

CHAIN OF CUSTODY # : TCEC-SWCM-JAN

REGULATORY CRITERIA

Note: For regulated drinking water samples - please use the Drinking Water Chain of Custody Form

[ ] MISA Reg. 153 Sewer Use [ ] Other
[ ] Table 1 [ ] Sanitary
[x] PWQO [ ] Table 2 [ ] Storm
[ ] Table 3 Region _____ specify
[ ] Reg. 558

Report Criteria on C of A ? [n]

SAMPLES MUST BE KEPT COOL (< 10 °C) FROM TIME OF SAMPLING UNTIL DELIVERY TO MAXXAM

ANALYSIS REQUESTED (Please be specific):

	Sample Identification	Date Sampled	Time Sampled	Matrix (GW, SW, Soil, etc.)	Regulated Drinking Water ? (Y / N)	Metals Field Filtered ? (Y / N)	ZL-ON-WLF-2024 TCLS - SW (POND OUTLETS) QUARTERLY	# of Cont.	COMMENTS / TAT COMMENTS
1	SP3	26-Jan-24	AM	SW	N	N	X	12	
2									
3									
4									
5									
6									
7									
8									
9									
10									
11									
12									

TURNAROUND TIME (TAT) REQUIRED:

PLEASE PROVIDE ADVANCE NOTICE FOR RUSH PROJECTS

Regular (Standard) TAT:
[x] 5 to 7 Working Days

Rush TAT: Rush Confirmation # _____ (call Lab for #)
[ ] 1 day [ ] 2 days [ ] 3 days

DATE Required: 5-Feb-24
TIME Required: 12:00 PM

Please note that TAT for certain tests such as BOD and Dioxins/Furans are > 5 days - contact your Project Manager for details.

NONT-2024-01-1549

All samples for Hg field filtered @ 45um
See lab addendum for lab group coding

RELINQUISHED BY: (Signature/Print)	RECEIVED BY: (Signature/Print)	Date:	Time:
JRA - January 26, 2024	Sowmya Raguraman	2024/01/26	13:26
	VK Usha Kiran	2024/01/26	18:08

Laboratory Use Only

Temperature (°C) on Receipt: 3 | 2 | 3

Condition of Sample on Receipt: [ ] OK [ ] SIF

*** MANDATORY SECTIONS IN GREY MUST BE FILLED OUT. AN INCOMPLETE CHAIN OF CUSTODY MAY RESULT IN ANALYTICAL TAT DELAYS**

BV: 727135
7/7/7

Custody Seal Present Intact
Cooling Media Yes No

White: Maxxam Yellow: Mail Pink: Client

Your P.O. #: 13254256
Your Project #: 2402553.01
Site#: 700
Site Location: ON07
Your C.O.C. #: TCEC-SWCN-JAN

Attention: Khalid Hussein - Twin Creeks

RWDI Inc.
600 Southgate Drive
Guelph, ON
Canada N1G 4P6

Report Date: 2024/02/05
Report #: R8015576
Version: 1 - Final

CERTIFICATE OF ANALYSIS

BUREAU VERITAS JOB #: C427031
Received: 2024/01/26, 13:25

Sample Matrix: Water
Samples Received: 1

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Analytical Method
ABN Compounds in Water by GC/MS	1	2024/01/30	2024/02/01	CAM SOP-00301	EPA 8270 m
Alkalinity	1	N/A	2024/01/30	CAM SOP-00448	SM 24 2320 B m
Biochemical Oxygen Demand (BOD)	1	2024/01/29	2024/02/03	CAM SOP-00427	SM 24 5210B m
Chloride by Automated Colourimetry	1	N/A	2024/01/30	CAM SOP-00463	SM 24 4500-Cl E m
Chemical Oxygen Demand	1	N/A	2024/01/31	CAM SOP-00416	SM 24 5220 D m
Conductance in Water - On-site	1	N/A	2024/01/31		
Conductivity	1	N/A	2024/01/30	CAM SOP-00414	SM 24 2510 m
Field Measured Dissolved Oxygen in Water	1	N/A	2024/01/31		
Dissolved Mercury in Water by CVAA	1	2024/02/01	2024/02/02	CAM SOP-00453	EPA 7470A m
Total Metals by ICPMS	1	N/A	2024/02/01	CAM SOP-00447	EPA 6020B m
Ammonia-N	1	N/A	2024/01/31	CAM SOP-00441	USGS I-2522-90 m
Nitrate & Nitrite as Nitrogen in Water (1)	1	N/A	2024/01/29	CAM SOP-00440	SM 24 4500-NO3I/NO2B
pH (2)	1	2024/01/29	2024/01/30	CAM SOP-00413	SM 24th - 4500H+ B
Phenols (4AAP)	1	N/A	2024/01/31	CAM SOP-00444	OMOE E3179 m
Field Measured pH (3)	1	N/A	2024/01/31		Field pH Meter
Sulphate by Automated Turbidimetry	1	N/A	2024/01/30	CAM SOP-00464	SM 24 4500-SO42- E m
Total Dissolved Solids	1	2024/01/31	2024/02/01	CAM SOP-00428	SM 24 2540C m
Field Temperature (3)	1	N/A	2024/01/31		Field Thermometer
Total Kjeldahl Nitrogen in Water	1	2024/01/30	2024/01/31	CAM SOP-00938	OMOE E3516 m
Total Phosphorus (Colourimetric)	1	2024/01/30	2024/01/31	CAM SOP-00407	SM 24 4500-P I
Total Suspended Solids	1	2024/01/31	2024/02/01	CAM SOP-00428	SM 24 2540D m
Turbidity - On-site	1	N/A	2024/01/31		
Un-ionized Ammonia (4)	1	2024/01/27	2024/02/01	Auto Calc.	PWQO
Volatile Organic Compounds in Water	1	N/A	2024/01/31	CAM SOP-00228	EPA 8260D

Remarks:

Bureau Veritas is accredited to ISO/IEC 17025 for specific parameters on scopes of accreditation. Unless otherwise noted, procedures used by Bureau Veritas are based upon recognized Provincial, Federal or US method compendia such as CCME, EPA, APHA or the Quebec Ministry of Environment.

All work recorded herein has been done in accordance with procedures and practices ordinarily exercised by professionals in Bureau Veritas' profession using accepted testing methodologies, quality assurance and quality control procedures (except where otherwise agreed by the client and Bureau Veritas in

Bureau Veritas 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.bvna.com

Microbiology testing is conducted at 6660 Campobello Rd. Chemistry testing is conducted at 6740 Campobello Rd.

Your P.O. #: 13254256
Your Project #: 2402553.01
Site#: 700
Site Location: ON07
Your C.O.C. #: TCEC-SWCN-JAN

Attention: Khalid Hussein - Twin Creeks

RWDI Inc.
600 Southgate Drive
Guelph, ON
Canada N1G 4P6

Report Date: 2024/02/05
Report #: R8015576
Version: 1 - Final

CERTIFICATE OF ANALYSIS

BUREAU VERITAS JOB #: C427031
Received: 2024/01/26, 13:25

writing). All data is in statistical control and has met quality control and method performance criteria unless otherwise noted. All method blanks are reported; unless indicated otherwise, associated sample data are not blank corrected. Where applicable, unless otherwise noted, Measurement Uncertainty has not been accounted for when stating conformity to the referenced standard.

Bureau Veritas liability is limited to the actual cost of the requested analyses, unless otherwise agreed in writing. There is no other warranty expressed or implied. Bureau Veritas has been retained to provide analysis of samples provided by the Client using the testing methodology referenced in this report. Interpretation and use of test results are the sole responsibility of the Client and are not within the scope of services provided by Bureau Veritas, unless otherwise agreed in writing. Bureau Veritas is not responsible for the accuracy or any data impacts, that result from the information provided by the customer or their agent.

Solid sample results, except biota, are based on dry weight unless otherwise indicated. Organic analyses are not recovery corrected except for isotope dilution methods.
Results relate to samples tested. When sampling is not conducted by Bureau Veritas, results relate to the supplied samples tested.
This Certificate shall not be reproduced except in full, without the written approval of the laboratory.
Reference Method suffix “m” indicates test methods incorporate validated modifications from specific reference methods to improve performance.
* RPDs calculated using raw data. The rounding of final results may result in the apparent difference.
(1) Values for calculated parameters may not appear to add up due to rounding of raw data and significant figures.
(2) "The CCME method and Analytical Protocol (O. Reg 153/04, O. Reg. 406/19) requires pH to be analyzed within 15 minutes of sampling and therefore field analysis is required for compliance. All Laboratory pH analyses in this report are reported past the CCME and Analytical Protocol (O. Reg 153/04, O. Reg. 406/19) holding time. Bureau Veritas endeavors to analyze samples as soon as possible after receipt."

(3) This is a field test, therefore, the results relate to items that were not analysed at Bureau Veritas.
(4) Un-ionized ammonia is calculated using the total ammonia result and field data provided by the client for pH and temperature.

Encryption Key

Please direct all questions regarding this Certificate of Analysis to:
Patricia Legette, Project Manager
Email: Patricia.Legette@bureauveritas.com
Phone# (905)817-5799

==========

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Bureau Veritas Job #: C427031
Report Date: 2024/02/05

RWDI Inc.
Client Project #: 2402553.01
Site Location: ON07
Your P.O. #: 13254256
Sampler Initials: JRA

RESULTS OF ANALYSES OF WATER

Bureau Veritas ID		YFP488		
Sampling Date		2024/01/25		
COC Number		TCEC-SWCN-JAN		
	UNITS	SP2	RDL	QC Batch
Calculated Parameters				
Total Un-ionized Ammonia	mg/L	<0.00061	0.00061	9187182
Field Measurements				
Field Conductivity	uS/cm	586	N/A	ONSITE
Field Dissolved Oxygen	mg/L	11.60	N/A	ONSITE
Field Temperature	Celsius	4.6	N/A	ONSITE
Field Measured Field Turbidity	NTU	19.5	N/A	ONSITE
Field Measured pH	pH	7.3		ONSITE
Inorganics				
Total Ammonia-N	mg/L	0.19	0.15	9188774
Total BOD	mg/L	<2	2	9188357
Total Chemical Oxygen Demand (COD)	mg/L	9.1	4.0	9191420
Conductivity	umho/cm	460	1.0	9188792
Total Dissolved Solids	mg/L	295	10	9191038
Total Kjeldahl Nitrogen (TKN)	mg/L	<0.7	0.7	9191339
pH	pH	7.91		9188791
Phenols-4AAP	mg/L	<0.0010	0.0010	9192869
Total Phosphorus	mg/L	<0.030	0.030	9191350
Total Suspended Solids	mg/L	<10	10	9192449
Dissolved Sulphate (SO4)	mg/L	94	1.0	9186958
Alkalinity (Total as CaCO3)	mg/L	110	1.0	9188780
Dissolved Chloride (Cl-)	mg/L	9.5	1.0	9186956
Nitrite (N)	mg/L	0.025	0.010	9188270
Nitrate (N)	mg/L	0.87	0.10	9188270

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
N/A = Not Applicable

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Microbiology testing is conducted at 6660 Campobello Rd. Chemistry testing is conducted at 6740 Campobello Rd.

Bureau Veritas Job #: C427031
Report Date: 2024/02/05

RWDI Inc.
Client Project #: 2402553.01
Site Location: ON07
Your P.O. #: 13254256
Sampler Initials: JRA

ELEMENTS BY ATOMIC SPECTROSCOPY (WATER)

Bureau Veritas ID		YFP488		
Sampling Date		2024/01/25		
COC Number		TCEC-SWCN-JAN		
	UNITS	SP2	RDL	QC Batch
Metals				
Dissolved Mercury (Hg)	ug/L	<0.10	0.10	9195516
Total Arsenic (As)	mg/L	<0.001	0.001	9195181
Total Barium (Ba)	mg/L	0.026	0.005	9195181
Total Boron (B)	mg/L	0.09	0.02	9195181
Total Cadmium (Cd)	mg/L	<0.0001	0.0001	9195181
Total Calcium (Ca)	mg/L	59	0.2	9195181
Total Chromium (Cr)	mg/L	<0.005	0.005	9195181
Total Copper (Cu)	mg/L	<0.002	0.002	9195181
Total Iron (Fe)	mg/L	0.3	0.1	9195181
Total Lead (Pb)	mg/L	<0.0005	0.0005	9195181
Total Magnesium (Mg)	mg/L	13	0.05	9195181
Total Nickel (Ni)	mg/L	0.002	0.001	9195181
Total Potassium (K)	mg/L	2.6	0.2	9195181
Total Sodium (Na)	mg/L	8.6	0.1	9195181
Total Zinc (Zn)	mg/L	0.01	0.01	9195181

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

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Microbiology testing is conducted at 6660 Campobello Rd. Chemistry testing is conducted at 6740 Campobello Rd.

SEMI-VOLATILE ORGANICS BY GC-MS (WATER)

Bureau Veritas ID		YFP488		
Sampling Date		2024/01/25		
COC Number		TCEC-SWCN-JAN		
	UNITS	SP2	RDL	QC Batch
Semivolatile Organics				
Benzo(a)pyrene	ug/L	<0.20	0.20	9191184
1,2-Dichlorobenzene	ug/L	<0.50	0.50	9191184
1,3-Dichlorobenzene	ug/L	<0.50	0.50	9191184
1,4-Dichlorobenzene	ug/L	<0.50	0.50	9191184
Hexachlorobenzene	ug/L	<0.50	0.50	9191184
1,2,4-Trichlorobenzene	ug/L	<0.50	0.50	9191184
2,4-Dichlorophenol	ug/L	<0.30	0.30	9191184
Pentachlorophenol	ug/L	<1.0	1.0	9191184
Phenol	ug/L	<0.50	0.50	9191184
2,4,6-Trichlorophenol	ug/L	<0.50	0.50	9191184
Di-N-butyl phthalate	ug/L	<2.0	2.0	9191184
Diethyl phthalate	ug/L	<5.0	5.0	9191184
Dimethyl phthalate	ug/L	<1.0	1.0	9191184
Surrogate Recovery (%)				
2,4,6-Tribromophenol	%	55		9191184
2-Fluorobiphenyl	%	67		9191184
2-Fluorophenol	%	17		9191184
D14-Terphenyl	%	111		9191184
D5-Nitrobenzene	%	82		9191184
D5-Phenol	%	17		9191184

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

Microbiology testing is conducted at 6660 Campobello Rd. Chemistry testing is conducted at 6740 Campobello Rd.

RWDI Inc.
Client Project #: 2402553.01
Site Location: ON07
Your P.O. #: 13254256
Sampler Initials: JRA

VOLATILE ORGANICS BY GC/MS (WATER)

Bureau Veritas ID		YFP488		
Sampling Date		2024/01/25		
COC Number		TCEC-SWCN-JAN		
	UNITS	SP2	RDL	QC Batch
Volatile Organics				
Benzene	ug/L	<0.20	0.20	9187120
1,4-Dichlorobenzene	ug/L	<0.40	0.40	9187120
Ethylbenzene	ug/L	<0.20	0.20	9187120
Methylene Chloride(Dichloromethane)	ug/L	<2.0	2.0	9187120
Toluene	ug/L	<0.20	0.20	9187120
Vinyl Chloride	ug/L	<0.20	0.20	9187120
p+m-Xylene	ug/L	<0.20	0.20	9187120
o-Xylene	ug/L	<0.20	0.20	9187120
Total Xylenes	ug/L	<0.20	0.20	9187120
Surrogate Recovery (%)				
4-Bromofluorobenzene	%	103		9187120
D4-1,2-Dichloroethane	%	97		9187120
D8-Toluene	%	97		9187120

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

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Microbiology testing is conducted at 6660 Campobello Rd. Chemistry testing is conducted at 6740 Campobello Rd.

GENERAL COMMENTS

Results relate only to the items tested.

Bureau Veritas 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.bvna.com

Microbiology testing is conducted at 6660 Campobello Rd. Chemistry testing is conducted at 6740 Campobello Rd.

Bureau Veritas Job #: C427031
Report Date: 2024/02/05

QUALITY ASSURANCE REPORT

RWDI Inc.
Client Project #: 2402553.01
Site Location: ON07
Your P.O. #: 13254256
Sampler Initials: JRA

			Matrix Spike		SPIKED BLANK		Method Blank		RPD		QC Standard	
QC Batch	Parameter	Date	% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits	% Recovery	QC Limits
9187120	4-Bromofluorobenzene	2024/01/31	104	70 - 130	102	70 - 130	103	%				
9187120	D4-1,2-Dichloroethane	2024/01/31	99	70 - 130	101	70 - 130	98	%				
9187120	D8-Toluene	2024/01/31	97	70 - 130	99	70 - 130	96	%				
9191184	2,4,6-Tribromophenol	2024/01/31	112	10 - 130	108	10 - 130	80	%				
9191184	2-Fluorobiphenyl	2024/01/31	75	30 - 130	74	30 - 130	78	%				
9191184	2-Fluorophenol	2024/01/31	44	10 - 130	52	10 - 130	38	%				
9191184	D14-Terphenyl	2024/01/31	108	30 - 130	114	30 - 130	102	%				
9191184	D5-Nitrobenzene	2024/01/31	88	30 - 130	94	30 - 130	81	%				
9191184	D5-Phenol	2024/01/31	14	10 - 130	35	10 - 130	27	%				
9186956	Dissolved Chloride (Cl-)	2024/01/30	NC	80 - 120	97	80 - 120	<1.0	mg/L	0.75 (1)	20		
9186958	Dissolved Sulphate (SO4)	2024/01/30	96	75 - 125	95	80 - 120	<1.0	mg/L	0.063 (1)	20		
9187120	1,4-Dichlorobenzene	2024/01/31	111	70 - 130	115	70 - 130	<0.40	ug/L				
9187120	Benzene	2024/01/31	93	70 - 130	92	70 - 130	<0.20	ug/L				
9187120	Ethylbenzene	2024/01/31	93	70 - 130	93	70 - 130	<0.20	ug/L				
9187120	Methylene Chloride(Dichloromethane)	2024/01/31	98	70 - 130	99	70 - 130	<2.0	ug/L				
9187120	o-Xylene	2024/01/31	87	70 - 130	87	70 - 130	<0.20	ug/L	0.46 (1)	30		
9187120	p+m-Xylene	2024/01/31	98	70 - 130	98	70 - 130	<0.20	ug/L	6.6 (1)	30		
9187120	Toluene	2024/01/31	92	70 - 130	92	70 - 130	<0.20	ug/L	NC (1)	30		
9187120	Total Xylenes	2024/01/31					<0.20	ug/L	4.5 (1)	30		
9187120	Vinyl Chloride	2024/01/31	84	70 - 130	87	70 - 130	<0.20	ug/L				
9188270	Nitrate (N)	2024/01/29	87 (2)	80 - 120	92	80 - 120	<0.10	mg/L	0.17 (3)	20		
9188270	Nitrite (N)	2024/01/29	103 (2)	80 - 120	104	80 - 120	<0.010	mg/L	3.2 (3)	20		
9188357	Total BOD	2024/02/03					<2	mg/L	NC (1)	30	94	80 - 120
9188774	Total Ammonia-N	2024/01/31	98	75 - 125	95	80 - 120	<0.15	mg/L	0.32 (1)	20		
9188780	Alkalinity (Total as CaCO3)	2024/01/30			93	85 - 115	<1.0	mg/L	9.4 (1)	20		
9188791	pH	2024/01/30			101	98 - 103			2.4 (1)	N/A		
9188792	Conductivity	2024/01/30			99	85 - 115	<1.0	umho/cm	NC (1)	10		
9191038	Total Dissolved Solids	2024/02/01			98	80 - 120	<10	mg/L	13 (1)	20		
9191184	1,2,4-Trichlorobenzene	2024/01/31	66	30 - 130	63	30 - 130	<0.50	ug/L				

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Microbiology testing is conducted at 6660 Campobello Rd. Chemistry testing is conducted at 6740 Campobello Rd.

QUALITY ASSURANCE REPORT(CONT'D)

			Matrix Spike		SPIKED BLANK		Method Blank		RPD		QC Standard	
QC Batch	Parameter	Date	% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits	% Recovery	QC Limits
9191184	1,2-Dichlorobenzene	2024/01/31	68	30 - 130	66	30 - 130	<0.50	ug/L				
9191184	1,3-Dichlorobenzene	2024/01/31	60	30 - 130	56	30 - 130	<0.50	ug/L				
9191184	1,4-Dichlorobenzene	2024/01/31	64	30 - 130	57	30 - 130	<0.50	ug/L				
9191184	2,4,6-Trichlorophenol	2024/01/31	93	10 - 130	92	10 - 130	<0.50	ug/L				
9191184	2,4-Dichlorophenol	2024/01/31	93	10 - 130	92	10 - 130	<0.30	ug/L				
9191184	Benzo(a)pyrene	2024/01/31	113	30 - 130	99	30 - 130	<0.20	ug/L				
9191184	Diethyl phthalate	2024/01/31	95	30 - 130	114	30 - 130	<5.0	ug/L				
9191184	Dimethyl phthalate	2024/01/31	94	30 - 130	95	30 - 130	<1.0	ug/L				
9191184	Di-N-butyl phthalate	2024/01/31	116	30 - 130	122	30 - 130	<2.0	ug/L	NC (1)	40		
9191184	Hexachlorobenzene	2024/01/31	106	30 - 130	109	30 - 130	<0.50	ug/L				
9191184	Pentachlorophenol	2024/01/31	107	10 - 130	71	10 - 130	<1.0	ug/L				
9191184	Phenol	2024/01/31	4.8 (4)	10 - 130	38	10 - 130	<0.50	ug/L				
9191339	Total Kjeldahl Nitrogen (TKN)	2024/01/31	98 (5)	80 - 120	95	80 - 120	<0.7	mg/L	NC (6)	20	96	80 - 120
9191350	Total Phosphorus	2024/01/31	99 (5)	80 - 120	101	80 - 120	<0.030	mg/L	NC (6)	25	102	80 - 120
9191420	Total Chemical Oxygen Demand (COD)	2024/01/31	95	80 - 120	99	80 - 120	<4.0	mg/L	2.5 (1)	20		
9192449	Total Suspended Solids	2024/02/01			95	80 - 120	<10	mg/L	9.8 (1)	20		
9192869	Phenols-4AAP	2024/01/31	103	80 - 120	101	80 - 120	<0.0010	mg/L	NC (1)	20		
9195181	Total Arsenic (As)	2024/02/01	99 (7)	80 - 120	99	80 - 120	<0.001	mg/L	NC (8)	20		
9195181	Total Barium (Ba)	2024/02/01	94 (7)	80 - 120	95	80 - 120	<0.005	mg/L	7.0 (8)	20		
9195181	Total Boron (B)	2024/02/01	100 (7)	80 - 120	101	80 - 120	<0.02	mg/L	0.19 (8)	20		
9195181	Total Cadmium (Cd)	2024/02/01	97 (7)	80 - 120	98	80 - 120	<0.0001	mg/L	NC (8)	20		
9195181	Total Calcium (Ca)	2024/02/01	NC (7)	80 - 120	94	80 - 120	<0.2	mg/L	0.21 (8)	20		
9195181	Total Chromium (Cr)	2024/02/01	94 (7)	80 - 120	94	80 - 120	<0.005	mg/L	NC (8)	20		
9195181	Total Copper (Cu)	2024/02/01	96 (7)	80 - 120	96	80 - 120	<0.002	mg/L	NC (8)	20		
9195181	Total Iron (Fe)	2024/02/01	93 (7)	80 - 120	94	80 - 120	<0.1	mg/L	2.5 (8)	20		
9195181	Total Lead (Pb)	2024/02/01	95 (7)	80 - 120	95	80 - 120	<0.0005	mg/L	NC (8)	20		
9195181	Total Magnesium (Mg)	2024/02/01	92 (7)	80 - 120	93	80 - 120	<0.05	mg/L	0.14 (8)	20		
9195181	Total Nickel (Ni)	2024/02/01	94 (7)	80 - 120	95	80 - 120	<0.001	mg/L	4.3 (8)	20		
9195181	Total Potassium (K)	2024/02/01	94 (7)	80 - 120	94	80 - 120	<0.2	mg/L	0.14 (8)	20		
9195181	Total Sodium (Na)	2024/02/01	93 (7)	80 - 120	94	80 - 120	<0.1	mg/L	0.23 (8)	20		

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Microbiology testing is conducted at 6660 Campobello Rd. Chemistry testing is conducted at 6740 Campobello Rd.

QUALITY ASSURANCE REPORT(CONT'D)

			Matrix Spike		SPIKED BLANK		Method Blank		RPD		QC Standard	
QC Batch	Parameter	Date	% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits	% Recovery	QC Limits
9195181	Total Zinc (Zn)	2024/02/01	98 (7)	80 - 120	100	80 - 120	<0.01	mg/L	1.2 (8)	20		
9195516	Dissolved Mercury (Hg)	2024/02/02	106	75 - 125	108	80 - 120	<0.10	ug/L	NC (1)	20		

N/A = Not Applicable

Duplicate: Paired analysis of a separate portion of the same sample. Used to evaluate the variance in the measurement.

Matrix Spike: A sample to which a known amount of the analyte of interest has been added. Used to evaluate sample matrix interference.

QC Standard: A sample of known concentration prepared by an external agency under stringent conditions. Used as an independent check of method accuracy.

Spiked Blank: A blank matrix sample to which a known amount of the analyte, usually from a second source, has been added. Used to evaluate method accuracy.

Method Blank: A blank matrix containing all reagents used in the analytical procedure. Used to identify laboratory contamination.

Surrogate: A pure or isotopically labeled compound whose behavior mirrors the analytes of interest. Used to evaluate extraction efficiency.

NC (Matrix Spike): The recovery in the matrix spike was not calculated. The relative difference between the concentration in the parent sample and the spike amount was too small to permit a reliable recovery calculation (matrix spike concentration was less than the native sample concentration)

NC (Duplicate RPD): The duplicate RPD was not calculated. The concentration in the sample and/or duplicate was too low to permit a reliable RPD calculation (absolute difference <= 2x RDL).

(1) Duplicate Parent ID

(2) Matrix Spike Parent ID [YFP488-04]

(3) Duplicate Parent ID [YFP488-04]

(4) Recovery or RPD for this parameter is outside control limits. The overall quality control for this analysis meets acceptability criteria.

(5) Matrix Spike Parent ID [YFP488-08]

(6) Duplicate Parent ID [YFP488-08]

(7) Matrix Spike Parent ID [YFP488-07]

(8) Duplicate Parent ID [YFP488-07]

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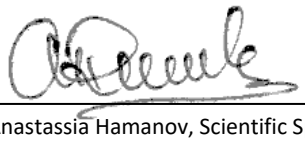
Microbiology testing is conducted at 6660 Campobello Rd. Chemistry testing is conducted at 6740 Campobello Rd.

Bureau Veritas Job #: C427031
Report Date: 2024/02/05

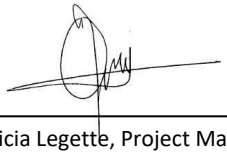
RWDI Inc.
Client Project #: 2402553.01
Site Location: ON07
Your P.O. #: 13254256
Sampler Initials: JRA

VALIDATION SIGNATURE PAGE

The analytical data and all QC contained in this report were reviewed and validated by:



Anastassia Hamanov, Scientific Specialist



Patricia Legette, Project Manager

Bureau Veritas has procedures in place to guard against improper use of the electronic signature and have the required "signatories", as per ISO/IEC 17025, signing the reports. For Service Group specific validation, please refer to the Validation Signatures page if included, otherwise available by request. For Department specific Analyst/Supervisor validation names, please refer to the Test Summary section if included, otherwise available by request. This report is authorized by Rodney Major, General Manager responsible for Ontario Environmental laboratory operations.

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Microbiology testing is conducted at 6660 Campobello Rd. Chemistry testing is conducted at 6740 Campobello Rd.

FIELD INFORMATION FORM

BUREAU VERITAS

WASTE MANAGEMENT

Site Name: TCEC

Site No.: Sample: SP2 (Sample ID)

This Waste Management Field Information Form is Required
This form is to be completed, in addition to any State Forms. The Field Form is submitted along with the Chain of Custody Forms that accompany the sample containers (i.e. with the cooler that is returned to the laboratory).

Laboratory Use Only/Lab ID:

PURGE INFO

PURGE DATE (MM DD YY)	PURGE TIME (2400 Hr Clock)	ELAPSED HRS (hrs:min)	WATER VOL IN CASING (Gallons)	ACTUAL VOL PURGED (Gallons)	WELL VOLs PURGED

Note: For Passive Sampling, replace "Water Vol in Casing" and "Well Vols Purged" w/ Water Vol in Tubing/Flow Cell and Tubing/Flow Cell Vols Purged. Mark Changes, Record field data below.

PURGE/SAMPLE EQUIPMENT

Purging and Sampling Equipment ... Dedicated: Y or N

Filter Device: Y or N 0.45 µ or ____ µ (circle or fill in)

Purging Device: A-Submersible Pump, B-Peristaltic Pump, C-QED Bladder Pump, D-Bailer, E-Piston Pump, F-Dipper/Bottle

Sampling Device: A-Submersible Pump, B-Peristaltic Pump, C-QED Bladder Pump, D-Bailer, E-Piston Pump, F-Dipper/Bottle

Filter Type: A (A-In-line Disposable, B-Pressure, C-Vacuum, X-Other:)

X-Other:

Sample Tube Type: A (A-Teflon, B-Stainless Steel, C-PVC, D-Polypropylene, X-Other:)

WELL DATA

Well Elevation (at TOC) (ft/msl) | Depth to Water (DTW) (from TOC) (ft) | Groundwater Elevation (GWE) (Site Datum, from TOC) (ft msl)

Total Well Depth (from TOC) (ft) | Stick Up (from ground elevation) (ft) | Casing ID (in) | Casing Material

Note: Total Depth, Stick Up, Casing ID, etc. are optional and can be from historical data, unless required by Site/Permit. Well Elevation, DTW, and GWE must be current, obtained from site.

STABILIZATION DATA (Optional)

	Sample Time (2400 Hr Clock)	Rate/Unit	pH (std)	Conductance (SC/EC) (µmhos/cm @ 25°C)	Temp. (°C)	Turbidity (ntu)	D.O. (mg/L - ppm)	eH/ORP (mV)	DTW (ft)
1st									
2nd									
3rd									
4th									
Input Range for 3 consec. readings or Permit/State requirements:			+/-	+/-	+/-	+/-	+/-	+/-	

Stabilization Data Fields are Optional *(i.e. complete stabilization readings for parameters required by WM, Site, or State). These fields can be used where four (4) field measurements are required by State/Permit/Site. If a Data Logger or other Electronic format is used, fill in final readings below and submit electronic data separately to Site. If more fields above are needed, use separate sheet or form.*

FIELD DATA

SAMPLE DATE (MM DD YY)	pH (std)	CONDUCTANCE (µmhos/cm @ 25°C)	TEMP. (°C)	TURBIDITY (ntu)	DO (mg/L - ppm)	eH/ORP (mV)	Other: Units
01 25 24	7.3	586	4.6	19.5	11.60		

Final Field Readings are required *(i.e. record field measurements, final stabilized readings, passive sample readings before sampling for all field parameters required by State/Permit/Site.)*

FIELD COMMENTS

Sample Appearance: transparent Odor: N/O Color: N/C Other:

Weather Conditions (required daily, or as conditions change): 3°C Direction/Speed: 4Kn/h N Outlook: Overcast Precipitation: Y or N

Specific Comments (including purge/well volume calculations if required):

SB2 Verification Sample

width: 1.75m time @ 1mti: 25s

t2: 25s

Depth: 0.5m t3: 27s

I certify that sampling procedures were in accordance with applicable EPA, State, and WM protocols (if more than one sampler, all should sign):

Date	Name	Signature	Company
01 25 24	Jake Antibello		RVDS

DISTRIBUTION: WHITE/ORIGINAL - Stays with Sample, YELLOW - Returned to Client, PINK - Field Copy

Field Information Form v-3.1 06/20

2014

Maxxam Analytics Inc
6740 Campobello Road Mississauga, ON L5N 2L8
Phone: 905-817-5700 Fax: 905-817-5777 Toll Free: (800) 563-6266

REC'D IN LONDON

CHAIN OF CUSTODY RECORD

Page 1 of 1

INVOICE INFORMATION:		REPORT INFORMATION (if differs from invoice):		PROJECT INFORMATION:		MAXXAM JOB NUMBER:
Company Name:	Waste Management of Canada Corporation	Company Name:	RWDI AIR Inc.	Quotation #		
Contact Name:	Lisa Mertick	Contact Name:	Brent Langille	P.O. #:	12285756	
Address:	5768 Nauvoo Rd, Watford, ON N0M 2S0	Address:	4510 Rhodes Drive, Unit 530 Windsor, ON, N8W 5K5	Project #:	2402553.01	CHAIN OF CUSTODY # :
Phone:	519-849-5810 Fax: 519-849-5811	Phone:	519-823-1311 x 2618 Fax: 519-823-1316	Project Name:	Twin Creeks SW	TCEC-SWCM-JAN
Email:	lmertick@wm.com	Email:	BJL@RWDI.com, JCL@RWDI.com	Location:	Twin Creeks	
				Sampled By:	JRA	

REGULATORY CRITERIA

Note: For regulated drinking water samples - please use the Drinking Water Chain of Custody Form

- [ ] MISA
- [ ] Reg. 153 — [ ] Table 1 [ ] Table 2 [ ] Table 3
- Sewer Use — [ ] Sanitary [ ] Storm — Region _____
- [ ] Other — specify _____
- [x] PWQO
- [ ] Reg. 558

Report Criteria on C of A ? [n]

SAMPLES MUST BE KEPT COOL (< 10 °C) FROM TIME OF SAMPLING UNTIL DELIVERY TO MAXXAM

ANALYSIS REQUESTED (Please be specific):

	Sample Identification	Date Sampled	Time Sampled	Matrix (GW, SW, Soil, etc.)	Regulated Drinking Water ? (Y / N)	Metals Field Filtered ? (Y / N)	ZL-ON-WLF-2024 TCLS - SW (POND OUTLETS) QUARTERLY	# of Cont.	COMMENTS / TAT COMMENTS
1	SP2	25-Jan-24	PM	SW	N	N	X	12	
2									
3									
4									
5									
6									
7									
8									
9									
10									
11									
12									

TURNAROUND TIME (TAT) REQUIRED:

PLEASE PROVIDE ADVANCE NOTICE FOR RUSH PROJECTS

Regular (Standard) TAT:
[x] 5 to 7 Working Days

Rush TAT: Rush Confirmation # _____ (call Lab for #)
[ ] 1 day [ ] 2 days [ ] 3 days
DATE Required: 5-Feb-24
TIME Required: 12:00 PM

Please note that TAT for certain tests such as BOD and Dioxins/Furans are > 5 days - contact your Project Manager for details.

NONT-2024-01-1548

All samples for Hg field filtered @ 45um
See lab addendum for lab group coding

RELINQUISHED BY: (Signature/Print)	RECEIVED BY: (Signature/Print)	Date:	Time:
JRA - January 26, 2024	Sujit Rowmya Rangamani	2024/01/26	13:25
		2024/01/26	18:08

Laboratory Use Only

Temperature (°C) on Receipt: 3/2/3

Condition of Sample on Receipt: [ ] OK [ ] SIF

*** MANDATORY SECTIONS IN GREY MUST BE FILLED OUT. AN INCOMPLETE CHAIN OF CUSTODY MAY RESULT IN ANALYTICAL TAT DELAYS**

BV-727938
7/7/7

Custody Seal Present Intact
Cooling Media Yes No

White: Maxxam Yellow: Mail Pink: Client

Your P.O. #: 13254256
Your Project #: 2402553.01
Site#: 700
Site Location: ON07
Your C.O.C. #: 880472

Attention: Khalid Hussein - Twin Creeks

RWDI Inc.
600 Southgate Drive
Guelph, ON
Canada N1G 4P6

Report Date: 2024/04/22
Report #: R8118473
Version: 1 - Final

CERTIFICATE OF ANALYSIS

BUREAU VERITAS JOB #: C4A9910
Received: 2024/04/13, 12:30

Sample Matrix: Water
Samples Received: 2

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Analytical Method
ABN Compounds in Water by GC/MS	2	2024/04/15	2024/04/17	CAM SOP-00301	EPA 8270 m
Alkalinity	2	N/A	2024/04/17	CAM SOP-00448	SM 24 2320 B m
Biochemical Oxygen Demand (BOD)	2	2024/04/15	2024/04/20	CAM SOP-00427	SM 24 5210B m
Chloride by Automated Colourimetry	2	N/A	2024/04/16	CAM SOP-00463	SM 24 4500-Cl E m
Chemical Oxygen Demand	1	N/A	2024/04/16	CAM SOP-00416	SM 24 5220 D m
Chemical Oxygen Demand	1	N/A	2024/04/17	CAM SOP-00416	SM 24 5220 D m
Conductance in Water - On-site	2	N/A	2024/04/18		
Conductivity	2	N/A	2024/04/17	CAM SOP-00414	SM 24 2510 m
Field Measured Dissolved Oxygen in Water	2	N/A	2024/04/18		
Dissolved Mercury in Water by CVAA	2	2024/04/15	2024/04/15	CAM SOP-00453	EPA 7470A m
Total Metals by ICPMS	2	N/A	2024/04/18	CAM SOP-00447	EPA 6020B m
Ammonia-N	2	N/A	2024/04/19	CAM SOP-00441	USGS I-2522-90 m
Nitrate & Nitrite as Nitrogen in Water (1)	2	N/A	2024/04/16	CAM SOP-00440	SM 24 4500-NO3I/NO2B
pH (2)	2	2024/04/15	2024/04/17	CAM SOP-00413	SM 24th - 4500H+ B
Phenols (4AAP)	2	N/A	2024/04/17	CAM SOP-00444	OMOE E3179 m
Field Measured pH (3)	2	N/A	2024/04/18		Field pH Meter
Sulphate by Automated Turbidimetry	2	N/A	2024/04/16	CAM SOP-00464	SM 24 4500-SO42- E m
Total Dissolved Solids	2	2024/04/18	2024/04/19	CAM SOP-00428	SM 24 2540C m
Field Temperature (3)	2	N/A	2024/04/18		Field Thermometer
Total Kjeldahl Nitrogen in Water	2	2024/04/15	2024/04/18	CAM SOP-00938	OMOE E3516 m
Total Phosphorus (Colourimetric)	2	2024/04/15	2024/04/19	CAM SOP-00407	SM 24 4500-P I
Total Suspended Solids	2	2024/04/16	2024/04/17	CAM SOP-00428	SM 24 2540D m
Turbidity - On-site	2	N/A	2024/04/18		
Un-ionized Ammonia (4)	2	2024/04/13	2024/04/22	Auto Calc.	PWQO
Volatile Organic Compounds in Water	2	N/A	2024/04/16	CAM SOP-00228	EPA 8260D

Remarks:

Bureau Veritas is accredited to ISO/IEC 17025 for specific parameters on scopes of accreditation. Unless otherwise noted, procedures used by Bureau Veritas are based upon recognized Provincial, Federal or US method compendia such as CCME, EPA, APHA or the Quebec Ministry of Environment.

All work recorded herein has been done in accordance with procedures and practices ordinarily exercised by professionals in Bureau Veritas' profession

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Microbiology testing is conducted at 6660 Campobello Rd. Chemistry testing is conducted at 6740 Campobello Rd.

Your P.O. #: 13254256
Your Project #: 2402553.01
Site#: 700
Site Location: ON07
Your C.O.C. #: 880472

Attention: Khalid Hussein - Twin Creeks

RWDI Inc.
600 Southgate Drive
Guelph, ON
Canada N1G 4P6

Report Date: 2024/04/22
Report #: R8118473
Version: 1 - Final

CERTIFICATE OF ANALYSIS

BUREAU VERITAS JOB #: C4A9910
Received: 2024/04/13, 12:30

using accepted testing methodologies, quality assurance and quality control procedures (except where otherwise agreed by the client and Bureau Veritas in writing). All data is in statistical control and has met quality control and method performance criteria unless otherwise noted. All method blanks are reported; unless indicated otherwise, associated sample data are not blank corrected. Where applicable, unless otherwise noted, Measurement Uncertainty has not been accounted for when stating conformity to the referenced standard.

Bureau Veritas liability is limited to the actual cost of the requested analyses, unless otherwise agreed in writing. There is no other warranty expressed or implied. Bureau Veritas has been retained to provide analysis of samples provided by the Client using the testing methodology referenced in this report. Interpretation and use of test results are the sole responsibility of the Client and are not within the scope of services provided by Bureau Veritas, unless otherwise agreed in writing. Bureau Veritas is not responsible for the accuracy or any data impacts, that result from the information provided by the customer or their agent.

Solid sample results, except biota, are based on dry weight unless otherwise indicated. Organic analyses are not recovery corrected except for isotope dilution methods.
Results relate to samples tested. When sampling is not conducted by Bureau Veritas, results relate to the supplied samples tested.
This Certificate shall not be reproduced except in full, without the written approval of the laboratory.
Reference Method suffix “m” indicates test methods incorporate validated modifications from specific reference methods to improve performance.
* RPDs calculated using raw data. The rounding of final results may result in the apparent difference.
(1) Values for calculated parameters may not appear to add up due to rounding of raw data and significant figures.
(2) "The CCME method and Analytical Protocol (O. Reg 153/04, O. Reg. 406/19) requires pH to be analyzed within 15 minutes of sampling and therefore field analysis is required for compliance. All Laboratory pH analyses in this report are reported past the CCME and Analytical Protocol (O. Reg 153/04, O. Reg. 406/19) holding time. Bureau Veritas endeavors to analyze samples as soon as possible after receipt."

(3) This is a field test, therefore, the results relate to items that were not analysed at Bureau Veritas.
(4) Un-ionized ammonia is calculated using the total ammonia result and field data provided by the client for pH and temperature.

Encryption Key

Please direct all questions regarding this Certificate of Analysis to:
Patricia Legette, Project Manager
Email: Patricia.Legette@bureauveritas.com
Phone# (905)817-5799

==========

Bureau Veritas has procedures in place to guard against improper use of the electronic signature and have the required "signatories", as per ISO/IEC 17025, signing the reports. For Service Group specific validation, please refer to the Validation Signatures page if included, otherwise available by request. For Department specific Analyst/Supervisor validation names, please refer to the Test Summary section if included, otherwise available by request. This report is authorized by Rodney Major, General Manager responsible for Ontario Environmental laboratory operations.

Bureau Veritas Job #: C4A9910
Report Date: 2024/04/22

RWDI Inc.
Client Project #: 2402553.01
Site Location: ON07
Your P.O. #: 13254256
Sampler Initials: JC

RESULTS OF ANALYSES OF WATER

Bureau Veritas ID		YWU772	YWU773		
Sampling Date		2024/04/12 08:00	2024/04/12 08:00		
COC Number		880472	880472		
	UNITS	SS1	SSDUP1	RDL	QC Batch
Calculated Parameters					
Total Un-ionized Ammonia	mg/L	<0.0037	<0.0037	0.0037	9332551
Field Measurements					
Field Conductivity	uS/cm	575	575	N/A	ONSITE
Field Dissolved Oxygen	mg/L	10.2	10.2	N/A	ONSITE
Field Temperature	Celsius	11.4	11.4	N/A	ONSITE
Field Measured Field Turbidity	NTU	260	260	N/A	ONSITE
Field Measured pH	pH	8.0	8.0		ONSITE
Inorganics					
Total Ammonia-N	mg/L	<0.15	<0.15	0.15	9334519
Total BOD	mg/L	<2	5	2	9334113
Total Chemical Oxygen Demand (COD)	mg/L	29	30	4.0	9333530
Conductivity	umho/cm	640	640	1.0	9333441
Total Dissolved Solids	mg/L	410	410	10	9339095
Total Kjeldahl Nitrogen (TKN)	mg/L	<0.7	<0.7	0.7	9334829
pH	pH	7.95	7.85		9333444
Phenols-4AAP	mg/L	<0.0010	<0.0010	0.0010	9339037
Total Phosphorus	mg/L	0.10	0.10	0.030	9334847
Total Suspended Solids	mg/L	160	150	10	9336577
Dissolved Sulphate (SO4)	mg/L	140	140	1.0	9333408
Alkalinity (Total as CaCO3)	mg/L	150	150	1.0	9333430
Dissolved Chloride (Cl-)	mg/L	24	25	1.0	9333416
Nitrite (N)	mg/L	0.015	0.015	0.010	9333988
Nitrate (N)	mg/L	0.66	0.62	0.10	9333988

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
N/A = Not Applicable

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Bureau Veritas Job #: C4A9910
Report Date: 2024/04/22

RWDI Inc.
Client Project #: 2402553.01
Site Location: ON07
Your P.O. #: 13254256
Sampler Initials: JC

ELEMENTS BY ATOMIC SPECTROSCOPY (WATER)

Bureau Veritas ID		YWU772	YWU773		
Sampling Date		2024/04/12 08:00	2024/04/12 08:00		
COC Number		880472	880472		
	UNITS	SS1	SSDUP1	RDL	QC Batch
Metals					
Dissolved Mercury (Hg)	ug/L	<0.10	<0.10	0.10	9334048
Total Arsenic (As)	mg/L	0.002	0.002	0.001	9340758
Total Barium (Ba)	mg/L	0.037	0.037	0.005	9340758
Total Boron (B)	mg/L	0.30	0.28	0.02	9340758
Total Cadmium (Cd)	mg/L	<0.0001	<0.0001	0.0001	9340758
Total Calcium (Ca)	mg/L	79	77	0.2	9340758
Total Chromium (Cr)	mg/L	0.005	0.005	0.005	9340758
Total Copper (Cu)	mg/L	0.007	0.007	0.002	9340758
Total Iron (Fe)	mg/L	4.9	4.8	0.1	9340758
Total Lead (Pb)	mg/L	0.0028	0.0028	0.0005	9340758
Total Magnesium (Mg)	mg/L	29	28	0.05	9340758
Total Nickel (Ni)	mg/L	0.009	0.009	0.001	9340758
Total Potassium (K)	mg/L	5.2	5.1	0.2	9340758
Total Sodium (Na)	mg/L	21	20	0.1	9340758
Total Zinc (Zn)	mg/L	0.03	0.03	0.01	9340758

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

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RWDI Inc.
Client Project #: 2402553.01
Site Location: ON07
Your P.O. #: 13254256
Sampler Initials: JC

SEMI-VOLATILE ORGANICS BY GC-MS (WATER)

Bureau Veritas ID		YWU772	YWU773		
Sampling Date		2024/04/12 08:00	2024/04/12 08:00		
COC Number		880472	880472		
	UNITS	SS1	SSDUP1	RDL	QC Batch
Semivolatile Organics					
Benzo(a)pyrene	ug/L	<0.20	<0.20	0.20	9334198
1,2-Dichlorobenzene	ug/L	<0.50	<0.50	0.50	9334198
1,3-Dichlorobenzene	ug/L	<0.50	<0.50	0.50	9334198
1,4-Dichlorobenzene	ug/L	<0.50	<0.50	0.50	9334198
Hexachlorobenzene	ug/L	<0.50	<0.50	0.50	9334198
1,2,4-Trichlorobenzene	ug/L	<0.50	<0.50	0.50	9334198
2,4-Dichlorophenol	ug/L	<0.30	<0.30	0.30	9334198
Pentachlorophenol	ug/L	<1.0	<1.0	1.0	9334198
Phenol	ug/L	<0.50	<0.50	0.50	9334198
2,4,6-Trichlorophenol	ug/L	<0.50	<0.50	0.50	9334198
Di-N-butyl phthalate	ug/L	<2.0	<2.0	2.0	9334198
Diethyl phthalate	ug/L	<1.0	<1.0	1.0	9334198
Dimethyl phthalate	ug/L	<1.0	<1.0	1.0	9334198
Surrogate Recovery (%)					
2,4,6-Tribromophenol	%	32	93		9334198
2-Fluorobiphenyl	%	70	70		9334198
2-Fluorophenol	%	13	41		9334198
D14-Terphenyl	%	78	79		9334198
D5-Nitrobenzene	%	85	82		9334198
D5-Phenol	%	19	26		9334198

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

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Microbiology testing is conducted at 6660 Campobello Rd. Chemistry testing is conducted at 6740 Campobello Rd.

VOLATILE ORGANICS BY GC/MS (WATER)

Bureau Veritas ID		YWU772	YWU773		
Sampling Date		2024/04/12 08:00	2024/04/12 08:00		
COC Number		880472	880472		
	UNITS	SS1	SSDUP1	RDL	QC Batch
Volatile Organics					
Benzene	ug/L	<0.20	<0.20	0.20	9332924
1,4-Dichlorobenzene	ug/L	<0.40	<0.40	0.40	9332924
Ethylbenzene	ug/L	<0.20	<0.20	0.20	9332924
Methylene Chloride(Dichloromethane)	ug/L	<2.0	<2.0	2.0	9332924
Toluene	ug/L	<0.20	<0.20	0.20	9332924
Vinyl Chloride	ug/L	<0.20	<0.20	0.20	9332924
p+m-Xylene	ug/L	<0.20	<0.20	0.20	9332924
o-Xylene	ug/L	<0.20	<0.20	0.20	9332924
Total Xylenes	ug/L	<0.20	<0.20	0.20	9332924
Surrogate Recovery (%)					
4-Bromofluorobenzene	%	105	104		9332924
D4-1,2-Dichloroethane	%	114	112		9332924
D8-Toluene	%	85	84		9332924

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

Microbiology testing is conducted at 6660 Campobello Rd. Chemistry testing is conducted at 6740 Campobello Rd.

Bureau Veritas Job #: C4A9910
Report Date: 2024/04/22

RWDI Inc.
Client Project #: 2402553.01
Site Location: ON07
Your P.O. #: 13254256
Sampler Initials: JC

GENERAL COMMENTS

Each temperature is the average of up to three cooler temperatures taken at receipt

Package 1	1.7°C

Results relate only to the items tested.

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Microbiology testing is conducted at 6660 Campobello Rd. Chemistry testing is conducted at 6740 Campobello Rd.

QUALITY ASSURANCE REPORT

			Matrix Spike		SPIKED BLANK		Method Blank		RPD		QC Standard	
QC Batch	Parameter	Date	% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits	% Recovery	QC Limits
9332924	4-Bromofluorobenzene	2024/04/16	106	70 - 130	106	70 - 130	108	%				
9332924	D4-1,2-Dichloroethane	2024/04/16	103	70 - 130	100	70 - 130	106	%				
9332924	D8-Toluene	2024/04/16	102	70 - 130	102	70 - 130	86	%				
9334198	2,4,6-Tribromophenol	2024/04/16	99	10 - 130	96	10 - 130	81	%				
9334198	2-Fluorobiphenyl	2024/04/16	58	30 - 130	59	30 - 130	59	%				
9334198	2-Fluorophenol	2024/04/16	39	10 - 130	39	10 - 130	37	%				
9334198	D14-Terphenyl	2024/04/16	74	30 - 130	74	30 - 130	69	%				
9334198	D5-Nitrobenzene	2024/04/16	81	30 - 130	80	30 - 130	77	%				
9334198	D5-Phenol	2024/04/16	27	10 - 130	25	10 - 130	24	%				
9332924	1,4-Dichlorobenzene	2024/04/16	105	70 - 130	101	70 - 130	<0.40	ug/L				
9332924	Benzene	2024/04/16	95	70 - 130	90	70 - 130	<0.20	ug/L				
9332924	Ethylbenzene	2024/04/16	91	70 - 130	89	70 - 130	<0.20	ug/L				
9332924	Methylene Chloride(Dichloromethane)	2024/04/16	105	70 - 130	99	70 - 130	<2.0	ug/L				
9332924	o-Xylene	2024/04/16	82	70 - 130	83	70 - 130	<0.20	ug/L	NC (1)	30		
9332924	p+m-Xylene	2024/04/16	98	70 - 130	96	70 - 130	<0.20	ug/L	NC (1)	30		
9332924	Toluene	2024/04/16	95	70 - 130	91	70 - 130	<0.20	ug/L	NC (1)	30		
9332924	Total Xylenes	2024/04/16					<0.20	ug/L	NC (1)	30		
9332924	Vinyl Chloride	2024/04/16	105	70 - 130	100	70 - 130	<0.20	ug/L				
9333408	Dissolved Sulphate (SO4)	2024/04/16	NC	75 - 125	97	80 - 120	<1.0	mg/L	0.91 (1)	20		
9333416	Dissolved Chloride (Cl-)	2024/04/16	94	80 - 120	98	80 - 120	<1.0	mg/L	8.5 (1)	20		
9333430	Alkalinity (Total as CaCO3)	2024/04/17			102	85 - 115	<1.0	mg/L	NC (1)	20		
9333441	Conductivity	2024/04/17			101	85 - 115	<1.0	umho/cm	NC (1)	10		
9333444	pH	2024/04/17			102	98 - 103			1.7 (1)	N/A		
9333530	Total Chemical Oxygen Demand (COD)	2024/04/16	98	80 - 120	99	80 - 120	<4.0	mg/L	3.8 (1)	20		
9333988	Nitrate (N)	2024/04/16	117	80 - 120	98	80 - 120	<0.10	mg/L	5.2 (1)	20		
9333988	Nitrite (N)	2024/04/16	120	80 - 120	103	80 - 120	<0.010	mg/L				
9334048	Dissolved Mercury (Hg)	2024/04/15	101	75 - 125	102	80 - 120	<0.10	ug/L	NC (1)	20		
9334113	Total BOD	2024/04/20					<2	mg/L	14 (1)	30	95	80 - 120
9334198	1,2,4-Trichlorobenzene	2024/04/17	48	30 - 130	44	30 - 130	<0.50	ug/L	NC (1)	40		

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QUALITY ASSURANCE REPORT(CONT'D)

			Matrix Spike		SPIKED BLANK		Method Blank		RPD		QC Standard	
QC Batch	Parameter	Date	% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits	% Recovery	QC Limits
9334198	1,2-Dichlorobenzene	2024/04/17	53	30 - 130	49	30 - 130	<0.50	ug/L	NC (1)	40		
9334198	1,3-Dichlorobenzene	2024/04/17	47	30 - 130	43	30 - 130	<0.50	ug/L	NC (1)	40		
9334198	1,4-Dichlorobenzene	2024/04/17	47	30 - 130	44	30 - 130	<0.50	ug/L	NC (1)	40		
9334198	2,4,6-Trichlorophenol	2024/04/17	78	10 - 130	81	10 - 130	<0.50	ug/L	NC (1)	40		
9334198	2,4-Dichlorophenol	2024/04/17	69	10 - 130	67	10 - 130	<0.30	ug/L	NC (1)	40		
9334198	Benzo(a)pyrene	2024/04/17	97	30 - 130	97	30 - 130	<0.20	ug/L	NC (1)	40		
9334198	Diethyl phthalate	2024/04/17	96	30 - 130	95	30 - 130	<1.0	ug/L	NC (1)	40		
9334198	Dimethyl phthalate	2024/04/17	91	30 - 130	87	30 - 130	<1.0	ug/L	NC (1)	40		
9334198	Di-N-butyl phthalate	2024/04/17	110	30 - 130	111	30 - 130	<2.0	ug/L	NC (1)	40		
9334198	Hexachlorobenzene	2024/04/17	93	30 - 130	93	30 - 130	<0.50	ug/L	NC (1)	40		
9334198	Pentachlorophenol	2024/04/17	90	10 - 130	80	10 - 130	<1.0	ug/L	NC (1)	40		
9334198	Phenol	2024/04/17	31	10 - 130	31	10 - 130	<0.50	ug/L	NC (1)	40		
9334519	Total Ammonia-N	2024/04/19	99 (2)	75 - 125	100	80 - 120	<0.15	mg/L	NC (3)	20		
9334829	Total Kjeldahl Nitrogen (TKN)	2024/04/18	102 (4)	80 - 120	99	80 - 120	<0.7	mg/L	NC (5)	20	100	80 - 120
9334847	Total Phosphorus	2024/04/19	100 (4)	80 - 120	102	80 - 120	<0.030	mg/L	2.8 (5)	25	94	80 - 120
9336577	Total Suspended Solids	2024/04/17			99	80 - 120	<10	mg/L	15 (1)	20		
9339037	Phenols-4AAP	2024/04/17	102	80 - 120	99	80 - 120	<0.0010	mg/L	NC (1)	20		
9339095	Total Dissolved Solids	2024/04/19			98	80 - 120	<10	mg/L	2.4 (1)	20		
9340758	Total Arsenic (As)	2024/04/18	103	80 - 120	98	80 - 120	<0.001	mg/L	NC (1)	20		
9340758	Total Barium (Ba)	2024/04/18	100	80 - 120	97	80 - 120	<0.005	mg/L	0.39 (1)	20		
9340758	Total Boron (B)	2024/04/18	97	80 - 120	92	80 - 120	<0.02	mg/L	0.067 (1)	20		
9340758	Total Cadmium (Cd)	2024/04/18	103	80 - 120	99	80 - 120	<0.0001	mg/L	NC (1)	20		
9340758	Total Calcium (Ca)	2024/04/18	NC	80 - 120	101	80 - 120	<0.2	mg/L	2.0 (1)	20		
9340758	Total Chromium (Cr)	2024/04/18	100	80 - 120	97	80 - 120	<0.005	mg/L	NC (1)	20		
9340758	Total Copper (Cu)	2024/04/18	102	80 - 120	99	80 - 120	<0.002	mg/L	12 (1)	20		
9340758	Total Iron (Fe)	2024/04/18	99	80 - 120	95	80 - 120	<0.1	mg/L	6.8 (1)	20		
9340758	Total Lead (Pb)	2024/04/18	102	80 - 120	99	80 - 120	<0.0005	mg/L	NC (1)	20		
9340758	Total Magnesium (Mg)	2024/04/18	96	80 - 120	95	80 - 120	<0.05	mg/L	3.5 (1)	20		
9340758	Total Nickel (Ni)	2024/04/18	96	80 - 120	94	80 - 120	<0.001	mg/L	9.9 (1)	20		
9340758	Total Potassium (K)	2024/04/18	103	80 - 120	98	80 - 120	<0.2	mg/L	3.6 (1)	20		

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QUALITY ASSURANCE REPORT(CONT'D)

			Matrix Spike		SPIKED BLANK		Method Blank		RPD		QC Standard	
QC Batch	Parameter	Date	% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits	% Recovery	QC Limits
9340758	Total Sodium (Na)	2024/04/18	NC	80 - 120	95	80 - 120	<0.1	mg/L	3.6 (1)	20		
9340758	Total Zinc (Zn)	2024/04/18	102	80 - 120	101	80 - 120	<0.01	mg/L	19 (1)	20		

N/A = Not Applicable

Duplicate: Paired analysis of a separate portion of the same sample. Used to evaluate the variance in the measurement.

Matrix Spike: A sample to which a known amount of the analyte of interest has been added. Used to evaluate sample matrix interference.

QC Standard: A sample of known concentration prepared by an external agency under stringent conditions. Used as an independent check of method accuracy.

Spiked Blank: A blank matrix sample to which a known amount of the analyte, usually from a second source, has been added. Used to evaluate method accuracy.

Method Blank: A blank matrix containing all reagents used in the analytical procedure. Used to identify laboratory contamination.

Surrogate: A pure or isotopically labeled compound whose behavior mirrors the analytes of interest. Used to evaluate extraction efficiency.

NC (Matrix Spike): The recovery in the matrix spike was not calculated. The relative difference between the concentration in the parent sample and the spike amount was too small to permit a reliable recovery calculation (matrix spike concentration was less than the native sample concentration)

NC (Duplicate RPD): The duplicate RPD was not calculated. The concentration in the sample and/or duplicate was too low to permit a reliable RPD calculation (absolute difference <= 2x RDL).

(1) Duplicate Parent ID

(2) Matrix Spike Parent ID [YWU773-09]

(3) Duplicate Parent ID [YWU773-09]

(4) Matrix Spike Parent ID [YWU772-06]

(5) Duplicate Parent ID [YWU772-06]

Bureau Veritas 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.bvna.com

Microbiology testing is conducted at 6660 Campobello Rd. Chemistry testing is conducted at 6740 Campobello Rd.

Bureau Veritas Job #: C4A9910
Report Date: 2024/04/22

RWDI Inc.
Client Project #: 2402553.01
Site Location: ON07
Your P.O. #: 13254256
Sampler Initials: JC

VALIDATION SIGNATURE PAGE

The analytical data and all QC contained in this report were reviewed and validated by:

Cristina Carriere, Senior Scientific Specialist

Patricia Legette, Project Manager

Bureau Veritas has procedures in place to guard against improper use of the electronic signature and have the required "signatories", as per ISO/IEC 17025, signing the reports. For Service Group specific validation, please refer to the Validation Signatures page if included, otherwise available by request. For Department specific Analyst/Supervisor validation names, please refer to the Test Summary section if included, otherwise available by request. This report is authorized by Rodney Major, General Manager responsible for Ontario Environmental laboratory operations.

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S2437676

FIELD INFORMATION FORM

BUREAU VERITAS

WM WASTE MANAGEMENT

Site Name: Twin Creeks

Site No.:

Sample: SS | Sample ID

This Waste Management Field Information Form is Required
This form is to be completed, in addition to any State Forms. The Field Form is submitted along with the Chain of Custody Forms that accompany the sample containers (i.e. with the cooler that is returned to the laboratory).

Laboratory Use Only/Lab ID:

PURGE INFO

PURGE DATE (MM DD YY)	PURGE TIME (2400 Hr Clock)	ELAPSED HRS (hrs:min)	WATER VOL IN CASING (Gallons)	ACTUAL VOL PURGED (Gallons)	WELL VOLs PURGED

Note: For Passive Sampling, replace "Water Vol in Casing" and "Well Vols Purged" w/ Water Vol in Tubing/Flow Cell and Tubing/Flow Cell Vols Purged. Mark Changes, Record field data below.

PURGE/SAMPLE EQUIPMENT

Purging and Sampling Equipment ... Dedicated: Y or N

Filter Device: Y or N — 0.45 µ or ____ µ (circle or fill in)

Purging Device: ____ A-Submersible Pump B-Peristaltic Pump C-QED Bladder Pump D-Bailer E-Piston Pump F-Dipper/Bottle

Sampling Device: ____

Filter Type: A — A-In-line Disposable B-Pressure C-Vacuum X-Other: ____

X-Other: ____

Sample Tube Type: ____ A-Teflon B-Stainless Steel C-PVC D-Polypropylene X-Other: ____

WELL DATA

Well Elevation (at TOC) ____ (ft/msl)

Depth to Water (DTW) (from TOC) ____ (ft)

Groundwater Elevation (GWE) (Site Datum, from TOC) ____ (ft msl)

Total Well Depth (from TOC) ____ (ft)

Stick Up (from ground elevation) ____ (ft)

Casing ID ____ (in)

Casing Material ____

Note: Total Depth, Stick Up, Casing ID, etc. are optional and can be from historical data, unless required by Site/Permit. Well Elevation, DTW, and GWE must be current, obtained from site.

STABILIZATION DATA (Optional)

Sample Time (2400 Hr Clock)	Rate/Unit	pH (std)	Conductance (SC/EC) (µmhos/cm @ 25°C)	Temp. (°C)	Turbidity (ntu)	D.O. (mg/L - ppm)	eH/ORP (mV)	DTW (ft)
1st								
2nd								
3rd								
4th								
Input Range for 3 consec. readings or Permit/State requirements:		+/-	+/-	+/-	+/-	+/-	+/-	

Stabilization Data Fields are Optional *(i.e. complete stabilization readings for parameters required by WM, Site, or State). These fields can be used where four (4) field measurements are required by State/Permit/Site. If a Data Logger or other Electronic format is used, fill in final readings below and submit electronic data separately to Site. If more fields above are needed, use separate sheet or form.*

FIELD DATA

SAMPLE DATE (MM DD YY)	pH (std)	CONDUCTANCE µS (µmhos/cm @ 25°C)	TEMP. (°C)	TURBIDITY (ntu)	DO (mg/L - ppm)	eH/ORP (mV)	Other: Units
04 12 24	8.0	575	11.4	260	10.2		

Final Field Readings are required *(i.e. record field measurements, final stabilized readings, passive sample readings before sampling for all field parameters required by State/Permit/Site.)*

FIELD COMMENTS

Sample Appearance: translucent Odor: none Color: very light brown Other: ____

Weather Conditions (required daily, or as conditions change): 6°C Direction/Speed: W 36km/h Outlook: overcast/rain Precipitation: Y or N

Specific Comments (including purge/well volume calculations if required):

stream; depth: 0.20m — SSDUP1 collected

width: 2.25m

Flow time over 1m: 1: 3s — Trace suspended pieces of vegetation in

2: 4s — sample

3: 3s — Sampled @ 8:00 AM

I certify that sampling procedures were in accordance with applicable EPA, State, and WM protocols (if more than one sampler, all should sign):

Date	Name	Signature	Company
04,12,24	JCL		RWDI

DISTRIBUTION: WHITE/ORIGINAL - Stays with Sample, YELLOW - Returned to Client, PINK - Field Copy

Field Information Form v-3.1 06/20

2024

Custody Tracking Form

T880472

Please use this form for custody tracking when submitting the work instructions via eCOC (electronic Chain of Custody). Please ensure your form has a barcode or a Bureau Veritas eCOC confirmation number in the top right hand side. This number links your electronic submission to your samples. This form should be placed in the cooler with your samples.

First Sample: SS1
Last Sample: SSDUP1
Sample Count: 2

Relinquished By				Received By			
Jeff Cleland		Date	2024/04/12	Sugar Salvant		Date	2024/04/13
		Time (24 HR)	16:00			Time (24 HR)	12:30
		Date				Date	
		Time (24 HR)				Time (24 HR)	
		Date				Date	
		Time (24 HR)				Time (24 HR)	

Unless otherwise agreed to, submissions and use of services are governed by Bureau Veritas' standard terms and conditions which can be found at www.bvna.com.

Triage Information

Sampled By (Print): Jeff Cleland

# of Coolers/Pkgs: 1

Rush ☐ Immediate Test ☐ Food Residue ☐

Micro ☐ Food Chemistry ☐

*** LABORATORY USE ONLY ***

Received At

Labeled By

Verified By

Lab Comments:

13-Apr-24 12:30
Patricia Legette
C4A9910
AJH ENV-997

Custody Seal		Cooling Media	Temperature °C		
Present (Y/N)	Intact (Y/N)	Present (Y/N)	1	2	3
Y	Y	Y	2	1	2
Drinking Water Metals Preservation Check Done (Circle)				YES	NO

COR FCD-00383/4

Page 1 of 1

Your P.O. #: 13254256
Your Project #: 2402553.01
Site#: 700
Site Location: ON07
Your C.O.C. #: 880491

Attention: Khalid Hussein - Twin Creeks

RWDI Inc.
600 Southgate Drive
Guelph, ON
Canada N1G 4P6

Report Date: 2024/04/22
Report #: R8118126
Version: 1 - Final

CERTIFICATE OF ANALYSIS

BUREAU VERITAS JOB #: C4A9915
Received: 2024/04/13, 12:30

Sample Matrix: Water
Samples Received: 4

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Analytical Method
Alkalinity	4	N/A	2024/04/16	CAM SOP-00448	SM 24 2320 B m
Chloride by Automated Colourimetry	4	N/A	2024/04/16	CAM SOP-00463	SM 24 4500-Cl E m
Conductance in Water - On-site	4	N/A	2024/04/18		
Field Measured Dissolved Oxygen in Water	4	N/A	2024/04/18		
Total Metals by ICPMS	4	N/A	2024/04/18	CAM SOP-00447	EPA 6020B m
Total Ammonia-N	4	N/A	2024/04/16	CAM SOP-00441	USGS I-2522-90 m
Nitrate & Nitrite as Nitrogen in Water (1)	3	N/A	2024/04/15	CAM SOP-00440	SM 24 4500-NO3I/NO2B
Nitrate & Nitrite as Nitrogen in Water (1)	1	N/A	2024/04/16	CAM SOP-00440	SM 24 4500-NO3I/NO2B
Phenols (4AAP)	4	N/A	2024/04/17	CAM SOP-00444	OMOE E3179 m
Field Measured pH (2)	4	N/A	2024/04/18		Field pH Meter
Sulphate by Automated Turbidimetry	4	N/A	2024/04/16	CAM SOP-00464	SM 24 4500-SO42- E m
Field Temperature (2)	4	N/A	2024/04/18		Field Thermometer
Total Organic Carbon (TOC) (3)	4	N/A	2024/04/17	CAM SOP-00446	SM 24 5310B m
Turbidity - On-site	4	N/A	2024/04/18		
Un-ionized Ammonia (4)	4	2024/04/13	2024/04/18	Auto Calc.	PWQO
Volatile Organic Compounds in Water	4	N/A	2024/04/16	CAM SOP-00226	EPA 8260D m

Remarks:

Bureau Veritas is accredited to ISO/IEC 17025 for specific parameters on scopes of accreditation. Unless otherwise noted, procedures used by Bureau Veritas are based upon recognized Provincial, Federal or US method compendia such as CCME, EPA, APHA or the Quebec Ministry of Environment.

All work recorded herein has been done in accordance with procedures and practices ordinarily exercised by professionals in Bureau Veritas' profession using accepted testing methodologies, quality assurance and quality control procedures (except where otherwise agreed by the client and Bureau Veritas in writing). All data is in statistical control and has met quality control and method performance criteria unless otherwise noted. All method blanks are reported; unless indicated otherwise, associated sample data are not blank corrected. Where applicable, unless otherwise noted, Measurement Uncertainty has not been accounted for when stating conformity to the referenced standard.

Bureau Veritas liability is limited to the actual cost of the requested analyses, unless otherwise agreed in writing. There is no other warranty expressed or implied. Bureau Veritas has been retained to provide analysis of samples provided by the Client using the testing methodology referenced in this report. Interpretation and use of test results are the sole responsibility of the Client and are not within the scope of services provided by Bureau Veritas, unless otherwise agreed in writing. Bureau Veritas is not responsible for the accuracy or any data impacts, that result from the information provided by the customer or their agent.

Your P.O. #: 13254256
Your Project #: 2402553.01
Site#: 700
Site Location: ON07
Your C.O.C. #: 880491

Attention: Khalid Hussein - Twin Creeks

RWDI Inc.
600 Southgate Drive
Guelph, ON
Canada N1G 4P6

Report Date: 2024/04/22
Report #: R8118126
Version: 1 - Final

CERTIFICATE OF ANALYSIS

BUREAU VERITAS JOB #: C4A9915

Received: 2024/04/13, 12:30

Solid sample results, except biota, are based on dry weight unless otherwise indicated. Organic analyses are not recovery corrected except for isotope dilution methods.

Results relate to samples tested. When sampling is not conducted by Bureau Veritas, results relate to the supplied samples tested.

This Certificate shall not be reproduced except in full, without the written approval of the laboratory.

Reference Method suffix "m" indicates test methods incorporate validated modifications from specific reference methods to improve performance.

* RPDs calculated using raw data. The rounding of final results may result in the apparent difference.

(1) Values for calculated parameters may not appear to add up due to rounding of raw data and significant figures.
(2) This is a field test, therefore, the results relate to items that were not analysed at Bureau Veritas.
(3) Total Organic Carbon (TOC) present in the sample should be considered as non-purgeable TOC.
(4) Un-ionized ammonia is calculated using the total ammonia result and field data provided by the client for pH and temperature.

Encryption Key

Please direct all questions regarding this Certificate of Analysis to:
Patricia Legette, Project Manager
Email: Patricia.Legette@bureauveritas.com
Phone# (905)817-5799

==========

Bureau Veritas has procedures in place to guard against improper use of the electronic signature and have the required "signatories", as per ISO/IEC 17025, signing the reports. For Service Group specific validation, please refer to the Validation Signatures page if included, otherwise available by request. For Department specific Analyst/Supervisor validation names, please refer to the Test Summary section if included, otherwise available by request. This report is authorized by Rodney Major, General Manager responsible for Ontario Environmental laboratory operations.

Bureau Veritas Job #: C4A9915
Report Date: 2024/04/22

RWDI Inc.
Client Project #: 2402553.01
Site Location: ON07
Your P.O. #: 13254256
Sampler Initials: JC

RESULTS OF ANALYSES OF WATER

Bureau Veritas ID		YWU791		YWU792		YWU793		YWU794		
Sampling Date		2024/04/12 10:50		2024/04/12 10:15		2024/04/12 10:00		2024/04/12 22:15		
COC Number		880491		880491		880491		880491		
	UNITS	SS14A	RDL	SS14B	RDL	SS15A	RDL	PSSWDUP	RDL	QC Batch
Calculated Parameters										
Total Un-ionized Ammonia	mg/L	<0.00094	0.00094	0.0045	0.0012	0.00093	0.00072	0.0066	0.0012	9332551
Field Measurements										
Field Conductivity	uS/cm	810	N/A	850	N/A	770	N/A	850	N/A	ONSITE
Field Dissolved Oxygen	mg/L	9.61	N/A	9.80	N/A	9.41	N/A	9.80	N/A	ONSITE
Field Temperature	Celsius	10.7	N/A	10.6	N/A	10.2	N/A	10.6	N/A	ONSITE
Field Measured Field Turbidity	NTU	104	N/A	738	N/A	234	N/A	738	N/A	ONSITE
Field Measured pH	pH	7.9		8.0		7.8		8.0		ONSITE
Inorganics										
Total Ammonia-N	mg/L	<0.050	0.050	0.19	0.050	0.065	0.050	0.28	0.050	9334512
Total Organic Carbon (TOC)	mg/L	11	0.40	17	0.40	14	0.40	17	0.40	9334771
Phenols-4AAP	mg/L	<0.0010	0.0010	<0.0010	0.0010	<0.0010	0.0010	<0.0010	0.0010	9339729
Dissolved Sulphate (SO4)	mg/L	130	1.0	83	1.0	79	1.0	83	1.0	9333408
Alkalinity (Total as CaCO3)	mg/L	200	1.0	210	1.0	200	1.0	210	1.0	9333471
Dissolved Chloride (Cl-)	mg/L	6.9	1.0	46	1.0	25	1.0	46	1.0	9333416
Nitrate (N)	mg/L	0.77	0.10	0.48	0.10	1.52	0.10	0.50	0.10	9333302

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
N/A = Not Applicable

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Microbiology testing is conducted at 6660 Campobello Rd. Chemistry testing is conducted at 6740 Campobello Rd.

Bureau Veritas Job #: C4A9915
Report Date: 2024/04/22

RWDI Inc.
Client Project #: 2402553.01
Site Location: ON07
Your P.O. #: 13254256
Sampler Initials: JC

ELEMENTS BY ATOMIC SPECTROSCOPY (WATER)

Bureau Veritas ID		YWU791	YWU792	YWU793	YWU794		
Sampling Date		2024/04/12 10:50	2024/04/12 10:15	2024/04/12 10:00	2024/04/12 22:15		
COC Number		880491	880491	880491	880491		
	UNITS	SS14A	SS14B	SS15A	PSSWDUP	RDL	QC Batch
Metals							
Total Boron (B)	mg/L	0.08	0.66	0.52	0.64	0.02	9340758
Total Calcium (Ca)	mg/L	83	98	72	97	0.2	9340758
Total Chromium (Cr)	mg/L	<0.005	0.024	0.005	0.018	0.005	9340758
Total Iron (Fe)	mg/L	1.4	20	5.2	19	0.1	9340758
Total Magnesium (Mg)	mg/L	24	29	21	28	0.05	9340758
Total Nickel (Ni)	mg/L	0.003	0.031	0.009	0.029	0.001	9340758
Total Potassium (K)	mg/L	4.8	8.7	6.6	8.4	0.2	9340758
Total Sodium (Na)	mg/L	7.1	39	25	38	0.1	9340758
Total Zinc (Zn)	mg/L	<0.01	0.06	0.02	0.05	0.01	9340758

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

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Bureau Veritas Job #: C4A9915
Report Date: 2024/04/22

RWDI Inc.
Client Project #: 2402553.01
Site Location: ON07
Your P.O. #: 13254256
Sampler Initials: JC

VOLATILE ORGANICS BY GC/MS (WATER)

Bureau Veritas ID		YWU791	YWU792	YWU793	YWU794		
Sampling Date		2024/04/12 10:50	2024/04/12 10:15	2024/04/12 10:00	2024/04/12 22:15		
COC Number		880491	880491	880491	880491		
	UNITS	SS14A	SS14B	SS15A	PSSWDUP	RDL	QC Batch
Volatile Organics							
Benzene	ug/L	<0.50	<0.50	<0.50	<0.50	0.50	9335593
Ethylbenzene	ug/L	<0.50	<0.50	<0.50	<0.50	0.50	9335593
Toluene	ug/L	<1.0	<1.0	<1.0	<1.0	1.0	9335593
p+m-Xylene	ug/L	<0.50	<0.50	<0.50	<0.50	0.50	9335593
o-Xylene	ug/L	<0.50	<0.50	<0.50	<0.50	0.50	9335593
Total Xylenes	ug/L	<0.50	<0.50	<0.50	<0.50	0.50	9335593
Surrogate Recovery (%)							
4-Bromofluorobenzene	%	93	97	97	97		9335593
D4-1,2-Dichloroethane	%	107	105	107	105		9335593
D8-Toluene	%	95	101	91	102		9335593

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

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Bureau Veritas Job #: C4A9915
Report Date: 2024/04/22

RWDI Inc.
Client Project #: 2402553.01
Site Location: ON07
Your P.O. #: 13254256
Sampler Initials: JC

GENERAL COMMENTS

Each temperature is the average of up to three cooler temperatures taken at receipt

Package 1	2.0°C

Sample YWU791 [SS14A] : VOC Water Analysis: Due to foaming, sample required dilution. The detection limits were adjusted accordingly.

Sample YWU792 [SS14B] : VOC Water Analysis: Due to foaming, sample required dilution. The detection limits were adjusted accordingly.

Sample YWU793 [SS15A] : VOC Water Analysis: Due to foaming, sample required dilution. The detection limits were adjusted accordingly.

Sample YWU794 [PSSWDUP] : VOC Water Analysis: Due to foaming, sample required dilution. The detection limits were adjusted accordingly.

Results relate only to the items tested.

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Microbiology testing is conducted at 6660 Campobello Rd. Chemistry testing is conducted at 6740 Campobello Rd.

QUALITY ASSURANCE REPORT

			Matrix Spike		SPIKED BLANK		Method Blank		RPD	
QC Batch	Parameter	Date	% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits
9335593	4-Bromofluorobenzene	2024/04/16	102 (6)	70 - 130	98	70 - 130	98	%		
9335593	D4-1,2-Dichloroethane	2024/04/16	103 (6)	70 - 130	107	70 - 130	104	%		
9335593	D8-Toluene	2024/04/16	101 (6)	70 - 130	97	70 - 130	97	%		
9333302	Nitrate (N)	2024/04/15	104	80 - 120	103	80 - 120	<0.10	mg/L	1.4 (1)	20
9333408	Dissolved Sulphate (SO4)	2024/04/16	NC (2)	75 - 125	97	80 - 120	<1.0	mg/L	0.91 (3)	20
9333416	Dissolved Chloride (Cl-)	2024/04/16	94 (2)	80 - 120	98	80 - 120	<1.0	mg/L	8.5 (3)	20
9333471	Alkalinity (Total as CaCO3)	2024/04/16			104	85 - 115	<1.0	mg/L	0.63 (3)	20
9334512	Total Ammonia-N	2024/04/16	99	75 - 125	100	80 - 120	<0.050	mg/L	NC (1)	20
9334771	Total Organic Carbon (TOC)	2024/04/17	92 (4)	80 - 120	97	80 - 120	<0.40	mg/L	1.8 (5)	20
9335593	Benzene	2024/04/16	95 (6)	70 - 130	93	70 - 130	<0.10	ug/L	NC (7)	30
9335593	Ethylbenzene	2024/04/16	97 (6)	70 - 130	94	70 - 130	<0.10	ug/L	NC (7)	30
9335593	o-Xylene	2024/04/16	92 (6)	70 - 130	89	70 - 130	<0.10	ug/L	NC (7)	30
9335593	p+m-Xylene	2024/04/16	106 (6)	70 - 130	99	70 - 130	<0.10	ug/L	NC (7)	30
9335593	Toluene	2024/04/16	95 (6)	70 - 130	91	70 - 130	<0.20	ug/L	NC (7)	30
9335593	Total Xylenes	2024/04/16					<0.10	ug/L	NC (7)	30
9339729	Phenols-4AAP	2024/04/17	102	80 - 120	98	80 - 120	<0.0010	mg/L	NC (1)	20
9340758	Total Boron (B)	2024/04/18	97	80 - 120	92	80 - 120	<0.02	mg/L	0.067 (1)	20
9340758	Total Calcium (Ca)	2024/04/18	NC	80 - 120	101	80 - 120	<0.2	mg/L	2.0 (1)	20
9340758	Total Chromium (Cr)	2024/04/18	100	80 - 120	97	80 - 120	<0.005	mg/L	NC (1)	20
9340758	Total Iron (Fe)	2024/04/18	99	80 - 120	95	80 - 120	<0.1	mg/L	6.8 (1)	20
9340758	Total Magnesium (Mg)	2024/04/18	96	80 - 120	95	80 - 120	<0.05	mg/L	3.5 (1)	20
9340758	Total Nickel (Ni)	2024/04/18	96	80 - 120	94	80 - 120	<0.001	mg/L	9.9 (1)	20
9340758	Total Potassium (K)	2024/04/18	103	80 - 120	98	80 - 120	<0.2	mg/L	3.6 (1)	20
9340758	Total Sodium (Na)	2024/04/18	NC	80 - 120	95	80 - 120	<0.1	mg/L	3.6 (1)	20

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Microbiology testing is conducted at 6660 Campobello Rd. Chemistry testing is conducted at 6740 Campobello Rd.

QUALITY ASSURANCE REPORT(CONT'D)

			Matrix Spike		SPIKED BLANK		Method Blank		RPD	
QC Batch	Parameter	Date	% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits
9340758	Total Zinc (Zn)	2024/04/18	102	80 - 120	101	80 - 120	<0.01	mg/L	19 (1)	20

Duplicate: Paired analysis of a separate portion of the same sample. Used to evaluate the variance in the measurement.

Matrix Spike: A sample to which a known amount of the analyte of interest has been added. Used to evaluate sample matrix interference.

Spiked Blank: A blank matrix sample to which a known amount of the analyte, usually from a second source, has been added. Used to evaluate method accuracy.

Method Blank: A blank matrix containing all reagents used in the analytical procedure. Used to identify laboratory contamination.

Surrogate: A pure or isotopically labeled compound whose behavior mirrors the analytes of interest. Used to evaluate extraction efficiency.

NC (Matrix Spike): The recovery in the matrix spike was not calculated. The relative difference between the concentration in the parent sample and the spike amount was too small to permit a reliable recovery calculation (matrix spike concentration was less than the native sample concentration)

NC (Duplicate RPD): The duplicate RPD was not calculated. The concentration in the sample and/or duplicate was too low to permit a reliable RPD calculation (absolute difference <= 2x RDL).

(1) Duplicate Parent ID

(2) Matrix Spike Parent ID [YWU791-01]

(3) Duplicate Parent ID [YWU791-01]

(4) Matrix Spike Parent ID [YWU791-03]

(5) Duplicate Parent ID [YWU791-03]

(6) Matrix Spike Parent ID [YWU791-06]

(7) Duplicate Parent ID [YWU791-06]

Bureau Veritas 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.bvna.com

Microbiology testing is conducted at 6660 Campobello Rd. Chemistry testing is conducted at 6740 Campobello Rd.

Bureau Veritas Job #: C4A9915
Report Date: 2024/04/22

RWDI Inc.
Client Project #: 2402553.01
Site Location: ON07
Your P.O. #: 13254256
Sampler Initials: JC

VALIDATION SIGNATURE PAGE

The analytical data and all QC contained in this report were reviewed and validated by:

Cristina Carriere, Senior Scientific Specialist

Patricia Legette, Project Manager

Bureau Veritas has procedures in place to guard against improper use of the electronic signature and have the required "signatories", as per ISO/IEC 17025, signing the reports. For Service Group specific validation, please refer to the Validation Signatures page if included, otherwise available by request. For Department specific Analyst/Supervisor validation names, please refer to the Test Summary section if included, otherwise available by request. This report is authorized by Rodney Major, General Manager responsible for Ontario Environmental laboratory operations.

Bureau Veritas 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.bvna.com

Microbiology testing is conducted at 6660 Campobello Rd. Chemistry testing is conducted at 6740 Campobello Rd.

S2437676 X

BUREAU VERITAS

FIELD INFORMATION FORM

WM WASTE MANAGEMENT

Site Name: TCE SSTC

Site No.: Sample: SS14A (Sample ID)

This Waste Management Field Information Form is Required
This form is to be completed, in addition to any State Forms. The Field Form is submitted along with the Chain of Custody Forms that accompany the sample containers (i.e. with the cooler that is returned to the laboratory).

Laboratory Use Only/Lab ID:

PURGE INFO

PURGE DATE (MM DD YY)	PURGE TIME (2400 Hr Clock)	ELAPSED HRS (hrs:min)	WATER VOL IN CASING (Gallons)	ACTUAL VOL PURGED (Gallons)	WELL VOLs PURGED

Note: For Passive Sampling, replace "Water Vol in Casing" and "Well Vols Purged" w/ Water Vol in Tubing/Flow Cell and Tubing/Flow Cell Vols Purged. Mark Changes, Record field data below.

PURGE/SAMPLE EQUIPMENT

Purging and Sampling Equipment ... Dedicated: Y or N

Filter Device: Y or N 0.45 µ or ____ µ (circle or fill in)

Purging Device: A-Submersible Pump, B-Peristaltic Pump, C-QED Bladder Pump, D-Bailer, E-Piston Pump, F-Dipper/Bottle

Filter Type: A-In-line Disposable, B-Pressure, C-Vacuum, X-Other: ____

Sampling Device:

X-Other:

Sample Tube Type: A-Teflon, B-Stainless Steel, C-PVC, D-Polypropylene, X-Other: ____

WELL DATA

Well Elevation (at TOC) (ft/msl)

Depth to Water (DTW) (from TOC) (ft)

Groundwater Elevation (GWE) (Site Datum, from TOC) (ft msl)

Total Well Depth (from TOC) (ft)

Stick Up (from ground elevation) (ft)

Casing ID (in)

Casing Material

Note: Total Depth, Stick Up, Casing ID, etc. are optional and can be from historical data, unless required by Site/Permit. Well Elevation, DTW, and GWE must be current, obtained from site.

STABILIZATION DATA (Optional)

Sample Time (2400 Hr Clock)	Rate/Unit	pH (std)	Conductance (SC/EC) (µmhos/cm @ 25°C)	Temp. (°C)	Turbidity (ntu)	D.O. (mg/L - ppm)	eH/ORP (mV)	DTW (ft)
		1st	1st					
		2nd	2nd					
		3rd	3rd					
		4th	4th					
Input Range for 3 consec. readings or Permit/State requirements:		+/-	+/-	+/-	+/-	+/-	+/-	

Stabilization Data Fields are Optional *(i.e. complete stabilization readings for parameters required by WM, Site, or State). These fields can be used where four (4) field measurements are required by State/Permit/Site. If a Data Logger or other Electronic format is used, fill in final readings below and submit electronic data separately to Site. If more fields above are needed, use separate sheet or form.*

FIELD DATA

SAMPLE DATE (MM DD YY)	pH (std)	CONDUCTANCE (µmhos/cm @ 25°C)	TEMP. (°C)	TURBIDITY (ntu)	DO (mg/L - ppm)	eH/ORP (mV)	Other: Units
041224	7.09	63.61	10.7	6.4	9.61		

Final Field Readings are required *(i.e. record field measurements, final stabilized readings, passive sample readings before sampling for all field parameters required by State/Permit/Site.)*

Sample Appearance: transparent Odor: N/O Color: N/C Other: ____

Weather Conditions (required daily, or as conditions change): 7°C Direction/Speed: 32km/hr Outlook: Rain Precipitation: Y or N

Specific Comments (including purge/well volume calculations if required):

FIELD COMMENTS

Stream width 0.65m
Depth 0.15m - Sampled @ 10:50 AM
bmeam ti: 9:5
ti: 10:5
to: 8:5

I certify that sampling procedures were in accordance with applicable EPA, State, and WM protocols (if more than one sampler, all should sign):

Date	Name	Signature	Company
04/12/24	Jake Artzbell		RWPJ
/ /			

DISTRIBUTION: WHITE/ORIGINAL - Stays with Sample, YELLOW - Returned to Client, PINK - Field Copy

Field Information Form v-3.1 06/20

2048

S2437676

BUREAU VERITAS

FIELD INFORMATION FORM

WM WASTE MANAGEMENT

Site Name: TCEC

Site No.: Sample: SS114D (Sample ID)

This Waste Management Field Information Form is Required
This form is to be completed, in addition to any State Forms. The Field Form is submitted along with the Chain of Custody Forms that accompany the sample containers (i.e. with the cooler that is returned to the laboratory).

Laboratory Use Only/Lab ID:

PURGE INFO

PURGE DATE (MM DD YY)	PURGE TIME (2400 Hr Clock)	ELAPSED HRS (hrs:min)	WATER VOL IN CASING (Gallons)	ACTUAL VOL PURGED (Gallons)	WELL VOLs PURGED

Note: For Passive Sampling, replace "Water Vol in Casing" and "Well Vols Purged" w/ Water Vol in Tubing/Flow Cell and Tubing/Flow Cell Vols Purged. Mark Changes, Record field data below.

PURGE/SAMPLE EQUIPMENT

Purging and Sampling Equipment ... Dedicated: Y or N

Filter Device: Y or N — 0.45 µ or ____ µ (circle or fill in)

Purging Device: ____ (A-Submersible Pump, B-Peristaltic Pump, C-QED Bladder Pump, D-Bailer, E-Piston Pump, F-Dipper/Bottle)

Filter Type: ____ (A-In-line Disposable, B-Pressure, C-Vacuum, X-Other: ____)

Sampling Device: ____

X-Other: ____

Sample Tube Type: ____ (A-Teflon, B-Stainless Steel, C-PVC, D-Polypropylene, X-Other: ____)

WELL DATA

Well Elevation (at TOC): ____ (ft/msl)

Depth to Water (DTW) (from TOC): ____ (ft)

Groundwater Elevation (GWE) (Site Datum, from TOC): ____ (ft msl)

Total Well Depth (from TOC): ____ (ft)

Stick Up (from ground elevation): ____ (ft)

Casing ID: ____ (in)

Casing Material: ____

Note: Total Depth, Stick Up, Casing ID, etc. are optional and can be from historical data, unless required by Site/Permit. Well Elevation, DTW, and GWE must be current, obtained from site.

STABILIZATION DATA (Optional)

Sample Time (2400 Hr Clock)	Rate/Unit	pH (std)	Conductance (SC/EC) (µmhos/cm @ 25°C)	Temp. (°C)	Turbidity (ntu)	D.O. (mg/L - ppm)	eH/ORP (mV)	DTW (ft)
		1st	1st					
		2nd	2nd					
		3rd	3rd					
		4th	4th					
Input Range for 3 consec. readings or Permit/State requirements:		+/-	+/-	+/-	+/-	+/-	+/-	

Stabilization Data Fields are Optional *(i.e. complete stabilization readings for parameters required by WM, Site, or State). These fields can be used where four (4) field measurements are required by State/Permit/Site. If a Data Logger or other Electronic format is used, fill in final readings below and submit electronic data separately to Site. If more fields above are needed, use separate sheet or form.*

FIELD DATA

SAMPLE DATE (MM DD YY)	pH (std)	CONDUCTANCE (µmhos/cm @ 25°C)	TEMP. (°C)	TURBIDITY (ntu)	DO (mg/L - ppm)	eH/ORP (mV)	Other: Units
04 12 24	8.0	0.85 mS	16.6	738	9.80		

Final Field Readings are required *(i.e. record field measurements, final stabilized readings, passive sample readings before sampling for all field parameters required by State/Permit/Site.)*

FIELD COMMENTS

Sample Appearance: translucent — Odor: N/S — Color: light Brown — Other: ____

Weather Conditions (required daily, or as conditions change): 70F — Direction/Speed: Rain 32 km/hW — Outlook: Rain — Precipitation: (Y) or N

Specific Comments (including purge/well volume calculations if required):

WL: 0.5 m

Depth 0.15 m — PS&DUP taken

time @ 1m to: 12

t2: 13 — Sampled @ 10:15 AM

t3: 12

I certify that sampling procedures were in accordance with applicable EPA, State, and WM protocols (if more than one sampler, all should sign):

Date	Name	Signature	Company
04/12/24	Jake Arbibello		RWDI
/ /			

DISTRIBUTION: WHITE/ORIGINAL - Stays with Sample, YELLOW - Returned to Client, PINK - Field Copy

Field Information Form v-3.1 06/20

2047

S2437676

BUREAU VERITAS

FIELD INFORMATION FORM

WASTE MANAGEMENT

Site Name: TCEC

Site No.: Sample: SS1SA (Sample ID)

This Waste Management Field Information Form is Required
This form is to be completed, in addition to any State Forms. The Field Form is submitted along with the Chain of Custody Forms that accompany the sample containers (i.e. with the cooler that is returned to the laboratory).

Laboratory Use Only/Lab ID:

PURGE INFO

PURGE DATE (MM DD YY)	PURGE TIME (2400 Hr Clock)	ELAPSED HRS (hr:min)	WATER VOL IN CASING (Gallons)	ACTUAL VOL PURGED (Gallons)	WELL VOLs PURGED

Note: For Passive Sampling, replace "Water Vol in Casing" and "Well Vols Purged" w/ Water Vol in Tubing/Flow Cell and Tubing/Flow Cell Vols Purged. Mark Changes, Record field data below.

PURGE/SAMPLE EQUIPMENT

Purging and Sampling Equipment ... Dedicated: Y or N

Filter Device: Y or N — 0.45 µ or ____ µ (circle or fill in)

Purging Device: A-Submersible Pump, B-Peristaltic Pump, C-QED Bladder Pump, D-Bailer, E-Piston Pump, F-Dipper/Bottle

Sampling Device: (same codes)

X-Other:

Filter Type: A-In-line Disposable, B-Pressure, C-Vacuum, X-Other:

Sample Tube Type: A-Teflon, B-Stainless Steel, C-PVC, D-Polypropylene, X-Other:

WELL DATA

Well Elevation (at TOC) (ft/msl)	Depth to Water (DTW) (from TOC) (ft)	Groundwater Elevation (GWE) (Site Datum, from TOC) (ft msl)

Total Well Depth (from TOC) (ft)	Stick Up (from ground elevation) (ft)	Casing ID (in)	Casing Material

Note: Total Depth, Stick Up, Casing ID, etc. are optional and can be from historical data, unless required by Site/Permit. Well Elevation, DTW, and GWE must be current, obtained from site.

STABILIZATION DATA (Optional)

Sample Time (2400 Hr Clock)	Rate/Unit	pH (std)	Conductance (SC/EC) (µmhos/cm @ 25°C)	Temp. (°C)	Turbidity (ntu)	D.O. (mg/L - ppm)	eH/ORP (mV)	DTW (ft)
		1st	1st					
		2nd	2nd					
		3rd	3rd					
		4th	4th					
Input Range for 3 consec. readings or Permit/State requirements:		+/-	+/-	+/-	+/-	+/-	+/-	

Stabilization Data Fields are Optional *(i.e. complete stabilization readings for parameters required by WM, Site, or State). These fields can be used where four (4) field measurements are required by State/Permit/Site. If a Data Logger or other Electronic format is used, fill in final readings below and submit electronic data separately to Site. If more fields above are needed, use separate sheet or form.*

FIELD DATA

SAMPLE DATE (MM DD YY)	pH (std)	CONDUCTANCE (µmhos/cm @ 25°C)	TEMP. (°C)	TURBIDITY (ntu)	DO (mg/L - ppm)	eH/ORP (mV)	Other: Units
04 12 24	7.8	0.77	10.2	23	9.41		

Final Field Readings are required *(i.e. record field measurements, final stabilized readings, passive sample readings before sampling for all field parameters required by State/Permit/Site.)*

FIELD COMMENTS

Sample Appearance: translucent — Odor: N/O — Color: light Brown — Other:

Weather Conditions (required daily, or as conditions change): 7°C — Direction/Speed: 32km/hW — Outlook: Rain — Precipitation: (Y) or N

Specific Comments (including purge/well volume calculations if required):

Depth: 1m - Sampled @ 10:00AM

Depth: 0.25m

time@1m to: 10

to: 10

to: 12

I certify that sampling procedures were in accordance with applicable EPA, State, and WM protocols (if more than one sampler, all should sign):

Date	Name	Signature	Company
04/12/24	Jake Atkins		RJDS
/ /			

DISTRIBUTION: WHITE/ORIGINAL - Stays with Sample, YELLOW - Returned to Client, PINK - Field Copy

Field Information Form v-3.1 06/20

2046

Custody Tracking Form

T880491

Please use this form for custody tracking when submitting the work instructions via eCOC (electronic Chain of Custody). Please ensure your form has a barcode or a Bureau Veritas eCOC confirmation number in the top right hand side. This number links your electronic submission to your samples. This form should be placed in the cooler with your samples.

First Sample: SS14A
Last Sample: PSSWDUP
Sample Count: 4

Relinquished By				Received By			
Jeff Ueland		Date	2024/04/12	SUGAR SALVANT		Date	2024/04/13
		Time (24 HR)	16:00			Time (24 HR)	12:30
		Date				Date	
		Time (24 HR)				Time (24 HR)	
		Date				Date	
		Time (24 HR)				Time (24 HR)	

Unless otherwise agreed to, submissions and use of services are governed by Bureau Veritas' standard terms and conditions which can be found at www.bvna.com.

Triage Information

Sampled By (Print): Jeff Ueland

# of Coolers/Pkgs: 1

Rush ☐ Immediate Test ☐ Food Residue ☐

Micro ☐ Food Chemistry ☐

***** LABORATORY USE ONLY *****

Received At

Lab Comments:

Labeled By

Verified By

13-Apr-24 12:30
Patricia Legette
C4A9915
AJH ENV-997

Custody Seal		Cooling Media	Temperature °C		
Present (Y/N)	Intact (Y/N)	Present (Y/N)	1	2	3
Y	Y	Y	2	2	2
Drinking Water Metals Preservation Check Done (Circle)				YES	NO

COR FCD-00383/4

Page 1 of 1

Your P.O. #: 13254256
Your Project #: 2402553.01
Site#: 700
Site Location: ON07
Your C.O.C. #: 887021

Attention: Khalid Hussein - Twin Creeks

RWDI Inc.
600 Southgate Drive
Guelph, ON
Canada N1G 4P6

Report Date: 2024/05/07
Report #: R8138764
Version: 1 - Final

CERTIFICATE OF ANALYSIS

BUREAU VERITAS JOB #: C4C5083
Received: 2024/04/26, 09:54

Sample Matrix: Water
Samples Received: 1

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Analytical Method
ABN Compounds in Water by GC/MS	1	2024/05/02	2024/05/03	CAM SOP-00301	EPA 8270 m
Alkalinity	1	N/A	2024/05/03	CAM SOP-00448	SM 24 2320 B m
Biochemical Oxygen Demand (BOD)	1	2024/04/27	2024/05/02	CAM SOP-00427	SM 24 5210B m
Chloride by Automated Colourimetry	1	N/A	2024/04/29	CAM SOP-00463	SM 24 4500-Cl E m
Chemical Oxygen Demand	1	N/A	2024/05/06	CAM SOP-00416	SM 24 5220 D m
Conductance in Water - On-site	1	N/A	2024/05/06		
Conductivity	1	N/A	2024/05/03	CAM SOP-00414	SM 24 2510 m
Field Measured Dissolved Oxygen in Water	1	N/A	2024/05/06		
Dissolved Mercury in Water by CVAA	1	2024/04/30	2024/04/30	CAM SOP-00453	EPA 7470A m
Total Metals by ICPMS	1	N/A	2024/05/01	CAM SOP-00447	EPA 6020B m
Ammonia-N	1	N/A	2024/05/02	CAM SOP-00441	USGS I-2522-90 m
Nitrate & Nitrite as Nitrogen in Water (1)	1	N/A	2024/04/30	CAM SOP-00440	SM 24 4500-NO3I/NO2B
pH (2)	1	2024/04/27	2024/05/03	CAM SOP-00413	SM 24th - 4500H+ B
Phenols (4AAP)	1	N/A	2024/05/02	CAM SOP-00444	OMOE E3179 m
Field Measured pH (3)	1	N/A	2024/04/26		Field pH Meter
Sulphate by Automated Turbidimetry	1	N/A	2024/04/29	CAM SOP-00464	SM 24 4500-SO42- E m
Total Dissolved Solids	1	2024/04/30	2024/05/01	CAM SOP-00428	SM 24 2540C m
Field Temperature (3)	1	N/A	2024/04/26		Field Thermometer
Total Kjeldahl Nitrogen in Water	1	2024/04/29	2024/05/01	CAM SOP-00938	OMOE E3516 m
Total Phosphorus (Colourimetric)	1	2024/04/30	2024/05/01	CAM SOP-00407	SM 24 4500-P I
Total Suspended Solids	1	2024/04/29	2024/04/30	CAM SOP-00428	SM 24 2540D m
Turbidity - On-site	1	N/A	2024/05/06		
Un-ionized Ammonia (4)	1	2024/04/26	2024/05/06	Auto Calc.	PWQO
Volatile Organic Compounds in Water	1	N/A	2024/04/30	CAM SOP-00228	EPA 8260D

Remarks:

Bureau Veritas is accredited to ISO/IEC 17025 for specific parameters on scopes of accreditation. Unless otherwise noted, procedures used by Bureau Veritas are based upon recognized Provincial, Federal or US method compendia such as CCME, EPA, APHA or the Quebec Ministry of Environment.

All work recorded herein has been done in accordance with procedures and practices ordinarily exercised by professionals in Bureau Veritas' profession using accepted testing methodologies, quality assurance and quality control procedures (except where otherwise agreed by the client and Bureau Veritas in

Your P.O. #: 13254256
Your Project #: 2402553.01
Site#: 700
Site Location: ON07
Your C.O.C. #: 887021

Attention: Khalid Hussein - Twin Creeks

RWDI Inc.
600 Southgate Drive
Guelph, ON
Canada N1G 4P6

Report Date: 2024/05/07
Report #: R8138764
Version: 1 - Final

CERTIFICATE OF ANALYSIS

BUREAU VERITAS JOB #: C4C5083
Received: 2024/04/26, 09:54

writing). All data is in statistical control and has met quality control and method performance criteria unless otherwise noted. All method blanks are reported; unless indicated otherwise, associated sample data are not blank corrected. Where applicable, unless otherwise noted, Measurement Uncertainty has not been accounted for when stating conformity to the referenced standard.

Bureau Veritas liability is limited to the actual cost of the requested analyses, unless otherwise agreed in writing. There is no other warranty expressed or implied. Bureau Veritas has been retained to provide analysis of samples provided by the Client using the testing methodology referenced in this report. Interpretation and use of test results are the sole responsibility of the Client and are not within the scope of services provided by Bureau Veritas, unless otherwise agreed in writing. Bureau Veritas is not responsible for the accuracy or any data impacts, that result from the information provided by the customer or their agent.

Solid sample results, except biota, are based on dry weight unless otherwise indicated. Organic analyses are not recovery corrected except for isotope dilution methods.
Results relate to samples tested. When sampling is not conducted by Bureau Veritas, results relate to the supplied samples tested.
This Certificate shall not be reproduced except in full, without the written approval of the laboratory.
Reference Method suffix “m” indicates test methods incorporate validated modifications from specific reference methods to improve performance.
* RPDs calculated using raw data. The rounding of final results may result in the apparent difference.
(1) Values for calculated parameters may not appear to add up due to rounding of raw data and significant figures.
(2) "The CCME method and Analytical Protocol (O. Reg 153/04, O. Reg. 406/19) requires pH to be analyzed within 15 minutes of sampling and therefore field analysis is required for compliance. All Laboratory pH analyses in this report are reported past the CCME and Analytical Protocol (O. Reg 153/04, O. Reg. 406/19) holding time. Bureau Veritas endeavors to analyze samples as soon as possible after receipt."

(3) This is a field test, therefore, the results relate to items that were not analysed at Bureau Veritas.
(4) Un-ionized ammonia is calculated using the total ammonia result and field data provided by the client for pH and temperature.

Encryption Key

Please direct all questions regarding this Certificate of Analysis to:
Patricia Legette, Project Manager
Email: Patricia.Legette@bureauveritas.com
Phone# (905)817-5799
==========
Bureau Veritas has procedures in place to guard against improper use of the electronic signature and have the required "signatories", as per ISO/IEC 17025, signing the reports. For Service Group specific validation, please refer to the Validation Signatures page if included, otherwise available by request. For Department specific Analyst/Supervisor validation names, please refer to the Test Summary section if included, otherwise available by request. This report is authorized by Rodney Major, General Manager responsible for Ontario Environmental laboratory operations.

Bureau Veritas Job #: C4C5083
Report Date: 2024/05/07

RWDI Inc.
Client Project #: 2402553.01
Site Location: ON07
Your P.O. #: 13254256
Sampler Initials: EW

RESULTS OF ANALYSES OF WATER

Bureau Veritas ID		YZY254		
Sampling Date		2024/04/24 09:30		
COC Number		887021		
	UNITS	SP2	RDL	QC Batch
Calculated Parameters				
Total Un-ionized Ammonia	mg/L	<0.0035	0.0035	9358481
Field Measurements				
Field Conductivity	uS/cm	581	N/A	ONSITE
Field Dissolved Oxygen	mg/L	10.98	N/A	ONSITE
Field Temperature	Celsius	7.6	N/A	ONSITE
Field Measured Field Turbidity	NTU	110	N/A	ONSITE
Field Measured pH	pH	8.1		ONSITE
Inorganics				
Total Ammonia-N	mg/L	<0.15	0.15	9366936
Total BOD	mg/L	3	2	9359905
Total Chemical Oxygen Demand (COD)	mg/L	27	4.0	9362910
Conductivity	umho/cm	630	1.0	9360262
Total Dissolved Solids	mg/L	370	10	9363501
Total Kjeldahl Nitrogen (TKN)	mg/L	<0.7	0.7	9362874
pH	pH	7.92		9360263
Phenols-4AAP	mg/L	<0.0010	0.0010	9369499
Total Phosphorus	mg/L	0.060	0.030	9363725
Total Suspended Solids	mg/L	110	10	9361171
Dissolved Sulphate (SO4)	mg/L	160	1.0	9360421
Alkalinity (Total as CaCO3)	mg/L	78	1.0	9360258
Dissolved Chloride (Cl-)	mg/L	45	1.0	9360418
Nitrite (N)	mg/L	<0.010	0.010	9360244
Nitrate (N)	mg/L	<0.10	0.10	9360244

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
N/A = Not Applicable

Bureau Veritas 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.bvna.com

Microbiology testing is conducted at 6660 Campobello Rd. Chemistry testing is conducted at 6740 Campobello Rd.

Bureau Veritas Job #: C4C5083
Report Date: 2024/05/07

RWDI Inc.
Client Project #: 2402553.01
Site Location: ON07
Your P.O. #: 13254256
Sampler Initials: EW

ELEMENTS BY ATOMIC SPECTROSCOPY (WATER)

Bureau Veritas ID		YZY254		
Sampling Date		2024/04/24 09:30		
COC Number		887021		
	UNITS	SP2	RDL	QC Batch
Metals				
Dissolved Mercury (Hg)	ug/L	<0.10	0.10	9363903
Total Arsenic (As)	mg/L	0.002	0.001	9366069
Total Barium (Ba)	mg/L	0.023	0.005	9366069
Total Boron (B)	mg/L	0.32	0.02	9366069
Total Cadmium (Cd)	mg/L	<0.0001	0.0001	9366069
Total Calcium (Ca)	mg/L	47	0.2	9366069
Total Chromium (Cr)	mg/L	<0.005	0.005	9366069
Total Copper (Cu)	mg/L	0.005	0.002	9366069
Total Iron (Fe)	mg/L	2.2	0.1	9366069
Total Lead (Pb)	mg/L	0.0015	0.0005	9366069
Total Magnesium (Mg)	mg/L	27	0.05	9366069
Total Nickel (Ni)	mg/L	0.005	0.001	9366069
Total Potassium (K)	mg/L	3.6	0.2	9366069
Total Sodium (Na)	mg/L	38	0.1	9366069
Total Zinc (Zn)	mg/L	<0.01	0.01	9366069

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

Bureau Veritas 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.bvna.com

Microbiology testing is conducted at 6660 Campobello Rd. Chemistry testing is conducted at 6740 Campobello Rd.

RWDI Inc.
Client Project #: 2402553.01
Site Location: ON07
Your P.O. #: 13254256
Sampler Initials: EW

SEMI-VOLATILE ORGANICS BY GC-MS (WATER)

Bureau Veritas ID		YZY254		
Sampling Date		2024/04/24 09:30		
COC Number		887021		
	UNITS	SP2	RDL	QC Batch
Semivolatile Organics				
Benzo(a)pyrene	ug/L	<0.20	0.20	9368487
1,2-Dichlorobenzene	ug/L	<0.50	0.50	9368487
1,3-Dichlorobenzene	ug/L	<0.50	0.50	9368487
1,4-Dichlorobenzene	ug/L	<0.50	0.50	9368487
Hexachlorobenzene	ug/L	<0.50	0.50	9368487
1,2,4-Trichlorobenzene	ug/L	<0.50	0.50	9368487
2,4-Dichlorophenol	ug/L	<0.30	0.30	9368487
Pentachlorophenol	ug/L	<1.0	1.0	9368487
Phenol	ug/L	<0.50	0.50	9368487
2,4,6-Trichlorophenol	ug/L	<0.50	0.50	9368487
Di-N-butyl phthalate	ug/L	<2.0	2.0	9368487
Diethyl phthalate	ug/L	<1.0	1.0	9368487
Dimethyl phthalate	ug/L	<1.0	1.0	9368487
Surrogate Recovery (%)				
2,4,6-Tribromophenol	%	77		9368487
2-Fluorobiphenyl	%	79		9368487
2-Fluorophenol	%	35		9368487
D14-Terphenyl	%	94		9368487
D5-Nitrobenzene	%	80		9368487
D5-Phenol	%	23		9368487

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

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Microbiology testing is conducted at 6660 Campobello Rd. Chemistry testing is conducted at 6740 Campobello Rd.

Bureau Veritas Job #: C4C5083
Report Date: 2024/05/07

RWDI Inc.
Client Project #: 2402553.01
Site Location: ON07
Your P.O. #: 13254256
Sampler Initials: EW

VOLATILE ORGANICS BY GC/MS (WATER)

Bureau Veritas ID		YZY254		
Sampling Date		2024/04/24 09:30		
COC Number		887021		
	UNITS	SP2	RDL	QC Batch
Volatile Organics				
Benzene	ug/L	<0.20	0.20	9361805
1,4-Dichlorobenzene	ug/L	<0.40	0.40	9361805
Ethylbenzene	ug/L	<0.20	0.20	9361805
Methylene Chloride(Dichloromethane)	ug/L	<2.0	2.0	9361805
Toluene	ug/L	<0.20	0.20	9361805
Vinyl Chloride	ug/L	<0.20	0.20	9361805
p+m-Xylene	ug/L	<0.20	0.20	9361805
o-Xylene	ug/L	<0.20	0.20	9361805
Total Xylenes	ug/L	<0.20	0.20	9361805
Surrogate Recovery (%)				
4-Bromofluorobenzene	%	100		9361805
D4-1,2-Dichloroethane	%	127		9361805
D8-Toluene	%	82		9361805

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

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Microbiology testing is conducted at 6660 Campobello Rd. Chemistry testing is conducted at 6740 Campobello Rd.

RWDI Inc.
Client Project #: 2402553.01
Site Location: ON07
Your P.O. #: 13254256
Sampler Initials: EW

GENERAL COMMENTS

Each temperature is the average of up to three cooler temperatures taken at receipt

Package 1	1.3°C

Results relate only to the items tested.

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Microbiology testing is conducted at 6660 Campobello Rd. Chemistry testing is conducted at 6740 Campobello Rd.

Bureau Veritas Job #: C4C5083
Report Date: 2024/05/07

QUALITY ASSURANCE REPORT

RWDI Inc.
Client Project #: 2402553.01
Site Location: ON07
Your P.O. #: 13254256
Sampler Initials: EW

			Matrix Spike		SPIKED BLANK		Method Blank		RPD		QC Standard	
QC Batch	Parameter	Date	% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits	% Recovery	QC Limits
9361805	4-Bromofluorobenzene	2024/04/30	101	70 - 130	103	70 - 130	101	%				
9361805	D4-1,2-Dichloroethane	2024/04/30	111	70 - 130	104	70 - 130	119	%				
9361805	D8-Toluene	2024/04/30	108	70 - 130	108	70 - 130	86	%				
9368487	2,4,6-Tribromophenol	2024/05/02	72	10 - 130	86	10 - 130	75	%				
9368487	2-Fluorobiphenyl	2024/05/02	68	30 - 130	78	30 - 130	81	%				
9368487	2-Fluorophenol	2024/05/02	40	10 - 130	49	10 - 130	43	%				
9368487	D14-Terphenyl	2024/05/02	81	30 - 130	92	30 - 130	91	%				
9368487	D5-Nitrobenzene	2024/05/02	75	30 - 130	89	30 - 130	81	%				
9368487	D5-Phenol	2024/05/02	28	10 - 130	31	10 - 130	27	%				
9359905	Total BOD	2024/05/02					<2	mg/L	3.1 (1)	30	97	80 - 120
9360244	Nitrate (N)	2024/04/30	90	80 - 120	93	80 - 120	<0.10	mg/L	NC (1)	20		
9360244	Nitrite (N)	2024/04/30	102	80 - 120	102	80 - 120	<0.010	mg/L	NC (1)	20		
9360258	Alkalinity (Total as CaCO3)	2024/05/03			104	85 - 115	<1.0	mg/L	2.1 (1)	20		
9360262	Conductivity	2024/05/03			103	85 - 115	<1.0	umho/cm	0 (1)	10		
9360263	pH	2024/05/03			102	98 - 103			0.23 (1)	N/A		
9360418	Dissolved Chloride (Cl-)	2024/04/29	101	80 - 120	103	80 - 120	<1.0	mg/L	1.2 (1)	20		
9360421	Dissolved Sulphate (SO4)	2024/04/29	105	75 - 125	104	80 - 120	<1.0	mg/L	0.85 (1)	20		
9361171	Total Suspended Solids	2024/04/30			97	80 - 120	<10	mg/L	0.98 (1)	20		
9361805	1,4-Dichlorobenzene	2024/04/30	111	70 - 130	116	70 - 130	<0.40	ug/L	NC (1)	30		
9361805	Benzene	2024/04/30	94	70 - 130	97	70 - 130	<0.20	ug/L	2.1 (1)	30		
9361805	Ethylbenzene	2024/04/30	86	70 - 130	94	70 - 130	<0.20	ug/L	NC (1)	30		
9361805	Methylene Chloride(Dichloromethane)	2024/04/30	106	70 - 130	105	70 - 130	<2.0	ug/L	NC (1)	30		
9361805	o-Xylene	2024/04/30	76	70 - 130	89	70 - 130	<0.20	ug/L	NC (1)	30		
9361805	p+m-Xylene	2024/04/30	74	70 - 130	82	70 - 130	<0.20	ug/L	NC (1)	30		
9361805	Toluene	2024/04/30	99	70 - 130	103	70 - 130	<0.20	ug/L	2.4 (1)	30		
9361805	Total Xylenes	2024/04/30					<0.20	ug/L	NC (1)	30		
9361805	Vinyl Chloride	2024/04/30	98	70 - 130	105	70 - 130	<0.20	ug/L				
9362874	Total Kjeldahl Nitrogen (TKN)	2024/05/01	117	80 - 120	98	80 - 120	<0.7	mg/L	1.9 (1)	20	97	80 - 120
9362910	Total Chemical Oxygen Demand (COD)	2024/05/06	90	80 - 120	99	80 - 120	<4.0	mg/L	1.6 (1)	20		

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Microbiology testing is conducted at 6660 Campobello Rd. Chemistry testing is conducted at 6740 Campobello Rd.

QUALITY ASSURANCE REPORT(CONT'D)

			Matrix Spike		SPIKED BLANK		Method Blank		RPD		QC Standard	
QC Batch	Parameter	Date	% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits	% Recovery	QC Limits
9363501	Total Dissolved Solids	2024/05/01			95	80 - 120	<10	mg/L	0 (1)	20		
9363725	Total Phosphorus	2024/05/01	89 (2)	80 - 120	96	80 - 120	<0.030	mg/L	1.7 (3)	25	93	80 - 120
9363903	Dissolved Mercury (Hg)	2024/04/30	98	75 - 125	100	80 - 120	<0.10	ug/L	NC (1)	20		
9366069	Total Arsenic (As)	2024/05/01	104	80 - 120	103	80 - 120	<0.001	mg/L				
9366069	Total Barium (Ba)	2024/05/01	102	80 - 120	97	80 - 120	<0.005	mg/L				
9366069	Total Boron (B)	2024/05/01	98	80 - 120	96	80 - 120	<0.02	mg/L	NC (1)	20		
9366069	Total Cadmium (Cd)	2024/05/01	103	80 - 120	100	80 - 120	<0.0001	mg/L	NC (1)	20		
9366069	Total Calcium (Ca)	2024/05/01	NC	80 - 120	100	80 - 120	<0.2	mg/L	5.1 (1)	20		
9366069	Total Chromium (Cr)	2024/05/01	97	80 - 120	97	80 - 120	<0.005	mg/L	NC (1)	20		
9366069	Total Copper (Cu)	2024/05/01	104	80 - 120	102	80 - 120	<0.002	mg/L	NC (1)	20		
9366069	Total Iron (Fe)	2024/05/01	100	80 - 120	99	80 - 120	<0.1	mg/L	1.6 (1)	20		
9366069	Total Lead (Pb)	2024/05/01	103	80 - 120	101	80 - 120	<0.0005	mg/L	NC (1)	20		
9366069	Total Magnesium (Mg)	2024/05/01	100	80 - 120	102	80 - 120	<0.05	mg/L	3.4 (1)	20		
9366069	Total Nickel (Ni)	2024/05/01	98	80 - 120	97	80 - 120	<0.001	mg/L	NC (1)	20		
9366069	Total Potassium (K)	2024/05/01	102	80 - 120	102	80 - 120	<0.2	mg/L	2.7 (1)	20		
9366069	Total Sodium (Na)	2024/05/01	99	80 - 120	103	80 - 120	<0.1	mg/L	1.9 (1)	20		
9366069	Total Zinc (Zn)	2024/05/01	104	80 - 120	103	80 - 120	<0.01	mg/L	NC (1)	20		
9366936	Total Ammonia-N	2024/05/02	90	75 - 125	99	80 - 120	<0.15	mg/L	NC (1)	20		
9368487	1,2,4-Trichlorobenzene	2024/05/02	57	30 - 130	62	30 - 130	<0.50	ug/L	NC (1)	40		
9368487	1,2-Dichlorobenzene	2024/05/02	63	30 - 130	70	30 - 130	<0.50	ug/L	NC (1)	40		
9368487	1,3-Dichlorobenzene	2024/05/02	60	30 - 130	62	30 - 130	<0.50	ug/L	NC (1)	40		
9368487	1,4-Dichlorobenzene	2024/05/02	63	30 - 130	69	30 - 130	<0.50	ug/L	NC (1)	40		
9368487	2,4,6-Trichlorophenol	2024/05/02	75	10 - 130	86	10 - 130	<0.50	ug/L	NC (1)	40		
9368487	2,4-Dichlorophenol	2024/05/02	77	10 - 130	86	10 - 130	<0.30	ug/L	NC (1)	40		
9368487	Benzo(a)pyrene	2024/05/02	84	30 - 130	100	30 - 130	<0.20	ug/L	NC (1)	40		
9368487	Diethyl phthalate	2024/05/02	96	30 - 130	111	30 - 130	<1.0	ug/L	NC (1)	40		
9368487	Dimethyl phthalate	2024/05/02	78	30 - 130	89	30 - 130	<1.0	ug/L	NC (1)	40		
9368487	Di-N-butyl phthalate	2024/05/02	93	30 - 130	103	30 - 130	<2.0	ug/L	NC (1)	40		
9368487	Hexachlorobenzene	2024/05/02	93	30 - 130	99	30 - 130	<0.50	ug/L	NC (1)	40		
9368487	Pentachlorophenol	2024/05/02	63	10 - 130	71	10 - 130	<1.0	ug/L	NC (1)	40		

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Microbiology testing is conducted at 6660 Campobello Rd. Chemistry testing is conducted at 6740 Campobello Rd.

QUALITY ASSURANCE REPORT(CONT'D)

			Matrix Spike		SPIKED BLANK		Method Blank		RPD		QC Standard	
QC Batch	Parameter	Date	% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits	% Recovery	QC Limits
9368487	Phenol	2024/05/02	36	10 - 130	38	10 - 130	<0.50	ug/L	NC (1)	40		
9369499	Phenols-4AAP	2024/05/02	100	80 - 120	100	80 - 120	<0.0010	mg/L	NC (1)	20		

N/A = Not Applicable

Duplicate: Paired analysis of a separate portion of the same sample. Used to evaluate the variance in the measurement.

Matrix Spike: A sample to which a known amount of the analyte of interest has been added. Used to evaluate sample matrix interference.

QC Standard: A sample of known concentration prepared by an external agency under stringent conditions. Used as an independent check of method accuracy.

Spiked Blank: A blank matrix sample to which a known amount of the analyte, usually from a second source, has been added. Used to evaluate method accuracy.

Method Blank: A blank matrix containing all reagents used in the analytical procedure. Used to identify laboratory contamination.

Surrogate: A pure or isotopically labeled compound whose behavior mirrors the analytes of interest. Used to evaluate extraction efficiency.

NC (Matrix Spike): The recovery in the matrix spike was not calculated. The relative difference between the concentration in the parent sample and the spike amount was too small to permit a reliable recovery calculation (matrix spike concentration was less than the native sample concentration)

NC (Duplicate RPD): The duplicate RPD was not calculated. The concentration in the sample and/or duplicate was too low to permit a reliable RPD calculation (absolute difference <= 2x RDL).

(1) Duplicate Parent ID

(2) Matrix Spike Parent ID [YZY254-08]

(3) Duplicate Parent ID [YZY254-08]

Bureau Veritas 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.bvna.com

Microbiology testing is conducted at 6660 Campobello Rd. Chemistry testing is conducted at 6740 Campobello Rd.

Bureau Veritas Job #: C4C5083
Report Date: 2024/05/07

RWDI Inc.
Client Project #: 2402553.01
Site Location: ON07
Your P.O. #: 13254256
Sampler Initials: EW

VALIDATION SIGNATURE PAGE

The analytical data and all QC contained in this report were reviewed and validated by:

Cristina Carriere, Senior Scientific Specialist

Patricia Legette, Project Manager

Bureau Veritas has procedures in place to guard against improper use of the electronic signature and have the required "signatories", as per ISO/IEC 17025, signing the reports. For Service Group specific validation, please refer to the Validation Signatures page if included, otherwise available by request. For Department specific Analyst/Supervisor validation names, please refer to the Test Summary section if included, otherwise available by request. This report is authorized by Rodney Major, General Manager responsible for Ontario Environmental laboratory operations.

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Microbiology testing is conducted at 6660 Campobello Rd. Chemistry testing is conducted at 6740 Campobello Rd.

FIELD INFORMATION FORM

BUREAU VERITAS

WASTE MANAGEMENT

Site Name: Twin Creeks

Site No.: Sample: SP2 (Sample ID)

This Waste Management Field Information Form is Required
This form is to be completed, in addition to any State Forms. The Field Form is submitted along with the Chain of Custody Forms that accompany the sample containers (i.e. with the cooler that is returned to the laboratory).

Laboratory Use Only/Lab ID:

PURGE INFO

PURGE DATE (MM DD YY)	PURGE TIME (2400 Hr Clock)	ELAPSED HRS (hrs:min)	WATER VOL IN CASING (Gallons)	ACTUAL VOL PURGED (Gallons)	WELL VOLs PURGED

Note: For Passive Sampling, replace "Water Vol in Casing" and "Well Vols Purged" w/ Water Vol in Tubing/Flow Cell and Tubing/Flow Cell Vols Purged. Mark Changes, Record field data below.

PURGE/SAMPLE EQUIPMENT

Purging and Sampling Equipment ... Dedicated: Y or N

Filter Device: (Y) or N — 0.45 µ or _____ µ (circle or fill in)

Purging Device: _____ Sampling Device: _____ X-Other: _____

A-Submersible Pump, B-Peristaltic Pump, C-QED Bladder Pump, D-Bailer, E-Piston Pump, F-Dipper/Bottle

Filter Type: A (A-In-line Disposable, B-Pressure, C-Vacuum, X-Other: _____)

Sample Tube Type: _____ (A-Teflon, B-Stainless Steel, C-PVC, D-Polypropylene, X-Other: _____)

WELL DATA

Well Elevation (at TOC): _____ (ft/msl) — Depth to Water (DTW) (from TOC): _____ (ft) — Groundwater Elevation (GWE) (Site Datum, from TOC): _____ (ft msl)

Total Well Depth (from TOC): _____ (ft) — Stick Up (from ground elevation): _____ (ft) — Casing ID: _____ (in) — Casing Material: _____

Note: Total Depth, Stick Up, Casing ID, etc. are optional and can be from historical data, unless required by Site/Permit. Well Elevation, DTW, and GWE must be current, obtained from site.

STABILIZATION DATA (Optional)

Sample Time (2400 Hr Clock)	Rate/Unit	pH (std)	Conductance (SC/EC) (µmhos/cm @ 25°C)	Temp. (°C)	Turbidity (ntu)	D.O. (mg/L - ppm)	eH/ORP (mV)	DTW (ft)
		1st	1st					
		2nd	2nd					
		3rd	3rd					
		4th	4th					
Input Range for 3 consec. readings or Permit/State requirements:		+/-	+/-	+/-	+/-	+/-	+/-	

Stabilization Data Fields are Optional *(i.e. complete stabilization readings for parameters required by WM, Site, or State). These fields can be used where four (4) field measurements are required by State/Permit/Site. If a Data Logger or other Electronic format is used, fill in final readings below and submit electronic data separately to Site. If more fields above are needed, use separate sheet or form.*

FIELD DATA

SAMPLE DATE (MM DD YY)	pH (std)	CONDUCTANCE (µmhos/cm @ 25°C)	TEMP. (°C)	TURBIDITY (ntu)	DO (mg/L - ppm)	eH/ORP (mV)	Other: Units
042424	8.1	581	7.6	110	10.98		

Final Field Readings are required *(i.e. record field measurements, final stabilized readings, passive sample readings before sampling for all field parameters required by State/Permit/Site.)*

FIELD COMMENTS

Sample Appearance: yellow, Translucent — Odor: none — Color: yellow — Other: _____

Weather Conditions (required daily, or as conditions change): 2° C — Direction/Speed: 35 Km/h N — Outlook: Overcast — Precipitation: Y or (N)

Specific Comments (including purge/well volume calculations if required):

Stream: depth: 0.30 m
width: 2.00 m

Flow time @ 1m: 8s, 8s, 10s

I certify that sampling procedures were in accordance with applicable EPA, State, and WM protocols (if more than one sampler, all should sign):

Date	Name	Signature	Company
04/24/24	Eric Wilson	E Wilson	RWDI

DISTRIBUTION: WHITE/ORIGINAL - Stays with Sample, YELLOW - Returned to Client, PINK - Field Copy

Field Information Form v-3.1 06/20

2039

IMMEDIATE

Custody Tracking Form

T887021-H

Please use this form for custody tracking when submitting the work instructions via eCOC (electronic Chain of Custody). Please ensure your form has a barcode or a Bureau Veritas eCOC confirmation number in the top right hand side. This number links your electronic submission to your samples. This form should be placed in the cooler with your samples.

First Sample: SP2
Last Sample: SP2
Sample Count: 1

Relinquished By				Received By			
Jeff Leland		Date	2024/04/24	Kristin Kellerman	ASHLEY SCHRAMM	Date	2024/04/26
		Time (24 HR)	5:00PM			Time (24 HR)	09:54
		Date				Date	
		Time (24 HR)				Time (24 HR)	
		Date				Date	
		Time (24 HR)				Time (24 HR)	

Unless otherwise agreed to, submissions and use of services are governed by Bureau Veritas' standard terms and conditions which can be found at www.bvna.com.

Triage Information

Sampled By (Print): Eric Wilson

# of Coolers/Pkgs: 1

Rush ☐ Immediate Test ☐ Food Residue ☐

Micro ☐ Food Chemistry ☐

*** LABORATORY USE ONLY ***

Received At

Labeled By

Verified By

Lab Comments:

26-Apr-24 09:54
Patricia Legette
C4C5083
AK0 ENV-1613

Custody Seal		Cooling Media	Temperature °C		
Present (Y/N)	Intact (Y/N)	Present (Y/N)	1	2	3
Y	Y	Y	1	1	2
Drinking Water Metals Preservation Check Done (Circle)				YES	NO

COR FCD-00383/4

Page 1 of 1

Your P.O. #: 13254256
Your Project #: 2402553.01
Site#: 700
Site Location: ON07
Your C.O.C. #: 890266

Attention: Khalid Hussein - Twin Creeks

RWDI Inc.
600 Southgate Drive
Guelph, ON
Canada N1G 4P6

Report Date: 2024/05/13
Report #: R8146247
Version: 1 - Final

CERTIFICATE OF ANALYSIS

BUREAU VERITAS JOB #: C4D1386
Received: 2024/05/02, 09:15

Sample Matrix: Water
Samples Received: 1

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Analytical Method
ABN Compounds in Water by GC/MS	1	2024/05/06	2024/05/07	CAM SOP-00301	EPA 8270 m
Alkalinity	1	N/A	2024/05/09	CAM SOP-00448	SM 24 2320 B m
Biochemical Oxygen Demand (BOD)	1	2024/05/03	2024/05/08	CAM SOP-00427	SM 24 5210B m
Chloride by Automated Colourimetry	1	N/A	2024/05/08	CAM SOP-00463	SM 24 4500-Cl E m
Chemical Oxygen Demand	1	N/A	2024/05/08	CAM SOP-00416	SM 24 5220 D m
Conductance in Water - On-site	1	N/A	2024/05/08		
Conductivity	1	N/A	2024/05/09	CAM SOP-00414	SM 24 2510 m
Field Measured Dissolved Oxygen in Water	1	N/A	2024/05/08		
Dissolved Mercury in Water by CVAA	1	2024/05/06	2024/05/07	CAM SOP-00453	EPA 7470A m
Total Metals by ICPMS	1	N/A	2024/05/09	CAM SOP-00447	EPA 6020B m
Ammonia-N	1	N/A	2024/05/07	CAM SOP-00441	USGS I-2522-90 m
Nitrate & Nitrite as Nitrogen in Water (1)	1	N/A	2024/05/04	CAM SOP-00440	SM 24 4500-NO3I/NO2B
pH (2)	1	2024/05/03	2024/05/09	CAM SOP-00413	SM 24th - 4500H+ B
Phenols (4AAP)	1	N/A	2024/05/08	CAM SOP-00444	OMOE E3179 m
Field Measured pH (3)	1	N/A	2024/05/02		Field pH Meter
Sulphate by Automated Turbidimetry	1	N/A	2024/05/08	CAM SOP-00464	SM 24 4500-SO42- E m
Total Dissolved Solids	1	2024/05/06	2024/05/07	CAM SOP-00428	SM 24 2540C m
Field Temperature (3)	1	N/A	2024/05/02		Field Thermometer
Total Kjeldahl Nitrogen in Water	1	2024/05/06	2024/05/07	CAM SOP-00938	OMOE E3516 m
Total Phosphorus (Colourimetric)	1	2024/05/06	2024/05/07	CAM SOP-00407	SM 24 4500-P I
Total Suspended Solids	1	2024/05/06	2024/05/07	CAM SOP-00428	SM 24 2540D m
Turbidity - On-site	1	N/A	2024/05/08		
Un-ionized Ammonia (4)	1	2024/05/02	2024/05/08	Auto Calc.	PWQO
Volatile Organic Compounds in Water	1	N/A	2024/05/06	CAM SOP-00228	EPA 8260D

Remarks:

Bureau Veritas is accredited to ISO/IEC 17025 for specific parameters on scopes of accreditation. Unless otherwise noted, procedures used by Bureau Veritas are based upon recognized Provincial, Federal or US method compendia such as CCME, EPA, APHA or the Quebec Ministry of Environment.

All work recorded herein has been done in accordance with procedures and practices ordinarily exercised by professionals in Bureau Veritas' profession using accepted testing methodologies, quality assurance and quality control procedures (except where otherwise agreed by the client and Bureau Veritas in

Your P.O. #: 13254256
Your Project #: 2402553.01
Site#: 700
Site Location: ON07
Your C.O.C. #: 890266

Attention: Khalid Hussein - Twin Creeks

RWDI Inc.
600 Southgate Drive
Guelph, ON
Canada N1G 4P6

Report Date: 2024/05/13
Report #: R8146247
Version: 1 - Final

CERTIFICATE OF ANALYSIS

BUREAU VERITAS JOB #: C4D1386
Received: 2024/05/02, 09:15

writing). All data is in statistical control and has met quality control and method performance criteria unless otherwise noted. All method blanks are reported; unless indicated otherwise, associated sample data are not blank corrected. Where applicable, unless otherwise noted, Measurement Uncertainty has not been accounted for when stating conformity to the referenced standard.

Bureau Veritas liability is limited to the actual cost of the requested analyses, unless otherwise agreed in writing. There is no other warranty expressed or implied. Bureau Veritas has been retained to provide analysis of samples provided by the Client using the testing methodology referenced in this report. Interpretation and use of test results are the sole responsibility of the Client and are not within the scope of services provided by Bureau Veritas, unless otherwise agreed in writing. Bureau Veritas is not responsible for the accuracy or any data impacts, that result from the information provided by the customer or their agent.

Solid sample results, except biota, are based on dry weight unless otherwise indicated. Organic analyses are not recovery corrected except for isotope dilution methods.
Results relate to samples tested. When sampling is not conducted by Bureau Veritas, results relate to the supplied samples tested.
This Certificate shall not be reproduced except in full, without the written approval of the laboratory.
Reference Method suffix “m” indicates test methods incorporate validated modifications from specific reference methods to improve performance.
* RPDs calculated using raw data. The rounding of final results may result in the apparent difference.
(1) Values for calculated parameters may not appear to add up due to rounding of raw data and significant figures.
(2) "The CCME method and Analytical Protocol (O. Reg 153/04, O. Reg. 406/19) requires pH to be analyzed within 15 minutes of sampling and therefore field analysis is required for compliance. All Laboratory pH analyses in this report are reported past the CCME and Analytical Protocol (O. Reg 153/04, O. Reg. 406/19) holding time. Bureau Veritas endeavors to analyze samples as soon as possible after receipt."

(3) This is a field test, therefore, the results relate to items that were not analysed at Bureau Veritas.
(4) Un-ionized ammonia is calculated using the total ammonia result and field data provided by the client for pH and temperature.

Encryption Key

Please direct all questions regarding this Certificate of Analysis to:
Patricia Legette, Project Manager
Email: Patricia.Legette@bureauveritas.com
Phone# (905)817-5799

==========

Bureau Veritas has procedures in place to guard against improper use of the electronic signature and have the required "signatories", as per ISO/IEC 17025, signing the reports. For Service Group specific validation, please refer to the Validation Signatures page if included, otherwise available by request. For Department specific Analyst/Supervisor validation names, please refer to the Test Summary section if included, otherwise available by request. This report is authorized by Rodney Major, General Manager responsible for Ontario Environmental laboratory operations.

Bureau Veritas Job #: C4D1386
Report Date: 2024/05/13

RWDI Inc.
Client Project #: 2402553.01
Site Location: ON07
Your P.O. #: 13254256
Sampler Initials: JC

RESULTS OF ANALYSES OF WATER

Bureau Veritas ID		ZBH475		
Sampling Date		2024/04/30 11:00		
COC Number		890266		
	UNITS	**SS1**	**RDL**	**QC Batch**
Calculated Parameters				
Total Un-ionized Ammonia	mg/L	<0.0043	0.0043	9369071
Field Measurements				
Field Conductivity	uS/cm	6760	N/A	ONSITE
Field Dissolved Oxygen	mg/L	10.48	N/A	ONSITE
Field Temperature	Celsius	21.0	N/A	ONSITE
Field Measured Field Turbidity	NTU	749	N/A	ONSITE
Field Measured pH	pH	7.75		ONSITE
Inorganics				
Total Ammonia-N	mg/L	<0.15	0.15	9372105
Total BOD	mg/L	4	2	9371249
Total Chemical Oxygen Demand (COD)	mg/L	29	4.0	9375571
Conductivity	umho/cm	580	1.0	9372848
Total Dissolved Solids	mg/L	405	10	9375224
Total Kjeldahl Nitrogen (TKN)	mg/L	<0.7	0.7	9372981
pH	pH	8.09		9372847
Phenols-4AAP	mg/L	<0.0010	0.0010	9381757
Total Phosphorus	mg/L	0.15	0.10	9373461
Total Suspended Solids	mg/L	190	10	9375085
Dissolved Sulphate (SO4)	mg/L	100	1.0	9373486
Alkalinity (Total as CaCO3)	mg/L	160	1.0	9372690
Dissolved Chloride (Cl-)	mg/L	22	1.0	9373482
Nitrite (N)	mg/L	0.045	0.010	9373361
Nitrate (N)	mg/L	1.43	0.10	9373361

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
N/A = Not Applicable

Bureau Veritas 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.bvna.com

Microbiology testing is conducted at 6660 Campobello Rd. Chemistry testing is conducted at 6740 Campobello Rd.

Bureau Veritas Job #: C4D1386
Report Date: 2024/05/13

RWDI Inc.
Client Project #: 2402553.01
Site Location: ON07
Your P.O. #: 13254256
Sampler Initials: JC

ELEMENTS BY ATOMIC SPECTROSCOPY (WATER)

Bureau Veritas ID		ZBH475		
Sampling Date		2024/04/30 11:00		
COC Number		890266		
	UNITS	SS1	RDL	QC Batch
Metals				
Dissolved Mercury (Hg)	ug/L	<0.10	0.10	9375776
Total Arsenic (As)	mg/L	0.003	0.001	9377119
Total Barium (Ba)	mg/L	0.053	0.005	9377119
Total Boron (B)	mg/L	0.12	0.02	9377119
Total Cadmium (Cd)	mg/L	<0.0001	0.0001	9377119
Total Calcium (Ca)	mg/L	85	0.2	9377119
Total Chromium (Cr)	mg/L	0.008	0.005	9377119
Total Copper (Cu)	mg/L	0.010	0.002	9377119
Total Iron (Fe)	mg/L	7.1	0.1	9377119
Total Lead (Pb)	mg/L	0.0037	0.0005	9377119
Total Magnesium (Mg)	mg/L	24	0.05	9377119
Total Nickel (Ni)	mg/L	0.012	0.001	9377119
Total Potassium (K)	mg/L	5.0	0.2	9377119
Total Sodium (Na)	mg/L	15	0.1	9377119
Total Zinc (Zn)	mg/L	0.04	0.01	9377119

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

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RWDI Inc.
Client Project #: 2402553.01
Site Location: ON07
Your P.O. #: 13254256
Sampler Initials: JC

SEMI-VOLATILE ORGANICS BY GC-MS (WATER)

Bureau Veritas ID		ZBH475		
Sampling Date		2024/04/30 11:00		
COC Number		890266		
	UNITS	SS1	RDL	QC Batch
Semivolatile Organics				
Benzo(a)pyrene	ug/L	<0.20	0.20	9374897
1,2-Dichlorobenzene	ug/L	<0.50	0.50	9374897
1,3-Dichlorobenzene	ug/L	<0.50	0.50	9374897
1,4-Dichlorobenzene	ug/L	<0.50	0.50	9374897
Hexachlorobenzene	ug/L	<0.50	0.50	9374897
1,2,4-Trichlorobenzene	ug/L	<0.50	0.50	9374897
2,4-Dichlorophenol	ug/L	<0.30	0.30	9374897
Pentachlorophenol	ug/L	<1.0	1.0	9374897
Phenol	ug/L	<0.50	0.50	9374897
2,4,6-Trichlorophenol	ug/L	<0.50	0.50	9374897
Di-N-butyl phthalate	ug/L	<2.0	2.0	9374897
Diethyl phthalate	ug/L	<1.0	1.0	9374897
Dimethyl phthalate	ug/L	<1.0	1.0	9374897
Surrogate Recovery (%)				
2,4,6-Tribromophenol	%	103		9374897
2-Fluorobiphenyl	%	80		9374897
2-Fluorophenol	%	39		9374897
D14-Terphenyl	%	85		9374897
D5-Nitrobenzene	%	85		9374897
D5-Phenol	%	26		9374897

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

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Microbiology testing is conducted at 6660 Campobello Rd. Chemistry testing is conducted at 6740 Campobello Rd.

Bureau Veritas Job #: C4D1386
Report Date: 2024/05/13

RWDI Inc.
Client Project #: 2402553.01
Site Location: ON07
Your P.O. #: 13254256
Sampler Initials: JC

VOLATILE ORGANICS BY GC/MS (WATER)

Bureau Veritas ID		ZBH475		
Sampling Date		2024/04/30 11:00		
COC Number		890266		
	UNITS	SS1	RDL	QC Batch
Volatile Organics				
Benzene	ug/L	<0.20	0.20	9374104
1,4-Dichlorobenzene	ug/L	<0.40	0.40	9374104
Ethylbenzene	ug/L	<0.20	0.20	9374104
Methylene Chloride(Dichloromethane)	ug/L	<2.0	2.0	9374104
Toluene	ug/L	<0.20	0.20	9374104
Vinyl Chloride	ug/L	<0.20	0.20	9374104
p+m-Xylene	ug/L	<0.20	0.20	9374104
o-Xylene	ug/L	<0.20	0.20	9374104
Total Xylenes	ug/L	<0.20	0.20	9374104
Surrogate Recovery (%)				
4-Bromofluorobenzene	%	97		9374104
D4-1,2-Dichloroethane	%	105		9374104
D8-Toluene	%	92		9374104

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

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Bureau Veritas Job #: C4D1386
Report Date: 2024/05/13

RWDI Inc.
Client Project #: 2402553.01
Site Location: ON07
Your P.O. #: 13254256
Sampler Initials: JC

GENERAL COMMENTS

Each temperature is the average of up to three cooler temperatures taken at receipt

Package 1	5.3°C

Results relate only to the items tested.

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Microbiology testing is conducted at 6660 Campobello Rd. Chemistry testing is conducted at 6740 Campobello Rd.

QUALITY ASSURANCE REPORT

			Matrix Spike		SPIKED BLANK		Method Blank		RPD		QC Standard	
QC Batch	Parameter	Date	% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits	% Recovery	QC Limits
9374104	4-Bromofluorobenzene	2024/05/06	101	70 - 130	102	70 - 130	102	%				
9374104	D4-1,2-Dichloroethane	2024/05/06	104	70 - 130	101	70 - 130	105	%				
9374104	D8-Toluene	2024/05/06	105	70 - 130	103	70 - 130	93	%				
9374897	2,4,6-Tribromophenol	2024/05/06	104	10 - 130	110	10 - 130	89	%				
9374897	2-Fluorobiphenyl	2024/05/06	65	30 - 130	72	30 - 130	72	%				
9374897	2-Fluorophenol	2024/05/06	29	10 - 130	50	10 - 130	42	%				
9374897	D14-Terphenyl	2024/05/06	78	30 - 130	80	30 - 130	73	%				
9374897	D5-Nitrobenzene	2024/05/06	72	30 - 130	88	30 - 130	80	%				
9374897	D5-Phenol	2024/05/06	17	10 - 130	34	10 - 130	27	%				
9371249	Total BOD	2024/05/08					<2	mg/L	NC (1)	30	99	80 - 120
9372105	Total Ammonia-N	2024/05/07	94	75 - 125	99	80 - 120	<0.15	mg/L	NC (1)	20		
9372690	Alkalinity (Total as CaCO3)	2024/05/09			101	85 - 115	<1.0	mg/L	1.3 (1)	20		
9372847	pH	2024/05/09			102	98 - 103			0.68 (1)	N/A		
9372848	Conductivity	2024/05/09			100	85 - 115	<1.0	umho/cm	2.6 (1)	10		
9372981	Total Kjeldahl Nitrogen (TKN)	2024/05/07	NC	80 - 120	102	80 - 120	<0.7	mg/L	2.4 (1)	20	99	80 - 120
9373361	Nitrate (N)	2024/05/04	85	80 - 120	95	80 - 120	<0.10	mg/L	0.14 (1)	20		
9373361	Nitrite (N)	2024/05/04	95	80 - 120	100	80 - 120	<0.010	mg/L	8.3 (1)	20		
9373461	Total Phosphorus	2024/05/07	106	80 - 120	103	80 - 120	<0.030	mg/L	8.8 (1)	25	100	80 - 120
9373482	Dissolved Chloride (Cl-)	2024/05/08	NC	80 - 120	99	80 - 120	<1.0	mg/L	0.71 (1)	20		
9373486	Dissolved Sulphate (SO4)	2024/05/08	NC	75 - 125	96	80 - 120	<1.0	mg/L	0.67 (1)	20		
9374104	1,4-Dichlorobenzene	2024/05/06	118	70 - 130	116	70 - 130	<0.40	ug/L	NC (1)	30		
9374104	Benzene	2024/05/06	99	70 - 130	98	70 - 130	<0.20	ug/L	NC (1)	30		
9374104	Ethylbenzene	2024/05/06	105	70 - 130	104	70 - 130	<0.20	ug/L	NC (1)	30		
9374104	Methylene Chloride(Dichloromethane)	2024/05/06	107	70 - 130	107	70 - 130	<2.0	ug/L	NC (1)	30		
9374104	o-Xylene	2024/05/06	93	70 - 130	96	70 - 130	<0.20	ug/L	NC (1)	30		
9374104	p+m-Xylene	2024/05/06	110	70 - 130	110	70 - 130	<0.20	ug/L	NC (1)	30		
9374104	Toluene	2024/05/06	103	70 - 130	100	70 - 130	<0.20	ug/L	NC (1)	30		
9374104	Total Xylenes	2024/05/06					<0.20	ug/L	NC (1)	30		
9374104	Vinyl Chloride	2024/05/06	102	70 - 130	103	70 - 130	<0.20	ug/L	NC (1)	30		

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Microbiology testing is conducted at 6660 Campobello Rd. Chemistry testing is conducted at 6740 Campobello Rd.

QUALITY ASSURANCE REPORT(CONT'D)

			Matrix Spike		SPIKED BLANK		Method Blank		RPD		QC Standard	
QC Batch	Parameter	Date	% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits	% Recovery	QC Limits
9374897	1,2,4-Trichlorobenzene	2024/05/06	55	30 - 130	58	30 - 130	<0.50	ug/L				
9374897	1,2-Dichlorobenzene	2024/05/06	55	30 - 130	59	30 - 130	<0.50	ug/L				
9374897	1,3-Dichlorobenzene	2024/05/06	50	30 - 130	56	30 - 130	<0.50	ug/L				
9374897	1,4-Dichlorobenzene	2024/05/06	49	30 - 130	54	30 - 130	<0.50	ug/L				
9374897	2,4,6-Trichlorophenol	2024/05/06	84	10 - 130	95	10 - 130	<0.50	ug/L				
9374897	2,4-Dichlorophenol	2024/05/06	67	10 - 130	84	10 - 130	<0.30	ug/L				
9374897	Benzo(a)pyrene	2024/05/06	107	30 - 130	106	30 - 130	<0.20	ug/L				
9374897	Diethyl phthalate	2024/05/06	101	30 - 130	107	30 - 130	<1.0	ug/L				
9374897	Dimethyl phthalate	2024/05/06	83	30 - 130	100	30 - 130	<1.0	ug/L				
9374897	Di-N-butyl phthalate	2024/05/06	116	30 - 130	117	30 - 130	<2.0	ug/L	NC (1)	40		
9374897	Hexachlorobenzene	2024/05/06	103	30 - 130	109	30 - 130	<0.50	ug/L				
9374897	Pentachlorophenol	2024/05/06	112	10 - 130	87	10 - 130	<1.0	ug/L				
9374897	Phenol	2024/05/06	26	10 - 130	37	10 - 130	<0.50	ug/L				
9375085	Total Suspended Solids	2024/05/07			95	80 - 120	<10	mg/L	NC (1)	20		
9375224	Total Dissolved Solids	2024/05/07			98	80 - 120	<10	mg/L	2.0 (1)	20		
9375571	Total Chemical Oxygen Demand (COD)	2024/05/08	102	80 - 120	100	80 - 120	<4.0	mg/L	3.3 (1)	20		
9375776	Dissolved Mercury (Hg)	2024/05/07	92	75 - 125	92	80 - 120	<0.10	ug/L	NC (1)	20		
9377119	Total Arsenic (As)	2024/05/09	104	80 - 120	102	80 - 120	<0.001	mg/L				
9377119	Total Barium (Ba)	2024/05/09	100	80 - 120	99	80 - 120	<0.005	mg/L	1.3 (1)	20		
9377119	Total Boron (B)	2024/05/09	NC	80 - 120	95	80 - 120	<0.02	mg/L	11 (1)	20		
9377119	Total Cadmium (Cd)	2024/05/09	103	80 - 120	103	80 - 120	<0.0001	mg/L	NC (1)	20		
9377119	Total Calcium (Ca)	2024/05/09	NC	80 - 120	96	80 - 120	<0.2	mg/L	1.0 (1)	20		
9377119	Total Chromium (Cr)	2024/05/09	97	80 - 120	96	80 - 120	<0.005	mg/L	NC (1)	20		
9377119	Total Copper (Cu)	2024/05/09	99	80 - 120	98	80 - 120	<0.002	mg/L	2.0 (1)	20		
9377119	Total Iron (Fe)	2024/05/09	97	80 - 120	96	80 - 120	<0.1	mg/L	3.1 (1)	20		
9377119	Total Lead (Pb)	2024/05/09	94	80 - 120	96	80 - 120	<0.0005	mg/L	NC (1)	20		
9377119	Total Magnesium (Mg)	2024/05/09	NC	80 - 120	96	80 - 120	<0.05	mg/L	3.3 (1)	20		
9377119	Total Nickel (Ni)	2024/05/09	97	80 - 120	95	80 - 120	<0.001	mg/L				
9377119	Total Potassium (K)	2024/05/09	100	80 - 120	99	80 - 120	<0.2	mg/L	2.6 (1)	20		
9377119	Total Sodium (Na)	2024/05/09	NC	80 - 120	95	80 - 120	<0.1	mg/L	2.4 (1)	20		

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Microbiology testing is conducted at 6660 Campobello Rd. Chemistry testing is conducted at 6740 Campobello Rd.

QUALITY ASSURANCE REPORT(CONT'D)

			Matrix Spike		SPIKED BLANK		Method Blank		RPD		QC Standard	
QC Batch	Parameter	Date	% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits	% Recovery	QC Limits
9377119	Total Zinc (Zn)	2024/05/09	103	80 - 120	105	80 - 120	<0.01	mg/L	NC (1)	20		
9381757	Phenols-4AAP	2024/05/08	105	80 - 120	107	80 - 120	<0.0010	mg/L	9.5 (1)	20		

N/A = Not Applicable

Duplicate: Paired analysis of a separate portion of the same sample. Used to evaluate the variance in the measurement.

Matrix Spike: A sample to which a known amount of the analyte of interest has been added. Used to evaluate sample matrix interference.

QC Standard: A sample of known concentration prepared by an external agency under stringent conditions. Used as an independent check of method accuracy.

Spiked Blank: A blank matrix sample to which a known amount of the analyte, usually from a second source, has been added. Used to evaluate method accuracy.

Method Blank: A blank matrix containing all reagents used in the analytical procedure. Used to identify laboratory contamination.

Surrogate: A pure or isotopically labeled compound whose behavior mirrors the analytes of interest. Used to evaluate extraction efficiency.

NC (Matrix Spike): The recovery in the matrix spike was not calculated. The relative difference between the concentration in the parent sample and the spike amount was too small to permit a reliable recovery calculation (matrix spike concentration was less than the native sample concentration)

NC (Duplicate RPD): The duplicate RPD was not calculated. The concentration in the sample and/or duplicate was too low to permit a reliable RPD calculation (absolute difference <= 2x RDL).

(1) Duplicate Parent ID

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Microbiology testing is conducted at 6660 Campobello Rd. Chemistry testing is conducted at 6740 Campobello Rd.

Bureau Veritas Job #: C4D1386
Report Date: 2024/05/13

RWDI Inc.
Client Project #: 2402553.01
Site Location: ON07
Your P.O. #: 13254256
Sampler Initials: JC

VALIDATION SIGNATURE PAGE

The analytical data and all QC contained in this report were reviewed and validated by:

Cristina Carriere, Senior Scientific Specialist

Michael Damianidis, Project Manager Assistant

Bureau Veritas has procedures in place to guard against improper use of the electronic signature and have the required "signatories", as per ISO/IEC 17025, signing the reports. For Service Group specific validation, please refer to the Validation Signatures page if included, otherwise available by request. For Department specific Analyst/Supervisor validation names, please refer to the Test Summary section if included, otherwise available by request. This report is authorized by Rodney Major, General Manager responsible for Ontario Environmental laboratory operations.

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FIELD INFORMATION FORM

BUREAU VERITAS

WASTE MANAGEMENT

Site Name: Twin Creeks

Site No.:

Sample: 551 (Sample ID)

This Waste Management Field Information Form is Required
This form is to be completed, in addition to any State Forms. The Field Form is submitted along with the Chain of Custody Forms that accompany the sample containers (i.e. with the cooler that is returned to the laboratory).

Laboratory Use Only/Lab ID:

PURGE INFO

PURGE DATE (MM DD YY)	PURGE TIME (2400 Hr Clock)	ELAPSED HRS (hrs:min)	WATER VOL IN CASING (Gallons)	ACTUAL VOL PURGED (Gallons)	WELL VOLs PURGED

Note: For Passive Sampling, replace "Water Vol in Casing" and "Well Vols Purged" w/ Water Vol in Tubing/Flow Cell and Tubing/Flow Cell Vols Purged. Mark Changes, Record field data below.

PURGE/SAMPLE EQUIPMENT

Purging and Sampling Equipment ... Dedicated: Y or N

Purging Device:
Sampling Device:
X-Other:

A-Submersible Pump, B-Peristaltic Pump, C-QED Bladder Pump, D-Bailer, E-Piston Pump, F-Dipper/Bottle

Filter Device: Y or N — 0.45 µ or ____ µ (circle or fill in)

Filter Type: A

A-In-line Disposable, B-Pressure, C-Vacuum, X-Other:

Sample Tube Type:

A-Teflon, B-Stainless Steel, C-PVC, D-Polypropylene, X-Other:

WELL DATA

Well Elevation (at TOC) (ft/msl)
Depth to Water (DTW) (from TOC) (ft)
Groundwater Elevation (GWE) (Site Datum, from TOC) (ft msl)
Total Well Depth (from TOC) (ft)
Stick Up (from ground elevation) (ft)
Casing ID (in)
Casing Material

Note: Total Depth, Stick Up, Casing ID, etc. are optional and can be from historical data, unless required by Site/Permit. Well Elevation, DTW, and GWE must be current, obtained from site.

STABILIZATION DATA (Optional)

Sample Time (2400 Hr Clock)	Rate/Unit	pH (std)	Conductance (SC/EC) (µmhos/cm @ 25°C)	Temp. (°C)	Turbidity (ntu)	D.O. (mg/L - ppm)	eH/ORP (mV)	DTW (ft)
		1st	1st					
		2nd	2nd					
		3rd	3rd					
		4th	4th					
Input Range for 3 consec. readings or Permit/State requirements:		+/-	+/-	+/-	+/-	+/-	+/-	

Stabilization Data Fields are Optional *(i.e. complete stabilization readings for parameters required by WM, Site, or State). These fields can be used where four (4) field measurements are required by State/Permit/Site. If a Data Logger or other Electronic format is used, fill in final readings below and submit electronic data separately to Site. If more fields above are needed, use separate sheet or form.*

FIELD DATA

SAMPLE DATE (MM DD YY)	pH (std)	CONDUCTANCE (µmhos/cm @ 25°C)	TEMP. (°C)	TURBIDITY (ntu)	DO (mg/L - ppm)	eH/ORP (mV)	Other: Units
04 30 24	7.75	MS 676	21.0	749	10.48		

Final Field Readings are required *(i.e. record field measurements, final stabilized readings, passive sample readings before sampling for all field parameters required by State/Permit/Site.)*

Sample Appearance: transluscent
Odor: N/O
Color: yellow
Other:

Weather Conditions (required daily, or as conditions change): 18°c
Direction/Speed: 19kts W
Outlook: clear
Precipitation: Y or N

Specific Comments (including purge/well volume calculations if required):

FIELD COMMENTS

width: 1m
depth: 0.10 m
thue @ 1m: 15s
13s
15s

I certify that sampling procedures were in accordance with applicable EPA, State, and WM protocols (if more than one sampler, all should sign):

Date	Name	Signature	Company
04/30/24	Eric Wilson	E.W./bam.	RWDI
/ /			

DISTRIBUTION: WHITE/ORIGINAL - Stays with Sample, YELLOW - Returned to Client, PINK - Field Copy

Field Information Form v-3.1 06/20

2057

IMMEDIATE TEST

Custody Tracking Form

T890266-H

Please use this form for custody tracking when submitting the work instructions via eCOC (electronic Chain of Custody). Please ensure your form has a barcode or a Bureau Veritas eCOC confirmation number in the top right hand side. This number links your electronic submission to your samples. This form should be placed in the cooler with your samples.

First Sample: SS1
Last Sample: SS1
Sample Count: 1

Relinquished By				Received By			
Jeff Cleland		Date	2024/05/01			Date	
		Time (24 HR)	9:30			Time (24 HR)	09:15
		Date				Date	
		Time (24 HR)				Time (24 HR)	
		Date				Date	
		Time (24 HR)				Time (24 HR)	

Unless otherwise agreed to, submissions and use of services are governed by Bureau Veritas' standard terms and conditions which can be found at www.bvna.com.

Triage Information

Sampled By (Print): Eric Wilson

# of Coolers/Pkgs: 1

Rush ☐ Immediate Test ☐ Food Residue ☐

Micro ☐ Food Chemistry ☐

*** LABORATORY USE ONLY ***

Received At: L 02-May-24 09:15

Labeled By: Patricia Legette

C4D1386

Verified By: VIY ENV-1996

Custody Seal		Cooling Media	Temperature °C		
Present (Y/N)	Intact (Y/N)	Present (Y/N)	1	2	3
Y	Y	Y	4	5	7

Drinking Water Metals Preservation Check Done (Circle) **YES** **NO**

COR FCD-00383/4

Page 1 of 1

Your P.O. #: 13254256
Your Project #: 2402553.01
Site#: 700
Site Location: ON07
Your C.O.C. #: 880479

Attention: Khalid Hussein - Twin Creeks

RWDI Inc.
600 Southgate Drive
Guelph, ON
Canada N1G 4P6

Report Date: 2024/04/22
Report #: R8118467
Version: 1 - Final

CERTIFICATE OF ANALYSIS

BUREAU VERITAS JOB #: C4A9867
Received: 2024/04/13, 12:30

Sample Matrix: Water
Samples Received: 5

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Analytical Method
ABN Compounds in Water by GC/MS	5	2024/04/15	2024/04/17	CAM SOP-00301	EPA 8270 m
Alkalinity	5	N/A	2024/04/16	CAM SOP-00448	SM 24 2320 B m
Biochemical Oxygen Demand (BOD)	5	2024/04/15	2024/04/20	CAM SOP-00427	SM 24 5210B m
Chloride by Automated Colourimetry	5	N/A	2024/04/16	CAM SOP-00463	SM 24 4500-Cl E m
Chemical Oxygen Demand	5	N/A	2024/04/18	CAM SOP-00416	SM 24 5220 D m
Conductance in Water - On-site	5	N/A	2024/04/18		
Conductivity	5	N/A	2024/04/16	CAM SOP-00414	SM 24 2510 m
Field Measured Dissolved Oxygen in Water	5	N/A	2024/04/18		
Dissolved Mercury in Water by CVAA	5	2024/04/15	2024/04/15	CAM SOP-00453	EPA 7470A m
Total Metals by ICPMS	5	N/A	2024/04/18	CAM SOP-00447	EPA 6020B m
Ammonia-N	5	N/A	2024/04/19	CAM SOP-00441	USGS I-2522-90 m
Nitrate & Nitrite as Nitrogen in Water (1)	4	N/A	2024/04/16	CAM SOP-00440	SM 24 4500-NO3I/NO2B
Nitrate & Nitrite as Nitrogen in Water (1)	1	N/A	2024/04/17	CAM SOP-00440	SM 24 4500-NO3I/NO2B
pH (2)	5	2024/04/16	2024/04/16	CAM SOP-00413	SM 24th - 4500H+ B
Phenols (4AAP)	1	N/A	2024/04/15	CAM SOP-00444	OMOE E3179 m
Phenols (4AAP)	4	N/A	2024/04/18	CAM SOP-00444	OMOE E3179 m
Field Measured pH (3)	5	N/A	2024/04/18		Field pH Meter
Sulphate by Automated Turbidimetry	5	N/A	2024/04/16	CAM SOP-00464	SM 24 4500-SO42- E m
Total Dissolved Solids	2	2024/04/17	2024/04/18	CAM SOP-00428	SM 24 2540C m
Total Dissolved Solids	3	2024/04/18	2024/04/19	CAM SOP-00428	SM 24 2540C m
Field Temperature (3)	5	N/A	2024/04/18		Field Thermometer
Total Kjeldahl Nitrogen in Water	5	2024/04/16	2024/04/18	CAM SOP-00938	OMOE E3516 m
Total Phosphorus (Colourimetric)	5	2024/04/16	2024/04/19	CAM SOP-00407	SM 24 4500-P I
Total Suspended Solids	5	2024/04/16	2024/04/17	CAM SOP-00428	SM 24 2540D m
Turbidity - On-site	5	N/A	2024/04/18		
Un-ionized Ammonia (4)	5	2024/04/15	2024/04/22	Auto Calc.	PWQO
Volatile Organic Compounds in Water	5	N/A	2024/04/16	CAM SOP-00228	EPA 8260D

Remarks:

Bureau Veritas is accredited to ISO/IEC 17025 for specific parameters on scopes of accreditation. Unless otherwise noted, procedures used by Bureau Veritas are based upon recognized Provincial, Federal or US method compendia such as CCME, EPA, APHA or the Quebec Ministry of Environment.

Your P.O. #: 13254256
Your Project #: 2402553.01
Site#: 700
Site Location: ON07
Your C.O.C. #: 880479

Attention: Khalid Hussein - Twin Creeks

RWDI Inc.
600 Southgate Drive
Guelph, ON
Canada N1G 4P6

Report Date: 2024/04/22
Report #: R8118467
Version: 1 - Final

CERTIFICATE OF ANALYSIS

BUREAU VERITAS JOB #: C4A9867
Received: 2024/04/13, 12:30

All work recorded herein has been done in accordance with procedures and practices ordinarily exercised by professionals in Bureau Veritas' profession using accepted testing methodologies, quality assurance and quality control procedures (except where otherwise agreed by the client and Bureau Veritas in writing). All data is in statistical control and has met quality control and method performance criteria unless otherwise noted. All method blanks are reported; unless indicated otherwise, associated sample data are not blank corrected. Where applicable, unless otherwise noted, Measurement Uncertainty has not been accounted for when stating conformity to the referenced standard.

Bureau Veritas liability is limited to the actual cost of the requested analyses, unless otherwise agreed in writing. There is no other warranty expressed or implied. Bureau Veritas has been retained to provide analysis of samples provided by the Client using the testing methodology referenced in this report. Interpretation and use of test results are the sole responsibility of the Client and are not within the scope of services provided by Bureau Veritas, unless otherwise agreed in writing. Bureau Veritas is not responsible for the accuracy or any data impacts, that result from the information provided by the customer or their agent.

Solid sample results, except biota, are based on dry weight unless otherwise indicated. Organic analyses are not recovery corrected except for isotope dilution methods.
Results relate to samples tested. When sampling is not conducted by Bureau Veritas, results relate to the supplied samples tested.
This Certificate shall not be reproduced except in full, without the written approval of the laboratory.
Reference Method suffix “m” indicates test methods incorporate validated modifications from specific reference methods to improve performance.
* RPDs calculated using raw data. The rounding of final results may result in the apparent difference.
(1) Values for calculated parameters may not appear to add up due to rounding of raw data and significant figures.
(2) "The CCME method and Analytical Protocol (O. Reg 153/04, O. Reg. 406/19) requires pH to be analyzed within 15 minutes of sampling and therefore field analysis is required for compliance. All Laboratory pH analyses in this report are reported past the CCME and Analytical Protocol (O. Reg 153/04, O. Reg. 406/19) holding time. Bureau Veritas endeavors to analyze samples as soon as possible after receipt."

(3) This is a field test, therefore, the results relate to items that were not analysed at Bureau Veritas.
(4) Un-ionized ammonia is calculated using the total ammonia result and field data provided by the client for pH and temperature.

Encryption Key

Please direct all questions regarding this Certificate of Analysis to:
Patricia Legette, Project Manager
Email: Patricia.Legette@bureauveritas.com
Phone# (905)817-5799

==========

Bureau Veritas has procedures in place to guard against improper use of the electronic signature and have the required "signatories", as per ISO/IEC 17025, signing the reports. For Service Group specific validation, please refer to the Validation Signatures page if included, otherwise available by request. For Department specific Analyst/Supervisor validation names, please refer to the Test Summary section if included, otherwise available by request. This report is authorized by Rodney Major, General Manager responsible for Ontario Environmental laboratory operations.

Bureau Veritas Job #: C4A9867
Report Date: 2024/04/22

RWDI Inc.
Client Project #: 2402553.01
Site Location: ON07
Your P.O. #: 13254256
Sampler Initials: JC

RESULTS OF ANALYSES OF WATER

Bureau Veritas ID		YWU496		YWU497			YWU498		
Sampling Date		2024/04/12 11:30		2024/04/12 10:05			2024/04/12 13:00		
COC Number		880479		880479			880479		
	UNITS	SP1	QC Batch	SP2	RDL	QC Batch	SP3	RDL	QC Batch
Calculated Parameters									
Total Un-ionized Ammonia	mg/L	<0.0024	9333596	<0.0024	0.0024	9333596	<0.0031	0.0031	9333596
Field Measurements									
Field Conductivity	uS/cm	617	ONSITE	558	N/A	ONSITE	586	N/A	ONSITE
Field Dissolved Oxygen	mg/L	9.61	ONSITE	9.57	N/A	ONSITE	9.73	N/A	ONSITE
Field Temperature	Celsius	11.6	ONSITE	11.8	N/A	ONSITE	11.8	N/A	ONSITE
Field Measured Field Turbidity	NTU	91.0	ONSITE	22.3	N/A	ONSITE	25.3	N/A	ONSITE
Field Measured pH	pH	7.8	ONSITE	7.8		ONSITE	7.9		ONSITE
Inorganics									
Total Ammonia-N	mg/L	<0.15	9334519	<0.15	0.15	9334519	<0.15	0.15	9334519
Total BOD	mg/L	5	9334113	<2	2	9334113	3	2	9334113
Total Chemical Oxygen Demand (COD)	mg/L	39	9336386	19	4.0	9336386	14	4.0	9336386
Conductivity	umho/cm	660	9335514	600	1.0	9335514	650	1.0	9335514
Total Dissolved Solids	mg/L	415	9339090	340	10	9339090	435	10	9339095
Total Kjeldahl Nitrogen (TKN)	mg/L	<0.7	9334829	<0.7	0.7	9334829	<0.7	0.7	9334829
pH	pH	7.81	9335513	7.80		9335513	7.98		9335513
Phenols-4AAP	mg/L	0.0013	9334532	<0.0010	0.0010	9341523	<0.0010	0.0010	9341523
Total Phosphorus	mg/L	0.053	9334847	<0.030	0.030	9334847	<0.030	0.030	9334847
Total Suspended Solids	mg/L	46	9336562	<10	10	9336562	14	10	9336577
Dissolved Sulphate (SO4)	mg/L	150	9333408	150	1.0	9333408	160	1.0	9333408
Alkalinity (Total as CaCO3)	mg/L	150	9335510	65	1.0	9335510	120	1.0	9335510
Dissolved Chloride (Cl-)	mg/L	20	9333416	47	1.0	9333416	23	1.0	9333416
Nitrite (N)	mg/L	0.012	9333988	<0.010	0.010	9335521	<0.010	0.010	9335521
Nitrate (N)	mg/L	0.42	9333988	<0.10	0.10	9335521	0.48	0.10	9335521

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
N/A = Not Applicable

Bureau Veritas 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.bvna.com

Microbiology testing is conducted at 6660 Campobello Rd. Chemistry testing is conducted at 6740 Campobello Rd.

Bureau Veritas Job #: C4A9867
Report Date: 2024/04/22

RWDI Inc.
Client Project #: 2402553.01
Site Location: ON07
Your P.O. #: 13254256
Sampler Initials: JC

RESULTS OF ANALYSES OF WATER

Bureau Veritas ID		YWU499		YWU500		
Sampling Date		2024/04/12 12:15		2024/04/12 10:05		
COC Number		880479		880479		
	UNITS	SP4	RDL	SPDUP	RDL	QC Batch
Calculated Parameters						
Total Un-ionized Ammonia	mg/L	0.0035	0.0015	<0.0024	0.0024	9333596
Field Measurements						
Field Conductivity	uS/cm	603	N/A	558	N/A	ONSITE
Field Dissolved Oxygen	mg/L	9.08	N/A	9.57	N/A	ONSITE
Field Temperature	Celsius	11.4	N/A	11.8	N/A	ONSITE
Field Measured Field Turbidity	NTU	103	N/A	22.3	N/A	ONSITE
Field Measured pH	pH	7.6		7.8		ONSITE
Inorganics						
Total Ammonia-N	mg/L	0.35	0.15	<0.15	0.15	9334519
Total BOD	mg/L	3	2	<2	2	9334113
Total Chemical Oxygen Demand (COD)	mg/L	22	4.0	19	4.0	9336386
Conductivity	umho/cm	680	1.0	610	1.0	9335514
Total Dissolved Solids	mg/L	450	10	400	10	9339095
Total Kjeldahl Nitrogen (TKN)	mg/L	0.9	0.7	<0.7	0.7	9334829
pH	pH	7.93		7.72		9335513
Phenols-4AAP	mg/L	<0.0010	0.0010	<0.0010	0.0010	9341523
Total Phosphorus	mg/L	0.051	0.030	<0.030	0.030	9334847
Total Suspended Solids	mg/L	50	10	<10	10	9336577
Dissolved Sulphate (SO4)	mg/L	170	1.0	150	1.0	9333408
Alkalinity (Total as CaCO3)	mg/L	140	1.0	58	1.0	9335510
Dissolved Chloride (Cl-)	mg/L	18	1.0	47	1.0	9333416
Nitrite (N)	mg/L	0.019	0.010	<0.010	0.010	9335521
Nitrate (N)	mg/L	0.29	0.10	<0.10	0.10	9335521

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
N/A = Not Applicable

Bureau Veritas 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.bvna.com

Microbiology testing is conducted at 6660 Campobello Rd. Chemistry testing is conducted at 6740 Campobello Rd.

Bureau Veritas Job #: C4A9867
Report Date: 2024/04/22

RWDI Inc.
Client Project #: 2402553.01
Site Location: ON07
Your P.O. #: 13254256
Sampler Initials: JC

ELEMENTS BY ATOMIC SPECTROSCOPY (WATER)

Bureau Veritas ID		YWU496	YWU497	YWU498	YWU499	YWU500		
Sampling Date		2024/04/12 11:30	2024/04/12 10:05	2024/04/12 13:00	2024/04/12 12:15	2024/04/12 10:05		
COC Number		880479	880479	880479	880479	880479		
	UNITS	SP1	SP2	SP3	SP4	SPDUP	RDL	QC Batch
Metals								
Dissolved Mercury (Hg)	ug/L	<0.10	<0.10	<0.10	<0.10	<0.10	0.10	9334048
Total Arsenic (As)	mg/L	0.001	<0.001	0.001	0.002	<0.001	0.001	9340758
Total Barium (Ba)	mg/L	0.024	0.019	0.039	0.039	0.020	0.005	9340758
Total Boron (B)	mg/L	0.33	0.27	0.05	0.10	0.27	0.02	9340758
Total Cadmium (Cd)	mg/L	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	0.0001	9340758
Total Calcium (Ca)	mg/L	72	41	74	79	41	0.2	9340758
Total Chromium (Cr)	mg/L	<0.005	<0.005	<0.005	<0.005	<0.005	0.005	9340758
Total Copper (Cu)	mg/L	0.003	0.003	0.003	0.004	0.003	0.002	9340758
Total Iron (Fe)	mg/L	1.6	0.3	0.4	2.5	0.3	0.1	9340758
Total Lead (Pb)	mg/L	0.0007	<0.0005	<0.0005	0.0011	<0.0005	0.0005	9340758
Total Magnesium (Mg)	mg/L	27	23	24	28	23	0.05	9340758
Total Nickel (Ni)	mg/L	0.004	0.003	0.002	0.006	0.002	0.001	9340758
Total Potassium (K)	mg/L	5.0	3.3	2.6	4.6	3.3	0.2	9340758
Total Sodium (Na)	mg/L	21	37	19	19	37	0.1	9340758
Total Zinc (Zn)	mg/L	<0.01	<0.01	<0.01	<0.01	<0.01	0.01	9340758

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

Bureau Veritas 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.bvna.com

Microbiology testing is conducted at 6660 Campobello Rd. Chemistry testing is conducted at 6740 Campobello Rd.

Bureau Veritas Job #: C4A9867
Report Date: 2024/04/22

RWDI Inc.
Client Project #: 2402553.01
Site Location: ON07
Your P.O. #: 13254256
Sampler Initials: JC

SEMI-VOLATILE ORGANICS BY GC-MS (WATER)

Bureau Veritas ID		YWU496	YWU497	YWU498	YWU499	YWU500		
Sampling Date		2024/04/12 11:30	2024/04/12 10:05	2024/04/12 13:00	2024/04/12 12:15	2024/04/12 10:05		
COC Number		880479	880479	880479	880479	880479		
	UNITS	SP1	SP2	SP3	SP4	SPDUP	RDL	QC Batch
Semivolatile Organics								
Benzo(a)pyrene	ug/L	<0.20	<0.20	<0.20	<0.20	<0.20	0.20	9334198
1,2-Dichlorobenzene	ug/L	<0.50	<0.50	<0.50	<0.50	<0.50	0.50	9334198
1,3-Dichlorobenzene	ug/L	<0.50	<0.50	<0.50	<0.50	<0.50	0.50	9334198
1,4-Dichlorobenzene	ug/L	<0.50	<0.50	<0.50	<0.50	<0.50	0.50	9334198
Hexachlorobenzene	ug/L	<0.50	<0.50	<0.50	<0.50	<0.50	0.50	9334198
1,2,4-Trichlorobenzene	ug/L	<0.50	<0.50	<0.50	<0.50	<0.50	0.50	9334198
2,4-Dichlorophenol	ug/L	<0.30	<0.30	<0.30	<0.30	<0.30	0.30	9334198
Pentachlorophenol	ug/L	<1.0	<1.0	<1.0	<1.0	<1.0	1.0	9334198
Phenol	ug/L	<0.50	<0.50	<0.50	<0.50	<0.50	0.50	9334198
2,4,6-Trichlorophenol	ug/L	<0.50	<0.50	<0.50	<0.50	<0.50	0.50	9334198
Di-N-butyl phthalate	ug/L	<2.0	<2.0	<2.0	<2.0	<2.0	2.0	9334198
Diethyl phthalate	ug/L	<1.0	<1.0	<1.0	<1.0	<1.0	1.0	9334198
Dimethyl phthalate	ug/L	<1.0	<1.0	<1.0	<1.0	<1.0	1.0	9334198
Surrogate Recovery (%)								
2,4,6-Tribromophenol	%	99	86	58	77	65		9334198
2-Fluorobiphenyl	%	72	67	70	69	41		9334198
2-Fluorophenol	%	43	31	20	32	19		9334198
D14-Terphenyl	%	78	71	77	76	70		9334198
D5-Nitrobenzene	%	85	79	83	84	49		9334198
D5-Phenol	%	31	23	19	25	15		9334198

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

Bureau Veritas 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.bvna.com

Microbiology testing is conducted at 6660 Campobello Rd. Chemistry testing is conducted at 6740 Campobello Rd.

Bureau Veritas Job #: C4A9867
Report Date: 2024/04/22

RWDI Inc.
Client Project #: 2402553.01
Site Location: ON07
Your P.O. #: 13254256
Sampler Initials: JC

VOLATILE ORGANICS BY GC/MS (WATER)

Bureau Veritas ID		YWU496	YWU497	YWU498	YWU499	YWU500		
Sampling Date		2024/04/12 11:30	2024/04/12 10:05	2024/04/12 13:00	2024/04/12 12:15	2024/04/12 10:05		
COC Number		880479	880479	880479	880479	880479		
	UNITS	SP1	SP2	SP3	SP4	SPDUP	RDL	QC Batch
Volatile Organics								
Benzene	ug/L	<0.20	<0.20	<0.20	<0.20	<0.20	0.20	9332924
1,4-Dichlorobenzene	ug/L	<0.40	<0.40	<0.40	<0.40	<0.40	0.40	9332924
Ethylbenzene	ug/L	<0.20	<0.20	<0.20	<0.20	<0.20	0.20	9332924
Methylene Chloride(Dichloromethane)	ug/L	<2.0	<2.0	<2.0	<2.0	<2.0	2.0	9332924
Toluene	ug/L	<0.20	<0.20	<0.20	<0.20	<0.20	0.20	9332924
Vinyl Chloride	ug/L	<0.20	<0.20	<0.20	<0.20	<0.20	0.20	9332924
p+m-Xylene	ug/L	<0.20	<0.20	<0.20	<0.20	<0.20	0.20	9332924
o-Xylene	ug/L	<0.20	<0.20	<0.20	<0.20	<0.20	0.20	9332924
Total Xylenes	ug/L	<0.20	<0.20	<0.20	<0.20	<0.20	0.20	9332924
Surrogate Recovery (%)								
4-Bromofluorobenzene	%	104	105	104	106	106		9332924
D4-1,2-Dichloroethane	%	112	112	114	114	112		9332924
D8-Toluene	%	85	85	85	85	85		9332924

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

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Microbiology testing is conducted at 6660 Campobello Rd. Chemistry testing is conducted at 6740 Campobello Rd.

GENERAL COMMENTS

Each temperature is the average of up to three cooler temperatures taken at receipt

Package 1	3.0°C
Package 2	2.0°C
Package 3	0.3°C

Results relate only to the items tested.

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Microbiology testing is conducted at 6660 Campobello Rd. Chemistry testing is conducted at 6740 Campobello Rd.

QUALITY ASSURANCE REPORT

			Matrix Spike		SPIKED BLANK		Method Blank		RPD		QC Standard	
QC Batch	Parameter	Date	% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits	% Recovery	QC Limits
9332924	4-Bromofluorobenzene	2024/04/16	106	70 - 130	106	70 - 130	108	%				
9332924	D4-1,2-Dichloroethane	2024/04/16	103	70 - 130	100	70 - 130	106	%				
9332924	D8-Toluene	2024/04/16	102	70 - 130	102	70 - 130	86	%				
9334198	2,4,6-Tribromophenol	2024/04/16	99 (4)	10 - 130	96	10 - 130	81	%				
9334198	2-Fluorobiphenyl	2024/04/16	58 (4)	30 - 130	59	30 - 130	59	%				
9334198	2-Fluorophenol	2024/04/16	39 (4)	10 - 130	39	10 - 130	37	%				
9334198	D14-Terphenyl	2024/04/16	74 (4)	30 - 130	74	30 - 130	69	%				
9334198	D5-Nitrobenzene	2024/04/16	81 (4)	30 - 130	80	30 - 130	77	%				
9334198	D5-Phenol	2024/04/16	27 (4)	10 - 130	25	10 - 130	24	%				
9332924	1,4-Dichlorobenzene	2024/04/16	105	70 - 130	101	70 - 130	<0.40	ug/L				
9332924	Benzene	2024/04/16	95	70 - 130	90	70 - 130	<0.20	ug/L				
9332924	Ethylbenzene	2024/04/16	91	70 - 130	89	70 - 130	<0.20	ug/L				
9332924	Methylene Chloride(Dichloromethane)	2024/04/16	105	70 - 130	99	70 - 130	<2.0	ug/L				
9332924	o-Xylene	2024/04/16	82	70 - 130	83	70 - 130	<0.20	ug/L	NC (1)	30		
9332924	p+m-Xylene	2024/04/16	98	70 - 130	96	70 - 130	<0.20	ug/L	NC (1)	30		
9332924	Toluene	2024/04/16	95	70 - 130	91	70 - 130	<0.20	ug/L	NC (1)	30		
9332924	Total Xylenes	2024/04/16					<0.20	ug/L	NC (1)	30		
9332924	Vinyl Chloride	2024/04/16	105	70 - 130	100	70 - 130	<0.20	ug/L				
9333408	Dissolved Sulphate (SO4)	2024/04/16	NC	75 - 125	97	80 - 120	<1.0	mg/L	0.91 (1)	20		
9333416	Dissolved Chloride (Cl-)	2024/04/16	94	80 - 120	98	80 - 120	<1.0	mg/L	8.5 (1)	20		
9333988	Nitrate (N)	2024/04/16	117	80 - 120	98	80 - 120	<0.10	mg/L	5.2 (1)	20		
9333988	Nitrite (N)	2024/04/16	120	80 - 120	103	80 - 120	<0.010	mg/L				
9334048	Dissolved Mercury (Hg)	2024/04/15	101 (2)	75 - 125	102	80 - 120	<0.10	ug/L	NC (3)	20		
9334113	Total BOD	2024/04/20					<2	mg/L	14 (1)	30	95	80 - 120
9334198	1,2,4-Trichlorobenzene	2024/04/17	48 (4)	30 - 130	44	30 - 130	<0.50	ug/L	NC (5)	40		
9334198	1,2-Dichlorobenzene	2024/04/17	53 (4)	30 - 130	49	30 - 130	<0.50	ug/L	NC (5)	40		
9334198	1,3-Dichlorobenzene	2024/04/17	47 (4)	30 - 130	43	30 - 130	<0.50	ug/L	NC (5)	40		
9334198	1,4-Dichlorobenzene	2024/04/17	47 (4)	30 - 130	44	30 - 130	<0.50	ug/L	NC (5)	40		
9334198	2,4,6-Trichlorophenol	2024/04/17	78 (4)	10 - 130	81	10 - 130	<0.50	ug/L	NC (5)	40		
9334198	2,4-Dichlorophenol	2024/04/17	69 (4)	10 - 130	67	10 - 130	<0.30	ug/L	NC (5)	40		

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Microbiology testing is conducted at 6660 Campobello Rd. Chemistry testing is conducted at 6740 Campobello Rd.

QUALITY ASSURANCE REPORT(CONT'D)

			Matrix Spike		SPIKED BLANK		Method Blank		RPD		QC Standard	
QC Batch	Parameter	Date	% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits	% Recovery	QC Limits
9334198	Benzo(a)pyrene	2024/04/17	97 (4)	30 - 130	97	30 - 130	<0.20	ug/L	NC (5)	40		
9334198	Diethyl phthalate	2024/04/17	96 (4)	30 - 130	95	30 - 130	<1.0	ug/L	NC (5)	40		
9334198	Dimethyl phthalate	2024/04/17	91 (4)	30 - 130	87	30 - 130	<1.0	ug/L	NC (5)	40		
9334198	Di-N-butyl phthalate	2024/04/17	110 (4)	30 - 130	111	30 - 130	<2.0	ug/L	NC (5)	40		
9334198	Hexachlorobenzene	2024/04/17	93 (4)	30 - 130	93	30 - 130	<0.50	ug/L	NC (5)	40		
9334198	Pentachlorophenol	2024/04/17	90 (4)	10 - 130	80	10 - 130	<1.0	ug/L	NC (5)	40		
9334198	Phenol	2024/04/17	31 (4)	10 - 130	31	10 - 130	<0.50	ug/L	NC (5)	40		
9334519	Total Ammonia-N	2024/04/19	99	75 - 125	100	80 - 120	<0.15	mg/L	NC (1)	20		
9334532	Phenols-4AAP	2024/04/15	107	80 - 120	102	80 - 120	<0.0010	mg/L	8.4 (1)	20		
9334829	Total Kjeldahl Nitrogen (TKN)	2024/04/18	102	80 - 120	99	80 - 120	<0.7	mg/L	NC (1)	20	100	80 - 120
9334847	Total Phosphorus	2024/04/19	100	80 - 120	102	80 - 120	<0.030	mg/L	2.8 (1)	25	94	80 - 120
9335510	Alkalinity (Total as CaCO3)	2024/04/16			104	85 - 115	<1.0	mg/L	1.7 (1)	20		
9335513	pH	2024/04/16			7.0 (6)	98 - 103			0.60 (1)	N/A		
9335514	Conductivity	2024/04/16			103	85 - 115	<1.0	umho/cm	0.25 (1)	10		
9335521	Nitrate (N)	2024/04/16	98	80 - 120	98	80 - 120	<0.10	mg/L	NC (1)	20		
9335521	Nitrite (N)	2024/04/16	105	80 - 120	103	80 - 120	<0.010	mg/L	NC (1)	20		
9336386	Total Chemical Oxygen Demand (COD)	2024/04/18	NC	80 - 120	100	80 - 120	<4.0	mg/L	15 (1)	20		
9336562	Total Suspended Solids	2024/04/17			97	80 - 120	<10	mg/L	4.1 (1)	20		
9336577	Total Suspended Solids	2024/04/17			99	80 - 120	<10	mg/L	15 (1)	20		
9339090	Total Dissolved Solids	2024/04/18			98	80 - 120	<10	mg/L	2.4 (1)	20		
9339095	Total Dissolved Solids	2024/04/19			98	80 - 120	<10	mg/L	2.4 (1)	20		
9340758	Total Arsenic (As)	2024/04/18	103 (7)	80 - 120	98	80 - 120	<0.001	mg/L	NC (8)	20		
9340758	Total Barium (Ba)	2024/04/18	100 (7)	80 - 120	97	80 - 120	<0.005	mg/L	0.39 (8)	20		
9340758	Total Boron (B)	2024/04/18	97 (7)	80 - 120	92	80 - 120	<0.02	mg/L	0.067 (8)	20		
9340758	Total Cadmium (Cd)	2024/04/18	103 (7)	80 - 120	99	80 - 120	<0.0001	mg/L	NC (8)	20		
9340758	Total Calcium (Ca)	2024/04/18	NC (7)	80 - 120	101	80 - 120	<0.2	mg/L	2.0 (8)	20		
9340758	Total Chromium (Cr)	2024/04/18	100 (7)	80 - 120	97	80 - 120	<0.005	mg/L	NC (8)	20		
9340758	Total Copper (Cu)	2024/04/18	102 (7)	80 - 120	99	80 - 120	<0.002	mg/L	12 (8)	20		
9340758	Total Iron (Fe)	2024/04/18	99 (7)	80 - 120	95	80 - 120	<0.1	mg/L	6.8 (8)	20		

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Microbiology testing is conducted at 6660 Campobello Rd. Chemistry testing is conducted at 6740 Campobello Rd.

QUALITY ASSURANCE REPORT(CONT'D)

			Matrix Spike		SPIKED BLANK		Method Blank		RPD		QC Standard	
QC Batch	Parameter	Date	% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits	% Recovery	QC Limits
9340758	Total Lead (Pb)	2024/04/18	102 (7)	80 - 120	99	80 - 120	<0.0005	mg/L	NC (8)	20		
9340758	Total Magnesium (Mg)	2024/04/18	96 (7)	80 - 120	95	80 - 120	<0.05	mg/L	3.5 (8)	20		
9340758	Total Nickel (Ni)	2024/04/18	96 (7)	80 - 120	94	80 - 120	<0.001	mg/L	9.9 (8)	20		
9340758	Total Potassium (K)	2024/04/18	103 (7)	80 - 120	98	80 - 120	<0.2	mg/L	3.6 (8)	20		
9340758	Total Sodium (Na)	2024/04/18	NC (7)	80 - 120	95	80 - 120	<0.1	mg/L	3.6 (8)	20		
9340758	Total Zinc (Zn)	2024/04/18	102 (7)	80 - 120	101	80 - 120	<0.01	mg/L	19 (8)	20		
9341523	Phenols-4AAP	2024/04/18	101	80 - 120	97	80 - 120	<0.0010	mg/L	NC (1)	20		

N/A = Not Applicable

Duplicate: Paired analysis of a separate portion of the same sample. Used to evaluate the variance in the measurement.

Matrix Spike: A sample to which a known amount of the analyte of interest has been added. Used to evaluate sample matrix interference.

QC Standard: A sample of known concentration prepared by an external agency under stringent conditions. Used as an independent check of method accuracy.

Spiked Blank: A blank matrix sample to which a known amount of the analyte, usually from a second source, has been added. Used to evaluate method accuracy.

Method Blank: A blank matrix containing all reagents used in the analytical procedure. Used to identify laboratory contamination.

Surrogate: A pure or isotopically labeled compound whose behavior mirrors the analytes of interest. Used to evaluate extraction efficiency.

NC (Matrix Spike): The recovery in the matrix spike was not calculated. The relative difference between the concentration in the parent sample and the spike amount was too small to permit a reliable recovery calculation (matrix spike concentration was less than the native sample concentration)

NC (Duplicate RPD): The duplicate RPD was not calculated. The concentration in the sample and/or duplicate was too low to permit a reliable RPD calculation (absolute difference <= 2x RDL).

(1) Duplicate Parent ID

(2) Matrix Spike Parent ID [YWU496-07]

(3) Duplicate Parent ID [YWU496-07]

(4) Matrix Spike Parent ID [YWU500-01]

(5) Duplicate Parent ID [YWU497-01]

(6) Recovery or RPD for this parameter is outside control limits. The overall quality control for this analysis meets acceptability criteria.

(7) Matrix Spike Parent ID [YWU500-05]

(8) Duplicate Parent ID [YWU500-05]

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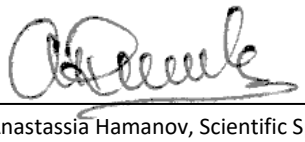
Microbiology testing is conducted at 6660 Campobello Rd. Chemistry testing is conducted at 6740 Campobello Rd.

Bureau Veritas Job #: C4A9867
Report Date: 2024/04/22

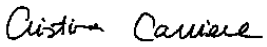
RWDI Inc.
Client Project #: 2402553.01
Site Location: ON07
Your P.O. #: 13254256
Sampler Initials: JC

VALIDATION SIGNATURE PAGE

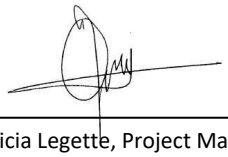
The analytical data and all QC contained in this report were reviewed and validated by:



Anastassia Hamanov, Scientific Specialist



Cristina Carriere, Senior Scientific Specialist



Patricia Legette, Project Manager

Bureau Veritas has procedures in place to guard against improper use of the electronic signature and have the required "signatories", as per ISO/IEC 17025, signing the reports. For Service Group specific validation, please refer to the Validation Signatures page if included, otherwise available by request. For Department specific Analyst/Supervisor validation names, please refer to the Test Summary section if included, otherwise available by request. This report is authorized by Rodney Major, General Manager responsible for Ontario Environmental laboratory operations.

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Microbiology testing is conducted at 6660 Campobello Rd. Chemistry testing is conducted at 6740 Campobello Rd.

FIELD INFORMATION FORM

BUREAU VERITAS

WASTE MANAGEMENT

Site Name: Twin creeks

Site No.: Sample: S 4 1 Sample ID

This Waste Management Field Information Form is Required
This form is to be completed, in addition to any State Forms. The Field Form is submitted along with the Chain of Custody Forms that accompany the sample containers (i.e. with the cooler that is returned to the laboratory).

Laboratory Use Only/Lab ID:

PURGE INFO

PURGE DATE (MM DD YY)	PURGE TIME (2400 Hr Clock)	ELAPSED HRS (hrs:min)	WATER VOL IN CASING (Gallons)	ACTUAL VOL PURGED (Gallons)	WELL VOLs PURGED

Note: For Passive Sampling, replace "Water Vol in Casing" and "Well Vols Purged" w/ Water Vol in Tubing/Flow Cell and Tubing/Flow Cell Vols Purged. Mark Changes, Record field data below.

PURGE/SAMPLE EQUIPMENT

Purging and Sampling Equipment ... Dedicated: Y or N

Purging Device: A-Submersible Pump, B-Peristaltic Pump, C-QED Bladder Pump, D-Bailer, E-Piston Pump, F-Dipper/Bottle

Sampling Device:

X-Other:

Filter Device: Y or N 0.45 µ or ____ µ (circle or fill in)

Filter Type: A — A-In-line Disposable, B-Pressure, C-Vacuum, X-Other: ____

Sample Tube Type: A-Teflon, B-Stainless Steel, C-PVC, D-Polypropylene, X-Other: ____

WELL DATA

Well Elevation (at TOC) (ft/msl) | Depth to Water (DTW) (from TOC) (ft) | Groundwater Elevation (GWE) (Site Datum, from TOC) (ft msl)

Total Well Depth (from TOC) (ft) | Stick Up (from ground elevation) (ft) | Casing ID (in) | Casing Material

Note: Total Depth, Stick Up, Casing ID, etc. are optional and can be from historical data, unless required by Site/Permit. Well Elevation, DTW, and GWE must be current, obtained from site.

STABILIZATION DATA (Optional)

Sample Time (2400 Hr Clock)	Rate/Unit	pH (std)	Conductance (SC/EC) (µmhos/cm @ 25°C)	Temp. (°C)	Turbidity (ntu)	D.O. (mg/L - ppm)	eH/ORP (mV)	DTW (ft)
1st		1st	1st					
2nd		2nd	2nd					
3rd		3rd	3rd					
4th		4th	4th					
Input Range for 3 consec. readings or Permit/State requirements:		+/-	+/-	+/-	+/-	+/-	+/-	

Stabilization Data Fields are Optional *(i.e. complete stabilization readings for parameters required by WM, Site, or State). These fields can be used where four (4) field measurements are required by State/Permit/Site. If a Data Logger or other Electronic format is used, fill in final readings below and submit electronic data separately to Site. If more fields above are needed, use separate sheet or form.*

FIELD DATA

SAMPLE DATE (MM DD YY)	pH (std)	CONDUCTANCE (µmhos/cm @ 25°C)	TEMP. (°C)	TURBIDITY (ntu)	DO (mg/L - ppm)	eH/ORP (mV)	Other: Units
04 12 24	7.8	µS 617	11.6	91.0	9.61		

Final Field Readings are required *(i.e. record field measurements, final stabilized readings, passive sample readings before sampling for all field parameters required by State/Permit/Site.)*

FIELD COMMENTS

Sample Appearance: translucent/opaque Odor: none Color: very light brown Other:

Weather Conditions (required daily, or as conditions change): 7°C Direction/Speed: W 31 Km/h Outlook: overcast/rain Precipitation: Y or N

Specific Comments (including purge/well volume calculations if required):

stream; depth; 0.25 m — Trace suspended ~~organics~~ pieces of vegetation in sample

width; 2.1 m

flow ~~over~~ time over 1m: 1: 3s

2: 4s — Sampled @ 11:30 AM

3: 4s

I certify that sampling procedures were in accordance with applicable EPA, State, and WM protocols (if more than one sampler, all should sign):

Date	Name	Signature	Company
04,12,24	SCL		RWOI

DISTRIBUTION: WHITE/ORIGINAL - Stays with Sample, YELLOW - Returned to Client, PINK - Field Copy

Field Information Form v-3.1 06/20

2027

FIELD INFORMATION FORM

BUREAU VERITAS

WASTE MANAGEMENT

Site Name: Twin Creeks

Site No.:

Sample: SW2 (Sample ID)

This Waste Management Field Information Form is Required
This form is to be completed, in addition to any State Forms. The Field Form is submitted along with the Chain of Custody Forms that accompany the sample containers (i.e. with the cooler that is returned to the laboratory).

Laboratory Use Only/Lab ID:

PURGE INFO

PURGE DATE (MM DD YY)	PURGE TIME (2400 Hr Clock)	ELAPSED HRS (hrs:min)	WATER VOL IN CASING (Gallons)	ACTUAL VOL PURGED (Gallons)	WELL VOLs PURGED

Note: For Passive Sampling, replace "Water Vol in Casing" and "Well Vols Purged" w/ Water Vol in Tubing/Flow Cell and Tubing/Flow Cell Vols Purged. Mark Changes, Record field data below.

PURGE/SAMPLE EQUIPMENT

Purging and Sampling Equipment ... Dedicated: Y or N

Purging Device:

Sampling Device:

X-Other:

A-Submersible Pump, B-Peristaltic Pump, C-QED Bladder Pump, D-Bailer, E-Piston Pump, F-Dipper/Bottle

Filter Device: Y or N — 0.45 µ or ____ µ (circle or fill in)

Filter Type: A — A-In-line Disposable, B-Pressure, C-Vacuum, X-Other:

Sample Tube Type: A-Teflon, B-Stainless Steel, C-PVC, D-Polypropylene, X-Other:

WELL DATA

Well Elevation (at TOC) (ft/msl)

*Depth to Water (DTW) (from TOC) (ft)

Groundwater Elevation (GWE) (Site Datum, from TOC) (ft msl)

Total Well Depth (from TOC) (ft)

Stick Up (from ground elevation) (ft)

Casing ID (in)

Casing Material

Note: Total Depth, Stick Up, Casing ID, etc. are optional and can be from historical data, unless required by Site/Permit. Well Elevation, DTW, and GWE must be current, obtained from site.

STABILIZATION DATA (Optional)

Sample Time (2400 Hr Clock)	Rate/Unit	pH (std)	Conductance (SC/EC) (µmhos/cm @ 25°C)	Temp. (°C)	Turbidity (ntu)	D.O. (mg/L - ppm)	eH/ORP (mV)	DTW (ft)
		1st	1st					
		2nd	2nd					
		3rd	3rd					
		4th	4th					
Input Range for 3 consec. readings or Permit/State requirements:		+/-	+/-	+/-	+/-	+/-	+/-	

Stabilization Data Fields are Optional *(i.e. complete stabilization readings for parameters required by WM, Site, or State). These fields can be used where four (4) field measurements are required by State/Permit/Site. If a Data Logger or other Electronic format is used, fill in final readings below and submit electronic data separately to Site. If more fields above are needed, use separate sheet or form.*

FIELD DATA

SAMPLE DATE (MM DD YY)	pH (std)	CONDUCTANCE (µS µmhos/cm @ 25°C)	TEMP. (°C)	TURBIDITY (ntu)	DO (mg/L - ppm)	eH/ORP (mV)	Other: Units
04 12 24	7.8	558	11.8	22.3	9.57		

Final Field Readings are required *(i.e. record field measurements, final stabilized readings, passive sample readings before sampling for all field parameters required by State/Permit/Site.)*

FIELD COMMENTS

Sample Appearance: transparent — Odor: none — Color: clear — Other:

Weather Conditions (required daily, or as conditions change): 6°C — Direction/Speed: W 36Km/h — Outlook: overcast/rain — Precipitation: Y or N

Specific Comments (including purge/well volume calculations if required):

Stream: depth: 0.40m — SPDUP collected
width: 2.30m

flow time over 1m: 1: 6s — Trace suspended pieces of vegetation in
2: 6s — sample
3: 5s — sampled @ 10:05 AM

I certify that sampling procedures were in accordance with applicable EPA, State, and WM protocols (if more than one sampler, all should sign):

Date	Name	Signature	Company
04,12,24	SC		RWDI

DISTRIBUTION: WHITE/ORIGINAL - Stays with Sample, YELLOW - Returned to Client, PINK - Field Copy

Field Information Form v-3.1 06/20

2026

FIELD INFORMATION FORM

BUREAU VERITAS

WASTE MANAGEMENT

Site Name: Twin Creeks

Site No.:

Sample: S4 3 (Sample ID)

This Waste Management Field Information Form is Required
This form is to be completed, in addition to any State Forms. The Field Form is submitted along with the Chain of Custody Forms that accompany the sample containers (i.e. with the cooler that is returned to the laboratory).

Laboratory Use Only/Lab ID:

PURGE INFO

PURGE DATE (MM DD YY)	PURGE TIME (2400 Hr Clock)	ELAPSED HRS (hrs:min)	WATER VOL IN CASING (Gallons)	ACTUAL VOL PURGED (Gallons)	WELL VOLs PURGED

Note: For Passive Sampling, replace "Water Vol in Casing" and "Well Vols Purged" w/ Water Vol in Tubing/Flow Cell and Tubing/Flow Cell Vols Purged. Mark Changes, Record field data below.

PURGE/SAMPLE EQUIPMENT

Purging and Sampling Equipment ... Dedicated: Y or N

Purging Device: A-Submersible Pump, B-Peristaltic Pump, C-QED Bladder Pump, D-Bailer, E-Piston Pump, F-Dipper/Bottle

Sampling Device:

X-Other:

Filter Device: Y or N — 0.45 µ or ____ µ (circle or fill in)

Filter Type: A — A-In-line Disposable, B-Pressure, C-Vacuum, X-Other:

Sample Tube Type: A-Teflon, B-Stainless Steel, C-PVC, D-Pofypropylene, X-Other:

WELL DATA

Well Elevation (at TOC) (ft/msl)	Depth to Water (DTW) (from TOC) (ft)	Groundwater Elevation (GWE) (Site Datum, from TOC) (ft msl)
Total Well Depth (from TOC) (ft)	Stick Up (from ground elevation) (ft)	Casing ID (in) / Casing Material

Note: Total Depth, Stick Up, Casing ID, etc. are optional and can be from historical data, unless required by Site/Permit. Well Elevation, DTW, and GWE must be current, obtained from site.

STABILIZATION DATA (Optional)

Sample Time (2400 Hr Clock)	Rate/Unit	pH (std)	Conductance (SC/EC) (µmhos/cm @ 25°C)	Temp. (°C)	Turbidity (ntu)	D.O. (mg/L - ppm)	eH/ORP (mV)	DTW (ft)
		1st	1st					
		2nd	2nd					
		3rd	3rd					
		4th	4th					
Input Range for 3 consec. readings or Permit/State requirements:		+/-	+/-	+/-	+/-	+/-	+/-	

Stabilization Data Fields are Optional *(i.e. complete stabilization readings for parameters required by WM, Site, or State). These fields can be used where four (4) field measurements are required by State/Permit/Site. If a Data Logger or other Electronic format is used, fill in final readings below and submit electronic data separately to Site. If more fields above are needed, use separate sheet or form.*

FIELD DATA

SAMPLE DATE (MM DD YY)	pH (std)	CONDUCTANCE (µmhos/cm @ 25°C)	TEMP. (°C)	TURBIDITY (ntu)	DO (mg/L - ppm)	eH/ORP (mV)	Other: Units
041224	7.9	586	11.8	25.0	9.73		

Final Field Readings are required *(i.e. record field measurements, final stabilized readings, passive sample readings before sampling for all field parameters required by State/Permit/Site.)*

FIELD COMMENTS

Sample Appearance: transparent — Odor: none — Color: clear — Other:

Weather Conditions (required daily, or as conditions change): 7°C — Direction/Speed: W 31 Km/h — Outlook: Overcast/rain — Precipitation: Y or N

Specific Comments (including purge/well volume calculations if required):

Stream; depth: 0.25 m
width: 1.90 m
flow time over 1m; 1: 5s
2: 4s
3: 4s

- Trace suspended pieces of vegetation in sample
- sampled @ 1:00pm

I certify that sampling procedures were in accordance with applicable EPA, State, and WM protocols (if more than one sampler, all should sign):

Date	Name	Signature	Company
04/12/24	SL		RWDI

DISTRIBUTION: WHITE/ORIGINAL - Stays with Sample, YELLOW - Returned to Client, PINK - Field Copy

Field Information Form v-3.1 06/20

2030

BUREAU VERITAS

FIELD INFORMATION FORM

WM WASTE MANAGEMENT

Site Name: Twin Creeks

Site No.:

Sample: S 1 4 (Sample ID)

This Waste Management Field Information Form is Required
This form is to be completed, in addition to any State Forms. The Field Form is submitted along with the Chain of Custody Forms that accompany the sample containers (i.e. with the cooler that is returned to the laboratory).

Laboratory Use Only/Lab ID:

PURGE INFO

PURGE DATE (MM DD YY)	PURGE TIME (2400 Hr Clock)	ELAPSED HRS (hrs:min)	WATER VOL IN CASING (Gallons)	ACTUAL VOL PURGED (Gallons)	WELL VOLs PURGED

Note: For Passive Sampling, replace "Water Vol in Casing" and "Well Vols Purged" w/ Water Vol in Tubing/Flow Cell and Tubing/Flow Cell Vols Purged. Mark Changes, Record field data below.

PURGE/SAMPLE EQUIPMENT

Purging and Sampling Equipment ... Dedicated: Y or N

Filter Device: Y or N — 0.45 µ or ____ µ (circle or fill in)

Purging Device: ____ A-Submersible Pump, B-Peristaltic Pump, C-QED Bladder Pump, D-Bailer, E-Piston Pump, F-Dipper/Bottle

Sampling Device: ____

X-Other: ____

Filter Type: A — A-In-line Disposable, B-Pressure, C-Vacuum, X-Other: ____

Sample Tube Type: ____ A-Teflon, B-Stainless Steel, C-PVC, D-Polypropylene, X-Other: ____

WELL DATA

Well Elevation (at TOC): ____ (ft/msl)

Depth to Water (DTW) (from TOC): ____ (ft)

Groundwater Elevation (GWE) (Site Datum, from TOC): ____ (ft msl)

Total Well Depth (from TOC): ____ (ft)

Stick Up (from ground elevation): ____ (ft)

Casing ID: ____ (in)

Casing Material: ____

Note: Total Depth, Stick Up, Casing ID, etc. are optional and can be from historical data, unless required by Site/Permit. Well Elevation, DTW, and GWE must be current, obtained from site.

STABILIZATION DATA (Optional)

Sample Time (2400 Hr Clock)	Rate/Unit	pH (std)	Conductance (SC/EC) (µmhos/cm @ 25°C)	Temp. (°C)	Turbidity (ntu)	D.O. (mg/L - ppm)	eH/ORP (mV)	DTW (ft)
		1st	1st					
		2nd	2nd					
		3rd	3rd					
		4th	4th					
Input Range for 3 consec. readings or Permit/State requirements:		+/-	+/-	+/-	+/-	+/-	+/-	

Stabilization Data Fields are Optional *(i.e. complete stabilization readings for parameters required by WM, Site, or State). These fields can be used where four (4) field measurements are required by State/Permit/Site. If a Data Logger or other Electronic format is used, fill in final readings below and submit electronic data separately to Site. If more fields above are needed, use separate sheet or form.*

FIELD DATA

SAMPLE DATE (MM DD YY)	pH (std)	CONDUCTANCE (µmhos/cm @ 25°C)	TEMP. (°C)	TURBIDITY (ntu)	DO (mg/L - ppm)	eH/ORP (mV)	Other: Units
04/12/24	7.6	603	11.4	103	9.08		

Final Field Readings are required *(i.e. record field measurements, final stabilized readings, passive sample readings before sampling for all field parameters required by State/Permit/Site.)*

FIELD COMMENTS

Sample Appearance: Translucent — Odor: none — Color: clear/very light brown — Other: ____

Weather Conditions (required daily, or as conditions change): 7°C — Direction/Speed: W31 Km/h — Outlook: Overcast/rain — Precipitation: Y or N

Specific Comments (including purge/well volume calculations if required):

Stream: depth: 0.17 m — sampled @ 12:15 PM

width: 1.75 m

flow time over 1m: 1: 4s

2: 4s

3: 4s

I certify that sampling procedures were in accordance with applicable EPA, State, and WM protocols (if more than one sampler, all should sign):

Date	Name	Signature	Company
04/12/24	JL		RWDI

DISTRIBUTION: WHITE/ORIGINAL - Stays with Sample, YELLOW - Returned to Client, PINK - Field Copy

Field Information Form v-3.1 06/20

2028

Custody Tracking Form

T880479

Please use this form for custody tracking when submitting the work instructions via eCOC (electronic Chain of Custody). Please ensure your form has a barcode or a Bureau Veritas eCOC confirmation number in the top right hand side. This number links your electronic submission to your samples. This form should be placed in the cooler with your samples.

First Sample: SP1
Last Sample: SPDUP
Sample Count: 5

Relinquished By				Received By			
Jeff Ueland		Date	2024/04/12	SUGAR SALVAN		Date	2024/04/13
		Time (24 HR)	16:00			Time (24 HR)	12:30
		Date				Date	
		Time (24 HR)				Time (24 HR)	
		Date				Date	
		Time (24 HR)				Time (24 HR)	

Unless otherwise agreed to, submissions and use of services are governed by Bureau Veritas' standard terms and conditions which can be found at www.bvna.com.

Triage Information

Sampled By (Print): Jeff Ueland

# of Coolers/Pkgs: 3

Rush ☐ Immediate Test ☐ Food Residue ☐

Micro ☐ Food Chemistry ☐

*** LABORATORY USE ONLY ***

Received At

Labeled By

Verified By

Lab Comments:

13-Apr-24 12:30
Patricia Legette
C4A9867
JDK ENV-1457

Custody Seal		Cooling Media	Temperature °C		
Present (Y/N)	Intact (Y/N)	Present (Y/N)	1	2	3
Y	Y	Y	3	2	4
Y	Y	Y	2	2	2
Y	Y	Y	0	0	1
Drinking Water Metals Preservation Check Done (Circle)				YES	NO

COR FCD-00383/4

Page 1 of 1

Your P.O. #: 13254256
Your Project #: 2402553.01
Site#: 700
Site Location: ON07
Your C.O.C. #: 880495

Attention: Khalid Hussein - Twin Creeks

RWDI Inc.
600 Southgate Drive
Guelph, ON
Canada N1G 4P6

Report Date: 2024/04/22
Report #: R8118462
Version: 1 - Final

CERTIFICATE OF ANALYSIS

BUREAU VERITAS JOB #: C4A9909
Received: 2024/04/13, 12:30

Sample Matrix: Water
Samples Received: 2

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Analytical Method
Alkalinity	2	N/A	2024/04/16	CAM SOP-00448	SM 24 2320 B m
Biochemical Oxygen Demand (BOD)	2	2024/04/14	2024/04/19	CAM SOP-00427	SM 24 5210B m
Chloride by Automated Colourimetry	2	N/A	2024/04/17	CAM SOP-00463	SM 24 4500-Cl E m
Chemical Oxygen Demand	2	N/A	2024/04/18	CAM SOP-00416	SM 24 5220 D m
Conductance in Water - On-site	2	N/A	2024/04/18		
Conductivity	2	N/A	2024/04/16	CAM SOP-00414	SM 24 2510 m
Field Measured Dissolved Oxygen in Water	2	N/A	2024/04/18		
Dissolved Mercury in Water by CVAA	2	2024/04/17	2024/04/17	CAM SOP-00453	EPA 7470A m
Total Metals by ICPMS	2	N/A	2024/04/18	CAM SOP-00447	EPA 6020B m
Ammonia-N	2	N/A	2024/04/19	CAM SOP-00441	USGS I-2522-90 m
Nitrate & Nitrite as Nitrogen in Water (1)	2	N/A	2024/04/16	CAM SOP-00440	SM 24 4500-NO3I/NO2B
pH (2)	2	2024/04/16	2024/04/16	CAM SOP-00413	SM 24th - 4500H+ B
Phenols (4AAP)	2	N/A	2024/04/18	CAM SOP-00444	OMOE E3179 m
Field Measured pH (3)	2	N/A	2024/04/18		Field pH Meter
Sulphate by Automated Turbidimetry	2	N/A	2024/04/17	CAM SOP-00464	SM 24 4500-SO42- E m
Total Dissolved Solids	1	2024/04/17	2024/04/18	CAM SOP-00428	SM 24 2540C m
Total Dissolved Solids	1	2024/04/18	2024/04/19	CAM SOP-00428	SM 24 2540C m
Field Temperature (3)	2	N/A	2024/04/18		Field Thermometer
Total Kjeldahl Nitrogen in Water	2	2024/04/16	2024/04/18	CAM SOP-00938	OMOE E3516 m
Total Phosphorus (Colourimetric)	2	2024/04/16	2024/04/19	CAM SOP-00407	SM 24 4500-P I
Total Suspended Solids	2	2024/04/16	2024/04/17	CAM SOP-00428	SM 24 2540D m
Turbidity - On-site	2	N/A	2024/04/18		
Un-ionized Ammonia (4)	2	2024/04/15	2024/04/22	Auto Calc.	PWQO

Remarks:

Bureau Veritas is accredited to ISO/IEC 17025 for specific parameters on scopes of accreditation. Unless otherwise noted, procedures used by Bureau Veritas are based upon recognized Provincial, Federal or US method compendia such as CCME, EPA, APHA or the Quebec Ministry of Environment.

All work recorded herein has been done in accordance with procedures and practices ordinarily exercised by professionals in Bureau Veritas' profession using accepted testing methodologies, quality assurance and quality control procedures (except where otherwise agreed by the client and Bureau Veritas in writing). All data is in statistical control and has met quality control and method performance criteria unless otherwise noted. All method blanks are reported; unless indicated otherwise, associated sample data are not blank corrected. Where applicable, unless otherwise noted, Measurement

Your P.O. #: 13254256
Your Project #: 2402553.01
Site#: 700
Site Location: ON07
Your C.O.C. #: 880495

Attention: Khalid Hussein - Twin Creeks

RWDI Inc.
600 Southgate Drive
Guelph, ON
Canada N1G 4P6

Report Date: 2024/04/22
Report #: R8118462
Version: 1 - Final

CERTIFICATE OF ANALYSIS

BUREAU VERITAS JOB #: C4A9909
Received: 2024/04/13, 12:30

Uncertainty has not been accounted for when stating conformity to the referenced standard.

Bureau Veritas liability is limited to the actual cost of the requested analyses, unless otherwise agreed in writing. There is no other warranty expressed or implied. Bureau Veritas has been retained to provide analysis of samples provided by the Client using the testing methodology referenced in this report. Interpretation and use of test results are the sole responsibility of the Client and are not within the scope of services provided by Bureau Veritas, unless otherwise agreed in writing. Bureau Veritas is not responsible for the accuracy or any data impacts, that result from the information provided by the customer or their agent.

Solid sample results, except biota, are based on dry weight unless otherwise indicated. Organic analyses are not recovery corrected except for isotope dilution methods.
Results relate to samples tested. When sampling is not conducted by Bureau Veritas, results relate to the supplied samples tested.
This Certificate shall not be reproduced except in full, without the written approval of the laboratory.
Reference Method suffix “m” indicates test methods incorporate validated modifications from specific reference methods to improve performance.
* RPDs calculated using raw data. The rounding of final results may result in the apparent difference.
(1) Values for calculated parameters may not appear to add up due to rounding of raw data and significant figures.
(2) "The CCME method and Analytical Protocol (O. Reg 153/04, O. Reg. 406/19) requires pH to be analyzed within 15 minutes of sampling and therefore field analysis is required for compliance. All Laboratory pH analyses in this report are reported past the CCME and Analytical Protocol (O. Reg 153/04, O. Reg. 406/19) holding time. Bureau Veritas endeavors to analyze samples as soon as possible after receipt."

(3) This is a field test, therefore, the results relate to items that were not analysed at Bureau Veritas.
(4) Un-ionized ammonia is calculated using the total ammonia result and field data provided by the client for pH and temperature.

Encryption Key

Please direct all questions regarding this Certificate of Analysis to:
Patricia Legette, Project Manager
Email: Patricia.Legette@bureauveritas.com
Phone# (905)817-5799

==========

Bureau Veritas has procedures in place to guard against improper use of the electronic signature and have the required "signatories", as per ISO/IEC 17025, signing the reports. For Service Group specific validation, please refer to the Validation Signatures page if included, otherwise available by request. For Department specific Analyst/Supervisor validation names, please refer to the Test Summary section if included, otherwise available by request. This report is authorized by Rodney Major, General Manager responsible for Ontario Environmental laboratory operations.

Bureau Veritas Job #: C4A9909
Report Date: 2024/04/22

RWDI Inc.
Client Project #: 2402553.01
Site Location: ON07
Your P.O. #: 13254256
Sampler Initials: JC

RESULTS OF ANALYSES OF WATER

Bureau Veritas ID		YWU770			YWU771		
Sampling Date		2024/04/12 11:10			2024/04/12 09:20		
COC Number		880495			880495		
	UNITS	SS10	RDL	QC Batch	SS16	RDL	QC Batch
Calculated Parameters							
Total Un-ionized Ammonia	mg/L	<0.0047	0.0047	9333596	<0.00066	0.00066	9333596
Field Measurements							
Field Conductivity	uS/cm	300	N/A	ONSITE	339	N/A	ONSITE
Field Dissolved Oxygen	mg/L	10.17	N/A	ONSITE	9.58	N/A	ONSITE
Field Temperature	Celsius	11.5	N/A	ONSITE	9.7	N/A	ONSITE
Field Measured Field Turbidity	NTU	246	N/A	ONSITE	160	N/A	ONSITE
Field Measured pH	pH	8.1		ONSITE	7.3		ONSITE
Inorganics							
Total Ammonia-N	mg/L	<0.15	0.15	9334519	<0.15	0.15	9334519
Total BOD	mg/L	<2	2	9332753	<2	2	9332753
Total Chemical Oxygen Demand (COD)	mg/L	39	4.0	9336386	42	4.0	9336386
Conductivity	umho/cm	210	1.0	9335514	350	1.0	9335514
Total Dissolved Solids	mg/L	210	10	9339095	210	10	9339090
Total Kjeldahl Nitrogen (TKN)	mg/L	<0.7	0.7	9334829	<0.7	0.7	9334829
pH	pH	7.84		9335513	7.90		9335513
Phenols-4AAP	mg/L	0.0013	0.0010	9341754	0.0013	0.0010	9341754
Total Phosphorus	mg/L	0.080	0.030	9334847	0.071	0.030	9334847
Total Suspended Solids	mg/L	64	10	9336562	53	10	9336562
Dissolved Sulphate (SO4)	mg/L	8.8	1.0	9335608	9.0	1.0	9335608
Alkalinity (Total as CaCO3)	mg/L	97	1.0	9335510	170	1.0	9335510
Dissolved Chloride (Cl-)	mg/L	6.0	1.0	9335604	7.0	1.0	9335604
Nitrite (N)	mg/L	0.014	0.010	9335521	<0.010	0.010	9335521
Nitrate (N)	mg/L	1.76	0.10	9335521	0.47	0.10	9335521

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
N/A = Not Applicable

Bureau Veritas 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.bvna.com

Microbiology testing is conducted at 6660 Campobello Rd. Chemistry testing is conducted at 6740 Campobello Rd.

Bureau Veritas Job #: C4A9909
Report Date: 2024/04/22

RWDI Inc.
Client Project #: 2402553.01
Site Location: ON07
Your P.O. #: 13254256
Sampler Initials: JC

ELEMENTS BY ATOMIC SPECTROSCOPY (WATER)

Bureau Veritas ID		YWU770	YWU771		
Sampling Date		2024/04/12 11:10	2024/04/12 09:20		
COC Number		880495	880495		
	UNITS	SS10	SS16	RDL	QC Batch
Metals					
Dissolved Mercury (Hg)	ug/L	<0.10	<0.10	0.10	9338267
Total Arsenic (As)	mg/L	0.002	0.001	0.001	9340758
Total Barium (Ba)	mg/L	0.041	0.033	0.005	9340758
Total Boron (B)	mg/L	0.06	0.03	0.02	9340758
Total Cadmium (Cd)	mg/L	<0.0001	<0.0001	0.0001	9340758
Total Calcium (Ca)	mg/L	34	56	0.2	9340758
Total Chromium (Cr)	mg/L	0.008	<0.005	0.005	9340758
Total Copper (Cu)	mg/L	0.006	0.004	0.002	9340758
Total Iron (Fe)	mg/L	7.4	3.6	0.1	9340758
Total Lead (Pb)	mg/L	0.0030	0.0019	0.0005	9340758
Total Magnesium (Mg)	mg/L	8.4	12	0.05	9340758
Total Nickel (Ni)	mg/L	0.010	0.006	0.001	9340758
Total Potassium (K)	mg/L	3.1	3.9	0.2	9340758
Total Sodium (Na)	mg/L	2.0	2.4	0.1	9340758
Total Zinc (Zn)	mg/L	0.02	0.01	0.01	9340758

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

Bureau Veritas 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.bvna.com

Microbiology testing is conducted at 6660 Campobello Rd. Chemistry testing is conducted at 6740 Campobello Rd.

Bureau Veritas Job #: C4A9909
Report Date: 2024/04/22

RWDI Inc.
Client Project #: 2402553.01
Site Location: ON07
Your P.O. #: 13254256
Sampler Initials: JC

GENERAL COMMENTS

Each temperature is the average of up to three cooler temperatures taken at receipt

Package 1	1.3°C
Package 2	1.3°C

Results relate only to the items tested.

Bureau Veritas 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.bvna.com

Microbiology testing is conducted at 6660 Campobello Rd. Chemistry testing is conducted at 6740 Campobello Rd.

QUALITY ASSURANCE REPORT

			Matrix Spike		SPIKED BLANK		Method Blank		RPD		QC Standard	
QC Batch	Parameter	Date	% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits	% Recovery	QC Limits
9332753	Total BOD	2024/04/19					<2	mg/L	NC (1)	30	98	80 - 120
9334519	Total Ammonia-N	2024/04/19	99	75 - 125	100	80 - 120	<0.15	mg/L	NC (2)	20		
9334829	Total Kjeldahl Nitrogen (TKN)	2024/04/18	102	80 - 120	99	80 - 120	<0.7	mg/L	NC (2)	20	100	80 - 120
9334847	Total Phosphorus	2024/04/19	100	80 - 120	102	80 - 120	<0.030	mg/L	2.8 (2)	25	94	80 - 120
9335510	Alkalinity (Total as CaCO3)	2024/04/16			104	85 - 115	<1.0	mg/L	1.7 (2)	20		
9335513	pH	2024/04/16			7.0 (3)	98 - 103			0.60 (2)	N/A		
9335514	Conductivity	2024/04/16			103	85 - 115	<1.0	umho/cm	0.25 (2)	10		
9335521	Nitrate (N)	2024/04/16	98	80 - 120	98	80 - 120	<0.10	mg/L	NC (2)	20		
9335521	Nitrite (N)	2024/04/16	105	80 - 120	103	80 - 120	<0.010	mg/L	NC (2)	20		
9335604	Dissolved Chloride (Cl-)	2024/04/17	NC	80 - 120	97	80 - 120	<1.0	mg/L	3.5 (2)	20		
9335608	Dissolved Sulphate (SO4)	2024/04/17	NC	75 - 125	97	80 - 120	<1.0	mg/L	0.24 (2)	20		
9336386	Total Chemical Oxygen Demand (COD)	2024/04/18	NC	80 - 120	100	80 - 120	<4.0	mg/L	15 (2)	20		
9336562	Total Suspended Solids	2024/04/17			97	80 - 120	<10	mg/L	4.1 (2)	20		
9338267	Dissolved Mercury (Hg)	2024/04/17	96 (4)	75 - 125	95	80 - 120	<0.10	ug/L	NC (5)	20		
9339090	Total Dissolved Solids	2024/04/18			98	80 - 120	<10	mg/L	2.4 (6)	20		
9339095	Total Dissolved Solids	2024/04/19			98	80 - 120	<10	mg/L	2.4 (7)	20		
9340758	Total Arsenic (As)	2024/04/18	103	80 - 120	98	80 - 120	<0.001	mg/L	NC (2)	20		
9340758	Total Barium (Ba)	2024/04/18	100	80 - 120	97	80 - 120	<0.005	mg/L	0.39 (2)	20		
9340758	Total Boron (B)	2024/04/18	97	80 - 120	92	80 - 120	<0.02	mg/L	0.067 (2)	20		
9340758	Total Cadmium (Cd)	2024/04/18	103	80 - 120	99	80 - 120	<0.0001	mg/L	NC (2)	20		
9340758	Total Calcium (Ca)	2024/04/18	NC	80 - 120	101	80 - 120	<0.2	mg/L	2.0 (2)	20		
9340758	Total Chromium (Cr)	2024/04/18	100	80 - 120	97	80 - 120	<0.005	mg/L	NC (2)	20		
9340758	Total Copper (Cu)	2024/04/18	102	80 - 120	99	80 - 120	<0.002	mg/L	12 (2)	20		
9340758	Total Iron (Fe)	2024/04/18	99	80 - 120	95	80 - 120	<0.1	mg/L	6.8 (2)	20		
9340758	Total Lead (Pb)	2024/04/18	102	80 - 120	99	80 - 120	<0.0005	mg/L	NC (2)	20		
9340758	Total Magnesium (Mg)	2024/04/18	96	80 - 120	95	80 - 120	<0.05	mg/L	3.5 (2)	20		
9340758	Total Nickel (Ni)	2024/04/18	96	80 - 120	94	80 - 120	<0.001	mg/L	9.9 (2)	20		
9340758	Total Potassium (K)	2024/04/18	103	80 - 120	98	80 - 120	<0.2	mg/L	3.6 (2)	20		
9340758	Total Sodium (Na)	2024/04/18	NC	80 - 120	95	80 - 120	<0.1	mg/L	3.6 (2)	20		

Bureau Veritas 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.bvna.com

Microbiology testing is conducted at 6660 Campobello Rd. Chemistry testing is conducted at 6740 Campobello Rd.

QUALITY ASSURANCE REPORT(CONT'D)

			Matrix Spike		SPIKED BLANK		Method Blank		RPD		QC Standard	
QC Batch	Parameter	Date	% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits	% Recovery	QC Limits
9340758	Total Zinc (Zn)	2024/04/18	102	80 - 120	101	80 - 120	<0.01	mg/L	19 (2)	20		
9341754	Phenols-4AAP	2024/04/18	100 (8)	80 - 120	98	80 - 120	<0.0010	mg/L	NC (9)	20		

N/A = Not Applicable

Duplicate: Paired analysis of a separate portion of the same sample. Used to evaluate the variance in the measurement.

Matrix Spike: A sample to which a known amount of the analyte of interest has been added. Used to evaluate sample matrix interference.

QC Standard: A sample of known concentration prepared by an external agency under stringent conditions. Used as an independent check of method accuracy.

Spiked Blank: A blank matrix sample to which a known amount of the analyte, usually from a second source, has been added. Used to evaluate method accuracy.

Method Blank: A blank matrix containing all reagents used in the analytical procedure. Used to identify laboratory contamination.

NC (Matrix Spike): The recovery in the matrix spike was not calculated. The relative difference between the concentration in the parent sample and the spike amount was too small to permit a reliable recovery calculation (matrix spike concentration was less than the native sample concentration)

NC (Duplicate RPD): The duplicate RPD was not calculated. The concentration in the sample and/or duplicate was too low to permit a reliable RPD calculation (absolute difference <= 2x RDL).

(1) Duplicate Parent ID [YWU771-05]

(2) Duplicate Parent ID

(3) Recovery or RPD for this parameter is outside control limits. The overall quality control for this analysis meets acceptability criteria.

(4) Matrix Spike Parent ID [YWU770-10]

(5) Duplicate Parent ID [YWU770-10]

(6) Duplicate Parent ID [YWU771-03]

(7) Duplicate Parent ID [YWU770-03]

(8) Matrix Spike Parent ID [YWU770-11]

(9) Duplicate Parent ID [YWU770-11]

Bureau Veritas 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.bvna.com

Microbiology testing is conducted at 6660 Campobello Rd. Chemistry testing is conducted at 6740 Campobello Rd.

Bureau Veritas Job #: C4A9909
Report Date: 2024/04/22

RWDI Inc.
Client Project #: 2402553.01
Site Location: ON07
Your P.O. #: 13254256
Sampler Initials: JC

VALIDATION SIGNATURE PAGE

The analytical data and all QC contained in this report were reviewed and validated by:

Cristina Carriere, Senior Scientific Specialist

Patricia Legette, Project Manager

Bureau Veritas has procedures in place to guard against improper use of the electronic signature and have the required "signatories", as per ISO/IEC 17025, signing the reports. For Service Group specific validation, please refer to the Validation Signatures page if included, otherwise available by request. For Department specific Analyst/Supervisor validation names, please refer to the Test Summary section if included, otherwise available by request. This report is authorized by Rodney Major, General Manager responsible for Ontario Environmental laboratory operations.

Bureau Veritas 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.bvna.com

Microbiology testing is conducted at 6660 Campobello Rd. Chemistry testing is conducted at 6740 Campobello Rd.

S2437676

BUREAU VERITAS

FIELD INFORMATION FORM

WASTE MANAGEMENT

Site Name: TCEC

Site No.: Sample: S316 (Sample ID)

This Waste Management Field Information Form is Required
This form is to be completed, in addition to any State Forms. The Field Form is submitted along with the Chain of Custody Forms that accompany the sample containers (i.e. with the cooler that is returned to the laboratory).

Laboratory Use Only/Lab ID:

PURGE INFO

PURGE DATE (MM DD YY)	PURGE TIME (2400 Hr Clock)	ELAPSED HRS (hrs:min)	WATER VOL IN CASING (Gallons)	ACTUAL VOL PURGED (Gallons)	WELL VOLs PURGED

Note: For Passive Sampling, replace "Water Vol in Casing" and "Well Vols Purged" w/ Water Vol in Tubing/Flow Cell and Tubing/Flow Cell Vols Purged. Mark Changes, Record field data below.

PURGE/SAMPLE EQUIPMENT

Purging and Sampling Equipment ... Dedicated: [Y] or [N]

Filter Device: [Y] or [N] [0.45 µ] or [ ] µ (circle or fill in)

Purging Device: [ ] A-Submersible Pump B-Peristaltic Pump C-QED Bladder Pump D-Bailer E-Piston Pump F-Dipper/Bottle

Sampling Device: [ ]

X-Other: [ ]

Filter Type: [A] A-In-line Disposable B-Pressure C-Vacuum X-Other: ____

Sample Tube Type: [A] A-Teflon B-Stainless Steel C-PVC D-Polypropylene X-Other: ____

WELL DATA

Well Elevation (at TOC) [ ] (ft/msl)

Depth to Water (DTW) (from TOC) [ ] (ft)

Groundwater Elevation (GWE) (Site Datum, from TOC) [ ] (ft msl)

Total Well Depth (from TOC) [ ] (ft)

Stick Up (from ground elevation) [ ] (ft)

Casing ID [ ] (in)

Casing Material [ ]

Note: Total Depth, Stick Up, Casing ID, etc. are optional and can be from historical data, unless required by Site/Permit. Well Elevation, DTW, and GWE must be current, obtained from site.

STABILIZATION DATA (Optional)

Sample Time (2400 Hr Clock)	Rate/Unit	pH (std)	Conductance (SC/EC) (µmhos/cm @ 25°C)	Temp. (°C)	Turbidity (ntu)	D.O. (mg/L - ppm)	eH/ORP (mV)	DTW (ft)
		1st	1st					
		2nd	2nd					
		3rd	3rd					
		4th	4th					
Input Range for 3 consec. readings or Permit/State requirements:		+/-	+/-	+/-	+/-	+/-	+/-	

Stabilization Data Fields are Optional *(i.e. complete stabilization readings for parameters required by WM, Site, or State). These fields can be used where four (4) field measurements are required by State/Permit/Site. If a Data Logger or other Electronic format is used, fill in final readings below and submit electronic data separately to Site. If more fields above are needed, use separate sheet or form.*

FIELD DATA

SAMPLE DATE (MM DD YY)	pH (std)	CONDUCTANCE (µmhos/cm @ 25°C)	TEMP. (°C)	TURBIDITY (ntu)	DO (mg/L - ppm)	eH/ORP (mV)	Other: Units
041224	8.1	0.130	11.5	246	10.17		

Final Field Readings are required *(i.e. record field measurements, final stabilized readings, passive sample readings before sampling for all field parameters required by State/Permit/Site.)*

Sample Appearance: Opaque Odor: N/O Color: Brown Other: ____

Weather Conditions (required daily, or as conditions change): 7°C Direction/Speed: 32 Km/hr Outlook: Rain Precipitation: Y or N

Specific Comments (including purge/well volume calculations if required):

FIELD COMMENTS

Stream: width: 0.2 m – sampled @ 11:10 hrs

Depth 0-15 m

time@ln t_1: 4s

t_2: 5s

t_3: 4s

I certify that sampling procedures were in accordance with applicable EPA, State, and WM protocols (if more than one sampler, all should sign):

Date	Name	Signature	Company
04/12/24	Jake Arbtalli		RWDI

DISTRIBUTION: WHITE/ORIGINAL - Stays with Sample, YELLOW - Returned to Client, PINK - Field Copy

Field Information Form v.3.1 06/20

2049

S2437676

FIELD INFORMATION FORM

BUREAU VERITAS

WASTE MANAGEMENT

Site Name: Twin Creeks

Site No.: Sample: S S 1 6 (Sample ID)

This Waste Management Field Information Form is Required
This form is to be completed, in addition to any State Forms. The Field Form is submitted along with the Chain of Custody Forms that accompany the sample containers (i.e. with the cooler that is returned to the laboratory).

Laboratory Use Only/Lab ID:

PURGE INFO

PURGE DATE (MM DD YY)	PURGE TIME (2400 Hr Clock)	ELAPSED HRS (hrs:min)	WATER VOL IN CASING (Gallons)	ACTUAL VOL PURGED (Gallons)	WELL VOLs PURGED

Note: For Passive Sampling, replace "Water Vol in Casing" and "Well Vols Purged" w/ Water Vol in Tubing/Flow Cell and Tubing/Flow Cell Vols Purged. Mark Changes, Record field data below.

PURGE/SAMPLE EQUIPMENT

Purging and Sampling Equipment ... Dedicated: Y or N

Purging Device:

Sampling Device:

X-Other:

A-Submersible Pump B-Peristaltic Pump C-QED Bladder Pump D-Bailer E-Piston Pump F-Dipper/Bottle

Filter Device: Y or N 0.45 µ or ____ µ (circle or fill in)

Filter Type: A A-In-line Disposable B-Pressure C-Vacuum X-Other: ____

Sample Tube Type: A-Teflon B-Stainless Steel C-PVC D-Polypropylene X-Other: ____

WELL DATA

Well Elevation (at TOC) (ft/msl)

Depth to Water (DTW) (from TOC) (ft)

Groundwater Elevation (GWE) (Site Datum, from TOC) (ft msl)

Total Well Depth (from TOC) (ft)

Stick Up (from ground elevation) (ft)

Casing ID (in)

Casing Material

Note: Total Depth, Stick Up, Casing ID, etc. are optional and can be from historical data, unless required by Site/Permit. Well Elevation, DTW, and GWE must be current, obtained from site.

STABILIZATION DATA (Optional)

Sample Time (2400 Hr Clock)	Rate/Unit	pH (std)	Conductance (SC/EC) (µmhos/cm @ 25°C)	Temp. (°C)	Turbidity (ntu)	D.O. (mg/L - ppm)	eH/ORP (mV)	DTW (ft)
		1st	1st					
		2nd	2nd					
		3rd	3rd					
		4th	4th					
Input Range for 3 consec. readings or Permit/State requirements:		+/-	+/-	+/-	+/-	+/-	+/-	

Stabilization Data Fields are Optional *(i.e. complete stabilization readings for parameters required by WM, Site, or State). These fields can be used where four (4) field measurements are required by State/Permit/Site. If a Data Logger or other Electronic format is used, fill in final readings below and submit electronic data separately to Site. If more fields above are needed, use separate sheet or form.*

FIELD DATA

SAMPLE DATE (MM DD YY)	pH (std)	CONDUCTANCE (µmhos/cm @ 25°C)	TEMP. (°C)	TURBIDITY (ntu)	DO (mg/L - ppm)	eH/ORP (mV)	Other: Units
0 4 1 2 2 4	7.3	µS 3 3 9	9.7	1 6 0	9.58		

Final Field Readings are required *(i.e. record field measurements, final stabilized readings, passive sample readings before sampling for all field parameters required by State/Permit/Site.)*

FIELD COMMENTS

Sample Appearance: translucent Odor: none Color: very light brown Other: ____

Weather Conditions (required daily, or as conditions change): 6°C Direction/Speed: W 36Km/h Outlook: Overcast/rain Precipitation: Y or N

Specific Comments (including purge/well volume calculations if required):

stream: depth: 0.08m
width: 0.90m
flow time over 1m: 1: 5s
2: 6s
3: 4s

- Trace suspended pieces of vegetation in sample
- sampled @ 9:20 AM

I certify that sampling procedures were in accordance with applicable EPA, State, and WM protocols (if more than one sampler, all should sign):

Date	Name	Signature	Company
04,12,24	JL		RWDI

DISTRIBUTION: WHITE/ORIGINAL - Stays with Sample, YELLOW - Returned to Client, PINK - Field Copy

Field Information Form v-3.1 06/20

2025

Custody Tracking Form

T880495

Please use this form for custody tracking when submitting the work instructions via eCOC (electronic Chain of Custody). Please ensure your form has a barcode or a Bureau Veritas eCOC confirmation number in the top right hand side. This number links your electronic submission to your samples. This form should be placed in the cooler with your samples.

First Sample: SS10
Last Sample: SS16
Sample Count: 2

Relinquished By				Received By			
Jeff Cleland		Date	2024/04/12	SUGAR SALVAM		Date	2024/04/13
		Time (24 HR)	16:00			Time (24 HR)	12:30
		Date				Date	
		Time (24 HR)				Time (24 HR)	
		Date				Date	
		Time (24 HR)				Time (24 HR)	

Unless otherwise agreed to, submissions and use of services are governed by Bureau Veritas' standard terms and conditions which can be found at www.bvna.com.

Triage Information

Sampled By (Print): Jeff Cleland, Jake Artibello

# of Coolers/Pkgs: 2

Rush ☐ Immediate Test ☐ Food Residue ☐

Micro ☐ Food Chemistry ☐

*** LABORATORY USE ONLY ***

Received At

Labeled By

Verified By

Lab Comments:

13-Apr-24 12:30
Patricia Legette
C4A9909
JDK ENV-2102

Custody Seal		Cooling Media	Temperature °C		
Present (Y/N)	Intact (Y/N)	Present (Y/N)	1	2	3
Y	Y	Y	1	2	1
Y	Y	Y	1	2	1

Drinking Water Metals Preservation Check Done (Circle) **YES** **NO**

COR FCD-00383/4

Page 1 of 1

Your P.O. #: 13254256
Your Project #: 2402553.01
Site#: 700
Site Location: ON07
Your C.O.C. #: 927983

Attention: Khalid Hussein - Twin Creeks

RWDI Inc.
600 Southgate Drive
Guelph, ON
Canada N1G 4P6

Report Date: 2024/07/19
Report #: R8241259
Version: 1 - Final

CERTIFICATE OF ANALYSIS

BUREAU VERITAS JOB #: C4L2021
Received: 2024/07/10, 16:30

Sample Matrix: Surface Water
Samples Received: 1

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Analytical Method
Alkalinity	1	N/A	2024/07/13	CAM SOP-00448	SM 24 2320 B m
Chloride by Automated Colourimetry	1	N/A	2024/07/18	CAM SOP-00463	SM 24 4500-Cl E m
Conductance in Water - On-site	1	N/A	2024/07/16		
Conductivity	1	N/A	2024/07/13	CAM SOP-00414	SM 24 2510 m
Field Measured Dissolved Oxygen in Water	1	N/A	2024/07/16		
Total Metals by ICPMS	1	N/A	2024/07/17	CAM SOP-00447	EPA 6020B m
Ammonia-N	1	N/A	2024/07/18	CAM SOP-00441	USGS I-2522-90 m
Nitrate & Nitrite as Nitrogen in Water (1)	1	N/A	2024/07/13	CAM SOP-00440	SM 24 4500-NO3I/NO2B
pH (2)	1	2024/07/12	2024/07/13	CAM SOP-00413	SM 24th - 4500H+ B
Phenols (4AAP)	1	N/A	2024/07/16	CAM SOP-00444	OMOE E3179 m
Field Measured pH (3)	1	N/A	2024/07/11		Field pH Meter
Sulphate by Automated Turbidimetry	1	N/A	2024/07/18	CAM SOP-00464	SM 24 4500-SO42- E m
Total Dissolved Solids	1	2024/07/15	2024/07/16	CAM SOP-00428	SM 24 2540C m
Field Temperature (3)	1	N/A	2024/07/11		Field Thermometer
Total Kjeldahl Nitrogen in Water	1	2024/07/16	2024/07/17	CAM SOP-00938	OMOE E3516 m
Total Phosphorus (Colourimetric)	1	2024/07/16	2024/07/17	CAM SOP-00407	SM 24 4500-P I
Turbidity - On-site	1	N/A	2024/07/16		
Un-ionized Ammonia (4)	1	2024/07/12	2024/07/18	Auto Calc.	PWQO

Remarks:

Bureau Veritas is accredited to ISO/IEC 17025 for specific parameters on scopes of accreditation. Unless otherwise noted, procedures used by Bureau Veritas are based upon recognized Provincial, Federal or US method compendia such as CCME, EPA, APHA or the Quebec Ministry of Environment.

All work recorded herein has been done in accordance with procedures and practices ordinarily exercised by professionals in Bureau Veritas' profession using accepted testing methodologies, quality assurance and quality control procedures (except where otherwise agreed by the client and Bureau Veritas in writing). All data is in statistical control and has met quality control and method performance criteria unless otherwise noted. All method blanks are reported; unless indicated otherwise, associated sample data are not blank corrected. Where applicable, unless otherwise noted, Measurement Uncertainty has not been accounted for when stating conformity to the referenced standard.

Bureau Veritas liability is limited to the actual cost of the requested analyses, unless otherwise agreed in writing. There is no other warranty expressed or implied. Bureau Veritas has been retained to provide analysis of samples provided by the Client using the testing methodology referenced in this report. Interpretation and use of test results are the sole responsibility of the Client and are not within the scope of services provided by Bureau Veritas, unless

Your P.O. #: 13254256
Your Project #: 2402553.01
Site#: 700
Site Location: ON07
Your C.O.C. #: 927983

Attention: Khalid Hussein - Twin Creeks

RWDI Inc.
600 Southgate Drive
Guelph, ON
Canada N1G 4P6

Report Date: 2024/07/19
Report #: R8241259
Version: 1 - Final

CERTIFICATE OF ANALYSIS

BUREAU VERITAS JOB #: C4L2021
Received: 2024/07/10, 16:30

otherwise agreed in writing. Bureau Veritas is not responsible for the accuracy or any data impacts, that result from the information provided by the customer or their agent.

Solid sample results, except biota, are based on dry weight unless otherwise indicated. Organic analyses are not recovery corrected except for isotope dilution methods.
Results relate to samples tested. When sampling is not conducted by Bureau Veritas, results relate to the supplied samples tested.
This Certificate shall not be reproduced except in full, without the written approval of the laboratory.
Reference Method suffix "m" indicates test methods incorporate validated modifications from specific reference methods to improve performance.
* RPDs calculated using raw data. The rounding of final results may result in the apparent difference.
(1) Values for calculated parameters may not appear to add up due to rounding of raw data and significant figures.
(2) "The CCME method and Analytical Protocol (O. Reg 153/04, O. Reg. 406/19) requires pH to be analyzed within 15 minutes of sampling and therefore field analysis is required for compliance. All Laboratory pH analyses in this report are reported past the CCME and Analytical Protocol (O. Reg 153/04, O. Reg. 406/19) holding time. Bureau Veritas endeavors to analyze samples as soon as possible after receipt."

(3) This is a field test, therefore, the results relate to items that were not analysed at Bureau Veritas.
(4) Un-ionized ammonia is calculated using the total ammonia result and field data provided by the client for pH and temperature.

Encryption Key

Please direct all questions regarding this Certificate of Analysis to:
Patricia Legette, Project Manager
Email: Patricia.Legette@bureauveritas.com
Phone# (905)817-5799

==========

Bureau Veritas has procedures in place to guard against improper use of the electronic signature and have the required "signatories", as per ISO/IEC 17025, signing the reports. For Service Group specific validation, please refer to the Validation Signatures page if included, otherwise available by request. For Department specific Analyst/Supervisor validation names, please refer to the Test Summary section if included, otherwise available by request. This report is authorized by Rodney Major, General Manager responsible for Ontario Environmental laboratory operations.

Bureau Veritas Job #: C4L2021
Report Date: 2024/07/19

RWDI Inc.
Client Project #: 2402553.01
Site Location: ON07
Your P.O. #: 13254256
Sampler Initials: JC

RESULTS OF ANALYSES OF SURFACE WATER

Bureau Veritas ID		ZRW200		
Sampling Date		2024/07/10 09:20		
COC Number		927983		
	UNITS	**SS16**	**RDL**	**QC Batch**
Calculated Parameters				
Total Un-ionized Ammonia	mg/L	<0.0029	0.0029	9510674
Field Measurements				
Field Conductivity	uS/cm	548	N/A	ONSITE
Field Dissolved Oxygen	mg/L	90.8	N/A	ONSITE
Field Temperature	Celsius	20.3	N/A	ONSITE
Field Measured Field Turbidity	NTU	70.6	N/A	ONSITE
Field Measured pH	pH	7.6		ONSITE
Inorganics				
Total Ammonia-N	mg/L	<0.15	0.15	9517221
Conductivity	umho/cm	380	1.0	9512737
Total Dissolved Solids	mg/L	245	10	9514928
Total Kjeldahl Nitrogen (TKN)	mg/L	<0.7	0.7	9515807
pH	pH	7.82		9512739
Phenols-4AAP	mg/L	<0.0010	0.0010	9514900
Total Phosphorus	mg/L	0.20	0.030	9517052
Dissolved Sulphate (SO4)	mg/L	56	1.0	9511981
Alkalinity (Total as CaCO3)	mg/L	130	1.0	9512735
Dissolved Chloride (Cl-)	mg/L	1.2	1.0	9511979
Nitrite (N)	mg/L	<0.010	0.010	9511992
Nitrate (N)	mg/L	<0.10	0.10	9511992

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
N/A = Not Applicable

Bureau Veritas 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.bvna.com

Microbiology testing is conducted at 6660 Campobello Rd. Chemistry testing is conducted at 6740 Campobello Rd.

Bureau Veritas Job #: C4L2021
Report Date: 2024/07/19

RWDI Inc.
Client Project #: 2402553.01
Site Location: ON07
Your P.O. #: 13254256
Sampler Initials: JC

ELEMENTS BY ATOMIC SPECTROSCOPY (SURFACE WATER)

Bureau Veritas ID		ZRW200		
Sampling Date		2024/07/10 09:20		
COC Number		927983		
	UNITS	**SS16**	**RDL**	**QC Batch**
Metals				
Total Boron (B)	mg/L	0.05	0.02	9516645
Total Calcium (Ca)	mg/L	58	0.2	9516645
Total Chromium (Cr)	mg/L	<0.005	0.005	9516645
Total Iron (Fe)	mg/L	4.3	0.1	9516645
Total Magnesium (Mg)	mg/L	12	0.05	9516645
Total Nickel (Ni)	mg/L	0.007	0.001	9516645
Total Potassium (K)	mg/L	7.1	0.2	9516645
Total Sodium (Na)	mg/L	3.1	0.1	9516645
Total Zinc (Zn)	mg/L	0.02	0.01	9516645

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

Bureau Veritas 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.bvna.com

Microbiology testing is conducted at 6660 Campobello Rd. Chemistry testing is conducted at 6740 Campobello Rd.

GENERAL COMMENTS

Results relate only to the items tested.

Bureau Veritas 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.bvna.com

Microbiology testing is conducted at 6660 Campobello Rd. Chemistry testing is conducted at 6740 Campobello Rd.

Bureau Veritas Job #: C4L2021
Report Date: 2024/07/19

QUALITY ASSURANCE REPORT

RWDI Inc.
Client Project #: 2402553.01
Site Location: ON07
Your P.O. #: 13254256
Sampler Initials: JC

			Matrix Spike		SPIKED BLANK		Method Blank		RPD		QC Standard	
QC Batch	Parameter	Date	% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits	% Recovery	QC Limits
9511979	Dissolved Chloride (Cl-)	2024/07/18	NC	80 - 120	100	80 - 120	<1.0	mg/L	0.97 (1)	20		
9511981	Dissolved Sulphate (SO4)	2024/07/18	NC	75 - 125	102	80 - 120	<1.0	mg/L	0.81 (1)	20		
9511992	Nitrate (N)	2024/07/13	92 (2)	80 - 120	95	80 - 120	<0.10	mg/L	NC (3)	20		
9511992	Nitrite (N)	2024/07/13	100 (2)	80 - 120	101	80 - 120	<0.010	mg/L	NC (3)	20		
9512735	Alkalinity (Total as CaCO3)	2024/07/13			98	85 - 115	<1.0	mg/L	0.11 (3)	20		
9512737	Conductivity	2024/07/13			102	85 - 115	<1.0	umho/cm	0.27 (3)	10		
9512739	pH	2024/07/13			102	98 - 103			0.81 (3)	N/A		
9514900	Phenols-4AAP	2024/07/16	102	80 - 120	102	80 - 120	<0.0010	mg/L	NC (1)	20		
9514928	Total Dissolved Solids	2024/07/16			97	80 - 120	<10	mg/L	14 (1)	20		
9515807	Total Kjeldahl Nitrogen (TKN)	2024/07/17	108	80 - 120	102	80 - 120	<0.7	mg/L	NC (1)	20	105	80 - 120
9516645	Total Boron (B)	2024/07/17	NC	80 - 120	89	80 - 120	<0.02	mg/L				
9516645	Total Calcium (Ca)	2024/07/17	NC	80 - 120	97	80 - 120	<0.2	mg/L				
9516645	Total Chromium (Cr)	2024/07/17	92	80 - 120	91	80 - 120	<0.005	mg/L	4.6 (1)	20		
9516645	Total Iron (Fe)	2024/07/17	96	80 - 120	95	80 - 120	<0.1	mg/L				
9516645	Total Magnesium (Mg)	2024/07/17	98	80 - 120	95	80 - 120	<0.05	mg/L				
9516645	Total Nickel (Ni)	2024/07/17	NC	80 - 120	90	80 - 120	<0.001	mg/L	4.5 (1)	20		
9516645	Total Potassium (K)	2024/07/17	NC	80 - 120	95	80 - 120	<0.2	mg/L				
9516645	Total Sodium (Na)	2024/07/17	NC	80 - 120	95	80 - 120	<0.1	mg/L				
9516645	Total Zinc (Zn)	2024/07/17	NC	80 - 120	95	80 - 120	<0.01	mg/L	3.4 (1)	20		
9517052	Total Phosphorus	2024/07/17	100	80 - 120	105	80 - 120	<0.030	mg/L	2.7 (1)	25	104	80 - 120

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Microbiology testing is conducted at 6660 Campobello Rd. Chemistry testing is conducted at 6740 Campobello Rd.

QUALITY ASSURANCE REPORT(CONT'D)

			Matrix Spike		SPIKED BLANK		Method Blank		RPD		QC Standard	
QC Batch	Parameter	Date	% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits	% Recovery	QC Limits
9517221	Total Ammonia-N	2024/07/18	96 (4)	75 - 125	97	80 - 120	<0.15	mg/L	NC (5)	20		

N/A = Not Applicable

Duplicate: Paired analysis of a separate portion of the same sample. Used to evaluate the variance in the measurement.

Matrix Spike: A sample to which a known amount of the analyte of interest has been added. Used to evaluate sample matrix interference.

QC Standard: A sample of known concentration prepared by an external agency under stringent conditions. Used as an independent check of method accuracy.

Spiked Blank: A blank matrix sample to which a known amount of the analyte, usually from a second source, has been added. Used to evaluate method accuracy.

Method Blank: A blank matrix containing all reagents used in the analytical procedure. Used to identify laboratory contamination.

NC (Matrix Spike): The recovery in the matrix spike was not calculated. The relative difference between the concentration in the parent sample and the spike amount was too small to permit a reliable recovery calculation (matrix spike concentration was less than the native sample concentration)

NC (Duplicate RPD): The duplicate RPD was not calculated. The concentration in the sample and/or duplicate was too low to permit a reliable RPD calculation (absolute difference <= 2x RDL).

(1) Duplicate Parent ID

(2) Matrix Spike Parent ID [ZRW200-01]

(3) Duplicate Parent ID [ZRW200-01]

(4) Matrix Spike Parent ID [ZRW200-06]

(5) Duplicate Parent ID [ZRW200-06]

Bureau Veritas 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.bvna.com

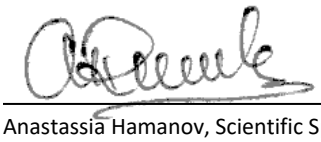
Microbiology testing is conducted at 6660 Campobello Rd. Chemistry testing is conducted at 6740 Campobello Rd.

Bureau Veritas Job #: C4L2021
Report Date: 2024/07/19

RWDI Inc.
Client Project #: 2402553.01
Site Location: ON07
Your P.O. #: 13254256
Sampler Initials: JC

VALIDATION SIGNATURE PAGE

The analytical data and all QC contained in this report were reviewed and validated by:



Anastassia Hamanov, Scientific Specialist



Michael Damianidis, Project Manager Assistant

Bureau Veritas has procedures in place to guard against improper use of the electronic signature and have the required "signatories", as per ISO/IEC 17025, signing the reports. For Service Group specific validation, please refer to the Validation Signatures page if included, otherwise available by request. For Department specific Analyst/Supervisor validation names, please refer to the Test Summary section if included, otherwise available by request. This report is authorized by Rodney Major, General Manager responsible for Ontario Environmental laboratory operations.

Bureau Veritas 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.bvna.com

Microbiology testing is conducted at 6660 Campobello Rd. Chemistry testing is conducted at 6740 Campobello Rd.

S2437676 x

BUREAU VERITAS

FIELD INFORMATION FORM

WM WASTE MANAGEMENT

Site Name: TCEC

Site No.: Sample: SISTW Sample ID

This Waste Management Field Information Form is Required
This form is to be completed, in addition to any State Forms. The Field Form is submitted along with the Chain of Custody Forms that accompany the sample containers (i.e. with the cooler that is returned to the laboratory).

Laboratory Use Only/Lab ID:

PURGE INFO

PURGE DATE (MM DD YY)	PURGE TIME (2400 Hr Clock)	ELAPSED HRS (hrs:min)	WATER VOL IN CASING (Gallons)	ACTUAL VOL PURGED (Gallons)	WELL VOLs PURGED

Note: For Passive Sampling, replace "Water Vol in Casing" and "Well Vols Purged" w/ Water Vol in Tubing/Flow Cell and Tubing/Flow Cell Vols Purged. Mark Changes. Record field data below.

PURGE/SAMPLE EQUIPMENT

Purging and Sampling Equipment ... Dedicated: Y or N

Filter Device: Y or N 0.45 µ or ____ µ (circle or fill in)

Purging Device: A-Submersible Pump, B-Peristaltic Pump, C-QED Bladder Pump, D-Bailer, E-Piston Pump, F-Dipper/Bottle

Sampling Device:

X-Other:

Filter Type: A-In-line Disposable, B-Pressure, C-Vacuum, X-Other:

Sample Tube Type: A-Teflon, B-Stainless Steel, C-PVC, D-Polypropylene, X-Other:

WELL DATA

Well Elevation (at TOC) (ft/msl)

Depth to Water (DTW) (from TOC) (ft)

Groundwater Elevation (GWE) (Site Datum, from TOC) (ft msl)

Total Well Depth (from TOC) (ft)

Stick Up (from ground elevation) (ft)

Casing ID (in)

Casing Material

Note: Total Depth, Stick Up, Casing ID, etc. are optional and can be from historical data, unless required by Site/Permit. Well Elevation, DTW, and GWE must be current, obtained from site.

STABILIZATION DATA (Optional)

Sample Time (2400 Hr Clock)	Rate/Unit	pH (std)	Conductance (SC/EC) (µmhos/cm @ 25°C)	Temp. (°C)	Turbidity (ntu)	D.O. (mg/L - ppm)	eH/ORP (mV)	DTW (ft)
	1st	1st	1st					
	2nd	2nd	2nd					
	3rd	3rd	3rd					
	4th	4th	4th					
Input Range for 3 consec. readings or Permit/State requirements:		+/-	+/-	+/-	+/-	+/-	+/-	

Stabilization Data Fields are Optional *(i.e. complete stabilization readings for parameters required by WM, Site, or State). These fields can be used where four (4) field measurements are required by State/Permit/Site. If a Data Logger or other Electronic format is used, fill in final readings below and submit electronic data separately to Site. If more fields above are needed, use separate sheet or form.*

FIELD DATA

SAMPLE DATE (MM DD YY)	pH (std)	CONDUCTANCE (µmhos/cm @ 25°C)	TEMP. (°C)	TURBIDITY (ntu)	DO (mg/L - ppm)	eH/ORP (mV)	Other: Units
07 10 24	7.6	548	20.3	706	90.8		

Final Field Readings are required *(i.e. record field measurements, final stabilized readings, passive sample readings before sampling for all field parameters required by State/Permit/Site.)*

FIELD COMMENTS

Sample Appearance: transparent Odor: none Color: brown Other:

Weather Conditions (required daily, or as conditions change): 14°C Direction/Speed: 15km/hr E Outlook: overcast Precipitation: Y or N

Specific Comments (including purge/well volume calculations if required):

9:20AM depth .05m width .1m flow over 1m

T1: 32 s

2: 31 s

3: 31 s

I certify that sampling procedures were in accordance with applicable EPA, State, and WM protocols (if more than one sampler, all should sign):

Date	Name	Signature	Company
07/10/24	Maya DeForest	[signature]	EWDI Air
/ /			

DISTRIBUTION: WHITE/ORIGINAL - Stays with Sample, YELLOW - Returned to Client, PINK - Field Copy

Field Information Form v-3.1 06/20

2128

BUREAU VERITAS

BOD

Custody Tracking Form

T927983

Please use this form for custody tracking when submitting the work instructions via eCOC (electronic Chain of Custody). Please ensure your form has a barcode or a Bureau Veritas eCOC confirmation number in the top right hand side. This number links your electronic submission to your samples. This form should be placed in the cooler with your samples.

First Sample: SS16
Last Sample: SS16
Sample Count: 1

Relinquished By				Received By			
James Hanna		Date	2024/07/10	Soumyalaganou		Date	2024/07/10
		Time (24 HR)	16:15			Time (24 HR)	16:30
		Date		BHARGAV		Date	2024/07/11
		Time (24 HR)				Time (24 HR)	18:54
		Date				Date	
		Time (24 HR)				Time (24 HR)	

Unless otherwise agreed to, submissions and use of services are governed by Bureau Veritas' standard terms and conditions which can be found at www.bvna.com.

Triage Information

Sampled By (Print): James Hanna

# of Coolers/Pkgs: 1

Rush ☐ Immediate Test ☐ Food Residue ☐

Micro ☐ Food Chemistry ☐

*** LABORATORY USE ONLY ***

Received At

Labeled By

Verified By

Lab Comments:

Custody Seal		Cooling Media	Temperature °C		
Present (Y/N)	Intact (Y/N)	Present (Y/N)	1	2	3
Y	Y	Y	2	3	8
Y	N	Y	4	4	4
Drinking Water Metals Preservation Check Done (Circle)				YES	NO

10-Jul-24 16:30
Patricia Legette
C4L2021

A3P ENV-1281

REC'D IN LONDON

COR FCD-00383/4

Page 1 of 1

eCOC: T927983

Expected TAT:	Standard TAT
Expected Arrival:	2024/07/10 12:00
Submitted By:	Jeffery Cleland
Submitted To:	Mississauga, ON (Env. Lab)

Invoice Information

Attn: Lisa Mertick lmertick@wm.com
Waste Management of Canada Corporation
5768 Nauvoo Rd. RR# 4
Watford , ON , N0M 2S0
Email to:
lmertick@wm.com
invoiceuploads@bureauveritas.com

Report Information

Attn: Jeffery Cleland
RWDI Inc.
4510 Rhodes Drive
Suite 530
Windsor , ON , N8W 5K5
Email to:
jeffery.cleland@rwdi.com
khalid.hussein@rwdi.com
james.hanna@rwdi.com
maja.deforest@rwdi.com
jake.artibello@rwdi.com

Project Information

Quote #:	C34991
PO/AFE#:	13254256
Project #:	2402553.01
Site Location:	Twin Creeks Environmental Centre

Analytical Summary

A: Standard TAT

Client Sample ID	Clnt Ref	Sampling Date/Time	Matrix	#Cont	ON-WLF-2024 TCLS - SW (BKGRND STATION) QUARTERLY
SS16	1	2024/07/10 09:20	SURFACE WATER	6	A

Deadlines are estimates only and are subject to change. Please refer to your Job Confirmation report for final due dates.

Submission Information

# of Samples:	1
Details:	See lab addendum for lab group coding

Your P.O. #: 13254256
Your Project #: 2402553.01
Site#: 700
Site Location: ON07
Your C.O.C. #: 927956

Attention: Khalid Hussein - Twin Creeks

RWDI Inc.
600 Southgate Drive
Guelph, ON
Canada N1G 4P6

Report Date: 2024/07/19
Report #: R8241295
Version: 1 - Final

CERTIFICATE OF ANALYSIS

BUREAU VERITAS JOB #: C4L2024
Received: 2024/07/10, 16:19

Sample Matrix: Surface Water
Samples Received: 4

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Analytical Method
Alkalinity	4	N/A	2024/07/12	CAM SOP-00448	SM 24 2320 B m
Chloride by Automated Colourimetry	4	N/A	2024/07/18	CAM SOP-00463	SM 24 4500-Cl E m
Conductance in Water - On-site	4	N/A	2024/07/17		
Field Measured Dissolved Oxygen in Water	4	N/A	2024/07/17		
Total Metals by ICPMS	1	N/A	2024/07/17	CAM SOP-00447	EPA 6020B m
Total Metals by ICPMS	3	N/A	2024/07/18	CAM SOP-00447	EPA 6020B m
Ammonia-N	4	N/A	2024/07/18	CAM SOP-00441	USGS I-2522-90 m
Nitrate & Nitrite as Nitrogen in Water (1)	4	N/A	2024/07/12	CAM SOP-00440	SM 24 4500-NO3I/NO2B
Phenols (4AAP)	4	N/A	2024/07/16	CAM SOP-00444	OMOE E3179 m
Field Measured pH (2)	4	N/A	2024/07/11		Field pH Meter
Sulphate by Automated Turbidimetry	4	N/A	2024/07/18	CAM SOP-00464	SM 24 4500-SO42- E m
Field Temperature (2)	4	N/A	2024/07/11		Field Thermometer
Total Kjeldahl Nitrogen in Water	4	2024/07/16	2024/07/17	CAM SOP-00938	OMOE E3516 m
Total Organic Carbon (TOC) (3)	4	N/A	2024/07/17	CAM SOP-00446	SM 24 5310B m
Total Phosphorus (Colourimetric)	4	2024/07/16	2024/07/17	CAM SOP-00407	SM 24 4500-P I
Turbidity - On-site	4	N/A	2024/07/17		
Un-ionized Ammonia (4)	4	2024/07/12	2024/07/18	Auto Calc.	PWQO
Volatile Organic Compounds in Water	4	N/A	2024/07/16	CAM SOP-00226	EPA 8260D m

Remarks:

Bureau Veritas is accredited to ISO/IEC 17025 for specific parameters on scopes of accreditation. Unless otherwise noted, procedures used by Bureau Veritas are based upon recognized Provincial, Federal or US method compendia such as CCME, EPA, APHA or the Quebec Ministry of Environment.

All work recorded herein has been done in accordance with procedures and practices ordinarily exercised by professionals in Bureau Veritas' profession using accepted testing methodologies, quality assurance and quality control procedures (except where otherwise agreed by the client and Bureau Veritas in writing). All data is in statistical control and has met quality control and method performance criteria unless otherwise noted. All method blanks are reported; unless indicated otherwise, associated sample data are not blank corrected. Where applicable, unless otherwise noted, Measurement Uncertainty has not been accounted for when stating conformity to the referenced standard.

Bureau Veritas liability is limited to the actual cost of the requested analyses, unless otherwise agreed in writing. There is no other warranty expressed or implied. Bureau Veritas has been retained to provide analysis of samples provided by the Client using the testing methodology referenced in this report. Interpretation and use of test results are the sole responsibility of the Client and are not within the scope of services provided by Bureau Veritas, unless

Your P.O. #: 13254256
Your Project #: 2402553.01
Site#: 700
Site Location: ON07
Your C.O.C. #: 927956

Attention: Khalid Hussein - Twin Creeks

RWDI Inc.
600 Southgate Drive
Guelph, ON
Canada N1G 4P6

Report Date: 2024/07/19
Report #: R8241295
Version: 1 - Final

CERTIFICATE OF ANALYSIS

BUREAU VERITAS JOB #: C4L2024
Received: 2024/07/10, 16:19

otherwise agreed in writing. Bureau Veritas is not responsible for the accuracy or any data impacts, that result from the information provided by the customer or their agent.

Solid sample results, except biota, are based on dry weight unless otherwise indicated. Organic analyses are not recovery corrected except for isotope dilution methods.
Results relate to samples tested. When sampling is not conducted by Bureau Veritas, results relate to the supplied samples tested.
This Certificate shall not be reproduced except in full, without the written approval of the laboratory.
Reference Method suffix "m" indicates test methods incorporate validated modifications from specific reference methods to improve performance.
* RPDs calculated using raw data. The rounding of final results may result in the apparent difference.
(1) Values for calculated parameters may not appear to add up due to rounding of raw data and significant figures.
(2) This is a field test, therefore, the results relate to items that were not analysed at Bureau Veritas.
(3) Total Organic Carbon (TOC) present in the sample should be considered as non-purgeable TOC.
(4) Un-ionized ammonia is calculated using the total ammonia result and field data provided by the client for pH and temperature.

Encryption Key

Please direct all questions regarding this Certificate of Analysis to:
Patricia Legette, Project Manager
Email: Patricia.Legette@bureauveritas.com
Phone# (905)817-5799

==========

Bureau Veritas has procedures in place to guard against improper use of the electronic signature and have the required "signatories", as per ISO/IEC 17025, signing the reports. For Service Group specific validation, please refer to the Validation Signatures page if included, otherwise available by request. For Department specific Analyst/Supervisor validation names, please refer to the Test Summary section if included, otherwise available by request. This report is authorized by Rodney Major, General Manager responsible for Ontario Environmental laboratory operations.

Bureau Veritas Job #: C4L2024
Report Date: 2024/07/19

RWDI Inc.
Client Project #: 2402553.01
Site Location: ON07
Your P.O. #: 13254256
Sampler Initials: JF

RESULTS OF ANALYSES OF SURFACE WATER

Bureau Veritas ID		ZRW204		ZRW205		ZRW206	ZRW207		
Sampling Date		2024/07/10 11:20		2024/07/10 10:40		2024/07/10 10:20	2024/07/10 22:20		
COC Number		927956		927956		927956	927956		
	UNITS	SS14A	RDL	SS14B	RDL	SS15A	PSSWDUP	RDL	QC Batch
Calculated Parameters									
Total Un-ionized Ammonia	mg/L	<0.0075	0.0075	<0.013	0.013	<0.0036	<0.0036	0.0036	9510674
Field Measurements									
Field Conductivity	uS/cm	853	N/A	760	N/A	940	940	N/A	ONSITE
Field Dissolved Oxygen	mg/L	7.20	N/A	8.83	N/A	7.09	7.09	N/A	ONSITE
Field Temperature	Celsius	21.0	N/A	20.1	N/A	20.3	20.3	N/A	ONSITE
Field Measured Field Turbidity	NTU	501	N/A	>999	N/A	167	167	N/A	ONSITE
Field Measured pH	pH	8.0		8.3		7.7	7.7		ONSITE
Inorganics									
Total Ammonia-N	mg/L	<0.15	0.15	<0.15	0.15	<0.15	<0.15	0.15	9517221
Total Kjeldahl Nitrogen (TKN)	mg/L	<0.7	0.7	1.3	0.7	<0.7	<0.7	0.7	9515807
Total Organic Carbon (TOC)	mg/L	8.3	0.40	8.2	0.40	11	13	0.40	9517403
Phenols-4AAP	mg/L	<0.0010	0.0010	<0.0010	0.0010	<0.0010	<0.0010	0.0010	9514900
Total Phosphorus	mg/L	0.23	0.030	3.1	0.030	0.15	0.16	0.030	9517052
Dissolved Sulphate (SO4)	mg/L	250	1.0	150	1.0	250	240	1.0	9511981
Alkalinity (Total as CaCO3)	mg/L	83	1.0	66	1.0	120	120	1.0	9511714
Dissolved Chloride (Cl-)	mg/L	1.3	1.0	18	1.0	12	12	1.0	9511979
Nitrite (N)	mg/L	0.020	0.010	0.061	0.010	<0.010	<0.010	0.010	9511464
Nitrate (N)	mg/L	0.27	0.10	0.98	0.10	<0.10	<0.10	0.10	9511464

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
N/A = Not Applicable

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Microbiology testing is conducted at 6660 Campobello Rd. Chemistry testing is conducted at 6740 Campobello Rd.

Bureau Veritas Job #: C4L2024
Report Date: 2024/07/19

RWDI Inc.
Client Project #: 2402553.01
Site Location: ON07
Your P.O. #: 13254256
Sampler Initials: JF

ELEMENTS BY ATOMIC SPECTROSCOPY (SURFACE WATER)

Bureau Veritas ID		ZRW204		ZRW205		ZRW206	ZRW207		
Sampling Date		2024/07/10 11:20		2024/07/10 10:40		2024/07/10 10:20	2024/07/10 22:20		
COC Number		927956		927956		927956	927956		
	UNITS	SS14A	RDL	SS14B	RDL	SS15A	PSSWDUP	RDL	QC Batch
Metals									
Total Aluminum (Al)	mg/L	8.4	0.02	190	0.8	3.3	4.4	0.02	9516645
Total Arsenic (As)	mg/L	0.004	0.001	0.08	0.01	0.002	0.003	0.001	9516645
Total Barium (Ba)	mg/L	0.058	0.005	0.98	0.05	0.053	0.056	0.005	9516645
Total Beryllium (Be)	mg/L	<0.0006	0.0006	0.009	0.006	<0.0006	<0.0006	0.0006	9516645
Total Bismuth (Bi)	mg/L	<0.001	0.001	<0.01	0.01	<0.001	<0.001	0.001	9516645
Total Boron (B)	mg/L	0.09	0.02	0.4	0.2	0.45	0.46	0.02	9516645
Total Cadmium (Cd)	mg/L	<0.0001	0.0001	0.001	0.001	<0.0001	<0.0001	0.0001	9516645
Total Calcium (Ca)	mg/L	110	0.2	930	2	90	94	0.2	9516645
Total Chromium (Cr)	mg/L	0.013	0.005	0.27	0.05	0.006	0.008	0.005	9516645
Total Cobalt (Co)	mg/L	0.0061	0.0005	0.12	0.005	0.0026	0.0029	0.0005	9516645
Total Copper (Cu)	mg/L	0.012	0.002	0.23	0.02	0.008	0.010	0.002	9516645
Total Iron (Fe)	mg/L	13	0.1	290	1	6.0	6.6	0.1	9516645
Total Lead (Pb)	mg/L	0.0048	0.0005	0.12	0.005	0.0028	0.0028	0.0005	9516645
Total Magnesium (Mg)	mg/L	31	0.05	180	0.5	22	23	0.05	9516645
Total Molybdenum (Mo)	mg/L	0.017	0.002	0.05	0.02	0.006	0.007	0.002	9516645
Total Nickel (Ni)	mg/L	0.019	0.001	0.39	0.01	0.010	0.013	0.001	9516645
Total Potassium (K)	mg/L	6.0	0.2	43	2	6.2	6.8	0.2	9516645
Total Selenium (Se)	mg/L	<0.005	0.005	<0.05	0.05	<0.005	<0.005	0.005	9516645
Total Silver (Ag)	mg/L	<0.0004	0.0004	<0.004	0.004	<0.0004	<0.0004	0.0004	9516645
Total Sodium (Na)	mg/L	7.5	0.1	18	1	18	20	0.1	9516645
Total Strontium (Sr)	mg/L	0.79	0.003	1.5	0.03	0.33	0.36	0.003	9516645
Total Tin (Sn)	mg/L	<0.002	0.002	<0.02	0.02	<0.002	<0.002	0.002	9516645
Total Titanium (Ti)	mg/L	0.10	0.005	1.5	0.05	0.053	0.056	0.005	9516645
Total Vanadium (V)	mg/L	0.014	0.001	0.29	0.01	0.007	0.008	0.001	9516645
Total Zinc (Zn)	mg/L	0.03	0.01	0.8	0.1	0.03	0.04	0.01	9516645

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

Bureau Veritas 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.bvna.com

Microbiology testing is conducted at 6660 Campobello Rd. Chemistry testing is conducted at 6740 Campobello Rd.

Bureau Veritas Job #: C4L2024
Report Date: 2024/07/19

RWDI Inc.
Client Project #: 2402553.01
Site Location: ON07
Your P.O. #: 13254256
Sampler Initials: JF

VOLATILE ORGANICS BY GC/MS (SURFACE WATER)

Bureau Veritas ID		ZRW204	ZRW205	ZRW206	ZRW207		
Sampling Date		2024/07/10 11:20	2024/07/10 10:40	2024/07/10 10:20	2024/07/10 22:20		
COC Number		927956	927956	927956	927956		
	UNITS	SS14A	SS14B	SS15A	PSSWDUP	RDL	QC Batch
Volatile Organics							
Benzene	ug/L	<0.10	0.18	<0.10	<0.10	0.10	9513990
Ethylbenzene	ug/L	<0.10	<0.10	<0.10	<0.10	0.10	9513990
Toluene	ug/L	<0.20	0.40	<0.20	<0.20	0.20	9513990
p+m-Xylene	ug/L	<0.10	0.14	<0.10	<0.10	0.10	9513990
o-Xylene	ug/L	<0.10	<0.10	<0.10	<0.10	0.10	9513990
Total Xylenes	ug/L	<0.10	0.14	<0.10	<0.10	0.10	9513990
Surrogate Recovery (%)							
4-Bromofluorobenzene	%	101	97	102	102		9513990
D4-1,2-Dichloroethane	%	106	107	107	107		9513990
D8-Toluene	%	96	95	96	96		9513990

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

Bureau Veritas 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.bvna.com

Microbiology testing is conducted at 6660 Campobello Rd. Chemistry testing is conducted at 6740 Campobello Rd.

GENERAL COMMENTS

Sample ZRW205 [SS14B] : Metals Analysis: Due to the sample matrix, sample required dilution. Detection limits were adjusted accordingly.

Results relate only to the items tested.

Bureau Veritas 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.bvna.com

Microbiology testing is conducted at 6660 Campobello Rd. Chemistry testing is conducted at 6740 Campobello Rd.

QUALITY ASSURANCE REPORT

			Matrix Spike		SPIKED BLANK		Method Blank		RPD		QC Standard	
QC Batch	Parameter	Date	% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits	% Recovery	QC Limits
9513990	4-Bromofluorobenzene	2024/07/16	104	70 - 130	102	70 - 130	100	%				
9513990	D4-1,2-Dichloroethane	2024/07/16	106	70 - 130	100	70 - 130	106	%				
9513990	D8-Toluene	2024/07/16	98	70 - 130	98	70 - 130	97	%				
9511464	Nitrate (N)	2024/07/12	94	80 - 120	99	80 - 120	<0.10	mg/L	NC (1)	20		
9511464	Nitrite (N)	2024/07/12	102	80 - 120	101	80 - 120	<0.010	mg/L	NC (1)	20		
9511714	Alkalinity (Total as CaCO3)	2024/07/12			98	85 - 115	<1.0	mg/L	0.83 (1)	20		
9511979	Dissolved Chloride (Cl-)	2024/07/18	NC	80 - 120	100	80 - 120	<1.0	mg/L	0.97 (1)	20		
9511981	Dissolved Sulphate (SO4)	2024/07/18	NC	75 - 125	102	80 - 120	<1.0	mg/L	0.81 (1)	20		
9513990	Benzene	2024/07/16	98	70 - 130	98	70 - 130	<0.10	ug/L	NC (1)	30		
9513990	Ethylbenzene	2024/07/16	96	70 - 130	98	70 - 130	<0.10	ug/L	NC (1)	30		
9513990	o-Xylene	2024/07/16	100	70 - 130	99	70 - 130	<0.10	ug/L	NC (1)	30		
9513990	p+m-Xylene	2024/07/16	98	70 - 130	98	70 - 130	<0.10	ug/L	NC (1)	30		
9513990	Toluene	2024/07/16	96	70 - 130	96	70 - 130	<0.20	ug/L	NC (1)	30		
9513990	Total Xylenes	2024/07/16					<0.10	ug/L	NC (1)	30		
9514900	Phenols-4AAP	2024/07/16	102	80 - 120	102	80 - 120	<0.0010	mg/L	NC (1)	20		
9515807	Total Kjeldahl Nitrogen (TKN)	2024/07/17	108	80 - 120	102	80 - 120	<0.7	mg/L	NC (1)	20	105	80 - 120
9516645	Total Aluminum (Al)	2024/07/17	101	80 - 120	93	80 - 120	<0.02	mg/L				
9516645	Total Arsenic (As)	2024/07/17	97	80 - 120	97	80 - 120	<0.001	mg/L				
9516645	Total Barium (Ba)	2024/07/17	98	80 - 120	96	80 - 120	<0.005	mg/L				
9516645	Total Beryllium (Be)	2024/07/17	104	80 - 120	94	80 - 120	<0.0006	mg/L				
9516645	Total Bismuth (Bi)	2024/07/17	93	80 - 120	95	80 - 120	<0.001	mg/L				
9516645	Total Boron (B)	2024/07/17	NC	80 - 120	89	80 - 120	<0.02	mg/L				
9516645	Total Cadmium (Cd)	2024/07/17	96	80 - 120	98	80 - 120	<0.0001	mg/L				
9516645	Total Calcium (Ca)	2024/07/17	NC	80 - 120	97	80 - 120	<0.2	mg/L				
9516645	Total Chromium (Cr)	2024/07/17	92	80 - 120	91	80 - 120	<0.005	mg/L	4.6 (1)	20		
9516645	Total Cobalt (Co)	2024/07/17	94	80 - 120	94	80 - 120	<0.0005	mg/L				
9516645	Total Copper (Cu)	2024/07/17	103	80 - 120	93	80 - 120	<0.002	mg/L	3.9 (1)	20		
9516645	Total Iron (Fe)	2024/07/17	96	80 - 120	95	80 - 120	<0.1	mg/L				
9516645	Total Lead (Pb)	2024/07/17	94	80 - 120	97	80 - 120	<0.0005	mg/L				
9516645	Total Magnesium (Mg)	2024/07/17	98	80 - 120	95	80 - 120	<0.05	mg/L				

Bureau Veritas 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.bvna.com

Microbiology testing is conducted at 6660 Campobello Rd. Chemistry testing is conducted at 6740 Campobello Rd.

QUALITY ASSURANCE REPORT(CONT'D)

			Matrix Spike		SPIKED BLANK		Method Blank		RPD		QC Standard	
QC Batch	Parameter	Date	% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits	% Recovery	QC Limits
9516645	Total Molybdenum (Mo)	2024/07/17	101	80 - 120	98	80 - 120	<0.002	mg/L				
9516645	Total Nickel (Ni)	2024/07/17	NC	80 - 120	90	80 - 120	<0.001	mg/L	4.5 (1)	20		
9516645	Total Potassium (K)	2024/07/17	NC	80 - 120	95	80 - 120	<0.2	mg/L				
9516645	Total Selenium (Se)	2024/07/17	98	80 - 120	100	80 - 120	<0.005	mg/L				
9516645	Total Silver (Ag)	2024/07/17	91	80 - 120	95	80 - 120	<0.0004	mg/L				
9516645	Total Sodium (Na)	2024/07/17	NC	80 - 120	95	80 - 120	<0.1	mg/L				
9516645	Total Strontium (Sr)	2024/07/17	NC	80 - 120	95	80 - 120	<0.003	mg/L				
9516645	Total Tin (Sn)	2024/07/17	102	80 - 120	98	80 - 120	<0.002	mg/L				
9516645	Total Titanium (Ti)	2024/07/17	95	80 - 120	90	80 - 120	<0.005	mg/L				
9516645	Total Vanadium (V)	2024/07/17	95	80 - 120	90	80 - 120	<0.001	mg/L				
9516645	Total Zinc (Zn)	2024/07/17	NC	80 - 120	95	80 - 120	<0.01	mg/L	3.4 (1)	20		
9517052	Total Phosphorus	2024/07/17	100	80 - 120	105	80 - 120	<0.030	mg/L	2.7 (1)	25	104	80 - 120
9517221	Total Ammonia-N	2024/07/18	96	75 - 125	97	80 - 120	<0.15	mg/L	NC (1)	20		
9517403	Total Organic Carbon (TOC)	2024/07/17	106 (2)	80 - 120	100	80 - 120	<0.40	mg/L	7.2 (3)	20		

Duplicate: Paired analysis of a separate portion of the same sample. Used to evaluate the variance in the measurement.

Matrix Spike: A sample to which a known amount of the analyte of interest has been added. Used to evaluate sample matrix interference.

QC Standard: A sample of known concentration prepared by an external agency under stringent conditions. Used as an independent check of method accuracy.

Spiked Blank: A blank matrix sample to which a known amount of the analyte, usually from a second source, has been added. Used to evaluate method accuracy.

Method Blank: A blank matrix containing all reagents used in the analytical procedure. Used to identify laboratory contamination.

Surrogate: A pure or isotopically labeled compound whose behavior mirrors the analytes of interest. Used to evaluate extraction efficiency.

NC (Matrix Spike): The recovery in the matrix spike was not calculated. The relative difference between the concentration in the parent sample and the spike amount was too small to permit a reliable recovery calculation (matrix spike concentration was less than the native sample concentration)

NC (Duplicate RPD): The duplicate RPD was not calculated. The concentration in the sample and/or duplicate was too low to permit a reliable RPD calculation (absolute difference <= 2x RDL).

(1) Duplicate Parent ID

(2) Matrix Spike Parent ID [ZRW206-03]

(3) Duplicate Parent ID [ZRW206-03]

Bureau Veritas 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.bvna.com

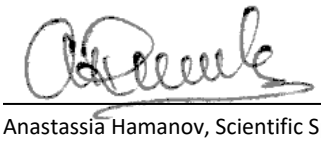
Microbiology testing is conducted at 6660 Campobello Rd. Chemistry testing is conducted at 6740 Campobello Rd.

Bureau Veritas Job #: C4L2024
Report Date: 2024/07/19

RWDI Inc.
Client Project #: 2402553.01
Site Location: ON07
Your P.O. #: 13254256
Sampler Initials: JF

VALIDATION SIGNATURE PAGE

The analytical data and all QC contained in this report were reviewed and validated by:



Anastassia Hamanov, Scientific Specialist



Michael Damianidis, Project Manager Assistant

Bureau Veritas has procedures in place to guard against improper use of the electronic signature and have the required "signatories", as per ISO/IEC 17025, signing the reports. For Service Group specific validation, please refer to the Validation Signatures page if included, otherwise available by request. For Department specific Analyst/Supervisor validation names, please refer to the Test Summary section if included, otherwise available by request. This report is authorized by Rodney Major, General Manager responsible for Ontario Environmental laboratory operations.

Bureau Veritas 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.bvna.com

Microbiology testing is conducted at 6660 Campobello Rd. Chemistry testing is conducted at 6740 Campobello Rd.

S2437676

BUREAU VERITAS

FIELD INFORMATION FORM

WM WASTE MANAGEMENT

Site Name: TCEC

Site No.: Sample: SS14A (Sample ID)

This Waste Management Field Information Form is Required
This form is to be completed, in addition to any State Forms. The Field Form is submitted along with the Chain of Custody Forms that accompany the sample containers (i.e. with the cooler that is returned to the laboratory).

Laboratory Use Only/Lab ID:

PURGE INFO

PURGE DATE (MM DD YY)	PURGE TIME (2400 Hr Clock)	ELAPSED HRS (hrs:min)	WATER VOL IN CASING (Gallons)	ACTUAL VOL PURGED (Gallons)	WELL VOLs PURGED

Note: For Passive Sampling, replace "Water Vol in Casing" and "Well Vols Purged" w/ Water Vol in Tubing/Flow Cell and Tubing/Flow Cell Vols Purged. Mark Changes, Record field data below.

PURGE/SAMPLE EQUIPMENT

Purging and Sampling Equipment ... Dedicated: Y or N — Filter Device: Y or N — 0.45 µ or ____ µ (circle or fill in)

Purging Device: ____ A-Submersible Pump B-Peristaltic Pump C-QED Bladder Pump D-Bailer E-Piston Pump F-Dipper/Bottle

Sampling Device: ____

X-Other: ____

Filter Type: ____ A-In-line Disposable B-Pressure C-Vacuum X-Other: ____

Sample Tube Type: ____ A-Teflon B-Stainless Steel C-PVC D-Polypropylene X-Other: ____

WELL DATA

Well Elevation (at TOC) ____ (ft/msl) — Depth to Water (DTW) (from TOC) ____ (ft) — Groundwater Elevation (GWE) (Site Datum, from TOC) ____ (ft msl)

Total Well Depth (from TOC) ____ (ft) — Stick Up (from ground elevation) ____ (ft) — Casing ID ____ (in) — Casing Material ____

Note: Total Depth, Stick Up, Casing ID, etc. are optional and can be from historical data, unless required by Site/Permit. Well Elevation, DTW, and GWE must be current, obtained from site.

STABILIZATION DATA (Optional)

Sample Time (2400 Hr Clock)	Rate/Unit	pH (std)	Conductance (SC/EC) (µmhos/cm @ 25°C)	Temp. (°C)	Turbidity (ntu)	D.O. (mg/L - ppm)	eH/ORP (mV)	DTW (ft)
		1st	1st					
		2nd	2nd					
		3rd	3rd					
		4th	4th					
Input Range for 3 consec. readings or Permit/State requirements:		+/-	+/-	+/-	+/-	+/-	+/-	

Stabilization Data Fields are Optional *(i.e. complete stabilization readings for parameters required by WM, Site, or State). These fields can be used where four (4) field measurements are required by State/Permit/Site. If a Data Logger or other Electronic format is used, fill in final readings below and submit electronic data separately to Site. If more fields above are needed, use separate sheet or form.*

FIELD DATA

SAMPLE DATE (MM DD YY)	pH (std)	CONDUCTANCE (µmhos/cm @ 25°C)	TEMP. (°C)	TURBIDITY (ntu)	DO (mg/L - ppm)	eH/ORP (mV)	Other: Units
07/10/24	8.0	853	21.0	501	7.2		

Final Field Readings are required *(i.e. record field measurements, final stabilized readings, passive sample readings before sampling for all field parameters required by State/Permit/Site.)*

FIELD COMMENTS

Sample Appearance: opaque — Odor: none — Color: light brown — Other: ____

Weather Conditions (required daily, or as conditions change): 19°C — Direction/Speed: 15km/hr E — Outlook: rainy — Precipitation: Y or (N)

Specific Comments (including purge/well volume calculations if required): flow time over 1m

11:20 Depth: 0.10 Width: 1.5 1: 45s 2: 40s 3: 45s

I certify that sampling procedures were in accordance with applicable EPA, State, and WM protocols (if more than one sampler, all should sign):

Date	Name	Signature	Company
07/10/24	Maja Petrovic		BWDI Air

DISTRIBUTION: WHITE/ORIGINAL - Stays with Sample, YELLOW - Returned to Client, PINK - Field Copy

Field Information Form v-3.1 06/20

2118

S2437676

FIELD INFORMATION FORM

WASTE MANAGEMENT

Site Name: TCEC

Site No.: Sample: SS14B (Sample ID)

This Waste Management Field Information Form is Required
This form is to be completed, in addition to any State Forms. The Field Form is submitted along with the Chain of Custody Forms that accompany the sample containers (i.e. with the cooler that is returned to the laboratory).

Laboratory Use Only/Lab ID:

PURGE INFO

PURGE DATE (MM DD YY)	PURGE TIME (2400 Hr Clock)	ELAPSED HRS (hrs:min)	WATER VOL IN CASING (Gallons)	ACTUAL VOL PURGED (Gallons)	WELL VOLs PURGED

Note: For Passive Sampling, replace "Water Vol in Casing" and "Well Vols Purged" w/ Water Vol in Tubing/Flow Cell and Tubing/Flow Cell Vols Purged. Mark Changes, Record field data below.

PURGE/SAMPLE EQUIPMENT

Purging and Sampling Equipment ... Dedicated: Y or N — Filter Device: Y or N — 0.45 µ or ____ µ (circle or fill in)

Purging Device: A-Submersible Pump, B-Peristaltic Pump, C-QED Bladder Pump, D-Bailer, E-Piston Pump, F-Dipper/Bottle

Sampling Device: A-Submersible Pump, B-Peristaltic Pump, C-QED Bladder Pump, D-Bailer, E-Piston Pump, F-Dipper/Bottle

Filter Type: A-In-line Disposable, B-Pressure, C-Vacuum, X-Other: ____

X-Other: ____ Sample Tube Type: A-Teflon, B-Stainless Steel, C-PVC, D-Polypropylene, X-Other: ____

WELL DATA

Well Elevation (at TOC) ____ (ft/msl) — Depth to Water (DTW) (from TOC) ____ (ft) — Groundwater Elevation (GWE) (Site Datum, from TOC) ____ (ft msl)

Total Well Depth (from TOC) ____ (ft) — Stick Up (from ground elevation) ____ (ft) — Casing ID ____ (in) — Casing Material ____

Note: Total Depth, Stick Up, Casing ID, etc. are optional and can be from historical data, unless required by Site/Permit. Well Elevation, DTW, and GWE must be current, obtained from site.

STABILIZATION DATA (Optional)

Sample Time (2400 Hr Clock)	Rate/Unit	pH (std)	Conductance (SC/EC) (µmhos/cm @ 25°C)	Temp. (°C)	Turbidity (ntu)	D.O. (mg/L - ppm)	eH/ORP (mV)	DTW (ft)
		1st	1st					
		2nd	2nd					
		3rd	3rd					
		4th	4th					
Input Range for 3 consec. readings or Permit/State requirements:		+/-	+/-	+/-	+/-	+/-	+/-	

Stabilization Data Fields are Optional *(i.e. complete stabilization readings for parameters required by WM, Site, or State). These fields can be used where four (4) field measurements are required by State/Permit/Site. If a Data Logger or other Electronic format is used, fill in final readings below and submit electronic data separately to Site. If more fields above are needed, use separate sheet or form.*

FIELD DATA

SAMPLE DATE (MM DD YY)	pH (std)	CONDUCTANCE (µmhos/cm @ 25°C)	TEMP. (°C)	TURBIDITY (ntu)	DO (mg/L - ppm)	eH/ORP (mV)	Other: Units
07/10/24	8.3	760	20.1	>999	8.83		

Final Field Readings are required *(i.e. record field measurements, final stabilized readings, passive sample readings before sampling for all field parameters required by State/Permit/Site.)*

FIELD COMMENTS

Sample Appearance: opaque — Odor: none — Color: light brown — Other: ____

Weather Conditions (required daily, or as conditions change): 19°C — Direction/Speed: 15 km/hr E — Outlook: overcast — Precipitation: Y or N

Specific Comments (including purge/well volume calculations if required): flow over 1m

10:40 Depth: 1.0 t: 1:35 s

Width: 0.05 2:30 s

3:32 s

I certify that sampling procedures were in accordance with applicable EPA, State, and WM protocols (if more than one sampler, all should sign):

Date	Name	Signature	Company
07/10/24	Maya DeForest	[signature]	RWDI Air
/ /			

DISTRIBUTION: WHITE/ORIGINAL - Stays with Sample, YELLOW - Returned to Client, PINK - Field Copy

Field Information Form v-3.1 06/20

2116

S2437676

BUREAU VERITAS

FIELD INFORMATION FORM

WASTE MANAGEMENT

Site Name: TCEC

Site No.: Sample: SS15A (Sample ID)

This Waste Management Field Information Form is Required
This form is to be completed, in addition to any State Forms. The Field Form is submitted along with the Chain of Custody Forms that accompany the sample containers (i.e. with the cooler that is returned to the laboratory).

Laboratory Use Only/Lab ID:

PURGE INFO

PURGE DATE (MM DD YY)	PURGE TIME (2400 Hr Clock)	ELAPSED HRS (hrs:min)	WATER VOL IN CASING (Gallons)	ACTUAL VOL PURGED (Gallons)	WELL VOLs PURGED

Note: For Passive Sampling, replace "Water Vol in Casing" and "Well Vols Purged" w/ Water Vol in Tubing/Flow Cell and Tubing/Flow Cell Vols Purged. Mark Changes, Record field data below.

PURGE/SAMPLE EQUIPMENT

Purging and Sampling Equipment ... Dedicated: Y or N

Filter Device: Y or N — 0.45 µ or _____ µ (circle or fill in)

Purging Device: A-Submersible Pump, B-Peristaltic Pump, C-QED Bladder Pump, D-Bailer, E-Piston Pump, F-Dipper/Bottle

Filter Type: A — A-In-line Disposable, B-Pressure, C-Vacuum, X-Other: _____

Sampling Device:

X-Other:

Sample Tube Type: A-Teflon, B-Stainless Steel, C-PVC, D-Polypropylene, X-Other: _____

WELL DATA

Well Elevation (at TOC) _____ (ft/msl)

Depth to Water (DTW) (from TOC) _____ (ft)

Groundwater Elevation (GWE) (Site Datum, from TOC) _____ (ft msl)

Total Well Depth (from TOC) _____ (ft)

Stick Up (from ground elevation) _____ (ft)

Casing ID _____ (in)

Casing Material _____

Note: Total Depth, Stick Up, Casing ID, etc. are optional and can be from historical data, unless required by Site/Permit. Well Elevation, DTW, and GWE must be current, obtained from site.

STABILIZATION DATA (Optional)

Sample Time (2400 Hr Clock)	Rate/Unit	pH (std)	Conductance (SC/EC) (µmhos/cm @ 25°C)	Temp. (°C)	Turbidity (ntu)	D.O. (mg/L - ppm)	eH/ORP (mV)	DTW (ft)
		1st	1st					
		2nd	2nd					
		3rd	3rd					
		4th	4th					
Input Range for 3 consec. readings or Permit/State requirements:		+/-	+/-	+/-	+/-	+/-	+/-	

Stabilization Data Fields are Optional *(i.e. complete stabilization readings for parameters required by WM, Site, or State). These fields can be used where four (4) field measurements are required by State/Permit/Site. If a Data Logger or other Electronic format is used, fill in final readings below and submit electronic data separately to Site. If more fields above are needed, use separate sheet or form.*

FIELD DATA

SAMPLE DATE (MM DD YY)	pH (std)	CONDUCTANCE (µmhos/cm @ 25°C)	TEMP. (°C)	TURBIDITY (ntu)	DO (mg/L - ppm)	eH/ORP (mV)	Other: Units
07 10 24	7.7	940	20.3	167	7.09		

Final Field Readings are required *(i.e. record field measurements, final stabilized readings, passive sample readings before sampling for all field parameters required by State/Permit/Site.)*

FIELD COMMENTS

Sample Appearance: translucent — Odor: none — Color: light brown — Other: _____

Weather Conditions (required daily, or as conditions change): 19°C — Direction/Speed: 15km/hr E — Outlook: Overcast — Precipitation: Y or N

Specific Comments (including purge/well volume calculations if required): flow time over 1m

1020 AM width: 0.5m depth 0.25m

1: 25 s
2: 30 s
3: 27 s

DUP - PSSWDUP

I certify that sampling procedures were in accordance with applicable EPA, State, and WM protocols (if more than one sampler, all should sign):

Date	Name	Signature	Company
07/10/24	Maya DeForest	[signature]	EWDE Air.
/ /			

DISTRIBUTION: WHITE/ORIGINAL - Stays with Sample, YELLOW - Returned to Client, PINK - Field Copy

Field Information Form v-3.1 06/2

2115

Custody Tracking Form

T927956

Please use this form for custody tracking when submitting the work instructions via eCOC (electronic Chain of Custody). Please ensure your form has a barcode or a Bureau Veritas eCOC confirmation number in the top right hand side. This number links your electronic submission to your samples. This form should be placed in the cooler with your samples.

First Sample: SS14A
Last Sample: PSSWDUP
Sample Count: 4

Relinquished By				Received By			
James Hanna		Date	2024/07/10	Soumya. Raganoni		Date	2024/07/10
		Time (24 HR)	16:15			Time (24 HR)	16:19
		Date		BHARGAV		Date	2024/07/11
		Time (24 HR)				Time (24 HR)	18:54
		Date				Date	
		Time (24 HR)				Time (24 HR)	

Unless otherwise agreed to, submissions and use of services are governed by Bureau Veritas' standard terms and conditions which can be found at www.bvna.com.

Triage Information

Sampled By (Print): James Hanna

# of Coolers/Pkgs: 1

Rush ☐ Immediate Test ☐ Food Residue ☐

Micro ☐ Food Chemistry ☐

*** LABORATORY USE ONLY ***

Received At

Labeled By

Verified By

Lab Comments:

Custody Seal		Cooling Media	Temperature °C		
Present (Y/N)	Intact (Y/N)	Present (Y/N)	1	2	3
Y	Y	Y	9	9	12
Y	N	Y	6	5	6
Drinking Water Metals Preservation Check Done (Circle)				YES	NO

10-Jul-24 16:19
Patricia Legette
C4L2024

A3P ENV-1281

COR FCD-00383/4

Page 1 of 1

752468

REC'D IN LONDON

eCOC: T927956

Expected TAT:	Standard TAT
Expected Arrival:	2024/07/10 20:00
Submitted By:	Jeffery Cleland
Submitted To:	Mississauga, ON (Env. Lab)

Invoice Information

Attn: Lisa Mertick lmertick@wm.com
Waste Management of Canada Corporation
5768 Nauvoo Rd. RR# 4
Watford , ON , N0M 2S0
Email to:
lmertick@wm.com
invoiceuploads@bureauveritas.com

Report Information

Attn: Jeffery Cleland
RWDI Inc.
4510 Rhodes Drive
Suite 530
Windsor , ON , N8W 5K5
Email to:
james.hanna@rwdi.com
khalid.hussein@rwdi.com
jeffery.cleland@rwdi.com
maja.deforest@rwdi.com
jake.artibello@rwdi.com

Project Information

Quote #:	C34991
PO/AFE#:	13254256
Project #:	2402553.01
Site Location:	Twin Creeks Environmental Centre

Analytical Summary

A: Standard TAT

Client Sample ID	Clnt Ref	Sampling Date/Time	Matrix	#Cont	ON-WLF-2024 TCLS - SW (POPLAR) MONITORING & STORM
SS14A	1	2024/07/10 11:20	SURFACE WATER	6	A
SS14B	2	2024/07/10 10:40	SURFACE WATER	6	A
SS15A	3	2024/07/10 10:20	SURFACE WATER	6	A
PSSWDUP	4	2024/07/10 22:20	SURFACE WATER	6	A

Deadlines are estimates only and are subject to change. Please refer to your Job Confirmation report for final due dates.

Submission Information

# of Samples:	4
Details:	See lab addendum for lab group coding

Your P.O. #: 13254256
Your Project #: 2402553.01
Site#: 700
Site Location: ON07
Your C.O.C. #: 927965

Attention: Khalid Hussein - Twin Creeks

RWDI Inc.
600 Southgate Drive
Guelph, ON
Canada N1G 4P6

Report Date: 2024/07/19
Report #: R8241512
Version: 1 - Final

CERTIFICATE OF ANALYSIS

BUREAU VERITAS JOB #: C4L2588
Received: 2024/07/10, 16:24

Sample Matrix: Surface Water
Samples Received: 5

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Analytical Method
ABN Compounds in Water by GC/MS	5	2024/07/15	2024/07/17	CAM SOP-00301	EPA 8270 m
Alkalinity	5	N/A	2024/07/13	CAM SOP-00448	SM 24 2320 B m
Biochemical Oxygen Demand (BOD)	5	2024/07/13	2024/07/18	CAM SOP-00427	SM 24 5210B m
Chloride by Automated Colourimetry	5	N/A	2024/07/16	CAM SOP-00463	SM 24 4500-Cl E m
Chemical Oxygen Demand	4	N/A	2024/07/16	CAM SOP-00416	SM 24 5220 D m
Chemical Oxygen Demand	1	N/A	2024/07/17	CAM SOP-00416	SM 24 5220 D m
Conductance in Water - On-site	5	N/A	2024/07/16		
Conductivity	5	N/A	2024/07/13	CAM SOP-00414	SM 24 2510 m
Field Measured Dissolved Oxygen in Water	5	N/A	2024/07/16		
Dissolved Mercury in Water by CVAA	5	2024/07/17	2024/07/17	CAM SOP-00453	EPA 7470A m
Total Metals by ICPMS	5	N/A	2024/07/17	CAM SOP-00447	EPA 6020B m
Ammonia-N	5	N/A	2024/07/18	CAM SOP-00441	USGS I-2522-90 m
Nitrate & Nitrite as Nitrogen in Water (1)	5	N/A	2024/07/13	CAM SOP-00440	SM 24 4500-NO3I/NO2B
pH (2)	5	2024/07/12	2024/07/13	CAM SOP-00413	SM 24th - 4500H+ B
Phenols (4AAP)	5	N/A	2024/07/16	CAM SOP-00444	OMOE E3179 m
Field Measured pH (3)	5	N/A	2024/07/12		Field pH Meter
Sulphate by Automated Turbidimetry	5	N/A	2024/07/16	CAM SOP-00464	SM 24 4500-SO42- E m
Total Dissolved Solids	1	2024/07/15	2024/07/16	CAM SOP-00428	SM 24 2540C m
Total Dissolved Solids	2	2024/07/16	2024/07/17	CAM SOP-00428	SM 24 2540C m
Total Dissolved Solids	2	2024/07/16	2024/07/18	CAM SOP-00428	SM 24 2540C m
Field Temperature (3)	5	N/A	2024/07/12		Field Thermometer
Total Kjeldahl Nitrogen in Water	4	2024/07/15	2024/07/17	CAM SOP-00938	OMOE E3516 m
Total Kjeldahl Nitrogen in Water	1	2024/07/16	2024/07/17	CAM SOP-00938	OMOE E3516 m
Total Phosphorus (Colourimetric)	5	2024/07/16	2024/07/17	CAM SOP-00407	SM 24 4500-P I
Total Suspended Solids	3	2024/07/16	2024/07/17	CAM SOP-00428	SM 24 2540D m
Total Suspended Solids	2	2024/07/16	2024/07/18	CAM SOP-00428	SM 24 2540D m
Turbidity - On-site	5	N/A	2024/07/16		
Un-ionized Ammonia (4)	5	2024/07/12	2024/07/18	Auto Calc.	PWQO
Volatile Organic Compounds in Water	5	N/A	2024/07/15	CAM SOP-00228	EPA 8260D

Remarks:

Bureau Veritas 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.bvna.com

Microbiology testing is conducted at 6660 Campobello Rd. Chemistry testing is conducted at 6740 Campobello Rd.

Your P.O. #: 13254256
Your Project #: 2402553.01
Site#: 700
Site Location: ON07
Your C.O.C. #: 927965

Attention: Khalid Hussein - Twin Creeks

RWDI Inc.
600 Southgate Drive
Guelph, ON
Canada N1G 4P6

Report Date: 2024/07/19
Report #: R8241512
Version: 1 - Final

CERTIFICATE OF ANALYSIS

BUREAU VERITAS JOB #: C4L2588
Received: 2024/07/10, 16:24

Bureau Veritas is accredited to ISO/IEC 17025 for specific parameters on scopes of accreditation. Unless otherwise noted, procedures used by Bureau Veritas are based upon recognized Provincial, Federal or US method compendia such as CCME, EPA, APHA or the Quebec Ministry of Environment.

All work recorded herein has been done in accordance with procedures and practices ordinarily exercised by professionals in Bureau Veritas' profession using accepted testing methodologies, quality assurance and quality control procedures (except where otherwise agreed by the client and Bureau Veritas in writing). All data is in statistical control and has met quality control and method performance criteria unless otherwise noted. All method blanks are reported; unless indicated otherwise, associated sample data are not blank corrected. Where applicable, unless otherwise noted, Measurement Uncertainty has not been accounted for when stating conformity to the referenced standard.

Bureau Veritas liability is limited to the actual cost of the requested analyses, unless otherwise agreed in writing. There is no other warranty expressed or implied. Bureau Veritas has been retained to provide analysis of samples provided by the Client using the testing methodology referenced in this report. Interpretation and use of test results are the sole responsibility of the Client and are not within the scope of services provided by Bureau Veritas, unless otherwise agreed in writing. Bureau Veritas is not responsible for the accuracy or any data impacts, that result from the information provided by the customer or their agent.

Solid sample results, except biota, are based on dry weight unless otherwise indicated. Organic analyses are not recovery corrected except for isotope dilution methods.
Results relate to samples tested. When sampling is not conducted by Bureau Veritas, results relate to the supplied samples tested.
This Certificate shall not be reproduced except in full, without the written approval of the laboratory.
Reference Method suffix “m” indicates test methods incorporate validated modifications from specific reference methods to improve performance.
* RPDs calculated using raw data. The rounding of final results may result in the apparent difference.
(1) Values for calculated parameters may not appear to add up due to rounding of raw data and significant figures.
(2) "The CCME method and Analytical Protocol (O. Reg 153/04, O. Reg. 406/19) requires pH to be analyzed within 15 minutes of sampling and therefore field analysis is required for compliance. All Laboratory pH analyses in this report are reported past the CCME and Analytical Protocol (O. Reg 153/04, O. Reg. 406/19) holding time. Bureau Veritas endeavors to analyze samples as soon as possible after receipt."

(3) This is a field test, therefore, the results relate to items that were not analysed at Bureau Veritas.
(4) Un-ionized ammonia is calculated using the total ammonia result and field data provided by the client for pH and temperature.

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Your P.O. #: 13254256
Your Project #: 2402553.01
Site#: 700
Site Location: ON07
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Attention: Khalid Hussein - Twin Creeks

RWDI Inc.
600 Southgate Drive
Guelph, ON
Canada N1G 4P6

Report Date: 2024/07/19
Report #: R8241512
Version: 1 - Final

CERTIFICATE OF ANALYSIS

BUREAU VERITAS JOB #: C4L2588
Received: 2024/07/10, 16:24

Encryption Key

Please direct all questions regarding this Certificate of Analysis to:
Patricia Legette, Project Manager
Email: Patricia.Legette@bureauveritas.com
Phone# (905)817-5799

==========

Bureau Veritas has procedures in place to guard against improper use of the electronic signature and have the required "signatories", as per ISO/IEC 17025, signing the reports. For Service Group specific validation, please refer to the Validation Signatures page if included, otherwise available by request. For Department specific Analyst/Supervisor validation names, please refer to the Test Summary section if included, otherwise available by request. This report is authorized by Rodney Major, General Manager responsible for Ontario Environmental laboratory operations.

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Microbiology testing is conducted at 6660 Campobello Rd. Chemistry testing is conducted at 6740 Campobello Rd.

Bureau Veritas Job #: C4L2588
Report Date: 2024/07/19

RWDI Inc.
Client Project #: 2402553.01
Site Location: ON07
Your P.O. #: 13254256
Sampler Initials: JC

RESULTS OF ANALYSES OF SURFACE WATER

Bureau Veritas ID		ZRZ296			ZRZ297	ZRZ298		
Sampling Date		2024/07/10 10:00			2024/07/10 00:20	2024/07/10 12:05		
COC Number		927965			927965	927965		
	UNITS	SP1	RDL	QC Batch	SP2	SP3	RDL	QC Batch
Calculated Parameters								
Total Un-ionized Ammonia	mg/L	<0.013	0.013	9510674	<0.14	<0.14	0.14	9510674
Field Measurements								
Field Conductivity	uS/cm	903	N/A	ONSITE	647	587	N/A	ONSITE
Field Dissolved Oxygen	mg/L	8.79	N/A	ONSITE	8.42	8.27	N/A	ONSITE
Field Temperature	Celsius	22.8	N/A	ONSITE	22.6	22.4	N/A	ONSITE
Field Measured Field Turbidity	NTU	78.4	N/A	ONSITE	11.2	16.2	N/A	ONSITE
Field Measured pH	pH	8.2		ONSITE	9.8	9.9		ONSITE
Inorganics								
Total Ammonia-N	mg/L	<0.15	0.15	9517221	<0.15	<0.15	0.15	9517221
Total BOD	mg/L	3	2	9513076	<2	<2	2	9513076
Total Chemical Oxygen Demand (COD)	mg/L	<4.0	4.0	9515542	<4.0	<4.0	4.0	9515542
Conductivity	umho/cm	620	1.0	9512737	530	460	1.0	9512737
Total Dissolved Solids	mg/L	445	10	9514928	305	270	10	9516780
Total Kjeldahl Nitrogen (TKN)	mg/L	<0.7	0.7	9515807	<0.7	<0.7	0.7	9515807
pH	pH	8.02		9512739	8.97	9.16		9512739
Phenols-4AAP	mg/L	<0.0010	0.0010	9516899	<0.0010	<0.0010	0.0010	9516899
Total Phosphorus	mg/L	0.038	0.030	9517052	<0.030	<0.030	0.030	9517052
Total Suspended Solids	mg/L	50	10	9516824	28	<10	10	9516821
Dissolved Sulphate (SO4)	mg/L	230	1.0	9512769	120	130	1.0	9512769
Alkalinity (Total as CaCO3)	mg/L	62	1.0	9512735	57	41	1.0	9512735
Dissolved Chloride (Cl-)	mg/L	8.4	1.0	9512768	49	28	1.0	9512768
Nitrite (N)	mg/L	<0.010	0.010	9512340	<0.010	<0.010	0.010	9512340
Nitrate (N)	mg/L	<0.10	0.10	9512340	<0.10	<0.10	0.10	9512340

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
N/A = Not Applicable

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Microbiology testing is conducted at 6660 Campobello Rd. Chemistry testing is conducted at 6740 Campobello Rd.

Bureau Veritas Job #: C4L2588
Report Date: 2024/07/19

RWDI Inc.
Client Project #: 2402553.01
Site Location: ON07
Your P.O. #: 13254256
Sampler Initials: JC

RESULTS OF ANALYSES OF SURFACE WATER

Bureau Veritas ID		ZRZ299			ZRZ300		
Sampling Date		2024/07/10 23:50			2024/07/10 10:05		
COC Number		927965			927965		
	UNITS	SP4	RDL	QC Batch	SPDUP	RDL	QC Batch
Calculated Parameters							
Total Un-ionized Ammonia	mg/L	<0.02	0.02	9510674	<0.14	0.14	9510674
Field Measurements							
Field Conductivity	uS/cm	599	N/A	ONSITE	647	N/A	ONSITE
Field Dissolved Oxygen	mg/L	7.90	N/A	ONSITE	8.42	N/A	ONSITE
Field Temperature	Celsius	22.8	N/A	ONSITE	22.6	N/A	ONSITE
Field Measured Field Turbidity	NTU	22.9	N/A	ONSITE	11.2	N/A	ONSITE
Field Measured pH	pH	8.4		ONSITE	9.8		ONSITE
Inorganics							
Total Ammonia-N	mg/L	<0.15	0.15	9517221	<0.15	0.15	9517221
Total BOD	mg/L	3	2	9513076	<2	2	9513076
Total Chemical Oxygen Demand (COD)	mg/L	<4.0	4.0	9515542	<4.0	4.0	9518050
Conductivity	umho/cm	450	1.0	9512737	530	1.0	9512737
Total Dissolved Solids	mg/L	285	10	9516765	335	10	9516765
Total Kjeldahl Nitrogen (TKN)	mg/L	<0.7	0.7	9515807	<0.7	0.7	9515807
pH	pH	8.09		9512739	8.99		9512739
Phenols-4AAP	mg/L	<0.0010	0.0010	9516899	<0.0010	0.0010	9516899
Total Phosphorus	mg/L	0.055	0.030	9517052	<0.030	0.030	9517052
Total Suspended Solids	mg/L	64	10	9516824	22	10	9516824
Dissolved Sulphate (SO4)	mg/L	90	1.0	9512769	120	1.0	9512769
Alkalinity (Total as CaCO3)	mg/L	120	1.0	9512735	56	1.0	9512735
Dissolved Chloride (Cl-)	mg/L	10	1.0	9512768	48	1.0	9512768
Nitrite (N)	mg/L	<0.010	0.010	9512340	<0.010	0.010	9512340
Nitrate (N)	mg/L	<0.10	0.10	9512340	<0.10	0.10	9512340

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
N/A = Not Applicable

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Microbiology testing is conducted at 6660 Campobello Rd. Chemistry testing is conducted at 6740 Campobello Rd.

Bureau Veritas Job #: C4L2588
Report Date: 2024/07/19

RWDI Inc.
Client Project #: 2402553.01
Site Location: ON07
Your P.O. #: 13254256
Sampler Initials: JC

ELEMENTS BY ATOMIC SPECTROSCOPY (SURFACE WATER)

Bureau Veritas ID		ZRZ296	ZRZ297	ZRZ298	ZRZ299	ZRZ300		
Sampling Date		2024/07/10 10:00	2024/07/10 00:20	2024/07/10 12:05	2024/07/10 23:50	2024/07/10 10:05		
COC Number		927965	927965	927965	927965	927965		
	UNITS	SP1	SP2	SP3	SP4	SPDUP	RDL	QC Batch
Metals								
Dissolved Mercury (Hg)	ug/L	<0.10	<0.10	<0.10	<0.10	<0.10	0.10	9519529
Total Arsenic (As)	mg/L	0.002	0.005	0.003	0.004	0.005	0.001	9516645
Total Barium (Ba)	mg/L	0.018	0.012	0.016	0.022	0.012	0.005	9516645
Total Boron (B)	mg/L	0.21	0.29	0.06	0.07	0.27	0.02	9516645
Total Cadmium (Cd)	mg/L	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	0.0001	9516645
Total Calcium (Ca)	mg/L	61	28	33	49	27	0.2	9516645
Total Chromium (Cr)	mg/L	<0.005	<0.005	<0.005	<0.005	<0.005	0.005	9516645
Total Copper (Cu)	mg/L	0.003	<0.002	<0.002	<0.002	<0.002	0.002	9516645
Total Iron (Fe)	mg/L	1.4	0.3	0.1	2.0	0.3	0.1	9516645
Total Lead (Pb)	mg/L	0.0006	<0.0005	<0.0005	0.0010	<0.0005	0.0005	9516645
Total Magnesium (Mg)	mg/L	29	22	18	18	22	0.05	9516645
Total Nickel (Ni)	mg/L	0.003	0.002	<0.001	0.004	0.002	0.001	9516645
Total Potassium (K)	mg/L	4.8	6.6	1.1	2.6	6.5	0.2	9516645
Total Sodium (Na)	mg/L	14	35	24	11	34	0.1	9516645
Total Zinc (Zn)	mg/L	<0.01	<0.01	<0.01	<0.01	<0.01	0.01	9516645

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

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Microbiology testing is conducted at 6660 Campobello Rd. Chemistry testing is conducted at 6740 Campobello Rd.

Bureau Veritas Job #: C4L2588
Report Date: 2024/07/19

RWDI Inc.
Client Project #: 2402553.01
Site Location: ON07
Your P.O. #: 13254256
Sampler Initials: JC

SEMI-VOLATILE ORGANICS BY GC-MS (SURFACE WATER)

Bureau Veritas ID		ZRZ296	ZRZ297	ZRZ298	ZRZ299	ZRZ300		
Sampling Date		2024/07/10 10:00	2024/07/10 00:20	2024/07/10 12:05	2024/07/10 23:50	2024/07/10 10:05		
COC Number		927965	927965	927965	927965	927965		
	UNITS	SP1	SP2	SP3	SP4	SPDUP	RDL	QC Batch
Semivolatile Organics								
Benzo(a)pyrene	ug/L	<0.20	<0.20	<0.20	<0.20	<0.20	0.20	9515592
1,2-Dichlorobenzene	ug/L	<0.50	<0.50	<0.50	<0.50	<0.50	0.50	9515592
1,3-Dichlorobenzene	ug/L	<0.50	<0.50	<0.50	<0.50	<0.50	0.50	9515592
1,4-Dichlorobenzene	ug/L	<0.50	<0.50	<0.50	<0.50	<0.50	0.50	9515592
Hexachlorobenzene	ug/L	<0.50	<0.50	<0.50	<0.50	<0.50	0.50	9515592
1,2,4-Trichlorobenzene	ug/L	<0.50	<0.50	<0.50	<0.50	<0.50	0.50	9515592
2,4-Dichlorophenol	ug/L	<0.30	<0.30	<0.30	<0.30	<0.30	0.30	9515592
Pentachlorophenol	ug/L	<1.0	<1.0	<1.0	<1.0	<1.0	1.0	9515592
Phenol	ug/L	<0.50	<0.50	<0.50	<0.50	<0.50	0.50	9515592
2,4,6-Trichlorophenol	ug/L	<0.50	<0.50	<0.50	<0.50	<0.50	0.50	9515592
Di-N-butyl phthalate	ug/L	<2.0	<2.0	<2.0	<2.0	<2.0	2.0	9515592
Diethyl phthalate	ug/L	<1.0	<1.0	<1.0	<1.0	<1.0	1.0	9515592
Dimethyl phthalate	ug/L	<1.0	<1.0	<1.0	<1.0	<1.0	1.0	9515592
Surrogate Recovery (%)								
2,4,6-Tribromophenol	%	91	91	84	86	84		9515592
2-Fluorobiphenyl	%	80	74	73	77	77		9515592
2-Fluorophenol	%	37	27	29	36	28		9515592
D14-Terphenyl	%	91	94	90	88	92		9515592
D5-Nitrobenzene	%	75	68	63	71	68		9515592
D5-Phenol	%	27	23	25	26	22		9515592

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

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Bureau Veritas Job #: C4L2588
Report Date: 2024/07/19

RWDI Inc.
Client Project #: 2402553.01
Site Location: ON07
Your P.O. #: 13254256
Sampler Initials: JC

VOLATILE ORGANICS BY GC/MS (SURFACE WATER)

Bureau Veritas ID		ZRZ296	ZRZ297	ZRZ298	ZRZ299	ZRZ300		
Sampling Date		2024/07/10 10:00	2024/07/10 00:20	2024/07/10 12:05	2024/07/10 23:50	2024/07/10 10:05		
COC Number		927965	927965	927965	927965	927965		
	UNITS	SP1	SP2	SP3	SP4	SPDUP	RDL	QC Batch
Volatile Organics								
Benzene	ug/L	<0.20	<0.20	<0.20	<0.20	<0.20	0.20	9513133
1,4-Dichlorobenzene	ug/L	<0.40	<0.40	<0.40	<0.40	<0.40	0.40	9513133
Ethylbenzene	ug/L	<0.20	<0.20	<0.20	<0.20	<0.20	0.20	9513133
Methylene Chloride(Dichloromethane)	ug/L	<2.0	<2.0	<2.0	<2.0	<2.0	2.0	9513133
Toluene	ug/L	<0.20	<0.20	<0.20	<0.20	<0.20	0.20	9513133
Vinyl Chloride	ug/L	<0.20	<0.20	<0.20	<0.20	<0.20	0.20	9513133
p+m-Xylene	ug/L	<0.20	<0.20	<0.20	<0.20	<0.20	0.20	9513133
o-Xylene	ug/L	<0.20	<0.20	<0.20	<0.20	<0.20	0.20	9513133
Total Xylenes	ug/L	<0.20	<0.20	<0.20	<0.20	<0.20	0.20	9513133
Surrogate Recovery (%)								
4-Bromofluorobenzene	%	98	98	99	98	98		9513133
D4-1,2-Dichloroethane	%	103	103	103	103	103		9513133
D8-Toluene	%	96	97	98	97	97		9513133

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

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Microbiology testing is conducted at 6660 Campobello Rd. Chemistry testing is conducted at 6740 Campobello Rd.

GENERAL COMMENTS

Results relate only to the items tested.

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Microbiology testing is conducted at 6660 Campobello Rd. Chemistry testing is conducted at 6740 Campobello Rd.

Bureau Veritas Job #: C4L2588
Report Date: 2024/07/19

QUALITY ASSURANCE REPORT

RWDI Inc.
Client Project #: 2402553.01
Site Location: ON07
Your P.O. #: 13254256
Sampler Initials: JC

			Matrix Spike		SPIKED BLANK		Method Blank		RPD		QC Standard	
QC Batch	Parameter	Date	% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits	% Recovery	QC Limits
9513133	4-Bromofluorobenzene	2024/07/15	100	70 - 130	100	70 - 130	99	%				
9513133	D4-1,2-Dichloroethane	2024/07/15	103	70 - 130	101	70 - 130	101	%				
9513133	D8-Toluene	2024/07/15	101	70 - 130	101	70 - 130	98	%				
9515592	2,4,6-Tribromophenol	2024/07/16	85	10 - 130	87	10 - 130	76	%				
9515592	2-Fluorobiphenyl	2024/07/16	42	30 - 130	59	30 - 130	57	%				
9515592	2-Fluorophenol	2024/07/16	20	10 - 130	36	10 - 130	32	%				
9515592	D14-Terphenyl	2024/07/16	88	30 - 130	93	30 - 130	81	%				
9515592	D5-Nitrobenzene	2024/07/16	38	30 - 130	66	30 - 130	60	%				
9515592	D5-Phenol	2024/07/16	16	10 - 130	26	10 - 130	22	%				
9512340	Nitrate (N)	2024/07/13	92	80 - 120	92	80 - 120	<0.10	mg/L	NC (1)	20		
9512340	Nitrite (N)	2024/07/13	103	80 - 120	101	80 - 120	<0.010	mg/L	NC (1)	20		
9512735	Alkalinity (Total as CaCO3)	2024/07/13			98	85 - 115	<1.0	mg/L	0.11 (1)	20		
9512737	Conductivity	2024/07/13			102	85 - 115	<1.0	umho/cm	0.27 (1)	10		
9512739	pH	2024/07/13			102	98 - 103			0.81 (1)	N/A		
9512768	Dissolved Chloride (Cl-)	2024/07/16	97	80 - 120	104	80 - 120	<1.0	mg/L	2.1 (1)	20		
9512769	Dissolved Sulphate (SO4)	2024/07/16	NC	75 - 125	98	80 - 120	<1.0	mg/L	0.74 (1)	20		
9513076	Total BOD	2024/07/18					<2	mg/L	6.5 (1)	30	93	80 - 120
9513133	1,4-Dichlorobenzene	2024/07/15	98	70 - 130	99	70 - 130	<0.40	ug/L				
9513133	Benzene	2024/07/15	94	70 - 130	95	70 - 130	<0.20	ug/L				
9513133	Ethylbenzene	2024/07/15	94	70 - 130	96	70 - 130	<0.20	ug/L				
9513133	Methylene Chloride(Dichloromethane)	2024/07/15	97	70 - 130	97	70 - 130	<2.0	ug/L				
9513133	o-Xylene	2024/07/15	93	70 - 130	95	70 - 130	<0.20	ug/L	NC (1)	30		
9513133	p+m-Xylene	2024/07/15	91	70 - 130	93	70 - 130	<0.20	ug/L	NC (1)	30		
9513133	Toluene	2024/07/15	94	70 - 130	95	70 - 130	<0.20	ug/L	NC (1)	30		
9513133	Total Xylenes	2024/07/15					<0.20	ug/L	NC (1)	30		
9513133	Vinyl Chloride	2024/07/15	90	70 - 130	92	70 - 130	<0.20	ug/L				
9514928	Total Dissolved Solids	2024/07/16			97	80 - 120	<10	mg/L	14 (1)	20		
9515542	Total Chemical Oxygen Demand (COD)	2024/07/16	NC	80 - 120	97	80 - 120	<4.0	mg/L	1.4 (1)	20		
9515592	1,2,4-Trichlorobenzene	2024/07/16	33	30 - 130	52	30 - 130	<0.50	ug/L				

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Microbiology testing is conducted at 6660 Campobello Rd. Chemistry testing is conducted at 6740 Campobello Rd.

QUALITY ASSURANCE REPORT(CONT'D)

			Matrix Spike		SPIKED BLANK		Method Blank		RPD		QC Standard	
QC Batch	Parameter	Date	% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits	% Recovery	QC Limits
9515592	1,2-Dichlorobenzene	2024/07/16	36	30 - 130	55	30 - 130	<0.50	ug/L				
9515592	1,3-Dichlorobenzene	2024/07/16	33	30 - 130	52	30 - 130	<0.50	ug/L				
9515592	1,4-Dichlorobenzene	2024/07/16	35	30 - 130	54	30 - 130	<0.50	ug/L				
9515592	2,4,6-Trichlorophenol	2024/07/16	66	10 - 130	83	10 - 130	<0.50	ug/L	NC (1)	40		
9515592	2,4-Dichlorophenol	2024/07/16	46	10 - 130	70	10 - 130	<0.30	ug/L	NC (1)	40		
9515592	Benzo(a)pyrene	2024/07/16	93	30 - 130	94	30 - 130	<0.20	ug/L	NC (1)	40		
9515592	Diethyl phthalate	2024/07/16	87	30 - 130	92	30 - 130	<1.0	ug/L				
9515592	Dimethyl phthalate	2024/07/16	72	30 - 130	79	30 - 130	<1.0	ug/L				
9515592	Di-N-butyl phthalate	2024/07/16	96	30 - 130	97	30 - 130	<2.0	ug/L	NC (1)	40		
9515592	Hexachlorobenzene	2024/07/16	84	30 - 130	91	30 - 130	<0.50	ug/L				
9515592	Pentachlorophenol	2024/07/16	107	10 - 130	96	10 - 130	<1.0	ug/L	NC (1)	40		
9515592	Phenol	2024/07/16	18	10 - 130	28	10 - 130	<0.50	ug/L	NC (1)	40		
9515807	Total Kjeldahl Nitrogen (TKN)	2024/07/17	108	80 - 120	102	80 - 120	<0.7	mg/L	NC (1)	20	105	80 - 120
9516645	Total Arsenic (As)	2024/07/17	97	80 - 120	97	80 - 120	<0.001	mg/L				
9516645	Total Barium (Ba)	2024/07/17	98	80 - 120	96	80 - 120	<0.005	mg/L				
9516645	Total Boron (B)	2024/07/17	NC	80 - 120	89	80 - 120	<0.02	mg/L				
9516645	Total Cadmium (Cd)	2024/07/17	96	80 - 120	98	80 - 120	<0.0001	mg/L				
9516645	Total Calcium (Ca)	2024/07/17	NC	80 - 120	97	80 - 120	<0.2	mg/L				
9516645	Total Chromium (Cr)	2024/07/17	92	80 - 120	91	80 - 120	<0.005	mg/L	4.6 (1)	20		
9516645	Total Copper (Cu)	2024/07/17	103	80 - 120	93	80 - 120	<0.002	mg/L	3.9 (1)	20		
9516645	Total Iron (Fe)	2024/07/17	96	80 - 120	95	80 - 120	<0.1	mg/L				
9516645	Total Lead (Pb)	2024/07/17	94	80 - 120	97	80 - 120	<0.0005	mg/L				
9516645	Total Magnesium (Mg)	2024/07/17	98	80 - 120	95	80 - 120	<0.05	mg/L				
9516645	Total Nickel (Ni)	2024/07/17	NC	80 - 120	90	80 - 120	<0.001	mg/L	4.5 (1)	20		
9516645	Total Potassium (K)	2024/07/17	NC	80 - 120	95	80 - 120	<0.2	mg/L				
9516645	Total Sodium (Na)	2024/07/17	NC	80 - 120	95	80 - 120	<0.1	mg/L				
9516645	Total Zinc (Zn)	2024/07/17	NC	80 - 120	95	80 - 120	<0.01	mg/L	3.4 (1)	20		
9516765	Total Dissolved Solids	2024/07/17			98	80 - 120	<10	mg/L	1.5 (1)	20		
9516780	Total Dissolved Solids	2024/07/18			98	80 - 120	<10	mg/L	13 (1)	20		
9516821	Total Suspended Solids	2024/07/18			99	80 - 120	<10	mg/L	NC (1)	20		

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Microbiology testing is conducted at 6660 Campobello Rd. Chemistry testing is conducted at 6740 Campobello Rd.

QUALITY ASSURANCE REPORT(CONT'D)

			Matrix Spike		SPIKED BLANK		Method Blank		RPD		QC Standard	
QC Batch	Parameter	Date	% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits	% Recovery	QC Limits
9516824	Total Suspended Solids	2024/07/17			99	80 - 120	<10	mg/L	NC (1)	20		
9516899	Phenols-4AAP	2024/07/16	101	80 - 120	100	80 - 120	<0.0010	mg/L	NC (1)	20		
9517052	Total Phosphorus	2024/07/17	100	80 - 120	105	80 - 120	<0.030	mg/L	2.7 (1)	25	104	80 - 120
9517221	Total Ammonia-N	2024/07/18	96	75 - 125	97	80 - 120	<0.15	mg/L	NC (1)	20		
9518050	Total Chemical Oxygen Demand (COD)	2024/07/17	NC	80 - 120	103	80 - 120	<4.0	mg/L	1.1 (1)	20		
9519529	Dissolved Mercury (Hg)	2024/07/17	92 (2)	75 - 125	93	80 - 120	<0.10	ug/L	NC (3)	20		

N/A = Not Applicable

Duplicate: Paired analysis of a separate portion of the same sample. Used to evaluate the variance in the measurement.

Matrix Spike: A sample to which a known amount of the analyte of interest has been added. Used to evaluate sample matrix interference.

QC Standard: A sample of known concentration prepared by an external agency under stringent conditions. Used as an independent check of method accuracy.

Spiked Blank: A blank matrix sample to which a known amount of the analyte, usually from a second source, has been added. Used to evaluate method accuracy.

Method Blank: A blank matrix containing all reagents used in the analytical procedure. Used to identify laboratory contamination.

Surrogate: A pure or isotopically labeled compound whose behavior mirrors the analytes of interest. Used to evaluate extraction efficiency.

NC (Matrix Spike): The recovery in the matrix spike was not calculated. The relative difference between the concentration in the parent sample and the spike amount was too small to permit a reliable recovery calculation (matrix spike concentration was less than the native sample concentration)

NC (Duplicate RPD): The duplicate RPD was not calculated. The concentration in the sample and/or duplicate was too low to permit a reliable RPD calculation (absolute difference <= 2x RDL).

(1) Duplicate Parent ID

(2) Matrix Spike Parent ID [ZRZ298-07]

(3) Duplicate Parent ID [ZRZ298-07]

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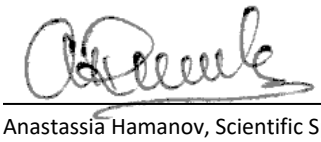
Microbiology testing is conducted at 6660 Campobello Rd. Chemistry testing is conducted at 6740 Campobello Rd.

Bureau Veritas Job #: C4L2588
Report Date: 2024/07/19

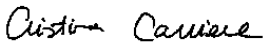
RWDI Inc.
Client Project #: 2402553.01
Site Location: ON07
Your P.O. #: 13254256
Sampler Initials: JC

VALIDATION SIGNATURE PAGE

The analytical data and all QC contained in this report were reviewed and validated by:



Anastassia Hamanov, Scientific Specialist



Cristina Carriere, Senior Scientific Specialist



Michael Damianidis, Project Manager Assistant

Bureau Veritas has procedures in place to guard against improper use of the electronic signature and have the required "signatories", as per ISO/IEC 17025, signing the reports. For Service Group specific validation, please refer to the Validation Signatures page if included, otherwise available by request. For Department specific Analyst/Supervisor validation names, please refer to the Test Summary section if included, otherwise available by request. This report is authorized by Rodney Major, General Manager responsible for Ontario Environmental laboratory operations.

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Microbiology testing is conducted at 6660 Campobello Rd. Chemistry testing is conducted at 6740 Campobello Rd.

BUREAU VERITAS

FIELD INFORMATION FORM

WASTE MANAGEMENT

Site Name: TCEC

Site No.: Sample: SP 2 (Sample ID)

This Waste Management Field Information Form is Required
This form is to be completed, in addition to any State Forms. The Field Form is submitted along with the Chain of Custody Forms that accompany the sample containers (i.e. with the cooler that is returned to the laboratory).

Laboratory Use Only/Lab ID:

PURGE INFO

PURGE DATE (MM DD YY)	PURGE TIME (2400 Hr Clock)	ELAPSED HRS (hrs:min)	WATER VOL IN CASING (Gallons)	ACTUAL VOL PURGED (Gallons)	WELL VOLs PURGED

Note: For Passive Sampling, replace "Water Vol in Casing" and "Well Vols Purged" w/ Water Vol in Tubing/Flow Cell and Tubing/Flow Cell Vols Purged. Mark Changes, Record field data below.

PURGE/SAMPLE EQUIPMENT

Purging and Sampling Equipment ... Dedicated: Y or N

Purging Device: A-Submersible Pump, B-Peristaltic Pump, C-QED Bladder Pump, D-Bailer, E-Piston Pump, F-Dipper/Bottle

Sampling Device:

X-Other:

Filter Device: Y or N — 0.45 µ or ____ µ (circle or fill in)

Filter Type: A — A-In-line Disposable, B-Pressure, C-Vacuum, X-Other:

Sample Tube Type: A-Teflon, B-Stainless Steel, C-PVC, D-Polypropylene, X-Other:

WELL DATA

Well Elevation (at TOC) (ft/msl)

Depth to Water (DTW) (from TOC) (ft)

Groundwater Elevation (GWE) (Site Datum, from TOC) (ft msl)

Total Well Depth (from TOC) (ft)

Stick Up (from ground elevation) (ft)

Casing ID (in)

Casing Material

Note: Total Depth, Stick Up, Casing ID, etc. are optional and can be from historical data, unless required by Site/Permit. Well Elevation, DTW, and GWE must be current, obtained from site.

STABILIZATION DATA (Optional)

	Sample Time (2400 Hr Clock)	Rate/Unit	pH (std)	Conductance (SC/EC) (µmhos/cm @ 25°C)	Temp. (°C)	Turbidity (ntu)	D.O. (mg/L - ppm)	eH/ORP (mV)	DTW (ft)
1st									
2nd									
3rd									
4th									
Input Range for 3 consec. readings or Permit/State requirements:			+/-	+/-	+/-	+/-	+/-	+/-	

Stabilization Data Fields are Optional *(i.e. complete stabilization readings for parameters required by WM, Site, or State). These fields can be used where four (4) field measurements are required by State/Permit/Site. If a Data Logger or other Electronic format is used, fill in final readings below and submit electronic data separately to Site. If more fields above are needed, use separate sheet or form.*

FIELD DATA

SAMPLE DATE (MM DD YY)	pH (std)	CONDUCTANCE (µmhos/cm @ 25°C)	TEMP. (°C)	TURBIDITY (ntu)	DO (mg/L - ppm)	eH/ORP (mV)	Other: Units
07 10 24	9.8	647	22.6	11.2	8.42		

Final Field Readings are required *(i.e. record field measurements, final stabilized readings, passive sample readings before sampling for all field parameters required by State/Permit/Site.)*

Sample Appearance: transparent

Odor: none

Color: Clear

Other:

Weather Conditions (required daily, or as conditions change): 19°C

Direction/Speed: ISW/NE

Outlook: OVERCAST

Precipitation: Y or N

FIELD COMMENTS

Specific Comments (including purge/well volume calculations if required): Flow time over 1m

SPDUP Taken here — Width: 1.0 — t: 1:35 s

RZO — Depth: 0.25 — 2:30 s

3:32 s

I certify that sampling procedures were in accordance with applicable EPA, State, and WM protocols (if more than one sampler, all should sign):

Date	Name	Signature	Company
07/10/24	Maya DeForest		RWDI AIR

DISTRIBUTION: WHITE/ORIGINAL - Stays with Sample, YELLOW - Returned to Client, PINK - Field Copy

Field Information Form v-3.1 06/20

2119

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FIELD INFORMATION FORM

BUREAU VERITAS

WASTE MANAGEMENT

Site Name: TCEC

Site No.: Sample: [redacted] S1M1 (Sample ID)

This Waste Management Field Information Form is Required
This form is to be completed, in addition to any State Forms. The Field Form is submitted along with the Chain of Custody Forms that accompany the sample containers (i.e. with the cooler that is returned to the laboratory).

Laboratory Use Only/Lab ID:

PURGE INFO

PURGE DATE (MM DD YY)	PURGE TIME (2400 Hr Clock)	ELAPSED HRS (hrs:min)	WATER VOL IN CASING (Gallons)	ACTUAL VOL PURGED (Gallons)	WELL VOLs PURGED

Note: For Passive Sampling, replace "Water Vol in Casing" and "Well Vols Purged" w/ Water Vol in Tubing/Flow Cell and Tubing/Flow Cell Vols Purged. Mark Changes, Record field data below.

PURGE/SAMPLE EQUIPMENT

Purging and Sampling Equipment ... Dedicated: Y or N

Filter Device: Y or N .45 µ or ____ µ (circle or fill in)

Purging Device: A-Submersible Pump, B-Peristaltic Pump, C-QED Bladder Pump, D-Bailer, E-Piston Pump, F-Dipper/Bottle

Sampling Device:

X-Other:

Filter Type: A (A-In-line Disposable, B-Pressure, C-Vacuum, X-Other: ____)

Sample Tube Type: A-Teflon, B-Stainless Steel, C-PVC, D-Polypropylene, X-Other: ____

WELL DATA

Well Elevation (at TOC) (ft/msl)

Depth to Water (DTW) (from TOC) (ft)

Groundwater Elevation (GWE) (Site Datum, from TOC) (ft msl)

Total Well Depth (from TOC) (ft)

Stick Up (from ground elevation) (ft)

Casing ID (in)

Casing Material

Note: Total Depth, Stick Up, Casing ID, etc. are optional and can be from historical data, unless required by Site/Permit. Well Elevation, DTW, and GWE must be current, obtained from site.

STABILIZATION DATA (Optional)

Sample Time (2400 Hr Clock)	Rate/Unit	pH (std)	Conductance (SC/EC) (µmhos/cm @ 25°C)	Temp. (°C)	Turbidity (ntu)	D.O. (mg/L - ppm)	eH/ORP (mV)	DTW (ft)
		1st	1st					
		2nd	2nd					
		3rd	3rd					
		4th	4th					
Input Range for 3 consec. readings or Permit/State requirements:		+/-	+/-	+/-	+/-	+/-	+/-	

Stabilization Data Fields are Optional *(i.e. complete stabilization readings for parameters required by WM, Site, or State). These fields can be used where four (4) field measurements are required by State/Permit/Site. If a Data Logger or other Electronic format is used, fill in final readings below and submit electronic data separately to Site. If more fields above are needed, use separate sheet or form.*

FIELD DATA

SAMPLE DATE (MM DD YY)	pH (std)	CONDUCTANCE (µmhos/cm @ 25°C)	TEMP. (°C)	TURBIDITY (ntu)	DO (mg/L - ppm)	eH/ORP (mV)	Other: Units
07 10 24	8.4	599	22.8	229	7.90		

Final Field Readings are required *(i.e. record field measurements, final stabilized readings, passive sample readings before sampling for all field parameters required by State/Permit/Site.)*

Sample Appearance: transparent Odor: none Color: clear Other:

Weather Conditions (required daily, or as conditions change): 19°C Direction/Speed: SSW/NE Outlook: overcast Precipitation: Y or N

Specific Comments (including purge/well volume calculations if required): flow time over 1 m

FIELD COMMENTS

11:50 Depth: 0.30 t: 1: 15 s

Width: 1.50 2: 14 s

3: 15 s

I certify that sampling procedures were in accordance with applicable EPA, State, and WM protocols (if more than one sampler, all should sign):

Date	Name	Signature	Company
07/10/24	Maja DeForest	[signature]	RWDI, Air

DISTRIBUTION: WHITE/ORIGINAL - Stays with Sample, YELLOW - Returned to Client, PINK - Field Copy

Field Information Form v-3.1 06/20

2122

S2437676

BUREAU VERITAS

FIELD INFORMATION FORM

WASTE MANAGEMENT

Site Name: TLEC

Site No.: Sample: SR3 (Sample ID)

This Waste Management Field Information Form is Required
This form is to be completed, in addition to any State Forms. The Field Form is submitted along with the Chain of Custody Forms that accompany the sample containers (i.e. with the cooler that is returned to the laboratory).

Laboratory Use Only/Lab ID:

PURGE INFO

PURGE DATE (MM DD YY)	PURGE TIME (2400 Hr Clock)	ELAPSED HRS (hrs:min)	WATER VOL IN CASING (Gallons)	ACTUAL VOL PURGED (Gallons)	WELL VOLs PURGED

Note: For Passive Sampling, replace "Water Vol in Casing" and "Well Vols Purged" w/ Water Vol in Tubing/Flow Cell and Tubing/Flow Cell Vols Purged. Mark Changes, Record field data below.

PURGE/SAMPLE EQUIPMENT

Purging and Sampling Equipment ... Dedicated: Y or N

Purging Device: A-Submersible Pump, B-Peristaltic Pump, C-QED Bladder Pump, D-Bailer, E-Piston Pump, F-Dipper/Bottle

Sampling Device:

X-Other:

Filter Device: Y or N — 0.45 or ____ µ (circle or fill in)

Filter Type: A-In-line Disposable, B-Pressure, C-Vacuum, X-Other: ____

Sample Tube Type: A-Teflon, B-Stainless Steel, C-PVC, D-Polypropylene, X-Other: ____

WELL DATA

Well Elevation (at TOC) (ft/msl)

Depth to Water (DTW) (from TOC) (ft)

Groundwater Elevation (GWE) (Site Datum, from TOC) (ft msl)

Total Well Depth (from TOC) (ft)

Stick Up (from ground elevation) (ft)

Casing ID (in)

Casing Material

Note: Total Depth, Stick Up, Casing ID, etc. are optional and can be from historical data, unless required by Site/Permit. Well Elevation, DTW, and GWE must be current, obtained from site.

STABILIZATION DATA (Optional)

Sample Time (2400 Hr Clock)	Rate/Unit	pH (std)	Conductance (SC/EC) (µmhos/cm @ 25°C)	Temp. (°C)	Turbidity (ntu)	D.O. (mg/L - ppm)	eH/ORP (mV)	DTW (ft)
		1st	1st					
		2nd	2nd					
		3rd	3rd					
		4th	4th					
Input Range for 3 consec. readings or Permit/State requirements:		+/-	+/-	+/-	+/-	+/-	+/-	

Stabilization Data Fields are Optional *(i.e. complete stabilization readings for parameters required by WM, Site, or State). These fields can be used where four (4) field measurements are required by State/Permit/Site. If a Data Logger or other Electronic format is used, fill in final readings below and submit electronic data separately to Site. If more fields above are needed, use separate sheet or form.*

FIELD DATA

SAMPLE DATE (MM DD YY)	pH (std)	CONDUCTANCE (µmhos/cm @ 25°C)	TEMP. (°C)	TURBIDITY (ntu)	DO (mg/L - ppm)	eH/ORP (mV)	Other: Units
07/10/24	9.9	587	22.4	16.2	8.27		

Final Field Readings are required *(i.e. record field measurements, final stabilized readings, passive sample readings before sampling for all field parameters required by State/Permit/Site.)*

Sample Appearance: transparent Odor: none Color: clear Other: ____

Weather Conditions (required daily, or as conditions change): Nice Direction/Speed: 15 km/hr E Outlook: overcast Precipitation: Y or N

Specific Comments (including purge/well volume calculations if required):

FIELD COMMENTS

12:05 flow t over 1m
t: 1:65
2:65
3:75

I certify that sampling procedures were in accordance with applicable EPA, State, and WM protocols (if more than one sampler, all should sign):

Date	Name	Signature	Company
07/10/24	Maya DeForest	[signature]	RWDI Air

DISTRIBUTION: WHITE/ORIGINAL - Stays with Sample, YELLOW - Returned to Client, PINK - Field Copy

Field Information Form v-3.1 06/20

2123

S2437676

BUREAU VERITAS

FIELD INFORMATION FORM

WASTE MANAGEMENT

Site Name: TCEC

Site No.: Sample: SP1 (Sample ID)

This Waste Management Field Information Form is Required
This form is to be completed, in addition to any State Forms. The Field Form is submitted along with the Chain of Custody Forms that accompany the sample containers (i.e. with the cooler that is returned to the laboratory).

Laboratory Use Only/Lab ID:

PURGE INFO

PURGE DATE (MM DD YY)	PURGE TIME (2400 Hr Clock)	ELAPSED HRS (hrs:min)	WATER VOL IN CASING (Gallons)	ACTUAL VOL PURGED (Gallons)	WELL VOLs PURGED

Note: For Passive Sampling, replace "Water Vol in Casing" and "Well Vols Purged" w/ Water Vol in Tubing/Flow Cell and Tubing/Flow Cell Vols Purged. Mark Changes, Record field data below.

PURGE/SAMPLE EQUIPMENT

Purging and Sampling Equipment ... Dedicated: Y or N

Filter Device: Y or N — 0.45 µ or ____ µ (circle or fill in)

Purging Device: ____ A-Submersible Pump B-Peristaltic Pump C-QED Bladder Pump D-Bailer E-Piston Pump F-Dipper/Bottle

Filter Type: P — A-In-line Disposable B-Pressure C-Vacuum X-Other: ____

Sampling Device: ____

X-Other: ____

Sample Tube Type: ____ A-Teflon B-Stainless Steel C-PVC D-Polypropylene X-Other: ____

WELL DATA

Well Elevation (at TOC) ____ (ft/msl)

Depth to Water (DTW) (from TOC) ____ (ft)

Groundwater Elevation (GWE) (Site Datum, from TOC) ____ (ft msl)

Total Well Depth (from TOC) ____ (ft)

Stick Up (from ground elevation) ____ (ft)

Casing ID ____ (in)

Casing Material ____

Note: Total Depth, Stick Up, Casing ID, etc. are optional and can be from historical data, unless required by Site/Permit. Well Elevation, DTW, and GWE must be current, obtained from site.

STABILIZATION DATA (Optional)

Sample Time (2400 Hr Clock)	Rate/Unit	pH (std)	Conductance (SC/EC) (µmhos/cm @ 25°C)	Temp. (°C)	Turbidity (ntu)	D.O. (mg/L - ppm)	eH/ORP (mV)	DTW (ft)
		1st	1st					
		2nd	2nd					
		3rd	3rd					
		4th	4th					
Input Range for 3 consec. readings or Permit/State requirements:		+/-	+/-	+/-	+/-	+/-	+/-	

Stabilization Data Fields are Optional *(i.e. complete stabilization readings for parameters required by WM, Site, or State). These fields can be used where four (4) field measurements are required by State/Permit/Site. If a Data Logger or other Electronic format is used, fill in final readings below and submit electronic data separately to Site. If more fields above are needed, use separate sheet or form.*

FIELD DATA

SAMPLE DATE (MM DD YY)	pH (std)	CONDUCTANCE (µmhos/cm @ 25°C)	TEMP. (°C)	TURBIDITY (ntu)	DO (mg/L - ppm)	eH/ORP (mV)	Other: Units
07 10 24	8.2	903	22.8	78.4	8.79		

Final Field Readings are required *(i.e. record field measurements, final stabilized readings, passive sample readings before sampling for all field parameters required by State/Permit/Site.)*

FIELD COMMENTS

Sample Appearance: translucent Odor: none Color: clear Other: ____

Weather Conditions (required daily, or as conditions change): 19°C Direction/Speed: 15km/hr E Outlook: overcast Precipitation: Y or N

Specific Comments (including purge/well volume calculations if required): flow time over 1m

10AM width: 0.75 depth: 0.30 1: 6 s 2: 6 s 3: 7 s

I certify that sampling procedures were in accordance with applicable EPA, State, and WM protocols (if more than one sampler, all should sign):

Date	Name	Signature	Company
07 / 10 / 24	Maja DeForest		RWDI Air
/ /			

DISTRIBUTION: WHITE/ORIGINAL - Stays with Sample, YELLOW - Returned to Client, PINK - Field Copy

Field Information Form v-3.1 06/20

2114

Custody Tracking Form

T927965

Please use this form for custody tracking when submitting the work instructions via eCOC (electronic Chain of Custody). Please ensure your form has a barcode or a Bureau Veritas eCOC confirmation number in the top right hand side. This number links your electronic submission to your samples. This form should be placed in the cooler with your samples.

First Sample: SP1
Last Sample: SPDUP
Sample Count: 5

Relinquished By				Received By			
James Hanna		Date	2024/07/10	Soumya Raganow		Date	2024/07/10
		Time (24 HR)	16:15			Time (24 HR)	16:24
		Date		WYRHO Hnn		Date	2024/07/10
		Time (24 HR)				Time (24 HR)	18:54
		Date				Date	
		Time (24 HR)				Time (24 HR)	

Unless otherwise agreed to, submissions and use of services are governed by Bureau Veritas' standard terms and conditions which can be found at www.bvna.com.

Triage Information

Sampled By (Print): James Hanna

# of Coolers/Pkgs: 3

Rush ☐ Immediate Test ☐ Food Residue ☐

Micro ☐ Food Chemistry ☐

*** LABORATORY USE ONLY ***

Received At

Labeled By

Verified By

Lab Comments: #752468

10-Jul-24 16:24
Patricia Legette
C4L2588

G1K ENV 1272

Custody Seal		Cooling Media	Temperature °C		
Present (Y/N)	Intact (Y/N)	Present (Y/N)	1	2	3
Y	Y	Y	10	10	11
Y	Y	Y	5	6	4
Y	Y	Y	4	4	2

Drinking Water Metals Preservation Check Done (Circle) **YES** **NO**

REC'D IN LONDON

COR FCD-00383/4

Page 1 of 1

Your P.O. #: 13254256
Your Project #: 2402553.01
Site#: 700
Site Location: ON07
Your C.O.C. #: 935786

Attention: Khalid Hussein - Twin Creeks

RWDI Inc.
600 Southgate Drive
Guelph, ON
Canada N1G 4P6

Report Date: 2024/08/06
Report #: R8265482
Version: 1 - Final

CERTIFICATE OF ANALYSIS

BUREAU VERITAS JOB #: C4M8299
Received: 2024/07/25, 10:40

Sample Matrix: Water
Samples Received: 1

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Analytical Method
ABN Compounds in Water by GC/MS	1	2024/07/30	2024/07/31	CAM SOP-00301	EPA 8270 m
Alkalinity	1	N/A	2024/07/28	CAM SOP-00448	SM 24 2320 B m
Biochemical Oxygen Demand (BOD)	1	2024/07/26	2024/07/31	CAM SOP-00427	SM 24 5210B m
Chemical Oxygen Demand	1	N/A	2024/07/30	CAM SOP-00416	SM 24 5220 D m
Conductance in Water - On-site	1	N/A	2024/07/30		
Field Measured Dissolved Oxygen in Water	1	N/A	2024/07/30		
Dissolved Mercury in Water by CVAA	1	2024/07/26	2024/07/26	CAM SOP-00453	EPA 7470A m
Total Metals by ICPMS	1	N/A	2024/07/29	CAM SOP-00447	EPA 6020B m
Ammonia-N	1	N/A	2024/07/30	CAM SOP-00441	USGS I-2522-90 m
Nitrate & Nitrite as Nitrogen in Water (1)	1	N/A	2024/07/27	CAM SOP-00440	SM 24 4500-NO3I/NO2B
pH (2)	1	2024/07/26	2024/07/28	CAM SOP-00413	SM 24th - 4500H+ B
Phenols (4AAP)	1	N/A	2024/07/31	CAM SOP-00444	OMOE E3179 m
Field Measured pH (3)	1	N/A	2024/07/25		Field pH Meter
Total Dissolved Solids	1	2024/07/30	2024/07/31	CAM SOP-00428	SM 24 2540C m
Field Temperature (3)	1	N/A	2024/07/25		Field Thermometer
Total Kjeldahl Nitrogen in Water	1	2024/07/29	2024/07/30	CAM SOP-00938	OMOE E3516 m
Total Phosphorus (Colourimetric)	1	2024/07/30	2024/07/30	CAM SOP-00407	SM 24 4500-P I
Total Suspended Solids	1	2024/07/30	2024/07/31	CAM SOP-00428	SM 24 2540D m
Turbidity - On-site	1	N/A	2024/07/30		
Un-ionized Ammonia (4)	1	2024/07/25	2024/07/31	Auto Calc.	PWQO
Volatile Organic Compounds in Water	1	N/A	2024/07/29	CAM SOP-00228	EPA 8260D

Remarks:

Bureau Veritas is accredited to ISO/IEC 17025 for specific parameters on scopes of accreditation. Unless otherwise noted, procedures used by Bureau Veritas are based upon recognized Provincial, Federal or US method compendia such as CCME, EPA, APHA or the Quebec Ministry of Environment.

All work recorded herein has been done in accordance with procedures and practices ordinarily exercised by professionals in Bureau Veritas' profession using accepted testing methodologies, quality assurance and quality control procedures (except where otherwise agreed by the client and Bureau Veritas in writing). All data is in statistical control and has met quality control and method performance criteria unless otherwise noted. All method blanks are reported; unless indicated otherwise, associated sample data are not blank corrected. Where applicable, unless otherwise noted, Measurement Uncertainty has not been accounted for when stating conformity to the referenced standard.

Your P.O. #: 13254256
Your Project #: 2402553.01
Site#: 700
Site Location: ON07
Your C.O.C. #: 935786

Attention: Khalid Hussein - Twin Creeks

RWDI Inc.
600 Southgate Drive
Guelph, ON
Canada N1G 4P6

Report Date: 2024/08/06
Report #: R8265482
Version: 1 - Final

CERTIFICATE OF ANALYSIS

BUREAU VERITAS JOB #: C4M8299
Received: 2024/07/25, 10:40

Bureau Veritas liability is limited to the actual cost of the requested analyses, unless otherwise agreed in writing. There is no other warranty expressed or implied. Bureau Veritas has been retained to provide analysis of samples provided by the Client using the testing methodology referenced in this report. Interpretation and use of test results are the sole responsibility of the Client and are not within the scope of services provided by Bureau Veritas, unless otherwise agreed in writing. Bureau Veritas is not responsible for the accuracy or any data impacts, that result from the information provided by the customer or their agent.

Solid sample results, except biota, are based on dry weight unless otherwise indicated. Organic analyses are not recovery corrected except for isotope dilution methods.
Results relate to samples tested. When sampling is not conducted by Bureau Veritas, results relate to the supplied samples tested.
This Certificate shall not be reproduced except in full, without the written approval of the laboratory.
Reference Method suffix “m” indicates test methods incorporate validated modifications from specific reference methods to improve performance.
* RPDs calculated using raw data. The rounding of final results may result in the apparent difference.
(1) Values for calculated parameters may not appear to add up due to rounding of raw data and significant figures.
(2) "The CCME method and Analytical Protocol (O. Reg 153/04, O. Reg. 406/19) requires pH to be analyzed within 15 minutes of sampling and therefore field analysis is required for compliance. All Laboratory pH analyses in this report are reported past the CCME and Analytical Protocol (O. Reg 153/04, O. Reg. 406/19) holding time. Bureau Veritas endeavors to analyze samples as soon as possible after receipt."

(3) This is a field test, therefore, the results relate to items that were not analysed at Bureau Veritas.
(4) Un-ionized ammonia is calculated using the total ammonia result and field data provided by the client for pH and temperature.

Encryption Key

Please direct all questions regarding this Certificate of Analysis to:
Patricia Legette, Project Manager
Email: Patricia.Legette@bureauveritas.com
Phone# (905)817-5799

==========

Bureau Veritas has procedures in place to guard against improper use of the electronic signature and have the required "signatories", as per ISO/IEC 17025, signing the reports. For Service Group specific validation, please refer to the Validation Signatures page if included, otherwise available by request. For Department specific Analyst/Supervisor validation names, please refer to the Test Summary section if included, otherwise available by request. This report is authorized by Rodney Major, General Manager responsible for Ontario Environmental laboratory operations.

Bureau Veritas Job #: C4M8299
Report Date: 2024/08/06

RWDI Inc.
Client Project #: 2402553.01
Site Location: ON07
Your P.O. #: 13254256
Sampler Initials: MD

RESULTS OF ANALYSES OF WATER

Bureau Veritas ID		ZVE663		
Sampling Date		2024/07/24 09:50		
COC Number		935786		
	UNITS	**SP2**	**RDL**	**QC Batch**
Calculated Parameters				
Total Un-ionized Ammonia	mg/L	<0.0036	0.0036	9537292
Field Measurements				
Field Conductivity	uS/cm	558	N/A	ONSITE
Field Dissolved Oxygen	mg/L	5.72	N/A	ONSITE
Field Temperature	Celsius	23.4	N/A	ONSITE
Field Measured Field Turbidity	NTU	13.3	N/A	ONSITE
Field Measured pH	pH	7.6		ONSITE
Inorganics				
Total Ammonia-N	mg/L	<0.15	0.15	9545011
Total BOD	mg/L	6	2	9539694
Total Chemical Oxygen Demand (COD)	mg/L	29	4.0	9545278
Total Dissolved Solids	mg/L	425	10	9546665
Total Kjeldahl Nitrogen (TKN)	mg/L	0.9	0.7	9545257
pH	pH	8.07		9541403
Phenols-4AAP	mg/L	<0.0010	0.0010	9549739
Total Phosphorus	mg/L	0.050	0.030	9546166
Total Suspended Solids	mg/L	15	10	9546764
Alkalinity (Total as CaCO3)	mg/L	140	1.0	9541409
Nitrite (N)	mg/L	<0.010	0.010	9541356
Nitrate (N)	mg/L	<0.10	0.10	9541356

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
N/A = Not Applicable

Bureau Veritas 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.bvna.com

Microbiology testing is conducted at 6660 Campobello Rd. Chemistry testing is conducted at 6740 Campobello Rd.

Bureau Veritas Job #: C4M8299
Report Date: 2024/08/06

RWDI Inc.
Client Project #: 2402553.01
Site Location: ON07
Your P.O. #: 13254256
Sampler Initials: MD

ELEMENTS BY ATOMIC SPECTROSCOPY (WATER)

Bureau Veritas ID		ZVE663		
Sampling Date		2024/07/24 09:50		
COC Number		935786		
	UNITS	SP2	RDL	QC Batch
Metals				
Dissolved Mercury (Hg)	ug/L	<0.10	0.10	9539776
Total Arsenic (As)	mg/L	0.006	0.001	9543598
Total Barium (Ba)	mg/L	0.033	0.005	9543598
Total Boron (B)	mg/L	0.30	0.02	9543598
Total Cadmium (Cd)	mg/L	<0.0001	0.0001	9543598
Total Calcium (Ca)	mg/L	70	0.2	9543598
Total Chromium (Cr)	mg/L	<0.005	0.005	9543598
Total Copper (Cu)	mg/L	<0.002	0.002	9543598
Total Iron (Fe)	mg/L	0.3	0.1	9543598
Total Lead (Pb)	mg/L	<0.0005	0.0005	9543598
Total Magnesium (Mg)	mg/L	19	0.05	9543598
Total Nickel (Ni)	mg/L	0.003	0.001	9543598
Total Potassium (K)	mg/L	7.4	0.2	9543598
Total Sodium (Na)	mg/L	23	0.1	9543598
Total Zinc (Zn)	mg/L	<0.01	0.01	9543598

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

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Microbiology testing is conducted at 6660 Campobello Rd. Chemistry testing is conducted at 6740 Campobello Rd.

RWDI Inc.
Client Project #: 2402553.01
Site Location: ON07
Your P.O. #: 13254256
Sampler Initials: MD

SEMI-VOLATILE ORGANICS BY GC-MS (WATER)

Bureau Veritas ID		ZVE663		
Sampling Date		2024/07/24 09:50		
COC Number		935786		
	UNITS	SP2	RDL	QC Batch
Semivolatile Organics				
Benzo(a)pyrene	ug/L	<0.20	0.20	9547318
1,2-Dichlorobenzene	ug/L	<0.50	0.50	9547318
1,3-Dichlorobenzene	ug/L	<0.50	0.50	9547318
1,4-Dichlorobenzene	ug/L	<0.50	0.50	9547318
Hexachlorobenzene	ug/L	<0.50	0.50	9547318
1,2,4-Trichlorobenzene	ug/L	<0.50	0.50	9547318
2,4-Dichlorophenol	ug/L	<0.30	0.30	9547318
Pentachlorophenol	ug/L	<1.0	1.0	9547318
Phenol	ug/L	<0.50	0.50	9547318
2,4,6-Trichlorophenol	ug/L	<0.50	0.50	9547318
Di-N-butyl phthalate	ug/L	<2.0	2.0	9547318
Diethyl phthalate	ug/L	<1.0	1.0	9547318
Dimethyl phthalate	ug/L	<1.0	1.0	9547318
Surrogate Recovery (%)				
2,4,6-Tribromophenol	%	103		9547318
2-Fluorobiphenyl	%	72		9547318
2-Fluorophenol	%	32		9547318
D14-Terphenyl	%	95		9547318
D5-Nitrobenzene	%	56		9547318
D5-Phenol	%	26		9547318

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

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Microbiology testing is conducted at 6660 Campobello Rd. Chemistry testing is conducted at 6740 Campobello Rd.

Bureau Veritas Job #: C4M8299
Report Date: 2024/08/06

RWDI Inc.
Client Project #: 2402553.01
Site Location: ON07
Your P.O. #: 13254256
Sampler Initials: MD

VOLATILE ORGANICS BY GC/MS (WATER)

Bureau Veritas ID		ZVE663		
Sampling Date		2024/07/24 09:50		
COC Number		935786		
	UNITS	SP2	RDL	QC Batch
Volatile Organics				
Benzene	ug/L	<0.20	0.20	9540048
1,4-Dichlorobenzene	ug/L	<0.40	0.40	9540048
Ethylbenzene	ug/L	<0.20	0.20	9540048
Methylene Chloride(Dichloromethane)	ug/L	<2.0	2.0	9540048
Toluene	ug/L	<0.20	0.20	9540048
Vinyl Chloride	ug/L	<0.20	0.20	9540048
p+m-Xylene	ug/L	<0.20	0.20	9540048
o-Xylene	ug/L	<0.20	0.20	9540048
Total Xylenes	ug/L	<0.20	0.20	9540048
Surrogate Recovery (%)				
4-Bromofluorobenzene	%	101		9540048
D4-1,2-Dichloroethane	%	115		9540048
D8-Toluene	%	95		9540048

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

Bureau Veritas 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.bvna.com

Microbiology testing is conducted at 6660 Campobello Rd. Chemistry testing is conducted at 6740 Campobello Rd.

RWDI Inc.
Client Project #: 2402553.01
Site Location: ON07
Your P.O. #: 13254256
Sampler Initials: MD

GENERAL COMMENTS

Each temperature is the average of up to three cooler temperatures taken at receipt

Package 1	7.3°C

Results relate only to the items tested.

Bureau Veritas 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.bvna.com

Microbiology testing is conducted at 6660 Campobello Rd. Chemistry testing is conducted at 6740 Campobello Rd.

Bureau Veritas Job #: C4M8299
Report Date: 2024/08/06

QUALITY ASSURANCE REPORT

RWDI Inc.
Client Project #: 2402553.01
Site Location: ON07
Your P.O. #: 13254256
Sampler Initials: MD

			Matrix Spike		SPIKED BLANK		Method Blank		RPD		QC Standard	
QC Batch	Parameter	Date	% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits	% Recovery	QC Limits
9540048	4-Bromofluorobenzene	2024/07/29	100	70 - 130	100	70 - 130	102	%				
9540048	D4-1,2-Dichloroethane	2024/07/29	112	70 - 130	109	70 - 130	112	%				
9540048	D8-Toluene	2024/07/29	96	70 - 130	96	70 - 130	96	%				
9547318	2,4,6-Tribromophenol	2024/07/31	95	10 - 130	97	10 - 130	68	%				
9547318	2-Fluorobiphenyl	2024/07/31	64	30 - 130	69	30 - 130	64	%				
9547318	2-Fluorophenol	2024/07/31	39	10 - 130	44	10 - 130	39	%				
9547318	D14-Terphenyl	2024/07/31	99	30 - 130	102	30 - 130	92	%				
9547318	D5-Nitrobenzene	2024/07/31	71	30 - 130	83	30 - 130	77	%				
9547318	D5-Phenol	2024/07/31	27	10 - 130	32	10 - 130	26	%				
9539694	Total BOD	2024/07/31					<2	mg/L	7.4 (1)	30	100	80 - 120
9539776	Dissolved Mercury (Hg)	2024/07/26	98 (2)	75 - 125	103	80 - 120	<0.10	ug/L	NC (3)	20		
9540048	1,4-Dichlorobenzene	2024/07/29	117	70 - 130	100	70 - 130	<0.40	ug/L	NC (1)	30		
9540048	Benzene	2024/07/29	113	70 - 130	97	70 - 130	<0.20	ug/L	NC (1)	30		
9540048	Ethylbenzene	2024/07/29	108	70 - 130	94	70 - 130	<0.20	ug/L	NC (1)	30		
9540048	Methylene Chloride(Dichloromethane)	2024/07/29	121	70 - 130	103	70 - 130	<2.0	ug/L	NC (1)	30		
9540048	o-Xylene	2024/07/29	106	70 - 130	94	70 - 130	<0.20	ug/L	NC (1)	30		
9540048	p+m-Xylene	2024/07/29	108	70 - 130	94	70 - 130	<0.20	ug/L	NC (1)	30		
9540048	Toluene	2024/07/29	107	70 - 130	92	70 - 130	<0.20	ug/L	NC (1)	30		
9540048	Total Xylenes	2024/07/29					<0.20	ug/L	NC (1)	30		
9540048	Vinyl Chloride	2024/07/29	106	70 - 130	83	70 - 130	<0.20	ug/L	NC (1)	30		
9541356	Nitrate (N)	2024/07/27	NC	80 - 120	96	80 - 120	<0.10	mg/L	0.66 (1)	20		
9541356	Nitrite (N)	2024/07/27	99	80 - 120	102	80 - 120	<0.010	mg/L	3.4 (1)	20		
9541403	pH	2024/07/28			102	98 - 103			1.6 (1)	N/A		
9541409	Alkalinity (Total as CaCO3)	2024/07/28			99	85 - 115	<1.0	mg/L	1.9 (1)	20		
9543598	Total Arsenic (As)	2024/07/29	94	80 - 120	99	80 - 120	<0.001	mg/L				
9543598	Total Barium (Ba)	2024/07/29	93	80 - 120	95	80 - 120	<0.005	mg/L				
9543598	Total Boron (B)	2024/07/29	95	80 - 120	96	80 - 120	<0.02	mg/L				
9543598	Total Cadmium (Cd)	2024/07/29	94	80 - 120	98	80 - 120	<0.0001	mg/L				
9543598	Total Calcium (Ca)	2024/07/29	NC	80 - 120	100	80 - 120	<0.2	mg/L				
9543598	Total Chromium (Cr)	2024/07/29	90	80 - 120	95	80 - 120	<0.005	mg/L	5.5 (1)	20		

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Microbiology testing is conducted at 6660 Campobello Rd. Chemistry testing is conducted at 6740 Campobello Rd.

QUALITY ASSURANCE REPORT(CONT'D)

			Matrix Spike		SPIKED BLANK		Method Blank		RPD		QC Standard	
QC Batch	Parameter	Date	% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits	% Recovery	QC Limits
9543598	Total Copper (Cu)	2024/07/29	99	80 - 120	98	80 - 120	<0.002	mg/L	3.9 (1)	20		
9543598	Total Iron (Fe)	2024/07/29	92	80 - 120	98	80 - 120	<0.1	mg/L				
9543598	Total Lead (Pb)	2024/07/29	93	80 - 120	100	80 - 120	<0.0005	mg/L				
9543598	Total Magnesium (Mg)	2024/07/29	87	80 - 120	97	80 - 120	<0.05	mg/L				
9543598	Total Nickel (Ni)	2024/07/29	87	80 - 120	95	80 - 120	<0.001	mg/L	5.1 (1)	20		
9543598	Total Potassium (K)	2024/07/29	NC	80 - 120	98	80 - 120	<0.2	mg/L				
9543598	Total Sodium (Na)	2024/07/29	NC	80 - 120	98	80 - 120	<0.1	mg/L				
9543598	Total Zinc (Zn)	2024/07/29	90	80 - 120	101	80 - 120	<0.01	mg/L	4.4 (1)	20		
9545011	Total Ammonia-N	2024/07/30	87	75 - 125	91	80 - 120	<0.15	mg/L	1.4 (1)	20		
9545257	Total Kjeldahl Nitrogen (TKN)	2024/07/30	114 (4)	80 - 120	99	80 - 120	<0.7	mg/L	3.4 (5)	20	101	80 - 120
9545278	Total Chemical Oxygen Demand (COD)	2024/07/30	NC	80 - 120	100	80 - 120	<4.0	mg/L	0.20 (1)	20		
9546166	Total Phosphorus	2024/07/30	104	80 - 120	108	80 - 120	<0.030	mg/L	1.2 (1)	25	114	80 - 120
9546665	Total Dissolved Solids	2024/07/31			98	80 - 120	<10	mg/L	2.0 (1)	20		
9546764	Total Suspended Solids	2024/07/31			97	80 - 120	<10	mg/L	NC (1)	20		
9547318	1,2,4-Trichlorobenzene	2024/07/31	35	30 - 130	39	30 - 130	<0.50	ug/L				
9547318	1,2-Dichlorobenzene	2024/07/31	35	30 - 130	42	30 - 130	<0.50	ug/L				
9547318	1,3-Dichlorobenzene	2024/07/31	30	30 - 130	36	30 - 130	<0.50	ug/L				
9547318	1,4-Dichlorobenzene	2024/07/31	31	30 - 130	38	30 - 130	<0.50	ug/L				
9547318	2,4,6-Trichlorophenol	2024/07/31	80	10 - 130	87	10 - 130	<0.50	ug/L				
9547318	2,4-Dichlorophenol	2024/07/31	74	10 - 130	87	10 - 130	<0.30	ug/L				
9547318	Benzo(a)pyrene	2024/07/31	101	30 - 130	104	30 - 130	<0.20	ug/L				
9547318	Diethyl phthalate	2024/07/31	101	30 - 130	105	30 - 130	<1.0	ug/L				
9547318	Dimethyl phthalate	2024/07/31	97	30 - 130	100	30 - 130	<1.0	ug/L				
9547318	Di-N-butyl phthalate	2024/07/31	112	30 - 130	116	30 - 130	<2.0	ug/L	NC (1)	40		
9547318	Hexachlorobenzene	2024/07/31	83	30 - 130	84	30 - 130	<0.50	ug/L				
9547318	Pentachlorophenol	2024/07/31	95	10 - 130	91	10 - 130	<1.0	ug/L				
9547318	Phenol	2024/07/31	28	10 - 130	32	10 - 130	<0.50	ug/L				

Bureau Veritas 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.bvna.com

Microbiology testing is conducted at 6660 Campobello Rd. Chemistry testing is conducted at 6740 Campobello Rd.

QUALITY ASSURANCE REPORT(CONT'D)

			Matrix Spike		SPIKED BLANK		Method Blank		RPD		QC Standard	
QC Batch	Parameter	Date	% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits	% Recovery	QC Limits
9549739	Phenols-4AAP	2024/07/31	101	80 - 120	103	80 - 120	<0.0010	mg/L	3.5 (1)	20		

N/A = Not Applicable

Duplicate: Paired analysis of a separate portion of the same sample. Used to evaluate the variance in the measurement.

Matrix Spike: A sample to which a known amount of the analyte of interest has been added. Used to evaluate sample matrix interference.

QC Standard: A sample of known concentration prepared by an external agency under stringent conditions. Used as an independent check of method accuracy.

Spiked Blank: A blank matrix sample to which a known amount of the analyte, usually from a second source, has been added. Used to evaluate method accuracy.

Method Blank: A blank matrix containing all reagents used in the analytical procedure. Used to identify laboratory contamination.

Surrogate: A pure or isotopically labeled compound whose behavior mirrors the analytes of interest. Used to evaluate extraction efficiency.

NC (Matrix Spike): The recovery in the matrix spike was not calculated. The relative difference between the concentration in the parent sample and the spike amount was too small to permit a reliable recovery calculation (matrix spike concentration was less than the native sample concentration)

NC (Duplicate RPD): The duplicate RPD was not calculated. The concentration in the sample and/or duplicate was too low to permit a reliable RPD calculation (absolute difference <= 2x RDL).

(1) Duplicate Parent ID

(2) Matrix Spike Parent ID [ZVE663-08]

(3) Duplicate Parent ID [ZVE663-08]

(4) Matrix Spike Parent ID [ZVE663-07]

(5) Duplicate Parent ID [ZVE663-07]

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Microbiology testing is conducted at 6660 Campobello Rd. Chemistry testing is conducted at 6740 Campobello Rd.

Bureau Veritas Job #: C4M8299
Report Date: 2024/08/06

RWDI Inc.
Client Project #: 2402553.01
Site Location: ON07
Your P.O. #: 13254256
Sampler Initials: MD

VALIDATION SIGNATURE PAGE

The analytical data and all QC contained in this report were reviewed and validated by:

Cristina Carriere, Senior Scientific Specialist

Michael Damianidis, Project Manager Assistant

Bureau Veritas has procedures in place to guard against improper use of the electronic signature and have the required "signatories", as per ISO/IEC 17025, signing the reports. For Service Group specific validation, please refer to the Validation Signatures page if included, otherwise available by request. For Department specific Analyst/Supervisor validation names, please refer to the Test Summary section if included, otherwise available by request. This report is authorized by Rodney Major, General Manager responsible for Ontario Environmental laboratory operations.

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Microbiology testing is conducted at 6660 Campobello Rd. Chemistry testing is conducted at 6740 Campobello Rd.

S2437676

BUREAU VERITAS

FIELD INFORMATION FORM

WM WASTE MANAGEMENT

Site Name: TCEC

Site No.: Sample: SP2 (Sample ID)

This Waste Management Field Information Form is Required
This form is to be completed, in addition to any State Forms. The Field Form is submitted along with the Chain of Custody Forms that accompany the sample containers (i.e. with the cooler that is returned to the laboratory).

Laboratory Use Only/Lab ID:

PURGE INFO

PURGE DATE (MM DD YY)	PURGE TIME (2400 Hr Clock)	ELAPSED HRS (hrs:min)	WATER VOL IN CASING (Gallons)	ACTUAL VOL PURGED (Gallons)	WELL VOLs PURGED

Note: For Passive Sampling, replace "Water Vol in Casing" and "Well Vols Purged" w/ Water Vol in Tubing/Flow Cell and Tubing/Flow Cell Vols Purged. Mark Changes, Record field data below.

PURGE/SAMPLE EQUIPMENT

Purging and Sampling Equipment ... Dedicated: Y or N

Purging Device: A-Submersible Pump, B-Peristaltic Pump, C-QED Bladder Pump, D-Bailer, E-Piston Pump, F-Dipper/Bottle

Sampling Device:

X-Other:

Filter Device: Y or N — 0.45 µ or ____ µ (circle or fill in)

Filter Type: A (A-In-line Disposable, B-Pressure, C-Vacuum, X-Other:)

Sample Tube Type: (A-Teflon, B-Stainless Steel, C-PVC, D-Polypropylene, X-Other:)

WELL DATA

Well Elevation (at TOC) (ft/msl)

Depth to Water (DTW) (from TOC) (ft)

Groundwater Elevation (GWE) (Site Datum, from TOC) (ft msl)

Total Well Depth (from TOC) (ft)

Stick Up (from ground elevation) (ft)

Casing ID (in)

Casing Material

Note: Total Depth, Stick Up, Casing ID, etc. are optional and can be from historical data, unless required by Site/Permit. Well Elevation, DTW, and GWE must be current, obtained from site.

STABILIZATION DATA (Optional)

Sample Time (2400 Hr Clock)	Rate/Unit	pH (std)	Conductance (SC/EC) (µmhos/cm @ 25°C)	Temp. (°C)	Turbidity (ntu)	D.O. (mg/L - ppm)	eH/ORP (mV)	DTW (ft)
		1st	1st					
		2nd	2nd					
		3rd	3rd					
		4th	4th					
Input Range for 3 consec. readings or Permit/State requirements:		+/-	+/-	+/-	+/-	+/-	+/-	

Stabilization Data Fields are Optional *(i.e. complete stabilization readings for parameters required by WM, Site, or State). These fields can be used where four (4) field measurements are required by State/Permit/Site. If a Data Logger or other Electronic format is used, fill in final readings below and submit electronic data separately to Site. If more fields above are needed, use separate sheet or form.*

FIELD DATA

SAMPLE DATE (MM DD YY)	pH (std)	CONDUCTANCE (µmhos/cm @ 25°C)	TEMP. (°C)	TURBIDITY (ntu)	DO (mg/L - ppm)	eH/ORP (mV)	Other: Units
07 24 24	7.6	558	23.4	13.3	5.72		

Final Field Readings are required *(i.e. record field measurements, final stabilized readings, passive sample readings before sampling for all field parameters required by State/Permit/Site.)*

Sample Appearance: clear Odor: none Color: clear Other:

Weather Conditions (required daily, or as conditions change): 20°C Direction/Speed: W 13km/hr Outlook: Overcast Precipitation: Y or N

FIELD COMMENTS

Specific Comments (including purge/well volume calculations if required):

width: 1m
depth: .3m
9:50 AM

Img 1: 10s
2: 12s
3: 10s

I certify that sampling procedures were in accordance with applicable EPA, State, and WM protocols (if more than one sampler, all should sign):

Date	Name	Signature	Company
07/24/24	Maya DeForest		RWDI Air

DISTRIBUTION: WHITE/ORIGINAL - Stays with Sample, YELLOW - Returned to Client, PINK - Field Copy

Field Information Form v-3.1 06/20

BOD

Custody Tracking Form

T935786

Please use this form for custody tracking when submitting the work instructions via eCOC (electronic Chain of Custody). Please ensure your form has a barcode or a Bureau Veritas eCOC confirmation number in the top right hand side. This number links your electronic submission to your samples. This form should be placed in the cooler with your samples.

First Sample: SP2
Last Sample: SP2
Sample Count: 1

Relinquished By				Received By			
Print: Maya Deforest	Sign:	Date	2024/07/24	Print:	Sign:	Date	
		Time (24 HR)	11:00 AM			Time (24 HR)	
Print	Sign	Date	YYYY/MM/DD	Print	Sign	Date	YYYY/MM/DD
		Time (24 HR)	HH:MM			Time (24 HR)	HH:MM
Print	Sign	Date	YYYY/MM/DD	Print	Sign	Date	YYYY/MM/DD
		Time (24 HR)	HH:MM			Time (24 HR)	HH:MM

Unless otherwise agreed to, submissions and use of services are governed by Bureau Veritas' standard terms and conditions which can be found at www.bvna.com.

Triage Information

Sampled By (Print): Maya Deforest

# of Coolers/Pkgs: 1

Rush ☐ Immediate Test ☐ Food Residue ☐

Micro ☐ Food Chemistry ☐

*** LABORATORY USE ONLY ***

Received At

Labeled By

Verified By

Lab Comments:

Custody Seal		Cooling Media	Temperature °C		
Present (Y/N)	Intact (Y/N)	Present (Y/N)	1	2	3
Y	Y	Y	10	6	6

Drinking Water Metals Preservation Check Done (Circle) YES NO

25-Jul-24 10:40
Patricia Legette
C4M8299

A3P ENV-1652

COR FCD-00383/4

Page 1 of 1

eCOC: T935786

Expected TAT:	Standard TAT
Expected Arrival:	2024/07/25 12:00
Submitted By:	Jeffery Cleland
Submitted To:	Mississauga, ON (Env. Lab)

Invoice Information

Attn: Lisa Mertick lmertick@wm.com
Waste Management of Canada Corporation
5768 Nauvoo Rd. RR# 4
Watford , ON , N0M 2S0
Email to:
lmertick@wm.com
invoiceuploads@bureauveritas.com

Report Information

Attn: Jeff Cleland
RWDI Inc.
4510 Rhodes Drive
Suite 530
Windsor , ON , N8W 5K5
Email to:
jeffery.cleland@rwdi.com
khalid.hussein@rwdi.com
james.hanna@rwdi.com
maja.deforest@rwdi.com
jake.artibello@rwdi.com

Project Information

Quote #:	C34991
PO/AFE#:	13254256
Project #:	2402553.01
Site Location:	Twin Creeks Environmental Centre

Analytical Summary

A: Standard TAT

Client Sample ID	Clnt Ref	Sampling Date/Time	Matrix	#Cont	ON-WLF-2024 TCLS - SWM POND OUTLETS QUARTERLY
SP2	1	2024/07/24 09:50	SURFACE WATER	12	A

Deadlines are estimates only and are subject to change. Please refer to your Job Confirmation report for final due dates.

Submission Information

# of Samples:	1
Details:	All samples for Hg field filtered @ 45um
	See lab addendum for lab group coding

Your P.O. #: 13254256
Your Project #: 2402553.01
Site#: 700
Site Location: ON07
Your C.O.C. #: 938761

Attention: Khalid Hussein - Twin Creeks

RWDI Inc.
600 Southgate Drive
Guelph, ON
Canada N1G 4P6

Report Date: 2024/08/09
Report #: R8270017
Version: 1 - Final

CERTIFICATE OF ANALYSIS

BUREAU VERITAS JOB #: C4N4722
Received: 2024/07/31, 10:03

Sample Matrix: Water
Samples Received: 1

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Analytical Method
ABN Compounds in Water by GC/MS	1	2024/08/01	2024/08/02	CAM SOP-00301	EPA 8270 m
Alkalinity	1	N/A	2024/08/02	CAM SOP-00448	SM 24 2320 B m
Biochemical Oxygen Demand (BOD)	1	2024/08/01	2024/08/06	CAM SOP-00427	SM 24 5210B m
Chloride by Automated Colourimetry	1	N/A	2024/08/06	CAM SOP-00463	SM 24 4500-Cl E m
Chemical Oxygen Demand	1	N/A	2024/08/06	CAM SOP-00416	SM 24 5220 D m
Conductance in Water - On-site	1	N/A	2024/08/02		
Conductivity	1	N/A	2024/08/02	CAM SOP-00414	SM 24 2510 m
Field Measured Dissolved Oxygen in Water	1	N/A	2024/08/02		
Dissolved Mercury in Water by CVAA	1	2024/08/02	2024/08/02	CAM SOP-00453	EPA 7470A m
Total Metals by ICPMS	1	N/A	2024/08/07	CAM SOP-00447	EPA 6020B m
Ammonia-N	1	N/A	2024/08/07	CAM SOP-00441	USGS I-2522-90 m
Nitrate & Nitrite as Nitrogen in Water (1)	1	N/A	2024/08/02	CAM SOP-00440	SM 24 4500-NO3I/NO2B
pH (2)	1	2024/08/01	2024/08/02	CAM SOP-00413	SM 24th - 4500H+ B
Phenols (4AAP)	1	N/A	2024/08/07	CAM SOP-00444	OMOE E3179 m
Field Measured pH (3)	1	N/A	2024/07/31		Field pH Meter
Sulphate by Automated Turbidimetry	1	N/A	2024/08/06	CAM SOP-00464	SM 24 4500-SO42- E m
Total Dissolved Solids	1	2024/08/02	2024/08/06	CAM SOP-00428	SM 24 2540C m
Field Temperature (3)	1	N/A	2024/07/31		Field Thermometer
Total Kjeldahl Nitrogen in Water	1	2024/08/02	2024/08/07	CAM SOP-00938	OMOE E3516 m
Total Phosphorus (Colourimetric)	1	2024/08/02	2024/08/06	CAM SOP-00407	SM 24 4500-P I
Total Suspended Solids	1	2024/08/02	2024/08/06	CAM SOP-00428	SM 24 2540D m
Turbidity - On-site	1	N/A	2024/08/02		
Un-ionized Ammonia (4)	1	2024/07/31	2024/08/07	Auto Calc.	PWQO
Volatile Organic Compounds in Water	1	N/A	2024/08/02	CAM SOP-00228	EPA 8260D

Remarks:

Bureau Veritas is accredited to ISO/IEC 17025 for specific parameters on scopes of accreditation. Unless otherwise noted, procedures used by Bureau Veritas are based upon recognized Provincial, Federal or US method compendia such as CCME, EPA, APHA or the Quebec Ministry of Environment.

All work recorded herein has been done in accordance with procedures and practices ordinarily exercised by professionals in Bureau Veritas' profession using accepted testing methodologies, quality assurance and quality control procedures (except where otherwise agreed by the client and Bureau Veritas in

Your P.O. #: 13254256
Your Project #: 2402553.01
Site#: 700
Site Location: ON07
Your C.O.C. #: 938761

Attention: Khalid Hussein - Twin Creeks

RWDI Inc.
600 Southgate Drive
Guelph, ON
Canada N1G 4P6

Report Date: 2024/08/09
Report #: R8270017
Version: 1 - Final

CERTIFICATE OF ANALYSIS

BUREAU VERITAS JOB #: C4N4722
Received: 2024/07/31, 10:03

writing). All data is in statistical control and has met quality control and method performance criteria unless otherwise noted. All method blanks are reported; unless indicated otherwise, associated sample data are not blank corrected. Where applicable, unless otherwise noted, Measurement Uncertainty has not been accounted for when stating conformity to the referenced standard.

Bureau Veritas liability is limited to the actual cost of the requested analyses, unless otherwise agreed in writing. There is no other warranty expressed or implied. Bureau Veritas has been retained to provide analysis of samples provided by the Client using the testing methodology referenced in this report. Interpretation and use of test results are the sole responsibility of the Client and are not within the scope of services provided by Bureau Veritas, unless otherwise agreed in writing. Bureau Veritas is not responsible for the accuracy or any data impacts, that result from the information provided by the customer or their agent.

Solid sample results, except biota, are based on dry weight unless otherwise indicated. Organic analyses are not recovery corrected except for isotope dilution methods.
Results relate to samples tested. When sampling is not conducted by Bureau Veritas, results relate to the supplied samples tested.
This Certificate shall not be reproduced except in full, without the written approval of the laboratory.
Reference Method suffix “m” indicates test methods incorporate validated modifications from specific reference methods to improve performance.
* RPDs calculated using raw data. The rounding of final results may result in the apparent difference.
(1) Values for calculated parameters may not appear to add up due to rounding of raw data and significant figures.
(2) "The CCME method and Analytical Protocol (O. Reg 153/04, O. Reg. 406/19) requires pH to be analyzed within 15 minutes of sampling and therefore field analysis is required for compliance. All Laboratory pH analyses in this report are reported past the CCME and Analytical Protocol (O. Reg 153/04, O. Reg. 406/19) holding time. Bureau Veritas endeavors to analyze samples as soon as possible after receipt."

(3) This is a field test, therefore, the results relate to items that were not analysed at Bureau Veritas.
(4) Un-ionized ammonia is calculated using the total ammonia result and field data provided by the client for pH and temperature.

Encryption Key

Please direct all questions regarding this Certificate of Analysis to:
Patricia Legette, Project Manager
Email: Patricia.Legette@bureauveritas.com
Phone# (905)817-5799

==========

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Bureau Veritas Job #: C4N4722
Report Date: 2024/08/09

RWDI Inc.
Client Project #: 2402553.01
Site Location: ON07
Your P.O. #: 13254256
Sampler Initials: MD

RESULTS OF ANALYSES OF WATER

Bureau Veritas ID		ZWL686		
Sampling Date		2024/07/30 09:35		
COC Number		938761		
	UNITS	SS1	RDL	QC Batch
Calculated Parameters				
Total Un-ionized Ammonia	mg/L	0.014	0.013	9548987
Field Measurements				
Field Conductivity	uS/cm	249	N/A	ONSITE
Field Dissolved Oxygen	mg/L	7.30	N/A	ONSITE
Field Temperature	Celsius	22.6	N/A	ONSITE
Field Measured Field Turbidity	NTU	>999	N/A	ONSITE
Field Measured pH	pH	8.2		ONSITE
Inorganics				
Total Ammonia-N	mg/L	0.16	0.15	9553410
Total BOD	mg/L	6	2	9551406
Total Chemical Oxygen Demand (COD)	mg/L	23	4.0	9554942
Conductivity	umho/cm	230	1.0	9552226
Total Dissolved Solids	mg/L	375	10	9554487
Total Kjeldahl Nitrogen (TKN)	mg/L	<0.7	0.7	9554926
pH	pH	8.01		9552228
Phenols-4AAP	mg/L	<0.0010	0.0010	9559301
Total Phosphorus	mg/L	0.71	0.030	9554995
Total Suspended Solids	mg/L	1400	100	9554019
Dissolved Sulphate (SO4)	mg/L	35	1.0	9552258
Alkalinity (Total as CaCO3)	mg/L	70	1.0	9552221
Dissolved Chloride (Cl-)	mg/L	5.3	1.0	9552255
Nitrite (N)	mg/L	0.027	0.010	9551901
Nitrate (N)	mg/L	0.27	0.10	9551901

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
N/A = Not Applicable

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Microbiology testing is conducted at 6660 Campobello Rd. Chemistry testing is conducted at 6740 Campobello Rd.

Bureau Veritas Job #: C4N4722
Report Date: 2024/08/09

RWDI Inc.
Client Project #: 2402553.01
Site Location: ON07
Your P.O. #: 13254256
Sampler Initials: MD

ELEMENTS BY ATOMIC SPECTROSCOPY (WATER)

Bureau Veritas ID		ZWL686		
Sampling Date		2024/07/30 09:35		
COC Number		938761		
	UNITS	SS1	RDL	QC Batch
Metals				
Dissolved Mercury (Hg)	ug/L	<0.10	0.10	9554136
Total Arsenic (As)	mg/L	0.02	0.01	9558707
Total Barium (Ba)	mg/L	0.28	0.05	9558707
Total Boron (B)	mg/L	<0.2	0.2	9558707
Total Cadmium (Cd)	mg/L	<0.001	0.001	9558707
Total Calcium (Ca)	mg/L	190	2	9558707
Total Chromium (Cr)	mg/L	0.06	0.05	9558707
Total Copper (Cu)	mg/L	0.06	0.02	9558707
Total Iron (Fe)	mg/L	62	1	9558707
Total Lead (Pb)	mg/L	0.027	0.005	9558707
Total Magnesium (Mg)	mg/L	36	0.5	9558707
Total Nickel (Ni)	mg/L	0.08	0.01	9558707
Total Potassium (K)	mg/L	18	2	9558707
Total Sodium (Na)	mg/L	5	1	9558707
Total Zinc (Zn)	mg/L	0.2	0.1	9558707

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

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Microbiology testing is conducted at 6660 Campobello Rd. Chemistry testing is conducted at 6740 Campobello Rd.

RWDI Inc.
Client Project #: 2402553.01
Site Location: ON07
Your P.O. #: 13254256
Sampler Initials: MD

SEMI-VOLATILE ORGANICS BY GC-MS (WATER)

Bureau Veritas ID		ZWL686		
Sampling Date		2024/07/30 09:35		
COC Number		938761		
	UNITS	SS1	RDL	QC Batch
Semivolatile Organics				
Benzo(a)pyrene	ug/L	<2.0	2.0	9552742
1,2-Dichlorobenzene	ug/L	<5.0	5.0	9552742
1,3-Dichlorobenzene	ug/L	<5.0	5.0	9552742
1,4-Dichlorobenzene	ug/L	<5.0	5.0	9552742
Hexachlorobenzene	ug/L	<5.0	5.0	9552742
1,2,4-Trichlorobenzene	ug/L	<5.0	5.0	9552742
2,4-Dichlorophenol	ug/L	<3.0	3.0	9552742
Pentachlorophenol	ug/L	<10	10	9552742
Phenol	ug/L	<5.0	5.0	9552742
2,4,6-Trichlorophenol	ug/L	<5.0	5.0	9552742
Di-N-butyl phthalate	ug/L	<20	20	9552742
Diethyl phthalate	ug/L	<10	10	9552742
Dimethyl phthalate	ug/L	<10	10	9552742
Surrogate Recovery (%)				
2,4,6-Tribromophenol	%	66		9552742
2-Fluorobiphenyl	%	40		9552742
2-Fluorophenol	%	17		9552742
D14-Terphenyl	%	69		9552742
D5-Nitrobenzene	%	53		9552742
D5-Phenol	%	14		9552742

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

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Microbiology testing is conducted at 6660 Campobello Rd. Chemistry testing is conducted at 6740 Campobello Rd.

RWDI Inc.
Client Project #: 2402553.01
Site Location: ON07
Your P.O. #: 13254256
Sampler Initials: MD

VOLATILE ORGANICS BY GC/MS (WATER)

Bureau Veritas ID		ZWL686		
Sampling Date		2024/07/30 09:35		
COC Number		938761		
	UNITS	SS1	RDL	QC Batch
Volatile Organics				
Benzene	ug/L	<0.20	0.20	9552211
1,4-Dichlorobenzene	ug/L	<0.40	0.40	9552211
Ethylbenzene	ug/L	<0.20	0.20	9552211
Methylene Chloride(Dichloromethane)	ug/L	<2.0	2.0	9552211
Toluene	ug/L	0.20	0.20	9552211
Vinyl Chloride	ug/L	<0.20	0.20	9552211
p+m-Xylene	ug/L	<0.20	0.20	9552211
o-Xylene	ug/L	<0.20	0.20	9552211
Total Xylenes	ug/L	<0.20	0.20	9552211
Surrogate Recovery (%)				
4-Bromofluorobenzene	%	93		9552211
D4-1,2-Dichloroethane	%	110		9552211
D8-Toluene	%	93		9552211

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

Bureau Veritas 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.bvna.com

Microbiology testing is conducted at 6660 Campobello Rd. Chemistry testing is conducted at 6740 Campobello Rd.

Bureau Veritas Job #: C4N4722
Report Date: 2024/08/09

RWDI Inc.
Client Project #: 2402553.01
Site Location: ON07
Your P.O. #: 13254256
Sampler Initials: MD

GENERAL COMMENTS

Each temperature is the average of up to three cooler temperatures taken at receipt

Package 1	8.3°C

Sample ZWL686 [SS1] : ABN Analysis: Due to the sample matrix, a smaller amount was used for analysis. Detection limits were adjusted accordingly.

Metals Analysis: Due to the sample matrix, sample required dilution. Detection limit was adjusted accordingly.
TKN < Ammonia: Both values fall within the method uncertainty for duplicates and are likely equivalent.

Results relate only to the items tested.

Bureau Veritas 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.bvna.com

Microbiology testing is conducted at 6660 Campobello Rd. Chemistry testing is conducted at 6740 Campobello Rd.

Bureau Veritas Job #: C4N4722
Report Date: 2024/08/09

QUALITY ASSURANCE REPORT

RWDI Inc.
Client Project #: 2402553.01
Site Location: ON07
Your P.O. #: 13254256
Sampler Initials: MD

			Matrix Spike		SPIKED BLANK		Method Blank		RPD		QC Standard	
QC Batch	Parameter	Date	% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits	% Recovery	QC Limits
9552211	4-Bromofluorobenzene	2024/08/02	98	70 - 130	101	70 - 130	97	%				
9552211	D4-1,2-Dichloroethane	2024/08/02	104	70 - 130	103	70 - 130	106	%				
9552211	D8-Toluene	2024/08/02	103	70 - 130	104	70 - 130	94	%				
9552742	2,4,6-Tribromophenol	2024/08/02	95	10 - 130	91	10 - 130	84	%				
9552742	2-Fluorobiphenyl	2024/08/02	69	30 - 130	66	30 - 130	81	%				
9552742	2-Fluorophenol	2024/08/02	32	10 - 130	30	10 - 130	35	%				
9552742	D14-Terphenyl	2024/08/02	91	30 - 130	93	30 - 130	93	%				
9552742	D5-Nitrobenzene	2024/08/02	72	30 - 130	66	30 - 130	78	%				
9552742	D5-Phenol	2024/08/02	22	10 - 130	20	10 - 130	23	%				
9551406	Total BOD	2024/08/06					<2	mg/L	1.7 (1)	30	95	80 - 120
9551901	Nitrate (N)	2024/08/02	95	80 - 120	98	80 - 120	<0.10	mg/L	6.3 (2)	20		
9551901	Nitrite (N)	2024/08/02	105	80 - 120	107	80 - 120	<0.010	mg/L	NC (2)	20		
9552211	1,4-Dichlorobenzene	2024/08/02	100	70 - 130	92	70 - 130	<0.40	ug/L				
9552211	Benzene	2024/08/02	105	70 - 130	96	70 - 130	<0.20	ug/L	NC (2)	30		
9552211	Ethylbenzene	2024/08/02	102	70 - 130	94	70 - 130	<0.20	ug/L				
9552211	Methylene Chloride(Dichloromethane)	2024/08/02	120	70 - 130	110	70 - 130	<2.0	ug/L				
9552211	o-Xylene	2024/08/02	100	70 - 130	94	70 - 130	<0.20	ug/L				
9552211	p+m-Xylene	2024/08/02	103	70 - 130	95	70 - 130	<0.20	ug/L				
9552211	Toluene	2024/08/02	105	70 - 130	97	70 - 130	<0.20	ug/L				
9552211	Total Xylenes	2024/08/02					<0.20	ug/L				
9552211	Vinyl Chloride	2024/08/02	108	70 - 130	98	70 - 130	<0.20	ug/L				
9552221	Alkalinity (Total as CaCO3)	2024/08/02			97	85 - 115	<1.0	mg/L	2.5 (2)	20		
9552226	Conductivity	2024/08/02			101	85 - 115	<1.0	umho/cm	0.38 (2)	10		
9552228	pH	2024/08/02			102	98 - 103			0.16 (2)	N/A		
9552255	Dissolved Chloride (Cl-)	2024/08/06	NC	80 - 120	97	80 - 120	<1.0	mg/L	0.056 (2)	20		
9552258	Dissolved Sulphate (SO4)	2024/08/06	NC	75 - 125	96	80 - 120	<1.0	mg/L	4.0 (2)	20		
9552742	1,2,4-Trichlorobenzene	2024/08/02	40	30 - 130	42	30 - 130	<0.50	ug/L	26 (2)	40		
9552742	1,2-Dichlorobenzene	2024/08/02	41	30 - 130	41	30 - 130	<0.50	ug/L	32 (2)	40		
9552742	1,3-Dichlorobenzene	2024/08/02	35	30 - 130	36	30 - 130	<0.50	ug/L	26 (2)	40		

Bureau Veritas 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.bvna.com

Microbiology testing is conducted at 6660 Campobello Rd. Chemistry testing is conducted at 6740 Campobello Rd.

QUALITY ASSURANCE REPORT(CONT'D)

			Matrix Spike		SPIKED BLANK		Method Blank		RPD		QC Standard	
QC Batch	Parameter	Date	% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits	% Recovery	QC Limits
9552742	1,4-Dichlorobenzene	2024/08/02	36	30 - 130	36	30 - 130	<0.50	ug/L	33 (2)	40		
9552742	2,4,6-Trichlorophenol	2024/08/02	86	10 - 130	85	10 - 130	<0.50	ug/L	5.6 (2)	40		
9552742	2,4-Dichlorophenol	2024/08/02	76	10 - 130	71	10 - 130	<0.30	ug/L	14 (2)	40		
9552742	Benzo(a)pyrene	2024/08/02	106	30 - 130	106	30 - 130	<0.20	ug/L	2.9 (2)	40		
9552742	Diethyl phthalate	2024/08/02	119	30 - 130	120	30 - 130	<1.0	ug/L	4.5 (2)	40		
9552742	Dimethyl phthalate	2024/08/02	113	30 - 130	113	30 - 130	<1.0	ug/L	4.8 (2)	40		
9552742	Di-N-butyl phthalate	2024/08/02	93	30 - 130	95	30 - 130	<2.0	ug/L	2.8 (2)	40		
9552742	Hexachlorobenzene	2024/08/02	91	30 - 130	88	30 - 130	<0.50	ug/L	2.3 (2)	40		
9552742	Pentachlorophenol	2024/08/02	102	10 - 130	98	10 - 130	<1.0	ug/L	9.1 (2)	40		
9552742	Phenol	2024/08/02	26	10 - 130	23	10 - 130	<0.50	ug/L	21 (2)	40		
9553410	Total Ammonia-N	2024/08/07	NC	75 - 125	94	80 - 120	<0.15	mg/L	0.20 (2)	20		
9554019	Total Suspended Solids	2024/08/06			95	80 - 120	<10	mg/L	6.3 (2)	20		
9554136	Dissolved Mercury (Hg)	2024/08/02	97	75 - 125	98	80 - 120	<0.10	ug/L	NC (2)	20		
9554487	Total Dissolved Solids	2024/08/06			100	80 - 120	<10	mg/L	0.96 (2)	20		
9554926	Total Kjeldahl Nitrogen (TKN)	2024/08/07	NC	80 - 120	105	80 - 120	<0.7	mg/L	4.6 (2)	20	107	80 - 120
9554942	Total Chemical Oxygen Demand (COD)	2024/08/06	NC	80 - 120	95	80 - 120	<4.0	mg/L	0.56 (2)	20		
9554995	Total Phosphorus	2024/08/06	109	80 - 120	107	80 - 120	<0.030	mg/L	5.0 (2)	25	106	80 - 120
9558707	Total Arsenic (As)	2024/08/06	99	80 - 120	99	80 - 120	<0.001	mg/L				
9558707	Total Barium (Ba)	2024/08/07	96	80 - 120	95	80 - 120	<0.005	mg/L	3.0 (2)	20		
9558707	Total Boron (B)	2024/08/07	NC	80 - 120	90	80 - 120	<0.02	mg/L	1.1 (2)	20		
9558707	Total Cadmium (Cd)	2024/08/07	96	80 - 120	96	80 - 120	<0.0001	mg/L	NC (2)	20		
9558707	Total Calcium (Ca)	2024/08/07	NC	80 - 120	98	80 - 120	<0.2	mg/L	7.2 (2)	20		
9558707	Total Chromium (Cr)	2024/08/07	103	80 - 120	103	80 - 120	<0.005	mg/L	NC (2)	20		
9558707	Total Copper (Cu)	2024/08/07	103	80 - 120	102	80 - 120	<0.002	mg/L	NC (2)	20		
9558707	Total Iron (Fe)	2024/08/07	101	80 - 120	103	80 - 120	<0.1	mg/L	0.21 (2)	20		
9558707	Total Lead (Pb)	2024/08/07	99	80 - 120	97	80 - 120	<0.0005	mg/L	NC (2)	20		
9558707	Total Magnesium (Mg)	2024/08/07	NC	80 - 120	97	80 - 120	<0.05	mg/L	2.3 (2)	20		
9558707	Total Nickel (Ni)	2024/08/06	95	80 - 120	96	80 - 120	<0.001	mg/L				
9558707	Total Potassium (K)	2024/08/07	98	80 - 120	104	80 - 120	<0.2	mg/L	0.96 (2)	20		
9558707	Total Sodium (Na)	2024/08/07	NC	80 - 120	106	80 - 120	<0.1	mg/L	0.28 (2)	20		

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Microbiology testing is conducted at 6660 Campobello Rd. Chemistry testing is conducted at 6740 Campobello Rd.

QUALITY ASSURANCE REPORT(CONT'D)

			Matrix Spike		SPIKED BLANK		Method Blank		RPD		QC Standard	
QC Batch	Parameter	Date	% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits	% Recovery	QC Limits
9558707	Total Zinc (Zn)	2024/08/07	99	80 - 120	101	80 - 120	<0.01	mg/L	NC (2)	20		
9559301	Phenols-4AAP	2024/08/07	102	80 - 120	101	80 - 120	<0.0010	mg/L	NC (2)	20		

N/A = Not Applicable

Duplicate: Paired analysis of a separate portion of the same sample. Used to evaluate the variance in the measurement.

Matrix Spike: A sample to which a known amount of the analyte of interest has been added. Used to evaluate sample matrix interference.

QC Standard: A sample of known concentration prepared by an external agency under stringent conditions. Used as an independent check of method accuracy.

Spiked Blank: A blank matrix sample to which a known amount of the analyte, usually from a second source, has been added. Used to evaluate method accuracy.

Method Blank: A blank matrix containing all reagents used in the analytical procedure. Used to identify laboratory contamination.

Surrogate: A pure or isotopically labeled compound whose behavior mirrors the analytes of interest. Used to evaluate extraction efficiency.

NC (Matrix Spike): The recovery in the matrix spike was not calculated. The relative difference between the concentration in the parent sample and the spike amount was too small to permit a reliable recovery calculation (matrix spike concentration was less than the native sample concentration)

NC (Duplicate RPD): The duplicate RPD was not calculated. The concentration in the sample and/or duplicate was too low to permit a reliable RPD calculation (absolute difference <= 2x RDL).

(1) Duplicate Parent ID [ZWL686-04]

(2) Duplicate Parent ID

Bureau Veritas 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.bvna.com

Microbiology testing is conducted at 6660 Campobello Rd. Chemistry testing is conducted at 6740 Campobello Rd.

Bureau Veritas Job #: C4N4722
Report Date: 2024/08/09

RWDI Inc.
Client Project #: 2402553.01
Site Location: ON07
Your P.O. #: 13254256
Sampler Initials: MD

VALIDATION SIGNATURE PAGE

The analytical data and all QC contained in this report were reviewed and validated by:

Cristina Carriere, Senior Scientific Specialist

Louise Harding, Team Lead

Michael Damianidis, Project Manager Assistant

Bureau Veritas has procedures in place to guard against improper use of the electronic signature and have the required "signatories", as per ISO/IEC 17025, signing the reports. For Service Group specific validation, please refer to the Validation Signatures page if included, otherwise available by request. For Department specific Analyst/Supervisor validation names, please refer to the Test Summary section if included, otherwise available by request. This report is authorized by Rodney Major, General Manager responsible for Ontario Environmental laboratory operations.

Bureau Veritas 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.bvna.com

Microbiology testing is conducted at 6660 Campobello Rd. Chemistry testing is conducted at 6740 Campobello Rd.

FIELD INFORMATION FORM

BUREAU VERITAS

WASTE MANAGEMENT

Site Name: TCEC

Site No.: Sample: 5 5 1 (Sample ID)

This Waste Management Field Information Form is Required
This form is to be completed, in addition to any State Forms. The Field Form is submitted along with the Chain of Custody Forms that accompany the sample containers (i.e. with the cooler that is returned to the laboratory).

Laboratory Use Only/Lab ID:

PURGE INFO

PURGE DATE (MM DD YY)	PURGE TIME (2400 Hr Clock)	ELAPSED HRS (hrs:min)	WATER VOL IN CASING (Gallons)	ACTUAL VOL PURGED (Gallons)	WELL VOLs PURGED

Note: For Passive Sampling, replace "Water Vol in Casing" and "Well Vols Purged" w/ Water Vol in Tubing/Flow Cell and Tubing/Flow Cell Vols Purged. Mark Changes, Record field data below.

PURGE/SAMPLE EQUIPMENT

Purging and Sampling Equipment ... Dedicated: Y or N

Purging Device:
Sampling Device:
X-Other:

A-Submersible Pump, B-Peristaltic Pump, C-QED Bladder Pump, D-Bailer, E-Piston Pump, F-Dipper/Bottle

Filter Device: Y or N 0.45 µ or ____ µ (circle or fill in)

Filter Type: A (A-In-line Disposable, B-Pressure, C-Vacuum, X-Other:)

Sample Tube Type: (A-Teflon, B-Stainless Steel, C-PVC, D-Polypropylene, X-Other:)

WELL DATA

Well Elevation (at TOC) (ft/msl)
Depth to Water (DTW) (from TOC) (ft)
Groundwater Elevation (GWE) (Site Datum, from TOC) (ft msl)
Total Well Depth (from TOC) (ft)
Stick Up (from ground elevation) (ft)
Casing ID (in)
Casing Material

Note: Total Depth, Stick Up, Casing ID, etc are optional and can be from historical data, unless required by Site/Permit. Well Elevation, DTW, and GWE must be current, obtained from site.

STABILIZATION DATA (Optional)

Sample Time (2400 Hr Clock)	Rate/Unit	pH (std)	Conductance (SC/EC) (µmhos/cm @ 25°C)	Temp. (°C)	Turbidity (ntu)	D.O. (mg/L - ppm)	eH/ORP (mV)	DTW (ft)
		1st	1st					
		2nd	2nd					
		3rd	3rd					
		4th	4th					
Input Range for 3 consec. readings or Permit/State requirements:		+/-	+/-	+/-	+/-	+/-	+/-	

Stabilization Data Fields are Optional *(i.e. complete stabilization readings for parameters required by WM, Site, or State). These fields can be used where four (4) field measurements are required by State/Permit/Site. If a Data Logger or other Electronic format is used, fill in final readings below and submit electronic data separately to Site. If more fields above are needed, use separate sheet or form.*

FIELD DATA

SAMPLE DATE (MM DD YY)	pH (std)	CONDUCTANCE (µmhos/cm @ 25°C)	TEMP. (°C)	TURBIDITY (ntu)	DO (mg/L - ppm)	eH/ORP (mV)	Other: Units
07 31 24	8.2	2419	22.6	>999	7.30		

Final Field Readings are required *(i.e. record field measurements, final stabilized readings, passive sample readings before sampling for all field parameters required by State/Permit/Site.)*

FIELD COMMENTS

Sample Appearance: Opaque Odor: N/O Color: Brown Other:

Weather Conditions (required daily, or as conditions change): 26°C Direction/Speed: S 11 KM/hr Outlook: Partly Cloudy Precipitation: Y or N

Specific Comments (including purge/well volume calculations if required):

@ 9:55
Wtr lvl: 1.5m
Depth: 0.25m
time @ 1m: 7s
2m 7s
3m 8s

I certify that sampling procedures were in accordance with applicable EPA, State, and WM protocols (if more than one sampler, all should sign):

Date	Name	Signature	Company
07/30/24	Maya Dobrescu	[signature]	EWDI Air

DISTRIBUTION: WHITE/ORIGINAL - Stays with Sample, YELLOW - Returned to Client, PINK - Field Copy

Field Information Form v-3.1 06/20

2129

Custody Tracking Form

T938761

Please use this form for custody tracking when submitting the work instructions via eCOC (electronic Chain of Custody). Please ensure your form has a barcode or a Bureau Veritas eCOC confirmation number in the top right hand side. This number links your electronic submission to your samples. This form should be placed in the cooler with your samples.

First Sample: SS1
Last Sample: SS1
Sample Count: 1

Relinquished By				Received By			
Maya DeForest		Date	2024/07/30			Date	2024/07/31
		Time (24 HR)	10:20			Time (24 HR)	1037
		Date				Date	
		Time (24 HR)				Time (24 HR)	
		Date				Date	
		Time (24 HR)				Time (24 HR)	

Unless otherwise agreed to, submissions and use of services are governed by Bureau Veritas' standard terms and conditions which can be found at www.bvna.com.

Triage Information

Sampled By (Print): Maya DeForest

# of Coolers/Pkgs: 1

Rush ☐ Immediate Test ☐ Food Residue ☐

Micro ☐ Food Chemistry ☐

*** LABORATORY USE ONLY ***

Received At

Labeled By

Verified By

Lab Comments: 31-Jul-24 10:03 Patricia Legette C4N4722 BM2 ENV-1549

Custody Seal		Cooling Media	Temperature °C		
Present (Y/N)	Intact (Y/N)	Present (Y/N)	1	2	3
Y	Y	Y	7	8	10 TF39

Drinking Water Metals Preservation Check Done (Circle) **YES** **NO**

COR FCD-00383/4

Page 1 of 1

Your P.O. #: 13254256
Your Project #: 2402553.01
Site#: 700
Site Location: ON07
Your C.O.C. #: 927977

Attention: Khalid Hussein - Twin Creeks

RWDI Inc.
600 Southgate Drive
Guelph, ON
Canada N1G 4P6

Report Date: 2024/07/19
Report #: R8241670
Version: 1 - Final

CERTIFICATE OF ANALYSIS

BUREAU VERITAS JOB #: C4L1992
Received: 2024/07/11, 18:54

Sample Matrix: Surface Water
Samples Received: 2

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Analytical Method
ABN Compounds in Water by GC/MS	2	2024/07/15	2024/07/16	CAM SOP-00301	EPA 8270 m
Alkalinity	2	N/A	2024/07/13	CAM SOP-00448	SM 24 2320 B m
Biochemical Oxygen Demand (BOD)	2	2024/07/13	2024/07/18	CAM SOP-00427	SM 24 5210B m
Chloride by Automated Colourimetry	1	N/A	2024/07/16	CAM SOP-00463	SM 24 4500-Cl E m
Chloride by Automated Colourimetry	1	N/A	2024/07/18	CAM SOP-00463	SM 24 4500-Cl E m
Chemical Oxygen Demand	2	N/A	2024/07/16	CAM SOP-00416	SM 24 5220 D m
Conductance in Water - On-site	2	N/A	2024/07/17		
Conductivity	2	N/A	2024/07/13	CAM SOP-00414	SM 24 2510 m
Field Measured Dissolved Oxygen in Water	2	N/A	2024/07/17		
Dissolved Mercury in Water by CVAA	2	2024/07/18	2024/07/18	CAM SOP-00453	EPA 7470A m
Total Metals by ICPMS	2	N/A	2024/07/17	CAM SOP-00447	EPA 6020B m
Ammonia-N	2	N/A	2024/07/18	CAM SOP-00441	USGS I-2522-90 m
Nitrate & Nitrite as Nitrogen in Water (1)	2	N/A	2024/07/13	CAM SOP-00440	SM 24 4500-NO3I/NO2B
pH (2)	2	2024/07/12	2024/07/13	CAM SOP-00413	SM 24th - 4500H+ B
Phenols (4AAP)	2	N/A	2024/07/18	CAM SOP-00444	OMOE E3179 m
Field Measured pH (3)	2	N/A	2024/07/11		Field pH Meter
Sulphate by Automated Turbidimetry	1	N/A	2024/07/16	CAM SOP-00464	SM 24 4500-SO42- E m
Sulphate by Automated Turbidimetry	1	N/A	2024/07/18	CAM SOP-00464	SM 24 4500-SO42- E m
Total Dissolved Solids	2	2024/07/13	2024/07/15	CAM SOP-00428	SM 24 2540C m
Field Temperature (3)	2	N/A	2024/07/11		Field Thermometer
Total Kjeldahl Nitrogen in Water	2	2024/07/15	2024/07/17	CAM SOP-00938	OMOE E3516 m
Total Phosphorus (Colourimetric)	2	2024/07/16	2024/07/17	CAM SOP-00407	SM 24 4500-P I
Total Suspended Solids	2	2024/07/12	2024/07/15	CAM SOP-00428	SM 24 2540D m
Turbidity - On-site	2	N/A	2024/07/17		
Un-ionized Ammonia (4)	2	2024/07/12	2024/07/18	Auto Calc.	PWQO
Volatile Organic Compounds in Water	2	N/A	2024/07/15	CAM SOP-00228	EPA 8260D

Remarks:

Bureau Veritas is accredited to ISO/IEC 17025 for specific parameters on scopes of accreditation. Unless otherwise noted, procedures used by Bureau Veritas are based upon recognized Provincial, Federal or US method compendia such as CCME, EPA, APHA or the Quebec Ministry of Environment.

Your P.O. #: 13254256
Your Project #: 2402553.01
Site#: 700
Site Location: ON07
Your C.O.C. #: 927977

Attention: Khalid Hussein - Twin Creeks

RWDI Inc.
600 Southgate Drive
Guelph, ON
Canada N1G 4P6

Report Date: 2024/07/19
Report #: R8241670
Version: 1 - Final

CERTIFICATE OF ANALYSIS

BUREAU VERITAS JOB #: C4L1992
Received: 2024/07/11, 18:54

All work recorded herein has been done in accordance with procedures and practices ordinarily exercised by professionals in Bureau Veritas' profession using accepted testing methodologies, quality assurance and quality control procedures (except where otherwise agreed by the client and Bureau Veritas in writing). All data is in statistical control and has met quality control and method performance criteria unless otherwise noted. All method blanks are reported; unless indicated otherwise, associated sample data are not blank corrected. Where applicable, unless otherwise noted, Measurement Uncertainty has not been accounted for when stating conformity to the referenced standard.

Bureau Veritas liability is limited to the actual cost of the requested analyses, unless otherwise agreed in writing. There is no other warranty expressed or implied. Bureau Veritas has been retained to provide analysis of samples provided by the Client using the testing methodology referenced in this report. Interpretation and use of test results are the sole responsibility of the Client and are not within the scope of services provided by Bureau Veritas, unless otherwise agreed in writing. Bureau Veritas is not responsible for the accuracy or any data impacts, that result from the information provided by the customer or their agent.

Solid sample results, except biota, are based on dry weight unless otherwise indicated. Organic analyses are not recovery corrected except for isotope dilution methods.
Results relate to samples tested. When sampling is not conducted by Bureau Veritas, results relate to the supplied samples tested.
This Certificate shall not be reproduced except in full, without the written approval of the laboratory.
Reference Method suffix “m” indicates test methods incorporate validated modifications from specific reference methods to improve performance.
* RPDs calculated using raw data. The rounding of final results may result in the apparent difference.
(1) Values for calculated parameters may not appear to add up due to rounding of raw data and significant figures.
(2) "The CCME method and Analytical Protocol (O. Reg 153/04, O. Reg. 406/19) requires pH to be analyzed within 15 minutes of sampling and therefore field analysis is required for compliance. All Laboratory pH analyses in this report are reported past the CCME and Analytical Protocol (O. Reg 153/04, O. Reg. 406/19) holding time. Bureau Veritas endeavors to analyze samples as soon as possible after receipt."

(3) This is a field test, therefore, the results relate to items that were not analysed at Bureau Veritas.
(4) Un-ionized ammonia is calculated using the total ammonia result and field data provided by the client for pH and temperature.

Encryption Key

Please direct all questions regarding this Certificate of Analysis to:
Patricia Legette, Project Manager
Email: Patricia.Legette@bureauveritas.com
Phone# (905)817-5799

==========

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Bureau Veritas Job #: C4L1992
Report Date: 2024/07/19

RWDI Inc.
Client Project #: 2402553.01
Site Location: ON07
Your P.O. #: 13254256
Sampler Initials: JC

RESULTS OF ANALYSES OF SURFACE WATER

Bureau Veritas ID		ZRW108		ZRW109		
Sampling Date		2024/07/10 08:50		2024/07/10 08:50		
COC Number		927977		927977		
	UNITS	SS1	QC Batch	SSDUP1	RDL	QC Batch
Calculated Parameters						
Total Un-ionized Ammonia	mg/L	<0.0059	9510674	<0.0059	0.0059	9510674
Field Measurements						
Field Conductivity	uS/cm	597	ONSITE	597	N/A	ONSITE
Field Dissolved Oxygen	mg/L	87.3	ONSITE	87.3	N/A	ONSITE
Field Temperature	Celsius	20.7	ONSITE	20.7	N/A	ONSITE
Field Measured Field Turbidity	NTU	>999	ONSITE	>999	N/A	ONSITE
Field Measured pH	pH	7.9	ONSITE	7.9		ONSITE
Inorganics						
Total Ammonia-N	mg/L	<0.15	9517221	<0.15	0.15	9517221
Total BOD	mg/L	4	9513076	4	2	9513076
Total Chemical Oxygen Demand (COD)	mg/L	<4.0	9512184	<4.0	4.0	9512184
Conductivity	umho/cm	350	9512737	350	1.0	9512737
Total Dissolved Solids	mg/L	315	9513595	350	10	9513595
Total Kjeldahl Nitrogen (TKN)	mg/L	<0.7	9515807	<0.7	0.7	9515807
pH	pH	7.94	9512739	7.92		9512739
Phenols-4AAP	mg/L	<0.0010	9522326	<0.0010	0.0010	9522326
Total Phosphorus	mg/L	0.60	9517052	0.60	0.030	9517052
Total Suspended Solids	mg/L	1200	9511515	1200	33	9511515
Dissolved Sulphate (SO4)	mg/L	93	9512769	88	1.0	9511981
Alkalinity (Total as CaCO3)	mg/L	64	9512735	66	1.0	9512735
Dissolved Chloride (Cl-)	mg/L	7.8	9512768	7.1	1.0	9511979
Nitrite (N)	mg/L	0.049	9511992	0.033	0.010	9511992
Nitrate (N)	mg/L	0.32	9511992	0.33	0.10	9511992

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
N/A = Not Applicable

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Microbiology testing is conducted at 6660 Campobello Rd. Chemistry testing is conducted at 6740 Campobello Rd.

Bureau Veritas Job #: C4L1992
Report Date: 2024/07/19

RWDI Inc.
Client Project #: 2402553.01
Site Location: ON07
Your P.O. #: 13254256
Sampler Initials: JC

ELEMENTS BY ATOMIC SPECTROSCOPY (SURFACE WATER)

Bureau Veritas ID		ZRW108	ZRW109		
Sampling Date		2024/07/10 08:50	2024/07/10 08:50		
COC Number		927977	927977		
	UNITS	SS1	SSDUP1	RDL	QC Batch
Metals					
Dissolved Mercury (Hg)	ug/L	<0.10	<0.10	0.10	9522440
Total Arsenic (As)	mg/L	0.014	0.015	0.001	9516645
Total Barium (Ba)	mg/L	0.16	0.17	0.005	9516645
Total Boron (B)	mg/L	0.08	0.09	0.02	9516645
Total Cadmium (Cd)	mg/L	0.0002	0.0002	0.0001	9516645
Total Calcium (Ca)	mg/L	110	120	0.2	9516645
Total Chromium (Cr)	mg/L	0.046	0.048	0.005	9516645
Total Copper (Cu)	mg/L	0.040	0.042	0.002	9516645
Total Iron (Fe)	mg/L	48	50	0.1	9516645
Total Lead (Pb)	mg/L	0.020	0.022	0.0005	9516645
Total Magnesium (Mg)	mg/L	26	27	0.05	9516645
Total Nickel (Ni)	mg/L	0.065	0.068	0.001	9516645
Total Potassium (K)	mg/L	7.5	7.8	0.2	9516645
Total Sodium (Na)	mg/L	7.3	7.4	0.1	9516645
Total Zinc (Zn)	mg/L	0.15	0.16	0.01	9516645

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

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RWDI Inc.
Client Project #: 2402553.01
Site Location: ON07
Your P.O. #: 13254256
Sampler Initials: JC

SEMI-VOLATILE ORGANICS BY GC-MS (SURFACE WATER)

Bureau Veritas ID		ZRW108		ZRW109		
Sampling Date		2024/07/10 08:50		2024/07/10 08:50		
COC Number		927977		927977		
	UNITS	SS1	RDL	SSDUP1	RDL	QC Batch
Semivolatile Organics						
Benzo(a)pyrene	ug/L	<0.80	0.80	<0.20	0.20	9515592
1,2-Dichlorobenzene	ug/L	<2.0	2.0	<0.50	0.50	9515592
1,3-Dichlorobenzene	ug/L	<2.0	2.0	<0.50	0.50	9515592
1,4-Dichlorobenzene	ug/L	<2.0	2.0	<0.50	0.50	9515592
Hexachlorobenzene	ug/L	<2.0	2.0	<0.50	0.50	9515592
1,2,4-Trichlorobenzene	ug/L	<2.0	2.0	<0.50	0.50	9515592
2,4-Dichlorophenol	ug/L	<1.2	1.2	<0.30	0.30	9515592
Pentachlorophenol	ug/L	<4.0	4.0	<1.0	1.0	9515592
Phenol	ug/L	<2.0	2.0	<0.50	0.50	9515592
2,4,6-Trichlorophenol	ug/L	<2.0	2.0	<0.50	0.50	9515592
Di-N-butyl phthalate	ug/L	<8.0	8.0	<2.0	2.0	9515592
Diethyl phthalate	ug/L	<4.0	4.0	<1.0	1.0	9515592
Dimethyl phthalate	ug/L	<4.0	4.0	<1.0	1.0	9515592
Surrogate Recovery (%)						
2,4,6-Tribromophenol	%	78		81		9515592
2-Fluorobiphenyl	%	59		62		9515592
2-Fluorophenol	%	27		22		9515592
D14-Terphenyl	%	86		86		9515592
D5-Nitrobenzene	%	59		53		9515592
D5-Phenol	%	22		18		9515592

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

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RWDI Inc.
Client Project #: 2402553.01
Site Location: ON07
Your P.O. #: 13254256
Sampler Initials: JC

VOLATILE ORGANICS BY GC/MS (SURFACE WATER)

Bureau Veritas ID		ZRW108	ZRW109		
Sampling Date		2024/07/10 08:50	2024/07/10 08:50		
COC Number		927977	927977		
	UNITS	SS1	SSDUP1	RDL	QC Batch
Volatile Organics					
Benzene	ug/L	<0.20	<0.20	0.20	9513133
1,4-Dichlorobenzene	ug/L	<0.40	<0.40	0.40	9513133
Ethylbenzene	ug/L	<0.20	<0.20	0.20	9513133
Methylene Chloride(Dichloromethane)	ug/L	<2.0	<2.0	2.0	9513133
Toluene	ug/L	<0.20	<0.20	0.20	9513133
Vinyl Chloride	ug/L	<0.20	<0.20	0.20	9513133
p+m-Xylene	ug/L	<0.20	<0.20	0.20	9513133
o-Xylene	ug/L	<0.20	<0.20	0.20	9513133
Total Xylenes	ug/L	<0.20	<0.20	0.20	9513133
Surrogate Recovery (%)					
4-Bromofluorobenzene	%	99	100		9513133
D4-1,2-Dichloroethane	%	103	103		9513133
D8-Toluene	%	96	96		9513133

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

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GENERAL COMMENTS

Sample ZRW108 [SS1] : ABN Analysis: Due to the sample matrix, a smaller than usual portion of the sample was used for extraction. Detection limits were adjusted accordingly.
COD < BOD: Both values fall within the method uncertainty for duplicates and are likely equivalent.

Sample ZRW109 [SSDUP1] : COD < BOD: Both values fall within the method uncertainty for duplicates and are likely equivalent.

Results relate only to the items tested.

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Microbiology testing is conducted at 6660 Campobello Rd. Chemistry testing is conducted at 6740 Campobello Rd.

Bureau Veritas Job #: C4L1992
Report Date: 2024/07/19

QUALITY ASSURANCE REPORT

RWDI Inc.
Client Project #: 2402553.01
Site Location: ON07
Your P.O. #: 13254256
Sampler Initials: JC

			Matrix Spike		SPIKED BLANK		Method Blank		RPD		QC Standard	
QC Batch	Parameter	Date	% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits	% Recovery	QC Limits
9513133	4-Bromofluorobenzene	2024/07/15	100	70 - 130	100	70 - 130	99	%				
9513133	D4-1,2-Dichloroethane	2024/07/15	103	70 - 130	101	70 - 130	101	%				
9513133	D8-Toluene	2024/07/15	101	70 - 130	101	70 - 130	98	%				
9515592	2,4,6-Tribromophenol	2024/07/16	85	10 - 130	87	10 - 130	76	%				
9515592	2-Fluorobiphenyl	2024/07/16	42	30 - 130	59	30 - 130	57	%				
9515592	2-Fluorophenol	2024/07/16	20	10 - 130	36	10 - 130	32	%				
9515592	D14-Terphenyl	2024/07/16	88	30 - 130	93	30 - 130	81	%				
9515592	D5-Nitrobenzene	2024/07/16	38	30 - 130	66	30 - 130	60	%				
9515592	D5-Phenol	2024/07/16	16	10 - 130	26	10 - 130	22	%				
9511515	Total Suspended Solids	2024/07/15			100	80 - 120	<10	mg/L	8.0 (1)	20		
9511979	Dissolved Chloride (Cl-)	2024/07/18	NC	80 - 120	100	80 - 120	<1.0	mg/L	0.97 (1)	20		
9511981	Dissolved Sulphate (SO4)	2024/07/18	NC	75 - 125	102	80 - 120	<1.0	mg/L	0.81 (1)	20		
9511992	Nitrate (N)	2024/07/13	92	80 - 120	95	80 - 120	<0.10	mg/L	NC (1)	20		
9511992	Nitrite (N)	2024/07/13	100	80 - 120	101	80 - 120	<0.010	mg/L	NC (1)	20		
9512184	Total Chemical Oxygen Demand (COD)	2024/07/16	99	80 - 120	100	80 - 120	<4.0	mg/L	NC (1)	20		
9512735	Alkalinity (Total as CaCO3)	2024/07/13			98	85 - 115	<1.0	mg/L	0.11 (1)	20		
9512737	Conductivity	2024/07/13			102	85 - 115	<1.0	umho/cm	0.27 (1)	10		
9512739	pH	2024/07/13			102	98 - 103			0.81 (1)	N/A		
9512768	Dissolved Chloride (Cl-)	2024/07/16	97 (2)	80 - 120	104	80 - 120	<1.0	mg/L	2.1 (3)	20		
9512769	Dissolved Sulphate (SO4)	2024/07/16	NC (2)	75 - 125	98	80 - 120	<1.0	mg/L	0.74 (3)	20		
9513076	Total BOD	2024/07/18					<2	mg/L	6.5 (1)	30	93	80 - 120
9513133	1,4-Dichlorobenzene	2024/07/15	98	70 - 130	99	70 - 130	<0.40	ug/L				
9513133	Benzene	2024/07/15	94	70 - 130	95	70 - 130	<0.20	ug/L				
9513133	Ethylbenzene	2024/07/15	94	70 - 130	96	70 - 130	<0.20	ug/L				
9513133	Methylene Chloride(Dichloromethane)	2024/07/15	97	70 - 130	97	70 - 130	<2.0	ug/L				
9513133	o-Xylene	2024/07/15	93	70 - 130	95	70 - 130	<0.20	ug/L	NC (1)	30		
9513133	p+m-Xylene	2024/07/15	91	70 - 130	93	70 - 130	<0.20	ug/L	NC (1)	30		
9513133	Toluene	2024/07/15	94	70 - 130	95	70 - 130	<0.20	ug/L	NC (1)	30		
9513133	Total Xylenes	2024/07/15					<0.20	ug/L	NC (1)	30		

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QUALITY ASSURANCE REPORT(CONT'D)

			Matrix Spike		SPIKED BLANK		Method Blank		RPD		QC Standard	
QC Batch	Parameter	Date	% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits	% Recovery	QC Limits
9513133	Vinyl Chloride	2024/07/15	90	70 - 130	92	70 - 130	<0.20	ug/L				
9513595	Total Dissolved Solids	2024/07/15			98	80 - 120	<10	mg/L	13 (1)	20		
9515592	1,2,4-Trichlorobenzene	2024/07/16	33	30 - 130	52	30 - 130	<0.50	ug/L				
9515592	1,2-Dichlorobenzene	2024/07/16	36	30 - 130	55	30 - 130	<0.50	ug/L				
9515592	1,3-Dichlorobenzene	2024/07/16	33	30 - 130	52	30 - 130	<0.50	ug/L				
9515592	1,4-Dichlorobenzene	2024/07/16	35	30 - 130	54	30 - 130	<0.50	ug/L				
9515592	2,4,6-Trichlorophenol	2024/07/16	66	10 - 130	83	10 - 130	<0.50	ug/L	NC (1)	40		
9515592	2,4-Dichlorophenol	2024/07/16	46	10 - 130	70	10 - 130	<0.30	ug/L	NC (1)	40		
9515592	Benzo(a)pyrene	2024/07/16	93	30 - 130	94	30 - 130	<0.20	ug/L	NC (1)	40		
9515592	Diethyl phthalate	2024/07/16	87	30 - 130	92	30 - 130	<1.0	ug/L				
9515592	Dimethyl phthalate	2024/07/16	72	30 - 130	79	30 - 130	<1.0	ug/L				
9515592	Di-N-butyl phthalate	2024/07/16	96	30 - 130	97	30 - 130	<2.0	ug/L	NC (1)	40		
9515592	Hexachlorobenzene	2024/07/16	84	30 - 130	91	30 - 130	<0.50	ug/L				
9515592	Pentachlorophenol	2024/07/16	107	10 - 130	96	10 - 130	<1.0	ug/L	NC (1)	40		
9515592	Phenol	2024/07/16	18	10 - 130	28	10 - 130	<0.50	ug/L	NC (1)	40		
9515807	Total Kjeldahl Nitrogen (TKN)	2024/07/17	108 (4)	80 - 120	102	80 - 120	<0.7	mg/L	NC (5)	20	105	80 - 120
9516645	Total Arsenic (As)	2024/07/17	97	80 - 120	97	80 - 120	<0.001	mg/L				
9516645	Total Barium (Ba)	2024/07/17	98	80 - 120	96	80 - 120	<0.005	mg/L				
9516645	Total Boron (B)	2024/07/17	NC	80 - 120	89	80 - 120	<0.02	mg/L				
9516645	Total Cadmium (Cd)	2024/07/17	96	80 - 120	98	80 - 120	<0.0001	mg/L				
9516645	Total Calcium (Ca)	2024/07/17	NC	80 - 120	97	80 - 120	<0.2	mg/L				
9516645	Total Chromium (Cr)	2024/07/17	92	80 - 120	91	80 - 120	<0.005	mg/L	4.6 (1)	20		
9516645	Total Copper (Cu)	2024/07/17	103	80 - 120	93	80 - 120	<0.002	mg/L	3.9 (1)	20		
9516645	Total Iron (Fe)	2024/07/17	96	80 - 120	95	80 - 120	<0.1	mg/L				
9516645	Total Lead (Pb)	2024/07/17	94	80 - 120	97	80 - 120	<0.0005	mg/L				
9516645	Total Magnesium (Mg)	2024/07/17	98	80 - 120	95	80 - 120	<0.05	mg/L				
9516645	Total Nickel (Ni)	2024/07/17	NC	80 - 120	90	80 - 120	<0.001	mg/L	4.5 (1)	20		
9516645	Total Potassium (K)	2024/07/17	NC	80 - 120	95	80 - 120	<0.2	mg/L				
9516645	Total Sodium (Na)	2024/07/17	NC	80 - 120	95	80 - 120	<0.1	mg/L				
9516645	Total Zinc (Zn)	2024/07/17	NC	80 - 120	95	80 - 120	<0.01	mg/L	3.4 (1)	20		

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QUALITY ASSURANCE REPORT(CONT'D)

			Matrix Spike		SPIKED BLANK		Method Blank		RPD		QC Standard	
QC Batch	Parameter	Date	% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits	% Recovery	QC Limits
9517052	Total Phosphorus	2024/07/17	100 (6)	80 - 120	105	80 - 120	<0.030	mg/L	2.7 (7)	25	104	80 - 120
9517221	Total Ammonia-N	2024/07/18	96	75 - 125	97	80 - 120	<0.15	mg/L	NC (1)	20		
9522326	Phenols-4AAP	2024/07/18	102	80 - 120	102	80 - 120	<0.0010	mg/L	3.3 (1)	20		
9522440	Dissolved Mercury (Hg)	2024/07/18	95	75 - 125	92	80 - 120	<0.10	ug/L	NC (1)	20		

N/A = Not Applicable

Duplicate: Paired analysis of a separate portion of the same sample. Used to evaluate the variance in the measurement.

Matrix Spike: A sample to which a known amount of the analyte of interest has been added. Used to evaluate sample matrix interference.

QC Standard: A sample of known concentration prepared by an external agency under stringent conditions. Used as an independent check of method accuracy.

Spiked Blank: A blank matrix sample to which a known amount of the analyte, usually from a second source, has been added. Used to evaluate method accuracy.

Method Blank: A blank matrix containing all reagents used in the analytical procedure. Used to identify laboratory contamination.

Surrogate: A pure or isotopically labeled compound whose behavior mirrors the analytes of interest. Used to evaluate extraction efficiency.

NC (Matrix Spike): The recovery in the matrix spike was not calculated. The relative difference between the concentration in the parent sample and the spike amount was too small to permit a reliable recovery calculation (matrix spike concentration was less than the native sample concentration)

NC (Duplicate RPD): The duplicate RPD was not calculated. The concentration in the sample and/or duplicate was too low to permit a reliable RPD calculation (absolute difference <= 2x RDL).

(1) Duplicate Parent ID

(2) Matrix Spike Parent ID [ZRW108-02]

(3) Duplicate Parent ID [ZRW108-02]

(4) Matrix Spike Parent ID [ZRW109-08]

(5) Duplicate Parent ID [ZRW109-08]

(6) Matrix Spike Parent ID [ZRW108-08]

(7) Duplicate Parent ID [ZRW108-08]

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Bureau Veritas Job #: C4L1992
Report Date: 2024/07/19

RWDI Inc.
Client Project #: 2402553.01
Site Location: ON07
Your P.O. #: 13254256
Sampler Initials: JC

VALIDATION SIGNATURE PAGE

The analytical data and all QC contained in this report were reviewed and validated by:

Cristina Carriere, Senior Scientific Specialist

Michael Damianidis, Project Manager Assistant

Bureau Veritas has procedures in place to guard against improper use of the electronic signature and have the required "signatories", as per ISO/IEC 17025, signing the reports. For Service Group specific validation, please refer to the Validation Signatures page if included, otherwise available by request. For Department specific Analyst/Supervisor validation names, please refer to the Test Summary section if included, otherwise available by request. This report is authorized by Rodney Major, General Manager responsible for Ontario Environmental laboratory operations.

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BUREAU VERITAS

FIELD INFORMATION FORM

WASTE MANAGEMENT

Site Name: ICEC

Site No.: Sample: S 61 (Sample ID)

This Waste Management Field Information Form is Required
This form is to be completed, in addition to any State Forms. The Field Form is submitted along with the Chain of Custody Forms that accompany the sample containers (i.e. with the cooler that is returned to the laboratory).

Laboratory Use Only/Lab ID:

PURGE INFO

PURGE DATE (MM DD YY)	PURGE TIME (2400 Hr Clock)	ELAPSED HRS (hrs:min)	WATER VOL IN CASING (Gallons)	ACTUAL VOL PURGED (Gallons)	WELL VOLs PURGED

Note: For Passive Sampling, replace "Water Vol in Casing" and "Well Vols Purged" w/ Water Vol in Tubing/Flow Cell and Tubing/Flow Cell Vols Purged. Mark Changes, Record field data below.

PURGE/SAMPLE EQUIPMENT

Purging and Sampling Equipment ... Dedicated: Y or N

Filter Device: Y or N 0.45 µ or ____ µ (circle or fill in)

Purging Device: ____ A-Submersible Pump B-Peristaltic Pump C-QED Bladder Pump D-Bailer E-Piston Pump F-Dipper/Bottle

Sampling Device: ____

X-Other: ____

Filter Type: A (A-In-line Disposable B-Pressure C-Vacuum X-Other: ____)

Sample Tube Type: A (A-Teflon B-Stainless Steel C-PVC D-Polypropylene X-Other: ____)

WELL DATA

Well Elevation (at TOC) ____ (ft/msl)

Depth to Water (DTW) (from TOC) ____ (ft)

Groundwater Elevation (GWE) (Site Datum, from TOC) ____ (ft msl)

Total Well Depth (from TOC) ____ (ft)

Stick Up (from ground elevation) ____ (ft)

Casing ID ____ (in)

Casing Material ____

Note: Total Depth, Stick Up, Casing ID, etc. are optional and can be from historical data, unless required by Site/Permit. Well Elevation, DTW, and GWE must be current, obtained from site.

STABILIZATION DATA (Optional)

Sample Time (2400 Hr Clock)	Rate/Unit	pH (std)	Conductance (SC/EC) (µmhos/cm @ 25°C)	Temp. (°C)	Turbidity (ntu)	D.O. (mg/L - ppm)	eH/ORP (mV)	DTW (ft)
		1st	1st					
		2nd	2nd					
		3rd	3rd					
		4th	4th					
Input Range for 3 consec. readings or Permit/State requirements:		+/-	+/-	+/-	+/-	+/-	+/-	

Stabilization Data Fields are Optional *(i.e. complete stabilization readings for parameters required by WM, Site, or State). These fields can be used where four (4) field measurements are required by State/Permit/Site. If a Data Logger or other Electronic format is used, fill in final readings below and submit electronic data separately to Site. If more fields above are needed, use separate sheet or form.*

FIELD DATA

SAMPLE DATE (MM DD YY)	pH (std)	CONDUCTANCE (µmhos/cm @ 25°C)	TEMP. (°C)	TURBIDITY (ntu)	DO (mg/L - ppm)	eH/ORP (mV)	Other: Units
07 10 24	7.9	597	20.7	>999	87.3		

Final Field Readings are required *(i.e. record field measurements, final stabilized readings, passive sample readings before sampling for all field parameters required by State/Permit/Site.)*

FIELD COMMENTS

Sample Appearance: opaque Odor: none Color: tan Other: ____

Weather Conditions (required daily, or as conditions change): 19°C Direction/Speed: 15km/hr E Outlook: ~~Cloudy~~ Overcast Precipitation: Y or (N)

Specific Comments (including purge/well volume calculations if required):

time: 8:50 width 1m time @ 1m 1: 15s

Depth .15m 2: 15s

DUP collected. 3: 16s

I certify that sampling procedures were in accordance with applicable EPA, State, and WM protocols (if more than one sampler, all should sign):

Date	Name	Signature	Company
07/10/24	Maja Deforest	[signature]	RWPI Air

DISTRIBUTION: WHITE/ORIGINAL - Stays with Sample, YELLOW - Returned to Client, PINK - Field Copy

Field Information Form v-3.1 06/20

2113

BOD
BUREAU VERITAS

Custody Tracking Form

T927977

Please use this form for custody tracking when submitting the work instructions via eCOC (electronic Chain of Custody). Please ensure your form has a barcode or a Bureau Veritas eCOC confirmation number in the top right hand side. This number links your electronic submission to your samples. This form should be placed in the cooler with your samples.

First Sample: SS1
Last Sample: SSDUP1
Sample Count: 2

Relinquished By				Received By			
James Hanna		Date	2024/07/10	Soumya Pergamon		Date	2024/07/10
		Time (24 HR)	16:15			Time (24 HR)	16:27
		Date				Date	2024/07/11
		Time (24 HR)				Time (24 HR)	18:54
		Date				Date	
		Time (24 HR)				Time (24 HR)	

Unless otherwise agreed to, submissions and use of services are governed by Bureau Veritas' standard terms and conditions which can be found at www.bvna.com.

Triage Information

Sampled By (Print): James Hanna

# of Coolers/Pkgs: 1

Rush ☐ Immediate Test ☐ Food Residue ☐

Micro ☐ Food Chemistry ☐

*** LABORATORY USE ONLY ***

Received At

Labeled By

Verified By

Lab Comments: #752468

Custody Seal		Cooling Media	Temperature °C		
Present (Y/N)	Intact (Y/N)	Present (Y/N)	1	2	3
Y	Y	Y	8	10	4
Y	N	Y	5	5	4
Drinking Water Metals Preservation Check Done (Circle)				YES	NO

11-Jul-24 18:54
Patricia Legette
C4L1992

BM2 ENV-1327

REC'D IN LONDON

COR FCD-00383/4

Page 1 of 1

Your P.O. #: 13254256
Your Project #: 2402553.01
Site#: 700
Site Location: ON07
Your C.O.C. #: 979752

Attention: Khalid Hussein - Twin Creeks

RWDI Inc.
600 Southgate Drive
Guelph, ON
Canada N1G 4P6

Report Date: 2024/10/24
Report #: R8375428
Version: 1 - Final

CERTIFICATE OF ANALYSIS

BUREAU VERITAS JOB #: C4W4864
Received: 2024/10/16, 10:22

Sample Matrix: Water
Samples Received: 2

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Analytical Method
Alkalinity	2	N/A	2024/10/22	CAM SOP-00448	SM 24 2320 B m
Chloride by Automated Colourimetry	2	N/A	2024/10/21	CAM SOP-00463	SM 24 4500-Cl E m
Conductance in Water - On-site	2	N/A	2024/10/23		
Conductivity	2	N/A	2024/10/22	CAM SOP-00414	SM 24 2510 m
Field Measured Dissolved Oxygen in Water	2	N/A	2024/10/23		
Total Metals by ICPMS	2	N/A	2024/10/22	CAM SOP-00447	EPA 6020B m
Ammonia-N	2	N/A	2024/10/18	CAM SOP-00441	USGS I-2522-90 m
Nitrate & Nitrite as Nitrogen in Water (1)	2	N/A	2024/10/19	CAM SOP-00440	SM 24 4500-NO3I/NO2B
pH (2)	2	2024/10/17	2024/10/20	CAM SOP-00413	SM 24th - 4500H+ B
Phenols (4AAP)	2	N/A	2024/10/18	CAM SOP-00444	OMOE E3179 m
Field Measured pH (3)	2	N/A	2024/10/16		Field pH Meter
Sulphate by Automated Turbidimetry	2	N/A	2024/10/21	CAM SOP-00464	SM 24 4500-SO42- E m
Total Dissolved Solids	2	2024/10/18	2024/10/21	CAM SOP-00428	SM 24 2540C m
Field Temperature (3)	2	N/A	2024/10/16		Field Thermometer
Total Kjeldahl Nitrogen in Water	2	2024/10/21	2024/10/23	CAM SOP-00938	OMOE E3516 m
Total Phosphorus (Colourimetric)	2	2024/10/21	2024/10/22	CAM SOP-00407	SM 24 4500-P I
Turbidity - On-site	2	N/A	2024/10/23		
Un-ionized Ammonia (4)	2	2024/10/16	2024/10/23	Auto Calc.	PWQO

Remarks:

Bureau Veritas is accredited to ISO/IEC 17025 for specific parameters on scopes of accreditation. Unless otherwise noted, procedures used by Bureau Veritas are based upon recognized Provincial, Federal or US method compendia such as CCME, EPA, APHA or the Quebec Ministry of Environment.

All work recorded herein has been done in accordance with procedures and practices ordinarily exercised by professionals in Bureau Veritas' profession using accepted testing methodologies, quality assurance and quality control procedures (except where otherwise agreed by the client and Bureau Veritas in writing). All data is in statistical control and has met quality control and method performance criteria unless otherwise noted. All method blanks are reported; unless indicated otherwise, associated sample data are not blank corrected. Where applicable, unless otherwise noted, Measurement Uncertainty has not been accounted for when stating conformity to the referenced standard.

Bureau Veritas liability is limited to the actual cost of the requested analyses, unless otherwise agreed in writing. There is no other warranty expressed or implied. Bureau Veritas has been retained to provide analysis of samples provided by the Client using the testing methodology referenced in this report. Interpretation and use of test results are the sole responsibility of the Client and are not within the scope of services provided by Bureau Veritas, unless

Your P.O. #: 13254256
Your Project #: 2402553.01
Site#: 700
Site Location: ON07
Your C.O.C. #: 979752

Attention: Khalid Hussein - Twin Creeks

RWDI Inc.
600 Southgate Drive
Guelph, ON
Canada N1G 4P6

Report Date: 2024/10/24
Report #: R8375428
Version: 1 - Final

CERTIFICATE OF ANALYSIS

BUREAU VERITAS JOB #: C4W4864
Received: 2024/10/16, 10:22

otherwise agreed in writing. Bureau Veritas is not responsible for the accuracy or any data impacts, that result from the information provided by the customer or their agent.

Solid sample results, except biota, are based on dry weight unless otherwise indicated. Organic analyses are not recovery corrected except for isotope dilution methods.
Results relate to samples tested. When sampling is not conducted by Bureau Veritas, results relate to the supplied samples tested.
This Certificate shall not be reproduced except in full, without the written approval of the laboratory.
Reference Method suffix "m" indicates test methods incorporate validated modifications from specific reference methods to improve performance.
* RPDs calculated using raw data. The rounding of final results may result in the apparent difference.
(1) Values for calculated parameters may not appear to add up due to rounding of raw data and significant figures.
(2) "The CCME method and Analytical Protocol (O. Reg 153/04, O. Reg. 406/19) requires pH to be analyzed within 15 minutes of sampling and therefore field analysis is required for compliance. All Laboratory pH analyses in this report are reported past the CCME and Analytical Protocol (O. Reg 153/04, O. Reg. 406/19) holding time. Bureau Veritas endeavors to analyze samples as soon as possible after receipt."

(3) This is a field test, therefore, the results relate to items that were not analysed at Bureau Veritas.
(4) Un-ionized ammonia is calculated using the total ammonia result and field data provided by the client for pH and temperature.

Encryption Key

Please direct all questions regarding this Certificate of Analysis to:
Patricia Legette, Project Manager
Email: Patricia.Legette@bureauveritas.com
Phone# (905)817-5799

==========

Bureau Veritas has procedures in place to guard against improper use of the electronic signature and have the required "signatories", as per ISO/IEC 17025, signing the reports. For Service Group specific validation, please refer to the Validation Signatures page if included, otherwise available by request. For Department specific Analyst/Supervisor validation names, please refer to the Test Summary section if included, otherwise available by request. This report is authorized by Rodney Major, General Manager responsible for Ontario Environmental laboratory operations.

Bureau Veritas Job #: C4W4864
Report Date: 2024/10/24

RWDI Inc.
Client Project #: 2402553.01
Site Location: ON07
Your P.O. #: 13254256
Sampler Initials: JA

RESULTS OF ANALYSES OF WATER

Bureau Veritas ID		AFZP40		AFZP41		
Sampling Date		2024/10/14 10:30		2024/10/14 11:45		
COC Number		979752		979752		
	UNITS	SS16	RDL	SS10	RDL	QC Batch
Calculated Parameters						
Total Un-ionized Ammonia	mg/L	<0.0027	0.0027	<0.011	0.011	9704113
Field Measurements						
Field Conductivity	uS/cm	345	N/A	309	N/A	ONSITE
Field Dissolved Oxygen	mg/L	10.4	N/A	10.96	N/A	ONSITE
Field Temperature	Celsius	10.1	N/A	11.0	N/A	ONSITE
Field Measured Field Turbidity	NTU	83.7	N/A	453	N/A	ONSITE
Field Measured pH	pH	7.9		8.5		ONSITE
Inorganics						
Total Ammonia-N	mg/L	<0.15	0.15	<0.15	0.15	9707206
Conductivity	umho/cm	320	1.0	210	1.0	9708574
Total Dissolved Solids	mg/L	235	10	185	10	9709664
Total Kjeldahl Nitrogen (TKN)	mg/L	<0.7	0.7	<0.7	0.7	9714201
pH	pH	7.92		7.87		9708577
Phenols-4AAP	mg/L	<0.0010	0.0010	<0.0010	0.0010	9709791
Total Phosphorus	mg/L	0.33	0.030	0.25	0.030	9712429
Dissolved Sulphate (SO4)	mg/L	29	1.0	23	1.0	9708612
Alkalinity (Total as CaCO3)	mg/L	130	1.0	76	1.0	9708573
Dissolved Chloride (Cl-)	mg/L	2.7	1.0	5.5	1.0	9708611
Nitrite (N)	mg/L	<0.010	0.010	<0.010	0.010	9708604
Nitrate (N)	mg/L	<0.10	0.10	<0.10	0.10	9708604

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
N/A = Not Applicable

Bureau Veritas 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.bvna.com

Microbiology testing is conducted at 6660 Campobello Rd. Chemistry testing is conducted at 6740 Campobello Rd.

Bureau Veritas Job #: C4W4864
Report Date: 2024/10/24

RWDI Inc.
Client Project #: 2402553.01
Site Location: ON07
Your P.O. #: 13254256
Sampler Initials: JA

ELEMENTS BY ATOMIC SPECTROSCOPY (WATER)

Bureau Veritas ID		AFZP40	AFZP41		
Sampling Date		2024/10/14 10:30	2024/10/14 11:45		
COC Number		979752	979752		
	UNITS	SS16	SS10	RDL	QC Batch
Metals					
Total Boron (B)	mg/L	0.04	0.06	0.02	9713739
Total Calcium (Ca)	mg/L	55	32	0.2	9713739
Total Chromium (Cr)	mg/L	<0.005	0.015	0.005	9713739
Total Iron (Fe)	mg/L	1.9	14	0.1	9713739
Total Magnesium (Mg)	mg/L	9.6	8.1	0.05	9713739
Total Nickel (Ni)	mg/L	0.003	0.017	0.001	9713739
Total Potassium (K)	mg/L	9.5	4.2	0.2	9713739
Total Sodium (Na)	mg/L	2.2	2.1	0.1	9713739
Total Zinc (Zn)	mg/L	0.02	0.04	0.01	9713739

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

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Microbiology testing is conducted at 6660 Campobello Rd. Chemistry testing is conducted at 6740 Campobello Rd.

Bureau Veritas Job #: C4W4864
Report Date: 2024/10/24

RWDI Inc.
Client Project #: 2402553.01
Site Location: ON07
Your P.O. #: 13254256
Sampler Initials: JA

GENERAL COMMENTS

Each temperature is the average of up to three cooler temperatures taken at receipt

Package 1	6.0°C

Results relate only to the items tested.

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Microbiology testing is conducted at 6660 Campobello Rd. Chemistry testing is conducted at 6740 Campobello Rd.

Bureau Veritas Job #: C4W4864
Report Date: 2024/10/24

QUALITY ASSURANCE REPORT

RWDI Inc.
Client Project #: 2402553.01
Site Location: ON07
Your P.O. #: 13254256
Sampler Initials: JA

			Matrix Spike		SPIKED BLANK		Method Blank		RPD		QC Standard	
QC Batch	Parameter	Date	% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits	% Recovery	QC Limits
9707206	Total Ammonia-N	2024/10/18	90	75 - 125	92	80 - 120	<0.15	mg/L	NC (1)	20		
9708573	Alkalinity (Total as CaCO3)	2024/10/22			98	85 - 115	<1.0	mg/L	0.33 (1)	20		
9708574	Conductivity	2024/10/22			101	85 - 115	<1.0	umho/cm	0.44 (1)	10		
9708577	pH	2024/10/20			102	98 - 103			0.29 (1)	N/A		
9708604	Nitrate (N)	2024/10/19	83	80 - 120	97	80 - 120	<0.10	mg/L	6.2 (1)	20		
9708604	Nitrite (N)	2024/10/19	96	80 - 120	103	80 - 120	<0.010	mg/L	1.1 (1)	20		
9708611	Dissolved Chloride (Cl-)	2024/10/21	97 (2)	80 - 120	95	80 - 120	<1.0	mg/L	1.9 (3)	20		
9708612	Dissolved Sulphate (SO4)	2024/10/21	NC (2)	75 - 125	93	80 - 120	<1.0	mg/L	0.69 (3)	20		
9709664	Total Dissolved Solids	2024/10/21			98	80 - 120	<10	mg/L	3.7 (1)	20		
9709791	Phenols-4AAP	2024/10/18	86	80 - 120	103	80 - 120	<0.0010	mg/L	NC (1)	20		
9712429	Total Phosphorus	2024/10/22	109	80 - 120	101	80 - 120	<0.030	mg/L	4.8 (1)	25	101	80 - 120
9713739	Total Boron (B)	2024/10/22	94 (4)	80 - 120	92	80 - 120	<0.02	mg/L	1.6 (5)	20		
9713739	Total Calcium (Ca)	2024/10/22	91 (4)	80 - 120	94	80 - 120	<0.2	mg/L	0.32 (5)	20		
9713739	Total Chromium (Cr)	2024/10/22	94 (4)	80 - 120	95	80 - 120	<0.005	mg/L	NC (5)	20		
9713739	Total Iron (Fe)	2024/10/22	95 (4)	80 - 120	96	80 - 120	<0.1	mg/L	0.87 (5)	20		
9713739	Total Magnesium (Mg)	2024/10/22	93 (4)	80 - 120	94	80 - 120	<0.05	mg/L	0.46 (5)	20		
9713739	Total Nickel (Ni)	2024/10/22	91 (4)	80 - 120	93	80 - 120	<0.001	mg/L	2.3 (5)	20		
9713739	Total Potassium (K)	2024/10/22	95 (4)	80 - 120	95	80 - 120	<0.2	mg/L	0.43 (5)	20		
9713739	Total Sodium (Na)	2024/10/22	92 (4)	80 - 120	94	80 - 120	<0.1	mg/L	0.28 (5)	20		
9713739	Total Zinc (Zn)	2024/10/22	96 (4)	80 - 120	97	80 - 120	<0.01	mg/L	5.3 (5)	20		

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Microbiology testing is conducted at 6660 Campobello Rd. Chemistry testing is conducted at 6740 Campobello Rd.

QUALITY ASSURANCE REPORT(CONT'D)

			Matrix Spike		SPIKED BLANK		Method Blank		RPD		QC Standard	
QC Batch	Parameter	Date	% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits	% Recovery	QC Limits
9714201	Total Kjeldahl Nitrogen (TKN)	2024/10/24	NC	80 - 120	100	80 - 120	<0.7	mg/L	18 (1)	20	95	80 - 120

N/A = Not Applicable

Duplicate: Paired analysis of a separate portion of the same sample. Used to evaluate the variance in the measurement.

Matrix Spike: A sample to which a known amount of the analyte of interest has been added. Used to evaluate sample matrix interference.

QC Standard: A sample of known concentration prepared by an external agency under stringent conditions. Used as an independent check of method accuracy.

Spiked Blank: A blank matrix sample to which a known amount of the analyte, usually from a second source, has been added. Used to evaluate method accuracy.

Method Blank: A blank matrix containing all reagents used in the analytical procedure. Used to identify laboratory contamination.

NC (Matrix Spike): The recovery in the matrix spike was not calculated. The relative difference between the concentration in the parent sample and the spike amount was too small to permit a reliable recovery calculation (matrix spike concentration was less than the native sample concentration)

NC (Duplicate RPD): The duplicate RPD was not calculated. The concentration in the sample and/or duplicate was too low to permit a reliable RPD calculation (absolute difference <= 2x RDL).

(1) Duplicate Parent ID

(2) Matrix Spike Parent ID [AFZP40-01]

(3) Duplicate Parent ID [AFZP40-01]

(4) Matrix Spike Parent ID [AFZP40-03]

(5) Duplicate Parent ID [AFZP40-03]

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Microbiology testing is conducted at 6660 Campobello Rd. Chemistry testing is conducted at 6740 Campobello Rd.

Bureau Veritas Job #: C4W4864
Report Date: 2024/10/24

RWDI Inc.
Client Project #: 2402553.01
Site Location: ON07
Your P.O. #: 13254256
Sampler Initials: JA

VALIDATION SIGNATURE PAGE

The analytical data and all QC contained in this report were reviewed and validated by:

Cristina Carriere, Senior Scientific Specialist

Patricia Legette, Project Manager

Bureau Veritas has procedures in place to guard against improper use of the electronic signature and have the required "signatories", as per ISO/IEC 17025, signing the reports. For Service Group specific validation, please refer to the Validation Signatures page if included, otherwise available by request. For Department specific Analyst/Supervisor validation names, please refer to the Test Summary section if included, otherwise available by request. This report is authorized by Rodney Major, General Manager responsible for Ontario Environmental laboratory operations.

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Microbiology testing is conducted at 6660 Campobello Rd. Chemistry testing is conducted at 6740 Campobello Rd.

FIELD INFORMATION FORM

BUREAU VERITAS

WM WASTE MANAGEMENT

Site Name: TCEC

Site No.: ____ Sample: S S 1 6 (Sample ID)

This Waste Management Field Information Form is Required
This form is to be completed, in addition to any State Forms. The Field Form is submitted along with the Chain of Custody Forms that accompany the sample containers (i.e. with the cooler that is returned to the laboratory).

Laboratory Use Only/Lab ID:

PURGE INFO

PURGE DATE (MM DD YY)	PURGE TIME (2400 Hr Clock)	ELAPSED HRS (hrs:min)	WATER VOL IN CASING (Gallons)	ACTUAL VOL PURGED (Gallons)	WELL VOLs PURGED

Note: For Passive Sampling, replace "Water Vol in Casing" and "Well Vols Purged" w/ Water Vol in Tubing/Flow Cell and Tubing/Flow Cell Vols Purged. Mark Changes, Record field data below.

PURGE/SAMPLE EQUIPMENT

Purging and Sampling Equipment ... Dedicated: Y or N — Filter Device: Y or N — 0.45 µ or ____ µ (circle or fill in)

Purging Device: ____ A-Submersible Pump B-Peristaltic Pump C-QED Bladder Pump D-Bailer E-Piston Pump F-Dipper/Bottle — Filter Type: ____ A-In-line Disposable B-Pressure C-Vacuum X-Other: ____

Sampling Device: ____

X-Other: ____ Sample Tube Type: ____ A-Teflon B-Stainless Steel C-PVC D-Polypropylene X-Other: ____

WELL DATA

Well Elevation (at TOC) ____ (ft/msl) — Depth to Water (DTW) (from TOC) ____ (ft) — Groundwater Elevation (GWE) (Site Datum, from TOC) ____ (ft msl)

Total Well Depth (from TOC) ____ (ft) — Stick Up (from ground elevation) ____ (ft) — Casing ID ____ (in) — Casing Material ____

Note: Total Depth, Stick Up, Casing ID, etc. are optional and can be from historical data, unless required by Site/Permit. Well Elevation, DTW, and GWE must be current, obtained from site.

STABILIZATION DATA (Optional)

Sample Time (2400 Hr Clock)	Rate/Unit ____	pH (std)	Conductance (SC/EC) (µmhos/cm @ 25°C)	Temp. (°C)	Turbidity (ntu)	D.O. (mg/L - ppm)	eH/ORP (mV)	DTW (ft)
		1st	1st					
		2nd	2nd					
		3rd	3rd					
		4th	4th					
Input Range for 3 consec. readings or Permit/State requirements:		+/-	+/-	+/-	+/-	+/-	+/-	

Stabilization Data Fields are Optional *(i.e. complete stabilization readings for parameters required by WM, Site, or State). These fields can be used where four (4) field measurements are required by State/Permit/Site. If a Data Logger or other Electronic format is used, fill in final readings below and submit electronic data separately to Site. If more fields above are needed, use separate sheet or form.*

FIELD DATA

SAMPLE DATE (MM DD YY)	pH (std)	CONDUCTANCE (µmhos/cm @ 25°C)	TEMP. (°C)	TURBIDITY (ntu)	DO (mg/L - ppm)	eH/ORP (mV)	Other: ____ Units ____
10 14 24	7.9	345	10.1	83.7	10.4		

Final Field Readings are required *(i.e. record field measurements, final stabilized readings, passive sample readings before sampling for all field parameters required by State/Permit/Site.)*

Sample Appearance: ~~Opaque~~ transparent — Odor: N/O — Color: N/C — Other: ____

Weather Conditions (required daily, or as conditions change): 70C — Direction/Speed: 22 km/h N — Outlook: A few clouds — Precipitation: Y or (N)

Specific Comments (including purge/well volume calculations if required):

FIELD COMMENTS

with 0.10 6:36
Depth 0.05
time @ 1:27
1:28
1:28

I certify that sampling procedures were in accordance with applicable EPA, State, and WM protocols (if more than one sampler, all should sign):

Date	Name	Signature	Company
10/14/24	Jake Arbitello		RWP
/ /			

DISTRIBUTION: WHITE/ORIGINAL - Stays with Sample, YELLOW - Returned to Client, PINK - Field Copy

Field Information Form v-3.1 06/20

2138

FIELD INFORMATION FORM

BUREAU VERITAS

WASTE MANAGEMENT

Site Name: TLC

Site No.: Sample: S110 (Sample ID)

This Waste Management Field Information Form is Required
This form is to be completed, in addition to any State Forms. The Field Form is submitted along with the Chain of Custody Forms that accompany the sample containers (i.e. with the cooler that is returned to the laboratory).

Laboratory Use Only/Lab ID:

PURGE INFO

PURGE DATE (MM DD YY)	PURGE TIME (2400 Hr Clock)	ELAPSED HRS (hrs:min)	WATER VOL IN CASING (Gallons)	ACTUAL VOL PURGED (Gallons)	WELL VOLs PURGED

Note: For Passive Sampling, replace "Water Vol in Casing" and "Well Vols Purged" w/ Water Vol in Tubing/Flow Cell and Tubing/Flow Cell Vols Purged. Mark Changes, Record field data below.

PURGE/SAMPLE EQUIPMENT

Purging and Sampling Equipment ... Dedicated: Y or N

Filter Device: Y or N — 0.45 µ or ____ µ (circle or fill in)

Purging Device: ____ A-Submersible Pump B-Peristaltic Pump C-QED Bladder Pump D-Bailer E-Piston Pump F-Dipper/Bottle

Sampling Device: ____

X-Other: ____

Filter Type: ____ A-In-line Disposable B-Pressure C-Vacuum X-Other: ____

Sample Tube Type: ____ A-Teflon B-Stainless Steel C-PVC D-Polypropylene X-Other: ____

WELL DATA

Well Elevation (at TOC) ____ (ft/msl)

Depth to Water (DTW) (from TOC) ____ (ft)

Groundwater Elevation (GWE) (Site Datum, from TOC) ____ (ft msl)

Total Well Depth (from TOC) ____ (ft)

Stick Up (from ground elevation) ____ (ft)

Casing ID ____ (in)

Casing Material ____

Note: Total Depth, Stick Up, Casing ID, etc. are optional and can be from historical data, unless required by Site/Permit. Well Elevation, DTW, and GWE must be current, obtained from site.

STABILIZATION DATA (Optional)

Sample Time (2400 Hr Clock)	Rate/Unit	pH (std)	Conductance (SC/EC) (µmhos/cm @ 25°C)	Temp. (°C)	Turbidity (ntu)	D.O. (mg/L - ppm)	eH/ORP (mV)	DTW (ft)
		1st	1st					
		2nd	2nd					
		3rd	3rd					
		4th	4th					
Input Range for 3 consec. readings or Permit/State requirements:		+/-	+/-	+/-	+/-	+/-	+/-	

Stabilization Data Fields are Optional *(i.e. complete stabilization readings for parameters required by WM, Site, or State). These fields can be used where four (4) field measurements are required by State/Permit/Site. If a Data Logger or other Electronic format is used, fill in final readings below and submit electronic data separately to Site. If more fields above are needed, use separate sheet or form.*

FIELD DATA

SAMPLE DATE (MM DD YY)	pH (std)	CONDUCTANCE (µmhos/cm @ 25°C)	TEMP. (°C)	TURBIDITY (ntu)	DO (mg/L - ppm)	eH/ORP (mV)	Other: Units
10/14/24	8.5	369	11.0	453	10.96		

Final Field Readings are required *(i.e. record field measurements, final stabilized readings, passive sample readings before sampling for all field parameters required by State/Permit/Site.)*

Sample Appearance: transparent Odor: N/O Color: N/C Other: ____

Weather Conditions (required daily, or as conditions change): 7°C Direction/Speed: 22 Km/h N Outlook: A few clouds Precipitation: Y or N

Specific Comments (including purge/well volume calculations if required):

FIELD COMMENTS

width: 0.10m 1145

Rpth 0.05 m

time@1m 1:7s

2: 8s

3: 9s

I certify that sampling procedures were in accordance with applicable EPA, State, and WM protocols (if more than one sampler, all should sign):

Date	Name	Signature	Company
10,14,24	Jake Arbitell		KWBE
/ /			

DISTRIBUTION: WHITE/ORIGINAL - Stays with Sample, YELLOW - Returned to Client, PINK - Field Copy

Field Information Form v-3.1 06/20

2120

Custody Tracking Form

T979752

Please use this form for custody tracking when submitting the work instructions via eCOC (electronic Chain of Custody). Please ensure your form has a barcode or a Bureau Veritas eCOC confirmation number in the top right hand side. This number links your electronic submission to your samples. This form should be placed in the cooler with your samples.

First Sample: SS16
Last Sample: SS10
Sample Count: 2

Relinquished By				Received By			
J. Artibell		Date	24/10/15	SAMRA BOSTEAN		Date	2024/10/16
		Time (24 HR)	10:00			Time (24 HR)	10:22
		Date				Date	
		Time (24 HR)				Time (24 HR)	
		Date				Date	
		Time (24 HR)				Time (24 HR)	

Unless otherwise agreed to, submissions and use of services are governed by Bureau Veritas' standard terms and conditions which can be found at www.bvna.com.

Triage Information

Sampled By (Print): J. Artibell

# of Coolers/Pkgs: 1

Rush ☐ Immediate Test ☐ Food Residue ☐

Micro ☐ Food Chemistry ☐

*** LABORATORY USE ONLY ***

Received At: Lab Cc 16-Oct-24 10:22

Patricia Legette

C4W4864

Labeled By: BM2 ENV-1463

Verified By:

Custody Seal		Cooling Media	Temperature °C		
Present (Y/N)	Intact (Y/N)	Present (Y/N)	1	2	3
Y	Y	Y	6	7	5
Drinking Water Metals Preservation Check Done (Circle)			YES		NO

COR FCD-00383/4

Page 1 of 1

Your P.O. #: 13254256
Your Project #: 2402553.01
Site#: 700
Site Location: ON07
Your C.O.C. #: 979778

Attention: Khalid Hussein - Twin Creeks

RWDI Inc.
600 Southgate Drive
Guelph, ON
Canada N1G 4P6

Report Date: 2024/10/24
Report #: R8375590
Version: 1 - Final

CERTIFICATE OF ANALYSIS

BUREAU VERITAS JOB #: C4W4954
Received: 2024/10/16, 10:15

Sample Matrix: Water
Samples Received: 5

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Analytical Method
ABN Compounds in Water by GC/MS	5	2024/10/18	2024/10/20	CAM SOP-00301	EPA 8270 m
Alkalinity	5	N/A	2024/10/22	CAM SOP-00448	SM 24 2320 B m
Biochemical Oxygen Demand (BOD)	5	2024/10/17	2024/10/22	CAM SOP-00427	SM 24 5210B m
Chloride by Automated Colourimetry	5	N/A	2024/10/21	CAM SOP-00463	SM 24 4500-Cl E m
Chemical Oxygen Demand	5	N/A	2024/10/21	CAM SOP-00416	SM 24 5220 D m
Conductance in Water - On-site	5	N/A	2024/10/17		
Conductivity	5	N/A	2024/10/22	CAM SOP-00414	SM 24 2510 m
Field Measured Dissolved Oxygen in Water	5	N/A	2024/10/17		
Dissolved Mercury in Water by CVAA	5	2024/10/21	2024/10/21	CAM SOP-00453	EPA 7470A m
Total Metals by ICPMS	5	N/A	2024/10/22	CAM SOP-00447	EPA 6020B m
Ammonia-N	4	N/A	2024/10/18	CAM SOP-00441	USGS I-2522-90 m
Ammonia-N	1	N/A	2024/10/19	CAM SOP-00441	USGS I-2522-90 m
Nitrate & Nitrite as Nitrogen in Water (1)	5	N/A	2024/10/19	CAM SOP-00440	SM 24 4500-NO3I/NO2B
pH (2)	5	2024/10/17	2024/10/20	CAM SOP-00413	SM 24th - 4500H+ B
Phenols (4AAP)	5	N/A	2024/10/18	CAM SOP-00444	OMOE E3179 m
Field Measured pH (3)	5	N/A	2024/10/16		Field pH Meter
Sulphate by Automated Turbidimetry	5	N/A	2024/10/21	CAM SOP-00464	SM 24 4500-SO42- E m
Total Dissolved Solids	5	2024/10/18	2024/10/21	CAM SOP-00428	SM 24 2540C m
Field Temperature (3)	5	N/A	2024/10/16		Field Thermometer
Total Kjeldahl Nitrogen in Water	5	2024/10/21	2024/10/23	CAM SOP-00938	OMOE E3516 m
Total Phosphorus (Colourimetric)	5	2024/10/19	2024/10/22	CAM SOP-00407	SM 24 4500-P I
Total Suspended Solids	5	2024/10/18	2024/10/18	CAM SOP-00428	SM 24 2540D m
Turbidity - On-site	5	N/A	2024/10/17		
Un-ionized Ammonia (4)	5	2024/10/16	2024/10/24	Auto Calc.	PWQO
Volatile Organic Compounds in Water	5	N/A	2024/10/18	CAM SOP-00228	EPA 8260D

Remarks:

Bureau Veritas is accredited to ISO/IEC 17025 for specific parameters on scopes of accreditation. Unless otherwise noted, procedures used by Bureau Veritas are based upon recognized Provincial, Federal or US method compendia such as CCME, EPA, APHA or the Quebec Ministry of Environment.

All work recorded herein has been done in accordance with procedures and practices ordinarily exercised by professionals in Bureau Veritas' profession

Bureau Veritas 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.bvna.com

Microbiology testing is conducted at 6660 Campobello Rd. Chemistry testing is conducted at 6740 Campobello Rd.

Your P.O. #: 13254256
Your Project #: 2402553.01
Site#: 700
Site Location: ON07
Your C.O.C. #: 979778

Attention: Khalid Hussein - Twin Creeks

RWDI Inc.
600 Southgate Drive
Guelph, ON
Canada N1G 4P6

Report Date: 2024/10/24
Report #: R8375590
Version: 1 - Final

CERTIFICATE OF ANALYSIS

BUREAU VERITAS JOB #: C4W4954
Received: 2024/10/16, 10:15

using accepted testing methodologies, quality assurance and quality control procedures (except where otherwise agreed by the client and Bureau Veritas in writing). All data is in statistical control and has met quality control and method performance criteria unless otherwise noted. All method blanks are reported; unless indicated otherwise, associated sample data are not blank corrected. Where applicable, unless otherwise noted, Measurement Uncertainty has not been accounted for when stating conformity to the referenced standard.

Bureau Veritas liability is limited to the actual cost of the requested analyses, unless otherwise agreed in writing. There is no other warranty expressed or implied. Bureau Veritas has been retained to provide analysis of samples provided by the Client using the testing methodology referenced in this report. Interpretation and use of test results are the sole responsibility of the Client and are not within the scope of services provided by Bureau Veritas, unless otherwise agreed in writing. Bureau Veritas is not responsible for the accuracy or any data impacts, that result from the information provided by the customer or their agent.

Solid sample results, except biota, are based on dry weight unless otherwise indicated. Organic analyses are not recovery corrected except for isotope dilution methods.
Results relate to samples tested. When sampling is not conducted by Bureau Veritas, results relate to the supplied samples tested.
This Certificate shall not be reproduced except in full, without the written approval of the laboratory.
Reference Method suffix “m” indicates test methods incorporate validated modifications from specific reference methods to improve performance.
* RPDs calculated using raw data. The rounding of final results may result in the apparent difference.
(1) Values for calculated parameters may not appear to add up due to rounding of raw data and significant figures.
(2) "The CCME method and Analytical Protocol (O. Reg 153/04, O. Reg. 406/19) requires pH to be analyzed within 15 minutes of sampling and therefore field analysis is required for compliance. All Laboratory pH analyses in this report are reported past the CCME and Analytical Protocol (O. Reg 153/04, O. Reg. 406/19) holding time. Bureau Veritas endeavors to analyze samples as soon as possible after receipt."

(3) This is a field test, therefore, the results relate to items that were not analysed at Bureau Veritas.
(4) Un-ionized ammonia is calculated using the total ammonia result and field data provided by the client for pH and temperature.

Encryption Key

Please direct all questions regarding this Certificate of Analysis to:
Patricia Legette, Project Manager
Email: Patricia.Legette@bureauveritas.com
Phone# (905)817-5799

==========

Bureau Veritas has procedures in place to guard against improper use of the electronic signature and have the required "signatories", as per ISO/IEC 17025, signing the reports. For Service Group specific validation, please refer to the Validation Signatures page if included, otherwise available by request. For Department specific Analyst/Supervisor validation names, please refer to the Test Summary section if included, otherwise available by request. This report is authorized by Rodney Major, General Manager responsible for Ontario Environmental laboratory operations.

Bureau Veritas Job #: C4W4954
Report Date: 2024/10/24

RWDI Inc.
Client Project #: 2402553.01
Site Location: ON07
Your P.O. #: 13254256
Sampler Initials: JA

RESULTS OF ANALYSES OF WATER

Bureau Veritas ID		AFZT00			AFZT01		AFZT02		
Sampling Date		2024/10/14 11:10			2024/10/14 10:45		2024/10/14 12:40		
COC Number		979778			979778		979778		
	UNITS	SP1	RDL	QC Batch	SP2	RDL	SP3	RDL	QC Batch
Calculated Parameters									
Total Un-ionized Ammonia	mg/L	<0.025	0.025	9704113	<0.045	0.045	<0.012	0.012	9704113
Field Measurements									
Field Conductivity	uS/cm	674	N/A	ONSITE	631	N/A	600	N/A	ONSITE
Field Dissolved Oxygen	mg/L	10.99	N/A	ONSITE	10.30	N/A	10.36	N/A	ONSITE
Field Temperature	Celsius	11.0	N/A	ONSITE	11.3	N/A	11.8	N/A	ONSITE
Field Measured Field Turbidity	NTU	99.0	N/A	ONSITE	353	N/A	10.8	N/A	ONSITE
Field Measured pH	pH	8.9		ONSITE	9.2		8.5		ONSITE
Inorganics									
Total Ammonia-N	mg/L	<0.15	0.15	9707198	<0.15	0.15	<0.15	0.15	9707206
Total BOD	mg/L	<2	2	9706273	<2	2	<2	2	9706273
Total Chemical Oxygen Demand (COD)	mg/L	8.6	4.0	9711910	51	4.0	10	4.0	9711910
Conductivity	umho/cm	640	1.0	9708574	470	1.0	700	1.0	9708574
Total Dissolved Solids	mg/L	445	10	9709664	325	10	500	10	9709664
Total Kjeldahl Nitrogen (TKN)	mg/L	<0.7	0.7	9714201	<0.7	0.7	<0.7	0.7	9714201
pH	pH	7.91		9708577	7.91		7.98		9708577
Phenols-4AAP	mg/L	<0.0010	0.0010	9709791	<0.0010	0.0010	<0.0010	0.0010	9709791
Total Phosphorus	mg/L	<0.030	0.030	9712429	0.20	0.030	<0.030	0.030	9712429
Total Suspended Solids	mg/L	29	10	9709306	490	17	<10	10	9709306
Dissolved Sulphate (SO4)	mg/L	240	1.0	9708612	120	1.0	240	1.0	9708612
Alkalinity (Total as CaCO3)	mg/L	56	1.0	9708573	55	1.0	89	1.0	9708573
Dissolved Chloride (Cl-)	mg/L	6.0	1.0	9708611	27	1.0	12	1.0	9708611
Nitrite (N)	mg/L	<0.010	0.010	9708604	<0.010	0.010	<0.010	0.010	9708604
Nitrate (N)	mg/L	<0.10	0.10	9708604	<0.10	0.10	<0.10	0.10	9708604

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
N/A = Not Applicable

Bureau Veritas 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.bvna.com

Microbiology testing is conducted at 6660 Campobello Rd. Chemistry testing is conducted at 6740 Campobello Rd.

Bureau Veritas Job #: C4W4954
Report Date: 2024/10/24

RWDI Inc.
Client Project #: 2402553.01
Site Location: ON07
Your P.O. #: 13254256
Sampler Initials: JA

RESULTS OF ANALYSES OF WATER

Bureau Veritas ID		AFZT03		AFZT04		
Sampling Date		2024/10/14 12:30		2024/10/14 10:45		
COC Number		979778		979778		
	UNITS	SP4	RDL	SPDUP	RDL	QC Batch
Calculated Parameters						
Total Un-ionized Ammonia	mg/L	<0.012	0.012	<0.045	0.045	9704113
Field Measurements						
Field Conductivity	uS/cm	468	N/A	631	N/A	ONSITE
Field Dissolved Oxygen	mg/L	10.52	N/A	10.30	N/A	ONSITE
Field Temperature	Celsius	11.9	N/A	11.3	N/A	ONSITE
Field Measured Field Turbidity	NTU	155	N/A	353	N/A	ONSITE
Field Measured pH	pH	8.5		9.2		ONSITE
Inorganics						
Total Ammonia-N	mg/L	<0.15	0.15	<0.15	0.15	9707206
Total BOD	mg/L	<2	2	5	2	9706273
Total Chemical Oxygen Demand (COD)	mg/L	18	4.0	52	4.0	9711910
Conductivity	umho/cm	520	1.0	480	1.0	9708574
Total Dissolved Solids	mg/L	390	10	295	10	9709664
Total Kjeldahl Nitrogen (TKN)	mg/L	<0.7	0.7	<0.7	0.7	9714201
pH	pH	8.01		7.87		9708577
Phenols-4AAP	mg/L	<0.0010	0.0010	<0.0010	0.0010	9709791
Total Phosphorus	mg/L	0.085	0.030	0.28	0.030	9712429
Total Suspended Solids	mg/L	71	10	300	10	9709306
Dissolved Sulphate (SO4)	mg/L	130	1.0	120	1.0	9708612
Alkalinity (Total as CaCO3)	mg/L	110	1.0	61	1.0	9708573
Dissolved Chloride (Cl-)	mg/L	10	1.0	27	1.0	9708611
Nitrite (N)	mg/L	0.024	0.010	<0.010	0.010	9708604
Nitrate (N)	mg/L	0.12	0.10	<0.10	0.10	9708604

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
N/A = Not Applicable

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Microbiology testing is conducted at 6660 Campobello Rd. Chemistry testing is conducted at 6740 Campobello Rd.

Bureau Veritas Job #: C4W4954
Report Date: 2024/10/24

RWDI Inc.
Client Project #: 2402553.01
Site Location: ON07
Your P.O. #: 13254256
Sampler Initials: JA

ELEMENTS BY ATOMIC SPECTROSCOPY (WATER)

Bureau Veritas ID		AFZT00	AFZT01	AFZT02	AFZT03	AFZT04		
Sampling Date		2024/10/14 11:10	2024/10/14 10:45	2024/10/14 12:40	2024/10/14 12:30	2024/10/14 10:45		
COC Number		979778	979778	979778	979778	979778		
	UNITS	SP1	SP2	SP3	SP4	SPDUP	RDL	QC Batch
Metals								
Dissolved Mercury (Hg)	ug/L	<0.10	<0.10	<0.10	<0.10	<0.10	0.10	9713333
Total Arsenic (As)	mg/L	0.001	0.004	0.001	0.002	0.004	0.001	9713739
Total Barium (Ba)	mg/L	0.021	0.041	0.029	0.034	0.040	0.005	9713739
Total Boron (B)	mg/L	0.14	0.23	0.12	0.09	0.23	0.02	9713739
Total Cadmium (Cd)	mg/L	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	0.0001	9713739
Total Calcium (Ca)	mg/L	71	40	77	59	44	0.2	9713739
Total Chromium (Cr)	mg/L	<0.005	0.006	<0.005	<0.005	<0.005	0.005	9713739
Total Copper (Cu)	mg/L	<0.002	0.007	<0.002	0.004	0.007	0.002	9713739
Total Iron (Fe)	mg/L	0.7	5.6	0.3	3.9	5.4	0.1	9713739
Total Lead (Pb)	mg/L	<0.0005	0.0048	<0.0005	0.0014	0.0054	0.0005	9713739
Total Magnesium (Mg)	mg/L	27	22	28	23	22	0.05	9713739
Total Nickel (Ni)	mg/L	0.002	0.009	0.002	0.007	0.009	0.001	9713739
Total Potassium (K)	mg/L	3.4	6.7	3.4	2.7	5.9	0.2	9713739
Total Sodium (Na)	mg/L	10	23	15	13	23	0.1	9713739
Total Zinc (Zn)	mg/L	<0.01	0.03	<0.01	<0.01	0.03	0.01	9713739

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

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Bureau Veritas Job #: C4W4954
Report Date: 2024/10/24

RWDI Inc.
Client Project #: 2402553.01
Site Location: ON07
Your P.O. #: 13254256
Sampler Initials: JA

SEMI-VOLATILE ORGANICS BY GC-MS (WATER)

Bureau Veritas ID		AFZT00	AFZT01	AFZT02	AFZT03	AFZT04		
Sampling Date		2024/10/14 11:10	2024/10/14 10:45	2024/10/14 12:40	2024/10/14 12:30	2024/10/14 10:45		
COC Number		979778	979778	979778	979778	979778		
	UNITS	SP1	SP2	SP3	SP4	SPDUP	RDL	QC Batch
Semivolatile Organics								
Benzo(a)pyrene	ug/L	<0.20	<0.20	<0.20	<0.20	<0.20	0.20	9710084
1,2-Dichlorobenzene	ug/L	<0.50	<0.50	<0.50	<0.50	<0.50	0.50	9710084
1,3-Dichlorobenzene	ug/L	<0.50	<0.50	<0.50	<0.50	<0.50	0.50	9710084
1,4-Dichlorobenzene	ug/L	<0.50	<0.50	<0.50	<0.50	<0.50	0.50	9710084
Hexachlorobenzene	ug/L	<0.50	<0.50	<0.50	<0.50	<0.50	0.50	9710084
1,2,4-Trichlorobenzene	ug/L	<0.50	<0.50	<0.50	<0.50	<0.50	0.50	9710084
2,4-Dichlorophenol	ug/L	<0.30	<0.30	<0.30	<0.30	<0.30	0.30	9710084
Pentachlorophenol	ug/L	<1.0	<1.0	<1.0	<1.0	<1.0	1.0	9710084
Phenol	ug/L	<0.50	<0.50	<0.50	<0.50	<0.50	0.50	9710084
2,4,6-Trichlorophenol	ug/L	<0.50	<0.50	<0.50	<0.50	<0.50	0.50	9710084
Di-N-butyl phthalate	ug/L	<2.0	<2.0	<2.0	<2.0	<2.0	2.0	9710084
Diethyl phthalate	ug/L	<1.0	<1.0	<1.0	<1.0	<1.0	1.0	9710084
Dimethyl phthalate	ug/L	<1.0	<1.0	<1.0	<1.0	<1.0	1.0	9710084
Surrogate Recovery (%)								
2,4,6-Tribromophenol	%	63	93	77	56	87		9710084
2-Fluorobiphenyl	%	82	81	79	80	86		9710084
2-Fluorophenol	%	25	37	30	22	39		9710084
D14-Terphenyl	%	93	89	89	85	91		9710084
D5-Nitrobenzene	%	72	74	70	70	80		9710084
D5-Phenol	%	21	24	25	22	26		9710084

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

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Bureau Veritas Job #: C4W4954
Report Date: 2024/10/24

RWDI Inc.
Client Project #: 2402553.01
Site Location: ON07
Your P.O. #: 13254256
Sampler Initials: JA

VOLATILE ORGANICS BY GC/MS (WATER)

Bureau Veritas ID		AFZT00	AFZT01	AFZT02	AFZT03	AFZT04		
Sampling Date		2024/10/14 11:10	2024/10/14 10:45	2024/10/14 12:40	2024/10/14 12:30	2024/10/14 10:45		
COC Number		979778	979778	979778	979778	979778		
	UNITS	SP1	SP2	SP3	SP4	SPDUP	RDL	QC Batch
Volatile Organics								
Benzene	ug/L	<0.20	<0.20	<0.20	<0.20	<0.20	0.20	9706744
1,4-Dichlorobenzene	ug/L	<0.40	<0.40	<0.40	<0.40	<0.40	0.40	9706744
Ethylbenzene	ug/L	<0.20	<0.20	<0.20	<0.20	<0.20	0.20	9706744
Methylene Chloride(Dichloromethane)	ug/L	<2.0	<2.0	<2.0	<2.0	<2.0	2.0	9706744
Toluene	ug/L	<0.20	<0.20	<0.20	<0.20	<0.20	0.20	9706744
Vinyl Chloride	ug/L	<0.20	<0.20	<0.20	<0.20	<0.20	0.20	9706744
p+m-Xylene	ug/L	<0.20	<0.20	<0.20	<0.20	<0.20	0.20	9706744
o-Xylene	ug/L	<0.20	<0.20	<0.20	<0.20	<0.20	0.20	9706744
Total Xylenes	ug/L	<0.20	<0.20	<0.20	<0.20	<0.20	0.20	9706744
Surrogate Recovery (%)								
4-Bromofluorobenzene	%	103	102	102	102	102		9706744
D4-1,2-Dichloroethane	%	100	99	101	100	100		9706744
D8-Toluene	%	95	94	94	93	94		9706744

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

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Bureau Veritas Job #: C4W4954
Report Date: 2024/10/24

RWDI Inc.
Client Project #: 2402553.01
Site Location: ON07
Your P.O. #: 13254256
Sampler Initials: JA

GENERAL COMMENTS

Each temperature is the average of up to three cooler temperatures taken at receipt

Package 1	7.0°C
Package 2	6.0°C
Package 3	4.0°C

Results relate only to the items tested.

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Microbiology testing is conducted at 6660 Campobello Rd. Chemistry testing is conducted at 6740 Campobello Rd.

Bureau Veritas Job #: C4W4954
Report Date: 2024/10/24

QUALITY ASSURANCE REPORT

RWDI Inc.
Client Project #: 2402553.01
Site Location: ON07
Your P.O. #: 13254256
Sampler Initials: JA

			Matrix Spike		SPIKED BLANK		Method Blank		RPD		QC Standard	
QC Batch	Parameter	Date	% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits	% Recovery	QC Limits
9706744	4-Bromofluorobenzene	2024/10/17	102	70 - 130	102	70 - 130	104	%				
9706744	D4-1,2-Dichloroethane	2024/10/17	99	70 - 130	99	70 - 130	108	%				
9706744	D8-Toluene	2024/10/17	101	70 - 130	102	70 - 130	93	%				
9710084	2,4,6-Tribromophenol	2024/10/18	92 (2)	10 - 130	81	10 - 130	61	%				
9710084	2-Fluorobiphenyl	2024/10/18	66 (2)	30 - 130	72	30 - 130	65	%				
9710084	2-Fluorophenol	2024/10/18	37 (2)	10 - 130	46	10 - 130	37	%				
9710084	D14-Terphenyl	2024/10/18	90 (2)	30 - 130	90	30 - 130	86	%				
9710084	D5-Nitrobenzene	2024/10/18	64 (2)	30 - 130	85	30 - 130	79	%				
9710084	D5-Phenol	2024/10/18	28 (2)	10 - 130	30	10 - 130	24	%				
9706273	Total BOD	2024/10/22					<2	mg/L	NC (1)	30	96	80 - 120
9706744	1,4-Dichlorobenzene	2024/10/17	107	70 - 130	109	70 - 130	<0.40	ug/L	NC (1)	30		
9706744	Benzene	2024/10/17	104	70 - 130	109	70 - 130	<0.20	ug/L	NC (1)	30		
9706744	Ethylbenzene	2024/10/17	102	70 - 130	107	70 - 130	<0.20	ug/L	NC (1)	30		
9706744	Methylene Chloride(Dichloromethane)	2024/10/17	101	70 - 130	104	70 - 130	<2.0	ug/L	NC (1)	30		
9706744	o-Xylene	2024/10/17	107	70 - 130	113	70 - 130	<0.20	ug/L	NC (1)	30		
9706744	p+m-Xylene	2024/10/17	101	70 - 130	106	70 - 130	<0.20	ug/L	NC (1)	30		
9706744	Toluene	2024/10/17	104	70 - 130	108	70 - 130	<0.20	ug/L	NC (1)	30		
9706744	Total Xylenes	2024/10/17					<0.20	ug/L	NC (1)	30		
9706744	Vinyl Chloride	2024/10/17	98	70 - 130	102	70 - 130	<0.20	ug/L	NC (1)	30		
9707198	Total Ammonia-N	2024/10/19	98	75 - 125	100	80 - 120	<0.050	mg/L	NC (1)	20		
9707206	Total Ammonia-N	2024/10/18	90	75 - 125	92	80 - 120	<0.15	mg/L	NC (1)	20		
9708573	Alkalinity (Total as CaCO3)	2024/10/22			98	85 - 115	<1.0	mg/L	0.33 (1)	20		
9708574	Conductivity	2024/10/22			101	85 - 115	<1.0	umho/cm	0.44 (1)	10		
9708577	pH	2024/10/20			102	98 - 103			0.29 (1)	N/A		
9708604	Nitrate (N)	2024/10/19	83	80 - 120	97	80 - 120	<0.10	mg/L	6.2 (1)	20		
9708604	Nitrite (N)	2024/10/19	96	80 - 120	103	80 - 120	<0.010	mg/L	1.1 (1)	20		
9708611	Dissolved Chloride (Cl-)	2024/10/21	97	80 - 120	95	80 - 120	<1.0	mg/L	1.9 (1)	20		
9708612	Dissolved Sulphate (SO4)	2024/10/21	NC	75 - 125	93	80 - 120	<1.0	mg/L	0.69 (1)	20		
9709306	Total Suspended Solids	2024/10/18			99	80 - 120	<10	mg/L	NC (1)	20		

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Microbiology testing is conducted at 6660 Campobello Rd. Chemistry testing is conducted at 6740 Campobello Rd.

QUALITY ASSURANCE REPORT(CONT'D)

			Matrix Spike		SPIKED BLANK		Method Blank		RPD		QC Standard	
QC Batch	Parameter	Date	% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits	% Recovery	QC Limits
9709664	Total Dissolved Solids	2024/10/21			98	80 - 120	<10	mg/L	3.7 (1)	20		
9709791	Phenols-4AAP	2024/10/18	86	80 - 120	103	80 - 120	<0.0010	mg/L	NC (1)	20		
9710084	1,2,4-Trichlorobenzene	2024/10/20	54 (2)	30 - 130	54	30 - 130	<0.50	ug/L	NC (3)	40		
9710084	1,2-Dichlorobenzene	2024/10/20	56 (2)	30 - 130	56	30 - 130	<0.50	ug/L	NC (3)	40		
9710084	1,3-Dichlorobenzene	2024/10/20	52 (2)	30 - 130	50	30 - 130	<0.50	ug/L	NC (3)	40		
9710084	1,4-Dichlorobenzene	2024/10/20	57 (2)	30 - 130	54	30 - 130	<0.50	ug/L	NC (3)	40		
9710084	2,4,6-Trichlorophenol	2024/10/20	90 (2)	10 - 130	96	10 - 130	<0.50	ug/L	NC (3)	40		
9710084	2,4-Dichlorophenol	2024/10/20	69 (2)	10 - 130	75	10 - 130	<0.30	ug/L	NC (3)	40		
9710084	Benzo(a)pyrene	2024/10/20	101 (2)	30 - 130	111	30 - 130	<0.20	ug/L	NC (3)	40		
9710084	Diethyl phthalate	2024/10/20	72 (2)	30 - 130	104	30 - 130	<1.0	ug/L	NC (3)	40		
9710084	Dimethyl phthalate	2024/10/20	84 (2)	30 - 130	100	30 - 130	<1.0	ug/L	NC (3)	40		
9710084	Di-N-butyl phthalate	2024/10/20	103 (2)	30 - 130	104	30 - 130	<2.0	ug/L	NC (3)	40		
9710084	Hexachlorobenzene	2024/10/20	83 (2)	30 - 130	86	30 - 130	<0.50	ug/L	NC (3)	40		
9710084	Pentachlorophenol	2024/10/20	63 (2)	10 - 130	89	10 - 130	<1.0	ug/L	NC (3)	40		
9710084	Phenol	2024/10/20	31 (2)	10 - 130	35	10 - 130	<0.50	ug/L	NC (3)	40		
9711910	Total Chemical Oxygen Demand (COD)	2024/10/21	NC	80 - 120	100	80 - 120	<4.0	mg/L	4.0 (1)	20		
9712429	Total Phosphorus	2024/10/22	109	80 - 120	101	80 - 120	<0.030	mg/L	4.8 (1)	25	101	80 - 120
9713333	Dissolved Mercury (Hg)	2024/10/21	106	75 - 125	94	80 - 120	<0.10	ug/L	NC (1)	20		
9713739	Total Arsenic (As)	2024/10/22	95	80 - 120	96	80 - 120	<0.001	mg/L				
9713739	Total Barium (Ba)	2024/10/22	93	80 - 120	94	80 - 120	<0.005	mg/L				
9713739	Total Boron (B)	2024/10/22	94	80 - 120	92	80 - 120	<0.02	mg/L	1.6 (1)	20		
9713739	Total Cadmium (Cd)	2024/10/22	96	80 - 120	96	80 - 120	<0.0001	mg/L				
9713739	Total Calcium (Ca)	2024/10/22	91	80 - 120	94	80 - 120	<0.2	mg/L	0.32 (1)	20		
9713739	Total Chromium (Cr)	2024/10/22	94	80 - 120	95	80 - 120	<0.005	mg/L	NC (1)	20		
9713739	Total Copper (Cu)	2024/10/22	95	80 - 120	94	80 - 120	<0.002	mg/L				
9713739	Total Iron (Fe)	2024/10/22	95	80 - 120	96	80 - 120	<0.1	mg/L	0.87 (1)	20		
9713739	Total Lead (Pb)	2024/10/22	95	80 - 120	94	80 - 120	<0.0005	mg/L				
9713739	Total Magnesium (Mg)	2024/10/22	93	80 - 120	94	80 - 120	<0.05	mg/L	0.46 (1)	20		
9713739	Total Nickel (Ni)	2024/10/22	91	80 - 120	93	80 - 120	<0.001	mg/L	2.3 (1)	20		
9713739	Total Potassium (K)	2024/10/22	95	80 - 120	95	80 - 120	<0.2	mg/L	0.43 (1)	20		

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Microbiology testing is conducted at 6660 Campobello Rd. Chemistry testing is conducted at 6740 Campobello Rd.

QUALITY ASSURANCE REPORT(CONT'D)

			Matrix Spike		SPIKED BLANK		Method Blank		RPD		QC Standard	
QC Batch	Parameter	Date	% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits	% Recovery	QC Limits
9713739	Total Sodium (Na)	2024/10/22	92	80 - 120	94	80 - 120	<0.1	mg/L	0.28 (1)	20		
9713739	Total Zinc (Zn)	2024/10/22	96	80 - 120	97	80 - 120	<0.01	mg/L	5.3 (1)	20		
9714201	Total Kjeldahl Nitrogen (TKN)	2024/10/24	NC	80 - 120	100	80 - 120	<0.7	mg/L	18 (1)	20	95	80 - 120

N/A = Not Applicable

Duplicate: Paired analysis of a separate portion of the same sample. Used to evaluate the variance in the measurement.

Matrix Spike: A sample to which a known amount of the analyte of interest has been added. Used to evaluate sample matrix interference.

QC Standard: A sample of known concentration prepared by an external agency under stringent conditions. Used as an independent check of method accuracy.

Spiked Blank: A blank matrix sample to which a known amount of the analyte, usually from a second source, has been added. Used to evaluate method accuracy.

Method Blank: A blank matrix containing all reagents used in the analytical procedure. Used to identify laboratory contamination.

Surrogate: A pure or isotopically labeled compound whose behavior mirrors the analytes of interest. Used to evaluate extraction efficiency.

NC (Matrix Spike): The recovery in the matrix spike was not calculated. The relative difference between the concentration in the parent sample and the spike amount was too small to permit a reliable recovery calculation (matrix spike concentration was less than the native sample concentration)

NC (Duplicate RPD): The duplicate RPD was not calculated. The concentration in the sample and/or duplicate was too low to permit a reliable RPD calculation (absolute difference <= 2x RDL).

(1) Duplicate Parent ID

(2) Matrix Spike Parent ID [AFZT00-01]

(3) Duplicate Parent ID [AFZT02-01]

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Microbiology testing is conducted at 6660 Campobello Rd. Chemistry testing is conducted at 6740 Campobello Rd.

Bureau Veritas Job #: C4W4954
Report Date: 2024/10/24

RWDI Inc.
Client Project #: 2402553.01
Site Location: ON07
Your P.O. #: 13254256
Sampler Initials: JA

VALIDATION SIGNATURE PAGE

The analytical data and all QC contained in this report were reviewed and validated by:

Cristina Carriere, Senior Scientific Specialist

Zunaira Allem, Project Manager Assistant

Bureau Veritas has procedures in place to guard against improper use of the electronic signature and have the required "signatories", as per ISO/IEC 17025, signing the reports. For Service Group specific validation, please refer to the Validation Signatures page if included, otherwise available by request. For Department specific Analyst/Supervisor validation names, please refer to the Test Summary section if included, otherwise available by request. This report is authorized by Rodney Major, General Manager responsible for Ontario Environmental laboratory operations.

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Microbiology testing is conducted at 6660 Campobello Rd. Chemistry testing is conducted at 6740 Campobello Rd.

FIELD INFORMATION FORM

BUREAU VERITAS

WASTE MANAGEMENT

Site Name: TCEC

Site No.: Sample: SP1 (Sample ID)

This Waste Management Field Information Form is Required
This form is to be completed, in addition to any State Forms. The Field Form is submitted along with the Chain of Custody Forms that accompany the sample containers (i.e. with the cooler that is returned to the laboratory).

Laboratory Use Only/Lab ID:

PURGE INFO

PURGE DATE (MM DD YY)	PURGE TIME (2400 Hr Clock)	ELAPSED HRS (hrs:min)	WATER VOL IN CASING (Gallons)	ACTUAL VOL PURGED (Gallons)	WELL VOLs PURGED

Note: For Passive Sampling, replace "Water Vol in Casing" and "Well Vols Purged" w/ Water Vol in Tubing/Flow Cell and Tubing/Flow Cell Vols Purged. Mark Changes, Record field data below.

PURGE/SAMPLE EQUIPMENT

Purging and Sampling Equipment ... Dedicated: Y or N

Filter Device: Y or N 0.45 µ or ____ µ (circle or fill in)

Purging Device: A-Submersible Pump, B-Peristaltic Pump, C-QED Bladder Pump, D-Bailer, E-Piston Pump, F-Dipper/Bottle

Sampling Device: A-Submersible Pump, B-Peristaltic Pump, C-QED Bladder Pump, D-Bailer, E-Piston Pump, F-Dipper/Bottle

Filter Type: A

A-In-line Disposable, B-Pressure, C-Vacuum, X-Other: ____

X-Other:

Sample Tube Type: A

A-Teflon, B-Stainless Steel, C-PVC, D-Polypropylene, X-Other: ____

WELL DATA

Well Elevation (at TOC) (ft/msl)

Depth to Water (DTW) (from TOC) (ft)

Groundwater Elevation (GWE) (Site Datum, from TOC) (ft msl)

Total Well Depth (from TOC) (ft)

Stick Up (from ground elevation) (ft)

Casing ID (in)

Casing Material

Note: Total Depth, Stick Up, Casing ID, etc. are optional and can be from historical data, unless required by Site/Permit. Well Elevation, DTW, and GWE must be current, obtained from site.

STABILIZATION DATA (Optional)

Sample Time (2400 Hr Clock)	Rate/Unit		pH (std)		Conductance (SC/EC) (µmhos/cm @ 25°C)	Temp. (°C)	Turbidity (ntu)	D.O. (mg/L - ppm)	eH/ORP (mV)	DTW (ft)
		1st		1st						
		2nd		2nd						
		3rd		3rd						
		4th		4th						
Input Range for 3 consec. readings or Permit/State requirements:			+/-		+/-	+/-	+/-	+/-	+/-	

Stabilization Data Fields are Optional *(i.e. complete stabilization readings for parameters required by WM, Site, or State). These fields can be used where four (4) field measurements are required by State/Permit/Site. If a Data Logger or other Electronic format is used, fill in final readings below and submit electronic data separately to Site. If more fields above are needed, use separate sheet or form.*

FIELD DATA

SAMPLE DATE (MM DD YY)	pH (std)	CONDUCTANCE (µmhos/cm @ 25°C)	TEMP. (°C)	TURBIDITY (ntu)	DO (mg/L - ppm)	eH/ORP (mV)	Other: Units
101424	8.49	674	11.0	99.0	10.99		

Final Field Readings are required *(i.e. record field measurements, final stabilized readings, passive sample readings before sampling for all field parameters required by State/Permit/Site.)*

FIELD COMMENTS

Sample Appearance: transparent Odor: N/O Color: N/C Other:

Weather Conditions (required daily, or as conditions change): 9°C Direction/Speed: 23Km/hr Outlook: Mostly Sunny Precipitation: Y or N

Specific Comments (including purge/well volume calculations if required):

width: 0.75m 11:16

Depth: 0.15m

time @ 1:15

2:16

3:15

I certify that sampling procedures were in accordance with applicable EPA, State, and WM protocols (if more than one sampler, all should sign):

Date	Name	Signature	Company
10/14/24	Jake Artibello		RWPI
/ /			

T75

DISTRIBUTION: WHITE/ORIGINAL - Stays with Sample, YELLOW - Returned to Client, PINK - Field Copy

Field Information Form v-3.1 06/20

2140

FIELD INFORMATION FORM

BUREAU VERITAS

WASTE MANAGEMENT

Site Name: TCC

Site No.: Sample: SW2 (Sample ID)

This Waste Management Field Information Form is Required
This form is to be completed, in addition to any State Forms. The Field Form is submitted along with the Chain of Custody Forms that accompany the sample containers (i.e. with the cooler that is returned to the laboratory).

Laboratory Use Only/Lab ID:

PURGE INFO

PURGE DATE (MM DD YY)	PURGE TIME (2400 Hr Clock)	ELAPSED HRS (hrs:min)	WATER VOL IN CASING (Gallons)	ACTUAL VOL PURGED (Gallons)	WELL VOLs PURGED

Note: For Passive Sampling, replace "Water Vol in Casing" and "Well Vols Purged" w/ Water Vol in Tubing/Flow Cell and Tubing/Flow Cell Vols Purged. Mark Changes, Record field data below.

PURGE/SAMPLE EQUIPMENT

Purging and Sampling Equipment ... Dedicated: Y or N

Purging Device: A-Submersible Pump, B-Peristaltic Pump, C-QED Bladder Pump, D-Bailer, E-Piston Pump, F-Dipper/Bottle

Sampling Device:

X-Other:

Filter Device: Y or N 0.45 µ or ____ µ (circle or fill in)

Filter Type: N — A-In-line Disposable, B-Pressure, C-Vacuum, X-Other: ____

Sample Tube Type: A — A-Teflon, B-Stainless Steel, C-PVC, D-Polypropylene, X-Other: ____

WELL DATA

Well Elevation (at TOC) (ft/msl)

Depth to Water (DTW) (from TOC) (ft)

Groundwater Elevation (GWE) (Site Datum, from TOC) (ft msl)

Total Well Depth (from TOC) (ft)

Stick Up (from ground elevation) (ft)

Casing ID (in)

Casing Material

Note: Total Depth, Stick Up, Casing ID, etc. are optional and can be from historical data, unless required by Site/Permit. Well Elevation, DTW, and GWE must be current, obtained from site.

STABILIZATION DATA (Optional)

Sample Time (2400 Hr Clock)	Rate/Unit		pH (std)	Conductance (SC/EC) (µmhos/cm @ 25°C)	Temp. (°C)	Turbidity (ntu)	D.O. (mg/L - ppm)	eH/ORP (mV)	DTW (ft)
		1st							
		2nd							
		3rd							
		4th							
Input Range for 3 consec. readings or Permit/State requirements:			+/-	+/-	+/-	+/-	+/-	+/-	

Stabilization Data Fields are Optional *(i.e. complete stabilization readings for parameters required by WM, Site, or State). These fields can be used where four (4) field measurements are required by State/Permit/Site. If a Data Logger or other Electronic format is used, fill in final readings below and submit electronic data separately to Site. If more fields above are needed, use separate sheet or form.*

FIELD DATA

SAMPLE DATE (MM DD YY)	pH (std)	CONDUCTANCE (µmhos/cm @ 25°C)	TEMP. (°C)	TURBIDITY (ntu)	DO (mg/L - ppm)	eH/ORP (mV)	Other: Units
10 14 24	9.2	631	11.3	353	10.30		

Final Field Readings are required *(i.e. record field measurements, final stabilized readings, passive sample readings before sampling for all field parameters required by State/Permit/Site.)*

Sample Appearance: translucent Odor: N/O Color: light grey Other:

Weather Conditions (required daily, or as conditions change): 9°C Direction/Speed: 22km/hN Outlook: A few clouds Precipitation: Y or N

Specific Comments (including purge/well volume calculations if required):

FIELD COMMENTS

Water 2.5m — Sample taken

Depth 0.3m — 10:45

time e/a 1:4

2:4

3:5

I certify that sampling procedures were in accordance with applicable EPA, State, and WM protocols (if more than one sampler, all should sign):

Date	Name	Signature	Company
10/14/24	Jake Arriola		RWIS
/ /			

T28

DISTRIBUTION: WHITE/ORIGINAL - Stays with Sample, YELLOW - Returned to Client, PINK - Field Copy

Field Information Form v-3.1 06/20

2139

BUREAU VERITAS

FIELD INFORMATION FORM

WASTE MANAGEMENT

Site Name: TCEC

Site No.: Sample: SP3 (Sample ID)

This Waste Management Field Information Form is Required
This form is to be completed, in addition to any State Forms. The Field Form is submitted along with the Chain of Custody Forms that accompany the sample containers (i.e. with the cooler that is returned to the laboratory).

Laboratory Use Only/Lab ID:

PURGE INFO

PURGE DATE (MM DD YY)	PURGE TIME (2400 Hr Clock)	ELAPSED HRS (hrs:min)	WATER VOL IN CASING (Gallons)	ACTUAL VOL PURGED (Gallons)	WELL VOLs PURGED

Note: For Passive Sampling, replace "Water Vol in Casing" and "Well Vols Purged" w/ Water Vol in Tubing/Flow Cell and Tubing/Flow Cell Vols Purged. Mark Changes, Record field data below.

PURGE/SAMPLE EQUIPMENT

Purging and Sampling Equipment ... Dedicated: [Y] or [N]

Filter Device: [Y] or [N] [0.45 µ] or [ ] µ (circle or fill in)

Purging Device: [ ] A-Submersible Pump B-Peristaltic Pump C-QED Bladder Pump D-Bailer E-Piston Pump F-Dipper/Bottle

Filter Type: [A] A-In-line Disposable B-Pressure C-Vacuum X-Other:

Sampling Device: [ ]

X-Other:

Sample Tube Type: [A] A-Teflon B-Stainless Steel C-PVC D-Polypropylene X-Other:

WELL DATA

Well Elevation (at TOC): (ft/msl)

Depth to Water (DTW) (from TOC): (ft)

Groundwater Elevation (GWE) (Site Datum, from TOC): (ft msl)

Total Well Depth (from TOC): (ft)

Stick Up (from ground elevation): (ft)

Casing ID: (in)

Casing Material:

Note: Total Depth, Stick Up, Casing ID, etc. are optional and can be from historical data unless required by Site/Permit. Well Elevation, DTW, and GWE must be current, obtained from site.

STABILIZATION DATA (Optional)

Sample Time (2400 Hr Clock)	Rate/Unit	pH (std)	Conductance (SC/EC) (µmhos/cm @ 25°C)	Temp. (°C)	Turbidity (ntu)	D.O. (mg/L - ppm)	eH/ORP (mV)	DTW (ft)
		1st	1st					
		2nd	2nd					
		3rd	3rd					
		4th	4th					
Input Range for 3 consec. readings or Permit/State requirements:		+/-	+/-	+/-	+/-	+/-	+/-	

Stabilization Data Fields are Optional *(i.e. complete stabilization readings for parameters required by WM, Site, or State). These fields can be used where four (4) field measurements are required by State/Permit/Site. If a Data Logger or other Electronic format is used, fill in final readings below and submit electronic data separately to Site. If more fields above are needed, use separate sheet or form.*

FIELD DATA

SAMPLE DATE (MM DD YY)	pH (std)	CONDUCTANCE (µmhos/cm @ 25°C)	TEMP. (°C)	TURBIDITY (ntu)	DO (mg/L - ppm)	eH/ORP (mV)	Other: Units
10 14 24	8.5	600	11.8	10.8	10.38		

Final Field Readings are required *(i.e. record field measurements, final stabilized readings, passive sample readings before sampling for all field parameters required by State/Permit/Site.)*

FIELD COMMENTS

Sample Appearance: transparent Odor: N/O Color: N/C Other:

Weather Conditions (required daily, or as conditions change): 9°C Direction/Speed: 23km/h N Outlook: A few clouds Precipitation: Y or (N)

1240

Specific Comments (including purge/well volume calculations if required):

Width: 2.2m

Depth: 0.15m

time in 1: 10

2: 12

3: 10

F78

I certify that sampling procedures were in accordance with applicable EPA, State, and WM protocols (if more than one sampler, all should sign):

Date	Name	Signature	Company
10,14,24	Jake Arbuckle		KWDI

DISTRIBUTION: WHITE/ORIGINAL - Stays with Sample, YELLOW - Returned to Client, PINK - Field Copy

Field Information Form v-3.1 06/20

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FIELD INFORMATION FORM

BUREAU VERITAS

WASTE MANAGEMENT

Site Name: TLEC

Site No.: Sample: 104 (Sample ID)

This Waste Management Field Information Form is Required
This form is to be completed, in addition to any State Forms. The Field Form is submitted along with the Chain of Custody Forms that accompany the sample containers (i.e. with the cooler that is returned to the laboratory).

Laboratory Use Only/Lab ID:

PURGE INFO

PURGE DATE (MM DD YY)	PURGE TIME (2400 Hr Clock)	ELAPSED HRS (hrs:min)	WATER VOL IN CASING (Gallons)	ACTUAL VOL PURGED (Gallons)	WELL VOLs PURGED

Note: For Passive Sampling, replace "Water Vol in Casing" and "Well Vols Purged" w/ Water Vol in Tubing/Flow Cell and Tubing/Flow Cell Vols Purged. Mark Changes, Record field data below.

PURGE/SAMPLE EQUIPMENT

Purging and Sampling Equipment ... Dedicated: Y or N — Filter Device: Y or N — 0.45 µ or ____ µ (circle or fill in)

Purging Device: A-Submersible Pump, B-Peristaltic Pump, C-QED Bladder Pump, D-Bailer, E-Piston Pump, F-Dipper/Bottle

Sampling Device:

X-Other:

Filter Type: A (A-In-line Disposable, B-Pressure, C-Vacuum, X-Other: ____)

Sample Tube Type: A (A-Teflon, B-Stainless Steel, C-PVC, D-Polypropylene, X-Other: ____)

WELL DATA

Well Elevation (at TOC) (ft/msl) — Depth to Water (DTW) (from TOC) (ft) — Groundwater Elevation (GWE) (Site Datum, from TOC) (ft msl)

Total Well Depth (from TOC) (ft) — Stick Up (from ground elevation) (ft) — Casing ID (in) — Casing Material

Note: Total Depth, Stick Up, Casing ID, etc. are optional and can be from historical data, unless required by Site/Permit. Well Elevation, DTW, and GWE must be current, obtained from site.

STABILIZATION DATA (Optional)

Sample Time (2400 Hr Clock)	Rate/Unit	pH (std)	Conductance (SC/EC) (µmhos/cm @ 25°C)	Temp. (°C)	Turbidity (ntu)	D.O. (mg/L - ppm)	eH/ORP (mV)	DTW (ft)
		1st	1st					
		2nd	2nd					
		3rd	3rd					
		4th	4th					
Input Range for 3 consec. readings or Permit/State requirements:		+/-	+/-	+/-	+/-	+/-	+/-	

Stabilization Data Fields are Optional *(i.e. complete stabilization readings for parameters required by WM, Site, or State). These fields can be used where four (4) field measurements are required by State/Permit/Site. If a Data Logger or other Electronic format is used, fill in final readings below and submit electronic data separately to Site. If more fields above are needed, use separate sheet or form.*

FIELD DATA

SAMPLE DATE (MM DD YY)	pH (std)	CONDUCTANCE (µmhos/cm @ 25°C)	TEMP. (°C)	TURBIDITY (ntu)	DO (mg/L - ppm)	eH/ORP (mV)	Other: Units
10/14/24	8.5	468	11.9	15	10.52		

Final Field Readings are required *(i.e. record field measurements, final stabilized readings, passive sample readings before sampling for all field parameters required by State/Permit/Site.)*

FIELD COMMENTS

Sample Appearance: transparent — Odor: N/O — Color: N/C — Other:

Weather Conditions (required daily, or as conditions change): 9°C — Direction/Speed: 23 km/h N — Outlook: A few clouds — Precipitation: Y or N

Specific Comments (including purge/well volume calculations if required):

12:30

width: 1.60m

Depth: 6.25m

time @ 1m: ~~1 hour~~ 15

2: 15

3: 15

I certify that sampling procedures were in accordance with applicable EPA, State, and WM protocols (if more than one sampler, all should sign):

Date	Name	Signature	Company
10/14/24	Jake A. Eiball		RWDI
/ /			

DISTRIBUTION: WHITE/ORIGINAL - Stays with Sample, YELLOW - Returned to Client, PINK - Field Copy

Field Information Form v-3.1 06/20

(778) 2125

BOD

Custody Tracking Form

T979778-H

Please use this form for custody tracking when submitting the work instructions via eCOC (electronic Chain of Custody). Please ensure your form has a barcode or a Bureau Veritas eCOC confirmation number in the top right hand side. This number links your electronic submission to your samples. This form should be placed in the cooler with your samples.

First Sample: SP1
Last Sample: SPDUP
Sample Count: 5

Relinquished By				Received By			
J. Arbib		Date	27/10/15	SATYA BHARGAVA		Date	2024/10/16
		Time (24 HR)	10:15			Time (24 HR)	10:15
		Date				Date	
		Time (24 HR)				Time (24 HR)	
		Date				Date	
		Time (24 HR)				Time (24 HR)	

Unless otherwise agreed to, submissions and use of services are governed by Bureau Veritas' standard terms and conditions which can be found at www.bvna.com.

Triage Information

Sampled By (Print): J. Arbib

# of Coolers/Pkgs: 3

Rush ☐ Immediate Test ☐ Food Residue ☐

Micro ☐ Food Chemistry ☐

*** LABORATORY USE ONLY ***

Received At: Lab Cr 16-Oct-24 10:15

Labeled By: Patricia Legette

C4W4954

Verified By: BM2 ENV-1460

Custody Seal		Cooling Media	Temperature °C		
Present (Y/N)	Intact (Y/N)	Present (Y/N)	1	2	3
Y	Y	Y	6	6	9
Y	Y	Y	5	6	7
Y	Y	Y	3	4	5
Drinking Water Metals Preservation Check Done (Circle)				YES	NO

COR FCD-00383/4

Page 1 of 1

Your P.O. #: 13254256
Your Project #: 2402553.01
Site#: 700
Site Location: ON07
Your C.O.C. #: 987212

Attention: Khalid Hussein - Twin Creeks

RWDI Inc.
600 Southgate Drive
Guelph, ON
Canada N1G 4P6

Report Date: 2024/11/07
Report #: R8395057
Version: 1 - Final

CERTIFICATE OF ANALYSIS

BUREAU VERITAS JOB #: C4Y0310
Received: 2024/10/29, 10:09

Sample Matrix: Water
Samples Received: 1

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Analytical Method
ABN Compounds in Water by GC/MS	1	2024/11/03	2024/11/04	CAM SOP-00301	EPA 8270 m
Alkalinity	1	N/A	2024/11/04	CAM SOP-00448	SM 24 2320 B m
Biochemical Oxygen Demand (BOD)	1	2024/10/31	2024/11/05	CAM SOP-00427	SM 24 5210B m
Chloride by Automated Colourimetry	1	N/A	2024/11/05	CAM SOP-00463	SM 24 4500-Cl E m
Chemical Oxygen Demand	1	N/A	2024/11/04	CAM SOP-00416	SM 24 5220 D m
Conductance in Water - On-site	1	N/A	2024/11/04		
Conductivity	1	N/A	2024/11/04	CAM SOP-00414	SM 24 2510 m
Field Measured Dissolved Oxygen in Water	1	N/A	2024/11/04		
Dissolved Mercury in Water by CVAA	1	2024/11/01	2024/11/05	CAM SOP-00453	EPA 7470A m
Total Metals by ICPMS	1	N/A	2024/11/04	CAM SOP-00447	EPA 6020B m
Ammonia-N	1	N/A	2024/11/04	CAM SOP-00441	USGS I-2522-90 m
Nitrate & Nitrite as Nitrogen in Water (1)	1	N/A	2024/11/04	CAM SOP-00440	SM 24 4500-NO3I/NO2B
pH (2)	1	2024/11/01	2024/11/04	CAM SOP-00413	SM 24th - 4500H+ B
Phenols (4AAP)	1	N/A	2024/11/04	CAM SOP-00444	OMOE E3179 m
Field Measured pH (3)	1	N/A	2024/10/29		Field pH Meter
Sulphate by Automated Turbidimetry	1	N/A	2024/11/05	CAM SOP-00464	SM 24 4500-SO42- E m
Total Dissolved Solids	1	2024/11/01	2024/11/04	CAM SOP-00428	SM 24 2540C m
Field Temperature (3)	1	N/A	2024/10/29		Field Thermometer
Total Kjeldahl Nitrogen in Water	1	2024/11/01	2024/11/04	CAM SOP-00938	OMOE E3516 m
Total Phosphorus (Colourimetric)	1	2024/11/01	2024/11/04	CAM SOP-00407	SM 24 4500-P I
Total Suspended Solids	1	2024/11/01	2024/11/04	CAM SOP-00428	SM 24 2540D m
Turbidity - On-site	1	N/A	2024/11/04		
Un-ionized Ammonia (4)	1	2024/10/29	2024/11/04	Auto Calc.	PWQO
Volatile Organic Compounds in Water	1	N/A	2024/11/04	CAM SOP-00228	EPA 8260D

Remarks:

Bureau Veritas is accredited to ISO/IEC 17025 for specific parameters on scopes of accreditation. Unless otherwise noted, procedures used by Bureau Veritas are based upon recognized Provincial, Federal or US method compendia such as CCME, EPA, APHA or the Quebec Ministry of Environment.

All work recorded herein has been done in accordance with procedures and practices ordinarily exercised by professionals in Bureau Veritas' profession using accepted testing methodologies, quality assurance and quality control procedures (except where otherwise agreed by the client and Bureau Veritas in

Bureau Veritas 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.bvna.com

Microbiology testing is conducted at 6660 Campobello Rd. Chemistry testing is conducted at 6740 Campobello Rd.

Your P.O. #: 13254256
Your Project #: 2402553.01
Site#: 700
Site Location: ON07
Your C.O.C. #: 987212

Attention: Khalid Hussein - Twin Creeks

RWDI Inc.
600 Southgate Drive
Guelph, ON
Canada N1G 4P6

Report Date: 2024/11/07
Report #: R8395057
Version: 1 - Final

CERTIFICATE OF ANALYSIS

BUREAU VERITAS JOB #: C4Y0310
Received: 2024/10/29, 10:09

writing). All data is in statistical control and has met quality control and method performance criteria unless otherwise noted. All method blanks are reported; unless indicated otherwise, associated sample data are not blank corrected. Where applicable, unless otherwise noted, Measurement Uncertainty has not been accounted for when stating conformity to the referenced standard.

Bureau Veritas liability is limited to the actual cost of the requested analyses, unless otherwise agreed in writing. There is no other warranty expressed or implied. Bureau Veritas has been retained to provide analysis of samples provided by the Client using the testing methodology referenced in this report. Interpretation and use of test results are the sole responsibility of the Client and are not within the scope of services provided by Bureau Veritas, unless otherwise agreed in writing. Bureau Veritas is not responsible for the accuracy or any data impacts, that result from the information provided by the customer or their agent.

Solid sample results, except biota, are based on dry weight unless otherwise indicated. Organic analyses are not recovery corrected except for isotope dilution methods.
Results relate to samples tested. When sampling is not conducted by Bureau Veritas, results relate to the supplied samples tested.
This Certificate shall not be reproduced except in full, without the written approval of the laboratory.
Reference Method suffix “m” indicates test methods incorporate validated modifications from specific reference methods to improve performance.
* RPDs calculated using raw data. The rounding of final results may result in the apparent difference.
(1) Values for calculated parameters may not appear to add up due to rounding of raw data and significant figures.
(2) "The CCME method and Analytical Protocol (O. Reg 153/04, O. Reg. 406/19) requires pH to be analyzed within 15 minutes of sampling and therefore field analysis is required for compliance. All Laboratory pH analyses in this report are reported past the CCME and Analytical Protocol (O. Reg 153/04, O. Reg. 406/19) holding time. Bureau Veritas endeavors to analyze samples as soon as possible after receipt."

(3) This is a field test, therefore, the results relate to items that were not analysed at Bureau Veritas.
(4) Un-ionized ammonia is calculated using the total ammonia result and field data provided by the client for pH and temperature.

Encryption Key

Please direct all questions regarding this Certificate of Analysis to:
Patricia Legette, Project Manager
Email: Patricia.Legette@bureauveritas.com
Phone# (905)817-5799

==========

Bureau Veritas has procedures in place to guard against improper use of the electronic signature and have the required "signatories", as per ISO/IEC 17025, signing the reports. For Service Group specific validation, please refer to the Validation Signatures page if included, otherwise available by request. For Department specific Analyst/Supervisor validation names, please refer to the Test Summary section if included, otherwise available by request. This report is authorized by Rodney Major, General Manager responsible for Ontario Environmental laboratory operations.

Bureau Veritas Job #: C4Y0310
Report Date: 2024/11/07

RWDI Inc.
Client Project #: 2402553.01
Site Location: ON07
Your P.O. #: 13254256
Sampler Initials: JA

RESULTS OF ANALYSES OF WATER

Bureau Veritas ID		AHHL38		
Sampling Date		2024/10/28 11:00		
COC Number		987212		
	UNITS	SP2	RDL	QC Batch
Calculated Parameters				
Total Un-ionized Ammonia	mg/L	<0.03	0.03	9731292
Field Measurements				
Field Conductivity	uS/cm	593	N/A	ONSITE
Field Dissolved Oxygen	mg/L	11.22	N/A	ONSITE
Field Temperature	Celsius	10.7	N/A	ONSITE
Field Measured Field Turbidity	NTU	20.4	N/A	ONSITE
Field Measured pH	pH	9.0		ONSITE
Inorganics				
Total Ammonia-N	mg/L	<0.15	0.15	9743304
Total BOD	mg/L	3	2	9736118
Total Chemical Oxygen Demand (COD)	mg/L	32	4.0	9741309
Conductivity	umho/cm	530	1.0	9740352
Total Dissolved Solids	mg/L	400	10	9739455
Total Kjeldahl Nitrogen (TKN)	mg/L	<0.7	0.7	9741352
pH	pH	7.87		9740354
Phenols-4AAP	mg/L	<0.0010	0.0010	9742960
Total Phosphorus	mg/L	<0.030	0.030	9741403
Total Suspended Solids	mg/L	11	10	9740043
Dissolved Sulphate (SO4)	mg/L	140	1.0	9739810
Alkalinity (Total as CaCO3)	mg/L	65	1.0	9740349
Dissolved Chloride (Cl-)	mg/L	33	1.0	9739802
Nitrite (N)	mg/L	<0.010	0.010	9740365
Nitrate (N)	mg/L	<0.10	0.10	9740365

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
N/A = Not Applicable

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Microbiology testing is conducted at 6660 Campobello Rd. Chemistry testing is conducted at 6740 Campobello Rd.

Bureau Veritas Job #: C4Y0310
Report Date: 2024/11/07

RWDI Inc.
Client Project #: 2402553.01
Site Location: ON07
Your P.O. #: 13254256
Sampler Initials: JA

ELEMENTS BY ATOMIC SPECTROSCOPY (WATER)

Bureau Veritas ID		AHHL38		
Sampling Date		2024/10/28 11:00		
COC Number		987212		
	UNITS	SP2	RDL	QC Batch
Metals				
Dissolved Mercury (Hg)	ug/L	<0.10	0.10	9739107
Total Arsenic (As)	mg/L	0.001	0.001	9741151
Total Barium (Ba)	mg/L	0.027	0.005	9741151
Total Boron (B)	mg/L	0.26	0.02	9741151
Total Cadmium (Cd)	mg/L	<0.0001	0.0001	9741151
Total Calcium (Ca)	mg/L	42	0.2	9741151
Total Chromium (Cr)	mg/L	<0.005	0.005	9741151
Total Copper (Cu)	mg/L	<0.002	0.002	9741151
Total Iron (Fe)	mg/L	0.3	0.1	9741151
Total Lead (Pb)	mg/L	<0.0005	0.0005	9741151
Total Magnesium (Mg)	mg/L	21	0.05	9741151
Total Nickel (Ni)	mg/L	0.003	0.001	9741151
Total Potassium (K)	mg/L	5.6	0.2	9741151
Total Sodium (Na)	mg/L	27	0.1	9741151
Total Zinc (Zn)	mg/L	<0.01	0.01	9741151

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

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Microbiology testing is conducted at 6660 Campobello Rd. Chemistry testing is conducted at 6740 Campobello Rd.

SEMI-VOLATILE ORGANICS BY GC-MS (WATER)

Bureau Veritas ID		AHHL38		
Sampling Date		2024/10/28 11:00		
COC Number		987212		
	UNITS	SP2	RDL	QC Batch
Semivolatile Organics				
Benzo(a)pyrene	ug/L	<0.20	0.20	9742413
1,2-Dichlorobenzene	ug/L	<0.50	0.50	9742413
1,3-Dichlorobenzene	ug/L	<0.50	0.50	9742413
1,4-Dichlorobenzene	ug/L	<0.50	0.50	9742413
Hexachlorobenzene	ug/L	<0.50	0.50	9742413
1,2,4-Trichlorobenzene	ug/L	<0.50	0.50	9742413
2,4-Dichlorophenol	ug/L	<0.30	0.30	9742413
Pentachlorophenol	ug/L	<1.0	1.0	9742413
Phenol	ug/L	<0.50	0.50	9742413
2,4,6-Trichlorophenol	ug/L	<0.50	0.50	9742413
Di-N-butyl phthalate	ug/L	<2.0	2.0	9742413
Diethyl phthalate	ug/L	<1.0	1.0	9742413
Dimethyl phthalate	ug/L	<1.0	1.0	9742413
Surrogate Recovery (%)				
2,4,6-Tribromophenol	%	81		9742413
2-Fluorobiphenyl	%	58		9742413
2-Fluorophenol	%	29		9742413
D14-Terphenyl	%	78		9742413
D5-Nitrobenzene	%	53		9742413
D5-Phenol	%	21		9742413

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

Microbiology testing is conducted at 6660 Campobello Rd. Chemistry testing is conducted at 6740 Campobello Rd.

Bureau Veritas Job #: C4Y0310
Report Date: 2024/11/07

RWDI Inc.
Client Project #: 2402553.01
Site Location: ON07
Your P.O. #: 13254256
Sampler Initials: JA

VOLATILE ORGANICS BY GC/MS (WATER)

Bureau Veritas ID		AHHL38		
Sampling Date		2024/10/28 11:00		
COC Number		987212		
	UNITS	SP2	RDL	QC Batch
Volatile Organics				
Benzene	ug/L	<0.20	0.20	9742850
1,4-Dichlorobenzene	ug/L	<0.40	0.40	9742850
Ethylbenzene	ug/L	<0.20	0.20	9742850
Methylene Chloride(Dichloromethane)	ug/L	<2.0	2.0	9742850
Toluene	ug/L	<0.20	0.20	9742850
Vinyl Chloride	ug/L	<0.20	0.20	9742850
p+m-Xylene	ug/L	<0.20	0.20	9742850
o-Xylene	ug/L	<0.20	0.20	9742850
Total Xylenes	ug/L	<0.20	0.20	9742850
Surrogate Recovery (%)				
4-Bromofluorobenzene	%	101		9742850
D4-1,2-Dichloroethane	%	105		9742850
D8-Toluene	%	94		9742850

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

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Microbiology testing is conducted at 6660 Campobello Rd. Chemistry testing is conducted at 6740 Campobello Rd.

Bureau Veritas Job #: C4Y0310
Report Date: 2024/11/07

RWDI Inc.
Client Project #: 2402553.01
Site Location: ON07
Your P.O. #: 13254256
Sampler Initials: JA

GENERAL COMMENTS

Each temperature is the average of up to three cooler temperatures taken at receipt

Package 1	6.3°C

Results relate only to the items tested.

Bureau Veritas 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.bvna.com

Microbiology testing is conducted at 6660 Campobello Rd. Chemistry testing is conducted at 6740 Campobello Rd.

Bureau Veritas Job #: C4Y0310
Report Date: 2024/11/07

QUALITY ASSURANCE REPORT

RWDI Inc.
Client Project #: 2402553.01
Site Location: ON07
Your P.O. #: 13254256
Sampler Initials: JA

			Matrix Spike		SPIKED BLANK		Method Blank		RPD		QC Standard	
QC Batch	Parameter	Date	% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits	% Recovery	QC Limits
9742413	2,4,6-Tribromophenol	2024/11/03	98	10 - 130	86	10 - 130	75	%				
9742413	2-Fluorobiphenyl	2024/11/03	74	30 - 130	63	30 - 130	70	%				
9742413	2-Fluorophenol	2024/11/03	38	10 - 130	42	10 - 130	39	%				
9742413	D14-Terphenyl	2024/11/03	104	30 - 130	102	30 - 130	95	%				
9742413	D5-Nitrobenzene	2024/11/03	72	30 - 130	68	30 - 130	69	%				
9742413	D5-Phenol	2024/11/03	32	10 - 130	28	10 - 130	24	%				
9742850	4-Bromofluorobenzene	2024/11/04	100	70 - 130	100	70 - 130	102	%				
9742850	D4-1,2-Dichloroethane	2024/11/04	102	70 - 130	101	70 - 130	102	%				
9742850	D8-Toluene	2024/11/04	104	70 - 130	102	70 - 130	95	%				
9736118	Total BOD	2024/11/05					<2	mg/L	8.3 (1)	30	96	80 - 120
9739107	Dissolved Mercury (Hg)	2024/11/05	104	75 - 125	106	80 - 120	<0.10	ug/L				
9739455	Total Dissolved Solids	2024/11/04			98	80 - 120	<10	mg/L	0.95 (1)	20		
9739802	Dissolved Chloride (Cl-)	2024/11/05	100	80 - 120	100	80 - 120	<1.0	mg/L	NC (1)	20		
9739810	Dissolved Sulphate (SO4)	2024/11/05	96	75 - 125	98	80 - 120	<1.0	mg/L	NC (1)	20		
9740043	Total Suspended Solids	2024/11/04			95	80 - 120	<10	mg/L	9.5 (2)	20		
9740349	Alkalinity (Total as CaCO3)	2024/11/04			97	85 - 115	<1.0	mg/L	0.089 (1)	20		
9740352	Conductivity	2024/11/04			101	85 - 115	<1.0	umho/cm	0.20 (1)	10		
9740354	pH	2024/11/04			102	98 - 103			0.97 (1)	N/A		
9740365	Nitrate (N)	2024/11/04	93	80 - 120	99	80 - 120	<0.10	mg/L	NC (1)	20		
9740365	Nitrite (N)	2024/11/04	99	80 - 120	103	80 - 120	<0.010	mg/L	NC (1)	20		
9741151	Total Arsenic (As)	2024/11/04	102 (3)	80 - 120	103	80 - 120	<0.001	mg/L	3.4 (4)	20		
9741151	Total Barium (Ba)	2024/11/04	99 (3)	80 - 120	98	80 - 120	<0.005	mg/L	5.4 (4)	20		
9741151	Total Boron (B)	2024/11/04	104 (3)	80 - 120	96	80 - 120	<0.02	mg/L	1.8 (4)	20		
9741151	Total Cadmium (Cd)	2024/11/04	99 (3)	80 - 120	98	80 - 120	<0.0001	mg/L	NC (4)	20		
9741151	Total Calcium (Ca)	2024/11/04	NC (3)	80 - 120	98	80 - 120	<0.2	mg/L	1.7 (4)	20		
9741151	Total Chromium (Cr)	2024/11/04	98 (3)	80 - 120	99	80 - 120	<0.005	mg/L	NC (4)	20		
9741151	Total Copper (Cu)	2024/11/04	98 (3)	80 - 120	100	80 - 120	<0.002	mg/L	NC (4)	20		
9741151	Total Iron (Fe)	2024/11/04	97 (3)	80 - 120	99	80 - 120	<0.1	mg/L	4.7 (4)	20		
9741151	Total Lead (Pb)	2024/11/04	97 (3)	80 - 120	98	80 - 120	<0.0005	mg/L	NC (4)	20		

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Microbiology testing is conducted at 6660 Campobello Rd. Chemistry testing is conducted at 6740 Campobello Rd.

QUALITY ASSURANCE REPORT(CONT'D)

			Matrix Spike		SPIKED BLANK		Method Blank		RPD		QC Standard	
QC Batch	Parameter	Date	% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits	% Recovery	QC Limits
9741151	Total Magnesium (Mg)	2024/11/04	98 (3)	80 - 120	100	80 - 120	<0.05	mg/L	3.6 (4)	20		
9741151	Total Nickel (Ni)	2024/11/04	96 (3)	80 - 120	97	80 - 120	<0.001	mg/L	1.0 (4)	20		
9741151	Total Potassium (K)	2024/11/04	101 (3)	80 - 120	102	80 - 120	<0.2	mg/L	1.5 (4)	20		
9741151	Total Sodium (Na)	2024/11/04	NC (3)	80 - 120	100	80 - 120	<0.1	mg/L	1.7 (4)	20		
9741151	Total Zinc (Zn)	2024/11/04	100 (3)	80 - 120	102	80 - 120	<0.01	mg/L	NC (4)	20		
9741309	Total Chemical Oxygen Demand (COD)	2024/11/04	101 (5)	80 - 120	103	80 - 120	<4.0	mg/L	5.5 (6)	20		
9741352	Total Kjeldahl Nitrogen (TKN)	2024/11/04	102 (5)	80 - 120	108	80 - 120	<0.7	mg/L	NC (6)	20	114	80 - 120
9741403	Total Phosphorus	2024/11/04	93 (5)	80 - 120	97	80 - 120	<0.030	mg/L	NC (6)	25	95	80 - 120
9742413	1,2,4-Trichlorobenzene	2024/11/03	58	30 - 130	33	30 - 130	<0.50	ug/L				
9742413	1,2-Dichlorobenzene	2024/11/03	59	30 - 130	37	30 - 130	<0.50	ug/L				
9742413	1,3-Dichlorobenzene	2024/11/03	55	30 - 130	34	30 - 130	<0.50	ug/L				
9742413	1,4-Dichlorobenzene	2024/11/03	60	30 - 130	33	30 - 130	<0.50	ug/L				
9742413	2,4,6-Trichlorophenol	2024/11/03	98	10 - 130	89	10 - 130	<0.50	ug/L				
9742413	2,4-Dichlorophenol	2024/11/03	71	10 - 130	64	10 - 130	<0.30	ug/L				
9742413	Benzo(a)pyrene	2024/11/04	106	30 - 130	102	30 - 130	<0.20	ug/L	NC (1)	40		
9742413	Diethyl phthalate	2024/11/03	86	30 - 130	86	30 - 130	<1.0	ug/L				
9742413	Dimethyl phthalate	2024/11/03	94	30 - 130	96	30 - 130	<1.0	ug/L				
9742413	Di-N-butyl phthalate	2024/11/04	116	30 - 130	116	30 - 130	<2.0	ug/L	NC (1)	40		
9742413	Hexachlorobenzene	2024/11/03	90	30 - 130	84	30 - 130	<0.50	ug/L				
9742413	Pentachlorophenol	2024/11/03	102	10 - 130	82	10 - 130	<1.0	ug/L				
9742413	Phenol	2024/11/03	35	10 - 130	31	10 - 130	<0.50	ug/L				
9742850	1,4-Dichlorobenzene	2024/11/04	108	70 - 130	100	70 - 130	<0.40	ug/L	NC (1)	30		
9742850	Benzene	2024/11/04	98	70 - 130	98	70 - 130	<0.20	ug/L	NC (1)	30		
9742850	Ethylbenzene	2024/11/04	101	70 - 130	100	70 - 130	<0.20	ug/L	NC (1)	30		
9742850	Methylene Chloride(Dichloromethane)	2024/11/04	96	70 - 130	94	70 - 130	<2.0	ug/L	NC (1)	30		
9742850	o-Xylene	2024/11/04	105	70 - 130	105	70 - 130	<0.20	ug/L	NC (1)	30		
9742850	p+m-Xylene	2024/11/04	102	70 - 130	100	70 - 130	<0.20	ug/L	NC (1)	30		
9742850	Toluene	2024/11/04	101	70 - 130	99	70 - 130	<0.20	ug/L	NC (1)	30		
9742850	Total Xylenes	2024/11/04					<0.20	ug/L	NC (1)	30		
9742850	Vinyl Chloride	2024/11/04	89	70 - 130	87	70 - 130	<0.20	ug/L	NC (1)	30		

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Microbiology testing is conducted at 6660 Campobello Rd. Chemistry testing is conducted at 6740 Campobello Rd.

QUALITY ASSURANCE REPORT(CONT'D)

			Matrix Spike		SPIKED BLANK		Method Blank		RPD		QC Standard	
QC Batch	Parameter	Date	% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits	% Recovery	QC Limits
9742960	Phenols-4AAP	2024/11/04	101	80 - 120	100	80 - 120	<0.0010	mg/L	NC (1)	20		
9743304	Total Ammonia-N	2024/11/04	100 (7)	75 - 125	98	80 - 120	<0.15	mg/L	NC (8)	20		

N/A = Not Applicable

Duplicate: Paired analysis of a separate portion of the same sample. Used to evaluate the variance in the measurement.

Matrix Spike: A sample to which a known amount of the analyte of interest has been added. Used to evaluate sample matrix interference.

QC Standard: A sample of known concentration prepared by an external agency under stringent conditions. Used as an independent check of method accuracy.

Spiked Blank: A blank matrix sample to which a known amount of the analyte, usually from a second source, has been added. Used to evaluate method accuracy.

Method Blank: A blank matrix containing all reagents used in the analytical procedure. Used to identify laboratory contamination.

Surrogate: A pure or isotopically labeled compound whose behavior mirrors the analytes of interest. Used to evaluate extraction efficiency.

NC (Matrix Spike): The recovery in the matrix spike was not calculated. The relative difference between the concentration in the parent sample and the spike amount was too small to permit a reliable recovery calculation (matrix spike concentration was less than the native sample concentration)

NC (Duplicate RPD): The duplicate RPD was not calculated. The concentration in the sample and/or duplicate was too low to permit a reliable RPD calculation (absolute difference <= 2x RDL).

(1) Duplicate Parent ID

(2) Duplicate Parent ID [AHHL38-03]

(3) Matrix Spike Parent ID [AHHL38-04]

(4) Duplicate Parent ID [AHHL38-04]

(5) Matrix Spike Parent ID [AHHL38-06]

(6) Duplicate Parent ID [AHHL38-06]

(7) Matrix Spike Parent ID [AHHL38-09]

(8) Duplicate Parent ID [AHHL38-09]

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Microbiology testing is conducted at 6660 Campobello Rd. Chemistry testing is conducted at 6740 Campobello Rd.

Bureau Veritas Job #: C4Y0310
Report Date: 2024/11/07

RWDI Inc.
Client Project #: 2402553.01
Site Location: ON07
Your P.O. #: 13254256
Sampler Initials: JA

VALIDATION SIGNATURE PAGE

The analytical data and all QC contained in this report were reviewed and validated by:

Cristina Carriere, Senior Scientific Specialist

Louise Harding, Scientific Specialist

Patricia Legette, Project Manager

Bureau Veritas has procedures in place to guard against improper use of the electronic signature and have the required "signatories", as per ISO/IEC 17025, signing the reports. For Service Group specific validation, please refer to the Validation Signatures page if included, otherwise available by request. For Department specific Analyst/Supervisor validation names, please refer to the Test Summary section if included, otherwise available by request. This report is authorized by Rodney Major, General Manager responsible for Ontario Environmental laboratory operations.

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C4Y0310
2024/10/29 10:09

BUREAU VERITAS

FIELD INFORMATION FORM

WASTE MANAGEMENT

Site Name: TCEC
Site No.:
Sample: SG2 (Sample ID)

This Waste Management Field Information Form is Required
This form is to be completed, in addition to any State Forms. The Field Form is submitted along with the Chain of Custody Forms that accompany the sample containers (i.e. with the cooler that is returned to the laboratory).

Laboratory Use Only/Lab ID:

PURGE INFO

PURGE DATE (MM DD YY)	PURGE TIME (2400 Hr Clock)	ELAPSED HRS (hrs:min)	WATER VOL IN CASING (Gallons)	ACTUAL VOL PURGED (Gallons)	WELL VOLs PURGED

Note: For Passive Sampling, replace "Water Vol in Casing" and "Well Vols Purged" w/ Water Vol in Tubing/Flow Cell and Tubing/Flow Cell Vols Purged. Mark Changes. Record field data below.

PURGE/SAMPLE EQUIPMENT

Purging and Sampling Equipment ... Dedicated: Y or N
Purging Device:
Sampling Device:
X-Other:

A-Submersible Pump, B-Peristaltic Pump, C-QED Bladder Pump, D-Bailer, E-Piston Pump, F-Dipper/Bottle

Filter Device: Y or N — 0.45 µ or ____ µ (circle or fill in)
Filter Type: A-In-line Disposable, B-Pressure, C-Vacuum, X-Other:
Sample Tube Type: A-Teflon, B-Stainless Steel, C-PVC, D-Polypropylene, X-Other:

WELL DATA

Well Elevation (at TOC) (ft/msl)
Depth to Water (DTW) (from TOC) (ft)
Groundwater Elevation (GWE) (Site Datum, from TOC) (ft msl)
Total Well Depth (from TOC) (ft)
Stick Up (from ground elevation) (ft)
Casing ID (in)
Casing Material

Note: Total Depth, Stick Up, Casing ID, etc. are optional and can be from historical data, unless required by Site/Permit. Well Elevation, DTW, and GWE must be current, obtained from site.

STABILIZATION DATA (Optional)

Sample Time (2400 Hr Clock)	Rate/Unit	pH (std)	Conductance (SC/EC) (µmhos/cm @ 25°C)	Temp. (°C)	Turbidity (ntu)	D.O. (mg/L - ppm)	eH/ORP (mV)	DTW (ft)
		1st	1st					
		2nd	2nd					
		3rd	3rd					
		4th	4th					
Input Range for 3 consec. readings or Permit/State requirements:		+/-	+/-	+/-	+/-	+/-	+/-	

Stabilization Data Fields are Optional *(i.e. complete stabilization readings for parameters required by WM, Site, or State). These fields can be used where four (4) field measurements are required by State/Permit/Site. If a Data Logger or other Electronic format is used, fill in final readings below and submit electronic data separately to Site. If more fields above are needed, use separate sheet or form.*

FIELD DATA

SAMPLE DATE (MM DD YY)	pH (std)	CONDUCTANCE (µmhos/cm @ 25°C)	TEMP. (°C)	TURBIDITY (ntu)	DO (mg/L - ppm)	eH/ORP (mV)	Other: Units
10 28 24	9.0	5413	10.7	20.4	11.22		

Final Field Readings are required *(i.e. record field measurements, final stabilized readings, passive sample readings before sampling for all field parameters required by State/Permit/Site.)*

FIELD COMMENTS

Sample Appearance: clear
Odor: n/a
Color: n/a
Other: —
Weather Conditions (required daily, or as conditions change): 10°C
Direction/Speed: 11 Kn/hr S
Outlook: clear
Precipitation: Y or N

Specific Comments (including purge/well volume calculations if required):

Initial: 1m — SG2 Verification
Repl: 0.30m — 11.00
time @ 1: 5
2: 7
3: 7

I certify that sampling procedures were in accordance with applicable EPA, State, and WM protocols (if more than one sampler, all should sign):

Date	Name	Signature	Company
10/28/24	J. Alikelb		RVPI
/ /			

DISTRIBUTION: WHITE/ORIGINAL - Stays with Sample, YELLOW - Returned to Client, PINK - Field Copy

Field Information Form v-5.1 06/20

2005

C4Y0310
2024/10/29 10:09

Custody Tracking Form

T987212

Please use this form for custody tracking when submitting the work instructions via eCOC (electronic Chain of Custody). Please ensure your form has a barcode or a Bureau Veritas eCOC confirmation number in the top right hand side. This number links your electronic submission to your samples. This form should be placed in the cooler with your samples.

First Sample: SP2
Last Sample: SP2
Sample Count: 1

Relinquished By				Received By			
J. Artibello		Date	24/10/29	MRY40		Date	2024/10/29
		Time (24 HR)	11:30			Time (24 HR)	10:09
		Date				Date	
		Time (24 HR)				Time (24 HR)	
		Date				Date	
		Time (24 HR)				Time (24 HR)	

Unless otherwise agreed to, submissions and use of services are governed by Bureau Veritas' standard terms and conditions which can be found at www.bvna.com.

Triage Information

Sampled By (Print): J. Artibello

# of Coolers/Pkgs: 1

Rush ☐ Immediate Test ☐ Food Residue ☐

Micro ☐ Food Chemistry ☐

*** LABORATORY USE ONLY ***

Received At

Lab Comments:

Labeled By

Verified By

29-Oct-24 10:09
Patricia Legette
C4Y0310
AJH FNV-1565

Custody Seal		Cooling Media	Temperature °C		
Present (Y/N)	Intact (Y/N)	Present (Y/N)	1	2	3
Y	Y	Y	7	6	6
Drinking Water Metals Preservation Check Done (Circle)				YES	NO

COR FCD-00383/4

Page 1 of 1

Your P.O. #: 13254256
Your Project #: 2402553.01
Site#: 700
Site Location: ON07
Your C.O.C. #: 994235

Attention: Khalid Hussein - Twin Creeks

RWDI Inc.
600 Southgate Drive
Guelph, ON
Canada N1G 4P6

Report Date: 2024/11/21
Report #: R8414126
Version: 1 - Final

CERTIFICATE OF ANALYSIS

BUREAU VERITAS JOB #: C4Z6024
Received: 2024/11/12, 09:24

Sample Matrix: Water
Samples Received: 1

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Analytical Method
ABN Compounds in Water by GC/MS	1	2024/11/14	2024/11/15	CAM SOP-00301	EPA 8270 m
Alkalinity	1	N/A	2024/11/14	CAM SOP-00448	SM 24 2320 B m
Biochemical Oxygen Demand (BOD)	1	2024/11/14	2024/11/19	CAM SOP-00427	SM 24 5210B m
Chloride by Automated Colourimetry	1	N/A	2024/11/15	CAM SOP-00463	SM 24 4500-Cl E m
Chemical Oxygen Demand	1	N/A	2024/11/18	CAM SOP-00416	SM 24 5220 D m
Conductance in Water - On-site	1	N/A	2024/11/18		
Conductivity	1	N/A	2024/11/14	CAM SOP-00414	SM 24 2510 m
Field Measured Dissolved Oxygen in Water	1	N/A	2024/11/18		
Dissolved Mercury in Water by CVAA	1	2024/11/15	2024/11/19	CAM SOP-00453	EPA 7470A m
Total Metals by ICPMS	1	N/A	2024/11/14	CAM SOP-00447	EPA 6020B m
Ammonia-N	1	N/A	2024/11/14	CAM SOP-00441	USGS I-2522-90 m
Nitrate & Nitrite as Nitrogen in Water (1)	1	N/A	2024/11/14	CAM SOP-00440	SM 24 4500-NO3I/NO2B
pH (2)	1	2024/11/13	2024/11/14	CAM SOP-00413	SM 24th - 4500H+ B
Phenols (4AAP)	1	N/A	2024/11/15	CAM SOP-00444	OMOE E3179 m
Field Measured pH (3)	1	N/A	2024/11/12		Field pH Meter
Sulphate by Automated Turbidimetry	1	N/A	2024/11/15	CAM SOP-00464	SM 24 4500-SO42- E m
Total Dissolved Solids	1	2024/11/13	2024/11/14	CAM SOP-00428	SM 24 2540C m
Field Temperature (3)	1	N/A	2024/11/12		Field Thermometer
Total Kjeldahl Nitrogen in Water	1	2024/11/15	2024/11/15	CAM SOP-00938	SM 4500-N B m
Total Phosphorus (Colourimetric)	1	2024/11/15	2024/11/18	CAM SOP-00407	SM 24 4500-P I
Total Suspended Solids	1	2024/11/13	2024/11/14	CAM SOP-00428	SM 24 2540D m
Turbidity - On-site	1	N/A	2024/11/18		
Un-ionized Ammonia (4)	1	2024/11/12	2024/11/18	Auto Calc.	PWQO
Volatile Organic Compounds in Water	1	N/A	2024/11/15	CAM SOP-00228	EPA 8260D

Remarks:

Bureau Veritas is accredited to ISO/IEC 17025 for specific parameters on scopes of accreditation. Unless otherwise noted, procedures used by Bureau Veritas are based upon recognized Provincial, Federal or US method compendia such as CCME, EPA, APHA or the Quebec Ministry of Environment.

All work recorded herein has been done in accordance with procedures and practices ordinarily exercised by professionals in Bureau Veritas' profession using accepted testing methodologies, quality assurance and quality control procedures (except where otherwise agreed by the client and Bureau Veritas in

Your P.O. #: 13254256
Your Project #: 2402553.01
Site#: 700
Site Location: ON07
Your C.O.C. #: 994235

Attention: Khalid Hussein - Twin Creeks

RWDI Inc.
600 Southgate Drive
Guelph, ON
Canada N1G 4P6

Report Date: 2024/11/21
Report #: R8414126
Version: 1 - Final

CERTIFICATE OF ANALYSIS

BUREAU VERITAS JOB #: C4Z6024
Received: 2024/11/12, 09:24

writing). All data is in statistical control and has met quality control and method performance criteria unless otherwise noted. All method blanks are reported; unless indicated otherwise, associated sample data are not blank corrected. Where applicable, unless otherwise noted, Measurement Uncertainty has not been accounted for when stating conformity to the referenced standard.

Bureau Veritas liability is limited to the actual cost of the requested analyses, unless otherwise agreed in writing. There is no other warranty expressed or implied. Bureau Veritas has been retained to provide analysis of samples provided by the Client using the testing methodology referenced in this report. Interpretation and use of test results are the sole responsibility of the Client and are not within the scope of services provided by Bureau Veritas, unless otherwise agreed in writing. Bureau Veritas is not responsible for the accuracy or any data impacts, that result from the information provided by the customer or their agent.

Solid sample results, except biota, are based on dry weight unless otherwise indicated. Organic analyses are not recovery corrected except for isotope dilution methods.
Results relate to samples tested. When sampling is not conducted by Bureau Veritas, results relate to the supplied samples tested.
This Certificate shall not be reproduced except in full, without the written approval of the laboratory.
Reference Method suffix “m” indicates test methods incorporate validated modifications from specific reference methods to improve performance.
* RPDs calculated using raw data. The rounding of final results may result in the apparent difference.
(1) Values for calculated parameters may not appear to add up due to rounding of raw data and significant figures.
(2) "The CCME method and Analytical Protocol (O. Reg 153/04, O. Reg. 406/19) requires pH to be analyzed within 15 minutes of sampling and therefore field analysis is required for compliance. All Laboratory pH analyses in this report are reported past the CCME and Analytical Protocol (O. Reg 153/04, O. Reg. 406/19) holding time. Bureau Veritas endeavors to analyze samples as soon as possible after receipt."

(3) This is a field test, therefore, the results relate to items that were not analysed at Bureau Veritas.
(4) Un-ionized ammonia is calculated using the total ammonia result and field data provided by the client for pH and temperature.

Encryption Key

Please direct all questions regarding this Certificate of Analysis to:
Patricia Legette, Project Manager
Email: Patricia.Legette@bureauveritas.com
Phone# (905)817-5799
==========
Bureau Veritas has procedures in place to guard against improper use of the electronic signature and have the required "signatories", as per ISO/IEC 17025, signing the reports. For Service Group specific validation, please refer to the Validation Signatures page if included, otherwise available by request. For Department specific Analyst/Supervisor validation names, please refer to the Test Summary section if included, otherwise available by request. This report is authorized by Rodney Major, General Manager responsible for Ontario Environmental laboratory operations.

Bureau Veritas Job #: C4Z6024
Report Date: 2024/11/21

RWDI Inc.
Client Project #: 2402553.01
Site Location: ON07
Your P.O. #: 13254256
Sampler Initials: JA

RESULTS OF ANALYSES OF WATER

Bureau Veritas ID		AIPO26		
Sampling Date		2024/11/11 10:15		
COC Number		994235		
	UNITS	**SS1**	**RDL**	**QC Batch**
Calculated Parameters				
Total Un-ionized Ammonia	mg/L	<0.0049	0.0049	9760078
Field Measurements				
Field Conductivity	uS/cm	1201	N/A	ONSITE
Field Dissolved Oxygen	mg/L	10.32	N/A	ONSITE
Field Temperature	Celsius	12.1	N/A	ONSITE
Field Measured Field Turbidity	NTU	369	N/A	ONSITE
Field Measured pH	pH	8.1		ONSITE
Inorganics				
Total Ammonia-N	mg/L	<0.15	0.15	9765142
Total BOD	mg/L	<2	2	9765042
Total Chemical Oxygen Demand (COD)	mg/L	26	4.0	9766210
Conductivity	umho/cm	700	1.0	9764455
Total Dissolved Solids	mg/L	485	10	9764207
Total Kjeldahl Nitrogen (TKN)	mg/L	<0.7	0.7	9768380
pH	pH	7.82		9764459
Phenols-4AAP	mg/L	<0.0010	0.0010	9768568
Total Phosphorus	mg/L	0.066	0.030	9768390
Total Suspended Solids	mg/L	110	10	9764033
Dissolved Sulphate (SO4)	mg/L	240	1.0	9763550
Alkalinity (Total as CaCO3)	mg/L	87	1.0	9764466
Dissolved Chloride (Cl-)	mg/L	12	1.0	9763544
Nitrite (N)	mg/L	<0.010	0.010	9764470
Nitrate (N)	mg/L	0.14	0.10	9764470

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
N/A = Not Applicable

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Microbiology testing is conducted at 6660 Campobello Rd. Chemistry testing is conducted at 6740 Campobello Rd.

Bureau Veritas Job #: C4Z6024
Report Date: 2024/11/21

RWDI Inc.
Client Project #: 2402553.01
Site Location: ON07
Your P.O. #: 13254256
Sampler Initials: JA

ELEMENTS BY ATOMIC SPECTROSCOPY (WATER)

Bureau Veritas ID		AIPO26		
Sampling Date		2024/11/11 10:15		
COC Number		994235		
	UNITS	SS1	RDL	QC Batch
Metals				
Dissolved Mercury (Hg)	ug/L	<0.10	0.10	9767854
Total Arsenic (As)	mg/L	0.002	0.001	9762384
Total Barium (Ba)	mg/L	0.038	0.005	9762384
Total Boron (B)	mg/L	0.13	0.02	9762384
Total Cadmium (Cd)	mg/L	<0.0001	0.0001	9762384
Total Calcium (Ca)	mg/L	95	0.2	9762384
Total Chromium (Cr)	mg/L	<0.005	0.005	9762384
Total Copper (Cu)	mg/L	0.004	0.002	9762384
Total Iron (Fe)	mg/L	3.7	0.1	9762384
Total Lead (Pb)	mg/L	0.0018	0.0005	9762384
Total Magnesium (Mg)	mg/L	30	0.05	9762384
Total Nickel (Ni)	mg/L	0.007	0.001	9762384
Total Potassium (K)	mg/L	4.8	0.2	9762384
Total Sodium (Na)	mg/L	15	0.1	9762384
Total Zinc (Zn)	mg/L	0.02	0.01	9762384

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

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Bureau Veritas Job #: C4Z6024
Report Date: 2024/11/21

RWDI Inc.
Client Project #: 2402553.01
Site Location: ON07
Your P.O. #: 13254256
Sampler Initials: JA

SEMI-VOLATILE ORGANICS BY GC-MS (WATER)

Bureau Veritas ID		AIPO26		
Sampling Date		2024/11/11 10:15		
COC Number		994235		
	UNITS	SS1	RDL	QC Batch
Semivolatile Organics				
Benzo(a)pyrene	ug/L	<0.80	0.80	9766560
1,2-Dichlorobenzene	ug/L	<2.0	2.0	9766560
1,3-Dichlorobenzene	ug/L	<2.0	2.0	9766560
1,4-Dichlorobenzene	ug/L	<2.0	2.0	9766560
Hexachlorobenzene	ug/L	<2.0	2.0	9766560
1,2,4-Trichlorobenzene	ug/L	<2.0	2.0	9766560
2,4-Dichlorophenol	ug/L	<1.2	1.2	9766560
Pentachlorophenol	ug/L	<4.0	4.0	9766560
Phenol	ug/L	<2.0	2.0	9766560
2,4,6-Trichlorophenol	ug/L	<2.0	2.0	9766560
Di-N-butyl phthalate	ug/L	<8.0	8.0	9766560
Diethyl phthalate	ug/L	<4.0	4.0	9766560
Dimethyl phthalate	ug/L	<4.0	4.0	9766560
Surrogate Recovery (%)				
2,4,6-Tribromophenol	%	70		9766560
2-Fluorobiphenyl	%	65		9766560
2-Fluorophenol	%	36		9766560
D14-Terphenyl	%	94		9766560
D5-Nitrobenzene	%	82		9766560
D5-Phenol	%	29		9766560

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

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Bureau Veritas Job #: C4Z6024
Report Date: 2024/11/21

RWDI Inc.
Client Project #: 2402553.01
Site Location: ON07
Your P.O. #: 13254256
Sampler Initials: JA

VOLATILE ORGANICS BY GC/MS (WATER)

Bureau Veritas ID		AIPO26		
Sampling Date		2024/11/11 10:15		
COC Number		994235		
	UNITS	SS1	RDL	QC Batch
Volatile Organics				
Benzene	ug/L	<0.20	0.20	9765775
1,4-Dichlorobenzene	ug/L	<0.40	0.40	9765775
Ethylbenzene	ug/L	<0.20	0.20	9765775
Methylene Chloride(Dichloromethane)	ug/L	<2.0	2.0	9765775
Toluene	ug/L	<0.20	0.20	9765775
Vinyl Chloride	ug/L	<0.20	0.20	9765775
p+m-Xylene	ug/L	<0.20	0.20	9765775
o-Xylene	ug/L	<0.20	0.20	9765775
Total Xylenes	ug/L	<0.20	0.20	9765775
Surrogate Recovery (%)				
4-Bromofluorobenzene	%	98		9765775
D4-1,2-Dichloroethane	%	106		9765775
D8-Toluene	%	94		9765775

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

Bureau Veritas 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.bvna.com

Microbiology testing is conducted at 6660 Campobello Rd. Chemistry testing is conducted at 6740 Campobello Rd.

GENERAL COMMENTS

Each temperature is the average of up to three cooler temperatures taken at receipt

Package 1	2.7°C

Sample AIPO26 [SS1] : ABN Analysis: Due to the sample matrix, a smaller than usual portion of the sample was used for extraction. Detection limits were adjusted accordingly.

Results relate only to the items tested.

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QUALITY ASSURANCE REPORT

			Matrix Spike		SPIKED BLANK		Method Blank		RPD		QC Standard	
QC Batch	Parameter	Date	% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits	% Recovery	QC Limits
9765775	4-Bromofluorobenzene	2024/11/15	99	70 - 130	98	70 - 130	100	%				
9765775	D4-1,2-Dichloroethane	2024/11/15	103	70 - 130	99	70 - 130	102	%				
9765775	D8-Toluene	2024/11/15	100	70 - 130	101	70 - 130	95	%				
9766560	2,4,6-Tribromophenol	2024/11/15	81	10 - 130	80	10 - 130	50	%				
9766560	2-Fluorobiphenyl	2024/11/15	59	30 - 130	61	30 - 130	56	%				
9766560	2-Fluorophenol	2024/11/15	42	10 - 130	44	10 - 130	31	%				
9766560	D14-Terphenyl	2024/11/15	93	30 - 130	95	30 - 130	93	%				
9766560	D5-Nitrobenzene	2024/11/15	76	30 - 130	79	30 - 130	69	%				
9766560	D5-Phenol	2024/11/15	30	10 - 130	31	10 - 130	23	%				
9762384	Total Arsenic (As)	2024/11/13	101	80 - 120	100	80 - 120	<0.001	mg/L				
9762384	Total Barium (Ba)	2024/11/13	94	80 - 120	96	80 - 120	<0.005	mg/L	0.085 (1)	20		
9762384	Total Boron (B)	2024/11/13	97	80 - 120	95	80 - 120	<0.02	mg/L	1.3 (1)	20		
9762384	Total Cadmium (Cd)	2024/11/13	97	80 - 120	97	80 - 120	<0.0001	mg/L	NC (1)	20		
9762384	Total Calcium (Ca)	2024/11/13	101	80 - 120	104	80 - 120	<0.2	mg/L	2.6 (1)	20		
9762384	Total Chromium (Cr)	2024/11/13	102	80 - 120	103	80 - 120	<0.005	mg/L	NC (1)	20		
9762384	Total Copper (Cu)	2024/11/13	99	80 - 120	98	80 - 120	<0.002	mg/L	NC (1)	20		
9762384	Total Iron (Fe)	2024/11/13	98	80 - 120	100	80 - 120	<0.1	mg/L	NC (1)	20		
9762384	Total Lead (Pb)	2024/11/13	94	80 - 120	95	80 - 120	<0.0005	mg/L	NC (1)	20		
9762384	Total Magnesium (Mg)	2024/11/13	99	80 - 120	97	80 - 120	<0.05	mg/L	3.2 (1)	20		
9762384	Total Nickel (Ni)	2024/11/13	97	80 - 120	96	80 - 120	<0.001	mg/L				
9762384	Total Potassium (K)	2024/11/13	100	80 - 120	100	80 - 120	<0.2	mg/L	2.0 (1)	20		
9762384	Total Sodium (Na)	2024/11/13	103	80 - 120	99	80 - 120	<0.1	mg/L	1.4 (1)	20		
9762384	Total Zinc (Zn)	2024/11/13	98	80 - 120	101	80 - 120	<0.01	mg/L	NC (1)	20		
9763544	Dissolved Chloride (Cl-)	2024/11/15	86	80 - 120	96	80 - 120	<1.0	mg/L	1.3 (1)	20		
9763550	Dissolved Sulphate (SO4)	2024/11/15	89	75 - 125	97	80 - 120	<1.0	mg/L	0.53 (1)	20		
9764033	Total Suspended Solids	2024/11/14			96	80 - 120	<10	mg/L	6.5 (1)	20		
9764207	Total Dissolved Solids	2024/11/14			95	80 - 120	<10	mg/L	0 (1)	20		
9764455	Conductivity	2024/11/14			102	85 - 115	<1.0	umho/cm	0 (2)	10		
9764459	pH	2024/11/14			102	98 - 103			1.5 (2)	N/A		

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QUALITY ASSURANCE REPORT(CONT'D)

			Matrix Spike		SPIKED BLANK		Method Blank		RPD		QC Standard	
QC Batch	Parameter	Date	% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits	% Recovery	QC Limits
9764466	Alkalinity (Total as CaCO3)	2024/11/14			96	85 - 115	<1.0	mg/L	1.6 (2)	20		
9764470	Nitrate (N)	2024/11/14	NC	80 - 120	93	80 - 120	<0.10	mg/L	2.2 (1)	20		
9764470	Nitrite (N)	2024/11/14	NC	80 - 120	105	80 - 120	<0.010	mg/L	0.64 (1)	20		
9765042	Total BOD	2024/11/19					<2	mg/L	4.7 (1)	30	100	80 - 120
9765142	Total Ammonia-N	2024/11/14	87 (3)	75 - 125	95	80 - 120	<0.15	mg/L	NC (4)	20		
9765775	1,4-Dichlorobenzene	2024/11/15	99	70 - 130	101	70 - 130	<0.40	ug/L	NC (1)	30		
9765775	Benzene	2024/11/15	95	70 - 130	96	70 - 130	<0.20	ug/L	NC (1)	30		
9765775	Ethylbenzene	2024/11/15	92	70 - 130	95	70 - 130	<0.20	ug/L	NC (1)	30		
9765775	Methylene Chloride(Dichloromethane)	2024/11/15	106	70 - 130	104	70 - 130	<2.0	ug/L	NC (1)	30		
9765775	o-Xylene	2024/11/15	99	70 - 130	103	70 - 130	<0.20	ug/L	NC (1)	30		
9765775	p+m-Xylene	2024/11/15	92	70 - 130	95	70 - 130	<0.20	ug/L	NC (1)	30		
9765775	Toluene	2024/11/15	96	70 - 130	98	70 - 130	<0.20	ug/L	0.85 (1)	30		
9765775	Total Xylenes	2024/11/15					<0.20	ug/L	NC (1)	30		
9765775	Vinyl Chloride	2024/11/15	88	70 - 130	88	70 - 130	<0.20	ug/L	NC (1)	30		
9766210	Total Chemical Oxygen Demand (COD)	2024/11/18	NC	80 - 120	99	80 - 120	<4.0	mg/L	1.6 (1)	20		
9766560	1,2,4-Trichlorobenzene	2024/11/15	38	30 - 130	37	30 - 130	<0.50	ug/L	NC (5)	40		
9766560	1,2-Dichlorobenzene	2024/11/15	41	30 - 130	43	30 - 130	<0.50	ug/L	NC (5)	40		
9766560	1,3-Dichlorobenzene	2024/11/15	33	30 - 130	35	30 - 130	<0.50	ug/L	NC (5)	40		
9766560	1,4-Dichlorobenzene	2024/11/15	39	30 - 130	39	30 - 130	<0.50	ug/L	NC (5)	40		
9766560	2,4,6-Trichlorophenol	2024/11/15	88	10 - 130	87	10 - 130	<0.50	ug/L	NC (5)	40		
9766560	2,4-Dichlorophenol	2024/11/15	78	10 - 130	79	10 - 130	<0.30	ug/L	NC (5)	40		
9766560	Benzo(a)pyrene	2024/11/15	106	30 - 130	104	30 - 130	<0.20	ug/L	NC (5)	40		
9766560	Diethyl phthalate	2024/11/15	98	30 - 130	93	30 - 130	<1.0	ug/L	NC (5)	40		
9766560	Dimethyl phthalate	2024/11/15	94	30 - 130	91	30 - 130	<1.0	ug/L	NC (5)	40		
9766560	Di-N-butyl phthalate	2024/11/15	102	30 - 130	101	30 - 130	<2.0	ug/L	NC (5)	40		
9766560	Hexachlorobenzene	2024/11/15	79	30 - 130	82	30 - 130	<0.50	ug/L	NC (5)	40		
9766560	Pentachlorophenol	2024/11/15	75	10 - 130	70	10 - 130	<1.0	ug/L	NC (5)	40		
9766560	Phenol	2024/11/15	31	10 - 130	31	10 - 130	<0.50	ug/L	NC (5)	40		
9767854	Dissolved Mercury (Hg)	2024/11/19	98	75 - 125	98	80 - 120	<0.10	ug/L	NC (1)	20		
9768380	Total Kjeldahl Nitrogen (TKN)	2024/11/15	118 (6)	80 - 120	108	80 - 120	<0.7	mg/L	NC (7)	20	105	80 - 120

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QUALITY ASSURANCE REPORT(CONT'D)

			Matrix Spike		SPIKED BLANK		Method Blank		RPD		QC Standard	
QC Batch	Parameter	Date	% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits	% Recovery	QC Limits
9768390	Total Phosphorus	2024/11/18	92 (6)	80 - 120	98	80 - 120	<0.030	mg/L	0.46 (7)	25	103	80 - 120
9768568	Phenols-4AAP	2024/11/15	101	80 - 120	101	80 - 120	<0.0010	mg/L	NC (1)	20		

N/A = Not Applicable

Duplicate: Paired analysis of a separate portion of the same sample. Used to evaluate the variance in the measurement.

Matrix Spike: A sample to which a known amount of the analyte of interest has been added. Used to evaluate sample matrix interference.

QC Standard: A sample of known concentration prepared by an external agency under stringent conditions. Used as an independent check of method accuracy.

Spiked Blank: A blank matrix sample to which a known amount of the analyte, usually from a second source, has been added. Used to evaluate method accuracy.

Method Blank: A blank matrix containing all reagents used in the analytical procedure. Used to identify laboratory contamination.

Surrogate: A pure or isotopically labeled compound whose behavior mirrors the analytes of interest. Used to evaluate extraction efficiency.

NC (Matrix Spike): The recovery in the matrix spike was not calculated. The relative difference between the concentration in the parent sample and the spike amount was too small to permit a reliable recovery calculation (matrix spike concentration was less than the native sample concentration)

NC (Duplicate RPD): The duplicate RPD was not calculated. The concentration in the sample and/or duplicate was too low to permit a reliable RPD calculation (absolute difference <= 2x RDL).

(1) Duplicate Parent ID

(2) Duplicate Parent ID [AIPO26-02]

(3) Matrix Spike Parent ID [AIPO26-09]

(4) Duplicate Parent ID [AIPO26-09]

(5) Duplicate Parent ID [AIPO26-01]

(6) Matrix Spike Parent ID [AIPO26-06]

(7) Duplicate Parent ID [AIPO26-06]

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Microbiology testing is conducted at 6660 Campobello Rd. Chemistry testing is conducted at 6740 Campobello Rd.

Bureau Veritas Job #: C4Z6024
Report Date: 2024/11/21

RWDI Inc.
Client Project #: 2402553.01
Site Location: ON07
Your P.O. #: 13254256
Sampler Initials: JA

VALIDATION SIGNATURE PAGE

The analytical data and all QC contained in this report were reviewed and validated by:

Louise Harding, Scientific Specialist

Michael Damianidis, Project Manager Assistant

Bureau Veritas has procedures in place to guard against improper use of the electronic signature and have the required "signatories", as per ISO/IEC 17025, signing the reports. For Service Group specific validation, please refer to the Validation Signatures page if included, otherwise available by request. For Department specific Analyst/Supervisor validation names, please refer to the Test Summary section if included, otherwise available by request. This report is authorized by Rodney Major, General Manager responsible for Ontario Environmental laboratory operations.

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BUREAU VERITAS

FIELD INFORMATION FORM

WASTE MANAGEMENT

Site Name: TCEC

Site No.: Sample: SS-Verification Sample ID

This Waste Management Field Information Form is Required
This form is to be completed, in addition to any State Forms. The Field Form is submitted along with the Chain of Custody Forms that accompany the sample containers (i.e. with the cooler that is returned to the laboratory).

Laboratory Use Only/Lab ID:

PURGE INFO

PURGE DATE (MM DD YY)	PURGE TIME (2400 Hr Clock)	ELAPSED HRS (hrs:min)	WATER VOL IN CASING (Gallons)	ACTUAL VOL PURGED (Gallons)	WELL VOLs PURGED

Note: For Passive Sampling, replace "Water Vol in Casing" and "Well Vols Purged" w/ Water Vol in Tubing/Flow Cell and Tubing/Flow Cell Vols Purged. Mark Changes, Record field data below.

PURGE/SAMPLE EQUIPMENT

Purging and Sampling Equipment ... Dedicated: Y or N

Purging Device: A-Submersible Pump, B-Peristaltic Pump, C-QED Bladder Pump, D-Bailer, E-Piston Pump, F-Dipper/Bottle

Sampling Device:

X-Other:

Filter Device: Y or N — 0.45 µ or ____ µ (circle or fill in)

Filter Type: A — A-In-line Disposable, B-Pressure, C-Vacuum, X-Other: ____

Sample Tube Type: A — A-Teflon, B-Stainless Steel, C-PVC, D-Polypropylene, X-Other: ____

WELL DATA

Well Elevation (at TOC) (ft/msl)

Depth to Water (DTW) (from TOC) (ft)

Groundwater Elevation (GWE) (Site Datum, from TOC) (ft msl)

Total Well Depth (from TOC) (ft)

Stick Up (from ground elevation) (ft)

Casing ID (in)

Casing Material

Note: Total Depth, Stick Up, Casing ID, etc. are optional and can be from historical data, unless required by Site/Permit. Well Elevation, DTW, and GWE must be current, obtained from site.

STABILIZATION DATA (Optional)

Sample Time (2400 Hr Clock)	Rate/Unit	pH (std)	Conductance (SC/EC) (µmhos/cm @ 25°C)	Temp. (°C)	Turbidity (ntu)	D.O. (mg/L - ppm)	eH/ORP (mV)	DTW (ft)
		1st	1st					
		2nd	2nd					
		3rd	3rd					
		4th	4th					
Input Range for 3 consec. readings or Permit/State requirements:		+/-	+/-	+/-	+/-	+/-	+/-	

Stabilization Data Fields are Optional *(i.e. complete stabilization readings for parameters required by WM, Site, or State). These fields can be used where four (4) field measurements are required by State/Permit/Site. If a Data Logger or other Electronic format is used, fill in final readings below and submit electronic data separately to Site. If more fields above are needed, use separate sheet or form.*

FIELD DATA

SAMPLE DATE (MM DD YY)	pH (std)	CONDUCTANCE (µmhos/cm @ 25°C)	TEMP. (°C)	TURBIDITY (ntu)	DO (mg/L - ppm)	eH/ORP (mV)	Other: Units
11 11 24	8.1	1201	12.1	369	10.32		

Final Field Readings are required *(i.e. record field measurements, final stabilized readings, passive sample readings before sampling for all field parameters required by State/Permit/Site.)*

FIELD COMMENTS

Sample Appearance: ____ Odor: N/O Color: N/C Other: transient

Weather Conditions (required daily, or as conditions change): NOC Direction/Speed: 21Km/h W Outlook: mostly cloudy Precipitation: Y or N

Specific Comments (including purge/well volume calculations if required):

Well = 0.85m time 10:15

Depth = 0.35m

time @ 1:15

2:15

3:16

I certify that sampling procedures were in accordance with applicable EPA, State, and WM protocols (if more than one sampler, all should sign):

Date	Name	Signature	Company
11/11/24	Jake Arbitell		RWPI
/ /			

DISTRIBUTION: WHITE/ORIGINAL - Stays with Sample, YELLOW - Returned to Client, PINK - Field Copy

Field Information Form v-3.1 06/20

2163

Custody Tracking Form

T994235

Please use this form for custody tracking when submitting the work instructions via eCOC (electronic Chain of Custody). Please ensure your form has a barcode or a Bureau Veritas eCOC confirmation number in the top right hand side. This number links your electronic submission to your samples. This form should be placed in the cooler with your samples.

First Sample: SS1
Last Sample: SS1
Sample Count: 1

Relinquished By				Received By			
J. Archibald		Date	27/11/24			Date	
		Time (24 HR)	10:35			Time (24 HR)	
		Date				Date	
		Time (24 HR)				Time (24 HR)	
		Date				Date	
		Time (24 HR)				Time (24 HR)	

Unless otherwise agreed to, submissions and use of services are governed by Bureau Veritas' standard terms and conditions which can be found at www.bvna.com.

Triage Information

Sampled By (Print): J. Archibald

# of Coolers/Pkgs: 1

Rush ☐ Immediate Test ☐ Food Residue ☐

Micro ☐ Food Chemistry ☐

*** LABORATORY USE ONLY ***

Received At

Lab Comments:

Labeled By

Verified By

Custody Seal		Cooling Media	Temperature °C		
Present (Y/N)	Intact (Y/N)	Present (Y/N)	1	2	3
Y	Y	Y	3	1	Y

Drinking Water Metals Preservation Check Done (Circle) **YES** **NO**

12-Nov-24 09:24
Patricia Legette
C4Z6024

COR FCD-00383/4

APPENDIX I6:

Biological Laboratory Reports

Your P.O. #: 13254256
Your Project #: 2402553.01
Site#: 700
Site Location: ON07
Your C.O.C. #: 979756

Attention: Khalid Hussein - Twin Creeks

RWDI Inc.
600 Southgate Drive
Guelph, ON
Canada N1G 4P6

Report Date: 2024/10/24
Report #: R8375432
Version: 1 - Final

CERTIFICATE OF ANALYSIS

BUREAU VERITAS JOB #: C4W4815
Received: 2024/10/16, 10:27

Sample Matrix: Water
Samples Received: 2

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Analytical Method
ABN Compounds in Water by GC/MS	2	2024/10/18	2024/10/20	CAM SOP-00301	EPA 8270 m
Alkalinity	2	N/A	2024/10/19	CAM SOP-00448	SM 24 2320 B m
Biochemical Oxygen Demand (BOD)	2	2024/10/18	2024/10/23	CAM SOP-00427	SM 24 5210B m
Chloride by Automated Colourimetry	2	N/A	2024/10/21	CAM SOP-00463	SM 24 4500-Cl E m
Chemical Oxygen Demand	2	N/A	2024/10/21	CAM SOP-00416	SM 24 5220 D m
Conductance in Water - On-site	2	N/A	2024/10/17		
Conductivity	2	N/A	2024/10/19	CAM SOP-00414	SM 24 2510 m
Field Measured Dissolved Oxygen in Water	2	N/A	2024/10/17		
Dissolved Mercury in Water by CVAA	2	2024/10/21	2024/10/21	CAM SOP-00453	EPA 7470A m
Total Metals by ICPMS	2	N/A	2024/10/22	CAM SOP-00447	EPA 6020B m
Ammonia-N	2	N/A	2024/10/19	CAM SOP-00441	USGS I-2522-90 m
Nitrate & Nitrite as Nitrogen in Water (1)	2	N/A	2024/10/18	CAM SOP-00440	SM 24 4500-NO3I/NO2B
pH (2)	2	2024/10/18	2024/10/19	CAM SOP-00413	SM 24th - 4500H+ B
Phenols (4AAP)	2	N/A	2024/10/22	CAM SOP-00444	OMOE E3179 m
Field Measured pH (3)	2	N/A	2024/10/16		Field pH Meter
Sulphate by Automated Turbidimetry	2	N/A	2024/10/21	CAM SOP-00464	SM 24 4500-SO42- E m
Total Dissolved Solids	2	2024/10/18	2024/10/21	CAM SOP-00428	SM 24 2540C m
Field Temperature (3)	2	N/A	2024/10/16		Field Thermometer
Total Kjeldahl Nitrogen in Water	2	2024/10/21	2024/10/23	CAM SOP-00938	OMOE E3516 m
Total Phosphorus (Colourimetric)	2	2024/10/19	2024/10/22	CAM SOP-00407	SM 24 4500-P I
Total Suspended Solids	2	2024/10/18	2024/10/18	CAM SOP-00428	SM 24 2540D m
Turbidity - On-site	2	N/A	2024/10/17		
Un-ionized Ammonia (4)	2	2024/10/16	2024/10/21	Auto Calc.	PWQO
Volatile Organic Compounds in Water	2	N/A	2024/10/20	CAM SOP-00228	EPA 8260D

Remarks:

Bureau Veritas is accredited to ISO/IEC 17025 for specific parameters on scopes of accreditation. Unless otherwise noted, procedures used by Bureau Veritas are based upon recognized Provincial, Federal or US method compendia such as CCME, EPA, APHA or the Quebec Ministry of Environment.

All work recorded herein has been done in accordance with procedures and practices ordinarily exercised by professionals in Bureau Veritas' profession using accepted testing methodologies, quality assurance and quality control procedures (except where otherwise agreed by the client and Bureau Veritas in

Your P.O. #: 13254256
Your Project #: 2402553.01
Site#: 700
Site Location: ON07
Your C.O.C. #: 979756

Attention: Khalid Hussein - Twin Creeks

RWDI Inc.
600 Southgate Drive
Guelph, ON
Canada N1G 4P6

Report Date: 2024/10/24
Report #: R8375432
Version: 1 - Final

CERTIFICATE OF ANALYSIS

BUREAU VERITAS JOB #: C4W4815
Received: 2024/10/16, 10:27

writing). All data is in statistical control and has met quality control and method performance criteria unless otherwise noted. All method blanks are reported; unless indicated otherwise, associated sample data are not blank corrected. Where applicable, unless otherwise noted, Measurement Uncertainty has not been accounted for when stating conformity to the referenced standard.

Bureau Veritas liability is limited to the actual cost of the requested analyses, unless otherwise agreed in writing. There is no other warranty expressed or implied. Bureau Veritas has been retained to provide analysis of samples provided by the Client using the testing methodology referenced in this report. Interpretation and use of test results are the sole responsibility of the Client and are not within the scope of services provided by Bureau Veritas, unless otherwise agreed in writing. Bureau Veritas is not responsible for the accuracy or any data impacts, that result from the information provided by the customer or their agent.

Solid sample results, except biota, are based on dry weight unless otherwise indicated. Organic analyses are not recovery corrected except for isotope dilution methods.
Results relate to samples tested. When sampling is not conducted by Bureau Veritas, results relate to the supplied samples tested.
This Certificate shall not be reproduced except in full, without the written approval of the laboratory.
Reference Method suffix “m” indicates test methods incorporate validated modifications from specific reference methods to improve performance.
* RPDs calculated using raw data. The rounding of final results may result in the apparent difference.
(1) Values for calculated parameters may not appear to add up due to rounding of raw data and significant figures.
(2) "The CCME method and Analytical Protocol (O. Reg 153/04, O. Reg. 406/19) requires pH to be analyzed within 15 minutes of sampling and therefore field analysis is required for compliance. All Laboratory pH analyses in this report are reported past the CCME and Analytical Protocol (O. Reg 153/04, O. Reg. 406/19) holding time. Bureau Veritas endeavors to analyze samples as soon as possible after receipt."

(3) This is a field test, therefore, the results relate to items that were not analysed at Bureau Veritas.
(4) Un-ionized ammonia is calculated using the total ammonia result and field data provided by the client for pH and temperature.

Encryption Key

Please direct all questions regarding this Certificate of Analysis to:
Patricia Legette, Project Manager
Email: Patricia.Legette@bureauveritas.com
Phone# (905)817-5799
==========
Bureau Veritas has procedures in place to guard against improper use of the electronic signature and have the required "signatories", as per ISO/IEC 17025, signing the reports. For Service Group specific validation, please refer to the Validation Signatures page if included, otherwise available by request. For Department specific Analyst/Supervisor validation names, please refer to the Test Summary section if included, otherwise available by request. This report is authorized by Rodney Major, General Manager responsible for Ontario Environmental laboratory operations.

Bureau Veritas Job #: C4W4815
Report Date: 2024/10/24

RWDI Inc.
Client Project #: 2402553.01
Site Location: ON07
Your P.O. #: 13254256
Sampler Initials: JA

RESULTS OF ANALYSES OF WATER

Bureau Veritas ID		AFZN53		AFZN54		
Sampling Date		2024/10/14 10:00		2024/10/14 10:00		
COC Number		979756		979756		
	UNITS	**SS1**	**QC Batch**	**SSDUP1**	**RDL**	**QC Batch**
Calculated Parameters						
Total Un-ionized Ammonia	mg/L	<0.00074	9704113	<0.00074	0.00074	9704113
Field Measurements						
Field Conductivity	uS/cm	616	ONSITE	616	N/A	ONSITE
Field Dissolved Oxygen	mg/L	10.7	ONSITE	10.7	N/A	ONSITE
Field Temperature	Celsius	11.1	ONSITE	11.1	N/A	ONSITE
Field Measured Field Turbidity	NTU	>999	ONSITE	>999	N/A	ONSITE
Field Measured pH	pH	7.3	ONSITE	7.3		ONSITE
Inorganics						
Total Ammonia-N	mg/L	<0.15	9710189	<0.15	0.15	9710189
Total BOD	mg/L	<2	9708915	<2	2	9708915
Total Chemical Oxygen Demand (COD)	mg/L	<4.0	9711307	<4.0	4.0	9711307
Conductivity	umho/cm	470	9709376	480	1.0	9709376
Total Dissolved Solids	mg/L	405	9709664	415	10	9709664
Total Kjeldahl Nitrogen (TKN)	mg/L	<0.7	9714201	<0.7	0.7	9714201
pH	pH	7.91	9709374	7.93		9709374
Phenols-4AAP	mg/L	<0.0010	9713386	<0.0010	0.0010	9713386
Total Phosphorus	mg/L	0.28	9712429	0.26	0.030	9712429
Total Suspended Solids	mg/L	570	9709306	790	33	9709306
Dissolved Sulphate (SO4)	mg/L	150	9709359	150	1.0	9709359
Alkalinity (Total as CaCO3)	mg/L	71	9709371	72	1.0	9709371
Dissolved Chloride (Cl-)	mg/L	7.9	9709354	7.9	1.0	9709354
Nitrite (N)	mg/L	<0.010	9709289	<0.010	0.010	9709286
Nitrate (N)	mg/L	0.27	9709289	0.25	0.10	9709286

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
N/A = Not Applicable

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Microbiology testing is conducted at 6660 Campobello Rd. Chemistry testing is conducted at 6740 Campobello Rd.

Bureau Veritas Job #: C4W4815
Report Date: 2024/10/24

RWDI Inc.
Client Project #: 2402553.01
Site Location: ON07
Your P.O. #: 13254256
Sampler Initials: JA

ELEMENTS BY ATOMIC SPECTROSCOPY (WATER)

Bureau Veritas ID		AFZN53	AFZN54		
Sampling Date		2024/10/14 10:00	2024/10/14 10:00		
COC Number		979756	979756		
	UNITS	SS1	SSDUP1	RDL	QC Batch
Metals					
Dissolved Mercury (Hg)	ug/L	<0.10	<0.10	0.10	9713333
Total Arsenic (As)	mg/L	0.007	0.007	0.001	9713739
Total Barium (Ba)	mg/L	0.086	0.081	0.005	9713739
Total Boron (B)	mg/L	0.09	0.08	0.02	9713739
Total Cadmium (Cd)	mg/L	<0.0001	<0.0001	0.0001	9713739
Total Calcium (Ca)	mg/L	86	86	0.2	9713739
Total Chromium (Cr)	mg/L	0.022	0.022	0.005	9713739
Total Copper (Cu)	mg/L	0.019	0.019	0.002	9713739
Total Iron (Fe)	mg/L	22	21	0.1	9713739
Total Lead (Pb)	mg/L	0.0093	0.0089	0.0005	9713739
Total Magnesium (Mg)	mg/L	24	24	0.05	9713739
Total Nickel (Ni)	mg/L	0.031	0.031	0.001	9713739
Total Potassium (K)	mg/L	6.1	6.2	0.2	9713739
Total Sodium (Na)	mg/L	7.7	7.8	0.1	9713739
Total Zinc (Zn)	mg/L	0.07	0.07	0.01	9713739

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

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SEMI-VOLATILE ORGANICS BY GC-MS (WATER)

Bureau Veritas ID		AFZN53	AFZN54		
Sampling Date		2024/10/14 10:00	2024/10/14 10:00		
COC Number		979756	979756		
	UNITS	SS1	SSDUP1	RDL	QC Batch
Semivolatile Organics					
Benzo(a)pyrene	ug/L	<0.20	<0.20	0.20	9710084
1,2-Dichlorobenzene	ug/L	<0.50	<0.50	0.50	9710084
1,3-Dichlorobenzene	ug/L	<0.50	<0.50	0.50	9710084
1,4-Dichlorobenzene	ug/L	<0.50	<0.50	0.50	9710084
Hexachlorobenzene	ug/L	<0.50	<0.50	0.50	9710084
1,2,4-Trichlorobenzene	ug/L	<0.50	<0.50	0.50	9710084
2,4-Dichlorophenol	ug/L	<0.30	<0.30	0.30	9710084
Pentachlorophenol	ug/L	<1.0	<1.0	1.0	9710084
Phenol	ug/L	<0.50	<0.50	0.50	9710084
2,4,6-Trichlorophenol	ug/L	<0.50	<0.50	0.50	9710084
Di-N-butyl phthalate	ug/L	<2.0	<2.0	2.0	9710084
Diethyl phthalate	ug/L	<1.0	<1.0	1.0	9710084
Dimethyl phthalate	ug/L	<1.0	<1.0	1.0	9710084
Surrogate Recovery (%)					
2,4,6-Tribromophenol	%	63	31		9710084
2-Fluorobiphenyl	%	77	72		9710084
2-Fluorophenol	%	25	9.6 (1)		9710084
D14-Terphenyl	%	79	82		9710084
D5-Nitrobenzene	%	70	66		9710084
D5-Phenol	%	18	12		9710084

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
(1) Recovery or RPD for this parameter is outside control limits. The overall quality control for this analysis meets acceptability criteria.

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VOLATILE ORGANICS BY GC/MS (WATER)

Bureau Veritas ID		AFZN53	AFZN54		
Sampling Date		2024/10/14 10:00	2024/10/14 10:00		
COC Number		979756	979756		
	UNITS	SS1	SSDUP1	RDL	QC Batch
Volatile Organics					
Benzene	ug/L	<0.20	<0.20	0.20	9709128
1,4-Dichlorobenzene	ug/L	<0.40	<0.40	0.40	9709128
Ethylbenzene	ug/L	<0.20	<0.20	0.20	9709128
Methylene Chloride(Dichloromethane)	ug/L	<2.0	<2.0	2.0	9709128
Toluene	ug/L	<0.20	<0.20	0.20	9709128
Vinyl Chloride	ug/L	<0.20	<0.20	0.20	9709128
p+m-Xylene	ug/L	<0.20	<0.20	0.20	9709128
o-Xylene	ug/L	<0.20	<0.20	0.20	9709128
Total Xylenes	ug/L	<0.20	<0.20	0.20	9709128
Surrogate Recovery (%)					
4-Bromofluorobenzene	%	101	101		9709128
D4-1,2-Dichloroethane	%	96	98		9709128
D8-Toluene	%	94	94		9709128

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

Microbiology testing is conducted at 6660 Campobello Rd. Chemistry testing is conducted at 6740 Campobello Rd.

Bureau Veritas Job #: C4W4815
Report Date: 2024/10/24

RWDI Inc.
Client Project #: 2402553.01
Site Location: ON07
Your P.O. #: 13254256
Sampler Initials: JA

GENERAL COMMENTS

Each temperature is the average of up to three cooler temperatures taken at receipt

Package 1	4.7°C

Results relate only to the items tested.

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Microbiology testing is conducted at 6660 Campobello Rd. Chemistry testing is conducted at 6740 Campobello Rd.

QUALITY ASSURANCE REPORT

			Matrix Spike		SPIKED BLANK		Method Blank		RPD		QC Standard	
QC Batch	Parameter	Date	% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits	% Recovery	QC Limits
9709128	4-Bromofluorobenzene	2024/10/20	102	70 - 130	101	70 - 130	102	%				
9709128	D4-1,2-Dichloroethane	2024/10/20	102	70 - 130	98	70 - 130	98	%				
9709128	D8-Toluene	2024/10/20	97	70 - 130	97	70 - 130	95	%				
9710084	2,4,6-Tribromophenol	2024/10/18	92	10 - 130	81	10 - 130	61	%				
9710084	2-Fluorobiphenyl	2024/10/18	66	30 - 130	72	30 - 130	65	%				
9710084	2-Fluorophenol	2024/10/18	37	10 - 130	46	10 - 130	37	%				
9710084	D14-Terphenyl	2024/10/18	90	30 - 130	90	30 - 130	86	%				
9710084	D5-Nitrobenzene	2024/10/18	64	30 - 130	85	30 - 130	79	%				
9710084	D5-Phenol	2024/10/18	28	10 - 130	30	10 - 130	24	%				
9708915	Total BOD	2024/10/23					<2	mg/L	NC (1)	30	97	80 - 120
9709128	1,4-Dichlorobenzene	2024/10/20	106	70 - 130	100	70 - 130	<0.40	ug/L	NC (1)	30		
9709128	Benzene	2024/10/20	104	70 - 130	97	70 - 130	<0.20	ug/L	NC (1)	30		
9709128	Ethylbenzene	2024/10/20	101	70 - 130	96	70 - 130	<0.20	ug/L	NC (1)	30		
9709128	Methylene Chloride(Dichloromethane)	2024/10/20	100	70 - 130	92	70 - 130	<2.0	ug/L	NC (1)	30		
9709128	o-Xylene	2024/10/20	110	70 - 130	105	70 - 130	<0.20	ug/L	NC (1)	30		
9709128	p+m-Xylene	2024/10/20	103	70 - 130	98	70 - 130	<0.20	ug/L	NC (1)	30		
9709128	Toluene	2024/10/20	100	70 - 130	93	70 - 130	<0.20	ug/L	NC (1)	30		
9709128	Total Xylenes	2024/10/20					<0.20	ug/L	NC (1)	30		
9709128	Vinyl Chloride	2024/10/20	92	70 - 130	86	70 - 130	<0.20	ug/L	NC (1)	30		
9709286	Nitrate (N)	2024/10/18	92	80 - 120	94	80 - 120	<0.10	mg/L	NC (1)	20		
9709286	Nitrite (N)	2024/10/18	105	80 - 120	106	80 - 120	<0.010	mg/L	NC (1)	20		
9709289	Nitrate (N)	2024/10/18	92	80 - 120	93	80 - 120	<0.10	mg/L	NC (1)	20		
9709289	Nitrite (N)	2024/10/18	105	80 - 120	106	80 - 120	<0.010	mg/L				
9709306	Total Suspended Solids	2024/10/18			99	80 - 120	<10	mg/L	NC (1)	20		
9709354	Dissolved Chloride (Cl-)	2024/10/21	NC	80 - 120	104	80 - 120	<1.0	mg/L	1.9 (1)	20		
9709359	Dissolved Sulphate (SO4)	2024/10/21	NC	75 - 125	105	80 - 120	<1.0	mg/L	0.47 (1)	20		
9709371	Alkalinity (Total as CaCO3)	2024/10/19			101	85 - 115	<1.0	mg/L	1.1 (1)	20		
9709374	pH	2024/10/19			102	98 - 103			0.53 (1)	N/A		
9709376	Conductivity	2024/10/19			100	85 - 115	<1.0	umho/cm	0.13 (1)	10		

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Microbiology testing is conducted at 6660 Campobello Rd. Chemistry testing is conducted at 6740 Campobello Rd.

QUALITY ASSURANCE REPORT(CONT'D)

			Matrix Spike		SPIKED BLANK		Method Blank		RPD		QC Standard	
QC Batch	Parameter	Date	% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits	% Recovery	QC Limits
9709664	Total Dissolved Solids	2024/10/21			98	80 - 120	<10	mg/L	3.7 (1)	20		
9710084	1,2,4-Trichlorobenzene	2024/10/20	54	30 - 130	54	30 - 130	<0.50	ug/L	NC (1)	40		
9710084	1,2-Dichlorobenzene	2024/10/20	56	30 - 130	56	30 - 130	<0.50	ug/L	NC (1)	40		
9710084	1,3-Dichlorobenzene	2024/10/20	52	30 - 130	50	30 - 130	<0.50	ug/L	NC (1)	40		
9710084	1,4-Dichlorobenzene	2024/10/20	57	30 - 130	54	30 - 130	<0.50	ug/L	NC (1)	40		
9710084	2,4,6-Trichlorophenol	2024/10/20	90	10 - 130	96	10 - 130	<0.50	ug/L	NC (1)	40		
9710084	2,4-Dichlorophenol	2024/10/20	69	10 - 130	75	10 - 130	<0.30	ug/L	NC (1)	40		
9710084	Benzo(a)pyrene	2024/10/20	101	30 - 130	111	30 - 130	<0.20	ug/L	NC (1)	40		
9710084	Diethyl phthalate	2024/10/20	72	30 - 130	104	30 - 130	<1.0	ug/L	NC (1)	40		
9710084	Dimethyl phthalate	2024/10/20	84	30 - 130	100	30 - 130	<1.0	ug/L	NC (1)	40		
9710084	Di-N-butyl phthalate	2024/10/20	103	30 - 130	104	30 - 130	<2.0	ug/L	NC (1)	40		
9710084	Hexachlorobenzene	2024/10/20	83	30 - 130	86	30 - 130	<0.50	ug/L	NC (1)	40		
9710084	Pentachlorophenol	2024/10/20	63	10 - 130	89	10 - 130	<1.0	ug/L	NC (1)	40		
9710084	Phenol	2024/10/20	31	10 - 130	35	10 - 130	<0.50	ug/L	NC (1)	40		
9710189	Total Ammonia-N	2024/10/19	97	75 - 125	99	80 - 120	<0.050	mg/L	1.3 (1)	20		
9711307	Total Chemical Oxygen Demand (COD)	2024/10/21	95	80 - 120	93	80 - 120	<4.0	mg/L	0 (1)	20		
9712429	Total Phosphorus	2024/10/22	109 (2)	80 - 120	101	80 - 120	<0.030	mg/L	4.8 (3)	25	101	80 - 120
9713333	Dissolved Mercury (Hg)	2024/10/21	106	75 - 125	94	80 - 120	<0.10	ug/L	NC (1)	20		
9713386	Phenols-4AAP	2024/10/21	99	80 - 120	102	80 - 120	<0.0010	mg/L	NC (1)	20		
9713739	Total Arsenic (As)	2024/10/22	95	80 - 120	96	80 - 120	<0.001	mg/L				
9713739	Total Barium (Ba)	2024/10/22	93	80 - 120	94	80 - 120	<0.005	mg/L				
9713739	Total Boron (B)	2024/10/22	94	80 - 120	92	80 - 120	<0.02	mg/L	1.6 (1)	20		
9713739	Total Cadmium (Cd)	2024/10/22	96	80 - 120	96	80 - 120	<0.0001	mg/L				
9713739	Total Calcium (Ca)	2024/10/22	91	80 - 120	94	80 - 120	<0.2	mg/L	0.32 (1)	20		
9713739	Total Chromium (Cr)	2024/10/22	94	80 - 120	95	80 - 120	<0.005	mg/L	NC (1)	20		
9713739	Total Copper (Cu)	2024/10/22	95	80 - 120	94	80 - 120	<0.002	mg/L				
9713739	Total Iron (Fe)	2024/10/22	95	80 - 120	96	80 - 120	<0.1	mg/L	0.87 (1)	20		
9713739	Total Lead (Pb)	2024/10/22	95	80 - 120	94	80 - 120	<0.0005	mg/L				
9713739	Total Magnesium (Mg)	2024/10/22	93	80 - 120	94	80 - 120	<0.05	mg/L	0.46 (1)	20		
9713739	Total Nickel (Ni)	2024/10/22	91	80 - 120	93	80 - 120	<0.001	mg/L	2.3 (1)	20		

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QUALITY ASSURANCE REPORT(CONT'D)

			Matrix Spike		SPIKED BLANK		Method Blank		RPD		QC Standard	
QC Batch	Parameter	Date	% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits	% Recovery	QC Limits
9713739	Total Potassium (K)	2024/10/22	95	80 - 120	95	80 - 120	<0.2	mg/L	0.43 (1)	20		
9713739	Total Sodium (Na)	2024/10/22	92	80 - 120	94	80 - 120	<0.1	mg/L	0.28 (1)	20		
9713739	Total Zinc (Zn)	2024/10/22	96	80 - 120	97	80 - 120	<0.01	mg/L	5.3 (1)	20		
9714201	Total Kjeldahl Nitrogen (TKN)	2024/10/24	NC	80 - 120	100	80 - 120	<0.7	mg/L	18 (1)	20	95	80 - 120

N/A = Not Applicable

Duplicate: Paired analysis of a separate portion of the same sample. Used to evaluate the variance in the measurement.

Matrix Spike: A sample to which a known amount of the analyte of interest has been added. Used to evaluate sample matrix interference.

QC Standard: A sample of known concentration prepared by an external agency under stringent conditions. Used as an independent check of method accuracy.

Spiked Blank: A blank matrix sample to which a known amount of the analyte, usually from a second source, has been added. Used to evaluate method accuracy.

Method Blank: A blank matrix containing all reagents used in the analytical procedure. Used to identify laboratory contamination.

Surrogate: A pure or isotopically labeled compound whose behavior mirrors the analytes of interest. Used to evaluate extraction efficiency.

NC (Matrix Spike): The recovery in the matrix spike was not calculated. The relative difference between the concentration in the parent sample and the spike amount was too small to permit a reliable recovery calculation (matrix spike concentration was less than the native sample concentration)

NC (Duplicate RPD): The duplicate RPD was not calculated. The concentration in the sample and/or duplicate was too low to permit a reliable RPD calculation (absolute difference <= 2x RDL).

(1) Duplicate Parent ID

(2) Matrix Spike Parent ID [AFZN53-06]

(3) Duplicate Parent ID [AFZN53-06]

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Bureau Veritas Job #: C4W4815
Report Date: 2024/10/24

RWDI Inc.
Client Project #: 2402553.01
Site Location: ON07
Your P.O. #: 13254256
Sampler Initials: JA

VALIDATION SIGNATURE PAGE

The analytical data and all QC contained in this report were reviewed and validated by:

Cristina Carriere, Senior Scientific Specialist

Zunaira Allem, Project Manager Assistant

Bureau Veritas has procedures in place to guard against improper use of the electronic signature and have the required "signatories", as per ISO/IEC 17025, signing the reports. For Service Group specific validation, please refer to the Validation Signatures page if included, otherwise available by request. For Department specific Analyst/Supervisor validation names, please refer to the Test Summary section if included, otherwise available by request. This report is authorized by Rodney Major, General Manager responsible for Ontario Environmental laboratory operations.

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BUREAU VERITAS

FIELD INFORMATION FORM

WASTE MANAGEMENT

Site Name: TCEC

Site No.:

Sample: SS1
Sample ID

This Waste Management Field Information Form is Required
This form is to be completed, in addition to any State Forms. The Field Form is submitted along with the Chain of Custody Forms that accompany the sample containers (i.e. with the cooler that is returned to the laboratory).

Laboratory Use Only/Lab ID:

PURGE INFO

PURGE DATE (MM DD YY)	PURGE TIME (2400 Hr Clock)	ELAPSED HRS (hrs:min)	WATER VOL IN CASING (Gallons)	ACTUAL VOL PURGED (Gallons)	WELL VOLs PURGED

Note: For Passive Sampling, replace "Water Vol in Casing" and "Well Vols Purged" w/ Water Vol in Tubing/Flow Cell and Tubing/Flow Cell Vols Purged. Mark Changes, Record field data below.

PURGE/SAMPLE EQUIPMENT

Purging and Sampling Equipment ... Dedicated: Y or N

Purging Device:
Sampling Device:
X-Other:

A-Submersible Pump, B-Peristaltic Pump, C-QED Bladder Pump, D-Bailer, E-Piston Pump, F-Dipper/Bottle

Filter Device: Y or N (0.45 µ) or ____ µ (circle or fill in)

Filter Type: A

A-In-line Disposable, B-Pressure, C-Vacuum, X-Other:

Sample Tube Type: A

A-Teflon, B-Stainless Steel, C-PVC, D-Polypropylene, X-Other:

WELL DATA

Well Elevation (at TOC) (ft/msl)	Depth to Water (DTW) (from TOC) (ft)	Groundwater Elevation (GWE) (Site Datum, from TOC) (ft msl)

Total Well Depth (from TOC) (ft)	Stick Up (from ground elevation) (ft)	Casing ID (in)	Casing Material

Note: Total Depth, Stick Up, Casing ID, etc. are optional and can be from historical data, unless required by Site/Permit. Well Elevation, DTW, and GWE must be current, obtained from site.

STABILIZATION DATA (Optional)

Sample Time (2400 Hr Clock)	Rate/Unit	pH (std)	Conductance (SC/EC) (µmhos/cm @ 25°C)	Temp. (°C)	Turbidity (ntu)	D.O. (mg/L - ppm)	eH/ORP (mV)	DTW (ft)
		1st	1st					
		2nd	2nd					
		3rd	3rd					
		4th	4th					
Input Range for 3 consec. readings or Permit/State requirements:		+/-	+/-	+/-	+/-	+/-	+/-	

Stabilization Data Fields are Optional *(i.e. complete stabilization readings for parameters required by WM, Site, or State). These fields can be used where four (4) field measurements are required by State/Permit/Site. If a Data Logger or other Electronic format is used, fill in final readings below and submit electronic data separately to Site. If more fields above are needed, use separate sheet or form.*

FIELD DATA

SAMPLE DATE (MM DD YY)	pH (std)	CONDUCTANCE (µmhos/cm @ 25°C)	TEMP. (°C)	TURBIDITY (ntu)	DO (mg/L - ppm)	eH/ORP (mV)	Other: Units
10 14 24	7.3	616	11.1	>999	10.7		

Final Field Readings are required *(i.e. record field measurements, final stabilized readings, passive sample readings before sampling for all field parameters required by State/Permit/Site.)*

Sample Appearance: Opaque Odor: Nil Color: N/C Other:

Weather Conditions (required daily, or as conditions change): 7°C Direction/Speed: 22 km/h N Outlook: A few clouds Precipitation: Y or N

Specific Comments (including purge/well volume calculations if required):

FIELD COMMENTS

Width: 2 m — 10:00
Depth: 0.15m — MSS Dup1 taken*
time/int: 17s
2: 17s
3: 16s

T78

I certify that sampling procedures were in accordance with applicable EPA, State, and WM protocols (if more than one sampler, all should sign):

Date	Name	Signature	Company
10/14/24	Jake Arbib		RWDE
/ /			

DISTRIBUTION: WHITE/ORIGINAL - Stays with Sample, YELLOW - Returned to Client, PINK - Field Copy

Field Information Form v-3.1 06/20

2137

Custody Tracking Form

T979756-H

Please use this form for custody tracking when submitting the work instructions via eCOC (electronic Chain of Custody). Please ensure your form has a barcode or a Bureau Veritas eCOC confirmation number in the top right hand side. This number links your electronic submission to your samples. This form should be placed in the cooler with your samples.

First Sample: SS1
Last Sample: SSDUP1
Sample Count: 2

Relinquished By				Received By			
J. Artibell		Date	24/10/15	SATPAL BASRA		Date	2024/10/16
		Time (24 HR)	10:00			Time (24 HR)	10:27
		Date				Date	
		Time (24 HR)				Time (24 HR)	
		Date				Date	
		Time (24 HR)				Time (24 HR)	

Unless otherwise agreed to, submissions and use of services are governed by Bureau Veritas' standard terms and conditions which can be found at www.bvna.com.

Triage Information

Sampled By (Print): J. Artibell

# of Coolers/Pkgs: 1

Rush ☐ Immediate Test ☐ Food Residue ☐

Micro ☐ Food Chemistry ☐

*** LABORATORY USE ONLY ***

Received At

Lab Comments:

Labeled By

Verified By

16-Oct-24 10:27
Patricia Legette
C4W4815
RUK ENV-911

Custody Seal		Cooling Media	Temperature °C		
Present (Y/N)	Intact (Y/N)	Present (Y/N)	1	2	3
Y	Y	Y	4	4	6
Drinking Water Metals Preservation Check Done (Circle)				YES	NO

COR FCD-00383/4

Page 1 of 1

Your P.O. #: 13254256
Your Project #: 2402553.01
Site#: 700
Site Location: ON07
Your C.O.C. #: 979741

Attention: Khalid Hussein - Twin Creeks

RWDI Inc.
600 Southgate Drive
Guelph, ON
Canada N1G 4P6

Report Date: 2024/10/25
Report #: R8377421
Version: 1 - Final

CERTIFICATE OF ANALYSIS

BUREAU VERITAS JOB #: C4W4834
Received: 2024/10/16, 10:22

Sample Matrix: Water
Samples Received: 4

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Analytical Method
Alkalinity	4	N/A	2024/10/24	CAM SOP-00448	SM 24 2320 B m
Chloride by Automated Colourimetry	4	N/A	2024/10/23	CAM SOP-00463	SM 24 4500-Cl E m
Conductance in Water - On-site	4	N/A	2024/10/17		
Field Measured Dissolved Oxygen in Water	4	N/A	2024/10/17		
Total Metals by ICPMS	4	N/A	2024/10/22	CAM SOP-00447	EPA 6020B m
Ammonia-N	4	N/A	2024/10/22	CAM SOP-00441	USGS I-2522-90 m
Nitrate & Nitrite as Nitrogen in Water (1)	4	N/A	2024/10/18	CAM SOP-00440	SM 24 4500-NO3I/NO2B
Phenols (4AAP)	4	N/A	2024/10/22	CAM SOP-00444	OMOE E3179 m
Field Measured pH (2)	4	N/A	2024/10/16		Field pH Meter
Sulphate by Automated Turbidimetry	4	N/A	2024/10/23	CAM SOP-00464	SM 24 4500-SO42- E m
Field Temperature (2)	4	N/A	2024/10/16		Field Thermometer
Total Organic Carbon (TOC) (3)	4	N/A	2024/10/22	CAM SOP-00446	SM 24 5310B m
Turbidity - On-site	4	N/A	2024/10/17		
Un-ionized Ammonia (4)	4	2024/10/16	2024/10/22	Auto Calc.	PWQO
Volatile Organic Compounds in Water	4	N/A	2024/10/21	CAM SOP-00226	EPA 8260D m

Remarks:

Bureau Veritas is accredited to ISO/IEC 17025 for specific parameters on scopes of accreditation. Unless otherwise noted, procedures used by Bureau Veritas are based upon recognized Provincial, Federal or US method compendia such as CCME, EPA, APHA or the Quebec Ministry of Environment.

All work recorded herein has been done in accordance with procedures and practices ordinarily exercised by professionals in Bureau Veritas' profession using accepted testing methodologies, quality assurance and quality control procedures (except where otherwise agreed by the client and Bureau Veritas in writing). All data is in statistical control and has met quality control and method performance criteria unless otherwise noted. All method blanks are reported; unless indicated otherwise, associated sample data are not blank corrected. Where applicable, unless otherwise noted, Measurement Uncertainty has not been accounted for when stating conformity to the referenced standard.

Bureau Veritas liability is limited to the actual cost of the requested analyses, unless otherwise agreed in writing. There is no other warranty expressed or implied. Bureau Veritas has been retained to provide analysis of samples provided by the Client using the testing methodology referenced in this report. Interpretation and use of test results are the sole responsibility of the Client and are not within the scope of services provided by Bureau Veritas, unless otherwise agreed in writing. Bureau Veritas is not responsible for the accuracy or any data impacts, that result from the information provided by the customer or their agent.

Solid sample results, except biota, are based on dry weight unless otherwise indicated. Organic analyses are not recovery corrected except for isotope

Your P.O. #: 13254256
Your Project #: 2402553.01
Site#: 700
Site Location: ON07
Your C.O.C. #: 979741

Attention: Khalid Hussein - Twin Creeks

RWDI Inc.
600 Southgate Drive
Guelph, ON
Canada N1G 4P6

Report Date: 2024/10/25
Report #: R8377421
Version: 1 - Final

CERTIFICATE OF ANALYSIS

BUREAU VERITAS JOB #: C4W4834
Received: 2024/10/16, 10:22

dilution methods.
Results relate to samples tested. When sampling is not conducted by Bureau Veritas, results relate to the supplied samples tested.
This Certificate shall not be reproduced except in full, without the written approval of the laboratory.
Reference Method suffix "m" indicates test methods incorporate validated modifications from specific reference methods to improve performance.
* RPDs calculated using raw data. The rounding of final results may result in the apparent difference.
(1) Values for calculated parameters may not appear to add up due to rounding of raw data and significant figures.
(2) This is a field test, therefore, the results relate to items that were not analysed at Bureau Veritas.
(3) Total Organic Carbon (TOC) present in the sample should be considered as non-purgeable TOC.
(4) Un-ionized ammonia is calculated using the total ammonia result and field data provided by the client for pH and temperature.

Encryption Key

Please direct all questions regarding this Certificate of Analysis to:
Patricia Legette, Project Manager
Email: Patricia.Legette@bureauveritas.com
Phone# (905)817-5799

==========

Bureau Veritas has procedures in place to guard against improper use of the electronic signature and have the required "signatories", as per ISO/IEC 17025, signing the reports. For Service Group specific validation, please refer to the Validation Signatures page if included, otherwise available by request. For Department specific Analyst/Supervisor validation names, please refer to the Test Summary section if included, otherwise available by request. This report is authorized by Rodney Major, General Manager responsible for Ontario Environmental laboratory operations.

Bureau Veritas Job #: C4W4834
Report Date: 2024/10/25

RWDI Inc.
Client Project #: 2402553.01
Site Location: ON07
Your P.O. #: 13254256
Sampler Initials: JA

RESULTS OF ANALYSES OF WATER

Bureau Veritas ID		AFZO19		AFZO20		AFZO21	AFZO22		
Sampling Date		2024/10/14 12:10		2024/10/14 12:00		2024/10/14 11:30	2024/10/14 11:30		
COC Number		979741		979741		979741	979741		
	UNITS	SS14A	RDL	SS14B	RDL	SS15A	PSSWDUP	RDL	QC Batch
Calculated Parameters									
Total Un-ionized Ammonia	mg/L	<0.0087	0.0087	<0.015	0.015	<0.0065	<0.0065	0.0065	9704113
Field Measurements									
Field Conductivity	uS/cm	722	N/A	1015	N/A	650	650	N/A	ONSITE
Field Dissolved Oxygen	mg/L	10.60	N/A	10.62	N/A	10.30	10.30	N/A	ONSITE
Field Temperature	Celsius	10.9	N/A	12.1	N/A	10.0	10.0	N/A	ONSITE
Field Measured Field Turbidity	NTU	266	N/A	49.6	N/A	120	120	N/A	ONSITE
Field Measured pH	pH	8.4		8.6		8.3	8.3		ONSITE
Inorganics									
Total Ammonia-N	mg/L	<0.15	0.15	<0.15	0.15	<0.15	<0.15	0.15	9715841
Total Organic Carbon (TOC)	mg/L	7.5	0.40	16	0.40	14	14	0.40	9715837
Phenols-4AAP	mg/L	<0.0010	0.0010	<0.0010	0.0010	<0.0010	<0.0010	0.0010	9715683
Dissolved Sulphate (SO4)	mg/L	260	1.0	160	1.0	81	99	1.0	9712356
Alkalinity (Total as CaCO3)	mg/L	91	1.0	160	1.0	130	130	1.0	9710075
Dissolved Chloride (Cl-)	mg/L	12	1.0	140	1.0	57	49	1.0	9712355
Nitrate (N)	mg/L	1.21	0.10	5.21	0.10	5.06	3.11	0.10	9709289

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
N/A = Not Applicable

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Microbiology testing is conducted at 6660 Campobello Rd. Chemistry testing is conducted at 6740 Campobello Rd.

Bureau Veritas Job #: C4W4834
Report Date: 2024/10/25

RWDI Inc.
Client Project #: 2402553.01
Site Location: ON07
Your P.O. #: 13254256
Sampler Initials: JA

ELEMENTS BY ATOMIC SPECTROSCOPY (WATER)

Bureau Veritas ID		AFZO19	AFZO20	AFZO21	AFZO22		
Sampling Date		2024/10/14 12:10	2024/10/14 12:00	2024/10/14 11:30	2024/10/14 11:30		
COC Number		979741	979741	979741	979741		
	UNITS	SS14A	SS14B	SS15A	PSSWDUP	RDL	QC Batch
Metals							
Total Boron (B)	mg/L	0.12	1.1	0.47	0.49	0.02	9713739
Total Calcium (Ca)	mg/L	98	83	65	68	0.2	9713739
Total Chromium (Cr)	mg/L	0.007	<0.005	<0.005	0.005	0.005	9713739
Total Iron (Fe)	mg/L	6.8	1.1	4.4	4.6	0.1	9713739
Total Magnesium (Mg)	mg/L	27	27	18	18	0.05	9713739
Total Nickel (Ni)	mg/L	0.011	0.009	0.010	0.011	0.001	9713739
Total Potassium (K)	mg/L	8.6	15	11	11	0.2	9713739
Total Sodium (Na)	mg/L	11	88	33	35	0.1	9713739
Total Zinc (Zn)	mg/L	0.02	<0.01	0.02	0.02	0.01	9713739

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

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Microbiology testing is conducted at 6660 Campobello Rd. Chemistry testing is conducted at 6740 Campobello Rd.

Bureau Veritas Job #: C4W4834
Report Date: 2024/10/25

RWDI Inc.
Client Project #: 2402553.01
Site Location: ON07
Your P.O. #: 13254256
Sampler Initials: JA

VOLATILE ORGANICS BY GC/MS (WATER)

Bureau Veritas ID		AFZO19	AFZO20	AFZO21	AFZO22		
Sampling Date		2024/10/14 12:10	2024/10/14 12:00	2024/10/14 11:30	2024/10/14 11:30		
COC Number		979741	979741	979741	979741		
	UNITS	SS14A	SS14B	SS15A	PSSWDUP	RDL	QC Batch
Volatile Organics							
Benzene	ug/L	<0.10	<0.10	<0.10	<0.10	0.10	9710144
Ethylbenzene	ug/L	<0.10	<0.10	<0.10	<0.10	0.10	9710144
Toluene	ug/L	<0.20	<0.20	<0.20	<0.20	0.20	9710144
p+m-Xylene	ug/L	<0.10	<0.10	<0.10	<0.10	0.10	9710144
o-Xylene	ug/L	<0.10	<0.10	<0.10	<0.10	0.10	9710144
Total Xylenes	ug/L	<0.10	<0.10	<0.10	<0.10	0.10	9710144
Surrogate Recovery (%)							
4-Bromofluorobenzene	%	99	95	97	95		9710144
D4-1,2-Dichloroethane	%	98	100	100	101		9710144
D8-Toluene	%	102	100	100	100		9710144

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

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Microbiology testing is conducted at 6660 Campobello Rd. Chemistry testing is conducted at 6740 Campobello Rd.

Bureau Veritas Job #: C4W4834
Report Date: 2024/10/25

RWDI Inc.
Client Project #: 2402553.01
Site Location: ON07
Your P.O. #: 13254256
Sampler Initials: JA

GENERAL COMMENTS

Each temperature is the average of up to three cooler temperatures taken at receipt

Package 1	4.7°C

Results relate only to the items tested.

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Microbiology testing is conducted at 6660 Campobello Rd. Chemistry testing is conducted at 6740 Campobello Rd.

Bureau Veritas Job #: C4W4834
Report Date: 2024/10/25

QUALITY ASSURANCE REPORT

RWDI Inc.
Client Project #: 2402553.01
Site Location: ON07
Your P.O. #: 13254256
Sampler Initials: JA

			Matrix Spike		SPIKED BLANK		Method Blank		RPD	
QC Batch	Parameter	Date	% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits
9710144	4-Bromofluorobenzene	2024/10/21	93	70 - 130	101	70 - 130	99	%		
9710144	D4-1,2-Dichloroethane	2024/10/21	98	70 - 130	99	70 - 130	104	%		
9710144	D8-Toluene	2024/10/21	102	70 - 130	102	70 - 130	101	%		
9709289	Nitrate (N)	2024/10/18	92	80 - 120	93	80 - 120	<0.10	mg/L	NC (1)	20
9710075	Alkalinity (Total as CaCO3)	2024/10/24			96	85 - 115	<1.0	mg/L	0.83 (1)	20
9710144	Benzene	2024/10/21	112	70 - 130	111	70 - 130	<0.10	ug/L	NC (1)	30
9710144	Ethylbenzene	2024/10/21	104	70 - 130	104	70 - 130	<0.10	ug/L	NC (1)	30
9710144	o-Xylene	2024/10/21	111	70 - 130	108	70 - 130	<0.10	ug/L	NC (1)	30
9710144	p+m-Xylene	2024/10/21	104	70 - 130	102	70 - 130	<0.10	ug/L	NC (1)	30
9710144	Toluene	2024/10/21	109	70 - 130	108	70 - 130	<0.20	ug/L	NC (1)	30
9710144	Total Xylenes	2024/10/21					<0.10	ug/L	NC (1)	30
9712355	Dissolved Chloride (Cl-)	2024/10/23	NC	80 - 120	100	80 - 120	<1.0	mg/L	3.8 (1)	20
9712356	Dissolved Sulphate (SO4)	2024/10/23	94	75 - 125	101	80 - 120	<1.0	mg/L	NC (1)	20
9713739	Total Boron (B)	2024/10/22	94	80 - 120	92	80 - 120	<0.02	mg/L	1.6 (1)	20
9713739	Total Calcium (Ca)	2024/10/22	91	80 - 120	94	80 - 120	<0.2	mg/L	0.32 (1)	20
9713739	Total Chromium (Cr)	2024/10/22	94	80 - 120	95	80 - 120	<0.005	mg/L	NC (1)	20
9713739	Total Iron (Fe)	2024/10/22	95	80 - 120	96	80 - 120	<0.1	mg/L	0.87 (1)	20
9713739	Total Magnesium (Mg)	2024/10/22	93	80 - 120	94	80 - 120	<0.05	mg/L	0.46 (1)	20
9713739	Total Nickel (Ni)	2024/10/22	91	80 - 120	93	80 - 120	<0.001	mg/L	2.3 (1)	20
9713739	Total Potassium (K)	2024/10/22	95	80 - 120	95	80 - 120	<0.2	mg/L	0.43 (1)	20
9713739	Total Sodium (Na)	2024/10/22	92	80 - 120	94	80 - 120	<0.1	mg/L	0.28 (1)	20
9713739	Total Zinc (Zn)	2024/10/22	96	80 - 120	97	80 - 120	<0.01	mg/L	5.3 (1)	20
9715683	Phenols-4AAP	2024/10/22	102	80 - 120	102	80 - 120	<0.0010	mg/L	NC (1)	20
9715837	Total Organic Carbon (TOC)	2024/10/22	96 (2)	80 - 120	98	80 - 120	<0.40	mg/L	2.6 (3)	20

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Microbiology testing is conducted at 6660 Campobello Rd. Chemistry testing is conducted at 6740 Campobello Rd.

QUALITY ASSURANCE REPORT(CONT'D)

			Matrix Spike		SPIKED BLANK		Method Blank		RPD	
QC Batch	Parameter	Date	% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits
9715841	Total Ammonia-N	2024/10/22	94 (4)	75 - 125	101	80 - 120	<0.15	mg/L	NC (5)	20

Duplicate: Paired analysis of a separate portion of the same sample. Used to evaluate the variance in the measurement.

Matrix Spike: A sample to which a known amount of the analyte of interest has been added. Used to evaluate sample matrix interference.

Spiked Blank: A blank matrix sample to which a known amount of the analyte, usually from a second source, has been added. Used to evaluate method accuracy.

Method Blank: A blank matrix containing all reagents used in the analytical procedure. Used to identify laboratory contamination.

Surrogate: A pure or isotopically labeled compound whose behavior mirrors the analytes of interest. Used to evaluate extraction efficiency.

NC (Matrix Spike): The recovery in the matrix spike was not calculated. The relative difference between the concentration in the parent sample and the spike amount was too small to permit a reliable recovery calculation (matrix spike concentration was less than the native sample concentration)

NC (Duplicate RPD): The duplicate RPD was not calculated. The concentration in the sample and/or duplicate was too low to permit a reliable RPD calculation (absolute difference <= 2x RDL).

(1) Duplicate Parent ID

(2) Matrix Spike Parent ID [AFZO19-03]

(3) Duplicate Parent ID [AFZO19-03]

(4) Matrix Spike Parent ID [AFZO19-05]

(5) Duplicate Parent ID [AFZO19-05]

Bureau Veritas 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.bvna.com

Microbiology testing is conducted at 6660 Campobello Rd. Chemistry testing is conducted at 6740 Campobello Rd.

Bureau Veritas Job #: C4W4834
Report Date: 2024/10/25

RWDI Inc.
Client Project #: 2402553.01
Site Location: ON07
Your P.O. #: 13254256
Sampler Initials: JA

VALIDATION SIGNATURE PAGE

The analytical data and all QC contained in this report were reviewed and validated by:

Cristina Carriere, Senior Scientific Specialist

Patricia Legette, Project Manager

Bureau Veritas has procedures in place to guard against improper use of the electronic signature and have the required "signatories", as per ISO/IEC 17025, signing the reports. For Service Group specific validation, please refer to the Validation Signatures page if included, otherwise available by request. For Department specific Analyst/Supervisor validation names, please refer to the Test Summary section if included, otherwise available by request. This report is authorized by Rodney Major, General Manager responsible for Ontario Environmental laboratory operations.

Bureau Veritas 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.bvna.com

Microbiology testing is conducted at 6660 Campobello Rd. Chemistry testing is conducted at 6740 Campobello Rd.

FIELD INFORMATION FORM

BUREAU VERITAS

WASTE MANAGEMENT

Site Name: TCEC

Site No.: Sample: SS14A (Sample ID)

This Waste Management Field Information Form is Required
This form is to be completed, in addition to any State Forms. The Field Form is submitted along with the Chain of Custody Forms that accompany the sample containers (i.e. with the cooler that is returned to the laboratory).

Laboratory Use Only/Lab ID:

PURGE INFO

PURGE DATE (MM DD YY)	PURGE TIME (2400 Hr Clock)	ELAPSED HRS (hrs:min)	WATER VOL IN CASING (Gallons)	ACTUAL VOL PURGED (Gallons)	WELL VOLs PURGED

Note: For Passive Sampling, replace "Water Vol in Casing" and "Well Vols Purged" w/ Water Vol in Tubing/Flow Cell and Tubing/Flow Cell Vols Purged. Mark Changes, Record field data below.

PURGE/SAMPLE EQUIPMENT

Purging and Sampling Equipment ... Dedicated: [Y] or [N]

Filter Device: [Y] or [N] [0.45 µ] or [ ] µ (circle or fill in)

Purging Device: [ ]
Sampling Device: [ ]
A-Submersible Pump, B-Peristaltic Pump, C-QED Bladder Pump, D-Bailer, E-Piston Pump, F-Dipper/Bottle

Filter Type: [ ] A-In-line Disposable, B-Pressure, C-Vacuum, X-Other: ____

X-Other: [ ]

Sample Tube Type: [ ] A-Teflon, B-Stainless Steel, C-PVC, D-Polypropylene, X-Other: ____

WELL DATA

Well Elevation (at TOC) (ft/msl)	Depth to Water (DTW) (from TOC) (ft)	Groundwater Elevation (GWE) (Site Datum, from TOC) (ft msl)

Total Well Depth (from TOC) (ft)	Stick Up (from ground elevation) (ft)	Casing ID (in)	Casing Material

Note: Total Depth, Stick Up, Casing ID, etc. are optional and can be from historical data, unless required by Site/Permit. Well Elevation, DTW, and GWE must be current, obtained from site.

STABILIZATION DATA (Optional)

	Sample Time (2400 Hr Clock)	Rate/Unit	pH (std)	Conductance (SC/EC) (µmhos/cm @ 25°C)	Temp. (°C)	Turbidity (ntu)	D.O. (mg/L - ppm)	eH/ORP (mV)	DTW (ft)
1st									
2nd									
3rd									
4th									
Input Range for 3 consec. readings or Permit/State requirements:			+/-	+/-	+/-	+/-	+/-	+/-	

Stabilization Data Fields are Optional *(i.e. complete stabilization readings for parameters required by WM, Site, or State). These fields can be used where four (4) field measurements are required by State/Permit/Site. If a Data Logger or other Electronic format is used, fill in final readings below and submit electronic data separately to Site. If more fields above are needed, use separate sheet or form.*

FIELD DATA

SAMPLE DATE (MM DD YY)	pH (std)	CONDUCTANCE (µmhos/cm @ 25°C)	TEMP. (°C)	TURBIDITY (ntu)	DO (mg/L - ppm)	eH/ORP (mV)	Other: Units
10 14 24	8.14	1727	10.9	266	10.60		

Final Field Readings are required *(i.e. record field measurements, final stabilized readings, passive sample readings before sampling for all field parameters required by State/Permit/Site.)*

Sample Appearance: transparent Odor: N/O Color: N/C Other: ____

Weather Conditions (required daily, or as conditions change): 7°C Direction/Speed: 22km/h W Outlook: A few clouds Precipitation: Y or N

Specific Comments (including purge/well volume calculations if required):

FIELD COMMENTS

turbl 0.6m 12:10
Depth: 0.1m
time @ 11:21
2:23
2:21

I certify that sampling procedures were in accordance with applicable EPA, State, and WM protocols (if more than one sampler, all should sign):

Date	Name	Signature	Company
10/14/24	Jake Arbiball.		KWF
/ /			

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DISTRIBUTION: WHITE/ORIGINAL - Stays with Sample, YELLOW - Returned to Client, PINK - Field Copy

Field Information Form v-3.1 06/20

2124

FIELD INFORMATION FORM

BUREAU VERITAS

WM WASTE MANAGEMENT

Site Name: TCEC

Site No.: Sample: SGMW Sample ID

This Waste Management Field Information Form is Required
This form is to be completed, in addition to any State Forms. The Field Form is submitted along with the Chain of Custody Forms that accompany the sample containers (i.e. with the cooler that is returned to the laboratory).

Laboratory Use Only/Lab ID:

PURGE INFO

PURGE DATE (MM DD YY)	PURGE TIME (2400 Hr Clock)	ELAPSED HRS (hrs:min)	WATER VOL IN CASING (Gallons)	ACTUAL VOL PURGED (Gallons)	WELL VOLs PURGED

Note: For Passive Sampling, replace "Water Vol in Casing" and "Well Vols Purged" w/ Water Vol in Tubing/Flow Cell and Tubing/Flow Cell Vols Purged. Mark Changes, Record field data below.

PURGE/SAMPLE EQUIPMENT

Purging and Sampling Equipment ... Dedicated: Y or N — Filter Device: Y or N — 0.45 µ or ____ µ (circle or fill in)

Purging Device: A-Submersible Pump, B-Peristaltic Pump, C-QED Bladder Pump, D-Bailer, E-Piston Pump, F-Dipper/Bottle

Sampling Device: A-Submersible Pump, B-Peristaltic Pump, C-QED Bladder Pump, D-Bailer, E-Piston Pump, F-Dipper/Bottle

Filter Type: A-In-line Disposable, B-Pressure, C-Vacuum, X-Other: ____

X-Other: ____ Sample Tube Type: A-Teflon, B-Stainless Steel, C-PVC, D-Polypropylene, X-Other: ____

WELL DATA

Well Elevation (at TOC) ____ (ft/msl) — Depth to Water (DTW) (from TOC) ____ (ft) — Groundwater Elevation (GWE) (Site Datum, from TOC) ____ (ft msl)

Total Well Depth (from TOC) ____ (ft) — Stick Up (from ground elevation) ____ (ft) — Casing ID ____ (in) — Casing Material ____

Note: Total Depth, Stick Up, Casing ID, etc. are optional and can be from historical data, unless required by Site/Permit. Well Elevation, DTW, and GWE must be current, obtained from site.

STABILIZATION DATA (Optional)

Sample Time (2400 Hr Clock)	Rate/Unit	pH (std)	Conductance (SC/EC) (µmhos/cm @ 25°C)	Temp. (°C)	Turbidity (ntu)	D.O. (mg/L - ppm)	eH/ORP (mV)	DTW (ft)
		1st	1st					
		2nd	2nd					
		3rd	3rd					
		4th	4th					
Input Range for 3 consec. readings or Permit/State requirements:		+/-	+/-	+/-	+/-	+/-	+/-	

Stabilization Data Fields are Optional *(i.e. complete stabilization readings for parameters required by WM, Site, or State). These fields can be used where four (4) field measurements are required by State/Permit/Site. If a Data Logger or other Electronic format is used, fill in final readings below and submit electronic data separately to Site. If more fields above are needed, use separate sheet or form.*

FIELD DATA

SAMPLE DATE (MM DD YY)	pH (std)	CONDUCTANCE (µmhos/cm @ 25°C)	TEMP. (°C)	TURBIDITY (ntu)	DO (mg/L - ppm)	eH/ORP (mV)	Other: Units
10 14 24	8.6	1015	17.1	49.6	10.62		

Final Field Readings are required *(i.e. record field measurements, final stabilized readings, passive sample readings before sampling for all field parameters required by State/Permit/Site.)*

Sample Appearance: transparent — Odor: N/O — Color: N/C — Other: ____

Weather Conditions (required daily, or as conditions change): 7°C — Direction/Speed: 22km/h W — Outlook: A few clouds — Precipitation: Y or N

Specific Comments (including purge/well volume calculations if required):

FIELD COMMENTS

Well: 0.10m 12:00 ~~Peristaltic Bailer~~

Depth 0.05m

time @ 1m 1:7s

2m 7s

3m 8s

I certify that sampling procedures were in accordance with applicable EPA, State, and WM protocols (if more than one sampler, all should sign):

Date	Name	Signature	Company
10/14/24	Jake Arbibell		RWDI
/ /			

T78

DISTRIBUTION: WHITE/ORIGINAL - Stays with Sample, YELLOW - Returned to Client, PINK - Field Copy

Field Information Form v-3.1 06/20

2121

FIELD INFORMATION FORM

BUREAU VERITAS

WASTE MANAGEMENT

Site Name: FTEC

Site No.: Sample: SS15TA (Sample ID)

This Waste Management Field Information Form is Required
This form is to be completed, in addition to any State Forms. The Field Form is submitted along with the Chain of Custody Forms that accompany the sample containers (i.e. with the cooler that is returned to the laboratory).

Laboratory Use Only/Lab ID:

PURGE INFO

PURGE DATE (MM DD YY)	PURGE TIME (2400 Hr Clock)	ELAPSED HRS (hrs:min)	WATER VOL IN CASING (Gallons)	ACTUAL VOL PURGED (Gallons)	WELL VOLs PURGED

Note: For Passive Sampling, replace "Water Vol in Casing" and "Well Vols Purged" w/ Water Vol in Tubing/Flow Cell and Tubing/Flow Cell Vols Purged. Mark Changes, Record field data below.

PURGE/SAMPLE EQUIPMENT

Purging and Sampling Equipment ... Dedicated: Y or N — Filter Device: Y or N — 0.45 µ or ____ µ (circle or fill in)

Purging Device: A-Submersible Pump, B-Peristaltic Pump, C-QED Bladder Pump, D-Bailer, E-Piston Pump, F-Gripper/Bottle

Sampling Device:

X-Other:

Filter Type: A-In-line Disposable, B-Pressure, C-Vacuum, X-Other: ____

Sample Tube Type: A-Teflon, B-Stainless Steel, C-PVC, D-Polypropylene, X-Other: ____

WELL DATA

Well Elevation (at TOC) ____ (ft/msl) — Depth to Water (DTW) (from TOC) ____ (ft) — Groundwater Elevation (GWE) (Site Datum, from TOC) ____ (ft msl)

Total Well Depth (from TOC) ____ (ft) — Stick Up (from ground elevation) ____ (ft) — Casing ID ____ (in) — Casing Material ____

Note: Total Depth, Stick Up, Casing ID, etc. are optional and can be from historical data, unless required by Site/Permit. Well Elevation, DTW, and GWE must be current, obtained from site.

STABILIZATION DATA (Optional)

Sample Time (2400 Hr Clock)	Rate/Unit	pH (std)	Conductance (SC/EC) (µmhos/cm @ 25°C)	Temp. (°C)	Turbidity (ntu)	D.O. (mg/L - ppm)	eH/ORP (mV)	DTW (ft)
		1st	1st					
		2nd	2nd					
		3rd	3rd					
		4th	4th					
Input Range for 3 consec. readings or Permit/State requirements:		+/-	+/-	+/-	+/-	+/-	+/-	

Stabilization Data Fields are Optional *(i.e. complete stabilization readings for parameters required by WM, Site, or State). These fields can be used where four (4) field measurements are required by State/Permit/Site. If a Data Logger or other Electronic format is used, fill in final readings below and submit electronic data separately to Site. If more fields above are needed, use separate sheet or form.*

FIELD DATA

SAMPLE DATE (MM DD YY)	pH (std)	CONDUCTANCE (µmhos/cm @ 25°C)	TEMP. (°C)	TURBIDITY (ntu)	DO (mg/L - ppm)	eH/ORP (mV)	Other: ____ Units ____
101424	8.13	650	10.0	120	10.30		

Final Field Readings are required *(i.e. record field measurements, final stabilized readings, passive sample readings before sampling for all field parameters required by State/Permit/Site.)*

FIELD COMMENTS

Sample Appearance: Translucent — Odor: N/O — Color: light Brown — Other: ____

Weather Conditions (required daily, or as conditions change): 7°C — Direction/Speed: 22kg/h V — Outlook: A few clouds — Precipitation: Y or N

Specific Comments (including purge/well volume calculations if required):

Width: 1.75m

Depth: 0.30m

time/ln 1: 22s

2: 22s

3: 22s

*Pulled up to Ice. 1130

I certify that sampling procedures were in accordance with applicable EPA, State, and WM protocols (if more than one sampler, all should sign):

Date	Name	Signature	Company
10/14/24	Jake Arbitrable		RWE
/ /			

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DISTRIBUTION: WHITE/ORIGINAL - Stays with Sample, YELLOW - Returned to Client, PINK - Field Copy

Field Information Form v-3.1 06/20

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Custody Tracking Form

T979741

Please use this form for custody tracking when submitting the work instructions via eCOC (electronic Chain of Custody). Please ensure your form has a barcode or a Bureau Veritas eCOC confirmation number in the top right hand side. This number links your electronic submission to your samples. This form should be placed in the cooler with your samples.

First Sample: SS14A
Last Sample: PSSWDUP
Sample Count: 4

Relinquished By				Received By			
J. Arkell		Date	24/10/15			Date	2024/10/16
		Time (24 HR)	10:00			Time (24 HR)	10:22
		Date				Date	
		Time (24 HR)				Time (24 HR)	
		Date				Date	
		Time (24 HR)				Time (24 HR)	

Unless otherwise agreed to, submissions and use of services are governed by Bureau Veritas' standard terms and conditions which can be found at www.bvna.com.

Triage Information

Sampled By (Print): J. Arkell

# of Coolers/Pkgs: 1

Rush ☐ Immediate Test ☐ Food Residue ☐

Micro ☐ Food Chemistry ☐

*** LABORATORY USE ONLY ***

Received At: Lab 16-Oct-24 10:22

Labeled By: Patricia Legette C4W4834

Verified By: BM2 ENV-1463

Custody Seal		Cooling Media	Temperature °C		
Present (Y/N)	Intact (Y/N)	Present (Y/N)	1	2	3
Y	Y	Y	5	2	2
Drinking Water Metals Preservation Check Done (Circle)				YES	NO

COR FCD-00383/4

Page 1 of 1

NAUTILUS ENVIRONMENTAL

Certificate of Analysis

ACUTE LETHALITY BIOASSAY REPORT
(Single-Concentration Test)

CLIENT:

RWDI Air Inc., 4510 Rhodes Drive, Suite 530, Windsor, ON N8W 5K5

TEST RESULTS:

Sample Name[1]	Sample Number	Date Collected	Date Received	Date Tested	Test Species[2]	Percent Mortality[3]	Method Deviations
SP2	9830-0012401	2024-01-25	2024-01-25	2024-01-26 2024-01-26	RBT DM	0% 0%	None None

1 - Results relate only to the sample tested. Tested as received from client.

2 - Test Type and Species RBT = Rainbow Trout 96-hour 100% Effluent Concentration Acute Lethality Test
DM = *Daphnia magna* 48-hour 100% Effluent Concentration Acute Lethality Test

3 - Most regulations regard ≤50% mortality to be a "pass". Check your applicable regulatory requirements.

TEST PROTOCOLS:

Environment Canada, "Biological Test Method: Reference Method for Determining Acute Lethality of Effluents to Rainbow Trout", Environmental Technology Centre, Ottawa, Ontario, Report EPS 1/RM/13 Second Edition - December 2000, including May 2007 and February 2016 Amendments. (Nautilus Test Method RT-SC-R1.7)

Environment Canada, "Biological Test Method: Reference Method for Determining Acute Lethality of Effluents to *Daphnia magna*", Environmental Technology Centre, Ottawa, Ontario, Report EPS 1/RM/14 Second Edition - December 2000, including February 2016 Amendment. (Nautilus Test Method DM-SC-R1.7)

Testing Laboratory:

Nautilus Environmental Company Inc.,
704 Mara St., Suite 122,
Point Edward, Ontario, N7V 1X4

CALA Testing Accreditation No. A1225

This laboratory is accredited by the Canadian Association for Laboratory Accreditation Inc. (CALA) to ISO/IEC 17025, and accreditation is limited to the tests on the laboratory's scope of testing.

REFERENCE/HEALTH DATA:

Trout

Date Reference Test Initiated:	2024-01-04	**Reference Chemical:**	Zinc	**Fish Lot #:**	LF131223
96-Hour LC50:	0.32 mg/L	**95% Confidence Limits:**	0.26 mg/L;	0.39 mg/L	
Historic Geometric Mean LC50:	0.35 mg/L	**Historic Warning Limits (± 2 SD):**	0.14 mg/L;	0.87 mg/L	

Daphnia magna

Date Reference Test Initiated:	2024-01-15	**Reference Chemical:**	Zinc		
48-Hour LC50:	0.80 mg/L	**95% Confidence Limits:**	0.61 mg/L;	1.04 mg/L	
Historic Geometric Mean LC50:	0.84 mg/L	**Historic Warning Limits (± 2 SD):**	0.47 mg/L;	1.50 mg/L	

TEST RESULTS APPROVED BY:

Date: 2024-02-06

C. D'Andrea

Carol D'Andrea
Laboratory Supervisor

Y:\bioassays\2023\9000\9830-001\9830-0012401 TD

NAUTILUS ENVIRONMENTAL
Suite 122, 704 Mara Street
Point Edward, ON
N7V 1X4
Tel. (519) 339-8787

TOXICITY TEST REPORT
Rainbow Trout
EPS 1/RM/13

SAMPLE IDENTIFICATION

Client/ Location	Rowan Williams Davies & Irwin	Sample Name	SP2
Sample	9830-0012401	Colleted by	N/A
Sample Method	Grab	Arrival Temp	2.6 °C
Date/Time collected	2024-01-25; PM	Date/Time received	2024-01-25; 15:45
Sample Point Description	other	Sample Description	Clear Yellow With Debris
Transaportation	Road	Sample Type	Surface Water
Storage	4 ±2 °C In dark, no headspace	Date Tested	2024-01-26

Test Method(s) : Reference Method for Determining Acute Lethality of Liquid Effluents to Rainbow Trout. Environment Canada, EPS 1/RM/13 (2nd Edition, December 2000, with May 2007 and February 2016 amendments).

96-HOUR TEST RESULTS

Substance	Effect	Value
Control	Mean Impairment	0.0 %
	Mean Mortality	0.0 %
100%	Mean Impairment	0.0 %
	Mean Mortality	0.0 %

The results reported relate only to the sample tested and as received.

TEST ORGANISM

Test Organism :	*Oncorhynchus mykiss*	Mean Fork Length :	51.3 mm
Organism Batch :	LF131223	Range of Fork Lengths :	42 - 59 mm
Control Sample Size :	10	Mean Wet Weight :	1.3 g
Cumulative stock tank mortality rate :	0% (previous 7 days)	Organism Loading Rate :	0.4 g/L
Control organisms showing stress :	0 (at test completion)		

TEST CONDITIONS

Sample Treatment :	None	Volume Tested (L) :	30
pH Adjustment :	None	Number of Replicates :	1
Test Aeration :	Yes	Organisms Per Replicate :	10
Pre-aeration/Aeration Rate :	6.5 ± 0.26 mL/min/L	Organisms Per Test Level :	10
Duration of Pre-Aeration :	30 minutes	Test Method Deviation(s) :	None

REFERENCE TOXICANT DATA

Toxicant :	Zinc	LC50 :	0.32 mg/L
Organism Batch :	LF131223	95% Confidence Limits :	(0.26 mg/L ; 0.39 mg/L)
Date Tested :	2024-01-04	Historical Mean LC50 :	0.35 mg/L
Statistical Method :	Untrimmed Spearman-Karber α=0%	Warning Limits (± 2SD) :	(0.14 mg/L ; 0.87 mg/L)

COMMENTS

•All test validity criteria as specified in the test method were satisfied.

Approved By : C.D.
Project Manager

Sample Number : 9830-0012401

TEST DATA

	pH	Dissolved O_2 (mg/L)	O_2 Saturation (%)[3]	Conductivity (µmhos/cm)	Temperature (°C)
Initial Water Chemistry (100%) :	7.5	9.8	99	455	15.0
After 30 min pre-aeration :	7.6	9.8	99	456	15.0

0 HOURS

Date & Time 2024-01-26 11:00
Analyst(s) : SO

Concentration	Dead	Impaired	pH	Dissolved O_2	O_2 Saturation[3]	Conductivity	Temperature
100%	0	0	7.6	9.8	99	456	15.0
Control	0	0	8.0	9.5	95	220	15.0

Notes:

24 HOURS

Date & Time 2024-01-27 11:00
Analyst(s) : EP

Concentration	Dead	Impaired	pH	Dissolved O_2	O_2 Saturation[3]	Conductivity	Temperature
100%	0	0	-	-	-	-	-
Control	0	0	-	-	-	-	-

Notes:

48 HOURS

Date & Time 2024-01-28 11:00
Analyst(s) : EP

Concentration	Dead	Impaired	pH	Dissolved O_2	O_2 Saturation[3]	Conductivity	Temperature
100%	0	0	-	-	-	-	-
Control	0	0	-	-	-	-	-

Notes:

72 HOURS

Date & Time 2024-01-29 11:00
Analyst(s) : CS

Concentration	Dead	Impaired	pH	Dissolved O_2	O_2 Saturation[3]	Conductivity	Temperature
100%	0	0	-	-	-	-	-
Control	0	0	-	-	-	-	-

Notes:

96 HOURS

Date & Time 2024-01-30 11:00
Analyst(s) : CS/DS

Concentration	Dead	Impaired	pH	Dissolved O_2	O_2 Saturation[3]	Conductivity	Temperature
100%	0	0	7.9	8.5	87.0	495	16.0
Control	0	0	7.6	8.4	86.0	247	16.0

Notes:

"–" = not measured/not required

Number impaired does not include number dead.

[3] adjusted for temperature and barometric pressure

Test Data Reviewed By : EP

Date : 2024-02-01

NAUTILUS ENVIRONMENTAL
Suite 122, 704 Mara Street
Point Edward, ON
N7V 1X4
Tel. (519) 339-8787

TOXICITY TEST REPORT

Daphnia magna
EPS 1/RM/14

SAMPLE IDENTIFICATION

Sample Number :	9830-0012401	Sampling Date :	2024-01-25
Company :	Rowan Williams Davies & Irwin	Sampling Time :	PM
Substance :	SP2	Date Received :	2024-01-25
Sampling Method :	Grab	Time Received :	15:45
Sampled By :	N/A	Temperature at Receipt :	2.6 °C
Sample Description :	Clear yellow with debris	Date Tested :	2024-01-26

Test Method : Reference Method for Determining Acute Lethality of Effluents to *Daphnia magna* . Environment Canada EPS 1/RM/14 (Second Edition, December 2000, with February 2016 amendments).

48-HOUR TEST RESULTS

Substance	Effect	Value
Control	Mean Immobility	0.0 %
	Mean Mortality	0.0 %
100%	Mean Immobility	0.0 %
	Mean Mortality	0.0 %

The results reported relate only to the sample tested and as received.

TEST ORGANISM

Species :	*Daphnia magna*	Time to First Brood :	9 days
Organism Batch :	22MD	Average Brood Size :	19.7
Culture Mortality :	0% (prev. 7 days)		

TEST CONDITIONS

Sample Treatment :	None	Number of Replicates :	3
pH Adjustment :	None	Organisms / Replicate :	10
Pre-aeration Rate :	~30 mL/min/L	Organisms / Test Level :	30
Duration of Pre-Aeration :	0 minutes	Organism Loading Rate :	25.0 mL/organism
Test Aeration :	None	Impaired Control Organisms :	0.0%
Hardness Adjustment :	None	Test Method Deviation(s) :	None

REFERENCE TOXICANT DATA

Toxicant :	Zinc	LC50 :	0.80 mg/L
Date Tested :	2024-01-15	95% Confidence Limits :	(0.61 mg/L; 1.04 mg/L)
Organism Batch :	Zn2301	Historical Mean LC50 :	0.84 mg/L
Analyst(s) :	SO	Warning Limits (± 2SD) :	(0.47 mg/L; 1.50 mg/L)
Statistical Method :	Untrimmed Spearman-Karber α=0%		

COMMENTS

•All test validity criteria as specified in the test method were satisfied.

Approved By : C.D.
Project Manager

Sample Number : **9830-0012401**

TEST DATA

	pH	Dissolved O_2 (mg/L)	Conductivity (µmhos/cm)	Temperature (°C)	O_2 Saturation (%)*	Hardness (as $CaCO_3$)
Initial Chemistry (100%) :	7.6	11.0	449	21	124	164 mg/L

0 HOURS

Date & Time : 2024-01-26 14:20
Analyst(s) : SO

Concentration (%)	Replicate	Dead	Immobile	pH	Dissolved O_2	Conductivity	Temperature	O_2 Saturation*	Hardness
100	A	0	0	7.7	9.7	452	21	111	164
100	B	0	0	7.6	9.7	455	21	111	164
100	C	0	0	7.7	9.6	451	21	111	164
Control	A	0	0	8.0	8.4	643	21	98	196
Control	B	0	0	8.0	8.5	641	21	98	196
Control	C	0	0	8.0	8.4	644	21	98	196

Notes:

24 HOURS

Date & Time : 2024-01-27 14:20
Analyst(s) : EP

Concentration (%)	Replicate	Dead	Immobile	pH	Dissolved O_2	Conductivity	Temperature
100	A	–	0	-	-	-	-
100	B	–	0	-	-	-	-
100	C	–	0	-	-	-	-
Control	A	–	0	-	-	-	-
Control	B	–	0	-	-	-	-
Control	C	–	0	-	-	-	-

Notes:

48 HOURS

Date & Time : 2024-01-28 14:20
Analyst(s) : EP

Concentration (%)	Replicate	Dead	Immobile	pH	Dissolved O_2	Conductivity	Temperature
100	A	0	0	8.3	8.4	470	20
100	B	0	0	8.3	8.4	471	20
100	C	0	0	8.3	8.4	474	20
Control	A	0	0	8.1	8.6	648	20
Control	B	0	0	8.1	8.6	652	20
Control	C	0	0	8.1	8.6	653	20

Notes:

Number immobile does not include number dead.

"–" = not measured/not required
* adjusted for temperature and barometric pressure

Test Data Reviewed By : EP
Date : 2024-02-01

NAUTILUS ENVIRONMENTAL

Certificate of Analysis

ACUTE LETHALITY BIOASSAY REPORT
(Single-Concentration Test)

CLIENT:

RWDI Air Inc., 4510 Rhodes Drive, Suite 530, Windsor, ON N8W 5K5

TEST RESULTS:

Sample Name[1]	Sample Number	Date Collected	Date Received	Date Tested	Test Species[2]	Percent Mortality[3]	Method Deviations
SS1	9830-0012402	2024-01-26	2024-01-26	2024-01-29 2024-01-27	RBT DM	0% 0%	None None

1 - Results relate only to the sample tested. Tested as received from client.

2 - Test Type and Species RBT = Rainbow Trout 96-hour 100% Effluent Concentration Acute Lethality Test
DM = *Daphnia magna* 48-hour 100% Effluent Concentration Acute Lethality Test

3 - Most regulations regard ≤50% mortality to be a "pass". Check your applicable regulatory requirements.

TEST PROTOCOLS:

Environment Canada, "Biological Test Method: Reference Method for Determining Acute Lethality of Effluents to Rainbow Trout", Environmental Technology Centre, Ottawa, Ontario, Report EPS 1/RM/13 Second Edition - December 2000, including May 2007 and February 2016 Amendments. (Nautilus Test Method RT-SC-R1.7)

Environment Canada, "Biological Test Method: Reference Method for Determining Acute Lethality of Effluents to *Daphnia magna*", Environmental Technology Centre, Ottawa, Ontario, Report EPS 1/RM/14 Second Edition - December 2000, including February 2016 Amendment. (Nautilus Test Method DM-SC-R1.7)

Testing Laboratory:

Nautilus Environmental Company Inc.,
704 Mara St., Suite 122,
Point Edward, Ontario, N7V 1X4

CALA Testing Accreditation No. A1225

This laboratory is accredited by the Canadian Association for Laboratory Accreditation Inc. (CALA) to ISO/IEC 17025, and accreditation is limited to the tests on the laboratory's scope of testing.

REFERENCE/HEALTH DATA:

Trout

Date Reference Test Initiated:	2024-01-04	**Reference Chemical:**	Zinc	**Fish Lot #:**	LF131223
96-Hour LC50:	0.32 mg/L	**95% Confidence Limits:**	0.26 mg/L;	0.39 mg/L	
Historic Geometric Mean LC50:	0.35 mg/L	**Historic Warning Limits (± 2 SD):**	0.14 mg/L;	0.87 mg/L	

Daphnia magna

Date Reference Test Initiated:	2024-01-15	**Reference Chemical:**	Zinc		
48-Hour LC50:	0.80 mg/L	**95% Confidence Limits:**	0.61 mg/L;	1.04 mg/L	
Historic Geometric Mean LC50:	0.84 mg/L	**Historic Warning Limits (± 2 SD):**	0.47 mg/L;	1.50 mg/L	

TEST RESULTS APPROVED BY:

Date: 2024-02-06

C. D'Andrea

Carol D'Andrea
Laboratory Supervisor

Y:\bioassays\2024\9000\9830-001\9830-0012402 TD

NAUTILUS ENVIRONMENTAL
Suite 122, 704 Mara Street
Point Edward, ON
N7V 1X4
Tel. (519) 339-8787

TOXICITY TEST REPORT
Rainbow Trout
EPS 1/RM/13

SAMPLE IDENTIFICATION

Client/ Location	Rowan Williams Davies & Irwin	Sample Name	SS1
Sample	9830-0012402	Colleted by	N/A
Sample Method	Grab	Arrival Temp	4.9 °C
Date/Time collected	2024-01-26; AM	Date/Time received	2024-01-26; 15:00
Sample Point Description	Other	Sample Description	Cloudy Beige
Transaportation	Road/Air	Sample Type	Surface Water
Storage	4 ±2 °C In dark, no headspace	Date Tested	2024-01-29

Test Method(s) : Reference Method for Determining Acute Lethality of Liquid Effluents to Rainbow Trout. Environment Canada, EPS 1/RM/13 (2nd Edition, December 2000, with May 2007 and February 2016 amendments).

96-HOUR TEST RESULTS

Substance	Effect	Value
Control	Mean Impairment	0.0 %
	Mean Mortality	0.0 %
100%	Mean Impairment	0.0 %
	Mean Mortality	0.0 %

The results reported relate only to the sample tested and as received.

TEST ORGANISM

Test Organism :	*Oncorhynchus mykiss*	Mean Fork Length :	54.1 mm
Organism Batch :	LF131223	Range of Fork Lengths :	51 - 57 mm
Control Sample Size :	10	Mean Wet Weight :	1.5 g
Cumulative stock tank mortality rate :	0% (previous 7 days)	Organism Loading Rate :	0.5 g/L
Control organisms showing stress :	0 (at test completion)		

TEST CONDITIONS

Sample Treatment :	None	Volume Tested (L) :	30
pH Adjustment :	None	Number of Replicates :	1
Test Aeration :	Yes	Organisms Per Replicate :	10
Pre-aeration/Aeration Rate :	6.5 ± 0.26 mL/min/L	Organisms Per Test Level :	10
Duration of Pre-Aeration :	120 minutes	Test Method Deviation(s) :	None

REFERENCE TOXICANT DATA

Toxicant :	Zinc	LC50 :	0.32 mg/L
Organism Batch :	LF131223	95% Confidence Limits :	(0.26 mg/L ; 0.39 mg/L)
Date Tested :	2024-01-04	Historical Mean LC50 :	0.35 mg/L
Statistical Method :	Untrimmed Spearman-Karber α=0%	Warning Limits (± 2SD) :	(0.14 mg/L ; 0.87 mg/L)

COMMENTS

•All test validity criteria as specified in the test method were satisfied.

Approved By : Carol D'Andrea
Project Manager

Sample Number : 9830-0012402

TEST DATA

	pH	Dissolved O_2 (mg/L)	O_2 Saturation (%)[3]	Conductivity (µmhos/cm)	Temperature (°C)
Initial Water Chemistry (100%) :	7.9	10.2	105	343	16.0
After 30 min pre-aeration :	7.9	10.2	104	343	16.0

0 HOURS

Date & Time 2024-01-29 12:20
Analyst(s) : CS

Concentration	Dead	Impaired	pH	Dissolved O_2	O_2 Saturation[3]	Conductivity	Temperature
100%	0	0	8.0	9.8	101	343	16.0
Control	0	0	7.9	9.8	99	215	15.0

Notes:

24 HOURS

Date & Time 2024-01-30 8:30
Analyst(s) : CS

Concentration	Dead	Impaired	pH	Dissolved O_2	O_2 Saturation[3]	Conductivity	Temperature
100%	0	0	-	-	-	-	-
Control	0	0	-	-	-	-	-

Notes:

48 HOURS

Date & Time 2024-01-31 8:52
Analyst(s) : DS

Concentration	Dead	Impaired	pH	Dissolved O_2	O_2 Saturation[3]	Conductivity	Temperature
100%	0	0	-	-	-	-	-
Control	0	0	-	-	-	-	-

Notes:

72 HOURS

Date & Time 2024-02-01 9:00
Analyst(s) : EP

Concentration	Dead	Impaired	pH	Dissolved O_2	O_2 Saturation[3]	Conductivity	Temperature
100%	0	0	-	-	-	-	-
Control	0	0	-	-	-	-	-

Notes:

96 HOURS

Date & Time 2024-02-02 13:22
Analyst(s) : DS

Concentration	Dead	Impaired	pH	Dissolved O_2	O_2 Saturation[3]	Conductivity	Temperature
100%	0	0	8.0	9.4	94.0	353	15.0
Control	0	0	7.7	9.3	93.0	221	15.0

Notes:

"–" = not measured/not required

Number impaired does not include number dead.

[3] adjusted for temperature and barometric pressure

Test Data Reviewed By : E.P.

Date : 2024-02-05

NAUTILUS ENVIRONMENTAL
Suite 122, 704 Mara Street
Point Edward, ON
N7V 1X4
Tel. (519) 339-8787

TOXICITY TEST REPORT

Daphnia magna
EPS 1/RM/14

SAMPLE IDENTIFICATION

Sample Number :	9830-0012402	Sampling Date :	2024-01-26
Company :	Rowan Williams Davies & Irwin	Sampling Time :	AM
Substance :	SS1	Date Received :	2024-01-26
Sampling Method :	Grab	Time Received :	15:00
Sampled By :	N/A	Temperature at Receipt :	4.9 °C
Sample Description :	cloudy beige	Date Tested :	2024-01-27

Test Method : Reference Method for Determining Acute Lethality of Effluents to *Daphnia magna* . Environment Canada EPS 1/RM/14 (Second Edition, December 2000, with February 2016 amendments).

48-HOUR TEST RESULTS

Substance	Effect	Value
Control	Mean Immobility	0.0 %
	Mean Mortality	0.0 %
100%	Mean Immobility	0.0 %
	Mean Mortality	0.0 %

The results reported relate only to the sample tested and as received.

TEST ORGANISM

Species :	*Daphnia magna*	Time to First Brood :	9 days
Organism Batch :	42MA	Average Brood Size :	21.0
Culture Mortality :	6% (prev. 7 days)		

TEST CONDITIONS

Sample Treatment :	None	Number of Replicates :	3
pH Adjustment :	None	Organisms / Replicate :	10
Pre-aeration Rate :	~30 mL/min/L	Organisms / Test Level :	30
Duration of Pre-Aeration :	30 minutes	Organism Loading Rate :	25.0 mL/organism
Test Aeration :	None	Impaired Control Organisms :	0.0%
Hardness Adjustment :	None	Test Method Deviation(s) :	None

REFERENCE TOXICANT DATA

Toxicant :	Zinc	LC50 :	0.80 mg/L
Date Tested :	2024-01-15	95% Confidence Limits :	(0.61 mg/L; 1.04 mg/L)
Organism Batch :	Zn2301	Historical Mean LC50 :	0.84 mg/L
Analyst(s) :	SO	Warning Limits (± 2SD) :	(0.47 mg/L; 1.50 mg/L)
Statistical Method :	Untrimmed Spearman-Karber α=0%		

COMMENTS

•All test validity criteria as specified in the test method were satisfied.

Approved By : Carol D'Andrea
Project Manager

Sample Number : **9830-0012402**

TEST DATA

	pH	Dissolved O_2 (mg/L)	Conductivity (µmhos/cm)	Temperature (°C)	O_2 Saturation (%)*	Hardness (as $CaCO_3$)
Initial Chemistry (100%) :	8.1	11.9	372	20	120	164 mg/L

0 HOURS

Date & Time : 2024-01-27 12:00
Analyst(s) : EP

Concentration (%)	Replicate	Dead	Immobile	pH	Dissolved O_2	Conductivity	Temperature	O_2 Saturation*	Hardness
100	A	0	0	8.1	9.9	371	21	110	164
100	B	0	0	8.1	9.8	375	21	110	164
100	C	0	0	8.1	9.7	373	21	110	164
Control	A	0	0	8.2	8.6	651	21	96	196
Control	B	0	0	8.2	8.5	648	21	96	196
Control	C	0	0	8.2	8.5	650	21	96	196

Notes:

24 HOURS

Date & Time : 2024-01-28 12:00
Analyst(s) : EP

Concentration (%)	Replicate	Dead	Immobile	pH	Dissolved O_2	Conductivity	Temperature
100	A	–	0	-	-	-	-
100	B	–	0	-	-	-	-
100	C	–	0	-	-	-	-
Control	A	–	0	-	-	-	-
Control	B	–	0	-	-	-	-
Control	C	–	0	-	-	-	-

Notes:

48 HOURS

Date & Time : 2024-01-29 12:00
Analyst(s) : CS

Concentration (%)	Replicate	Dead	Immobile	pH	Dissolved O_2	Conductivity	Temperature
100	A	0	0	8.2	8.5	387	20
100	B	0	0	8.2	8.6	389	20
100	C	0	0	8.2	8.5	379	20
Control	A	0	0	8.1	8.4	646	20
Control	B	0	0	8.1	8.5	647	20
Control	C	0	0	8.0	8.5	651	20

Notes:

Number immobile does not include number dead.

"–" = not measured/not required
* adjusted for temperature and barometric pressure

Test Data Reviewed By : EP
Date : 2024-02-05

Certificate of Analysis

ACUTE LETHALITY BIOASSAY REPORT
(Single-Concentration Test)

CLIENT:
RWDI Air Inc., 4510 Rhodes Drive, Suite 530, Windsor, ON N8W 5K5

TEST RESULTS:

Sample Name[1]	Sample Number	Date Collected	Date Received	Date Tested	Test Species[2]	Percent Mortality[3]	Method Deviations
SP2	9830-0012405	2024-04-12	2024-04-12	2024-04-15 2024-04-14	RBT DM	0% 0%	None None

1 - Results relate only to the sample tested. Tested as received from client.
2 - Test Type and Species RBT = Rainbow Trout 96-hour 100% Effluent Concentration Acute Lethality Test
DM = *Daphnia magna* 48-hour 100% Effluent Concentration Acute Lethality Test
3 - Most regulations regard ≤50% mortality to be a "pass". Check your applicable regulatory requirements.

TEST PROTOCOLS:

Environment Canada, "Biological Test Method: Reference Method for Determining Acute Lethality of Effluents to Rainbow Trout", Environmental Technology Centre, Ottawa, Ontario, Report EPS 1/RM/13 Second Edition - December 2000, including May 2007, February 2016 and December 2023 Amendments. (Nautilus Test Method RT-SC-R1.7)

Environment Canada, "Biological Test Method: Reference Method for Determining Acute Lethality of Effluents to *Daphnia magna*", Environmental Technology Centre, Ottawa, Ontario, Report EPS 1/RM/14 Second Edition - December 2000, including February 2016 Amendment. (Nautilus Test Method DM-SC-R1.7)

Testing Laboratory:

Nautilus Environmental Company Inc.,
704 Mara St., Suite 122,
Point Edward, Ontario, N7V 1X4

CALA Testing Accreditation No. A1225

This laboratory is accredited by the Canadian Association for Laboratory Accreditation Inc. (CALA) to ISO/IEC 17025, and accreditation is limited to the tests on the laboratory's scope of testing.

TEST RESULTS APPROVED BY:
Date: 2024-05-01

Y:\bioassays\2024\9000\9830-001\9830-0012405 TD

Ken Ferguson
Senior Biologist

NAUTILUS ENVIRONMENTAL
Suite 122, 704 Mara Street
Point Edward, ON
N7V 1X4
Tel. (519) 339-8787

TOXICITY TEST REPORT

Rainbow Trout
EPS 1/RM/13

SAMPLE IDENTIFICATION

Sample Number :	9830-0012405		
Company :	Rowan Williams Davies & Irwin	Sampling Date :	2024-04-12
Location :	Windsor, ON	Sampling Time :	AM
Substance :	SP2	Date Received :	2024-04-12
Sampling Method :	Grab	Time Received :	15:00
Sampled By :	Jake A.	Temperature at Receipt :	11.7 °C
Sample Description :	Cloudy Pale Green	Date Tested :	2024-04-15

Test Method(s) : Reference Method for Determining Acute Lethality of Liquid Effluents to Rainbow Trout. Environment Canada, EPS 1/RM/13 (2nd Edition, December 2000, with May 2007, February 2016 and December 2023 amendments)

96-HOUR TEST RESULTS

Substance	Effect	Value
Control	Mean Impairment	0.0 %
	Mean Mortality	0.0 %
100%	Mean Impairment	0.0 %
	Mean Mortality	0.0 %

The results reported relate only to the sample tested and as received.

TEST ORGANISM

Test Organism :	*Oncorhynchus mykiss*	Mean Fork Length :	51.1 mm
Organism Batch :	LF240214-1	Range of Fork Lengths :	45 - 58 mm
Control Sample Size :	10	Mean Wet Weight :	1.4 g
Cumulative stock tank mortality rate :	0.6% (previous 7 days)	Organism Loading Rate :	0.4 g/L
Control organisms showing stress :	0 (at test completion)		

TEST CONDITIONS

Sample Treatment :	None	Volume Tested (L) :	35
pH Adjustment :	None	Number of Replicates :	1
Test Aeration :	Yes	Organisms Per Replicate :	10
Pre-aeration/Aeration Rate :	6.5 ± 0.26 mL/min/L	Organisms Per Test Level :	10
Duration of Pre-Aeration :	30 minutes	Test Method Deviation(s) :	None

REFERENCE TOXICANT DATA

Toxicant :	Zinc	LC50 :	0.24 mg/L
Organism Batch :	LF240214	95% Confidence Limits :	(0.17 mg/L ; 0.34 mg/L)
Date Tested :	2024-03-08	Historical Mean LC50 :	0.34 mg/L
Statistical Method :	Binomial Method α=0%	Warning Limits (± 2SD) :	(0.14 mg/L ; 0.80 mg/L)

COMMENTS

•All test validity criteria as specified in the test method were satisfied.

Approved By : Ken Ferguson
Senior Biologist

This laboratory is accredited by the Canadian Association for Laboratory Accreditation Inc. (CALA) to ISO/IEC 17025, and accreditation is limited to the tests on the laboratory's scope of testing.

Sample Number : 9830-0012405

TEST DATA

	pH	Dissolved O_2 (mg/L)	O_2 Saturation (%)[3]	Conductivity (µmhos/cm)	Temperature (°C)
Initial Water Chemistry (100%) :	8.3	9.9	97	603	14.0
After 30 min pre-aeration :	8.2	10.3	100	607	14.0

0 HOURS

Date & Time 2024-04-15 11:55
Analyst(s) : DS

Concentration	Dead	Impaired	pH	Dissolved O_2	O_2 Saturation[3]	Conductivity	Temperature
Control	0	0	7.8	10.3	100	225	14.0
100%	0	0	8.2	10.3	100	607	14.0

Notes:

24 HOURS

Date & Time 2024-04-16 8:56
Analyst(s) : DS

Concentration	Dead	Impaired	pH	Dissolved O_2	O_2 Saturation[3]	Conductivity	Temperature
Control	0	0	–	–	–	–	–
100%	0	0	–	–	–	–	–

Notes:

48 HOURS

Date & Time 2024-04-17 9:05
Analyst(s) : KK

Concentration	Dead	Impaired	pH	Dissolved O_2	O_2 Saturation[3]	Conductivity	Temperature
Control	0	0	–	–	–	–	–
100%	0	0	–	–	–	–	–

Notes:

72 HOURS

Date & Time 2024-04-18 9:40
Analyst(s) : DS

Concentration	Dead	Impaired	pH	Dissolved O_2	O_2 Saturation[3]	Conductivity	Temperature
Control	0	0	–	–	–	–	–
100%	0	0	–	–	–	–	–

Notes:

96 HOURS

Date & Time 2024-04-19 11:50
Analyst(s) : DS

Concentration	Dead	Impaired	pH	Dissolved O_2	O_2 Saturation[3]	Conductivity	Temperature
Control	0	0	7.8	9.0	90.0	227	15.0
100%	0	0	7.7	8.8	88.0	606	15.0

Notes:

"–" = not measured/not required

[3] adjusted for temperature and barometric pressure

Test Data Reviewed By : EP
Date : 2024-04-26

NAUTILUS ENVIRONMENTAL
Suite 122, 704 Mara Street
Point Edward, ON
N7V 1X4
Tel. (519) 339-8787

TOXICITY TEST REPORT

Daphnia magna
EPS 1/RM/14

SAMPLE IDENTIFICATION

Sample Number :	9830-0012405		
Company :	Rowan Williams Davies & Irwin	Sampling Date :	2024-04-12
Location :	Windsor, ON	Sampling Time :	AM
Substance :	SP2	Date Received :	2024-04-12
Sampling Method :	Grab	Time Received :	15:00
Sampled By :	Jake A.	Temperature at Receipt :	11.7 °C
Sample Description :	Cloudy Pale Green	Date Tested :	2024-04-14

Test Method : Reference Method for Determining Acute Lethality of Effluents to *Daphnia magna* . Environment Canada EPS 1/RM/14 (Second Edition, December 2000, with February 2016 amendments).

48-HOUR TEST RESULTS

Substance	Effect	Value
Control	Mean Immobility	0.0 %
	Mean Mortality	0.0 %
100%	Mean Immobility	0.0 %
	Mean Mortality	0.0 %

The results reported relate only to the sample tested and as received.

TEST ORGANISM

Species :	*Daphnia magna*	Time to First Brood :	8 days
Culture Mortality :	0% (prev. 7 days)	Mean Brood Size :	20.0

TEST CONDITIONS

Sample Treatment :	None	Number of Replicates :	3
pH Adjustment :	No	Organisms per Replicate :	10
Pre-aeration Rate :	36.5 ± 2 mL/min/L	Organisms per Test Level :	30
Duration of Pre-Aeration :	30 minutes	Organism Loading Rate :	25.0 mL/organism
Test Aeration :	None	Impaired Control Organisms :	0.0%
Hardness Adjustment :	No	Test Method Deviation(s) :	None

REFERENCE TOXICANT DATA

Toxicant :	Zinc	LC50 :	1.14 mg/L
Date Tested :	2024-04-08	95% Confidence Limits :	(0.95 mg/L; 1.38 mg/L)
Statistical Method :	Untrimmed Spearman-Karber α=0%	Historical Mean LC50 :	0.90 mg/L
		Warning Limits (± 2SD) :	(0.44 mg/L; 1.85 mg/L)

COMMENTS

•All test validity criteria as specified in the test method were satisfied.

Approved By : Ken Ferguson
Senior Biologist

This laboratory is accredited by the Canadian Association for Laboratory Accreditation Inc. (CALA) to ISO/IEC 17025, and accreditation is limited to the tests on the laboratory's scope of testing.

Sample Number : 9830-0012405

TEST DATA

	pH	Dissolved O_2 (mg/L)	Conductivity (µmhos/cm)	Temperature (°C)	O_2 Saturation (%)*	Hardness (as $CaCO_3$)
Initial Chemistry (100%) :	8.2	10.0	605	19	111	190 mg/L

0 HOURS

Date & Time : 2024-04-14 11:53
Analyst(s) : KP

Concentration (%)	Replicate	Dead	Immobile	pH	Dissolved O_2	Conductivity	Temperature	O_2 Saturation*	Hardness
Control	A	0	0	8.1	8.5	629	20	96	190 mg/L
Control	B	0	0	-	-	-	-	-	-
Control	C	0	0	-	-	-	-	-	-
100	A	0	0	8.2	9.5	602	20	106.1	190
100	B	0	0	-	-	-	-	-	-
100	C	0	0	-	-	-	-	-	-

Notes:

24 HOURS

Date & Time : 2024-04-15 9:00
Analyst(s) : EP

Concentration (%)	Replicate	Dead	Immobile	pH	Dissolved O_2	Conductivity	Temperature	O_2 Saturation*
Control	A	–	0	-	-	-	-	-
Control	B	–	0	-	-	-	-	-
Control	C	–	0	-	-	-	-	-
100	A	–	0	-	-	-	-	-
100	B	–	0	-	-	-	-	-
100	C	–	0	-	-	-	-	-

Notes:

48 HOURS

Date & Time : 2024-04-16 12:17
Analyst(s) : DS

Concentration (%)	Replicate	Dead	Immobile	pH	Dissolved O_2	Conductivity	Temperature	O_2 Saturation*
Control	A	0	0	8.0	8.6	614	19	92
Control	B	0	0	-	-	-	-	-
Control	C	0	0	-	-	-	-	-
100	A	0	0	7.9	8.3	598	19	90
100	B	0	0	-	-	-	-	-
100	C	0	0	-	-	-	-	-

"–" = not measured/not required

* adjusted for temperature and barometric pressure

Test Data Reviewed By : EP
Date : 2024-04-26

Certificate of Analysis

ACUTE LETHALITY BIOASSAY REPORT
(Single-Concentration Test)

CLIENT:

RWDI Air Inc., 4510 Rhodes Drive, Suite 530, Windsor, ON N8W 5K5

TEST RESULTS:

Sample Name[1]	Sample Number	Date Collected	Date Received	Date Tested	Test Species[2]	Percent Mortality[3]	Method Deviations
SP3	9830-0012406	2024-04-12	2024-04-12	2024-04-15 2024-04-14	RBT DM	0% 0%	None None

1 - Results relate only to the sample tested. Tested as received from client.

2 - Test Type and Species RBT = Rainbow Trout 96-hour 100% Effluent Concentration Acute Lethality Test
DM = *Daphnia magna* 48-hour 100% Effluent Concentration Acute Lethality Test

3 - Most regulations regard ≤50% mortality to be a "pass". Check your applicable regulatory requirements.

TEST PROTOCOLS:

Environment Canada, "Biological Test Method: Reference Method for Determining Acute Lethality of Effluents to Rainbow Trout", Environmental Technology Centre, Ottawa, Ontario, Report EPS 1/RM/13 Second Edition - December 2000, including May 2007, February 2016 and December 2023 Amendments. (Nautilus Test Method RT-SC-R1.7)

Environment Canada, "Biological Test Method: Reference Method for Determining Acute Lethality of Effluents to *Daphnia magna*", Environmental Technology Centre, Ottawa, Ontario, Report EPS 1/RM/14 Second Edition - December 2000, including February 2016 Amendment. (Nautilus Test Method DM-SC-R1.7)

Testing Laboratory:

Nautilus Environmental Company Inc.,
704 Mara St., Suite 122,
Point Edward, Ontario, N7V 1X4

CALA Testing Accreditation No. A1225

This laboratory is accredited by the Canadian Association for Laboratory Accreditation Inc. (CALA) to ISO/IEC 17025, and accreditation is limited to the tests on the laboratory's scope of testing.

TEST RESULTS APPROVED BY:

Date: 2024-05-01

Y:\bioassays\2024\9000\9830-001\9830-0012406 TD

Ken Ferguson
Senior Biologist

NAUTILUS ENVIRONMENTAL
Suite 122, 704 Mara Street
Point Edward, ON
N7V 1X4
Tel. (519) 339-8787

TOXICITY TEST REPORT

Rainbow Trout
EPS 1/RM/13

SAMPLE IDENTIFICATION

Sample Number :	9830-0012406		
Company :	Rowan Williams Davies & Irwin	Sampling Date :	2024-04-12
Location :	Windsor, ON	Sampling Time :	PM
Substance :	SP3	Date Received :	2024-04-12
Sampling Method :	Grab	Time Received :	15:00
Sampled By :	Jake A.	Temperature at Receipt :	12 °C
Sample Description :	Cloudy Pale Green	Date Tested :	2024-04-15

Test Method(s) : Reference Method for Determining Acute Lethality of Liquid Effluents to Rainbow Trout. Environment Canada, EPS 1/RM/13 (2nd Edition, December 2000, with May 2007, February 2016 and December 2023 amendments)

96-HOUR TEST RESULTS

Substance	Effect	Value
Control	Mean Impairment	0.0 %
	Mean Mortality	0.0 %
100%	Mean Impairment	0.0 %
	Mean Mortality	0.0 %

The results reported relate only to the sample tested and as received.

TEST ORGANISM

Test Organism :	*Oncorhynchus mykiss*	Mean Fork Length :	51.1 mm
Organism Batch :	LF240214-1	Range of Fork Lengths :	45 - 58 mm
Control Sample Size :	10	Mean Wet Weight :	1.4 g
Cumulative stock tank mortality rate :	0.6% (previous 7 days)	Organism Loading Rate :	0.4 g/L
Control organisms showing stress :	0 (at test completion)		

TEST CONDITIONS

Sample Treatment :	None	Volume Tested (L) :	35
pH Adjustment :	None	Number of Replicates :	1
Test Aeration :	Yes	Organisms Per Replicate :	10
Pre-aeration/Aeration Rate :	6.5 ± 0.26 mL/min/L	Organisms Per Test Level :	10
Duration of Pre-Aeration :	30 minutes	Test Method Deviation(s) :	None

REFERENCE TOXICANT DATA

Toxicant :	Zinc	LC50 :	0.24 mg/L
Organism Batch :	LF240214	95% Confidence Limits :	(0.17 mg/L ; 0.34 mg/L)
Date Tested :	2024-03-08	Historical Mean LC50 :	0.34 mg/L
Statistical Method :	Binomial Method α=0%	Warning Limits (± 2SD) :	(0.14 mg/L ; 0.80 mg/L)

COMMENTS

•All test validity criteria as specified in the test method were satisfied.

Approved By : Ken Ferguson
Senior Biologist

This laboratory is accredited by the Canadian Association for Laboratory Accreditation Inc. (CALA) to ISO/IEC 17025, and accreditation is limited to the tests on the laboratory's scope of testing.

Sample Number : 9830-0012406

TEST DATA

	pH	Dissolved O_2 (mg/L)	O_2 Saturation (%)[3]	Conductivity (µmhos/cm)	Temperature (°C)
Initial Water Chemistry (100%) :	8.0	9.6	94	646	14.0
After 30 min pre-aeration :	8.0	10.1	98	648	14.0

0 HOURS

Date & Time 2024-04-15 11:55
Analyst(s) : DS

Concentration	Dead	Impaired	pH	Dissolved O_2	O_2 Saturation[3]	Conductivity	Temperature
Control	0	0	7.8	10.3	100	225	14.0
100%	0	0	8.0	10.1	98	648	14.0

Notes:

24 HOURS

Date & Time 2024-04-16 8:57
Analyst(s) : DS

Concentration	Dead	Impaired	pH	Dissolved O_2	O_2 Saturation[3]	Conductivity	Temperature
Control	0	0	–	–	–	–	–
100%	0	0	–	–	–	–	–

Notes:

48 HOURS

Date & Time 2024-04-17 9:05
Analyst(s) : KK

Concentration	Dead	Impaired	pH	Dissolved O_2	O_2 Saturation[3]	Conductivity	Temperature
Control	0	0	–	–	–	–	–
100%	0	0	–	–	–	–	–

Notes:

72 HOURS

Date & Time 2024-04-18 9:40
Analyst(s) : DS

Concentration	Dead	Impaired	pH	Dissolved O_2	O_2 Saturation[3]	Conductivity	Temperature
Control	0	0	–	–	–	–	–
100%	0	0	–	–	–	–	–

Notes:

96 HOURS

Date & Time 2024-04-19 11:52
Analyst(s) : DS

Concentration	Dead	Impaired	pH	Dissolved O_2	O_2 Saturation[3]	Conductivity	Temperature
Control	0	0	7.8	9.0	90.0	227	15.0
100%	0	0	8.0	8.8	88.0	645	15.0

Notes:

"–" = not measured/not required

[3] adjusted for temperature and barometric pressure

Test Data Reviewed By : EP
Date : 2024-04-26

NAUTILUS ENVIRONMENTAL
Suite 122, 704 Mara Street
Point Edward, ON
N7V 1X4
Tel. (519) 339-8787

TOXICITY TEST REPORT

Daphnia magna
EPS 1/RM/14

SAMPLE IDENTIFICATION

Sample Number :	9830-0012406		
Company :	Rowan Williams Davies & Irwin	Sampling Date :	2024-04-12
Location :	Windsor, ON	Sampling Time :	PM
Substance :	SP3	Date Received :	2024-04-12
Sampling Method :	Grab	Time Received :	15:00
Sampled By :	Jake A.	Temperature at Receipt :	12 °C
Sample Description :	Cloudy Pale Green	Date Tested :	2024-04-14

Test Method : Reference Method for Determining Acute Lethality of Effluents to *Daphnia magna* . Environment Canada EPS 1/RM/14 (Second Edition, December 2000, with February 2016 amendments).

48-HOUR TEST RESULTS

Substance	Effect	Value
Control	Mean Immobility	0.0 %
	Mean Mortality	0.0 %
100%	Mean Immobility	0.0 %
	Mean Mortality	0.0 %

The results reported relate only to the sample tested and as received.

TEST ORGANISM

Species :	*Daphnia magna*	Time to First Brood :	8 days
Culture Mortality :	0% (prev. 7 days)	Mean Brood Size :	25.0

TEST CONDITIONS

Sample Treatment :	None	Number of Replicates :	3
pH Adjustment :	No	Organisms per Replicate :	10
Pre-aeration Rate :	28.8 ± 2 mL/min/L	Organisms per Test Level :	30
Duration of Pre-Aeration :	30 minutes	Organism Loading Rate :	25.0 mL/organism
Test Aeration :	None	Impaired Control Organisms :	0.0%
Hardness Adjustment :	No	Test Method Deviation(s) :	None

REFERENCE TOXICANT DATA

Toxicant :	Zinc	LC50 :	1.14 mg/L
Date Tested :	2024-04-08	95% Confidence Limits :	(0.95 mg/L; 1.38 mg/L)
Statistical Method :	Untrimmed Spearman-Karber α=0%	Historical Mean LC50 :	0.90 mg/L
		Warning Limits (± 2SD) :	(0.44 mg/L; 1.85 mg/L)

COMMENTS

•All test validity criteria as specified in the test method were satisfied.

Approved By : Ken Ferguson
Senior Biologist

This laboratory is accredited by the Canadian Association for Laboratory Accreditation Inc. (CALA) to ISO/IEC 17025, and accreditation is limited to the tests on the laboratory's scope of testing.

Sample Number : 9830-0012406

TEST DATA

	pH	Dissolved O_2 (mg/L)	Conductivity (µmhos/cm)	Temperature (°C)	O_2 Saturation (%)*	Hardness (as $CaCO_3$)
Initial Chemistry (100%) :	8.1	9.8	649	19	109	240 mg/L

0 HOURS

Date & Time : 2024-04-14 11:55
Analyst(s) : KP

Concentration (%)	Replicate	Dead	Immobile	pH	Dissolved O_2	Conductivity	Temperature	O_2 Saturation*	Hardness
Control	A	0	0	8.1	8.5	629	20	96	190 mg/L
Control	B	0	0	-	-	-	-	-	-
Control	C	0	0	-	-	-	-	-	-
100	A	0	0	8.1	9.2	646	20	103.6	240
100	B	0	0	-	-	-	-	-	-
100	C	0	0	-	-	-	-	-	-

Notes:

24 HOURS

Date & Time : 2024-04-15 9:00
Analyst(s) : EP

Concentration (%)	Replicate	Dead	Immobile	pH	Dissolved O_2	Conductivity	Temperature	O_2 Saturation*
Control	A	–	0	-	-	-	-	-
Control	B	–	0	-	-	-	-	-
Control	C	–	0	-	-	-	-	-
100	A	–	0	-	-	-	-	-
100	B	–	0	-	-	-	-	-
100	C	–	0	-	-	-	-	-

Notes:

48 HOURS

Date & Time : 2024-04-16 12:21
Analyst(s) : DS

Concentration (%)	Replicate	Dead	Immobile	pH	Dissolved O_2	Conductivity	Temperature	O_2 Saturation*
Control	A	0	0	8.1	8.6	616	19	92
Control	B	0	0	-	-	-	-	-
Control	C	0	0	-	-	-	-	-
100	A	0	0	8.3	8.4	634	19	91
100	B	0	0	-	-	-	-	-
100	C	0	0	-	-	-	-	-

"–" = not measured/not required

* adjusted for temperature and barometric pressure

Test Data Reviewed By : EP
Date : 2024-04-26

NAUTILUS ENVIRONMENTAL

Certificate of Analysis

ACUTE LETHALITY BIOASSAY REPORT
(Single-Concentration Test)

CLIENT:

RWDI Air Inc., 4510 Rhodes Drive, Suite 530, Windsor, ON N8W 5K5

TEST RESULTS:

Sample Name[1]	Sample Number	Date Collected	Date Received	Date Tested	Test Species[2]	Percent Mortality[3]	Method Deviations
SP4	9830-0012407	2024-04-12	2024-04-12	2024-04-15 2024-04-14	RBT DM	0% 0%	None None

1 - Results relate only to the sample tested. Tested as received from client.

2 - Test Type and Species RBT = Rainbow Trout 96-hour 100% Effluent Concentration Acute Lethality Test
DM = *Daphnia magna* 48-hour 100% Effluent Concentration Acute Lethality Test

3 - Most regulations regard ≤50% mortality to be a "pass". Check your applicable regulatory requirements.

TEST PROTOCOLS:

Environment Canada, "Biological Test Method: Reference Method for Determining Acute Lethality of Effluents to Rainbow Trout", Environmental Technology Centre, Ottawa, Ontario, Report EPS 1/RM/13 Second Edition - December 2000, including May 2007, February 2016 and December 2023 Amendments. (Nautilus Test Method RT-SC-R1.7)

Environment Canada, "Biological Test Method: Reference Method for Determining Acute Lethality of Effluents to *Daphnia magna*", Environmental Technology Centre, Ottawa, Ontario, Report EPS 1/RM/14 Second Edition - December 2000, including February 2016 Amendment. (Nautilus Test Method DM-SC-R1.7)

Testing Laboratory:

Nautilus Environmental Company Inc.,
704 Mara St., Suite 122,
Point Edward, Ontario, N7V 1X4

CALA Testing Accreditation No. A1225

This laboratory is accredited by the Canadian Association for Laboratory Accreditation Inc. (CALA) to ISO/IEC 17025, and accreditation is limited to the tests on the laboratory's scope of testing.

TEST RESULTS APPROVED BY:

Date: 2024-05-01

Y:\bioassays\2024\9000\9830-001\9830-0012407 TD

Ken Ferguson
Senior Biologist

NAUTILUS ENVIRONMENTAL
Suite 122, 704 Mara Street
Point Edward, ON
N7V 1X4
Tel. (519) 339-8787

TOXICITY TEST REPORT

Rainbow Trout
EPS 1/RM/13

SAMPLE IDENTIFICATION

Sample Number :	9830-0012407		
Company :	Rowan Williams Davies & Irwin	Sampling Date :	2024-04-12
Location :	Windsor, ON	Sampling Time :	PM
Substance :	SP4	Date Received :	2024-04-12
Sampling Method :	Grab	Time Received :	15:00
Sampled By :	Jake A.	Temperature at Receipt :	11.7 °C
Sample Description :	Cloudy Pale Brown	Date Tested :	2024-04-15

Test Method(s) : Reference Method for Determining Acute Lethality of Liquid Effluents to Rainbow Trout. Environment Canada, EPS 1/RM/13 (2nd Edition, December 2000, with May 2007, February 2016 and December 2023 amendments)

96-HOUR TEST RESULTS

Substance	Effect	Value
Control	Mean Impairment	0.0 %
	Mean Mortality	0.0 %
100%	Mean Impairment	0.0 %
	Mean Mortality	0.0 %

The results reported relate only to the sample tested and as received.

TEST ORGANISM

Test Organism :	*Oncorhynchus mykiss*	Mean Fork Length :	51.1 mm
Organism Batch :	LF240214-1	Range of Fork Lengths :	45 - 58 mm
Control Sample Size :	10	Mean Wet Weight :	1.4 g
Cumulative stock tank mortality rate :	0.6% (previous 7 days)	Organism Loading Rate :	0.4 g/L
Control organisms showing stress :	0 (at test completion)		

TEST CONDITIONS

Sample Treatment :	None	Volume Tested (L) :	35
pH Adjustment :	None	Number of Replicates :	1
Test Aeration :	Yes	Organisms Per Replicate :	10
Pre-aeration/Aeration Rate :	6.5 ± 0.26 mL/min/L	Organisms Per Test Level :	10
Duration of Pre-Aeration :	30 minutes	Test Method Deviation(s) :	None

REFERENCE TOXICANT DATA

Toxicant :	Zinc	LC50 :	0.24 mg/L
Organism Batch :	LF240214	95% Confidence Limits :	(0.17 mg/L ; 0.34 mg/L)
Date Tested :	2024-03-08	Historical Mean LC50 :	0.34 mg/L
Statistical Method :	Binomial Method α=0%	Warning Limits (± 2SD) :	(0.14 mg/L ; 0.80 mg/L)

COMMENTS

•All test validity criteria as specified in the test method were satisfied.

Approved By : Ken Ferguson
Senior Biologist

This laboratory is accredited by the Canadian Association for Laboratory Accreditation Inc. (CALA) to ISO/IEC 17025, and accreditation is limited to the tests on the laboratory's scope of testing.

Sample Number : 9830-0012407

TEST DATA

	pH	Dissolved O_2 (mg/L)	O_2 Saturation (%)[3]	Conductivity (µmhos/cm)	Temperature (°C)
Initial Water Chemistry (100%) :	7.9	9.3	91	676	14.0
After 30 min pre-aeration :	7.9	9.8	96	674	14.0

0 HOURS

Date & Time 2024-04-15 11:55
Analyst(s) : DS

Concentration	Dead	Impaired	pH	Dissolved O_2	O_2 Saturation[3]	Conductivity	Temperature
Control	0	0	7.8	10.3	100	225	14.0
100%	0	0	7.9	9.8	96	674	14.0

Notes:

24 HOURS

Date & Time 2024-04-16 8:57
Analyst(s) : DS

Concentration	Dead	Impaired	pH	Dissolved O_2	O_2 Saturation[3]	Conductivity	Temperature
Control	0	0	–	–	–	–	–
100%	0	0	–	–	–	–	–

Notes:

48 HOURS

Date & Time 2024-04-17 9:05
Analyst(s) : KK

Concentration	Dead	Impaired	pH	Dissolved O_2	O_2 Saturation[3]	Conductivity	Temperature
Control	0	0	–	–	–	–	–
100%	0	0	–	–	–	–	–

Notes:

72 HOURS

Date & Time 2024-04-18 9:40
Analyst(s) : DS

Concentration	Dead	Impaired	pH	Dissolved O_2	O_2 Saturation[3]	Conductivity	Temperature
Control	0	0	–	–	–	–	–
100%	0	0	–	–	–	–	–

Notes:

96 HOURS

Date & Time 2024-04-19 11:54
Analyst(s) : DS

Concentration	Dead	Impaired	pH	Dissolved O_2	O_2 Saturation[3]	Conductivity	Temperature
Control	0	0	7.8	9.0	90.0	227	15.0
100%	0	0	8.1	8.9	89.0	664	15.0

Notes:

"–" = not measured/not required

[3] adjusted for temperature and barometric pressure

Test Data Reviewed By : EP
Date : 2024-04-26

NAUTILUS ENVIRONMENTAL
Suite 122, 704 Mara Street
Point Edward, ON
N7V 1X4
Tel. (519) 339-8787

TOXICITY TEST REPORT

Daphnia magna
EPS 1/RM/14

SAMPLE IDENTIFICATION

Sample Number :	9830-0012407		
Company :	Rowan Williams Davies & Irwin	Sampling Date :	2024-04-12
Location :	Windsor, ON	Sampling Time :	PM
Substance :	SP4	Date Received :	2024-04-12
Sampling Method :	Grab	Time Received :	15:00
Sampled By :	Jake A.	Temperature at Receipt :	11.7 °C
Sample Description :	Cloudy Pale Brown	Date Tested :	2024-04-14

Test Method : Reference Method for Determining Acute Lethality of Effluents to *Daphnia magna* . Environment Canada EPS 1/RM/14 (Second Edition, December 2000, with February 2016 amendments).

48-HOUR TEST RESULTS

Substance	Effect	Value
Control	Mean Immobility	0.0 %
	Mean Mortality	0.0 %
100%	Mean Immobility	0.0 %
	Mean Mortality	0.0 %

The results reported relate only to the sample tested and as received.

TEST ORGANISM

Species :	*Daphnia magna*	Time to First Brood :	8 days
Culture Mortality :	0% (prev. 7 days)	Mean Brood Size :	44.0

TEST CONDITIONS

Sample Treatment :	None	Number of Replicates :	3
pH Adjustment :	No	Organisms per Replicate :	10
Pre-aeration Rate :	N/A ± 2 mL/min/L	Organisms per Test Level :	30
Duration of Pre-Aeration :	0 minutes	Organism Loading Rate :	25.0 mL/organism
Test Aeration :	None	Impaired Control Organisms :	0.0%
Hardness Adjustment :	No	Test Method Deviation(s) :	None

REFERENCE TOXICANT DATA

Toxicant :	Zinc	LC50 :	1.14 mg/L
Date Tested :	2024-04-08	95% Confidence Limits :	(0.95 mg/L; 1.38 mg/L)
Statistical Method :	Untrimmed Spearman-Karber α=0%	Historical Mean LC50 :	0.90 mg/L
		Warning Limits (± 2SD) :	(0.44 mg/L; 1.85 mg/L)

COMMENTS

•All test validity criteria as specified in the test method were satisfied.

Approved By : Ken Ferguson
Senior Biologist

This laboratory is accredited by the Canadian Association for Laboratory Accreditation Inc. (CALA) to ISO/IEC 17025, and accreditation is limited to the tests on the laboratory's scope of testing.

Sample Number : 9830-0012407

TEST DATA

	pH	Dissolved O_2 (mg/L)	Conductivity (µmhos/cm)	Temperature (°C)	O_2 Saturation (%)*	Hardness (as $CaCO_3$)
Initial Chemistry (100%) :	7.9	9.0	677	20	102	320 mg/L

0 HOURS

Date & Time : 2024-04-14 12:10
Analyst(s) : KP

Concentration (%)	Replicate	Dead	Immobile	pH	Dissolved O_2	Conductivity	Temperature	O_2 Saturation*	Hardness
Control	A	0	0	8.1	8.5	629	20	96	190 mg/L
Control	B	0	0	-	-	-	-	-	-
Control	C	0	0	-	-	-	-	-	-
100	A	0	0	7.9	9.0	677	20	102.3	320
100	B	0	0	-	-	-	-	-	-
100	C	0	0	-	-	-	-	-	-

Notes:

24 HOURS

Date & Time : 2024-04-15 9:00
Analyst(s) : EP

Concentration (%)	Replicate	Dead	Immobile	pH	Dissolved O_2	Conductivity	Temperature	O_2 Saturation*
Control	A	–	0	-	-	-	-	-
Control	B	–	0	-	-	-	-	-
Control	C	–	0	-	-	-	-	-
100	A	–	0	-	-	-	-	-
100	B	–	0	-	-	-	-	-
100	C	–	0	-	-	-	-	-

Notes:

48 HOURS

Date & Time : 2024-04-16 12:25
Analyst(s) : DS

Concentration (%)	Replicate	Dead	Immobile	pH	Dissolved O_2	Conductivity	Temperature	O_2 Saturation*
Control	A	0	0	8.1	8.6	614	19	93
Control	B	0	0	-	-	-	-	-
Control	C	0	0	-	-	-	-	-
100	A	0	0	8.3	8.4	659	19	91
100	B	0	0	-	-	-	-	-
100	C	0	0	-	-	-	-	-

"–" = not measured/not required

* adjusted for temperature and barometric pressure

Test Data Reviewed By : EP
Date : 2024-04-26

NAUTILUS ENVIRONMENTAL

Certificate of Analysis

ACUTE LETHALITY BIOASSAY REPORT
(Single-Concentration Test)

CLIENT:

RWDI Air Inc., 4510 Rhodes Drive, Suite 530, Windsor, ON N8W 5K5

TEST RESULTS:

Sample Name[1]	Sample Number	Date Collected	Date Received	Date Tested	Test Species[2]	Percent Mortality[3]	Method Deviations
SS10	9830-0012408	2024-04-12	2024-04-12	2024-04-15 2024-04-15	RBT DM	0% 0%	None None

1 - Results relate only to the sample tested. Tested as received from client.

2 - Test Type and Species RBT = Rainbow Trout 96-hour 100% Effluent Concentration Acute Lethality Test
DM = *Daphnia magna* 48-hour 100% Effluent Concentration Acute Lethality Test

3 - Most regulations regard ≤50% mortality to be a "pass". Check your applicable regulatory requirements.

TEST PROTOCOLS:

Environment Canada, "Biological Test Method: Reference Method for Determining Acute Lethality of Effluents to Rainbow Trout", Environmental Technology Centre, Ottawa, Ontario, Report EPS 1/RM/13 Second Edition - December 2000, including May 2007, February 2016 and December 2023 Amendments. (Nautilus Test Method RT-SC-R1.7)

Environment Canada, "Biological Test Method: Reference Method for Determining Acute Lethality of Effluents to *Daphnia magna*", Environmental Technology Centre, Ottawa, Ontario, Report EPS 1/RM/14 Second Edition - December 2000, including February 2016 Amendment. (Nautilus Test Method DM-SC-R1.7)

Testing Laboratory:

Nautilus Environmental Company Inc.,
704 Mara St., Suite 122,
Point Edward, Ontario, N7V 1X4

CALA Testing Accreditation No. A1225

This laboratory is accredited by the Canadian Association for Laboratory Accreditation Inc. (CALA) to ISO/IEC 17025, and accreditation is limited to the tests on the laboratory's scope of testing.

TEST RESULTS APPROVED BY:

Date: 2024-05-01

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Ken Ferguson
Senior Biologist

NAUTILUS ENVIRONMENTAL
Suite 122, 704 Mara Street
Point Edward, ON
N7V 1X4
Tel. (519) 339-8787

TOXICITY TEST REPORT

Rainbow Trout
EPS 1/RM/13

SAMPLE IDENTIFICATION

Sample Number :	9830-0012408		
Company :	Rowan Williams Davies & Irwin	Sampling Date :	2024-04-12
Location :	Windsor, ON	Sampling Time :	PM
Substance :	SS10	Date Received :	2024-04-12
Sampling Method :	Grab	Time Received :	15:00
Sampled By :	Jake A.	Temperature at Receipt :	12.3 °C
Sample Description :	Cloudy Pale Brown	Date Tested :	2024-04-15

Test Method(s) : Reference Method for Determining Acute Lethality of Liquid Effluents to Rainbow Trout. Environment Canada, EPS 1/RM/13 (2nd Edition, December 2000, with May 2007, February 2016 and December 2023 amendments)

96-HOUR TEST RESULTS

Substance	Effect	Value
Control	Mean Impairment	0.0 %
	Mean Mortality	0.0 %
100%	Mean Impairment	0.0 %
	Mean Mortality	0.0 %

The results reported relate only to the sample tested and as received.

TEST ORGANISM

Test Organism :	*Oncorhynchus mykiss*	Mean Fork Length :	51.1 mm
Organism Batch :	LF240214-1	Range of Fork Lengths :	45 - 58 mm
Control Sample Size :	10	Mean Wet Weight :	1.4 g
Cumulative stock tank mortality rate :	0.6% (previous 7 days)	Organism Loading Rate :	0.4 g/L
Control organisms showing stress :	0 (at test completion)		

TEST CONDITIONS

Sample Treatment :	None	Volume Tested (L) :	35
pH Adjustment :	None	Number of Replicates :	1
Test Aeration :	Yes	Organisms Per Replicate :	10
Pre-aeration/Aeration Rate :	6.5 ± 0.26 mL/min/L	Organisms Per Test Level :	10
Duration of Pre-Aeration :	30 minutes	Test Method Deviation(s) :	None

REFERENCE TOXICANT DATA

Toxicant :	Zinc	LC50 :	0.24 mg/L
Organism Batch :	LF240214	95% Confidence Limits :	(0.17 mg/L ; 0.34 mg/L)
Date Tested :	2024-03-08	Historical Mean LC50 :	0.34 mg/L
Statistical Method :	Binomial Method α=0%	Warning Limits (± 2SD) :	(0.14 mg/L ; 0.80 mg/L)

COMMENTS

•All test validity criteria as specified in the test method were satisfied.

Approved By : Ken Ferguson
Senior Biologist

This laboratory is accredited by the Canadian Association for Laboratory Accreditation Inc. (CALA) to ISO/IEC 17025, and accreditation is limited to the tests on the laboratory's scope of testing.

Sample Number : 9830-0012408

TEST DATA

	pH	Dissolved O_2 (mg/L)	O_2 Saturation (%)[3]	Conductivity (µmhos/cm)	Temperature (°C)
Initial Water Chemistry (100%) :	7.8	10.0	98	205	14.0
After 30 min pre-aeration :	7.8	10.3	100	206	14.0

0 HOURS

Date & Time 2024-04-15 11:55
Analyst(s) : DS

Concentration	Dead	Impaired	pH	Dissolved O_2	O_2 Saturation[3]	Conductivity	Temperature
Control	0	0	7.8	10.3	100	225	14.0
100%	0	0	7.8	10.3	100	206	14.0

Notes:

24 HOURS

Date & Time 2024-04-16 8:58
Analyst(s) : DS

Concentration	Dead	Impaired	pH	Dissolved O_2	O_2 Saturation[3]	Conductivity	Temperature
Control	0	0	–	–	–	–	–
100%	0	0	–	–	–	–	–

Notes:

48 HOURS

Date & Time 2024-04-17 9:05
Analyst(s) : KK

Concentration	Dead	Impaired	pH	Dissolved O_2	O_2 Saturation[3]	Conductivity	Temperature
Control	0	0	–	–	–	–	–
100%	0	0	–	–	–	–	–

Notes:

72 HOURS

Date & Time 2024-04-18 9:40
Analyst(s) : DS

Concentration	Dead	Impaired	pH	Dissolved O_2	O_2 Saturation[3]	Conductivity	Temperature
Control	0	0	–	–	–	–	–
100%	0	0	–	–	–	–	–

Notes:

96 HOURS

Date & Time 2024-04-19 11:56
Analyst(s) : DS

Concentration	Dead	Impaired	pH	Dissolved O_2	O_2 Saturation[3]	Conductivity	Temperature
Control	0	0	7.8	9.0	90.0	227	15.0
100%	0	0	7.9	8.9	88.0	211	14.0

Notes:

"–" = not measured/not required

[3] adjusted for temperature and barometric pressure

Test Data Reviewed By : EP
Date : 2024-04-26

NAUTILUS ENVIRONMENTAL
Suite 122, 704 Mara Street
Point Edward, ON
N7V 1X4
Tel. (519) 339-8787

TOXICITY TEST REPORT

Daphnia magna
EPS 1/RM/14

SAMPLE IDENTIFICATION

Sample Number :	9830-0012408		
Company :	Rowan Williams Davies & Irwin	Sampling Date :	2024-04-12
Location :	Windsor, ON	Sampling Time :	PM
Substance :	SS10	Date Received :	2024-04-12
Sampling Method :	Grab	Time Received :	15:00
Sampled By :	Jake A.	Temperature at Receipt :	12.3 °C
Sample Description :	Cloudy Pale Brown	Date Tested :	2024-04-15

Test Method : Reference Method for Determining Acute Lethality of Effluents to *Daphnia magna* . Environment Canada EPS 1/RM/14 (Second Edition, December 2000, with February 2016 amendments).

48-HOUR TEST RESULTS

Substance	Effect	Value
Control	Mean Immobility	0.0 %
	Mean Mortality	0.0 %
100%	Mean Immobility	0.0 %
	Mean Mortality	0.0 %

The results reported relate only to the sample tested and as received.

TEST ORGANISM

Species :	*Daphnia magna*	Time to First Brood :	8 days
Culture Mortality :	0% (prev. 7 days)	Mean Brood Size :	25.0

TEST CONDITIONS

Sample Treatment :	None	Number of Replicates :	3
pH Adjustment :	No	Organisms per Replicate :	10
Pre-aeration Rate :	27.7 ± 2 mL/min/L	Organisms per Test Level :	30
Duration of Pre-Aeration :	30 minutes	Organism Loading Rate :	25.0 mL/organism
Test Aeration :	None	Impaired Control Organisms :	0.0%
Hardness Adjustment :	No	Test Method Deviation(s) :	None

REFERENCE TOXICANT DATA

Toxicant :	Zinc	LC50 :	1.14 mg/L
Date Tested :	2024-04-08	95% Confidence Limits :	(0.95 mg/L; 1.38 mg/L)
Statistical Method :	Untrimmed Spearman-Karber α=0%	Historical Mean LC50 :	0.90 mg/L
		Warning Limits (± 2SD) :	(0.44 mg/L; 1.85 mg/L)

COMMENTS

•All test validity criteria as specified in the test method were satisfied.

Approved By : Ken Ferguson
Senior Biologist

This laboratory is accredited by the Canadian Association for Laboratory Accreditation Inc. (CALA) to ISO/IEC 17025, and accreditation is limited to the tests on the laboratory's scope of testing.

Sample Number : 9830-0012408

TEST DATA

	pH	Dissolved O_2 (mg/L)	Conductivity (µmhos/cm)	Temperature (°C)	O_2 Saturation (%)*	Hardness (as $CaCO_3$)
Initial Chemistry (100%) :	7.3	10.8	211	19	114	100 mg/L

0 HOURS

Date & Time : 2024-04-15 9:30
Analyst(s) : EP

Concentration (%)	Replicate	Dead	Immobile	pH	Dissolved O_2	Conductivity	Temperature	O_2 Saturation*	Hardness
Control	A	0	0	8.0	8.8	601	20	98	190 mg/L
Control	B	0	0	-	-	-	-	-	-
Control	C	0	0	-	-	-	-	-	-
100	A	0	0	7.8	10.5	214	19	113	100
100	B	0	0	-	-	-	-	-	-
100	C	0	0	-	-	-	-	-	-

Notes:

24 HOURS

Date & Time : 2024-04-16 10:10
Analyst(s) : DS

Concentration (%)	Replicate	Dead	Immobile	pH	Dissolved O_2	Conductivity	Temperature	O_2 Saturation*
Control	A	–	0	-	-	-	-	-
Control	B	–	0	-	-	-	-	-
Control	C	–	0	-	-	-	-	-
100	A	–	0	-	-	-	-	-
100	B	–	0	-	-	-	-	-
100	C	–	0	-	-	-	-	-

Notes: Difficult to see all neos on 100% sample but not seeing immobile neos

48 HOURS

Date & Time : 2024-04-17 9:10
Analyst(s) : KP

Concentration (%)	Replicate	Dead	Immobile	pH	Dissolved O_2	Conductivity	Temperature	O_2 Saturation*
Control	A	0	0	7.9	9.1	632	19	99
Control	B	0	0	-	-	-	-	-
Control	C	0	0	-	-	-	-	-
100	A	0	0	8.1	8.8	239	19	96
100	B	0	0	-	-	-	-	-
100	C	0	0	-	-	-	-	-

"–" = not measured/not required

* adjusted for temperature and barometric pressure

Test Data Reviewed By : EP
Date : 2024-04-26

NAUTILUS ENVIRONMENTAL

Certificate of Analysis

ACUTE LETHALITY BIOASSAY REPORT
(Single-Concentration Test)

CLIENT:

RWDI Air Inc., 4510 Rhodes Drive, Suite 530, Windsor, ON N8W 5K5

TEST RESULTS:

Sample Name[1]	Sample Number	Date Collected	Date Received	Date Tested	Test Species[2]	Percent Mortality[3]	Method Deviations
SS16	9830-0012409	2024-04-12	2024-04-12	2024-04-15 2024-04-15	RBT DM	0% 0%	None None

1 - Results relate only to the sample tested. Tested as received from client.

2 - Test Type and Species RBT = Rainbow Trout 96-hour 100% Effluent Concentration Acute Lethality Test
DM = *Daphnia magna* 48-hour 100% Effluent Concentration Acute Lethality Test

3 - Most regulations regard ≤50% mortality to be a "pass". Check your applicable regulatory requirements.

TEST PROTOCOLS:

Environment Canada, "Biological Test Method: Reference Method for Determining Acute Lethality of Effluents to Rainbow Trout", Environmental Technology Centre, Ottawa, Ontario, Report EPS 1/RM/13 Second Edition - December 2000, including May 2007, February 2016 and December 2023 Amendments. (Nautilus Test Method RT-SC-R1.7)

Environment Canada, "Biological Test Method: Reference Method for Determining Acute Lethality of Effluents to *Daphnia magna*", Environmental Technology Centre, Ottawa, Ontario, Report EPS 1/RM/14 Second Edition - December 2000, including February 2016 Amendment. (Nautilus Test Method DM-SC-R1.7)

Testing Laboratory:

Nautilus Environmental Company Inc.,
704 Mara St., Suite 122,
Point Edward, Ontario, N7V 1X4

CALA Testing Accreditation No. A1225

This laboratory is accredited by the Canadian Association for Laboratory Accreditation Inc. (CALA) to ISO/IEC 17025, and accreditation is limited to the tests on the laboratory's scope of testing.

TEST RESULTS APPROVED BY:

Date: 2024-05-01

Y:\bioassays\2024\9000\9830-001\9830-0012409 TD

Ken Ferguson
Senior Biologist

NAUTILUS ENVIRONMENTAL
Suite 122, 704 Mara Street
Point Edward, ON
N7V 1X4
Tel. (519) 339-8787

TOXICITY TEST REPORT
Rainbow Trout
EPS 1/RM/13

SAMPLE IDENTIFICATION

Sample Number :	9830-0012409		
Company :	Rowan Williams Davies & Irwin	Sampling Date :	2024-04-12
Location :	Windsor, ON	Sampling Time :	AM
Substance :	SS16	Date Received :	2024-04-12
Sampling Method :	Grab	Time Received :	15:00
Sampled By :	Jake A.	Temperature at Receipt :	11.2 °C
Sample Description :	Cloudy Brown	Date Tested :	2024-04-15

Test Method(s) : Reference Method for Determining Acute Lethality of Liquid Effluents to Rainbow Trout. Environment Canada, EPS 1/RM/13 (2nd Edition, December 2000, with May 2007, February 2016 and December 2023 amendments)

96-HOUR TEST RESULTS

Substance	Effect	Value
Control	Mean Impairment	0.0 %
	Mean Mortality	0.0 %
100%	Mean Impairment	0.0 %
	Mean Mortality	0.0 %

The results reported relate only to the sample tested and as received.

TEST ORGANISM

Test Organism :	*Oncorhynchus mykiss*	Mean Fork Length :	51.1 mm
Organism Batch :	LF240214-1	Range of Fork Lengths :	45 - 58 mm
Control Sample Size :	10	Mean Wet Weight :	1.4 g
Cumulative stock tank mortality rate :	0.6% (previous 7 days)	Organism Loading Rate :	0.4 g/L
Control organisms showing stress :	0 (at test completion)		

TEST CONDITIONS

Sample Treatment :	None	Volume Tested (L) :	35
pH Adjustment :	None	Number of Replicates :	1
Test Aeration :	Yes	Organisms Per Replicate :	10
Pre-aeration/Aeration Rate :	6.5 ± 0.26 mL/min/L	Organisms Per Test Level :	10
Duration of Pre-Aeration :	30 minutes	Test Method Deviation(s) :	None

REFERENCE TOXICANT DATA

Toxicant :	Zinc	LC50 :	0.24 mg/L
Organism Batch :	LF240214	95% Confidence Limits :	(0.17 mg/L ; 0.34 mg/L)
Date Tested :	2024-03-08	Historical Mean LC50 :	0.34 mg/L
Statistical Method :	Binomial Method α=0%	Warning Limits (± 2SD) :	(0.14 mg/L ; 0.80 mg/L)

COMMENTS

•All test validity criteria as specified in the test method were satisfied.

Approved By : Ken Ferguson
Senior Biologist

This laboratory is accredited by the Canadian Association for Laboratory Accreditation Inc. (CALA) to ISO/IEC 17025, and accreditation is limited to the tests on the laboratory's scope of testing.

Sample Number : 9830-0012409

TEST DATA

	pH	Dissolved O_2 (mg/L)	O_2 Saturation (%)[3]	Conductivity (µmhos/cm)	Temperature (°C)
Initial Water Chemistry (100%) :	7.6	9.4	93	339	14.0
After 30 min pre-aeration :	7.7	9.8	97	341	14.0

0 HOURS

Date & Time 2024-04-15 11:55
Analyst(s) : DS

Concentration	Dead	Impaired	pH	Dissolved O_2	O_2 Saturation[3]	Conductivity	Temperature
Control	0	0	7.8	10.3	100	225	14.0
100%	0	0	7.7	9.8	97	341	14.0

Notes:

24 HOURS

Date & Time 2024-04-16 8:59
Analyst(s) : DS

Concentration	Dead	Impaired	pH	Dissolved O_2	O_2 Saturation[3]	Conductivity	Temperature
Control	0	0	–	–	–	–	–
100%	0	0	–	–	–	–	–

Notes:

48 HOURS

Date & Time 2024-04-17 9:05
Analyst(s) : KK

Concentration	Dead	Impaired	pH	Dissolved O_2	O_2 Saturation[3]	Conductivity	Temperature
Control	0	0	–	–	–	–	–
100%	0	0	–	–	–	–	–

Notes:

72 HOURS

Date & Time 2024-04-18 9:40
Analyst(s) : DS

Concentration	Dead	Impaired	pH	Dissolved O_2	O_2 Saturation[3]	Conductivity	Temperature
Control	0	0	–	–	–	–	–
100%	0	0	–	–	–	–	–

Notes:

96 HOURS

Date & Time 2024-04-19 11:58
Analyst(s) : DS

Concentration	Dead	Impaired	pH	Dissolved O_2	O_2 Saturation[3]	Conductivity	Temperature
Control	0	0	7.8	9.0	90.0	227	15.0
100%	0	0	8.1	8.7	87.0	337	15.0

Notes:

"–" = not measured/not required

[3] adjusted for temperature and barometric pressure

Test Data Reviewed By : EP
Date : 2024-04-26

NAUTILUS ENVIRONMENTAL
Suite 122, 704 Mara Street
Point Edward, ON
N7V 1X4
Tel. (519) 339-8787

TOXICITY TEST REPORT

Daphnia magna
EPS 1/RM/14

SAMPLE IDENTIFICATION

Sample Number :	9830-0012409		
Company :	Rowan Williams Davies & Irwin	Sampling Date :	2024-04-12
Location :	Windsor, ON	Sampling Time :	AM
Substance :	SS16	Date Received :	2024-04-12
Sampling Method :	Grab	Time Received :	15:00
Sampled By :	Jake A.	Temperature at Receipt :	11.2 °C
Sample Description :	Cloudy Brown	Date Tested :	2024-04-15

Test Method : Reference Method for Determining Acute Lethality of Effluents to *Daphnia magna* . Environment Canada EPS 1/RM/14 (Second Edition, December 2000, with February 2016 amendments).

48-HOUR TEST RESULTS

Substance	Effect	Value
Control	Mean Immobility	0.0 %
	Mean Mortality	0.0 %
100%	Mean Immobility	0.0 %
	Mean Mortality	0.0 %

The results reported relate only to the sample tested and as received.

TEST ORGANISM

Species :	*Daphnia magna*	Time to First Brood :	8 days
Culture Mortality :	0% (prev. 7 days)	Mean Brood Size :	25.0

TEST CONDITIONS

Sample Treatment :	None	Number of Replicates :	3
pH Adjustment :	No	Organisms per Replicate :	10
Pre-aeration Rate :	36.5 ± 2 mL/min/L	Organisms per Test Level :	30
Duration of Pre-Aeration :	30 minutes	Organism Loading Rate :	25.0 mL/organism
Test Aeration :	None	Impaired Control Organisms :	0.0%
Hardness Adjustment :	No	Test Method Deviation(s) :	None

REFERENCE TOXICANT DATA

Toxicant :	Zinc	LC50 :	1.14 mg/L
Date Tested :	2024-04-08	95% Confidence Limits :	(0.95 mg/L; 1.38 mg/L)
Statistical Method :	Untrimmed Spearman-Karber α=0%	Historical Mean LC50 :	0.90 mg/L
		Warning Limits (± 2SD) :	(0.44 mg/L; 1.85 mg/L)

COMMENTS

•All test validity criteria as specified in the test method were satisfied.

Approved By : Ken Ferguson
Senior Biologist

This laboratory is accredited by the Canadian Association for Laboratory Accreditation Inc. (CALA) to ISO/IEC 17025, and accreditation is limited to the tests on the laboratory's scope of testing.

Sample Number : 9830-0012409

TEST DATA

	pH	Dissolved O_2 (mg/L)	Conductivity (µmhos/cm)	Temperature (°C)	O_2 Saturation (%)*	Hardness (as $CaCO_3$)
Initial Chemistry (100%) :	7.5	10.1	337	19	109	176 mg/L

0 HOURS

Date & Time : 2024-04-15 9:40
Analyst(s) : EP

Concentration (%)	Replicate	Dead	Immobile	pH	Dissolved O_2	Conductivity	Temperature	O_2 Saturation*	Hardness
Control	A	0	0	8.0	8.8	601	20	98	190 mg/L
Control	B	0	0	-	-	-	-	-	-
Control	C	0	0	-	-	-	-	-	-
100	A	0	0	7.7	9.9	338	19	107	176
100	B	0	0	-	-	-	-	-	-
100	C	0	0	-	-	-	-	-	-

Notes:

24 HOURS

Date & Time : 2024-04-16 10:13
Analyst(s) : DS

Concentration (%)	Replicate	Dead	Immobile	pH	Dissolved O_2	Conductivity	Temperature	O_2 Saturation*
Control	A	–	0	-	-	-	-	-
Control	B	–	0	-	-	-	-	-
Control	C	–	0	-	-	-	-	-
100	A	–	0	-	-	-	-	-
100	B	–	0	-	-	-	-	-
100	C	–	0	-	-	-	-	-

Notes:

48 HOURS

Date & Time : 2024-04-17 9:15
Analyst(s) : KP

Concentration (%)	Replicate	Dead	Immobile	pH	Dissolved O_2	Conductivity	Temperature	O_2 Saturation*
Control	A	0	0	8.0	9.1	632	19	99
Control	B	0	0	-	-	-	-	-
Control	C	0	0	-	-	-	-	-
100	A	0	0	8.3	8.8	359	19	96
100	B	0	0	-	-	-	-	-
100	C	0	0	-	-	-	-	-

"–" = not measured/not required

* adjusted for temperature and barometric pressure

Test Data Reviewed By : EP
Date : 2024-04-26

NAUTILUS ENVIRONMENTAL

Certificate of Analysis

ACUTE LETHALITY BIOASSAY REPORT
(Single-Concentration Test)

CLIENT:

RWDI Air Inc., 4510 Rhodes Drive, Suite 530, Windsor, ON N8W 5K5

TEST RESULTS:

Sample Name[1]	Sample Number	Date Collected	Date Received	Date Tested	Test Species[2]	Percent Mortality[3]	Method Deviations
SS1	9830-0012410	2024-04-12	2024-04-12	2024-04-15 2024-04-15	RBT DM	0% 0%	None None

1 - Results relate only to the sample tested. Tested as received from client.

2 - Test Type and Species RBT = Rainbow Trout 96-hour 100% Effluent Concentration Acute Lethality Test
DM = *Daphnia magna* 48-hour 100% Effluent Concentration Acute Lethality Test

3 - Most regulations regard ≤50% mortality to be a "pass". Check your applicable regulatory requirements.

TEST PROTOCOLS:

Environment Canada, "Biological Test Method: Reference Method for Determining Acute Lethality of Effluents to Rainbow Trout", Environmental Technology Centre, Ottawa, Ontario, Report EPS 1/RM/13 Second Edition - December 2000, including May 2007, February 2016 and December 2023 Amendments. (Nautilus Test Method RT-SC-R1.7)

Environment Canada, "Biological Test Method: Reference Method for Determining Acute Lethality of Effluents to *Daphnia magna*", Environmental Technology Centre, Ottawa, Ontario, Report EPS 1/RM/14 Second Edition - December 2000, including February 2016 Amendment. (Nautilus Test Method DM-SC-R1.7)

Testing Laboratory:

Nautilus Environmental Company Inc.,
704 Mara St., Suite 122,
Point Edward, Ontario, N7V 1X4

CALA Testing Accreditation No. A1225

This laboratory is accredited by the Canadian Association for Laboratory Accreditation Inc. (CALA) to ISO/IEC 17025, and accreditation is limited to the tests on the laboratory's scope of testing.

TEST RESULTS APPROVED BY:

Date: 2024-05-01

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Ken Ferguson
Senior Biologist

NAUTILUS ENVIRONMENTAL
Suite 122, 704 Mara Street
Point Edward, ON
N7V 1X4
Tel. (519) 339-8787

TOXICITY TEST REPORT

Rainbow Trout
EPS 1/RM/13

SAMPLE IDENTIFICATION

Sample Number :	9830-0012410		
Company :	Rowan Williams Davies & Irwin	Sampling Date :	2024-04-12
Location :	Windsor, ON	Sampling Time :	AM
Substance :	SS1	Date Received :	2024-04-12
Sampling Method :	Grab	Time Received :	15:00
Sampled By :	Jake A.	Temperature at Receipt :	11.5 °C
Sample Description :	Cloudy Brown	Date Tested :	2024-04-15

Test Method(s) : Reference Method for Determining Acute Lethality of Liquid Effluents to Rainbow Trout. Environment Canada, EPS 1/RM/13 (2nd Edition, December 2000, with May 2007, February 2016 and December 2023 amendments)

96-HOUR TEST RESULTS

Substance	Effect	Value
Control	Mean Impairment	0.0 %
	Mean Mortality	0.0 %
100%	Mean Impairment	0.0 %
	Mean Mortality	0.0 %

The results reported relate only to the sample tested and as received.

TEST ORGANISM

Test Organism :	*Oncorhynchus mykiss*	Mean Fork Length :	51.1 mm
Organism Batch :	LF240214-1	Range of Fork Lengths :	45 - 58 mm
Control Sample Size :	10	Mean Wet Weight :	1.4 g
Cumulative stock tank mortality rate :	0.6% (previous 7 days)	Organism Loading Rate :	0.4 g/L
Control organisms showing stress :	0 (at test completion)		

TEST CONDITIONS

Sample Treatment :	None	Volume Tested (L) :	35
pH Adjustment :	None	Number of Replicates :	1
Test Aeration :	Yes	Organisms Per Replicate :	10
Pre-aeration/Aeration Rate :	6.5 ± 0.26 mL/min/L	Organisms Per Test Level :	10
Duration of Pre-Aeration :	30 minutes	Test Method Deviation(s) :	None

REFERENCE TOXICANT DATA

Toxicant :	Zinc	LC50 :	0.24 mg/L
Organism Batch :	LF240214	95% Confidence Limits :	(0.17 mg/L ; 0.34 mg/L)
Date Tested :	2024-03-08	Historical Mean LC50 :	0.34 mg/L
Statistical Method :	Binomial Method α=0%	Warning Limits (± 2SD) :	(0.14 mg/L ; 0.80 mg/L)

COMMENTS

•All test validity criteria as specified in the test method were satisfied.

Approved By : Ken Ferguson
Senior Biologist

This laboratory is accredited by the Canadian Association for Laboratory Accreditation Inc. (CALA) to ISO/IEC 17025, and accreditation is limited to the tests on the laboratory's scope of testing.

Sample Number : 9830-0012410

TEST DATA

	pH	Dissolved O_2 (mg/L)	O_2 Saturation (%)[3]	Conductivity (µmhos/cm)	Temperature (°C)
Initial Water Chemistry (100%) :	7.7	8.1	81	635	15.0
After 30 min pre-aeration :	7.7	8.8	88	627	15.0

0 HOURS

Date & Time 2024-04-15 11:55
Analyst(s) : DS

Concentration	Dead	Impaired	pH	Dissolved O_2	O_2 Saturation[3]	Conductivity	Temperature
Control	0	0	7.8	10.3	100	225	14.0
100%	0	0	7.7	8.8	88	627	15.0

Notes:

24 HOURS

Date & Time 2024-04-16 9:00
Analyst(s) : DS

Concentration	Dead	Impaired	pH	Dissolved O_2	O_2 Saturation[3]	Conductivity	Temperature
Control	0	0	–	–	–	–	–
100%	0	0	–	–	–	–	–

Notes:

48 HOURS

Date & Time 2024-04-17 9:05
Analyst(s) : KK

Concentration	Dead	Impaired	pH	Dissolved O_2	O_2 Saturation[3]	Conductivity	Temperature
Control	0	0	–	–	–	–	–
100%	0	0	–	–	–	–	–

Notes:

72 HOURS

Date & Time 2024-04-18 9:40
Analyst(s) : DS

Concentration	Dead	Impaired	pH	Dissolved O_2	O_2 Saturation[3]	Conductivity	Temperature
Control	0	0	–	–	–	–	–
100%	0	0	–	–	–	–	–

Notes:

96 HOURS

Date & Time 2024-04-19 12:00
Analyst(s) : DS

Concentration	Dead	Impaired	pH	Dissolved O_2	O_2 Saturation[3]	Conductivity	Temperature
Control	0	0	7.8	9.0	90.0	227	15.0
100%	0	0	8.0	8.8	88.0	645	15.0

Notes:

"–" = not measured/not required

[3] adjusted for temperature and barometric pressure

Test Data Reviewed By : EP
Date : 2024-04-26

NAUTILUS ENVIRONMENTAL
Suite 122, 704 Mara Street
Point Edward, ON
N7V 1X4
Tel. (519) 339-8787

TOXICITY TEST REPORT

Daphnia magna
EPS 1/RM/14

SAMPLE IDENTIFICATION

Sample Number :	9830-0012410		
Company :	Rowan Williams Davies & Irwin	Sampling Date :	2024-04-12
Location :	Windsor, ON	Sampling Time :	AM
Substance :	SS1	Date Received :	2024-04-12
Sampling Method :	Grab	Time Received :	15:00
Sampled By :	Jake A.	Temperature at Receipt :	11.5 °C
Sample Description :	Cloudy Brown	Date Tested :	2024-04-15

Test Method : Reference Method for Determining Acute Lethality of Effluents to *Daphnia magna* . Environment Canada EPS 1/RM/14 (Second Edition, December 2000, with February 2016 amendments).

48-HOUR TEST RESULTS

Substance	Effect	Value
Control	Mean Immobility	0.0 %
	Mean Mortality	0.0 %
100%	Mean Immobility	0.0 %
	Mean Mortality	0.0 %

The results reported relate only to the sample tested and as received.

TEST ORGANISM

Species :	*Daphnia magna*	Time to First Brood :	8 days
Culture Mortality :	0% (prev. 7 days)	Mean Brood Size :	25.0

TEST CONDITIONS

Sample Treatment :	None	Number of Replicates :	3
pH Adjustment :	No	Organisms per Replicate :	10
Pre-aeration Rate :	28.8 ± 2 mL/min/L	Organisms per Test Level :	30
Duration of Pre-Aeration :	30 minutes	Organism Loading Rate :	25.0 mL/organism
Test Aeration :	None	Impaired Control Organisms :	0.0%
Hardness Adjustment :	No	Test Method Deviation(s) :	None

REFERENCE TOXICANT DATA

Toxicant :	Zinc	LC50 :	1.14 mg/L
Date Tested :	2024-04-08	95% Confidence Limits :	(0.95 mg/L; 1.38 mg/L)
Statistical Method :	Untrimmed Spearman-Karber α=0%	Historical Mean LC50 :	0.90 mg/L
		Warning Limits (± 2SD) :	(0.44 mg/L; 1.85 mg/L)

COMMENTS

•All test validity criteria as specified in the test method were satisfied.

Approved By : Ken Ferguson
Senior Biologist

This laboratory is accredited by the Canadian Association for Laboratory Accreditation Inc. (CALA) to ISO/IEC 17025, and accreditation is limited to the tests on the laboratory's scope of testing.

Sample Number : 9830-0012410

TEST DATA

	pH	Dissolved O_2 (mg/L)	Conductivity (µmhos/cm)	Temperature (°C)	O_2 Saturation (%)*	Hardness (as $CaCO_3$)
Initial Chemistry (100%) :	7.8	9.4	630	19	101	1364 mg/L

0 HOURS

Date & Time : 2024-04-15 9:45
Analyst(s) : EP

Concentration (%)	Replicate	Dead	Immobile	pH	Dissolved O_2	Conductivity	Temperature	O_2 Saturation*	Hardness
Control	A	0	0	8.0	8.8	601	20	98	190 mg/L
Control	B	0	0	-	-	-	-	-	-
Control	C	0	0	-	-	-	-	-	-
100	A	0	0	7.8	9.3	627	19	100	1364
100	B	0	0	-	-	-	-	-	-
100	C	0	0	-	-	-	-	-	-

Notes:

24 HOURS

Date & Time : 2024-04-16 10:16
Analyst(s) : DS

Concentration (%)	Replicate	Dead	Immobile	pH	Dissolved O_2	Conductivity	Temperature	O_2 Saturation*
Control	A	–	0	-	-	-	-	-
Control	B	–	0	-	-	-	-	-
Control	C	–	0	-	-	-	-	-
100	A	–	0	-	-	-	-	-
100	B	–	0	-	-	-	-	-
100	C	–	0	-	-	-	-	-

Notes:

48 HOURS

Date & Time : 2024-04-17 9:20
Analyst(s) : KP

Concentration (%)	Replicate	Dead	Immobile	pH	Dissolved O_2	Conductivity	Temperature	O_2 Saturation*
Control	A	0	0	8.0	9.0	628	19	99
Control	B	0	0	-	-	-	-	-
Control	C	0	0	-	-	-	-	-
100	A	0	0	8.2	8.4	635	19	92
100	B	0	0	-	-	-	-	-
100	C	0	0	-	-	-	-	-

"–" = not measured/not required

* adjusted for temperature and barometric pressure

Test Data Reviewed By : EP
Date : 2024-04-26

NAUTILUS ENVIRONMENTAL

Certificate of Analysis

ACUTE LETHALITY BIOASSAY REPORT
(Single-Concentration Test)

CLIENT:

RWDI Air Inc., 4510 Rhodes Drive, Suite 530, Windsor, ON N8W 5K5

TEST RESULTS:

Sample Name[1]	Sample Number	Date Collected	Date Received	Date Tested	Test Species[2]	Percent Mortality[3]	Method Deviations
SP2	9830-0012411	2024-04-24	2024-04-24	2024-04-25 2024-04-25	RBT DM	0% 0%	None None

1 - Results relate only to the sample tested. Tested as received from client.

2 - Test Type and Species RBT = Rainbow Trout 96-hour 100% Effluent Concentration Acute Lethality Test
DM = *Daphnia magna* 48-hour 100% Effluent Concentration Acute Lethality Test

3 - Most regulations regard ≤50% mortality to be a "pass". Check your applicable regulatory requirements.

TEST PROTOCOLS:

Environment Canada, "Biological Test Method: Reference Method for Determining Acute Lethality of Effluents to Rainbow Trout", Environmental Technology Centre, Ottawa, Ontario, Report EPS 1/RM/13 Second Edition - December 2000, including May 2007, February 2016 and December 2023 Amendments. (Nautilus Test Method RT-SC-R1.7)

Environment Canada, "Biological Test Method: Reference Method for Determining Acute Lethality of Effluents to *Daphnia magna*", Environmental Technology Centre, Ottawa, Ontario, Report EPS 1/RM/14 Second Edition - December 2000, including February 2016 Amendment. (Nautilus Test Method DM-SC-R1.7)

Testing Laboratory:

Nautilus Environmental Company Inc.,
704 Mara St., Suite 122,
Point Edward, Ontario, N7V 1X4

CALA Testing Accreditation No. A1225

This laboratory is accredited by the Canadian Association for Laboratory Accreditation Inc. (CALA) to ISO/IEC 17025, and accreditation is limited to the tests on the laboratory's scope of testing.

TEST RESULTS APPROVED BY:

Date: 2024-04-29

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Ken Ferguson
Senior Biologist

NAUTILUS ENVIRONMENTAL
Suite 122, 704 Mara Street
Point Edward, ON
N7V 1X4
Tel. (519) 339-8787

TOXICITY TEST REPORT

Rainbow Trout
EPS 1/RM/13

SAMPLE IDENTIFICATION

Sample Number :	9830-0012411		
Company :	Rowan Williams Davies & Irwin	Sampling Date :	2024-04-24
Location :	Windsor, ON	Sampling Time :	9:30
Substance :	SP2	Date Received :	2024-04-24
Sampling Method :	Grab	Time Received :	15:55
Sampled By :	N/A	Temperature at Receipt :	7.3 °C
Sample Description :	Cloudy Green	Date Tested :	2024-04-25

Test Method(s) : Reference Method for Determining Acute Lethality of Liquid Effluents to Rainbow Trout. Environment Canada, EPS 1/RM/13 (2nd Edition, December 2000, with May 2007, February 2016 and December 2023 amendments)

96-HOUR TEST RESULTS

Substance	Effect	Value
Control	Mean Impairment	0.0 %
	Mean Mortality	0.0 %
100%	Mean Impairment	0.0 %
	Mean Mortality	0.0 %

The results reported relate only to the sample tested and as received.

TEST ORGANISM

Test Organism :	*Oncorhynchus mykiss*	Mean Fork Length :	49.6 mm
Organism Batch :	LF240306-1	Range of Fork Lengths :	44 - 54 mm
Control Sample Size :	10	Mean Wet Weight :	1.2 g
Cumulative stock tank mortality rate :	0.51% (previous 7 days)	Organism Loading Rate :	0.4 g/L
Control organisms showing stress :	0 (at test completion)		

TEST CONDITIONS

Sample Treatment :	None	Volume Tested (L) :	30
pH Adjustment :	None	Number of Replicates :	1
Test Aeration :	Yes	Organisms Per Replicate :	10
Pre-aeration/Aeration Rate :	6.5 ± 0.26 mL/min/L	Organisms Per Test Level :	10
Duration of Pre-Aeration :	60 minutes	Test Method Deviation(s) :	None

REFERENCE TOXICANT DATA

Toxicant :	Zinc	LC50 :	0.28 mg/L
Organism Batch :	LF240306	95% Confidence Limits :	(0.21 mg/L ; 0.37 mg/L)
Date Tested :	2024-03-28	Historical Mean LC50 :	0.32 mg/L
Statistical Method :	Probit Analysis	Warning Limits (± 2SD) :	(0.14 mg/L ; 0.73 mg/L)

COMMENTS

•All test validity criteria as specified in the test method were satisfied.

Approved By : Ken Ferguson
Senior Biologist

This laboratory is accredited by the Canadian Association for Laboratory Accreditation Inc. (CALA) to ISO/IEC 17025, and accreditation is limited to the tests on the laboratory's scope of testing.

Sample Number : 9830-0012411

TEST DATA

	pH	Dissolved O_2 (mg/L)	O_2 Saturation (%)[3]	Conductivity (µmhos/cm)	Temperature (°C)
Initial Water Chemistry (100%) :	8.4	10.4	103	611	15.0
After 30 min pre-aeration :	8.4	10.3	103	609	15.0

0 HOURS

Date & Time 2024-04-25 12:40
Analyst(s) : KK

Concentration	Dead	Impaired	pH	Dissolved O_2	O_2 Saturation[3]	Conductivity	Temperature
Control	0	0	7.8	10.0	96	235	14.0
100%	0	0	8.4	10.2	100	619	15.0

Notes:

24 HOURS

Date & Time 2024-04-26 9:00
Analyst(s) : KK

Concentration	Dead	Impaired	pH	Dissolved O_2	O_2 Saturation[3]	Conductivity	Temperature
Control	0	0	–	–	–	–	–
100%	0	0	–	–	–	–	–

Notes:

48 HOURS

Date & Time 2024-04-27 8:40
Analyst(s) : MB

Concentration	Dead	Impaired	pH	Dissolved O_2	O_2 Saturation[3]	Conductivity	Temperature
Control	0	0	–	–	–	–	–
100%	0	0	–	–	–	–	–

Notes:

72 HOURS

Date & Time 2024-04-28 9:00
Analyst(s) : MB

Concentration	Dead	Impaired	pH	Dissolved O_2	O_2 Saturation[3]	Conductivity	Temperature
Control	0	0	–	–	–	–	–
100%	0	0	–	–	–	–	–

Notes:

96 HOURS

Date & Time 2024-04-29 13:55
Analyst(s) : KK

Concentration	Dead	Impaired	pH	Dissolved O_2	O_2 Saturation[3]	Conductivity	Temperature
Control	0	0	7.6	9.3	92.0	277	15.0
100%	0	0	7.7	9.2	90.0	686	14.0

Notes:

"–" = not measured/not required

[3] adjusted for temperature and barometric pressure

Test Data Reviewed By : EP
Date : 2024-04-30

NAUTILUS ENVIRONMENTAL
Suite 122, 704 Mara Street
Point Edward, ON
N7V 1X4
Tel. (519) 339-8787

TOXICITY TEST REPORT

Daphnia magna
EPS 1/RM/14

SAMPLE IDENTIFICATION

Sample Number :	9830-0012411		
Company :	Rowan Williams Davies & Irwin	Sampling Date :	2024-04-24
Location :	Windsor, ON	Sampling Time :	9:30
Substance :	SP2	Date Received :	2024-04-24
Sampling Method :	Grab	Time Received :	15:55
Sampled By :	N/A	Temperature at Receipt :	7.3 °C
Sample Description :	Cloudy Green	Date Tested :	2024-04-25

Test Method : Reference Method for Determining Acute Lethality of Effluents to *Daphnia magna* . Environment Canada EPS 1/RM/14 (Second Edition, December 2000, with February 2016 amendments).

48-HOUR TEST RESULTS

Substance	Effect	Value
Control	Mean Immobility	0.0 %
	Mean Mortality	0.0 %
100%	Mean Immobility	0.0 %
	Mean Mortality	0.0 %

The results reported relate only to the sample tested and as received.

TEST ORGANISM

Species :	*Daphnia magna*	Time to First Brood :	8 days
Culture Mortality :	0% (prev. 7 days)	Mean Brood Size :	54.3

TEST CONDITIONS

Sample Treatment :	None	Number of Replicates :	3
pH Adjustment :	No	Organisms per Replicate :	10
Pre-aeration Rate :	36.5 ± 2 mL/min/L	Organisms per Test Level :	30
Duration of Pre-Aeration :	30 minutes	Organism Loading Rate :	25.0 mL/organism
Test Aeration :	None	Impaired Control Organisms :	0.0%
Hardness Adjustment :	No	Test Method Deviation(s) :	None

REFERENCE TOXICANT DATA

Toxicant :	Zinc	LC50 :	0.91 mg/L
Date Tested :	2024-04-22	95% Confidence Limits :	(0.66 mg/L; 1.24 mg/L)
Statistical Method :	Untrimmed Spearman-Karber α=0%	Historical Mean LC50 :	0.92 mg/L
		Warning Limits (± 2SD) :	(0.45 mg/L; 1.88 mg/L)

COMMENTS

•All test validity criteria as specified in the test method were satisfied.

Approved By : Ken Ferguson
Senior Biologist

This laboratory is accredited by the Canadian Association for Laboratory Accreditation Inc. (CALA) to ISO/IEC 17025, and accreditation is limited to the tests on the laboratory's scope of testing.

Sample Number : 9830-0012411

TEST DATA

	pH	Dissolved O_2 (mg/L)	Conductivity (µmhos/cm)	Temperature (°C)	O_2 Saturation (%)*	Hardness (as $CaCO_3$)
Initial Chemistry (100%) :	8.5	10.3	638	20	113	460 mg/L

0 HOURS

Date & Time : 2024-04-25 10:25
Analyst(s) : KP

Concentration (%)	Replicate	Dead	Immobile	pH	Dissolved O_2	Conductivity	Temperature	O_2 Saturation*	Hardness
Control	A	0	0	8.1	8.3	621	20	91	184 mg/L
Control	B	0	0	-	-	-	-	-	-
Control	C	0	0	-	-	-	-	-	-
100	A	0	0	8.4	9.5	636	20	104	460
100	B	0	0	-	-	-	-	-	-
100	C	0	0	-	-	-	-	-	-

Notes:

24 HOURS

Date & Time : 2024-04-26 11:34
Analyst(s) : KP

Concentration (%)	Replicate	Dead	Immobile	pH	Dissolved O_2	Conductivity	Temperature	O_2 Saturation*
Control	A	–	0	-	-	-	-	-
Control	B	–	0	-	-	-	-	-
Control	C	–	0	-	-	-	-	-
100	A	–	0	-	-	-	-	-
100	B	–	0	-	-	-	-	-
100	C	–	0	-	-	-	-	-

Notes:

48 HOURS

Date & Time : 2024-04-27 10:55
Analyst(s) : KP

Concentration (%)	Replicate	Dead	Immobile	pH	Dissolved O_2	Conductivity	Temperature	O_2 Saturation*
Control	A	0	0	8.1	8.6	628	20	95
Control	B	0	0	-	-	-	-	-
Control	C	0	0	-	-	-	-	-
100	A	0	0	8.0	8.6	647	20	95
100	B	0	0	-	-	-	-	-
100	C	0	0	-	-	-	-	-

"–" = not measured/not required

* adjusted for temperature and barometric pressure

Test Data Reviewed By : EP
Date : 2024-04-30

NAUTILUS ENVIRONMENTAL

Certificate of Analysis

ACUTE LETHALITY BIOASSAY REPORT
(Single-Concentration Test)

CLIENT:

RWDI Air Inc., 4510 Rhodes Drive, Suite 530, Windsor, ON N8W 5K5

TEST RESULTS:

Sample Name[1]	Sample Number	Date Collected	Date Received	Date Tested	Test Species[2]	Percent Mortality[3]	Method Deviations
SS1	9830-0012412	2024-04-30	2024-04-30	2024-05-02 2024-04-30	RBT DM	0% 0%	None None

1 - Results relate only to the sample tested. Tested as received from client.

2 - Test Type and Species RBT = Rainbow Trout 96-hour 100% Effluent Concentration Acute Lethality Test
DM = *Daphnia magna* 48-hour 100% Effluent Concentration Acute Lethality Test

3 - Most regulations regard ≤50% mortality to be a "pass". Check your applicable regulatory requirements.

TEST PROTOCOLS:

Environment Canada, "Biological Test Method: Reference Method for Determining Acute Lethality of Effluents to Rainbow Trout", Environmental Technology Centre, Ottawa, Ontario, Report EPS 1/RM/13 Second Edition - December 2000, including May 2007, February 2016 and December 2023 Amendments. (Nautilus Test Method RT-SC-R1.7)

Environment Canada, "Biological Test Method: Reference Method for Determining Acute Lethality of Effluents to *Daphnia magna*", Environmental Technology Centre, Ottawa, Ontario, Report EPS 1/RM/14 Second Edition - December 2000, including February 2016 Amendment. (Nautilus Test Method DM-SC-R1.7)

Testing Laboratory:

Nautilus Environmental Company Inc.,
704 Mara St., Suite 122,
Point Edward, Ontario, N7V 1X4

CALA Testing Accreditation No. A1225

This laboratory is accredited by the Canadian Association for Laboratory Accreditation Inc. (CALA) to ISO/IEC 17025, and accreditation is limited to the tests on the laboratory's scope of testing.

TEST RESULTS APPROVED BY:

Date: 2024-05-16

C. D'Andrea

Carol D'Andrea
Laboratory Supervisor

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NAUTILUS ENVIRONMENTAL
Suite 122, 704 Mara Street
Point Edward, ON
N7V 1X4
Tel. (519) 339-8787

TOXICITY TEST REPORT

Rainbow Trout
EPS 1/RM/13

SAMPLE IDENTIFICATION

Sample Number :	9830-0012412		
Company :	Rowan Williams Davies & Irwin	Sampling Date :	2024-04-30
Location :	Windsor, ON	Sampling Time :	AM
Substance :	SS1	Date Received :	2024-04-30
Sampling Method :	Grab	Time Received :	14:20
Sampled By :	N/A	Temperature at Receipt :	21 °C
Sample Description :	Cloudy, Brown	Date Tested :	2024-05-02

Test Method(s) : Reference Method for Determining Acute Lethality of Liquid Effluents to Rainbow Trout. Environment Canada, EPS 1/RM/13 (2nd Edition, December 2000, with May 2007, February 2016 and December 2023 amendments)

96-HOUR TEST RESULTS

Substance	Effect	Value
Control	Mean Impairment	0.0 %
	Mean Mortality	0.0 %
100%	Mean Impairment	0.0 %
	Mean Mortality	0.0 %

The results reported relate only to the sample tested and as received.

TEST ORGANISM

Test Organism :	*Oncorhynchus mykiss*	Mean Fork Length :	51.4 mm
Organism Batch :	LF240306	Range of Fork Lengths :	45 - 58 mm
Control Sample Size :	10	Mean Wet Weight :	1.3 g
Cumulative stock tank mortality rate :	0% (previous 7 days)	Organism Loading Rate :	0.4 g/L
Control organisms showing stress :	0 (at test completion)		

TEST CONDITIONS

Sample Treatment :	None	Volume Tested (L) :	30
pH Adjustment :	None	Number of Replicates :	1
Test Aeration :	Yes	Organisms Per Replicate :	10
Pre-aeration/Aeration Rate :	6.5 ± 0.26 mL/min/L	Organisms Per Test Level :	10
Duration of Pre-Aeration :	30 minutes	Test Method Deviation(s) :	None

REFERENCE TOXICANT DATA

Toxicant :	Zinc	LC50 :	0.28 mg/L
Organism Batch :	LF240306	95% Confidence Limits :	(0.21 mg/L ; 0.37 mg/L)
Date Tested :	2024-03-28	Historical Mean LC50 :	0.32 mg/L
Statistical Method :	Probit Analysis	Warning Limits (± 2SD) :	(0.14 mg/L ; 0.73 mg/L)

COMMENTS

•All test validity criteria as specified in the test method were satisfied.

Approved By : Carol D'Andrea

Laboratory Supervisor

This laboratory is accredited by the Canadian Association for Laboratory Accreditation Inc. (CALA) to ISO/IEC 17025, and accreditation is limited to the tests on the laboratory's scope of testing.

Sample Number : 9830-0012412

TEST DATA

	pH	Dissolved O_2 (mg/L)	O_2 Saturation (%)[3]	Conductivity (µmhos/cm)	Temperature (°C)
Initial Water Chemistry (100%) :	7.7	9.1	90	626	14.0
After 30 min pre-aeration :	7.8	9.4	83	620	14.0

0 HOURS

Date & Time 2024-05-02 12:30
Analyst(s) : CS/KK

Concentration	Dead	Impaired	pH	Dissolved O_2	O_2 Saturation[3]	Conductivity	Temperature
Control	0	0	7.9	10.1	100	242	15.0
100%	0	0	7.8	9.4	83	620	14.0

Notes:

24 HOURS

Date & Time 2024-05-03 9:05
Analyst(s) : KK

Concentration	Dead	Impaired	pH	Dissolved O_2	O_2 Saturation[3]	Conductivity	Temperature
Control	0	0	–	–	–	–	–
100%	0	0	–	–	–	–	–

Notes:

48 HOURS

Date & Time 2024-05-04 9:15
Analyst(s) : KK

Concentration	Dead	Impaired	pH	Dissolved O_2	O_2 Saturation[3]	Conductivity	Temperature
Control	0	0	–	–	–	–	–
100%	0	0	–	–	–	–	–

Notes:

72 HOURS

Date & Time 2024-05-05 9:40
Analyst(s) : KK

Concentration	Dead	Impaired	pH	Dissolved O_2	O_2 Saturation[3]	Conductivity	Temperature
Control	0	0	–	–	–	–	–
100%	0	0	–	–	–	–	–

Notes:

96 HOURS

Date & Time 2024-05-06 13:45
Analyst(s) : CS

Concentration	Dead	Impaired	pH	Dissolved O_2	O_2 Saturation[3]	Conductivity	Temperature
Control	0	0	8.0	9.2	92.0	238	15.0
100%	0	0	8.3	9.2	91.0	595	15.0

Notes:

"–" = not measured/not required

[3] adjusted for temperature and barometric pressure

Test Data Reviewed By : EP
Date : 2024-05-16

NAUTILUS ENVIRONMENTAL
Suite 122, 704 Mara Street
Point Edward, ON
N7V 1X4
Tel. (519) 339-8787

TOXICITY TEST REPORT

Daphnia magna
EPS 1/RM/14

SAMPLE IDENTIFICATION

Sample Number :	9830-0012412		
Company :	Rowan Williams Davies & Irwin	Sampling Date :	2024-04-30
Location :	Windsor, ON	Sampling Time :	AM
Substance :	SS1	Date Received :	2024-04-30
Sampling Method :	Grab	Time Received :	14:20
Sampled By :	N/A	Temperature at Receipt :	21 °C
Sample Description :	Cloudy, Brown	Date Tested :	2024-04-30

Test Method : Reference Method for Determining Acute Lethality of Effluents to *Daphnia magna* . Environment Canada EPS 1/RM/14 (Second Edition, December 2000, with February 2016 amendments).

48-HOUR TEST RESULTS

Substance	Effect	Value
Control	Mean Immobility	0.0 %
	Mean Mortality	0.0 %
100%	Mean Immobility	0.0 %
	Mean Mortality	0.0 %

The results reported relate only to the sample tested and as received.

TEST ORGANISM

Species :	*Daphnia magna*	Time to First Brood :	8 days
Culture Mortality :	0% (prev. 7 days)	Mean Brood Size :	51.7

TEST CONDITIONS

Sample Treatment :	None	Number of Replicates :	3
pH Adjustment :	No	Organisms per Replicate :	10
Pre-aeration Rate :	N/A ± 2 mL/min/L	Organisms per Test Level :	30
Duration of Pre-Aeration :	0 minutes	Organism Loading Rate :	25.0 mL/organism
Test Aeration :	None	Impaired Control Organisms :	0.0%
Hardness Adjustment :	No	Test Method Deviation(s) :	None

REFERENCE TOXICANT DATA

Toxicant :	Zinc	LC50 :	0.91 mg/L
Date Tested :	2024-04-22	95% Confidence Limits :	(0.66 mg/L; 1.24 mg/L)
Statistical Method :	Untrimmed Spearman-Karber α=0%	Historical Mean LC50 :	0.92 mg/L
		Warning Limits (± 2SD) :	(0.45 mg/L; 1.88 mg/L)

COMMENTS

•All test validity criteria as specified in the test method were satisfied.

Approved By : Carol D'Andrea
Laboratory Supervisor

This laboratory is accredited by the Canadian Association for Laboratory Accreditation Inc. (CALA) to ISO/IEC 17025, and accreditation is limited to the tests on the laboratory's scope of testing.

Sample Number : 9830-0012412

TEST DATA

	pH	Dissolved O_2 (mg/L)	Conductivity (µmhos/cm)	Temperature (°C)	O_2 Saturation (%)*	Hardness (as $CaCO_3$)
Initial Chemistry (100%) :	7.8	8.4	632	21	96	270 mg/L

0 HOURS

Date & Time : 2024-04-30 15:35
Analyst(s) : KP

Concentration (%)	Replicate	Dead	Immobile	pH	Dissolved O_2	Conductivity	Temperature	O_2 Saturation*	Hardness
Control	A	0	0	8.0	8.4	660	21	98	194 mg/L
Control	B	0	0	-	-	-	-	-	-
Control	C	0	0	-	-	-	-	-	-
100	A	0	0	7.8	8.4	632	21	96	270
100	B	0	0	-	-	-	-	-	-
100	C	0	0	-	-	-	-	-	-

Notes:

24 HOURS

Date & Time : 2024-05-01 10:47
Analyst(s) : KP

Concentration (%)	Replicate	Dead	Immobile	pH	Dissolved O_2	Conductivity	Temperature	O_2 Saturation*
Control	A	–	0	-	-	-	-	-
Control	B	–	0	-	-	-	-	-
Control	C	–	0	-	-	-	-	-
100	A	–	0	-	-	-	-	-
100	B	–	0	-	-	-	-	-
100	C	–	0	-	-	-	-	-

Notes: Very difficult to see through sample water; neonates seem to be all mobile.

48 HOURS

Date & Time : 2024-05-02 16:20
Analyst(s) : CS

Concentration (%)	Replicate	Dead	Immobile	pH	Dissolved O_2	Conductivity	Temperature	O_2 Saturation*
Control	A	0	0	8.0	8.3	680	19	90
Control	B	0	0	-	-	-	-	-
Control	C	0	0	-	-	-	-	-
100	A	0	0	8.3	8.1	657	19	88
100	B	0	0	-	-	-	-	-
100	C	0	0	-	-	-	-	-

"–" = not measured/not required

* adjusted for temperature and barometric pressure

Test Data Reviewed By : EP
Date : 2024-05-16

NAUTILUS ENVIRONMENTAL

Certificate of Analysis

ACUTE LETHALITY BIOASSAY REPORT
(Single-Concentration Test)

CLIENT:

RWDI Air Inc., 4510 Rhodes Drive, Suite 530, Windsor, ON N8W 5K5

TEST RESULTS:

Sample Name[1]	Sample Number	Date Collected	Date Received	Date Tested	Test Species[2]	Percent Mortality[3]	Method Deviations
SP1	9830-0012404	2024-04-12	2024-04-12	2024-04-15 2024-04-14	RBT DM	0% 0%	None None

1 - Results relate only to the sample tested. Tested as received from client.

2 - Test Type and Species RBT = Rainbow Trout 96-hour 100% Effluent Concentration Acute Lethality Test
DM = *Daphnia magna* 48-hour 100% Effluent Concentration Acute Lethality Test

3 - Most regulations regard ≤50% mortality to be a "pass". Check your applicable regulatory requirements.

TEST PROTOCOLS:

Environment Canada, "Biological Test Method: Reference Method for Determining Acute Lethality of Effluents to Rainbow Trout", Environmental Technology Centre, Ottawa, Ontario, Report EPS 1/RM/13 Second Edition - December 2000, including May 2007, February 2016 and December 2023 Amendments. (Nautilus Test Method RT-SC-R1.7)

Environment Canada, "Biological Test Method: Reference Method for Determining Acute Lethality of Effluents to *Daphnia magna*", Environmental Technology Centre, Ottawa, Ontario, Report EPS 1/RM/14 Second Edition - December 2000, including February 2016 Amendment. (Nautilus Test Method DM-SC-R1.7)

Testing Laboratory:

Nautilus Environmental Company Inc.,
704 Mara St., Suite 122,
Point Edward, Ontario, N7V 1X4

CALA Testing Accreditation No. A1225

This laboratory is accredited by the Canadian Association for Laboratory Accreditation Inc. (CALA) to ISO/IEC 17025, and accreditation is limited to the tests on the laboratory's scope of testing.

TEST RESULTS APPROVED BY:

Date: 2024-05-01

Y:\bioassays\2024\9000\9830-001\9830-0012404 TD

Ken Ferguson
Senior Biologist

NAUTILUS ENVIRONMENTAL
Suite 122, 704 Mara Street
Point Edward, ON
N7V 1X4
Tel. (519) 339-8787

TOXICITY TEST REPORT
Rainbow Trout
EPS 1/RM/13

SAMPLE IDENTIFICATION

Sample Number :	9830-0012404		
Company :	Rowan Williams Davies & Irwin	Sampling Date :	2024-04-12
Location :	Windsor, ON	Sampling Time :	PM
Substance :	SP1	Date Received :	2024-04-12
Sampling Method :	Grab	Time Received :	15:00
Sampled By :	Jake A.	Temperature at Receipt :	11.6 °C
Sample Description :	Cloudy Pale Brown	Date Tested :	2024-04-15

Test Method(s) : Reference Method for Determining Acute Lethality of Liquid Effluents to Rainbow Trout. Environment Canada, EPS 1/RM/13 (2nd Edition, December 2000, with May 2007, February 2016 and December 2023 amendments)

96-HOUR TEST RESULTS

Substance	Effect	Value
Control	Mean Impairment	0.0 %
	Mean Mortality	0.0 %
100%	Mean Impairment	0.0 %
	Mean Mortality	0.0 %

The results reported relate only to the sample tested and as received.

TEST ORGANISM

Test Organism :	*Oncorhynchus mykiss*	Mean Fork Length :	51.1 mm
Organism Batch :	LF240214-1	Range of Fork Lengths :	45 - 58 mm
Control Sample Size :	10	Mean Wet Weight :	1.4 g
Cumulative stock tank mortality rate :	0.6% (previous 7 days)	Organism Loading Rate :	0.4 g/L
Control organisms showing stress :	0 (at test completion)		

TEST CONDITIONS

Sample Treatment :	None	Volume Tested (L) :	35
pH Adjustment :	None	Number of Replicates :	1
Test Aeration :	Yes	Organisms Per Replicate :	10
Pre-aeration/Aeration Rate :	6.5 ± 0.26 mL/min/L	Organisms Per Test Level :	10
Duration of Pre-Aeration :	30 minutes	Test Method Deviation(s) :	None

REFERENCE TOXICANT DATA

Toxicant :	Zinc	LC50 :	0.24 mg/L
Organism Batch :	LF240214	95% Confidence Limits :	(0.17 mg/L ; 0.34 mg/L)
Date Tested :	2024-03-08	Historical Mean LC50 :	0.34 mg/L
Statistical Method :	Binomial Method α=0%	Warning Limits (± 2SD) :	(0.14 mg/L ; 0.80 mg/L)

COMMENTS

•All test validity criteria as specified in the test method were satisfied.

Approved By : Ken Ferguson
Senior Biologist

This laboratory is accredited by the Canadian Association for Laboratory Accreditation Inc. (CALA) to ISO/IEC 17025, and accreditation is limited to the tests on the laboratory's scope of testing.

Sample Number : 9830-0012404

TEST DATA

	pH	Dissolved O_2 (mg/L)	O_2 Saturation (%)[3]	Conductivity (µmhos/cm)	Temperature (°C)
Initial Water Chemistry (100%) :	7.9	9.1	91	657	15.0
After 30 min pre-aeration :	8.0	9.4	94	663	15.0

0 HOURS

Date & Time 2024-04-15 11:55
Analyst(s) : DS

Concentration	Dead	Impaired	pH	Dissolved O_2	O_2 Saturation[3]	Conductivity	Temperature
Control	0	0	7.8	10.3	100	225	14.0
100%	0	0	8.0	9.4	94	663	15.0

Notes:

24 HOURS

Date & Time 2024-04-16 8:55
Analyst(s) : DS

Concentration	Dead	Impaired	pH	Dissolved O_2	O_2 Saturation[3]	Conductivity	Temperature
Control	0	0	–	–	–	–	–
100%	0	0	–	–	–	–	–

Notes:

48 HOURS

Date & Time 2024-04-17 9:05
Analyst(s) : KK

Concentration	Dead	Impaired	pH	Dissolved O_2	O_2 Saturation[3]	Conductivity	Temperature
Control	0	0	–	–	–	–	–
100%	0	0	–	–	–	–	–

Notes:

72 HOURS

Date & Time 2024-04-18 9:35
Analyst(s) : DS

Concentration	Dead	Impaired	pH	Dissolved O_2	O_2 Saturation[3]	Conductivity	Temperature
Control	0	0	–	–	–	–	–
100%	0	0	–	–	–	–	–

Notes:

96 HOURS

Date & Time 2024-04-19 11:48
Analyst(s) : DS

Concentration	Dead	Impaired	pH	Dissolved O_2	O_2 Saturation[3]	Conductivity	Temperature
Control	0	0	7.8	9.0	90.0	227	15.0
100%	0	0	8.0	8.8	88.0	659	15.0

Notes:

"–" = not measured/not required

[3] adjusted for temperature and barometric pressure

Test Data Reviewed By : EP
Date : 2024-04-26

NAUTILUS ENVIRONMENTAL
Suite 122, 704 Mara Street
Point Edward, ON
N7V 1X4
Tel. (519) 339-8787

TOXICITY TEST REPORT

Daphnia magna
EPS 1/RM/14

SAMPLE IDENTIFICATION

Sample Number :	9830-0012404		
Company :	Rowan Williams Davies & Irwin	Sampling Date :	2024-04-12
Location :	Windsor, ON	Sampling Time :	PM
Substance :	SP1	Date Received :	2024-04-12
Sampling Method :	Grab	Time Received :	15:00
Sampled By :	Jake A.	Temperature at Receipt :	11.6 °C
Sample Description :	Cloudy Pale Brown	Date Tested :	2024-04-14

Test Method : Reference Method for Determining Acute Lethality of Effluents to *Daphnia magna* . Environment Canada EPS 1/RM/14 (Second Edition, December 2000, with February 2016 amendments).

48-HOUR TEST RESULTS

Substance	Effect	Value
Control	Mean Immobility	0.0 %
	Mean Mortality	0.0 %
100%	Mean Immobility	0.0 %
	Mean Mortality	0.0 %

The results reported relate only to the sample tested and as received.

TEST ORGANISM

Species :	*Daphnia magna*	Time to First Brood :	8 days
Culture Mortality :	0% (prev. 7 days)	Mean Brood Size :	16.0

TEST CONDITIONS

Sample Treatment :	None	Number of Replicates :	3
pH Adjustment :	No	Organisms per Replicate :	10
Pre-aeration Rate :	27.7 ± 2 mL/min/L	Organisms per Test Level :	30
Duration of Pre-Aeration :	30 minutes	Organism Loading Rate :	25.0 mL/organism
Test Aeration :	None	Impaired Control Organisms :	0.0%
Hardness Adjustment :	No	Test Method Deviation(s) :	None

REFERENCE TOXICANT DATA

Toxicant :	Zinc	LC50 :	1.14 mg/L
Date Tested :	2024-04-08	95% Confidence Limits :	(0.95 mg/L; 1.38 mg/L)
Statistical Method :	Untrimmed Spearman-Karber α=0%	Historical Mean LC50 :	0.90 mg/L
		Warning Limits (± 2SD) :	(0.44 mg/L; 1.85 mg/L)

COMMENTS

•All test validity criteria as specified in the test method were satisfied.

Approved By : Ken Ferguson
Senior Biologist

This laboratory is accredited by the Canadian Association for Laboratory Accreditation Inc. (CALA) to ISO/IEC 17025, and accreditation is limited to the tests on the laboratory's scope of testing.

Sample Number : 9830-0012404

TEST DATA

	pH	Dissolved O_2 (mg/L)	Conductivity (µmhos/cm)	Temperature (°C)	O_2 Saturation (%)*	Hardness (as $CaCO_3$)
Initial Chemistry (100%) :	8.0	9.6	662	19	107	310 mg/L

0 HOURS

Date & Time : 2024-04-14 11:50
Analyst(s) : KP

Concentration (%)	Replicate	Dead	Immobile	pH	Dissolved O_2	Conductivity	Temperature	O_2 Saturation*	Hardness
Control	A	0	0	8.1	8.5	629	20	96	190 mg/L
Control	B	0	0	-	-	-	-	-	-
Control	C	0	0	-	-	-	-	-	-
100	A	0	0	8.0	9.3	653	20	105.6	310
100	B	0	0	-	-	-	-	-	-
100	C	0	0	-	-	-	-	-	-

Notes:

24 HOURS

Date & Time : 2024-04-15 9:00
Analyst(s) : EP

Concentration (%)	Replicate	Dead	Immobile	pH	Dissolved O_2	Conductivity	Temperature	O_2 Saturation*
Control	A	–	0	-	-	-	-	-
Control	B	–	0	-	-	-	-	-
Control	C	–	0	-	-	-	-	-
100	A	–	0	-	-	-	-	-
100	B	–	0	-	-	-	-	-
100	C	–	0	-	-	-	-	-

Notes:

48 HOURS

Date & Time : 2024-04-16 12:10
Analyst(s) : DS

Concentration (%)	Replicate	Dead	Immobile	pH	Dissolved O_2	Conductivity	Temperature	O_2 Saturation*
Control	A	0	0	8.0	8.7	611	19	94
Control	B	0	0	-	-	-	-	-
Control	C	0	0	-	-	-	-	-
100	A	0	0	8.2	8.1	646	19	87
100	B	0	0	-	-	-	-	-
100	C	0	0	-	-	-	-	-

"–" = not measured/not required

* adjusted for temperature and barometric pressure

Test Data Reviewed By : EP
Date : 2024-04-26

NAUTILUS ENVIRONMENTAL

Certificate of Analysis

ACUTE LETHALITY BIOASSAY REPORT
(Single-Concentration Test)

CLIENT:

RWDI Air Inc., 4510 Rhodes Drive, Suite 530, Windsor, ON N8W 5K5

TEST RESULTS:

Sample Name[1]	Sample Number	Date Collected	Date Received	Date Tested	Test Species[2]	Percent Mortality[3]	Method Deviations
SP2	9830-0012414	2024-07-24	2024-07-24	2024-07-25 2024-07-25	RBT DM	20% 0%	None None

1 - Results relate only to the sample tested. Tested as received from client.

2 - Test Type and Species RBT = Rainbow Trout 96-hour 100% Effluent Concentration Acute Lethality Test

DM = *Daphnia magna* 48-hour 100% Effluent Concentration Acute Lethality Test

3 - Most regulations regard ≤50% mortality to be a "pass". Check your applicable regulatory requirements.

TEST PROTOCOLS:

Environment Canada, "Biological Test Method: Reference Method for Determining Acute Lethality of Effluents to Rainbow Trout", Environmental Technology Centre, Ottawa, Ontario, Report EPS 1/RM/13 Second Edition - December 2000, including May 2007, February 2016 and December 2023 Amendments. (Nautilus Test Method RT-SC-R1.7)

Environment Canada, "Biological Test Method: Reference Method for Determining Acute Lethality of Effluents to *Daphnia magna*", Environmental Technology Centre, Ottawa, Ontario, Report EPS 1/RM/14 Second Edition - December 2000, including February 2016 Amendment. (Nautilus Test Method DM-SC-R1.7)

Testing Laboratory:

Nautilus Environmental Company Inc.,
704 Mara St., Suite 122,
Point Edward, Ontario, N7V 1X4

CALA Testing Accreditation No. A1225

This laboratory is accredited by the Canadian Association for Laboratory Accreditation Inc. (CALA) to ISO/IEC 17025, and accreditation is limited to the tests on the laboratory's scope of testing.

TEST RESULTS APPROVED BY:

Date: 2024-07-31

Y:\bioassays\2024\9000\9830-001\9830-0012414 TD

Ken Ferguson
Senior Biologist

NAUTILUS ENVIRONMENTAL
Suite 122, 704 Mara Street
Point Edward, ON
N7V 1X4
Tel. (519) 339-8787

TOXICITY TEST REPORT

Rainbow Trout
EPS 1/RM/13

SAMPLE IDENTIFICATION

Sample Number :	9830-0012414		
Company :	Rowan Williams Davies & Irwin	Sampling Date :	2024-07-24
Location :	Windsor, ON	Sampling Time :	9:50
Substance :	**SP2**	Date Received :	2024-07-24
Sampling Method :	Grab	Time Received :	16:30
Sampled By :	Jake Artibrllo	Temperature at Receipt :	22.5 °C
Sample Description :	Cloudy, Light Green	Date Tested :	2024-07-25

Test Method(s) : Reference Method for Determining Acute Lethality of Liquid Effluents to Rainbow Trout. Environment Canada, EPS 1/RM/13 (2nd Edition, December 2000, with May 2007, February 2016, and December 2023 amendments).

96-HOUR TEST RESULTS

Substance	Effect	Value
Control	Mean Impairment	0.0 %
	Mean Mortality	10.0 %
100%	Mean Impairment	0.0 %
	Mean Mortality	20.0 %

The results reported relate only to the sample tested and as received.

TEST ORGANISM

Test Organism :	*Oncorhynchus mykiss*	Mean Fork Length :	36.4 mm
Organism Batch :	CC240531	Range of Fork Lengths :	31 - 40 mm
Control Sample Size :	9	Mean Wet Weight :	0.3 g
Cumulative stock tank mortality rate :	0% (previous 7 days)	Organism Loading Rate :	0.1 g/L
Control organisms showing stress :	10% (at test completion)		

TEST CONDITIONS

Test Type :	Single Concentration	Number of Replicates :	1
Sample pH Adjustment :	No	Organisms Per Replicate :	10
Sample Pre-aeration/Aeration Rate :	6.5 ± 0.26 mL/min/L	Organisms Per Test Level :	10
Duration of Sample Pre-Aeration :	30 minutes	Volume of Sample :	30 L
Control Pre-aeration/Aeration Rate :	6.5 ± 0.26 mL/min/L	Volume of Control :	30 L
Duration of Control Pre-aeration:	30 minutes	Test Method Deviation(s) :	None

REFERENCE TOXICANT DATA

Toxicant :	Zinc	LC50 :	0.47 mg/L
Organism Batch :	CC240531	95% Confidence Limits :	(0.36 mg/L ; 0.63 mg/L)
Date Tested :	2024-07-18	Historical Mean LC50 :	0.34 mg/L
Statistical Method :	Probit Analysis	Warning Limits (± 2SD) :	(0.15 mg/L ; 0.75 mg/L)

COMMENTS

•All test validity criteria as specified in the test method were satisfied.

Approved By : Ken Ferguson
Senior Biologist

Sample Number : 9830-0012414

TEST DATA

	pH	Dissolved O_2 (mg/L)	O_2 Saturation (%)[3]	Conductivity (µmhos/cm)	Temperature (°C)
Initial Water Chemistry (100%) :	7.5	5.3	54	619	16
After 30 min pre-aeration :	7.7	7.4	76	631	16

0 HOURS

Date & Time 2024-07-25 9:15
Analyst(s) : KP

Concentration	Dead	Impaired	pH	Dissolved O_2	O_2 Saturation[3]	Conductivity	Temperature
100%	0	0	7.7	7.4	76	631	16
Control	0	0	7.8	9.1	93	222	16

Notes:

24 HOURS

Date & Time 2024-07-26 9:00
Analyst(s) : KP

Concentration	Dead	Impaired	pH	Dissolved O_2	O_2 Saturation[3]	Conductivity	Temperature
100%	0	0	–	–	–	–	–
Control	0	0	–	–	–	–	–

Notes:

48 HOURS

Date & Time 2024-07-27 7:50
Analyst(s) : MB

Concentration	Dead	Impaired	pH	Dissolved O_2	O_2 Saturation[3]	Conductivity	Temperature
100%	0	0	–	–	–	–	–
Control	0	0	–	–	–	–	–

Notes:

72 HOURS

Date & Time 2024-07-28 7:45
Analyst(s) : MB

Concentration	Dead	Impaired	pH	Dissolved O_2	O_2 Saturation[3]	Conductivity	Temperature
100%	0	0	–	–	–	–	–
Control	0	0	–	–	–	–	–

Notes:

96 HOURS

Date & Time 2024-07-29 9:15
Analyst(s) : KP

Concentration	Dead	Impaired	pH	Dissolved O_2	O_2 Saturation[3]	Conductivity	Temperature
100%	2	0	8.4	9.6	97	653	15
Control	1	0	8.1	9.6	98	232	15

Notes:

"–" = not measured/not required

Number impaired does not include number dead.

[3] adjusted for temperature and barometric pressure

Test Data Reviewed By : EP

Date : 2024-07-29

NAUTILUS ENVIRONMENTAL
Suite 122, 704 Mara Street
Point Edward, ON
N7V 1X4
Tel. (519) 339-8787

TOXICITY TEST REPORT

Daphnia magna
EPS 1/RM/14

SAMPLE IDENTIFICATION

Sample Number :	9830-0012414		
Company :	**Rowan Williams Davies & Irwin**	Sampling Date :	2024-07-24
Location :	Windsor, ON	Sampling Time :	9:50
Substance :	**SP2**	Date Received :	2024-07-24
Sampling Method :	**Grab**	Time Received :	16:30
Sampled By :	Jake Artibrllo	Temperature at Receipt :	22.5 °C
Sample Description :	Cloudy, Light Green	Date Tested :	2024-07-25

Test Method : Reference Method for Determining Acute Lethality of Effluents to *Daphnia magna* . Environment Canada EPS 1/RM/14 (Second Edition, December 2000, with February 2016 amendments).

48-HOUR TEST RESULTS

Substance	Effect	Value
Control	Mean Immobility	3.3 %
	Mean Mortality	0.0 %
100%	Mean Immobility	0.0 %
	Mean Mortality	0.0 %

The results reported relate only to the sample tested and as received.

TEST ORGANISM

Species :	*Daphnia magna*	Time to First Brood :	8.0 days
Culture Mortality :	0.0% (prev. 7 days)	Mean Brood Size :	75.7 neonates

TEST CONDITIONS

Sample Treatment :	None	Number of Replicates :	3
pH Adjustment :	No	Organisms per Replicate :	10
Pre-aeration Rate :	N/A ± 2 mL/min/L	Organisms per Test Level :	30
Duration of Pre-Aeration :	0 minutes	Organism Loading Rate :	25.0 mL/organism
Test Aeration :	None	Impaired Control Organisms :	3.3%
Hardness Adjustment :	No	Test Method Deviation(s) :	None

REFERENCE TOXICANT DATA

Toxicant :	LC50 :
Date Tested :	95% Confidence Limits :
Statistical Method :	Historical Mean LC50 :
	Warning Limits (± 2SD) :

COMMENTS

•All test validity criteria as specified in the test method were satisfied.

Approved By : Ken Ferguson
Senior Biologist

Sample Number : 9830-0012414

TEST DATA

	pH	Dissolved O_2 (mg/L)	O_2 Saturation (%)*	Conductivity (µmhos/cm)	Temperature (°C)	Hardness (as $CaCO_3$)
Initial Chemistry (100%) :	7.7	6.9	75	635	19	252 mg/L
Chemistry after Adjustment (100%) :	0.0	0.0	0	0	0	mg/L

0 HOURS

Date & Time : 2024-07-25 9:30
Analyst(s) : KP

Concentration (%)	Replicate	Dead	Immobile	pH	Dissolved O_2	O_2 Saturation*	Conductivity	Temperature
100	A	0	0	7.7	6.9	75	635	19
100	B	0	0	7.7	6.9	75	635	19
100	C	0	0	7.7	6.9	75	635	19
Control	A	0	0	8.1	8.7	99	609	21
Control	B	0	0	8.1	8.7	99	609	21
Control	C	0	0	8.1	8.7	99	609	21

Notes:

24 HOURS

Date & Time : 2024-07-26 9:45
Analyst(s) : KP

Concentration (%)	Replicate	Dead	Immobile	pH	Dissolved O_2	O_2 Saturation*	Conductivity	Temperature
100	A	–	0	–	–	–	–	–
100	B	–	0	–	–	–	–	–
100	C	–	0	–	–	–	–	–
Control	A	–	0	–	–	–	–	–
Control	B	–	1	–	–	–	–	–
Control	C	–	0	–	–	–	–	–

Notes:

48 HOURS

Date & Time : 2024-07-27 7:55
Analyst(s) : MB

Concentration (%)	Replicate	Dead	Immobile	pH	Dissolved O_2	O_2 Saturation*	Conductivity	Temperature
100	A	0	0	8.2	8.2	89	656	20
100	B	0	0	8.2	8.2	89	656	20
100	C	0	0	8.2	8.2	89	656	20
Control	A	0	0	8.0	8.7	95	622	20
Control	B	0	1	8.0	8.7	95	622	20
Control	C	0	0	8.0	8.7	95	622	20

Notes:

Number immobile does not include number dead.

"–" = not measured/not required

* adjusted for temperature and barometric pressure

EP
2024-07-29

NAUTILUS ENVIRONMENTAL

Certificate of Analysis

ACUTE LETHALITY BIOASSAY REPORT
(Single-Concentration Test)

CLIENT:

RWDI Air Inc., 4510 Rhodes Drive, Suite 530, Windsor, ON N8W 5K5

TEST RESULTS:

Sample Name[1]	Sample Number	Date Collected	Date Received	Date Tested	Test Species[2]	Percent Mortality[3]	Method Deviations
SS1	9830-0012415	2024-07-30	2024-07-30	2024-07-31 2024-07-31	RBT DM	10% 0%	None None

1 - Results relate only to the sample tested. Tested as received from client.

2 - Test Type and Species RBT = Rainbow Trout 96-hour 100% Effluent Concentration Acute Lethality Test

DM = *Daphnia magna* 48-hour 100% Effluent Concentration Acute Lethality Test

3 - Most regulations regard ≤50% mortality to be a "pass". Check your applicable regulatory requirements.

TEST PROTOCOLS:

Environment Canada, "Biological Test Method: Reference Method for Determining Acute Lethality of Effluents to Rainbow Trout", Environmental Technology Centre, Ottawa, Ontario, Report EPS 1/RM/13 Second Edition - December 2000, including May 2007, February 2016 and December 2023 Amendments. (Nautilus Test Method RT-SC-R1.7)

Environment Canada, "Biological Test Method: Reference Method for Determining Acute Lethality of Effluents to *Daphnia magna*", Environmental Technology Centre, Ottawa, Ontario, Report EPS 1/RM/14 Second Edition - December 2000, including February 2016 Amendment. (Nautilus Test Method DM-SC-R1.7)

Testing Laboratory:

Nautilus Environmental Company Inc.,
704 Mara St., Suite 122,
Point Edward, Ontario, N7V 1X4

CALA Testing Accreditation No. A1225

This laboratory is accredited by the Canadian Association for Laboratory Accreditation Inc. (CALA) to ISO/IEC 17025, and accreditation is limited to the tests on the laboratory's scope of testing.

TEST RESULTS APPROVED BY:

Date: 2024-08-12

C. D'Andrea

Carol D'Andrea
Laboratory Supervisor

Y:\bioassays\2024\9000\9830-001\9830-0012415 TD

NAUTILUS ENVIRONMENTAL
Suite 122, 704 Mara Street
Point Edward, ON
N7V 1X4
Tel. (519) 339-8787

TOXICITY TEST REPORT
Rainbow Trout
EPS 1/RM/13

SAMPLE IDENTIFICATION

Sample Number :	9830-0012415		
Company :	Rowan Williams Davies & Irwin	Sampling Date :	2024-07-30
Location :	Windsor, ON	Sampling Time :	9:35
Substance :	**SS1**	Date Received :	2024-07-30
Sampling Method :	Grab	Time Received :	15:20
Sampled By :	Jake Artibrllo	Temperature at Receipt :	22.1 °C
Sample Description :	Cloudy Brown	Date Tested :	2024-07-31

Test Method(s) : Reference Method for Determining Acute Lethality of Liquid Effluents to Rainbow Trout. Environment Canada, EPS 1/RM/13 (2nd Edition, December 2000, with May 2007, February 2016, and December 2023 amendments).

96-HOUR TEST RESULTS

Substance	Effect	Value
Control	Mean Impairment	0.0 %
	Mean Mortality	0.0 %
100%	Mean Impairment	0.0 %
	Mean Mortality	10.0 %

The results reported relate only to the sample tested and as received.

TEST ORGANISM

Test Organism :	*Oncorhynchus mykiss*	Mean Fork Length :	36.9 mm
Organism Batch :	CC240531-4	Range of Fork Lengths :	34 - 43 mm
Control Sample Size :	10	Mean Wet Weight :	0.4 g
Cumulative stock tank mortality rate :	1.1% (previous 7 days)	Organism Loading Rate :	0.2 g/L
Control organisms showing stress :	0% (at test completion)		

TEST CONDITIONS

Test Type :	Single Concentration	Number of Replicates :	1
Sample pH Adjustment :	No	Organisms Per Replicate :	10
Sample Pre-aeration/Aeration Rate :	6.5 ± 0.26 mL/min/L	Organisms Per Test Level :	10
Duration of Sample Pre-Aeration :	30 minutes	Volume of Sample :	20 L
Control Pre-aeration/Aeration Rate :	6.5 ± 0.26 mL/min/L	Volume of Control :	20 L
Duration of Control Pre-aeration:	30 minutes	Test Method Deviation(s) :	None

REFERENCE TOXICANT DATA

Toxicant :	Zinc	LC50 :	0.47 mg/L
Organism Batch :	CC240531	95% Confidence Limits :	(0.36 mg/L ; 0.63 mg/L)
Date Tested :	2024-07-18	Historical Mean LC50 :	0.34 mg/L
Statistical Method :	Probit Analysis	Warning Limits (± 2SD) :	(0.15 mg/L ; 0.75 mg/L)

COMMENTS

•All test validity criteria as specified in the test method were satisfied.

Approved By : Carol D'Andrea
Laboratory Supervisor

Sample Number : 9830-0012415

TEST DATA

	pH	Dissolved O_2 (mg/L)	O_2 Saturation (%)[3]	Conductivity (µmhos/cm)	Temperature (°C)
Initial Water Chemistry (100%) :	7.9	6.8	70	225	16
After 30 min pre-aeration :	7.9	7.5	77	232	16

0 HOURS

Date & Time 2024-07-31 11:50
Analyst(s) : CS

Concentration	Dead	Impaired	pH	Dissolved O_2	O_2 Saturation[3]	Conductivity	Temperature
100%	0	0	7.9	7.5	77	232	16
Control	0	0	7.9	9.4	95	215	14

Notes:

24 HOURS

Date & Time 2024-08-01 9:00
Analyst(s) : KP

Concentration	Dead	Impaired	pH	Dissolved O_2	O_2 Saturation[3]	Conductivity	Temperature
100%	0	0	–	–	–	–	–
Control	0	0	–	–	–	–	–

Notes:

48 HOURS

Date & Time 2024-08-02 8:30
Analyst(s) : KP

Concentration	Dead	Impaired	pH	Dissolved O_2	O_2 Saturation[3]	Conductivity	Temperature
100%	0	0	–	–	–	–	–
Control	0	0	–	–	–	–	–

Notes:

72 HOURS

Date & Time 2024-08-03 8:40
Analyst(s) : MB

Concentration	Dead	Impaired	pH	Dissolved O_2	O_2 Saturation[3]	Conductivity	Temperature
100%	0	0	–	–	–	–	–
Control	0	0	–	–	–	–	–

Notes:

96 HOURS

Date & Time 2024-08-04 10:40
Analyst(s) : MB

Concentration	Dead	Impaired	pH	Dissolved O_2	O_2 Saturation[3]	Conductivity	Temperature
100%	1	0	7.9	8.7	86	292	15
Control	0	0	7.9	9.6	95	268	15

Notes:

"–" = not measured/not required

Number impaired does not include number dead.

[3] adjusted for temperature and barometric pressure

Test Data Reviewed By : cd

Date : 2024-08-09

NAUTILUS ENVIRONMENTAL
Suite 122, 704 Mara Street
Point Edward, ON
N7V 1X4
Tel. (519) 339-8787

TOXICITY TEST REPORT

Daphnia magna
EPS 1/RM/14

SAMPLE IDENTIFICATION

Sample Number :	9830-0012415		
Company :	**Rowan Williams Davies & Irwin**	Sampling Date :	2024-07-30
Location :	Windsor, ON	Sampling Time :	9:35
Substance :	**SS1**	Date Received :	2024-07-30
Sampling Method :	**Grab**	Time Received :	15:20
Sampled By :	Jake Artibrllo	Temperature at Receipt :	22.1 °C
Sample Description :	Cloudy Brown	Date Tested :	2024-07-31

Test Method : Reference Method for Determining Acute Lethality of Effluents to *Daphnia magna* . Environment Canada EPS 1/RM/14 (Second Edition, December 2000, with February 2016 amendments).

48-HOUR TEST RESULTS

Substance	Effect	Value
Control	Mean Immobility	0.0 %
	Mean Mortality	0.0 %
100%	Mean Immobility	0.0 %
	Mean Mortality	0.0 %

The results reported relate only to the sample tested and as received.

TEST ORGANISM

Species :	*Daphnia magna*	Time to First Brood :	8.0 days
Culture Mortality :	0.0% (prev. 7 days)	Mean Brood Size :	38.0 neonates

TEST CONDITIONS

Sample Treatment :	None	Number of Replicates :	3
pH Adjustment :	No	Organisms per Replicate :	10
Pre-aeration Rate :	0 ± 2 mL/min/L	Organisms per Test Level :	30
Duration of Pre-Aeration :	0 minutes	Organism Loading Rate :	25.0 mL/organism
Test Aeration :	None	Impaired Control Organisms :	0.0%
Hardness Adjustment :	No	Test Method Deviation(s) :	None

REFERENCE TOXICANT DATA

Toxicant :	Zinc	LC50 :	1.67 mg/L
Date Tested :	2024-07-22	95% Confidence Limits :	(1.23 mg/L; 2.27 mg/L)
Statistical Method :	UnTrimmed Spearman-Karber α=0%	Historical Mean LC50 :	0.93 mg/L
		Warning Limits (± 2SD) :	(0.37 mg/L; 2.32 mg/L)

COMMENTS

•All test validity criteria as specified in the test method were satisfied.

Approved By : Carol D'Andrea
Laboratory Supervisor

Sample Number : 9830-0012415

TEST DATA

	pH	Dissolved O_2 (mg/L)	O_2 Saturation (%)*	Conductivity (µmhos/cm)	Temperature (°C)	Hardness (as $CaCO_3$)
Initial Chemistry (100%) :	7.9	6.9	77	235	20	mg/L
Chemistry after Adjustment (100%) :	-	-	-	-	-	- mg/L

0 HOURS

Date & Time : 2024-07-31 11:30
Analyst(s) : CS

Concentration (%)	Replicate	Dead	Immobile	pH	Dissolved O_2	O_2 Saturation*	Conductivity	Temperature
100	A	0	0	7.9	6.9	77	235	20
100	B	0	0	7.9	6.9	77	235	20
100	C	0	0	7.9	6.9	77	235	20
Control	A	0	0	7.9	8.7	99	599	21
Control	B	0	0	7.9	8.7	99	599	21
Control	C	0	0	7.9	8.7	99	599	21

Notes:

24 HOURS

Date & Time : 2024-08-01 8:50
Analyst(s) : KP

Concentration (%)	Replicate	Dead	Immobile	pH	Dissolved O_2	O_2 Saturation*	Conductivity	Temperature
100	A	–	0	–	–	–	–	–
100	B	–	0	–	–	–	–	–
100	C	–	0	–	–	–	–	–
Control	A	–	0	–	–	–	–	–
Control	B	–	0	–	–	–	–	–
Control	C	–	0	–	–	–	–	–

Notes:

48 HOURS

Date & Time : 2024-08-02 12:00
Analyst(s) : KP

Concentration (%)	Replicate	Dead	Immobile	pH	Dissolved O_2	O_2 Saturation*	Conductivity	Temperature
100	A	0	0	8.0	7.5	82	266	20
100	B	0	0	8.0	7.5	82	266	20
100	C	0	0	8.0	7.5	82	266	20
Control	A	0	0	7.9	8.3	92	611	20
Control	B	0	0	7.9	8.3	92	611	20
Control	C	0	0	7.9	8.3	92	611	20

Notes:

Number immobile does not include number dead.

"–" = not measured/not required

* adjusted for temperature and barometric pressure

cd
2024-08-09

NAUTILUS ENVIRONMENTAL

Certificate of Analysis

ACUTE LETHALITY BIOASSAY REPORT
(Single-Concentration Test)

CLIENT:
RWDI Air Inc., 4510 Rhodes Drive, Suite 530, Windsor, ON N8W 5K5

TEST RESULTS:

Sample Name[1]	Sample Number	Date Collected	Date Received	Date Tested	Test Species[2]	Percent Mortality[3]	Method Deviations
SP2	9830-0012417	2024-10-28	2024-10-28	2024-10-30 2024-10-29	RBT DM	0% 0%	None None

1 - Results relate only to the sample tested. Tested as received from client.
2 - Test Type and Species RBT = Rainbow Trout 96-hour 100% Effluent Concentration Acute Lethality Test
DM = *Daphnia magna* 48-hour 100% Effluent Concentration Acute Lethality Test
3 - Most regulations regard ≤50% mortality to be a "pass". Check your applicable regulatory requirements.

TEST PROTOCOLS:

Environment Canada, "Biological Test Method: Reference Method for Determining Acute Lethality of Effluents to Rainbow Trout", Environmental Technology Centre, Ottawa, Ontario, Report EPS 1/RM/13 Second Edition - December 2000, including May 2007, February 2016 and December 2023 Amendments. (Nautilus Test Method RT-SC-R2.0)

Environment Canada, "Biological Test Method: Reference Method for Determining Acute Lethality of Effluents to *Daphnia magna*", Environmental Technology Centre, Ottawa, Ontario, Report EPS 1/RM/14 Second Edition - December 2000, including February 2016 Amendment. (Nautilus Test Method DM-SC-R3.0)

Testing Laboratory:

Nautilus Environmental Company Inc.,
704 Mara St., Suite 122,
Point Edward, Ontario, N7V 1X4

CALA Testing Accreditation No. A1225

This laboratory is accredited by the Canadian Association for Laboratory Accreditation Inc. (CALA) to ISO/IEC 17025, and accreditation is limited to the tests on the laboratory's scope of testing.

TEST RESULTS APPROVED BY:
Date: 2024-11-08

E. Pasiak

Edyta Pasiak
Senior Biologist

Y:\bioassays\2024\9000\9830-001\9830-0012417 TD

NAUTILUS ENVIRONMENTAL
Suite 122, 704 Mara Street
Point Edward, ON
N7V 1X4
Tel. (519) 339-8787

TOXICITY TEST REPORT

Rainbow Trout
EPS 1/RM/13

SAMPLE IDENTIFICATION

Sample Number :	9830-0012417		
Company :	Rowan Williams Davies & Irwin	Sampling Date :	2024-10-28
Location :	Windsor, ON	Sampling Time :	11:00
Substance :	**SP2**	Date Received :	2024-10-28
Sampling Method :	Grab	Time Received :	15:45
Sampled By :	J. A	Temperature at Receipt :	14.3 °C
Sample Description :	Cloudy, Light Green	Date Tested :	2024-10-30

Test Method(s) : Reference Method for Determining Acute Lethality of Liquid Effluents to Rainbow Trout. Environment Canada, EPS 1/RM/13 (2nd Edition, December 2000, with May 2007, February 2016, and December 2023 amendments).

96-HOUR TEST RESULTS

Substance	Effect	Value
Control	Mean Impairment	0.0 %
	Mean Mortality	0.0 %
100%	Mean Impairment	0.0 %
	Mean Mortality	0.0 %

The results reported relate only to the sample tested and as received.

TEST ORGANISM

Test Organism :	*Oncorhynchus mykiss*	Mean Fork Length :	38.3 mm
Organism Batch :	LF240925	Range of Fork Lengths :	36 - 43 mm
Control Sample Size :	10	Mean Wet Weight :	0.4 g
Cumulative stock tank mortality rate :	0% (previous 7 days)	Organism Loading Rate :	0.2 g/L
Control organisms showing stress :	0% (at test completion)		

TEST CONDITIONS

Test Type :	Single Concentration	Number of Replicates :	1
Sample pH Adjustment :	No	Organisms Per Replicate :	10
Sample Pre-aeration/Aeration Rate :	6.5 ± 0.26 mL/min/L	Organisms Per Test Level :	10
Duration of Sample Pre-Aeration :	30 minutes	Volume of Sample :	20 L
Control Pre-aeration/Aeration Rate :	6.5 ± 0.26 mL/min/L	Volume of Control :	20 L
Duration of Control Pre-aeration:	30 minutes	Test Method Deviation(s) :	None

REFERENCE TOXICANT DATA

Toxicant :	Zinc	LC50 :	0.3 mg/L
Organism Batch :	LF240925	95% Confidence Limits :	(0.21 mg/L ; 0.41 mg/L)
Date Tested :	2024-10-18	Historical Mean LC50 :	0.39 mg/L
Statistical Method :	Trimmed Spearman-Karber α=10%	Warning Limits (± 2SD) :	(0.19 mg/L ; 0.77 mg/L)

COMMENTS

•All test validity criteria as specified in the test method were satisfied.

Approved By : Edyta Pasiak
Senior Biologist

Sample Number : 9830-0012417

TEST DATA

	pH	Dissolved O_2 (mg/L)	O_2 Saturation (%)[3]	Conductivity (µmhos/cm)	Temperature (°C)
Initial Water Chemistry (100%) :	8.2	9.8	99	532	16
After 30 min pre-aeration :	8.2	9.8	98	532	16

0 HOURS

Date & Time 2024-10-30 10:30
Analyst(s) : CS

Concentration	Dead	Impaired	pH	Dissolved O_2	O_2 Saturation[3]	Conductivity	Temperature
100%	0	0	8.2	9.8	98	532	16
Control	0	0	7.9	9.9	98	244	15

Notes:

24 HOURS

Date & Time 2024-10-31 9:00
Analyst(s) : CS

Concentration	Dead	Impaired	pH	Dissolved O_2	O_2 Saturation[3]	Conductivity	Temperature
100%	0	0	–	–	–	–	–
Control	0	0	–	–	–	–	–

Notes:

48 HOURS

Date & Time 2024-11-01 9:00
Analyst(s) : CS

Concentration	Dead	Impaired	pH	Dissolved O_2	O_2 Saturation[3]	Conductivity	Temperature
100%	0	0	–	–	–	–	–
Control	0	0	–	–	–	–	–

Notes:

72 HOURS

Date & Time 2024-11-02 14:45
Analyst(s) : CQ

Concentration	Dead	Impaired	pH	Dissolved O_2	O_2 Saturation[3]	Conductivity	Temperature
100%	0	0	–	–	–	–	–
Control	0	0	–	–	–	–	–

Notes:

96 HOURS

Date & Time 2024-11-03 11:30
Analyst(s) : CQ

Concentration	Dead	Impaired	pH	Dissolved O_2	O_2 Saturation[3]	Conductivity	Temperature
100%	0	0	7.9	9.5	92	500	14
Control	0	0	7.9	9.6	94	234	14

Notes:

"–" = not measured/not required

Number impaired does not include number dead.

[3] adjusted for temperature and barometric pressure

Test Data Reviewed By : cd

Date : 2024-11-07

NAUTILUS ENVIRONMENTAL
Suite 122, 704 Mara Street
Point Edward, ON
N7V 1X4
Tel. (519) 339-8787

TOXICITY TEST REPORT

Daphnia magna
EPS 1/RM/14

SAMPLE IDENTIFICATION

Sample Number :	9830-0012417		
Company :	**Rowan Williams Davies & Irwin**	Sampling Date :	2024-10-28
Location :	Windsor, ON	Sampling Time :	11:00
Substance :	**SP2**	Date Received :	2024-10-28
Sampling Method :	**Grab**	Time Received :	15:45
Sampled By :	J. A	Temperature at Receipt :	14.3 °C
Sample Description :	Cloudy, Light Green	Date Tested :	2024-10-29

Test Method : Reference Method for Determining Acute Lethality of Effluents to *Daphnia magna* . Environment Canada EPS 1/RM/14 (Second Edition, December 2000, with February 2016 amendments).

48-HOUR TEST RESULTS

Substance	Effect	Value
Control	Mean Immobility	0.0 %
	Mean Mortality	0.0 %
100%	Mean Immobility	0.0 %
	Mean Mortality	0.0 %

The results reported relate only to the sample tested and as received.

TEST ORGANISM

Species :	*Daphnia magna*	Time to First Brood :	10.0 days
Culture Mortality :	0.0% (prev. 7 days)	Mean Brood Size :	59.5 neonates

TEST CONDITIONS

Sample Treatment :	None	Number of Replicates :	3
pH Adjustment :	No	Organisms per Replicate :	10
Pre-aeration Rate :	35.7 ± 2 mL/min/L	Organisms per Test Level :	30
Duration of Pre-Aeration :	30 minutes	Organism Loading Rate :	25.0 mL/organism
Test Aeration :	None	Impaired Control Organisms :	0.0%
Hardness Adjustment :	No	Test Method Deviation(s) :	None

REFERENCE TOXICANT DATA

Toxicant :	Zinc	LC50 :	0.81 mg/L
Date Tested :	2024-10-28	95% Confidence Limits :	(0.60 mg/L; 1.09 mg/L)
Statistical Method :	UnTrimmed Spearman-Karber α=0%	Historical Mean LC50 :	1.14 mg/L
		Warning Limits (± 2SD) :	(0.41 mg/L; 3.22 mg/L)

COMMENTS

•All test validity criteria as specified in the test method were satisfied.

Approved By : Edyta Pasiak
Senior Biologist

Sample Number : 9830-0012417

TEST DATA

	pH	Dissolved O_2 (mg/L)	O_2 Saturation (%)*	Conductivity (µmhos/cm)	Temperature (°C)	Hardness (as $CaCO_3$)
Initial Chemistry (100%) :	8.3	10.9	122	533	20	196 mg/L
Chemistry after Adjustment (100%) :	0.0	0.0	0	0	0	mg/L

0 HOURS

Date & Time : 2024-10-29 12:10
Analyst(s) : CQ

Concentration (%)	Replicate	Dead	Immobile	pH	Dissolved O_2	O_2 Saturation*	Conductivity	Temperature	Hardness
100	A	0	0	8.3	10.3	116	533	20	196
100	B	0	0	8.3	10.3	116	533	20	
100	C	0	0	8.3	10.3	116	533	20	
Control	A	0	0	7.9	8.8	98	627	20	198
Control	B	0	0	7.9	8.8	98	627	20	
Control	C	0	0	7.9	8.8	98	627	20	

Notes:

24 HOURS

Date & Time : 2024-10-30 15:10
Analyst(s) : CQ

Concentration (%)	Replicate	Dead	Immobile	pH	Dissolved O_2	O_2 Saturation*	Conductivity	Temperature
100	A	–	0	–	–	–	–	–
100	B	–	0	–	–	–	–	–
100	C	–	0	–	–	–	–	–
Control	A	–	0	–	–	–	–	–
Control	B	–	0	–	–	–	–	–
Control	C	–	0	–	–	–	–	–

Notes:

48 HOURS

Date & Time : 2024-10-31 11:35
Analyst(s) : CQ

Concentration (%)	Replicate	Dead	Immobile	pH	Dissolved O_2	O_2 Saturation*	Conductivity	Temperature
100	A	0	0	7.8	8.4	94	489	20
100	B	0	0	7.8	8.4	94	489	20
100	C	0	0	7.8	8.4	94	489	20
Control	A	0	0	8.0	8.5	95	565	20
Control	B	0	0	8.0	8.5	95	565	20
Control	C	0	0	8.0	8.5	95	565	20

Notes:

Number immobile does not include number dead.

"–" = not measured/not required

* adjusted for temperature and barometric pressure

Test Data Reviewed By : cd
Date : 2024-11-07

NAUTILUS ENVIRONMENTAL
Suite 122, 704 Mara Street
Point Edward, ON
N7V 1X4
Tel. (519) 339-8787

TOXICITY TEST REPORT

Daphnia magna
EPS 1/RM/14

SAMPLE IDENTIFICATION

Sample Number :	9830-0012418		
Company :	**Rowan Williams Davies & Irwin**	Sampling Date :	2024-11-11
Location :	Windsor, ON	Sampling Time :	AM
Substance :	**SS1**	Date Received :	2024-11-12
Sampling Method :	**Grab**	Time Received :	08:50
Sampled By :	J. A	Temperature at Receipt :	8.9 °C
Sample Description :	Cloudy, Gray	Date Tested :	2024-11-12

Test Method : Reference Method for Determining Acute Lethality of Effluents to *Daphnia magna* . Environment Canada EPS 1/RM/14 (Second Edition, December 2000, with February 2016 amendments).

48-HOUR TEST RESULTS

Substance	Effect	Value
Control	Mean Immobility	0.0 %
	Mean Mortality	0.0 %
100%	Mean Immobility	0.0 %
	Mean Mortality	0.0 %

The results reported relate only to the sample tested and as received.

TEST ORGANISM

Species :	*Daphnia magna*	Time to First Brood :	7.0 days
Culture Mortality :	0.0% (prev. 7 days)	Mean Brood Size :	39.8 neonates

TEST CONDITIONS

Sample Treatment :	None	Number of Replicates :	3
pH Adjustment :	No	Organisms per Replicate :	10
Pre-aeration Rate :	35.7 ± 2 mL/min/L	Organisms per Test Level :	30
Duration of Pre-Aeration :	30 minutes	Organism Loading Rate :	25.0 mL/organism
Test Aeration :	None	Impaired Control Organisms :	0.0%
Hardness Adjustment :	No	Test Method Deviation(s) :	None

REFERENCE TOXICANT DATA

Toxicant :	Zinc	LC50 :	0.84 mg/L
Date Tested :	2024-11-18	95% Confidence Limits :	(0.59 mg/L; 1.16 mg/L)
Statistical Method :	Probit Analysis	Historical Mean LC50 :	1.12 mg/L
		Warning Limits (± 2SD) :	(0.39 mg/L; 3.20 mg/L)

COMMENTS

•All test validity criteria as specified in the test method were satisfied.

Approved By : Edyta Pasiak
Senior Biologist

Sample Number : 9830-0012418

TEST DATA

	pH	Dissolved O_2 (mg/L)	O_2 Saturation (%)*	Conductivity (µmhos/cm)	Temperature (°C)	Hardness (as $CaCO_3$)
Initial Chemistry (100%) :	7.6	9.6	103	704	20	200 mg/L
Chemistry after Adjustment (100%) :	0.0	0.0	0	0	0	mg/L

0 HOURS

Date & Time : 2024-11-12 14:30
Analyst(s) : CQ

Concentration (%)	Replicate	Dead	Immobile	pH	Dissolved O_2	O_2 Saturation*	Conductivity	Temperature	Hardness
100	A	0	0	7.8	8.8	98	712	20	200
100	B	0	0	7.8	8.8	98	712	20	
100	C	0	0	7.8	8.8	98	712	20	
Control	A	0	0	7.9	7.9	91	592	21	184
Control	B	0	0	7.9	7.9	91	592	21	
Control	C	0	0	7.9	7.9	91	592	21	

Notes:

24 HOURS

Date & Time : 2024-11-13 13:20
Analyst(s) : CQ

Concentration (%)	Replicate	Dead	Immobile	pH	Dissolved O_2	O_2 Saturation*	Conductivity	Temperature
100	A	–	0	–	–	–	–	–
100	B	–	0	–	–	–	–	–
100	C	–	0	–	–	–	–	–
Control	A	–	0	–	–	–	–	–
Control	B	–	0	–	–	–	–	–
Control	C	–	0	–	–	–	–	–

Notes:

48 HOURS

Date & Time : 2024-11-14 14:34
Analyst(s) : KP

Concentration (%)	Replicate	Dead	Immobile	pH	Dissolved O_2	O_2 Saturation*	Conductivity	Temperature
100	A	0	0	8.0	8.5	97	733	21
100	B	0	0	8.0	8.5	97	733	21
100	C	0	0	8.0	8.5	97	733	21
Control	A	0	0	7.9	8.7	97	617	21
Control	B	0	0	7.9	8.7	97	617	21
Control	C	0	0	7.9	8.7	97	617	21

Notes:

Number immobile does not include number dead.

"–" = not measured/not required

* adjusted for temperature and barometric pressure

Test Data Reviewed By : SO
Date : 2024-11-25

NAUTILUS ENVIRONMENTAL
Suite 122, 704 Mara Street
Point Edward, ON
N7V 1X4
Tel. (519) 339-8787

TOXICITY TEST REPORT
Rainbow Trout
EPS 1/RM/13

SAMPLE IDENTIFICATION

Sample Number :	9830-0012418		
Company :	Rowan Williams Davies & Irwin	Sampling Date :	2024-11-11
Location :	Windsor, ON	Sampling Time :	AM
Substance :	**SS1**	Date Received :	2024-11-11
Sampling Method :	Grab	Time Received :	8:50
Sampled By :	J.A	Temperature at Receipt :	8.9 °C
Sample Description :	Cloudy, grey	Date Tested :	2024-11-13

Test Method(s) : Reference Method for Determining Acute Lethality of Liquid Effluents to Rainbow Trout. Environment Canada, EPS 1/RM/13 (2nd Edition, December 2000, with May 2007, February 2016, and December 2023 amendments).

96-HOUR TEST RESULTS

Substance	Effect	Value
Control	Mean Impairment	0.0 %
	Mean Mortality	0.0 %
100%	Mean Impairment	0.0 %
	Mean Mortality	0.0 %

The results reported relate only to the sample tested and as received.

TEST ORGANISM

Test Organism :	*Oncorhynchus mykiss*	Mean Fork Length :	49.3 mm
Organism Batch :	LF240925	Range of Fork Lengths :	43 - 56 mm
Control Sample Size :	10	Mean Wet Weight :	0.9 g
Cumulative stock tank mortality rate :	0% (previous 7 days)	Organism Loading Rate :	0.3 g/L
Control organisms showing stress :	0% (at test completion)		

TEST CONDITIONS

Test Type :	Single Concentration	Number of Replicates :	1
Sample pH Adjustment :	No	Organisms Per Replicate :	10
Sample Pre-aeration/Aeration Rate :	6.5 ± 0.26 mL/min/L	Organisms Per Test Level :	10
Duration of Sample Pre-Aeration :	30 minutes	Volume of Sample :	30 L
Control Pre-aeration/Aeration Rate :	6.5 ± 0.26 mL/min/L	Volume of Control :	30 L
Duration of Control Pre-aeration:	30 minutes	Test Method Deviation(s) :	None

REFERENCE TOXICANT DATA

Toxicant :	Zn2403	LC50 :	0.22 mg/L
Organism Batch :	LF240925	95% Confidence Limits :	0.16, 0.29 mg/L
Date Tested :	2024-11-08	Historical Mean LC50 :	0.38 mg/L
Statistical Method :	Untrimmed Spearman-Karber	Warning Limits (± 2SD) :	0.18, 0.82 mg/L

COMMENTS

•All test validity criteria as specified in the test method were satisfied.

Approved By : Edyta Pasiak
Senior Biologist

Sample Number : 9830-0012418

TEST DATA

	pH	Dissolved O_2 (mg/L)	O_2 Saturation (%)[3]	Conductivity (µmhos/cm)	Temperature (°C)
Initial Water Chemistry (100%) :	7.6	10.0	10	680	15
After 30 min pre-aeration :	7.6	9.9	99	682	15

0 HOURS

Date & Time 2024-11-13 10:55
Analyst(s) : SO

Concentration	Dead	Impaired	pH	Dissolved O_2	O_2 Saturation[3]	Conductivity	Temperature
100%	0	0	7.6	9.9	99	682	15
Control	0	0	7.6	9.7	95	220	15

Notes:

24 HOURS

Date & Time 2024-11-14 9:45
Analyst(s) : SO

Concentration	Dead	Impaired	pH	Dissolved O_2	O_2 Saturation[3]	Conductivity	Temperature
100%	0	0	–	–	–	–	–
Control	0	0	–	–	–	–	–

Notes:

48 HOURS

Date & Time 2024-11-15 9:20
Analyst(s) : SO

Concentration	Dead	Impaired	pH	Dissolved O_2	O_2 Saturation[3]	Conductivity	Temperature
100%	0	0	–	–	–	–	–
Control	0	0	–	–	–	–	–

Notes:

72 HOURS

Date & Time 2024-11-16 8:25
Analyst(s) : KP

Concentration	Dead	Impaired	pH	Dissolved O_2	O_2 Saturation[3]	Conductivity	Temperature
100%	0	0	–	–	–	–	–
Control	0	0	–	–	–	–	–

Notes:

96 HOURS

Date & Time 2024-11-17 11:48
Analyst(s) : KP

Concentration	Dead	Impaired	pH	Dissolved O_2	O_2 Saturation[3]	Conductivity	Temperature
100%	0	0	7.7	8.6	88	698	16
Control	0	0	7.7	9.2	94	240	16

Notes:

"–" = not measured/not required

Number impaired does not include number dead.

[3] adjusted for temperature and barometric pressure

Test Data Reviewed By : CS

Date : 2024-12-02

983c-001

NAUTILUS ENVIRONMENTAL

TESTING LOCATION (Please Circle)

Burnaby
8664 Commerce Court
Burnaby, British Columbia, Canada
V5A 4N7
Phone 604.420.8773

Calgary
10823 27 Street SE
Calgary, Alberta, Canada
T2Z 3V9
Phone 403.253.7121

Point Edward
704 Mara Street, Suite 122
Point Edward, Ontario, Canada
N7V 1X4
Phone 519.339.8787

Chain of Custody

Date_____Page__of__

Report to:		Invoice To:	
Company	RWDI	Company	RWDI
Address	600 Southgate Dr	Address	
City/Prov/PC	Guelph ON N1G 4P6	City/Prov/PC	
Contact	Jeffrey.clelland@rwdi.com	Contact	Khalid Hussein
Phone	226 462 6175	Phone	
Email	Jeffrey.clelland@rwdi.com Jake.antibello@rwdi.com	Email	accountspayable@rwdi.com
		PO No.	2402557.01

Sample Collection By: JCA Sample Type: Grab ◯ OR Composite ◯

	SAMPLE ID	DATE (DD/MM/YY)	TIME	MATRIX	# OF CONTAINERS AND VOLUME (e.g. 1 x 20 L)	COMMENTS	ANALYSES REQUIRED: Enterolert Single concentration	ANALYSES REQUIRED: DM Single Concentration	Receipt Temperature (°C)
1	SS1	11/11/24	AM	SW	2 x 1L	Dark line	X	X	8.9
2									
3									
4									
5									
6									
7									
8									
9									
10									

18

SPECIAL INSTRUCTIONS/COMMENTS (CLIENT)

SAMPLE RECEIPT DETAILS (LABORATORY)

1. Total No. of Containers		4. Ice Present in Cooler?	Y / N
2. Courier		5. Seal Present?	Y / N
3. Good Condition?	Y / N	6. Initials Present on Seal?	Y / N

SAMPLE DESCRIPTION AND COMMENTS (LABORATORY)

Cloudy, Gray
pH 7.6 8.9
DO 11.2
Cond 689

RELINQUISHED BY (CLIENT)

Jake Antibello (Printed Name) (Signature)
RWDI (Company) 11/11/24 (Date DD/MM/YY and Time)

RECEIVED BY (LABORATORY)

Parth (Printed Name) (Signature)
(Company) 12/11/2024 08:50 (Date DD/MM/YY and Time)

Our liability is limited to the cost of the test requested. The test results only relate to the sample as received. No liability in whole or in part is assumed for the collection, handling, or transport of the sample, application or interpretation of the test data or results in part or in whole.

Additional costs may be required for sample disposal or storage. Payment net 30 unless otherwise contracted.