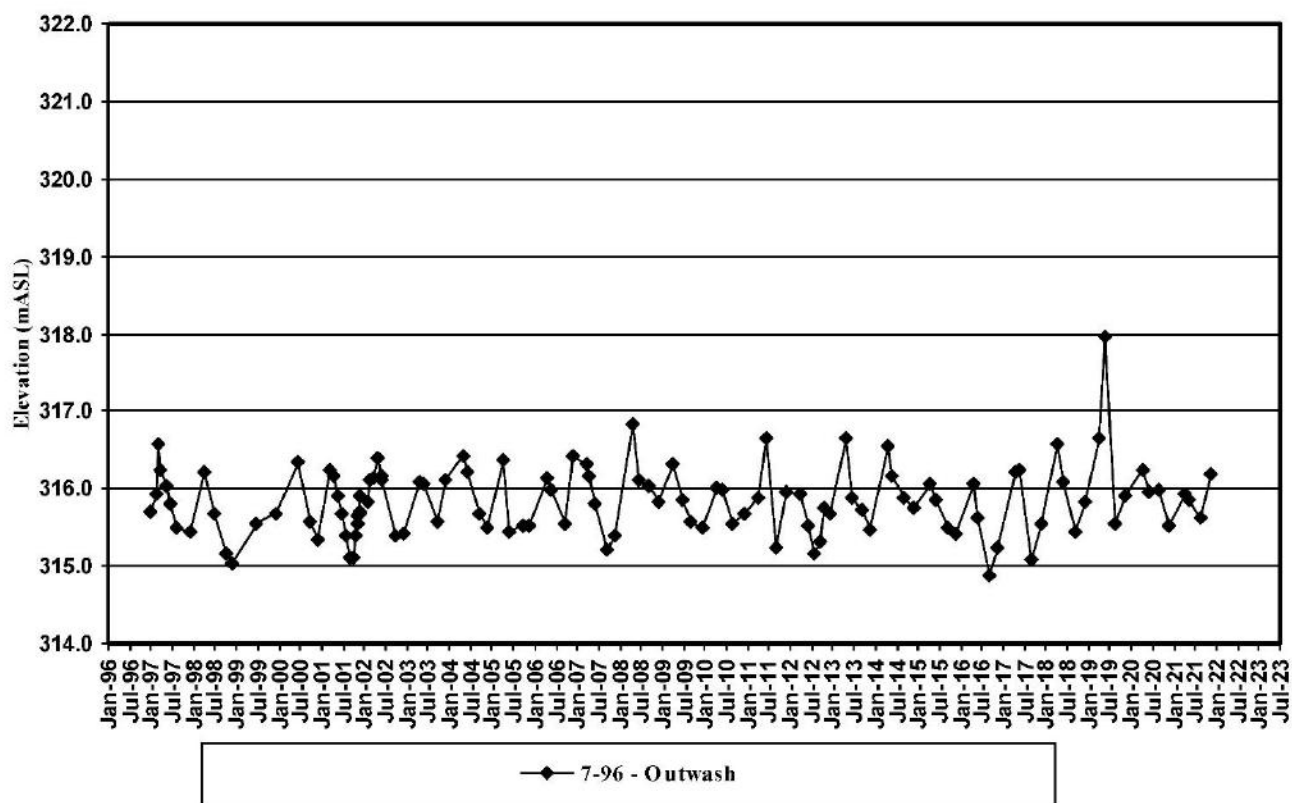
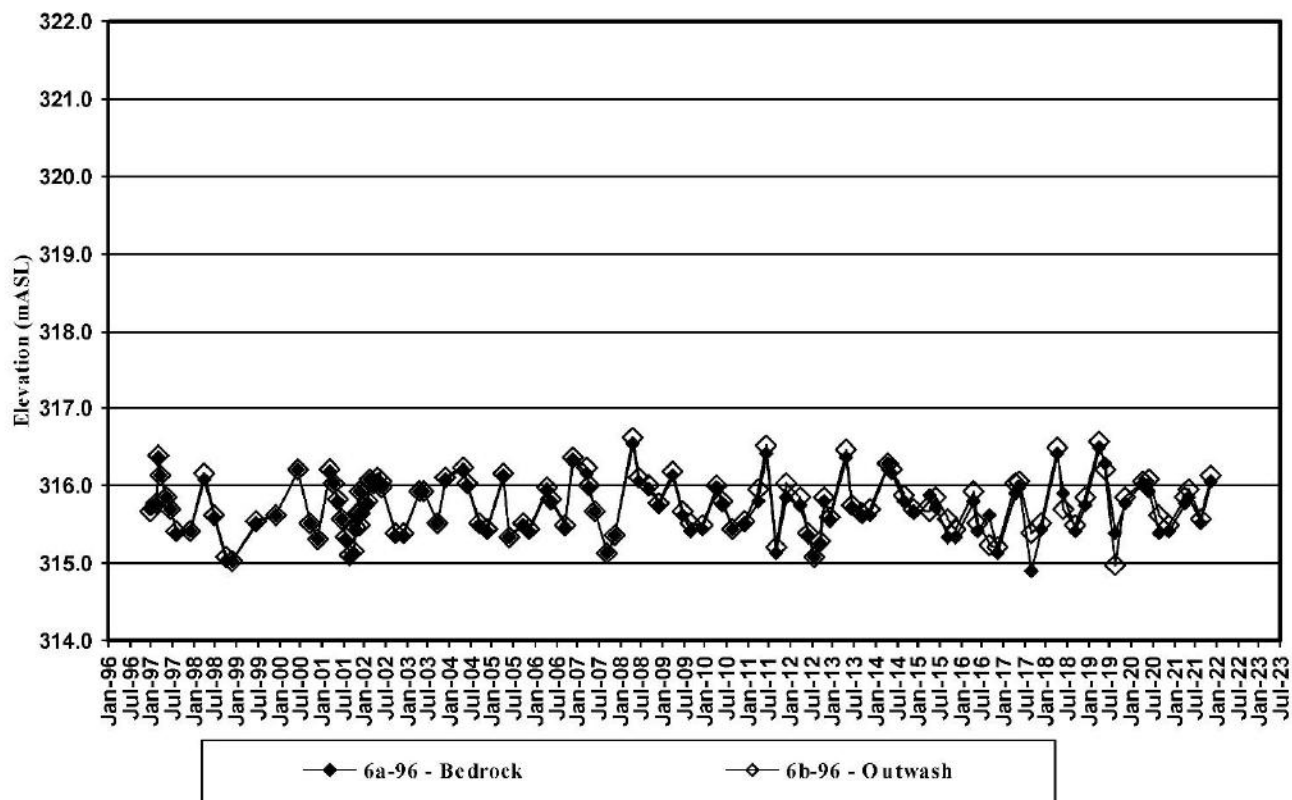


Appendix A

Groundwater Elevations and Hydrographs





AECOM

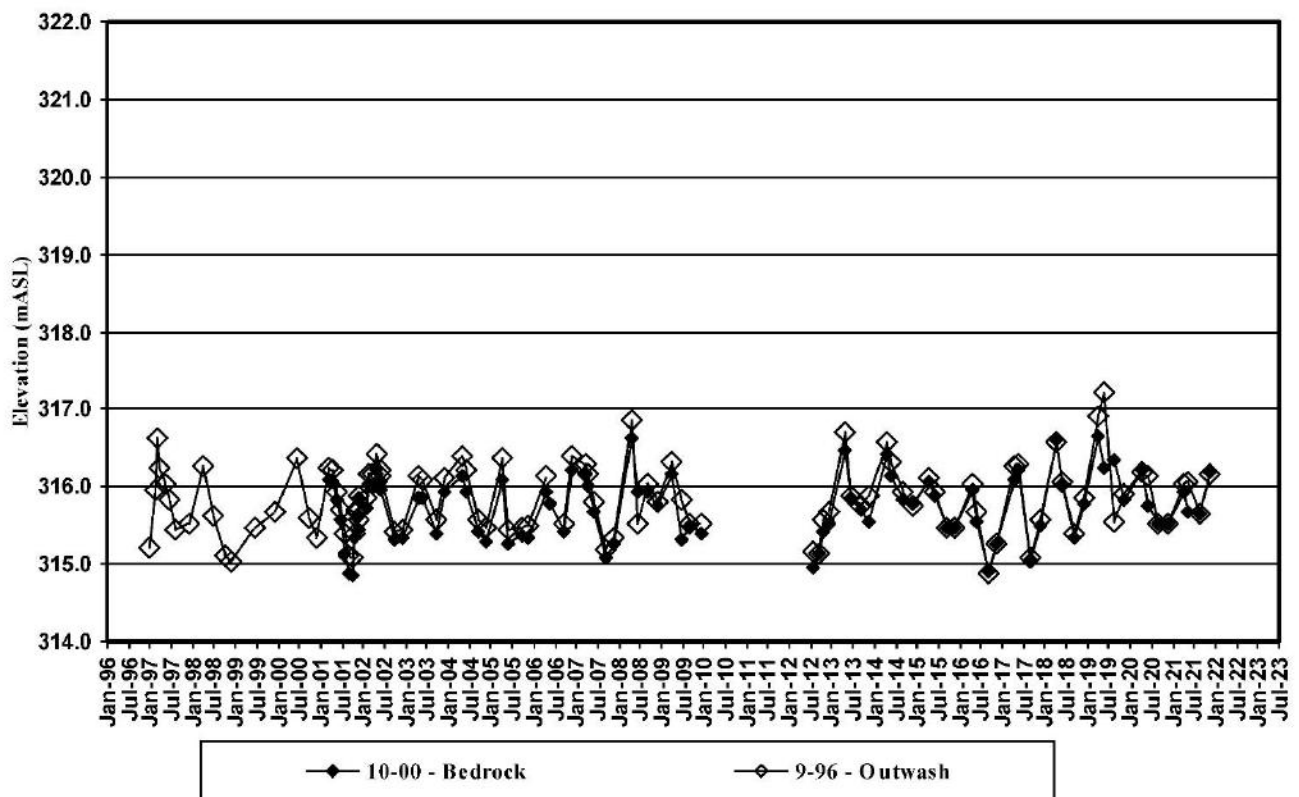
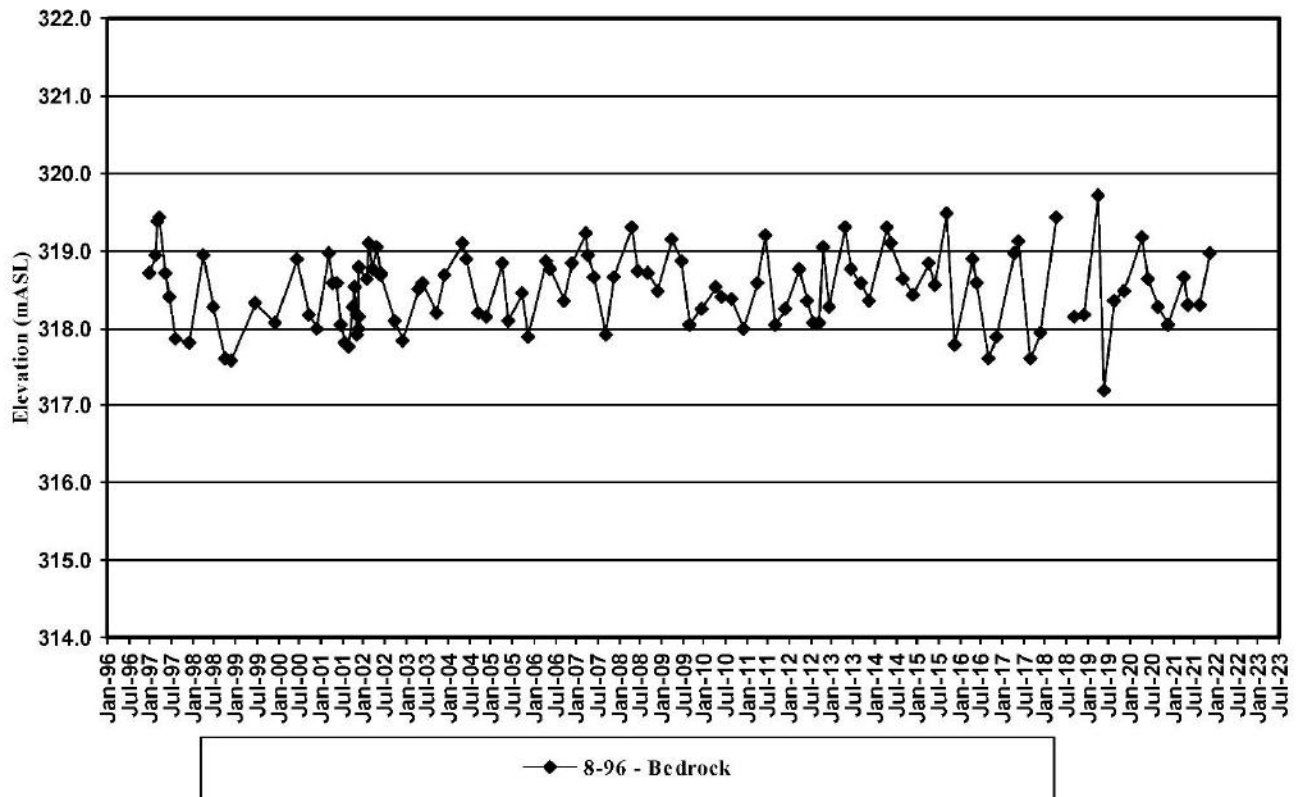
Guelph WRIC & Waste Transfer Station

Hydrographs

FIGURE

A - 1

9 Rpt Hydrographs



AECOM

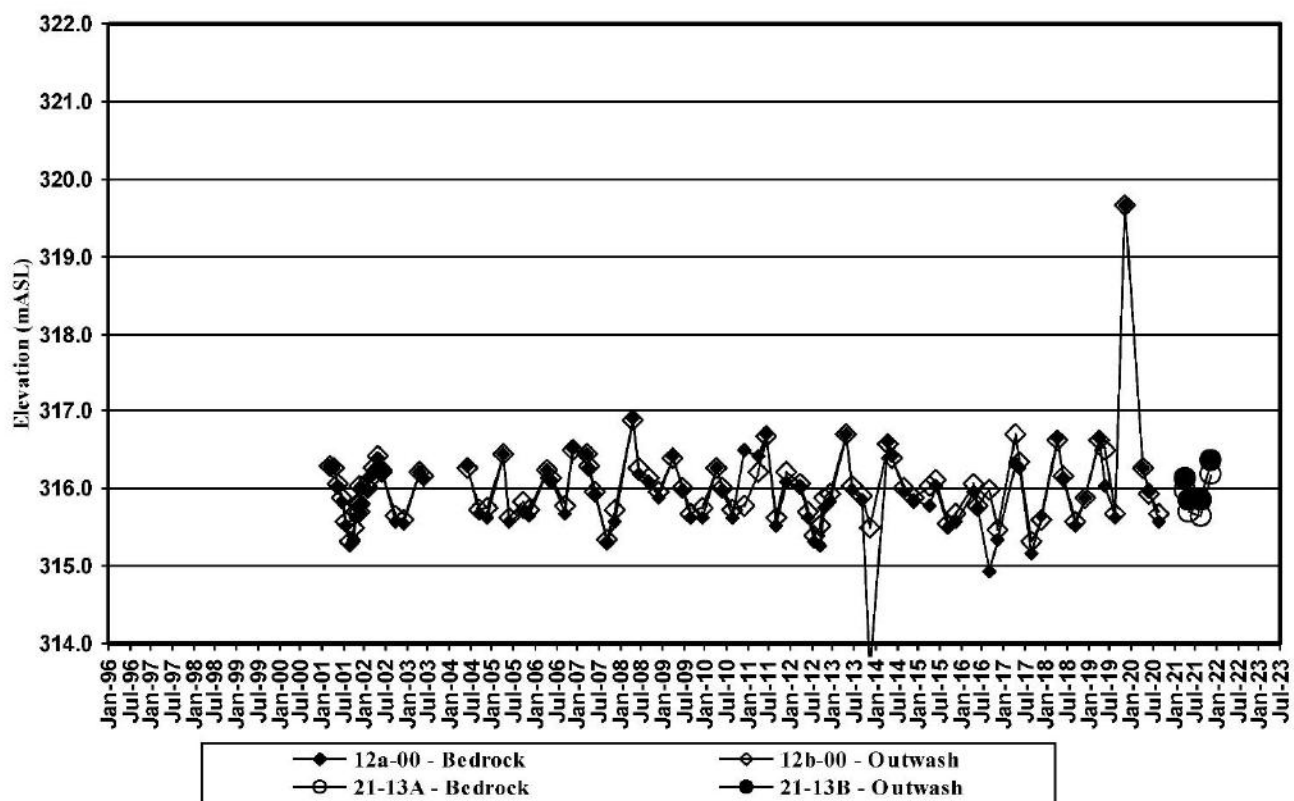
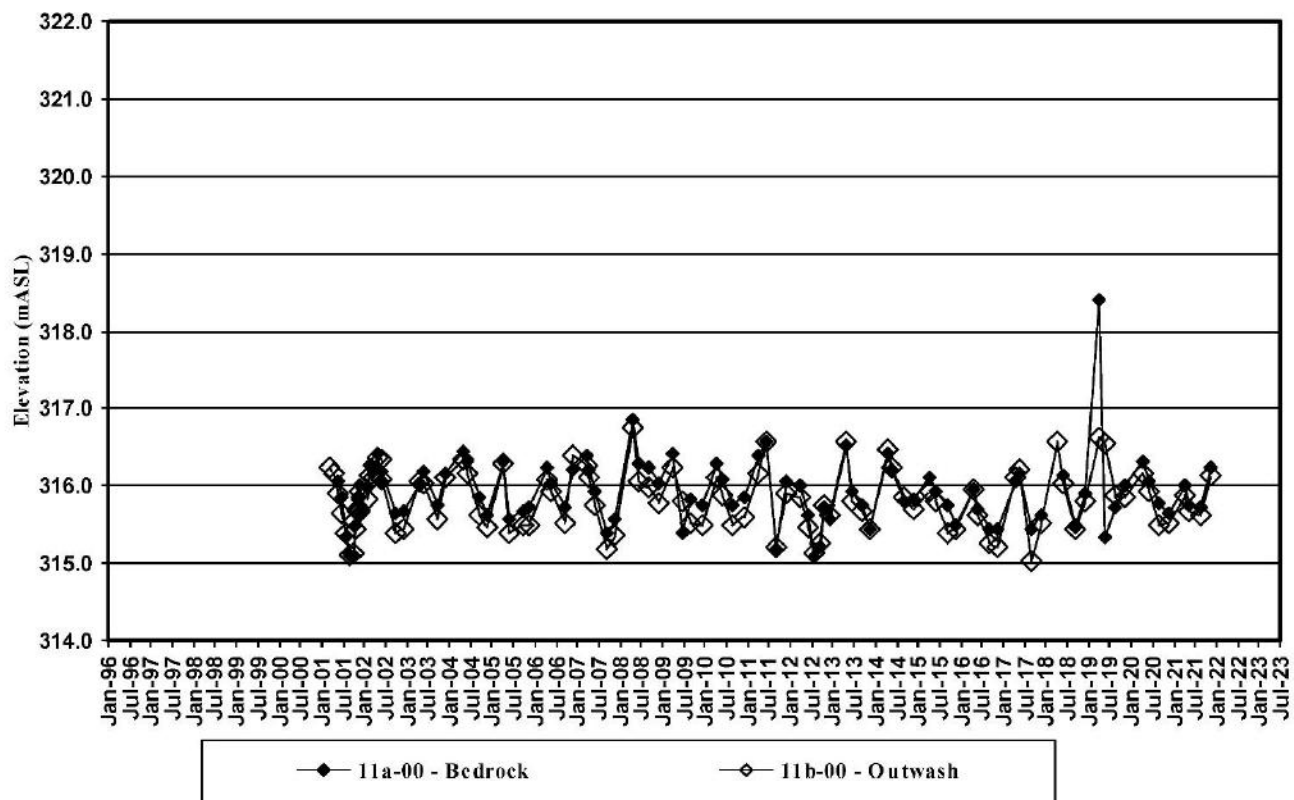
Guelph WRIC & Waste Transfer Station

Hydrographs

FIGURE

A - 2

9 Rpt Hydrographs



AECOM

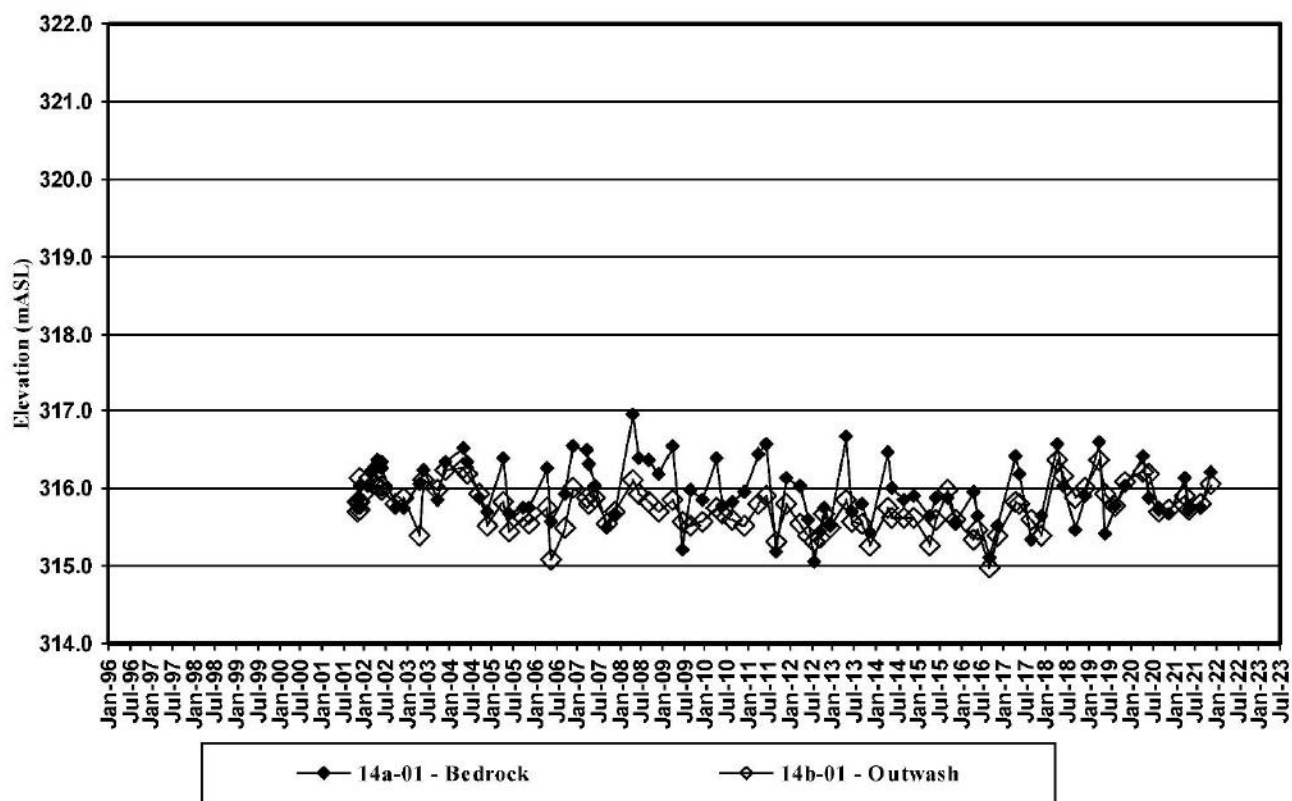
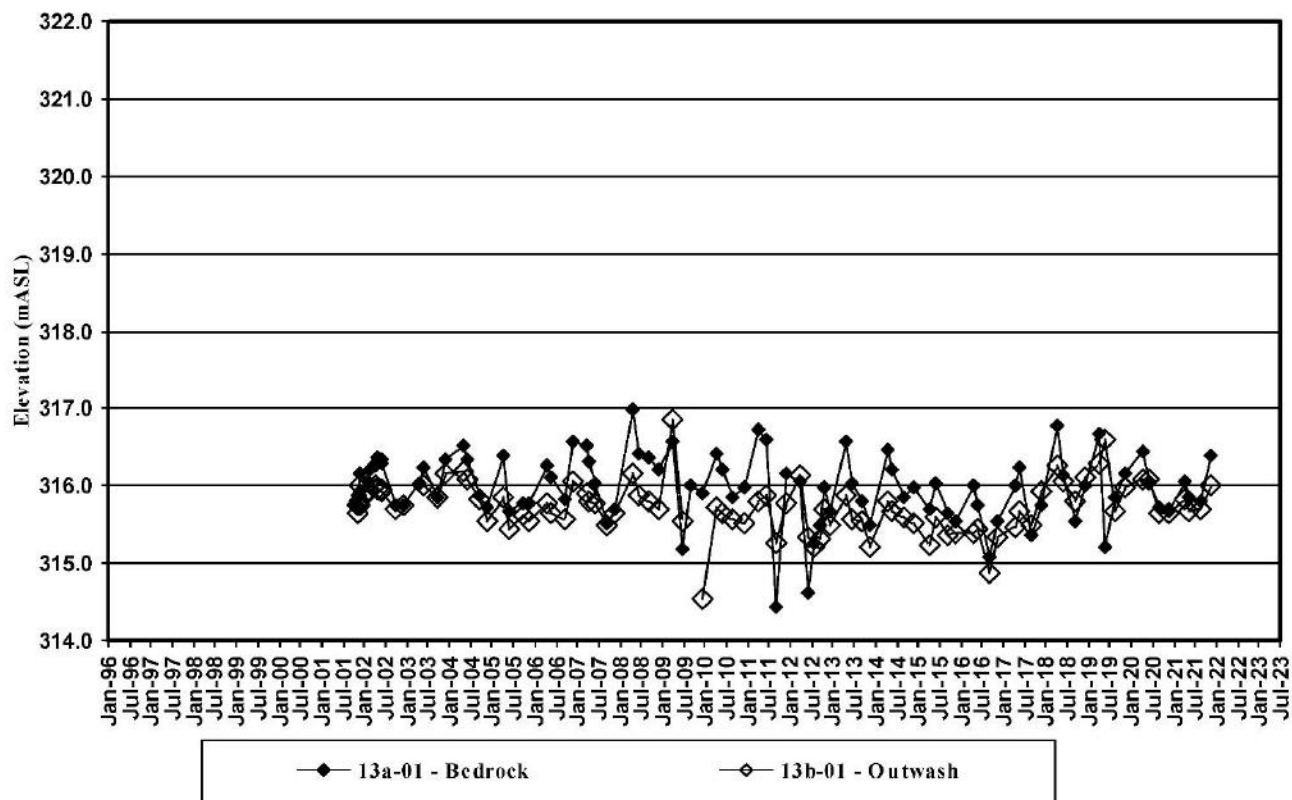
Guelph WRIC & Waste Transfer Station

Hydrographs

FIGURE

A - 3

9 Rpt Hydrographs



AECOM

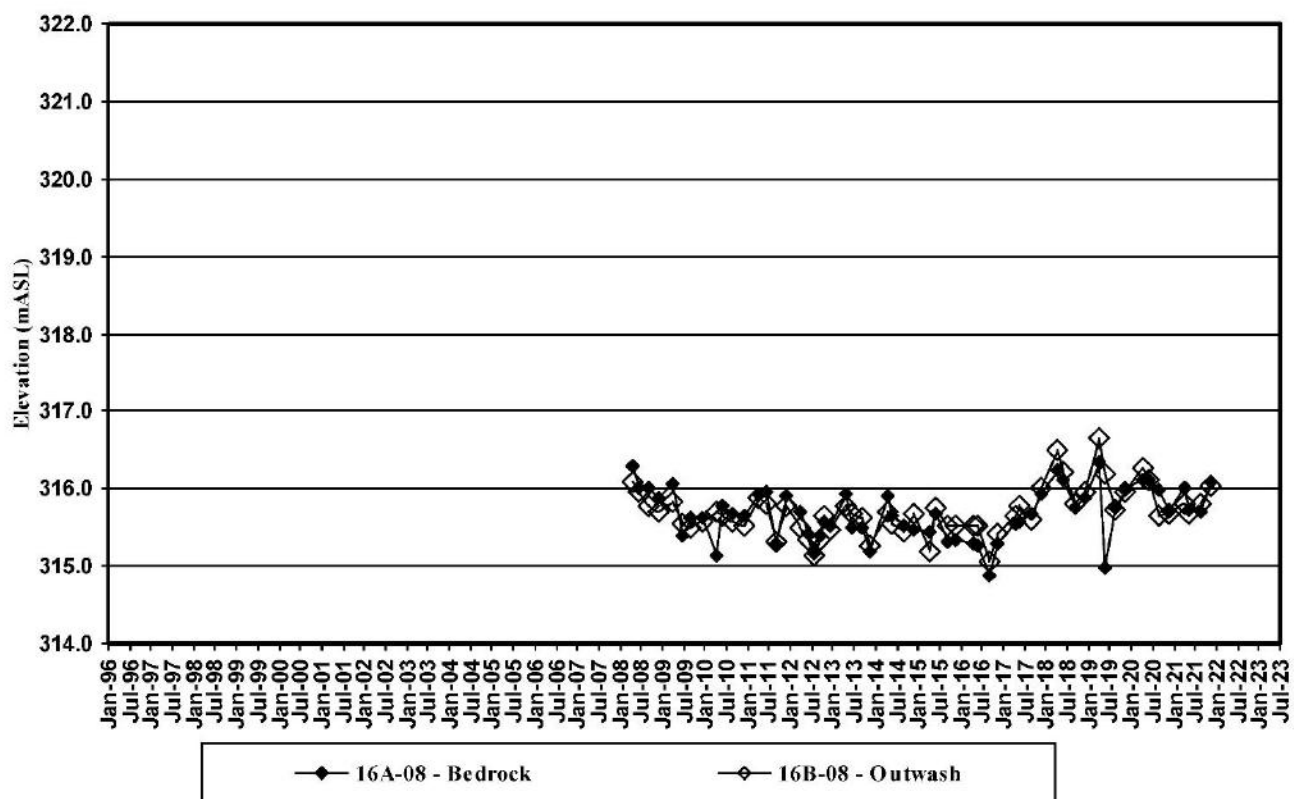
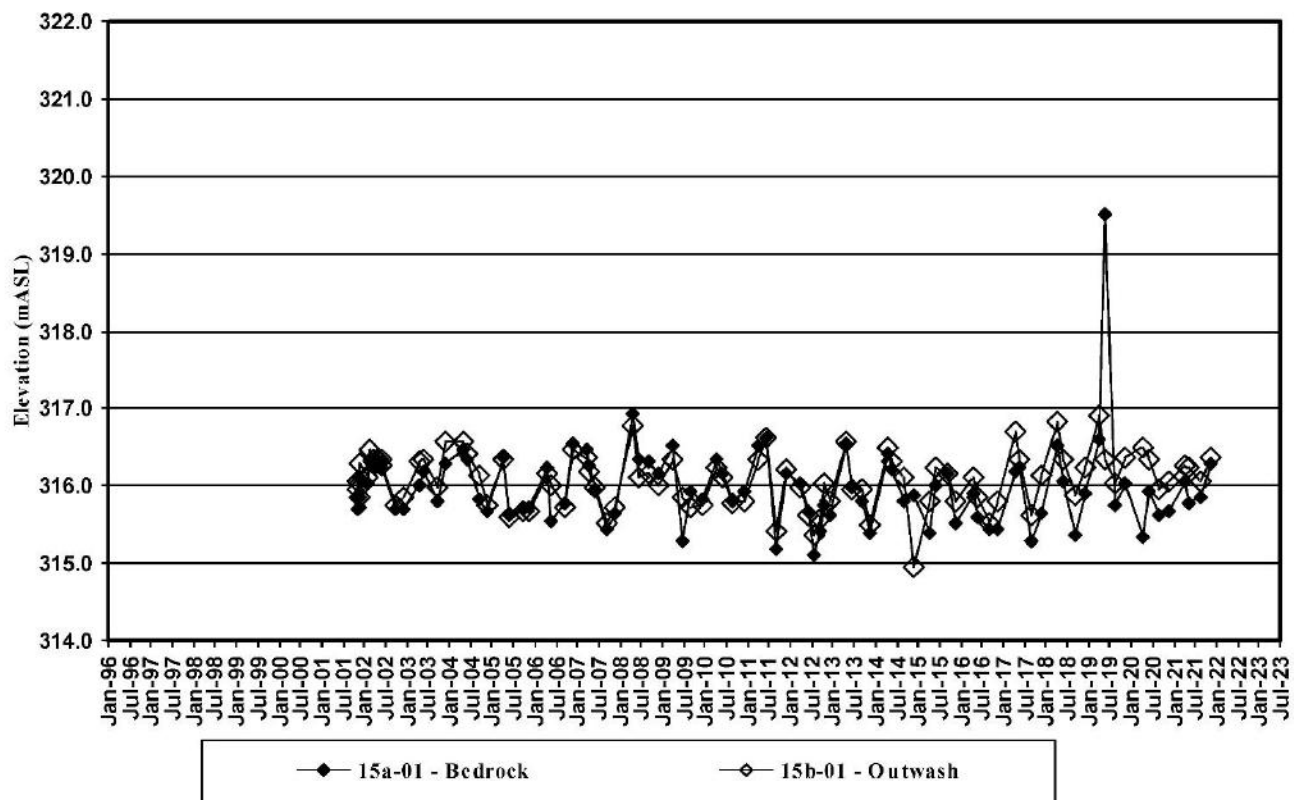
Guelph WRIC & Waste Transfer Station

Hydrographs

FIGURE

A - 4

9 Rpt Hydrographs



AECOM

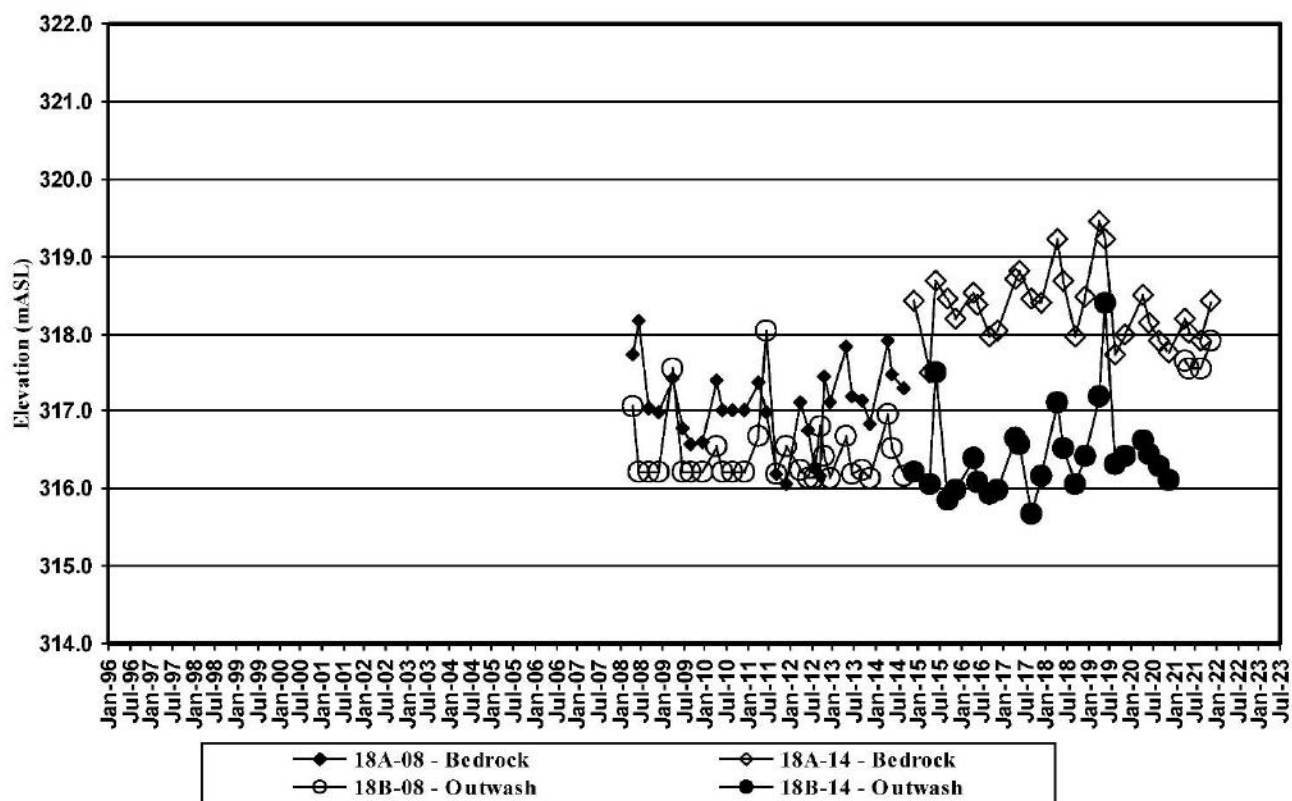
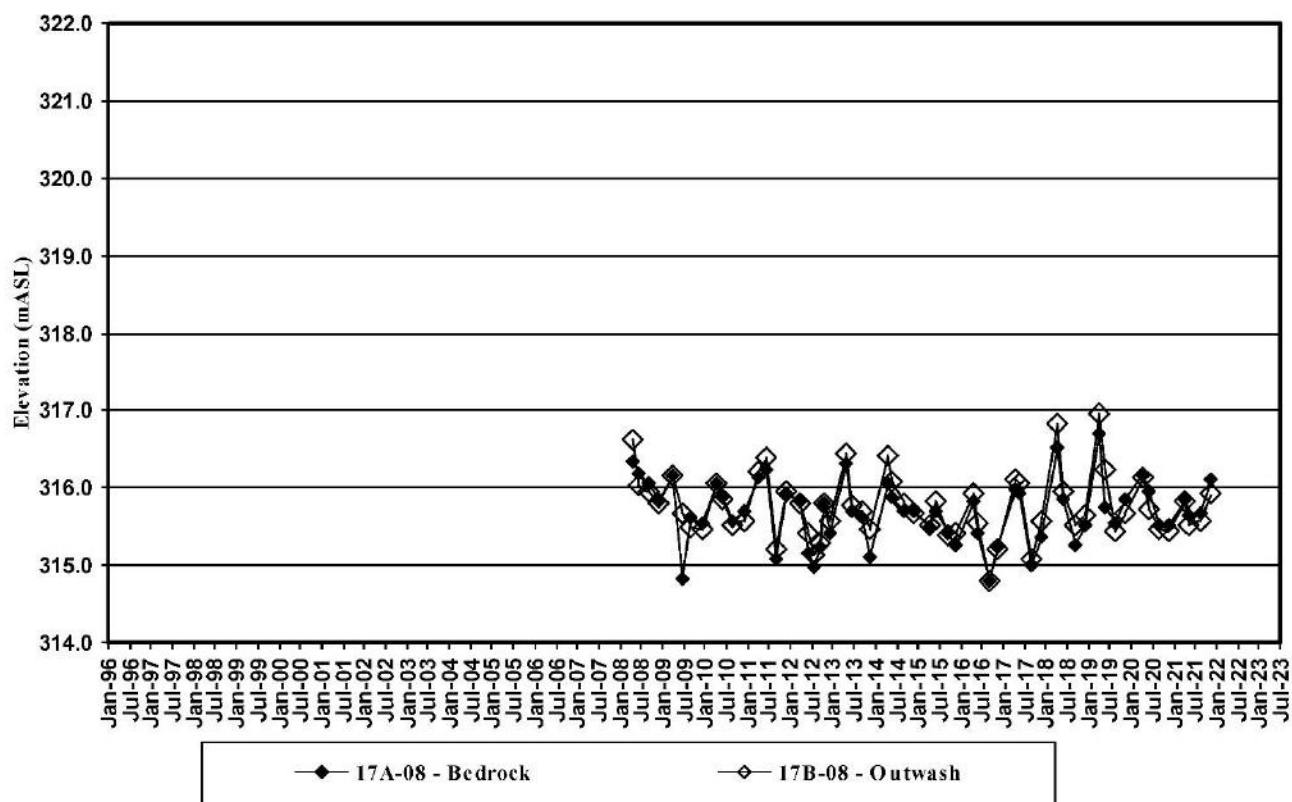
Guelph WRIC & Waste Transfer Station

Hydrographs

FIGURE

A - 5

9 Rpt Hydrographs



AECOM

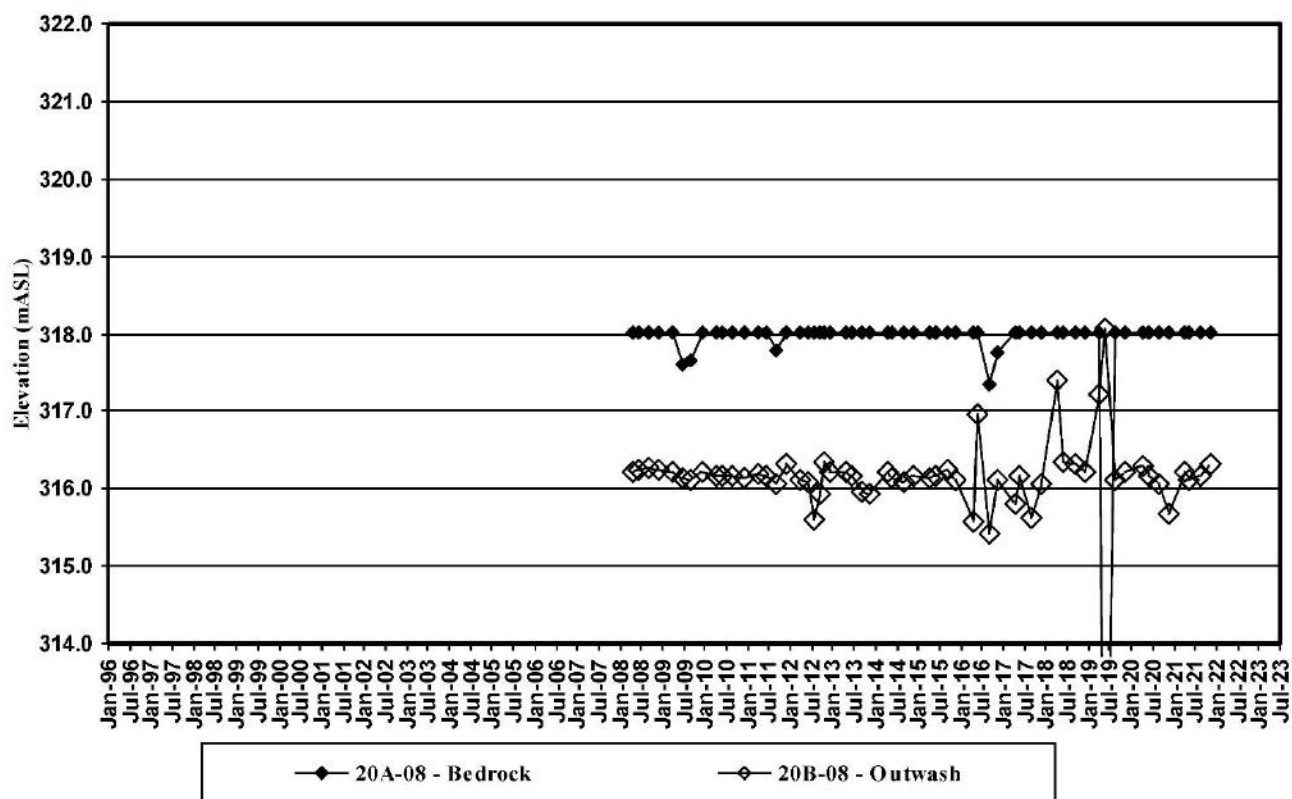
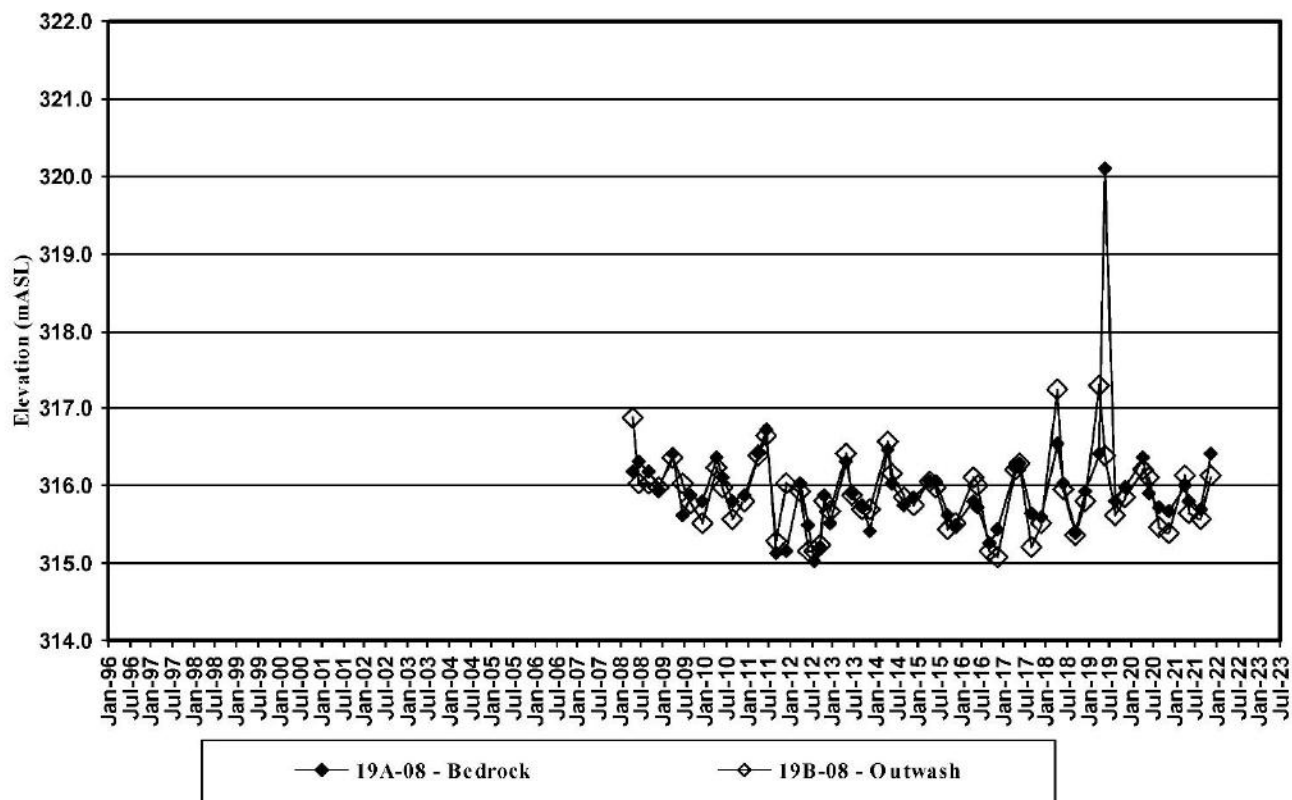
Guelph WRIC & Waste Transfer Station

Hydrographs

FIGURE

A - 6

9 Rpt Hydrographs



AECOM

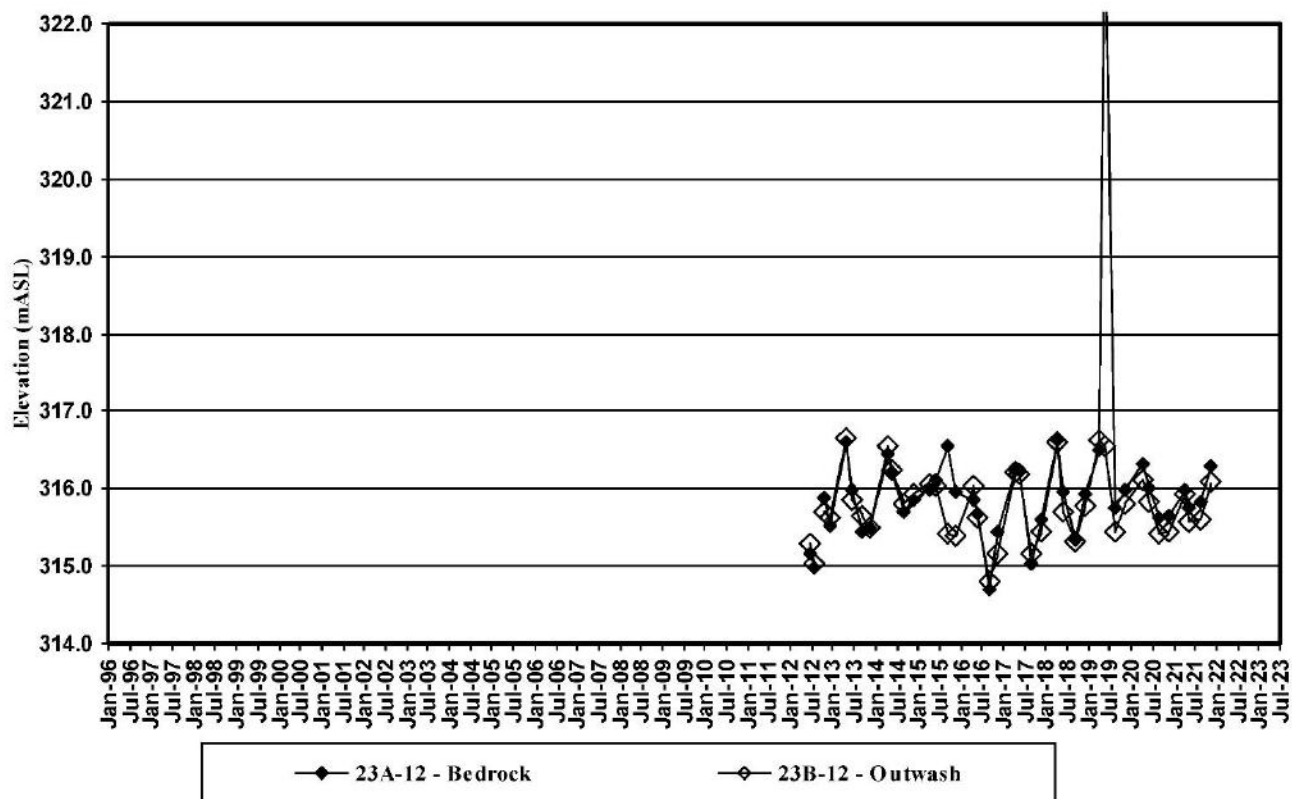
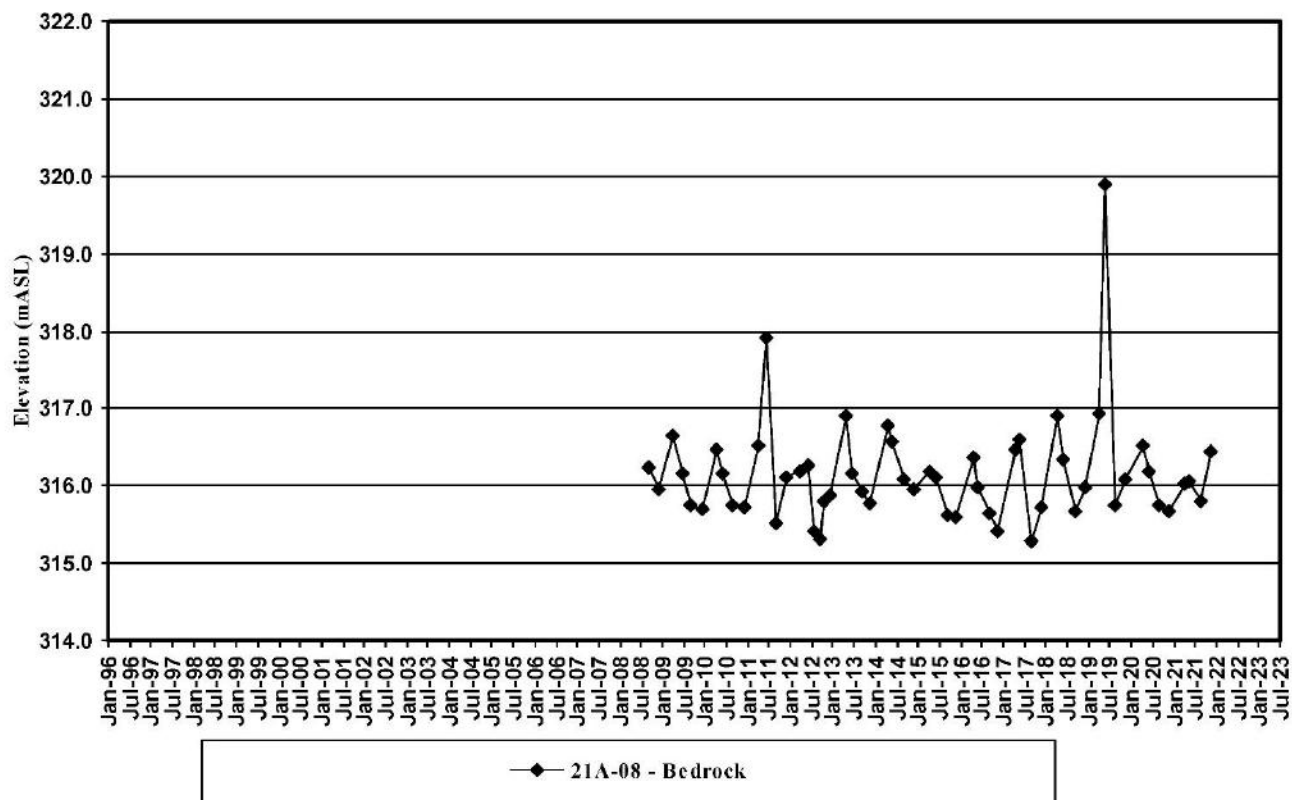
Guelph WRIC & Waste Transfer Station

Hydrographs

FIGURE

A - 7

9 Rpt Hydrographs



AECOM

Guelph WRIC & Waste Transfer Station

Hydrographs

FIGURE

A - 8

9 Rpt Hydrographs

Routine Groundwater Elevations at the WRIC/Waste Transfer Station

AECOM

Date	2a-91	2b-91	5-96	6a-96	6b-96	7-96	8-96	9-96	10-00	11a-00	11b-00	12a-00	12b-00	13a-01	13b-01	14a-01	14b-01
4-Apr-91	316.00	316.02															
14-Apr-91	315.88	315.89															
12-May-91	315.67	315.59															
17-May-91	315.60	315.58															
17-May-94	316.32	316.34															
5-May-95	315.96	316.00															
13-Apr-96	316.22	316.20															
13-Jun-96	316.41	316.34															
21-Aug-96	315.81	315.75															
9-Sep-96	315.59	315.55															
11-Dec-96		315.62															
20-Dec-96			319.53	315.70	315.67	315.70	318.72	315.20									
11-Feb-97	315.31		319.48	315.77	315.78	315.92	318.95	315.96									
3-Mar-97	315.26		320.34	316.37	316.38	316.57	319.37	316.62									
27-Mar-97	315.58	316.27	320.68	316.13	316.13	316.24	319.42	316.24									
6-May-97	315.38	316.08	319.39	315.86	315.86	316.02	318.72	316.04									
23-Jun-97	315.20	315.87	318.47	315.69	315.70	315.81	318.40	315.83									
8-Aug-97	314.86	315.50	317.62	315.39	315.41	315.49	317.85	315.45									
9-Dec-97	314.82	315.55	318.32	315.41	315.41	315.44	317.81	315.52									
31-Mar-98	315.62	316.28	319.90	316.08	316.15	316.22	318.94	316.26									
24-Jun-98	315.07	315.74	318.67	315.60	315.61	315.68	318.26	315.61									
29-Sep-98	314.47	Dry	317.34	315.03	315.08	315.15	317.59	315.11									
3-Dec-98	314.40	Dry	318.24	315.03	315.04	315.02	317.57	315.03									
29-Jun-99	314.91	Dry	320.03	315.51	315.55	315.54	318.33	315.46									
9-Dec-99	315.04	315.60	318.99	315.62	315.63	315.67	318.07	315.68									
21-Jun-00	315.69	316.40	320.17	316.21	316.21	316.34	318.89	316.36									
28-Sep-00	314.95	315.62	318.08	315.51	315.51	315.56	318.16	315.59									
6-Dec-00	314.52	315.43	318.29	315.32	315.32	315.34	317.98	315.35									
22-Mar-01	316.23	316.25	320.11	316.19	316.20	316.23	318.97	316.23	316.09		316.23	316.30	316.30				
26-Apr-01	316.19	316.19	318.53	316.02	316.04	316.17	318.59	316.20	316.07		316.15	316.26	316.26				
28-May-01	315.91	315.91	319.57	315.80	315.83	315.90	318.57	315.92	315.83	316.06	315.90	316.03	316.07				
27-Jun-01	315.68	315.68	318.01	315.56	315.58	315.66	318.04	315.69	315.56	315.85	315.65	315.82	315.88				
31-Jul-01	315.39	NR	317.62	315.32	315.34	315.38	317.80	315.39	315.14	315.34	315.38	315.53	315.58				
30-Aug-01	315.11	NR	317.87	315.09	315.10	315.10	317.76	315.11	314.87	315.11	315.11	315.26	315.31				
28-Sep-01	315.11	NR	319.68	315.14	315.16	315.11	318.26	315.09	314.85	315.08	315.13	315.35	315.48				
19-Oct-01	315.40	NR	320.35	315.45	315.46	315.40	318.54	315.38	315.35	315.50	315.43	315.61	315.71				
8-Nov-01	315.66	NR	319.03	315.62	315.63	315.65	318.17	315.66	315.61	315.85	315.66			315.74	315.64	315.74	315.71
16-Nov-01	315.56	315.71	318.31	315.63	315.65	315.55	317.90	315.71	315.59	315.82	315.69	315.78	315.80	315.89	315.76	315.86	315.83
21-Nov-01	315.57	315.56	318.30	315.61	315.48	315.68	317.99	315.56	315.45	315.66	315.68	315.79	315.80	315.89	315.75	315.88	315.82
27-Nov-01	315.71	315.71	318.88	315.63	315.65	315.70	318.14	315.72	315.61	315.84	315.70	315.67	315.70	315.92	315.79	315.76	315.72
4-Dec-01	315.90	315.89	320.97	315.92	315.93	315.90	318.78	315.89	315.85	316.00	315.92	316.00	316.02	316.17	316.00	316.03	316.14
28-Jan-02	315.85	315.84	318.94	315.77	315.79	315.83	318.63	315.85	315.72	315.98	315.83	315.97	316.00	316.07	315.93	316.04	315.99
28-Feb-02	316.14	316.14	320.56	316.08	316.09	316.12	319.09	316.15	316.04	316.27	316.13	316.14	316.11	316.22	315.92	316.21	316.13
28-Mar-02	316.16	316.16	319.02	316.00	316.02	316.14	318.76	316.17	315.99	316.19	316.12	316.25	316.26	316.27	315.97	316.27	316.05

Routine Groundwater Elevations at the WRIC/Waste Transfer Station

AECOM

Date	2a-91	2b-91	5-96	6a-96	6b-96	7-96	8-96	9-96	10-00	11a-00	11b-00	12a-00	12b-00	13a-01	13b-01	14a-01	14b-01
10-Apr-02														316.27	316.00	316.26	316.05
29-Apr-02	316.40	316.41	320.48	316.08	316.11	316.39	319.05	316.41	316.24	316.43	316.37	316.39	316.43	316.36	315.96	316.37	316.04
28-May-02	316.18	316.18	318.46	316.03	316.05	316.16	318.70	316.20	316.05	316.07	316.33	316.25	316.25	316.35	315.96	316.35	316.03
4-Jun-02	316.11	316.12	318.57	315.98	315.99	316.10	318.69	316.13	315.95	316.19	316.09	316.20	316.21	316.28	315.93	316.26	315.99
30-Sep-02	315.41	315.40	318.85	315.36	315.38	315.40	318.10	315.41	315.30	315.64	315.40	315.56	315.64	315.75	315.70	315.74	315.81
3-Dec-02	315.44	315.43	317.96	315.37	315.39	315.41	317.84	315.44	315.34	315.67	315.43	315.54	315.59	315.76	315.75	315.76	315.87
25-Apr-03	316.10	316.11	318.90	315.92	315.94	316.09	318.49	316.13	315.85	316.04	316.07	316.20	316.21	316.03	N/A	316.05	315.39
2-Jun-03	316.06	316.05	319.15	315.92	315.94	316.05	318.57	316.08	315.86	316.18	316.03	316.14	316.15	316.23	316.01	316.24	316.11
30-Sep-03	315.57	315.57	319.18	315.52	315.53	315.56	318.20	315.56	315.38	315.74	315.57	N/A	N/A	315.85	315.85	315.84	315.97
1-Dec-03	316.12	316.11	320.70	316.09	316.11	316.11	318.67	316.11	315.93	316.15	316.12	N/A	N/A	316.34	316.16	316.33	316.25
27-Apr-04	316.38	316.38	319.88	316.20	316.23	316.42	319.10	316.39	316.14	316.45	316.34	N/A	N/A	316.52	316.19	316.51	316.27
8-Jun-04	316.16	316.20	318.53	316.00	316.02	316.20	318.88	316.20	315.93	316.32	316.15	316.28	316.27	316.33	316.08	316.34	316.18
14-Sep-04	N/A	N/A	318.50	315.49	315.51	315.66	318.19	315.57	315.42	315.85	315.63	315.67	315.72	315.88	315.82	315.89	315.94
30-Nov-04	315.46	315.47	318.97	315.42	315.44	315.50	318.14	315.47	315.29	315.61	315.46	315.63	315.74	315.72	315.54	315.70	315.52
18-Apr-05	316.33	316.35	318.85	316.14	316.16	316.36	318.83	316.37	316.08	316.32	316.29	316.44	316.44	316.40	315.85	316.38	315.82
1-Jun-05	N/A	315.28	318.11	315.34	315.35	315.44	318.08	315.43	315.26	315.57	315.39	315.56	315.63	315.67	315.44	315.66	315.44
30-Sep-05	315.48	315.47	320.58	315.48	315.51	315.52	318.45	315.46	315.36	315.66	315.50	315.69	315.83	315.77	315.63	315.74	315.62
28-Nov-05	315.44	315.48	318.45	315.42	315.44	315.52	317.88	315.49	315.34	315.72	315.49	315.65	315.73	315.77	315.54	315.74	315.54
20-Apr-06	316.12	316.12	319.06	315.96	315.98	316.14	318.87	316.13	315.93	316.23	316.08	316.23	316.24	316.27	315.77	316.26	315.75
1-Jun-06	315.98	315.96	318.51	315.81	315.82	315.99	318.76	N/A	315.77	316.02	315.93	316.11	316.13	316.11	315.64	315.58	315.09
27-Sep-06	315.53	315.52	319.32	315.47	315.49	315.55	318.35	315.53	315.41	315.72	315.51	315.68	315.78	315.83	315.58	315.94	315.48
4-Dec-06	316.39	316.38	320.16	316.35	316.37	316.43	318.84	316.40	316.20	316.20	316.38	316.52	316.49	316.58	316.06	316.55	316.01
30-Mar-07	316.28	316.28	320.23	316.17	316.25	316.32	319.22	316.30	316.15	316.40	316.26	316.44	316.44	316.52	315.90	316.49	315.87
26-Apr-07	316.14	316.15	319.03	315.98	316.01	316.17	318.95	316.16	316.00	316.22	316.10	316.27	316.28	316.32	315.80	316.31	315.80
14-Jun-07	315.77	315.79	318.11	315.66	315.67	315.81	318.66	315.81	315.68	315.93	315.75	315.92	315.95	316.03	315.78	316.02	315.88
27-Sep-07	315.18	Dry	318.11	315.12	315.14	315.21	317.90	315.18	315.08	315.39	315.18	315.30	315.33	315.51	315.49	315.49	315.55
5-Dec-07	315.36	Dry	320.31	315.36	315.37	315.40	318.65	315.35	315.26	315.58	315.37	315.57	315.72	315.69	315.65	315.68	315.70
25-Apr-08	316.84	316.84	319.02	316.54	316.63	316.82	319.31	316.86	316.62	316.86	316.76	316.91	316.87	316.98	316.16	316.96	316.12
25-Jun-08	316.05	316.04	320.44	316.05	316.10	316.10	318.74	315.53	315.94	316.28	316.07	316.19	316.27	316.41	315.89	316.38	315.92
18-Sep-08	316.03	315.98	319.68	315.95	316.01	316.03	318.72	316.03	315.94	316.24	315.98	316.09	316.13	316.37	315.81	316.36	315.82
9-Dec-08	315.83	315.78	318.91	315.75	315.77	315.82	318.47	315.80	315.76	316.04	315.78	315.89	315.96	316.22	315.70	316.19	315.70
2-Apr-09	316.29	316.29	319.06	316.14	316.18	316.31	319.14	316.31	316.16	316.43	316.24	316.41	316.40	316.56	316.86	316.55	315.84
24-Jun-09	315.83	315.83	318.36	315.63	315.66	315.85	318.85	315.83	315.31	315.38	315.79	315.98	316.01	315.18	315.54	315.22	315.56
10-Sep-09	315.53	315.52	317.84	315.42	315.52	315.56	318.05	315.53	315.50	315.82	315.51	315.62	315.67	316.00	damaged	315.98	315.51
15-Dec-09	315.45	315.48	319.73	315.44	315.49	315.50	318.25	315.51	315.40	315.76	315.48	315.63	315.75	315.91	314.55	315.86	315.57
22-Apr-10	316.17	316.16	318.71	315.98	316.01	316.00	318.54	N/A	N/A	316.30	316.11	316.27	316.26	316.41	315.73	316.38	315.76
1-Jun-10	315.91	315.91	317.59	315.78	315.80	315.97	318.40	N/A	N/A	316.08	315.88	315.97	316.01	316.21	315.65	315.77	315.67
1-Sep-10	315.49	315.50	320.13	315.44	315.44	315.54	318.37	N/A	N/A	315.74	315.50	315.61	315.73	315.86	315.56	315.83	315.60
16-Dec-10	315.62	315.61	318.17	315.53	315.55	315.66	318.00	N/A	N/A	315.85	315.59	316.50	315.77	315.98	315.53	315.95	315.53
5-Apr-11	316.11	315.95	318.48	315.79	315.96	315.89	318.58	N/A	N/A	316.38	316.16	316.42	316.21	316.72	315.80	316.45	315.81
14-Jun-11	316.57	316.58	318.54	316.42	316.51	316.65	319.19	N/A	N/A	316.58	316.58	316.69	316.67	316.61	315.89	316.56	315.91
16-Sep-11	315.20		317.67	315.14	315.22	315.24	318.03	N/A	N/A	315.18	315.20	315.51	315.61	314.45	315.26	315.18	315.31
13-Dec-11	315.93	315.93	319.36	315.84	316.02	315.95	318.24	N/A	N/A	316.07	315.90	316.09	316.22	316.17	315.77	316.14	315.80
12-Apr-12	315.90	315.90	318.07	315.76	315.84	315.92	318.75	N/A	N/A	316.00	315.86	316.04	316.06	316.06	316.13	316.04	315.54

Routine Groundwater Elevations at the WRIC/Waste Transfer Station

AECOM

Date	2a-91	2b-91	5-96	6a-96	6b-96	7-96	8-96	9-96	10-00	11a-00	11b-00	12a-00	12b-00	13a-01	13b-01	14a-01	14b-01
18-Jun-12	315.77	315.49	318.03	315.36	315.38	315.52	318.34	N/A	N/A	315.61	315.47	315.63	315.70	314.61	315.35	315.60	315.40
5-Jul-12																	
7-Aug-12	315.33	dry	318.50	315.08	315.09	315.15	318.07	315.17	314.94	315.07	315.13	315.30	315.39	315.26	315.22	315.06	315.31
27-Sep-12	315.08	Dry	318.54	315.25	315.29	315.30	318.07	315.13	315.13	315.20	315.27	315.25	315.52	315.48	315.32	315.44	315.36
2-Nov-12	315.53	315.53	320.85	315.80	315.85	315.76	319.04	315.57	315.41	315.72	315.75	315.76	315.87	315.98	315.69	315.75	315.68
17-Dec-12	315.60	315.61	319.63	315.56	315.60	315.68	318.28	315.68	315.51	315.57	315.61	315.82	315.92	315.67	315.50	315.52	315.49
26-Apr-13	316.63	316.63	319.76	316.36	316.46	316.64	319.29	316.69	316.47	316.51	316.57	316.69	316.70	316.56	315.88	316.67	315.85
17-Jun-13	315.87	315.84	318.42	315.73	315.74	315.87	318.75	315.89	315.85	315.94	315.81	315.99	316.02	316.04	315.56	315.71	315.56
25-Sep-13	315.71	315.72	318.86	315.63	315.64	315.72	318.59	315.74	315.69	315.75	315.67	315.85	315.91	315.81	315.54	315.80	315.55
1-Dec-13	315.67	315.56	317.71	315.63	315.70	315.46	318.34	315.87	315.55	315.43	315.43	313.62	315.49	315.48	315.22	315.44	315.27
24-Apr-14	315.71	315.67	318.95	316.29	316.30	316.54	319.31	316.57	316.42	316.42	316.46	316.61	316.58	316.47	315.79	316.47	315.75
1-Jun-14	316.16	316.15	318.66	316.16	316.20	316.17	319.09	316.31	316.14	316.21	316.25	316.42	316.40	316.20	315.66	316.00	315.61
16-Sep-14	315.79	315.62	319.14	315.80	315.87	315.88	318.64	315.92	315.82	315.81	315.84	315.96	316.00	315.84	315.59	315.84	315.61
1-Dec-14			318.90	315.67	315.71	315.75	318.42	315.76	315.78	315.82	315.69	315.85	315.87	315.98	315.52	315.91	315.63
29-Apr-15	removed	removed	318.53	315.89	315.67	316.07	318.84	316.11	316.05	316.11	315.93	315.78	316.03	315.71	315.24	315.64	315.27
16-Jun-15	removed	removed	318.32	315.73	315.84	315.84	318.56	315.92	315.88	315.93	315.79	316.03	316.11	316.03	315.60	315.87	315.59
24-Sep-15	removed	removed	317.71	315.33	315.57	315.49	319.47	315.46	315.46	315.74	315.39	315.48	315.55	315.65	315.36	315.88	315.98
1-Dec-15	Removed	removed	317.82	315.35	315.44	315.42	317.79	315.46	315.46	315.49	315.43	315.57	315.66	315.55	315.39	315.57	315.59
29-Apr-16	removed	removed	318.89	315.80	315.92	316.05	318.88	316.03	315.96	315.96	315.96	315.96	316.07	316.00	315.38	315.95	315.34
1-Jun-16	removed	removed	317.54	315.41	315.53	315.61	318.57	315.68	315.55	315.70	315.61	315.75	315.78	315.76	315.43	315.65	315.47
20-Sep-16	removed	removed	317.27	315.61	315.24	314.87	317.60	314.87	314.89	315.45	315.25	314.92	315.98	315.07	314.88	315.10	314.98
1-Dec-16	removed	removed	318.41	315.14	315.20	315.23	317.88	315.25	315.27	315.43	315.21	315.34	315.46	315.54	315.34	315.52	315.40
27-Apr-17	removed	removed	318.88	315.90	316.02	316.21	318.96	316.26	316.09	316.07	316.10	316.32	316.70	316.01	315.47	316.42	315.83
5-Jun-17	removed	removed	318.38	315.98	316.06	316.25	319.12	316.29	316.20	316.17	316.20	316.27	316.35	316.25	315.66	316.18	315.81
19-Sep-17	removed	removed	317.11	314.90	315.40	315.08	317.61	315.07	315.05	315.44	315.03	315.15	315.31	315.36	315.50	315.34	315.59
5-Dec-17	removed	removed	317.77	315.45	315.53	315.54	317.93	315.56	315.50	315.62	315.53	315.64	315.59	315.75	315.93	315.65	315.38
24-Apr-18			320.54	316.43	316.50	316.58	319.44	316.57	316.60	N/A	316.57	316.66	316.62	316.77	316.26	316.57	316.36
13-Jun-18			317.72	315.91	315.71	316.08	Bird Nest	316.07	316.02	316.13	316.04	316.14	316.17	316.14	316.06	316.02	316.16
27-Sep-18			319.68	315.41	315.48	315.45	318.15	315.39	315.34	315.47	315.45	315.52	315.56	315.54	315.79	315.46	315.88
10-Dec-18			318.06	315.75	315.84	315.82	318.16	315.84	315.78	315.91	315.81	315.87	315.89	316.01	316.12	315.91	316.00
16-Apr-19			317.72	316.49	316.56	316.66	319.71	316.90	316.64	318.40	316.63	316.64	316.63	316.67	316.28	316.59	316.37
1-Jun-19			316.29	316.20	317.97	317.19	317.21	316.25	315.35	316.55	316.02	316.49	315.20	316.60	315.41	315.93	
9-Sep-19			317.90	315.39	314.97	315.55	318.36	315.55	316.35	315.72	315.88	315.63	315.67	315.85	315.66	315.78	315.78
1-Dec-19			318.26	315.77	315.86	315.91	318.48	315.90	315.82	316.00	315.86	319.65	319.65	316.15	315.98	316.04	316.09
23-Apr-20			318.10	316.04	316.07	316.23	319.17	316.19	316.20	316.32	316.15	316.27	316.26	316.44	316.08	316.43	316.22
20-Jun-20			317.73	315.93	316.08	315.95	318.62	316.14	315.74	316.05	315.93	315.95	315.94	316.06	316.08	315.87	316.18
10-Sep-20			317.98	315.38	315.61	315.97	318.27	315.51	315.52	315.77	315.50	315.57	315.66	315.72	315.65	315.72	315.69
1-Dec-20			317.95	315.42	315.49	315.52	318.05	315.53	315.53	315.65	315.51	N/A	N/A	315.67	315.64	315.66	315.72
27-Apr-21			318.02	315.77	315.86	315.94	318.66	316.03	315.94	316.00	315.89			316.07	315.83	316.14	315.90
1-Jun-21			317.77	315.85	315.96	315.85	318.29	316.06	315.66	315.75	315.67			315.84	315.66	315.73	315.72
14-Sep-21			318.30	315.53	315.58	315.62	318.29	315.64	315.64	315.72	315.63			315.79	315.69	315.74	315.79
1-Dec-21			319.25	316.07	316.14	316.18	318.97	316.15	316.18	316.23	316.13			316.40	316.01	316.20	316.06

Routine Groundwater Elevations at the WRIC/Waste Transfer Station

AECOM

Date	15a-01	15b-01	16a-08	16b-08	17a-08	17b-08	18a-08 /18a-14	18b-08 /18b-14	19a-08	19b-08	20a-08	20b-08	21a-08	22a-11	22b-11	23a-12	23b-12
4-Apr-91																	
14-Apr-91																	
12-May-91																	
17-May-91																	
17-May-94																	
5-May-95																	
13-Apr-96																	
13-Jun-96																	
21-Aug-96																	
9-Sep-96																	
11-Dec-96																	
20-Dec-96																	
11-Feb-97																	
3-Mar-97																	
27-Mar-97																	
6-May-97																	
23-Jun-97																	
8-Aug-97																	
9-Dec-97																	
31-Mar-98																	
24-Jun-98																	
29-Sep-98																	
3-Dec-98																	
29-Jun-99																	
9-Dec-99																	
21-Jun-00																	
28-Sep-00																	
6-Dec-00																	
22-Mar-01																	
26-Apr-01																	
28-May-01																	
27-Jun-01																	
31-Jul-01																	
30-Aug-01																	
28-Sep-01																	
19-Oct-01																	
8-Nov-01	315.70	315.95															
16-Nov-01	315.84	316.06															
21-Nov-01	315.84	316.02															
27-Nov-01	315.72	315.86															
4-Dec-01	316.11	316.30															
28-Jan-02	316.02	316.10															
28-Feb-02	316.32	316.47															
28-Mar-02	316.23	316.34															

Notes Location 18 was decommissioned and off set in September 2014 to facilitate construction of the PDO Area.

Routine Groundwater Elevations at the WRIC/Waste Transfer Station

AECOM

Date	15a-01	15b-01	16a-08	16b-08	17a-08	17b-08	18a-08 /18a-14	18b-08 /18b-14	19a-08	19b-08	20a-08	20b-08	21a-08	22a-11	22b-11	23a-12	23b-12
10-Apr-02	316.24	316.31															
29-Apr-02	316.33	316.35															
28-May-02	316.30	316.34															
4-Jun-02	316.24	316.27															
30-Sep-02	315.69	315.75															
3-Dec-02	315.71	315.86															
25-Apr-03	316.01	316.31															
2-Jun-03	316.19	316.35															
30-Sep-03	315.80	315.99															
1-Dec-03	316.29	316.56															
27-Apr-04	316.48	316.56															
8-Jun-04	316.33	316.43															
14-Sep-04	315.83	316.13															
30-Nov-04	315.67	315.74															
18-Apr-05	316.36	316.34															
1-Jun-05	315.62	315.59															
30-Sep-05	315.70	315.66															
28-Nov-05	315.72	315.66															
20-Apr-06	316.23	316.17															
1-Jun-06	315.54	316.00															
27-Sep-06	315.77	315.72															
4-Dec-06	316.54	316.48															
30-Mar-07	316.48	316.37															
26-Apr-07	316.27	316.19															
14-Jun-07	315.96	315.99															
27-Sep-07	315.45	315.52															
5-Dec-07	315.65	315.72															
25-Apr-08	316.92	316.77	316.30	316.09	316.33	316.62	317.72	317.07	316.19	316.89	318.01	316.22					
25-Jun-08	316.35	316.12	316.00	315.95	316.18	316.02	318.17	316.21	316.31	316.03	318.01	316.23					
18-Sep-08	316.31	316.16	316.01	315.78	316.05	315.95	317.03	316.22	316.18	316.02	318.01	316.27	316.23				
9-Dec-08	316.16	316.00	315.88	315.69	315.83	315.79	316.98	316.21	315.95	315.98	318.01	316.25	315.96				
2-Apr-09	316.51	316.34	316.05	315.82	316.15	316.17	317.42	317.56	316.43	316.36	318.01	316.20	316.64				
24-Jun-09	315.28	315.86	315.40	315.55	314.82	315.67	316.79	316.21	315.62	316.03	317.59	316.14	316.17				
10-Sep-09	315.92	315.73	315.63	315.50	315.62	315.49	316.57	316.21	315.88	315.78	317.64	316.10	315.75				
15-Dec-09	315.83	315.76	315.61	315.56	315.54	315.46	316.59	316.20	315.80	315.53	318.01	316.22	315.70				
22-Apr-10	316.35	316.23	315.13	315.71	316.05	316.07	317.40	316.54	316.36	316.24	318.01	316.16	316.48				
1-Jun-10	316.15	316.10	315.77	315.65	315.88	315.84	317.00	316.22	316.11	315.98	318.01	316.15	316.15				
1-Sep-10	315.80	315.77	315.66	315.56	315.57	315.51	317.00	316.20	315.79	315.56	318.01	316.17	315.75				
16-Dec-10	315.92	315.81	315.64	315.51	315.69	315.58	317.02	316.22	315.87	315.81	318.01	316.14	315.73				
5-Apr-11	316.53	316.34	315.93	315.88	316.14	316.20	317.37	316.67	316.42	316.40	318.01	316.18	316.52				
14-Jun-11	316.63	316.63	315.96	315.81	316.25	316.40	316.99	318.05	316.73	316.66	318.01	316.16	317.91				
16-Sep-11	315.19	315.42	315.29	315.32	315.09	315.22	316.19	316.19	315.13	315.28	317.77	316.07	315.52				
13-Dec-11	316.17	316.22	315.90	315.77	315.93	315.96	316.06	316.55	315.15	316.03	318.01	316.31	316.12	316.64	315.95		
12-Apr-12	316.02	315.98	315.70	315.50	315.83	315.81	317.12	316.25	316.02	315.94	318.01	316.12	316.19	315.77	315.73		

Notes Location 18 was decommissioned and off set in September 2014 to facilitate construction of the PDO Area.

Routine Groundwater Elevations at the WRIC/Waste Transfer Station

AECOM

Date	15a-01	15b-01	16a-08	16b-08	17a-08	17b-08	18a-08 /18a-14	18b-08 /18b-14	19a-08	19b-08	20a-08	20b-08	21a-08	22a-11	22b-11	23a-12	23b-12
18-Jun-12	315.68	315.63	315.41	315.35	315.15	315.42	316.75	<316.13	315.50	<315.16	318.01	316.08	316.27	315.29	315.39		
5-Jul-12																315.15	315.29
7-Aug-12	315.10	315.37	315.16	315.12	314.99	315.13	316.27	<316.13	315.02	<315.16	318.01	315.60	315.41	314.99	315.16	314.97	315.04
27-Sep-12	315.42	315.56	315.39	315.34	315.23	315.29	316.15	316.81	315.20	315.24	318.01	315.94	315.31	315.31	315.28	NA	NA
2-Nov-12	315.75	316.03	315.58	315.65	315.81	315.81	317.44	316.41	315.88	315.80	318.01	316.35	315.81	315.81	315.81	315.89	315.70
17-Dec-12	315.61	315.81	315.51	315.47	315.41	315.58	317.10	316.14	315.52	315.68	318.01	316.22	315.88	315.62	315.49	315.53	315.63
26-Apr-13	316.54	316.58	315.94	315.78	316.32	316.44	317.84	316.68	316.32	316.41	318.01	316.22	316.90	316.34	316.28	316.60	316.65
17-Jun-13	315.99	315.95	315.49	315.66	315.69	315.77	317.18	316.19	315.91	315.88	318.01	316.17	316.17	315.81	315.76	315.99	315.85
25-Sep-13	315.79	315.95	315.49	315.63	315.61	315.69	317.15	316.24	315.73	315.70	318.01	315.96	315.94	315.68	315.65	315.45	315.65
1-Dec-13	315.38	315.50	315.18	315.26	315.11	315.47	316.83	<316.13	315.41	315.69	318.01	315.94	315.77	315.41	315.30	315.49	315.50
24-Apr-14	316.43	316.50	315.90	315.71	316.05	316.42	317.90	316.97	316.47	316.57	318.01	316.20	316.78	316.27	316.19	316.45	316.54
1-Jun-14	316.22	316.31	315.65	315.54	315.89	316.08	317.47	316.53	316.04	316.15	318.01	316.13	316.56	316.11	315.97	316.20	316.25
16-Sep-14	315.80	316.12	315.52	315.44	315.71	315.81	317.28	316.16	315.74	315.85	318.01	316.09	316.08	315.81	315.72	315.69	315.79
1-Dec-14	315.88	314.95	315.46	315.67	315.70	315.68	318.42	316.22	315.86	315.74	318.01	316.16	315.96	315.65	315.66	315.85	315.94
29-Apr-15	315.38	315.79	315.43	315.18	315.48	315.51	317.51	316.05	316.05	316.06	318.01	316.13	316.19	315.71	315.89	315.97	316.05
16-Jun-15	316.00	316.23	315.68	315.76	315.71	315.83	318.69	317.50	316.07	315.99	318.01	316.16	316.12	315.81	315.83	316.10	316.02
24-Sep-15	316.17	316.16	315.31	315.51	315.42	315.40	318.46	315.85	315.61	315.45	318.01	316.23	315.61	315.54	315.57	316.55	315.41
1-Dec-15	315.52	315.80	315.35	315.52	315.27	315.42	318.20	315.98	315.50	315.51	318.01	316.10	315.60	315.37	315.32	315.96	315.38
29-Apr-16	315.91	316.11	315.28	315.51	315.83	315.92	318.52	316.39	315.80	316.10	318.01	315.57	316.36	315.81	315.78	315.85	316.03
1-Jun-16	315.59	315.84	315.27	315.52	315.41	315.55	318.38	316.08	315.72	316.01	318.01	316.95	315.99	315.51	315.41	315.67	315.62
20-Sep-16	315.44	315.53	314.88	315.06	314.80	314.81	317.97	315.93	315.25	315.15	317.35	315.42	315.65	314.85	314.85	314.69	314.79
1-Dec-16	315.43	315.81	315.29	315.41	315.24	315.21	318.03	315.99	315.44	315.09	317.75	316.11	315.42	315.22	315.24	315.44	315.16
27-Apr-17	316.19	316.71	315.55	315.64	315.97	316.10	318.72	316.65	316.23	316.22	318.01	315.81	316.48	315.85	315.96	316.25	316.21
5-Jun-17	316.24	316.34	315.56	315.78	315.93	316.05	318.82	316.56	316.28	316.28	318.01	316.16	316.60	315.92	315.97	316.24	316.18
19-Sep-17	315.29	315.62	315.67	315.59	315.01	315.07	318.44	315.68	315.65	315.22	318.01	315.62	315.28	315.12	315.15	315.04	315.17
5-Dec-17	315.65	316.13	315.93	316.00	315.37	315.58	318.39	316.17	315.59	315.52	318.01	316.06	315.72	315.53	315.60	315.59	315.45
24-Apr-18	316.53	316.84	316.24	316.49	316.53	316.83	319.21	317.11	316.55	317.24	318.01	317.40	316.90	316.56	317.53	316.62	316.61
13-Jun-18	316.05	316.35	316.12	316.22	315.84	315.95	318.69	316.53	316.04	315.95	318.01	316.34	316.34	315.91	316.00	315.96	315.69
27-Sep-18	315.37	315.89	315.76	315.81	315.26	315.52	317.96	316.05	315.38	315.36	318.01	316.31	315.68	315.39	315.51	315.33	315.31
10-Dec-18	315.91	316.25	315.88	315.96	315.52	315.65	318.48	316.42	315.94	315.81	318.01	316.21	315.97	315.77	315.81	315.92	315.78
16-Apr-19	316.59	316.91	316.35	316.65	316.69	316.96	319.45	317.19	316.43	317.29	318.01	317.22	316.92	316.51	317.03	316.49	316.62
1-Jun-19	319.50	316.33	314.97	316.19	315.74	316.24	319.23	318.41	320.10	316.38	309.22	318.07	319.89	313.03	316.16	323.63	316.55
9-Sep-19	315.76	316.03	315.76	315.72	315.55	315.45	317.73	316.32	315.79	315.63	318.01	316.12	315.76	315.57	315.52	315.74	315.45
1-Dec-19	316.04	316.36	315.97	315.96	315.86	315.68	317.99	316.43	315.97	315.86	318.01	316.20	316.08	315.85	315.80	315.98	315.80
23-Apr-20	315.34	316.49	316.10	316.27	316.16	316.13	318.51	316.62	316.37	316.22	318.01	316.29	316.53	316.08	316.17	316.31	316.12
20-Jun-20	315.94	316.33	316.11	316.12	315.95	315.73	318.15	316.45	315.91	316.11	318.01	316.16	316.18	315.83	315.91	316.00	315.82
10-Sep-20	315.62	315.95	315.97	315.64	315.52	315.46	317.90	316.30	315.72	315.47	318.01	316.07	315.74	315.57	315.48	315.62	315.41
1-Dec-20	315.66	316.06	315.71	315.67	315.53	315.44	317.76	316.11	315.66	315.39	318.01	315.68	315.68	315.49	315.50	315.65	315.44
27-Apr-21	316.07	316.27	316.00	315.81	315.84	315.82	318.20	317.65	316.00	316.13	318.01	316.22	316.03	315.89	315.84	315.97	315.94
1-Jun-21	315.78	316.24	315.72	315.66	315.64	315.53	318.02	317.54	315.79	315.65	318.01	316.11	316.07	315.30	315.59	315.75	315.57
14-Sep-21	315.85	316.07	315.69	315.81	315.67	315.56	317.92	317.55	315.69	315.56	318.01	316.16	315.79	315.63	315.59	315.82	315.59
1-Dec-21	316.30	316.37	316.09	316.02	316.11	315.93	318.43	317.92	316.42	316.14	318.01	316.32	316.44	316.15	316.14	316.30	316.09

Notes Location 18 was decommissioned and off set in September 2014 to facilitate construction of the PDO Area.

Appendix B

**Groundwater Chemistry and
Time-Concentration Plots –
Routine and Organics**

A decorative graphic element consisting of a thick, dark green curved line that starts from the left edge of the page, dips down, and then rises to curve upwards towards the right edge, creating a wave-like shape that separates the text from the bottom of the page.

Routine Groundwater Quality - General Analysis -Guelph WRIC & Waste Transfer Station

AECOM

Date	Lab	pH	Cond- uctivity	Alk mg/L	Mg mg/L	K mg/L	BOD mg/L	COD mg/L	TKN mg/L	NH3-N mg/L	Total-P mg/L	SO4 mg/L	Phenol ug/L	Cl mg/L	Na mg/L	Ca mg/L	Fe mg/L	B mg/L	P mg/L	Zn mg/L	NO2 mg/L	NO3 mg/L
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Monitor: 1a-91 Lower Till

1991-11-07	EPL	7.2	609	297	32	8.1						25.6		10.5	2.9	96.7	<0.005	0.03	<0.09	<0.005	<0.03	17.7
1992-03-04	EPL	7.09	647	300	31.8	7.9						26.2		9.23	3.14	94.7	0.026	0.03	1.13	0.017	<0.03	17.9
1992-03-07	EPL	7.63	721	234	35.5	8.1						27.3		14.1	2.72	89.1	<0.005	<0.01	<0.06	<0.005	<0.03	27.5
1994-05-17	EPL	7.76	703	242	31.6	5.5				< 0.05		28.7		12.6	2.41	97.6	0.101	0.02	<0.06	0.024	<0.03	22.6
1995-05-05	MDS	7.6	689	250	32.5	5.2				< 0.05		31.7		17.3	2.67	102	0.012	0.02	<0.06	<0.005	<0.03	21.3

Monitor: 1b-91 Outwash

1991-11-07	EPL	7.3	753	280	40	15						37.4		23.9	3.5	111	0.074	0.05	<0.09	<0.005	<0.03	33.1
1992-03-04	EPL	7.31	733	227	34.9	13.6						34.1		10.5	2.95	97.2	0.265	0.05	0.7	0.022	<0.03	32.3
1992-03-07	EPL	7.64	740	224	34.1	14.6						33.6		20.7	3.01	97.8	0.022	0.04	<0.06	0.01	<0.03	27.2
1994-03-17	EPL	7.74	521	225	23	11.4				< 0.05		15.6		5.45	2.01	67.7	0.064	0.03	<0.06	0.009	<0.03	8.76
1995-05-05	MDS	7.85	398	138	16.4	7.4				< 0.05		19.7		26.9	10.9	46.1	0.033	0.03	<0.06	<0.005	<0.03	5.01

Monitor: 2a-91 Lower Till

1991-11-07	EPL	7.78	434	215	28	2.8						17.1		24.5	32	35	0.11	0.06	<0.09	<0.005	<0.03	0.98
1992-03-04	EPL	7.61	494	229	28.7	3.6						20		21.3	34.7	36.9	0.313	0.07	1.14	0.009	0.37	1.67
1992-03-07	EPL	7.88	479	209	28.3	1.4						16.2		15.2	30.6	36.6	0.018	0.06	<0.06	<0.005	0.16	1.99
1994-05-17	EPL	7.99	462	236	24.3	0.9				< 0.05		10.5		10.5	39.6	30.4	0.204	0.07	<0.06	<0.005	<0.03	0.08
1995-05-05	MDS	8.02	437	210	20.9	1				< 0.05		11.7		8.92	45.5	28	0.054	0.07	<0.06	<0.005	<0.03	0.47
1996-04-13	ENT	8.31	424	220	29	1.82				0.45		19.8	< 0.5	8.1	30	49.3	0.23	0.093		0.01	<0.06	<0.05
1996-06-13	ENT	8.27	331	234	26.5	2.61				0.159		18.9	< 0.5	7.5	32	43.3	<0.01	0.11		<0.01	<0.06	0.4
1996-08-21	ENT	7.7	454	237	26.9	2.1				0.22		19.9	1	7.5	33.3	43.9	<0.01	0.11		<0.01	<0.06	1.27
1996-09-18	ENT	8.11	363	226	31.4	1.9				0.03		18	< 0.5	6.4	31.4	41.1	<0.01	0.146		<0.01	<0.06	1.08
1997-02-11	WBL	7.9			23.8	1.7	< 0.34	8	0.17	0.021	< 0.011	48.4	< 0.72	119	27.1	45.6	0.796	0.057	0.048	0.028		
1997-03-26	WBL	8.18	514	235	27.7	2.29	< 0.34	17	0.16	0.089	< 0.011	25.2	< 0.72	5.8	26.2	51	0.672	0.07	<0.028	0.021		
1997-06-25	WBL	8.24	471	226	21.8	1.43	1.89	< 7	0.33	0.26	< 0.011	18.8	< 0.72	5.33	24	36.5	0.069	0.066	<0.028	0.016		
1997-10-01	WBL	8.1	441	227	22.6	1.63	0.66	14	0.33	0.176	< 0.011	16.3	< 0.72	5.13	26.9	38.6	0.477	0.055	<0.028	0.017		
1997-12-11	WBL	8.12	450	225	22.2	1.92	< 0.34	33	0.34	0.108	< 0.011	16.7	< 0.72	4.97	29.5	38.6	1.28	0.055	<0.028	0.042		0.22
1998-03-31	WBL	8.05	455	227	21.3	1.77	1.03			0.212		16.3	< 0.72	6.47	24.2	44.8	1.14	0.055	<0.011	0.022		0.58
1998-06-24	WBL	8.06	463	230	21.2	1.39	0.9			0.177		17	< 0.72	4.92	26.7	42	0.176	0.103	<0.006	0.01		0.8
1998-10-02	CAN	8	500	240	25	< 1	2	< 5	0.17	< 0.1	0.08	19	< 1	4.8	31	41	0.6	0.05		0.02		0.71
1998-12-03	CAN	7.9	490	240	23	< 1	< 2	< 5	0.2	< 0.1	0.12	17	< 2	4.9	30	36	<0.05	0.05		<0.01		0.4
1999-06-29	Barr	8.45	440	220	24.2	2	1.5	9	0.33	0.24	0.025	15.8		5.9	28.7	38	0.39	0.05	<0.1	0.017		
1999-12-09	Barr	8.04	454	221	23.2	1.4	0.7	14	0.46	0.23	0.009	15	< 1	< 5	32.3	34.5	0.02	0.07	<0.1	<0.005		
2000-06-21	Philip	7.88	441	231	21.6	1.2	1	< 5	0.46	0.31	0.005	15.3	< 1	5.1	25.6	35.8	<0.03	0.042	<0.05	<0.005		
2000-12-07	Philip	8.15	388	236	22.6	1.1	1.1	10	0.47	0.25	0.011	17.8	< 1	5.2	27.8	35.7	0.21	0.094		0.11		
2001-06-27	Philip	7.9	456	236	23	1	1.9	< 5	0.34	0.22	0.018	22.4	< 1	4.8	29.4	38.2	0.06	0.13	<0.1	0.135		
2001-12-03	Philip	8.19	457	241	20.3	1.6	1	< 5	0.23	0.07	0.028	18.1	< 1	4.2	30.4	33.3	0.03	0.07	<0.1	0.038		
2002-06-04	Philip	8.44	443	266	23.4	1	0.6	8	0.66	0.13	0.016	15.2	< 1	3.6	25.7	39.6	<0.01	0.06	<0.1	0.007		
2002-12-03	Philip	8.27	466	230	24.4	2	< 0.5	17	0.94	0.07	0.01	14.7	< 1	3.3	27.1	42.3	0.01	0.05	<0.1	<0.005		
2003-06-02	Philip	8.14	460	220	23.7	1	< 0.5	9	0.67	0.17	< 0.001	15.7	20	4.6	25.8	40.4	<0.01	0.06		<0.005		
2003-12-01	Philip	8.21	415	225	24.5	1.1	1	6	0.25	< 0.03	0.015	20.1	< 1	4.4	24.6	40.8	0.03	0.06	<0.1	<0.005		

Routine Groundwater Quality - General Analysis -Guelph WRIC & Waste Transfer Station

AECOM

Date	Lab	pH	Cond- uctivity	Alk mg/L	Mg mg/L	K mg/L	BOD mg/L	COD mg/L	TKN mg/L	NH3-N mg/L	Total-P mg/L	SO4 mg/L	Phenol ug/L	Cl mg/L	Na mg/L	Ca mg/L	Fe mg/L	B mg/L	P mg/L	Zn mg/L	NO2 mg/L	NO3 mg/L
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Monitor: 2a-91 Lower Till

2004-06-09	Philip	8.11	459	234	22	< 1	0.7	6	0.36	0.07	0.01	20.9	< 1	5.2	36.8	36.6	<0.01	0.06		0.03	<0.2	0.7
2004-11-30	Philip	8.04	452	241	23.5	1	< 0.5	5	0.23	0.03	0.005	15.5	< 1	4.3	27.5	38.4	<0.01	0.05		<0.005		
2005-08-03	N/A																					
2005-11-28	Maxx	8.24	433	233	25		< 2	14	0.8	0.14	< 0.02	15	< 1	4	32	4	<0.05	0.061	<0.05	0.005		
2006-06-01	MAX	8.2	510	254	27	1.4	< 2	6	0.8	0.24	< 0.02	15	< 1	7	28	48	<0.02	0.061	<0.05	<0.005		
2006-12-04	MAX	8.2	511	256	26	1.3	< 2	< 4	0.5	0.23	< 0.02	18	< 1	6	30	43	<0.02	0.061	<0.05	<0.005		
2007-03-30	MAX	8.3	477	241	22	1.2	< 2	4	0.4	0.21	< 0.02	16	< 1	6	32	39	<0.02	0.063	<0.05	<0.005		
2007-06-14	MAX	8.3	501	249	28	1.4	2	5	0.3	0.16	0.04	19	< 1	6	37	42	<0.02	0.071	<0.05	<0.005		
2007-12-05	MAX	8.3	448	229	23	1.3	< 2	8	0.2	0.12	< 0.02	13	< 1	4	24	40	<0.02	0.05	<0.1	<0.005	<0.01	0.1
2008-06-25	MAX	8.4	446	226	23	1.4		13	0.5	0.25	< 0.02	13	< 1	5	33	38	<0.02	0.059	<0.1	<0.005	<0.01	0.1
2008-12-09	MAX	8.1	460	236	21	1.1	< 2	4	0.3	0.09	0.03	16	< 1	3	29	39	<0.02	0.064	<0.1	<0.005	<0.01	<0.1
2009-06-25	MAX	8.1	486	244	27	1.4	< 2	6	0.5	0.25	< 0.02	16	< 1	4	31	44	<0.02	0.067	<0.1	<0.005	<0.01	0.8
2009-12-16	MAX	8.2	439	227	24	1.3	< 2	4	0.4	0.2	< 0.02	10	< 1	3	22	42	<0.02	0.055	<0.1	<0.005	<0.01	<0.1
2010-06-29	MAX	8.1	456	226	23	1.2	< 2	11	0.6	0.29	< 0.02	12	< 1	4	25	40	<0.02	0.064	<0.1	<0.005	<0.01	0.4
2010-12-22	MAX	8.07	452	238	26	1.2	< 2	< 4	0.2	< 0.05	< 0.02	7	< 1	4	22	45	<0.02	0.05	<0.1	0.013	<0.01	0.1
2011-06-16	MAX	8.11	493	246	26	1.4	< 2	13	0.5	0.3	< 0.02	15	< 1	3	27	47	0.02	0.057	<0.1	<0.005	0.03	0.9
2011-12-15	MAX	8.11	552	271	28	1.4	< 2	< 4	0.9	0.09	0.17	22	< 1	4	29	52	2	0.062	<0.1	0.06	0.06	0.4
2012-06-18	MAX	8.13	520	260	27	1.3	< 2	10	0.26	< 0.05	0.05	22	< 1	3	25	49	2.3	0.053	<0.1	0.011	<0.01	0.18
2012-12-17	MAX	7.98	640	330	35	1.5	< 2	< 4	0.45	0.066	0.086	31	< 1	4	32	62	2.8	0.054	<0.1	0.011	<0.01	0.52
2013-06-18	MAX	8.18	620	300	31	1.5	< 2	4.9	0.25	0.052	0.12	29	< 1	3	33	61	2.3	0.061	<0.1	0.007	<0.01	0.14
2013-12-05	MAX	7.97	700	340	38	1.6	< 2	18	3	0.1	0.86	34	< 1	5	32	73	<0.02	0.059	<0.1	<0.005	<0.01	0.74
2014-05-26	MAX	7.91	710	350	38	1.5	< 2	19	<2	< 0.05	0.94	36	< 1	5	30	72	0.053	<0.1	0.014	<0.01	0.9	
2014-12-02	Remo																					

Monitor: 2b-91 Outwash

1992-03-07	EPL	8	499	154	26.3	0.4					< 0.05	28.1		18.1	3.56	63.8	<0.005	<0.01	<0.06	<0.005	<0.03	13.3
1994-05-17	EPL	7.9	587	208	31.4	2					< 0.05	34		8.69	9.44	63.9	0.054	0.01	<0.06	<0.005	<0.03	<0.03
1995-05-05	MDS	7.95	530	179	28.3	0.6					< 0.05	25.5		8.59	3.69	68.9	0.019	<0.01	<0.06	<0.005		17.2
1996-04-13	ENT	7.91	425	169	26.8	0.908				0.01		30.3	< 0.5	11.6	4.1	67.9	<0.01	0.42		<0.01	<0.06	<0.05
1996-06-13	ENT	8.34	337	177	25.1	0.8				0.016		28.2	0.1	7.5	3.9	60.3	<0.01	0.052		<0.01	<0.06	11
1996-08-21	ENT	8.16	373	167	22.8	1.14				0.06		26.2	1	6.7	3.63	59.6	<0.01	0.05		<0.01	<0.06	11.2
1996-09-18	ENT	7.93	377	216	22.9	0.9				< 0.01		26	< 0.5	6.5	2.9	60.2	<0.01	0.067		<0.01	<0.06	11.5
1996-12-11	ENT	8.19	459	208	21.1	1.1				0.04		26.7	< 0.5	7.2	4.6	51	<0.01	0.017		0.01	<0.06	11.4
1997-03-27	WBL	8.14	543	180	26.8	0.69	< 0.34	18	0.24	< 0.01	0.014	25.8	< 0.72	10.5	2.4	71.9	0.088	0.028	<0.028	0.013		
1998-03-31	WBL	7.92	556	183	25.8	0.78	1.03			< 0.019		23.2	1.34	16.2	3.88	74.8	0.111	<0.016	0.024	0.012		15.7
1998-06-24	Dry																					
1998-10-02	Dry																					
1998-12-03	Dry																					
1999-12-09	Barr	7.77	463	166	23.9	< 1	0.9	14	0.4	0.43	0.005	27	< 1	17	3.6	53.2	<0.01	<0.01	<0.1	0.016		
2000-06-21	Philip	7.89	401	184	24.5	0.7	< 0.5	< 5	0.23	< 0.03	< 0.002	25.5	< 1	8.1	4	58.2	<0.03	<0.005	<0.05	<0.005		
2000-12-07	INS																					

Routine Groundwater Quality - General Analysis -Guelph WRIC & Waste Transfer Station

AECOM

Date	Lab	pH	Cond- uctivity	Alk mg/L	Mg mg/L	K mg/L	BOD mg/L	COD mg/L	TKN mg/L	NH3-N mg/L	Total-P mg/L	SO4 mg/L	Phenol ug/L	Cl mg/L	Na mg/L	Ca mg/L	Fe mg/L	B mg/L	P mg/L	Zn mg/L	NO2 mg/L	NO3 mg/L
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Monitor: 2b-91 Outwash

2001-06-27	INV																					
2001-12-03	INV																					
2002-06-04	Philip	8.22	362	176	21.8	< 1	1.1	15	1.01	< 0.03	0.006	19.1	< 1	5.5	1.8	52.2	<0.01	0.01	<0.1	0.015		
2002-12-03	INS																					
2003-06-02	Philip	8	444	182	23.1	< 1	1.4	14	0.74	< 0.03	< 0.001	15	6	4.8	2.2	54.4	<0.01	<0.01		0.019		
2003-12-01	Philip	8.16	501	190	25	< 1	< 0.5	10	0.51	< 0.03	0.004	23	< 1	8.4	2.9	61.4	<0.01	0.01	<0.1	0.008		
2004-06-08	Philip	7.83	550	256	31.2	< 1	< 0.5	7	0.49	< 0.03	0.002	21.3	< 1	8.4	2.1	90	0.04	0.01		0.179	<0.2	9.2
2004-11-30	INS																					
2005-08-03	INS																					
2005-11-28	INS																					
2006-06-01	INS																					
2006-12-04	INS																					
2007-03-30	MAX	8.1	764	362	39	0.84	< 2	5	0.3	0.06	< 0.02	15	< 1	10	2.5	78	<0.02	0.022	<0.05	<0.005		
2007-06-14	INS																					
2007-12-05	INS																					
2008-06-25	MAX	8.3	494	228	26	0.79		< 4	0.3	0.05	< 0.02	10	< 1	4	2.6	64	<0.02	0.02	<0.1	0.016	<0.01	0.7
2008-12-09	INS																					
2009-06-25	MAX	8	514	270	27	0.78	< 2	< 4	0.3	< 0.05	< 0.02	9	< 1	3	5.2	71	<0.02	0.02	<0.1	0.023	<0.01	0.7
2009-12-16	INS																					
2010-06-29	MAX	8	558	286	26	0.75	< 2	7	0.2	< 0.05	< 0.02	9	< 1	3	5.2	75	<0.02	0.018	<0.1	0.022	<0.01	1.2
2010-12-22	INS																					
2011-06-16	MAX	7.99	530	278	27	0.7	< 2	12	0.2	< 0.05	< 0.02	8	< 1	3	3.4	78	<0.02	0.016	<0.1	0.02	<0.01	0.4
2011-12-15	MAX	8.05	537	283	27	0.95	< 2	9	0.5	< 0.05	0.24	8	< 1	4	4.9	80	4.3	0.02	<0.1	0.04	<0.01	0.6
2012-06-18	INSV																					
2012-12-17	MAX	7.76	540	290	28	0.99	< 2	10	<0.1	< 0.05	0.19	6	< 1	3	3.8	87	6.7	0.011	<0.1	0.031	<0.01	0.46
2013-06-19	MAX	7.97	460	230	20	0.65	< 2	22	0.6	< 0.05	0.28	7	< 1	2	2.4	61	12	0.017	<0.1	0.019	<0.01	0.41
2013-12-05	MAX	7.92	500	270	26	0.94	< 2	31	2.9	< 0.05	0.34	5	< 1	2	2.4	81	<0.02	0.021	<0.1	0.026	<0.01	0.38
2014-05-26	MAX	7.9	450	240	22	0.67	< 2	8.3	0.21	< 0.05	0.14	6	< 1	2	2.5	68	5.9	0.017	<0.1	0.03	<0.01	0.4
2014-12-02	Remo																					

Monitor: 3-91 Bedrock

1991-11-07	EPL	7.2	711	278	42	1						31.7		22.6	3.2	104	0.12	0.02	<0.09	0.3	<0.03	27
1992-03-04	EPL	7.49	740	308	39.9	2						33.4		15.7	3.37	96.9	0.44	0.02	0.68	0.22	<0.03	22.4
1994-05-17	EPL	7.92	802	327	40.2	2.7				< 0.05		34.2		32.1	13.2	98.5	0.013	0.02	<0.06	0.299	<0.03	10.1
1995-05-05	MDS	7.47	687	300	37.2	< 0.4				< 0.05		32.5		20.8	7.75	96.5	0.018	0.01	<0.06	0.425	<0.03	9.27
1996-08-21	ENT	7.75	950	363	45.2	13.4				1.09		39	1.5	8	44.1	116	<0.01	0.12		0.46	<0.06	14.5
1996-09-18	ENT	7.53	720	323	39.9	7.1				0.45		30.8	< 0.5	40.1	18.1	105	0.03	0.112		0.28	<0.06	9.31
1996-12-11	ENT	8.09	918	363	32.9	1.86				0.08		35.9	< 0.5	49	17.4	85.6	<0.01	0.06		0.74	<0.06	18.3

Monitor: 3-97 Outwash

1997-12-11	WBL				464	29.4		79	2.08	0.037	2.07		< 0.72		98.5	905	54.9	0.05	3.3	6.86		
1998-03-31	WBL	7.72	1270	343	30.5	6.52		1.15		< 0.019		58.6	< 0.72	165	99.3	126	0.12	0.041	0.065	0.055		3.7

Routine Groundwater Quality - General Analysis -Guelph WRIC & Waste Transfer Station

AECOM

Date	Lab	pH	Cond- uctivity	Alk mg/L	Mg mg/L	K mg/L	BOD mg/L	COD mg/L	TKN mg/L	NH3-N mg/L	Total-P mg/L	SO4 mg/L	Phenol ug/L	Cl mg/L	Na mg/L	Ca mg/L	Fe mg/L	B mg/L	P mg/L	Zn mg/L	NO2 mg/L	NO3 mg/L
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Monitor: 3-97 Outwash

1998-06-24	WBL	7.56	939	364	27	4.98	1.17			< 0.019		27.8	< 0.72	71.6	44.9	112	0.475	0.072	<0.006	0.134		2.42
1998-10-02	Dry																					
1998-12-03	Dry																					

Monitor: 5-91 Bedrock/Outwash

1991-11-07	EPL	7.54	589	290	35	1.8						54.2		15.8	12	88	<0.005	0.02	<0.09	0.048	<0.03	1.8
1992-03-07	EPL	7.51	658	282	34.7	1.1						41.4		12.3	14.8	85.3	<0.005	0.01	<0.06	0.29	0.12	6.35
1994-05-17	EPL	7.64	547	282	31.9	1				< 0.05		15.6		8.68	4.67	68.5	0.084	0.01	<0.06	0.92	<0.03	0.86
1995-05-05	MDS	7.37	1210	234	60.2	< 0.4				< 0.05		53		210	51.1	136	<0.005	0.02	<0.06	0.229	<0.03	12

Monitor: 5-96 Bedrock

1997-02-11	WBL	7.32			34.8	4.83	< 0.34	< 7	0.24	0.021	0.012	32.7	< 0.72	6.53	54.6	125	0.013	0.041	<0.028	1.07		
1997-03-27	WBL	7.45	1390	312	35	5.16	< 0.34		0.19	0.051	< 0.011	39.5	< 0.72	219	88.8	130	0.013	0.034	<0.028	1.92		
1997-06-25	WBL	7.58	1460	326	33.5	5.1	< 0.34	< 7	0.35	0.044	< 0.011	41.6	< 0.72	251	100	104	0.017	0.029	<0.028	1.62		
1997-10-01	WBL	7.26	1290	345	37.1	5.57	< 0.34	13	0.29	< 0.01	< 0.011	43.4	< 0.72	190	102	116	0.017	0.032	<0.028	1.78		
1997-12-11	WBL	7.34	1240	358	35.9	5.85	< 0.34	25	0.24	0.018	< 0.011	43.3	< 0.72	173	96.3	115	0.016	0.023	<0.028	1.7		2.26
1998-03-31	WBL	7.18	1180	352	30.6	5.14	< 0.34			0.058		41.5	< 0.72	142	75.3	128	0.017	0.028	<0.011	1.52		1.95
1998-06-24	WBL	7.38	1240	346	31.4	5.27	1.32			0.062		38.6	< 0.72	172	84.2	107	0.028	0.053	<0.006	2.1		1.75
1998-10-02	CAN	7.3	1300	370	32	5.3	3	6	0.25	< 0.1	0.03	42	< 1	160	91	100	<0.05	<0.05		1.9		0.53
1998-12-03	CAN	7.3	1200	380	30	5.6	< 2	< 5	0.13	< 0.1	0.11	39	< 2	130	88	94	<0.05	<0.05		1.5		0.54
1999-06-29	Barr	8.01	1216	333	34.4	6	1.3	10	0.23	0.06	0.004	41.7		236	105	105	<0.01	<0.01	<0.1	2.12		
1999-12-09	Barr	7.32	1136	355	30.2	4.8	0.6	14	0.42	0.32	0.058	33	< 1	124	100	90.5	<0.01	0.02	<0.1	1.61		
2000-06-21	Philip	7.27	1056	330	29.2	5	0.6	10	0.46	< 0.03	< 0.002	35.8	< 1	165	95.3	100	<0.03	0.009	<0.05	1.42		
2000-12-07	Philip	7.52	910	360	27.2	4.5	0.7	11	0.45	0.04	< 0.002	31.5	< 1	112	71.9	83.9	<0.03	0.022		1.66		
2001-06-27	Philip	7.55	1376	321	33.2	5	0.8	< 5	0.22	< 0.03	0.01	38	< 1	275	137	111	<0.01	0.06	<0.1	1.81		
2001-12-03	Philip	7.68	1054	343	27.4	3.9	1	6	0.32	< 0.03	0.003	33	< 1	136	93.2	89.9	<0.01	0.05	<0.1	1.88		
2002-06-04	Philip	8.38	1360	290	31.1	5	0.9	9	0.39	< 0.03	0.005	32.6	< 1	290	139	106	<0.01	0.02	<0.1	1.92		
2002-12-03	Philip	7.9	1116	316	25.9	5	< 0.5	10	0.37	< 0.03	0.013	30.4	< 1	177	118	86.1	<0.01	0.02	<0.1	1.56		
2003-06-02	Philip	7.52	2132	278	38.4	6	< 0.5	10	0.39	0.03	< 0.001	43.2	6	474	263	134	<0.01	0.02		2.35		
2003-12-01	Philip	7.89	1345	299	24.2	4.3	0.9	10	0.36	< 0.03	< 0.002	35.8	< 1	284	178	83.7	<0.01	0.02	<0.1	1.65		
2004-06-08	Philip	7.46	2148	275	33.2	4.6	< 0.5	13	0.48	< 0.03	0.006	47.8	< 1	631	295	130	0.06	0.02		2.43	<0.2	1
2004-11-30	Philip	7.69	1707	321	20.8	4	< 0.5	19	0.64	0.04	0.003	41.3	< 1	425	272	79	<0.01	0.02		1.44		
2005-08-03	Maxx	7.97	3500	283	40	7.7	< 2	27	1.2	< 0.05	< 0.02	47	< 1	952	710	160	<0.5	<0.1	<0.5	2.9		
2005-11-28	Maxx	8.1	2780	333	25		< 2	17	0.5	< 0.05	< 0.02	49	< 1	661	53	97	<0.05	0.023	<0.05	1.6		
2006-06-01	MAX	8	3480	302	31	5.9	< 2	15	0.6	0.07	< 0.02	41	< 1	908	590	120	<0.02	0.021	<0.05	2.1		
2006-12-04	MAX	7.9	2190	341	19	4.6	< 2	6	0.3	0.09	< 0.02	41	< 1	470	390	73	<0.02	0.02	<0.05	1.4		
2007-03-30	MAX	8	2610	297	22	4.6	< 2	11	0.4	0.12	< 0.02	38	< 1	630	410	97	<0.02	0.018	<0.05	1.5		
2007-06-14	MAX	8.1	2900	284	29	5.3	< 2	12	0.3	0.1	< 0.02	40	< 1	700	490	110	<0.02	0.018	<0.05	2.2		
2007-12-05	MAX	8.1	2460	307	23	5.4	< 2	24	0.2	0.06	< 0.02	39	< 1	580	420	94	<0.02	0.017	<0.1	1.7	0.01	0.2
2008-06-25	MAX	8.1	3810	270	30	5.5		29	0.4	< 0.05	< 0.02	44	< 1	970	610	140	<0.02	<0.1	<0.1	2.2	<0.01	0.5
2008-12-09	MAX	8	2530	319	16	4.2	< 2	12	0.3	< 0.05	< 0.02	39	< 1	570	390	76	<0.02	0.03	<0.1	1.5	<0.01	0.3
2009-06-25	MAX	7.8	3030	288	27	5	< 2	12	0.3	< 0.05	< 0.02	42	< 1	740	490	110	<0.02	0.019	<0.1	2.3	0.01	0.4

Routine Groundwater Quality - General Analysis -Guelph WRIC & Waste Transfer Station

AECOM

Date	Lab	pH	Cond- uctivity	Alk mg/L	Mg mg/L	K mg/L	BOD mg/L	COD mg/L	TKN mg/L	NH3-N mg/L	Total-P mg/L	SO4 mg/L	Phenol ug/L	Cl mg/L	Na mg/L	Ca mg/L	Fe mg/L	B mg/L	P mg/L	Zn mg/L	NO2 mg/L	NO3 mg/L
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Monitor: 5-96 Bedrock

2009-12-16	MAX	7.7	2190	307	19	4.5	14	22	2	1.4	0.09	33	12	480	390	76	0.05	0.02	0.12	0.14	<0.01	0.2
2010-06-24	MAX	7.9	2560	263	24	4.4	< 2	4	0.5	< 0.05	< 0.02	32	< 1	610	390	100	<0.02	0.019	<0.1	1.4	<0.01	0.7
2010-12-17	MAX	7.9	1940	296	18	4	< 2	10	0.2	< 0.05	< 0.02	28	< 1	390	330	79	<0.02	0.027	<0.1	0.97	<0.01	0.4
2011-06-15	MAX	7.82	2580	277	26	4.2	< 2	16	0.2	< 0.05	< 0.02	31	< 1	630	390	120	<0.02	0.02	<0.1	2	<0.01	0.5
2011-12-13	MAX	7.96	1980	304	19	4	< 2	14	0.4	0.07	0.07	28	3	400	330	80	0.21	0.013	<0.1	1.1	<0.01	0.2
2012-06-18	MAX	7.85	3100	250	27	4.2	< 2	12	0.36	< 0.05	< 0.02	31	1.3	780	420	130	0.07	0.025	<0.1	1.7	<0.01	0.19
2012-12-10	MAX	7.71	1900	290	19	3.8	< 2	7.6	0.67	< 0.05	< 0.02	28	< 1	380	320	83	0.03	0.015	<0.1	1.6	<0.01	0.46
2013-06-20	MAX	8.24	3900	250	26	4.1	< 2	6.1	0.26	< 0.05	< 0.04	38	< 1	1100	380	120	0.26	0.013	<0.1	2.1	<0.01	0.26
2013-12-03	MAX	7.8	2400	300	19	4.1	< 2	6.4	0.31	< 0.05	< 0.02	30	< 1	590	440	88	<0.02	0.019	<0.1	1.5	<0.01	0.57
2014-05-23	MAX	7.8	2600	280	21	3.8	< 2	6.6	0.26	< 0.05	< 0.04	34	< 1	650	440	110	<0.02	0.013	<0.1	1.8	<0.01	0.64
2014-12-03	MAX	7.98	2800	290	23	4.3	< 2	8.4	0.14	< 0.05	< 0.02	35	< 1	680	460	100	<0.02	0.02	<0.1	1.8	<0.01	0.75
2015-06-22	MAX	7.68	2900	290	23	4.2	< 2	22	0.18	< 0.05	0.02	36	< 1	730	460	110	0.03	0.017	<0.1	1.7	<0.01	0.53
2015-12-07	MAX	7.84	2500	280	22	4	< 2	< 4	0.16	< 0.05	< 0.02	31	< 1	560	410	96	0.04	0.011	<0.1	1.8	<0.01	0.73
2016-06-24	MAX	7.96	3900	260	21	3.7	< 2	7.8	0.13	< 0.05	< 0.02	39	< 1	1100	390	96	0.17	0.019	<0.1	1.4	<0.01	0.21
2016-12-05	MAX	7.85	2900	310	17	3.6	< 2	10	0.13	< 0.05	< 0.02	39	< 1	670	490	86	0.06	0.018	<0.1	1.1	0.015	0.2
2017-06-06	MAX	8.07	3000	280	22	3.8	< 2	12	0.24	< 0.05	< 0.02	37	< 1	740	470	110	0.09	0.015	<0.1	1.7	<0.01	0.49
2017-12-12	MAX	7.96	2600	300	18	3.5	< 2	7.3	<0.1	< 0.05	< 0.02	33	< 1	550	390	86	0.07	0.029	<0.1	1.5	<0.01	0.38
2018-06-20	MAX	7.83	2600	280	21	3.6	< 2	7.3	<0.1	< 0.05	< 0.02	35	< 1	580	410	100	0.08	0.016	<0.1	1.6	<0.01	0.25
2018-12-12	MAX	7.91	2500	290	18	3.3	< 2	9.3	<0.1	< 0.05	< 0.02	36	< 1	560	400	85	0.05	0.016	<0.1	1.5	<0.01	0.31
2019-06-26	MAX	7.93	2700	270	21	3.3	< 2	5.9	0.13	0.056	< 0.02	37	< 1	740	470	110	0.04	0.016	<0.1	1.6	<0.01	0.33
2019-12-04	MAX	7.94	2700	280	21	3.6	< 2	< 4	<0.1	< 0.05	< 0.02	38	< 1	610	460	110	<0.02	0.015	<0.1	1.7	<0.01	0.33
2020-06-19	Burea	8	3100	290	23	3.8	< 2	11	0.12	< 0.05	0.022	34	< 1	780	520	120	0.05	0.017	<0.1	1.4	<0.01	0.26
2020-12-10	Burea	7.8	3300	290	26	4.4	< 2	12	0.1	< 0.05	< 0.02	37	< 1	870	560	120	0.05	0.028	<0.1	2.1	<0.01	0.31
2021-06-14	Burea	8.01	3200	300	23	4	< 2	16	<0.1	< 0.05	< 0.02	32	< 1	810	500	110	0.07	0.018	0.1	1.6	<0.01	0.72
2021-12-15	Burea	7.94	3400	320	23	4.4	< 2	12	<0.1	< 0.05	< 0.02	38	< 1	840	560	110	0.03	0.019		1.7	<0.01	0.81

Monitor: 6a-96 Bedrock

1997-02-11	WBL	7.55			26.4	3.58	0.87	17	0.25	< 0.01	< 0.011	32.4	< 0.72	16.3	68.8	111	0.036	0.038	<0.028	0.037		
1997-03-26	WBL	7.76	1430	237	35.4	4.36	< 0.34		<0.07	< 0.01	< 0.011	32.7	< 0.72	312	83.9	130	0.033	0.022	<0.028	0.051		
1997-06-25	WBL	7.76	1640	238	30	4.74	0.36	< 7	<0.07	< 0.01	< 0.011	33.4	< 0.72	312	136	104	0.026	0.028	<0.028	0.049		
1997-10-01	WBL	7.26	1690	420	37.1	16.4	1.44	10	0.23	< 0.01	< 0.011	43.1	< 0.72	216	134	158	0.021	0.056	0.035	0.154		
1997-12-11	WBL	7.63	1700	261	33	5.53	< 0.34	15	0.22	< 0.01	< 0.011	38.3	< 0.72	333	176	116	0.016	0.021	<0.028	0.03		14.8
1998-03-31	WBL	7.56	1290	246	29.1	4.87	< 0.34			< 0.019		32.9	< 0.72	199	70	133	0.02	0.021	<0.011	0.029		16.7
1998-06-24	WBL	7.61	1480	239	31.5	4.76	0.66			< 0.019		31	< 0.72	270	122	121	0.041	0.024	<0.006	0.049		13
1998-10-02	CAN	7.6	1500	260	33	4.8	2	8	0.24	< 0.1	0.02	33	< 1	250	130	110	<0.05	<0.05		0.04		16
1998-12-03	CAN	7.5	1600	250	33	5	< 2	< 5	0.11	< 0.1	0.12	30	< 2	280	120	110	<0.05	<0.05		0.07		12
1999-06-29	Barr	8.19	1210	252	33.5	5	0.9	10	0.24	0.03	0.003	32.3		261	111	112	<0.01	<0.01	<0.1	0.043		
1999-12-09	Barr	7.61	1344	260	31.1	4.3	0.7	11	0.14	0.02	0.006	30	< 1	208	129	101	<0.01	0.02	<0.1	0.07		
2000-06-21	Philip	7.52	1157	292	32	4	1.2	8	0.36	< 0.03	< 0.002	33.7	< 1	202	99.8	114	<0.03	<0.005	<0.05	0.039		
2000-12-07	Philip	7.74	1116	288	28.3	3.5	0.5	9	0.35	< 0.03	< 0.002	32.4	< 1	194	97.3	94.6	<0.03	0.014		0.034		
2001-06-27	Philip	7.73	1165	290	31.1	3	1.7	5	0.13	< 0.03	0.004	40	< 1	192	96	110	<0.01	0.06	<0.1	0.25		

Routine Groundwater Quality - General Analysis -Guelph WRIC & Waste Transfer Station

AECOM

Date	Lab	pH	Cond- uctivity	Alk mg/L	Mg mg/L	K mg/L	BOD mg/L	COD mg/L	TKN mg/L	NH3-N mg/L	Total-P mg/L	SO4 mg/L	Phenol ug/L	Cl mg/L	Na mg/L	Ca mg/L	Fe mg/L	B mg/L	P mg/L	Zn mg/L	NO2 mg/L	NO3 mg/L
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Monitor: 6a-96 Bedrock

2001-12-03	Philip	7.91	1232	286	30.7	2.7	< 0.5	< 5	0.12	< 0.03	0.005	36.4	< 1	206	104	106	<0.01	0.05	<0.1	0.099		
2002-06-04	Philip	8.14	1051	278	30	3	0.7	6	0.44	< 0.03	0.005	33.8	< 1	158	78.9	107	<0.01	0.02	<0.1	0.033		
2002-12-03	Philip	7.85	1143	271	29.3	4	< 0.5	8	0.41	< 0.03	0.012	33.9	< 1	179	99.2	106	<0.01	0.01	<0.1	0.039		
2003-06-02	Philip	7.58	1191	277	32.1	3	< 0.5	7	0.4	< 0.03	< 0.001	46.8	6	171	83.1	116	<0.01	0.01		0.035		
2003-12-01	Philip	8.09	1098	277	31.1	2	0.8	10	0.29	< 0.03	0.004	39	< 1	167	79.4	111	<0.01	0.02	<0.1	0.035		
2004-06-09	Philip	7.77	1029	248	28.3	2.9	< 0.5	< 5	0.18	< 0.03	0.004	34.8	< 1	164	74.5	125	0.08	0.01		0.404	<0.2	16.1
2004-11-30	Philip	7.78	1463	253	37	3	< 0.5	8	0.24	0.05	0.004	38.3	< 1	345	115	137	<0.01	0.02		0.034		
2005-08-03	Maxx	8.02	1350	235	38	2.8	< 2	5	0.3	< 0.05	< 0.02	34	< 1	233	130	130	<0.05	0.012	0.07	0.029		
2005-11-28	Maxx	8.08	1510	252	40		< 2	8	0.9	< 0.05	< 0.02	42	< 1	256	140	140	<0.05	0.016	<0.05	0.036		
2006-06-01	MAX	8.1	1510	264	35	2.7	< 2	7	0.3	< 0.05	0.04	39	1	228	130	120	<0.02	0.018	<0.05	0.036		
2006-12-04	MAX	7.9	1620	273	42	3.2	< 2	6	<0.1	0.09	0.02	56	< 1	210	140	150	<0.02	0.019	<0.05	0.042		
2007-03-30	MAX	8.1	1530	270	34	3.1	< 2	5	0.3	0.15	< 0.02	55	< 1	180	110	130	<0.02	0.021	<0.05	<0.005		
2007-06-14	MAX	8.2	1330	206	38	3.4	< 2	5	<0.1	0.1	< 0.02	56	< 1	190	130	130	<0.02	0.025	<0.05	0.035		
2007-12-05	MAX	8	1610	267	38	3.3	< 2	17	0.3	< 0.05	< 0.02	46	< 1	230	140	140	<0.02	0.015	<0.1	0.037	<0.2	34
2008-06-25	MAX	8.2	1660	257	32	3.1		< 4	0.4	0.09	< 0.02	42	< 1	280	160	120	0.04	0.021	<0.1	0.036	<0.1	26
2008-12-09	MAX	8	1740	268	38	3.6	< 2	9	<0.1	0.09	< 0.02	54	< 1	260	150	140	<0.02	0.02	<0.1	0.042	<0.01	37
2009-06-25	MAX	7.9	1700	273	39	4.4	< 2	5	0.1	< 0.05	< 0.02	50	< 1	240	160	150	<0.02	0.03	<0.1	0.039	<0.01	46
2009-12-15	MAX	7.8	1520	280	33	3.9	< 2	4	0.2	< 0.05	0.04	41	< 1	220	140	120	<0.02	0.03	<0.1	0.039	<0.01	22
2010-06-23	MAX	8	1340	277	28	3.4	< 2	< 4	0.4	< 0.05	< 0.02	37	< 1	200	130	110	<0.02	0.027	<0.1	0.029	<0.01	12
2010-12-20	MAX	7.86	1340	279	28	2.9	< 2	5	0.2	< 0.05	< 0.02	33	< 1	210	130	110	0.06	0.021	<0.1	0.035	<0.01	6.8
2011-06-14	MAX	7.94	1300	276	28	3	< 2	8	0.3	< 0.05	< 0.02	35	< 1	190	140	100	<0.02	0.028	<0.1	0.031	<0.01	8.4
2011-12-13	MAX	8.01	1220	269	26	3	< 2	5	0.2	< 0.05	0.04	34	< 1	160	120	98	<0.02	0.016	<0.1	0.038	<0.01	7.5
2012-06-18	MAX	7.91	1100	280	23	2.8	< 2	9.2	0.39	< 0.05	< 0.02	35	1.1	140	100	89	<0.02	0.021	<0.1	0.027	<0.01	5.9
2012-12-10	MAX	7.91	1200	290	26	2.9	< 2	< 4	0.45	< 0.05	< 0.02	34	< 1	160	120	100	<0.02	0.019	<0.1	0.03	<0.01	4.9
2013-06-17	MAX	8	1100	280	23	2.5	< 2	4	0.21	< 0.05	< 1	34	< 1	150	100	89	<0.02	0.024	<0.1	0.025	<0.01	4.8
2013-12-02	MAX	7.84	1200	290	27	3.2	< 2	7.1	0.35	< 0.05	< 0.02	39	< 1	160	110	100	<0.02	0.024	<0.1	0.029	<0.01	5.2
2014-05-21	MAX	7.88	1200	290	26	3.6	< 2	< 4	0.18	< 0.05	< 0.04	38	< 1	160	110	110	<0.02	0.024	<0.1	0.031	<0.01	5.31
2014-12-02	MAX	7.93	1300	280	25	3.7	< 2	< 4	0.33	< 0.05	< 0.02	34	< 1	180	120	100	0.03	0.029	<0.1	0.029	<0.01	4.55
2015-06-16	MAX	7.79	1400	290	28	2.9	< 2	4.5	0.55	< 0.05	0.02	35	< 1	230	140	110	0.05	0.029	<0.1	0.035	<0.01	3.7
2015-12-02	MAX	7.86	1400	270	24	2.6	< 2	6.9	0.38	0.1	0.021	37	< 1	220	140	98	0.15	0.026	<0.1	0.03	<0.01	2.8
2016-06-23	MAX	8.06	1300	260	24	2.5	< 2	5.3	0.16	< 0.05	< 0.02	38	< 1	200	120	98	<0.02	0.024	<0.1	0.03	<0.01	2.53
2016-12-02	MAX	7.92	1300	270	26	2.7	2	< 4	<0.1	< 0.05	< 0.02	42	< 1	210	130	100	<0.02	0.02	<0.1	0.03	<0.01	2.65
2017-06-06	MAX	8.13	1200	270	25	2.5	< 2	5.6	0.23	< 0.05	< 0.02	45	< 1	190	110	100	0.06	0.021	<0.1	0.028	<0.01	2.71
2017-12-05	MAX	7.9	1400	270	26	2.5	< 2	< 4	0.26	0.11	< 0.02	46	< 1	220	120	100	0.14	0.019	<0.1	0.02	0.011	2.48
2018-06-20	MAX	7.95	1300	260	26	2.3	< 2	< 4	0.15	< 0.05	< 0.02	50	< 1	190	110	110	0.02	0.021	<0.1	0.027	<0.01	1.76
2018-12-12	MAX	7.91	1300	260	27	2.1	< 2	< 4	<0.1	< 0.05	0.024	56	< 1	200	110	110	0.09	0.019	<0.1	0.021	<0.01	1.41
2019-06-14	MAX	7.92	1300	250	27	2.1	< 2	5.8	<0.1	< 0.05	< 0.02	61	< 1	250	120	110	0.04	0.021	<0.1	0.02	<0.01	1.48
2019-12-02	MAX	7.87	1300	250	29	2.1	< 2	< 4	0.15	< 0.05	0.034	55	< 1	210	110	110	0.22	0.019	<0.1	0.029	<0.01	1.67
2020-06-15	Burea	7.91	1200	260	29	2	< 2	< 4	<0.1	< 0.05	0.041	55	< 1	160	94	110	0.78	0.022	<0.1	<0.005	<0.01	1.45
2020-12-08	Burea	7.95	1200	270	27	1.9	< 2	< 4	<0.1	0.09	< 0.02	56	< 1	180	100	110	0.29	0.02	<0.1	<0.005	<0.01	1.29
2021-06-11	Burea	7.93	1200	270	25		< 2	< 4	0.15	< 0.05	< 0.02	54	< 1	160			0.03				<0.01	1.57

Routine Groundwater Quality - General Analysis -Guelph WRIC & Waste Transfer Station

AECOM

Date	Lab	pH	Cond- uctivity	Alk mg/L	Mg mg/L	K mg/L	BOD mg/L	COD mg/L	TKN mg/L	NH3-N mg/L	Total-P mg/L	SO4 mg/L	Phenol ug/L	Cl mg/L	Na mg/L	Ca mg/L	Fe mg/L	B mg/L	P mg/L	Zn mg/L	NO2 mg/L	NO3 mg/L
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Monitor: 6a-96 Bedrock

2021-06-12	Burea															100		0.024				
2021-06-13	Burea																					
2021-06-15	Burea																		<0.1			
2021-06-16	Burea					1.8																
2021-06-17	Burea														99							
2021-06-18	Burea																			0.021		
2021-12-14	Burea	7.89	1200	270	33	2.5	< 2	11	0.46	0.53	0.08	64	< 1	150	86	120	1.7	0.018	0.17	<0.005	<0.01	1.11

Monitor: 6b-96 Outwash

1997-02-11	WBL	7.39			42.2	15.3	0.42	22	0.18	0.055	< 0.011	44.3	< 0.72	621	322	167	0.038	0.045	<0.028	0.073		
1997-03-26	WBL	7.73	3260	260	35.2	16.3	< 0.34		0.09	< 0.01	< 0.011	44.1	< 0.72	815	467	146	0.073	0.062	<0.028	0.1		
1997-06-25	WBL	7.58	2210	323	34.8	15	0.51	< 7	<0.07	< 0.01	< 0.011	45	< 0.72	440	198	125	0.033	0.047	<0.028	0.139		
1997-10-01	WBL	7.65	1740	246	36.2	5.36	4.19	56	<0.07	< 0.01	< 0.011	35.8	< 0.72	341	164	128	0.019	0.02	0.035	0.041		
1997-12-11	WBL	7.33	1200	333	30.6	13.1	0.75	17	0.17	< 0.01	< 0.011	39.7	< 0.72	128	80.5	120	0.145	0.046	<0.028	0.09		14
1998-03-31	WBL	7.43	2770	270	28.8	12.6	< 0.34			< 0.019		50.9	< 0.72	649	289	168	0.113	0.029	<0.011	0.083		17.3
1998-06-24	WBL	7.34	1860	308	35.5	15.4	0.48			0.047		43	< 0.72	279	159	163	0.017	0.078	<0.006	0.151		43.5
1998-10-02	CAN	7.3	1500	410	45	15	< 2	< 5	0.34	< 0.1	< 0.02	40	< 1	150	92	160	<0.05	0.05		0.14		37
1998-12-03	CAN	7.3	1300	390	35	12	< 2	< 5	<0.1	< 0.1	0.11	35	< 2	120	75	120	<0.05	<0.05		0.1		15
1999-06-29	Barr	8.01	1550	327	34.3	11	1.9	11	0.29	< 0.02	0.003	44.4		338	189	125	0.01	0.03	<0.1	0.098		
1999-12-09	Barr	7.32	1378	332	32.1	10.5	0.6	17	0.54	0.05	0.002	38	< 1	155	122	121	<0.01	0.04	<0.1	0.108		
2000-06-21	Philip	7.36	1639	306	31	18	< 0.5	13	3.16	2.84	< 0.002	48.8	< 1	313	182	130	<0.03	0.03	<0.05	0.099		
2000-12-07	Philip	7.48	1137	352	32.9	10.2	2.5	11	0.44	0.09	< 0.002	43.7	< 1	163	78.3	113	<0.03	0.04		0.104		
2001-06-27	Philip	7.59	1580	339	30.2	10	1.9	< 5	0.28	< 0.03	0.005	43	< 1	265	188	114	<0.01	0.07	<0.1	0.258		
2001-12-03	Philip	7.79	1531	379	28.6	8.9	< 0.5	11	0.42	< 0.03	0.008	56.7	< 1	252	161	116	<0.01	0.06	<0.1	0.141		
2002-06-04	Philip	8.2	1769	317	32.7	10	0.6	12	0.59	< 0.03	0.015	46.1	< 1	390	223	129	0.01	0.04	<0.1	0.177		
2002-12-03	Philip	7.85	974	310	25.8	9	< 0.5	14	0.77	< 0.03	0.009	34.7	< 1	97	77.2	95	<0.01	0.03	<0.1	0.063		
2003-06-02	Philip	7.69	1538	270	25.8	7	0.7	10	0.37	0.1	< 0.001	41.9	11	350	225	101	<0.01	0.03		0.068		
2003-12-01	Philip	7.96	1407	309	22.5	6.9	0.8	5	0.42	< 0.03	0.004	38.6	< 1	278	179	107	0.03	0.03	<0.1	0.242		
2004-06-09	Philip	7.54	1871	314	40.4	10.2	< 0.5	8	0.3	< 0.03	0.003	65.2	< 1	412	214	217	0.21	0.04		1.31	<0.2	40.3
2004-11-30	Philip	7.76	791	290	20.5	6	< 0.5	13	0.6	< 0.03	0.004	23.4	< 1	90.3	53.1	85.9	<0.01	0.02		0.054		
2005-08-03	Maxx	7.86	1920	347	39	13	< 2	13	0.7	< 0.05	< 0.02	49	< 1	297	210	160	<0.05	0.045	<0.05	0.11		
2005-11-28	Maxx	8.19	1190	348	26		< 2	11	0.2	< 0.05	< 0.02	35	< 1	120	110	110	<0.05	0.039	<0.05	0.067		
2006-06-01	MAX	8	2060	342	35	11	< 2	8	0.5	< 0.05	0.08	44	< 1	340	250	140	<0.02	0.045	<0.05	0.088		
2006-12-04	MAX	8.1	1420	412	24	8.6	< 2	7	0.6	0.09	< 0.02	44	< 1	170	180	99	<0.02	0.04	<0.05	0.066		
2007-03-30	MAX	7.9	2440	356	31	9.2	8	12	0.8	0.11	< 0.02	54	< 1	460	280	120	<0.02	0.034	<0.05	<0.005		
2007-06-14	MAX	8	1820	344	36	11	< 2	9	0.3	0.09	< 0.02	55	< 1	240	230	140	<0.02	0.05	<0.05	0.09		
2007-12-05	MAX	8.1	1450	282	29	11	< 2	17	0.4	< 0.05	< 0.02	44	< 1	240	130	120	<0.02	0.041	<0.1	0.068	<0.01	8.3
2008-06-25	MAX	8.1	2480	308	47	14		15	0.6	0.13	< 0.02	63	< 1	420	280	190	<0.02	0.047	<0.1	0.12	<0.1	76
2008-12-09	MAX	8	1840	309	33	12	< 2	11	0.4	0.12	0.05	51	< 1	280	190	130	<0.02	0.034	<0.1	0.085	0.01	33
2009-06-25	MAX	7.9	2030	320	30	11	< 2	6	0.3	< 0.05	< 0.02	46	< 1	370	280	120	<0.02	0.049	<0.1	0.08	<0.01	23
2009-12-15	MAX	7.8	1380	307	30	11	< 2	< 4	0.6	0.19	0.03	45	< 1	170	130	120	<0.02	0.04	<0.1	0.068	<0.01	22

Routine Groundwater Quality - General Analysis -Guelph WRIC & Waste Transfer Station

AECOM

Date	Lab	pH	Cond- uctivity	Alk mg/L	Mg mg/L	K mg/L	BOD mg/L	COD mg/L	TKN mg/L	NH3-N mg/L	Total-P mg/L	SO4 mg/L	Phenol ug/L	Cl mg/L	Na mg/L	Ca mg/L	Fe mg/L	B mg/L	P mg/L	Zn mg/L	NO2 mg/L	NO3 mg/L
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Monitor: 6b-96 Outwash

2010-06-23	MAX	8	1300	302	22	8.1	< 2	< 4	0.5	< 0.05	< 0.02	36	< 1	190	140	90	<0.02	0.035	<0.1	0.064	<0.01	12
2010-12-20	MAX	7.82	1080	283	22	8.3	< 2	6	0.3	< 0.05	< 0.02	33	< 1	130	94	96	<0.02	0.027	<0.1	0.059	<0.01	11
2011-06-14	MAX	7.91	1650	313	22	7.7	< 2	16	0.4	< 0.05	< 0.02	36	< 1	270	240	93	<0.02	0.036	0.11	0.057	<0.01	6.1
2011-12-13	MAX	8.01	1380	326	24	9.1	< 2	13	0.8	< 0.05	0.12	38	< 1	180	160	95	2	0.024	<0.1	0.067	<0.01	5.3
2012-06-18	MAX	7.9	1500	350	22	7.6	< 2	10	0.38	< 0.05	0.027	39	< 1	230	190	95	0.12	0.029	<0.1	0.063	<0.01	5.6
2012-12-10	MAX	7.84	1200	310	21	7.6	< 2	16	1.1	< 0.05	0.12	22	1.2	160	130	94	2.4	0.023	<0.1	0.06	<0.01	2.9
2013-06-17	MAX	7.88	1900	330	26	8.7	< 2	4.6	0.81	0.4	0.044	73	< 1	330	230	110	0.1	0.036	<0.1	0.078	0.018	6.8
2013-12-02	MAX	7.79	1400	310	23	7.4	2	22	0.86	0.15	0.026	44	< 1	220	170	110	<0.02	0.03	<0.1	0.073	0.048	5.3
2014-05-21	MAX	7.88	2100	330	23	6.2	< 2	9.7	0.38	< 0.05	0.052	41	< 1	410	310	110	<0.02	0.027	<0.1	0.081	<0.01	7.18
2014-12-02	MAX	7.78	1900	330	28	8.4	2	14	1.4	0.063	0.059	40	< 1	350	210	130	0.21	0.042	<0.1	0.086	0.013	5.69
2015-06-16	MAX	7.75	1600	320	23	7	< 2	5.4	0.67	< 0.05	0.025	39	< 1	280	210	110	0.26	0.039	<0.1	0.076	<0.01	4.28
2015-12-02	MAX	7.81	1200	290	22	7.3	< 2	8.5	0.33	< 0.05	0.048	36	< 1	140	100	93	0.18	0.035	<0.1	0.065	<0.01	3.48
2016-06-23	MAX	7.99	2000	320	29	7.4	< 2	7.4	0.6	< 0.05	< 0.02	38	< 1	380	220	130	0.22	0.037	<0.1	0.088	<0.01	4.66
2016-12-02	MAX	7.93	1000	300	20	6.6	< 2	< 4	0.15	< 0.05	< 0.02	31	< 1	120	79	84	0.12	0.034	<0.1	0.058	<0.01	2.89
2017-06-06	MAX	8.1	1900	310	23	6.1	< 2	9.4	0.41	< 0.05	0.021	39	< 1	360	240	100	0.36	0.036	<0.1	0.062	<0.01	4.28
2017-12-05	MAX	7.94	770	280	16	4.9	< 2	4.1	0.12	0.061	< 0.02	20	< 1	68	59	68	0.27	0.024	<0.1	0.037	<0.01	1.31
2018-06-20	MAX	7.92	1100	280	20	4.6	< 2	< 4	0.13	< 0.05	0.029	59	< 1	140	110	92	0.33	0.03	<0.1	0.05	<0.01	1.99
2018-12-12	MAX	7.95	920	270	16	4.1	< 2	5	0.1	< 0.05	0.024	31	< 1	110	89	73	0.19	0.018	<0.1	0.039	<0.01	1.65
2019-06-14	MAX	7.92	1700	290	25	5.2	< 2	4.8	0.33	< 0.05	< 0.02	39	< 1	340	220	120	0.03	0.032	<0.1	0.057	<0.01	2.59
2019-12-02	MAX	7.88	920	260	19	3.9	< 2	< 4	0.16	0.078	< 0.02	31	< 1	130	100	77	0.29	0.019	<0.1	0.048	<0.01	1.59
2020-06-15	Burea	7.89	1100	290	21	4.1	< 2	< 4	<0.1	< 0.05	0.023	33	< 1	140	110	93	0.15	0.028	<0.1	0.054	<0.01	1.47
2020-12-08	Burea	7.98	790	270	17	3.2	< 2	< 4	<0.1	< 0.05	0.026	30	< 1	72	54	77	0.32	0.019	<0.1	0.045	<0.01	1.21
2021-06-11	Burea	7.94	1000	260	20	2.7	< 2	< 4	0.2	< 0.05	< 0.02	43	< 1	130	99	84	0.09	0.021	<0.1	0.04	<0.01	1.49
2021-12-14	Burea	7.87	1000	300	2.7	99	< 2	< 4	<0.1	< 0.05	< 0.02	35	< 1	130	< 0.1	0.09	0.08	84	20	0.04	<0.01	2.44

Monitor: 7-96 Outwash

1997-02-11	WBL	7.7			26.2	12.6	< 0.34	24	<0.07	< 0.01	< 0.011	35.2	2.48	132	63.5	90.1	0.053	0.048	<0.028	0.05		
1997-03-26	WBL	7.7	1180	256	32.5	14	< 0.34		<0.07	< 0.01	< 0.011	35.5	< 0.72	131	80.6	104	0.071	0.074	<0.028	0.084		
1997-06-25	WBL	7.8	992	250	29.6	9.65	0.69	< 7	0.08	< 0.01	< 0.011	35.2	< 0.72	66.4	33.7	95.1	0.03	0.039	<0.028	0.11		
1997-10-01	WBL	7.57	902	251	33.2	10.2	1.44	< 7	0.1	< 0.01	< 0.011	35.7	< 0.72	54.3	28.7	110	0.039	0.056	<0.028	0.082		24.6
1997-12-11	WBL	7.52	906	248	31.8	10.1	< 0.34	< 7	0.25	< 0.01	< 0.011	36.3	< 0.72	62.1	30	105	0.168	0.055	<0.028	0.084		23
1998-03-31	WBL	7.55	1120	224	32.4	9.06	< 0.34			< 0.019		43	< 0.72	92.4	36.8	127	0.092	0.038	<0.011	0.088		43.1
1998-06-24	WBL	7.77	1200	226	34.9	9.49	0.78			< 0.019		41.3	< 0.72	89.8	38.8	141	0.058	0.056	<0.006	0.115		53.5
1998-10-02	CAN	7.4	1100	280	38	11	3	10	0.27	< 0.1	< 0.02	46	< 1	74	35	130	<0.05	<0.05		0.12		41
1998-12-03	CAN	7.5	1200	310	39	11	< 2	< 5	0.36	< 0.1	0.1	41	< 2	72	32	130	<0.05	<0.05		0.13		37
1999-06-29	Barr	8.15	1325	248	41	12	2.2	10	0.21	< 0.02	0.003	58.4		282	110	132	<0.01	0.03	<0.1	0.122		
1999-12-09	Barr	7.39	1478	293	45.4	14.1	0.8	13	0.2	< 0.02	< 0.002	41	< 1	231	91.1	135	<0.01	0.05	0.1	0.153		
2000-06-21	Philip	7.44	1775	255	48.8	13.9	0.6	12	0.54	< 0.03	< 0.002	80.9	< 1	397	172	157	<0.03	0.035	<0.05	0.144		
2000-12-07	Philip	7.5	1430	321	41	13.2	16	12	0.3	0.05	< 0.002	75.8	< 1	227	118	135	<0.03	0.102		0.297		
2001-06-27	Philip	7.72	1768	293	44.4	13	1.7	6	0.34	< 0.03	0.006	105	< 1	307	176	144	<0.01	0.09	<0.1	0.246		
2001-12-03	Philip	7.73	1259	365	36.2	11.8	< 0.5	7	0.41	< 0.03	0.004	48.7	< 1	162	87.8	124	<0.01	0.05	<0.1	0.151		

Routine Groundwater Quality - General Analysis -Guelph WRIC & Waste Transfer Station

AECOM

Date	Lab	pH	Cond- uctivity	Alk mg/L	Mg mg/L	K mg/L	BOD mg/L	COD mg/L	TKN mg/L	NH3-N mg/L	Total-P mg/L	SO4 mg/L	Phenol ug/L	Cl mg/L	Na mg/L	Ca mg/L	Fe mg/L	B mg/L	P mg/L	Zn mg/L	NO2 mg/L	NO3 mg/L
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Monitor: 7-96 Outwash

2002-06-04	Philip	8.04	1863	328	46.1	20	< 0.5	11	0.77	0.42	0.006	110	< 1	378	201	146	<0.01	0.07	<0.1	0.182		
2002-12-03	Philip	7.92	1681	350	44.9	27	< 0.5	16	1.03	1.11	0.012	70.9	< 1	244	145	152	<0.01	0.07	<0.1	0.173		
2003-06-02	Philip	7.52	2122	298	52.7	23	< 0.5	11	0.99	0.41	0.002	131	12	380	212	167	<0.01	0.06		0.199		
2003-12-01	Philip	8	1206	303	36.9	16.3	1.3	12	0.41	< 0.03	0.003	61.1	< 1	178	86.6	118	<0.01	0.05	<0.1	0.147		
2004-06-08	Philip	7.48	1995	336	51.6	22	0.8	13	0.57	< 0.03	0.002	129	< 1	370	196	226	0.19	0.07		0.859	<0.2	55.4
2004-11-30	Philip	7.71	1705	368	40.5	20	< 0.5	15	0.75	0.12	0.003	107	< 1	296	158	150	<0.01	0.07		0.202		
2005-08-03	Maxx	7.95	1800	325	51	19	< 2	22	1.5	0.12	< 0.02	86	< 1	190	140	180	<0.05	0.086	0.067	0.23		
2005-11-28	Maxx	8.07	2140	378	52		< 2	10	1	< 0.05	< 0.02	112	< 1	258	180	200	<0.05	0.093	<0.05	0.27		
2006-06-01	MAX	8	1910	306	44	16	< 2	12	0.7	< 0.05	0.04	113	< 1	186	120	170	<0.02	0.099	<0.05	0.24		
2006-12-04	MAX	7.9	1610	315	40	17	< 2	7	0.7	0.09	< 0.02	83	1	150	100	170	<0.02	0.092	<0.05	0.22		
2007-03-30	MAX	8.1	1650	276	45	16	< 2	12	<0.1	0.08	< 0.02	65	< 1	160	100	180	<0.02	0.06	<0.05	0.23		
2007-06-14	MAX	8	1370	278	39	15	< 2	8	0.1	0.09	< 0.02	70	< 1	140	110	140	<0.02	0.058	<0.05	0.18		
2007-12-05	MAX	8	1310	289	36	15	< 2	20	0.5	0.06	< 0.02	57	< 1	100	72	150	<0.02	0.048	<0.1	0.2	<0.2	44
2008-06-25	MAX	8.1	1810	284	37	14		9	0.6	0.06	< 0.02	83	< 1	240	150	140	<0.02	0.065	<0.1	0.21	<0.1	54
2008-12-09	MAX	7.9	1470	289	35	14	< 2	8	0.6	< 0.05	< 0.02	58	< 1	170	110	130	<0.02	0.062	<0.1	0.19	0.02	41
2009-06-25	MAX	7.8	1400	318	33	11	< 2	< 4	0.6	< 0.05	< 0.02	56	< 1	190	130	120	<0.02	0.042	<0.1	0.17	<0.01	21
2009-12-15	MAX	7.8	1130	298	28	12	< 2	5	0.4	< 0.05	0.03	40	< 1	120	89	100	<0.02	0.052	<0.1	0.15	<0.01	15
2010-06-24	MAX	8	1380	331	36	12	< 2	4	0.5	< 0.05	< 0.02	51	< 1	180	100	130	<0.02	0.039	<0.1	0.19	<0.01	21
2010-12-17	MAX	7.73	1030	278	29	11	< 2	12	0.3	< 0.05	< 0.02	41	< 1	84	73	110	<0.02	0.05	<0.1	0.17	<0.01	23
2011-06-14	MAX	7.85	1740	316	36	11	< 2	16	0.6	< 0.05	< 0.02	60	< 1	270	190	130	<0.02	0.039	<0.1	0.16	<0.01	18
2011-12-14	MAX	8.02	1190	333	30	11	< 2	5	0.4	< 0.05	0.05	46	< 1	110	93	110	0.81	0.036	<0.1	0.22	<0.01	16
2012-06-18	MAX	7.88	1200	310	28	9.5	< 2	15	0.66	< 0.05	0.034	44	1	120	91	100	1.7	0.034	<0.1	0.17	<0.01	12
2012-12-10	MAX	7.88	1100	330	28	11	< 2	7.7	0.54	< 0.05	< 0.02	46	< 1	110	86	110	0.08	0.04	<0.1	0.2	<0.01	8.6
2013-06-19	MAX	8.12	1100	300	26	8.5	< 2	4.8	0.28	< 0.05	< 0.02	41	< 1	130	80	100	0.74	0.037	<0.1	0.19	<0.01	6.8
2013-12-03	MAX	7.73	1000	320	27	11	< 2	11	0.52	0.064	< 0.02	34	< 1	110	73	100	<0.02	0.047	<0.1	0.11	<0.01	5.3
2014-05-26	MAX	7.74	1400	300	30	9.7	< 2	18	0.48	< 0.05	< 0.04	42	< 1	190	120	110	<0.02	0.037	<0.1	0.17	<0.01	5.87
2014-12-03	MAX	7.88	1100	290	28	10	< 2	< 4	0.4	< 0.05	< 0.02	37	< 1	140	81	110	<0.02	0.047	<0.1	0.2	<0.01	4.93
2015-06-22	MAX	7.76	1000	290	26	7.8	< 2	21	0.65	< 0.05	< 0.02	36	< 1	130	70	97	0.22	0.035	<0.1	0.16	<0.01	4.54
2015-12-07	MAX	7.73	1100	300	29	9	< 2	< 4	0.4	< 0.05	0.024	35	< 1	140	78	110	0.22	0.031	<0.1	0.17	<0.01	3.88
2016-06-22	MAX	7.98	1200	290	27	7.9	< 2	4.1	0.17	< 0.05	< 0.02	37	< 1	170	120	100	0.09	0.034	<0.1	0.14	<0.01	4.42
2016-11-30	MAX	7.77	1200	300	26	8.2	< 2	< 4	<0.2	< 0.05	< 0.02	34	< 1	150	87	110	0.2	0.042	<0.1	0.2	<0.01	4.89
2017-06-06	MAX	8.04	1400	290	29	8.3	< 2	9.5	0.42	< 0.05	< 0.02	41	< 1	220	130	110	0.11	0.036	<0.1	0.15	<0.01	5.42
2017-12-06	MAX	7.77	1300	390	29	8	< 2	< 4	<0.2	< 0.05	< 0.02	41	< 1	130	100	120	0.07	0.047	<0.1	0.18	<0.01	4.38
2018-06-13	MAX	7.98	1600	330	31	8.2	< 2	18	<0.2	< 0.05	< 0.02	44	< 1	270	170	110	0.19	0.045	<0.1	0.17	<0.01	4.96
2018-12-11	MAX	7.79	1200	340	27	7.6	< 2	< 4	0.28	0.11	0.023	43	< 1	130	98	100	0.22	0.037	<0.1	0.16	<0.01	3.11
2019-06-14	MAX	7.91	1900	300	34	8.4	< 2	4.8	<0.2	< 0.05	0.02	51	< 1	370	210	130	0.04	0.039	<0.1	0.21	<0.01	6.32
2019-12-02	MAX	7.73	1800	350	34	8.6	< 2	< 4	<0.1	< 0.05	< 0.02	50	< 1	300	190	130	0.05	0.05	<0.1	0.2	<0.01	6.45
2020-06-15	Burea	7.84	1900	310	33	7.5	< 2	< 4	<0.2	< 0.05	< 0.02	50	< 1	350	210	130	0.07	0.045	<0.1	0.17	<0.01	7.24
2020-12-07	Burea	7.74	1900	370	34	9.1	2	9	<0.2	< 0.05	< 0.02	57	< 1	310	210	140	0.08	0.053	<0.1	0.2	<0.01	6.74
2021-06-09	Burea	8	1700	360	30	7.3	< 2	< 4	0.26	< 0.05	< 0.02	53	< 1	280	210	110	0.1	0.047	<0.1	0.18	<0.01	4.42
2021-12-15	Burea	7.9	1600	410	22	8.1	< 2	8.2	<0.1	< 0.05	< 0.02	35	< 1	210	200	100	0.16	0.046		0.15	<0.01	2.99

Routine Groundwater Quality - General Analysis -Guelph WRIC & Waste Transfer Station

AECOM

Date	Lab	pH	Cond- uctivity	Alk mg/L	Mg mg/L	K mg/L	BOD mg/L	COD mg/L	TKN mg/L	NH3-N mg/L	Total-P mg/L	SO4 mg/L	Phenol ug/L	Cl mg/L	Na mg/L	Ca mg/L	Fe mg/L	B mg/L	P mg/L	Zn mg/L	NO2 mg/L	NO3 mg/L
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Monitor: 8-96 Bedrock

1997-02-11	WBL	7.78			39.9	2.08	< 0.34	28	0.21	< 0.01	0.034	73.5	< 0.72	33	19.3	94.9	0.054	0.051	<0.028	0.024		
1997-03-27	WBL	7.77	864	302	36.9	1.73	< 0.34	46	0.3	< 0.01	< 0.011	53.9	< 0.72	49.8	18.8	107	0.011	0.032	<0.028	0.673		
1997-06-25	WBL	7.84	882	308	33.6	1.77	< 0.34	< 7	<0.07	0.018	< 0.011	60.8	< 0.72	40.9	17.6	92	0.017	0.052	<0.028	0.543		
1997-10-01	WBL	7.45	838	321	37.1	1.9	0.51	51	0.2	< 0.01	< 0.011	66.2	< 0.72	37.2	19.3	111	0.021	0.021	<0.028	0.502		
1997-12-11	WBL	7.61	880	297	37.7	1.99	< 0.34	< 7	0.34	< 0.01	< 0.011	75.2	< 0.72	55.4	21	105	0.063	0.025	<0.028	0.69		5.16
1998-03-31	WBL	7.41	997	288	33.4	2.05	1.72			< 0.019		65.6	< 0.72	102	32.9	116	0.013	0.022	<0.011	0.535		3.94
1998-06-24	WBL	7.5	890	309	32.1	1.78	0.75			< 0.019		58.6	< 0.72	58.4	30.1	107	0.057	<0.016	<0.006	0.632		5.23
1998-10-02	CAN	7.4	890	320	38	2.2	< 2	< 5	0.3	< 0.1	< 0.02	73	< 1	57	31	110	<0.05	<0.05		0.84		4.8
1998-12-03	CAN	7.4	910	310	36	2.2	< 2	< 5	0.48	< 0.1	0.12	72	< 2	60	28	99	<0.05	<0.05		0.83		2.6
1999-06-29	Barr	8.23	976	282	40.1	3	1.7	12	0.19	< 0.02	0.003	68.2		146	67.7	109	<0.01	<0.01	<0.1	0.751		
1999-12-09	Barr	7.46	1358	287	43.4	2.8	0.9	9	0.49	0.03	0.004	64	< 1	207	103	114	<0.01	0.01	<0.1	0.896		
2000-06-21	Philip	7.43	1212	264	38.9	2.4	< 0.5	6	0.25	< 0.03	< 0.002	64.4	< 1	233	107	111	<0.03	<0.005	<0.05	0.89		
2000-12-07	Philip	7.6	942	320	34.6	2	1.3	13	0.25	0.04	< 0.002	63.7	< 1	125	59.2	94.6	<0.03	0.059		1.01		
2001-06-27	Philip	7.76	1019	317	36.3	2	1.6	< 5	0.27	0.03	0.037	63	< 1	139	76.1	105	0.02	0.05	<0.1	1.11		
2001-12-03	Philip	7.66	1329	356	36	2.3	1.1	< 5	0.2	< 0.03	0.005	50	< 1	225	93.9	103	<0.01	0.05	<0.1	1.02		
2002-06-04	Philip	8.43	1024	302	35.1	3	< 0.5	12	0.75	< 0.03	0.008	56.5	< 1	138	74.1	102	<0.01	0.01	<0.1	0.867		
2002-12-03	Philip	7.97	1002	309	35.8	3	< 0.5	6	0.31	< 0.03	0.004	59.4	< 1	118	65.5	101	<0.01	0.01	<0.1	0.871		
2003-06-02	Philip	7.47	1622	276	39.9	3	< 0.5	7	0.41	< 0.03	< 0.001	55.1	9	332	171	116	<0.01	0.01		1.08		
2003-12-01	Philip	7.85	1262	285	35.6	3.1	1	9	0.4	< 0.03	0.003	53.8	< 1	254	124	104	<0.01	0.02	<0.1	1.05		
2004-06-08	Philip	7.6	1036	292	35.3	1.8	< 0.5	6	0.2	< 0.03	0.003	58.4	< 1	159	80.6	123	0.11	0.01		1.43	<0.2	3.9
2004-11-30	Philip	7.8	981	309	33.4	3	< 0.5	17	0.7	< 0.03	0.006	58.4	< 1	121	66.2	96.3	<0.01	<0.01		0.919		
2005-08-03	Maxx	8.15	888	298	36	2.5	< 2	22	1.2	< 0.05	< 0.02	47	< 1	98	71	92	<0.05	0.019	0.069	0.7		
2005-11-28	Maxx	8.05	997	320	37		< 2	6	0.6	< 0.05	< 0.02	54	< 1	99	66	110	<0.05	0.015	<0.05	1		
2006-06-01	MAX	8.1	1040	314	32	2.3	< 2	11	0.5	< 0.05	< 0.02	50	< 1	129	67	87	<0.02	0.013	<0.05	0.94		
2006-12-04	MAX	8.1	976	327	35	2.8	< 2	< 4	0.4	< 0.05	< 0.02	50	< 1	99	62	99	<0.02	0.014	<0.05	1.1		
2007-03-30	MAX	8.2	1030	308	36	2.6	< 2	5	0.4	0.08	< 0.02	55	< 1	120	71	100	<0.02	0.02	<0.05	1.1		
2007-06-14	MAX	8.1	1010	303	40	2.7	< 2	5	0.5	0.11	< 0.02	54	< 1	110	79	100	<0.02	0.015	<0.05	1.1		
2007-12-05	MAX	8	1130	306	37	2.8	< 2	12	0.2	< 0.05	< 0.02	62	< 1	150	68	110	<0.02	0.011	<0.1	1.2	<0.01	1.9
2008-06-25	MAX	8.1	1050	291	37	2.8		15	0.5	0.12	< 0.02	52	< 1	130	81	100	<0.02	<0.01	<0.1	1.2	<0.01	1.2
2008-12-09	MAX	8	997	310	33	2.5	< 2	4	0.3	< 0.05	< 0.02	56	< 1	110	59	91	<0.02	0.012	<0.1	1.1	<0.01	1
2009-06-25	MAX	7.8	943	298	32	2.3	< 2	4	0.3	< 0.05	< 0.02	54	< 1	97	61	90	<0.02	0.013	<0.1	1	<0.01	1.1
2009-12-16	MAX	7.7	1010	312	35	2.5	< 2	8	0.3	< 0.05	0.02	46	< 1	110	62	97	<0.02	0.015	<0.1	1.1	<0.01	1.1
2010-06-24	MAX	8	960	292	33	2.3	< 2	< 4	0.4	< 0.05	< 0.02	50	< 1	110	63	93	<0.02	0.013	<0.1	0.97	<0.01	1.1
2010-12-22	MAX	7.73	953	304	35	2.6	< 2	< 4	0.3	< 0.05	< 0.02	43	< 1	95	64	97	<0.02	0.014	<0.1	1.1	<0.01	0.8
2011-06-15	MAX	7.9	1030	282	33	2.5	< 2	14	0.3	< 0.05	< 0.02	56	< 1	140	79	91	<0.02	0.015	<0.1	1.1	<0.01	0.6
2011-12-14	MAX	7.99	1000	296	32	2.7	< 2	< 4	0.3	< 0.05	0.02	38	< 1	110	73	91	<0.02	<0.01	<0.1	1.4	<0.01	0.5
2012-06-18	MAX	7.9	960	290	31	2.2	< 2	10	0.43	< 0.05	< 0.02	44	< 1	100	62	89	0.21	<0.01	<0.1	0.76	<0.01	0.33
2012-12-10	MAX	7.77	920	300	32	2.4	< 2	7	0.57	< 0.05	< 0.02	47	< 1	88	59	92	0.08	<0.01	<0.1	0.99	<0.01	0.44
2013-06-20	MAX	8.37	960	290	33	2.4	< 2	5.8	0.34	< 0.05	< 0.02	44	< 1	100	66	97	0.14	0.016	<0.1	0.92	<0.01	0.28
2013-12-03	MAX	7.74	910	300	32	2.5	< 2	6.1	0.24	< 0.05	< 0.02	38	< 1	93	60	87	<0.02	0.016	<0.1	1.1	<0.01	0.31
2014-05-26	MAX	7.83	900	290	32	2.2	< 2	< 4	0.16	< 0.05	< 0.04	39	< 1	92	57	90	<0.02	0.013	<0.1	0.97	<0.01	0.37

Routine Groundwater Quality - General Analysis -Guelph WRIC & Waste Transfer Station

AECOM

Date	Lab	pH	Cond- uctivity	Alk mg/L	Mg mg/L	K mg/L	BOD mg/L	COD mg/L	TKN mg/L	NH3-N mg/L	Total-P mg/L	SO4 mg/L	Phenol ug/L	Cl mg/L	Na mg/L	Ca mg/L	Fe mg/L	B mg/L	P mg/L	Zn mg/L	NO2 mg/L	NO3 mg/L
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Monitor: 8-96 Bedrock

2014-12-03	MAX	7.99	900	290	30	2.4	< 2	< 4	0.19	0.051	< 0.02	39	< 1	93	59	87	<0.02	0.021	<0.1	0.94	<0.01	0.4
2015-06-22	MAX	7.76	1100	300	33	2.3	< 2	9	0.16	< 0.05	< 0.02	39	< 1	140	76	93	0.06	0.015	<0.1	0.97	<0.01	0.35
2015-12-07	MAX	7.87	1100	280	34	2.4	< 2	< 4	0.14	< 0.05	< 0.02	37	< 1	140	81	95	0.03	<0.01	<0.1	1	<0.01	0.39
2016-06-24	MAX	7.86	1000	290	32	2.2	< 2	8.5	0.16	< 0.05	< 0.02	39	< 1	130	75	93	0.05	0.012	<0.1	0.9	<0.01	0.3
2016-12-05	MAX	7.87	1000	300	31	2.4	< 2	7.6	0.12	< 0.05	< 0.02	37	< 1	120	70	89	0.1	0.016	<0.1	0.96	<0.01	0.31
2017-06-07	MAX	8.06	1100	300	33	2.4	< 2	11	0.19	< 0.05	< 0.02	37	< 1	140	79	96	0.18	0.014	<0.1	0.92	<0.01	0.37
2017-12-12	MAX	8.01	1100	310	32	2.4	< 2	< 4	<0.1	< 0.05	< 0.02	37	< 1	130	75	88	0.08	0.023	<0.1	0.98	<0.01	0.38
2018-06-13	Bird																					
2018-09-27	MAX	7.95	1100	310	31	2.4	< 2	8.6	0.1	0.066	< 0.02	39	< 1	130	75	92	0.05	0.015	<0.1	0.9	<0.01	0.31
2018-12-12	MAX	7.9	1000	300	30	2.4	< 2	< 4	<0.1	< 0.05	0.047	39	< 1	120	71	87	0.03	0.015	<0.1	0.97	<0.01	0.33
2019-06-26	MAX	8.04	1000	290	33	2.1	< 2	< 4	0.15	< 0.05	< 0.02	35	< 1	150	77	94	0.03	0.013	<0.1	0.85	<0.01	0.33
2019-12-04	MAX	7.85	990	290	30	2.2	< 2	< 4	<0.1	< 0.05	< 0.02	36	< 1	120	75	91	0.03	0.014	<0.1	0.89	<0.01	0.31
2020-06-19	Burea	8.05	960	300	30	2	< 2	< 4	<0.1	< 0.05	0.025	32	< 1	120	70	89	0.04	0.016	<0.1	0.78	<0.01	0.28
2020-12-10	Burea	7.89	910	300	28	2.1	< 2	7.6	<0.1	< 0.05	< 0.02	34	< 1	96	63	78	0.04	0.015	<0.1	0.83	<0.01	0.31
2021-06-14	Burea	8.02	1200	290	36	2.3	< 2	4	<0.1	< 0.05	< 0.02	35	< 1	190	96	100	0.04	0.016	<0.1	0.99	<0.01	0.28
2021-12-15	Burea	8.03	1100	300	32	2.4	< 2	10	<0.1	< 0.05	< 0.02	34	< 1	150	88	96	0.03	0.017		0.9	<0.01	0.29

Monitor: 9-96 Outwash

1997-02-11	WBL	7.81			16.4	0.99	0.69	7	0.19	< 0.01	< 0.011	17.6	2.23	7.17	4.37	61.6	0.124	0.021	<0.028	0.008		
1997-03-26	WBL	8.04	474	186	18.7	0.86	< 0.34	14	0.24	< 0.01	< 0.011	23.4	< 0.72	6.34	7.96	68.6	0.074	0.036	<0.028	0.027		
1997-06-25	WBL	8.01	582	205	20.7	0.95	< 0.34	< 7	<0.07	< 0.01	< 0.011	26.7	< 0.72	6.93	7.38	71	0.031	0.031	<0.028	0.018		
1997-10-01	WBL	7.92	490	179	21.7	0.84	1.2	13	0.1	< 0.01	< 0.011	22.4	< 0.72	9.82	1.68	74.5	0.026	0.018	0.029	0.008		11.4
1997-12-11	WBL	7.85	488	171	21.8	0.67	< 0.34	< 7	0.22	< 0.01	< 0.011	20.4	< 0.72	13.6	1.48	70.3	0.031	<0.016	0.04	0.005		8.67
1998-03-31	WBL	8.38	557	195	25.9	0.7	< 0.34			0.019		26.7	< 0.72	13.1	2.2	71.7	0.011	0.03	<0.011	0.005		13
1998-06-24	WBL	7.79	536	193	21.6	0.78	1.38			< 0.019		26	< 0.72	12.5	2.83	76.2	0.027	0.047	<0.006	0.007		11.6
1998-10-02	CAN	7.7	610	210	29	< 1	< 2	< 5	0.4	< 0.1	< 0.02	29	< 1	19	2	85	<0.05	<0.05		<0.01		14
1998-12-03	CAN	7.6	590	230	24	< 1	< 2	< 5	0.31	< 0.1	0.17	23	< 2	11	2.5	79	<0.05	<0.05		0.01		9.9
1999-06-29	Barr	8.31	528	220	19.6	1	1.2	10	0.21	< 0.02	0.004	24.6		23.3	8.2	79.7	<0.01	0.01	<0.1	<0.005		
1999-12-09	Barr	7.65	649	251	20.2	< 1	< 0.5	6	0.16	0.06	0.004	17	< 1	31	14.6	93.2	0.01	0.03	<0.1	0.024		
2000-06-21	Philip	7.71	414	234	14.7	0.8	< 0.5	5	0.28	< 0.03	< 0.002	12.2	< 1	12	8.9	77.4	<0.03	0.013	<0.05	<0.005		
2000-12-07	Philip	7.91	408	249	15	0.3	1.1	5	0.13	0.04	< 0.002	13.7	< 1	13.5	8.7	69.3	<0.03	0.063		0.169		
2001-06-27	Philip	7.9	570	248	18.3	< 1	1.7	< 5	0.14	< 0.03	0.004	25	< 1	20	14.2	86	<0.01	0.06	<0.1	0.208		
2001-12-03	Philip	7.93	482	223	15.3	1.3	0.9	< 5	0.39	< 0.03	0.008	10.8	< 1	15.7	20.2	72	0.03	0.03	<0.1	0.182		
2002-06-04	Philip	8.08	517	236	16.1	1	< 0.5	5	0.43	< 0.03	0.005	17.1	< 1	21.7	16.7	79.2	0.01	0.05	<0.1	<0.005		
2002-12-03	Philip	8.08	595	232	20.8	1	< 0.5	5	0.3	< 0.03	0.012	15.8	< 1	33.5	10.9	84.5	<0.01	0.03	<0.1	0.011		
2003-06-02	Philip	7.76	666	229	20.6	< 1	< 0.5	7	0.45	0.03	< 0.001	11	4	64.1	20.7	90.2	<0.01	0.04		0.011		
2003-12-01	Philip	8.03	701	236	21.6	< 1	< 0.5	12	0.5	< 0.03	< 0.002	13.4	< 1	83.7	29.2	87	<0.01	0.03	<0.1	0.018		
2004-06-08	Philip	7.81	591	235	20.1	< 1	0.6	6	0.28	< 0.03	0.002	28.8	< 1	39.7	18.4	89.5	<0.01	0.05		0.072	<0.2	6.4
2004-11-30	Philip	7.78	671	274	19.9	1	< 0.5	9	0.34	< 0.03	0.003	27.8	< 1	41.2	28.6	87.9	<0.01	0.02		<0.005		
2005-08-03	Maxx	8.08	584	259	22	1	< 2	13	0.8	< 0.05	< 0.02	24	< 1	9	11	87	<0.05	0.03	0.073	<0.005		
2005-11-28	Maxx	8.17	714	295	18		< 2	10	0.6	< 0.05	< 0.02	21	< 1	38	34	100	<0.05	0.043	<0.05	0.006		

Routine Groundwater Quality - General Analysis -Guelph WRIC & Waste Transfer Station

AECOM

Date	Lab	pH	Cond- uctivity	Alk mg/L	Mg mg/L	K mg/L	BOD mg/L	COD mg/L	TKN mg/L	NH3-N mg/L	Total-P mg/L	SO4 mg/L	Phenol ug/L	Cl mg/L	Na mg/L	Ca mg/L	Fe mg/L	B mg/L	P mg/L	Zn mg/L	NO2 mg/L	NO3 mg/L
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Monitor: 9-96 Outwash

2006-06-01	N/A																					
2006-12-04	MAX	8.1	686	291	22	1.2	< 2	< 4	0.3	0.07	< 0.02	20	< 1	34	27	86	<0.02	0.036	<0.05	0.005		
2007-03-30	MAX	8.2	691	296	22	1.1	< 2	< 4	0.4	0.06	< 0.02	27	< 1	23	15	81	<0.02	0.039	<0.05	<0.005		
2007-06-14	MAX	8.1	703	322	30	1.3	< 2	4	0.4	0.09	< 0.02	22	< 1	17	18	100	<0.02	0.045	<0.05	<0.005		
2007-12-05	MAX	8.1	653	305	26	1	< 2	12	0.3	< 0.05	< 0.02	27	< 1	6	6.7	97	<0.02	0.03	<0.1	<0.005	<0.01	5.3
2008-06-25	MAX	8.3	738	246	31	1.5		6	0.6	< 0.05	< 0.02	26	< 1	23	14	95	<0.02	0.035	<0.1	0.011	<0.01	6.6
2008-12-09	MAX	8	700	317	30	1.1	< 2	8	0.5	< 0.05	< 0.02	27	< 1	18	9.7	93	<0.02	0.032	<0.1	0.008	<0.01	5.6
2009-06-25	MAX	7.9	690	317	29	1.3	< 2	4	0.4	< 0.05	< 0.02	22	< 1	15	13	99	<0.02	0.037	<0.1	0.005	<0.01	5
2009-12-16	MAX	8	691	348	34	1.2	< 2	8	0.3	< 0.05	< 0.02	23	< 1	5	9.6	100	<0.02	0.037	<0.1	0.006	<0.01	3.9
2010-06-24	N/A																					
2010-12-22	N/A																					
2011-06-15	N/A																					
2011-12-14	N/A																					
2012-06-18	NA																					
2012-07-19	MAX	7.96	290	85	7.5	2.2	< 2	8.6	1.5	0.1	< 0.02	14	< 1	14	19	30	0.39	0.017	<0.1	<0.005	<0.01	6.2
2012-12-10	MAX	7.48	290	100	6.9	3.9	< 2	< 4	1	< 0.05	< 0.02	19	< 1	13	17	29	0.34	0.012	<0.1	<0.005	<0.01	6.3
2013-06-18	MAX	7.89	390	130	11	4.1	< 2	8.1	0.16	< 0.05	< 0.02	19	< 1	18	21	41	0.22	0.019	<0.1	<0.005	<0.01	8.3
2013-12-02	MAX	8.02	450	140	13	6.8	< 2	13	0.3	< 0.05	< 0.02	33	< 1	16	21	44	<0.02	0.02	<0.1	0.034	<0.01	9.2
2014-05-21	MAX	8.12	490	150	14	8	< 2	< 4	0.35	< 0.05	< 0.02	31	< 1	26	28	50	<0.02	0.021	<0.1	<0.005	<0.01	8.08
2014-12-02	MAX	8.02	430	150	12	10	< 2	< 4	0.26	< 0.05	< 0.02	31	< 1	9	20	43	0.05	0.039	<0.1	<0.005	<0.01	5.28
2015-06-16	MAX	8.28	270	84	4.8	17	< 2	8.8	<1	< 0.05	< 0.02	26	< 1	7	13	26	0.14	0.025	<0.1	<0.005	<0.01	3.85
2015-12-01	MAX	7.96	430	150	14	6.5	< 2	11	<0.1	< 0.05	0.037	33	< 1	9.9	16	47	2.4	0.044	<0.1	0.0088	<0.01	4.56
2016-06-20	MAX	8.23	370	130	11	8.2	< 2	< 4	0.41	< 0.05	< 0.02	29	< 1	7.9	14	41	0.29	0.037	<0.1	0.011	<0.01	4.35
2016-11-29	MAX	8.04	390	130	11	8.6	< 2	< 4	<0.2	< 0.05	< 0.02	35	< 1	11	22	41	0.24	0.029	<0.1	0.0054	<0.01	4.2
2017-06-05	MAX	8.01	310	110	8	8	2	9.7	0.16	< 0.05	< 0.02	31	< 1	6	13	31	1.2	0.028	<0.1	0.0052	<0.01	3.39
2017-12-06	MAX	8.11	400	140	10	6	< 2	< 4	<0.1	< 0.05	< 0.02	29	< 1	15	16	42	0.44	0.026	<0.1	<0.005	<0.01	4.16
2018-06-13	MAX	8.12	310	110	5.8	9.1	< 2	17	<0.1	< 0.05	< 0.02	26	< 1	9.5	16	30	0.49	0.024	<0.1	<0.005	<0.01	2.19
2018-12-11	MAX	8.11	340	130	8.3	11	< 2	6.6	<0.1	< 0.05	< 0.02	28	< 1	3.7	10	40	0.61	0.024	<0.1	<0.005	<0.01	2.45
2019-06-13	MAX	8.2	300	91	5.7	12	< 2	< 4	<0.1	< 0.05	< 0.02	34	< 1	11	13	31	0.4	0.021	<0.1	<0.005	<0.01	1.85
2019-12-03	MAX	8.19	300	120	7.7	8.3	< 2	< 4	0.16	< 0.05	< 0.02	25	< 1	4.1	11	37	0.2	0.02	<0.1	<0.005	<0.01	2.87
2020-06-15	Burea	8.11	350	120	8.3	7.9	< 2	< 4	<0.1	0.22	0.066	22	< 1	17	11	43	0.36	<0.01	<0.1	<0.005	<0.01	2.85
2020-12-07	Burea	7.91	270	110	7	3.9	< 2	4.8	<0.1	< 0.05	< 0.02	11	< 1	5.6	10	34	0.17	0.018	<0.1	<0.005	<0.01	1.29
2021-06-09	Burea	8.24	330	110	5.9	8.2	< 2	11	0.22	< 0.05	< 0.02	27	< 1	15	17	36	0.99	0.031	<0.1	<0.005	<0.01	1.36
2021-12-13	Burca	8.16	260	100	5.6	6.7	< 2	5.4	0.16	< 0.05	< 0.02	18	< 1	3.8	7.9	33	0.26	0.031	<0.1	<0.005	<0.01	1.14

Monitor: 10-00 Bedrock

2001-06-27	Philip	7.84	662	259	31.5	< 1	< 0.5	< 5	0.14	0.07	0.009	103	< 1	22	9.9	93.7	0.02	0.02	<0.1	0.016		
2001-12-03	Philip	8.01	666	267	30.7	< 1	0.8	< 5	0.19	0.04	0.01	85.8	< 1	25.8	12	95.1	0.04	0.02	<0.1	0.061		
2002-06-04	Philip	8.23	595	239	28.2	2	< 0.5	< 5	0.19	0.04	0.013	76	< 1	21.5	9.2	84.4	0.02	0.02	<0.1	<0.005		
2002-12-03	Philip	8	660	255	29.5	1	< 0.5	7	0.42	0.06	0.013	76.8	< 1	26.9	11.3	87.7	0.03	0.01	<0.1	<0.005		
2003-06-02	Philip	7.78	659	242	29.1	< 1	< 0.5	< 5	0.17	0.05	< 0.001	25.2	11	44.9	10	87	0.03	0.01		<0.005		

Routine Groundwater Quality - General Analysis -Guelph WRIC & Waste Transfer Station

AECOM

Date	Lab	pH	Cond- uctivity	Alk mg/L	Mg mg/L	K mg/L	BOD mg/L	COD mg/L	TKN mg/L	NH3-N mg/L	Total-P mg/L	SO4 mg/L	Phenol ug/L	Cl mg/L	Na mg/L	Ca mg/L	Fe mg/L	B mg/L	P mg/L	Zn mg/L	NO2 mg/L	NO3 mg/L
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Monitor: 10-00 Bedrock

2003-12-01	Philip	8.09	626	236	28.2	1.1	0.8	< 5	0.21	< 0.03	0.009	78.5	< 1	27.6	10.2	85.2	0.04	0.02	<0.1	0.015		
2004-06-09	Philip	7.78	600	238	28.2	< 1	< 0.5	< 5	0.13	0.08	0.005	82.4	< 1	27.8	9.7	91	0.07	0.02		0.13	<0.2	<0.2
2004-11-30	Philip	7.89	626	245	27.7	2	< 0.5	< 5	0.13	0.03	0.005	77.7	< 1	28.1	10.4	83.5	0.04	0.02		<0.005		
2005-08-03	Maxx	8.18	599	240	31	1.2	< 2	< 4	0.3	< 0.05	< 0.02	67	< 1	20	10	86	<0.05	0.011	<0.05	<0.005		
2005-11-28	Maxx	8.07	616	251	31		< 2	5	0.2	< 0.05	< 0.02	71	< 1	23	10	90	<0.05	0.016	<0.05	<0.005		
2006-06-01	MAX	8.1	646	254	30	1.1	< 2	< 4	1	0.09	< 0.02	77	< 1	20	9.1	88	0.03	0.014	<0.05	<0.005		
2006-12-04	MAX	8.2	651	257	28	1	< 2	4	0.3	0.11	< 0.02	82	< 1	17	8.6	83	0.02	0.014	<0.05	<0.005		
2007-03-30	MAX	8.2	648	249	27	1.1	< 2	< 4	0.5	0.12	< 0.02	75	< 1	19	7.7	79	0.02	0.014	<0.05	<0.005		
2007-06-14	MAX	8.1	656	246	29	1.1	< 2	5	0.2	0.15	< 0.02	81	< 1	21	8.9	84	0.03	0.015	<0.05	<0.005		
2007-12-05	MAX	8.2	652	239	28	1.1	< 2	11	0.2	0.07	< 0.02	81	< 1	21	8.8	86	<0.02	<0.01	<0.1	<0.005	<0.01	<0.1
2008-06-25	MAX	8.2	654	237	28	1.1		11	0.3	0.11	< 0.02	82	< 1	23	9.5	86	<0.02	<0.01	<0.1	<0.005	<0.01	<0.1
2008-12-09	MAX	8.1	679	238	29	1.1	< 2	< 4	0.2	0.07	< 0.02	91	< 1	27	11	85	0.03	0.018	<0.1	<0.005	<0.01	<0.1
2009-06-25	MAX	8	631	240	29	1.1	< 2	< 4	0.3	< 0.05	< 0.02	80	< 1	17	8.8	87	0.03	0.016	<0.1	<0.005	<0.01	<0.1
2009-12-16	MAX	8	685	239	32	1.2	< 2	< 4	0.2	0.06	0.02	84	< 1	28	14	94	0.04	0.019	<0.1	<0.005	<0.01	<0.1
2010-06-24	N/A																					
2010-12-22	N/A																					
2011-06-15	N/A																					
2011-12-14	N/A																					
2012-06-18	NA																					
2012-07-19	MAX	7.88	650	240	30	1.1	< 2	11	0.97	0.11	0.24	68	< 1	22	9.1	87	3.1	0.015	<0.1	<0.005	<0.01	<0.1
2012-12-10	MAX	7.93	670	240	30	1.1	< 2	< 4	0.54	0.077	0.23	74	< 1	25	9.3	91	6.6	<0.01	<0.1	<0.005	<0.01	<0.1
2013-06-18	MAX	8.04	710	240	29	1.2	< 2	5.1	0.24	0.054	0.03	82	< 1	32	12	95	0.81	0.017	<0.1	<0.005	<0.01	<0.1
2013-12-02	MAX	8	690	250	31	1.1	< 2	7	0.2	0.053	0.041	80	< 1	30	11	92	0.04	0.014	<0.1	<0.005	<0.01	<0.1
2014-05-21	MAX	8	700	240	29	1.1	< 2	< 4	0.29	< 0.05	< 0.02	81	< 1	30	10	94	0.81	0.013	<0.1	<0.005	<0.01	<0.1
2014-12-02	MAX	7.94	740	240	30	1.2	< 2	< 4	0.19	0.094	0.03	90	< 1	37	14	92	0.63	0.025	<0.1	<0.005	<0.01	<0.1
2015-06-16	MAX	7.86	720	240	31	1.3	< 2	< 4	0.12	0.053	0.026	92	< 1	36	14	95	0.22	0.022	<0.1	<0.005	<0.01	<0.1
2015-12-01	MAX	7.97	710	230	31	1.2	< 2	10	0.16	< 0.05	0.087	84	< 1	32	12	91	1.8	0.019	<0.1	<0.005	<0.01	<0.1
2016-06-20	MAX	8.05	700	240	28	1.1	< 2	6.2	0.17	0.054	0.22	83	< 1	32	11	87	4.6	0.018	<0.1	<0.005	<0.01	<0.1
2016-11-29	MAX	8	700	230	31	1.2	< 2	8.6	0.16	0.071	0.16	89	< 1	37	13	94	4.7	0.013	<0.1	<0.005	<0.01	<0.1
2017-06-05	MAX	8.15	720	250	30	1.1	< 2	8.7	0.2	0.055	0.085	81	< 1	34	9.9	92	2.1	0.015	<0.1	<0.005	<0.01	<0.1
2017-12-06	MAX	7.98	730	260	30	1.1	< 2	< 4	0.1	< 0.05	0.027	79	< 1	31	10	88	0.58	0.015	<0.1	<0.005	<0.01	<0.1
2018-06-13	MAX	8.12	710	250	30	1.2	< 2	17	0.16	0.078	< 0.02	80	< 1	31	11	89	0.26	0.022	<0.1	<0.005	<0.01	<0.1
2018-12-11	MAX	8	710	250	29	1.1	< 2	< 4	<0.1	0.061	0.024	78	< 1	31	11	88	0.56	0.011	<0.1	<0.005	<0.01	<0.1
2019-06-13	MAX	8.06	680	240	29	1	< 2	< 4	0.13	< 0.05	0.045	80	< 1	27	8.5	89	0.53	0.014	<0.1	<0.005	<0.01	<0.1
2019-12-03	MAX	7.94	690	240	31	1.1	< 2	< 4	0.11	< 0.05	< 0.02	78	< 1	29	11	88	0.31	0.014	<0.1	<0.005	<0.01	<0.1
2020-06-15	Burea	8	700	250	30	1.2	< 2	< 4	<0.1	< 0.05	0.028	76	< 1	29	11	91	0.1	0.021	<0.1	<0.005	<0.01	<0.1
2020-12-07	Burea	7.96	710	250	31	1.3	< 2	7.9	0.1	< 0.05	0.04	82	< 1	31	11	93	0.49	0.014	<0.1	<0.005	<0.01	<0.1
2021-06-09	Burea	8.13	680	250	30	1.1	< 2	4.2	0.1	< 0.05	0.078	79	< 1	28	10	89	0.77	0.017	<0.1	<0.005	<0.01	<0.1
2021-12-13	Burea	8.01	700	240	29	1.3	< 2	9.4	0.11	< 0.05	0.2	80	< 1	34	13	90	5.4	0.019	<0.1	<0.005	<0.01	<0.1

Monitor: 11a-00 Bedrock

Routine Groundwater Quality - General Analysis -Guelph WRIC & Waste Transfer Station

AECOM

Date	Lab	pH	Cond- uctivity	Alk mg/L	Mg mg/L	K mg/L	BOD mg/L	COD mg/L	TKN mg/L	NH3-N mg/L	Total-P mg/L	SO4 mg/L	Phenol ug/L	Cl mg/L	Na mg/L	Ca mg/L	Fe mg/L	B mg/L	P mg/L	Zn mg/L	NO2 mg/L	NO3 mg/L
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Monitor: 11a-00 Bedrock

2001-06-27	Philip	8.13	528	263	25.3	2	2.9	< 5	0.28	0.13	0.03	46.8	< 1	7.1	25.9	68.7	0.34	0.1	<0.1	0.138		
2001-12-03	Philip	7.99	512	262	24.9	2	1.2	< 5	0.32	0.12	0.007	34.9	< 1	5.1	12	83.2	0.04	0.04	<0.1	0.254		
2002-06-04	Philip	8.13	454	241	23.7	2	0.9	< 5	0.41	0.13	0.01	26.7	< 1	5	6	64.4	0.04	0.03	<0.1	<0.005		
2002-12-03	Philip	8.12	500	253	24.3	3	< 0.5	< 5	0.33	0.12	0.009	25.9	< 1	4	6.1	67	<0.01	0.03	<0.1	0.011		
2003-06-02	Philip	7.71	515	231	24.7	2	< 0.5	< 5	0.38	0.11	< 0.001	31.8	9	6.3	5.8	67.5	<0.01	0.03		<0.005		
2003-12-01	Philip	8.02	507	233	23.6	1.6	1	9	0.52	< 0.03	0.004	35.9	< 1	7	5.6	64.8	0.02	0.04	<0.1	<0.005		
2004-06-08	Philip	7.81	478	236	24.2	1	< 0.5	6	0.26	0.1	0.003	33.4	< 1	6.9	5.4	80.3	0.05	0.03		0.185	<0.2	<0.2
2004-11-30	Philip	7.96	494	241	23.8	1	< 0.5	10	0.53	0.13	0.007	29.4	< 1	6.7	5.1	66	<0.01	0.02		<0.005		
2005-08-03	Maxx	8.13	471	238	25	1.9	< 2	8	0.6	0.06	< 0.02	20	< 1	5	5.5	62	0.066	0.038	0.079	<0.005		
2005-11-28	Maxx	8.2	470	248	26		< 2	10	0.4	0.14	< 0.02	26	< 1	7	5.2	70	<0.05	0.036	<0.05	<0.005		
2006-06-01	MAX	8.1	520	250	26	2	< 2	< 4	0.4	0.16	< 0.02	25	< 1	8	5.2	72	<0.02	0.034	<0.05	<0.005		
2006-12-04	MAX	8.1	532	252	25	1.8	< 2	< 4	0.3	0.12	< 0.02	38	< 1	10	5.3	70	<0.02	0.035	<0.05	<0.005		
2007-03-30	MAX	8.3	523	244	23	1.8	< 2	< 4	0.4	0.26	< 0.02	29	< 1	11	4.3	64	<0.02	0.033	<0.05	<0.005		
2007-06-14	MAX	8.3	539	242	27	1.8	< 2	< 4	0.4	0.24	< 0.02	32	< 1	12	5.2	77	<0.02	0.033	<0.05	0.015		
2007-12-05	MAX	8.2	534	236	25	1.9	< 2	11	0.2	0.12	< 0.02	33	< 1	12	6	69	<0.02	0.031	<0.1	<0.005	<0.01	<0.1
2008-06-25	MAX	8.2	534	231	27	2.3		16	0.6	0.21	< 0.02	30	< 1	15	6.5	73	<0.02	0.026	<0.1	<0.005	<0.01	<0.1
2008-12-09	MAX	8.1	526	237	23	1.7	< 2	< 4	0.3	0.1	< 0.02	34	< 1	12	4.9	65	<0.02	0.035	<0.1	<0.005	<0.01	0.1
2009-06-25	MAX	8	559	232	27	1.8	< 2	11	0.2	< 0.05	< 0.02	44	< 1	16	5.2	74	<0.02	0.035	<0.1	<0.005	<0.01	0.1
2009-12-15	MAX	8	539	233	25	1.8	< 2	5	0.1	< 0.05	0.03	34	< 1	14	5.2	69	<0.02	0.038	<0.1	<0.005	<0.01	0.2
2010-06-28	MAX	8.1	546	225	25	1.8	< 2	5	0.2	< 0.05	0.03	39	< 1	18	4.8	69	<0.02	0.036	<0.1	<0.005	<0.01	0.1
2010-12-22	MAX	7.85	575	227	28	1.9	< 2	< 4	0.3	0.24	< 0.02	38	< 1	22	5.4	75	<0.02	0.032	<0.1	<0.005	<0.01	<0.1
2011-06-15	MAX	7.97	568	228	27	1.8	< 2	10	0.2	0.1	< 0.02	51	< 1	24	5.3	75	0.25	0.033	<0.1	<0.005	<0.01	<0.1
2011-12-14	MAX	8.12	588	230	27	1.8	< 2	< 4	0.3	0.1	0.03	35	< 1	24	5.4	75	0.21	0.025	<0.1	0.011	0.05	<0.1
2012-06-19	MAX	8.09	590	230	27	1.8	< 2	8.1	0.39	0.073	0.025	39	< 1	24	5.2	74	0.56	0.031	<0.1	0.04	<0.01	<0.1
2012-12-11	MAX	7.85	580	240	25	1.7	< 2	< 4	<0.1	0.058	< 0.02	40	< 1	22	5.2	75	0.17	0.034	<0.1	<0.005	<0.01	0.11
2013-06-21	MAX	8.2	570	230	26	1.9	< 2	< 4	0.31	0.13	< 0.02	39	< 1	21	5.6	74	0.3	0.033	<0.1	0.01	<0.01	<0.1
2013-12-04	MAX	7.8	580	230	26	1.7	< 2	7.9	0.34	0.12	< 0.02	37	< 1	24	5.8	71	<0.02	0.031	<0.1	<0.005	0.014	<0.1
2014-05-21	MAX	7.98	570	230	27	1.7	< 2	< 4	0.54	< 0.05	< 0.02	38	< 1	24	5.9	75	0.04	0.034	<0.1	<0.005	<0.01	<0.1
2014-12-03	MAX	8.05	580	230	27	1.9	< 2	< 4	0.21	0.19	< 0.02	38	1.3	24	5.9	74	0.16	0.037	<0.1	0.0065	<0.01	<0.1
2015-06-22	MAX	7.83	580	240	26	1.8	< 2	8.3	0.13	< 0.05	0.021	38	< 1	24	5.7	71	0.19	0.033	<0.1	<0.005	0.015	<0.1
2015-12-02	MAX	7.88	590	220	26	1.8	< 2	5.2	0.22	0.12	0.025	35	1.6	23	5.8	74	0.23	0.04	<0.1	0.0063	0.035	<0.1
2016-06-21	MAX	8.16	570	240	26	1.7	< 2	11	0.16	< 0.05	0.022	37	< 1	24	6.2	70	0.26	0.03	<0.1	0.012	<0.01	0.11
2016-11-30	MAX	7.97	580	230	27	1.8	< 2	5.5	0.14	< 0.05	< 0.02	33	< 1	22	6.2	71	0.28	0.036	<0.1	0.0086	0.035	<0.1
2017-06-05	MAX	8.17	570	230	26	1.7	< 2	< 4	0.22	< 0.05	< 0.02	39	< 1	22	5.9	70	0.25	0.036	<0.1	<0.005	<0.01	<0.1
2017-12-05	MAX	8	580	250	25	1.7	< 2	< 4	0.17	0.11	0.027	38	1.4	20	5.7	68	0.23	0.034	<0.1	<0.005	0.06	<0.1
2018-06-14	MAX	8.14	570	240	28	1.9	< 2	4.3	0.12	0.087	0.024	37	< 1	20	6.4	72	0.26	0.032	<0.1	<0.005	<0.01	<0.1
2018-12-12	MAX	7.97	570	240	25	1.7	< 2	< 4	0.1	0.085	0.035	38	< 1	20	5.8	67	0.27	0.03	<0.1	<0.005	<0.01	<0.1
2019-06-13	MAX	8.14	570	230	26	1.7	< 2	< 4	0.2	< 0.05	0.04	36	< 1	20	6.1	72	0.29	0.032	<0.1	<0.005	<0.01	0.12
2019-12-02	MAX	7.93	560	240	26	1.7	< 2	< 4	<0.1	< 0.05	< 0.02	37	< 1	20	6.2	70	0.17	0.031	<0.1	<0.005	<0.01	<0.1
2020-06-15	Burea	8	570	240	27	1.8	< 2	< 4	0.12	0.089	< 0.02	37	< 1	21	6.2	75	0.45	0.035	<0.1	<0.005	<0.01	<0.1
2020-12-07	Burea	8	570	240	27	1.9	< 2	4.8	<0.1	0.074	< 0.02	36	< 1	20	6.1	75	0.36	0.031	<0.1	<0.005	<0.01	0.14

Routine Groundwater Quality - General Analysis -Guelph WRIC & Waste Transfer Station

AECOM

Date	Lab	pH	Cond- uctivity	Alk mg/L	Mg mg/L	K mg/L	BOD mg/L	COD mg/L	TKN mg/L	NH3-N mg/L	Total-P mg/L	SO4 mg/L	Phenol ug/L	Cl mg/L	Na mg/L	Ca mg/L	Fe mg/L	B mg/L	P mg/L	Zn mg/L	NO2 mg/L	NO3 mg/L
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Monitor: 11a-00 Bedrock

2021-06-14	Burea	8.04	570	240	27	1.7	< 2	< 4	0.29	0.079	0.028	39	< 1	21	6.1	73	0.32	0.033	<0.1	<0.005	<0.01	0.13
2021-12-14	Burea	8.03	570	230	26	1.7	< 2	< 4	<0.1	0.07	< 0.02	34	< 1	21	6	74	0.3	0.032	<0.1	<0.005	<0.01	<0.1

Monitor: 11b-00 Outwash

2001-06-27	Philip	7.99	798	264	25.6	2	7.2	5	0.22	< 0.03	0.017	55	< 1	54	54.1	83.1	0.03	0.07	<0.1	0.113		
2001-12-03	Philip	7.98	1081	266	28.4	2.2	1.4	6	0.28	< 0.03	0.023	50.4	< 1	155	92.8	100	<0.01	0.04	<0.1	0.013		
2002-06-04	Philip	8.02	751	252	24.7	1	0.9	6	0.39	< 0.03	0.005	35	< 1	69.3	40.3	91.4	<0.01	0.09	<0.1	0.015		
2002-12-03	Philip	8	813	250	28.2	2	< 0.5	6	0.37	< 0.03	0.022	42.2	< 1	68.9	26.8	103	<0.01	0.15	<0.1	0.063		
2003-06-02	Philip	7.72	873	226	28.1	2	0.6	5	0.37	0.04	< 0.001	48.5	7	70.6	37.2	101	<0.01	0.41		0.029		
2003-12-01	Philip	8.1	629	185	13.1	1.1	< 0.5	12	0.51	< 0.03	0.005	43	< 1	58.8	58.9	51.6	0.02	0.58	<0.1	0.012		
2004-06-08	Philip	7.9	887	192	18.3	< 1	0.7	23	0.97	0.03	0.007	37.7	< 1	165	93.4	79.2	0.02	1.09		0.129	<0.2	4.7
2004-11-30	Philip	8	781	212	15.1	1	< 0.5	7	0.26	< 0.03	0.002	29.4	< 1	118	83.2	60.6	<0.01	0.57		0.011		
2005-08-03	Maxx	8.04	919	235	21	1.6	< 2	8	0.8	< 0.05	< 0.02	37	< 1	139	88	84	<0.05	1.2	<0.05	0.028		
2005-11-28	Maxx	8.12	1210	235	21		< 2	< 4	0.7	< 0.05	< 0.02	37	< 1	192	150	91	<0.05	0.6	<0.05	0.02		
2006-06-01	MAX	8.1	961	268	18	1.4	< 2	8	0.6	< 0.05	0.05	40	< 1	129	120	69	<0.02	0.8	<0.05	0.02		
2006-12-04	MAX	8.2	899	279	14	1.2	< 2	< 4	0.5	< 0.05	< 0.02	48	< 1	92	110	53	<0.02	1.9	<0.05	0.012		
2007-03-30	MAX	8.3	780	274	12	1	< 2	7	0.4	0.09	< 0.02	34	< 1	61	95	44	<0.02	1.5	<0.05	<0.005		
2007-06-14	MAX	8.2	756	264	15	1.3	< 2	7	0.4	0.08	< 0.02	36	< 1	54	96	60	<0.02	1.8	<0.05	0.016		
2007-12-05	MAX	8.2	755	259	16	1.5	< 2	12	0.3	< 0.05	5.2	27	< 1	66	77	65	<0.02	0.58	<0.1	0.013	<0.01	3.4
2008-06-25	MAX	8.2	1100	250	19	1.4		6	0.5	0.08	< 0.02	25	< 1	180	110	81	<0.02	0.39	<0.1	0.018	<0.01	5.5
2008-12-09	MAX	8.1	939	264	16	1.4	< 2	5	0.4	< 0.05	0.03	27	< 1	110	110	63	<0.02	0.9	<0.1	0.019	<0.01	4.4
2009-06-25	MAX	8	1130	253	18	1.4	< 2	< 4	0.3	< 0.05	< 0.02	25	< 1	190	140	74	<0.02	0.85	<0.1	0.018	<0.01	3.8
2009-12-15	MAX	8	890	250	17	1.5	< 2	< 4	0.2	< 0.05	0.03	19	< 1	110	89	71	<0.02	0.44	<0.1	0.016	<0.01	3.5
2010-06-28	MAX	8	966	243	17	1.5	< 2	6	0.3	< 0.05	< 0.02	35	< 1	140	95	75	<0.02	0.24	<0.1	0.017	<0.01	3.3
2010-12-17	MAX	7.96	966	255	18	1.5	< 2	< 4	0.2	< 0.05	< 0.02	38	< 1	130	110	75	<0.02	0.57	<0.1	0.017	<0.01	3.3
2011-06-14	MAX	8.01	1140	224	16	1.9	< 2	17	0.5	< 0.05	< 0.02	30	< 1	190	140	73	<0.02	0.58	<0.1	0.014	<0.01	3
2011-12-14	MAX	8.16	975	238	15	1.4	< 2	< 4	1	< 0.05	0.19	25	< 1	140	110	64	1.9	0.49	<0.1	0.02	<0.01	2.7
2012-06-18	MAX	8.04	970	230	16	1.5	< 2	9.8	0.45	0.055	0.024	23	1	140	100	71	1.6	0.21	<0.1	0.034	<0.01	2.1
2012-12-11	MAX	7.87	1000	250	18	1.6	< 2	< 4	0.26	< 0.05	0.045	23	< 1	140	100	84	2	0.19	<0.1	0.02	<0.01	3
2013-06-19	MAX	7.9	1300	250	18	1.6	< 2	4.9	0.43	< 0.05	0.067	28	< 1	220	130	87	1.8	0.15	<0.1	0.022	<0.01	3
2013-12-04	MAX	7.97	1100	330	27	1.8	< 2	10	0.48	< 0.05	0.19	23	< 1	140	150	91	<0.02	0.27	<0.1	0.11	<0.01	2.8
2014-05-21	MAX	7.96	1600	270	23	1.8	< 2	< 4	0.29	< 0.05	< 0.02	27	< 1	290	220	100	<0.02	0.1	<0.1	0.073	<0.01	3.13
2014-12-03	MAX	8.07	1000	270	22	1.9	< 2	< 4	0.17	< 0.05	0.03	17	< 1	140	130	85	<0.02	0.16	<0.1	0.058	<0.01	2.15
2015-06-22	MAX	7.81	1300	230	23	1.6	< 2	8.7	0.39	< 0.05	0.061	20	< 1	240	130	94	2.7	0.27	<0.1	0.023	<0.01	1.94
2015-12-02	MAX	8.01	1100	250	30	1.9	< 2	4	0.41	< 0.05	0.044	28	< 1	150	120	110	0.07	0.18	<0.1	0.09	<0.01	3.73
2016-06-21	MAX	8.09	1000	260	18	1.4	< 2	5.2	0.31	< 0.05	0.09	40	< 1	140	100	79	2.4	0.2	<0.1	0.029	<0.01	2.98
2016-11-30	MAX	7.99	1000	290	16	1.7	< 2	< 4	<0.1	< 0.05	0.029	37	< 1	120	110	73	2	0.082	<0.1	0.028	<0.01	2.84
2017-06-05	MAX	8.29	1000	260	10	1.3	< 2	8.4	0.22	< 0.05	0.021	22	< 1	130	160	46	0.6	0.17	<0.1	0.01	<0.01	1.6
2017-12-05	MAX	8.08	810	270	13	1.3	< 2	< 4	<0.1	< 0.05	0.055	39	< 1	68	81	61	2.4	0.084	<0.1	0.013	<0.01	1.47
2018-06-14	MAX	8.28	720	230	11	1.2	< 2	5	<0.1	0.081	0.24	21	< 1	77	84	51	9.1	0.14	<0.1	0.018	<0.01	1.96
2018-12-12	MAX	7.99	720	250	18	1.4	< 2	< 4	0.13	< 0.05	0.13	34	< 1	47	68	70	2.4	0.092	0.1	0.094	<0.01	2.01

Routine Groundwater Quality - General Analysis -Guelph WRIC & Waste Transfer Station

AECOM

Date	Lab	pH	Cond- uctivity	Alk mg/L	Mg mg/L	K mg/L	BOD mg/L	COD mg/L	TKN mg/L	NH3-N mg/L	Total-P mg/L	SO4 mg/L	Phenol ug/L	Cl mg/L	Na mg/L	Ca mg/L	Fe mg/L	B mg/L	P mg/L	Zn mg/L	NO2 mg/L	NO3 mg/L
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Monitor: 11b-00 Outwash

2019-06-13	MAX	8.18	900	240	13	1.2	< 2	< 4	<0.1	< 0.05	0.028	28	< 1	120	110	62	0.35	0.087	<0.1	<0.005	<0.01	1.73
2019-12-02	MAX	8.02	700	250	13	1.2	< 2	< 4	0.11	< 0.05	< 0.1	22	< 1	50	75	59	0.49	0.093	<0.1	0.01	<0.01	2.3
2020-06-15	Burea	8.05	840	250	16	1.2	< 2	< 4	<0.1	< 0.05	0.056	31	< 1	88	73	76	1.6	0.13	<0.1	0.016	<0.01	2.29
2020-12-07	Burea	7.93	980	270	21	1.7	< 2	4.1	<0.1	< 0.05	< 0.02	39	< 1	130	87	99	0.72	0.053	<0.1	0.022	<0.01	2.11
2021-06-14	Burea	8.07	780	250	18	1.2	< 2	11	<0.1	< 0.05	0.023	34	< 1	72	58	79	0.84	0.056	<0.1	0.02	<0.01	2.47
2021-12-14	Burea	8.07	620	290	13	1.2	< 2	4.6	<0.1	< 0.05	0.027	14	< 1	22	55	64	2.3	0.1	<0.1	<0.005	<0.01	1.38

Monitor: 12a-00 Bedrock

2001-06-27	Philip	7.5	888	390	43.6	14	1.2	7	0.92	0.45	0.006	96.2	< 1	82.8	22.6	109	<0.01	0.07	<0.1	1.44		
2001-12-03	Philip	7.77	920	389	44.7	10.1	1.2	16	0.75	0.19	0.008	50.6	< 1	24.7	19.7	110	<0.01	0.06	<0.1	1.17		
2002-06-04	Philip	8.33	889	346	40.5	15	0.6	10	1.34	0.64	0.007	44.5	< 1	44.3	20.6	123	0.04	0.02	<0.1	1.51		
2002-12-03	Philip	7.78	4365	372	41.2	15	< 0.5	24	4.22	4.23	0.012	55.7	< 1	1200	763	109	<0.1	<0.1	<1	0.958		
2003-06-02	Philip	7.37	915	350	40.4	18	< 0.5	11	1.04	0.41	0.002	46.3	10	55.5	36.2	103	<0.01	0.02		1.17		
2003-12-01	No Ac																					
2004-06-08	Philip	7.53	845	319	37	13.9	< 0.5	10	0.89	0.47	0.009	45.5	< 1	45.3	23	106	<0.01	0.02		1.15	<0.2	22.5
2004-11-30	Philip	7.57	823	321	37.7	13	< 0.5	13	0.67	0.13	0.002	50.5	< 1	38.5	16.4	98.4	<0.01	0.02		1		
2005-08-03	Maxx	7.93	891	370	44	16	< 2	9	0.6	0.17	< 0.02	40	< 1	42	27	110	<0.05	0.028	0.084	1.1		
2005-11-28	Maxx	7.88	791	331	40		< 2	54	2.5	0.16	< 0.02	54	< 1	30	20	100	<0.05	0.024	<0.05	0.97		
2006-06-01	MAX	7.9	858	338	39	16	< 2	13	1.2	0.24	< 0.02	40	< 1	34	25	110	<0.02	0.02	<0.05	1.1		
2006-12-04	MAX	7.8	1020	423	41	22	< 2	8	1.2	0.56	< 0.02	49	< 1	41	34	110	<0.02	0.024	<0.05	1.2		
2007-03-30	MAX	8.1	938	376	33	23	< 2	5	1.1	0.47	< 0.02	40	< 1	35	26	110	<0.02	0.022	<0.05	1.3		
2007-06-14	MAX	8	947	353	37	17	< 2	8	3.5	0.24	< 0.02	45	< 1	40	29	100	<0.02	0.019	<0.05	1.1		
2007-12-05	MAX	8	796	343	34	11	< 2	12	0.4	0.1	0.03	39	< 1	34	17	94	<0.02	0.027	<0.1	0.92	<0.01	1.4
2008-06-25	MAX	8	796	343	32	13		6	0.6	0.07	< 0.02	36	< 1	23	18	93	<0.02	0.02	<0.1	0.99	<0.01	8.9
2008-12-09	MAX	7.9	816	343	30	12	< 2	9	0.5	0.06	< 0.02	40	< 1	27	18	96	<0.02	0.032	<0.1	0.92	0.02	5.9
2009-06-25	MAX	7.7	707	298	30	13	< 2	4	0.5	0.05	< 0.02	38	< 1	13	15	83	<0.02	0.05	<0.1	0.81	0.01	8
2009-12-16	MAX	7.6	742	312	37	10	< 2	10	0.3	< 0.05	< 0.02	39	< 1	31	13	93	<0.02	0.019	<0.1	0.81	0.03	1.4
2010-06-24	MAX	7.9	699	304	30	14	< 2	7	0.6	< 0.05	< 0.02	35	< 1	11	15	86	<0.02	0.02	<0.1	0.84	0.02	5.5
2010-12-20	MAX	7.75	658	304	32	8.7	< 2	7	0.4	< 0.05	< 0.02	34	< 1	9	6.5	87	<0.02	0.02	<0.1	0.77	0.02	1.7
2011-06-15	MAX	7.82	603	283	26	12	< 2	12	0.3	< 0.05	< 0.02	26	< 1	5	8.4	77	<0.02	0.016	<0.1	0.74	<0.01	3
2011-12-15	MAX	8.01	701	318	33	11	< 2	< 4	0.8	< 0.05	0.06	32	< 1	13	11	92	0.55	0.011	<0.1	0.82	<0.01	2.3
2012-06-18	MAX	7.8	680	300	30	9.5	< 2	10	0.5	< 0.05	< 0.02	32	< 1	18	9.4	82	0.05	0.02	<0.1	0.77	<0.01	1.9
2012-12-10	MAX	7.62	710	310	33	6.2	< 2	< 4	0.62	< 0.05	< 0.02	31	< 1	25	11	90	<0.02	0.016	<0.1	0.74	0.016	1.3
2013-06-18	MAX	7.87	630	290	28	11	< 2	7.3	0.19	< 0.05	< 0.02	29	< 1	6	7.4	84	<0.02	0.016	<0.1	0.76	<0.01	2.2
2013-12-02	MAX	7.77	660	320	31	12	< 2	< 4	0.27	< 0.05	< 0.02	28	< 1	8	7.4	89	<0.02	0.02	<0.1	0.78	<0.01	1.5
2014-05-20	MAX	7.63	590	290	26	11	< 2	< 4	0.12	< 0.05	< 0.02	25	< 1	4	5.4	78	<0.02	0.016	<0.1	0.82	<0.01	1.29
2014-12-02	MAX	7.64	670	310	30	8.7	< 2	< 4	0.15	< 0.05	< 0.02	26	< 1	14	6.8	87	<0.02	0.025	<0.1	0.71	0.019	1.04
2015-06-17	MAX	7.69	710	310	30	9	< 2	5.8	0.24	< 0.05	< 0.02	28	< 1	28	9.7	79	0.02	0.015	<0.1	0.73	<0.01	1.33
2015-12-01	MAX	7.75	690	300	34	6.4	< 2	8.6	0.16	< 0.05	< 0.02	33	< 1	18	7.5	86	0.09	0.02	<0.1	0.72	<0.01	0.59
2016-06-23	MAX	7.99	630	310	28	9.6	< 2	7.6	0.29	< 0.05	< 0.02	28	< 1	4.8	5.8	80	0.04	0.017	<0.1	0.68	<0.01	1.19
2016-11-29	MAX	7.78	740	330	33	7.4	< 2	< 4	0.15	< 0.05	< 0.02	29	< 1	34	16	82	0.13	0.016	<0.1	0.8	<0.01	0.15

Routine Groundwater Quality - General Analysis -Guelph WRIC & Waste Transfer Station

AECOM

Date	Lab	pH	Cond- uctivity	Alk mg/L	Mg mg/L	K mg/L	BOD mg/L	COD mg/L	TKN mg/L	NH3-N mg/L	Total-P mg/L	SO4 mg/L	Phenol ug/L	Cl mg/L	Na mg/L	Ca mg/L	Fe mg/L	B mg/L	P mg/L	Zn mg/L	NO2 mg/L	NO3 mg/L
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Monitor: 12a-00 Bedrock

2017-06-05	MAX	7.98	560	250	25	8.6	< 2	5.9	0.23	< 0.05	< 0.02	23	< 1	2.9	3.7	71	0.06	0.017	<0.1	0.58	<0.01	0.68
2017-12-05	MAX	7.78	700	330	30	7.4	< 2	< 4	0.16	< 0.05	< 0.02	29	< 1	18	7.9	82	0.03	0.018	<0.1	0.68	<0.01	0.38
2018-06-13	MAX	7.82	550	290	25	8.8	< 2	15	<0.1	< 0.05	< 0.02	21	< 1	2.9	3.6	73	0.05	0.021	<0.1	0.59	<0.01	0.65
2018-12-11	MAX	7.83	680	320	32	6.5	< 2	5.9	<0.1	< 0.05	< 0.02	28	< 1	16	8.1	86	0.03	0.013	<0.1	0.69	<0.01	0.55
2019-06-13	MAX	7.94	550	270	24	8.4	< 2	5.8	<0.1	< 0.05	< 0.02	19	< 1	3.1	3.3	72	0.04	0.014	<0.1	0.55	<0.01	0.57
2020-03-10	Burea	7.66	560	270	26	7.5	< 2	< 4	0.12	< 0.05	< 0.02	20	< 1	4.1	3.5	69	0.03	0.015	<0.1	0.54	<0.01	0.56
2020-06-19	Burea	7.87	550	280	25	7.4	< 2	< 4	0.23	< 0.05	0.24	20	< 1	3.5	3.4	73	0.02	0.015	<0.1	0.51	<0.01	0.56

Monitor: 21-13A Bedrock

2021-06-17	Burea	7.87	590	320	32	3.5	3	13	0.24	< 0.05	0.37	19	< 1	3	1.8	78	14	0.013	<0.1	0.56	<0.01	0.29
2021-12-14	Burea	7.77	590	300	32	4.1	< 2	9.3	0.23	0.067	0.32	19	< 1	2.9	2.1	76	11	0.017	<0.1	0.57	<0.01	0.38

Monitor: 12b-00 Outwash

2001-06-27	Philip	7.77	760	354	27.2	4	0.9	11	0.45	0.13	0.026	48.9	< 1	40	25.2	106	0.62	0.1	<0.1	0.372		
2001-12-03	Philip	7.83	435	204	12.8	3.5	1.2	12	0.26	< 0.03	0.042	21.3	< 1	11.7	12.3	54.8	0.02	0.07	<0.1	0.209		
2002-06-04	Philip	8.51	1144	353	25.6	11	2.9	48	10.8	9.3	0.053	30.1	< 1	169	94.7	97	0.01	0.09	<0.1	0.352		
2002-12-03	Philip	7.76	1187	420	37.2	5	1.2	32	1.41	0.71	0.239	35.4	< 1	135	112	110	16.7	0.05	0.3	0.006		
2003-06-02	Philip	7.38	1108	398	33.7	3	92	88	1.33	0.57	0.004	4.5	157	117	66	118	22.7	0.11		0.017		
2003-12-01	No Ac																					
2004-06-08	Philip	7.56	710	339	24.9	4.1	2.1	29	1.94	1.46	0.151	20.1	< 1	51	33.8	118	11	0.09		0.342	<0.2	0.2
2004-11-30	Philip	7.62	687	341	24.4	4	< 0.5	24	1.03	0.43	0.046	32.3	< 1	22.7	16.4	96.7	3.25	0.08		0.079		
2005-08-03	Maxx	7.78	610	306	21	4.2	< 3	27	2.4	1.07	0.1	20	1	14	16	90	7.1	0.092	0.17	0.026		
2005-11-28	Maxx	7.93	647	345	26		< 2	14	1	0.35	< 0.02	28	< 1	13	13	100	2.1	0.068	<0.05	0.32		
2006-06-01	MAX	8.1	584	292	19	2.5	< 2	8	1	0.49	0.02	24	< 1	10	12	72	1.7	0.05	0.053	0.15		
2006-12-04	MAX	7.9	648	328	22	3.2	< 2	5	0.8	0.43	< 0.02	26	< 1	11	14	92	0.78	0.065	<0.05	0.21		
2007-03-30	MAX	8.1	526	257	15	2.2	< 2	8	0.7	0.39	< 0.02	18	< 1	8	10	76	1.1	0.039	<0.05	0.22		
2007-06-14	MAX	8	685	337	22	3	< 2	16	0.6	0.44	< 0.02	30	< 1	11	13	93	4.5	0.049	<0.05	0.22		
2007-12-05	MAX	7.9	657	305	22	2.8	< 2	11	0.3	< 0.05	0.02	27	< 1	7	8.4	95	<0.02	0.035	<0.1	0.58	<0.01	4.5
2008-06-25	MAX	8.2	482	235	16	2.7		5	0.6	0.16	< 0.02	22	< 1	5	8.9	70	<0.02	0.067	<0.1	0.61	<0.01	0.2
2008-12-09	MAX	7.9	707	356	25	4	< 2	9	0.5	< 0.05	< 0.02	27	< 1	6	13	100	<0.02	0.058	<0.1	0.74	<0.01	1.4
2009-06-25	MAX	7.7	587	297	20	3	< 2	< 4	0.4	0.12	0.03	21	< 1	4	9.3	87	<0.02	0.053	<0.1	0.61	<0.01	0.4
2009-12-16	MAX	7.5	764	383	31	4.7	< 2	5	0.5	< 0.05	< 0.02	25	< 1	4	9	120	<0.02	0.037	<0.1	0.65	<0.01	3.6
2010-06-24	MAX	7.9	532	263	18	2.8	< 2	11	0.5	0.07	< 0.02	13	< 1	8	9.5	80	<0.02	0.051	<0.1	0.54	<0.01	<0.1
2010-12-17	MAX	7.68	712	353	30	3.9	< 2	9	0.4	< 0.05	< 0.02	20	< 1	7	7.7	100	<0.02	0.057	<0.1	0.47	<0.01	2.1
2011-06-15	MAX	7.84	516	260	18	2.6	< 2	14	0.3	0.09	0.02	16	< 1	5	7.1	77	<0.02	0.044	<0.1	0.35	<0.01	0.1
2011-12-15	MAX	8.01	749	354	29	3.9	< 2	14	0.7	< 0.05	0.88	32	< 1	8	9.6	110	6.1	0.035	<0.1	0.18	<0.01	2.4
2012-06-18	MAX	7.73	710	340	26	3.5	< 2	21	0.96	< 0.05	0.28	29	< 1	6	7.5	100	16	0.039	<0.1	0.7	<0.01	2.4
2012-12-10	MAX	7.64	780	380	30	4.2	< 2	6.9	1.2	< 0.05	0.6	33	< 1	9	11	120	13	0.035	<0.1	0.3	<0.01	3.2
2013-06-18	MAX	7.86	510	250	17	2.6	< 2	11	0.51	< 0.05	0.32	16	< 1	6	6.5	76	8	0.04	<0.1	0.61	<0.01	0.14
2013-12-02	MAX	7.59	590	290	23	3.4	< 2	7.5	0.55	< 0.05	0.17	21	< 1	5	6.6	92	5.4	0.044	<0.1	0.55	<0.01	0.95
2014-05-20	MAX	7.64	530	250	18	2.5	< 2	< 4	0.31	< 0.05	0.12	18	< 1	11	8.4	77	2.5	0.035	<0.1	0.52	<0.01	<0.1
2014-12-02	MAX	7.57	740	320	26	3.7	< 2	6.8	0.27	< 0.05	0.098	19	< 1	30	13	100	4.1	0.045	<0.1	0.48	<0.01	1.9

Routine Groundwater Quality - General Analysis -Guelph WRIC & Waste Transfer Station

AECOM

Date	Lab	pH	Cond- uctivity	Alk mg/L	Mg mg/L	K mg/L	BOD mg/L	COD mg/L	TKN mg/L	NH3-N mg/L	Total-P mg/L	SO4 mg/L	Phenol ug/L	Cl mg/L	Na mg/L	Ca mg/L	Fe mg/L	B mg/L	P mg/L	Zn mg/L	NO2 mg/L	NO3 mg/L
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Monitor: 12b-00 Outwash

2015-06-17	MAX	7.69	670	300	24	2.8	< 2	7.6	0.3	< 0.05	0.15	26	< 1	26	13	87	4.7	0.032	<0.1	0.34	<0.01	1.01
2015-12-01	MAX	7.57	810	350	29	3.9	< 2	11	0.2	< 0.05	0.14	23	< 1	31	26	100	4.3	0.029	<0.1	0.18	<0.01	2.56
2016-06-23	MAX	7.68	640	310	22	4.3	< 2	5.5	0.17	< 0.05	0.085	2.1	< 1	< 1	11	84	2.4	0.032	<0.1	0.34	<0.01	1.49
2016-11-29	MAX	7.68	710	360	26	3	< 2	< 4	0.17	< 0.05	< 0.1	36	< 1	9.4	14	110	2.9	0.046	<0.1	0.19	<0.01	0.76
2017-06-05	MAX	8.03	470	230	18	3.3	< 2	5.9	0.18	< 0.05	0.22	14	< 1	6	8.2	69	5.1	0.043	<0.1	0.12	<0.01	<0.1
2017-12-05	MAX	7.68	720	360	24	2.6	< 2	5.6	0.24	< 0.05	0.081	20	< 1	9	14	94	2.4	0.043	<0.1	0.24	<0.01	2.42
2018-06-13	MAX	8.05	450	210	15	2.1	< 2	17	<0.1	< 0.05	0.16	12	< 1	10	6.2	61	3.7	0.037	<0.1	0.21	<0.01	0.39
2018-12-11	MAX	7.84	660	310	25	2.8	< 2	5.9	<0.1	< 0.05	0.039	18	< 1	19	16	95	0.99	0.033	<0.1	0.31	<0.01	1.93
2019-06-13	MAX	7.92	490	190	17	2.2	< 2	< 4	0.19	< 0.05	0.028	10	< 1	33	24	68	0.27	0.028	<0.1	0.25	<0.01	0.65
2020-03-10	Burea	7.64	530	230	18	1.8	< 2	< 4	0.15	< 0.05	0.2	11	< 1	23	12	71	4	0.024	0.11	0.34	<0.01	1.3
2020-06-19	Burea	7.85	700	320	28	3	< 2	4.3	0.29	0.08	0.87	19	< 1	26	25	110	6.2	0.029	<0.1	0.64	<0.01	<0.1

Monitor: 21-13B Outwash

2021-06-17	Burea	8.13	610	330	29	2.6	< 2	15	0.6	< 0.05	2.9	12	< 1	5.3	6.6	88	110	0.019	<0.1	0.17	<0.01	0.36
2021-12-14	Burea	7.83	690	360	25	2.2	< 2	< 4	<0.1	< 0.05	< 0.02	15	< 1	4.4	15	100	89	0.022	<0.1	0.34	<0.01	0.69

Monitor: 13a-01 Bedrock

2001-12-03	Philip	7.95	913	272	38.8	2.9	0.8	< 5	0.21	0.09	0.008	105	< 1	83.9	39.9	106	0.77	0.04	<0.1	0.111		
2002-06-04	Philip	8.08	851	259	35	2	< 0.5	< 5	0.24	0.1	0.005	107	< 1	85.5	38	97.7	0.96	0.04	<0.1	<0.005		
2002-12-03	Philip	7.99	902	262	35.6	2	< 0.5	< 5	0.24	0.1	0.008	104	< 1	85.3	40.3	99.8	0.81	0.03	<0.1	<0.005		
2003-06-02	Philip	7.77	921	248	35.2	2	< 0.5	< 5	0.23	0.11	< 0.001	111	9	88.5	41	100	0.45	0.03		0.022		
2003-12-01	Philip	8.15	853	250	34.5	2.3	< 0.5	6	0.25	< 0.03	0.004	110	< 1	97.1	39	109	0.74	0.05	<0.1	0.193		
2004-06-09	Philip	7.81	854	254	34.3	2.1	< 0.5	< 5	0.19	0.14	0.007	119	< 1	97.1	39.7	112	0.64	0.04		0.117	<0.2	<0.2
2004-11-30	Philip	7.96	897	254	33.9	2	< 0.5	6	0.25	0.1	0.006	115	< 1	101	40.8	98.8	0.65	0.04		<0.005		
2005-08-03	Maxx	8.02	889	252	36	2.5	< 2	4	0.5	0.19	< 0.02	107	< 1	93	44	100	0.58	0.043	<0.05	<0.005		
2005-11-28	Maxx	8	884	263	37		< 2	< 4	0.2	0.12	< 0.02	101	< 1	87	44	110	0.59	0.041	<0.05	<0.005		
2006-06-01	MAX	8.1	929	266	33	2.2	< 2	5	0.5	0.17	< 0.02	106	< 1	111	40	94	0.43	0.045	<0.05	<0.005		
2006-12-04	MAX	8	967	268	35	2.5	< 2	< 4	0.3	0.18	< 0.02	111	< 1	100	43	100	0.5	0.044	<0.05	<0.005		
2007-03-30	MAX	8.1	958	260	32	2.4	< 2	5	0.3	0.21	< 0.02	103	< 1	94	39	90	0.5	0.042	<0.05	<0.005		
2007-06-14	MAX	8.2	967	258	34	2.5	< 2	4	0.4	0.21	< 0.02	110	< 1	97	44	100	0.43	0.043	<0.05	<0.005		
2007-12-05	MAX	8.1	939	251	34	2.4	< 2	8	0.2	0.17	< 0.02	103	< 1	97	42	98	0.42	0.038	<0.1	<0.005	<0.01	<0.1
2008-06-25	MAX	8.2	967	247	37	2.6		11	0.5	0.19	< 0.02	120	< 1	100	49	100	0.3	0.043	<0.1	<0.005	<0.01	<0.1
2008-12-09	MAX	8	965	251	34	2.5	< 2	< 4	0.3	0.14	< 0.02	124	< 1	95	45	97	0.32	0.043	<0.1	<0.005	<0.01	<0.1
2009-06-25	MAX	7.9	969	248	34	2.6	< 2	< 4	0.2	0.13	< 0.02	120	< 1	96	44	100	0.54	0.047	<0.1	<0.005	<0.01	<0.1
2009-12-16	MAX	7.8	955	248	35	2.7	< 2	7	0.3	0.12	0.03	110	< 1	95	45	100	0.37	0.047	<0.1	<0.005	<0.01	<0.1
2010-06-28	MAX	7.9	953	244	32	2.5	< 2	9	0.4	0.1	0.02	120	< 1	92	40	95	0.4	0.049	<0.1	<0.005	<0.01	<0.1
2010-12-20	MAX	7.76	952	243	34	2.6	< 2	6	0.3	0.13	< 0.02	100	< 1	95	43	100	0.2	0.048	<0.1	<0.005	<0.01	<0.1
2011-06-16	MAX	7.95	936	241	36	2.7	< 2	13	0.2	0.14	< 0.02	120	< 1	95	44	100	0.39	0.043	<0.1	<0.005	<0.01	<0.1
2011-12-13	MAX	8.02	980	245	37	2.7	< 2	< 4	0.2	0.08	0.04	110	< 1	93	44	100	0.44	0.043	<0.1	<0.005	<0.01	<0.1
2012-06-20	MAX	7.86	970	250	35	2.6	< 2	8.2	0.46	0.079	0.032	110	< 1	93	44	100	0.42	0.046	<0.1	<0.005	<0.01	<0.1
2012-12-11	MAX	7.85	960	250	31	2.6	< 2	< 4	0.47	0.15	< 0.02	110	< 1	91	40	100	0.37	0.048	<0.1	<0.005	<0.01	<0.1
2013-06-17	MAX	7.71	960	260	32	2.3	< 2	< 4	0.72	0.16	< 0.02	110	< 1	95	42	94	0.42	0.048	<0.1	<0.005	<0.01	<0.1

Routine Groundwater Quality - General Analysis -Guelph WRIC & Waste Transfer Station

AECOM

Date	Lab	pH	Cond- uctivity	Alk mg/L	Mg mg/L	K mg/L	BOD mg/L	COD mg/L	TKN mg/L	NH3-N mg/L	Total-P mg/L	SO4 mg/L	Phenol ug/L	Cl mg/L	Na mg/L	Ca mg/L	Fe mg/L	B mg/L	P mg/L	Zn mg/L	NO2 mg/L	NO3 mg/L
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Monitor: 13a-01 Bedrock

2013-12-09	MAX	7.89	980	240	35	2.5	< 2	< 4	0.24	0.15	< 1	110	< 1	97	44	100	0.35	0.041	<0.1	<0.005	<0.01	<0.1
2014-05-22	MAX	7.86	950	240	32	2.5	< 2	< 4	0.28	0.093	< 0.04	110	< 1	97	45	110	0.31	0.045	<0.1	<0.005	<0.01	<0.1
2014-12-03	MAX	7.99	930	250	36	2.7	< 2	< 4	0.2	0.16	< 0.02	110	< 1	99	45	100	0.3	0.053	<0.1	<0.005	<0.01	<0.1
2015-06-18	MAX	7.93	960	240	35	2.7	< 2	4.1	0.23	0.15	< 0.02	110	< 1	99	45	100	0.45	0.048	<0.1	<0.005	<0.01	<0.1
2015-12-04	MAX	8	960	240	35	2.6	< 2	4.9	0.14	0.14	< 0.02	100	< 1	95	45	98	0.34	0.041	<0.1	<0.005	<0.01	<0.1
2016-06-21	MAX	8.01	960	250	34	2.4	< 2	< 4	0.21	0.11	< 0.02	100	< 1	99	43	93	0.37	0.042	<0.1	<0.005	<0.01	<0.1
2016-12-06	MAX	7.96	970	250	34	2.7	< 2	< 4	0.21	0.11	< 0.02	100	< 1	100	45	97	0.39	0.048	<0.1	<0.005	<0.01	<0.1
2017-06-07	MAX	8.05	970	250	35	2.6	< 2	< 4	0.28	0.14	< 0.02	100	< 1	110	45	98	0.4	0.051	<0.1	<0.005	<0.01	<0.1
2017-12-06	MAX	7.98	990	260	33	2.6	< 2	< 4	0.19	0.12	< 0.02	95	< 1	110	45	96	0.39	0.044	<0.1	<0.005	<0.01	<0.1
2018-06-18	MAX	7.85	1000	250	36	2.7	< 2	< 4	0.22	0.13	< 0.02	97	< 1	110	48	100	0.49	0.038	<0.1	<0.005	<0.01	<0.1
2018-12-10	MAX	7.93	1000	250	34	2.4	< 2	4.9	0.12	0.17	< 0.02	100	< 1	110	47	100	0.3	0.04	<0.1	<0.005	<0.01	<0.1
2019-06-18	MAX	7.88	1000	240	35	2.7	< 2	< 4	0.18	0.12	< 0.02	110	< 1	110	51	110	0.33	0.05	<0.1	<0.005	<0.01	<0.1
2019-12-04	MAX	7.88	960	250	33	2.5	< 2	< 4	0.22	0.16	< 0.02	96	< 1	110	46	98	0.49	0.038	<0.1	<0.005	<0.01	<0.1
2020-06-16	Burea	7.81	1000	250	34	2.5	< 2	7	0.2	0.14	< 0.02	100	< 1	120	50	110	0.35	0.039	<0.1	<0.005	<0.01	<0.1
2020-12-09	Burea	7.98	1000	250	33	2.6	< 2	< 4	0.16	0.16	< 0.02	100	< 1	120	47	100	0.51	0.045	<0.1	<0.005	<0.01	<0.1
2021-06-16	Burea	7.96	1000	250	34	2.7	< 2	< 4	0.14	0.1	< 0.02	100	< 1	120	48	98	0.46	0.049	<0.1	<0.005	<0.01	<0.1
2021-12-17	Burea	7.94	1000	250	35	2.7	< 2	< 4	0.12	0.15	< 0.02	100	< 1	120	51	100	0.29	0.047	<0.1	<0.005	<0.01	<0.1

Monitor: 13b-01 Outwash

2001-12-03	Philip	7.93	655	296	29.7	2.2	1.4	< 5	0.23	< 0.03	0.223	50.4	< 1	14.9	4.8	84.7	0.01	0.02	<0.1	0.024		
2002-06-04	Philip	8.17	576	299	30.4	2	0.7	11	0.75	< 0.03	0.006	38	< 1	7	5	88	<0.01	0.08	<0.1	0.08		
2002-12-03	Philip	7.93	683	300	31.6	2	< 0.5	< 5	0.18	< 0.03	0.213	50.4	< 1	17.4	7.2	92.8	0.01	0.01	<0.1	0.022		
2003-06-02	Philip	7.65	699	287	33.6	1	0.7	9	0.56	< 0.03	< 0.001	53.8	12	23.3	4.9	97.2	<0.01	0.01		0.042		
2003-12-01	Philip	7.8	665	375	35.8	1.4	0.8	5	0.2	< 0.03	0.036	29.4	< 1	11.9	7.5	103	0.05	0.1	<0.1	0.06		
2004-06-09	Philip	7.72	610	291	30.4	< 1	< 0.5	7	0.48	< 0.03	0.004	44.8	< 1	16.7	5.7	105	0.05	0.02		0.252	<0.2	4.6
2004-11-30	Philip	7.71	810	369	35.4	2	< 0.5	20	0.91	< 0.03	0.002	29.8	< 1	51.8	19.9	110	<0.01	0.04		0.055		
2005-08-03	Maxx	7.98	800	345	38	2	< 2	19	1.1	< 0.05	< 0.02	25	< 1	55	12	110	0.15	0.014	<0.05	0.061		
2005-11-28	Maxx	8.06	846	506	45		< 2	7	0.5	< 0.05	< 0.02	17	< 1	11	14	140	<0.05	0.063	<0.05	0.09		
2006-06-01	MAX	8	1090	403	41	1.7	< 2	12	0.7	< 0.05	< 0.02	21	< 1	132	30	120	<0.02	0.019	<0.05	0.072		
2006-12-04	MAX	7.9	1070	471	41	2	< 2	< 4	0.4	0.08	< 0.02	26	< 1	65	32	140	<0.02	0.035	<0.05	0.089		
2007-03-30	MAX	8.1	977	419	38	1.9	< 2	< 4	0.4	0.08	< 0.02	22	< 1	65	40	130	<0.02	0.032	<0.05	0.072		
2007-06-14	MAX	8.1	971	383	35	2	< 2	5	0.4	0.09	< 0.02	24	< 1	79	38	130	<0.02	0.029	<0.05	0.07		
2007-12-05	MAX	8	1260	363	36	2	< 2	14	0.2	< 0.05	< 0.02	49	< 1	160	88	120	<0.02	0.021	<0.1	0.07	<0.01	3.3
2008-06-25	MAX	8.1	1340	309	45	2.4		4	0.5	< 0.05	< 0.02	29	< 1	200	49	160	<0.02	0.017	<0.1	0.093	<0.01	6
2008-12-09	MAX	8	1180	348	28	2.5	< 2	< 4	0.3	< 0.05	< 0.02	35	< 1	160	83	120	<0.02	0.033	<0.1	0.07	<0.01	2.6
2009-06-25	MAX	7.7	1190	355	31	2.2	< 2	< 4	0.3	< 0.05	< 0.02	24	< 1	160	78	130	<0.02	0.029	<0.1	0.092	0.02	4.1
2009-12-16	MAX	7.9	1030	338	29	2.4	< 2	9	0.5	0.29	0.03	28	< 1	120	73	110	2.5	0.028	<0.1	0.018	<0.01	2.7
2010-06-28	MAX	7.9	1050	402	30	2	< 2	7	0.3	< 0.05	0.02	28	< 1	83	50	130	<0.02	0.031	<0.1	0.095	0.02	2.4
2010-12-20	MAX	7.71	1120	357	31	2.2	< 2	< 4	0.2	< 0.05	< 0.02	36	< 1	130	59	140	<0.02	0.026	<0.1	0.089	<0.01	2.1
2011-06-16	MAX	7.76	1040	423	30	2	< 2	11	0.3	< 0.05	< 0.02	24	< 1	77	50	140	<0.02	0.026	<0.1	0.12	0.03	2.2
2011-12-13	MAX	7.86	987	407	30	2.1	< 2	14	1.1	< 0.05	0.32	21	< 1	62	39	130	20	0.027	<0.1	0.13	<0.01	2

Routine Groundwater Quality - General Analysis -Guelph WRIC & Waste Transfer Station

AECOM

Date	Lab	pH	Cond- uctivity	Alk mg/L	Mg mg/L	K mg/L	BOD mg/L	COD mg/L	TKN mg/L	NH3-N mg/L	Total-P mg/L	SO4 mg/L	Phenol ug/L	Cl mg/L	Na mg/L	Ca mg/L	Fe mg/L	B mg/L	P mg/L	Zn mg/L	NO2 mg/L	NO3 mg/L
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Monitor: 13b-01 Outwash

2012-06-20	MAX	7.69	1100	440	30	2.1	< 2	13	0.53	< 0.05	0.043	28	< 1	68	44	140	1.4	0.029	<0.1	0.12	0.017	2.3
2012-12-11	MAX	7.74	1000	410	28	2.1	< 2	< 4	1.4	< 0.05	< 0.04	33	< 1	66	37	140	1.2	0.029	<0.1	0.11	0.011	3
2013-06-17	MAX	7.78	1100	420	30	1.8	< 2	30	1.4	0.096	0.35	30	< 1	89	38	140	11	0.032	<0.1	0.15	0.1	3.5
2013-12-09	MAX	7.69	1100	440	27	2	< 2	< 4	0.31	< 0.05	0.027	24	< 1	83	49	140	<0.02	0.025	<0.1	0.13	0.034	2.4
2014-05-22	MAX	7.68	1100	440	28	1.9	< 2	< 4	0.47	< 0.05	< 0.04	31	< 1	66	52	150	<0.02	0.029	<0.1	0.23	0.019	2.82
2014-12-03	MAX	7.88	1100	410	28	2.1	< 2	< 4	0.22	< 0.05	< 0.02	22	< 1	95	53	150	<0.02	0.036	<0.1	0.2	0.029	2.08
2015-06-18	MAX	7.95	870	410	26	1.8	< 2	< 4	0.23	< 0.05	< 0.02	20	< 1	38	35	130	0.19	0.027	<0.1	0.13	0.024	1.14
2015-12-04	MAX	7.81	1100	340	28	1.9	< 2	4.3	0.11	< 0.05	< 0.02	41	< 1	110	40	140	0.26	0.02	<0.1	0.076	<0.01	0.48
2016-06-21	MAX	7.88	1100	380	30	1.7	< 2	11	0.22	< 0.05	< 0.02	25	< 1	120	28	150	0.11	0.022	<0.1	0.14	0.037	2.62
2016-12-06	MAX	7.77	1400	340	29	2.3	8	11	<0.1	< 0.05	0.1	47	< 1	180	110	140	2	0.027	<0.1	0.12	<0.01	1.4
2017-06-07	MAX	8.15	590	230	26	1.9	< 2	< 4	0.23	< 0.05	< 0.02	38	< 1	33	2	75	0.2	0.03	<0.1	0.014	0.014	<0.1
2017-12-06	MAX	7.86	1400	350	28	2.2	< 2	< 4	0.1	< 0.05	< 0.02	56	< 1	190	110	120	0.23	0.026	<0.1	0.079	<0.01	1.1
2018-06-18	MAX	7.81	880	360	24	1.6	< 2	4.6	<0.1	< 0.05	< 0.02	28	< 1	48	43	100	0.24	0.018	<0.1	0.027	<0.01	1.43
2018-12-10	MAX	7.79	1000	350	24	1.8	< 2	< 4	<0.1	< 0.05	< 0.02	35	< 1	100	80	100	0.16	0.019	<0.1	0.038	<0.01	1.18
2019-06-18	MAX	7.82	1000	410	31	1.8	< 2	< 4	0.34	< 0.05	< 0.02	38	< 1	69	54	140	0.14	0.028	<0.1	0.081	0.011	3.21
2019-12-04	MAX	7.81	1200	320	29	2	< 2	< 4	<0.1	< 0.05	< 0.02	45	< 1	160	78	130	0.08	0.02	<0.1	0.06	<0.01	1.04
2020-06-16	Burea	7.7	810	390	25	1.5	< 2	< 4	<0.1	< 0.05	< 0.02	18	< 1	26	27	110	0.16	0.036	<0.1	0.053	<0.01	2.02
2020-12-09	Burea	7.89	1200	340	26	2.1	< 2	5.8	<0.1	< 0.05	< 0.02	50	< 1	130	84	110	0.11	0.026	<0.1	0.055	<0.01	1.17
2021-06-16	Burea	7.96	900	310	23	1.7	< 2	14	<0.1	< 0.05	< 0.02	44	< 1	80	55	93	0.19	0.02	<0.1	0.046	<0.01	0.78
2021-12-17	Burea	7.83	990	320	26	2	< 2	< 4	<0.1	< 0.05	< 0.02	51	< 1	110	62	120	0.11	0.027	<0.1	0.054	<0.01	1.02

Monitor: 14a-01 Bedrock

2001-12-04	Philip	7.95	674	263	27.9	< 1	2	10	0.23	< 0.03	0.011	64.8	< 1	26.6	27.4	84	0.25	0.04	<0.1	0.128		
2002-06-04	Philip	8.44	556	240	22.4	2	1.4	8	0.5	< 0.03	0.006	58.1	< 1	10.7	24.9	63.5	<0.01	0.04	<0.1	0.007		
2002-12-03	Philip	8.01	519	240	23.7	< 1	< 0.5	< 5	0.25	< 0.03	0.006	38.8	< 1	4.8	11.5	65.3	<0.01	0.01	<0.1	0.007		
2003-06-02	Philip	7.82	489	215	23.3	1	1.1	15	0.13	0.03	< 0.001	49.7	29	7	20	64.6	0.13	0.02		0.006		
2003-12-01	Philip	8.18	542	232	23.7	< 1	0.7	7	0.24	< 0.03	0.003	53.1	< 1	12	18.2	72.9	0.05	0.03	<0.1	0.083		
2004-06-09	Philip	8.04	527	234	25.7	< 1	< 0.5	19	0.86	0.03	0.004	61.2	< 1	14.2	19.6	69.3	0.01	0.02		<0.005	<0.2	<0.2
2004-11-30	Philip	7.92	527	236	24.4	1	< 0.5	< 5	0.06	< 0.03	< 0.002	48.6	< 1	12.8	9.1	68.1	0.03	<0.01		<0.005		
2005-08-03	Maxx	8.22	533	234	26	1.1	< 2	15	1.1	< 0.05	< 0.02	51	< 1	11	19	67	<0.05	0.031	0.069	<0.005		
2005-11-28	Maxx	8.18	529	242	29		< 2	9	0.4	< 0.05	< 0.02	42	< 1	15	14	78	0.16	0.018	<0.05	<0.005		
2006-06-01	MAX	8.2	605	253	28	1.1	< 2	9	0.4	< 0.05	< 0.02	52	< 1	15	16	77	0.14	0.022	<0.05	<0.005		
2006-12-04	MAX	8.2	597	253	26	1	< 2	< 4	0.2	0.08	< 0.02	61	< 1	13	14	74	0.11	0.017	<0.05	<0.005		
2007-03-30	MAX	8.2	599	249	24	0.99	< 2	< 4	0.2	0.06	< 0.02	61	< 1	13	13	72	<0.02	0.018	<0.05	<0.005		
2007-06-14	MAX	8.1	601	243	29	1.1	< 2	< 4	0.2	0.1	< 0.02	63	< 1	14	12	80	<0.02	0.015	<0.05	0.01		
2007-12-05	MAX	8.2	603	241	27	1.2	< 2	12	0.1	< 0.05	< 0.02	62	< 1	12	16	77	<0.02	0.013	<0.1	<0.005	<0.01	<0.1
2008-06-25	MAX	8.2	590	236	29	1.1		7	0.3	< 0.05	< 0.02	58	< 1	15	11	80	<0.02	<0.01	<0.1	<0.005	<0.01	<0.1
2008-12-09	MAX	8	606	239	26	1.1	< 2	< 4	0.2	< 0.05	0.04	67	< 1	17	14	72	<0.02	0.016	<0.1	<0.005	<0.01	<0.1
2009-06-25	MAX	8	635	237	29	1.2	< 2	< 4	0.2	< 0.05	< 0.02	71	< 1	21	16	86	0.06	0.022	<0.1	<0.005	<0.01	<0.1
2009-12-16	MAX	7.9	629	242	29	1.2	< 2	< 4	0.1	< 0.05	< 0.02	64	< 1	20	17	79	0.03	0.017	<0.1	<0.005	<0.01	<0.1
2010-06-29	MAX	8.1	599	231	26	0.98	< 2	6	0.2	< 0.05	0.02	64	< 1	19	10	75	<0.02	0.016	<0.1	<0.005	<0.01	<0.1

Routine Groundwater Quality - General Analysis -Guelph WRIC & Waste Transfer Station

AECOM

Date	Lab	pH	Cond- uctivity	Alk mg/L	Mg mg/L	K mg/L	BOD mg/L	COD mg/L	TKN mg/L	NH3-N mg/L	Total-P mg/L	SO4 mg/L	Phenol ug/L	Cl mg/L	Na mg/L	Ca mg/L	Fe mg/L	B mg/L	P mg/L	Zn mg/L	NO2 mg/L	NO3 mg/L
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Monitor: 14a-01 Bedrock

2010-12-20	MAX	7.92	672	252	27	1.2	< 2	< 4	0.2	< 0.05	< 0.02	65	< 1	23	19	77	<0.02	0.017	<0.1	<0.005	<0.01	<0.1
2011-06-15	MAX	7.96	666	239	28	1.2	< 2	14	0.1	< 0.05	< 0.02	73	< 1	28	16	83	0.11	0.023	<0.1	<0.005	<0.01	<0.1
2011-12-14	MAX	8.13	652	240	28	1.2	< 2	< 4	0.2	< 0.05	< 0.02	65	< 1	23	17	81	0.14	0.015	<0.1	0.014	<0.01	<0.1
2012-06-19	MAX	8.06	620	240	27	1.1	< 2	7.6	0.15	< 0.05	0.022	57	< 1	20	14	76	0.09	0.019	<0.1	0.018	<0.01	<0.1
2012-12-17	MAX	7.72	620	240	28	1.1	< 2	7	0.31	< 0.05	< 0.02	62	< 1	20	18	81	0.16	0.012	<0.1	0.0061	<0.01	<0.1
2013-06-18	MAX	8.05	620	240	25	1.3	< 2	< 4	0.22	< 0.05	0.025	63	< 1	20	29	74	0.29	0.024	<0.1	<0.005	<0.01	<0.1
2013-12-04	MAX	7.94	650	250	27	1.2	< 2	11	0.31	< 0.05	0.041	63	< 1	24	22	76	0.02	0.023	<0.1	0.008	<0.01	<0.1
2014-05-26	MAX	8.02	630	240	25	1	< 2	< 4	0.27	< 0.05	< 0.02	62	< 1	22	18	80		0.019		<0.005	<0.01	<0.1
2014-12-04	MAX	7.96	620	230	26	1.2	< 2	4.5	<0.1	< 0.05	< 0.02	56	< 1	21	15	78	0.02	0.019	<0.1	<0.005	<0.01	<0.1
2015-06-22	MAX	7.79	640	250	26	1.2	< 2	9	<0.1	< 0.05	0.022	63	< 1	23	21	75	1.3	0.024	<0.1	<0.005	<0.01	<0.1
2015-12-30	MAX	7.8	640	240	29	1.2	< 2	< 4	<0.1	< 0.05	< 0.02	63	< 1	23	25	80	1.3	0.024	<0.1	0.006	<0.01	<0.1
2016-06-21	MAX																					
2016-06-22	MAX	8.2	640	240	26	1.1	< 2	4.2	<0.1	< 0.05	0.027	67	< 1	24	26	71	0.74	0.025	<0.1	0.008	<0.01	0.16
2016-12-05	MAX	7.88	650	250	24	1	< 2	< 4	0.13	< 0.05	< 0.02	60	< 1	23	25	70	0.51	0.025	<0.1	0.012	<0.01	<0.1
2017-06-08	MAX	8.17	640	240	25	1.1	< 2	4.8	0.13	< 0.05	< 0.02	64	< 1	24	26	69	0.32	0.026	<0.1	<0.005	<0.01	<0.1
2017-12-08	MAX	8.02	660	250	26	1.1	< 2	< 4	<0.1	< 0.05	< 0.02	64	< 1	23	27	71	0.4	0.025	<0.1	<0.005	<0.01	<0.1
2018-06-19	MAX	8.22	660	250	24	1.1	< 2	8.5	0.16	< 0.05	< 0.02	61	< 1	23	29	69	0.25	0.028	<0.1	<0.005	<0.01	<0.1
2018-12-11	MAX	7.99	650	240	25	1	< 2	5.7	<0.1	< 0.05	< 0.02	60	< 1	22	26	69	0.25	0.023	<0.1	<0.005	<0.01	<0.1
2019-06-26	MAX	8.18	610	240	26	0.97	< 2	< 4	<0.1	< 0.05	< 0.02	61	< 1	23	26	73	1.3	0.022	<0.1	<0.005	<0.01	<0.1
2019-12-05	MAX	8	650	240	25	1.1	< 2	< 4	<0.1	< 0.05	< 0.02	63	< 1	23	29	75	0.27	0.021	<0.1	<0.005	<0.01	<0.1
2020-06-19	Burea	7.82	950	370	21	1.2	< 2	16	0.28	< 0.05	0.04	3.4	< 1	93	70	110	0.34	0.025	<0.1	0.53	<0.01	<0.1
2020-12-11	Burea	7.98	650	250	25	1.1	< 2	5.1	<0.1	< 0.05	< 0.02	63	< 1	25	24	70	0.29	0.02	<0.1	<0.005	<0.01	<0.1
2021-06-17	Burea	8.19	630	250	25	1.1	< 2	9	<0.1	< 0.05	< 0.02	61	< 1	26	26	73	0.4	0.023	<0.1	<0.005	<0.01	<0.1
2021-12-16	Burea	8.01	640	240	25	1.2	< 2	< 4	<0.1	< 0.05	0.03	61	< 1	26	26	77	0.28	0.022	<0.1	<0.005	<0.01	<0.1

Monitor: 14b-01 Outwash

2001-12-04	Philip	7.94	716	336	30.3	< 1	1.3	12	0.3	< 0.03	0.009	62.9	< 1	22.3	8.2	114	0.15	0.05	<0.1	0.269		
2002-06-04	Philip	8.41	776	279	30.2	2	1	21	0.34	0.06	1.11	89.4	< 1	58.4	20.9	100	<0.01	0.02	<0.1	0.195		
2002-12-03	Philip	8.07	680	277	29.7	2	0.7	12	0.68	< 0.03	0.005	58.1	< 1	24.1	7.7	95.4	0.01	<0.01	<0.1	0.081		
2003-06-02	Philip	7.59	845	270	26.2	2	0.8	18	0.62	0.04	< 0.001	33.7	13	85.8	32.7	104	0.37	0.02		0.121		
2003-12-01	Philip	7.84	895	342	30.1	< 1	< 0.5	27	0.9	0.22	0.005	29.6	< 1	101	40.4	112	0.73	0.02	<0.1	0.245		
2004-06-09	Philip	7.55	771	327	27.9	1.2	< 0.5	20	0.7	0.14	0.002	39.2	2	70.6	33.8	129	0.8	0.01		0.505	<0.2	<0.2
2004-11-30	Philip	7.65	878	364	31.3	< 1	< 0.5	34	1.37	0.15	0.004	30.6	< 1	91.4	34.2	123	1.22	0.02		0.369		
2005-08-03	Maxx	7.93	818	267	29	2.3	< 2	20	1.3	0.06	< 0.02	83	< 1	73	31	110	0.91	0.013	0.059	0.11		
2005-11-28	Maxx	8.09	1070	305	38		6	12	0.6	0.09	< 0.02	77	< 1	143	49	140	1.3	0.02	<0.05	0.12		
2006-06-01	MAX	8	1100	361	36	2	< 2	11	0.5	0.06	0.03	59	< 1	129	60	120	0.29	0.021	<0.05	0.26		
2006-12-04	MAX	8	1120	438	37	2	< 2	9	0.9	0.09	< 0.02	64	< 1	92	67	130	0.15	0.025	<0.05	0.33		
2007-03-30	MAX	8.1	901	347	32	1.7	< 2	15	0.3	0.07	< 0.02	46	< 1	67	49	110	0.03	0.023	<0.05	0.42		
2007-06-14	MAX	8.1	909	295	36	2	< 2	8	0.2	0.09	< 0.02	87	< 1	75	39	110	0.13	0.026	<0.05	0.18		
2007-12-05	MAX	8.1	1040	294	35	1.9	< 2	13	0.3	< 0.05	< 0.02	88	< 1	120	42	120	<0.02	0.012	<0.1	0.35	<0.01	<0.1
2008-06-25	MAX	8	1270	326	35	2.6		6	0.3	< 0.05	< 0.02	84	< 1	180	100	120	<0.02	0.016	<0.1	0.4	<0.01	0.4

Routine Groundwater Quality - General Analysis -Guelph WRIC & Waste Transfer Station

AECOM

Date	Lab	pH	Cond- uctivity	Alk mg/L	Mg mg/L	K mg/L	BOD mg/L	COD mg/L	TKN mg/L	NH3-N mg/L	Total-P mg/L	SO4 mg/L	Phenol ug/L	Cl mg/L	Na mg/L	Ca mg/L	Fe mg/L	B mg/L	P mg/L	Zn mg/L	NO2 mg/L	NO3 mg/L
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Monitor: 14b-01 Outwash

2008-12-09	MAX	8	1310	423	33	2.2	< 2	4	0.3	< 0.05	< 0.02	58	< 1	150	110	120	0.02	0.022	<0.1	0.41	<0.01	0.1
2009-06-25	MAX	7.8	1670	357	33	2.6	< 2	< 4	0.2	< 0.05	0.02	52	< 1	280	170	130	<0.02	0.025	<0.1	0.87	<0.01	0.2
2009-12-15	MAX	7.7	1670	398	32	2.2	< 2	4	0.3	< 0.05	0.03	42	< 1	260	170	130	<0.02	0.016	<0.1	0.7	<0.01	<0.1
2010-06-29	MAX	8	1230	365	27	2.3	< 2	9	0.4	< 0.05	< 0.02	47	< 1	150	120	110	<0.02	0.027	<0.1	0.79	<0.01	0.3
2010-12-20	MAX	7.76	1240	420	< 0.05	< 0.2	< 2	7	0.3	< 0.05	< 0.02	38	< 1	130	< 0.1	< 0.2	<0.02	<0.01	<0.1	<0.005	<0.01	4
2011-06-14	MAX	7.74	1170	370	30	2.2	< 2	8	0.4	< 0.05	< 0.02	35	< 1	130	94	120	<0.02	0.022	<0.1	1.4	<0.01	3.5
2011-12-14	MAX	8.05	977	386	24	1.9	< 2	15	3	< 0.05	1	32	< 1	63	88	93	61	0.018	<0.1	0.72	<0.01	1.2
2012-06-19	MAX	7.82	1200	340	32	2.3	< 2	9.7	0.84	< 0.05	0.65	37	< 1	150	82	130	39	0.02	<0.1	1.4	<0.01	<0.1
2012-12-17	MAX	7.48	1100	410	30	2	< 2	46	2.9	0.073	1.5	35	< 1	92	91	130	27	0.015	<0.1	0.94	<0.01	0.4
2013-06-18	MAX	7.81	1600	380	40	2.6	< 2	< 4	0.33	< 0.05	0.089	43	< 1	250	120	180	3.2	0.022	<0.1	1.7	<0.01	1.6
2013-12-04	MAX	7.68	1100	430	37	1.9	< 2	8.1	0.84	< 0.05	0.11	29	< 1	81	78	140	<0.02	0.025	0.11	1.2	<0.01	0.95
2014-05-26	MAX	7.56	1600	320	36	1.9	< 2	36	11	< 0.05	1.1	36	< 1	270	120	160	34	0.018	<0.1	1.1	<0.01	2.67
2014-12-04	MAX	7.77	1000	420	80	2.5	< 2	10	0.71	< 0.05	0.43	22	< 1	73	83	280	<0.02	0.037	0.45	2	<0.01	0.37
2015-06-22	MAX	7.64	1300	340	32	2	< 2	37	1.2	< 0.05	1.1	37	< 1	180	86	150	34	0.023	<0.1	0.98	<0.01	1.48
2015-12-30	MAX	7.58	1000	380	27	1.5	< 2	5.9	0.31	< 0.05	0.26	33	< 1	86	71	120	10	0.019	<0.1	0.52	<0.01	0.6
2016-06-22	MAX	7.81	1800	380	38	2.2	< 2	8.4	<0.1	< 0.05	0.31	63	< 1	280	150	170	14	0.024	<0.1	1.1	<0.01	0.92
2016-12-05	MAX	7.77	1700	360	46	2.9	< 2	14	0.11	< 0.05	0.094	65	< 1	260	130	200	<0.02	0.028	0.14	1.3	<0.01	<0.1
2017-06-08	MAX	7.88	2000	370	36	2.2	< 2	12	0.78	< 0.05	0.091	67	< 1	350	170	180	3.4	0.025	<0.1	0.99	<0.01	4.14
2017-12-08	MAX	7.85	860	360	25	1	< 2	11	0.26	< 0.05	0.03	N	< 1	74	34	100	0.99	<0.01	<0.1	0.41	<0.01	<0.1
2018-06-19	MAX	7.85	1100	400	27	1.5	< 2	15	0.32	< 0.05	0.25	11	< 1	110	74	120	5	0.02	<0.1	0.7	<0.01	<0.1
2018-12-11	MAX	7.72	2000	390	42	1.8	< 2	12	0.16	0.06	0.042	44	< 1	360	150	190	0.97	0.019	<0.1	0.82	<0.01	<0.1
2019-06-26	MAX	7.91	1600	340	30	1.7	< 2	6.5	0.19	< 0.05	0.05	66	< 1	300	170	140	1.4	0.019	<0.1	0.52	0.015	1.23
2019-12-05	MAX	7.6	2100	460	33	1.9	< 2	10	0.23	< 0.05	0.04	49	< 1	330	250	160	0.81	0.017	<0.1	0.73	0.018	1.29
2020-06-19	Burea	8.09	640	250	26	1	< 2	< 4	<0.1	< 0.05	0.021	65	< 1	24	26	73	0.21	0.028	<0.1	<0.005	<0.01	<0.1
2020-12-11	Burea	7.57	1800	400	29	1.6	< 2	11	0.12	< 0.05	< 0.04	54	< 1	310	170	160	0.66	0.02	<0.1	0.66	<0.01	<0.1
2021-06-17	Burea	8.06	1300	340	20	1.5	< 2	14	<0.1	< 0.05	0.038	61	< 1	170	130	110	1.4	0.018	<0.1	0.35	<0.01	0.22
2021-12-16	Burea	7.91	1700	570	21	1.6	< 2	7.9	0.11	< 0.05	0.11	25	< 1	190	250	110	2.9	0.025	<0.1	0.12	<0.01	<0.1

Monitor: 15a-01 Bedrock

2001-12-04	Philip	7.95	754	259	35.1	< 1	0.6	< 5	0.16	< 0.03	0.006	92.4	< 1	48.3	7.7	104	0.27	<0.01	<0.1	<0.005		
2002-06-04	Philip	8.13	718	254	34.9	1	< 0.5	< 5	0.15	< 0.03	0.086	94.1	< 1	52.8	8.3	103	0.4	<0.01	<0.1	<0.005		
2002-12-03	Philip	8.06	794	260	35.7	2	< 0.5	8	0.49	0.03	0.011	92.3	< 1	57.6	10.6	106	0.47	<0.01	<0.1	<0.005		
2003-06-02	Philip	7.87	789	246	36	1	< 0.5	6	0.15	< 0.03	< 0.001	99	15	56.2	12.2	107	0.5	<0.01		<0.005		
2003-12-01	Philip	8.17	754	245	32.5	< 1	< 0.5	7	0.19	< 0.03	0.007	101	< 1	60.7	11.5	103	0.5	<0.01	<0.1	0.072		
2004-06-09	Philip	7.85	734	258	34.9	< 1	< 0.5	6	0.16	< 0.03	0.004	105	< 1	62.4	13	129	0.55	0.01		0.335	<0.2	<0.2
2004-11-30	Philip	7.97	754	257	33.7	1	< 0.5	< 5	0.16	< 0.03	0.005	105	< 1	61.5	13.7	101	0.52	<0.01		<0.005		
2005-08-03	Maxx	8.14	737	254	35	1.1	< 2	5	0.4	< 0.05	< 0.02	91	< 1	49	15	100	0.55	<0.01	<0.05	<0.005		
2005-11-28	Maxx	8.22	736	262	37		< 2	6	0.4	< 0.05	< 0.02	88	< 1	47	16	110	0.58	<0.01	<0.05	<0.005		
2006-06-01	MAX	8.1	790	268	33	1	< 2	10	0.4	< 0.05	< 0.02	74	1	59	15	92	0.46	0.011	<0.05	<0.005		
2006-12-04	MAX	8	811	271	35	1.1	< 2	< 4	0.3	0.18	< 0.02	79	< 1	55	17	100	0.55	0.011	<0.05	<0.005		
2007-03-30	MAX	8.1	808	263	29	1	< 2	< 4	0.3	0.1	< 0.02	92	< 1	54	15	88	0.56	0.01	<0.05	<0.005		

Routine Groundwater Quality - General Analysis -Guelph WRIC & Waste Transfer Station

AECOM

Date	Lab	pH	Cond- uctivity	Alk mg/L	Mg mg/L	K mg/L	BOD mg/L	COD mg/L	TKN mg/L	NH3-N mg/L	Total-P mg/L	SO4 mg/L	Phenol ug/L	Cl mg/L	Na mg/L	Ca mg/L	Fe mg/L	B mg/L	P mg/L	Zn mg/L	NO2 mg/L	NO3 mg/L
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Monitor: 15a-01 Bedrock

2007-06-14	MAX	8.1	799	258	36	1.3	< 2	< 4	0.4	0.11	< 0.02	95	< 1	51	18	110	0.4	0.011	<0.05	<0.005	<0.01	<0.1
2007-12-05	MAX	8.2	799	255	35	1.2	< 2	13	0.2	0.09	< 0.02	100	< 1	51	19	110	0.47	0.012	<0.1	<0.005	<0.01	<0.1
2008-06-25	MAX	8.3	783	249	33	1.4		10	0.4	< 0.05	< 0.02	104	< 1	45	19	100	0.07	<0.01	<0.1	0.042	<0.01	<0.1
2008-12-09	MAX	8	786	252	32	1.2	< 2	< 4	0.3	0.07	< 0.02	116	< 1	42	19	96	0.45	0.013	<0.1	<0.005	<0.01	<0.1
2009-06-25	MAX	8	783	249	34	1.2	< 2	4	0.2	< 0.05	< 0.02	110	< 1	43	20	96	0.57	0.034	<0.1	<0.005	<0.01	<0.1
2009-12-16	MAX	8	802	251	32	1.2	2	< 4	0.2	< 0.05	< 0.02	110	< 1	48	19	100	0.62	0.015	<0.1	<0.005	<0.01	<0.1
2010-06-28	MAX	8.1	818	245	34	1.2	< 2	6	0.3	< 0.05	0.02	110	< 1	47	19	100	0.64	0.021	<0.1	<0.005	<0.01	<0.1
2010-12-22	MAX	7.85	844	251	37	1.3	< 2	< 4	0.2	< 0.05	< 0.02	110	< 1	56	21	110	0.64	0.016	<0.1	<0.005	<0.01	<0.1
2011-06-14	MAX	7.92	824	243	35	1.3	< 2	7	0.3	< 0.05	0.02	100	< 1	56	19	110	0.71	0.017	<0.1	<0.005	<0.01	<0.1
2011-12-15	MAX	8.02	857	247	39	1.4	< 2	< 4	0.2	0.05	< 0.02	100	< 1	61	24	120	0.19	0.012	<0.1	<0.005	<0.01	<0.1
2012-06-18	MAX	7.94	860	250	34	1.2	< 2	12	0.2	< 0.05	< 0.02	98	< 1	62	21	100	0.78	0.013	<0.1	<0.005	<0.01	<0.1
2012-12-11	MAX	7.87	860	250	34	1.3	< 2	< 4	0.59	0.057	< 0.02	110	< 1	63	22	110	0.66	0.02	<0.1	<0.005	<0.01	<0.1
2013-06-19	MAX	8.17	860	260	30	1.2	< 2	9.9	0.17	0.064	< 0.02	110	< 1	63	20	98	0.74	0.025	<0.1	<0.005	<0.01	<0.1
2013-12-03	MAX	7.83	850	250	31	1.1	< 2	< 4	0.28	< 0.05	< 0.02	94	< 1	67	21	92	0.74	0.025	<0.1	0.006	<0.01	<0.1
2014-05-21	MAX	7.9	870	250	34	1.3	< 2	< 4	<0.1	< 0.05	< 0.02	110	< 1	66	24	110	0.73	0.018	<0.1	<0.005	<0.01	<0.1
2014-12-04	MAX	7.94	840	250	41	1.7	< 2	< 4	0.15	0.082	0.13	96	< 1	68	25	140	0.75	0.028	0.17	0.077	<0.01	<0.1
2015-06-19	MAX	8.02	840	260	36	1.4	< 2	< 4	0.14	< 0.05	< 0.02	100	< 1	68	27	110	1	0.022	<0.1	<0.005	<0.01	<0.1
2015-12-08	MAX	7.93	870	240	36	1.3	< 2	< 4	0.14	< 0.05	0.025	110	< 1	66	27	110	1.2	0.014	<0.1	<0.005	<0.01	<0.1
2016-03-11	MAX	7.94	880	250	36	1.4	< 2	< 4	<0.1	< 0.05	< 0.02	110	< 1	69	27	110	1	0.024	<0.1	<0.005	<0.01	<0.1
2016-06-22	MAX	7.98	1300	240	44	1.5	< 2	5.8	0.17	< 0.05	0.021	100	< 1	170	53	130	1.2	0.017	<0.1	0.01	<0.01	<0.1
2016-06-23	MAX																					
2016-12-01	MAX	7.96	970	250	35	1.3	< 2	< 4	0.27	< 0.05	0.023	96	< 1	99	37	100	0.9	0.019	<0.1	<0.005	<0.01	<0.1
2017-06-08	MAX	8.09	1200	240	40	1.5	< 2	< 4	0.24	0.052	< 0.02	100	< 1	170	50	120	1	0.023	<0.1	<0.005	<0.01	<0.1
2017-12-08	MAX	8.02	1000	260	35	1.5	< 2	< 4	0.13	< 0.05	< 0.02	97	< 1	120	47	110	0.92	0.021	<0.1	<0.005	<0.01	<0.1
2018-06-19	MAX	7.93	1900	230	41	2	< 2	10	0.22	0.12	0.073	100	< 1	370	160	130	3.1	0.026	<0.1	<0.005	<0.01	<0.1
2018-12-12	MAX	7.89	1200	250	34	1.5	< 2	6.8	<0.1	< 0.05	0.026	99	< 1	140	70	110	1.1	0.021	<0.1	<0.005	<0.01	<0.1
2019-06-18	MAX	7.88	1800	220	45	1.9	< 2	< 4	0.14	< 0.05	< 0.02	110	< 1	390	150	160	1.1	0.025	<0.1	<0.005	<0.01	<0.1
2019-12-03	MAX	7.89	1400	250	31	1.6	< 2	< 4	0.13	0.082	< 0.02	96	1.7	240	120	100	0.94	0.02	<0.1	<0.005	<0.01	<0.1
2020-03-13	Burea	7.8	1300	250	33	1.5	< 2	< 4	0.19	0.083	< 0.02	110	< 1	190	100	110	0.81	0.021	<0.1	<0.005	<0.01	<0.1
2020-06-18	Burea	7.76	1500	240	41	1.8	< 2	5.5	<0.1	< 0.05	0.024	90	< 1	270	130	140	1.1	0.025	<0.1	<0.005	<0.01	<0.1
2020-12-08	Burea	7.9	1200	260	33	1.7	< 2	7.6	<0.1	< 0.05	< 0.02	97	< 1	170	110	110	0.82	0.024	<0.1	<0.005	<0.01	<0.1
2021-06-10	Burea	8.05	1300	250	33	1.6	< 2	< 4	0.11	< 0.05	0.021	150	< 1	160	110	110	0.89	0.029	<0.1	<0.005	<0.01	<0.1
2021-12-15	Burea	8	1200	250	32	1.5	< 2	< 4	0.12	< 0.05	0.024	110	< 1	150	89	110	0.88	0.025		<0.005	<0.01	<0.1

Monitor: 15b-01 Outwash

2001-12-04	Philip	8.16	646	252	27	< 1	4.4	13	0.27	< 0.03	0.014	26.2	< 1	24.4	6.2	77.7	<0.01	0.08	<0.1	0.143		
2002-06-04	Philip	8.1	475	215	21.1	1	0.9	11	0.79	< 0.03	0.008	13.8	< 1	6.9	2	73.4	<0.01	<0.01	<0.1	0.007		
2002-12-03	Philip	7.95	723	200	29.4	2	0.9	12	0.75	< 0.03	0.012	14.3	< 1	9.1	2	103	<0.01	0.01	<0.1	0.009		
2003-06-02	Philip	7.95	534	214	22.4	< 1	1.4	12	0.66	< 0.03	0.002	37.1	10	5.2	5	77.2	<0.01	0.01		0.009		
2003-12-01	Philip	8.08	661	291	27.5	1.1	< 0.5	25	0.74	< 0.03	0.003	40.5	< 1	7.9	10.7	95	<0.01	0.04	<0.1	0.01		
2004-06-09	Philip	7.94	478	204	18.7	< 1	< 0.5	11	0.45	< 0.03	0.002	24.2	< 1	24.8	4	74	0.01	<0.01		0.047	<0.2	4.1

Routine Groundwater Quality - General Analysis -Guelph WRIC & Waste Transfer Station

AECOM

Date	Lab	pH	Cond- uctivity	Alk mg/L	Mg mg/L	K mg/L	BOD mg/L	COD mg/L	TKN mg/L	NH3-N mg/L	Total-P mg/L	SO4 mg/L	Phenol ug/L	Cl mg/L	Na mg/L	Ca mg/L	Fe mg/L	B mg/L	P mg/L	Zn mg/L	NO2 mg/L	NO3 mg/L
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Monitor: 15b-01 Outwash

2004-11-30	Philip	7.99	558	240	21.8	< 1	< 0.5	12	0.58	< 0.03	0.002	22.4	< 1	27.9	3.3	83	<0.01	0.01		0.008		
2005-08-03	Maxx	8.06	668	335	30	0.98	< 2	18	1.4	< 0.05	< 0.02	16	< 1	10	4.6	120	0.097	<0.01	<0.05	0.03		
2005-11-28	Maxx	7.97	1150	533	53		< 2	9	0.8	< 0.05	< 0.02	26	< 1	56	10	190	<0.05	0.039	<0.05	0.045		
2006-06-01	MAX	8	853	462	32	0.97	< 2	11	0.7	< 0.05	0.02	15	< 1	8	12	120	<0.02	0.025	<0.05	0.026		
2006-12-04	MAX	7.8	949	490	36	1.2	< 2	7	0.4	< 0.05	< 0.02	24	< 1	4	16	150	0.29	0.045	<0.05	0.034		
2007-03-30	MAX	8.1	955	484	38	0.92	< 2	< 4	0.4	0.09	< 0.02	28	< 1	13	9.2	150	<0.02	0.026	<0.05	0.008		
2007-06-14	MAX	8.1	996	478	38	1	< 2	7	0.3	0.1	< 0.02	25	< 1	35	8.7	160	<0.02	0.023	<0.05	0.041		
2007-12-05	MAX	8	1130	481	42	1.3	< 2	17	0.4	< 0.05	< 0.02	28	< 1	38	15	180	<0.02	0.042	<0.1	0.049	<0.1	15
2008-06-25	MAX	8.1	1330	449	31	1.3		4	0.4	< 0.05	< 0.02	23	< 1	130	94	150	<0.02	0.016	<0.1	0.036	<0.1	13
2008-12-09	MAX	8	1100	544	25	1.2	< 2	6	0.4	< 0.05	< 0.02	18	< 1	21	90	120	<0.02	0.038	<0.1	0.037	<0.01	8.6
2009-06-25	MAX	7.7	1160	423	37	1.1	< 2	6	0.4	< 0.05	< 0.02	27	< 1	110	45	170	<0.02	0.023	<0.1	0.043	<0.01	5.7
2009-12-16	MAX	7.8	1070	540	24	1.2	< 2	< 4	0.3	< 0.05	< 0.02	16	< 1	15	98	120	<0.02	0.034	<0.1	0.039	<0.01	10
2010-06-25	MAX	7.8	1720	393	43	1.4	< 2	8	0.4	< 0.05	0.02	25	< 1	270	85	210	<0.02	0.026	<0.1	0.053	<0.01	9.7
2010-12-17	MAX	7.6	1380	521	30	1.4	< 2	6	0.3	< 0.05	< 0.02	17	< 1	120	130	150	<0.02	0.041	<0.1	0.045	<0.01	4.6
2011-06-14	MAX	7.73	1150	402	26	1.1	< 2	13	0.4	< 0.05	< 0.02	23	< 1	110	93	130	<0.02	0.024	0.11	0.032	<0.01	5.8
2011-12-15	MAX	7.84	1130	465	30	1.4	< 2	19	1.2	< 0.05	1.2	36	< 1	49	110	140	6.7	0.023	<0.1	0.055	<0.01	8.8
2012-06-18	MAX	7.68	1200	440	33	1	< 2	15	1	< 0.05	0.34	38	< 1	74	57	150	25	0.014	<0.1	0.052	<0.01	13
2012-12-11	MAX	7.66	1000	410	32	1.1	< 2	< 4	0.22	0.11	< 0.1	63	< 1	36	38	170	<0.02	0.025	<0.1	0.23	<0.01	8.5
2013-06-19	MAX	7.5	1100	340	26	0.89	< 2	4.1	0.35	0.061	0.12	63	< 1	78	40	140	6.5	0.017	<0.1	0.036	<0.01	7.8
2013-12-03	MAX	7.52	910	410	32	1.1	< 2	< 4	1.3	< 0.05	0.075	34	< 1	30	26	140	<0.02	0.024	<0.1	0.039	<0.01	3.5
2014-05-21	MAX	7.7	880	360	39	1.4	< 2	< 4	0.1	< 0.05	0.049	32	< 1	35	21	150	<0.02	0.017	<0.1	0.24	<0.01	4.65
2014-12-04	MAX	7.8	940	390	37	1.5	< 2	< 4	0.18	< 0.05	0.074	46	< 1	39	24	170	<0.02	0.034	<0.1	0.24	<0.01	5.23
2015-06-19	MAX	7.89	820	360	28	0.91	< 2	< 4	<0.5	< 0.05	0.073	61	< 1	18	22	130	3.6	0.023	<0.1	0.037	<0.01	5.85
2015-12-08	MAX	7.77	1800	180	23	6.8	< 2	19	0.41	< 0.05	0.096	190	< 1	320	170	170	2.4	0.078	<0.1	0.035	<0.01	<0.1
2016-03-11	MAX	7.93	2500	130	6.1	4	< 2	36	0.46	0.057	0.12	270	< 1	520	450	72	4.3	0.18	<0.1	0.01	0.022	0.8
2016-06-22	MAX	8.06	600	180	5.9	3.6	< 2	41	0.56	0.22	0.14	86	1.9	24	49	75	4.4	0.13	<0.1	0.018	0.137	1.16
2016-12-01	MAX	7.56	1000	190	13	15		220	1.3	< 0.05	0.19	220	34	75	36	140	2.2	0.094	<0.1	0.088	0.025	<0.1
2017-06-08	MAX	7.9	770	140	6	3.8	< 2	13	0.75	0.25	0.24	230	1.4	16	26	120	4.5	0.087	<0.1	0.016	<0.01	0.16
2017-12-08	MAX	8.02	1600	140	3	3.5	< 2	15	0.29	< 0.05	0.14	140	1.4	300	230	66	2.4	0.044	<0.1	0.0069	<0.01	<0.1
2018-06-19	MAX	7.91	710	170	4.6	3.5	< 2	26	0.84	0.47	0.37	130		32	42	89	4.4	0.068	0.13	0.0066	<0.01	<0.1
2018-09-27	MAX	7.86	530	160	4.4	2.7	< 2	25	0.46	0.27	0.17	94	< 1	16	14	84	3.4	0.055	0.13	<0.005	<0.01	<0.1
2018-12-12	MAX	7.35	2600	340	14	22	170	320	1.8	0.2	0.61	22	50	580	390	120	6.7	0.054	0.71	<0.005	<0.05	<0.5
2019-06-18	MAX	7.94	530	190	3.3	3.6	< 2	17	0.7	0.36	0.25	43	< 1	25	48	67	0.64	0.077	0.27	0.0056	0.023	<0.1
2019-12-03	MAX	7.48	1800	380	15	29	160	320	1.9	0.31	0.79	< 1	110	340	250	120	6.4	0.07	0.83	<0.005	<0.05	<0.5
2020-03-13	Burea	8.05	2500	220	1.4	3	< 2	28	0.52	0.09	0.46	130	< 1	540	520	23	2	0.15	0.51	0.03	<0.01	1.22
2020-06-18	Burea	7.64	530	200	2.8	3.3	< 2	22	0.52	0.25	0.25	35	< 1	25	66	49	0.61	0.07	0.3	0.021	<0.01	<0.1
2020-12-08	Burea	6.96	3300	460	35	85	450	880	37	34	2.1	97	530	660	380	220	13	0.12	2.1	0.16	<0.1	<1
2021-06-10	Burea	7.72	690	230	4.7	5.5	6	15	2.8	2.4	0.14	80	< 1	27	71	69	0.13	0.062	0.22	0.033	0.031	1.34
2021-12-15	Burea	7.92	840	190	6.5	4.2	10	7.8	0.62	0.34	0.11	64	< 1	100	47	110	0.36	0.037		0.031	0.163	3.72

Monitor: 16A-08 Bedrock

Routine Groundwater Quality - General Analysis -Guelph WRIC & Waste Transfer Station

AECOM

Date	Lab	pH	Cond- uctivity	Alk mg/L	Mg mg/L	K mg/L	BOD mg/L	COD mg/L	TKN mg/L	NH3-N mg/L	Total-P mg/L	SO4 mg/L	Phenol ug/L	Cl mg/L	Na mg/L	Ca mg/L	Fe mg/L	B mg/L	P mg/L	Zn mg/L	NO2 mg/L	NO3 mg/L
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Monitor: 16A-08 Bedrock

2008-03-26	MAX	8	691	251	29	3.6	< 2	4	0.4	0.16	< 0.02	70	< 1	36	42	76	<0.02	0.039	<0.1	0.053	0.02	<0.1
2008-06-25	MAX	8.3	596	238	28	2.7		7	0.5	0.19	< 0.02	46	< 1	28	6.2	82	<0.02	0.022	<0.1	0.04	<0.01	<0.1
2008-12-09	MAX	8.1	605	239	26	2	< 2	< 4	0.3	0.06	< 0.02	39	< 1	29	2.5	77	<0.02	0.025	<0.1	0.039	<0.01	<0.1
2009-06-25	MAX	8	645	239	29	2	< 2	< 4	0.3	0.05	< 0.02	47	< 1	39	4	88	<0.02	0.029	<0.1	0.043	<0.01	<0.1
2009-12-16	MAX	8.1	636	240	29	2	< 2	7	0.2	0.07	0.03	42	< 1	36	3.6	87	<0.02	0.027	<0.1	0.043	<0.01	<0.1
2010-06-28	MAX	7.9	634	236	27	1.8	< 2	4	0.2	< 0.05	0.02	53	< 1	31	2.1	83	<0.02	0.029	<0.1	0.035	<0.01	<0.1
2010-12-20	MAX	7.94	630	236	29	1.9	< 2	< 4	0.2	0.05	< 0.02	41	< 1	33	2.2	88	0.04	0.027	<0.1	0.025	0.01	<0.1
2011-06-16	MAX	7.99	620	232	29	2	< 2	18	0.4	0.06	< 0.02	58	< 1	34	2.2	88	0.06	0.025	<0.1	0.021	<0.01	<0.1
2011-12-13	MAX	8.08	653	239	30	2	< 2	< 4	0.3	< 0.05	< 0.02	43	< 1	35	3.5	87	0.63	0.021	<0.1	0.037	<0.01	<0.1
2012-06-20	MAX	8.03	640	230	27	1.9	< 2	10	0.19	< 0.05	0.033	39	< 1	33	2.7	84	0.48	0.025	<0.1	0.032	<0.01	<0.1
2012-12-12	MAX	8.02	620	250	27	1.8	< 2	< 4	0.27	0.091	< 0.02	43	< 1	32	2.5	86	0.3	0.027	<0.1	0.029	<0.01	<0.1
2013-06-17	MAX	8.07	620	230	27	1.7	< 2	< 4	0.26	0.064	< 0.02	40	< 1	31	2.3	79	0.37	0.028	<0.1	0.026	<0.01	<0.1
2013-12-09	MAX	8.02	630	240	27	1.8	< 2	< 4	0.23	0.052	< 0.02	37	< 1	32	2.2	83	0.38	0.022	<0.1	0.023	<0.01	<0.1
2014-05-26	MAX	7.9	620	230	28	1.8	< 2	< 4	<0.1	< 0.05	< 0.04	43	< 1	32	2.2	86	0.19	0.028	<0.1	0.031	<0.01	<0.1
2014-12-03	MAX	8.03	620	240	29	2	< 2	< 4	0.12	0.084	< 0.02	40	< 1	32	2.1	87	0.07	0.032	<0.1	0.028	<0.01	<0.1
2015-06-18	MAX	8.11	600	230	28	1.9	< 2	< 4	0.15	0.1	< 0.02	44	< 1	32	3.7	84	0.15	0.034	<0.1	0.028	<0.01	<0.1
2015-12-04	MAX	8.06	630	230	29	1.9	< 2	4.6	0.13	< 0.05	< 0.02	39	< 1	32	2.3	85	0.18	0.022	<0.1	0.021	0.01	<0.1
2016-06-21	MAX	8.14	600	230	27	1.7	< 2	4.5	0.12	< 0.05	< 0.02	42	< 1	31	3.4	77	0.24	0.028	<0.1	0.039	<0.01	<0.1
2016-12-05	MAX	7.93	610	240	27	1.8	< 2	< 4	0.11	< 0.05	< 0.02	36	< 1	31	2.3	82	0.23	0.03	<0.1	0.032	0.019	<0.1
2017-06-07	MAX	7.97	970	270	24	1.8	< 2	4.5	0.25	< 0.05	< 0.02	29	< 1	100	48	120	0.32	0.024	<0.1	0.091	0.03	1.86
2017-12-07	MAX	8.1	610	240	27	1.9	< 2	< 4	0.11	< 0.05	< 0.02	38	< 1	31	2.1	78	0.16	0.024	<0.1	0.014	<0.01	<0.1
2018-06-14	MAX	8.17	590	230	30	2	< 2	9.7	<0.1	0.066	< 0.02	39	< 1	30	2.4	80	0.19	0.029	<0.1	0.013	<0.01	<0.1
2018-12-11	MAX	8	590	230	28	1.8	< 2	5	<0.1	0.053	< 0.02	37	< 1	29	2.2	75	0.15	0.029	<0.1	0.015	<0.01	<0.1
2019-06-19	MAX	8.06	580	220	27	1.8	< 2	< 4	<0.1	< 0.05	< 0.02	39	< 1	30	2.1	79	0.15	0.03	<0.1	0.0095	0.019	<0.1
2019-12-03	MAX	7.98	560	230	25	1.7	< 2	< 4	<0.1	0.065	0.04	39	< 1	30	1.9	73	0.23	0.023	<0.1	0.014	<0.01	<0.1
2020-06-18	Burea	7.86	580	220	27	1.8	< 2	< 4	<0.1	0.082	0.027	36	< 1	30	2.1	79	0.21	0.026	<0.1	0.0093	<0.01	<0.1
2020-12-07	Burea	7.98	600	240	27	1.9	< 2	4.4	<0.1	< 0.05	< 0.02	36	< 1	28	2.1	83	0.15	0.026	<0.1	0.013	<0.01	<0.1
2021-06-16	Burea	8.11	590	230	27	1.7	< 2	< 4	<0.1	< 0.05	< 0.02	40	< 1	30	2.1	79	0.15	0.027	<0.1	0.011	<0.01	0.14
2021-12-14	Burea	8.08	590	230	26	1.8	< 2	< 4	<0.1	< 0.05	< 0.02	40	< 1	29	2	80	0.14	0.028	<0.1	0.012	<0.01	<0.1

Monitor: 16B-08 Outwash

2008-03-26	MAX	8	1130	477	42	1.5	< 2	15	0.9	0.09	< 0.02	105	< 1	38	60	130	<0.02	0.027	<0.1	0.16	0.12	3.3
2008-06-25	MAX	8.2	1170	318	43	2.4		14	0.3	< 0.05	< 0.02	68	< 1	160	42	130	<0.02	<0.01	<0.1	1.1	<0.01	<0.1
2008-12-09	MAX	7.8	1290	597	51	2.1	< 2	17	0.8	< 0.05	< 0.02	50	< 1	53	39	170	<0.02	0.028	<0.1	0.72	<0.01	2.9
2009-06-25	MAX	7.8	1640	382	46	3.1	< 2	9	0.4	< 0.05	< 0.02	58	< 1	260	150	150	<0.02	0.022	<0.1	1.8	<0.01	<0.1
2009-12-15	MAX	7.6	1350	555	48	2.1	< 2	19	0.5	< 0.05	0.03	48	< 1	96	71	160	0.03	0.033	<0.1	1.1	<0.01	<0.1
2010-06-23	MAX	7.9	1470	373	41	2.8	< 2	9	0.4	< 0.05	0.02	79	< 1	210	120	130	<0.02	0.022	<0.1	1.3	<0.01	<0.1
2010-12-20	MAX	7.55	1240	586	49	1.6	< 2	22	0.8	< 0.05	< 0.02	49	< 1	39	46	170	<0.02	0.029	<0.1	0.75	0.03	1.8
2011-06-16	MAX	7.78	1340	383	37	2.6	< 2	20	0.4	< 0.05	< 0.02	63	< 1	170	130	120	0.09	0.021	<0.1	1.3	0.02	0.9
2011-12-13	MAX	7.73	1190	518	50	1.3	< 2	17	1.1	< 0.05	0.13	71	< 1	23	38	160	1.3	0.033	<0.1	0.49	0.03	10
2012-06-20	MAX	7.78	1200	360	27	2.1	< 2	14	0.45	< 0.05	< 0.02	38	< 1	120	120	89	0.18	0.021	<0.1	0.55	<0.01	<0.1

Routine Groundwater Quality - General Analysis -Guelph WRIC & Waste Transfer Station

AECOM

Date	Lab	pH	Cond- uctivity	Alk mg/L	Mg mg/L	K mg/L	BOD mg/L	COD mg/L	TKN mg/L	NH3-N mg/L	Total-P mg/L	SO4 mg/L	Phenol ug/L	Cl mg/L	Na mg/L	Ca mg/L	Fe mg/L	B mg/L	P mg/L	Zn mg/L	NO2 mg/L	NO3 mg/L
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Monitor: 16B-08 Outwash

2012-12-12	MAX	7.75	1100	560	45	1.1	< 2	16	0.74	< 0.05	< 0.02	55	< 5	10	23	170	0.14	0.034	<0.1	0.53	0.013	5
2013-06-17	MAX	7.89	1200	370	30	2.1	< 2	7.3	0.35	< 0.05	< 0.02	41	< 1	130	110	97	0.1	0.021	<0.1	0.92	<0.01	<0.1
2013-12-09	MAX	7.58	1200	570	47	1.5	< 2	6.6	0.78	< 0.05	< 0.02	43	< 1	38	43	160	<0.02	0.031	<0.1	0.72	<0.01	0.49
2014-05-26	MAX	7.69	1200	360	29	2.3	< 2	7.1	0.2	< 0.05	< 0.02	35	< 1	140	120	99	0.1	0.025	<0.1	1	<0.01	<0.1
2014-12-03	MAX	7.68	1100	570	47	1.3	< 2	17	0.64	0.053	< 0.02	39	< 1	13	25	160	<0.02	0.047	<0.1	0.62	<0.01	2.61
2015-06-18	MAX	7.84	1300	430	35	2.5	< 2	9.7	0.23	< 0.05	< 0.02	39	< 1	150	120	120	0.07	0.032	<0.1	1.1	<0.01	<0.1
2015-12-04	MAX	7.48	1100	530	45	1.6	< 2	17	0.4	< 0.05	< 0.02	36	< 1	33	38	150	0.08	0.032	<0.1	0.7	<0.01	<0.1
2016-06-21	MAX	7.96	1200	360	27	2.2	< 2	14	0.22	< 0.05	< 0.02	45	< 1	130	120	94	0.15	0.026	<0.1	0.91	<0.01	<0.1
2016-12-05	MAX	7.58	1300	400	33	2.5	< 2	9.4	0.27	< 0.05	< 0.02	57	< 1	140	97	120	0.11	0.034	<0.1	1.1	<0.01	<0.1
2017-06-07	MAX	8.05	1300	320	28	2.3	< 2	4.5	0.2	< 0.05	< 0.02	64	< 1	180	120	110	0.17	0.027	<0.1	1.1	0.011	0.18
2017-12-07	MAX	7.88	880	420	26	1.3	< 2	16	0.41	< 0.05	< 0.02	< 5	< 1	42	20	120	0.2	0.015	<0.1	0.15	<0.01	0.44
2018-06-14	MAX	7.89	810	360	27	1.8	2	20	0.26	0.069	0.021	< 1	< 1	41	23	120	0.19	0.027	<0.1	0.098	0.014	0.37
2018-12-11	MAX	7.78	970	320	29	2.4	< 2	11	0.14	0.088	< 0.04	55	< 1	84	55	97	0.1	0.024	<0.1	0.45	0.014	0.19
2019-06-19	MAX	7.82	1200	310	39	2.3	< 2	4	0.15	< 0.05	< 0.02	62	< 1	160	56	140	0.05	0.016	<0.1	0.96	0.016	<0.1
2019-12-03	MAX	7.82	860	300	26	2	< 2	< 4	0.2	< 0.05	< 0.02	52	< 1	73	46	91	0.11	0.015	<0.1	0.44	0.034	1.36
2020-06-18	Burea	7.7	800	330	25	1.9	< 2	11	0.32	< 0.05	< 0.02	15	< 1	48	27	100	0.07	0.029	<0.1	0.14	<0.01	0.21
2020-12-07	Burea	7.81	890	320	31	2.1	< 2	9	0.16	< 0.05	< 0.02	51	< 1	69	32	120	0.04	0.022	<0.1	0.1	<0.01	<0.1
2021-06-16	Burea	7.93	760	280			< 2	4.6	0.38	< 0.05	< 0.02	46	< 1	42						0.06	4.97	
2021-12-14	Burea	7.74	1200	340	32	2.8	< 2	< 4	<0.1	< 0.05	< 0.02	61	< 1	130	84	120	0.03	0.024	<0.1	0.57	<0.01	<0.1

Monitor: 17A-08 Bedrock

2008-03-26	MAX	8.2	721	248	28	2.1	< 2	7	0.6	0.21	< 0.02	96	< 1	29	67	64	<0.02	0.039	<0.1	0.007	<0.01	0.3
2008-06-25	MAX	8.3	643	233	30	2.2		< 4	0.5	0.29	< 0.02	63	< 1	36	16	80	0.05	0.022	<0.1	<0.005	<0.01	<0.1
2008-12-09	MAX	8.1	609	237	26	1.4	< 2	< 4	0.4	0.1	< 0.02	51	< 1	27	15	69	0.02	0.028	<0.1	<0.005	<0.01	<0.1
2009-06-25	MAX	8	608	230	28	1.6	< 2	< 4	0.4	0.18	< 0.02	51	< 1	29	10	77	0.13	0.028	<0.1	<0.005	<0.01	<0.1
2009-12-16	MAX	7.9	615	232	29	1.6	< 2	4	0.2	0.08	< 0.02	48	< 1	30	11	79	0.1	0.027	<0.1	<0.005	<0.01	0.2
2010-06-23	MAX	8.1	645	229	30	1.6	< 2	< 4	0.5	0.13	< 0.02	59	< 1	34	12	79	0.11	0.027	<0.1	<0.005	<0.01	<0.1
2010-12-20	MAX	7.92	650	228	29	1.6	< 2	5	0.3	0.19	< 0.02	51	< 1	36	11	81	0.03	0.027	<0.1	<0.005	0.04	<0.1
2011-06-16	MAX	8.02	647	225	29	1.6	< 2	11	0.3	0.17	< 0.02	57	< 1	38	12	83	0.05	0.024	<0.1	<0.005	<0.01	<0.1
2011-12-15	MAX	8.21	682	229	29	1.6	< 2	< 4	1	0.08	0.05	56	< 1	39	12	83	0.65	0.025	<0.1	0.014	0.05	0.1
2012-06-20	MAX	8.04	680	230	30	1.6	< 2	10	0.37	0.073	0.03	55	< 1	38	12	84	0.86	0.027	<0.1	<0.005	<0.01	<0.1
2012-12-10	MAX	7.85	680	230	28	1.6	< 2	< 4	0.41	0.12	< 0.02	66	< 1	39	12	85	0.8	0.029	<0.1	<0.005	<0.01	<0.1
2013-06-17	MAX	8.06	690	230	29	1.5	< 2	< 4	0.41	0.14	0.075	61	< 1	41	13	78	2.1	0.026	<0.1	<0.005	<0.01	<0.1
2013-12-04	MAX	7.84	710	240	32	1.9	< 2	6.1	0.46	0.12	0.08	62	< 1	45	14	87	0.13	0.028	<0.1	0.024	0.042	0.12
2014-05-22	MAX	8.05	700	230	32	1.9	< 2	< 4	0.74	0.13	0.1	67	< 1	45	14	94	0.07	0.03	<0.1	0.022	0.021	<0.1
2014-12-02	MAX	7.96	710	230	30	1.7	< 2	< 4	0.3	0.18	0.047	63	< 1	45	13	85	1.4	0.033	<0.1	0.0066	0.013	<0.1
2015-06-17	MAX	7.97	710	230	31	1.6	< 2	< 4	0.2	0.093	0.032	68	< 1	45	14	85	0.91	0.026	<0.1	0.0052	0.044	<0.1
2015-12-03	MAX	7.7	730	220	30	1.6	< 2	< 4	0.21	0.07	0.022	69	< 1	46	14	90	0.62	0.029	<0.1	<0.005	0.011	<0.1
2016-06-21	MAX	8.22	710	230	30	1.7	< 2	< 4	0.21	0.08	0.03	64	< 1	42	14	85	0.94	0.03	<0.1	0.024	0.012	<0.1
2016-12-06	MAX	7.94	690	240	29	1.5	7	< 4	0.11	< 0.05	0.032	60	< 1	37	14	82	1.2	0.03	<0.1	0.0096	0.011	<0.1
2017-06-07	MAX	8.08	660	240	27	1.5	< 2	< 4	0.21	0.063	0.034	56	< 1	36	13	78	1.1	0.029	<0.1	<0.005	0.022	<0.1

Routine Groundwater Quality - General Analysis -Guelph WRIC & Waste Transfer Station

AECOM

Date	Lab	pH	Cond- uctivity	Alk mg/L	Mg mg/L	K mg/L	BOD mg/L	COD mg/L	TKN mg/L	NH3-N mg/L	Total-P mg/L	SO4 mg/L	Phenol ug/L	Cl mg/L	Na mg/L	Ca mg/L	Fe mg/L	B mg/L	P mg/L	Zn mg/L	NO2 mg/L	NO3 mg/L
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Monitor: 17A-08 Bedrock

2017-12-06	MAX	8.01	670	250	28	1.5	< 2	< 4	0.12	< 0.05	0.044	56	< 1	34	13	78	1.4	0.026	<0.1	<0.005	0.019	<0.1
2018-06-14	MAX	8.05	680	250	30	1.7	< 2	5.7	0.12	0.09	0.038	56	< 1	34	14	83	1.8	0.025	<0.1	<0.005	<0.01	<0.1
2018-12-10	MAX	7.97	690	240	29	1.5	< 2	< 4	<0.1	0.074	< 0.02	61	< 1	35	15	82	1.1	0.02	<0.1	<0.005	<0.01	<0.1
2019-06-18	MAX	8.01	1100	300	22	1.4	4	< 4	0.28	< 0.05	4	77	< 1	110	110	95	120	0.028	<0.1	0.059	<0.01	1.3
2019-12-04	MAX	7.93	830	300	18	0.92	< 2	< 4	0.12	0.089	0.55	36	< 1	67	68	91	16	0.02	<0.1	0.064	<0.01	1.01
2020-06-16	Burea	7.83	1300	260	25	1	< 2	8.4	<0.1	< 0.05	0.29	38	< 1	200	97	120	10	0.018	<0.1	0.084	<0.01	1.19
2020-12-09	Burea	7.98	950	290	19	0.98	< 2	< 4	<0.1	< 0.05	0.25	55	< 1	97	73	95	7.1	0.022	<0.1	0.071	<0.01	1.25
2021-06-16	Burea	7.93	830	290	21	0.74	< 2	< 4	<0.1	< 0.05	0.18	36	< 1	72	54	96	8.1	0.02	0.1	0.068	0.01	0.91
2021-12-16	Burea	7.93	990	330	23	1.1	< 2	< 4	<0.1	0.1	0.26	56	< 1	100	80	110	7.3	0.025	<0.1	0.074	<0.01	0.82

Monitor: 17B-08 Outwash

2008-03-26	MAX	8	2080	357	41	2.4	< 2	5	0.4	< 0.05	< 0.02	75	< 1	400	240	150	<0.02	0.025	<0.1	0.25	0.02	3.6
2008-06-25	MAX	8.3	2380	313	46	2.8		11	0.3	< 0.05	< 0.02	68	< 1	500	290	160	<0.02	0.015	<0.1	0.29	<0.01	4.2
2008-12-09	MAX	8	1580	319	32	2.5	< 2	4	0.3	< 0.05	< 0.02	56	< 1	260	170	110	<0.02	0.018	<0.1	0.14	<0.01	5.1
2009-06-25	MAX	7.8	2730	304	48	3.1	< 2	8	0.2	< 0.05	< 0.02	66	< 1	620	330	190	<0.02	0.018	<0.1	0.33	<0.01	4.9
2009-12-16	MAX	7.7	1730	321	36	2.3	< 2	6	0.2	< 0.05	0.04	39	< 1	300	180	140	<0.02	0.021	<0.1	0.16	<0.01	4.5
2010-06-23	MAX	8	1850	304	34	2.8	< 2	6	0.4	< 0.05	0.02	74	< 1	330	180	140	<0.02	0.022	<0.1	0.081	<0.01	4
2010-12-20	MAX	7.82	1640	320	29	2.2	< 2	4	0.2	< 0.05	< 0.02	45	< 1	270	170	120	<0.02	0.023	<0.1	0.13	<0.01	5
2011-06-16	MAX	7.77	2020	321	34	2.4	< 2	12	0.2	< 0.05	< 0.02	64	< 1	410	250	130	<0.02	0.019	<0.1	0.25	<0.01	4.1
2011-12-15	MAX	8.07	1510	325	28	2.1	< 2	10	0.9	< 0.05	0.34	38	< 1	230	160	110	12	0.021	<0.1	0.15	<0.01	3.5
2012-06-20	MAX	7.8	2100	330	35	2.3	< 2	11	0.55	< 0.05	0.062	41	< 1	400	230	140	2.7	0.022	<0.1	0.26	<0.01	4.4
2012-12-10	MAX	7.7	2400	330	36	2.9	< 2	< 4	0.19	< 0.05	< 0.04	59	< 1	480	260	170	1.2	0.026	<0.1	0.22	<0.01	3
2013-06-17	MAX	7.91	1900	330	31	1.9	< 2	< 4	0.5	< 0.05	< 0.02	47	< 1	350	220	120	1.3	0.02	<0.1	0.24	<0.01	2.7
2013-12-04	MAX	7.82	1600	330	27	2	< 2	6.5	0.43	< 0.05	0.032	40	< 1	270	200	100	<0.02	0.02	<0.1	0.24	<0.01	3.1
2014-05-22	MAX	7.85	1400	320	27	1.8	< 2	< 4	0.2	< 0.05	< 0.02	38	< 1	220	170	100	<0.02	0.022	<0.1	0.24	<0.01	2.78
2014-12-02	MAX	7.92	1400	320	27	1.9	< 2	4.6	0.17	0.056	0.025	36	< 1	220	160	100	1.1	0.026	<0.1	0.19	<0.01	2.55
2015-06-17	MAX	7.81	1800	300	33	1.9	< 2	4.4	0.33	< 0.05	0.022	37	1.6	350	190	120	<0.02	0.017	<0.1	0.27	<0.01	0.34
2015-12-03	MAX	7.93	1200	310	24	1.6	< 2	< 4	0.19	< 0.05	0.038	35	< 1	150	110	88	1.6	0.021	<0.1	0.14	<0.01	1.7
2016-06-21	MAX	8.05	2100	310	39	2.3	< 2	7.2	0.25	< 0.05	0.021	47	< 1	430	230	150	0.71	0.025	<0.1	0.29	<0.01	2.84
2016-12-06	MAX	7.95	1100	310	22	1.6	7	< 4	<0.1	< 0.05	0.027	56	< 1	120	99	91	1.2	0.025	<0.1	0.11	<0.01	1.46
2017-06-07	MAX	8.15	2100	350	23	2.2	< 2	< 4	0.25	< 0.05	0.028	57	< 1	380	310	85	0.81	0.03	<0.1	0.16	<0.01	1.59
2017-12-06	MAX	7.96	930	310	19	1.2	< 2	< 4	0.15	0.056	0.024	48	1.7	86	80	84	0.79	0.022	<0.1	0.095	<0.01	1.21
2018-06-14	MAX	7.96	1000	290	24	1.1	< 2	7.9	<0.1	0.11	0.22	43	< 1	130	80	110	11	0.024	<0.1	0.1	<0.01	0.97
2018-12-10	MAX	7.88	990	300	21	0.91	< 2	< 4	<0.1	< 0.05	< 0.1	58	< 1	100	79	96	5	0.017	<0.1	0.078	<0.01	1.12
2019-06-18	MAX	7.97	680	240	30	1.6	< 2	< 4	0.15	0.069	0.029	63	< 1	35	16	86	0.58	0.028	<0.1	0.0078	<0.01	<0.1
2019-12-04	MAX	8.05	690	240	29	1.7	< 2	< 4	<0.1	0.091	< 0.02	70	< 1	35	20	84	3.1	0.026	<0.1	<0.005	<0.01	<0.1
2020-06-16	Burea	7.96	710	240	29	1.7	< 2	9.1	0.14	0.061	0.044	72	< 1	36	23	81	1	0.024	<0.1	<0.005	<0.01	<0.1
2020-12-09	Burea	8.05	690	250	26	1.6	< 2	< 4	<0.1	0.058	0.026	63	< 1	35	24	76	0.92	0.027	<0.1	<0.005	<0.01	<0.1
2021-06-16	Burea	8.11	690	240	28	1.6	4	9.7	0.15	< 0.05	0.032	60	< 1	36	20	81	0.92	0.027	<0.1	<0.005	<0.01	0.12
2021-12-16	Burea	8	700	240	29	1.7	2	< 4	<0.1	0.069	0.029	64	< 1	38	27	83	0.74	0.025	<0.1	<0.005	<0.01	<0.1

Monitor: 18A-08 Bedrock

Routine Groundwater Quality - General Analysis -Guelph WRIC & Waste Transfer Station

AECOM

Date	Lab	pH	Conductivity	Alk mg/L	Mg mg/L	K mg/L	BOD mg/L	COD mg/L	TKN mg/L	NH3-N mg/L	Total-P mg/L	SO4 mg/L	Phenol ug/L	Cl mg/L	Na mg/L	Ca mg/L	Fe mg/L	B mg/L	P mg/L	Zn mg/L	NO2 mg/L	NO3 mg/L
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Monitor: 18A-08 Bedrock

2008-03-26	MAX	8.1	803	258	27	1.5	< 2	23	0.9	0.09	< 0.02	130	< 1	18	89	65	88	0.029	<0.1	0.022	0.12	5.7
2008-06-25	MAX	8.3	632	243	28	3		12	0.3	< 0.05	< 0.02	36	< 1	19	20	81	<0.02	<0.01	<0.1	0.25	<0.01	7.3
2008-12-09	MAX	8.1	613	247	27	1.1	< 2	< 4	0.5	0.16	< 0.02	35	< 1	16	6.1	76	<0.02	<0.01	<0.1	0.12	<0.01	6.7
2009-06-25	MAX	7.9	605	242	29	1.2	< 2	< 4	0.2	< 0.05	< 0.02	34	< 1	16	5	85	<0.02	0.012	<0.1	0.32	<0.01	6.9
2009-12-15	MAX	7.9	628	246	28	1.3	< 2	< 4	0.2	< 0.05	0.04	36	< 1	16	4.5	82	<0.02	0.01	<0.1	0.35	<0.01	8
2010-06-30	MAX	8	625	241	29	1.2	< 2	18	0.3	< 0.05	0.03	38	< 1	18	4.6	82	<0.02	0.01	<0.1	0.33	0.02	6.5
2010-12-22	MAX	7.85	628	241	31	1.2	< 2	< 4	<0.1	< 0.05	< 0.02	37	< 1	18	4.6	88	<0.02	<0.01	<0.1	0.36	<0.01	6.8
2011-06-16	MAX	7.81	840	233	34	1.5	< 2	13	0.2	< 0.05	< 0.02	130	< 1	57	24	100	0.21	0.024	<0.1	0.009	<0.01	<0.1
2011-12-16	MAX	7.91	621	251	27	1.2	< 2	32	2	0.33	1	36	2	16	4	78	20	<0.01	<0.1	0.22	0.02	5.3
2012-06-22	MAX	7.82	610	240	28	1.3	< 2	55	2.8	< 0.05	0.17	38	< 1	16	4.1	82	3.3	<0.01	<0.1	0.36	0.038	4.8
2012-12-17	MAX	7.59	610	250	30	1.2	< 2	< 4	<0.1	< 0.05	0.082	38	< 1	16	4.5	91	2	<0.01	<0.1	0.41	<0.01	5.1
2013-06-20	MAX	8.32	610	240	28	1.2	< 2	22	1.1	0.079	1.4	39	< 1	16	4.2	87	33	<0.01	<0.1	0.36	0.035	4.7
2013-12-09	MAX	7.81	620	240	28	1.1	< 2	6.1	0.66	0.17	0.11	37	< 1	16	4.3	81	0.05	<0.01	<0.1	0.37	<0.01	5
2014-05-27	MAX	7.74	600	240	27	1	< 2	< 4	0.28	< 0.05	0.083	40	< 1	16	4.4	82	2.7	<0.01	<0.1	0.36	<0.01	4.86

Monitor: 18A-14 Bedrock

2014-12-05	N/A																					
2015-06-16	MAX	7.93	620	250	27	1.8	< 2	29	0.75	< 0.05	0.38	45	< 1	18	9.1	84	12	0.014	<0.1	0.16	<0.01	4.68
2015-12-08	MAX	7.83	610	240	29	1.6	< 2	14	<1	< 0.05	0.39	35	< 1	17	4.7	84	13	<0.01	<0.1	0.26	0.026	4.42
2016-06-21	MAX																					
2016-06-22	MAX				28	1.3									4.5	77		0.011	<0.1	0.3		
2016-06-23	MAX	8.05	610	250			< 2	6.7	<0.2	< 0.05	0.14	36	< 1	17			4.2				<0.01	5.03
2016-12-01	MAX	7.93	620	250	26	1.2	< 2	< 4	<0.2	< 0.05	0.14	36	< 1	18	4.5	75	2.9	0.011	<0.1	0.35	<0.01	4.93
2017-06-08	MAX	7.96	620	250	27	1.4	< 2	< 4	0.53	< 0.05	0.085	4.3	< 1	3.2	4.2	81	3.6	0.011	<0.1	0.31	<0.01	4.7
2017-12-13	MAX	7.87	640	260	26	1.3	< 2	< 4	<0.2	< 0.05	0.11	38	< 1	18	4.2	78	4.1	0.011	<0.1	0.31	<0.01	5.12
2018-06-19	MAX	7.99	620	260	27	1.3	< 2	7.1	<0.2	< 0.05	0.089	37	< 1	17	4.4	80	2.7	0.013	<0.1	0.3	<0.01	4.4
2018-12-11	MAX	7.93	620	260	27	1	< 2	< 4	0.16	< 0.05	0.027	36	< 1	19	4.7	83	0.92	<0.01	<0.1	0.39	<0.01	5.12
2019-06-17	MAX	8.31	610	210	2.4	1.4	< 2	12	0.23	< 0.05	1.8	7.6	< 1	81	120	12	51	<0.01	<0.1	<0.005	<0.01	<0.1
2019-12-03	MAX	7.87	610	250	25	0.99	< 2	4.6	0.27	< 0.05	< 0.02	37	< 1	18	4.2	78	0.38	<0.01	<0.1	0.37	<0.01	4.51
2020-06-18	Burea	7.8	610	250	28	1.2	< 2	< 4	0.13	< 0.05	0.025	34	< 1	18	4.7	86	0.37	<0.01	<0.1	0.36	<0.01	4.12
2020-12-11	Burea	7.86	630	250	27	1.1	< 2	5.1	<0.2	< 0.05	< 0.02	36	< 1	20	4.7	82	0.46	<0.01	<0.1	0.43	<0.01	4.81
2021-06-10	Burea	8.18	1900	260	8.3	4.7	< 2	15	0.23	0.14	1.5	23	< 1	420	330	50	53	0.016	<0.1	0.0096	<0.01	<0.1
2021-12-15	Burea	7.97	610	250	27	1.1	< 2	< 4	<0.1	< 0.05	0.03	38	< 1	20	4.9	84	0.88	0.01	<0.1	0.41	<0.01	4.12

Monitor: 18B-08 Outwash

2008-03-26	MAX	8.2	1020	284	12	2.1	< 2	53	1	0.12	0.02	223	< 1	8	270	29	150	0.07	<0.1	0.021	0.05	1.6
2008-06-25	INS																					
2008-12-09	INS																					
2009-06-25	INS																					
2009-12-15	INS																					
2010-06-30	INS																					
2010-12-22	INS																					

Routine Groundwater Quality - General Analysis -Guelph WRIC & Waste Transfer Station

AECOM

Date	Lab	pH	Cond- uctivity	Alk mg/L	Mg mg/L	K mg/L	BOD mg/L	COD mg/L	TKN mg/L	NH3-N mg/L	Total-P mg/L	SO4 mg/L	Phenol ug/L	Cl mg/L	Na mg/L	Ca mg/L	Fe mg/L	B mg/L	P mg/L	Zn mg/L	NO2 mg/L	NO3 mg/L
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Monitor: 18B-08 Outwash

2011-06-16	MAX	8.03	1080	424	18	5.5	< 2	14	0.4	< 0.05	0.03	120	< 1	19	190	60	<0.02	0.1	<0.1	<0.005	<0.01	4.4
2011-12-16	INS																					
2012-06-22	Dry																					
2012-12-17	INS																					
2013-06-20	INSV																					
2013-12-09	Dry																					
2014-05-27	MAX	7.97	520	260	26	0.73	< 2	18	2.1	< 0.05	0.43	10	< 1	9	6.2	65	10	<0.01	<0.1	0.018	<0.01	0.32

Monitor: 18B-14 Outwash

2014-12-05	N/A																					
2015-06-16	MAX	8.17	540	190	25	2.4	< 2	8.1	<1	< 0.05	0.94	19	< 1	40	24	53	37	0.029	<0.1	0.0074	<0.01	1.09
2015-12-08	MAX	7.99	610	210	28	2.2	< 2	130	0.68	< 0.05	14	21	< 1	43	19	69	320	0.012	<0.1	0.0067	<0.01	4.2
2016-06-22	MAX				15	1.5									180	39		<0.01	<0.1	0.014		
2016-06-23	MAX	8.23	1200	210			< 2	140	<0.1	< 0.05	13	20	< 1	210			520				0.03	0.16
2016-12-01	MAX	8.26	520	230	6	1.1	< 2	110	0.26	0.11	5.7	14	< 1	22	89	17	240	0.03	<0.1	0.0072	0.024	0.22
2017-06-08	MAX	8.38	590	190	3.1	1	< 2	8.7	0.95	0.081	14	14	< 1	64	110	11	200	0.01	<0.1	0.0067	<0.01	<0.1
2017-12-13	MAX	8.34	710	210	3.1	1.1	< 2	13	0.37	0.082	4.8	14	< 1	87	130	11	140	0.028	<0.1	<0.005	<0.01	<0.1
2018-06-19	MAX	8.28	940	180	4.4	1.6	< 2	19	0.36	0.23	4.7	12	< 1	150	170	18	170	<0.01	<0.1	<0.005	0.012	<0.1
2018-12-11	MAX	8.24	940	190	5.7	1.9	< 2	7.3	0.17	0.14	1.6	10	< 1	160	170	24	68	0.015	<0.1	0.0058	<0.01	<0.1
2019-06-17	MAX	8.03	610	250	28	1.1	< 2	< 4	<0.1	< 0.05	0.033	36	< 1	19	4.6	88	<0.02	<0.01	<0.1	0.4	<0.01	4.99
2019-12-03	MAX	8.24	960	200	5.4	2.5	< 2	4.6	0.16	0.083	1.1	7.1	< 1	160	170	26	44	0.02	<0.1	<0.005	<0.01	<0.1
2020-06-18	Burea	7.96	2500	210	15	5.8	< 2	12	0.27	0.1	1.3	21	< 1	620	400	83	54	0.013	<0.1	0.01	<0.01	<0.1
2020-12-11	Burea	8.05	2000	310	18	5.6	< 2	28	0.38	0.16	2.4	25	< 1	440	360	79	75	0.025	<0.1	0.031	<0.01	<0.1
2021-06-10	Burea	8.06	630	250	30	1.1	< 2	< 4	<0.2	< 0.05	< 0.02	38	< 1	21	4.9	86	<0.02	0.01	<0.1	0.44	<0.01	4.87
2021-12-15	Burea	8.17	760	200	4.4	3.6	6	12	0.54	0.19	3.6	12	< 1	120	120	27	110	0.021		<0.005	<0.01	<0.1

Monitor: 19A-08 Bedrock

2008-03-26	MAX	8.1	844	245	37	1.4	< 2	13	0.3	0.1	0.03	143	< 1	45	47	94	0.02	0.03	<0.1	<0.005	0.02	<0.1
2008-06-25	MAX	8.2	841	240	37	1.3		4	0.3	0.05	< 0.02	134	< 1	50	33	100	0.04	0.022	<0.1	<0.005	<0.01	<0.1
2008-12-09	MAX	8.1	811	242	33	1.2	< 2	< 4	0.2	< 0.05	< 0.02	129	< 1	46	19	96	0.17	0.022	<0.1	<0.005	<0.01	<0.1
2009-06-25	MAX	7.9	768	236	35	1.2	< 2	2	0.2	< 0.05	< 0.02	140	< 1	27	12	100	0.17	0.026	<0.1	<0.005	<0.01	<0.1
2009-12-15	MAX	7.9	834	244	35	1.4	< 2	5	0.2	< 0.05	0.02	120	< 1	48	21	100	0.21	0.029	<0.1	<0.005	<0.01	<0.1
2010-06-30	MAX	7.8	788	234	33	1.2	< 2	6	0.2	< 0.05	0.03	130	< 1	37	16	100	0.2	0.023	<0.1	<0.005	<0.01	<0.1
2010-12-22	MAX	7.87	825	236	36	1.3	< 2	< 4	0.1	< 0.05	< 0.02	120	< 1	43	21	110	0.21	0.027	<0.1	<0.005	<0.01	<0.1
2011-06-15	MAX	7.95	838	235	35	1.4	< 2	17	0.2	< 0.05	< 0.02	130	< 1	60	25	100	0.24	0.033	<0.1	<0.005	<0.01	<0.1
2011-12-16	MAX	7.95	898	246	34	1.5	< 2	38	0.8	0.09	0.7	120	< 1	70	29	100	29	0.031	<0.1	0.067	<0.01	<0.1
2012-06-22	MAX	7.87	880	240	35	1.4	< 2	< 4	0.49	< 0.05	0.055	110	< 1	65	28	110	2.4	0.028	<0.1	<0.005	<0.01	<0.1
2012-12-17	MAX	7.74	890	250	35	1.5	< 2	8.5	0.61	0.074	0.031	120	< 1	68	32	110	0.53	0.025	<0.1	0.012	<0.01	<0.1
2013-06-20	MAX	8.13	860	240	34	1.5	< 2	< 4	0.18	0.071	< 0.02	120	< 1	63	27	110	0.77	0.036	<0.1	<0.005	<0.01	<0.1
2013-12-09	MAX	8.02	900	240	35	1.5	< 2	< 4	0.22	0.07	< 0.02	110	< 1	72	32	110	0.27	0.026	<0.1	<0.005	<0.01	<0.1
2014-05-27	MAX	7.91	890	240	34	1.4	< 2	< 4	0.2	< 0.05	< 0.04	120	< 1	70	31	100	0.28	0.032	<0.1	<0.005	<0.01	<0.1
2014-12-04	MAX	7.82	840	240	36	1.9	< 2	< 4	<0.1	0.1	0.054	110	< 1	72	31	110	0.26	0.035	<0.1	0.016	<0.01	<0.1

Routine Groundwater Quality - General Analysis -Guelph WRIC & Waste Transfer Station

AECOM

Date	Lab	pH	Cond- uctivity	Alk mg/L	Mg mg/L	K mg/L	BOD mg/L	COD mg/L	TKN mg/L	NH3-N mg/L	Total-P mg/L	SO4 mg/L	Phenol ug/L	Cl mg/L	Na mg/L	Ca mg/L	Fe mg/L	B mg/L	P mg/L	Zn mg/L	NO2 mg/L	NO3 mg/L
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Monitor: 19A-08 Bedrock

2015-06-18	MAX	7.98	860	250	35	1.6	< 2	9.6	0.16	0.16	0.13	110	< 1	68	31	100	4.7	0.036	<0.1	<0.005	0.014	<0.1
2015-12-02	MAX	7.94	880	230	35	1.5	< 2	5	0.12	< 0.05	0.024	120	< 1	66	30	100	0.63	0.032	<0.1	<0.005	<0.01	<0.1
2016-06-20	MAX	8.09	890	250	34	1.6	< 2	< 4	0.2	0.055	< 0.02	110	< 1	69	30	100	0.5	0.035	<0.1	0.015	<0.01	<0.1
2016-11-28	MAX	7.95	840	230	34	1.5	< 2	13	0.16	0.071	0.12	120	< 1	68	30	100	2.5	0.027	<0.1	0.0051	<0.01	<0.1
2017-06-05	MAX	8.08	850	230	34	1.5	< 2	7	0.17	< 0.05	0.023	110	< 1	67	30	99	0.95	0.035	<0.1	<0.005	<0.01	<0.1
2017-12-07	MAX	8.06	890	260	32	1.5	< 2	< 4	0.14	< 0.05	0.024	110	< 1	69	29	100	0.64	0.035	<0.1	<0.005	<0.01	<0.1
2018-06-18	MAX	7.9	900	250	35	1.5	< 2	< 4	0.17	0.054	0.021	110	< 1	67	31	100	0.63	0.028	<0.1	<0.005	<0.01	<0.1
2018-12-10	MAX	8.01	890	250	34	1.4	< 2	< 4	<0.1	0.066	< 0.02	110	< 1	72	31	99	0.5	0.029	<0.1	<0.005	<0.01	<0.1
2019-06-25	MAX	8.08	830	240	33	1.4	< 2	6.5	0.13	0.052	< 0.02	110	< 1	78	29	100	0.45	0.035	<0.1	<0.005	<0.01	<0.1
2019-12-05	MAX	7.93	870	250	34	1.5	< 2	< 4	<0.1	0.093	< 0.02	110	< 1	72	31	100	0.49	0.032	<0.1	<0.005	<0.01	<0.1
2020-06-17	Burea	7.82	910	250	33	1.4	< 2	12	0.13	< 0.05	< 0.02	110	< 1	78	32	100	0.35	0.027	<0.1	<0.005	<0.01	<0.1
2020-12-10	Burea	7.98	900	250	34	1.5	< 2	4.8	0.11	< 0.05	< 0.02	110	< 1	79	35	110	0.38	0.034	<0.1	<0.005	<0.01	<0.1
2021-06-15	Burea	8.04	910	250	35	1.5	< 2	< 4	0.1	0.064	< 0.02	100	< 1	78	34	100	0.56	0.036	<0.1	<0.005	<0.01	<0.1
2021-12-13	Burea	7.89	880	250	33	1.6	< 2	5.4	<0.1	0.061	0.033	99	< 1	80	35	100	0.56	0.035	<0.1	<0.005	<0.01	<0.1

Monitor: 19B-08 Outwash

2008-03-26	MAX	8.1	1560	289	14	4.5	< 2	51	1.7	0.53	0.03	454	< 1	38	350	35	130	0.14	<0.1	0.02	<0.1	1
2008-06-25	MAX	8.3	2070	314	10	7.8		38	1.8	1	< 0.02	576	< 1	60	480	23	<0.02	0.2	<0.1	<0.005	0.26	2.5
2008-12-09	MAX	8.2	2290	485	13	8.6	< 2	13	1.1	0.44	< 0.02	596	< 1	56	470	36	<0.02	0.27	<0.1	<0.005	0.06	8.8
2009-06-25	MAX	8.2	2010	499	10	8.1	< 2	9	1.1	0.54	< 0.02	420	< 1	40	470	28	<0.02	0.23	<0.1	<0.005	0.12	10
2009-12-15	INS																					
2010-06-30	INS																					
2010-12-22	INS																					
2011-06-15	MAX	8.07	1220	485	15	6.4	< 2	16	0.4	< 0.05	0.03	150	< 1	16	250	44	1.7	0.15	<0.1	0.005	<0.01	5.4
2011-12-16	MAX	7.93	1670	666	25	7.3	< 2	25	0.8	< 0.05	0.57	180	< 1	18	160	85	15	0.1	<0.1	0.006	<0.01	5.6
2012-06-22	Dry																					
2012-12-17	MAX	7.72	1300	620	18	11	< 2	17	0.75	< 0.05	0.69	77	< 1	7	260	57	11	0.14	<0.1	0.007	<0.01	2.8
2013-06-20	INSV																					
2013-12-09	MAX	8.02	1400	650	14	10	< 2	< 4	0.3	< 0.05	0.14	77	< 1	16	220	45	0.02	0.14	<0.1	<0.005	<0.01	3.8
2014-05-27	MAX	7.71	1100	470	31	6.7	< 2	5.8	1.1	< 0.05	0.43	63	< 1	29	110	98	5.9	0.066	<0.1	0.023	<0.01	5.78
2014-12-04	MAX	7.87	1600	700	26	12	< 2	5.4	0.38	< 0.05	0.15	98	< 1	26	300	75	<0.02	0.17	0.14	0.026	0.01	4.94
2015-06-18	MAX	8.03	1500	620	22	11	< 2	< 4	0.27	0.16	0.09	110	< 1	42	250	71	2.6	0.13	<0.1	0.026	0.017	4.61
2015-12-02	MAX	7.23	1700	690	19	11	< 2	15	0.13	< 0.05	0.13	150	< 1	41	330	59	4.2	0.17	<0.1	0.014	<0.01	3.85
2016-06-20	MAX	8.09	1600	690	22	11	< 2	14	0.32	< 0.05	0.058	150	< 1	36	300	65	1	0.17	<0.1	0.014	<0.01	3.16
2016-11-28	INSV																					
2017-06-05	MAX	8.02	1500	620	28	10	< 2	7	0.31	< 0.05	0.066	120	< 1	46	280	82	1.2	0.16	<0.1	0.018	<0.01	2
2017-12-07	INSV																					
2018-06-18	MAX	7.67	1300	590	32	9.7	< 2	11	<0.1	< 0.05	0.15	95	< 1	48	180	100	1.5	0.099	<0.1	0.017	<0.01	2.51
2018-12-10	MAX	7.71	1400	620	32	11	< 2	4.5	0.14	< 0.05	0.029	93	< 1	49	180	97	0.68	0.092	<0.1	0.024	<0.01	2.9
2019-06-25	MAX	7.89	1200	520	32	8.8	< 2	< 4	0.28	0.18	0.044	82	< 1	64	150	96	1.2	0.081	<0.1	0.024	<0.01	2.42
2019-12-05	MAX	7.62	1300	530	34	8.4	< 2	< 4	0.27	< 0.05	0.06	84	< 1	60	140	99	1.2	0.071	<0.1	0.019	<0.01	2.35

Routine Groundwater Quality - General Analysis -Guelph WRIC & Waste Transfer Station

AECOM

Date	Lab	pH	Cond- uctivity	Alk mg/L	Mg mg/L	K mg/L	BOD mg/L	COD mg/L	TKN mg/L	NH3-N mg/L	Total-P mg/L	SO4 mg/L	Phenol ug/L	Cl mg/L	Na mg/L	Ca mg/L	Fe mg/L	B mg/L	P mg/L	Zn mg/L	NO2 mg/L	NO3 mg/L
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Monitor: 19B-08 Outwash

2020-06-17	Burea	7.75	1300	510	31	8.9	< 2	7	<0.1	< 0.05	0.049	86	< 1	48	170	87	1.3	0.08	<0.1	0.022	<0.01	2.75
2021-06-15	Burea	8.02	1200	500	25	9.2	< 2	6.5	0.11	< 0.05	0.038	80	< 1	34	190	71	1.3	0.096	<0.1	0.017	<0.01	1.78
2021-12-13	Burea	7.79	1100	440	27	8.7	< 2	7.2	0.1	< 0.05	0.038	67	< 1	30	140	85	1.2	0.075	<0.1	0.019	<0.01	1.5

Monitor: 20A-08 Bedrock

2008-03-26	MAX	8.1	732	262	30	1.8	< 2	15	0.8	0.07	< 0.02	107	< 1	19	56	72	53	0.025	<0.1	0.012	0.13	2
2008-06-25	MAX	8.3	597	242	28	1.2		11	0.4	< 0.05	< 0.02	53	< 1	16	4.9	83	<0.02	<0.01	<0.1	0.032	0.07	2.5
2008-12-09	MAX	8.1	633	251	26	1.1	< 2	4	0.3	< 0.05	< 0.02	55	< 1	17	9.2	84	<0.02	0.02	<0.1	0.068	0.05	4.1
2009-06-25	MAX	7.9	602	242	28	1.2	< 2	< 4	0.3	< 0.05	< 0.02	49	< 1	16	5.9	83	<0.02	0.011	<0.1	0.089	0.09	2.4
2009-12-15	MAX	7.9	622	247	29	1.3	< 2	< 4	0.2	< 0.05	0.03	47	< 1	16	4.9	84	<0.02	0.012	<0.1	0.11	0.04	3.8
2010-06-29	MAX	8	794	236	27	1.2	< 2	10	0.4	< 0.05	< 0.02	130	< 1	37	5.3	80	0.19	<0.01	<0.1	0.096	<0.01	<0.1
2010-12-22	MAX	7.79	630	242	31	1.2	< 2	< 4	0.4	< 0.05	< 0.02	50	< 1	18	4.7	88	<0.02	<0.01	<0.1	0.12	0.06	2.9
2011-06-15	MAX	7.94	604	239	26	1	< 2	15	0.2	< 0.05	< 0.02	48	< 1	17	4.9	80	<0.02	<0.01	<0.1	0.11	0.08	3.1
2011-12-16	MAX	8.04	629	244	27	1.2	< 2	51	1	< 0.05	1	49	< 1	18	5.4	81	15	<0.01	<0.1	0.074	0.02	3.1
2012-06-22	MAX	7.95	620	240	27	1.2	< 2	9.7	0.67	< 0.05	0.21	43	< 1	17	4	82	4.1	<0.01	<0.1	0.14	<0.01	3.4
2012-12-17	MAX	7.63	620	250	30	1.3	< 2	< 4	0.17	< 0.05	< 0.02	48	< 1	17	4.5	87	2.6	<0.01	<0.1	0.13	0.012	3.3
2013-06-20	MAX	8.38	610	240	28	1.1	< 2	6.2	0.24	< 0.05	< 0.02	44	< 1	15	3.9	86	0.81	<0.01	<0.1	0.13	0.029	2.5
2013-12-09	MAX	7.92	630	250	26	1	< 2	< 4	0.32	< 0.05	0.029	43	< 1	17	5.7	78	0.33	<0.01	<0.1	0.11	0.038	3.6
2014-05-27	MAX	7.87	610	240	28	1.1	< 2	< 4	0.22	< 0.05	< 0.02	45	< 1	17	3.9	84	<0.02	<0.01	<0.1	0.16	0.045	2.81
2014-12-04	MAX	7.89	620	240	29	1.2	< 2	< 4	<0.1	< 0.05	< 0.02	44	< 1	17	4.2	85	<0.02	<0.01	<0.1	0.13	0.03	3.11
2015-06-18	MAX	8.03	600	250	29	1.2	< 2	< 4	0.27	< 0.05	< 0.02	43	< 1	17	4.1	85	0.41	0.01	<0.1	0.12	0.036	3.09
2015-12-02	MAX	7.42	630	240	29	1.3	< 2	4.4	<0.1	< 0.05	< 0.02	46	< 1	19	4.7	84	1.7	0.013	<0.1	0.13	0.012	3.49
2016-06-20	MAX	8.1	610	250	28	1.1	< 2	23	0.32	< 0.05	0.13	42	< 1	16	4.3	82	3.6	<0.01	<0.1	0.13	<0.01	2.63
2016-11-28	MAX	7.95	620	250	28	1.2	< 2	9.2	0.16	< 0.05	0.033	41	< 1	20	4.8	84	0.25	<0.01	<0.1	0.13	<0.01	3.45
2017-06-05	MAX	7.97	620	250	28	1	< 2	6.6	0.33	< 0.05	< 0.02	42	< 1	18	4.3	82	0.25	<0.01	<0.1	0.13	<0.01	2.83
2017-12-12	MAX	7.95	670	260	27	1.1	< 2	< 4	0.31	< 0.05	0.021	40	< 1	21	4.5	81	0.07	0.01	<0.1	0.12	<0.01	4.77
2018-06-18	MAX	7.79	640	260	29	1.1	< 2	< 4	<0.1	< 0.05	< 0.02	41	< 1	19	4.4	82	<0.02	<0.01	<0.1	0.2	<0.01	3.47
2018-12-10	MAX	7.92	640	260	28	1.1	< 2	4.9	<0.1	< 0.05	< 0.02	41	< 1	19	4.6	84	<0.02	<0.01	<0.1	0.13	0.051	3.29
2019-06-25	MAX	7.91	600	250	28	0.99	< 2	< 4	0.19	< 0.05	< 0.02	42	< 1	18	4.2	83	0.02	<0.01	<0.1	0.13	<0.01	2.73
2019-12-05	MAX	7.75	640	250	28	1.1	< 2	< 4	0.18	< 0.05	< 0.02	40	< 1	20	4.7	87	0.1	<0.01	<0.1	0.14	<0.01	3.29
2020-06-17	Burea	7.92	630	250	29	1	< 2	< 4	0.1	< 0.05	< 0.02	39	< 1	19	4.5	84	0.04	<0.01	<0.1	0.13	0.028	2.94
2020-12-10	Burea	7.99	650	260	30	1.1	< 2	4.5	<0.1	< 0.05	< 0.02	41	< 1	24	4.9	87	0.12	0.01	<0.1	0.13	<0.01	4.61
2021-06-15	Burea	7.98	630	260			< 2	< 4	<0.2	< 0.05	< 0.02	43	< 1	21							<0.01	3.16
2021-12-13	Burea	8.01	630	250	28	1.2	< 2	4.7	<0.1	< 0.05	< 0.02	41	< 1	21	4.7	89	0.08	<0.01	<0.1	0.14	<0.01	3.63

Monitor: 20B-08 Outwash

2008-03-26	MAX	8	572	244	30	1.2	< 2	10	0.5	< 0.05	< 0.02	52	< 1	11	3.5	82	73	<0.01	<0.1	0.09	<0.01	1.2
2008-06-25	MAX	8.2	933	235	26	3.3		20	0.6	< 0.05	< 0.02	78	< 1	110	57	99	<0.02	0.013	<0.1	0.63	<0.01	<0.1
2008-12-09	MAX	8	694	266	25	1.3	< 2	7	0.3	< 0.05	< 0.02	73	< 1	25	16	84	<0.02	0.018	<0.1	0.16	<0.01	<0.1
2009-06-25	MAX	7.7	822	254	26	1.9	< 2	10	0.3	< 0.05	< 0.02	49	< 1	88	45	95	<0.02	0.014	<0.1	0.37	<0.01	<0.1
2009-12-15	MAX	7.9	628	271	27	1.5	< 2	< 4	0.2	< 0.05	< 0.02	56	< 1	8	9.6	85	<0.02	0.012	<0.1	0.18	<0.01	<0.1
2010-06-29	MAX	7.8	1080	256	29	1.9	< 2	14	0.4	< 0.05	0.02	44	< 1	170	58	110	<0.02	0.013	<0.1	0.64	<0.01	<0.1

Routine Groundwater Quality - General Analysis -Guelph WRIC & Waste Transfer Station

AECOM

Date	Lab	pH	Cond- uctivity	Alk mg/L	Mg mg/L	K mg/L	BOD mg/L	COD mg/L	TKN mg/L	NH3-N mg/L	Total-P mg/L	SO4 mg/L	Phenol ug/L	Cl mg/L	Na mg/L	Ca mg/L	Fe mg/L	B mg/L	P mg/L	Zn mg/L	NO2 mg/L	NO3 mg/L
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Monitor: 20B-08 Outwash

2010-12-22	MAX	7.87	631	272	31	1.5	< 2	< 4	0.2	< 0.05	< 0.02	49	< 1	12	5.9	93	<0.02	<0.01	<0.1	0.14	<0.01	0.3
2011-06-15	MAX	7.9	614	296	28	1.3	< 2	13	0.3	< 0.05	< 0.02	29	< 1	7	3.6	89	<0.02	0.016	<0.1	0.13	<0.01	<0.1
2011-12-16	MAX	7.94	590	272	25	1.1	< 2	14	0.8	< 0.05	0.27	32	< 1	10	4.3	78	7.1	<0.01	<0.1	0.098	<0.01	<0.1
2012-06-22	MAX	7.8	790	270	27	1.8	3	93	1.3	0.19	0.4	44	8.9	67	30	93	7.7	<0.01	<0.1	0.28	<0.01	<0.1
2012-12-17	MAX	7.65	670	280	32	1.5	< 2	13	0.3	< 0.05	0.072	44	< 1	24	11	97	2.5	<0.01	<0.1	0.11	<0.01	0.14
2013-06-20	MAX	8.25	910	260	28	1.5	< 2	16	0.5	< 0.05	0.089	49	< 1	100	50	100	3.1	0.013	<0.1	0.43	<0.01	<0.1
2013-12-09	MAX	7.88	790	280	28	1.4	< 2	< 4	0.34	< 0.05	0.021	43	< 1	59	23	91	<0.02	<0.01	<0.1	0.23	<0.01	<0.1
2014-05-27	MAX	7.82	700	290	31	1.4	< 2	7.5	0.28	< 0.05	< 0.02	44	< 1	29	8.8	95	1.2	0.01	<0.1	0.1	<0.01	<0.1
2014-12-04	MAX	7.86	700	310	32	1.6	< 2	5.8	0.2	< 0.05	0.032	36	< 1	25	11	100	0.04	0.013	<0.1	0.16	<0.01	<0.1
2015-06-18	MAX	7.89	730	300	31	1.7	< 2	9.7	0.12	< 0.05	0.097	49	< 1	30	13	97	3.7	0.014	<0.1	0.083	<0.01	0.1
2015-12-02	MAX	7.46	740	280	32	1.6	< 2	25	0.16	< 0.05	0.13	52	< 1	33	11	97	4.5	0.012	<0.1	0.092	<0.01	<0.1
2016-06-20	MAX	7.89	980	310	41	1.9	< 2	15	0.21	< 0.05	0.069	72	< 1	90	21	120	3	0.013	<0.1	0.18	<0.01	0.59
2016-11-28	MAX	7.86	970	310	35	1.8	< 2	8.8	0.16	< 0.05	0.057	69	< 1	98	42	110	2.5	<0.01	<0.1	0.19	<0.01	<0.1
2017-06-05	MAX	7.96	1100	310	41	1.9	< 2	5.9	0.26	< 0.05	0.027	82	< 1	110	28	120	0.99	0.014	<0.1	0.12	<0.01	1.69
2017-12-12	MAX	7.88	1100	330	40	1.9	< 2	10	0.12	< 0.05	0.028	110	< 1	100	35	120	0.54	0.013	<0.1	0.12	<0.01	<0.1
2018-06-18	MAX	7.78	1000	320	37	2	< 2	9.6	0.1	< 0.05	0.099	78	< 1	93	54	110	1.9	<0.01	<0.1	0.14	<0.01	<0.1
2018-12-10	MAX	7.86	1100	330	40	1.9	< 2	11	0.12	< 0.05	< 0.02	100	< 1	95	46	120	0.6	<0.01	<0.1	0.24	<0.01	0.24
2019-06-25	MAX	8.15	1200	300	33	1.8	< 2	15	0.25	< 0.05	< 0.02	74	< 1	170	97	120	0.51	0.013	<0.1	0.26	<0.01	0.16
2019-12-05	MAX	7.63	1100	340	38	2	< 2	15	0.12	< 0.05	< 0.02	98	< 1	81	50	120	1.1	0.012	<0.1	0.11	<0.01	<0.1
2020-06-17	Burea	7.85	1100	340	36	1.7	< 2	< 4	0.13	< 0.05	0.088	88	< 1	87	57	120	2	<0.01	<0.1	0.19	<0.01	0.12
2020-12-10	Burea	7.89	1200	380	43	2.2	< 2	10	0.12	< 0.05	0.081	120	< 1	92	61	130	2.3	0.017	<0.1	0.2	<0.01	0.28
2021-06-15	Burea	7.8	1300	300	29	1.6	< 2	13	0.22	< 0.05	0.066	68	< 1	200	100	110	1.5	0.012	0.39	0.54	<0.01	<0.1
2021-12-13	Burea	7.99	780	330	0.016	1.6	< 2	9	0.13	< 0.05	< 0.02	52	< 1	30	< 0.1	0	0.37	0.54	100	1.6	<0.01	<0.1

Monitor: 21A-08 Bedrock

2008-06-25	N/A																					
2008-06-25	MAX																					
2008-06-25	MAX																					
2008-06-25	N/A																					
2008-12-09	MAX	8.1	820	284	32	1.2	< 2	8	0.5	< 0.05	< 0.02	49	< 1	54	34	86	<0.02	0.013	<0.1	0.22	0.02	6.2
2009-06-25	MAX	7.8	583	261	26	0.89	< 2	6	0.3	< 0.05	< 0.02	30	< 1	5	13	78	<0.02	0.015	<0.1	0.26	<0.01	4.8
2009-12-15	MAX	7.8	776	277	29	1.1	< 2	4	0.3	< 0.05	0.02	39	< 1	47	33	86	0.05	0.018	<0.1	0.32	<0.01	6.3
2010-06-25	MAX	8	589	262	25	0.87	< 2	4	0.4	< 0.05	< 0.02	26	< 1	8	13	75	<0.02	0.012	<0.1	0.29	<0.01	4.3
2010-12-22	MAX	7.79	660	278	29	1.1	< 2	< 4	0.3	< 0.05	< 0.02	32	< 1	18	19	87	<0.02	0.01	<0.1	0.29	<0.01	5.1
2011-06-14	MAX	7.85	557	263	26	0.86	< 2	15	0.5	< 0.05	< 0.02	21	< 1	4	7.5	79	<0.02	0.02	<0.1	0.36	<0.01	3.1
2011-12-14	MAX	8.07	619	278	26	1	< 2	15	2	< 0.05	0.14	27	< 1	10	14	79	0.83	<0.01	<0.1	0.31	<0.01	3.5
2012-06-18	MAX	7.93	570	260	24	0.88	< 2	12	0.26	< 0.05	< 0.02	24	< 1	6	9.8	73	0.44	<0.01	<0.1	0.31	<0.01	2.9
2012-12-10	MAX	7.81	650	290	28	1.1	< 2	< 4	0.34	< 0.05	< 0.02	28	< 1	19	18	84	0.07	0.011	<0.1	0.36	<0.01	3.1
2013-06-19	MAX	8.23	560	270	23	0.8	< 2	6.1	0.41	< 0.05	0.032	19	< 1	4	6.9	71	0.97	0.014	<0.1	0.31	<0.01	1.9
2013-12-03	MAX	7.76	570	280	27	1.1	< 2	5.5	0.54	< 0.05	0.039	20	14	6	10	80	<0.02	0.016	<0.1	0.27	<0.01	2.1
2014-05-20	MAX	7.85	580	280	25	0.82	< 2	5.6	0.15	< 0.05	< 0.02	23	< 1	8	8.9	80	0.29	0.012	<0.1	0.35	<0.01	2.32

Routine Groundwater Quality - General Analysis -Guelph WRIC & Waste Transfer Station

AECOM

Date	Lab	pH	Cond- uctivity	Alk mg/L	Mg mg/L	K mg/L	BOD mg/L	COD mg/L	TKN mg/L	NH3-N mg/L	Total-P mg/L	SO4 mg/L	Phenol ug/L	Cl mg/L	Na mg/L	Ca mg/L	Fe mg/L	B mg/L	P mg/L	Zn mg/L	NO2 mg/L	NO3 mg/L
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Monitor: 21A-08 Bedrock

2014-12-03	MAX	7.94	630	280	27	1	< 2	< 4	0.34	< 0.05	< 0.02	21	< 1	22	20	80	<0.02	0.017	<0.1	0.38	<0.01	1.88
2015-06-22	MAX	7.74	580	280	25	0.96	< 2	7.1	0.35	< 0.05	< 0.02	20	< 1	12	11	77	0.42	0.015	<0.1	0.34	<0.01	1.57
2015-12-07	MAX	7.86	620	280	28	1	< 2	< 4	0.25	< 0.05	< 0.02	24	< 1	16	16	81	0.11	<0.01	<0.1	0.35	<0.01	1.77
2016-06-22	MAX	8.02	550	280	25	0.84	< 2	< 4	<0.1	< 0.05	< 0.02	15	< 1	5	8.1	73	0.09	0.017	<0.1	0.32	<0.01	1.16
2016-12-05	MAX	7.84	640	290	25	0.96	< 2	9.1	<0.1	< 0.05	< 0.02	22	< 1	22	19	79	0.06	0.018	<0.1	0.35	<0.01	1.59
2017-06-06	MAX	8.11	550	280	24	0.79	< 2	8.4	0.26	< 0.05	< 0.02	14	< 1	4.3	7.6	74	0.09	0.011	<0.1	0.32	<0.01	1.21
2017-12-06	MAX	7.87	620	300	25	0.82	< 2	< 4	<0.1	< 0.05	< 0.02	18	< 1	11	10	75	0.27	0.015	<0.1	0.29	<0.01	1.03
2018-06-14	MAX	7.91	520	320	26	0.92	< 2	6.4	<0.1	< 0.05	< 0.02	13	< 1	8.2	11	80	0.14	0.014	<0.1	0.35	<0.01	0.96
2018-12-11	MAX	7.85	620	290	27	0.97	< 2	4.7	<0.1	< 0.05	0.021	19	< 1	16	16	77	0.05	0.016	<0.1	0.33	<0.01	0.98
2019-06-14	MAX	7.96	550	270	25	0.78	< 2	< 4	0.18	< 0.05	< 0.02	15	< 1	5.1	7	76	0.12	0.012	<0.1	0.32	<0.01	0.79
2019-12-02	MAX	7.79	590	280	26	0.96	< 2	< 4	0.13	< 0.05	< 0.02	18	< 1	12	13	74	0.09	0.013	<0.1	0.32	<0.01	0.68
2020-06-15	Burea	7.96	540	280	24	0.77	< 2	5.5	<0.1	< 0.05	0.022	13	< 1	4.5	7.2	73	0.11	0.015	<0.1	0.31	<0.01	0.6
2020-12-07	Burea	7.86	700	290	27	1.1	< 2	5.5	<0.1	< 0.05	< 0.02	18	< 1	40	16	82	0.07	0.014	<0.1	0.33	<0.01	0.88
2021-06-10	Burea	7.9	600	280	24	1.1	< 2	5.9	0.2	< 0.05	< 0.02	17	< 1	17	15	74	0.15	0.02	<0.1	0.36	<0.01	0.83
2021-12-15	Burea	7.87	660	310	28	1.1	< 2	8.2	<0.1	< 0.05	< 0.02	17	< 1	20	14	86	0.11	0.018		0.4	<0.01	0.58

Monitor: 22A-11 Bedrock

2011-12-19	MAX	7.88	769	212	35	1.6	< 2	< 4	0.9	< 0.05	0.14	89	< 1	56	16	110	1.3	0.015	0.16	0.015	<0.01	<0.1
2012-06-19	MAX	7.96	990	260	20	1.5	< 2	10	<0.1	0.1	< 0.02	25	< 1	130	78	94	0.19	0.024	<0.1	0.015	<0.01	4
2012-12-11	MAX	7.82	780	240	31	1.4	< 2	< 4	0.11	< 0.05	0.029	93	< 1	49	16	100	0.89	0.023	<0.1	<0.005	<0.01	<0.1
2013-06-17	MAX	8.22	780	230	31	1.3	< 2	< 4	0.26	0.062	0.055	88	< 1	49	16	88	1.2	0.02	<0.1	0.006	<0.01	<0.1
2013-12-04	MAX	7.86	770	240	33	2.3	< 2	7.1	0.35	0.14	0.11	85	< 1	55	17	93	1.2	0.025	0.18	0.01	0.023	0.12
2014-05-21	MAX	7.95	760	230	32	1.6	< 2	< 4	0.35	0.058	0.21	88	< 1	48	15	99	0.28	0.022	0.22	0.025	0.033	<0.1
2014-12-02	MAX	7.97	770	240	32	1.5	< 2	< 4	0.25	0.15	0.32	85	< 1	47	15	97	2.1	0.025	<0.1	<0.005	0.021	<0.1
2015-06-16	MAX	8.01	760	240	33	1.5	< 2	5.1	0.12	< 0.05	0.081	87	< 1	49	16	99	0.7	0.023	<0.1	<0.005	0.01	<0.1
2015-12-03	MAX	7.66	780	230	32	1.5	< 2	< 4	0.14	< 0.05	0.035	86	< 1	50	17	90	0.72	0.022	<0.1	0.0052	<0.01	<0.1
2016-06-21	MAX	8.12	770	230	32	1.4	2	7.2	0.14	< 0.05	0.06	86	< 1	48	17	92	0.72	0.021	<0.1	<0.005	0.014	<0.1
2016-12-06	MAX	8.01	790	240	32	1.5	6	< 4	0.11	0.06	0.061	78	< 1	56	18	93	0.72	0.022	<0.1	<0.005	<0.01	0.14
2017-06-07	MAX	8.18	780	240	32	1.5	< 2	4.7	0.19	0.071	0.033	86	< 1	63	18	93	0.51	0.021	<0.1	<0.005	0.013	<0.1
2017-12-06	MAX	7.98	810	260	31	1.6	4	6.3	0.86	0.72	0.11	78	2.8	61	17	93	0.44	0.019	0.14	<0.005	0.056	<0.1
2018-06-14	MAX	8.15	810	230	36	1.7	< 2	11	0.18	0.16	0.076	86	< 1	69	24	100	0.83	0.021	<0.1	<0.005	<0.01	0.18
2018-12-10	MAX	8.05	850	250	33	1.4	< 2	< 4	0.19	0.21	0.063	79	< 1	75	24	96	1.3	0.018	<0.1	<0.005	<0.01	<0.1
2019-06-18	MAX	8.08	840	240	33	1.5	< 2	< 4	0.35	0.1	0.2	85	< 1	77	26	100	1.3	0.023	<0.1	<0.005	<0.01	0.17
2019-12-04	MAX	7.96	800	250	31	1.4	< 2	< 4	0.16	0.14	0.042	81	< 1	73	23	94	0.89	0.02	<0.1	<0.005	<0.01	<0.1
2020-06-16	Burea	8	860	250	34	1.4	< 2	8.1	0.13	0.093	0.053	82	< 1	76	26	99	0.42	0.018	<0.1	<0.005	<0.01	0.12
2020-12-09	Burea	8	860	250	32	1.5	< 2	< 4	0.15	0.13	0.045	89	< 1	84	27	98	0.51	0.025	<0.1	<0.005	<0.01	0.14
2021-06-16	Burea	8.07	860	250	34	1.5	2	5	0.23	< 0.05	0.084	87	< 1	79	30	100	0.73	0.025	<0.1	<0.005	0.01	0.21
2021-12-17	Burea	7.91	870	240	33	1.5	3	< 4	<0.1	0.1	1.3	90	< 1	80	32	100	6.4	0.029	<0.1	<0.005	<0.01	0.11

Monitor: 22B-11 Outwash

2011-12-19	MAX	7.83	817	299	24	1.6	< 2	< 4	0.3	< 0.05	0.03	25	< 1	57	43	110	0.21	0.014	<0.1	0.021	<0.01	3.7
2012-06-19	MAX	7.97	770	230	32	1.3	< 2	9.8	0.43	< 0.05	0.04	83	< 1	46	13	96	1.4	0.019	<0.1	<0.005	<0.01	<0.1

Routine Groundwater Quality - General Analysis -Guelph WRIC & Waste Transfer Station

AECOM

Date	Lab	pH	Cond- uctivity	Alk mg/L	Mg mg/L	K mg/L	BOD mg/L	COD mg/L	TKN mg/L	NH3-N mg/L	Total-P mg/L	SO4 mg/L	Phenol ug/L	Cl mg/L	Na mg/L	Ca mg/L	Fe mg/L	B mg/L	P mg/L	Zn mg/L	NO2 mg/L	NO3 mg/L
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Monitor: 22B-11 Outwash

2012-12-11	MAX	7.82	870	340	22	1.5	< 2	< 4	0.46	< 0.05	< 0.02	26	< 1	59	48	110	0.28	0.024	<0.1	0.012	<0.01	3.5
2013-06-17	MAX	7.89	1100	240	22	1.7	< 2	< 4	0.69	< 0.05	< 0.02	28	< 1	150	93	100	0.23	0.028	<0.1	0.013	<0.01	3.9
2013-12-04	MAX	7.85	910	300	19	1.6	< 2	7.5	0.44	< 0.05	< 0.02	23	< 1	98	83	84	<0.02	0.025	<0.1	0.021	<0.01	3
2014-05-21	MAX	7.83	1100	270	22	1.8	< 2	21	0.5	< 0.05	< 0.02	28	< 1	140	84	100	<0.02	0.022	<0.1	0.017	0.014	4.13
2014-12-02	MAX	7.9	950	340	22	1.9	< 2	< 4	0.21	0.082	< 0.02	21	< 1	96	70	110	0.05	0.031	<0.1	0.015	0.02	2.94
2015-06-16	MAX	7.95	1200	280	26	2	< 2	< 4	0.66	< 0.05	< 0.02	20	< 1	170	93	120	0.05	0.026	<0.1	0.018	<0.01	3.93
2015-12-03	MAX	7.64	870	280	23	1.5	< 2	< 4	0.12	< 0.05	< 0.02	45	< 1	75	41	100	0.2	0.024	<0.1	0.014	<0.01	0.32
2016-06-21	MAX	8.05	1100	280	22	1.6	< 2	5.4	0.22	< 0.05	0.022	27	< 1	160	110	100	0.17	0.022	<0.1	0.016	<0.01	2.78
2016-12-06	MAX	7.81	1200	350	32	1.9	< 2	< 4	<0.1	< 0.05	< 0.02	30	< 1	140	50	140	0.18	0.026	<0.1	0.023	<0.01	1.8
2017-06-07	MAX	8.1	1000	270	20	1.5	< 2	6	0.19	< 0.05	0.024	33	< 1	130	95	89	0.45	0.021	<0.1	0.014	<0.01	2.35
2017-12-06	MAX	7.93	1300	320	27	2.1	< 2	< 4	0.12	< 0.05	< 0.02	66	< 1	170	110	110	0.2	0.024	<0.1	0.025	<0.01	0.64
2018-06-14	MAX	7.97	920	310	25	1.8	< 2	7.9	<0.1	< 0.05	< 0.02	43	< 1	100	85	100	0.08	0.019	<0.1	0.013	<0.01	0.61
2018-12-10	MAX	7.96	1200	300	27	1.9	< 2	5.9	<0.1	< 0.05	< 0.02	61	< 1	130	88	110	0.02	0.017	<0.1	0.02	<0.01	0.98
2019-06-18	MAX	8.01	640	280	18	1.1	< 2	< 4	0.14	0.054	< 0.02	12	< 1	33	25	89	0.04	0.013	<0.1	0.0098	<0.01	0.73
2019-12-04	MAX	7.87	1200	320	29	2	< 2	< 4	0.16	0.068	< 0.02	45	< 1	180	78	130	0.06	0.018	<0.1	0.015	<0.01	1.05
2020-06-16	Burea	7.87	1000	330	26	1.7	< 2	4.5	<0.1	< 0.05	< 0.02	33	< 1	110	63	120	0.12	0.012	<0.1	0.015	<0.01	1.33
2020-12-09	Burea	7.94	1200	320	24	2.1	< 2	4.1	<0.1	< 0.05	< 0.02	57	< 1	140	86	110	0.11	0.022	<0.1	0.018	<0.01	0.86
2021-06-16	Burea	7.93	1100	330	24	1.8	< 2	< 4	<0.1	< 0.05	< 0.02	56	< 1	120	77	110	0.03	0.021	<0.1	0.014	<0.01	0.77
2021-12-17	Burea	7.7	890	360	23	1.7	< 2	< 4	<0.1	< 0.05	< 0.02	33	< 1	59	55	110	0.12	0.021	<0.1	0.01	<0.01	0.34

Monitor: 23A-12 Bedrock

2012-07-05	MAX	7.8	700	230	28	0.95	< 2	4.8	<0.1	< 0.05	< 0.02	100	< 1	24	11	85	0.49	0.026	<0.1	<0.005	<0.01	<0.1
2012-12-17	MAX	7.71	720	250			< 2	< 4	0.29	< 0.05	< 0.02	95	< 1	30			0.13			<0.01	<0.1	
2012-12-18	MAX	7.68	720	250	34	1.3	< 2	< 4	0.3	0.063	0.035	93	< 1	30	15	97	0.13	0.014	<0.1	<0.005	<0.01	<0.1
2013-06-18	MAX	7.99	710	230	32	1.2	< 2	< 4	0.23	0.052	< 0.02	100	< 1	25	12	96	0.15	0.024	<0.1	<0.005	<0.01	<0.1
2013-12-05	MAX	7.86	720	240	34	1.3	< 2	9.4	0.28	< 0.05	< 0.02	90	< 1	30	14	96	0.12	0.024	<0.1	<0.005	<0.01	<0.1
2014-05-22	MAX	7.91	710	240	31	1.2	< 2	< 4	0.39	< 0.05	< 0.02	92		31	14	93	0.13	0.024	<0.1	0.012	<0.01	<0.1
2014-12-04	MAX	7.9	700	230	33	1.3	< 2	< 4	<0.1	0.066	< 0.02	96	< 1	24	12	95	0.14	0.024	<0.1	<0.005	<0.01	<0.1
2015-06-17	MAX	7.89	700	230	30	1.2	< 2	< 4	0.1	< 0.05	< 0.02	110	< 1	25	12	84	0.17	0.02	<0.1	<0.005	<0.01	<0.1
2015-12-04	MAX	7.95	710	230	32	1.2	< 2	< 4	<0.1	< 0.05	< 0.02	100	< 1	24	12	90	0.14	0.019	<0.1	<0.005	<0.01	<0.1
2016-06-20	MAX	8.21	710	240	31	1.2	< 2	< 4	0.11	< 0.05	< 0.02	93	< 1	26	13	90	0.36	0.024	<0.1	<0.005	<0.01	<0.1
2016-11-28	MAX	7.94	680	230	30	1.2	< 2	< 4	0.12	< 0.05	< 0.02	100	< 1	24	11	87	0.24	0.017	<0.1	<0.005	<0.01	<0.1
2017-06-06	MAX	8.13	710	250	30	1.2	< 2	5.6	0.12	< 0.05	< 0.02	90	< 1	31	13	85	0.18	0.024	<0.1	<0.005	<0.01	<0.1
2017-12-12	MAX	7.84	720	240	30	1.2	< 2	< 4	0.1	< 0.05	0.021	100	< 1	25	12	86	1.3	0.026	<0.1	<0.005	<0.01	<0.1
2018-06-18	MAX	7.87	730	250	32	1.3	< 2	6	<0.1	< 0.05	< 0.02	85	< 1	30	14	88	0.17	0.02	<0.1	<0.005	<0.01	<0.1
2018-12-10	MAX	7.95	720	240	30	1.1	< 2	7.3	<0.1	< 0.05	< 0.02	99	< 1	26	12	89	0.18	0.017	<0.1	<0.005	<0.01	<0.1
2019-06-25	MAX	8.11	680	240	31	1.1	< 2	4.5	0.12	< 0.05	< 0.02	90	< 1	30	13	87	0.26	0.023	<0.1	<0.005	<0.01	<0.1
2019-12-05	MAX	7.93	700	240	30	1.2	< 2	< 4	<0.1	0.061	< 0.02	98	< 1	26	12	91	0.26	0.023	<0.1	<0.005	<0.01	<0.1
2020-06-17	Burea	7.95	720	250	31	1.2	< 2	4.2	<0.1	0.063	< 0.02	95	< 1	30	13	89	0.33	0.019	<0.1	<0.005	<0.01	<0.1
2020-12-10	Burea	8.01	700	240	31	1.2	< 2	4.8	<0.1	< 0.05	0.021	110	< 1	27	12	92	1.1	0.024	<0.1	<0.005	<0.01	<0.1
2021-06-15	Burea	7.91	720	250	29	1.2	< 2	8.3	<0.1	< 0.05	< 0.02	84	< 1	33	14	82	0.56	0.024	<0.1	<0.005	<0.01	0.11

Routine Groundwater Quality - General Analysis -Guelph WRIC & Waste Transfer Station

AECOM

Date	Lab	pH	Cond- uctivity	Alk mg/L	Mg mg/L	K mg/L	BOD mg/L	COD mg/L	TKN mg/L	NH3-N mg/L	Total-P mg/L	SO4 mg/L	Phenol ug/L	Cl mg/L	Na mg/L	Ca mg/L	Fe mg/L	B mg/L	P mg/L	Zn mg/L	NO2 mg/L	NO3 mg/L
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Monitor: 23A-12 Bedrock

2021-12-13	Burea	7.95	690	240	29	1.2	< 2	< 4	<0.1	0.1	< 0.02	90	< 1	28	13	89	0.38	0.022	<0.1	<0.005	<0.01	<0.1
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Monitor: 23B-12 Outwash

2012-07-05	MAX	7.83	1200	320	35	4.6	< 2	74	<1	0.075	5.6	35	< 1	150	79	96	120	0.094	<0.1	0.039	0.054	3.7
2012-07-19	MAX	7.75	1400	330	40	5	< 2	12	0.75	0.088	0.6	29	< 1	190	120	120	27	0.061	<0.1	0.18	0.011	3.5
2012-12-18	MAX	7.65	1300	380	35	4.2	< 2	23	<0.5	0.074	1.2	36	< 1	140	120	130	26	0.59	<0.1	0.22	<0.01	4.8
2013-06-18	MAX	7.91	1100	320	29	3	< 2	< 4	0.4	< 0.05	0.23	26	< 1	150	83	120	9.9	0.49	<0.1	0.16	<0.01	3.3
2013-12-05	MAX	7.71	1100	400	33	3.4	< 2	12	1.7	< 0.05	0.41	28	< 1	110	98	130	0.03	0.39	<0.1	0.2	<0.01	3.4
2014-05-22	MAX	7.72	1200	360	78	2.6	< 2	< 4	0.55	< 0.05	0.24	34	< 1	140	84	240	<0.02	0.71	0.23	0.88	<0.01	3.31
2014-12-04	MAX	7.82	1400	380	150	5.4	< 2	5	<0.5	< 0.05	0.48	33	< 1	180	140	380	<0.02	0.19	0.52	1.6	0.02	4.59
2015-06-17	MAX	7.74	1400	320	31	2.7	< 2	4.3	0.75	< 0.05	0.33	29	< 1	210	120	110	15	0.46	<0.1	0.25	<0.01	4.68
2015-12-04	MAX	7.74	1700	360	34	3.6	< 2	17	0.96	< 0.05	0.51	34	< 1	270	200	130	19	0.12	<0.1	0.35	0.02	4.17
2016-06-20	MAX	8.05	1300	340	30	2.7	< 2	< 4	0.77	< 0.05	0.28	31	< 1	170	120	120	15	0.39	<0.1	0.26	<0.01	3.42
2016-11-28	MAX	7.79	1400	330	31	2.9	< 2	< 4	0.17	< 0.05	0.35	37	< 1	220	140	120	16	0.038	<0.1	0.37	<0.01	3.64
2017-06-06	MAX	8.03	1300	380	29	1.9	< 2	6.6	0.6	< 0.05	0.29	30	< 1	150	95	120	12	0.36	<0.1	0.19	<0.01	3.22
2017-12-12	MAX	7.73	1500	380	29	2.6	< 2	6.5	<0.5	< 0.05	1.4	38	< 1	210	140	120	15	0.074	<0.1	0.31	<0.01	3.52
2018-06-18	MAX	7.79	1500	360	31	2.2	< 2	6	<0.1	< 0.05	0.23	33	< 1	220	140	120	7.6	0.35	<0.1	0.24	<0.01	3.14
2018-12-10	MAX	7.78	1500	350	30	2.5	< 2	6.6	0.57	< 0.05	0.15	39	< 1	230	150	120	8.3	0.14	<0.1	0.28	<0.01	4.6
2019-06-25	MAX	7.96	1200	340	26	1.8	< 2	4.1	0.46	< 0.05	0.086	29	< 1	180	120	110	4.5	0.33	<0.1	0.19	<0.01	2.74
2019-12-05	MAX	7.83	1200	360	28	2.2	< 2	< 4	0.69	0.075	0.16	36	< 1	150	120	120	7	0.15	<0.1	0.25	<0.01	4.01
2020-06-17	Burea	7.86	1300	360	29	1.9	< 2	6	<0.1	< 0.05	0.26	35	< 1	170	120	110	8.9	0.13	<0.1	0.24	<0.01	3.6
2020-12-10	Burea	7.89	1400	370	29	2.2	< 2	< 4	0.15	< 0.05	0.31	38	< 1	180	130	120	11	0.069	<0.1	0.33	<0.01	3.82
2021-06-15	Burea	7.77	1200	330	28	2.2	< 2	5.8	<0.2	< 0.05	0.13	32	< 1	170	100	100	6.3	0.15	<0.1	0.24	<0.01	3.63
2021-12-13	Burea	7.81	1200	360	28	2.4	< 2	6.9	0.12	< 0.05	0.11	29	< 1	140	110	110	6.2	0.09	<0.1	0.25	<0.01	3.47

ORGANIC ANALYSIS (ATG MISA Groups 19 - 20) - Guelph WRIC/Waste Transfer Station - 2021

AECOM

Parameter	5-96 14-Jun-21	6a-96 11-Jun-21	6b-96 11-Jun-21	7-96 09-Jun-21
<u>MISA Group 19</u>				
Acenaphthene:	< 0.2	< 0.2	< 0.2	< 0.2
5-Nitroacenaphthene:	< 1	< 1	< 1	< 1
Acenaphthylene:	< 0.2	< 0.2	< 0.2	< 0.2
Anthracene:	< 0.2	< 0.2	< 0.2	< 0.2
Benzo(a)anthracene:	< 0.2	< 0.2	< 0.2	< 0.2
Benzo(a)Pyrene:	< 0.2	< 0.2	< 0.2	< 0.2
Benzo(b)Fluoranthene:	< 0.2	< 0.2	< 0.2	< 0.2
Benzo(g,h,i)perylene:	< 0.2	< 0.2	< 0.2	< 0.2
Benzo(k)Fluoranthene:	< 0.2	< 0.2	< 0.2	< 0.2
Biphenyl:	< 0.5	< 0.5	< 0.5	< 0.5
Camphene:	< 1	< 1	< 1	< 1
1-Chloronaphthalene:	< 1	< 1	< 1	< 1
2-Chloronaphthalene:	< 0.5	< 0.5	< 0.5	< 0.5
Chrysene:	< 0.2	< 0.2	< 0.2	< 0.2
Dibenzo(a,h)Anthracene:	< 0.2	< 0.2	< 0.2	< 0.2
Fluoranthene:	< 0.2	< 0.2	< 0.2	< 0.2
Fluorene:	< 0.2	< 0.2	< 0.2	< 0.2
Indeno(1,2,3-cd)Pyrene:	< 0.2	< 0.2	< 0.2	< 0.2
Indole:	< 1	< 1	< 1	< 1
1-Methylnaphthalene:	< 0.2	< 0.2	< 0.2	< 0.2
2-Methylnaphthalene:	< 0.2	< 0.2	< 0.2	< 0.2
Naphthalene:	< 0.2	< 0.2	< 0.2	< 0.2
Perylene:	< 0.2	< 0.2	< 0.2	< 0.2
Phenanthrene:	< 0.2	< 0.2	< 0.2	< 0.2
Pyrene:	< 0.2	< 0.2	< 0.2	< 0.2
Benzyl Butyl Phthalate:	< 0.5	< 0.5	< 0.5	< 0.5
bis(2-ethylhexyl)Phthalate:	< 2	< 2	< 2	< 2
Di-N-butylPhthalate:	< 2	< 2	< 2	< 2
Di-N-octylPhthalate:	< 0.8	< 0.8	< 0.8	< 0.8
4-Bromophenyl phenyl EtHe	< 0.3	< 0.3	< 0.3	< 0.3
4-Chlorophenyl Phenyl EtHe	< 0.5	< 0.5	< 0.5	< 0.5
bis(2-chloroisopropyl)Ether:	< 0.5	< 0.5	< 0.5	< 0.5
bis(2-Chloroethyl)Ether:	< 0.5	< 0.5	< 0.5	< 0.5
Diphenyl ether:	< 0.3	< 0.3	< 0.3	< 0.3
2,4-Dinitrotoluene:	< 0.5	< 0.5	< 0.5	< 0.5
2,6-Dinitrotoluene:	< 0.5	< 0.5	< 0.5	< 0.5
bis(2-chloroethoxy)Methan	< 0.5	< 0.5	< 0.5	< 0.5
Nitrosodiphenylamine /Diphenylamine:	< 1	< 1	< 1	< 1
N-Nitrosodi-N-propylamine:	< 0.5	< 0.5	< 0.5	< 0.5
<u>MISA Group 20</u>				
2,3,4,5-Tetrachlorophenol:	< 0.4	< 0.4	< 0.4	< 0.4
2,3,4,6-Tetrachlorophenol:	< 0.5	< 0.5	< 0.5	< 0.5
2,3,5,6-Tetrachlorophenol:	< 0.5	< 0.5	< 0.5	< 0.5
2,3,4-Trichlorophenol:	< 0.5	< 0.5	< 0.5	< 0.5
2,3,5-Trichlorophenol:	< 0.5	< 0.5	< 0.5	< 0.5
2,4,5-Trichlorophenol:	< 0.5	< 0.5	< 0.5	< 0.5
2,4,6-Trichlorophenol:	< 0.5	< 0.5	< 0.5	< 0.5
2,4-Dinitrophenol:	< 2	< 2	< 2	< 2
2,4-Dimethylphenol:	< 0.5	< 0.5	< 0.5	< 0.5
2,4-Dichlorophenol:	< 0.3	< 0.3	< 0.3	< 0.3
2,6-Dichlorophenol:	< 0.5	< 0.5	< 0.5	< 0.5
4,6-Dinitro-o-Cresol:				
2-Chlorophenol:	< 0.3	< 0.3	< 0.3	< 0.3
4-Chloro-3-methylphenol:	< 0.5	< 0.5	< 0.5	< 0.5
4-Nitrophenol:	< 1.4	< 1.4	< 1.4	< 1.4
o-Cresol:	< 0.5	< 0.5	< 0.5	< 0.5
m-,p-Cresol:	< 0.5	< 0.5	< 0.5	< 0.5
Pentachlorophenol:	< 1	< 1	< 1	< 1
Phenol:	< 0.5	< 0.5	< 0.5	< 0.5

ORGANIC ANALYSIS (ATG MISA Groups 19 - 20) - Guelph WRIC/Waste Transfer Station - 2021

AECOM

Parameter	8-96 14-Jun-21	9-96 09-Jun-21	10-00 09-Jun-21	10-00 23-Jun-21
<u>MISA Group 19</u>				
Acenaphthene:	< 0.2	< 0.2		< 0.2
5-Nitroacenaphthene:	< 1	< 1		< 1
Acenaphthylene:	< 0.2	< 0.2		< 0.2
Anthracene:	< 0.2	< 0.2		< 0.2
Benzo(a)anthracene:	< 0.2	< 0.2		< 0.2
Benzo(a)Pyrene:	< 0.2	< 0.2		< 0.2
Benzo(b)Fluoranthene:	< 0.2	< 0.2		< 0.2
Benzo(g,h,i)perylene:	< 0.2	< 0.2		< 0.2
Benzo(k)Fluoranthene:	< 0.2	< 0.2		< 0.2
Biphenyl:	< 0.5	< 0.5		< 0.5
Camphene:	< 1	< 1		< 1
1-Chloronaphthalene:	< 1	< 1		< 1
2-Chloronaphthalene:	< 0.5	< 0.5		< 0.5
Chrysene:	< 0.2	< 0.2		< 0.2
Dibenzo(a,h)Anthracene:	< 0.2	< 0.2		< 0.2
Fluoranthene:	< 0.2	< 0.2		< 0.2
Fluorene:	< 0.2	< 0.2		< 0.2
Indeno(1,2,3-cd)Pyrene:	< 0.2	< 0.2		< 0.2
Indole:	< 1	< 1		< 1
1-Methylnaphthalene:	< 0.2	< 0.2		< 0.2
2-Methylnaphthalene:	< 0.2	< 0.2		< 0.2
Naphthalene:	< 0.2	< 0.2		< 0.2
Perylene:	< 0.2	< 0.2		< 0.2
Phenanthrene:	< 0.2	< 0.2		< 0.2
Pyrene:	< 0.2	< 0.2		< 0.2
Benzyl Butyl Phthalate:	< 0.5	< 0.5		< 0.5
bis(2-ethylhexyl)Phthalate:	< 2	< 2		< 2
Di-N-butylPhthalate:	< 2	< 2		< 2
Di-N-octylPhthalate:	< 0.8	< 0.8		< 0.8
4-Bromophenyl phenyl EtHe	< 0.3	< 0.3		< 0.3
4-Chlorophenyl Phenyl EtHe	< 0.5	< 0.5		< 0.5
bis(2-chloroisopropyl)Ether:	< 0.5	< 0.5		< 0.5
bis(2-Chloroethyl)Ether:	< 0.5	< 0.5		< 0.5
Diphenyl ether:	< 0.3	< 0.3		< 0.3
2,4-Dinitrotoluene:	< 0.5	< 0.5		< 0.5
2,6-Dinitrotoluene:	< 0.5	< 0.5		< 0.5
bis(2-chloroethoxy)Methan	< 0.5	< 0.5		< 0.5
Nitrosodiphenylamine /Diphenylamine:	< 1	< 1		< 1
N-Nitrosodi-N-propylamine:	< 0.5	< 0.5		< 0.5
<u>MISA Group 20</u>				
2,3,4,5-Tetrachlorophenol:	< 0.4	< 0.4		< 0.4
2,3,4,6-Tetrachlorophenol:	< 0.5	< 0.5		< 0.5
2,3,5,6-Tetrachlorophenol:	< 0.5	< 0.5		< 0.5
2,3,4-Trichlorophenol:	< 0.5	< 0.5		< 0.5
2,3,5-Trichlorophenol:	< 0.5	< 0.5		< 0.5
2,4,5-Trichlorophenol:	< 0.5	< 0.5		< 0.5
2,4,6-Trichlorophenol:	< 0.5	< 0.5		< 0.5
2,4-Dinitrophenol:	< 2	< 2		< 2
2,4-Dimethylphenol:	< 0.5	< 0.5		< 0.5
2,4-Dichlorophenol:	< 0.3	< 0.3		< 0.3
2,6-Dichlorophenol:	< 0.5	< 0.5		< 0.5
4,6-Dinitro-o-Cresol:				
2-Chlorophenol:	< 0.3	< 0.3		< 0.3
4-Chloro-3-methylphenol:	< 0.5	< 0.5		< 0.5
4-Nitrophenol:	< 1.4	< 1.4		< 1.4
o-Cresol:	< 0.5	< 0.5		< 0.5
m-,p-Cresol:	< 0.5	< 0.5		< 0.5
Pentachlorophenol:	< 1	< 1		< 1
Phenol:	< 0.5	< 0.5		< 0.5

ORGANIC ANALYSIS (ATG MISA Groups 19 - 20) - Guelph WRIC/Waste Transfer Station - 2021

AECOM

Parameter	11a-00 14-Jun-21	11b-00 14-Jun-21	21-13A 17-Jun-21	21-13B 17-Jun-21
<u>MISA Group 19</u>				
Acenaphthene:	< 0.2	< 0.2	< 0.2	< 0.2
5-Nitroacenaphthene:	< 1	< 1	< 1	< 1
Acenaphthylene:	< 0.2	< 0.2	< 0.2	< 0.2
Anthracene:	< 0.2	< 0.2	< 0.2	< 0.2
Benzo(a)anthracene:	< 0.2	< 0.2	< 0.2	< 0.2
Benzo(a)Pyrene:	< 0.2	< 0.2	< 0.2	< 0.2
Benzo(b)Fluoranthene:	< 0.2	< 0.2	< 0.2	< 0.2
Benzo(g,h,i)perylene:	< 0.2	< 0.2	< 0.2	< 0.2
Benzo(k)Fluoranthene:	< 0.2	< 0.2	< 0.2	< 0.2
Biphenyl:	< 0.5	< 0.5	< 0.5	< 0.5
Camphene:	< 1	< 1	< 1	< 1
1-Chloronaphthalene:	< 1	< 1	< 1	< 1
2-Chloronaphthalene:	< 0.5	< 0.5	< 0.5	< 0.5
Chrysene:	< 0.2	< 0.2	< 0.2	< 0.2
Dibenzo(a,h)Anthracene:	< 0.2	< 0.2	< 0.2	< 0.2
Fluoranthene:	< 0.2	< 0.2	< 0.2	< 0.2
Fluorene:	< 0.2	< 0.2	< 0.2	< 0.2
Indeno(1,2,3-cd)Pyrene:	< 0.2	< 0.2	< 0.2	< 0.2
Indole:	< 1	< 1	< 1	< 1
1-Methylnaphthalene:	< 0.2	< 0.2	< 0.2	< 0.2
2-Methylnaphthalene:	< 0.2	< 0.2	0.28	0.24
Naphthalene:	< 0.2	< 0.2	< 0.2	< 0.2
Perylene:	< 0.2	< 0.2	< 0.2	< 0.2
Phenanthrene:	< 0.2	< 0.2	< 0.2	< 0.2
Pyrene:	< 0.2	< 0.2	< 0.2	< 0.2
Benzyl Butyl Phthalate:	< 0.5	< 0.5	< 0.5	< 0.5
bis(2-ethylhexyl)Phthalate:	< 2	< 2	< 2	< 2
Di-N-butylPhthalate:	< 2	< 2	< 2	< 2
Di-N-octylPhthalate:	< 0.8	< 0.8	< 0.8	< 0.8
4-Bromophenyl phenyl EtHe	< 0.3	< 0.3	< 0.3	< 0.3
4-Chlorophenyl Phenyl EtHe	< 0.5	< 0.5	< 0.5	< 0.5
bis(2-chloroisopropyl)Ether:	< 0.5	< 0.5	< 0.5	< 0.5
bis(2-Chloroethyl)Ether:	< 0.5	< 0.5	< 0.5	< 0.5
Diphenyl ether:	< 0.3	< 0.3	< 0.3	< 0.3
2,4-Dinitrotoluene:	< 0.5	< 0.5	< 0.5	< 0.5
2,6-Dinitrotoluene:	< 0.5	< 0.5	< 0.5	< 0.5
bis(2-chloroethoxy)Methan	< 0.5	< 0.5	< 0.5	< 0.5
Nitrosodiphenylamine /Diphenylamine:	< 1	< 1	< 1	< 1
N-Nitrosodi-N-propylamine:	< 0.5	< 0.5	< 0.5	< 0.5
<u>MISA Group 20</u>				
2,3,4,5-Tetrachlorophenol:	< 0.4	< 0.4	< 0.4	< 0.4
2,3,4,6-Tetrachlorophenol:	< 0.5	< 0.5	< 0.5	< 0.5
2,3,5,6-Tetrachlorophenol:	< 0.5	< 0.5	< 0.5	< 0.5
2,3,4-Trichlorophenol:	< 0.5	< 0.5	< 0.5	< 0.5
2,3,5-Trichlorophenol:	< 0.5	< 0.5	< 0.5	< 0.5
2,4,5-Trichlorophenol:	< 0.5	< 0.5	< 0.5	< 0.5
2,4,6-Trichlorophenol:	< 0.5	< 0.5	< 0.5	< 0.5
2,4-Dinitrophenol:	< 2	< 2	< 2	< 2
2,4-Dimethylphenol:	< 0.5	< 0.5	< 0.5	< 0.5
2,4-Dichlorophenol:	< 0.3	< 0.3	< 0.3	< 0.3
2,6-Dichlorophenol:	< 0.5	< 0.5	< 0.5	< 0.5
4,6-Dinitro-o-Cresol:				
2-Chlorophenol:	< 0.3	< 0.3	< 0.3	< 0.3
4-Chloro-3-methylphenol:	< 0.5	< 0.5	< 0.5	< 0.5
4-Nitrophenol:	< 1.4	< 1.4	< 1.4	< 1.4
o-Cresol:	< 0.5	< 0.5	< 0.5	< 0.5
m-,p-Cresol:	< 0.5	< 0.5	< 0.5	< 0.5
Pentachlorophenol:	< 1	< 1	< 1	< 1
Phenol:	< 0.5	< 0.5	< 0.5	< 0.5

ORGANIC ANALYSIS (ATG MISA Groups 19 - 20) - Guelph WRIC/Waste Transfer Station - 2021

AECOM

Parameter	13a-01 16-Jun-21	13b-01 16-Jun-21	14a-01 17-Jun-21	14b-01 17-Jun-21
<u>MISA Group 19</u>				
Acenaphthene:	< 0.2	< 0.2	< 0.2	< 0.2
5-Nitroacenaphthene:	< 1	< 1	< 1	< 1
Acenaphthylene:	< 0.2	< 0.2	< 0.2	< 0.2
Anthracene:	< 0.2	< 0.2	< 0.2	< 0.2
Benzo(a)anthracene:	< 0.2	< 0.2	< 0.2	< 0.2
Benzo(a)Pyrene:	< 0.2	< 0.2	< 0.2	< 0.2
Benzo(b)Fluoranthene:	< 0.2	< 0.2	< 0.2	< 0.2
Benzo(g,h,i)perylene:	< 0.2	< 0.2	< 0.2	< 0.2
Benzo(k)Fluoranthene:	< 0.2	< 0.2	< 0.2	< 0.2
Biphenyl:	< 0.5	< 0.5	< 0.5	< 0.5
Camphene:	< 1	< 1	< 1	< 1
1-Chloronaphthalene:	< 1	< 1	< 1	< 1
2-Chloronaphthalene:	< 0.5	< 0.5	< 0.5	< 0.5
Chrysene:	< 0.2	< 0.2	< 0.2	< 0.2
Dibenzo(a,h)Anthracene:	< 0.2	< 0.2	< 0.2	< 0.2
Fluoranthene:	< 0.2	< 0.2	< 0.2	< 0.2
Fluorene:	< 0.2	< 0.2	< 0.2	< 0.2
Indeno(1,2,3-cd)Pyrene:	< 0.2	< 0.2	< 0.2	< 0.2
Indole:	< 1	< 1	< 1	< 1
1-Methylnaphthalene:	< 0.2	< 0.2	< 0.2	< 0.2
2-Methylnaphthalene:	< 0.2	< 0.2	0.21	< 0.2
Naphthalene:	< 0.2	< 0.2	< 0.2	< 0.2
Perylene:	< 0.2	< 0.2	< 0.2	< 0.2
Phenanthrene:	< 0.2	< 0.2	< 0.2	< 0.2
Pyrene:	< 0.2	< 0.2	< 0.2	< 0.2
Benzyl Butyl Phthalate:	< 0.5	< 0.5	< 0.5	< 0.5
bis(2-ethylhexyl)Phthalate:	< 2	< 2	< 2	5.7
Di-N-butylPhthalate:	< 2	< 2	< 2	< 2
Di-N-octylPhthalate:	< 0.8	< 0.8	< 0.8	< 0.8
4-Bromophenyl phenyl EtHe	< 0.3	< 0.3	< 0.3	< 0.3
4-Chlorophenyl Phenyl EtHe	< 0.5	< 0.5	< 0.5	< 0.5
bis(2-chloroisopropyl)Ether:	< 0.5	< 0.5	< 0.5	< 0.5
bis(2-Chloroethyl)Ether:	< 0.5	< 0.5	< 0.5	< 0.5
Diphenyl ether:	< 0.3	< 0.3	< 0.3	< 0.3
2,4-Dinitrotoluene:	< 0.5	< 0.5	< 0.5	< 0.5
2,6-Dinitrotoluene:	< 0.5	< 0.5	< 0.5	< 0.5
bis(2-chloroethoxy)Methan	< 0.5	< 0.5	< 0.5	< 0.5
Nitrosodiphenylamine /Diphenylamine:	< 1	< 1	< 1	< 1
N-Nitrosodi-N-propylamine:	< 0.5	< 0.5	< 0.5	< 0.5
<u>MISA Group 20</u>				
2,3,4,5-Tetrachlorophenol:	< 0.4	< 0.4	< 0.4	< 0.4
2,3,4,6-Tetrachlorophenol:	< 0.5	< 0.5	< 0.5	< 0.5
2,3,5,6-Tetrachlorophenol:	< 0.5	< 0.5	< 0.5	< 0.5
2,3,4-Trichlorophenol:	< 0.5	< 0.5	< 0.5	< 0.5
2,3,5-Trichlorophenol:	< 0.5	< 0.5	< 0.5	< 0.5
2,4,5-Trichlorophenol:	< 0.5	< 0.5	< 0.5	< 0.5
2,4,6-Trichlorophenol:	< 0.5	< 0.5	< 0.5	< 0.5
2,4-Dinitrophenol:	< 2	< 2	< 2	< 2
2,4-Dimethylphenol:	< 0.5	< 0.5	< 0.5	< 0.5
2,4-Dichlorophenol:	< 0.3	< 0.3	< 0.3	< 0.3
2,6-Dichlorophenol:	< 0.5	< 0.5	< 0.5	< 0.5
4,6-Dinitro-o-Cresol:				
2-Chlorophenol:	< 0.3	< 0.3	< 0.3	< 0.3
4-Chloro-3-methylphenol:	< 0.5	< 0.5	< 0.5	< 0.5
4-Nitrophenol:	< 1.4	< 1.4	< 1.4	< 1.4
o-Cresol:	< 0.5	< 0.5	< 0.5	< 0.5
m-,p-Cresol:	< 0.5	< 0.5	< 0.5	< 0.5
Pentachlorophenol:	< 1	< 1	< 1	< 1
Phenol:	< 0.5	< 0.5	< 0.5	< 0.5

ORGANIC ANALYSIS (ATG MISA Groups 19 - 20) - Guelph WRIC/Waste Transfer Station - 2021

AECOM

Parameter	15a-01 10-Jun-21	15b-01 10-Jun-21	16A-08 16-Jun-21	16B-08 16-Jun-21
<u>MISA Group 19</u>				
Acenaphthene:	< 0.2	< 0.2	< 0.2	< 0.2
5-Nitroacenaphthene:	< 1	< 1	< 1	< 1
Acenaphthylene:	< 0.2	< 0.2	< 0.2	< 0.2
Anthracene:	< 0.2	< 0.2	< 0.2	< 0.2
Benzo(a)anthracene:	< 0.2	< 0.2	< 0.2	< 0.2
Benzo(a)Pyrene:	< 0.2	< 0.2	< 0.2	< 0.2
Benzo(b)Fluoranthene:	< 0.2	< 0.2	< 0.2	< 0.2
Benzo(g,h,i)perylene:	< 0.2	< 0.2	< 0.2	< 0.2
Benzo(k)Fluoranthene:	< 0.2	< 0.2	< 0.2	< 0.2
Biphenyl:	< 0.5	< 0.5	< 0.5	< 0.5
Camphene:	< 1	< 1	< 1	< 1
1-Chloronaphthalene:	< 1	< 1	< 1	< 1
2-Chloronaphthalene:	< 0.5	< 0.5	< 0.5	< 0.5
Chrysene:	< 0.2	< 0.2	< 0.2	< 0.2
Dibenzo(a,h)Anthracene:	< 0.2	< 0.2	< 0.2	< 0.2
Fluoranthene:	< 0.2	< 0.2	< 0.2	< 0.2
Fluorene:	< 0.2	< 0.2	< 0.2	< 0.2
Indeno(1,2,3-cd)Pyrene:	< 0.2	< 0.2	< 0.2	< 0.2
Indole:	< 1	< 1	< 1	< 1
1-Methylnaphthalene:	< 0.2	< 0.2	< 0.2	< 0.2
2-Methylnaphthalene:	< 0.2	< 0.2	0.21	< 0.2
Naphthalene:	< 0.2	< 0.2	< 0.2	< 0.2
Perylene:	< 0.2	< 0.2	< 0.2	< 0.2
Phenanthrene:	< 0.2	< 0.2	< 0.2	< 0.2
Pyrene:	< 0.2	< 0.2	< 0.2	< 0.2
Benzyl Butyl Phthalate:	< 0.5	< 0.5	< 0.5	< 0.5
bis(2-ethylhexyl)Phthalate:	< 2	< 2	< 2	< 2
Di-N-butylPhthalate:	< 2	< 2	< 2	< 2
Di-N-octylPhthalate:	< 0.8	< 0.8	< 0.8	< 0.8
4-Bromophenyl phenyl EtHe	< 0.3	< 0.3	< 0.3	< 0.3
4-Chlorophenyl Phenyl EtHe	< 0.5	< 0.5	< 0.5	< 0.5
bis(2-chloroisopropyl)Ether:	< 0.5	< 0.5	< 0.5	< 0.5
bis(2-Chloroethyl)Ether:	< 0.5	< 0.5	< 0.5	< 0.5
Diphenyl ether:	< 0.3	< 0.3	< 0.3	< 0.3
2,4-Dinitrotoluene:	< 0.5	< 0.5	< 0.5	< 0.5
2,6-Dinitrotoluene:	< 0.5	< 0.5	< 0.5	< 0.5
bis(2-chloroethoxy)Methan	< 0.5	< 0.5	< 0.5	< 0.5
Nitrosodiphenylamine /Diphenylamine:	< 1	< 1	< 1	< 1
N-Nitrosodi-N-propylamine:	< 0.5	< 0.5	< 0.5	< 0.5
<u>MISA Group 20</u>				
2,3,4,5-Tetrachlorophenol:	< 0.4	< 0.4	< 0.4	< 0.4
2,3,4,6-Tetrachlorophenol:	< 0.5	< 0.5	< 0.5	< 0.5
2,3,5,6-Tetrachlorophenol:	< 0.5	< 0.5	< 0.5	< 0.5
2,3,4-Trichlorophenol:	< 0.5	< 0.5	< 0.5	< 0.5
2,3,5-Trichlorophenol:	< 0.5	< 0.5	< 0.5	< 0.5
2,4,5-Trichlorophenol:	< 0.5	< 0.5	< 0.5	< 0.5
2,4,6-Trichlorophenol:	< 0.5	< 0.5	< 0.5	< 0.5
2,4-Dinitrophenol:	< 2	< 2	< 2	< 2
2,4-Dimethylphenol:	< 0.5	< 0.5	< 0.5	< 0.5
2,4-Dichlorophenol:	< 0.3	< 0.3	< 0.3	< 0.3
2,6-Dichlorophenol:	< 0.5	< 0.5	< 0.5	< 0.5
4,6-Dinitro-o-Cresol:				
2-Chlorophenol:	< 0.3	< 0.3	< 0.3	< 0.3
4-Chloro-3-methylphenol:	< 0.5	< 0.5	< 0.5	< 0.5
4-Nitrophenol:	< 1.4	< 1.4	< 1.4	< 1.4
o-Cresol:	< 0.5	< 0.5	< 0.5	< 0.5
m-,p-Cresol:	< 0.5	< 0.5	< 0.5	< 0.5
Pentachlorophenol:	< 1	< 1	< 1	< 1
Phenol:	< 0.5	< 0.5	< 0.5	< 0.5

ORGANIC ANALYSIS (ATG MISA Groups 19 - 20) - Guelph WRIC/Waste Transfer Station - 2021

AECOM

Parameter	17A-08 16-Jun-21	17B-08 16-Jun-21	18A-14 10-Jun-21	18B-14 10-Jun-21
<u>MISA Group 19</u>				
Acenaphthene:	< 0.2	< 0.2	< 0.2	< 0.2
5-Nitroacenaphthene:	< 1	< 1	< 1	< 1
Acenaphthylene:	< 0.2	< 0.2	< 0.2	< 0.2
Anthracene:	< 0.2	< 0.2	< 0.2	< 0.2
Benzo(a)anthracene:	< 0.2	< 0.2	< 0.2	< 0.2
Benzo(a)Pyrene:	< 0.2	< 0.2	< 0.2	< 0.2
Benzo(b)Fluoranthene:	< 0.2	< 0.2	< 0.2	< 0.2
Benzo(g,h,i)perylene:	< 0.2	< 0.2	< 0.2	< 0.2
Benzo(k)Fluoranthene:	< 0.2	< 0.2	< 0.2	< 0.2
Biphenyl:	< 0.5	< 0.5	< 0.5	< 0.5
Camphene:	< 1	< 1	< 1	< 1
1-Chloronaphthalene:	< 1	< 1	< 1	< 1
2-Chloronaphthalene:	< 0.5	< 0.5	< 0.5	< 0.5
Chrysene:	< 0.2	< 0.2	< 0.2	< 0.2
Dibenzo(a,h)Anthracene:	< 0.2	< 0.2	< 0.2	< 0.2
Fluoranthene:	< 0.2	< 0.2	< 0.2	< 0.2
Fluorene:	< 0.2	< 0.2	< 0.2	< 0.2
Indeno(1,2,3-cd)Pyrene:	< 0.2	< 0.2	< 0.2	< 0.2
Indole:	< 1	< 1	< 1	< 1
1-Methylnaphthalene:	< 0.2	< 0.2	< 0.2	< 0.2
2-Methylnaphthalene:	< 0.2	< 0.2	< 0.2	< 0.2
Naphthalene:	< 0.2	< 0.2	< 0.2	< 0.2
Perylene:	< 0.2	< 0.2	< 0.2	< 0.2
Phenanthrene:	< 0.2	< 0.2	< 0.2	< 0.2
Pyrene:	< 0.2	< 0.2	< 0.2	< 0.2
Benzyl Butyl Phthalate:	< 0.5	< 0.5	< 0.5	< 0.5
bis(2-ethylhexyl)Phthalate:	< 2	< 2	< 2	< 2
Di-N-butylPhthalate:	< 2	< 2	< 2	< 2
Di-N-octylPhthalate:	< 0.8	< 0.8	< 0.8	< 0.8
4-Bromophenyl phenyl EtHe	< 0.3	< 0.3	< 0.3	< 0.3
4-Chlorophenyl Phenyl EtHe	< 0.5	< 0.5	< 0.5	< 0.5
bis(2-chloroisopropyl)Ether:	< 0.5	< 0.5	< 0.5	< 0.5
bis(2-Chloroethyl)Ether:	< 0.5	< 0.5	< 0.5	< 0.5
Diphenyl ether:	< 0.3	< 0.3	< 0.3	< 0.3
2,4-Dinitrotoluene:	< 0.5	< 0.5	< 0.5	< 0.5
2,6-Dinitrotoluene:	< 0.5	< 0.5	< 0.5	< 0.5
bis(2-chloroethoxy)Methan	< 0.5	< 0.5	< 0.5	< 0.5
Nitrosodiphenylamine /Diphenylamine:	< 1	< 1	< 1	< 1
N-Nitrosodi-N-propylamine:	< 0.5	< 0.5	< 0.5	< 0.5
<u>MISA Group 20</u>				
2,3,4,5-Tetrachlorophenol:	< 0.4	< 0.4	< 0.4	< 0.4
2,3,4,6-Tetrachlorophenol:	< 0.5	< 0.5	< 0.5	< 0.5
2,3,5,6-Tetrachlorophenol:	< 0.5	< 0.5	< 0.5	< 0.5
2,3,4-Trichlorophenol:	< 0.5	< 0.5	< 0.5	< 0.5
2,3,5-Trichlorophenol:	< 0.5	< 0.5	< 0.5	< 0.5
2,4,5-Trichlorophenol:	< 0.5	< 0.5	< 0.5	< 0.5
2,4,6-Trichlorophenol:	< 0.5	< 0.5	< 0.5	< 0.5
2,4-Dinitrophenol:	< 2	< 2	< 2	< 2
2,4-Dimethylphenol:	< 0.5	< 0.5	< 0.5	< 0.5
2,4-Dichlorophenol:	< 0.3	< 0.3	< 0.3	< 0.3
2,6-Dichlorophenol:	< 0.5	< 0.5	< 0.5	< 0.5
4,6-Dinitro-o-Cresol:				
2-Chlorophenol:	< 0.3	< 0.3	< 0.3	< 0.3
4-Chloro-3-methylphenol:	< 0.5	< 0.5	< 0.5	< 0.5
4-Nitrophenol:	< 1.4	< 1.4	< 1.4	< 1.4
o-Cresol:	< 0.5	< 0.5	< 0.5	< 0.5
m-,p-Cresol:	< 0.5	< 0.5	< 0.5	< 0.5
Pentachlorophenol:	< 1	< 1	< 1	< 1
Phenol:	< 0.5	< 0.5	< 0.5	< 0.5

ORGANIC ANALYSIS (ATG MISA Groups 19 - 20) - Guelph WRIC/Waste Transfer Station - 2021

AECOM

Parameter	19A-08 15-Jun-21	19B-08 15-Jun-21	20A-08 15-Jun-21	20B-08 15-Jun-21
<u>MISA Group 19</u>				
Acenaphthene:	< 0.2	< 0.2	< 0.2	< 0.2
5-Nitroacenaphthene:	< 1	< 1	< 1	< 1
Acenaphthylene:	< 0.2	< 0.2	< 0.2	< 0.2
Anthracene:	< 0.2	< 0.2	< 0.2	< 0.2
Benzo(a)anthracene:	< 0.2	< 0.2	< 0.2	< 0.2
Benzo(a)Pyrene:	< 0.2	< 0.2	< 0.2	< 0.2
Benzo(b)Fluoranthene:	< 0.2	< 0.2	< 0.2	< 0.2
Benzo(g,h,i)perylene:	< 0.2	< 0.2	< 0.2	< 0.2
Benzo(k)Fluoranthene:	< 0.2	< 0.2	< 0.2	< 0.2
Biphenyl:	< 0.5	< 0.5	< 0.5	< 0.5
Camphene:	< 1	< 1	< 1	< 1
1-Chloronaphthalene:	< 1	< 1	< 1	< 1
2-Chloronaphthalene:	< 0.5	< 0.5	< 0.5	< 0.5
Chrysene:	< 0.2	< 0.2	< 0.2	< 0.2
Dibenzo(a,h)Anthracene:	< 0.2	< 0.2	< 0.2	< 0.2
Fluoranthene:	< 0.2	< 0.2	< 0.2	< 0.2
Fluorene:	< 0.2	< 0.2	< 0.2	< 0.2
Indeno(1,2,3-cd)Pyrene:	< 0.2	< 0.2	< 0.2	< 0.2
Indole:	< 1	< 1	< 1	< 1
1-Methylnaphthalene:	< 0.2	< 0.2	< 0.2	< 0.2
2-Methylnaphthalene:	< 0.2	< 0.2	< 0.2	< 0.2
Naphthalene:	< 0.2	< 0.2	< 0.2	< 0.2
Perylene:	< 0.2	< 0.2	< 0.2	< 0.2
Phenanthrene:	< 0.2	< 0.2	< 0.2	< 0.2
Pyrene:	< 0.2	< 0.2	< 0.2	< 0.2
Benzyl Butyl Phthalate:	< 0.5	< 0.5	< 0.5	< 0.5
bis(2-ethylhexyl)Phthalate:	< 2	< 2	< 2	< 2
Di-N-butylPhthalate:	< 2	< 2	< 2	< 2
Di-N-octylPhthalate:	< 0.8	< 0.8	< 0.8	< 0.8
4-Bromophenyl phenyl EtHe	< 0.3	< 0.3	< 0.3	< 0.3
4-Chlorophenyl Phenyl EtHe	< 0.5	< 0.5	< 0.5	< 0.5
bis(2-chloroisopropyl)Ether:	< 0.5	< 0.5	< 0.5	< 0.5
bis(2-Chloroethyl)Ether:	< 0.5	< 0.5	< 0.5	< 0.5
Diphenyl ether:	< 0.3	< 0.3	< 0.3	< 0.3
2,4-Dinitrotoluene:	< 0.5	< 0.5	< 0.5	< 0.5
2,6-Dinitrotoluene:	< 0.5	< 0.5	< 0.5	< 0.5
bis(2-chloroethoxy)Methan	< 0.5	< 0.5	< 0.5	< 0.5
Nitrosodiphenylamine /Diphenylamine:	< 1	< 1	< 1	< 1
N-Nitrosodi-N-propylamine:	< 0.5	< 0.5	< 0.5	< 0.5
<u>MISA Group 20</u>				
2,3,4,5-Tetrachlorophenol:	< 0.4	< 0.4	< 0.4	< 0.4
2,3,4,6-Tetrachlorophenol:	< 0.5	< 0.5	< 0.5	< 0.5
2,3,5,6-Tetrachlorophenol:	< 0.5	< 0.5	< 0.5	< 0.5
2,3,4-Trichlorophenol:	< 0.5	< 0.5	< 0.5	< 0.5
2,3,5-Trichlorophenol:	< 0.5	< 0.5	< 0.5	< 0.5
2,4,5-Trichlorophenol:	< 0.5	< 0.5	< 0.5	< 0.5
2,4,6-Trichlorophenol:	< 0.5	< 0.5	< 0.5	< 0.5
2,4-Dinitrophenol:	< 2	< 2	< 2	< 2
2,4-Dimethylphenol:	< 0.5	< 0.5	< 0.5	< 0.5
2,4-Dichlorophenol:	< 0.3	< 0.3	< 0.3	< 0.3
2,6-Dichlorophenol:	< 0.5	< 0.5	< 0.5	< 0.5
4,6-Dinitro-o-Cresol:				
2-Chlorophenol:	< 0.3	< 0.3	< 0.3	< 0.3
4-Chloro-3-methylphenol:	< 0.5	< 0.5	< 0.5	< 0.5
4-Nitrophenol:	< 1.4	< 1.4	< 1.4	< 1.4
o-Cresol:	< 0.5	< 0.5	< 0.5	< 0.5
m-,p-Cresol:	< 0.5	< 0.5	< 0.5	< 0.5
Pentachlorophenol:	< 1	< 1	< 1	< 1
Phenol:	< 0.5	< 0.5	< 0.5	< 0.5

ORGANIC ANALYSIS (ATG MISA Groups 19 - 20) - Guelph WRIC/Waste Transfer Station - 2021

AECOM

Parameter	21A-08 10-Jun-21	22A-11 16-Jun-21	22B-11 16-Jun-21	23A-12 15-Jun-21
<u>MISA Group 19</u>				
Acenaphthene:	< 0.2	< 0.2	< 0.2	< 0.2
5-Nitroacenaphthene:	< 1	< 1	< 1	< 1
Acenaphthylene:	< 0.2	< 0.2	< 0.2	< 0.2
Anthracene:	< 0.2	< 0.2	< 0.2	< 0.2
Benzo(a)anthracene:	< 0.2	< 0.2	< 0.2	< 0.2
Benzo(a)Pyrene:	< 0.2	< 0.2	< 0.2	< 0.2
Benzo(b)Fluoranthene:	< 0.2	< 0.2	< 0.2	< 0.2
Benzo(g,h,i)perylene:	< 0.2	< 0.2	< 0.2	< 0.2
Benzo(k)Fluoranthene:	< 0.2	< 0.2	< 0.2	< 0.2
Biphenyl:	< 0.5	< 0.5	< 0.5	< 0.5
Camphene:	< 1	< 1	< 1	< 1
1-Chloronaphthalene:	< 1	< 1	< 1	< 1
2-Chloronaphthalene:	< 0.5	< 0.5	< 0.5	< 0.5
Chrysene:	< 0.2	< 0.2	< 0.2	< 0.2
Dibenzo(a,h)Anthracene:	< 0.2	< 0.2	< 0.2	< 0.2
Fluoranthene:	< 0.2	< 0.2	< 0.2	< 0.2
Fluorene:	< 0.2	< 0.2	< 0.2	< 0.2
Indeno(1,2,3-cd)Pyrene:	< 0.2	< 0.2	< 0.2	< 0.2
Indole:	< 1	< 1	< 1	< 1
1-Methylnaphthalene:	< 0.2	< 0.2	< 0.2	< 0.2
2-Methylnaphthalene:	< 0.2	0.2	< 0.2	< 0.2
Naphthalene:	< 0.2	< 0.2	< 0.2	< 0.2
Perylene:	< 0.2	< 0.2	< 0.2	< 0.2
Phenanthrene:	< 0.2	< 0.2	< 0.2	< 0.2
Pyrene:	< 0.2	< 0.2	< 0.2	< 0.2
Benzyl Butyl Phthalate:	< 0.5	< 0.5	< 0.5	< 0.5
bis(2-ethylhexyl)Phthalate:	< 2	< 2	< 2	< 2
Di-N-butylPhthalate:	< 2	< 2	< 2	< 2
Di-N-octylPhthalate:	< 0.8	< 0.8	< 0.8	< 0.8
4-Bromophenyl phenyl EtHe	< 0.3	< 0.3	< 0.3	< 0.3
4-Chlorophenyl Phenyl EtHe	< 0.5	< 0.5	< 0.5	< 0.5
bis(2-chloroisopropyl)Ether:	< 0.5	< 0.5	< 0.5	< 0.5
bis(2-Chloroethyl)Ether:	< 0.5	< 0.5	< 0.5	< 0.5
Diphenyl ether:	< 0.3	< 0.3	< 0.3	< 0.3
2,4-Dinitrotoluene:	< 0.5	< 0.5	< 0.5	< 0.5
2,6-Dinitrotoluene:	< 0.5	< 0.5	< 0.5	< 0.5
bis(2-chloroethoxy)Methan	< 0.5	< 0.5	< 0.5	< 0.5
Nitrosodiphenylamine /Diphenylamine:	< 1	< 1	< 1	< 1
N-Nitrosodi-N-propylamine:	< 0.5	< 0.5	< 0.5	< 0.5
<u>MISA Group 20</u>				
2,3,4,5-Tetrachlorophenol:	< 0.4	< 0.4	< 0.4	< 0.4
2,3,4,6-Tetrachlorophenol:	< 0.5	< 0.5	< 0.5	< 0.5
2,3,5,6-Tetrachlorophenol:	< 0.5	< 0.5	< 0.5	< 0.5
2,3,4-Trichlorophenol:	< 0.5	< 0.5	< 0.5	< 0.5
2,3,5-Trichlorophenol:	< 0.5	< 0.5	< 0.5	< 0.5
2,4,5-Trichlorophenol:	< 0.5	< 0.5	< 0.5	< 0.5
2,4,6-Trichlorophenol:	< 0.5	< 0.5	< 0.5	< 0.5
2,4-Dinitrophenol:	< 2	< 2	< 2	< 2
2,4-Dimethylphenol:	< 0.5	< 0.5	< 0.5	< 0.5
2,4-Dichlorophenol:	< 0.3	< 0.3	< 0.3	< 0.3
2,6-Dichlorophenol:	< 0.5	< 0.5	< 0.5	< 0.5
4,6-Dinitro-o-Cresol:				
2-Chlorophenol:	< 0.3	< 0.3	< 0.3	< 0.3
4-Chloro-3-methylphenol:	< 0.5	< 0.5	< 0.5	< 0.5
4-Nitrophenol:	< 1.4	< 1.4	< 1.4	< 1.4
o-Cresol:	< 0.5	< 0.5	< 0.5	< 0.5
m-,p-Cresol:	< 0.5	< 0.5	< 0.5	< 0.5
Pentachlorophenol:	< 1	< 1	< 1	< 1
Phenol:	< 0.5	< 0.5	< 0.5	< 0.5

ORGANIC ANALYSIS (ATG MISA Groups 19 - 20) - Guelph WRIC/Waste Transfer Station - 2021

AECOM

Parameter	23B-12 15-Jun-21
<u>MISA Group 19</u>	
Acenaphthene:	< 0.2
5-Nitroacenaphthene:	< 1
Acenaphthylene:	< 0.2
Anthracene:	< 0.2
Benzo(a)anthracene:	< 0.2
Benzo(a)Pyrene:	< 0.2
Benzo(b)Fluoranthene:	< 0.2
Benzo(g,h,i)perylene:	< 0.2
Benzo(k)Fluoranthene:	< 0.2
Biphenyl:	< 0.5
Camphene:	< 1
1-Chloronaphthalene:	< 1
2-Chloronaphthalene:	< 0.5
Chrysene:	< 0.2
Dibenzo(a,h)Anthracene:	< 0.2
Fluoranthene:	< 0.2
Fluorene:	< 0.2
Indeno(1,2,3-cd)Pyrene:	< 0.2
Indole:	< 1
1-Methylnaphthalene:	< 0.2
2-Methylnaphthalene:	< 0.2
Naphthalene:	< 0.2
Perylene:	< 0.2
Phenanthrene:	< 0.2
Pyrene:	< 0.2
Benzyl Butyl Phthalate:	< 0.5
bis(2-ethylhexyl)Phthalate:	< 2
Di-N-butylPhthalate:	< 2
Di-N-octylPhthalate:	< 0.8
4-Bromophenyl phenyl EtHe	< 0.3
4-Chlorophenyl Phenyl EtHe	< 0.5
bis(2-chloroisopropyl)Ether:	< 0.5
bis(2-Chloroethyl)Ether:	< 0.5
Diphenyl ether:	< 0.3
2,4-Dinitrotoluene:	< 0.5
2,6-Dinitrotoluene:	< 0.5
bis(2-chloroethoxy)Methan	< 0.5
Nitrosodiphenylamine /Diphenylamine:	< 1
N-Nitrosodi-N-propylamine:	< 0.5
<u>MISA Group 20</u>	
2,3,4,5-Tetrachlorophenol:	< 0.4
2,3,4,6-Tetrachlorophenol:	< 0.5
2,3,5,6-Tetrachlorophenol:	< 0.5
2,3,4-Trichlorophenol:	< 0.5
2,3,5-Trichlorophenol:	< 0.5
2,4,5-Trichlorophenol:	< 0.5
2,4,6-Trichlorophenol:	< 0.5
2,4-Dinitrophenol:	< 2
2,4-Dimethylphenol:	< 0.5
2,4-Dichlorophenol:	< 0.3
2,6-Dichlorophenol:	< 0.5
4,6-Dinitro-o-Cresol:	
2-Chlorophenol:	< 0.3
4-Chloro-3-methylphenol:	< 0.5
4-Nitrophenol:	< 1.4
o-Cresol:	< 0.5
m-,p-Cresol:	< 0.5
Pentachlorophenol:	< 1
Phenol:	< 0.5

ORGANIC ANALYSIS - ATG MISA Groups 16, 17 and 18 - Guelph WRIC/Waste Transfer Station - 2021

AECOM

Parameter	5-96 14-Jun-21	6a-96 11-Jun-21	6b-96 11-Jun-21	7-96 09-Jun-21
<u>MISA Group 16</u>				
1,1,1,2-Tetrachloroethane:	< 0.2	< 0.2	< 0.2	< 0.2
1,1,1-Trichloroethane:	< 0.1	< 0.1	< 0.1	< 0.1
1,1,2,2-Tetrachloroethane:	< 0.2	< 0.2	< 0.2	< 0.2
1,1,2-Trichloroethane:	< 0.2	< 0.2	< 0.2	< 0.2
1,1-Dichloroethane:	< 0.1	< 0.1	< 0.1	< 0.1
1,1-Dichloroethylene:	< 0.1	< 0.1	< 0.1	< 0.1
1,2-Dichlorobenzene:	< 0.2	< 0.2	< 0.2	< 0.2
1,2-Dibromoethane:*	< 0.2	< 0.2	< 0.2	< 0.2
1,2-Dichloroethane:	< 0.2	< 0.2	< 0.2	< 0.2
1,2-Dichloropropane:	< 0.1	< 0.1	< 0.1	< 0.1
1,3-Dichlorobenzene:	< 0.2	< 0.2	< 0.2	< 0.2
1,4-Dichlorobenzene:	< 0.2	< 0.2	< 0.2	< 0.2
Bromodichloromethane:	< 0.1	1.7	< 0.1	< 0.1
Bromoform:	< 0.2	< 0.2	< 0.2	< 0.2
Bromomethane:	< 0.5	< 0.5	< 0.5	< 0.5
Carbon Tetrachloride:	< 0.1	< 0.1	< 0.1	< 0.1
Chlorobenzene:	< 0.1	< 0.1	< 0.1	< 0.1
Chloroform:	< 0.1	8.3	3	< 0.1
Chloromethane:	< 0.5	< 0.5	< 0.5	< 0.5
Cis-1,2-Dichloroethylene:	< 0.1	< 0.1	< 0.1	< 0.1
Cis-1,3-Dichloropropylene:	< 0.2	< 0.2	< 0.2	< 0.2
Dibromochloromethane:	< 0.2	0.29	< 0.2	< 0.2
Methylene Chloride:	< 0.5	< 0.5	< 0.5	< 0.5
Tetrachloroethylene:	< 0.1	< 0.1	< 0.1	< 0.1
trans-1,2-Dichloroethylene:	< 0.1	< 0.1	< 0.1	< 0.1
Trans-1,3-Dichloropropylene:	< 0.2	< 0.2	< 0.2	< 0.2
Trichloroethylene:	< 0.1	< 0.1	< 0.1	< 0.1
Trichlorofluoromethane:	< 0.2	< 0.2	< 0.2	< 0.2
Vinyl chloride:	< 0.2	< 0.2	< 0.2	< 0.2
<u>MISA Group 17</u>				
Benzene:	< 0.1	< 0.1	< 0.1	< 0.1
Ethylbenzene:	< 0.1	< 0.1	< 0.1	< 0.1
Styrene:	< 0.2	< 0.2	< 0.2	< 0.2
Toluene:	< 0.2	< 0.2	< 0.2	< 0.2
o-Xylene:	< 0.1	< 0.1	< 0.1	< 0.1
m-Xylene and p-Xylene:	< 0.1	< 0.1	< 0.1	< 0.1
<u>MISA Group 18</u>				
Acrolein:	< 10	< 10	< 10	< 10
Acrylonitrile:	< 5	< 5	< 5	< 5

ORGANIC ANALYSIS - ATG MISA Groups 16, 17 and 18 - Guelph WRIC/Waste Transfer Station - 2021

AECOM

Parameter	8-96 14-Jun-21	9-96 09-Jun-21	10-00 09-Jun-21	10-00 23-Jun-21
<u>MISA Group 16</u>				
1,1,1,2-Tetrachloroethane:	< 0.2	< 0.2	< 0.2	
1,1,1-Trichloroethane:	< 0.1	< 0.1	< 0.1	
1,1,2,2-Tetrachloroethane:	< 0.2	< 0.2	< 0.2	
1,1,2-Trichloroethane:	< 0.2	< 0.2	< 0.2	
1,1-Dichloroethane:	< 0.1	< 0.1	< 0.1	
1,1-Dichloroethylene:	< 0.1	< 0.1	< 0.1	
1,2-Dichlorobenzene:	< 0.2	< 0.2	< 0.2	
1,2-Dibromoethane:*	< 0.2	< 0.2	< 0.2	
1,2-Dichloroethane:	< 0.2	< 0.2	< 0.2	
1,2-Dichloropropane:	< 0.1	< 0.1	< 0.1	
1,3-Dichlorobenzene:	< 0.2	< 0.2	< 0.2	
1,4-Dichlorobenzene:	< 0.2	< 0.2	< 0.2	
Bromodichloromethane:	< 0.1	0.37	< 0.1	
Bromoform:	< 0.2	< 0.2	< 0.2	
Bromomethane:	< 0.5	< 0.5	< 0.5	
Carbon Tetrachloride:	< 0.1	< 0.1	< 0.1	
Chlorobenzene:	< 0.1	< 0.1	< 0.1	
Chloroform:	< 0.1	0.95	< 0.1	
Chloromethane:	< 0.5	< 0.5	< 0.5	
Cis-1,2-Dichloroethylene:	< 0.1	< 0.1	< 0.1	
Cis-1,3-Dichloropropylene:	< 0.2	< 0.2	< 0.2	
Dibromochloromethane:	< 0.2	< 0.2	< 0.2	
Methylene Chloride:	< 0.5	< 0.5	< 0.5	
Tetrachloroethylene:	< 0.1	< 0.1	< 0.1	
trans-1,2-Dichloroethylene:	< 0.1	< 0.1	< 0.1	
Trans-1,3-Dichloropropylene:	< 0.2	< 0.2	< 0.2	
Trichloroethylene:	< 0.1	< 0.1	< 0.1	
Trichlorofluoromethane:	< 0.2	< 0.2	< 0.2	
Vinyl chloride:	< 0.2	< 0.2	< 0.2	
<u>MISA Group 17</u>				
Benzene:	< 0.1	< 0.1	< 0.1	
Ethylbenzene:	< 0.1	< 0.1	< 0.1	
Styrene:	< 0.2	< 0.2	< 0.2	
Toluene:	< 0.2	< 0.2	< 0.2	
o-Xylene:	< 0.1	< 0.1	< 0.1	
m-Xylene and p-Xylene:	< 0.1	< 0.1	< 0.1	
<u>MISA Group 18</u>				
Acrolein:	< 10	< 11	< 10	
Acrylonitrile:	< 5	< 5.1	< 5	

ORGANIC ANALYSIS - ATG MISA Groups 16, 17 and 18 - Guelph WRIC/Waste Transfer Station - 2021

AECOM

Parameter	11a-00 14-Jun-21	11b-00 14-Jun-21	21-13A 17-Jun-21	21-13B 17-Jun-21
<u>MISA Group 16</u>				
1,1,1,2-Tetrachloroethane:		< 0.2	< 0.2	< 0.2
1,1,1-Trichloroethane:		< 0.1	< 0.1	< 0.1
1,1,2,2-Tetrachloroethane:		< 0.2	< 0.2	< 0.2
1,1,2-Trichloroethane:		< 0.2	< 0.2	< 0.2
1,1-Dichloroethane:		< 0.1	< 0.1	< 0.1
1,1-Dichloroethylene:		< 0.1	< 0.1	< 0.1
1,2-Dichlorobenzene:		< 0.2	< 0.2	< 0.2
1,2-Dibromoethane:*		< 0.2	< 0.2	< 0.2
1,2-Dichloroethane:		< 0.2	< 0.2	< 0.2
1,2-Dichloropropane:		< 0.1	< 0.1	< 0.1
1,3-Dichlorobenzene:		< 0.2	< 0.2	< 0.2
1,4-Dichlorobenzene:		< 0.2	< 0.2	< 0.2
Bromodichloromethane:		< 0.4	< 0.1	< 0.1
Bromoform:		< 0.2	< 0.2	< 0.2
Bromomethane:		< 0.5	< 0.5	< 0.5
Carbon Tetrachloride:		< 0.1	< 0.1	< 0.1
Chlorobenzene:		< 0.1	< 0.1	< 0.1
Chloroform:		< 5.4	< 0.1	< 0.1
Chloromethane:		< 0.5	< 0.5	< 0.5
Cis-1,2-Dichloroethylene:		< 0.1	< 0.1	< 0.1
Cis-1,3-Dichloropropylene:		< 0.2	< 0.2	< 0.2
Dibromochloromethane:		< 0.2	< 0.2	< 0.2
Methylene Chloride:		< 0.5	< 0.5	< 0.5
Tetrachloroethylene:		< 0.1	< 0.1	< 0.1
trans-1,2-Dichloroethylene:		< 0.1	< 0.1	< 0.1
Trans-1,3-Dichloropropylene:		< 0.2	< 0.2	< 0.2
Trichloroethylene:		< 0.1	< 0.1	< 0.1
Trichlorofluoromethane:		< 0.2	< 0.2	< 0.2
Vinyl chloride:		< 0.2	< 0.2	< 0.2
<u>MISA Group 17</u>				
Benzene:		< 0.1	< 0.1	0.13
Ethylbenzene:		< 0.1	0.1	< 0.1
Styrene:		< 0.2	< 0.2	< 0.2
Toluene:		< 0.2	0.37	0.34
o-Xylene:		< 0.1	0.1	< 0.1
m-Xylene and p-Xylene:		< 0.1	0.23	0.23
<u>MISA Group 18</u>				
Acrolein:		< 10	< 10	< 10
Acrylonitrile:		< 5	< 5	< 5

ORGANIC ANALYSIS - ATG MISA Groups 16, 17 and 18 - Guelph WRIC/Waste Transfer Station - 2021

AECOM

Parameter	13a-01 16-Jun-21	13b-01 16-Jun-21	14a-01 17-Jun-21	14b-01 17-Jun-21
<u>MISA Group 16</u>				
1,1,1,2-Tetrachloroethane:	< 0.2	< 0.2	< 0.2	< 0.2
1,1,1-Trichloroethane:	< 0.1	< 0.1	< 0.1	< 0.1
1,1,2,2-Tetrachloroethane:	< 0.2	< 0.2	< 0.2	< 0.2
1,1,2-Trichloroethane:	< 0.2	< 0.2	< 0.2	< 0.2
1,1-Dichloroethane:	< 0.1	< 0.1	< 0.1	< 0.1
1,1-Dichloroethylene:	< 0.1	< 0.1	< 0.1	< 0.1
1,2-Dichlorobenzene:	< 0.2	< 0.2	< 0.2	< 0.2
1,2-Dibromoethane:*	< 0.2	< 0.2	< 0.2	< 0.2
1,2-Dichloroethane:	< 0.2	< 0.2	< 0.2	< 0.2
1,2-Dichloropropane:	< 0.1	< 0.1	< 0.1	< 0.1
1,3-Dichlorobenzene:	< 0.2	< 0.2	< 0.2	< 0.2
1,4-Dichlorobenzene:	< 0.2	< 0.2	< 0.2	< 0.2
Bromodichloromethane:	< 0.1	< 0.25	< 0.1	< 0.1
Bromoform:	< 0.2	< 0.2	< 0.2	< 0.2
Bromomethane:	< 0.5	< 0.5	< 0.5	< 0.5
Carbon Tetrachloride:	< 0.1	< 0.1	< 0.1	< 0.1
Chlorobenzene:	< 0.1	< 0.1	< 0.1	< 0.1
Chloroform:	< 0.1	< 1.7	< 0.1	0.74
Chloromethane:	< 0.5	< 0.5	< 0.5	< 0.5
Cis-1,2-Dichloroethylene:	< 0.1	< 0.1	< 0.1	< 0.1
Cis-1,3-Dichloropropylene:	< 0.2	< 0.2	< 0.2	< 0.2
Dibromochloromethane:	< 0.2	< 0.2	< 0.2	< 0.2
Methylene Chloride:	< 0.5	< 0.5	< 0.5	< 0.5
Tetrachloroethylene:	< 0.1	< 0.1	< 0.1	< 0.1
trans-1,2-Dichloroethylene:	< 0.1	< 0.1	< 0.1	< 0.1
Trans-1,3-Dichloropropylene:	< 0.2	< 0.2	< 0.2	< 0.2
Trichloroethylene:	< 0.1	< 0.1	< 0.1	< 0.1
Trichlorofluoromethane:	< 0.2	< 0.2	< 0.2	< 0.2
Vinyl chloride:	< 0.2	< 0.2	< 0.2	< 0.2
<u>MISA Group 17</u>				
Benzene:	< 0.1	< 0.1	< 0.1	< 0.1
Ethylbenzene:	< 0.1	< 0.1	< 0.1	< 0.1
Styrene:	< 0.2	< 0.2	< 0.2	< 0.2
Toluene:	< 0.2	< 0.2	< 0.2	< 0.2
o-Xylene:	< 0.1	< 0.1	< 0.1	< 0.1
m-Xylene and p-Xylene:	< 0.1	< 0.1	< 0.1	< 0.1
<u>MISA Group 18</u>				
Acrolein:	< 10	< 10	< 10	< 10
Acrylonitrile:	< 5	< 5	< 5	< 5

ORGANIC ANALYSIS - ATG MISA Groups 16, 17 and 18 - Guelph WRIC/Waste Transfer Station - 2021

AECOM

Parameter	15a-01 10-Jun-21	15b-01 10-Jun-21	16A-08 16-Jun-21	16B-08 16-Jun-21
<u>MISA Group 16</u>				
1,1,1,2-Tetrachloroethane:	< 0.2	< 0.2	< 0.2	< 0.2
1,1,1-Trichloroethane:	< 0.1	< 0.1	< 0.1	< 0.1
1,1,2,2-Tetrachloroethane:	< 0.2	< 0.2	< 0.2	< 0.2
1,1,2-Trichloroethane:	< 0.2	< 0.2	< 0.2	< 0.2
1,1-Dichloroethane:	< 0.1	< 0.1	< 0.1	< 0.1
1,1-Dichloroethylene:	< 0.1	< 0.1	< 0.1	< 0.1
1,2-Dichlorobenzene:	< 0.2	< 0.2	< 0.2	< 0.2
1,2-Dibromoethane:*	< 0.2	< 0.2	< 0.2	< 0.2
1,2-Dichloroethane:	< 0.2	< 0.2	< 0.2	< 0.2
1,2-Dichloropropane:	< 0.1	< 0.1	< 0.1	< 0.1
1,3-Dichlorobenzene:	< 0.2	< 0.2	< 0.2	< 0.2
1,4-Dichlorobenzene:	< 0.2	< 0.2	< 0.2	< 0.2
Bromodichloromethane:	< 0.1	< 0.1	< 0.1	< 0.1
Bromoform:	< 0.2	< 0.2	< 0.2	< 0.2
Bromomethane:	< 0.5	< 0.5	< 0.5	< 0.5
Carbon Tetrachloride:	< 0.1	< 0.1	< 0.1	< 0.1
Chlorobenzene:	< 0.1	< 0.1	< 0.1	< 0.1
Chloroform:	< 0.1	< 0.1	< 0.1	0.32
Chloromethane:	< 0.5	< 0.5	< 0.5	< 0.5
Cis-1,2-Dichloroethylene:	< 0.1	< 0.1	< 0.1	< 0.1
Cis-1,3-Dichloropropylene:	< 0.2	< 0.2	< 0.2	< 0.2
Dibromochloromethane:	< 0.2	< 0.2	< 0.2	< 0.2
Methylene Chloride:	< 0.5	< 0.5	< 0.5	< 0.5
Tetrachloroethylene:	< 0.1	< 0.1	< 0.1	< 0.1
trans-1,2-Dichloroethylene:	< 0.1	< 0.1	< 0.1	< 0.1
Trans-1,3-Dichloropropylene:	< 0.2	< 0.2	< 0.2	< 0.2
Trichloroethylene:	< 0.1	< 0.1	< 0.1	< 0.1
Trichlorofluoromethane:	< 0.2	< 0.2	< 0.2	< 0.2
Vinyl chloride:	< 0.2	< 0.2	< 0.2	< 0.2
<u>MISA Group 17</u>				
Benzene:	< 0.1	< 0.1	< 0.1	< 0.1
Ethylbenzene:	< 0.1	< 0.1	< 0.1	< 0.1
Styrene:	< 0.2	< 0.2	< 0.2	< 0.2
Toluene:	< 0.2	< 0.2	< 0.2	< 0.2
o-Xylene:	< 0.1	< 0.1	< 0.1	< 0.1
m-Xylene and p-Xylene:	< 0.1	< 0.1	< 0.1	< 0.1
<u>MISA Group 18</u>				
Acrolein:	< 10	< 10	< 10	< 10
Acrylonitrile:	< 5	< 5	< 5	< 5

ORGANIC ANALYSIS - ATG MISA Groups 16, 17 and 18 - Guelph WRIC/Waste Transfer Station - 2021

AECOM

Parameter	17A-08 16-Jun-21	17B-08 16-Jun-21	18A-14 10-Jun-21	18B-14 10-Jun-21
<u>MISA Group 16</u>				
1,1,1,2-Tetrachloroethane:	< 0.2	< 0.2	< 0.2	< 0.2
1,1,1-Trichloroethane:	< 0.1	< 0.1	< 0.1	< 0.1
1,1,2,2-Tetrachloroethane:	< 0.2	< 0.2	< 0.2	< 0.2
1,1,2-Trichloroethane:	< 0.2	< 0.2	< 0.2	< 0.2
1,1-Dichloroethane:	< 0.1	< 0.1	< 0.1	< 0.1
1,1-Dichloroethylene:	< 0.1	< 0.1	< 0.1	< 0.1
1,2-Dichlorobenzene:	< 0.2	< 0.2	< 0.2	< 0.2
1,2-Dibromoethane:*	< 0.2	< 0.2	< 0.2	< 0.2
1,2-Dichloroethane:	< 0.2	< 0.2	< 0.2	< 0.2
1,2-Dichloropropane:	< 0.1	< 0.1	< 0.1	< 0.1
1,3-Dichlorobenzene:	< 0.2	< 0.2	< 0.2	< 0.2
1,4-Dichlorobenzene:	< 0.2	< 0.2	< 0.2	< 0.2
Bromodichloromethane:	2.3	< 0.1	< 0.1	< 0.1
Bromoform:	< 0.2	< 0.2	< 0.2	< 0.2
Bromomethane:	< 0.5	< 0.5	< 0.5	< 0.5
Carbon Tetrachloride:	< 0.1	< 0.1	< 0.1	< 0.1
Chlorobenzene:	< 0.1	< 0.1	< 0.1	< 0.1
Chloroform:	6	< 0.1	< 0.1	< 0.1
Chloromethane:	< 0.5	< 0.5	< 0.5	< 0.5
Cis-1,2-Dichloroethylene:	< 0.1	< 0.1	< 0.1	< 0.1
Cis-1,3-Dichloropropylene:	< 0.2	< 0.2	< 0.2	< 0.2
Dibromochloromethane:	< 0.2	< 0.2	< 0.2	< 0.2
Methylene Chloride:	< 0.5	< 0.5	< 0.5	< 0.5
Tetrachloroethylene:	< 0.1	< 0.1	< 0.1	< 0.1
trans-1,2-Dichloroethylene:	< 0.1	< 0.1	< 0.1	< 0.1
Trans-1,3-Dichloropropylene:	< 0.2	< 0.2	< 0.2	< 0.2
Trichloroethylene:	< 0.1	< 0.1	< 0.1	< 0.1
Trichlorofluoromethane:	< 0.2	< 0.2	< 0.2	< 0.2
Vinyl chloride:	< 0.2	< 0.2	< 0.2	< 0.2
<u>MISA Group 17</u>				
Benzene:	< 0.1	< 0.1	< 0.1	< 0.1
Ethylbenzene:	< 0.1	< 0.1	< 0.1	< 0.1
Styrene:	< 0.2	< 0.2	< 0.2	< 0.2
Toluene:	< 0.2	< 0.2	< 0.2	< 0.2
o-Xylene:	< 0.1	< 0.1	< 0.1	< 0.1
m-Xylene and p-Xylene:	< 0.1	< 0.1	0.16	< 0.1
<u>MISA Group 18</u>				
Acrolein:	< 10	< 10	< 10	< 10
Acrylonitrile:	< 5	< 5	< 5	< 5

ORGANIC ANALYSIS - ATG MISA Groups 16, 17 and 18 - Guelph WRIC/Waste Transfer Station - 2021

AECOM

Parameter	19A-08 15-Jun-21	19B-08 15-Jun-21	20A-08 15-Jun-21	20B-08 15-Jun-21
<u>MISA Group 16</u>				
1,1,1,2-Tetrachloroethane:	< 0.2	< 0.2	< 0.2	< 0.2
1,1,1-Trichloroethane:	< 0.1	< 0.1	< 0.1	< 0.1
1,1,2,2-Tetrachloroethane:	< 0.2	< 0.2	< 0.2	< 0.2
1,1,2-Trichloroethane:	< 0.2	< 0.2	< 0.2	< 0.2
1,1-Dichloroethane:	< 0.1	< 0.1	< 0.1	< 0.1
1,1-Dichloroethylene:	< 0.1	< 0.1	< 0.1	< 0.1
1,2-Dichlorobenzene:	< 0.2	< 0.2	< 0.2	< 0.2
1,2-Dibromoethane:*	< 0.2	< 0.2	< 0.2	< 0.2
1,2-Dichloroethane:	< 0.2	< 0.2	< 0.2	< 0.2
1,2-Dichloropropane:	< 0.1	< 0.1	< 0.1	< 0.1
1,3-Dichlorobenzene:	< 0.2	< 0.2	< 0.2	< 0.2
1,4-Dichlorobenzene:	< 0.2	< 0.2	< 0.2	< 0.2
Bromodichloromethane:	< 0.1	< 0.1	< 0.1	< 0.1
Bromoform:	< 0.2	< 0.2	< 0.2	< 0.2
Bromomethane:	< 0.5	< 0.5	< 0.5	< 0.5
Carbon Tetrachloride:	< 0.1	< 0.1	< 0.1	< 0.1
Chlorobenzene:	< 0.1	< 0.1	< 0.1	< 0.1
Chloroform:	< 0.1	< 0.1	< 0.1	< 0.1
Chloromethane:	< 0.5	< 0.5	< 0.5	< 0.5
Cis-1,2-Dichloroethylene:	< 0.1	< 0.1	< 0.1	< 0.1
Cis-1,3-Dichloropropylene:	< 0.2	< 0.2	< 0.2	< 0.2
Dibromochloromethane:	< 0.2	< 0.2	< 0.2	< 0.2
Methylene Chloride:	< 0.5	< 0.5	< 0.5	< 0.5
Tetrachloroethylene:	< 0.1	< 0.1	< 0.1	< 0.1
trans-1,2-Dichloroethylene:	< 0.1	< 0.1	< 0.1	< 0.1
Trans-1,3-Dichloropropylene:	< 0.2	< 0.2	< 0.2	< 0.2
Trichloroethylene:	< 0.1	< 0.1	< 0.1	< 0.1
Trichlorofluoromethane:	< 0.2	< 0.2	< 0.2	< 0.2
Vinyl chloride:	< 0.2	< 0.2	< 0.2	< 0.2
<u>MISA Group 17</u>				
Benzene:	< 0.1	< 0.1	< 0.1	< 0.1
Ethylbenzene:	< 0.1	< 0.1	< 0.1	< 0.1
Styrene:	< 0.2	< 0.2	< 0.2	< 0.2
Toluene:	< 0.2	< 0.2	< 0.2	< 0.2
o-Xylene:	< 0.1	< 0.1	< 0.1	< 0.1
m-Xylene and p-Xylene:	< 0.1	< 0.1	< 0.1	< 0.1
<u>MISA Group 18</u>				
Acrolein:	< 10	< 10	< 10	< 10
Acrylonitrile:	< 5	< 5	< 5	< 5

ORGANIC ANALYSIS - ATG MISA Groups 16, 17 and 18 - Guelph WRIC/Waste Transfer Station - 2021

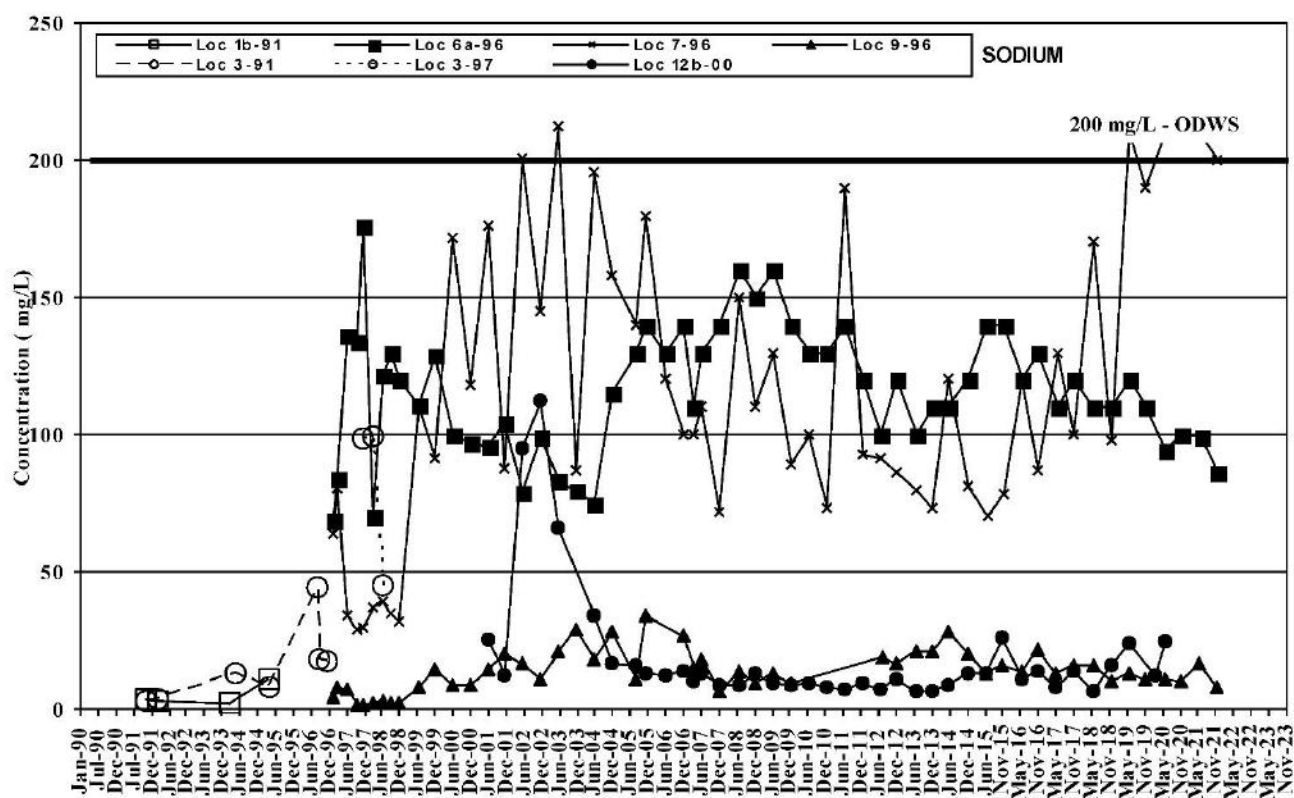
AECOM

Parameter	21A-08 10-Jun-21	22A-11 16-Jun-21	22B-11 16-Jun-21	23A-12 15-Jun-21
<u>MISA Group 16</u>				
1,1,1,2-Tetrachloroethane:	< 0.2	< 0.2	< 0.2	< 0.2
1,1,1-Trichloroethane:	< 0.1	< 0.1	< 0.1	< 0.1
1,1,2,2-Tetrachloroethane:	< 0.2	< 0.2	< 0.2	< 0.2
1,1,2-Trichloroethane:	< 0.2	< 0.2	< 0.2	< 0.2
1,1-Dichloroethane:	< 0.1	< 0.1	< 0.1	< 0.1
1,1-Dichloroethylene:	< 0.1	< 0.1	< 0.1	< 0.1
1,2-Dichlorobenzene:	< 0.2	< 0.2	< 0.2	< 0.2
1,2-Dibromoethane:*	< 0.2	< 0.2	< 0.2	< 0.2
1,2-Dichloroethane:	< 0.2	< 0.2	< 0.2	< 0.2
1,2-Dichloropropane:	< 0.1	< 0.1	< 0.1	< 0.1
1,3-Dichlorobenzene:	< 0.2	< 0.2	< 0.2	< 0.2
1,4-Dichlorobenzene:	< 0.2	< 0.2	< 0.2	< 0.2
Bromodichloromethane:	< 0.1	< 0.1	< 0.1	< 0.1
Bromoform:	< 0.2	< 0.2	< 0.2	< 0.2
Bromomethane:	< 0.5	< 0.5	< 0.5	< 0.5
Carbon Tetrachloride:	< 0.1	< 0.1	< 0.1	< 0.1
Chlorobenzene:	< 0.1	< 0.1	< 0.1	< 0.1
Chloroform:	< 0.1	< 0.1	0.57	< 0.1
Chloromethane:	< 0.5	< 0.5	< 0.5	< 0.5
Cis-1,2-Dichloroethylene:	< 0.1	< 0.1	< 0.1	< 0.1
Cis-1,3-Dichloropropylene:	< 0.2	< 0.2	< 0.2	< 0.2
Dibromochloromethane:	< 0.2	< 0.2	< 0.2	< 0.2
Methylene Chloride:	< 0.5	< 0.5	< 0.5	< 0.5
Tetrachloroethylene:	< 0.1	< 0.1	< 0.1	< 0.1
trans-1,2-Dichloroethylene:	< 0.1	< 0.1	< 0.1	< 0.1
Trans-1,3-Dichloropropylene:	< 0.2	< 0.2	< 0.2	< 0.2
Trichloroethylene:	< 0.1	< 0.1	< 0.1	< 0.1
Trichlorofluoromethane:	< 0.2	< 0.2	< 0.2	< 0.2
Vinyl chloride:	< 0.2	< 0.2	< 0.2	< 0.2
<u>MISA Group 17</u>				
Benzene:	< 0.1	< 0.1	< 0.1	< 0.1
Ethylbenzene:	< 0.1	< 0.1	< 0.1	< 0.1
Styrene:	< 0.2	< 0.2	< 0.2	< 0.2
Toluene:	< 0.2	< 0.2	< 0.2	< 0.2
o-Xylene:	< 0.1	< 0.1	< 0.1	< 0.1
m-Xylene and p-Xylene:	< 0.1	< 0.1	< 0.1	< 0.1
<u>MISA Group 18</u>				
Acrolein:	< 10	< 10	< 10	< 10
Acrylonitrile:	< 5	< 5	< 5	< 5

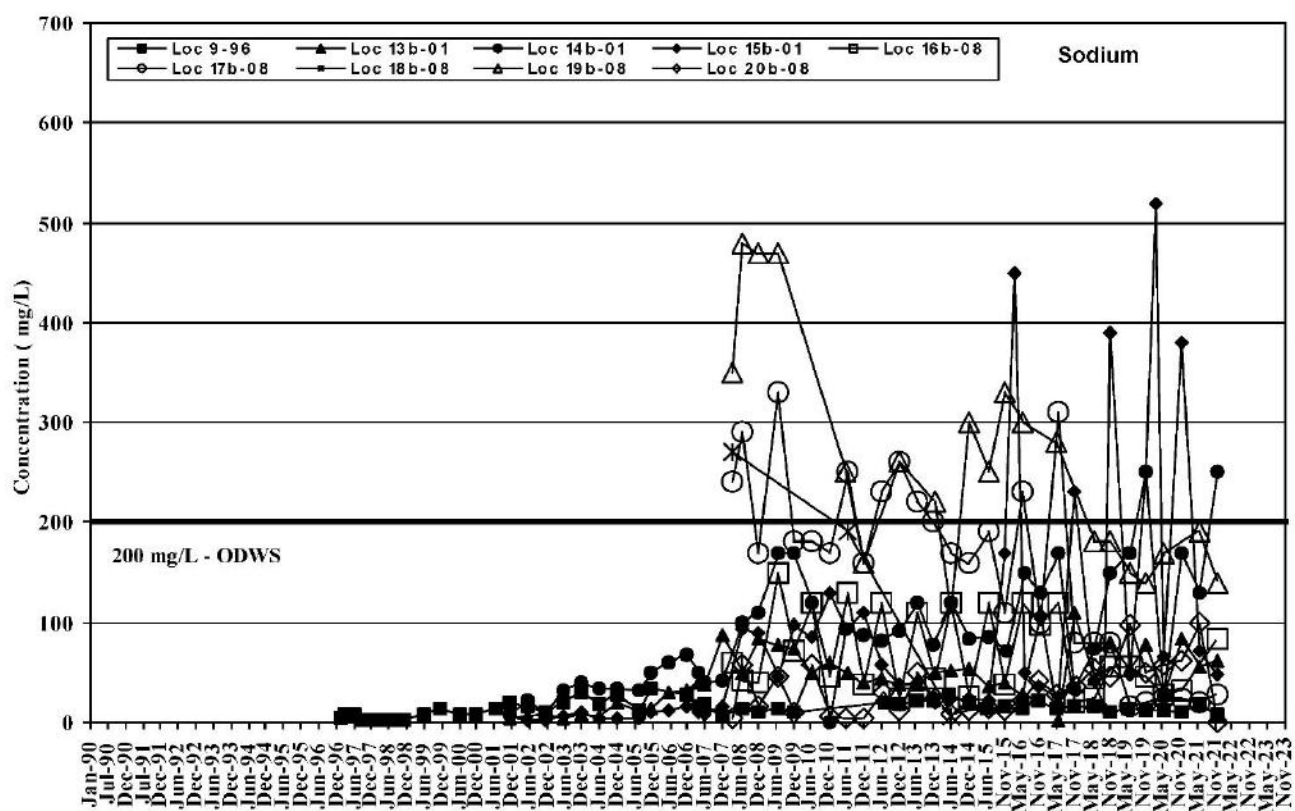
ORGANIC ANALYSIS - ATG MISA Groups 16, 17 and 18 - Guelph WRIC/Waste Transfer Station - 2021

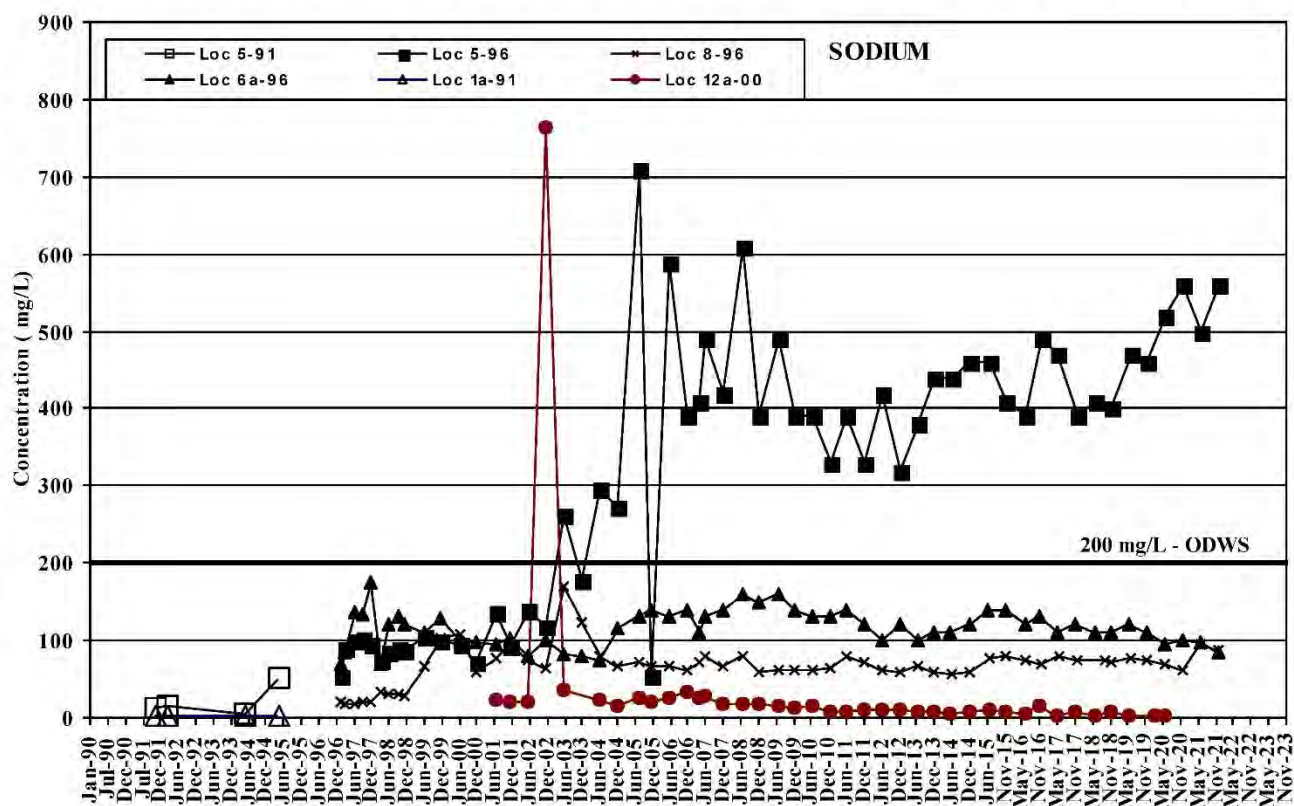
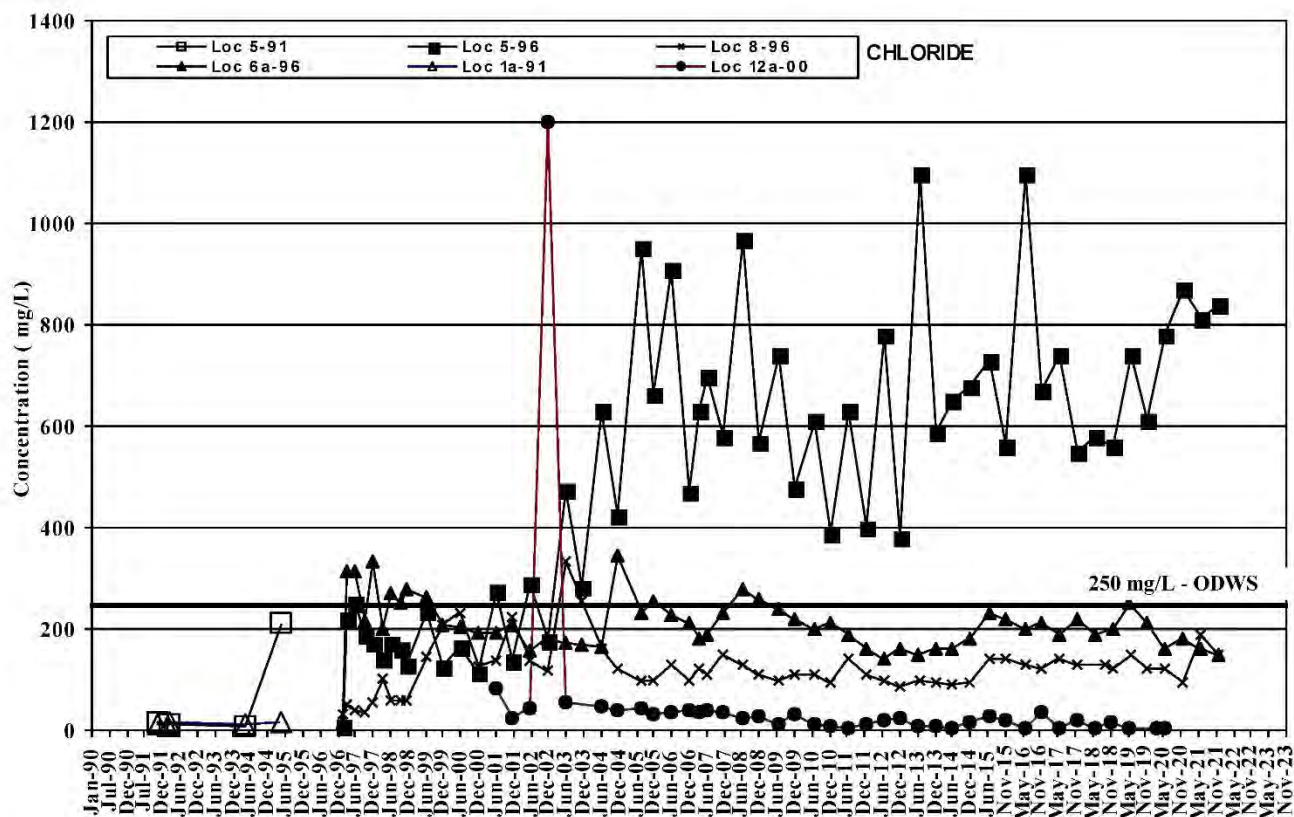
AECOM

Parameter	23B-12 15-Jun-21
<u>MISA Group 16</u>	
1,1,1,2-Tetrachloroethane:	< 0.2
1,1,1-Trichloroethane:	< 0.1
1,1,2,2-Tetrachloroethane:	< 0.2
1,1,2-Trichloroethane:	< 0.2
1,1-Dichloroethane:	< 0.1
1,1-Dichloroethylene:	< 0.1
1,2-Dichlorobenzene:	< 0.2
1,2-Dibromoethane:*	< 0.2
1,2-Dichloroethane:	< 0.2
1,2-Dichloropropane:	< 0.1
1,3-Dichlorobenzene:	< 0.2
1,4-Dichlorobenzene:	< 0.2
Bromodichloromethane:	< 0.1
Bromoform:	< 0.2
Bromomethane:	< 0.5
Carbon Tetrachloride:	< 0.1
Chlorobenzene:	< 0.1
Chloroform:	< 0.1
Chloromethane:	< 0.5
Cis-1,2-Dichloroethylene:	< 0.1
Cis-1,3-Dichloropropylene:	< 0.2
Dibromochloromethane:	< 0.2
Methylene Chloride:	< 0.5
Tetrachloroethylene:	< 0.1
trans-1,2-Dichloroethylene:	< 0.1
Trans-1,3-Dichloropropylene:	< 0.2
Trichloroethylene:	< 0.1
Trichlorofluoromethane:	< 0.2
Vinyl chloride:	< 0.2
<u>MISA Group 17</u>	
Benzene:	< 0.1
Ethylbenzene:	< 0.1
Styrene:	< 0.2
Toluene:	< 0.2
o-Xylene:	< 0.1
m-Xylene and p-Xylene:	< 0.1
<u>MISA Group 18</u>	
Acrolein:	< 10
Acrylonitrile:	< 5



12 Cl-NA Location WestOB





AECOM

Guelph WRIC & Waste Transfer Station

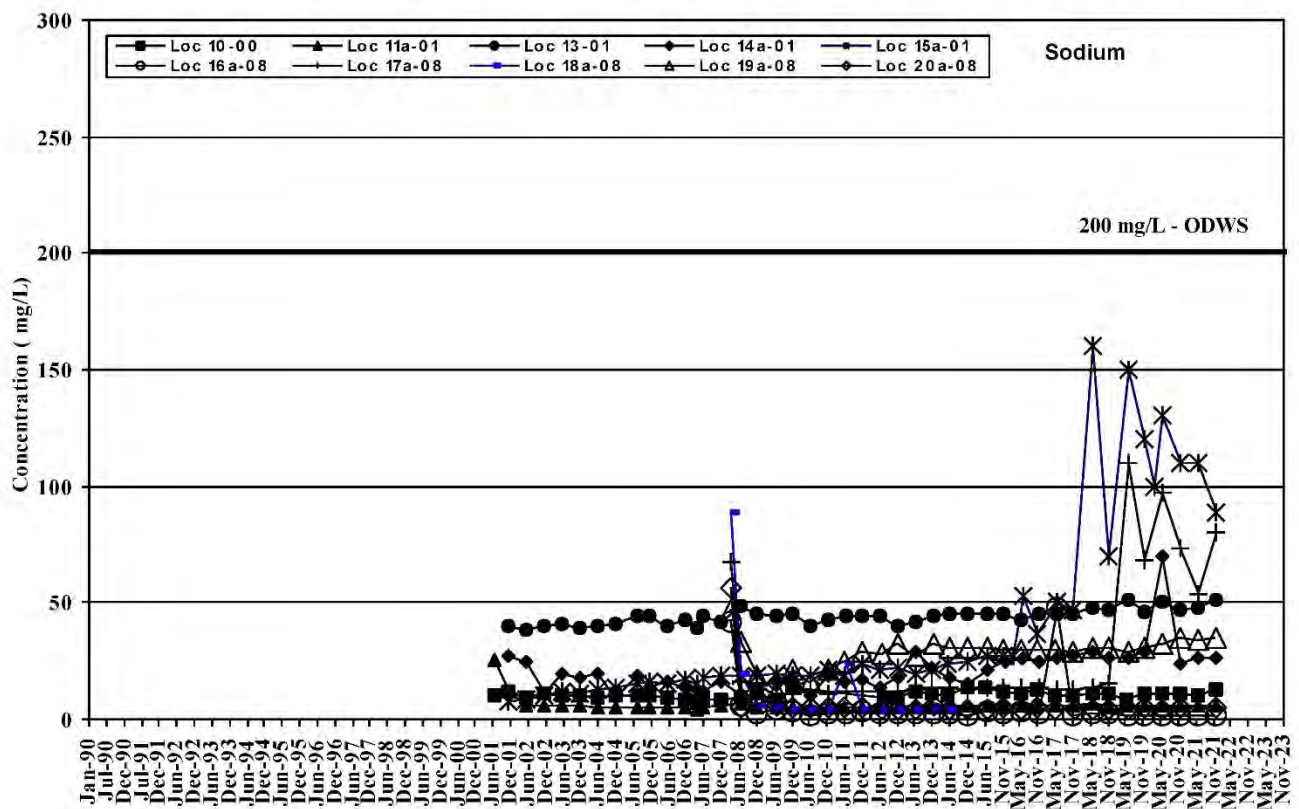
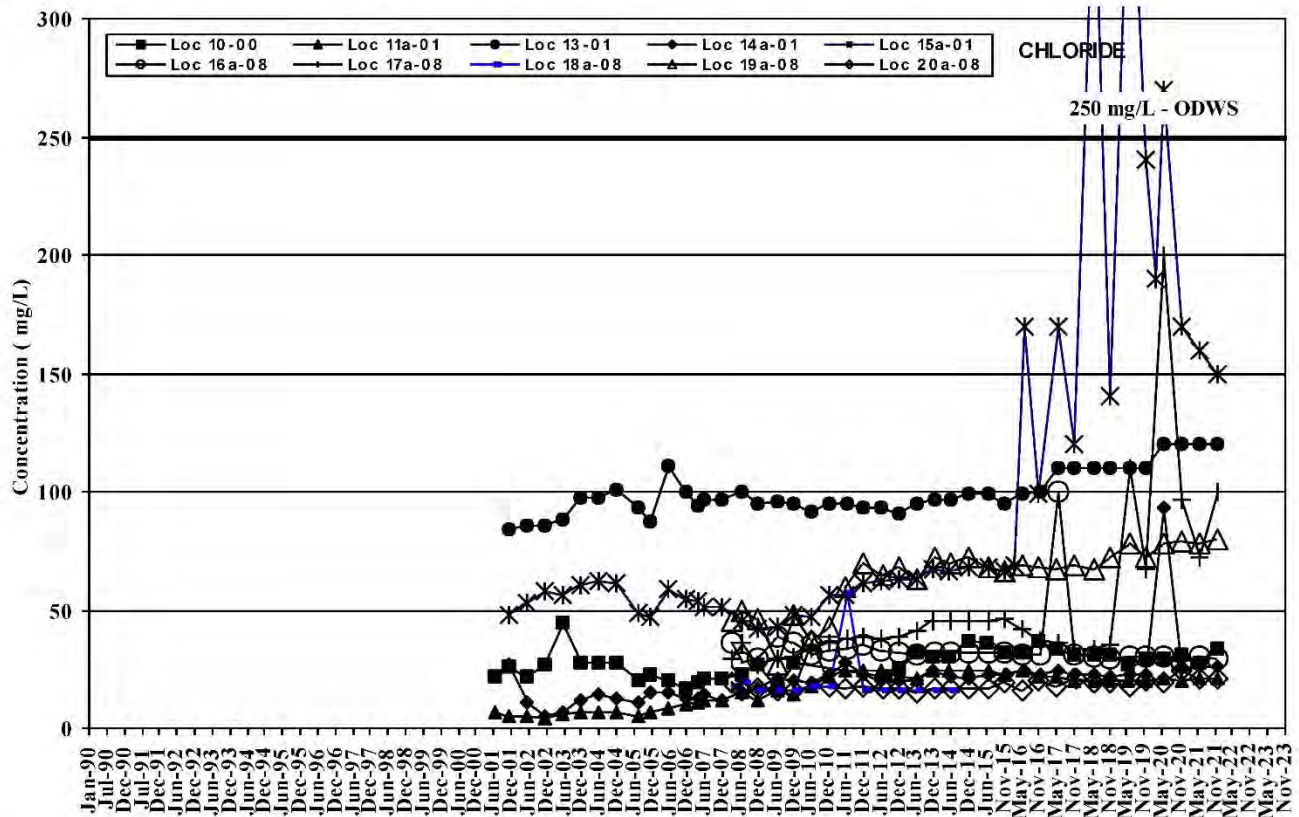
Ground Water Chemistry Trends

Bedrock Locations West or on Wet/Dry Facility

FIGURE

B3

12 Cl-NA Location WestBed



AECOM

Guelph WRIC & Waste Transfer Station

Ground Water Chemistry Trends

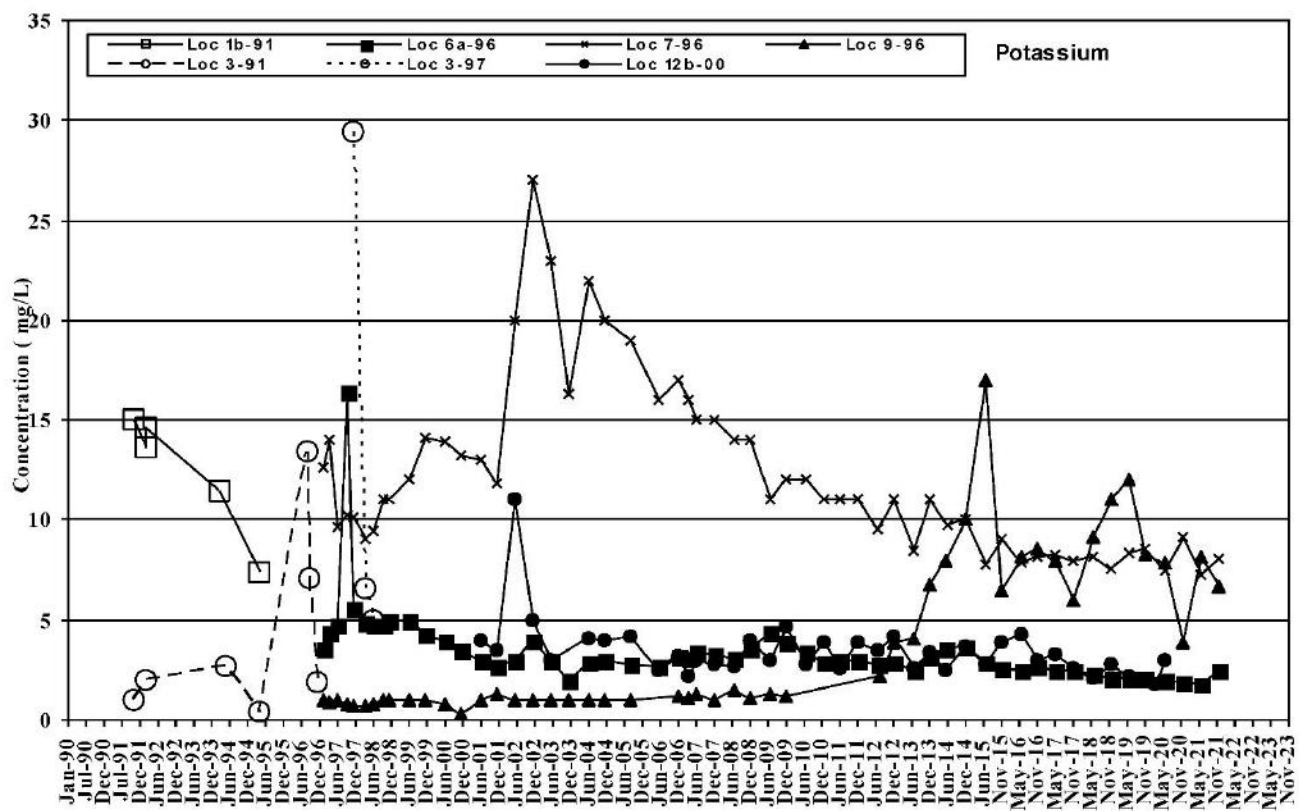
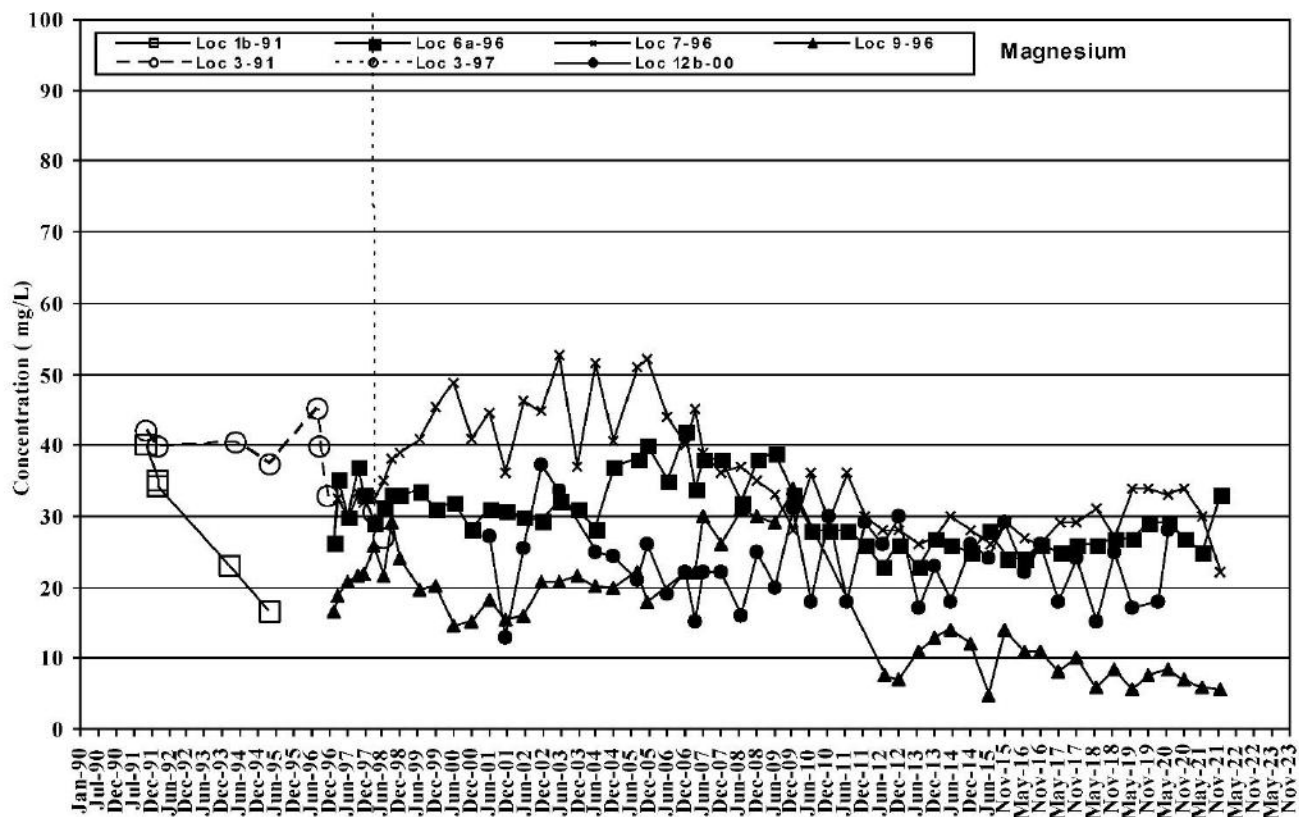
Bedrock Locations East of Wet/Dry or on

Transfer Station Property

FIGURE

B4

12 Cl-NA Location EastBed

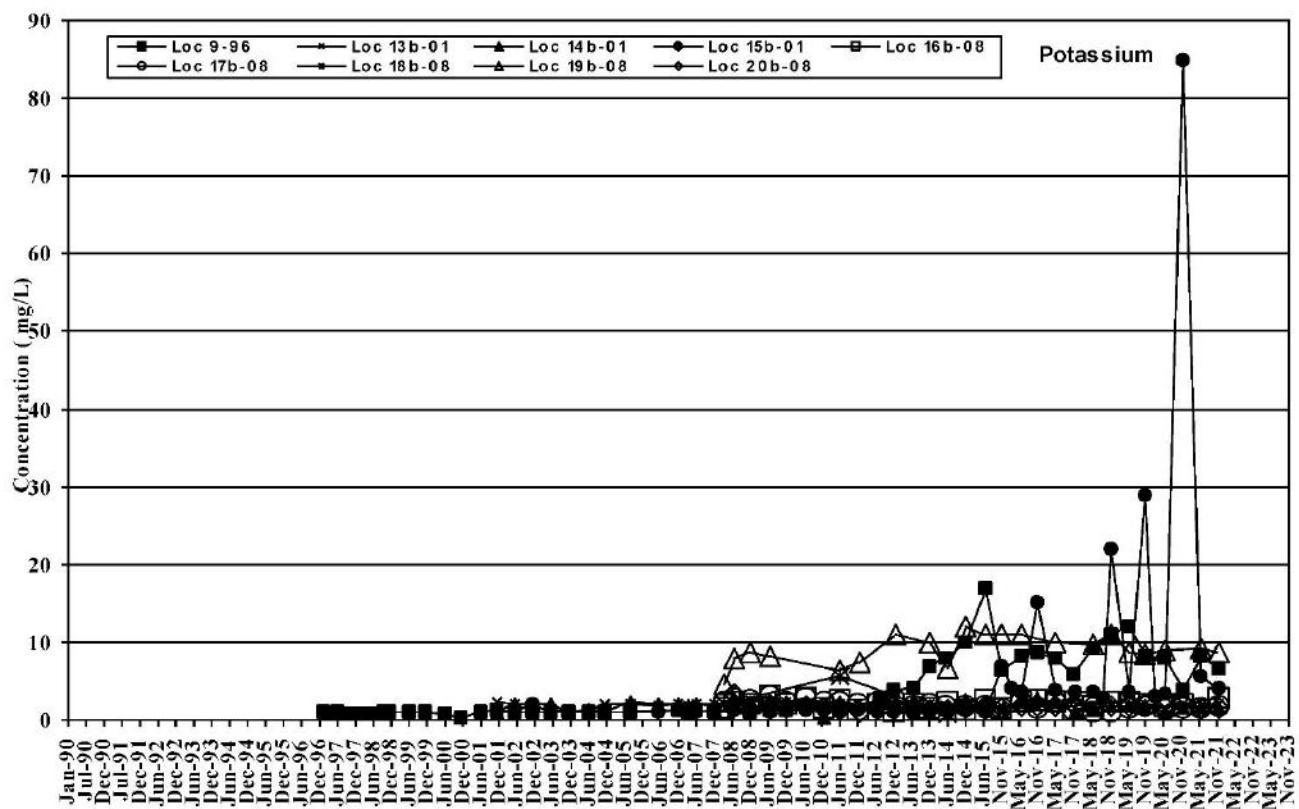
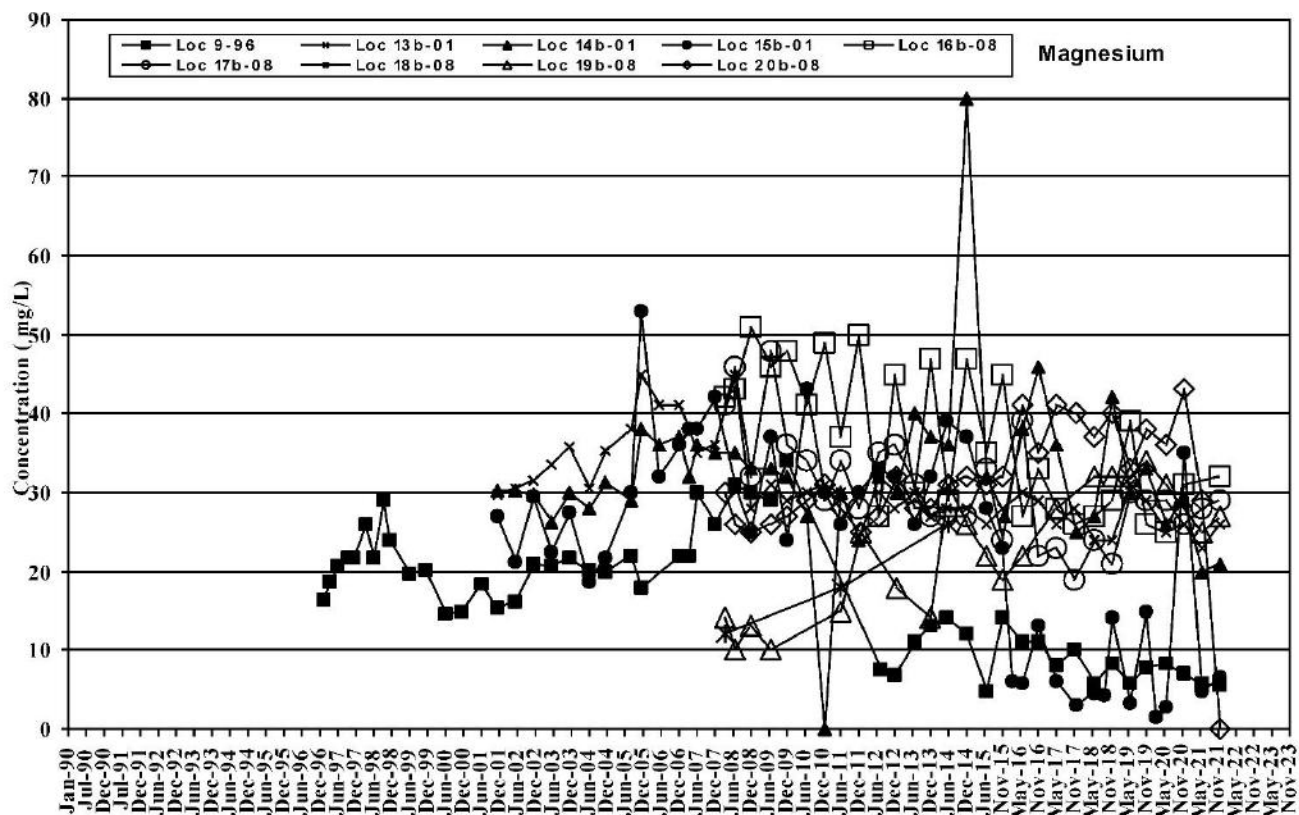


AECOM

Guelph WRIC & Waste Transfer Station
Ground Water Chemistry Trends
Overburden Locations on Wet/Dry Facility

FIGURE
B5

12 Mg-K Location WestOB



AECOM

Guelph WRIC & Waste Transfer Station

Ground Water Chemistry Trends

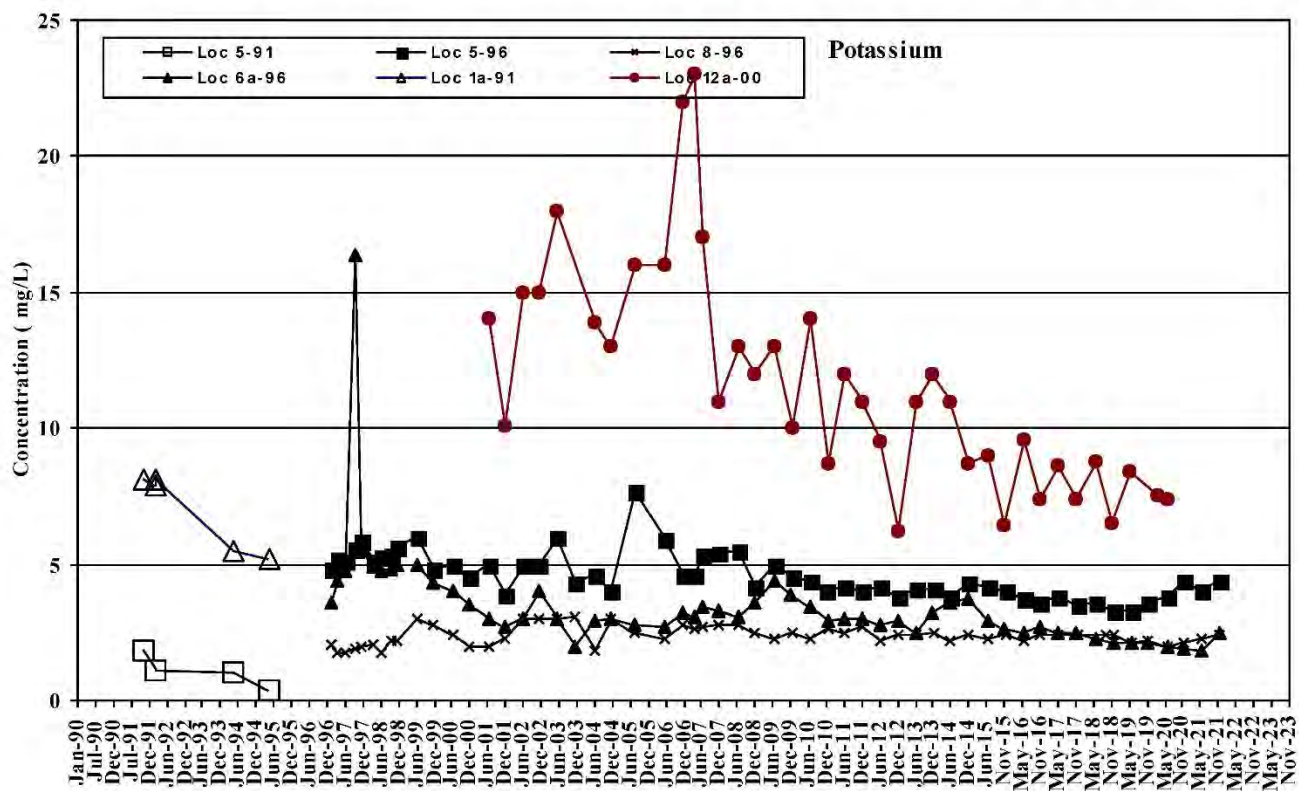
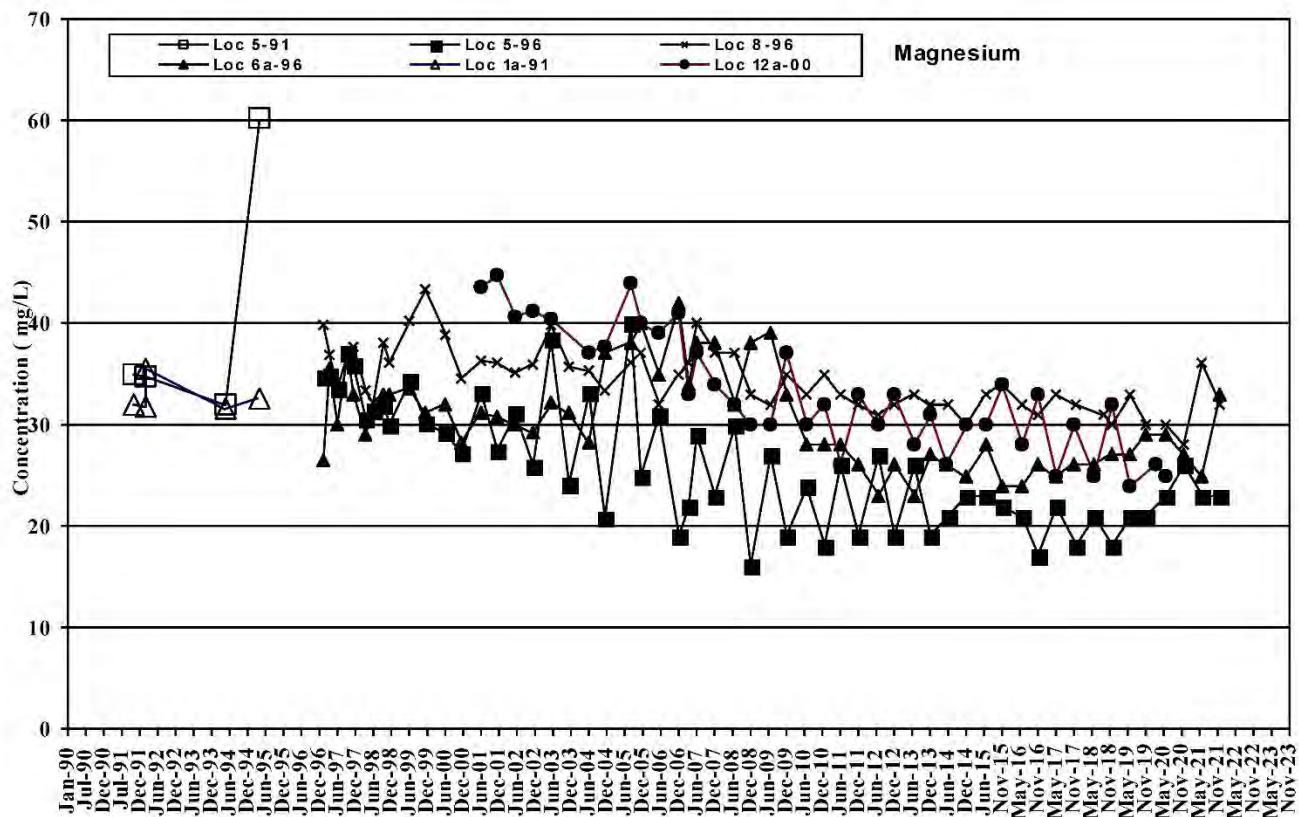
Overburden Locations East of Wet/Dry or

Transfer Station Property

FIGURE

B6

12 Mg-K Location EastOB



AECOM

Guelph WRIC & Waste Transfer Station

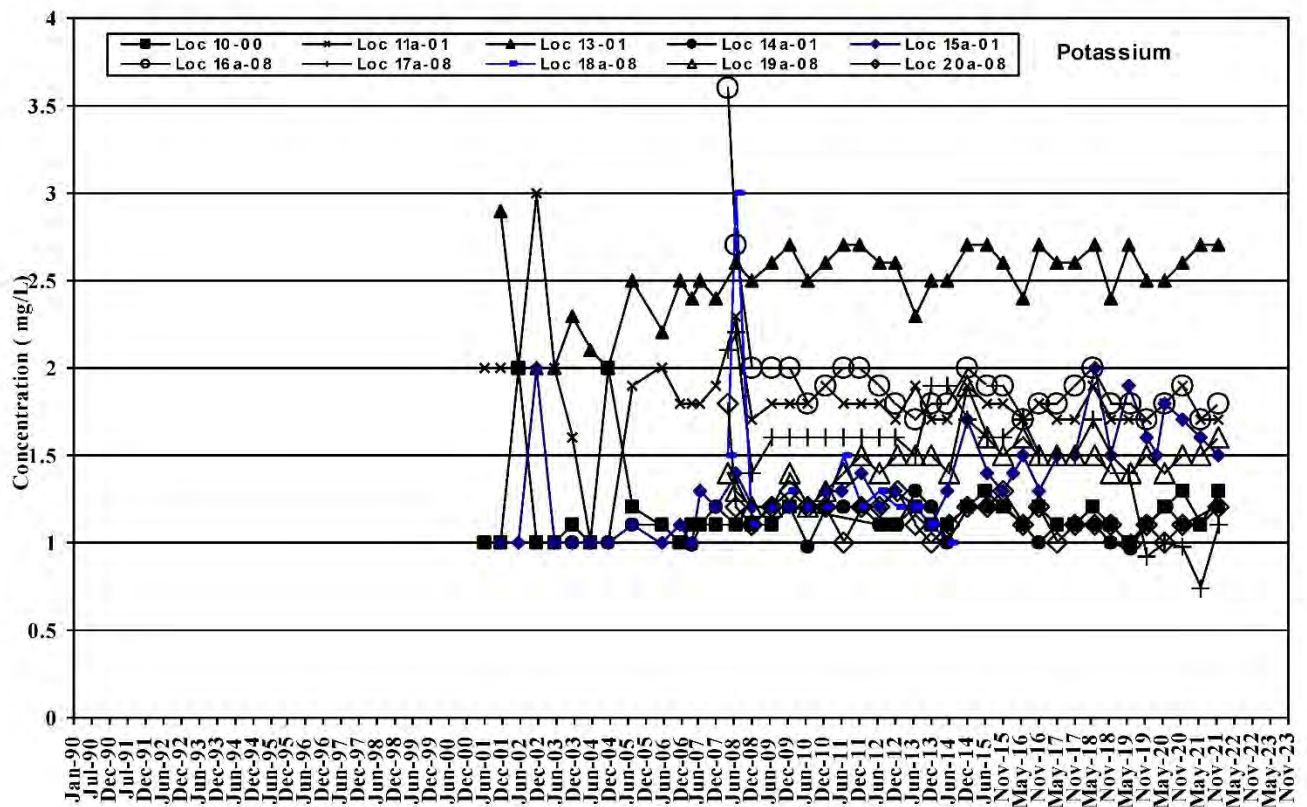
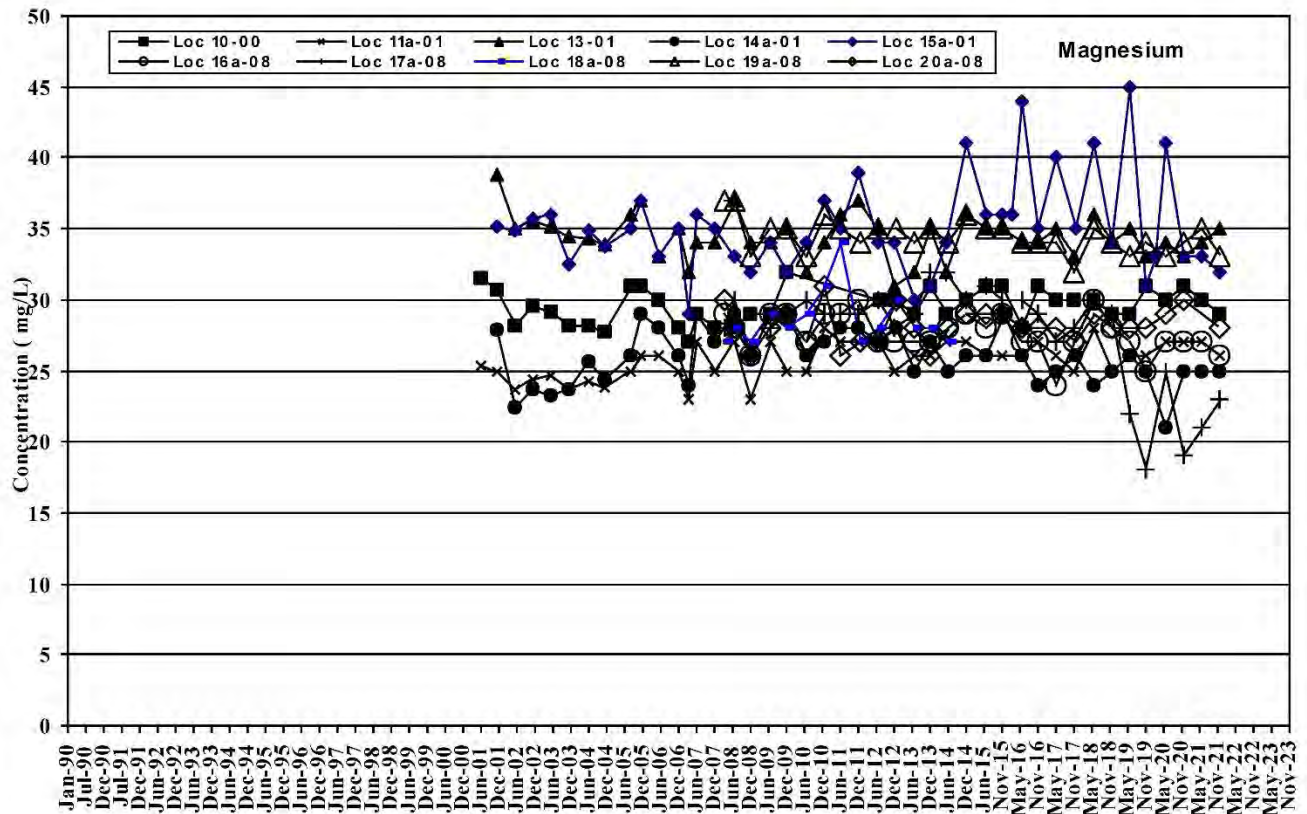
Ground Water Chemistry Trends

Bedrock Locations West or on Wet/Dry Facility

FIGURE

B7

12 Mg-K Location WestBed



AECOM

Guelph WRIC & Waste Transfer Station

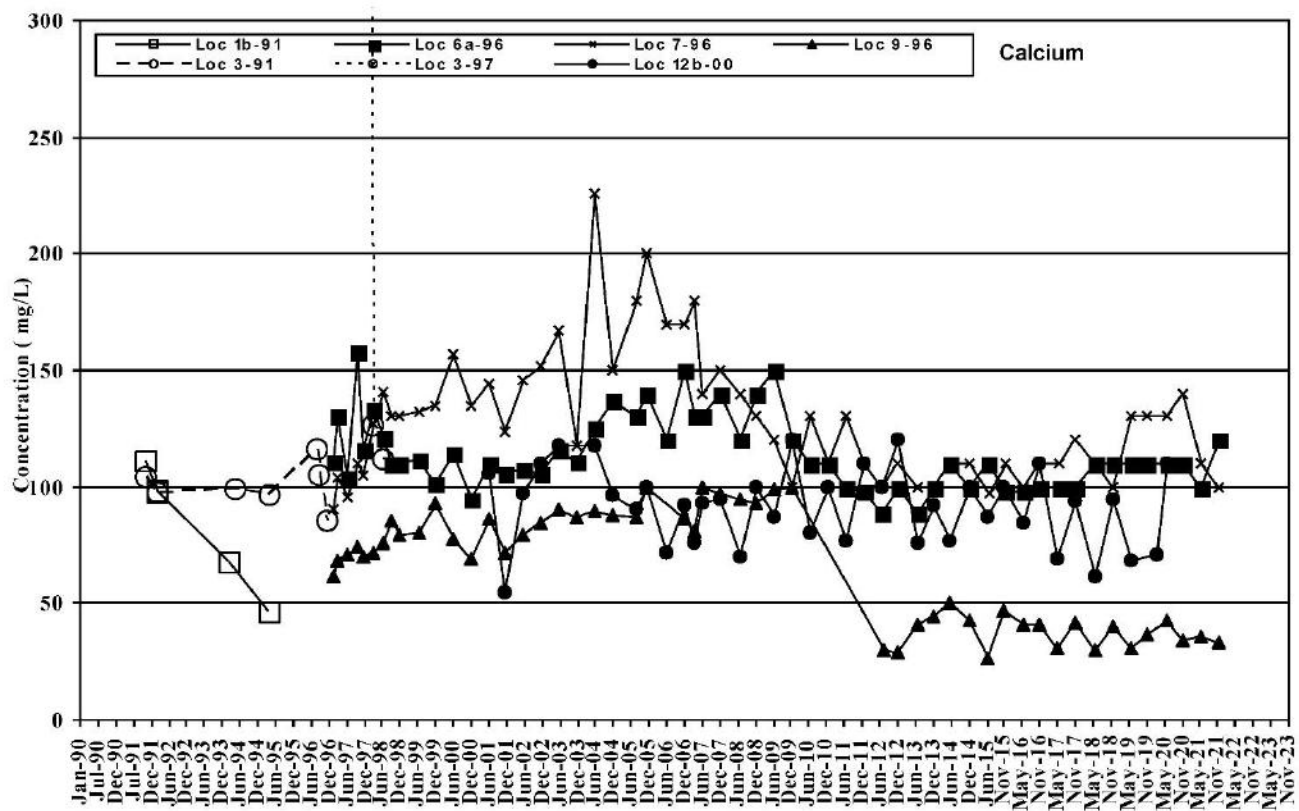
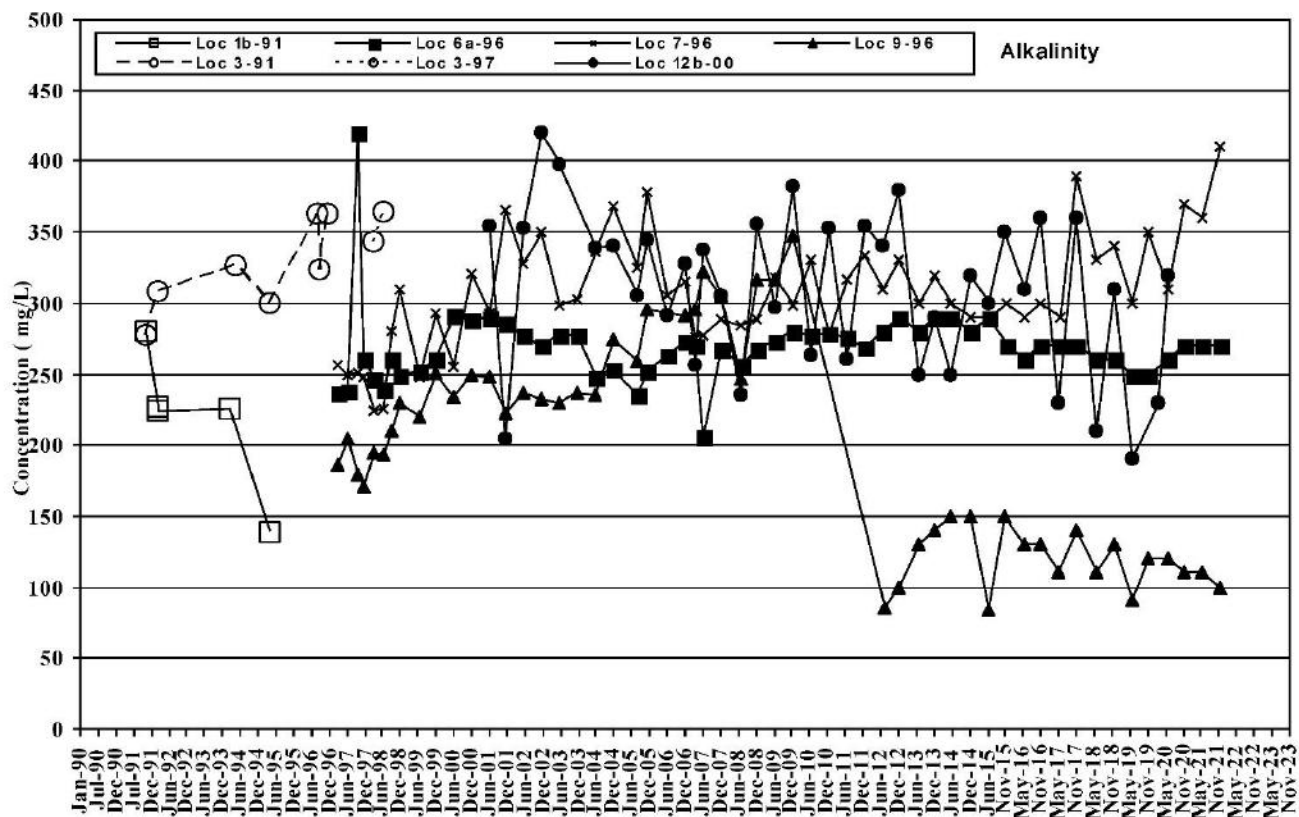
Ground Water Chemistry Trends

Bedrock Locations East of Wet/Dry or on Transfer Station Property

FIGURE

B8

12 Mg-K Location EastBed



AECOM

Guelph WRIC & Waste Transfer Station

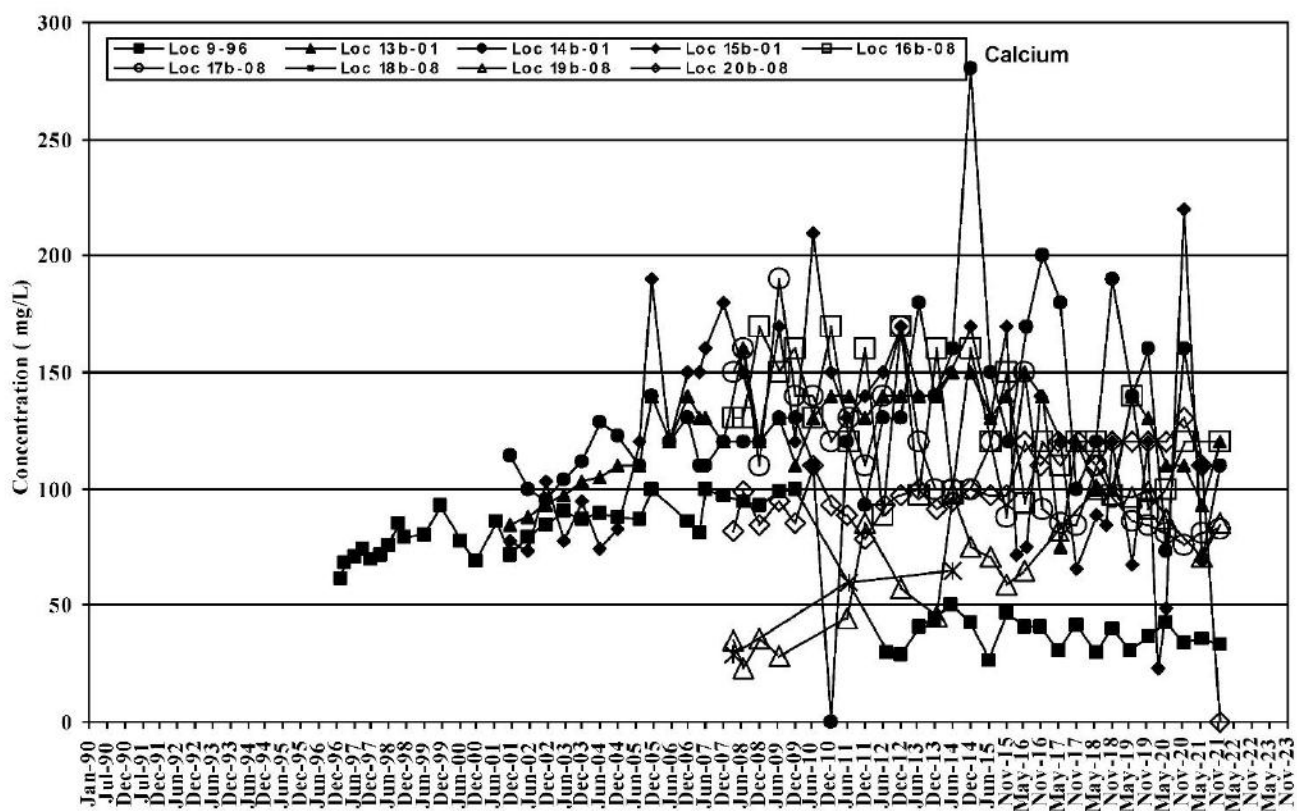
Ground Water Chemistry Trends

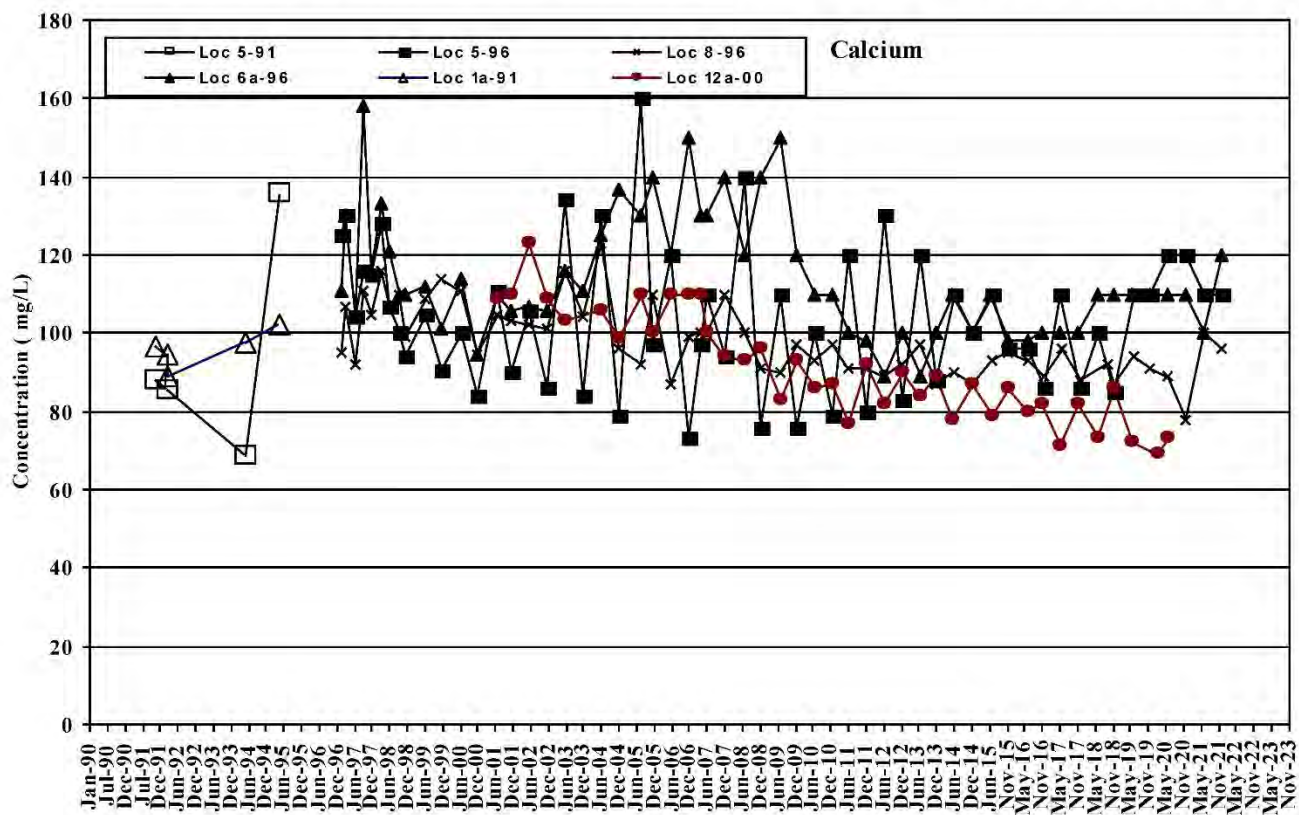
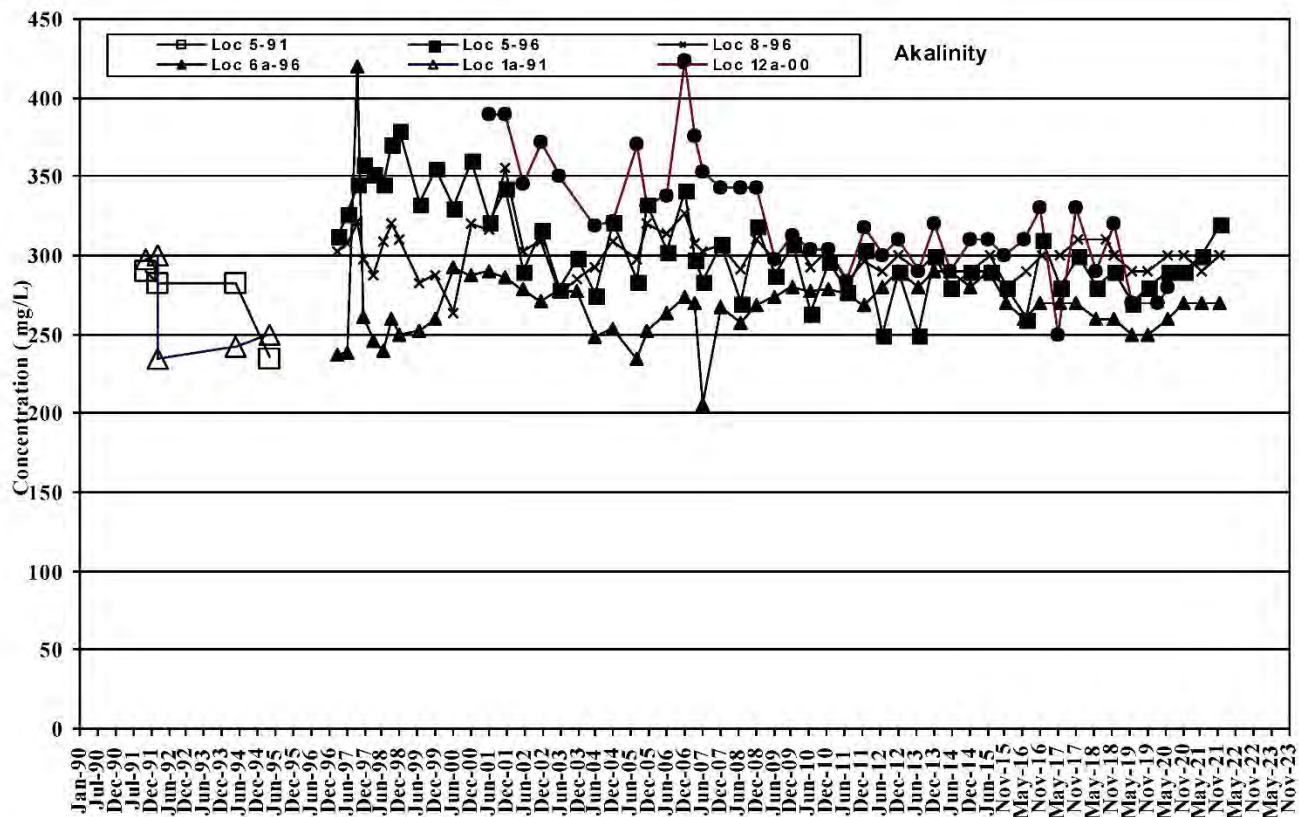
Overburden Locations on Wet/Dry Facility

FIGURE

B9

12 Alk-Ca Location WestOB





AECOM

Guelph WRIC & Waste Transfer Station

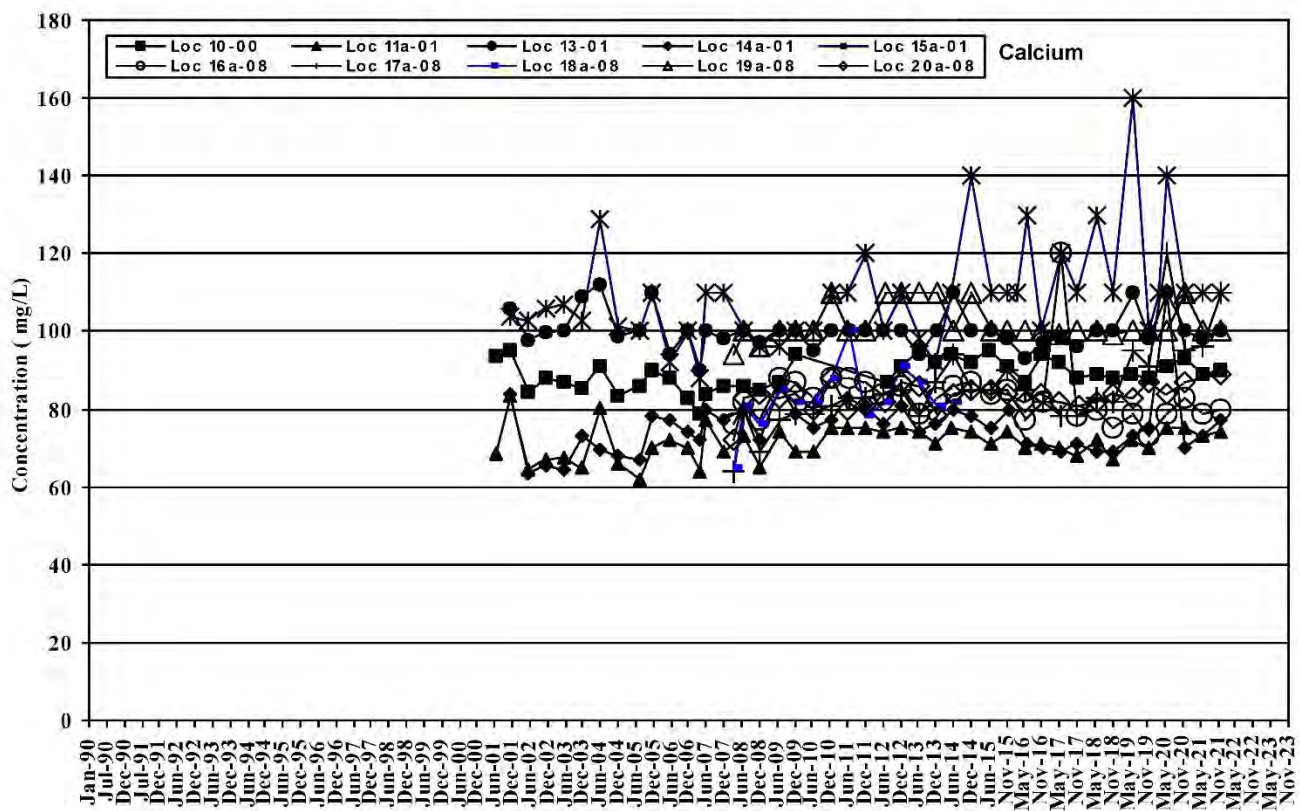
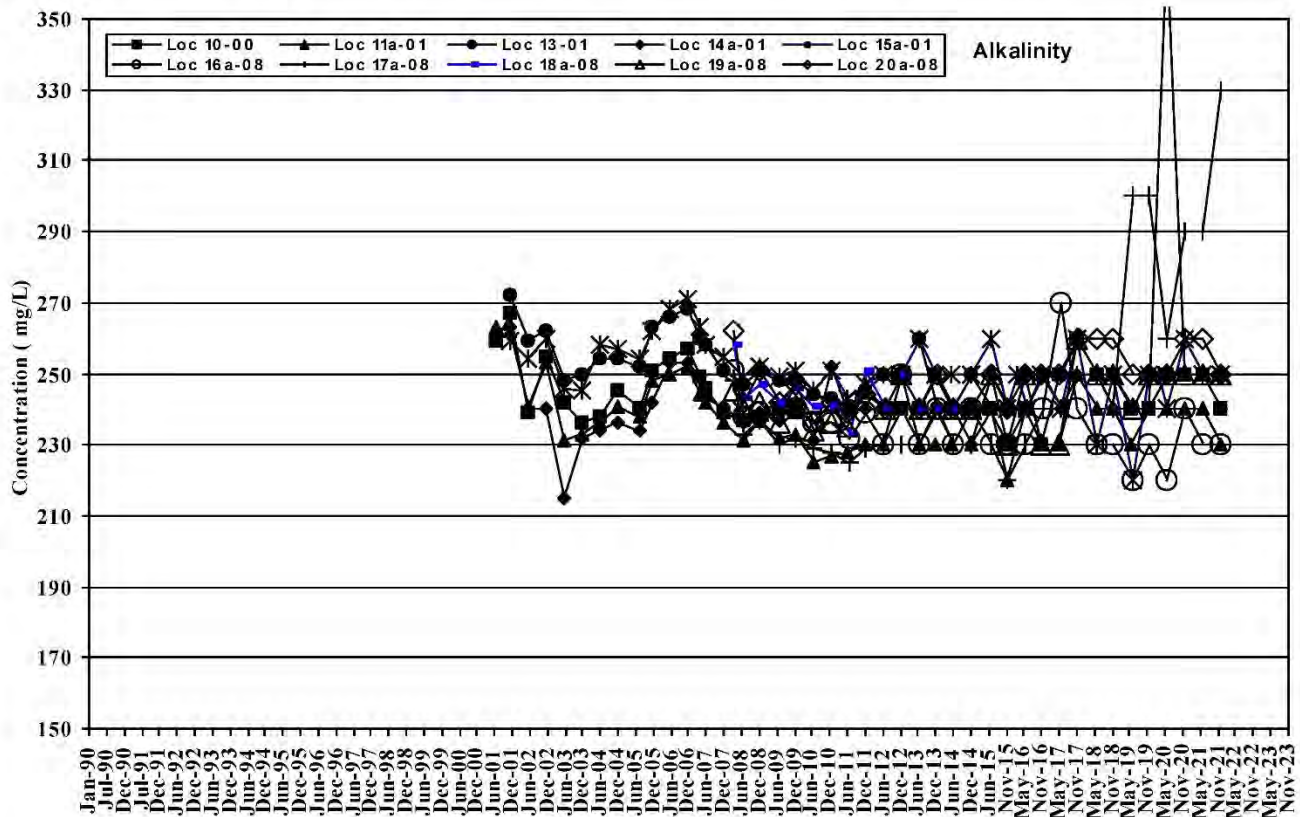
Ground Water Chemistry Trends

Bedrock Locations West or on Wet/Dry Facility

FIGURE

B11

12 Alk-Ca Location WestBed



AECOM

Guelph WRIC & Waste Transfer Station

Ground Water Chemistry Trends

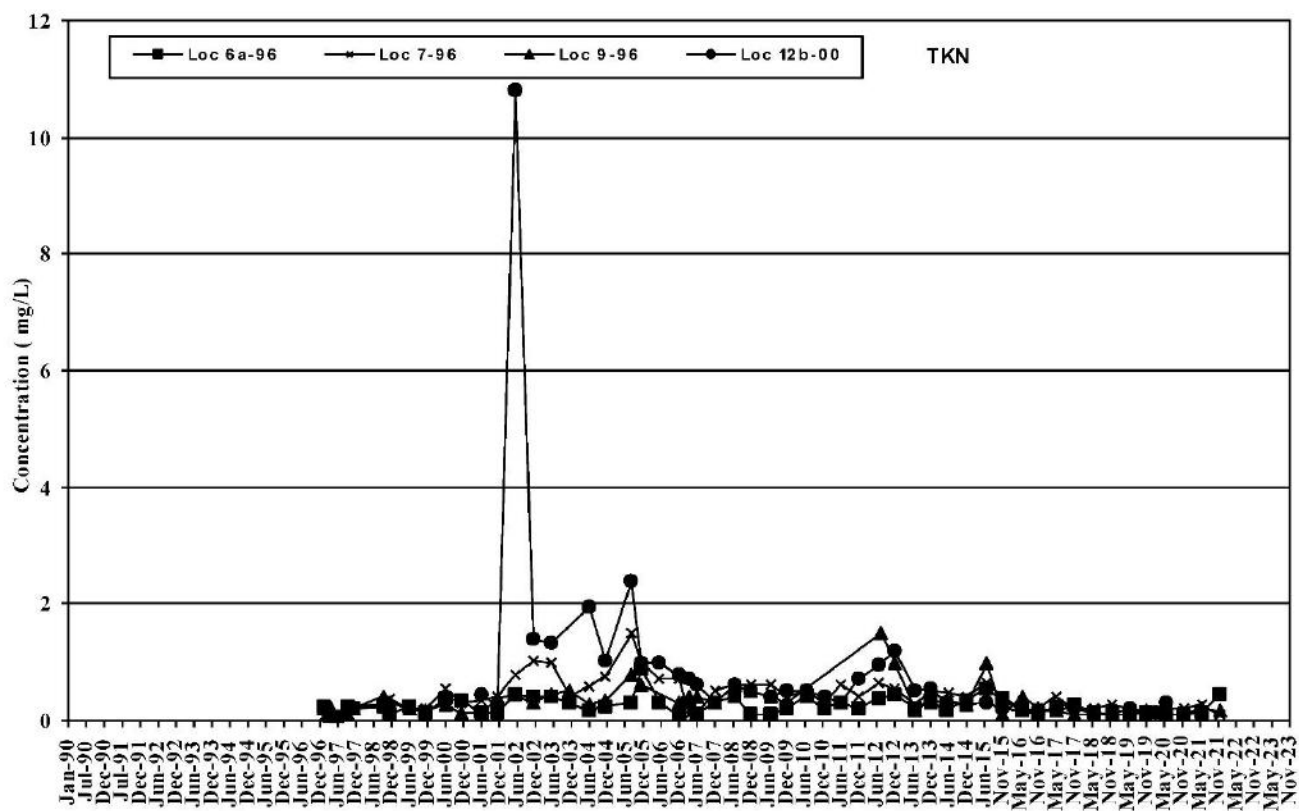
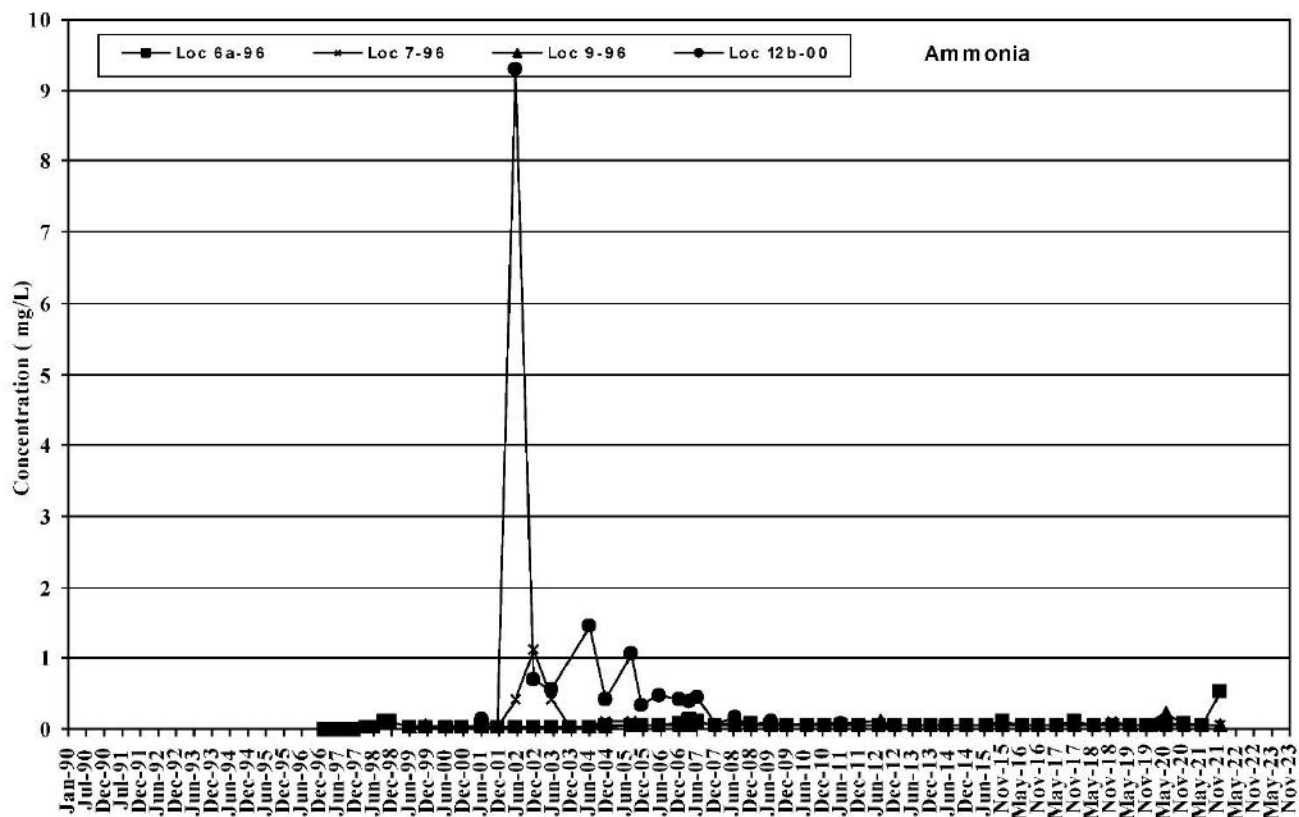
Bedrock Locations East of Wet/Dry or on Transfer

Station Property

FIGURE

B12

12 Alk-Ca Location EastBed



AECOM

Guelph WRIC & Waste Transfer Station

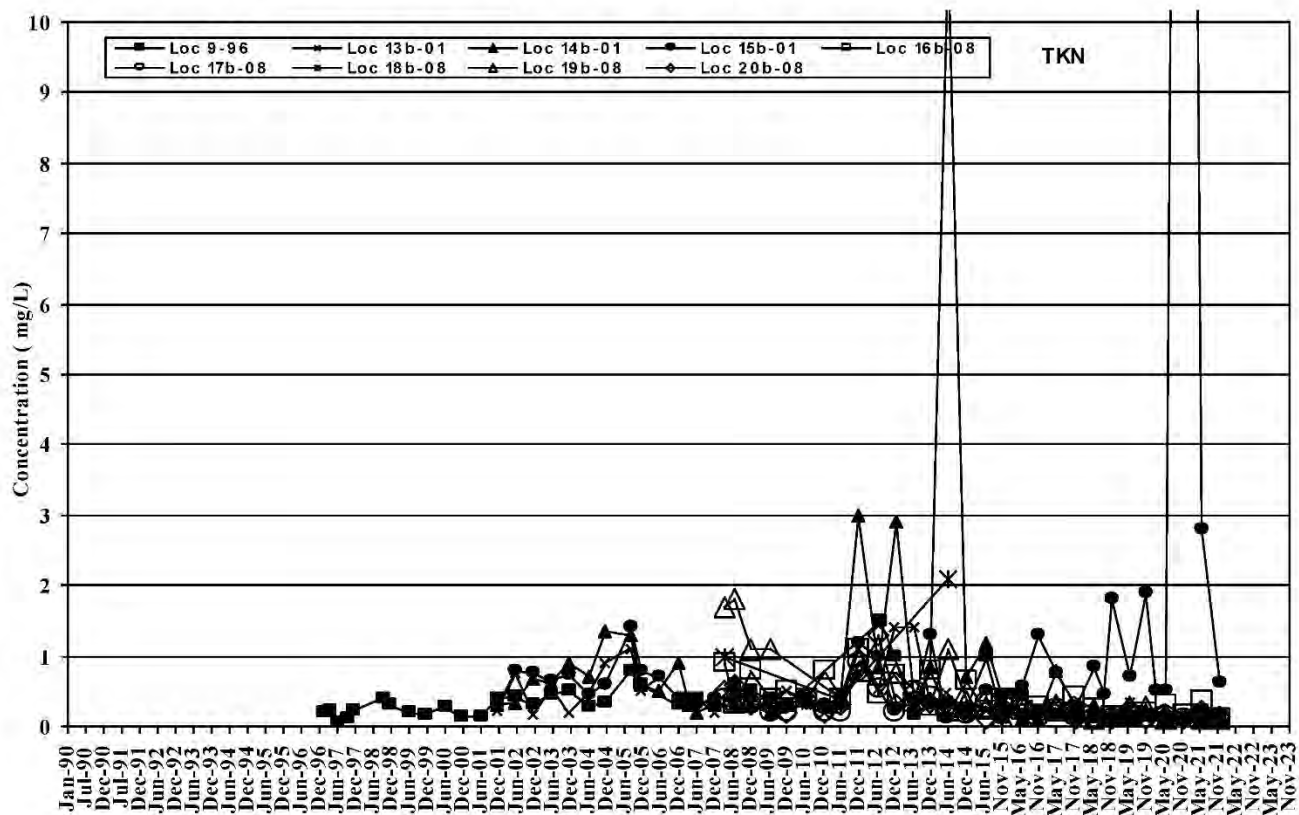
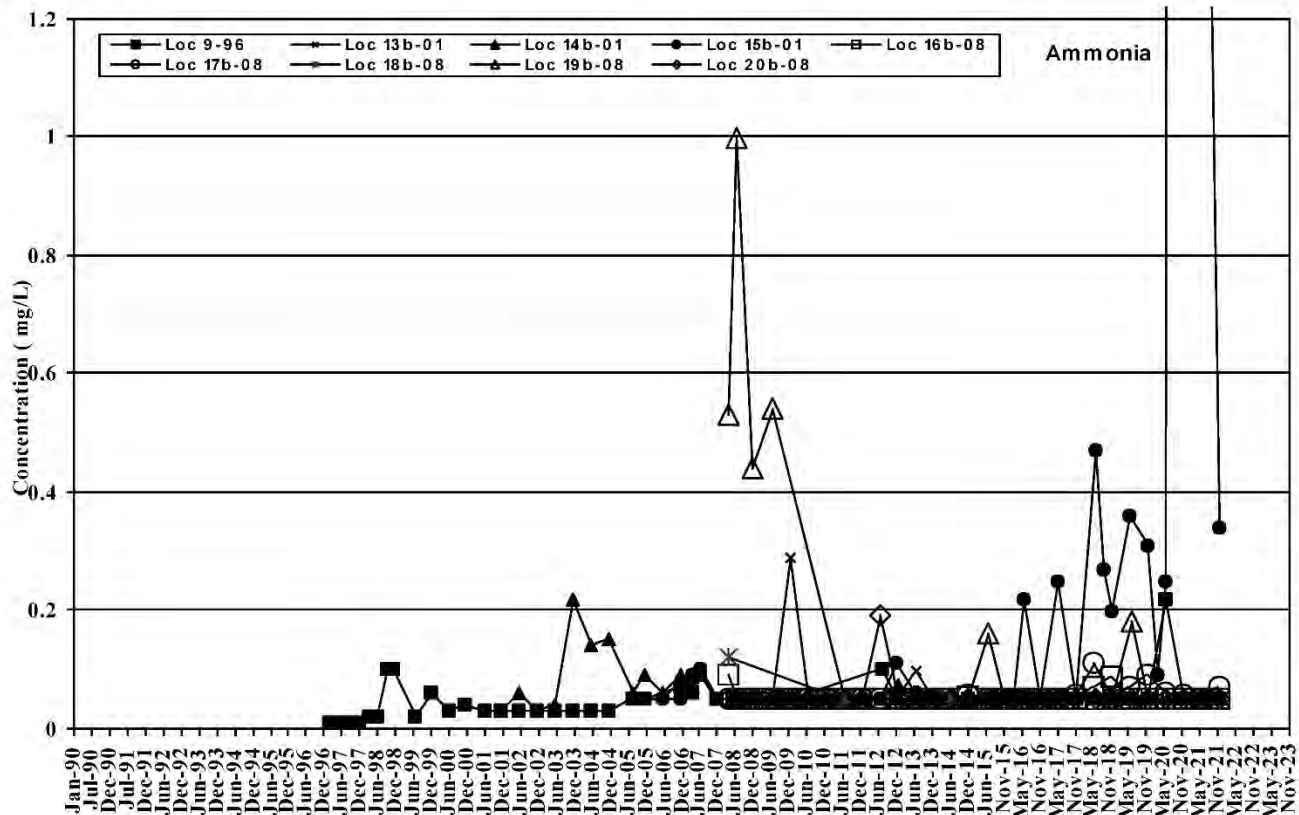
Ground Water Chemistry Trends

Overburden Locations on Wet/Dry Facility

FIGURE

B13

12 NH3-TKN Location WestOB



AECOM

Guelph WRIC & Waste Transfer Station

Ground Water Chemistry Trends

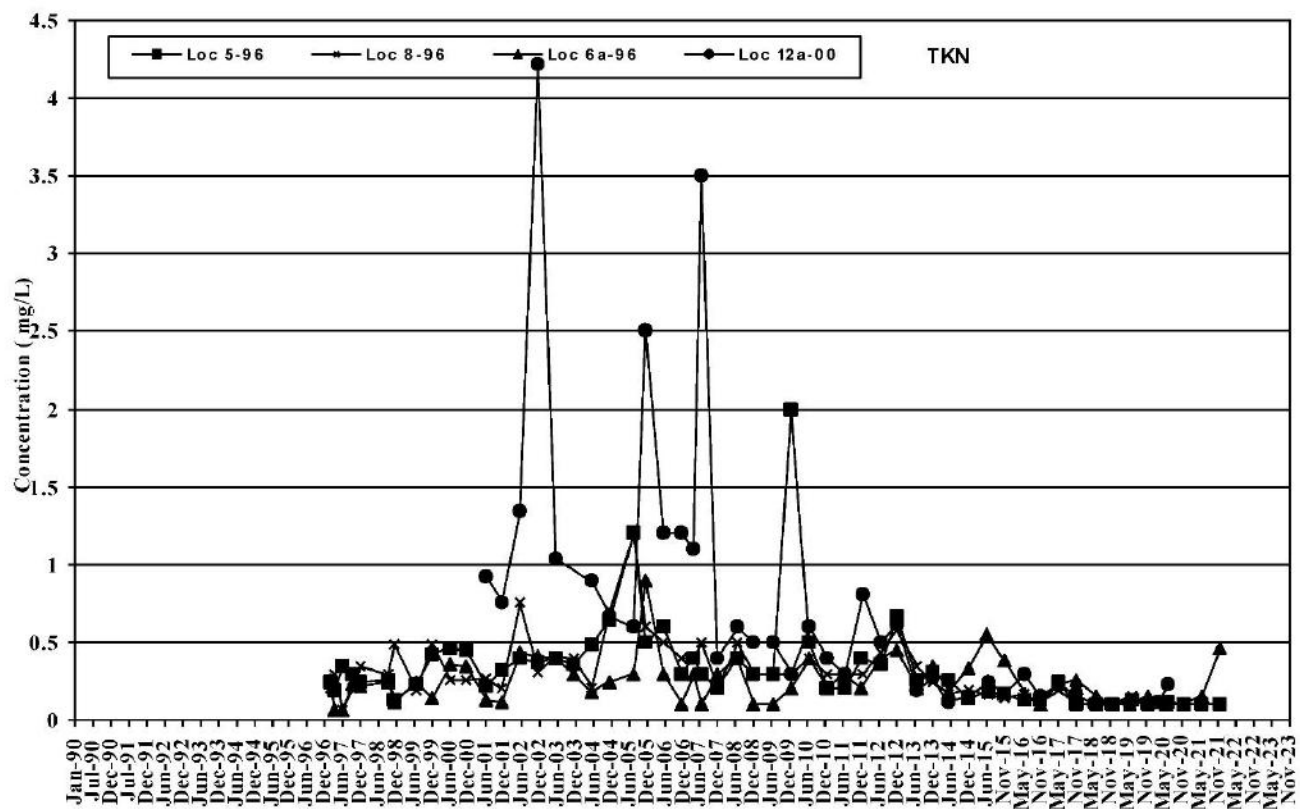
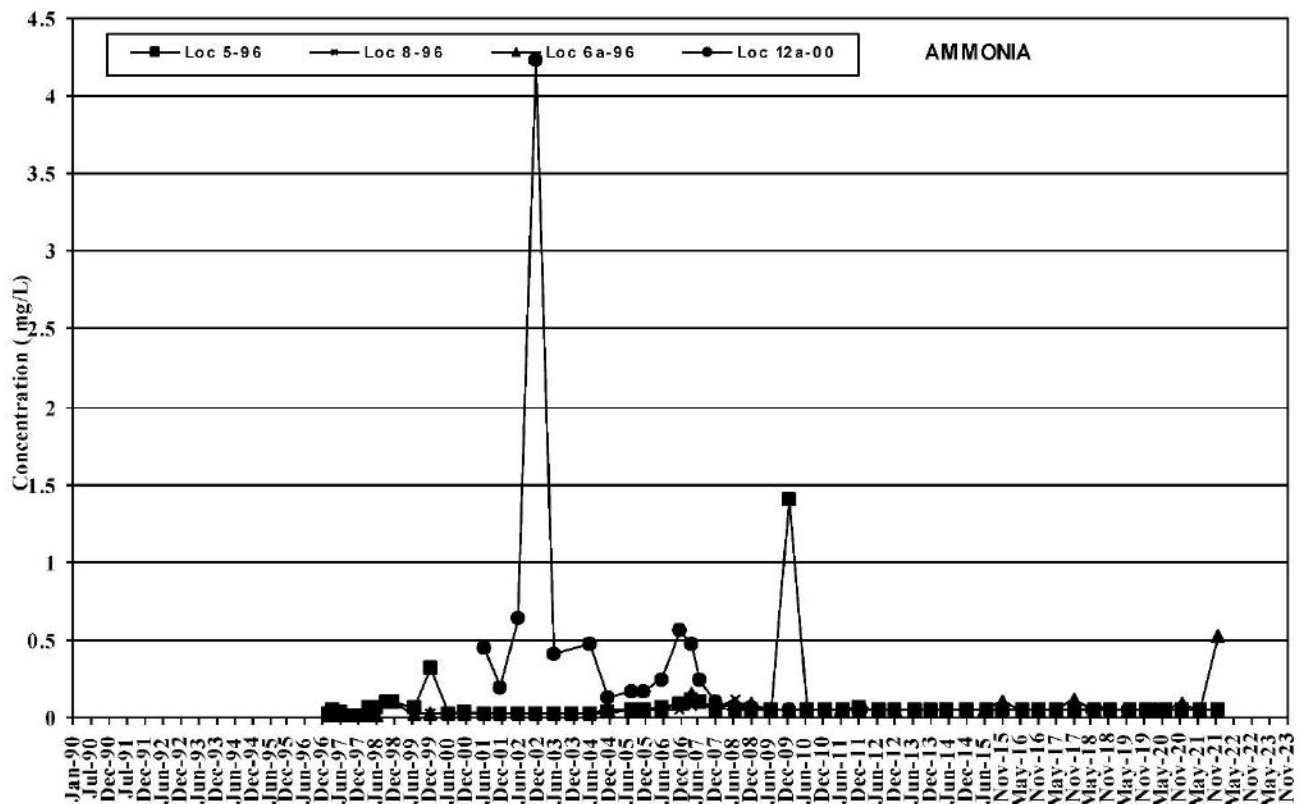
Overburden Locations East of Wet/Dry or

Transfer Station Property

FIGURE

B14

12 NH₃-TKN Location EastOB



AECOM

Guelph WRIC & Waste Transfer Station

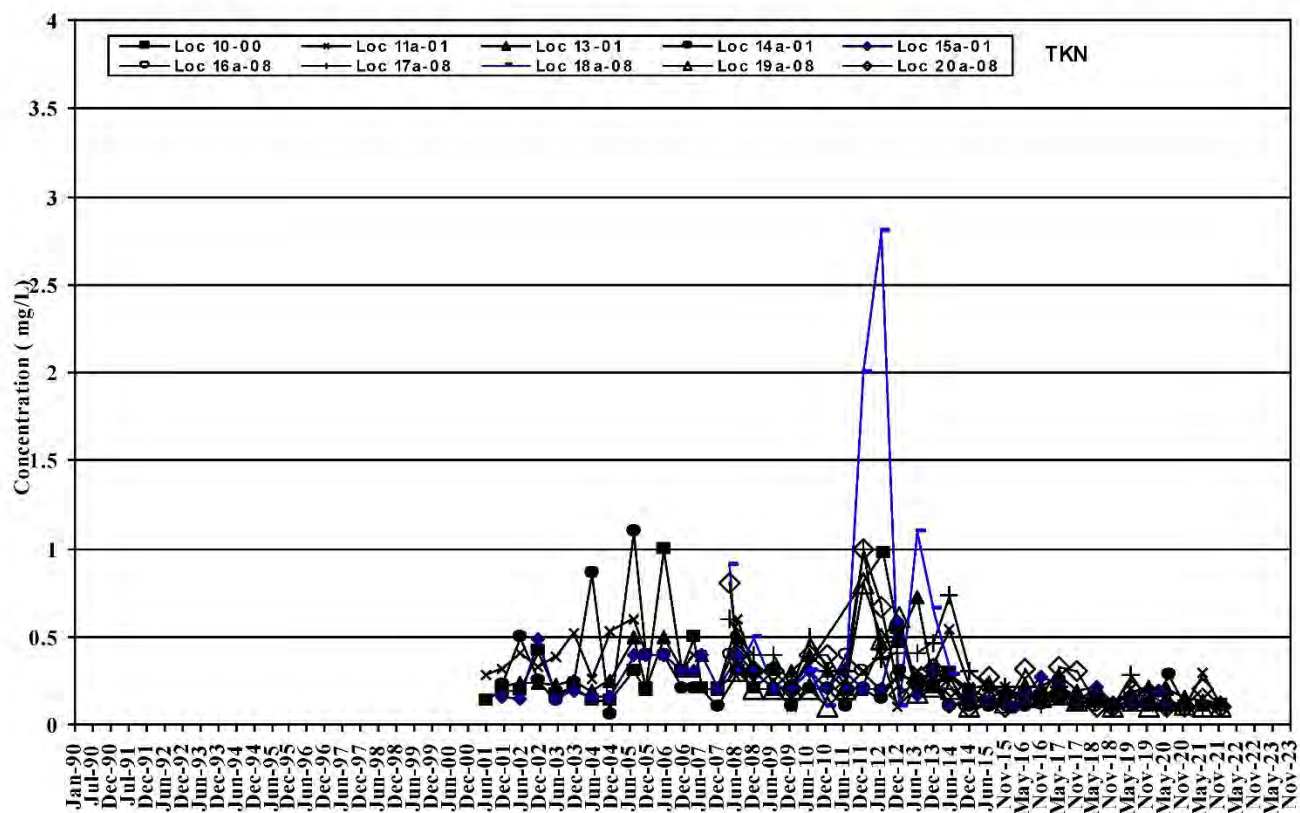
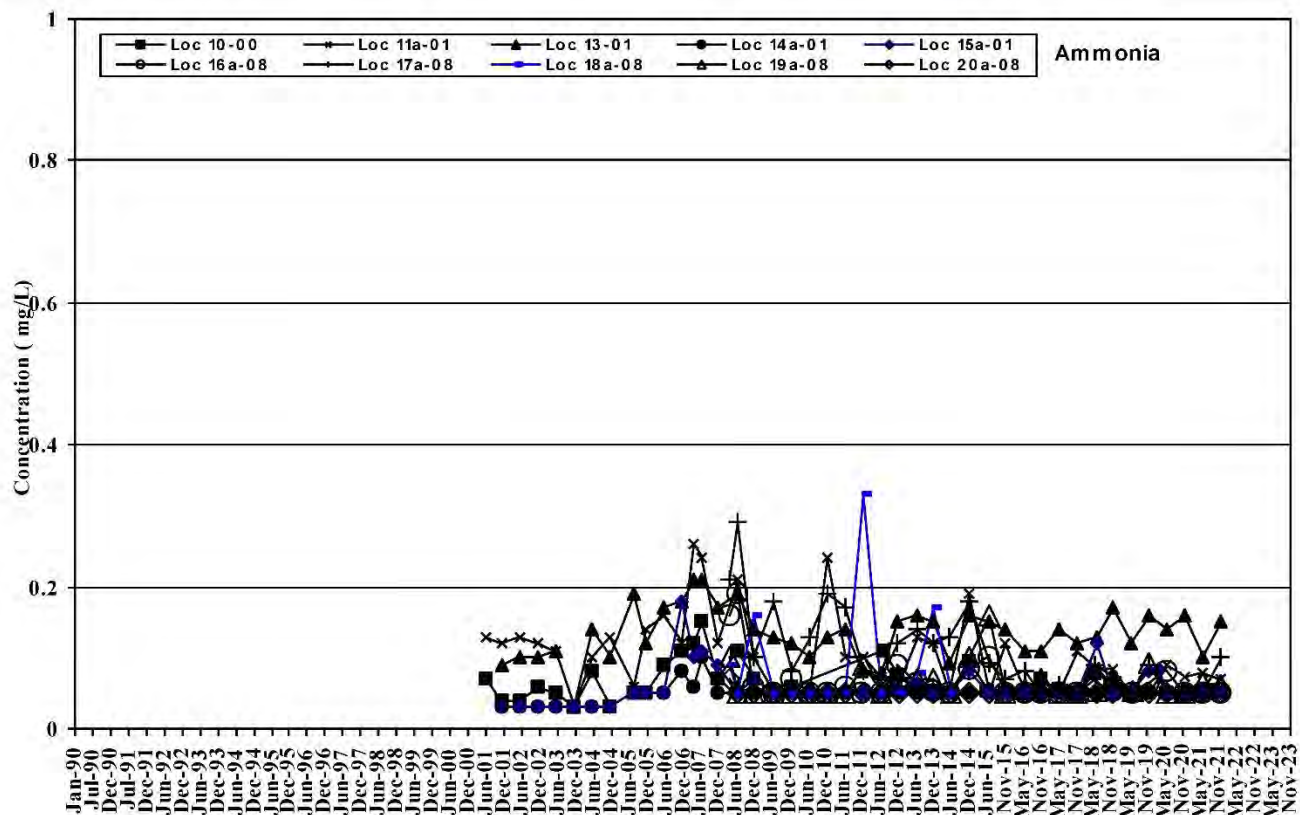
Ground Water Chemistry Trends

Bedrock Locations West or on Wet/Dry Facility

FIGURE

B15

12 NH3-TKN Location WestBed



AECOM

Guelph WRIC & Waste Transfer Station

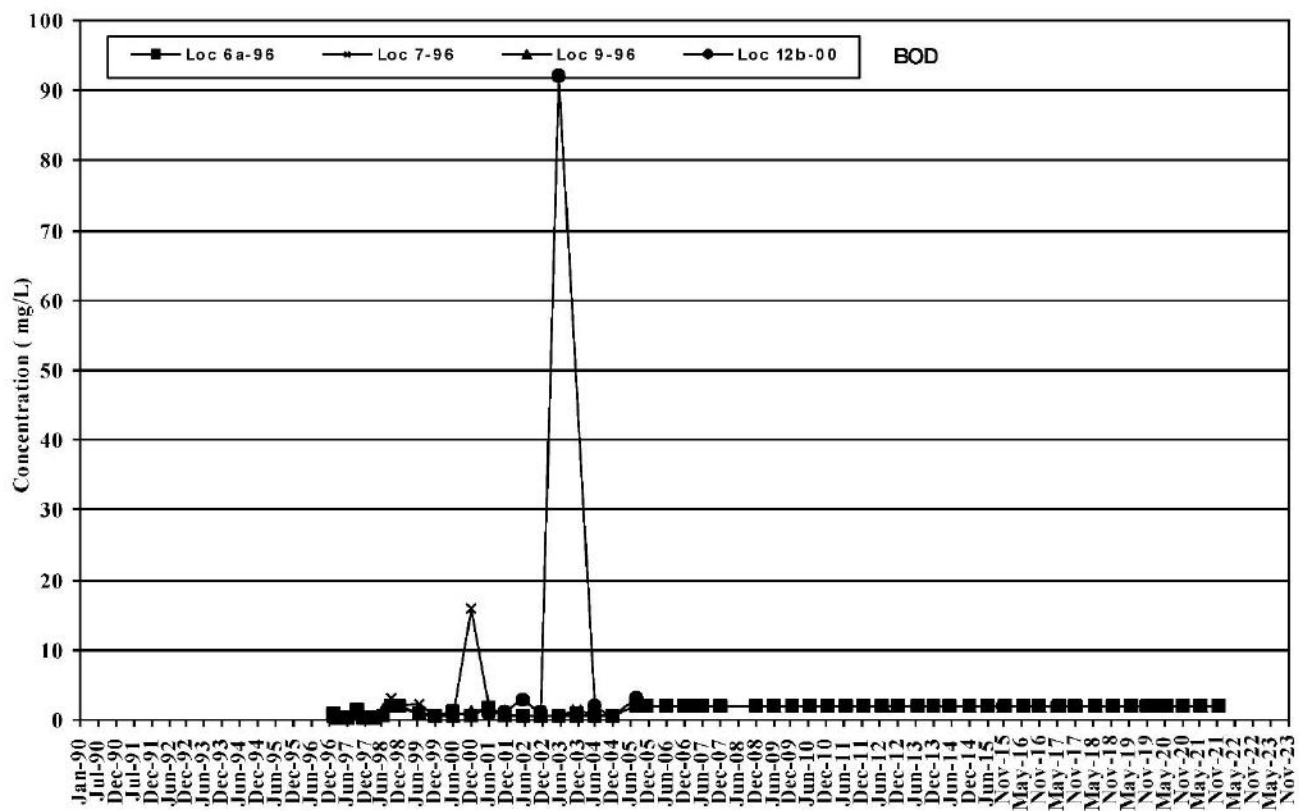
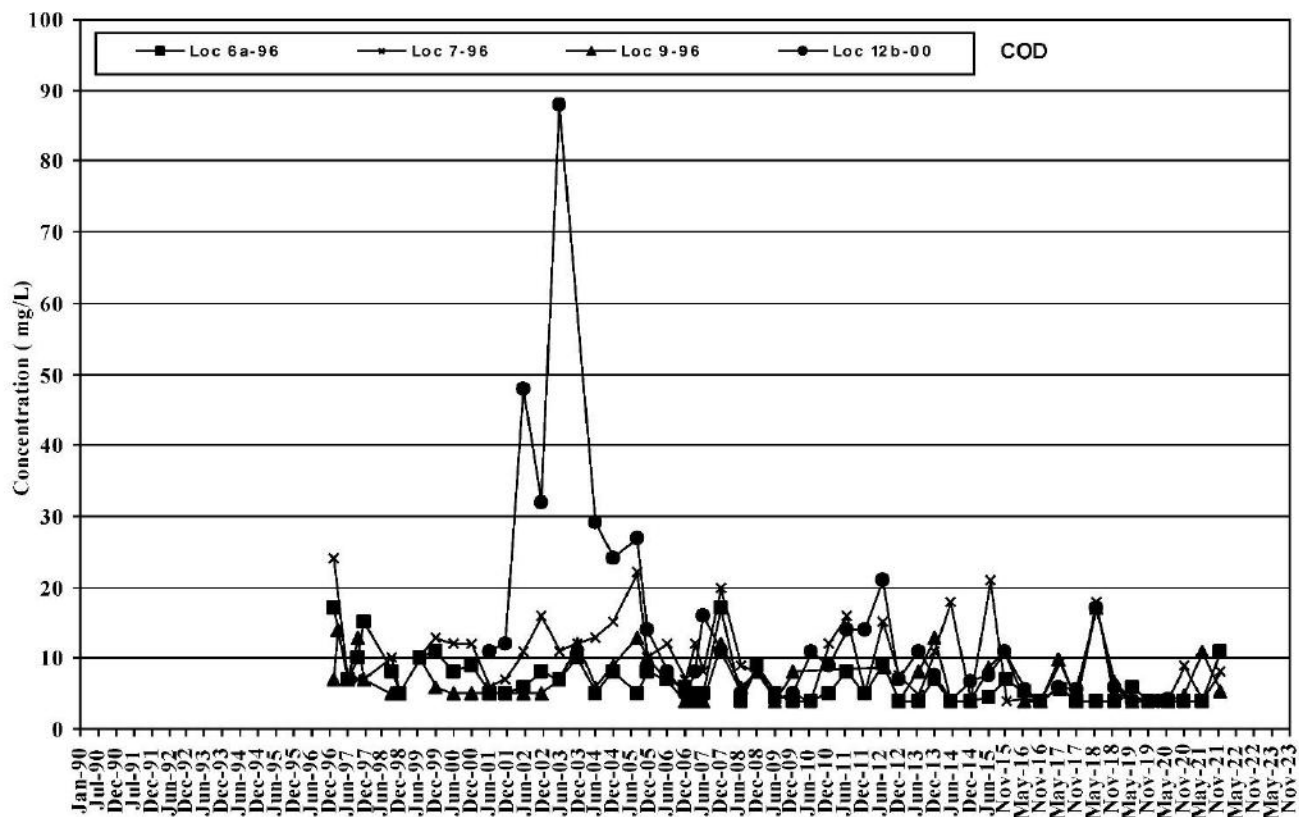
Ground Water Chemistry Trends

Bedrock Locations East of Wet/Dry or on Transfer Station Property

FIGURE

B16

12 NH3-TKN Location EasttBed

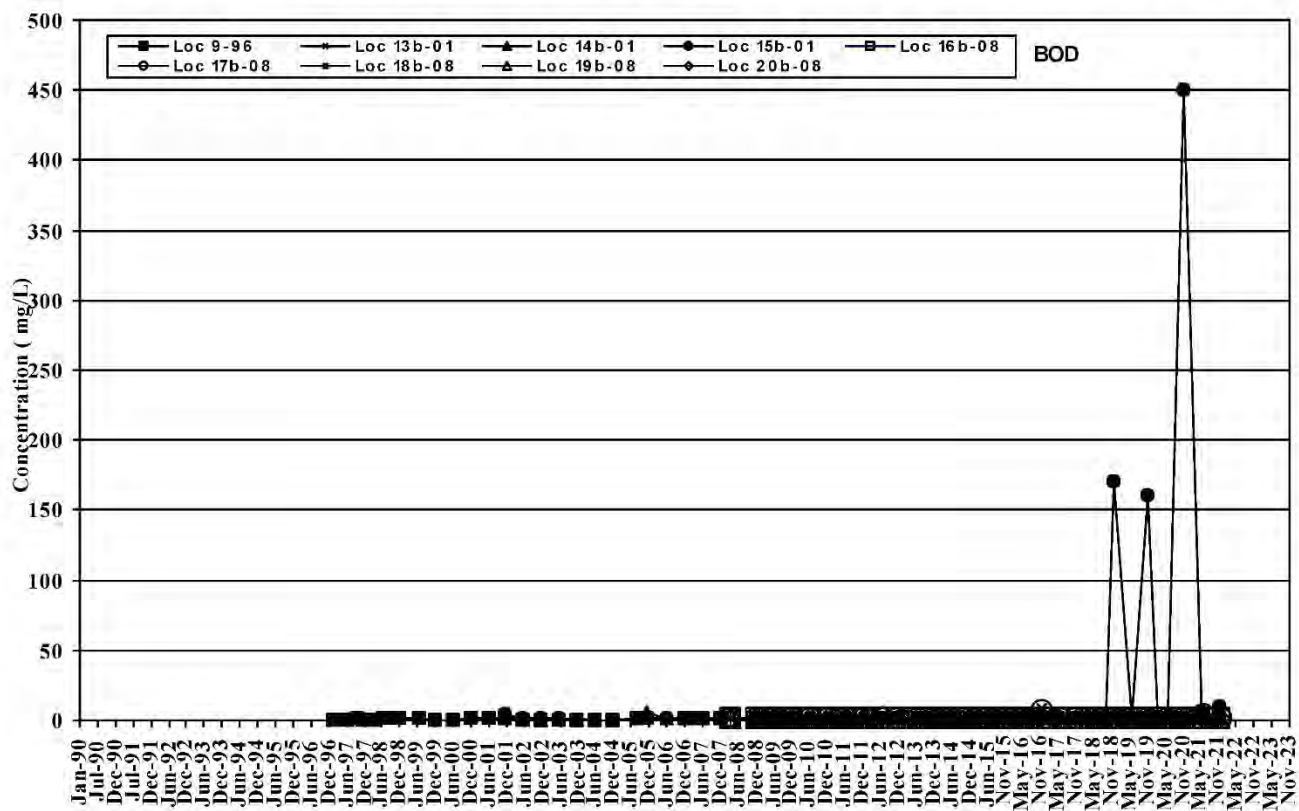
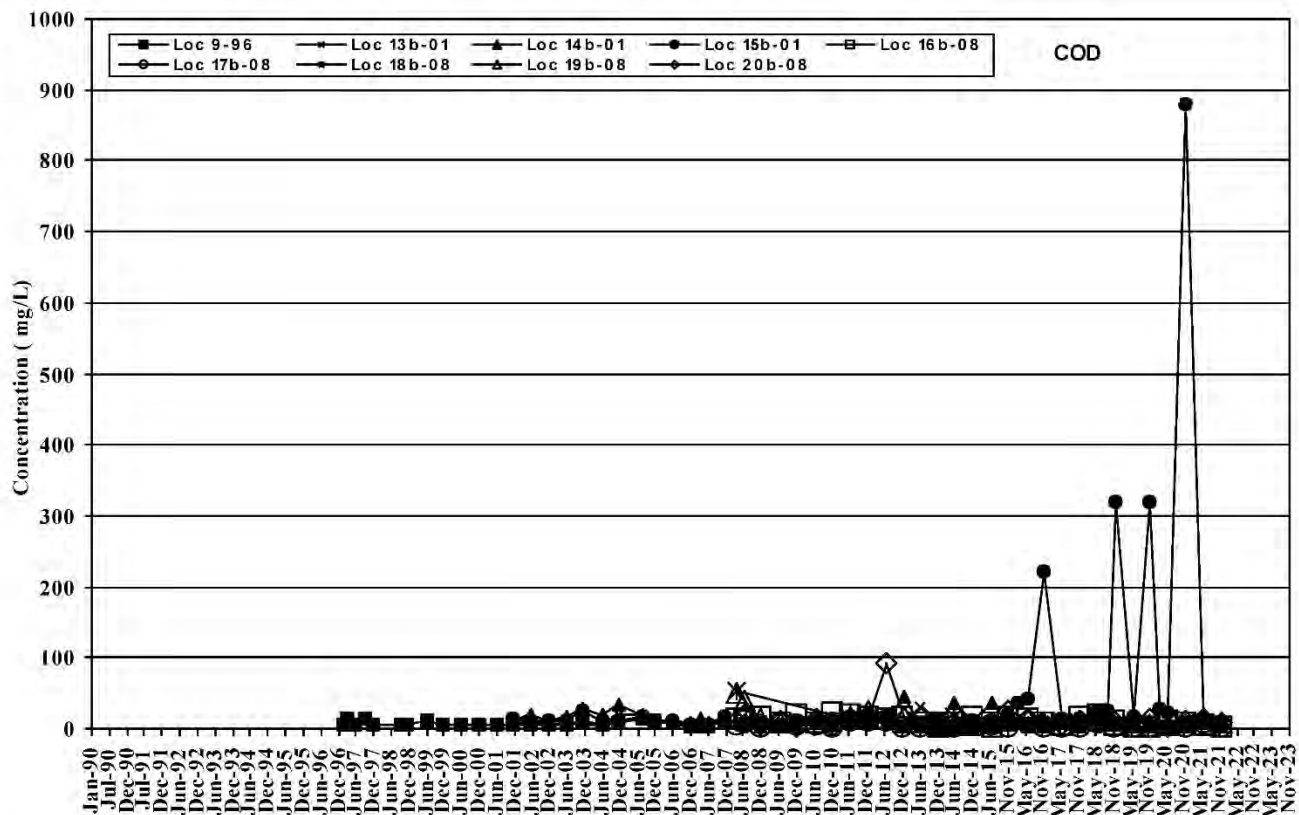


AECOM

Guelph WRIC & Waste Transfer Station
Ground Water Chemistry Trends
Overburden Locations on Wet/Dry Facility

FIGURE
B17

12 COD-BOD Location: WestOB



AECOM

Guelph WRIC & Waste Transfer Station

Ground Water Chemistry Trends

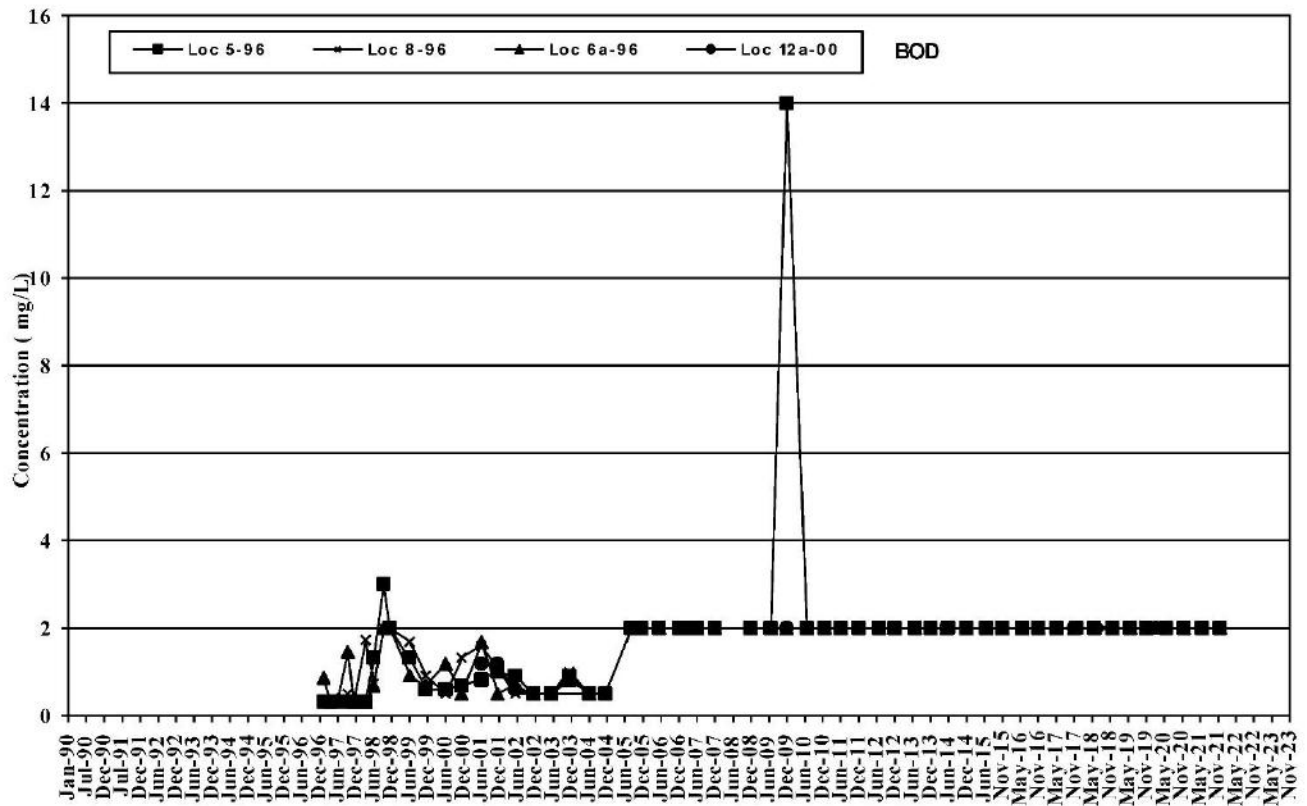
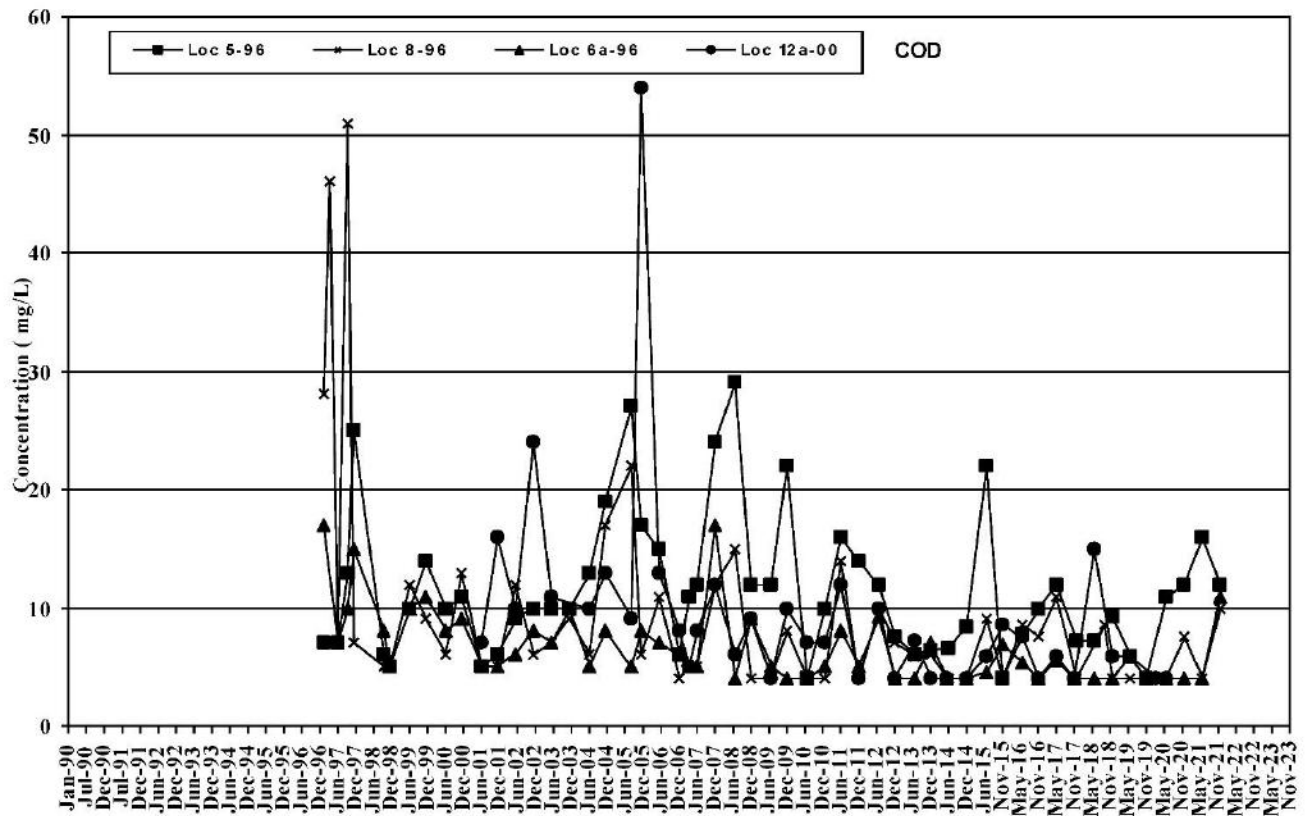
Overburden Locations East of Wet/Dry or

Transfer Station Property

FIGURE

B18

12 COD-BOD Location EastOB



AECOM

Guelph WRIC & Waste Transfer Station

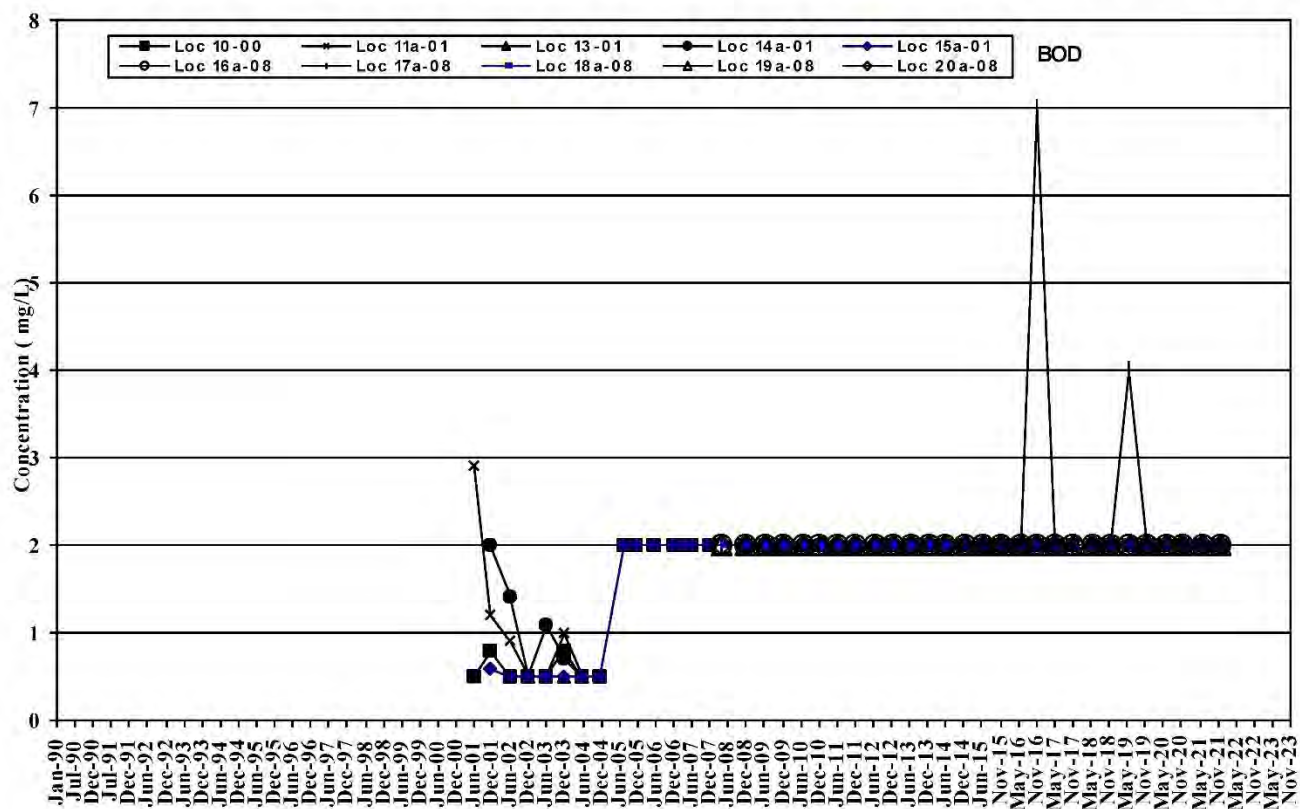
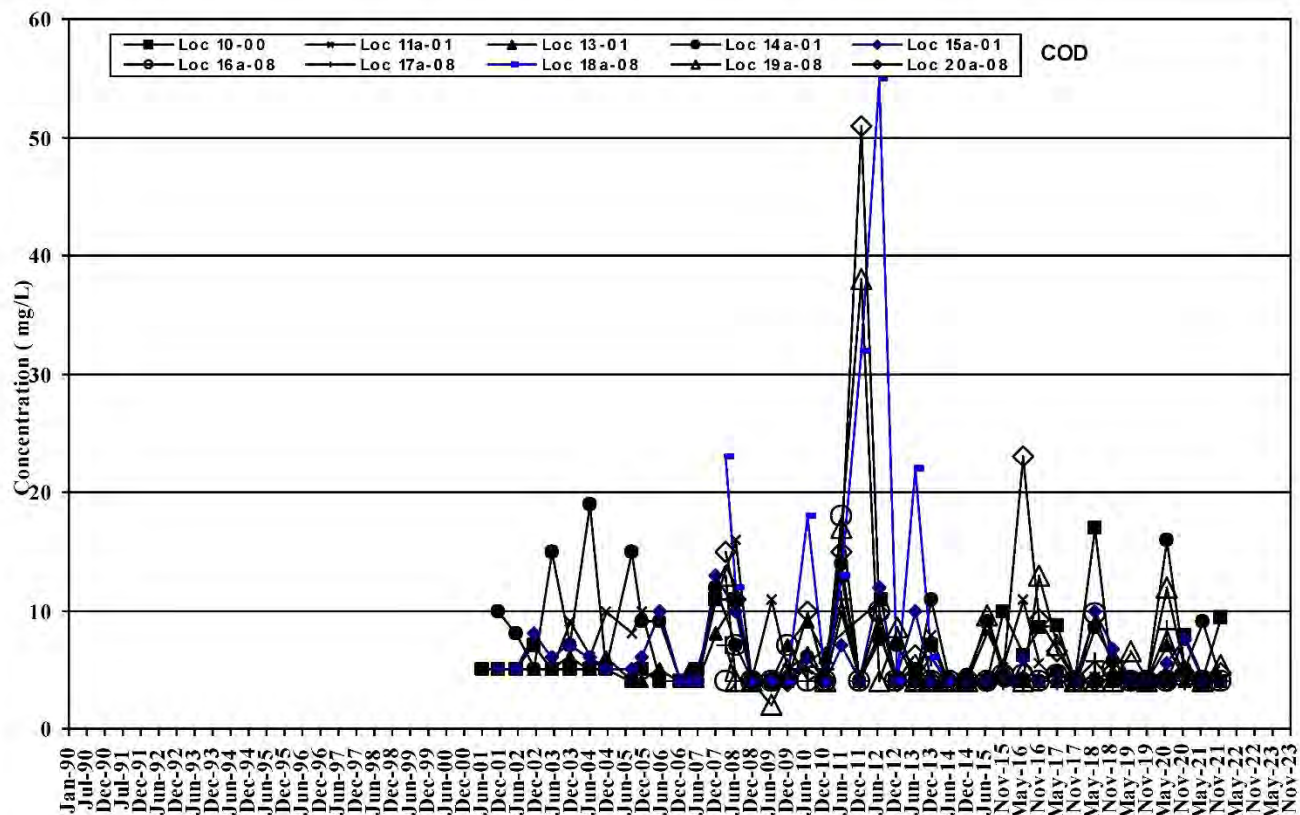
Ground Water Chemistry Trends

Bedrock Locations West or on Wet/Dry Facility

FIGURE

B19

12 COD-BOD Location WestBed



AECOM

Guelph WRIC & Waste Transfer Station

Ground Water Chemistry Trends

Bedrock Locations East of Wet/Dry or on Transfer Station Property

FIGURE

B20

12 COD-BOD Location EastBed

Appendix C

Surface Water Chemistry – Routine and Organics



Routine Surface Water Quality - General Analysis -Guelph WRIC & Waste Transfer Station

AECOM

Date	Lab	pH	Conductivity	Alk mg/L	Mg mg/L	K mg/L	BOD mg/L	COD mg/L	TKN mg/L	NH3-N mg/L	Total-P mg/L	TSS mg/L	SO4 mg/L	Phenol ug/L	Cl mg/L	Na mg/L	Ca mg/L	Fe mg/L	B mg/L	P mg/L	Zn mg/L	NO3-N mg/L
SW 1		6.5 - 8.5									0.03			1.0				0.30	0.20		0.02	
1996-04-13	ENT	7.6	310	60						392		123		< 0.5	59.4				0.02			
1996-05-29	ENT	7.8			4.74	5.32	< 10	22	1	0.04	0.22	21	14.1	7	42.2	29.8	32.4	0.51	0.06	0.2	0.08	<0.05
1996-07-03	ENT						13		2.4	0.19	0.08	73		1								
1996-08-22	ENT	7.82			0.46	13.1	< 10	< 10	0.56	0.27	0.23	10	7.4	< 0.5	19.7	20.5	38.6	0.25	0.3	0.18	<0.0004	0.06
1996-09-18	ENT						< 10		2	0.13	0.07	6		< 0.5								
1996-10-16	ENT						< 10		2	0.13	0.01	1		< 1								
1996-11-20	ENT						< 10		3	0.08	0.15	7		15								
1996-12-11	ENT	7.94			6.84	9.6	< 10	93	1.34	0.08	0.18	4	12.6	1	272	155	41.7	0.59	0.02	0.15	0.02	
1997-04-08	WBL	8.64	2840	118	8.09	18.3	9.24	170	2.73	< 0.01	0.206	19	18	< 0.72	732	434	49.7	1.05	<0.016	<0.028	0.034	
1997-05-06	WBL	8.29	1450	81	4.47	9.81	5.7	134	1.37	0.067	0.174	39	13.2	1.15	423	236	27.3	1.73	0.023	0.16	0.071	
1997-06-26	WBL	9.23	826	111	3.86	11.1	4.11	57	1.35	< 0.01	0.124	5	14.3	< 0.72	164	114	26.3	0.743	0.062	0.128	0.017	
1997-07-31	WBL	9.53	1460	123	4.79	13.1	2.82	88	3.51	0.119	0.234	4	15	0.99	394	245	24.2	0.873	0.054	0.234	0.015	
1997-09-11	WBL	8.73	527	94.1	4.47	12.3	2.17	71	1.48	0.017	0.072	< 6	14.7	< 0.72	89.6	76	25.4	0.56	0.095	0.099	0.02	
1997-11-26	WBL	7.6	960				3.12		1.72	0.084	0.139	542		< 0.72								
1997-12-09	WBL	7.79	970	132	7.02	12.5	1.94	59	1.6	0.014	0.095	3	13.9	< 0.72	198	140	45.7	0.381	0.023	0.081	0.014	0.03
1998-01-08	WBL	7.65	545				6.3		1	0.2	0.31	357		7								
1998-02-28	Froze																					
1998-03-31	WBL	8.32	1480	121	3.48	6.75	2.53		1.52	0.023	0.107	5	12.7	< 0.72	443	250	35.5	0.542	0.051	0.107	0.007	<0.01
1998-04-30	Dry																					
1998-05-12	WBL	7.55	1420				8.52		4.02	0.795	0.3	840		0.72								
1998-06-24	WBL	9.52	597	112	4.14	9.73	5.58		2.73	0.058	0.245	< 2	10.9	< 0.72	109	72.8	27.7	0.644	0.064	0.245	0.02	<0.01
1998-07-31	Dry																					
1998-08-31	Dry																					
1998-09-30	Dry																					
1998-10-31	Dry																					
1998-11-30	Dry																					
1998-12-31	Dry																					
1999-01-31	Froze																					
1999-02-28	Froze																					
1999-03-31	Barr	8.01	1624	142	7.49	13	6.7	68	3.6	0.37	0.27	21	33	< 2	441	298	52.7	0.5	0.05	0.4	0.026	
1999-04-30	Dry																					
1999-05-31	Dry																					
1999-06-29	Barr	7.91	307	77	2.9	9	6.4	51	1.72	0.84	0.057	12	15		41.9	34.3	20.6	0.12		0.4	0.019	
1999-07-31	Dry																					
1999-08-31	Dry																					
1999-09-30	Dry																					
1999-10-31	Dry																					
1999-11-30	Dry																					
1999-12-14	Barr	8.01	716	168	16.7	18	19.4	49	2.77	1.05	0.11	40	46.9	< 1	57.4	42.5	65.5	0.01	0.04	0.2	0.018	
2000-01-30	Froze																					
2000-02-28	Froze																					
2000-03-31	Philip	7.37	2380	123	10.2	15	9.1	87	3.31	0.07	0.224	17	21	< 1	634	370	59.7	0.62	0.03		0.031	
2000-04-27	Philip	7.13	2595	140	29.8	43	16.5	117	115	104	0.423	23	35.8	1	123	85.7	146	0.36	0.06	0.5	0.041	
2000-05-23	Philip	7.46	1930	142	25.9	53	3.2	137	66.3	68.2	0.47	13	35.3	< 1	96.5	70.2	120	0.42	0.09	0.6	0.073	
2000-06-30	Philip	7.33	88	241	3.7	10	27	60	1.92	0.19	0.286	5	6.6	< 1	23.6	19	24.9	0.36		0.4	0.031	

Routine Surface Water Quality - General Analysis -Guelph WRIC & Waste Transfer Station

AECOM

Date	Lab	pH	Conductivity	Alk mg/L	Mg mg/L	K mg/L	BOD mg/L	COD mg/L	TKN mg/L	NH3-N mg/L	Total-P mg/L	TSS mg/L	SO4 mg/L	Phenol ug/L	Cl mg/L	Na mg/L	Ca mg/L	Fe mg/L	B mg/L	P mg/L	Zn mg/L	NO3-N mg/L
SW 1		6.5 - 8.5									0.03			1.0				0.30	0.20		0.02	
2000-07-30	Dry																					
2000-08-29	Dry																					
2000-09-28	Philip	7.81	374	97	4.32	12.4	12.8	57	2.5	0.08	0.194	128	15.5	< 1	51.8	40.1	30.5	0.16	0.029	0.23	0.035	
2000-10-30	Dry																					
2000-11-28	Philip	7.63	778	90	7.41	16.8	6	57	2.54	0.08	0.5	29	24.4	< 1	193	109	73.7	0.96	0.022	0.7	0.112	
2000-12-07	Froze																					
2001-01-31	Froze																					
2001-02-28	Froze																					
2001-03-31	Froze																					
2001-04-24	Philip	7.9	747	175	6.13	11	2.2	65	3.16	0.17	0.12	6	9.8	2	140	122	34.4	0.83		0.4	0.024	
2001-05-28	Philip	7.29	333	119	3.93	9	8.3	77	2.4	0.11	0.288	10	13.2	< 1	39.4	46	49.4	0.58	0.03	0.4	0.048	
2001-06-30	Dry																					
2001-07-25	Philip	7.3	322	105	4.82	15	8.1	143	5.3	0.3	0.765	21	21.7	< 1	30.3	29.7	56.9	0.96	0.06	1	0.103	
2001-08-31	Dry																					
2001-09-27	Philip	7.5	383	128	5.48	15	3	57	1.64	0.07	0.318	2	19	< 1	33.8	31.7	30.5	0.09	0.03	0.3	0.019	
2001-10-18	Philip	7.84	304	125	4.94	9	3.4	50	2.94	< 0.03	0.294	7	4.3	< 1	19.3	24.8	31.7	0.91	0.04	0.4	0.042	
2001-11-30	Philip	7.48	104	39	1.72	4	1.3	24	0.87	0.03	0.3	11	1.5	< 1	4.5	6.8	9.38	0.54	<0.01	0.2	0.031	
2001-12-04	Philip	7.57	153	61	3.04	6.3	3.1	26	0.68	< 0.03	0.128	1	2.7	< 1	6.5	8.8	19.2	0.31	0.01	0.4	0.043	
2002-01-31	Froze																					
2002-02-28	Froze																					
2002-03-29	Froze																					
2002-04-29	Philip	7.52	398	77	2.9	5	5.6	58	1.88	0.06	0.456	11	7.3	< 1	69.3	57.4	30.8	0.57	0.02	0.5	0.361	
2002-05-31	Dry																					
2002-06-05	Philip	7.8	228	55	2.46	4	5.2	75	2.19	0.14	0.438	16	5.6	< 1	28.9	26.4	18.1	0.87	0.02	0.6	0.099	
2002-07-31	Dry																					
2002-08-30	Dry																					
2002-09-27	Dry																					
2002-10-31	Dry																					
2002-11-29	Dry																					
2002-12-20	Dry																					
2003-01-31	Froze																					
2003-02-28	Froze																					
2003-03-29	Froze																					
2003-04-30	Dry																					
2003-05-31	Dry																					
2003-06-05	Philip	6.99	240	68	2.89	4	6.1	51	6	0.16	0.934	118	6.1	< 1	26.1							
2003-07-31	N/A																					
2003-08-30	N/A																					
2003-09-27	Dry																					
2003-10-31	Dry																					
2003-11-29	Dry																					
2003-12-01	Philip	7.21	256	52	3.16	4	4.2	24	0.63	< 0.03	0.146	12	6	< 1	49.7	28.9	18.8	0.54	<0.01	0.3	0.07	
2006-01-31	Dry																					
2006-02-28	Dry																					
2006-03-09	MAX	7.5	245	25	2.2	2	4	22	1.3	0.29	0.17	24	5	2	53	37	8.9	1.8	<0.02	0.2	0.09	

Routine Surface Water Quality - General Analysis -Guelph WRIC & Waste Transfer Station

AECOM

Date	Lab	pH	Conductivity	Alk mg/L	Mg mg/L	K mg/L	BOD mg/L	COD mg/L	TKN mg/L	NH3-N mg/L	Total-P mg/L	TSS mg/L	SO4 mg/L	Phenol ug/L	Cl mg/L	Na mg/L	Ca mg/L	Fe mg/L	B mg/L	P mg/L	Zn mg/L	NO3-N mg/L
SW 1		6.5 - 8.5									0.03			1.0				0.30	0.20		0.02	
2006-04-30	Dry																					
2006-05-16	MAX	7.6	346	126	4.8	7.6	3	43	1.6	0.16	0.21	3	4	< 1	36	43	31	0.43	0.018		0.023	
2006-06-30	Dry																					
2006-07-31	Dry																					
2006-08-31	Dry																					
2006-09-13	N/A																					
2006-10-31	Dry																					
2006-11-30	Dry																					
2006-12-31	Dry																					
2007-01-31	Snow																					
2007-02-28	Snow																					
2007-03-14	MAX	7.3	238	22	2.4	5.3	3	25	1.3	0.53	0.26	4	7	< 1	49	33	8.7	0.16	<0.01		0.021	
2007-03-29	MAX	7.8	686	101	6.7	4.4	3	31	1.5	0.08	0.19	10	13	1	140	120	34	0.93	0.021		0.043	
2007-04-30	Dry																					
2007-05-31	Dry																					
2007-06-30	Dry																					
2007-07-31	Dry																					
2007-08-31	Dry																					
2007-09-28	Dry																					
2007-10-31	Dry																					
2007-11-21	MAX	7.9	239	69	4.4	8	3	33	1.3	0.09	0.41	8	10	< 1	24	24	15	0.56	0.011		0.035	
2007-12-31	Snow																					
2008-01-08	MAX	7.5	731	83	5.7	5.4	2	31	1.4	0.06	0.22	3	13	< 1	170	160	35	1.5	0.022		0.09	
2008-02-28	Snow																					
2008-03-31	Snow																					
2008-04-10	MAX	8.3	2260	225	20	9.5	< 2	22	0.9	< 0.05	0.06	2	29	< 1	520	350	100	0.2	0.02		0.03	
2008-05-31	Dry																					
2008-06-24	MAX	7.6	121	39	2.3	2.6	5	33	2.5	0.9	0.28	24	4	< 1	9	11	11	0.99	0.011		0.067	0.1
2008-07-24	MAX	7.6	98	47	2.1	2.6	5	22	0.6	< 0.05	0.19	5	< 1	< 1	3	2.7	14	0.2	0.01		0.023	<0.1
2008-08-11	MAX	7.3	157	61	2.2	2.2	3	19	0.8	0.15	0.19	4	2	< 1	10	11	16	0.2	0.02		0.017	<0.1
2008-09-28	Dry																					
2008-10-31	Dry																					
2008-11-30	Dry																					
2008-12-31	Snow																					
2009-01-30	Snow																					
2009-02-12	MAX	7.3	374	36	1.7	2.4	< 2	14	0.6	< 0.05	0.19	7	7	< 1	85	60	12	0.5	<0.01		0.035	
2009-03-11	MAX	6.4	253	47	1.7	2.6	3	19	0.7	< 0.05	0.13	< 10	9	< 1	43	36	12	0.3	<0.01		0.028	
2009-04-28	MAX	7	374	80	2.7	2.2	< 2	33	0.1	< 0.05	0.11	10	6	1	58	50	23	0.4	0.02		0.04	
2009-05-27	MAX	7.4	472	88	4	7.6	7	67	3.1	0.63	1.3	9	20	< 1	74	80	22	0.3	0.03		0.032	
2009-06-30	Dry																					
2009-07-31	Dry																					
2009-08-31	Dry																					
2009-09-30	Dry																					
2009-10-30	Dry																					
2009-11-30	Dry																					

Routine Surface Water Quality - General Analysis -Guelph WRIC & Waste Transfer Station

AECOM

Date	Lab	pH	Conductivity	Alk mg/L	Mg mg/L	K mg/L	BOD mg/L	COD mg/L	TKN mg/L	NH3-N mg/L	Total-P mg/L	TSS mg/L	SO4 mg/L	Phenol ug/L	Cl mg/L	Na mg/L	Ca mg/L	Fe mg/L	B mg/L	P mg/L	Zn mg/L	NO3-N mg/L
SW 1		6.5 - 8.5									0.03			1.0				0.30	0.20		0.02	
2009-12-30	Dry																					
2010-01-29	Snow																					
2010-02-26	Snow																					
2010-03-18	MAX	7.7	268	91	4	3.2	3	23	0.8	< 0.05	0.13	2	5	< 1	27	21	28	<0.1	<0.01		0.015	
2010-04-30	Dry																					
2010-05-31	Dry																					
2010-06-30	Dry																					
2010-07-30	Dry																					
2010-08-31	Dry																					
2010-09-30	Dry																					
2010-10-29	Dry																					
2010-12-02	MAX	7.68	187	82	3.9	2.4	< 2	31	0.9	< 0.05	0.29	49	2	1	7	7	23	0.2	<0.01		0.025	
2010-12-31	Dry																					
2011-01-28	Froze																					
2011-02-28	Froze																					
2011-03-31	Snow/																					
2011-04-08	MAX	7.93	1060	178	9.3	2.6	< 2	32	0.8	< 0.05	0.07	2	4	< 1	200	140	63	<0.1	<0.01		0.013	
2011-06-03	MAX	8.1	463	209	9.1	2.3	< 2	44	1.2	0.13	0.15	7	< 1	< 1	22	26	71	0.8	0.02		0.012	
2011-06-22	MAX	7.8	593	270	9.8	1.3	6	53	2.1	< 0.05	0.38	30	< 1	< 1	30	33	88	2.8	0.02		0.007	
2011-07-29	Dry																					
2011-08-31	Dry																					
2011-09-30	Dry																					
2011-10-20	MAX	7.54	67	29	1.7	2.1	< 2	10	0.4	< 0.05	0.25	3	< 1	4	3	2.9	7.5	0.1	<0.01		0.01	
2011-11-29	MAX	7.19	70	29	1.6	2.6	< 2	10	0.3	< 0.05	0.18	6	< 1	< 1	3	2.4	8.5	0.2	<0.01		0.016	
2011-12-15	MAX	7.77	200	67	4.7	3.4	< 2	26	0.8	0.33	0.26	4	6	2	16	10	25	0.13	<0.01		0.014	
2012-01-31	Dry																					
2012-02-29	Dry																					
2012-03-29	Dry																					
2012-04-30	Dry																					
2012-05-31	Dry																					
2012-06-29	Dry																					
2012-07-31	Dry																					
2012-08-31	Dry																					
2012-09-28	Dry																					
2012-10-31	Dry																					
2012-11-30	Dry																					
2012-12-21	Dry																					
2013-01-30	MAX	6.7	990	23	1.9	3.8	3	25	1.4	0.23	0.2	7	12		230	150	9.4	0.23	<0.01		0.023	
2013-02-28	Dry																					
2013-03-29	Dry																					
2013-04-18	MAX	7.73	1500	74	7.6	5.3	< 2	37	0.9	0.12	0.021	2	8	3.3	390	280	51	<0.1	<0.01		0.023	
2013-05-31	Dry																					
2013-06-28	Dry																					
2013-07-31	Dry																					
2013-08-07	MAX	6.51	540	100	8.6	66	170	360	7.5	0.76	5.5	49	17	2.6	63	15	42	0.61	0.033		0.1	

Routine Surface Water Quality - General Analysis -Guelph WRIC & Waste Transfer Station

AECOM

Date	Lab	pH	Conductivity	Alk mg/L	Mg mg/L	K mg/L	BOD mg/L	COD mg/L	TKN mg/L	NH3-N mg/L	Total-P mg/L	TSS mg/L	SO4 mg/L	Phenol ug/L	Cl mg/L	Na mg/L	Ca mg/L	Fe mg/L	B mg/L	P mg/L	Zn mg/L	NO3-N mg/L
SW 1		6.5 - 8.5									0.03			1.0				0.30	0.20		0.02	
2013-09-30	Dry																					
2013-10-31	MAX	7.27	110	44	2.3	2.3	< 2	21	0.55	< 0.05	0.18	2	4	1.9	3	3.6	15	0.22	0.012		0.022	
2013-11-29	Dry																					
2013-12-31	Dry																					
2014-01-14	MAX	7.49	2200	69	10	2.6	7	42	1.7	0.07	0.11	110	20	< 1	570	410	74	1	0.01		0.07	
2014-01-31	Ice Co																					
2014-02-28	Snow																					
2014-03-28	Ice Co																					
2014-04-30	Below																					
2014-05-30	Dry																					
2014-06-30	Dry																					
2014-07-31	Dry																					
2014-08-29	Dry																					
2014-09-30	Dry																					
2014-10-31	Dry																					
2014-11-28	Below																					
2014-12-31	Dry																					
2015-01-31	Snow																					
2015-02-28	Snow																					
2015-03-28	Snow																					
2015-04-10	MAX	7.96	700	260	24	1.4	< 2	< 4	0.29	0.077	< 0.02	< 1	12	< 1	59	32	85	<0.1	0.015		0.098	
2015-05-30	Dry																					
2015-06-30	Dry																					
2015-07-31	Dry																					
2015-08-29	Dry																					
2015-09-30	Dry																					
2015-10-31	Dry																					
2015-11-28	Dry																					
2015-12-31	Dry																					
2016-01-29	Snow																					
2016-02-03	MAX	6.95	370	66	4	1.8	< 2	14	0.42	< 0.05	0.1	10	2.4	< 1	76	44	23	0.13	<0.01		0.013	<0.1
2016-03-17	MAX	7.53	290	79	3.7	1.5	2	23	0.31	< 0.05	0.062	11	8.4	< 1	37	30	24	0.6	0.01		0.041	<0.1
2016-04-26	Below																					
2016-05-17	Dry																					
2016-05-26	Dry																					
2016-06-28	Dry																					
2016-07-29	Dry																					
2016-08-17	Dry																					
2016-09-20	Dry																					
2016-10-19	Dry																					
2016-11-24	Dry																					
2016-12-30	Snow																					
2017-01-18	Froze																					
2017-02-23	Dry																					
2017-03-29	Dry																					

Routine Surface Water Quality - General Analysis -Guelph WRIC & Waste Transfer Station

AECOM

Date	Lab	pH	Conductivity	Alk mg/L	Mg mg/L	K mg/L	BOD mg/L	COD mg/L	TKN mg/L	NH3-N mg/L	Total-P mg/L	TSS mg/L	SO4 mg/L	Phenol ug/L	Cl mg/L	Na mg/L	Ca mg/L	Fe mg/L	B mg/L	P mg/L	Zn mg/L	NO3-N mg/L
SW 1		6.5 - 8.5									0.03			1.0				0.30	0.20		0.02	
2017-04-27	MAX	7.88	370	140	5.1	3.6	< 2	41	0.74	< 0.05	0.12	20	< 1	< 1	31	35	38	0.3	0.016		0.024	<0.1
2017-05-25	MAX	7.94	210	92	3.1	0.92	< 2	34	0.64	< 0.05	0.13	21	< 1	< 1	9.2	22	21	0.63	0.022		0.024	<0.1
2017-06-22	Dry																					
2017-07-27	Dry																					
2017-08-18	Dry																					
2017-09-29	Dry																					
2017-10-26	Dry																					
2017-11-23	Dry																					
2017-12-20	Dry																					
2018-01-23	MAX	7.18	770	34	3.6	3.7	2	19	0.35	< 0.05	0.21	28	13	3.5	180	130	18	0.68	<0.01		0.04	0.19
2018-02-20	MAX	7.35	310	27	1.4	1.9	4	19	0.31	0.079	0.13	18	7	5.1	72	51	8	0.49	<0.01		0.042	0.16
2018-03-27	No Sa																					
2018-04-24	No Sa																					
2018-05-29	No Sa																					
2018-06-28	No Sa																					
2018-07-17	No Sa																					
2018-08-17	No Sa																					
2018-08-22	No Sa																					
2018-09-11	No Sa																					
2018-10-03	No Sa																					
2018-11-26	No Sa																					
2018-12-17	No Sa																					
2019-05-10	MAX	7.97	380	130	3.8	2.9	4	28	0.5	< 0.05	0.19	10	< 1	< 1	39	42	29	0.59	0.011		0.013	<0.1
2019-06-06	MAX	7.59	140	55	2.1	1.1	< 2	22	0.33	0.063	0.16	18	< 1	< 1	10	14	15	1	0.013		0.03	<0.1
2020-01-14	Burea	7.29	140	22	0.96	1.3	< 2	5.6	0.28	< 0.05	0.12	3	3.4	< 1	25	17	5.7	0.14	<0.01		0.0092	<0.1

Routine Surface Water Quality - General Analysis -Guelph WRIC & Waste Transfer Station

AECOM

Date	Lab	pH	Conductivity	Alk mg/L	Mg mg/L	K mg/L	BOD mg/L	COD mg/L	TKN mg/L	NH3-N mg/L	Total-P mg/L	TSS mg/L	SO4 mg/L	Phenol ug/L	Cl mg/L	Na mg/L	Ca mg/L	Fe mg/L	B mg/L	P mg/L	Zn mg/L	NO3-N mg/L
EPTS-01		6.5 - 8.5									0.03			1.0				0.30	0.20		0.02	
2004-06-09	N/A																					
2004-06-09	Philip	8	583	236	20.8	< 1	1.3	7	0.27	0.07	0.003		19.4	< 1	52.3	24.9	93.5	0.09	0.02		0.427	4.8
2004-06-09	Philip	8	583	236	20.8	1	1.3	7	0.27	0.07	0.003		19.4	1	52.3	24.9	93.5	0.09	0.02		0.427	4.8
2004-06-09	N/A					<								<								
2004-11-30	Philip	8.11	665	244	22.4	2	< 0.5	8	0.18	< 0.03	0.003		21.3	< 1	60.3	23.6	83.4	<0.01	0.01		0.082	
2005-08-03	N/A																					
2005-11-28	Maxx	8.18	620	231	24		< 2	< 4	0.4	0.1	< 0.02		18	< 1	51	26	84	<0.05	0.015	<0.05	0.077	
2006-06-01	N/A																					
2006-12-04	MAX																					
2007-03-30	MAX	8.3	621	242	24	1.3	< 2	4	0.6	0.11	< 0.02		14	< 1	44	24	82	<0.02	0.015	<0.05	0.099	
2007-06-14	MAX	8.3	592	243	22	1.3	< 2	10	0.9	0.13	< 0.02		16	< 1	35	18	76	<0.02	0.014	<0.05	0.17	
2007-08-16	MAX	8.2	558	235	24	1.5	< 2	12	0.6	0.19	< 0.02		16	< 1	27	15	75	<0.02	0.014	<0.05	0.045	
2007-12-05	MAX	8.2	650	232	27	1.7	< 2	6	0.4	0.18	< 0.02		26	< 1	51	22	96	0.06	0.016	<0.1	0.1	4
2008-05-02	MAX	8.3	610	213	19	1.1	< 2	< 4	0.6	0.05	0.02		17	< 1	51	30	68	<0.02	<0.01	<0.1	0.068	2.9
2008-06-25	MAX	8.1	593	217	20	1.3		11	0.7	0.12	< 0.02		15	< 1	45	26		<0.02	<0.01	<0.1	0.052	2.9
2008-09-11	MAX	8.2	574	228	20	1.4	< 2	11	0.6	< 0.05	< 0.02		16	< 1		21	75	<0.02	0.013	<0.1	0.067	3.1
2008-12-09	MAX	8	787	262	20	1.6	< 2	< 4	0.3	< 0.05	< 0.02		19	< 1	80	47	80	<0.02	0.017	<0.1	0.13	4.1
2009-05-01	MAX	7.8	582	231	21	1.3	< 2	< 4	0.5	< 0.05	< 0.02		13	< 1	44	22	75	<0.02	0.013	<0.1	0.065	2
2009-06-25	MAX	8.1	557	228	21	1.4	< 2	< 4	0.5	< 0.05	< 0.02		12	< 1	31	18	73	<0.02	0.017	<0.1	0.056	2.6
2009-08-31	MAX	7.8	1420	334	20	1.7	< 2	140	1.5	0.13	0.12		110	< 1	190	120	160	1	0.19	0.11	0.013	<0.1
2009-12-15	MAX	7.8	451	169	20	1.2	< 2	9	0.4	0.06	0.02		11	< 1	26	13	70	<0.02	0.011	<0.1	0.15	3.5
2010-06-24	MAX	8	618	235	21	1.3	< 2	< 4	0.6	0.07	0.02		15	1	40	24	73	<0.06	0.012	<0.1	0.053	2.9
2010-12-17	MAX	7.98	725	266	24	1.5	< 2	8	0.3	< 0.05	< 0.02		16	< 1	54	28	88	<0.02	0.023	<0.1	0.096	4.7
2011-06-15	MAX	8.07	617	238	19	1.6	< 2	17	0.5	< 0.05	< 0.02		12	< 1	45	35	70	<0.02	0.02	<0.1	0.073	1.4
2011-12-19	MAX	7.99	770	256	27	1.8	< 2	5	0.4	< 0.05	0.03		30	2	64	45	96	0.04	<0.01	<0.1	0.29	3.3
2012-01-31	NA																					
2012-02-29	NA																					
2012-03-29	NA																					
2012-04-17	MAX	8.08	670	250	23	1.4	< 2	13	0.55	< 0.05	0.025	1	14	< 1	45	31	86	<0.1	0.016		0.08	
2012-05-31	NA																					
2012-06-22	MAX	8.05	620	230	21	1.3	< 2	13	0.64	< 0.05	< 0.02	3	14	< 1	38	22	74	<0.1	0.016		0.055	
2012-07-26	MAX	8.19	590	230	22	1.4	3	12	0.66	0.1	< 0.02	1	14	< 1	34	18	73	<0.1	0.015		0.039	
2012-08-31	NA																					
2012-09-20	MAX	8.02	690	250	25	1.5	< 2	9.5	0.75	0.12	< 0.02	1	15	< 1	47	29	84	<0.1	0.017		0.057	
2012-10-24	MAX	8.09	700	250	24	1.6	< 2	15	0.5	0.2	< 0.02	2	16	< 1	49	30	87	<0.1	0.018		0.085	
2012-11-30	NA																					
2012-12-18	MAX	7.88	740	270	25	1.7	< 2	7.6	0.3	0.062	< 0.02	2	18	< 1	58	37	94	<0.1	<0.01		0.11	
2013-01-30	MAX	7.91	620	220	20	1.4	< 2	9.1	0.54	< 0.05	< 0.02	2	16	< 1	44	32	76	<0.1	0.012		0.2	
2013-02-28	NA																					
2013-03-29	NA																					
2013-04-18	MAX	8.1	650	210	19	1.2	< 2	18	0.64	< 0.05	< 0.02	< 1	13	< 1	64	50	73	<0.1	0.011		0.072	
2013-05-28	MAX	8.16	580	220	22	1.4	< 2	8.9	0.42	0.12	< 0.02	2	13	< 1	35	26	79	<0.1	<0.01		0.06	
2013-06-21	MAX	8.43	600	230	20	1.4	< 2	8.5	0.58	< 0.05	< 0.02		14	< 1	35	25	74	<0.02	0.013	<0.1	0.051	2.5
2013-06-27	MAX	8.03	630	240	22	1.4	< 2	10	0.43	0.11	< 0.02	3	13	< 1	39	27	78	<0.1	0.016		0.066	
2013-07-25	MAX	8.17	600	240	21	1.5	< 2	6.3	0.39	0.067	< 0.02	2	12	< 1	32	23	77	<0.1	0.017		0.059	

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Date	Lab	pH	Conductivity	Alk mg/L	Mg mg/L	K mg/L	BOD mg/L	COD mg/L	TKN mg/L	NH3-N mg/L	Total-P mg/L	TSS mg/L	SO4 mg/L	Phenol ug/L	Cl mg/L	Na mg/L	Ca mg/L	Fe mg/L	B mg/L	P mg/L	Zn mg/L	NO3-N mg/L
EPTS-01		6.5 - 8.5									0.03			1.0				0.30	0.20		0.02	
2013-08-07	MAX	8.2	560	220	20	1.5	< 2	5.7	0.52	0.074	< 0.02	1	12	< 1	30	20	75	<0.1	0.017		0.058	
2013-09-24	MAX	8.15	640	260	20	1.5	< 2	10	0.93	0.12	< 0.02	2	14	< 1	37	23	74	<0.1	0.021		0.067	
2013-10-31	MAX	8.13	620	260	20	1.4	< 2	< 4	0.27	< 0.05	< 0.02	< 1	12	< 1	32	19	79	<0.1	0.015		0.083	
2013-11-19	MAX	8.05	650	270	23	1.7	< 2	8	0.5	0.086	< 0.02	< 1	13	< 1	34	23	85	<0.1	0.02		0.086	
2013-12-05	MAX	7.87	660	270	22	1.5	< 2	< 4	0.32	0.1	< 0.02	< 1	14	< 1	36	21	80	<0.1	0.012		0.099	
2014-01-14	MAX	7.98	720	250	24	1.7	< 2	4.6	0.24	< 0.05	< 0.02	< 1	14	< 1	61	37	93	<0.1	0.015		0.11	
2014-02-20	MAX	8.03	680	260	24	1.6	< 2	< 4	0.46	0.13	< 0.04	2	14	< 1	41	32	91	<0.1	0.017		0.1	
2014-03-27	MAX	8.17	695	250	25	1.5	< 2	6.2	0.43	< 0.05	< 0.04	< 1	12	< 1	58	25	92	<0.1	0.021		0.091	
2014-04-23	MAX	7.93	710	240	22	1.4	< 2	< 4	0.4	< 0.05	< 0.04	< 1	11	< 1	71	39	84	<0.1	<0.01		0.1	
2014-05-27	MAX	7.92	660	250	21	1.3	< 2	< 4	0.53	< 0.05	< 0.02	1	11	< 1	45	27	78	<0.1	0.013		0.068	
2014-06-25	MAX	8.14	610	250	22	1.4	< 2	< 4	0.63	0.06	< 0.02	2	12	< 1	37	25	80	<0.1	0.021		0.069	
2014-07-29	MAX	8.05	620	250	21	1.4	< 2	9.1	0.68	0.13	< 0.02	10	12	< 1	38	22	76	<0.1	0.015		0.061	
2014-08-21	MAX	8.11	650	260	26	1.6	< 2	7.2	0.75	< 0.05	< 0.02	1	13	< 1	41	29	92	<0.1	0.013		0.072	
2014-09-23	MAX	8.08	700	260	23	1.6	< 2	< 4	0.64	0.055	0.021	< 1	13	< 1	44	30	83	<0.1	0.017		0.063	
2014-10-23	MAX	8.06	670	270	23	1.6	< 2	7.6	0.39	0.075	0.024	< 1	12	< 1	36	23	90	<0.1	0.025		0.077	
2014-11-26	MAX	8.12	700	280	25	1.8	< 2	< 4	0.48	0.14	< 0.02	1	13	< 1	43	28	95	<0.1	0.018		0.1	
2014-12-18	MAX	8.08	680	270	25	1.7	< 2	< 4	0.21	< 0.05	< 0.02	< 1	13	< 1	36	22	93	<0.1	0.018		0.094	
2015-01-21	MAX	7.96	990	290	23	1.5	< 2	< 4	0.24	< 0.05	< 0.02	< 1	17	< 1	120	43	95	<0.1	0.017		0.12	
2015-02-28	Snow																					
2015-03-17	MAX	7.94	680	270	24	1.7	< 2	9.3	0.72	0.17	0.028	2	14	< 1	46	27	94	<0.1	0.019		0.093	3.14
2015-04-10	MAX	7.19	470	73	3.5	1.6	< 2	24	0.72	0.067	0.072	10	7	2.4	92	68	22	0.45	0.01		0.029	
2015-05-20	MAX	7.93	700	260	24	1.3	< 2	9.1	0.66	0.094	< 0.02	2	12	< 1	59	32	86	<0.1	0.015		0.067	2.51
2015-06-30	MAX	8.03	710	270	23	1.2	< 2	< 4	< 1	0.073	< 0.02	3	13	< 1	59	34	79	<0.1	0.018		0.063	2.77
2015-07-14	MAX	8	660	250	21	1.2	< 2	6.3	0.48	< 0.05	< 0.02	2	13	< 1	49	30	75	<0.1	0.016		0.051	2.54
2015-08-27	MAX	8.08	710	270	24	1.4	< 2	< 4	0.35	0.051	< 0.02	2	14	< 1	48	31	83	<0.1	0.025		0.068	2.74
2015-09-04	MAX	7.97	680	260	22	1.5	< 2	17	0.76	0.053	0.024	15	14	< 1	48	28	75	<0.1	0.019		0.067	2.74
2015-10-22	MAX	8.19	690	270	24	1.5	< 2	5.2	0.52	0.064	< 0.02	2	14	< 1	43	25	85	<0.1	0.016		0.071	3.2
2015-11-25	MAX	8	750	270	25	1.7	< 2	6	0.56	0.051	< 0.02	3	15	< 1	60	35	93	<0.1	0.016		0.096	3.64
2015-12-15	MAX	7.87	780	270	25	1.8	< 2	8.4	0.52	0.14	0.024	9	15	< 1	66	34	95	<0.1	0.014		0.15	3.24
2016-01-29	Snow																					
2016-02-03	MAX	7.77	790	290	25	1.7	< 2	5	0.37	0.065	< 0.02	< 1	15	< 1	68	39	95	<0.1	0.014		0.11	3.49
2016-03-17	MAX	7.99	780	270	22	1.4	< 2	10	0.21	< 0.05	< 0.02	< 1	16	< 1	69	37	81	<0.1	0.013		0.096	3.22
2016-04-26	MAX	8.11	640	240	19	1.1	< 2	7	< 0.1	0.076	< 0.02	< 1	12	< 1	45	34	70	<0.1	0.011		0.077	2.1
2016-05-17	MAX	8.09	630	240	21	1.2	< 2	5.8	0.25	< 0.05	< 0.02	1	13	< 1	42	30	74	<0.1	0.013		0.061	2.27
2016-05-26	MAX	8.15	580	240	21	1.3	< 2	12	0.16	0.093	< 0.02	3	11	< 1	33	24	73	<0.1	0.013		0.069	2
2016-06-28	MAX	8.02	640	260	21	1.3	< 2	11	0.4	< 0.05	< 0.02	2	13	< 1	37	26	75	<0.1	0.018		0.053	1.62
2016-07-29	MAX	8.26	570	220	23	1.5	< 2	21	0.21	< 0.05	< 0.02	7	13	< 1	38	25	66	<0.1	0.014		0.041	1.57
2016-08-17	MAX	8.08	610	240	21	1.4	< 2	16	0.44	< 0.05	0.007	2	14	< 1	38	24	69	<0.1	0.016		0.038	1.68
2016-09-20	MAX	8.17	640	270	23	1.5	< 2	9.6	0.32	< 0.05	< 0.02	1	14	< 1	37	23	87	<0.1	0.019		0.05	1.92
2016-10-19	MAX	8.11	680	280	22	1.7	< 2	11	0.65	0.081	0.021	2	15	< 1	43	25	80	<0.1	0.018		0.06	2.23
2016-11-24	MAX	8.27	690	280	24	1.6	< 2	< 4	0.23	0.058	< 0.02	7	16	< 1	42	23	90	<0.1	0.016		0.069	3.09
2016-12-30	Snow																					
2017-01-18	MAX	7.79	740	230	18	1.3	< 2	11	0.18	0.055	< 0.02	< 1	13	< 1	81	36	69	<0.1	0.013		0.086	2.74
2017-02-23	MAX	7.96	770	280	24	1.7	< 3	< 4	0.34	< 0.05	< 0.02	< 1	17	< 1	63	35	89	<0.1	0.015		0.11	3.33
2017-03-29	MAX	8.04	680	240	20	1.3	< 2	4.2	< 0.1	0.052	< 0.02	< 1	16	< 1	58	30	76	<0.1	0.01		0.076	3.37

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Date	Lab	pH	Conductivity	Alk mg/L	Mg mg/L	K mg/L	BOD mg/L	COD mg/L	TKN mg/L	NH3-N mg/L	Total-P mg/L	TSS mg/L	SO4 mg/L	Phenol ug/L	Cl mg/L	Na mg/L	Ca mg/L	Fe mg/L	B mg/L	P mg/L	Zn mg/L	NO3-N mg/L
EPTS-01		6.5 - 8.5									0.03			1.0				0.30	0.20		0.02	
2017-04-27	MAX	8.13	580	220	18	1.1	< 2	5.3	0.28	< 0.05	< 0.02	1	12	< 1	36	25	70	<0.1	0.012		0.068	2.39
2017-05-25	MAX	8.18	600	230	18	1.3	< 2	7.6	0.38	< 0.05	< 0.02	1	12	< 1	40	28	67	0.1	0.011		0.063	1.96
2017-05-25	MAX	8.18	600	230	18	1.3	2	7.6	0.38	0.05	0.02	1	12	1	40	28	67	<0.1	0.011		0.063	1.96
2017-06-22	MAX	8.23	560	230	20	1.5	< 2	12	0.51	0.081	< 0.02	1	12	< 1	30	22	69	<0.1	0.013		0.042	2.19
2017-07-27	MAX	8.08	580	250	20	1.6	2	7.6	0.29	< 0.05	< 0.02	2	12	< 1	33	22	72	<0.1	0.016		0.055	2.1
2017-08-18	MAX	7.96	610	260	20	1.6	< 2	9.1	0.27	< 0.05	< 0.02	2	3.9	< 1	19	23	73	<0.1	0.014		0.067	2.01
2017-09-29	Dry																					
2017-10-26	MAX	8.18	620	270	22	1.8	< 2	6.2	0.54	0.16	< 0.02	2	13	< 1	33	21	81	<0.1	0.018		0.072	1.6
2017-11-23	MAX	8.29	650	280	22	1.5	< 2	< 4	0.11	0.053	< 0.02	< 1	14	< 1	37	22	79	0.28	0.014		0.072	2.45
2017-12-20	MAX	7.9	650	270	22	1.6	< 2	< 4	< 0.1	0.083	< 0.02	5	15	< 1	35	19	80	<0.1	0.015		0.11	2.54
2018-01-23	MAX	7.88	620	250	15	1.6	< 2	< 4	0.22	0.18	0.023	10	14	1.8	38	17	58	<0.1	0.014		0.19	2.5
2018-02-20	MAX	7.49	190	53	4.6	3.1	4	22	0.57	0.21	0.09	10	< 10	6.1	23	13	16	0.56	<0.01		0.053	0.54
2018-03-27	MAX	8.26	700	260	21	1.4	< 2	7.1	0.17	< 0.05	0.022	1	14	< 1	60	28	77	<0.1	0.013		0.07	2.61
2018-04-24	MAX	8.15	770	260	22	1.3	< 2	9.1	0.59	0.051	< 0.02	< 1	11	< 1	62	42	85	<0.1	<0.01		0.1	3.67
2018-05-29	MAX	8.34	680	250	25	1.7	3	16	0.16	0.099	< 0.04	4	15	< 1	49	35	83	<0.1	0.012		0.11	1.92
2018-06-28	MAX	8.04	670	260	19	1.2	< 2	< 4	< 0.1	0.081	0.052	2	14	< 1	43	24	70	<0.1	0.012		0.086	1.73
2018-07-17	MAX	8.04	630	250	21	1.5	< 2	10	0.13	0.14	< 0.02	3	12	< 1	42	29	75	<0.1	0.014		0.048	1.65
2018-08-17	MAX	8.03	600	250	22	1.5	< 2	10	< 0.1	0.081	< 0.02	2	13	< 1	35	22	80	<0.1	0.012		0.053	1.44
2018-08-22	MAX	8.12	630	260	21	1.4	< 2	6.6	0.25	0.19	< 0.02	4	13	< 1	39	24	76	<0.1	0.014		0.061	1.53
2018-09-11	MAX	8.14	600	250	22	1.5	< 2	16	0.42	< 0.05	< 0.02	3	14	< 1	35	21	77	<0.1	0.014		0.057	1.61
2018-10-03	MAX	8.2	600	260	20	1.5	< 2	7.4	0.39	0.11	< 0.02	< 1	14	< 1	32	18	80	<0.1	0.016		0.062	1.76
2018-11-26	MAX	7.91	690	270	20	1.5	< 2	7.3	0.24	0.24	0.045	7	15	< 1	46	26	78	<0.1	0.015		0.1	2.64
2018-12-17	MAX	7.96	720	270	23	1.7	16	11	0.2	0.14	< 0.02	1	16	< 1	48	30	89	<0.1	0.016		0.11	2.94
2019-04-16	MAX	8.31	620	210	18	1.1	< 2	7.6	< 0.1	< 0.05	< 0.02	< 1	14	< 1	46	26	71	<0.1	<0.01		0.059	3
2019-05-10	MAX	8	610	220	20	1.2	< 2	< 4	0.11	< 0.05	< 0.02	1	12	< 1	42	28	72	<0.1	0.012		0.094	3.25
2019-06-06	MAX	8.06	550	230	18	1.6	< 2	12	0.39	< 0.05	< 0.02	1	10	< 1	33	21	67	<0.1	0.014		0.082	1.86
2019-07-18	MAX	8.23	560	230	18	1.8	< 2	12	0.26	< 0.05	< 0.02	3	11	5.2	30	19	68	<0.1	0.014		0.053	1.92
2019-08-27	MAX	8.16	580	240	20	1.8	< 2	6.6	0.33	0.084	< 0.02	2	12	< 1	31	19	74	<0.1	0.015		0.045	1.62
2019-09-24	MAX	8.09	600	250	21	1.7	< 2	6.6	0.42	0.1	< 0.02	2	12	< 1	33	20	77	<0.1	0.014		0.052	1.47
2019-10-29	MAX	8.17	640	260	21	1.7	< 2	8.9	0.35	0.097	< 0.02	2	13	< 1	37	23	81	<0.1	0.013		0.074	2.15
2019-11-27	MAX	8.1	680	270	21	1.7	< 2	7.4	0.24	0.09	< 0.02	< 1	14	< 1	42	26	83	<0.1	0.014		0.094	3
2020-01-14	Burea	7.99	890	280	22	1.6	< 2	< 4	0.44	0.059	< 0.02	< 1	17	< 1	96	68	86	<0.1	0.013		0.11	4.08
2020-03-25	Burea	7.93	590	230	18	1.3	< 2	5.1	0.3	< 0.05	< 0.02	2	12	< 1	34	21	71	<0.1	<0.01		0.077	3.15
2020-04-23	Burea	8.09	620	250	21	1.4	< 2	5.7	0.15	< 0.05	< 0.02	1	12	< 1	34	21	77	0.14	<0.01		0.072	2.33
2020-05-19	Burea	7.72	460	88	21	1.5	3	39	0.65	< 0.05	0.14	9	41	< 1	60	20	78	<0.1	0.016		0.092	<0.1
2020-06-24	Burea	8.13	600	260	21	1.5	< 2	< 4	0.4	< 0.05	0.021	2	12	< 1	30	18	76	<0.1	<0.01		0.068	2.1
2020-07-29	Burea	8.13	600	250	22	1.5	< 2	5	0.29	< 0.05	< 0.02	2	12	< 1	30	19	75	<0.1	0.012		0.048	1.94
2020-08-25	Burea	8.01	630	260	21	1.4	< 2	8.6	0.3	0.058	< 0.02	2	13	< 1	33	19	75	<0.1	0.012		0.06	1.93
2020-09-10	Burea	8.02	640	270	21	1.4	< 2	4.8	0.31	< 0.05	< 0.02	3	13	< 1	32	17	78	<0.1	0.011		0.078	1.92
2020-09-29	Burea	8.14	630	270	23	1.7	< 2	13	0.29	< 0.05	0.022	2	13	< 1	33	20	87	<0.1	0.015		0.078	2.01
2020-10-28	Burea	8.1	680	280	23	1.5	< 2	6	0.17	0.11	< 0.02	2	14	< 1	38	21	87	<0.1	0.014		0.067	2.23
2020-11-26	Burea	8.05	710	270	24	1.5	< 2	5.8	< 0.1	< 0.05	< 0.02	2	15	< 1	44	25	86	<0.1	0.014		0.082	3.07
2020-12-15	Burea	8.03	750	290	23	1.7	< 2	5.9	0.16	0.072	< 0.02	2	15	< 1	49	27	95	<0.1	0.018		0.1	2.97
2021-01-27	Burea	7.93	740	270	24	1.7	2	11	0.17	0.05	0.02	45	15	1	63	31	95	<0.1	0.017		0.15	3.52
2021-03-10	Burea	8.07	790	270	23	1.8	< 2	6.7	0.13	0.054	< 0.02	2	17	< 1	71	36	87	<0.1	0.013		0.1	3.21

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Date	Lab	pH	Conductivity	Alk mg/L	Mg mg/L	K mg/L	BOD mg/L	COD mg/L	TKN mg/L	NH3-N mg/L	Total-P mg/L	TSS mg/L	SO4 mg/L	Phenol ug/L	Cl mg/L	Na mg/L	Ca mg/L	Fe mg/L	B mg/L	P mg/L	Zn mg/L	NO3-N mg/L
EPTS-01		6.5 - 8.5									0.03			1.0				0.30	0.20		0.02	
2021-04-27	Burea	8.08	750	260	23	1.4	< 2	6	0.12	< 0.05	< 0.02	1	17	< 1	75	36	84	<0.1	0.014		0.072	2.59
2021-05-25	Burea	8.23	740	270	22	1.3	< 2	< 4	0.26	< 0.05	< 0.02	3	17	< 1	62	35	82	<0.1	0.016		0.082	2.3
2021-06-09	Burea	8.16	710	250	22	1.3	2	7.1	0.18	0.11	0.02	2	15	1	67	37	74	0.1	0.017		0.067	1.87
2021-06-09	Burea	8.16	710	250	22	1.3	< 2	7.1	0.18	0.11	< 0.02	2	15	< 1	67	37	74	<0.1	0.017		0.067	1.87
2021-07-09	Burea	7.89	740	270	23	1.6	2	7.7	0.32	0.094	0.02	3	16	1	72	42	81	0.1	0.015		0.071	2.14
2021-07-09	Burea	7.89	740	270	23	1.6	< 2	7.7	0.32	0.094	< 0.02	3	16	< 1	72	42	81	<0.1	0.015		0.071	2.14
2021-08-26	Burea	8.21	720	270	23	1.5	< 2	8.4	0.11	< 0.05	0.024	6	17	< 1	64	39	86	<0.1	0.016		0.066	2.02
2021-09-08	Burea	8.26	710	270	23	1.6	< 2	16	0.23	0.053	0.057	3	18	< 1	63	38	88	<0.1	0.017		0.11	2.08
2021-09-08	Burea	8.26	710	270	23	1.6	2	16	0.23	0.053	0.057	3	18	1	63	38	88	0.1	0.017		0.11	2.08
2021-10-21	Burea	8.17	750	300	24	1.7	< 2	4.7	0.3	< 0.05	0.1	2	17	< 1	61	38	92	<0.1	0.017		0.091	2.17
2021-11-17	Burea	8.22	720	290	23	1.7	< 2	5.7	0.47	0.12	< 0.02	3	15	< 1	47	31	91	<0.1	0.033		0.11	2.82
2021-12-16	Burea	7.99	770	300	23	1.6	< 2	< 4	< 0.1	< 0.05	< 0.02	< 1	14	< 1	58	40	90	<0.1	0.016		0.11	2.59

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Date	Lab	pH	Conductivity	Alk mg/L	Mg mg/L	K mg/L	BOD mg/L	COD mg/L	TKN mg/L	NH3-N mg/L	Total-P mg/L	TSS mg/L	SO4 mg/L	Phenol ug/L	Cl mg/L	Na mg/L	Ca mg/L	Fe mg/L	B mg/L	P mg/L	Zn mg/L	NO3-N mg/L
TP1-Out		6.5 - 8.5									0.03			1.0				0.30	0.20		0.02	
2006-01-31	Dry																					
2006-02-28	Dry																					
2006-03-09	MAX	7.6	1390	69	3.9	6	10	52	2.4	0.66	0.29	25	27	1	332	220	37	0.92	<0.02	0.4	0.07	
2006-04-30	Dry																					
2006-05-16	MAX	7.8	222	85	3.4	2.7	< 2	31	1.2	0.07	0.13	3	6	< 1	15	23	23	0.47	0.018		0.019	
2006-06-30	Dry																					
2006-07-31	Dry																					
2006-08-31	Dry																					
2006-09-13	MAX	7.6	135	50	2.2	3.8	4	17	0.9	0.06	0.28	1	8	< 1	5	5.4	16	<0.05	0.032		0.021	
2006-10-31	Dry																					
2006-11-30	Dry																					
2006-12-31	Dry																					
2007-01-31	Snow																					
2007-02-28	Snow																					
2007-03-14	MAX	7.6	972	70	4	5.7	4	28	1.7	0.66	0.3	3	11	< 1	220	180	26	0.2	0.018		0.028	
2007-03-29	MAX	8.2	951	170	9.8	5.8	4	38	2.1	< 0.05	0.12	4	23	2	180	170	61	0.48	0.052		0.021	
2007-04-30	Dry																					
2007-05-31	Dry																					
2007-06-30	Dry																					
2007-07-31	Dry																					
2007-08-31	Dry																					
2007-09-12	MAX	7.7	659	107	0.8	45	14	140	3	0.13	0.75	15	48	4	100	53	48	7.2	0.1		0.023	
2007-10-02	MAX	7.9	695	229	9.6	24	7	120	4	0.19	0.26	10	24	2	73	47	72	0.96	0.08		0.022	
2007-11-21	MAX	7.8	191	55	3.1	4.1	5	5	1	0.1	0.22	19	15	< 1	14	15	22	0.77	0.022		0.045	
2007-12-31	Snow																					
2008-01-08	MAX	7.7	867	107	4	2.9	2	22	1.5	< 0.05	0.12	9	24	< 1	190	150	32	0.43	0.013		0.037	
2008-02-28	Snow																					
2008-03-31	Snow																					
2008-04-10	MAX	8.2	535	126	4.3	2.3	< 2	36	1.1	< 0.05	0.14	3	6	1	84	76	32	0.7	0.02		0.011	
2008-05-22	MAX	8.1	584	155	5.9	2.5	3	41	1.5	< 0.05	0.12	17	14	< 1	80	80	41	0.7	0.04		0.008	<0.1
2008-06-24	MAX	7.8	245	87	2.9	1.7	4	37	1.5	0.24	0.23	6	4	1	19	20	22	0.69	0.028		0.019	<1
2008-07-24	MAX	8	333	128	4.8	5.8	4	43	1.3	0.11	0.15	5	< 1	< 1	27	24	35	1.2	0.03		0.006	<0.1
2008-08-11	MAX	7.5	323	118	4.7	2.1	2	24	0.6	0.4	0.059	3	2	< 1	24	24	32	0.5	0.02		0.007	<0.1
2008-09-17	MAX	7.9	427	165	7.1	5.2	< 2	26	1.2	< 0.05	0.091	4	8	< 1	33	40	54	0.5	0.03		0.014	0.1
2008-10-16	MAX	7.9	389	130	3.9	4.7	< 2	63	1.1	0.28	0.11	< 1	34	2	23	23	52	<0.1	0.04		0.007	0.2
2008-11-26	MAX	8.1	4740	243	16	4.2	< 2	36	0.8	0.06	0.056	2	34	< 1	1300	820	160	0.2	0.03		0.055	<0.1
2008-12-31	Snow																					
2009-01-30	Snow																					
2009-02-12	MAX	7.6	772	86	5.2	2.2	< 2	21	0.7	< 0.05	0.11	11	9	< 1	180	110	33	1	<0.01		0.046	
2009-03-11	MAX	6.7	526	95	4.5	2.9	3	27	1	< 0.05	0.13	10	13	< 1	99	78	29	1	0.01		0.045	
2009-04-28	MAX	6.7	404	64	3	1.8	8	53	1.6	0.24	0.25	32	21	2	72	57	22	1.5	0.02		0.062	
2009-05-27	MAX	7	282	52	2.9	4.6	13	71	2.6	0.35	0.5	48	33	4	32	34	21	1.6	0.06		0.08	
2009-06-17	MAX	7	462	133	4.2	6.2	6	53	1.6	0.25	0.13	4	42	< 1	37	42	47	0.6	0.11		0.011	
2009-07-23	MAX	7.1	214	62	3.3	3.4	6	68	2.7	< 0.05	0.5	32	19	< 1	11	16	24	1.2	0.05		0.076	
2009-08-28	Dry																					

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Date	Lab	pH	Conductivity	Alk mg/L	Mg mg/L	K mg/L	BOD mg/L	COD mg/L	TKN mg/L	NH3-N mg/L	Total-P mg/L	TSS mg/L	SO4 mg/L	Phenol ug/L	Cl mg/L	Na mg/L	Ca mg/L	Fe mg/L	B mg/L	P mg/L	Zn mg/L	NO3-N mg/L
TP1-Out		6.5 - 8.5									0.03			1.0				0.30	0.20		0.02	
2009-09-29	MAX	7.3	228	78	2.7	3.2	3	28	1	0.05	0.19	6	20	< 1	14	15	26	0.1	0.02		0.015	
2009-10-29	MAX	7.8	586	161	6.7	7.7	< 2	35	1.1	0.08	0.14	8	28	< 1	65	48	59	0.3	0.03		0.034	
2009-11-19	MAX	8	627	190	7.7	7.4	< 2	27	1	0.14	0.11	1	18	< 1	70	55	69	0.2	0.03		0.014	
2009-12-09	MAX	7.9	531	167	6.9	4	< 2	21	0.8	0.11	0.06	2	14	< 1	55	48	53	0.2	0.01		0.009	
2010-01-29	Snow																					
2010-02-26	Snow																					
2010-03-18	MAX	7.9	723	224	12	6.4	4	34	1.8	0.15	0.16	7	5	< 1	92	73	64	0.8	0.01		0.019	
2010-04-07	MAX	7.7	599	140	6.5	5.1	6	58	1.8	< 0.05	0.29	9	32	< 1	88	72	53	1.4	0.03		0.02	
2010-05-31	Dry																					
2010-06-22	N/A																					
2010-07-30	MAX	7.8	365	135	4.6	3.1	3	42	1.5	0.57	0.17	9	20	< 1	20	19	48	0.7	0.04		0.007	
2010-08-31	MAX	8.2	379	140	4.1	4.5	3	25	1	0.08	0.13	< 1	20	< 1	21	23	52	<0.1	0.04		<0.005	
2010-09-30	MAX	7.9	443	146	6.4	6.8	< 2	45	1.4	0.19	0.18	< 10	14	< 1	38	32	47	0.5	0.02		0.008	
2010-11-05	MAX	8.17	569	188	8.1	5.9	< 2	41	1.6	0.43	0.15	7	15	< 1	51	51	63	0.7	0.02		0.031	
2010-12-02	MAX	8	544	177	7.9	3	< 2	22	0.6	< 0.05	0.05	3	16	< 1	49	57	50	0.4	0.01		0.019	
2010-12-31	Froze																					
2011-01-28	Froze																					
2011-02-28	Froze																					
2011-03-31	Snow/																					
2011-04-08	MAX	7.97	996	195	10	3.6	< 2	33	1.1	< 0.05	0.1	5	21	< 1	190	130	67	0.4	0.02		0.016	
2011-06-03	MAX	7.65	1030	390	29	7.4	< 2	26	1.7	0.52	0.2	9	36	3	66	63	140	1.4	0.04		0.071	
2011-06-22	MAX	8.06	343	150	5.5	1.5	< 2	39	1.4	0.23	0.13	< 10	< 1	< 1	16	21	45	0.6	0.03		<0.005	
2011-07-29	Dry																					
2011-08-25	MAX	7.48	394	98	5.3	14	3	49	2.3	0.09	0.3	5	40	< 1	33	22	41	<0.1	0.03		0.015	
2011-09-27	MAX	7.96	316	109	5.9	6.9	< 2	42	1.5	0.15	0.24	2	27	7	15	14	39	0.2	0.04		0.013	
2011-10-20	MAX	7.95	225	87	3.6	1.9	< 2	17	0.5	< 0.05	0.09	6	8	3	13	14	26	0.2	<0.01		0.013	
2011-11-29	MAX	7.37	137	50	2.5	1.7	5	35	0.9	< 0.05	0.25	28	10	3	5	7.4	19	1	<0.01		0.059	
2011-12-15	MAX	7.78	423	70	2.4	1.6	3	25	0.6	< 0.05	0.14	5	10	3	75	56	28	0.33	0.014		0.067	
2012-01-31	Dry																					
2012-02-29	Dry																					
2012-03-29	MAX	8	920	170	8.8	3.7	2	41	0.91	0.085	0.15	6	6	< 1	170	130	60	1.1	0.02		0.013	
2012-04-17	MAX	8.1	970	180	8	4.2	< 2	40	1.9	0.09	0.1	5	7	< 1	170	130	65	1.2	0.018		0.0082	
2012-05-31	Dry																					
2012-06-22	MAX	8.04	400	140	4.5	3.8	< 2	43	1	0.16	0.11	4	16	< 1	26	32	48	0.67	0.057		0.0086	
2012-07-26	MAX	8.26	410	140	3.3	5.4	2	27	1.4	0.14	0.079	2	17	< 1	28	36	46	<0.1	0.052		0.0089	
2012-08-31	Dry																					
2012-09-20	MAX	7.67	400	140	6.7	3	< 2	35	1.1	< 0.05	0.075	2	11	3.1	32	26	47	0.29	0.024		<0.005	
2012-10-24	MAX	7.68	490	180	9	2.8	< 2	30	0.64	0.15	0.035	4	12	< 1	38	36	58	0.23	0.019		0.0083	
2012-11-30	Dry																					
2012-12-18	MAX	7.23	740	160	6.9	2	3	21	0.94	< 0.05	0.043	3	23	< 1	120	87	54	<0.1	0.011		0.025	
2013-01-30	MAX	7.05	1600	61	4.8	2.6	7	57	1.8	0.13	0.28	58	17	< 1	400	300	34	1.7	0.013		0.11	
2013-02-28	Dry																					
2013-03-29	Dry																					
2013-04-18	MAX	7.85	1100	94	4.5	1.8	3	31	0.87	0.055	0.056	5	16	2.3	240	190	36	0.49	0.024		0.015	
2013-05-28	MAX	8.26	1000	150	6	3.9	4	59	2.7	0.1	0.82	49	19	< 1	180	150	57	8.5	0.019		0.015	

Routine Surface Water Quality - General Analysis -Guelph WRIC & Waste Transfer Station

AECOM

Date	Lab	pH	Conductivity	Alk mg/L	Mg mg/L	K mg/L	BOD mg/L	COD mg/L	TKN mg/L	NH3-N mg/L	Total-P mg/L	TSS mg/L	SO4 mg/L	Phenol ug/L	Cl mg/L	Na mg/L	Ca mg/L	Fe mg/L	B mg/L	P mg/L	Zn mg/L	NO3-N mg/L
TP1-Out		6.5 - 8.5									0.03			1.0				0.30	0.20		0.02	
2013-06-27	MAX	8.02	370	120	4	1.9	< 2	20	0.71	0.093	< 0.02	2	10	< 1	30	31	42	0.31	0.032		<0.005	
2013-07-25	MAX	7.96	230	82	3.4	3	< 2	18	0.82	0.17	0.075	1	11	< 1	14	12	33	0.26	0.037		<0.005	
2013-08-07	MAX	7.68	470	140	7.2	12	14	55	1.9	0.055	0.39	11	< 1	1	58	32	46	1.2	0.028		0.011	
2013-09-24	MAX	7.95	510	180	8.8	3.1	< 2	32	1.2	0.094	0.077	2	9	< 1	43	35	54	0.16	0.024		0.007	
2013-10-31	MAX	7.32	150	52	2.2	2.4	3	17	0.72	< 0.05	0.19	5	8	2.3	10	8.8	17	0.26	0.017		0.025	
2013-11-19	MAX	7.82	440	160	8.9	3.9	< 2	25	0.67	< 0.05	0.038	2	15	< 1	30	28	52	0.12	0.022		0.011	
2013-12-05	MAX	7.81	380	130	6.5	2.9	< 2	15	0.71	0.28	0.049	2	18	2.7	30	25	44	0.66	0.012		0.01	
2014-01-14	MAX	7.78	1400	120	8.6	2.8	< 2	15	1.1	< 0.05	0.022	9	14	< 1	310	230	59	0.33	<0.01		0.015	
2014-02-28	Snow																					
2014-03-28	Snow																					
2014-04-23	MAX	7.93	1500	230	15	3.8	< 2	29	0.94	< 0.05	< 0.02	2	5	< 1	300	170	99	0.39	0.012		0.0054	
2014-05-27	MAX	7.99	770	160	7.9	2.2	4	33	1.5	0.14	0.076	6	19	2	130	95	54	0.83	0.043		<0.005	
2014-06-25	MAX	7.46	260	56	3.3	9.1	5	47	1.6	0.28	0.71	8	24	1.9	30	25	19	0.22	0.052		0.015	
2014-07-29	MAX	7.77	270	88	4	2.8	2	30	1.2	0.071	0.089	3	7	< 1	25	22	26	0.12	0.022		0.014	
2014-08-21	MAX	7.73	210	72	3.3	2.5	2	26	0.57	0.088	0.091	1	17	1.1	13	11	25	0.14	0.028		0.012	
2014-09-23	MAX	7.88	370	120	6.4	2.1	< 2	27	0.63	0.066	0.05	1	6	2.1	33	27	40	0.16	0.022		0.0074	
2014-10-23	MAX	7.9	570	180	8	3.9	< 2	31	0.72	0.067	0.072	3	17	1.8	61	45	61	0.39	0.036		0.0058	
2014-11-26	MAX	8.05	870	200	10	2.9	< 2	25	0.89	< 0.05	0.074	15	10	4.5	140	100	61	0.71	0.015		0.024	
2014-12-18	MAX	7.92	570	170	8.9	2.7	< 2	24	0.73	< 0.05	0.052	4	< 1	3.5	74	58	57	0.55	0.013		0.008	
2015-01-31	Ice Co																					
2015-02-28	Ice Co																					
2015-03-17	MAX	7.67	890	96	4.4	3.3	3	26	0.73	0.06	0.062	5	8	6.5	200	130	32	0.27	0.014		0.016	<0.1
2015-04-10	MAX	7.76	1000	180	11	3.1	< 2	20	0.88	< 0.05	0.07	3	8	1.6	180	120	67	0.28	0.019		0.0085	
2015-05-20	MAX	8.16	1200	210	13	5	< 2	30	0.92	< 0.05	0.033	3	2	< 1	260	160	72	0.29	0.018		<0.005	<0.1
2015-06-30	MAX	7.8	660	200	7.6	1.8	7	34	1.1	0.089	0.073	3	1	< 1	88	68	52	0.26	0.026		0.0061	<0.1
2015-07-14	MAX	7.72	420	130	5.3	2.2	< 2	23	0.86	0.1	0.056	1	25	< 1	39	34	39	0.25	0.032		<0.005	0.18
2015-08-27	MAX	7.96	480	150	6.2	3.4	4	23	0.87	0.2	0.072	2	12	< 1	45	40	49	0.49	0.034		<0.005	0.98
2015-09-04	MAX	8	470	150	5.5	3.6	< 2	26	0.82	0.094	0.058	< 1	12	< 1	45	37	47	0.37	0.033		<0.005	1.12
2015-10-22	MAX	8.06	310	100	5.4	3.9	< 2	21	0.45	< 0.05	0.048	1	26	< 1	19	15	37	0.16	0.028		0.0052	<0.1
2015-11-25	MAX	7.73	650	160	8.9	9.1	< 2	34	0.61	< 0.05	0.15	3	42	< 1	76	52	64	0.27	0.026		0.012	<0.1
2015-12-15	MAX	7.53	930	140	10	8.1	8	66	1.4	< 0.05	0.25	35	120	19	120	83	87	2.1	0.096		0.072	<0.1
2016-01-29	Snow																					
2016-02-03	MAX	7.24	1100	86	4.4	2	< 2	25	0.32	< 0.05	0.09	11	28	< 1	240	180	36	0.75	0.022		0.046	<0.1
2016-03-17	MAX	7.69	590	100	4.2	2.2	2	33	0.41	< 0.05	0.11	29	37	< 1	91	63	41	2	0.041		0.075	<0.1
2016-04-26	MAX	7.73	420	58	2.4	1.4	< 2	22	0.37	< 0.05	0.093	18	28	< 1	68	53	25	0.98	0.029		0.042	0.11
2016-05-17	MAX	7.79	870	140	7.2	3.2	3	51	0.89	< 0.05	0.16	8	83	< 1	130	97	70	1.6	0.055		0.013	<0.1
2016-05-26	MAX	7.27	470	63	5.3	4.3	8	100	1.6	0.67	0.24	40	69	3.8	47	42	50	2	0.068		0.1	0.53
2016-06-28	MAX	8.23	510	140	4.8	2.1	< 2	34	0.6	< 0.05	0.039	2	40	< 1	41	40	56	0.15	0.058		<0.005	0.26
2016-07-29	MAX	7.77	320	69	3.1	3.5	3	29	0.7	0.067	0.11	1	61	< 1	15	13	44	0.29	0.045		0.0055	<0.1
2016-08-17	MAX	7.35	370	120	4.4	7.3	18	100	1.3	< 0.05	0.71	9	32	11	22	16	51	1.5	0.044		0.009	<0.1
2016-09-20	MAX	7.96	450	130	5.2	11	< 2	34	0.87	0.16	0.11	8	60	< 1	22	14	72	0.63	0.071		<0.005	0.16
2016-10-19	MAX	8.03	970	170	12	8.2	< 2	37	1	< 0.05	0.052	1	320	< 1	26	21	160	0.49	0.075		0.0055	0.39
2016-11-24	MAX	7.81	540	110	6.7	7.2	12	75	0.79	< 0.05	0.14	8	60	2.3	29	24	65	0.55	0.058		0.037	<0.1
2016-12-30	Snow																					
2017-01-18	MAX	7.91	2300	220	14	3.1	3	30	0.69	0.13	0.062	5	44	< 1	530	330	82	0.47	0.019		0.018	0.16

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Date	Lab	pH	Conductivity	Alk mg/L	Mg mg/L	K mg/L	BOD mg/L	COD mg/L	TKN mg/L	NH3-N mg/L	Total-P mg/L	TSS mg/L	SO4 mg/L	Phenol ug/L	Cl mg/L	Na mg/L	Ca mg/L	Fe mg/L	B mg/L	P mg/L	Zn mg/L	NO3-N mg/L
TP1-Out		6.5 - 8.5									0.03			1.0				0.30	0.20		0.02	
2017-02-23	MAX	7.86	610	100	4.3	1.5	3	6.9	0.32	< 0.05	0.04	< 1	9.5	< 1	110	75	36	<0.1	0.011		<0.005	<0.1
2017-03-29	MAX	7.96	1100	180	6.9	2.6	< 2	26	0.56	< 0.05	0.042	1	32	< 1	190	130	68	0.23	0.027		0.0058	<0.1
2017-04-27	MAX	8.01	720	200	7.7	1.5	3	49	0.96	< 0.05	0.24	15	15	< 1	96	74	63	1.3	0.036		0.0095	<0.1
2017-05-25	MAX	7.54	270	54	2.1	1.8	3	27	0.7	0.05	0.079	9	55	2	13	12	38	0.49	0.028		0.032	0.1
2017-05-25	MAX	7.54	270	54	2.1	1.8	3	27	0.7	< 0.05	0.079	9	55	2	13	12	38	0.49	0.028		0.032	<0.1
2017-06-22	MAX	7.79	750	160	9.6	0.97	8	83	1.3	0.09	0.12	8	210	7.1	23	24	130	1.2	0.056		0.0079	<0.1
2017-07-27	MAX	7.8	680	81	6.4	2.1	2	24	0.41	0.056	0.043	2	240	1.9	14	13	120	0.38	0.038		<0.005	0.32
2017-08-18	MAX	7.4	270	70	2.7	1.8	< 2	24	0.37	< 0.05	0.084	4	37	1.9	4.5	5.7	48	0.36	0.033		0.015	<0.1
2017-09-29	Dry																					
2017-10-26	MAX	7.9	480	140	5.8	4.8	< 2	25	0.68	< 0.05	0.079	3	81	< 1	16	12	81	0.64	0.049		0.0087	<0.1
2017-11-23	MAX	8.12	600	190	7.4	2.9	< 2	20	0.33	< 0.05	0.031	1	55	< 1	40	33	73	0.17	0.024		0.0066	<0.1
2017-12-20	MAX	7.73	870	220	9.1	3.7	< 2	25	0.54	< 0.05	0.068	14	34	< 1	120	71	86	0.72	0.017		0.013	<0.1
2018-01-23	MAX	7.78	1000	95	5.3	1.7	3	14	0.32	0.072	0.077	6	22	1.7	230	160	35	0.35	0.032		0.025	0.13
2018-02-20	MAX	7.58	460	45	3.6	1.9	4	17	0.41	0.13	0.2	50	19	7.7	96	70	22	2	0.018		0.098	0.11
2018-03-27	MAX	8.17	3300	280	14	6.7	< 2	35	0.42	< 0.05	0.067	15	36	< 1	850	540	130	1.5	0.022		0.0058	<0.1
2018-04-24	MAX	8.09	940	210	9.5	2.5	2	33	0.71	< 0.05	0.087	3	13	< 1	150	100	74	0.85	0.016		0.011	<0.1
2018-05-29	MAX	8.11	710	250	14	3.1	7	76	0.83	0.078	0.16	15	< 1	2.2	75	51	84	2.7	0.035		0.0066	<0.1
2018-06-28	MAX	7.75	350	130	4.2	1.5	< 2	26	0.77	0.1	0.14	9	24	< 1	16	14	47	1.5	0.032		0.0088	<0.1
2018-07-17	MAX	7.32	680	76	5.9	7.9	10	67	0.96	0.094	0.35	8	17	1.8	4.8	16	110	0.36	0.044		0.024	<0.1
2018-08-17	MAX	7.45	530	74	5.3	3.7	6	57	0.68	0.066	0.11	4	160	1.1	16	12	91	0.26	0.052		0.026	<0.1
2018-08-22	MAX	7.71	320	100	3.2	1.4	< 2	23	0.42	0.067	0.065	3	47	< 1	8.2	8.4	49	0.49	0.027		0.012	<0.1
2018-09-11	MAX	7.6	510	110	5.2	2.8	< 2	36	0.67	0.1	0.075	2	100	< 1	28	19	73	0.14	0.04		0.01	<0.1
2018-10-03	MAX	7.85	340	100	4.3	2.8	< 2	22	0.6	0.069	0.086	4	40	< 1	19	14	47	0.27	0.034		0.018	<0.1
2018-11-26	MAX	7.83	620	160	7.2	4.7	< 2	24	0.41	0.14	0.075	5	40	< 1	72	41	63	0.12	0.019		0.016	<0.1
2018-12-17	MAX	7.6	2700	280	18	11	23	81	0.77	0.084	0.14	7	63	1.7	630	410	130	1.4	0.028		0.037	<0.1
2019-04-16	MAX	7.89	710	70	4.7	3.6	3	31	0.97	0.15	0.12	14	110	6.2	96	64	66	0.51	0.043		0.042	0.19
2019-05-10	MAX	7.92	420	86	3.6	2.9	3	18	0.38	< 0.05	0.071	4	50	< 1	39	30	47	0.2	0.025		0.008	<0.1
2019-06-06	MAX	7.55	310	93	3.3	3.7	4	32	0.85	< 0.05	0.18	8	29	1	22	17	40	0.96	0.044		0.024	<0.1
2019-07-18	MAX	7.89	400	110	4.3	1.8	< 2	28	0.81	< 0.05	0.11	3	50	< 1	25	19	52	0.42	0.042		0.02	<0.1
2019-08-27	MAX	8.04	510	180	6.9	11	6	75	1.5	0.28	0.5	2	19	1	36	25	66	2.1	0.051		0.0071	<0.1
2019-09-24	MAX	8	450	160	5.5	4.3	< 2	18	0.64	0.091	0.09	2	37	< 1	21	17	68	0.38	0.032		<0.005	0.13
2019-10-29	MAX	7.95	470	140	5.8	3.6	< 2	22	0.55	< 0.05	0.06	2	48	< 1	26	21	65	0.24	0.025		0.012	<0.1
2019-11-27	MAX	7.8	1600	230	14	16	29	150	1.1	< 0.05	0.29	17	32	3.4	250	200	96	2.3	0.033		0.051	<0.1
2020-01-14	Burea	7.95	1400	240	12	2.3	< 2	22	0.51	< 0.05	0.063	3	36	< 1	250	180	90	0.37	0.019		0.022	<0.1
2020-03-25	Burea	7.77	1100	150	4.7	2.4	< 2	34	0.48	< 0.05	0.13	5	45	< 1	210	160	58	0.6	0.03		0.0076	<0.1
2020-04-23	Burea	7.95	970	160	4.4	2.2	< 2	33	0.43	0.05	0.13	4	21	< 1	170	140	53	0.84	0.026		<0.005	<0.1
2020-05-19	Burea	8.13	610	260	2.9	2.1	< 2	9.2	0.3	< 0.05	< 0.02	1	12	< 1	31	48	40	1.3	0.039		0.018	2.22
2020-05-19	Burea	8.13	610	260	2.9	2.1	< 2	9.2	0.3	< 0.05	< 0.02	1	12	< 1	31	48	40	1.3	0.039		0.018	2.22
2020-06-24	Burea	7.76	340	88	3.6	2.7	5	37	0.87	0.11	0.13	9	38	< 1	25	22	37	0.5	0.042		0.021	<0.1
2020-07-29	Burea	7.85	330	120	4.6	2	< 2	16	0.6	0.093	0.088	3	19	< 1	14	14	45	0.45	0.031		0.0051	0.23
2020-08-25	Burea	8.03	470	130	5.4	1.6	< 2	13	0.48	0.091	0.047	3	59	< 1	27	22	62	0.16	0.031		<0.005	0.47
2020-09-10	Burea	7.85	440	150	4.5	3.5	< 2	45	0.54	< 0.05	0.25	7	32	< 1	28	21	58	1.2	0.043		<0.005	<0.1
2020-09-29	Burea	7.42	300	60	3.9	3.8	4	34	0.63	< 0.05	0.17	3	62	< 1	16	13	41	0.12	0.044		0.02	<0.1
2020-10-06	Burea	8.09	390	93	4.9	3	< 2	29	0.55	< 0.05	0.06	3	37	< 1	30	19	49	0.16	0.041		<0.005	<0.1
2020-10-28	Burea	7.73	330	99	3.8	4.3	< 2	20	0.4	0.053	0.048	2	36	< 1	20	17	46	0.15	0.035		<0.005	<0.1

Routine Surface Water Quality - General Analysis -Guelph WRIC & Waste Transfer Station

AECOM

Date	Lab	pH	Conductivity	Alk mg/L	Mg mg/L	K mg/L	BOD mg/L	COD mg/L	TKN mg/L	NH3-N mg/L	Total-P mg/L	TSS mg/L	SO4 mg/L	Phenol ug/L	Cl mg/L	Na mg/L	Ca mg/L	Fe mg/L	B mg/L	P mg/L	Zn mg/L	NO3-N mg/L
TP1-Out		6.5 - 8.5									0.03			1.0				0.30	0.20		0.02	
2020-11-26	Burea	7.04	1600	140	15	37	160	480	48	47	2.3	52	270	6.9	210	120	91	1.2	0.076		0.54	<0.5
2020-12-15	Burea	7.52	2600	180	9.6	13	8	68	49	48	0.32	10	210	< 1	520	320	81	2.2	0.038		0.021	<0.1
2021-01-27	Burea	7.55	4600	370	17	15	6	57	94	90	0.25	13	340	< 1	1000	670	160	2	0.033		0.009	<0.1
2021-03-10	Burea	7.68	380	42	1.4	1.2	2	13	4.9	5.1	0.083	5	25	< 1	71	40	12	0.12	<0.01		0.0056	0.15
2021-04-27	Burea	7.87	1100	130	6.4	4.5	2	49	6.3	5.2	0.11	5	130	< 1	180	120	73	0.55	0.038		0.0083	1
2021-05-25	Burea	8.04	540	120	3.8	3.2	7	25	1	0.35	0.12	3	74	< 1	45	40	62	0.26	0.031		0.0081	0.87
2021-06-09	Burea	7.87	390	110	4.7	3.6	6	47	1.5	0.62	0.15	9	47	< 1	24	16	51	0.63	0.04		0.015	<0.1
2021-06-09	Burea	7.87	390	110	4.7	3.6	6	47	1.5	0.62	0.15	9	47	1	24	16	51	0.63	0.04		0.015	0.1
2021-07-09	Burea	7.61	340	110	3.9	1.8	< 2	29	0.73	0.27	0.13	4	39	< 1	18	15	52	0.97	0.041		0.013	<0.1
2021-07-09	Burea	7.61	340	110	3.9	1.8	2	29	0.73	0.27	0.13	4	39	1	18	15	52	0.97	0.041		0.013	0.1
2021-08-26	Burea	8.17	550	160	5.9	2	< 2	22	0.48	< 0.05	0.065	2	74	< 1	32	25	84	<0.1	0.051		<0.005	0.14
2021-09-08	Burea	7.53	230	57	2.9	2.1	3	17	0.61	0.13	0.13	2	37	< 1	11	8.5	32	<0.1	0.035		0.022	<0.1
2021-09-08	Burea	7.53	230	57	2.9	2.1	3	17	0.61	0.13	0.13	2	37	1	11	8.5	32	0.1	0.035		0.022	0.1
2021-10-21	Burea	8.08	620	210	9.7	4	< 2	21	0.63	0.054	0.05	1	49	< 1	42	38	82	0.19	0.045		<0.005	0.13
2021-11-17	Burea	8	460	130	5.4	3.4	< 2	22	0.47	0.1	0.087	1	50	< 1	29	23	57	<0.1	0.037		<0.005	0.14
2021-12-16	Burea	7.97	970	210	9.4	2.2	< 2	14	0.31	< 0.05	0.038	< 1	64	< 1	130	99	85	<0.1	0.03		0.01	<0.1

**Surface Water ORGANIC ANALYSIS (ATG MISA Groups 19 and 20) - Guelph
WRIC/Waste Transfer Station - 2021**

AECOM

Parameter	EPTS-01 09-Jun-21	TP1-Out 09-Jun-21
<u>MISA Group 19</u>		
Acenaphthene:	< 0.2	< 0.2
5-Nitroacenaphthene:		
Acenaphthylene:	< 0.2	< 0.2
Anthracene:	< 0.2	< 0.2
Benzo(a)anthracene:	< 0.2	< 0.2
Benzo(a)Pyrene:	< 0.2	< 0.2
Benzo(b)Fluoranthene:	< 0.2	< 0.2
Benzo(g,h,i)perylene:	< 0.2	< 0.2
Benzo(k)Fluoranthene:	< 0.2	< 0.2
Biphenyl:	< 0.5	< 0.5
Camphene:		
1-Chloronaphthalene:	< 1	< 1
2-Chloronaphthalene:	< 0.5	< 0.5
Chrysene:	< 0.2	< 0.2
Dibenzo(a,h)Anthracene:	< 0.2	< 0.2
Fluoranthene:	< 0.2	< 0.2
Fluorene:	< 0.2	< 0.2
Indeno(1,2,3-cd)Pyrene:	< 0.2	< 0.2
Indole:		
1-Methylnaphthalene:	< 0.2	< 0.2
2-Methylnaphthalene:	< 0.2	< 0.2
Naphthalene:	< 0.2	< 0.2
Perylene:	< 0.2	< 0.2
Phenanthrene:	< 0.2	< 0.2
Pyrene:	< 0.2	< 0.2
Benzyl Butyl Phthalate:	< 0.5	< 0.5
bis(2-ethylhexyl)Phthalate:	< 2	< 2
Di-N-butylPhthalate:	< 2	< 2
Di-N-octylPhthalate:	< 0.8	< 0.8
4-Bromophenyl phenyl EtHe	< 0.3	< 0.3
4-Chlorophenyl Phenyl EtHe	< 0.5	< 0.5
bis(2-chloroisopropyl)Ether:	< 0.5	< 0.5
bis(2-Chloroethyl)Ether:	< 0.5	< 0.5
Diphenyl ether:	< 0.3	< 0.3
2,4-Dinitrotoluene:	< 0.5	< 0.5
2,6-Dinitrotoluene:	< 0.5	< 0.5
bis(2-chloroethoxy)Methan	< 0.5	< 0.5
Nitrosodiphenylamine /Diphenylamine:	< 1	< 1
N-Nitrosodi-N-propylamine:	< 0.5	< 0.5
<u>MISA Group 20</u>		
2,3,4,5-Tetrachlorophenol:	< 0.4	< 0.4
2,3,4,6-Tetrachlorophenol:	< 0.5	< 0.5
2,3,5,6-Tetrachlorophenol:	< 0.5	< 0.5
2,3,4-Trichlorophenol:	< 0.5	< 0.5
2,3,5-Trichlorophenol:	< 0.5	< 0.5
2,4,5-Trichlorophenol:	< 0.5	< 0.5
2,4,6-Trichlorophenol:	< 0.5	< 0.5
2,4-Dinitrophenol:	< 2	< 2
2,4-Dimethylphenol:	< 0.5	< 0.5
2,4-Dichlorophenol:	< 0.3	< 0.3
2,6-Dichlorophenol:	< 0.5	< 0.5
4,6-Dinitro-o-Cresol:		
2-Chlorophenol:	< 0.3	< 0.3
4-Chloro-3-methylphenol	< 0.5	< 0.5
4-Nitrophenol:	< 1.4	< 1.4
o-Cresol:	< 0.5	< 0.5
m-,p-Cresol:	< 0.5	< 0.5
Pentachlorophenol:	< 1	< 1
Phenol:	< 0.5	< 0.5

**Surface Water ORGANIC ANALYSIS - ATG MISA Groups 16, 17 and 18 -Guelph
WRIC/Waste Transfer Station - 2021**

AECOM

Parameter	EPTS-01 09-Jun-21	TP1-Out 09-Jun-21
<u>MISA Group 16</u>		
1,1,1,2-Tetrachloroethane:	< 0.2	< 0.4
1,1,1-Trichloroethane:	< 0.1	< 0.2
1,1,2,2-Tetrachloroethane:	< 0.2	< 0.4
1,1,2-Trichloroethane:	< 0.2	< 0.4
1,1-Dichloroethane:	< 0.1	< 0.2
1,1-Dichloroethylene:	< 0.1	< 0.2
1,2-Dichlorobenzene:	< 0.2	< 0.4
1,2-Dibromoethane:*		
1,2-Dichloroethane:	< 0.2	< 0.4
1,2-Dichloropropane:	< 0.1	< 0.2
1,3-Dichlorobenzene:	< 0.2	< 0.4
1,4-Dichlorobenzene:	< 0.2	< 0.4
Bromodichloromethane:	< 0.1	< 0.2
Bromoform:	< 0.2	< 0.4
Bromomethane:	< 0.5	< 1
Carbon Tetrachloride:	< 0.1	< 0.2
Chlorobenzene:	< 0.1	< 0.2
Chloroform:	0.46	< 0.2
Chloromethane:		
Cis-1,2-Dichloroethylene:	< 0.1	< 0.2
Cis-1,3-Dichloropropylene:	< 0.2	< 0.4
Dibromochloromethane:	< 0.2	< 0.4
Methylene Chloride:	< 0.5	< 1
Tetrachloroethylene:	< 0.1	< 0.2
trans-1,2-Dichloroethylene:	< 0.1	< 0.2
Trans-1,3-Dichloropropylene:	< 0.2	< 0.4
Trichloroethylene:	< 0.1	< 0.2
Trichlorofluoromethane:	< 0.2	< 0.4
Vinyl chloride:	< 0.2	< 0.4
<u>MISA Group 17</u>		
Benzene:	< 0.1	< 0.2
Ethylbenzene:	< 0.1	< 0.2
Styrene:	< 0.2	< 0.4
Toluene:	< 0.2	< 0.4
o-Xylene:	< 0.1	< 0.2
m-Xylene and p-Xylene:	< 0.1	< 0.2
<u>MISA Group 18</u>		
Acrolein:		
Acrylonitrile:		

Appendix D

2020 Laboratory Reports



**Attention: Amy Spence**

City of Guelph
 Solid Waste RIC (Wet/Dry)
 110 Dunlop Drive
 Guelph, ON
 CANADA N1H 6H8

Your P.O. #: 1900689
 Your Project #: Wet / Dry Surface Water
 Site#: 110 DUNLOP DR.
 Site Location: WET/DRY SW APRIL 2021
 Your C.O.C. #: 785154-03-01

Report Date: 2021/05/04
 Report #: R6620993
 Version: 1 - Final

CERTIFICATE OF ANALYSIS**BV LABS JOB #: C1B3376****Received: 2021/04/28, 15:58**

Sample Matrix: Water
 # Samples Received: 2

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Analytical Method
Alkalinity	2	N/A	2021/04/29	CAM SOP-00448	SM 23 2320 B m
Biochemical Oxygen Demand (BOD)	2	2021/04/29	2021/05/04	CAM SOP-00427	SM 23 5210B m
Chloride by Automated Colourimetry	2	N/A	2021/04/30	CAM SOP-00463	SM 23 4500-Cl E m
Chemical Oxygen Demand	2	N/A	2021/05/01	CAM SOP-00416	SM 23 5220 D m
Conductivity	2	N/A	2021/04/29	CAM SOP-00414	SM 23 2510 m
Total Metals Analysis by ICPMS	2	N/A	2021/04/30	CAM SOP-00447	EPA 6020B m
Total Ammonia-N	2	N/A	2021/05/03	CAM SOP-00441	USGS I-2522-90 m
Nitrate (NO3) and Nitrite (NO2) in Water (1)	2	N/A	2021/04/30	CAM SOP-00440	SM 23 4500-NO3/NO2B
pH	2	2021/04/29	2021/04/29	CAM SOP-00413	SM 4500H+ B m
Phenols (4AAP)	2	N/A	2021/04/30	CAM SOP-00444	OMOE E3179 m
Sulphate by Automated Colourimetry	2	N/A	2021/04/30	CAM SOP-00464	EPA 375.4 m
Total Kjeldahl Nitrogen in Water	1	2021/04/30	2021/05/03	CAM SOP-00938	OMOE E3516 m
Total Kjeldahl Nitrogen in Water	1	2021/04/30	2021/05/04	CAM SOP-00938	OMOE E3516 m
Total Phosphorus (Colourimetric)	2	2021/04/30	2021/04/30	CAM SOP-00407	SM 23 4500 P B H m
Low Level Total Suspended Solids	2	2021/04/30	2021/05/03	CAM SOP-00428	SM 23 2540D 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, MELCC, EPA, APHA.

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. #: 1900689
Your Project #: Wet / Dry Surface Water
Site#: 110 DUNLOP DR.
Site Location: WET/DRY SW APRIL 2021
Your C.O.C. #: 785154-03-01

Attention: Amy Spence

City of Guelph
Solid Waste RIC (Wet/Dry)
110 Dunlop Drive
Guelph, ON
CANADA N1H 6H8

Report Date: 2021/05/04
Report #: R6620993
Version: 1 - Final

CERTIFICATE OF ANALYSIS

BV LABS JOB #: C1B3376

Received: 2021/04/28, 15:58

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.

Encryption Key

Hongmei Zhao (Grace)
Project Manager
04 May 2021 16:48:37

Please direct all questions regarding this Certificate of Analysis to your Project Manager.

James Aspin, Senior Project Manager

Email: James.Aspin@bureauveritas.com

Phone# (905)817-5771

=====

BV Labs 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 Signature Page.

BUREAU
VERITAS

BV Labs Job #: C1B3376
Report Date: 2021/05/04

City of Guelph
Client Project #: Wet / Dry Surface Water
Site Location: WET/DRY SW APRIL 2021
Your P.O. #: 1900689
Sampler Initials: AS

RESULTS OF ANALYSES OF WATER

BV Labs ID			PKY983		PKY984			PKY984		
Sampling Date			2021/04/27		2021/04/27			2021/04/27		
COC Number			785154-03-01		785154-03-01			785154-03-01		
	UNITS	Criteria	TP1-OUT	RDL	EPTSO1	RDL	QC Batch	EPTSO1 Lab-Dup	RDL	QC Batch
Inorganics										
Total Ammonia-N	mg/L	-	5.2	0.050	ND	0.050	7327629			
Total BOD	mg/L	-	2	2	ND	2	7325170			
Total Chemical Oxygen Demand (COD)	mg/L	-	49	4.0	6.0	4.0	7327636			
Conductivity	umho/cm	-	1100	1.0	750	1.0	7326385			
Total Kjeldahl Nitrogen (TKN)	mg/L	-	6.3	0.20	0.12	0.10	7327643			
pH	pH	6.5:8.5	7.87		8.08		7326393			
Phenols-4AAP	mg/L	0.001	ND	0.0010	ND	0.0010	7327244	ND	0.0010	7327244
Total Phosphorus	mg/L	0.01	0.11	0.020	ND (1)	0.020	7327631	ND (1)	0.020	7327631
Total Suspended Solids	mg/L	-	5	1	1	1	7328077			
Dissolved Sulphate (SO ₄)	mg/L	-	130	1.0	17	1.0	7326728			
Alkalinity (Total as CaCO ₃)	mg/L	-	130	1.0	260	1.0	7326362			
Dissolved Chloride (Cl ⁻)	mg/L	-	180	2.0	75	1.0	7326722			
Nitrite (N)	mg/L	-	0.069	0.010	0.031	0.010	7326696			
Nitrate (N)	mg/L	-	1.00	0.10	2.59	0.10	7326696			
Nitrate + Nitrite (N)	mg/L	-	1.07	0.10	2.63	0.10	7326696			
RDL = Reportable Detection Limit QC Batch = Quality Control Batch Lab-Dup = Laboratory Initiated Duplicate Criteria: Ontario Provincial Water Quality Objectives Ref. to MOEE Water Management document dated Feb.1999 ND = Not detected (1) RDL exceeds criteria										



BUREAU
VERITAS

BV Labs Job #: C1B3376
Report Date: 2021/05/04

City of Guelph
Client Project #: Wet / Dry Surface Water
Site Location: WET/DRY SW APRIL 2021
Your P.O. #: 1900689
Sampler Initials: AS

ELEMENTS BY ATOMIC SPECTROSCOPY (WATER)

BV Labs ID			PKY983	PKY984		
Sampling Date			2021/04/27	2021/04/27		
COC Number			785154-03-01	785154-03-01		
	UNITS	Criteria	TP1-OUT	EPTS01	RDL	QC Batch
Metals						
Total Boron (B)	mg/L	0.2	0.038	0.014	0.010	7327297
Total Calcium (Ca)	mg/L	-	73	84	0.20	7327297
Total Iron (Fe)	mg/L	0.3	0.55	ND	0.10	7327297
Total Magnesium (Mg)	mg/L	-	6.4	23	0.050	7327297
Total Potassium (K)	mg/L	-	4.5	1.4	0.20	7327297
Total Sodium (Na)	mg/L	-	120	36	0.10	7327297
Total Zinc (Zn)	mg/L	0.03	0.0083	0.072	0.0050	7327297
RDL = Reportable Detection Limit						
QC Batch = Quality Control Batch						
Criteria: Ontario Provincial Water Quality Objectives						
Ref. to MOEE Water Management document dated Feb.1999						
ND = Not detected						



BUREAU
VERITAS

BV Labs Job #: C1B3376

Report Date: 2021/05/04

City of Guelph

Client Project #: Wet / Dry Surface Water

Site Location: WET/DRY SW APRIL 2021

Your P.O. #: 1900689

Sampler Initials: AS

GENERAL COMMENTS

Results relate only to the items tested.



BV Labs Job #: C1B3376
Report Date: 2021/05/04

QUALITY ASSURANCE REPORT

City of Guelph
Client Project #: Wet / Dry Surface Water
Site Location: WET/DRY SW APRIL 2021
Your P.O. #: 1900689
Sampler Initials: AS

QC Batch	Parameter	Date	Matrix Spike		SPIKED BLANK		Method Blank		RPD		QC Standard	
			% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits	% Recovery	QC Limits
7325170	Total BOD	2021/05/04					ND, RDL=2	mg/L	0.52	30	97	80 - 120
7326362	Alkalinity (Total as CaCO ₃)	2021/04/29			93	85 - 115	ND, RDL=1.0	mg/L	0.19	20		
7326385	Conductivity	2021/04/29			102	85 - 115	ND, RDL=1.0	umho/cm	0.37	25		
7326393	pH	2021/04/29			102	98 - 103			0.93	N/A		
7326696	Nitrate (N)	2021/04/30	103	80 - 120	98	80 - 120	ND, RDL=0.10	mg/L	0.12	20		
7326696	Nitrite (N)	2021/04/30	107	80 - 120	106	80 - 120	ND, RDL=0.010	mg/L	4.4	20		
7326722	Dissolved Chloride (Cl ⁻)	2021/04/30	NC	80 - 120	101	80 - 120	ND, RDL=1.0	mg/L	3.7	20		
7326728	Dissolved Sulphate (SO ₄)	2021/04/30	NC	75 - 125	100	80 - 120	ND, RDL=1.0	mg/L	0.67	20		
7327244	Phenols-4AAP	2021/04/30	101	80 - 120	99	80 - 120	ND, RDL=0.0010	mg/L	NC	20		
7327297	Total Boron (B)	2021/04/30	NC	80 - 120	94	80 - 120	ND, RDL=0.010	mg/L	2.9	20		
7327297	Total Calcium (Ca)	2021/04/30	NC	80 - 120	97	80 - 120	ND, RDL=0.20	mg/L	4.5	20		
7327297	Total Iron (Fe)	2021/04/30	92	80 - 120	93	80 - 120	ND, RDL=0.10	mg/L	NC	20		
7327297	Total Magnesium (Mg)	2021/04/30	NC	80 - 120	95	80 - 120	ND, RDL=0.050	mg/L	4.1	20		
7327297	Total Potassium (K)	2021/04/30	NC	80 - 120	96	80 - 120	ND, RDL=0.20	mg/L	4.5	20		
7327297	Total Sodium (Na)	2021/04/30	NC	80 - 120	94	80 - 120	ND, RDL=0.10	mg/L	3.2	20		
7327297	Total Zinc (Zn)	2021/04/30	93	80 - 120	100	80 - 120	ND, RDL=0.0050	mg/L	NC	20		
7327629	Total Ammonia-N	2021/05/03	102	75 - 125	101	80 - 120	ND, RDL=0.050	mg/L	NC	20		
7327631	Total Phosphorus	2021/04/30	89	80 - 120	102	80 - 120	ND, RDL=0.020	mg/L	NC	20	96	80 - 120
7327636	Total Chemical Oxygen Demand (COD)	2021/05/01	101	80 - 120	101	80 - 120	ND, RDL=4.0	mg/L	NC	20		
7327643	Total Kjeldahl Nitrogen (TKN)	2021/05/03	112	80 - 120	102	80 - 120	ND, RDL=0.10	mg/L	NC	20	104	80 - 120



BV Labs Job #: C1B3376
Report Date: 2021/05/04

QUALITY ASSURANCE REPORT(CONT'D)

City of Guelph
Client Project #: Wet / Dry Surface Water
Site Location: WET/DRY SW APRIL 2021
Your P.O. #: 1900689
Sampler Initials: AS

QC Batch	Parameter	Date	Matrix Spike		SPIKED BLANK		Method Blank		RPD		QC Standard	
			% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits	% Recovery	QC Limits
7328077	Total Suspended Solids	2021/05/03					ND, RDL=1	mg/L	6.5	25	95	85 - 115

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 $\leq 2 \times \text{RDL}$).



BUREAU
VERITAS

BV Labs Job #: C1B3376
Report Date: 2021/05/04

City of Guelph
Client Project #: Wet / Dry Surface Water
Site Location: WET/DRY SW APRIL 2021
Your P.O. #: 1900689
Sampler Initials: AS

VALIDATION SIGNATURE PAGE

The analytical data and all QC contained in this report were reviewed and validated by the following individual(s).

Anastassia Hamanov, Scientific Specialist

BV Labs 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 Signature Page.

BOD <small>Bureau Veritas Laboratories 1540 Carleton Place, Mississauga, Ontario Canada L4N 2L9 Tel: (905) 817-5700 Toll-free 800-563-0266 Fax: (905) 817-5777 www.bvlabs.com</small>										Page 1 of 1																																																																																																																																	
INVOICE TO:										REPORT TO:										PROJECT INFORMATION:										Laboratory Use Only:																																																																																																													
Company Name: #12237 City of Guelph Attention: Amy Spence (Wet/Dry) Address: 186 Eastview Rd Guelph ON N1E 1Z6 Tel: (519) 837-5633 Fax: (519) 823-0910 Email: amy.spence@guelph.ca										Company Name: 9497-The City of Guelph Attention: Amy Spence Address: 110 Dunlop Dr Guelph, ON N1H 6H8 Tel: 519-362-1164 Fax: pattywong@... Email: amy.spence@guelph.ca aecom.ca										Quotation #: B90142 P.O. #: Project: Wet / Dry Surface Water Project Name: Wet / Dry SW April 2021 Site #: 110 Dunlop Dr Prepared By: Amy Spence										BV Labs Job #: Bottle Order #: Project Manager: James Aspin COC #: CR785154-03-01																																																																																																													
MOE REGULATED DRINKING WATER OR WATER INTENDED FOR HUMAN CONSUMPTION MUST BE SUBMITTED ON THE BV LABS DRINKING WATER CHAIN OF CUSTODY										ANALYSIS REQUESTED (PLEASE BE SPECIFIC)										Turnaround Time (TAT) Required Please provide advance notice for rush projects																																																																																																																							
Regulation 153 (2011) <input type="checkbox"/> Table 1 <input type="checkbox"/> Res/Park <input type="checkbox"/> Medium/Fine <input type="checkbox"/> Table 2 <input type="checkbox"/> Ind/Comm <input type="checkbox"/> Coarse <input type="checkbox"/> Table 3 <input type="checkbox"/> Agri/Other <input type="checkbox"/> For RSC										Other Regulations <input type="checkbox"/> CCME <input type="checkbox"/> Sanitary Sewer Bylaw <input type="checkbox"/> Reg 568 <input type="checkbox"/> Storm Sewer Bylaw <input type="checkbox"/> MISA <input type="checkbox"/> Municipality <input type="checkbox"/> PWOC <input type="checkbox"/> Reg 406 Table <input type="checkbox"/> Other:										Special Instructions										Regular (Standard) TAT: (will be applied if Rush TAT is not specified) Standard TAT = 5-7 Working days for most tests. Please note: Standard TAT for certain tests such as BOD and Dissolved Phosphorus are + 5 days - contact your Project Manager for details. Job Specific Rush TAT (if applies to entire submission) Date Required: Time Required: <input type="checkbox"/> Rush Confirmation Number: (call us for #)																																																																																																													
Include Criteria on Certificate of Analysis (Y/N)?										Field Filtered (please circle): Metals / Hg / Cr VI Wet Dry SW Nitrate Nitrite										# of Tests Comments																																																																																																																							
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* RELINQUISHED BY: (Signature/Print) <u>Amy Spence / Amy Spence</u> Date: <u>21/04/28</u> Time: <u>PM</u>										RECEIVED BY: (Signature/Print) <u>James Aspin</u> Date: <u>20/04/28</u> Time: <u>15:58</u>										# Jars used and not submitted: Laboratory Use Only:																																																																																																																							
Time Sensitive: Temperature (°C) on Receipt: <u>11/10</u>										Custody Seal: Present: <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No										White: BV Labs Yellow: Client																																																																																																																							

* UNLESS OTHERWISE AGREED TO IN WRITING, WORK SUBMITTED ON THIS CHAIN OF CUSTODY IS SUBJECT TO BV LABS' STANDARD TERMS AND CONDITIONS. SIGNING OF THIS CHAIN OF CUSTODY DOCUMENT IS ACKNOWLEDGMENT AND ACCEPTANCE OF OUR TERMS WHICH ARE AVAILABLE FOR VIEWING AT WWW.BVLABS.COM/TERMS-AND-CONDITIONS.
 * IT IS THE RESPONSIBILITY OF THE RELINQUISHER TO ENSURE THE ACCURACY OF THE CHAIN OF CUSTODY RECORD. AN INCOMPLETE CHAIN OF CUSTODY MAY RESULT IN ANALYTICAL TAT DELAYS.
 ** SAMPLE CONTAINER, PRESERVATION, HOLD TIME AND PACKAGE INFORMATION CAN BE VIEWED AT WWW.BVLABS.COM/RESOURCES/CHAIN-OF-CUSTODY-FORMS.



Your P.O. #: 2100310
 Your Project #: WET / DRY SURFACE WATER
 Site#: 110 DUNLOP DR.
 Site Location: WET/DRY SW MAY 2021
 Your C.O.C. #: 785154-04-01

Attention: Amy Spence

City of Guelph
 Solid Waste RIC (Wet/Dry)
 110 Dunlop Drive
 Guelph, ON
 CANADA N1H 6H8

Report Date: 2021/06/02
 Report #: R6658729
 Version: 1 - Final

CERTIFICATE OF ANALYSIS

BV LABS JOB #: C1E2144

Received: 2021/05/26, 15:50

Sample Matrix: Water
 # Samples Received: 2

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Analytical Method
Alkalinity	2	N/A	2021/05/29	CAM SOP-00448	SM 23 2320 B m
Biochemical Oxygen Demand (BOD)	2	2021/05/28	2021/06/02	CAM SOP-00427	SM 23 5210B m
Chloride by Automated Colourimetry	2	N/A	2021/05/31	CAM SOP-00463	SM 23 4500-Cl E m
Chemical Oxygen Demand	2	N/A	2021/05/29	CAM SOP-00416	SM 23 5220 D m
Conductivity	2	N/A	2021/05/29	CAM SOP-00414	SM 23 2510 m
Total Metals Analysis by ICPMS	2	N/A	2021/05/28	CAM SOP-00447	EPA 6020B m
Total Ammonia-N	2	N/A	2021/05/31	CAM SOP-00441	USGS I-2522-90 m
Nitrate (NO3) and Nitrite (NO2) in Water (1)	2	N/A	2021/05/31	CAM SOP-00440	SM 23 4500-NO3I/NO2B
pH	2	2021/05/28	2021/05/29	CAM SOP-00413	SM 4500H+ B m
Phenols (4AAP)	2	N/A	2021/05/28	CAM SOP-00444	OMOE E3179 m
Sulphate by Automated Colourimetry	2	N/A	2021/05/31	CAM SOP-00464	EPA 375.4 m
Total Kjeldahl Nitrogen in Water	2	2021/05/27	2021/05/28	CAM SOP-00938	OMOE E3516 m
Total Phosphorus (Colourimetric)	2	2021/05/28	2021/05/31	CAM SOP-00407	SM 23 4500 P B H m
Low Level Total Suspended Solids	1	2021/05/28	2021/05/31	CAM SOP-00428	SM 23 2540D m
Low Level Total Suspended Solids	1	2021/05/29	2021/05/31	CAM SOP-00428	SM 23 2540D 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, MELCC, EPA, APHA.

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. #: 2100310
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Site#: 110 DUNLOP DR.
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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.

Encryption Key

Hongmei Zhao (Grace)
Project Manager
02 Jun 2021 16:05:39

Please direct all questions regarding this Certificate of Analysis to your Project Manager.

James Aspin, Senior Project Manager

Email: James.Aspin@bureauveritas.com

Phone# (905)817-5771

=====

BV Labs 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 Signature Page.



BV Labs Job #: C1E2144
Report Date: 2021/06/02

City of Guelph
Client Project #: WET / DRY SURFACE WATER
Site Location: WET/DRY SW MAY 2021
Your P.O. #: 2100310
Sampler Initials: AS

RESULTS OF ANALYSES OF WATER

BV Labs ID			PQX701		PQX702		
Sampling Date			2021/05/25		2021/05/25		
COC Number			785154-04-01		785154-04-01		
	UNITS	Criteria	TP1-OUT	QC Batch	EPTS01	RDL	QC Batch
Inorganics							
Total Ammonia-N	mg/L	-	0.35	7374800	ND	0.050	7374985
Total BOD	mg/L	-	7	7375976	ND	2	7375976
Total Chemical Oxygen Demand (COD)	mg/L	-	25	7374818	ND	4.0	7374818
Conductivity	umho/cm	-	540	7376741	740	1.0	7376741
Total Kjeldahl Nitrogen (TKN)	mg/L	-	1.0	7374825	0.26	0.10	7374825
pH	pH	6.5:8.5	8.04	7376780	8.23		7376780
Phenols-4AAP	mg/L	0.001	ND	7376010	ND	0.0010	7376010
Total Phosphorus	mg/L	0.01	0.12	7377089	ND (1)	0.020	7377089
Total Suspended Solids	mg/L	-	3	7376573	3	1	7378643
Dissolved Sulphate (SO4)	mg/L	-	74	7376995	17	1.0	7376995
Alkalinity (Total as CaCO3)	mg/L	-	120	7376754	270	1.0	7376754
Dissolved Chloride (Cl-)	mg/L	-	45	7376989	62	1.0	7376989
Nitrite (N)	mg/L	-	0.024	7376831	0.031	0.010	7376831
Nitrate (N)	mg/L	-	0.87	7376831	2.30	0.10	7376831
Nitrate + Nitrite (N)	mg/L	-	0.90	7376831	2.33	0.10	7376831
RDL = Reportable Detection Limit QC Batch = Quality Control Batch Criteria: Ontario Provincial Water Quality Objectives Ref. to MOEE Water Management document dated Feb.1999 ND = Not detected (1) RDL exceeds criteria							

BV Labs ID			PQX702		
Sampling Date			2021/05/25		
COC Number			785154-04-01		
	UNITS	Criteria	EPTS01 Lab-Dup	RDL	QC Batch
Inorganics					
Total Ammonia-N	mg/L	-	ND	0.050	7374985
Total Chemical Oxygen Demand (COD)	mg/L	-	ND	4.0	7374818
RDL = Reportable Detection Limit QC Batch = Quality Control Batch Lab-Dup = Laboratory Initiated Duplicate Criteria: Ontario Provincial Water Quality Objectives Ref. to MOEE Water Management document dated Feb.1999 ND = Not detected					



BUREAU
VERITAS

BV Labs Job #: C1E2144
Report Date: 2021/06/02

City of Guelph
Client Project #: WET / DRY SURFACE WATER
Site Location: WET/DRY SW MAY 2021
Your P.O. #: 2100310
Sampler Initials: AS

ELEMENTS BY ATOMIC SPECTROSCOPY (WATER)

BV Labs ID			PQX701	PQX702	PQX702		
Sampling Date			2021/05/25	2021/05/25	2021/05/25		
COC Number			785154-04-01	785154-04-01	785154-04-01		
	UNITS	Criteria	TP1-OUT	EPTS01	EPTS01 Lab-Dup	RDL	QC Batch
Metals							
Total Boron (B)	mg/L	0.2	0.031	0.016	0.015	0.010	7376096
Total Calcium (Ca)	mg/L	-	62	82	82	0.20	7376096
Total Iron (Fe)	mg/L	0.3	0.26	ND	ND	0.10	7376096
Total Magnesium (Mg)	mg/L	-	3.8	22	22	0.050	7376096
Total Potassium (K)	mg/L	-	3.2	1.3	1.4	0.20	7376096
Total Sodium (Na)	mg/L	-	40	35	35	0.10	7376096
Total Zinc (Zn)	mg/L	0.03	0.0081	0.082	0.085	0.0050	7376096
RDL = Reportable Detection Limit QC Batch = Quality Control Batch Lab-Dup = Laboratory Initiated Duplicate Criteria: Ontario Provincial Water Quality Objectives Ref. to MOEE Water Management document dated Feb.1999 ND = Not detected							



BUREAU
VERITAS

BV Labs Job #: C1E2144

Report Date: 2021/06/02

City of Guelph

Client Project #: WET / DRY SURFACE WATER

Site Location: WET/DRY SW MAY 2021

Your P.O. #: 2100310

Sampler Initials: AS

GENERAL COMMENTS

Results relate only to the items tested.



BV Labs Job #: C1E2144
Report Date: 2021/06/02

QUALITY ASSURANCE REPORT

City of Guelph
Client Project #: WET / DRY SURFACE WATER
Site Location: WET/DRY SW MAY 2021
Your P.O. #: 2100310
Sampler Initials: AS

QC Batch	Parameter	Date	Matrix Spike		SPIKED BLANK		Method Blank		RPD		QC Standard	
			% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits	% Recovery	QC Limits
7374800	Total Ammonia-N	2021/05/31	99	75 - 125	98	80 - 120	ND, RDL=0.050	mg/L	5.8	20		
7374818	Total Chemical Oxygen Demand (COD)	2021/05/29	104	80 - 120	97	80 - 120	ND, RDL=4.0	mg/L	NC	20		
7374825	Total Kjeldahl Nitrogen (TKN)	2021/05/28	95	80 - 120	101	80 - 120	ND, RDL=0.10	mg/L	NC	20	101	80 - 120
7374985	Total Ammonia-N	2021/05/31	96	75 - 125	98	80 - 120	ND, RDL=0.050	mg/L	NC	20		
7375976	Total BOD	2021/06/02					ND, RDL=2	mg/L	NC	30	93	80 - 120
7376010	Phenols-4AAP	2021/05/28	102	80 - 120	99	80 - 120	ND, RDL=0.0010	mg/L	NC	20		
7376096	Total Boron (B)	2021/05/28	93	80 - 120	93	80 - 120	ND, RDL=0.010	mg/L	4.4	20		
7376096	Total Calcium (Ca)	2021/05/28	NC	80 - 120	97	80 - 120	ND, RDL=0.20	mg/L	0.12	20		
7376096	Total Iron (Fe)	2021/05/28	96	80 - 120	95	80 - 120	ND, RDL=0.10	mg/L	NC	20		
7376096	Total Magnesium (Mg)	2021/05/28	94	80 - 120	94	80 - 120	ND, RDL=0.050	mg/L	0.57	20		
7376096	Total Potassium (K)	2021/05/28	95	80 - 120	92	80 - 120	ND, RDL=0.20	mg/L	1.8	20		
7376096	Total Sodium (Na)	2021/05/28	NC	80 - 120	95	80 - 120	ND, RDL=0.10	mg/L	1.8	20		
7376096	Total Zinc (Zn)	2021/05/28	100	80 - 120	101	80 - 120	ND, RDL=0.0050	mg/L	2.6	20		
7376573	Total Suspended Solids	2021/05/31					ND, RDL=1	mg/L	18	25	96	85 - 115
7376741	Conductivity	2021/05/29			101	85 - 115	ND, RDL=1.0	umho/cm	0.45	25		
7376754	Alkalinity (Total as CaCO3)	2021/05/29			99	85 - 115	ND, RDL=1.0	mg/L	0.55	20		
7376780	pH	2021/05/29			101	98 - 103			0.13	N/A		
7376831	Nitrate (N)	2021/05/31	92	80 - 120	97	80 - 120	ND, RDL=0.10	mg/L	NC	20		
7376831	Nitrite (N)	2021/05/31	105	80 - 120	108	80 - 120	ND, RDL=0.010	mg/L	NC	20		
7376989	Dissolved Chloride (Cl-)	2021/05/31	110	80 - 120	103	80 - 120	ND, RDL=1.0	mg/L	1.8	20		
7376995	Dissolved Sulphate (SO4)	2021/05/31	NC	75 - 125	104	80 - 120	ND, RDL=1.0	mg/L	0.13	20		
7377089	Total Phosphorus	2021/05/31	99	80 - 120	100	80 - 120	ND, RDL=0.020	mg/L	1.6	20	98	80 - 120



BV Labs Job #: C1E2144
Report Date: 2021/06/02

QUALITY ASSURANCE REPORT(CONT'D)

City of Guelph
Client Project #: WET / DRY SURFACE WATER
Site Location: WET/DRY SW MAY 2021
Your P.O. #: 2100310
Sampler Initials: AS

QC Batch	Parameter	Date	Matrix Spike		SPIKED BLANK		Method Blank		RPD		QC Standard	
			% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits	% Recovery	QC Limits
7378643	Total Suspended Solids	2021/05/31					ND, RDL=1	mg/L	18	25	95	85 - 115

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 $\leq 2 \times$ RDL).



BV Labs Job #: C1E2144
Report Date: 2021/06/02

City of Guelph
Client Project #: WET / DRY SURFACE WATER
Site Location: WET/DRY SW MAY 2021
Your P.O. #: 2100310
Sampler Initials: AS

VALIDATION SIGNATURE PAGE

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

Anastassia Hamanov, Scientific Specialist

BV Labs 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 Signature Page.



Bureau Veritas Laboratories
5740 Camboselo Road, Mississauga, Ontario Canada L5N 2L8 Tel: (905) 817-5700 Toll-free: 800-563-6266 Fax: (905) 817-5777 www.bvlabs.com

CHAIN OF CUSTODY RECORD

Page 1 of 1

INVOICE TO:			REPORT TO:			PROJECT INFORMATION:			Laboratory Use Only:		
Company Name: #12237 City of Guelph Attention: Amy Spence (Wet/Dry) Address: 186 Eastview Rd Guelph ON N1E 1Z6 Tel: (519) 837-5633 Fax: (519) 823-0910 Email: amy.spence@guelph.ca			Company Name: 9497- The City of Guelph Attention: Amy Spence Address: 110 Dunlop Dr. Guelph, ON N1H 6H8 Tel: 519-362-1164 Fax: pattywonga Email: amy.spence@guelph.ca aecom.com			Quotation #: B90142 P.O. #: Project: Wet / Dry Surface Water Project Name: Wet/Dry SW May 2021 Site #: 110 Dunlop Dr. Sampled By: Amy Spence			BV Labs Job #: Bottle Order #: 785154 COC #: Project Manager: James Aspin		
MOE REGULATED DRINKING WATER OR WATER INTENDED FOR HUMAN CONSUMPTION MUST BE SUBMITTED ON THE BV LABS DRINKING WATER CHAIN OF CUSTODY						ANALYSIS REQUESTED (PLEASE BE SPECIFIC)					
Regulation 153 (2011) <input type="checkbox"/> Table 1 <input type="checkbox"/> Res/Park <input type="checkbox"/> Medium/Fine <input type="checkbox"/> Table 2 <input type="checkbox"/> Ind/Comm <input type="checkbox"/> Coarse <input type="checkbox"/> Table 3 <input type="checkbox"/> Agri/Other <input type="checkbox"/> For RSC <input type="checkbox"/> Table			Other Regulations <input type="checkbox"/> CCME <input type="checkbox"/> Sanitary Sewer Bylaw <input type="checkbox"/> Reg 558 <input type="checkbox"/> Storm Sewer Bylaw <input type="checkbox"/> MISA Municipality <input type="checkbox"/> PWQO <input type="checkbox"/> Reg 406 Table <input type="checkbox"/> Other			Special Instructions			Turnaround Time (TAT) Required: Please provide advance notice for rush projects Regular (Standard) TAT: (will be applied if Rush TAT is not specified) Standard TAT = 5-7 Working days for most tests. Please note: Standard TAT for certain tests such as BOD and Dioxins/Furans are > 5 days - contact your Project Manager for details. Job Specific Rush TAT (if applies to entire submission) Date Required: Time Required: Rush Confirmation Number: (call lab for #)		
Include Criteria on Certificate of Analysis (Y/N)?						Field Filtered (please circle): Metals / Hg / Cr VI Wet/Dry SW Nitrates + Nitrites					
Sample Barcode Label	Sample (Location) Identification	Date Sampled	Time Sampled	Matrix							
1	TP1-OUT	MAY 25/21	AM	SW	N	X	X				8
2	EPTS01	MAY 25/21	AM	SW	N	X	X				8
3											
4											
5											
6											
7											
8											
9											
10											
* RELINQUISHED BY: (Signature/Print) Amy Spence / Amy Spence			Date: (YY/MM/DD) Time 21/05/26 PM			RECEIVED BY: (Signature/Print) James Aspin			Date: (YY/MM/DD) Time 20/05/26 15:50		
# Jars used and not submitted			Laboratory Use Only Time Sensitive Temperature (°C) on Receipt 3/2/4			Custody Seal Present Intact			Yes / No Yes / No		
* UNLESS OTHERWISE AGREED TO IN WRITING, WORK SUBMITTED ON THIS CHAIN OF CUSTODY IS SUBJECT TO BV LABS' STANDARD TERMS AND CONDITIONS. SIGNING OF THIS CHAIN OF CUSTODY DOCUMENT IS ACKNOWLEDGMENT AND ACCEPTANCE OF OUR TERMS WHICH ARE AVAILABLE FOR VIEWING AT WWW.BVLABS.COM/TERMS-AND-CONDITIONS.						* IT IS THE RESPONSIBILITY OF THE RELINQUISHER TO ENSURE THE ACCURACY OF THE CHAIN OF CUSTODY RECORD. AN INCOMPLETE CHAIN OF CUSTODY MAY RESULT IN ANALYTICAL TAT DELAYS.					
** SAMPLE CONTAINER, PRESERVATION, HOLD TIME AND PACKAGE INFORMATION CAN BE VIEWED AT WWW.BVLABS.COM/RESOURCES/CHAIN-OF-CUSTODY-FORMS.						SAMPLES MUST BE KEPT COOL (< 10° C) FROM TIME OF SAMPLING UNTIL DELIVERY TO BV LABS					

26-May-21 15:50

James Aspin



C1E2144

URE ENV-623

**Attention: Amy Spence**

City of Guelph
 Solid Waste RIC (Wet/Dry)
 110 Dunlop Drive
 Guelph, ON
 CANADA N1H 6H8

Your P.O. #: 2100310
 Your Project #: WET/DRY SURFACE WATER
 Site#: 110 DUNLOP DR
 Site Location: WET / DRY SW JUNE 2021 15MM RAIN EVENT
 Your C.O.C. #: 797322-02-01

Report Date: 2021/06/24
 Report #: R6690348
 Version: 1 - Final

CERTIFICATE OF ANALYSIS**BV LABS JOB #: C1F9184****Received: 2021/06/10, 15:37**

Sample Matrix: Water
 # Samples Received: 2

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Analytical Method
ABN Compounds in Water by GC/MS	2	2021/06/11	2021/06/12	CAM SOP-00301	EPA 8270 m
Alkalinity	1	N/A	2021/06/15	CAM SOP-00448	SM 23 2320 B m
Alkalinity	1	N/A	2021/06/16	CAM SOP-00448	SM 23 2320 B m
Biochemical Oxygen Demand (BOD)	2	2021/06/11	2021/06/16	CAM SOP-00427	SM 23 5210B m
Chloride by Automated Colourimetry	2	N/A	2021/06/15	CAM SOP-00463	SM 23 4500-Cl E m
Chemical Oxygen Demand	2	N/A	2021/06/11	CAM SOP-00416	SM 23 5220 D m
Conductivity	1	N/A	2021/06/15	CAM SOP-00414	SM 23 2510 m
Conductivity	1	N/A	2021/06/16	CAM SOP-00414	SM 23 2510 m
Total Metals Analysis by ICPMS	2	N/A	2021/06/14	CAM SOP-00447	EPA 6020B m
Total Ammonia-N	2	N/A	2021/06/14	CAM SOP-00441	USGS I-2522-90 m
Nitrate (NO3) and Nitrite (NO2) in Water (1)	2	N/A	2021/06/16	CAM SOP-00440	SM 23 4500-NO3I/NO2B
pH	1	2021/06/14	2021/06/15	CAM SOP-00413	SM 4500H+ B m
pH	1	2021/06/14	2021/06/16	CAM SOP-00413	SM 4500H+ B m
Phenols (4AAP)	2	N/A	2021/06/14	CAM SOP-00444	OMOE E3179 m
Sulphate by Automated Colourimetry	2	N/A	2021/06/15	CAM SOP-00464	EPA 375.4 m
Total Kjeldahl Nitrogen in Water	1	2021/06/11	2021/06/11	CAM SOP-00938	OMOE E3516 m
Total Kjeldahl Nitrogen in Water	1	2021/06/11	2021/06/15	CAM SOP-00938	OMOE E3516 m
Total Phosphorus (Colourimetric)	2	2021/06/11	2021/06/14	CAM SOP-00407	SM 23 4500 P B H m
Low Level Total Suspended Solids	2	2021/06/11	2021/06/15	CAM SOP-00428	SM 23 2540D m
Volatile Organic Compounds in Water	2	N/A	2021/06/18	CAM SOP-00226	EPA 8260C 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, MELCC, EPA, APHA.

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. #: 2100310
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Site Location: WET / DRY SW JUNE 2021 15MM RAIN EVENT
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Attention: Amy Spence

City of Guelph
Solid Waste RIC (Wet/Dry)
110 Dunlop Drive
Guelph, ON
CANADA N1H 6H8

Report Date: 2021/06/24
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CERTIFICATE OF ANALYSIS

BV LABS JOB #: C1F9184

Received: 2021/06/10, 15:37

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.

Encryption Key

Hongmei Zhao (Grace)
Project Manager
24 Jun 2021 10:39:43

Please direct all questions regarding this Certificate of Analysis to your Project Manager.

James Aspin, Senior Project Manager

Email: James.Aspin@bureauveritas.com

Phone# (905)817-5771

=====

BV Labs 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 Signature Page.



BV Labs Job #: C1F9184
Report Date: 2021/06/24

City of Guelph
Client Project #: WET/DRY SURFACE WATER
Site Location: WET / DRY SW JUNE 2021 15MM RAIN EVENT
Your P.O. #: 2100310
Sampler Initials: AS

RESULTS OF ANALYSES OF WATER

BV Labs ID			PUM970		PUM971		
Sampling Date			2021/06/09		2021/06/09		
COC Number			797322-02-01		797322-02-01		
	UNITS	Criteria	TP1-OUT	QC Batch	EPTS01	RDL	QC Batch
Inorganics							
Total Ammonia-N	mg/L	-	0.62	7403376	0.11	0.050	7403376
Total BOD	mg/L	-	6	7402222	ND	2	7402223
Total Chemical Oxygen Demand (COD)	mg/L	-	47	7403127	7.1	4.0	7403127
Conductivity	umho/cm	-	390	7407440	710	1.0	7407440
Total Kjeldahl Nitrogen (TKN)	mg/L	-	1.5	7403116	0.18	0.10	7403116
pH	pH	6.5:8.5	7.87	7407443	8.16		7407443
Phenols-4AAP	mg/L	0.001	ND	7403357	ND	0.0010	7403357
Total Phosphorus	mg/L	0.01	0.15	7403188	ND (1)	0.020	7403188
Total Suspended Solids	mg/L	-	9	7403005	2	1	7403005
Dissolved Sulphate (SO4)	mg/L	-	47	7407321	15	1.0	7407321
Alkalinity (Total as CaCO3)	mg/L	-	110	7407438	250	1.0	7407438
Dissolved Chloride (Cl-)	mg/L	-	24	7407313	67	1.0	7407313
Nitrite (N)	mg/L	-	0.013	7407437	0.030	0.010	7407437
Nitrate (N)	mg/L	-	ND	7407437	1.87	0.10	7407437
Nitrate + Nitrite (N)	mg/L	-	ND	7407437	1.90	0.10	7407437
RDL = Reportable Detection Limit QC Batch = Quality Control Batch Criteria: Ontario Provincial Water Quality Objectives Ref. to MOEE Water Management document dated Feb.1999 ND = Not detected (1) RDL exceeds criteria							



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BV Labs Job #: C1F9184
Report Date: 2021/06/24

City of Guelph
Client Project #: WET/DRY SURFACE WATER
Site Location: WET / DRY SW JUNE 2021 15MM RAIN EVENT
Your P.O. #: 2100310
Sampler Initials: AS

ELEMENTS BY ATOMIC SPECTROSCOPY (WATER)

BV Labs ID			PUM970	PUM971		
Sampling Date			2021/06/09	2021/06/09		
COC Number			797322-02-01	797322-02-01		
	UNITS	Criteria	TP1-OUT	EPTS01	RDL	QC Batch
Metals						
Total Boron (B)	mg/L	0.2	0.040	0.017	0.010	7406213
Total Calcium (Ca)	mg/L	-	51	74	0.20	7406213
Total Iron (Fe)	mg/L	0.3	0.63	ND	0.10	7406213
Total Magnesium (Mg)	mg/L	-	4.7	22	0.050	7406213
Total Potassium (K)	mg/L	-	3.6	1.3	0.20	7406213
Total Sodium (Na)	mg/L	-	16	37	0.10	7406213
Total Zinc (Zn)	mg/L	0.03	0.015	0.067	0.0050	7406213
RDL = Reportable Detection Limit						
QC Batch = Quality Control Batch						
Criteria: Ontario Provincial Water Quality Objectives						
Ref. to MOEE Water Management document dated Feb.1999						
ND = Not detected						



BV Labs Job #: C1F9184
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SEMI-VOLATILE ORGANICS BY GC-MS (WATER)

BV Labs ID			PUM970	PUM971		
Sampling Date			2021/06/09	2021/06/09		
COC Number			797322-02-01	797322-02-01		
	UNITS	Criteria	TP1-OUT	EPTS01	RDL	QC Batch
Semivolatile Organics						
Acenaphthene	ug/L	-	ND	ND	0.20	7402310
Acenaphthylene	ug/L	-	ND	ND	0.20	7402310
Anthracene	ug/L	0.0008	ND (1)	ND (1)	0.20	7402310
Benzo(a)anthracene	ug/L	0.0004	ND (1)	ND (1)	0.20	7402310
Benzo(a)pyrene	ug/L	-	ND	ND	0.20	7402310
Benzo(b/j)fluoranthene	ug/L	-	ND	ND	0.20	7402310
Benzo(g,h,i)perylene	ug/L	0.00002	ND (1)	ND (1)	0.20	7402310
Benzo(k)fluoranthene	ug/L	0.0002	ND (1)	ND (1)	0.20	7402310
1-Chloronaphthalene	ug/L	0.1	ND (1)	ND (1)	1.0	7402310
2-Chloronaphthalene	ug/L	0.0002	ND (1)	ND (1)	0.50	7402310
Chrysene	ug/L	0.0001	ND (1)	ND (1)	0.20	7402310
Dibenzo(a,h)anthracene	ug/L	0.002	ND (1)	ND (1)	0.20	7402310
Fluoranthene	ug/L	0.0008	ND (1)	ND (1)	0.20	7402310
Fluorene	ug/L	0.2	ND	ND	0.20	7402310
Indeno(1,2,3-cd)pyrene	ug/L	-	ND	ND	0.20	7402310
1-Methylnaphthalene	ug/L	2	ND	ND	0.20	7402310
2-Methylnaphthalene	ug/L	2	ND	ND	0.20	7402310
Naphthalene	ug/L	7	ND	ND	0.20	7402310
Perylene	ug/L	0.00007	ND (1)	ND (1)	0.20	7402310
Phenanthrene	ug/L	0.03	ND (1)	ND (1)	0.20	7402310
Pyrene	ug/L	-	ND	ND	0.20	7402310
1,2-Dichlorobenzene	ug/L	2.5	ND	ND	0.50	7402310
1,3-Dichlorobenzene	ug/L	2.5	ND	ND	0.50	7402310
1,4-Dichlorobenzene	ug/L	4	ND	ND	0.50	7402310
Hexachlorobenzene	ug/L	0.0065	ND (1)	ND (1)	0.50	7402310
Pentachlorobenzene	ug/L	0.03	ND (1)	ND (1)	0.50	7402310
1,2,3,5-Tetrachlorobenzene	ug/L	0.1	ND (1)	ND (1)	0.50	7402310
1,2,4,5-Tetrachlorobenzene	ug/L	0.15	ND (1)	ND (1)	0.50	7402310
1,2,3-Trichlorobenzene	ug/L	0.9	ND	ND	0.50	7402310
1,2,4-Trichlorobenzene	ug/L	0.5	ND	ND	0.50	7402310
RDL = Reportable Detection Limit						
QC Batch = Quality Control Batch						
Criteria: Ontario Provincial Water Quality Objectives						
Ref. to MOEE Water Management document dated Feb.1999						
ND = Not detected						
(1) RDL exceeds criteria						



BV Labs Job #: C1F9184
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City of Guelph
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SEMI-VOLATILE ORGANICS BY GC-MS (WATER)

BV Labs ID			PUM970	PUM971		
Sampling Date			2021/06/09	2021/06/09		
COC Number			797322-02-01	797322-02-01		
	UNITS	Criteria	TP1-OUT	EPTS01	RDL	QC Batch
1,3,5-Trichlorobenzene	ug/L	0.65	ND	ND	0.50	7402310
2-Chlorophenol	ug/L	7	ND	ND	0.30	7402310
4-Chloro-3-Methylphenol	ug/L	3	ND	ND	0.50	7402310
m/p-Cresol	ug/L	1	ND	ND	0.50	7402310
o-Cresol	ug/L	-	ND	ND	0.50	7402310
1,2,3,4-Tetrachlorobenzene	ug/L	0.1	ND (1)	ND (1)	0.50	7402310
2,3-Dichlorophenol	ug/L	0.2	ND (1)	ND (1)	0.50	7402310
2,4-Dichlorophenol	ug/L	0.2	ND (1)	ND (1)	0.30	7402310
2,5-Dichlorophenol	ug/L	0.2	ND (1)	ND (1)	0.50	7402310
2,6-Dichlorophenol	ug/L	0.2	ND (1)	ND (1)	0.50	7402310
3,4-Dichlorophenol	ug/L	0.2	ND (1)	ND (1)	0.50	7402310
3,5-Dichlorophenol	ug/L	0.5	ND	ND	0.50	7402310
2,4-Dimethylphenol	ug/L	10	ND	ND	0.50	7402310
2,4-Dinitrophenol	ug/L	-	ND	ND	2.0	7402310
4,6-Dinitro-2-methylphenol	ug/L	0.2	ND (1)	ND (1)	2.0	7402310
2-Nitrophenol	ug/L	0.5	ND	ND	0.50	7402310
4-Nitrophenol	ug/L	50	ND	ND	1.4	7402310
Pentachlorophenol	ug/L	0.5	ND (1)	ND (1)	1.0	7402310
Phenol	ug/L	5	ND	ND	0.50	7402310
2,3,4,5-Tetrachlorophenol	ug/L	1	ND	ND	0.40	7402310
2,3,4,6-Tetrachlorophenol	ug/L	1	ND	ND	0.50	7402310
2,3,5,6-Tetrachlorophenol	ug/L	1	ND	ND	0.50	7402310
2,3,4-Trichlorophenol	ug/L	18	ND	ND	0.50	7402310
2,3,5-Trichlorophenol	ug/L	18	ND	ND	0.50	7402310
2,3,6-Trichlorophenol	ug/L	18	ND	ND	0.50	7402310
2,4,5-Trichlorophenol	ug/L	18	ND	ND	0.50	7402310
2,4,6-Trichlorophenol	ug/L	18	ND	ND	0.50	7402310
3,4,5-Trichlorophenol	ug/L	18	ND	ND	0.50	7402310
Benzyl butyl phthalate	ug/L	0.2	ND (1)	ND (1)	0.50	7402310
Biphenyl	ug/L	0.2	ND (1)	ND (1)	0.50	7402310
Bis(2-chloroethyl)ether	ug/L	200	ND	ND	0.50	7402310

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
Criteria: Ontario Provincial Water Quality Objectives
Ref. to MOEE Water Management document dated Feb.1999
ND = Not detected
(1) RDL exceeds criteria



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SEMI-VOLATILE ORGANICS BY GC-MS (WATER)

BV Labs ID			PUM970	PUM971		
Sampling Date			2021/06/09	2021/06/09		
COC Number			797322-02-01	797322-02-01		
	UNITS	Criteria	TP1-OUT	EPTS01	RDL	QC Batch
Bis(2-chloroethoxy)methane	ug/L	-	ND	ND	0.50	7402310
Bis(2-chloroisopropyl)ether	ug/L	-	ND	ND	0.50	7402310
Bis(2-ethylhexyl)phthalate	ug/L	0.6	ND (1)	ND (1)	2.0	7402310
4-Bromophenyl phenyl ether	ug/L	0.05	ND (1)	ND (1)	0.30	7402310
p-Chloroaniline	ug/L	-	ND	ND	1.0	7402310
4-Chlorophenyl phenyl ether	ug/L	0.05	ND (1)	ND (1)	0.50	7402310
Di-N-butyl phthalate	ug/L	4	ND	ND	2.0	7402310
di-n-octyl phthalate	ug/L	-	ND	ND	0.80	7402310
2,4-Dinitrotoluene	ug/L	4	ND	ND	0.50	7402310
Diethyl phthalate	ug/L	0.2	ND (1)	ND (1)	1.0	7402310
3,3'-Dichlorobenzidine	ug/L	0.6	ND	ND	0.50	7402310
Dimethyl phthalate	ug/L	0.2	ND (1)	ND (1)	1.0	7402310
2,6-Dinitrotoluene	ug/L	6	ND	ND	0.50	7402310
Diphenyl Ether	ug/L	0.03	ND (1)	ND (1)	0.30	7402310
Hexachlorobutadiene	ug/L	0.009	ND (1)	ND (1)	0.40	7402310
Hexachlorocyclopentadiene	ug/L	0.06	ND (1)	ND (1)	2.0	7402310
Hexachloroethane	ug/L	1	ND	ND	0.50	7402310
Isophorone	ug/L	-	ND	ND	0.50	7402310
Nitrobenzene	ug/L	0.02	ND (1)	ND (1)	0.50	7402310
Nitrosodiphenylamine/Diphenylamine	ug/L	3	ND	ND	1.0	7402310
N-Nitroso-di-n-propylamine	ug/L	-	ND	ND	0.50	7402310
Surrogate Recovery (%)						
2,4,6-Tribromophenol	%	-	88	70		7402310
2-Fluorobiphenyl	%	-	73	74		7402310
2-Fluorophenol	%	-	35	27		7402310
D14-Terphenyl	%	-	82	87		7402310
D5-Nitrobenzene	%	-	87	89		7402310
D5-Phenol	%	-	24	23		7402310
RDL = Reportable Detection Limit QC Batch = Quality Control Batch Criteria: Ontario Provincial Water Quality Objectives Ref. to MOEE Water Management document dated Feb.1999 ND = Not detected (1) RDL exceeds criteria						



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VOLATILE ORGANICS BY GC/MS (WATER)

BV Labs ID			PUM970		PUM971		
Sampling Date			2021/06/09		2021/06/09		
COC Number			797322-02-01		797322-02-01		
	UNITS	Criteria	TP1-OUT	RDL	EPTS01	RDL	QC Batch
Volatile Organics							
Acetone (2-Propanone)	ug/L	-	ND	20	ND	10	7402517
Benzene	ug/L	100	ND	0.20	ND	0.10	7402517
Bromodichloromethane	ug/L	200	ND	0.20	ND	0.10	7402517
Bromoform	ug/L	60	ND	0.40	ND	0.20	7402517
Bromomethane	ug/L	0.9	ND (1)	1.0	ND	0.50	7402517
Carbon Tetrachloride	ug/L	-	ND	0.20	ND	0.10	7402517
Chlorobenzene	ug/L	15	ND	0.20	ND	0.10	7402517
Chloroform	ug/L	-	ND	0.20	0.46	0.10	7402517
Dibromochloromethane	ug/L	40	ND	0.40	ND	0.20	7402517
1,2-Dichlorobenzene	ug/L	2.5	ND	0.40	ND	0.20	7402517
1,3-Dichlorobenzene	ug/L	2.5	ND	0.40	ND	0.20	7402517
1,4-Dichlorobenzene	ug/L	4	ND	0.40	ND	0.20	7402517
Dichlorodifluoromethane (FREON 12)	ug/L	-	ND	1.0	ND	0.50	7402517
1,1-Dichloroethane	ug/L	200	ND	0.20	ND	0.10	7402517
1,2-Dichloroethane	ug/L	100	ND	0.40	ND	0.20	7402517
1,1-Dichloroethylene	ug/L	40	ND	0.20	ND	0.10	7402517
cis-1,2-Dichloroethylene	ug/L	200	ND	0.20	ND	0.10	7402517
trans-1,2-Dichloroethylene	ug/L	200	ND	0.20	ND	0.10	7402517
1,2-Dichloropropane	ug/L	0.7	ND	0.20	ND	0.10	7402517
cis-1,3-Dichloropropene	ug/L	-	ND	0.40	ND	0.20	7402517
trans-1,3-Dichloropropene	ug/L	7	ND	0.40	ND	0.20	7402517
Ethylbenzene	ug/L	8	ND	0.20	ND	0.10	7402517
Ethylene Dibromide	ug/L	5	ND	0.40	ND	0.20	7402517
Hexane	ug/L	-	ND	1.0	ND	0.50	7402517
Methylene Chloride(Dichloromethane)	ug/L	100	ND	1.0	ND	0.50	7402517
Methyl Ethyl Ketone (2-Butanone)	ug/L	400	ND	10	ND	5.0	7402517
Methyl Isobutyl Ketone	ug/L	-	ND	10	ND	5.0	7402517
Methyl t-butyl ether (MTBE)	ug/L	200	ND	0.40	ND	0.20	7402517
Styrene	ug/L	4	ND	0.40	ND	0.20	7402517
1,1,1,2-Tetrachloroethane	ug/L	20	ND	0.40	ND	0.20	7402517
RDL = Reportable Detection Limit QC Batch = Quality Control Batch Criteria: Ontario Provincial Water Quality Objectives Ref. to MOEE Water Management document dated Feb.1999 ND = Not detected (1) RDL exceeds criteria							



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VOLATILE ORGANICS BY GC/MS (WATER)

BV Labs ID			PUM970		PUM971		
Sampling Date			2021/06/09		2021/06/09		
COC Number			797322-02-01		797322-02-01		
	UNITS	Criteria	TP1-OUT	RDL	EPTS01	RDL	QC Batch
1,1,2,2-Tetrachloroethane	ug/L	70	ND	0.40	ND	0.20	7402517
Tetrachloroethylene	ug/L	50	ND	0.20	ND	0.10	7402517
Toluene	ug/L	0.8	ND	0.40	ND	0.20	7402517
1,1,1-Trichloroethane	ug/L	10	ND	0.20	ND	0.10	7402517
1,1,2-Trichloroethane	ug/L	800	ND	0.40	ND	0.20	7402517
Trichloroethylene	ug/L	20	ND	0.20	ND	0.10	7402517
Trichlorofluoromethane (FREON 11)	ug/L	-	ND	0.40	ND	0.20	7402517
Vinyl Chloride	ug/L	600	ND	0.40	ND	0.20	7402517
p+m-Xylene	ug/L	2	ND	0.20	ND	0.10	7402517
o-Xylene	ug/L	40	ND	0.20	ND	0.10	7402517
Total Xylenes	ug/L	-	ND	0.20	ND	0.10	7402517
Surrogate Recovery (%)							
4-Bromofluorobenzene	%	-	99		102		7402517
D4-1,2-Dichloroethane	%	-	105		104		7402517
D8-Toluene	%	-	98		100		7402517
RDL = Reportable Detection Limit QC Batch = Quality Control Batch Criteria: Ontario Provincial Water Quality Objectives Ref. to MOEE Water Management document dated Feb.1999 ND = Not detected							



BUREAU
VERITAS

BV Labs Job #: C1F9184

Report Date: 2021/06/24

City of Guelph

Client Project #: WET/DRY SURFACE WATER

Site Location: WET / DRY SW JUNE 2021 15MM RAIN EVENT

Your P.O. #: 2100310

Sampler Initials: AS

GENERAL COMMENTS

Sample PUM970 [TP1-OUT] : VOC Water Analysis: Due to foaming, sample required dilution. The detection limits were adjusted accordingly.

Results relate only to the items tested.



BV Labs Job #: C1F9184
Report Date: 2021/06/24

QUALITY ASSURANCE REPORT

City of Guelph
Client Project #: WET/DRY SURFACE WATER
Site Location: WET / DRY SW JUNE 2021 15MM RAIN EVENT
Your P.O. #: 2100310
Sampler Initials: AS

QC Batch	Parameter	Date	Matrix Spike		SPIKED BLANK		Method Blank		RPD		QC Standard	
			% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits	% Recovery	QC Limits
7402310	2,4,6-Tribromophenol	2021/06/11	109	10 - 130	110	10 - 130	83	%				
7402310	2-Fluorobiphenyl	2021/06/11	81	30 - 130	75	30 - 130	80	%				
7402310	2-Fluorophenol	2021/06/11	48	10 - 130	52	10 - 130	37	%				
7402310	D14-Terphenyl	2021/06/11	93	30 - 130	97	30 - 130	91	%				
7402310	D5-Nitrobenzene	2021/06/11	93	30 - 130	89	30 - 130	84	%				
7402310	D5-Phenol	2021/06/11	32	10 - 130	33	10 - 130	27	%				
7402517	4-Bromofluorobenzene	2021/06/15	97	70 - 130	98	70 - 130	98	%				
7402517	D4-1,2-Dichloroethane	2021/06/15	85	70 - 130	89	70 - 130	90	%				
7402517	D8-Toluene	2021/06/15	103	70 - 130	104	70 - 130	103	%				
7402222	Total BOD	2021/06/16					ND, RDL=2	mg/L	6.3	30	91	80 - 120
7402223	Total BOD	2021/06/16					ND, RDL=2	mg/L	NC	30	91	80 - 120
7402310	1,2,3,4-Tetrachlorobenzene	2021/06/11	71	30 - 130	61	30 - 130	ND, RDL=0.50	ug/L				
7402310	1,2,3,5-Tetrachlorobenzene	2021/06/11	67	30 - 130	62	30 - 130	ND, RDL=0.50	ug/L				
7402310	1,2,3-Trichlorobenzene	2021/06/11	76	30 - 130	67	30 - 130	ND, RDL=0.50	ug/L				
7402310	1,2,4,5-Tetrachlorobenzene	2021/06/11	75	30 - 130	66	30 - 130	ND, RDL=0.50	ug/L				
7402310	1,2,4-Trichlorobenzene	2021/06/11	71	30 - 130	60	30 - 130	ND, RDL=0.50	ug/L				
7402310	1,2-Dichlorobenzene	2021/06/11	66	30 - 130	51	30 - 130	ND, RDL=0.50	ug/L				
7402310	1,3,5-Trichlorobenzene	2021/06/11	69	30 - 130	71	30 - 130	ND, RDL=0.50	ug/L				
7402310	1,3-Dichlorobenzene	2021/06/11	61	30 - 130	49	30 - 130	ND, RDL=0.50	ug/L				
7402310	1,4-Dichlorobenzene	2021/06/11	64	30 - 130	48	30 - 130	ND, RDL=0.50	ug/L				
7402310	1-Chloronaphthalene	2021/06/11	71	30 - 130	66	30 - 130	ND, RDL=1.0	ug/L				
7402310	1-Methylnaphthalene	2021/06/11	86	30 - 130	78	30 - 130	ND, RDL=0.20	ug/L				
7402310	2,3,4,5-Tetrachlorophenol	2021/06/11	86	10 - 130	81	10 - 130	ND, RDL=0.40	ug/L				
7402310	2,3,4,6-Tetrachlorophenol	2021/06/11	114	10 - 130	112	10 - 130	ND, RDL=0.50	ug/L				
7402310	2,3,4-Trichlorophenol	2021/06/11	93	10 - 130	88	10 - 130	ND, RDL=0.50	ug/L				
7402310	2,3,5,6-Tetrachlorophenol	2021/06/11	107	10 - 130	99	10 - 130	ND, RDL=0.50	ug/L				
7402310	2,3,5-Trichlorophenol	2021/06/11	99	10 - 130	93	10 - 130	ND, RDL=0.50	ug/L				
7402310	2,3,6-Trichlorophenol	2021/06/11	99	10 - 130	95	10 - 130	ND, RDL=0.50	ug/L				
7402310	2,3-Dichlorophenol	2021/06/11	95	10 - 130	91	10 - 130	ND, RDL=0.50	ug/L				
7402310	2,4,5-Trichlorophenol	2021/06/11	102	10 - 130	97	10 - 130	ND, RDL=0.50	ug/L				



BV Labs Job #: C1F9184
Report Date: 2021/06/24

QUALITY ASSURANCE REPORT(CONT'D)

City of Guelph
Client Project #: WET/DRY SURFACE WATER
Site Location: WET / DRY SW JUNE 2021 15MM RAIN EVENT
Your P.O. #: 2100310
Sampler Initials: AS

QC Batch	Parameter	Date	Matrix Spike		SPIKED BLANK		Method Blank		RPD		QC Standard	
			% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits	% Recovery	QC Limits
7402310	2,4,6-Trichlorophenol	2021/06/11	90	10 - 130	88	10 - 130	ND, RDL=0.50	ug/L				
7402310	2,4-Dichlorophenol	2021/06/11	91	10 - 130	88	10 - 130	ND, RDL=0.30	ug/L				
7402310	2,4-Dimethylphenol	2021/06/11	45	10 - 130	71	10 - 130	ND, RDL=0.50	ug/L				
7402310	2,4-Dinitrophenol	2021/06/11	142 (1)	10 - 130	118	10 - 130	ND, RDL=2.0	ug/L				
7402310	2,4-Dinitrotoluene	2021/06/11	107	30 - 130	102	30 - 130	ND, RDL=0.50	ug/L				
7402310	2,5-Dichlorophenol	2021/06/11	105	10 - 130	93	10 - 130	ND, RDL=0.50	ug/L				
7402310	2,6-Dichlorophenol	2021/06/11	95	10 - 130	85	10 - 130	ND, RDL=0.50	ug/L				
7402310	2,6-Dinitrotoluene	2021/06/11	99	30 - 130	93	30 - 130	ND, RDL=0.50	ug/L				
7402310	2-Chloronaphthalene	2021/06/11	75	30 - 130	71	30 - 130	ND, RDL=0.50	ug/L				
7402310	2-Chlorophenol	2021/06/11	83	10 - 130	77	10 - 130	ND, RDL=0.30	ug/L				
7402310	2-Methylnaphthalene	2021/06/11	77	30 - 130	71	30 - 130	ND, RDL=0.20	ug/L				
7402310	2-Nitrophenol	2021/06/11	105	10 - 130	92	10 - 130	ND, RDL=0.50	ug/L				
7402310	3,3'-Dichlorobenzidine	2021/06/12	7.7 (1)	30 - 130	97	30 - 130	ND, RDL=0.50	ug/L	NC	40		
7402310	3,4,5-Trichlorophenol	2021/06/11	98	10 - 130	93	10 - 130	ND, RDL=0.50	ug/L				
7402310	3,4-Dichlorophenol	2021/06/11	90	10 - 130	88	10 - 130	ND, RDL=0.50	ug/L				
7402310	3,5-Dichlorophenol	2021/06/11	90	10 - 130	96	10 - 130	ND, RDL=0.50	ug/L				
7402310	4,6-Dinitro-2-methylphenol	2021/06/11	120	10 - 130	113	10 - 130	ND, RDL=2.0	ug/L				
7402310	4-Bromophenyl phenyl ether	2021/06/11	NA	30 - 130	98	30 - 130	ND, RDL=0.30	ug/L				
7402310	4-Chloro-3-Methylphenol	2021/06/11	88	10 - 130	93	10 - 130	ND, RDL=0.50	ug/L				
7402310	4-Chlorophenyl phenyl ether	2021/06/11	NA	30 - 130	78	30 - 130	ND, RDL=0.50	ug/L				
7402310	4-Nitrophenol	2021/06/11	30	10 - 130	39	10 - 130	ND, RDL=1.4	ug/L				
7402310	Acenaphthene	2021/06/11	83	30 - 130	83	30 - 130	ND, RDL=0.20	ug/L				
7402310	Acenaphthylene	2021/06/11	85	30 - 130	82	30 - 130	ND, RDL=0.20	ug/L				
7402310	Anthracene	2021/06/11	85	30 - 130	85	30 - 130	ND, RDL=0.20	ug/L				
7402310	Benzo(a)anthracene	2021/06/11	105	30 - 130	104	30 - 130	ND, RDL=0.20	ug/L				
7402310	Benzo(a)pyrene	2021/06/11	99	30 - 130	97	30 - 130	ND, RDL=0.20	ug/L				
7402310	Benzo(b,j)fluoranthene	2021/06/11	102	30 - 130	100	30 - 130	ND, RDL=0.20	ug/L				
7402310	Benzo(g,h,i)perylene	2021/06/11	66	30 - 130	72	30 - 130	ND, RDL=0.20	ug/L				
7402310	Benzo(k)fluoranthene	2021/06/11	102	30 - 130	93	30 - 130	ND, RDL=0.20	ug/L				
7402310	Benzyl butyl phthalate	2021/06/11	NA (2)	30 - 130	104	30 - 130	ND, RDL=0.50	ug/L				



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QUALITY ASSURANCE REPORT(CONT'D)

City of Guelph
Client Project #: WET/DRY SURFACE WATER
Site Location: WET / DRY SW JUNE 2021 15MM RAIN EVENT
Your P.O. #: 2100310
Sampler Initials: AS

QC Batch	Parameter	Date	Matrix Spike		SPIKED BLANK		Method Blank		RPD		QC Standard	
			% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits	% Recovery	QC Limits
7402310	Biphenyl	2021/06/11	79	30 - 130	76	30 - 130	ND, RDL=0.50	ug/L				
7402310	Bis(2-chloroethoxy)methane	2021/06/11	NA	30 - 130	70	30 - 130	ND, RDL=0.50	ug/L				
7402310	Bis(2-chloroethyl)ether	2021/06/11	NA	30 - 130	68	30 - 130	ND, RDL=0.50	ug/L				
7402310	Bis(2-chloroisopropyl)ether	2021/06/11	NA	30 - 130	61	30 - 130	ND, RDL=0.50	ug/L				
7402310	Bis(2-ethylhexyl)phthalate	2021/06/12	NA	30 - 130	105	30 - 130	ND, RDL=2.0	ug/L	NC	40		
7402310	Chrysene	2021/06/11	100	30 - 130	98	30 - 130	ND, RDL=0.20	ug/L				
7402310	Dibenzo(a,h)anthracene	2021/06/11	75	30 - 130	79	30 - 130	ND, RDL=0.20	ug/L				
7402310	Diethyl phthalate	2021/06/11	NA	30 - 130	102	30 - 130	ND, RDL=1.0	ug/L				
7402310	Dimethyl phthalate	2021/06/11	NA	30 - 130	99	30 - 130	ND, RDL=1.0	ug/L				
7402310	Di-n-butyl phthalate	2021/06/12	NA	30 - 130	107	30 - 130	ND, RDL=2.0	ug/L	NC	40		
7402310	di-n-octyl phthalate	2021/06/11	NA	30 - 130	101	30 - 130	ND, RDL=0.80	ug/L				
7402310	Diphenyl Ether	2021/06/11	NA	30 - 130	76	30 - 130	ND, RDL=0.30	ug/L				
7402310	Fluoranthene	2021/06/11	105	30 - 130	102	30 - 130	ND, RDL=0.20	ug/L				
7402310	Fluorene	2021/06/11	93	30 - 130	88	30 - 130	ND, RDL=0.20	ug/L				
7402310	Hexachlorobenzene	2021/06/11	96	30 - 130	99	30 - 130	ND, RDL=0.50	ug/L				
7402310	Hexachlorobutadiene	2021/06/11	40	30 - 130	56	30 - 130	ND, RDL=0.40	ug/L				
7402310	Hexachlorocyclopentadiene	2021/06/11	48	30 - 130	51	30 - 130	ND, RDL=2.0	ug/L				
7402310	Hexachloroethane	2021/06/11	46	30 - 130	43	30 - 130	ND, RDL=0.50	ug/L				
7402310	Indeno(1,2,3-cd)pyrene	2021/06/11	76	30 - 130	80	30 - 130	ND, RDL=0.20	ug/L				
7402310	Isophorone	2021/06/11	100	30 - 130	98	30 - 130	ND, RDL=0.50	ug/L				
7402310	m/p-Cresol	2021/06/11	58	10 - 130	65	10 - 130	ND, RDL=0.50	ug/L				
7402310	Naphthalene	2021/06/11	74	30 - 130	62	30 - 130	ND, RDL=0.20	ug/L				
7402310	Nitrobenzene	2021/06/11	94	30 - 130	86	30 - 130	ND, RDL=0.50	ug/L				
7402310	Nitrosodiphenylamine/Diphenylamine	2021/06/11	96	30 - 130	114	30 - 130	ND, RDL=1.0	ug/L				
7402310	N-Nitroso-di-n-propylamine	2021/06/11	93	30 - 130	90	30 - 130	ND, RDL=0.50	ug/L				
7402310	o-Cresol	2021/06/11	62	10 - 130	66	10 - 130	ND, RDL=0.50	ug/L				
7402310	p-Chloroaniline	2021/06/11	50	30 - 130	89	30 - 130	ND, RDL=1.0	ug/L				
7402310	Pentachlorobenzene	2021/06/11	76	30 - 130	75	30 - 130	ND, RDL=0.50	ug/L				
7402310	Pentachlorophenol	2021/06/12	78	10 - 130	73	10 - 130	ND, RDL=1.0	ug/L	NC	40		
7402310	Perylene	2021/06/11	92	30 - 130	91	30 - 130	ND, RDL=0.20	ug/L				



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QUALITY ASSURANCE REPORT(CONT'D)

City of Guelph
Client Project #: WET/DRY SURFACE WATER
Site Location: WET / DRY SW JUNE 2021 15MM RAIN EVENT
Your P.O. #: 2100310
Sampler Initials: AS

QC Batch	Parameter	Date	Matrix Spike		SPIKED BLANK		Method Blank		RPD		QC Standard	
			% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits	% Recovery	QC Limits
7402310	Phenanthrene	2021/06/11	89	30 - 130	88	30 - 130	ND, RDL=0.20	ug/L				
7402310	Phenol	2021/06/11	32	10 - 130	33	10 - 130	ND, RDL=0.50	ug/L				
7402310	Pyrene	2021/06/11	93	30 - 130	92	30 - 130	ND, RDL=0.20	ug/L				
7402517	1,1,1,2-Tetrachloroethane	2021/06/15	99	70 - 130	96	70 - 130	ND, RDL=0.20	ug/L	NC	30		
7402517	1,1,1-Trichloroethane	2021/06/15	104	70 - 130	101	70 - 130	ND, RDL=0.10	ug/L	NC	30		
7402517	1,1,2,2-Tetrachloroethane	2021/06/15	83	70 - 130	81	70 - 130	ND, RDL=0.20	ug/L	NC	30		
7402517	1,1,2-Trichloroethane	2021/06/15	91	70 - 130	88	70 - 130	ND, RDL=0.20	ug/L	NC	30		
7402517	1,1-Dichloroethane	2021/06/15	105	70 - 130	102	70 - 130	ND, RDL=0.10	ug/L	NC	30		
7402517	1,1-Dichloroethylene	2021/06/15	115	70 - 130	111	70 - 130	ND, RDL=0.10	ug/L	NC	30		
7402517	1,2-Dichlorobenzene	2021/06/15	103	70 - 130	97	70 - 130	ND, RDL=0.20	ug/L	NC	30		
7402517	1,2-Dichloroethane	2021/06/15	86	70 - 130	83	70 - 130	ND, RDL=0.20	ug/L	NC	30		
7402517	1,2-Dichloropropane	2021/06/15	94	70 - 130	91	70 - 130	ND, RDL=0.10	ug/L	NC	30		
7402517	1,3-Dichlorobenzene	2021/06/15	107	70 - 130	102	70 - 130	ND, RDL=0.20	ug/L	NC	30		
7402517	1,4-Dichlorobenzene	2021/06/15	121	70 - 130	114	70 - 130	ND, RDL=0.20	ug/L	NC	30		
7402517	Acetone (2-Propanone)	2021/06/15	98	60 - 140	95	60 - 140	ND, RDL=10	ug/L	NC	30		
7402517	Benzene	2021/06/15	97	70 - 130	93	70 - 130	ND, RDL=0.10	ug/L	NC	30		
7402517	Bromodichloromethane	2021/06/15	NC	70 - 130	90	70 - 130	ND, RDL=0.10	ug/L	2.7	30		
7402517	Bromoform	2021/06/15	86	70 - 130	82	70 - 130	ND, RDL=0.20	ug/L	4.0	30		
7402517	Bromomethane	2021/06/15	97	60 - 140	93	60 - 140	ND, RDL=0.50	ug/L	NC	30		
7402517	Carbon Tetrachloride	2021/06/15	103	70 - 130	100	70 - 130	ND, RDL=0.10	ug/L	NC	30		
7402517	Chlorobenzene	2021/06/15	101	70 - 130	97	70 - 130	ND, RDL=0.10	ug/L	NC	30		
7402517	Chloroform	2021/06/15	NC	70 - 130	93	70 - 130	ND, RDL=0.10	ug/L	0.60	30		
7402517	cis-1,2-Dichloroethylene	2021/06/15	102	70 - 130	98	70 - 130	ND, RDL=0.10	ug/L	NC	30		
7402517	cis-1,3-Dichloropropene	2021/06/15	87	70 - 130	84	70 - 130	ND, RDL=0.20	ug/L	NC	30		
7402517	Dibromochloromethane	2021/06/15	90	70 - 130	85	70 - 130	ND, RDL=0.20	ug/L	1.3	30		
7402517	Dichlorodifluoromethane (FREON 12)	2021/06/15	93	60 - 140	94	60 - 140	ND, RDL=0.50	ug/L	NC	30		
7402517	Ethylbenzene	2021/06/15	103	70 - 130	99	70 - 130	ND, RDL=0.10	ug/L	1.4	30		
7402517	Ethylene Dibromide	2021/06/15	87	70 - 130	85	70 - 130	ND, RDL=0.20	ug/L	NC	30		
7402517	Hexane	2021/06/15	112	70 - 130	130	70 - 130	ND, RDL=0.50	ug/L	NC	30		
7402517	Methyl Ethyl Ketone (2-Butanone)	2021/06/15	91	60 - 140	88	60 - 140	ND, RDL=5.0	ug/L	NC	30		



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City of Guelph
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Your P.O. #: 2100310
Sampler Initials: AS

QC Batch	Parameter	Date	Matrix Spike		SPIKED BLANK		Method Blank		RPD		QC Standard	
			% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits	% Recovery	QC Limits
7402517	Methyl Isobutyl Ketone	2021/06/15	83	70 - 130	81	70 - 130	ND, RDL=5.0	ug/L	NC	30		
7402517	Methyl t-butyl ether (MTBE)	2021/06/15	83	70 - 130	82	70 - 130	ND, RDL=0.20	ug/L	NC	30		
7402517	Methylene Chloride(Dichloromethane)	2021/06/15	111	70 - 130	107	70 - 130	ND, RDL=0.50	ug/L	NC	30		
7402517	o-Xylene	2021/06/15	95	70 - 130	91	70 - 130	ND, RDL=0.10	ug/L	NC	30		
7402517	p-m-Xylene	2021/06/15	104	70 - 130	99	70 - 130	ND, RDL=0.10	ug/L	NC	30		
7402517	Styrene	2021/06/15	102	70 - 130	100	70 - 130	ND, RDL=0.20	ug/L	NC	30		
7402517	Tetrachloroethylene	2021/06/15	104	70 - 130	101	70 - 130	ND, RDL=0.10	ug/L	NC	30		
7402517	Toluene	2021/06/15	102	70 - 130	96	70 - 130	ND, RDL=0.20	ug/L	NC	30		
7402517	Total Xylenes	2021/06/15					ND, RDL=0.10	ug/L	NC	30		
7402517	trans-1,2-Dichloroethylene	2021/06/15	116	70 - 130	112	70 - 130	ND, RDL=0.10	ug/L	NC	30		
7402517	trans-1,3-Dichloropropene	2021/06/15	91	70 - 130	86	70 - 130	ND, RDL=0.20	ug/L	NC	30		
7402517	Trichloroethylene	2021/06/15	109	70 - 130	105	70 - 130	ND, RDL=0.10	ug/L	NC	30		
7402517	Trichlorofluoromethane (FREON 11)	2021/06/15	108	70 - 130	106	70 - 130	ND, RDL=0.20	ug/L	NC	30		
7402517	Vinyl Chloride	2021/06/15	109	70 - 130	106	70 - 130	ND, RDL=0.20	ug/L	NC	30		
7403005	Total Suspended Solids	2021/06/15					ND, RDL=1	mg/L	NC	25	101	85 - 115
7403116	Total Kjeldahl Nitrogen (TKN)	2021/06/11	101	80 - 120	97	80 - 120	ND, RDL=0.10	mg/L	7.4	20	96	80 - 120
7403127	Total Chemical Oxygen Demand (COD)	2021/06/11	107	80 - 120	102	80 - 120	ND, RDL=4.0	mg/L	6.8	20		
7403188	Total Phosphorus	2021/06/14	94	80 - 120	93	80 - 120	ND, RDL=0.020	mg/L	4.5	20	92	80 - 120
7403357	Phenols-4AAP	2021/06/14	102	80 - 120	100	80 - 120	ND, RDL=0.0010	mg/L	NC	20		
7403376	Total Ammonia-N	2021/06/14	99	75 - 125	103	80 - 120	ND, RDL=0.050	mg/L	NC	20		
7406213	Total Boron (B)	2021/06/14	97	80 - 120	93	80 - 120	ND, RDL=0.010	mg/L				
7406213	Total Calcium (Ca)	2021/06/14	NC	80 - 120	99	80 - 120	ND, RDL=0.20	mg/L				
7406213	Total Iron (Fe)	2021/06/14	97	80 - 120	95	80 - 120	ND, RDL=0.10	mg/L				
7406213	Total Magnesium (Mg)	2021/06/14	101	80 - 120	94	80 - 120	ND, RDL=0.050	mg/L				
7406213	Total Potassium (K)	2021/06/14	NC	80 - 120	96	80 - 120	ND, RDL=0.20	mg/L				
7406213	Total Sodium (Na)	2021/06/14	NC	80 - 120	95	80 - 120	ND, RDL=0.10	mg/L				



BV Labs Job #: C1F9184
Report Date: 2021/06/24

QUALITY ASSURANCE REPORT(CONT'D)

City of Guelph
Client Project #: WET/DRY SURFACE WATER
Site Location: WET / DRY SW JUNE 2021 15MM RAIN EVENT
Your P.O. #: 2100310
Sampler Initials: AS

QC Batch	Parameter	Date	Matrix Spike		SPIKED BLANK		Method Blank		RPD		QC Standard	
			% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits	% Recovery	QC Limits
7406213	Total Zinc (Zn)	2021/06/15	98	80 - 120	100	80 - 120	ND, RDL=0.0050	mg/L	NC	20		
7407313	Dissolved Chloride (Cl-)	2021/06/15	NC	80 - 120	101	80 - 120	ND, RDL=1.0	mg/L	3.2	20		
7407321	Dissolved Sulphate (SO4)	2021/06/15	NC	75 - 125	101	80 - 120	ND, RDL=1.0	mg/L	1.1	20		
7407437	Nitrate (N)	2021/06/16	94	80 - 120	95	80 - 120	ND, RDL=0.10	mg/L	NC	20		
7407437	Nitrite (N)	2021/06/16	115	80 - 120	103	80 - 120	ND, RDL=0.010	mg/L	NC	20		
7407438	Alkalinity (Total as CaCO3)	2021/06/15			96	85 - 115	ND, RDL=1.0	mg/L	1.4	20		
7407440	Conductivity	2021/06/15			100	85 - 115	ND, RDL=1.0	umho/cm	0.41	25		
7407443	pH	2021/06/15			102	98 - 103			0.26	N/A		

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) Recovery or RPD for this parameter is outside control limits. The overall quality control for this analysis meets acceptability criteria.

(2) The recovery in the matrix spike was not available (NA) due to missing spiking in the sample.



BUREAU
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BV Labs Job #: C1F9184
Report Date: 2021/06/24

City of Guelph
Client Project #: WET/DRY SURFACE WATER
Site Location: WET / DRY SW JUNE 2021 15MM RAIN EVENT
Your P.O. #: 2100310
Sampler Initials: AS

VALIDATION SIGNATURE PAGE

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

Brad Newman, B.Sc., C.Chem., Scientific Service Specialist

BV Labs 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 Signature Page.



Bureau Veritas Laboratories
6740 Campbell Road, Mississauga, Ontario Canada L5N 2L8 Tel: (905) 617-5700 Toll-free 800-563-6266 Fax: (905) 617-5777 www.bvlab.com

CHAIN OF CUSTODY RECORD

Page 1 of 1

INVOICE TO:		REPORT TO:		PROJECT INFORMATION:		Laboratory Use Only:	
Company Name: #12237 City of Guelph	Company Name: 9497- The City of Guelph	Quotation #: B90142 15mm Rain Event	BV Labs Job #:	Bottle Order #:			
Attention: Amy Spence (Wet/Dry)	Attention: Amy Spence	P.O. #:					
Address: 186 Eastview Rd	Address: 110 Dunlop Dr.	Project: Wet / Dry Surface Water					
Guelph ON N1E 1Z6	Guelph, ON N1H6H8	Project Name: Wet / Dry SW June 2021					
Tel: (519) 837-5633 Fax: (519) 823-0910	Tel: 519-362-1164 Fax: patty.wong@	Site #: 110 Dunlop Dr					
Email: amy.spence@guelph.ca	Email: amy.spence@guelph.ca gaelcom.com	Sampled By: Amy Spence					

MOE REGULATED DRINKING WATER OR WATER INTENDED FOR HUMAN CONSUMPTION MUST BE SUBMITTED ON THE BV LABS DRINKING WATER CHAIN OF CUSTODY						ANALYSIS REQUESTED (PLEASE BE SPECIFIC)										Turnaround Time (TAT) Required				
Regulation 153 (2011)			Other Regulations			Special Instructions			Field Filtered (please circle) Metals / Hg / Cr VI										Please provide advance notice for rush projects.	
<input type="checkbox"/> Table 1	<input type="checkbox"/> Res/Park	<input type="checkbox"/> Medium/Fine	<input type="checkbox"/> CCME	<input type="checkbox"/> Sanitary Sewer Bylaw											Regular (Standard) TAT: (will be applied if Rush TAT is not specified)					
<input type="checkbox"/> Table 2	<input type="checkbox"/> Ind/Comm	<input type="checkbox"/> Coarse	<input type="checkbox"/> Reg 558	<input type="checkbox"/> Storm Sewer Bylaw											Standard TAT = 5-7 Working days for most tests					
<input type="checkbox"/> Table 3	<input type="checkbox"/> Agri/Other	<input type="checkbox"/> For RSC	<input type="checkbox"/> MISA	<input type="checkbox"/> Municipality											Please note: Standard TAT for certain tests such as BOD and Dissolved Solids are > 5 days - contact your Project Manager for details.					
<input type="checkbox"/> Table	<input type="checkbox"/> PWQO	<input type="checkbox"/> Reg 406 Table	<input type="checkbox"/> Other											Job Specific Rush TAT (if applies to entire submission)						
Include Criteria on Certificate of Analysis (Y/N)?														Date Required: _____ Time Required: _____						
														Rush Confirmation Number: _____ (call lab for #)						
Sample Barcode Label	Sample (Location) Identification	Date Sampled	Time Sampled	Matrix	Field Filtered (please circle) Metals / Hg / Cr VI	Wet Dry SW	Semi-Volatile Organic Characterization	Volatile Organic Characterization	NITRATES + NITRITES											
1	TP1-OUT	JUNE 9, 2021	AM	SW	N	X	X	X	X	13										
2	EPTS01	JUNE 9, 2021	AM	SW	N	X	X	X	X	13										
3																				
4																				
5																				
6																				
7																				
8																				
9																				
10																				
* RELINQUISHED BY: (Signature/Print)				Date: (YY/MM/DD)	Time	RECEIVED BY: (Signature/Print)				Date: (YY/MM/DD)	Time	# Jars used and not submitted		Laboratory Use Only						
Amy Spence / Amy Spence				21/06/10	PM	DIPKA SINGH				23/06/10	15:37			Time Sensitive	Temperature (°C) on Receipt	Custody Seal	Yes	No		
														4/2/2						
* UNLESS OTHERWISE AGREED TO IN WRITING, WORK SUBMITTED ON THIS CHAIN OF CUSTODY IS SUBJECT TO BV LABS' STANDARD TERMS AND CONDITIONS. SIGNING OF THIS CHAIN OF CUSTODY DOCUMENT IS ACKNOWLEDGMENT AND ACCEPTANCE OF OUR TERMS WHICH ARE AVAILABLE FOR VIEWING AT WWW.BVLABS.COM/TERMS-AND-CONDITIONS.														SAMPLES MUST BE KEPT COOL (< 10° C) FROM TIME OF SAMPLING UNTIL DELIVERY TO BV LABS						
* IT IS THE RESPONSIBILITY OF THE RELINQUISHER TO ENSURE THE ACCURACY OF THE CHAIN OF CUSTODY RECORD. AN INCOMPLETE CHAIN OF CUSTODY MAY RESULT IN ANALYTICAL TAT DELAYS.														White: BV Labs Yellow: Client						
** SAMPLE CONTAINER, PRESERVATION, HOLD TIME AND PACKAGE INFORMATION CAN BE VIEWED AT WWW.BVLABS.COM/RESOURCES/CHAIN-OF-CUSTODY-FORMS.																				

Bureau Veritas Canada (2019) Inc.



Your P.O. #: 2100310
Your Project #: Wet/Dry Ground Water
Site Location: JUNE GW
Your C.O.C. #: 830940-01-01

Attention: Andrew Shouldice

City of Guelph
Eastview Landfill
186 Eastview Road
Guelph, ON
CANADA N1E 1Z6

Report Date: 2021/06/29
Report #: R6697778
Version: 1 - Final

CERTIFICATE OF ANALYSIS

BV LABS JOB #: C1G0292

Received: 2021/06/10, 15:37

Sample Matrix: Water
Samples Received: 5

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Analytical Method
ABN Compounds in Water by GC/MS	4	2021/06/18	2021/06/19	CAM SOP-00301	EPA 8270 m
Alkalinity	5	N/A	2021/06/15	CAM SOP-00448	SM 23 2320 B m
Biochemical Oxygen Demand (BOD)	5	2021/06/12	2021/06/17	CAM SOP-00427	SM 23 5210B m
Chloride by Automated Colourimetry	5	N/A	2021/06/15	CAM SOP-00463	SM 23 4500-Cl E m
Chemical Oxygen Demand	5	N/A	2021/06/14	CAM SOP-00416	SM 23 5220 D m
Conductivity	5	N/A	2021/06/15	CAM SOP-00414	SM 23 2510 m
Dissolved Metals by ICPMS	5	N/A	2021/06/15	CAM SOP-00447	EPA 6020B m
Total Metals Analysis by ICP	3	2021/06/14	2021/06/14	CAM SOP-00408	EPA 6010D m
Total Metals Analysis by ICP	2	2021/06/15	2021/06/15	CAM SOP-00408	EPA 6010D m
Total Ammonia-N	5	N/A	2021/06/15	CAM SOP-00441	USGS I-2522-90 m
Nitrate (NO3) and Nitrite (NO2) in Water (1)	5	N/A	2021/06/15	CAM SOP-00440	SM 23 4500-NO3I/NO2B
pH	5	2021/06/14	2021/06/15	CAM SOP-00413	SM 4500H+ B m
Phenols (4AAP)	5	N/A	2021/06/14	CAM SOP-00444	OMOE E3179 m
Sulphate by Automated Colourimetry	5	N/A	2021/06/15	CAM SOP-00464	EPA 375.4 m
Total Kjeldahl Nitrogen in Water	5	2021/06/14	2021/06/15	CAM SOP-00938	OMOE E3516 m
Total Phosphorus (Colourimetric)	5	2021/06/14	2021/06/14	CAM SOP-00407	SM 23 4500 P B H m
Volatile Organic Compounds in Water	5	N/A	2021/06/17	CAM SOP-00226	EPA 8260C m
Non-Routine Volatile Organic Compounds	5	N/A	2021/06/17	CAM SOP-00226	EPA 8260 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, MELCC, EPA, APHA.

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.



Your P.O. #: 2100310
Your Project #: Wet/Dry Ground Water
Site Location: JUNE GW
Your C.O.C. #: 830940-01-01

Attention: Andrew Shouldice

City of Guelph
Eastview Landfill
186 Eastview Road
Guelph, ON
CANADA N1E 1Z6

Report Date: 2021/06/29
Report #: R6697778
Version: 1 - Final

CERTIFICATE OF ANALYSIS

BV LABS JOB #: C1G0292

Received: 2021/06/10, 15:37

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.

Encryption Key

Hongmei Zhao (Grace)
Project Manager
29 Jun 2021 12:21:28

Please direct all questions regarding this Certificate of Analysis to your Project Manager.

James Aspin, Senior Project Manager
Email: James.Aspin@bureauveritas.com
Phone# (905)817-5771

=====

BV Labs 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 Signature Page.



BUREAU
VERITAS

BV Labs Job #: C1G0292
Report Date: 2021/06/29

City of Guelph
Client Project #: Wet/Dry Ground Water
Site Location: JUNE GW
Your P.O. #: 2100310
Sampler Initials: AS

RESULTS OF ANALYSES OF WATER

BV Labs ID				PUS419			
Sampling Date				2021/06/10			
COC Number				830940-01-01			
	UNITS	Criteria	Criteria C	15A	RDL	MDL	QC Batch
Inorganics							
Total Ammonia-N	mg/L	-	-	ND	0.050	0.0080	7405868
Total BOD	mg/L	-	-	ND	2	0.4	7404554
Total Chemical Oxygen Demand (COD)	mg/L	-	-	ND	4.0	3.6	7405978
Conductivity	umho/cm	-	-	1300	1.0	0.20	7407440
Total Kjeldahl Nitrogen (TKN)	mg/L	-	-	0.11	0.10	0.060	7406463
pH	pH	-	6.5:8.5	8.05			7407443
Phenols-4AAP	mg/L	-	-	ND	0.0010	0.00030	7405968
Total Phosphorus	mg/L	-	-	0.021	0.020	0.0030	7405876
Dissolved Sulphate (SO ₄)	mg/L	-	500	150	1.0	0.10	7407321
Alkalinity (Total as CaCO ₃)	mg/L	-	30-500	250	1.0	0.20	7407438
Dissolved Chloride (Cl ⁻)	mg/L	-	250	160	2.0	0.60	7407313
Nitrite (N)	mg/L	1	-	ND	0.010	0.0020	7407244
Nitrate (N)	mg/L	10	-	ND	0.10	0.010	7407244
Nitrate + Nitrite (N)	mg/L	10	-	ND	0.10	0.010	7407244
RDL = Reportable Detection Limit QC Batch = Quality Control Batch Criteria, Criteria C: Ontario Regulation 169/03 Criteria A = Maximum Acceptable Criteria B = Interim Maximum Criteria C = Chemical/Physical Objectives [A/O] (Made under the Ontario Safe Drinking Water Act, 2002) ND = Not detected							



BUREAU
VERITAS

BV Labs Job #: C1G0292
Report Date: 2021/06/29

City of Guelph
Client Project #: Wet/Dry Ground Water
Site Location: JUNE GW
Your P.O. #: 2100310
Sampler Initials: AS

RESULTS OF ANALYSES OF WATER

BV Labs ID				PUS420				PUS420			
Sampling Date				2021/06/10				2021/06/10			
COC Number				830940-01-01				830940-01-01			
	UNITS	Criteria	Criteria C	15B	RDL	MDL	QC Batch	15B Lab-Dup	RDL	MDL	QC Batch
Inorganics											
Total Ammonia-N	mg/L	-	-	2.4	0.050	0.0080	7405868				
Total BOD	mg/L	-	-	6	2	0.4	7404554				
Total Chemical Oxygen Demand (COD)	mg/L	-	-	15	4.0	3.6	7405978				
Conductivity	umho/cm	-	-	690	1.0	0.20	7407451	690	1.0	0.20	7407451
Total Kjeldahl Nitrogen (TKN)	mg/L	-	-	2.8	0.10	0.060	7406463				
pH	pH	-	6.5:8.5	7.72			7407459	7.75			7407459
Phenols-4AAP	mg/L	-	-	ND	0.0010	0.00030	7405968				
Total Phosphorus	mg/L	-	-	0.14	0.020	0.0030	7405876				
Dissolved Sulphate (SO4)	mg/L	-	500	80	1.0	0.10	7407321				
Alkalinity (Total as CaCO3)	mg/L	-	30-500	230	1.0	0.20	7407441	230	1.0	0.20	7407441
Dissolved Chloride (Cl-)	mg/L	-	250	27	1.0	0.30	7407313				
Nitrite (N)	mg/L	1	-	0.031	0.010	0.0020	7407244				
Nitrate (N)	mg/L	10	-	1.34	0.10	0.010	7407244				
Nitrate + Nitrite (N)	mg/L	10	-	1.37	0.10	0.010	7407244				

RDL = Reportable Detection Limit

QC Batch = Quality Control Batch

Lab-Dup = Laboratory Initiated Duplicate

Criteria, Criteria C: Ontario Regulation 169/03

Criteria A = Maximum Acceptable

Criteria B = Interim Maximum

Criteria C = Chemical/Physical Objectives [A/O]

(Made under the Ontario Safe Drinking Water Act, 2002)

ND = Not detected



BUREAU
VERITAS

BV Labs Job #: C1G0292
Report Date: 2021/06/29

City of Guelph
Client Project #: Wet/Dry Ground Water
Site Location: JUNE GW
Your P.O. #: 2100310
Sampler Initials: AS

RESULTS OF ANALYSES OF WATER

BV Labs ID				PUS421				PUS421			
Sampling Date				2021/06/09				2021/06/09			
COC Number				830940-01-01				830940-01-01			
	UNITS	Criteria	Criteria C	9	RDL	MDL	QC Batch	9 Lab-Dup	RDL	MDL	QC Batch

Inorganics

Total Ammonia-N	mg/L	-	-	ND	0.050	0.0080	7405868				
Total BOD	mg/L	-	-	ND	2	0.4	7404554	ND	2	0.4	7404554
Total Chemical Oxygen Demand (COD)	mg/L	-	-	11	4.0	3.6	7405978				
Conductivity	umho/cm	-	-	330	1.0	0.20	7407440				
Total Kjeldahl Nitrogen (TKN)	mg/L	-	-	0.22	0.10	0.060	7406463				
pH	pH	-	6.5:8.5	8.24			7407443				
Phenols-4AAP	mg/L	-	-	ND	0.0010	0.00030	7405968				
Total Phosphorus	mg/L	-	-	ND	0.020	0.0030	7405876				
Dissolved Sulphate (SO4)	mg/L	-	500	27	1.0	0.10	7407321				
Alkalinity (Total as CaCO3)	mg/L	-	30-500	110	1.0	0.20	7407438				
Dissolved Chloride (Cl-)	mg/L	-	250	15	1.0	0.30	7407313				
Nitrite (N)	mg/L	1	-	ND	0.010	0.0020	7407244				
Nitrate (N)	mg/L	10	-	1.36	0.10	0.010	7407244				
Nitrate + Nitrite (N)	mg/L	10	-	1.36	0.10	0.010	7407244				

RDL = Reportable Detection Limit

QC Batch = Quality Control Batch

Lab-Dup = Laboratory Initiated Duplicate

Criteria, Criteria C: Ontario Regulation 169/03

Criteria A = Maximum Acceptable

Criteria B = Interim Maximum

Criteria C = Chemical/Physical Objectives [A/O]

(Made under the Ontario Safe Drinking Water Act, 2002)

ND = Not detected



BUREAU
VERITAS

BV Labs Job #: C1G0292
Report Date: 2021/06/29

City of Guelph
Client Project #: Wet/Dry Ground Water
Site Location: JUNE GW
Your P.O. #: 2100310
Sampler Initials: AS

RESULTS OF ANALYSES OF WATER

BV Labs ID				PUS422			PUS423			
Sampling Date				2021/06/09			2021/06/09			
COC Number				830940-01-01			830940-01-01			
	UNITS	Criteria	Criteria C	10	RDL	MDL	7	RDL	MDL	QC Batch

Inorganics										
Total Ammonia-N	mg/L	-	-	ND	0.050	0.0080	ND	0.050	0.0080	7405868
Total BOD	mg/L	-	-	ND	2	0.4	ND	2	0.4	7404554
Total Chemical Oxygen Demand (COD)	mg/L	-	-	4.2	4.0	3.6	ND	4.0	3.6	7405978
Conductivity	umho/cm	-	-	680	1.0	0.20	1700	1.0	0.20	7407440
Total Kjeldahl Nitrogen (TKN)	mg/L	-	-	0.10	0.10	0.060	0.26	0.10	0.060	7406463
pH	pH	-	6.5:8.5	8.13			8.00			7407443
Phenols-4AAP	mg/L	-	-	ND	0.0010	0.00030	ND	0.0010	0.00030	7405968
Total Phosphorus	mg/L	-	-	0.078	0.020	0.0030	ND	0.020	0.0030	7405876
Dissolved Sulphate (SO4)	mg/L	-	500	79	1.0	0.10	53	1.0	0.10	7407321
Alkalinity (Total as CaCO3)	mg/L	-	30-500	250	1.0	0.20	360	1.0	0.20	7407438
Dissolved Chloride (Cl-)	mg/L	-	250	28	1.0	0.30	280	4.0	1.2	7407313
Nitrite (N)	mg/L	1	-	ND	0.010	0.0020	ND	0.010	0.0020	7407244
Nitrate (N)	mg/L	10	-	ND	0.10	0.010	4.42	0.10	0.010	7407244
Nitrate + Nitrite (N)	mg/L	10	-	ND	0.10	0.010	4.42	0.10	0.010	7407244

RDL = Reportable Detection Limit

QC Batch = Quality Control Batch

Criteria, Criteria C: Ontario Regulation 169/03

Criteria A = Maximum Acceptable

Criteria B = Interim Maximum

Criteria C = Chemical/Physical Objectives [A/O]

(Made under the Ontario Safe Drinking Water Act, 2002)

ND = Not detected



BUREAU
VERITAS

BV Labs Job #: C1G0292

Report Date: 2021/06/29

City of Guelph

Client Project #: Wet/Dry Ground Water

Site Location: JUNE GW

Your P.O. #: 2100310

Sampler Initials: AS

RESULTS OF ANALYSES OF WATER

BV Labs ID				PUS423			
Sampling Date				2021/06/09			
COC Number				830940-01-01			
	UNITS	Criteria	Criteria C	7 Lab-Dup	RDL	MDL	QC Batch
Inorganics							
Conductivity	umho/cm	-	-	1700	1.0	0.20	7407440
pH	pH	-	6.5:8.5	7.98			7407443
Alkalinity (Total as CaCO ₃)	mg/L	-	30-500	370	1.0	0.20	7407438
RDL = Reportable Detection Limit QC Batch = Quality Control Batch Lab-Dup = Laboratory Initiated Duplicate Criteria, Criteria C: Ontario Regulation 169/03 Criteria A = Maximum Acceptable Criteria B = Interim Maximum Criteria C = Chemical/Physical Objectives [A/O] (Made under the Ontario Safe Drinking Water Act, 2002)							



BUREAU
VERITAS

BV Labs Job #: C1G0292
Report Date: 2021/06/29

City of Guelph
Client Project #: Wet/Dry Ground Water
Site Location: JUNE GW
Your P.O. #: 2100310
Sampler Initials: AS

ELEMENTS BY ATOMIC SPECTROSCOPY (WATER)

BV Labs ID					PUS419				PUS419			
Sampling Date					2021/06/10				2021/06/10			
COC Number					830940-01-01				830940-01-01			
	UNITS	Criteria	Criteria B	Criteria C	15A	RDL	MDL	QC Batch	15A Lab-Dup	RDL	MDL	QC Batch
Metals												
Total Iron (Fe)	mg/L	-	-	0.3	0.89	0.02	0.004	7405821				
Dissolved Boron (B)	ug/L	-	5000	-	29	10	10	7407256	27	10	10	7407256
Dissolved Calcium (Ca)	ug/L	-	-	-	110000	200	200	7407256	110000	200	200	7407256
Dissolved Magnesium (Mg)	ug/L	-	-	-	33000	50	50	7407256	34000	50	50	7407256
Dissolved Phosphorus (P)	ug/L	-	-	-	ND	100	50	7407256	ND	100	50	7407256
Dissolved Potassium (K)	ug/L	-	-	-	1600	200	200	7407256	1600	200	200	7407256
Dissolved Sodium (Na)	ug/L	20000	-	200000	110000	100	100	7407256	110000	100	100	7407256
Dissolved Zinc (Zn)	ug/L	-	-	5000	ND	5.0	5.0	7407256	ND	5.0	5.0	7407256
RDL = Reportable Detection Limit QC Batch = Quality Control Batch Lab-Dup = Laboratory Initiated Duplicate Criteria, Criteria B, Criteria C: Ontario Regulation 169/03 Criteria A = Maximum Acceptable Criteria B = Interim Maximum Criteria C = Chemical/Physical Objectives [A/O] (Made under the Ontario Safe Drinking Water Act, 2002) ND = Not detected												

BUREAU
VERITAS

BV Labs Job #: C1G0292

Report Date: 2021/06/29

City of Guelph

Client Project #: Wet/Dry Ground Water

Site Location: JUNE GW

Your P.O. #: 2100310

Sampler Initials: AS

ELEMENTS BY ATOMIC SPECTROSCOPY (WATER)

BV Labs ID					PUS420		PUS421	PUS422			
Sampling Date					2021/06/10		2021/06/09	2021/06/09			
COC Number					830940-01-01		830940-01-01	830940-01-01			
	UNITS	Criteria	Criteria B	Criteria C	15B	QC Batch	9	10	RDL	MDL	QC Batch

Metals

Total Iron (Fe)	mg/L	-	-	0.3	0.13	7408708	0.99	0.77	0.02	0.004	7405821
Dissolved Boron (B)	ug/L	-	5000	-	62	7407256	31	17	10	10	7407256
Dissolved Calcium (Ca)	ug/L	-	-	-	69000	7407256	36000	89000	200	200	7407256
Dissolved Magnesium (Mg)	ug/L	-	-	-	4700	7407256	5900	30000	50	50	7407256
Dissolved Phosphorus (P)	ug/L	-	-	-	220	7407256	ND	ND	100	50	7407256
Dissolved Potassium (K)	ug/L	-	-	-	5500	7407256	8200	1100	200	200	7407256
Dissolved Sodium (Na)	ug/L	20000	-	200000	71000	7407256	17000	10000	100	100	7407256
Dissolved Zinc (Zn)	ug/L	-	-	5000	33	7407256	ND	ND	5.0	5.0	7407256

RDL = Reportable Detection Limit

QC Batch = Quality Control Batch

Criteria, Criteria B, Criteria C: Ontario Regulation 169/03

Criteria A = Maximum Acceptable

Criteria B = Interim Maximum

Criteria C = Chemical/Physical Objectives [A/O]

(Made under the Ontario Safe Drinking Water Act, 2002)

ND = Not detected



BUREAU
VERITAS

BV Labs Job #: C1G0292

Report Date: 2021/06/29

City of Guelph

Client Project #: Wet/Dry Ground Water

Site Location: JUNE GW

Your P.O. #: 2100310

Sampler Initials: AS

ELEMENTS BY ATOMIC SPECTROSCOPY (WATER)

BV Labs ID					PUS423			
Sampling Date					2021/06/09			
COC Number					830940-01-01			
	UNITS	Criteria	Criteria B	Criteria C	7	RDL	MDL	QC Batch
Metals								
Total Iron (Fe)	mg/L	-	-	0.3	0.10	0.02	0.004	7408708
Dissolved Boron (B)	ug/L	-	5000	-	47	10	10	7407256
Dissolved Calcium (Ca)	ug/L	-	-	-	110000	200	200	7407256
Dissolved Magnesium (Mg)	ug/L	-	-	-	30000	50	50	7407256
Dissolved Phosphorus (P)	ug/L	-	-	-	ND	100	50	7407256
Dissolved Potassium (K)	ug/L	-	-	-	7300	200	200	7407256
Dissolved Sodium (Na)	ug/L	20000	-	200000	210000	100	100	7407256
Dissolved Zinc (Zn)	ug/L	-	-	5000	180	5.0	5.0	7407256
RDL = Reportable Detection Limit QC Batch = Quality Control Batch Criteria, Criteria B, Criteria C: Ontario Regulation 169/03 Criteria A = Maximum Acceptable Criteria B = Interim Maximum Criteria C = Chemical/Physical Objectives [A/O] (Made under the Ontario Safe Drinking Water Act, 2002) ND = Not detected								



BV Labs Job #: C1G0292
Report Date: 2021/06/29

City of Guelph
Client Project #: Wet/Dry Ground Water
Site Location: JUNE GW
Your P.O. #: 2100310
Sampler Initials: AS

SEMI-VOLATILE ORGANICS BY GC-MS (WATER)

BV Labs ID			PUS419	PUS420	PUS421	PUS423			
Sampling Date			2021/06/10	2021/06/10	2021/06/09	2021/06/09			
COC Number			830940-01-01	830940-01-01	830940-01-01	830940-01-01			
	UNITS	Criteria	15A	15B	9	7	RDL	MDL	QC Batch

Semivolatile Organics									
Acenaphthene	ug/L	-	ND	ND	ND	ND	0.20	0.050	7415713
Acenaphthylene	ug/L	-	ND	ND	ND	ND	0.20	0.050	7415713
Anthracene	ug/L	-	ND	ND	ND	ND	0.20	0.050	7415713
Benzo(a)anthracene	ug/L	-	ND	ND	ND	ND	0.20	0.050	7415713
Benzo(a)pyrene	ug/L	0.01	ND (1)	ND (1)	ND (1)	ND (1)	0.20	0.050	7415713
Benzo(b,j)fluoranthene	ug/L	-	ND	ND	ND	ND	0.20	0.10	7415713
Benzo(g,h,i)perylene	ug/L	-	ND	ND	ND	ND	0.20	0.050	7415713
Benzo(k)fluoranthene	ug/L	-	ND	ND	ND	ND	0.20	0.050	7415713
1-Chloronaphthalene	ug/L	-	ND	ND	ND	ND	1.0	0.10	7415713
2-Chloronaphthalene	ug/L	-	ND	ND	ND	ND	0.50	0.050	7415713
Chrysene	ug/L	-	ND	ND	ND	ND	0.20	0.050	7415713
Dibenzo(a,h)anthracene	ug/L	-	ND	ND	ND	ND	0.20	0.050	7415713
Fluoranthene	ug/L	-	ND	ND	ND	ND	0.20	0.050	7415713
Fluorene	ug/L	-	ND	ND	ND	ND	0.20	0.10	7415713
Indeno(1,2,3-cd)pyrene	ug/L	-	ND	ND	ND	ND	0.20	0.050	7415713
1-Methylnaphthalene	ug/L	-	ND	ND	ND	ND	0.20	0.10	7415713
2-Methylnaphthalene	ug/L	-	ND	ND	ND	ND	0.20	0.10	7415713
Naphthalene	ug/L	-	ND	ND	ND	ND	0.20	0.10	7415713
5-Nitroacenaphthene	ug/L	-	ND	ND	ND	ND	1.0	0.10	7415713
Perylene	ug/L	-	ND	ND	ND	ND	0.20	0.10	7415713
Phenanthrene	ug/L	-	ND	ND	ND	ND	0.20	0.050	7415713
Pyrene	ug/L	-	ND	ND	ND	ND	0.20	0.050	7415713
2-Chlorophenol	ug/L	-	ND	ND	ND	ND	0.30	0.10	7415713
4-Chloro-3-Methylphenol	ug/L	-	ND	ND	ND	ND	0.50	0.10	7415713
m/p-Cresol	ug/L	-	ND	ND	ND	ND	0.50	0.20	7415713
o-Cresol	ug/L	-	ND	ND	ND	ND	0.50	0.10	7415713
2,4-Dichlorophenol	ug/L	900	ND	ND	ND	ND	0.30	0.10	7415713
2,6-Dichlorophenol	ug/L	-	ND	ND	ND	ND	0.50	0.20	7415713

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
Criteria: Ontario Regulation 169/03
Criteria A = Maximum Acceptable
Criteria B = Interim Maximum
Criteria C = Chemical/Physical Objectives [A/O]
(Made under the Ontario Safe Drinking Water Act, 2002)
ND = Not detected
(1) RDL exceeds criteria



BV Labs Job #: C1G0292
Report Date: 2021/06/29

City of Guelph
Client Project #: Wet/Dry Ground Water
Site Location: JUNE GW
Your P.O. #: 2100310
Sampler Initials: AS

SEMI-VOLATILE ORGANICS BY GC-MS (WATER)

BV Labs ID			PUS419	PUS420	PUS421	PUS423			
Sampling Date			2021/06/10	2021/06/10	2021/06/09	2021/06/09			
COC Number			830940-01-01	830940-01-01	830940-01-01	830940-01-01			
	UNITS	Criteria	15A	15B	9	7	RDL	MDL	QC Batch
2,4-Dimethylphenol	ug/L	-	ND	ND	ND	ND	0.50	0.10	7415713
2,4-Dinitrophenol	ug/L	-	ND	ND	ND	ND	2.0	0.20	7415713
4,6-Dinitro-2-methylphenol	ug/L	-	ND	ND	ND	ND	2.0	0.50	7415713
4-Nitrophenol	ug/L	-	ND	ND	ND	ND	1.4	0.10	7415713
Pentachlorophenol	ug/L	60	ND	ND	ND	ND	1.0	0.20	7415713
Phenol	ug/L	-	ND	ND	ND	ND	0.50	0.10	7415713
2,3,4,5-Tetrachlorophenol	ug/L	-	ND	ND	ND	ND	0.40	0.10	7415713
2,3,4,6-Tetrachlorophenol	ug/L	100	ND	ND	ND	ND	0.50	0.20	7415713
2,3,5,6-Tetrachlorophenol	ug/L	-	ND	ND	ND	ND	0.50	0.20	7415713
2,3,4-Trichlorophenol	ug/L	-	ND	ND	ND	ND	0.50	0.10	7415713
2,3,5-Trichlorophenol	ug/L	-	ND	ND	ND	ND	0.50	0.10	7415713
2,4,5-Trichlorophenol	ug/L	-	ND	ND	ND	ND	0.50	0.20	7415713
2,4,6-Trichlorophenol	ug/L	5	ND	ND	ND	ND	0.50	0.10	7415713
Benzyl butyl phthalate	ug/L	-	ND	ND	ND	ND	0.50	0.10	7415713
Biphenyl	ug/L	-	ND	ND	ND	ND	0.50	0.10	7415713
Bis(2-chloroethyl)ether	ug/L	-	ND	ND	ND	ND	0.50	0.10	7415713
Bis(2-chloroethoxy)methane	ug/L	-	ND	ND	ND	ND	0.50	0.10	7415713
Bis(2-chloroisopropyl)ether	ug/L	-	ND	ND	ND	ND	0.50	0.10	7415713
Bis(2-ethylhexyl)phthalate	ug/L	-	ND	ND	ND	ND	2.0	0.10	7415713
4-Bromophenyl phenyl ether	ug/L	-	ND	ND	ND	ND	0.30	0.10	7415713
Camphene	ug/L	-	ND	ND	ND	ND	1.0	0.10	7415713
4-Chlorophenyl phenyl ether	ug/L	-	ND	ND	ND	ND	0.50	0.10	7415713
Di-N-butyl phthalate	ug/L	-	ND	ND	ND	ND	2.0	0.10	7415713
di-n-octyl phthalate	ug/L	-	ND	ND	ND	ND	0.80	0.10	7415713
2,4-Dinitrotoluene	ug/L	-	ND	ND	ND	ND	0.50	0.10	7415713
2,6-Dinitrotoluene	ug/L	-	ND	ND	ND	ND	0.50	0.10	7415713
Diphenyl Ether	ug/L	-	ND	ND	ND	ND	0.30	0.10	7415713
Indole	ug/L	-	ND	ND	ND	ND	1.0	0.20	7415713
Nitrosodiphenylamine/Diphenylamine	ug/L	-	ND	ND	ND	ND	1.0	0.10	7415713

RDL = Reportable Detection Limit

QC Batch = Quality Control Batch

Criteria: Ontario Regulation 169/03

Criteria A = Maximum Acceptable

Criteria B = Interim Maximum

Criteria C = Chemical/Physical Objectives [A/O]

(Made under the Ontario Safe Drinking Water Act, 2002)

ND = Not detected



BUREAU
VERITAS

BV Labs Job #: C1G0292
Report Date: 2021/06/29

City of Guelph
Client Project #: Wet/Dry Ground Water
Site Location: JUNE GW
Your P.O. #: 2100310
Sampler Initials: AS

SEMI-VOLATILE ORGANICS BY GC-MS (WATER)

BV Labs ID			PUS419	PUS420	PUS421	PUS423			
Sampling Date			2021/06/10	2021/06/10	2021/06/09	2021/06/09			
COC Number			830940-01-01	830940-01-01	830940-01-01	830940-01-01			
	UNITS	Criteria	15A	15B	9	7	RDL	MDL	QC Batch
N-Nitroso-di-n-propylamine	ug/L	-	ND	ND	ND	ND	0.50	0.10	7415713
Surrogate Recovery (%)									
2,4,6-Tribromophenol	%	-	96	101	102	103			7415713
2-Fluorobiphenyl	%	-	73	74	80	81			7415713
2-Fluorophenol	%	-	37	37	38	33			7415713
D14-Terphenyl	%	-	88	88	88	91			7415713
D5-Nitrobenzene	%	-	86	87	95	91			7415713
D5-Phenol	%	-	24	23	24	24			7415713
RDL = Reportable Detection Limit QC Batch = Quality Control Batch Criteria: Ontario Regulation 169/03 Criteria A = Maximum Acceptable Criteria B = Interim Maximum Criteria C = Chemical/Physical Objectives [A/O] (Made under the Ontario Safe Drinking Water Act, 2002) ND = Not detected									



BV Labs Job #: C1G0292
Report Date: 2021/06/29

City of Guelph
Client Project #: Wet/Dry Ground Water
Site Location: JUNE GW
Your P.O. #: 2100310
Sampler Initials: AS

VOLATILE ORGANICS BY GC/MS (WATER)

BV Labs ID					PUS419	PUS420	PUS420			
Sampling Date					2021/06/10	2021/06/10	2021/06/10			
COC Number					830940-01-01	830940-01-01	830940-01-01			
	UNITS	Criteria	Criteria B	Criteria C	15A	15B	15B Lab-Dup	RDL	MDL	QC Batch
Volatile Organics										
Acetone (2-Propanone)	ug/L	-	-	-	ND	ND	ND	10	1.0	7405209
Benzene	ug/L	5	-	-	ND	ND	ND	0.10	0.020	7405209
Bromodichloromethane	ug/L	-	-	-	ND	ND	ND	0.10	0.050	7405209
Acrolein	ug/L	-	-	-	ND	ND	ND	10	N/A	7405382
Bromoform	ug/L	-	-	-	ND	ND	ND	0.20	0.10	7405209
Bromomethane	ug/L	-	-	-	ND	ND	ND	0.50	0.10	7405209
Carbon Tetrachloride	ug/L	5	-	-	ND	ND	ND	0.10	0.050	7405209
Chlorobenzene	ug/L	80	-	-	ND	ND	ND	0.10	0.010	7405209
Chloroform	ug/L	-	-	-	ND	ND	ND	0.10	0.050	7405209
Acrylonitrile	ug/L	-	-	-	ND	ND	ND	5.0	N/A	7405382
Chloromethane	ug/L	-	-	-	ND	ND	ND	0.50	0.050	7405209
Dibromochloromethane	ug/L	-	-	-	ND	ND	ND	0.20	0.050	7405209
1,2-Dichlorobenzene	ug/L	200	-	-	ND	ND	ND	0.20	0.050	7405209
1,3-Dichlorobenzene	ug/L	-	-	-	ND	ND	ND	0.20	0.050	7405209
1,4-Dichlorobenzene	ug/L	5	-	-	ND	ND	ND	0.20	0.050	7405209
1,1-Dichloroethane	ug/L	-	-	-	ND	ND	ND	0.10	0.050	7405209
1,2-Dichloroethane	ug/L	-	5	-	ND	ND	ND	0.20	0.050	7405209
1,1-Dichloroethylene	ug/L	14	-	-	ND	ND	ND	0.10	0.050	7405209
cis-1,2-Dichloroethylene	ug/L	-	-	-	ND	ND	ND	0.10	0.050	7405209
trans-1,2-Dichloroethylene	ug/L	-	-	-	ND	ND	ND	0.10	0.050	7405209
1,2-Dichloropropane	ug/L	-	-	-	ND	ND	ND	0.10	0.050	7405209
cis-1,3-Dichloropropene	ug/L	-	-	-	ND	ND	ND	0.20	0.050	7405209
trans-1,3-Dichloropropene	ug/L	-	-	-	ND	ND	ND	0.20	0.050	7405209
Ethylbenzene	ug/L	-	-	2.4	ND	ND	ND	0.10	0.010	7405209
Ethylene Dibromide	ug/L	-	-	-	ND	ND	ND	0.20	0.050	7405209
Methylene Chloride(Dichloromethane)	ug/L	50	-	-	ND	ND	ND	0.50	0.10	7405209
Methyl Ethyl Ketone (2-Butanone)	ug/L	-	-	-	ND	ND	ND	5.0	0.50	7405209
RDL = Reportable Detection Limit QC Batch = Quality Control Batch Lab-Dup = Laboratory Initiated Duplicate Criteria, Criteria B, Criteria C: Ontario Regulation 169/03 Criteria A = Maximum Acceptable Criteria B = Interim Maximum Criteria C = Chemical/Physical Objectives [A/O] (Made under the Ontario Safe Drinking Water Act, 2002) ND = Not detected N/A = Not Applicable										



BUREAU
VERITAS

BV Labs Job #: C1G0292
Report Date: 2021/06/29

City of Guelph
Client Project #: Wet/Dry Ground Water
Site Location: JUNE GW
Your P.O. #: 2100310
Sampler Initials: AS

VOLATILE ORGANICS BY GC/MS (WATER)

BV Labs ID					PUS419	PUS420	PUS420			
Sampling Date					2021/06/10	2021/06/10	2021/06/10			
COC Number					830940-01-01	830940-01-01	830940-01-01			
	UNITS	Criteria	Criteria B	Criteria C	15A	15B	15B Lab-Dup	RDL	MDL	QC Batch
Methyl Isobutyl Ketone	ug/L	-	-	-	ND	ND	ND	5.0	0.10	7405209
Methyl t-butyl ether (MTBE)	ug/L	-	-	-	ND	ND	ND	0.20	0.050	7405209
Styrene	ug/L	-	-	-	ND	ND	ND	0.20	0.050	7405209
1,1,1,2-Tetrachloroethane	ug/L	-	-	-	ND	ND	ND	0.20	0.050	7405209
1,1,2,2-Tetrachloroethane	ug/L	-	-	-	ND	ND	ND	0.20	0.050	7405209
Tetrachloroethylene	ug/L	30	-	-	ND	ND	ND	0.10	0.050	7405209
Toluene	ug/L	-	-	24	ND	ND	ND	0.20	0.010	7405209
1,1,1-Trichloroethane	ug/L	-	-	-	ND	ND	ND	0.10	0.050	7405209
1,1,2-Trichloroethane	ug/L	-	-	-	ND	ND	ND	0.20	0.050	7405209
Trichloroethylene	ug/L	5	-	-	ND	ND	ND	0.10	0.050	7405209
Trichlorofluoromethane (FREON 11)	ug/L	-	-	-	ND	ND	ND	0.20	0.10	7405209
Vinyl Chloride	ug/L	2	-	-	ND	ND	ND	0.20	0.050	7405209
p+m-Xylene	ug/L	-	-	-	ND	ND	ND	0.10	0.010	7405209
o-Xylene	ug/L	-	-	-	ND	ND	ND	0.10	0.010	7405209
Total Xylenes	ug/L	-	-	300	ND	ND	ND	0.10	0.010	7405209
Surrogate Recovery (%)										
4-Bromofluorobenzene	%	-	-	-	99	100	101			7405209
D4-1,2-Dichloroethane	%	-	-	-	103	103	102			7405209
D8-Toluene	%	-	-	-	99	100	99			7405209
RDL = Reportable Detection Limit QC Batch = Quality Control Batch Lab-Dup = Laboratory Initiated Duplicate Criteria, Criteria B, Criteria C: Ontario Regulation 169/03 Criteria A = Maximum Acceptable Criteria B = Interim Maximum Criteria C = Chemical/Physical Objectives [A/O] (Made under the Ontario Safe Drinking Water Act, 2002) ND = Not detected										



BV Labs Job #: C1G0292
Report Date: 2021/06/29

City of Guelph
Client Project #: Wet/Dry Ground Water
Site Location: JUNE GW
Your P.O. #: 2100310
Sampler Initials: AS

VOLATILE ORGANICS BY GC/MS (WATER)

BV Labs ID					PUS421	PUS422	PUS423			
Sampling Date					2021/06/09	2021/06/09	2021/06/09			
COC Number					830940-01-01	830940-01-01	830940-01-01			
	UNITS	Criteria	Criteria B	Criteria C	9	10	7	RDL	MDL	QC Batch

Volatile Organics										
Acetone (2-Propanone)	ug/L	-	-	-	ND	ND	ND	10	1.0	7405209
Benzene	ug/L	5	-	-	ND	ND	ND	0.10	0.020	7405209
Bromodichloromethane	ug/L	-	-	-	0.37	ND	ND	0.10	0.050	7405209
Acrolein	ug/L	-	-	-	ND	ND	ND	10	N/A	7405382
Bromoform	ug/L	-	-	-	ND	ND	ND	0.20	0.10	7405209
Bromomethane	ug/L	-	-	-	ND	ND	ND	0.50	0.10	7405209
Carbon Tetrachloride	ug/L	5	-	-	ND	ND	ND	0.10	0.050	7405209
Chlorobenzene	ug/L	80	-	-	ND	ND	ND	0.10	0.010	7405209
Chloroform	ug/L	-	-	-	0.95	ND	ND	0.10	0.050	7405209
Acrylonitrile	ug/L	-	-	-	ND	ND	ND	5.0	N/A	7405382
Chloromethane	ug/L	-	-	-	ND	ND	ND	0.50	0.050	7405209
Dibromochloromethane	ug/L	-	-	-	ND	ND	ND	0.20	0.050	7405209
1,2-Dichlorobenzene	ug/L	200	-	-	ND	ND	ND	0.20	0.050	7405209
1,3-Dichlorobenzene	ug/L	-	-	-	ND	ND	ND	0.20	0.050	7405209
1,4-Dichlorobenzene	ug/L	5	-	-	ND	ND	ND	0.20	0.050	7405209
1,1-Dichloroethane	ug/L	-	-	-	ND	ND	ND	0.10	0.050	7405209
1,2-Dichloroethane	ug/L	-	5	-	ND	ND	ND	0.20	0.050	7405209
1,1-Dichloroethylene	ug/L	14	-	-	ND	ND	ND	0.10	0.050	7405209
cis-1,2-Dichloroethylene	ug/L	-	-	-	ND	ND	ND	0.10	0.050	7405209
trans-1,2-Dichloroethylene	ug/L	-	-	-	ND	ND	ND	0.10	0.050	7405209
1,2-Dichloropropane	ug/L	-	-	-	ND	ND	ND	0.10	0.050	7405209
cis-1,3-Dichloropropene	ug/L	-	-	-	ND	ND	ND	0.20	0.050	7405209
trans-1,3-Dichloropropene	ug/L	-	-	-	ND	ND	ND	0.20	0.050	7405209
Ethylbenzene	ug/L	-	-	2.4	ND	ND	ND	0.10	0.010	7405209
Ethylene Dibromide	ug/L	-	-	-	ND	ND	ND	0.20	0.050	7405209
Methylene Chloride(Dichloromethane)	ug/L	50	-	-	ND	ND	ND	0.50	0.10	7405209
Methyl Ethyl Ketone (2-Butanone)	ug/L	-	-	-	ND	ND	ND	5.0	0.50	7405209
Methyl Isobutyl Ketone	ug/L	-	-	-	ND	ND	ND	5.0	0.10	7405209

RDL = Reportable Detection Limit

QC Batch = Quality Control Batch

Criteria, Criteria B, Criteria C: Ontario Regulation 169/03

Criteria A = Maximum Acceptable

Criteria B = Interim Maximum

Criteria C = Chemical/Physical Objectives [A/O]

(Made under the Ontario Safe Drinking Water Act, 2002)

ND = Not detected

N/A = Not Applicable



BUREAU
VERITAS

BV Labs Job #: C1G0292
Report Date: 2021/06/29

City of Guelph
Client Project #: Wet/Dry Ground Water
Site Location: JUNE GW
Your P.O. #: 2100310
Sampler Initials: AS

VOLATILE ORGANICS BY GC/MS (WATER)

BV Labs ID					PUS421	PUS422	PUS423			
Sampling Date					2021/06/09	2021/06/09	2021/06/09			
COC Number					830940-01-01	830940-01-01	830940-01-01			
	UNITS	Criteria	Criteria B	Criteria C	9	10	7	RDL	MDL	QC Batch
Methyl t-butyl ether (MTBE)	ug/L	-	-	-	ND	ND	ND	0.20	0.050	7405209
Styrene	ug/L	-	-	-	ND	ND	ND	0.20	0.050	7405209
1,1,1,2-Tetrachloroethane	ug/L	-	-	-	ND	ND	ND	0.20	0.050	7405209
1,1,2,2-Tetrachloroethane	ug/L	-	-	-	ND	ND	ND	0.20	0.050	7405209
Tetrachloroethylene	ug/L	30	-	-	ND	ND	ND	0.10	0.050	7405209
Toluene	ug/L	-	-	24	ND	ND	ND	0.20	0.010	7405209
1,1,1-Trichloroethane	ug/L	-	-	-	ND	ND	ND	0.10	0.050	7405209
1,1,2-Trichloroethane	ug/L	-	-	-	ND	ND	ND	0.20	0.050	7405209
Trichloroethylene	ug/L	5	-	-	ND	ND	ND	0.10	0.050	7405209
Trichlorofluoromethane (FREON 11)	ug/L	-	-	-	ND	ND	ND	0.20	0.10	7405209
Vinyl Chloride	ug/L	2	-	-	ND	ND	ND	0.20	0.050	7405209
p+m-Xylene	ug/L	-	-	-	ND	ND	ND	0.10	0.010	7405209
o-Xylene	ug/L	-	-	-	ND	ND	ND	0.10	0.010	7405209
Total Xylenes	ug/L	-	-	300	ND	ND	ND	0.10	0.010	7405209
Surrogate Recovery (%)										
4-Bromofluorobenzene	%	-	-	-	101	101	101			7405209
D4-1,2-Dichloroethane	%	-	-	-	102	102	105			7405209
D8-Toluene	%	-	-	-	100	99	98			7405209
RDL = Reportable Detection Limit QC Batch = Quality Control Batch Criteria, Criteria B, Criteria C: Ontario Regulation 169/03 Criteria A = Maximum Acceptable Criteria B = Interim Maximum Criteria C = Chemical/Physical Objectives [A/O] (Made under the Ontario Safe Drinking Water Act, 2002) ND = Not detected										



BUREAU
VERITAS

BV Labs Job #: C1G0292

Report Date: 2021/06/29

City of Guelph

Client Project #: Wet/Dry Ground Water

Site Location: JUNE GW

Your P.O. #: 2100310

Sampler Initials: AS

GENERAL COMMENTS

Results relate only to the items tested.



BV Labs Job #: C1G0292
Report Date: 2021/06/29

QUALITY ASSURANCE REPORT

City of Guelph
Client Project #: Wet/Dry Ground Water
Site Location: JUNE GW
Your P.O. #: 2100310
Sampler Initials: AS

QC Batch	Parameter	Date	Matrix Spike		SPIKED BLANK		Method Blank		RPD		QC Standard	
			% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits	% Recovery	QC Limits
7405209	4-Bromofluorobenzene	2021/06/17	104	70 - 130	103	70 - 130	101	%				
7405209	D4-1,2-Dichloroethane	2021/06/17	101	70 - 130	102	70 - 130	103	%				
7405209	D8-Toluene	2021/06/17	100	70 - 130	101	70 - 130	98	%				
7415713	2,4,6-Tribromophenol	2021/06/18	110	10 - 130	109	10 - 130	105	%				
7415713	2-Fluorobiphenyl	2021/06/18	79	30 - 130	79	30 - 130	87	%				
7415713	2-Fluorophenol	2021/06/18	40	10 - 130	46	10 - 130	41	%				
7415713	D14-Terphenyl	2021/06/18	95	30 - 130	97	30 - 130	92	%				
7415713	D5-Nitrobenzene	2021/06/18	90	30 - 130	97	30 - 130	97	%				
7415713	D5-Phenol	2021/06/18	26	10 - 130	27	10 - 130	27	%				
7404554	Total BOD	2021/06/17					ND, RDL=2	mg/L	NC	30	92	80 - 120
7405209	1,1,1,2-Tetrachloroethane	2021/06/17	106	70 - 130	111	70 - 130	ND, RDL=0.20	ug/L	NC	30		
7405209	1,1,1-Trichloroethane	2021/06/17	104	70 - 130	110	70 - 130	ND, RDL=0.10	ug/L	NC	30		
7405209	1,1,2,2-Tetrachloroethane	2021/06/17	100	70 - 130	103	70 - 130	ND, RDL=0.20	ug/L	NC	30		
7405209	1,1,2-Trichloroethane	2021/06/17	104	70 - 130	108	70 - 130	ND, RDL=0.20	ug/L	NC	30		
7405209	1,1-Dichloroethane	2021/06/17	95	70 - 130	99	70 - 130	ND, RDL=0.10	ug/L	NC	30		
7405209	1,1-Dichloroethylene	2021/06/17	98	70 - 130	105	70 - 130	ND, RDL=0.10	ug/L	NC	30		
7405209	1,2-Dichlorobenzene	2021/06/17	100	70 - 130	101	70 - 130	ND, RDL=0.20	ug/L	NC	30		
7405209	1,2-Dichloroethane	2021/06/17	96	70 - 130	101	70 - 130	ND, RDL=0.20	ug/L	NC	30		
7405209	1,2-Dichloropropane	2021/06/17	99	70 - 130	102	70 - 130	ND, RDL=0.10	ug/L	NC	30		
7405209	1,3-Dichlorobenzene	2021/06/17	100	70 - 130	102	70 - 130	ND, RDL=0.20	ug/L	NC	30		
7405209	1,4-Dichlorobenzene	2021/06/17	115	70 - 130	117	70 - 130	ND, RDL=0.20	ug/L	NC	30		
7405209	Acetone (2-Propanone)	2021/06/17	95	60 - 140	101	60 - 140	ND, RDL=10	ug/L	NC	30		
7405209	Benzene	2021/06/17	94	70 - 130	96	70 - 130	ND, RDL=0.10	ug/L	NC	30		
7405209	Bromodichloromethane	2021/06/17	105	70 - 130	110	70 - 130	ND, RDL=0.10	ug/L	NC	30		
7405209	Bromoform	2021/06/17	105	70 - 130	112	70 - 130	ND, RDL=0.20	ug/L	NC	30		
7405209	Bromomethane	2021/06/17	96	60 - 140	116	60 - 140	ND, RDL=0.50	ug/L	NC	30		
7405209	Carbon Tetrachloride	2021/06/17	105	70 - 130	110	70 - 130	ND, RDL=0.10	ug/L	NC	30		
7405209	Chlorobenzene	2021/06/17	101	70 - 130	104	70 - 130	ND, RDL=0.10	ug/L	NC	30		
7405209	Chloroform	2021/06/17	99	70 - 130	104	70 - 130	ND, RDL=0.10	ug/L	NC	30		
7405209	Chloromethane	2021/06/17	83	60 - 140	90	60 - 140	ND, RDL=0.50	ug/L	NC	30		



BV Labs Job #: C1G0292
Report Date: 2021/06/29

QUALITY ASSURANCE REPORT(CONT'D)

City of Guelph
Client Project #: Wet/Dry Ground Water
Site Location: JUNE GW
Your P.O. #: 2100310
Sampler Initials: AS

QC Batch	Parameter	Date	Matrix Spike		SPIKED BLANK		Method Blank		RPD		QC Standard	
			% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits	% Recovery	QC Limits
7405209	cis-1,2-Dichloroethylene	2021/06/17	100	70 - 130	105	70 - 130	ND, RDL=0.10	ug/L	NC	30		
7405209	cis-1,3-Dichloropropene	2021/06/17	104	70 - 130	106	70 - 130	ND, RDL=0.20	ug/L	NC	30		
7405209	Dibromochloromethane	2021/06/17	105	70 - 130	110	70 - 130	ND, RDL=0.20	ug/L	NC	30		
7405209	Ethylbenzene	2021/06/17	95	70 - 130	98	70 - 130	ND, RDL=0.10	ug/L	NC	30		
7405209	Ethylene Dibromide	2021/06/17	96	70 - 130	100	70 - 130	ND, RDL=0.20	ug/L	NC	30		
7405209	Methyl Ethyl Ketone (2-Butanone)	2021/06/17	102	60 - 140	107	60 - 140	ND, RDL=5.0	ug/L	NC	30		
7405209	Methyl Isobutyl Ketone	2021/06/17	104	70 - 130	106	70 - 130	ND, RDL=5.0	ug/L	NC	30		
7405209	Methyl t-butyl ether (MTBE)	2021/06/17	100	70 - 130	104	70 - 130	ND, RDL=0.20	ug/L	NC	30		
7405209	Methylene Chloride(Dichloromethane)	2021/06/17	99	70 - 130	103	70 - 130	ND, RDL=0.50	ug/L	NC	30		
7405209	o-Xylene	2021/06/17	97	70 - 130	100	70 - 130	ND, RDL=0.10	ug/L	NC	30		
7405209	p-m-Xylene	2021/06/17	101	70 - 130	103	70 - 130	ND, RDL=0.10	ug/L	NC	30		
7405209	Styrene	2021/06/17	109	70 - 130	113	70 - 130	ND, RDL=0.20	ug/L	NC	30		
7405209	Tetrachloroethylene	2021/06/17	97	70 - 130	99	70 - 130	ND, RDL=0.10	ug/L	NC	30		
7405209	Toluene	2021/06/17	97	70 - 130	100	70 - 130	ND, RDL=0.20	ug/L	NC	30		
7405209	Total Xylenes	2021/06/17					ND, RDL=0.10	ug/L	NC	30		
7405209	trans-1,2-Dichloroethylene	2021/06/17	100	70 - 130	104	70 - 130	ND, RDL=0.10	ug/L	NC	30		
7405209	trans-1,3-Dichloropropene	2021/06/17	107	70 - 130	111	70 - 130	ND, RDL=0.20	ug/L	NC	30		
7405209	Trichloroethylene	2021/06/17	105	70 - 130	110	70 - 130	ND, RDL=0.10	ug/L	NC	30		
7405209	Trichlorofluoromethane (FREON 11)	2021/06/17	102	70 - 130	108	70 - 130	ND, RDL=0.20	ug/L	NC	30		
7405209	Vinyl Chloride	2021/06/17	97	70 - 130	104	70 - 130	ND, RDL=0.20	ug/L	NC	30		
7405382	Acrolein	2021/06/17	97	60 - 140	113	60 - 140	ND, RDL=10	ug/L	NC	30		
7405382	Acrylonitrile	2021/06/17	104	60 - 140	110	60 - 140	ND, RDL=5.0	ug/L	NC	30		
7405821	Total Iron (Fe)	2021/06/14	95	80 - 120	110	80 - 120	0.05, RDL=0.02	mg/L	6.6	25		
7405868	Total Ammonia-N	2021/06/15	94	75 - 125	99	80 - 120	ND, RDL=0.050	mg/L	0.43	20		
7405876	Total Phosphorus	2021/06/14	94	80 - 120	93	80 - 120	ND, RDL=0.020	mg/L	3.5	20	94	80 - 120
7405968	Phenols-4AAP	2021/06/14	95	80 - 120	96	80 - 120	ND, RDL=0.0010	mg/L	NC	20		
7405978	Total Chemical Oxygen Demand (COD)	2021/06/14	95	80 - 120	98	80 - 120	ND, RDL=4.0	mg/L	13	20		



BV Labs Job #: C1G0292
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QUALITY ASSURANCE REPORT(CONT'D)

City of Guelph
Client Project #: Wet/Dry Ground Water
Site Location: JUNE GW
Your P.O. #: 2100310
Sampler Initials: AS

QC Batch	Parameter	Date	Matrix Spike		SPIKED BLANK		Method Blank		RPD		QC Standard	
			% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits	% Recovery	QC Limits
7406463	Total Kjeldahl Nitrogen (TKN)	2021/06/15	103	80 - 120	102	80 - 120	ND, RDL=0.10	mg/L	2.0	20	100	80 - 120
7407244	Nitrate (N)	2021/06/16	97	80 - 120	95	80 - 120	ND, RDL=0.10	mg/L	NC	20		
7407244	Nitrite (N)	2021/06/16	104	80 - 120	107	80 - 120	ND, RDL=0.010	mg/L	NC	20		
7407256	Dissolved Boron (B)	2021/06/15	102	80 - 120	99	80 - 120	ND, RDL=10	ug/L	4.7	20		
7407256	Dissolved Calcium (Ca)	2021/06/15	NC	80 - 120	99	80 - 120	ND, RDL=200	ug/L	1.1	20		
7407256	Dissolved Magnesium (Mg)	2021/06/15	NC	80 - 120	103	80 - 120	ND, RDL=50	ug/L	0.88	20		
7407256	Dissolved Phosphorus (P)	2021/06/15	114	80 - 120	120	80 - 120	ND, RDL=100	ug/L	NC	20		
7407256	Dissolved Potassium (K)	2021/06/15	104	80 - 120	102	80 - 120	ND, RDL=200	ug/L	0.12	20		
7407256	Dissolved Sodium (Na)	2021/06/15	NC	80 - 120	102	80 - 120	ND, RDL=100	ug/L	0.41	20		
7407256	Dissolved Zinc (Zn)	2021/06/15	99	80 - 120	99	80 - 120	ND, RDL=5.0	ug/L	NC	20		
7407313	Dissolved Chloride (Cl-)	2021/06/15	NC	80 - 120	101	80 - 120	ND, RDL=1.0	mg/L	3.2	20		
7407321	Dissolved Sulphate (SO4)	2021/06/15	NC	75 - 125	101	80 - 120	ND, RDL=1.0	mg/L	1.1	20		
7407438	Alkalinity (Total as CaCO3)	2021/06/15			96	85 - 115	ND, RDL=1.0	mg/L	1.4	20		
7407440	Conductivity	2021/06/15			100	85 - 115	ND, RDL=1.0	umho/cm	0.41	25		
7407441	Alkalinity (Total as CaCO3)	2021/06/15			96	85 - 115	ND, RDL=1.0	mg/L	0.011	20		
7407443	pH	2021/06/15			102	98 - 103			0.26	N/A		
7407451	Conductivity	2021/06/15			102	85 - 115	ND, RDL=1.0	umho/cm	0.29	25		
7407459	pH	2021/06/15			102	98 - 103			0.27	N/A		
7408708	Total Iron (Fe)	2021/06/15	98	80 - 120	100	80 - 120	ND, RDL=0.02	mg/L	NC	25		
7415713	1-Chloronaphthalene	2021/06/18	76	30 - 130	74	30 - 130	ND, RDL=1.0	ug/L	NC	40		
7415713	1-Methylnaphthalene	2021/06/18	93	30 - 130	93	30 - 130	ND, RDL=0.20	ug/L	NC	40		
7415713	2,3,4,5-Tetrachlorophenol	2021/06/18	89	10 - 130	85	10 - 130	ND, RDL=0.40	ug/L	NC	40		
7415713	2,3,4,6-Tetrachlorophenol	2021/06/18	110	10 - 130	116	10 - 130	ND, RDL=0.50	ug/L	NC	40		
7415713	2,3,4-Trichlorophenol	2021/06/18	97	10 - 130	91	10 - 130	ND, RDL=0.50	ug/L	NC	40		
7415713	2,3,5,6-Tetrachlorophenol	2021/06/18	117	10 - 130	115	10 - 130	ND, RDL=0.50	ug/L	NC	40		
7415713	2,3,5-Trichlorophenol	2021/06/18	108	10 - 130	99	10 - 130	ND, RDL=0.50	ug/L	NC	40		
7415713	2,4,5-Trichlorophenol	2021/06/18	105	10 - 130	102	10 - 130	ND, RDL=0.50	ug/L	NC	40		



BV Labs Job #: C160292
Report Date: 2021/06/29

QUALITY ASSURANCE REPORT(CONT'D)

City of Guelph
Client Project #: Wet/Dry Ground Water
Site Location: JUNE GW
Your P.O. #: 2100310
Sampler Initials: AS

QC Batch	Parameter	Date	Matrix Spike		SPIKED BLANK		Method Blank		RPD		QC Standard	
			% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits	% Recovery	QC Limits
7415713	2,4,6-Trichlorophenol	2021/06/18	97	10 - 130	94	10 - 130	ND, RDL=0.50	ug/L	NC	40		
7415713	2,4-Dichlorophenol	2021/06/18	95	10 - 130	100	10 - 130	ND, RDL=0.30	ug/L	NC	40		
7415713	2,4-Dimethylphenol	2021/06/18	82	10 - 130	71	10 - 130	ND, RDL=0.50	ug/L	NC	40		
7415713	2,4-Dinitrophenol	2021/06/18	121	10 - 130	129	10 - 130	ND, RDL=2.0	ug/L	NC	40		
7415713	2,4-Dinitrotoluene	2021/06/18	105	30 - 130	99	30 - 130	ND, RDL=0.50	ug/L	NC	40		
7415713	2,6-Dichlorophenol	2021/06/18	93	10 - 130	94	10 - 130	ND, RDL=0.50	ug/L	NC	40		
7415713	2,6-Dinitrotoluene	2021/06/18	93	30 - 130	87	30 - 130	ND, RDL=0.50	ug/L	NC	40		
7415713	2-Chloronaphthalene	2021/06/18	83	30 - 130	78	30 - 130	ND, RDL=0.50	ug/L	NC	40		
7415713	2-Chlorophenol	2021/06/18	75	10 - 130	83	10 - 130	ND, RDL=0.30	ug/L	NC	40		
7415713	2-Methylnaphthalene	2021/06/18	82	30 - 130	83	30 - 130	ND, RDL=0.20	ug/L	NC	40		
7415713	4,6-Dinitro-2-methylphenol	2021/06/18	113	10 - 130	123	10 - 130	ND, RDL=2.0	ug/L	NC	40		
7415713	4-Bromophenyl phenyl ether	2021/06/18	98	30 - 130	93	30 - 130	ND, RDL=0.30	ug/L	NC	40		
7415713	4-Chloro-3-Methylphenol	2021/06/18	94	10 - 130	94	10 - 130	ND, RDL=0.50	ug/L	NC	40		
7415713	4-Chlorophenyl phenyl ether	2021/06/18	83	30 - 130	79	30 - 130	ND, RDL=0.50	ug/L	NC	40		
7415713	4-Nitrophenol	2021/06/18	22	10 - 130	26	10 - 130	ND, RDL=1.4	ug/L	NC	40		
7415713	5-Nitroacenaphthene	2021/06/18	95	30 - 130	98	30 - 130	ND, RDL=1.0	ug/L	NC	40		
7415713	Acenaphthene	2021/06/18	93	30 - 130	86	30 - 130	ND, RDL=0.20	ug/L	NC	40		
7415713	Acenaphthylene	2021/06/18	95	30 - 130	90	30 - 130	ND, RDL=0.20	ug/L	NC	40		
7415713	Anthracene	2021/06/18	86	30 - 130	84	30 - 130	ND, RDL=0.20	ug/L	NC	40		
7415713	Benzo(a)anthracene	2021/06/18	105	30 - 130	104	30 - 130	ND, RDL=0.20	ug/L	NC	40		
7415713	Benzo(a)pyrene	2021/06/18	87	30 - 130	87	30 - 130	ND, RDL=0.20	ug/L	NC	40		
7415713	Benzo(b,j)fluoranthene	2021/06/18	99	30 - 130	99	30 - 130	ND, RDL=0.20	ug/L	NC	40		
7415713	Benzo(g,h,i)perylene	2021/06/18	68	30 - 130	77	30 - 130	ND, RDL=0.20	ug/L	NC	40		
7415713	Benzo(k)fluoranthene	2021/06/18	103	30 - 130	98	30 - 130	ND, RDL=0.20	ug/L	NC	40		
7415713	Benzyl butyl phthalate	2021/06/18	97	30 - 130	103	30 - 130	ND, RDL=0.50	ug/L	NC	40		
7415713	Biphenyl	2021/06/18	88	30 - 130	83	30 - 130	ND, RDL=0.50	ug/L	NC	40		
7415713	Bis(2-chloroethoxy)methane	2021/06/18	74	30 - 130	76	30 - 130	ND, RDL=0.50	ug/L	NC	40		
7415713	Bis(2-chloroethyl)ether	2021/06/18	77	30 - 130	81	30 - 130	ND, RDL=0.50	ug/L	NC	40		
7415713	Bis(2-chloroisopropyl)ether	2021/06/18	68	30 - 130	69	30 - 130	ND, RDL=0.50	ug/L	NC	40		
7415713	Bis(2-ethylhexyl)phthalate	2021/06/18	100	30 - 130	104	30 - 130	ND, RDL=2.0	ug/L	NC	40		



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QUALITY ASSURANCE REPORT(CONT'D)

City of Guelph
Client Project #: Wet/Dry Ground Water
Site Location: JUNE GW
Your P.O. #: 2100310
Sampler Initials: AS

QC Batch	Parameter	Date	Matrix Spike		SPIKED BLANK		Method Blank		RPD		QC Standard	
			% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits	% Recovery	QC Limits
7415713	Camphene	2021/06/18	63	30 - 130	75	30 - 130	ND, RDL=1.0	ug/L	NC	40		
7415713	Chrysene	2021/06/18	101	30 - 130	98	30 - 130	ND, RDL=0.20	ug/L	NC	40		
7415713	Dibenzo(a,h)anthracene	2021/06/18	76	30 - 130	83	30 - 130	ND, RDL=0.20	ug/L	NC	40		
7415713	Di-N-butyl phthalate	2021/06/18	103	30 - 130	106	30 - 130	ND, RDL=2.0	ug/L	NC	40		
7415713	di-n-octyl phthalate	2021/06/18	98	30 - 130	99	30 - 130	ND, RDL=0.80	ug/L	NC	40		
7415713	Diphenyl Ether	2021/06/18	81	30 - 130	75	30 - 130	ND, RDL=0.30	ug/L	NC	40		
7415713	Fluoranthene	2021/06/18	103	30 - 130	101	30 - 130	ND, RDL=0.20	ug/L	NC	40		
7415713	Fluorene	2021/06/18	96	30 - 130	90	30 - 130	ND, RDL=0.20	ug/L	NC	40		
7415713	Indeno(1,2,3-cd)pyrene	2021/06/18	77	30 - 130	85	30 - 130	ND, RDL=0.20	ug/L	NC	40		
7415713	Indole	2021/06/18	75	30 - 130	81	30 - 130	ND, RDL=1.0	ug/L	NC	40		
7415713	m/p-Cresol	2021/06/18	57	10 - 130	62	10 - 130	ND, RDL=0.50	ug/L	NC	40		
7415713	Naphthalene	2021/06/18	73	30 - 130	73	30 - 130	ND, RDL=0.20	ug/L	NC	40		
7415713	Nitrosodiphenylamine/Diphenylamine	2021/06/18	119	30 - 130	124	30 - 130	ND, RDL=1.0	ug/L	NC	40		
7415713	N-Nitroso-di-n-propylamine	2021/06/18	92	30 - 130	97	30 - 130	ND, RDL=0.50	ug/L	NC	40		
7415713	o-Cresol	2021/06/18	62	10 - 130	66	10 - 130	ND, RDL=0.50	ug/L	NC	40		
7415713	Pentachlorophenol	2021/06/18	90	10 - 130	84	10 - 130	ND, RDL=1.0	ug/L	NC	40		
7415713	Perylene	2021/06/18	94	30 - 130	91	30 - 130	ND, RDL=0.20	ug/L	NC	40		
7415713	Phenanthrene	2021/06/18	92	30 - 130	89	30 - 130	ND, RDL=0.20	ug/L	NC	40		
7415713	Phenol	2021/06/18	24	10 - 130	27	10 - 130	ND, RDL=0.50	ug/L	NC	40		



BV Labs Job #: C1G0292
Report Date: 2021/06/29

QUALITY ASSURANCE REPORT(CONT'D)

City of Guelph
Client Project #: Wet/Dry Ground Water
Site Location: JUNE GW
Your P.O. #: 2100310
Sampler Initials: AS

QC Batch	Parameter	Date	Matrix Spike		SPIKED BLANK		Method Blank		RPD		QC Standard	
			% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits	% Recovery	QC Limits
7415713	Pyrene	2021/06/18	93	30 - 130	91	30 - 130	ND, RDL=0.20	ug/L	NC	40		
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 $\leq 2 \times \text{RDL}$).												



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BV Labs Job #: C1G0292

Report Date: 2021/06/29

City of Guelph

Client Project #: Wet/Dry Ground Water

Site Location: JUNE GW

Your P.O. #: 2100310

Sampler Initials: AS

VALIDATION SIGNATURE PAGE

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

Anastassia Hamanov, Scientific Specialist

BV Labs 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 Signature Page.

10-Jun-21 15:37

James Aspin



C1G0292

DSG

ENV-928

Page 1 of 1



Bureau Veritas Laboratories
6740 Campbell Road, Mississauga, Ontario Canada L5N 2L8 Tel (905) 817-5700 Toll-free 800-563-0266 Fax (905) 817-5777 www.bvlabs.com

INVOICE TO:		REPORT TO:		PROJECT INFORMATION:		Laboratory Use Only:	
Company Name: #12237 City of Guelph		Company Name:		Quotation #: B90142		BV Labs Job #:	
Attention: Andrew Shouldice (Eastview)		Attention:		P.O. #:		Bottle Order #:	
Address: 186 Eastview Rd		Address:		Project: Wet/Dry Ground Water		COC #:	
Guelph ON N1E 1Z6		Tel:		Project Name: June GW		Project Manager:	
Tel: (519) 822-1260 Ext: 2473 Fax: (519) 823-0910		Email:		Site #:		James Aspin	
Email: Andrew.Shouldice@guelph.ca		Fax:		Sampled By: Andrew Shouldice		C#B30940-01-01	

MOE REGULATED DRINKING WATER OR WATER INTENDED FOR HUMAN CONSUMPTION MUST BE SUBMITTED ON THE BV LABS DRINKING WATER CHAIN OF CUSTODY

Regulation 153 (2011)		Other Regulations		Special Instructions		Field Filtered (please circle):		Analysis Requested (Please be specific):		Turnaround Time (TAT) Required:	
<input type="checkbox"/> Table 1	<input type="checkbox"/> Res/Park	<input type="checkbox"/> Medium/Fine	<input type="checkbox"/> CCME	<input type="checkbox"/> Sanitary Sewer Bylaw			At 100 / 100 / Cr VI				Regular (Standard) TAT:
<input type="checkbox"/> Table 2	<input type="checkbox"/> Ind/Comm	<input type="checkbox"/> Coarse	<input type="checkbox"/> Reg 558	<input type="checkbox"/> Storm Sewer Bylaw			Wet/Dry GW + ATG 16-20				(will be applied if Rush TAT is not specified):
<input type="checkbox"/> Table 3	<input type="checkbox"/> Agri/Other	<input type="checkbox"/> For RSC	<input type="checkbox"/> MISA	<input type="checkbox"/> Municipality							Standard TAT = 5-7 Working days for most tests.
<input type="checkbox"/> Table			<input type="checkbox"/> PWQO	<input type="checkbox"/> Reg 406 Table							Please note: Standard TAT for certain tests such as BOD and Dissolved Oxygen are > 5 days - contact your Project Manager for details.
			<input type="checkbox"/> Other								Job Specific Rush TAT (if applies to entire submission):
Include Criteria on Certificate of Analysis (Y/N)?											Date Required: _____ Time Required: _____
Sample Barcode Label	Sample (Location) Identification	Date Sampled	Time Sampled	Matrix							Rush Confirmation Number: _____ (call lab for #)
1	15A	June 16/21	AM	GW	Y						# of Bottles: 13
2	15B	↓	AM	GW	Y						Comments: 13
3	9	June 9/21	AM	GW	Y						13
4	10	↓	AM	GW	Y						13
5	7	↓	AM	GW	Y						13
6											
7											
8											
9											
10											

* RELINQUISHED BY: (Signature/Print)		Date: (YY/MM/DD)	Time	RECEIVED BY: (Signature/Print)		Date: (YY/MM/DD)	Time	# Jars used and not submitted	Laboratory Use Only	
Andrew Shouldice		21/06/10	AM	DIPKA SINGH		22/06/10	15:37		Time Sensitive	Temperature (°C) on Receipt
									10/15/5	Custody Seal Present
										Intact
										White: BV Labs Yellow: Client

* UNLESS OTHERWISE AGREED TO IN WRITING, WORK SUBMITTED ON THIS CHAIN OF CUSTODY IS SUBJECT TO BV LABS' STANDARD TERMS AND CONDITIONS. SIGNING OF THIS CHAIN OF CUSTODY DOCUMENT IS ACKNOWLEDGMENT AND ACCEPTANCE OF OUR TERMS WHICH ARE AVAILABLE FOR VIEWING AT WWW.BVLABS.COM/TERMS-AND-CONDITIONS.

* IT IS THE RESPONSIBILITY OF THE RELINQUISHER TO ENSURE THE ACCURACY OF THE CHAIN OF CUSTODY RECORD. AN INCOMPLETE CHAIN OF CUSTODY MAY RESULT IN ANALYTICAL TAT DELAYS.

** SAMPLE CONTAINER, PRESERVATION, HOLD TIME AND PACKAGE INFORMATION CAN BE VIEWED AT WWW.BVLABS.COM/RESOURCES/CHAIN-OF-CUSTODY-FORMS.

SAMPLES MUST BE KEPT COOL (1-10°C) FROM TIME OF SAMPLING UNTIL DELIVERY TO BV LABS

Bureau Veritas Canada (2018) Inc.

10/18/9 on 10



Your P.O. #: 2100310
 Your Project #: Wet/Dry Ground Water
 Site Location: JUNE GW
 Your C.O.C. #: 830940-02-01

Attention: Andrew Shouldice

City of Guelph
 Eastview Landfill
 186 Eastview Road
 Guelph, ON
 CANADA N1E 1Z6

Report Date: 2021/06/21
 Report #: R6685743
 Version: 1 - Final

CERTIFICATE OF ANALYSIS

BV LABS JOB #: C1G1210

Received: 2021/06/11, 15:57

Sample Matrix: Water
 # Samples Received: 5

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Analytical Method
ABN Compounds in Water by GC/MS	5	2021/06/18	2021/06/19	CAM SOP-00301	EPA 8270 m
Alkalinity	5	N/A	2021/06/15	CAM SOP-00448	SM 23 2320 B m
Biochemical Oxygen Demand (BOD)	5	2021/06/12	2021/06/17	CAM SOP-00427	SM 23 5210B m
Chloride by Automated Colourimetry	5	N/A	2021/06/15	CAM SOP-00463	SM 23 4500-Cl E m
Chemical Oxygen Demand	5	N/A	2021/06/15	CAM SOP-00416	SM 23 5220 D m
Conductivity	5	N/A	2021/06/15	CAM SOP-00414	SM 23 2510 m
Dissolved Metals by ICPMS	5	N/A	2021/06/14	CAM SOP-00447	EPA 6020B m
Total Metals Analysis by ICP	5	2021/06/15	2021/06/15	CAM SOP-00408	EPA 6010D m
Total Ammonia-N	5	N/A	2021/06/15	CAM SOP-00441	USGS I-2522-90 m
Nitrate (NO ₃) and Nitrite (NO ₂) in Water (1)	5	N/A	2021/06/15	CAM SOP-00440	SM 23 4500-NO ₃ I/NO ₂ B
pH	5	2021/06/14	2021/06/15	CAM SOP-00413	SM 4500H+ B m
Phenols (4AAP)	5	N/A	2021/06/14	CAM SOP-00444	OMOE E3179 m
Sulphate by Automated Colourimetry	5	N/A	2021/06/15	CAM SOP-00464	EPA 375.4 m
Total Kjeldahl Nitrogen in Water	4	2021/06/14	2021/06/15	CAM SOP-00938	OMOE E3516 m
Total Kjeldahl Nitrogen in Water	1	2021/06/14	2021/06/16	CAM SOP-00938	OMOE E3516 m
Total Phosphorus (Colourimetric)	2	2021/06/15	2021/06/15	CAM SOP-00407	SM 23 4500 P B H m
Total Phosphorus (Colourimetric)	3	2021/06/15	2021/06/16	CAM SOP-00407	SM 23 4500 P B H m
Volatile Organic Compounds in Water	5	N/A	2021/06/16	CAM SOP-00226	EPA 8260C m
Non-Routine Volatile Organic Compounds	5	N/A	2021/06/16	CAM SOP-00226	EPA 8260 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, MELCC, EPA, APHA.

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



Your P.O. #: 2100310
Your Project #: Wet/Dry Ground Water
Site Location: JUNE GW
Your C.O.C. #: 830940-02-01

Attention: Andrew Shouldice

City of Guelph
Eastview Landfill
186 Eastview Road
Guelph, ON
CANADA N1E 1Z6

Report Date: 2021/06/21
Report #: R6685743
Version: 1 - Final

CERTIFICATE OF ANALYSIS

BV LABS JOB #: C1G1210

Received: 2021/06/11, 15:57

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.

Encryption Key

Hongmei Zhao (Grace)
Project Manager
21 Jun 2021 15:24:39

Please direct all questions regarding this Certificate of Analysis to your Project Manager.

James Aspin, Senior Project Manager
Email: James.Aspin@bureauveritas.com
Phone# (905)817-5771

=====

BV Labs 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 Signature Page.



BUREAU
VERITAS

BV Labs Job #: C1G1210
Report Date: 2021/06/21

City of Guelph
Client Project #: Wet/Dry Ground Water
Site Location: JUNE GW
Your P.O. #: 2100310
Sampler Initials: AS

RESULTS OF ANALYSES OF WATER

BV Labs ID				PUX030			
Sampling Date				2021/06/10			
COC Number				830940-02-01			
	UNITS	Criteria	Criteria C	21A	RDL	MDL	QC Batch
Inorganics							
Total Ammonia-N	mg/L	-	-	ND	0.050	0.0080	7406960
Total BOD	mg/L	-	-	ND	2	0.4	7404553
Total Chemical Oxygen Demand (COD)	mg/L	-	-	5.9	4.0	3.6	7407001
Conductivity	umho/cm	-	-	600	1.0	0.20	7406808
Total Kjeldahl Nitrogen (TKN)	mg/L	-	-	0.20	0.10	0.060	7406992
pH	pH	-	6.5:8.5	7.90			7406834
Phenols-4AAP	mg/L	-	-	ND	0.0010	0.00030	7405652
Total Phosphorus	mg/L	-	-	ND	0.020	0.0030	7408028
Dissolved Sulphate (SO ₄)	mg/L	-	500	17	1.0	0.10	7406519
Alkalinity (Total as CaCO ₃)	mg/L	-	30-500	280	1.0	0.20	7406819
Dissolved Chloride (Cl ⁻)	mg/L	-	250	17	1.0	0.30	7406511
Nitrite (N)	mg/L	1	-	ND	0.010	0.0020	7407235
Nitrate (N)	mg/L	10	-	0.83	0.10	0.010	7407235
Nitrate + Nitrite (N)	mg/L	10	-	0.83	0.10	0.010	7407235
RDL = Reportable Detection Limit QC Batch = Quality Control Batch Criteria, Criteria C: Ontario Regulation 169/03 Criteria A = Maximum Acceptable Criteria B = Interim Maximum Criteria C = Chemical/Physical Objectives [A/O] (Made under the Ontario Safe Drinking Water Act, 2002) ND = Not detected							



BUREAU
VERITAS

BV Labs Job #: C1G1210
Report Date: 2021/06/21

City of Guelph
Client Project #: Wet/Dry Ground Water
Site Location: JUNE GW
Your P.O. #: 2100310
Sampler Initials: AS

RESULTS OF ANALYSES OF WATER

BV Labs ID				PUX030			
Sampling Date				2021/06/10			
COC Number				830940-02-01			
	UNITS	Criteria	Criteria C	21A Lab-Dup	RDL	MDL	QC Batch
Inorganics							
Total BOD	mg/L	-	-	ND	2	0.4	7404553
Nitrite (N)	mg/L	1	-	ND	0.010	0.0020	7407235
Nitrate (N)	mg/L	10	-	0.80	0.10	0.010	7407235
Nitrate + Nitrite (N)	mg/L	10	-	0.80	0.10	0.010	7407235
RDL = Reportable Detection Limit QC Batch = Quality Control Batch Lab-Dup = Laboratory Initiated Duplicate Criteria, Criteria C: Ontario Regulation 169/03 Criteria A = Maximum Acceptable Criteria B = Interim Maximum Criteria C = Chemical/Physical Objectives [A/O] (Made under the Ontario Safe Drinking Water Act, 2002) ND = Not detected							



BUREAU
VERITAS

BV Labs Job #: C1G1210
Report Date: 2021/06/21

City of Guelph
Client Project #: Wet/Dry Ground Water
Site Location: JUNE GW
Your P.O. #: 2100310
Sampler Initials: AS

RESULTS OF ANALYSES OF WATER

BV Labs ID				PUX031			
Sampling Date				2021/06/10			
COC Number				830940-02-01			
	UNITS	Criteria	Criteria C	18A	RDL	MDL	QC Batch
Inorganics							
Total Ammonia-N	mg/L	-	-	0.14	0.050	0.0080	7406960
Total BOD	mg/L	-	-	ND	2	0.4	7404553
Total Chemical Oxygen Demand (COD)	mg/L	-	-	15	4.0	3.6	7407001
Conductivity	umho/cm	-	-	1900	1.0	0.20	7406808
Total Kjeldahl Nitrogen (TKN)	mg/L	-	-	0.23	0.10	0.060	7406992
pH	pH	-	6.5:8.5	8.18			7406834
Phenols-4AAP	mg/L	-	-	ND	0.0010	0.00030	7405652
Total Phosphorus	mg/L	-	-	1.5	0.10	0.015	7408028
Dissolved Sulphate (SO ₄)	mg/L	-	500	23	1.0	0.10	7406519
Alkalinity (Total as CaCO ₃)	mg/L	-	30-500	260	1.0	0.20	7406819
Dissolved Chloride (Cl ⁻)	mg/L	-	250	420	5.0	1.5	7406511
Nitrite (N)	mg/L	1	-	ND	0.010	0.0020	7407244
Nitrate (N)	mg/L	10	-	ND	0.10	0.010	7407244
Nitrate + Nitrite (N)	mg/L	10	-	ND	0.10	0.010	7407244
RDL = Reportable Detection Limit QC Batch = Quality Control Batch Criteria, Criteria C: Ontario Regulation 169/03 Criteria A = Maximum Acceptable Criteria B = Interim Maximum Criteria C = Chemical/Physical Objectives [A/O] (Made under the Ontario Safe Drinking Water Act, 2002) ND = Not detected							



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VERITAS

BV Labs Job #: C1G1210
Report Date: 2021/06/21

City of Guelph
Client Project #: Wet/Dry Ground Water
Site Location: JUNE GW
Your P.O. #: 2100310
Sampler Initials: AS

RESULTS OF ANALYSES OF WATER

BV Labs ID				PUX032			
Sampling Date				2021/06/10			
COC Number				830940-02-01			
	UNITS	Criteria	Criteria C	18B	RDL	MDL	QC Batch
Inorganics							
Total Ammonia-N	mg/L	-	-	ND	0.050	0.0080	7406960
Total BOD	mg/L	-	-	ND	2	0.4	7404553
Total Chemical Oxygen Demand (COD)	mg/L	-	-	ND	4.0	3.6	7407001
Conductivity	umho/cm	-	-	630	1.0	0.20	7406808
Total Kjeldahl Nitrogen (TKN)	mg/L	-	-	ND (1)	0.20	0.12	7406992
pH	pH	-	6.5:8.5	8.06			7406834
Phenols-4AAP	mg/L	-	-	ND	0.0010	0.00030	7405670
Total Phosphorus	mg/L	-	-	ND	0.020	0.0030	7408028
Dissolved Sulphate (SO ₄)	mg/L	-	500	38	1.0	0.10	7406519
Alkalinity (Total as CaCO ₃)	mg/L	-	30-500	250	1.0	0.20	7406819
Dissolved Chloride (Cl ⁻)	mg/L	-	250	21	1.0	0.30	7406511
Nitrite (N)	mg/L	1	-	ND	0.010	0.0020	7407257
Nitrate (N)	mg/L	10	-	4.87	0.10	0.010	7407257
Nitrate + Nitrite (N)	mg/L	10	-	4.87	0.10	0.010	7407257
RDL = Reportable Detection Limit							
QC Batch = Quality Control Batch							
Criteria, Criteria C: Ontario Regulation 169/03							
Criteria A = Maximum Acceptable							
Criteria B = Interim Maximum							
Criteria C = Chemical/Physical Objectives [A/O]							
(Made under the Ontario Safe Drinking Water Act, 2002)							
ND = Not detected							
(1) Due to a high concentration of NO _x , the sample required dilution. The detection limit was adjusted accordingly.							



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VERITAS

BV Labs Job #: C1G1210
Report Date: 2021/06/21

City of Guelph
Client Project #: Wet/Dry Ground Water
Site Location: JUNE GW
Your P.O. #: 2100310
Sampler Initials: AS

RESULTS OF ANALYSES OF WATER

BV Labs ID				PUX033		PUX034			
Sampling Date				2021/06/11		2021/06/11			
COC Number				830940-02-01		830940-02-01			
	UNITS	Criteria	Criteria C	6A	QC Batch	6B	RDL	MDL	QC Batch
Inorganics									
Total Ammonia-N	mg/L	-	-	ND	7406960	ND	0.050	0.0080	7406960
Total BOD	mg/L	-	-	ND	7404553	ND	2	0.4	7404553
Total Chemical Oxygen Demand (COD)	mg/L	-	-	ND	7407001	ND	4.0	3.6	7407001
Conductivity	umho/cm	-	-	1200	7406808	1000	1.0	0.20	7406808
Total Kjeldahl Nitrogen (TKN)	mg/L	-	-	0.15	7406992	0.20	0.10	0.060	7406992
pH	pH	-	6.5:8.5	7.93	7406834	7.94			7406834
Phenols-4AAP	mg/L	-	-	ND	7405670	ND	0.0010	0.00030	7405670
Total Phosphorus	mg/L	-	-	ND	7408039	ND	0.020	0.0030	7408039
Dissolved Sulphate (SO ₄)	mg/L	-	500	54	7406519	43	1.0	0.10	7406519
Alkalinity (Total as CaCO ₃)	mg/L	-	30-500	270	7406819	260	1.0	0.20	7406819
Dissolved Chloride (Cl ⁻)	mg/L	-	250	160	7406511	130	2.0	0.60	7406511
Nitrite (N)	mg/L	1	-	ND	7407244	ND	0.010	0.0020	7407235
Nitrate (N)	mg/L	10	-	1.57	7407244	1.49	0.10	0.010	7407235
Nitrate + Nitrite (N)	mg/L	10	-	1.57	7407244	1.49	0.10	0.010	7407235
RDL = Reportable Detection Limit QC Batch = Quality Control Batch Criteria, Criteria C: Ontario Regulation 169/03 Criteria A = Maximum Acceptable Criteria B = Interim Maximum Criteria C = Chemical/Physical Objectives [A/O] (Made under the Ontario Safe Drinking Water Act, 2002) ND = Not detected									



BUREAU
VERITAS

BV Labs Job #: C1G1210
Report Date: 2021/06/21

City of Guelph
Client Project #: Wet/Dry Ground Water
Site Location: JUNE GW
Your P.O. #: 2100310
Sampler Initials: AS

ELEMENTS BY ATOMIC SPECTROSCOPY (WATER)

BV Labs ID					PUX030	PUX031	PUX032	PUX033			
Sampling Date					2021/06/10	2021/06/10	2021/06/10	2021/06/11			
COC Number					830940-02-01	830940-02-01	830940-02-01	830940-02-01			
	UNITS	Criteria	Criteria B	Criteria C	21A	18A	18B	6A	RDL	MDL	QC Batch

Metals

Total Iron (Fe)	mg/L	-	-	0.3	0.15	53	ND	0.03	0.02	0.004	7407976
Dissolved Boron (B)	ug/L	-	5000	-	20	16	ND	24	10	10	7405074
Dissolved Calcium (Ca)	ug/L	-	-	-	74000	50000	86000	100000	200	200	7405074
Dissolved Magnesium (Mg)	ug/L	-	-	-	24000	8300	30000	25000	50	50	7405074
Dissolved Phosphorus (P)	ug/L	-	-	-	ND	ND	ND	ND	100	50	7405074
Dissolved Potassium (K)	ug/L	-	-	-	1100	4700	1100	1800	200	200	7405074
Dissolved Sodium (Na)	ug/L	20000	-	200000	15000	330000	4900	99000	100	100	7405074
Dissolved Zinc (Zn)	ug/L	-	-	5000	360	9.6	440	21	5.0	5.0	7405074

RDL = Reportable Detection Limit

QC Batch = Quality Control Batch

Criteria, Criteria B, Criteria C: Ontario Regulation 169/03

Criteria A = Maximum Acceptable

Criteria B = Interim Maximum

Criteria C = Chemical/Physical Objectives [A/O]

(Made under the Ontario Safe Drinking Water Act, 2002)

ND = Not detected



BUREAU
VERITAS

BV Labs Job #: C1G1210
Report Date: 2021/06/21

City of Guelph
Client Project #: Wet/Dry Ground Water
Site Location: JUNE GW
Your P.O. #: 2100310
Sampler Initials: AS

ELEMENTS BY ATOMIC SPECTROSCOPY (WATER)

BV Labs ID					PUX034			
Sampling Date					2021/06/11			
COC Number					830940-02-01			
	UNITS	Criteria	Criteria B	Criteria C	6B	RDL	MDL	QC Batch
Metals								
Total Iron (Fe)	mg/L	-	-	0.3	0.09	0.02	0.004	7407976
Dissolved Boron (B)	ug/L	-	5000	-	21	10	10	7405074
Dissolved Calcium (Ca)	ug/L	-	-	-	84000	200	200	7405074
Dissolved Magnesium (Mg)	ug/L	-	-	-	20000	50	50	7405074
Dissolved Phosphorus (P)	ug/L	-	-	-	ND	100	50	7405074
Dissolved Potassium (K)	ug/L	-	-	-	2700	200	200	7405074
Dissolved Sodium (Na)	ug/L	20000	-	200000	99000	100	100	7405074
Dissolved Zinc (Zn)	ug/L	-	-	5000	40	5.0	5.0	7405074
RDL = Reportable Detection Limit QC Batch = Quality Control Batch Criteria, Criteria B, Criteria C: Ontario Regulation 169/03 Criteria A = Maximum Acceptable Criteria B = Interim Maximum Criteria C = Chemical/Physical Objectives [A/O] (Made under the Ontario Safe Drinking Water Act, 2002) ND = Not detected								

BUREAU
VERITAS

BV Labs Job #: C1G1210

Report Date: 2021/06/21

City of Guelph

Client Project #: Wet/Dry Ground Water

Site Location: JUNE GW

Your P.O. #: 2100310

Sampler Initials: AS

SEMI-VOLATILE ORGANICS BY GC-MS (WATER)

BV Labs ID			PUX030	PUX031	PUX032	PUX033			
Sampling Date			2021/06/10	2021/06/10	2021/06/10	2021/06/11			
COC Number			830940-02-01	830940-02-01	830940-02-01	830940-02-01			
	UNITS	Criteria	21A	18A	18B	6A	RDL	MDL	QC Batch

Semivolatile Organics

Acenaphthene	ug/L	-	ND	ND	ND	ND	0.20	0.050	7415713
Acenaphthylene	ug/L	-	ND	ND	ND	ND	0.20	0.050	7415713
Anthracene	ug/L	-	ND	ND	ND	ND	0.20	0.050	7415713
Benzo(a)anthracene	ug/L	-	ND	ND	ND	ND	0.20	0.050	7415713
Benzo(a)pyrene	ug/L	0.01	ND (1)	ND (1)	ND (1)	ND (1)	0.20	0.050	7415713
Benzo(b,j)fluoranthene	ug/L	-	ND	ND	ND	ND	0.20	0.10	7415713
Benzo(g,h,i)perylene	ug/L	-	ND	ND	ND	ND	0.20	0.050	7415713
Benzo(k)fluoranthene	ug/L	-	ND	ND	ND	ND	0.20	0.050	7415713
1-Chloronaphthalene	ug/L	-	ND	ND	ND	ND	1.0	0.10	7415713
2-Chloronaphthalene	ug/L	-	ND	ND	ND	ND	0.50	0.050	7415713
Chrysene	ug/L	-	ND	ND	ND	ND	0.20	0.050	7415713
Dibenzo(a,h)anthracene	ug/L	-	ND	ND	ND	ND	0.20	0.050	7415713
Fluoranthene	ug/L	-	ND	ND	ND	ND	0.20	0.050	7415713
Fluorene	ug/L	-	ND	ND	ND	ND	0.20	0.10	7415713
Indeno(1,2,3-cd)pyrene	ug/L	-	ND	ND	ND	ND	0.20	0.050	7415713
1-Methylnaphthalene	ug/L	-	ND	ND	ND	ND	0.20	0.10	7415713
2-Methylnaphthalene	ug/L	-	ND	ND	ND	ND	0.20	0.10	7415713
Naphthalene	ug/L	-	ND	ND	ND	ND	0.20	0.10	7415713
5-Nitroacenaphthene	ug/L	-	ND	ND	ND	ND	1.0	0.10	7415713
Perylene	ug/L	-	ND	ND	ND	ND	0.20	0.10	7415713
Phenanthrene	ug/L	-	ND	ND	ND	ND	0.20	0.050	7415713
Pyrene	ug/L	-	ND	ND	ND	ND	0.20	0.050	7415713
2-Chlorophenol	ug/L	-	ND	ND	ND	ND	0.30	0.10	7415713
4-Chloro-3-Methylphenol	ug/L	-	ND	ND	ND	ND	0.50	0.10	7415713
m/p-Cresol	ug/L	-	ND	ND	ND	ND	0.50	0.20	7415713
o-Cresol	ug/L	-	ND	ND	ND	ND	0.50	0.10	7415713
2,4-Dichlorophenol	ug/L	900	ND	ND	ND	ND	0.30	0.10	7415713
2,6-Dichlorophenol	ug/L	-	ND	ND	ND	ND	0.50	0.20	7415713

RDL = Reportable Detection Limit

QC Batch = Quality Control Batch

Criteria: Ontario Regulation 169/03

Criteria A = Maximum Acceptable

Criteria B = Interim Maximum

Criteria C = Chemical/Physical Objectives [A/O]

(Made under the Ontario Safe Drinking Water Act, 2002)

ND = Not detected

(1) RDL exceeds criteria



BV Labs Job #: C1G1210
Report Date: 2021/06/21

City of Guelph
Client Project #: Wet/Dry Ground Water
Site Location: JUNE GW
Your P.O. #: 2100310
Sampler Initials: AS

SEMI-VOLATILE ORGANICS BY GC-MS (WATER)

BV Labs ID			PUX030	PUX031	PUX032	PUX033			
Sampling Date			2021/06/10	2021/06/10	2021/06/10	2021/06/11			
COC Number			830940-02-01	830940-02-01	830940-02-01	830940-02-01			
	UNITS	Criteria	21A	18A	18B	6A	RDL	MDL	QC Batch
2,4-Dimethylphenol	ug/L	-	ND	ND	ND	ND	0.50	0.10	7415713
2,4-Dinitrophenol	ug/L	-	ND	ND	ND	ND	2.0	0.20	7415713
4,6-Dinitro-2-methylphenol	ug/L	-	ND	ND	ND	ND	2.0	0.50	7415713
4-Nitrophenol	ug/L	-	ND	ND	ND	ND	1.4	0.10	7415713
Pentachlorophenol	ug/L	60	ND	ND	ND	ND	1.0	0.20	7415713
Phenol	ug/L	-	ND	ND	ND	ND	0.50	0.10	7415713
2,3,4,5-Tetrachlorophenol	ug/L	-	ND	ND	ND	ND	0.40	0.10	7415713
2,3,4,6-Tetrachlorophenol	ug/L	100	ND	ND	ND	ND	0.50	0.20	7415713
2,3,5,6-Tetrachlorophenol	ug/L	-	ND	ND	ND	ND	0.50	0.20	7415713
2,3,4-Trichlorophenol	ug/L	-	ND	ND	ND	ND	0.50	0.10	7415713
2,3,5-Trichlorophenol	ug/L	-	ND	ND	ND	ND	0.50	0.10	7415713
2,4,5-Trichlorophenol	ug/L	-	ND	ND	ND	ND	0.50	0.20	7415713
2,4,6-Trichlorophenol	ug/L	5	ND	ND	ND	ND	0.50	0.10	7415713
Benzyl butyl phthalate	ug/L	-	ND	ND	ND	ND	0.50	0.10	7415713
Biphenyl	ug/L	-	ND	ND	ND	ND	0.50	0.10	7415713
Bis(2-chloroethyl)ether	ug/L	-	ND	ND	ND	ND	0.50	0.10	7415713
Bis(2-chloroethoxy)methane	ug/L	-	ND	ND	ND	ND	0.50	0.10	7415713
Bis(2-chloroisopropyl)ether	ug/L	-	ND	ND	ND	ND	0.50	0.10	7415713
Bis(2-ethylhexyl)phthalate	ug/L	-	ND	ND	ND	ND	2.0	0.10	7415713
4-Bromophenyl phenyl ether	ug/L	-	ND	ND	ND	ND	0.30	0.10	7415713
Camphene	ug/L	-	ND	ND	ND	ND	1.0	0.10	7415713
4-Chlorophenyl phenyl ether	ug/L	-	ND	ND	ND	ND	0.50	0.10	7415713
Di-N-butyl phthalate	ug/L	-	ND	ND	ND	ND	2.0	0.10	7415713
di-n-octyl phthalate	ug/L	-	ND	ND	ND	ND	0.80	0.10	7415713
2,4-Dinitrotoluene	ug/L	-	ND	ND	ND	ND	0.50	0.10	7415713
2,6-Dinitrotoluene	ug/L	-	ND	ND	ND	ND	0.50	0.10	7415713
Diphenyl Ether	ug/L	-	ND	ND	ND	ND	0.30	0.10	7415713
Indole	ug/L	-	ND	ND	ND	ND	1.0	0.20	7415713
Nitrosodiphenylamine/Diphenylamine	ug/L	-	ND	ND	ND	ND	1.0	0.10	7415713

RDL = Reportable Detection Limit

QC Batch = Quality Control Batch

Criteria: Ontario Regulation 169/03

Criteria A = Maximum Acceptable

Criteria B = Interim Maximum

Criteria C = Chemical/Physical Objectives [A/O]

(Made under the Ontario Safe Drinking Water Act, 2002)

ND = Not detected



BUREAU
VERITAS

BV Labs Job #: C1G1210
Report Date: 2021/06/21

City of Guelph
Client Project #: Wet/Dry Ground Water
Site Location: JUNE GW
Your P.O. #: 2100310
Sampler Initials: AS

SEMI-VOLATILE ORGANICS BY GC-MS (WATER)

BV Labs ID			PUX030	PUX031	PUX032	PUX033			
Sampling Date			2021/06/10	2021/06/10	2021/06/10	2021/06/11			
COC Number			830940-02-01	830940-02-01	830940-02-01	830940-02-01			
	UNITS	Criteria	21A	18A	18B	6A	RDL	MDL	QC Batch
N-Nitroso-di-n-propylamine	ug/L	-	ND	ND	ND	ND	0.50	0.10	7415713
Surrogate Recovery (%)									
2,4,6-Tribromophenol	%	-	91	101	107	95			7415713
2-Fluorobiphenyl	%	-	81	65	80	81			7415713
2-Fluorophenol	%	-	40	24	36	37			7415713
D14-Terphenyl	%	-	87	74	83	88			7415713
D5-Nitrobenzene	%	-	96	64	93	95			7415713
D5-Phenol	%	-	25	19	25	24			7415713
RDL = Reportable Detection Limit QC Batch = Quality Control Batch Criteria: Ontario Regulation 169/03 Criteria A = Maximum Acceptable Criteria B = Interim Maximum Criteria C = Chemical/Physical Objectives [A/O] (Made under the Ontario Safe Drinking Water Act, 2002) ND = Not detected									



BUREAU
VERITAS

BV Labs Job #: C1G1210
Report Date: 2021/06/21

City of Guelph
Client Project #: Wet/Dry Ground Water
Site Location: JUNE GW
Your P.O. #: 2100310
Sampler Initials: AS

SEMI-VOLATILE ORGANICS BY GC-MS (WATER)

BV Labs ID			PUX034			
Sampling Date			2021/06/11			
COC Number			830940-02-01			
	UNITS	Criteria	6B	RDL	MDL	QC Batch
Semivolatile Organics						
Acenaphthene	ug/L	-	ND	0.20	0.050	7415713
Acenaphthylene	ug/L	-	ND	0.20	0.050	7415713
Anthracene	ug/L	-	ND	0.20	0.050	7415713
Benzo(a)anthracene	ug/L	-	ND	0.20	0.050	7415713
Benzo(a)pyrene	ug/L	0.01	ND (1)	0.20	0.050	7415713
Benzo(b,j)fluoranthene	ug/L	-	ND	0.20	0.10	7415713
Benzo(g,h,i)perylene	ug/L	-	ND	0.20	0.050	7415713
Benzo(k)fluoranthene	ug/L	-	ND	0.20	0.050	7415713
1-Chloronaphthalene	ug/L	-	ND	1.0	0.10	7415713
2-Chloronaphthalene	ug/L	-	ND	0.50	0.050	7415713
Chrysene	ug/L	-	ND	0.20	0.050	7415713
Dibenzo(a,h)anthracene	ug/L	-	ND	0.20	0.050	7415713
Fluoranthene	ug/L	-	ND	0.20	0.050	7415713
Fluorene	ug/L	-	ND	0.20	0.10	7415713
Indeno(1,2,3-cd)pyrene	ug/L	-	ND	0.20	0.050	7415713
1-Methylnaphthalene	ug/L	-	ND	0.20	0.10	7415713
2-Methylnaphthalene	ug/L	-	ND	0.20	0.10	7415713
Naphthalene	ug/L	-	ND	0.20	0.10	7415713
5-Nitroacenaphthene	ug/L	-	ND	1.0	0.10	7415713
Perylene	ug/L	-	ND	0.20	0.10	7415713
Phenanthrene	ug/L	-	ND	0.20	0.050	7415713
Pyrene	ug/L	-	ND	0.20	0.050	7415713
2-Chlorophenol	ug/L	-	ND	0.30	0.10	7415713
4-Chloro-3-Methylphenol	ug/L	-	ND	0.50	0.10	7415713
m/p-Cresol	ug/L	-	ND	0.50	0.20	7415713
o-Cresol	ug/L	-	ND	0.50	0.10	7415713
2,4-Dichlorophenol	ug/L	900	ND	0.30	0.10	7415713
2,6-Dichlorophenol	ug/L	-	ND	0.50	0.20	7415713
RDL = Reportable Detection Limit QC Batch = Quality Control Batch Criteria: Ontario Regulation 169/03 Criteria A = Maximum Acceptable Criteria B = Interim Maximum Criteria C = Chemical/Physical Objectives [A/O] (Made under the Ontario Safe Drinking Water Act, 2002) ND = Not detected (1) RDL exceeds criteria						



BV Labs Job #: C1G1210
Report Date: 2021/06/21

City of Guelph
Client Project #: Wet/Dry Ground Water
Site Location: JUNE GW
Your P.O. #: 2100310
Sampler Initials: AS

SEMI-VOLATILE ORGANICS BY GC-MS (WATER)

BV Labs ID			PUX034			
Sampling Date			2021/06/11			
COC Number			830940-02-01			
	UNITS	Criteria	6B	RDL	MDL	QC Batch
2,4-Dimethylphenol	ug/L	-	ND	0.50	0.10	7415713
2,4-Dinitrophenol	ug/L	-	ND	2.0	0.20	7415713
4,6-Dinitro-2-methylphenol	ug/L	-	ND	2.0	0.50	7415713
4-Nitrophenol	ug/L	-	ND	1.4	0.10	7415713
Pentachlorophenol	ug/L	60	ND	1.0	0.20	7415713
Phenol	ug/L	-	ND	0.50	0.10	7415713
2,3,4,5-Tetrachlorophenol	ug/L	-	ND	0.40	0.10	7415713
2,3,4,6-Tetrachlorophenol	ug/L	100	ND	0.50	0.20	7415713
2,3,5,6-Tetrachlorophenol	ug/L	-	ND	0.50	0.20	7415713
2,3,4-Trichlorophenol	ug/L	-	ND	0.50	0.10	7415713
2,3,5-Trichlorophenol	ug/L	-	ND	0.50	0.10	7415713
2,4,5-Trichlorophenol	ug/L	-	ND	0.50	0.20	7415713
2,4,6-Trichlorophenol	ug/L	5	ND	0.50	0.10	7415713
Benzyl butyl phthalate	ug/L	-	ND	0.50	0.10	7415713
Biphenyl	ug/L	-	ND	0.50	0.10	7415713
Bis(2-chloroethyl)ether	ug/L	-	ND	0.50	0.10	7415713
Bis(2-chloroethoxy)methane	ug/L	-	ND	0.50	0.10	7415713
Bis(2-chloroisopropyl)ether	ug/L	-	ND	0.50	0.10	7415713
Bis(2-ethylhexyl)phthalate	ug/L	-	ND	2.0	0.10	7415713
4-Bromophenyl phenyl ether	ug/L	-	ND	0.30	0.10	7415713
Camphene	ug/L	-	ND	1.0	0.10	7415713
4-Chlorophenyl phenyl ether	ug/L	-	ND	0.50	0.10	7415713
Di-N-butyl phthalate	ug/L	-	ND	2.0	0.10	7415713
di-n-octyl phthalate	ug/L	-	ND	0.80	0.10	7415713
2,4-Dinitrotoluene	ug/L	-	ND	0.50	0.10	7415713
2,6-Dinitrotoluene	ug/L	-	ND	0.50	0.10	7415713
Diphenyl Ether	ug/L	-	ND	0.30	0.10	7415713
Indole	ug/L	-	ND	1.0	0.20	7415713
Nitrosodiphenylamine/Diphenylamine	ug/L	-	ND	1.0	0.10	7415713
RDL = Reportable Detection Limit QC Batch = Quality Control Batch Criteria: Ontario Regulation 169/03 Criteria A = Maximum Acceptable Criteria B = Interim Maximum Criteria C = Chemical/Physical Objectives [A/O] (Made under the Ontario Safe Drinking Water Act, 2002) ND = Not detected						



BUREAU
VERITAS

BV Labs Job #: C1G1210
Report Date: 2021/06/21

City of Guelph
Client Project #: Wet/Dry Ground Water
Site Location: JUNE GW
Your P.O. #: 2100310
Sampler Initials: AS

SEMI-VOLATILE ORGANICS BY GC-MS (WATER)

BV Labs ID			PUX034			
Sampling Date			2021/06/11			
COC Number			830940-02-01			
	UNITS	Criteria	6B	RDL	MDL	QC Batch
N-Nitroso-di-n-propylamine	ug/L	-	ND	0.50	0.10	7415713
Surrogate Recovery (%)						
2,4,6-Tribromophenol	%	-	101			7415713
2-Fluorobiphenyl	%	-	80			7415713
2-Fluorophenol	%	-	38			7415713
D14-Terphenyl	%	-	85			7415713
D5-Nitrobenzene	%	-	97			7415713
D5-Phenol	%	-	24			7415713
RDL = Reportable Detection Limit QC Batch = Quality Control Batch Criteria: Ontario Regulation 169/03 Criteria A = Maximum Acceptable Criteria B = Interim Maximum Criteria C = Chemical/Physical Objectives [A/O] (Made under the Ontario Safe Drinking Water Act, 2002) ND = Not detected						



BV Labs Job #: C1G1210
Report Date: 2021/06/21

City of Guelph
Client Project #: Wet/Dry Ground Water
Site Location: JUNE GW
Your P.O. #: 2100310
Sampler Initials: AS

VOLATILE ORGANICS BY GC/MS (WATER)

BV Labs ID					PUX030	PUX031	PUX031			
Sampling Date					2021/06/10	2021/06/10	2021/06/10			
COC Number					830940-02-01	830940-02-01	830940-02-01			
	UNITS	Criteria	Criteria B	Criteria C	21A	18A	18A Lab-Dup	RDL	MDL	QC Batch

Volatile Organics										
Acetone (2-Propanone)	ug/L	-	-	-	ND	ND	ND	10	1.0	7404664
Benzene	ug/L	5	-	-	ND	ND	ND	0.10	0.020	7404664
Bromodichloromethane	ug/L	-	-	-	ND	ND	ND	0.10	0.050	7404664
Acrolein	ug/L	-	-	-	ND	ND	ND	10	N/A	7405394
Bromoform	ug/L	-	-	-	ND	ND	ND	0.20	0.10	7404664
Bromomethane	ug/L	-	-	-	ND	ND	ND	0.50	0.10	7404664
Carbon Tetrachloride	ug/L	5	-	-	ND	ND	ND	0.10	0.050	7404664
Chlorobenzene	ug/L	80	-	-	ND	ND	ND	0.10	0.010	7404664
Chloroform	ug/L	-	-	-	ND	ND	ND	0.10	0.050	7404664
Acrylonitrile	ug/L	-	-	-	ND	ND	ND	5.0	N/A	7405394
Chloromethane	ug/L	-	-	-	ND	ND	ND	0.50	0.050	7404664
Dibromochloromethane	ug/L	-	-	-	ND	ND	ND	0.20	0.050	7404664
1,2-Dichlorobenzene	ug/L	200	-	-	ND	ND	ND	0.20	0.050	7404664
1,3-Dichlorobenzene	ug/L	-	-	-	ND	ND	ND	0.20	0.050	7404664
1,4-Dichlorobenzene	ug/L	5	-	-	ND	ND	ND	0.20	0.050	7404664
1,1-Dichloroethane	ug/L	-	-	-	ND	ND	ND	0.10	0.050	7404664
1,2-Dichloroethane	ug/L	-	5	-	ND	ND	ND	0.20	0.050	7404664
1,1-Dichloroethylene	ug/L	14	-	-	ND	ND	ND	0.10	0.050	7404664
cis-1,2-Dichloroethylene	ug/L	-	-	-	ND	ND	ND	0.10	0.050	7404664
trans-1,2-Dichloroethylene	ug/L	-	-	-	ND	ND	ND	0.10	0.050	7404664
1,2-Dichloropropane	ug/L	-	-	-	ND	ND	ND	0.10	0.050	7404664
cis-1,3-Dichloropropene	ug/L	-	-	-	ND	ND	ND	0.20	0.050	7404664
trans-1,3-Dichloropropene	ug/L	-	-	-	ND	ND	ND	0.20	0.050	7404664
Ethylbenzene	ug/L	-	-	2.4	ND	ND	ND	0.10	0.010	7404664
Ethylene Dibromide	ug/L	-	-	-	ND	ND	ND	0.20	0.050	7404664
Methylene Chloride(Dichloromethane)	ug/L	50	-	-	ND	ND	ND	0.50	0.10	7404664
Methyl Ethyl Ketone (2-Butanone)	ug/L	-	-	-	ND	ND	ND	5.0	0.50	7404664

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
Lab-Dup = Laboratory Initiated Duplicate
Criteria, Criteria B, Criteria C: Ontario Regulation 169/03
Criteria A = Maximum Acceptable
Criteria B = Interim Maximum
Criteria C = Chemical/Physical Objectives [A/O]
(Made under the Ontario Safe Drinking Water Act, 2002)
ND = Not detected
N/A = Not Applicable



BV Labs Job #: C1G1210
Report Date: 2021/06/21

City of Guelph
Client Project #: Wet/Dry Ground Water
Site Location: JUNE GW
Your P.O. #: 2100310
Sampler Initials: AS

VOLATILE ORGANICS BY GC/MS (WATER)

BV Labs ID					PUX030	PUX031	PUX031			
Sampling Date					2021/06/10	2021/06/10	2021/06/10			
COC Number					830940-02-01	830940-02-01	830940-02-01			
	UNITS	Criteria	Criteria B	Criteria C	21A	18A	18A Lab-Dup	RDL	MDL	QC Batch
Methyl Isobutyl Ketone	ug/L	-	-	-	ND	ND	ND	5.0	0.10	7404664
Methyl t-butyl ether (MTBE)	ug/L	-	-	-	ND	ND	ND	0.20	0.050	7404664
Styrene	ug/L	-	-	-	ND	ND	ND	0.20	0.050	7404664
1,1,1,2-Tetrachloroethane	ug/L	-	-	-	ND	ND	ND	0.20	0.050	7404664
1,1,2,2-Tetrachloroethane	ug/L	-	-	-	ND	ND	ND	0.20	0.050	7404664
Tetrachloroethylene	ug/L	30	-	-	ND	ND	ND	0.10	0.050	7404664
Toluene	ug/L	-	-	24	ND	ND	ND	0.20	0.010	7404664
1,1,1-Trichloroethane	ug/L	-	-	-	ND	ND	ND	0.10	0.050	7404664
1,1,2-Trichloroethane	ug/L	-	-	-	ND	ND	ND	0.20	0.050	7404664
Trichloroethylene	ug/L	5	-	-	ND	ND	ND	0.10	0.050	7404664
Trichlorofluoromethane (FREON 11)	ug/L	-	-	-	ND	ND	ND	0.20	0.10	7404664
Vinyl Chloride	ug/L	2	-	-	ND	ND	ND	0.20	0.050	7404664
p+m-Xylene	ug/L	-	-	-	ND	0.16	0.15	0.10	0.010	7404664
o-Xylene	ug/L	-	-	-	ND	ND	ND	0.10	0.010	7404664
Total Xylenes	ug/L	-	-	300	ND	0.16	0.15	0.10	0.010	7404664
Surrogate Recovery (%)										
4-Bromofluorobenzene	%	-	-	-	102	102	100			7404664
D4-1,2-Dichloroethane	%	-	-	-	103	104	105			7404664
D8-Toluene	%	-	-	-	99	99	98			7404664
RDL = Reportable Detection Limit QC Batch = Quality Control Batch Lab-Dup = Laboratory Initiated Duplicate Criteria, Criteria B, Criteria C: Ontario Regulation 169/03 Criteria A = Maximum Acceptable Criteria B = Interim Maximum Criteria C = Chemical/Physical Objectives [A/O] (Made under the Ontario Safe Drinking Water Act, 2002) ND = Not detected										



BV Labs Job #: C1G1210
Report Date: 2021/06/21

City of Guelph
Client Project #: Wet/Dry Ground Water
Site Location: JUNE GW
Your P.O. #: 2100310
Sampler Initials: AS

VOLATILE ORGANICS BY GC/MS (WATER)

BV Labs ID					PUX032	PUX033	PUX034			
Sampling Date					2021/06/10	2021/06/11	2021/06/11			
COC Number					830940-02-01	830940-02-01	830940-02-01			
	UNITS	Criteria	Criteria B	Criteria C	18B	6A	6B	RDL	MDL	QC Batch

Volatile Organics										
Acetone (2-Propanone)	ug/L	-	-	-	ND	ND	ND	10	1.0	7404664
Benzene	ug/L	5	-	-	ND	ND	ND	0.10	0.020	7404664
Bromodichloromethane	ug/L	-	-	-	ND	1.7	ND	0.10	0.050	7404664
Acrolein	ug/L	-	-	-	ND	ND	ND	10	N/A	7405394
Bromoform	ug/L	-	-	-	ND	ND	ND	0.20	0.10	7404664
Bromomethane	ug/L	-	-	-	ND	ND	ND	0.50	0.10	7404664
Carbon Tetrachloride	ug/L	5	-	-	ND	ND	ND	0.10	0.050	7404664
Chlorobenzene	ug/L	80	-	-	ND	ND	ND	0.10	0.010	7404664
Chloroform	ug/L	-	-	-	ND	8.3	3.0	0.10	0.050	7404664
Acrylonitrile	ug/L	-	-	-	ND	ND	ND	5.0	N/A	7405394
Chloromethane	ug/L	-	-	-	ND	ND	ND	0.50	0.050	7404664
Dibromochloromethane	ug/L	-	-	-	ND	0.29	ND	0.20	0.050	7404664
1,2-Dichlorobenzene	ug/L	200	-	-	ND	ND	ND	0.20	0.050	7404664
1,3-Dichlorobenzene	ug/L	-	-	-	ND	ND	ND	0.20	0.050	7404664
1,4-Dichlorobenzene	ug/L	5	-	-	ND	ND	ND	0.20	0.050	7404664
1,1-Dichloroethane	ug/L	-	-	-	ND	ND	ND	0.10	0.050	7404664
1,2-Dichloroethane	ug/L	-	5	-	ND	ND	ND	0.20	0.050	7404664
1,1-Dichloroethylene	ug/L	14	-	-	ND	ND	ND	0.10	0.050	7404664
cis-1,2-Dichloroethylene	ug/L	-	-	-	ND	ND	ND	0.10	0.050	7404664
trans-1,2-Dichloroethylene	ug/L	-	-	-	ND	ND	ND	0.10	0.050	7404664
1,2-Dichloropropane	ug/L	-	-	-	ND	ND	ND	0.10	0.050	7404664
cis-1,3-Dichloropropene	ug/L	-	-	-	ND	ND	ND	0.20	0.050	7404664
trans-1,3-Dichloropropene	ug/L	-	-	-	ND	ND	ND	0.20	0.050	7404664
Ethylbenzene	ug/L	-	-	2.4	ND	ND	ND	0.10	0.010	7404664
Ethylene Dibromide	ug/L	-	-	-	ND	ND	ND	0.20	0.050	7404664
Methylene Chloride(Dichloromethane)	ug/L	50	-	-	ND	ND	ND	0.50	0.10	7404664
Methyl Ethyl Ketone (2-Butanone)	ug/L	-	-	-	ND	ND	ND	5.0	0.50	7404664
Methyl Isobutyl Ketone	ug/L	-	-	-	ND	ND	ND	5.0	0.10	7404664

RDL = Reportable Detection Limit

QC Batch = Quality Control Batch

Criteria, Criteria B, Criteria C: Ontario Regulation 169/03

Criteria A = Maximum Acceptable

Criteria B = Interim Maximum

Criteria C = Chemical/Physical Objectives [A/O]

(Made under the Ontario Safe Drinking Water Act, 2002)

ND = Not detected

N/A = Not Applicable



BUREAU
VERITAS

BV Labs Job #: C1G1210
Report Date: 2021/06/21

City of Guelph
Client Project #: Wet/Dry Ground Water
Site Location: JUNE GW
Your P.O. #: 2100310
Sampler Initials: AS

VOLATILE ORGANICS BY GC/MS (WATER)

BV Labs ID					PUX032	PUX033	PUX034			
Sampling Date					2021/06/10	2021/06/11	2021/06/11			
COC Number					830940-02-01	830940-02-01	830940-02-01			
	UNITS	Criteria	Criteria B	Criteria C	18B	6A	6B	RDL	MDL	QC Batch
Methyl t-butyl ether (MTBE)	ug/L	-	-	-	ND	ND	ND	0.20	0.050	7404664
Styrene	ug/L	-	-	-	ND	ND	ND	0.20	0.050	7404664
1,1,1,2-Tetrachloroethane	ug/L	-	-	-	ND	ND	ND	0.20	0.050	7404664
1,1,2,2-Tetrachloroethane	ug/L	-	-	-	ND	ND	ND	0.20	0.050	7404664
Tetrachloroethylene	ug/L	30	-	-	ND	ND	ND	0.10	0.050	7404664
Toluene	ug/L	-	-	24	ND	ND	ND	0.20	0.010	7404664
1,1,1-Trichloroethane	ug/L	-	-	-	ND	ND	ND	0.10	0.050	7404664
1,1,2-Trichloroethane	ug/L	-	-	-	ND	ND	ND	0.20	0.050	7404664
Trichloroethylene	ug/L	5	-	-	ND	ND	ND	0.10	0.050	7404664
Trichlorofluoromethane (FREON 11)	ug/L	-	-	-	ND	ND	ND	0.20	0.10	7404664
Vinyl Chloride	ug/L	2	-	-	ND	ND	ND	0.20	0.050	7404664
p+m-Xylene	ug/L	-	-	-	ND	ND	ND	0.10	0.010	7404664
o-Xylene	ug/L	-	-	-	ND	ND	ND	0.10	0.010	7404664
Total Xylenes	ug/L	-	-	300	ND	ND	ND	0.10	0.010	7404664
Surrogate Recovery (%)										
4-Bromofluorobenzene	%	-	-	-	103	101	102			7404664
D4-1,2-Dichloroethane	%	-	-	-	104	106	106			7404664
D8-Toluene	%	-	-	-	98	97	97			7404664
RDL = Reportable Detection Limit QC Batch = Quality Control Batch Criteria, Criteria B, Criteria C: Ontario Regulation 169/03 Criteria A = Maximum Acceptable Criteria B = Interim Maximum Criteria C = Chemical/Physical Objectives [A/O] (Made under the Ontario Safe Drinking Water Act, 2002) ND = Not detected										



BUREAU
VERITAS

BV Labs Job #: C1G1210

Report Date: 2021/06/21

City of Guelph

Client Project #: Wet/Dry Ground Water

Site Location: JUNE GW

Your P.O. #: 2100310

Sampler Initials: AS

GENERAL COMMENTS

Results relate only to the items tested.



BV Labs Job #: C1G1210
Report Date: 2021/06/21

QUALITY ASSURANCE REPORT

City of Guelph
Client Project #: Wet/Dry Ground Water
Site Location: JUNE GW
Your P.O. #: 2100310
Sampler Initials: AS

QC Batch	Parameter	Date	Matrix Spike		SPIKED BLANK		Method Blank		RPD		QC Standard	
			% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits	% Recovery	QC Limits
7404664	4-Bromofluorobenzene	2021/06/16	100	70 - 130	100	70 - 130	97	%				
7404664	D4-1,2-Dichloroethane	2021/06/16	99	70 - 130	102	70 - 130	98	%				
7404664	D8-Toluene	2021/06/16	102	70 - 130	100	70 - 130	101	%				
7415713	2,4,6-Tribromophenol	2021/06/18	110	10 - 130	109	10 - 130	105	%				
7415713	2-Fluorobiphenyl	2021/06/18	79	30 - 130	79	30 - 130	87	%				
7415713	2-Fluorophenol	2021/06/18	40	10 - 130	46	10 - 130	41	%				
7415713	D14-Terphenyl	2021/06/18	95	30 - 130	97	30 - 130	92	%				
7415713	D5-Nitrobenzene	2021/06/18	90	30 - 130	97	30 - 130	97	%				
7415713	D5-Phenol	2021/06/18	26	10 - 130	27	10 - 130	27	%				
7404553	Total BOD	2021/06/17					ND, RDL=2	mg/L	NC	30	87	80 - 120
7404664	1,1,1,2-Tetrachloroethane	2021/06/16	110	70 - 130	109	70 - 130	ND, RDL=0.20	ug/L	NC	30		
7404664	1,1,1-Trichloroethane	2021/06/16	110	70 - 130	111	70 - 130	ND, RDL=0.10	ug/L	NC	30		
7404664	1,1,2,2-Tetrachloroethane	2021/06/16	102	70 - 130	99	70 - 130	ND, RDL=0.20	ug/L	NC	30		
7404664	1,1,2-Trichloroethane	2021/06/16	106	70 - 130	104	70 - 130	ND, RDL=0.20	ug/L	NC	30		
7404664	1,1-Dichloroethane	2021/06/16	100	70 - 130	101	70 - 130	ND, RDL=0.10	ug/L	NC	30		
7404664	1,1-Dichloroethylene	2021/06/16	104	70 - 130	106	70 - 130	ND, RDL=0.10	ug/L	NC	30		
7404664	1,2-Dichlorobenzene	2021/06/16	105	70 - 130	101	70 - 130	ND, RDL=0.20	ug/L	NC	30		
7404664	1,2-Dichloroethane	2021/06/16	98	70 - 130	100	70 - 130	ND, RDL=0.20	ug/L	NC	30		
7404664	1,2-Dichloropropane	2021/06/16	102	70 - 130	103	70 - 130	ND, RDL=0.10	ug/L	NC	30		
7404664	1,3-Dichlorobenzene	2021/06/16	108	70 - 130	103	70 - 130	ND, RDL=0.20	ug/L	NC	30		
7404664	1,4-Dichlorobenzene	2021/06/16	124	70 - 130	117	70 - 130	ND, RDL=0.20	ug/L	NC	30		
7404664	Acetone (2-Propanone)	2021/06/16	98	60 - 140	101	60 - 140	ND, RDL=10	ug/L	NC	30		
7404664	Benzene	2021/06/16	99	70 - 130	98	70 - 130	ND, RDL=0.10	ug/L	NC	30		
7404664	Bromodichloromethane	2021/06/16	109	70 - 130	110	70 - 130	ND, RDL=0.10	ug/L	NC	30		
7404664	Bromoform	2021/06/16	108	70 - 130	107	70 - 130	ND, RDL=0.20	ug/L	NC	30		
7404664	Bromomethane	2021/06/16	96	60 - 140	117	60 - 140	ND, RDL=0.50	ug/L	NC	30		
7404664	Carbon Tetrachloride	2021/06/16	109	70 - 130	110	70 - 130	ND, RDL=0.10	ug/L	NC	30		
7404664	Chlorobenzene	2021/06/16	106	70 - 130	103	70 - 130	ND, RDL=0.10	ug/L	NC	30		
7404664	Chloroform	2021/06/16	104	70 - 130	105	70 - 130	ND, RDL=0.10	ug/L	NC	30		
7404664	Chloromethane	2021/06/16	89	60 - 140	97	60 - 140	ND, RDL=0.50	ug/L	NC	30		



BV Labs Job #: C1G1210
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QUALITY ASSURANCE REPORT(CONT'D)

City of Guelph
Client Project #: Wet/Dry Ground Water
Site Location: JUNE GW
Your P.O. #: 2100310
Sampler Initials: AS

QC Batch	Parameter	Date	Matrix Spike		SPIKED BLANK		Method Blank		RPD		QC Standard	
			% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits	% Recovery	QC Limits
7404664	cis-1,2-Dichloroethylene	2021/06/16	106	70 - 130	105	70 - 130	ND, RDL=0.10	ug/L	NC	30		
7404664	cis-1,3-Dichloropropene	2021/06/16	109	70 - 130	108	70 - 130	ND, RDL=0.20	ug/L	NC	30		
7404664	Dibromochloromethane	2021/06/16	108	70 - 130	107	70 - 130	ND, RDL=0.20	ug/L	NC	30		
7404664	Ethylbenzene	2021/06/16	101	70 - 130	99	70 - 130	ND, RDL=0.10	ug/L	NC	30		
7404664	Ethylene Dibromide	2021/06/16	96	70 - 130	96	70 - 130	ND, RDL=0.20	ug/L	NC	30		
7404664	Methyl Ethyl Ketone (2-Butanone)	2021/06/16	106	60 - 140	105	60 - 140	ND, RDL=5.0	ug/L	NC	30		
7404664	Methyl Isobutyl Ketone	2021/06/16	108	70 - 130	105	70 - 130	ND, RDL=5.0	ug/L	NC	30		
7404664	Methyl t-butyl ether (MTBE)	2021/06/16	100	70 - 130	101	70 - 130	ND, RDL=0.20	ug/L	NC	30		
7404664	Methylene Chloride(Dichloromethane)	2021/06/16	102	70 - 130	103	70 - 130	ND, RDL=0.50	ug/L	NC	30		
7404664	o-Xylene	2021/06/16	103	70 - 130	99	70 - 130	ND, RDL=0.10	ug/L	NC	30		
7404664	p+m-Xylene	2021/06/16	107	70 - 130	103	70 - 130	ND, RDL=0.10	ug/L	6.2	30		
7404664	Styrene	2021/06/16	115	70 - 130	112	70 - 130	ND, RDL=0.20	ug/L	NC	30		
7404664	Tetrachloroethylene	2021/06/16	102	70 - 130	99	70 - 130	ND, RDL=0.10	ug/L	NC	30		
7404664	Toluene	2021/06/16	104	70 - 130	102	70 - 130	ND, RDL=0.20	ug/L	NC	30		
7404664	Total Xylenes	2021/06/16					ND, RDL=0.10	ug/L	6.2	30		
7404664	trans-1,2-Dichloroethylene	2021/06/16	108	70 - 130	105	70 - 130	ND, RDL=0.10	ug/L	NC	30		
7404664	trans-1,3-Dichloropropene	2021/06/16	114	70 - 130	110	70 - 130	ND, RDL=0.20	ug/L	NC	30		
7404664	Trichloroethylene	2021/06/16	112	70 - 130	110	70 - 130	ND, RDL=0.10	ug/L	NC	30		
7404664	Trichlorofluoromethane (FREON 11)	2021/06/16	105	70 - 130	106	70 - 130	ND, RDL=0.20	ug/L	NC	30		
7404664	Vinyl Chloride	2021/06/16	104	70 - 130	105	70 - 130	ND, RDL=0.20	ug/L	NC	30		
7405074	Dissolved Boron (B)	2021/06/14	101	80 - 120	98	80 - 120	ND, RDL=10	ug/L				
7405074	Dissolved Calcium (Ca)	2021/06/14	NC	80 - 120	99	80 - 120	ND, RDL=200	ug/L				
7405074	Dissolved Magnesium (Mg)	2021/06/14	95	80 - 120	101	80 - 120	ND, RDL=50	ug/L				
7405074	Dissolved Phosphorus (P)	2021/06/14	106	80 - 120	102	80 - 120	ND, RDL=100	ug/L				
7405074	Dissolved Potassium (K)	2021/06/14	103	80 - 120	103	80 - 120	ND, RDL=200	ug/L				
7405074	Dissolved Sodium (Na)	2021/06/14	NC	80 - 120	99	80 - 120	ND, RDL=100	ug/L				
7405074	Dissolved Zinc (Zn)	2021/06/14	97	80 - 120	96	80 - 120	ND, RDL=5.0	ug/L	NC	20		
7405394	Acrolein	2021/06/16	100	60 - 140	96	60 - 140	ND, RDL=10	ug/L	NC	30		
7405394	Acrylonitrile	2021/06/16	105	60 - 140	97	60 - 140	ND, RDL=5.0	ug/L	NC	30		



BV Labs Job #: C1G1210
Report Date: 2021/06/21

QUALITY ASSURANCE REPORT(CONT'D)

City of Guelph
Client Project #: Wet/Dry Ground Water
Site Location: JUNE GW
Your P.O. #: 2100310
Sampler Initials: AS

QC Batch	Parameter	Date	Matrix Spike		SPIKED BLANK		Method Blank		RPD		QC Standard	
			% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits	% Recovery	QC Limits
7405652	Phenols-4AAP	2021/06/14	100	80 - 120	96	80 - 120	ND, RDL=0.0010	mg/L	NC	20		
7405670	Phenols-4AAP	2021/06/14	94	80 - 120	96	80 - 120	ND, RDL=0.0010	mg/L	8.0	20		
7406511	Dissolved Chloride (Cl-)	2021/06/15	NC	80 - 120	102	80 - 120	ND, RDL=1.0	mg/L	6.4 (1)	20		
7406519	Dissolved Sulphate (SO4)	2021/06/15	108	75 - 125	99	80 - 120	ND, RDL=1.0	mg/L	3.9	20		
7406808	Conductivity	2021/06/15			99	85 - 115	ND, RDL=1.0	umho/cm	0.99	25		
7406819	Alkalinity (Total as CaCO3)	2021/06/15			96	85 - 115	ND, RDL=1.0	mg/L	0.51	20		
7406834	pH	2021/06/15			102	98 - 103			0.26	N/A		
7406960	Total Ammonia-N	2021/06/15	98	75 - 125	96	80 - 120	ND, RDL=0.050	mg/L	13	20		
7406992	Total Kjeldahl Nitrogen (TKN)	2021/06/15	106	80 - 120	102	80 - 120	ND, RDL=0.10	mg/L	20	20	101	80 - 120
7407001	Total Chemical Oxygen Demand (COD)	2021/06/15	94	80 - 120	97	80 - 120	ND, RDL=4.0	mg/L	NC	20		
7407235	Nitrate (N)	2021/06/15	87	80 - 120	96	80 - 120	ND, RDL=0.10	mg/L	4.1	20		
7407235	Nitrite (N)	2021/06/15	109	80 - 120	109	80 - 120	ND, RDL=0.010	mg/L	NC	20		
7407244	Nitrate (N)	2021/06/16	97	80 - 120	95	80 - 120	ND, RDL=0.10	mg/L	NC	20		
7407244	Nitrite (N)	2021/06/16	104	80 - 120	107	80 - 120	ND, RDL=0.010	mg/L	NC	20		
7407257	Nitrate (N)	2021/06/15	98	80 - 120	95	80 - 120	ND, RDL=0.10	mg/L	1.7	20		
7407257	Nitrite (N)	2021/06/15	107	80 - 120	106	80 - 120	ND, RDL=0.010	mg/L	5.3	20		
7407976	Total Iron (Fe)	2021/06/15	94	80 - 120	97	80 - 120	ND, RDL=0.02	mg/L				
7408028	Total Phosphorus	2021/06/16	97	80 - 120	101	80 - 120	ND, RDL=0.020	mg/L	0.84	20	98	80 - 120
7408039	Total Phosphorus	2021/06/15	104	80 - 120	106	80 - 120	ND, RDL=0.020	mg/L	0.044	20	105	80 - 120
7415713	1-Chloronaphthalene	2021/06/18	76	30 - 130	74	30 - 130	ND, RDL=1.0	ug/L	NC	40		
7415713	1-Methylnaphthalene	2021/06/18	93	30 - 130	93	30 - 130	ND, RDL=0.20	ug/L	NC	40		
7415713	2,3,4,5-Tetrachlorophenol	2021/06/18	89	10 - 130	85	10 - 130	ND, RDL=0.40	ug/L	NC	40		



BV Labs Job #: C1G1210
Report Date: 2021/06/21

QUALITY ASSURANCE REPORT(CONT'D)

City of Guelph
Client Project #: Wet/Dry Ground Water
Site Location: JUNE GW
Your P.O. #: 2100310
Sampler Initials: AS

QC Batch	Parameter	Date	Matrix Spike		SPIKED BLANK		Method Blank		RPD		QC Standard	
			% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits	% Recovery	QC Limits
7415713	2,3,4,6-Tetrachlorophenol	2021/06/18	110	10 - 130	116	10 - 130	ND, RDL=0.50	ug/L	NC	40		
7415713	2,3,4-Trichlorophenol	2021/06/18	97	10 - 130	91	10 - 130	ND, RDL=0.50	ug/L	NC	40		
7415713	2,3,5,6-Tetrachlorophenol	2021/06/18	117	10 - 130	115	10 - 130	ND, RDL=0.50	ug/L	NC	40		
7415713	2,3,5-Trichlorophenol	2021/06/18	108	10 - 130	99	10 - 130	ND, RDL=0.50	ug/L	NC	40		
7415713	2,4,5-Trichlorophenol	2021/06/18	105	10 - 130	102	10 - 130	ND, RDL=0.50	ug/L	NC	40		
7415713	2,4,6-Trichlorophenol	2021/06/18	97	10 - 130	94	10 - 130	ND, RDL=0.50	ug/L	NC	40		
7415713	2,4-Dichlorophenol	2021/06/18	95	10 - 130	100	10 - 130	ND, RDL=0.30	ug/L	NC	40		
7415713	2,4-Dimethylphenol	2021/06/18	82	10 - 130	71	10 - 130	ND, RDL=0.50	ug/L	NC	40		
7415713	2,4-Dinitrophenol	2021/06/18	121	10 - 130	129	10 - 130	ND, RDL=2.0	ug/L	NC	40		
7415713	2,4-Dinitrotoluene	2021/06/18	105	30 - 130	99	30 - 130	ND, RDL=0.50	ug/L	NC	40		
7415713	2,6-Dichlorophenol	2021/06/18	93	10 - 130	94	10 - 130	ND, RDL=0.50	ug/L	NC	40		
7415713	2,6-Dinitrotoluene	2021/06/18	93	30 - 130	87	30 - 130	ND, RDL=0.50	ug/L	NC	40		
7415713	2-Chloronaphthalene	2021/06/18	83	30 - 130	78	30 - 130	ND, RDL=0.50	ug/L	NC	40		
7415713	2-Chlorophenol	2021/06/18	75	10 - 130	83	10 - 130	ND, RDL=0.30	ug/L	NC	40		
7415713	2-Methylnaphthalene	2021/06/18	82	30 - 130	83	30 - 130	ND, RDL=0.20	ug/L	NC	40		
7415713	4,6-Dinitro-2-methylphenol	2021/06/18	113	10 - 130	123	10 - 130	ND, RDL=2.0	ug/L	NC	40		
7415713	4-Bromophenyl phenyl ether	2021/06/18	98	30 - 130	93	30 - 130	ND, RDL=0.30	ug/L	NC	40		
7415713	4-Chloro-3-Methylphenol	2021/06/18	94	10 - 130	94	10 - 130	ND, RDL=0.50	ug/L	NC	40		
7415713	4-Chlorophenyl phenyl ether	2021/06/18	83	30 - 130	79	30 - 130	ND, RDL=0.50	ug/L	NC	40		
7415713	4-Nitrophenol	2021/06/18	22	10 - 130	26	10 - 130	ND, RDL=1.4	ug/L	NC	40		
7415713	5-Nitroacenaphthene	2021/06/18	95	30 - 130	98	30 - 130	ND, RDL=1.0	ug/L	NC	40		
7415713	Acenaphthene	2021/06/18	93	30 - 130	86	30 - 130	ND, RDL=0.20	ug/L	NC	40		
7415713	Acenaphthylene	2021/06/18	95	30 - 130	90	30 - 130	ND, RDL=0.20	ug/L	NC	40		
7415713	Anthracene	2021/06/18	86	30 - 130	84	30 - 130	ND, RDL=0.20	ug/L	NC	40		
7415713	Benzo(a)anthracene	2021/06/18	105	30 - 130	104	30 - 130	ND, RDL=0.20	ug/L	NC	40		
7415713	Benzo(a)pyrene	2021/06/18	87	30 - 130	87	30 - 130	ND, RDL=0.20	ug/L	NC	40		
7415713	Benzo(b,j)fluoranthene	2021/06/18	99	30 - 130	99	30 - 130	ND, RDL=0.20	ug/L	NC	40		
7415713	Benzo(g,h,i)perylene	2021/06/18	68	30 - 130	77	30 - 130	ND, RDL=0.20	ug/L	NC	40		
7415713	Benzo(k)fluoranthene	2021/06/18	103	30 - 130	98	30 - 130	ND, RDL=0.20	ug/L	NC	40		
7415713	Benzyl butyl phthalate	2021/06/18	97	30 - 130	103	30 - 130	ND, RDL=0.50	ug/L	NC	40		



BV Labs Job #: C1G1210
Report Date: 2021/06/21

QUALITY ASSURANCE REPORT(CONT'D)

City of Guelph
Client Project #: Wet/Dry Ground Water
Site Location: JUNE GW
Your P.O. #: 2100310
Sampler Initials: AS

QC Batch	Parameter	Date	Matrix Spike		SPIKED BLANK		Method Blank		RPD		QC Standard	
			% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits	% Recovery	QC Limits
7415713	Biphenyl	2021/06/18	88	30 - 130	83	30 - 130	ND, RDL=0.50	ug/L	NC	40		
7415713	Bis(2-chloroethoxy)methane	2021/06/18	74	30 - 130	76	30 - 130	ND, RDL=0.50	ug/L	NC	40		
7415713	Bis(2-chloroethyl)ether	2021/06/18	77	30 - 130	81	30 - 130	ND, RDL=0.50	ug/L	NC	40		
7415713	Bis(2-chloroisopropyl)ether	2021/06/18	68	30 - 130	69	30 - 130	ND, RDL=0.50	ug/L	NC	40		
7415713	Bis(2-ethylhexyl)phthalate	2021/06/18	100	30 - 130	104	30 - 130	ND, RDL=2.0	ug/L	NC	40		
7415713	Camphene	2021/06/18	63	30 - 130	75	30 - 130	ND, RDL=1.0	ug/L	NC	40		
7415713	Chrysene	2021/06/18	101	30 - 130	98	30 - 130	ND, RDL=0.20	ug/L	NC	40		
7415713	Dibenzo(a,h)anthracene	2021/06/18	76	30 - 130	83	30 - 130	ND, RDL=0.20	ug/L	NC	40		
7415713	Di-N-butyl phthalate	2021/06/18	103	30 - 130	106	30 - 130	ND, RDL=2.0	ug/L	NC	40		
7415713	di-n-octyl phthalate	2021/06/18	98	30 - 130	99	30 - 130	ND, RDL=0.80	ug/L	NC	40		
7415713	Diphenyl Ether	2021/06/18	81	30 - 130	75	30 - 130	ND, RDL=0.30	ug/L	NC	40		
7415713	Fluoranthene	2021/06/18	103	30 - 130	101	30 - 130	ND, RDL=0.20	ug/L	NC	40		
7415713	Fluorene	2021/06/18	96	30 - 130	90	30 - 130	ND, RDL=0.20	ug/L	NC	40		
7415713	Indeno(1,2,3-cd)pyrene	2021/06/18	77	30 - 130	85	30 - 130	ND, RDL=0.20	ug/L	NC	40		
7415713	Indole	2021/06/18	75	30 - 130	81	30 - 130	ND, RDL=1.0	ug/L	NC	40		
7415713	m/p-Cresol	2021/06/18	57	10 - 130	62	10 - 130	ND, RDL=0.50	ug/L	NC	40		
7415713	Naphthalene	2021/06/18	73	30 - 130	73	30 - 130	ND, RDL=0.20	ug/L	NC	40		
7415713	Nitrosodiphenylamine/Diphenylamine	2021/06/18	119	30 - 130	124	30 - 130	ND, RDL=1.0	ug/L	NC	40		
7415713	N-Nitroso-di-n-propylamine	2021/06/18	92	30 - 130	97	30 - 130	ND, RDL=0.50	ug/L	NC	40		
7415713	o-Cresol	2021/06/18	62	10 - 130	66	10 - 130	ND, RDL=0.50	ug/L	NC	40		
7415713	Pentachlorophenol	2021/06/18	90	10 - 130	84	10 - 130	ND, RDL=1.0	ug/L	NC	40		
7415713	Perylene	2021/06/18	94	30 - 130	91	30 - 130	ND, RDL=0.20	ug/L	NC	40		
7415713	Phenanthrene	2021/06/18	92	30 - 130	89	30 - 130	ND, RDL=0.20	ug/L	NC	40		
7415713	Phenol	2021/06/18	24	10 - 130	27	10 - 130	ND, RDL=0.50	ug/L	NC	40		



BV Labs Job #: C1G1210
Report Date: 2021/06/21

QUALITY ASSURANCE REPORT(CONT'D)

City of Guelph
Client Project #: Wet/Dry Ground Water
Site Location: JUNE GW
Your P.O. #: 2100310
Sampler Initials: AS

QC Batch	Parameter	Date	Matrix Spike		SPIKED BLANK		Method Blank		RPD		QC Standard	
			% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits	% Recovery	QC Limits
7415713	Pyrene	2021/06/18	93	30 - 130	91	30 - 130	ND, RDL=0.20	ug/L	NC	40		
<p>N/A = Not Applicable</p> <p>Duplicate: Paired analysis of a separate portion of the same sample. Used to evaluate the variance in the measurement.</p> <p>Matrix Spike: A sample to which a known amount of the analyte of interest has been added. Used to evaluate sample matrix interference.</p> <p>QC Standard: A sample of known concentration prepared by an external agency under stringent conditions. Used as an independent check of method accuracy.</p> <p>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.</p> <p>Method Blank: A blank matrix containing all reagents used in the analytical procedure. Used to identify laboratory contamination.</p> <p>Surrogate: A pure or isotopically labeled compound whose behavior mirrors the analytes of interest. Used to evaluate extraction efficiency.</p> <p>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)</p> <p>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).</p> <p>(1) POTENTIAL EXCEEDANCE FOR PARAMETER</p>												



BUREAU
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BV Labs Job #: C1G1210

Report Date: 2021/06/21

City of Guelph

Client Project #: Wet/Dry Ground Water

Site Location: JUNE GW

Your P.O. #: 2100310

Sampler Initials: AS

VALIDATION SIGNATURE PAGE

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

Anastassia Hamanov, Scientific Specialist

Brad Newman, B.Sc., C.Chem., Scientific Service Specialist

BV Labs 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 Signature Page.



Bureau Veritas Laboratories
5740 Campbell Road, Mississauga, Ontario Canada L5N 2L8 Tel: (905) 817-5700 Toll-free 800-563-6266 Fax: (905) 817-5777 www.bvlabs.com

Page 1 of 1

CHAIN OF CUSTODY RECORD

INVOICE TO:		REPORT TO:		PROJECT INFORMATION:		Laboratory Use Only:	
Company Name: #12237 City of Guelph	Company Name: Andrew Shouldice (Eastview)	Attention: Andrew Shouldice	Attention: Andrew Shouldice	Quotation #: B90142	P.O. #:	BV Labs Job #:	Bottle Order #:
Address: 186 Eastview Rd	Address: Guelph ON N1E 1Z6	Tel: (519) 822-1260 Ext. 2473	Fax: (519) 823-0910	Project: Wet/Dry Ground Water	Project Name: JUNE GW	COC #:	Project Manager:
Email: Andrew.Shouldice@guelph.ca	Email: Andrew.Shouldice@guelph.ca			Site #:	Sampled By: Andrew Shouldice		James Aspin
MOE REGULATED DRINKING WATER OR WATER INTENDED FOR HUMAN CONSUMPTION MUST BE SUBMITTED ON THE BV LABS DRINKING WATER CHAIN OF CUSTODY				ANALYSIS REQUESTED (PLEASE BE SPECIFIC)		Turnaround Time (TAT) Required	
Regulation 153 (2011)		Other Regulations		Special Instructions		Regular (Standard) TAT:	
<input type="checkbox"/> Table 1	<input type="checkbox"/> Res/Park	<input type="checkbox"/> Medium/Fine	<input type="checkbox"/> CCME	<input type="checkbox"/> Sanitary Sewer Bylaw		(will be applied if Rush TAT is not specified)	
<input type="checkbox"/> Table 2	<input type="checkbox"/> Ind/Comm	<input type="checkbox"/> Coarse	<input type="checkbox"/> Reg 558	<input type="checkbox"/> Storm Sewer Bylaw		Standard TAT = 5-7 Working days for most tests.	
<input type="checkbox"/> Table 3	<input type="checkbox"/> Agri/Other	<input type="checkbox"/> For RSC	<input type="checkbox"/> MISA	<input type="checkbox"/> Municipality		Please note: Standard TAT for certain tests such as BOD and Dioxins/Furans are > 5 days - contact your Project Manager for details	
<input type="checkbox"/> Table			<input type="checkbox"/> PWQO	<input type="checkbox"/> Reg 406 Table		Job Specific Rush TAT (if applies to entire submission)	
Include Criteria on Certificate of Analysis (Y/N)?						Date Required: Time Required:	
Sample Barcode Label	Sample (Location) Identification	Date Sampled	Time Sampled	Matrix	Field Filtered (please circle):	# of Bottles	Comments
1	21A	June 10/21	pm	GW	Y	13	
2	18A			GW	Y	13	
3	18B			GW	Y	13	
4	6A	June 11/21	Am	GW	Y	13	
5	6B			GW	Y	13	
6							
7							
8							
9							
10							
* RELINQUISHED BY: (Signature/Print)		Date: (YY/MM/DD)	Time	RECEIVED BY: (Signature/Print)		Date: (YY/MM/DD)	Time
Andrew Shouldice		21/06/11	Am	En/1412-1414 Fayer		20/06/11	15:57
* UNLESS OTHERWISE AGREED TO IN WRITING, WORK SUBMITTED ON THIS CHAIN OF CUSTODY IS SUBJECT TO BV LABS' STANDARD TERMS AND CONDITIONS. SIGNING OF THIS CHAIN OF CUSTODY DOCUMENT IS ACKNOWLEDGMENT AND ACCEPTANCE OF OUR TERMS WHICH ARE AVAILABLE FOR VIEWING AT WWW.BVLABS.COM/TERMS-AND-CONDITIONS.							
* IT IS THE RESPONSIBILITY OF THE RELINQUISHER TO ENSURE THE ACCURACY OF THE CHAIN OF CUSTODY RECORD. AN INCOMPLETE CHAIN OF CUSTODY MAY RESULT IN ANALYTICAL TAT DELAYS.							
* SAMPLE CONTAINER, PRESERVATION, HOLD TIME AND PACKAGE INFORMATION CAN BE VIEWED AT WWW.BVLABS.COM/RESOURCES/CHAIN-OF-CUSTODY-FORMS.							
11-Jun-21 15:57				James Aspin			
C1G1210				AEP ENV 503			
* jars used and not submitted		Time Sensitive		Temperature (°C) on Recd:		Custody Seal	
				8/8/19 4/4/16		Present	
						Intact	
						Yes	
						No	
						White: BV Labs	
						Yellow: Client	



Your P.O. #: 2100310
 Your Project #: WET/DRY GROUND WATER
 Site Location: JUNE GW
 Your C.O.C. #: 830940-03-01

Attention: Amy Spence

City of Guelph
 Solid Waste RIC (Wet/Dry)
 110 Dunlop Drive
 Guelph, ON
 CANADA N1H 6H8

Report Date: 2021/06/22
 Report #: R6687092
 Version: 1 - Final

CERTIFICATE OF ANALYSIS

BV LABS JOB #: C1G4299

Received: 2021/06/15, 16:00

Sample Matrix: Water
 # Samples Received: 6

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Analytical Method
ABN Compounds in Water by GC/MS	2	2021/06/18	2021/06/18	CAM SOP-00301	EPA 8270 m
ABN Compounds in Water by GC/MS	4	2021/06/18	2021/06/19	CAM SOP-00301	EPA 8270 m
Alkalinity	6	N/A	2021/06/17	CAM SOP-00448	SM 23 2320 B m
Biochemical Oxygen Demand (BOD)	6	2021/06/16	2021/06/21	CAM SOP-00427	SM 23 5210B m
Chloride by Automated Colourimetry	6	N/A	2021/06/17	CAM SOP-00463	SM 23 4500-Cl E m
Chemical Oxygen Demand	6	N/A	2021/06/17	CAM SOP-00416	SM 23 5220 D m
Conductivity	6	N/A	2021/06/17	CAM SOP-00414	SM 23 2510 m
Dissolved Metals by ICPMS	6	N/A	2021/06/17	CAM SOP-00447	EPA 6020B m
Total Metals Analysis by ICP	6	2021/06/18	2021/06/18	CAM SOP-00408	EPA 6010D m
Total Ammonia-N	4	N/A	2021/06/17	CAM SOP-00441	USGS I-2522-90 m
Total Ammonia-N	2	N/A	2021/06/18	CAM SOP-00441	USGS I-2522-90 m
Nitrate (NO3) and Nitrite (NO2) in Water (1)	6	N/A	2021/06/17	CAM SOP-00440	SM 23 4500-NO3I/NO2B
pH	6	2021/06/16	2021/06/17	CAM SOP-00413	SM 4500H+ B m
Phenols (4AAP)	6	N/A	2021/06/16	CAM SOP-00444	OMOE E3179 m
Sulphate by Automated Colourimetry	6	N/A	2021/06/17	CAM SOP-00464	EPA 375.4 m
Total Kjeldahl Nitrogen in Water	5	2021/06/16	2021/06/17	CAM SOP-00938	OMOE E3516 m
Total Kjeldahl Nitrogen in Water	1	2021/06/16	2021/06/18	CAM SOP-00938	OMOE E3516 m
Total Phosphorus (Colourimetric)	5	2021/06/17	2021/06/17	CAM SOP-00407	SM 23 4500 P B H m
Total Phosphorus (Colourimetric)	1	2021/06/17	2021/06/18	CAM SOP-00407	SM 23 4500 P B H m
Volatile Organic Compounds in Water	6	N/A	2021/06/18	CAM SOP-00226	EPA 8260C m
Non-Routine Volatile Organic Compounds	6	N/A	2021/06/18	CAM SOP-00226	EPA 8260 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, MELCC, EPA, APHA.

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. #: 2100310
Your Project #: WET/DRY GROUND WATER
Site Location: JUNE GW
Your C.O.C. #: 830940-03-01

Attention: Amy Spence

City of Guelph
Solid Waste RIC (Wet/Dry)
110 Dunlop Drive
Guelph, ON
CANADA N1H 6H8

Report Date: 2021/06/22
Report #: R6687092
Version: 1 - Final

CERTIFICATE OF ANALYSIS

BV LABS JOB #: C1G4299

Received: 2021/06/15, 16:00

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.

Encryption Key

Hongmei Zhao (Grace)
Project Manager
22 Jun 2021 15:44:24

Please direct all questions regarding this Certificate of Analysis to your Project Manager.

James Aspin, Senior Project Manager

Email: James.Aspin@bureauveritas.com

Phone# (905)817-5771

=====

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BUREAU
VERITAS

BV Labs Job #: C1G4299
Report Date: 2021/06/22

City of Guelph
Client Project #: WET/DRY GROUND WATER
Site Location: JUNE GW
Your P.O. #: 2100310
Sampler Initials: AS

RESULTS OF ANALYSES OF WATER

BV Labs ID				PVO855			PVO856		
Sampling Date				2021/06/14			2021/06/14		
COC Number				830940-03-01			830940-03-01		
	UNITS	Criteria	Criteria C	5	RDL	QC Batch	8	RDL	QC Batch
Inorganics									
Total Ammonia-N	mg/L	-	-	ND	0.050	7412067	ND	0.050	7412067
Total BOD	mg/L	-	-	ND	2	7410723	ND	2	7410723
Total Chemical Oxygen Demand (COD)	mg/L	-	-	16	4.0	7411506	4.0	4.0	7411506
Conductivity	umho/cm	-	-	3200	1.0	7412031	1200	1.0	7412031
Total Kjeldahl Nitrogen (TKN)	mg/L	-	-	ND	0.10	7411478	ND	0.10	7411478
pH	pH	-	6.5:8.5	8.01		7412032	8.02		7412032
Phenols-4AAP	mg/L	-	-	ND	0.0010	7410496	ND	0.0010	7410496
Total Phosphorus	mg/L	-	-	ND	0.020	7413472	ND	0.020	7413472
Dissolved Sulphate (SO ₄)	mg/L	-	500	32	1.0	7412099	35	1.0	7412099
Alkalinity (Total as CaCO ₃)	mg/L	-	30-500	300	1.0	7412023	290	1.0	7412023
Dissolved Chloride (Cl ⁻)	mg/L	-	250	810	10	7412077	190	3.0	7412077
Nitrite (N)	mg/L	1	-	ND	0.010	7411630	ND	0.010	7412055
Nitrate (N)	mg/L	10	-	0.72	0.10	7411630	0.28	0.10	7412055
Nitrate + Nitrite (N)	mg/L	10	-	0.72	0.10	7411630	0.28	0.10	7412055
RDL = Reportable Detection Limit QC Batch = Quality Control Batch Criteria, Criteria C: Ontario Regulation 169/03 Criteria A = Maximum Acceptable Criteria B = Interim Maximum Criteria C = Chemical/Physical Objectives [A/O] (Made under the Ontario Safe Drinking Water Act, 2002) ND = Not detected									



BUREAU
VERITAS

BV Labs Job #: C1G4299
Report Date: 2021/06/22

City of Guelph
Client Project #: WET/DRY GROUND WATER
Site Location: JUNE GW
Your P.O. #: 2100310
Sampler Initials: AS

RESULTS OF ANALYSES OF WATER

BV Labs ID				PVO857			PVO857		
Sampling Date				2021/06/14			2021/06/14		
COC Number				830940-03-01			830940-03-01		
	UNITS	Criteria	Criteria C	11 A	RDL	QC Batch	11 A Lab-Dup	RDL	QC Batch
Inorganics									
Total Ammonia-N	mg/L	-	-	0.079	0.050	7411054			
Total BOD	mg/L	-	-	ND	2	7410723			
Total Chemical Oxygen Demand (COD)	mg/L	-	-	ND	4.0	7411506			
Conductivity	umho/cm	-	-	570	1.0	7412424	570	1.0	7412424
Total Kjeldahl Nitrogen (TKN)	mg/L	-	-	0.29	0.10	7410920			
pH	pH	-	6.5:8.5	8.04		7412427	8.08		7412427
Phenols-4AAP	mg/L	-	-	ND	0.0010	7410496			
Total Phosphorus	mg/L	-	-	0.028	0.020	7413259			
Dissolved Sulphate (SO ₄)	mg/L	-	500	39	1.0	7412099			
Alkalinity (Total as CaCO ₃)	mg/L	-	30-500	240	1.0	7412402	240	1.0	7412402
Dissolved Chloride (Cl ⁻)	mg/L	-	250	21	1.0	7412077			
Nitrite (N)	mg/L	1	-	ND	0.010	7412055	ND	0.010	7412055
Nitrate (N)	mg/L	10	-	0.13	0.10	7412055	0.13	0.10	7412055
Nitrate + Nitrite (N)	mg/L	10	-	0.13	0.10	7412055	0.13	0.10	7412055
RDL = Reportable Detection Limit QC Batch = Quality Control Batch Lab-Dup = Laboratory Initiated Duplicate Criteria, Criteria C: Ontario Regulation 169/03 Criteria A = Maximum Acceptable Criteria B = Interim Maximum Criteria C = Chemical/Physical Objectives [A/O] (Made under the Ontario Safe Drinking Water Act, 2002) ND = Not detected									



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VERITAS

BV Labs Job #: C1G4299

Report Date: 2021/06/22

City of Guelph

Client Project #: WET/DRY GROUND WATER

Site Location: JUNE GW

Your P.O. #: 2100310

Sampler Initials: AS

RESULTS OF ANALYSES OF WATER

BV Labs ID				PVO858	PVO859		PVO860		
Sampling Date				2021/06/14	2021/06/15		2021/06/15		
COC Number				830940-03-01	830940-03-01		830940-03-01		
	UNITS	Criteria	Criteria C	11 B	19 A	QC Batch	19 B	RDL	QC Batch
Inorganics									
Total Ammonia-N	mg/L	-	-	ND	0.064	7412067	ND	0.050	7411075
Total BOD	mg/L	-	-	ND	ND	7410723	ND	2	7410723
Total Chemical Oxygen Demand (COD)	mg/L	-	-	11	ND	7411506	6.5	4.0	7411081
Conductivity	umho/cm	-	-	780	910	7412031	1200	1.0	7412031
Total Kjeldahl Nitrogen (TKN)	mg/L	-	-	ND	0.10	7411478	0.11	0.10	7411079
pH	pH	-	6.5:8.5	8.07	8.04	7412032	8.02		7412032
Phenols-4AAP	mg/L	-	-	ND	ND	7410921	ND	0.0010	7410921
Total Phosphorus	mg/L	-	-	0.023	ND	7413472	0.038	0.020	7413667
Dissolved Sulphate (SO4)	mg/L	-	500	34	100	7412099	80	1.0	7412099
Alkalinity (Total as CaCO3)	mg/L	-	30-500	250	250	7412023	500	1.0	7412023
Dissolved Chloride (Cl-)	mg/L	-	250	72	78	7412077	34	1.0	7412077
Nitrite (N)	mg/L	1	-	ND	ND	7412055	ND	0.010	7411630
Nitrate (N)	mg/L	10	-	2.47	ND	7412055	1.78	0.10	7411630
Nitrate + Nitrite (N)	mg/L	10	-	2.47	ND	7412055	1.78	0.10	7411630

RDL = Reportable Detection Limit

QC Batch = Quality Control Batch

Criteria, Criteria C: Ontario Regulation 169/03

Criteria A = Maximum Acceptable

Criteria B = Interim Maximum

Criteria C = Chemical/Physical Objectives [A/O]

(Made under the Ontario Safe Drinking Water Act, 2002)

ND = Not detected



BUREAU
VERITAS

BV Labs Job #: C1G4299

Report Date: 2021/06/22

City of Guelph

Client Project #: WET/DRY GROUND WATER

Site Location: JUNE GW

Your P.O. #: 2100310

Sampler Initials: AS

RESULTS OF ANALYSES OF WATER

BV Labs ID				PVO860		
Sampling Date				2021/06/15		
COC Number				830940-03-01		
	UNITS	Criteria	Criteria C	19 B Lab-Dup	RDL	QC Batch
Inorganics						
Total Ammonia-N	mg/L	-	-	ND	0.050	7411075
RDL = Reportable Detection Limit QC Batch = Quality Control Batch Lab-Dup = Laboratory Initiated Duplicate Criteria, Criteria C: Ontario Regulation 169/03 Criteria A = Maximum Acceptable Criteria B = Interim Maximum Criteria C = Chemical/Physical Objectives [A/O] (Made under the Ontario Safe Drinking Water Act, 2002) ND = Not detected						



BUREAU
VERITAS

BV Labs Job #: C1G4299
Report Date: 2021/06/22

City of Guelph
Client Project #: WET/DRY GROUND WATER
Site Location: JUNE GW
Your P.O. #: 2100310
Sampler Initials: AS

ELEMENTS BY ATOMIC SPECTROSCOPY (WATER)

BV Labs ID					PVO855			PVO855		
Sampling Date					2021/06/14			2021/06/14		
COC Number					830940-03-01			830940-03-01		
	UNITS	Criteria	Criteria B	Criteria C	5	RDL	QC Batch	5 Lab-Dup	RDL	QC Batch
Metals										
Total Iron (Fe)	mg/L	-	-	0.3	0.07	0.02	7415712	0.08	0.02	7415712
Dissolved Boron (B)	ug/L	-	5000	-	18	10	7412255			
Dissolved Calcium (Ca)	ug/L	-	-	-	110000	200	7412255			
Dissolved Magnesium (Mg)	ug/L	-	-	-	23000	50	7412255			
Dissolved Phosphorus (P)	ug/L	-	-	-	ND	100	7412255			
Dissolved Potassium (K)	ug/L	-	-	-	4000	200	7412255			
Dissolved Sodium (Na)	ug/L	20000	-	200000	500000	100	7412255			
Dissolved Zinc (Zn)	ug/L	-	-	5000	1600	5.0	7412255			
RDL = Reportable Detection Limit QC Batch = Quality Control Batch Lab-Dup = Laboratory Initiated Duplicate Criteria, Criteria B, Criteria C: Ontario Regulation 169/03 Criteria A = Maximum Acceptable Criteria B = Interim Maximum Criteria C = Chemical/Physical Objectives [A/O] (Made under the Ontario Safe Drinking Water Act, 2002) ND = Not detected										



BUREAU
VERITAS

BV Labs Job #: C1G4299
Report Date: 2021/06/22

City of Guelph
Client Project #: WET/DRY GROUND WATER
Site Location: JUNE GW
Your P.O. #: 2100310
Sampler Initials: AS

ELEMENTS BY ATOMIC SPECTROSCOPY (WATER)

BV Labs ID					PVO856	PVO857	PVO858	PVO859		
Sampling Date					2021/06/14	2021/06/14	2021/06/14	2021/06/15		
COC Number					830940-03-01	830940-03-01	830940-03-01	830940-03-01		
	UNITS	Criteria	Criteria B	Criteria C	8	11 A	11 B	19 A	RDL	QC Batch

Metals

Total Iron (Fe)	mg/L	-	-	0.3	0.04	0.32	0.84	0.56	0.02	7415712
Dissolved Boron (B)	ug/L	-	5000	-	16	33	56	36	10	7412255
Dissolved Calcium (Ca)	ug/L	-	-	-	100000	73000	79000	100000	200	7412255
Dissolved Magnesium (Mg)	ug/L	-	-	-	36000	27000	18000	35000	50	7412255
Dissolved Phosphorus (P)	ug/L	-	-	-	ND	ND	ND	ND	100	7412255
Dissolved Potassium (K)	ug/L	-	-	-	2300	1700	1200	1500	200	7412255
Dissolved Sodium (Na)	ug/L	20000	-	200000	96000	6100	58000	34000	100	7412255
Dissolved Zinc (Zn)	ug/L	-	-	5000	990	ND	20	ND	5.0	7412255

RDL = Reportable Detection Limit

QC Batch = Quality Control Batch

Criteria, Criteria B, Criteria C: Ontario Regulation 169/03

Criteria A = Maximum Acceptable

Criteria B = Interim Maximum

Criteria C = Chemical/Physical Objectives [A/O]

(Made under the Ontario Safe Drinking Water Act, 2002)

ND = Not detected



BUREAU
VERITAS

BV Labs Job #: C1G4299
Report Date: 2021/06/22

City of Guelph
Client Project #: WET/DRY GROUND WATER
Site Location: JUNE GW
Your P.O. #: 2100310
Sampler Initials: AS

ELEMENTS BY ATOMIC SPECTROSCOPY (WATER)

BV Labs ID					PVO860		
Sampling Date					2021/06/15		
COC Number					830940-03-01		
	UNITS	Criteria	Criteria B	Criteria C	19 B	RDL	QC Batch
Metals							
Total Iron (Fe)	mg/L	-	-	0.3	1.3	0.02	7415712
Dissolved Boron (B)	ug/L	-	5000	-	96	10	7412255
Dissolved Calcium (Ca)	ug/L	-	-	-	71000	200	7412255
Dissolved Magnesium (Mg)	ug/L	-	-	-	25000	50	7412255
Dissolved Phosphorus (P)	ug/L	-	-	-	ND	100	7412255
Dissolved Potassium (K)	ug/L	-	-	-	9200	200	7412255
Dissolved Sodium (Na)	ug/L	20000	-	200000	190000	100	7412255
Dissolved Zinc (Zn)	ug/L	-	-	5000	17	5.0	7412255
RDL = Reportable Detection Limit QC Batch = Quality Control Batch Criteria, Criteria B, Criteria C: Ontario Regulation 169/03 Criteria A = Maximum Acceptable Criteria B = Interim Maximum Criteria C = Chemical/Physical Objectives [A/O] (Made under the Ontario Safe Drinking Water Act, 2002) ND = Not detected							



BUREAU
VERITAS

BV Labs Job #: C1G4299
Report Date: 2021/06/22

City of Guelph
Client Project #: WET/DRY GROUND WATER
Site Location: JUNE GW
Your P.O. #: 2100310
Sampler Initials: AS

SEMI-VOLATILE ORGANICS BY GC-MS (WATER)

BV Labs ID			PVO855	PVO856	PVO856	PVO857	PVO858		
Sampling Date			2021/06/14	2021/06/14	2021/06/14	2021/06/14	2021/06/14		
COC Number			830940-03-01	830940-03-01	830940-03-01	830940-03-01	830940-03-01		
	UNITS	Criteria	5	8	8 Lab-Dup	11 A	11 B	RDL	QC Batch

Semivolatile Organics

Acenaphthene	ug/L	-	ND	ND	ND	ND	ND	0.20	7415713
Acenaphthylene	ug/L	-	ND	ND	ND	ND	ND	0.20	7415713
Anthracene	ug/L	-	ND	ND	ND	ND	ND	0.20	7415713
Benzo(a)anthracene	ug/L	-	ND	ND	ND	ND	ND	0.20	7415713
Benzo(a)pyrene	ug/L	0.01	ND (1)	ND (1)	ND (1)	ND (1)	ND (1)	0.20	7415713
Benzo(b/j)fluoranthene	ug/L	-	ND	ND	ND	ND	ND	0.20	7415713
Benzo(g,h,i)perylene	ug/L	-	ND	ND	ND	ND	ND	0.20	7415713
Benzo(k)fluoranthene	ug/L	-	ND	ND	ND	ND	ND	0.20	7415713
1-Chloronaphthalene	ug/L	-	ND	ND	ND	ND	ND	1.0	7415713
2-Chloronaphthalene	ug/L	-	ND	ND	ND	ND	ND	0.50	7415713
Chrysene	ug/L	-	ND	ND	ND	ND	ND	0.20	7415713
Dibenzo(a,h)anthracene	ug/L	-	ND	ND	ND	ND	ND	0.20	7415713
Fluoranthene	ug/L	-	ND	ND	ND	ND	ND	0.20	7415713
Fluorene	ug/L	-	ND	ND	ND	ND	ND	0.20	7415713
Indeno(1,2,3-cd)pyrene	ug/L	-	ND	ND	ND	ND	ND	0.20	7415713
1-Methylnaphthalene	ug/L	-	ND	ND	ND	ND	ND	0.20	7415713
2-Methylnaphthalene	ug/L	-	ND	ND	ND	ND	ND	0.20	7415713
Naphthalene	ug/L	-	ND	ND	ND	ND	ND	0.20	7415713
5-Nitroacenaphthene	ug/L	-	ND	ND	ND	ND	ND	1.0	7415713
Perylene	ug/L	-	ND	ND	ND	ND	ND	0.20	7415713
Phenanthrene	ug/L	-	ND	ND	ND	ND	ND	0.20	7415713
Pyrene	ug/L	-	ND	ND	ND	ND	ND	0.20	7415713
2-Chlorophenol	ug/L	-	ND	ND	ND	ND	ND	0.30	7415713
4-Chloro-3-Methylphenol	ug/L	-	ND	ND	ND	ND	ND	0.50	7415713
m/p-Cresol	ug/L	-	ND	ND	ND	ND	ND	0.50	7415713
o-Cresol	ug/L	-	ND	ND	ND	ND	ND	0.50	7415713
2,4-Dichlorophenol	ug/L	900	ND	ND	ND	ND	ND	0.30	7415713

RDL = Reportable Detection Limit

QC Batch = Quality Control Batch

Lab-Dup = Laboratory Initiated Duplicate

Criteria: Ontario Regulation 169/03

Criteria A = Maximum Acceptable

Criteria B = Interim Maximum

Criteria C = Chemical/Physical Objectives [A/O]

(Made under the Ontario Safe Drinking Water Act, 2002)

ND = Not detected

(1) RDL exceeds criteria



BV Labs Job #: C1G4299
Report Date: 2021/06/22

City of Guelph
Client Project #: WET/DRY GROUND WATER
Site Location: JUNE GW
Your P.O. #: 2100310
Sampler Initials: AS

SEMI-VOLATILE ORGANICS BY GC-MS (WATER)

BV Labs ID			PVO855	PVO856	PVO856	PVO857	PVO858		
Sampling Date			2021/06/14	2021/06/14	2021/06/14	2021/06/14	2021/06/14		
COC Number			830940-03-01	830940-03-01	830940-03-01	830940-03-01	830940-03-01		
	UNITS	Criteria	5	8	8 Lab-Dup	11 A	11 B	RDL	QC Batch
2,6-Dichlorophenol	ug/L	-	ND	ND	ND	ND	ND	0.50	7415713
2,4-Dimethylphenol	ug/L	-	ND	ND	ND	ND	ND	0.50	7415713
2,4-Dinitrophenol	ug/L	-	ND	ND	ND	ND	ND	2.0	7415713
4,6-Dinitro-2-methylphenol	ug/L	-	ND	ND	ND	ND	ND	2.0	7415713
4-Nitrophenol	ug/L	-	ND	ND	ND	ND	ND	1.4	7415713
Pentachlorophenol	ug/L	60	ND	ND	ND	ND	ND	1.0	7415713
Phenol	ug/L	-	ND	ND	ND	ND	ND	0.50	7415713
2,3,4,5-Tetrachlorophenol	ug/L	-	ND	ND	ND	ND	ND	0.40	7415713
2,3,4,6-Tetrachlorophenol	ug/L	100	ND	ND	ND	ND	ND	0.50	7415713
2,3,5,6-Tetrachlorophenol	ug/L	-	ND	ND	ND	ND	ND	0.50	7415713
2,3,4-Trichlorophenol	ug/L	-	ND	ND	ND	ND	ND	0.50	7415713
2,3,5-Trichlorophenol	ug/L	-	ND	ND	ND	ND	ND	0.50	7415713
2,4,5-Trichlorophenol	ug/L	-	ND	ND	ND	ND	ND	0.50	7415713
2,4,6-Trichlorophenol	ug/L	5	ND	ND	ND	ND	ND	0.50	7415713
Benzyl butyl phthalate	ug/L	-	ND	ND	ND	ND	ND	0.50	7415713
Biphenyl	ug/L	-	ND	ND	ND	ND	ND	0.50	7415713
Bis(2-chloroethyl)ether	ug/L	-	ND	ND	ND	ND	ND	0.50	7415713
Bis(2-chloroethoxy)methane	ug/L	-	ND	ND	ND	ND	ND	0.50	7415713
Bis(2-chloroisopropyl)ether	ug/L	-	ND	ND	ND	ND	ND	0.50	7415713
Bis(2-ethylhexyl)phthalate	ug/L	-	ND	ND	ND	ND	ND	2.0	7415713
4-Bromophenyl phenyl ether	ug/L	-	ND	ND	ND	ND	ND	0.30	7415713
Camphene	ug/L	-	ND	ND	ND	ND	ND	1.0	7415713
4-Chlorophenyl phenyl ether	ug/L	-	ND	ND	ND	ND	ND	0.50	7415713
Di-N-butyl phthalate	ug/L	-	ND	ND	ND	ND	ND	2.0	7415713
di-n-octyl phthalate	ug/L	-	ND	ND	ND	ND	ND	0.80	7415713
2,4-Dinitrotoluene	ug/L	-	ND	ND	ND	ND	ND	0.50	7415713
2,6-Dinitrotoluene	ug/L	-	ND	ND	ND	ND	ND	0.50	7415713
Diphenyl Ether	ug/L	-	ND	ND	ND	ND	ND	0.30	7415713
Indole	ug/L	-	ND	ND	ND	ND	ND	1.0	7415713

RDL = Reportable Detection Limit

QC Batch = Quality Control Batch

Lab-Dup = Laboratory Initiated Duplicate

Criteria: Ontario Regulation 169/03

Criteria A = Maximum Acceptable

Criteria B = Interim Maximum

Criteria C = Chemical/Physical Objectives [A/O]

(Made under the Ontario Safe Drinking Water Act, 2002)

ND = Not detected



BUREAU
VERITAS

BV Labs Job #: C1G4299
Report Date: 2021/06/22

City of Guelph
Client Project #: WET/DRY GROUND WATER
Site Location: JUNE GW
Your P.O. #: 2100310
Sampler Initials: AS

SEMI-VOLATILE ORGANICS BY GC-MS (WATER)

BV Labs ID			PVO855	PVO856	PVO856	PVO857	PVO858		
Sampling Date			2021/06/14	2021/06/14	2021/06/14	2021/06/14	2021/06/14		
COC Number			830940-03-01	830940-03-01	830940-03-01	830940-03-01	830940-03-01		
	UNITS	Criteria	5	8	8 Lab-Dup	11 A	11 B	RDL	QC Batch
Nitrosodiphenylamine/Diphenylamine	ug/L	-	ND	ND	ND	ND	ND	1.0	7415713
N-Nitroso-di-n-propylamine	ug/L	-	ND	ND	ND	ND	ND	0.50	7415713
Surrogate Recovery (%)									
2,4,6-Tribromophenol	%	-	107	100	105	106	103		7415713
2-Fluorobiphenyl	%	-	83	78	77	82	84		7415713
2-Fluorophenol	%	-	39	37	38	42	34		7415713
D14-Terphenyl	%	-	89	88	86	92	89		7415713
D5-Nitrobenzene	%	-	91	89	91	98	99		7415713
D5-Phenol	%	-	23	23	23	26	22		7415713
RDL = Reportable Detection Limit QC Batch = Quality Control Batch Lab-Dup = Laboratory Initiated Duplicate Criteria: Ontario Regulation 169/03 Criteria A = Maximum Acceptable Criteria B = Interim Maximum Criteria C = Chemical/Physical Objectives [A/O] (Made under the Ontario Safe Drinking Water Act, 2002) ND = Not detected									



BV Labs Job #: C1G4299
Report Date: 2021/06/22

City of Guelph
Client Project #: WET/DRY GROUND WATER
Site Location: JUNE GW
Your P.O. #: 2100310
Sampler Initials: AS

SEMI-VOLATILE ORGANICS BY GC-MS (WATER)

BV Labs ID			PVO859	PVO860		
Sampling Date			2021/06/15	2021/06/15		
COC Number			830940-03-01	830940-03-01		
	UNITS	Criteria	19 A	19 B	RDL	QC Batch
Semivolatile Organics						
Acenaphthene	ug/L	-	ND	ND	0.20	7415713
Acenaphthylene	ug/L	-	ND	ND	0.20	7415713
Anthracene	ug/L	-	ND	ND	0.20	7415713
Benzo(a)anthracene	ug/L	-	ND	ND	0.20	7415713
Benzo(a)pyrene	ug/L	0.01	ND (1)	ND (1)	0.20	7415713
Benzo(b,j)fluoranthene	ug/L	-	ND	ND	0.20	7415713
Benzo(g,h,i)perylene	ug/L	-	ND	ND	0.20	7415713
Benzo(k)fluoranthene	ug/L	-	ND	ND	0.20	7415713
1-Chloronaphthalene	ug/L	-	ND	ND	1.0	7415713
2-Chloronaphthalene	ug/L	-	ND	ND	0.50	7415713
Chrysene	ug/L	-	ND	ND	0.20	7415713
Dibenzo(a,h)anthracene	ug/L	-	ND	ND	0.20	7415713
Fluoranthene	ug/L	-	ND	ND	0.20	7415713
Fluorene	ug/L	-	ND	ND	0.20	7415713
Indeno(1,2,3-cd)pyrene	ug/L	-	ND	ND	0.20	7415713
1-Methylnaphthalene	ug/L	-	ND	ND	0.20	7415713
2-Methylnaphthalene	ug/L	-	ND	ND	0.20	7415713
Naphthalene	ug/L	-	ND	ND	0.20	7415713
5-Nitroacenaphthene	ug/L	-	ND	ND	1.0	7415713
Perylene	ug/L	-	ND	ND	0.20	7415713
Phenanthrene	ug/L	-	ND	ND	0.20	7415713
Pyrene	ug/L	-	ND	ND	0.20	7415713
2-Chlorophenol	ug/L	-	ND	ND	0.30	7415713
4-Chloro-3-Methylphenol	ug/L	-	ND	ND	0.50	7415713
m/p-Cresol	ug/L	-	ND	ND	0.50	7415713
o-Cresol	ug/L	-	ND	ND	0.50	7415713
2,4-Dichlorophenol	ug/L	900	ND	ND	0.30	7415713
2,6-Dichlorophenol	ug/L	-	ND	ND	0.50	7415713
RDL = Reportable Detection Limit QC Batch = Quality Control Batch Criteria: Ontario Regulation 169/03 Criteria A = Maximum Acceptable Criteria B = Interim Maximum Criteria C = Chemical/Physical Objectives [A/O] (Made under the Ontario Safe Drinking Water Act, 2002) ND = Not detected (1) RDL exceeds criteria						



BUREAU
VERITAS

BV Labs Job #: C1G4299
Report Date: 2021/06/22

City of Guelph
Client Project #: WET/DRY GROUND WATER
Site Location: JUNE GW
Your P.O. #: 2100310
Sampler Initials: AS

SEMI-VOLATILE ORGANICS BY GC-MS (WATER)

BV Labs ID			PVO859	PVO860		
Sampling Date			2021/06/15	2021/06/15		
COC Number			830940-03-01	830940-03-01		
	UNITS	Criteria	19 A	19 B	RDL	QC Batch
2,4-Dimethylphenol	ug/L	-	ND	ND	0.50	7415713
2,4-Dinitrophenol	ug/L	-	ND	ND	2.0	7415713
4,6-Dinitro-2-methylphenol	ug/L	-	ND	ND	2.0	7415713
4-Nitrophenol	ug/L	-	ND	ND	1.4	7415713
Pentachlorophenol	ug/L	60	ND	ND	1.0	7415713
Phenol	ug/L	-	ND	ND	0.50	7415713
2,3,4,5-Tetrachlorophenol	ug/L	-	ND	ND	0.40	7415713
2,3,4,6-Tetrachlorophenol	ug/L	100	ND	ND	0.50	7415713
2,3,5,6-Tetrachlorophenol	ug/L	-	ND	ND	0.50	7415713
2,3,4-Trichlorophenol	ug/L	-	ND	ND	0.50	7415713
2,3,5-Trichlorophenol	ug/L	-	ND	ND	0.50	7415713
2,4,5-Trichlorophenol	ug/L	-	ND	ND	0.50	7415713
2,4,6-Trichlorophenol	ug/L	5	ND	ND	0.50	7415713
Benzyl butyl phthalate	ug/L	-	ND	ND	0.50	7415713
Biphenyl	ug/L	-	ND	ND	0.50	7415713
Bis(2-chloroethyl)ether	ug/L	-	ND	ND	0.50	7415713
Bis(2-chloroethoxy)methane	ug/L	-	ND	ND	0.50	7415713
Bis(2-chloroisopropyl)ether	ug/L	-	ND	ND	0.50	7415713
Bis(2-ethylhexyl)phthalate	ug/L	-	ND	ND	2.0	7415713
4-Bromophenyl phenyl ether	ug/L	-	ND	ND	0.30	7415713
Camphene	ug/L	-	ND	ND	1.0	7415713
4-Chlorophenyl phenyl ether	ug/L	-	ND	ND	0.50	7415713
Di-N-butyl phthalate	ug/L	-	ND	ND	2.0	7415713
di-n-octyl phthalate	ug/L	-	ND	ND	0.80	7415713
2,4-Dinitrotoluene	ug/L	-	ND	ND	0.50	7415713
2,6-Dinitrotoluene	ug/L	-	ND	ND	0.50	7415713
Diphenyl Ether	ug/L	-	ND	ND	0.30	7415713
Indole	ug/L	-	ND	ND	1.0	7415713
Nitrosodiphenylamine/Diphenylamine	ug/L	-	ND	ND	1.0	7415713
RDL = Reportable Detection Limit QC Batch = Quality Control Batch Criteria: Ontario Regulation 169/03 Criteria A = Maximum Acceptable Criteria B = Interim Maximum Criteria C = Chemical/Physical Objectives [A/O] (Made under the Ontario Safe Drinking Water Act, 2002) ND = Not detected						



BUREAU
VERITAS

BV Labs Job #: C1G4299
Report Date: 2021/06/22

City of Guelph
Client Project #: WET/DRY GROUND WATER
Site Location: JUNE GW
Your P.O. #: 2100310
Sampler Initials: AS

SEMI-VOLATILE ORGANICS BY GC-MS (WATER)

BV Labs ID			PVO859	PVO860		
Sampling Date			2021/06/15	2021/06/15		
COC Number			830940-03-01	830940-03-01		
	UNITS	Criteria	19 A	19 B	RDL	QC Batch
N-Nitroso-di-n-propylamine	ug/L	-	ND	ND	0.50	7415713
Surrogate Recovery (%)						
2,4,6-Tribromophenol	%	-	92	113		7415713
2-Fluorobiphenyl	%	-	77	86		7415713
2-Fluorophenol	%	-	30	41		7415713
D14-Terphenyl	%	-	89	91		7415713
D5-Nitrobenzene	%	-	86	100		7415713
D5-Phenol	%	-	19	26		7415713
RDL = Reportable Detection Limit QC Batch = Quality Control Batch Criteria: Ontario Regulation 169/03 Criteria A = Maximum Acceptable Criteria B = Interim Maximum Criteria C = Chemical/Physical Objectives [A/O] (Made under the Ontario Safe Drinking Water Act, 2002) ND = Not detected						



BV Labs Job #: C1G4299
Report Date: 2021/06/22

City of Guelph
Client Project #: WET/DRY GROUND WATER
Site Location: JUNE GW
Your P.O. #: 2100310
Sampler Initials: AS

VOLATILE ORGANICS BY GC/MS (WATER)

BV Labs ID					PVO855	PVO856	PVO856		
Sampling Date					2021/06/14	2021/06/14	2021/06/14		
COC Number					830940-03-01	830940-03-01	830940-03-01		
	UNITS	Criteria	Criteria B	Criteria C	5	8	8 Lab-Dup	RDL	QC Batch

Volatile Organics									
Acetone (2-Propanone)	ug/L	-	-	-	ND	ND	ND	10	7410929
Benzene	ug/L	5	-	-	ND	ND	ND	0.10	7410929
Bromodichloromethane	ug/L	-	-	-	ND	ND	ND	0.10	7410929
Acrolein	ug/L	-	-	-	ND	ND	ND	10	7392088
Bromoform	ug/L	-	-	-	ND	ND	ND	0.20	7410929
Bromomethane	ug/L	-	-	-	ND	ND	ND	0.50	7410929
Carbon Tetrachloride	ug/L	5	-	-	ND	ND	ND	0.10	7410929
Chlorobenzene	ug/L	80	-	-	ND	ND	ND	0.10	7410929
Chloroform	ug/L	-	-	-	ND	ND	ND	0.10	7410929
Acrylonitrile	ug/L	-	-	-	ND	ND	ND	5.0	7392088
Chloromethane	ug/L	-	-	-	ND	ND	ND	0.50	7410929
Dibromochloromethane	ug/L	-	-	-	ND	ND	ND	0.20	7410929
1,2-Dichlorobenzene	ug/L	200	-	-	ND	ND	ND	0.20	7410929
1,3-Dichlorobenzene	ug/L	-	-	-	ND	ND	ND	0.20	7410929
1,4-Dichlorobenzene	ug/L	5	-	-	ND	ND	ND	0.20	7410929
1,1-Dichloroethane	ug/L	-	-	-	ND	ND	ND	0.10	7410929
1,2-Dichloroethane	ug/L	-	5	-	ND	ND	ND	0.20	7410929
1,1-Dichloroethylene	ug/L	14	-	-	ND	ND	ND	0.10	7410929
cis-1,2-Dichloroethylene	ug/L	-	-	-	ND	ND	ND	0.10	7410929
trans-1,2-Dichloroethylene	ug/L	-	-	-	ND	ND	ND	0.10	7410929
1,2-Dichloropropane	ug/L	-	-	-	ND	ND	ND	0.10	7410929
cis-1,3-Dichloropropene	ug/L	-	-	-	ND	ND	ND	0.20	7410929
trans-1,3-Dichloropropene	ug/L	-	-	-	ND	ND	ND	0.20	7410929
Ethylbenzene	ug/L	-	-	2.4	ND	ND	ND	0.10	7410929
Ethylene Dibromide	ug/L	-	-	-	ND	ND	ND	0.20	7410929
Methylene Chloride(Dichloromethane)	ug/L	50	-	-	ND	ND	ND	0.50	7410929
Methyl Ethyl Ketone (2-Butanone)	ug/L	-	-	-	ND	ND	ND	5.0	7410929
Methyl Isobutyl Ketone	ug/L	-	-	-	ND	ND	ND	5.0	7410929

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
Lab-Dup = Laboratory Initiated Duplicate
Criteria, Criteria B, Criteria C: Ontario Regulation 169/03
Criteria A = Maximum Acceptable
Criteria B = Interim Maximum
Criteria C = Chemical/Physical Objectives [A/O]
(Made under the Ontario Safe Drinking Water Act, 2002)
ND = Not detected



BUREAU
VERITAS

BV Labs Job #: C1G4299
Report Date: 2021/06/22

City of Guelph
Client Project #: WET/DRY GROUND WATER
Site Location: JUNE GW
Your P.O. #: 2100310
Sampler Initials: AS

VOLATILE ORGANICS BY GC/MS (WATER)

BV Labs ID					PVO855	PVO856	PVO856		
Sampling Date					2021/06/14	2021/06/14	2021/06/14		
COC Number					830940-03-01	830940-03-01	830940-03-01		
	UNITS	Criteria	Criteria B	Criteria C	5	8	8 Lab-Dup	RDL	QC Batch
Methyl t-butyl ether (MTBE)	ug/L	-	-	-	ND	ND	ND	0.20	7410929
Styrene	ug/L	-	-	-	ND	ND	ND	0.20	7410929
1,1,1,2-Tetrachloroethane	ug/L	-	-	-	ND	ND	ND	0.20	7410929
1,1,2,2-Tetrachloroethane	ug/L	-	-	-	ND	ND	ND	0.20	7410929
Tetrachloroethylene	ug/L	30	-	-	ND	ND	ND	0.10	7410929
Toluene	ug/L	-	-	24	ND	ND	ND	0.20	7410929
1,1,1-Trichloroethane	ug/L	-	-	-	ND	ND	ND	0.10	7410929
1,1,2-Trichloroethane	ug/L	-	-	-	ND	ND	ND	0.20	7410929
Trichloroethylene	ug/L	5	-	-	ND	ND	ND	0.10	7410929
Trichlorofluoromethane (FREON 11)	ug/L	-	-	-	ND	ND	ND	0.20	7410929
Vinyl Chloride	ug/L	2	-	-	ND	ND	ND	0.20	7410929
p+m-Xylene	ug/L	-	-	-	ND	ND	ND	0.10	7410929
o-Xylene	ug/L	-	-	-	ND	ND	ND	0.10	7410929
Total Xylenes	ug/L	-	-	300	ND	ND	ND	0.10	7410929
Surrogate Recovery (%)									
4-Bromofluorobenzene	%	-	-	-	100	100	100		7410929
D4-1,2-Dichloroethane	%	-	-	-	101	100	102		7410929
D8-Toluene	%	-	-	-	99	100	100		7410929
RDL = Reportable Detection Limit QC Batch = Quality Control Batch Lab-Dup = Laboratory Initiated Duplicate Criteria, Criteria B, Criteria C: Ontario Regulation 169/03 Criteria A = Maximum Acceptable Criteria B = Interim Maximum Criteria C = Chemical/Physical Objectives [A/O] (Made under the Ontario Safe Drinking Water Act, 2002) ND = Not detected									



BV Labs Job #: C1G4299
Report Date: 2021/06/22

City of Guelph
Client Project #: WET/DRY GROUND WATER
Site Location: JUNE GW
Your P.O. #: 2100310
Sampler Initials: AS

VOLATILE ORGANICS BY GC/MS (WATER)

BV Labs ID					PVO857	PVO858	PVO859		
Sampling Date					2021/06/14	2021/06/14	2021/06/15		
COC Number					830940-03-01	830940-03-01	830940-03-01		
	UNITS	Criteria	Criteria B	Criteria C	11 A	11 B	19 A	RDL	QC Batch
Volatile Organics									
Acetone (2-Propanone)	ug/L	-	-	-	ND	ND	ND	10	7410929
Benzene	ug/L	5	-	-	ND	ND	ND	0.10	7410929
Bromodichloromethane	ug/L	-	-	-	ND	0.40	ND	0.10	7410929
Acrolein	ug/L	-	-	-	ND	ND	ND	10	7392088
Bromoform	ug/L	-	-	-	ND	ND	ND	0.20	7410929
Bromomethane	ug/L	-	-	-	ND	ND	ND	0.50	7410929
Carbon Tetrachloride	ug/L	5	-	-	ND	ND	ND	0.10	7410929
Chlorobenzene	ug/L	80	-	-	ND	ND	ND	0.10	7410929
Chloroform	ug/L	-	-	-	ND	5.4	ND	0.10	7410929
Acrylonitrile	ug/L	-	-	-	ND	ND	ND	5.0	7392088
Chloromethane	ug/L	-	-	-	ND	ND	ND	0.50	7410929
Dibromochloromethane	ug/L	-	-	-	ND	ND	ND	0.20	7410929
1,2-Dichlorobenzene	ug/L	200	-	-	ND	ND	ND	0.20	7410929
1,3-Dichlorobenzene	ug/L	-	-	-	ND	ND	ND	0.20	7410929
1,4-Dichlorobenzene	ug/L	5	-	-	ND	ND	ND	0.20	7410929
1,1-Dichloroethane	ug/L	-	-	-	ND	ND	ND	0.10	7410929
1,2-Dichloroethane	ug/L	-	5	-	ND	ND	ND	0.20	7410929
1,1-Dichloroethylene	ug/L	14	-	-	ND	ND	ND	0.10	7410929
cis-1,2-Dichloroethylene	ug/L	-	-	-	ND	ND	ND	0.10	7410929
trans-1,2-Dichloroethylene	ug/L	-	-	-	ND	ND	ND	0.10	7410929
1,2-Dichloropropane	ug/L	-	-	-	ND	ND	ND	0.10	7410929
cis-1,3-Dichloropropene	ug/L	-	-	-	ND	ND	ND	0.20	7410929
trans-1,3-Dichloropropene	ug/L	-	-	-	ND	ND	ND	0.20	7410929
Ethylbenzene	ug/L	-	-	2.4	ND	ND	ND	0.10	7410929
Ethylene Dibromide	ug/L	-	-	-	ND	ND	ND	0.20	7410929
Methylene Chloride(Dichloromethane)	ug/L	50	-	-	ND	ND	ND	0.50	7410929
Methyl Ethyl Ketone (2-Butanone)	ug/L	-	-	-	ND	ND	ND	5.0	7410929
Methyl Isobutyl Ketone	ug/L	-	-	-	ND	ND	ND	5.0	7410929
RDL = Reportable Detection Limit									
QC Batch = Quality Control Batch									
Criteria, Criteria B, Criteria C: Ontario Regulation 169/03									
Criteria A = Maximum Acceptable									
Criteria B = Interim Maximum									
Criteria C = Chemical/Physical Objectives [A/O]									
(Made under the Ontario Safe Drinking Water Act, 2002)									
ND = Not detected									



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VERITAS

BV Labs Job #: C1G4299
Report Date: 2021/06/22

City of Guelph
Client Project #: WET/DRY GROUND WATER
Site Location: JUNE GW
Your P.O. #: 2100310
Sampler Initials: AS

VOLATILE ORGANICS BY GC/MS (WATER)

BV Labs ID					PVO857	PVO858	PVO859		
Sampling Date					2021/06/14	2021/06/14	2021/06/15		
COC Number					830940-03-01	830940-03-01	830940-03-01		
	UNITS	Criteria	Criteria B	Criteria C	11 A	11 B	19 A	RDL	QC Batch
Methyl t-butyl ether (MTBE)	ug/L	-	-	-	ND	ND	ND	0.20	7410929
Styrene	ug/L	-	-	-	ND	ND	ND	0.20	7410929
1,1,1,2-Tetrachloroethane	ug/L	-	-	-	ND	ND	ND	0.20	7410929
1,1,2,2-Tetrachloroethane	ug/L	-	-	-	ND	ND	ND	0.20	7410929
Tetrachloroethylene	ug/L	30	-	-	ND	ND	ND	0.10	7410929
Toluene	ug/L	-	-	24	ND	ND	ND	0.20	7410929
1,1,1-Trichloroethane	ug/L	-	-	-	ND	ND	ND	0.10	7410929
1,1,2-Trichloroethane	ug/L	-	-	-	ND	ND	ND	0.20	7410929
Trichloroethylene	ug/L	5	-	-	ND	ND	ND	0.10	7410929
Trichlorofluoromethane (FREON 11)	ug/L	-	-	-	ND	ND	ND	0.20	7410929
Vinyl Chloride	ug/L	2	-	-	ND	ND	ND	0.20	7410929
p+m-Xylene	ug/L	-	-	-	ND	ND	ND	0.10	7410929
o-Xylene	ug/L	-	-	-	ND	ND	ND	0.10	7410929
Total Xylenes	ug/L	-	-	300	ND	ND	ND	0.10	7410929
Surrogate Recovery (%)									
4-Bromofluorobenzene	%	-	-	-	101	100	99		7410929
D4-1,2-Dichloroethane	%	-	-	-	100	99	100		7410929
D8-Toluene	%	-	-	-	99	100	99		7410929
RDL = Reportable Detection Limit QC Batch = Quality Control Batch Criteria, Criteria B, Criteria C: Ontario Regulation 169/03 Criteria A = Maximum Acceptable Criteria B = Interim Maximum Criteria C = Chemical/Physical Objectives [A/O] (Made under the Ontario Safe Drinking Water Act, 2002) ND = Not detected									



BV Labs Job #: C1G4299
Report Date: 2021/06/22

City of Guelph
Client Project #: WET/DRY GROUND WATER
Site Location: JUNE GW
Your P.O. #: 2100310
Sampler Initials: AS

VOLATILE ORGANICS BY GC/MS (WATER)

BV Labs ID					PVO860		
Sampling Date					2021/06/15		
COC Number					830940-03-01		
	UNITS	Criteria	Criteria B	Criteria C	19 B	RDL	QC Batch
Volatile Organics							
Acetone (2-Propanone)	ug/L	-	-	-	ND	10	7410929
Benzene	ug/L	5	-	-	ND	0.10	7410929
Bromodichloromethane	ug/L	-	-	-	ND	0.10	7410929
Acrolein	ug/L	-	-	-	ND	10	7392088
Bromoform	ug/L	-	-	-	ND	0.20	7410929
Bromomethane	ug/L	-	-	-	ND	0.50	7410929
Carbon Tetrachloride	ug/L	5	-	-	ND	0.10	7410929
Chlorobenzene	ug/L	80	-	-	ND	0.10	7410929
Chloroform	ug/L	-	-	-	ND	0.10	7410929
Acrylonitrile	ug/L	-	-	-	ND	5.0	7392088
Chloromethane	ug/L	-	-	-	ND	0.50	7410929
Dibromochloromethane	ug/L	-	-	-	ND	0.20	7410929
1,2-Dichlorobenzene	ug/L	200	-	-	ND	0.20	7410929
1,3-Dichlorobenzene	ug/L	-	-	-	ND	0.20	7410929
1,4-Dichlorobenzene	ug/L	5	-	-	ND	0.20	7410929
1,1-Dichloroethane	ug/L	-	-	-	ND	0.10	7410929
1,2-Dichloroethane	ug/L	-	5	-	ND	0.20	7410929
1,1-Dichloroethylene	ug/L	14	-	-	ND	0.10	7410929
cis-1,2-Dichloroethylene	ug/L	-	-	-	ND	0.10	7410929
trans-1,2-Dichloroethylene	ug/L	-	-	-	ND	0.10	7410929
1,2-Dichloropropane	ug/L	-	-	-	ND	0.10	7410929
cis-1,3-Dichloropropene	ug/L	-	-	-	ND	0.20	7410929
trans-1,3-Dichloropropene	ug/L	-	-	-	ND	0.20	7410929
Ethylbenzene	ug/L	-	-	2.4	ND	0.10	7410929
Ethylene Dibromide	ug/L	-	-	-	ND	0.20	7410929
Methylene Chloride(Dichloromethane)	ug/L	50	-	-	ND	0.50	7410929
Methyl Ethyl Ketone (2-Butanone)	ug/L	-	-	-	ND	5.0	7410929
Methyl Isobutyl Ketone	ug/L	-	-	-	ND	5.0	7410929
RDL = Reportable Detection Limit							
QC Batch = Quality Control Batch							
Criteria, Criteria B, Criteria C: Ontario Regulation 169/03							
Criteria A = Maximum Acceptable							
Criteria B = Interim Maximum							
Criteria C = Chemical/Physical Objectives [A/O]							
(Made under the Ontario Safe Drinking Water Act, 2002)							
ND = Not detected							



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VERITAS

BV Labs Job #: C1G4299

Report Date: 2021/06/22

City of Guelph

Client Project #: WET/DRY GROUND WATER

Site Location: JUNE GW

Your P.O. #: 2100310

Sampler Initials: AS

VOLATILE ORGANICS BY GC/MS (WATER)

BV Labs ID					PVO860		
Sampling Date					2021/06/15		
COC Number					830940-03-01		
	UNITS	Criteria	Criteria B	Criteria C	19 B	RDL	QC Batch
Methyl t-butyl ether (MTBE)	ug/L	-	-	-	ND	0.20	7410929
Styrene	ug/L	-	-	-	ND	0.20	7410929
1,1,1,2-Tetrachloroethane	ug/L	-	-	-	ND	0.20	7410929
1,1,2,2-Tetrachloroethane	ug/L	-	-	-	ND	0.20	7410929
Tetrachloroethylene	ug/L	30	-	-	ND	0.10	7410929
Toluene	ug/L	-	-	24	ND	0.20	7410929
1,1,1-Trichloroethane	ug/L	-	-	-	ND	0.10	7410929
1,1,2-Trichloroethane	ug/L	-	-	-	ND	0.20	7410929
Trichloroethylene	ug/L	5	-	-	ND	0.10	7410929
Trichlorofluoromethane (FREON 11)	ug/L	-	-	-	ND	0.20	7410929
Vinyl Chloride	ug/L	2	-	-	ND	0.20	7410929
p+m-Xylene	ug/L	-	-	-	ND	0.10	7410929
o-Xylene	ug/L	-	-	-	ND	0.10	7410929
Total Xylenes	ug/L	-	-	300	ND	0.10	7410929
Surrogate Recovery (%)							
4-Bromofluorobenzene	%	-	-	-	101		7410929
D4-1,2-Dichloroethane	%	-	-	-	101		7410929
D8-Toluene	%	-	-	-	99		7410929
RDL = Reportable Detection Limit QC Batch = Quality Control Batch Criteria, Criteria B, Criteria C: Ontario Regulation 169/03 Criteria A = Maximum Acceptable Criteria B = Interim Maximum Criteria C = Chemical/Physical Objectives [A/O] (Made under the Ontario Safe Drinking Water Act, 2002) ND = Not detected							



BUREAU
VERITAS

BV Labs Job #: C1G4299

Report Date: 2021/06/22

City of Guelph

Client Project #: WET/DRY GROUND WATER

Site Location: JUNE GW

Your P.O. #: 2100310

Sampler Initials: AS

GENERAL COMMENTS

Results relate only to the items tested.



BV Labs Job #: C1G4299
Report Date: 2021/06/22

QUALITY ASSURANCE REPORT

City of Guelph
Client Project #: WET/DRY GROUND WATER
Site Location: JUNE GW
Your P.O. #: 2100310
Sampler Initials: AS

QC Batch	Parameter	Date	Matrix Spike		SPIKED BLANK		Method Blank		RPD		QC Standard	
			% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits	% Recovery	QC Limits
7410929	4-Bromofluorobenzene	2021/06/18	102	70 - 130	102	70 - 130	99	%				
7410929	D4-1,2-Dichloroethane	2021/06/18	99	70 - 130	99	70 - 130	96	%				
7410929	D8-Toluene	2021/06/18	100	70 - 130	100	70 - 130	101	%				
7415713	2,4,6-Tribromophenol	2021/06/18	110	10 - 130	109	10 - 130	105	%				
7415713	2-Fluorobiphenyl	2021/06/18	79	30 - 130	79	30 - 130	87	%				
7415713	2-Fluorophenol	2021/06/18	40	10 - 130	46	10 - 130	41	%				
7415713	D14-Terphenyl	2021/06/18	95	30 - 130	97	30 - 130	92	%				
7415713	D5-Nitrobenzene	2021/06/18	90	30 - 130	97	30 - 130	97	%				
7415713	D5-Phenol	2021/06/18	26	10 - 130	27	10 - 130	27	%				
7392088	Acrolein	2021/06/18	107	60 - 140	104	60 - 140	ND, RDL=10	ug/L	NC	30		
7392088	Acrylonitrile	2021/06/18	105	60 - 140	101	60 - 140	ND, RDL=5.0	ug/L	NC	30		
7410496	Phenols-4AAP	2021/06/16	101	80 - 120	103	80 - 120	ND, RDL=0.0010	mg/L	NC	20		
7410723	Total BOD	2021/06/21					ND, RDL=2	mg/L	6.7	30	97	80 - 120
7410920	Total Kjeldahl Nitrogen (TKN)	2021/06/18	NC	80 - 120	98	80 - 120	ND, RDL=0.10	mg/L	0.50	20	97	80 - 120
7410921	Phenols-4AAP	2021/06/16	98	80 - 120	103	80 - 120	ND, RDL=0.0010	mg/L	NC	20		
7410929	1,1,1,2-Tetrachloroethane	2021/06/18	95	70 - 130	97	70 - 130	ND, RDL=0.20	ug/L	NC	30		
7410929	1,1,1-Trichloroethane	2021/06/18	96	70 - 130	96	70 - 130	ND, RDL=0.10	ug/L	NC	30		
7410929	1,1,2,2-Tetrachloroethane	2021/06/18	88	70 - 130	89	70 - 130	ND, RDL=0.20	ug/L	NC	30		
7410929	1,1,2-Trichloroethane	2021/06/18	94	70 - 130	94	70 - 130	ND, RDL=0.20	ug/L	NC	30		
7410929	1,1-Dichloroethane	2021/06/18	86	70 - 130	87	70 - 130	ND, RDL=0.10	ug/L	NC	30		
7410929	1,1-Dichloroethylene	2021/06/18	91	70 - 130	90	70 - 130	ND, RDL=0.10	ug/L	NC	30		
7410929	1,2-Dichlorobenzene	2021/06/18	94	70 - 130	92	70 - 130	ND, RDL=0.20	ug/L	NC	30		
7410929	1,2-Dichloroethane	2021/06/18	88	70 - 130	88	70 - 130	ND, RDL=0.20	ug/L	NC	30		
7410929	1,2-Dichloropropane	2021/06/18	92	70 - 130	92	70 - 130	ND, RDL=0.10	ug/L	NC	30		
7410929	1,3-Dichlorobenzene	2021/06/18	94	70 - 130	92	70 - 130	ND, RDL=0.20	ug/L	NC	30		
7410929	1,4-Dichlorobenzene	2021/06/18	108	70 - 130	105	70 - 130	ND, RDL=0.20	ug/L	NC	30		
7410929	Acetone (2-Propanone)	2021/06/18	96	60 - 140	92	60 - 140	ND, RDL=10	ug/L	NC	30		
7410929	Benzene	2021/06/18	87	70 - 130	87	70 - 130	ND, RDL=0.10	ug/L	NC	30		



BV Labs Job #: C1G4299
Report Date: 2021/06/22

QUALITY ASSURANCE REPORT(CONT'D)

City of Guelph
Client Project #: WET/DRY GROUND WATER
Site Location: JUNE GW
Your P.O. #: 2100310
Sampler Initials: AS

QC Batch	Parameter	Date	Matrix Spike		SPIKED BLANK		Method Blank		RPD		QC Standard	
			% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits	% Recovery	QC Limits
7410929	Bromodichloromethane	2021/06/18	97	70 - 130	97	70 - 130	ND, RDL=0.10	ug/L	NC	30		
7410929	Bromoform	2021/06/18	96	70 - 130	96	70 - 130	ND, RDL=0.20	ug/L	NC	30		
7410929	Bromomethane	2021/06/18	85	60 - 140	72	60 - 140	ND, RDL=0.50	ug/L	NC	30		
7410929	Carbon Tetrachloride	2021/06/18	95	70 - 130	94	70 - 130	ND, RDL=0.10	ug/L	NC	30		
7410929	Chlorobenzene	2021/06/18	93	70 - 130	93	70 - 130	ND, RDL=0.10	ug/L	NC	30		
7410929	Chloroform	2021/06/18	93	70 - 130	92	70 - 130	ND, RDL=0.10	ug/L	NC	30		
7410929	Chloromethane	2021/06/18	84	60 - 140	85	60 - 140	ND, RDL=0.50	ug/L	NC	30		
7410929	cis-1,2-Dichloroethylene	2021/06/18	93	70 - 130	93	70 - 130	ND, RDL=0.10	ug/L	NC	30		
7410929	cis-1,3-Dichloropropene	2021/06/18	96	70 - 130	94	70 - 130	ND, RDL=0.20	ug/L	NC	30		
7410929	Dibromochloromethane	2021/06/18	93	70 - 130	94	70 - 130	ND, RDL=0.20	ug/L	NC	30		
7410929	Ethylbenzene	2021/06/18	88	70 - 130	88	70 - 130	ND, RDL=0.10	ug/L	NC	30		
7410929	Ethylene Dibromide	2021/06/18	90	70 - 130	90	70 - 130	ND, RDL=0.20	ug/L	NC	30		
7410929	Methyl Ethyl Ketone (2-Butanone)	2021/06/18	87	60 - 140	86	60 - 140	ND, RDL=5.0	ug/L	NC	30		
7410929	Methyl Isobutyl Ketone	2021/06/18	93	70 - 130	89	70 - 130	ND, RDL=5.0	ug/L	NC	30		
7410929	Methyl t-butyl ether (MTBE)	2021/06/18	88	70 - 130	87	70 - 130	ND, RDL=0.20	ug/L	NC	30		
7410929	Methylene Chloride(Dichloromethane)	2021/06/18	91	70 - 130	90	70 - 130	ND, RDL=0.50	ug/L	NC	30		
7410929	o-Xylene	2021/06/18	89	70 - 130	89	70 - 130	ND, RDL=0.10	ug/L	NC	30		
7410929	p-m-Xylene	2021/06/18	92	70 - 130	92	70 - 130	ND, RDL=0.10	ug/L	NC	30		
7410929	Styrene	2021/06/18	99	70 - 130	99	70 - 130	ND, RDL=0.20	ug/L	NC	30		
7410929	Tetrachloroethylene	2021/06/18	90	70 - 130	87	70 - 130	ND, RDL=0.10	ug/L	NC	30		
7410929	Toluene	2021/06/18	90	70 - 130	90	70 - 130	ND, RDL=0.20	ug/L	NC	30		
7410929	Total Xylenes	2021/06/18					ND, RDL=0.10	ug/L	NC	30		
7410929	trans-1,2-Dichloroethylene	2021/06/18	94	70 - 130	91	70 - 130	ND, RDL=0.10	ug/L	NC	30		
7410929	trans-1,3-Dichloropropene	2021/06/18	97	70 - 130	96	70 - 130	ND, RDL=0.20	ug/L	NC	30		
7410929	Trichloroethylene	2021/06/18	99	70 - 130	97	70 - 130	ND, RDL=0.10	ug/L	NC	30		
7410929	Trichlorofluoromethane (FREON 11)	2021/06/18	91	70 - 130	90	70 - 130	ND, RDL=0.20	ug/L	NC	30		
7410929	Vinyl Chloride	2021/06/18	88	70 - 130	87	70 - 130	ND, RDL=0.20	ug/L	NC	30		
7411054	Total Ammonia-N	2021/06/18	96	75 - 125	99	80 - 120	ND, RDL=0.050	mg/L	4.1	20		



BV Labs Job #: C1G4299
Report Date: 2021/06/22

QUALITY ASSURANCE REPORT(CONT'D)

City of Guelph
Client Project #: WET/DRY GROUND WATER
Site Location: JUNE GW
Your P.O. #: 2100310
Sampler Initials: AS

QC Batch	Parameter	Date	Matrix Spike		SPIKED BLANK		Method Blank		RPD		QC Standard	
			% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits	% Recovery	QC Limits
7411075	Total Ammonia-N	2021/06/18	95	75 - 125	99	80 - 120	ND, RDL=0.050	mg/L	NC	20		
7411079	Total Kjeldahl Nitrogen (TKN)	2021/06/18	NC	80 - 120	98	80 - 120	ND, RDL=0.10	mg/L	4.5	20	97	80 - 120
7411081	Total Chemical Oxygen Demand (COD)	2021/06/21	96	80 - 120	98	80 - 120	ND, RDL=4.0	mg/L	NC	20		
7411478	Total Kjeldahl Nitrogen (TKN)	2021/06/18	97	80 - 120	102	80 - 120	ND, RDL=0.10	mg/L	NC	20	98	80 - 120
7411506	Total Chemical Oxygen Demand (COD)	2021/06/17	105	80 - 120	102	80 - 120	5.1, RDL=4.0	mg/L	NC	20		
7411630	Nitrate (N)	2021/06/17	NC	80 - 120	108	80 - 120	ND, RDL=0.10	mg/L	0.56	20		
7411630	Nitrite (N)	2021/06/17	107	80 - 120	110	80 - 120	ND, RDL=0.010	mg/L	0.57	20		
7412023	Alkalinity (Total as CaCO ₃)	2021/06/17			97	85 - 115	ND, RDL=1.0	mg/L	3.9	20		
7412031	Conductivity	2021/06/17			101	85 - 115	ND, RDL=1.0	umho/cm	0.42	25		
7412032	pH	2021/06/17			102	98 - 103			1.6	N/A		
7412055	Nitrate (N)	2021/06/17	106	80 - 120	105	80 - 120	ND, RDL=0.10	mg/L	0.70	20		
7412055	Nitrite (N)	2021/06/17	108	80 - 120	107	80 - 120	ND, RDL=0.010	mg/L	NC	20		
7412067	Total Ammonia-N	2021/06/17	98	75 - 125	99	80 - 120	ND, RDL=0.050	mg/L	NC	20		
7412077	Dissolved Chloride (Cl ⁻)	2021/06/17	NC	80 - 120	104	80 - 120	ND, RDL=1.0	mg/L	0.55	20		
7412099	Dissolved Sulphate (SO ₄)	2021/06/17	110	75 - 125	105	80 - 120	ND, RDL=1.0	mg/L	NC	20		
7412255	Dissolved Boron (B)	2021/06/17	97	80 - 120	97	80 - 120	ND, RDL=10	ug/L	1.9	20		
7412255	Dissolved Calcium (Ca)	2021/06/17	NC	80 - 120	103	80 - 120	ND, RDL=200	ug/L				
7412255	Dissolved Magnesium (Mg)	2021/06/17	94	80 - 120	102	80 - 120	ND, RDL=50	ug/L				
7412255	Dissolved Phosphorus (P)	2021/06/17	106	80 - 120	105	80 - 120	ND, RDL=100	ug/L				
7412255	Dissolved Potassium (K)	2021/06/17	103	80 - 120	99	80 - 120	ND, RDL=200	ug/L				
7412255	Dissolved Sodium (Na)	2021/06/17	102	80 - 120	99	80 - 120	ND, RDL=100	ug/L	5.3	20		
7412255	Dissolved Zinc (Zn)	2021/06/17	99	80 - 120	100	80 - 120	ND, RDL=5.0	ug/L	NC	20		
7412402	Alkalinity (Total as CaCO ₃)	2021/06/17			95	85 - 115	ND, RDL=1.0	mg/L	0.36	20		
7412424	Conductivity	2021/06/17			100	85 - 115	ND, RDL=1.0	umho/cm	0.35	25		
7412427	pH	2021/06/17			102	98 - 103			0.48	N/A		



BV Labs Job #: C1G4299
Report Date: 2021/06/22

QUALITY ASSURANCE REPORT(CONT'D)

City of Guelph
Client Project #: WET/DRY GROUND WATER
Site Location: JUNE GW
Your P.O. #: 2100310
Sampler Initials: AS

QC Batch	Parameter	Date	Matrix Spike		SPIKED BLANK		Method Blank		RPD		QC Standard	
			% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits	% Recovery	QC Limits
7413259	Total Phosphorus	2021/06/17	101	80 - 120	100	80 - 120	ND, RDL=0.020	mg/L	1.4	20	98	80 - 120
7413472	Total Phosphorus	2021/06/17	99	80 - 120	99	80 - 120	ND, RDL=0.020	mg/L	1.8	20	98	80 - 120
7413667	Total Phosphorus	2021/06/18	95	80 - 120	97	80 - 120	ND, RDL=0.020	mg/L	3.5	20	95	80 - 120
7415712	Total Iron (Fe)	2021/06/18	97	80 - 120	99	80 - 120	ND, RDL=0.02	mg/L	11	25		
7415713	1-Chloronaphthalene	2021/06/18	76	30 - 130	74	30 - 130	ND, RDL=1.0	ug/L	NC	40		
7415713	1-Methylnaphthalene	2021/06/18	93	30 - 130	93	30 - 130	ND, RDL=0.20	ug/L	NC	40		
7415713	2,3,4,5-Tetrachlorophenol	2021/06/18	89	10 - 130	85	10 - 130	ND, RDL=0.40	ug/L	NC	40		
7415713	2,3,4,6-Tetrachlorophenol	2021/06/18	110	10 - 130	116	10 - 130	ND, RDL=0.50	ug/L	NC	40		
7415713	2,3,4-Trichlorophenol	2021/06/18	97	10 - 130	91	10 - 130	ND, RDL=0.50	ug/L	NC	40		
7415713	2,3,5,6-Tetrachlorophenol	2021/06/18	117	10 - 130	115	10 - 130	ND, RDL=0.50	ug/L	NC	40		
7415713	2,3,5-Trichlorophenol	2021/06/18	108	10 - 130	99	10 - 130	ND, RDL=0.50	ug/L	NC	40		
7415713	2,4,5-Trichlorophenol	2021/06/18	105	10 - 130	102	10 - 130	ND, RDL=0.50	ug/L	NC	40		
7415713	2,4,6-Trichlorophenol	2021/06/18	97	10 - 130	94	10 - 130	ND, RDL=0.50	ug/L	NC	40		
7415713	2,4-Dichlorophenol	2021/06/18	95	10 - 130	100	10 - 130	ND, RDL=0.30	ug/L	NC	40		
7415713	2,4-Dimethylphenol	2021/06/18	82	10 - 130	71	10 - 130	ND, RDL=0.50	ug/L	NC	40		
7415713	2,4-Dinitrophenol	2021/06/18	121	10 - 130	129	10 - 130	ND, RDL=2.0	ug/L	NC	40		
7415713	2,4-Dinitrotoluene	2021/06/18	105	30 - 130	99	30 - 130	ND, RDL=0.50	ug/L	NC	40		
7415713	2,6-Dichlorophenol	2021/06/18	93	10 - 130	94	10 - 130	ND, RDL=0.50	ug/L	NC	40		
7415713	2,6-Dinitrotoluene	2021/06/18	93	30 - 130	87	30 - 130	ND, RDL=0.50	ug/L	NC	40		
7415713	2-Chloronaphthalene	2021/06/18	83	30 - 130	78	30 - 130	ND, RDL=0.50	ug/L	NC	40		
7415713	2-Chlorophenol	2021/06/18	75	10 - 130	83	10 - 130	ND, RDL=0.30	ug/L	NC	40		
7415713	2-Methylnaphthalene	2021/06/18	82	30 - 130	83	30 - 130	ND, RDL=0.20	ug/L	NC	40		
7415713	4,6-Dinitro-2-methylphenol	2021/06/18	113	10 - 130	123	10 - 130	ND, RDL=2.0	ug/L	NC	40		
7415713	4-Bromophenyl phenyl ether	2021/06/18	98	30 - 130	93	30 - 130	ND, RDL=0.30	ug/L	NC	40		
7415713	4-Chloro-3-Methylphenol	2021/06/18	94	10 - 130	94	10 - 130	ND, RDL=0.50	ug/L	NC	40		
7415713	4-Chlorophenyl phenyl ether	2021/06/18	83	30 - 130	79	30 - 130	ND, RDL=0.50	ug/L	NC	40		
7415713	4-Nitrophenol	2021/06/18	22	10 - 130	26	10 - 130	ND, RDL=1.4	ug/L	NC	40		



BV Labs Job #: C1G4299
Report Date: 2021/06/22

QUALITY ASSURANCE REPORT(CONT'D)

City of Guelph
Client Project #: WET/DRY GROUND WATER
Site Location: JUNE GW
Your P.O. #: 2100310
Sampler Initials: AS

QC Batch	Parameter	Date	Matrix Spike		SPIKED BLANK		Method Blank		RPD		QC Standard	
			% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits	% Recovery	QC Limits
7415713	5-Nitroacenaphthene	2021/06/18	95	30 - 130	98	30 - 130	ND, RDL=1.0	ug/L	NC	40		
7415713	Acenaphthene	2021/06/18	93	30 - 130	86	30 - 130	ND, RDL=0.20	ug/L	NC	40		
7415713	Acenaphthylene	2021/06/18	95	30 - 130	90	30 - 130	ND, RDL=0.20	ug/L	NC	40		
7415713	Anthracene	2021/06/18	86	30 - 130	84	30 - 130	ND, RDL=0.20	ug/L	NC	40		
7415713	Benzo(a)anthracene	2021/06/18	105	30 - 130	104	30 - 130	ND, RDL=0.20	ug/L	NC	40		
7415713	Benzo(a)pyrene	2021/06/18	87	30 - 130	87	30 - 130	ND, RDL=0.20	ug/L	NC	40		
7415713	Benzo(b,j)fluoranthene	2021/06/18	99	30 - 130	99	30 - 130	ND, RDL=0.20	ug/L	NC	40		
7415713	Benzo(g,h,i)perylene	2021/06/18	68	30 - 130	77	30 - 130	ND, RDL=0.20	ug/L	NC	40		
7415713	Benzo(k)fluoranthene	2021/06/18	103	30 - 130	98	30 - 130	ND, RDL=0.20	ug/L	NC	40		
7415713	Benzyl butyl phthalate	2021/06/18	97	30 - 130	103	30 - 130	ND, RDL=0.50	ug/L	NC	40		
7415713	Biphenyl	2021/06/18	88	30 - 130	83	30 - 130	ND, RDL=0.50	ug/L	NC	40		
7415713	Bis(2-chloroethoxy)methane	2021/06/18	74	30 - 130	76	30 - 130	ND, RDL=0.50	ug/L	NC	40		
7415713	Bis(2-chloroethyl)ether	2021/06/18	77	30 - 130	81	30 - 130	ND, RDL=0.50	ug/L	NC	40		
7415713	Bis(2-chloroisopropyl)ether	2021/06/18	68	30 - 130	69	30 - 130	ND, RDL=0.50	ug/L	NC	40		
7415713	Bis(2-ethylhexyl)phthalate	2021/06/18	100	30 - 130	104	30 - 130	ND, RDL=2.0	ug/L	NC	40		
7415713	Camphene	2021/06/18	63	30 - 130	75	30 - 130	ND, RDL=1.0	ug/L	NC	40		
7415713	Chrysene	2021/06/18	101	30 - 130	98	30 - 130	ND, RDL=0.20	ug/L	NC	40		
7415713	Dibenzo(a,h)anthracene	2021/06/18	76	30 - 130	83	30 - 130	ND, RDL=0.20	ug/L	NC	40		
7415713	Di-N-butyl phthalate	2021/06/18	103	30 - 130	106	30 - 130	ND, RDL=2.0	ug/L	NC	40		
7415713	di-n-octyl phthalate	2021/06/18	98	30 - 130	99	30 - 130	ND, RDL=0.80	ug/L	NC	40		
7415713	Diphenyl Ether	2021/06/18	81	30 - 130	75	30 - 130	ND, RDL=0.30	ug/L	NC	40		
7415713	Fluoranthene	2021/06/18	103	30 - 130	101	30 - 130	ND, RDL=0.20	ug/L	NC	40		
7415713	Fluorene	2021/06/18	96	30 - 130	90	30 - 130	ND, RDL=0.20	ug/L	NC	40		
7415713	Indeno(1,2,3-cd)pyrene	2021/06/18	77	30 - 130	85	30 - 130	ND, RDL=0.20	ug/L	NC	40		
7415713	Indole	2021/06/18	75	30 - 130	81	30 - 130	ND, RDL=1.0	ug/L	NC	40		
7415713	m/p-Cresol	2021/06/18	57	10 - 130	62	10 - 130	ND, RDL=0.50	ug/L	NC	40		
7415713	Naphthalene	2021/06/18	73	30 - 130	73	30 - 130	ND, RDL=0.20	ug/L	NC	40		
7415713	Nitrosodiphenylamine/Diphenylamine	2021/06/18	119	30 - 130	124	30 - 130	ND, RDL=1.0	ug/L	NC	40		
7415713	N-Nitroso-di-n-propylamine	2021/06/18	92	30 - 130	97	30 - 130	ND, RDL=0.50	ug/L	NC	40		
7415713	o-Cresol	2021/06/18	62	10 - 130	66	10 - 130	ND, RDL=0.50	ug/L	NC	40		



BV Labs Job #: C1G4299
Report Date: 2021/06/22

QUALITY ASSURANCE REPORT(CONT'D)

City of Guelph
Client Project #: WET/DRY GROUND WATER
Site Location: JUNE GW
Your P.O. #: 2100310
Sampler Initials: AS

QC Batch	Parameter	Date	Matrix Spike		SPIKED BLANK		Method Blank		RPD		QC Standard	
			% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits	% Recovery	QC Limits
7415713	Pentachlorophenol	2021/06/18	90	10 - 130	84	10 - 130	ND, RDL=1.0	ug/L	NC	40		
7415713	Perylene	2021/06/18	94	30 - 130	91	30 - 130	ND, RDL=0.20	ug/L	NC	40		
7415713	Phenanthrene	2021/06/18	92	30 - 130	89	30 - 130	ND, RDL=0.20	ug/L	NC	40		
7415713	Phenol	2021/06/18	24	10 - 130	27	10 - 130	ND, RDL=0.50	ug/L	NC	40		
7415713	Pyrene	2021/06/18	93	30 - 130	91	30 - 130	ND, RDL=0.20	ug/L	NC	40		

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 $\leq 2 \times$ RDL).



BUREAU
VERITAS

BV Labs Job #: C1G4299

Report Date: 2021/06/22

City of Guelph

Client Project #: WET/DRY GROUND WATER

Site Location: JUNE GW

Your P.O. #: 2100310

Sampler Initials: AS

VALIDATION SIGNATURE PAGE

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

Anastassia Hamanov, Scientific Specialist

BV Labs 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 Signature Page.



Bureau Veritas Laboratories
5740 Campbell Road, Mississauga, Ontario Canada L5N 2L8 Tel: (905) 817-5700 Toll-free 800-563-6266 Fax: (905) 817-5777 www.bvlabs.com

CHAIN OF CUSTODY RECORD

Page 1 of 1

BOD

INVOICE TO:		REPORT TO:		PROJECT INFORMATION:		Laboratory Use Only:	
Company Name: #12237 City of Guelph		Company Name:		Quotation #: B90142		BV Labs Job #:	
Attention: Andrew Shouldice (Eastview)		Attention:		P.O. #:		Bottle Order #:	
Address: 186 Eastview Rd		Address:		Project: Wet/Dry Ground Water		COC #:	
Guelph ON N1E 1Z6		Address:		Project Name: June GW		Project Manager:	
Tel: (519) 822-1260 Ext: 2473 Fax: (519) 823-0910		Tel:		Site #:		James Aspin	
Email: Andrew.Shouldice@guelph.ca		Email:		Sampled By: Andrew Shouldice		C#830940-03-01	

MOE REGULATED DRINKING WATER OR WATER INTENDED FOR HUMAN CONSUMPTION MUST BE SUBMITTED ON THE BV LABS DRINKING WATER CHAIN OF CUSTODY

Regulation 153 (2011)			Other Regulations			Special Instructions		
<input type="checkbox"/> Table 1	<input type="checkbox"/> Res/Park	<input type="checkbox"/> Medium/Fine	<input type="checkbox"/> CCME	<input type="checkbox"/> Sanitary Sewer Bylaw				
<input type="checkbox"/> Table 2	<input type="checkbox"/> Ind/Comm	<input type="checkbox"/> Coarse	<input type="checkbox"/> Reg 558	<input type="checkbox"/> Storm Sewer Bylaw				
<input type="checkbox"/> Table 3	<input type="checkbox"/> Agri/Other	<input type="checkbox"/> For RSC	<input type="checkbox"/> MISA	Municipality				
<input type="checkbox"/> Table			<input type="checkbox"/> PWQO	<input type="checkbox"/> Reg 406 Table				
<input type="checkbox"/> Other								
Include Criteria on Certificate of Analysis (Y/N)?								
Sample Barcode Label	Sample (Location) Identification	Date Sampled	Time Sampled	Matrix	Field Filtered (please circle): Metals / Hg / Cr VI	Vol Dry GW	ATG	16-20
1	5	June 14/21	Am	GW	Y	X		
2	8			GW	Y	X		
3	11A			GW	Y	X		
4	11B			GW	Y	X		
5	19A	June 15/21	Am	GW	Y	X		
6	19B			GW	Y	X		
7								
8								
9								
10								

15-Jun-21 16:00
James Aspin
C1G4299

* RELINQUISHED BY: (Signature/Print)	Date: (YY/MM/DD)	Time	RECEIVED BY: (Signature/Print)	Date: (YY/MM/DD)	Time	# jars used and not submitted	Laboratory Use Only		
Andrew Shouldice	21/06/15	Am	ADISHA VADORA	2021/06/15	16:00		Time Sensitive	Temperature (°C) on Receipt	Custody Seal
								6.6	Present
								9	Intact

* UNLESS OTHERWISE AGREED TO IN WRITING, WORK SUBMITTED ON THIS CHAIN OF CUSTODY IS SUBJECT TO BV LABS' STANDARD TERMS AND CONDITIONS. SIGNING OF THIS CHAIN OF CUSTODY DOCUMENT IS ACKNOWLEDGMENT AND ACCEPTANCE OF OUR TERMS WHICH ARE AVAILABLE FOR VIEWING AT WWW.BVLABS.COM/TERMS-AND-CONDITIONS.

* IT IS THE RESPONSIBILITY OF THE RELINQUISHER TO ENSURE THE ACCURACY OF THE CHAIN OF CUSTODY RECORD. AN INCOMPLETE CHAIN OF CUSTODY MAY RESULT IN ANALYTICAL TAT DELAYS.

** SAMPLE CONTAINER, PRESERVATION, HOLD TIME AND PACKAGE INFORMATION CAN BE VIEWED AT WWW.BVLABS.COM/RESOURCES/CHAIN-OF-CUSTODY-FORMS.

SAMPLES MUST BE KEPT COOL (< 10°C) FROM TIME OF SAMPLING UNTIL DELIVERY TO BV LABS

White: BV Labs Yellow: Client

4, 5, 7



Your P.O. #: 2100310
 Your Project #: WET/DRY GROUND WATER
 Site Location: JUNE GW
 Your C.O.C. #: 830940-04-01

Attention: Amy Spence

City of Guelph
 Solid Waste RIC (Wet/Dry)
 110 Dunlop Drive
 Guelph, ON
 CANADA N1H 6H8

Report Date: 2021/06/24
 Report #: R6690711
 Version: 1 - Final

CERTIFICATE OF ANALYSIS

BV LABS JOB #: C1G6044

Received: 2021/06/16, 16:00

Sample Matrix: Water
 # Samples Received: 6

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Analytical Method
ABN Compounds in Water by GC/MS	6	2021/06/22	2021/06/23	CAM SOP-00301	EPA 8270 m
Alkalinity	6	N/A	2021/06/18	CAM SOP-00448	SM 23 2320 B m
Biochemical Oxygen Demand (BOD)	6	2021/06/17	2021/06/22	CAM SOP-00427	SM 23 5210B m
Chloride by Automated Colourimetry	6	N/A	2021/06/18	CAM SOP-00463	SM 23 4500-Cl E m
Chemical Oxygen Demand	6	N/A	2021/06/18	CAM SOP-00416	SM 23 5220 D m
Conductivity	6	N/A	2021/06/18	CAM SOP-00414	SM 23 2510 m
Dissolved Metals by ICPMS	6	N/A	2021/06/18	CAM SOP-00447	EPA 6020B m
Total Metals Analysis by ICP	6	2021/06/21	2021/06/22	CAM SOP-00408	EPA 6010D m
Total Ammonia-N	5	N/A	2021/06/18	CAM SOP-00441	USGS I-2522-90 m
Total Ammonia-N	1	N/A	2021/06/22	CAM SOP-00441	USGS I-2522-90 m
Nitrate (NO3) and Nitrite (NO2) in Water (1)	6	N/A	2021/06/18	CAM SOP-00440	SM 23 4500-NO3I/NO2B
pH	6	2021/06/18	2021/06/18	CAM SOP-00413	SM 4500H+ B m
Phenols (4AAP)	6	N/A	2021/06/17	CAM SOP-00444	OMOE E3179 m
Sulphate by Automated Colourimetry	6	N/A	2021/06/18	CAM SOP-00464	EPA 375.4 m
Total Kjeldahl Nitrogen in Water	3	2021/06/17	2021/06/17	CAM SOP-00938	OMOE E3516 m
Total Kjeldahl Nitrogen in Water	2	2021/06/17	2021/06/21	CAM SOP-00938	OMOE E3516 m
Total Kjeldahl Nitrogen in Water	1	2021/06/22	2021/06/22	CAM SOP-00938	OMOE E3516 m
Total Phosphorus (Colourimetric)	6	2021/06/18	2021/06/18	CAM SOP-00407	SM 23 4500 P B H m
Volatile Organic Compounds in Water	6	N/A	2021/06/18	CAM SOP-00226	EPA 8260C m
Non-Routine Volatile Organic Compounds	6	N/A	2021/06/18	CAM SOP-00226	EPA 8260 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, MELCC, EPA, APHA.

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. #: 2100310
Your Project #: WET/DRY GROUND WATER
Site Location: JUNE GW
Your C.O.C. #: 830940-04-01

Attention: Amy Spence

City of Guelph
Solid Waste RIC (Wet/Dry)
110 Dunlop Drive
Guelph, ON
CANADA N1H 6H8

Report Date: 2021/06/24
Report #: R6690711
Version: 1 - Final

CERTIFICATE OF ANALYSIS

BV LABS JOB #: C1G6044

Received: 2021/06/16, 16:00

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.

Encryption Key

Hongmei Zhao (Grace)
Project Manager
24 Jun 2021 15:53:23

Please direct all questions regarding this Certificate of Analysis to your Project Manager.

James Aspin, Senior Project Manager

Email: James.Aspin@bureauveritas.com

Phone# (905)817-5771

=====

BV Labs 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 Signature Page.



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BV Labs Job #: C1G6044
Report Date: 2021/06/24

City of Guelph
Client Project #: WET/DRY GROUND WATER
Site Location: JUNE GW
Your P.O. #: 2100310
Sampler Initials: AS

RESULTS OF ANALYSES OF WATER

BV Labs ID				PVX870			PVX871		
Sampling Date				2021/06/15			2021/06/15		
COC Number				830940-04-01			830940-04-01		
	UNITS	Criteria	Criteria C	20A	RDL	QC Batch	20B	RDL	QC Batch
Inorganics									
Total Ammonia-N	mg/L	-	-	ND	0.050	7413734	ND	0.050	7413734
Total BOD	mg/L	-	-	ND	2	7413338	ND	2	7413338
Total Chemical Oxygen Demand (COD)	mg/L	-	-	ND	4.0	7413773	13	4.0	7413773
Conductivity	umho/cm	-	-	630	1.0	7416565	1300	1.0	7416565
Total Kjeldahl Nitrogen (TKN)	mg/L	-	-	ND (1)	0.20	7413755	0.22	0.10	7413755
pH	pH	-	6.5-8.5	7.98		7416562	7.80		7416562
Phenols-4AAP	mg/L	-	-	ND	0.0010	7413938	ND	0.0010	7414108
Total Phosphorus	mg/L	-	-	ND	0.020	7415786	0.066	0.020	7415786
Dissolved Sulphate (SO ₄)	mg/L	-	500	43	1.0	7414865	68	1.0	7414865
Alkalinity (Total as CaCO ₃)	mg/L	-	30-500	260	1.0	7416560	300	1.0	7416560
Dissolved Chloride (Cl ⁻)	mg/L	-	250	21	1.0	7414864	200	3.0	7414864
Nitrite (N)	mg/L	1	-	ND	0.010	7414763	ND	0.010	7414763
Nitrate (N)	mg/L	10	-	3.16	0.10	7414763	ND	0.10	7414763
Nitrate + Nitrite (N)	mg/L	10	-	3.16	0.10	7414763	ND	0.10	7414763
RDL = Reportable Detection Limit QC Batch = Quality Control Batch Criteria, Criteria C: Ontario Regulation 169/03 Criteria A = Maximum Acceptable Criteria B = Interim Maximum Criteria C = Chemical/Physical Objectives [A/O] (Made under the Ontario Safe Drinking Water Act, 2002) ND = Not detected (1) Due to a high concentration of NO _x , the sample required dilution. The detection limit was adjusted accordingly.									



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VERITAS

BV Labs Job #: C1G6044
Report Date: 2021/06/24

City of Guelph
Client Project #: WET/DRY GROUND WATER
Site Location: JUNE GW
Your P.O. #: 2100310
Sampler Initials: AS

RESULTS OF ANALYSES OF WATER

BV Labs ID				PVX872			PVX873		
Sampling Date				2021/06/15			2021/06/15		
COC Number				830940-04-01			830940-04-01		
	UNITS	Criteria	Criteria C	23A	RDL	QC Batch	23B	RDL	QC Batch
Inorganics									
Total Ammonia-N	mg/L	-	-	ND	0.050	7414547	ND	0.050	7414547
Total BOD	mg/L	-	-	ND	2	7413338	ND	2	7413338
Total Chemical Oxygen Demand (COD)	mg/L	-	-	8.3	4.0	7413773	5.8	4.0	7413773
Conductivity	umho/cm	-	-	720	1.0	7416565	1200	1.0	7416565
Total Kjeldahl Nitrogen (TKN)	mg/L	-	-	ND	0.10	7413755	ND (1)	0.20	7413755
pH	pH	-	6.5-8.5	7.91		7416562	7.77		7416562
Phenols-4AAP	mg/L	-	-	ND	0.0010	7414108	ND	0.0010	7413938
Total Phosphorus	mg/L	-	-	ND	0.020	7415786	0.13	0.020	7415786
Dissolved Sulphate (SO ₄)	mg/L	-	500	84	1.0	7414865	32	1.0	7414865
Alkalinity (Total as CaCO ₃)	mg/L	-	30-500	250	1.0	7416560	330	1.0	7416560
Dissolved Chloride (Cl ⁻)	mg/L	-	250	33	1.0	7414864	170	2.0	7414864
Nitrite (N)	mg/L	1	-	ND	0.010	7414763	ND	0.010	7414763
Nitrate (N)	mg/L	10	-	0.11	0.10	7414763	3.63	0.10	7414763
Nitrate + Nitrite (N)	mg/L	10	-	0.11	0.10	7414763	3.63	0.10	7414763
RDL = Reportable Detection Limit QC Batch = Quality Control Batch Criteria, Criteria C: Ontario Regulation 169/03 Criteria A = Maximum Acceptable Criteria B = Interim Maximum Criteria C = Chemical/Physical Objectives [A/O] (Made under the Ontario Safe Drinking Water Act, 2002) ND = Not detected (1) Due to a high concentration of NO _x , the sample required dilution. The detection limit was adjusted accordingly.									



BV Labs Job #: C1G6044
Report Date: 2021/06/24

City of Guelph
Client Project #: WET/DRY GROUND WATER
Site Location: JUNE GW
Your P.O. #: 2100310
Sampler Initials: AS

RESULTS OF ANALYSES OF WATER

BV Labs ID				PVX873			PVX874		
Sampling Date				2021/06/15			2021/06/16		
COC Number				830940-04-01			830940-04-01		
	UNITS	Criteria	Criteria C	23B Lab-Dup	RDL	QC Batch	13A	RDL	QC Batch
Inorganics									
Total Ammonia-N	mg/L	-	-				0.10	0.050	7421860
Total BOD	mg/L	-	-				ND	2	7413338
Total Chemical Oxygen Demand (COD)	mg/L	-	-				ND	4.0	7413773
Conductivity	umho/cm	-	-	1300	1.0	7416565	1000	1.0	7416565
Total Kjeldahl Nitrogen (TKN)	mg/L	-	-				0.14	0.10	7421842
pH	pH	-	6.5:8.5	7.79		7416562	7.96		7416562
Phenols-4AAP	mg/L	-	-				ND	0.0010	7414108
Total Phosphorus	mg/L	-	-				ND	0.020	7415786
Dissolved Sulphate (SO ₄)	mg/L	-	500				100	1.0	7414865
Alkalinity (Total as CaCO ₃)	mg/L	-	30-500	340	1.0	7416560	250	1.0	7416560
Dissolved Chloride (Cl ⁻)	mg/L	-	250				120	1.0	7414864
Nitrite (N)	mg/L	1	-				ND	0.010	7414763
Nitrate (N)	mg/L	10	-				ND	0.10	7414763
Nitrate + Nitrite (N)	mg/L	10	-				ND	0.10	7414763
RDL = Reportable Detection Limit QC Batch = Quality Control Batch Lab-Dup = Laboratory Initiated Duplicate Criteria, Criteria C: Ontario Regulation 169/03 Criteria A = Maximum Acceptable Criteria B = Interim Maximum Criteria C = Chemical/Physical Objectives [A/O] (Made under the Ontario Safe Drinking Water Act, 2002) ND = Not detected									



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BV Labs Job #: C1G6044
Report Date: 2021/06/24

City of Guelph
Client Project #: WET/DRY GROUND WATER
Site Location: JUNE GW
Your P.O. #: 2100310
Sampler Initials: AS

RESULTS OF ANALYSES OF WATER

BV Labs ID				PVX875			PVX875		
Sampling Date				2021/06/16			2021/06/16		
COC Number				830940-04-01			830940-04-01		
	UNITS	Criteria	Criteria C	13B	RDL	QC Batch	13B Lab-Dup	RDL	QC Batch
Inorganics									
Total Ammonia-N	mg/L	-	-	ND	0.050	7413734			
Total BOD	mg/L	-	-	ND	2	7413338	ND	2	7413338
Total Chemical Oxygen Demand (COD)	mg/L	-	-	14	4.0	7413773			
Conductivity	umho/cm	-	-	900	1.0	7416565			
Total Kjeldahl Nitrogen (TKN)	mg/L	-	-	ND	0.10	7413755			
pH	pH	-	6.5:8.5	7.96		7416562			
Phenols-4AAP	mg/L	-	-	ND	0.0010	7413938	ND	0.0010	7413938
Total Phosphorus	mg/L	-	-	ND	0.020	7415786			
Dissolved Sulphate (SO ₄)	mg/L	-	500	44	1.0	7414865			
Alkalinity (Total as CaCO ₃)	mg/L	-	30-500	310	1.0	7416560			
Dissolved Chloride (Cl ⁻)	mg/L	-	250	80	1.0	7414864			
Nitrite (N)	mg/L	1	-	ND	0.010	7414763			
Nitrate (N)	mg/L	10	-	0.78	0.10	7414763			
Nitrate + Nitrite (N)	mg/L	10	-	0.78	0.10	7414763			
RDL = Reportable Detection Limit QC Batch = Quality Control Batch Lab-Dup = Laboratory Initiated Duplicate Criteria, Criteria C: Ontario Regulation 169/03 Criteria A = Maximum Acceptable Criteria B = Interim Maximum Criteria C = Chemical/Physical Objectives [A/O] (Made under the Ontario Safe Drinking Water Act, 2002) ND = Not detected									



BUREAU
VERITAS

BV Labs Job #: C1G6044
Report Date: 2021/06/24

City of Guelph
Client Project #: WET/DRY GROUND WATER
Site Location: JUNE GW
Your P.O. #: 2100310
Sampler Initials: AS

ELEMENTS BY ATOMIC SPECTROSCOPY (WATER)

BV Labs ID					PVX870	PVX871	PVX872	PVX873		
Sampling Date					2021/06/15	2021/06/15	2021/06/15	2021/06/15		
COC Number					830940-04-01	830940-04-01	830940-04-01	830940-04-01		
	UNITS	Criteria	Criteria B	Criteria C	20A	20B	23A	23B	RDL	QC Batch

Metals

Total Iron (Fe)	mg/L	-	-	0.3	0.09	1.5	0.56	6.3	0.02	7419145
Dissolved Boron (B)	ug/L	-	5000	-	ND	12	24	150	10	7415223
Dissolved Calcium (Ca)	ug/L	-	-	-	81000	110000	82000	100000	200	7415223
Dissolved Magnesium (Mg)	ug/L	-	-	-	27000	29000	29000	28000	50	7415223
Dissolved Phosphorus (P)	ug/L	-	-	-	ND	390	ND	ND	100	7415223
Dissolved Potassium (K)	ug/L	-	-	-	1000	1600	1200	2200	200	7415223
Dissolved Sodium (Na)	ug/L	20000	-	200000	4200	100000	14000	100000	100	7415223
Dissolved Zinc (Zn)	ug/L	-	-	5000	130	540	ND	240	5.0	7415223

RDL = Reportable Detection Limit

QC Batch = Quality Control Batch

Criteria, Criteria B, Criteria C: Ontario Regulation 169/03

Criteria A = Maximum Acceptable

Criteria B = Interim Maximum

Criteria C = Chemical/Physical Objectives [A/O]

(Made under the Ontario Safe Drinking Water Act, 2002)

ND = Not detected



BUREAU
VERITAS

BV Labs Job #: C1G6044
Report Date: 2021/06/24

City of Guelph
Client Project #: WET/DRY GROUND WATER
Site Location: JUNE GW
Your P.O. #: 2100310
Sampler Initials: AS

ELEMENTS BY ATOMIC SPECTROSCOPY (WATER)

BV Labs ID					PVX874		PVX875		
Sampling Date					2021/06/16		2021/06/16		
COC Number					830940-04-01		830940-04-01		
	UNITS	Criteria	Criteria B	Criteria C	13A	RDL	13B	RDL	QC Batch
Metals									
Total Iron (Fe)	mg/L	-	-	0.3	0.46	0.02	0.19	0.02	7419145
Dissolved Boron (B)	ug/L	-	5000	-	49	10	20	10	7415223
Dissolved Calcium (Ca)	ug/L	-	-	-	98000	400	93000	200	7415223
Dissolved Magnesium (Mg)	ug/L	-	-	-	34000	50	23000	50	7415223
Dissolved Phosphorus (P)	ug/L	-	-	-	ND	100	ND	100	7415223
Dissolved Potassium (K)	ug/L	-	-	-	2700	200	1700	200	7415223
Dissolved Sodium (Na)	ug/L	20000	-	200000	48000	100	55000	100	7415223
Dissolved Zinc (Zn)	ug/L	-	-	5000	ND	5.0	46	5.0	7415223
RDL = Reportable Detection Limit QC Batch = Quality Control Batch Criteria, Criteria B, Criteria C: Ontario Regulation 169/03 Criteria A = Maximum Acceptable Criteria B = Interim Maximum Criteria C = Chemical/Physical Objectives [A/O] (Made under the Ontario Safe Drinking Water Act, 2002) ND = Not detected									



BV Labs Job #: C1G6044
Report Date: 2021/06/24

City of Guelph
Client Project #: WET/DRY GROUND WATER
Site Location: JUNE GW
Your P.O. #: 2100310
Sampler Initials: AS

SEMI-VOLATILE ORGANICS BY GC-MS (WATER)

BV Labs ID			PVX870	PVX871	PVX872	PVX873	PVX874		
Sampling Date			2021/06/15	2021/06/15	2021/06/15	2021/06/15	2021/06/16		
COC Number			830940-04-01	830940-04-01	830940-04-01	830940-04-01	830940-04-01		
	UNITS	Criteria	20A	20B	23A	23B	13A	RDL	QC Batch

Semivolatile Organics

Acenaphthene	ug/L	-	ND	ND	ND	ND	ND	0.20	7422968
Acenaphthylene	ug/L	-	ND	ND	ND	ND	ND	0.20	7422968
Anthracene	ug/L	-	ND	ND	ND	ND	ND	0.20	7422968
Benzo(a)anthracene	ug/L	-	ND	ND	ND	ND	ND	0.20	7422968
Benzo(a)pyrene	ug/L	0.01	ND (1)	ND (1)	ND (1)	ND (1)	ND (1)	0.20	7422968
Benzo(b,j)fluoranthene	ug/L	-	ND	ND	ND	ND	ND	0.20	7422968
Benzo(g,h,i)perylene	ug/L	-	ND	ND	ND	ND	ND	0.20	7422968
Benzo(k)fluoranthene	ug/L	-	ND	ND	ND	ND	ND	0.20	7422968
1-Chloronaphthalene	ug/L	-	ND	ND	ND	ND	ND	1.0	7422968
2-Chloronaphthalene	ug/L	-	ND	ND	ND	ND	ND	0.50	7422968
Chrysene	ug/L	-	ND	ND	ND	ND	ND	0.20	7422968
Dibenzo(a,h)anthracene	ug/L	-	ND	ND	ND	ND	ND	0.20	7422968
Fluoranthene	ug/L	-	ND	ND	ND	ND	ND	0.20	7422968
Fluorene	ug/L	-	ND	ND	ND	ND	ND	0.20	7422968
Indeno(1,2,3-cd)pyrene	ug/L	-	ND	ND	ND	ND	ND	0.20	7422968
1-Methylnaphthalene	ug/L	-	ND	ND	ND	ND	ND	0.20	7422968
2-Methylnaphthalene	ug/L	-	ND	ND	ND	ND	ND	0.20	7422968
Naphthalene	ug/L	-	ND	ND	ND	ND	ND	0.20	7422968
5-Nitroacenaphthene	ug/L	-	ND	ND	ND	ND	ND	1.0	7422968
Perylene	ug/L	-	ND	ND	ND	ND	ND	0.20	7422968
Phenanthrene	ug/L	-	ND	ND	ND	ND	ND	0.20	7422968
Pyrene	ug/L	-	ND	ND	ND	ND	ND	0.20	7422968
2-Chlorophenol	ug/L	-	ND	ND	ND	ND	ND	0.30	7422968
4-Chloro-3-Methylphenol	ug/L	-	ND	ND	ND	ND	ND	0.50	7422968
m/p-Cresol	ug/L	-	ND	ND	ND	ND	ND	0.50	7422968
o-Cresol	ug/L	-	ND	ND	ND	ND	ND	0.50	7422968
2,4-Dichlorophenol	ug/L	900	ND	ND	ND	ND	ND	0.30	7422968
2,6-Dichlorophenol	ug/L	-	ND	ND	ND	ND	ND	0.50	7422968

RDL = Reportable Detection Limit

QC Batch = Quality Control Batch

Criteria: Ontario Regulation 169/03

Criteria A = Maximum Acceptable

Criteria B = Interim Maximum

Criteria C = Chemical/Physical Objectives [A/O]

(Made under the Ontario Safe Drinking Water Act, 2002)

ND = Not detected

(1) RDL exceeds criteria



BV Labs Job #: C1G6044
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City of Guelph
Client Project #: WET/DRY GROUND WATER
Site Location: JUNE GW
Your P.O. #: 2100310
Sampler Initials: AS

SEMI-VOLATILE ORGANICS BY GC-MS (WATER)

BV Labs ID			PVX870	PVX871	PVX872	PVX873	PVX874		
Sampling Date			2021/06/15	2021/06/15	2021/06/15	2021/06/15	2021/06/16		
COC Number			830940-04-01	830940-04-01	830940-04-01	830940-04-01	830940-04-01		
	UNITS	Criteria	20A	20B	23A	23B	13A	RDL	QC Batch
2,4-Dimethylphenol	ug/L	-	ND	ND	ND	ND	ND	0.50	7422968
2,4-Dinitrophenol	ug/L	-	ND	ND	ND	ND	ND	2.0	7422968
4,6-Dinitro-2-methylphenol	ug/L	-	ND	ND	ND	ND	ND	2.0	7422968
4-Nitrophenol	ug/L	-	ND	ND	ND	ND	ND	1.4	7422968
Pentachlorophenol	ug/L	60	ND	ND	ND	ND	ND	1.0	7422968
Phenol	ug/L	-	ND	ND	ND	ND	ND	0.50	7422968
2,3,4,5-Tetrachlorophenol	ug/L	-	ND	ND	ND	ND	ND	0.40	7422968
2,3,4,6-Tetrachlorophenol	ug/L	100	ND	ND	ND	ND	ND	0.50	7422968
2,3,5,6-Tetrachlorophenol	ug/L	-	ND	ND	ND	ND	ND	0.50	7422968
2,3,4-Trichlorophenol	ug/L	-	ND	ND	ND	ND	ND	0.50	7422968
2,3,5-Trichlorophenol	ug/L	-	ND	ND	ND	ND	ND	0.50	7422968
2,4,5-Trichlorophenol	ug/L	-	ND	ND	ND	ND	ND	0.50	7422968
2,4,6-Trichlorophenol	ug/L	5	ND	ND	ND	ND	ND	0.50	7422968
Benzyl butyl phthalate	ug/L	-	ND	ND	ND	ND	ND	0.50	7422968
Biphenyl	ug/L	-	ND	ND	ND	ND	ND	0.50	7422968
Bis(2-chloroethyl)ether	ug/L	-	ND	ND	ND	ND	ND	0.50	7422968
Bis(2-chloroethoxy)methane	ug/L	-	ND	ND	ND	ND	ND	0.50	7422968
Bis(2-chloroisopropyl)ether	ug/L	-	ND	ND	ND	ND	ND	0.50	7422968
Bis(2-ethylhexyl)phthalate	ug/L	-	ND	ND	ND	ND	ND	2.0	7422968
4-Bromophenyl phenyl ether	ug/L	-	ND	ND	ND	ND	ND	0.30	7422968
Camphene	ug/L	-	ND	ND	ND	ND	ND	1.0	7422968
4-Chlorophenyl phenyl ether	ug/L	-	ND	ND	ND	ND	ND	0.50	7422968
Di-N-butyl phthalate	ug/L	-	ND	ND	ND	ND	ND	2.0	7422968
di-n-octyl phthalate	ug/L	-	ND	ND	ND	ND	ND	0.80	7422968
2,4-Dinitrotoluene	ug/L	-	ND	ND	ND	ND	ND	0.50	7422968
2,6-Dinitrotoluene	ug/L	-	ND	ND	ND	ND	ND	0.50	7422968
Diphenyl Ether	ug/L	-	ND	ND	ND	ND	ND	0.30	7422968
Indole	ug/L	-	ND	ND	ND	ND	ND	1.0	7422968
Nitrosodiphenylamine/Diphenylamine	ug/L	-	ND	ND	ND	ND	ND	1.0	7422968

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QC Batch = Quality Control Batch

Criteria: Ontario Regulation 169/03

Criteria A = Maximum Acceptable

Criteria B = Interim Maximum

Criteria C = Chemical/Physical Objectives [A/O]

(Made under the Ontario Safe Drinking Water Act, 2002)

ND = Not detected



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BV Labs Job #: C1G6044
Report Date: 2021/06/24

City of Guelph
Client Project #: WET/DRY GROUND WATER
Site Location: JUNE GW
Your P.O. #: 2100310
Sampler Initials: AS

SEMI-VOLATILE ORGANICS BY GC-MS (WATER)

BV Labs ID			PVX870	PVX871	PVX872	PVX873	PVX874		
Sampling Date			2021/06/15	2021/06/15	2021/06/15	2021/06/15	2021/06/16		
COC Number			830940-04-01	830940-04-01	830940-04-01	830940-04-01	830940-04-01		
	UNITS	Criteria	20A	20B	23A	23B	13A	RDL	QC Batch
N-Nitroso-di-n-propylamine	ug/L	-	ND	ND	ND	ND	ND	0.50	7422968
Surrogate Recovery (%)									
2,4,6-Tribromophenol	%	-	85	91	85	70	81		7422968
2-Fluorobiphenyl	%	-	72	59	68	85	67		7422968
2-Fluorophenol	%	-	40	34	53	26	45		7422968
D14-Terphenyl	%	-	105	99	101	97	104		7422968
D5-Nitrobenzene	%	-	88	72	87	88	83		7422968
D5-Phenol	%	-	29	23	40	30	29		7422968

RDL = Reportable Detection Limit

QC Batch = Quality Control Batch

Criteria: Ontario Regulation 169/03

Criteria A = Maximum Acceptable

Criteria B = Interim Maximum

Criteria C = Chemical/Physical Objectives [A/O]

(Made under the Ontario Safe Drinking Water Act, 2002)

ND = Not detected



BV Labs Job #: C1G6044
Report Date: 2021/06/24

City of Guelph
Client Project #: WET/DRY GROUND WATER
Site Location: JUNE GW
Your P.O. #: 2100310
Sampler Initials: AS

SEMI-VOLATILE ORGANICS BY GC-MS (WATER)

BV Labs ID			PVX875		
Sampling Date			2021/06/16		
COC Number			830940-04-01		
	UNITS	Criteria	13B	RDL	QC Batch
Semivolatile Organics					
Acenaphthene	ug/L	-	ND	0.20	7422968
Acenaphthylene	ug/L	-	ND	0.20	7422968
Anthracene	ug/L	-	ND	0.20	7422968
Benzo(a)anthracene	ug/L	-	ND	0.20	7422968
Benzo(a)pyrene	ug/L	0.01	ND (1)	0.20	7422968
Benzo(b,j)fluoranthene	ug/L	-	ND	0.20	7422968
Benzo(g,h,i)perylene	ug/L	-	ND	0.20	7422968
Benzo(k)fluoranthene	ug/L	-	ND	0.20	7422968
1-Chloronaphthalene	ug/L	-	ND	1.0	7422968
2-Chloronaphthalene	ug/L	-	ND	0.50	7422968
Chrysene	ug/L	-	ND	0.20	7422968
Dibenzo(a,h)anthracene	ug/L	-	ND	0.20	7422968
Fluoranthene	ug/L	-	ND	0.20	7422968
Fluorene	ug/L	-	ND	0.20	7422968
Indeno(1,2,3-cd)pyrene	ug/L	-	ND	0.20	7422968
1-Methylnaphthalene	ug/L	-	ND	0.20	7422968
2-Methylnaphthalene	ug/L	-	ND	0.20	7422968
Naphthalene	ug/L	-	ND	0.20	7422968
5-Nitroacenaphthene	ug/L	-	ND	1.0	7422968
Perylene	ug/L	-	ND	0.20	7422968
Phenanthrene	ug/L	-	ND	0.20	7422968
Pyrene	ug/L	-	ND	0.20	7422968
2-Chlorophenol	ug/L	-	ND	0.30	7422968
4-Chloro-3-Methylphenol	ug/L	-	ND	0.50	7422968
m/p-Cresol	ug/L	-	ND	0.50	7422968
o-Cresol	ug/L	-	ND	0.50	7422968
2,4-Dichlorophenol	ug/L	900	ND	0.30	7422968
2,6-Dichlorophenol	ug/L	-	ND	0.50	7422968
RDL = Reportable Detection Limit QC Batch = Quality Control Batch Criteria: Ontario Regulation 169/03 Criteria A = Maximum Acceptable Criteria B = Interim Maximum Criteria C = Chemical/Physical Objectives [A/O] (Made under the Ontario Safe Drinking Water Act, 2002) ND = Not detected (1) RDL exceeds criteria					



BV Labs Job #: C1G6044
Report Date: 2021/06/24

City of Guelph
Client Project #: WET/DRY GROUND WATER
Site Location: JUNE GW
Your P.O. #: 2100310
Sampler Initials: AS

SEMI-VOLATILE ORGANICS BY GC-MS (WATER)

BV Labs ID			PVX875		
Sampling Date			2021/06/16		
COC Number			830940-04-01		
	UNITS	Criteria	13B	RDL	QC Batch
2,4-Dimethylphenol	ug/L	-	ND	0.50	7422968
2,4-Dinitrophenol	ug/L	-	ND	2.0	7422968
4,6-Dinitro-2-methylphenol	ug/L	-	ND	2.0	7422968
4-Nitrophenol	ug/L	-	ND	1.4	7422968
Pentachlorophenol	ug/L	60	ND	1.0	7422968
Phenol	ug/L	-	ND	0.50	7422968
2,3,4,5-Tetrachlorophenol	ug/L	-	ND	0.40	7422968
2,3,4,6-Tetrachlorophenol	ug/L	100	ND	0.50	7422968
2,3,5,6-Tetrachlorophenol	ug/L	-	ND	0.50	7422968
2,3,4-Trichlorophenol	ug/L	-	ND	0.50	7422968
2,3,5-Trichlorophenol	ug/L	-	ND	0.50	7422968
2,4,5-Trichlorophenol	ug/L	-	ND	0.50	7422968
2,4,6-Trichlorophenol	ug/L	5	ND	0.50	7422968
Benzyl butyl phthalate	ug/L	-	ND	0.50	7422968
Biphenyl	ug/L	-	ND	0.50	7422968
Bis(2-chloroethyl)ether	ug/L	-	ND	0.50	7422968
Bis(2-chloroethoxy)methane	ug/L	-	ND	0.50	7422968
Bis(2-chloroisopropyl)ether	ug/L	-	ND	0.50	7422968
Bis(2-ethylhexyl)phthalate	ug/L	-	ND	2.0	7422968
4-Bromophenyl phenyl ether	ug/L	-	ND	0.30	7422968
Camphene	ug/L	-	ND	1.0	7422968
4-Chlorophenyl phenyl ether	ug/L	-	ND	0.50	7422968
Di-N-butyl phthalate	ug/L	-	ND	2.0	7422968
di-n-octyl phthalate	ug/L	-	ND	0.80	7422968
2,4-Dinitrotoluene	ug/L	-	ND	0.50	7422968
2,6-Dinitrotoluene	ug/L	-	ND	0.50	7422968
Diphenyl Ether	ug/L	-	ND	0.30	7422968
Indole	ug/L	-	ND	1.0	7422968
Nitrosodiphenylamine/Diphenylamine	ug/L	-	ND	1.0	7422968
RDL = Reportable Detection Limit QC Batch = Quality Control Batch Criteria: Ontario Regulation 169/03 Criteria A = Maximum Acceptable Criteria B = Interim Maximum Criteria C = Chemical/Physical Objectives [A/O] (Made under the Ontario Safe Drinking Water Act, 2002) ND = Not detected					



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BV Labs Job #: C1G6044
Report Date: 2021/06/24

City of Guelph
Client Project #: WET/DRY GROUND WATER
Site Location: JUNE GW
Your P.O. #: 2100310
Sampler Initials: AS

SEMI-VOLATILE ORGANICS BY GC-MS (WATER)

BV Labs ID			PVX875		
Sampling Date			2021/06/16		
COC Number			830940-04-01		
	UNITS	Criteria	13B	RDL	QC Batch
N-Nitroso-di-n-propylamine	ug/L	-	ND	0.50	7422968
Surrogate Recovery (%)					
2,4,6-Tribromophenol	%	-	80		7422968
2-Fluorobiphenyl	%	-	65		7422968
2-Fluorophenol	%	-	31		7422968
D14-Terphenyl	%	-	104		7422968
D5-Nitrobenzene	%	-	84		7422968
D5-Phenol	%	-	25		7422968
RDL = Reportable Detection Limit QC Batch = Quality Control Batch Criteria: Ontario Regulation 169/03 Criteria A = Maximum Acceptable Criteria B = Interim Maximum Criteria C = Chemical/Physical Objectives [A/O] (Made under the Ontario Safe Drinking Water Act, 2002) ND = Not detected					



BV Labs Job #: C1G6044
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City of Guelph
Client Project #: WET/DRY GROUND WATER
Site Location: JUNE GW
Your P.O. #: 2100310
Sampler Initials: AS

VOLATILE ORGANICS BY GC/MS (WATER)

BV Labs ID					PVX870	PVX871	PVX872		
Sampling Date					2021/06/15	2021/06/15	2021/06/15		
COC Number					830940-04-01	830940-04-01	830940-04-01		
	UNITS	Criteria	Criteria B	Criteria C	20A	20B	23A	RDL	QC Batch
Volatile Organics									
Acetone (2-Propanone)	ug/L	-	-	-	ND	ND	ND	10	7410929
Benzene	ug/L	5	-	-	ND	ND	ND	0.10	7410929
Bromodichloromethane	ug/L	-	-	-	ND	ND	ND	0.10	7410929
Acrolein	ug/L	-	-	-	ND	ND	ND	10	7392088
Bromoform	ug/L	-	-	-	ND	ND	ND	0.20	7410929
Bromomethane	ug/L	-	-	-	ND	ND	ND	0.50	7410929
Carbon Tetrachloride	ug/L	5	-	-	ND	ND	ND	0.10	7410929
Chlorobenzene	ug/L	80	-	-	ND	ND	ND	0.10	7410929
Chloroform	ug/L	-	-	-	ND	ND	ND	0.10	7410929
Acrylonitrile	ug/L	-	-	-	ND	ND	ND	5.0	7392088
Chloromethane	ug/L	-	-	-	ND	ND	ND	0.50	7410929
Dibromochloromethane	ug/L	-	-	-	ND	ND	ND	0.20	7410929
1,2-Dichlorobenzene	ug/L	200	-	-	ND	ND	ND	0.20	7410929
1,3-Dichlorobenzene	ug/L	-	-	-	ND	ND	ND	0.20	7410929
1,4-Dichlorobenzene	ug/L	5	-	-	ND	ND	ND	0.20	7410929
1,1-Dichloroethane	ug/L	-	-	-	ND	ND	ND	0.10	7410929
1,2-Dichloroethane	ug/L	-	5	-	ND	ND	ND	0.20	7410929
1,1-Dichloroethylene	ug/L	14	-	-	ND	ND	ND	0.10	7410929
cis-1,2-Dichloroethylene	ug/L	-	-	-	ND	ND	ND	0.10	7410929
trans-1,2-Dichloroethylene	ug/L	-	-	-	ND	ND	ND	0.10	7410929
1,2-Dichloropropane	ug/L	-	-	-	ND	ND	ND	0.10	7410929
cis-1,3-Dichloropropene	ug/L	-	-	-	ND	ND	ND	0.20	7410929
trans-1,3-Dichloropropene	ug/L	-	-	-	ND	ND	ND	0.20	7410929
Ethylbenzene	ug/L	-	-	2.4	ND	ND	ND	0.10	7410929
Ethylene Dibromide	ug/L	-	-	-	ND	ND	ND	0.20	7410929
Methylene Chloride(Dichloromethane)	ug/L	50	-	-	ND	ND	ND	0.50	7410929
Methyl Ethyl Ketone (2-Butanone)	ug/L	-	-	-	ND	ND	ND	5.0	7410929
Methyl Isobutyl Ketone	ug/L	-	-	-	ND	ND	ND	5.0	7410929
RDL = Reportable Detection Limit									
QC Batch = Quality Control Batch									
Criteria, Criteria B, Criteria C: Ontario Regulation 169/03									
Criteria A = Maximum Acceptable									
Criteria B = Interim Maximum									
Criteria C = Chemical/Physical Objectives [A/O]									
(Made under the Ontario Safe Drinking Water Act, 2002)									
ND = Not detected									



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BV Labs Job #: C1G6044
Report Date: 2021/06/24

City of Guelph
Client Project #: WET/DRY GROUND WATER
Site Location: JUNE GW
Your P.O. #: 2100310
Sampler Initials: AS

VOLATILE ORGANICS BY GC/MS (WATER)

BV Labs ID					PVX870	PVX871	PVX872		
Sampling Date					2021/06/15	2021/06/15	2021/06/15		
COC Number					830940-04-01	830940-04-01	830940-04-01		
	UNITS	Criteria	Criteria B	Criteria C	20A	20B	23A	RDL	QC Batch
Methyl t-butyl ether (MTBE)	ug/L	-	-	-	ND	ND	ND	0.20	7410929
Styrene	ug/L	-	-	-	ND	ND	ND	0.20	7410929
1,1,1,2-Tetrachloroethane	ug/L	-	-	-	ND	ND	ND	0.20	7410929
1,1,2,2-Tetrachloroethane	ug/L	-	-	-	ND	ND	ND	0.20	7410929
Tetrachloroethylene	ug/L	30	-	-	ND	ND	ND	0.10	7410929
Toluene	ug/L	-	-	24	ND	ND	ND	0.20	7410929
1,1,1-Trichloroethane	ug/L	-	-	-	ND	ND	ND	0.10	7410929
1,1,2-Trichloroethane	ug/L	-	-	-	ND	ND	ND	0.20	7410929
Trichloroethylene	ug/L	5	-	-	ND	ND	ND	0.10	7410929
Trichlorofluoromethane (FREON 11)	ug/L	-	-	-	ND	ND	ND	0.20	7410929
Vinyl Chloride	ug/L	2	-	-	ND	ND	ND	0.20	7410929
p+m-Xylene	ug/L	-	-	-	ND	ND	ND	0.10	7410929
o-Xylene	ug/L	-	-	-	ND	ND	ND	0.10	7410929
Total Xylenes	ug/L	-	-	300	ND	ND	ND	0.10	7410929
Surrogate Recovery (%)									
4-Bromofluorobenzene	%	-	-	-	99	101	100		7410929
D4-1,2-Dichloroethane	%	-	-	-	100	106	102		7410929
D8-Toluene	%	-	-	-	99	98	99		7410929
RDL = Reportable Detection Limit QC Batch = Quality Control Batch Criteria, Criteria B, Criteria C: Ontario Regulation 169/03 Criteria A = Maximum Acceptable Criteria B = Interim Maximum Criteria C = Chemical/Physical Objectives [A/O] (Made under the Ontario Safe Drinking Water Act, 2002) ND = Not detected									



BV Labs Job #: C1G6044
Report Date: 2021/06/24

City of Guelph
Client Project #: WET/DRY GROUND WATER
Site Location: JUNE GW
Your P.O. #: 2100310
Sampler Initials: AS

VOLATILE ORGANICS BY GC/MS (WATER)

BV Labs ID					PVX873	PVX874	PVX875		
Sampling Date					2021/06/15	2021/06/16	2021/06/16		
COC Number					830940-04-01	830940-04-01	830940-04-01		
	UNITS	Criteria	Criteria B	Criteria C	23B	13A	13B	RDL	QC Batch
Volatile Organics									
Acetone (2-Propanone)	ug/L	-	-	-	ND	ND	ND	10	7410929
Benzene	ug/L	5	-	-	ND	ND	ND	0.10	7410929
Bromodichloromethane	ug/L	-	-	-	ND	ND	0.25	0.10	7410929
Acrolein	ug/L	-	-	-	ND	ND	ND	10	7392088
Bromoform	ug/L	-	-	-	ND	ND	ND	0.20	7410929
Bromomethane	ug/L	-	-	-	ND	ND	ND	0.50	7410929
Carbon Tetrachloride	ug/L	5	-	-	ND	ND	ND	0.10	7410929
Chlorobenzene	ug/L	80	-	-	ND	ND	ND	0.10	7410929
Chloroform	ug/L	-	-	-	0.26	ND	1.7	0.10	7410929
Acrylonitrile	ug/L	-	-	-	ND	ND	ND	5.0	7392088
Chloromethane	ug/L	-	-	-	ND	ND	ND	0.50	7410929
Dibromochloromethane	ug/L	-	-	-	ND	ND	ND	0.20	7410929
1,2-Dichlorobenzene	ug/L	200	-	-	ND	ND	ND	0.20	7410929
1,3-Dichlorobenzene	ug/L	-	-	-	ND	ND	ND	0.20	7410929
1,4-Dichlorobenzene	ug/L	5	-	-	ND	ND	ND	0.20	7410929
1,1-Dichloroethane	ug/L	-	-	-	ND	ND	ND	0.10	7410929
1,2-Dichloroethane	ug/L	-	5	-	ND	ND	ND	0.20	7410929
1,1-Dichloroethylene	ug/L	14	-	-	ND	ND	ND	0.10	7410929
cis-1,2-Dichloroethylene	ug/L	-	-	-	ND	ND	ND	0.10	7410929
trans-1,2-Dichloroethylene	ug/L	-	-	-	ND	ND	ND	0.10	7410929
1,2-Dichloropropane	ug/L	-	-	-	ND	ND	ND	0.10	7410929
cis-1,3-Dichloropropene	ug/L	-	-	-	ND	ND	ND	0.20	7410929
trans-1,3-Dichloropropene	ug/L	-	-	-	ND	ND	ND	0.20	7410929
Ethylbenzene	ug/L	-	-	2.4	ND	ND	ND	0.10	7410929
Ethylene Dibromide	ug/L	-	-	-	ND	ND	ND	0.20	7410929
Methylene Chloride(Dichloromethane)	ug/L	50	-	-	ND	ND	ND	0.50	7410929
Methyl Ethyl Ketone (2-Butanone)	ug/L	-	-	-	ND	ND	ND	5.0	7410929
Methyl Isobutyl Ketone	ug/L	-	-	-	ND	ND	ND	5.0	7410929
RDL = Reportable Detection Limit									
QC Batch = Quality Control Batch									
Criteria, Criteria B, Criteria C: Ontario Regulation 169/03									
Criteria A = Maximum Acceptable									
Criteria B = Interim Maximum									
Criteria C = Chemical/Physical Objectives [A/O]									
(Made under the Ontario Safe Drinking Water Act, 2002)									
ND = Not detected									



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VERITAS

BV Labs Job #: C1G6044
Report Date: 2021/06/24

City of Guelph
Client Project #: WET/DRY GROUND WATER
Site Location: JUNE GW
Your P.O. #: 2100310
Sampler Initials: AS

VOLATILE ORGANICS BY GC/MS (WATER)

BV Labs ID					PVX873	PVX874	PVX875		
Sampling Date					2021/06/15	2021/06/16	2021/06/16		
COC Number					830940-04-01	830940-04-01	830940-04-01		
	UNITS	Criteria	Criteria B	Criteria C	23B	13A	13B	RDL	QC Batch
Methyl t-butyl ether (MTBE)	ug/L	-	-	-	ND	ND	ND	0.20	7410929
Styrene	ug/L	-	-	-	ND	ND	ND	0.20	7410929
1,1,1,2-Tetrachloroethane	ug/L	-	-	-	ND	ND	ND	0.20	7410929
1,1,2,2-Tetrachloroethane	ug/L	-	-	-	ND	ND	ND	0.20	7410929
Tetrachloroethylene	ug/L	30	-	-	ND	ND	ND	0.10	7410929
Toluene	ug/L	-	-	24	ND	ND	ND	0.20	7410929
1,1,1-Trichloroethane	ug/L	-	-	-	ND	ND	ND	0.10	7410929
1,1,2-Trichloroethane	ug/L	-	-	-	ND	ND	ND	0.20	7410929
Trichloroethylene	ug/L	5	-	-	ND	ND	ND	0.10	7410929
Trichlorofluoromethane (FREON 11)	ug/L	-	-	-	ND	ND	ND	0.20	7410929
Vinyl Chloride	ug/L	2	-	-	ND	ND	ND	0.20	7410929
p+m-Xylene	ug/L	-	-	-	ND	ND	ND	0.10	7410929
o-Xylene	ug/L	-	-	-	ND	ND	ND	0.10	7410929
Total Xylenes	ug/L	-	-	300	ND	ND	ND	0.10	7410929
Surrogate Recovery (%)									
4-Bromofluorobenzene	%	-	-	-	100	100	99		7410929
D4-1,2-Dichloroethane	%	-	-	-	102	104	103		7410929
D8-Toluene	%	-	-	-	99	98	98		7410929
RDL = Reportable Detection Limit QC Batch = Quality Control Batch Criteria, Criteria B, Criteria C: Ontario Regulation 169/03 Criteria A = Maximum Acceptable Criteria B = Interim Maximum Criteria C = Chemical/Physical Objectives [A/O] (Made under the Ontario Safe Drinking Water Act, 2002) ND = Not detected									



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VERITAS

BV Labs Job #: C1G6044

Report Date: 2021/06/24

City of Guelph

Client Project #: WET/DRY GROUND WATER

Site Location: JUNE GW

Your P.O. #: 2100310

Sampler Initials: AS

GENERAL COMMENTS

Results relate only to the items tested.



BV Labs Job #: C166044
Report Date: 2021/06/24

QUALITY ASSURANCE REPORT

City of Guelph
Client Project #: WET/DRY GROUND WATER
Site Location: JUNE GW
Your P.O. #: 2100310
Sampler Initials: AS

QC Batch	Parameter	Date	Matrix Spike		SPIKED BLANK		Method Blank		RPD		QC Standard	
			% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits	% Recovery	QC Limits
7410929	4-Bromofluorobenzene	2021/06/18	102	70 - 130	102	70 - 130	99	%				
7410929	D4-1,2-Dichloroethane	2021/06/18	99	70 - 130	99	70 - 130	96	%				
7410929	D8-Toluene	2021/06/18	100	70 - 130	100	70 - 130	101	%				
7422968	2,4,6-Tribromophenol	2021/06/23	97	10 - 130	103	10 - 130	91	%				
7422968	2-Fluorobiphenyl	2021/06/23	74	30 - 130	80	30 - 130	87	%				
7422968	2-Fluorophenol	2021/06/23	56	10 - 130	57	10 - 130	49	%				
7422968	D14-Terphenyl	2021/06/23	98	30 - 130	108	30 - 130	103	%				
7422968	D5-Nitrobenzene	2021/06/23	88	30 - 130	96	30 - 130	97	%				
7422968	D5-Phenol	2021/06/23	48	10 - 130	40	10 - 130	33	%				
7392088	Acrolein	2021/06/18	107	60 - 140	104	60 - 140	ND, RDL=10	ug/L	NC	30		
7392088	Acrylonitrile	2021/06/18	105	60 - 140	101	60 - 140	ND, RDL=5.0	ug/L	NC	30		
7410929	1,1,1,2-Tetrachloroethane	2021/06/18	95	70 - 130	97	70 - 130	ND, RDL=0.20	ug/L	NC	30		
7410929	1,1,1-Trichloroethane	2021/06/18	96	70 - 130	96	70 - 130	ND, RDL=0.10	ug/L	NC	30		
7410929	1,1,2,2-Tetrachloroethane	2021/06/18	88	70 - 130	89	70 - 130	ND, RDL=0.20	ug/L	NC	30		
7410929	1,1,2-Trichloroethane	2021/06/18	94	70 - 130	94	70 - 130	ND, RDL=0.20	ug/L	NC	30		
7410929	1,1-Dichloroethane	2021/06/18	86	70 - 130	87	70 - 130	ND, RDL=0.10	ug/L	NC	30		
7410929	1,1-Dichloroethylene	2021/06/18	91	70 - 130	90	70 - 130	ND, RDL=0.10	ug/L	NC	30		
7410929	1,2-Dichlorobenzene	2021/06/18	94	70 - 130	92	70 - 130	ND, RDL=0.20	ug/L	NC	30		
7410929	1,2-Dichloroethane	2021/06/18	88	70 - 130	88	70 - 130	ND, RDL=0.20	ug/L	NC	30		
7410929	1,2-Dichloropropane	2021/06/18	92	70 - 130	92	70 - 130	ND, RDL=0.10	ug/L	NC	30		
7410929	1,3-Dichlorobenzene	2021/06/18	94	70 - 130	92	70 - 130	ND, RDL=0.20	ug/L	NC	30		
7410929	1,4-Dichlorobenzene	2021/06/18	108	70 - 130	105	70 - 130	ND, RDL=0.20	ug/L	NC	30		
7410929	Acetone (2-Propanone)	2021/06/18	96	60 - 140	92	60 - 140	ND, RDL=10	ug/L	NC	30		
7410929	Benzene	2021/06/18	87	70 - 130	87	70 - 130	ND, RDL=0.10	ug/L	NC	30		
7410929	Bromodichloromethane	2021/06/18	97	70 - 130	97	70 - 130	ND, RDL=0.10	ug/L	NC	30		
7410929	Bromoform	2021/06/18	96	70 - 130	96	70 - 130	ND, RDL=0.20	ug/L	NC	30		
7410929	Bromomethane	2021/06/18	85	60 - 140	72	60 - 140	ND, RDL=0.50	ug/L	NC	30		
7410929	Carbon Tetrachloride	2021/06/18	95	70 - 130	94	70 - 130	ND, RDL=0.10	ug/L	NC	30		
7410929	Chlorobenzene	2021/06/18	93	70 - 130	93	70 - 130	ND, RDL=0.10	ug/L	NC	30		
7410929	Chloroform	2021/06/18	93	70 - 130	92	70 - 130	ND, RDL=0.10	ug/L	NC	30		



BV Labs Job #: C1G6044
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QUALITY ASSURANCE REPORT(CONT'D)

City of Guelph
Client Project #: WET/DRY GROUND WATER
Site Location: JUNE GW
Your P.O. #: 2100310
Sampler Initials: AS

QC Batch	Parameter	Date	Matrix Spike		SPIKED BLANK		Method Blank		RPD		QC Standard	
			% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits	% Recovery	QC Limits
7410929	Chloromethane	2021/06/18	84	60 - 140	85	60 - 140	ND, RDL=0.50	ug/L	NC	30		
7410929	cis-1,2-Dichloroethylene	2021/06/18	93	70 - 130	93	70 - 130	ND, RDL=0.10	ug/L	NC	30		
7410929	cis-1,3-Dichloropropene	2021/06/18	96	70 - 130	94	70 - 130	ND, RDL=0.20	ug/L	NC	30		
7410929	Dibromochloromethane	2021/06/18	93	70 - 130	94	70 - 130	ND, RDL=0.20	ug/L	NC	30		
7410929	Ethylbenzene	2021/06/18	88	70 - 130	88	70 - 130	ND, RDL=0.10	ug/L	NC	30		
7410929	Ethylene Dibromide	2021/06/18	90	70 - 130	90	70 - 130	ND, RDL=0.20	ug/L	NC	30		
7410929	Methyl Ethyl Ketone (2-Butanone)	2021/06/18	87	60 - 140	86	60 - 140	ND, RDL=5.0	ug/L	NC	30		
7410929	Methyl Isobutyl Ketone	2021/06/18	93	70 - 130	89	70 - 130	ND, RDL=5.0	ug/L	NC	30		
7410929	Methyl t-butyl ether (MTBE)	2021/06/18	88	70 - 130	87	70 - 130	ND, RDL=0.20	ug/L	NC	30		
7410929	Methylene Chloride(Dichloromethane)	2021/06/18	91	70 - 130	90	70 - 130	ND, RDL=0.50	ug/L	NC	30		
7410929	o-Xylene	2021/06/18	89	70 - 130	89	70 - 130	ND, RDL=0.10	ug/L	NC	30		
7410929	p+m-Xylene	2021/06/18	92	70 - 130	92	70 - 130	ND, RDL=0.10	ug/L	NC	30		
7410929	Styrene	2021/06/18	99	70 - 130	99	70 - 130	ND, RDL=0.20	ug/L	NC	30		
7410929	Tetrachloroethylene	2021/06/18	90	70 - 130	87	70 - 130	ND, RDL=0.10	ug/L	NC	30		
7410929	Toluene	2021/06/18	90	70 - 130	90	70 - 130	ND, RDL=0.20	ug/L	NC	30		
7410929	Total Xylenes	2021/06/18					ND, RDL=0.10	ug/L	NC	30		
7410929	trans-1,2-Dichloroethylene	2021/06/18	94	70 - 130	91	70 - 130	ND, RDL=0.10	ug/L	NC	30		
7410929	trans-1,3-Dichloropropene	2021/06/18	97	70 - 130	96	70 - 130	ND, RDL=0.20	ug/L	NC	30		
7410929	Trichloroethylene	2021/06/18	99	70 - 130	97	70 - 130	ND, RDL=0.10	ug/L	NC	30		
7410929	Trichlorofluoromethane (FREON 11)	2021/06/18	91	70 - 130	90	70 - 130	ND, RDL=0.20	ug/L	NC	30		
7410929	Vinyl Chloride	2021/06/18	88	70 - 130	87	70 - 130	ND, RDL=0.20	ug/L	NC	30		
7413338	Total BOD	2021/06/22					ND, RDL=2	mg/L	NC	30	96	80 - 120
7413734	Total Ammonia-N	2021/06/18	97	75 - 125	97	80 - 120	ND, RDL=0.050	mg/L	NC	20		
7413755	Total Kjeldahl Nitrogen (TKN)	2021/06/18	97	80 - 120	93	80 - 120	ND, RDL=0.10	mg/L	12	20	92	80 - 120
7413773	Total Chemical Oxygen Demand (COD)	2021/06/18	97	80 - 120	99	80 - 120	ND, RDL=4.0	mg/L	NC	20		
7413938	Phenols-4AAP	2021/06/17	102	80 - 120	102	80 - 120	ND, RDL=0.0010	mg/L	NC	20		
7414108	Phenols-4AAP	2021/06/17	99	80 - 120	101	80 - 120	ND, RDL=0.0010	mg/L	NC	20		



BV Labs Job #: C166044
Report Date: 2021/06/24

QUALITY ASSURANCE REPORT(CONT'D)

City of Guelph
Client Project #: WET/DRY GROUND WATER
Site Location: JUNE GW
Your P.O. #: 2100310
Sampler Initials: AS

QC Batch	Parameter	Date	Matrix Spike		SPIKED BLANK		Method Blank		RPD		QC Standard	
			% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits	% Recovery	QC Limits
7414547	Total Ammonia-N	2021/06/18	97	75 - 125	99	80 - 120	ND, RDL=0.050	mg/L	NC	20		
7414763	Nitrate (N)	2021/06/18	101	80 - 120	101	80 - 120	ND, RDL=0.10	mg/L	NC	20		
7414763	Nitrite (N)	2021/06/18	105	80 - 120	106	80 - 120	ND, RDL=0.010	mg/L	NC	20		
7414864	Dissolved Chloride (Cl-)	2021/06/18	NC	80 - 120	105	80 - 120	ND, RDL=1.0	mg/L	0.18	20		
7414865	Dissolved Sulphate (SO4)	2021/06/18	NC	75 - 125	104	80 - 120	ND, RDL=1.0	mg/L	1.3	20		
7415223	Dissolved Boron (B)	2021/06/18	105	80 - 120	101	80 - 120	ND, RDL=10	ug/L	2.2	20		
7415223	Dissolved Calcium (Ca)	2021/06/18	NC	80 - 120	96	80 - 120	ND, RDL=200	ug/L	0.89	20		
7415223	Dissolved Magnesium (Mg)	2021/06/18	95	80 - 120	96	80 - 120	ND, RDL=50	ug/L	1.0	20		
7415223	Dissolved Phosphorus (P)	2021/06/18	NC	80 - 120	117	80 - 120	ND, RDL=100	ug/L				
7415223	Dissolved Potassium (K)	2021/06/18	101	80 - 120	100	80 - 120	ND, RDL=200	ug/L	1.1	20		
7415223	Dissolved Sodium (Na)	2021/06/18	NC	80 - 120	96	80 - 120	ND, RDL=100	ug/L	1.7	20		
7415223	Dissolved Zinc (Zn)	2021/06/18	96	80 - 120	94	80 - 120	ND, RDL=5.0	ug/L	NC	20		
7415786	Total Phosphorus	2021/06/18	99	80 - 120	100	80 - 120	ND, RDL=0.020	mg/L	2.0	20	97	80 - 120
7416560	Alkalinity (Total as CaCO3)	2021/06/18			98	85 - 115	ND, RDL=1.0	mg/L	1.8	20		
7416562	pH	2021/06/18			102	98 - 103			0.26	N/A		
7416565	Conductivity	2021/06/18			100	85 - 115	ND, RDL=1.0	umho/cm	0.32	25		
7419145	Total Iron (Fe)	2021/06/22	95	80 - 120	103	80 - 120	ND, RDL=0.02	mg/L	6.5	25		
7421842	Total Kjeldahl Nitrogen (TKN)	2021/06/22	105	80 - 120	96	80 - 120	ND, RDL=0.10	mg/L	3.3	20	101	80 - 120
7421860	Total Ammonia-N	2021/06/22	101	75 - 125	97	80 - 120	ND, RDL=0.050	mg/L	NC	20		
7422968	1-Chloronaphthalene	2021/06/23	70	30 - 130	69	30 - 130	ND, RDL=1.0	ug/L	NC	40		
7422968	1-Methylnaphthalene	2021/06/23	96	30 - 130	91	30 - 130	ND, RDL=0.20	ug/L	NC	40		
7422968	2,3,4,5-Tetrachlorophenol	2021/06/23	95	10 - 130	102	10 - 130	ND, RDL=0.40	ug/L	NC	40		
7422968	2,3,4,6-Tetrachlorophenol	2021/06/23	107	10 - 130	103	10 - 130	ND, RDL=0.50	ug/L	NC	40		
7422968	2,3,4-Trichlorophenol	2021/06/23	100	10 - 130	99	10 - 130	ND, RDL=0.50	ug/L	NC	40		
7422968	2,3,5,6-Tetrachlorophenol	2021/06/23	114	10 - 130	109	10 - 130	ND, RDL=0.50	ug/L	NC	40		
7422968	2,3,5-Trichlorophenol	2021/06/23	115	10 - 130	105	10 - 130	ND, RDL=0.50	ug/L	NC	40		



BV Labs Job #: C1G6044
Report Date: 2021/06/24

QUALITY ASSURANCE REPORT(CONT'D)

City of Guelph
Client Project #: WET/DRY GROUND WATER
Site Location: JUNE GW
Your P.O. #: 2100310
Sampler Initials: AS

QC Batch	Parameter	Date	Matrix Spike		SPIKED BLANK		Method Blank		RPD		QC Standard	
			% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits	% Recovery	QC Limits
7422968	2,4,5-Trichlorophenol	2021/06/23	111	10 - 130	106	10 - 130	ND, RDL=0.50	ug/L	NC	40		
7422968	2,4,6-Trichlorophenol	2021/06/23	103	10 - 130	97	10 - 130	ND, RDL=0.50	ug/L	NC	40		
7422968	2,4-Dichlorophenol	2021/06/23	99	10 - 130	101	10 - 130	ND, RDL=0.30	ug/L	NC	40		
7422968	2,4-Dimethylphenol	2021/06/23	63	10 - 130	67	10 - 130	ND, RDL=0.50	ug/L	NC	40		
7422968	2,4-Dinitrophenol	2021/06/23	116	10 - 130	114	10 - 130	ND, RDL=2.0	ug/L	NC	40		
7422968	2,4-Dinitrotoluene	2021/06/23	98	30 - 130	101	30 - 130	ND, RDL=0.50	ug/L	NC	40		
7422968	2,6-Dichlorophenol	2021/06/23	100	10 - 130	101	10 - 130	ND, RDL=0.50	ug/L	NC	40		
7422968	2,6-Dinitrotoluene	2021/06/23	93	30 - 130	91	30 - 130	ND, RDL=0.50	ug/L	NC	40		
7422968	2-Chloronaphthalene	2021/06/23	96	30 - 130	91	30 - 130	ND, RDL=0.50	ug/L	NC	40		
7422968	2-Chlorophenol	2021/06/23	94	10 - 130	95	10 - 130	ND, RDL=0.30	ug/L	NC	40		
7422968	2-Methylnaphthalene	2021/06/23	86	30 - 130	84	30 - 130	ND, RDL=0.20	ug/L	NC	40		
7422968	4,6-Dinitro-2-methylphenol	2021/06/23	107	10 - 130	110	10 - 130	ND, RDL=2.0	ug/L	NC	40		
7422968	4-Bromophenyl phenyl ether	2021/06/23	97	30 - 130	100	30 - 130	ND, RDL=0.30	ug/L	NC	40		
7422968	4-Chloro-3-Methylphenol	2021/06/23	107	10 - 130	102	10 - 130	ND, RDL=0.50	ug/L	NC	40		
7422968	4-Chlorophenyl phenyl ether	2021/06/23	93	30 - 130	90	30 - 130	ND, RDL=0.50	ug/L	NC	40		
7422968	4-Nitrophenol	2021/06/23	59	10 - 130	47	10 - 130	ND, RDL=1.4	ug/L	NC	40		
7422968	5-Nitroacenaphthene	2021/06/23	98	30 - 130	94	30 - 130	ND, RDL=1.0	ug/L				
7422968	Acenaphthene	2021/06/23	92	30 - 130	91	30 - 130	ND, RDL=0.20	ug/L	NC	40		
7422968	Acenaphthylene	2021/06/23	90	30 - 130	92	30 - 130	ND, RDL=0.20	ug/L	NC	40		
7422968	Anthracene	2021/06/23	91	30 - 130	89	30 - 130	ND, RDL=0.20	ug/L	NC	40		
7422968	Benzo(a)anthracene	2021/06/23	106	30 - 130	105	30 - 130	ND, RDL=0.20	ug/L	NC	40		
7422968	Benzo(a)pyrene	2021/06/23	92	30 - 130	92	30 - 130	ND, RDL=0.20	ug/L	NC	40		
7422968	Benzo(b,j)fluoranthene	2021/06/23	105	30 - 130	106	30 - 130	ND, RDL=0.20	ug/L	NC	40		
7422968	Benzo(g,h,i)perylene	2021/06/23	103	30 - 130	104	30 - 130	ND, RDL=0.20	ug/L	NC	40		
7422968	Benzo(k)fluoranthene	2021/06/23	105	30 - 130	102	30 - 130	ND, RDL=0.20	ug/L	NC	40		
7422968	Benzyl butyl phthalate	2021/06/23	102	30 - 130	107	30 - 130	ND, RDL=0.50	ug/L	NC	40		
7422968	Biphenyl	2021/06/23	90	30 - 130	87	30 - 130	ND, RDL=0.50	ug/L	NC	40		
7422968	Bis(2-chloroethoxy)methane	2021/06/23	81	30 - 130	85	30 - 130	ND, RDL=0.50	ug/L	NC	40		
7422968	Bis(2-chloroethyl)ether	2021/06/23	89	30 - 130	88	30 - 130	ND, RDL=0.50	ug/L	NC	40		
7422968	Bis(2-chloroisopropyl)ether	2021/06/23	68	30 - 130	79	30 - 130	ND, RDL=0.50	ug/L	NC	40		



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Report Date: 2021/06/24

QUALITY ASSURANCE REPORT(CONT'D)

City of Guelph
Client Project #: WET/DRY GROUND WATER
Site Location: JUNE GW
Your P.O. #: 2100310
Sampler Initials: AS

QC Batch	Parameter	Date	Matrix Spike		SPIKED BLANK		Method Blank		RPD		QC Standard	
			% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits	% Recovery	QC Limits
7422968	Bis(2-ethylhexyl)phthalate	2021/06/23	96	30 - 130	99	30 - 130	ND, RDL=2.0	ug/L	NC	40		
7422968	Camphene	2021/06/23	71	30 - 130	65	30 - 130	ND, RDL=1.0	ug/L				
7422968	Chrysene	2021/06/23	106	30 - 130	104	30 - 130	ND, RDL=0.20	ug/L	NC	40		
7422968	Dibenzo(a,h)anthracene	2021/06/23	107	30 - 130	104	30 - 130	ND, RDL=0.20	ug/L	NC	40		
7422968	Di-N-butyl phthalate	2021/06/23	104	30 - 130	106	30 - 130	ND, RDL=2.0	ug/L	NC	40		
7422968	di-n-octyl phthalate	2021/06/23	101	30 - 130	102	30 - 130	ND, RDL=0.80	ug/L	NC	40		
7422968	Diphenyl Ether	2021/06/23	88	30 - 130	90	30 - 130	ND, RDL=0.30	ug/L	NC	40		
7422968	Fluoranthene	2021/06/23	107	30 - 130	100	30 - 130	ND, RDL=0.20	ug/L	NC	40		
7422968	Fluorene	2021/06/23	96	30 - 130	96	30 - 130	ND, RDL=0.20	ug/L	NC	40		
7422968	Indeno(1,2,3-cd)pyrene	2021/06/23	107	30 - 130	106	30 - 130	ND, RDL=0.20	ug/L	NC	40		
7422968	Indole	2021/06/23	65	30 - 130	85	30 - 130	ND, RDL=1.0	ug/L				
7422968	m/p-Cresol	2021/06/23	79	10 - 130	75	10 - 130	ND, RDL=0.50	ug/L	NC	40		
7422968	Naphthalene	2021/06/23	66	30 - 130	66	30 - 130	ND, RDL=0.20	ug/L	NC	40		
7422968	Nitrosodiphenylamine/Diphenylamine	2021/06/23	116	30 - 130	123	30 - 130	ND, RDL=1.0	ug/L	NC	40		
7422968	N-Nitroso-di-n-propylamine	2021/06/23	96	30 - 130	95	30 - 130	ND, RDL=0.50	ug/L	NC	40		
7422968	o-Cresol	2021/06/23	79	10 - 130	76	10 - 130	ND, RDL=0.50	ug/L	NC	40		
7422968	Pentachlorophenol	2021/06/23	94	10 - 130	83	10 - 130	ND, RDL=1.0	ug/L	NC	40		
7422968	Perylene	2021/06/23	102	30 - 130	104	30 - 130	ND, RDL=0.20	ug/L	NC	40		
7422968	Phenanthrene	2021/06/23	99	30 - 130	98	30 - 130	ND, RDL=0.20	ug/L	NC	40		
7422968	Phenol	2021/06/23	50	10 - 130	42	10 - 130	ND, RDL=0.50	ug/L	NC	40		



BV Labs Job #: C1G6044
Report Date: 2021/06/24

QUALITY ASSURANCE REPORT(CONT'D)

City of Guelph
Client Project #: WET/DRY GROUND WATER
Site Location: JUNE GW
Your P.O. #: 2100310
Sampler Initials: AS

QC Batch	Parameter	Date	Matrix Spike		SPIKED BLANK		Method Blank		RPD		QC Standard	
			% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits	% Recovery	QC Limits
7422968	Pyrene	2021/06/23	103	30 - 130	105	30 - 130	ND, RDL=0.20	ug/L	NC	40		
<p>N/A = Not Applicable</p> <p>Duplicate: Paired analysis of a separate portion of the same sample. Used to evaluate the variance in the measurement.</p> <p>Matrix Spike: A sample to which a known amount of the analyte of interest has been added. Used to evaluate sample matrix interference.</p> <p>QC Standard: A sample of known concentration prepared by an external agency under stringent conditions. Used as an independent check of method accuracy.</p> <p>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.</p> <p>Method Blank: A blank matrix containing all reagents used in the analytical procedure. Used to identify laboratory contamination.</p> <p>Surrogate: A pure or isotopically labeled compound whose behavior mirrors the analytes of interest. Used to evaluate extraction efficiency.</p> <p>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)</p> <p>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 $\leq 2 \times$ RDL).</p>												



BUREAU
VERITAS

BV Labs Job #: C1G6044

Report Date: 2021/06/24

City of Guelph

Client Project #: WET/DRY GROUND WATER

Site Location: JUNE GW

Your P.O. #: 2100310

Sampler Initials: AS


VALIDATION SIGNATURE PAGE

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

Anastassia Hamanov, Scientific Specialist

BV Labs 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 Signature Page.

Page 1 of 1



BOD
Bureau Veritas Laboratories
1740 Campbell Road, Mississauga, Ontario Canada L5N 2L3 Tel: (905) 817-5700 Toll-free 800-563-6266 Fax: (905) 817-5777 www.bvlabs.com

CHAIN OF CUSTODY RECORD

INVOICE TO: Company Name: #12237 City of Guelph Attention: Andrew Shouldice (Eastview) Address: 186 Eastview Rd Guelph ON N1E 1Z6 Tel: (519) 822-1260 Ext. 2473 Fax: (519) 823-0910 Email: Andrew.Shouldice@guelph.ca		REPORT TO: Company Name: Attention: Address: Tel: Fax: Email:		PROJECT INFORMATION: Quotation #: B90142 P.O. #: Project: Wet/Dry Ground Water Project Name: June GW Site #: Sampled By: Andrew Shouldice		Laboratory Use Only: BV Labs Job #: Bottle Order #: COC #: Project Manager: James Aspin CW30340-04-01	
MOE REGULATED DRINKING WATER OR WATER INTENDED FOR HUMAN CONSUMPTION MUST BE SUBMITTED ON THE BV LABS DRINKING WATER CHAIN OF CUSTODY				ANALYSIS REQUESTED (PLEASE BE SPECIFIC)			
Regulation 153 (2011) <input type="checkbox"/> Table 1 <input type="checkbox"/> Res/Park <input type="checkbox"/> Medium/Fish <input type="checkbox"/> Table 2 <input type="checkbox"/> Ind/Comm <input type="checkbox"/> Coastal <input type="checkbox"/> Table 3 <input type="checkbox"/> Agri/Other <input type="checkbox"/> For RSC <input type="checkbox"/> Table:		Other Regulations <input type="checkbox"/> CCME <input type="checkbox"/> Sanitary Sewer Bylaw <input type="checkbox"/> Reg 506 <input type="checkbox"/> Storm Sewer Bylaw <input type="checkbox"/> MISA <input type="checkbox"/> Municipality <input type="checkbox"/> PWOD <input type="checkbox"/> Reg 406 Table <input type="checkbox"/> Other:		Special Instructions		Field Filtered (please circle) Media: /kg /Cr/Vt Wet/Dry GW: <input checked="" type="checkbox"/> ATG 16-2C	
Include Criteria on Certificate of Analysis (Y/N)?							
Sample Barcode Label	Sample (Location) Identification	Date Sampled	Time Sampled	Matrix	Field Filtered	Media	Wet/Dry
1	20A	June 15/21	Am	GW	Y	X	13
2	20B			GW	Y	X	13
3	23A			GW	Y	X	13
4	23B			GW	Y	X	13
5	13A	June 16/21		GW	Y	X	13
6	13B			GW	Y	X	13
7							
8							
9							
10							
RELINQUISHED BY: (Signature/Print) Andrew Shouldice		Date: (YY/MM/DD) 21/06/16	Time AM	RECEIVED BY: (Signature/Print) Anisha Vahora		Date: (YY/MM/DD) 20/06/16	Time 16:00
# Jars used and not submitted		Laboratory Use Only		Time Sensitivity		Temperature (°C) on Receipt 8, 8, 10	
Time Sensitivity		Temperature (°C) on Receipt		Custody Seal Present <input checked="" type="checkbox"/>		White: BV Labs Yellow: Client	

* UNLESS OTHERWISE AGREED TO IN WRITING, WORK SUBMITTED ON THIS CHAIN OF CUSTODY IS SUBJECT TO BV LABS' STANDARD TERMS AND CONDITIONS. SIGNING OF THIS CHAIN OF CUSTODY DOCUMENT IS ACKNOWLEDGMENT AND ACCEPTANCE OF OUR TERMS WHICH ARE AVAILABLE FOR VIEWING AT WWW.BVLABS.COM/TERMS AND CONDITIONS.

* IT IS THE RESPONSIBILITY OF THE RELINQUISHER TO ENSURE THE ACCURACY OF THE CHAIN OF CUSTODY RECORD. AN INCOMPLETE CHAIN OF CUSTODY MAY RESULT IN ANALYTICAL TAT DELAYS.

** SAMPLE CONTAINER, PRESERVATION, HOLD TIME AND PACKAGE INFORMATION CAN BE VIEWED AT WWW.BVLABS.COM/RESOURCES/CHAIN-OF-CUSTODY FORMS.

Bureau Veritas Canada (2019) Inc.

5/5/6° WB# 402454



Your P.O. #: 2100310
 Your Project #: Wet/Dry Ground Water
 Site Location: JUNE GW
 Your C.O.C. #: 829801-01-01

Attention: Andrew Shouldice

City of Guelph
 Eastview Landfill
 186 Eastview Road
 Guelph, ON
 CANADA N1E 1Z6

Report Date: 2021/06/25
 Report #: R6692682
 Version: 1 - Final

CERTIFICATE OF ANALYSIS

BV LABS JOB #: C1G7226

Received: 2021/06/17, 16:00

Sample Matrix: Water
 # Samples Received: 6

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Analytical Method
ABN Compounds in Water by GC/MS	6	2021/06/24	2021/06/24	CAM SOP-00301	EPA 8270 m
Alkalinity	4	N/A	2021/06/19	CAM SOP-00448	SM 23 2320 B m
Alkalinity	2	N/A	2021/06/23	CAM SOP-00448	SM 23 2320 B m
Biochemical Oxygen Demand (BOD)	6	2021/06/18	2021/06/23	CAM SOP-00427	SM 23 5210B m
Chloride by Automated Colourimetry	6	N/A	2021/06/21	CAM SOP-00463	SM 23 4500-Cl E m
Chemical Oxygen Demand	3	N/A	2021/06/21	CAM SOP-00416	SM 23 5220 D m
Chemical Oxygen Demand	2	N/A	2021/06/22	CAM SOP-00416	SM 23 5220 D m
Chemical Oxygen Demand	1	N/A	2021/06/23	CAM SOP-00416	SM 23 5220 D m
Conductivity	4	N/A	2021/06/19	CAM SOP-00414	SM 23 2510 m
Conductivity	2	N/A	2021/06/23	CAM SOP-00414	SM 23 2510 m
Dissolved Metals by ICPMS	6	N/A	2021/06/22	CAM SOP-00447	EPA 6020B m
Total Metals Analysis by ICP	6	2021/06/21	2021/06/22	CAM SOP-00408	EPA 6010D m
Total Ammonia-N	1	N/A	2021/06/21	CAM SOP-00441	USGS I-2522-90 m
Total Ammonia-N	5	N/A	2021/06/22	CAM SOP-00441	USGS I-2522-90 m
Nitrate (NO3) and Nitrite (NO2) in Water (1)	5	N/A	2021/06/21	CAM SOP-00440	SM 23 4500-NO3I/NO2B
Nitrate (NO3) and Nitrite (NO2) in Water (1)	1	N/A	2021/06/22	CAM SOP-00440	SM 23 4500-NO3I/NO2B
pH	4	2021/06/18	2021/06/19	CAM SOP-00413	SM 4500H+ B m
pH	2	2021/06/19	2021/06/23	CAM SOP-00413	SM 4500H+ B m
Phenols (4AAP)	6	N/A	2021/06/18	CAM SOP-00444	OMOE E3179 m
Sulphate by Automated Colourimetry	6	N/A	2021/06/21	CAM SOP-00464	EPA 375.4 m
Total Kjeldahl Nitrogen in Water	4	2021/06/18	2021/06/21	CAM SOP-00938	OMOE E3516 m
Total Kjeldahl Nitrogen in Water	2	2021/06/18	2021/06/22	CAM SOP-00938	OMOE E3516 m
Total Phosphorus (Colourimetric)	2	2021/06/18	2021/06/21	CAM SOP-00407	SM 23 4500 P B H m
Total Phosphorus (Colourimetric)	4	2021/06/21	2021/06/22	CAM SOP-00407	SM 23 4500 P B H m
Volatile Organic Compounds in Water	6	N/A	2021/06/22	CAM SOP-00226	EPA 8260C m
Non-Routine Volatile Organic Compounds	6	N/A	2021/06/22	CAM SOP-00226	EPA 8260 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, MELCC, EPA, APHA.



Your P.O. #: 2100310
 Your Project #: Wet/Dry Ground Water
 Site Location: JUNE GW
 Your C.O.C. #: 829801-01-01

Attention: Andrew Shouldice

City of Guelph
 Eastview Landfill
 186 Eastview Road
 Guelph, ON
 CANADA N1E 1Z6

Report Date: 2021/06/25
 Report #: R6692682
 Version: 1 - Final

CERTIFICATE OF ANALYSIS

BV LABS JOB #: C1G7226

Received: 2021/06/17, 16:00

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.

Encryption Key

Hongmei Zhao (Grace)
 Project Manager
 25 Jun 2021 16:46:07

Please direct all questions regarding this Certificate of Analysis to your Project Manager.

James Aspin, Senior Project Manager
 Email: James.Aspin@bureauveritas.com
 Phone# (905)817-5771

=====

BV Labs 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 Signature Page.



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BV Labs Job #: C1G7226
Report Date: 2021/06/25

City of Guelph
Client Project #: Wet/Dry Ground Water
Site Location: JUNE GW
Your P.O. #: 2100310
Sampler Initials: AS

RESULTS OF ANALYSES OF WATER

BV Labs ID				PWD730				PWD730			
Sampling Date				2021/06/16				2021/06/16			
COC Number				829801-01-01				829801-01-01			
	UNITS	Criteria	Criteria C	17A	RDL	MDL	QC Batch	17A Lab-Dup	RDL	MDL	QC Batch

Inorganics											
Total Ammonia-N	mg/L	-	-	ND	0.050	0.0080	7417101				
Total BOD	mg/L	-	-	ND	2	0.4	7415607				
Total Chemical Oxygen Demand (COD)	mg/L	-	-	ND	4.0	3.6	7416819				
Conductivity	umho/cm	-	-	830	1.0	0.20	7417534	840	1.0	0.20	7417534
Total Kjeldahl Nitrogen (TKN)	mg/L	-	-	ND	0.10	0.060	7416859				
pH	pH	-	6.5:8.5	7.93			7417542	7.97			7417542
Phenols-4AAP	mg/L	-	-	ND	0.0010	0.00030	7416274				
Total Phosphorus	mg/L	-	-	0.18	0.10	0.015	7419519				
Dissolved Sulphate (SO ₄)	mg/L	-	500	36	1.0	0.10	7417736				
Alkalinity (Total as CaCO ₃)	mg/L	-	30-500	290	1.0	0.20	7417522	300	1.0	0.20	7417522
Dissolved Chloride (Cl ⁻)	mg/L	-	250	72	1.0	0.30	7417735				
Nitrite (N)	mg/L	1	-	ND	0.010	0.0020	7418262				
Nitrate (N)	mg/L	10	-	0.91	0.10	0.010	7418262				
Nitrate + Nitrite (N)	mg/L	10	-	0.91	0.10	0.010	7418262				

RDL = Reportable Detection Limit

QC Batch = Quality Control Batch

Lab-Dup = Laboratory Initiated Duplicate

Criteria, Criteria C: Ontario Regulation 169/03

Criteria A = Maximum Acceptable

Criteria B = Interim Maximum

Criteria C = Chemical/Physical Objectives [A/O]

(Made under the Ontario Safe Drinking Water Act, 2002)

ND = Not detected



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BV Labs Job #: C1G7226
Report Date: 2021/06/25

City of Guelph
Client Project #: Wet/Dry Ground Water
Site Location: JUNE GW
Your P.O. #: 2100310
Sampler Initials: AS

RESULTS OF ANALYSES OF WATER

BV Labs ID				PWD731		PWD732			
Sampling Date				2021/06/16		2021/06/16			
COC Number				829801-01-01		829801-01-01			
	UNITS	Criteria	Criteria C	17B	QC Batch	22A	RDL	MDL	QC Batch
Inorganics									
Total Ammonia-N	mg/L	-	-	ND	7416728	ND	0.050	0.0080	7416728
Total BOD	mg/L	-	-	4	7415607	2	2	0.4	7415607
Total Chemical Oxygen Demand (COD)	mg/L	-	-	9.7	7416819	5.0	4.0	3.6	7416449
Conductivity	umho/cm	-	-	690	7417534	860	1.0	0.20	7417534
Total Kjeldahl Nitrogen (TKN)	mg/L	-	-	0.15	7416716	0.23	0.10	0.060	7416716
pH	pH	-	6.5:8.5	8.11	7417542	8.07			7417542
Phenols-4AAP	mg/L	-	-	ND	7416274	ND	0.0010	0.00030	7416274
Total Phosphorus	mg/L	-	-	0.032	7416606	0.084	0.020	0.0030	7416606
Dissolved Sulphate (SO ₄)	mg/L	-	500	60	7417736	87	1.0	0.10	7417761
Alkalinity (Total as CaCO ₃)	mg/L	-	30-500	240	7417522	250	1.0	0.20	7417522
Dissolved Chloride (Cl ⁻)	mg/L	-	250	36	7417735	79	1.0	0.30	7417771
Nitrite (N)	mg/L	1	-	ND	7418262	0.010	0.010	0.0020	7417728
Nitrate (N)	mg/L	10	-	0.12	7418262	0.21	0.10	0.010	7417728
Nitrate + Nitrite (N)	mg/L	10	-	0.12	7418262	0.22	0.10	0.010	7417728
RDL = Reportable Detection Limit QC Batch = Quality Control Batch Criteria, Criteria C: Ontario Regulation 169/03 Criteria A = Maximum Acceptable Criteria B = Interim Maximum Criteria C = Chemical/Physical Objectives [A/O] (Made under the Ontario Safe Drinking Water Act, 2002) ND = Not detected									



BV Labs Job #: C1G7226
Report Date: 2021/06/25

City of Guelph
Client Project #: Wet/Dry Ground Water
Site Location: JUNE GW
Your P.O. #: 2100310
Sampler Initials: AS

RESULTS OF ANALYSES OF WATER

BV Labs ID				PWD732				PWD733			
Sampling Date				2021/06/16				2021/06/16			
COC Number				829801-01-01				829801-01-01			
	UNITS	Criteria	Criteria C	22A Lab-Dup	RDL	MDL	QC Batch	22B	RDL	MDL	QC Batch
Inorganics											
Total Ammonia-N	mg/L	-	-					ND	0.050	0.0080	7417101
Total BOD	mg/L	-	-					ND	2	0.4	7415607
Total Chemical Oxygen Demand (COD)	mg/L	-	-	ND	4.0	3.6	7416449	ND	4.0	3.6	7419533
Conductivity	umho/cm	-	-					1100	1.0	0.20	7418266
Total Kjeldahl Nitrogen (TKN)	mg/L	-	-					ND	0.10	0.060	7416859
pH	pH	-	6.5:8.5					7.93			7418268
Phenols-4AAP	mg/L	-	-					ND	0.0010	0.00030	7416274
Total Phosphorus	mg/L	-	-					ND	0.020	0.0030	7419519
Dissolved Sulphate (SO4)	mg/L	-	500					56	1.0	0.10	7417736
Alkalinity (Total as CaCO3)	mg/L	-	30-500					330	1.0	0.20	7418267
Dissolved Chloride (Cl-)	mg/L	-	250					120	1.0	0.30	7417735
Nitrite (N)	mg/L	1	-					ND	0.010	0.0020	7417712
Nitrate (N)	mg/L	10	-					0.77	0.10	0.010	7417712
Nitrate + Nitrite (N)	mg/L	10	-					0.77	0.10	0.010	7417712

RDL = Reportable Detection Limit

QC Batch = Quality Control Batch

Lab-Dup = Laboratory Initiated Duplicate

Criteria, Criteria C: Ontario Regulation 169/03

Criteria A = Maximum Acceptable

Criteria B = Interim Maximum

Criteria C = Chemical/Physical Objectives [A/O]

(Made under the Ontario Safe Drinking Water Act, 2002)

ND = Not detected



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BV Labs Job #: C1G7226

Report Date: 2021/06/25

City of Guelph

Client Project #: Wet/Dry Ground Water

Site Location: JUNE GW

Your P.O. #: 2100310

Sampler Initials: AS

RESULTS OF ANALYSES OF WATER

BV Labs ID				PWD733			
Sampling Date				2021/06/16			
COC Number				829801-01-01			
	UNITS	Criteria	Criteria C	22B Lab-Dup	RDL	MDL	QC Batch
Inorganics							
Total Chemical Oxygen Demand (COD)	mg/L	-	-	ND	4.0	3.6	7419533
Nitrite (N)	mg/L	1	-	ND	0.010	0.0020	7417712
Nitrate (N)	mg/L	10	-	0.79	0.10	0.010	7417712
Nitrate + Nitrite (N)	mg/L	10	-	0.79	0.10	0.010	7417712
RDL = Reportable Detection Limit QC Batch = Quality Control Batch Lab-Dup = Laboratory Initiated Duplicate Criteria, Criteria C: Ontario Regulation 169/03 Criteria A = Maximum Acceptable Criteria B = Interim Maximum Criteria C = Chemical/Physical Objectives [A/O] (Made under the Ontario Safe Drinking Water Act, 2002) ND = Not detected							



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BV Labs Job #: C1G7226
Report Date: 2021/06/25

City of Guelph
Client Project #: Wet/Dry Ground Water
Site Location: JUNE GW
Your P.O. #: 2100310
Sampler Initials: AS

RESULTS OF ANALYSES OF WATER

BV Labs ID				PWD734			
Sampling Date				2021/06/16			
COC Number				829801-01-01			
	UNITS	Criteria	Criteria C	16A	RDL	MDL	QC Batch
Inorganics							
Total Ammonia-N	mg/L	-	-	ND	0.050	0.0080	7417101
Total BOD	mg/L	-	-	ND	2	0.4	7415607
Total Chemical Oxygen Demand (COD)	mg/L	-	-	ND	4.0	3.6	7416819
Conductivity	umho/cm	-	-	590	1.0	0.20	7417534
Total Kjeldahl Nitrogen (TKN)	mg/L	-	-	ND	0.10	0.060	7416859
pH	pH	-	6.5:8.5	8.11			7417542
Phenols-4AAP	mg/L	-	-	ND	0.0010	0.00030	7416274
Total Phosphorus	mg/L	-	-	ND	0.020	0.0030	7419519
Dissolved Sulphate (SO ₄)	mg/L	-	500	40	1.0	0.10	7417736
Alkalinity (Total as CaCO ₃)	mg/L	-	30-500	230	1.0	0.20	7417522
Dissolved Chloride (Cl ⁻)	mg/L	-	250	30	1.0	0.30	7417735
Nitrite (N)	mg/L	1	-	ND	0.010	0.0020	7418262
Nitrate (N)	mg/L	10	-	0.14	0.10	0.010	7418262
Nitrate + Nitrite (N)	mg/L	10	-	0.14	0.10	0.010	7418262
RDL = Reportable Detection Limit QC Batch = Quality Control Batch Criteria, Criteria C: Ontario Regulation 169/03 Criteria A = Maximum Acceptable Criteria B = Interim Maximum Criteria C = Chemical/Physical Objectives [A/O] (Made under the Ontario Safe Drinking Water Act, 2002) ND = Not detected							



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BV Labs Job #: C1G7226
Report Date: 2021/06/25

City of Guelph
Client Project #: Wet/Dry Ground Water
Site Location: JUNE GW
Your P.O. #: 2100310
Sampler Initials: AS

RESULTS OF ANALYSES OF WATER

BV Labs ID				PWD735			
Sampling Date				2021/06/16			
COC Number				829801-01-01			
	UNITS	Criteria	Criteria C	16B	RDL	MDL	QC Batch
Inorganics							
Total Ammonia-N	mg/L	-	-	ND	0.050	0.0080	7419416
Total BOD	mg/L	-	-	ND	2	0.4	7415607
Total Chemical Oxygen Demand (COD)	mg/L	-	-	4.6	4.0	3.6	7419533
Conductivity	umho/cm	-	-	760	1.0	0.20	7418266
Total Kjeldahl Nitrogen (TKN)	mg/L	-	-	0.38	0.20	0.12	7417261
pH	pH	-	6.5:8.5	7.93			7418268
Phenols-4AAP	mg/L	-	-	ND	0.0010	0.00030	7416274
Total Phosphorus	mg/L	-	-	ND	0.020	0.0030	7420046
Dissolved Sulphate (SO ₄)	mg/L	-	500	46	1.0	0.10	7417736
Alkalinity (Total as CaCO ₃)	mg/L	-	30-500	280	1.0	0.20	7418267
Dissolved Chloride (Cl ⁻)	mg/L	-	250	42	1.0	0.30	7417735
Nitrite (N)	mg/L	1	-	0.060	0.010	0.0020	7418262
Nitrate (N)	mg/L	10	-	4.97	0.10	0.010	7418262
Nitrate + Nitrite (N)	mg/L	10	-	5.03	0.10	0.010	7418262
RDL = Reportable Detection Limit QC Batch = Quality Control Batch Criteria, Criteria C: Ontario Regulation 169/03 Criteria A = Maximum Acceptable Criteria B = Interim Maximum Criteria C = Chemical/Physical Objectives [A/O] (Made under the Ontario Safe Drinking Water Act, 2002) ND = Not detected							



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BV Labs Job #: C1G7226

Report Date: 2021/06/25

City of Guelph

Client Project #: Wet/Dry Ground Water

Site Location: JUNE GW

Your P.O. #: 2100310

Sampler Initials: AS

RESULTS OF ANALYSES OF WATER

BV Labs ID				PWD735			
Sampling Date				2021/06/16			
COC Number				829801-01-01			
	UNITS	Criteria	Criteria C	16B Lab-Dup	RDL	MDL	QC Batch
Inorganics							
Total Ammonia-N	mg/L	-	-	ND	0.050	0.0080	7419416
RDL = Reportable Detection Limit QC Batch = Quality Control Batch Lab-Dup = Laboratory Initiated Duplicate Criteria, Criteria C: Ontario Regulation 169/03 Criteria A = Maximum Acceptable Criteria B = Interim Maximum Criteria C = Chemical/Physical Objectives [A/O] (Made under the Ontario Safe Drinking Water Act, 2002) ND = Not detected							



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BV Labs Job #: C1G7226
Report Date: 2021/06/25

City of Guelph
Client Project #: Wet/Dry Ground Water
Site Location: JUNE GW
Your P.O. #: 2100310
Sampler Initials: AS

ELEMENTS BY ATOMIC SPECTROSCOPY (WATER)

BV Labs ID					PWD730	PWD731	PWD732	PWD733			
Sampling Date					2021/06/16	2021/06/16	2021/06/16	2021/06/16			
COC Number					829801-01-01	829801-01-01	829801-01-01	829801-01-01			
	UNITS	Criteria	Criteria B	Criteria C	17A	17B	22A	22B	RDL	MDL	QC Batch

Metals

Total Iron (Fe)	mg/L	-	-	0.3	8.1	0.92	0.73	0.03	0.02	0.004	7419145
Dissolved Boron (B)	ug/L	-	5000	-	20	27	25	21	10	10	7418102
Dissolved Calcium (Ca)	ug/L	-	-	-	96000	81000	100000	110000	200	200	7418102
Dissolved Magnesium (Mg)	ug/L	-	-	-	21000	28000	34000	24000	50	50	7418102
Dissolved Phosphorus (P)	ug/L	-	-	-	ND	ND	ND	ND	100	50	7418102
Dissolved Potassium (K)	ug/L	-	-	-	740	1600	1500	1800	200	200	7418102
Dissolved Sodium (Na)	ug/L	20000	-	200000	54000	20000	30000	77000	100	100	7418102
Dissolved Zinc (Zn)	ug/L	-	-	5000	68	ND	ND	14	5.0	5.0	7418102

RDL = Reportable Detection Limit

QC Batch = Quality Control Batch

Criteria, Criteria B, Criteria C: Ontario Regulation 169/03

Criteria A = Maximum Acceptable

Criteria B = Interim Maximum

Criteria C = Chemical/Physical Objectives [A/O]

(Made under the Ontario Safe Drinking Water Act, 2002)

ND = Not detected



BUREAU
VERITAS

BV Labs Job #: C1G7226
Report Date: 2021/06/25

City of Guelph
Client Project #: Wet/Dry Ground Water
Site Location: JUNE GW
Your P.O. #: 2100310
Sampler Initials: AS

ELEMENTS BY ATOMIC SPECTROSCOPY (WATER)

BV Labs ID					PWD734				PWD734			
Sampling Date					2021/06/16				2021/06/16			
COC Number					829801-01-01				829801-01-01			
	UNITS	Criteria	Criteria B	Criteria C	16A	RDL	MDL	QC Batch	16A Lab-Dup	RDL	MDL	QC Batch

Metals

Total Iron (Fe)	mg/L	-	-	0.3	0.15	0.02	0.004	7419145	0.14	0.02	0.004	7419145
Dissolved Boron (B)	ug/L	-	5000	-	27	10	10	7418102				
Dissolved Calcium (Ca)	ug/L	-	-	-	79000	200	200	7418102				
Dissolved Magnesium (Mg)	ug/L	-	-	-	27000	50	50	7418102				
Dissolved Phosphorus (P)	ug/L	-	-	-	ND	100	50	7418102				
Dissolved Potassium (K)	ug/L	-	-	-	1700	200	200	7418102				
Dissolved Sodium (Na)	ug/L	20000	-	200000	2100	100	100	7418102				
Dissolved Zinc (Zn)	ug/L	-	-	5000	11	5.0	5.0	7418102				

RDL = Reportable Detection Limit

QC Batch = Quality Control Batch

Lab-Dup = Laboratory Initiated Duplicate

Criteria, Criteria B, Criteria C: Ontario Regulation 169/03

Criteria A = Maximum Acceptable

Criteria B = Interim Maximum

Criteria C = Chemical/Physical Objectives [A/O]

(Made under the Ontario Safe Drinking Water Act, 2002)

ND = Not detected



BUREAU
VERITAS

BV Labs Job #: C1G7226
Report Date: 2021/06/25

City of Guelph
Client Project #: Wet/Dry Ground Water
Site Location: JUNE GW
Your P.O. #: 2100310
Sampler Initials: AS

ELEMENTS BY ATOMIC SPECTROSCOPY (WATER)

BV Labs ID					PWD735			
Sampling Date					2021/06/16			
COC Number					829801-01-01			
	UNITS	Criteria	Criteria B	Criteria C	16B	RDL	MDL	QC Batch
Metals								
Total Iron (Fe)	mg/L	-	-	0.3	0.06	0.02	0.004	7419145
Dissolved Boron (B)	ug/L	-	5000	-	13	10	10	7418102
Dissolved Calcium (Ca)	ug/L	-	-	-	100000	200	200	7418102
Dissolved Magnesium (Mg)	ug/L	-	-	-	29000	50	50	7418102
Dissolved Phosphorus (P)	ug/L	-	-	-	ND	100	50	7418102
Dissolved Potassium (K)	ug/L	-	-	-	1500	200	200	7418102
Dissolved Sodium (Na)	ug/L	20000	-	200000	17000	100	100	7418102
Dissolved Zinc (Zn)	ug/L	-	-	5000	580	5.0	5.0	7418102
RDL = Reportable Detection Limit QC Batch = Quality Control Batch Criteria, Criteria B, Criteria C: Ontario Regulation 169/03 Criteria A = Maximum Acceptable Criteria B = Interim Maximum Criteria C = Chemical/Physical Objectives [A/O] (Made under the Ontario Safe Drinking Water Act, 2002) ND = Not detected								



BV Labs Job #: C1G7226
Report Date: 2021/06/25

City of Guelph
Client Project #: Wet/Dry Ground Water
Site Location: JUNE GW
Your P.O. #: 2100310
Sampler Initials: AS

SEMI-VOLATILE ORGANICS BY GC-MS (WATER)

BV Labs ID			PWD730	PWD731	PWD732	PWD733			
Sampling Date			2021/06/16	2021/06/16	2021/06/16	2021/06/16			
COC Number			829801-01-01	829801-01-01	829801-01-01	829801-01-01			
	UNITS	Criteria	17A	17B	22A	22B	RDL	MDL	QC Batch
Semivolatile Organics									
Acenaphthene	ug/L	-	ND	ND	ND	ND	0.20	0.050	7426683
Acenaphthylene	ug/L	-	ND	ND	ND	ND	0.20	0.050	7426683
Anthracene	ug/L	-	ND	ND	ND	ND	0.20	0.050	7426683
Benzo(a)anthracene	ug/L	-	ND	ND	ND	ND	0.20	0.050	7426683
Benzo(a)pyrene	ug/L	0.01	ND (1)	ND (1)	ND (1)	ND (1)	0.20	0.050	7426683
Benzo(b,j)fluoranthene	ug/L	-	ND	ND	ND	ND	0.20	0.10	7426683
Benzo(g,h,i)perylene	ug/L	-	ND	ND	ND	ND	0.20	0.050	7426683
Benzo(k)fluoranthene	ug/L	-	ND	ND	ND	ND	0.20	0.050	7426683
1-Chloronaphthalene	ug/L	-	ND	ND	ND	ND	1.0	0.10	7426683
2-Chloronaphthalene	ug/L	-	ND	ND	ND	ND	0.50	0.050	7426683
Chrysene	ug/L	-	ND	ND	ND	ND	0.20	0.050	7426683
Dibenzo(a,h)anthracene	ug/L	-	ND	ND	ND	ND	0.20	0.050	7426683
Fluoranthene	ug/L	-	ND	ND	ND	ND	0.20	0.050	7426683
Fluorene	ug/L	-	ND	ND	ND	ND	0.20	0.10	7426683
Indeno(1,2,3-cd)pyrene	ug/L	-	ND	ND	ND	ND	0.20	0.050	7426683
1-Methylnaphthalene	ug/L	-	ND	ND	ND	ND	0.20	0.10	7426683
2-Methylnaphthalene	ug/L	-	ND	ND	0.20	ND	0.20	0.10	7426683
Naphthalene	ug/L	-	ND	ND	ND	ND	0.20	0.10	7426683
5-Nitroacenaphthene	ug/L	-	ND	ND	ND	ND	1.0	0.10	7426683
Perylene	ug/L	-	ND	ND	ND	ND	0.20	0.10	7426683
Phenanthrene	ug/L	-	ND	ND	ND	ND	0.20	0.050	7426683
Pyrene	ug/L	-	ND	ND	ND	ND	0.20	0.050	7426683
2-Chlorophenol	ug/L	-	ND	ND	ND	ND	0.30	0.10	7426683
4-Chloro-3-Methylphenol	ug/L	-	ND	ND	ND	ND	0.50	0.10	7426683
m/p-Cresol	ug/L	-	ND	ND	ND	ND	0.50	0.20	7426683
o-Cresol	ug/L	-	ND	ND	ND	ND	0.50	0.10	7426683
2,4-Dichlorophenol	ug/L	900	ND	ND	ND	ND	0.30	0.10	7426683
2,6-Dichlorophenol	ug/L	-	ND	ND	ND	ND	0.50	0.20	7426683
RDL = Reportable Detection Limit QC Batch = Quality Control Batch Criteria: Ontario Regulation 169/03 Criteria A = Maximum Acceptable Criteria B = Interim Maximum Criteria C = Chemical/Physical Objectives [A/O] (Made under the Ontario Safe Drinking Water Act, 2002) ND = Not detected (1) RDL exceeds criteria									



BV Labs Job #: C1G7226
Report Date: 2021/06/25

City of Guelph
Client Project #: Wet/Dry Ground Water
Site Location: JUNE GW
Your P.O. #: 2100310
Sampler Initials: AS

SEMI-VOLATILE ORGANICS BY GC-MS (WATER)

BV Labs ID			PWD730	PWD731	PWD732	PWD733			
Sampling Date			2021/06/16	2021/06/16	2021/06/16	2021/06/16			
COC Number			829801-01-01	829801-01-01	829801-01-01	829801-01-01			
	UNITS	Criteria	17A	17B	22A	22B	RDL	MDL	QC Batch
2,4-Dimethylphenol	ug/L	-	ND	ND	ND	ND	0.50	0.10	7426683
2,4-Dinitrophenol	ug/L	-	ND	ND	ND	ND	2.0	0.20	7426683
4,6-Dinitro-2-methylphenol	ug/L	-	ND	ND	ND	ND	2.0	0.50	7426683
4-Nitrophenol	ug/L	-	ND	ND	ND	ND	1.4	0.10	7426683
Pentachlorophenol	ug/L	60	ND	ND	ND	ND	1.0	0.20	7426683
Phenol	ug/L	-	ND	ND	ND	ND	0.50	0.10	7426683
2,3,4,5-Tetrachlorophenol	ug/L	-	ND	ND	ND	ND	0.40	0.10	7426683
2,3,4,6-Tetrachlorophenol	ug/L	100	ND	ND	ND	ND	0.50	0.20	7426683
2,3,5,6-Tetrachlorophenol	ug/L	-	ND	ND	ND	ND	0.50	0.20	7426683
2,3,4-Trichlorophenol	ug/L	-	ND	ND	ND	ND	0.50	0.10	7426683
2,3,5-Trichlorophenol	ug/L	-	ND	ND	ND	ND	0.50	0.10	7426683
2,4,5-Trichlorophenol	ug/L	-	ND	ND	ND	ND	0.50	0.20	7426683
2,4,6-Trichlorophenol	ug/L	5	ND	ND	ND	ND	0.50	0.10	7426683
Benzyl butyl phthalate	ug/L	-	ND	ND	ND	ND	0.50	0.10	7426683
Biphenyl	ug/L	-	ND	ND	ND	ND	0.50	0.10	7426683
Bis(2-chloroethyl)ether	ug/L	-	ND	ND	ND	ND	0.50	0.10	7426683
Bis(2-chloroethoxy)methane	ug/L	-	ND	ND	ND	ND	0.50	0.10	7426683
Bis(2-chloroisopropyl)ether	ug/L	-	ND	ND	ND	ND	0.50	0.10	7426683
Bis(2-ethylhexyl)phthalate	ug/L	-	ND	ND	ND	ND	2.0	0.10	7426683
4-Bromophenyl phenyl ether	ug/L	-	ND	ND	ND	ND	0.30	0.10	7426683
Camphene	ug/L	-	ND	ND	ND	ND	1.0	0.10	7426683
4-Chlorophenyl phenyl ether	ug/L	-	ND	ND	ND	ND	0.50	0.10	7426683
Di-N-butyl phthalate	ug/L	-	ND	ND	ND	ND	2.0	0.10	7426683
di-n-octyl phthalate	ug/L	-	ND	ND	ND	ND	0.80	0.10	7426683
2,4-Dinitrotoluene	ug/L	-	ND	ND	ND	ND	0.50	0.10	7426683
2,6-Dinitrotoluene	ug/L	-	ND	ND	ND	ND	0.50	0.10	7426683
Diphenyl Ether	ug/L	-	ND	ND	ND	ND	0.30	0.10	7426683
Indole	ug/L	-	ND	ND	ND	ND	1.0	0.20	7426683
Nitrosodiphenylamine/Diphenylamine	ug/L	-	ND	ND	ND	ND	1.0	0.10	7426683

RDL = Reportable Detection Limit

QC Batch = Quality Control Batch

Criteria: Ontario Regulation 169/03

Criteria A = Maximum Acceptable

Criteria B = Interim Maximum

Criteria C = Chemical/Physical Objectives [A/O]

(Made under the Ontario Safe Drinking Water Act, 2002)

ND = Not detected



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VERITAS

BV Labs Job #: C1G7226

Report Date: 2021/06/25

City of Guelph

Client Project #: Wet/Dry Ground Water

Site Location: JUNE GW

Your P.O. #: 2100310

Sampler Initials: AS

SEMI-VOLATILE ORGANICS BY GC-MS (WATER)

BV Labs ID			PWD730	PWD731	PWD732	PWD733			
Sampling Date			2021/06/16	2021/06/16	2021/06/16	2021/06/16			
COC Number			829801-01-01	829801-01-01	829801-01-01	829801-01-01			
	UNITS	Criteria	17A	17B	22A	22B	RDL	MDL	QC Batch
N-Nitroso-di-n-propylamine	ug/L	-	ND	ND	ND	ND	0.50	0.10	7426683
Surrogate Recovery (%)									
2,4,6-Tribromophenol	%	-	89	88	79	84			7426683
2-Fluorobiphenyl	%	-	74	88	82	86			7426683
2-Fluorophenol	%	-	32	32	32	30			7426683
D14-Terphenyl	%	-	81	105	102	110			7426683
D5-Nitrobenzene	%	-	84	90	88	96			7426683
D5-Phenol	%	-	22	22	22	20			7426683
RDL = Reportable Detection Limit QC Batch = Quality Control Batch Criteria: Ontario Regulation 169/03 Criteria A = Maximum Acceptable Criteria B = Interim Maximum Criteria C = Chemical/Physical Objectives [A/O] (Made under the Ontario Safe Drinking Water Act, 2002) ND = Not detected									



BV Labs Job #: C1G7226
Report Date: 2021/06/25

City of Guelph
Client Project #: Wet/Dry Ground Water
Site Location: JUNE GW
Your P.O. #: 2100310
Sampler Initials: AS

SEMI-VOLATILE ORGANICS BY GC-MS (WATER)

BV Labs ID			PWD733	PWD734	PWD735			
Sampling Date			2021/06/16	2021/06/16	2021/06/16			
COC Number			829801-01-01	829801-01-01	829801-01-01			
	UNITS	Criteria	22B Lab-Dup	16A	16B	RDL	MDL	QC Batch
Semivolatile Organics								
Acenaphthene	ug/L	-	ND	ND	ND	0.20	0.050	7426683
Acenaphthylene	ug/L	-	ND	ND	ND	0.20	0.050	7426683
Anthracene	ug/L	-	ND	ND	ND	0.20	0.050	7426683
Benzo(a)anthracene	ug/L	-	ND	ND	ND	0.20	0.050	7426683
Benzo(a)pyrene	ug/L	0.01	ND (1)	ND (1)	ND (1)	0.20	0.050	7426683
Benzo(b,j)fluoranthene	ug/L	-	ND	ND	ND	0.20	0.10	7426683
Benzo(g,h,i)perylene	ug/L	-	ND	ND	ND	0.20	0.050	7426683
Benzo(k)fluoranthene	ug/L	-	ND	ND	ND	0.20	0.050	7426683
1-Chloronaphthalene	ug/L	-	ND	ND	ND	1.0	0.10	7426683
2-Chloronaphthalene	ug/L	-	ND	ND	ND	0.50	0.050	7426683
Chrysene	ug/L	-	ND	ND	ND	0.20	0.050	7426683
Dibenzo(a,h)anthracene	ug/L	-	ND	ND	ND	0.20	0.050	7426683
Fluoranthene	ug/L	-	ND	ND	ND	0.20	0.050	7426683
Fluorene	ug/L	-	ND	ND	ND	0.20	0.10	7426683
Indeno(1,2,3-cd)pyrene	ug/L	-	ND	ND	ND	0.20	0.050	7426683
1-Methylnaphthalene	ug/L	-	ND	ND	ND	0.20	0.10	7426683
2-Methylnaphthalene	ug/L	-	0.24	0.21	ND	0.20	0.10	7426683
Naphthalene	ug/L	-	ND	ND	ND	0.20	0.10	7426683
5-Nitroacenaphthene	ug/L	-	ND	ND	ND	1.0	0.10	7426683
Perylene	ug/L	-	ND	ND	ND	0.20	0.10	7426683
Phenanthrene	ug/L	-	ND	ND	ND	0.20	0.050	7426683
Pyrene	ug/L	-	ND	ND	ND	0.20	0.050	7426683
2-Chlorophenol	ug/L	-	ND	ND	ND	0.30	0.10	7426683
4-Chloro-3-Methylphenol	ug/L	-	ND	ND	ND	0.50	0.10	7426683
m/p-Cresol	ug/L	-	ND	ND	ND	0.50	0.20	7426683
o-Cresol	ug/L	-	ND	ND	ND	0.50	0.10	7426683
2,4-Dichlorophenol	ug/L	900	ND	ND	ND	0.30	0.10	7426683
RDL = Reportable Detection Limit QC Batch = Quality Control Batch Lab-Dup = Laboratory Initiated Duplicate Criteria: Ontario Regulation 169/03 Criteria A = Maximum Acceptable Criteria B = Interim Maximum Criteria C = Chemical/Physical Objectives [A/O] (Made under the Ontario Safe Drinking Water Act, 2002) ND = Not detected (1) RDL exceeds criteria								



BV Labs Job #: C1G7226
Report Date: 2021/06/25

City of Guelph
Client Project #: Wet/Dry Ground Water
Site Location: JUNE GW
Your P.O. #: 2100310
Sampler Initials: AS

SEMI-VOLATILE ORGANICS BY GC-MS (WATER)

BV Labs ID			PWD733	PWD734	PWD735			
Sampling Date			2021/06/16	2021/06/16	2021/06/16			
COC Number			829801-01-01	829801-01-01	829801-01-01			
	UNITS	Criteria	22B Lab-Dup	16A	16B	RDL	MDL	QC Batch
2,6-Dichlorophenol	ug/L	-	ND	ND	ND	0.50	0.20	7426683
2,4-Dimethylphenol	ug/L	-	ND	ND	ND	0.50	0.10	7426683
2,4-Dinitrophenol	ug/L	-	ND	ND	ND	2.0	0.20	7426683
4,6-Dinitro-2-methylphenol	ug/L	-	ND	ND	ND	2.0	0.50	7426683
4-Nitrophenol	ug/L	-	ND	ND	ND	1.4	0.10	7426683
Pentachlorophenol	ug/L	60	ND	ND	ND	1.0	0.20	7426683
Phenol	ug/L	-	ND	ND	ND	0.50	0.10	7426683
2,3,4,5-Tetrachlorophenol	ug/L	-	ND	ND	ND	0.40	0.10	7426683
2,3,4,6-Tetrachlorophenol	ug/L	100	ND	ND	ND	0.50	0.20	7426683
2,3,5,6-Tetrachlorophenol	ug/L	-	ND	ND	ND	0.50	0.20	7426683
2,3,4-Trichlorophenol	ug/L	-	ND	ND	ND	0.50	0.10	7426683
2,3,5-Trichlorophenol	ug/L	-	ND	ND	ND	0.50	0.10	7426683
2,4,5-Trichlorophenol	ug/L	-	ND	ND	ND	0.50	0.20	7426683
2,4,6-Trichlorophenol	ug/L	5	ND	ND	ND	0.50	0.10	7426683
Benzyl butyl phthalate	ug/L	-	ND	ND	ND	0.50	0.10	7426683
Biphenyl	ug/L	-	ND	ND	ND	0.50	0.10	7426683
Bis(2-chloroethyl)ether	ug/L	-	ND	ND	ND	0.50	0.10	7426683
Bis(2-chloroethoxy)methane	ug/L	-	ND	ND	ND	0.50	0.10	7426683
Bis(2-chloroisopropyl)ether	ug/L	-	ND	ND	ND	0.50	0.10	7426683
Bis(2-ethylhexyl)phthalate	ug/L	-	ND	ND	ND	2.0	0.10	7426683
4-Bromophenyl phenyl ether	ug/L	-	ND	ND	ND	0.30	0.10	7426683
Camphene	ug/L	-	ND	ND	ND	1.0	0.10	7426683
4-Chlorophenyl phenyl ether	ug/L	-	ND	ND	ND	0.50	0.10	7426683
Di-N-butyl phthalate	ug/L	-	ND	ND	ND	2.0	0.10	7426683
di-n-octyl phthalate	ug/L	-	ND	ND	ND	0.80	0.10	7426683
2,4-Dinitrotoluene	ug/L	-	ND	ND	ND	0.50	0.10	7426683
2,6-Dinitrotoluene	ug/L	-	ND	ND	ND	0.50	0.10	7426683
Diphenyl Ether	ug/L	-	ND	ND	ND	0.30	0.10	7426683
Indole	ug/L	-	ND	ND	ND	1.0	0.20	7426683

RDL = Reportable Detection Limit

QC Batch = Quality Control Batch

Lab-Dup = Laboratory Initiated Duplicate

Criteria: Ontario Regulation 169/03

Criteria A = Maximum Acceptable

Criteria B = Interim Maximum

Criteria C = Chemical/Physical Objectives [A/O]

(Made under the Ontario Safe Drinking Water Act, 2002)

ND = Not detected



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VERITAS

BV Labs Job #: C1G7226
Report Date: 2021/06/25

City of Guelph
Client Project #: Wet/Dry Ground Water
Site Location: JUNE GW
Your P.O. #: 2100310
Sampler Initials: AS

SEMI-VOLATILE ORGANICS BY GC-MS (WATER)

BV Labs ID			PWD733	PWD734	PWD735			
Sampling Date			2021/06/16	2021/06/16	2021/06/16			
COC Number			829801-01-01	829801-01-01	829801-01-01			
	UNITS	Criteria	22B Lab-Dup	16A	16B	RDL	MDL	QC Batch
Nitrosodiphenylamine/Diphenylamine	ug/L	-	ND	ND	ND	1.0	0.10	7426683
N-Nitroso-di-n-propylamine	ug/L	-	ND	ND	ND	0.50	0.10	7426683
Surrogate Recovery (%)								
2,4,6-Tribromophenol	%	-	101	94	87			7426683
2-Fluorobiphenyl	%	-	82	82	74			7426683
2-Fluorophenol	%	-	35	33	16			7426683
D14-Terphenyl	%	-	105	101	102			7426683
D5-Nitrobenzene	%	-	94	93	82			7426683
D5-Phenol	%	-	21	22	10			7426683
RDL = Reportable Detection Limit QC Batch = Quality Control Batch Lab-Dup = Laboratory Initiated Duplicate Criteria: Ontario Regulation 169/03 Criteria A = Maximum Acceptable Criteria B = Interim Maximum Criteria C = Chemical/Physical Objectives [A/O] (Made under the Ontario Safe Drinking Water Act, 2002) ND = Not detected								



BV Labs Job #: C1G7226
Report Date: 2021/06/25

City of Guelph
Client Project #: Wet/Dry Ground Water
Site Location: JUNE GW
Your P.O. #: 2100310
Sampler Initials: AS

VOLATILE ORGANICS BY GC/MS (WATER)

BV Labs ID					PWD730	PWD731	PWD731			
Sampling Date					2021/06/16	2021/06/16	2021/06/16			
COC Number					829801-01-01	829801-01-01	829801-01-01			
	UNITS	Criteria	Criteria B	Criteria C	17A	17B	17B Lab-Dup	RDL	MDL	QC Batch

Volatile Organics										
Acetone (2-Propanone)	ug/L	-	-	-	ND	ND	ND	10	1.0	7417144
Benzene	ug/L	5	-	-	ND	ND	ND	0.10	0.020	7417144
Bromodichloromethane	ug/L	-	-	-	2.3	ND	ND	0.10	0.050	7417144
Acrolein	ug/L	-	-	-	ND	ND	ND	10	N/A	7420286
Bromoform	ug/L	-	-	-	ND	ND	ND	0.20	0.10	7417144
Bromomethane	ug/L	-	-	-	ND	ND	ND	0.50	0.10	7417144
Carbon Tetrachloride	ug/L	5	-	-	ND	ND	ND	0.10	0.050	7417144
Chlorobenzene	ug/L	80	-	-	ND	ND	ND	0.10	0.010	7417144
Chloroform	ug/L	-	-	-	6.0	ND	ND	0.10	0.050	7417144
Acrylonitrile	ug/L	-	-	-	ND	ND	ND	5.0	N/A	7420286
Chloromethane	ug/L	-	-	-	ND	ND	ND	0.50	0.050	7417144
Dibromochloromethane	ug/L	-	-	-	ND	ND	ND	0.20	0.050	7417144
1,2-Dichlorobenzene	ug/L	200	-	-	ND	ND	ND	0.20	0.050	7417144
1,3-Dichlorobenzene	ug/L	-	-	-	ND	ND	ND	0.20	0.050	7417144
1,4-Dichlorobenzene	ug/L	5	-	-	ND	ND	ND	0.20	0.050	7417144
1,1-Dichloroethane	ug/L	-	-	-	ND	ND	ND	0.10	0.050	7417144
1,2-Dichloroethane	ug/L	-	5	-	ND	ND	ND	0.20	0.050	7417144
1,1-Dichloroethylene	ug/L	14	-	-	ND	ND	ND	0.10	0.050	7417144
cis-1,2-Dichloroethylene	ug/L	-	-	-	ND	ND	ND	0.10	0.050	7417144
trans-1,2-Dichloroethylene	ug/L	-	-	-	ND	ND	ND	0.10	0.050	7417144
1,2-Dichloropropane	ug/L	-	-	-	ND	ND	ND	0.10	0.050	7417144
cis-1,3-Dichloropropene	ug/L	-	-	-	ND	ND	ND	0.20	0.050	7417144
trans-1,3-Dichloropropene	ug/L	-	-	-	ND	ND	ND	0.20	0.050	7417144
Ethylbenzene	ug/L	-	-	2.4	ND	ND	ND	0.10	0.010	7417144
Ethylene Dibromide	ug/L	-	-	-	ND	ND	ND	0.20	0.050	7417144
Methylene Chloride(Dichloromethane)	ug/L	50	-	-	ND	ND	ND	0.50	0.10	7417144
Methyl Ethyl Ketone (2-Butanone)	ug/L	-	-	-	ND	ND	ND	5.0	0.50	7417144

RDL = Reportable Detection Limit

QC Batch = Quality Control Batch

Lab-Dup = Laboratory Initiated Duplicate

Criteria, Criteria B, Criteria C: Ontario Regulation 169/03

Criteria A = Maximum Acceptable

Criteria B = Interim Maximum

Criteria C = Chemical/Physical Objectives [A/O]

(Made under the Ontario Safe Drinking Water Act, 2002)

ND = Not detected

N/A = Not Applicable

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VERITAS

BV Labs Job #: C1G7226

Report Date: 2021/06/25

City of Guelph

Client Project #: Wet/Dry Ground Water

Site Location: JUNE GW

Your P.O. #: 2100310

Sampler Initials: AS

VOLATILE ORGANICS BY GC/MS (WATER)

BV Labs ID					PWD730	PWD731	PWD731			
Sampling Date					2021/06/16	2021/06/16	2021/06/16			
COC Number					829801-01-01	829801-01-01	829801-01-01			
	UNITS	Criteria	Criteria B	Criteria C	17A	17B	17B Lab-Dup	RDL	MDL	QC Batch
Methyl Isobutyl Ketone	ug/L	-	-	-	ND	ND	ND	5.0	0.10	7417144
Methyl t-butyl ether (MTBE)	ug/L	-	-	-	ND	ND	ND	0.20	0.050	7417144
Styrene	ug/L	-	-	-	ND	ND	ND	0.20	0.050	7417144
1,1,1,2-Tetrachloroethane	ug/L	-	-	-	ND	ND	ND	0.20	0.050	7417144
1,1,2,2-Tetrachloroethane	ug/L	-	-	-	ND	ND	ND	0.20	0.050	7417144
Tetrachloroethylene	ug/L	30	-	-	ND	ND	ND	0.10	0.050	7417144
Toluene	ug/L	-	-	24	ND	ND	ND	0.20	0.010	7417144
1,1,1-Trichloroethane	ug/L	-	-	-	ND	ND	ND	0.10	0.050	7417144
1,1,2-Trichloroethane	ug/L	-	-	-	ND	ND	ND	0.20	0.050	7417144
Trichloroethylene	ug/L	5	-	-	ND	ND	ND	0.10	0.050	7417144
Trichlorofluoromethane (FREON 11)	ug/L	-	-	-	ND	ND	ND	0.20	0.10	7417144
Vinyl Chloride	ug/L	2	-	-	ND	ND	ND	0.20	0.050	7417144
p+m-Xylene	ug/L	-	-	-	ND	ND	ND	0.10	0.010	7417144
o-Xylene	ug/L	-	-	-	ND	ND	ND	0.10	0.010	7417144
Total Xylenes	ug/L	-	-	300	ND	ND	ND	0.10	0.010	7417144
Surrogate Recovery (%)										
4-Bromofluorobenzene	%	-	-	-	102	102	101			7417144
D4-1,2-Dichloroethane	%	-	-	-	103	104	105			7417144
D8-Toluene	%	-	-	-	99	100	99			7417144
RDL = Reportable Detection Limit QC Batch = Quality Control Batch Lab-Dup = Laboratory Initiated Duplicate Criteria, Criteria B, Criteria C: Ontario Regulation 169/03 Criteria A = Maximum Acceptable Criteria B = Interim Maximum Criteria C = Chemical/Physical Objectives [A/O] (Made under the Ontario Safe Drinking Water Act, 2002) ND = Not detected										



BV Labs Job #: C1G7226
Report Date: 2021/06/25

City of Guelph
Client Project #: Wet/Dry Ground Water
Site Location: JUNE GW
Your P.O. #: 2100310
Sampler Initials: AS

VOLATILE ORGANICS BY GC/MS (WATER)

BV Labs ID					PWD732	PWD733	PWD734			
Sampling Date					2021/06/16	2021/06/16	2021/06/16			
COC Number					829801-01-01	829801-01-01	829801-01-01			
	UNITS	Criteria	Criteria B	Criteria C	22A	22B	16A	RDL	MDL	QC Batch

Volatile Organics										
Acetone (2-Propanone)	ug/L	-	-	-	ND	ND	ND	10	1.0	7417144
Benzene	ug/L	5	-	-	ND	ND	ND	0.10	0.020	7417144
Bromodichloromethane	ug/L	-	-	-	ND	ND	ND	0.10	0.050	7417144
Acrolein	ug/L	-	-	-	ND	ND	ND	10	N/A	7420286
Bromoform	ug/L	-	-	-	ND	ND	ND	0.20	0.10	7417144
Bromomethane	ug/L	-	-	-	ND	ND	ND	0.50	0.10	7417144
Carbon Tetrachloride	ug/L	5	-	-	ND	ND	ND	0.10	0.050	7417144
Chlorobenzene	ug/L	80	-	-	ND	ND	ND	0.10	0.010	7417144
Chloroform	ug/L	-	-	-	ND	0.57	ND	0.10	0.050	7417144
Acrylonitrile	ug/L	-	-	-	ND	ND	ND	5.0	N/A	7420286
Chloromethane	ug/L	-	-	-	ND	ND	ND	0.50	0.050	7417144
Dibromochloromethane	ug/L	-	-	-	ND	ND	ND	0.20	0.050	7417144
1,2-Dichlorobenzene	ug/L	200	-	-	ND	ND	ND	0.20	0.050	7417144
1,3-Dichlorobenzene	ug/L	-	-	-	ND	ND	ND	0.20	0.050	7417144
1,4-Dichlorobenzene	ug/L	5	-	-	ND	ND	ND	0.20	0.050	7417144
1,1-Dichloroethane	ug/L	-	-	-	ND	ND	ND	0.10	0.050	7417144
1,2-Dichloroethane	ug/L	-	5	-	ND	ND	ND	0.20	0.050	7417144
1,1-Dichloroethylene	ug/L	14	-	-	ND	ND	ND	0.10	0.050	7417144
cis-1,2-Dichloroethylene	ug/L	-	-	-	ND	ND	ND	0.10	0.050	7417144
trans-1,2-Dichloroethylene	ug/L	-	-	-	ND	ND	ND	0.10	0.050	7417144
1,2-Dichloropropane	ug/L	-	-	-	ND	ND	ND	0.10	0.050	7417144
cis-1,3-Dichloropropene	ug/L	-	-	-	ND	ND	ND	0.20	0.050	7417144
trans-1,3-Dichloropropene	ug/L	-	-	-	ND	ND	ND	0.20	0.050	7417144
Ethylbenzene	ug/L	-	-	2.4	ND	ND	ND	0.10	0.010	7417144
Ethylene Dibromide	ug/L	-	-	-	ND	ND	ND	0.20	0.050	7417144
Methylene Chloride(Dichloromethane)	ug/L	50	-	-	ND	ND	ND	0.50	0.10	7417144
Methyl Ethyl Ketone (2-Butanone)	ug/L	-	-	-	ND	ND	ND	5.0	0.50	7417144
Methyl Isobutyl Ketone	ug/L	-	-	-	ND	ND	ND	5.0	0.10	7417144

RDL = Reportable Detection Limit

QC Batch = Quality Control Batch

Criteria, Criteria B, Criteria C: Ontario Regulation 169/03

Criteria A = Maximum Acceptable

Criteria B = Interim Maximum

Criteria C = Chemical/Physical Objectives [A/O]

(Made under the Ontario Safe Drinking Water Act, 2002)

ND = Not detected

N/A = Not Applicable



BUREAU
VERITAS

BV Labs Job #: C1G7226
Report Date: 2021/06/25

City of Guelph
Client Project #: Wet/Dry Ground Water
Site Location: JUNE GW
Your P.O. #: 2100310
Sampler Initials: AS

VOLATILE ORGANICS BY GC/MS (WATER)

BV Labs ID					PWD732	PWD733	PWD734			
Sampling Date					2021/06/16	2021/06/16	2021/06/16			
COC Number					829801-01-01	829801-01-01	829801-01-01			
	UNITS	Criteria	Criteria B	Criteria C	22A	22B	16A	RDL	MDL	QC Batch
Methyl t-butyl ether (MTBE)	ug/L	-	-	-	ND	ND	ND	0.20	0.050	7417144
Styrene	ug/L	-	-	-	ND	ND	ND	0.20	0.050	7417144
1,1,1,2-Tetrachloroethane	ug/L	-	-	-	ND	ND	ND	0.20	0.050	7417144
1,1,2,2-Tetrachloroethane	ug/L	-	-	-	ND	ND	ND	0.20	0.050	7417144
Tetrachloroethylene	ug/L	30	-	-	ND	ND	ND	0.10	0.050	7417144
Toluene	ug/L	-	-	24	ND	ND	ND	0.20	0.010	7417144
1,1,1-Trichloroethane	ug/L	-	-	-	ND	ND	ND	0.10	0.050	7417144
1,1,2-Trichloroethane	ug/L	-	-	-	ND	ND	ND	0.20	0.050	7417144
Trichloroethylene	ug/L	5	-	-	ND	ND	ND	0.10	0.050	7417144
Trichlorofluoromethane (FREON 11)	ug/L	-	-	-	ND	ND	ND	0.20	0.10	7417144
Vinyl Chloride	ug/L	2	-	-	ND	ND	ND	0.20	0.050	7417144
p+m-Xylene	ug/L	-	-	-	ND	ND	ND	0.10	0.010	7417144
o-Xylene	ug/L	-	-	-	ND	ND	ND	0.10	0.010	7417144
Total Xylenes	ug/L	-	-	300	ND	ND	ND	0.10	0.010	7417144
Surrogate Recovery (%)										
4-Bromofluorobenzene	%	-	-	-	102	101	102			7417144
D4-1,2-Dichloroethane	%	-	-	-	104	104	103			7417144
D8-Toluene	%	-	-	-	99	99	100			7417144
RDL = Reportable Detection Limit QC Batch = Quality Control Batch Criteria, Criteria B, Criteria C: Ontario Regulation 169/03 Criteria A = Maximum Acceptable Criteria B = Interim Maximum Criteria C = Chemical/Physical Objectives [A/O] (Made under the Ontario Safe Drinking Water Act, 2002) ND = Not detected										



BV Labs Job #: C1G7226
Report Date: 2021/06/25

City of Guelph
Client Project #: Wet/Dry Ground Water
Site Location: JUNE GW
Your P.O. #: 2100310
Sampler Initials: AS

VOLATILE ORGANICS BY GC/MS (WATER)

BV Labs ID					PWD735			
Sampling Date					2021/06/16			
COC Number					829801-01-01			
	UNITS	Criteria	Criteria B	Criteria C	16B	RDL	MDL	QC Batch
Volatile Organics								
Acetone (2-Propanone)	ug/L	-	-	-	ND	10	1.0	7417144
Benzene	ug/L	5	-	-	ND	0.10	0.020	7417144
Bromodichloromethane	ug/L	-	-	-	ND	0.10	0.050	7417144
Acrolein	ug/L	-	-	-	ND	10	N/A	7420286
Bromoform	ug/L	-	-	-	ND	0.20	0.10	7417144
Bromomethane	ug/L	-	-	-	ND	0.50	0.10	7417144
Carbon Tetrachloride	ug/L	5	-	-	ND	0.10	0.050	7417144
Chlorobenzene	ug/L	80	-	-	ND	0.10	0.010	7417144
Chloroform	ug/L	-	-	-	0.32	0.10	0.050	7417144
Acrylonitrile	ug/L	-	-	-	ND	5.0	N/A	7420286
Chloromethane	ug/L	-	-	-	ND	0.50	0.050	7417144
Dibromochloromethane	ug/L	-	-	-	ND	0.20	0.050	7417144
1,2-Dichlorobenzene	ug/L	200	-	-	ND	0.20	0.050	7417144
1,3-Dichlorobenzene	ug/L	-	-	-	ND	0.20	0.050	7417144
1,4-Dichlorobenzene	ug/L	5	-	-	ND	0.20	0.050	7417144
1,1-Dichloroethane	ug/L	-	-	-	ND	0.10	0.050	7417144
1,2-Dichloroethane	ug/L	-	5	-	ND	0.20	0.050	7417144
1,1-Dichloroethylene	ug/L	14	-	-	ND	0.10	0.050	7417144
cis-1,2-Dichloroethylene	ug/L	-	-	-	ND	0.10	0.050	7417144
trans-1,2-Dichloroethylene	ug/L	-	-	-	ND	0.10	0.050	7417144
1,2-Dichloropropane	ug/L	-	-	-	ND	0.10	0.050	7417144
cis-1,3-Dichloropropene	ug/L	-	-	-	ND	0.20	0.050	7417144
trans-1,3-Dichloropropene	ug/L	-	-	-	ND	0.20	0.050	7417144
Ethylbenzene	ug/L	-	-	2.4	ND	0.10	0.010	7417144
Ethylene Dibromide	ug/L	-	-	-	ND	0.20	0.050	7417144
Methylene Chloride(Dichloromethane)	ug/L	50	-	-	ND	0.50	0.10	7417144
Methyl Ethyl Ketone (2-Butanone)	ug/L	-	-	-	ND	5.0	0.50	7417144
Methyl Isobutyl Ketone	ug/L	-	-	-	ND	5.0	0.10	7417144
RDL = Reportable Detection Limit QC Batch = Quality Control Batch Criteria, Criteria B, Criteria C: Ontario Regulation 169/03 Criteria A = Maximum Acceptable Criteria B = Interim Maximum Criteria C = Chemical/Physical Objectives [A/O] (Made under the Ontario Safe Drinking Water Act, 2002) ND = Not detected N/A = Not Applicable								



BUREAU
VERITAS

BV Labs Job #: C1G7226
Report Date: 2021/06/25

City of Guelph
Client Project #: Wet/Dry Ground Water
Site Location: JUNE GW
Your P.O. #: 2100310
Sampler Initials: AS

VOLATILE ORGANICS BY GC/MS (WATER)

BV Labs ID					PWD735			
Sampling Date					2021/06/16			
COC Number					829801-01-01			
	UNITS	Criteria	Criteria B	Criteria C	16B	RDL	MDL	QC Batch
Methyl t-butyl ether (MTBE)	ug/L	-	-	-	ND	0.20	0.050	7417144
Styrene	ug/L	-	-	-	ND	0.20	0.050	7417144
1,1,1,2-Tetrachloroethane	ug/L	-	-	-	ND	0.20	0.050	7417144
1,1,2,2-Tetrachloroethane	ug/L	-	-	-	ND	0.20	0.050	7417144
Tetrachloroethylene	ug/L	30	-	-	ND	0.10	0.050	7417144
Toluene	ug/L	-	-	24	ND	0.20	0.010	7417144
1,1,1-Trichloroethane	ug/L	-	-	-	ND	0.10	0.050	7417144
1,1,2-Trichloroethane	ug/L	-	-	-	ND	0.20	0.050	7417144
Trichloroethylene	ug/L	5	-	-	ND	0.10	0.050	7417144
Trichlorofluoromethane (FREON 11)	ug/L	-	-	-	ND	0.20	0.10	7417144
Vinyl Chloride	ug/L	2	-	-	ND	0.20	0.050	7417144
p+m-Xylene	ug/L	-	-	-	ND	0.10	0.010	7417144
o-Xylene	ug/L	-	-	-	ND	0.10	0.010	7417144
Total Xylenes	ug/L	-	-	300	ND	0.10	0.010	7417144
Surrogate Recovery (%)								
4-Bromofluorobenzene	%	-	-	-	101			7417144
D4-1,2-Dichloroethane	%	-	-	-	104			7417144
D8-Toluene	%	-	-	-	99			7417144
RDL = Reportable Detection Limit QC Batch = Quality Control Batch Criteria, Criteria B, Criteria C: Ontario Regulation 169/03 Criteria A = Maximum Acceptable Criteria B = Interim Maximum Criteria C = Chemical/Physical Objectives [A/O] (Made under the Ontario Safe Drinking Water Act, 2002) ND = Not detected								



BUREAU
VERITAS

BV Labs Job #: C1G7226

Report Date: 2021/06/25

City of Guelph

Client Project #: Wet/Dry Ground Water

Site Location: JUNE GW

Your P.O. #: 2100310

Sampler Initials: AS

GENERAL COMMENTS

Results relate only to the items tested.



BV Labs Job #: C1G7226
Report Date: 2021/06/25

QUALITY ASSURANCE REPORT

City of Guelph
Client Project #: Wet/Dry Ground Water
Site Location: JUNE GW
Your P.O. #: 2100310
Sampler Initials: AS

QC Batch	Parameter	Date	Matrix Spike		SPIKED BLANK		Method Blank		RPD		QC Standard	
			% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits	% Recovery	QC Limits
7417144	4-Bromofluorobenzene	2021/06/22	99	70 - 130	105	70 - 130	99	%				
7417144	D4-1,2-Dichloroethane	2021/06/22	93	70 - 130	99	70 - 130	99	%				
7417144	D8-Toluene	2021/06/22	103	70 - 130	101	70 - 130	100	%				
7426683	2,4,6-Tribromophenol	2021/06/24	101	10 - 130	94	10 - 130	77	%				
7426683	2-Fluorobiphenyl	2021/06/24	82	30 - 130	91	30 - 130	69	%				
7426683	2-Fluorophenol	2021/06/24	37	10 - 130	41	10 - 130	30	%				
7426683	D14-Terphenyl	2021/06/24	105	30 - 130	109	30 - 130	106	%				
7426683	D5-Nitrobenzene	2021/06/24	95	30 - 130	99	30 - 130	85	%				
7426683	D5-Phenol	2021/06/24	25	10 - 130	26	10 - 130	20	%				
7415607	Total BOD	2021/06/23					ND, RDL=2	mg/L	0	30	97	80 - 120
7416274	Phenols-4AAP	2021/06/18	96	80 - 120	101	80 - 120	ND, RDL=0.0010	mg/L	6.3	20		
7416449	Total Chemical Oxygen Demand (COD)	2021/06/21	100	80 - 120	98	80 - 120	ND, RDL=4.0	mg/L	NC	20		
7416606	Total Phosphorus	2021/06/21	101	80 - 120	101	80 - 120	ND, RDL=0.020	mg/L	0.58	20	100	80 - 120
7416716	Total Kjeldahl Nitrogen (TKN)	2021/06/21	96	N/A	100	80 - 120	ND, RDL=0.10	mg/L	20	20	114	80 - 120
7416728	Total Ammonia-N	2021/06/22	97	75 - 125	98	80 - 120	ND, RDL=0.050	mg/L	NC	20		
7416819	Total Chemical Oxygen Demand (COD)	2021/06/22	NC	80 - 120	102	80 - 120	ND, RDL=4.0	mg/L	7.9	20		
7416859	Total Kjeldahl Nitrogen (TKN)	2021/06/21	103	80 - 120	101	80 - 120	ND, RDL=0.10	mg/L	NC	20	104	80 - 120
7417101	Total Ammonia-N	2021/06/22	95	75 - 125	98	80 - 120	ND, RDL=0.050	mg/L	NC	20		
7417144	1,1,1,2-Tetrachloroethane	2021/06/22	104	70 - 130	114	70 - 130	ND, RDL=0.20	ug/L	NC	30		
7417144	1,1,1-Trichloroethane	2021/06/22	107	70 - 130	108	70 - 130	ND, RDL=0.10	ug/L	NC	30		
7417144	1,1,2,2-Tetrachloroethane	2021/06/22	88	70 - 130	105	70 - 130	ND, RDL=0.20	ug/L	NC	30		
7417144	1,1,2-Trichloroethane	2021/06/22	96	70 - 130	109	70 - 130	ND, RDL=0.20	ug/L	NC	30		
7417144	1,1-Dichloroethane	2021/06/22	95	70 - 130	94	70 - 130	ND, RDL=0.10	ug/L	NC	30		
7417144	1,1-Dichloroethylene	2021/06/22	103	70 - 130	92	70 - 130	ND, RDL=0.10	ug/L	NC	30		
7417144	1,2-Dichlorobenzene	2021/06/22	98	70 - 130	105	70 - 130	ND, RDL=0.20	ug/L	NC	30		
7417144	1,2-Dichloroethane	2021/06/22	89	70 - 130	96	70 - 130	ND, RDL=0.20	ug/L	NC	30		
7417144	1,2-Dichloropropane	2021/06/22	94	70 - 130	100	70 - 130	ND, RDL=0.10	ug/L	NC	30		



BV Labs Job #: C1G7226
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QUALITY ASSURANCE REPORT(CONT'D)

City of Guelph
Client Project #: Wet/Dry Ground Water
Site Location: JUNE GW
Your P.O. #: 2100310
Sampler Initials: AS

QC Batch	Parameter	Date	Matrix Spike		SPIKED BLANK		Method Blank		RPD		QC Standard	
			% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits	% Recovery	QC Limits
7417144	1,3-Dichlorobenzene	2021/06/22	103	70 - 130	106	70 - 130	ND, RDL=0.20	ug/L	NC	30		
7417144	1,4-Dichlorobenzene	2021/06/22	117	70 - 130	122	70 - 130	ND, RDL=0.20	ug/L	NC	30		
7417144	Acetone (2-Propanone)	2021/06/22	79	60 - 140	85	60 - 140	ND, RDL=10	ug/L	NC	30		
7417144	Benzene	2021/06/22	94	70 - 130	95	70 - 130	ND, RDL=0.10	ug/L	NC	30		
7417144	Bromodichloromethane	2021/06/22	122	70 - 130	110	70 - 130	ND, RDL=0.10	ug/L	NC	30		
7417144	Bromoform	2021/06/22	99	70 - 130	115	70 - 130	ND, RDL=0.20	ug/L	NC	30		
7417144	Bromomethane	2021/06/22	129	60 - 140	105	60 - 140	ND, RDL=0.50	ug/L	NC	30		
7417144	Carbon Tetrachloride	2021/06/22	110	70 - 130	110	70 - 130	ND, RDL=0.10	ug/L	NC	30		
7417144	Chlorobenzene	2021/06/22	101	70 - 130	106	70 - 130	ND, RDL=0.10	ug/L	NC	30		
7417144	Chloroform	2021/06/22	NC	70 - 130	102	70 - 130	ND, RDL=0.10	ug/L	NC	30		
7417144	Chloromethane	2021/06/22	97	60 - 140	72	60 - 140	ND, RDL=0.50	ug/L	NC	30		
7417144	cis-1,2-Dichloroethylene	2021/06/22	101	70 - 130	103	70 - 130	ND, RDL=0.10	ug/L	NC	30		
7417144	cis-1,3-Dichloropropene	2021/06/22	100	70 - 130	109	70 - 130	ND, RDL=0.20	ug/L	NC	30		
7417144	Dibromochloromethane	2021/06/22	99	70 - 130	111	70 - 130	ND, RDL=0.20	ug/L	NC	30		
7417144	Ethylbenzene	2021/06/22	97	70 - 130	101	70 - 130	ND, RDL=0.10	ug/L	NC	30		
7417144	Ethylene Dibromide	2021/06/22	90	70 - 130	103	70 - 130	ND, RDL=0.20	ug/L	NC	30		
7417144	Methyl Ethyl Ketone (2-Butanone)	2021/06/22	83	60 - 140	97	60 - 140	ND, RDL=5.0	ug/L	NC	30		
7417144	Methyl Isobutyl Ketone	2021/06/22	83	70 - 130	99	70 - 130	ND, RDL=5.0	ug/L	NC	30		
7417144	Methyl t-butyl ether (MTBE)	2021/06/22	85	70 - 130	95	70 - 130	ND, RDL=0.20	ug/L	NC	30		
7417144	Methylene Chloride(Dichloromethane)	2021/06/22	96	70 - 130	97	70 - 130	ND, RDL=0.50	ug/L	NC	30		
7417144	o-Xylene	2021/06/22	97	70 - 130	103	70 - 130	ND, RDL=0.10	ug/L	NC	30		
7417144	p+m-Xylene	2021/06/22	103	70 - 130	106	70 - 130	ND, RDL=0.10	ug/L	NC	30		
7417144	Styrene	2021/06/22	108	70 - 130	116	70 - 130	ND, RDL=0.20	ug/L	NC	30		
7417144	Tetrachloroethylene	2021/06/22	100	70 - 130	101	70 - 130	ND, RDL=0.10	ug/L	NC	30		
7417144	Toluene	2021/06/22	100	70 - 130	100	70 - 130	ND, RDL=0.20	ug/L	NC	30		
7417144	Total Xylenes	2021/06/22					ND, RDL=0.10	ug/L	NC	30		
7417144	trans-1,2-Dichloroethylene	2021/06/22	106	70 - 130	100	70 - 130	ND, RDL=0.10	ug/L	NC	30		
7417144	trans-1,3-Dichloropropene	2021/06/22	102	70 - 130	113	70 - 130	ND, RDL=0.20	ug/L	NC	30		
7417144	Trichloroethylene	2021/06/22	109	70 - 130	109	70 - 130	ND, RDL=0.10	ug/L	NC	30		
7417144	Trichlorofluoromethane (FREON 11)	2021/06/22	107	70 - 130	96	70 - 130	ND, RDL=0.20	ug/L	NC	30		



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QUALITY ASSURANCE REPORT(CONT'D)

City of Guelph
Client Project #: Wet/Dry Ground Water
Site Location: JUNE GW
Your P.O. #: 2100310
Sampler Initials: AS

QC Batch	Parameter	Date	Matrix Spike		SPIKED BLANK		Method Blank		RPD		QC Standard	
			% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits	% Recovery	QC Limits
7417144	Vinyl Chloride	2021/06/22	103	70 - 130	83	70 - 130	ND, RDL=0.20	ug/L	NC	30		
7417261	Total Kjeldahl Nitrogen (TKN)	2021/06/21	113	80 - 120	104	80 - 120	ND, RDL=0.10	mg/L	NC	20	104	80 - 120
7417522	Alkalinity (Total as CaCO ₃)	2021/06/19			99	85 - 115	ND, RDL=1.0	mg/L	0.28	20		
7417534	Conductivity	2021/06/19			102	85 - 115	ND, RDL=1.0	umho/cm	0.59	25		
7417542	pH	2021/06/19			102	98 - 103			0.54	N/A		
7417712	Nitrate (N)	2021/06/21	103	80 - 120	105	80 - 120	ND, RDL=0.10	mg/L	1.7	20		
7417712	Nitrite (N)	2021/06/21	104	80 - 120	107	80 - 120	ND, RDL=0.010	mg/L	NC	20		
7417728	Nitrate (N)	2021/06/21	100	80 - 120	102	80 - 120	ND, RDL=0.10	mg/L	NC	20		
7417728	Nitrite (N)	2021/06/21	107	80 - 120	106	80 - 120	ND, RDL=0.010	mg/L	NC	20		
7417735	Dissolved Chloride (Cl ⁻)	2021/06/21	110	80 - 120	103	80 - 120	ND, RDL=1.0	mg/L	7.2	20		
7417736	Dissolved Sulphate (SO ₄)	2021/06/21	100	75 - 125	100	80 - 120	ND, RDL=1.0	mg/L	NC	20		
7417761	Dissolved Sulphate (SO ₄)	2021/06/21	104	75 - 125	100	80 - 120	ND, RDL=1.0	mg/L	NC	20		
7417771	Dissolved Chloride (Cl ⁻)	2021/06/21	111	80 - 120	101	80 - 120	ND, RDL=1.0	mg/L	NC	20		
7418102	Dissolved Boron (B)	2021/06/22	98	80 - 120	92	80 - 120	ND, RDL=10	ug/L				
7418102	Dissolved Calcium (Ca)	2021/06/22	104	80 - 120	102	80 - 120	ND, RDL=200	ug/L				
7418102	Dissolved Magnesium (Mg)	2021/06/22	102	80 - 120	99	80 - 120	ND, RDL=50	ug/L				
7418102	Dissolved Phosphorus (P)	2021/06/22	101	80 - 120	100	80 - 120	ND, RDL=100	ug/L				
7418102	Dissolved Potassium (K)	2021/06/22	103	80 - 120	99	80 - 120	ND, RDL=200	ug/L				
7418102	Dissolved Sodium (Na)	2021/06/22	101	80 - 120	98	80 - 120	ND, RDL=100	ug/L				
7418102	Dissolved Zinc (Zn)	2021/06/22	103	80 - 120	98	80 - 120	ND, RDL=5.0	ug/L				
7418262	Nitrate (N)	2021/06/21	102	80 - 120	102	80 - 120	ND, RDL=0.10	mg/L	NC	20		
7418262	Nitrite (N)	2021/06/21	100	80 - 120	106	80 - 120	ND, RDL=0.010	mg/L	NC	20		
7418266	Conductivity	2021/06/23			102	85 - 115	ND, RDL=1.0	umho/cm	1.8	25		
7418267	Alkalinity (Total as CaCO ₃)	2021/06/23			97	85 - 115	ND, RDL=1.0	mg/L	3.3	20		
7418268	pH	2021/06/24			102	98 - 103			0.15	N/A		
7419145	Total Iron (Fe)	2021/06/22	95	80 - 120	103	80 - 120	ND, RDL=0.02	mg/L	6.5	25		



BV Labs Job #: C1G7226
Report Date: 2021/06/25

QUALITY ASSURANCE REPORT(CONT'D)

City of Guelph
Client Project #: Wet/Dry Ground Water
Site Location: JUNE GW
Your P.O. #: 2100310
Sampler Initials: AS

QC Batch	Parameter	Date	Matrix Spike		SPIKED BLANK		Method Blank		RPD		QC Standard	
			% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits	% Recovery	QC Limits
7419416	Total Ammonia-N	2021/06/21	97	75 - 125	97	80 - 120	ND, RDL=0.050	mg/L	NC	20		
7419519	Total Phosphorus	2021/06/22	99	80 - 120	100	80 - 120	ND, RDL=0.020	mg/L	0.25	20	99	80 - 120
7419533	Total Chemical Oxygen Demand (COD)	2021/06/21	99	80 - 120	93	80 - 120	ND, RDL=4.0	mg/L	NC	20		
7420046	Total Phosphorus	2021/06/22	101	80 - 120	99	80 - 120	ND, RDL=0.020	mg/L	5.2	20	100	80 - 120
7420286	Acrolein	2021/06/22	105	60 - 140	107	60 - 140	ND, RDL=10	ug/L	NC	30		
7420286	Acrylonitrile	2021/06/22	101	60 - 140	107	60 - 140	ND, RDL=5.0	ug/L	NC	30		
7426683	1-Chloronaphthalene	2021/06/24	72	30 - 130	74	30 - 130	ND, RDL=1.0	ug/L	NC	40		
7426683	1-Methylnaphthalene	2021/06/24	100	30 - 130	104	30 - 130	ND, RDL=0.20	ug/L	NC	40		
7426683	2,3,4,5-Tetrachlorophenol	2021/06/24	88	10 - 130	102	10 - 130	ND, RDL=0.40	ug/L	NC	40		
7426683	2,3,4,6-Tetrachlorophenol	2021/06/24	101	10 - 130	102	10 - 130	ND, RDL=0.50	ug/L	NC	40		
7426683	2,3,4-Trichlorophenol	2021/06/24	94	10 - 130	95	10 - 130	ND, RDL=0.50	ug/L	NC	40		
7426683	2,3,5,6-Tetrachlorophenol	2021/06/24	106	10 - 130	112	10 - 130	ND, RDL=0.50	ug/L	NC	40		
7426683	2,3,5-Trichlorophenol	2021/06/24	99	10 - 130	105	10 - 130	ND, RDL=0.50	ug/L	NC	40		
7426683	2,4,5-Trichlorophenol	2021/06/24	107	10 - 130	111	10 - 130	ND, RDL=0.50	ug/L	NC	40		
7426683	2,4,6-Trichlorophenol	2021/06/24	97	10 - 130	98	10 - 130	ND, RDL=0.50	ug/L	NC	40		
7426683	2,4-Dichlorophenol	2021/06/24	95	10 - 130	98	10 - 130	ND, RDL=0.30	ug/L	NC	40		
7426683	2,4-Dimethylphenol	2021/06/24	68	10 - 130	65	10 - 130	ND, RDL=0.50	ug/L	NC	40		
7426683	2,4-Dinitrophenol	2021/06/24	97	10 - 130	99	10 - 130	ND, RDL=2.0	ug/L	NC	40		
7426683	2,4-Dinitrotoluene	2021/06/24	95	30 - 130	92	30 - 130	ND, RDL=0.50	ug/L	NC	40		
7426683	2,6-Dichlorophenol	2021/06/24	92	10 - 130	98	10 - 130	ND, RDL=0.50	ug/L	NC	40		
7426683	2,6-Dinitrotoluene	2021/06/24	89	30 - 130	90	30 - 130	ND, RDL=0.50	ug/L	NC	40		
7426683	2-Chloronaphthalene	2021/06/24	92	30 - 130	94	30 - 130	ND, RDL=0.50	ug/L	NC	40		
7426683	2-Chlorophenol	2021/06/24	84	10 - 130	89	10 - 130	ND, RDL=0.30	ug/L	NC	40		
7426683	2-Methylnaphthalene	2021/06/24	88	30 - 130	98	30 - 130	ND, RDL=0.20	ug/L	20	40		
7426683	4,6-Dinitro-2-methylphenol	2021/06/24	92	10 - 130	99	10 - 130	ND, RDL=2.0	ug/L	NC	40		
7426683	4-Bromophenyl phenyl ether	2021/06/24	99	30 - 130	101	30 - 130	ND, RDL=0.30	ug/L	NC	40		
7426683	4-Chloro-3-Methylphenol	2021/06/24	92	10 - 130	98	10 - 130	ND, RDL=0.50	ug/L	NC	40		



BV Labs Job #: C1G7226
Report Date: 2021/06/25

QUALITY ASSURANCE REPORT(CONT'D)

City of Guelph
Client Project #: Wet/Dry Ground Water
Site Location: JUNE GW
Your P.O. #: 2100310
Sampler Initials: AS

QC Batch	Parameter	Date	Matrix Spike		SPIKED BLANK		Method Blank		RPD		QC Standard	
			% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits	% Recovery	QC Limits
7426683	4-Chlorophenyl phenyl ether	2021/06/24	91	30 - 130	97	30 - 130	ND, RDL=0.50	ug/L	NC	40		
7426683	4-Nitrophenol	2021/06/24	17	10 - 130	26	10 - 130	ND, RDL=1.4	ug/L	NC	40		
7426683	5-Nitroacenaphthene	2021/06/24	91	30 - 130	90	30 - 130	ND, RDL=1.0	ug/L	NC	40		
7426683	Acenaphthene	2021/06/24	91	30 - 130	90	30 - 130	ND, RDL=0.20	ug/L	NC	40		
7426683	Acenaphthylene	2021/06/24	87	30 - 130	90	30 - 130	ND, RDL=0.20	ug/L	NC	40		
7426683	Anthracene	2021/06/24	87	30 - 130	87	30 - 130	ND, RDL=0.20	ug/L	NC	40		
7426683	Benzo(a)anthracene	2021/06/24	102	30 - 130	102	30 - 130	ND, RDL=0.20	ug/L	NC	40		
7426683	Benzo(a)pyrene	2021/06/24	89	30 - 130	88	30 - 130	ND, RDL=0.20	ug/L	NC	40		
7426683	Benzo(b,j)fluoranthene	2021/06/24	101	30 - 130	102	30 - 130	ND, RDL=0.20	ug/L	NC	40		
7426683	Benzo(g,h,i)perylene	2021/06/24	99	30 - 130	100	30 - 130	ND, RDL=0.20	ug/L	NC	40		
7426683	Benzo(k)fluoranthene	2021/06/24	105	30 - 130	106	30 - 130	ND, RDL=0.20	ug/L	NC	40		
7426683	Benzyl butyl phthalate	2021/06/24	102	30 - 130	104	30 - 130	ND, RDL=0.50	ug/L	NC	40		
7426683	Biphenyl	2021/06/24	87	30 - 130	89	30 - 130	ND, RDL=0.50	ug/L	NC	40		
7426683	Bis(2-chloroethoxy)methane	2021/06/24	81	30 - 130	84	30 - 130	ND, RDL=0.50	ug/L	NC	40		
7426683	Bis(2-chloroethyl)ether	2021/06/24	92	30 - 130	93	30 - 130	ND, RDL=0.50	ug/L	NC	40		
7426683	Bis(2-chloroisopropyl)ether	2021/06/24	84	30 - 130	78	30 - 130	ND, RDL=0.50	ug/L	NC	40		
7426683	Bis(2-ethylhexyl)phthalate	2021/06/24	100	30 - 130	101	30 - 130	ND, RDL=2.0	ug/L	NC	40		
7426683	Camphene	2021/06/24	65	30 - 130	97	30 - 130	ND, RDL=1.0	ug/L	NC	40		
7426683	Chrysene	2021/06/24	101	30 - 130	101	30 - 130	ND, RDL=0.20	ug/L	NC	40		
7426683	Dibenzo(a,h)anthracene	2021/06/24	100	30 - 130	102	30 - 130	ND, RDL=0.20	ug/L	NC	40		
7426683	Di-N-butyl phthalate	2021/06/24	101	30 - 130	100	30 - 130	ND, RDL=2.0	ug/L	NC	40		
7426683	di-n-octyl phthalate	2021/06/24	108	30 - 130	110	30 - 130	ND, RDL=0.80	ug/L	NC	40		
7426683	Diphenyl Ether	2021/06/24	92	30 - 130	95	30 - 130	ND, RDL=0.30	ug/L	NC	40		
7426683	Fluoranthene	2021/06/24	98	30 - 130	96	30 - 130	ND, RDL=0.20	ug/L	NC	40		
7426683	Fluorene	2021/06/24	95	30 - 130	94	30 - 130	ND, RDL=0.20	ug/L	NC	40		
7426683	Indeno(1,2,3-cd)pyrene	2021/06/24	101	30 - 130	104	30 - 130	ND, RDL=0.20	ug/L	NC	40		
7426683	Indole	2021/06/24	77	30 - 130	83	30 - 130	ND, RDL=1.0	ug/L	NC	40		
7426683	m/p-Cresol	2021/06/24	60	10 - 130	60	10 - 130	ND, RDL=0.50	ug/L	NC	40		
7426683	Naphthalene	2021/06/24	92	30 - 130	100	30 - 130	ND, RDL=0.20	ug/L	NC	40		
7426683	Nitrosodiphenylamine/Diphenylamine	2021/06/24	121	30 - 130	118	30 - 130	ND, RDL=1.0	ug/L	NC	40		



BV Labs Job #: C1G7226
Report Date: 2021/06/25

QUALITY ASSURANCE REPORT(CONT'D)

City of Guelph
Client Project #: Wet/Dry Ground Water
Site Location: JUNE GW
Your P.O. #: 2100310
Sampler Initials: AS

QC Batch	Parameter	Date	Matrix Spike		SPIKED BLANK		Method Blank		RPD		QC Standard	
			% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits	% Recovery	QC Limits
7426683	N-Nitroso-di-n-propylamine	2021/06/24	100	30 - 130	97	30 - 130	ND, RDL=0.50	ug/L	NC	40		
7426683	o-Cresol	2021/06/24	66	10 - 130	69	10 - 130	ND, RDL=0.50	ug/L	NC	40		
7426683	Pentachlorophenol	2021/06/24	73	10 - 130	76	10 - 130	ND, RDL=1.0	ug/L	NC	40		
7426683	Perylene	2021/06/24	98	30 - 130	97	30 - 130	ND, RDL=0.20	ug/L	NC	40		
7426683	Phenanthrene	2021/06/24	96	30 - 130	94	30 - 130	ND, RDL=0.20	ug/L	NC	40		
7426683	Phenol	2021/06/24	26	10 - 130	29	10 - 130	ND, RDL=0.50	ug/L	NC	40		
7426683	Pyrene	2021/06/24	101	30 - 130	102	30 - 130	ND, RDL=0.20	ug/L	NC	40		

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 $\leq 2 \times$ RDL).



BUREAU
VERITAS

BV Labs Job #: C1G7226

Report Date: 2021/06/25

City of Guelph

Client Project #: Wet/Dry Ground Water

Site Location: JUNE GW

Your P.O. #: 2100310

Sampler Initials: AS

VALIDATION SIGNATURE PAGE

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

Anastassia Hamanov, Scientific Specialist

Brad Newman, B.Sc., C.Chem., Scientific Service Specialist

BV Labs 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 Signature Page.

James Aspin
C1G7226

laboratories
Mississauga, Ontario Canada L5N 2L8 Tel: (905) 817-5700 Toll-free: 800-563-6266 Fax: (905) 817-5777 www.bvlabs.com

CHAIN OF CUSTODY RECORD

Page 1 of 1

KTN ENV-1220

Company Name: #12231 City of Guelph

Attention: Andrew Shouldice (Eastview)

Address: 186 Eastview Rd

Guelph ON N1E 1Z6

Tel: (519) 822-1260 Ext: 2473 Fax: (519) 823-0910

Email: Andrew.Shouldice@guelph.ca

REPORT TO:

Company Name:

Attention:

Address:

Tel:

Fax:

Email:

PROJECT INFORMATION:

Quotation #: B90142

P.O. #:

Project: Wet/Dry Ground Water

Project Name: June GW

Site #:

Sampled By: Andrew Shouldice

Laboratory Use Only:

BV Labs Job #:

Bottle Order #:

COC #:

Project Manager:

James Aspin

MOE REGULATED DRINKING WATER OR WATER INTENDED FOR HUMAN CONSUMPTION MUST BE SUBMITTED ON THE BV LABS DRINKING WATER CHAIN OF CUSTODY

Regulation 153 (2011)	Other Regulations	Special Instructions
<input type="checkbox"/> Table 1 <input type="checkbox"/> Table 2 <input type="checkbox"/> Table 3 <input type="checkbox"/> Table	<input type="checkbox"/> Res/Park <input type="checkbox"/> Ind/Comm <input type="checkbox"/> Agri/Other <input type="checkbox"/> Medium/Fine <input type="checkbox"/> Coarse <input type="checkbox"/> For RSC <input type="checkbox"/> CCME <input type="checkbox"/> Reg 558 <input type="checkbox"/> MISA <input type="checkbox"/> PWQO <input type="checkbox"/> Other	<input type="checkbox"/> Sanitary Sewer Bylaw <input type="checkbox"/> Storm Sewer Bylaw <input type="checkbox"/> Municipality <input type="checkbox"/> Reg 406 Table

Include Criteria on Certificate of Analysis (Y/N)?

Sample Barcode Label	Sample (Location) Identification	Date Sampled	Time Sampled	Matrix	Field Filtered (please circle): Metals / Hg / Cr VI	ABN Compounds in Water by GC/MS	Volatile Organic Compounds in Water	Non-Volatile Organic Compounds	ANALYSIS REQUESTED (PLEASE BE SPECIFIC)	Turnaround Time (TAT) Required: Please provide advance notice for rush projects
1 SID#504030	15A	3								Regular (Standard) TAT: (will be applied if Rush TAT is not specified): Standard TAT = 5-7 Working days for most tests. Please note: Standard TAT for certain tests such as BOD and Dioxins/Furans are > 5 days - contact your Project Manager for details.
2	17A	June 16/21	Am	GW	Y				X	Job Specific Rush TAT (if applies to entire submission) Date Required: Time Required: Rush Confirmation Number: (call lab for #)
3	17B			GW	Y				X	# of Bottles Comments
4	22A			GW	Y				X	
5	22B			GW	Y				X	
6	16A		Pm	GW	Y				X	
7	16B			GW	Y				X	
8										
9										
10										

* RELINQUISHED BY: (Signature/Print)	Date: (YY/MM/DD)	Time	RECEIVED BY: (Signature/Print)	Date: (YY/MM/DD)	Time	# Jars used and not submitted	Laboratory Use Only
Andrew Shouldice	21/06/17	Am	James Aspin	21/06/17	6:00		Time Sensitive Temperature (°C) on Receipt Custody Seal Present Intact

* UNLESS OTHERWISE AGREED TO IN WRITING, WORK SUBMITTED ON THIS CHAIN OF CUSTODY IS SUBJECT TO BV LABS' STANDARD TERMS AND CONDITIONS. SIGNING OF THIS CHAIN OF CUSTODY DOCUMENT IS ACKNOWLEDGMENT AND ACCEPTANCE OF OUR TERMS WHICH ARE AVAILABLE FOR VIEWING AT WWW.BVLABS.COM/TERMS-AND-CONDITIONS.

* IT IS THE RESPONSIBILITY OF THE RELINQUISHER TO ENSURE THE ACCURACY OF THE CHAIN OF CUSTODY RECORD. AN INCOMPLETE CHAIN OF CUSTODY MAY RESULT IN ANALYTICAL TAT DELAYS.

** SAMPLE CONTAINER, PRESERVATION, HOLD TIME AND PACKAGE INFORMATION CAN BE VIEWED AT WWW.BVLABS.COM/RESOURCES/CHAIN-OF-CUSTODY-FORMS.

SAMPLES MUST BE KEPT COOL (<10°C) FROM TIME OF SAMPLING UNTIL DELIVERY TO BV LABS

White: BV Labs Yellow: Client

1/7/2



Your P.O. #: 2100310
 Your Project #: WET/DRY GROUND WATER
 Site Location: JUNE GW
 Your C.O.C. #: 829801-02-01

Attention: Amy Spence

City of Guelph
 Solid Waste RIC (Wet/Dry)
 110 Dunlop Drive
 Guelph, ON
 CANADA N1H 6H8

Report Date: 2021/06/28
 Report #: R6696107
 Version: 1 - Final

CERTIFICATE OF ANALYSIS

BV LABS JOB #: C1G9221

Received: 2021/06/18, 16:19

Sample Matrix: Water
 # Samples Received: 4

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Analytical Method
ABN Compounds in Water by GC/MS	4	2021/06/24	2021/06/25	CAM SOP-00301	EPA 8270 m
Alkalinity	4	N/A	2021/06/22	CAM SOP-00448	SM 23 2320 B m
Biochemical Oxygen Demand (BOD)	4	2021/06/19	2021/06/24	CAM SOP-00427	SM 23 5210B m
Chloride by Automated Colourimetry	4	N/A	2021/06/23	CAM SOP-00463	SM 23 4500-Cl E m
Chemical Oxygen Demand	4	N/A	2021/06/24	CAM SOP-00416	SM 23 5220 D m
Conductivity	4	N/A	2021/06/22	CAM SOP-00414	SM 23 2510 m
Dissolved Metals by ICPMS	4	N/A	2021/06/21	CAM SOP-00447	EPA 6020B m
Total Metals Analysis by ICP	4	2021/06/22	2021/06/22	CAM SOP-00408	EPA 6010D m
Total Ammonia-N	3	N/A	2021/06/22	CAM SOP-00441	USGS I-2522-90 m
Total Ammonia-N	1	N/A	2021/06/24	CAM SOP-00441	USGS I-2522-90 m
Nitrate (NO3) and Nitrite (NO2) in Water (1)	4	N/A	2021/06/22	CAM SOP-00440	SM 23 4500-NO3I/NO2B
pH	4	2021/06/19	2021/06/22	CAM SOP-00413	SM 4500H+ B m
Phenols (4AAP)	3	N/A	2021/06/21	CAM SOP-00444	OMOE E3179 m
Phenols (4AAP)	1	N/A	2021/06/22	CAM SOP-00444	OMOE E3179 m
Sulphate by Automated Colourimetry	4	N/A	2021/06/22	CAM SOP-00464	EPA 375.4 m
Total Kjeldahl Nitrogen in Water	4	2021/06/21	2021/06/22	CAM SOP-00938	OMOE E3516 m
Total Phosphorus (Colourimetric)	4	2021/06/22	2021/06/23	CAM SOP-00407	SM 23 4500 P B H m
Volatile Organic Compounds in Water	4	N/A	2021/06/23	CAM SOP-00226	EPA 8260C m
Non-Routine Volatile Organic Compounds	4	N/A	2021/06/24	CAM SOP-00226	EPA 8260 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, MELCC, EPA, APHA.

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



Your P.O. #: 2100310
Your Project #: WET/DRY GROUND WATER
Site Location: JUNE GW
Your C.O.C. #: 829801-02-01

Attention: Amy Spence

City of Guelph
Solid Waste RIC (Wet/Dry)
110 Dunlop Drive
Guelph, ON
CANADA N1H 6H8

Report Date: 2021/06/28
Report #: R6696107
Version: 1 - Final

CERTIFICATE OF ANALYSIS

BV LABS JOB #: C1G9221

Received: 2021/06/18, 16:19

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.

Encryption Key

Hongmei Zhao (Grace)
Project Manager
28 Jun 2021 14:30:59

Please direct all questions regarding this Certificate of Analysis to your Project Manager.

James Aspin, Senior Project Manager

Email: James.Aspin@bureauveritas.com

Phone# (905)817-5771

=====

BV Labs 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 Signature Page.



BUREAU
VERITAS

BV Labs Job #: C1G9221
Report Date: 2021/06/28

City of Guelph
Client Project #: WET/DRY GROUND WATER
Site Location: JUNE GW
Your P.O. #: 2100310
Sampler Initials: AS

RESULTS OF ANALYSES OF WATER

BV Labs ID				PWN615			PWN615		
Sampling Date				2021/06/17			2021/06/17		
COC Number				829801-02-01			829801-02-01		
	UNITS	Criteria	Criteria C	12A	RDL	QC Batch	12A Lab-Dup	RDL	QC Batch
Inorganics									
Total Ammonia-N	mg/L	-	-	ND	0.050	7420497			
Total BOD	mg/L	-	-	3	2	7418040			
Total Chemical Oxygen Demand (COD)	mg/L	-	-	13	4.0	7420172			
Conductivity	umho/cm	-	-	590	1.0	7418582			
Total Kjeldahl Nitrogen (TKN)	mg/L	-	-	0.24	0.10	7420117			
pH	pH	-	6.5:8.5	7.87		7418583			
Phenols-4AAP	mg/L	-	-	ND	0.0010	7419468			
Total Phosphorus	mg/L	-	-	0.37	0.10	7422155			
Dissolved Sulphate (SO ₄)	mg/L	-	500	19	1.0	7418588	19	1.0	7418588
Alkalinity (Total as CaCO ₃)	mg/L	-	30-500	320	1.0	7418581			
Dissolved Chloride (Cl ⁻)	mg/L	-	250	3.0	1.0	7418584	3.1	1.0	7418584
Nitrite (N)	mg/L	1	-	ND	0.010	7418558			
Nitrate (N)	mg/L	10	-	0.29	0.10	7418558			
Nitrate + Nitrite (N)	mg/L	10	-	0.29	0.10	7418558			
RDL = Reportable Detection Limit QC Batch = Quality Control Batch Lab-Dup = Laboratory Initiated Duplicate Criteria, Criteria C: Ontario Regulation 169/03 Criteria A = Maximum Acceptable Criteria B = Interim Maximum Criteria C = Chemical/Physical Objectives [A/O] (Made under the Ontario Safe Drinking Water Act, 2002) ND = Not detected									



BUREAU
VERITAS

BV Labs Job #: C1G9221
Report Date: 2021/06/28

City of Guelph
Client Project #: WET/DRY GROUND WATER
Site Location: JUNE GW
Your P.O. #: 2100310
Sampler Initials: AS

RESULTS OF ANALYSES OF WATER

BV Labs ID				PWN616			PWN617		
Sampling Date				2021/06/17			2021/06/17		
COC Number				829801-02-01			829801-02-01		
	UNITS	Criteria	Criteria C	12B	RDL	QC Batch	14A	RDL	QC Batch
Inorganics									
Total Ammonia-N	mg/L	-	-	ND	0.050	7419650	ND	0.050	7420497
Total BOD	mg/L	-	-	ND	2	7418040	ND	2	7418040
Total Chemical Oxygen Demand (COD)	mg/L	-	-	15	4.0	7420172	9.0	4.0	7420172
Conductivity	umho/cm	-	-	610	1.0	7418582	630	1.0	7418582
Total Kjeldahl Nitrogen (TKN)	mg/L	-	-	0.60	0.10	7419726	ND	0.10	7420117
pH	pH	-	6.5-8.5	8.13		7418583	8.19		7418583
Phenols-4AAP	mg/L	-	-	ND	0.0010	7419131	ND	0.0010	7419468
Total Phosphorus	mg/L	-	-	2.9	0.20	7422366	ND	0.020	7422155
Dissolved Sulphate (SO ₄)	mg/L	-	500	12	1.0	7418588	61	1.0	7418588
Alkalinity (Total as CaCO ₃)	mg/L	-	30-500	330	1.0	7418581	250	1.0	7418581
Dissolved Chloride (Cl ⁻)	mg/L	-	250	5.3	1.0	7418584	26	1.0	7418584
Nitrite (N)	mg/L	1	-	ND	0.010	7418558	ND	0.010	7418558
Nitrate (N)	mg/L	10	-	0.36	0.10	7418558	ND	0.10	7418558
Nitrate + Nitrite (N)	mg/L	10	-	0.36	0.10	7418558	ND	0.10	7418558
RDL = Reportable Detection Limit QC Batch = Quality Control Batch Criteria, Criteria C: Ontario Regulation 169/03 Criteria A = Maximum Acceptable Criteria B = Interim Maximum Criteria C = Chemical/Physical Objectives [A/O] (Made under the Ontario Safe Drinking Water Act, 2002) ND = Not detected									



BUREAU
VERITAS

BV Labs Job #: C1G9221
Report Date: 2021/06/28

City of Guelph
Client Project #: WET/DRY GROUND WATER
Site Location: JUNE GW
Your P.O. #: 2100310
Sampler Initials: AS

RESULTS OF ANALYSES OF WATER

BV Labs ID				PWN618			PWN618		
Sampling Date				2021/06/17			2021/06/17		
COC Number				829801-02-01			829801-02-01		
	UNITS	Criteria	Criteria C	14B	RDL	QC Batch	14B Lab-Dup	RDL	QC Batch
Inorganics									
Total Ammonia-N	mg/L	-	-	ND	0.050	7420497	ND	0.050	7420497
Total BOD	mg/L	-	-	ND	2	7418040	ND	2	7418040
Total Chemical Oxygen Demand (COD)	mg/L	-	-	14	4.0	7420172	12	4.0	7420172
Conductivity	umho/cm	-	-	1300	1.0	7418582	1300	1.0	7418582
Total Kjeldahl Nitrogen (TKN)	mg/L	-	-	ND	0.10	7420117			
pH	pH	-	6.5:8.5	8.06		7418583	7.87		7418583
Phenols-4AAP	mg/L	-	-	ND	0.0010	7419131			
Total Phosphorus	mg/L	-	-	0.038	0.020	7422155			
Dissolved Sulphate (SO ₄)	mg/L	-	500	61	1.0	7418588			
Alkalinity (Total as CaCO ₃)	mg/L	-	30-500	340	1.0	7418581	340	1.0	7418581
Dissolved Chloride (Cl ⁻)	mg/L	-	250	170	2.0	7418584			
Nitrite (N)	mg/L	1	-	ND	0.010	7418558			
Nitrate (N)	mg/L	10	-	0.22	0.10	7418558			
Nitrate + Nitrite (N)	mg/L	10	-	0.22	0.10	7418558			
RDL = Reportable Detection Limit QC Batch = Quality Control Batch Lab-Dup = Laboratory Initiated Duplicate Criteria, Criteria C: Ontario Regulation 169/03 Criteria A = Maximum Acceptable Criteria B = Interim Maximum Criteria C = Chemical/Physical Objectives [A/O] (Made under the Ontario Safe Drinking Water Act, 2002) ND = Not detected									



BUREAU
VERITAS

BV Labs Job #: C1G9221
Report Date: 2021/06/28

City of Guelph
Client Project #: WET/DRY GROUND WATER
Site Location: JUNE GW
Your P.O. #: 2100310
Sampler Initials: AS

ELEMENTS BY ATOMIC SPECTROSCOPY (WATER)

BV Labs ID					PWN615	PWN616	PWN617	PWN618		
Sampling Date					2021/06/17	2021/06/17	2021/06/17	2021/06/17		
COC Number					829801-02-01	829801-02-01	829801-02-01	829801-02-01		
	UNITS	Criteria	Criteria B	Criteria C	12A	12B	14A	14B	RDL	QC Batch

Metals

Total Iron (Fe)	mg/L	-	-	0.3	14	110	0.40	1.4	0.02	7422240
Dissolved Boron (B)	ug/L	-	5000	-	13	19	23	18	10	7419441
Dissolved Calcium (Ca)	ug/L	-	-	-	78000	88000	73000	110000	200	7419441
Dissolved Magnesium (Mg)	ug/L	-	-	-	32000	29000	25000	20000	50	7419441
Dissolved Phosphorus (P)	ug/L	-	-	-	ND	ND	ND	ND	100	7419441
Dissolved Potassium (K)	ug/L	-	-	-	3500	2600	1100	1500	200	7419441
Dissolved Sodium (Na)	ug/L	20000	-	200000	1800	6600	26000	130000	100	7419441
Dissolved Zinc (Zn)	ug/L	-	-	5000	560	170	ND	350	5.0	7419441

RDL = Reportable Detection Limit

QC Batch = Quality Control Batch

Criteria, Criteria B, Criteria C: Ontario Regulation 169/03

Criteria A = Maximum Acceptable

Criteria B = Interim Maximum

Criteria C = Chemical/Physical Objectives [A/O]

(Made under the Ontario Safe Drinking Water Act, 2002)

ND = Not detected



BV Labs Job #: C1G9221
Report Date: 2021/06/28

City of Guelph
Client Project #: WET/DRY GROUND WATER
Site Location: JUNE GW
Your P.O. #: 2100310
Sampler Initials: AS

SEMI-VOLATILE ORGANICS BY GC-MS (WATER)

BV Labs ID			PWN615	PWN616	PWN617	PWN618		
Sampling Date			2021/06/17	2021/06/17	2021/06/17	2021/06/17		
COC Number			829801-02-01	829801-02-01	829801-02-01	829801-02-01		
	UNITS	Criteria	12A	12B	14A	14B	RDL	QC Batch
Semivolatile Organics								
Acenaphthene	ug/L	-	ND	ND	ND	ND	0.20	7426683
Acenaphthylene	ug/L	-	ND	ND	ND	ND	0.20	7426683
Anthracene	ug/L	-	ND	ND	ND	ND	0.20	7426683
Benzo(a)anthracene	ug/L	-	ND	ND	ND	ND	0.20	7426683
Benzo(a)pyrene	ug/L	0.01	ND (1)	ND (1)	ND (1)	ND (1)	0.20	7426683
Benzo(b/j)fluoranthene	ug/L	-	ND	ND	ND	ND	0.20	7426683
Benzo(g,h,i)perylene	ug/L	-	ND	ND	ND	ND	0.20	7426683
Benzo(k)fluoranthene	ug/L	-	ND	ND	ND	ND	0.20	7426683
1-Chloronaphthalene	ug/L	-	ND	ND	ND	ND	1.0	7426683
2-Chloronaphthalene	ug/L	-	ND	ND	ND	ND	0.50	7426683
Chrysene	ug/L	-	ND	ND	ND	ND	0.20	7426683
Dibenzo(a,h)anthracene	ug/L	-	ND	ND	ND	ND	0.20	7426683
Fluoranthene	ug/L	-	ND	ND	ND	ND	0.20	7426683
Fluorene	ug/L	-	ND	ND	ND	ND	0.20	7426683
Indeno(1,2,3-cd)pyrene	ug/L	-	ND	ND	ND	ND	0.20	7426683
1-Methylnaphthalene	ug/L	-	ND	ND	ND	ND	0.20	7426683
2-Methylnaphthalene	ug/L	-	0.28	0.24	0.21	ND	0.20	7426683
Naphthalene	ug/L	-	ND	ND	ND	ND	0.20	7426683
5-Nitroacenaphthene	ug/L	-	ND	ND	ND	ND	1.0	7426683
Perylene	ug/L	-	ND	ND	ND	ND	0.20	7426683
Phenanthrene	ug/L	-	ND	ND	ND	ND	0.20	7426683
Pyrene	ug/L	-	ND	ND	ND	ND	0.20	7426683
2-Chlorophenol	ug/L	-	ND	ND	ND	ND	0.30	7426683
4-Chloro-3-Methylphenol	ug/L	-	ND	ND	ND	ND	0.50	7426683
m/p-Cresol	ug/L	-	ND	ND	ND	ND	0.50	7426683
o-Cresol	ug/L	-	ND	ND	ND	ND	0.50	7426683
2,4-Dichlorophenol	ug/L	900	ND	ND	ND	ND	0.30	7426683
2,6-Dichlorophenol	ug/L	-	ND	ND	ND	ND	0.50	7426683
RDL = Reportable Detection Limit QC Batch = Quality Control Batch Criteria: Ontario Regulation 169/03 Criteria A = Maximum Acceptable Criteria B = Interim Maximum Criteria C = Chemical/Physical Objectives [A/O] (Made under the Ontario Safe Drinking Water Act, 2002) ND = Not detected (1) RDL exceeds criteria								



BV Labs Job #: C1G9221
Report Date: 2021/06/28

City of Guelph
Client Project #: WET/DRY GROUND WATER
Site Location: JUNE GW
Your P.O. #: 2100310
Sampler Initials: AS

SEMI-VOLATILE ORGANICS BY GC-MS (WATER)

BV Labs ID			PWN615	PWN616	PWN617	PWN618		
Sampling Date			2021/06/17	2021/06/17	2021/06/17	2021/06/17		
COC Number			829801-02-01	829801-02-01	829801-02-01	829801-02-01		
	UNITS	Criteria	12A	12B	14A	14B	RDL	QC Batch
2,4-Dimethylphenol	ug/L	-	ND	ND	ND	ND	0.50	7426683
2,4-Dinitrophenol	ug/L	-	ND	ND	ND	ND	2.0	7426683
4,6-Dinitro-2-methylphenol	ug/L	-	ND	ND	ND	ND	2.0	7426683
4-Nitrophenol	ug/L	-	ND	ND	ND	ND	1.4	7426683
Pentachlorophenol	ug/L	60	ND	ND	ND	ND	1.0	7426683
Phenol	ug/L	-	ND	ND	ND	ND	0.50	7426683
2,3,4,5-Tetrachlorophenol	ug/L	-	ND	ND	ND	ND	0.40	7426683
2,3,4,6-Tetrachlorophenol	ug/L	100	ND	ND	ND	ND	0.50	7426683
2,3,5,6-Tetrachlorophenol	ug/L	-	ND	ND	ND	ND	0.50	7426683
2,3,4-Trichlorophenol	ug/L	-	ND	ND	ND	ND	0.50	7426683
2,3,5-Trichlorophenol	ug/L	-	ND	ND	ND	ND	0.50	7426683
2,4,5-Trichlorophenol	ug/L	-	ND	ND	ND	ND	0.50	7426683
2,4,6-Trichlorophenol	ug/L	5	ND	ND	ND	ND	0.50	7426683
Benzyl butyl phthalate	ug/L	-	ND	ND	ND	ND	0.50	7426683
Biphenyl	ug/L	-	ND	ND	ND	ND	0.50	7426683
Bis(2-chloroethyl)ether	ug/L	-	ND	ND	ND	ND	0.50	7426683
Bis(2-chloroethoxy)methane	ug/L	-	ND	ND	ND	ND	0.50	7426683
Bis(2-chloroisopropyl)ether	ug/L	-	ND	ND	ND	ND	0.50	7426683
Bis(2-ethylhexyl)phthalate	ug/L	-	ND	ND	ND	5.7	2.0	7426683
4-Bromophenyl phenyl ether	ug/L	-	ND	ND	ND	ND	0.30	7426683
Camphene	ug/L	-	ND	ND	ND	ND	1.0	7426683
4-Chlorophenyl phenyl ether	ug/L	-	ND	ND	ND	ND	0.50	7426683
Di-N-butyl phthalate	ug/L	-	ND	ND	ND	ND	2.0	7426683
di-n-octyl phthalate	ug/L	-	ND	ND	ND	ND	0.80	7426683
2,4-Dinitrotoluene	ug/L	-	ND	ND	ND	ND	0.50	7426683
2,6-Dinitrotoluene	ug/L	-	ND	ND	ND	ND	0.50	7426683
Diphenyl Ether	ug/L	-	ND	ND	ND	ND	0.30	7426683
Indole	ug/L	-	ND	ND	ND	ND	1.0	7426683
Nitrosodiphenylamine/Diphenylamine	ug/L	-	ND	ND	ND	ND	1.0	7426683

RDL = Reportable Detection Limit

QC Batch = Quality Control Batch

Criteria: Ontario Regulation 169/03

Criteria A = Maximum Acceptable

Criteria B = Interim Maximum

Criteria C = Chemical/Physical Objectives [A/O]

(Made under the Ontario Safe Drinking Water Act, 2002)

ND = Not detected



BUREAU
VERITAS

BV Labs Job #: C1G9221
Report Date: 2021/06/28

City of Guelph
Client Project #: WET/DRY GROUND WATER
Site Location: JUNE GW
Your P.O. #: 2100310
Sampler Initials: AS

SEMI-VOLATILE ORGANICS BY GC-MS (WATER)

BV Labs ID			PWN615	PWN616	PWN617	PWN618		
Sampling Date			2021/06/17	2021/06/17	2021/06/17	2021/06/17		
COC Number			829801-02-01	829801-02-01	829801-02-01	829801-02-01		
	UNITS	Criteria	12A	12B	14A	14B	RDL	QC Batch
N-Nitroso-di-n-propylamine	ug/L	-	ND	ND	ND	ND	0.50	7426683
Surrogate Recovery (%)								
2,4,6-Tribromophenol	%	-	39	30	67	67		7426683
2-Fluorobiphenyl	%	-	73	70	66	77		7426683
2-Fluorophenol	%	-	16	10	21	18		7426683
D14-Terphenyl	%	-	88	82	105	107		7426683
D5-Nitrobenzene	%	-	92	81	80	85		7426683
D5-Phenol	%	-	16	12	17	13		7426683
RDL = Reportable Detection Limit QC Batch = Quality Control Batch Criteria: Ontario Regulation 169/03 Criteria A = Maximum Acceptable Criteria B = Interim Maximum Criteria C = Chemical/Physical Objectives [A/O] (Made under the Ontario Safe Drinking Water Act, 2002) ND = Not detected								



BV Labs Job #: C1G9221
Report Date: 2021/06/28

City of Guelph
Client Project #: WET/DRY GROUND WATER
Site Location: JUNE GW
Your P.O. #: 2100310
Sampler Initials: AS

VOLATILE ORGANICS BY GC/MS (WATER)

BV Labs ID					PWN615	PWN616	PWN616		
Sampling Date					2021/06/17	2021/06/17	2021/06/17		
COC Number					829801-02-01	829801-02-01	829801-02-01		
	UNITS	Criteria	Criteria B	Criteria C	12A	12B	12B Lab-Dup	RDL	QC Batch

Volatile Organics									
Acetone (2-Propanone)	ug/L	-	-	-	ND	ND	ND	10	7426105
Benzene	ug/L	5	-	-	ND	0.13	0.13	0.10	7426105
Bromodichloromethane	ug/L	-	-	-	ND	ND	ND	0.10	7426105
Acrolein	ug/L	-	-	-	ND	ND	ND	10	7392239
Bromoform	ug/L	-	-	-	ND	ND	ND	0.20	7426105
Bromomethane	ug/L	-	-	-	ND	ND	ND	0.50	7426105
Carbon Tetrachloride	ug/L	5	-	-	ND	ND	ND	0.10	7426105
Chlorobenzene	ug/L	80	-	-	ND	ND	ND	0.10	7426105
Chloroform	ug/L	-	-	-	ND	ND	ND	0.10	7426105
Acrylonitrile	ug/L	-	-	-	ND	ND	ND	5.0	7392239
Chloromethane	ug/L	-	-	-	ND	ND	ND	0.50	7426105
Dibromochloromethane	ug/L	-	-	-	ND	ND	ND	0.20	7426105
1,2-Dichlorobenzene	ug/L	200	-	-	ND	ND	ND	0.20	7426105
1,3-Dichlorobenzene	ug/L	-	-	-	ND	ND	ND	0.20	7426105
1,4-Dichlorobenzene	ug/L	5	-	-	ND	ND	ND	0.20	7426105
1,1-Dichloroethane	ug/L	-	-	-	ND	ND	ND	0.10	7426105
1,2-Dichloroethane	ug/L	-	5	-	ND	ND	ND	0.20	7426105
1,1-Dichloroethylene	ug/L	14	-	-	ND	ND	ND	0.10	7426105
cis-1,2-Dichloroethylene	ug/L	-	-	-	ND	ND	ND	0.10	7426105
trans-1,2-Dichloroethylene	ug/L	-	-	-	ND	ND	ND	0.10	7426105
1,2-Dichloropropane	ug/L	-	-	-	ND	ND	ND	0.10	7426105
cis-1,3-Dichloropropene	ug/L	-	-	-	ND	ND	ND	0.20	7426105
trans-1,3-Dichloropropene	ug/L	-	-	-	ND	ND	ND	0.20	7426105
Ethylbenzene	ug/L	-	-	2.4	0.10	ND	ND	0.10	7426105
Ethylene Dibromide	ug/L	-	-	-	ND	ND	ND	0.20	7426105
Methylene Chloride(Dichloromethane)	ug/L	50	-	-	ND	ND	ND	0.50	7426105
Methyl Ethyl Ketone (2-Butanone)	ug/L	-	-	-	ND	ND	ND	5.0	7426105
Methyl Isobutyl Ketone	ug/L	-	-	-	ND	ND	ND	5.0	7426105

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
Lab-Dup = Laboratory Initiated Duplicate
Criteria, Criteria B, Criteria C: Ontario Regulation 169/03
Criteria A = Maximum Acceptable
Criteria B = Interim Maximum
Criteria C = Chemical/Physical Objectives [A/O]
(Made under the Ontario Safe Drinking Water Act, 2002)
ND = Not detected



BV Labs Job #: C1G9221
Report Date: 2021/06/28

City of Guelph
Client Project #: WET/DRY GROUND WATER
Site Location: JUNE GW
Your P.O. #: 2100310
Sampler Initials: AS

VOLATILE ORGANICS BY GC/MS (WATER)

BV Labs ID					PWN615	PWN616	PWN616		
Sampling Date					2021/06/17	2021/06/17	2021/06/17		
COC Number					829801-02-01	829801-02-01	829801-02-01		
	UNITS	Criteria	Criteria B	Criteria C	12A	12B	12B Lab-Dup	RDL	QC Batch
Methyl t-butyl ether (MTBE)	ug/L	-	-	-	ND	ND	ND	0.20	7426105
Styrene	ug/L	-	-	-	ND	ND	ND	0.20	7426105
1,1,1,2-Tetrachloroethane	ug/L	-	-	-	ND	ND	ND	0.20	7426105
1,1,2,2-Tetrachloroethane	ug/L	-	-	-	ND	ND	ND	0.20	7426105
Tetrachloroethylene	ug/L	30	-	-	ND	ND	ND	0.10	7426105
Toluene	ug/L	-	-	24	0.37	0.34	0.36	0.20	7426105
1,1,1-Trichloroethane	ug/L	-	-	-	ND	ND	ND	0.10	7426105
1,1,2-Trichloroethane	ug/L	-	-	-	ND	ND	ND	0.20	7426105
Trichloroethylene	ug/L	5	-	-	ND	ND	ND	0.10	7426105
Trichlorofluoromethane (FREON 11)	ug/L	-	-	-	ND	ND	ND	0.20	7426105
Vinyl Chloride	ug/L	2	-	-	ND	ND	ND	0.20	7426105
p+m-Xylene	ug/L	-	-	-	0.23	0.23	0.25	0.10	7426105
o-Xylene	ug/L	-	-	-	0.10	ND	ND	0.10	7426105
Total Xylenes	ug/L	-	-	300	0.34	0.23	0.25	0.10	7426105
Surrogate Recovery (%)									
4-Bromofluorobenzene	%	-	-	-	101	103	102		7426105
D4-1,2-Dichloroethane	%	-	-	-	112	113	111		7426105
D8-Toluene	%	-	-	-	98	99	97		7426105
RDL = Reportable Detection Limit QC Batch = Quality Control Batch Lab-Dup = Laboratory Initiated Duplicate Criteria, Criteria B, Criteria C: Ontario Regulation 169/03 Criteria A = Maximum Acceptable Criteria B = Interim Maximum Criteria C = Chemical/Physical Objectives [A/O] (Made under the Ontario Safe Drinking Water Act, 2002) ND = Not detected									



BV Labs Job #: C1G9221
Report Date: 2021/06/28

City of Guelph
Client Project #: WET/DRY GROUND WATER
Site Location: JUNE GW
Your P.O. #: 2100310
Sampler Initials: AS

VOLATILE ORGANICS BY GC/MS (WATER)

BV Labs ID					PWN617	PWN618		
Sampling Date					2021/06/17	2021/06/17		
COC Number					829801-02-01	829801-02-01		
	UNITS	Criteria	Criteria B	Criteria C	14A	14B	RDL	QC Batch
Volatile Organics								
Acetone (2-Propanone)	ug/L	-	-	-	ND	ND	10	7426105
Benzene	ug/L	5	-	-	ND	ND	0.10	7426105
Bromodichloromethane	ug/L	-	-	-	ND	ND	0.10	7426105
Acrolein	ug/L	-	-	-	ND	ND	10	7392239
Bromoform	ug/L	-	-	-	ND	ND	0.20	7426105
Bromomethane	ug/L	-	-	-	ND	ND	0.50	7426105
Carbon Tetrachloride	ug/L	5	-	-	ND	ND	0.10	7426105
Chlorobenzene	ug/L	80	-	-	ND	ND	0.10	7426105
Chloroform	ug/L	-	-	-	ND	0.74	0.10	7426105
Acrylonitrile	ug/L	-	-	-	ND	ND	5.0	7392239
Chloromethane	ug/L	-	-	-	ND	ND	0.50	7426105
Dibromochloromethane	ug/L	-	-	-	ND	ND	0.20	7426105
1,2-Dichlorobenzene	ug/L	200	-	-	ND	ND	0.20	7426105
1,3-Dichlorobenzene	ug/L	-	-	-	ND	ND	0.20	7426105
1,4-Dichlorobenzene	ug/L	5	-	-	ND	ND	0.20	7426105
1,1-Dichloroethane	ug/L	-	-	-	ND	ND	0.10	7426105
1,2-Dichloroethane	ug/L	-	5	-	ND	ND	0.20	7426105
1,1-Dichloroethylene	ug/L	14	-	-	ND	ND	0.10	7426105
cis-1,2-Dichloroethylene	ug/L	-	-	-	ND	ND	0.10	7426105
trans-1,2-Dichloroethylene	ug/L	-	-	-	ND	ND	0.10	7426105
1,2-Dichloropropane	ug/L	-	-	-	ND	ND	0.10	7426105
cis-1,3-Dichloropropene	ug/L	-	-	-	ND	ND	0.20	7426105
trans-1,3-Dichloropropene	ug/L	-	-	-	ND	ND	0.20	7426105
Ethylbenzene	ug/L	-	-	2.4	ND	ND	0.10	7426105
Ethylene Dibromide	ug/L	-	-	-	ND	ND	0.20	7426105
Methylene Chloride(Dichloromethane)	ug/L	50	-	-	ND	ND	0.50	7426105
Methyl Ethyl Ketone (2-Butanone)	ug/L	-	-	-	ND	ND	5.0	7426105
Methyl Isobutyl Ketone	ug/L	-	-	-	ND	ND	5.0	7426105
RDL = Reportable Detection Limit								
QC Batch = Quality Control Batch								
Criteria, Criteria B, Criteria C: Ontario Regulation 169/03								
Criteria A = Maximum Acceptable								
Criteria B = Interim Maximum								
Criteria C = Chemical/Physical Objectives [A/O]								
(Made under the Ontario Safe Drinking Water Act, 2002)								
ND = Not detected								



BUREAU
VERITAS

BV Labs Job #: C1G9221
Report Date: 2021/06/28

City of Guelph
Client Project #: WET/DRY GROUND WATER
Site Location: JUNE GW
Your P.O. #: 2100310
Sampler Initials: AS

VOLATILE ORGANICS BY GC/MS (WATER)

BV Labs ID					PWN617	PWN618		
Sampling Date					2021/06/17	2021/06/17		
COC Number					829801-02-01	829801-02-01		
	UNITS	Criteria	Criteria B	Criteria C	14A	14B	RDL	QC Batch
Methyl t-butyl ether (MTBE)	ug/L	-	-	-	ND	ND	0.20	7426105
Styrene	ug/L	-	-	-	ND	ND	0.20	7426105
1,1,1,2-Tetrachloroethane	ug/L	-	-	-	ND	ND	0.20	7426105
1,1,2,2-Tetrachloroethane	ug/L	-	-	-	ND	ND	0.20	7426105
Tetrachloroethylene	ug/L	30	-	-	ND	ND	0.10	7426105
Toluene	ug/L	-	-	24	ND	ND	0.20	7426105
1,1,1-Trichloroethane	ug/L	-	-	-	ND	ND	0.10	7426105
1,1,2-Trichloroethane	ug/L	-	-	-	ND	ND	0.20	7426105
Trichloroethylene	ug/L	5	-	-	ND	ND	0.10	7426105
Trichlorofluoromethane (FREON 11)	ug/L	-	-	-	ND	ND	0.20	7426105
Vinyl Chloride	ug/L	2	-	-	ND	ND	0.20	7426105
p+m-Xylene	ug/L	-	-	-	ND	ND	0.10	7426105
o-Xylene	ug/L	-	-	-	ND	ND	0.10	7426105
Total Xylenes	ug/L	-	-	300	ND	ND	0.10	7426105
Surrogate Recovery (%)								
4-Bromofluorobenzene	%	-	-	-	101	102		7426105
D4-1,2-Dichloroethane	%	-	-	-	108	110		7426105
D8-Toluene	%	-	-	-	99	99		7426105
RDL = Reportable Detection Limit QC Batch = Quality Control Batch Criteria, Criteria B, Criteria C: Ontario Regulation 169/03 Criteria A = Maximum Acceptable Criteria B = Interim Maximum Criteria C = Chemical/Physical Objectives [A/O] (Made under the Ontario Safe Drinking Water Act, 2002) ND = Not detected								



BUREAU
VERITAS

BV Labs Job #: C1G9221

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City of Guelph

Client Project #: WET/DRY GROUND WATER

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GENERAL COMMENTS

Results relate only to the items tested.



BV Labs Job #: C1G9221
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QUALITY ASSURANCE REPORT

City of Guelph
Client Project #: WET/DRY GROUND WATER
Site Location: JUNE GW
Your P.O. #: 2100310
Sampler Initials: AS

QC Batch	Parameter	Date	Matrix Spike		SPIKED BLANK		Method Blank		RPD		QC Standard	
			% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits	% Recovery	QC Limits
7426105	4-Bromofluorobenzene	2021/06/23	103	70 - 130	102	70 - 130	100	%				
7426105	D4-1,2-Dichloroethane	2021/06/23	109	70 - 130	105	70 - 130	104	%				
7426105	D8-Toluene	2021/06/23	98	70 - 130	99	70 - 130	99	%				
7426683	2,4,6-Tribromophenol	2021/06/24	101	10 - 130	94	10 - 130	77	%				
7426683	2-Fluorobiphenyl	2021/06/24	82	30 - 130	91	30 - 130	69	%				
7426683	2-Fluorophenol	2021/06/24	37	10 - 130	41	10 - 130	30	%				
7426683	D14-Terphenyl	2021/06/24	105	30 - 130	109	30 - 130	106	%				
7426683	D5-Nitrobenzene	2021/06/24	95	30 - 130	99	30 - 130	85	%				
7426683	D5-Phenol	2021/06/24	25	10 - 130	26	10 - 130	20	%				
7392239	Acrolein	2021/06/24	87	60 - 140	106	60 - 140	ND, RDL=10	ug/L	NC	30		
7392239	Acrylonitrile	2021/06/24	103	60 - 140	108	60 - 140	ND, RDL=5.0	ug/L	NC	30		
7418040	Total BOD	2021/06/24					ND, RDL=2	mg/L	NC	30	96	80 - 120
7418558	Nitrate (N)	2021/06/22	109	80 - 120	105	80 - 120	ND, RDL=0.10	mg/L	0.41	20		
7418558	Nitrite (N)	2021/06/22	110	80 - 120	106	80 - 120	ND, RDL=0.010	mg/L	17	20		
7418581	Alkalinity (Total as CaCO ₃)	2021/06/22			97	85 - 115	ND, RDL=1.0	mg/L	1.4	20		
7418582	Conductivity	2021/06/22			99	85 - 115	ND, RDL=1.0	umho/cm	0.78	25		
7418583	pH	2021/06/22			102	98 - 103			2.4	N/A		
7418584	Dissolved Chloride (Cl ⁻)	2021/06/23	111	80 - 120	103	80 - 120	ND, RDL=1.0	mg/L	3.3	20		
7418588	Dissolved Sulphate (SO ₄)	2021/06/22	82	75 - 125	105	80 - 120	ND, RDL=1.0	mg/L	0.44	20		
7419131	Phenols-4AAP	2021/06/21	100	80 - 120	98	80 - 120	ND, RDL=0.0010	mg/L	NC	20		
7419441	Dissolved Boron (B)	2021/06/21	101	80 - 120	97	80 - 120	ND, RDL=10	ug/L	0.13	20		
7419441	Dissolved Calcium (Ca)	2021/06/21	NC	80 - 120	101	80 - 120	ND, RDL=200	ug/L				
7419441	Dissolved Magnesium (Mg)	2021/06/21	96	80 - 120	94	80 - 120	ND, RDL=50	ug/L				
7419441	Dissolved Phosphorus (P)	2021/06/21	104	80 - 120	101	80 - 120	ND, RDL=100	ug/L				
7419441	Dissolved Potassium (K)	2021/06/21	98	80 - 120	97	80 - 120	ND, RDL=200	ug/L				
7419441	Dissolved Sodium (Na)	2021/06/21	94	80 - 120	94	80 - 120	ND, RDL=100	ug/L	0.70	20		
7419441	Dissolved Zinc (Zn)	2021/06/21	95	80 - 120	94	80 - 120	ND, RDL=5.0	ug/L	NC	20		



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QUALITY ASSURANCE REPORT(CONT'D)

City of Guelph
Client Project #: WET/DRY GROUND WATER
Site Location: JUNE GW
Your P.O. #: 2100310
Sampler Initials: AS

QC Batch	Parameter	Date	Matrix Spike		SPIKED BLANK		Method Blank		RPD		QC Standard	
			% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits	% Recovery	QC Limits
7419468	Phenols-4AAP	2021/06/21	95	80 - 120	98	80 - 120	ND, RDL=0.0010	mg/L	NC	20		
7419650	Total Ammonia-N	2021/06/24	91	75 - 125	99	80 - 120	ND, RDL=0.050	mg/L	0.14	20		
7419726	Total Kjeldahl Nitrogen (TKN)	2021/06/22	NC	80 - 120	104	80 - 120	ND, RDL=0.10	mg/L	0.96	20	97	80 - 120
7420117	Total Kjeldahl Nitrogen (TKN)	2021/06/22	99	80 - 120	107	80 - 120	ND, RDL=0.10	mg/L	NC	20	101	80 - 120
7420172	Total Chemical Oxygen Demand (COD)	2021/06/24	99	80 - 120	102	80 - 120	ND, RDL=4.0	mg/L	16	20		
7420497	Total Ammonia-N	2021/06/22	95	75 - 125	97	80 - 120	ND, RDL=0.050	mg/L	NC	20		
7422155	Total Phosphorus	2021/06/23	100	80 - 120	99	80 - 120	ND, RDL=0.020	mg/L	1.5	20	96	80 - 120
7422240	Total Iron (Fe)	2021/06/22	NC	80 - 120	101	80 - 120	ND, RDL=0.02	mg/L	2.9	25		
7422366	Total Phosphorus	2021/06/23	95	80 - 120	98	80 - 120	ND, RDL=0.020	mg/L	NC	20	96	80 - 120
7426105	1,1,1,2-Tetrachloroethane	2021/06/23	91	70 - 130	100	70 - 130	ND, RDL=0.20	ug/L	NC	30		
7426105	1,1,1-Trichloroethane	2021/06/23	91	70 - 130	100	70 - 130	ND, RDL=0.10	ug/L	NC	30		
7426105	1,1,2,2-Tetrachloroethane	2021/06/23	89	70 - 130	96	70 - 130	ND, RDL=0.20	ug/L	NC	30		
7426105	1,1,2-Trichloroethane	2021/06/23	93	70 - 130	99	70 - 130	ND, RDL=0.20	ug/L	NC	30		
7426105	1,1-Dichloroethane	2021/06/23	81	70 - 130	89	70 - 130	ND, RDL=0.10	ug/L	NC	30		
7426105	1,1-Dichloroethylene	2021/06/23	90	70 - 130	97	70 - 130	ND, RDL=0.10	ug/L	NC	30		
7426105	1,2-Dichlorobenzene	2021/06/23	79	70 - 130	99	70 - 130	ND, RDL=0.20	ug/L	NC	30		
7426105	1,2-Dichloroethane	2021/06/23	91	70 - 130	96	70 - 130	ND, RDL=0.20	ug/L	NC	30		
7426105	1,2-Dichloropropane	2021/06/23	87	70 - 130	94	70 - 130	ND, RDL=0.10	ug/L	NC	30		
7426105	1,3-Dichlorobenzene	2021/06/23	76	70 - 130	98	70 - 130	ND, RDL=0.20	ug/L	NC	30		
7426105	1,4-Dichlorobenzene	2021/06/23	88	70 - 130	111	70 - 130	ND, RDL=0.20	ug/L	NC	30		
7426105	Acetone (2-Propanone)	2021/06/23	100	60 - 140	103	60 - 140	ND, RDL=10	ug/L	NC	30		
7426105	Benzene	2021/06/23	85	70 - 130	90	70 - 130	ND, RDL=0.10	ug/L	3.1	30		
7426105	Bromodichloromethane	2021/06/23	94	70 - 130	103	70 - 130	ND, RDL=0.10	ug/L	NC	30		
7426105	Bromoform	2021/06/23	91	70 - 130	101	70 - 130	ND, RDL=0.20	ug/L	NC	30		
7426105	Bromomethane	2021/06/23	66	60 - 140	66	60 - 140	ND, RDL=0.50	ug/L	NC	30		
7426105	Carbon Tetrachloride	2021/06/23	88	70 - 130	99	70 - 130	ND, RDL=0.10	ug/L	NC	30		



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City of Guelph
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Site Location: JUNE GW
Your P.O. #: 2100310
Sampler Initials: AS

QC Batch	Parameter	Date	Matrix Spike		SPIKED BLANK		Method Blank		RPD		QC Standard	
			% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits	% Recovery	QC Limits
7426105	Chlorobenzene	2021/06/23	84	70 - 130	96	70 - 130	ND, RDL=0.10	ug/L	NC	30		
7426105	Chloroform	2021/06/23	90	70 - 130	97	70 - 130	ND, RDL=0.10	ug/L	NC	30		
7426105	Chloromethane	2021/06/23	83	60 - 140	93	60 - 140	ND, RDL=0.50	ug/L	NC	30		
7426105	cis-1,2-Dichloroethylene	2021/06/23	89	70 - 130	96	70 - 130	ND, RDL=0.10	ug/L	NC	30		
7426105	cis-1,3-Dichloropropene	2021/06/23	91	70 - 130	99	70 - 130	ND, RDL=0.20	ug/L	NC	30		
7426105	Dibromochloromethane	2021/06/23	90	70 - 130	98	70 - 130	ND, RDL=0.20	ug/L	NC	30		
7426105	Ethylbenzene	2021/06/23	79	70 - 130	90	70 - 130	ND, RDL=0.10	ug/L	NC	30		
7426105	Ethylene Dibromide	2021/06/23	88	70 - 130	95	70 - 130	ND, RDL=0.20	ug/L	NC	30		
7426105	Methyl Ethyl Ketone (2-Butanone)	2021/06/23	89	60 - 140	94	60 - 140	ND, RDL=5.0	ug/L	NC	30		
7426105	Methyl Isobutyl Ketone	2021/06/23	94	70 - 130	98	70 - 130	ND, RDL=5.0	ug/L	NC	30		
7426105	Methyl t-butyl ether (MTBE)	2021/06/23	90	70 - 130	94	70 - 130	ND, RDL=0.20	ug/L	NC	30		
7426105	Methylene Chloride(Dichloromethane)	2021/06/23	89	70 - 130	96	70 - 130	ND, RDL=0.50	ug/L	NC	30		
7426105	o-Xylene	2021/06/23	81	70 - 130	91	70 - 130	ND, RDL=0.10	ug/L	NC	30		
7426105	p-m-Xylene	2021/06/23	82	70 - 130	94	70 - 130	ND, RDL=0.10	ug/L	8.4	30		
7426105	Styrene	2021/06/23	87	70 - 130	103	70 - 130	ND, RDL=0.20	ug/L	NC	30		
7426105	Tetrachloroethylene	2021/06/23	78	70 - 130	91	70 - 130	ND, RDL=0.10	ug/L	NC	30		
7426105	Toluene	2021/06/23	83	70 - 130	92	70 - 130	ND, RDL=0.20	ug/L	5.8	30		
7426105	Total Xylenes	2021/06/23					ND, RDL=0.10	ug/L	8.4	30		
7426105	trans-1,2-Dichloroethylene	2021/06/23	91	70 - 130	98	70 - 130	ND, RDL=0.10	ug/L	NC	30		
7426105	trans-1,3-Dichloropropene	2021/06/23	93	70 - 130	99	70 - 130	ND, RDL=0.20	ug/L	NC	30		
7426105	Trichloroethylene	2021/06/23	91	70 - 130	100	70 - 130	ND, RDL=0.10	ug/L	NC	30		
7426105	Trichlorofluoromethane (FREON 11)	2021/06/23	91	70 - 130	100	70 - 130	ND, RDL=0.20	ug/L	NC	30		
7426105	Vinyl Chloride	2021/06/23	82	70 - 130	88	70 - 130	ND, RDL=0.20	ug/L	NC	30		
7426683	1-Chloronaphthalene	2021/06/24	72	30 - 130	74	30 - 130	ND, RDL=1.0	ug/L	NC	40		
7426683	1-Methylnaphthalene	2021/06/24	100	30 - 130	104	30 - 130	ND, RDL=0.20	ug/L	NC	40		
7426683	2,3,4,5-Tetrachlorophenol	2021/06/24	88	10 - 130	102	10 - 130	ND, RDL=0.40	ug/L	NC	40		
7426683	2,3,4,6-Tetrachlorophenol	2021/06/24	101	10 - 130	102	10 - 130	ND, RDL=0.50	ug/L	NC	40		
7426683	2,3,4-Trichlorophenol	2021/06/24	94	10 - 130	95	10 - 130	ND, RDL=0.50	ug/L	NC	40		
7426683	2,3,5,6-Tetrachlorophenol	2021/06/24	106	10 - 130	112	10 - 130	ND, RDL=0.50	ug/L	NC	40		
7426683	2,3,5-Trichlorophenol	2021/06/24	99	10 - 130	105	10 - 130	ND, RDL=0.50	ug/L	NC	40		



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City of Guelph
Client Project #: WET/DRY GROUND WATER
Site Location: JUNE GW
Your P.O. #: 2100310
Sampler Initials: AS

QC Batch	Parameter	Date	Matrix Spike		SPIKED BLANK		Method Blank		RPD		QC Standard	
			% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits	% Recovery	QC Limits
7426683	2,4,5-Trichlorophenol	2021/06/24	107	10 - 130	111	10 - 130	ND, RDL=0.50	ug/L	NC	40		
7426683	2,4,6-Trichlorophenol	2021/06/24	97	10 - 130	98	10 - 130	ND, RDL=0.50	ug/L	NC	40		
7426683	2,4-Dichlorophenol	2021/06/24	95	10 - 130	98	10 - 130	ND, RDL=0.30	ug/L	NC	40		
7426683	2,4-Dimethylphenol	2021/06/24	68	10 - 130	65	10 - 130	ND, RDL=0.50	ug/L	NC	40		
7426683	2,4-Dinitrophenol	2021/06/24	97	10 - 130	99	10 - 130	ND, RDL=2.0	ug/L	NC	40		
7426683	2,4-Dinitrotoluene	2021/06/24	95	30 - 130	92	30 - 130	ND, RDL=0.50	ug/L	NC	40		
7426683	2,6-Dichlorophenol	2021/06/24	92	10 - 130	98	10 - 130	ND, RDL=0.50	ug/L	NC	40		
7426683	2,6-Dinitrotoluene	2021/06/24	89	30 - 130	90	30 - 130	ND, RDL=0.50	ug/L	NC	40		
7426683	2-Chloronaphthalene	2021/06/24	92	30 - 130	94	30 - 130	ND, RDL=0.50	ug/L	NC	40		
7426683	2-Chlorophenol	2021/06/24	84	10 - 130	89	10 - 130	ND, RDL=0.30	ug/L	NC	40		
7426683	2-Methylnaphthalene	2021/06/24	88	30 - 130	98	30 - 130	ND, RDL=0.20	ug/L	20	40		
7426683	4,6-Dinitro-2-methylphenol	2021/06/24	92	10 - 130	99	10 - 130	ND, RDL=2.0	ug/L	NC	40		
7426683	4-Bromophenyl phenyl ether	2021/06/24	99	30 - 130	101	30 - 130	ND, RDL=0.30	ug/L	NC	40		
7426683	4-Chloro-3-Methylphenol	2021/06/24	92	10 - 130	98	10 - 130	ND, RDL=0.50	ug/L	NC	40		
7426683	4-Chlorophenyl phenyl ether	2021/06/24	91	30 - 130	97	30 - 130	ND, RDL=0.50	ug/L	NC	40		
7426683	4-Nitrophenol	2021/06/24	17	10 - 130	26	10 - 130	ND, RDL=1.4	ug/L	NC	40		
7426683	5-Nitroacenaphthene	2021/06/24	91	30 - 130	90	30 - 130	ND, RDL=1.0	ug/L	NC	40		
7426683	Acenaphthene	2021/06/24	91	30 - 130	90	30 - 130	ND, RDL=0.20	ug/L	NC	40		
7426683	Acenaphthylene	2021/06/24	87	30 - 130	90	30 - 130	ND, RDL=0.20	ug/L	NC	40		
7426683	Anthracene	2021/06/24	87	30 - 130	87	30 - 130	ND, RDL=0.20	ug/L	NC	40		
7426683	Benzo(a)anthracene	2021/06/24	102	30 - 130	102	30 - 130	ND, RDL=0.20	ug/L	NC	40		
7426683	Benzo(a)pyrene	2021/06/24	89	30 - 130	88	30 - 130	ND, RDL=0.20	ug/L	NC	40		
7426683	Benzo(b,j)fluoranthene	2021/06/24	101	30 - 130	102	30 - 130	ND, RDL=0.20	ug/L	NC	40		
7426683	Benzo(g,h,i)perylene	2021/06/24	99	30 - 130	100	30 - 130	ND, RDL=0.20	ug/L	NC	40		
7426683	Benzo(k)fluoranthene	2021/06/24	105	30 - 130	106	30 - 130	ND, RDL=0.20	ug/L	NC	40		
7426683	Benzyl butyl phthalate	2021/06/24	102	30 - 130	104	30 - 130	ND, RDL=0.50	ug/L	NC	40		
7426683	Biphenyl	2021/06/24	87	30 - 130	89	30 - 130	ND, RDL=0.50	ug/L	NC	40		
7426683	Bis(2-chloroethoxy)methane	2021/06/24	81	30 - 130	84	30 - 130	ND, RDL=0.50	ug/L	NC	40		
7426683	Bis(2-chloroethyl)ether	2021/06/24	92	30 - 130	93	30 - 130	ND, RDL=0.50	ug/L	NC	40		
7426683	Bis(2-chloroisopropyl)ether	2021/06/24	84	30 - 130	78	30 - 130	ND, RDL=0.50	ug/L	NC	40		



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City of Guelph
Client Project #: WET/DRY GROUND WATER
Site Location: JUNE GW
Your P.O. #: 2100310
Sampler Initials: AS

QC Batch	Parameter	Date	Matrix Spike		SPIKED BLANK		Method Blank		RPD		QC Standard	
			% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits	% Recovery	QC Limits
7426683	Bis(2-ethylhexyl)phthalate	2021/06/24	100	30 - 130	101	30 - 130	ND, RDL=2.0	ug/L	NC	40		
7426683	Camphene	2021/06/24	65	30 - 130	97	30 - 130	ND, RDL=1.0	ug/L	NC	40		
7426683	Chrysene	2021/06/24	101	30 - 130	101	30 - 130	ND, RDL=0.20	ug/L	NC	40		
7426683	Dibenzo(a,h)anthracene	2021/06/24	100	30 - 130	102	30 - 130	ND, RDL=0.20	ug/L	NC	40		
7426683	Di-N-butyl phthalate	2021/06/24	101	30 - 130	100	30 - 130	ND, RDL=2.0	ug/L	NC	40		
7426683	di-n-octyl phthalate	2021/06/24	108	30 - 130	110	30 - 130	ND, RDL=0.80	ug/L	NC	40		
7426683	Diphenyl Ether	2021/06/24	92	30 - 130	95	30 - 130	ND, RDL=0.30	ug/L	NC	40		
7426683	Fluoranthene	2021/06/24	98	30 - 130	96	30 - 130	ND, RDL=0.20	ug/L	NC	40		
7426683	Fluorene	2021/06/24	95	30 - 130	94	30 - 130	ND, RDL=0.20	ug/L	NC	40		
7426683	Indeno(1,2,3-cd)pyrene	2021/06/24	101	30 - 130	104	30 - 130	ND, RDL=0.20	ug/L	NC	40		
7426683	Indole	2021/06/24	77	30 - 130	83	30 - 130	ND, RDL=1.0	ug/L	NC	40		
7426683	m/p-Cresol	2021/06/24	60	10 - 130	60	10 - 130	ND, RDL=0.50	ug/L	NC	40		
7426683	Naphthalene	2021/06/24	92	30 - 130	100	30 - 130	ND, RDL=0.20	ug/L	NC	40		
7426683	Nitrosodiphenylamine/Diphenylamine	2021/06/24	121	30 - 130	118	30 - 130	ND, RDL=1.0	ug/L	NC	40		
7426683	N-Nitroso-di-n-propylamine	2021/06/24	100	30 - 130	97	30 - 130	ND, RDL=0.50	ug/L	NC	40		
7426683	o-Cresol	2021/06/24	66	10 - 130	69	10 - 130	ND, RDL=0.50	ug/L	NC	40		
7426683	Pentachlorophenol	2021/06/24	73	10 - 130	76	10 - 130	ND, RDL=1.0	ug/L	NC	40		
7426683	Perylene	2021/06/24	98	30 - 130	97	30 - 130	ND, RDL=0.20	ug/L	NC	40		
7426683	Phenanthrene	2021/06/24	96	30 - 130	94	30 - 130	ND, RDL=0.20	ug/L	NC	40		
7426683	Phenol	2021/06/24	26	10 - 130	29	10 - 130	ND, RDL=0.50	ug/L	NC	40		



BV Labs Job #: C1G9221
Report Date: 2021/06/28

QUALITY ASSURANCE REPORT(CONT'D)

City of Guelph
Client Project #: WET/DRY GROUND WATER
Site Location: JUNE GW
Your P.O. #: 2100310
Sampler Initials: AS

QC Batch	Parameter	Date	Matrix Spike		SPIKED BLANK		Method Blank		RPD		QC Standard	
			% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits	% Recovery	QC Limits
7426683	Pyrene	2021/06/24	101	30 - 130	102	30 - 130	ND, RDL=0.20	ug/L	NC	40		
<p>N/A = Not Applicable</p> <p>Duplicate: Paired analysis of a separate portion of the same sample. Used to evaluate the variance in the measurement.</p> <p>Matrix Spike: A sample to which a known amount of the analyte of interest has been added. Used to evaluate sample matrix interference.</p> <p>QC Standard: A sample of known concentration prepared by an external agency under stringent conditions. Used as an independent check of method accuracy.</p> <p>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.</p> <p>Method Blank: A blank matrix containing all reagents used in the analytical procedure. Used to identify laboratory contamination.</p> <p>Surrogate: A pure or isotopically labeled compound whose behavior mirrors the analytes of interest. Used to evaluate extraction efficiency.</p> <p>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)</p> <p>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 $\leq 2 \times$ RDL).</p>												



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BV Labs Job #: C1G9221

Report Date: 2021/06/28

City of Guelph

Client Project #: WET/DRY GROUND WATER

Site Location: JUNE GW

Your P.O. #: 2100310

Sampler Initials: AS

VALIDATION SIGNATURE PAGE

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

Anastassia Hamanov, Scientific Specialist

Ewa Pranjić, M.Sc., C.Chem, Scientific Specialist

BV Labs 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 Signature Page.



Your P.O. #: 2100310
Your Project #: Wet/Dry Ground Water
Site Location: JUNE GW
Your C.O.C. #: 829801-03-01

Attention: Andrew Shouldice

City of Guelph
Eastview Landfill
186 Eastview Road
Guelph, ON
CANADA N1E 1Z6

Report Date: 2021/07/05
Report #: R6705347
Version: 1 - Final

CERTIFICATE OF ANALYSIS

BV LABS JOB #: C1H5350

Received: 2021/06/24, 15:50

Sample Matrix: Water
Samples Received: 1

Analyses	Date		Laboratory Method	Analytical Method
	Quantity	Date Extracted		
ABN Compounds in Water by GC/MS	1	2021/07/02	2021/07/03 CAM SOP-00301	EPA 8270 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, MELCC, EPA, APHA.

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.



Your P.O. #: 2100310
Your Project #: Wet/Dry Ground Water
Site Location: JUNE GW
Your C.O.C. #: 829801-03-01

Attention: Andrew Shouldice

City of Guelph
Eastview Landfill
186 Eastview Road
Guelph, ON
CANADA N1E 1Z6

Report Date: 2021/07/05
Report #: R6705347
Version: 1 - Final

CERTIFICATE OF ANALYSIS

BV LABS JOB #: C1H5350

Received: 2021/06/24, 15:50

Encryption Key

Heba Gamal
Project Manager
05 Jul 2021 16:58:50

Please direct all questions regarding this Certificate of Analysis to your Project Manager.
James Aspin, Senior Project Manager
Email: James.Aspin@bureauveritas.com
Phone# (905)817-5771

=====

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BV Labs Job #: C1H5350
Report Date: 2021/07/05

City of Guelph
Client Project #: Wet/Dry Ground Water
Site Location: JUNE GW
Your P.O. #: 2100310
Sampler Initials: AS

SEMI-VOLATILE ORGANICS BY GC-MS (WATER)

BV Labs ID			PXV161			
Sampling Date			2021/06/23			
COC Number			829801-03-01			
	UNITS	Criteria	10	RDL	MDL	QC Batch
Semivolatiles Organics						
Acenaphthene	ug/L	-	ND	0.20	0.050	7441560
Acenaphthylene	ug/L	-	ND	0.20	0.050	7441560
Anthracene	ug/L	-	ND	0.20	0.050	7441560
Benzo(a)anthracene	ug/L	-	ND	0.20	0.050	7441560
Benzo(a)pyrene	ug/L	0.01	ND (1)	0.20	0.050	7441560
Benzo(b,j)fluoranthene	ug/L	-	ND	0.20	0.10	7441560
Benzo(g,h,i)perylene	ug/L	-	ND	0.20	0.050	7441560
Benzo(k)fluoranthene	ug/L	-	ND	0.20	0.050	7441560
1-Chloronaphthalene	ug/L	-	ND	1.0	0.10	7441560
2-Chloronaphthalene	ug/L	-	ND	0.50	0.050	7441560
Chrysene	ug/L	-	ND	0.20	0.050	7441560
Dibenzo(a,h)anthracene	ug/L	-	ND	0.20	0.050	7441560
Fluoranthene	ug/L	-	ND	0.20	0.050	7441560
Fluorene	ug/L	-	ND	0.20	0.10	7441560
Indeno(1,2,3-cd)pyrene	ug/L	-	ND	0.20	0.050	7441560
1-Methylnaphthalene	ug/L	-	ND	0.20	0.10	7441560
2-Methylnaphthalene	ug/L	-	ND	0.20	0.10	7441560
Naphthalene	ug/L	-	ND	0.20	0.10	7441560
5-Nitroacenaphthene	ug/L	-	ND	1.0	0.10	7441560
Perylene	ug/L	-	ND	0.20	0.10	7441560
Phenanthrene	ug/L	-	ND	0.20	0.050	7441560
Pyrene	ug/L	-	ND	0.20	0.050	7441560
2-Chlorophenol	ug/L	-	ND	0.30	0.10	7441560
4-Chloro-3-Methylphenol	ug/L	-	ND	0.50	0.10	7441560
m/p-Cresol	ug/L	-	ND	0.50	0.20	7441560
o-Cresol	ug/L	-	ND	0.50	0.10	7441560
2,4-Dichlorophenol	ug/L	900	ND	0.30	0.10	7441560
2,6-Dichlorophenol	ug/L	-	ND	0.50	0.20	7441560
RDL = Reportable Detection Limit QC Batch = Quality Control Batch Criteria: Ontario Regulation 169/03 Criteria A = Maximum Acceptable Criteria B = Interim Maximum Criteria C = Chemical/Physical Objectives [A/O] (Made under the Ontario Safe Drinking Water Act, 2002) ND = Not detected (1) RDL exceeds criteria						



BV Labs Job #: C1H5350
Report Date: 2021/07/05

City of Guelph
Client Project #: Wet/Dry Ground Water
Site Location: JUNE GW
Your P.O. #: 2100310
Sampler Initials: AS

SEMI-VOLATILE ORGANICS BY GC-MS (WATER)

BV Labs ID			PXV161			
Sampling Date			2021/06/23			
COC Number			829801-03-01			
	UNITS	Criteria	10	RDL	MDL	QC Batch
2,4-Dimethylphenol	ug/L	-	ND	0.50	0.10	7441560
2,4-Dinitrophenol	ug/L	-	ND	2.0	0.20	7441560
4,6-Dinitro-2-methylphenol	ug/L	-	ND	2.0	0.50	7441560
4-Nitrophenol	ug/L	-	ND	1.4	0.10	7441560
Pentachlorophenol	ug/L	60	ND	1.0	0.20	7441560
Phenol	ug/L	-	ND	0.50	0.10	7441560
2,3,4,5-Tetrachlorophenol	ug/L	-	ND	0.40	0.10	7441560
2,3,4,6-Tetrachlorophenol	ug/L	100	ND	0.50	0.20	7441560
2,3,5,6-Tetrachlorophenol	ug/L	-	ND	0.50	0.20	7441560
2,3,4-Trichlorophenol	ug/L	-	ND	0.50	0.10	7441560
2,3,5-Trichlorophenol	ug/L	-	ND	0.50	0.10	7441560
2,4,5-Trichlorophenol	ug/L	-	ND	0.50	0.20	7441560
2,4,6-Trichlorophenol	ug/L	5	ND	0.50	0.10	7441560
Benzyl butyl phthalate	ug/L	-	ND	0.50	0.10	7441560
Biphenyl	ug/L	-	ND	0.50	0.10	7441560
Bis(2-chloroethyl)ether	ug/L	-	ND	0.50	0.10	7441560
Bis(2-chloroethoxy)methane	ug/L	-	ND	0.50	0.10	7441560
Bis(2-chloroisopropyl)ether	ug/L	-	ND	0.50	0.10	7441560
Bis(2-ethylhexyl)phthalate	ug/L	-	ND	2.0	0.10	7441560
4-Bromophenyl phenyl ether	ug/L	-	ND	0.30	0.10	7441560
Camphene	ug/L	-	ND	1.0	0.10	7441560
4-Chlorophenyl phenyl ether	ug/L	-	ND	0.50	0.10	7441560
Di-N-butyl phthalate	ug/L	-	ND	2.0	0.10	7441560
di-n-octyl phthalate	ug/L	-	ND	0.80	0.10	7441560
2,4-Dinitrotoluene	ug/L	-	ND	0.50	0.10	7441560
2,6-Dinitrotoluene	ug/L	-	ND	0.50	0.10	7441560
Diphenyl Ether	ug/L	-	ND	0.30	0.10	7441560
Indole	ug/L	-	ND	1.0	0.20	7441560
Nitrosodiphenylamine/Diphenylamine	ug/L	-	ND	1.0	0.10	7441560
RDL = Reportable Detection Limit QC Batch = Quality Control Batch Criteria: Ontario Regulation 169/03 Criteria A = Maximum Acceptable Criteria B = Interim Maximum Criteria C = Chemical/Physical Objectives [A/O] (Made under the Ontario Safe Drinking Water Act, 2002) ND = Not detected						



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BV Labs Job #: C1H5350
Report Date: 2021/07/05

City of Guelph
Client Project #: Wet/Dry Ground Water
Site Location: JUNE GW
Your P.O. #: 2100310
Sampler Initials: AS

SEMI-VOLATILE ORGANICS BY GC-MS (WATER)

BV Labs ID			PXV161			
Sampling Date			2021/06/23			
COC Number			829801-03-01			
	UNITS	Criteria	10	RDL	MDL	QC Batch
N-Nitroso-di-n-propylamine	ug/L	-	ND	0.50	0.10	7441560
Surrogate Recovery (%)						
2,4,6-Tribromophenol	%	-	87			7441560
2-Fluorobiphenyl	%	-	67			7441560
2-Fluorophenol	%	-	49			7441560
D14-Terphenyl	%	-	85			7441560
D5-Nitrobenzene	%	-	79			7441560
D5-Phenol	%	-	34			7441560
RDL = Reportable Detection Limit QC Batch = Quality Control Batch Criteria: Ontario Regulation 169/03 Criteria A = Maximum Acceptable Criteria B = Interim Maximum Criteria C = Chemical/Physical Objectives [A/O] (Made under the Ontario Safe Drinking Water Act, 2002) ND = Not detected						



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BV Labs Job #: C1H5350

Report Date: 2021/07/05

City of Guelph

Client Project #: Wet/Dry Ground Water

Site Location: JUNE GW

Your P.O. #: 2100310

Sampler Initials: AS

GENERAL COMMENTS

Results relate only to the items tested.



BV Labs Job #: C1H5350
Report Date: 2021/07/05

QUALITY ASSURANCE REPORT

City of Guelph
Client Project #: Wet/Dry Ground Water
Site Location: JUNE GW
Your P.O. #: 2100310
Sampler Initials: AS

QC Batch	Parameter	Date	Matrix Spike		SPIKED BLANK		Method Blank		RPD	
			% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits
7441560	2,4,6-Tribromophenol	2021/07/03	94	10 - 130	84	10 - 130	86	%		
7441560	2-Fluorobiphenyl	2021/07/03	64	30 - 130	59	30 - 130	79	%		
7441560	2-Fluorophenol	2021/07/03	41	10 - 130	48	10 - 130	52	%		
7441560	D14-Terphenyl	2021/07/03	95	30 - 130	92	30 - 130	93	%		
7441560	D5-Nitrobenzene	2021/07/03	73	30 - 130	73	30 - 130	82	%		
7441560	D5-Phenol	2021/07/03	34	10 - 130	31	10 - 130	35	%		
7441560	1-Chloronaphthalene	2021/07/03	63	30 - 130	57	30 - 130	ND, RDL=1.0	ug/L		
7441560	1-Methylnaphthalene	2021/07/03	80	30 - 130	72	30 - 130	ND, RDL=0.20	ug/L		
7441560	2,3,4,5-Tetrachlorophenol	2021/07/03	104	10 - 130	98	10 - 130	ND, RDL=0.40	ug/L		
7441560	2,3,4,6-Tetrachlorophenol	2021/07/03	101	10 - 130	94	10 - 130	ND, RDL=0.50	ug/L		
7441560	2,3,4-Trichlorophenol	2021/07/03	95	10 - 130	90	10 - 130	ND, RDL=0.50	ug/L		
7441560	2,3,5,6-Tetrachlorophenol	2021/07/03	104	10 - 130	103	10 - 130	ND, RDL=0.50	ug/L		
7441560	2,3,5-Trichlorophenol	2021/07/03	103	10 - 130	94	10 - 130	ND, RDL=0.50	ug/L		
7441560	2,4,5-Trichlorophenol	2021/07/03	103	10 - 130	98	10 - 130	ND, RDL=0.50	ug/L		
7441560	2,4,6-Trichlorophenol	2021/07/03	93	10 - 130	93	10 - 130	ND, RDL=0.50	ug/L		
7441560	2,4-Dichlorophenol	2021/07/03	80	10 - 130	73	10 - 130	ND, RDL=0.30	ug/L		
7441560	2,4-Dimethylphenol	2021/07/03	66	10 - 130	68	10 - 130	ND, RDL=0.50	ug/L		
7441560	2,4-Dinitrophenol	2021/07/03	96	10 - 130	91	10 - 130	ND, RDL=2.0	ug/L		
7441560	2,4-Dinitrotoluene	2021/07/03	98	30 - 130	89	30 - 130	ND, RDL=0.50	ug/L		
7441560	2,6-Dichlorophenol	2021/07/03	83	10 - 130	79	10 - 130	ND, RDL=0.50	ug/L		
7441560	2,6-Dinitrotoluene	2021/07/03	89	30 - 130	83	30 - 130	ND, RDL=0.50	ug/L		
7441560	2-Chloronaphthalene	2021/07/03	78	30 - 130	76	30 - 130	ND, RDL=0.50	ug/L		
7441560	2-Chlorophenol	2021/07/03	78	10 - 130	76	10 - 130	ND, RDL=0.30	ug/L		
7441560	2-Methylnaphthalene	2021/07/03	72	30 - 130	63	30 - 130	ND, RDL=0.20	ug/L		
7441560	4,6-Dinitro-2-methylphenol	2021/07/03	102	10 - 130	90	10 - 130	ND, RDL=2.0	ug/L		
7441560	4-Bromophenyl phenyl ether	2021/07/03	89	30 - 130	82	30 - 130	ND, RDL=0.30	ug/L		
7441560	4-Chloro-3-Methylphenol	2021/07/03	102	10 - 130	88	10 - 130	ND, RDL=0.50	ug/L		
7441560	4-Chlorophenyl phenyl ether	2021/07/03	79	30 - 130	77	30 - 130	ND, RDL=0.50	ug/L		
7441560	4-Nitrophenol	2021/07/03	38	10 - 130	43	10 - 130	ND, RDL=1.4	ug/L		
7441560	5-Nitroacenaphthene	2021/07/03	87	30 - 130	84	30 - 130	ND, RDL=1.0	ug/L		



BV Labs Job #: C1H5350
Report Date: 2021/07/05

QUALITY ASSURANCE REPORT(CONT'D)

City of Guelph
Client Project #: Wet/Dry Ground Water
Site Location: JUNE GW
Your P.O. #: 2100310
Sampler Initials: AS

QC Batch	Parameter	Date	Matrix Spike		SPIKED BLANK		Method Blank		RPD	
			% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits
7441560	Acenaphthene	2021/07/03	83	30 - 130	77	30 - 130	ND, RDL=0.20	ug/L		
7441560	Acenaphthylene	2021/07/03	80	30 - 130	78	30 - 130	ND, RDL=0.20	ug/L		
7441560	Anthracene	2021/07/03	81	30 - 130	82	30 - 130	ND, RDL=0.20	ug/L		
7441560	Benzo(a)anthracene	2021/07/03	96	30 - 130	99	30 - 130	ND, RDL=0.20	ug/L		
7441560	Benzo(a)pyrene	2021/07/03	83	30 - 130	87	30 - 130	ND, RDL=0.20	ug/L		
7441560	Benzo(b,j)fluoranthene	2021/07/03	97	30 - 130	96	30 - 130	ND, RDL=0.20	ug/L		
7441560	Benzo(g,h,i)perylene	2021/07/03	95	30 - 130	99	30 - 130	ND, RDL=0.20	ug/L		
7441560	Benzo(k)fluoranthene	2021/07/03	97	30 - 130	95	30 - 130	ND, RDL=0.20	ug/L		
7441560	Benzyl butyl phthalate	2021/07/03	92	30 - 130	90	30 - 130	ND, RDL=0.50	ug/L		
7441560	Biphenyl	2021/07/03	75	30 - 130	75	30 - 130	ND, RDL=0.50	ug/L		
7441560	Bis(2-chloroethoxy)methane	2021/07/03	67	30 - 130	65	30 - 130	ND, RDL=0.50	ug/L		
7441560	Bis(2-chloroethyl)ether	2021/07/03	74	30 - 130	71	30 - 130	ND, RDL=0.50	ug/L		
7441560	Bis(2-chloroisopropyl)ether	2021/07/03	64	30 - 130	62	30 - 130	ND, RDL=0.50	ug/L		
7441560	Bis(2-ethylhexyl)phthalate	2021/07/03	88	30 - 130	89	30 - 130	ND, RDL=2.0	ug/L	NC	40
7441560	Camphene	2021/07/03	69	30 - 130	57	30 - 130	ND, RDL=1.0	ug/L		
7441560	Chrysene	2021/07/03	93	30 - 130	98	30 - 130	ND, RDL=0.20	ug/L		
7441560	Dibenzo(a,h)anthracene	2021/07/03	100	30 - 130	104	30 - 130	ND, RDL=0.20	ug/L		
7441560	Di-N-butyl phthalate	2021/07/03	91	30 - 130	89	30 - 130	ND, RDL=2.0	ug/L	NC	40
7441560	di-n-octyl phthalate	2021/07/03	96	30 - 130	89	30 - 130	ND, RDL=0.80	ug/L		
7441560	Diphenyl Ether	2021/07/03	74	30 - 130	73	30 - 130	ND, RDL=0.30	ug/L		
7441560	Fluoranthene	2021/07/03	91	30 - 130	91	30 - 130	ND, RDL=0.20	ug/L		
7441560	Fluorene	2021/07/03	89	30 - 130	85	30 - 130	ND, RDL=0.20	ug/L		
7441560	Indeno(1,2,3-cd)pyrene	2021/07/03	101	30 - 130	104	30 - 130	ND, RDL=0.20	ug/L		
7441560	Indole	2021/07/03	41	30 - 130	68	30 - 130	ND, RDL=1.0	ug/L		
7441560	m/p-Cresol	2021/07/03	71	10 - 130	65	10 - 130	ND, RDL=0.50	ug/L		
7441560	Naphthalene	2021/07/03	80	30 - 130	73	30 - 130	ND, RDL=0.20	ug/L		
7441560	Nitrosodiphenylamine/Diphenylamine	2021/07/03	105	30 - 130	106	30 - 130	ND, RDL=1.0	ug/L		
7441560	N-Nitroso-di-n-propylamine	2021/07/03	81	30 - 130	80	30 - 130	ND, RDL=0.50	ug/L		
7441560	o-Cresol	2021/07/03	70	10 - 130	70	10 - 130	ND, RDL=0.50	ug/L		
7441560	Pentachlorophenol	2021/07/03	81	10 - 130	70	10 - 130	ND, RDL=1.0	ug/L		



BV Labs Job #: C1H5350
Report Date: 2021/07/05

QUALITY ASSURANCE REPORT(CONT'D)

City of Guelph
Client Project #: Wet/Dry Ground Water
Site Location: JUNE GW
Your P.O. #: 2100310
Sampler Initials: AS

QC Batch	Parameter	Date	Matrix Spike		SPIKED BLANK		Method Blank		RPD	
			% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits
7441560	Perylene	2021/07/03	93	30 - 130	96	30 - 130	ND, RDL=0.20	ug/L		
7441560	Phenanthrene	2021/07/03	90	30 - 130	89	30 - 130	ND, RDL=0.20	ug/L		
7441560	Phenol	2021/07/03	37	10 - 130	36	10 - 130	ND, RDL=0.50	ug/L		
7441560	Pyrene	2021/07/03	97	30 - 130	94	30 - 130	ND, RDL=0.20	ug/L		

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 (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 $\leq 2 \times \text{RDL}$).



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BV Labs Job #: C1H5350

Report Date: 2021/07/05

City of Guelph

Client Project #: Wet/Dry Ground Water

Site Location: JUNE GW

Your P.O. #: 2100310

Sampler Initials: AS

VALIDATION SIGNATURE PAGE

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

Anastassia Hamanov, Scientific Specialist

BV Labs 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 Signature Page.

**Attention: Amy Spence**

City of Guelph
 Solid Waste RIC (Wet/Dry)
 110 Dunlop Drive
 Guelph, ON
 CANADA N1H 6H8

Your P.O. #: 2100310
 Your Project #: WET / DRY SURFACE WATER
 Site#: 110 DUNLOP DR
 Site Location: WET/DRY SW JULY 2021/15MM RAIN EVENT
 Your C.O.C. #: 785154-05-01

Report Date: 2021/07/19
 Report #: R6724880
 Version: 1 - Final

CERTIFICATE OF ANALYSIS**BV LABS JOB #: C1J1371****Received: 2021/07/09, 16:21**

Sample Matrix: Water
 # Samples Received: 2

Analyses	Date		Date Analyzed	Laboratory Method	Analytical Method
	Quantity	Extracted			
Alkalinity	2	N/A	2021/07/13	CAM SOP-00448	SM 23 2320 B m
Biochemical Oxygen Demand (BOD)	2	2021/07/12	2021/07/17	CAM SOP-00427	SM 23 5210B m
Chloride by Automated Colourimetry	2	N/A	2021/07/13	CAM SOP-00463	SM 23 4500-Cl E m
Chemical Oxygen Demand	2	N/A	2021/07/13	CAM SOP-00416	SM 23 5220 D m
Conductivity	2	N/A	2021/07/13	CAM SOP-00414	SM 23 2510 m
Total Metals Analysis by ICPMS	2	N/A	2021/07/14	CAM SOP-00447	EPA 6020B m
Total Ammonia-N	2	N/A	2021/07/13	CAM SOP-00441	USGS I-2522-90 m
Nitrate (NO3) and Nitrite (NO2) in Water (1)	2	N/A	2021/07/13	CAM SOP-00440	SM 23 4500-NO3/NO2B
pH	2	2021/07/13	2021/07/13	CAM SOP-00413	SM 4500H+ B m
Phenols (4AAP)	2	N/A	2021/07/12	CAM SOP-00444	OMOE E3179 m
Sulphate by Automated Colourimetry	2	N/A	2021/07/13	CAM SOP-00464	EPA 375.4 m
Total Kjeldahl Nitrogen in Water	2	2021/07/12	2021/07/13	CAM SOP-00938	OMOE E3516 m
Total Phosphorus (Colourimetric)	2	2021/07/13	2021/07/14	CAM SOP-00407	SM 23 4500 P B H m
Low Level Total Suspended Solids	2	2021/07/14	2021/07/14	CAM SOP-00428	SM 23 2540D 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, MELCC, EPA, APHA.

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. #: 2100310
Your Project #: WET / DRY SURFACE WATER
Site#: 110 DUNLOP DR
Site Location: WET/DRY SW JULY 2021/15MM RAIN EVENT
Your C.O.C. #: 785154-05-01

Attention: Amy Spence

City of Guelph
Solid Waste RIC (Wet/Dry)
110 Dunlop Drive
Guelph, ON
CANADA N1H 6H8

Report Date: 2021/07/19
Report #: R6724880
Version: 1 - Final

CERTIFICATE OF ANALYSIS

BV LABS JOB #: C1J1371

Received: 2021/07/09, 16:21

dilution methods.

Results relate to samples tested. When sampling is not conducted by Bureau Veritas, results relate to the supplied samples tested.

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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.

Encryption Key

Hongmei Zhao (Grace)
Project Manager
19 Jul 2021 09:28:31

Please direct all questions regarding this Certificate of Analysis to your Project Manager.

James Aspin, Senior Project Manager

Email: James.Aspin@bureauveritas.com

Phone# (905)817-5771

=====

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VERITAS

BV Labs Job #: C1J1371

Report Date: 2021/07/19

City of Guelph

Client Project #: WET / DRY SURFACE WATER

Site Location: WET/DRY SW JULY 2021/15MM RAIN EVENT

Your P.O. #: 2100310

Sampler Initials: AS

RESULTS OF ANALYSES OF WATER

BV Labs ID			QBE725			QBE725		
Sampling Date			2021/07/09			2021/07/09		
COC Number			785154-05-01			785154-05-01		
	UNITS	Criteria	TP1-OUT	RDL	QC Batch	TP1-OUT Lab-Dup	RDL	QC Batch
Inorganics								
Total Ammonia-N	mg/L	-	0.27	0.050	7457663			
Total BOD	mg/L	-	ND	2	7457858	ND	2	7457858
Total Chemical Oxygen Demand (COD)	mg/L	-	29	4.0	7457740			
Conductivity	umho/cm	-	340	1.0	7458806			
Total Kjeldahl Nitrogen (TKN)	mg/L	-	0.73	0.10	7457707			
pH	pH	6.5:8.5	7.61		7458805			
Phenols-4AAP	mg/L	0.001	ND	0.0010	7456633			
Total Phosphorus	mg/L	0.01	0.13	0.020	7459318			
Total Suspended Solids	mg/L	-	4	1	7455980			
Dissolved Sulphate (SO ₄)	mg/L	-	39	1.0	7458824			
Alkalinity (Total as CaCO ₃)	mg/L	-	110	1.0	7458801			
Dissolved Chloride (Cl ⁻)	mg/L	-	18	1.0	7458809			
Nitrite (N)	mg/L	-	0.020	0.010	7458182			
Nitrate (N)	mg/L	-	ND	0.10	7458182			
Nitrate + Nitrite (N)	mg/L	-	ND	0.10	7458182			
RDL = Reportable Detection Limit QC Batch = Quality Control Batch Lab-Dup = Laboratory Initiated Duplicate Criteria: Ontario Provincial Water Quality Objectives Ref. to MOEE Water Management document dated Feb.1999 ND = Not detected								



BUREAU
VERITAS

BV Labs Job #: C1J1371

Report Date: 2021/07/19

City of Guelph

Client Project #: WET / DRY SURFACE WATER

Site Location: WET/DRY SW JULY 2021/15MM RAIN EVENT

Your P.O. #: 2100310

Sampler Initials: AS

RESULTS OF ANALYSES OF WATER

BV Labs ID			QBE726		
Sampling Date			2021/07/09		
COC Number			785154-05-01		
	UNITS	Criteria	EPTSO1	RDL	QC Batch
Inorganics					
Total Ammonia-N	mg/L	-	0.094	0.050	7457663
Total BOD	mg/L	-	ND	2	7457858
Total Chemical Oxygen Demand (COD)	mg/L	-	7.7	4.0	7457740
Conductivity	umho/cm	-	740	1.0	7458806
Total Kjeldahl Nitrogen (TKN)	mg/L	-	0.32	0.10	7457707
pH	pH	6.5:8.5	7.89		7458805
Phenols-4AAP	mg/L	0.001	ND	0.0010	7456633
Total Phosphorus	mg/L	0.01	ND (1)	0.020	7459318
Total Suspended Solids	mg/L	-	3	1	7455980
Dissolved Sulphate (SO ₄)	mg/L	-	16	1.0	7458824
Alkalinity (Total as CaCO ₃)	mg/L	-	270	1.0	7458801
Dissolved Chloride (Cl ⁻)	mg/L	-	72	1.0	7458809
Nitrite (N)	mg/L	-	0.065	0.010	7458182
Nitrate (N)	mg/L	-	2.14	0.10	7458182
Nitrate + Nitrite (N)	mg/L	-	2.21	0.10	7458182
RDL = Reportable Detection Limit					
QC Batch = Quality Control Batch					
Criteria: Ontario Provincial Water Quality Objectives					
Ref. to MOEE Water Management document dated Feb.1999					
ND = Not detected					
(1) RDL exceeds criteria					



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VERITAS

BV Labs Job #: C1J1371

Report Date: 2021/07/19

City of Guelph

Client Project #: WET / DRY SURFACE WATER

Site Location: WET/DRY SW JULY 2021/15MM RAIN EVENT

Your P.O. #: 2100310

Sampler Initials: AS

ELEMENTS BY ATOMIC SPECTROSCOPY (WATER)

BV Labs ID			QBE725	QBE726		
Sampling Date			2021/07/09	2021/07/09		
COC Number			785154-05-01	785154-05-01		
	UNITS	Criteria	TP1-OUT	EPTS01	RDL	QC Batch
Metals						
Total Boron (B)	mg/L	0.2	0.041	0.015	0.010	7458756
Total Calcium (Ca)	mg/L	-	52	81	0.20	7458756
Total Iron (Fe)	mg/L	0.3	0.97	ND	0.10	7458756
Total Magnesium (Mg)	mg/L	-	3.9	23	0.050	7458756
Total Potassium (K)	mg/L	-	1.8	1.6	0.20	7458756
Total Sodium (Na)	mg/L	-	15	42	0.10	7458756
Total Zinc (Zn)	mg/L	0.03	0.013	0.071	0.0050	7458756
RDL = Reportable Detection Limit						
QC Batch = Quality Control Batch						
Criteria: Ontario Provincial Water Quality Objectives						
Ref. to MOEE Water Management document dated Feb.1999						
ND = Not detected						



BUREAU
VERITAS

BV Labs Job #: C1J1371

Report Date: 2021/07/19

City of Guelph

Client Project #: WET / DRY SURFACE WATER

Site Location: WET/DRY SW JULY 2021/15MM RAIN EVENT

Your P.O. #: 2100310

Sampler Initials: AS

GENERAL COMMENTS

Results relate only to the items tested.



BV Labs Job #: C1J1371
Report Date: 2021/07/19

QUALITY ASSURANCE REPORT

City of Guelph
Client Project #: WET / DRY SURFACE WATER
Site Location: WET/DRY SW JULY 2021/15MM RAIN EVENT
Your P.O. #: 2100310
Sampler Initials: AS

QC Batch	Parameter	Date	Matrix Spike		SPIKED BLANK		Method Blank		RPD		QC Standard	
			% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits	% Recovery	QC Limits
7455980	Total Suspended Solids	2021/07/14					ND, RDL=1	mg/L	5.7	25	96	85 - 115
7456633	Phenols-4AAP	2021/07/12	95	80 - 120	97	80 - 120	ND, RDL=0.0010	mg/L	NC	20		
7457663	Total Ammonia-N	2021/07/13	99	75 - 125	101	80 - 120	ND, RDL=0.050	mg/L	1.8	20		
7457707	Total Kjeldahl Nitrogen (TKN)	2021/07/13	103	80 - 120	97	80 - 120	ND, RDL=0.10	mg/L	7.7	20	100	80 - 120
7457740	Total Chemical Oxygen Demand (COD)	2021/07/13	102	80 - 120	101	80 - 120	ND, RDL=4.0	mg/L	7.3	20		
7457858	Total BOD	2021/07/17					ND, RDL=2	mg/L	NC	30	99	80 - 120
7458182	Nitrate (N)	2021/07/13	102	80 - 120	99	80 - 120	ND, RDL=0.10	mg/L	NC	20		
7458182	Nitrite (N)	2021/07/13	108	80 - 120	104	80 - 120	ND, RDL=0.010	mg/L	NC	20		
7458756	Total Boron (B)	2021/07/14	93	80 - 120	93	80 - 120	ND, RDL=0.010	mg/L	0.32	20		
7458756	Total Calcium (Ca)	2021/07/14	95	80 - 120	97	80 - 120	ND, RDL=0.20	mg/L	2.3	20		
7458756	Total Iron (Fe)	2021/07/14	100	80 - 120	99	80 - 120	ND, RDL=0.10	mg/L	2.2	20		
7458756	Total Magnesium (Mg)	2021/07/14	101	80 - 120	100	80 - 120	ND, RDL=0.050	mg/L	1.1	20		
7458756	Total Potassium (K)	2021/07/14	104	80 - 120	104	80 - 120	ND, RDL=0.20	mg/L	2.3	20		
7458756	Total Sodium (Na)	2021/07/14	NC	80 - 120	101	80 - 120	ND, RDL=0.10	mg/L	1.1	20		
7458756	Total Zinc (Zn)	2021/07/14	100	80 - 120	103	80 - 120	ND, RDL=0.0050	mg/L	3.0	20		
7458801	Alkalinity (Total as CaCO ₃)	2021/07/13			97	85 - 115	ND, RDL=1.0	mg/L	0.078	20		
7458805	pH	2021/07/13			102	98 - 103			0.028	N/A		
7458806	Conductivity	2021/07/13			102	85 - 115	ND, RDL=1.0	umho/cm	0	25		
7458809	Dissolved Chloride (Cl ⁻)	2021/07/13	113	80 - 120	101	80 - 120	ND, RDL=1.0	mg/L	3.6	20		
7458824	Dissolved Sulphate (SO ₄)	2021/07/13	NC	75 - 125	99	80 - 120	ND, RDL=1.0	mg/L	1.3	20		



BV Labs Job #: C1J1371
Report Date: 2021/07/19

QUALITY ASSURANCE REPORT(CONT'D)

City of Guelph
Client Project #: WET / DRY SURFACE WATER
Site Location: WET/DRY SW JULY 2021/15MM RAIN EVENT
Your P.O. #: 2100310
Sampler Initials: AS

QC Batch	Parameter	Date	Matrix Spike		SPIKED BLANK		Method Blank		RPD		QC Standard	
			% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits	% Recovery	QC Limits
7459318	Total Phosphorus	2021/07/14	101	80 - 120	100	80 - 120	ND, RDL=0.020	mg/L	NC	20	102	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 $\leq 2 \times$ RDL).



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VERITAS

BV Labs Job #: C1J1371

Report Date: 2021/07/19

City of Guelph

Client Project #: WET / DRY SURFACE WATER

Site Location: WET/DRY SW JULY 2021/15MM RAIN EVENT

Your P.O. #: 2100310

Sampler Initials: AS

VALIDATION SIGNATURE PAGE

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

Brad Newman, B.Sc., C.Chem., Scientific Service Specialist

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Your P.O. #: 2100310
 Your Project #: WET / DRY SURFACE WATER AUG 21
 Site Location: 110 DUNLOP DR
 Your C.O.C. #: 828919-01-01

Attention: Amy Spence

City of Guelph
 Solid Waste RIC (Wet/Dry)
 110 Dunlop Drive
 Guelph, ON
 CANADA N1H 6H8

Report Date: 2021/09/03
 Report #: R6796259
 Version: 1 - Final

CERTIFICATE OF ANALYSIS

BV LABS JOB #: C106217

Received: 2021/08/27, 16:18

Sample Matrix: Water
 # Samples Received: 2

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Analytical Method
Alkalinity	2	N/A	2021/08/31	CAM SOP-00448	SM 23 2320 B m
Biochemical Oxygen Demand (BOD)	2	2021/08/28	2021/09/02	CAM SOP-00427	SM 23 5210B m
Chloride by Automated Colourimetry	2	N/A	2021/08/31	CAM SOP-00463	SM 23 4500-Cl E m
Chemical Oxygen Demand	2	N/A	2021/09/01	CAM SOP-00416	SM 23 5220 D m
Conductivity	2	N/A	2021/08/31	CAM SOP-00414	SM 23 2510 m
Total Metals Analysis by ICPMS	2	N/A	2021/09/02	CAM SOP-00447	EPA 6020B m
Total Ammonia-N	2	N/A	2021/09/01	CAM SOP-00441	USGS I-2522-90 m
Nitrate (NO3) and Nitrite (NO2) in Water (1)	2	N/A	2021/09/01	CAM SOP-00440	SM 23 4500-NO3I/NO2B
pH	2	2021/08/30	2021/08/31	CAM SOP-00413	SM 4500H+ B m
Phenols (4AAP)	2	N/A	2021/08/30	CAM SOP-00444	OMOE E3179 m
Sulphate by Automated Colourimetry	2	N/A	2021/08/31	CAM SOP-00464	EPA 375.4 m
Total Kjeldahl Nitrogen in Water	2	2021/08/31	2021/09/01	CAM SOP-00938	OMOE E3516 m
Total Phosphorus (Colourimetric)	2	2021/08/31	2021/09/01	CAM SOP-00407	SM 23 4500 P B H m
Low Level Total Suspended Solids	2	2021/08/31	2021/09/01	CAM SOP-00428	SM 23 2540D m

Remarks:

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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. #: 2100310
Your Project #: WET / DRY SURFACE WATER AUG 21
Site Location: 110 DUNLOP DR
Your C.O.C. #: 828919-01-01

Attention: Amy Spence

City of Guelph
Solid Waste RIC (Wet/Dry)
110 Dunlop Drive
Guelph, ON
CANADA N1H 6H8

Report Date: 2021/09/03
Report #: R6796259
Version: 1 - Final

CERTIFICATE OF ANALYSIS

BV LABS JOB #: C106217

Received: 2021/08/27, 16:18

dilution methods.

Results relate to samples tested. When sampling is not conducted by Bureau Veritas, results relate to the supplied samples tested.

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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.

Encryption Key

Heba Gamal
Project Manager
03 Sep 2021 16:36:26

Please direct all questions regarding this Certificate of Analysis to your Project Manager.

James Aspin, Senior Project Manager

Email: James.Aspin@bureauveritas.com

Phone# (905)817-5771

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BV Labs Job #: C106217
Report Date: 2021/09/03

City of Guelph
Client Project #: WET / DRY SURFACE WATER AUG 21
Site Location: 110 DUNLOP DR
Your P.O. #: 2100310
Sampler Initials: AS

RESULTS OF ANALYSES OF WATER

BV Labs ID			QMR583		QMR584		
Sampling Date			2021/08/26		2021/08/26		
COC Number			828919-01-01		828919-01-01		
	UNITS	Criteria	TP1-OUT	QC Batch	EPTS01	RDL	QC Batch
Inorganics							
Total Ammonia-N	mg/L	-	ND	7551023	ND	0.050	7551023
Total BOD	mg/L	-	ND	7547391	ND	2	7547391
Total Chemical Oxygen Demand (COD)	mg/L	-	22	7551028	8.4	4.0	7551031
Conductivity	umho/cm	-	550	7550209	720	1.0	7550209
Total Kjeldahl Nitrogen (TKN)	mg/L	-	0.48	7551037	0.11	0.10	7551046
pH	pH	6.5:8.5	8.17	7550221	8.21		7550221
Phenols-4AAP	mg/L	0.001	ND	7548445	ND	0.0010	7548428
Total Phosphorus	mg/L	0.01	0.065	7550999	0.024	0.020	7550999
Total Suspended Solids	mg/L	-	2	7547859	6	1	7547859
Dissolved Sulphate (SO ₄)	mg/L	-	74	7550202	17	1.0	7550202
Alkalinity (Total as CaCO ₃)	mg/L	-	160	7550199	270	1.0	7550199
Dissolved Chloride (Cl ⁻)	mg/L	-	32	7550183	64	1.0	7550183
Nitrite (N)	mg/L	-	ND	7550190	0.041	0.010	7550190
Nitrate (N)	mg/L	-	0.14	7550190	2.02	0.10	7550190
Nitrate + Nitrite (N)	mg/L	-	0.14	7550190	2.06	0.10	7550190
RDL = Reportable Detection Limit QC Batch = Quality Control Batch Criteria: Ontario Provincial Water Quality Objectives Ref. to MOEE Water Management document dated Feb.1999 ND = Not detected							



BUREAU
VERITAS

BV Labs Job #: C106217
Report Date: 2021/09/03

City of Guelph
Client Project #: WET / DRY SURFACE WATER AUG 21
Site Location: 110 DUNLOP DR
Your P.O. #: 2100310
Sampler Initials: AS

ELEMENTS BY ATOMIC SPECTROSCOPY (WATER)

BV Labs ID			QMR583	QMR584		
Sampling Date			2021/08/26	2021/08/26		
COC Number			828919-01-01	828919-01-01		
	UNITS	Criteria	TP1-OUT	EPTS01	RDL	QC Batch
Metals						
Total Boron (B)	mg/L	0.2	0.051	0.016	0.010	7553296
Total Calcium (Ca)	mg/L	-	84	86	0.20	7553296
Total Iron (Fe)	mg/L	0.3	ND	ND	0.10	7553296
Total Magnesium (Mg)	mg/L	-	5.9	23	0.050	7553296
Total Potassium (K)	mg/L	-	2.0	1.5	0.20	7553296
Total Sodium (Na)	mg/L	-	25	39	0.10	7553296
Total Zinc (Zn)	mg/L	0.03	ND	0.066	0.0050	7553296
RDL = Reportable Detection Limit						
QC Batch = Quality Control Batch						
Criteria: Ontario Provincial Water Quality Objectives						
Ref. to MOEE Water Management document dated Feb.1999						
ND = Not detected						



BUREAU
VERITAS

BV Labs Job #: C106217

Report Date: 2021/09/03

City of Guelph

Client Project #: WET / DRY SURFACE WATER AUG 21

Site Location: 110 DUNLOP DR

Your P.O. #: 2100310

Sampler Initials: AS

GENERAL COMMENTS

Results relate only to the items tested.



BV Labs Job #: C106217
Report Date: 2021/09/03

QUALITY ASSURANCE REPORT

City of Guelph
Client Project #: WET / DRY SURFACE WATER AUG 21
Site Location: 110 DUNLOP DR
Your P.O. #: 2100310
Sampler Initials: AS

QC Batch	Parameter	Date	Matrix Spike		SPIKED BLANK		Method Blank		RPD		QC Standard	
			% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits	% Recovery	QC Limits
7547391	Total BOD	2021/09/02					ND, RDL=2	mg/L	NC	30	95	80 - 120
7547859	Total Suspended Solids	2021/09/01					ND, RDL=1	mg/L	13	25	99	85 - 115
7548428	Phenols-4AAP	2021/08/30	99	80 - 120	99	80 - 120	ND, RDL=0.0010	mg/L	NC	20		
7548445	Phenols-4AAP	2021/08/30	92	80 - 120	97	80 - 120	ND, RDL=0.0010	mg/L	NC	20		
7550183	Dissolved Chloride (Cl-)	2021/08/31	NC	80 - 120	103	80 - 120	ND, RDL=1.0	mg/L	1.2	20		
7550190	Nitrate (N)	2021/09/01	99	80 - 120	101	80 - 120	ND, RDL=0.10	mg/L	0.53	20		
7550190	Nitrite (N)	2021/09/01	96	80 - 120	104	80 - 120	ND, RDL=0.010	mg/L	NC	20		
7550199	Alkalinity (Total as CaCO ₃)	2021/08/31			98	85 - 115	ND, RDL=1.0	mg/L	3.3	20		
7550202	Dissolved Sulphate (SO ₄)	2021/08/31	NC	75 - 125	107	80 - 120	ND, RDL=1.0	mg/L	1.2	20		
7550209	Conductivity	2021/08/31			100	85 - 115	ND, RDL=1.0	umho/cm	1.5	25		
7550221	pH	2021/08/31			102	98 - 103			0.34	N/A		
7550999	Total Phosphorus	2021/09/01	99	80 - 120	100	80 - 120	ND, RDL=0.020	mg/L	1.4	20	99	80 - 120
7551023	Total Ammonia-N	2021/09/01	95	75 - 125	101	80 - 120	ND, RDL=0.050	mg/L	3.0	20		
7551028	Total Chemical Oxygen Demand (COD)	2021/09/01	100	80 - 120	102	80 - 120	ND, RDL=4.0	mg/L	3.4	20		
7551031	Total Chemical Oxygen Demand (COD)	2021/09/01	106	80 - 120	99	80 - 120	ND, RDL=4.0	mg/L	NC	20		
7551037	Total Kjeldahl Nitrogen (TKN)	2021/09/01	98	80 - 120	94	80 - 120	ND, RDL=0.10	mg/L	NC	20	94	80 - 120
7551046	Total Kjeldahl Nitrogen (TKN)	2021/09/02	94	80 - 120	94	80 - 120	ND, RDL=0.10	mg/L	1.9	20	94	80 - 120
7553296	Total Boron (B)	2021/09/02	96	80 - 120	95	80 - 120	ND, RDL=0.010	mg/L				
7553296	Total Calcium (Ca)	2021/09/02	NC	80 - 120	96	80 - 120	ND, RDL=0.20	mg/L				
7553296	Total Iron (Fe)	2021/09/02	100	80 - 120	95	80 - 120	ND, RDL=0.10	mg/L	7.8	20		
7553296	Total Magnesium (Mg)	2021/09/02	97	80 - 120	92	80 - 120	ND, RDL=0.050	mg/L				
7553296	Total Potassium (K)	2021/09/02	98	80 - 120	99	80 - 120	ND, RDL=0.20	mg/L				
7553296	Total Sodium (Na)	2021/09/02	NC	80 - 120	99	80 - 120	ND, RDL=0.10	mg/L				



BV Labs Job #: C106217
Report Date: 2021/09/03

QUALITY ASSURANCE REPORT(CONT'D)

City of Guelph
Client Project #: WET / DRY SURFACE WATER AUG 21
Site Location: 110 DUNLOP DR
Your P.O. #: 2100310
Sampler Initials: AS

QC Batch	Parameter	Date	Matrix Spike		SPIKED BLANK		Method Blank		RPD		QC Standard	
			% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits	% Recovery	QC Limits
7553296	Total Zinc (Zn)	2021/09/02	99	80 - 120	96	80 - 120	ND, RDL=0.0050	mg/L	8.4	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.

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 $\leq 2 \times$ RDL).



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BV Labs Job #: C106217

Report Date: 2021/09/03

City of Guelph

Client Project #: WET / DRY SURFACE WATER AUG 21

Site Location: 110 DUNLOP DR

Your P.O. #: 2100310

Sampler Initials: AS

VALIDATION SIGNATURE PAGE

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

Brad Newman, B.Sc., C.Chem., Scientific Service Specialist

BV Labs 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 Signature Page.

		Bureau Veritas Laboratories 8740 Campbell Road, Mississauga, Ontario Canada L6N 2L8 Tel: (905) 817-5700 Toll-free 800-563-6266 Fax: (905) 817-5777 www.bvlabs.com		Page 1 of 1	
INVOICE TO:		REPORT TO:		PROJECT INFORMATION:	
Company Name: #12237 City of Guelph Attention: Amy Spence (Wet/Dry) Address: 186 Eastview Rd Guelph ON N1E 1Z6 Tel: (519) 837-5633 Fax: (519) 823-0910 Email: amy.spence@guelph.ca		Company Name: 9497- The City of Guelph Attention: Amy Spence Address: 110 Dunlop Dr. Guelph, ON N1H6H8 Tel: 519-362-1164 Fax: patty.wong@qcom.com Email: amy.spence@guelph.ca qcom.com		Quotation #: B90142 P.O. #: Project: Wet / Dry Surface Water Aug 2021 Project Name: Wet/Dry Surface Water Aug 2021 Site #: 110 Dunlop Dr Sampled By: Amy Spence	
				Laboratory Use Only:	
				BV Labs Job #: Bottle Order #: 825919 COC #: Project Manager: James Aspin	
MOE REGULATED DRINKING WATER OR WATER INTENDED FOR HUMAN CONSUMPTION MUST BE SUBMITTED ON THE BV LABS DRINKING WATER CHAIN OF CUSTODY					
Regulation 153 (2011) <input type="checkbox"/> Table 1 <input type="checkbox"/> Res/Park <input type="checkbox"/> Medium/Fine <input type="checkbox"/> Table 2 <input type="checkbox"/> Ind/Comm <input type="checkbox"/> Coarse <input type="checkbox"/> Table 3 <input type="checkbox"/> Agr/Other <input type="checkbox"/> For RSC <input type="checkbox"/> Table		Other Regulations <input type="checkbox"/> CCME <input type="checkbox"/> Sanitary Sewer Bylaw <input type="checkbox"/> Reg 558 <input type="checkbox"/> Storm Sewer Bylaw <input type="checkbox"/> MISA <input type="checkbox"/> Municipality <input type="checkbox"/> PWQO <input type="checkbox"/> Reg 406 Table <input type="checkbox"/> Other		Special Instructions	
Include Criteria on Certificate of Analysis (Y/N)?					
Sample Barcode Label	Sample (Location) Identification	Date Sampled	Time Sampled	Matrix	
1	TP1- OUT	Aug 26/21	AM	W	N X
2	EPTS01	Aug 26/21	AM	W	N X
3				W	
4				W	
5				W	
6				W	
7				W	
8				W	
9				W	
10				W	
* RELINQUISHED BY: (Signature/Print) Amy Spence / Amy Spence		Date: (YY/MM/DD) 21/08/21	Time: PM	RECEIVED BY: (Signature/Print) 	
		Date: (YY/MM/DD) 21/08/21	Time: 1:18	# Jars used and not submitted	
				Laboratory Use Only	
				Time Sensitive: <input type="checkbox"/> Temperature (°C) on Receipt: 5/1/4 Custody Seal: Present <input checked="" type="checkbox"/> Intact <input type="checkbox"/>	
				White: BV Labs Yellow: Client	

* UNLESS OTHERWISE AGREED TO IN WRITING, WORK SUBMITTED ON THIS CHAIN OF CUSTODY IS SUBJECT TO BV LABS' STANDARD TERMS AND CONDITIONS. SIGNING OF THIS CHAIN OF CUSTODY DOCUMENT IS ACKNOWLEDGMENT AND ACCEPTANCE OF OUR TERMS WHICH ARE AVAILABLE FOR VIEWING AT WWW.BVLABS.COM/TERMS-AND-CONDITIONS.

* IT IS THE RESPONSIBILITY OF THE RELINQUISHER TO ENSURE THE ACCURACY OF THE CHAIN OF CUSTODY RECORD. AN INCOMPLETE CHAIN OF CUSTODY MAY RESULT IN ANALYTICAL TAT DELAYS.

** SAMPLE CONTAINER, PRESERVATION, HOLD TIME AND PACKAGE INFORMATION CAN BE VIEWED AT WWW.BVLABS.COM/RESOURCES/CHAIN-OF-CUSTODY-FORMS.

Bureau Veritas Canada (2019) Inc.

**Attention: Amy Spence**

City of Guelph
Solid Waste RIC (Wet/Dry)
110 Dunlop Drive
Guelph, ON
CANADA N1H 6H8

Your P.O. #: 2100310
Your Project #: Wet / Dry Surface Water
Site#: 110 DUNLOP DR
Site Location: WET/DRY SW SEPT 2021 15MM RAIN EVENT
Your C.O.C. #: 828919-02-01

Report Date: 2021/09/16

Report #: R6813020

Version: 1 - Final

CERTIFICATE OF ANALYSIS**BV LABS JOB #: C1P8963****Received: 2021/09/09, 16:01**

Sample Matrix: Water
Samples Received: 2

Analyses	Date		Date	Laboratory Method	Analytical Method
	Quantity	Extracted			
Alkalinity	2	N/A	2021/09/13	CAM SOP-00448	SM 23 2320 B m
Biochemical Oxygen Demand (BOD)	2	2021/09/10	2021/09/15	CAM SOP-00427	SM 23 5210B m
Chloride by Automated Colourimetry	2	N/A	2021/09/13	CAM SOP-00463	SM 23 4500-Cl E m
Chemical Oxygen Demand	2	N/A	2021/09/13	CAM SOP-00416	SM 23 5220 D m
Conductivity	2	N/A	2021/09/13	CAM SOP-00414	SM 23 2510 m
Total Metals Analysis by ICPMS	2	N/A	2021/09/14	CAM SOP-00447	EPA 6020B m
Total Ammonia-N	2	N/A	2021/09/11	CAM SOP-00441	USGS I-2522-90 m
Nitrate (NO3) and Nitrite (NO2) in Water (1)	1	N/A	2021/09/10	CAM SOP-00440	SM 23 4500-NO3/NO2B
Nitrate (NO3) and Nitrite (NO2) in Water (1)	1	N/A	2021/09/13	CAM SOP-00440	SM 23 4500-NO3/NO2B
pH	2	2021/09/10	2021/09/13	CAM SOP-00413	SM 4500H+ B m
Phenols (4AAP)	2	N/A	2021/09/10	CAM SOP-00444	OMOE E3179 m
Sulphate by Automated Colourimetry	2	N/A	2021/09/13	CAM SOP-00464	EPA 375.4 m
Total Kjeldahl Nitrogen in Water	2	2021/09/10	2021/09/14	CAM SOP-00938	OMOE E3516 m
Total Phosphorus (Colourimetric)	2	2021/09/13	2021/09/14	CAM SOP-00407	SM 23 4500 P B H m
Low Level Total Suspended Solids	2	2021/09/13	2021/09/14	CAM SOP-00428	SM 23 2540D 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, MELCC, EPA, APHA.

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. #: 2100310
Your Project #: Wet / Dry Surface Water
Site#: 110 DUNLOP DR
Site Location: WET/DRY SW SEPT 2021 15MM RAIN EVENT
Your C.O.C. #: 828919-02-01

Attention: Amy Spence

City of Guelph
Solid Waste RIC (Wet/Dry)
110 Dunlop Drive
Guelph, ON
CANADA N1H 6H8

Report Date: 2021/09/16
Report #: R6813020
Version: 1 - Final

CERTIFICATE OF ANALYSIS

BV LABS JOB #: C1P8963

Received: 2021/09/09, 16:01

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.

Encryption Key

Heba Gamal
Project Manager
16 Sep 2021 10:38:31

Please direct all questions regarding this Certificate of Analysis to your Project Manager.

James Aspin, Senior Project Manager

Email: James.Aspin@bureauveritas.com

Phone# (905)817-5771

=====

BV Labs 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 Signature Page.



BV Labs Job #: C1P8963
Report Date: 2021/09/16

City of Guelph
Client Project #: Wet / Dry Surface Water
Site Location: WET/DRY SW SEPT 2021 15MM RAIN EVENT
Your P.O. #: 2100310
Sampler Initials: AS

RESULTS OF ANALYSES OF WATER

BV Labs ID			QPJ666			QPJ666		
Sampling Date			2021/09/08			2021/09/08		
COC Number			828919-02-01			828919-02-01		
	UNITS	Criteria	TP1-OUT	RDL	QC Batch	TP1-OUT Lab-Dup	RDL	QC Batch
Inorganics								
Total Ammonia-N	mg/L	-	0.13	0.050	7571352			
Total BOD	mg/L	-	3	2	7569180	3	2	7569180
Total Chemical Oxygen Demand (COD)	mg/L	-	17	4.0	7570327			
Conductivity	umho/cm	-	230	1.0	7570854			
Total Kjeldahl Nitrogen (TKN)	mg/L	-	0.61	0.10	7570602			
pH	pH	6.5:8.5	7.53		7570857			
Phenols-4AAP	mg/L	0.001	ND	0.0010	7569222			
Total Phosphorus	mg/L	0.01	0.13	0.020	7573911			
Total Suspended Solids	mg/L	-	2	1	7570046			
Dissolved Sulphate (SO ₄)	mg/L	-	37	1.0	7571171			
Alkalinity (Total as CaCO ₃)	mg/L	-	57	1.0	7570839			
Dissolved Chloride (Cl ⁻)	mg/L	-	11	1.0	7571165			
Nitrite (N)	mg/L	-	0.033	0.010	7570474			
Nitrate (N)	mg/L	-	ND	0.10	7570474			
Nitrate + Nitrite (N)	mg/L	-	0.12	0.10	7570474			
RDL = Reportable Detection Limit QC Batch = Quality Control Batch Lab-Dup = Laboratory Initiated Duplicate Criteria: Ontario Provincial Water Quality Objectives Ref. to MOEE Water Management document dated Feb.1999 ND = Not detected								



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BV Labs Job #: C1P8963
Report Date: 2021/09/16

City of Guelph
Client Project #: Wet / Dry Surface Water
Site Location: WET/DRY SW SEPT 2021 15MM RAIN EVENT
Your P.O. #: 2100310
Sampler Initials: AS

RESULTS OF ANALYSES OF WATER

BV Labs ID			QPJ667		
Sampling Date			2021/09/08		
COC Number			828919-02-01		
	UNITS	Criteria	EPTSO1	RDL	QC Batch
Inorganics					
Total Ammonia-N	mg/L	-	0.053	0.050	7571352
Total BOD	mg/L	-	ND	2	7569180
Total Chemical Oxygen Demand (COD)	mg/L	-	16	4.0	7570327
Conductivity	umho/cm	-	710	1.0	7570854
Total Kjeldahl Nitrogen (TKN)	mg/L	-	0.23	0.10	7570602
pH	pH	6.5:8.5	8.26		7570857
Phenols-4AAP	mg/L	0.001	ND	0.0010	7569222
Total Phosphorus	mg/L	0.01	0.057	0.020	7573911
Total Suspended Solids	mg/L	-	3	1	7570046
Dissolved Sulphate (SO ₄)	mg/L	-	18	1.0	7569877
Alkalinity (Total as CaCO ₃)	mg/L	-	270	1.0	7570839
Dissolved Chloride (Cl ⁻)	mg/L	-	63	1.0	7569834
Nitrite (N)	mg/L	-	0.049	0.010	7569805
Nitrate (N)	mg/L	-	2.08	0.10	7569805
Nitrate + Nitrite (N)	mg/L	-	2.13	0.10	7569805
RDL = Reportable Detection Limit					
QC Batch = Quality Control Batch					
Criteria: Ontario Provincial Water Quality Objectives					
Ref. to MOEE Water Management document dated Feb.1999					
ND = Not detected					



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BV Labs Job #: C1P8963
Report Date: 2021/09/16

City of Guelph
Client Project #: Wet / Dry Surface Water
Site Location: WET/DRY SW SEPT 2021 15MM RAIN EVENT
Your P.O. #: 2100310
Sampler Initials: AS

ELEMENTS BY ATOMIC SPECTROSCOPY (WATER)

BV Labs ID			QPJ666	QPJ667		
Sampling Date			2021/09/08	2021/09/08		
COC Number			828919-02-01	828919-02-01		
	UNITS	Criteria	TP1-OUT	EPTS01	RDL	QC Batch
Metals						
Total Boron (B)	mg/L	0.2	0.035	0.017	0.010	7575538
Total Calcium (Ca)	mg/L	-	32	88	0.20	7575538
Total Iron (Fe)	mg/L	0.3	ND	ND	0.10	7575538
Total Magnesium (Mg)	mg/L	-	2.9	23	0.050	7575538
Total Potassium (K)	mg/L	-	2.1	1.6	0.20	7575538
Total Sodium (Na)	mg/L	-	8.5	38	0.10	7575538
Total Zinc (Zn)	mg/L	0.03	0.022	0.11	0.0050	7575538
RDL = Reportable Detection Limit						
QC Batch = Quality Control Batch						
Criteria: Ontario Provincial Water Quality Objectives						
Ref. to MOEE Water Management document dated Feb.1999						
ND = Not detected						



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BV Labs Job #: C1P8963

Report Date: 2021/09/16

City of Guelph

Client Project #: Wet / Dry Surface Water

Site Location: WET/DRY SW SEPT 2021 15MM RAIN EVENT

Your P.O. #: 2100310

Sampler Initials: AS

GENERAL COMMENTS

Results relate only to the items tested.



BV Labs Job #: C1P8963
Report Date: 2021/09/16

QUALITY ASSURANCE REPORT

City of Guelph
Client Project #: Wet / Dry Surface Water
Site Location: WET/DRY SW SEPT 2021 15MM RAIN EVENT
Your P.O. #: 2100310
Sampler Initials: AS

QC Batch	Parameter	Date	Matrix Spike		SPIKED BLANK		Method Blank		RPD		QC Standard	
			% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits	% Recovery	QC Limits
7569180	Total BOD	2021/09/15					ND, RDL=2	mg/L	11	30	99	80 - 120
7569222	Phenols-4AAP	2021/09/10	97	80 - 120	98	80 - 120	ND, RDL=0.0010	mg/L	9.5	20		
7569805	Nitrate (N)	2021/09/10	107	80 - 120	105	80 - 120	ND, RDL=0.10	mg/L	NC	20		
7569805	Nitrite (N)	2021/09/10	112	80 - 120	108	80 - 120	ND, RDL=0.010	mg/L	NC	20		
7569834	Dissolved Chloride (Cl-)	2021/09/13	NC	80 - 120	104	80 - 120	ND, RDL=1.0	mg/L	2.4	20		
7569877	Dissolved Sulphate (SO4)	2021/09/13	NC	75 - 125	104	80 - 120	ND, RDL=1.0	mg/L	1.7	20		
7570046	Total Suspended Solids	2021/09/14					ND, RDL=1	mg/L	15	25	96	85 - 115
7570327	Total Chemical Oxygen Demand (COD)	2021/09/13	101	80 - 120	100	80 - 120	ND, RDL=4.0	mg/L	NC	20		
7570474	Nitrate (N)	2021/09/13	109	80 - 120	106	80 - 120	ND, RDL=0.10	mg/L	NC	20		
7570474	Nitrite (N)	2021/09/13	91	80 - 120	105	80 - 120	ND, RDL=0.010	mg/L	NC	20		
7570602	Total Kjeldahl Nitrogen (TKN)	2021/09/14	100	80 - 120	99	80 - 120	ND, RDL=0.10	mg/L	2.0	20	100	80 - 120
7570839	Alkalinity (Total as CaCO3)	2021/09/13			97	85 - 115	ND, RDL=1.0	mg/L	0.014	20		
7570854	Conductivity	2021/09/13			101	85 - 115	ND, RDL=1.0	umho/cm	0.33	25		
7570857	pH	2021/09/13			101	98 - 103			0.95	N/A		
7571165	Dissolved Chloride (Cl-)	2021/09/13	126 (1)	80 - 120	102	80 - 120	ND, RDL=1.0	mg/L	1.2	20		
7571171	Dissolved Sulphate (SO4)	2021/09/13	NC	75 - 125	106	80 - 120	ND, RDL=1.0	mg/L	0.34	20		
7571352	Total Ammonia-N	2021/09/11	98	75 - 125	101	80 - 120	ND, RDL=0.050	mg/L	0.54	20		
7573911	Total Phosphorus	2021/09/14	102	80 - 120	98	80 - 120	ND, RDL=0.020	mg/L	2.3	20	100	80 - 120
7575538	Total Boron (B)	2021/09/14	99	80 - 120	98	80 - 120	ND, RDL=0.010	mg/L	1.3	20		
7575538	Total Calcium (Ca)	2021/09/14	NC	80 - 120	98	80 - 120	ND, RDL=0.20	mg/L	5.1	20		
7575538	Total Iron (Fe)	2021/09/14	97	80 - 120	98	80 - 120	ND, RDL=0.10	mg/L	1.9	20		
7575538	Total Magnesium (Mg)	2021/09/14	95	80 - 120	99	80 - 120	ND, RDL=0.050	mg/L	1.1	20		
7575538	Total Potassium (K)	2021/09/14	98	80 - 120	99	80 - 120	ND, RDL=0.20	mg/L	0.96	20		



BV Labs Job #: C1P8963
Report Date: 2021/09/16

QUALITY ASSURANCE REPORT(CONT'D)

City of Guelph
Client Project #: Wet / Dry Surface Water
Site Location: WET/DRY SW SEPT 2021 15MM RAIN EVENT
Your P.O. #: 2100310
Sampler Initials: AS

QC Batch	Parameter	Date	Matrix Spike		SPIKED BLANK		Method Blank		RPD		QC Standard	
			% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits	% Recovery	QC Limits
7575538	Total Sodium (Na)	2021/09/14	94	80 - 120	99	80 - 120	ND, RDL=0.10	mg/L	2.2	20		
7575538	Total Zinc (Zn)	2021/09/14	103	80 - 120	105	80 - 120	ND, RDL=0.0050	mg/L	NC	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 $\leq 2 \times$ RDL).

(1) Recovery or RPD for this parameter is outside control limits. The overall quality control for this analysis meets acceptability criteria.



BUREAU
VERITAS

BV Labs Job #: C1P8963
Report Date: 2021/09/16

City of Guelph
Client Project #: Wet / Dry Surface Water
Site Location: WET/DRY SW SEPT 2021 15MM RAIN EVENT
Your P.O. #: 2100310
Sampler Initials: AS

VALIDATION SIGNATURE PAGE

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

Brad Newman, B.Sc., C.Chem., Scientific Service Specialist

BV Labs 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 Signature Page.



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

CHAIN OF CUSTODY RECORD

Page 1 of 1

INVOICE TO:		REPORT TO:		PROJECT INFORMATION:		Laboratory Use Only:	
Company Name: #12237 City of Guelph	Attention: Amy Spence (Wet/Dry)	Company Name: 9497 The City of Guelph	Attention: Amy Spence	Quotation #: B90142	15 mm Rain Event	By Labs Job #:	Bottle Order #:
Address: 186 Eastview Rd	Guelph ON N1E 1Z6	Address: 110 Dunlop Dr	Guelph, ON N1H6H8	Project: Wet / Dry Surface Water	Wet/Dry SW Sept 2021	COC #:	Project Manager:
Tel: (519) 837-5633	Fax: (519) 823-0910	Tel: 519-362-1164	Fax: patty.wong@cityofguelph.ca	Site #: 110 Dunlop Dr	Sampled By:	James Aspin	
MOE REGULATED DRINKING WATER OR WATER INTENDED FOR HUMAN CONSUMPTION MUST BE SUBMITTED ON THE BV LABS DRINKING WATER CHAIN OF CUSTODY				ANALYSIS REQUESTED (PLEASE BE SPECIFIC)		Turnaround Time (TAT) Required: Please provide advance notice for rush projects	
Regulation 153 (2011)		Other Regulations		Special Instructions		Regular (Standard) TAT: (will be applied if Rush TAT is not specified). Standard TAT = 5-7 Working days for most tests. Please note: Standard TAT for certain tests such as BOD and Dioxins/Furans are > 5 days - contact your Project Manager for details.	
<input type="checkbox"/> Table 1	<input type="checkbox"/> Res/Park	<input type="checkbox"/> Medium/Fine	<input type="checkbox"/> CCME	<input type="checkbox"/> Sanitary Sewer Bylaw		<input checked="" type="checkbox"/>	
<input type="checkbox"/> Table 2	<input type="checkbox"/> Ind/Comm	<input type="checkbox"/> Coarse	<input type="checkbox"/> Reg 558	<input type="checkbox"/> Storm Sewer Bylaw			
<input type="checkbox"/> Table 3	<input type="checkbox"/> Agri/Other	<input type="checkbox"/> For RSC	<input type="checkbox"/> MISA	Municipality			
<input type="checkbox"/> Table			<input type="checkbox"/> PWQO	Reg 406 Table			
		<input type="checkbox"/> Other					
Include Criteria on Certificate of Analysis (Y/N)?						Job Specific Rush TAT (if applies to entire submission) Date Required: Time Required: Rush Confirmation Number: (call lab for #)	
Sample Barcode Label	Sample (Location) Identification	Date Sampled	Time Sampled	Matrix	Field Filtered (please circle): Metals / Hg / Cr / V	Wet/Dry SW	Semi-Volatile Organ Characterization
1	TP1-OUT	Sept 8, 2021	AM	SW	N	X	X
2	EPTSO1	Sept 8, 2021	AM	SW	N	X	X
3							
4							
5							
6							
7							
8							
9							
10							
* RELINQUISHED BY: (Signature/Print)		Date: (YY/MM/DD)	Time	RECEIVED BY: (Signature/Print)	Date: (YY/MM/DD)	Time	# jars used and not submitted
Amy Spence / Amy Spence		21/09/09	PM	Y. THOMPSON	21/09/09	16:01	
							Laboratory Use Only
							Time Sensitive
							Temperature (°C) on Receipt
							4/3/4
							Custody Seal
							Present
							Intact
							Yes
							No
							White: BV Labs
							Yellow: Client
							ICE: Y

* UNLESS OTHERWISE AGREED TO IN WRITING, WORK SUBMITTED ON THIS CHAIN OF CUSTODY IS SUBJECT TO BV LABS' STANDARD TERMS AND CONDITIONS. SIGNING OF THIS CHAIN OF CUSTODY DOCUMENT IS ACKNOWLEDGMENT AND ACCEPTANCE OF OUR TERMS WHICH ARE AVAILABLE FOR VIEWING AT WWW.BVLABS.COM/TERMS-AND-CONDITIONS.

* IT IS THE RESPONSIBILITY OF THE RELINQUISHER TO ENSURE THE ACCURACY OF THE CHAIN OF CUSTODY RECORD. AN INCOMPLETE CHAIN OF CUSTODY MAY RESULT IN ANALYTICAL TAT DELAYS.

** SAMPLE CONTAINER, PRESERVATION, HOLD TIME AND PACKAGE INFORMATION CAN BE VIEWED AT WWW.BVLABS.COM/RESOURCES/CHAIN-OF-CUSTODY-FORMS.

SAMPLES MUST BE KEPT COOL (< 10°C) FROM TIME OF SAMPLING UNTIL DELIVERY TO BV LABS

Bureau Veritas Canada (2019) Inc.

**Attention: Amy Spence**

City of Guelph
 Solid Waste RIC (Wet/Dry)
 110 Dunlop Drive
 Guelph, ON
 CANADA N1H 6H8

Your P.O. #: 2100310
 Your Project #: Wet / Dry Surface Water
 Site#: 110 DUNLOP DR
 Site Location: WET / DRY SW OCTOBER 2021
 Your C.O.C. #: 785154-07-01

Report Date: 2021/11/02
 Report #: R6882949
 Version: 1 - Final

CERTIFICATE OF ANALYSIS**BV LABS JOB #: C1V0012****Received: 2021/10/22, 17:17**

Sample Matrix: Water
 # Samples Received: 2

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Analytical Method
Alkalinity	2	N/A	2021/10/28	CAM SOP-00448	SM 23 2320 B m
Biochemical Oxygen Demand (BOD)	2	2021/10/23	2021/10/28	CAM SOP-00427	SM 23 5210B m
Chloride by Automated Colourimetry	2	N/A	2021/10/27	CAM SOP-00463	SM 23 4500-Cl E m
Chemical Oxygen Demand	2	N/A	2021/10/27	CAM SOP-00416	SM 23 5220 D m
Conductivity	2	N/A	2021/10/28	CAM SOP-00414	SM 23 2510 m
Total Metals Analysis by ICPMS	2	N/A	2021/11/01	CAM SOP-00447	EPA 6020B m
Total Ammonia-N	2	N/A	2021/10/28	CAM SOP-00441	USGS I-2522-90 m
Nitrate & Nitrite as Nitrogen in Water (1)	2	N/A	2021/10/27	CAM SOP-00440	SM 23 4500-NO3I/NO2B
pH	2	2021/10/26	2021/10/28	CAM SOP-00413	SM 4500H+ B m
Phenols (4AAP)	2	N/A	2021/10/25	CAM SOP-00444	OMOE E3179 m
Sulphate by Automated Colourimetry	2	N/A	2021/10/27	CAM SOP-00464	EPA 375.4 m
Total Kjeldahl Nitrogen in Water	2	2021/10/26	2021/10/27	CAM SOP-00938	OMOE E3516 m
Total Phosphorus (Colourimetric)	2	2021/10/27	2021/10/28	CAM SOP-00407	SM 23 4500 P B H m
Low Level Total Suspended Solids	2	2021/10/27	2021/10/28	CAM SOP-00428	SM 23 2540D 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, MELCC, EPA, APHA.

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. #: 2100310
Your Project #: Wet / Dry Surface Water
Site#: 110 DUNLOP DR
Site Location: WET / DRY SW OCTOBER 2021
Your C.O.C. #: 785154-07-01

Attention: Amy Spence

City of Guelph
Solid Waste RIC (Wet/Dry)
110 Dunlop Drive
Guelph, ON
CANADA N1H 6H8

Report Date: 2021/11/02
Report #: R6882949
Version: 1 - Final

CERTIFICATE OF ANALYSIS

BV LABS JOB #: C1V0012

Received: 2021/10/22, 17:17

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.

Encryption Key

Heba Gamal
Project Manager
02 Nov 2021 14:02:56

Please direct all questions regarding this Certificate of Analysis to your Project Manager.

James Aspin, Senior Project Manager

Email: James.Aspin@bureauveritas.com

Phone# (905)817-5771

=====

BV Labs 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 Signature Page.



BUREAU
VERITAS

Bureau Veritas Job #: C1V0012

Report Date: 2021/11/02

City of Guelph

Client Project #: Wet / Dry Surface Water

Site Location: WET / DRY SW OCTOBER 2021

Your P.O. #: 2100310

Sampler Initials: AS

RESULTS OF ANALYSES OF WATER

Bureau Veritas ID			RAF749			RAF749		
Sampling Date			2021/10/21			2021/10/21		
COC Number			785154-07-01			785154-07-01		
	UNITS	Criteria	TP1-OUT	RDL	QC Batch	TP1-OUT Lab-Dup	RDL	QC Batch
Inorganics								
Total Ammonia-N	mg/L	-	0.054	0.050	7665819	ND	0.050	7665819
Total BOD	mg/L	-	ND	2	7656222			
Total Chemical Oxygen Demand (COD)	mg/L	-	21	4.0	7661294			
Conductivity	umho/cm	-	620	1.0	7661192			
Total Kjeldahl Nitrogen (TKN)	mg/L	-	0.63	0.10	7660939			
pH	pH	6.5:8.5	8.08		7661199			
Phenols-4AAP	mg/L	0.001	ND	0.0010	7658078			
Total Phosphorus	mg/L	0.01	0.050	0.020	7664279			
Total Suspended Solids	mg/L	-	1	1	7659185			
Dissolved Sulphate (SO ₄)	mg/L	-	49	1.0	7661346			
Alkalinity (Total as CaCO ₃)	mg/L	-	210	1.0	7661184			
Dissolved Chloride (Cl ⁻)	mg/L	-	42	1.0	7661342			
Nitrite (N)	mg/L	-	ND	0.010	7661322	ND	0.010	7661322
Nitrate (N)	mg/L	-	0.13	0.10	7661322	0.13	0.10	7661322
Nitrate + Nitrite (N)	mg/L	-	0.13	0.10	7661322	0.13	0.10	7661322
RDL = Reportable Detection Limit QC Batch = Quality Control Batch Lab-Dup = Laboratory Initiated Duplicate Criteria: Ontario Provincial Water Quality Objectives Ref. to MOEE Water Management document dated Feb.1999 ND = Not Detected at a concentration equal or greater than the indicated Detection Limit.								



BUREAU
VERITAS

Bureau Veritas Job #: C1V0012

Report Date: 2021/11/02

City of Guelph

Client Project #: Wet / Dry Surface Water

Site Location: WET / DRY SW OCTOBER 2021

Your P.O. #: 2100310

Sampler Initials: AS

RESULTS OF ANALYSES OF WATER

Bureau Veritas ID			RAF750			RAF750		
Sampling Date			2021/10/21			2021/10/21		
COC Number			785154-07-01			785154-07-01		
	UNITS	Criteria	EPTS01	RDL	QC Batch	EPTS01 Lab-Dup	RDL	QC Batch

Inorganics								
Total Ammonia-N	mg/L	-	ND	0.050	7661428			
Total BOD	mg/L	-	ND	2	7656222	ND	2	7656222
Total Chemical Oxygen Demand (COD)	mg/L	-	4.7	4.0	7661294			
Conductivity	umho/cm	-	750	1.0	7661192			
Total Kjeldahl Nitrogen (TKN)	mg/L	-	0.30	0.10	7660939			
pH	pH	6.5:8.5	8.17		7661199			
Phenols-4AAP	mg/L	0.001	ND	0.0010	7658073			
Total Phosphorus	mg/L	0.01	0.10	0.020	7664279			
Total Suspended Solids	mg/L	-	2	1	7659185			
Dissolved Sulphate (SO ₄)	mg/L	-	17	1.0	7661346			
Alkalinity (Total as CaCO ₃)	mg/L	-	300	1.0	7661184			
Dissolved Chloride (Cl ⁻)	mg/L	-	61	1.0	7661342			
Nitrite (N)	mg/L	-	0.049	0.010	7661203			
Nitrate (N)	mg/L	-	2.17	0.10	7661203			
Nitrate + Nitrite (N)	mg/L	-	2.22	0.10	7661203			

RDL = Reportable Detection Limit

QC Batch = Quality Control Batch

Lab-Dup = Laboratory Initiated Duplicate

Criteria: Ontario Provincial Water Quality Objectives

Ref. to MOEE Water Management document dated Feb.1999

ND = Not Detected at a concentration equal or greater than the indicated Detection Limit.



**BUREAU
VERITAS**

Bureau Veritas Job #: C1V0012

Report Date: 2021/11/02

City of Guelph

Client Project #: Wet / Dry Surface Water

Site Location: WET / DRY SW OCTOBER 2021

Your P.O. #: 2100310

Sampler Initials: AS

ELEMENTS BY ATOMIC SPECTROSCOPY (WATER)

Bureau Veritas ID			RAF749	RAF750		
Sampling Date			2021/10/21	2021/10/21		
COC Number			785154-07-01	785154-07-01		
	UNITS	Criteria	TP1-OUT	EPTS01	RDL	QC Batch
Metals						
Total Boron (B)	mg/L	0.2	0.045	0.017	0.010	7667492
Total Calcium (Ca)	mg/L	-	82	92	0.20	7667492
Total Iron (Fe)	mg/L	0.3	0.19	ND	0.10	7667492
Total Magnesium (Mg)	mg/L	-	9.7	24	0.050	7667492
Total Potassium (K)	mg/L	-	4.0	1.7	0.20	7667492
Total Sodium (Na)	mg/L	-	38	38	0.10	7667492
Total Zinc (Zn)	mg/L	0.03	ND	0.091	0.0050	7667492
RDL = Reportable Detection Limit						
QC Batch = Quality Control Batch						
Criteria: Ontario Provincial Water Quality Objectives						
Ref. to MOEE Water Management document dated Feb.1999						
ND = Not Detected at a concentration equal or greater than the indicated Detection Limit.						



BUREAU
VERITAS

Bureau Veritas Job #: C1V0012

Report Date: 2021/11/02

City of Guelph

Client Project #: Wet / Dry Surface Water

Site Location: WET / DRY SW OCTOBER 2021

Your P.O. #: 2100310

Sampler Initials: AS

GENERAL COMMENTS

Results relate only to the items tested.



Bureau Veritas Job #: C1V0012
Report Date: 2021/11/02

QUALITY ASSURANCE REPORT

City of Guelph
Client Project #: Wet / Dry Surface Water
Site Location: WET / DRY SW OCTOBER 2021
Your P.O. #: 2100310
Sampler Initials: AS

QC Batch	Parameter	Date	Matrix Spike		SPIKED BLANK		Method Blank		RPD		QC Standard	
			% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits	% Recovery	QC Limits
7656222	Total BOD	2021/10/28					ND, RDL=2	mg/L	NC	30	93	80 - 120
7658073	Phenols-4AAP	2021/10/25	99	80 - 120	98	80 - 120	ND, RDL=0.0010	mg/L	NC	20		
7658078	Phenols-4AAP	2021/10/25	98	80 - 120	100	80 - 120	ND, RDL=0.0010	mg/L	NC	20		
7659185	Total Suspended Solids	2021/10/28					ND, RDL=1	mg/L	12	25	101	85 - 115
7660939	Total Kjeldahl Nitrogen (TKN)	2021/10/27	108	80 - 120	99	80 - 120	ND, RDL=0.10	mg/L	10	20	100	80 - 120
7661184	Alkalinity (Total as CaCO ₃)	2021/10/28			98	85 - 115	ND, RDL=1.0	mg/L	1.1	20		
7661192	Conductivity	2021/10/28			102	85 - 115	ND, RDL=1.0	umho/cm	1.8	25		
7661199	pH	2021/10/28			101	98 - 103			0.34	N/A		
7661203	Nitrate (N)	2021/10/27	87	80 - 120	91	80 - 120	ND, RDL=0.10	mg/L	1.1	20		
7661203	Nitrite (N)	2021/10/27	99	80 - 120	104	80 - 120	ND, RDL=0.010	mg/L	NC	20		
7661294	Total Chemical Oxygen Demand (COD)	2021/10/26	95	80 - 120	99	80 - 120	ND, RDL=4.0	mg/L	1.3	20		
7661322	Nitrate (N)	2021/10/27	83	80 - 120	88	80 - 120	ND, RDL=0.10	mg/L	1.2	20		
7661322	Nitrite (N)	2021/10/27	103	80 - 120	106	80 - 120	ND, RDL=0.010	mg/L	NC	20		
7661342	Dissolved Chloride (Cl ⁻)	2021/10/27	NC	80 - 120	103	80 - 120	ND, RDL=1.0	mg/L	0.88	20		
7661346	Dissolved Sulphate (SO ₄)	2021/10/27	NC	75 - 125	104	80 - 120	ND, RDL=1.0	mg/L	0.17	20		
7661428	Total Ammonia-N	2021/10/28	95	75 - 125	98	80 - 120	ND, RDL=0.050	mg/L	NC	20		
7664279	Total Phosphorus	2021/10/28	96	80 - 120	97	80 - 120	ND, RDL=0.020	mg/L	1.4	20	94	80 - 120
7665819	Total Ammonia-N	2021/10/28	96	75 - 125	99	80 - 120	ND, RDL=0.050	mg/L	8.3	20		
7667492	Total Boron (B)	2021/11/01	93	80 - 120	101	80 - 120	ND, RDL=0.010	mg/L	2.8	20		
7667492	Total Calcium (Ca)	2021/11/01	NC	80 - 120	102	80 - 120	ND, RDL=0.20	mg/L	0.20	20		
7667492	Total Iron (Fe)	2021/11/01	104	80 - 120	100	80 - 120	ND, RDL=0.10	mg/L	0.44	20		
7667492	Total Magnesium (Mg)	2021/11/01	NC	80 - 120	106	80 - 120	ND, RDL=0.050	mg/L	1.4	20		



Bureau Veritas Job #: C1V0012
Report Date: 2021/11/02

QUALITY ASSURANCE REPORT(CONT'D)

City of Guelph
Client Project #: Wet / Dry Surface Water
Site Location: WET / DRY SW OCTOBER 2021
Your P.O. #: 2100310
Sampler Initials: AS

QC Batch	Parameter	Date	Matrix Spike		SPIKED BLANK		Method Blank		RPD		QC Standard	
			% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits	% Recovery	QC Limits
7667492	Total Potassium (K)	2021/11/01	103	80 - 120	102	80 - 120	ND, RDL=0.20	mg/L	0.79	20		
7667492	Total Sodium (Na)	2021/11/01	NC	80 - 120	102	80 - 120	ND, RDL=0.10	mg/L	0.032	20		
7667492	Total Zinc (Zn)	2021/11/01	NC	80 - 120	106	80 - 120	ND, RDL=0.0050	mg/L	0.34	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 $\leq 2 \times \text{RDL}$).



BUREAU
VERITAS

Bureau Veritas Job #: C1V0012
Report Date: 2021/11/02

City of Guelph
Client Project #: Wet / Dry Surface Water
Site Location: WET / DRY SW OCTOBER 2021
Your P.O. #: 2100310
Sampler Initials: AS

VALIDATION SIGNATURE PAGE

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

Anastassia Hamanov, Scientific Specialist

BV Labs 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 Signature Page.

**Attention: Amy Spence**

City of Guelph
 Solid Waste RIC (Wet/Dry)
 110 Dunlop Drive
 Guelph, ON
 CANADA N1H 6H8

Your P.O. #: 2100310
 Your Project #: WET / DRY SURFACE WATER
 Site#: 110 DUNLOP DR
 Site Location: WET/DRY SW NOVEMBER 2021
 Your C.O.C. #: 828919-03-01

Report Date: 2022/01/07
 Report #: R6953645
 Version: 1 - Final

CERTIFICATE OF ANALYSIS**BV LABS JOB #: C1Y0706****Received: 2021/11/18, 16:42**

Sample Matrix: Water
 # Samples Received: 2

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Analytical Method
Alkalinity	2	N/A	2021/11/23	CAM SOP-00448	SM 23 2320 B m
Biochemical Oxygen Demand (BOD)	2	2021/11/19	2021/12/08	CAM SOP-00427	SM 23 5210B m
Chloride by Automated Colourimetry	1	N/A	2021/11/22	CAM SOP-00463	SM 23 4500-Cl E m
Chloride by Automated Colourimetry	1	N/A	2021/11/23	CAM SOP-00463	SM 23 4500-Cl E m
Chemical Oxygen Demand	2	N/A	2022/01/06	CAM SOP-00416	SM 23 5220 D m
Conductivity	2	N/A	2021/11/23	CAM SOP-00414	SM 23 2510 m
Total Metals Analysis by ICPMS	1	N/A	2021/11/29	CAM SOP-00447	EPA 6020B m
Total Metals Analysis by ICPMS	1	N/A	2021/12/06	CAM SOP-00447	EPA 6020B m
Total Ammonia-N	1	N/A	2021/11/29	CAM SOP-00441	USGS I-2522-90 m
Total Ammonia-N	1	N/A	2021/12/08	CAM SOP-00441	USGS I-2522-90 m
Nitrate & Nitrite as Nitrogen in Water (1)	2	N/A	2021/11/23	CAM SOP-00440	SM 23 4500-NO3I/NO2B
pH	2	2021/11/20	2021/11/23	CAM SOP-00413	SM 4500H+ B m
Phenols (4AAP)	2	N/A	2021/11/22	CAM SOP-00444	OMOE E3179 m
Sulphate by Automated Colourimetry	2	N/A	2021/11/22	CAM SOP-00464	EPA 375.4 m
Total Kjeldahl Nitrogen in Water	1	2021/12/13	2021/12/13	CAM SOP-00938	OMOE E3516 m
Total Kjeldahl Nitrogen in Water	1	2021/12/09	2021/11/29	CAM SOP-00938	OMOE E3516 m
Total Phosphorus (Colourimetric)	1	2021/11/30	2021/11/30	CAM SOP-00407	SM 23 4500 P B H m
Total Phosphorus (Colourimetric)	1	2021/12/06	2021/12/08	CAM SOP-00407	SM 23 4500 P B H m
Low Level Total Suspended Solids	2	2021/11/22	2021/11/30	CAM SOP-00428	SM 23 2540D 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, MELCC, EPA, APHA.

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



Your P.O. #: 2100310
Your Project #: WET / DRY SURFACE WATER
Site#: 110 DUNLOP DR
Site Location: WET/DRY SW NOVEMBER 2021
Your C.O.C. #: 828919-03-01

Attention: Amy Spence

City of Guelph
Solid Waste RIC (Wet/Dry)
110 Dunlop Drive
Guelph, ON
CANADA N1H 6H8

Report Date: 2022/01/07
Report #: R6953645
Version: 1 - Final

CERTIFICATE OF ANALYSIS

BV LABS JOB #: C1Y0706

Received: 2021/11/18, 16:42

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.

Encryption Key

James Aspin
Senior Project Manager
10 Jan 2022 08:54:14

Please direct all questions regarding this Certificate of Analysis to your Project Manager.

James Aspin, Senior Project Manager

Email: James.Aspin@bureauveritas.com

Phone# (905)817-5771

=====

BV Labs 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 Signature Page.



BUREAU
VERITAS

Bureau Veritas Job #: C1Y0706

Report Date: 2022/01/07

City of Guelph

Client Project #: WET / DRY SURFACE WATER

Site Location: WET/DRY SW NOVEMBER 2021

Your P.O. #: 2100310

Sampler Initials: AS

RESULTS OF ANALYSES OF WATER

Bureau Veritas ID			RGU305			RGU305		
Sampling Date			2021/11/17			2021/11/17		
COC Number			828919-03-01			828919-03-01		
	UNITS	Criteria	TP1 - OUT	RDL	QC Batch	TP1 - OUT Lab-Dup	RDL	QC Batch
Inorganics								
Total Ammonia-N	mg/L	-	0.10	0.050	7722537	0.091	0.050	7722537
Total BOD	mg/L	-	ND	2	7710278			
Total Chemical Oxygen Demand (COD)	mg/L	-	22	4.0	7767503			
Conductivity	umho/cm	-	460	1.0	7713663			
Total Kjeldahl Nitrogen (TKN)	mg/L	-	0.47	0.10	7722203			
pH	pH	6.5:8.5	8.00		7713672			
Phenols-4AAP	mg/L	0.001	ND	0.0010	7714285	ND	0.0010	7714285
Total Phosphorus	mg/L	0.01	0.087	0.020	7713869			
Total Suspended Solids	mg/L	-	1	1	7713129			
Dissolved Sulphate (SO ₄)	mg/L	-	50	1.0	7713708			
Alkalinity (Total as CaCO ₃)	mg/L	-	130	1.0	7713671			
Dissolved Chloride (Cl ⁻)	mg/L	-	29	1.0	7713709			
Nitrite (N)	mg/L	-	ND	0.010	7713679	ND	0.010	7713679
Nitrate (N)	mg/L	-	0.14	0.10	7713679	0.14	0.10	7713679
Nitrate + Nitrite (N)	mg/L	-	0.14	0.10	7713679	0.14	0.10	7713679
RDL = Reportable Detection Limit QC Batch = Quality Control Batch Lab-Dup = Laboratory Initiated Duplicate Criteria: Ontario Provincial Water Quality Objectives Ref. to MOEE Water Management document dated Feb.1999 ND = Not Detected at a concentration equal or greater than the indicated Detection Limit.								



BUREAU
VERITAS

Bureau Veritas Job #: C1Y0706

Report Date: 2022/01/07

City of Guelph

Client Project #: WET / DRY SURFACE WATER

Site Location: WET/DRY SW NOVEMBER 2021

Your P.O. #: 2100310

Sampler Initials: AS

RESULTS OF ANALYSES OF WATER

Bureau Veritas ID			RGU306		
Sampling Date			2021/11/17		
COC Number			828919-03-01		
	UNITS	Criteria	EPTS01	RDL	QC Batch
Inorganics					
Total Ammonia-N	mg/L	-	0.12	0.050	7721479
Total BOD	mg/L	-	ND	2	7710278
Total Chemical Oxygen Demand (COD)	mg/L	-	5.7	4.0	7767503
Conductivity	umho/cm	-	720	1.0	7713663
Total Kjeldahl Nitrogen (TKN)	mg/L	-	0.47	0.10	7715540
pH	pH	6.5:8.5	8.22		7713672
Phenols-4AAP	mg/L	0.001	ND	0.0010	7714285
Total Phosphorus	mg/L	0.01	ND (1)	0.020	7717615
Total Suspended Solids	mg/L	-	3	1	7713129
Dissolved Sulphate (SO ₄)	mg/L	-	15	1.0	7713657
Alkalinity (Total as CaCO ₃)	mg/L	-	290	1.0	7713671
Dissolved Chloride (Cl ⁻)	mg/L	-	47	1.0	7713654
Nitrite (N)	mg/L	-	0.020	0.010	7713679
Nitrate (N)	mg/L	-	2.82	0.10	7713679
Nitrate + Nitrite (N)	mg/L	-	2.84	0.10	7713679
RDL = Reportable Detection Limit					
QC Batch = Quality Control Batch					
Criteria: Ontario Provincial Water Quality Objectives					
Ref. to MOEE Water Management document dated Feb.1999					
ND = Not Detected at a concentration equal or greater than the indicated Detection Limit.					
(1) RDL exceeds criteria					



BUREAU
VERITAS

Bureau Veritas Job #: C1Y0706

Report Date: 2022/01/07

City of Guelph

Client Project #: WET / DRY SURFACE WATER

Site Location: WET/DRY SW NOVEMBER 2021

Your P.O. #: 2100310

Sampler Initials: AS

ELEMENTS BY ATOMIC SPECTROSCOPY (WATER)

Bureau Veritas ID			RGU305	RGU305		RGU306		
Sampling Date			2021/11/17	2021/11/17		2021/11/17		
COC Number			828919-03-01	828919-03-01		828919-03-01		
	UNITS	Criteria	TP1 - OUT	TP1 - OUT Lab-Dup	QC Batch	EPTS01	RDL	QC Batch
Metals								
Total Boron (B)	mg/L	0.2	0.037	0.038	7717472	0.033	0.010	7721992
Total Calcium (Ca)	mg/L	-	57	60	7717472	91	0.20	7721992
Total Iron (Fe)	mg/L	0.3	ND	ND	7717472	ND	0.10	7721992
Total Magnesium (Mg)	mg/L	-	5.4	5.6	7717472	23	0.050	7721992
Total Potassium (K)	mg/L	-	3.4	3.5	7717472	1.7	0.20	7721992
Total Sodium (Na)	mg/L	-	23	24	7717472	31	0.10	7721992
Total Zinc (Zn)	mg/L	0.03	ND	ND	7717472	0.11	0.0050	7721992
RDL = Reportable Detection Limit QC Batch = Quality Control Batch Lab-Dup = Laboratory Initiated Duplicate Criteria: Ontario Provincial Water Quality Objectives Ref. to MOEE Water Management document dated Feb.1999 ND = Not Detected at a concentration equal or greater than the indicated Detection Limit.								



BUREAU
VERITAS

Bureau Veritas Job #: C1Y0706

Report Date: 2022/01/07

City of Guelph

Client Project #: WET / DRY SURFACE WATER

Site Location: WET/DRY SW NOVEMBER 2021

Your P.O. #: 2100310

Sampler Initials: AS

GENERAL COMMENTS

Results relate only to the items tested.



Bureau Veritas Job #: C1Y0706
Report Date: 2022/01/07

QUALITY ASSURANCE REPORT

City of Guelph
Client Project #: WET / DRY SURFACE WATER
Site Location: WET/DRY SW NOVEMBER 2021
Your P.O. #: 2100310
Sampler Initials: AS

QC Batch	Parameter	Date	Matrix Spike		SPIKED BLANK		Method Blank		RPD		QC Standard	
			% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits	% Recovery	QC Limits
7710278	Total BOD	2021/12/08					ND, RDL=2	mg/L	NC	30	97	80 - 120
7713129	Total Suspended Solids	2021/11/30					ND, RDL=1	mg/L	25	25	98	85 - 115
7713654	Dissolved Chloride (Cl ⁻)	2021/11/23	NC	80 - 120	105	80 - 120	ND, RDL=1.0	mg/L	1.5	20		
7713657	Dissolved Sulphate (SO ₄)	2021/11/22	NC	75 - 125	100	80 - 120	ND, RDL=1.0	mg/L	1.3	20		
7713663	Conductivity	2021/11/23			101	85 - 115	1.0, RDL=1.0	umho/cm	0.97	25		
7713671	Alkalinity (Total as CaCO ₃)	2021/11/23			95	85 - 115	ND, RDL=1.0	mg/L	0.19	20		
7713672	pH	2021/11/23			102	98 - 103			0.072	N/A		
7713679	Nitrate (N)	2021/11/23	101	80 - 120	103	80 - 120	ND, RDL=0.10	mg/L	2.9	20		
7713679	Nitrite (N)	2021/11/23	105	80 - 120	107	80 - 120	ND, RDL=0.010	mg/L	NC	20		
7713708	Dissolved Sulphate (SO ₄)	2021/11/22	130 (1)	75 - 125	102	80 - 120	ND, RDL=1.0	mg/L	NC	20		
7713709	Dissolved Chloride (Cl ⁻)	2021/11/22	107	80 - 120	107	80 - 120	ND, RDL=1.0	mg/L	12	20		
7713869	Total Phosphorus	2021/12/08	104	80 - 120	103	80 - 120	ND, RDL=0.020	mg/L	11	20	104	80 - 120
7714285	Phenols-4AAP	2021/11/22	95	80 - 120	98	80 - 120	ND, RDL=0.0010	mg/L	NC	20		
7715540	Total Kjeldahl Nitrogen (TKN)	2021/11/29	115	80 - 120	103	80 - 120	ND, RDL=0.10	mg/L	14	20	103	80 - 120
7717472	Total Boron (B)	2021/11/29	95	80 - 120	89	80 - 120	ND, RDL=0.010	mg/L	3.2	20		
7717472	Total Calcium (Ca)	2021/11/29	NC	80 - 120	99	80 - 120	ND, RDL=0.20	mg/L	4.5	20		
7717472	Total Iron (Fe)	2021/11/29	99	80 - 120	99	80 - 120	ND, RDL=0.10	mg/L	NC	20		
7717472	Total Magnesium (Mg)	2021/11/29	97	80 - 120	99	80 - 120	ND, RDL=0.050	mg/L	4.1	20		
7717472	Total Potassium (K)	2021/11/29	99	80 - 120	96	80 - 120	ND, RDL=0.20	mg/L	3.6	20		
7717472	Total Sodium (Na)	2021/11/29	97	80 - 120	95	80 - 120	ND, RDL=0.10	mg/L	4.1	20		
7717472	Total Zinc (Zn)	2021/11/29	103	80 - 120	101	80 - 120	ND, RDL=0.0050	mg/L	NC	20		
7717615	Total Phosphorus	2021/11/30	93	80 - 120	96	80 - 120	ND, RDL=0.020	mg/L	0.79	20	97	80 - 120



Bureau Veritas Job #: C1Y0706
Report Date: 2022/01/07

QUALITY ASSURANCE REPORT(CONT'D)

City of Guelph
Client Project #: WET / DRY SURFACE WATER
Site Location: WET/DRY SW NOVEMBER 2021
Your P.O. #: 2100310
Sampler Initials: AS

QC Batch	Parameter	Date	Matrix Spike		SPIKED BLANK		Method Blank		RPD		QC Standard	
			% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits	% Recovery	QC Limits
7721479	Total Ammonia-N	2021/11/29	97	75 - 125	97	80 - 120	ND, RDL=0.050	mg/L	0.23	20		
7721992	Total Boron (B)	2021/12/06	96	80 - 120	100	80 - 120	ND, RDL=0.010	mg/L	5.6	20		
7721992	Total Calcium (Ca)	2021/12/06	NC	80 - 120	101	80 - 120	ND, RDL=0.20	mg/L	3.2	20		
7721992	Total Iron (Fe)	2021/12/06	96	80 - 120	99	80 - 120	ND, RDL=0.10	mg/L	4.6	20		
7721992	Total Magnesium (Mg)	2021/12/06	94	80 - 120	99	80 - 120	ND, RDL=0.050	mg/L	5.2	20		
7721992	Total Potassium (K)	2021/12/06	97	80 - 120	97	80 - 120	ND, RDL=0.20	mg/L	4.4	20		
7721992	Total Sodium (Na)	2021/12/06	NC	80 - 120	98	80 - 120	ND, RDL=0.10	mg/L	5.9	20		
7721992	Total Zinc (Zn)	2021/12/06	99	80 - 120	105	80 - 120	ND, RDL=0.0050	mg/L	4.3	20		
7722203	Total Kjeldahl Nitrogen (TKN)	2021/12/13	103	80 - 120	101	80 - 120	ND, RDL=0.10	mg/L	NC	20	101	80 - 120
7722537	Total Ammonia-N	2021/12/08	97	75 - 125	100	80 - 120	ND, RDL=0.050	mg/L	14	20		
7767503	Total Chemical Oxygen Demand (COD)	2022/01/06	98	80 - 120	99	80 - 120	ND, RDL=4.0	mg/L	10	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 $\leq 2 \times$ RDL).

(1) Recovery or RPD for this parameter is outside control limits. The overall quality control for this analysis meets acceptability criteria.



BUREAU
VERITAS

Bureau Veritas Job #: C1Y0706

Report Date: 2022/01/07

City of Guelph

Client Project #: WET / DRY SURFACE WATER

Site Location: WET/DRY SW NOVEMBER 2021

Your P.O. #: 2100310

Sampler Initials: AS

VALIDATION SIGNATURE PAGE

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

Brad Newman, B.Sc., C.Chem., Scientific Service Specialist

BV Labs 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 Signature Page.



Bureau Veritas Laboratoires
6740 Campbell Road, Mississauga, Ontario Canada L5N 2L8 Tel: (905) 817-5700 Toll-free: 800-563-6266 Fax: (905) 817-5777 www.bvlabs.com

18-Nov-21 16:42

James Aspin

C1Y0706

Page 1 of 1

INVOICE TO:		REPORT TO:		PROJECT INFORMATION:	
Company Name: #12237 City of Guelph	Company Name: 9497- The City of Guelph	Quotation #: B90142	KSE ENV-1992		
Attention: Amy Spence (Wet/Dry)	Attention: Amy Spence	P.O. #:			
Address: 186 Eastview Rd	Address: 110 Dunlop Drive	Project: Wet / Dry Surface Water			
Guelph ON N1E 1Z6	Guelph, ON N1H6H8	Project Name: Wet/Dry SW November 2021			
Tel: (519) 837-5633 Fax: (519) 823-0910	Tel: 519-362-1164 Fax: patty.wong@acrom.com	Site #: 110 Dunlop Dr			
Email: amy.spence@guelph.ca	Email: amy.spence@guelph.ca acrom.com	Sampled By: Amy Spence			

MOE REGULATED DRINKING WATER OR WATER INTENDED FOR HUMAN CONSUMPTION MUST BE SUBMITTED ON THE BV LABS DRINKING WATER CHAIN OF CUSTODY.

Regulation 153 (2011)			Other Regulations			Special Instructions		
<input type="checkbox"/> Table 1	<input type="checkbox"/> Res/Park	<input type="checkbox"/> Medium/Fine	<input type="checkbox"/> CCME	<input type="checkbox"/> Sanitary Sewer Bylaw				
<input type="checkbox"/> Table 2	<input type="checkbox"/> Ind/Comm	<input type="checkbox"/> Coarse	<input type="checkbox"/> Reg 558	<input type="checkbox"/> Storm Sewer Bylaw				
<input type="checkbox"/> Table 3	<input type="checkbox"/> Agri/Other	<input type="checkbox"/> For RSC	<input type="checkbox"/> MISA	<input type="checkbox"/> Municipality				
<input type="checkbox"/> Table			<input type="checkbox"/> PWQO	<input type="checkbox"/> Reg 405 Table				
<input type="checkbox"/> Other			<input type="checkbox"/> Other					
Include Criteria on Certificate of Analysis (Y/N)?								
Sample Barcode Label	Sample (Location) Identification	Date Sampled	Time Sampled	Matrix	Field Filtered (please circle): Metals / Hg / Cr VI	Wet-Dry SW	Standard Method: Chloride Determination	NITRATES + NITRITES
1	TP1-OUT	NOV 17, 2021	AM	SW	N	X		X
2	EPTSO1	NOV 17, 2021	AM	SW	N	X		X
3								
4								
5								
6								
7								
8								
9								
10								

* RELINQUISHED BY: (Signature/Print)		Date: (YY/MM/DD)	Time	RECEIVED BY: (Signature/Print)		Date: (YY/MM/DD)	Time	# jars used and not submitted	Laboratory Use Only	
Amy Spence / Amy Spence		21/11/18	PM	S. DIPIKA SINGH		20/21/11/18	16:42		Time Sensitive	Temperature (°C) on Reel
									0/0/0	
									Custody Seal	Yes No
									Present	
									Intact	

* UNLESS OTHERWISE AGREED TO IN WRITING, WORK SUBMITTED ON THIS CHAIN OF CUSTODY IS SUBJECT TO BV LABS' STANDARD TERMS AND CONDITIONS. SIGNING OF THIS CHAIN OF CUSTODY DOCUMENT IS ACKNOWLEDGMENT AND ACCEPTANCE OF OUR TERMS WHICH ARE AVAILABLE FOR VIEWING AT WWW.BVLABS.COM/TERMS-AND-CONDITIONS.

* IT IS THE RESPONSIBILITY OF THE RELINQUISHER TO ENSURE THE ACCURACY OF THE CHAIN OF CUSTODY RECORD. AN INCOMPLETE CHAIN OF CUSTODY MAY RESULT IN ANALYTICAL TAT DELAYS.

** SAMPLE CONTAINER, PRESERVATION, HOLD TIME AND PACKAGE INFORMATION CAN BE VIEWED AT WWW.BVLABS.COM/RESOURCES/CHAIN-OF-CUSTODY-FORMS.

White: BV Labs Yellow: Client

SAMPLES MUST BE KEPT COOL (< 10° C) FROM TIME OF SAMPLING UNTIL DELIVERY TO BV LABS



Your Project #: Wet/Dry Ground Water
 Site Location: DEC GW
 Your C.O.C. #: 804608-03-01

Attention: Amy Spence

City of Guelph
 Solid Waste RIC (Wet/Dry)
 110 Dunlop Drive
 Guelph, ON
 CANADA N1H 6H8

Report Date: 2021/12/22
 Report #: R6935090
 Version: 1 - Final

CERTIFICATE OF ANALYSIS

BV LABS JOB #: C1Y9712

Received: 2021/12/14, 16:49

Sample Matrix: Water
 # Samples Received: 8

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Analytical Method
Alkalinity	8	N/A	2021/12/16	CAM SOP-00448	SM 23 2320 B m
Biochemical Oxygen Demand (BOD)	8	2021/12/15	2021/12/20	CAM SOP-00427	SM 23 5210B m
Chloride by Automated Colourimetry	8	N/A	2021/12/16	CAM SOP-00463	SM 23 4500-Cl E m
Chemical Oxygen Demand	8	N/A	2021/12/17	CAM SOP-00416	SM 23 5220 D m
Conductivity	8	N/A	2021/12/16	CAM SOP-00414	SM 23 2510 m
Dissolved Metals by ICPMS	7	N/A	2021/12/16	CAM SOP-00447	EPA 6020B m
Dissolved Metals by ICPMS	1	N/A	2021/12/17	CAM SOP-00447	EPA 6020B m
Total Metals Analysis by ICP	8	2021/12/17	2021/12/17	CAM SOP-00408	EPA 6010D m
Total Ammonia-N	8	N/A	2021/12/20	CAM SOP-00441	USGS I-2522-90 m
Nitrate & Nitrite as Nitrogen in Water (1)	8	N/A	2021/12/16	CAM SOP-00440	SM 23 4500-NO3I/NO2B
pH	8	2021/12/15	2021/12/16	CAM SOP-00413	SM 4500H+ B m
Phenols (4AAP)	8	N/A	2021/12/15	CAM SOP-00444	OMOE E3179 m
Sulphate by Automated Colourimetry	8	N/A	2021/12/16	CAM SOP-00464	EPA 375.4 m
Total Kjeldahl Nitrogen in Water	6	2021/12/16	2021/12/17	CAM SOP-00938	OMOE E3516 m
Total Kjeldahl Nitrogen in Water	1	2021/12/16	2021/12/20	CAM SOP-00938	OMOE E3516 m
Total Kjeldahl Nitrogen in Water	1	2021/12/17	2021/12/20	CAM SOP-00938	OMOE E3516 m
Total Phosphorus (Colourimetric)	8	2021/12/17	2021/12/19	CAM SOP-00407	SM 23 4500 P B H 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, MELCC, EPA, APHA.

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.

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Your Project #: Wet/Dry Ground Water
Site Location: DEC GW
Your C.O.C. #: 804608-03-01

Attention: Amy Spence

City of Guelph
Solid Waste RIC (Wet/Dry)
110 Dunlop Drive
Guelph, ON
CANADA N1H 6H8

Report Date: 2021/12/22
Report #: R6935090
Version: 1 - Final

CERTIFICATE OF ANALYSIS

BV LABS JOB #: C1Y9712

Received: 2021/12/14, 16:49

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.

Encryption Key

James Aspin
Senior Project Manager
22 Dec 2021 16:50:38

Please direct all questions regarding this Certificate of Analysis to your Project Manager.

James Aspin, Senior Project Manager

Email: James.Aspin@bureauveritas.com

Phone# (905)817-5771

=====

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BUREAU
VERITAS

Bureau Veritas Job #: C1Y9712

Report Date: 2021/12/22

City of Guelph

Client Project #: Wet/Dry Ground Water

Site Location: DEC GW

Sampler Initials: AS

RESULTS OF ANALYSES OF WATER

Bureau Veritas ID				RIS507			RIS507		
Sampling Date				2021/12/13			2021/12/13		
COC Number				804608-03-01			804608-03-01		
	UNITS	Criteria	Criteria C	19A	RDL	QC Batch	19A Lab-Dup	RDL	QC Batch
Inorganics									
Total Ammonia-N	mg/L	-	-	0.061	0.050	7735249			
Total BOD	mg/L	-	-	ND	2	7727459	ND	2	7727459
Total Chemical Oxygen Demand (COD)	mg/L	-	-	5.4	4.0	7731520			
Conductivity	umho/cm	-	-	880	1.0	7729544			
Total Kjeldahl Nitrogen (TKN)	mg/L	-	-	ND	0.10	7731460			
pH	pH	-	6.5-8.5	7.89		7729532			
Phenols-4AAP	mg/L	-	-	ND	0.0010	7727439			
Total Phosphorus	mg/L	-	-	0.033	0.020	7734866			
Dissolved Sulphate (SO ₄)	mg/L	-	500	99	1.0	7729919			
Alkalinity (Total as CaCO ₃)	mg/L	-	30-500	250	1.0	7729520			
Dissolved Chloride (Cl ⁻)	mg/L	-	250	80	1.0	7729922			
Nitrite (N)	mg/L	1	-	ND	0.010	7729165			
Nitrate (N)	mg/L	10	-	ND	0.10	7729165			
Nitrate + Nitrite (N)	mg/L	10	-	ND	0.10	7729165			
RDL = Reportable Detection Limit QC Batch = Quality Control Batch Lab-Dup = Laboratory Initiated Duplicate Criteria, Criteria C: Ontario Regulation 169/03 Criteria A = Maximum Acceptable Criteria B = Interim Maximum Criteria C = Chemical/Physical Objectives [A/O] (Made under the Ontario Safe Drinking Water Act, 2002) ND = Not Detected at a concentration equal or greater than the indicated Detection Limit.									



BUREAU
VERITAS

Bureau Veritas Job #: C1Y9712
Report Date: 2021/12/22

City of Guelph
Client Project #: Wet/Dry Ground Water
Site Location: DEC GW
Sampler Initials: AS

RESULTS OF ANALYSES OF WATER

Bureau Veritas ID				RIS508			RIS508		
Sampling Date				2021/12/13			2021/12/13		
COC Number				804608-03-01			804608-03-01		
	UNITS	Criteria	Criteria C	19B	RDL	QC Batch	19B Lab-Dup	RDL	QC Batch
Inorganics									
Total Ammonia-N	mg/L	-	-	ND	0.050	7735249			
Total BOD	mg/L	-	-	ND	2	7727459			
Total Chemical Oxygen Demand (COD)	mg/L	-	-	7.2	4.0	7731520			
Conductivity	umho/cm	-	-	1100	1.0	7729544			
Total Kjeldahl Nitrogen (TKN)	mg/L	-	-	0.10	0.10	7731510			
pH	pH	-	6.5-8.5	7.79		7729532			
Phenols-4AAP	mg/L	-	-	ND	0.0010	7727439			
Total Phosphorus	mg/L	-	-	0.038	0.020	7734866			
Dissolved Sulphate (SO ₄)	mg/L	-	500	67	1.0	7729919	67	1.0	7729919
Alkalinity (Total as CaCO ₃)	mg/L	-	30-500	440	1.0	7729520			
Dissolved Chloride (Cl ⁻)	mg/L	-	250	30	1.0	7729922	30	1.0	7729922
Nitrite (N)	mg/L	1	-	ND	0.010	7729165			
Nitrate (N)	mg/L	10	-	1.50	0.10	7729165			
Nitrate + Nitrite (N)	mg/L	10	-	1.50	0.10	7729165			
RDL = Reportable Detection Limit QC Batch = Quality Control Batch Lab-Dup = Laboratory Initiated Duplicate Criteria, Criteria C: Ontario Regulation 169/03 Criteria A = Maximum Acceptable Criteria B = Interim Maximum Criteria C = Chemical/Physical Objectives [A/O] (Made under the Ontario Safe Drinking Water Act, 2002) ND = Not Detected at a concentration equal or greater than the indicated Detection Limit.									



BUREAU
VERITAS

Bureau Veritas Job #: C1Y9712

Report Date: 2021/12/22

City of Guelph

Client Project #: Wet/Dry Ground Water

Site Location: DEC GW

Sampler Initials: AS

RESULTS OF ANALYSES OF WATER

Bureau Veritas ID				RIS509	RIS510			RIS510		
Sampling Date				2021/12/13	2021/12/13			2021/12/13		
COC Number				804608-03-01	804608-03-01			804608-03-01		
	UNITS	Criteria	Criteria C	20A	20B	RDL	QC Batch	20B Lab-Dup	RDL	QC Batch

Inorganics										
Total Ammonia-N	mg/L	-	-	ND	ND	0.050	7735249			
Total BOD	mg/L	-	-	ND	ND	2	7727459			
Total Chemical Oxygen Demand (COD)	mg/L	-	-	4.7	9.0	4.0	7731520	8.7	4.0	7731520
Conductivity	umho/cm	-	-	630	780	1.0	7729544			
Total Kjeldahl Nitrogen (TKN)	mg/L	-	-	ND	0.13	0.10	7731510			
pH	pH	-	6.5:8.5	8.01	7.99		7729532			
Phenols-4AAP	mg/L	-	-	ND	ND	0.0010	7727439			
Total Phosphorus	mg/L	-	-	ND	ND	0.020	7734866			
Dissolved Sulphate (SO4)	mg/L	-	500	41	52	1.0	7729919			
Alkalinity (Total as CaCO3)	mg/L	-	30-500	250	330	1.0	7729520			
Dissolved Chloride (Cl-)	mg/L	-	250	21	30	1.0	7729922			
Nitrite (N)	mg/L	1	-	ND	ND	0.010	7729165			
Nitrate (N)	mg/L	10	-	3.63	ND	0.10	7729165			
Nitrate + Nitrite (N)	mg/L	10	-	3.63	ND	0.10	7729165			

RDL = Reportable Detection Limit

QC Batch = Quality Control Batch

Lab-Dup = Laboratory Initiated Duplicate

Criteria, Criteria C: Ontario Regulation 169/03

Criteria A = Maximum Acceptable

Criteria B = Interim Maximum

Criteria C = Chemical/Physical Objectives [A/O]

(Made under the Ontario Safe Drinking Water Act, 2002)

ND = Not Detected at a concentration equal or greater than the indicated Detection Limit.



BUREAU
VERITAS

Bureau Veritas Job #: C1Y9712
Report Date: 2021/12/22

City of Guelph
Client Project #: Wet/Dry Ground Water
Site Location: DEC GW
Sampler Initials: AS

RESULTS OF ANALYSES OF WATER

Bureau Veritas ID				RIS511			RIS511		
Sampling Date				2021/12/13			2021/12/13		
COC Number				804608-03-01			804608-03-01		
	UNITS	Criteria	Criteria C	23A	RDL	QC Batch	23A Lab-Dup	RDL	QC Batch

Inorganics									
Total Ammonia-N	mg/L	-	-	0.10 (1)	0.050	7735249			
Total BOD	mg/L	-	-	ND	2	7727459			
Total Chemical Oxygen Demand (COD)	mg/L	-	-	ND	4.0	7731520			
Conductivity	umho/cm	-	-	690	1.0	7729544			
Total Kjeldahl Nitrogen (TKN)	mg/L	-	-	ND (1)	0.10	7735138	0.12	0.10	7735138
pH	pH	-	6.5-8.5	7.95		7729532			
Phenols-4AAP	mg/L	-	-	ND	0.0010	7727439			
Total Phosphorus	mg/L	-	-	ND	0.020	7734866			
Dissolved Sulphate (SO ₄)	mg/L	-	500	90	1.0	7729919			
Alkalinity (Total as CaCO ₃)	mg/L	-	30-500	240	1.0	7729520			
Dissolved Chloride (Cl ⁻)	mg/L	-	250	28	1.0	7729922			
Nitrite (N)	mg/L	1	-	ND	0.010	7729165			
Nitrate (N)	mg/L	10	-	ND	0.10	7729165			
Nitrate + Nitrite (N)	mg/L	10	-	ND	0.10	7729165			

RDL = Reportable Detection Limit

QC Batch = Quality Control Batch

Lab-Dup = Laboratory Initiated Duplicate

Criteria, Criteria C: Ontario Regulation 169/03

Criteria A = Maximum Acceptable

Criteria B = Interim Maximum

Criteria C = Chemical/Physical Objectives [A/O]

(Made under the Ontario Safe Drinking Water Act, 2002)

ND = Not Detected at a concentration equal or greater than the indicated Detection Limit.

(1) TKN < NH₄: Both values fall within acceptable RPD limits for duplicates and are likely equivalent.

BUREAU
VERITAS

Bureau Veritas Job #: C1Y9712

Report Date: 2021/12/22

City of Guelph

Client Project #: Wet/Dry Ground Water

Site Location: DEC GW

Sampler Initials: AS

RESULTS OF ANALYSES OF WATER

Bureau Veritas ID				RIS512		RIS513	RIS514		
Sampling Date				2021/12/13		2021/12/13	2021/12/13		
COC Number				804608-03-01		804608-03-01	804608-03-01		
	UNITS	Criteria	Criteria C	23B	RDL	9	10	RDL	QC Batch

Inorganics

Total Ammonia-N	mg/L	-	-	ND	0.050	ND	ND	0.050	7735249
Total BOD	mg/L	-	-	ND	2	ND	ND	2	7727459
Total Chemical Oxygen Demand (COD)	mg/L	-	-	6.9	4.0	5.4	9.4	4.0	7731520
Conductivity	umho/cm	-	-	1200	1.0	260	700	1.0	7729544
Total Kjeldahl Nitrogen (TKN)	mg/L	-	-	0.12	0.10	0.16	0.11	0.10	7731510
pH	pH	-	6.5:8.5	7.81		8.16	8.01		7729532
Phenols-4AAP	mg/L	-	-	ND	0.0010	ND	ND	0.0010	7727439
Total Phosphorus	mg/L	-	-	0.11	0.020	ND	0.20	0.020	7734866
Dissolved Sulphate (SO ₄)	mg/L	-	500	29	1.0	18	80	1.0	7729919
Alkalinity (Total as CaCO ₃)	mg/L	-	30-500	360	1.0	100	240	1.0	7729520
Dissolved Chloride (Cl ⁻)	mg/L	-	250	140	2.0	3.8	34	1.0	7729922
Nitrite (N)	mg/L	1	-	ND	0.010	ND	ND	0.010	7729165
Nitrate (N)	mg/L	10	-	3.47	0.10	1.14	ND	0.10	7729165
Nitrate + Nitrite (N)	mg/L	10	-	3.47	0.10	1.14	ND	0.10	7729165

RDL = Reportable Detection Limit

QC Batch = Quality Control Batch

Criteria, Criteria C: Ontario Regulation 169/03

Criteria A = Maximum Acceptable

Criteria B = Interim Maximum

Criteria C = Chemical/Physical Objectives [A/O]

(Made under the Ontario Safe Drinking Water Act, 2002)

ND = Not Detected at a concentration equal or greater than the indicated Detection Limit.

Bureau Veritas ID				RIS514		
Sampling Date				2021/12/13		
COC Number				804608-03-01		
	UNITS	Criteria	Criteria C	10 Lab-Dup	RDL	QC Batch

Inorganics

Total Phosphorus	mg/L	-	-	0.20	0.020	7734866
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RDL = Reportable Detection Limit

QC Batch = Quality Control Batch

Lab-Dup = Laboratory Initiated Duplicate

Criteria, Criteria C: Ontario Regulation 169/03

Criteria A = Maximum Acceptable

Criteria B = Interim Maximum

Criteria C = Chemical/Physical Objectives [A/O]

(Made under the Ontario Safe Drinking Water Act, 2002)



BUREAU
VERITAS

Bureau Veritas Job #: C1Y9712
Report Date: 2021/12/22

City of Guelph
Client Project #: Wet/Dry Ground Water
Site Location: DEC GW
Sampler Initials: AS

ELEMENTS BY ATOMIC SPECTROSCOPY (WATER)

Bureau Veritas ID					RIS507	RIS508	RIS509	RIS510		
Sampling Date					2021/12/13	2021/12/13	2021/12/13	2021/12/13		
COC Number					804608-03-01	804608-03-01	804608-03-01	804608-03-01		
	UNITS	Criteria	Criteria B	Criteria C	19A	19B	20A	20B	RDL	QC Batch

Metals

Total Iron (Fe)	mg/L	-	-	0.3	0.56	1.2	0.08	0.37	0.02	7735000
Dissolved Boron (B)	ug/L	-	5000	-	35	75	ND	16	10	7730950
Dissolved Calcium (Ca)	ug/L	-	-	-	100000	85000	89000	100000	200	7730950
Dissolved Magnesium (Mg)	ug/L	-	-	-	33000	27000	28000	31000	50	7730950
Dissolved Phosphorus (P)	ug/L	-	-	-	ND	ND	ND	ND	100	7730950
Dissolved Potassium (K)	ug/L	-	-	-	1600	8700	1200	1600	200	7730950
Dissolved Sodium (Na)	ug/L	20000	-	200000	35000	140000	4700	27000	100	7730950
Dissolved Zinc (Zn)	ug/L	-	-	5000	ND	19	140	100	5.0	7730950

RDL = Reportable Detection Limit

QC Batch = Quality Control Batch

Criteria, Criteria B, Criteria C: Ontario Regulation 169/03

Criteria A = Maximum Acceptable

Criteria B = Interim Maximum

Criteria C = Chemical/Physical Objectives [A/O]

(Made under the Ontario Safe Drinking Water Act, 2002)

ND = Not Detected at a concentration equal or greater than the indicated Detection Limit.



BUREAU
VERITAS

Bureau Veritas Job #: C1Y9712

Report Date: 2021/12/22

City of Guelph

Client Project #: Wet/Dry Ground Water

Site Location: DEC GW

Sampler Initials: AS

ELEMENTS BY ATOMIC SPECTROSCOPY (WATER)

Bureau Veritas ID					RIS511			RIS511		
Sampling Date					2021/12/13			2021/12/13		
COC Number					804608-03-01			804608-03-01		
	UNITS	Criteria	Criteria B	Criteria C	23A	RDL	QC Batch	23A Lab-Dup	RDL	QC Batch
Metals										
Total Iron (Fe)	mg/L	-	-	0.3	0.38	0.02	7735000			
Dissolved Boron (B)	ug/L	-	5000	-	22	10	7730950	22	10	7730950
Dissolved Calcium (Ca)	ug/L	-	-	-	89000	200	7730950	88000	200	7730950
Dissolved Magnesium (Mg)	ug/L	-	-	-	29000	50	7730950	29000	50	7730950
Dissolved Phosphorus (P)	ug/L	-	-	-	ND	100	7730950	ND	100	7730950
Dissolved Potassium (K)	ug/L	-	-	-	1200	200	7730950	1200	200	7730950
Dissolved Sodium (Na)	ug/L	20000	-	200000	13000	100	7730950	12000	100	7730950
Dissolved Zinc (Zn)	ug/L	-	-	5000	ND	5.0	7730950	ND	5.0	7730950
RDL = Reportable Detection Limit QC Batch = Quality Control Batch Lab-Dup = Laboratory Initiated Duplicate Criteria, Criteria B, Criteria C: Ontario Regulation 169/03 Criteria A = Maximum Acceptable Criteria B = Interim Maximum Criteria C = Chemical/Physical Objectives [A/O] (Made under the Ontario Safe Drinking Water Act, 2002) ND = Not Detected at a concentration equal or greater than the indicated Detection Limit.										



BUREAU
VERITAS

Bureau Veritas Job #: C1Y9712

Report Date: 2021/12/22

City of Guelph

Client Project #: Wet/Dry Ground Water

Site Location: DEC GW

Sampler Initials: AS

ELEMENTS BY ATOMIC SPECTROSCOPY (WATER)

Bureau Veritas ID					RIS512	RIS513	RIS514		
Sampling Date					2021/12/13	2021/12/13	2021/12/13		
COC Number					804608-03-01	804608-03-01	804608-03-01		
	UNITS	Criteria	Criteria B	Criteria C	23B	9	10	RDL	QC Batch

Metals

Total Iron (Fe)	mg/L	-	-	0.3	6.2	0.26	5.4	0.02	7735000
Dissolved Boron (B)	ug/L	-	5000	-	90	31	19	10	7730950
Dissolved Calcium (Ca)	ug/L	-	-	-	110000	33000	90000	200	7730950
Dissolved Magnesium (Mg)	ug/L	-	-	-	28000	5600	29000	50	7730950
Dissolved Phosphorus (P)	ug/L	-	-	-	ND	ND	ND	100	7730950
Dissolved Potassium (K)	ug/L	-	-	-	2400	6700	1300	200	7730950
Dissolved Sodium (Na)	ug/L	20000	-	200000	110000	7900	13000	100	7730950
Dissolved Zinc (Zn)	ug/L	-	-	5000	250	ND	ND	5.0	7730950

RDL = Reportable Detection Limit

QC Batch = Quality Control Batch

Criteria, Criteria B, Criteria C: Ontario Regulation 169/03

Criteria A = Maximum Acceptable

Criteria B = Interim Maximum

Criteria C = Chemical/Physical Objectives [A/O]

(Made under the Ontario Safe Drinking Water Act, 2002)

ND = Not Detected at a concentration equal or greater than the indicated Detection Limit.



BUREAU
VERITAS

Bureau Veritas Job #: C1Y9712

Report Date: 2021/12/22

City of Guelph

Client Project #: Wet/Dry Ground Water

Site Location: DEC GW

Sampler Initials: AS

GENERAL COMMENTS

Sample RIS511 [23A] : TKN < Ammonia: Both values fall within the method uncertainty for duplicates and are likely equivalent.

Results relate only to the items tested.



Bureau Veritas Job #: C1Y9712
Report Date: 2021/12/22

QUALITY ASSURANCE REPORT

City of Guelph
Client Project #: Wet/Dry Ground Water
Site Location: DEC GW
Sampler Initials: AS

QC Batch	Parameter	Date	Matrix Spike		SPIKED BLANK		Method Blank		RPD		QC Standard	
			% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits	% Recovery	QC Limits
7727439	Phenols-4AAP	2021/12/15	102	80 - 120	101	80 - 120	ND, RDL=0.0010	mg/L	NC	20		
7727459	Total BOD	2021/12/20					ND, RDL=2	mg/L	NC	30	100	80 - 120
7729165	Nitrate (N)	2021/12/16	100	80 - 120	103	80 - 120	ND, RDL=0.10	mg/L	0.22	20		
7729165	Nitrite (N)	2021/12/16	100	80 - 120	104	80 - 120	ND, RDL=0.010	mg/L	0.20	20		
7729520	Alkalinity (Total as CaCO ₃)	2021/12/16			95	85 - 115	ND, RDL=1.0	mg/L	NC	20		
7729532	pH	2021/12/16			102	98 - 103			1.0	N/A		
7729544	Conductivity	2021/12/16			101	85 - 115	ND, RDL=1.0	umho/cm	NC	25		
7729919	Dissolved Sulphate (SO ₄)	2021/12/16	NC	75 - 125	102	80 - 120	ND, RDL=1.0	mg/L	0.11	20		
7729922	Dissolved Chloride (Cl ⁻)	2021/12/16	NC	80 - 120	101	80 - 120	ND, RDL=1.0	mg/L	0.066	20		
7730950	Dissolved Boron (B)	2021/12/16	97	80 - 120	95	80 - 120	ND, RDL=10	ug/L	0.10	20		
7730950	Dissolved Calcium (Ca)	2021/12/16	NC	80 - 120	101	80 - 120	ND, RDL=200	ug/L	1.1	20		
7730950	Dissolved Magnesium (Mg)	2021/12/16	NC	80 - 120	98	80 - 120	ND, RDL=50	ug/L	0.50	20		
7730950	Dissolved Phosphorus (P)	2021/12/16	107	80 - 120	110	80 - 120	ND, RDL=100	ug/L	NC	20		
7730950	Dissolved Potassium (K)	2021/12/16	99	80 - 120	98	80 - 120	ND, RDL=200	ug/L	1.8	20		
7730950	Dissolved Sodium (Na)	2021/12/16	97	80 - 120	98	80 - 120	ND, RDL=100	ug/L	1.6	20		
7730950	Dissolved Zinc (Zn)	2021/12/16	99	80 - 120	98	80 - 120	ND, RDL=5.0	ug/L	NC	20		
7731460	Total Kjeldahl Nitrogen (TKN)	2021/12/17	95	80 - 120	95	80 - 120	ND, RDL=0.10	mg/L	0.55	20	101	80 - 120
7731510	Total Kjeldahl Nitrogen (TKN)	2021/12/20	NC	80 - 120	96	80 - 120	ND, RDL=0.10	mg/L	5.5	20	102	80 - 120
7731520	Total Chemical Oxygen Demand (COD)	2021/12/17	105	80 - 120	105	80 - 120	ND, RDL=4.0	mg/L	4.1	20		
7734866	Total Phosphorus	2021/12/19	97	80 - 120	100	80 - 120	ND, RDL=0.020	mg/L	0.40	20	102	80 - 120
7735000	Total Iron (Fe)	2021/12/17	NC	80 - 120	107	80 - 120	ND, RDL=0.02	mg/L				
7735138	Total Kjeldahl Nitrogen (TKN)	2021/12/20	105	80 - 120	104	80 - 120	ND, RDL=0.10	mg/L	18	20	105	80 - 120



Bureau Veritas Job #: C1Y9712
Report Date: 2021/12/22

QUALITY ASSURANCE REPORT(CONT'D)

City of Guelph
Client Project #: Wet/Dry Ground Water
Site Location: DEC GW
Sampler Initials: AS

QC Batch	Parameter	Date	Matrix Spike		SPIKED BLANK		Method Blank		RPD		QC Standard	
			% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits	% Recovery	QC Limits
7735249	Total Ammonia-N	2021/12/20	94	75 - 125	105	80 - 120	ND, RDL=0.050	mg/L	3.8	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.

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 $\leq 2 \times \text{RDL}$).



BUREAU
VERITAS

Bureau Veritas Job #: C1Y9712
Report Date: 2021/12/22

City of Guelph
Client Project #: Wet/Dry Ground Water
Site Location: DEC GW
Sampler Initials: AS

VALIDATION SIGNATURE PAGE

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

Brad Newman, B.Sc., C.Chem., Scientific Service Specialist

BV Labs 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 Signature Page.



Bureau Veritas Laboratories
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14-Dec-21 16:49

James Aspin

11 11 - 01 AUGUST 512 0000000000 0000000000
C1Y9712

RJM ENV-1483


C#804608-03-0

804608

James Aspin

INVOICE TO:		REPORT TO:		PROJECT INFORMATION:		nly:	
Company Name: #12237 City of Guelph		Company Name:		Quotation #: B90142		Bottle Order #:	
Attention: Andrew Shouldice (Eastview)		Attention:		P.O. #:		804608	
Address: 186 Eastview Rd		Address:		Project: Wet/Dry Ground Water		ENV-1483	
Guelph ON N1E 1Z6				Project Name: Dec GW		COC #:	
Tel: (519) 822-1260 Ext: 2473 Fax: (519) 823-0910		Tel:		Site #:		Project Manager:	
Email: Andrew.Shouldice@guelph.ca		Email:		Sampled By: Andrew Shouldice		James Aspin	

MOE REGULATED DRINKING WATER OR WATER INTENDED FOR HUMAN CONSUMPTION MUST BE SUBMITTED ON THE BV LABS DRINKING WATER CHAIN OF CUSTODY						ANALYSIS REQUESTED (PLEASE BE SPECIFIC)										Turnaround Time (TAT) Required: Please provide advance notice for rush projects				
Regulation 153 (2011)		Other Regulations		Special Instructions		Field Filtered (please circle): Metals / Hg / Cr VI	ABN Compounds in Water by GC/MS	Volatile Organic Compounds in Water	Non-Routine Volatile Organic Compounds	Wet/Dry GW									# of Bottles	Comments
<input type="checkbox"/> Table 1	<input type="checkbox"/> Res/Park	<input type="checkbox"/> Medium/Fine	<input type="checkbox"/> CCME																	
<input type="checkbox"/> Table 2	<input type="checkbox"/> Ind/Comm	<input type="checkbox"/> Coarse	<input type="checkbox"/> Reg 558	<input type="checkbox"/> Storm Sewer Bylaw																
<input type="checkbox"/> Table 3	<input type="checkbox"/> Agri/Other	<input type="checkbox"/> For RSC	<input type="checkbox"/> MISA	Municipality _____																
<input type="checkbox"/> Table _____			<input type="checkbox"/> PWQO	Reg 406 Table _____																
<input type="checkbox"/> Other _____			<input type="checkbox"/> Other _____																	
Include Criteria on Certificate of Analysis (Y/N)?																				

	Sample Barcode Label	Sample (Location) Identification	Date Sampled	Time Sampled	Matrix														
1		19A	Dec 13/14	Am	GW	Y				X								7	
2		19B			GW	Y				X								7	
3		20A			GW	Y				X								7	
4		20B			GW	Y				X								7	
5		23A			GW	Y				X								7	
6		23B		Pm	GW	Y				X								7	
7		9			GW	Y				X								7	
8		10			GW	Y				X								7	
9																			
10																			

* RELINQUISHED BY: (Signature/Print) <i>Andrew Shouldice</i>	Date: (YY/MM/DD) 21/12/14	Time Am	RECEIVED BY: (Signature/Print) <i>[Signature]</i>	Date: (YY/MM/DD) 04/1/15	Time 1649	# Jars used and not submitted	Laboratory Use Only
							Time Sensitive Temperature (°C) on Reel <i>1/12</i>
							Custody Seal Present <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No

* UNLESS OTHERWISE AGREED TO IN WRITING, WORK SUBMITTED ON THIS CHAIN OF CUSTODY IS SUBJECT TO BV LABS' STANDARD TERMS AND CONDITIONS. SIGNING OF THIS CHAIN OF CUSTODY DOCUMENT IS ACKNOWLEDGMENT AND ACCEPTANCE OF OUR TERMS WHICH ARE AVAILABLE FOR VIEWING AT WWW.BVLABS.COM/TERMS-AND-CONDITIONS.
 ** IT IS THE RESPONSIBILITY OF THE RELINQUISHER TO ENSURE THE ACCURACY OF THE CHAIN OF CUSTODY RECORD. AN INCOMPLETE CHAIN OF CUSTODY MAY RESULT IN ANALYTICAL TAT DELAYS.
 *** SAMPLE CONTAINER, PRESERVATION, HOLD TIME AND PACKAGE INFORMATION CAN BE VIEWED AT WWW.BVLABS.COM/RESOURCES/CHAIN-OF-CUSTODY-FORMS.

White: BV Labs Yellow: Client



Your P.O. #: 2100310
 Your Project #: Wet/Dry Ground Water
 Site Location: DEC GW
 Your C.O.C. #: 804608-04-01

Attention: Amy Spence

City of Guelph
 Solid Waste RIC (Wet/Dry)
 110 Dunlop Drive
 Guelph, ON
 CANADA N1H 6H8

Report Date: 2022/01/06
 Report #: R6950974
 Version: 1 - Final

CERTIFICATE OF ANALYSIS

BV LABS JOB #: C1Z1838

Received: 2021/12/15, 17:17

Sample Matrix: Water
 # Samples Received: 8

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Analytical Method
Alkalinity	8	N/A	2021/12/16	CAM SOP-00448	SM 23 2320 B m
Biochemical Oxygen Demand (BOD)	8	2021/12/17	2021/12/22	CAM SOP-00427	SM 23 5210B m
Chloride by Automated Colourimetry	8	N/A	2021/12/17	CAM SOP-00463	SM 23 4500-Cl E m
Chemical Oxygen Demand	8	N/A	2021/12/22	CAM SOP-00416	SM 23 5220 D m
Conductivity	8	N/A	2021/12/16	CAM SOP-00414	SM 23 2510 m
Dissolved Metals by ICPMS	8	N/A	2021/12/22	CAM SOP-00447	EPA 6020B m
Total Metals Analysis by ICP	8	2021/12/21	2021/12/23	CAM SOP-00408	EPA 6010D m
Total Ammonia-N	8	N/A	2021/12/21	CAM SOP-00441	USGS I-2522-90 m
Nitrate & Nitrite as Nitrogen in Water (1)	8	N/A	2021/12/20	CAM SOP-00440	SM 23 4500-NO3I/NO2B
pH	8	2021/12/16	2021/12/16	CAM SOP-00413	SM 4500H+ B m
Phenols (4AAP)	8	N/A	2021/12/17	CAM SOP-00444	OMOE E3179 m
Sulphate by Automated Colourimetry	8	N/A	2021/12/17	CAM SOP-00464	EPA 375.4 m
Total Kjeldahl Nitrogen in Water	7	2021/12/20	2021/12/21	CAM SOP-00938	OMOE E3516 m
Total Kjeldahl Nitrogen in Water	1	2021/12/20	2021/12/22	CAM SOP-00938	OMOE E3516 m
Total Phosphorus (Colourimetric)	8	2021/12/20	2021/12/21	CAM SOP-00407	SM 23 4500 P B H 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, MELCC, EPA, APHA.

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. #: 2100310
Your Project #: Wet/Dry Ground Water
Site Location: DEC GW
Your C.O.C. #: 804608-04-01

Attention: Amy Spence

City of Guelph
Solid Waste RIC (Wet/Dry)
110 Dunlop Drive
Guelph, ON
CANADA N1H 6H8

Report Date: 2022/01/06
Report #: R6950974
Version: 1 - Final

CERTIFICATE OF ANALYSIS

BV LABS JOB #: C1Z1838

Received: 2021/12/15, 17:17

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.

Encryption Key

James Aspin
Senior Project Manager
06 Jan 2022 13:16:53

Please direct all questions regarding this Certificate of Analysis to your Project Manager.

James Aspin, Senior Project Manager

Email: James.Aspin@bureauveritas.com

Phone# (905)817-5771

=====

BV Labs 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 Signature Page.



BUREAU
VERITAS

Bureau Veritas Job #: C1Z1838

Report Date: 2022/01/06

City of Guelph

Client Project #: Wet/Dry Ground Water

Site Location: DEC GW

Your P.O. #: 2100310

Sampler Initials: AS

RESULTS OF ANALYSES OF WATER

Bureau Veritas ID				RJF771	RJF772		
Sampling Date				2021/12/14	2021/12/14		
COC Number				804608-04-01	804608-04-01		
	UNITS	Criteria	Criteria C	11A	11B	RDL	QC Batch
Inorganics							
Total Ammonia-N	mg/L	-	-	0.070	ND	0.050	7737224
Total BOD	mg/L	-	-	ND	ND	2	7734926
Total Chemical Oxygen Demand (COD)	mg/L	-	-	ND	4.6	4.0	7742923
Conductivity	umho/cm	-	-	570	620	1.0	7732537
Total Kjeldahl Nitrogen (TKN)	mg/L	-	-	ND	ND	0.10	7742832
pH	pH	-	6.5-8.5	8.03	8.07		7732542
Phenols-4AAP	mg/L	-	-	ND	ND	0.0010	7734852
Total Phosphorus	mg/L	-	-	ND	0.027	0.020	7742313
Dissolved Sulphate (SO ₄)	mg/L	-	500	34	14	1.0	7732721
Alkalinity (Total as CaCO ₃)	mg/L	-	30-500	230	290	1.0	7732522
Dissolved Chloride (Cl ⁻)	mg/L	-	250	21	22	1.0	7732705
Nitrite (N)	mg/L	1	-	ND	ND	0.010	7732590
Nitrate (N)	mg/L	10	-	ND	1.38	0.10	7732590
Nitrate + Nitrite (N)	mg/L	10	-	ND	1.38	0.10	7732590
RDL = Reportable Detection Limit QC Batch = Quality Control Batch Criteria, Criteria C: Ontario Regulation 169/03 Criteria A = Maximum Acceptable Criteria B = Interim Maximum Criteria C = Chemical/Physical Objectives [A/O] (Made under the Ontario Safe Drinking Water Act, 2002) ND = Not Detected at a concentration equal or greater than the indicated Detection Limit.							



BUREAU
VERITAS

Bureau Veritas Job #: C1Z1838

Report Date: 2022/01/06

City of Guelph

Client Project #: Wet/Dry Ground Water

Site Location: DEC GW

Your P.O. #: 2100310

Sampler Initials: AS

RESULTS OF ANALYSES OF WATER

Bureau Veritas ID				RJF772			RJF773		
Sampling Date				2021/12/14			2021/12/14		
COC Number				804608-04-01			804608-04-01		
	UNITS	Criteria	Criteria C	11B Lab-Dup	RDL	QC Batch	12A	RDL	QC Batch
Inorganics									
Total Ammonia-N	mg/L	-	-	ND	0.050	7737224	0.067	0.050	7736146
Total BOD	mg/L	-	-				ND	2	7734926
Total Chemical Oxygen Demand (COD)	mg/L	-	-				9.3	4.0	7742923
Conductivity	umho/cm	-	-				590	1.0	7732537
Total Kjeldahl Nitrogen (TKN)	mg/L	-	-				0.23	0.10	7742832
pH	pH	-	6.5:8.5				7.77		7732542
Phenols-4AAP	mg/L	-	-				ND	0.0010	7734852
Total Phosphorus	mg/L	-	-				0.32	0.10	7742313
Dissolved Sulphate (SO ₄)	mg/L	-	500				19	1.0	7732721
Alkalinity (Total as CaCO ₃)	mg/L	-	30-500				300	1.0	7732522
Dissolved Chloride (Cl ⁻)	mg/L	-	250				2.9	1.0	7732705
Nitrite (N)	mg/L	1	-				ND	0.010	7732590
Nitrate (N)	mg/L	10	-				0.38	0.10	7732590
Nitrate + Nitrite (N)	mg/L	10	-				0.38	0.10	7732590
RDL = Reportable Detection Limit QC Batch = Quality Control Batch Lab-Dup = Laboratory Initiated Duplicate Criteria, Criteria C: Ontario Regulation 169/03 Criteria A = Maximum Acceptable Criteria B = Interim Maximum Criteria C = Chemical/Physical Objectives [A/O] (Made under the Ontario Safe Drinking Water Act, 2002) ND = Not Detected at a concentration equal or greater than the indicated Detection Limit.									



BUREAU
VERITAS

Bureau Veritas Job #: C1Z1838
Report Date: 2022/01/06

City of Guelph
Client Project #: Wet/Dry Ground Water
Site Location: DEC GW
Your P.O. #: 2100310
Sampler Initials: AS

RESULTS OF ANALYSES OF WATER

Bureau Veritas ID				RJF774			RJF774		
Sampling Date				2021/12/14			2021/12/14		
COC Number				804608-04-01			804608-04-01		
	UNITS	Criteria	Criteria C	12B	RDL	QC Batch	12B Lab-Dup	RDL	QC Batch
Inorganics									
Total Ammonia-N	mg/L	-	-	ND	0.050	7736157	ND	0.050	7736157
Total BOD	mg/L	-	-	ND	2	7734926			
Total Chemical Oxygen Demand (COD)	mg/L	-	-	ND	4.0	7742923			
Conductivity	umho/cm	-	-	690	1.0	7732537			
Total Kjeldahl Nitrogen (TKN)	mg/L	-	-	ND	0.10	7742832	ND	0.10	7742832
pH	pH	-	6.5:8.5	7.83		7732542			
Phenols-4AAP	mg/L	-	-	ND	0.0010	7734852			
Total Phosphorus	mg/L	-	-	ND	0.020	7742313			
Dissolved Sulphate (SO ₄)	mg/L	-	500	15	1.0	7732721			
Alkalinity (Total as CaCO ₃)	mg/L	-	30-500	360	1.0	7732522			
Dissolved Chloride (Cl ⁻)	mg/L	-	250	4.4	1.0	7732705			
Nitrite (N)	mg/L	1	-	ND	0.010	7732590			
Nitrate (N)	mg/L	10	-	0.69	0.10	7732590			
Nitrate + Nitrite (N)	mg/L	10	-	0.69	0.10	7732590			
RDL = Reportable Detection Limit QC Batch = Quality Control Batch Lab-Dup = Laboratory Initiated Duplicate Criteria, Criteria C: Ontario Regulation 169/03 Criteria A = Maximum Acceptable Criteria B = Interim Maximum Criteria C = Chemical/Physical Objectives [A/O] (Made under the Ontario Safe Drinking Water Act, 2002) ND = Not Detected at a concentration equal or greater than the indicated Detection Limit.									



BUREAU
VERITAS

Bureau Veritas Job #: C1Z1838

Report Date: 2022/01/06

City of Guelph

Client Project #: Wet/Dry Ground Water

Site Location: DEC GW

Your P.O. #: 2100310

Sampler Initials: AS

RESULTS OF ANALYSES OF WATER

Bureau Veritas ID				RJF775			RJF776		
Sampling Date				2021/12/14			2021/12/14		
COC Number				804608-04-01			804608-04-01		
	UNITS	Criteria	Criteria C	6A	RDL	QC Batch	6B	RDL	QC Batch
Inorganics									
Total Ammonia-N	mg/L	-	-	0.53 (1)	0.050	7736157	ND	0.050	7737224
Total BOD	mg/L	-	-	ND	2	7734926	ND	2	7734926
Total Chemical Oxygen Demand (COD)	mg/L	-	-	11	4.0	7742923	ND	4.0	7742923
Conductivity	umho/cm	-	-	1200	1.0	7732537	1000	1.0	7732537
Total Kjeldahl Nitrogen (TKN)	mg/L	-	-	0.46 (1)	0.10	7742832	ND	0.10	7742832
pH	pH	-	6.5-8.5	7.89		7732542	7.87		7732542
Phenols-4AAP	mg/L	-	-	ND	0.0010	7734852	ND	0.0010	7734852
Total Phosphorus	mg/L	-	-	0.080	0.020	7742313	ND	0.020	7742313
Dissolved Sulphate (SO ₄)	mg/L	-	500	64	1.0	7732721	35	1.0	7732721
Alkalinity (Total as CaCO ₃)	mg/L	-	30-500	270	1.0	7732522	300	1.0	7732522
Dissolved Chloride (Cl ⁻)	mg/L	-	250	150	2.0	7732705	130	1.0	7732705
Nitrite (N)	mg/L	1	-	ND	0.010	7732590	ND	0.010	7732608
Nitrate (N)	mg/L	10	-	1.11	0.10	7732590	2.44	0.10	7732608
Nitrate + Nitrite (N)	mg/L	10	-	1.11	0.10	7732590	2.44	0.10	7732608
RDL = Reportable Detection Limit QC Batch = Quality Control Batch Criteria, Criteria C: Ontario Regulation 169/03 Criteria A = Maximum Acceptable Criteria B = Interim Maximum Criteria C = Chemical/Physical Objectives [A/O] (Made under the Ontario Safe Drinking Water Act, 2002) ND = Not Detected at a concentration equal or greater than the indicated Detection Limit. (1) TKN < NH ₄ : Both values fall within acceptable RPD limits for duplicates and are likely equivalent.									



BUREAU
VERITAS

Bureau Veritas Job #: C1Z1838

Report Date: 2022/01/06

City of Guelph

Client Project #: Wet/Dry Ground Water

Site Location: DEC GW

Your P.O. #: 2100310

Sampler Initials: AS

RESULTS OF ANALYSES OF WATER

Bureau Veritas ID				RJF777			RJF777		
Sampling Date				2021/12/14			2021/12/14		
COC Number				804608-04-01			804608-04-01		
	UNITS	Criteria	Criteria C	16A	RDL	QC Batch	16A Lab-Dup	RDL	QC Batch
Inorganics									
Total Ammonia-N	mg/L	-	-	ND	0.050	7736157			
Total BOD	mg/L	-	-	ND	2	7734926			
Total Chemical Oxygen Demand (COD)	mg/L	-	-	ND	4.0	7742923			
Conductivity	umho/cm	-	-	590	1.0	7732537			
Total Kjeldahl Nitrogen (TKN)	mg/L	-	-	ND	0.10	7742832			
pH	pH	-	6.5:8.5	8.08		7732542			
Phenols-4AAP	mg/L	-	-	ND	0.0010	7734852			
Total Phosphorus	mg/L	-	-	ND	0.020	7742313	ND	0.020	7742313
Dissolved Sulphate (SO ₄)	mg/L	-	500	40	1.0	7732721			
Alkalinity (Total as CaCO ₃)	mg/L	-	30-500	230	1.0	7732522			
Dissolved Chloride (Cl ⁻)	mg/L	-	250	29	1.0	7732705			
Nitrite (N)	mg/L	1	-	ND	0.010	7732590			
Nitrate (N)	mg/L	10	-	ND	0.10	7732590			
Nitrate + Nitrite (N)	mg/L	10	-	ND	0.10	7732590			
RDL = Reportable Detection Limit QC Batch = Quality Control Batch Lab-Dup = Laboratory Initiated Duplicate Criteria, Criteria C: Ontario Regulation 169/03 Criteria A = Maximum Acceptable Criteria B = Interim Maximum Criteria C = Chemical/Physical Objectives [A/O] (Made under the Ontario Safe Drinking Water Act, 2002) ND = Not Detected at a concentration equal or greater than the indicated Detection Limit.									



BUREAU
VERITAS

Bureau Veritas Job #: C1Z1838
Report Date: 2022/01/06

City of Guelph
Client Project #: Wet/Dry Ground Water
Site Location: DEC GW
Your P.O. #: 2100310
Sampler Initials: AS

RESULTS OF ANALYSES OF WATER

Bureau Veritas ID				RJF778		
Sampling Date				2021/12/14		
COC Number				804608-04-01		
	UNITS	Criteria	Criteria C	16B	RDL	QC Batch
Inorganics						
Total Ammonia-N	mg/L	-	-	ND	0.050	7737224
Total BOD	mg/L	-	-	ND	2	7734926
Total Chemical Oxygen Demand (COD)	mg/L	-	-	ND	4.0	7742923
Conductivity	umho/cm	-	-	1200	1.0	7732537
Total Kjeldahl Nitrogen (TKN)	mg/L	-	-	ND	0.10	7742832
pH	pH	-	6.5:8.5	7.74		7732542
Phenols-4AAP	mg/L	-	-	ND	0.0010	7734852
Total Phosphorus	mg/L	-	-	ND	0.020	7742313
Dissolved Sulphate (SO ₄)	mg/L	-	500	61	1.0	7732721
Alkalinity (Total as CaCO ₃)	mg/L	-	30-500	340	1.0	7732522
Dissolved Chloride (Cl ⁻)	mg/L	-	250	130	2.0	7732705
Nitrite (N)	mg/L	1	-	ND	0.010	7732590
Nitrate (N)	mg/L	10	-	ND	0.10	7732590
Nitrate + Nitrite (N)	mg/L	10	-	ND	0.10	7732590
RDL = Reportable Detection Limit QC Batch = Quality Control Batch Criteria, Criteria C: Ontario Regulation 169/03 Criteria A = Maximum Acceptable Criteria B = Interim Maximum Criteria C = Chemical/Physical Objectives [A/O] (Made under the Ontario Safe Drinking Water Act, 2002) ND = Not Detected at a concentration equal or greater than the indicated Detection Limit.						



BUREAU
VERITAS

Bureau Veritas Job #: C1Z1838
Report Date: 2022/01/06

City of Guelph
Client Project #: Wet/Dry Ground Water
Site Location: DEC GW
Your P.O. #: 2100310
Sampler Initials: AS

ELEMENTS BY ATOMIC SPECTROSCOPY (WATER)

Bureau Veritas ID					RJF771	RJF772	RJF773	RJF774		
Sampling Date					2021/12/14	2021/12/14	2021/12/14	2021/12/14		
COC Number					804608-04-01	804608-04-01	804608-04-01	804608-04-01		
	UNITS	Criteria	Criteria B	Criteria C	11A	11B	12A	12B	RDL	QC Batch

Metals

Total Iron (Fe)	mg/L	-	-	0.3	0.30	2.3	11	89	0.02	7744466
Dissolved Boron (B)	ug/L	-	5000	-	32	100	17	22	10	7741409
Dissolved Calcium (Ca)	ug/L	-	-	-	74000	64000	76000	100000	200	7741409
Dissolved Magnesium (Mg)	ug/L	-	-	-	26000	13000	32000	25000	50	7741409
Dissolved Phosphorus (P)	ug/L	-	-	-	ND	ND	ND	ND	100	7741409
Dissolved Potassium (K)	ug/L	-	-	-	1700	1200	4100	2200	200	7741409
Dissolved Sodium (Na)	ug/L	20000	-	200000	6000	55000	2100	15000	100	7741409
Dissolved Zinc (Zn)	ug/L	-	-	5000	ND	ND	570	340	5.0	7741409

RDL = Reportable Detection Limit

QC Batch = Quality Control Batch

Criteria, Criteria B, Criteria C: Ontario Regulation 169/03

Criteria A = Maximum Acceptable

Criteria B = Interim Maximum

Criteria C = Chemical/Physical Objectives [A/O]

(Made under the Ontario Safe Drinking Water Act, 2002)

ND = Not Detected at a concentration equal or greater than the indicated Detection Limit.



BUREAU
VERITAS

Bureau Veritas Job #: C1Z1838

Report Date: 2022/01/06

City of Guelph

Client Project #: Wet/Dry Ground Water

Site Location: DEC GW

Your P.O. #: 2100310

Sampler Initials: AS

ELEMENTS BY ATOMIC SPECTROSCOPY (WATER)

Bureau Veritas ID					RJF774			RJF775	RJF776		
Sampling Date					2021/12/14			2021/12/14	2021/12/14		
COC Number					804608-04-01			804608-04-01	804608-04-01		
	UNITS	Criteria	Criteria B	Criteria C	12B Lab-Dup	RDL	QC Batch	6A	6B	RDL	QC Batch

Metals

Total Iron (Fe)	mg/L	-	-	0.3				1.7	0.08	0.02	7744466
Dissolved Boron (B)	ug/L	-	5000	-	24	10	7741409	18	22	10	7741409
Dissolved Calcium (Ca)	ug/L	-	-	-	100000	200	7741409	120000	89000	200	7741409
Dissolved Magnesium (Mg)	ug/L	-	-	-	24000	50	7741409	33000	19000	50	7741409
Dissolved Phosphorus (P)	ug/L	-	-	-	ND	100	7741409	170	ND	100	7741409
Dissolved Potassium (K)	ug/L	-	-	-	2200	200	7741409	2500	3700	200	7741409
Dissolved Sodium (Na)	ug/L	20000	-	200000	15000	100	7741409	86000	100000	100	7741409
Dissolved Zinc (Zn)	ug/L	-	-	5000	340	5.0	7741409	ND	52	5.0	7741409

RDL = Reportable Detection Limit

QC Batch = Quality Control Batch

Lab-Dup = Laboratory Initiated Duplicate

Criteria, Criteria B, Criteria C: Ontario Regulation 169/03

Criteria A = Maximum Acceptable

Criteria B = Interim Maximum

Criteria C = Chemical/Physical Objectives [A/O]

(Made under the Ontario Safe Drinking Water Act, 2002)

ND = Not Detected at a concentration equal or greater than the indicated Detection Limit.



BUREAU
VERITAS

Bureau Veritas Job #: C1Z1838
Report Date: 2022/01/06

City of Guelph
Client Project #: Wet/Dry Ground Water
Site Location: DEC GW
Your P.O. #: 2100310
Sampler Initials: AS

ELEMENTS BY ATOMIC SPECTROSCOPY (WATER)

Bureau Veritas ID					RJF777	RJF778		
Sampling Date					2021/12/14	2021/12/14		
COC Number					804608-04-01	804608-04-01		
	UNITS	Criteria	Criteria B	Criteria C	16A	16B	RDL	QC Batch
Metals								
Total Iron (Fe)	mg/L	-	-	0.3	0.14	0.03	0.02	7744466
Dissolved Boron (B)	ug/L	-	5000	-	28	24	10	7741409
Dissolved Calcium (Ca)	ug/L	-	-	-	80000	120000	200	7741409
Dissolved Magnesium (Mg)	ug/L	-	-	-	26000	32000	50	7741409
Dissolved Phosphorus (P)	ug/L	-	-	-	ND	ND	100	7741409
Dissolved Potassium (K)	ug/L	-	-	-	1800	2800	200	7741409
Dissolved Sodium (Na)	ug/L	20000	-	200000	2000	84000	100	7741409
Dissolved Zinc (Zn)	ug/L	-	-	5000	12	570	5.0	7741409
RDL = Reportable Detection Limit QC Batch = Quality Control Batch Criteria, Criteria B, Criteria C: Ontario Regulation 169/03 Criteria A = Maximum Acceptable Criteria B = Interim Maximum Criteria C = Chemical/Physical Objectives [A/O] (Made under the Ontario Safe Drinking Water Act, 2002) ND = Not Detected at a concentration equal or greater than the indicated Detection Limit.								



BUREAU
VERITAS

Bureau Veritas Job #: C1Z1838

Report Date: 2022/01/06

City of Guelph

Client Project #: Wet/Dry Ground Water

Site Location: DEC GW

Your P.O. #: 2100310

Sampler Initials: AS

GENERAL COMMENTS

Sample RJF775 [6A] : TKN < Ammonia: Both values fall within the method uncertainty for duplicates and are likely equivalent.

Results relate only to the items tested.



Bureau Veritas Job #: C121838
Report Date: 2022/01/06

QUALITY ASSURANCE REPORT

City of Guelph
Client Project #: Wet/Dry Ground Water
Site Location: DEC GW
Your P.O. #: 2100310
Sampler Initials: AS

QC Batch	Parameter	Date	Matrix Spike		SPIKED BLANK		Method Blank		RPD		QC Standard	
			% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits	% Recovery	QC Limits
7732522	Alkalinity (Total as CaCO ₃)	2021/12/16			94	85 - 115	ND, RDL=1.0	mg/L	1.1	20		
7732537	Conductivity	2021/12/16			101	85 - 115	ND, RDL=1.0	umho/cm	1.1	25		
7732542	pH	2021/12/16			102	98 - 103			0.60	N/A		
7732590	Nitrate (N)	2021/12/20	NC	80 - 120	104	80 - 120	ND, RDL=0.10	mg/L	0.25	20		
7732590	Nitrite (N)	2021/12/20	105	80 - 120	106	80 - 120	ND, RDL=0.010	mg/L	9.6	20		
7732608	Nitrate (N)	2021/12/20	102	80 - 120	101	80 - 120	ND, RDL=0.10	mg/L	0.85	20		
7732608	Nitrite (N)	2021/12/20	108	80 - 120	109	80 - 120	ND, RDL=0.010	mg/L	0.68	20		
7732705	Dissolved Chloride (Cl ⁻)	2021/12/17	NC	80 - 120	103	80 - 120	ND, RDL=1.0	mg/L	1.2	20		
7732721	Dissolved Sulphate (SO ₄)	2021/12/17	NC	75 - 125	103	80 - 120	ND, RDL=1.0	mg/L	2.4	20		
7734852	Phenols-4AAP	2021/12/17	102	80 - 120	98	80 - 120	ND, RDL=0.0010	mg/L	NC	20		
7734926	Total BOD	2021/12/22					ND, RDL=2	mg/L	3.4	30	100	80 - 120
7736146	Total Ammonia-N	2021/12/21	98	75 - 125	101	80 - 120	ND, RDL=0.050	mg/L	4.0	20		
7736157	Total Ammonia-N	2021/12/21	98	75 - 125	100	80 - 120	ND, RDL=0.050	mg/L	NC	20		
7737224	Total Ammonia-N	2021/12/21	99	75 - 125	100	80 - 120	ND, RDL=0.050	mg/L	NC	20		
7741409	Dissolved Boron (B)	2021/12/22	102	80 - 120	101	80 - 120	ND, RDL=10	ug/L	7.2	20		
7741409	Dissolved Calcium (Ca)	2021/12/22	NC	80 - 120	103	80 - 120	ND, RDL=200	ug/L	1.8	20		
7741409	Dissolved Magnesium (Mg)	2021/12/22	102	80 - 120	100	80 - 120	ND, RDL=50	ug/L	0.50	20		
7741409	Dissolved Phosphorus (P)	2021/12/22	108	80 - 120	117	80 - 120	ND, RDL=100	ug/L	NC	20		
7741409	Dissolved Potassium (K)	2021/12/22	109	80 - 120	104	80 - 120	ND, RDL=200	ug/L	0.35	20		
7741409	Dissolved Sodium (Na)	2021/12/22	105	80 - 120	101	80 - 120	ND, RDL=100	ug/L	0.72	20		
7741409	Dissolved Zinc (Zn)	2021/12/22	100	80 - 120	99	80 - 120	ND, RDL=5.0	ug/L	0.10	20		
7742313	Total Phosphorus	2021/12/21	91	80 - 120	98	80 - 120	ND, RDL=0.020	mg/L	NC	20	100	80 - 120
7742832	Total Kjeldahl Nitrogen (TKN)	2021/12/21	102	80 - 120	107	80 - 120	ND, RDL=0.10	mg/L	NC	20	106	80 - 120



Bureau Veritas Job #: C121838
Report Date: 2022/01/06

QUALITY ASSURANCE REPORT(CONT'D)

City of Guelph
Client Project #: Wet/Dry Ground Water
Site Location: DEC GW
Your P.O. #: 2100310
Sampler Initials: AS

QC Batch	Parameter	Date	Matrix Spike		SPIKED BLANK		Method Blank		RPD		QC Standard	
			% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits	% Recovery	QC Limits
7742923	Total Chemical Oxygen Demand (COD)	2021/12/21	113	80 - 120	102	80 - 120	ND, RDL=4.0	mg/L	NC	20		
7744466	Total Iron (Fe)	2021/12/23	107	80 - 120	105	80 - 120	ND, RDL=0.02	mg/L	1.3	25		

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 $\leq 2 \times$ RDL).





BUREAU
VERITAS

Bureau Veritas Job #: C1Z1838
Report Date: 2022/01/06

City of Guelph
Client Project #: Wet/Dry Ground Water
Site Location: DEC GW
Your P.O. #: 2100310
Sampler Initials: AS

VALIDATION SIGNATURE PAGE

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

Ewa Pranjić, M.Sc., C.Chem, Scientific Specialist

BV Labs 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 Signature Page.



Bureau Veritas Laboratories
6740 Campbell Road, Mississauga, Ontario Canada L5N 2L8 Tel: (905) 817-5700 Toll-free 800-563-6266 Fax: (905) 817-5777 www.bvlabs.com

15-Dec-21 17:17

James Aspin

C1Z1838

URE ENV-1632

Page 1 of 1

INVOICE TO:		REPORT TO:		PROJECT INFORMATION:	
Company Name: #12237 City of Guelph	Company Name:	Quotation #: B90142	Bottle Order #: 804608		
Attention: Andrew Shouldice (Eastview)	Attention:	P.O. #:	Project Manager: James Aspin		
Address: 186 Eastview Rd	Address:	Project: Wet/Dry Ground Water	COC #: C#804608-04-01		
Guelph ON N1E 1Z6		Project Name: Dec GW			
Tel: (519) 822-1260 Ext: 2473 Fax: (519) 823-0910	Tel:	Site #:			
Email: Andrew.Shouldice@guelph.ca	Email:	Sampled By: Andrew Shouldice			

MOE REGULATED DRINKING WATER OR WATER INTENDED FOR HUMAN CONSUMPTION MUST BE SUBMITTED ON THE BV LABS DRINKING WATER CHAIN OF CUSTODY

Regulation 153 (2011)		Other Regulations		Special Instructions	
<input type="checkbox"/> Table 1 <input type="checkbox"/> Res/Park <input type="checkbox"/> Medium/Fine	<input type="checkbox"/> CCME <input type="checkbox"/> Sanitary Sewer Bylaw				
<input type="checkbox"/> Table 2 <input type="checkbox"/> Ind/Comm <input type="checkbox"/> Coarse	<input type="checkbox"/> Reg 558 <input type="checkbox"/> Storm Sewer Bylaw				
<input type="checkbox"/> Table 3 <input type="checkbox"/> Agri/Other <input type="checkbox"/> For RSC	<input type="checkbox"/> MISA Municipality				
<input type="checkbox"/> Table <input type="checkbox"/> P/WQO <input type="checkbox"/> Reg 406 Table	<input type="checkbox"/> Other				
Include Criteria on Certificate of Analysis (Y/N)?					
Sample Barcode Label	Sample (Location) Identification	Date Sampled	Time Sampled	Matrix	Field Filtered (please circle): Metals/Hg/Cr VI
1	11A	Dec 14/21	Am	GW	Y
2	11B			GW	Y
3	12A			GW	Y
4	12B			GW	Y
5	6A		Pm	GW	Y
6	6B			GW	Y
7	16A			GW	Y
8	16B			GW	Y
9					
10					

ANALYSIS REQUESTED (PLEASE BE SPECIFIC)	
ABN Compounds in Water by GC/MS	Wet/Dry GW
Volatile Organic Compounds in Water	
Non-Routine Volatile Organic Compounds	

Turnaround Time (TAT) Required	
Please provide advance notice for rush projects	
Regular (Standard) TAT: (will be applied if Rush TAT is not specified): Standard TAT = 5-7 Working days for most tests. Please note: Standard TAT for certain tests such as BOD and Dioxins/Furans are > 5 days - contact your Project Manager for details.	
Job Specific Rush TAT (if applies to entire submission) Date Required: Time Required:	
Rush Confirmation Number: (call lab for #)	
# of Bottles	Comments

* RELINQUISHED BY: (Signature/Print)		Date: (YY/MM/DD)	Time	RECEIVED BY: (Signature/Print)		Date: (YY/MM/DD)	Time	# jars used and not submitted	Laboratory Use Only				
Andrew Shouldice		21/12/15	Am	Kavithaselvan		2021/12/15	17:17		Time Sensitive	Temperature (°C) on Reel: 5/5/5	Custody Seal: Present	Yes	No
											Intact	Yes	No

* UNLESS OTHERWISE AGREED TO IN WRITING, WORK SUBMITTED ON THIS CHAIN OF CUSTODY IS SUBJECT TO BV LABS' STANDARD TERMS AND CONDITIONS. SIGNING OF THIS CHAIN OF CUSTODY DOCUMENT IS ACKNOWLEDGMENT AND ACCEPTANCE OF OUR TERMS WHICH ARE AVAILABLE FOR VIEWING AT WWW.BVLABS.COM/TERMS-AND-CONDITIONS.

** IT IS THE RESPONSIBILITY OF THE RELINQUISHER TO ENSURE THE ACCURACY OF THE CHAIN OF CUSTODY RECORD. AN INCOMPLETE CHAIN OF CUSTODY MAY RESULT IN ANALYTICAL TAT DELAYS.

** SAMPLE CONTAINER, PRESERVATION, HOLD TIME AND PACKAGE INFORMATION CAN BE VIEWED AT WWW.BVLABS.COM/RESOURCES/CHAIN-OF-CUSTODY-FORMS.

SAMPLES MUST BE KEPT COOL (< 10° C) FROM TIME OF SAMPLING UNTIL DELIVERY TO BV LABS

White: BV Labs Yellow: Client

Bureau Veritas Canada (2019) Inc.

Bv Driver



Your P.O. #: 2100310
Your Project #: WET/DRY GW
Site Location: DEC GW
Your C.O.C. #: 749651-04-01

Attention: Amy Spence

City of Guelph
Solid Waste RIC (Wet/Dry)
110 Dunlop Drive
Guelph, ON
CANADA N1H 6H8

Report Date: 2022/01/06
Report #: R6950968
Version: 1 - Final

CERTIFICATE OF ANALYSIS

BV LABS JOB #: C1Z4135

Received: 2021/12/16, 17:20

Sample Matrix: Water
Samples Received: 8

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Analytical Method
Alkalinity	8	N/A	2021/12/20	CAM SOP-00448	SM 23 2320 B m
Biochemical Oxygen Demand (BOD)	8	2021/12/18	2021/12/23	CAM SOP-00427	SM 23 5210B m
Chloride by Automated Colourimetry	8	N/A	2021/12/20	CAM SOP-00463	SM 23 4500-Cl E m
Chemical Oxygen Demand	8	N/A	2021/12/22	CAM SOP-00416	SM 23 5220 D m
Conductivity	8	N/A	2021/12/20	CAM SOP-00414	SM 23 2510 m
Lab Filtered Metals by ICPMS	1	2021/12/18	2021/12/20	CAM SOP-00447	EPA 6020B m
Dissolved Metals by ICPMS	2	N/A	2021/12/21	CAM SOP-00447	EPA 6020B m
Dissolved Metals by ICPMS	3	N/A	2021/12/22	CAM SOP-00447	EPA 6020B m
Dissolved Metals by ICPMS	2	N/A	2021/12/23	CAM SOP-00447	EPA 6020B m
Total Metals Analysis by ICP	8	2021/12/22	2021/12/23	CAM SOP-00408	EPA 6010D m
Total Ammonia-N	8	N/A	2021/12/21	CAM SOP-00441	USGS I-2522-90 m
Nitrate & Nitrite as Nitrogen in Water (1)	8	N/A	2021/12/21	CAM SOP-00440	SM 23 4500-NO3I/NO2B
pH	7	2021/12/17	2021/12/20	CAM SOP-00413	SM 4500H+ B m
pH	1	2021/12/18	2021/12/20	CAM SOP-00413	SM 4500H+ B m
Phenols (4AAP)	8	N/A	2021/12/18	CAM SOP-00444	OMOE E3179 m
Sulphate by Automated Colourimetry	8	N/A	2021/12/20	CAM SOP-00464	EPA 375.4 m
Total Kjeldahl Nitrogen in Water	8	2021/12/20	2021/12/21	CAM SOP-00938	OMOE E3516 m
Total Phosphorus (Colourimetric)	8	2021/12/21	2021/12/23	CAM SOP-00407	SM 23 4500 P B H 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, MELCC, EPA, APHA.

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.



Your P.O. #: 2100310
Your Project #: WET/DRY GW
Site Location: DEC GW
Your C.O.C. #: 749651-04-01

Attention: Amy Spence

City of Guelph
Solid Waste RIC (Wet/Dry)
110 Dunlop Drive
Guelph, ON
CANADA N1H 6H8

Report Date: 2022/01/06
Report #: R6950968
Version: 1 - Final

CERTIFICATE OF ANALYSIS

BV LABS JOB #: C1Z4135

Received: 2021/12/16, 17:20

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.

Encryption Key

James Aspin
Senior Project Manager
06 Jan 2022 13:16:49

Please direct all questions regarding this Certificate of Analysis to your Project Manager.

James Aspin, Senior Project Manager
Email: James.Aspin@bureauveritas.com
Phone# (905)817-5771

=====

BV Labs 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 Signature Page.



BUREAU
VERITAS

Bureau Veritas Job #: C1Z4135

Report Date: 2022/01/06

City of Guelph

Client Project #: WET/DRY GW

Site Location: DEC GW

Your P.O. #: 2100310

Sampler Initials: AS

RESULTS OF ANALYSES OF WATER

Bureau Veritas ID				RJS548			RJS548		
Sampling Date				2021/12/15			2021/12/15		
COC Number				749651-04-01			749651-04-01		
	UNITS	Criteria	Criteria C	18A	RDL	QC Batch	18A Lab-Dup	RDL	QC Batch
Inorganics									
Total Ammonia-N	mg/L	-	-	ND	0.050	7746123			
Total BOD	mg/L	-	-	ND	2	7738179	ND	2	7738179
Total Chemical Oxygen Demand (COD)	mg/L	-	-	ND	4.0	7746680			
Conductivity	umho/cm	-	-	610	1.0	7737678			
Total Kjeldahl Nitrogen (TKN)	mg/L	-	-	ND	0.10	7744020			
pH	pH	-	6.5:8.5	7.97		7737688			
Phenols-4AAP	mg/L	-	-	ND	0.0010	7737048			
Total Phosphorus	mg/L	-	-	0.030	0.020	7745212			
Dissolved Sulphate (SO ₄)	mg/L	-	500	38	1.0	7738560			
Alkalinity (Total as CaCO ₃)	mg/L	-	30-500	250	1.0	7737701			
Dissolved Chloride (Cl ⁻)	mg/L	-	250	20	1.0	7738553			
Nitrite (N)	mg/L	1	-	ND	0.010	7737508			
Nitrate (N)	mg/L	10	-	4.12	0.10	7737508			
Nitrate + Nitrite (N)	mg/L	10	-	4.12	0.10	7737508			
RDL = Reportable Detection Limit QC Batch = Quality Control Batch Lab-Dup = Laboratory Initiated Duplicate Criteria, Criteria C: Ontario Regulation 169/03 Criteria A = Maximum Acceptable Criteria B = Interim Maximum Criteria C = Chemical/Physical Objectives [A/O] (Made under the Ontario Safe Drinking Water Act, 2002) ND = Not Detected at a concentration equal or greater than the indicated Detection Limit.									



BUREAU
VERITAS

Bureau Veritas Job #: C1Z4135

Report Date: 2022/01/06

City of Guelph

Client Project #: WET/DRY GW

Site Location: DEC GW

Your P.O. #: 2100310

Sampler Initials: AS

RESULTS OF ANALYSES OF WATER

Bureau Veritas ID				RJS549			RJS550		
Sampling Date				2021/12/15			2021/12/15		
COC Number				749651-04-01			749651-04-01		
	UNITS	Criteria	Criteria C	18B	RDL	QC Batch	15A	RDL	QC Batch
Inorganics									
Total Ammonia-N	mg/L	-	-	0.19	0.050	7746123	ND	0.050	7746123
Total BOD	mg/L	-	-	6	2	7738179	ND	2	7738179
Total Chemical Oxygen Demand (COD)	mg/L	-	-	12	4.0	7746680	ND	4.0	7746680
Conductivity	umho/cm	-	-	760	1.0	7738497	1200	1.0	7737678
Total Kjeldahl Nitrogen (TKN)	mg/L	-	-	0.54	0.10	7744020	0.12	0.10	7744020
pH	pH	-	6.5-8.5	8.17		7738498	8.00		7737688
Phenols-4AAP	mg/L	-	-	ND	0.0010	7737048	ND	0.0010	7737048
Total Phosphorus	mg/L	-	-	3.6	0.10	7745212	0.024	0.020	7745212
Dissolved Sulphate (SO ₄)	mg/L	-	500	12	1.0	7738560	110	1.0	7738560
Alkalinity (Total as CaCO ₃)	mg/L	-	30-500	200	1.0	7738487	250	1.0	7737701
Dissolved Chloride (Cl ⁻)	mg/L	-	250	120	1.0	7738553	150	2.0	7738553
Nitrite (N)	mg/L	1	-	ND	0.010	7737508	ND	0.010	7737508
Nitrate (N)	mg/L	10	-	ND	0.10	7737508	ND	0.10	7737508
Nitrate + Nitrite (N)	mg/L	10	-	ND	0.10	7737508	ND	0.10	7737508
RDL = Reportable Detection Limit QC Batch = Quality Control Batch Criteria, Criteria C: Ontario Regulation 169/03 Criteria A = Maximum Acceptable Criteria B = Interim Maximum Criteria C = Chemical/Physical Objectives [A/O] (Made under the Ontario Safe Drinking Water Act, 2002) ND = Not Detected at a concentration equal or greater than the indicated Detection Limit.									



BUREAU
VERITAS

Bureau Veritas Job #: C1Z4135

Report Date: 2022/01/06

City of Guelph

Client Project #: WET/DRY GW

Site Location: DEC GW

Your P.O. #: 2100310

Sampler Initials: AS

RESULTS OF ANALYSES OF WATER

Bureau Veritas ID				RJS551	RJS552		RJS553		
Sampling Date				2021/12/15	2021/12/15		2021/12/15		
COC Number				749651-04-01	749651-04-01		749651-04-01		
	UNITS	Criteria	Criteria C	15B	21A	RDL	7	RDL	QC Batch

Inorganics									
Total Ammonia-N	mg/L	-	-	0.34	ND	0.050	ND	0.050	7746123
Total BOD	mg/L	-	-	10	ND	2	ND	2	7738179
Total Chemical Oxygen Demand (COD)	mg/L	-	-	7.8	8.2	4.0	8.2	4.0	7746680
Conductivity	umho/cm	-	-	840	660	1.0	1600	1.0	7737678
Total Kjeldahl Nitrogen (TKN)	mg/L	-	-	0.62	ND	0.10	ND	0.10	7744020
pH	pH	-	6.5:8.5	7.92	7.87		7.90		7737688
Phenols-4AAP	mg/L	-	-	ND	ND	0.0010	ND	0.0010	7737048
Total Phosphorus	mg/L	-	-	0.11	ND	0.020	ND	0.020	7745212
Dissolved Sulphate (SO ₄)	mg/L	-	500	64	17	1.0	35	1.0	7738560
Alkalinity (Total as CaCO ₃)	mg/L	-	30-500	190	310	1.0	410	1.0	7737701
Dissolved Chloride (Cl ⁻)	mg/L	-	250	100	20	1.0	210	2.0	7738553
Nitrite (N)	mg/L	1	-	0.163	ND	0.010	ND	0.010	7737508
Nitrate (N)	mg/L	10	-	3.72	0.58	0.10	2.99	0.10	7737508
Nitrate + Nitrite (N)	mg/L	10	-	3.89	0.58	0.10	2.99	0.10	7737508

RDL = Reportable Detection Limit

QC Batch = Quality Control Batch

Criteria, Criteria C: Ontario Regulation 169/03

Criteria A = Maximum Acceptable

Criteria B = Interim Maximum

Criteria C = Chemical/Physical Objectives [A/O]

(Made under the Ontario Safe Drinking Water Act, 2002)

ND = Not Detected at a concentration equal or greater than the indicated Detection Limit.



BUREAU
VERITAS

Bureau Veritas Job #: C1Z4135

Report Date: 2022/01/06

City of Guelph

Client Project #: WET/DRY GW

Site Location: DEC GW

Your P.O. #: 2100310

Sampler Initials: AS

RESULTS OF ANALYSES OF WATER

Bureau Veritas ID				RJS553			RJS554		
Sampling Date				2021/12/15			2021/12/15		
COC Number				749651-04-01			749651-04-01		
	UNITS	Criteria	Criteria C	7 Lab-Dup	RDL	QC Batch	5	RDL	QC Batch
Inorganics									
Total Ammonia-N	mg/L	-	-				ND	0.050	7746123
Total BOD	mg/L	-	-				ND	2	7738179
Total Chemical Oxygen Demand (COD)	mg/L	-	-	7.5	4.0	7746680	12	4.0	7746680
Conductivity	umho/cm	-	-				3400	1.0	7737678
Total Kjeldahl Nitrogen (TKN)	mg/L	-	-				ND	0.10	7744020
pH	pH	-	6.5:8.5				7.94		7737688
Phenols-4AAP	mg/L	-	-				ND	0.0010	7737048
Total Phosphorus	mg/L	-	-				ND	0.020	7745212
Dissolved Sulphate (SO ₄)	mg/L	-	500				38	1.0	7738560
Alkalinity (Total as CaCO ₃)	mg/L	-	30-500				320	1.0	7737701
Dissolved Chloride (Cl ⁻)	mg/L	-	250				840	10	7738553
Nitrite (N)	mg/L	1	-				ND	0.010	7737508
Nitrate (N)	mg/L	10	-				0.81	0.10	7737508
Nitrate + Nitrite (N)	mg/L	10	-				0.81	0.10	7737508
RDL = Reportable Detection Limit QC Batch = Quality Control Batch Lab-Dup = Laboratory Initiated Duplicate Criteria, Criteria C: Ontario Regulation 169/03 Criteria A = Maximum Acceptable Criteria B = Interim Maximum Criteria C = Chemical/Physical Objectives [A/O] (Made under the Ontario Safe Drinking Water Act, 2002) ND = Not Detected at a concentration equal or greater than the indicated Detection Limit.									



BUREAU
VERITAS

Bureau Veritas Job #: C1Z4135

Report Date: 2022/01/06

City of Guelph

Client Project #: WET/DRY GW

Site Location: DEC GW

Your P.O. #: 2100310

Sampler Initials: AS

RESULTS OF ANALYSES OF WATER

Bureau Veritas ID				RJS555			RJS555		
Sampling Date				2021/12/15			2021/12/15		
COC Number				749651-04-01			749651-04-01		
	UNITS	Criteria	Criteria C	8	RDL	QC Batch	8 Lab-Dup	RDL	QC Batch
Inorganics									
Total Ammonia-N	mg/L	-	-	ND	0.050	7746123	ND	0.050	7746123
Total BOD	mg/L	-	-	ND	2	7738179			
Total Chemical Oxygen Demand (COD)	mg/L	-	-	10	4.0	7746680			
Conductivity	umho/cm	-	-	1100	1.0	7737678			
Total Kjeldahl Nitrogen (TKN)	mg/L	-	-	ND	0.10	7744020			
pH	pH	-	6.5:8.5	8.03		7737688			
Phenols-4AAP	mg/L	-	-	ND	0.0010	7737048			
Total Phosphorus	mg/L	-	-	ND	0.020	7745212			
Dissolved Sulphate (SO ₄)	mg/L	-	500	34	1.0	7738572	34	1.0	7738572
Alkalinity (Total as CaCO ₃)	mg/L	-	30-500	300	1.0	7737701			
Dissolved Chloride (Cl ⁻)	mg/L	-	250	150	2.0	7738563	150	2.0	7738563
Nitrite (N)	mg/L	1	-	ND	0.010	7737508	ND	0.010	7737508
Nitrate (N)	mg/L	10	-	0.29	0.10	7737508	0.29	0.10	7737508
Nitrate + Nitrite (N)	mg/L	10	-	0.29	0.10	7737508	0.29	0.10	7737508
RDL = Reportable Detection Limit QC Batch = Quality Control Batch Lab-Dup = Laboratory Initiated Duplicate Criteria, Criteria C: Ontario Regulation 169/03 Criteria A = Maximum Acceptable Criteria B = Interim Maximum Criteria C = Chemical/Physical Objectives [A/O] (Made under the Ontario Safe Drinking Water Act, 2002) ND = Not Detected at a concentration equal or greater than the indicated Detection Limit.									



BUREAU
VERITAS

Bureau Veritas Job #: C1Z4135

Report Date: 2022/01/06

City of Guelph

Client Project #: WET/DRY GW

Site Location: DEC GW

Your P.O. #: 2100310

Sampler Initials: AS

ELEMENTS BY ATOMIC SPECTROSCOPY (WATER)

Bureau Veritas ID					RJS548			RJS549		
Sampling Date					2021/12/15			2021/12/15		
COC Number					749651-04-01			749651-04-01		
	UNITS	Criteria	Criteria B	Criteria C	18A	RDL	QC Batch	18B	RDL	QC Batch
Metals										
Total Iron (Fe)	mg/L	-	-	0.3	0.88	0.02	7747666	110	0.02	7747666
Dissolved Boron (B)	ug/L	-	5000	-	10	10	7741409	21	10	7737493
Dissolved Calcium (Ca)	ug/L	-	-	-	84000	200	7741409	27000	200	7737493
Dissolved Chromium (Cr)	ug/L	50	-	-				ND	5.0	7737493
Dissolved Iron (Fe)	ug/L	-	-	300				ND	100	7737493
Dissolved Magnesium (Mg)	ug/L	-	-	-	27000	50	7741409	4400	50	7737493
Dissolved Manganese (Mn)	ug/L	-	-	50				140	2.0	7737493
Dissolved Nickel (Ni)	ug/L	-	-	-				1.7	1.0	7737493
Dissolved Phosphorus (P)	ug/L	-	-	-	ND	100	7741409			
Dissolved Potassium (K)	ug/L	-	-	-	1100	200	7741409	3600	200	7737493
Dissolved Sodium (Na)	ug/L	20000	-	200000	4900	100	7741409	120000	100	7737493
Dissolved Zinc (Zn)	ug/L	-	-	5000	410	5.0	7741409	ND	5.0	7737493
RDL = Reportable Detection Limit QC Batch = Quality Control Batch Criteria, Criteria B, Criteria C: Ontario Regulation 169/03 Criteria A = Maximum Acceptable Criteria B = Interim Maximum Criteria C = Chemical/Physical Objectives [A/O] (Made under the Ontario Safe Drinking Water Act, 2002) ND = Not Detected at a concentration equal or greater than the indicated Detection Limit.										



BUREAU
VERITAS

Bureau Veritas Job #: C1Z4135

Report Date: 2022/01/06

City of Guelph

Client Project #: WET/DRY GW

Site Location: DEC GW

Your P.O. #: 2100310

Sampler Initials: AS

ELEMENTS BY ATOMIC SPECTROSCOPY (WATER)

Bureau Veritas ID					RJS549			RJS550	RJS551		
Sampling Date					2021/12/15			2021/12/15	2021/12/15		
COC Number					749651-04-01			749651-04-01	749651-04-01		
	UNITS	Criteria	Criteria B	Criteria C	18B Lab-Dup	RDL	QC Batch	15A	15B	RDL	QC Batch

Metals

Total Iron (Fe)	mg/L	-	-	0.3	100	0.02	7747666	0.88	0.36	0.02	7747666
Dissolved Boron (B)	ug/L	-	5000	-				25	37	10	7738318
Dissolved Calcium (Ca)	ug/L	-	-	-				110000	110000	200	7738318
Dissolved Magnesium (Mg)	ug/L	-	-	-				32000	6500	50	7738318
Dissolved Phosphorus (P)	ug/L	-	-	-				ND	130	100	7738318
Dissolved Potassium (K)	ug/L	-	-	-				1500	4200	200	7738318
Dissolved Sodium (Na)	ug/L	20000	-	200000				89000	47000	100	7738318
Dissolved Zinc (Zn)	ug/L	-	-	5000				ND	31	5.0	7738318

RDL = Reportable Detection Limit

QC Batch = Quality Control Batch

Lab-Dup = Laboratory Initiated Duplicate

Criteria, Criteria B, Criteria C: Ontario Regulation 169/03

Criteria A = Maximum Acceptable

Criteria B = Interim Maximum

Criteria C = Chemical/Physical Objectives [A/O]

(Made under the Ontario Safe Drinking Water Act, 2002)

ND = Not Detected at a concentration equal or greater than the indicated Detection Limit.



BUREAU
VERITAS

Bureau Veritas Job #: C1Z4135

Report Date: 2022/01/06

City of Guelph

Client Project #: WET/DRY GW

Site Location: DEC GW

Your P.O. #: 2100310

Sampler Initials: AS

ELEMENTS BY ATOMIC SPECTROSCOPY (WATER)

Bureau Veritas ID					RJS551			RJS552	RJS553		
Sampling Date					2021/12/15			2021/12/15	2021/12/15		
COC Number					749651-04-01			749651-04-01	749651-04-01		
	UNITS	Criteria	Criteria B	Criteria C	15B Lab-Dup	RDL	QC Batch	21A	7	RDL	QC Batch

Metals

Total Iron (Fe)	mg/L	-	-	0.3				0.11	0.16	0.02	7747666
Dissolved Boron (B)	ug/L	-	5000	-	36	10	7738318	18	46	10	7741409
Dissolved Calcium (Ca)	ug/L	-	-	-	110000	200	7738318	86000	100000	200	7741409
Dissolved Magnesium (Mg)	ug/L	-	-	-	6600	50	7738318	28000	22000	50	7741409
Dissolved Phosphorus (P)	ug/L	-	-	-	130	100	7738318	ND	ND	100	7741409
Dissolved Potassium (K)	ug/L	-	-	-	4200	200	7738318	1100	8100	200	7741409
Dissolved Sodium (Na)	ug/L	20000	-	200000	48000	100	7738318	14000	200000	100	7741409
Dissolved Zinc (Zn)	ug/L	-	-	5000	32	5.0	7738318	400	150	5.0	7741409

RDL = Reportable Detection Limit

QC Batch = Quality Control Batch

Lab-Dup = Laboratory Initiated Duplicate

Criteria, Criteria B, Criteria C: Ontario Regulation 169/03

Criteria A = Maximum Acceptable

Criteria B = Interim Maximum

Criteria C = Chemical/Physical Objectives [A/O]

(Made under the Ontario Safe Drinking Water Act, 2002)

ND = Not Detected at a concentration equal or greater than the indicated Detection Limit.



BUREAU
VERITAS

Bureau Veritas Job #: C1Z4135
Report Date: 2022/01/06

City of Guelph
Client Project #: WET/DRY GW
Site Location: DEC GW
Your P.O. #: 2100310
Sampler Initials: AS

ELEMENTS BY ATOMIC SPECTROSCOPY (WATER)

Bureau Veritas ID					RJS554	RJS555		
Sampling Date					2021/12/15	2021/12/15		
COC Number					749651-04-01	749651-04-01		
	UNITS	Criteria	Criteria B	Criteria C	5	8	RDL	QC Batch
Metals								
Total Iron (Fe)	mg/L	-	-	0.3	0.03	0.03	0.02	7747666
Dissolved Boron (B)	ug/L	-	5000	-	19	17	10	7741409
Dissolved Calcium (Ca)	ug/L	-	-	-	110000	96000	200	7741409
Dissolved Magnesium (Mg)	ug/L	-	-	-	23000	32000	50	7741409
Dissolved Phosphorus (P)	ug/L	-	-	-	ND	ND	100	7741409
Dissolved Potassium (K)	ug/L	-	-	-	4400	2400	200	7741409
Dissolved Sodium (Na)	ug/L	20000	-	200000	560000	88000	100	7741409
Dissolved Zinc (Zn)	ug/L	-	-	5000	1700	900	5.0	7741409
RDL = Reportable Detection Limit QC Batch = Quality Control Batch Criteria, Criteria B, Criteria C: Ontario Regulation 169/03 Criteria A = Maximum Acceptable Criteria B = Interim Maximum Criteria C = Chemical/Physical Objectives [A/O] (Made under the Ontario Safe Drinking Water Act, 2002) ND = Not Detected at a concentration equal or greater than the indicated Detection Limit.								



BUREAU
VERITAS

Bureau Veritas Job #: C1Z4135

Report Date: 2022/01/06

City of Guelph

Client Project #: WET/DRY GW

Site Location: DEC GW

Your P.O. #: 2100310

Sampler Initials: AS

GENERAL COMMENTS

Sample RJS551 [15B] : COD < BOD: Both values fall within the method uncertainty for duplicates and are likely equivalent.

Results relate only to the items tested.



Bureau Veritas Job #: C124135
Report Date: 2022/01/06

QUALITY ASSURANCE REPORT

City of Guelph
Client Project #: WET/DRY GW
Site Location: DEC GW
Your P.O. #: 2100310
Sampler Initials: AS

QC Batch	Parameter	Date	Matrix Spike		SPIKED BLANK		Method Blank		RPD		QC Standard	
			% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits	% Recovery	QC Limits
7737048	Phenols-4AAP	2021/12/18	94	80 - 120	99	80 - 120	ND, RDL=0.0010	mg/L	NC	20		
7737493	Dissolved Boron (B)	2021/12/20	92	80 - 120	96	80 - 120	ND, RDL=10	ug/L	0.70	20		
7737493	Dissolved Calcium (Ca)	2021/12/20	NC	80 - 120	101	80 - 120	ND, RDL=200	ug/L	1.5	20		
7737493	Dissolved Chromium (Cr)	2021/12/20	99	80 - 120	96	80 - 120	ND, RDL=5.0	ug/L	NC	20		
7737493	Dissolved Iron (Fe)	2021/12/20	100	80 - 120	100	80 - 120	ND, RDL=100	ug/L	NC	20		
7737493	Dissolved Magnesium (Mg)	2021/12/20	NC	80 - 120	97	80 - 120	ND, RDL=50	ug/L	1.8	20		
7737493	Dissolved Manganese (Mn)	2021/12/20	98	80 - 120	99	80 - 120	ND, RDL=2.0	ug/L	0.38	20		
7737493	Dissolved Nickel (Ni)	2021/12/20	95	80 - 120	96	80 - 120	ND, RDL=1.0	ug/L	19	20		
7737493	Dissolved Potassium (K)	2021/12/20	98	80 - 120	99	80 - 120	ND, RDL=200	ug/L	1.0	20		
7737493	Dissolved Sodium (Na)	2021/12/20	NC	80 - 120	95	80 - 120	ND, RDL=100	ug/L	1.2	20		
7737493	Dissolved Zinc (Zn)	2021/12/20	97	80 - 120	98	80 - 120	ND, RDL=5.0	ug/L	NC	20		
7737508	Nitrate (N)	2021/12/21	98	80 - 120	101	80 - 120	ND, RDL=0.10	mg/L	1.5	20		
7737508	Nitrite (N)	2021/12/21	102	80 - 120	106	80 - 120	ND, RDL=0.010	mg/L	NC	20		
7737678	Conductivity	2021/12/20			100	85 - 115	ND, RDL=1.0	umho/cm	0.50	25		
7737688	pH	2021/12/20			102	98 - 103			1.0	N/A		
7737701	Alkalinity (Total as CaCO ₃)	2021/12/20			99	85 - 115	ND, RDL=1.0	mg/L	0.021	20		
7738179	Total BOD	2021/12/23					ND, RDL=2	mg/L	NC	30	103	80 - 120
7738318	Dissolved Boron (B)	2021/12/21	97	80 - 120	95	80 - 120	ND, RDL=10	ug/L	1.1	20		
7738318	Dissolved Calcium (Ca)	2021/12/21	NC	80 - 120	101	80 - 120	ND, RDL=200	ug/L	1.1	20		
7738318	Dissolved Magnesium (Mg)	2021/12/21	104	80 - 120	102	80 - 120	ND, RDL=50	ug/L	0.71	20		
7738318	Dissolved Phosphorus (P)	2021/12/21	112	80 - 120	117	80 - 120	ND, RDL=100	ug/L	1.7	20		
7738318	Dissolved Potassium (K)	2021/12/21	106	80 - 120	103	80 - 120	ND, RDL=200	ug/L	0.33	20		
7738318	Dissolved Sodium (Na)	2021/12/21	NC	80 - 120	101	80 - 120	ND, RDL=100	ug/L	0.18	20		
7738318	Dissolved Zinc (Zn)	2021/12/21	102	80 - 120	100	80 - 120	ND, RDL=5.0	ug/L	2.0	20		
7738487	Alkalinity (Total as CaCO ₃)	2021/12/20			95	85 - 115	ND, RDL=1.0	mg/L	0.52	20		
7738497	Conductivity	2021/12/20			103	85 - 115	ND, RDL=1.0	umho/cm	0.093	25		
7738498	pH	2021/12/20			102	98 - 103			0.23	N/A		



Bureau Veritas Job #: C124135
Report Date: 2022/01/06

QUALITY ASSURANCE REPORT(CONT'D)

City of Guelph
Client Project #: WET/DRY GW
Site Location: DEC GW
Your P.O. #: 2100310
Sampler Initials: AS

QC Batch	Parameter	Date	Matrix Spike		SPIKED BLANK		Method Blank		RPD		QC Standard	
			% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits	% Recovery	QC Limits
7738553	Dissolved Chloride (Cl-)	2021/12/20	NC	80 - 120	103	80 - 120	ND, RDL=1.0	mg/L	0.56	20		
7738560	Dissolved Sulphate (SO4)	2021/12/20	NC	75 - 125	104	80 - 120	ND, RDL=1.0	mg/L	1.1	20		
7738563	Dissolved Chloride (Cl-)	2021/12/20	NC	80 - 120	103	80 - 120	ND, RDL=1.0	mg/L	1.1	20		
7738572	Dissolved Sulphate (SO4)	2021/12/20	NC	75 - 125	102	80 - 120	ND, RDL=1.0	mg/L	0.40	20		
7741409	Dissolved Boron (B)	2021/12/22	102	80 - 120	101	80 - 120	ND, RDL=10	ug/L	7.2	20		
7741409	Dissolved Calcium (Ca)	2021/12/22	NC	80 - 120	103	80 - 120	ND, RDL=200	ug/L	1.8	20		
7741409	Dissolved Magnesium (Mg)	2021/12/22	102	80 - 120	100	80 - 120	ND, RDL=50	ug/L	0.50	20		
7741409	Dissolved Phosphorus (P)	2021/12/22	108	80 - 120	117	80 - 120	ND, RDL=100	ug/L	NC	20		
7741409	Dissolved Potassium (K)	2021/12/22	109	80 - 120	104	80 - 120	ND, RDL=200	ug/L	0.35	20		
7741409	Dissolved Sodium (Na)	2021/12/22	105	80 - 120	101	80 - 120	ND, RDL=100	ug/L	0.72	20		
7741409	Dissolved Zinc (Zn)	2021/12/22	100	80 - 120	99	80 - 120	ND, RDL=5.0	ug/L	0.10	20		
7744020	Total Kjeldahl Nitrogen (TKN)	2021/12/21	101	80 - 120	106	80 - 120	ND, RDL=0.10	mg/L	NC	20	105	80 - 120
7745212	Total Phosphorus	2021/12/23	95	80 - 120	98	80 - 120	ND, RDL=0.020	mg/L	1.1	20	96	80 - 120
7746123	Total Ammonia-N	2021/12/21	97	75 - 125	102	80 - 120	ND, RDL=0.050	mg/L	NC	20		
7746680	Total Chemical Oxygen Demand (COD)	2021/12/22	118	80 - 120	104	80 - 120	ND, RDL=4.0	mg/L	9.2	20		
7747666	Total Iron (Fe)	2021/12/23	NC	80 - 120	104	80 - 120	ND, RDL=0.02	mg/L	5.7	25		

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).



BUREAU
VERITAS

Bureau Veritas Job #: C1Z4135
Report Date: 2022/01/06

City of Guelph
Client Project #: WET/DRY GW
Site Location: DEC GW
Your P.O. #: 2100310
Sampler Initials: AS

VALIDATION SIGNATURE PAGE

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

Ewa Pranjić, M.Sc., C.Chem, Scientific Specialist

BV Labs 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 Signature Page.



Bureau Veritas Laboratories
6740 Campbell Road, Mississauga, Ontario Canada L5N 2L8 Tel: (905) 817-5700 Toll-free: 800-563-6266 Fax: (905) 817-5777 www.bvlabs.com

16-Dec-21 17:20

Page 1 of 1

James Aspin

C1Z4135

ily:

Bottle Order #:

749551

Project Manager:

James Aspin

INVOICE TO:
Company Name: #12237 City of Guelph
Attention: Andrew Shouldice (Eastview)
Address: 186 Eastview Rd
Guelph ON N1E 1Z6
Tel: (519) 822-1260 Ext: 2473 Fax: (519) 823-0910
Email: Andrew.Shouldice@guelph.ca, Bill.Shields@guelph.ca

REPORT TO:
Company Name:
Attention:
Address:
Tel:
Fax:

PROJECT INFORMATION:
Quotation #: B14416 B90142
P.O. #: RJM
Project: EASTVIEW GW wet/dry GW
Project Name: Dec GW
Site #:
Sampled By: Andrew Shouldice

ENV-1075

COC #:

CW749551-04-01

MOE REGULATED DRINKING WATER OR WATER INTENDED FOR HUMAN CONSUMPTION MUST BE SUBMITTED ON THE BV LABS DRINKING WATER CHAIN OF CUSTODY

Regulation 153 (2011)	Other Regulations	Special Instructions
<input type="checkbox"/> Table 1 <input type="checkbox"/> Table 2 <input type="checkbox"/> Table 3 <input type="checkbox"/> Table	<input type="checkbox"/> Res/Park <input type="checkbox"/> Ind/Comm <input type="checkbox"/> Agri/Other <input type="checkbox"/> Medium/Fine <input type="checkbox"/> Coarse <input type="checkbox"/> For RSC <input type="checkbox"/> CCME <input type="checkbox"/> Reg 558 <input type="checkbox"/> MISA <input type="checkbox"/> PWQO <input type="checkbox"/> Other <input type="checkbox"/> Sanitary Sewer Bylaw <input type="checkbox"/> Storm Sewer Bylaw <input type="checkbox"/> Municipality	

Include Criteria on Certificate of Analysis (Y/N)?

Field Filtered (please circle):
Metals / Hg / Cr VI

EASTVIEW SURFACE WATER

Wet/dry GW

ANALYSIS REQUESTED (PLEASE BE SPECIFIC)

Turnaround Time (TAT) Required:

Please provide advance notice for rush projects

Regular (Standard) TAT:

(will be applied if Rush TAT is not specified):

Standard TAT = 5-7 Working days for most tests.

Please note: Standard TAT for certain tests such as BOD and Dioxins/Furans are > 5 days - contact your Project Manager for details.

Job Specific Rush TAT (if applies to entire submission)

Date Required: Time Required:

Rush Confirmation Number:

(call lab for #)

Sample Barcode Label	Sample (Location) Identification	Date Sampled	Time Sampled	Matrix	Field Filtered (please circle): Metals / Hg / Cr VI	EASTVIEW SURFACE WATER	Wet/dry GW														# of Bottles	Comments
1	18A	Dec 15/21	Am	GW	Y		X														7	
2	18B			GW	Y		X														7	
3	15A			GW	Y		X														7	
4	15B			GW	Y		X														7	
5	21A			GW	Y		X														7	
6	7		Pm	GW	Y		X														7	
7	5			GW	Y		X														7	
8	8			GW	Y		X														7	
9																						
10																						

* RELINQUISHED BY: (Signature/Print) Andrew Shouldice	Date: (YY/MM/DD) 21/12/16	Time Am	RECEIVED BY: (Signature/Print) [Signature]	Date: (YY/MM/DD) 20/12/16	Time 1800	# jars used and not submitted	Laboratory Use Only			
						Time Sensitive	Temperature (°C) on Receipt 5/3/5	Custody Seal	Yes	No
								Present		
								Intact		

* UNLESS OTHERWISE AGREED TO IN WRITING, WORK SUBMITTED ON THIS CHAIN OF CUSTODY IS SUBJECT TO BV LABS' STANDARD TERMS AND CONDITIONS. SIGNING OF THIS CHAIN OF CUSTODY DOCUMENT IS ACKNOWLEDGMENT AND ACCEPTANCE OF OUR TERMS WHICH ARE AVAILABLE FOR VIEWING AT WWW.BVLABS.COM/TERMS-AND-CONDITIONS.

** IT IS THE RESPONSIBILITY OF THE RELINQUISHER TO ENSURE THE ACCURACY OF THE CHAIN OF CUSTODY RECORD. AN INCOMPLETE CHAIN OF CUSTODY MAY RESULT IN ANALYTICAL TAT DELAYS.

** SAMPLE CONTAINER, PRESERVATION, HOLD TIME AND PACKAGE INFORMATION CAN BE VIEWED AT WWW.BVLABS.COM/RESOURCES/CHAIN-OF-CUSTODY-FORMS.

SAMPLES MUST BE KEPT COOL (< 10° C) FROM TIME OF SAMPLING UNTIL DELIVERY TO BV LABS

White: BV Labs

Yellow: Client



Your P.O. #: 2100310
 Your Project #: WET/DRY GW
 Site Location: DEC GW
 Your C.O.C. #: 797024-04-01

Attention: Amy Spence

City of Guelph
 Solid Waste RIC (Wet/Dry)
 110 Dunlop Drive
 Guelph, ON
 CANADA N1H 6H8

Report Date: 2022/01/10
 Report #: R6956790
 Version: 1 - Final

CERTIFICATE OF ANALYSIS

BV LABS JOB #: C1Z6643

Received: 2021/12/17, 16:59

Sample Matrix: Water
 # Samples Received: 9

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Analytical Method
Alkalinity	9	N/A	2021/12/20	CAM SOP-00448	SM 23 2320 B m
Biochemical Oxygen Demand (BOD)	9	2021/12/18	2021/12/23	CAM SOP-00427	SM 23 5210B m
Chloride by Automated Colourimetry	9	N/A	2021/12/20	CAM SOP-00463	SM 23 4500-Cl E m
Chemical Oxygen Demand	9	N/A	2021/12/23	CAM SOP-00416	SM 23 5220 D m
Conductivity	9	N/A	2021/12/20	CAM SOP-00414	SM 23 2510 m
Dissolved Metals by ICPMS	6	N/A	2021/12/22	CAM SOP-00447	EPA 6020B m
Dissolved Metals by ICPMS	3	N/A	2021/12/23	CAM SOP-00447	EPA 6020B m
Total Metals Analysis by ICP	9	2021/12/22	2021/12/23	CAM SOP-00408	EPA 6010D m
Total Ammonia-N	9	N/A	2021/12/23	CAM SOP-00441	USGS I-2522-90 m
Nitrate & Nitrite as Nitrogen in Water (1)	9	N/A	2021/12/21	CAM SOP-00440	SM 23 4500-NO3I/NO2B
pH	9	2021/12/18	2021/12/20	CAM SOP-00413	SM 4500H+ B m
Phenols (4AAP)	8	N/A	2021/12/20	CAM SOP-00444	OMOE E3179 m
Phenols (4AAP)	1	N/A	2021/12/21	CAM SOP-00444	OMOE E3179 m
Sulphate by Automated Colourimetry	9	N/A	2021/12/20	CAM SOP-00464	EPA 375.4 m
Total Kjeldahl Nitrogen in Water	5	2021/12/20	2021/12/21	CAM SOP-00938	OMOE E3516 m
Total Kjeldahl Nitrogen in Water	3	2021/12/21	2021/12/22	CAM SOP-00938	OMOE E3516 m
Total Kjeldahl Nitrogen in Water	1	2021/12/21	2021/12/31	CAM SOP-00938	OMOE E3516 m
Total Phosphorus (Colourimetric)	9	2021/12/22	2021/12/23	CAM SOP-00407	SM 23 4500 P B H 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, MELCC, EPA, APHA.

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.



Your P.O. #: 2100310
Your Project #: WET/DRY GW
Site Location: DEC GW
Your C.O.C. #: 797024-04-01

Attention: Amy Spence

City of Guelph
Solid Waste RIC (Wet/Dry)
110 Dunlop Drive
Guelph, ON
CANADA N1H 6H8

Report Date: 2022/01/10
Report #: R6956790
Version: 1 - Final

CERTIFICATE OF ANALYSIS

BV LABS JOB #: C1Z6643

Received: 2021/12/17, 16:59

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.

Encryption Key

James Aspin
Senior Project Manager
11 Jan 2022 07:58:33

Please direct all questions regarding this Certificate of Analysis to your Project Manager.

James Aspin, Senior Project Manager
Email: James.Aspin@bureauveritas.com
Phone# (905)817-5771

=====

BV Labs 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 Signature Page.



BUREAU
VERITAS

Bureau Veritas Job #: C1Z6643
Report Date: 2022/01/10

City of Guelph
Client Project #: WET/DRY GW
Site Location: DEC GW
Your P.O. #: 2100310
Sampler Initials: AS

RESULTS OF ANALYSES OF WATER

Bureau Veritas ID				RKG635			RKG635		
Sampling Date				2021/12/16			2021/12/16		
COC Number				797024-04-01			797024-04-01		
	UNITS	Criteria	Criteria C	14A	RDL	QC Batch	14A Lab-Dup	RDL	QC Batch
Inorganics									
Total Ammonia-N	mg/L	-	-	ND	0.050	7746936	ND	0.050	7746936
Total BOD	mg/L	-	-	ND	2	7738180	ND	2	7738180
Total Chemical Oxygen Demand (COD)	mg/L	-	-	ND	4.0	7745495			
Conductivity	umho/cm	-	-	640	1.0	7738516			
Total Kjeldahl Nitrogen (TKN)	mg/L	-	-	ND	0.10	7744020			
pH	pH	-	6.5-8.5	8.01		7738520			
Phenols-4AAP	mg/L	-	-	ND	0.0010	7741233	ND	0.0010	7741233
Total Phosphorus	mg/L	-	-	0.030	0.020	7747632			
Dissolved Sulphate (SO ₄)	mg/L	-	500	61	1.0	7739378			
Alkalinity (Total as CaCO ₃)	mg/L	-	30-500	240	1.0	7738505			
Dissolved Chloride (Cl ⁻)	mg/L	-	250	26	1.0	7739374			
Nitrite (N)	mg/L	1	-	ND	0.010	7738811			
Nitrate (N)	mg/L	10	-	ND	0.10	7738811			
Nitrate + Nitrite (N)	mg/L	10	-	ND	0.10	7738811			
RDL = Reportable Detection Limit QC Batch = Quality Control Batch Lab-Dup = Laboratory Initiated Duplicate Criteria, Criteria C: Ontario Regulation 169/03 Criteria A = Maximum Acceptable Criteria B = Interim Maximum Criteria C = Chemical/Physical Objectives [A/O] (Made under the Ontario Safe Drinking Water Act, 2002) ND = Not Detected at a concentration equal or greater than the indicated Detection Limit.									



BUREAU
VERITAS

Bureau Veritas Job #: C1Z6643
Report Date: 2022/01/10

City of Guelph
Client Project #: WET/DRY GW
Site Location: DEC GW
Your P.O. #: 2100310
Sampler Initials: AS

RESULTS OF ANALYSES OF WATER

Bureau Veritas ID				RKG636		RKG637		
Sampling Date				2021/12/16		2021/12/16		
COC Number				797024-04-01		797024-04-01		
	UNITS	Criteria	Criteria C	14B	RDL	17A	RDL	QC Batch
Inorganics								
Total Ammonia-N	mg/L	-	-	ND	0.050	0.10 (1)	0.050	7746936
Total BOD	mg/L	-	-	ND	2	ND	2	7738180
Total Chemical Oxygen Demand (COD)	mg/L	-	-	7.9	4.0	ND	4.0	7745495
Conductivity	umho/cm	-	-	1700	1.0	990	1.0	7738516
Total Kjeldahl Nitrogen (TKN)	mg/L	-	-	0.11	0.10	ND (1)	0.10	7744020
pH	pH	-	6.5:8.5	7.91		7.93		7738520
Phenols-4AAP	mg/L	-	-	ND	0.0010	ND	0.0010	7741233
Total Phosphorus	mg/L	-	-	0.11	0.040	0.26	0.040	7747632
Dissolved Sulphate (SO ₄)	mg/L	-	500	25	1.0	56	1.0	7738572
Alkalinity (Total as CaCO ₃)	mg/L	-	30-500	570	1.0	330	1.0	7738505
Dissolved Chloride (Cl ⁻)	mg/L	-	250	190	2.0	100	1.0	7738563
Nitrite (N)	mg/L	1	-	ND	0.010	ND	0.010	7738811
Nitrate (N)	mg/L	10	-	ND	0.10	0.82	0.10	7738811
Nitrate + Nitrite (N)	mg/L	10	-	ND	0.10	0.82	0.10	7738811
RDL = Reportable Detection Limit QC Batch = Quality Control Batch Criteria, Criteria C: Ontario Regulation 169/03 Criteria A = Maximum Acceptable Criteria B = Interim Maximum Criteria C = Chemical/Physical Objectives [A/O] (Made under the Ontario Safe Drinking Water Act, 2002) ND = Not Detected at a concentration equal or greater than the indicated Detection Limit. (1) TKN < NH ₄ : Both values fall within acceptable RPD limits for duplicates and are likely equivalent.								



BUREAU
VERITAS

Bureau Veritas Job #: C1Z6643

Report Date: 2022/01/10

City of Guelph

Client Project #: WET/DRY GW

Site Location: DEC GW

Your P.O. #: 2100310

Sampler Initials: AS

RESULTS OF ANALYSES OF WATER

Bureau Veritas ID				RKG638			RKG638		
Sampling Date				2021/12/16			2021/12/16		
COC Number				797024-04-01			797024-04-01		
	UNITS	Criteria	Criteria C	17B	RDL	QC Batch	17B Lab-Dup	RDL	QC Batch
Inorganics									
Total Ammonia-N	mg/L	-	-	0.069	0.050	7746936			
Total BOD	mg/L	-	-	2	2	7738180			
Total Chemical Oxygen Demand (COD)	mg/L	-	-	ND	4.0	7745495	ND	4.0	7745495
Conductivity	umho/cm	-	-	700	1.0	7738516			
Total Kjeldahl Nitrogen (TKN)	mg/L	-	-	ND	0.10	7744020			
pH	pH	-	6.5:8.5	8.00		7738520			
Phenols-4AAP	mg/L	-	-	ND	0.0010	7741233			
Total Phosphorus	mg/L	-	-	0.029	0.020	7747632			
Dissolved Sulphate (SO ₄)	mg/L	-	500	64	1.0	7739378			
Alkalinity (Total as CaCO ₃)	mg/L	-	30-500	240	1.0	7738505			
Dissolved Chloride (Cl ⁻)	mg/L	-	250	38	1.0	7739374			
Nitrite (N)	mg/L	1	-	ND	0.010	7738811			
Nitrate (N)	mg/L	10	-	ND	0.10	7738811			
Nitrate + Nitrite (N)	mg/L	10	-	ND	0.10	7738811			
RDL = Reportable Detection Limit QC Batch = Quality Control Batch Lab-Dup = Laboratory Initiated Duplicate Criteria, Criteria C: Ontario Regulation 169/03 Criteria A = Maximum Acceptable Criteria B = Interim Maximum Criteria C = Chemical/Physical Objectives [A/O] (Made under the Ontario Safe Drinking Water Act, 2002) ND = Not Detected at a concentration equal or greater than the indicated Detection Limit.									



BUREAU
VERITAS

Bureau Veritas Job #: C126643

Report Date: 2022/01/10

City of Guelph

Client Project #: WET/DRY GW

Site Location: DEC GW

Your P.O. #: 2100310

Sampler Initials: AS

RESULTS OF ANALYSES OF WATER

Bureau Veritas ID				RKG639			RKG641		
Sampling Date				2021/12/17			2021/12/17		
COC Number				797024-04-01			797024-04-01		
	UNITS	Criteria	Criteria C	22A	RDL	QC Batch	22B	RDL	QC Batch
Inorganics									
Total Ammonia-N	mg/L	-	-	0.10 (1)	0.050	7746936	ND	0.050	7746936
Total BOD	mg/L	-	-	3	2	7738180	ND	2	7738180
Total Chemical Oxygen Demand (COD)	mg/L	-	-	ND	4.0	7745495	ND	4.0	7745495
Conductivity	umho/cm	-	-	870	1.0	7738497	890	1.0	7738497
Total Kjeldahl Nitrogen (TKN)	mg/L	-	-	ND (1)	0.10	7745423	ND	0.10	7744020
pH	pH	-	6.5-8.5	7.91		7738498	7.70		7738498
Phenols-4AAP	mg/L	-	-	ND	0.0010	7741233	ND	0.0010	7741233
Total Phosphorus	mg/L	-	-	1.3	0.040	7747632	ND	0.020	7747632
Dissolved Sulphate (SO ₄)	mg/L	-	500	90	1.0	7738572	33	1.0	7738572
Alkalinity (Total as CaCO ₃)	mg/L	-	30-500	240	1.0	7738487	360	1.0	7738487
Dissolved Chloride (Cl ⁻)	mg/L	-	250	80	1.0	7738563	59	1.0	7738563
Nitrite (N)	mg/L	1	-	ND	0.010	7738811	ND	0.010	7738811
Nitrate (N)	mg/L	10	-	0.11	0.10	7738811	0.34	0.10	7738811
Nitrate + Nitrite (N)	mg/L	10	-	0.11	0.10	7738811	0.34	0.10	7738811
RDL = Reportable Detection Limit QC Batch = Quality Control Batch Criteria, Criteria C: Ontario Regulation 169/03 Criteria A = Maximum Acceptable Criteria B = Interim Maximum Criteria C = Chemical/Physical Objectives [A/O] (Made under the Ontario Safe Drinking Water Act, 2002) ND = Not Detected at a concentration equal or greater than the indicated Detection Limit. (1) TKN < NH ₄ : Both values fall within acceptable RPD limits for duplicates and are likely equivalent.									



BUREAU
VERITAS

Bureau Veritas Job #: C126643

Report Date: 2022/01/10

City of Guelph

Client Project #: WET/DRY GW

Site Location: DEC GW

Your P.O. #: 2100310

Sampler Initials: AS

RESULTS OF ANALYSES OF WATER

Bureau Veritas ID				RKG641			RKG642		
Sampling Date				2021/12/17			2021/12/17		
COC Number				797024-04-01			797024-04-01		
	UNITS	Criteria	Criteria C	22B Lab-Dup	RDL	QC Batch	13A	RDL	QC Batch
Inorganics									
Total Ammonia-N	mg/L	-	-				0.15	0.050	7746936
Total BOD	mg/L	-	-				ND	2	7738180
Total Chemical Oxygen Demand (COD)	mg/L	-	-				ND	4.0	7745495
Conductivity	umho/cm	-	-				1000	1.0	7738516
Total Kjeldahl Nitrogen (TKN)	mg/L	-	-	ND	0.10	7744020	0.12	0.10	7745411
pH	pH	-	6.5:8.5				7.94		7738520
Phenols-4AAP	mg/L	-	-				ND	0.0010	7741233
Total Phosphorus	mg/L	-	-				ND	0.020	7747632
Dissolved Sulphate (SO ₄)	mg/L	-	500				100	1.0	7738572
Alkalinity (Total as CaCO ₃)	mg/L	-	30-500				250	1.0	7738505
Dissolved Chloride (Cl ⁻)	mg/L	-	250				120	1.0	7738563
Nitrite (N)	mg/L	1	-	ND	0.010	7738811	ND	0.010	7738811
Nitrate (N)	mg/L	10	-	0.35	0.10	7738811	ND	0.10	7738811
Nitrate + Nitrite (N)	mg/L	10	-	0.35	0.10	7738811	ND	0.10	7738811
RDL = Reportable Detection Limit QC Batch = Quality Control Batch Lab-Dup = Laboratory Initiated Duplicate Criteria, Criteria C: Ontario Regulation 169/03 Criteria A = Maximum Acceptable Criteria B = Interim Maximum Criteria C = Chemical/Physical Objectives [A/O] (Made under the Ontario Safe Drinking Water Act, 2002) ND = Not Detected at a concentration equal or greater than the indicated Detection Limit.									



BUREAU
VERITAS

Bureau Veritas Job #: C1Z6643

Report Date: 2022/01/10

City of Guelph

Client Project #: WET/DRY GW

Site Location: DEC GW

Your P.O. #: 2100310

Sampler Initials: AS

RESULTS OF ANALYSES OF WATER

Bureau Veritas ID				RKG643			RKG643		
Sampling Date				2021/12/17			2021/12/17		
COC Number				797024-04-01			797024-04-01		
	UNITS	Criteria	Criteria C	13B	RDL	QC Batch	13B Lab-Dup	RDL	QC Batch
Inorganics									
Total Ammonia-N	mg/L	-	-	ND	0.050	7746936			
Total BOD	mg/L	-	-	ND	2	7738180			
Total Chemical Oxygen Demand (COD)	mg/L	-	-	ND	4.0	7745495			
Conductivity	umho/cm	-	-	990	1.0	7738516			
Total Kjeldahl Nitrogen (TKN)	mg/L	-	-	ND	0.10	7745411			
pH	pH	-	6.5:8.5	7.83		7738520			
Phenols-4AAP	mg/L	-	-	ND	0.0010	7741233			
Total Phosphorus	mg/L	-	-	ND	0.020	7747632	ND	0.020	7747632
Dissolved Sulphate (SO ₄)	mg/L	-	500	51	1.0	7738572			
Alkalinity (Total as CaCO ₃)	mg/L	-	30-500	320	1.0	7738505			
Dissolved Chloride (Cl ⁻)	mg/L	-	250	110	1.0	7738563			
Nitrite (N)	mg/L	1	-	ND	0.010	7738811			
Nitrate (N)	mg/L	10	-	1.02	0.10	7738811			
Nitrate + Nitrite (N)	mg/L	10	-	1.02	0.10	7738811			
RDL = Reportable Detection Limit QC Batch = Quality Control Batch Lab-Dup = Laboratory Initiated Duplicate Criteria, Criteria C: Ontario Regulation 169/03 Criteria A = Maximum Acceptable Criteria B = Interim Maximum Criteria C = Chemical/Physical Objectives [A/O] (Made under the Ontario Safe Drinking Water Act, 2002) ND = Not Detected at a concentration equal or greater than the indicated Detection Limit.									



BUREAU
VERITAS

Bureau Veritas Job #: C1Z6643

Report Date: 2022/01/10

City of Guelph

Client Project #: WET/DRY GW

Site Location: DEC GW

Your P.O. #: 2100310

Sampler Initials: AS

RESULTS OF ANALYSES OF WATER

Bureau Veritas ID				RKG644		
Sampling Date				2021/12/17		
COC Number				797024-04-01		
	UNITS	Criteria	Criteria C	24	RDL	QC Batch
Inorganics						
Total Ammonia-N	mg/L	-	-	0.11 (1)	0.050	7746936
Total BOD	mg/L	-	-	2	2	7738180
Total Chemical Oxygen Demand (COD)	mg/L	-	-	7.5	4.0	7745495
Conductivity	umho/cm	-	-	850	1.0	7738516
Total Kjeldahl Nitrogen (TKN)	mg/L	-	-	ND (1)	0.10	7745411
pH	pH	-	6.5:8.5	7.98		7738520
Phenols-4AAP	mg/L	-	-	ND	0.0010	7741233
Total Phosphorus	mg/L	-	-	1.4	0.040	7747632
Dissolved Sulphate (SO ₄)	mg/L	-	500	91	1.0	7738572
Alkalinity (Total as CaCO ₃)	mg/L	-	30-500	250	1.0	7738505
Dissolved Chloride (Cl ⁻)	mg/L	-	250	79	1.0	7738563
Nitrite (N)	mg/L	1	-	ND	0.010	7738811
Nitrate (N)	mg/L	10	-	0.14	0.10	7738811
Nitrate + Nitrite (N)	mg/L	10	-	0.14	0.10	7738811
RDL = Reportable Detection Limit						
QC Batch = Quality Control Batch						
Criteria, Criteria C: Ontario Regulation 169/03						
Criteria A = Maximum Acceptable						
Criteria B = Interim Maximum						
Criteria C = Chemical/Physical Objectives [A/O]						
(Made under the Ontario Safe Drinking Water Act, 2002)						
ND = Not Detected at a concentration equal or greater than the indicated Detection Limit.						
(1) TKN < NH ₄ : Both values fall within acceptable RPD limits for duplicates and are likely equivalent.						



BUREAU
VERITAS

Bureau Veritas Job #: C1Z6643

Report Date: 2022/01/10

City of Guelph

Client Project #: WET/DRY GW

Site Location: DEC GW

Your P.O. #: 2100310

Sampler Initials: AS

ELEMENTS BY ATOMIC SPECTROSCOPY (WATER)

Bureau Veritas ID					RKG635			RKG635		
Sampling Date					2021/12/16			2021/12/16		
COC Number					797024-04-01			797024-04-01		
	UNITS	Criteria	Criteria B	Criteria C	14A	RDL	QC Batch	14A Lab-Dup	RDL	QC Batch
Metals										
Total Iron (Fe)	mg/L	-	-	0.3	0.28	0.02	7747666			
Dissolved Boron (B)	ug/L	-	5000	-	22	10	7741427	22	10	7741427
Dissolved Calcium (Ca)	ug/L	-	-	-	77000	200	7741427	77000	200	7741427
Dissolved Magnesium (Mg)	ug/L	-	-	-	25000	50	7741427	26000	50	7741427
Dissolved Phosphorus (P)	ug/L	-	-	-	ND	100	7741427	ND	100	7741427
Dissolved Potassium (K)	ug/L	-	-	-	1200	200	7741427	1200	200	7741427
Dissolved Sodium (Na)	ug/L	20000	-	200000	26000	100	7741427	27000	100	7741427
Dissolved Zinc (Zn)	ug/L	-	-	5000	ND	5.0	7741427	ND	5.0	7741427
RDL = Reportable Detection Limit QC Batch = Quality Control Batch Lab-Dup = Laboratory Initiated Duplicate Criteria, Criteria B, Criteria C: Ontario Regulation 169/03 Criteria A = Maximum Acceptable Criteria B = Interim Maximum Criteria C = Chemical/Physical Objectives [A/O] (Made under the Ontario Safe Drinking Water Act, 2002) ND = Not Detected at a concentration equal or greater than the indicated Detection Limit.										



**BUREAU
VERITAS**

Bureau Veritas Job #: C1Z6643

Report Date: 2022/01/10

City of Guelph

Client Project #: WET/DRY GW

Site Location: DEC GW

Your P.O. #: 2100310

Sampler Initials: AS

ELEMENTS BY ATOMIC SPECTROSCOPY (WATER)

Bureau Veritas ID					RKG636	RKG637	RKG638	RKG639		
Sampling Date					2021/12/16	2021/12/16	2021/12/16	2021/12/17		
COC Number					797024-04-01	797024-04-01	797024-04-01	797024-04-01		
	UNITS	Criteria	Criteria B	Criteria C	14B	17A	17B	22A	RDL	QC Batch

Metals

Total Iron (Fe)	mg/L	-	-	0.3	2.9	7.3	0.74	6.4	0.02	7747666
Dissolved Boron (B)	ug/L	-	5000	-	25	25	25	29	10	7741409
Dissolved Calcium (Ca)	ug/L	-	-	-	110000	110000	83000	100000	200	7741409
Dissolved Magnesium (Mg)	ug/L	-	-	-	21000	23000	29000	33000	50	7741409
Dissolved Phosphorus (P)	ug/L	-	-	-	ND	ND	ND	ND	100	7741409
Dissolved Potassium (K)	ug/L	-	-	-	1600	1100	1700	1500	200	7741409
Dissolved Sodium (Na)	ug/L	20000	-	200000	250000	80000	27000	32000	100	7741409
Dissolved Zinc (Zn)	ug/L	-	-	5000	120	74	ND	ND	5.0	7741409

RDL = Reportable Detection Limit

QC Batch = Quality Control Batch

Criteria, Criteria B, Criteria C: Ontario Regulation 169/03

Criteria A = Maximum Acceptable

Criteria B = Interim Maximum

Criteria C = Chemical/Physical Objectives [A/O]

(Made under the Ontario Safe Drinking Water Act, 2002)

ND = Not Detected at a concentration equal or greater than the indicated Detection Limit.



BUREAU
VERITAS

Bureau Veritas Job #: C1Z6643

Report Date: 2022/01/10

City of Guelph

Client Project #: WET/DRY GW

Site Location: DEC GW

Your P.O. #: 2100310

Sampler Initials: AS

ELEMENTS BY ATOMIC SPECTROSCOPY (WATER)

Bureau Veritas ID					RKG641		RKG642			RKG643		
Sampling Date					2021/12/17		2021/12/17			2021/12/17		
COC Number					797024-04-01		797024-04-01			797024-04-01		
	UNITS	Criteria	Criteria B	Criteria C	22B	RDL	13A	RDL	QC Batch	13B	RDL	QC Batch

Metals

Total Iron (Fe)	mg/L	-	-	0.3	0.12	0.02	0.29	0.02	7747666	0.11	0.02	7747666
Dissolved Boron (B)	ug/L	-	5000	-	21	10	47	10	7741409	27	10	7741427
Dissolved Calcium (Ca)	ug/L	-	-	-	110000	200	100000	400	7741409	120000	200	7741427
Dissolved Magnesium (Mg)	ug/L	-	-	-	23000	50	35000	50	7741409	26000	50	7741427
Dissolved Phosphorus (P)	ug/L	-	-	-	ND	100	ND	100	7741409	ND	100	7741427
Dissolved Potassium (K)	ug/L	-	-	-	1700	200	2700	200	7741409	2000	200	7741427
Dissolved Sodium (Na)	ug/L	20000	-	200000	55000	100	51000	100	7741409	62000	100	7741427
Dissolved Zinc (Zn)	ug/L	-	-	5000	10	5.0	ND	5.0	7741409	54	5.0	7741427

RDL = Reportable Detection Limit

QC Batch = Quality Control Batch

Criteria, Criteria B, Criteria C: Ontario Regulation 169/03

Criteria A = Maximum Acceptable

Criteria B = Interim Maximum

Criteria C = Chemical/Physical Objectives [A/O]

(Made under the Ontario Safe Drinking Water Act, 2002)

ND = Not Detected at a concentration equal or greater than the indicated Detection Limit.



**BUREAU
VERITAS**

Bureau Veritas Job #: C1Z6643

Report Date: 2022/01/10

City of Guelph

Client Project #: WET/DRY GW

Site Location: DEC GW

Your P.O. #: 2100310

Sampler Initials: AS

ELEMENTS BY ATOMIC SPECTROSCOPY (WATER)

Bureau Veritas ID					RKG644		
Sampling Date					2021/12/17		
COC Number					797024-04-01		
	UNITS	Criteria	Criteria B	Criteria C	24	RDL	QC Batch
Metals							
Total Iron (Fe)	mg/L	-	-	0.3	8.1	0.02	7747666
Dissolved Boron (B)	ug/L	-	5000	-	28	10	7741409
Dissolved Calcium (Ca)	ug/L	-	-	-	100000	200	7741409
Dissolved Magnesium (Mg)	ug/L	-	-	-	33000	50	7741409
Dissolved Phosphorus (P)	ug/L	-	-	-	ND	100	7741409
Dissolved Potassium (K)	ug/L	-	-	-	1500	200	7741409
Dissolved Sodium (Na)	ug/L	20000	-	200000	32000	100	7741409
Dissolved Zinc (Zn)	ug/L	-	-	5000	ND	5.0	7741409
RDL = Reportable Detection Limit QC Batch = Quality Control Batch Criteria, Criteria B, Criteria C: Ontario Regulation 169/03 Criteria A = Maximum Acceptable Criteria B = Interim Maximum Criteria C = Chemical/Physical Objectives [A/O] (Made under the Ontario Safe Drinking Water Act, 2002) ND = Not Detected at a concentration equal or greater than the indicated Detection Limit.							



BUREAU
VERITAS

Bureau Veritas Job #: C1Z6643

Report Date: 2022/01/10

City of Guelph

Client Project #: WET/DRY GW

Site Location: DEC GW

Your P.O. #: 2100310

Sampler Initials: AS

GENERAL COMMENTS

Sample RKG638 [17B] : COD < BOD: Both values fall within the method uncertainty for duplicates and are likely equivalent.

Sample RKG639 [22A] : TKN < Ammonia: Both values fall within the method uncertainty for duplicates and are likely equivalent.

Sample RKG642 [13A] : TKN < Ammonia: Both values fall within the method uncertainty for duplicates and are likely equivalent.

Sample RKG644 [24] : TKN < Ammonia: Both values fall within the method uncertainty for duplicates and are likely equivalent.

Results relate only to the items tested.



Bureau Veritas Job #: C126643
Report Date: 2022/01/10

QUALITY ASSURANCE REPORT

City of Guelph
Client Project #: WET/DRY GW
Site Location: DEC GW
Your P.O. #: 2100310
Sampler Initials: AS

QC Batch	Parameter	Date	Matrix Spike		SPIKED BLANK		Method Blank		RPD		QC Standard	
			% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits	% Recovery	QC Limits
7738180	Total BOD	2021/12/23					ND, RDL=2	mg/L	NC	30	91	80 - 120
7738487	Alkalinity (Total as CaCO ₃)	2021/12/20			95	85 - 115	ND, RDL=1.0	mg/L	0.52	20		
7738497	Conductivity	2021/12/20			103	85 - 115	ND, RDL=1.0	umho/cm	0.093	25		
7738498	pH	2021/12/20			102	98 - 103			0.23	N/A		
7738505	Alkalinity (Total as CaCO ₃)	2021/12/20			95	85 - 115	ND, RDL=1.0	mg/L	0.56	20		
7738516	Conductivity	2021/12/20			100	85 - 115	ND, RDL=1.0	umho/cm	0.26	25		
7738520	pH	2021/12/20			102	98 - 103			0.18	N/A		
7738563	Dissolved Chloride (Cl ⁻)	2021/12/20	NC	80 - 120	103	80 - 120	ND, RDL=1.0	mg/L	1.1	20		
7738572	Dissolved Sulphate (SO ₄)	2021/12/20	NC	75 - 125	102	80 - 120	ND, RDL=1.0	mg/L	0.40	20		
7738811	Nitrate (N)	2021/12/21	98	80 - 120	98	80 - 120	ND, RDL=0.10	mg/L	2.9	20		
7738811	Nitrite (N)	2021/12/21	104	80 - 120	106	80 - 120	ND, RDL=0.010	mg/L	NC	20		
7739374	Dissolved Chloride (Cl ⁻)	2021/12/20	105	80 - 120	105	80 - 120	ND, RDL=1.0	mg/L	2.1	20		
7739378	Dissolved Sulphate (SO ₄)	2021/12/20	NC	75 - 125	99	80 - 120	ND, RDL=1.0	mg/L	1.4	20		
7741233	Phenols-4AAP	2021/12/20	100	80 - 120	96	80 - 120	ND, RDL=0.0010	mg/L	NC	20		
7741409	Dissolved Boron (B)	2021/12/22	102	80 - 120	101	80 - 120	ND, RDL=10	ug/L	7.2	20		
7741409	Dissolved Calcium (Ca)	2021/12/22	NC	80 - 120	103	80 - 120	ND, RDL=200	ug/L	1.8	20		
7741409	Dissolved Magnesium (Mg)	2021/12/22	102	80 - 120	100	80 - 120	ND, RDL=50	ug/L	0.50	20		
7741409	Dissolved Phosphorus (P)	2021/12/22	108	80 - 120	117	80 - 120	ND, RDL=100	ug/L	NC	20		
7741409	Dissolved Potassium (K)	2021/12/22	109	80 - 120	104	80 - 120	ND, RDL=200	ug/L	0.35	20		
7741409	Dissolved Sodium (Na)	2021/12/22	105	80 - 120	101	80 - 120	ND, RDL=100	ug/L	0.72	20		
7741409	Dissolved Zinc (Zn)	2021/12/22	100	80 - 120	99	80 - 120	ND, RDL=5.0	ug/L	0.10	20		
7741427	Dissolved Boron (B)	2021/12/23	99	80 - 120	93	80 - 120	ND, RDL=10	ug/L	1.7	20		
7741427	Dissolved Calcium (Ca)	2021/12/23	NC	80 - 120	105	80 - 120	ND, RDL=200	ug/L	0.41	20		
7741427	Dissolved Magnesium (Mg)	2021/12/23	NC	80 - 120	102	80 - 120	ND, RDL=50	ug/L	1.6	20		
7741427	Dissolved Phosphorus (P)	2021/12/23	111	80 - 120	124 (1)	80 - 120	ND, RDL=100	ug/L	NC	20		
7741427	Dissolved Potassium (K)	2021/12/23	110	80 - 120	107	80 - 120	ND, RDL=200	ug/L	3.1	20		
7741427	Dissolved Sodium (Na)	2021/12/23	NC	80 - 120	103	80 - 120	ND, RDL=100	ug/L	2.3	20		



Bureau Veritas Job #: C126643
Report Date: 2022/01/10

QUALITY ASSURANCE REPORT(CONT'D)

City of Guelph
Client Project #: WET/DRY GW
Site Location: DEC GW
Your P.O. #: 2100310
Sampler Initials: AS

QC Batch	Parameter	Date	Matrix Spike		SPIKED BLANK		Method Blank		RPD		QC Standard	
			% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits	% Recovery	QC Limits
7741427	Dissolved Zinc (Zn)	2021/12/23	97	80 - 120	97	80 - 120	ND, RDL=5.0	ug/L	NC	20		
7744020	Total Kjeldahl Nitrogen (TKN)	2021/12/21	101	80 - 120	106	80 - 120	ND, RDL=0.10	mg/L	NC	20	105	80 - 120
7745411	Total Kjeldahl Nitrogen (TKN)	2021/12/22	100	80 - 120	94	80 - 120	ND, RDL=0.10	mg/L	9.0	20	94	80 - 120
7745423	Total Kjeldahl Nitrogen (TKN)	2021/12/23	93	80 - 120	95	80 - 120	ND, RDL=0.10	mg/L	NC	20	92	80 - 120
7745495	Total Chemical Oxygen Demand (COD)	2021/12/23	106	80 - 120	104	80 - 120	ND, RDL=4.0	mg/L	NC	20		
7746936	Total Ammonia-N	2021/12/23	98	75 - 125	101	80 - 120	ND, RDL=0.050	mg/L	NC	20		
7747632	Total Phosphorus	2021/12/23	96	80 - 120	97	80 - 120	ND, RDL=0.020	mg/L	NC	20	98	80 - 120
7747666	Total Iron (Fe)	2021/12/23	NC	80 - 120	104	80 - 120	ND, RDL=0.02	mg/L	5.7	25		

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 $\leq 2 \times$ RDL).

(1) Recovery or RPD for this parameter is outside control limits. The overall quality control for this analysis meets acceptability criteria.





BUREAU
VERITAS

Bureau Veritas Job #: C1Z6643
Report Date: 2022/01/10

City of Guelph
Client Project #: WET/DRY GW
Site Location: DEC GW
Your P.O. #: 2100310
Sampler Initials: AS

VALIDATION SIGNATURE PAGE

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

Ewa Pranjić, M.Sc., C.Chem, Scientific Specialist

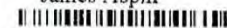
BV Labs has procedures in place to guard against improper use of the electronic signature and have the required "signatories", as per ISO/IEC 17025, signing the reports. For Service Group specific validation please refer to the Validation Signature Page.



Bureau Veritas Laboratories
6740 Campbell Road, Mississauga, Ontario Canada L5N 2L8 Tel: (905) 817-5700 Toll-free 800-563-6266 Fax: (905) 817-5777 www.bvlabs.com

17-Dec-21 16:59

James Aspin



C1Z6643

Page 1 of 1

INVOICE TO:		REPORT TO:		PROJECT INFORMATION:	
Company Name: #12237 City of Guelph	Attention: Andrew Shouldice (Eastview)	Company Name:	Attention:	Quotation #: B14476 B 90142	KSE ENV-1698
Address: 186 Eastview Rd	Guelph ON N1E 1Z6	Address:		Project: EASTVIEW GW Wet/Dry GW	
Tel: (519) 822-1260 Ext: 2473	Fax: (519) 823-0910	Tel:	Fax:	Project Name: Dec GW	
Email: Andrew.Shouldice@guelph.ca, Bill.Shields@guelph.ca		Email:		Site #: Andrew Shouldice	
				COC #:	
				Sampled By:	

Bottle Order #:
797024
Project Manager:
James Aspin

MOE REGULATED DRINKING WATER OR WATER INTENDED FOR HUMAN CONSUMPTION MUST BE SUBMITTED ON THE BV LABS DRINKING WATER CHAIN OF CUSTODY						ANALYSIS REQUESTED (PLEASE BE SPECIFIC)										Turnaround Time (TAT) Required:			
Regulation 153 (2011)						Other Regulations						Special Instructions						Regular (Standard) TAT:	
<input type="checkbox"/> Table 1 <input type="checkbox"/> Res/Park <input type="checkbox"/> Medium/Fine						<input type="checkbox"/> CCME <input type="checkbox"/> Sanitary Sewer Bylaw												Job Specific Rush TAT (if applies to entire submission)	
<input type="checkbox"/> Table 2 <input type="checkbox"/> Ind/Comm <input type="checkbox"/> Coarse						<input type="checkbox"/> Reg 558 <input type="checkbox"/> Storm Sewer Bylaw												Date Required: <input type="text"/> Time Required: <input type="text"/>	
<input type="checkbox"/> Table 3 <input type="checkbox"/> Agri/Other <input type="checkbox"/> For RSC						<input type="checkbox"/> MISA Municipality												Rush Confirmation Number: <input type="text"/> <small>(call lab for #)</small>	
<input type="checkbox"/> Table <input type="checkbox"/>						<input type="checkbox"/> PWQO <input type="checkbox"/> Reg 406 Table													
<input type="checkbox"/> Other																			
Include Criteria on Certificate of Analysis (Y/N)?																			
Sample Barcode Label	Sample (Location) Identification	Date Sampled	Time Sampled	Matrix	Field Filtered (please circle): Metals / Hg / Cr / V	Eastview Landfill SW	Wet/Dry GW									# of Bottles	Comments		
1	14 A	Dec 16 /21	PM	GW	Y	X										7			
2	14 B			GW	Y	X										7			
3	17 A			GW	Y	X										7			
4	17 B			GW	Y	X										7			
5	22 A	Dec 17 /21	Am	GW	Y	X										7			
6	22 B			GW	Y	X										7			
7	13 A			GW	Y	X										7			
8	13 B			GW	Y	X										7			
9	24			GW	Y	X										7			
10																			

* RELINQUISHED BY: (Signature/Print)		Date: (YY/MM/DD)	Time	RECEIVED BY: (Signature/Print)		Date: (YY/MM/DD)	Time	# jars used and not submitted	Laboratory Use Only				
Andrew Shouldice		21/12/17	Am	Mustafa Mustafa		20/12/17	16:59		Time Sensitive	Temperature (°C) on Recept	Custody Seal	Yes	No
										0/2/13	Present		
											Intact		

* UNLESS OTHERWISE AGREED TO IN WRITING, WORK SUBMITTED ON THIS CHAIN OF CUSTODY IS SUBJECT TO BV LABS' STANDARD TERMS AND CONDITIONS. SIGNING OF THIS CHAIN OF CUSTODY DOCUMENT IS ACKNOWLEDGMENT AND ACCEPTANCE OF OUR TERMS WHICH ARE AVAILABLE FOR VIEWING AT WWW.BVLABS.COM/TERMS-AND-CONDITIONS.

* IT IS THE RESPONSIBILITY OF THE RELINQUISHER TO ENSURE THE ACCURACY OF THE CHAIN OF CUSTODY RECORD. AN INCOMPLETE CHAIN OF CUSTODY MAY RESULT IN ANALYTICAL TAT DELAYS.

** SAMPLE CONTAINER, PRESERVATION, HOLD TIME AND PACKAGE INFORMATION CAN BE VIEWED AT WWW.BVLABS.COM/RESOURCES/CHAIN-OF-CUSTODY-FORMS.

SAMPLES MUST BE KEPT COOL (< 10°C) FROM TIME OF SAMPLING UNTIL DELIVERY TO BV LABS

White: BV Labs Yellow: Client

Bureau Veritas Canada (2019) Inc.

**Attention: Amy Spence**

City of Guelph
Solid Waste RIC (Wet/Dry)
110 Dunlop Drive
Guelph, ON
CANADA N1H 6H8

Your P.O. #: 2100310
Your Project #: WET/DRY SURFACE WATER
Site#: 110 DONLOP DR
Site Location: WET/DRY SW-DECEMBER 2021
Your C.O.C. #: n/a

Report Date: 2021/12/29

Report #: R6943321

Version: 1 - Final

CERTIFICATE OF ANALYSIS**BV LABS JOB #: C1Z6652****Received: 2021/12/17, 16:59**

Sample Matrix: Water
Samples Received: 2

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Analytical Method
Alkalinity	2	N/A	2021/12/20	CAM SOP-00448	SM 23 2320 B m
Biochemical Oxygen Demand (BOD)	2	2021/12/18	2021/12/23	CAM SOP-00427	SM 23 5210B m
Chloride by Automated Colourimetry	2	N/A	2021/12/20	CAM SOP-00463	SM 23 4500-Cl E m
Chemical Oxygen Demand	2	N/A	2021/12/23	CAM SOP-00416	SM 23 5220 D m
Conductivity	2	N/A	2021/12/20	CAM SOP-00414	SM 23 2510 m
Total Metals Analysis by ICPMS	2	N/A	2021/12/23	CAM SOP-00447	EPA 6020B m
Total Ammonia-N	2	N/A	2021/12/21	CAM SOP-00441	USGS I-2522-90 m
Nitrate & Nitrite as Nitrogen in Water (1)	2	N/A	2021/12/21	CAM SOP-00440	SM 23 4500-NO3I/NO2B
pH	2	2021/12/18	2021/12/20	CAM SOP-00413	SM 4500H+ B m
Phenols (4AAP)	2	N/A	2021/12/20	CAM SOP-00444	OMOE E3179 m
Sulphate by Automated Colourimetry	2	N/A	2021/12/20	CAM SOP-00464	EPA 375.4 m
Total Kjeldahl Nitrogen in Water	2	2021/12/21	2021/12/22	CAM SOP-00938	OMOE E3516 m
Total Phosphorus (Colourimetric)	2	2021/12/21	2021/12/23	CAM SOP-00407	SM 23 4500 P B H m
Low Level Total Suspended Solids	1	2021/12/20	2021/12/21	CAM SOP-00428	SM 23 2540D m
Low Level Total Suspended Solids	1	2021/12/20	2021/12/22	CAM SOP-00428	SM 23 2540D 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, MELCC, EPA, APHA.

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. #: 2100310
Your Project #: WET/DRY SURFACE WATER
Site#: 110 DONLOP DR
Site Location: WET/DRY SW-DECEMBER 2021
Your C.O.C. #: n/a

Attention: Amy Spence

City of Guelph
Solid Waste RIC (Wet/Dry)
110 Dunlop Drive
Guelph, ON
CANADA N1H 6H8

Report Date: 2021/12/29
Report #: R6943321
Version: 1 - Final

CERTIFICATE OF ANALYSIS

BV LABS JOB #: C1Z6652

Received: 2021/12/17, 16:59

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.

Encryption Key

James Aspin
Senior Project Manager
29 Dec 2021 15:02:21

Please direct all questions regarding this Certificate of Analysis to your Project Manager.

James Aspin, Senior Project Manager

Email: James.Aspin@bureauveritas.com

Phone# (905)817-5771

=====

BV Labs 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 Signature Page.



BUREAU
VERITAS

Bureau Veritas Job #: C1Z6652

Report Date: 2021/12/29

City of Guelph

Client Project #: WET/DRY SURFACE WATER

Site Location: WET/DRY SW-DECEMBER 2021

Your P.O. #: 2100310

Sampler Initials: AS

RESULTS OF ANALYSES OF WATER

Bureau Veritas ID			RKG690			RKG691		
Sampling Date			2021/12/16			2021/12/16		
COC Number			n/a			n/a		
	UNITS	Criteria	TP1-OUT	RDL	QC Batch	EPTS01	RDL	QC Batch
Inorganics								
Total Ammonia-N	mg/L	-	ND	0.050	7743971	ND	0.050	7743971
Total BOD	mg/L	-	ND	2	7738180	ND	2	7738180
Total Chemical Oxygen Demand (COD)	mg/L	-	14	4.0	7745495	ND	4.0	7745495
Conductivity	umho/cm	-	970	1.0	7738516	770	1.0	7738516
Total Kjeldahl Nitrogen (TKN)	mg/L	-	0.31	0.10	7745411	ND	0.10	7746525
pH	pH	6.5:8.5	7.97		7738520	7.99		7738520
Phenols-4AAP	mg/L	0.001	ND	0.0010	7741233	ND	0.0010	7741233
Total Phosphorus	mg/L	0.01	0.038	0.020	7745212	ND (1)	0.020	7745212
Total Suspended Solids	mg/L	-	ND	1	7741622	ND	1	7742371
Dissolved Sulphate (SO ₄)	mg/L	-	64	1.0	7738572	14	1.0	7738572
Alkalinity (Total as CaCO ₃)	mg/L	-	210	1.0	7738505	300	1.0	7738505
Dissolved Chloride (Cl ⁻)	mg/L	-	130	2.0	7738563	58	1.0	7738563
Nitrite (N)	mg/L	-	ND	0.010	7738539	0.031	0.010	7738539
Nitrate (N)	mg/L	-	ND	0.10	7738539	2.59	0.10	7738539
Nitrate + Nitrite (N)	mg/L	-	ND	0.10	7738539	2.62	0.10	7738539
RDL = Reportable Detection Limit QC Batch = Quality Control Batch Criteria: Ontario Provincial Water Quality Objectives Ref. to MOEE Water Management document dated Feb.1999 ND = Not Detected at a concentration equal or greater than the indicated Detection Limit. (1) RDL exceeds criteria								



BUREAU
VERITAS

Bureau Veritas Job #: C1Z6652

Report Date: 2021/12/29

City of Guelph

Client Project #: WET/DRY SURFACE WATER

Site Location: WET/DRY SW-DECEMBER 2021

Your P.O. #: 2100310

Sampler Initials: AS

RESULTS OF ANALYSES OF WATER

Bureau Veritas ID			RKG691		
Sampling Date			2021/12/16		
COC Number			n/a		
	UNITS	Criteria	EPTS01 Lab-Dup	RDL	QC Batch
Inorganics					
Conductivity	umho/cm	-	760	1.0	7738516
Total Kjeldahl Nitrogen (TKN)	mg/L	-	ND	0.10	7746525
pH	pH	6.5:8.5	8.00		7738520
Alkalinity (Total as CaCO ₃)	mg/L	-	300	1.0	7738505
RDL = Reportable Detection Limit QC Batch = Quality Control Batch Lab-Dup = Laboratory Initiated Duplicate Criteria: Ontario Provincial Water Quality Objectives Ref. to MOEE Water Management document dated Feb.1999 ND = Not Detected at a concentration equal or greater than the indicated Detection Limit.					



**BUREAU
VERITAS**

Bureau Veritas Job #: C1Z6652

Report Date: 2021/12/29

City of Guelph

Client Project #: WET/DRY SURFACE WATER

Site Location: WET/DRY SW-DECEMBER 2021

Your P.O. #: 2100310

Sampler Initials: AS

ELEMENTS BY ATOMIC SPECTROSCOPY (WATER)

Bureau Veritas ID			RKG690	RKG691		
Sampling Date			2021/12/16	2021/12/16		
COC Number			n/a	n/a		
	UNITS	Criteria	TP1-OUT	EPTS01	RDL	QC Batch
Metals						
Total Boron (B)	mg/L	0.2	0.030	0.016	0.010	7747655
Total Calcium (Ca)	mg/L	-	85	90	0.20	7747655
Total Iron (Fe)	mg/L	0.3	ND	ND	0.10	7747655
Total Magnesium (Mg)	mg/L	-	9.4	23	0.050	7747655
Total Potassium (K)	mg/L	-	2.2	1.6	0.20	7747655
Total Sodium (Na)	mg/L	-	99	40	0.10	7747655
Total Zinc (Zn)	mg/L	0.03	0.010	0.11	0.0050	7747655
RDL = Reportable Detection Limit						
QC Batch = Quality Control Batch						
Criteria: Ontario Provincial Water Quality Objectives						
Ref. to MOEE Water Management document dated Feb.1999						
ND = Not Detected at a concentration equal or greater than the indicated Detection Limit.						



BUREAU
VERITAS

Bureau Veritas Job #: C1Z6652

Report Date: 2021/12/29

City of Guelph

Client Project #: WET/DRY SURFACE WATER

Site Location: WET/DRY SW-DECEMBER 2021

Your P.O. #: 2100310

Sampler Initials: AS

GENERAL COMMENTS

Results relate only to the items tested.



Bureau Veritas Job #: C126652
Report Date: 2021/12/29

QUALITY ASSURANCE REPORT

City of Guelph
Client Project #: WET/DRY SURFACE WATER
Site Location: WET/DRY SW-DECEMBER 2021
Your P.O. #: 2100310
Sampler Initials: AS

QC Batch	Parameter	Date	Matrix Spike		SPIKED BLANK		Method Blank		RPD		QC Standard	
			% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits	% Recovery	QC Limits
7738180	Total BOD	2021/12/23					ND, RDL=2	mg/L	NC	30	91	80 - 120
7738505	Alkalinity (Total as CaCO ₃)	2021/12/20			95	85 - 115	ND, RDL=1.0	mg/L	0.56	20		
7738516	Conductivity	2021/12/20			100	85 - 115	ND, RDL=1.0	umho/cm	0.26	25		
7738520	pH	2021/12/20			102	98 - 103			0.18	N/A		
7738539	Nitrate (N)	2021/12/21	90	80 - 120	99	80 - 120	ND, RDL=0.10	mg/L	0.047	20		
7738539	Nitrite (N)	2021/12/21	101	80 - 120	107	80 - 120	ND, RDL=0.010	mg/L	NC	20		
7738563	Dissolved Chloride (Cl ⁻)	2021/12/20	NC	80 - 120	103	80 - 120	ND, RDL=1.0	mg/L	1.1	20		
7738572	Dissolved Sulphate (SO ₄)	2021/12/20	NC	75 - 125	102	80 - 120	ND, RDL=1.0	mg/L	0.40	20		
7741233	Phenols-4AAP	2021/12/20	100	80 - 120	96	80 - 120	ND, RDL=0.0010	mg/L	NC	20		
7741622	Total Suspended Solids	2021/12/21					ND, RDL=1	mg/L	13	25	96	85 - 115
7742371	Total Suspended Solids	2021/12/22					ND, RDL=1	mg/L	1.9	25	95	85 - 115
7743971	Total Ammonia-N	2021/12/21	97	75 - 125	100	80 - 120	ND, RDL=0.050	mg/L	9.4	20		
7745212	Total Phosphorus	2021/12/23	95	80 - 120	98	80 - 120	ND, RDL=0.020	mg/L	1.1	20	96	80 - 120
7745411	Total Kjeldahl Nitrogen (TKN)	2021/12/22	100	80 - 120	94	80 - 120	ND, RDL=0.10	mg/L	9.0	20	94	80 - 120
7745495	Total Chemical Oxygen Demand (COD)	2021/12/23	106	80 - 120	104	80 - 120	ND, RDL=4.0	mg/L	NC	20		
7746525	Total Kjeldahl Nitrogen (TKN)	2021/12/22	99	80 - 120	97	80 - 120	ND, RDL=0.10	mg/L	NC	20	97	80 - 120
7747655	Total Boron (B)	2021/12/23	95	80 - 120	95	80 - 120	ND, RDL=0.010	mg/L				
7747655	Total Calcium (Ca)	2021/12/23	NC	80 - 120	100	80 - 120	ND, RDL=0.20	mg/L				
7747655	Total Iron (Fe)	2021/12/23	98	80 - 120	97	80 - 120	ND, RDL=0.10	mg/L	2.7	20		
7747655	Total Magnesium (Mg)	2021/12/23	103	80 - 120	100	80 - 120	ND, RDL=0.050	mg/L				
7747655	Total Potassium (K)	2021/12/23	102	80 - 120	98	80 - 120	ND, RDL=0.20	mg/L				
7747655	Total Sodium (Na)	2021/12/23	NC	80 - 120	97	80 - 120	ND, RDL=0.10	mg/L				



Bureau Veritas Job #: C126652
Report Date: 2021/12/29

QUALITY ASSURANCE REPORT(CONT'D)

City of Guelph
Client Project #: WET/DRY SURFACE WATER
Site Location: WET/DRY SW-DECEMBER 2021
Your P.O. #: 2100310
Sampler Initials: AS

QC Batch	Parameter	Date	Matrix Spike		SPIKED BLANK		Method Blank		RPD		QC Standard	
			% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits	% Recovery	QC Limits
7747655	Total Zinc (Zn)	2021/12/23	101	80 - 120	103	80 - 120	ND, RDL=0.0050	mg/L	2.1	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 $\leq 2 \times$ RDL).



BUREAU
VERITAS

Bureau Veritas Job #: C1Z6652
Report Date: 2021/12/29

City of Guelph
Client Project #: WET/DRY SURFACE WATER
Site Location: WET/DRY SW-DECEMBER 2021
Your P.O. #: 2100310
Sampler Initials: AS

VALIDATION SIGNATURE PAGE

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

Brad Newman, B.Sc., C.Chem., Scientific Service Specialist

BV Labs 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 Signature Page.

CHAIN OF CUSTODY RECORD

INVOICE TO:						REPORT TO:						PROJECT INFORMATION:						Laboratory Use Only:					
Company Name: #12237 City of Guelph Attention: Amy Spence (Wet/Dry) Address: 186 Eastview Rd Guelph ON N1E 1Z6 Tel: (519) 837-5633 Fax: (519) 823-0910 Email: amy.spence@guelph.ca						Company Name: 9497 - The City of Guelph Attention: Amy Spence Address: 110 Dunlop Dr. Guelph, ON N1H 6H8 Tel: 519-362-1164 Fax: paty.wong@dec.com Email: amy.spence@guelph.ca dec.com						Quotation #: B90142 P.O. #: Project: Wet / Dry Surface Water Project Name: Wet / Dry SW - December 20 21 Site #: 110 Dunlop Dr. Sampled By: Amy Spence						BV Labs Job #: 843404 COC #: C#843404-01-01 Bottle Order #: Project Manager: James Aspin					
MOE REGULATED DRINKING WATER OR WATER INTENDED FOR HUMAN CONSUMPTION MUST BE SUBMITTED ON THE BV LABS DRINKING WATER CHAIN OF CUSTODY																		Turnaround Time (TAT) Required: Please provide advance notice for rush projects					
Regulation 153 (2011)						Other Regulations						Special Instructions						Field Filtered (please circle): Metals / Hg / Cr VI Wet-Dry SW Simplex Methods - Open Chain Contamination Validated Closed Chain Contamination NITRATES + NITRITES					
<input type="checkbox"/> Table 1 <input type="checkbox"/> Res/Park <input type="checkbox"/> Medium/Fine <input type="checkbox"/> Table 2 <input type="checkbox"/> Ind/Comm <input type="checkbox"/> Coarse <input type="checkbox"/> Table 3 <input type="checkbox"/> Agri/Other <input type="checkbox"/> For RSC <input type="checkbox"/> Table _____ <input type="checkbox"/> Other _____						<input type="checkbox"/> CCME <input type="checkbox"/> Sanitary Sewer Bylaw <input type="checkbox"/> Reg 558 <input type="checkbox"/> Storm Sewer Bylaw <input type="checkbox"/> MISA Municipality _____ <input type="checkbox"/> PWQO <input type="checkbox"/> Reg 406 Table _____ <input type="checkbox"/> Other _____																	
Include Criteria on Certificate of Analysis (Y/N)?																							
	Sample Barcode Label	Sample (Location) Identification	Date Sampled	Time Sampled	Matrix																		
1		TP1-OOT	DEC16/21	PM	SW	N	X						X				8						
2		EPTSO1	DEC16/21	PM	SW	N	X						X				8						
3																							
4																							
5																							
6																							
7																							
8																							
9																							
10																							
* RELINQUISHED BY: (Signature/Print) Amy Spence / Amy Spence						Date: (YY/MM/DD) 21/12/17		Time AM		RECEIVED BY: (Signature/Print) Mushar / Mushar				Date: (YY/MM/DD) 20/12/17		Time 16:59		# jars used and not submitted	Laboratory Use Only				
																		Time Sensitive		Temperature (°C) on Recci 11/11	Custody Seal Present Intact	Yes	No
<small>* UNLESS OTHERWISE AGREED TO IN WRITING, WORK SUBMITTED ON THIS CHAIN OF CUSTODY IS SUBJECT TO BV LABS' STANDARD TERMS AND CONDITIONS. SIGNING OF THIS CHAIN OF CUSTODY DOCUMENT IS ACKNOWLEDGMENT AND ACCEPTANCE OF OUR TERMS WHICH ARE AVAILABLE FOR VIEWING AT WWW.BVLABS.COM/TERMS-AND-CONDITIONS.</small>																		White: BV Labs		Yellow: Client			
<small>* IT IS THE RESPONSIBILITY OF THE RELINQUISHER TO ENSURE THE ACCURACY OF THE CHAIN OF CUSTODY RECORD. AN INCOMPLETE CHAIN OF CUSTODY MAY RESULT IN ANALYTICAL TAT DELAYS.</small>																							
<small>** SAMPLE CONTAINER, PRESERVATION, HOLD TIME AND PACKAGE INFORMATION CAN BE VIEWED AT WWW.BVLABS.COM/RESOURCES/CHAIN-OF-CUSTODY-FORMS.</small>																							



Your P.O. #: 1900689
 Your Project #: WET/DRY SURFACE WATER JAN 2021
 Site#: 110 DUNLOP DR
 Site Location: WET/DRY SW JAN 2021
 Your C.O.C. #: 809106-01-01

Attention: Amy Spence

City of Guelph
 Solid Waste RIC (Wet/Dry)
 110 Dunlop Drive
 Guelph, ON
 CANADA N1H 6H8

Report Date: 2021/02/03
 Report #: R6504372
 Version: 1 - Final

CERTIFICATE OF ANALYSIS

BV LABS JOB #: C124479

Received: 2021/01/28, 15:55

Sample Matrix: Water
 # Samples Received: 2

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Analytical Method
Alkalinity	2	N/A	2021/02/01	CAM SOP-00448	SM 23 2320 B m
Biochemical Oxygen Demand (BOD)	2	2021/01/29	2021/02/03	CAM SOP-00427	SM 23 5210B m
Chloride by Automated Colourimetry	2	N/A	2021/02/01	CAM SOP-00463	SM 23 4500-Cl E m
Chemical Oxygen Demand	2	N/A	2021/01/29	CAM SOP-00416	SM 23 5220 D m
Conductivity	2	N/A	2021/02/01	CAM SOP-00414	SM 23 2510 m
Total Metals Analysis by ICPMS	2	N/A	2021/02/01	CAM SOP-00447	EPA 6020B m
Total Ammonia-N	2	N/A	2021/02/02	CAM SOP-00441	USGS I-2522-90 m
Nitrate (NO3) and Nitrite (NO2) in Water (1)	2	N/A	2021/02/01	CAM SOP-00440	SM 23 4500-NO3/NO2B
pH	2	2021/01/29	2021/02/01	CAM SOP-00413	SM 4500H+ B m
Phenols (4AAP)	2	N/A	2021/02/01	CAM SOP-00444	OMOE E3179 m
Sulphate by Automated Colourimetry	2	N/A	2021/02/01	CAM SOP-00464	EPA 375.4 m
Total Kjeldahl Nitrogen in Water	1	2021/01/29	2021/01/30	CAM SOP-00938	OMOE E3516 m
Total Kjeldahl Nitrogen in Water	1	2021/01/29	2021/02/01	CAM SOP-00938	OMOE E3516 m
Total Phosphorus (Colourimetric)	2	2021/02/01	2021/02/02	CAM SOP-00407	SM 23 4500 P B H m
Low Level Total Suspended Solids	2	2021/02/01	2021/02/02	CAM SOP-00428	SM 23 2540D 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, MELCC, EPA, APHA.

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. #: 1900689
Your Project #: WET/DRY SURFACE WATER JAN 2021
Site#: 110 DUNLOP DR
Site Location: WET/DRY SW JAN 2021
Your C.O.C. #: 809106-01-01

Attention: Amy Spence

City of Guelph
Solid Waste RIC (Wet/Dry)
110 Dunlop Drive
Guelph, ON
CANADA N1H 6H8

Report Date: 2021/02/03
Report #: R6504372
Version: 1 - Final

CERTIFICATE OF ANALYSIS

BV LABS JOB #: C124479

Received: 2021/01/28, 15:55

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.

Encryption Key

Hongmei Zhao (Grace)
Project Manager
03 Feb 2021 15:49:46

Please direct all questions regarding this Certificate of Analysis to your Project Manager.

James Aspin, Senior Project Manager

Email: James.Aspin@bureauveritas.com

Phone# (905)817-5771

=====

BV Labs 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 Signature Page.



BUREAU
VERITAS

BV Labs Job #: C124479
Report Date: 2021/02/03

City of Guelph
Client Project #: WET/DRY SURFACE WATER JAN 2021
Site Location: WET/DRY SW JAN 2021
Your P.O. #: 1900689
Sampler Initials: AS

RESULTS OF ANALYSES OF WATER

BV Labs ID			OSG980		OSG981			OSG981		
Sampling Date			2021/01/27		2021/01/27			2021/01/27		
COC Number			809106-01-01		809106-01-01			809106-01-01		
	UNITS	Criteria	TP1-OUT	RDL	EPT-SO1	RDL	QC Batch	EPT-SO1 Lab-Dup	RDL	QC Batch
Inorganics										
Total Ammonia-N	mg/L	-	90	0.25	ND	0.050	7178601			
Total BOD	mg/L	-	6	2	ND	2	7175511			
Total Chemical Oxygen Demand (COD)	mg/L	-	57	4.0	11	4.0	7176194	11	4.0	7176194
Conductivity	umho/cm	-	4600	1.0	740	1.0	7175343			
Total Kjeldahl Nitrogen (TKN)	mg/L	-	94	5.0	0.17	0.10	7176110			
pH	pH	6.5:8.5	7.55		7.93		7175345			
Phenols-4AAP	mg/L	0.001	ND	0.0010	ND	0.0010	7177861			
Total Phosphorus	mg/L	0.01	0.25	0.020	ND (1)	0.020	7178547			
Total Suspended Solids	mg/L	-	13	1	45	1	7178886			
Dissolved Sulphate (SO4)	mg/L	-	340	1.0	15	1.0	7177126			
Alkalinity (Total as CaCO3)	mg/L	-	370	1.0	270	1.0	7175334			
Dissolved Chloride (Cl-)	mg/L	-	1000	10	63	1.0	7177124			
Nitrite (N)	mg/L	-	ND	0.010	0.014	0.010	7177232			
Nitrate (N)	mg/L	-	ND	0.10	3.52	0.10	7177232			
Nitrate + Nitrite (N)	mg/L	-	ND	0.10	3.53	0.10	7177232			
RDL = Reportable Detection Limit QC Batch = Quality Control Batch Lab-Dup = Laboratory Initiated Duplicate Criteria: Ontario Provincial Water Quality Objectives Ref. to MOEE Water Management document dated Feb.1999 ND = Not detected (1) RDL exceeds criteria										



BUREAU
VERITAS

BV Labs Job #: C124479
Report Date: 2021/02/03

City of Guelph
Client Project #: WET/DRY SURFACE WATER JAN 2021
Site Location: WET/DRY SW JAN 2021
Your P.O. #: 1900689
Sampler Initials: AS

ELEMENTS BY ATOMIC SPECTROSCOPY (WATER)

BV Labs ID			OSG980		OSG981	OSG981		
Sampling Date			2021/01/27		2021/01/27	2021/01/27		
COC Number			809106-01-01		809106-01-01	809106-01-01		
	UNITS	Criteria	TP1-OUT	RDL	EPT-SO1	EPT-SO1 Lab-Dup	RDL	QC Batch
Metals								
Total Boron (B)	mg/L	0.2	0.033	0.010	0.017	0.017	0.010	7178248
Total Calcium (Ca)	mg/L	-	160	0.20	95	92	0.20	7178248
Total Iron (Fe)	mg/L	0.3	2.0	0.10	ND	ND	0.10	7178248
Total Magnesium (Mg)	mg/L	-	17	0.050	24	23	0.050	7178248
Total Potassium (K)	mg/L	-	15	0.20	1.7	1.7	0.20	7178248
Total Sodium (Na)	mg/L	-	670	0.50	31	30	0.10	7178248
Total Zinc (Zn)	mg/L	0.03	0.0090	0.0050	0.15	0.15	0.0050	7178248
RDL = Reportable Detection Limit QC Batch = Quality Control Batch Lab-Dup = Laboratory Initiated Duplicate Criteria: Ontario Provincial Water Quality Objectives Ref. to MOEE Water Management document dated Feb.1999 ND = Not detected								



BUREAU
VERITAS

BV Labs Job #: C124479

Report Date: 2021/02/03

City of Guelph

Client Project #: WET/DRY SURFACE WATER JAN 2021

Site Location: WET/DRY SW JAN 2021

Your P.O. #: 1900689

Sampler Initials: AS

GENERAL COMMENTS

Results relate only to the items tested.



BV Labs Job #: C124479
Report Date: 2021/02/03

QUALITY ASSURANCE REPORT

City of Guelph
Client Project #: WET/DRY SURFACE WATER JAN 2021
Site Location: WET/DRY SW JAN 2021
Your P.O. #: 1900689
Sampler Initials: AS

QC Batch	Parameter	Date	Matrix Spike		SPIKED BLANK		Method Blank		RPD		QC Standard	
			% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits	% Recovery	QC Limits
7175334	Alkalinity (Total as CaCO ₃)	2021/02/01			95	85 - 115	ND, RDL=1.0	mg/L	0.42	20		
7175343	Conductivity	2021/02/01			100	85 - 115	ND, RDL=1.0	umho/cm	0.57	25		
7175345	pH	2021/02/01			102	98 - 103			0.46	N/A		
7175511	Total BOD	2021/02/03					ND, RDL=2	mg/L	NC	30	88	80 - 120
7176110	Total Kjeldahl Nitrogen (TKN)	2021/01/30	NC	80 - 120	102	80 - 120	ND, RDL=0.10	mg/L	9.8	20	102	80 - 120
7176194	Total Chemical Oxygen Demand (COD)	2021/01/29	97	80 - 120	102	80 - 120	ND, RDL=4.0	mg/L	6.0	20		
7177124	Dissolved Chloride (Cl ⁻)	2021/02/01	NC	80 - 120	103	80 - 120	ND, RDL=1.0	mg/L	0.41	20		
7177126	Dissolved Sulphate (SO ₄)	2021/02/01	NC	75 - 125	103	80 - 120	ND, RDL=1.0	mg/L	4.9	20		
7177232	Nitrate (N)	2021/02/01	101	80 - 120	103	80 - 120	ND, RDL=0.10	mg/L	NC	20		
7177232	Nitrite (N)	2021/02/01	106	80 - 120	107	80 - 120	ND, RDL=0.010	mg/L	NC	20		
7177861	Phenols-4AAP	2021/02/01	102	80 - 120	100	80 - 120	ND, RDL=0.0010	mg/L	3.0	20		
7178248	Total Boron (B)	2021/02/01	95	80 - 120	96	80 - 120	ND, RDL=0.010	mg/L	0.46	20		
7178248	Total Calcium (Ca)	2021/02/01	NC	80 - 120	97	80 - 120	ND, RDL=0.20	mg/L	3.2	20		
7178248	Total Iron (Fe)	2021/02/01	95	80 - 120	94	80 - 120	ND, RDL=0.10	mg/L	NC	20		
7178248	Total Magnesium (Mg)	2021/02/01	91	80 - 120	94	80 - 120	ND, RDL=0.050	mg/L	2.6	20		
7178248	Total Potassium (K)	2021/02/01	95	80 - 120	95	80 - 120	ND, RDL=0.20	mg/L	3.2	20		
7178248	Total Sodium (Na)	2021/02/01	NC	80 - 120	96	80 - 120	ND, RDL=0.10	mg/L	1.7	20		
7178248	Total Zinc (Zn)	2021/02/01	100	80 - 120	100	80 - 120	ND, RDL=0.0050	mg/L	0.44	20		
7178547	Total Phosphorus	2021/02/02	100	80 - 120	100	80 - 120	ND, RDL=0.020	mg/L	0.58	20	100	80 - 120
7178601	Total Ammonia-N	2021/02/02	99	75 - 125	97	80 - 120	ND, RDL=0.050	mg/L	NC	20		



BV Labs Job #: C124479
Report Date: 2021/02/03

QUALITY ASSURANCE REPORT(CONT'D)

City of Guelph
Client Project #: WET/DRY SURFACE WATER JAN 2021
Site Location: WET/DRY SW JAN 2021
Your P.O. #: 1900689
Sampler Initials: AS

QC Batch	Parameter	Date	Matrix Spike		SPIKED BLANK		Method Blank		RPD		QC Standard	
			% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits	% Recovery	QC Limits
7178886	Total Suspended Solids	2021/02/02					ND, RDL=1	mg/L	NC	25	100	85 - 115

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.

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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 $\leq 2 \times$ RDL).



BUREAU
VERITAS

BV Labs Job #: C124479
Report Date: 2021/02/03

City of Guelph
Client Project #: WET/DRY SURFACE WATER JAN 2021
Site Location: WET/DRY SW JAN 2021
Your P.O. #: 1900689
Sampler Initials: AS

VALIDATION SIGNATURE PAGE

The analytical data and all QC contained in this report were reviewed and validated by the following individual(s).

Brad Newman, B.Sc., C.Chem., Scientific Service Specialist

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Bureau Veritas Laboratories
6740 Campbell Road, Mississauga, Ontario Canada L5N 2L8 Tel: (905) 817-5700 Toll-free: 800-563-6266 Fax: (905) 817-5777 www.bvlabs.com

CHAIN OF CUSTODY RECORD

Page 1 of 1

INVOICE TO:		REPORT TO:		PROJECT INFORMATION:		Laboratory Use Only:	
Company Name: #12237 City of Guelph	Company Name: 9497-City of Guelph	Quotation #: B90142	BV Labs Job #:		Bottle Order #:		
Attention: Amy Spence (Wet/Dry)	Attention: Amy Spence	P.O. #: Wet/Dry Surface Water - EASTVIEW SW Jan 2021	Barcode:		Barcode:		
Address: 186 Eastview Rd Guelph ON N1E 1Z6	Address: 110 Dunlop Dr Guelph ON N1H 6H8	Project Name: Wet/Dry SW Jan 2021	COC #:		Project Manager:		
Tel: (519) 767-0598 x2080 Fax: (519) 823-0910	Tel: 519-362-1164 Fax: patty.wong@gecom.com	Site #: 110 Dunlop Dr	Barcode:		James Aspin		
Email: amy.spence@guelph.ca, Elizabeth.verghis@guelph.ca	Email: amy.spence@guelph.ca, geocom.com	Sampled By: Amy Spence	C#809106-01-01				
MOE REGULATED DRINKING WATER OR WATER INTENDED FOR HUMAN CONSUMPTION MUST BE SUBMITTED ON THE BV LABS DRINKING WATER CHAIN OF CUSTODY				ANALYSIS REQUESTED (PLEASE BE SPECIFIC)		Turnaround Time (TAT) Required: Please provide advance notice for rush projects	
Regulation 153 (2011) <input type="checkbox"/> Table 1 <input type="checkbox"/> Res/Park <input type="checkbox"/> Medium/Fine <input type="checkbox"/> Table 2 <input type="checkbox"/> Ind/Comm <input type="checkbox"/> Coarse <input type="checkbox"/> Table 3 <input type="checkbox"/> Agri/Other <input type="checkbox"/> For RSC <input type="checkbox"/> Table		Other Regulations <input type="checkbox"/> CCME <input type="checkbox"/> Sanitary Sewer Bylaw <input type="checkbox"/> Reg 558 <input type="checkbox"/> Storm Sewer Bylaw <input type="checkbox"/> MISA <input type="checkbox"/> Municipality <input type="checkbox"/> PWQO <input type="checkbox"/> Reg 406 Table <input type="checkbox"/> Other		Special Instructions		Regular (Standard) TAT: (will be applied if Rush TAT is not specified) Standard TAT = 5-7 Working days for most tests. Please note: Standard TAT for certain tests such as BOD and Dioxins/Furans are > 5 days - contact your Project Manager for details. Job Specific Rush TAT (if applies to entire submission) Date Required: Time Required: <input type="checkbox"/> Rush Confirmation Number: (call lab for #)	
Include Criteria on Certificate of Analysis (Y/N)?				Field Filtered (please circle): Metals / Hg / Cr / V Wet/Dry Surface Water Nitrates + Nitrites			
Sample Barcode Label	Sample (Location) Identification	Date Sampled	Time Sampled	Matrix			
1	TP1-OUT	JAN27/21	SW	W	N	X	X
2	EPT 501	JAN27/21	SW	W	N	X	X
3				W			
4				W			
5				W			
6				W			
7				W			
8				W			
9				W			
10				W			
* RELINQUISHED BY: (Signature/Print) Amy Spence/Amy Spence		Date: (YY/MM/DD) 21/01/28	Time PM	RECEIVED BY: (Signature/Print) DIPIKA SINGH		Date: (YY/MM/DD) 28/10/28	Time 15:55
# jars used and not submitted		Laboratory Use Only		Time Sensitive		Temperature (°C), on Reel -2-1/-2	Custody Seal Present <input checked="" type="checkbox"/> Intact <input checked="" type="checkbox"/>
* UNLESS OTHERWISE AGREED TO IN WRITING, WORK SUBMITTED ON THIS CHAIN OF CUSTODY IS SUBJECT TO BV LABS' STANDARD TERMS AND CONDITIONS. SIGNING OF THIS CHAIN OF CUSTODY DOCUMENT IS ACKNOWLEDGMENT AND ACCEPTANCE OF OUR TERMS WHICH ARE AVAILABLE FOR VIEWING AT WWW.BVLABS.COM/TERMS-AND-CONDITIONS. * IT IS THE RESPONSIBILITY OF THE RELINQUISHER TO ENSURE THE ACCURACY OF THE CHAIN OF CUSTODY RECORD. AN INCOMPLETE CHAIN OF CUSTODY MAY RESULT IN ANALYTICAL TAT DELAYS. ** SAMPLE CONTAINER, PRESERVATION, HOLD TIME AND PACKAGE INFORMATION CAN BE VIEWED AT WWW.BVLABS.COM/RESOURCES/CHAIN-OF-CUSTODY-FORMS.				White: BV Labs Yellow: Client SAMPLES MUST BE KEPT COOL (< 10° C) FROM TIME OF SAMPLING UNTIL DELIVERY TO BV LABS			

**Attention: Amy Spence**

City of Guelph
Solid Waste RIC (Wet/Dry)
110 Dunlop Drive
Guelph, ON
CANADA N1H 6H8

Your P.O. #: 1900689
Your Project #: WET/DRY SURFACE WATER MAR 2021
Site#: 110 DUNLOP DR
Site Location: WET/DRY SW MARCH 2021
Your C.O.C. #: 809106-02-01

Report Date: 2021/03/17

Report #: R6558289

Version: 1 - Final

CERTIFICATE OF ANALYSIS**BV LABS JOB #: C165336****Received: 2021/03/11, 15:40**

Sample Matrix: Water
Samples Received: 2

Analyses	Date		Date	Laboratory Method	Analytical Method
	Quantity	Extracted			
Alkalinity	2	N/A	2021/03/15	CAM SOP-00448	SM 23 2320 B m
Biochemical Oxygen Demand (BOD)	2	2021/03/12	2021/03/17	CAM SOP-00427	SM 23 5210B m
Chloride by Automated Colourimetry	2	N/A	2021/03/15	CAM SOP-00463	SM 23 4500-Cl E m
Chemical Oxygen Demand	2	N/A	2021/03/12	CAM SOP-00416	SM 23 5220 D m
Conductivity	2	N/A	2021/03/15	CAM SOP-00414	SM 23 2510 m
Total Metals Analysis by ICPMS	2	N/A	2021/03/16	CAM SOP-00447	EPA 6020B m
Total Ammonia-N	2	N/A	2021/03/16	CAM SOP-00441	USGS I-2522-90 m
Nitrate (NO ₃) and Nitrite (NO ₂) in Water (1)	2	N/A	2021/03/15	CAM SOP-00440	SM 23 4500-NO ₃ /NO ₂ B
pH	2	2021/03/13	2021/03/15	CAM SOP-00413	SM 4500H+ B m
Phenols (4AAP)	2	N/A	2021/03/15	CAM SOP-00444	OMOE E3179 m
Sulphate by Automated Colourimetry	2	N/A	2021/03/15	CAM SOP-00464	EPA 375.4 m
Total Kjeldahl Nitrogen in Water	1	2021/03/12	2021/03/16	CAM SOP-00938	OMOE E3516 m
Total Kjeldahl Nitrogen in Water	1	2021/03/12	2021/03/17	CAM SOP-00938	OMOE E3516 m
Total Phosphorus (Colourimetric)	2	2021/03/15	2021/03/16	CAM SOP-00407	SM 23 4500 P B H m
Low Level Total Suspended Solids	2	2021/03/13	2021/03/15	CAM SOP-00428	SM 23 2540D 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, MELCC, EPA, APHA.

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. #: 1900689
Your Project #: WET/DRY SURFACE WATER MAR 2021
Site#: 110 DUNLOP DR
Site Location: WET/DRY SW MARCH 2021
Your C.O.C. #: 809106-02-01

Attention: Amy Spence

City of Guelph
Solid Waste RIC (Wet/Dry)
110 Dunlop Drive
Guelph, ON
CANADA N1H 6H8

Report Date: 2021/03/17
Report #: R6558289
Version: 1 - Final

CERTIFICATE OF ANALYSIS

BV LABS JOB #: C165336

Received: 2021/03/11, 15:40

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.

Encryption Key

Hongmei Zhao (Grace)
Project Manager
17 Mar 2021 15:11:41

Please direct all questions regarding this Certificate of Analysis to your Project Manager.

James Aspin, Senior Project Manager

Email: James.Aspin@bureauveritas.com

Phone# (905)817-5771

=====

BV Labs 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 Signature Page.



BV Labs Job #: C165336
Report Date: 2021/03/17

City of Guelph
Client Project #: WET/DRY SURFACE WATER MAR 2021
Site Location: WET/DRY SW MARCH 2021
Your P.O. #: 1900689

RESULTS OF ANALYSES OF WATER

BV Labs ID			PAZ951			PAZ952		
Sampling Date			2021/03/10			2021/03/10		
COC Number			809106-02-01			809106-02-01		
	UNITS	Criteria	TP1-OUT	RDL	QC Batch	EPTS01	RDL	QC Batch
Inorganics								
Total Ammonia-N	mg/L	-	5.1 (1)	0.050	7245069	0.054	0.050	7245069
Total BOD	mg/L	-	2	2	7243289	ND	2	7243290
Total Chemical Oxygen Demand (COD)	mg/L	-	13	4.0	7244808	6.7	4.0	7244808
Conductivity	umho/cm	-	380	1.0	7245932	790	1.0	7245932
Total Kjeldahl Nitrogen (TKN)	mg/L	-	4.9 (1)	0.50	7244942	0.13	0.10	7244942
pH	pH	6.5:8.5	7.68		7245933	8.07		7245933
Phenols-4AAP	mg/L	0.001	ND	0.0010	7246865	ND	0.0010	7246865
Total Phosphorus	mg/L	0.01	0.083	0.020	7246868	ND (2)	0.020	7246868
Total Suspended Solids	mg/L	-	5	1	7244205	2	1	7244205
Dissolved Sulphate (SO4)	mg/L	-	25	1.0	7245877	17	1.0	7245877
Alkalinity (Total as CaCO3)	mg/L	-	42	1.0	7245928	270	1.0	7245928
Dissolved Chloride (Cl-)	mg/L	-	71	1.0	7245876	71	1.0	7245876
Nitrite (N)	mg/L	-	ND	0.010	7245881	0.031	0.010	7245881
Nitrate (N)	mg/L	-	0.15	0.10	7245881	3.21	0.10	7245881
Nitrate + Nitrite (N)	mg/L	-	0.15	0.10	7245881	3.24	0.10	7245881
RDL = Reportable Detection Limit QC Batch = Quality Control Batch Criteria: Ontario Provincial Water Quality Objectives Ref. to MOEE Water Management document dated Feb.1999 ND = Not detected (1) TKN < NH4: Both values fall within acceptable RPD limits for duplicates and are likely equivalent. (2) RDL exceeds criteria								



ELEMENTS BY ATOMIC SPECTROSCOPY (WATER)

BV Labs ID			PAZ951	PAZ952		
Sampling Date			2021/03/10	2021/03/10		
COC Number			809106-02-01	809106-02-01		
	UNITS	Criteria	TP1-OUT	EPTS01	RDL	QC Batch
Metals						
Total Boron (B)	mg/L	0.2	ND	0.013	0.010	7247382
Total Calcium (Ca)	mg/L	-	12	87	0.20	7247382
Total Iron (Fe)	mg/L	0.3	0.12	ND	0.10	7247382
Total Magnesium (Mg)	mg/L	-	1.4	23	0.050	7247382
Total Potassium (K)	mg/L	-	1.2	1.8	0.20	7247382
Total Sodium (Na)	mg/L	-	40	36	0.10	7247382
Total Zinc (Zn)	mg/L	0.03	0.0056	0.10	0.0050	7247382
RDL = Reportable Detection Limit						
QC Batch = Quality Control Batch						
Criteria: Ontario Provincial Water Quality Objectives						
Ref. to MOEE Water Management document dated Feb.1999						
ND = Not detected						



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BV Labs Job #: C165336

Report Date: 2021/03/17

City of Guelph

Client Project #: WET/DRY SURFACE WATER MAR 2021

Site Location: WET/DRY SW MARCH 2021

Your P.O. #: 1900689

GENERAL COMMENTS

Sample PAZ951 [TP1-OUT] : TKN < Ammonia: Both values fall within the method uncertainty for duplicates and are likely equivalent.

Results relate only to the items tested.



BV Labs Job #: C165336
Report Date: 2021/03/17

QUALITY ASSURANCE REPORT

City of Guelph
Client Project #: WET/DRY SURFACE WATER MAR 2021
Site Location: WET/DRY SW MARCH 2021
Your P.O. #: 1900689

QC Batch	Parameter	Date	Matrix Spike		SPIKED BLANK		Method Blank		RPD		QC Standard	
			% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits	% Recovery	QC Limits
7243289	Total BOD	2021/03/17					ND, RDL=2	mg/L	NC	30	90	80 - 120
7243290	Total BOD	2021/03/17					ND, RDL=2	mg/L	25	30	97	80 - 120
7244205	Total Suspended Solids	2021/03/15					ND, RDL=1	mg/L	NC	25	100	85 - 115
7244808	Total Chemical Oxygen Demand (COD)	2021/03/12	95	80 - 120	103	80 - 120	ND, RDL=4.0	mg/L	8.4	20		
7244942	Total Kjeldahl Nitrogen (TKN)	2021/03/16	109	80 - 120	101	80 - 120	ND, RDL=0.10	mg/L	NC	20	102	80 - 120
7245069	Total Ammonia-N	2021/03/16	100	75 - 125	99	80 - 120	ND, RDL=0.050	mg/L	7.0	20		
7245876	Dissolved Chloride (Cl-)	2021/03/15	NC	80 - 120	103	80 - 120	ND, RDL=1.0	mg/L	2.3	20		
7245877	Dissolved Sulphate (SO4)	2021/03/15	NC	75 - 125	105	80 - 120	ND, RDL=1.0	mg/L	0.20	20		
7245881	Nitrate (N)	2021/03/15	108	80 - 120	105	80 - 120	ND, RDL=0.10	mg/L	3.2	20		
7245881	Nitrite (N)	2021/03/15	108	80 - 120	106	80 - 120	ND, RDL=0.010	mg/L	NC	20		
7245928	Alkalinity (Total as CaCO3)	2021/03/15			93	85 - 115	ND, RDL=1.0	mg/L	NC	20		
7245932	Conductivity	2021/03/15			102	85 - 115	ND, RDL=1.0	umho/cm	0	25		
7245933	pH	2021/03/15			102	98 - 103			0.83	N/A		
7246865	Phenols-4AAP	2021/03/15	99	80 - 120	99	80 - 120	ND, RDL=0.0010	mg/L	NC	20		
7246868	Total Phosphorus	2021/03/16	96	80 - 120	97	80 - 120	ND, RDL=0.020	mg/L	5.9	20	96	80 - 120
7247382	Total Boron (B)	2021/03/16	97	80 - 120	95	80 - 120	ND, RDL=0.010	mg/L	2.2	20		
7247382	Total Calcium (Ca)	2021/03/16	NC	80 - 120	98	80 - 120	ND, RDL=0.20	mg/L				
7247382	Total Iron (Fe)	2021/03/16	101	80 - 120	98	80 - 120	ND, RDL=0.10	mg/L				
7247382	Total Magnesium (Mg)	2021/03/16	104	80 - 120	101	80 - 120	ND, RDL=0.050	mg/L				
7247382	Total Potassium (K)	2021/03/16	103	80 - 120	99	80 - 120	ND, RDL=0.20	mg/L				
7247382	Total Sodium (Na)	2021/03/16	105	80 - 120	100	80 - 120	ND, RDL=0.10	mg/L				



BV Labs Job #: C165336
Report Date: 2021/03/17

QUALITY ASSURANCE REPORT(CONT'D)

City of Guelph
Client Project #: WET/DRY SURFACE WATER MAR 2021
Site Location: WET/DRY SW MARCH 2021
Your P.O. #: 1900689

QC Batch	Parameter	Date	Matrix Spike		SPIKED BLANK		Method Blank		RPD		QC Standard	
			% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits	% Recovery	QC Limits
7247382	Total Zinc (Zn)	2021/03/16	101	80 - 120	101	80 - 120	ND, RDL=0.0050	mg/L	NC	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 $\leq 2 \times \text{RDL}$).



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BV Labs Job #: C165336
Report Date: 2021/03/17

City of Guelph
Client Project #: WET/DRY SURFACE WATER MAR 2021
Site Location: WET/DRY SW MARCH 2021
Your P.O. #: 1900689

VALIDATION SIGNATURE PAGE

The analytical data and all QC contained in this report were reviewed and validated by the following individual(s).

Ewa Pranjić, M.Sc., C.Chem, Scientific Specialist



BV Labs 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 Signature Page.



Bureau Veritas Laboratories
6740 Campbell Road, Mississauga, Ontario Canada L5N 2L8 Tel: (905) 817-5700 Toll-free: 800-563-6266 Fax: (905) 817-5777 www.bvlabs.com

CHAIN OF CUSTODY RECORD

Page 1 of 1

INVOICE TO:			REPORT TO:			PROJECT INFORMATION:			Laboratory Use Only:		
Company Name: #12237 City of Guelph			Company Name: 9497-City of Guelph			Quotation #: B90142			BV Labs Job #:		
Attention: Amy Spence (Wet/Dry)			Attention: Amy Spence			P.O. #: Wet/Dry Surface Water			Bottle Order #:		
Address: 186 Eastview Rd			Address: 110 Dunlop Dr.			Project: EASTVIEW SW March 2021					
Guelph ON N1E 1Z6			Guelph ON N1H 6H8			Project Name: Wet/Dry SW March 2021			CDC #:		
Tel: (519) 767-0598 x2080 Fax: (519) 823-0910			Tel: 519-362-1164 Fax: patty.wong@			Site #: 110 Dunlop Dr.			Project Manager:		
Email: amy.spence@guelph.ca, Elizabeth.verghis@guelph.ca			Email: amy.spence@guelph.ca, aecom.com			Sampled By: Amy Spence					
MOE REGULATED DRINKING WATER OR WATER INTENDED FOR HUMAN CONSUMPTION MUST BE SUBMITTED ON THE BV LABS DRINKING WATER CHAIN OF CUSTODY						Turnaround Time (TAT) Required: Please provide advance notice for rush projects					
Regulation 153 (2011)			Other Regulations			Special Instructions			Regular (Standard) TAT:		
<input type="checkbox"/> Table 1 <input type="checkbox"/> Res/Park <input type="checkbox"/> Medium/Fine			<input type="checkbox"/> CCME <input type="checkbox"/> Sanitary Sewer Bylaw			Field Filtered (please circle): Metals / Hg / Cr VI Wet/Dry Surface Water Nitrate-Nitrite			<input checked="" type="checkbox"/> (will be applied if Rush TAT is not specified):		
<input type="checkbox"/> Table 2 <input type="checkbox"/> Ind/Comm <input type="checkbox"/> Coarse			<input type="checkbox"/> Reg 558 <input type="checkbox"/> Storm Sewer Bylaw						Standard TAT = 5-7 Working days for most tests.		
<input type="checkbox"/> Table 3 <input type="checkbox"/> Agri/Other <input type="checkbox"/> For RSC			<input type="checkbox"/> MISA Municipality						Please note: Standard TAT for certain tests such as BOD and Dioxins/Furans are > 5 days - contact your Project Manager for details.		
<input type="checkbox"/> Table <input type="checkbox"/> PWQO <input type="checkbox"/> Reg 406 Table			<input type="checkbox"/> Other						Job Specific Rush TAT (if applies to entire submission)		
Include Criteria on Certificate of Analysis (Y/N)?						Date Required: Time Required: <input type="checkbox"/>					
						Rush Confirmation Number: (call lab for #)					
Sample Barcode Label		Sample (Location) Identification		Date Sampled	Time Sampled	Matrix				# of Bottles	Comments
1		TP1-OUT		MAR 10/21	AM	SW	N	X	X	8	
2		EPTSO1		MAR 10/21	AM	SW	N	X	X	8	
3											
4											
5											
6											
7											
8											
9											
10											
* RELINQUISHED BY: (Signature/Print)			Date: (YY/MM/DD)	Time	RECEIVED BY: (Signature/Print)			Date: (YY/MM/DD)	Time	# jars used and not submitted	Laboratory Use Only
Amy Spence / Amy Spence			21/03/11	PM	[Signature]			20/03/11	15:40		Time Sensitive
											Temperature (°C) on Receipt
											17-17-1
											Custody Seal Present
											Intact
											Yes
											No
* UNLESS OTHERWISE AGREED TO IN WRITING, WORK SUBMITTED ON THIS CHAIN OF CUSTODY IS SUBJECT TO BV LABS' STANDARD TERMS AND CONDITIONS. SIGNING OF THIS CHAIN OF CUSTODY DOCUMENT IS ACKNOWLEDGMENT AND ACCEPTANCE OF OUR TERMS WHICH ARE AVAILABLE FOR VIEWING AT WWW.BVLABS.COM/TERMS-AND-CONDITIONS.										White: BV Labs Yellow: Client	
* IT IS THE RESPONSIBILITY OF THE RELINQUISHER TO ENSURE THE ACCURACY OF THE CHAIN OF CUSTODY RECORD. AN INCOMPLETE CHAIN OF CUSTODY MAY RESULT IN ANALYTICAL TAT DELAYS.										SAMPLES MUST BE KEPT COOL (< 10° C) FROM TIME OF SAMPLING UNTIL DELIVERY TO BV LABS	
** SAMPLE CONTAINER, PRESERVATION, HOLD TIME AND PACKAGE INFORMATION CAN BE VIEWED AT WWW.BVLABS.COM/RESOURCES/CHAIN-OF-CUSTODY-FORMS.											

Bureau Veritas Canada (2019) Inc.

Appendix E

**Certificate of Approval –
Waste Resource Innovation
Centre and Transfer Station**

A decorative graphic element consisting of a thick, dark green curved line that starts from the bottom left, curves upwards and to the right, and then curves downwards and to the right, ending at the bottom right. The line is solid and has a consistent thickness.


 AMENDED PROVISIONAL CERTIFICATE OF APPROVAL
 WASTE DISPOSAL SITE

NUMBER A170128

Issue Date: February 10, 2011

The Corporation of the City of Guelph
 1 Carden St
 Guelph, Ontario
 N1H 3A1

Site Location: 110 Dunlop Drive
 Guelph City, County of Wellington
 N1H 6N1

You have applied in accordance with Section 27 of the Environmental Protection Act for approval of:

the establishment and operation of a Waste Disposal Site (Transfer and Processing) consisting of a 29.54 hectare of property for the purposes of composting, multi-material recovery, and waste transfer to serve the municipalities and businesses of the Province of Ontario and *Municipal Hazardous and Special Waste Transfer Station* serving the County of Wellington and City of Guelph,

to be used for:

a) the use and operation of an Organic Waste Processing Facility composting of the following categories of waste (*Note: Use of the site for additional categories of wastes requires a new application and amendments to the Provisional Certificate of Approval*); organic non-hazardous waste from residential, industrial, commercial and institutional sources limited to a maximum Site indoor storage capacity of 8,500 tonnes;

b) the use and operation of a *Material Recovery Facility* for processing, transfer and temporary storage of the following categories of waste (*Note: Use of the Site for additional categories of wastes requires a new application and amendments to the Provisional Certificate of Approval*); municipal waste including food and beverage cans, cardboard, glass, newspaper, plastic, waste electrical and electronic equipment and other such materials as would be collected by means of the source separated *dry waste* collection system limited to a maximum indoor storage capacity of 3850 tonnes and having an outdoor storage area for recyclable waste and *leaf and yard waste* that is located to the west of the Organic Waste Processing Facility;

c) the use and operation of a Municipal Hazardous and Special Waste facility for the transfer and temporary storage of the following categories of waste (*Note: Use of the Site for additional categories of wastes requires a new application and amendments to the Provisional Certificate of Approval*); *Municipal Hazardous and Special Waste* limited to the following waste classes; 112, 121, 145, 146, 148, 212, 213, 221, 242, 251, 252, 261, 263, 269, 312, and 331 as outlined in the New Ontario Waste Classes January 1986 limited to a maximum Site storage capacity of 15 tonnes; and

d) the use and operation of a Waste Disposal Site (Transfer) for non-hazardous solid industrial waste (*Note: Use of the Site for additional categories of wastes requires a new application and amendments to the Provisional Certificate of Approval*); from industrial, commercial and institutional sources, commercial waste and domestic waste, with an indoor storage maximum capacity of 795 tonnes and outdoor storage areas for *leaf and yard waste* and for recyclable waste.

For the purpose of this Certificate of Approval and the terms and conditions specified below, the following definitions apply:

(a) "Act" means the *Environmental Protection Act*, R.S.O. 1990, C.E-19, as amended;

(b) "Air Pollution Control Equipment" means the air pollution control equipment to abate emissions to the atmosphere

originating from the *Processing Building*;

(c) "**Amendment Materials**" means the materials derived from plants or animals, including materials consisting of other compounds of carbon, all readily biodegradable, and limited to materials listed in Condition 54.(2) of this Certificate;

(d) "**birds**" means pigeons, gulls, terns, crows, hawks, ducks, geese or any other birds that create a hazard to aircraft;

(e) "**brush**" means tree limbs, natural Christmas trees or other woody materials;

(f) "**Certificate**" means this entire provisional Certificate of Approval document, issued in accordance with section 39 of the *Act*, and includes any schedules to it, the application and the supporting documentation listed in schedule "A";

(g) "**Certificate of Approval (Air/Noise)**" means the Certificate of Approval issued under section 9 of the *EPA* for this Composting Site;

(h) "**City**" means the Corporation of the City of Guelph;

(i) "**Clean Wood**" means wood that is not painted wood, treated wood or laminated wood. *Clean Wood does not include wood waste or waste wood*;

(j) "**Competent Person**" or "**Competent People**" means a person or people who has/have training and knowledge of the following:

- i. relevant waste management legislation, regulations and guidelines;
- ii. major environmental concerns pertaining to the waste to be handled;
- iii. contents of the *Facility's* Design and Operating Report;
- iv. the terms, conditions and operating requirements of the *Certificate*;
- v. the applicable Fire Code and how it applies to proper storage and handling of waste that may be reactive, oxidizing, explosive or flammable;
- vi. the *WRIC Environmental Emergency Plan*, including exit locations and evacuation routing, and location of relevant equipment available for emergency situations;
- vii. procedures for recording and responding to public complaints;
- viii. record keeping procedures as outlined in Conditions 51 and 63 of this *Certificate*;
- ix. occupational health and safety concerns pertaining to the wastes to be processed;
- x. specific written procedures for the control of nuisance conditions;
- xi. operation and management of the *Site*, in accordance with the specific job requirements of each individual operator;
- xii. procedures for the identification and refusal of unacceptable wastes;
- xiii. proper handling of waste, and
- xiv. proper procedures for the storage of waste and proper maintenance of the *Site*;

(k) "**Compost**" means the material produced by an aerobic Composting of the Organic Waste and which has been tested to show compliance with the Compost quality criteria listed in Schedule B of this *Certificate* and can be used as a soil additive or for other similar uses. Compost is not considered a waste;

(l) "**Composting**" means an aerobic biological process, conducted under controlled engineered conditions designed to decompose and stabilize organic matter; simple exposure of organic matter under non-engineered conditions resulting in uncontrolled decay is not considered Composting;

(m) "**Composting Residual Waste**" means waste resulting from the Organic Waste processing activities at the *Composting Site* and the waste that cannot be Composted and that is destined for final disposal;

(n) "**Composting Site**" means the Organic Waste Composting Site, which is a part of the waste disposal site located at 110 Dunlop Drive in the City of Guelph, approved in this *Certificate* and as described and referred to in Items #32 to #47 of the attached Schedule "A";

- (o) "**Current Design and Operations Report**" or "**Current Design and Operations Reports**" means the Design and Operations Report or the Design and Operations Reports that is/are referenced in Items 49, 50, and/or 51 of Schedule "A" of this *Certificate* or the most recent Design and Operations Report that the Owner has submitted to the Ministry in accordance with Condition 68(4) of this *Certificate*;
- (p) "**Director**" means any Ministry employee appointed in writing by the Minister pursuant to section 5 of the *Act* as a Director for the purposes of Part V of the *Act*;
- (q) "**District Manager**" means the District Manager of the of the Guelph District Office of the Ministry;
- (r) "**District Office**" means the local office of the Ministry in which the Site is geographically located;
- (s) "**dry waste**" means those waste materials not identified in the wet and household hazardous waste streams;
- (t) "**Engineer's Report**" means a report prepared under the direction of and signed by an Independent Professional Engineer that sets out the *Operating Envelope*;
- (u) "**Finished Compost**" means the Organic Waste that has been Composted and fully cured and is considered ready for sampling and testing for compliance with the *Compost* quality criteria. Finished Compost is considered a waste until testing for the *Compost* quality criteria is completed and compliance with the criteria is demonstrated;
- (v) "**Immature Compost**" means the Organic Waste which has been Composted in the aerate *Composting* tunnels and screened within the confines of the *Processing Building*. Composted Organic Waste is considered an Immature Compost until it has been fully cured and is ready for compliance testing for *Compost* quality criteria. Immature Compost is considered a waste;
- (w) "**incident**" means an abnormal event which causes a spill, emission, emergency situation or other occurrences which may have an adverse effect on the environment, cause a nuisance or endanger public health and safety;
- (x) "**Independent Professional Engineer**" means a Professional Engineer licensed to Practice in the Province of Ontario and who is not an employee of the Owner;
- (y) "**Infrastructure**" means the structural elements that are used at the waste disposal site approved by this *Certificate* including buildings, structures, grounds and utilities;
- (z) "**leaf and yard waste**" means waste consisting of leaves, grass clippings and other plant materials but not tree limbs or other woody materials;
- (aa) "**Material Recovery Facility**" or "**MRF**" means the facility where *dry waste* is received, processed and stored, and includes the material recovery building and an outside storage area;
- (bb) "**Ministry**" means the Ontario Ministry of the Environment and includes all officials, employees or other persons acting on its behalf;
- (cc) "**Modifications**" means a change to the waste disposal site identified in the Engineer's Report and approved by this *Certificate* including changes to how the *Site* is used, operated, altered or enlarged;
- (dd) "**Municipality**" means The Corporation of the City of Guelph, and includes its officers, employees, agents and contractors;

- (ee) "**Municipal Hazardous and Special Waste**" and the acronym "**MHSW**" means hazardous waste or special waste generated by households located in the geographic boundaries of the City of Guelph and County of Wellington that fall within waste numbers 112, 121, 145, 146, 148, 212, 213, 221, 242, 251, 252, 261, 263, 269, 312, and 331 as outlined in the New Ontario Waste Classes, January 1996, as defined in Ontario Regulation 347; and also includes wet cell batteries and small dry cell batteries, household cleaners and detergents, aerosols, waxes and polishes, fluorescent tubes and energy efficient light bulbs and mercury switches and thermostats;
- (ff) "**Municipal Hazardous and Special Waste Transfer Station**" or "**MHSW Waste Transfer Station**" means the location where the *MHSW* waste is received, bulked, packed, stored and transferred to recyclers and/or to final disposal;
- (gg) "**NMA**" means *Nutrient Management Act*, 2002, S.O. 2002, c. 4, as amended from time to time;
- (hh) "**Ontario Regulation 347** and *O. Reg. 347*" means Ontario Regulation 347, R.R.O. 1990, General - Waste Management, made under the *Act*, as amended from time to time;
- (ii) "**Ontario Regulation 362**" means Ontario Regulation 362 - R.R.O. 1990, Waste Management PCBs, or as amended, made under the *Act*;
- (jj) "**Ontario Regulation 903**" means Ontario Regulation 903 – R.R.O. 1990, Wells, amended to Ontario Regulation 128/03, made under the *OWRA*;
- (kk) "**Operating Envelope**" means the limits on the pre-approved *Modifications* that the *Owner* may make to the *Site* without further amendment to the *Certificate*;
- (ll) "**Organic Waste**" means solid non-hazardous waste derived from plants or animals, including wastes consisting of other compounds of carbon, all readily biodegradable, and limited to wastes listed in Condition 54 of this *Certificate*;
- (mm) "**Owner**" means any person that is responsible for the establishment and operation of the *Site* being approved by this *Certificate*, and includes The Corporation of the City of Guelph, its successors and assigns;
- (nn) "**OWRA**" means the *Ontario Water Resources Act*, R.S.O. 1990, c. O.40, as amended;
- (oo) "**PA**" means the *Pesticides Act*, R.S.O. 1990, c. P-11, as amended from time to time;
- (pp) "**PCB**", "**PCB waste**" and "**PCBs**" means any monochlorinated or polychlorinated biphenyl or any mixture of them or mixture that contains one or more of them;
- (qq) "**Processing Building**" means the building at the *Composting Site* where the *Organic Waste* is received, pre-processed, Composted, screened and cured;
- (rr) "**Provincial Officer**" means any person designated in writing by the Minister as a provincial officer pursuant to Section 5 of the *OWRA* or Section 5 of the *EPA* or Section 17 of the *PA* or Section 4 of the *NMA* or Section 8 of *SDWA*;
- (ss) "**Public Liaison Committee**" and "**ToR PLC**" and "**PLC**" :means the committee referred to in Conditions 29, and 30 that is established to monitor the construction and operation of any activity at the *Site*;
- (tt) "**putrescible waste**" means solid waste that contains organic matter capable of being decomposed by microorganisms;

(uu) "**Rejected Waste**" means the load of incoming waste received at the *Composting Site* and deemed by *Owner* to contain waste that does not meet the incoming *Organic Waste* quality criteria set out in this *Certificate* or that cannot be Composted;

(vv) "**residual waste**" means waste resulting from the operations at the *Site* and directed for disposal;

(ww) "**residual waste (Processing Building)**" means waste resulting from the Organic Waste processing activities at the *Composting Site* and the waste that cannot be Composted and that is destined for final disposal;

(xx) "**Re-Start-up**" means resumption of the *Organic Waste* processing activities at the *Composting Site* following suspension of operations or a long duration power failure at the *Composting Site*;

(yy) "**small generators**" means small sources of waste of unknown origin that the City manages as a result of improper or illegal disposal of waste within the City of Guelph and is/are less than 500 kg of solid, non-hazardous waste per load or/and a combined total of less than 100 litres per month of hazardous wastes listed in Ontario Regulation 347 Schedule 1 or Schedule 2B and characteristic waste, or/and less than 1 kg per month of hazardous waste listed in Ontario Regulation 347 Schedule 2A, or/and less than 500 litres per month or 6000 litres per year of liquid industrial waste. Where the small generators generate both hazardous and liquid industrial waste, the sum total of the two shall not exceed 6000 litres per year;

(zz) "**SDWA**" means *Safe Drinking Water Act*, 2002, S.O. 2002, c. 32, as amended from time to time;

(aaa) "**Site**" means the 29.54 hectare Waste Disposal Site (Processing and Transfer) for the purposes of receipt, storage, processing and transfer of waste by *Composting*, waste transfer, and multi-material recovery, to serve the municipalities and businesses of the Province of Ontario and *Municipal Hazardous and Special Transfer Waste Station*, serving the County of Wellington and City of Guelph located on Lot 4 and 5 Concession 1, Division C, Guelph, Ontario as shown on Reference Plan 61R-5574;

(bbb) "**Start-up Date**" means the date on which the *Organic Waste* is first received at the *Composting Site*;

(ccc) "**Trained Personnel**" means an employee who in addition to being a *Competent Person* is trained in accordance with the requirements of Condition 60 and knowledgeable through instruction and/or practice;

(ddd) "**Waste Transfer Station**" means the part of the *Site* that is used to receive, process and transfer non-hazardous solid waste including municipal, industrial, commercial and institutional wastes, *leaf and yard waste* and source separated recyclables;

(eee) "**waste wood**" means waste that is a wood or a wood product that has been treated with adhesives or preservatives or painted and includes manufactured wood such as medium density fibreboard;

(fff) "**wet waste**" means organic waste material consisting of food scraps and other non-hazardous waste with similar characteristics collected as part of the *Municipality's* residential curbside collection program;

(ggg) "**wood waste**" means waste that is wood or a wood product that is not contaminated with chromated copper arsenate, ammoniacal copper arsenic pentachlorophenol, creosote or other wood preservative, is not part of an upholstered article, does not have an affixed or adhered rigid surface and from which hardware or fittings have been removed;

(hhh) "**WRIC**" means the City of Guelph Waste Resource Innovation Centre located at 80/110

Dunlop Drive, Guelph; and

(iii) "**WRIC Environmental Emergency Plan**" means the plan that is required by Condition 45 for the Waste Resource Innovation centre facility located at 80/110 Dunlop Drive, Guelph.

You are hereby notified that this approval is issued to you subject to the terms and conditions outlined below:

TERMS AND CONDITIONS

1. The issuance of, and compliance with, this *Certificate* does not:

(1) relieve any person of any obligation to comply with any provision of any applicable statute, regulation or other legal requirement including, but not limited to:

- (a) obtaining *Site* plan approval from the local municipal authority;
- (b) obtaining all necessary building permits from the local municipal authority Building Services Division;
- (c) obtaining approval from the Chief Fire Prevention Officer, local municipal authority; or

(2) limit in any way the authority of the Ministry to require certain steps be taken or to require the *Owner* and Operator to furnish any further information related to compliance with this *Certificate*.

A. INTERPRETATION

2. The requirements of this *Certificate* are severable. If any requirement of this *Certificate*, or application of any requirement of this *Certificate*, to any circumstances is held invalid, the application of such requirement to other circumstances and the remainder of this *Certificate* shall not be affected thereby.

3. Where there is a conflict between a provision of any document, including the application referred to in this *Certificate* and the conditions of this *Certificate*, the conditions in this *Certificate* shall take precedence.

4. Where there is a conflict between the application and a provision in any documents listed in Schedule "A", the application shall take precedence, unless it is clear that the purpose of the document was to amend the application and that the *Ministry* approved the amendment.

5. Where there is a conflict between any two documents listed in Schedule "A", other than the application, the document bearing the most recent date shall take precedence.

B. CHANGE IN OWNERSHIP

6. (a) The *City* shall notify the *Director*, in writing, of any of the following changes within, thirty (30) days of the change occurring;

- (i) change of *Owner*/operator of the *Site* or both;
- (ii) change of address of the *City*'s office or address of the new owner; and
- (iii) any changes in the legal name of the *Certificate* holder, or any change of business name or style where applicable;

(b) Notification shall include a copy of the most current "Initial Notice" or "Notice of Change" filed under the Corporations Information Act, R.S.O. 1990, as amended from time to time, or if that act is not applicable, a copy of the most recent registration under the Business Names Act, R.S.O. 1990, as amended from time to time; and

(c) In the event of any change in ownership of the *Site*, the *Owner* shall notify in writing the succeeding owner of the existence of this *Certificate*, and a copy of such notice shall be forwarded to the *Director*.

C) RECORDS and MINISTRY ACCESS

7. (a) The *City* shall make all records, diagrams and reports, available upon request for inspection by a Provincial Officer;

and

(b) The *City* shall maintain, at all times, up-to-date *Site* plans, plant drawings, operation plans, contingency plans, emergency measures and any other similar type information at the facility for as long as the facility is operational and shall retain this information for five (5) years following closure of the facility.

8. The *Municipality* shall allow *Ministry* personnel, or a *Ministry* authorized representative(s), upon presentation of credentials, to carry out any and all inspections authorized by Section 156, 157 or 158 of the *Act*, Section 15, 16, 17 of the Ontario Water Resources Act, R.S.O. 1990, or Section 19, 20 of the Pesticides Act, R.S.O. 1990, as amended from time to time, of any place to which this *Certificate* relates; and, without restricting the generality of the foregoing to:

- (i) enter upon any premises where the records required by the Conditions of this *Certificate* are kept;
- (ii) have access to and copy, at any reasonable time, any records required by the Conditions of this *Certificate*;
- (iii) inspect at reasonable times any facilities, equipment (including monitoring and control equipment), practices, or operations required by the Conditions of this *Certificate*; and
- (iv) sample and monitor at reasonable times for the purposes of assuring compliance with the Conditions of this *Certificate*.

9. (a) The *Municipality* shall, forthwith upon request of the *Director*, *District Manager*, or Provincial Officer (as defined in the *Act*), furnish any information requested by such persons with respect to compliance with this *Certificate*, including but not limited to, any records required to be kept under this *Certificate*; and

(b) In the event the *Municipality* provides the *Ministry* with information, records, documentation or notification in accordance with this *Certificate* (for the purposes of this Condition referred to as "Information");

- (i) the receipt of Information by the *Ministry*;
- (ii) the acceptance by the *Ministry* of the Information completeness or accuracy; or
- (iii) the failure of the *Ministry* to prosecute the *Municipality*, or require the *Municipality* to take any action under this *Certificate* or any statute or regulation in relation to the Information;

shall not be construed as an approval, excuse or justification by the *Ministry* of any act or omission of the *Municipality* relating to the Information, amounting to non-compliance with this *Certificate* or any statute or regulation.

10. Any information relating to this *Certificate* and contained in *Ministry* files may be made available to the public in accordance with the provisions of the Freedom of Information and Privacy Protection Act, R.S.O. 1990, C.F-31.

11. All records and monitoring data required by the Conditions of this *Certificate* must be kept on the *Site* for a minimum period of at least five (5) years.

D. SITE OPERATIONS

General

12. a) Except as otherwise provided by these Terms and Conditions, this *Site* shall be designed, developed, used, maintained and operated in accordance with the Applications for Provisional Certificate of Approval for a Waste Disposal Site dated October 22, 2009 and January 11, 2010 and signed by Bill Shields, Supervisor of Governance and Compliance, City of Guelph and associated plans and specifications, and the other supporting documentation listed in the attached Schedule "A" of this *Certificate*; and

b) Within ninety (90) days from the first receipt of *Organic Waste* at the *Composting Site*, a set of as-built drawings showing the *Composting Site*, as constructed, shall be prepared and kept at the *Composting Site*.

13. Only vehicles operating under the City's current Waste Management System Certificate of Approval No. A170150 are

permitted to bring waste to this *Site* during Sunday operating hours.

14. (i) The *Site* shall be operated and maintained in an environmentally safe manner which ensures the health and safety of all persons and minimizes visual impacts, surface water ponding, dust, odours, vectors, litter, vibration, noise and hazard to aircraft; and

(ii) If at any time problems such as dust, odours, vectors, litter, vibration, noise, hazard to aircraft or other nuisances are generated at the *Site*, resulting in complaints received by this *Ministry* and validated by a Provincial Officer, then the *City* shall upon request of the *Ministry*, take appropriate remedial action immediately. Appropriate measures may include temporary stoppage of all operations until the problem has been rectified and measures have been undertaken to prevent future occurrence.

Receiving Waste

15. a) *Residual waste*, transported from the *Site*, shall not exceed an average of one thousand (1000) tonnes per day averaged over a calendar year. If the *residual waste* approaches an average of one thousand (1000) tonnes per day, the *City* shall take measures immediately to reduce the receipt of the waste that causes the *residual waste* to approach the average of one thousand (1000) tonnes per day. *Residual waste* shall be disposed of at a waste disposal site approved by the *Ministry* to accept such waste;

b) The maximum amount of *residual waste* that may be transported from the *Site* is 1200 tonnes per day; and

c) In the event that *residual waste* and/or processed waste cannot be transferred from the *Site*, the *Owner* shall cease accepting any additional waste at the *Site*.

16. All in-coming and outgoing wastes to and from the *Site* shall be screened and inspected by *Competent Person* or *Trained Personnel* as detailed in the *Current Design and Operations Reports*, prior to being received, transferred and shipped to ensure wastes are being managed and disposed of in accordance with the *Act* and *O. Reg. 347*.

Waste Storage

17. Waste shall be stored at the *Site* in accordance with the *Current Design and Operations Reports* and at a minimum the *Owner* shall ensure that:

(1) i) all activities related to unloading waste, in-process waste and *residual waste* shall be conducted indoors at all times; and

ii) Condition 17. (1) i) does not apply to materials destined for recycling markets; and

iii) Condition 17.(1)(i) does not apply to materials received at the Public Drop-Off area.

(2) all *putrescible waste* shall be removed from the tipping floor of the *Waste Transfer Station* and the *MRF* at the end of each operating day and the tipping floor cleaned as necessary. Any *putrescible waste* that is not removed from the *Site* at the end of the operating day shall be stored indoors in a tarped or enclosed container;

(3) all containers used for the outside storage of non-putrescible processed waste that is destined for recycling markets shall be maintained in a leakproof condition and shall be tarped or enclosed unless material is being added or removed;

(4) The following are the maximum storage amounts that are allowed at the *Site*:

(a) *Waste Transfer Station* - 795 tonnes inside the *Waste Transfer Station* building;

(b) *MRF*- 3850 tonnes inside *MRF* building;

(c) Organic Waste Processing Facility- 8,500 tonnes inside building;

(d) Outdoor storage of the following:

i) *leaf and yard waste*- 4000 tonnes;

ii) a maximum of 3050 tonnes of non-putrescible recyclable wastes stored in dedicated bunkers or covered bins on an asphalt paved pad of approximate area of 6100 square metres pads located to the south of the transfer station and an asphalt paved pad of approximate area 2,100 square metres to the west of the Organic Processing Facility for the storage of such

recyclable materials as waste electronics, tires, scrap metal, corrugated cardboard and reusable materials;

iii) outdoor storage for a maximum of twelve (12) hours of two loaded transfer trailers from *Waste Transfer Station*;

iv) outdoor storage of *waste wood, wood waste and Amendment Materials* that are referred to in Condition 54 (9) of this *Certificate* in amounts that are needed for the processing of *Organic Waste* at the *Organic Waste Processing Facility*;

v) Any outdoor storage of recyclable waste shall not create a nuisance or hazard;

(e) wastes that are in bins in the Public Drop-Off area that is identified in Appendix A-1 of the Design and Operations Report that is identified in item 51 of Schedule "A"; and

(f) *MHSW Waste Transfer Station*-15 tonnes;

(5) The maximum storage times are as follows:

(a) *Waste Transfer Station* - i) *Organic Waste*- except as provided in (in building) Condition 17 (5) (a) ii), 24-hours storage time at the *Waste Transfer Station* until the *Start-up Date*;

ii) due to exceptional circumstances or an emergency, the *Owner* may request to the *District Manager* that maximum 24-hour storage allowed by Condition 17 (5)(a) i) be extended to up to 72-hours and the *District Manager* has the authority to grant written concurrence to such a request;

iii) after the *Start-up Date*, *Organic Waste, Residual Waste* and/or *rejected waste* may be stored at the *Waste Transfer Station* in accordance with Condition 56 (2)(h), 56(3)(c), and/or 56(4)(b);

iv) after the *Start-up Date*, due to exceptional circumstances or an emergency that results in the cessation of further processing at the *Composting Site*, on a one time basis for each such cessation of further processing, the *Owner* may remove the unprocessed organic waste from the *Composting Site* and transfer it in a covered container, on a priority basis, to the *Waste Transfer Station* and have it removed from the *Waste Transfer Station* on the same day that the transfer of unprocessed *Organic Waste* occurred on;

v) all other waste - 72-hours;

vi) due to exceptional circumstances or an emergency, the *Owner* may request to the *District Manager* that maximum 72-hour storage allowed by Condition 17 (5)(a) v) be extended to up to seven (7) days and the *District Manager* has the authority to grant written concurrence to such a request; and

vii) notwithstanding Conditions 17 i), ii), iii), iv), v) and vi), if the *District Manager* determines that the storage of odorous waste at the *Waste Transfer Station* is causing significant odour issues, the odorous waste at the *Waste Transfer Station* shall be immediately removed from the *Site*;

(b) *MRF* i) 5 days for generation of *residual waste* from date of (in building) generation; and

ii) 120 days for all other waste;

(c) *Organic Waste* i) as outlined in Condition 54 (8)(a)

Processing Facility of this *Certificate*, *Organic Waste* shall

be incorporated into active *Composting* process within 36-hours of receipt;

ii) as outlined in condition 54 (8)(e) of this *Certificate*, *residual waste (Processing Building)*

-maximum of 14 days storage time from generation date;

(d) Outdoor storage of waste - i) 12 hours for a maximum of two loaded and

transfer trailers from the *Waste Transfer Station*; and

ii) seven (7) days storage time for all other waste stored outside;

(e) Outdoor storage of materials referred to in Conditions 54 (9) and 17 (4)d.(iv) - the reasonable amount of time required for operational needs at the *Organic Waste Processing Facility* for the outdoor storage of *waste wood*, *wood waste* and *Amendment Materials*; and

(f) *MHSW* - 90 days storage time; and

(6) No storage or transfer areas, other than those approved under this *Certificate* shall be used for waste storage or transferring.

Dirt, Dust and Airborne Emissions

18. (a) The *City* shall ensure that dust and/or other material that may become a contaminant, generated by activities on the *Site*, is minimized in a manner that ensures there are no off-*Site* impacts of such emissions. The *City* shall implement control measures as outlined in the approved Operation and Management Plan to comply with this Condition;

(b) The *City* shall ensure that vehicles entering the *Site* do not drag into the *Site*, dirt and/or other material that may become a contaminant or a nuisance. The *City* shall ensure that vehicles leaving the *Site* do not drag out of the buildings or off the *Site* waste, dirt and/or other material that may become a contaminant or a nuisance; and

(c) All parking areas, on-*Site* roads that are used for transportation of wastes, recyclable material and/or processed material including *Compost*, and storage areas shall be paved and shall be cleaned as necessary to prevent dust and litter from blowing off the *Site*.

Litter

19. (a) Litter shall be picked up daily from the *Site* and from roads and ditches within one (1) kilometer of the *Site*;

(b) All collected and stored litter shall be in closed or covered containers;

(c) Litter collected through the litter control program shall be transferred off-*Site* or processed within four (4) days of collection; and

(d) The *City* shall undertake all reasonable measures at the *Site* to ensure that there is no unauthorized dumping of waste on the *Site*.

Rodents and Vermin

20. (a) The *City* shall implement the approved litter control to minimize and control the occurrence of vectors, rodents and vermin; and

(b) If necessary, the *City* shall retain the services of a pest management company to monitor and controls vectors, rodents and vermin.

Odour

21. a) The Odour Monitoring Program that is required by Condition 58 (13) of this *Certificate* also shall be designed to detect and identify any odours originating from the operation of the *Waste Transfer Station* and the *MRF*;

b) *Organic Waste* received at the public drop-off bins shall remain covered at all times other than loading and shall be emptied indoors daily; and

c) If *putrescible waste* is received at the *Material Recovery Facility*, it shall remain covered at all times other than during loading and unloading.

Noise

22. (a) All off-road equipment used at the *Site* shall be operated in such a manner that sound levels from such equipment do not exceed 85 decibels at 15 metres measurement distance;

- (b) All off-road equipment shall be operated and maintained in accordance with the procedures specified in Publication NPC-115 of the *Ministry's* Model Municipal Noise Control By-law;
- (c) All stationary equipment shall be operated and maintained in accordance with the procedures specified in Publication NPC-105 of the *Ministry's* Model Municipal Noise Control By-law; and
- (d) Notwithstanding Conditions 22, (a), (b) and (c), if at any time noise and vibration nuisances are generated at the *Site*, resulting in complaints received by this *Ministry* and validated by a Provincial Officer, the *City* shall take remedial action immediately.

Hazard to Aircraft

- 23. (a) The *City* shall ensure that the activities related to the operation of the *Site* do not create a hazard to aircraft;
- (b) The *City* shall ensure that there is no net increase in bird populations at the *Site* above the baseline levels established by the baseline study that has been conducted by the *Owner*;
- (c) If the population of *birds* in the vicinity of the facility increases above the baseline levels, the *City* shall immediately undertake additional bird deterrent measures, to bring the bird population in accordance with baseline levels;
- (d) The *City* shall ensure that the number of thermals created by the *Site* is kept to the minimum and that the number of *birds* soaring in these thermals shall not exceed ten (10) at any given time;
- (e) The *City* shall ensure that the amount of dust, steam, smoke or other airborne vapour discharged from the facility is kept to the minimum and shall not restrict visibility on or near the Guelph Air Park;
- (f) The *City* shall continue to implement a bird control management plan, as required, to ensure the *Site* is not an attraction to *birds*. The bird control management plan shall include but not be limited to additional bird deterrent measures in addition to the measure outlined in Item 6 of Schedule "A"; and
- (g) Upon receipt of a written notification that Transport Canada or such other governmental agency of equivalent jurisdiction over airport operations has served notice or a similar written warning to shut down or curtail airport operations at the Guelph Air Park due to hazard to aircraft as a result of *birds* in the vicinity of the airport, which may or may not be a direct result of the *Site* operations, the *City* shall undertake the following measures immediately:
 - (i) cease acceptance of all waste at the *Site*, except *MHSW*, unless in the opinion of the *District Manager*, the reason for the hazard to aircraft as a result of *birds* is known, and is not a direct or indirect result of *Site* operations;
 - (ii) if the reason for the hazard to aircraft as a result of *birds* is known and is a direct or indirect result of *Site* operations, take all reasonable measures to investigate the problem, institute remedial/mitigative measures immediately, devise a long-term action plan to avoid any such future occurrences at the airport and submit a comprehensive report of such plans to the *Director*, and the appropriate agency that has served the notification to shutdown or curtail airport operations;
 - (iii) if the reason for the hazard to aircraft as a result of *birds* is not known, the *City* shall undertake a comprehensive study, acceptable to the *Director* and the agency that served notification to shutdown or curtail operations to determine if such hazard to aircraft was a direct or indirect result of the *Site* operations and to propose measures to prevent any similar or related occurrences that may create a hazard to aircraft;
 - (iv) the *City* shall submit the reports required by Condition 23 (g) (ii) and (iii) to the *Director* for approval and to the agency that served notification to shutdown or curtail airport operations. Upon the *Director's* approval, the *City* shall implement remedial/mitigative/contingency measures, as required;
 - (v) The *City* shall not accept any waste at the *Site* unless a qualified professional consultant has submitted a report stating that the hazard to aircraft as a result of *birds* has been resolved, or is not the direct or indirect result of *Site* operations, and the *Director* has authorized that the *Site* can again begin to accept waste;
 - (vi) notwithstanding Condition 23 (g) (ii), (iii), (iv) and (v), the *City* may continue to process any waste materials inside the *Organic Waste Processing Facility* and the *Material Recovery Facility* that were present at the *Site* prior to the *City* ceasing to accept waste at the *Site* pursuant to Condition 23 (g) (i). The *City* shall continue to ensure that all *Site* activities do not create a hazard to aircraft safety;
 - (vii) During the period of shutdown the *City* shall implement its contingency plan for disposal of waste at approved alternative location(s); and
 - (viii) Condition 23(g) (i) to (vii) does not relieve the *City* from implementing all necessary contingency/mitigative measures

to ensure that *Site* activities do not create a hazard to aircraft.

Traffic

24. The *City* shall make adjustments to traffic flow patterns, including but not limited to the use of traffic lights as required, to minimize any adverse traffic impacts resulting from the facility traffic patterns.

Operating Hours

25. (a) All control measures at the *Site*, including but not limited to, dust, odours, vectors, litter, noise and hazard to aircraft shall take place 24-hours a day, seven (7) days a week;

Composting Site

(b) The allowed hours of operation of the *Composting Site* operation are covered by Condition 56 (1);

MHSW Transfer Station, MRF, and Public Drop-off area

(c) Waste and recyclable materials destined for the *MHSW*, the *MRF*, and/or the Public Drop-off area may be received at the *Site* only from 7:00a.m. to 11:00p.m. from Monday to Friday, and from 8:00a.m. to 4:00p.m. on Saturday;

(d) Waste and/or recyclable materials may be transferred from the *Site* only during the following hours:

(i) Monday to Friday 7:00a.m. to 6:00 p.m.; and

(ii) Saturday 8:00 a.m. to 4:00 p.m.;

(e) Outdoor processing of waste and/or recyclables associated with the *MHSW Transfer Station*, the *MRF* and/or the Public Drop-off area may occur only in the following hours:

(i) Monday to Friday 7:00 a.m. to 11:00 p.m.; and

(ii) Saturday 8:00 a.m. to 4:00 p.m.;

(f) Indoor processing at the *MRF* and/or the *MHSW* may take place from Monday 12:00 a.m. to Saturday 11:59 p.m. In extraordinary circumstances, indoor processing may take place beyond these hours to eliminate any backlog of material requiring processing;

(g) Due to exceptional circumstances or an emergency, the *Owner* may request to the *District Manager* that the hours of operation of the *MHSW Transfer Station*, the *MRF* and/or the Public Drop-off area be extended and the *District Manager* has the authority to grant written concurrence to such a request;

Waste Transfer Station

(h) Subject to Condition 13, waste destined for the Waste Transfer Station may be received at the *Site* only from Monday to Sunday from 7:00a.m. to 7:00p.m.;

(i) Notwithstanding the hours of operation for waste receipt at the *Waste Transfer Station* referenced in Condition 25 (g), the *Site's* activities and movement of waste within the *Site* related to the *Waste Transfer Station*, including outgoing shipments, may occur only during the hours of 7:00a.m. to 11:00p.m Monday to Saturday; and

(j) Due to exceptional circumstances or an emergency, the *Owner* may request to the *District Manager* that the hours of operation of the *Waste Transfer Station* be extended and the *District Manager* has the authority to grant written concurrence to such a request.

Competent People and Trained Personnel

26. a) The *Municipality* shall ensure through proper training programs and personnel records that all personnel directly involved with activities relating to the operation, maintenance and inspection of the *Site* are *Competent People* and that all personnel directly involved with the activities of the *Organic Waste Processing Facility* are *Trained Personnel* and that they are given refresher training on the components of a *Competent Person* or *Trained Personnel* as applicable, at least once every three years; and

b) The *Municipality* shall keep a record that is in electronic or written format that is easily accessible for inspection by a *Provincial Officer* of all employees who are *Competent People* and *Trained Personnel*.

27. The *Municipality* shall ensure that *Competent People* or *Trained Personnel* are available at all times during the hours of operation of this *Site*. No loading, unloading, or sorting of recyclables or any waste material shall occur unless a *Competent Person* or *Trained Personnel* supervises the loading, unloading, or sorting operation.

28. All in-coming and outgoing wastes shall be screened and inspected by *Competent People* or *Trained Personnel* as detailed in the *Current Design and Operations Reports*, prior to being received, transferred and shipped to ensure wastes are being managed and disposed of in accordance with the Act and *O. Reg. 347*.

Public Liaison Committee

29. (1) The *Owner* shall invite the following groups to provide input and/or comments into preparation of the Terms of Reference for the *Public Liaison Committee (ToR PLC)*:

- (a) home owners within 2,000 metres of the *Composting Site*;
- (b) any interested non-governmental organization (NGOs); and
- (c) any interested person(s) or group(s);

(2) (a) The *Owner* shall consider all input and/or comments submitted by the groups listed above during preparation of the *ToR PLC*; and

- (b) A minimum of ninety (90) days prior to the receipt of the *Organic Waste* at the *Composting Site*, the *Owner* shall prepare and submit to the *District Manager* the *ToR PLC*, including documentation demonstrating consideration of all public input and/or comments received, for written concurrence of the *District Manager*;

(3) The *ToR PLC* shall be amended from time to time according to appropriate amending procedures identified within the content of the *ToR PLC*. Any amendment to the *ToR PLC* must be agreed to by the *District Manager* prior to its implementation;

(4) Within sixty (60) days from the *District Manager*'s concurrence to the *ToR PLC*, the *Owner* shall take all reasonable steps to establish a *Public Liaison Committee (PLC)* which shall serve as a forum for dissemination, consultation, review and exchange of information regarding the operation of the *Composting Site*, including environmental monitoring, maintenance, complaint resolution, and new approvals or amendments to existing approvals related to the operation of this *Composting Site*;

(5) The *Owner* shall invite representation from the following groups to participate on the *PLC*:

- (a) home owners within 2,000 metres of the *Composting Site*;
- (b) any interested NGOs; and
- (c) any interested person(s) or group(s);

(6) The number of representatives from each group shall be as specified in the *ToR PLC* approved by the *District Manager*;

(7) No later than ninety (90) days from the *District Manager*'s concurrence to the *ToR PLC*, the *Owner* shall submit to the *District Manager* a written report that details steps to be taken by the *Owner* to establish, maintain and participate in a *PLC*. This report shall include the identification of each of the representatives that have been invited to participate in the *PLC*;

(8) A copy of the Annual Report that is required by Conditions 52 shall be provided to the *Public Liaison Committee* at the first scheduled meeting following March 31st; and

(9) The *City* shall allow reasonable access to the *Site* for any member of the *Public Liaison Committee*;

30. The *City* shall make available to the *Public Liaison Committee*, all records and reports required by this *Certificate* for the purposes of monitoring the ongoing operations of the *Site*.

E. STORMWATER AND WASTEWATER MANAGEMENT:

31. The *Municipality* shall manage all discharges from this *Site* including stormwater run-off, including the stormwater

collected and contained in the Stormwater Collection Ponds, in accordance with Municipal and Private Sewage Works Certificate of Approval number 5015-856HHG and appropriate Municipal, Provincial and or Federal Legislation, Regulations and By-laws.

F. MONITORING PROGRAM

Groundwater Monitoring

32. Groundwater shall be sampled on a semi-annual basis (spring and fall).

33. The analyses of samples collected in accordance with Condition 32 shall seek to identify chloride, nitrate and a suite of compounds characteristic of waste at the *Site*. Sampling frequency and parameters for analysis may be adjusted upon the approval of the *District Manager*, as groundwater information become available.

34. All monitoring wells which form part of any monitoring program shall be protected from damage. Any groundwater monitoring wells that are damaged shall be repaired or replaced forthwith or properly abandoned in accordance with *Ontario Regulation 903*.

Surface Water Monitoring

35. (a) The *City* shall annually review and update the existing surface water sampling program, designed to detect and quantify any impacts originating from the *Site*;

(b) A surface water sampling program shall be implemented to ensure early detection of contaminants in the event that such contaminants escape the *Site*. Surface water shall be sampled monthly for the following conventional parameters: biochemical oxygen demand (BOD), suspended solids (SS), ammonia, nitrogen, Total Kjeldahl Nitrogen (TKN), total phosphorus and phenolics. For all other parameters, surface water shall be sampled on a semi-annual basis (spring and fall). The analysis shall seek to identify chloride, nitrate and a suite of organic and inorganic compounds characteristic of waste generated at the *Site*;

(c) Sampling frequency and parameter for analysis may be adjusted upon the approval of the *District Manager*, as surface water information become available;

(d) Surface water shall be sampled at the discharge location of the final surface water detention pond;

(e) The *City* shall ensure that all stormwater which comes in contact with waste material is treated or discharged into the sanitary sewer; and

(f) The *City* shall annually review and update the detailed maintenance schedules for the infiltration trenches and stormwater detention ponds.

Reporting on monitoring.

36. The *Municipality* shall include the results from the approved program covering the previous calendar year, with the interpretation of the monitoring results prepared by a qualified hydrogeologist, engineer or scientist in the Annual Report referenced in Condition 52. Following a review of the analytical results or, of any of the reports required by this Condition, the *District Manager* or, the *Director* may alter the frequencies and locations of sampling and parameters for analysis required by this Condition if he/she considers it necessary for proper assessment of the quality of the groundwater or, if he/she is requested to do so by the *Municipality* and considers it acceptable by the evidence of information in support of the request.

G. SITE SECURITY

37. (a) The *City* shall ensure that a *Competent Person* is available at all times during the hours of operation at this *Site*. No loading or unloading of waste, *Compost* and/or recyclable material, including the public drop-off bins, shall occur unless a *Competent Person* supervises the loading or unloading operation. No public drop-off shall be allowed beyond the normal

operating hours of the facility. No processing shall occur unless a *Competent Person* supervises the processing;

(b) Not less than once each calendar year, the *City* shall ensure that a fire inspection is carried out to determine if adequate fire prevention and protection measures are in place for the facility;

(c) The *City* shall ensure that the *Site* is adequately lit at all times;

(d) The *City* shall ensure that the existing signs posted on the *Site*, which identify the name of the facility and an emergency and/or *incident* reporting telephone number, continue to be adequately maintained;

(e) The *City* shall ensure that the existing 1.6 metre high fence with lockable gates is adequately maintained in order to continue to preserve the security of the *Site*; and

(f) The *City* shall ensure that the *Site* is secured beyond the normal operating hours of the facility to prevent unauthorized entry.

H. WASTE TRANSFER STATION

38. a) Except as noted in Condition 38 b) and c) of this *Certificate*, the *Waste Transfer Station* may accept non-hazardous solid industrial waste from industrial, commercial and institutional sources, commercial waste and domestic waste;

b) asbestos waste may not be accepted at the *Waste Transfer Station*; and

c) *Organic Waste* may only be accepted at the *Waste Transfer Station* in accordance with Condition 17.(5)(a).

39. a) Except as noted in Condition 17.(5)(a) ii), iii), iv) and vi) in accordance with Condition 17.(5)(a)i), the maximum storage time at the *Waste Transfer Station* building for allowed *Organic Waste* is 24-hours; and

b) The maximum storage capacity in the building at the *Waste Transfer Station* is 795 tonnes in the *Waste Transfer Station* building.

I. MATERIAL RECOVERY FACILITY

40. (a) The *City* shall ensure that only municipal waste recyclable material, generated within the Province of Ontario is received at this *Site*;

(b) The maximum storage capacity at the *MRF* is 3,850 tonnes;

(c) All materials to be processed at the *Material Recovery Facility* shall be unloaded and processed indoors except commingled recyclables which may also, as required, be unloaded into the outdoor storage bunker assigned to this material, or in the *Organic Waste Processing Facility* when not in use for *Composting*;

(d) The *City* shall ensure all storage containers are maintained in good condition;

(e) The *City* shall limit any outside storage to processed or source-separated non-putrescible dry materials, dropped off by either commercial or residential vehicles, including but not necessarily limited to tires, rubble, electronic waste, source separated roofing shingles, mattresses, textiles, white goods, construction and demolition wastes, commingled recyclables, *wood waste*, *waste wood*, glass, scrap metal, and drywall;

(f) The *Owner* may apply to the *District Manager* for the outdoor storage in concrete bunkers or in storage containers of additional non-hazardous solid waste(s) that is/are not provided for in Condition 40 (e) and the *District Manager* may provide written concurrence to the *Owner* for the storage of non-hazardous solid waste(s) that is/are not provided for in Condition 40 (e);

(g) Outside storage shall be on an asphalt pad, or equivalent impermeable surface, within designated concrete bunkers, or in closed storage containers in a manner and in amounts which does not create a nuisance or hazard;

(h) The *City* shall implement litter controls including, but not limited to, covering waste with netting and limiting the receipt

or movement of materials on windy days. Litter pick-up shall occur daily and after the movement of waste either into the *Material Recovery Facility* for processing or after loading vehicles for off-*Site* transfer at a minimum;

(i) The outdoor storage of any wastes that may attract *birds*, vectors, rodents and/or vermin is prohibited;

(j) The *City* shall ensure that the addition, removal and processing of all wastes and/or recyclable material occurs only in the presence of a *Competent Person*;

(k) The *Material Recovery Facility* doors for vehicular traffic shall normally be kept closed and shall only be opened for entry or departure of vehicles if there is an attraction to *birds*;

(l) All *dry waste* shall be processed and shipped off-*Site* within 120 days of receipt; and

(m) *Residual waste* not suitable for further processing at the *Site* shall be moved off-*Site* within five (5) days of generation.

J. MUNICIPAL HAZARDOUS AND SPECIAL WASTE TRANSFER STATION

41. In this section, "processed waste" means wastes that have been bulked together in a common container or packaged for disposal.

42. (a) The operation of this *MHSW Transfer Station* is limited to the collection and transfer of waste classes 112, 121, 145, 146, 148, 212, 213, 221, 242, 251, 252, 261, 263, 269, 312, and 331 and also includes wet cell batteries and small dry cell batteries, household cleaners and detergents, aerosols, waxes and polishes, fluorescent tubes and energy efficient light bulbs, mercury switches and thermostats; as outlined in the New Ontario Waste Classes, January 1996, and waste allowed by Condition 43(b); and

(b) The maximum amount of *MHSW* and waste allowed by Condition 43(b) that may be stored at the *Site* is 15 tonnes.

43. (a) The *City* shall ensure that only *MHSW* generated by residents living within the City of Guelph and the County of Wellington is received. No industrial, commercial and/or institutional hazardous waste shall be received at this facility;

(b) Subject to the limitations outlined in Condition 42 of this Certificate, the City of Guelph may accept for collection and transfer at the *MHSW Transfer Station*, *MHSW* or other waste acquired by the City from *small generators* as a result of the management of incidents of improper or illegal dumping in the City of Guelph, none of which shall exceed the quantities outlined in the definition of *small generators* that is defined in the definitions section of this Certificate;

(c) The *City* shall ensure that a *Competent Person* is on duty at all times during the operation of the *MHSW Transfer Station* to provide proper supervision of activities;

(d) The *City* shall ensure that adequate fire fighting equipment is available at the *MHSW Transfer Station* location at all times and that on-*Site* staff are trained in the use of such equipment;

(e) The *City* shall ensure that the local police and fire departments are informed of the operation at the *MHSW Transfer Station* at all times and are kept up-to-date on the types and quantities of waste that the facility handles;

(f) Not less than once per calendar year, the *City* shall ensure that a fire and explosion prevention inspection is carried out by a qualified person who is either a representative from the City of Guelph Fire Department, a Professional Engineer or who has specialized training in fire and explosion hazards;

(g) The *City* shall ensure that the management and disposal of waste at the *MHSW Transfer Station* is done in accordance with Ontario Regulation 347;

(h) i) The *MHSW Transfer Station* shall be inspected by a *Competent Person*

on each operating day basis to ensure the proper storage and handling of *MHSW* waste and that the integrity of waste containers is intact;

ii) A daily record of the inspections required by Condition 43(g)i shall be maintained by the *Owner*;

iii) At a minimum, the record shall indicate the date and time of the inspection, the name of the *Competent Person* who did the inspection, a description of any unusual observations, such as spills, made during the inspection, description of any action taken to correct an *incident* that was identified and any recommendations for preventing a recurrence of a similar *incident*; and

iv) the records required by Condition 43(g)ii shall be made readily available for an inspection by a *Provincial Officer*;

(i) No *MHSW* waste shall be stored on-*Site* longer than ninety (90) days from the date it was received;

(j) All storage of waste shall be in accordance with the *Ministry's* "Guidelines for Environmental Protection Measures at Chemical and Waste Storage Facilities," May 2007, and its amendments;

(k) The *City* shall have a *Competent Person* annually review and update the existing waste screening measures for all incoming waste, to ensure only wastes approved by this *Certificate* are received at this facility;

(l) Any updated report on the waste screening measures shall be submitted to the *District Manager*; and

(m) The *City* shall ensure that no *PCB waste* are accepted at the *Site*. Oil and oil-based paints which have been manufactured prior to 1972, paints and thinners having an oily appearance, rubber based paints (concrete paints/stains), adhesives, urethane elastomers manufactured prior to 1977, pesticides manufactured prior to 1977, any of these materials whose manufacturing date cannot be determined and any container having contained these materials may contain *PCBs*. The *City* shall undertake a waste screening procedure for *PCBs* that includes, but is not limited to the following:

(i) The *City* shall ensure that an approved *PCB* storage site is available to take and store any confirmed *PCB waste* that is inadvertently received at the *Site*;

(ii) The *City* shall ensure a waste tracking system is established to properly identify the source of any confirmed *PCB waste*;

(iii) Any *PCB* suspect material shall be segregated and shall not be mixed or bulked. All *PCB* suspect material shall be sampled and analyzed for *PCB* content. Each individual suspect container or a representative proportional composite of not more than ten (10) individual suspect containers shall be sampled and analyzed;

(iv) Any material that may be mixed or bulked shall be sampled and analyzed for *PCB* content. Each individual bulk container or drum shall be sampled and analyzed; and

(v) Any material that has measure levels greater than fifty (50) parts per million is considered to be *PCB waste* as defined in *Ontario Regulation 362*. *PCB waste* shall be removed from the *Site* to an approved *PCB* storage site in accordance with written instructions from a *Director* as defined in *Ontario Regulation 362*, or a Waste Management System Certificate of Approval which specifies the manner in which *PCB waste* may be stored, handled, collected, transported or disposed of.

44. The *City* may offer materials in Ontario Waste Classes 145 (paint), 331 (aerosols), 213 (car products) and 148 (cleaning products) to the public.

K. WRIC ENVIRONMENTAL EMERGENCY PLAN

45. (a) Within thirty (30) days of commencing the receipt of Organic Waste at the *Composting Site*, the *Owner* shall update its "Solid Waste Resources Emergency and Contingency Plan" that is contained in the *Owner's* Design and Operations Reports that are referenced by Items 49, 50 and 51 of Schedule "A" by submitting to the *District Manager* a *WRIC Environmental Emergency Plan* for the entire *Site*. The *WRIC Environmental Emergency Plan* for the entire *Site* shall be prepared in consultation with the local Municipality and the City of Guelph Fire Department;

(b) The *WRIC Environmental Emergency Plan* shall identify measures for the preparation for, the prevention of, the response to and the recovery from environmental emergencies at the *Site* including but not limited to:

- (i) a spill, process upset, emission of odours, fire, explosion or any other emergency situation, and disruption at the *Site* such as power failure and/or equipment failure;
- (ii) specific clean-up methods for wastes expected to be generated from an emergency situation;
- (iii) fire and explosion prevention planning and fire protection systems;
- (iv) a list of equipment and clean-up materials available for dealing with the projected emergency situation;
- (v) measures to be taken to prevent incompatible chemicals at the *MHSW* Transfer Station from coming into contact;

- (vi) Environmental Emergency Planning measures for the *Composting Site* that are required by Condition 61 of this Certificate;
- (vii) measure to be undertaken in the event hazard to aircraft problems develop or there is a net increase in *birds* at the *Site*;
- (viii) measures to be undertaken in the event any unauthorized non-hazardous or hazardous waste or unidentifiable waste appears at the *Site*;
- (ix) measures to be undertaken in the event of groundwater and/or surface water contamination;
- (x) notification protocol with names and telephone numbers of persons to be contacted, including persons responsible for the *Site*, the *Ministry's District Office* and Spills Action Centre, the local Fire Department, the local Municipality, the local Medical Officer of Health, and the Ministry of Labour, and the names and telephone numbers of waste management companies available for emergency response; and
- (xi) a complaints procedure that has a minimum the information that is outlined in Condition 46;

(c) No waste shall be received at the *Composting Site* for storage or processing until the *District Manager* provides a written concurrence for the emergency response and contingency planning measures for the issues in the *WRIC Environmental Emergency Plan* that deals with the *Composting Site*;

(d) The city shall keep up-to-date copies of its *WRIC Environmental Emergency Plan* at central locations at the *Composting Site*, the *Waste Transfer Station*, the *MRF* and the *MHSW Waste Transfer Station*;

(e) The *WRIC Environmental Emergency Plan* shall be reviewed on an annual basis and updated, if necessary by the *Owner*. Any revised version of the *WRIC Environmental Emergency Plan* shall be submitted within fifteen (15) days of the revision for comments and concurrence to the local Municipality, the Fire Department and to the *District Manager*; and

(f) After five (5) years from the date of issue of this *Certificate*, the *Owner* may apply in writing to the *District Manager* for agreement of the removal of the requirement in Condition 45(e) that requires *District Manager* concurrence. Also, the *District Manager* may provide written notice to the *Owner* that they are exempted from the noted provision in Condition 45(e).

Complaints Procedure

46. If at any time, the *Municipality* receives complaints regarding the operation of the *Site*, the *Municipality* shall respond to these complaints according to the following procedure:

(a) The *Municipality* shall record each complaint on a formal complaint form entered in a sequentially numbered log book. The information recorded shall include the nature of the complaint, circumstances of the complaint including weather conditions, the name, address and the telephone number of the complainant and the time and date of the complaint;

(b) The *Municipality*, upon notification of the complaint shall initiate appropriate steps to determine all possible causes of the complaint, proceed to take the necessary actions to eliminate the cause of the complaint and forward a formal reply to the complainant; and

(c) The *Municipality* shall immediately orally notify the *Ministry* of the complaint, followed with the submission of a written report within one (1) week, of the complaint detailing what actions, if any, were taken to identify and remediate the cause of the complaint and what remedial action, if any, would be taken.

47. The *Municipality* shall take immediate measures to clean-up all spills, related discharges and process upsets of wastes which result from the operation of the *Site*. All spills and upsets shall be immediately reported to the *Ministry's* Spills Action Centre at (416) 325-3000 or 1-800-268-6060 and shall be recorded in a written log or an electronic file format, referred to in Condition 51 of this *Certificate*, as to the nature of the spill or upset, and the action taken for clean-up, correction and prevention of future occurrences.

L. INSPECTION

48. The *Municipality* shall have a *Competent Person* or *Trained Personnel* conduct regular daily and weekly inspections of the equipment and facilities as outlined in the Design and Operations Reports of this *Certificate* and as is required by Condition 57 of the *Certificate* to ensure that all equipment and facilities at the *Site* are maintained in good working order at all times. Any deficiencies detected during these regular inspections must be promptly corrected. A written record must be maintained at the *Site*, which includes the following:

- (a) name and signature of *Trained Personnel* conducting the inspection;
- (b) date and time of the inspection;
- (c) list of equipment inspected and all deficiencies observed;
- (d) a detailed description of the maintenance activity;
- (e) date and time of maintenance activity; and
- (f) recommendations for remedial action and actions undertaken.

49. The *Municipality*, in addition to inspections and documentation requirements carried out in Condition 48, shall conduct on each operating day, a physical inspection of the following areas to ensure the *Site* is secure or operating properly and that no off-*Site* impacts such as vermin, vectors, odour, noise, dust, litter, or other possible contaminants resulting from the operation of the Facility:

- (a) Oil/water separator;
- (b) holding tanks and associated containment areas;
- (c) drainage swales, culverts and catch basins and stormwater management pond; and
- (d) security fence, barriers and property line.

50. The *City* shall remedy any malfunction and/or deficiency which these inspections reveal.

M. RECORD KEEPING

51. (a) The *City* shall maintain written records of daily *Site* inspections at the *Site*. This record shall be in the form of a *Site* Inspection daily log(s) and shall include as a minimum:

- (i) the requirement outlined in Condition 63 of the *Certificate*;
- (ii) date and time of inspection;
- (iii) name, title and signature of a *Competent Person* or *Trained Personnel* supervising the inspection;
- (iv) a listing of all equipment, fencing, gates etc inspected and any deficiencies observed;
- (v) any maintenance conducted as a result of these inspections;
- (vi) recommendations for remedial action and date remedial action, if necessary, was completed;
- (vii) indication whether odours are detectable;
- (viii) indication of any litter collected;
- (ix) indication of any *incidents*; and
- (x) indication of *birds*;

(b) The *City* shall maintain daily written records of the waste and/or recyclable material received and processed at the *Waste Transfer Station*, the *Material Recovery Facility*, the *Municipal Hazardous and Special Waste Facility* and the *Organic Waste and Composting Site*. This record shall include as a minimum:

- (i) date, quantity and source of waste and/or recyclable material received;

- (ii) date and quantity of waste and/or recyclable material processed;
- (iii) date, quantity and the destination of material transferred off-Site; and
- (iv) date, quantity and destination of any *rejected waste* from the *Organic Processing Facility*;

(c) The log for the *Organic Waste and Composting Site* shall be in accordance with Condition 63;

(d) analytical results, when required of all in-coming and outgoing wastes and materials; and

(e) results of inspections and reports required under Conditions 48, 49 and 50, including the name and signature of the person conducting the inspection and completing the report.

N. ANNUAL REPORT

52. The *City* shall submit an annual report on the operation of the *Site* for the previous calendar year to the *District Manager* by March 31st of each year. This report will include the information required as follows:

- (a) the information required by Condition 63 (8) of the *Certificate* dealing with the *Composting Site*;
- (b) a monthly summary of the waste and/or recyclable materials received at the *Site*, including quantity, source and *Ontario Regulation 347* waste classes;
- (c) a monthly summary of the wastes and/or recyclable materials processed at the *Site* including quantity and *Ontario Regulation 347* waste classes;
- (d) a monthly summary of the waste and/or recyclable materials transferred off-Site including quantity, destination and *Ontario Regulation 347* waste classes;
- (e) an annual summary of the analytical results for the groundwater, and surface water monitoring program including an interpretation of the results and any remedial/mitigative action undertaken;
- (f) an annual summary of any deficiencies, items of non-compliance or process aberrations that occurred and remedial/mitigative action taken to correct them;
- (g) a summary of any changes to the *Engineer's Report* and/or the Design and Operations Report that have been approved by the *Director* since the last annual report;
- (h) a summary of any changes to the Design and Operations Report Design and the WRIC Environmental Emergency Plan that were made in accordance with Condition 68(1) of this *Certificate*;
- (i) a summary of any changes to the Design and Operations Report that have been approved by the *Director* since the last annual report;
- (j) update on activities of the *PLC*; and
- (k) all measurement units shall be reported in consistent metric units.

O. CLOSURE PLAN:

53. (a) The *Municipality* shall submit, for approval by the *Director*, a written Closure Plan for the *Site* four (4) months prior to the closure of the *Site*. This plan must include as a minimum, a description of the work that will be done to facilitate closure of the *Site* and a schedule for completion of that work;

(b) The closure plan shall include the requirement of Condition 65 of this *Certificate*; and

(c) Within ten (10) days after closure of the *Site*, the *Municipality* shall notify the *Director* in writing that the *Site* has been closed in accordance with the approved Closure Plan.

P. ORGANIC WASTE AND COMPOSTING SITE

54. Service Area, Approved Waste Types, Rates & Storage

(1) The *Composting Site* may only accept solid non-hazardous residential, commercial, institutional or industrial *Organic Waste* from the Provinces of Ontario, limited to the following *Organic Waste*:

- (a) Source-Separated *Organic Waste* limited to the following:

- (i) food wastes: fruit, vegetable and general table scraps, meat and fish/shellfish products, dairy products, eggs and egg shells, herbs, nuts and seeds, sugar and spices, confectionery products, sauces, bones, pet food, bread, grains, rice, pasta, flour, coffee grounds and tea bags;
- (ii) solidified cooking oils and cooked or raw grease and fats from residential sources only;
- (iii) paper fibres: soiled paper towels, tissues, paper plates, coffee filters, soiled paper food packaging items such as boxboard, cardboard, newspaper, and other paper fibre packaging materials;
- (iv) fresh flowers, houseplants and their soil, hair, pet fur, feathers and sawdust, wood shavings;
- (v) ashes from residential sources only;
- (vi) pet waste that is not collected or encased in a bag; and
- (vii) pet litter box or bedding wastes, including the intermingled pet waste;

(b) *Organic Waste* from the industrial, commercial and institutional sources that produce or collect food wastes;

(c) *Leaf and Yard Waste*; and

(d) *Compost* overs as described in the supporting documentation listed in the attached Schedule "A".

(2) The *Composting Site* may accept the following *Amendment Materials*:

- (a) straw and hay; and
- (b) *brush*, *Clean Wood* and Clean Wood products.

(3) The *Composting Site* may accept the *wood waste* and the *waste wood*, as defined in this *Certificate*, for processing to undertake size reduction on the paved outdoor pad referred to as the Amendment, Recyclables, and Leaf and Yard Staging Area, described in documentation listed in the attached Schedule "A", for the purpose of subsequent transfer from the *Composting Site*.

(4) (a) The *Owner* shall not accept at the *Composting Site* any cooked or raw grease and fats from industrial, commercial and institutional sources;

(b) The *Owner* shall not accept at the *Composting Site* animal carcasses, used sanitary products and human body waste;

(c) The *Owner* shall not receive pet waste from commercial, institutional or industrial sources;

(d) The *Owner* shall not accept at the *Composting Site* any *Organic Waste* that is collected through a waste collection program that allows use of bags, except the waste that is generated in and collected by the City of Guelph and in accordance with Table 1 entitled "Proposed Phase-out of Plastic Bag Usage in Organics Collection" included in Item #40 of the attached Schedule "A";

(e) The *Owner* shall ensure that the *Organic Waste* collected in bags in accordance with restrictions specified above, is given priority in the processing and transfer to the *Composting* tunnels;

(f) The *Owner* shall ensure that the *Organic Waste* collected in bags in accordance with restrictions specified above, is transported directly from the collection route to the *Composting Site*, without any intermediate transfer step; and

(g) The *Owner* shall not accept at the *Composting Site* any waste that is classified as hazardous waste or liquid industrial waste in accordance with *O. Reg. 347*.

(5) The *Owner* is only approved to receive *Organic Waste* in quantities that are not to exceed:

- (a) a maximum of 450 tonnes on a daily basis; and
- (b) a maximum of 60,000 tonnes per year.

(6) The *Owner* is approved to store a maximum of 8,500 tonnes of waste at the *Composting Site* at any one time.

(7) All waste and *Amendment Materials* storage at the *Composting Site* is subject to the following limitations:

(a) all unprocessed *Organic Waste* and the *Immature Compost* in various stages of curing and the *Finished Compost* shall be stored within the confines of the *Processing Building*;

(b) the *leaf and yard waste*, the *waste wood*, the *wood waste* and the *Amendment Materials* may be stored outdoors on the paved pad referred to as the *Amendment, Recyclables, and Leaf and Yard Staging Area*, described in documentation listed in the attached Schedule "A";

(c) all *Compost* shall be stored within the confines of the *Processing Building*;

(d) all solid *residual waste (Processing Building)* shall be stored within the confines of the *Processing Building*; and

(e) all solid *putrescible waste* generated through activities not relating to the handling and processing of *Organic Waste* (ie. office, lunch room, etc.) may be stored within the confines of the *Processing Building* and it shall be removed from the *Composting Site* as required in accordance with *O. Reg 347* and the *EPA*.

(8) *Organic Waste* storage duration at the *Composting Site* is limited to the following:

(a) The *Owner* shall ensure that the *Organic Waste*, excluding the *leaf and yard waste*, received at the *Composting Site* is incorporated into active *Composting* process no later than thirty six (36) hours from the time of its receipt;

(b) The *Owner* shall ensure that the *Organic Waste* collected in bags in accordance with restrictions specified in this *Certificate*, is given priority in the processing and transfer to the *Composting* tunnels;

(c) The *Owner* shall ensure that the *leaf and yard waste* storage duration shall not exceed seven (7) calendar days from the time of its receipt;

(d) Notwithstanding provisions of Conditions 54.(8)(a) and (c), above, the *Owner* shall transfer all *Organic Waste* processed in the *Processing Building* into the *Composting* tunnels at the end of the operating day each Friday; and

(e) The *Owner* shall not store the *residual waste (Processing Building)*, at the Site in excess of fourteen (14) days from the date of its generation, or as directed by the *District Manager*.

(9) (a) The *Owner* shall ensure that all outside storage of the *leaf and yard waste*, the *wood waste*, the *waste wood* and the *Amendment Materials* is undertaken in a manner that does not cause an adverse effect or a hazard to the environment or any person; and

(b) If in the opinion of the *District Manager*, the outside storage of the *leaf and yard waste*, the *wood waste*, the *waste wood* and the *Amendment Materials* results in odour complaint(s), the *Owner*, in consultation with the *District Manager* shall undertake appropriate steps, including reducing waste storage duration or the storage method, so that odour complaint(s) are eliminated.

(10) No outside waste storage of material from or for the *Organic Waste Processing Facility* other than the *leaf and yard waste*, the *waste wood*, the *wood waste* and the *Amendment Materials*, is approved under this *Certificate*."

(11) The *Owner* shall ensure that all *wood waste* and *waste wood* that has undergone size reduction at the *Amendment, Recyclables, and Leaf and Yard Staging Area* is segregated from the shredded *leaf and yard waste* and the *Amendment Materials* to prevent contamination of *Organic Waste* and *Amendment Materials* intended for the *Composting Process*.

(12) In the event that *Organic Waste* cannot be processed at the *Composting Site* in accordance with the requirements of this *Certificate*, the *Owner* shall cease accepting additional *Organic Waste* and shall remove all unprocessed *Organic Waste*

from the *Composting Site* in accordance with the procedures outlined in the *WRIC Environmental Emergency Plan*.

(13) All waste removed from the *Composting Site* shall be transferred to a waste disposal site for which a Provisional Certificate of Approval has been issued by the *Ministry* and the site is approved to receive this type and quantity of waste.

55. *Composting Site Security*

(1) The *Owner* shall ensure that all unloading and loading of waste and all *Organic Waste* processing activities at the *Composting Site* are at all times undertaken by *Trained Personnel*.

(2) The *Owner* shall ensure that the *Composting Site* is operated in a safe and secure manner, and that all waste is properly handled, packaged or contained and stored so as not to pose any threat to the general public and the *Composting Site* personnel.

56. *Composting Site Operations*

(1) The *Composting Site* is approved to operate within the following operating hours, subject to limitations of the local municipal by-laws:

Receipt and Removal of Waste from the Composting Site

(a) The *Owner* may only receive *Organic Waste* at the *Composting Site* and ship waste from the *Composting Site* between the hours of 7:00 a.m. and 6:00 p.m. Monday through Friday and between the hours of 8:00 a.m. and 4:00 p.m. on Saturday;

Shipment of Compost from the Composting Site

(b) The *Owner* may only ship *Compost* from the *Composting Site* between the hours of 7:00 a.m. and 6:00 p.m. Monday through Friday and between the hours of 8:00 a.m. and 4:00 p.m. on Saturday;

Processing Within the Processing Building

(c) The *Owner* may process the *Organic Waste* within the confines of the *Processing Building* twenty four (24) hours per day, seven (7) days per week;

Emergency Receipt of Waste

(d) The *Owner* may receive the *Organic Waste* at the *Composting Site* outside of the operating hours specified in sub-condition (a), above, on an emergency basis only;

(e) Within twenty four (24) hours from the emergency receipt of the *Organic Waste*, the *Owner* shall notify, in writing, the *District Manager* during regular business hours or verbally the Spills Action Centre, that the *Organic Waste* was received outside of the approved hours; and

(f) If in the opinion of the *District Manager*, the emergency receipt of the *Organic Waste* results in complaints, following the written notification from the *District Manager*, the *Owner* shall not receive the *Organic Waste* outside of the approved hours, until such time as the deficiencies causing complaints are rectified to the *District Manager's* satisfaction.

(2) *Incoming Waste/Amendment Materials receipt:*

(a) The *Owner* shall ensure that all unloading of the incoming *Organic Waste* at the *Composting Site*, takes place entirely within the confines of the *Processing Building*;

(b) Notwithstanding provisions of Condition 56.(2)(a), the *Owner* may unload the *leaf and yard waste*, the *wood waste*, the *waste wood* and the *Amendment Materials* outdoors on the paved pad referred to as the Amendment, Recyclables, and Leaf and Yard Staging Area, described in documentation listed in the attached Schedule "A";

(c) The *Owner* shall ensure that all loads of the incoming *Organic Waste*, excluding the *leaf and yard waste*, are accompanied by documentation containing the results of the required waste characterization as required by Condition 58.(2) or the identification of a pre-approved generator of waste as required by Conditions 58.(3)(b)

and 58.(3)(c);

(d) *Trained Personnel* shall inspect the required documentation prior to acceptance of the incoming *Organic Waste* at the *Composting Site*;

(e) The *Organic Waste* that has not been characterized in accordance with this *Certificate* or that is not accompanied by the required documentation shall not be accepted at the *Composting Site*;

(f) *Trained Personnel* shall visually inspect all incoming *Organic Waste* to ensure that only approved waste type is accepted at the *Composting Site*;

(g) The *Owner* shall only accept the incoming *Organic Waste* that is delivered in vehicles that have been approved by the *Ministry*, as required; and

(h) In the event that *Organic Waste* cannot be processed at the *Processing Building*, the portion of *Organic Waste* originating from the geographical area of the City of Guelph may be accepted at the *Waste Transfer Station* and may be stored for a maximum of 24-hours.

(3) *Rejected Waste (Organic Composting Facility) handling:*

(a) In the event that *Rejected Waste* is inadvertently accepted at the *Composting Site*, the *Owner* shall ensure that all *Rejected Waste*:

- (i) is stored in a way that ensures that no adverse effects result from such storage;
- (ii) is segregated from all other *Organic Waste*;
- (iii) is handled and removed from the *Composting Site* in accordance with *O.Reg. 347* and the *EPA*; and
- (iv) is removed from the *Composting Site* within three (3) days of its receipt or as acceptable to the *District Manager*;

(b) In the event that *Rejected Waste* is inadvertently accepted at the *Composting Site*, a record shall be made in the daily log book or in an electronic file of the reason why the waste was rejected and of the origin of the waste, if known; and

(c) i) *Rejected Waste* may be transferred to the *Waste Transfer Station* in a covered container; and

ii) In the event that *Rejected Waste* is transferred to the *Waste Transfer Station*, it shall be handled on a priority basis and removed from the *Waste Transfer Station* on the same day that the transfer of *Rejected Waste* occurred on.

(4) *residual waste (Processing Building) handling:*

(a) Subject to Condition 56 (4) (b), the *Owner* shall ensure that storage of all solid *residual waste (Processing Building)* resulting from processing of the *Organic Waste* at the *Composting Site* is undertaken within the confines of the *Processing Building*;

(b) i) *residual waste (Processing Building)* may be transferred to the *Waste Transfer Station* in a covered container; and

ii) In the event that *residual waste (Processing Building)* is transferred to the *Waste Transfer Station*, it shall be handled on a priority basis and removed from the *Waste Transfer Station* on the same day that the transfer of *residual waste (Processing Building)* occurred on.

(5) *Waste Processing:*

(a) The *Owner* shall ensure that all *Organic Waste* preprocessing, other than the activities approved under

Condition 56.(5)(c)(i), all *Organic Waste Composting*, all *Immature Compost* screening and curing and all *Finished Compost* screening are undertaken within the confines of the *Processing Building*;

(b) The *Owner* shall segregate the *Immature Compost* at various stages of curing until all *Compost* quality criteria specified in this *Certificate* are tested for and met; and

(c) (i) *Brush*, *Clean Wood* and clean wood products, *wood waste* and *waste wood* may undergo size reduction by shredding, grinding and/or chipping using *Ministry* approved equipment on the outdoor paved pad referred to as the *Amendment, Recyclables, and Leaf and Yard Staging Area*, described in documentation listed in the attached Schedule "A"; and

(ii) The *Owner* shall take precautions to ensure that size reduction activities do not cause a nuisance or impact including by limiting the hours of operation and/or refraining from carrying out size reduction during days with unfavourable meteorological conditions.

(6) Odour Control:

(a) The *Owner* shall maintain a negative air pressure atmosphere within the *Processing Building*, as compared to the ambient atmospheric pressure, at all times;

(b) The *Owner* shall ensure that the outside loading bay doors into the *Processing Building* are kept fully closed at all times except to permit the entry or exit of maintenance and waste and *Compost* transportation vehicles;

(c) The *Owner* shall ensure that the outside loading bay doors of the *Receiving Area* of the *Processing Building* are equipped with the air curtains, as described in the documentation of the attached Schedule "A", and that these air curtains are installed and maintained in accordance with the recommendations of the equipment manufacturer;

(d) The *Owner* shall ensure that, at all times, the air from the *Processing Building* is exhausted through an appropriate *Air Pollution Control Equipment* approved by the *Ministry* in the *Certificate of Approval (Air/Noise)*;

(e) If in the opinion of the *District Manager*, the fugitive air emissions originating from the *Processing Building* result in odour complaint(s), the *Owner* shall implement modifications to the *Processing Building* as proposed in the *WRIC Environmental Emergency Plan*, within the time frame acceptable to the *District Manager*;

(f) The *Owner* shall ensure that no equipment handling *Organic Waste* or their storage containers are kept outside, unless they have been washed to prevent odours; and

(g) (i) Prior to the receipt of *Organic Waste* at the *Composting Site*, the *Owner* shall undertake an appropriate test to confirm the integrity of the *Processing Building* containment;

(ii) This test shall be undertaken in accordance with the test protocol prepared in the consultation with and approved by the *District Manager*; and

(iii) This test shall be repeated as directed or agreed by the *District Manager*.

57. Equipment and Composting Site Inspections & Maintenance

(1) Prior to receipt of any *Organic Waste* at the *Composting Site*, the *Owner* shall prepare a comprehensive written inspection program which includes inspections of all aspects of the *Composting Site's* operations including the following:

(a) *Processing Building* including all outside bay doors, the *Air Pollution Control Equipment* and the presence of rust on metal surfaces within the confines of the *Processing Building*;

- (b) on-*Site* roads for presence of leaks and drips from the waste delivery trucks;
- (c) presence of excessive fugitive dust emissions from the on-*Site* roads;
- (d) on and off-*Site* litter; and
- (e) presence of vector and vermin.

(2) The inspections are to be undertaken daily by *Trained Personnel* in accordance with the inspection program to ensure that all equipment and facilities at the *Composting Site* are maintained in good working order at all times and that no negative impacts are occurring as a result of the *Organic Waste* management operations at the *Composting Site*. Any deficiencies detected during these regular inspections must be corrected as soon as reasonable.

(3) The *Owner* shall develop and implement a preventative maintenance program for all equipment associated with the processing and managing of *Organic Waste* at the *Composting Site* and with control of odour and dust emissions. The preventative maintenance program shall be maintained up-to-date and shall be available for inspection by a *Provincial Officer* upon request.

58. Quality Criteria, Testing & Monitoring

(1) Cross-Contamination Prevention

(a) The *Owner* shall ensure that the incoming *Organic Waste* is kept separate and does not come in contact with the *Immature Compost* / the *Finished Compost* and the *Compost* except where the *Immature Compost* / the *Finished Compost* and the *Compost* are being fed back into the *Composting* process; and

(b) The *Owner* may use the equipment utilized in processing of the incoming *Organic Waste* to process the *Immature Compost* / the *Finished Compost* and the *Compost* provided that the equipment has been cleaned, in accordance with the procedures described in documents listed in the attached Schedule "A", to prevent the *Immature Compost* / the *Finished Compost* and the *Compost* from being contaminated by the incoming *Organic Waste*.

(2) Quality Control Monitoring of the *Organic Waste* at the generator site:

(a) Prior to being accepted at the *Composting Site* for the first time, the incoming *Organic Waste* from a new source/stream shall be characterized in accordance with the *Ministry's* regulatory requirements for sampling and testing to ensure that the incoming *Organic Waste* complies with the quality criteria specified in this *Certificate*. The incoming *Organic Waste* may be considered a pre-approved waste source/stream once the incoming *Organic Waste* meets the required quality criteria and has been classified as such by the *Owner*; and

(b) The incoming *Organic Waste* shall be re-characterized following any process changes, operational issues or other factors that may affect the quality of the incoming *Organic Waste* from the pre-approved source/stream.

(3) Quality Control Monitoring of the *Organic Waste* at the *Composting Site*:

(a) The *Owner* shall not accept for *Composting* any individual *Organic Waste* source or an additive necessary for *Composting* that exceeds the following quality parameters set out in "Schedule B" of this *Certificate*:

- (i) trace elements; and
- (ii) organic chemicals;

(b) (i) Notwithstanding requirements from Condition 58.(2), the *Owner* shall conduct quality control monitoring of the incoming *Organic Waste* from each source/stream, except the *leaf and yard waste*; and

(ii) The *Owner* sample and analyze the incoming *Organic Waste* weekly; and

(c) (i) For the incoming *Organic Waste* from a particular source/stream with consistent quality as demonstrated through a minimum of four (4) analytical events spaced over a minimum of four (4) weeks, the *Owner* may reduce the sampling frequency to once every two (2) months; and

(ii) A minimum of seven (7) business days prior to the change in the *Organic Waste* sampling frequency, as permitted by Condition 58.(3)(b)(ii), the *Owner* shall submit a written notification of the proposed change to the *District Manager*.

Compost Quality Criteria

(4) The *Finished Compost* is considered to be *Compost* when it meets the following *Compost* quality criteria:

- (a) *Compost* quality criteria set out in Schedule "B" of this *Certificate*; and
- (b) curing duration of a minimum of twenty one (21) days and compliance with one (1) of the following three
- (3) maturity criteria:
 - (i) the respiration rate is less than, or equal to, 400 milligrams of oxygen per kilogram of volatile solids (or organic matter) per hour; or
 - (ii) the carbon dioxide evolution rate is less than, or equal to, 4 milligrams of carbon in the form of carbon dioxide per gram of organic matter per day; or
 - (iii) the temperature rise of the *Compost* above ambient temperature is less than 8°C.

Quality Control Monitoring of Finished Compost

(5) As a minimum, the *Owner* shall conduct quality control monitoring of the *Finished Compost* as follows:

- (a) a composite sample, consisting of a minimum of ten (10) representative grab samples, shall be collected for every 500 tonnes of the *Finished Compost* produced during the first four (4) months of operation;
- (b) following the first four (4) months of operation, a composite sample, consisting of a minimum of ten (10) representative grab samples, shall be collected every two (2) months representing all *Compost* generated within the preceding sixty (60) days or every 5,000 tonnes of the *Finished Compost*, whichever comes first;
- (c) if non-compliance with the *Compost* quality criteria has taken place during three (3) consecutive sampling events, the *Owner* shall sample and test the *Finished Compost* in accordance with Condition 58.(5)(a) until compliance with the *Compost* criteria is demonstrated again; and
- (d) all composite samples shall be analyzed for the parameters listed in Schedule "B".

Enhanced Pathogen Testing

(6) (a) As a minimum, the *Owner* shall conduct an enhanced pathogen quality control monitoring of the *Finished Compost* as follows:

- (i) a composite sample, consisting of a minimum of ten (10) representative grab samples, shall be collected and tested for every 500 tonnes of the *Finished Compost*; and
- (b) Prior to any change in the pathogen testing program, the *Owner* shall submit a minimum of one (1) year of the testing data that demonstrates compliance with the pathogens *Compost* quality criteria to the *District Manager*. This testing data shall be cross-referenced with the pasteurization temperature monitoring data required to be collected in Condition 58.(10).

Sampling And Testing Methods

(7) All sampling and testing required in this *Certificate* for the purpose of verifying compliance with the *Compost* quality criteria from Condition 58.(4) shall be undertaken in compliance with the document entitled "National Standard of Canada CAN/BNQ 0413-200/2005 Organic Soil Conditioners – Composts", dated 2005, as amended.

Non-compliance with Compost Quality Criteria

(8) (a) The *Finished Compost* is classified as waste until sampling/testing required by this *Certificate* demonstrates that all *Compost* quality criteria specified in this *Certificate* are met;

(b) (i) The *Finished Compost* that does not meet the pathogen criteria from Schedule "B" and/or non-biodegradable matter criteria from Condition 58.(4) shall be moved back to the aerobic *Composting* tunnels for re-processing;

(ii) Should the *Finished Compost* consistently exceed the pathogen criteria set out in Schedule "B", as demonstrated by three (3) sampling/testing events, the *Owner*, in consultation with the *District Manager*, shall implement appropriate modifications to the *Composting* process to ensure consistent destruction of pathogens;

(iii) The *Finished Compost* that does not meet the maturation criteria from Condition 58.(4) shall be re-tested and shall not be removed from the Maturation Area of the *Processing Building* until the maturation criteria are met;

(iv) The *Finished Compost* that does not meet the trace elements and/or organic chemicals criteria from Schedule "B" shall be kept segregated from all other waste and from the *Compost* and shall be handled as waste; and

(v) The *Finished Compost* that continues to be classified as waste shall be handled and be disposed of in accordance with *O. Reg. 347* and the *EPA*.

Process Monitoring

(9) The *Owner* shall ensure that the following process parameters are monitored:

- (a) temperature of the *Composting Organic Waste* in the *Composting* tunnels, as proposed in documentation in the attached Schedule "A";
- (b) temperature of the headspace air in the *Composting* tunnels, as proposed in documentation in the attached Schedule "A";
- (c) inlet air temperature;
- (d) outlet air temperature;
- (e) relative humidity in the *Composting* tunnels;
- (f) air flow into the tunnels;
- (g) oxygen content in the air; and
- (h) temperature of the *Immature Compost* in the curing piles.

Compliance With *Composting* Process Operating Parameters

(10) (a) The *Owner* shall ensure that the *Organic Waste Composting* in the *Composting* tunnels, is maintained at a minimum pasteurization temperature of 55°C for a minimum of seventy two (72) hours, in accordance with the documentation listed in attached Schedule "A", to ensure complete inactivation of pathogens in the *Composting Organic Waste*;

(b) As a minimum, two (2) temperature probes shall monitor the required pasteurization temperature within the *Composting Organic Waste* and three (3) temperature probes shall monitor the headspace air temperature of each *Composting* tunnel;

(c) The pasteurization temperature measurements within the *Composting Organic Waste* must be taken one (1) metre inside the *Composting* stockpile mass; and

(d) Should temperature monitoring show that the required pasteurization temperature has not been achieved, the *Composting* process must be continued until the above requirement has been met.

Temperature Monitoring Within the Curing Stockpiles

(11) As a minimum, the *Owner* shall monitor the temperature of the *Immature Compost* within the curing stockpiles weekly. The measurements shall be taken one (1) metre inside the curing stockpile mass and at points sufficient to provide a temperature profile of the *Immature Compost*.

(12) The *Owner* shall not start the curing process duration countdown until the temperature monitoring required by Condition 58.(11), above, demonstrates that the temperature of the *Immature Compost* in the Maturation Area does not exceed 50 °C.

Odour Monitoring Program

(13) A minimum of ninety (90) days prior to any *Organic Waste* being received at the *Composting Site*, the *Owner* shall prepare and submit to the *District Manager* an Odour Monitoring Program. The Odour Monitoring Program shall be designed to detect and identify any odours originating from the operation of the *Composting Site* which may cause nuisance impacts. The Odour Monitoring Program shall include a description of the equipment and inspection protocol to ensure that negative pressure is maintained at all times throughout the *Processing Building*. The Odour Monitoring Program shall be implemented after written concurrence from the *District Manager* has been received. In the future, should it be necessary to modify the approved Odour Monitoring Program written authorization of the *District Manager* is required.

59. Nuisance Impact Control & Housekeeping

(1) The *Owner* shall ensure that all vehicles that have delivered *Organic Waste* to the *Composting Site* are not leaking or dripping waste when leaving the *Composting Site*.

(2) The *Owner* shall ensure that the exterior of all trucks delivering *Organic Waste* to the *Composting Site* is cleaned prior to leaving the *Composting Site*, as needed, to prevent odours. Truck washing shall occur only in the dedicated wash down area of the *Processing Building*.

(3) Should the *Owner* become aware that the truck(s) delivering waste to the *Composting Site* have leaked waste or wastewater on the municipal roadways, the *Owner* shall immediately submit a written and/or verbal notification to the owner of the leaking vehicle(s).

(4) The *Owner* shall:

- (a) take all practical steps to prevent the escape of litter from the *Composting Site*;
- (b) pick up litter around the *Composting Site* on a daily basis, or more frequently if necessary; and
- (c) if necessary, erect litter fences around the areas causing a litter problem.

(5) Prior to the receipt of any *Organic Waste* at the *Composting Site*, the *Owner* shall:

- (a) implement necessary housekeeping procedures to eliminate sources of attraction for vermin and vectors; and
- (b) hire a qualified, licensed pest control professional to design and implement a pest control plan for the *Composting Site*. The pest control plan shall remain in place, and be updated from time to time as necessary, until the *Composting Site* has been closed and this *Certificate* has been revoked.

(6) The *Owner* shall ensure that all *Composting Site* roads and operations / yard areas are regularly swept / washed to prevent dust impacts from the *Composting Site*.

(7) The *Owner* shall store all *Compost* within the confines of the *Processing Building*.

(8) The *Owner* shall regularly clean and disinfect, if necessary, all equipment and storage areas that are used to handle and process waste at the *Composting Site*.

60. Operations Manual & Staff Training

(1) The *Owner* shall prepare an Operations Manual for use by the *Composting Site* personnel. The Operations Manual shall contain the following:

- (a) outline the responsibilities of the *Composting Site* personnel;
- (b) personnel training protocols;

- (c) waste receiving and screening procedures;
- (d) unloading, handling and storage procedures;
- (e) waste processing and process monitoring procedures;
- (f) sampling and testing procedures;
- (g) *Composting Site* inspections and recording procedures;
- (h) the emergency response procedures; and
- (i) procedure for handling complaints as described in the *Certificate of Approval (Air/Noise)* for this *Composting Site*.

(2) A copy of this Operations Manual shall be kept at the *Composting Site*, must be accessible to personnel at all times and must be updated, as required.

(3) (a) All employees of the *Composting Site* shall be trained with respect to the following, as it is relevant to the employee's position:

- (i) terms, conditions and operating requirements of this *Certificate*;
- (ii) operation and management of the *Site*, or area(s) within the *Composting Site*, as per the specific job requirements of each individual employee, and which may include procedures for receiving, screening and identifying waste, refusal, handling, processing and temporarily storing wastes;
- (iii) an outline of the responsibilities of the *Composting Site* employees including roles and responsibilities during emergency situations;
- (iv) the *WRIC Environmental Emergency Plan*, including exit locations and evacuation routing, and location of relevant equipment available for emergency situations;
- (v) environmental, and occupational health and safety concerns pertaining to the wastes to be handled;
- (vi) emergency first-aid information;
- (vii) relevant waste management legislation and regulations, including the *EPA* and *O. Reg. 347*;
- (viii) recording procedures as required by this *Certificate*;
- (ix) equipment and *Composting Site* inspection procedures, as required by this *Certificate*;
- (x) nuisance impact control & housekeeping procedures, as required by this *Certificate*; and
- (xi) procedures for recording and responding to public complaints as required by the *Certificate of Approval (Air/Noise)* for this *Composting Site*.

(4) The *Owner* shall ensure that all employees are trained in the requirements of this *Certificate* relevant to the employee's position:

- (a) upon commencing employment at the *Composting Site* in a particular position;
- (b) whenever items listed in Condition 60.(1) are changed; or
- (c) during the planned three (3)-year refresher training.

61. *Environmental Emergency Plan (Composting Facility)*

(1) The emergency response and contingency planning measures for the *Composting Site* that are required by Condition 45(a)(vi) shall include, as a minimum, the following information:

- (a) procedures and actions to be taken should the incoming *Organic Waste* not meet the quality criteria specified by this *Certificate*;
- (b) procedures and actions to be taken should the composted *Organic Waste* fail to meet the compost quality criteria specified by the *Certificate*;
- (c) procedures and actions to be taken should the occurrence of the complaints require the *Owner* to suspend the waste processing activities at the *Composting Site*;
- (d) modifications to the *Processing Building* and the implementation schedule should the fugitive odour emissions originating from the *Processing Building* result in odour complaints;
- (e) procedures and actions to be taken should a long term power failure at the *Composting Site* or a suspension of waste processing activities require a phased *Re-Start-up* of operations; and
- (f) procedures to be taken should it be necessary for the *Owner* to remove the unprocessed *Organic Waste* from the *Composting Site*.

(2) The emergency response and contingency planning measures for the *Composting Site* that are required by Condition 45(a)(vi) shall be prepared in consultation with the *District Manager*, the local Municipality and the Guelph Fire Department.

(3) As is required by Condition 45(c) of this Certificate, no waste shall be received at the *Composting Site* for storage or processing until the *District Manager* provides a written concurrence to the Plan.

62. Emergency Response and Reporting

(1) The *Owner* shall immediately take all necessary measures, as outlined in the applicable *WRIC Environmental Emergency Plan*, to handle the emergency situations occurring at the *Composting Site* and/or *Re-Start-up* of operations.

(2) The *Owner* shall ensure that the equipment and materials outlined in the applicable *WRIC Environmental Emergency Plan* are immediately available at the *Composting Site* at all times and are in a good state of repair and fully operational.

(3) The *Owner* shall ensure that all *Composting Site* personnel are fully trained in the use of the equipment and materials outlined in the applicable *WRIC Environmental Emergency Plan*, and in the procedures to be employed in the event of an emergency.

(4) All Spills, as defined in the *EPA*, shall be immediately reported to the **Ministry's Spills Action Centre at 1-800-268-6060** and shall be recorded in the log book as to the nature and cause of the spill, and the action taken for clean-up, correction and prevention of similar future occurrences.

(5) Should a Spill, as defined in the *EPA*, occur at the *Composting Site*, in addition to fulfilling the requirements from the *EPA*, the *Owner* shall submit to the *District Manager*, a written report within three (3) calendar days outlining the nature of the Spill, remedial measure taken and the measures taken to prevent future occurrences at the *Composting Site*.

63. Records Keeping

Daily Activities

(1) The *Owner* shall maintain an on-Site written or digital record of activities undertaken at the *Composting Site*. All measurements shall be recorded in consistent metric units of measurement. The record shall include, as a minimum, the following information:

- (a) date, quantity, source and type of the *Organic Waste*, (including any analytical data), received at the *Composting Site*;
- (b) date, quantity, type and the destination of the *Compost*, transferred from the *Composting Site*;
- (c) date, quantity, type and the destination of the *residual waste*, transferred from the *Composting Site* for final disposal;
- (d) date, quantity, type and the destination of the *Rejected Waste*, transferred from the *Composting Site*;
- (e) pre-Composting and post-Composting processing activities undertaken at the *Composting Site*;
- (f) tunnel loading / unloading activities and number of *Composting* tunnels actively undergoing *Composting*;
- (g) amount of the *Immature Compost* transferred from the *Composting* tunnels to the curing area;
- (h) housecleaning activities, including litter collection, floor and equipment washing;
- (i) loss of negative pressure within the *Processing Building* and the activities undertaken to restore the required negative pressure; and
- (j) results of the hydrogen sulphide and ammonia monitoring required by the *Certificate of Approval (Air/Noise)* for this *Composting Site*.

Monitoring Records

(2) (a) The *Owner* shall establish and maintain a written or digital record of all monitoring activities at the *Composting Site* as required by this *Certificate* and the *Certificate of Approval (Air/Noise)* for this *Composting Site*; and

- (b) The *Owner* shall establish and maintain a tracking system that tracks the pasteurization temperature measurements from the *Composting* tunnels and the testing results from the enhanced pathogen testing required by this *Certificate*. This tracking system shall include, as a minimum, the following information:

- (i) identification of the *Composting* tunnel used for the purpose of the *Organic Waste* pasteurization;
- (ii) the in-waste and the headspace temperature during the *Composting Organic Waste* pasteurization cycle, as required by this *Certificate*; and
- (iii) the results of the pathogen testing, as required by this *Certificate*.

Emergency Situations

(3) The *Owner* shall maintain an on-*Site* written or digital record of the emergency situations. The record shall include, as a minimum, the following:

- (a) the type of an emergency situation;
- (b) description of how the emergency situation was handled;
- (c) the type and amount of material spilled, if applicable;
- (d) a description of how the spilled material was cleaned up and stored, if generated; and
- (e) the location and time of final disposal, if applicable.

Inspections

(4) The *Owner* shall maintain an on-*Site* written or digital record of inspections as required by this *Certificate*. The record shall include, as a minimum, the following:

- (a) the name and signature of the *Trained Personnel* that conducted the inspection;
- (b) the date and time of the inspection;
- (c) the list of any deficiencies discovered;
- (d) the recommendations for remedial action; and
- (e) the date, time and description of actions taken.

Training

(5) The *Owner* shall maintain an on-*Site* written or digital record of training as required by this *Certificate*. The record shall include, as a minimum, the following:

- (a) date of training;
- (b) name and signature of employee who has been trained; and
- (c) description of the training provided.

Sampling & Testing Records

(6) The *Owner* shall establish and maintain a written or digital record of all sampling and testing activities at the *Composting Site*. This record shall include, as a minimum, the following information:

- (a) waste sampled, sample collection locations and volume collected;
- (b) day and time of collection;
- (c) sample handling procedures;
- (d) parameters tested for and the resulting concentrations;
- (e) name of the laboratory facility conducting the testing; and
- (f) conclusions drawn with respect to the results of the testing.

Complaints Response Records

(7) The *Owner* shall establish and maintain a written or digital record of complaints received and the responses made as required by the *Certificate of Approval (Air/Noise)* for this *Composting Site*.

Annual Report

(8) By March 31st following the end of each operating year, the *Owner* shall prepare and submit to the *District Manager*, an Annual Report summarizing the operation of the *Composting Site* covering the previous calendar year. This Annual Report shall include, as a minimum, the following information:

- (a) a monthly mass balance of the *Organic Waste* received, processed and transferred from this *Composting Site*, including waste type, quantity, sources and/or disposal destinations;
- (b) an annual summary mass balance of the *Organic Waste*, the *wood waste*, the *waste wood* and the *Amendment Material* received, processed and transferred from this *Composting Site*, including waste type, quantity, sources and/or disposal destination;
- (c) an annual summary of any deficiencies, items of non-compliance or process aberrations that occurred at this *Composting Site* and any remedial / mitigative action taken to correct them;
- (d) a descriptive summary of any spills, *incidents* or other emergency situations which have occurred at this *Composting Site*, any remedial measures taken, and the measures taken to prevent future occurrences;
- (e) a summary describing any *Rejected Waste* including quantity, waste type, reasons for rejection and origin of the *Rejected Waste*;
- (f) the quantity, by weight and volume of *Compost* and residues produced and the quantity of *Compost* and residues removed from the facility;
- (g) any environmental and operational problems, that could negatively impact the environment, encountered during the operation of the *Composting Site* or identified during the facility inspections and any mitigative actions taken;
- (h) any changes to the *WRIC Environmental Emergency Plan*, the *Operations Manual* or the *Closure Plan* that have been approved by the *Director* since the last *Annual Report*;
- (i) any recommendations to minimize environmental impacts from the operation of the *Composting Site* and to improve *Composting Site* operations and monitoring programs in this regard;
- (j) a summary of any complaints received and the responses made, as required by the *Certificate of Approval (Air/Noise)* for the *Composting Site*;
- (k) a description of the *Compost* distribution/markets;
- (l) conclusions from the enhanced pathogen testing as the results relate to the pasteurization temperature monitoring; and
- (m) a condition-by-condition analysis of compliance with all Conditions of this *Certificate*.

64. Wastewater Management

(1) The *Owner* shall ensure that all wastewater generated within the *Processing Building* is:

- (a) contained within the *Processing Building* and the storage tanks approved by this *Certificate*;
- (b) collected in the sufficiently designed wastewater storage facilities; and
- (c) either utilized in the process or discharged to the sanitary sewer or disposed of at a *Ministry* approved site.

(2) The *Owner* shall regularly empty, clean and disinfect if necessary, all sumps or wastewater storage/holding areas that are used to contain and collect the wastewater generated within the *Processing Building*.

(3) The *Owner* shall ensure that only uncontaminated water is used to irrigate the *Composting Organic Waste* after the *Composting Organic Waste* has completed the pasteurization phase of the *Composting Process*.

(4) The *Owner* shall ensure that the impermeable membrane under the *Processing Building* is installed in accordance with the manufacturer specifications to ensure its integrity and effectiveness as a wastewater leak barrier.

65. Closure Plan

(1) (a) The *Owner* shall submit, for approval by the *Director*, a written *Closure Plan* for the *Composting Site* at least six (6) months prior to closure of the *Composting Site*. This plan shall include, as a minimum, a description of the work that will be done to facilitate closure of the *Composting Site* and a schedule for completion of the required work; and

- (b) Within ten (10) days after closure of the *Composting Site*, the *Owner* shall notify the *Director*, in writing, that the *Composting Site* is closed and that the *Composting Site Closure Plan* has been implemented.

66. Ministry's Supplementary Requirements

Unless otherwise specified by the conditions of this *Certificate*, the *Owner* shall comply with the requirements of the *Ministry's* document entitled "Interim Guidelines for the Production and Use of Aerobic Compost in Ontario", dated November 2004, as amended.

67. Q. LIMITED OPERATIONAL FLEXIBILITY – Design, Operation and Management

(1) The *Owner* may make *Modifications* to the *Material Recovery Facility (MRF)*, and the *Waste Transfer Station* and the Design and Operations Reports for the *Material Recovery Facility* and the *Waste Transfer Station* in accordance with this *Certificate* and the pre-approved changes of the *Operating Envelope* as described in the *Engineer's Report* that is identified in Item 52 of Schedule "A".

(2) For greater certainty, the follow are *Modifications* that would be allowed at the *MRF* or the Transfer Station:

1) The following *Modifications* to the *infrastructure*; i) replacement of truck doors; ii) the installation of a coverall building to house a maximum of 1000 tonnes of recyclable wastes; iii) movement or *Modifications* to the staging area for recyclable materials; iv) additional outdoor storage of recyclable materials in staging area on an asphalt pad; v) landscaping changes; vi) on-*Site* roadway changes; vii) relocation of scales; viii) Installation of additional parking stalls and/or rearrangement of parking areas; ix) Installation or *Modifications* to lighting; x) Construction of a facility for the collection and distribution of reusable items xi) installation or *Modifications* to signage; xii) changes to improve the working environment for the employees within the *MRF* or Transfer Station such as installation or improvements to heating units, air conditioning units, air handling units, odour control systems or dust control systems as long as such changes would occur within the building and would not adversely effect the surroundings environment and would not require an application for a Section 9 Certificate of Approval; and

2) The ability to make *Modifications* to the *Site's* processing operations and equipment to improve the efficiency and effectiveness of the operation of the Waste Transfer Site or the Municipal Recycling Facility such as:

- i) *Modifications* or repairs to the building and its facilities including walls, floors, pits, roof, doors, plumbing, and electrical;
- ii) The installation or replacement of recycling or transfer plant equipment such as balers, conveyors, separation equipment, and compactors;
- iii) Addition or replacement of mobile equipment for use of the *Waste Transfer Station* or the Municipal Recycling Facility; and
- iv) relocation and modification of maintenance and waste processing operations inside the building used for the *Waste Transfer Station* or the Municipal Recycling Facility.

(3) For greater certainty, the following *Modifications* to the *Site* are not permitted as part of the *Operating Envelope*:

- i) Any changes to the *MHSW*;
- ii) Any changes to the *Organic Waste Processing Facility*;
- iii) *Modifications* to the type of waste accepted at the *Site*;
- iv) *Modifications* to the storage capacity of the *Waste Transfer Station* or the Municipal Recycling Facility;
- v) extending the *Site* onto adjacent lands;
- vi) changing the function of the approved operations of the *MRF* and the *Waste Transfer Station*;
- vii) accepting hazardous waste, liquid industrial waste, or municipal or industrial sewage;
- viii) changes to the *Site* not identified in the *Engineer's Report*; or
- ix) changes to the *Site* that have requirements under the Environmental Assessment Act.

(4) The *Owner* shall provide a written notification to the *District Manager* and *Director* at least fifteen (15) days prior to

making *Modifications* to the *Site* in accordance with 67(1) At a minimum the notification shall include the following:

- (1) a description of the change to the operations of the *Site* including an assessment of the anticipated environmental effects of the *Modifications*;
 - (2) updated versions of, or amendments to, all relevant technical documents required by this *Certificate* that are affected by the Modification including but not necessarily limited to an updated *Site Plan* drawing, Design and Operations Report, the Emergency Response, Spill Reporting and Contingency Plan and the Closure Plan including a document control record that tracks all changes that were made to the documents; and
 - (3) a statement signed by the *Owner* and an *Independent Professional Engineer* declaring that the *Modifications* made to the *Site* are done so in accordance with the *Operating Envelope*, are consistent with industry's best management practices and are not likely to result in an adverse effect.
- (5) Notwithstanding Condition 67(4), if the *Modifications* made to the *Site* require an amendment to the *WRIC Environmental Emergency Plan*, the *Owner* shall obtain the authorization of the local fire services authority prior to instituting the *Modifications*. A copy of the approved plan must be forwarded to the *District Manager* within fifteen (15) days of such approval.

68. Design and Operations Report

- (1) The Design and Operations Reports shall be retained at the *Site*; kept up to date; and be available for inspection by *Ministry* staff. The Design and Operations Report shall contain at a minimum the information specified for a waste processing site as described in the most recent version of the *Ministry* publication "Guide for Applying for Approval of Waste Disposal Site".
- (2) The *Owner* may amend the *Current Design and Operations Reports* for the *MRF* and the *Waste Transfer Station* in accordance with Condition 67(1) of this *Certificate*.
- (3) Changes to the Design and Operations Reports, with the exception of changes made under Condition 67(1), shall be submitted to the *Director* for approval.
- (4) If the *Owner* has made *Modifications* to the *Site* in accordance with Condition 67(1), the *Owner* shall ensure that the *Site* is built, operated and maintained in accordance with the *current Design and Operations Report*.
- (5) The *Owner* shall maintain a document control record at the *Site* that tracks all changes that are made to the Design and Operations Report.
- (6) The *Owner* may accept any solid Municipal Waste at the *Site* if the *Owner* has received written notification from a *Ministry* employee appointed for the purposes of Section 31 of the EPA, including the *Director* and *District Manager*, advising the *Owner* that the waste may be received to alleviate an emergency described in Section 31 of the EPA.

SCHEDULE "A"

This Schedule "A" forms part of this Certificate.

1. Applications for a Certificate of Approval for a Waste Disposal Site (Processing & Transfer) dated August 27, 1991, September 10, 1993, and January 2, 2007 and supporting documentation submitted therewith.
2. Applications for Certificate of Approval for a Waste Disposal Site (Processing & Transfer) submitted on April 4, 2008, February 24, 2009, October 22, 2009 and January 12, 2010 by Bill Shields, Supervisor, Governance & Compliance, City of Guelph Solid Waste Resources Division, including the Report, dated October 2009 and prepared by Golder Associates Ltd. and all other supporting documentation.
3. Applications for a Provisional Certificate of Approval for a Waste Disposal Site dated January 30, 2002 and February 1, 2005 signed by Cathy Smith, Manager, Solid Waste Resources Division, Corporation of the City of Guelph and other

supporting documentation.

4. Application for a Provisional Certificate of Approval for a Waste Disposal Site signed by Janet Laird, Director of Environmental Services, City of Guelph, dated February 17, 2006.
5. Plume Visibility Study, Wet/Dry Processing Facility, Guelph, Ontario dated November 20, 1991.
6. Evaluation of Potential Birds Hazards to Aircraft Safety Associated with the City of Guelph's Proposed Wet/Dry Recycling Facility Adjacent to the Guelph Air Park, dated March 5, 1992.
7. Letter from Mr. Dean Wyman, Manager, Solid Waste Resources Division, City of Guelph, to EAAB, dated June 12, 2006 requesting amendments to Certificate of Approval No. 9241-5DTRD9 and providing the rationale for the proposed amendments.
8. Letter to E. Gill, Ministry of Environment from K.J. Bull, City of Guelph, dated December 18, 1992 and additional information submitted therewith including the document "City of Guelph Hazardous Waste Facility Operation Manual" dated December 1992.
9. Letter and supporting documentation dated April 4, 1994, to Mr. H. M. Wong, Ontario Ministry of Environment and Energy from Mr. Richard Cave, R. Cave and Associates Ltd.
10. Letter date March 31, 1995 to the Ministry of Environment and Energy, Cambridge *District Office* from R.D. Funnell, P.Eng., City Engineer, re: Wet-Dry Recycling Centre - Annual Report.
11. Letter dated May 16, 1995 to Dave Ross, Ministry of Environment and Energy, from R.D. Funnell, P.Eng., City Engineer, RE: City of Guelph's Application to Amend Provisional Certificate of Approval No. A170128 for Waste Disposal Site (Processing) with the attached Application for an Approval of Waste Disposal Site dated May 17, 1995.
12. Letter dated December 30, 1996, to Mr. H. Wong, Ministry of Environment and Energy, West Central Region from R.D. Funnell, P.Eng., Director of Works, RE: Amendments to Certificate of Approval (Waste Disposal) No. A170128 for the City of Guelph's Wet-Dry Recycling Centre, including application dated December 31, 1996 and supporting documentation.
13. Letter dated July 14, 1997 to Mr. Hardy Wong, Director, West Central Region from Jutta Siebel, Wet-Dry Residential Coordinator, RE: City of Guelph's Wet-Dry Recycling Centre Certificate of Approval No. A170128.
14. Letter and application from Janet Laird, Manager of Solid Waste Services, City of Guelph to G. Carpentier, MOE dated April 3, 1998 re: Amendment to Certificate of Approval A170128.
15. Letter from Jutta Siebel, Wet-Dry Residential Coordinator, City of Guelph to G. Carpentier, dated May 4, 1998 re: Public Consultation and Analytical Data.
16. The covering letter from Ms. J. Laird, Manager of Solid Waste Services, City of Guelph to Mr. G. Carpentier, MOE, dated May 27, 1998 with attachments:
 - (a) Application for approval of a waste disposal site.
 - (b) Public consultation process for amendments to Certificate of Approval No. A170128.
17. The covering letter from Ms. J. Laird, to Mr. G. Carpentier, dated June 19, 1998 with attachments:
 - (a) Waste acceptance policy at the wet-dry recycling centre;
 - (b) Section 2.9 "Penalties for Improper Disposal" from the "A Guide for Solid Waste Disposal at Eastview Sanitary Landfill Site and the Wet-Dry Recycling Centre";
 - (c) Contingency plan for "odourous" wet/organic waste received at the wet-dry recycling centre.
18. Letter and application from Janet Laird, Manager of Solid Waste Services, City of Guelph, to G. Carpentier, MOE, dated October 26, 1998, re: Amendment to Provisional Certificate of Approval A170128.

19. Facsimile from Jutta Siebel, Wet-Dry Residential Coordinator, City of Guelph, to Stephen Rouleau, MOE, dated January 13, 1999, re: Copper and Mercury Levels in Compost.
20. Facsimile from Jutta Siebel, Wet-Dry Residential Coordinator, City of Guelph, to Stephen Rouleau, MOE, dated January 15, 1999 re: Copper and Mercury Levels in *leaf and yard waste*.
21. Letter and application from Janet Laird, Manager of Solid Waste Services, City of Guelph, to Adam Ciulini, MOE, dated February 12, 1999, re: Rationale for Amendment.
22. Memorandum from Adam Ciulini, MOE, to A. Dominski, MOE, dated April 12, 1999, re: Waste Management Policy Branch's Support of the Amendment.
23. Letter and application from Janet Laird, Manager of Solid Waste Services, City of Guelph to G. Carpentier, MOE, dated August 19, 1999, re: Amendment to Certificate of Approval No. A170128.
24. Document entitled City of Guelph - Request for Amendments to Provisional Certificate of Approval No. A170128, prepared for City of Guelph, prepared by Gartner Lee Limited, dated February 2006 except for Section 2.4, 2.6, 3.4 and 3.5 which are not approved by the Director.
25. Letter from Dean Wyman, Manager, Solid Waste Resources Division, City of Guelph, to EAAB, dated June 12, 2006 re: changes to and clarification of document submitted in support of the application for amendments.
26. Email from Dean Wyman, Manager, Solid Waste Resources Division, City of Guelph, to Veronica Pochmursky, EAAB, sent September 6, 2006, re: City of Guelph's procedures for *Clean Wood* and contaminated wood and final destination of contaminated or combined wood.
27. Letter Dated February 8, 2007 from Bill Shields, Supervisor, Governance and Compliance, City of Guelph to T. Gebrezghi, MOE, amendment of Section (C) of Page 1 of the CofA;
28. Letter dated March 14, 2007 from Khaled Mamun, P. Eng., EAAB to Jennifer Turnbull, City of Guelph, requesting for additional information;
29. Fax dated March 28, 2007 from Dean Wyman, Manager, Solid Waste Resources Division, City of Guelph to Khaled Mamun, P. Eng., MOE, submission of the additional information.
30. Fax dated April 11, 2007 from Dean Wyman, Solid Waste Resources Division, City of Guelph to Khaled Mamun, P. Eng., MOE, re: addition of Waste Class 121.
31. Document "City of Guelph Household Hazardous Waste Depot Request for Amendment to Certificate of Approval A170128", dated April 2008, including all appendices.
32. E-mail dated February 2, 2010 (4:44 p.m.) from Amy Burke, Golder Associates Ltd., to Margaret Wojcik, Ontario Ministry of the Environment, including an attachment entitled "08-1112-0126 LET 2010'02'02 MOE Response.pdf" to provide additional information on the proposal.
33. E-mail dated February 17, 2010 (11:12 a.m.) from Ravi Mahabir, Golder Associates Ltd., to Bijal Shah and Margaret Wojcik, Ontario Ministry of the Environment, including an attachment entitled "0811120126 City of Guelph OWPF Response to MOE 17Feb10.pdf" to provide additional information on the proposal.
34. E-mail dated March 1, 2010 (7:46 a.m.) from Amy Burke, Golder Associates Ltd., to Margaret Wojcik, Ontario Ministry of the Environment, including an attachment entitled "08-1112-0126 MEM 2010'02'25.pdf" to provide additional information on the proposed air curtains.
35. E-mail dated March 30, 2010 (4:56 p.m.) from Ravi Mahabir, Golder Associates Ltd., to Margaret Wojcik, Ontario Ministry of the Environment, including an attachment entitled "0811120126 City of Guelph OWPF Response to MOE 30Mar,2010.pdf" to provide additional information on the proposal.

36. E-mail dated April 8, 2010 (2:23 p.m.) from Ravi Mahabir, Golder Associates Ltd., to Margaret Wojcik, Ontario Ministry of the Environment, including an attachment entitled "0811120126 City of Guelph OWPF Response to MOE 8Apr10.pdf" to provide additional information on the proposal.
37. E-mail dated April 9, 2010 (8:27 a.m.) from Ravi Mahabir, Golder Associates Ltd., to Margaret Wojcik, Ontario Ministry of the Environment, including an attachment entitled "Revised Flowchart April 9,2010.pdf" to provide a correction to the previously submitted information.
38. E-mail dated April 09, 2010 (11:08 a.m.) from Ravi Mahabir, Golder Associates Ltd., to Margaret Wojcik, Ontario Ministry of the Environment, including an attachment entitled "08375-801-W02-1a.pdf" to provide additional information on the proposal.
39. E-mail dated April 28, 2010 (1:06 p.m.) from Ravi Mahabir, Golder Associates Ltd., to Margaret Wojcik, Ontario Ministry of the Environment, including an attachment entitled "0811120126 City of Guelph OWPF Responses to MOE 28Apr10.pdf" to provide additional information on the proposal.
40. E-mail dated May 05, 2010 (9:24 a.m.) from Ravi Mahabir, Golder Associates Ltd., to Margaret Wojcik, Ontario Ministry of the Environment, including an attachment entitled "0811120126 City of Guelph OWPF Responses to MOE 4May,2010 FSC.pdf" to provide additional information on the proposal including the schedule for phasing out the use of plastic bags to collect the *Organic Waste* in the City of Guelph, the approach to temperature monitoring of material within *Composting* tunnels.
41. E-mail dated May 7, 2010 (2:36 p.m.) from Ravi Mahabir, Golder Associates Ltd., to Margaret Wojcik, Ontario Ministry of the Environment, to clarify the proposal with respect to mixing of the *Composting* waste.
42. E-mail dated May 7, 2010 (3:52 p.m.) from Ravi Mahabir, Golder Associates Ltd., to Margaret Wojcik, Ontario Ministry of the Environment, to confirm that the acid spray system will be installed and operational at the start-up of the *Composting Site*.
43. E-mail dated May 11, 2010 (2:49 p.m.) from Ravi Mahabir, Golder Associates Ltd., to Margaret Wojcik, Ontario Ministry of the Environment, including an attachment entitled "compost temperatures.pdf" to provide data on compost temperature from two different monitoring methods.
44. E-mail dated May 26, 2010 (2:30 p.m.) from Ravi Mahabir, Golder Associates Ltd., to Margaret Wojcik, Ontario Ministry of the Environment, including an attachment entitled "0811120126 Draft CofA Review - Supporting Information RSM May 25,2010.pdf" providing additional clarification on the types of wastes to be received at the *Composting Site*.
45. E-mail dated June 2, 2010 (10:41 a.m.) from Amy Burke, Golder Associates Ltd., to Margaret Wojcik, Ontario Ministry of the Environment, providing additional clarification on the types of amendment and other wastes to be received at the *Composting Site*, the equipment decontamination procedure and the proposed pasteurization temperature monitoring.
46. E-mail dated June 18, 2010 (8:08 a.m.) from Bill Shields, Corporation of the City of Guelph, to Margaret Wojcik, Ontario Ministry of the Environment, including attachments entitled "Fig1_GuelphWRIC_Screening.pdf, Fig2_GuelphWRIC_Screening.pdf, Fig1_GuelphWRIC_Screening Option 3 (2010-05-04).pdf" describing the visual screening features and the landscaping completed at the Site.
47. E-mail dated June 25, 2010 (12:38 p.m.) from Amy Burke, Golder Associates Ltd., to Margaret Wojcik, Ontario Ministry of the Environment, including attachments entitled "0811120126 Draft CofA Review - Additional Comments 2010'06'25.pdf" and "0811120126 Draft CofA Review - Addition Comments 2010'06'23 Site_Layout_v2.pdf" showing the location of the outdoor paved pad referred to as the Amendment, Recyclables, and Leaf and Yard Waste Staging Area and describing handling of wastes at the said outdoor pad.
48. Letter from Mr. Dean Wyman, Manager, Solid Waste Resources Division, City of Guelph, to EAAB, dated June 12, 2006 requesting amendments to Certificate of Approval No. 9241-5DTRD9 and providing the rationale for the proposed amendments.
49. The Design and Operations Report for the City of Guelph *Material Recovery Facility* prepared by Golder Associates, dated January 12, 2010.

50. The Design and Operations Report for the City of Guelph *Waste Transfer Station* prepared by Golder Associates, dated January 12, 2010.

51. The Design and Operations Report for the City of Guelph WRIC Public Drop Off and *Municipal Hazardous and Special Waste* Facilities prepared by Golder Associates, dated January 12, 2010 and supplemental information provided by e-mail from Pamela Russell, P.Eng. of Golder Associates, to Jim Chisholm, P.Eng., Senior Review Engineer of the Ministry.

52. Engineers Report for the City of Guelph Waste Recycling Innovation Centre prepared by Golder Associates dated July 20, 2010 and provided by e-mail from Pamela Russell, P.Eng. of Golder Associates, to Jim Chisholm, P.Eng., Senior Review Engineer of the Ministry.

53. e-mail of July 20, 2010 from Pamela Russell of Golder Associate, to Jim Chisholm, Senior Review Engineer, Ministry of Environment along with attachments.

54. e-mail of Nov. 2, 2010 from Amy Burke of Golder Associates to Jim Chisholm, Senior Review Engineer, Ministry of Environment.

SCHEDULE "B"

This Schedule "B" forms part of this Certificate of Approval.

Compost Quality Criteria

Parameter		Concentration
Trace Elements (mg/kg dry weight) ¹	arsenic	13
	cadmium	3
	chromium	210
	cobalt	34
	copper	100
	lead	150
	mercury	0.8
	molybdenum	5
	nickel	62
	selenium	2
	zinc	500
Organic chemicals (mg/kg dry weight) ¹	PCBs ²	0.5
Pathogens	fecal coliforms	<1000 MPN/g of total solids calculated on a dry weight basis ³
	salmonellae	<3 MPN/4g total solids calculated on a dry weight basis ³
Non-biodegradable matter ⁴ % dry weight	plastic	1
	other	2

Note 1 – means milligrams per kilogram

Note 2 - means polychlorinated biphenols

Note 3 - means "Most Probable Number"

Note 4 - will not fit through a size 8 mesh

The reasons for the imposition of these terms and conditions are as follows:

- 1. The reason for Conditions 1 to 5 inclusive and Conditions 10 and 11 is to clarify the legal rights and obligations of this Certificate.*
- 2. The reason for Condition 6 is to ensure that the Site is operated under the corporate, limited or applicant's own name which appears on the application and supporting information submitted with the application and not under any name which the Director has not been asked to consider.*
- 3. The reason for Conditions 7, 8 and 9 is to ensure that Ministry personnel, when acting in the course of their duties, will be given unobstructed access to the information and records related to the Site which are required by this Certificate, and to enable the Ministry to be assured of the City's compliance with the terms and conditions stated in this Certificate.*
- 4. The reason for Conditions 16, 17, 18, 19, 20, 21, 22, and 24, is to minimize and/or prevent nuisance or adverse environmental affects from occurring. The use and operation of the Site without these conditions may create a nuisance or result in a hazard to the health and safety of any person or the environment.*
- 5. The reason for Condition 23 is to ensure that there is no adverse impact on aircraft safety in the area and no net increase in the bird population in the area, as a result of the use and operation of this Site.*
- 6. The reason for Conditions 12(a), 12(b), 13 and 14 is to ensure that the Site is operated in accordance with the application and supporting documentation for this Certificate and not in any manner which the Director has not been asked to consider. The operation of the Site without these conditions would not be in the public interest and may result in unacceptable environmental impacts. The imposition and compliance with these conditions will further ensure that the facility is operated and monitored in accordance with established procedures and practices for this type of facility.*
- 7. The reason for Condition 15 is to outline the maximum amount of residual waste that can be taken from the Site in one day. Any amount above an average of 1000 tonnes per day requires an Environmental Assessment.*
- 8. The reason for Condition 25 is to ensure that the Site will not be operated at hours during which such operation could cause material discomfort to any person.*
- 9. The reason for Condition 26, 27, 28 is to have personnel that have the sufficient skills, knowledge and experience to do the work that is necessary at the Site.*
- 10. The reason for Condition 29 and 30 is to require the Owner to establish a forum and provide reasonable access to the Site for the exchange of information and public dialogue on activities carried out at the Composting Site and other parts of the Site. Open communication with the public and local authorities is important in helping to maintain high standards for the operation of the Composting Site and other parts of the Site and protection of the natural environment. The use and operation of the Site without this condition would not be in the public interest.*
- 11. The reason for Condition 31 is to protect the environment from an adverse effect as a result of activities at the Site.*
- 12. The reason for Conditions 32, 33, 34, 35, and 36 is to minimize the risk of environmentally unacceptable discharges of a contaminant into the environment. Compliance with the monitoring programs outlined in these conditions will enable the City to allow for an early detection system for any unacceptable discharges of contaminants and allow for the implementation of a contingency plan.*
- 13. The reason for Condition 37 is to minimize the risk of vandalism and to ensure that the Site is only operated in the presence of competent people to ensure the waste is properly managed.*

14. The reason for Conditions 38, 39, 40, 41, 42, 43, and 44 to ensure the Site is operated in accordance with the application and this Certificate and not in any manner which the Director has not been asked to consider. Operation of the Site without these conditions would not be in the public interest.

15. The reason for Condition 45 is to ensure the City has an up-to-date Environmental Emergency Plan for the Site for the prompt control, abatement, mitigation and clean-up of emergency incidents, accidental discharge of contaminants, potential environmental or nuisance related impacts.

16. The reason for Condition 46 is to ensure that the City has a robust Complaints Procedure

17. The reason for Condition 47 is to make sure that the City takes immediate measures to responds to a spill and process upset and informs the Ministry immediately of such spills or upset.

18. The reason for conditions 48, 49, 50, 51, and 52 is so that the City have a robust inspection program at the site and that the inspections are properly recorded and an annual summary of activities at the site are sent to the ministry.

19. The reason for Condition 53 is to ensure the orderly shut down of the composting facility or other parts of the site.

20. Condition 54. is included to specify the approved Organic Waste receipt rate, the approved Organic Waste types and the service area from which the Organic Waste may be accepted at the Composting Site based on the Owner's application and supporting documentation.

21. Condition 55. is included to ensure that the Composting Site is sufficiently secured, supervised and operated by properly Trained Personnel and to ensure controlled access and integrity of the Composting Site by preventing unauthorized access when the Composting Site is closed and no Composting Site personnel is on duty.

22. Condition 56.(1) is included to specify the hours of operation for the Composting Site to ensure that the hours of the Composting Site's operation do not result in an adverse effect or a hazard to the natural environment or any person.

23. Condition 56.(2) is included to ensure that only the approved waste types are accepted and processed at the Composting Site.

24. Condition 56.(3) is included to specify the requirements for handling of the Rejected Waste that was inadvertently received at the Composting Site.

25. Conditions 56.(4) and (5) are included to ensure that waste and amendment materials handling and storage are undertaken in done in a way which does not result in an adverse effect or a hazard to the environment or any person.

26. Condition 56.(6) is included to specify odour control measures to minimize a potential for odour emissions from the Composting Site.

27. Condition 57. is included to require the Composting Site to be maintained and inspected thoroughly and on a regular basis to ensure that the operations at the Composting Site are undertaken in a manner which does not result in an adverse effect or a hazard to the health and safety of the environment or any person.

28. Condition 58. is included to require the Owner to characterize all waste received at the Composting Site and shipped off the Composting Site to ensure that only waste approved by this Certificate is handled at the Composting Site and that all waste transferred off the Composting Site is handled in accordance with the Ministry's requirements. Condition 38. is also included to require the Owner to monitor the Composting process parameters.

29. Condition 59. is included to ensure that the Composting Site is operated and maintained in an environmentally acceptable manner which does not result in a negative impact on the natural environment or any person.

30. Condition 60. is included to ensure that personnel employed at the Composting Site are fully aware and properly trained on the requirements and restrictions related to Composting Site operations under this Certificate.

31. Condition 61. is included to ensure that the Owner is prepared and properly equipped to take action in the event of an emergency situation.

32. Condition 62. also is included to require further spill notification to the Ministry, in addition to the requirements already listed in Part X of the EPA.

33. Condition 63. is included to ensure that detailed records of Composting Site activities, inspections, monitoring and upsets are recorded and maintained for inspection and information purposes.

34. Condition 64. is included to ensure that the wastewater generated at the Composting Site is handled in accordance with the Ministry's requirements and in a manner which does not result in a negative impact on the natural environment or any person.

35. Condition 65. is included to ensure that final closure of the Composting Site is completed in accordance with Ministry's standards.

36. Condition 66. is included to require the Owner to design, operate, maintain and monitor the waste management activities at the Composting Site in compliance with the Ministry's supplementary requirements as they become published and amended from time to time.

37. The reason for Conditions 67 and 68 is to ensure that the Site is operated in accordance with the application and supporting documentation submitted by the Owner, and not in a manner which the Director has not been asked to consider.

This Provisional Certificate of Approval revokes and replaces Certificate(s) of Approval No. A170128 and 9241-5DTRD9 issued on September 29, 2006 and April 24, 2003 respectively.

In accordance with Section 139 of the Environmental Protection Act, R.S.O. 1990, Chapter E-19, as amended, you may by written notice served upon me and the Environmental Review Tribunal within 15 days after receipt of this Notice, require a hearing by the Tribunal. Section 142 of the Environmental Protection Act, provides that the Notice requiring the hearing shall state:

1. The portions of the approval or each term or condition in the approval in respect of which the hearing is required, and;
2. The grounds on which you intend to rely at the hearing in relation to each portion appealed.

The Notice should also include:

3. The name of the appellant;
4. The address of the appellant;
5. The Certificate of Approval number;
6. The date of the Certificate of Approval;
7. The name of the Director;
8. The municipality within which the waste disposal site is located;

And the Notice should be signed and dated by the appellant.

This Notice must be served upon:

The Secretary*
Environmental Review Tribunal
655 Bay Street, 15th Floor
Toronto, Ontario
M5G 1E5

AND

The Director
Section 39, *Environmental Protection Act*
Ministry of the Environment
2 St. Clair Avenue West, Floor 12A
Toronto, Ontario
M4V 1L5

*** Further information on the Environmental Review Tribunal's requirements for an appeal can be obtained directly from the Tribunal at: Tel: (416) 314-4600, Fax: (416) 314-4506 or www.ert.gov.on.ca**

The above noted waste disposal site is approved under Section 39 of the Environmental Protection Act.

CONTENT COPY OF ORIGINAL

DATED AT TORONTO this 10th day of February, 2011

Tesfaye Gebrezghi, P.Eng.
Director
Section 39, *Environmental Protection Act*

JC/
c: District Manager, MOE Guelph
Pamela Russell, Golder Associates Ltd.

AMENDMENT TO PROVISIONAL CERTIFICATE OF
APPROVAL
WASTE DISPOSAL SITE

NUMBER A170128

Notice No. 1

Issue Date: September 22, 2011

 RECEIVED
OCT 03 2011

CITY CLERK'S OFFICE

The Corporation of the City of Guelph
1 Carden St
Guelph, Ontario
N1H 3A1

Site Location: 110 Dunlop Drive
Division 'C', RP 61R-5574
Lot 4 and 5, Concession 1
Guelph City, County of Wellington
N1H 6N1

You are hereby notified that I have amended Provisional Certificate of Approval No. A170128 issued on February 10, 2011 for the use and operation of a 29.54 hectare Waste Disposal Site (Transfer/Processing), as follows:

1. The following Condition 58.(1) is amended to read as follows:

58. Quality Criteria, Testing & Monitoring

(1) Cross-Contamination Prevention:

- (a) The *Owner* shall ensure that the incoming *Organic Waste* is kept separate and does not come in contact with the *Immature Compost* / the *Finished Compost* and the *Compost* except where the *Immature Compost* / the *Finished Compost* and the *Compost* are being fed back into the *Composting* process.
- (b) The *Owner* may use the equipment utilized in processing of the incoming *Organic Waste* to process the *Immature Compost* / the *Finished Compost* and the *Compost* provided that the equipment has been cleaned, in accordance with the procedures described in documents listed in the attached Schedule "A", to prevent the *Immature Compost* / the *Finished*

Compost and the *Compost* from being contaminated by the incoming *Organic Waste*.

- (c) The *Owner* may use the equipment utilized in screening of the *Immature Compost* to screen the *Compost* provided that the screening equipment has been adequately cleaned prior to its use to screen the *Compost* and in accordance with the procedures described in documents listed in the attached Schedule "A", to prevent the *Compost* from being contaminated by the *Immature Compost*.

2. The following documents are added to Schedule "A":

55. The application for the Certificate of Approval for a Waste Disposal Site, dated September 8, 2011 and signed by Bill Shields, Corporation of the City of Guelph, including the following attachments:

- (a) E-mail dated September 2, 2011 (11:17 a.m.) from Ravi Mahabir, Dillon Consulting Limited, to Tesfaye Gebrezghi, Ontario Ministry of the Environment, describing the considered proposal and including the following attachments:
 - (i) 104328 Letter to MOE on Facility Refinements Aug22,2011 RSM.pdf;
 - (ii) Guelph screen Layout.pdf
- (b) E-mail dated September 8, 2011 (8:57 a.m.) from Ravi Mahabir, Dillon Consulting Limited, to Margaret Wojcik, Ontario Ministry of the Environment, describing the further technical details of the proposal and the cross contamination prevention procedures and including the following attachments:
 - (i) 104328 Letter to MOE on Facility Refinements Sep2,2011 RSM signed.pdf;
 - (ii) 104328 Letter to MOE on OWPF Screening Plant Operations Sep8,2011 RSM.pdf

The reason for this amendment to the Certificate of Approval is as follows:

to replace the previously approved two separate screening plants with a single double-deck screening plant to allow for increased working space within the Maturation Hall.

This Notice shall constitute part of the approval issued under Provisional Certificate of Approval No. A170128 dated February 10, 2011, as amended.

In accordance with Section 139 of the Environmental Protection Act, R.S.O. 1990, Chapter E-19, as amended, you may by written notice served upon me and the Environmental Review Tribunal within 15 days

after receipt of this Notice, require a hearing by the Tribunal. Section 142 of the Environmental Protection Act, provides that the Notice requiring the hearing shall state:

1. The portions of the approval or each term or condition in the approval in respect of which the hearing is required, and;
2. The grounds on which you intend to rely at the hearing in relation to each portion appealed.

The Notice should also include:

3. The name of the appellant;
4. The address of the appellant;
5. The Certificate of Approval number;
6. The date of the Certificate of Approval;
7. The name of the Director;
8. The municipality within which the waste disposal site is located;

And the Notice should be signed and dated by the appellant.

This Notice must be served upon:

The Secretary*
Environmental Review Tribunal
655 Bay Street, 15th Floor
Toronto, Ontario
M5G 1E5

AND

The Director
Section 39, *Environmental Protection Act*
Ministry of the Environment
2 St. Clair Avenue West, Floor 12A
Toronto, Ontario
M4V 1L5

* Further information on the Environmental Review Tribunal's requirements for an appeal can be obtained directly from the Tribunal at: Tel: (416) 314-4600, Fax: (416) 314-4506 or www.ert.gov.on.ca

The above noted waste disposal site is approved under Section 39 of the Environmental Protection Act.

DATED AT TORONTO this 22nd day of September, 2011



Tesfaye Gebrezghi, P.Eng.
Director
Section 39, *Environmental Protection Act*

MW/

c: District Manager, MOE Guelph
Ravi Mahabir, P. Eng., Dillon Consulting Limited

AMENDMENT TO ENVIRONMENTAL COMPLIANCE APPROVAL

NUMBER A170128

Notice No. 2

Issue Date: November 2, 2012

The Corporation of the City of Guelph
1 Carden St
Guelph, Ontario
N1H 3A1

Site Location: 110 Dunlop Drive
110 Dunlop Dr
Guelph City, County of Wellington
N1H 6N1

You are hereby notified that I have amended Approval No. A170128 issued on February 10, 2011 and amended on September 22, 2011 for the use and operation of a 29.54 hectare Waste Disposal Site (Transfer/Processing), as follows: , as follows:

The following sub-conditions in Condition 54 are hereby amended as follows:

54. Service Area, Approved Waste Types, Rates & Storage

(1.1) The *Composting Site* may only accept solid non-hazardous residential, commercial, institutional or industrial *Organic Waste* from the Provinces of Ontario, limited to the following *Organic Waste* :

- (a) Source-Separated *Organic Waste* limited to the following:
 - (i) food wastes: fruit, vegetable and general table scraps, meat and fish/shellfish products, dairy products, eggs and egg shells, herbs, nuts and seeds, sugar and spices, confectionery products, sauces, bones, pet food, bread, grains, rice, pasta, flour, coffee grounds and tea bags;
 - (ii) solidified cooking oils and cooked or raw grease and fats from residential sources only;
 - (iii) paper fibres: soiled paper towels, tissues, paper plates, coffee filters, soiled paper food packaging items such as boxboard, cardboard, newspaper, and other paper fibre packaging materials;
 - (iv) fresh flowers, houseplants and their soil, hair, pet fur, feathers and sawdust, wood shavings;
 - (v) ashes from residential sources only;

- (vi) pet waste that is not collected or encased in a bag; and
 - (vii) pet litter box or bedding wastes, including the intermingled pet waste;
 - (b) *Organic Waste* from the industrial, commercial and institutional sources that produce or collect food wastes;
 - (c) *Leaf and Yard Waste*; and
 - (d) *Compost* covers as described in the supporting documentation listed in the attached Schedule "A".
- (1.2) (a) A minimum of eight (8) months prior to accepting *Organic Waste* from any new source at the *Site*, the *Owner* shall provide written notice to the *District Manager* of its intent to commence acceptance of the new waste.
- (b) The *Owner* shall submit to the *District Manager* the following information regarding the new waste source in writing at least six (6) weeks prior to receiving the new waste identified in Condition 54 (1.2)(a):
- (i) the name and location of the generator,
 - (ii) the date the *Owner* proposes to commence accepting the waste at the *Site*,
 - (iii) description of the constituent components of the waste being accepted,
 - (iv) confirmation whether inclusion of the waste component referenced above in Condition 54 (1.2)(a) is characterized as incidental or inadvertent,
 - (v) information related to the handling and storage of the waste prior to its delivery to the *Site*, and
 - (vi) all operational plans the *Owner* proposes for integrating the processing of waste from the new source into the waste stream currently being processed at the *Site*.
- (4) (d) i. The *Owner* shall not accept at the *Composting Site* any *Organic Waste* that is collected through a waste collection program that allows use of bags, except the waste that is generated in and collected by the City of Guelph and in accordance with Table 1 entitled "Proposed Phase-out of Plastic Bag Usage in Organics Collection" included in Item #40 of the attached Schedule "A";
- ii. Notwithstanding Condition 54 (4)(d) (i) above, the *Owner* is allowed to accept *Organic Waste* that has been placed in a biodegradable certified compostable bag.
- iii. The *Owner* shall ensure that any *Organic Waste* accepted at the *Site* that is

generated outside of the City that is collected through a waste collection program will only be collected in biodegradable certified compostable bags in accordance with Item 56 in Schedule "A".

The following Item is hereby added to Schedule "A":

56. Environmental Compliance Approval Application submitted by the City of Guelph requesting amendment to Condition No. 54 (4)(d). The application was signed and dated by Bill Shields, Supervisor of Governance and Compliance on October 3, 2012. The supporting documentation for the application include the following:
- a. ECA Amendment Outline prepared by Golder Associates which consists of a letter dated October 2, 2012 addressed to Mr. Bill Shields, City of Guelph from Ms Amy Burke and Mr. Michael Cant, Golder Associates (Project No. 12-1188-0007);
 - b. Public Liaison Committee Comments and Responses prepared by the City of Guelph which includes:
 - i. Memorandum dated February 10, 2010 entitled "Addendum to ESDM Report for City of Guelph OWPF Responses to Request Information/Clarification from MOE" addressed to Bijal Shah, Ministry of the Environment from Ravi Mahabir and Sean Capstick, Golder Associates; and
 - ii. Memorandum dated May 4, 2010 entitled "Summary of Key Items Discussed at April 29 Meeting with MOE" addressed to Tes Gebrezghi, Bijal Shah and Margaret Wojcik, Ministry of the Environment from Ravi Mahabir and Sean Capstick, Golder Associates; and
 - c. ECA Amendment Support Letter provided by Wellington Organix Inc. which consists of a letter dated August 29, 2012 addressed to Mr. David Gordon, City of Guelph from Mr. Mark Jared, Wellington Organix.

The reason(s) for this amendment to the Approval are as follows:

1. *The reason for the amendment to Condition 54 (1.1) and (1.2) is to ensure the City notifies the Ministry should the City start to accept waste from other clients.*
2. *The reason for the amendment to Condition 54 (4)(d) is to permit the City of Guelph to accept incoming waste in certified biodegradable compostable bags as the City has shown that operational changes have addressed odour issues at the Site and the restriction on waste being accepted in plastic bags is longer required.*

This Notice shall constitute part of the approval issued under Approval No. A170128 dated February 10, 2011

In accordance with Section 139 of the Environmental Protection Act, you may by written Notice served upon

me and the Environmental Review Tribunal within 15 days after receipt of this Notice, require a hearing by the Tribunal. Section 142 of the Environmental Protection Act provides that the Notice requiring the hearing shall state:

1. The portions of the environmental compliance approval or each term or condition in the environmental compliance approval in respect of which the hearing is required, and;
2. The grounds on which you intend to rely at the hearing in relation to each portion appealed.

Pursuant to subsection 139(3) of the Environmental Protection Act, a hearing may not be required with respect to any terms and conditions in this environmental compliance approval, if the terms and conditions are substantially the same as those contained in an approval that is amended or revoked by this environmental compliance approval.

The Notice should also include:

3. The name of the appellant;
4. The address of the appellant;
5. The environmental compliance approval number;
6. The date of the environmental compliance approval;
7. The name of the Director, and;
8. The municipality or municipalities within which the project is to be engaged in.

And the Notice should be signed and dated by the appellant.

This Notice must be served upon:

The Secretary*
Environmental Review Tribunal
655 Bay Street, Suite 1500
Toronto, Ontario
M5G 1E5

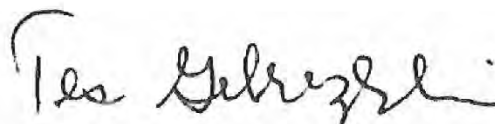
AND

The Director appointed for the purposes of
Part II.1 of the Environmental Protection Act
Ministry of the Environment
2 St. Clair Avenue West, Floor 12A
Toronto, Ontario
M4V 1L5

*** Further information on the Environmental Review Tribunal's requirements for an appeal can be obtained directly from the Tribunal at: Tel: (416) 212-6349, Fax: (416) 314-4506 or www.ert.gov.on.ca**

The above noted activity is approved under s.20.3 of Part II.1 of the Environmental Protection Act.

DATED AT TORONTO this 2nd day of November, 2012



Tesfaye Gebrezghi, P.Eng.
Director
appointed for the purposes of Part II.1 of the
Environmental Protection Act

DG/

c: District Manager, MOE Guelph

Amy Burke, Golder Associates Ltd.



AMENDMENT TO ENVIRONMENTAL COMPLIANCE APPROVAL

NUMBER A170128

Notice No. 3

Issue Date: January 24, 2013

The Corporation of the City of Guelph
 1 Carden St
 Guelph, Ontario
 N1H 3A1

Site Location: 110 Dunlop
 110 Dunlop Dr , Guelph Organic Waste Composting Facility,
 Guelph City, County of Wellington
 N1H 6N1

You are hereby notified that I have amended Approval No. A170128 issued on February 10, 2011 and amended on September 22, 2011 and November 2, 2012 for the establishment and operation of a Waste Disposal Site (Transfer and Processing) consisting of a 29.54 hectare of property for the purposes of composting, multi-material recovery, and waste transfer to serve the municipalities and businesses of the Province of Ontario, the State of New York, the State of Michigan and Municipal Hazardous and Special Waste Transfer Station serving the County of Wellington and City of Guelph,

to be used for:

a) the use and operation of an Organic Waste Processing Facility composting of the following categories of waste (Note: Use of the site for additional categories of wastes requires a new application and amendments to the Provisional Certificate of Approval); organic non-hazardous waste from residential, industrial, commercial and institutional sources limited to a maximum Site indoor storage capacity of 8,500 tonnes;

b) the use and operation of a Material Recovery Facility for processing, transfer and temporary storage of the following categories of waste (Note: Use of the Site for additional categories of wastes requires a new application and amendments to the Provisional Certificate of Approval); municipal waste including food and beverage cans, cardboard, glass, newspaper, plastic, waste electrical and electronic equipment and other such materials as would be collected by means of the source separated dry waste collection system limited to a maximum indoor storage capacity of 3850 tonnes and having an outdoor storage area for recyclable waste and leaf and yard waste that is located to the west of the Organic Waste Processing Facility;

c) the use and operation of a Municipal Hazardous and Special Waste facility for the transfer and temporary storage of the following categories of waste (Note: Use of the Site for additional categories of wastes requires a new application and amendments to the Provisional Certificate of Approval); Municipal Hazardous and Special Waste limited to the following waste classes; 112, 121, 145, 146, 148, 212, 213, 221, 242, 251, 252, 261, 263, 269, 312, and 331 as outlined in the New Ontario Waste Classes January 1986 limited to a maximum Site storage capacity of 15 tonnes; and

d) the use and operation of a Waste Disposal Site (Transfer) for non-hazardous solid industrial waste (Note: Use of the Site for additional categories of wastes requires a new application and amendments to the Provisional Certificate of Approval); from industrial, commercial and institutional sources, commercial waste and domestic waste, with an indoor storage maximum capacity of 795 tonnes and outdoor storage areas for leaf and yard waste and for recyclable waste.

, as follows:

The following Definition is hereby amended as follows:

(aaa) "**Site**" means the 29.54 hectare Waste Disposal Site (Processing and Transfer) for the purposes of receipt, storage, processing and transfer of waste by *Composting*, waste transfer, and multi-material recovery, to serve the municipalities and businesses of the Province of Ontario, the State of New York, the State of Michigan and *Municipal Hazardous and Special Transfer Waste Station*, serving the County of Wellington and City of Guelph located on Lot 4 and 5 Concession 1, Division C, Guelph, Ontario as shown on Reference Plan 61R-5574;

The following Condition is hereby revoked:

56. (6) Odour Control:

- (a) The *Owner* shall maintain a negative air pressure atmosphere within the *Processing Building*, as compared to the ambient atmospheric pressure, at all times;

The following Conditions are hereby amended as follows:

Public Liaison Committee

29. (1) The *Owner* shall invite the following groups to provide input and/or comments into preparation of the Terms of Reference for the *Public Liaison Committee (ToR PLC)*:

- (a) home owners within 2,000 metres of the *Site*;
- (b) any interested non-governmental organization (NGOs); and
- (c) any interested person(s) or group(s);

(2) (a) The *Owner* shall consider all input and/or comments submitted by the groups listed above during preparation of the *ToR PLC*; and

- (b) A minimum of ninety (90) days prior to the receipt of the *Waste* at the *Site*, the *Owner* shall prepare and submit to the *District Manager* the *ToR PLC*, including documentation demonstrating consideration of all public input and/or comments received, for written concurrence of the *District Manager*;

(3) The *ToR PLC* shall be amended from time to time according to appropriate amending procedures identified within the content of the *ToR PLC*. Any amendment to the *ToR PLC* must be agreed to by the *District Manager* prior to its implementation;

(4) Within sixty (60) days from the *District Manager's* concurrence to the *ToR PLC*, the *Owner* shall take all reasonable steps to establish a *Public Liaison Committee (PLC)* which shall serve as a forum for dissemination, consultation, review and exchange of information regarding the operation of the *Site*, including environmental monitoring, maintenance, complaint resolution, and new approvals or amendments to existing approvals related to the operation of this *Site*;

(5) The *Owner* shall invite representation from the following groups to participate on the *PLC*:

- (a) home owners within 2,000 metres of the *Site*;
- (b) any interested NGOs; and
- (c) any interested person(s) or group(s);

(6) The number of representatives from each group shall be as specified in the *ToR PLC* approved by the *District Manager*;

(7) No later than ninety (90) days from the *District Manager's* concurrence to the *ToR PLC*, the *Owner* shall submit to the *District Manager* a written report that details steps to be taken by the *Owner* to establish, maintain and participate in a *PLC*. This report shall include the identification of each of the representatives that have been invited to participate in the *PLC*;

(8) A copy of the Annual Report that is required by Conditions 52 shall be provided to the *Public Liaison Committee* at the first scheduled meeting following March 31st; and

(9) The *City* shall allow reasonable access to the *Site* for any member of the *Public Liaison Committee*;

40. (a) The *City* shall ensure that only municipal waste recyclable material, generated within the Province of Ontario, the State of New York and the State of Michigan is received at this *Site*;

54. (1.2) (a) A minimum of **six (6)** months prior to accepting *Organic Waste* from any new source at the *Site*, the *Owner* shall provide written notice to the *District Manager* of its intent to commence acceptance of the new waste .

The following Item is hereby added to Schedule "A":

57. Environmental Compliance Approval Application requesting that Condition 40 (a) relating to the service area be amended. The application was signed by Mr. Bill Shields, Supervisor of Governance and Compliance, City of Guelph and dated August 2, 2012.

58. Letter dated November 2, 2012 addressed to Mr. Dale Gable, Ministry of the Environment from Mr. Bill Shields, Supervisor of Governance and Compliance, City of Guelph requesting Condition 56 (6)(a) be revoked.

The reasons for this amendment to the Approval are as follows:

1. *The reason for the revocation of Condition 56 (6)(a) is the requirement to maintain negative air pressure is addressed with the ECA related to the air. This condition is a duplicate requirement.*
2. *The reason for the amendment to Condition 29 is to ensure the PLC is an exchange of information for the entire Site and not limited to the Composting Site.*
3. *The reason for the amendment to Condition No. 40 is to approve the service area expansion to include the State of New York as applied for by the City. This is to ensure the facility and equipment can operate at its peak efficiency.*
4. *The reason for the amendment to Condition 54 (1.2)(a) which corrects an administrative error in the last notice.*

This Notice shall constitute part of the approval issued under Approval No. A170128 dated February 10, 2011

In accordance with Section 139 of the Environmental Protection Act, you may by written Notice served upon me and the Environmental Review Tribunal within 15 days after receipt of this Notice, require a hearing by the Tribunal. Section 142 of the Environmental Protection Act provides that the Notice requiring the hearing shall state:

1. The portions of the environmental compliance approval or each term or condition in the environmental compliance approval in respect of which the hearing is required, and;
2. The grounds on which you intend to rely at the hearing in relation to each portion appealed.

Pursuant to subsection 139(3) of the Environmental Protection Act, a hearing may not be required with respect to any terms and conditions in this environmental compliance approval, if the terms and conditions are substantially the same as those contained in an approval that is amended or revoked by this environmental compliance approval.

The Notice should also include:

3. The name of the appellant;
4. The address of the appellant;
5. The environmental compliance approval number;
6. The date of the environmental compliance approval;
7. The name of the Director, and;
8. The municipality or municipalities within which the project is to be engaged in.

And the Notice should be signed and dated by the appellant.

This Notice must be served upon:

The Secretary*
Environmental Review Tribunal
655 Bay Street, Suite 1500
Toronto, Ontario
M5G 1E5

AND

The Director appointed for the purposes of Part II.1 of
the Environmental Protection Act
Ministry of the Environment
2 St. Clair Avenue West, Floor 12A
Toronto, Ontario
M4V 1L5

*** Further information on the Environmental Review Tribunal's requirements for an appeal can be obtained directly from the Tribunal at:
Tel: (416) 212-6349, Fax: (416) 314-4506 or www.ert.gov.on.ca**

The above noted activity is approved under s.20.3 of Part II.1 of the Environmental Protection Act.

DATED AT TORONTO this 24th day of January, 2013

Tesfaye Gebrezghi, P.Eng.
Director
appointed for the purposes of Part II.1 of the
Environmental Protection Act

DG/
c: District Manager, MOE Guelph
Amy Burke, Golder Associates Ltd.



Ministry of the Environment
Ministère de l'Environnement

AMENDMENT TO ENVIRONMENTAL COMPLIANCE APPROVAL

NUMBER A170128

Notice No. 3

Issue Date: January 24, 2013

The Corporation of the City of Guelph
1 Carden St
Guelph, Ontario
N1H 3A1

Site Location: 110 Dunlop
110 Dunlop Dr , Guelph Organic Waste Composting Facility,
Guelph City, County of Wellington
N1H 6N1

You are hereby notified that I have amended Approval No. A170128 issued on February 10, 2011 and amended on September 22, 2011 and November 2, 2012 for the establishment and operation of a Waste Disposal Site (Transfer and Processing) consisting of a 29.54 hectare of property for the purposes of composting, multi-material recovery, and waste transfer to serve the municipalities and businesses of the Province of Ontario, the State of New York, the State of Michigan and Municipal Hazardous and Special Waste Transfer Station serving the County of Wellington and City of Guelph,

to be used for:

- a) the use and operation of an Organic Waste Processing Facility composting of the following categories of waste (Note: Use of the site for additional categories of wastes requires a new application and amendments to the Provisional Certificate of Approval); organic non-hazardous waste from residential, industrial, commercial and institutional sources limited to a maximum Site indoor storage capacity of 8,500 tonnes;*
- b) the use and operation of a Material Recovery Facility for processing, transfer and temporary storage of the following categories of waste (Note: Use of the Site for additional categories of wastes requires a new application and amendments to the Provisional Certificate of Approval); municipal waste including food and beverage cans, cardboard, glass, newspaper, plastic, waste electrical and electronic equipment and other such materials as would be collected by means of the source separated dry waste collection system limited to a maximum indoor storage capacity of 3850 tonnes and having an outdoor storage area for recyclable waste and leaf and yard waste that is located to the west of the Organic Waste Processing Facility;*

- c) *the use and operation of a Municipal Hazardous and Special Waste facility for the transfer and temporary storage of the following categories of waste (Note: Use of the Site for additional categories of wastes requires a new application and amendments to the Provisional Certificate of Approval); Municipal Hazardous and Special Waste limited to the following waste classes; 112, 121, 145, 146, 148, 212, 213, 221, 242, 251, 252, 261, 263, 269, 312, and 331 as outlined in the New Ontario Waste Classes January 1986 limited to a maximum Site storage capacity of 15 tonnes; and*
- d) *the use and operation of a Waste Disposal Site (Transfer) for non-hazardous solid industrial waste (Note: Use of the Site for additional categories of wastes requires a new application and amendments to the Provisional Certificate of Approval); from industrial, commercial and institutional sources, commercial waste and domestic waste, with an indoor storage maximum capacity of 795 tonnes and outdoor storage areas for leaf and yard waste and for recyclable waste.*

, as follows:

The following Definition is hereby amended as follows:

- (aaa) "Site" means the 29.54 hectare Waste Disposal Site (Processing and Transfer) for the purposes of receipt, storage, processing and transfer of waste by *Composting*, waste transfer, and multi-material recovery, to serve the municipalities and businesses of the Province of Ontario, the State of New York, the State of Michigan and *Municipal Hazardous and Special Transfer Waste Station*, serving the County of Wellington and City of Guelph located on Lot 4 and 5 Concession 1, Division C, Guelph, Ontario as shown on Reference Plan 61R-5574;

The following Condition is hereby revoked:

56. (6) **Odour Control:**

- (a) The *Owner* shall maintain a negative air pressure atmosphere within the *Processing Building*, as compared to the ambient atmospheric pressure, at all times;

The following Conditions are hereby amended as follows:

Public Liaison Committee

- 29. (1) The *Owner* shall invite the following groups to provide input and/or comments into preparation of the Terms of Reference for the *Public Liaison Committee (ToR PLC)*:
 - (a) home owners within 2,000 metres of the *Site* ;
 - (b) any interested non-governmental organization (NGOs); and
 - (c) any interested person(s) or group(s);

- (2) (a) The *Owner* shall consider all input and/or comments submitted by the groups listed above during preparation of the *ToR PLC* ; and
- (b) A minimum of ninety (90) days prior to the receipt of the *Waste* at the *Site* , the *Owner* shall prepare and submit to the *District Manager* the *ToR PLC* , including documentation demonstrating consideration of all public input and/or comments received, for written concurrence of the *District Manager*;
- (3) The *ToR PLC* shall be amended from time to time according to appropriate amending procedures identified within the content of the *ToR PLC* . Any amendment to the *ToR PLC* must be agreed to by the *District Manager* prior to its implementation;
- (4) Within sixty (60) days from the *District Manager*'s concurrence to the *ToR PLC*, the *Owner* shall take all reasonable steps to establish a *Public Liaison Committee (PLC)* which shall serve as a forum for dissemination, consultation, review and exchange of information regarding the operation of the *Site* , including environmental monitoring, maintenance, complaint resolution, and new approvals or amendments to existing approvals related to the operation of this *Site* ;
- (5) The *Owner* shall invite representation from the following groups to participate on the *PLC* :
- (a) home owners within 2,000 metres of the *Site*;
 - (b) any interested NGOs; and
 - (c) any interested person(s) or group(s);
- (6) The number of representatives from each group shall be as specified in the *ToR PLC* approved by the *District Manager*;
- (7) No later than ninety (90) days from the *District Manager*'s concurrence to the *ToR PLC*, the *Owner* shall submit to the *District Manager* a written report that details steps to be taken by the *Owner* to establish, maintain and participate in a *PLC* . This report shall include the identification of each of the representatives that have been invited to participate in the *PLC* ;
- (8) A copy of the Annual Report that is required by Conditions 52 shall be provided to the *Public Liaison Committee* at the first scheduled meeting following March 31st; and
- (9) The *City* shall allow reasonable access to the *Site* for any member of the *Public Liaison Committee*;

40. (a) The *City* shall ensure that only municipal waste recyclable material, generated within the Province of Ontario, the State of New York and the State of Michigan is received at this *Site*;
54. (1.2) (a) A minimum of six (6) months prior to accepting *Organic Waste* from any new source at the *Site*, the *Owner* shall provide written notice to the *District Manager* of its intent to commence acceptance of the new waste.

The following Item is hereby added to Schedule "A":

57. Environmental Compliance Approval Application requesting that Condition 40 (a) relating to the service area be amended. The application was signed by Mr. Bill Shields, Supervisor of Governance and Compliance, City of Guelph and dated August 2, 2012.
58. Letter dated November 2, 2012 addressed to Mr. Dale Gable, Ministry of the Environment from Mr. Bill Shields, Supervisor of Governance and Compliance, City of Guelph requesting Condition 56 (6)(a) be revoked.

The reasons for this amendment to the Approval are as follows:

1. *The reason for the revocation of Condition 56 (6)(a) is the requirement to maintain negative air pressure is addressed with the ECA related to the air. This condition is a duplicate requirement.*
2. *The reason for the amendment to Condition 29 is to ensure the PLC is an exchange of information for the entire Site and not limited to the Composting Site.*
3. *The reason for the amendment to Condition No. 40 is to approve the service area expansion to include the State of New York as applied for by the City. This is to ensure the facility and equipment can operate at its peak efficiency.*
4. *The reason for the amendment to Condition 54 (1.2)(a) which corrects an administrative error in the last notice.*

This Notice shall constitute part of the approval issued under Approval No. A170128 dated February 10, 2011

In accordance with Section 139 of the Environmental Protection Act, you may by written Notice served upon me and the Environmental Review Tribunal within 15 days after receipt of this Notice, require a hearing by the Tribunal. Section 142 of the Environmental Protection Act provides that the Notice requiring the hearing shall state:

1. The portions of the environmental compliance approval or each term or condition in the environmental compliance approval in respect of which the hearing is required, and;
2. The grounds on which you intend to rely at the hearing in relation to each portion appealed

Pursuant to subsection 139(3) of the Environmental Protection Act, a hearing may not be required with respect to any terms and conditions in this environmental compliance approval, if the terms and conditions are substantially the same as those contained in an approval that is amended or revoked by this environmental compliance approval.

The Notice should also include:

3. The name of the appellant;
4. The address of the appellant;
5. The environmental compliance approval number;
6. The date of the environmental compliance approval;
7. The name of the Director, and;
8. The municipality or municipalities within which the project is to be engaged in

And the Notice should be signed and dated by the appellant.

This Notice must be served upon:

The Secretary*
Environmental Review Tribunal
655 Bay Street, Suite 1500
Toronto, Ontario
M5G 1E5

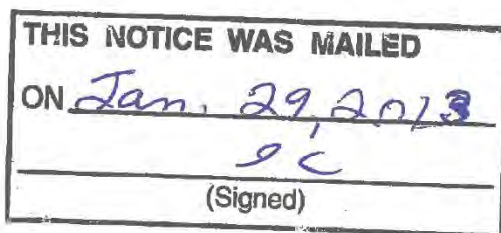
AND

The Director appointed for the purposes of
Part II.1 of the Environmental Protection Act
Ministry of the Environment
2 St. Clair Avenue West, Floor 12A
Toronto, Ontario
M4V 1L5

* Further information on the Environmental Review Tribunal's requirements for an appeal can be obtained directly from the Tribunal at: Tel: (416) 212-6349, Fax: (416) 314-4506 or www.ert.gov.on.ca

The above noted activity is approved under s.20.3 of Part II.1 of the Environmental Protection Act.

DATED AT TORONTO this 24th day of January, 2013



Tesfaye Gebrezghi, P.Eng.
Director
appointed for the purposes of Part II.1 of the
Environmental Protection Act

DG/

c: District Manager, MOE Guelph
Amy Burke, Golder Associates Ltd. ✓

AMENDED ENVIRONMENTAL COMPLIANCE APPROVAL

NUMBER 9496-9NFKJ9

Issue Date: January 7, 2015

The Corporation of the City of Guelph
1 Carden Street
Guelph, Ontario
N1H 3A1

Site Location: Guelph Waste Resource Innovation Centre (WRIC)
110 Dunlop Drive
City of Guelph, County of Wellington

You have applied under section 20.2 of Part II.1 of the Environmental Protection Act, R.S.O. 1990, c. E. 19 (Environmental Protection Act) for approval of:

an amendment to the wastewater infrastructure Works serving the 29.54 hectare Waste Resource Innovation Centre (WRIC) site, consisting of a Solid Waste Transfer Station, a Material Recovery Facility, an Organic Waste Processing Facility, a Municipal Hazardous and Special Waste Depot and a Public Drop-Off (PDO) Area, located at 110 Dunlop Drive on Part of Lot 5, Concession 1, Division C, in the City of Guelph, for the conveyance of sanitary sewage to the existing municipal sanitary sewer system, and for the collection, treatment and disposal of stormwater run-off from the WRIC site, providing Enhanced Level water quality control and erosion protection, and attenuating post-development peak flows to pre-development levels for the 5-year and 100-year storm events, to consolidate previous approvals for the site, to add new storm sewers and stormwater management facilities for the Public Drop-Off (PDO) Area at the eastern portion of the site, and to modify the stormwater facilities at the Solid Waste Transfer Station, consisting of the following:

Proposed Works:**Public Drop-Off (PDO) Area**

storm sewers: - installation of a new stormwater conveyance system serving the Public Drop-Off (PDO) Area, discharging to an oil and grit separator (Oil/Grit1), identified below;

oil and grit separator (Oil/Grit1 - catchment area 1.35 hectares): - one (1) oil and grit separator (Wilkinson Watergate Model WG400, or Approved Equivalent), having a sediment storage capacity of 1.4 m³, an oil storage capacity of 7.2 m³, and a total storage volume of 14.7 m³, and a maximum treatment flow rate of 393 L/s, discharging via a 525 mm diameter outlet pipe to a bioretention and infiltration facility, identified below;

bioretention and infiltration facility (catchment area 2.73 ha): - establishment of a bioretention filter and infiltration basin (Cell 1) and a second infiltration basin (Cell 2) located to the south-east of the Public Drop-Off (PDO) Area, having a minimum detention storage volume of approximately 586 m³ for the 100-year storm event, with an emergency spillway discharging via an existing ditch within a stormwater easement along the east side of the site to Dunlop Drive, and ultimately to the Eramosa River and the Grand River;

Solid Waste Transfer Station (TS) Area

storm sewers: - diversion of the existing storm sewer collection system located south-east of the Solid Waste Transfer Station (TS) from the spill collection and treatment system for the Solid Waste Transfer Station (TS) to an oil and grit separator (Oil/Grit2), identified below;

oil and grit separator (Oil/Grit2 - catchment area 1.09 hectares): - one (1) oil and grit separator (Wilkinson Watergate Model WG400, or Approved Equivalent), having a sediment storage capacity of 1.4 m³, an oil storage capacity of 7.2 m³, and a total storage volume of 14.7 m³, and a maximum treatment flow rate of 393 L/s, discharging via a 375 mm diameter outlet pipe to the existing a stormwater management pond serving the Solid Waste Transfer Station, identified below;

stormwater management pond (catchment area 5.51 ha): - modification of the drainage area to the existing stormwater management dry pond serving the Solid Waste Transfer Station, with a total storage volume of 2,899 m³ at a depth of 1.97 m with a maximum release rate of 628 L/s achieved during a 100-year design storm due to flow restriction by a staged outlet control structure consisting of three orifices having 0.25 m, 0.30 m and 0.50 m diameters;

Previous Works:

Solid Waste Transfer Station

a stormwater and spill collection and treatment system for the Solid Waste Transfer Station serving a concrete apron and a concrete fuel tank base at the petroleum fuelling facility, including:

- a series of catchbasins, manholes and underground storm sewers, discharging to an oil/water separator;
- one (1) coalescing oil/water separator, having a holding capacity of 2,700 L and designed for a maximum flow rate of 260 L/min, discharging to a pump chamber;
- a pump chamber (manhole) equipped with a pump with a rated capacity of 5 L/sec at a total dynamic head of 3.3 m, discharging via an existing swale to a stormwater management pond, identified below;

a stormwater management pond (catchment area 5.85 ha) for the Solid Waste Transfer Station discharging to an existing ditch on Dunlop Drive located to the north-east of the Solid Waste Transfer Station, including:

- a network of vegetated ditches and swales constructed on the site to collect and convey the 100-year design storm run-off to the stormwater management pond via two 525 mm diameter culverts under the driveway;
- one (1) stormwater management dry pond with a total storage volume of 2,899 m³ at a depth of 1.97 m with a maximum release rate of 628 L/s achieved during a 100-year design storm due to flow restriction by a staged outlet control structure consisting of three orifices having 0.25 m, 0.30 m and 0.50 m diameters;
- one (1) shut-off valve at the outlet control structure to allow diversion of any contaminated stormwater to a

sanitary sewage-leachate pumping station (SLPS), identified below;

sanitary sewage-leachate pumping station (SLPS) servicing the Solid Waste Transfer Station consisting of one (1) 3.5 m square by 5.6 m deep concrete wet well with duplex submersible sewage pumps each rated at 14 L/s at 13 m total dynamic head under normal operating condition and 22 L/s at 12 m total dynamic head under a stormwater management pond full/by-pass condition, a 300 mm diameter sanitary sewer inlet, a 200 mm diameter by-pass pipe from/to the adjacent stormwater management pond, identified above, discharging via a 150 mm diameter forcemain along Dunlop Drive to an existing municipal sanitary sewer on Watson Parkway;

Other Operations

redirection of the overflow outlet from the Municipal Hazardous and Special Waste Depot underground spill tank to the lined portion of the compost pad storage pond (CPSP) using a buried sewer pipe equipped with a flat gate and rip-rap protection;

Sanitary and Storm Sewers

sanitary sewers and sewer connections with diameters of 100 mm, 150 mm, and 200 mm;

storm sewers with diameters of 300 mm, 600 mm, and 900 mm;

small sanitary sewage pumping station, located in the north-east sector of the site, consisting of one (1) 1.2 m diameter sewage pumping station (SPS), complete with one (1) 4.8 m deep wet well, two (2) grinder pumps, each rated at 7.6 L/s at a total dynamic head of 16 m, and one (1) 100 mm diameter forcemain from the SPS to sanitary sewer manhole (MH 1) on Dunlop Drive connected to the existing municipal sanitary sewer system;

Stormwater Management Facilities

a stormwater management facility servicing the Waste Resource Innovation Centre, designed as a stormwater detention wet pond (SDP), having a permanent pool volume of 705 m³ for quality control and outlet control devices for quantity control, including:

- a perimeter drainage swale around the site;
- subsurface infiltration trenches to accommodate roof-top run-off;
- grass-lined drainage ditches;
- two (2) double-inlet catch basins located within the grassed ditch to capture and direct surface stormwater run-off from around the perimeter of the outdoor compost curing pad (OCCP) to a 300 mm diameter storm sewer leading to stormwater detention pond 1 (SDP1);
- one (1) lined compost pad storage pond (CPSP) with a temporary storage capacity of 100 m³ for run-off from the 1.56 ha outdoor compost curing pad (OCCP) having a total storage capacity of 540 m³;
- one (1) 600 mm diameter inlet storm sewer connecting the compost pad storage pond (CPSP) and manhole (MH 5) at the outdoor compost curing pad (OCCP);
- an outlet from the compost pad storage pond (CPSP) to the sanitary sewer system via a 200 mm diameter sewer leading to manhole (MH A2), with a 50 mm diameter orifice plate at the pipe inlet, for conveyance of the run-off from the outdoor compost curing pad (OCCP) to the sewage pumping station (SPS) at a maximum controlled rate of 7 L/s for the 100-year storm event;

- a separation berm between the compost pad storage pond (CPSP) and stormwater detention pond 1 (SDP1), including a ditch inlet catch basin with invert at 0.45 m above the bottom of the compost pad storage pond (CPSP), to convey excess flow to stormwater detention pond 1 (SDP1) during the 2-year storm event or greater with corresponding compost pad storage pond (CPSP) volumes of greater than 100 m³ via a 900 mm diameter pipe from the ditch inlet catchbasin and over the separation berm;
- an impermeable liner along the base and slopes of the compost pad storage pond (CPSP);

a stormwater detention wet pond (SDP1, catchment area 5.71 ha) having a permanent pool volume of approximately 630 m³ at a depth of 0.6 m and a total storage volume of 2,090 m³, including the permanent pool volume, including:

- seven (7) stormwater inlet locations around the pond perimeter for direct conveyance of run-off from a total drainage area of up to 5.71 ha into the pond, in addition to the 900 mm diameter overflow line from the compost pad storage pond (CPSP) ditch inlet catch basin to a rip rap protected area;
- a small, impermeable berm constructed around the pond outlet structure to ensure the minimum required permanent pool storage volume for quality control;
- an outlet structure for discharge of effluent to stormwater detention pond 2 (SDP2) via a 900 mm diameter sewer equipped at the inlet with a headwall and an adjustable steel gate with a 200 mm diameter orifice for quantity control;

a stormwater detention wet pond (SDP2, catchment area 2.87 ha) having a permanent pool volume of approximately 75 m³ and a total storage volume of 1,870 m³, including the permanent pool volume, designed for controlled outflow rates of 0.12 m³/s for the 5-year storm event and 0.18 m³/s for the 100-year storm event, including:

- four (4) stormwater inlet locations around the pond perimeter for direct conveyance of run-off from a total drainage area of 2.87 ha into the pond, in addition to the 900 mm diameter inlet sewer from stormwater detention pond 1 (SDP1);
- a small, impermeable berm constructed around the pond outlet structure to ensure the minimum required permanent pool storage volume for quality control;
- an outlet structure for discharge of effluent to the Dunlop Drive roadside ditch via a 900 mm diameter CSP sewer equipped at the inlet with a headwall and an adjustable steel gate with a 400 mm diameter orifice for quantity control;

including erosion/sedimentation control measures during construction and all other controls, electrical equipment, instrumentation, piping, valves and appurtenances essential for the proper operation of the aforementioned Works;

all in accordance with the submitted supporting documents listed in Schedule "A" forming part of this Approval.

For the purpose of this environmental compliance approval, the following definitions apply:

"Approval" means this entire document including the application and any supporting documents listed in any schedules in this Approval;

"Approved Equivalent" means a substituted product that meets the required quality and performance standards of a named product and has been approved for substitution in writing by the Director.

"Director" means a person appointed by the Minister pursuant to section 5 of the Environmental Protection Act for the purposes of Part II.1 of the Environmental Protection Act;

"Ministry" means the ministry of the government of Ontario responsible for the Environmental Protection Act and the Ontario Water Resources Act and includes all officials, employees or other persons acting on its behalf;

"Owner" means The Corporation of the City of Guelph and includes their successors and assignees;

"Previous Works" means those portions of the sewage Works previously approved under an Approval;

"Water Supervisor" means the Water Supervisor of the Guelph office of the Ministry;

"Works" means the sewage works described in the Owner's application(s) and this Approval.

You are hereby notified that this environmental compliance approval is issued to you subject to the terms and conditions outlined below:

TERMS AND CONDITIONS

1. GENERAL PROVISIONS

(1) The Owner shall ensure that any person authorized to carry out work on or operate any aspect of the Works is notified of this Approval and the Conditions herein and shall take all reasonable measures to ensure any such person complies with the same.

(2) Except as otherwise provided by these Conditions, the Owner shall design, build, install, operate and maintain the Works in accordance with the description given in this Approval, and the application for approval of the Works.

(3) Where there is a conflict between a provision of any submitted document referred to in this Approval and the Conditions of this Approval, the Conditions in this Approval shall take precedence, and where there is a conflict between the listed submitted documents, the document bearing the most recent date shall prevail.

(4) Where there is a conflict between the listed submitted documents, and the application, the application shall take precedence unless it is clear that the purpose of the document was to amend the application.

(5) The Conditions of this Approval are severable. If any Condition of this Approval, or the application of any requirement of this Approval to any circumstance, is held invalid or unenforceable, the application of such Condition to other circumstances and the remainder of this Approval shall not be affected thereby.

(6) The issuance of, and compliance with the Conditions of this Approval does not:

(a) relieve any person of any obligation to comply with any provision of any applicable statute, regulation or other legal requirement, including, but not limited to, the obligation to obtain approval from the local conservation authority necessary to construct or operate the sewage Works; or

(b) limit in any way the authority of the Ministry to require certain steps be taken to require the Owner to furnish any further information related to compliance with this Approval.

(7) This Approval includes the collection, treatment and disposal of stormwater run-off from the 29.54 hectare Waste Resource Innovation Centre (WRIC) in the City of Guelph, to provide Enhanced Level water quality control and erosion protection, discharging via existing ditches to the Eramosa River. Any changes within the drainage areas that might increase the required storage volumes or increase the flows to or from the stormwater management facilities or any structural/physical changes to the stormwater management facilities, including the inlets and outlets will require an amendment to this Approval.

2. EXPIRY OF APPROVAL

This Approval will cease to apply to those parts of the proposed Works which have not been constructed within **five (5) years** of the date of this Approval.

3. CHANGE OF OWNER

(1) The Owner shall notify the Water Supervisor and the Director, in writing, of any of the following changes within **thirty (30) days** of the change occurring:

(a) change of Owner;

(b) change of address of the Owner;

(c) change of partners where the Owner is or at any time becomes a partnership, and a copy of the most recent declaration filed under the Business Names Act, R.S.O. 1990, c. B17 shall be included in the notification to the Water Supervisor;

(d) change of name of the corporation where the Owner is or at any time becomes a corporation, and a copy of the most current information filed under the Corporations Information Act, R.S.O. 1990, c. C39 shall be included in the notification to the Water Supervisor.

4. OPERATION AND MAINTENANCE

(1) The Owner shall ensure that the design minimum liquid retention volume(s) is maintained in the wet ponds at all times.

(2) The Owner shall conduct a monthly visual inspection of the oil/water separators and the effluent from the pumping manhole during discharge of treated water for any visual oil sheen.

(3) The Owner shall inspect the Works at least once a year and, if necessary, clean and maintain the Works to prevent the excessive build-up of sediments, debris, and/or vegetation, maintain the inlet and outlet structures, and address any signs of slope erosion.

(4) The Owner shall maintain a logbook to record the results of these inspections and any cleaning and maintenance operations undertaken, and shall keep the logbook at the Corporate Office for inspection by the Ministry. The logbook shall include the following:

(a) the name of the Works; and

(b) the date and results of each inspection, maintenance and cleaning, including an estimate of the quantity of any materials removed.

5. MONITORING AND REPORTING

(1) The Owner shall implement a ground water and surface water sampling program to ensure early detection of contaminants in the event that such contaminants escape the Waste Resource Innovation Centre (WRIC) site, as follows:

(2) Ground Water and Surface Water shall be sampled and analysed for the following parameter suite:

Parameters (sampled semi-annually in the spring and fall)	Biological Oxygen Demand (BOD)	Chloride (Cl)
	Chemical Oxygen Demand (COD)	Sodium (Na)
	Total Kjeldahl Nitrogen (KTN)	Calcium (Ca)
	Ammonia as Nitrogen (NH ₃ -N)	Boron (B)
	Total Phosphorus (Total P)	Total Iron (Fe)
	Total Sulphate (SO ₄)	Phosphorus (P)
	Phenols	Zinc (Zn)
	Nitrate (NO ₃) and Nitrite (NO ₂)	
General Parameters (semi-annually)	pH	Magnesium (Mg)
	Conductivity	Potassium (K)
	Alkalinity	
Organics (sampled annually)	EPA 624,625 (ATG 16+17+18) & ATG (19+20)	
Field Parameters	pH, Conductivity, Temperature	

(3) The surface water monitoring shall include obtaining grab samples at the discharge locations of the final surface water off the Waste Resource Innovation Centre (WRIC) site, for at least three (3) wet events per year (a wet event is defined as a minimum of 15 mm of rain in the previous 24 hours), and tested for Total Suspended Solids (mg/L), and the results recorded. Two (2) of the events must occur within the May to September time period.

(4) The Owner shall **annually** review and update the ground water and surface water sampling programs, designed to detect and quantify any impacts originating from the Waste Resource Innovation Centre (WRIC) site.

(5) Sampling frequency and parameters for analysis may be adjusted upon the written approval of the Water Supervisor, from time to time, as ground water and surface water information becomes available.

(6) All ground water monitoring wells which form part of any monitoring program shall be protected from damage. Any ground water monitoring wells that are damaged shall be repaired or replaced forthwith or properly abandoned in accordance with Ontario Regulation 903.

(7) The Owner shall **annually** review and update, if required, the detailed maintenance schedules for the stormwater management facilities on the Waste Resource Innovation Centre (WRIC) site.

(8) The Owner shall submit to the Water Supervisor, **every year**, a copy of the test results as per Condition 5, Subsection (2) and Subsection (3), above.

(9) The Owner shall submit to the Water Supervisor, an **annual report** on the ground water and surface water sampling and monitoring program described herein, and shall include an interpretation of the results prepared by a qualified hydrogeologist, engineer or scientist, and shall identify any remedial/mitigative action taken.

6. SPILL CONTINGENCY AND POLLUTION PREVENTION PLAN

(1) Upon commencement of operation of the Works, the Owner shall implement a Spill Contingency and Pollution Prevention Plan that outlines procedures as to how to mitigate the impacts of a spill within the area serviced by the Works and/or prevent pollution incidents. The said plan shall include as a minimum, but not limited to:

(a) the name, job title and location (address) of the Owner, person in charge, management or control of the Waste Resource Innovation Centre (WRIC) at 110 Dunlop Drive;

(b) the name, job title and 24-hour telephone number of the person(s) responsible for activating the Spill Contingency and Pollution Prevention Plan;

(c) a site plan drawn to scale showing the facility, nearby buildings, streets, catchbasins & manholes, drainage patterns (including direction(s) of flow in storm sewers) and any features which need to be taken into account in terms of potential impacts on access and response (including physical obstructions and location of response and clean-up equipment);

(d) steps to be taken to report, contain, clean up and dispose of contaminants following a spill;

(e) a listing of telephone numbers for: local clean-up companies who may be called upon to assist in responding to spills; local emergency responders including health institution(s); and MOE Spills Action Centre 1-800-268-6060;

- (f) Materials Safety Data Sheets (MSDS) for each and every hazardous material which may be transported or stored within the area serviced by the Works;
- (g) the means (internal corporate procedures) by which the Spill Contingency and Pollution Prevention Plan is activated;
- (h) a description of the spill response and pollution prevention training provided to employees assigned to work in the area serviced by the Works, the date(s) on which the training was provided and to whom;
- (i) an inventory of response and clean-up equipment available to implement the Spill Contingency and Pollution Prevention Plan, location and date of maintenance/replacement if warranted, including testing and calibration of the equipment; and
- (j) the date on which the Spill Contingency and Pollution Prevention Plan was prepared and subsequently, amended.

(2) The Spill Contingency and Pollution Prevention Plan shall be kept in a conspicuous place near the reception area on site.

(3) The Spill Contingency and Pollution Prevention Plan will be amended from time to time as needed by changes in the operation of the facility or to reflect updates in the Municipal By-Laws, or improved Best Management Practices by the Owner.

7. TEMPORARY EROSION AND SEDIMENT CONTROL

(1) The Owner shall install and maintain temporary sediment and erosion control measures during construction and conduct inspections once every **two (2) weeks** and after each significant storm event (a significant storm event is defined as a minimum of 25 mm of rain in any 24 hours period). The inspections and maintenance of the temporary sediment and erosion control measures shall continue until they are no longer required and at which time they shall be removed and all disturbed areas reinstated properly.

(2) The Owner shall maintain records of inspections and maintenance which shall be made available for inspection by the Ministry, upon request. The record shall include the name of the inspector, date of inspection, and the remedial measures, if any, undertaken to maintain the temporary sediment and erosion control measures.

8. RECORD KEEPING

The Owner shall retain for a minimum of **five (5) years** from the date of their creation, all records and information related to or resulting from the operation and maintenance activities required by this Approval.

Schedule "A"

1. Application for Approval of Industrial Sewage Works, dated October 18, 2002, and associated documents, submitted by The Corporation of the City of Guelph;
2. Application for Approval of Municipal and Private Sewage Works, dated August 16, 2007, and received on August 20, 2007, submitted by The Corporation of the City of Guelph;
3. Storm & Sanitary Drainage Assessment Report for the City of Guelph Waste Resource Innovation Centre, dated August, 2007, prepared by Gartner Lee Limited;
4. Letters with attachments from Glenn Farmer of Gartner Lee Limited to the Ministry, dated October 5, 2007 and November 26, 2007;
5. E-mail with attachments from Glenn Farmer of Gartner Lee Limited to the Ministry, dated April 1, 2008;
6. E-mail from the Ministry to Glenn Farmer of Gartner Lee Limited, dated April 21, 2008;
7. Stormwater Management Report and final plans and specifications, dated 1992, prepared by R. Cave and Associates Engineering Ltd., Consulting Engineers;
8. Application for Approval of Municipal and Private Sewage Works, along with supporting information, dated April 13, 2010 and received on April 14, 2010, submitted by the The Corporation of the City of Guelph;
9. E-mail along with supporting information from Glenn Farmer of AECOM to the Ministry, dated May 14, 2010;
10. Application for Approval of Sewage Works, dated August 25, 2011 and submitted by The Corporation of the City of Guelph;
11. Design Brief and engineering drawings and specifications, dated August 9, 2011, provided by Vida Stripinis & Associates Limited;
12. Application for Approval of Municipal and Private Sewage Works, dated March 25, 2014, and received on April 15, 2014, submitted by the The Corporation of the City of Guelph;
13. Pipe Data Form and Storm Sewer Design Sheet, dated February 2014, prepared by Sco-Terra Consulting Group Limited;
14. Design Level Stormwater Management Plan, dated April 2014, prepared by Sco-Terra Consulting Group Limited;
15. Set of Engineering Drawings (22 drawings), dated April 14, 2014, prepared by Sco-Terra Consulting Group Limited;

16. E-mail and letter from Richard Pellerin of Sco-Terra Consulting Group Limited to the Ministry, dated September 24, 2014; and
17. E-mails from Richard Pellerin of Sco-Terra Consulting Group Limited to the Ministry, dated November 25, 2014, December 18, 2014, and January 7, 2015.

The reasons for the imposition of these terms and conditions are as follows:

1. Condition 1 is imposed to ensure that the Works are built and operated in the manner in which they were described for review and upon which approval was granted. This Condition is also included to emphasize the precedence of Conditions in the Approval and the practice that the Approval is based on the most current document, if several conflicting documents are submitted for review.
2. Condition 2 is included to ensure that, when the Works are constructed, the Works will meet the standards that apply at the time of construction to ensure the ongoing protection of the environment.
3. Condition 3 is included to ensure that the Ministry records are kept accurate and current with respect to approved Works and to ensure that any subsequent Owner of the Works is made aware of the Approval and continues to operate the Works in compliance with it.
4. Condition 4 is included to require that the Works be properly operated and maintained such that the environment is protected.
5. Condition 5 is included to enable the Owner to evaluate and demonstrate the performance of the Works on a continual basis, so that the Works are properly operated and maintained at a level which is consistent with the design objectives specified in the Approval and that the Works do not cause any impairment to the receiving watercourse.
6. Condition 6 is included to ensure that the Ministry is immediately informed of the occurrence of an emergency or otherwise abnormal situation so that appropriate steps are taken to address the immediate concerns regarding the protection of public health and minimizing environmental damage and to be able to devise an overall abatement strategy to prevent long term degradation and the re-occurrence of the situation.
7. Condition 7 is included as installation, regular inspection and maintenance of the temporary sediment and erosion control measures is required to mitigate the impact on the downstream receiving watercourse during construction, until they are no longer required.
8. Condition 8 is included to require that all records are retained for a sufficient time period to adequately evaluate the long-term operation and maintenance of the Works.

Upon issuance of the environmental compliance approval, I hereby revoke Approval No(s). 5015-856HHF, and 5320-8NXX2Y issued on June 16, 2010 and December 8, 2011 respectively.

In accordance with Section 139 of the Environmental Protection Act, you may by written Notice served upon me and the Environmental Review Tribunal within 15 days after receipt of this Notice, require a hearing by the Tribunal. Section 142 of the Environmental Protection Act provides that the Notice requiring the hearing shall state:

1. The portions of the environmental compliance approval or each term or condition in the environmental compliance approval in respect of which the hearing is required, and;
2. The grounds on which you intend to rely at the hearing in relation to each portion appealed.

Pursuant to subsection 139(3) of the Environmental Protection Act, a hearing may not be required with respect to any terms and conditions in this environmental compliance approval, if the terms and conditions are substantially the same as those contained in an approval that is amended or revoked by this environmental compliance approval.

The Notice should also include:

3. The name of the appellant;
4. The address of the appellant;
5. The environmental compliance approval number;
6. The date of the environmental compliance approval;
7. The name of the Director, and;
8. The municipality or municipalities within which the project is to be engaged in.

And the Notice should be signed and dated by the appellant.

This Notice must be served upon:

The Secretary*
Environmental Review Tribunal
655 Bay Street, Suite 1500
Toronto, Ontario
M5G 1E5

AND

The Director appointed for the purposes of
Part II.1 of the Environmental Protection Act
Ministry of the Environment
2 St. Clair Avenue West, Floor 12A
Toronto, Ontario
M4V 1L5

*** Further information on the Environmental Review Tribunal's requirements for an appeal can be obtained directly from the Tribunal at: Tel: (416) 212-6349, Fax: (416) 314-4506 or www.ert.gov.on.ca**

The above noted activity is approved under s.20.3 of Part II.1 of the Environmental Protection Act.

DATED AT TORONTO this 7th day of January, 2015



Edgardo Tovilla
Director
appointed for the purposes of Part II.1 of the
Environmental Protection Act

DC/

c: DWMD Supervisor, MOE Guelph office
Richard Pellerin, P. Eng, Sco-Terra Consulting Group Limited

AMENDMENT TO ENVIRONMENTAL COMPLIANCE APPROVAL

NUMBER A170128

Notice No. 4

Issue Date: January 9, 2015

The Corporation of the City of Guelph
1 Carden St
Guelph, Ontario
N1H 3A1

Site Location: Guelph Waste Resource Innovation Centre (WRIC)
110 Dunlop Dr
Guelph City, County of Wellington
N1H 6N1

You are hereby notified that I have amended Approval No. A170128 issued on February 10, 2011 for the use and operation of a 29.54 hectare Waste Disposal Site (Transfer/Processing), as follows:

1. Paragraphs c) and d) of the pre-amble have been amended to read as follows:
 - c) the use and operation of a Municipal Hazardous and Special Waste facility for the transfer and temporary storage of the following categories of waste (*Note: Use of the Site for additional categories of wastes requires a new application and amendments to the Provisional Certificate of Approval*); *Municipal Hazardous and Special Waste* limited to the following waste classes; 112, 121, 145, 146, 147, 148, 212, 213, 221, 242, 251, 252, 261, 263, 269, 312, and 331 as described in the Ministry of the Environment's document entitled "*Ontario Waste Classes*", dated February 2013, as amended, limited to a maximum Site storage capacity of 15 tonnes; and
 - d) the use and operation of a Waste Disposal Site (Transfer) for solid non-hazardous waste from industrial, commercial and institutional sources, commercial waste and domestic waste, with an indoor storage maximum capacity of 795 tonnes and outdoor storage areas for leaf and yard waste and for recyclable waste.
2. The following definitions have been amended to read as follows:
 - (g) "**Environmental Compliance Approval (Air/Noise)**" means the **Environmental Compliance Approval** issued for the Site for the activities mentioned in subsection 9 (1) of the *EPA* for the Composting Site;

- (ee) **"Municipal Hazardous and Special Waste" and "MHSW"** mean hazardous waste or special waste generated by households located within geographic boundaries of the City of Guelph and the County of Wellington that fall within waste numbers 112, 121, 145, 146, 147, 148, 212, 213, 221, 242, 251, 252, 261, 263, 269, 312, and 331 as set out in the Ministry of the Environment's document entitled "Ontario Waste Classes", dated February 2013, as amended, and as defined in *Regulation 347*, and also include wet cell batteries and small dry cell batteries, household cleaners and detergents, aerosols, waxes and polishes, fluorescent tubes and energy efficient light bulbs and mercury switches and thermostats;

3. The following definitions have been added:

- (jjj) **"Public Drop-off area"** means the East Public Drop-Off and the West Public Drop-Off areas set out in the supporting documentation included in the attached Schedule "A";
- (kkk) **"Environmental Compliance Approval (Municipal and Private Sewage Works)"** means the Environmental Compliance Approval issued for the Site for the activities mentioned in subsection 53 of the *OWRA*;

4. The following conditions have been amended to read as follows:

17.(4)(e) **Waste Storage**
wastes that are in bins in the Public Drop-Off area; and

46.(c) **Complaints Procedure**
The *Municipality* shall immediately orally notify the *Ministry* of the complaint, followed with the submission of a written report within three (3) days, of the complaint detailing what actions, if any, were taken to identify and remediate the cause of the complaint and what remedial action, if any, would be taken.

52.(e) **Annual Report**
an annual summary of the analytical results from the groundwater monitoring program and from surface water monitoring required in Environmental Compliance Approval (Municipal and Private Sewage Works), including an interpretation of the results and any remedial/mitigative action undertaken;

54.(1.2)(b)(iv) **Organic Waste and Composting Site**
confirmation whether inclusion of the *Organic Waste* in a biodegradable certified compostable bag is characterized as incidental/inadvertent or a result of collection through a waste collection program that allows the use of the said compostable bags;

5. Conditions 32, 33, 34, 35 and 36 are deleted.

6. The following documents have been added to Schedule "A":

57. Environmental Compliance Approval Application dated April 2, 2013, signed by Bill Shields, The Corporation of the City of Guelph, including the attached supporting documentation.
58. E-mail dated March 17, 2014 (9:31 a.m.) from Bill Shields, The Corporation of the City of Guelph, to Margaret Wojcik, Ontario Ministry of the Environment and Climate Change, with the description of the amended access to the West PDO and including the description of the wastes received at this location.

The reasons for this amendment to the Approval are as follows:

to approve an additional Public Drop-Off location, a new brush and leaf and yard waste storage areas, the new waste class to be accepted at Municipal Hazardous and Special Waste facility and to correct an administrative ambiguity in Condition 54.(1.2)(b)(iv). Conditions 32 through 35 are deleted since the groundwater and the surface water monitoring is required in the Environmental Compliance Approval (Municipal and Private Sewage Works) issued for the Site.

This Notice shall constitute part of the approval issued under Approval No. A170128 dated February 10, 2011, as amended.

In accordance with Section 139 of the Environmental Protection Act, you may by written Notice served upon me and the Environmental Review Tribunal within 15 days after receipt of this Notice, require a hearing by the Tribunal. Section 142 of the Environmental Protection Act provides that the Notice requiring the hearing shall state:

1. The portions of the environmental compliance approval or each term or condition in the environmental compliance approval in respect of which the hearing is required, and;
2. The grounds on which you intend to rely at the hearing in relation to each portion appealed.

Pursuant to subsection 139(3) of the Environmental Protection Act, a hearing may not be required with respect to any terms and conditions in this environmental compliance approval, if the terms and conditions are substantially the same as those contained in an approval that is amended or revoked by this environmental compliance approval.

The Notice should also include:

3. The name of the appellant;
4. The address of the appellant;
5. The environmental compliance approval number;
6. The date of the environmental compliance approval;
7. The name of the Director, and;
8. The municipality or municipalities within which the project is to be engaged in.

And the Notice should be signed and dated by the appellant.

This Notice must be served upon:

The Secretary*
Environmental Review Tribunal
655 Bay Street, Suite 1500
Toronto, Ontario
M5G 1E5

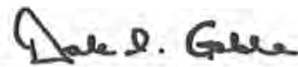
AND

The Director appointed for the purposes of
Part II.1 of the Environmental Protection Act
Ministry of the Environment
2 St. Clair Avenue West, Floor 12A
Toronto, Ontario
M4V 1L5

*** Further information on the Environmental Review Tribunal's requirements for an appeal can be obtained directly from the Tribunal at: Tel: (416) 212-6349, Fax: (416) 314-3717 or www.ert.gov.on.ca**

The above noted activity is approved under s.20.3 of Part II.1 of the Environmental Protection Act.

DATED AT TORONTO this 9th day of January, 2015



Dale Gable, P.Eng.

Director

appointed for the purposes of Part II.1 of the *Environmental*

MW/

c: District Manager, MOE Guelph
Chris Visser, Golder Associates Ltd.

December 3, 2013

Mr. Bill Shields
Supervisor of Governance & Compliance
Solid Waste Resources
Environmental Services Department
City of Guelph
59 Carden Street
Guelph, ON N1H 3A1

Dear Mr. Shields:

Project No: 60266226-03

Regarding: Follow Up Response to Ministry of the Environment Comments on the Surface Water Monitoring Program and Proposed Action Plan– City of Guelph

We have reviewed the comments received from the Ministry of the Environment (MOE) via email on October 31, 2013 with regard to our further response to the surface water comments from MOE review of the 2012 Annual Report dated October 8, 2013.

Based on the follow-up comments the MOE has agreed to the monitoring of Stormwater Detention Pond 2 (SD2) during and after precipitation events with water quality sampling only if discharge is required. The MOE has also requested that if this monitoring is to proceed that documentation regarding the operations of the pond should be provided in order to address, capacity, freeboard and the trigger level at which the pond will be discharged.

Discussion

A detailed assessment of the storm water ponds is contained in the "Storm & Sanitary Drainage Assessment Report for the City of Guelph Waste Resource Innovation Centre, dated August 2007 (GLL70-176). The physical characteristics of Pond SD2, as outlined in Table 3.5 of the drainage assessment report, are provided in the table below.

Depth / Stage (m)	Storage Volume (m3)	Pond Outflow 400 mm ϕ . (m ³ /s) ¹	Pond Outflow 900 mm ϕ CSP (m ³ /s) ¹	Comments
0	75	0000	0.000	Pond invert
0.2	470	0.149	0.293	400 mm orifice set at + 0.15 m above invert
0.45	870	0.224	0.535	
1.0	1870	0.334	1.254	Maximum pond depth

Notes: 1-units were incorrectly stated as L/s in the report (GLL70-176) as values in report are correctly report in m³/s.

Based on the detailed site assessment, it was determined that the Pond SD2 outlet could accommodate the peak flow generated by a 100 year storm (i.e., predicted outflow is 1.2 m³/s versus 1.33 m³/s pre development levels). However, it was concluded through modelling, that due to the modification to the system, which included the blockage of the outlet at SD2, that there could be surface flooding in the low lying areas for storm events in excess of a 5 year storm. Although this has not been observed at the site to-date, it is recommended that the trigger water level in the pond be set based on the theoretical calculation for a 5 year storm, in order to be conservative. Therefore, the trigger water level is to be set at 0.46 m as per the theoretical volume calculated in Pond SD2 of 890 m³ from a 5 year storm (Table 3.6 in the drainage assessment report).

Based on the above information, the following surface water monitoring program is recommended:

- Assess Storm Water Detention Pond 2 on a monthly basis/ and or during periods of rain/storm events (where practical);
- Install a staff gauge at the point of discharge from Pond SD2 to record observed levels;
- When a target level of 0.46 m above pond invert is reached, discharge would be required;
- Water quality sampling should be completed, prior to any discharge, to insure all applicable Provincial Water Quality Objectives (PWQO) and Canadian Water Quality Guidelines (CWQG) are met.
- If applicable guidelines are met off site discharge should be completed until below the outlet invert. Upon reaching this level, the outlet should then be closed.

Further to the above, the storm water management pond (TP) on the transfer station property will continue on the monthly frequency, under non stagnant conditions, based on current proposed upgrades to the transfer station facility. As part of this, sampling of the background station EPTS-01 should also continue on a monthly basis.

We trust that this meets your requirement at this time. Should you need further information or clarifications please do not hesitate to contact me at (905) 747-7482.

Sincerely,

AECOM Canada Ltd.



Terry La Chapelle, B.Sc., P.Geo.
Senior Geologist, Project Manager

TLC:mm .
cc: Kevin Noll, MOE
Glenn Farmer, AECOM

Ministry of the Environment
and Climate Change

Environmental Approvals
Branch

135 St. Clair Avenue West
1st Floor
Toronto ON M4V 1P5
Tel.: 416 314-8001
Fax: 416 314-8452

Ministère de l'Environnement et de
l'Action en matière de changement
climatique

Direction des autorisations
environnementales

135, avenue St. Clair Ouest
Rez-de-chaussée
Toronto ON M4V 1P5
Tél : 416 314-8001
Téléc. : 416 314-8452



May 3, 2016

Bill Shields, Supervisor, Governance & Compliance, Solid Waste
The Corporation of the City of Guelph
1 Carden Street
Guelph, Ontario
N1H 3A1

Dear Bill:

Re: Amendment to the Environmental Compliance Approval No. A 170128 dated
February 10, 2011 and interpretation of the outdoor storage terms and conditions

Please see attached to this letter, a signed Notice of Amendment (No. 5), dated May 3, 2016. In addition to the Notice, we are providing you with additional explanation of the following existing terms and conditions related to outdoor storage: Conditions 17.(4)(d), 40.(c), 40.(e) and 40.(g). Please note that these terms and conditions have not been amended in this Notice of Amendment.

With regards to the relevant terms in your conditions, the following information is provided:

1. **commingled recyclables** – means two or more of the categories of recyclables mixed together, unprocessed and as picked up at the source of generation
2. **processed materials** – means recyclables that have been processed at the site as approved in the ECA, therefore not in the condition as when leaving the source of generation
3. **source-separated materials** – means individual categories of recyclables separated at the source of generation
4. **non-putrescible** – means not easily bio-degradable; usually means clean recyclables not containing food waste constituent. As a result, they are not a potential source of odours
5. **dropped off by commercial vehicles** – means waste dropped off in vehicles owned by generators encompassing an enterprise or activity involving the exchange of goods or services, including the following:
 - (a) a hotel, motel, hostel or similar accommodation;
 - (b) an office building
 - (c) in respect of the classification of occupancies in Table 3.1.2.1. of Division B of Ontario Regulation 350/06 (Building Code) made under the Building Code Act, 1992, facilities that fall within:

- (i) Group D, business and personal services occupancies, or
 - (ii) Group E, mercantile occupancies
6. **dropped off by residential vehicles** – means waste dropped by residents having access to the public drop off area

With regards to the conditions, the following comments are provided:

Condition 40.(c):

40.(c) All materials to be processed at the Material Recovery Facility shall be unloaded and processed indoors except commingled recyclables which may also, as required, be unloaded into the outdoor storage bunker assigned to this material, or in the Organic Waste Processing Facility when not in use for Composting;

As currently worded in Condition 40.(c), above, commingled recyclables may be unloaded but not stored in the outdoor storage bunker.

Condition 40.(e):

40.(e) The City shall limit any outside storage to processed or source-separated non-putrescible dry materials, dropped off by either commercial or residential vehicles, including but not necessarily limited to tires, rubble, electronic waste, source separated roofing shingles, mattresses, textiles, white goods, construction and demolition wastes, commingled recyclables, wood waste, waste wood, glass, scrap metal, and drywall;

As currently set out in Condition 40.(e), above, outdoor storage, as set out in Condition 40.(g), below, is allowed for:

- all processed recyclables processed at the site as approved in the ECA; or
- non-putrescible (therefore non-odorous), dry recyclables dropped off by commercial vehicles; or
- non-putrescible (therefore non-odorous), dry recyclables dropped off by residents in the public drop off area.

Condition 40.(g):

40.(g) Outside storage shall be on an asphalt pad, or equivalent impermeable surface, within designated concrete bunkers, or in closed storage containers in a manner and in amounts which does not create a nuisance or hazard;

In accordance with Condition 40.(g), above, outside storage consists of designated concrete bunkers or closed storage containers and must not create a nuisance or a hazard.

Condition 17(4)(d)(ii):

17.(4)(d) Outdoor storage of the following:

- (ii) a maximum of 3050 tonnes of non-putrescible recyclable wastes stored in dedicated bunkers or covered bins on an asphalt paved pad of approximate area of 6100 square metres pads located to the south of the transfer station and an asphalt paved pad of approximate area 2,100 square metres to the west of the Organic Processing Facility for the storage of such recyclable materials as waste electronics, tires, scrap metal, corrugated cardboard and reusable materials;*

Since Conditions 40(e) and 40.(g), respectively, limit outside storage to the types of waste and locations where waste may be stored, the same interpretation of the means of storage is applicable to Condition 17(4)(d)(ii), above. Therefore as currently set out in Condition 17(4)(d)(ii), above, the outdoor storage is allowed for:

- processed recyclables (as approved in the ECA) or non-putrescible (therefore non-odorous) dry recyclables dropped off by commercial vehicles or non-putrescible (therefore non-odorous) dry recyclables dropped off by residents in the public drop off area, and when stored in outdoor bunkers or in covered bins

Should you have any questions regarding the above, please do not hesitate to contact Margaret Wojcik, P.Eng., Senior Review Engineer, at 416-314-5138.

Sincerely,



Dale Gable, P.Eng.

Director

appointed for the purposes of Part II.1 of the *Environmental Protection Act*

Enclosure

MW/

AMENDMENT TO ENVIRONMENTAL COMPLIANCE APPROVAL

NUMBER A170128

Notice No. 5

Issue Date: May 3, 2016

The Corporation of the City of Guelph
1 Carden St
Guelph, Ontario
N1H 3A1

Site Location: Waste Resource Innovation Centre
110 Dunlop Dr
Guelph City, County of Wellington, Ontario

You are hereby notified that I have amended Approval No. A170128 issued on February 10, 2011 for the use and operation of a 29.54 hectare Waste Disposal Site (Transfer/Processing) , as follows:

I. The following definitions have been amended to read as follows:

"dry waste" means those wastes not identified in the *Organic Waste* and the *Municipal Hazardous and Special Waste* waste streams;

"Organic Waste" means solid non-hazardous waste derived from plants or animals, including wastes consisting of other compounds of carbon, all readily biodegradable, and limited to wastes listed in Condition 54 of this *Approval*, and destined for processing in the *Organic Waste Processing Facility*;

II. The following definitions have been added:

"Biofilter" means the one (1) enclosed biofilter described in this *Approval* and in the *Environmental Compliance Approval (Air/Noise)* and in the supporting documentation referred to herein, to the extent approved in this *Approval* and in the *Environmental Compliance Approval (Air/Noise)*;

"Organic Waste Processing Facility" means the facility for the *Organic Waste* receiving, pre-processing, *Composting*, screening and curing, comprising the *Processing Building*, the *Air Pollution Control Equipment* consisting of the humidification chambers combined with ammonia scrubbers and an enclosed down-flow *Biofilter*, a stand-by diesel generator and natural gas-fired heating, ventilation and air conditioning (HVAC) units, as proposed in the application

for the Environmental Compliance Approval (formerly Certificate of Approval for a Waste Disposal Site), dated October 22, 2009 and signed by Bill Shields, Corporation of the City of Guelph, including the Report, dated October 2009 and prepared by Golder Associates Ltd. and referred to in Items #32 to #48 of the attached Schedule "A";

"Processing Building" means the fully enclosed building consisting of the following *Organic Waste* and *Amendment Materials* storage and processing areas and the building-dedicated equipment:

- three (3) receiving bays with door air curtains;
- *Organic Waste* and *Amendment Materials* tipping area and temporary storage area;
- three (3) front end loaders to transport *Organic Waste* and *Amendment Materials*;
- one (1) hopper and conveyor to transport *Organic Waste* and *Amendment Materials* to the shredder;
- one (1) shredder to break open the bags, reduce particle size and to blend *Organic Waste* with *Amendment Materials* into an *Organic Waste* mix;
- four (4) Phase 1 concrete tunnels for aerobic *Composting*;
- three (3) Phase 2 concrete tunnels for aerobic *Composting*;
- one (1) receiving hopper to transfer the composted *Organic Waste* mix from Phase 2 tunnels to intermediate screening equipment;
- one (1) intermediate screening equipment consisting of a magnetic conveyor and hurricane separator to remove any metals, oversized organics and any broken plastic bags;
- one (1) indoor 2,618 square metre-maturation area to cure the composted and screened *Organic Waste* mix;
- one (1) windrow turner for turning windrows;
- one (1) final screening equipment to remove remaining contaminants from the tested *Compost*;
- one (1) ventilation system to maintain negative pressure in the *Processing Building*, draw air from the tipping floor and maturation area and direct it as process air to the *Composting* tunnels and/or to three (3) humidifiers (three (3) ammonia scrubbers) followed by the *Biofilter*.

III. The following conditions have been added:

17.(4)(d) Outdoor storage of the following:

- vi) 37.85 cubic metres of the ammonium sulphate waste in a 37.85-cubic metre double-walled storage tank located outdoors;

17.(7)(a) i) Upon receipt of this amendment to the *Approval*, the *Owner* shall ensure that all unloading of the ammonium sulphate waste from its storage tank is supervised by the *Trained Personnel* at all times.

- ii) The *Owner* shall ensure that spill containment equipment is available on-hand for immediate use during all unloading of the ammonium sulphate waste from its storage tank.

The reasons for this amendment to the *Approval* are as follows:

to clarify the Ministry's intent to allow storage of recyclables only in the new *OWPF* and to ensure that the waste management activities carried out at the Site cease to be a significant drinking water threat in accordance with the policy CG-MC-3 of Grand River Source Protection Area Plan.

This Notice shall constitute part of the approval issued under Approval No. A170128 dated February 10, 2011, as amended.

In accordance with Section 139 of the Environmental Protection Act, you may by written Notice served upon me and the Environmental Review Tribunal within 15 days after receipt of this Notice, require a hearing by the Tribunal. Section 142 of the Environmental Protection Act provides that the Notice requiring the hearing shall state:

1. The portions of the environmental compliance approval or each term or condition in the environmental compliance approval in respect of which the hearing is required, and;
2. The grounds on which you intend to rely at the hearing in relation to each portion appealed.

Pursuant to subsection 139(3) of the Environmental Protection Act, a hearing may not be required with respect to any terms and conditions in this environmental compliance approval, if the terms and conditions are substantially the same as those contained in an approval that is amended or revoked by this environmental compliance approval.

The Notice should also include:

3. The name of the appellant;
4. The address of the appellant;
5. The environmental compliance approval number;
6. The date of the environmental compliance approval;
7. The name of the Director, and;
8. The municipality or municipalities within which the project is to be engaged in.

And the Notice should be signed and dated by the appellant.

This Notice must be served upon:


The Secretary*
Environmental Review Tribunal
655 Bay Street, Suite 1500
Toronto, Ontario
M5G 1E5

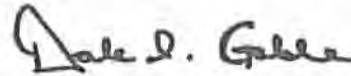
AND

The Director appointed for the purposes of Part II.1 of
the Environmental Protection Act
Ministry of the Environment and Climate Change
135 St. Clair Avenue West, 1st Floor
Toronto, Ontario
M4V 1P5

* Further information on the Environmental Review Tribunal's requirements for an appeal can be obtained directly from the Tribunal at: Tel: (416) 212-6349, Fax: (416) 326-5370 or www.ert.gov.on.ca

The above noted activity is approved under s.20.3 of Part II.1 of the Environmental Protection Act.


DATED AT TORONTO this 3rd day of May, 2016



Dale Gable, P.Eng.

Director

appointed for the purposes of Part II.1 of the
Environmental Protection Act

MW/

c: District Manager, MOECC Guelph
Bill Shields, The Corporation of the City of Guelph

Appendix F

**Ministry of the Environment,
Conservation and Parks
Correspondence**

A decorative graphic element consisting of a thick green line that curves from the bottom left towards the top right, set against a dark teal background.



Industrial Sewage Inspection Report

Client:	The Corporation of the City of Guelph, Business/Facility Name: City of Guelph Mailing Address: 1 Carden St, Guelph, Ontario, Canada, N1H 3A1 Physical Address: 1 Carden St, Guelph, City, County of Wellington, Ontario, Canada, N1H 3A1 Telephone: (519)822-1260, Extension: 3574, email: david.dipetro@guelph.ca Client #: 0908-6FTP5C, Client Type: Municipal Government, NAICS: 913910		
Inspection Site Address:	110 Dunlop Drive Address: 110 Dunlop Dr Guelph Organic Waste Processing Facility, Guelph, City, County of Wellington, N1H 6N1 District Office: Guelph GeoReference: Map Datum: NAD83, Zone: 17, Accuracy Estimate: 1-10 metres eg. Good Quality GPS, Method: GPS, UTM Easting: 564736, UTM Northing: 4822550, , LIO GeoReference: Zone: 17, UTM Easting: 564231.25, UTM Northing: 4822590.0, Latitude: 43.553497, Longitude: -80.20479 Site #: 9630-5EQQ33, NAICS: 562210		
Contact Name:	Elizabeth Verghis	Title:	Environmental Compliance and Management System Specialist
Contact Telephone:	519-822-1260 ext2058	Contact Fax:	
Last Inspection Date:	2006/02/17		
Inspection Start Date:	2020/01/29	Inspection Finish Date:	2020/01/29
Region:	West Central		

1.0 INTRODUCTION

The City of Guelph owns and operates a waste transfer and processing facility located at 110 Dunlop Drive in Guelph. The Waste Resources Innovation Centre is comprised of a material recovery facility (MRF), an organic waste processing facility (OWPF), a solid waste transfer station, a municipal hazardous and special waste depot and a public drop-off area.

This facility employs approximately 50 people.

The purpose of the inspection was to assess the facility for compliance with Environmental Compliance Approval (ECA) # 9496-9NFKJ9 issued January 7, 2015 to the facility and the Ontario Water Resources Act, as well as Ministry of Environment, Conservation and Parks (Ministry) policies and guidelines relating to sewage. This inspection was conducted in conjunction with the Ministry's Guelph District Office 2019/2020 inspection program.

After a fire at the MRF in 2019, fire douse water drained to the on-site pond. As part of the environmental response, it was discovered the discharge valve had been left in the open position for a significant period of time, allowing the direct discharge of stormwater from the property. This reactive inspection has been scoped to focus on the operation and maintenance of the works, as well as any remedial actions taken by the City in response to Incident Report #2405-BB7REW.

The inspection consisted of a review of Ministry files, an interview with Elizabeth Verghis, Environmental Compliance Manager as well as a physical inspection of the facility. The inspection was conducted on January 29, 2020 by Provincial Officer Jackie Lamport.

2.0 INSPECTION OBSERVATION

Facility MEWS (Works) Number:

This facility does not submit monitoring data through MEWS.

Sector Type:

Waste Disposal

Effluent Type:

Storm Water

Receiver Type:

Surface Water

Name of Receiver:

Flows from this site discharge via the York-Watson Regional SWM facility to the Eramosa and Speed Rivers before entering the Grand River.

Is there a sensitive receptor on/in the receiver?

Yes

Select the most important type of sensitive receptor.

Receiving Water

The City of Guelph periodically sources surface water from these rivers to an artificial groundwater recharge system. The nearest drinking water intake is the Manheim well in Cambridge.

Certificate of Approval Number(s):

Yes

C of A Number(s): 9496-9NFKJ9

Issued January 7, 2015.

2.1 WASTEWATER TREATMENT PROCESS DESCRIPTION

Treatment Description:

Stormwater is collected from various locations on the site which consist of 15 catchment areas. The Environmental Stormwater Plan submitted in the ECA application delineates these catchment areas and shows catchment size and amount of impervious surfaces in each.

The main storm water management facility is located in the north east corner of the property and discharges via a storm gate which can be closed in the event of a spill or other event. The other storm facility consists of a retention pond and infiltration gallery with spillway located in the south east portion of the site.

Each catchment area is connected to a catchbasin for oil/grit treatment. The catchment areas then drain via storm sewers to one of the two stormwater management facilities, with the exception of the Solid Waste Transfer Station which has drains connected to the sanitary sewage system.

Operation and Maintenance

The WRIC is required to conduct monthly inspections of the oil/water separators and the effluent from the pumping manhole for visible sheen. This is conducted and a log book kept. If an issue is noted, Elizabeth is notified and the supervisor will arrange for maintenance or repair and documented.

The owner is also required to inspect the works once per year. This is to be completed by the supervisor.

Ms. Verghis stated that the most recent inspection occurred after the fire, however no documentation was available to confirm that the inspection took place. There is also no documentation of these inspections having been completed prior to the fire. The state of the works at the time of the inspection indicates that they had not been completed for some time.

2.2 EFFLUENT SUMMARY REPORT

What are the facility's effluent limits based on?

Certificate of Approval/Permit

Does the facility comply with its limits?

Yes

Although the above question is marked "yes", compliance with effluent limits were not evaluated in this scoped inspection report.

2.3 SEWAGE TREATMENT WORKS CAPACITY ASSESSMENT

Flow (m ³ /day)	Year 1 2020	Year 2 2019	Year 3 2018
Average daily flow	0.00	0.00	0.00
Maximum daily flow	0.00	0.00	0.00
Capacity Design	0.00	0.00	0.00
% of capacity (based on average daily flow)	0.00	0.00	0.00

A capacity evaluation was not evaluated in this scoped inspection report.

2.4 SAMPLING REQUIREMENTS

What are the facility's sampling requirements based on?

Certificate of Approval/Permit

Does the facility meet sampling requirements?

Yes

Although the above question is marked "yes", sampling requirements were not evaluated in this scoped inspection report.

2.5 REPORTING REQUIREMENTS

What are the facility's reporting requirements based on?

Certificate of Approval/Permit

Does the facility meet reporting requirements?

Yes

Although the above question is marked "yes", reporting was not evaluated in this scoped inspection report. The City of Guelph does however submit an annual report to the Ministry which contains surface and ground water monitoring data.

2.6 FLOW MEASUREMENT

Flow measurements were not evaluated in this scoped inspection report.

2.7 MINISTRY SAMPLE RESULTS

Were Ministry samples collected during the inspection?

No

Reason:

No flow and outside of this scoped inspection report.

There was no flow at the time of the inspection.

2.8 FINANCIAL ASSURANCE

Financial Assurance is not required for this site.

2.9 SPILL PREVENTION AND CONTINGENCY PLANS

Is the facility required to have a Spill Prevention and Contingency Plan (SPCP) as required by Ontario Regulation 224/07?

No

Has the facility had any spills since the last inspection?

Yes

Were all the spills reported to the ministry?

Yes

Does the facility's operations or spill history suggest that a SPCP be developed?

Yes

Comments:

Although a Spill Prevention and Contingency Plan is not required under O. Reg 224/07, condition 6 of the ECA requires a Spill Contingency and Pollution Prevention Plan be developed and implemented.

The City provided a plan dated June 2016. It does not currently meet the requirements listed in the ECA, specifically missing:

6(1)(a) name and contact information of the person in charge, management or control of the WRIC

6(1)(b) name, job title and number or person responsible for activating the plan

6(1)(e) a listing of telephone numbers for local clean up contractors, local emergency responders and health institutions

6(1)(f) MSDS sheets

6(1)(g) internal corporate procedures for activation of the plan

6(1)(h) a description of spill response training and training logs

6(1)(i) date of maintenance/repair of spill kits

In addition, 6(1)(c) is not up to date.

Although several of the missing items are available elsewhere, such as MSDS sheets and training logs, these items are required to be included in the Spill Contingency and Pollution Prevention Plan under condition 6. As a result of the inspection this plan is now under revision. A draft of this revised plan was submitted to the ministry on February 3, 2020.

3.0 REVIEW OF PREVIOUS NON-COMPLIANCE ISSUES

The Ministry conducted three sewage inspections at this facility in 2005 and 2006. At that time, the WRIC had made modifications to the sewage works without first obtaining an approval, had not sampled as required.

There are no records of non-compliance with respect to the stormwater management facility since that time.

4.0 SUMMARY OF INSPECTION FINDINGS

Was there any indication of a known or anticipated human health impact during the inspection and/or review of relevant material, related to this Ministry's mandate?

No

Specifics:

Was there any indication of a known or anticipated environmental impact during the inspection and/or review of relevant material?

No

Specifics:

Was there any indication of a known or suspected violation of a legal requirement during the inspection and/or review of relevant material which could cause a human health impact or environmental impairment?

No

Specifics:

Was there any indication of a potential for environmental impairment during the inspection and/or the review of relevant material?

Yes

Specifics:

Annual inspections required by ECA condition 4(3) were not being completed and documented.

Was there any indication of minor administrative non-compliance?

Yes

Specifics:


The Spill Contingency and Pollution Prevention Plan did not contain all items required by ECA condition 6(1).

5.0 ACTION(S) REQUIRED

1. By March 27, The City of Guelph shall revise the Spill Contingency and Pollution Prevention Plan so that it contains all information required by ECA condition 6(1) and submit the plan to the undersigned provincial officer.
2. Effective immediately upon receipt of this inspection report, the City of Guelph shall recommence annual inspections required by ECA condition 4(3) and document as required by ECA condition 4(4).

6.0 OTHER INSPECTION FINDINGS

7.0 INCIDENT REPORT

Applicable
2405-BB7REW 

8.0 ATTACHMENTS

PREPARED BY:

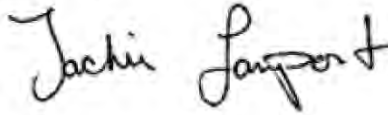
Environmental Officer:

Name:

Jackie Lamport

District Office:
Date:
Signature

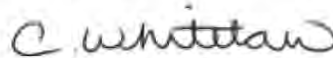
Guelph District Office
2020/02/24



REVIEWED BY:
District Supervisor:
Name:
District Office:
Date:

Clarissa Whitelaw
Guelph District Office
2020/02/25

Signature:



File Storage Number:

SI WE GU DU 230

Note:

"This inspection report does not in any way suggest that there is or has been compliance with applicable legislation and regulations as they may apply to this facility. It is, and remains, the responsibility of the owner and/or the operating authority to ensure compliance with all applicable legislative and regulatory requirements"

We want to hear from you. Please tell us about the quality of your interaction with our staff. You can provide feedback at 1-888-745-8888.

**Ministry of the Environment,
Conservation and Parks**

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**Ministère de l'Environnement, de la
Protection de la nature et des
Parcs**

Direction régionale du Centre-Ouest
Bureau du district d'Owen Sound
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Guelph ON N1G 4Y2
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Tél: (519) 240-4327



February 27, 2020

The Corporation of the City of Guelph
1 Carden St
Guelph, Ontario, N1H 3A1
Canada

Dear Ms. Elizabeth Verghis,

RE: Industrial Sewage Inspection Report
Reference Number 0168-BE4PLF

As per your inquiry on February 26, 2020, the final sentence of Section 2.1 - Wastewater Treatment Process Description of the industrial sewage inspection report should read:

"The state of the works at the time of the fire indicates that they had not been completed for some time."

I apologize for the error. If you have any questions or concerns, I can be reached at 519-240-4327 or jacqueline.lamport@ontario.ca.

Yours truly,

A handwritten signature in cursive script that reads "Jackie Lamport".

Jackie Lamport
Senior Environmental Officer
Guelph District Office

File Storage Number: SI WE GU DU 230

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Téléc.: 905 521-7820

Memorandum

Date: April 15, 2015

To: Kevin Noll
Senior Environmental Officer, Guelph District Office (GDO)

From: Abdul Quyum
Hydrogeologist, Water Resources Unit, Technical Support Section (TSS)

Re: 2014 Annual Monitoring Report
Guelph Wet-Dry Recycling Centre and Waste Transfer Station, Guelph, Ontario

As requested, I have reviewed the following report for groundwater issues:

- *2014 Annual Report – Solid Waste Transfer Station & Wet-Dry Recycling Centre, CofA/ECA (Waste Disposal Site) No. A170128, AECOM Canada Ltd., March, 2015.*

The focus of this review was Sections 7 & 8 of the report that deals with leachate and groundwater monitoring (hydraulic and geo-chemical data collection and interpretations).

The purpose of the review was to evaluate impact on the overburden and bedrock groundwater quality associated with historical and current waste handling operations at this site (wet-dry recycling center and waste transfer station).

This review was completed with respect to the requirements of Guideline B-7 *"Incorporation of the Reasonable Use Concept into MOEE Groundwater Management Activities, dated April 1994"*.

Comments:

The review comments are outlined below:

1. The groundwater flow direction in the overburden unit is influenced by surface and bedrock topography. The inferred groundwater flow direction in the overburden and bedrock units was found consistent and similar to previous years. According to the recent hydraulic data, the groundwater flows from east and west (based on GIS mapping north arrow) onto the site and then moves in a northerly/northwesterly direction along the incised bedrock valley slope before it exits the site along Dunlop Drive. Based on the inferred flow direction, the groundwater monitoring wells MW22A-11 (bedrock) and MW22B-11 (overburden) are deemed to be located along the downgradient property boundary for the purpose compliance evaluation as per the Guideline B-7 requirements.
2. For assessment of impact on the overburden and bedrock groundwater quality as per the Guideline B-7, the reasonable use concentration (RUC) for parameters of concern was established using groundwater quality data from selected on-site monitoring wells representing the background groundwater quality. The overburden unit groundwater quality at the downgradient monitoring well BH22B-11 was found marginally impacted with nitrate

in the May 2014 sampling event while the groundwater quality at this location met the RUC for parameters of concern in the December 2014 monitoring event. Considering the historical and current agricultural land use on an area located upgradient of the site and the nature of waste handling operations at the site, coupled with the nitrate detection higher than the RUC at some upgradient monitoring wells (19B-08 and 23B-12), the nitrate exceedance is not likely related to the recent waste management operations at this site. For the bedrock unit, the groundwater quality met the RUC for parameters of concern with the exception of iron. The iron exceedance may not be related to the current and historical waste operations conducted at the site because elevated iron concentrations have been detected over the years in monitoring wells representing background groundwater conditions. Moreover, iron exceedance is not a cause of concern since it is designated as a non-health related parameter in the Ontario Drinking Water Standards (ODWS). Consistent with the historical detection of organic compounds at several locations, low level of bis(2-ethylhexyl phthalate, chloroform, naphthalene, bromodichloromethane, 111-trichloroethane, toluene, and xylene were detected both in upgradient and downgradient monitoring wells but the concentrations were well below the respective regulatory standards. The monitoring for organic compounds will continue to confirm the temporal and spatial trend.

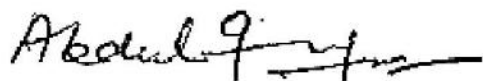
Conclusions:

The groundwater quality leaving the site at the downgradient property boundary was found marginally impacted with nitrate (overburden) and iron (bedrock). Given the current use of the facility as a waste transfer station and that the waste transfer operations are conducted inside in a building which is equipped with a floor sub-drain to capture any leachate run-off, potential negative impact on the groundwater quality caused by current waste handling and transfer operations is not anticipated and none has occurred. That said, the current groundwater quality monitoring program should continue to generate a large enough geochemical dataset especially for relatively new monitors to assess the temporal and spatial trend of impact indicator parameters. The monitoring report should be reviewed by a TSS hydrogeologist on a 6 year review frequency unless the site operations or groundwater quality conditions change significantly.

I trust that the above comments will be of benefit. If you have any questions, I can be reached at 905-521-7817 or abdul.guyum@ontario.ca

Statement of Limitations:

The purpose of the preceding review is to provide advice to the Ministry of the Environment regarding subsurface conditions based on a review of the information provided in the above referenced document. The conclusions, opinions and recommendations of the reviewer are based on information provided by others. The Ministry cannot guarantee that the information that has been provided by others is accurate or complete. A lack of specific comment by the reviewer is not to be construed as endorsing the content or views expressed in the reviewed material.



Abdul Quayum, M.A.Sc., P.Eng., P.Geo. (ab)
Hydrogeologist

**Ministry of the Environment
West Central Region**

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Ministère de l'Environnement

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Téléc. : 905 521-7820



August 13, 2015

MEMORANDUM

IDS Ref No: 0045-9V6H3U

TO: Kevin Noll
Senior Environmental Officer
Guelph District Office

FROM: Craig Fowler
Surface Water Specialist
Technical Support Section

RE: Guelph Waste Resource Innovation Centre – 2014 AMR

I have reviewed the following document for surface water impacts with regards to the aforementioned facility:

- *2014 Annual Report – Solid Waste Transfer Station & Wet-Dry Recycling Centre, CofA (Waste Disposal Site) No. A170128.* Prepared by AECOM, March 2015.

Background

For background site information please refer to the previous review completed by Paul Odom, IDS Reference No. 7520-8WDPK.

Comments and Recommendations

The purpose of this review was to evaluate 2014 surface water monitoring data for potential impacts from the solid waste transfer station. The review is not intended, unless otherwise noted, to determine compliance with applicable C of As. The following comments are based on information presented in the subject report.

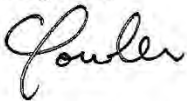
1. Surface water chemistry results from the Stormwater Management Pond at location TP1(out) had PWQO exceedances for iron, total phosphorus, phenol, and zinc. With the exception of zinc, these parameters are elevated relative to the background

monitor, the East Pond. Although the exceedances have not been attributed to existing operations, the site continues to be a source of these parameters compared to background conditions. If offsite land uses i.e. agriculture are being used to explain the exceedances, similar concentrations would also be expected in the East Pond given the proximity of the two surface water features. Also, historically phenol concentrations have had sporadic exceedances of the respective PWQO, but for 2014 the frequency for which concentrations were elevated increased compared to previous years and indicates a positive trend of increasing concentrations. Based on the subject report it appears that discharges from the Stormwater Management Pond did not occur, at least for the times sampling occurred. It is my opinion that phenol concentrations could taint the flesh of fish, but there is low probability in terms of an offsite impact given the low concentrations and frequency of discharge events. However, trends needs to continue to be evaluated.

2. I do not object the proposed recommendations for the surface water monitoring program. It's my understanding that the recommendations reiterate points that have been previously discussed.
3. It is my opinion that there were not any deficiencies with the 2014 annual monitoring report with respect to the surface water monitoring program.

Should you have any questions, comments, or require additional information, please contact me at (905) 521-7823 or craig.fowler2@ontario.ca.

Regards,



Craig Fowler

Cc Paul Odom, Surface Water Group Leader, MOE

The purpose of the preceding review is to provide advice to the Ministry of the Environment regarding surface water based on a review of the information provided in the above referenced documents. The conclusions, opinions and recommendations of the reviewer are based on information provided by others, except where otherwise specifically noted. The Ministry cannot guarantee that the information that is provided by others is accurate or complete. A lack of specific comment by the reviewer is not to be construed as endorsing the content or views expressed in the reviewed material.