

Memorandum

To: James Betke, P.Eng.

Date: August 11, 2021

Project No.: 18-0300-005.1208

From: Jason Mann, M.Sc., P.Geo.

Re: Lake St. Martin Outlet Channel Groundwater and Surface Water Baseline Data Summary

1.0 INTRODUCTION

The following memorandum is a summary of baseline groundwater and surface water data collected as part of the Lake St. Martin Outlet Channel project. A site plan of the area showing sample locations is provided in Figure 1. KGS Group conducted four sampling events during 2019 and twice during 2020 including both groundwater and surface water monitoring and sampling during the field programs.

2.0 GROUNDWATER QUALITY

Sampling

KGS Group conducted groundwater sampling at monitoring wells and pump wells located along the existing emergency channel and along the proposed channel alignment, as well as at sentinel wells located in the community of Dauphin River. In 2019, four programs were conducted including March, June, September and October. In total, groundwater sampling was conducted at 38 locations in 2019 (Table 1). In 2020, two sampling programs were conducted in June and October, and included 10 locations (Table 1). Locations of sample wells are shown on Figure 1.

3.0 SURFACE WATER QUALITY

Sampling

KGS Group conducted surface water sampling at one location (SW-R3) during two water monitoring events in June and October of 2019. Additional surface water sampling locations were added in the 2020 programs to include 6 additional sites (LSMOC – Inlet 1A, LSMOC - Outlet – 1A, BC-02, BC-05, CR3-1, and CR3-2) for a total of 7 locations during monitoring programs in each of the 2020 events (Table 1). These sampling locations are shown on Figure 1.

4.0 ANALYSIS

Laboratory data for groundwater wells and surface water sample locations has been tabulated and are compared to applicable Health Canada (HC) and Canadian Council of Ministers of the Environment (CCME) water quality guidelines in Tables 2 through 7. Table 8 shows summaries and statistical data of groundwater parameters across sampling events.

Prepared By:



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PJL/jr
Enclosure

STATEMENT OF LIMITATIONS AND CONDITIONS

Limitations

This memorandum has been prepared for Manitoba Infrastructure (MI) in accordance with the agreement between KGS Group and MI (the “Agreement”). This memorandum represents KGS Group’s professional judgment and exercising due care consistent with the preparation of similar documents. The information, data, recommendations and conclusions in this memorandum are subject to the constraints and limitations in the Agreement and the qualifications in this memorandum. This memorandum must be read as a whole, and sections or parts should not be read out of context.

This memorandum is based on information made available to KGS Group by MI. Unless stated otherwise, KGS Group has not verified the accuracy, completeness or validity of such information, makes no representation regarding its accuracy and hereby disclaims any liability in connection therewith. KGS Group shall not be responsible for conditions/issues it was not authorized or able to investigate or which were beyond the scope of its work. The information and conclusions provided in this memorandum apply only as they existed at the time of KGS Group’s work.

Third Party Use of Memorandum

Any use a third party makes of this memorandum or any reliance on or decisions made based on it, are the responsibility of such third parties. KGS Group accepts no responsibility for damages, if any, suffered by any third party as a result of decisions made or actions undertaken based on this memorandum.

Geo-Environmental Statement of Limitations

KGS Group prepared the geo-environmental conclusions and recommendations for this memorandum in a professional manner using the degree of skill and care exercised for similar projects under similar conditions by reputable and competent environmental consultants. The information contained in this memorandum is based on the information that was made available to KGS Group during the investigation and upon the services described, which were performed within the time and budgetary requirements of MI. As this memorandum is based on the available information, some of its conclusions could be different if the information upon which it is based is determined to be false, inaccurate or contradicted by additional information. KGS Group makes no representation concerning the legal significance of its findings or the value of the property investigated.

TABLES

TABLE 1
SUMMARY OF GROUNDWATER AND SURFACE WATER FIELD CHEMISTRY MEASUREMENTS AND COMPLETED LAB ANALYSES
LAKE ST. MARTIN OUTLET CHANNEL

Sample ID	Duplicate Sample ID	Date	Time	Temp. (°C)	Field pH	Field E.C. (µS/cm)	DO (mg/L)	ORP (mV)	Turbidity (NTU)	Laboratory Analysis Parameter Sets						
										ROU-4W+Metals ⁽¹⁾		Bacteria ⁽²⁾	Surface Water Sample Set ⁽³⁾	Isotopes		
										Dissolved Metals	Total Metals			Stable		Radioactive
														Oxygen-18 (¹⁸ O)	Deuterium (² H)	Tritium (³ H)
GROUNDWATER SAMPLES																
PW19-KGS-01		12-Mar-2019	18:00	5.2	8.1	782	-	-	-	x		x		x	x	x
		11-Jun-2019	9:40	5.3	7.32	688	0.37	32.2	-	x		x		x	x	x
	PW-200	24-Oct-2019	13:45	5.4	7.42	717	0.47	135.8	-	x		x		x	x	x
									-	x		x		x	x	x
		11-Mar-2020	9:50	5.2	6.68	748	0.93	354.6	-	x		x		x	x	x
		17-Jun-2020	16:30	5.3	7.2	684	0.59	-4.6	-	x		x		x	x	x
	27-Oct-2020	10:10	5.1	7.38	710	0.22	29.9	-	x		x		x	x	x	
PW19-KGS-02	PW19-KGS-05	13-Mar-2019	16:40	6.4	7.9	796	-	-	-	x		x		x	x	x
									-	x		x		x	x	x
		11-Jun-2019	11:50	6.4	7.34	724	0.99	-29.3	-	x		x		x	x	x
		24-Oct-2019	16:10	6.1	7.32	751	1.86	161	-	x		x		x	x	x
		16-Jun-2020	17:20	8.2	6.98	810	1.36	-14.6	-	x		x		x	x	x
	PW-100	28-Oct-2020	17:30	0.5	7.14	794	3.12	68.2	-	x		x		x	x	x
PW19-KGS-03	PW19-KGS-04	14-Mar-2019	17:40	6.7	7.8	663	-	-	-	x		x		x	x	x
									-	x				x	x	x
	PW19-KGS-200	11-Jun-2019	16:19	5.5	7.3	591	0.36	-3.3	-	x		x		x	x	x
									-	x		x		x	x	x
		24-Oct-2019	10:35	7.3	7.25	569	0.5	127.7	-	x		x		x	x	x
	PW19-KGS-300	16-Jun-2020	10:05	5.7	7.12	523	0.65	7.9	-	x		x		x	x	x
								-	x		x		x	x	x	
	27-Oct-2020	17:10	7.5	7.24	592	0.44	10.6	-	x		x		x	x	x	
TH15-04		8-Mar-2019	11:15	1.9	7.37	536	3.12	53.2	-	x				x	x	
TH15-05		8-Mar-2019	12:45	2.9	6.86	532	3.33	70.7	-	x				x	x	
TH19-KGS-01		9-Mar-2019	10:40	3.6	7.35	957	5.9	-45.9	-	x				x	x	
TH19-KGS-02B		11-Mar-2019	7:55	2	7.63	1888	9.42	19.3	-	x						
TH19-KGS-03A		8-Mar-2019	18:36	0	7.02	606	13.72	146.7	-	x						
TH19-KGS-04		9-Mar-2019	12:18	5.8	7.58	1018	1.17	-53.8	-	x				x	x	
TH19-KGS-05		8-Mar-2019	12:45	2.9	6.86	532	3.33	70.7	-	x				x	x	
TH19-KGS-07		7-Mar-2019	10:50	5.9	7.1	688	1.98	-46.8	-	x						
TH19-KGS-07A		7-Mar-2019	10:12	0.4	6.95	852	8	27.6	-	x						
TH19-KGS-08		8-Mar-2019	14:55	2.2	6.93	546	2.06	73.5	-	x				x	x	
TH19-KGS-09		12-Mar-2019	14:08	5.5	7.56	737	1.33	-74.5	-	x				x	x	
TH19-KGS-10	TH200	9-Mar-2019	17:35	3.6	7.57	707	2.19	-63.4	-	x				x	x	
									-	x				x	x	
TH19-KGS-100		7-Mar-2019	14:15	1.1	6.85	756	2.12	59.8	-	x				x	x	
TH19-KGS-11		8-Mar-2019	9:30	3.3	6.64	786	3.32	85.6	-	x				x	x	
TH19-KGS-11A		8-Mar-2019	9:10	1	6.51	648	7.5	87.2	-	x						

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Sample ID	Duplicate Sample ID	Date	Time	Temp. (°C)	Field pH	Field E.C. (µS/cm)	DO (mg/L)	ORP (mV)	Turbidity (NTU)	Laboratory Analysis Parameter Sets						
										ROU-4W+Metals ⁽¹⁾		Bacteria ⁽²⁾	Surface Water Sample Set ⁽³⁾	Isotopes		
										Dissolved Metals	Total Metals			Stable		Radioactive
														Oxygen-18 (¹⁸ O)	Deuterium (² H)	Tritium (³ H)
GROUNDWATER SAMPLES																
TH19-KGS-12		7-Mar-2019	15:30	1.9	6.79	904	5.21	59.2	-	x				x	x	
		12-Jun-2019	13:30	5.4	7.48	733	1.99	-9.2	-	x				x	x	x
		23-Oct-2019	16:15	4	7.36	748	2.55	145.3	-	x				x	x	x
		16-Jun-2020	14:45	8.5	6.99	810	0.19	20.1	-	x				x	x	x
		18-Oct-2020	12:50	3.7	7.47	759	3.67	75.3	-	x				x	x	x
TH19-KGS-12B		14-Mar-2019	13:00	2.4	7.82	918	8.38	76	-	x						
TH19-KGS-13		7-Mar-2019	16:40	2.6	7.08	786	1.86	75.5	-	x				x	x	
TH19-KGS-13A		7-Mar-2019	17:10	0.3	7	436	3.98	42.7	-	x						
TH19-KGS-14		8-Mar-2019	16:10	3	6.9	592	2.91	68.2	-	x				x	x	
TH19-KGS-14A		8-Mar-2019	16:15	1.7	6.84	446	11.29	49	-	x						
TH19-KGS-15		9-Mar-2019	16:25	4.3	7.15	769	3.13	-71.5	-	x				x	x	
TH19-KGS-16		15-Mar-2019	9:00	-	-	-	-	-	-	x				x	x	
	TH19-KGS-500								-	x				x	x	
TH19-KGS-16B		9-Mar-2019	16:00	3	6.89	889	9.29	-46.4	-	x						
TH19-KGS-17		10-Mar-2019	16:10	3.6	7.58	640	2.3	-23	-	x				x	x	x
		12-Jun-2019	18:25	7.7	7.54	626	1.63	-2.08	-	x				x	x	x
		23-Oct-2019	12:40	3.5	7.41	633	3	124	-	x				x	x	x
		16-Jun-2020	12:15	8.3	7.03	686	2.64	-29	-	x				x	x	x
		27-Oct-2020	15:10	3.7	6.68	641	1.49	16.4	-	x				x	x	x
TH19-KGS-17A		10-Mar-2019	16:00	3.2	7.2	544	12.02	-30.7	-	x						
TH19-KGS-17B		10-Mar-2019	16:20	0.3	7.12	904	12.13	-31.8	-	x						
TH19-KGS-18		11-Mar-2019	13:50	5.6	6.7	957	2.26	-81.5	-	x				x	x	x
		12-Jun-2019	10:20	6.7	7.03	972	2.51	-16.8	-	x				x	x	x
		23-Oct-2019	11:45	4.6	6.65	1023	3.5	122.3	-	x				x	x	x
		16-Jun-2020	11:00	9.5	6.56	567	3.84	8.4	-	x				x	x	x
		27-Oct-2020	13:40	5	6.51	910	2.51	27.2	-	x				x	x	x
TH19-KGS-18A		11-Mar-2019	14:43	2.1	6.97	497	8.84	88.5	-	x						
TH19-KGS-19		11-Mar-2019	17:44	2.3	8.76	770	6.18	-93.2	-	x				x	x	x
		12-Jun-2019	9:50	13.4	7.79	915	4.3	-8.6	-	x				x	x	x
		23-Oct-2019	16:40	5.7	8.17	783	8.47	131.9	-	x				x	x	x
		17-Jun-2020	13:12	16.3	7.83	813	6.59	-15.5	-	x				x	x	x
		27-Oct-2020	11:40	4.7	7.06	947	8.07	2.6	-	x				x	x	x
TH19-KGS-19A		11-Mar-2019	17:21	2.3	7.07	787	2.5	-81.6	-	x						
TH19-KGS-20		14-Mar-2019	14:25	3.8	7.28	1008	1.97	-38.1	-	x				x	x	
	TH300								-	x				x	x	

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										ROU-4W+Metals ⁽¹⁾		Bacteria ⁽²⁾	Surface Water Sample Set ⁽³⁾	Isotopes		
										Dissolved Metals	Total Metals			Stable		Radioactive
														Oxygen-18 (¹⁸ O)	Deuterium (² H)	Tritium (³ H)
GROUNDWATER SAMPLES																
Sentinel Well 1 - (SW19-KGS-01)		8-Mar-2019	13:30	5.7	7.7	940	-	-	-	x		x		x	x	x
		18-Jun-2020	11:25	5.2	7.08	784	0.34	41.2	-	x		x		x	x	x
Sentinel Well 2 - (SW19-KGS-02)		27-Sep-2019	10:50	9.7	8.4	1202	-	-	-	x		x		x		x
		18-Jun-2020	15:15	5	7.01	1102	0.56	1.5	-	x		x		x	x	x
		Oct. 29, 2020	12:25	4.9	7.3	1163	0.71	75	-	x		x		x	x	x
Sentinel Well 3 - (SW19-KGS-03)		27-Sep-2019	14:45	6.4	8.15	961	-	-	-	x		x		x		x
		18-Jun-2020	13:50	5.4	6.93	874	0.63	3.1	-	x		x		x	x	x
		Oct. 29, 2020	11:02	5.4	6.91	921	1.13	82.2	-	x		x		x	x	x
SURFACE WATER SAMPLES																
SW-R3		11-Jun-2019	14:00	17.8	8.58	456	6.97	17.5	-	x	x	x		x	x	x
		24-Oct-2019	11:40	1.4	7.06	180	13.7	148.8	-	x	x	x		x	x	x
		17-Jun-2020	12:03	22.5	8.04	286	8.3	-9.8	21.8				x	x	x	x
	SW-100	28-Oct-2020	10:08	0.6	7.29	389	12.89	64.6	-				x	x	x	x
LSMOC - Inlet-1A		17-Jun-2020	17:00	24.05	8.5	793	6.06	-16	7.13				x	x	x	x
		28-Oct-2020	15:25	1	6.48	1278	12.5	93.9	8.33				x	x	x	x
LSMOC - Outlet-1A		17-Jun-2020	13:30	19.5	8	625	7.16	-6.6	6.22				x	x	x	x
		28-Oct-2020	12:45	0.1	6	415	12.5	27.1	17.51				x	x	x	x
BC-02		17-Jun-2020	17:35	25.9	8.42	407	6.45	-13.5	34.6				x	x	x	x
		28-Oct-2020	12:15	0.6	8.09	573	12.86	68.1	-				x	x	x	x
BC-05		17-Jun-2020	17:25	26.3	8.35	434	5.3	-23.9	60.7				x	x	x	x
		28-Oct-2020	11:45	0.4	7.78	630	11.23	71.6	12.76				x	x	x	x
CR3-1		17-Jun-2020	13:58	22.3	7.27	229	0.06	-20.3	0.38				x	x	x	x
		28-Oct-2020	11:20	0.1	6.98	281	6.53	67.1	-				x	x	x	x
CR3-2		17-Jun-2020	14:14	25.5	7.75	258	4.38	-22.2	5.03				x	x	x	x
		28-Oct-2020	11:04	0.7	7.1	291	5.58	62.5	-				x	x	x	x

Notes:

1. ROU-4W plus metals includes: conductivity, hardness, pH, TDS (calculated), turbidity, alkalinity, bicarbonate, carbonate, chloride, fluoride, hydroxide, nitrate and nitrite, sulfate, aluminum, antimony, arsenic, barium, beryllium, bismuth, boron, cadmium, calcium, cesium, chromium, cobalt, copper, iron, lead, lithium, magnesium, manganese, molybdenum, nickel, phosphorus, potassium, rubidium, selenium, silicon, silver, sodium, strontium, sulfur, tellurium, thallium, thorium, tin, titanium, tungsten, uranium, vanadium, zinc, and zirconium
2. Bacteria test includes: escherichia Coli and total coliforms
3. Surface water sample set includes: BTEX, F1-F4, conductivity, total nitrogen, mercury (dissolved and total), ammonia by colour, total phosphorus, total dissolved phosphorus, total suspended solids, and turbidity.

**TABLE 2
GROUNDWATER ELEVATION MEASUREMENTS
LAKE ST. MARTIN OUTLET CHANNEL**

Sample ID	Date	Time	Ground Elevation (m)	Top of Casing Elevation (m)	Depth to Water from Top of Casing (m)	Groundwater Elevation (m)	Depth To Bottom from Top of Casing (m)	Stickup Height (m)	Comments
PW19-KGS-01	12-Mar-2019	15:40	245.485	246.125	1.908	244.217	-	-	
	11-Jun-2019	8:50			1.122	245.003	20.217	0.655	
	24-Oct-2019	13:00			0.43	245.695	-	-	
	17-Jun-2020	15:46			0.508	245.617	-	-	
	27-Oct-2020	9:03			0.883	245.242	-	-	
PWS19-KGS-02	11-Jun-2019	11:50	243.041	243.713	-0.837	244.55	-	0.88	Temporary 1.457 m casing added to measure flowing well; Measured 0.62 m below casing
	24-Oct-2019	-			Flowing	-	-	-	
	16-Jun-2020	17:20			Flowing	-	-	-	
	28-Oct-2020	17:20			Flowing	-	-	-	
PW19-KGS-03	14-Mar-2019	10:45	232.628	233.309	2.688	230.621	-	-	
	15-Mar-2019	13:28			2.677	230.632	-	-	
	11-Jun-2019	17:30			3.143	230.166	-	-	
	24-Oct-2019	8:54			2	231.309	-	-	
	17-Jun-2020	9:06			2.404	230.905	12.5	-	
	27-Oct-2020	16:30			2.903	230.406	-	-	
TH15-01A	26-Feb-2015	9:18	246.623	247.54	2.09	245.45	-	0.91	Final reading of multiple measurements taken in month
	1-May-2015	17:00			1.48	246.06	-	-	
	14-Sep-2015	-			2.395	245.145	-	-	
	15-Mar-2019	9:02			3.65	243.89	28.07	-	
	12-Jun-2019	14:05			2.865	244.675	28.07	0.897	
	24-Oct-2019	14:30			2.18	245.36	28.14	0.91	
	17-Jun-2020	-			2.335	245.205	28.075	-	Assumed static
28-Oct-2020	16:00			2.927	244.613	28.02	-		
TH15-01B	26-Feb-2015	9:19	246.623	247.63	3.54	244.09	-	1.01	
	1-May-2015	17:00			3.805	243.825	-	-	
	14-Sep-2015	12:00			3.664	243.966	-	-	
	15-Mar-2019	9:08			4.705	242.925	9.734	-	Assumed static
	12-Jun-2019	14:05			4.314	243.316	9.734	1.01	
	24-Oct-2019	14:30			3.588	244.042	9.749	1.03	
	17-Jun-2020	-			4.208	243.422	9.733	-	Assumed static
	28-Oct-2020	16:00			4.354	243.276	9.681	-	
TH15-01C	26-Feb-2015	9:20	246.623	247.56	3.79	243.77	-	0.94	
	1-May-2015	17:00			3.965	243.595	-	-	
	14-Sep-2015	12:00			3.92	243.64	-	-	
	15-Mar-2019	9:08			4.57	242.99	5.28	-	
	12-Jun-2019	14:05			4.358	243.202	5.284	0.938	
	24-Oct-2019	14:30			3.531	244.029	5.27	0.93	
	17-Jun-2020	-			4.165	243.395	5.282	-	Assumed static
	28-Oct-2020	16:00			4.42	243.14	5.27	-	
TH15-02A	22-Feb-2015	11:23	235.763	236.664	1.7	234.964	-	0.88	
	1-May-2015	16:40			2.13	234.534	-	-	
	16-Sep-2015	12:00			2.409	234.255	-	-	
	15-Mar-2019	11:07			4.104	232.56	7.55	-	
	11-Jun-2019	-			2.666	233.998	7.557	0.88	
	23-Oct-2009	-			1.838	234.826	7.55	0.92	
	16-Jun-2020	15:42			2.520	234.144	7.555	-	
	28-Oct-2020	10:15			2.635	234.029	7.55	-	
TH15-03	23-Feb-2015	10:40	237.5096	238.297	2.830	235.467	-	0.79	
	1-May-2015	16:30			2.660	235.637	-	-	
	15-Mar-2019	10:54			3.798	234.499	-	-	Assumed static
	11-Jun-2019	-			3.531	234.766	7.508	-	
	23-Oct-2019	14:49			3.027	235.270	7.514	1.075	
	16-Jun-2020	15:48			3.260	235.037	7.508	-	Assumed static
	28-Oct-2020	10:30			3.374	234.923	7.5	-	
TH15-03A	23-Feb-2015	10:41	237.005	237.919	3.680	234.239	-	0.91	
	1-May-2015	16:30			3.000	234.919	-	-	Plugged at 2.09 m
	16-Sep-2015	12:00			3.600	234.319	-	-	
	15-Mar-2019	10:56			4.181	233.738	5.669	-	
	11-Jun-2019	-			3.683	234.236	5.667	-	
	23-Oct-2019	14:50			2.763	235.156	5.66	1.35	
	16-Jun-2020	15:48			3.486	234.433	5.667	-	
	28-Oct-2020	10:30			3.783	234.136	5.665	-	
TH15-04	24-Feb-2015	10:00	236.255	237.075	0.245	236.83	-	0.82	
	1-May-2015	16:20			0.27	236.805	-	-	
	16-Sep-2015	12:00			0.715	236.36	-	-	
	26-Feb-2019	-			2.22	234.855	-	-	
	14-Mar-2019	8:35			2.239	234.836	-	-	
	11-Jun-2019	13:15			1.19	235.885	12.923	0.883	
	19-Oct-2019	-			0	237.075	-	0.88	Installed packer
	16-Jun-2020	14:21			0.555	236.52	12.925	-	Removed packer and water still rising
	27-Oct-2020	17:30			0.695	236.38	-	-	Frozen

**TABLE 2
GROUNDWATER ELEVATION MEASUREMENTS
LAKE ST. MARTIN OUTLET CHANNEL**

Sample ID	Date	Time	Ground Elevation (m)	Top of Casing Elevation (m)	Depth to Water from Top of Casing (m)	Groundwater Elevation (m)	Depth To Bottom from Top of Casing (m)	Stickup Height (m)	Comments
TH15-04A	24-Feb-2015	8:01	236.027	236.927	3	233.927	-	0.9	
	1-May-2015	16:20			2.26	234.667	-	-	Plugged at 1.36 m below grade
	16-Sep-2015	12:00			3.055	233.872	-	-	
	26-Feb-2019	-			3.76	233.167	-	-	
	8-Mar-2019	10:15			3.77	233.157	6.914	-	
	12-Jun-2019	13:15			2.901	234.026	6.91	1.029	
	23-Oct-2019	-			2.255	234.672	6.91	1.02	
TH15-05	24-Feb-2015	8:05	234.347	235.277	2.84	232.437	-	0.93	
	1-May-2015	16:10			2.3	232.977	-	-	Plugged at 1.37 m below grade
	16-Sep-2015	12:00			2.793	232.484	-	-	
	27-Feb-2019	-			3.2	232.077	-	-	
	8-Mar-2019	12:19			3.16	232.117	9.922	-	
	12-Jun-2019	13:09			3.08	232.197	9.949	1.162	
	23-Oct-2019	14:06			2.336	232.941	9.958	1.185	
TH15-05A	24-Feb-2015	8:06	234.306	235.206	2.850	232.356	-	0.9	
	1-May-2015	16:10			2.400	232.806	-	-	Plugged at 1.5 m below grade
	16-Sep-2015	12:00			2.786	232.420	-	-	
	8-Mar-2019	12:02			3.16	232.046	6.416	-	
	12-Jun-2019	13:05			3.033	232.173	6.412	1.105	
	23-Oct-2019	14:16			2.275	232.931	6.45	1.13	
	16-Jun-2020	14:08			Dry	-	2.64	-	Frozen
TH15-06	24-Feb-2015	9:00	228.857	229.367	4.270	225.097	-	0.51	
	1-May-2015	16:00			3.590	225.777	-	-	
	16-Sep-2015	12:00			4.376	224.991	-	-	
	10-Mar-2019	8:52			5.356	224.011	9.562	-	
	12-Jun-2019	-			4.271	225.096	9.554	0.85	
	23-Oct-2019	13:15			3.642	225.725	-	-	
	16-Jun-2020	13:39			3.854	225.513	9.563	-	
TH15-06A	24-Feb-2015	9:01	228.187	229.11	4.23	225.137	9.541	-	
	1-May-2015	16:00			3.050	226.060	-	0.92	
	16-Sep-2015	12:00			2.340	226.770	-	-	
	27-Feb-2019	12:00			2.984	226.126	-	-	
	10-Mar-2019	8:50			4.550	224.560	-	-	
	12-Jun-2019	-			4.644	224.466	-	-	
	23-Oct-2019	13:15			3.022	226.088	5.59	1.05	
TH15-07	23-Oct-2019	13:15			2.365	226.745	-	-	
	16-Jun-2020	13:38			2.499	226.611	5.595	-	
	27-Oct-2020	15:35			2.699	226.411	5.59	-	
	10-Mar-2019	8:17	227.5264	228.664	3.415	225.249	9.977	-	
	12-Jun-2019	11:20			2.423	226.241	9.978	1.18	
TH15-07A	23-Oct-2019	-			2.005	226.659	9.993	1.145	
	16-Jun-2020	13:46			2.118	226.546	9.98	-	
	27-Oct-2020	15:30			2.29	226.374	9.98	-	
	24-Feb-2015	9:05	228.1296	228.917	1.160	227.757	-	-	
	1-May-2015	15:50			0.970	227.947	-	-	
	16-Sep-2015	12:00			1.298	227.619	-	-	
	10-Mar-2019	8:19			4.456	224.461	5.36	-	
TH15-08A	12-Jun-2019	11:20			1.33	227.587	5.359	0.919	
	23-Oct-2019	-			0.999	227.918	5.363	0.865	
	16-Jun-2020	13:46			1.11	227.807	5.36	-	
	27-Oct-2020	15:30			1.205	227.712	5.38	-	
	1-May-2015	15:40	227.3449	228.279	3.330	224.949	-	-	
	16-Sep-2015	12:00			4.105	224.174	-	-	
TH15-08B	10-Mar-2019	9:39			4.828	223.451	10.255	-	
	12-Jun-2019	11:28			4.048	224.231	10.245	1.128	
	23-Oct-2019	12:28			3.462	224.817	-	-	
	16-Jun-2020	13:12			3.577	224.702	10.26	-	
	27-Oct-2020	15:20			4.043	224.236	10.241	-	
	24-Feb-2015	9:10	227.3449	228.265	1.320	226.945	-	-	
TH15-08B	1-May-2015	15:40			1.115	227.150	-	-	
	16-Sep-2015	12:00			1.415	226.850	-	-	
	10-Mar-2019	9:42			2.247	226.018	5.356	-	
	12-Jun-2019	11:28			1.471	226.794	5.358	1.13	
	23-Oct-2019	13:00			1.16	227.105	-	-	
	16-Jun-2020	13:13			1.223	227.042	5.315	-	
27-Oct-2020	15:20			1.335	226.930	5.386	-		

**TABLE 2
GROUNDWATER ELEVATION MEASUREMENTS
LAKE ST. MARTIN OUTLET CHANNEL**

Sample ID	Date	Time	Ground Elevation (m)	Top of Casing Elevation (m)	Depth to Water from Top of Casing (m)	Groundwater Elevation (m)	Depth To Bottom from Top of Casing (m)	Stickup Height (m)	Comments
TH15-09A	1-May-2015	15:30	226.695	227.454	1.120	226.334	-	-	
	16-Sep-2015	12:00			1.305	226.149	-	-	
	10-Mar-2019	11:15			2.126	225.328	6.407	-	
	12-Jun-2019	11:37			1.36	226.094	6.363	0.904	
	23-Oct-2019	-			1.152	226.302	6.35	0.89	
	16-Jun-2020	13:07			1.195	226.259	6.332	-	
	27-Oct-2020	15:09			1.227	226.227	6.31	-	
TH15-09B	24-Feb-2015	9:25	226.695	227.42	1.425	225.995	-	-	
	1-May-2015	15:30			0.935	226.485	-	-	
	16-Sep-2015	12:00			1.169	226.251	-	-	
	26-Feb-2019	-			1.950	225.470	-	-	
	10-Mar-2019	11:20			1.985	225.435	3.779	-	
	12-Jun-2019	11:37			1.194	226.226	3.799	0.856	
	23-Oct-2019	-			1.004	226.416	3.78	0.84	
	16-Jun-2020	13:08			1.049	226.371	3.8	-	
27-Oct-2020	15:09			1.078	226.342	3.78	-		
TH15-10A	1-May-2015	15:20	224.168	225.361	3.950	221.411	-	-	
	16-Sep-2015	12:00			2.386	222.975	-	-	
	25-Feb-2019	-			3.120	222.241	-	-	
	11-Mar-2019	13:36			3.158	222.203	10.44	-	
	12-Jun-2019	11:57			2.567	222.794	10.491	1.229	
	23-Oct-2019	-			1.993	223.368	10.495	-	
	16-Jun-2020	11:36			1.84	223.521	10.465	-	
	27-Oct-2020	14:15			2.086	223.275	10.41	-	
TH15-10B	1-May-2015	15:20	224.168	225.4	1.340	224.060	-	-	
	16-Sep-2015	12:00			1.715	223.685	-	-	
	25-Feb-2019	-			2.900	222.500	-	-	
	11-Mar-2019	13:39			2.901	222.499	6.029	-	
	12-Jun-2019	11:57			1.817	223.583	6.023	1.271	
	23-Oct-2019	-			1.38	224.020	6.02	-	
	16-Jun-2020	11:37			1.479	223.921	6.033	-	
	27-Oct-2020	14:15			1.579	223.821	6.003	-	
TH15-11A	1-May-2015	15:10	221.9015	222.62	1.460	221.160	-	-	
	16-Sep-2015	12:00			1.485	221.135	-	-	
	25-Feb-2019	-			1.970	220.650	-	-	
	13-Mar-2019	12:32			1.968	220.652	8.405	-	
	12-Jun-2019	11:00			1.44	221.180	8.405	0.91	
	23-Oct-2019	11:45			1.165	221.455	-	-	
	16-Jun-2020	11:30			1.093	221.527	8.41	-	
	27-Oct-2020	14:04			1.31	221.310	8.41	-	
TH15-11B	1-May-2015	15:10	221.9015	222.538	0.800	221.738	-	-	
	16-Sep-2015	12:00			1.095	221.443	-	-	
	25-Feb-2019	-			1.650	220.888	-	-	
	13-Mar-2019	12:34			1.653	220.885	4.706	-	
	12-Jun-2019	11:00			1.095	221.443	4.634	0.825	
	10/23/2019	11:45			0.83	221.708	-	-	
	16-Jun-2020	11:30			0.902	221.636	4.64	-	
	27-Oct-2020	14:04			1.015	221.523	4.63	-	
TH15-12A	24-Feb-2015	14:01	221.082	222.052	1.580	220.472	-	-	
	1-May-2015	15:00			1.415	220.637	-	-	
	16-Sep-2015	12:00			1.690	220.362	-	-	
	25-Feb-2019	-			2.650	219.402	-	-	
	11-Mar-2019	17:01			2.67	219.382	7.581	-	
	12-Jun-2019	19:20			1.779	220.273	7.563	1.09	
	23-Oct-2019	10:27			1.16	220.892	-	-	
	16-Jun-2020	10:00			1.517	220.535	7.485	-	
27-Oct-2020	10:30			1.63	220.422	7.43	-		
TH15-12B	24-Feb-2015	14:02	221.082	222.092	1.320	220.772	-	-	
	1-May-2015	15:00			1.185	220.907	-	-	
	16-Sep-2015	12:00			1.382	220.710	-	-	
	25-Feb-2019	-			2.070	220.022	-	-	
	11-Mar-2019	17:00			2.081	220.011	5.3	-	
	12-Jun-2019	19:20			1.421	220.671	5.312	1.14	
	23-Oct-2019	10:27			1.47	220.622	-	-	
	16-Jun-2020	10:02			1.558	220.534	5.273	-	
27-Oct-2020	10:30			1.667	220.425	5.22	-		
TH19-KGS-01	9-Mar-2019	9:33	245.457	245.915	1.688	244.227	21.753	-	
	11-Jun-2019	9:28			0.993	244.922	21.79	0.525	
	24-Oct-2019	13:00			0.3	245.615	21.8	0.45	
	9-Mar-2020	17:15			1.14	244.775	-	0.33	
	17-Jun-2020	-			0.38	245.535	21.8	0.45	
	27-Oct-2020	10:00			0.75	245.165	21.78	-	

**TABLE 2
GROUNDWATER ELEVATION MEASUREMENTS
LAKE ST. MARTIN OUTLET CHANNEL**

Sample ID	Date	Time	Ground Elevation (m)	Top of Casing Elevation (m)	Depth to Water from Top of Casing (m)	Groundwater Elevation (m)	Depth To Bottom from Top of Casing (m)	Stickup Height (m)	Comments
TH19-KGS-02	13-Mar-2019	7:40	245.172	246.287	2.08	244.207	-	-	
	11-Jun-2019	9:15			2.017	244.27	-	1.035	
	24-Oct-2019	13:00			0.575	245.712	19.143	1.03	
	9-Mar-2020	15:37			1.33	244.957	19.14	0.912	
	17-Jun-2020	15:30			0.68	245.607	19.125	-	
	27-Oct-2020	9:06			0.54	245.747	-	-	Frozen
TH19-KGS-02b	9-Mar-2019	8:20	245.204	245.992	2.44	243.552	8.354	-	
	11-Jun-2019	9:20			1.729	244.263	-	0.943	Frozen
	24-Oct-2019	-			0.936	245.056	8.36	0.89	
	9-Mar-2020	16:07			0.863	245.129	-	0.8	Frozen
	17-Jun-2020	15:35			1.02	244.972	8.35	-	
	27-Oct-2020	9:06			1.276	244.716	-	-	
TH19-KGS-03a	8-Mar-2019	18:10	245.388	246.316	1.562	244.754	2.5	-	
	11-Jun-2019	10:28			1.264	245.052	1.634	0.965	
	24-Oct-2019	15:15			1.126	245.19	2.489	-	
	17-Jun-2020	18:25			1.24	245.076	2.44	-	
	28-Oct-2020	16:26			1.305	245.011	2.47	-	
TH19-KGS-04	9-Mar-2019	11:45	244.935	245.671	1.519	244.152	23.835	-	
	11-Jun-2019	11:07			0.81	244.861	23.829	-	
	24-Oct-2019	15:00			0.14	245.531	23.834	0.82	
	17-Jun-2020	17:45			0.26	245.411	23.91	-	
	10/28/2020	16:00			0.59	245.081	-	-	
TH19-KGS-04a	11-Jun-2019	11:07	245.011	245.802	0.18	245.622	-	-	Reading taken below ground surface due to damaged well
	24-Oct-2019	-			0.945	244.857	2.138	-	
	17-Jun-2020	17:45			1.055	244.747	2.01	-	
	28-Oct-2020	16:00			1.095	244.707	1.89	-	
TH19-KGS-07	7-Mar-2019	9:32	243.215	243.992	0.063	243.929	11.49	-	Frozen
	11-Jun-2019	9:30			Flowing	-	-	1.53	Added 0.48 m casing; still flowing with extension installed
	24-Oct-2019	-			Flowing	-	-	-	Added 1.575 m extension; still flowing. Installed packer
	17-Jun-2020	17:43			-	-	-	-	Damaged well
	28-Oct-2020	16:40			Flowing	-	-	-	Damaged well
TH19-KGS-07a	7-Mar-2019	7:30	243.193	244.042	1.045	242.997	2.642	-	Frozen
	11-Jun-2019	9:45			1.032	243.01	2.639	-	
	24-Oct-2019	-			0.83	243.212	-	-	
	28-Oct-2020	16:45			1.06	242.982	-	-	Soft bottom
TH19-KGS-08	8-Mar-2019	14:04	233.734	234.612	Flowing	-	19.188	-	Artesian conditions
	12-Jun-2019	12:50			Flowing	-	19.191	1.072	Artesian conditions remain after adding 1.55 m casing extension
	23-Oct-2019	-			Flowing	-	-	-	Artesian conditions remain after adding 1.53 m casing extension
	16-Jun-2020	14:00			Flowing	-	19.205	-	Artesian conditions remain after adding 1.83 m casing extension
	27-Oct-2020	17:30			0	234.612	-	-	Frozen at top of pipe
TH19-KGS-08a	8-Mar-2019	14:59	234.217	234.921	Dry	-	2.48	-	
	12-Jun-2019	12:50			2.428	232.493	2.48	0.73	
	23-Oct-2019	-			1.75	233.171	2.49	0.62	
	28-Oct-2020	10:50			2.435	232.486	2.48	-	
TH19-KGS-09	12-Mar-2019	13:54	241.489	242.617	0.047	242.57	18.898	-	
	11-Jun-2019	-			-0.643	243.26	-	-	Removed 0.544 m of casing and added 1.55 m of temporary casing (1.011 m) to measure flowing well; measured 0.363 m below added height
	23-Oct-2019	-			-1.25	243.867	-	-	Added casing
	16-Jun-2020	17:00			-0.63	243.247	18.765	1.17	Added casing; new stickup of 1.17m
	28-Oct-2020	14:30			0	242.617	-	-	Frozen at top of pipe
TH19-KGS-10	9-Mar-2019	16:50	228.82	229.858	5.28	224.578	14.575	-	
	12-Jun-2019	12:27			4.174	225.684	14.57	1.029	
	23-Oct-2019	15:27			3.441	226.417	14.574	1.025	
	16-Jun-2020	13:24			3.645	226.213	14.575	-	
	27-Oct-2020	15:43			4.033	225.825	14.59	-	
TH19-KGS-10a	9-Mar-2019	16:52	229.115	229.918	2.06	227.858	2.187	-	
	12-Jun-2019	12:27			1.362	228.556	2.188	0.893	
	23-Oct-2019	-			1.168	228.75	2.195	0.869	
	16-Jun-2020	13:22			1.31	228.608	2.19	-	
	27-Oct-2020	15:22			1.375	228.543	2.19	-	
TH19-KGS-100	7-Mar-2019	13:38	240.653	241.741	1.405	240.336	2.948	-	Frozen
	11-Jun-2019	13:40			1.253	240.488	2.939	1.16	
	23-Oct-2019	17:36			1.053	240.688	2.933	1.16	
	16-Jun-2020	16:16			1.161	240.58	2.936	-	
	28-Oct-2020	15:15			1.187	240.554	-	-	Frozen
TH19-KGS-11	8-Mar-2019	8:08	236.92	237.915	1.932	235.983	16.815	-	Frozen
	11-Jun-2019	14:55			0.76	237.155	17.808	1.03	
	23-Oct-2019	16:55			0	237.915	16.82	1.075	Installed packer
	16-Jun-2020	15:31			1.78	236.135	16.812	-	Removed packer
	28-Oct-2020	13:51			-	-	-	-	Frozen at 0.22 m

**TABLE 2
GROUNDWATER ELEVATION MEASUREMENTS
LAKE ST. MARTIN OUTLET CHANNEL**

Sample ID	Date	Time	Ground Elevation (m)	Top of Casing Elevation (m)	Depth to Water from Top of Casing (m)	Groundwater Elevation (m)	Depth To Bottom from Top of Casing (m)	Stickup Height (m)	Comments
TH19-KGS-11a	8-Mar-2019	8:50	236.432	237.153	1.631	235.522	2.53	-	
	11-Jun-2019	14:58			1.142	236.011	2.532	0.82	
	23-Oct-2019	16:55			0.786	236.367	2.54	0.8	
	28-Oct-2020	13:51			1.111	236.042	2.528	-	
TH19-KGS-12	7-Mar-2019	14:50	240.795	241.779	5.294	236.485	15.87	-	
	11-Jun-2019	14:00			4.1	237.679	-	-	
	23-Oct-2019	15:31			2.501	239.278	18.87	1.07	
	16-Jun-2020	14:39			3.142	238.637	15.92	-	
	28-Oct-2020	12:30			3.6	238.179	15.91	-	
TH19-KGS-12b	12-Mar-2019	-	240.834	241.897	0.18	241.717	9.659	-	GWL taken after removing frozen packer
	11-Jun-2019	-			2.751	239.146	9.655	1.17	
	23-Oct-2019	15:06			2.061	239.836	9.655	1.195	
	16-Jun-2020	14:35			2.62	239.277	9.652	-	
	28-Oct-2020	12:30			2.08	239.817	9.65	-	
TH19-KGS-13	7-Mar-2019	15:55	237.054	238.001	2.045	235.956	14.613	-	
	11-Jun-2019	14:25			0.891	237.11	14.615	0.964	
	23-Oct-2019	-			-0.87	238.871	-	-	Temporary 1.53 m casing added to measure flowing well; Measured 0.66 m below added casing height
	16-Jun-2020	15:55			-0.04	238.041	14.62	-	Temporary 1.83 m casing added to measure flowing well; Measured 1.790m below added casing height
	28-Oct-2020	13:41			-	-	-	Frozen at 0.28	
TH19-KGS-13a	7-Mar-2019	16:29	237.025	237.81	1.37	236.44	2.172	-	
	11-Jun-2019	-			0.99	236.82	2.1	0.99	
	23-Oct-2019	-			0.745	237.065	2.16	0.73	
	16-Jun-2020	15:55			0.96	236.85	2.15	-	
	28-Oct-2020	13:43			1.02	236.79	2.14	-	
TH19-KGS-14	8-Mar-2019	15:40	232.921	233.994	1.65	232.344	11.794	-	
	11-Jun-2019	15:30			1.031	232.963	11.79	1.118	
	24-Oct-2019	11:07			-0.046	234.04	-	-	Temporary 1.596 m casing added to measure flowing well; Measured 1.55 m below casing height
	17-Jun-2020	9:17			-	-	-	-	Packer stuck in casing
	28-Oct-2020	9:24			-	-	-	Packer stuck in casing	
TH19-KGS-14a	8-Mar-2019	15:50	233.008	233.894	1.82	232.074	2.485	-	
	11-Jun-2019	17:07			1.319	232.575	2.485	1.008	
	24-Oct-2019	11:00			1.068	232.826	-	-	
	17-Jun-2020	10:59			1.216	232.678	2.482	-	
	28-Oct-2020	9:13			1.34	232.554	-	-	
TH19-KGS-15	8-Mar-2019	17:11	232.609	233.818	3.258	230.56	11.453	-	
	11-Jun-2019	17:00			3.82	229.998	11.447	-	
	24-Oct-2019	11:43			2.958	230.86	11.457	1.235	
	17-Jun-2020	10:43			3.36	230.458	11.452	-	
	27-Oct-2020	16:10			3.664	230.154	-	-	
TH19-KGS-16	15-Mar-2019	11:52	233.038	233.807	1.411	232.396	-	-	
	11-Jun-2019	16:37			0.27	233.537	10.264	-	
	24-Oct-2019	10:00			-0.855	234.662	10.27	0.956	Temporary 1.575 m casing added to measure flowing well; Measured 0.72 m below added casing height
	17-Jun-2020	12:43			-0.1	233.907	-	-	Temporary 1.83 m casing added to measure flowing well; Measured 1.73 m below added casing height
	27-Oct-2020	16:30			0.024	233.783	-	-	Frozen; GWL taken after thawing and installation of 0.024 m of casing
TH19-KGS-16a	9-Mar-2019	15:27	232.602	233.694	Dry	-	2.612	-	
	11-Jun-2019	11:13			2.594	231.1	2.612	1.08	
	24-Oct-2019	10:00			2.565	231.129	2.615	1.072	
	17-Jun-2020	12:06			2.57	231.124	2.615	-	
	27-Oct-2020	16:30			2.57	231.124	2.615	-	
TH19-KGS-16b	9-Mar-2019	16:30	232.907	234.023	3.404	230.619	3.983	-	
	11-Jun-2019	16:37			3.601	230.422	3.981	-	
	24-Oct-2019	10:00			3.255	230.768	3.99	1.14	
	17-Jun-2020	12:03			3.533	230.49	3.982	-	
	28-Oct-2020	8:46			3.498	230.525	3.982	-	
TH19-KGS-17	10-Mar-2019	11:50	225.028	225.698	3.292	222.406	12.745	-	
	11-Jun-2019	17:59			2.475	223.223	-	-	
	24-Oct-2019	12:08			1.77	223.928	-	0.75	
	16-Jun-2020	11:58			2.014	223.684	12.755	-	
	27-Oct-2020	14:36			2.5	223.198	12.74	-	
TH19-KGS-17a	10-Mar-2019	11:48	225.238	225.829	1.866	223.963	2.14	-	
	11-Jun-2019	17:59			1.188	224.641	2.14	0.736	
	24-Oct-2019	12:04			0.828	225.001	-	0.695	
	16-Jun-2020	11:53			0.916	224.913	2.14	-	
	27-Oct-2020	14:40			1.039	224.79	2.15	-	
TH19-KGS-17b	10-Mar-2019	11:52	225.26	226.09	7.648	218.442	8.428	-	
	13-Mar-2019	13:26			1.884	224.206	-	-	Not static
	11-Jun-2019	17:57			1.731	224.359	8.414	0.998	
	24-Oct-2019	12:00			1.316	224.774	-	1.065	
	16-Jun-2020	11:55			1.34	224.75	8.415	-	
	27-Oct-2020	14:40			1.495	224.595	8.415	-	

**TABLE 2
GROUNDWATER ELEVATION MEASUREMENTS
LAKE ST. MARTIN OUTLET CHANNEL**

Sample ID	Date	Time	Ground Elevation (m)	Top of Casing Elevation (m)	Depth to Water from Top of Casing (m)	Groundwater Elevation (m)	Depth To Bottom from Top of Casing (m)	Stickup Height (m)	Comments
TH19-KGS-18	11-Mar-2019	14:22	221.4033	222.447	3.46	218.987	13.123	-	
	11-Jun-2019	18:48			2.965	219.482	-	-	
	23-Oct-2019	12:00			2.667	219.78	-	1.18	
	16-Jun-2020	11:00			1.188	221.259	2.488	-	Pipe possibly broken or blocked
	27-Oct-2020	12:43			2.975	219.472	13.02	-	
TH19-KGS-18a	11-Mar-2019	14:43	221.427	222.157	0.801	221.356	2.123	-	
	11-Jun-2019	-			1.058	221.099	1.23	0.84	Frozen
	23-Oct-2019	10:45			0.78	221.377	-	0.862	
	16-Jun-2020	11:00			0.95	221.207	1.98	-	
	27-Oct-2020	12:43			0.93	221.227	1.45	-	
TH19-KGS-19	11-Mar-2019	16:00	220.585	221.487	2.623	218.864	12.362	-	
	11-Jun-2019	19:15			2.098	219.389	8.38	0.945	
	23-Oct-2019	10:00			2.692	218.795	-	1.08	
	16-Jun-2020	9:19			1.755	219.732	8.46	-	
	27-Oct-2020	11:34			2.125	219.362	-	-	
TH19-KGS-19a	11-Mar-2019	16:52	221.013	221.932	1.875	220.057	2.558	-	
	11-Jun-2019	18:45			1.2	220.732	2.55	1.04	
	23-Oct-2019	10:30			0.995	220.937	-	1.025	
	16-Jun-2020	10:04			1.065	220.867	2.55	-	
	27-Oct-2020	10:30			1.16	220.772	2.545	-	
TH19-KGS-20	14-Mar-2019	13:51	242.523	243.285	0.799	242.486	25.79	-	GWL measurement taken after removal of packer
	12-Jun-2019	-			1.525	241.76	25.69	0.905	Added casing
	24-Oct-2019	-			-0.795	244.08	25.83	0.95	Temporary 1.570 m casing added to measure flowing well; Measured 0.795 below added casing height
	17-Jun-2020	-			-0.71	243.995	-	-	Temporary 1.83 m casing added to measure flowing well; Measured 1.12 m below added casing height
	28-Oct-2020	-			-	-	-	-	Frozen plug
TH20-KGS-01	22-Feb-2020	12:00	245.143	246.142	0.9	245.242	-	-	Measurements taken one day after installation
	2-Mar-2020	11:33			0.89	245.252	-	-	Frozen
	17-Jun-2020	17:36			0.68	245.462	19.01	-	
	28-Oct-2020	14:30			-	-	-	-	Frozen at 1.012
TH20-KGS-02	2-Mar-2020	-	244.922	245.88	0.39	245.49	-	-	Frozen
	17-Jun-2020	17:59			0.485	245.395	2.38	-	Frozen
	28-Oct-2020	14:45			-	-	-	-	Frozen at 0.45 m
TH20-KGS-03	24-Feb-2020	7:40	245.021	246.07	1.42	244.65	-	-	GWL measurement taken 30 minutes after installation
	2-Mar-2020	-			0.88	245.19	-	-	Frozen
	17-Jun-2020	18:00			0.62	245.45	20.39	-	Soft bottom
	28-Oct-2020	14:45			0.926	245.144	-	-	Frozen
TH20-KGS-04	25-Feb-2020	7:40	245.172	246.136	1.25	244.886	-	-	GWL measurement taken on same day as installation
	2-Mar-2020	-			1.03	245.106	-	-	Frozen
	17-Jun-2020	18:13			0.69	245.446	16.32	-	Soft bottom
	28-Oct-2020	15:30			-	-	-	-	Frozen at 1.012
TH20-KGS-05	26-Feb-2020	7:40	245.202	246.105	1.09	245.015	-	-	GWL measurement taken 30 minutes after installation
	2-Mar-2020	-			0.92	245.185	-	-	Frozen
	9-Mar-2020	16:52			1.125	244.98	16.14	0.84	
	13-Mar-2020	-			1.05	245.055	-	-	
	17-Jun-2020	18:35			0.61	245.495	3.72	-	Frozen
	28-Oct-2020	15:00			-	-	-	-	Frozen at 0.865 m
TH20-KGS-06b	5-Mar-2020	9:30	245.399	246.611	1.525	245.086	-	-	
	9-Mar-2020	12:00			1.51	245.101	-	1.173	
	13-Mar-2020	12:57			-	-	-	-	
	17-Jun-2020	16:03			1.12	245.491	19.2	-	
	27-Oct-2020	10:00			1.45	245.161	20.01	-	
TH20-KGS-07	5-Mar-2020	12:00	245.404	246.37	0.44	245.93	-	-	
	9-Mar-2020	17:50			0.51	245.86	-	0.91	
	13-Mar-2020	-			1.293	245.077	-	-	
	17-Jun-2020	15:40			0.845	245.525	18.3	-	
	27-Oct-2020	9:30			1.205	245.165	18.29	-	
TH20-KGS-08	9-Mar-2020	18:05	245.357	246.298	1.18	245.118	-	0.908	
	13-Mar-2020	-			1.215	245.083	-	-	
	17-Jun-2020	-			0.785	245.513	17.75	-	
	27-Oct-2020	9:18			1.139	245.159	17.75	-	
Sentinel Well 1	8-Mar-2019	17:50	-	-	2.530	-	-	-	To be surveyed in winter/spring 2021
	18-Jun-2020	11:05	-	-	1.39	-	13.304	0.64	To be surveyed in winter/spring 2021
Sentinel Well 2	18-Jun-2020	-	-	-	Flowing	-	16.2	0.53	To be surveyed in winter/spring 2021
Sentinel Well 3	18-Jun-2020	13:23	-	-	0.273	-	14.05	0.74	To be surveyed in winter/spring 2021

Notes:
1. "-" = no value

**TABLE 3
GENERAL WATER QUALITY
LAKE ST. MARTIN OUTLET CHANNEL**

KGS Sample ID	Duplicate Sample ID	Date Sampled	ALS Sample ID	Parameter ⁽¹⁾																								
				pH (units)	E.C. (µS/cm)	Alkalinity as CaCO ₃	Bicarbonate as HCO ₃	Carbonate as CO ₃	Hydroxide as OH	Hardness as CaCO ₃	Chloride	Fluoride	Sulphate	Ammonia	Unionized Ammonia ⁽²⁾	Nitrate & Nitrite (as N)	Nitrate (as N)	Nitrite (as N)	Sodium	Total Phosphorus	Phosphorus - Total Dissolved	T.D.S.	T.S.S.	T.K.N.	Turbidity (NTU)	E. Coli	Total Coliform (MPN/100mL)	
HC-CDWQ ⁽³⁾																												
Drinking Water - MAC				-	-	-	-	-	-	-	-	1.5	-	-	-	10 ⁽⁹⁾	1.0 ⁽⁹⁾	-	-	-	-	-	-	0.1/0.3/1.0 ⁽¹³⁾	None Detectable per 100 mL	None Detectable per 100 mL		
Drinking Water - AO				7.0 - 10.5	-	-	-	-	-	-	80-100 ⁽⁵⁾	250	-	500	-	-	-	200	-	-	500	-	-	-	-	-	-	
CCME ⁽⁴⁾ - Canadian Water Quality Guidelines for the Protection of Aquatic Life																												
Freshwater				6.5 - 9.0	-	-	-	-	-	-	120 ^(6a) 640 ^(6b)	0.12 ⁽⁷⁾	-	-	0.019 ⁽⁸⁾	-	3 ^(10a) 124 ^(10b)	0.06	-	(11)	-	-	(12)	-	-	-		
GROUNDWATER SAMPLES																												
PW19-KGS-01		12-Mar-2019	L2245232-28	8.16	741	329	401	<0.60	<0.34	<u>366</u>	13.4	0.249	78.9	-	-	0.0093	0.0093	<0.0010	31.3	<0.030	-	437	-	-	1.04	0	0	
		11-Jun-2019	L2290890-1	7.65	705	338	412	<0.60	<0.34	<u>353</u>	9.05	0.263	77.0	-	-	<0.0051	<0.0050	<0.0010	27.9	<0.030	-	428	-	-	1.12	0	0	
	PW-200	24-Oct-2019	L2371920-1	8.18	694	363	443	<0.60	<0.34	<u>420</u>	9.35	0.305	78.6	-	-	<0.0051	<0.0050	<0.0010	28.0	0.037	-	467	-	-	78.3	0	0	
			L2371920-4	8.21	697	357	436	<0.60	<0.34	<u>431</u>	9.87	0.302	79.3	-	-	<0.0051	<0.0050	<0.0010	29.0	<0.030	-	469	-	-	81.2	0	0	
	RPD				0.4%	0.4%	1.7%	1.6%	NC	NC	2.6%	5.4%	1.0%	0.9%	-	-	NC	NC	NC	3.5%	NC	NC	0.4%	NC	NC	3.6%	NC	NC
			17-Jun-2020	L2463404-1	7.89	866	378	461	<0.60	<0.34	<u>396</u>	29.0	0.339	87.5	-	-	<0.0051	<0.0050	<0.0010	45.4	<0.030	-	<u>515</u>	-	-	3.20	0	0
		27-Oct-2020	L2523514-1	8.26	726	327	398	<0.60	<0.34	<u>336</u>	9.46	0.251	70.5	-	-	<0.0051	<0.0050	<0.0010	26.9	<0.030	-	409	-	-	1.91	0	0	
PW19-KGS-02	PW19-KGS-05	13-Mar-2019	L2245232-26	8.14	744	336	410	<0.60	<0.34	<u>372</u>	12.6	0.289	88.2	-	-	<0.0051	<0.0050	<0.0010	33.9	<0.030	-	455	-	-	233	0	0	
			L2245232-27	8.18	755	329	401	<0.60	<0.34	<u>380</u>	12.6	0.280	88.8	-	-	<0.010	<0.010	<0.0020	34.1	<0.030	-	454	-	-	180	0	0	
	RPD				0.5%	1.5%	2.1%	2.2%	NC	NC	2.1%	0.0%	3.2%	0.7%	-	-	NC	NC	NC	0.6%	NC	NC	0.2%	NC	NC	25.7%	NC	NC
			11-Jun-2019	L2290890-2	7.79	735	327	399	<0.60	<0.34	<u>362</u>	14.1	0.317	89.0	-	-	<0.0051	<0.0050	<0.0010	35.7	<0.030	-	449	-	-	2.57	0	0
			24-Oct-2019	L2371920-2	8.22	729	366	446	<0.60	<0.34	<u>371</u>	8.52	0.339	93.1	-	-	0.0082	0.0082	<0.0010	31.9	<0.030	-	471	-	-	1.33	0	3
			16-Jun-2020	L2462330-4	8.32	736	334	399	3.96	<0.34	<u>378</u>	10.9	0.310	89.6	-	-	<0.0051	<0.0050	<0.0010	32.9	<0.030	-	453	-	-	1.13	0	0
	PW-100	28-Oct-2020	L2523514-2	8.24	787	329	401	<0.60	<0.34	<u>344</u>	16.9	0.330	85.5	-	-	<0.0051	<0.0050	<0.0010	34.5	<0.030	-	444	-	-	2.96	0	0	
			L2523514-8	8.08	790	326	398	<0.60	<0.34	<u>350</u>	16.8	0.344	85.4	-	-	<0.0051	<0.0050	<0.0010	35.7	<0.030	-	445	-	-	2.47	0	0	
RPD				2.0%	0.4%	0.9%	0.8%	NC	NC	1.7%	0.6%	4.2%	0.1%	-	-	NC	NC	NC	3.4%	NC	NC	0.2%	NC	NC	18.0%	NC	NC	
PW19-KGS-03	PW19-KGS-04	14-Mar-2019	L2245232-24	8.17	626	335	409	<0.60	<0.34	<u>362</u>	1.06	0.197	36.8	-	-	0.016	0.016	<0.0020	8.44	<0.030	-	364	-	-	2.75	0	5	
			L2245232-25	8.22	622	333	406	<0.60	<0.34	<u>361</u>	1.01	0.212	37.2	-	-	0.0123	0.0123	<0.0010	8.45	<0.030	-	362	-	-	2.41	-	-	
	RPD				0.6%	0.6%	0.6%	0.7%	NC	NC	0.3%	4.8%	7.3%	1.1%	-	-	26.1%	26.1%	NC	0.1%	NC	NC	0.6%	NC	NC	13.2%	NC	NC
	PW19-KGS-200	11-Jun-2019	L2290890-3	7.71	606	330	402	<0.60	<0.34	<u>344</u>	1.12	0.175	31.3	-	-	<0.0051	<0.0050	<0.0010	8.58	<0.030	-	349	-	-	2.16	0	0	
			L2290890-4	7.71	609	333	406	<0.60	<0.34	<u>348</u>	1.15	0.176	31.8	-	-	<0.0051	<0.0050	<0.0010	8.60	<0.030	-	352	-	-	2.33	0	0	
	RPD				0.0%	0.5%	0.9%	1.0%	NC	NC	1.2%	2.6%	0.6%	1.6%	-	-	NC	NC	NC	0.2%	NC	NC	0.9%	NC	NC	7.6%	NC	NC
			24-Oct-2019	L2371920-3	8.11	550	331	403	<0.60	<0.34	<u>327</u>	0.91	0.181	31.8	-	-	<0.0051	<0.0050	<0.0010	3.76	<0.030	-	344	-	-	1.06	0	130
	PW19-KGS-300	17-Jun-2020	L2462330-5	8.24	536	300	365	<0.60	<0.34	<u>314</u>	0.86	0.199	25.8	-	-	<0.0051	<0.0050	<0.0010	5.83	<0.030	-	313	-	-	2.10	0	200	
			L2462330-6	8.23	535	298	363	<0.60	<0.34	<u>315</u>	0.87	0.198	25.9	-	-	<0.0051	<0.0050	<0.0010	5.72	<0.030	-	312	-	-	1.37	0	165	
	RPD				0.1%	0.2%	0.7%	0.5%	NC	NC	0.3%	1.2%	0.5%	0.4%	-	-	NC	NC	NC	1.9%	NC	NC	0.3%	NC	NC	42.1%	NC	19.2%
		27-Oct-2020	L2523514-3	8.21	608	318	388	<0.60	<0.34	<u>318</u>	0.99	0.202	27.1	-	-	<0.0051	<0.0050	<0.0010	7.05	<0.030	-	329	-	-	0.82	0	0	
Sentinel Well 1 - (SW19-KGS-01)		18-Jun-2020	L2463404-2	8.29	700	330	400	1.08	<0.34	<u>368</u>	9.60	0.273	80.4	-	-	<0.0051	<0.0050	<0.0010	27.3	<0.030	-	432	-	-	0.52	0	0	
		8-Mar-2019	L2242160-1	7.68	881	395	482	<0.60	<0.34	<u>406</u>	26.20	0.324	80.9	-	-	<0.0051	0.0051	<0.0010	48.0	<0.030	-	<u>520</u>	-	-	32.9	0	0	
Sentinel Well 2 - (SW19-KGS-02)		27-Sep-2019	L2356084-1	8.27	1170	349	426	<0.60	<0.34	<u>432</u>	91.4	0.269	198	-	-	<0.010	<0.010	<0.0020	111	<0.030	-	<u>748</u>	-	-	62.0	0	4	
		18-Jun-2020	L2463404-3	8.26	1180	345	421	<0.60	<0.34	<u>449</u>	97.2	0.284	204	-	-	<0.010	<0.010	<0.0020	107	<0.030	-	<u>759</u>	-	-	0.91	0	0	
		29-Oct-2020	L2523514-9	8.06	1240	340	415	<0.60	<0.34	<u>424</u>	89.0	0.291	187	-	-	<0.0051	<0.0050	<0.0010	106	<0.030	-	<u>722</u>	-	-	1.17	0	0	
Sentinel Well 3 - (SW19-KGS-03)		27-Sep-2019	L2356084-2	8.15	913	386	471	<0.60	<0.34	<u>407</u>	40.5	0.287	115	-	-	<0.010	<0.010	0.0049	61.9	<0.030	-	<u>576</u>	-	-	83.4	0	6	
		18-Jun-2020	L2463404-4	8.33	930	373	447	3.96	<0.34	<u>420</u>	42.4	0.308	117	-	-	<0.010	<0.010	<0.0020	58.5	<0.030	-	<u>576</u>	-	-	1.29	0	0	
		29-Oct-2020	L2523514-10	8.03	979	374	456	<0.60	<0.34	<u>407</u>	39.3	0.319	109	-	-	<0.0051	<0.0050	<0.0010	59.8	<0.030	-	<u>562</u>	-	-	1.44	0	2	
TH15-04		8-Mar-2019	L2245232-4	7.90	470	237	289	<0.60	<0.34	<u>241</u>	1.93	0.272	35.4	-	-	0.0178	0.0159	0.0019	19.3	<0.030	-	275	-	-	1630	-	-	
TH15-05		8-Mar-2019	L2245232-6	7.80	577	341	416	<0.60	<0.34	<u>338</u>	0.89	0.231	22.1	-	-	<0.0051	<0.0050	<0.0010	6.91	<0.030	-	342	-	-	>4000	-	-	
TH19-KGS-01B		9-Mar-2019	L2245232-12	8.14	773	376	458	<0.60	<0.34	<u>376</u>	21.6	0.287	94.7	-	-	<0.010	<0.010	<0.0020	38.4	<0.030	-	497	-	-	>4000	-	-	
TH19-KGS-02B		11-Mar-2019	L2245232-18	8.07	1970	269	328	<0.60	<0.34	<u>834</u>	93.9	0.32	737	-	-	<0.051	<0.050	0.014	178	<0.030	-	<u>1430</u>	-	-	1180	-	-	
TH19-KGS-03A		8-Mar-2019	L2245232-40	8.05	650	360	439	<0.60	<0.34	<u>367</u>	13.6	0.199	11.1	-	-	0.0502	0.0442	0.0060	14.0	0.092	-	373	-	-	>4000	-	-	
TH19-KGS-04		9-Mar-2019	L2245232-7	7.99	987	346	423	<0.60	<0.34	<u>438</u>	54.2	0.281	164	-	-	<0.010	<0.010	<0.0020	69.3	<0.030	-	<u>632</u>	-	-	347	-	-	
TH19-KGS-07		7-Mar-2019	L2245232-11	8.16	654	303	369	<0.60	<0.34	<u>331</u>	14.9	0.600	64.8	-	-	<0.0051	<0.0050	<0.0010	28.2	<0.030	-	391	-	-	101	-	-	
TH19-KGS-07A		7-Mar-2019	L2245232-10	7.74	689	434	530	<0.60	<0.34	<u>393</u>	4.31	0.373	12.2	-	-	0.018	0.0129	0.0051	10.2	0.053	-	419	-	-	>4000	-	-	
TH19-KGS-08		8-Mar-2019	L2245232-36	8.19	600	341	416	<0.60	<0.34	<u>352</u>	1.07	0.237	22.1	-	-	0.006	0.0060	<0.0010	7.17	<0.0								

**TABLE 3
GENERAL WATER QUALITY
LAKE ST. MARTIN OUTLET CHANNEL**

KGS Sample ID	Duplicate Sample ID	Date Sampled	ALS Sample ID	Parameter ⁽¹⁾																								
				pH (units)	E.C. (µS/cm)	Alkalinity as CaCO ₃	Bicarbonate as HCO ₃	Carbonate as CO ₃	Hydroxide as OH	Hardness as CaCO ₃	Chloride	Fluoride	Sulphate	Ammonia	Unionized Ammonia ⁽²⁾	Nitrate & Nitrite (as N)	Nitrate (as N)	Nitrite (as N)	Sodium	Total Phosphorus	Phosphorus - Total Dissolved	T.D.S.	T.S.S.	T.K.N.	Turbidity (NTU)	E. Coli	Total Coliform (MPN/100mL)	
HC-CDWQ ⁽³⁾																												
Drinking Water - MAC				-	-	-	-	-	-	-	-	-	1.5	-	-	-	10 ⁽⁹⁾	1.0 ⁽⁹⁾	-	-	-	-	-	0.1/0.3/1.0 ⁽¹³⁾	None Detectable per 100 mL	None Detectable per 100 mL		
Drinking Water - AO				7.0 - 10.5	-	-	-	-	-	-	80-100 ⁽⁵⁾	250	-	500	-	-	-	-	200	-	-	500	-	-	-	-	-	
CCME ⁽⁴⁾ - Canadian Water Quality Guidelines for the Protection of Aquatic Life																												
Freshwater				6.5 - 9.0	-	-	-	-	-	-	-	120 ^(6a) 640 ^(6b)	0.12 ⁽⁷⁾	-	0.019 ⁽⁸⁾	-	3 ^(10a) 124 ^(10b)	0.06	-	(11)	-	-	(12)	-	Narrative ⁽¹⁴⁾	-	-	
SURFACE WATER SAMPLES																												
BC-02		17-Jun-2020	L2463404-7	8.42	-	-	-	-	-	-	-	-	-	0.029	0.003977	<0.070	<0.020	<0.010	-	0.0551	0.0085	-	3.2	1.14	2.12	-	-	
		28-Oct-2020	L2523516-3	8.09	-	-	-	-	-	-	-	-	-	0.026	0.000274	<0.070	0.020	<0.010	-	0.0162	-	-	8.6	1.28	5.25	-	-	
BC-05		17-Jun-2020	L2463404-6	8.35	-	-	-	-	-	-	-	-	-	0.016	0.001954	<0.070	<0.020	<0.010	-	0.0486	0.0089	-	35.0	1.30	26.3	-	-	
		28-Oct-2020	L2523516-4	7.78	-	-	-	-	-	-	-	-	-	0.016	0.000082	<0.070	<0.020	<0.010	-	0.0223	-	-	10.8	1.07	5.19	-	-	
CR3-1		17-Jun-2020	L2462330-10	7.27	-	-	-	-	-	-	-	-	-	0.01	0.000086	<0.070	<0.020	<0.010	-	0.0073	0.0053	-	<3.0	0.64	0.16	-	-	
		28-Oct-2020	L2523516-5	<u>6.98</u>	-	-	-	-	-	-	-	-	-	0.010	0.000008	<0.070	<0.020	<0.010	-	0.0051	-	-	<3.0	0.50	0.16	-	-	
CR3-2		17-Jun-2020	L2462330-11	7.75	-	-	-	-	-	-	-	-	-	0.013	0.000416	<0.070	<0.020	<0.010	-	0.0093	0.0065	-	4.6	0.63	3.68	-	-	
		28-Oct-2020	L2523516-6	7.1	-	-	-	-	-	-	-	-	-	0.017	0.000019	<0.070	0.064	<0.010	-	0.0104	-	-	<3.0	0.53	0.89	-	-	
LSMOC-INLET-1A		17-Jun-2020	L2463404-5	8.5	-	-	-	-	-	-	-	-	-	0.025	0.003589	<0.070	<0.020	<0.010	-	0.0275	0.0055	-	8.4	0.84	4.85	-	-	
		28-Oct-2020	L2523516-1	<u>6.48</u>	-	-	-	-	-	-	-	-	-	0.047	0.000013	<0.070	<0.020	<0.010	-	0.0204	-	-	5.8	1.21	4.46	-	-	
LSMOC-OUTLET-1A		17-Jun-2020	L2462330-9	8	-	-	-	-	-	-	-	-	-	0.010	0.000368	<0.070	<0.020	<0.010	-	0.0207	0.0105	-	<3.0	0.52	4.38	-	-	
		27-Oct-2020	L2523516-2	<u>6</u>	-	-	-	-	-	-	-	-	-	0.031	0.000003	<0.070	0.051	<0.010	-	0.0670	-	-	11.4	0.48	14.1	-	-	
SW-R3		11-Jun-2019	L2290890-10	8.57	456	262	290	14	<0.34	<u>269</u>	0.970	0.159	17	-	-	<0.0051	<0.0050	<0.0010	6.84	<0.030	-	267	-	-	6.93	-	-	
		24-Oct-2019	L2371920-5	8.02	176	107	131	<0.60	<0.34	<u>106</u>	0.66	0.044	1.52	-	-	<0.0051	<0.0050	<0.0010	0.92	<0.030	-	103	-	-	1.2	1	>200	
		17-Jun-2020	L2462330-8	-	-	-	-	-	-	-	-	-	-	0.012	0.000593	<0.070	<0.020	<0.010	-	0.0171	0.0084	-	8.0	0.55	16.1	-	-	
		28-Oct-2020	L2523516-7	-	-	-	-	-	-	-	-	-	-	0.010	0.000017	<0.070	<0.020	<0.010	-	0.0052	-	-	<3.0	0.49	1.58	-	-	
	SW-100		L2523516-8	-	-	-	-	-	-	-	-	-	-	0.013	0.000022	<0.070	<0.020	<0.010	-	0.0045	-	-	<3.0	0.48	1.54	-	-	
	RPD			NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	26.1%	26.1%	NC	NC	NC	NC	14.4%	NC	NC	NC	NC	2.1%	2.6%	NC	NC
Laboratory Detection Limits				0.10	1.0	1.0	1.2	0.60	0.34	0.20	0.10	0.020	0.30	0.010	-	0.0051	0.0050	0.0010	0.050	0.030	-	5.0	-	-	0.10	-	-	

E.C. = Electrical Conductivity T.O.C. = Total Organic Carbon
B.O.D. = Biochemical Oxygen Demand T.K.N. = Total Kjeldahl Nitrogen
C.O.D. = Chemical Oxygen Demand T.D.S. = Total Dissolved Solids
D.O.C. = Dissolved Organic Carbon T.S.S. = Total Suspended Solids
TCU = True Colour Units S.A.R. = Sodium Absorption Ratio (no units)
NTU = Nephelometric Turbidity Units

Notes:

"-" = No Data

- All values are expressed in milligrams per litre (mg/L) unless otherwise specified. Groundwater metals samples - dissolved (filtered and preserved in field). Surface water metals samples - Total (preserved in field)
- Unionized ammonia calculated on Table 4 using pH, temperature, and laboratory analyzed ammonia values.
- Health Canada - Canadian Drinking Water Quality Guidelines (HC-CDWQ). Updated Sept 2020.
MAC = Maximum Acceptable Concentration = The maximum concentration of a parameter that is designed to protect those individuals most at risk, such as children and the elderly.
AO = Aesthetic Objective = A guideline which addresses a parameter that may affect consumer acceptance of drinking water, such as taste, odour, and colour.
- CCME - Canadian Council of Ministers of the Environment. Canadian Environmental Quality Guidelines, 1999. Updated 2018
Guidelines for Canadian Drinking Water Quality.
Community Water Supplies (Health Canada - Canadian Drinking Water Quality Guidelines)
Canadian Water Quality Guidelines for the Protection of Aquatic Life
Canadian Water Quality Guidelines for the Protection of Agriculture
- Public acceptance of hardness varies considerably. Generally, hardness levels between 80 and 100 mg/L (as CaCO₃) provide acceptable balance between corrosion and incrustation.
Where water is softened by sodium ion exchange, it is recommended that a separate, unsoftened supply be retained for culinary and drinking purposes.

**TABLE 4
UNIONIZED AMMONIA
LAKE ST. MARTIN OUTLET CHANNEL**

KGS Sample ID	Date	ALS Sample ID	pH ⁽¹⁾	Temp. (°C)	Temp. ⁽¹⁾ (°K)	pKa ⁽²⁾	f ⁽³⁾	Ammonia (mg/L)	Unionized Ammonia (mg/L) ⁽⁴⁾
BC-02	17-Jun-2020	L2463404-7	8.42	25.9	299.05	9.22	0.1371	0.029	0.003977
	28-Oct-2020	L2523516-3	8.09	0.6	273.75	10.06	0.0105	0.026	0.000274
BC-05	17-Jun-2020	L2463404-6	8.35	26.3	299.45	9.21	0.1221	0.016	0.001954
	28-Oct-2020	L2523516-4	7.78	0.4	273.55	10.07	0.0051	0.016	0.000082
CR3-1	17-Jun-2020	L2462330-10	7.27	22.3	295.45	9.33	0.0086	0.01	0.000086
	28-Oct-2020	L2523516-5	6.98	0.1	273.25	10.08	0.0008	0.010	0.000008
CR3-2	17-Jun-2020	L2462330-11	7.75	25.5	298.65	9.23	0.0320	0.013	0.000416
	28-Oct-2020	L2523516-6	7.1	0.7	273.85	10.06	0.0011	0.017	0.000019
LSMOC-INLET-1A	17-Jun-2020	L2463404-5	8.5	24.05	297.2	9.28	0.1436	0.025	0.003589
	28-Oct-2020	L2523516-1	6.48	1	274.15	10.05	0.0003	0.047	0.000013
LSMOC-OUTLET-1A	17-Jun-2020	L2462330-9	8	19.5	292.65	9.42	0.0368	0.010	0.000368
	27-Oct-2020	L2523516-2	6	0.1	273.25	10.08	0.0001	0.031	0.000003
SW-R3	17-Jun-2020	L2462330-8	8.04	22.5	295.65	9.32	0.0495	0.012	0.000593
	28-Oct-2020	L2523516-7	7.29	0.6	273.75	10.06	0.0017	0.010	0.000017
	28-Oct-2020	L2523516-8	7.29	0.6	273.75	10.06	0.0017	0.013	0.000022
PWQO									0.019

Notes:

1. pH and temperature values from field data.
2. $pKa = 0.09018 + 2729.92/T$, T = Temp. in Kelvins
3. $f = 1 / (10^{(pKa - pH)} + 1)$
4. Unionized Ammonia = f x (Ammonia)
5. PWQO - Provincial Water Quality Objectives, of the Ministry of Environment and Energy (MOEE), July 1994.

BOLD - Exceeds PWQO

TABLE 5
METALS IN WATER
LAKE ST. MARTIN OUTLET CHANNEL

KGS Sample ID	Duplicate Sample ID	Date Sampled	ALS Sample ID	Parameter ⁽¹⁾																			
				Aluminum	Antimony	Arsenic	Barium	Beryllium	Bismuth	Boron	Cadmium	Calcium	Cesium	Chromium	Cobalt	Copper	Iron	Lead	Lithium	Magnesium	Manganese	Mercury	
HC-CDWQ ⁽²⁾																							
Drinking Water - MAC				-	0.006	0.010	2.0	-	-	5.0	0.007	⁽⁹⁾	-	0.05	-	2.0	-	0.005	-	-	0.12	0.001	
Drinking Water - AO				0.1- 0.2 ⁽⁴⁾ (OG)	-	-	-	-	-	-	-	-	-	-	1.0	0.3	-	-	-	0.02	-		
CCME ⁽³⁾																							
Freshwater Aquatic Life				0.005 - 0.1 ⁽⁵⁾	-	0.005	-	-	-	29 ⁽⁶⁾ 1.5 ⁽⁷⁾	0.00009 ^(8a) 0.001 ^(8b)	-	-	0.0089 (III) ⁽¹⁰⁾ 0.001 (VI)	-	^(8c)	0.3	^(8d)	-	-	0.430 ^(11a) / 3.600 ^(11b)	0.000026 (inorganic) 0.000004 (methyl) ⁽¹²⁾	
GROUNDWATER SAMPLES																							
PW19-KGS-01		12-Mar-2019	L2245232-28	<0.0010	<0.00010	0.00038	0.0249	<0.00010	<0.000050	0.156	0.0000068	55.6	<0.000010	<0.00010	0.00025	0.00452	<0.010	0.000068	0.0245	55.2	0.00503	-	
		11-Jun-2019	L2290890-1	<0.0010	<0.00010	0.00049	0.0254	<0.00010	<0.000050	0.133	<0.0000050	51.9	<0.000010	<0.00010	0.00024	<0.00020	0.051	<0.000050	0.0247	54.3	<u>0.051</u>	-	
	PW-200	24-Oct-2019	L2371920-1	0.206	<0.00010	0.00063	0.0290	<0.00010	<0.000050	0.142	<0.0000050	66.6	0.000054	0.00060	0.00049	0.00186	0.390	0.00122	0.0242	61.5	<u>0.0226</u>	-	
			L2371920-4	0.212	<0.00010	0.00064	0.0295	<0.00010	<0.000050	0.144	<0.0000050	68.0	0.000055	0.00063	0.00051	0.00153	0.412	0.00118	0.0243	63.4	<u>0.0228</u>	-	
	RPD				2.9%	NC	1.6%	1.7%	NC	NC	1.4%	NC	2.1%	1.8%	4.9%	4.0%	19.5%	5.5%	3.3%	0.4%	3.0%	0.9%	NC
			17-Jun-2020	L2463404-1	<0.0010	<0.00010	0.00036	0.0282	<0.00010	<0.000050	0.180	<0.0000050	61.3	0.000010	<0.00010	0.00016	<0.00020	0.134	<0.000050	0.0312	59.1	0.0162	-
		27-Oct-2020	L2523514-1	<0.0010	<0.00010	0.00078	0.0243	<0.00010	<0.000050	0.145	<0.0000050	51.7	<0.000010	<0.00010	0.00019	<0.00020	0.152	<0.000050	0.0227	50.2	0.00596	-	
PW19-KGS-02	PW19-KGS-05	13-Mar-2019	L2245232-26	<0.0010	<0.00010	0.00135	0.0242	<0.00010	<0.000050	0.145	<0.0000050	58.5	<0.000010	<0.00010	0.00015	0.00066	0.121	<0.000050	0.0252	55.0	0.00465	-	
			L2245232-27	<0.0010	<0.00010	0.00136	0.0243	<0.00010	<0.000050	0.150	<0.0000050	60.3	0.000010	<0.00010	0.00014	<0.00020	0.128	<0.000050	0.0254	55.7	0.00462	-	
	RPD				NC	NC	0.7%	0.4%	NC	NC	3.4%	NC	3.0%	NC	6.9%	NC	5.6%	NC	0.8%	1.3%	0.6%	NC	
			11-Jun-2019	L2290890-2	<0.0010	<0.00010	0.00161	0.0250	<0.00010	<0.000050	0.129	<0.0000050	55.1	0.000012	<0.00010	0.00016	0.00122	0.112	0.000057	0.0253	54.6	<u>0.112</u>	-
			24-Oct-2019	L2371920-2	<0.0010	<0.00010	0.00125	0.0258	<0.00010	<0.000050	0.137	<0.0000050	57.2	0.000016	<0.00010	0.00015	0.00079	0.116	0.000070	0.0245	55.5	0.00436	-
			16-Jun-2020	L2462330-4	<0.0010	<0.00010	0.00129	0.0246	<0.00010	<0.000050	0.144	<0.0000050	57.8	<0.000010	<0.00010	0.00015	0.00050	0.138	0.000055	0.0253	56.7	0.00495	-
	PW-100	28-Oct-2020	L2523514-2	<0.0010	<0.00010	0.00185	0.0245	<0.00010	<0.000050	0.139	<0.0000050	54.2	0.000010	<0.00010	0.00015	<0.00020	0.191	<0.000050	0.0240	50.6	0.00685	-	
			L2523514-8	<0.0010	<0.00010	0.00182	0.0248	<0.00010	<0.000050	0.139	<0.0000050	55.4	0.000023	<0.00010	0.00016	<0.00020	0.202	<0.000050	0.0249	51.4	0.00694	-	
RPD				NC	NC	1.6%	1.2%	NC	NC	0.0%	NC	2.2%	78.8%	NC	6.5%	NC	5.6%	NC	3.7%	1.6%	1.3%	NC	
PW19-KGS-03	PW19-KGS-04	14-Mar-2019	L2245232-24	0.0011	<0.00010	0.00069	0.0590	<0.00010	<0.000050	0.102	<0.0000050	62.9	<0.000010	<0.00010	0.00110	0.00020	0.339	<0.000050	0.0184	49.8	<u>0.151</u>	-	
			L2245232-25	<0.0010	<0.00010	0.00071	0.0590	<0.00010	<0.000050	0.101	<0.0000050	62.4	<0.0000050	62.4	<0.000010	<0.00010	0.00112	<0.00020	0.337	<0.000050	0.0184	49.7	<u>0.152</u>
	RPD				NC	NC	2.9%	0.0%	NC	NC	1.0%	NC	0.8%	NC	NC	1.8%	NC	0.6%	NC	0.0%	0.2%	0.7%	NC
	PW19-KGS-200	11-Jun-2019	L2290890-3	<0.0010	<0.00010	0.00037	0.0538	<0.00010	<0.000050	0.092	<0.0000050	56.4	<0.000010	<0.00010	0.00056	<0.00020	0.216	<0.000050	0.0194	49.4	<u>0.216</u>	-	
			L2290890-4	<0.0010	<0.00010	0.00037	0.0527	<0.00010	<0.000050	0.091	<0.0000050	56.8	<0.000010	<0.00010	0.00058	<0.00020	0.202	<0.000050	0.0197	50.2	<u>0.202</u>	-	
	RPD				NC	NC	0.0%	2.1%	NC	NC	1.1%	NC	0.7%	NC	NC	3.5%	NC	6.7%	NC	1.5%	1.6%	6.7%	NC
			24-Oct-2019	L2371920-3	0.0090	<0.00010	0.00110	0.0619	<0.00010	<0.000050	0.068	<0.0000050	68.3	<0.000010	0.00010	0.00198	0.00041	1.25	0.000065	0.0124	38.0	<u>0.276</u>	-
	PW19-KGS-300	17-Jun-2020	L2462330-5	0.0018	<0.00010	0.00072	0.0487	<0.00010	<0.000050	0.077	<0.0000050	55.6	<0.000010	<0.00010	0.00094	<0.00020	0.243	<0.000050	0.0139	42.4	<u>0.119</u>	-	
L2462330-6			0.0019	<0.00010	0.00067	0.0492	<0.00010	<0.000050	0.076	<0.0000050	55.2	0.000011	<0.00010	0.00090	<0.00020	0.248	0.000074	0.0139	42.9	<u>0.119</u>	-		
RPD				5.4%	NC	7.2%	1.0%	NC	NC	1.3%	NC	0.7%	NC	4.3%	NC	2.0%	NC	0.0%	1.2%	0.0%	0.0%	NC	
		27-Oct-2020	L2523514-3	<0.0010	<0.00010	0.00091	0.0546	<0.00010	<0.000050	0.094	<0.0000050	56.2	<0.000010	<0.00010	0.00082	<0.00020	0.362	<0.000050	0.0160	43.1	<u>0.126</u>	-	
Sentinel Well 1 - (SW19-KGS-01)		18-Jun-2020	L2463404-2	<0.0010	<0.00010	0.00050	0.0245	<0.00010	<0.000050	0.143	<0.0000050	58.6	0.000012	<0.00010	0.00022	<0.00020	0.072	<0.000050	0.0253	53.8	0.00547	-	
		8-Mar-2019	L2242160-1	0.0010	<0.00010	0.00031	0.0450	<0.00010	<0.000050	0.186	<0.0000050	59.3	0.000036	<0.00010	0.000310	0.000230	<0.010	<0.000050	0.0326	62.5	0.0668	-	
Sentinel Well 2 - (SW19-KGS-02)		27-Sep-2019	L2356084-1	<0.0010	<0.00010	<0.00010	0.0115	<0.00010	<0.000050	0.235	<0.0000050	61.6	0.000048	0.00013	0.00073	<0.00020	<0.010	<0.000050	0.0379	67.6	0.0114	-	
		18-Jun-2020	L2463404-3	<0.0010	<0.00010	<0.00010	0.0124	<0.00010	<0.000050	0.190	<0.0000050	70.1	0.000020	<0.00010	0.00017	<0.00020	0.099	<0.000050	0.0381	66.6	0.00999	-	
		29-Oct-2020	L2523514-9	<0.0010	<0.00010	<0.00010	0.0122	<0.00010	<0.000050	0.203	<0.0000050	65.0	0.000014	<0.00010	0.00017	<0.00020	0.102	<0.000050	0.0364	63.5	0.0103	-	
Sentinel Well 3 - (SW19-KGS-03)		27-Sep-2019	L2356084-2	0.0019	<0.00010	0.00013	0.0187	<0.00010	<0.000050	0.247	<0.0000050	53.7	0.000023	0.00075	0.00020	0.00020	<0.010	<0.000050	0.0333	66.2	0.00319	-	
		18-Jun-2020	L2463404-4	<0.0010	<0.00010	0.00019	0.0175	<0.00010	<0.000050	0.190	<0.0000050	64.8	0.000019	<0.00010	0.00023	<0.00020	0.110	<0.000050	0.0339	62.8	0.0146	-	
		29-Oct-2020	L2523514-10	<0.0010	<0.00010	0.00022	0.0180	<0.00010	<0.000050	0.206	<0.0000050	60.2	0.000020	<0.00010	0.00024	<0.00020	0.116	<0.000050	0.0326	62.4	0.0152	-	
TH15-04		8-Mar-2019	L2245232-4	0.0188	0.00018	0.00168	0.0269	<0.00010	<0.000050	0.117	<0.0000050	39.3	<0.000010	<0.00010	0.00017	0.00126	0.110	0.000073	0.0170	34.8	0.0156	-	
TH15-05		8-Mar-2019	L2245232-6	<0.0010	<0.00010	0.00034	0.0716	<0.00010	<0.000050	0.091	<0.0000050	56.0	<0.000010	<0.00010	0.00021	<0.00020	0.132	<0.000050	0.0171	48.0	0.0134	-	
TH19-KGS-01B		9-Mar-2019	L2245232-12	<0.0010	<0.00010	0.00012	0.0202	<0.00010	<0.000050	0.158	<0.0000050	51.3	<0.000010	<0.00010	0.00033	<0.00020	0.921	<0.000050	0.0286	60.1	<u>0.0241</u>	-	
TH19-KGS-02B		11-Mar-2019	L2245232-18	0.0028	0.00018	0.00032	0.0279	<0.00010	<0.000050	0.202	0.0000081	123	<0.000010	<0.00010	0.00097	0.00292	<0.010	<0.000050	0.0568	128	<u>0.108</u>	-	
TH19-KGS-03A		8-Mar-2019	L2245232-40	0.0143	<0.00010	0.00089	0.0364	<0.00010	<0.000050	0.028	0.0000055	73.0	<0.000010	0.00020	0.00049	0.00071	0.756	<0.000050	0.0129	44.9	<u>0.0770</u>	-	

TABLE 5
METALS IN WATER
LAKE ST. MARTIN OUTLET CHANNEL

KGS Sample ID	Duplicate Sample ID	Date Sampled	ALS Sample ID	Parameter ⁽¹⁾																			
				Aluminum	Antimony	Arsenic	Barium	Beryllium	Bismuth	Boron	Cadmium	Calcium	Cesium	Chromium	Cobalt	Copper	Iron	Lead	Lithium	Magnesium	Manganese	Mercury	
HC-CDWQ ⁽²⁾																							
Drinking Water - MAC				-	0.006	0.010	2.0	-	-	5.0	0.007	⁽⁹⁾	-	0.05	-	2.0	-	0.005	-	-	0.12	0.001	
Drinking Water - AO				0.1- 0.2 ⁽⁴⁾ (OG)	-	-	-	-	-	-	-	-	-	-	1.0	0.3	-	-	-	-	0.02	-	
CCME ⁽³⁾																							
Freshwater Aquatic Life				0.005 - 0.1 ⁽⁵⁾	-	0.005	-	-	-	29 ⁽⁶⁾ 1.5 ⁽⁷⁾	0.00009 ^(8a) 0.001 ^(8b)	-	-	0.0089 (III) ⁽¹⁰⁾ 0.001 (VI)	-	^(8c)	0.3	^(8d)	-	-	0.430 ^(11a) / 3.600 ^(11b)	0.000026 (inorganic) 0.000004 (methyl) ⁽¹²⁾	
GROUNDWATER SAMPLES																							
TH19-KGS-07A		7-Mar-2019	L2245232-10	0.0161	0.00016	0.00217	0.0671	<0.00010	<0.000050	0.034	<0.000050	88.1	<0.000010	<0.00010	<0.00010	<0.00020	0.010	<0.000050	0.0167	42.1	<u>0.113</u>	-	
TH19-KGS-08		8-Mar-2019	L2245232-36	0.0047	<0.00010	0.00020	0.0602	<0.00010	<0.000050	0.102	<0.000050	58.3	<0.000010	<0.00010	0.00019	<0.00020	0.062	<0.000050	0.0172	50.2	<u>0.0261</u>	-	
TH19-KGS-09		12-Mar-2019	L2245232-2	0.0016	<0.00010	0.00062	0.0273	<0.00010	<0.000050	0.141	<0.000050	62.9	<0.000010	<0.00010	0.00022	<0.00020	0.058	<0.000050	0.0233	63.0	0.0189	-	
TH19-KGS-10	TH200 RPD	9-Mar-2019	L2245232-5	0.0029	<0.00010	0.00100	0.0585	<0.00010	<0.000050	0.091	<0.000050	58.7	<0.000010	<0.00010	0.00020	<0.00020	<0.010	<0.000050	0.0207	62.2	0.0100	-	
			L2245232-30	0.0029	<0.00010	0.00100	0.0601	<0.00010	<0.000050	0.091	<0.000050	59.5	<0.000010	<0.00010	0.00021	<0.00020	<0.010	<0.000050	0.0207	64.0	0.0103	-	
				0.0%	NC	0.0%	2.7%	NC	NC	0.0%	NC	1.4%	NC	NC	4.9%	NC	NC	NC	0.0%	2.9%	3.0%	NC	
TH19-KGS-100		7-Mar-2019	L2245232-41	0.0101	<0.00010	0.00082	0.0507	<0.00010	<0.000050	0.056	<0.000050	81.0	<0.000010	0.00019	0.00022	0.00128	<u>0.420</u>	0.000053	0.0181	60.3	<u>0.139</u>	-	
TH19-KGS-11		8-Mar-2019	L2245232-37	0.0042	<0.00010	0.00206	0.0164	<0.00010	<0.000050	0.412	<0.000050	56.2	0.000022	<0.00010	0.00014	<0.00020	0.044	<0.000050	0.0311	42.6	0.0163	-	
TH19-KGS-11A		8-Mar-2019	L2245232-20	0.0134	<0.00010	0.00129	0.0386	<0.00010	<0.000050	0.044	<0.000050	70.1	<0.000010	<0.00010	0.00153	0.00035	<u>1.09</u>	<0.000050	0.0059	38.0	<u>0.603</u>	-	
TH19-KGS-12		7-Mar-2019	L2245232-19	0.0027	0.00017	0.00040	0.0416	<0.00010	<0.000050	0.138	<0.000050	51.2	<0.000010	<0.00010	0.00085	0.00067	<u>1.64</u>	<0.000050	0.0350	72.3	<u>0.125</u>	-	
		12-Jun-2019	L2290890-5	0.0011	0.00024	0.00041	0.0602	<0.00010	<0.000050	0.115	<0.000050	48.5	<0.000010	<0.00010	0.00088	0.00022	<u>1.82</u>	<0.000050	0.0361	68.2	<u>1.82</u>	-	
		23-Oct-2019	L2371438-4	0.0057	0.00063	0.00109	0.0919	<0.00010	<0.000050	0.109	<0.000050	37.5	<0.000010	0.00017	0.00071	0.00058	<u>0.422</u>	<0.000050	0.0327	57.9	<u>0.0686</u>	-	
		16-Jun-2020	L2462330-3	0.0010	0.00011	0.00121	0.0783	<0.00010	<0.000050	0.126	<0.000050	45.5	<0.000010	<0.00010	0.00057	0.00041	<u>0.597</u>	<0.000050	0.0359	70.1	<u>0.209</u>	-	
	28-Oct-2020	L2523514-4	0.0062	0.00025	0.00214	0.107	<0.00010	<0.000050	0.135	<0.000050	45.3	<0.000010	0.00020	0.00168	0.00030	<u>0.423</u>	<0.000050	0.0353	64.1	<u>0.227</u>	-		
TH19-KGS-12B		14-Mar-2019	L2245232-34	0.0048	0.00075	0.00071	0.0197	<0.00010	<0.000050	0.167	0.0000147	57.6	<0.000010	<0.00010	0.00267	0.00324	<0.010	<0.000050	0.0432	68.2	<u>0.0753</u>	-	
TH19-KGS-13		7-Mar-2019	L2245232-1	<0.0010	0.00012	0.00093	0.0234	<0.00010	<0.000050	0.116	0.0000065	60.5	0.000014	<0.00010	0.00022	<0.00020	0.053	0.000247	0.0258	61.7	0.0145	-	
TH19-KGS-13A		7-Mar-2019	L2245232-17	0.0268	<0.00010	0.00111	0.0240	<0.00010	<0.000050	0.026	0.0000227	49.5	<0.000010	0.00013	0.00072	0.00165	0.199	0.000119	0.0080	32.4	<u>0.506</u>	-	
TH19-KGS-14		8-Mar-2019	L2245232-39	0.0017	<0.00010	0.00027	0.0371	<0.00010	<0.000050	0.136	<0.000050	60.5	0.000010	<0.00010	0.00013	<0.00020	0.034	<0.000050	0.0233	51.4	<u>0.0209</u>	-	
TH19-KGS-14A		8-Mar-2019	L2245232-9	0.0096	<0.00010	0.00137	0.0374	<0.00010	<0.000050	0.023	0.0000101	68.2	<0.000010	0.00011	0.00019	0.00096	<u>0.433</u>	<0.000050	0.0059	30.5	<u>0.142</u>	-	
TH19-KGS-15		9-Mar-2019	L2245232-29	0.0041	0.00018	0.00065	0.0353	<0.00010	<0.000050	0.124	0.0000098	65.2	<0.000010	0.00021	0.00054	0.00044	<0.010	<0.000050	0.0253	53.4	<u>0.0825</u>	-	
TH19-KGS-16	TH19-KGS-500 RPD	15-Mar-2019	L2245232-14	0.0339	0.00094	0.00185	0.0449	<0.00010	<0.000050	0.169	0.0000090	61.3	0.000020	0.00014	0.00036	0.00165	0.018	0.000084	0.0233	53.7	<u>0.0665</u>	-	
			L2245232-13	0.0034	0.00086	0.00177	0.0428	<0.00010	<0.000050	0.158	0.0000090	58.8	0.000014	<0.00010	0.00034	0.00076	<0.010	0.000056	0.0227	51.7	<u>0.0638</u>	-	
				163.5%	8.9%	4.4%	4.8%	NC	NC	6.7%	0.0%	4.2%	35.3%	NC	5.7%	73.9%	NC	40.0%	2.6%	3.8%	4.1%	NC	
TH19-KGS-16B		9-Mar-2019	L2245232-35	0.838	<0.00010	0.00122	0.0816	<0.00010	<0.000050	0.103	0.0000301	129	0.000049	0.00153	0.00195	0.00353	<u>0.934</u>	0.00166	0.0186	73.1	<u>0.390</u>	-	
TH19-KGS-17		10-Mar-2019	L2245232-23	0.0048	0.00100	0.00296	0.0417	<0.00010	<0.000050	0.094	<0.000050	55.8	<0.000010	0.00014	0.00022	0.00020	0.016	<0.000050	0.0189	59.5	<u>0.0242</u>	-	
		12-Jun-2019	L2290890-6	0.0045	0.00015	0.00270	0.0429	<0.00010	<0.000050	0.085	<0.000050	49.8	<0.000010	<0.00010	0.00025	<0.00020	0.063	<0.000050	0.0170	53.0	<u>0.063</u>	-	
		23-Oct-2019	L2371438-3	0.0015	<0.00010	0.00137	0.0428	<0.00010	<0.000050	0.082	<0.000050	53.9	<0.000010	<0.00010	0.00011	0.00033	0.159	<0.000050	0.0174	52.2	<u>0.0405</u>	-	
		16-Jun-2020	L2462330-2	0.0030	<0.00010	0.00120	0.0414	<0.00010	<0.000050	0.087	<0.000050	55.5	<0.000010	<0.00010	<0.00010	<0.00020	0.140	<0.000050	0.0177	55.0	<u>0.0204</u>	-	
	27-Oct-2020	L2523514-5	1.25	<0.00010	0.00134	0.0607	0.00012	<0.000050	0.094	0.0000064	67.7	0.000298	0.00224	0.00119	0.00168	<u>1.35</u>	0.00282	0.0192	60.5	<u>0.0417</u>	-		
TH19-KGS-17A		10-Mar-2019	L2245232-21	0.0125	0.00018	0.00113	0.0319	<0.00010	<0.000050	0.027	0.0000079	61.6	<0.000010	0.00064	0.00029	0.00459	0.061	0.000102	0.0073	39.6	<u>0.454</u>	-	
TH19-KGS-17B		10-Mar-2019	L2245232-15	0.0060	0.00033	0.00098	0.0365	<0.00010	<0.000050	0.130	0.0000078	41.1	<0.000010	0.00104	0.00022	0.00320	<0.010	0.000069	0.0599	103	0.0115	-	
TH19-KGS-18		11-Mar-2019	L2245232-38	0.0023	0.00031	0.00101	0.0975	<0.00010	<0.000050	0.093	<0.000050	114	<0.000010	<0.00010	0.00086	0.00048	0.213	<0.000050	0.0400	85.4	<u>0.0478</u>	-	
		12-Jun-2019	L2290890-7	0.0018	0.00011	0.00190	0.154	<0.00010	<0.000050	0.052	<0.000050	116	<0.000010	<0.00010	0.00154	<0.00020	<u>1.08</u>	<0.000050	0.0357	80.1	<u>1.08</u>	-	
		23-Oct-2019	L2371438-2	0.0100	<0.00010	0.00099	0.154	<0.00010	<0.000050	0.060	<0.000050	119	0.000010	<0.00010	0.00073	0.00035	<u>1.71</u>	0.000134	0.0323	73.3	<u>0.0643</u>	-	
		16-Jun-2020	L2462330-1	0.0163	0.00014	0.00163	0.0434	<0.00010	<0.000050	0.028	<0.000050	77.6	<0.000010	0.00047	0.00065	<0.00020	<u>1.78</u>	<0.000050	0.0089	33.9	<u>0.112</u>	-	
	27-Oct-2020	L2523514-6	0.0030	<0.00010	0.00163	0.0871	<0.00010	<0.000050	0.063	<0.000050	108	<0.000010	0.00020	0.00042	<0.00020	<u>1.53</u>	<0.000050	0.0227	55.2	<u>0.0492</u>	-		
TH19-KGS-18A		11-Mar-2019	L2245232-22	0.0198	0.00038	0.00317	0.0104	<0.00010	<0.000050	0.027	<0.000050	25.9	0.000018	0.00011	0.00043	0.00130	0.237	0.000081	0.0150	15.5	<u>0.123</u>	-	
TH19-KGS-19		11-Mar-2019	L2245232-31	0.0292	0.00429	0.0121	0.0292	<0.00010	<0.000050	0.116	<0.000050	44.9	0.000016	0.00233	0.00013	0.00200	<0.010	0.000052	0.0334	77.3	0.00082	-	
		12-Jun-2019	L2290890-8	0.0128	0.00027	0.0167	0.0881	0.00014	<0.000050	0.09													

**TABLE 5
METALS IN WATER
LAKE ST. MARTIN OUTLET CHANNEL**

KGS Sample ID	Duplicate Sample ID	Date Sampled	ALS Sample ID	Parameter ⁽¹⁾																			
				Aluminum	Antimony	Arsenic	Barium	Beryllium	Bismuth	Boron	Cadmium	Calcium	Cesium	Chromium	Cobalt	Copper	Iron	Lead	Lithium	Magnesium	Manganese	Mercury	
HC-CDWQ ⁽²⁾																							
Drinking Water - MAC				-	0.006	0.010	2.0	-	-	5.0	0.007	⁽⁹⁾	-	0.05	-	2.0	-	0.005	-	-	0.12	0.001	
Drinking Water - AO				0.1- 0.2 ⁽⁴⁾ (OG)	-	-	-	-	-	-	-	-	-	-	-	1.0	0.3	-	-	-	0.02	-	
CCME ⁽³⁾																							
Freshwater Aquatic Life				0.005 - 0.1 ⁽⁵⁾	-	0.005	-	-	-	29 ⁽⁶⁾ 1.5 ⁽⁷⁾	0.00009 ^(8a) 0.001 ^(8b)	-	-	0.0089 (III) ⁽¹⁰⁾ 0.001 (VI)	-	^(8c)	0.3	^(8d)	-	-	0.430 ^(11a) / 3.600 ^(11b)	0.000026 (inorganic) 0.000004 (methyl) ⁽¹²⁾	
GROUNDWATER SAMPLES																							
TH19-KGS-19A		11-Mar-2019	L2245232-16	0.0134	<0.00010	0.00695	0.0621	<0.00010	<0.000050	0.048	0.0000094	118	<0.000010	0.00043	0.00152	0.00165	2.44	0.000095	0.0100	55.4	0.487	-	
TH19-KGS-20		14-Mar-2019	L2245232-32	0.0013	0.00021	0.00053	0.0152	<0.00010	<0.000050	0.142	<0.0000050	32.5	<0.000010	<0.00010	0.00085	0.00023	<0.010	<0.000050	0.0326	32.5	0.0197	-	
	TH300		L2245232-33	0.0010	0.00020	0.00047	0.0151	<0.00010	<0.000050	0.150	<0.0000050	32.1	<0.000010	<0.00010	0.00075	0.00022	<0.010	<0.000050	0.0327	32.7	0.0199	-	
	RPD			26.1%	4.9%	12.0%	0.7%	NC	NC	5.5%	NC	1.2%	NC	NC	12.5%	4.4%	NC	NC	0.3%	0.6%	1.0%	NC	
TRIP BLANK		9-Mar-2019	L2245232-8	<0.0010	<0.00010	<0.00010	<0.00010	<0.00010	<0.000050	<0.010	<0.0000050	<0.050	<0.000010	<0.00010	<0.00010	<0.00020	<0.010	<0.000050	<0.0010	<0.0050	<0.00010	-	
TRIP BLANK		11-Jun-2019	L2290890-9	<0.0010	<0.00010	<0.00010	<0.00010	<0.00010	<0.000050	<0.010	<0.0000050	0.141	<0.000010	<0.00010	<0.00010	<0.00020	<0.010	<0.000050	<0.0010	0.0120	<0.010	-	
TRIP BLANK		26-Oct-2020	L2523514-11	<0.0010	<0.00010	<0.00010	<0.00010	<0.00010	<0.000050	<0.010	<0.0000050	<0.050	<0.000010	<0.00010	<0.00010	<0.00020	<0.010	<0.000050	<0.0010	<0.0050	<0.00010	-	
TRIP BLANK		17-Jun-2020	L2463404-8	<0.0010	<0.00010	<0.00010	<0.00010	<0.00010	<0.000050	<0.010	<0.0000050	<0.050	<0.000010	<0.00010	<0.00010	<0.00020	<0.010	<0.000050	<0.0010	<0.0050	<0.00010	-	
FIELD BLANK		7-Mar-2019	L2245232-3	<0.0010	<0.00010	<0.00010	<0.00010	<0.00010	<0.000050	<0.010	<0.0000050	<0.050	<0.000010	<0.00010	<0.00010	<0.00020	<0.010	<0.000050	<0.0010	<0.0050	<0.00010	-	
FIELD BLANK		12-Jun-2019	L2290890-11	0.0025	<0.00010	<0.00010	0.00018	<0.00010	<0.000050	<0.010	<0.0000050	0.106	<0.000010	<0.00010	<0.00010	0.00091	<0.010	<0.000050	<0.0010	0.0325	<0.010	-	
SURFACE WATER SAMPLES																							
BC-02		17-Jun-2020	L2463404-7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.0000050	
		28-Oct-2020	L2523516-3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.0000050
BC-05		17-Jun-2020	L2463404-6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.0000050
		28-Oct-2020	L2523516-4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.0000050
CR3-1		17-Jun-2020	L2462330-10	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.0000050
		28-Oct-2020	L2523516-5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.0000050
CR3-2		17-Jun-2020	L2462330-11	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.0000050
		28-Oct-2020	L2523516-6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.0000050
LSMOC-INLET-1A		17-Jun-2020	L2463404-5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.0000050
		28-Oct-2020	L2523516-1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.0000050
LSMOC-OUTLET-1A		17-Jun-2020	L2462330-9	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.0000050
		27-Oct-2020	L2523516-2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.0000050
SW-R3		11-Jun-2019	L2290890-10	0.263	<0.00010	0.00098	0.0396	<0.00010	<0.000050	0.040	<0.0000050	40.0	0.000032	0.00046	0.00019	0.00164	0.294	0.000149	0.0143	42.0	0.0210	-	
		24-Oct-2019	L2371920-5	0.0342	<0.00010	0.00068	0.00697	<0.00010	<0.000050	<0.010	0.0000128	21.5	<0.000010	0.00016	<0.00010	<0.00050	0.035	<0.000050	0.0023	13.5	0.00204	-	
		17-Jun-2020	L2462330-8	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.0000050
		28-Oct-2020	L2523516-7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.0000050
	SW-100		L2523516-8	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.0000050
	RPD			NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC
Laboratory Detection Limits				0.0010	0.00010	0.00010	0.00010	0.00010	0.000050	0.010	0.0000050	0.050	0.000010	0.00010	0.00010	0.00020	0.010	0.000050	0.0010	0.0050	0.00010	0.000050	

TABLE 5
METALS IN WATER
LAKE ST. MARTIN OUTLET CHANNEL

KGS Sample ID	Duplicate Sample ID	Date Sampled	ALS Sample ID	Parameter ⁽¹⁾																			
				Molybdenum	Nickel	Phosphorus	Potassium	Rubidium	Selenium	Silicon	Silver	Sodium	Strontium	Tellurium	Thallium	Tin	Titanium	Tungsten	Uranium	Vanadium	Zinc	Zirconium	
HC-CDWQ ⁽²⁾				-	-	-	-	-	0.05	-	(14)	-	7.0	-	-	-	-	-	0.02	-	-	-	
Drinking Water - MAC				-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Drinking Water - AO				-	-	-	-	-	-	-	-	200	-	-	-	-	-	-	-	-	5	-	
CCME ⁽³⁾				-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
Freshwater Aquatic Life				0.073 ⁽¹⁰⁾	(8e)	(13)	-	-	0.001	-	0.00025 ⁽¹⁵⁾	-	-	-	0.0008	-	-	-	0.033 ⁽⁷⁾ 0.015 ⁽⁸⁾	-	0.037 ^(7a) 0.007 ^(8a)	-	
GROUNDWATER SAMPLES																							
PW19-KGS-01		12-Mar-2019	L2245232-28	0.00113	0.00060	<0.030	4.93	0.00142	<0.000050	5.61	<0.000010	31.3	0.217	<0.00020	0.000011	<0.00010	<0.00030	<0.00010	0.00165	<0.00050	0.0089	<0.00060	
		11-Jun-2019	L2290890-1	0.00106	0.00065	<0.030	4.91	0.00139	<0.000050	5.81	<0.000010	27.9	0.214	<0.00020	<0.000010	<0.00010	<0.00030	<0.00010	0.00184	<0.00050	0.0013	<0.00060	
	PW-200	24-Oct-2019	L2371920-1	0.000894	0.00141	0.037	4.93	0.00202	<0.000050	6.14	<0.000010	28.0	0.222	<0.00020	0.000014	<0.00010	0.0130	<0.00010	0.00211	0.00056	0.0042	0.00026	
			L2371920-4	0.000916	0.00143	<0.030	5.05	0.00210	<0.000050	6.14	<0.000010	29.0	0.228	<0.00020	<0.000014	<0.00010	0.0128	<0.00010	0.00212	0.00055	0.0026	0.00028	
	RPD				2.4%	1.4%	NC	2.4%	3.9%	NC	0.0%	NC	3.5%	2.7%	NC	0.0%	NC	1.6%	NC	0.5%	1.8%	47.1%	7.4%
			17-Jun-2020	L2463404-1	0.00149	<0.00050	<0.030	6.44	0.00338	<0.000050	4.50	0.000010	45.4	0.227	<0.00020	<0.000010	<0.00010	<0.00030	<0.00010	0.000875	<0.00050	<0.0010	<0.00020
		27-Oct-2020	L2523514-1	0.00106	<0.00050	<0.030	4.40	0.00128	<0.000050	5.72	<0.000010	26.9	0.222	<0.00020	<0.000010	<0.00010	<0.00030	<0.00010	0.00162	<0.00050	<0.0010	<0.00020	
PW19-KGS-02	PW19-KGS-05	13-Mar-2019	L2245232-26	0.000395	<0.00050	<0.030	4.81	0.00264	<0.000050	5.48	<0.000010	33.9	0.215	<0.00020	<0.000010	<0.00010	<0.00030	<0.00010	0.000773	<0.00050	0.0025	<0.00060	
			L2245232-27	0.000381	<0.00050	<0.030	4.99	0.00253	<0.000050	5.44	<0.000010	34.1	0.212	<0.00020	<0.000010	<0.00010	<0.00030	<0.00010	0.000794	<0.00050	0.0014	<0.00060	
	RPD				3.6%	NC	NC	3.7%	4.3%	NC	0.7%	NC	0.6%	1.4%	NC	NC	NC	NC	2.7%	NC	56.4%	NC	
			11-Jun-2019	L2290890-2	0.000424	<0.00050	<0.030	4.71	0.00241	<0.000050	5.80	<0.000010	35.7	0.202	<0.00020	<0.000010	<0.00010	<0.00030	<0.00010	0.000996	<0.00050	0.0040	<0.00060
			24-Oct-2019	L2371920-2	0.000343	<0.00050	<0.030	5.06	0.00281	<0.000050	5.50	<0.000010	31.9	0.207	<0.00020	<0.000010	<0.00010	<0.00030	<0.00010	0.000727	<0.00050	0.0019	<0.00020
			16-Jun-2020	L2462330-4	0.000406	<0.00050	<0.030	4.73	0.00266	<0.000050	5.39	<0.000010	32.9	0.205	<0.00020	<0.000010	<0.00010	<0.00030	<0.00010	0.000739	<0.00050	<0.0010	<0.00020
	PW-100	28-Oct-2020	L2523514-2	0.000503	<0.00050	<0.030	4.50	0.00253	<0.000050	5.69	<0.000010	34.5	0.218	<0.00020	<0.000010	<0.00010	<0.00030	<0.00010	0.000935	<0.00050	<0.0010	<0.00020	
			L2523514-8	0.000502	<0.00050	<0.030	4.53	0.00244	0.00151	5.74	<0.000010	35.7	0.222	<0.00020	<0.000010	<0.00010	<0.00030	<0.00010	0.000952	<0.00050	<0.0010	<0.00020	
RPD				0.2%	NC	NC	0.7%	3.6%	NC	0.9%	NC	3.4%	1.8%	NC	NC	NC	NC	NC	1.8%	NC	NC	NC	
PW19-KGS-03	PW19-KGS-04	14-Mar-2019	L2245232-24	0.000434	0.00170	<0.030	3.39	0.00210	<0.000050	5.34	<0.000010	8.44	0.155	<0.00020	<0.000010	<0.00010	<0.00030	<0.00010	0.00114	<0.00050	0.0027	<0.00060	
			L2245232-25	0.000433	0.00165	<0.030	3.45	0.00196	<0.000050	5.35	<0.000010	8.45	0.155	<0.00020	<0.000010	<0.00010	<0.00030	<0.00010	0.00116	<0.00050	0.0025	<0.00060	
	RPD				0.2%	3.0%	NC	1.8%	6.9%	NC	0.2%	NC	0.1%	0.0%	NC	NC	NC	NC	NC	1.7%	NC	7.7%	NC
	PW19-KGS-200	11-Jun-2019	L2290890-3	0.000131	0.00097	<0.030	4.30	0.00257	<0.000050	5.46	<0.000010	8.58	0.149	<0.00020	<0.000010	<0.00010	<0.00030	<0.00010	0.000491	<0.00050	0.0011	<0.00060	
			L2290890-4	0.000118	0.00094	<0.030	4.28	0.00258	<0.000050	5.41	<0.000010	8.60	0.147	<0.00020	0.000010	<0.00010	<0.00030	<0.00010	0.000481	<0.00050	<0.0010	<0.00060	
	RPD				10.4%	3.1%	NC	0.5%	0.4%	NC	0.9%	NC	0.2%	1.4%	NC	NC	NC	NC	NC	2.1%	NC	NC	NC
			24-Oct-2019	L2371920-3	0.000440	0.000505	<0.030	2.51	0.00179	0.000067	5.22	0.000011	3.76	0.123	<0.00020	<0.000010	0.00075	0.00035	<0.00010	0.00221	0.00117	0.0013	0.00060
	PW19-KGS-300	17-Jun-2020	L2462330-5	0.000318	0.00214	<0.030	2.83	0.00170	<0.000050	4.51	<0.000010	5.83	0.128	<0.00020	0.000015	<0.00010	<0.00030	<0.00010	0.00179	<0.00050	<0.0010	<0.00020	
			L2462330-6	0.000335	0.00215	<0.030	2.83	0.00173	<0.000050	4.55	<0.000010	5.72	0.130	<0.00020	0.000015	<0.00010	<0.00030	<0.00010	0.00179	<0.00050	<0.0010	<0.00020	
	RPD				5.2%	0.5%	NC	0.0%	1.7%	NC	0.9%	NC	1.9%	1.6%	NC	0.0%	NC	NC	NC	0.0%	NC	NC	NC
		27-Oct-2020	L2523514-3	0.000355	0.00140	<0.030	3.32	0.00210	<0.000050	5.10	<0.000010	7.05	0.148	<0.00020	0.000010	<0.00010	<0.00030	<0.00010	0.00145	<0.00050	<0.0010	<0.00020	
Sentinel Well 1 - (SW19-KGS-01)		18-Jun-2020	L2463404-2	0.00117	0.00053	<0.030	4.52	0.00125	<0.000050	6.02	<0.000010	27.3	0.230	<0.00020	<0.000010	<0.00010	<0.00030	<0.00010	0.00195	<0.00050	<0.0010	<0.00020	
		8-Mar-2019	L2242160-1	0.00105	0.00106	<0.030	6.34	0.00319	0.000051	5.55	<0.000010	48	0.236	<0.00020	0.000011	<0.00010	<0.00030	<0.00010	0.00218	<0.00050	<0.0010	0.00066	
Sentinel Well 2 - (SW19-KGS-02)		27-Sep-2019	L2356084-1	0.00514	0.00171	<0.030	8.08	0.00483	0.000053	4.28	<0.000010	111	0.254	<0.00020	<0.000010	<0.00010	<0.00030	0.00016	0.000190	<0.00050	<0.0010	<0.00020	
		18-Jun-2020	L2463404-3	0.000083	<0.00050	<0.030	7.43	0.00401	<0.000050	4.02	0.000023	107	0.248	<0.00020	<0.000010	<0.00010	<0.00030	<0.00010	0.000200	<0.00050	<0.0010	<0.00020	
		29-Oct-2020	L2523514-9	0.000102	<0.00050	<0.030	7.39	0.00408	0.000791	4.37	<0.000010	106	0.246	<0.00020	<0.000010	<0.00010	<0.00030	<0.00010	0.000183	<0.00050	<0.0010	<0.00020	
Sentinel Well 3 - (SW19-KGS-03)		27-Sep-2019	L2356084-2	0.00149	0.00070	<0.030	7.37	0.00380	<0.000050	5.11	<0.000010	61.9	0.238	<0.00020	<0.000010	<0.00010	<0.00030	<0.00010	0.000179	<0.00050	<0.0010	<0.00020	
		18-Jun-2020	L2463404-4	0.000182	<0.00050	<0.030	6.56	0.00342	<0.000050	4.75	<0.000010	58.5	0.241	<0.00020	<0.000010	<0.00010	<0.00030	<0.00010	0.000175	<0.00050	<0.0010	<0.00020	
		29-Oct-2020	L2523514-10	0.000188	<0.00050	<0.030	6.74	0.00356	0.000544	4.74	<0.000010	59.8	0.240	<0.00020	<0.000010	<0.00010	<0.00030	<0.00010	0.000164	<0.00050	<0.0010	<0.00020	
TH15-04		8-Mar-2019	L2245232-4	0.00196	0.00145	<0.030	2.39	0.00116	0.000081	4.70	<0.000010	19.3	0.161	<0.00020	<0.000010	0.00267	<0.00030	0.00026	0.000793	<0.00050	0.0014	0.00082	
TH15-05		8-Mar-2019	L2245232-6	0.000417	0.00063	<0.030	3.48	0.00241	<0.000050	4.74	<0.000010	6.91	0.161	<0.00020	<0.000010	<0.00010	<0.00030	<0.00010	0.000317	<0.00050	<0.0010	<0.00060	
TH19-KGS-01B		9-Mar-2019	L2245232-12	0.00604	0.00121	<0.030	4.95	0.00252	<0.000050	5.01	<0.000010	38.4	0.216	<0.00020	0.000014	<0.00010	<0.00030	0.00015	0.000448	<0.00050	0.0020	<0.00060	
TH19-KGS-02B		11-Mar-2019	L2245232-18	0.0161	0.00405	<0.030	6.93	0.00195	0.000719	5.33	<0.000010	178	0.520	<0.00020	0.000037	0.00028	<0.00030	0.0950	0.0103	<0.00050	0.0038	0.000106	
TH19-KGS-03A		8-Mar-2019	L2245232-40	0.000905	0.00072	0.092	0.634	0.00116	0.000107	6.06	<0.000010	14.0	0.125	<0.00020	<0.000010	0.00023	<0.00030	<0.00010	0.00116	<0.00050	0.0048		

TABLE 5
METALS IN WATER
LAKE ST. MARTIN OUTLET CHANNEL

KGS Sample ID	Duplicate Sample ID	Date Sampled	ALS Sample ID	Parameter ⁽¹⁾																			
				Molybdenum	Nickel	Phosphorus	Potassium	Rubidium	Selenium	Silicon	Silver	Sodium	Strontium	Tellurium	Thallium	Tin	Titanium	Tungsten	Uranium	Vanadium	Zinc	Zirconium	
HC-CDWQ ⁽²⁾																							
Drinking Water - MAC				-	-	-	-	-	0.05	-	(14)	-	7.0	-	-	-	-	-	-	0.02	-	-	-
Drinking Water - AO				-	-	-	-	-	-	-	-	200	-	-	-	-	-	-	-	-	-	5	-
CCME ⁽³⁾																							
Freshwater Aquatic Life				0.073 ⁽¹⁰⁾	(8e)	(13)	-	-	0.001	-	0.00025 ⁽¹⁵⁾	-	-	-	0.0008	-	-	-	0.033 ⁽⁷⁾ 0.015 ⁽⁸⁾	-	0.037 ^(7a) 0.007 ^(8a)	-	
GROUNDWATER SAMPLES																							
TH19-KGS-10		9-Mar-2019	L2245232-5	0.00102	0.00069	<0.030	3.32	0.00214	<0.000050	5.92	<0.000010	8.14	0.178	<0.00020	0.000014	<0.00010	<0.00030	0.00194	0.00259	<0.00050	<0.0010	<0.00060	
	TH200		L2245232-30	0.00105	0.00069	<0.030	3.49	0.00229	<0.000050	5.88	<0.000010	8.22	0.184	<0.00020	0.000014	<0.00010	<0.00030	0.00200	0.00261	<0.00050	<0.0010	<0.00060	
	RPD			2.9%	0.0%	NC	5.0%	6.8%	NC	0.7%	NC	1.0%	3.3%	NC	0.0%	NC	NC	3.0%	0.8%	NC	NC	NC	NC
TH19-KGS-100		7-Mar-2019	L2245232-41	0.000134	<0.00050	0.129	0.532	0.00061	0.000159	9.96	<0.000010	12.5	0.203	<0.00020	<0.000010	<0.00010	0.00036	<0.00010	0.000316	<0.00050	<0.0010	0.000182	
TH19-KGS-11		8-Mar-2019	L2245232-37	0.00464	0.00091	<0.030	5.88	0.00419	0.000142	4.29	<0.000010	39.4	0.291	<0.00020	<0.000010	0.00015	<0.00030	0.00197	0.000908	<0.00050	<0.0010	0.000061	
TH19-KGS-11A		8-Mar-2019	L2245232-20	0.000394	0.00118	0.046	0.577	0.00084	0.000115	11.2	<0.000010	6.65	0.0968	<0.00020	<0.000010	<0.00010	<0.00030	<0.00010	0.000357	<0.00050	0.0027	0.000113	
TH19-KGS-12		7-Mar-2019	L2245232-19	0.0147	0.00303	<0.030	5.12	0.00238	<0.000050	5.47	<0.000010	27.4	0.260	<0.00020	0.000035	0.00012	<0.00030	0.00131	0.000077	<0.00050	0.0021	<0.00060	
		12-Jun-2019	L2290890-5	0.0164	0.00373	<0.030	4.55	0.00208	<0.000050	5.81	<0.000010	30.1	0.234	<0.00020	<0.000010	<0.00010	<0.00030	0.00048	0.000106	<0.00050	0.0016	<0.00060	
		23-Oct-2019	L2371438-4	0.0470	0.00573	<0.030	4.57	0.00213	0.000098	5.22	<0.000010	51.2	0.222	<0.00020	<0.000010	0.00019	<0.00030	0.00138	0.000043	<0.00050	0.0013	<0.00020	
		16-Jun-2020	L2462330-3	0.00380	0.00167	<0.030	4.50	0.00203	<0.000050	6.17	<0.000010	29.3	0.244	<0.00020	<0.000010	0.00022	<0.00030	0.00018	0.000235	<0.00050	0.0034	<0.00020	
	28-Oct-2020	L2523514-4	0.00605	0.00540	<0.030	4.55	0.00200	<0.000050	6.07	<0.000010	26.4	0.261	<0.00020	<0.000010	<0.00010	<0.00030	0.00024	0.000273	<0.00050	0.0013	<0.00020		
TH19-KGS-12B		14-Mar-2019	L2245232-34	0.00812	0.00284	0.049	5.82	0.00151	0.000216	7.08	<0.000010	31.1	0.307	<0.00020	0.000033	0.00035	<0.00030	0.0573	0.00416	<0.00050	0.0289	0.000226	
TH19-KGS-13		7-Mar-2019	L2245232-1	0.000721	0.00066	<0.030	4.37	0.00292	0.000088	5.18	<0.000010	21.3	0.202	<0.00020	<0.000010	<0.00010	<0.00030	0.00510	0.00120	<0.00050	0.0019	<0.00060	
TH19-KGS-13A		7-Mar-2019	L2245232-17	0.00207	0.00110	0.056	0.981	0.00097	0.000382	6.02	<0.000010	9.08	0.117	<0.00020	<0.000010	0.00013	0.00158	<0.00010	0.000901	<0.00050	0.0093	0.000209	
TH19-KGS-14		8-Mar-2019	L2245232-39	0.000275	<0.00050	<0.030	4.00	0.00281	<0.000050	4.72	<0.000010	12.6	0.162	<0.00020	<0.000010	<0.00010	<0.00030	0.00013	0.000199	<0.00050	0.0014	<0.00060	
TH19-KGS-14A		8-Mar-2019	L2245232-9	0.000266	0.00052	0.035	0.791	0.00076	0.000088	5.06	<0.000010	2.84	0.0961	<0.00020	<0.000010	0.00026	0.00049	<0.00010	0.000417	<0.00050	0.0142	0.000145	
TH19-KGS-15		9-Mar-2019	L2245232-29	0.00505	0.00267	<0.030	5.57	0.00319	0.000109	5.88	<0.000010	10.3	0.186	<0.00020	0.000027	0.00031	<0.00030	0.00704	0.00125	<0.00050	0.0027	0.000182	
TH19-KGS-16		15-Mar-2019	L2245232-14	0.00749	0.00254	<0.030	4.57	0.00326	0.000113	4.87	<0.000010	21.9	0.162	<0.00020	<0.000010	<0.00010	0.00115	0.00208	0.00131	<0.00050	0.0079	0.000265	
	TH19-KGS-500		L2245232-13	0.00483	0.00235	<0.030	4.50	0.00304	0.000106	4.59	<0.000010	21.1	0.160	<0.00020	<0.000010	<0.00010	<0.00030	0.00213	0.00123	<0.00050	0.0051	0.000103	
	RPD			43.2%	7.8%	NC	1.5%	7.0%	6.4%	5.9%	NC	3.7%	1.2%	NC	NC	NC	NC	2.4%	6.3%	NC	43.1%	88.0%	
TH19-KGS-16B		9-Mar-2019	L2245232-35	0.000866	0.00356	0.102	2.63	0.00265	<0.000050	8.20	<0.000010	8.26	0.177	<0.00020	0.000029	0.00024	0.0205	0.00041	0.0101	0.00259	0.0103	0.000878	
TH19-KGS-17		10-Mar-2019	L2245232-23	0.00164	0.00148	<0.030	3.90	0.00217	0.000130	4.39	<0.000010	9.43	0.162	<0.00020	<0.000010	<0.00010	<0.00030	0.00186	0.000389	<0.00050	<0.0010	<0.00060	
		12-Jun-2019	L2290890-6	0.0101	0.00087	<0.030	3.47	0.00227	0.000912	4.66	<0.000010	16.0	0.146	<0.00020	<0.000010	<0.00010	<0.00030	0.00038	0.000263	<0.00050	<0.0010	<0.00060	
		23-Oct-2019	L2371438-3	0.000591	<0.00050	<0.030	3.18	0.00192	<0.000050	4.35	<0.000010	9.11	0.166	<0.00020	<0.000010	<0.00010	<0.00030	0.00012	0.000137	<0.00050	<0.0010	<0.00020	
		16-Jun-2020	L2462330-2	0.000557	<0.00050	<0.030	3.34	0.00187	0.000140	4.29	<0.000010	9.00	0.163	<0.00020	<0.000010	<0.00010	<0.00030	<0.00010	0.000116	<0.00050	<0.0010	<0.00020	
	27-Oct-2020	L2523514-5	0.000300	0.00344	0.094	3.84	0.00528	<0.000050	6.22	<0.000010	8.63	0.169	<0.00020	0.000020	<0.00010	0.0471	<0.00010	0.000232	0.00216	0.0071	0.00189		
TH19-KGS-17A		10-Mar-2019	L2245232-21	0.000599	0.00090	0.056	1.23	0.00087	0.000079	8.29	<0.000010	4.40	0.110	<0.00020	<0.000010	0.00036	0.00060	<0.00010	0.00149	0.00113	0.0060	0.000341	
TH19-KGS-17B		10-Mar-2019	L2245232-15	0.0187	0.00089	<0.030	5.34	0.00146	0.00304	6.21	<0.000010	39.5	0.371	<0.00020	<0.000010	0.00039	0.00046	0.00011	0.0297	0.00134	0.0058	0.000481	
TH19-KGS-18		11-Mar-2019	L2245232-38	0.00526	0.00259	<0.030	2.88	0.00226	0.000111	10.7	<0.000010	12.3	0.308	<0.00020	<0.000010	<0.00010	<0.00030	0.00101	0.000459	<0.00050	0.0099	0.000108	
		12-Jun-2019	L2290890-7	0.00167	0.00461	<0.030	2.22	0.00167	<0.000050	10.6	<0.000010	11.3	0.290	<0.00020	<0.000010	<0.00010	<0.00030	0.00016	0.000586	<0.00050	0.0047	0.000193	
		23-Oct-2019	L2371438-2	0.000785	0.00177	<0.030	1.98	0.00147	0.000095	9.86	0.00022	11.2	0.305	<0.00020	<0.000010	<0.00010	0.00047	<0.00010	0.000294	<0.00050	0.0014	<0.00020	
		16-Jun-2020	L2462330-1	0.000534	0.00174	<0.030	0.616	0.00131	0.000918	6.99	<0.000010	6.56	0.108	<0.00020	<0.000010	<0.00010	0.00081	0.00013	0.000545	0.00102	<0.0010	0.00053	
	27-Oct-2020	L2523514-6	0.000614	0.00136	<0.030	1.14	0.00157	0.000063	8.64	<0.000010	9.36	0.227	<0.00020	<0.000010	<0.00010	<0.00030	<0.00010	0.000475	<0.00050	<0.0010	0.00046		
TH19-KGS-18A		11-Mar-2019	L2245232-22	0.000610	0.00060	<0.030	1.08	0.00154	0.000339	5.84	<0.000010	70.2	0.0751	<0.00020	0.000012	<0.00010	0.00068	<0.00010	0.000037	<0.00050	0.0045	0.000082	
TH19-KGS-19		11-Mar-2019	L2245232-31	0.00887	0.00138	0.041	5.32	0.00379	0.00134	19.2	<0.000010	37.1	0.283	<0.00020	<0.000010	0.00015	0.00037	0.121	0.00218	0.00796	0.0051	0.000191	
		12-Jun-2019	L2290890-8	0.00524	0.00216	<0.030	5.01	0.00370	0.000281	8.02	0.00021	48.5	0.921	<0.00020	0.000119	<0.00010	0.00061	0.0293	0.00203	0.00135	0.0026	0.000287	
		23-Oct-2019	L2371438-1	0.00790	0.00089	<0.030	3.10	0.00167	0.000101	7.92	<0.000010	43.1	0.511	<0.00020	<0.000010	0.00092	<0.00030	0.0172	0.00186	<0.00050	0.0014	0.00023	
		17-Jun-2020	L2462330-7	0.00415	0.00311	<0.030	4.20	0.00146	<0.000050	7.21	<0.000010	34.6	0.920	<0.00020	<0.000010	0.00019	<0.00030	0.00355	0.00146	<0.00050	0.0030	0.00021	
	27-Oct-2020	L2523514-7	0.000099	<0.00050	<0.030	4.15	0.00144	0.000337	8.12	<0.000010	23.4	0.711	<0										

**TABLE 5
METALS IN WATER
LAKE ST. MARTIN OUTLET CHANNEL**

KGS Sample ID	Duplicate Sample ID	Date Sampled	ALS Sample ID	Parameter ⁽¹⁾																			
				Molybdenum	Nickel	Phosphorus	Potassium	Rubidium	Selenium	Silicon	Silver	Sodium	Strontium	Tellurium	Thallium	Tin	Titanium	Tungsten	Uranium	Vanadium	Zinc	Zirconium	
HC-CDWQ⁽²⁾																							
Drinking Water - MAC				-	-	-	-	-	0.05	-	(14)	-	7.0	-	-	-	-	-	0.02	-	-	-	
Drinking Water - AO				-	-	-	-	-	-	-	-	200	-	-	-	-	-	-	-	-	5	-	
CCME⁽³⁾																							
Freshwater Aquatic Life				0.073 ⁽¹⁰⁾	(8e)	(13)	-	-	0.001	-	0.00025 ⁽¹⁵⁾	-	-	-	0.0008	-	-	-	0.033 ⁽⁷⁾ 0.015 ⁽⁸⁾	-	0.037 ^(7a) 0.007 ^(8a)	-	
GROUNDWATER SAMPLES																							
TRIP BLANK		9-Mar-2019	L2245232-8	<0.000050	<0.000050	<0.030	<0.050	<0.00020	<0.000050	<0.050	<0.000010	<0.050	<0.00010	<0.00020	<0.000010	<0.00010	<0.00030	<0.00010	<0.000010	<0.00050	<0.0010	<0.000060	
TRIP BLANK		11-Jun-2019	L2290890-9	<0.000050	<0.000050	<0.030	<0.050	<0.00020	<0.000050	<0.050	<0.000010	<0.050	<0.00010	<0.00020	<0.000010	<0.00010	<0.00030	<0.00010	<0.000010	<0.00050	<0.0010	<0.000060	
TRIP BLANK		26-Oct-2020	L2523514-11	<0.000050	<0.000050	<0.030	<0.050	<0.00020	0.000090	<0.050	<0.000010	<0.050	<0.00010	<0.00020	<0.000010	<0.00010	<0.00030	<0.00010	<0.000010	<0.00050	<0.0010	<0.00020	
TRIP BLANK		17-Jun-2020	L2463404-8	<0.000050	<0.000050	<0.030	<0.050	<0.00020	<0.000050	<0.050	<0.000010	<0.050	<0.00010	<0.00020	<0.000010	<0.00010	<0.00030	<0.00010	<0.000010	<0.00050	<0.0010	<0.00020	
FIELD BLANK		7-Mar-2019	L2245232-3	<0.000050	<0.000050	<0.030	<0.050	<0.00020	<0.000050	<0.050	<0.000010	<0.050	0.00014	<0.00020	<0.000010	<0.00010	<0.00030	<0.00010	<0.000010	<0.00050	<0.0010	<0.000060	
FIELD BLANK		12-Jun-2019	L2290890-11	<0.000050	<0.000050	<0.030	0.078	<0.00020	<0.000050	<0.050	<0.000010	0.123	0.00012	<0.00020	<0.000010	<0.00010	<0.00030	<0.00010	<0.000010	<0.00050	0.0033	<0.000060	
SURFACE WATER SAMPLES																							
BC-02		17-Jun-2020	L2463404-7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
		28-Oct-2020	L2523516-3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
BC-05		17-Jun-2020	L2463404-6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
		28-Oct-2020	L2523516-4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
CR3-1		17-Jun-2020	L2462330-10	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
		28-Oct-2020	L2523516-5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
CR3-2		17-Jun-2020	L2462330-11	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
		28-Oct-2020	L2523516-6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
LSMOC-INLET-1A		17-Jun-2020	L2463404-5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
		28-Oct-2020	L2523516-1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
LSMOC-OUTLET-1A		17-Jun-2020	L2462330-9	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
		27-Oct-2020	L2523516-2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
SW-R3		11-Jun-2019	L2290890-10	0.000566	0.00105	<0.030	3.48	0.00220	0.000066	1.33	<0.000010	6.85	0.117	<0.00020	0.000011	<0.00010	0.0106	<0.00010	0.00191	0.00120	<0.0030	0.00029	
		24-Oct-2019	L2371920-5	0.000085	<0.00050	<0.030	2.00	0.00355	0.000108	4.17	<0.000010	1.03	0.0233	<0.00020	<0.000010	<0.00010	0.00117	<0.00010	0.000061	<0.00050	<0.0030	<0.00020	
		17-Jun-2020	L2462330-8	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
		28-Oct-2020	L2523516-7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
	SW-100		L2523516-8	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
	RPD			NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	
Laboratory Detection Limits				0.000050	0.00050	0.030	0.050	0.00020	0.000050	0.050	0.000010	0.050	0.00010	0.00020	0.000010	0.00010	0.00030	0.00010	0.000010	0.00050	0.0010	0.00020	

Notes:

"-" = No Data

- All values are expressed in milligrams per litre (mg/L) unless otherwise specified. Groundwater samples - dissolved (filtered and preserved in field). Surface water samples - Total (preserved in field)
- Health Canada - Canadian Drinking Water Quality Guidelines (HC-CDWQ). Updated September 2020.
 MAC = Maximum Acceptable Concentration = The maximum concentration of a parameter that is designed to protect those individuals most at risk, such as children and the elderly.
 AO = Aesthetic Objective = A guideline which addresses a parameter that may affect consumer acceptance of drinking water, such as taste, odour, and colour.
 OG = Operational Guideline = Guideline meant for a parameter which may affect treatment plant processes or drinking water distribution systems.
- CCME - Canadian Council of Ministers of the Environment. Canadian Environmental Quality Guidelines, 1999. Updated December 2019.
 Guidelines for Canadian Drinking Water Quality.
 Community Water Supplies (Health Canada - Canadian Drinking Water Quality Guidelines)
 Canadian Water Quality Guidelines for the Protection of Aquatic Life
 Canadian Water Quality Guidelines for the Protection of Agriculture Water Uses
- This is an operational guidance value, designed to apply only to drinking water treatment plants using aluminum-based coagulants.
 The operational guidance value of 0.1 mg/L applies to conventional treatment plants, and 0.2 mg/L applies to other types of treatment systems.
- Total aluminum should not exceed 0.005 mg/L in waters with a pH below 6.5.
 The concentration of total aluminum should not exceed 0.1 mg/L in waters with a pH greater or equal to 6.5.

**TABLE 5
METALS IN WATER
LAKE ST. MARTIN OUTLET CHANNEL**

6. Short-term exposure (24 to 96 hours) concentrations which indicate potential for severe effects during transient events (spill events to aquatic receiving environments and infrequent releases of short-lived/non-persistent substances).
These are NOT protective guidelines.

a. The short-term benchmark is for dissolved zinc and is calculated using the following equation: $Benchmark = \exp(0.833[\ln(\text{hardness } \text{mg}\cdot\text{L}^{-1})] + 0.240[\ln(\text{DOC } \text{mg}\cdot\text{L}^{-1})] + 0.526)$.

The value in the table is for surface water of 50 mg CaCO₃-L⁻¹ hardness and 0.5 mg-L⁻¹ dissolved organic carbon (DOC). The benchmark equation is valid between hardness 13.8 and 250.5 mg CaCO₃-L⁻¹ and DOC 0.3 and 17.3 mg-L⁻¹. (value is in µg/L)

7. Long-term exposure guideline that protects all forms of aquatic life for indefinite exposure periods (>7 day exposures for fish and invertebrates, 24 hour exposures for aquatic plants and algae).

a. The long-term CWQG is for dissolved zinc and is calculated using the following equation: $CWQG = \exp(0.947[\ln(\text{hardness } \text{mg}\cdot\text{L}^{-1}) - 0.815[\text{pH}] + 0.398[\ln(\text{DOC } \text{mg}\cdot\text{L}^{-1})] + 4.625)$.

The value in the table is for surface water of 50 mg CaCO₃-L⁻¹ hardness, pH of 7.5 and 0.5 mg-L⁻¹ DOC. The CWQG equation is valid between hardness 23.4 and 399 mg CaCO₃-L⁻¹, pH 6.5 and 8.13 and DOC 0.3 to 22.9 mg-L⁻¹. (value is in µg/L)

8. Guidelines for the following metals are specific to the hardness of the sample, expressed as CaCO₃ in mg/L:

		Hardness Range (mg/L)	*Example Hardness (mg/L)	**Guideline (mg/L)
Cadmium	Long-Term ^(a)	50	-	0.00009
		0-16	-	0.00004
		17-280	100	0.00016
		>280	-	0.00037
	Short-Term ^(b)	50	-	0.00100
		0-5.2	-	0.00011
		5.3-360	100	0.00210
Copper ^(c)		>360	-	0.00770
		0-81	-	0.00200
		82-180	100	0.00236
		>180	-	0.00400
		Unknown	-	0.00200
Lead ^(d)		0-60	-	0.00100
		61-180	100	0.00318
		>180	-	0.00700
		Unknown	-	0.00100
Nickel ^(e)		0-60	-	0.02500
		61-180	100	0.09558
		>180	-	0.15000
		Unknown	-	0.02500

Sample ID	Date	Metal	Hardness (mg/L)	***Applicable Guideline (mg/L)
TH19-KGS-02B	11/Mar/2019	Copper	834	0.004
TH19-KGS-12B	14/Mar/2019	Copper	425	0.004
TH19-KGS-16B	9/Mar/2019	Copper	623	0.004
		Lead		0.007
TH19-KGS-17B	10/Mar/2019	Copper	528	0.004
TH19-KGS-19	11/Mar/2019	Copper	431	0.004
PW19-KGS-01	24/Oct/2019	Lead	420	0.007
PW-200 DUP	24/Oct/2019	Lead	431	0.007
TH19-KGS-17	27/Oct/2020	Lead	418	0.007

*The table on the left uses the equations defined by CCME to calculate a guideline when hardness is within the defined Hardness Range. These equations are applicable only to the rows where an Example Hardness value of 100 is input

**This Guideline column lists the guidelines related to each Hardness Range for each metal. An example guideline value in the rows requiring use of the equation was calculated, using the example value of 100 mg/L

***The table above lists those samples and parameters of which the lab results exceeded the minimum guideline value, thus requiring a comparison to the hardness of the samples to determine the applicable guideline. The Applicable Guidelines for these specific samples are listed in the right-most column

9. Guideline value not required, as there is no evidence of adverse health effects from calcium in drinking water. Calcium contributes to hardness.

10. Interim Water Quality Guideline.

11. These values are for a water hardness of 50 mg/L as CaCO₃ and pH 7.5. The freshwater benchmark equation and the CWQG look-up table must be used in order to obtain a site-specific benchmark and CWQG, respectively, based on the hardness and pH of the water body of interest. Note that it is not appropriate to apply the manganese freshwater guidelines to marine or estuarine environments. Both the benchmark and guideline values were derived for dissolved manganese in order to represent the bioavailable form.

a. The CWQG for manganese (i.e. long-term guideline) is found using the CWQG calculator in Appendix B of the Scientific Criteria Document for the Development of the Canadian Water Quality Guidelines for the Protection of Aquatic Life: Manganese.

The long-term CWQG is for dissolved manganese and is found manually using the look-up table below or using the CWQG and benchmark calculator (Appendix B). The CWQG table is valid between hardness of 25 and 670 mg/L and pH 5.8 and 8.4, which are the ranges of data used to derive the hardness and pH slopes.

b. The short-term benchmark is calculated using the benchmark calculator in Appendix B of the Scientific Criteria Document for the Development of the Canadian Water Quality Guidelines for the Protection of Aquatic Life: Manganese or the following equation:

$$Benchmark = \exp(0.878[\ln(\text{hardness})] + 4.76)$$

where the benchmark is expressed in dissolved manganese concentration (µg/L), and hardness is measured as CaCO₃ equivalents in mg/L.

The benchmark equation is valid between hardness of 25 and 250 mg/L, which is the range of data used to derive the hardness slope.

12. Interim Guideline - may not fully protect high trophic level fish.

13. If trigger ranges for total phosphorous are exceeded, the potential exists for an environmental impact. If trigger range is not exceeded,

but TP is more than 50% above baseline values, the potential exists for an environmental impact.

Trigger ranges (mg/L):

ultra-oligotrophic	<0.004	meso-eutrophic	0.020-0.035
oligotrophic	0.004-0.010	eutrophic	0.035-0.10
mesotrophic	0.010-0.020	hyper-eutrophic	>0.10

14. Guideline value not required. Drinking water does not contribute significantly to an individual's intake of silver.

15. This guideline is not applicable to silver nanoparticles and was derived based on the total concentration of silver.

	- Exceedance of HC-CDWQ Criteria MAC
<i>Italic</i>	- Exceedance of HC-CDWQ Criteria AO
BOLD	- Exceedance of CCME Criteria for the Protection of Aquatic Life

**TABLE 6
PETROLEUM HYDROCARBONS IN SURFACE WATER
LAKE ST. MARTIN OUTLET CHANNEL**

KGS Sample ID	Duplicate Sample ID	Date	ALS Sample ID	Parameter ⁽¹⁾								
				Benzene	Toluene ^(4a, 4b)	Ethylbenzene ^(5a, 5b)	Xylenes (-o-, m-, p) ^(6a, 6b)	F1-BTEX (C6 - C10)	F2 (C10 - C16)	F3 (C16 - C34)	F4 (C34 - C50)	Total Hydrocarbons (C6 - C50)
SURFACE WATER SAMPLES												
BC-02		17-Jun-2020	L2463404-7	<0.00050	<0.0010	<0.00050	<0.00064	<0.10	<0.10	<0.25	<0.25	<0.38
		28-Oct-2020	L2523516-3	<0.00050	<0.0010	<0.00050	<0.00064	<0.10	<0.10	<0.25	<0.25	<0.38
BC-05		17-Jun-2020	L2463404-6	<0.00050	<0.0010	<0.00050	<0.00064	<0.10	<0.10	<0.25	<0.25	<0.38
		28-Oct-2020	L2523516-4	<0.00050	<0.0010	<0.00050	<0.00064	<0.10	<0.10	<0.25	<0.25	<0.38
CR3-1		17-Jun-2020	L2462330-10	<0.00050	<0.0010	<0.00050	<0.00064	<0.10	<0.10	<0.25	<0.25	<0.38
		28-Oct-2020	L2523516-5	<0.00050	<0.0010	<0.00050	<0.00064	<0.10	<0.10	<0.25	<0.25	<0.38
CR3-2		17-Jun-2020	L2462330-11	<0.00050	<0.0010	<0.00050	<0.00064	<0.10	<0.10	<0.25	<0.25	<0.38
		28-Oct-2020	L2523516-6	<0.00050	<0.0010	<0.00050	<0.00064	<0.10	<0.10	<0.25	<0.25	<0.38
LSMOC-INLET-1A		17-Jun-2020	L2463404-5	<0.00050	<0.0010	<0.00050	<0.00064	<0.10	<0.10	<0.25	<0.25	<0.38
		28-Oct-2020	L2523516-1	<0.00050	<0.0010	<0.00050	<0.00064	<0.10	<0.10	<0.25	<0.25	<0.38
LSMOC-OUTLET-1A		17-Jun-2020	L2462330-9	<0.00050	<0.0010	<0.00050	<0.00064	<0.10	<0.10	<0.25	<0.25	<0.38
		27-Oct-2020	L2523516-2	<0.00050	<0.0010	<0.00050	<0.00064	<0.10	<0.10	<0.25	<0.25	<0.38
SW-R3		17-Jun-2020	L2462330-8	<0.00050	<0.0010	<0.00050	<0.00064	<0.10	<0.10	<0.25	<0.25	<0.38
		28-Oct-2020	L2523516-7	<0.00050	<0.0010	<0.00050	<0.00064	<0.10	<0.10	<0.25	<0.25	<0.38
	SW-100		L2523516-8	<0.00050	<0.0010	<0.00050	<0.00064	<0.10	<0.10	<0.25	<0.25	<0.38
	RPD			NC	NC	NC	NC	NC	NC	NC	NC	NC
Laboratory Detection Limits				0.0005	0.001	0.0005	0.00064	0.1	0.1	0.25	0.25	0.38
HC-CDWQ⁽²⁾												
Drinking Water Quality - MAC				0.005	0.060	0.140	0.090	-	-	-	-	-
Drinking Water Quality - AO				-	0.024	0.0016	0.020	-	-	-	-	-
CCME⁽³⁾												
Canadian Water Quality Guidelines for the Protection of Aquatic Life												
Freshwater Aquatic Life				0.37	0.002	0.090	-	-	-	-	-	-

Notes:

"-" = No Data

- All concentrations in milligrams per litre (mg/L) unless otherwise specified.
- Health Canada - Guidelines for Canadian Drinking Water Quality (HC-GCDWQ). Updated June 2019.
MAC = Maximum Acceptable Concentration = The maximum concentration of a parameter that is designed to protect those individuals most at risk, such as children and the elderly.
AO = Aesthetic Objective = A guideline which addresses a parameter that may affect consumer acceptance of drinking water, such as taste, odour, and colour.
- CCME - Canadian Council of Ministers of the Environment. Canadian Water Quality Guidelines, 1999. Updated 2018.
 - Community Water Supplies (Health Canada - Canadian Drinking Water Quality Guidelines)
 - Canadian Water Quality Guidelines for the Protection of Aquatic Life
 - Canadian Water Quality Guidelines for the Protection of Agriculture
- Toluene
 - Health basis of MAC: Adverse neurological effects, including vibration thresholds, colour discrimination, auditory thresholds, attention, memory and psychomotor functions.
 - Other Health Considerations: Insufficient information to determine whether toluene is carcinogenic to humans.
- Ethylbenzene
 - Health basis of MAC: Effects on the liver and pituitary gland.
 - Other Health Considerations: Tumour formation at various sites in animals, including kidney, lung, liver and testes.
- Xylenes
 - Health basis of MAC: Adverse neuromuscular effects.
 - Other Health Considerations: Insufficient information to determine whether xylenes are carcinogenic to humans.

Italic	- Exceedance of HC-CDWQ Criteria MAC
BOLD	- Exceedance of CCME Criteria for the Protection of Aquatic Life

**TABLE 7
HISTORICAL GROUNDWATER QUALITY DATA FROM 2019-2020 OF THE LSMOC
LAKE ST. MARTIN OUTLET CHANNEL**

Parameter ⁽³⁾	HC-CDWQG ⁽⁴⁾	CCME ⁽⁵⁾	Statistics ⁽⁶⁾						
			n ⁽²⁾	Min	Max	Mean	Standard Deviation	5 th Percentile	95 th Percentile
PH (PH units)	7.0-10.5 (AO)	6.5-9.0	72	7.12	8.57	8.03	0.30	7.48	8.35
Hardness as CaCO ₃	80-100 (AO)	-	72	<i>106</i>	<i>834</i>	<i>392.50</i>	<i>107.01</i>	<i>249.8</i>	<i>609</i>
Chloride	250 (AO)	120/640	72	0.13	97.2	13.06	22.38	0.53	69.86
Fluoride	1.5 (MAC)	0.12	72	0.044	1.15	0.28	0.15	0.13	0.55
Sulphate	500 (AO)	-	72	0.37	737	71.97	93.92	1.75	176.65
Nitrate (as N)	10 (MAC)	3/124	72	0.005	0.136	0.02	0.03	0.01	0.07
Nitrite (as N)	1.0 (MAC)	0.06	72	0.001	0.014	0.004	0.003	0.001	0.012
Calcium	-	-	72	20.8	129	62.20	21.81	36.11	116.90
Magnesium	-	-	72	13.1	128	57.58	17.79	32.46	83.09
Potassium	-	-	72	0.532	8.08	4.03	1.82	0.72	7.13
Sodium	200 (AO)	-	72	0.916	178	31.14	32.44	5.19	106.45
T.D.S.	500 (AO)	-	72	103	<i>1430</i>	462.39	164.86	281.60	<i>673.05</i>
Total Phosphorus	-	-	72	0.035	0.129	0.07	0.03	0.04	0.11
E. Coli (MPL/100mL)	None Detectable per 100 mL	-	36	0	1	0.03	0.18	0	0
Total Coliform (MPL/100mL)	None Detectable per 100 mL	-	36	0	200	12.1	42.63	0	76
Conductivity (µS/cm)	-	-	72	176	1970	756	230	477	1099
Aluminum, Dissolved	0.1-0.2 (AO)	0.005-0.1	72	0.001	1.25	0.051	0.21	0.001	0.11
Antimony, Dissolved	0.006 (MAC)	-	72	0.00011	0.00429	0.00049	0.00085	0.00011	0.00099
Arsenic, Dissolved	0.01 (MAC)	0.005	72	0.00012	0.0167	0.00169	0.0026	0.00021	0.01
Barium, Dissolved	2.0 (MAC)	-	72	0.00618	0.265	0.0496	0.043	0.012	0.13
Beryllium, Dissolved	-	-	72	0.00012	0.00014	0.00013	0.000014	0.000121	0.00014
Bismuth, Dissolved	-	-	72	0.000025	0.000025	0.000025	0.00007 ⁽⁷⁾	0.000025	0.000025
Boron, Dissolved	5.0 (MAC)	1.5-29	72	0.012	0.412	0.117	0.063	0.027	0.2
Cadmium, Dissolved	0.007 (MAC)	0.00009/0.001	72	0.0000055	0.00003	0.0000109	0.000007	0.000006	0.000025
Cesium, Dissolved	-	-	72	0.00001	0.000298	0.0000348	0.000059	0.00001	0.000054
Chromium, Dissolved	0.05 (MAC)	0.001(VI)/0.0089(III)	72	0.0001	0.00233	0.00048	0.00063	0.00011	0.0021
Cobalt, Dissolved	-	-	72	0.00011	0.00267	0.00056	0.00054	0.000143	0.0016
Copper, Dissolved	2.0 (MAC)/1.0 (AO)	-	72	0.0002	0.00459	0.00124	0.0012	0.0002	0.0035
Iron, Dissolved	0.3 (AO)	0.3	72	0.01	2.44	0.435	0.576	0.01495	1.71
Lead, Dissolved	0.005 (MAC)	-	72	0.000052	0.00282	0.00036	0.00072	0.000053	0.0017
Lithium, Dissolved	-	-	72	0.0021	0.0599	0.025	0.011	0.007685	0.04
Manganese, Dissolved	0.12 (MAC)/0.02 (AO)	0.43-3.6	72	0.00082	1.82	0.139	0.272	0.0045	0.497
Molybdenum, Dissolved	-	0.073	72	0.000081	0.047	0.00348	0.00667	0.00012	0.015
Nickel, Dissolved	-	-	72	0.00052	0.00573	0.00185	0.00135	0.0006	0.00483
Rubidium, Dissolved	-	-	72	0.00061	0.00528	0.0023	0.0010	0.000925	0.004
Selenium, Dissolved	0.05 (MAC)	0.001	72	0.000051	0.00304	0.0003	0.0005	0.0000547	0.00098
Silicon, Dissolved	-	-	72	0.707	19.2	6.19	2.51	4.17	10.65
Silver, Dissolved	-	0.00025	72	0.00001	0.000023	0.000017	0.000006	0.0000102	0.000023
Strontium, Dissolved	7	-	72	0.0223	0.92	0.23	0.15	0.10	0.52
Tellurium, Dissolved	-	-	72	0.0001	0.0001	0.0001	0.0007 ⁽⁷⁾	0.0001	0.0001
Thallium, Dissolved	-	0.0008	72	0.00001	0.000119	0.0000255	0.000026	0.0000108	0.000053
Tin, Dissolved	-	-	72	0.00012	0.00267	0.000413	0.00057	0.00013	0.001
Titanium, Dissolved	-	-	72	0.00032	0.0471	0.005	0.012	0.000344	0.026
Tungsten, Dissolved	-	-	72	0.0001	0.121	0.011	0.027	0.00012	0.0704
Uranium, Dissolved	0.02 (MAC)	0	72	0.000037	0.0297	0.002	0.004	0.000093	0.0032
Vanadium, Dissolved	-	0.015/0.033	72	0.00056	0.00796	0.002	0.002	0.00057	0.005
Zinc, Dissolved	-	-	72	0.0011	0.0289	0.004	0.005	0.0013	0.01
Zirconium, Dissolved	-	-	72	0.000061	0.00189	0.0003	0.0004	0.0001	0.0009

Notes:

- This table shows parameters with established guidelines.
- "n" refers to number of samples.
- Results are in mg/L unless otherwise specified in the parameter column.
- Health Canada - Canadian Drinking Water Quality Guidelines (HC-CDWQ). Updated September 2020.
MAC = Maximum Acceptable Concentration = The maximum concentration of a parameter that is designed to protect those individuals most at risk, such as children and the elderly.
AO = Aesthetic Objective = A guideline which addresses a parameter that may affect consumer acceptance of drinking water, such as taste, odour, and colour.
OG = Operational Guideline = Guideline meant for a parameter which may affect treatment plant processes or drinking water distribution systems.
- CCME - Canadian Council of Ministers of the Environment. Canadian Environmental Quality Guidelines for the protection of Freshwater Aquatic Life, 1999. Updated December 2019.
- For statistical calculations, half detection limit values are used for the results of the laboratory analyses reported as less than the detection limit values.
- Results of the laboratory analyses less than the detection limit values.

Italic	- Exceedance of HC-CDWQ Criteria MAC
BOLD	- Exceedance of HC-CDWQ Criteria AO
	- Exceedance of CCME Criteria for the Protection of Aquatic Life

TABLE 8
ISOTOPE DATA - LSMOC 2019-2020
LAKE ST. MARTIN OUTLET CHANNEL

Sample ID	Duplicate Sample ID	Date	$\delta^{18}\text{O}$		$\delta^2\text{H}$		E3H				
			Result	Repeat	Result	Repeat	Result	$\pm 1\sigma$	Repeat	$\pm 1\sigma$	
			VSMOW $\pm 0.2\text{‰}$		VSMOW $\pm 0.8\text{‰}$		$\pm 0.8 \text{ T.U.}$		$\pm 0.8 \text{ T.U.}$		
BC-02	-	17-Jun-2020	-10.54	-	-82.06	-	-	-	-	-	
		28-Oct-2020	-10.73	-	-86.72	-	-	-	-	-	
BC-05	-	17-Jun-2020	-11.14	-11.07	-85.12	-85.06	-	-	-	-	
		28-Oct-2020	-11.75	-11.61	-91.79	-90.95	-	-	-	-	
CR3-1	-	17-Jun-2020	-12.41	-	-89.75	-	-	-	-	-	
		28-Oct-2020	-13.25	-	-96.67	-	-	-	-	-	
CR3-2	-	17-Jun-2020	-12.47	-	-89.83	-	-	-	-	-	
		28-Oct-2020	-13.09	-	-96.32	-	-	-	-	-	
LSMOC INLET- 1A	-	17-Jun-2020	-7.63	-	-69.95	-	-	-	-	-	
		28-Oct-2020	-7.88	-7.81	-72.08	-72.06	-	-	-	-	
LSMOC OUTLET- 1A	-	17-Jun-2020	-9.46	-9.36	-80.35	-80.11	-	-	-	-	
		27-Oct-2020	-10.17	-10.13	-85.85	-85.45	-	-	-	-	
PW19-KGS-01	-	12-Mar-2019	-14.64	-14.60	-113.02	-112.81	<0.8	0.3	-	-	
		11-Jun-2019	-14.69	-14.65	-114.25	-114.23	<0.8	0.8	-	-	
		24-Oct-2019	-14.87	-14.79	-113.88	-113.94	< 0.8	0.2	-	-	
		24-Oct-2019	-15.09	-	-114.97	-	< 0.8	0.2	-	-	
	PW-200	17-Jun-2020	-14.93	-14.92	-113.94	-114.16	-	-	-	-	
		27-Oct-2020	-15.00	-14.92	-114.41	-114.40	-	-	-	-	
PW19-KGS-02	-	13-Mar-2019	-14.81	-	-113.18	-	<0.8	0.3	-	-	
		PW19-KGS-05	13-Mar-2019	-15.19	-	-114.56	-	<0.8	0.3	-	-
		11-Jun-2019	-14.76	-	-114.39	-	<0.8	0.8	-	-	
		24-Oct-2019	-15.11	-	-114.15	-	< 0.8	0.2	-	-	
		16-Jun-2020	-15.22	-	-114.90	-	-	-	-	-	
	28-Oct-2020	-15.28	-	-115.47	-	-	-	-	-		
	PW-100	28-Oct-2020	-15.23	-	-115.40	-	-	-	-		
PW19-KGS-03	-	14-Mar-2019	-14.92	-14.90	-111.49	-111.57	1.7	0.4	-	-	
		PW19-KGS-04	14-Mar-2019	-15.00	-	-111.60	-	1.9	0.4	-	-
		11-Jun-2019	-14.68	-14.71	-112.66	-112.62	<0.8	0.8	-	-	
		PW19-KGS-200	11-Jun-2019	-14.73	-	-112.61	-	<0.8	0.8	-	-
		24-Oct-2019	-13.62	-13.58	-97.15	-97.62	7.3	0.6	6.3	0.5	
		17-Jun-2020	-14.73	-	-108.26	-	-	-	-	-	
	17-Jun-2020	-14.83	-	-108.20	-	-	-	-	-		
		27-Oct-2020	-14.93	-	-111.13	-	-	-	-		
Sentinel Well 1 (SW19-KGS-01)	-	8-Mar-2019	-15.01	-15.03	-114.68	-113.97	<0.8	0.3	-	-	
		18-Jun-2020	-15.62	-	-114.73	-	-	-	-	-	
Sentinel Well 2 (SW19-KGS-02)	-	27-Sep-2019	-15.29	-15.35	-116.35	-115.60	< 0.8	0.3	-	-	
		18-Jun-2020	-15.79	-	-117.26	-	-	-	-	-	
		29-Oct-2020	-15.25	-	-116.37	-	-	-	-	-	
Sentinel Well 3 (SW19-KGS-03)	-	27-Sep-2019	-15.21	-15.22	-114.63	-114.84	< 0.8	0.3	-	-	
		18-Jun-2020	-15.58	-15.57	-115.47	-115.91	-	-	-	-	
		29-Oct-2020	-15.09	-	-114.86	-	-	-	-	-	
SW-R3	-	11-Jun-2019	-11.48	-11.52	-98.79	-98.59	7.3	0.8	-	-	
		24-Oct-2019	-14.58	-14.56	-102.10	-102.51	8.2	0.6	-	-	
		17-Jun-2020	-11.32	-	-87.43	-	-	-	-	-	
		28-Oct-2020	-13.38	-	-100.06	-	-	-	-	-	
	SW-100	28-Oct-2020	-13.35	-13.33	-99.46	-99.38	-	-	-	-	
TH15-04	-	8-Mar-2019	-15.04	-	-112.65	-	-	-	-		
TH15-05	-	8-Mar-2019	-15.16	-	-112.77	-	-	-	-		
TH19-KGS-01	-	9-Mar-2019	-14.62	-	-114.07	-	-	-	-		
TH19-KGS-04	-	9-Mar-2019	-14.83	-14.87	-113.99	-113.75	-	-	-		
TH19-KGS-08	-	8-Mar-2019	-15.14	-	-112.26	-	-	-	-		
TH19-KGS-09	-	12-Mar-2019	-15.21	-	-114.44	-	-	-	-		
TH19-KGS-10	-	9-Mar-2019	-15.21	-	-112.31	-	-	-	-	-	
		TH200	9-Mar-2019	-15.21	-	-112.80	-	-	-	-	

**ISOTOPE DATA - LSMOC 2019-2020
LAKE ST. MARTIN OUTLET CHANNEL**

Sample ID	Duplicate Sample ID	Date	$\delta^{18}\text{O}$		$\delta^2\text{H}$		E3H			
			Result	Repeat	Result	Repeat	Result	$\pm 1\sigma$	Repeat	$\pm 1\sigma$
			VSMOW $\pm 0.2\text{‰}$		VSMOW $\pm 0.8\text{‰}$		$\pm 0.8 \text{ T.U.}$		$\pm 0.8 \text{ T.U.}$	
TH19-KGS-100	-	7-Mar-2019	-14.80	-	-108.59	-	-	-	-	-
TH19-KGS-11	-	8-Mar-2019	-15.12	-15.16	-115.62	-115.73	-	-	-	-
TH19-KGS-12	-	7-Mar-2019	-15.33	-	-115.76	-	-	-	-	-
		12-Jun-2019	-15.54	-	-119.09	-	<0.8	0.8	-	-
		23-Oct-2019	-16.17	-	-119.73	-	< 0.8	0.2	-	-
		16-Jun-2020	-16.27	-	-119.72	-	-	-	-	-
		28-Oct-2020	-16.19	-	-120.34	-	-	-	-	-
TH19-KGS-13	-	7-Mar-2019	-14.06	-14.10	-112.59	-112.80	-	-	-	-
TH19-KGS-14	-	8-Mar-2019	-15.18	-	-113.03	-	-	-	-	-
TH19-KGS-15	-	9-Mar-2019	-15.19	-15.17	-112.73	-112.66	-	-	-	-
TH19-KGS-16	-	15-Mar-2019	-14.99	-15.01	-112.14	-112.18	-	-	-	-
	TH19-KGS-500	15-Mar-2019	-15.19	-	-112.75	-	-	-	-	-
TH19-KGS-17	-	10-Mar-2019	-15.11	-	-112.37	-	<0.8	0.3	-	-
		11-Jun-2019	-14.17	-13.99	-110.08	-109.25	<0.8	0.8	-	-
		23-Oct-2019	-15.40	-	-113.58	-	< 0.8	0.2	-	-
		16-Jun-2020	-15.27	-15.23	-113.09	-112.77	-	-	-	-
		27-Oct-2020	-15.19	-15.17	-113.33	-113.22	-	-	-	-
TH19-KGS-18	-	11-Mar-2019	-14.87	-	-109.46	-	<0.8	0.3	-	-
		12-Jun-2019	-14.43	-	-108.74	-	10.6	0.8	-	-
		23-Oct-2019	-14.94	-	-108.99	-	10.7	0.8	-	-
		16-Jun-2020	-14.74	-	-105.73	-	-	-	-	-
		27-Oct-2020	-14.71	-	-108.28	-	-	-	-	-
TH19-KGS-19	-	11-Mar-2019	-15.13	-	-112.49	-	<0.8	0.3	<0.8	0.5
		12-Jun-2019	-14.94	-	-113.71	-	<0.8	0.8	-	-
		23-Oct-2019	-15.39	-15.34	-114.44	-114.12	< 0.8	0.2	-	-
		17-Jun-2020	-15.27	-	-113.47	-	-	-	-	-
		27-Oct-2020	-15.19	-	-113.88	-	-	-	-	-
TH19-KGS-20	-	14-Mar-2019	-14.76	-14.68	-114.41	-114.65	-	-	-	-
	TH300	14-Mar-2019	-14.59	-	-114.05	-	-	-	-	-

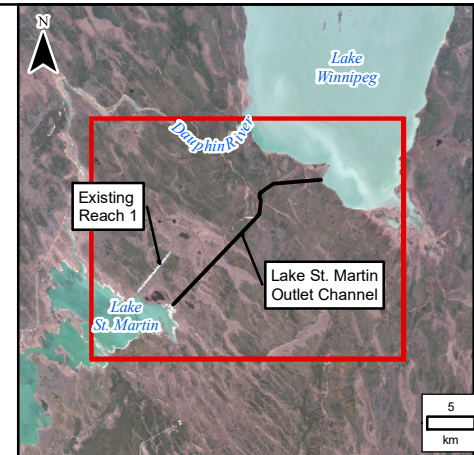
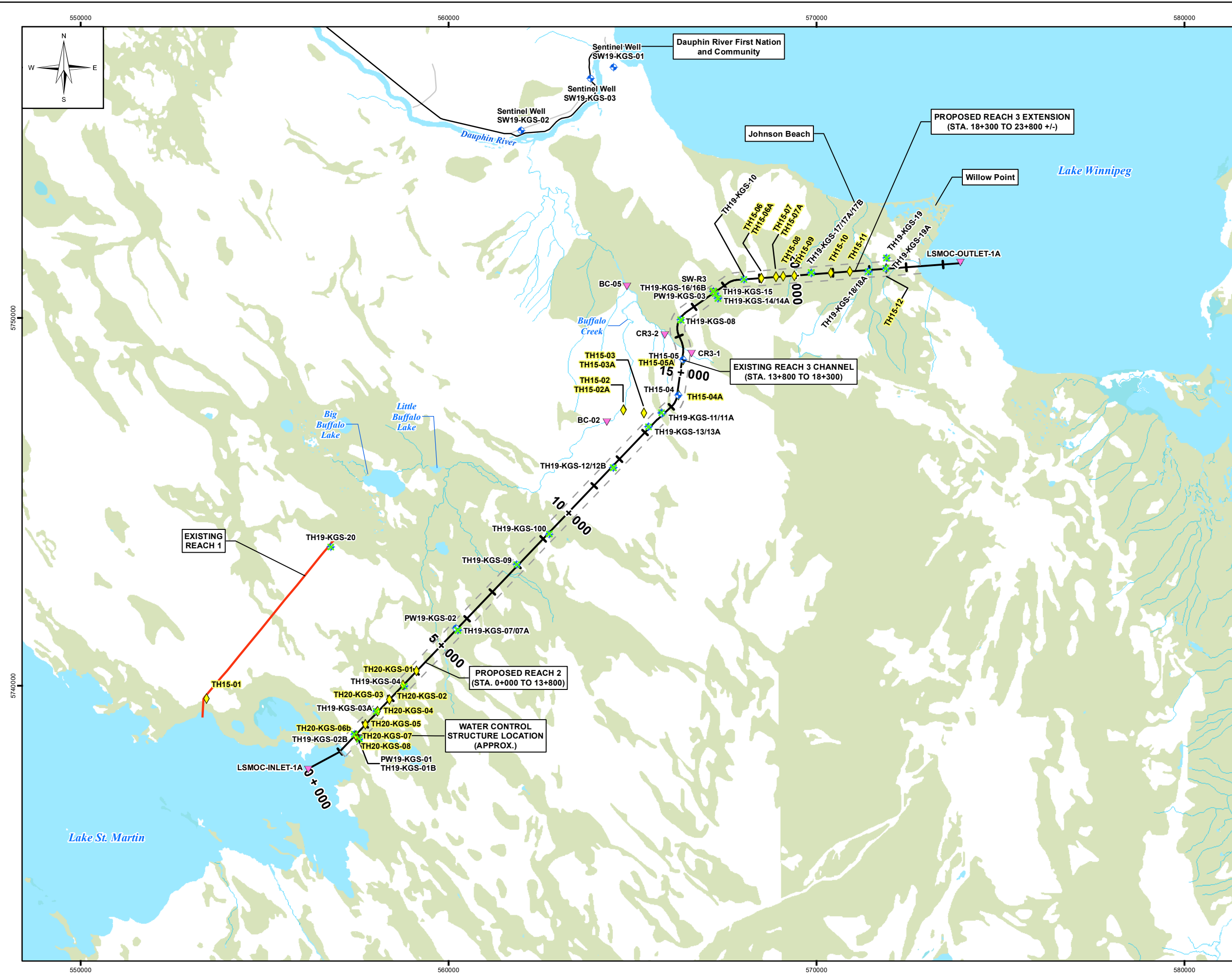
Note:

Tritium is reported in Tritium Units.

1TU = 3.221 Picocuries/L per IAEA, 2000 Report.

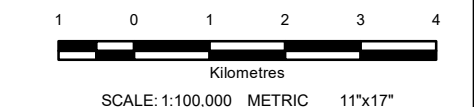
1TU = 0.11919 Becquerels/L per IAEA, 2000 Report.

FIGURE



- LEGEND:**
- ▼ Surface Water Sampling Location
 - ◆ Groundwater Sampling Location
 - ✱ Standpipe with Vibrating Wire
 - ◆ Standpipe
 - LSMOC Alignment
 - - - 400m Right Of Way

- NOTES:**
1. Locations with water quality samples have been labelled. For all other locations see the Geotechnical Data Report (KGS Group, October 2019).
 2. Wetland, watercourse, and waterbody layers shown were obtained from NRCAN 1:50,000 data.
 3. All units are metric and in metres unless otherwise specified. Transverse Mercator Projection, NAD 1983, Zone 14. Elevations are in metres above sea level (MSL).



NO	DATE	DESCRIPTION	ISSUED BY	CHECK BY
0	21/07/28	ISSUED FOR INFORMATION	P.J.L	J.D.M

REVISIONS / ISSUE

LAKE ST. MARTIN OUTLET CHANNEL
GROUNDWATER AND SURFACE WATER
SAMPLING SITES OF THE LSMOC PDA

GROUNDWATER AND SURFACE WATER
SAMPLING SITE LOCATION PLAN

JULY 2021	FIGURE 1	REV: 0
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APPENDIX A

Laboratory Data



KGS Group Consultants (Winnipeg)
865 Waverly Street - 3rd Floor
Winnipeg MB R3T 5P4
ATTN: ERIC LEVAY

Date: 21-MAR-19
PO No.:
WO No.: L2242160
Project Ref: 18-0300-005
Sample ID: WELL 1
Sampled By:
Date Collected: 08-MAR-19
Lab Sample ID: L2242160-1
Matrix: WATER

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
ROU4W Dissolved						
Bicarbonate (HCO3)	482		mg/L			13-MAR-19
Carbonate (CO3)	<0.60		mg/L			13-MAR-19
Hydroxide (OH)	<0.34		mg/L			13-MAR-19
*Nitrate and Nitrite as N	<0.0051		mg/L	10		12-MAR-19
pH						
pH	7.68		pH units			12-MAR-19
Turbidity						
*Turbidity	32.9		NTU			11-MAR-19
TDS calculated						
TDS (Calculated)	520		mg/L		500	21-MAR-19
Sulfate in Water by IC						
Sulfate (SO4)	80.9		mg/L		500	09-MAR-19
Nitrite in Water by IC (Low Level)						
*Nitrite (as N)	<0.0010		mg/L	1		09-MAR-19
Nitrate in Water by IC (Low Level)						
*Nitrate (as N)	0.0051		mg/L	10		09-MAR-19
Ion Balance Calculation						
Hardness Calculated						
Hardness (as CaCO3)	406		mg/L		500	21-MAR-19
Fluoride in Water by IC						
Fluoride (F)	0.324		mg/L	1.5		09-MAR-19
Dissolved Metals in Water by CRC ICPMS						
Dissolved Metals	LAB					20-MAR-19
Filtration Location						
Aluminum (Al)-Dissolved	0.0010		mg/L		0.1	20-MAR-19
Antimony (Sb)-Dissolved	<0.00010		mg/L	0.006		20-MAR-19
Arsenic (As)-Dissolved	0.00031		mg/L	0.01		20-MAR-19
Barium (Ba)-Dissolved	0.0450		mg/L	1		20-MAR-19
Beryllium (Be)-Dissolved	<0.00010		mg/L			20-MAR-19
Bismuth (Bi)-Dissolved	<0.000050		mg/L			20-MAR-19
Boron (B)-Dissolved	0.186		mg/L	5		20-MAR-19
Cadmium (Cd)-Dissolved	<0.000050		mg/L	0.005		20-MAR-19
Calcium (Ca)-Dissolved	59.3		mg/L			20-MAR-19
Cesium (Cs)-Dissolved	0.000036		mg/L			20-MAR-19
Chromium (Cr)-Dissolved	<0.00010		mg/L	0.05		20-MAR-19
Cobalt (Co)-Dissolved	0.00031		mg/L			20-MAR-19
Copper (Cu)-Dissolved	0.00023		mg/L	2.0	1.0	20-MAR-19
Iron (Fe)-Dissolved	<0.010		mg/L		0.3	20-MAR-19
Lead (Pb)-Dissolved	<0.000050		mg/L	0.01		20-MAR-19



KGS Group Consultants (Winnipeg)
865 Waverly Street - 3rd Floor
Winnipeg MB R3T 5P4
ATTN: ERIC LEVAY

Date: 21-MAR-19
PO No.:
WO No.: L2242160
Project Ref: 18-0300-005
Sample ID: WELL 1
Sampled By:
Date Collected: 08-MAR-19
Lab Sample ID: L2242160-1
Matrix: WATER

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
ROU4W Dissolved						
Dissolved Metals in Water by CRC ICPMS						
Lithium (Li)-Dissolved	0.0326		mg/L			20-MAR-19
Magnesium (Mg)-Dissolved	62.5		mg/L			20-MAR-19
Manganese (Mn)-Dissolved	0.0668		mg/L		0.05	20-MAR-19
Molybdenum (Mo)-Dissolved	0.00105		mg/L			20-MAR-19
Nickel (Ni)-Dissolved	0.00106		mg/L			20-MAR-19
Phosphorus (P)-Dissolved	<0.030		mg/L			20-MAR-19
Potassium (K)-Dissolved	6.34		mg/L			20-MAR-19
Rubidium (Rb)-Dissolved	0.00319		mg/L			20-MAR-19
Selenium (Se)-Dissolved	0.000051		mg/L	0.05		20-MAR-19
Silicon (Si)-Dissolved	5.55		mg/L			20-MAR-19
Silver (Ag)-Dissolved	<0.000010		mg/L			20-MAR-19
Sodium (Na)-Dissolved	48.0		mg/L		200	20-MAR-19
Strontium (Sr)-Dissolved	0.236		mg/L			20-MAR-19
Sulfur (S)-Dissolved	30.4		mg/L			20-MAR-19
Tellurium (Te)-Dissolved	<0.00020		mg/L			20-MAR-19
Thallium (Tl)-Dissolved	0.000011		mg/L			20-MAR-19
Thorium (Th)-Dissolved	<0.00010		mg/L			20-MAR-19
Tin (Sn)-Dissolved	<0.00010		mg/L			20-MAR-19
Titanium (Ti)-Dissolved	<0.00030		mg/L			20-MAR-19
Tungsten (W)-Dissolved	<0.00010		mg/L			20-MAR-19
Uranium (U)-Dissolved	0.00218		mg/L	0.02		20-MAR-19
Vanadium (V)-Dissolved	<0.00050		mg/L			20-MAR-19
Zinc (Zn)-Dissolved	<0.0010		mg/L		5.0	20-MAR-19
Zirconium (Zr)-Dissolved	0.000066		mg/L			20-MAR-19
Conductivity						
Conductivity	881		umhos/cm			12-MAR-19
Chloride in Water by IC (Low Level)						
Chloride (Cl)	26.2		mg/L		250	09-MAR-19
Alkalinity, Total (as CaCO3)						
Alkalinity, Total (as CaCO3)	395		mg/L			12-MAR-19
Total Coliform and E.coli						
Total Coliforms	0		MPN/100mL	0		09-MAR-19
Escherichia Coli	0		MPN/100mL	0		09-MAR-19



KGS Group Consultants (Winnipeg)
865 Waverly Street - 3rd Floor
Winnipeg MB R3T 5P4
ATTN: ERIC LEVAY

Date: 21-MAR-19
PO No.:
WO No.: L2242160
Project Ref: 18-0300-005
Sample ID: WELL 1
Sampled By:
Date Collected: 08-MAR-19
Lab Sample ID: L2242160-1
Matrix: WATER

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
<p>CDWQG = Health Canada Guideline Limits updated</p> <p>* CDWQG for Nitrate+Nitrite-N is the limit for nitrate only. If present as Nitrate then the limit is 10mg/L < or N.D. = less than detection limit. * Turbidity guideline based on membrane filtration. For guidelines on conventional treatment and slow sand or diatomaceous earth filtration please see Summary Table of Guidelines for Canadian Drinking Water Quality - A blank entry designates no known limit. - A shaded value in the Results column exceeds CDWQG MAC and/ or Aesthetic Objective.</p> <p>Approved by <u><i>Hua Wo</i></u> Hua Wo Account Manager</p> <p>21-MAR-2019 Revised report - Re-analysis of lab filtered dissolved metals.</p>	MAY 2018					

Guidelines & Objectives

Health Canada MAC Health Related Criteria Limits

Nitrate/Nitrite-N*	Criteria limit is 10 mg/L (1.0 mg/L if present as all Nitrite-N). High concentrations may contribute to blue baby syndrome in infants.
Lead*	A cumulative body poison, uncommon in naturally occurring hard waters.
Fluoride*	Present in fluoridated water supplies at 0.8 mg/L to reduce dental caries. Elevated levels causes fluorosis (mottling of teeth).
Total Coliforms*	Criteria is 0 CFU/100mL. Adverse health effects.
E. Coli*	Criteria is 0 CFU/100 mL. Certain E. Coli bacteria can be life threatening.

*Health Canada Canadian Drinking Water Quality Guidelines (MAC limit)

Aesthetic Objective Concentration Levels

Alkalinity	Acid neutralizing capacity. Usually a measure of carbonate and bicarbonates and calculated and reported as calcium carbonate.
Balance	Quality control parameter ratioing cations to anions
Bicarbonate	See Alkalinity. Report as the anion HCO ₃ -1
Carbonate	See Alkalinity. Reported at the anion CO ₃ -2
Calcium	See Hardness. Common major cation of water chemistry.
Chloride	Common major anion of water chemistry.
Conductance	Physical test measuring water salinity (dissolved ions or solids)
Hardness	Classical measure or capacity of water to precipitate soap (chiefly calcium and magnesium ions). Causes scaling tendency in water if carbonates/bicarbonates are present (if >200 mg/L). For drinking water purposes waters with results <200 mg/L are considered acceptable, results >200 mg/L are considered poor but can be tolerated. Results >500 mg/L are unacceptable.
Hydroxide	See alkalinity
Magnesium	See hardness. Common major cation of water chemistry. Elevated levels (>125 mg/L) may exert a cathartic or diuretic action.
pH	Measure of water acidity/alkalinity. Normal range is 7.0-8.5.
Potassium	Common major cation of water chemistry.
Sodium	Common major cation of water chemistry. Measure of salinity (saltiness). The aesthetic objective (not related to health) for sodium in drinking water is 200 mg/L. However, where sodium concentration of the drinking water exceeds 20 mg/L, it is recommended that any person on a sodium restricted diet consult with his/her physician or Medical Officer of Health concerning the use of that water.
Sulphate	Common major anion of water chemistry. Elevated levels may exert a cathartic or diuretic action.
Total Dissolved Solids	A measure of water salinity.
Iron	Causes staining to laundry and porcelain and astringent taste. Oxidizes to red-brown precipitate on exposure to air.
Manganese	Elevated levels may cause staining of laundry and porcelain.
Heterotrophic Plate Count	Criteria is 500 cfu/mL Measure of heterotrophic bacteria present.

GLOSSARY OF REPORT TERMS

Surrogates are compounds that are similar in behaviour to target analyte(s), but that do not normally occur in environmental samples. For applicable tests, surrogates are added to samples prior to analysis as a check on recovery. In reports that display the D.L. column, laboratory objectives for surrogates are listed there.

mg/kg - milligrams per kilogram based on dry weight of sample

mg/kg wwt - milligrams per kilogram based on wet weight of sample

mg/kg lwt - milligrams per kilogram based on lipid-adjusted weight

mg/L - unit of concentration based on volume, parts per million.

< - Less than.

D.L. - The reporting limit.

N/A - Result not available. Refer to qualifier code and definition for explanation.

Test results reported relate only to the samples as received by the laboratory.

UNLESS OTHERWISE STATED, ALL SAMPLES WERE RECEIVED IN ACCEPTABLE CONDITION.

Analytical results in unsigned test reports with the DRAFT watermark are subject to change, pending final QC review.

Quality Control Report

Workorder: L2242160

Report Date: 21-MAR-19

Page 1 of 6

Client: KGS Group Consultants (Winnipeg)
 865 Waverly Street - 3rd Floor
 Winnipeg MB R3T 5P4

Contact: ERIC LEVAY

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
ALK-TITR-WP		Water						
Batch	R4561039							
WG3005284-9	LCS							
Alkalinity, Total (as CaCO3)			104.0		%		85-115	12-MAR-19
WG3005284-6	MB							
Alkalinity, Total (as CaCO3)			<1.0		mg/L		1	12-MAR-19
CL-L-IC-N-WP		Water						
Batch	R4558311							
WG3003210-6	LCS							
Chloride (Cl)			97.5		%		90-110	09-MAR-19
WG3003210-5	MB							
Chloride (Cl)			<0.10		mg/L		0.1	09-MAR-19
EC-WP		Water						
Batch	R4561039							
WG3005284-8	LCS							
Conductivity			99.3		%		90-110	12-MAR-19
WG3005284-6	MB							
Conductivity			<1.0		umhos/cm		1	12-MAR-19
F-IC-N-WP		Water						
Batch	R4558311							
WG3003210-6	LCS							
Fluoride (F)			98.3		%		90-110	09-MAR-19
WG3003210-5	MB							
Fluoride (F)			<0.020		mg/L		0.02	09-MAR-19
MET-D-CCMS-WP		Water						
Batch	R4574955							
WG3010568-2	LCS							
Aluminum (Al)-Dissolved			100.3		%		80-120	20-MAR-19
Antimony (Sb)-Dissolved			98.5		%		80-120	20-MAR-19
Arsenic (As)-Dissolved			96.2		%		80-120	20-MAR-19
Barium (Ba)-Dissolved			98.1		%		80-120	20-MAR-19
Beryllium (Be)-Dissolved			101.9		%		80-120	20-MAR-19
Bismuth (Bi)-Dissolved			96.4		%		80-120	20-MAR-19
Boron (B)-Dissolved			100.8		%		80-120	20-MAR-19
Cadmium (Cd)-Dissolved			98.4		%		80-120	20-MAR-19
Calcium (Ca)-Dissolved			99.5		%		80-120	20-MAR-19
Cesium (Cs)-Dissolved			100.8		%		80-120	20-MAR-19
Chromium (Cr)-Dissolved			98.4		%		80-120	20-MAR-19



Quality Control Report

Workorder: L2242160

Report Date: 21-MAR-19

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Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
MET-D-CCMS-WP		Water						
Batch	R4574955							
WG3010568-2 LCS								
Cobalt (Co)-Dissolved			97.3		%		80-120	20-MAR-19
Copper (Cu)-Dissolved			97.8		%		80-120	20-MAR-19
Iron (Fe)-Dissolved			90.7		%		80-120	20-MAR-19
Lead (Pb)-Dissolved			99.98		%		80-120	20-MAR-19
Lithium (Li)-Dissolved			102.7		%		80-120	20-MAR-19
Magnesium (Mg)-Dissolved			109.5		%		80-120	20-MAR-19
Manganese (Mn)-Dissolved			97.6		%		80-120	20-MAR-19
Molybdenum (Mo)-Dissolved			99.7		%		80-120	20-MAR-19
Nickel (Ni)-Dissolved			97.3		%		80-120	20-MAR-19
Phosphorus (P)-Dissolved			100.9		%		80-120	20-MAR-19
Potassium (K)-Dissolved			94.0		%		80-120	20-MAR-19
Rubidium (Rb)-Dissolved			96.2		%		80-120	20-MAR-19
Selenium (Se)-Dissolved			97.5		%		80-120	20-MAR-19
Silicon (Si)-Dissolved			101.9		%		80-120	20-MAR-19
Silver (Ag)-Dissolved			102.2		%		80-120	20-MAR-19
Sodium (Na)-Dissolved			103.4		%		80-120	20-MAR-19
Strontium (Sr)-Dissolved			103.7		%		80-120	20-MAR-19
Sulfur (S)-Dissolved			104.8		%		80-120	20-MAR-19
Tellurium (Te)-Dissolved			98.1		%		80-120	20-MAR-19
Thallium (Tl)-Dissolved			98.0		%		80-120	20-MAR-19
Thorium (Th)-Dissolved			97.6		%		80-120	20-MAR-19
Tin (Sn)-Dissolved			99.6		%		80-120	20-MAR-19
Titanium (Ti)-Dissolved			96.1		%		80-120	20-MAR-19
Tungsten (W)-Dissolved			97.0		%		80-120	20-MAR-19
Uranium (U)-Dissolved			103.5		%		80-120	20-MAR-19
Vanadium (V)-Dissolved			98.8		%		80-120	20-MAR-19
Zinc (Zn)-Dissolved			98.7		%		80-120	20-MAR-19
Zirconium (Zr)-Dissolved			99.9		%		80-120	20-MAR-19
WG3010568-1 MB								
Aluminum (Al)-Dissolved			<0.0010		mg/L		0.001	20-MAR-19
Antimony (Sb)-Dissolved			<0.00010		mg/L		0.0001	20-MAR-19
Arsenic (As)-Dissolved			<0.00010		mg/L		0.0001	20-MAR-19
Barium (Ba)-Dissolved			<0.00010		mg/L		0.0001	20-MAR-19
Beryllium (Be)-Dissolved			<0.00010		mg/L		0.0001	20-MAR-19



Quality Control Report

Workorder: L2242160

Report Date: 21-MAR-19

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Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
MET-D-CCMS-WP		Water						
Batch	R4574955							
WG3010568-1	MB							
Bismuth (Bi)-Dissolved			<0.000050		mg/L		0.00005	20-MAR-19
Boron (B)-Dissolved			<0.010		mg/L		0.01	20-MAR-19
Cadmium (Cd)-Dissolved			<0.0000050		mg/L		0.000005	20-MAR-19
Calcium (Ca)-Dissolved			<0.050		mg/L		0.05	20-MAR-19
Cesium (Cs)-Dissolved			<0.000010		mg/L		0.00001	20-MAR-19
Chromium (Cr)-Dissolved			<0.00010		mg/L		0.0001	20-MAR-19
Cobalt (Co)-Dissolved			<0.00010		mg/L		0.0001	20-MAR-19
Copper (Cu)-Dissolved			<0.00020		mg/L		0.0002	20-MAR-19
Iron (Fe)-Dissolved			<0.010		mg/L		0.01	20-MAR-19
Lead (Pb)-Dissolved			<0.000050		mg/L		0.00005	20-MAR-19
Lithium (Li)-Dissolved			<0.0010		mg/L		0.001	20-MAR-19
Magnesium (Mg)-Dissolved			<0.0050		mg/L		0.005	20-MAR-19
Manganese (Mn)-Dissolved			<0.00010		mg/L		0.0001	20-MAR-19
Molybdenum (Mo)-Dissolved			<0.000050		mg/L		0.00005	20-MAR-19
Nickel (Ni)-Dissolved			<0.00050		mg/L		0.0005	20-MAR-19
Phosphorus (P)-Dissolved			<0.030		mg/L		0.03	20-MAR-19
Potassium (K)-Dissolved			<0.050		mg/L		0.05	20-MAR-19
Rubidium (Rb)-Dissolved			<0.00020		mg/L		0.0002	20-MAR-19
Selenium (Se)-Dissolved			<0.000050		mg/L		0.00005	20-MAR-19
Silicon (Si)-Dissolved			<0.050		mg/L		0.05	20-MAR-19
Silver (Ag)-Dissolved			<0.000010		mg/L		0.00001	20-MAR-19
Sodium (Na)-Dissolved			<0.050		mg/L		0.05	20-MAR-19
Strontium (Sr)-Dissolved			<0.00010		mg/L		0.0001	20-MAR-19
Sulfur (S)-Dissolved			<0.50		mg/L		0.5	20-MAR-19
Tellurium (Te)-Dissolved			<0.00020		mg/L		0.0002	20-MAR-19
Thallium (Tl)-Dissolved			<0.000010		mg/L		0.00001	20-MAR-19
Thorium (Th)-Dissolved			<0.00010		mg/L		0.0001	20-MAR-19
Tin (Sn)-Dissolved			<0.00010		mg/L		0.0001	20-MAR-19
Titanium (Ti)-Dissolved			<0.00030		mg/L		0.0003	20-MAR-19
Tungsten (W)-Dissolved			<0.00010		mg/L		0.0001	20-MAR-19
Uranium (U)-Dissolved			<0.000010		mg/L		0.00001	20-MAR-19
Vanadium (V)-Dissolved			<0.00050		mg/L		0.0005	20-MAR-19
Zinc (Zn)-Dissolved			<0.0010		mg/L		0.001	20-MAR-19
Zirconium (Zr)-Dissolved			<0.000060		mg/L		0.00006	20-MAR-19



Quality Control Report

Workorder: L2242160

Report Date: 21-MAR-19

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Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
NO2-L-IC-N-WP								
Batch R4558311								
WG3003210-6	LCS							
Nitrite (as N)			96.7		%		90-110	09-MAR-19
WG3003210-5	MB							
Nitrite (as N)			<0.0010		mg/L		0.001	09-MAR-19
NO3-L-IC-N-WP								
Batch R4558311								
WG3003210-6	LCS							
Nitrate (as N)			97.5		%		90-110	09-MAR-19
WG3003210-5	MB							
Nitrate (as N)			<0.0050		mg/L		0.005	09-MAR-19
PH-WP								
Batch R4561039								
WG3005284-7	LCS							
pH			7.38		pH units		7.3-7.5	12-MAR-19
SO4-IC-N-WP								
Batch R4558311								
WG3003210-6	LCS							
Sulfate (SO4)			97.7		%		90-110	09-MAR-19
WG3003210-5	MB							
Sulfate (SO4)			<0.30		mg/L		0.3	09-MAR-19
TC,EC-QT51-WP								
Batch R4555143								
WG3003646-1	MB							
Total Coliforms			0		MPN/100mL		1	09-MAR-19
Escherichia Coli			0		MPN/100mL		1	09-MAR-19
TURBIDITY-WP								
Batch R4560508								
WG3005350-2	DUP	L2242160-1						
Turbidity		32.9	33.1		NTU	0.6	15	11-MAR-19
WG3005350-3	LCS							
Turbidity			100.5		%		85-115	11-MAR-19
WG3005350-1	MB							
Turbidity			<0.10		NTU		0.1	11-MAR-19

Quality Control Report

Workorder: L2242160

Report Date: 21-MAR-19

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Legend:

Limit	ALS Control Limit (Data Quality Objectives)
DUP	Duplicate
RPD	Relative Percent Difference
N/A	Not Available
LCS	Laboratory Control Sample
SRM	Standard Reference Material
MS	Matrix Spike
MSD	Matrix Spike Duplicate
ADE	Average Desorption Efficiency
MB	Method Blank
IRM	Internal Reference Material
CRM	Certified Reference Material
CCV	Continuing Calibration Verification
CVS	Calibration Verification Standard
LCSD	Laboratory Control Sample Duplicate

Quality Control Report

Workorder: L2242160

Report Date: 21-MAR-19

Page 6 of 6

Hold Time Exceedances:

ALS Product Description	Sample ID	Sampling Date	Date Processed	Rec. HT	Actual HT	Units	Qualifier
Physical Tests							
pH	1	08-MAR-19 13:30	12-MAR-19 12:00	0.25	95	hours	EHTR-FM

Legend & Qualifier Definitions:

-
- EHTR-FM: Exceeded ALS recommended hold time prior to sample receipt. Field Measurement recommended.
 - EHTR: Exceeded ALS recommended hold time prior to sample receipt.
 - EHTL: Exceeded ALS recommended hold time prior to analysis. Sample was received less than 24 hours prior to expiry.
 - EHT: Exceeded ALS recommended hold time prior to analysis.
 - Rec. HT: ALS recommended hold time (see units).

Notes*:
Where actual sampling date is not provided to ALS, the date (& time) of receipt is used for calculation purposes.
Where actual sampling time is not provided to ALS, the earlier of 12 noon on the sampling date or the time (& date) of receipt is used for calculation purposes. Samples for L2242160 were received on 09-MAR-19 12:34.

ALS recommended hold times may vary by province. They are assigned to meet known provincial and/or federal government requirements. In the absence of regulatory hold times, ALS establishes recommendations based on guidelines published by the US EPA, APHA Standard Methods, or Environment Canada (where available). For more information, please contact ALS.

The ALS Quality Control Report is provided to ALS clients upon request. ALS includes comprehensive QC checks with every analysis to ensure our high standards of quality are met. Each QC result has a known or expected target value, which is compared against pre-determined data quality objectives to provide confidence in the accuracy of associated test results.

Please note that this report may contain QC results from anonymous Sample Duplicates and Matrix Spikes that do not originate from this Work Order.



KGS Group Consultants (Winnipeg)
865 Waverly Street - 3rd Floor
Winnipeg MB R3T 5P4
ATTN: ERIC LEVAY

Date: 29-MAR-19
PO No.:
WO No.: L2245232
Project Ref: 18-0300-05
Sample ID: TH19-KGS-13
Sampled By:
Date Collected: 07-MAR-19
Lab Sample ID: L2245232-1
Matrix: WATER

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
ROU4W Dissolved						
Bicarbonate (HCO3)	440		mg/L			20-MAR-19
Carbonate (CO3)	<0.60		mg/L			20-MAR-19
Hydroxide (OH)	<0.34		mg/L			20-MAR-19
*Nitrate and Nitrite as N	0.018		mg/L	10		21-MAR-19
pH						
pH	7.80		pH units			19-MAR-19
Turbidity						
*Turbidity	3970		NTU			16-MAR-19
TDS calculated						
TDS (Calculated)	449		mg/L		500	20-MAR-19
Sulfate in Water by IC						
Sulfate (SO4)	82.3		mg/L		500	16-MAR-19
Nitrite in Water by IC (Low Level)						
*Nitrite (as N)	0.0023		mg/L	1		16-MAR-19
Nitrate in Water by IC (Low Level)						
*Nitrate (as N)	0.016		mg/L	10		16-MAR-19
Ion Balance Calculation						
Hardness Calculated						
Hardness (as CaCO3)	405		mg/L		500	20-MAR-19
Fluoride in Water by IC						
Fluoride (F)	0.238		mg/L	1.5		16-MAR-19
Dissolved Metals in Water by CRC ICPMS						
Dissolved Metals	FIELD					19-MAR-19
Filtration Location						
Aluminum (Al)-Dissolved	<0.0010		mg/L		0.1	19-MAR-19
Antimony (Sb)-Dissolved	0.00012		mg/L	0.006		19-MAR-19
Arsenic (As)-Dissolved	0.00093		mg/L	0.01		19-MAR-19
Barium (Ba)-Dissolved	0.0234		mg/L	1		19-MAR-19
Beryllium (Be)-Dissolved	<0.00010		mg/L			19-MAR-19
Bismuth (Bi)-Dissolved	<0.000050		mg/L			19-MAR-19
Boron (B)-Dissolved	0.116		mg/L	5		19-MAR-19
Cadmium (Cd)-Dissolved	0.000065		mg/L	0.005		19-MAR-19
Calcium (Ca)-Dissolved	60.5		mg/L			19-MAR-19
Cesium (Cs)-Dissolved	0.000014		mg/L			19-MAR-19
Chromium (Cr)-Dissolved	<0.00010		mg/L	0.05		19-MAR-19
Cobalt (Co)-Dissolved	0.00022		mg/L			19-MAR-19
Copper (Cu)-Dissolved	<0.00020		mg/L	2.0	1.0	19-MAR-19
Iron (Fe)-Dissolved	0.053		mg/L		0.3	19-MAR-19
Lead (Pb)-Dissolved	0.000247		mg/L	0.01		19-MAR-19

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KGS Group Consultants (Winnipeg)
865 Waverly Street - 3rd Floor
Winnipeg MB R3T 5P4
ATTN: ERIC LEVAY

Date: 29-MAR-19
PO No.:
WO No.: L2245232
Project Ref: 18-0300-05
Sample ID: TH19-KGS-13
Sampled By:
Date Collected: 07-MAR-19
Lab Sample ID: L2245232-1
Matrix: WATER

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
ROU4W Dissolved						
Dissolved Metals in Water by CRC ICPMS						
Lithium (Li)-Dissolved	0.0258		mg/L			19-MAR-19
Magnesium (Mg)-Dissolved	61.7		mg/L			19-MAR-19
Manganese (Mn)-Dissolved	0.0145		mg/L		0.05	19-MAR-19
Molybdenum (Mo)-Dissolved	0.000721		mg/L			19-MAR-19
Nickel (Ni)-Dissolved	0.00066		mg/L			19-MAR-19
Phosphorus (P)-Dissolved	<0.030		mg/L			19-MAR-19
Potassium (K)-Dissolved	4.37		mg/L			19-MAR-19
Rubidium (Rb)-Dissolved	0.00292		mg/L			19-MAR-19
Selenium (Se)-Dissolved	0.000088		mg/L	0.05		19-MAR-19
Silicon (Si)-Dissolved	5.18		mg/L			19-MAR-19
Silver (Ag)-Dissolved	<0.000010		mg/L			19-MAR-19
Sodium (Na)-Dissolved	21.3		mg/L		200	19-MAR-19
Strontium (Sr)-Dissolved	0.202		mg/L			19-MAR-19
Sulfur (S)-Dissolved	28.1		mg/L			19-MAR-19
Tellurium (Te)-Dissolved	<0.00020		mg/L			19-MAR-19
Thallium (Tl)-Dissolved	<0.000010		mg/L			19-MAR-19
Thorium (Th)-Dissolved	<0.00010		mg/L			19-MAR-19
Tin (Sn)-Dissolved	<0.00010		mg/L			19-MAR-19
Titanium (Ti)-Dissolved	<0.00030		mg/L			19-MAR-19
Tungsten (W)-Dissolved	0.00510		mg/L			19-MAR-19
Uranium (U)-Dissolved	0.00120		mg/L	0.02		19-MAR-19
Vanadium (V)-Dissolved	<0.00050		mg/L			19-MAR-19
Zinc (Zn)-Dissolved	0.0019		mg/L		5.0	19-MAR-19
Zirconium (Zr)-Dissolved	<0.000060		mg/L			19-MAR-19
Conductivity						
Conductivity	724		umhos/cm			19-MAR-19
Chloride in Water by IC (Low Level)						
Chloride (Cl)	2.82		mg/L		250	16-MAR-19
Alkalinity, Total (as CaCO3)						
Alkalinity, Total (as CaCO3)	361		mg/L			19-MAR-19



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Date: 29-MAR-19
PO No.:
WO No.: L2245232
Project Ref: 18-0300-05
Sample ID: TH19-KGS-13
Sampled By:
Date Collected: 07-MAR-19
Lab Sample ID: L2245232-1
Matrix: WATER

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
<p>CDWQG = Health Canada Guideline Limits updated</p> <p>* CDWQG for Nitrate+Nitrite-N is the limit for nitrate only. If present as Nitrate then the limit is 10mg/L < or N.D. = less than detection limit. * Turbidity guideline based on membrane filtration. For guidelines on conventional treatment and slow sand or diatomaceous earth filtration please see Summary Table of Guidelines for Canadian Drinking Water Quality - A blank entry designates no known limit. - A shaded value in the Results column exceeds CDWQG MAC and/ or Aesthetic Objective.</p>	MAY 2018					
<p>Approved by <u><i>Hua Wo</i></u> Hua Wo Account Manager</p>						



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Winnipeg MB R3T 5P4
ATTN: ERIC LEVAY

Date: 29-MAR-19
PO No.:
WO No.: L2245232
Project Ref: 18-0300-05
Sample ID: TH19-KGS-09
Sampled By:
Date Collected: 12-MAR-19
Lab Sample ID: L2245232-2
Matrix: WATER

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
ROU4W Dissolved						
Bicarbonate (HCO3)	460		mg/L			20-MAR-19
Carbonate (CO3)	<0.60		mg/L			20-MAR-19
Hydroxide (OH)	<0.34		mg/L			20-MAR-19
*Nitrate and Nitrite as N	<0.010		mg/L	10		21-MAR-19
pH						
pH	7.98		pH units			19-MAR-19
Turbidity						
*Turbidity	745		NTU			16-MAR-19
TDS calculated						
TDS (Calculated)	460		mg/L		500	20-MAR-19
Sulfate in Water by IC						
Sulfate (SO4)	77.7		mg/L		500	16-MAR-19
Nitrite in Water by IC (Low Level)						
*Nitrite (as N)	<0.0020	DLM	mg/L	1		16-MAR-19
Nitrate in Water by IC (Low Level)						
*Nitrate (as N)	<0.010	DLM	mg/L	10		16-MAR-19
Ion Balance Calculation						
Hardness Calculated						
Hardness (as CaCO3)	417		mg/L		500	20-MAR-19
Fluoride in Water by IC						
Fluoride (F)	0.222		mg/L	1.5		16-MAR-19
Dissolved Metals in Water by CRC ICPMS						
Dissolved Metals	FIELD					19-MAR-19
Filtration Location						
Aluminum (Al)-Dissolved	0.0016		mg/L		0.1	19-MAR-19
Antimony (Sb)-Dissolved	<0.00010		mg/L	0.006		19-MAR-19
Arsenic (As)-Dissolved	0.00062		mg/L	0.01		19-MAR-19
Barium (Ba)-Dissolved	0.0273		mg/L	1		19-MAR-19
Beryllium (Be)-Dissolved	<0.00010		mg/L			19-MAR-19
Bismuth (Bi)-Dissolved	<0.000050		mg/L			19-MAR-19
Boron (B)-Dissolved	0.141		mg/L	5		19-MAR-19
Cadmium (Cd)-Dissolved	<0.000050		mg/L	0.005		19-MAR-19
Calcium (Ca)-Dissolved	62.9		mg/L			19-MAR-19
Cesium (Cs)-Dissolved	<0.000010		mg/L			19-MAR-19
Chromium (Cr)-Dissolved	<0.00010		mg/L	0.05		19-MAR-19
Cobalt (Co)-Dissolved	0.00022		mg/L			19-MAR-19
Copper (Cu)-Dissolved	<0.00020		mg/L	2.0	1.0	19-MAR-19
Iron (Fe)-Dissolved	0.058		mg/L		0.3	19-MAR-19
Lead (Pb)-Dissolved	<0.000050		mg/L	0.01		19-MAR-19

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ATTN: ERIC LEVAY


Date: 29-MAR-19
PO No.:
WO No.: L2245232
Project Ref: 18-0300-05
Sample ID: TH19-KGS-09
Sampled By:
Date Collected: 12-MAR-19
Lab Sample ID: L2245232-2
Matrix: WATER

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
ROU4W Dissolved						
Dissolved Metals in Water by CRC ICPMS						
Lithium (Li)-Dissolved	0.0233		mg/L			19-MAR-19
Magnesium (Mg)-Dissolved	63.0		mg/L			19-MAR-19
Manganese (Mn)-Dissolved	0.0189		mg/L		0.05	19-MAR-19
Molybdenum (Mo)-Dissolved	0.000518		mg/L			19-MAR-19
Nickel (Ni)-Dissolved	<0.00050		mg/L			19-MAR-19
Phosphorus (P)-Dissolved	<0.030		mg/L			19-MAR-19
Potassium (K)-Dissolved	4.94		mg/L			19-MAR-19
Rubidium (Rb)-Dissolved	0.00273		mg/L			19-MAR-19
Selenium (Se)-Dissolved	<0.000050		mg/L	0.05		19-MAR-19
Silicon (Si)-Dissolved	5.38		mg/L			19-MAR-19
Silver (Ag)-Dissolved	<0.000010		mg/L			19-MAR-19
Sodium (Na)-Dissolved	21.6		mg/L		200	19-MAR-19
Strontium (Sr)-Dissolved	0.191		mg/L			19-MAR-19
Sulfur (S)-Dissolved	26.6		mg/L			19-MAR-19
Tellurium (Te)-Dissolved	<0.00020		mg/L			19-MAR-19
Thallium (Tl)-Dissolved	0.000014		mg/L			19-MAR-19
Thorium (Th)-Dissolved	<0.00010		mg/L			19-MAR-19
Tin (Sn)-Dissolved	<0.00010		mg/L			19-MAR-19
Titanium (Ti)-Dissolved	<0.00030		mg/L			19-MAR-19
Tungsten (W)-Dissolved	0.00010		mg/L			19-MAR-19
Uranium (U)-Dissolved	0.000432		mg/L	0.02		19-MAR-19
Vanadium (V)-Dissolved	<0.00050		mg/L			19-MAR-19
Zinc (Zn)-Dissolved	<0.0010		mg/L		5.0	19-MAR-19
Zirconium (Zr)-Dissolved	<0.000060		mg/L			19-MAR-19
Conductivity						
Conductivity	737		umhos/cm			19-MAR-19
Chloride in Water by IC (Low Level)						
Chloride (Cl)	3.81		mg/L		250	16-MAR-19
Alkalinity, Total (as CaCO3)						
Alkalinity, Total (as CaCO3)	377		mg/L			19-MAR-19



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ATTN: ERIC LEVAY

Date: 29-MAR-19
PO No.:
WO No.: L2245232
Project Ref: 18-0300-05
Sample ID: TH19-KGS-09
Sampled By:
Date Collected: 12-MAR-19
Lab Sample ID: L2245232-2
Matrix: WATER

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
<p>CDWQG = Health Canada Guideline Limits updated</p> <p>* CDWQG for Nitrate+Nitrite-N is the limit for nitrate only. If present as Nitrate then the limit is 10mg/L < or N.D. = less than detection limit. * Turbidity guideline based on membrane filtration. For guidelines on conventional treatment and slow sand or diatomaceous earth filtration please see Summary Table of Guidelines for Canadian Drinking Water Quality - A blank entry designates no known limit. - A shaded value in the Results column exceeds CDWQG MAC and/ or Aesthetic Objective.</p>	MAY 2018					
<p>Approved by </p> <hr/> <p>Hua Wo Account Manager</p>						



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Winnipeg MB R3T 5P4
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Date: 29-MAR-19
PO No.:
WO No.: L2245232
Project Ref: 18-0300-05
Sample ID: FIELD
Sampled By:
Date Collected: 07-MAR-19
Lab Sample ID: L2245232-3
Matrix: WATER

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
ROU4W Dissolved						
Bicarbonate (HCO3)	2.4		mg/L			20-MAR-19
Carbonate (CO3)	<0.60		mg/L			20-MAR-19
Hydroxide (OH)	<0.34		mg/L			20-MAR-19
*Nitrate and Nitrite as N	<0.0051		mg/L	10		21-MAR-19
pH						
pH	6.48		pH units			19-MAR-19
Turbidity						
*Turbidity	<0.10		NTU			16-MAR-19
TDS calculated						
TDS (Calculated)	<5.0		mg/L		500	20-MAR-19
Sulfate in Water by IC						
Sulfate (SO4)	<0.30		mg/L		500	16-MAR-19
Nitrite in Water by IC (Low Level)						
*Nitrite (as N)	<0.0010		mg/L	1		16-MAR-19
Nitrate in Water by IC (Low Level)						
*Nitrate (as N)	<0.0050		mg/L	10		16-MAR-19
Ion Balance Calculation						
Hardness Calculated						
Hardness (as CaCO3)	<0.20		mg/L		500	20-MAR-19
Fluoride in Water by IC						
Fluoride (F)	<0.020		mg/L	1.5		16-MAR-19
Dissolved Metals in Water by CRC ICPMS						
Dissolved Metals	FIELD					19-MAR-19
Filtration Location						
Aluminum (Al)-Dissolved	<0.0010		mg/L		0.1	19-MAR-19
Antimony (Sb)-Dissolved	<0.00010		mg/L	0.006		19-MAR-19
Arsenic (As)-Dissolved	<0.00010		mg/L	0.01		19-MAR-19
Barium (Ba)-Dissolved	<0.00010		mg/L	1		19-MAR-19
Beryllium (Be)-Dissolved	<0.00010		mg/L			19-MAR-19
Bismuth (Bi)-Dissolved	<0.000050		mg/L			19-MAR-19
Boron (B)-Dissolved	<0.010		mg/L	5		19-MAR-19
Cadmium (Cd)-Dissolved	<0.0000050		mg/L	0.005		19-MAR-19
Calcium (Ca)-Dissolved	<0.050		mg/L			19-MAR-19
Cesium (Cs)-Dissolved	<0.000010		mg/L			19-MAR-19
Chromium (Cr)-Dissolved	<0.00010		mg/L	0.05		19-MAR-19
Cobalt (Co)-Dissolved	<0.00010		mg/L			19-MAR-19
Copper (Cu)-Dissolved	<0.00020		mg/L	2.0	1.0	19-MAR-19
Iron (Fe)-Dissolved	<0.010		mg/L		0.3	19-MAR-19
Lead (Pb)-Dissolved	<0.000050		mg/L	0.01		19-MAR-19



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865 Waverly Street - 3rd Floor
Winnipeg MB R3T 5P4
ATTN: ERIC LEVAY

Date: 29-MAR-19
PO No.:
WO No.: L2245232
Project Ref: 18-0300-05
Sample ID: FIELD
Sampled By:
Date Collected: 07-MAR-19
Lab Sample ID: L2245232-3
Matrix: WATER

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
ROU4W Dissolved						
Dissolved Metals in Water by CRC ICPMS						
Lithium (Li)-Dissolved	<0.0010		mg/L			19-MAR-19
Magnesium (Mg)-Dissolved	<0.0050		mg/L			19-MAR-19
Manganese (Mn)-Dissolved	<0.00010		mg/L		0.05	19-MAR-19
Molybdenum (Mo)-Dissolved	<0.000050		mg/L			19-MAR-19
Nickel (Ni)-Dissolved	<0.00050		mg/L			19-MAR-19
Phosphorus (P)-Dissolved	<0.030		mg/L			19-MAR-19
Potassium (K)-Dissolved	<0.050		mg/L			19-MAR-19
Rubidium (Rb)-Dissolved	<0.00020		mg/L			19-MAR-19
Selenium (Se)-Dissolved	<0.000050		mg/L	0.05		19-MAR-19
Silicon (Si)-Dissolved	<0.050		mg/L			19-MAR-19
Silver (Ag)-Dissolved	<0.000010		mg/L			19-MAR-19
Sodium (Na)-Dissolved	<0.050		mg/L		200	19-MAR-19
Strontium (Sr)-Dissolved	0.00014		mg/L			19-MAR-19
Sulfur (S)-Dissolved	<0.50		mg/L			19-MAR-19
Tellurium (Te)-Dissolved	<0.00020		mg/L			19-MAR-19
Thallium (Tl)-Dissolved	<0.000010		mg/L			19-MAR-19
Thorium (Th)-Dissolved	<0.00010		mg/L			19-MAR-19
Tin (Sn)-Dissolved	<0.00010		mg/L			19-MAR-19
Titanium (Ti)-Dissolved	<0.00030		mg/L			19-MAR-19
Tungsten (W)-Dissolved	<0.00010		mg/L			19-MAR-19
Uranium (U)-Dissolved	<0.000010		mg/L	0.02		19-MAR-19
Vanadium (V)-Dissolved	<0.00050		mg/L			19-MAR-19
Zinc (Zn)-Dissolved	<0.0010		mg/L		5.0	19-MAR-19
Zirconium (Zr)-Dissolved	<0.000060		mg/L			19-MAR-19
Conductivity						
Conductivity	1.2		umhos/cm			19-MAR-19
Chloride in Water by IC (Low Level)						
Chloride (Cl)	<0.10		mg/L		250	16-MAR-19
Alkalinity, Total (as CaCO3)						
Alkalinity, Total (as CaCO3)	2.0		mg/L			19-MAR-19



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Date: 29-MAR-19
PO No.:
WO No.: L2245232
Project Ref: 18-0300-05
Sample ID: FIELD
Sampled By:
Date Collected: 07-MAR-19
Lab Sample ID: L2245232-3
Matrix: WATER

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
<p>CDWQG = Health Canada Guideline Limits updated</p> <p>* CDWQG for Nitrate+Nitrite-N is the limit for nitrate only. If present as Nitrate then the limit is 10mg/L < or N.D. = less than detection limit. * Turbidity guideline based on membrane filtration. For guidelines on conventional treatment and slow sand or diatomaceous earth filtration please see Summary Table of Guidelines for Canadian Drinking Water Quality - A blank entry designates no known limit. - A shaded value in the Results column exceeds CDWQG MAC and/ or Aesthetic Objective.</p>	MAY 2018					
<p>Approved by <u><i>Hua Wo</i></u> Hua Wo Account Manager</p>						



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865 Waverly Street - 3rd Floor
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ATTN: ERIC LEVAY

Date: 29-MAR-19
PO No.:
WO No.: L2245232
Project Ref: 18-0300-05
Sample ID: TH15-04
Sampled By:
Date Collected: 08-MAR-19
Lab Sample ID: L2245232-4
Matrix: WATER

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
ROU4W Dissolved						
Bicarbonate (HCO3)	289		mg/L			20-MAR-19
Carbonate (CO3)	<0.60		mg/L			20-MAR-19
Hydroxide (OH)	<0.34		mg/L			20-MAR-19
*Nitrate and Nitrite as N	0.0178		mg/L	10		21-MAR-19
pH						
pH	7.90		pH units			19-MAR-19
Turbidity						
*Turbidity	1630		NTU			16-MAR-19
TDS calculated						
TDS (Calculated)	275		mg/L		500	20-MAR-19
Sulfate in Water by IC						
Sulfate (SO4)	35.4		mg/L		500	16-MAR-19
Nitrite in Water by IC (Low Level)						
*Nitrite (as N)	0.0019		mg/L	1		16-MAR-19
Nitrate in Water by IC (Low Level)						
*Nitrate (as N)	0.0159		mg/L	10		16-MAR-19
Ion Balance Calculation						
Hardness Calculated						
Hardness (as CaCO3)	241		mg/L		500	20-MAR-19
Fluoride in Water by IC						
Fluoride (F)	0.272		mg/L	1.5		16-MAR-19
Dissolved Metals in Water by CRC ICPMS						
Dissolved Metals	FIELD					19-MAR-19
Filtration Location						
Aluminum (Al)-Dissolved	0.0188		mg/L		0.1	19-MAR-19
Antimony (Sb)-Dissolved	0.00018		mg/L	0.006		19-MAR-19
Arsenic (As)-Dissolved	0.00168		mg/L	0.01		19-MAR-19
Barium (Ba)-Dissolved	0.0269		mg/L	1		19-MAR-19
Beryllium (Be)-Dissolved	<0.00010		mg/L			19-MAR-19
Bismuth (Bi)-Dissolved	<0.000050		mg/L			19-MAR-19
Boron (B)-Dissolved	0.117		mg/L	5		19-MAR-19
Cadmium (Cd)-Dissolved	<0.0000050		mg/L	0.005		19-MAR-19
Calcium (Ca)-Dissolved	39.3		mg/L			19-MAR-19
Cesium (Cs)-Dissolved	<0.000010		mg/L			19-MAR-19
Chromium (Cr)-Dissolved	<0.00010		mg/L	0.05		19-MAR-19
Cobalt (Co)-Dissolved	0.00017		mg/L			19-MAR-19
Copper (Cu)-Dissolved	0.00126		mg/L	2.0	1.0	19-MAR-19
Iron (Fe)-Dissolved	0.110		mg/L		0.3	19-MAR-19
Lead (Pb)-Dissolved	0.000073		mg/L	0.01		19-MAR-19



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PO No.:
WO No.: L2245232
Project Ref: 18-0300-05
Sample ID: TH15-04
Sampled By:
Date Collected: 08-MAR-19
Lab Sample ID: L2245232-4
Matrix: WATER

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
ROU4W Dissolved						
Dissolved Metals in Water by CRC ICPMS						
Lithium (Li)-Dissolved	0.0170		mg/L			19-MAR-19
Magnesium (Mg)-Dissolved	34.8		mg/L			19-MAR-19
Manganese (Mn)-Dissolved	0.0156		mg/L		0.05	19-MAR-19
Molybdenum (Mo)-Dissolved	0.00196		mg/L			19-MAR-19
Nickel (Ni)-Dissolved	0.00145		mg/L			19-MAR-19
Phosphorus (P)-Dissolved	<0.030		mg/L			19-MAR-19
Potassium (K)-Dissolved	2.39		mg/L			19-MAR-19
Rubidium (Rb)-Dissolved	0.00116		mg/L			19-MAR-19
Selenium (Se)-Dissolved	0.000081		mg/L	0.05		19-MAR-19
Silicon (Si)-Dissolved	4.70		mg/L			19-MAR-19
Silver (Ag)-Dissolved	<0.000010		mg/L			19-MAR-19
Sodium (Na)-Dissolved	19.3		mg/L		200	19-MAR-19
Strontium (Sr)-Dissolved	0.161		mg/L			19-MAR-19
Sulfur (S)-Dissolved	13.4		mg/L			19-MAR-19
Tellurium (Te)-Dissolved	<0.00020		mg/L			19-MAR-19
Thallium (Tl)-Dissolved	<0.000010		mg/L			19-MAR-19
Thorium (Th)-Dissolved	<0.00010		mg/L			19-MAR-19
Tin (Sn)-Dissolved	0.00267		mg/L			19-MAR-19
Titanium (Ti)-Dissolved	<0.00030		mg/L			19-MAR-19
Tungsten (W)-Dissolved	0.00026		mg/L			19-MAR-19
Uranium (U)-Dissolved	0.000793		mg/L	0.02		19-MAR-19
Vanadium (V)-Dissolved	<0.00050		mg/L			19-MAR-19
Zinc (Zn)-Dissolved	0.0014		mg/L		5.0	19-MAR-19
Zirconium (Zr)-Dissolved	0.000082		mg/L			19-MAR-19
Conductivity						
Conductivity	470		umhos/cm			19-MAR-19
Chloride in Water by IC (Low Level)						
Chloride (Cl)	1.93		mg/L		250	16-MAR-19
Alkalinity, Total (as CaCO3)						
Alkalinity, Total (as CaCO3)	237		mg/L			19-MAR-19



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ATTN: ERIC LEVAY

Date: 29-MAR-19
PO No.:
WO No.: L2245232
Project Ref: 18-0300-05
Sample ID: TH15-04
Sampled By:
Date Collected: 08-MAR-19
Lab Sample ID: L2245232-4
Matrix: WATER

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
<p>CDWQG = Health Canada Guideline Limits updated</p> <p>* CDWQG for Nitrate+Nitrite-N is the limit for nitrate only. If present as Nitrate then the limit is 10mg/L < or N.D. = less than detection limit. * Turbidity guideline based on membrane filtration. For guidelines on conventional treatment and slow sand or diatomaceous earth filtration please see Summary Table of Guidelines for Canadian Drinking Water Quality - A blank entry designates no known limit. - A shaded value in the Results column exceeds CDWQG MAC and/ or Aesthetic Objective.</p>	MAY 2018					
<p>Approved by </p> <hr/> <p>Hua Wo Account Manager</p>						



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ATTN: ERIC LEVAY

Date: 29-MAR-19
PO No.:
WO No.: L2245232
Project Ref: 18-0300-05
Sample ID: TH19-KGS-10
Sampled By:
Date Collected: 09-MAR-19
Lab Sample ID: L2245232-5
Matrix: WATER

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
ROU4W Dissolved						
Bicarbonate (HCO3)	506		mg/L			20-MAR-19
Carbonate (CO3)	<0.60		mg/L			20-MAR-19
Hydroxide (OH)	<0.34		mg/L			20-MAR-19
*Nitrate and Nitrite as N	0.0052		mg/L	10		21-MAR-19
pH						
pH	7.98		pH units			19-MAR-19
Turbidity						
*Turbidity	>4000		NTU			16-MAR-19
TDS calculated						
TDS (Calculated)	404		mg/L		500	20-MAR-19
Sulfate in Water by IC						
Sulfate (SO4)	21.7		mg/L		500	16-MAR-19
Nitrite in Water by IC (Low Level)						
*Nitrite (as N)	<0.0010		mg/L	1		16-MAR-19
Nitrate in Water by IC (Low Level)						
*Nitrate (as N)	0.0052		mg/L	10		16-MAR-19
Ion Balance Calculation						
Hardness Calculated						
Hardness (as CaCO3)	403		mg/L		500	20-MAR-19
Fluoride in Water by IC						
Fluoride (F)	0.329		mg/L	1.5		16-MAR-19
Dissolved Metals in Water by CRC ICPMS						
Dissolved Metals	FIELD					19-MAR-19
Filtration Location						
Aluminum (Al)-Dissolved	0.0029		mg/L		0.1	19-MAR-19
Antimony (Sb)-Dissolved	<0.00010		mg/L	0.006		19-MAR-19
Arsenic (As)-Dissolved	0.00100		mg/L	0.01		19-MAR-19
Barium (Ba)-Dissolved	0.0585		mg/L	1		19-MAR-19
Beryllium (Be)-Dissolved	<0.00010		mg/L			19-MAR-19
Bismuth (Bi)-Dissolved	<0.000050		mg/L			19-MAR-19
Boron (B)-Dissolved	0.091		mg/L	5		19-MAR-19
Cadmium (Cd)-Dissolved	<0.0000050		mg/L	0.005		19-MAR-19
Calcium (Ca)-Dissolved	58.7		mg/L			19-MAR-19
Cesium (Cs)-Dissolved	<0.000010		mg/L			19-MAR-19
Chromium (Cr)-Dissolved	<0.00010		mg/L	0.05		19-MAR-19
Cobalt (Co)-Dissolved	0.00020		mg/L			19-MAR-19
Copper (Cu)-Dissolved	<0.00020		mg/L	2.0	1.0	19-MAR-19
Iron (Fe)-Dissolved	<0.010		mg/L		0.3	19-MAR-19
Lead (Pb)-Dissolved	<0.000050		mg/L	0.01		19-MAR-19

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865 Waverly Street - 3rd Floor
Winnipeg MB R3T 5P4
ATTN: ERIC LEVAY

Date: 29-MAR-19
PO No.:
WO No.: L2245232
Project Ref: 18-0300-05
Sample ID: TH19-KGS-10
Sampled By:
Date Collected: 09-MAR-19
Lab Sample ID: L2245232-5
Matrix: WATER

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
ROU4W Dissolved						
Dissolved Metals in Water by CRC ICPMS						
Lithium (Li)-Dissolved	0.0207		mg/L			19-MAR-19
Magnesium (Mg)-Dissolved	62.2		mg/L			19-MAR-19
Manganese (Mn)-Dissolved	0.0100		mg/L		0.05	19-MAR-19
Molybdenum (Mo)-Dissolved	0.00102		mg/L			19-MAR-19
Nickel (Ni)-Dissolved	0.00069		mg/L			19-MAR-19
Phosphorus (P)-Dissolved	<0.030		mg/L			19-MAR-19
Potassium (K)-Dissolved	3.32		mg/L			19-MAR-19
Rubidium (Rb)-Dissolved	0.00214		mg/L			19-MAR-19
Selenium (Se)-Dissolved	<0.000050		mg/L	0.05		19-MAR-19
Silicon (Si)-Dissolved	5.92		mg/L			19-MAR-19
Silver (Ag)-Dissolved	<0.000010		mg/L			19-MAR-19
Sodium (Na)-Dissolved	8.14		mg/L		200	19-MAR-19
Strontium (Sr)-Dissolved	0.178		mg/L			19-MAR-19
Sulfur (S)-Dissolved	7.54		mg/L			19-MAR-19
Tellurium (Te)-Dissolved	<0.00020		mg/L			19-MAR-19
Thallium (Tl)-Dissolved	0.000014		mg/L			19-MAR-19
Thorium (Th)-Dissolved	<0.00010		mg/L			19-MAR-19
Tin (Sn)-Dissolved	<0.00010		mg/L			19-MAR-19
Titanium (Ti)-Dissolved	<0.00030		mg/L			19-MAR-19
Tungsten (W)-Dissolved	0.00194		mg/L			19-MAR-19
Uranium (U)-Dissolved	0.00259		mg/L	0.02		19-MAR-19
Vanadium (V)-Dissolved	<0.00050		mg/L			19-MAR-19
Zinc (Zn)-Dissolved	<0.0010		mg/L		5.0	19-MAR-19
Zirconium (Zr)-Dissolved	<0.000060		mg/L			19-MAR-19
Conductivity						
Conductivity	669		umhos/cm			19-MAR-19
Chloride in Water by IC (Low Level)						
Chloride (Cl)	1.38		mg/L		250	16-MAR-19
Alkalinity, Total (as CaCO3)						
Alkalinity, Total (as CaCO3)	415		mg/L			19-MAR-19



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Date: 29-MAR-19
PO No.:
WO No.: L2245232
Project Ref: 18-0300-05
Sample ID: TH19-KGS-10
Sampled By:
Date Collected: 09-MAR-19
Lab Sample ID: L2245232-5
Matrix: WATER

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
<p>CDWQG = Health Canada Guideline Limits updated</p> <p>* CDWQG for Nitrate+Nitrite-N is the limit for nitrate only. If present as Nitrate then the limit is 10mg/L < or N.D. = less than detection limit. * Turbidity guideline based on membrane filtration. For guidelines on conventional treatment and slow sand or diatomaceous earth filtration please see Summary Table of Guidelines for Canadian Drinking Water Quality - A blank entry designates no known limit. - A shaded value in the Results column exceeds CDWQG MAC and/ or Aesthetic Objective.</p>	MAY 2018					
<p>Approved by <u><i>Hua Wo</i></u> Hua Wo Account Manager</p>						



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ATTN: ERIC LEVAY

Date: 29-MAR-19
PO No.:
WO No.: L2245232
Project Ref: 18-0300-05
Sample ID: TH15-05
Sampled By:
Date Collected: 08-MAR-19
Lab Sample ID: L2245232-6
Matrix: WATER

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
ROU4W Dissolved						
Bicarbonate (HCO3)	416		mg/L			20-MAR-19
Carbonate (CO3)	<0.60		mg/L			20-MAR-19
Hydroxide (OH)	<0.34		mg/L			20-MAR-19
*Nitrate and Nitrite as N	<0.0051		mg/L	10		21-MAR-19
pH						
pH	7.80		pH units			19-MAR-19
Turbidity						
*Turbidity	>4000		NTU			16-MAR-19
TDS calculated						
TDS (Calculated)	342		mg/L		500	20-MAR-19
Sulfate in Water by IC						
Sulfate (SO4)	22.1		mg/L		500	16-MAR-19
Nitrite in Water by IC (Low Level)						
*Nitrite (as N)	<0.0010		mg/L	1		16-MAR-19
Nitrate in Water by IC (Low Level)						
*Nitrate (as N)	<0.0050		mg/L	10		16-MAR-19
Ion Balance Calculation						
Hardness Calculated						
Hardness (as CaCO3)	338		mg/L		500	20-MAR-19
Fluoride in Water by IC						
Fluoride (F)	0.231		mg/L	1.5		16-MAR-19
Dissolved Metals in Water by CRC ICPMS						
Dissolved Metals	FIELD					19-MAR-19
Filtration Location						
Aluminum (Al)-Dissolved	<0.0010		mg/L		0.1	19-MAR-19
Antimony (Sb)-Dissolved	<0.00010		mg/L	0.006		19-MAR-19
Arsenic (As)-Dissolved	0.00034		mg/L	0.01		19-MAR-19
Barium (Ba)-Dissolved	0.0716		mg/L	1		19-MAR-19
Beryllium (Be)-Dissolved	<0.00010		mg/L			19-MAR-19
Bismuth (Bi)-Dissolved	<0.000050		mg/L			19-MAR-19
Boron (B)-Dissolved	0.091		mg/L	5		19-MAR-19
Cadmium (Cd)-Dissolved	<0.000050		mg/L	0.005		19-MAR-19
Calcium (Ca)-Dissolved	56.0		mg/L			19-MAR-19
Cesium (Cs)-Dissolved	<0.000010		mg/L			19-MAR-19
Chromium (Cr)-Dissolved	<0.00010		mg/L	0.05		19-MAR-19
Cobalt (Co)-Dissolved	0.00021		mg/L			19-MAR-19
Copper (Cu)-Dissolved	<0.00020		mg/L	2.0	1.0	19-MAR-19
Iron (Fe)-Dissolved	0.132		mg/L		0.3	19-MAR-19
Lead (Pb)-Dissolved	<0.000050		mg/L	0.01		19-MAR-19



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Date: 29-MAR-19
PO No.:
WO No.: L2245232
Project Ref: 18-0300-05
Sample ID: TH15-05
Sampled By:
Date Collected: 08-MAR-19
Lab Sample ID: L2245232-6
Matrix: WATER

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
ROU4W Dissolved						
Dissolved Metals in Water by CRC ICPMS						
Lithium (Li)-Dissolved	0.0171		mg/L			19-MAR-19
Magnesium (Mg)-Dissolved	48.0		mg/L			19-MAR-19
Manganese (Mn)-Dissolved	0.0134		mg/L		0.05	19-MAR-19
Molybdenum (Mo)-Dissolved	0.000417		mg/L			19-MAR-19
Nickel (Ni)-Dissolved	0.00063		mg/L			19-MAR-19
Phosphorus (P)-Dissolved	<0.030		mg/L			19-MAR-19
Potassium (K)-Dissolved	3.48		mg/L			19-MAR-19
Rubidium (Rb)-Dissolved	0.00241		mg/L			19-MAR-19
Selenium (Se)-Dissolved	<0.000050		mg/L	0.05		19-MAR-19
Silicon (Si)-Dissolved	4.74		mg/L			19-MAR-19
Silver (Ag)-Dissolved	<0.000010		mg/L			19-MAR-19
Sodium (Na)-Dissolved	6.91		mg/L		200	19-MAR-19
Strontium (Sr)-Dissolved	0.161		mg/L			19-MAR-19
Sulfur (S)-Dissolved	7.26		mg/L			19-MAR-19
Tellurium (Te)-Dissolved	<0.00020		mg/L			19-MAR-19
Thallium (Tl)-Dissolved	<0.000010		mg/L			19-MAR-19
Thorium (Th)-Dissolved	<0.00010		mg/L			19-MAR-19
Tin (Sn)-Dissolved	<0.00010		mg/L			19-MAR-19
Titanium (Ti)-Dissolved	<0.00030		mg/L			19-MAR-19
Tungsten (W)-Dissolved	<0.00010		mg/L			19-MAR-19
Uranium (U)-Dissolved	0.000317		mg/L	0.02		19-MAR-19
Vanadium (V)-Dissolved	<0.00050		mg/L			19-MAR-19
Zinc (Zn)-Dissolved	<0.0010		mg/L		5.0	19-MAR-19
Zirconium (Zr)-Dissolved	<0.000060		mg/L			19-MAR-19
Conductivity						
Conductivity	577		umhos/cm			19-MAR-19
Chloride in Water by IC (Low Level)						
Chloride (Cl)	0.89		mg/L		250	16-MAR-19
Alkalinity, Total (as CaCO3)						
Alkalinity, Total (as CaCO3)	341		mg/L			19-MAR-19



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Date: 29-MAR-19
PO No.:
WO No.: L2245232
Project Ref: 18-0300-05
Sample ID: TH15-05
Sampled By:
Date Collected: 08-MAR-19
Lab Sample ID: L2245232-6
Matrix: WATER

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
<p>CDWQG = Health Canada Guideline Limits updated</p> <p>* CDWQG for Nitrate+Nitrite-N is the limit for nitrate only. If present as Nitrate then the limit is 10mg/L < or N.D. = less than detection limit. * Turbidity guideline based on membrane filtration. For guidelines on conventional treatment and slow sand or diatomaceous earth filtration please see Summary Table of Guidelines for Canadian Drinking Water Quality - A blank entry designates no known limit. - A shaded value in the Results column exceeds CDWQG MAC and/ or Aesthetic Objective.</p>	MAY 2018					
<p>Approved by <u>Hua Wo</u> Hua Wo Account Manager</p>						



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ATTN: ERIC LEVAY

Date: 29-MAR-19
PO No.:
WO No.: L2245232
Project Ref: 18-0300-05
Sample ID: TH19-KGS-04
Sampled By:
Date Collected: 09-MAR-19
Lab Sample ID: L2245232-7
Matrix: WATER

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
ROU4W Dissolved						
Bicarbonate (HCO3)	423		mg/L			20-MAR-19
Carbonate (CO3)	<0.60		mg/L			20-MAR-19
Hydroxide (OH)	<0.34		mg/L			20-MAR-19
*Nitrate and Nitrite as N	<0.010		mg/L	10		21-MAR-19
pH						
pH	7.99		pH units			19-MAR-19
Turbidity						
*Turbidity	347		NTU			16-MAR-19
TDS calculated						
TDS (Calculated)	632		mg/L		500	20-MAR-19
Sulfate in Water by IC						
Sulfate (SO4)	164		mg/L		500	16-MAR-19
Nitrite in Water by IC (Low Level)						
*Nitrite (as N)	<0.0020	DLM	mg/L	1		16-MAR-19
Nitrate in Water by IC (Low Level)						
*Nitrate (as N)	<0.010	DLM	mg/L	10		16-MAR-19
Ion Balance Calculation						
Hardness Calculated						
Hardness (as CaCO3)	438		mg/L		500	20-MAR-19
Fluoride in Water by IC						
Fluoride (F)	0.281		mg/L	1.5		16-MAR-19
Dissolved Metals in Water by CRC ICPMS						
Dissolved Metals	FIELD					19-MAR-19
Filtration Location						
Aluminum (Al)-Dissolved	0.0026		mg/L		0.1	19-MAR-19
Antimony (Sb)-Dissolved	0.00053		mg/L	0.006		19-MAR-19
Arsenic (As)-Dissolved	0.00196		mg/L	0.01		19-MAR-19
Barium (Ba)-Dissolved	0.0179		mg/L	1		19-MAR-19
Beryllium (Be)-Dissolved	<0.00010		mg/L			19-MAR-19
Bismuth (Bi)-Dissolved	<0.000050		mg/L			19-MAR-19
Boron (B)-Dissolved	0.157		mg/L	5		19-MAR-19
Cadmium (Cd)-Dissolved	<0.0000050		mg/L	0.005		19-MAR-19
Calcium (Ca)-Dissolved	61.5		mg/L			19-MAR-19
Cesium (Cs)-Dissolved	<0.000010		mg/L			19-MAR-19
Chromium (Cr)-Dissolved	0.00011		mg/L	0.05		19-MAR-19
Cobalt (Co)-Dissolved	0.00037		mg/L			19-MAR-19
Copper (Cu)-Dissolved	<0.00020		mg/L	2.0	1.0	19-MAR-19
Iron (Fe)-Dissolved	0.023		mg/L		0.3	19-MAR-19
Lead (Pb)-Dissolved	<0.000050		mg/L	0.01		19-MAR-19



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ATTN: ERIC LEVAY

Date: 29-MAR-19
PO No.:
WO No.: L2245232
Project Ref: 18-0300-05
Sample ID: TH19-KGS-04
Sampled By:
Date Collected: 09-MAR-19
Lab Sample ID: L2245232-7
Matrix: WATER

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
ROU4W Dissolved						
Dissolved Metals in Water by CRC ICPMS						
Lithium (Li)-Dissolved	0.0274		mg/L			19-MAR-19
Magnesium (Mg)-Dissolved	69.1		mg/L			19-MAR-19
Manganese (Mn)-Dissolved	0.0190		mg/L		0.05	19-MAR-19
Molybdenum (Mo)-Dissolved	0.00208		mg/L			19-MAR-19
Nickel (Ni)-Dissolved	0.00089		mg/L			19-MAR-19
Phosphorus (P)-Dissolved	<0.030		mg/L			19-MAR-19
Potassium (K)-Dissolved	5.35		mg/L			19-MAR-19
Rubidium (Rb)-Dissolved	0.00231		mg/L			19-MAR-19
Selenium (Se)-Dissolved	0.000112		mg/L	0.05		19-MAR-19
Silicon (Si)-Dissolved	5.88		mg/L			19-MAR-19
Silver (Ag)-Dissolved	<0.000010		mg/L			19-MAR-19
Sodium (Na)-Dissolved	69.3		mg/L		200	19-MAR-19
Strontium (Sr)-Dissolved	0.259		mg/L			19-MAR-19
Sulfur (S)-Dissolved	55.6		mg/L			19-MAR-19
Tellurium (Te)-Dissolved	<0.00020		mg/L			19-MAR-19
Thallium (Tl)-Dissolved	0.000020		mg/L			19-MAR-19
Thorium (Th)-Dissolved	<0.00010		mg/L			19-MAR-19
Tin (Sn)-Dissolved	<0.00010		mg/L			19-MAR-19
Titanium (Ti)-Dissolved	<0.00030		mg/L			19-MAR-19
Tungsten (W)-Dissolved	0.00063		mg/L			19-MAR-19
Uranium (U)-Dissolved	0.00119		mg/L	0.02		19-MAR-19
Vanadium (V)-Dissolved	<0.00050		mg/L			19-MAR-19
Zinc (Zn)-Dissolved	0.0024		mg/L		5.0	19-MAR-19
Zirconium (Zr)-Dissolved	<0.000060		mg/L			19-MAR-19
Conductivity						
Conductivity	987		umhos/cm			19-MAR-19
Chloride in Water by IC (Low Level)						
Chloride (Cl)	54.2		mg/L		250	16-MAR-19
Alkalinity, Total (as CaCO3)						
Alkalinity, Total (as CaCO3)	346		mg/L			19-MAR-19



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ATTN: ERIC LEVAY

Date: 29-MAR-19
PO No.:
WO No.: L2245232
Project Ref: 18-0300-05
Sample ID: TH19-KGS-04
Sampled By:
Date Collected: 09-MAR-19
Lab Sample ID: L2245232-7
Matrix: WATER

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
<p>CDWQG = Health Canada Guideline Limits updated</p> <p>* CDWQG for Nitrate+Nitrite-N is the limit for nitrate only. If present as Nitrate then the limit is 10mg/L < or N.D. = less than detection limit. * Turbidity guideline based on membrane filtration. For guidelines on conventional treatment and slow sand or diatomaceous earth filtration please see Summary Table of Guidelines for Canadian Drinking Water Quality - A blank entry designates no known limit. - A shaded value in the Results column exceeds CDWQG MAC and/ or Aesthetic Objective.</p>	MAY 2018					
<p>Approved by <u><i>Hua Wo</i></u> Hua Wo Account Manager</p>						



Date: 29-MAR-19

PO No.:

WO No.: L2245232

Project Ref: 18-0300-05

Sample ID: TRIP BLANK

Sampled By:

Date Collected:

Lab Sample ID: L2245232-8

Matrix: WATER

KGS Group Consultants (Winnipeg)
865 Waverly Street - 3rd Floor
Winnipeg MB R3T 5P4
ATTN: ERIC LEVAY

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
ROU4W Dissolved						
Bicarbonate (HCO3)	2.1		mg/L			20-MAR-19
Carbonate (CO3)	<0.60		mg/L			20-MAR-19
Hydroxide (OH)	<0.34		mg/L			20-MAR-19
*Nitrate and Nitrite as N	<0.0051		mg/L	10		21-MAR-19
pH						
pH	5.92		pH units			19-MAR-19
Turbidity						
*Turbidity	<0.10		NTU			16-MAR-19
TDS calculated						
TDS (Calculated)	<5.0		mg/L		500	20-MAR-19
Sulfate in Water by IC						
Sulfate (SO4)	<0.30		mg/L		500	16-MAR-19
Nitrite in Water by IC (Low Level)						
*Nitrite (as N)	<0.0010		mg/L	1		16-MAR-19
Nitrate in Water by IC (Low Level)						
*Nitrate (as N)	<0.0050		mg/L	10		16-MAR-19
Ion Balance Calculation						
Hardness Calculated						
Hardness (as CaCO3)	<0.20		mg/L		500	20-MAR-19
Fluoride in Water by IC						
Fluoride (F)	<0.020		mg/L	1.5		16-MAR-19
Dissolved Metals in Water by CRC ICPMS						
Dissolved Metals	LAB					19-MAR-19
Filtration Location						
Aluminum (Al)-Dissolved	<0.0010		mg/L		0.1	19-MAR-19
Antimony (Sb)-Dissolved	<0.00010		mg/L	0.006		19-MAR-19
Arsenic (As)-Dissolved	<0.00010		mg/L	0.01		19-MAR-19
Barium (Ba)-Dissolved	<0.00010		mg/L	1		19-MAR-19
Beryllium (Be)-Dissolved	<0.00010		mg/L			19-MAR-19
Bismuth (Bi)-Dissolved	<0.000050		mg/L			19-MAR-19
Boron (B)-Dissolved	<0.010		mg/L	5		19-MAR-19
Cadmium (Cd)-Dissolved	<0.000050		mg/L	0.005		19-MAR-19
Calcium (Ca)-Dissolved	<0.050		mg/L			19-MAR-19
Cesium (Cs)-Dissolved	<0.000010		mg/L			19-MAR-19
Chromium (Cr)-Dissolved	<0.00010		mg/L	0.05		19-MAR-19
Cobalt (Co)-Dissolved	<0.00010		mg/L			19-MAR-19
Copper (Cu)-Dissolved	<0.00020		mg/L	2.0	1.0	19-MAR-19
Iron (Fe)-Dissolved	<0.010		mg/L		0.3	19-MAR-19
Lead (Pb)-Dissolved	<0.000050		mg/L	0.01		19-MAR-19

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KGS Group Consultants (Winnipeg)
865 Waverly Street - 3rd Floor
Winnipeg MB R3T 5P4
ATTN: ERIC LEVAY


Date: 29-MAR-19
PO No.:
WO No.: L2245232
Project Ref: 18-0300-05
Sample ID: TRIP BLANK
Sampled By:
Date Collected:
Lab Sample ID: L2245232-8
Matrix: WATER

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
ROU4W Dissolved						
Dissolved Metals in Water by CRC ICPMS						
Lithium (Li)-Dissolved	<0.0010		mg/L			19-MAR-19
Magnesium (Mg)-Dissolved	<0.0050		mg/L			19-MAR-19
Manganese (Mn)-Dissolved	<0.00010		mg/L		0.05	19-MAR-19
Molybdenum (Mo)-Dissolved	<0.000050		mg/L			19-MAR-19
Nickel (Ni)-Dissolved	<0.00050		mg/L			19-MAR-19
Phosphorus (P)-Dissolved	<0.030		mg/L			19-MAR-19
Potassium (K)-Dissolved	<0.050		mg/L			19-MAR-19
Rubidium (Rb)-Dissolved	<0.00020		mg/L			19-MAR-19
Selenium (Se)-Dissolved	<0.000050		mg/L	0.05		19-MAR-19
Silicon (Si)-Dissolved	<0.050		mg/L			19-MAR-19
Silver (Ag)-Dissolved	<0.000010		mg/L			19-MAR-19
Sodium (Na)-Dissolved	<0.050		mg/L		200	19-MAR-19
Strontium (Sr)-Dissolved	<0.00010		mg/L			19-MAR-19
Sulfur (S)-Dissolved	<0.50		mg/L			19-MAR-19
Tellurium (Te)-Dissolved	<0.00020		mg/L			19-MAR-19
Thallium (Tl)-Dissolved	<0.000010		mg/L			19-MAR-19
Thorium (Th)-Dissolved	<0.00010		mg/L			19-MAR-19
Tin (Sn)-Dissolved	<0.00010		mg/L			19-MAR-19
Titanium (Ti)-Dissolved	<0.00030		mg/L			19-MAR-19
Tungsten (W)-Dissolved	<0.00010		mg/L			19-MAR-19
Uranium (U)-Dissolved	<0.000010		mg/L	0.02		19-MAR-19
Vanadium (V)-Dissolved	<0.00050		mg/L			19-MAR-19
Zinc (Zn)-Dissolved	<0.0010		mg/L		5.0	19-MAR-19
Zirconium (Zr)-Dissolved	<0.000060		mg/L			19-MAR-19
Conductivity						
Conductivity	1.0		umhos/cm			19-MAR-19
Chloride in Water by IC (Low Level)						
Chloride (Cl)	<0.10		mg/L		250	16-MAR-19
Alkalinity, Total (as CaCO3)						
Alkalinity, Total (as CaCO3)	1.7		mg/L			19-MAR-19
Total Coliform and E.coli						
Total Coliforms	0		MPN/100mL	0		16-MAR-19
Escherichia Coli	0		MPN/100mL	0		16-MAR-19



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Date: 29-MAR-19
PO No.:
WO No.: L2245232
Project Ref: 18-0300-05
Sample ID: TRIP BLANK
Sampled By:
Date Collected:
Lab Sample ID: L2245232-8
Matrix: WATER

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
<p>CDWQG = Health Canada Guideline Limits updated</p> <p>* CDWQG for Nitrate+Nitrite-N is the limit for nitrate only. If present as Nitrate then the limit is 10mg/L < or N.D. = less than detection limit. * Turbidity guideline based on membrane filtration. For guidelines on conventional treatment and slow sand or diatomaceous earth filtration please see Summary Table of Guidelines for Canadian Drinking Water Quality - A blank entry designates no known limit. - A shaded value in the Results column exceeds CDWQG MAC and/ or Aesthetic Objective.</p>	MAY 2018					
<p>Approved by </p> <hr/> <p>Hua Wo Account Manager</p>						



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Winnipeg MB R3T 5P4
ATTN: ERIC LEVAY

Date: 29-MAR-19
PO No.:
WO No.: L2245232
Project Ref: 18-0300-05
Sample ID: TH19-KGS-14A
Sampled By:
Date Collected: 08-MAR-19
Lab Sample ID: L2245232-9
Matrix: WATER

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
ROU4W Dissolved						
Bicarbonate (HCO3)	403		mg/L			20-MAR-19
Carbonate (CO3)	<0.60		mg/L			20-MAR-19
Hydroxide (OH)	<0.34		mg/L			20-MAR-19
*Nitrate and Nitrite as N	0.0217		mg/L	10		21-MAR-19
pH						
pH	7.58		pH units			19-MAR-19
Turbidity						
*Turbidity	>4000		NTU			16-MAR-19
TDS calculated						
TDS (Calculated)	305		mg/L		500	20-MAR-19
Sulfate in Water by IC						
Sulfate (SO4)	3.44		mg/L		500	16-MAR-19
Nitrite in Water by IC (Low Level)						
*Nitrite (as N)	0.0029		mg/L	1		16-MAR-19
Nitrate in Water by IC (Low Level)						
*Nitrate (as N)	0.0189		mg/L	10		16-MAR-19
Ion Balance Calculation						
Hardness Calculated						
Hardness (as CaCO3)	296		mg/L		500	20-MAR-19
Fluoride in Water by IC						
Fluoride (F)	0.216		mg/L	1.5		16-MAR-19
Dissolved Metals in Water by CRC ICPMS						
Dissolved Metals	FIELD					19-MAR-19
Filtration Location						
Aluminum (Al)-Dissolved	0.0096		mg/L		0.1	19-MAR-19
Antimony (Sb)-Dissolved	<0.00010		mg/L	0.006		19-MAR-19
Arsenic (As)-Dissolved	0.00137		mg/L	0.01		19-MAR-19
Barium (Ba)-Dissolved	0.0374		mg/L	1		19-MAR-19
Beryllium (Be)-Dissolved	<0.00010		mg/L			19-MAR-19
Bismuth (Bi)-Dissolved	<0.000050		mg/L			19-MAR-19
Boron (B)-Dissolved	0.023		mg/L	5		19-MAR-19
Cadmium (Cd)-Dissolved	0.0000101		mg/L	0.005		19-MAR-19
Calcium (Ca)-Dissolved	68.2		mg/L			19-MAR-19
Cesium (Cs)-Dissolved	<0.000010		mg/L			19-MAR-19
Chromium (Cr)-Dissolved	0.00011		mg/L	0.05		19-MAR-19
Cobalt (Co)-Dissolved	0.00019		mg/L			19-MAR-19
Copper (Cu)-Dissolved	0.00096		mg/L	2.0	1.0	19-MAR-19
Iron (Fe)-Dissolved	0.433		mg/L		0.3	19-MAR-19
Lead (Pb)-Dissolved	<0.000050		mg/L	0.01		19-MAR-19



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ATTN: ERIC LEVAY

Date: 29-MAR-19
PO No.:
WO No.: L2245232
Project Ref: 18-0300-05
Sample ID: TH19-KGS-14A
Sampled By:
Date Collected: 08-MAR-19
Lab Sample ID: L2245232-9
Matrix: WATER

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
ROU4W Dissolved						
Dissolved Metals in Water by CRC ICPMS						
Lithium (Li)-Dissolved	0.0059		mg/L			19-MAR-19
Magnesium (Mg)-Dissolved	30.5		mg/L			19-MAR-19
Manganese (Mn)-Dissolved	0.142		mg/L		0.05	19-MAR-19
Molybdenum (Mo)-Dissolved	0.000266		mg/L			19-MAR-19
Nickel (Ni)-Dissolved	0.00052		mg/L			19-MAR-19
Phosphorus (P)-Dissolved	0.035		mg/L			19-MAR-19
Potassium (K)-Dissolved	0.791		mg/L			19-MAR-19
Rubidium (Rb)-Dissolved	0.00076		mg/L			19-MAR-19
Selenium (Se)-Dissolved	0.000088		mg/L	0.05		19-MAR-19
Silicon (Si)-Dissolved	5.06		mg/L			19-MAR-19
Silver (Ag)-Dissolved	<0.000010		mg/L			19-MAR-19
Sodium (Na)-Dissolved	2.84		mg/L		200	19-MAR-19
Strontium (Sr)-Dissolved	0.0961		mg/L			19-MAR-19
Sulfur (S)-Dissolved	1.36		mg/L			19-MAR-19
Tellurium (Te)-Dissolved	<0.00020		mg/L			19-MAR-19
Thallium (Tl)-Dissolved	<0.000010		mg/L			19-MAR-19
Thorium (Th)-Dissolved	<0.00010		mg/L			19-MAR-19
Tin (Sn)-Dissolved	0.00026		mg/L			19-MAR-19
Titanium (Ti)-Dissolved	0.00049		mg/L			19-MAR-19
Tungsten (W)-Dissolved	<0.00010		mg/L			19-MAR-19
Uranium (U)-Dissolved	0.000417		mg/L	0.02		19-MAR-19
Vanadium (V)-Dissolved	<0.00050		mg/L			19-MAR-19
Zinc (Zn)-Dissolved	0.0142		mg/L		5.0	19-MAR-19
Zirconium (Zr)-Dissolved	0.000145		mg/L			19-MAR-19
Conductivity						
Conductivity	483		umhos/cm			19-MAR-19
Chloride in Water by IC (Low Level)						
Chloride (Cl)	1.08		mg/L		250	16-MAR-19
Alkalinity, Total (as CaCO3)						
Alkalinity, Total (as CaCO3)	330		mg/L			19-MAR-19



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Date: 29-MAR-19
PO No.:
WO No.: L2245232
Project Ref: 18-0300-05
Sample ID: TH19-KGS-14A
Sampled By:
Date Collected: 08-MAR-19
Lab Sample ID: L2245232-9
Matrix: WATER

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
<p>CDWQG = Health Canada Guideline Limits updated</p> <p>* CDWQG for Nitrate+Nitrite-N is the limit for nitrate only. If present as Nitrate then the limit is 10mg/L < or N.D. = less than detection limit. * Turbidity guideline based on membrane filtration. For guidelines on conventional treatment and slow sand or diatomaceous earth filtration please see Summary Table of Guidelines for Canadian Drinking Water Quality - A blank entry designates no known limit. - A shaded value in the Results column exceeds CDWQG MAC and/ or Aesthetic Objective.</p>	MAY 2018					
<p>Approved by <u><i>Hua Wo</i></u> Hua Wo Account Manager</p>						



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Date: 29-MAR-19
PO No.:
WO No.: L2245232
Project Ref: 18-0300-05
Sample ID: TH19-KGS-07A
Sampled By:
Date Collected: 07-MAR-19
Lab Sample ID: L2245232-10
Matrix: WATER

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
ROU4W Dissolved						
Bicarbonate (HCO3)	530		mg/L			20-MAR-19
Carbonate (CO3)	<0.60		mg/L			20-MAR-19
Hydroxide (OH)	<0.34		mg/L			20-MAR-19
*Nitrate and Nitrite as N	0.0180		mg/L	10		21-MAR-19
pH						
pH	7.74		pH units			19-MAR-19
Turbidity						
*Turbidity	>4000		NTU			16-MAR-19
TDS calculated						
TDS (Calculated)	419		mg/L		500	20-MAR-19
Sulfate in Water by IC						
Sulfate (SO4)	12.2		mg/L		500	16-MAR-19
Nitrite in Water by IC (Low Level)						
*Nitrite (as N)	0.0051		mg/L	1		16-MAR-19
Nitrate in Water by IC (Low Level)						
*Nitrate (as N)	0.0129		mg/L	10		16-MAR-19
Ion Balance Calculation						
Hardness Calculated						
Hardness (as CaCO3)	393		mg/L		500	20-MAR-19
Fluoride in Water by IC						
Fluoride (F)	0.373		mg/L	1.5		16-MAR-19
Dissolved Metals in Water by CRC ICPMS						
Dissolved Metals	FIELD					19-MAR-19
Filtration Location						
Aluminum (Al)-Dissolved	0.0161		mg/L		0.1	19-MAR-19
Antimony (Sb)-Dissolved	0.00016		mg/L	0.006		19-MAR-19
Arsenic (As)-Dissolved	0.00217		mg/L	0.01		19-MAR-19
Barium (Ba)-Dissolved	0.0671		mg/L	1		19-MAR-19
Beryllium (Be)-Dissolved	<0.00010		mg/L			19-MAR-19
Bismuth (Bi)-Dissolved	<0.000050		mg/L			19-MAR-19
Boron (B)-Dissolved	0.034		mg/L	5		19-MAR-19
Cadmium (Cd)-Dissolved	<0.0000050		mg/L	0.005		19-MAR-19
Calcium (Ca)-Dissolved	88.1		mg/L			19-MAR-19
Cesium (Cs)-Dissolved	<0.000010		mg/L			19-MAR-19
Chromium (Cr)-Dissolved	<0.00010		mg/L	0.05		19-MAR-19
Cobalt (Co)-Dissolved	<0.00010		mg/L			19-MAR-19
Copper (Cu)-Dissolved	<0.00020		mg/L	2.0	1.0	19-MAR-19
Iron (Fe)-Dissolved	0.010		mg/L		0.3	19-MAR-19
Lead (Pb)-Dissolved	<0.000050		mg/L	0.01		19-MAR-19

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865 Waverly Street - 3rd Floor
Winnipeg MB R3T 5P4
ATTN: ERIC LEVAY

Date: 29-MAR-19
PO No.:
WO No.: L2245232
Project Ref: 18-0300-05
Sample ID: TH19-KGS-07A
Sampled By:
Date Collected: 07-MAR-19
Lab Sample ID: L2245232-10
Matrix: WATER

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
ROU4W Dissolved						
Dissolved Metals in Water by CRC ICPMS						
Lithium (Li)-Dissolved	0.0167		mg/L			19-MAR-19
Magnesium (Mg)-Dissolved	42.1		mg/L			19-MAR-19
Manganese (Mn)-Dissolved	0.113		mg/L		0.05	19-MAR-19
Molybdenum (Mo)-Dissolved	0.00102		mg/L			19-MAR-19
Nickel (Ni)-Dissolved	<0.00050		mg/L			19-MAR-19
Phosphorus (P)-Dissolved	0.053		mg/L			19-MAR-19
Potassium (K)-Dissolved	2.04		mg/L			19-MAR-19
Rubidium (Rb)-Dissolved	0.00108		mg/L			19-MAR-19
Selenium (Se)-Dissolved	0.000123		mg/L	0.05		19-MAR-19
Silicon (Si)-Dissolved	13.0		mg/L			19-MAR-19
Silver (Ag)-Dissolved	<0.000010		mg/L			19-MAR-19
Sodium (Na)-Dissolved	10.2		mg/L		200	19-MAR-19
Strontium (Sr)-Dissolved	0.173		mg/L			19-MAR-19
Sulfur (S)-Dissolved	5.26		mg/L			19-MAR-19
Tellurium (Te)-Dissolved	<0.00020		mg/L			19-MAR-19
Thallium (Tl)-Dissolved	<0.000010		mg/L			19-MAR-19
Thorium (Th)-Dissolved	<0.00010		mg/L			19-MAR-19
Tin (Sn)-Dissolved	<0.00010		mg/L			19-MAR-19
Titanium (Ti)-Dissolved	<0.00030		mg/L			19-MAR-19
Tungsten (W)-Dissolved	0.00013		mg/L			19-MAR-19
Uranium (U)-Dissolved	0.000994		mg/L	0.02		19-MAR-19
Vanadium (V)-Dissolved	0.00088		mg/L			19-MAR-19
Zinc (Zn)-Dissolved	<0.0010		mg/L		5.0	19-MAR-19
Zirconium (Zr)-Dissolved	0.000144		mg/L			19-MAR-19
Conductivity						
Conductivity	689		umhos/cm			19-MAR-19
Chloride in Water by IC (Low Level)						
Chloride (Cl)	4.31		mg/L		250	16-MAR-19
Alkalinity, Total (as CaCO3)						
Alkalinity, Total (as CaCO3)	434		mg/L			19-MAR-19



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Date: 29-MAR-19
PO No.:
WO No.: L2245232
Project Ref: 18-0300-05
Sample ID: TH19-KGS-07A
Sampled By:
Date Collected: 07-MAR-19
Lab Sample ID: L2245232-10
Matrix: WATER

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
<p>CDWQG = Health Canada Guideline Limits updated</p> <p>* CDWQG for Nitrate+Nitrite-N is the limit for nitrate only. If present as Nitrate then the limit is 10mg/L < or N.D. = less than detection limit. * Turbidity guideline based on membrane filtration. For guidelines on conventional treatment and slow sand or diatomaceous earth filtration please see Summary Table of Guidelines for Canadian Drinking Water Quality - A blank entry designates no known limit. - A shaded value in the Results column exceeds CDWQG MAC and/ or Aesthetic Objective.</p>	MAY 2018					
<p>Approved by <u>Hua Wo</u> Hua Wo Account Manager</p>						



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ATTN: ERIC LEVAY

Date: 29-MAR-19
PO No.:
WO No.: L2245232
Project Ref: 18-0300-05
Sample ID: TH19-KGS-07
Sampled By:
Date Collected: 07-MAR-19
Lab Sample ID: L2245232-11
Matrix: WATER

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
ROU4W Dissolved						
Bicarbonate (HCO3)	369		mg/L			20-MAR-19
Carbonate (CO3)	<0.60		mg/L			20-MAR-19
Hydroxide (OH)	<0.34		mg/L			20-MAR-19
*Nitrate and Nitrite as N	<0.0051		mg/L	10		21-MAR-19
pH						
pH	8.16		pH units			19-MAR-19
Turbidity						
*Turbidity	101		NTU			16-MAR-19
TDS calculated						
TDS (Calculated)	391		mg/L		500	20-MAR-19
Sulfate in Water by IC						
Sulfate (SO4)	64.8		mg/L		500	16-MAR-19
Nitrite in Water by IC (Low Level)						
*Nitrite (as N)	<0.0010		mg/L	1		16-MAR-19
Nitrate in Water by IC (Low Level)						
*Nitrate (as N)	<0.0050		mg/L	10		16-MAR-19
Ion Balance Calculation						
Hardness Calculated						
Hardness (as CaCO3)	331		mg/L		500	20-MAR-19
Fluoride in Water by IC						
Fluoride (F)	0.600		mg/L	1.5		16-MAR-19
Dissolved Metals in Water by CRC ICPMS						
Dissolved Metals	FIELD					19-MAR-19
Filtration Location						
Aluminum (Al)-Dissolved	0.0014		mg/L		0.1	19-MAR-19
Antimony (Sb)-Dissolved	<0.00010		mg/L	0.006		19-MAR-19
Arsenic (As)-Dissolved	0.00025		mg/L	0.01		19-MAR-19
Barium (Ba)-Dissolved	0.0411		mg/L	1		19-MAR-19
Beryllium (Be)-Dissolved	<0.00010		mg/L			19-MAR-19
Bismuth (Bi)-Dissolved	<0.000050		mg/L			19-MAR-19
Boron (B)-Dissolved	0.112		mg/L	5		19-MAR-19
Cadmium (Cd)-Dissolved	<0.0000050		mg/L	0.005		19-MAR-19
Calcium (Ca)-Dissolved	41.9		mg/L			19-MAR-19
Cesium (Cs)-Dissolved	<0.000010		mg/L			19-MAR-19
Chromium (Cr)-Dissolved	<0.00010		mg/L	0.05		19-MAR-19
Cobalt (Co)-Dissolved	0.00056		mg/L			19-MAR-19
Copper (Cu)-Dissolved	<0.00020		mg/L	2.0	1.0	19-MAR-19
Iron (Fe)-Dissolved	0.778		mg/L		0.3	19-MAR-19
Lead (Pb)-Dissolved	<0.000050		mg/L	0.01		19-MAR-19



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ATTN: ERIC LEVAY

Date: 29-MAR-19
PO No.:
WO No.: L2245232
Project Ref: 18-0300-05
Sample ID: TH19-KGS-07
Sampled By:
Date Collected: 07-MAR-19
Lab Sample ID: L2245232-11
Matrix: WATER

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
ROU4W Dissolved						
Dissolved Metals in Water by CRC ICPMS						
Lithium (Li)-Dissolved	0.0223		mg/L			19-MAR-19
Magnesium (Mg)-Dissolved	55.0		mg/L			19-MAR-19
Manganese (Mn)-Dissolved	0.00748		mg/L		0.05	19-MAR-19
Molybdenum (Mo)-Dissolved	0.00482		mg/L			19-MAR-19
Nickel (Ni)-Dissolved	<0.00050		mg/L			19-MAR-19
Phosphorus (P)-Dissolved	<0.030		mg/L			19-MAR-19
Potassium (K)-Dissolved	4.29		mg/L			19-MAR-19
Rubidium (Rb)-Dissolved	0.00245		mg/L			19-MAR-19
Selenium (Se)-Dissolved	<0.000050		mg/L	0.05		19-MAR-19
Silicon (Si)-Dissolved	4.56		mg/L			19-MAR-19
Silver (Ag)-Dissolved	<0.000010		mg/L			19-MAR-19
Sodium (Na)-Dissolved	28.2		mg/L		200	19-MAR-19
Strontium (Sr)-Dissolved	0.198		mg/L			19-MAR-19
Sulfur (S)-Dissolved	22.0		mg/L			19-MAR-19
Tellurium (Te)-Dissolved	<0.00020		mg/L			19-MAR-19
Thallium (Tl)-Dissolved	<0.000010		mg/L			19-MAR-19
Thorium (Th)-Dissolved	<0.00010		mg/L			19-MAR-19
Tin (Sn)-Dissolved	<0.00010		mg/L			19-MAR-19
Titanium (Ti)-Dissolved	<0.00030		mg/L			19-MAR-19
Tungsten (W)-Dissolved	0.00406		mg/L			19-MAR-19
Uranium (U)-Dissolved	0.000404		mg/L	0.02		19-MAR-19
Vanadium (V)-Dissolved	<0.00050		mg/L			19-MAR-19
Zinc (Zn)-Dissolved	0.0017		mg/L		5.0	19-MAR-19
Zirconium (Zr)-Dissolved	<0.000060		mg/L			19-MAR-19
Conductivity						
Conductivity	654		umhos/cm			19-MAR-19
Chloride in Water by IC (Low Level)						
Chloride (Cl)	14.9		mg/L		250	16-MAR-19
Alkalinity, Total (as CaCO3)						
Alkalinity, Total (as CaCO3)	303		mg/L			19-MAR-19



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Date: 29-MAR-19
PO No.:
WO No.: L2245232
Project Ref: 18-0300-05
Sample ID: TH19-KGS-07
Sampled By:
Date Collected: 07-MAR-19
Lab Sample ID: L2245232-11
Matrix: WATER

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
<p>CDWQG = Health Canada Guideline Limits updated</p> <p>* CDWQG for Nitrate+Nitrite-N is the limit for nitrate only. If present as Nitrate then the limit is 10mg/L < or N.D. = less than detection limit. * Turbidity guideline based on membrane filtration. For guidelines on conventional treatment and slow sand or diatomaceous earth filtration please see Summary Table of Guidelines for Canadian Drinking Water Quality - A blank entry designates no known limit. - A shaded value in the Results column exceeds CDWQG MAC and/ or Aesthetic Objective.</p>	MAY 2018					
<p>Approved by <u><i>Hua Wo</i></u> Hua Wo Account Manager</p>						



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ATTN: ERIC LEVAY

Date: 29-MAR-19
PO No.:
WO No.: L2245232
Project Ref: 18-0300-05
Sample ID: TH19-KGS-01B
Sampled By:
Date Collected: 09-MAR-19
Lab Sample ID: L2245232-12
Matrix: WATER

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
ROU4W Dissolved						
Bicarbonate (HCO3)	458		mg/L			20-MAR-19
Carbonate (CO3)	<0.60		mg/L			20-MAR-19
Hydroxide (OH)	<0.34		mg/L			20-MAR-19
*Nitrate and Nitrite as N	<0.010		mg/L	10		21-MAR-19
pH						
pH	8.14		pH units			19-MAR-19
Turbidity						
*Turbidity	>4000		NTU			16-MAR-19
TDS calculated						
TDS (Calculated)	497		mg/L		500	20-MAR-19
Sulfate in Water by IC						
Sulfate (SO4)	94.7		mg/L		500	16-MAR-19
Nitrite in Water by IC (Low Level)						
*Nitrite (as N)	<0.0020	DLM	mg/L	1		16-MAR-19
Nitrate in Water by IC (Low Level)						
*Nitrate (as N)	<0.010	DLM	mg/L	10		16-MAR-19
Ion Balance Calculation						
Hardness Calculated						
Hardness (as CaCO3)	376		mg/L		500	20-MAR-19
Fluoride in Water by IC						
Fluoride (F)	0.287		mg/L	1.5		16-MAR-19
Dissolved Metals in Water by CRC ICPMS						
Dissolved Metals	FIELD					19-MAR-19
Filtration Location						
Aluminum (Al)-Dissolved	<0.0010		mg/L		0.1	19-MAR-19
Antimony (Sb)-Dissolved	<0.00010		mg/L	0.006		19-MAR-19
Arsenic (As)-Dissolved	0.00012		mg/L	0.01		19-MAR-19
Barium (Ba)-Dissolved	0.0202		mg/L	1		19-MAR-19
Beryllium (Be)-Dissolved	<0.00010		mg/L			19-MAR-19
Bismuth (Bi)-Dissolved	<0.000050		mg/L			19-MAR-19
Boron (B)-Dissolved	0.158		mg/L	5		19-MAR-19
Cadmium (Cd)-Dissolved	<0.000050		mg/L	0.005		19-MAR-19
Calcium (Ca)-Dissolved	51.3		mg/L			19-MAR-19
Cesium (Cs)-Dissolved	<0.000010		mg/L			19-MAR-19
Chromium (Cr)-Dissolved	<0.00010		mg/L	0.05		19-MAR-19
Cobalt (Co)-Dissolved	0.00033		mg/L			19-MAR-19
Copper (Cu)-Dissolved	<0.00020		mg/L	2.0	1.0	19-MAR-19
Iron (Fe)-Dissolved	0.921		mg/L		0.3	19-MAR-19
Lead (Pb)-Dissolved	<0.000050		mg/L	0.01		19-MAR-19

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ATTN: ERIC LEVAY

Date: 29-MAR-19
PO No.:
WO No.: L2245232
Project Ref: 18-0300-05
Sample ID: TH19-KGS-01B
Sampled By:
Date Collected: 09-MAR-19
Lab Sample ID: L2245232-12
Matrix: WATER

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
ROU4W Dissolved						
Dissolved Metals in Water by CRC ICPMS						
Lithium (Li)-Dissolved	0.0286		mg/L			19-MAR-19
Magnesium (Mg)-Dissolved	60.1		mg/L			19-MAR-19
Manganese (Mn)-Dissolved	0.0241		mg/L		0.05	19-MAR-19
Molybdenum (Mo)-Dissolved	0.00604		mg/L			19-MAR-19
Nickel (Ni)-Dissolved	0.00121		mg/L			19-MAR-19
Phosphorus (P)-Dissolved	<0.030		mg/L			19-MAR-19
Potassium (K)-Dissolved	4.95		mg/L			19-MAR-19
Rubidium (Rb)-Dissolved	0.00252		mg/L			19-MAR-19
Selenium (Se)-Dissolved	<0.000050		mg/L	0.05		19-MAR-19
Silicon (Si)-Dissolved	5.01		mg/L			19-MAR-19
Silver (Ag)-Dissolved	<0.000010		mg/L			19-MAR-19
Sodium (Na)-Dissolved	38.4		mg/L		200	19-MAR-19
Strontium (Sr)-Dissolved	0.216		mg/L			19-MAR-19
Sulfur (S)-Dissolved	31.6		mg/L			19-MAR-19
Tellurium (Te)-Dissolved	<0.00020		mg/L			19-MAR-19
Thallium (Tl)-Dissolved	0.000014		mg/L			19-MAR-19
Thorium (Th)-Dissolved	<0.00010		mg/L			19-MAR-19
Tin (Sn)-Dissolved	<0.00010		mg/L			19-MAR-19
Titanium (Ti)-Dissolved	<0.00030		mg/L			19-MAR-19
Tungsten (W)-Dissolved	0.00015		mg/L			19-MAR-19
Uranium (U)-Dissolved	0.000448		mg/L	0.02		19-MAR-19
Vanadium (V)-Dissolved	<0.00050		mg/L			19-MAR-19
Zinc (Zn)-Dissolved	0.0020		mg/L		5.0	19-MAR-19
Zirconium (Zr)-Dissolved	<0.000060		mg/L			19-MAR-19
Conductivity						
Conductivity	773		umhos/cm			19-MAR-19
Chloride in Water by IC (Low Level)						
Chloride (Cl)	21.6		mg/L		250	16-MAR-19
Alkalinity, Total (as CaCO3)						
Alkalinity, Total (as CaCO3)	376		mg/L			19-MAR-19



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Date: 29-MAR-19
PO No.:
WO No.: L2245232
Project Ref: 18-0300-05
Sample ID: TH19-KGS-01B
Sampled By:
Date Collected: 09-MAR-19
Lab Sample ID: L2245232-12
Matrix: WATER

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
<p>CDWQG = Health Canada Guideline Limits updated</p> <p>* CDWQG for Nitrate+Nitrite-N is the limit for nitrate only. If present as Nitrate then the limit is 10mg/L < or N.D. = less than detection limit. * Turbidity guideline based on membrane filtration. For guidelines on conventional treatment and slow sand or diatomaceous earth filtration please see Summary Table of Guidelines for Canadian Drinking Water Quality - A blank entry designates no known limit. - A shaded value in the Results column exceeds CDWQG MAC and/ or Aesthetic Objective.</p>	MAY 2018					
<p>Approved by <u><i>Hua Wo</i></u> Hua Wo Account Manager</p>						



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Date: 29-MAR-19
PO No.:
WO No.: L2245232
Project Ref: 18-0300-05
Sample ID: TH19-KGS-500
Sampled By:
Date Collected: 15-MAR-19
Lab Sample ID: L2245232-13
Matrix: WATER

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
ROU4W Dissolved						
Bicarbonate (HCO3)	431		mg/L			20-MAR-19
Carbonate (CO3)	<0.60		mg/L			20-MAR-19
Hydroxide (OH)	<0.34		mg/L			20-MAR-19
*Nitrate and Nitrite as N	0.141		mg/L	10		21-MAR-19
pH						
pH	7.96		pH units			19-MAR-19
Turbidity						
*Turbidity	896		NTU			16-MAR-19
TDS calculated						
TDS (Calculated)	408		mg/L		500	20-MAR-19
Sulfate in Water by IC						
Sulfate (SO4)	54.0		mg/L		500	16-MAR-19
Nitrite in Water by IC (Low Level)						
*Nitrite (as N)	0.0071		mg/L	1		16-MAR-19
Nitrate in Water by IC (Low Level)						
*Nitrate (as N)	0.134		mg/L	10		16-MAR-19
Ion Balance Calculation						
Hardness Calculated						
Hardness (as CaCO3)	360		mg/L		500	20-MAR-19
Fluoride in Water by IC						
Fluoride (F)	0.416		mg/L	1.5		16-MAR-19
Dissolved Metals in Water by CRC ICPMS						
Dissolved Metals	FIELD					19-MAR-19
Filtration Location						
Aluminum (Al)-Dissolved	0.0034		mg/L		0.1	19-MAR-19
Antimony (Sb)-Dissolved	0.00086		mg/L	0.006		19-MAR-19
Arsenic (As)-Dissolved	0.00177		mg/L	0.01		19-MAR-19
Barium (Ba)-Dissolved	0.0428		mg/L	1		19-MAR-19
Beryllium (Be)-Dissolved	<0.00010		mg/L			19-MAR-19
Bismuth (Bi)-Dissolved	<0.000050		mg/L			19-MAR-19
Boron (B)-Dissolved	0.158		mg/L	5		19-MAR-19
Cadmium (Cd)-Dissolved	0.000090		mg/L	0.005		19-MAR-19
Calcium (Ca)-Dissolved	58.8		mg/L			19-MAR-19
Cesium (Cs)-Dissolved	0.000014		mg/L			19-MAR-19
Chromium (Cr)-Dissolved	<0.00010		mg/L	0.05		19-MAR-19
Cobalt (Co)-Dissolved	0.00034		mg/L			19-MAR-19
Copper (Cu)-Dissolved	0.00076		mg/L	2.0	1.0	19-MAR-19
Iron (Fe)-Dissolved	<0.010		mg/L		0.3	19-MAR-19
Lead (Pb)-Dissolved	0.000056		mg/L	0.01		19-MAR-19

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Date: 29-MAR-19
PO No.:
WO No.: L2245232
Project Ref: 18-0300-05
Sample ID: TH19-KGS-500
Sampled By:
Date Collected: 15-MAR-19
Lab Sample ID: L2245232-13
Matrix: WATER

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
ROU4W Dissolved						
Dissolved Metals in Water by CRC ICPMS						
Lithium (Li)-Dissolved	0.0227		mg/L			19-MAR-19
Magnesium (Mg)-Dissolved	51.7		mg/L			19-MAR-19
Manganese (Mn)-Dissolved	0.0638		mg/L		0.05	19-MAR-19
Molybdenum (Mo)-Dissolved	0.00483		mg/L			19-MAR-19
Nickel (Ni)-Dissolved	0.00235		mg/L			19-MAR-19
Phosphorus (P)-Dissolved	<0.030		mg/L			19-MAR-19
Potassium (K)-Dissolved	4.50		mg/L			19-MAR-19
Rubidium (Rb)-Dissolved	0.00304		mg/L			19-MAR-19
Selenium (Se)-Dissolved	0.000106		mg/L	0.05		19-MAR-19
Silicon (Si)-Dissolved	4.59		mg/L			19-MAR-19
Silver (Ag)-Dissolved	<0.000010		mg/L			19-MAR-19
Sodium (Na)-Dissolved	21.1		mg/L		200	19-MAR-19
Strontium (Sr)-Dissolved	0.160		mg/L			19-MAR-19
Sulfur (S)-Dissolved	18.2		mg/L			19-MAR-19
Tellurium (Te)-Dissolved	<0.00020		mg/L			19-MAR-19
Thallium (Tl)-Dissolved	<0.000010		mg/L			19-MAR-19
Thorium (Th)-Dissolved	<0.00010		mg/L			19-MAR-19
Tin (Sn)-Dissolved	<0.00010		mg/L			19-MAR-19
Titanium (Ti)-Dissolved	<0.00030		mg/L			19-MAR-19
Tungsten (W)-Dissolved	0.00213		mg/L			19-MAR-19
Uranium (U)-Dissolved	0.00123		mg/L	0.02		19-MAR-19
Vanadium (V)-Dissolved	<0.00050		mg/L			19-MAR-19
Zinc (Zn)-Dissolved	0.0051		mg/L		5.0	19-MAR-19
Zirconium (Zr)-Dissolved	0.000103		mg/L			19-MAR-19
Conductivity						
Conductivity	674		umhos/cm			19-MAR-19
Chloride in Water by IC (Low Level)						
Chloride (Cl)	5.52		mg/L		250	16-MAR-19
Alkalinity, Total (as CaCO3)						
Alkalinity, Total (as CaCO3)	353		mg/L			19-MAR-19



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ATTN: ERIC LEVAY

Date: 29-MAR-19
PO No.:
WO No.: L2245232
Project Ref: 18-0300-05
Sample ID: TH19-KGS-500
Sampled By:
Date Collected: 15-MAR-19
Lab Sample ID: L2245232-13
Matrix: WATER

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
<p>CDWQG = Health Canada Guideline Limits updated</p> <p>* CDWQG for Nitrate+Nitrite-N is the limit for nitrate only. If present as Nitrate then the limit is 10mg/L < or N.D. = less than detection limit. * Turbidity guideline based on membrane filtration. For guidelines on conventional treatment and slow sand or diatomaceous earth filtration please see Summary Table of Guidelines for Canadian Drinking Water Quality - A blank entry designates no known limit. - A shaded value in the Results column exceeds CDWQG MAC and/ or Aesthetic Objective.</p>	MAY 2018					
<p>Approved by </p> <hr/> <p>Hua Wo Account Manager</p>						



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ATTN: ERIC LEVAY

Date: 29-MAR-19
PO No.:
WO No.: L2245232
Project Ref: 18-0300-05
Sample ID: TH19-KGS-16
Sampled By:
Date Collected: 15-MAR-19
Lab Sample ID: L2245232-14
Matrix: WATER

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
ROU4W Dissolved						
Bicarbonate (HCO3)	410		mg/L			20-MAR-19
Carbonate (CO3)	<0.60		mg/L			20-MAR-19
Hydroxide (OH)	<0.34		mg/L			20-MAR-19
*Nitrate and Nitrite as N	0.107		mg/L	10		21-MAR-19
pH						
pH	8.07		pH units			19-MAR-19
Turbidity						
*Turbidity	>4000		NTU			16-MAR-19
TDS calculated						
TDS (Calculated)	390		mg/L		500	20-MAR-19
Sulfate in Water by IC						
Sulfate (SO4)	44.5		mg/L		500	16-MAR-19
Nitrite in Water by IC (Low Level)						
*Nitrite (as N)	0.0063		mg/L	1		16-MAR-19
Nitrate in Water by IC (Low Level)						
*Nitrate (as N)	0.101		mg/L	10		16-MAR-19
Ion Balance Calculation						
Hardness Calculated						
Hardness (as CaCO3)	374		mg/L		500	20-MAR-19
Fluoride in Water by IC						
Fluoride (F)	0.446		mg/L	1.5		16-MAR-19
Dissolved Metals in Water by CRC ICPMS						
Dissolved Metals	FIELD					19-MAR-19
Filtration Location						
Aluminum (Al)-Dissolved	0.0339		mg/L		0.1	19-MAR-19
Antimony (Sb)-Dissolved	0.00094		mg/L	0.006		19-MAR-19
Arsenic (As)-Dissolved	0.00185		mg/L	0.01		19-MAR-19
Barium (Ba)-Dissolved	0.0449		mg/L	1		19-MAR-19
Beryllium (Be)-Dissolved	<0.00010		mg/L			19-MAR-19
Bismuth (Bi)-Dissolved	<0.000050		mg/L			19-MAR-19
Boron (B)-Dissolved	0.169		mg/L	5		19-MAR-19
Cadmium (Cd)-Dissolved	0.000090		mg/L	0.005		19-MAR-19
Calcium (Ca)-Dissolved	61.3		mg/L			19-MAR-19
Cesium (Cs)-Dissolved	0.000020		mg/L			19-MAR-19
Chromium (Cr)-Dissolved	0.00014		mg/L	0.05		19-MAR-19
Cobalt (Co)-Dissolved	0.00036		mg/L			19-MAR-19
Copper (Cu)-Dissolved	0.00165		mg/L	2.0	1.0	19-MAR-19
Iron (Fe)-Dissolved	0.018		mg/L		0.3	19-MAR-19
Lead (Pb)-Dissolved	0.000084		mg/L	0.01		19-MAR-19



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Date: 29-MAR-19
PO No.:
WO No.: L2245232
Project Ref: 18-0300-05
Sample ID: TH19-KGS-16
Sampled By:
Date Collected: 15-MAR-19
Lab Sample ID: L2245232-14
Matrix: WATER

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
ROU4W Dissolved						
Dissolved Metals in Water by CRC ICPMS						
Lithium (Li)-Dissolved	0.0233		mg/L			19-MAR-19
Magnesium (Mg)-Dissolved	53.7		mg/L			19-MAR-19
Manganese (Mn)-Dissolved	0.0665		mg/L		0.05	19-MAR-19
Molybdenum (Mo)-Dissolved	0.00749		mg/L			19-MAR-19
Nickel (Ni)-Dissolved	0.00254		mg/L			19-MAR-19
Phosphorus (P)-Dissolved	<0.030		mg/L			19-MAR-19
Potassium (K)-Dissolved	4.57		mg/L			19-MAR-19
Rubidium (Rb)-Dissolved	0.00326		mg/L			19-MAR-19
Selenium (Se)-Dissolved	0.000113		mg/L	0.05		19-MAR-19
Silicon (Si)-Dissolved	4.87		mg/L			19-MAR-19
Silver (Ag)-Dissolved	<0.000010		mg/L			19-MAR-19
Sodium (Na)-Dissolved	21.9		mg/L		200	19-MAR-19
Strontium (Sr)-Dissolved	0.162		mg/L			19-MAR-19
Sulfur (S)-Dissolved	18.9		mg/L			19-MAR-19
Tellurium (Te)-Dissolved	<0.00020		mg/L			19-MAR-19
Thallium (Tl)-Dissolved	<0.000010		mg/L			19-MAR-19
Thorium (Th)-Dissolved	<0.00010		mg/L			19-MAR-19
Tin (Sn)-Dissolved	<0.00010		mg/L			19-MAR-19
Titanium (Ti)-Dissolved	0.00115		mg/L			19-MAR-19
Tungsten (W)-Dissolved	0.00208		mg/L			19-MAR-19
Uranium (U)-Dissolved	0.00131		mg/L	0.02		19-MAR-19
Vanadium (V)-Dissolved	<0.00050		mg/L			19-MAR-19
Zinc (Zn)-Dissolved	0.0079		mg/L		5.0	19-MAR-19
Zirconium (Zr)-Dissolved	0.000265		mg/L			19-MAR-19
Conductivity						
Conductivity	632		umhos/cm			19-MAR-19
Chloride in Water by IC (Low Level)						
Chloride (Cl)	2.78		mg/L		250	16-MAR-19
Alkalinity, Total (as CaCO3)						
Alkalinity, Total (as CaCO3)	336		mg/L			19-MAR-19



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Winnipeg MB R3T 5P4
ATTN: ERIC LEVAY

Date: 29-MAR-19
PO No.:
WO No.: L2245232
Project Ref: 18-0300-05
Sample ID: TH19-KGS-16
Sampled By:
Date Collected: 15-MAR-19
Lab Sample ID: L2245232-14
Matrix: WATER

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
<p>CDWQG = Health Canada Guideline Limits updated</p> <p>* CDWQG for Nitrate+Nitrite-N is the limit for nitrate only. If present as Nitrate then the limit is 10mg/L < or N.D. = less than detection limit. * Turbidity guideline based on membrane filtration. For guidelines on conventional treatment and slow sand or diatomaceous earth filtration please see Summary Table of Guidelines for Canadian Drinking Water Quality - A blank entry designates no known limit. - A shaded value in the Results column exceeds CDWQG MAC and/ or Aesthetic Objective.</p>	MAY 2018					
<p>Approved by <u>Hua Wo</u> Hua Wo Account Manager</p>						



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Winnipeg MB R3T 5P4
ATTN: ERIC LEVAY

Date: 29-MAR-19
PO No.:
WO No.: L2245232
Project Ref: 18-0300-05
Sample ID: TH19-KGS-17B
Sampled By:
Date Collected: 10-MAR-19
Lab Sample ID: L2245232-15
Matrix: WATER

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
ROU4W Dissolved						
Bicarbonate (HCO3)	587		mg/L			20-MAR-19
Carbonate (CO3)	<0.60		mg/L			20-MAR-19
Hydroxide (OH)	<0.34		mg/L			20-MAR-19
*Nitrate and Nitrite as N	0.051		mg/L	10		21-MAR-19
pH						
pH	8.29		pH units			19-MAR-19
Turbidity						
*Turbidity	>4000		NTU			16-MAR-19
TDS calculated						
TDS (Calculated)	587		mg/L		500	20-MAR-19
Sulfate in Water by IC						
Sulfate (SO4)	106		mg/L		500	16-MAR-19
Nitrite in Water by IC (Low Level)						
*Nitrite (as N)	0.0121		mg/L	1		16-MAR-19
Nitrate in Water by IC (Low Level)						
*Nitrate (as N)	0.039		mg/L	10		16-MAR-19
Ion Balance Calculation						
Hardness Calculated						
Hardness (as CaCO3)	528		mg/L		500	20-MAR-19
Fluoride in Water by IC						
Fluoride (F)	0.603		mg/L	1.5		16-MAR-19
Dissolved Metals in Water by CRC ICPMS						
Dissolved Metals	FIELD					19-MAR-19
Filtration Location						
Aluminum (Al)-Dissolved	0.0060		mg/L		0.1	19-MAR-19
Antimony (Sb)-Dissolved	0.00033		mg/L	0.006		19-MAR-19
Arsenic (As)-Dissolved	0.00098		mg/L	0.01		19-MAR-19
Barium (Ba)-Dissolved	0.0365		mg/L	1		19-MAR-19
Beryllium (Be)-Dissolved	<0.00010		mg/L			19-MAR-19
Bismuth (Bi)-Dissolved	<0.000050		mg/L			19-MAR-19
Boron (B)-Dissolved	0.130		mg/L	5		19-MAR-19
Cadmium (Cd)-Dissolved	0.000078		mg/L	0.005		19-MAR-19
Calcium (Ca)-Dissolved	41.1		mg/L			19-MAR-19
Cesium (Cs)-Dissolved	<0.000010		mg/L			19-MAR-19
Chromium (Cr)-Dissolved	0.00104		mg/L	0.05		19-MAR-19
Cobalt (Co)-Dissolved	0.00022		mg/L			19-MAR-19
Copper (Cu)-Dissolved	0.00320		mg/L	2.0	1.0	19-MAR-19
Iron (Fe)-Dissolved	<0.010		mg/L		0.3	19-MAR-19
Lead (Pb)-Dissolved	0.000069		mg/L	0.01		19-MAR-19



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865 Waverly Street - 3rd Floor
Winnipeg MB R3T 5P4
ATTN: ERIC LEVAY

Date: 29-MAR-19
PO No.:
WO No.: L2245232
Project Ref: 18-0300-05
Sample ID: TH19-KGS-17B
Sampled By:
Date Collected: 10-MAR-19
Lab Sample ID: L2245232-15
Matrix: WATER

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
ROU4W Dissolved						
Dissolved Metals in Water by CRC ICPMS						
Lithium (Li)-Dissolved	0.0599		mg/L			19-MAR-19
Magnesium (Mg)-Dissolved	103		mg/L			19-MAR-19
Manganese (Mn)-Dissolved	0.0115		mg/L		0.05	19-MAR-19
Molybdenum (Mo)-Dissolved	0.0187		mg/L			19-MAR-19
Nickel (Ni)-Dissolved	0.00089		mg/L			19-MAR-19
Phosphorus (P)-Dissolved	<0.030		mg/L			19-MAR-19
Potassium (K)-Dissolved	5.34		mg/L			19-MAR-19
Rubidium (Rb)-Dissolved	0.00146		mg/L			19-MAR-19
Selenium (Se)-Dissolved	0.00304		mg/L	0.05		19-MAR-19
Silicon (Si)-Dissolved	6.21		mg/L			19-MAR-19
Silver (Ag)-Dissolved	<0.000010		mg/L			19-MAR-19
Sodium (Na)-Dissolved	39.5		mg/L		200	19-MAR-19
Strontium (Sr)-Dissolved	0.371		mg/L			19-MAR-19
Sulfur (S)-Dissolved	35.6		mg/L			19-MAR-19
Tellurium (Te)-Dissolved	<0.00020		mg/L			19-MAR-19
Thallium (Tl)-Dissolved	<0.000010		mg/L			19-MAR-19
Thorium (Th)-Dissolved	<0.00010		mg/L			19-MAR-19
Tin (Sn)-Dissolved	0.00039		mg/L			19-MAR-19
Titanium (Ti)-Dissolved	0.00046		mg/L			19-MAR-19
Tungsten (W)-Dissolved	0.00011		mg/L			19-MAR-19
Uranium (U)-Dissolved	0.0297		mg/L	0.02		19-MAR-19
Vanadium (V)-Dissolved	0.00134		mg/L			19-MAR-19
Zinc (Zn)-Dissolved	0.0058		mg/L		5.0	19-MAR-19
Zirconium (Zr)-Dissolved	0.000481		mg/L			19-MAR-19
Conductivity						
Conductivity	846		umhos/cm			19-MAR-19
Chloride in Water by IC (Low Level)						
Chloride (Cl)	3.39		mg/L		250	16-MAR-19
Alkalinity, Total (as CaCO3)						
Alkalinity, Total (as CaCO3)	481		mg/L			19-MAR-19



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ATTN: ERIC LEVAY

Date: 29-MAR-19
PO No.:
WO No.: L2245232
Project Ref: 18-0300-05
Sample ID: TH19-KGS-17B
Sampled By:
Date Collected: 10-MAR-19
Lab Sample ID: L2245232-15
Matrix: WATER

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
<p>CDWQG = Health Canada Guideline Limits updated</p> <p>* CDWQG for Nitrate+Nitrite-N is the limit for nitrate only. If present as Nitrate then the limit is 10mg/L < or N.D. = less than detection limit. * Turbidity guideline based on membrane filtration. For guidelines on conventional treatment and slow sand or diatomaceous earth filtration please see Summary Table of Guidelines for Canadian Drinking Water Quality - A blank entry designates no known limit. - A shaded value in the Results column exceeds CDWQG MAC and/ or Aesthetic Objective.</p>	MAY 2018					
<p>Approved by <u><i>Hua Wo</i></u> Hua Wo Account Manager</p>						



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ATTN: ERIC LEVAY

Date: 29-MAR-19
PO No.:
WO No.: L2245232
Project Ref: 18-0300-05
Sample ID: TH19-KGS-19A
Sampled By:
Date Collected: 11-MAR-19
Lab Sample ID: L2245232-16
Matrix: WATER

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
ROU4W Dissolved						
Bicarbonate (HCO3)	632		mg/L			20-MAR-19
Carbonate (CO3)	<0.60		mg/L			20-MAR-19
Hydroxide (OH)	<0.34		mg/L			20-MAR-19
*Nitrate and Nitrite as N	0.032		mg/L	10		21-MAR-19
pH						
pH	7.48		pH units			19-MAR-19
Turbidity						
*Turbidity	>4000		NTU			16-MAR-19
TDS calculated						
TDS (Calculated)	506		mg/L		500	20-MAR-19
Sulfate in Water by IC						
Sulfate (SO4)	4.13		mg/L		500	16-MAR-19
Nitrite in Water by IC (Low Level)						
*Nitrite (as N)	0.0022		mg/L	1		16-MAR-19
Nitrate in Water by IC (Low Level)						
*Nitrate (as N)	0.030		mg/L	10		16-MAR-19
Ion Balance Calculation						
Hardness Calculated						
Hardness (as CaCO3)	523		mg/L		500	20-MAR-19
Fluoride in Water by IC						
Fluoride (F)	0.148		mg/L	1.5		16-MAR-19
Dissolved Metals in Water by CRC ICPMS						
Dissolved Metals	FIELD					19-MAR-19
Filtration Location						
Aluminum (Al)-Dissolved	0.0134		mg/L		0.1	19-MAR-19
Antimony (Sb)-Dissolved	<0.00010		mg/L	0.006		19-MAR-19
Arsenic (As)-Dissolved	0.00695		mg/L	0.01		19-MAR-19
Barium (Ba)-Dissolved	0.0621		mg/L	1		19-MAR-19
Beryllium (Be)-Dissolved	<0.00010		mg/L			19-MAR-19
Bismuth (Bi)-Dissolved	<0.000050		mg/L			19-MAR-19
Boron (B)-Dissolved	0.048		mg/L	5		19-MAR-19
Cadmium (Cd)-Dissolved	0.000094		mg/L	0.005		19-MAR-19
Calcium (Ca)-Dissolved	118		mg/L			19-MAR-19
Cesium (Cs)-Dissolved	<0.000010		mg/L			19-MAR-19
Chromium (Cr)-Dissolved	0.00043		mg/L	0.05		19-MAR-19
Cobalt (Co)-Dissolved	0.00152		mg/L			19-MAR-19
Copper (Cu)-Dissolved	0.00165		mg/L	2.0	1.0	19-MAR-19
Iron (Fe)-Dissolved	2.44		mg/L		0.3	19-MAR-19
Lead (Pb)-Dissolved	0.000095		mg/L	0.01		19-MAR-19

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865 Waverly Street - 3rd Floor
Winnipeg MB R3T 5P4
ATTN: ERIC LEVAY

Date: 29-MAR-19
PO No.:
WO No.: L2245232
Project Ref: 18-0300-05
Sample ID: TH19-KGS-19A
Sampled By:
Date Collected: 11-MAR-19
Lab Sample ID: L2245232-16
Matrix: WATER

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
ROU4W Dissolved						
Dissolved Metals in Water by CRC ICPMS						
Lithium (Li)-Dissolved	0.0100		mg/L			19-MAR-19
Magnesium (Mg)-Dissolved	55.4		mg/L			19-MAR-19
Manganese (Mn)-Dissolved	0.487		mg/L		0.05	19-MAR-19
Molybdenum (Mo)-Dissolved	0.00213		mg/L			19-MAR-19
Nickel (Ni)-Dissolved	0.00141		mg/L			19-MAR-19
Phosphorus (P)-Dissolved	<0.030		mg/L			19-MAR-19
Potassium (K)-Dissolved	2.28		mg/L			19-MAR-19
Rubidium (Rb)-Dissolved	0.00180		mg/L			19-MAR-19
Selenium (Se)-Dissolved	0.000081		mg/L	0.05		19-MAR-19
Silicon (Si)-Dissolved	8.56		mg/L			19-MAR-19
Silver (Ag)-Dissolved	<0.000010		mg/L			19-MAR-19
Sodium (Na)-Dissolved	8.37		mg/L		200	19-MAR-19
Strontium (Sr)-Dissolved	0.184		mg/L			19-MAR-19
Sulfur (S)-Dissolved	1.43		mg/L			19-MAR-19
Tellurium (Te)-Dissolved	<0.00020		mg/L			19-MAR-19
Thallium (Tl)-Dissolved	<0.000010		mg/L			19-MAR-19
Thorium (Th)-Dissolved	<0.00010		mg/L			19-MAR-19
Tin (Sn)-Dissolved	0.00019		mg/L			19-MAR-19
Titanium (Ti)-Dissolved	0.00059		mg/L			19-MAR-19
Tungsten (W)-Dissolved	<0.00010		mg/L			19-MAR-19
Uranium (U)-Dissolved	0.000651		mg/L	0.02		19-MAR-19
Vanadium (V)-Dissolved	0.00094		mg/L			19-MAR-19
Zinc (Zn)-Dissolved	0.0060		mg/L		5.0	19-MAR-19
Zirconium (Zr)-Dissolved	0.000931		mg/L			19-MAR-19
Conductivity						
Conductivity	846		umhos/cm			19-MAR-19
Chloride in Water by IC (Low Level)						
Chloride (Cl)	6.58		mg/L		250	16-MAR-19
Alkalinity, Total (as CaCO3)						
Alkalinity, Total (as CaCO3)	518		mg/L			19-MAR-19



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Winnipeg MB R3T 5P4
ATTN: ERIC LEVAY

Date: 29-MAR-19
PO No.:
WO No.: L2245232
Project Ref: 18-0300-05
Sample ID: TH19-KGS-19A
Sampled By:
Date Collected: 11-MAR-19
Lab Sample ID: L2245232-16
Matrix: WATER

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
<p>CDWQG = Health Canada Guideline Limits updated</p> <p>* CDWQG for Nitrate+Nitrite-N is the limit for nitrate only. If present as Nitrate then the limit is 10mg/L < or N.D. = less than detection limit. * Turbidity guideline based on membrane filtration. For guidelines on conventional treatment and slow sand or diatomaceous earth filtration please see Summary Table of Guidelines for Canadian Drinking Water Quality - A blank entry designates no known limit. - A shaded value in the Results column exceeds CDWQG MAC and/ or Aesthetic Objective.</p>	MAY 2018					
<p>Approved by <u><i>Hua Wo</i></u> Hua Wo Account Manager</p>						



KGS Group Consultants (Winnipeg)
865 Waverly Street - 3rd Floor
Winnipeg MB R3T 5P4
ATTN: ERIC LEVAY

Date: 29-MAR-19
PO No.:
WO No.: L2245232
Project Ref: 18-0300-05
Sample ID: TH19-KGS-13A
Sampled By:
Date Collected: 07-MAR-19
Lab Sample ID: L2245232-17
Matrix: WATER

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
ROU4W Dissolved						
Bicarbonate (HCO3)	337		mg/L			20-MAR-19
Carbonate (CO3)	<0.60		mg/L			20-MAR-19
Hydroxide (OH)	<0.34		mg/L			20-MAR-19
*Nitrate and Nitrite as N	<0.0051		mg/L	10		21-MAR-19
pH						
pH	7.54		pH units			19-MAR-19
Turbidity						
*Turbidity	>4000		NTU			16-MAR-19
TDS calculated						
TDS (Calculated)	261		mg/L		500	20-MAR-19
Sulfate in Water by IC						
Sulfate (SO4)	1.79		mg/L		500	16-MAR-19
Nitrite in Water by IC (Low Level)						
*Nitrite (as N)	0.0012		mg/L	1		16-MAR-19
Nitrate in Water by IC (Low Level)						
*Nitrate (as N)	<0.0050		mg/L	10		16-MAR-19
Ion Balance Calculation						
Hardness Calculated						
Hardness (as CaCO3)	257		mg/L		500	20-MAR-19
Fluoride in Water by IC						
Fluoride (F)	0.148		mg/L	1.5		16-MAR-19
Dissolved Metals in Water by CRC ICPMS						
Dissolved Metals	FIELD					19-MAR-19
Filtration Location						
Aluminum (Al)-Dissolved	0.0268		mg/L		0.1	19-MAR-19
Antimony (Sb)-Dissolved	<0.00010		mg/L	0.006		19-MAR-19
Arsenic (As)-Dissolved	0.00111		mg/L	0.01		19-MAR-19
Barium (Ba)-Dissolved	0.0240		mg/L	1		19-MAR-19
Beryllium (Be)-Dissolved	<0.00010		mg/L			19-MAR-19
Bismuth (Bi)-Dissolved	<0.000050		mg/L			19-MAR-19
Boron (B)-Dissolved	0.026		mg/L	5		19-MAR-19
Cadmium (Cd)-Dissolved	0.0000227		mg/L	0.005		19-MAR-19
Calcium (Ca)-Dissolved	49.5		mg/L			19-MAR-19
Cesium (Cs)-Dissolved	<0.000010		mg/L			19-MAR-19
Chromium (Cr)-Dissolved	0.00013		mg/L	0.05		19-MAR-19
Cobalt (Co)-Dissolved	0.00072		mg/L			19-MAR-19
Copper (Cu)-Dissolved	0.00165		mg/L	2.0	1.0	19-MAR-19
Iron (Fe)-Dissolved	0.199		mg/L		0.3	19-MAR-19
Lead (Pb)-Dissolved	0.000119		mg/L	0.01		19-MAR-19



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865 Waverly Street - 3rd Floor
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ATTN: ERIC LEVAY

Date: 29-MAR-19
PO No.:
WO No.: L2245232
Project Ref: 18-0300-05
Sample ID: TH19-KGS-13A
Sampled By:
Date Collected: 07-MAR-19
Lab Sample ID: L2245232-17
Matrix: WATER

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
ROU4W Dissolved						
Dissolved Metals in Water by CRC ICPMS						
Lithium (Li)-Dissolved	0.0080		mg/L			19-MAR-19
Magnesium (Mg)-Dissolved	32.4		mg/L			19-MAR-19
Manganese (Mn)-Dissolved	0.506		mg/L		0.05	19-MAR-19
Molybdenum (Mo)-Dissolved	0.00207		mg/L			19-MAR-19
Nickel (Ni)-Dissolved	0.00110		mg/L			19-MAR-19
Phosphorus (P)-Dissolved	0.056		mg/L			19-MAR-19
Potassium (K)-Dissolved	0.981		mg/L			19-MAR-19
Rubidium (Rb)-Dissolved	0.00097		mg/L			19-MAR-19
Selenium (Se)-Dissolved	0.000382		mg/L	0.05		19-MAR-19
Silicon (Si)-Dissolved	6.02		mg/L			19-MAR-19
Silver (Ag)-Dissolved	<0.000010		mg/L			19-MAR-19
Sodium (Na)-Dissolved	9.08		mg/L		200	19-MAR-19
Strontium (Sr)-Dissolved	0.117		mg/L			19-MAR-19
Sulfur (S)-Dissolved	1.61		mg/L			19-MAR-19
Tellurium (Te)-Dissolved	<0.00020		mg/L			19-MAR-19
Thallium (Tl)-Dissolved	<0.000010		mg/L			19-MAR-19
Thorium (Th)-Dissolved	<0.00010		mg/L			19-MAR-19
Tin (Sn)-Dissolved	0.00013		mg/L			19-MAR-19
Titanium (Ti)-Dissolved	0.00158		mg/L			19-MAR-19
Tungsten (W)-Dissolved	<0.00010		mg/L			19-MAR-19
Uranium (U)-Dissolved	0.000901		mg/L	0.02		19-MAR-19
Vanadium (V)-Dissolved	<0.00050		mg/L			19-MAR-19
Zinc (Zn)-Dissolved	0.0093		mg/L		5.0	19-MAR-19
Zirconium (Zr)-Dissolved	0.000209		mg/L			19-MAR-19
Conductivity						
Conductivity	460		umhos/cm			19-MAR-19
Chloride in Water by IC (Low Level)						
Chloride (Cl)	2.14		mg/L		250	16-MAR-19
Alkalinity, Total (as CaCO3)						
Alkalinity, Total (as CaCO3)	276		mg/L			19-MAR-19



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Winnipeg MB R3T 5P4
ATTN: ERIC LEVAY

Date: 29-MAR-19
PO No.:
WO No.: L2245232
Project Ref: 18-0300-05
Sample ID: TH19-KGS-13A
Sampled By:
Date Collected: 07-MAR-19
Lab Sample ID: L2245232-17
Matrix: WATER

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
<p>CDWQG = Health Canada Guideline Limits updated</p> <p>* CDWQG for Nitrate+Nitrite-N is the limit for nitrate only. If present as Nitrate then the limit is 10mg/L < or N.D. = less than detection limit. * Turbidity guideline based on membrane filtration. For guidelines on conventional treatment and slow sand or diatomaceous earth filtration please see Summary Table of Guidelines for Canadian Drinking Water Quality - A blank entry designates no known limit. - A shaded value in the Results column exceeds CDWQG MAC and/ or Aesthetic Objective.</p>	MAY 2018					
<p>Approved by <u><i>Hua Wo</i></u> Hua Wo Account Manager</p>						



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865 Waverly Street - 3rd Floor
Winnipeg MB R3T 5P4
ATTN: ERIC LEVAY

Date: 29-MAR-19
PO No.:
WO No.: L2245232
Project Ref: 18-0300-05
Sample ID: TH19-KGS-02B
Sampled By:
Date Collected: 11-MAR-19
Lab Sample ID: L2245232-18
Matrix: WATER

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
ROU4W Dissolved						
Bicarbonate (HCO3)	328		mg/L			25-MAR-19
Carbonate (CO3)	<0.60		mg/L			25-MAR-19
Hydroxide (OH)	<0.34		mg/L			25-MAR-19
*Nitrate and Nitrite as N	<0.051		mg/L	10		21-MAR-19
pH						
pH	8.07		pH units			23-MAR-19
Turbidity						
*Turbidity	1180		NTU			16-MAR-19
TDS calculated						
TDS (Calculated)	1430		mg/L		500	25-MAR-19
Sulfate in Water by IC						
Sulfate (SO4)	737		mg/L		500	16-MAR-19
Nitrite in Water by IC (Low Level)						
*Nitrite (as N)	0.014		mg/L	1		16-MAR-19
Nitrate in Water by IC (Low Level)						
*Nitrate (as N)	<0.050	DLM	mg/L	10		16-MAR-19
Ion Balance Calculation						
Hardness Calculated						
Hardness (as CaCO3)	834		mg/L		500	20-MAR-19
Fluoride in Water by IC						
Fluoride (F)	0.32		mg/L	1.5		16-MAR-19
Dissolved Metals in Water by CRC ICPMS						
Dissolved Metals	FIELD					19-MAR-19
Filtration Location						
Aluminum (Al)-Dissolved	0.0028		mg/L		0.1	19-MAR-19
Antimony (Sb)-Dissolved	0.00018		mg/L	0.006		19-MAR-19
Arsenic (As)-Dissolved	0.00032		mg/L	0.01		19-MAR-19
Barium (Ba)-Dissolved	0.0279		mg/L	1		19-MAR-19
Beryllium (Be)-Dissolved	<0.00010		mg/L			19-MAR-19
Bismuth (Bi)-Dissolved	<0.000050		mg/L			19-MAR-19
Boron (B)-Dissolved	0.202		mg/L	5		19-MAR-19
Cadmium (Cd)-Dissolved	0.000081		mg/L	0.005		19-MAR-19
Calcium (Ca)-Dissolved	123		mg/L			19-MAR-19
Cesium (Cs)-Dissolved	<0.000010		mg/L			19-MAR-19
Chromium (Cr)-Dissolved	<0.00010		mg/L	0.05		19-MAR-19
Cobalt (Co)-Dissolved	0.00097		mg/L			19-MAR-19
Copper (Cu)-Dissolved	0.00292		mg/L	2.0	1.0	19-MAR-19
Iron (Fe)-Dissolved	<0.010		mg/L		0.3	19-MAR-19
Lead (Pb)-Dissolved	<0.000050		mg/L	0.01		19-MAR-19

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KGS Group Consultants (Winnipeg)
865 Waverly Street - 3rd Floor
Winnipeg MB R3T 5P4
ATTN: ERIC LEVAY

Date: 29-MAR-19
PO No.:
WO No.: L2245232
Project Ref: 18-0300-05
Sample ID: TH19-KGS-02B
Sampled By:
Date Collected: 11-MAR-19
Lab Sample ID: L2245232-18
Matrix: WATER

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
ROU4W Dissolved						
Dissolved Metals in Water by CRC ICPMS						
Lithium (Li)-Dissolved	0.0568		mg/L			19-MAR-19
Magnesium (Mg)-Dissolved	128		mg/L			19-MAR-19
Manganese (Mn)-Dissolved	0.108		mg/L		0.05	19-MAR-19
Molybdenum (Mo)-Dissolved	0.0161		mg/L			19-MAR-19
Nickel (Ni)-Dissolved	0.00405		mg/L			19-MAR-19
Phosphorus (P)-Dissolved	<0.030		mg/L			19-MAR-19
Potassium (K)-Dissolved	6.93		mg/L			19-MAR-19
Rubidium (Rb)-Dissolved	0.00195		mg/L			19-MAR-19
Selenium (Se)-Dissolved	0.000719		mg/L	0.05		19-MAR-19
Silicon (Si)-Dissolved	5.33		mg/L			19-MAR-19
Silver (Ag)-Dissolved	<0.000010		mg/L			19-MAR-19
Sodium (Na)-Dissolved	178		mg/L		200	19-MAR-19
Strontium (Sr)-Dissolved	0.520		mg/L			19-MAR-19
Sulfur (S)-Dissolved	270		mg/L			19-MAR-19
Tellurium (Te)-Dissolved	<0.00020		mg/L			19-MAR-19
Thallium (Tl)-Dissolved	0.000037		mg/L			19-MAR-19
Thorium (Th)-Dissolved	<0.00010		mg/L			19-MAR-19
Tin (Sn)-Dissolved	0.00028		mg/L			19-MAR-19
Titanium (Ti)-Dissolved	<0.00030		mg/L			19-MAR-19
Tungsten (W)-Dissolved	0.0950		mg/L			19-MAR-19
Uranium (U)-Dissolved	0.0103		mg/L	0.02		19-MAR-19
Vanadium (V)-Dissolved	<0.00050		mg/L			19-MAR-19
Zinc (Zn)-Dissolved	0.0038		mg/L		5.0	19-MAR-19
Zirconium (Zr)-Dissolved	0.000106		mg/L			19-MAR-19
Conductivity						
Conductivity	1970		umhos/cm			23-MAR-19
Chloride in Water by IC (Low Level)						
Chloride (Cl)	93.9		mg/L		250	16-MAR-19
Alkalinity, Total (as CaCO3)						
Alkalinity, Total (as CaCO3)	269		mg/L			23-MAR-19



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Date: 29-MAR-19
PO No.:
WO No.: L2245232
Project Ref: 18-0300-05
Sample ID: TH19-KGS-02B
Sampled By:
Date Collected: 11-MAR-19
Lab Sample ID: L2245232-18
Matrix: WATER

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
<p>CDWQG = Health Canada Guideline Limits updated</p> <p>* CDWQG for Nitrate+Nitrite-N is the limit for nitrate only. If present as Nitrate then the limit is 10mg/L < or N.D. = less than detection limit. * Turbidity guideline based on membrane filtration. For guidelines on conventional treatment and slow sand or diatomaceous earth filtration please see Summary Table of Guidelines for Canadian Drinking Water Quality - A blank entry designates no known limit. - A shaded value in the Results column exceeds CDWQG MAC and/ or Aesthetic Objective.</p>	MAY 2018					
<p>Approved by <u><i>Hua Wo</i></u> Hua Wo Account Manager</p>						



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ATTN: ERIC LEVAY

Date: 29-MAR-19
PO No.:
WO No.: L2245232
Project Ref: 18-0300-05
Sample ID: TH19-KGS-12
Sampled By:
Date Collected: 07-MAR-19
Lab Sample ID: L2245232-19
Matrix: WATER

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
ROU4W Dissolved						
Bicarbonate (HCO3)	376		mg/L			25-MAR-19
Carbonate (CO3)	6.24		mg/L			25-MAR-19
Hydroxide (OH)	<0.34		mg/L			25-MAR-19
*Nitrate and Nitrite as N	<0.0051		mg/L	10		21-MAR-19
pH						
pH	8.39		pH units			23-MAR-19
Turbidity						
*Turbidity	>4000		NTU			16-MAR-19
TDS calculated						
TDS (Calculated)	446		mg/L		500	25-MAR-19
Sulfate in Water by IC						
Sulfate (SO4)	81.0		mg/L		500	16-MAR-19
Nitrite in Water by IC (Low Level)						
*Nitrite (as N)	<0.0010		mg/L	1		16-MAR-19
Nitrate in Water by IC (Low Level)						
*Nitrate (as N)	<0.0050		mg/L	10		16-MAR-19
Ion Balance Calculation						
Hardness Calculated						
Hardness (as CaCO3)	426		mg/L		500	20-MAR-19
Fluoride in Water by IC						
Fluoride (F)	0.321		mg/L	1.5		16-MAR-19
Dissolved Metals in Water by CRC ICPMS						
Dissolved Metals	FIELD					19-MAR-19
Filtration Location						
Aluminum (Al)-Dissolved	0.0027		mg/L		0.1	19-MAR-19
Antimony (Sb)-Dissolved	0.00017		mg/L	0.006		19-MAR-19
Arsenic (As)-Dissolved	0.00040		mg/L	0.01		19-MAR-19
Barium (Ba)-Dissolved	0.0416		mg/L	1		19-MAR-19
Beryllium (Be)-Dissolved	<0.00010		mg/L			19-MAR-19
Bismuth (Bi)-Dissolved	<0.000050		mg/L			19-MAR-19
Boron (B)-Dissolved	0.138		mg/L	5		19-MAR-19
Cadmium (Cd)-Dissolved	<0.0000050		mg/L	0.005		19-MAR-19
Calcium (Ca)-Dissolved	51.2		mg/L			19-MAR-19
Cesium (Cs)-Dissolved	<0.000010		mg/L			19-MAR-19
Chromium (Cr)-Dissolved	<0.00010		mg/L	0.05		19-MAR-19
Cobalt (Co)-Dissolved	0.00085		mg/L			19-MAR-19
Copper (Cu)-Dissolved	0.00067		mg/L	2.0	1.0	19-MAR-19
Iron (Fe)-Dissolved	1.64		mg/L		0.3	19-MAR-19
Lead (Pb)-Dissolved	<0.000050		mg/L	0.01		19-MAR-19



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Date: 29-MAR-19
PO No.:
WO No.: L2245232
Project Ref: 18-0300-05
Sample ID: TH19-KGS-12
Sampled By:
Date Collected: 07-MAR-19
Lab Sample ID: L2245232-19
Matrix: WATER

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
ROU4W Dissolved						
Dissolved Metals in Water by CRC ICPMS						
Lithium (Li)-Dissolved	0.0350		mg/L			19-MAR-19
Magnesium (Mg)-Dissolved	72.3		mg/L			19-MAR-19
Manganese (Mn)-Dissolved	0.125		mg/L		0.05	19-MAR-19
Molybdenum (Mo)-Dissolved	0.0147		mg/L			19-MAR-19
Nickel (Ni)-Dissolved	0.00303		mg/L			19-MAR-19
Phosphorus (P)-Dissolved	<0.030		mg/L			19-MAR-19
Potassium (K)-Dissolved	5.12		mg/L			19-MAR-19
Rubidium (Rb)-Dissolved	0.00238		mg/L			19-MAR-19
Selenium (Se)-Dissolved	<0.000050		mg/L	0.05		19-MAR-19
Silicon (Si)-Dissolved	5.47		mg/L			19-MAR-19
Silver (Ag)-Dissolved	<0.000010		mg/L			19-MAR-19
Sodium (Na)-Dissolved	27.4		mg/L		200	19-MAR-19
Strontium (Sr)-Dissolved	0.260		mg/L			19-MAR-19
Sulfur (S)-Dissolved	26.0		mg/L			19-MAR-19
Tellurium (Te)-Dissolved	<0.00020		mg/L			19-MAR-19
Thallium (Tl)-Dissolved	0.000035		mg/L			19-MAR-19
Thorium (Th)-Dissolved	<0.00010		mg/L			19-MAR-19
Tin (Sn)-Dissolved	0.00012		mg/L			19-MAR-19
Titanium (Ti)-Dissolved	<0.00030		mg/L			19-MAR-19
Tungsten (W)-Dissolved	0.00131		mg/L			19-MAR-19
Uranium (U)-Dissolved	0.000077		mg/L	0.02		19-MAR-19
Vanadium (V)-Dissolved	<0.00050		mg/L			19-MAR-19
Zinc (Zn)-Dissolved	0.0021		mg/L		5.0	19-MAR-19
Zirconium (Zr)-Dissolved	<0.000060		mg/L			19-MAR-19
Conductivity						
Conductivity	727		umhos/cm			23-MAR-19
Chloride in Water by IC (Low Level)						
Chloride (Cl)	17.9		mg/L		250	16-MAR-19
Alkalinity, Total (as CaCO3)						
Alkalinity, Total (as CaCO3)	319		mg/L			23-MAR-19



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Date: 29-MAR-19
PO No.:
WO No.: L2245232
Project Ref: 18-0300-05
Sample ID: TH19-KGS-12
Sampled By:
Date Collected: 07-MAR-19
Lab Sample ID: L2245232-19
Matrix: WATER

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
<p>CDWQG = Health Canada Guideline Limits updated</p> <p>* CDWQG for Nitrate+Nitrite-N is the limit for nitrate only. If present as Nitrate then the limit is 10mg/L < or N.D. = less than detection limit. * Turbidity guideline based on membrane filtration. For guidelines on conventional treatment and slow sand or diatomaceous earth filtration please see Summary Table of Guidelines for Canadian Drinking Water Quality - A blank entry designates no known limit. - A shaded value in the Results column exceeds CDWQG MAC and/ or Aesthetic Objective.</p>	MAY 2018					
<p>Approved by <u><i>Hua Wo</i></u> Hua Wo Account Manager</p>						



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Date: 29-MAR-19
PO No.:
WO No.: L2245232
Project Ref: 18-0300-05
Sample ID: TH19-KGS-11A
Sampled By:
Date Collected: 08-MAR-19
Lab Sample ID: L2245232-20
Matrix: WATER

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
ROU4W Dissolved						
Bicarbonate (HCO3)	484		mg/L			25-MAR-19
Carbonate (CO3)	<0.60		mg/L			25-MAR-19
Hydroxide (OH)	<0.34		mg/L			25-MAR-19
*Nitrate and Nitrite as N	0.0172		mg/L	10		21-MAR-19
pH						
pH	7.12		pH units			23-MAR-19
Turbidity						
*Turbidity	>4000		NTU			16-MAR-19
TDS calculated						
TDS (Calculated)	354		mg/L		500	25-MAR-19
Sulfate in Water by IC						
Sulfate (SO4)	0.37		mg/L		500	16-MAR-19
Nitrite in Water by IC (Low Level)						
*Nitrite (as N)	0.0017		mg/L	1		16-MAR-19
Nitrate in Water by IC (Low Level)						
*Nitrate (as N)	0.0156		mg/L	10		16-MAR-19
Ion Balance Calculation						
Hardness Calculated						
Hardness (as CaCO3)	331		mg/L		500	20-MAR-19
Fluoride in Water by IC						
Fluoride (F)	0.086		mg/L	1.5		16-MAR-19
Dissolved Metals in Water by CRC ICPMS						
Dissolved Metals	FIELD					19-MAR-19
Filtration Location						
Aluminum (Al)-Dissolved	0.0134		mg/L		0.1	19-MAR-19
Antimony (Sb)-Dissolved	<0.00010		mg/L	0.006		19-MAR-19
Arsenic (As)-Dissolved	0.00129		mg/L	0.01		19-MAR-19
Barium (Ba)-Dissolved	0.0386		mg/L	1		19-MAR-19
Beryllium (Be)-Dissolved	<0.00010		mg/L			19-MAR-19
Bismuth (Bi)-Dissolved	<0.000050		mg/L			19-MAR-19
Boron (B)-Dissolved	0.044		mg/L	5		19-MAR-19
Cadmium (Cd)-Dissolved	<0.000050		mg/L	0.005		19-MAR-19
Calcium (Ca)-Dissolved	70.1		mg/L			19-MAR-19
Cesium (Cs)-Dissolved	<0.00010		mg/L			19-MAR-19
Chromium (Cr)-Dissolved	<0.00010		mg/L	0.05		19-MAR-19
Cobalt (Co)-Dissolved	0.00153		mg/L			19-MAR-19
Copper (Cu)-Dissolved	0.00035		mg/L	2.0	1.0	19-MAR-19
Iron (Fe)-Dissolved	1.09		mg/L		0.3	19-MAR-19
Lead (Pb)-Dissolved	<0.000050		mg/L	0.01		19-MAR-19

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ATTN: ERIC LEVAY


Date: 29-MAR-19
PO No.:
WO No.: L2245232
Project Ref: 18-0300-05
Sample ID: TH19-KGS-11A
Sampled By:
Date Collected: 08-MAR-19
Lab Sample ID: L2245232-20
Matrix: WATER

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
ROU4W Dissolved						
Dissolved Metals in Water by CRC ICPMS						
Lithium (Li)-Dissolved	0.0059		mg/L			19-MAR-19
Magnesium (Mg)-Dissolved	38.0		mg/L			19-MAR-19
Manganese (Mn)-Dissolved	0.603		mg/L		0.05	19-MAR-19
Molybdenum (Mo)-Dissolved	0.000394		mg/L			19-MAR-19
Nickel (Ni)-Dissolved	0.00118		mg/L			19-MAR-19
Phosphorus (P)-Dissolved	0.046		mg/L			19-MAR-19
Potassium (K)-Dissolved	0.577		mg/L			19-MAR-19
Rubidium (Rb)-Dissolved	0.00084		mg/L			19-MAR-19
Selenium (Se)-Dissolved	0.000115		mg/L	0.05		19-MAR-19
Silicon (Si)-Dissolved	11.2		mg/L			19-MAR-19
Silver (Ag)-Dissolved	<0.000010		mg/L			19-MAR-19
Sodium (Na)-Dissolved	6.65		mg/L		200	19-MAR-19
Strontium (Sr)-Dissolved	0.0968		mg/L			19-MAR-19
Sulfur (S)-Dissolved	0.69		mg/L			19-MAR-19
Tellurium (Te)-Dissolved	<0.00020		mg/L			19-MAR-19
Thallium (Tl)-Dissolved	<0.000010		mg/L			19-MAR-19
Thorium (Th)-Dissolved	<0.00010		mg/L			19-MAR-19
Tin (Sn)-Dissolved	<0.00010		mg/L			19-MAR-19
Titanium (Ti)-Dissolved	<0.00030		mg/L			19-MAR-19
Tungsten (W)-Dissolved	<0.00010		mg/L			19-MAR-19
Uranium (U)-Dissolved	0.000357		mg/L	0.02		19-MAR-19
Vanadium (V)-Dissolved	<0.00050		mg/L			19-MAR-19
Zinc (Zn)-Dissolved	0.0027		mg/L		5.0	19-MAR-19
Zirconium (Zr)-Dissolved	0.000113		mg/L			19-MAR-19
Conductivity						
Conductivity	669		umhos/cm			23-MAR-19
Chloride in Water by IC (Low Level)						
Chloride (Cl)	0.13		mg/L		250	16-MAR-19
Alkalinity, Total (as CaCO3)						
Alkalinity, Total (as CaCO3)	397		mg/L			23-MAR-19



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Date: 29-MAR-19
PO No.:
WO No.: L2245232
Project Ref: 18-0300-05
Sample ID: TH19-KGS-11A
Sampled By:
Date Collected: 08-MAR-19
Lab Sample ID: L2245232-20
Matrix: WATER

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
<p>CDWQG = Health Canada Guideline Limits updated</p> <p>* CDWQG for Nitrate+Nitrite-N is the limit for nitrate only. If present as Nitrate then the limit is 10mg/L < or N.D. = less than detection limit. * Turbidity guideline based on membrane filtration. For guidelines on conventional treatment and slow sand or diatomaceous earth filtration please see Summary Table of Guidelines for Canadian Drinking Water Quality - A blank entry designates no known limit. - A shaded value in the Results column exceeds CDWQG MAC and/ or Aesthetic Objective.</p>	MAY 2018					
<p>Approved by </p> <hr/> <p>Hua Wo Account Manager</p>						



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Date: 29-MAR-19
PO No.:
WO No.: L2245232
Project Ref: 18-0300-05
Sample ID: TH19-KGS-17A
Sampled By:
Date Collected: 10-MAR-19
Lab Sample ID: L2245232-21
Matrix: WATER

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
ROU4W Dissolved						
Bicarbonate (HCO3)	425		mg/L			25-MAR-19
Carbonate (CO3)	<0.60		mg/L			25-MAR-19
Hydroxide (OH)	<0.34		mg/L			25-MAR-19
*Nitrate and Nitrite as N	0.0118		mg/L	10		21-MAR-19
pH						
pH	7.93		pH units			23-MAR-19
Turbidity						
*Turbidity	>4000		NTU			16-MAR-19
TDS calculated						
TDS (Calculated)	321		mg/L		500	25-MAR-19
Sulfate in Water by IC						
Sulfate (SO4)	2.91		mg/L		500	16-MAR-19
Nitrite in Water by IC (Low Level)						
*Nitrite (as N)	0.0014		mg/L	1		16-MAR-19
Nitrate in Water by IC (Low Level)						
*Nitrate (as N)	0.0104		mg/L	10		16-MAR-19
Ion Balance Calculation						
Hardness Calculated						
Hardness (as CaCO3)	317		mg/L		500	20-MAR-19
Fluoride in Water by IC						
Fluoride (F)	0.127		mg/L	1.5		16-MAR-19
Dissolved Metals in Water by CRC ICPMS						
Dissolved Metals	FIELD					19-MAR-19
Filtration Location						
Aluminum (Al)-Dissolved	0.0125		mg/L		0.1	19-MAR-19
Antimony (Sb)-Dissolved	0.00018		mg/L	0.006		19-MAR-19
Arsenic (As)-Dissolved	0.00113		mg/L	0.01		19-MAR-19
Barium (Ba)-Dissolved	0.0319		mg/L	1		19-MAR-19
Beryllium (Be)-Dissolved	<0.00010		mg/L			19-MAR-19
Bismuth (Bi)-Dissolved	<0.000050		mg/L			19-MAR-19
Boron (B)-Dissolved	0.027		mg/L	5		19-MAR-19
Cadmium (Cd)-Dissolved	0.0000079		mg/L	0.005		19-MAR-19
Calcium (Ca)-Dissolved	61.6		mg/L			19-MAR-19
Cesium (Cs)-Dissolved	<0.000010		mg/L			19-MAR-19
Chromium (Cr)-Dissolved	0.00064		mg/L	0.05		19-MAR-19
Cobalt (Co)-Dissolved	0.00029		mg/L			19-MAR-19
Copper (Cu)-Dissolved	0.00459		mg/L	2.0	1.0	19-MAR-19
Iron (Fe)-Dissolved	0.061		mg/L		0.3	19-MAR-19
Lead (Pb)-Dissolved	0.000102		mg/L	0.01		19-MAR-19

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ATTN: ERIC LEVAY


Date: 29-MAR-19
PO No.:
WO No.: L2245232
Project Ref: 18-0300-05
Sample ID: TH19-KGS-17A
Sampled By:
Date Collected: 10-MAR-19
Lab Sample ID: L2245232-21
Matrix: WATER

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
ROU4W Dissolved						
Dissolved Metals in Water by CRC ICPMS						
Lithium (Li)-Dissolved	0.0073		mg/L			19-MAR-19
Magnesium (Mg)-Dissolved	39.6		mg/L			19-MAR-19
Manganese (Mn)-Dissolved	0.454		mg/L		0.05	19-MAR-19
Molybdenum (Mo)-Dissolved	0.000599		mg/L			19-MAR-19
Nickel (Ni)-Dissolved	0.00090		mg/L			19-MAR-19
Phosphorus (P)-Dissolved	0.056		mg/L			19-MAR-19
Potassium (K)-Dissolved	1.23		mg/L			19-MAR-19
Rubidium (Rb)-Dissolved	0.00087		mg/L			19-MAR-19
Selenium (Se)-Dissolved	0.000079		mg/L	0.05		19-MAR-19
Silicon (Si)-Dissolved	8.29		mg/L			19-MAR-19
Silver (Ag)-Dissolved	<0.000010		mg/L			19-MAR-19
Sodium (Na)-Dissolved	4.40		mg/L		200	19-MAR-19
Strontium (Sr)-Dissolved	0.110		mg/L			19-MAR-19
Sulfur (S)-Dissolved	1.33		mg/L			19-MAR-19
Tellurium (Te)-Dissolved	<0.00020		mg/L			19-MAR-19
Thallium (Tl)-Dissolved	<0.000010		mg/L			19-MAR-19
Thorium (Th)-Dissolved	<0.00010		mg/L			19-MAR-19
Tin (Sn)-Dissolved	0.00036		mg/L			19-MAR-19
Titanium (Ti)-Dissolved	0.00060		mg/L			19-MAR-19
Tungsten (W)-Dissolved	<0.00010		mg/L			19-MAR-19
Uranium (U)-Dissolved	0.00149		mg/L	0.02		19-MAR-19
Vanadium (V)-Dissolved	0.00113		mg/L			19-MAR-19
Zinc (Zn)-Dissolved	0.0060		mg/L		5.0	19-MAR-19
Zirconium (Zr)-Dissolved	0.000341		mg/L			19-MAR-19
Conductivity						
Conductivity	578		umhos/cm			23-MAR-19
Chloride in Water by IC (Low Level)						
Chloride (Cl)	2.54		mg/L		250	16-MAR-19
Alkalinity, Total (as CaCO3)						
Alkalinity, Total (as CaCO3)	348		mg/L			23-MAR-19



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Date: 29-MAR-19
PO No.:
WO No.: L2245232
Project Ref: 18-0300-05
Sample ID: TH19-KGS-17A
Sampled By:
Date Collected: 10-MAR-19
Lab Sample ID: L2245232-21
Matrix: WATER

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
<p>CDWQG = Health Canada Guideline Limits updated</p> <p>* CDWQG for Nitrate+Nitrite-N is the limit for nitrate only. If present as Nitrate then the limit is 10mg/L < or N.D. = less than detection limit. * Turbidity guideline based on membrane filtration. For guidelines on conventional treatment and slow sand or diatomaceous earth filtration please see Summary Table of Guidelines for Canadian Drinking Water Quality - A blank entry designates no known limit. - A shaded value in the Results column exceeds CDWQG MAC and/ or Aesthetic Objective.</p>	MAY 2018					
<p>Approved by </p> <hr/> <p>Hua Wo Account Manager</p>						



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Date: 29-MAR-19
PO No.:
WO No.: L2245232
Project Ref: 18-0300-05
Sample ID: TH19-KGS-18A
Sampled By:
Date Collected: 11-MAR-19
Lab Sample ID: L2245232-22
Matrix: WATER

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
ROU4W Dissolved						
Bicarbonate (HCO3)	337		mg/L			25-MAR-19
Carbonate (CO3)	<0.60		mg/L			25-MAR-19
Hydroxide (OH)	<0.34		mg/L			25-MAR-19
*Nitrate and Nitrite as N	0.0202		mg/L	10		21-MAR-19
pH						
pH	7.48		pH units			23-MAR-19
Turbidity						
*Turbidity	3110		NTU			16-MAR-19
TDS calculated						
TDS (Calculated)	287		mg/L		500	25-MAR-19
Sulfate in Water by IC						
Sulfate (SO4)	6.43		mg/L		500	16-MAR-19
Nitrite in Water by IC (Low Level)						
*Nitrite (as N)	0.0019		mg/L	1		16-MAR-19
Nitrate in Water by IC (Low Level)						
*Nitrate (as N)	0.0182		mg/L	10		16-MAR-19
Ion Balance Calculation						
Hardness Calculated						
Hardness (as CaCO3)	129		mg/L		500	20-MAR-19
Fluoride in Water by IC						
Fluoride (F)	0.125		mg/L	1.5		16-MAR-19
Dissolved Metals in Water by CRC ICPMS						
Dissolved Metals	FIELD					19-MAR-19
Filtration Location						
Aluminum (Al)-Dissolved	0.0198		mg/L		0.1	19-MAR-19
Antimony (Sb)-Dissolved	0.00038		mg/L	0.006		19-MAR-19
Arsenic (As)-Dissolved	0.00317		mg/L	0.01		19-MAR-19
Barium (Ba)-Dissolved	0.0104		mg/L	1		19-MAR-19
Beryllium (Be)-Dissolved	<0.00010		mg/L			19-MAR-19
Bismuth (Bi)-Dissolved	<0.000050		mg/L			19-MAR-19
Boron (B)-Dissolved	0.027		mg/L	5		19-MAR-19
Cadmium (Cd)-Dissolved	<0.0000050		mg/L	0.005		19-MAR-19
Calcium (Ca)-Dissolved	25.9		mg/L			19-MAR-19
Cesium (Cs)-Dissolved	0.000018		mg/L			19-MAR-19
Chromium (Cr)-Dissolved	0.00011		mg/L	0.05		19-MAR-19
Cobalt (Co)-Dissolved	0.00043		mg/L			19-MAR-19
Copper (Cu)-Dissolved	0.00130		mg/L	2.0	1.0	19-MAR-19
Iron (Fe)-Dissolved	0.237		mg/L		0.3	19-MAR-19
Lead (Pb)-Dissolved	0.000081		mg/L	0.01		19-MAR-19

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ATTN: ERIC LEVAY

Date: 29-MAR-19
PO No.:
WO No.: L2245232
Project Ref: 18-0300-05
Sample ID: TH19-KGS-18A
Sampled By:
Date Collected: 11-MAR-19
Lab Sample ID: L2245232-22
Matrix: WATER

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
ROU4W Dissolved						
Dissolved Metals in Water by CRC ICPMS						
Lithium (Li)-Dissolved	0.0150		mg/L			19-MAR-19
Magnesium (Mg)-Dissolved	15.5		mg/L			19-MAR-19
Manganese (Mn)-Dissolved	0.123		mg/L		0.05	19-MAR-19
Molybdenum (Mo)-Dissolved	0.000610		mg/L			19-MAR-19
Nickel (Ni)-Dissolved	0.00060		mg/L			19-MAR-19
Phosphorus (P)-Dissolved	<0.030		mg/L			19-MAR-19
Potassium (K)-Dissolved	1.08		mg/L			19-MAR-19
Rubidium (Rb)-Dissolved	0.00154		mg/L			19-MAR-19
Selenium (Se)-Dissolved	0.000339		mg/L	0.05		19-MAR-19
Silicon (Si)-Dissolved	5.84		mg/L			19-MAR-19
Silver (Ag)-Dissolved	<0.000010		mg/L			19-MAR-19
Sodium (Na)-Dissolved	70.2		mg/L		200	19-MAR-19
Strontium (Sr)-Dissolved	0.0751		mg/L			19-MAR-19
Sulfur (S)-Dissolved	2.40		mg/L			19-MAR-19
Tellurium (Te)-Dissolved	<0.00020		mg/L			19-MAR-19
Thallium (Tl)-Dissolved	0.000012		mg/L			19-MAR-19
Thorium (Th)-Dissolved	<0.00010		mg/L			19-MAR-19
Tin (Sn)-Dissolved	<0.00010		mg/L			19-MAR-19
Titanium (Ti)-Dissolved	0.00068		mg/L			19-MAR-19
Tungsten (W)-Dissolved	<0.00010		mg/L			19-MAR-19
Uranium (U)-Dissolved	0.000037		mg/L	0.02		19-MAR-19
Vanadium (V)-Dissolved	<0.00050		mg/L			19-MAR-19
Zinc (Zn)-Dissolved	0.0045		mg/L		5.0	19-MAR-19
Zirconium (Zr)-Dissolved	0.000082		mg/L			19-MAR-19
Conductivity						
Conductivity	489		umhos/cm			23-MAR-19
Chloride in Water by IC (Low Level)						
Chloride (Cl)	1.49		mg/L		250	16-MAR-19
Alkalinity, Total (as CaCO3)						
Alkalinity, Total (as CaCO3)	277		mg/L			23-MAR-19



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Date: 29-MAR-19
PO No.:
WO No.: L2245232
Project Ref: 18-0300-05
Sample ID: TH19-KGS-18A
Sampled By:
Date Collected: 11-MAR-19
Lab Sample ID: L2245232-22
Matrix: WATER

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
<p>CDWQG = Health Canada Guideline Limits updated MAY 2018</p> <p>* CDWQG for Nitrate+Nitrite-N is the limit for nitrate only. If present as Nitrate then the limit is 10mg/L < or N.D. = less than detection limit. * Turbidity guideline based on membrane filtration. For guidelines on conventional treatment and slow sand or diatomaceous earth filtration please see Summary Table of Guidelines for Canadian Drinking Water Quality - A blank entry designates no known limit. - A shaded value in the Results column exceeds CDWQG MAC and/ or Aesthetic Objective.</p>						
<p>Approved by <u>Hua Wo</u> Hua Wo Account Manager</p>						



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ATTN: ERIC LEVAY

Date: 29-MAR-19
PO No.:
WO No.: L2245232
Project Ref: 18-0300-05
Sample ID: TH19-KGS-17
Sampled By:
Date Collected: 10-MAR-19
Lab Sample ID: L2245232-23
Matrix: WATER

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
ROU4W Dissolved						
Bicarbonate (HCO3)	443		mg/L			25-MAR-19
Carbonate (CO3)	<0.60		mg/L			25-MAR-19
Hydroxide (OH)	<0.34		mg/L			25-MAR-19
*Nitrate and Nitrite as N	0.0094		mg/L	10		21-MAR-19
pH						
pH	8.19		pH units			23-MAR-19
Turbidity						
*Turbidity	>4000		NTU			16-MAR-19
TDS calculated						
TDS (Calculated)	390		mg/L		500	25-MAR-19
Sulfate in Water by IC						
Sulfate (SO4)	42.6		mg/L		500	16-MAR-19
Nitrite in Water by IC (Low Level)						
*Nitrite (as N)	0.0013		mg/L	1		16-MAR-19
Nitrate in Water by IC (Low Level)						
*Nitrate (as N)	0.0081		mg/L	10		16-MAR-19
Ion Balance Calculation						
Hardness Calculated						
Hardness (as CaCO3)	384		mg/L		500	20-MAR-19
Fluoride in Water by IC						
Fluoride (F)	0.272		mg/L	1.5		16-MAR-19
Dissolved Metals in Water by CRC ICPMS						
Dissolved Metals	FIELD					19-MAR-19
Filtration Location						
Aluminum (Al)-Dissolved	0.0048		mg/L		0.1	19-MAR-19
Antimony (Sb)-Dissolved	0.00100		mg/L	0.006		19-MAR-19
Arsenic (As)-Dissolved	0.00296		mg/L	0.01		19-MAR-19
Barium (Ba)-Dissolved	0.0417		mg/L	1		19-MAR-19
Beryllium (Be)-Dissolved	<0.00010		mg/L			19-MAR-19
Bismuth (Bi)-Dissolved	<0.000050		mg/L			19-MAR-19
Boron (B)-Dissolved	0.094		mg/L	5		19-MAR-19
Cadmium (Cd)-Dissolved	<0.000050		mg/L	0.005		19-MAR-19
Calcium (Ca)-Dissolved	55.8		mg/L			19-MAR-19
Cesium (Cs)-Dissolved	<0.000010		mg/L			19-MAR-19
Chromium (Cr)-Dissolved	0.00014		mg/L	0.05		19-MAR-19
Cobalt (Co)-Dissolved	0.00022		mg/L			19-MAR-19
Copper (Cu)-Dissolved	0.00020		mg/L	2.0	1.0	19-MAR-19
Iron (Fe)-Dissolved	0.016		mg/L		0.3	19-MAR-19
Lead (Pb)-Dissolved	<0.000050		mg/L	0.01		19-MAR-19

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ATTN: ERIC LEVAY

Date: 29-MAR-19
PO No.:
WO No.: L2245232
Project Ref: 18-0300-05
Sample ID: TH19-KGS-17
Sampled By:
Date Collected: 10-MAR-19
Lab Sample ID: L2245232-23
Matrix: WATER

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
ROU4W Dissolved						
Dissolved Metals in Water by CRC ICPMS						
Lithium (Li)-Dissolved	0.0189		mg/L			19-MAR-19
Magnesium (Mg)-Dissolved	59.5		mg/L			19-MAR-19
Manganese (Mn)-Dissolved	0.0242		mg/L		0.05	19-MAR-19
Molybdenum (Mo)-Dissolved	0.00164		mg/L			19-MAR-19
Nickel (Ni)-Dissolved	0.00148		mg/L			19-MAR-19
Phosphorus (P)-Dissolved	<0.030		mg/L			19-MAR-19
Potassium (K)-Dissolved	3.90		mg/L			19-MAR-19
Rubidium (Rb)-Dissolved	0.00217		mg/L			19-MAR-19
Selenium (Se)-Dissolved	0.000130		mg/L	0.05		19-MAR-19
Silicon (Si)-Dissolved	4.39		mg/L			19-MAR-19
Silver (Ag)-Dissolved	<0.000010		mg/L			19-MAR-19
Sodium (Na)-Dissolved	9.43		mg/L		200	19-MAR-19
Strontium (Sr)-Dissolved	0.162		mg/L			19-MAR-19
Sulfur (S)-Dissolved	14.5		mg/L			19-MAR-19
Tellurium (Te)-Dissolved	<0.00020		mg/L			19-MAR-19
Thallium (Tl)-Dissolved	<0.000010		mg/L			19-MAR-19
Thorium (Th)-Dissolved	<0.00010		mg/L			19-MAR-19
Tin (Sn)-Dissolved	<0.00010		mg/L			19-MAR-19
Titanium (Ti)-Dissolved	<0.00030		mg/L			19-MAR-19
Tungsten (W)-Dissolved	0.00186		mg/L			19-MAR-19
Uranium (U)-Dissolved	0.000389		mg/L	0.02		19-MAR-19
Vanadium (V)-Dissolved	<0.00050		mg/L			19-MAR-19
Zinc (Zn)-Dissolved	<0.0010		mg/L		5.0	19-MAR-19
Zirconium (Zr)-Dissolved	<0.000060		mg/L			19-MAR-19
Conductivity						
Conductivity	674		umhos/cm			23-MAR-19
Chloride in Water by IC (Low Level)						
Chloride (Cl)	1.33		mg/L		250	16-MAR-19
Alkalinity, Total (as CaCO3)						
Alkalinity, Total (as CaCO3)	363		mg/L			23-MAR-19



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Date: 29-MAR-19
PO No.:
WO No.: L2245232
Project Ref: 18-0300-05
Sample ID: TH19-KGS-17
Sampled By:
Date Collected: 10-MAR-19
Lab Sample ID: L2245232-23
Matrix: WATER

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
<p>CDWQG = Health Canada Guideline Limits updated</p> <p>* CDWQG for Nitrate+Nitrite-N is the limit for nitrate only. If present as Nitrate then the limit is 10mg/L < or N.D. = less than detection limit. * Turbidity guideline based on membrane filtration. For guidelines on conventional treatment and slow sand or diatomaceous earth filtration please see Summary Table of Guidelines for Canadian Drinking Water Quality - A blank entry designates no known limit. - A shaded value in the Results column exceeds CDWQG MAC and/ or Aesthetic Objective.</p>	MAY 2018					
<p>Approved by <u><i>Hua Wo</i></u> Hua Wo Account Manager</p>						



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Date: 29-MAR-19
PO No.:
WO No.: L2245232
Project Ref: 18-0300-05
Sample ID: PW19-KGS-03
Sampled By:
Date Collected: 14-MAR-19
Lab Sample ID: L2245232-24
Matrix: WATER

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
ROU4W Dissolved						
Bicarbonate (HCO3)	409		mg/L			25-MAR-19
Carbonate (CO3)	<0.60		mg/L			25-MAR-19
Hydroxide (OH)	<0.34		mg/L			25-MAR-19
*Nitrate and Nitrite as N	0.016		mg/L	10		21-MAR-19
pH						
pH	8.17		pH units			23-MAR-19
Turbidity						
*Turbidity	2.75		NTU			16-MAR-19
TDS calculated						
TDS (Calculated)	364		mg/L		500	25-MAR-19
Sulfate in Water by IC						
Sulfate (SO4)	36.8		mg/L		500	16-MAR-19
Nitrite in Water by IC (Low Level)						
*Nitrite (as N)	<0.0020	DLM	mg/L	1		16-MAR-19
Nitrate in Water by IC (Low Level)						
*Nitrate (as N)	0.016		mg/L	10		16-MAR-19
Ion Balance Calculation						
Hardness Calculated						
Hardness (as CaCO3)	362		mg/L		500	20-MAR-19
Fluoride in Water by IC						
Fluoride (F)	0.197		mg/L	1.5		16-MAR-19
Dissolved Metals in Water by CRC ICPMS						
Dissolved Metals	FIELD					19-MAR-19
Filtration Location						
Aluminum (Al)-Dissolved	0.0011		mg/L		0.1	19-MAR-19
Antimony (Sb)-Dissolved	<0.00010		mg/L	0.006		19-MAR-19
Arsenic (As)-Dissolved	0.00069		mg/L	0.01		19-MAR-19
Barium (Ba)-Dissolved	0.0590		mg/L	1		19-MAR-19
Beryllium (Be)-Dissolved	<0.00010		mg/L			19-MAR-19
Bismuth (Bi)-Dissolved	<0.000050		mg/L			19-MAR-19
Boron (B)-Dissolved	0.102		mg/L	5		19-MAR-19
Cadmium (Cd)-Dissolved	<0.0000050		mg/L	0.005		19-MAR-19
Calcium (Ca)-Dissolved	62.9		mg/L			19-MAR-19
Cesium (Cs)-Dissolved	<0.000010		mg/L			19-MAR-19
Chromium (Cr)-Dissolved	<0.00010		mg/L	0.05		19-MAR-19
Cobalt (Co)-Dissolved	0.00110		mg/L			19-MAR-19
Copper (Cu)-Dissolved	0.00020		mg/L	2.0	1.0	19-MAR-19
Iron (Fe)-Dissolved	0.339		mg/L		0.3	19-MAR-19
Lead (Pb)-Dissolved	<0.000050		mg/L	0.01		19-MAR-19



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Date: 29-MAR-19
PO No.:
WO No.: L2245232
Project Ref: 18-0300-05
Sample ID: PW19-KGS-03
Sampled By:
Date Collected: 14-MAR-19
Lab Sample ID: L2245232-24
Matrix: WATER

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
ROU4W Dissolved						
Dissolved Metals in Water by CRC ICPMS						
Lithium (Li)-Dissolved	0.0184		mg/L			19-MAR-19
Magnesium (Mg)-Dissolved	49.8		mg/L			19-MAR-19
Manganese (Mn)-Dissolved	0.151		mg/L		0.05	19-MAR-19
Molybdenum (Mo)-Dissolved	0.000434		mg/L			19-MAR-19
Nickel (Ni)-Dissolved	0.00170		mg/L			19-MAR-19
Phosphorus (P)-Dissolved	<0.030		mg/L			19-MAR-19
Potassium (K)-Dissolved	3.39		mg/L			19-MAR-19
Rubidium (Rb)-Dissolved	0.00210		mg/L			19-MAR-19
Selenium (Se)-Dissolved	<0.000050		mg/L	0.05		19-MAR-19
Silicon (Si)-Dissolved	5.34		mg/L			19-MAR-19
Silver (Ag)-Dissolved	<0.000010		mg/L			19-MAR-19
Sodium (Na)-Dissolved	8.44		mg/L		200	19-MAR-19
Strontium (Sr)-Dissolved	0.155		mg/L			19-MAR-19
Sulfur (S)-Dissolved	13.2		mg/L			19-MAR-19
Tellurium (Te)-Dissolved	<0.00020		mg/L			19-MAR-19
Thallium (Tl)-Dissolved	<0.000010		mg/L			19-MAR-19
Thorium (Th)-Dissolved	<0.00010		mg/L			19-MAR-19
Tin (Sn)-Dissolved	<0.00010		mg/L			19-MAR-19
Titanium (Ti)-Dissolved	<0.00030		mg/L			19-MAR-19
Tungsten (W)-Dissolved	<0.00010		mg/L			19-MAR-19
Uranium (U)-Dissolved	0.00114		mg/L	0.02		19-MAR-19
Vanadium (V)-Dissolved	<0.00050		mg/L			19-MAR-19
Zinc (Zn)-Dissolved	0.0027		mg/L		5.0	19-MAR-19
Zirconium (Zr)-Dissolved	<0.000060		mg/L			19-MAR-19
Conductivity						
Conductivity	626		umhos/cm			23-MAR-19
Chloride in Water by IC (Low Level)						
Chloride (Cl)	1.06		mg/L		250	16-MAR-19
Alkalinity, Total (as CaCO3)						
Alkalinity, Total (as CaCO3)	335		mg/L			23-MAR-19
Total Coliform and E.coli						
Total Coliforms	5		MPN/100mL	0		16-MAR-19
Escherichia Coli	0		MPN/100mL	0		16-MAR-19



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ATTN: ERIC LEVAY

Date: 29-MAR-19
PO No.:
WO No.: L2245232
Project Ref: 18-0300-05
Sample ID: PW19-KGS-03
Sampled By:
Date Collected: 14-MAR-19
Lab Sample ID: L2245232-24
Matrix: WATER

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
<p>CDWQG = Health Canada Guideline Limits updated</p> <p>* CDWQG for Nitrate+Nitrite-N is the limit for nitrate only. If present as Nitrate then the limit is 10mg/L < or N.D. = less than detection limit. * Turbidity guideline based on membrane filtration. For guidelines on conventional treatment and slow sand or diatomaceous earth filtration please see Summary Table of Guidelines for Canadian Drinking Water Quality - A blank entry designates no known limit. - A shaded value in the Results column exceeds CDWQG MAC and/ or Aesthetic Objective.</p>	MAY 2018					
<p>Approved by </p> <hr/> <p>Hua Wo Account Manager</p>						



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ATTN: ERIC LEVAY

Date: 29-MAR-19
PO No.:
WO No.: L2245232
Project Ref: 18-0300-05
Sample ID: PW19-KGS-04
Sampled By:
Date Collected: 14-MAR-19
Lab Sample ID: L2245232-25
Matrix: WATER

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
ROU4W Dissolved						
Bicarbonate (HCO3)	406		mg/L			25-MAR-19
Carbonate (CO3)	<0.60		mg/L			25-MAR-19
Hydroxide (OH)	<0.34		mg/L			25-MAR-19
*Nitrate and Nitrite as N	0.0123		mg/L	10		21-MAR-19
pH						
pH	8.22		pH units			23-MAR-19
Turbidity						
*Turbidity	2.41		NTU			16-MAR-19
TDS calculated						
TDS (Calculated)	362		mg/L		500	25-MAR-19
Sulfate in Water by IC						
Sulfate (SO4)	37.2		mg/L		500	16-MAR-19
Nitrite in Water by IC (Low Level)						
*Nitrite (as N)	<0.0010		mg/L	1		16-MAR-19
Nitrate in Water by IC (Low Level)						
*Nitrate (as N)	0.0123		mg/L	10		16-MAR-19
Ion Balance Calculation						
Hardness Calculated						
Hardness (as CaCO3)	361		mg/L		500	20-MAR-19
Fluoride in Water by IC						
Fluoride (F)	0.212		mg/L	1.5		16-MAR-19
Dissolved Metals in Water by CRC ICPMS						
Dissolved Metals	FIELD					19-MAR-19
Filtration Location						
Aluminum (Al)-Dissolved	<0.0010		mg/L		0.1	19-MAR-19
Antimony (Sb)-Dissolved	<0.00010		mg/L	0.006		19-MAR-19
Arsenic (As)-Dissolved	0.00071		mg/L	0.01		19-MAR-19
Barium (Ba)-Dissolved	0.0590		mg/L	1		19-MAR-19
Beryllium (Be)-Dissolved	<0.00010		mg/L			19-MAR-19
Bismuth (Bi)-Dissolved	<0.000050		mg/L			19-MAR-19
Boron (B)-Dissolved	0.101		mg/L	5		19-MAR-19
Cadmium (Cd)-Dissolved	<0.000050		mg/L	0.005		19-MAR-19
Calcium (Ca)-Dissolved	62.4		mg/L			19-MAR-19
Cesium (Cs)-Dissolved	<0.000010		mg/L			19-MAR-19
Chromium (Cr)-Dissolved	<0.00010		mg/L	0.05		19-MAR-19
Cobalt (Co)-Dissolved	0.00112		mg/L			19-MAR-19
Copper (Cu)-Dissolved	<0.00020		mg/L	2.0	1.0	19-MAR-19
Iron (Fe)-Dissolved	0.337		mg/L		0.3	19-MAR-19
Lead (Pb)-Dissolved	<0.000050		mg/L	0.01		19-MAR-19



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ATTN: ERIC LEVAY

Date: 29-MAR-19
PO No.:
WO No.: L2245232
Project Ref: 18-0300-05
Sample ID: PW19-KGS-04
Sampled By:
Date Collected: 14-MAR-19
Lab Sample ID: L2245232-25
Matrix: WATER

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
ROU4W Dissolved						
Dissolved Metals in Water by CRC ICPMS						
Lithium (Li)-Dissolved	0.0184		mg/L			19-MAR-19
Magnesium (Mg)-Dissolved	49.7		mg/L			19-MAR-19
Manganese (Mn)-Dissolved	0.152		mg/L		0.05	19-MAR-19
Molybdenum (Mo)-Dissolved	0.000433		mg/L			19-MAR-19
Nickel (Ni)-Dissolved	0.00165		mg/L			19-MAR-19
Phosphorus (P)-Dissolved	<0.030		mg/L			19-MAR-19
Potassium (K)-Dissolved	3.45		mg/L			19-MAR-19
Rubidium (Rb)-Dissolved	0.00196		mg/L			19-MAR-19
Selenium (Se)-Dissolved	<0.000050		mg/L	0.05		19-MAR-19
Silicon (Si)-Dissolved	5.35		mg/L			19-MAR-19
Silver (Ag)-Dissolved	<0.000010		mg/L			19-MAR-19
Sodium (Na)-Dissolved	8.45		mg/L		200	19-MAR-19
Strontium (Sr)-Dissolved	0.155		mg/L			19-MAR-19
Sulfur (S)-Dissolved	12.9		mg/L			19-MAR-19
Tellurium (Te)-Dissolved	<0.00020		mg/L			19-MAR-19
Thallium (Tl)-Dissolved	<0.000010		mg/L			19-MAR-19
Thorium (Th)-Dissolved	<0.00010		mg/L			19-MAR-19
Tin (Sn)-Dissolved	<0.00010		mg/L			19-MAR-19
Titanium (Ti)-Dissolved	<0.00030		mg/L			19-MAR-19
Tungsten (W)-Dissolved	<0.00010		mg/L			19-MAR-19
Uranium (U)-Dissolved	0.00116		mg/L	0.02		19-MAR-19
Vanadium (V)-Dissolved	<0.00050		mg/L			19-MAR-19
Zinc (Zn)-Dissolved	0.0025		mg/L		5.0	19-MAR-19
Zirconium (Zr)-Dissolved	<0.000060		mg/L			19-MAR-19
Conductivity						
Conductivity	622		umhos/cm			23-MAR-19
Chloride in Water by IC (Low Level)						
Chloride (Cl)	1.01		mg/L		250	16-MAR-19
Alkalinity, Total (as CaCO3)						
Alkalinity, Total (as CaCO3)	333		mg/L			23-MAR-19



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Date: 29-MAR-19
PO No.:
WO No.: L2245232
Project Ref: 18-0300-05
Sample ID: PW19-KGS-04
Sampled By:
Date Collected: 14-MAR-19
Lab Sample ID: L2245232-25
Matrix: WATER

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
<p>CDWQG = Health Canada Guideline Limits updated</p> <p>* CDWQG for Nitrate+Nitrite-N is the limit for nitrate only. If present as Nitrate then the limit is 10mg/L < or N.D. = less than detection limit. * Turbidity guideline based on membrane filtration. For guidelines on conventional treatment and slow sand or diatomaceous earth filtration please see Summary Table of Guidelines for Canadian Drinking Water Quality - A blank entry designates no known limit. - A shaded value in the Results column exceeds CDWQG MAC and/ or Aesthetic Objective.</p>	MAY 2018					
<p>Approved by <u><i>Hua Wo</i></u> Hua Wo Account Manager</p>						



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Winnipeg MB R3T 5P4
ATTN: ERIC LEVAY

Date: 29-MAR-19
PO No.:
WO No.: L2245232
Project Ref: 18-0300-05
Sample ID: PW19-KGS-02
Sampled By:
Date Collected: 13-MAR-19
Lab Sample ID: L2245232-26
Matrix: WATER

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
ROU4W Dissolved						
Bicarbonate (HCO3)	410		mg/L			25-MAR-19
Carbonate (CO3)	<0.60		mg/L			25-MAR-19
Hydroxide (OH)	<0.34		mg/L			25-MAR-19
*Nitrate and Nitrite as N	<0.0051		mg/L	10		21-MAR-19
pH						
pH	8.14		pH units			23-MAR-19
Turbidity						
*Turbidity	233		NTU			16-MAR-19
TDS calculated						
TDS (Calculated)	455		mg/L		500	25-MAR-19
Sulfate in Water by IC						
Sulfate (SO4)	88.2		mg/L		500	16-MAR-19
Nitrite in Water by IC (Low Level)						
*Nitrite (as N)	<0.0010		mg/L	1		16-MAR-19
Nitrate in Water by IC (Low Level)						
*Nitrate (as N)	<0.0050		mg/L	10		16-MAR-19
Ion Balance Calculation						
Hardness Calculated						
Hardness (as CaCO3)	372		mg/L		500	20-MAR-19
Fluoride in Water by IC						
Fluoride (F)	0.289		mg/L	1.5		16-MAR-19
Dissolved Metals in Water by CRC ICPMS						
Dissolved Metals	FIELD					19-MAR-19
Filtration Location						
Aluminum (Al)-Dissolved	<0.0010		mg/L		0.1	19-MAR-19
Antimony (Sb)-Dissolved	<0.00010		mg/L	0.006		19-MAR-19
Arsenic (As)-Dissolved	0.00135		mg/L	0.01		19-MAR-19
Barium (Ba)-Dissolved	0.0242		mg/L	1		19-MAR-19
Beryllium (Be)-Dissolved	<0.00010		mg/L			19-MAR-19
Bismuth (Bi)-Dissolved	<0.000050		mg/L			19-MAR-19
Boron (B)-Dissolved	0.145		mg/L	5		19-MAR-19
Cadmium (Cd)-Dissolved	<0.000050		mg/L	0.005		19-MAR-19
Calcium (Ca)-Dissolved	58.5		mg/L			19-MAR-19
Cesium (Cs)-Dissolved	<0.000010		mg/L			19-MAR-19
Chromium (Cr)-Dissolved	<0.00010		mg/L	0.05		19-MAR-19
Cobalt (Co)-Dissolved	0.00015		mg/L			19-MAR-19
Copper (Cu)-Dissolved	0.00066		mg/L	2.0	1.0	19-MAR-19
Iron (Fe)-Dissolved	0.121		mg/L		0.3	19-MAR-19
Lead (Pb)-Dissolved	<0.000050		mg/L	0.01		19-MAR-19

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865 Waverly Street - 3rd Floor
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ATTN: ERIC LEVAY

Date: 29-MAR-19
PO No.:
WO No.: L2245232
Project Ref: 18-0300-05
Sample ID: PW19-KGS-02
Sampled By:
Date Collected: 13-MAR-19
Lab Sample ID: L2245232-26
Matrix: WATER

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
ROU4W Dissolved						
Dissolved Metals in Water by CRC ICPMS						
Lithium (Li)-Dissolved	0.0252		mg/L			19-MAR-19
Magnesium (Mg)-Dissolved	55.0		mg/L			19-MAR-19
Manganese (Mn)-Dissolved	0.00465		mg/L		0.05	19-MAR-19
Molybdenum (Mo)-Dissolved	0.000395		mg/L			19-MAR-19
Nickel (Ni)-Dissolved	<0.00050		mg/L			19-MAR-19
Phosphorus (P)-Dissolved	<0.030		mg/L			19-MAR-19
Potassium (K)-Dissolved	4.81		mg/L			19-MAR-19
Rubidium (Rb)-Dissolved	0.00264		mg/L			19-MAR-19
Selenium (Se)-Dissolved	<0.000050		mg/L	0.05		19-MAR-19
Silicon (Si)-Dissolved	5.48		mg/L			19-MAR-19
Silver (Ag)-Dissolved	<0.000010		mg/L			19-MAR-19
Sodium (Na)-Dissolved	33.9		mg/L		200	19-MAR-19
Strontium (Sr)-Dissolved	0.215		mg/L			19-MAR-19
Sulfur (S)-Dissolved	31.2		mg/L			19-MAR-19
Tellurium (Te)-Dissolved	<0.00020		mg/L			19-MAR-19
Thallium (Tl)-Dissolved	<0.000010		mg/L			19-MAR-19
Thorium (Th)-Dissolved	<0.00010		mg/L			19-MAR-19
Tin (Sn)-Dissolved	<0.00010		mg/L			19-MAR-19
Titanium (Ti)-Dissolved	<0.00030		mg/L			19-MAR-19
Tungsten (W)-Dissolved	<0.00010		mg/L			19-MAR-19
Uranium (U)-Dissolved	0.000773		mg/L	0.02		19-MAR-19
Vanadium (V)-Dissolved	<0.00050		mg/L			19-MAR-19
Zinc (Zn)-Dissolved	0.0025		mg/L		5.0	19-MAR-19
Zirconium (Zr)-Dissolved	<0.000060		mg/L			19-MAR-19
Conductivity						
Conductivity	744		umhos/cm			23-MAR-19
Chloride in Water by IC (Low Level)						
Chloride (Cl)	12.6		mg/L		250	16-MAR-19
Alkalinity, Total (as CaCO3)						
Alkalinity, Total (as CaCO3)	336		mg/L			23-MAR-19
Total Coliform and E.coli						
Total Coliforms	0		MPN/100mL	0		16-MAR-19
Escherichia Coli	0		MPN/100mL	0		16-MAR-19



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ATTN: ERIC LEVAY

Date: 29-MAR-19
PO No.:
WO No.: L2245232
Project Ref: 18-0300-05
Sample ID: PW19-KGS-02
Sampled By:
Date Collected: 13-MAR-19
Lab Sample ID: L2245232-26
Matrix: WATER

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
<p>CDWQG = Health Canada Guideline Limits updated</p> <p>* CDWQG for Nitrate+Nitrite-N is the limit for nitrate only. If present as Nitrate then the limit is 10mg/L < or N.D. = less than detection limit. * Turbidity guideline based on membrane filtration. For guidelines on conventional treatment and slow sand or diatomaceous earth filtration please see Summary Table of Guidelines for Canadian Drinking Water Quality - A blank entry designates no known limit. - A shaded value in the Results column exceeds CDWQG MAC and/ or Aesthetic Objective.</p>	MAY 2018					
<p>Approved by <u><i>Hua Wo</i></u> Hua Wo Account Manager</p>						



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865 Waverly Street - 3rd Floor
Winnipeg MB R3T 5P4
ATTN: ERIC LEVAY

Date: 29-MAR-19
PO No.:
WO No.: L2245232
Project Ref: 18-0300-05
Sample ID: PW19-KGS-05
Sampled By:
Date Collected: 13-MAR-19
Lab Sample ID: L2245232-27
Matrix: WATER

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
ROU4W Dissolved						
Bicarbonate (HCO3)	401		mg/L			25-MAR-19
Carbonate (CO3)	<0.60		mg/L			25-MAR-19
Hydroxide (OH)	<0.34		mg/L			25-MAR-19
*Nitrate and Nitrite as N	<0.010		mg/L	10		21-MAR-19
pH						
pH	8.18		pH units			23-MAR-19
Turbidity						
*Turbidity	180		NTU			16-MAR-19
TDS calculated						
TDS (Calculated)	454		mg/L		500	25-MAR-19
Sulfate in Water by IC						
Sulfate (SO4)	88.8		mg/L		500	16-MAR-19
Nitrite in Water by IC (Low Level)						
*Nitrite (as N)	<0.0020	DLM	mg/L	1		16-MAR-19
Nitrate in Water by IC (Low Level)						
*Nitrate (as N)	<0.010	DLM	mg/L	10		16-MAR-19
Ion Balance Calculation						
Hardness Calculated						
Hardness (as CaCO3)	380		mg/L		500	20-MAR-19
Fluoride in Water by IC						
Fluoride (F)	0.280		mg/L	1.5		16-MAR-19
Dissolved Metals in Water by CRC ICPMS						
Dissolved Metals	FIELD					19-MAR-19
Filtration Location						
Aluminum (Al)-Dissolved	<0.0010		mg/L		0.1	19-MAR-19
Antimony (Sb)-Dissolved	<0.00010		mg/L	0.006		19-MAR-19
Arsenic (As)-Dissolved	0.00136		mg/L	0.01		19-MAR-19
Barium (Ba)-Dissolved	0.0243		mg/L	1		19-MAR-19
Beryllium (Be)-Dissolved	<0.00010		mg/L			19-MAR-19
Bismuth (Bi)-Dissolved	<0.000050		mg/L			19-MAR-19
Boron (B)-Dissolved	0.150		mg/L	5		19-MAR-19
Cadmium (Cd)-Dissolved	<0.0000050		mg/L	0.005		19-MAR-19
Calcium (Ca)-Dissolved	60.3		mg/L			19-MAR-19
Cesium (Cs)-Dissolved	0.000010		mg/L			19-MAR-19
Chromium (Cr)-Dissolved	<0.00010		mg/L	0.05		19-MAR-19
Cobalt (Co)-Dissolved	0.00014		mg/L			19-MAR-19
Copper (Cu)-Dissolved	<0.00020		mg/L	2.0	1.0	19-MAR-19
Iron (Fe)-Dissolved	0.128		mg/L		0.3	19-MAR-19
Lead (Pb)-Dissolved	<0.000050		mg/L	0.01		19-MAR-19



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865 Waverly Street - 3rd Floor
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ATTN: ERIC LEVAY


Date: 29-MAR-19
PO No.:
WO No.: L2245232
Project Ref: 18-0300-05
Sample ID: PW19-KGS-05
Sampled By:
Date Collected: 13-MAR-19
Lab Sample ID: L2245232-27
Matrix: WATER

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
ROU4W Dissolved						
Dissolved Metals in Water by CRC ICPMS						
Lithium (Li)-Dissolved	0.0254		mg/L			19-MAR-19
Magnesium (Mg)-Dissolved	55.7		mg/L			19-MAR-19
Manganese (Mn)-Dissolved	0.00462		mg/L		0.05	19-MAR-19
Molybdenum (Mo)-Dissolved	0.000381		mg/L			19-MAR-19
Nickel (Ni)-Dissolved	<0.00050		mg/L			19-MAR-19
Phosphorus (P)-Dissolved	<0.030		mg/L			19-MAR-19
Potassium (K)-Dissolved	4.99		mg/L			19-MAR-19
Rubidium (Rb)-Dissolved	0.00253		mg/L			19-MAR-19
Selenium (Se)-Dissolved	<0.000050		mg/L	0.05		19-MAR-19
Silicon (Si)-Dissolved	5.44		mg/L			19-MAR-19
Silver (Ag)-Dissolved	<0.000010		mg/L			19-MAR-19
Sodium (Na)-Dissolved	34.1		mg/L		200	19-MAR-19
Strontium (Sr)-Dissolved	0.212		mg/L			19-MAR-19
Sulfur (S)-Dissolved	30.8		mg/L			19-MAR-19
Tellurium (Te)-Dissolved	<0.00020		mg/L			19-MAR-19
Thallium (Tl)-Dissolved	<0.000010		mg/L			19-MAR-19
Thorium (Th)-Dissolved	<0.00010		mg/L			19-MAR-19
Tin (Sn)-Dissolved	<0.00010		mg/L			19-MAR-19
Titanium (Ti)-Dissolved	<0.00030		mg/L			19-MAR-19
Tungsten (W)-Dissolved	<0.00010		mg/L			19-MAR-19
Uranium (U)-Dissolved	0.000794		mg/L	0.02		19-MAR-19
Vanadium (V)-Dissolved	<0.00050		mg/L			19-MAR-19
Zinc (Zn)-Dissolved	0.0014		mg/L		5.0	19-MAR-19
Zirconium (Zr)-Dissolved	<0.000060		mg/L			19-MAR-19
Conductivity						
Conductivity	755		umhos/cm			23-MAR-19
Chloride in Water by IC (Low Level)						
Chloride (Cl)	12.6		mg/L		250	16-MAR-19
Alkalinity, Total (as CaCO3)						
Alkalinity, Total (as CaCO3)	329		mg/L			23-MAR-19
Total Coliform and E.coli						
Total Coliforms	0		MPN/100mL	0		16-MAR-19
Escherichia Coli	0		MPN/100mL	0		16-MAR-19



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ATTN: ERIC LEVAY

Date: 29-MAR-19
PO No.:
WO No.: L2245232
Project Ref: 18-0300-05
Sample ID: PW19-KGS-05
Sampled By:
Date Collected: 13-MAR-19
Lab Sample ID: L2245232-27
Matrix: WATER

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
<p>CDWQG = Health Canada Guideline Limits updated</p> <p>* CDWQG for Nitrate+Nitrite-N is the limit for nitrate only. If present as Nitrate then the limit is 10mg/L < or N.D. = less than detection limit. * Turbidity guideline based on membrane filtration. For guidelines on conventional treatment and slow sand or diatomaceous earth filtration please see Summary Table of Guidelines for Canadian Drinking Water Quality - A blank entry designates no known limit. - A shaded value in the Results column exceeds CDWQG MAC and/ or Aesthetic Objective.</p>	MAY 2018					
<p>Approved by </p> <hr/> <p>Hua Wo Account Manager</p>						



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Winnipeg MB R3T 5P4
ATTN: ERIC LEVAY

Date: 29-MAR-19
PO No.:
WO No.: L2245232
Project Ref: 18-0300-05
Sample ID: PW19-KGS-01
Sampled By:
Date Collected: 12-MAR-19
Lab Sample ID: L2245232-28
Matrix: WATER

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
ROU4W Dissolved						
Bicarbonate (HCO3)	401		mg/L			25-MAR-19
Carbonate (CO3)	<0.60		mg/L			25-MAR-19
Hydroxide (OH)	<0.34		mg/L			25-MAR-19
*Nitrate and Nitrite as N	0.0093		mg/L	10		21-MAR-19
pH						
pH	8.16		pH units			23-MAR-19
Turbidity						
*Turbidity	1.04		NTU			16-MAR-19
TDS calculated						
TDS (Calculated)	437		mg/L		500	25-MAR-19
Sulfate in Water by IC						
Sulfate (SO4)	78.9		mg/L		500	16-MAR-19
Nitrite in Water by IC (Low Level)						
*Nitrite (as N)	<0.0010		mg/L	1		16-MAR-19
Nitrate in Water by IC (Low Level)						
*Nitrate (as N)	0.0093		mg/L	10		16-MAR-19
Ion Balance Calculation						
Hardness Calculated						
Hardness (as CaCO3)	366		mg/L		500	20-MAR-19
Fluoride in Water by IC						
Fluoride (F)	0.249		mg/L	1.5		16-MAR-19
Dissolved Metals in Water by CRC ICPMS						
Dissolved Metals	FIELD					19-MAR-19
Filtration Location						
Aluminum (Al)-Dissolved	<0.0010		mg/L		0.1	19-MAR-19
Antimony (Sb)-Dissolved	<0.00010		mg/L	0.006		19-MAR-19
Arsenic (As)-Dissolved	0.00038		mg/L	0.01		19-MAR-19
Barium (Ba)-Dissolved	0.0249		mg/L	1		19-MAR-19
Beryllium (Be)-Dissolved	<0.00010		mg/L			19-MAR-19
Bismuth (Bi)-Dissolved	<0.000050		mg/L			19-MAR-19
Boron (B)-Dissolved	0.156		mg/L	5		19-MAR-19
Cadmium (Cd)-Dissolved	0.000068		mg/L	0.005		19-MAR-19
Calcium (Ca)-Dissolved	55.6		mg/L			19-MAR-19
Cesium (Cs)-Dissolved	<0.000010		mg/L			19-MAR-19
Chromium (Cr)-Dissolved	<0.00010		mg/L	0.05		19-MAR-19
Cobalt (Co)-Dissolved	0.00025		mg/L			19-MAR-19
Copper (Cu)-Dissolved	0.00452		mg/L	2.0	1.0	19-MAR-19
Iron (Fe)-Dissolved	<0.010		mg/L		0.3	19-MAR-19
Lead (Pb)-Dissolved	0.000068		mg/L	0.01		19-MAR-19



KGS Group Consultants (Winnipeg)
865 Waverly Street - 3rd Floor
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ATTN: ERIC LEVAY


Date: 29-MAR-19
PO No.:
WO No.: L2245232
Project Ref: 18-0300-05
Sample ID: PW19-KGS-01
Sampled By:
Date Collected: 12-MAR-19
Lab Sample ID: L2245232-28
Matrix: WATER

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
ROU4W Dissolved						
Dissolved Metals in Water by CRC ICPMS						
Lithium (Li)-Dissolved	0.0245		mg/L			19-MAR-19
Magnesium (Mg)-Dissolved	55.2		mg/L			19-MAR-19
Manganese (Mn)-Dissolved	0.00503		mg/L		0.05	19-MAR-19
Molybdenum (Mo)-Dissolved	0.00113		mg/L			19-MAR-19
Nickel (Ni)-Dissolved	0.00060		mg/L			19-MAR-19
Phosphorus (P)-Dissolved	<0.030		mg/L			19-MAR-19
Potassium (K)-Dissolved	4.93		mg/L			19-MAR-19
Rubidium (Rb)-Dissolved	0.00142		mg/L			19-MAR-19
Selenium (Se)-Dissolved	<0.000050		mg/L	0.05		19-MAR-19
Silicon (Si)-Dissolved	5.61		mg/L			19-MAR-19
Silver (Ag)-Dissolved	<0.000010		mg/L			19-MAR-19
Sodium (Na)-Dissolved	31.3		mg/L		200	19-MAR-19
Strontium (Sr)-Dissolved	0.217		mg/L			19-MAR-19
Sulfur (S)-Dissolved	27.2		mg/L			19-MAR-19
Tellurium (Te)-Dissolved	<0.00020		mg/L			19-MAR-19
Thallium (Tl)-Dissolved	0.000011		mg/L			19-MAR-19
Thorium (Th)-Dissolved	<0.00010		mg/L			19-MAR-19
Tin (Sn)-Dissolved	<0.00010		mg/L			19-MAR-19
Titanium (Ti)-Dissolved	<0.00030		mg/L			19-MAR-19
Tungsten (W)-Dissolved	<0.00010		mg/L			19-MAR-19
Uranium (U)-Dissolved	0.00165		mg/L	0.02		19-MAR-19
Vanadium (V)-Dissolved	<0.00050		mg/L			19-MAR-19
Zinc (Zn)-Dissolved	0.0089		mg/L		5.0	19-MAR-19
Zirconium (Zr)-Dissolved	<0.000060		mg/L			19-MAR-19
Conductivity						
Conductivity	741		umhos/cm			23-MAR-19
Chloride in Water by IC (Low Level)						
Chloride (Cl)	13.4		mg/L		250	16-MAR-19
Alkalinity, Total (as CaCO3)						
Alkalinity, Total (as CaCO3)	329		mg/L			23-MAR-19
Total Coliform and E.coli						
Total Coliforms	0		MPN/100mL	0		16-MAR-19
Escherichia Coli	0		MPN/100mL	0		16-MAR-19



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865 Waverly Street - 3rd Floor
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ATTN: ERIC LEVAY

Date: 29-MAR-19
PO No.:
WO No.: L2245232
Project Ref: 18-0300-05
Sample ID: PW19-KGS-01
Sampled By:
Date Collected: 12-MAR-19
Lab Sample ID: L2245232-28
Matrix: WATER

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
<p>CDWQG = Health Canada Guideline Limits updated</p> <p>* CDWQG for Nitrate+Nitrite-N is the limit for nitrate only. If present as Nitrate then the limit is 10mg/L < or N.D. = less than detection limit. * Turbidity guideline based on membrane filtration. For guidelines on conventional treatment and slow sand or diatomaceous earth filtration please see Summary Table of Guidelines for Canadian Drinking Water Quality - A blank entry designates no known limit. - A shaded value in the Results column exceeds CDWQG MAC and/ or Aesthetic Objective.</p>	MAY 2018					
<p>Approved by </p> <hr/> <p>Hua Wo Account Manager</p>						



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Winnipeg MB R3T 5P4
ATTN: ERIC LEVAY

Date: 29-MAR-19
PO No.:
WO No.: L2245232
Project Ref: 18-0300-05
Sample ID: TH19-KGS-15
Sampled By:
Date Collected: 09-MAR-19
Lab Sample ID: L2245232-29
Matrix: WATER

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
ROU4W Dissolved						
Bicarbonate (HCO3)	432		mg/L			25-MAR-19
Carbonate (CO3)	<0.60		mg/L			25-MAR-19
Hydroxide (OH)	<0.34		mg/L			25-MAR-19
*Nitrate and Nitrite as N	0.0175		mg/L	10		21-MAR-19
pH						
pH	8.22		pH units			23-MAR-19
Turbidity						
*Turbidity	599		NTU			16-MAR-19
TDS calculated						
TDS (Calculated)	383		mg/L		500	25-MAR-19
Sulfate in Water by IC						
Sulfate (SO4)	33.3		mg/L		500	16-MAR-19
Nitrite in Water by IC (Low Level)						
*Nitrite (as N)	<0.0010		mg/L	1		16-MAR-19
Nitrate in Water by IC (Low Level)						
*Nitrate (as N)	0.0175		mg/L	10		16-MAR-19
Ion Balance Calculation						
Hardness Calculated						
Hardness (as CaCO3)	383		mg/L		500	20-MAR-19
Fluoride in Water by IC						
Fluoride (F)	0.249		mg/L	1.5		16-MAR-19
Dissolved Metals in Water by CRC ICPMS						
Dissolved Metals	FIELD					19-MAR-19
Filtration Location						
Aluminum (Al)-Dissolved	0.0041		mg/L		0.1	19-MAR-19
Antimony (Sb)-Dissolved	0.00018		mg/L	0.006		19-MAR-19
Arsenic (As)-Dissolved	0.00065		mg/L	0.01		19-MAR-19
Barium (Ba)-Dissolved	0.0353		mg/L	1		19-MAR-19
Beryllium (Be)-Dissolved	<0.00010		mg/L			19-MAR-19
Bismuth (Bi)-Dissolved	<0.000050		mg/L			19-MAR-19
Boron (B)-Dissolved	0.124		mg/L	5		19-MAR-19
Cadmium (Cd)-Dissolved	0.000098		mg/L	0.005		19-MAR-19
Calcium (Ca)-Dissolved	65.2		mg/L			19-MAR-19
Cesium (Cs)-Dissolved	<0.000010		mg/L			19-MAR-19
Chromium (Cr)-Dissolved	0.00021		mg/L	0.05		19-MAR-19
Cobalt (Co)-Dissolved	0.00054		mg/L			19-MAR-19
Copper (Cu)-Dissolved	0.00044		mg/L	2.0	1.0	19-MAR-19
Iron (Fe)-Dissolved	<0.010		mg/L		0.3	19-MAR-19
Lead (Pb)-Dissolved	<0.000050		mg/L	0.01		19-MAR-19

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ATTN: ERIC LEVAY

Date: 29-MAR-19
PO No.:
WO No.: L2245232
Project Ref: 18-0300-05
Sample ID: TH19-KGS-15
Sampled By:
Date Collected: 09-MAR-19
Lab Sample ID: L2245232-29
Matrix: WATER

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
ROU4W Dissolved						
Dissolved Metals in Water by CRC ICPMS						
Lithium (Li)-Dissolved	0.0253		mg/L			19-MAR-19
Magnesium (Mg)-Dissolved	53.4		mg/L			19-MAR-19
Manganese (Mn)-Dissolved	0.0825		mg/L		0.05	19-MAR-19
Molybdenum (Mo)-Dissolved	0.00505		mg/L			19-MAR-19
Nickel (Ni)-Dissolved	0.00267		mg/L			19-MAR-19
Phosphorus (P)-Dissolved	<0.030		mg/L			19-MAR-19
Potassium (K)-Dissolved	5.57		mg/L			19-MAR-19
Rubidium (Rb)-Dissolved	0.00319		mg/L			19-MAR-19
Selenium (Se)-Dissolved	0.000109		mg/L	0.05		19-MAR-19
Silicon (Si)-Dissolved	5.88		mg/L			19-MAR-19
Silver (Ag)-Dissolved	<0.000010		mg/L			19-MAR-19
Sodium (Na)-Dissolved	10.3		mg/L		200	19-MAR-19
Strontium (Sr)-Dissolved	0.186		mg/L			19-MAR-19
Sulfur (S)-Dissolved	12.0		mg/L			19-MAR-19
Tellurium (Te)-Dissolved	<0.00020		mg/L			19-MAR-19
Thallium (Tl)-Dissolved	0.000027		mg/L			19-MAR-19
Thorium (Th)-Dissolved	<0.00010		mg/L			19-MAR-19
Tin (Sn)-Dissolved	0.00031		mg/L			19-MAR-19
Titanium (Ti)-Dissolved	<0.00030		mg/L			19-MAR-19
Tungsten (W)-Dissolved	0.00704		mg/L			19-MAR-19
Uranium (U)-Dissolved	0.00125		mg/L	0.02		19-MAR-19
Vanadium (V)-Dissolved	<0.00050		mg/L			19-MAR-19
Zinc (Zn)-Dissolved	0.0027		mg/L		5.0	19-MAR-19
Zirconium (Zr)-Dissolved	0.000182		mg/L			19-MAR-19
Conductivity						
Conductivity	661		umhos/cm			23-MAR-19
Chloride in Water by IC (Low Level)						
Chloride (Cl)	2.88		mg/L		250	16-MAR-19
Alkalinity, Total (as CaCO3)						
Alkalinity, Total (as CaCO3)	355		mg/L			23-MAR-19



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Date: 29-MAR-19
PO No.:
WO No.: L2245232
Project Ref: 18-0300-05
Sample ID: TH19-KGS-15
Sampled By:
Date Collected: 09-MAR-19
Lab Sample ID: L2245232-29
Matrix: WATER

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
<p>CDWQG = Health Canada Guideline Limits updated</p> <p>* CDWQG for Nitrate+Nitrite-N is the limit for nitrate only. If present as Nitrate then the limit is 10mg/L < or N.D. = less than detection limit. * Turbidity guideline based on membrane filtration. For guidelines on conventional treatment and slow sand or diatomaceous earth filtration please see Summary Table of Guidelines for Canadian Drinking Water Quality - A blank entry designates no known limit. - A shaded value in the Results column exceeds CDWQG MAC and/ or Aesthetic Objective.</p> <p>Approved by <u><i>Hua Wo</i></u> Hua Wo Account Manager</p>	MAY 2018					



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Date: 29-MAR-19
PO No.:
WO No.: L2245232
Project Ref: 18-0300-05
Sample ID: TH200
Sampled By:
Date Collected: 09-MAR-19
Lab Sample ID: L2245232-30
Matrix: WATER

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
ROU4W Dissolved						
Bicarbonate (HCO3)	505		mg/L			25-MAR-19
Carbonate (CO3)	<0.60		mg/L			25-MAR-19
Hydroxide (OH)	<0.34		mg/L			25-MAR-19
*Nitrate and Nitrite as N	<0.0051		mg/L	10		21-MAR-19
pH						
pH	8.11		pH units			23-MAR-19
Turbidity						
*Turbidity	>4000		NTU			16-MAR-19
TDS calculated						
TDS (Calculated)	406		mg/L		500	25-MAR-19
Sulfate in Water by IC						
Sulfate (SO4)	21.6		mg/L		500	16-MAR-19
Nitrite in Water by IC (Low Level)						
*Nitrite (as N)	<0.0010		mg/L	1		16-MAR-19
Nitrate in Water by IC (Low Level)						
*Nitrate (as N)	<0.0050		mg/L	10		16-MAR-19
Ion Balance Calculation						
Hardness Calculated						
Hardness (as CaCO3)	412		mg/L		500	20-MAR-19
Fluoride in Water by IC						
Fluoride (F)	0.320		mg/L	1.5		16-MAR-19
Dissolved Metals in Water by CRC ICPMS						
Dissolved Metals	FIELD					19-MAR-19
Filtration Location						
Aluminum (Al)-Dissolved	0.0029		mg/L		0.1	19-MAR-19
Antimony (Sb)-Dissolved	<0.00010		mg/L	0.006		19-MAR-19
Arsenic (As)-Dissolved	0.00100		mg/L	0.01		19-MAR-19
Barium (Ba)-Dissolved	0.0601		mg/L	1		19-MAR-19
Beryllium (Be)-Dissolved	<0.00010		mg/L			19-MAR-19
Bismuth (Bi)-Dissolved	<0.000050		mg/L			19-MAR-19
Boron (B)-Dissolved	0.091		mg/L	5		19-MAR-19
Cadmium (Cd)-Dissolved	<0.0000050		mg/L	0.005		19-MAR-19
Calcium (Ca)-Dissolved	59.5		mg/L			19-MAR-19
Cesium (Cs)-Dissolved	<0.000010		mg/L			19-MAR-19
Chromium (Cr)-Dissolved	<0.00010		mg/L	0.05		19-MAR-19
Cobalt (Co)-Dissolved	0.00021		mg/L			19-MAR-19
Copper (Cu)-Dissolved	<0.00020		mg/L	2.0	1.0	19-MAR-19
Iron (Fe)-Dissolved	<0.010		mg/L		0.3	19-MAR-19
Lead (Pb)-Dissolved	<0.000050		mg/L	0.01		19-MAR-19

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ATTN: ERIC LEVAY

Date: 29-MAR-19
PO No.:
WO No.: L2245232
Project Ref: 18-0300-05
Sample ID: TH200
Sampled By:
Date Collected: 09-MAR-19
Lab Sample ID: L2245232-30
Matrix: WATER

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
ROU4W Dissolved						
Dissolved Metals in Water by CRC ICPMS						
Lithium (Li)-Dissolved	0.0207		mg/L			19-MAR-19
Magnesium (Mg)-Dissolved	64.0		mg/L			19-MAR-19
Manganese (Mn)-Dissolved	0.0103		mg/L		0.05	19-MAR-19
Molybdenum (Mo)-Dissolved	0.00105		mg/L			19-MAR-19
Nickel (Ni)-Dissolved	0.00069		mg/L			19-MAR-19
Phosphorus (P)-Dissolved	<0.030		mg/L			19-MAR-19
Potassium (K)-Dissolved	3.49		mg/L			19-MAR-19
Rubidium (Rb)-Dissolved	0.00229		mg/L			19-MAR-19
Selenium (Se)-Dissolved	<0.000050		mg/L	0.05		19-MAR-19
Silicon (Si)-Dissolved	5.88		mg/L			19-MAR-19
Silver (Ag)-Dissolved	<0.000010		mg/L			19-MAR-19
Sodium (Na)-Dissolved	8.22		mg/L		200	19-MAR-19
Strontium (Sr)-Dissolved	0.184		mg/L			19-MAR-19
Sulfur (S)-Dissolved	7.71		mg/L			19-MAR-19
Tellurium (Te)-Dissolved	<0.00020		mg/L			19-MAR-19
Thallium (Tl)-Dissolved	0.000014		mg/L			19-MAR-19
Thorium (Th)-Dissolved	<0.00010		mg/L			19-MAR-19
Tin (Sn)-Dissolved	<0.00010		mg/L			19-MAR-19
Titanium (Ti)-Dissolved	<0.00030		mg/L			19-MAR-19
Tungsten (W)-Dissolved	0.00200		mg/L			19-MAR-19
Uranium (U)-Dissolved	0.00261		mg/L	0.02		19-MAR-19
Vanadium (V)-Dissolved	<0.00050		mg/L			19-MAR-19
Zinc (Zn)-Dissolved	<0.0010		mg/L		5.0	19-MAR-19
Zirconium (Zr)-Dissolved	<0.000060		mg/L			19-MAR-19
Conductivity						
Conductivity	691		umhos/cm			23-MAR-19
Chloride in Water by IC (Low Level)						
Chloride (Cl)	1.36		mg/L		250	16-MAR-19
Alkalinity, Total (as CaCO3)						
Alkalinity, Total (as CaCO3)	414		mg/L			23-MAR-19



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Date: 29-MAR-19
PO No.:
WO No.: L2245232
Project Ref: 18-0300-05
Sample ID: TH200
Sampled By:
Date Collected: 09-MAR-19
Lab Sample ID: L2245232-30
Matrix: WATER

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
<p>CDWQG = Health Canada Guideline Limits updated</p> <p>* CDWQG for Nitrate+Nitrite-N is the limit for nitrate only. If present as Nitrate then the limit is 10mg/L < or N.D. = less than detection limit. * Turbidity guideline based on membrane filtration. For guidelines on conventional treatment and slow sand or diatomaceous earth filtration please see Summary Table of Guidelines for Canadian Drinking Water Quality - A blank entry designates no known limit. - A shaded value in the Results column exceeds CDWQG MAC and/ or Aesthetic Objective.</p>	MAY 2018					
<p>Approved by <u><i>Hua Wo</i></u> Hua Wo Account Manager</p>						



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ATTN: ERIC LEVAY

Date: 29-MAR-19
PO No.:
WO No.: L2245232
Project Ref: 18-0300-05
Sample ID: TH19-KGS-19
Sampled By:
Date Collected: 11-MAR-19
Lab Sample ID: L2245232-31
Matrix: WATER

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
ROU4W Dissolved						
Bicarbonate (HCO3)	403		mg/L			25-MAR-19
Carbonate (CO3)	10.4		mg/L			25-MAR-19
Hydroxide (OH)	<0.34		mg/L			25-MAR-19
*Nitrate and Nitrite as N	0.046		mg/L	10		21-MAR-19
pH						
pH	8.47		pH units			23-MAR-19
Turbidity						
*Turbidity	468		NTU			16-MAR-19
TDS calculated						
TDS (Calculated)	497		mg/L		500	25-MAR-19
Sulfate in Water by IC						
Sulfate (SO4)	110		mg/L		500	16-MAR-19
Nitrite in Water by IC (Low Level)						
*Nitrite (as N)	0.0034		mg/L	1		16-MAR-19
Nitrate in Water by IC (Low Level)						
*Nitrate (as N)	0.042		mg/L	10		16-MAR-19
Ion Balance Calculation						
Hardness Calculated						
Hardness (as CaCO3)	431		mg/L		500	20-MAR-19
Fluoride in Water by IC						
Fluoride (F)	0.376		mg/L	1.5		16-MAR-19
Dissolved Metals in Water by CRC ICPMS						
Dissolved Metals	FIELD					19-MAR-19
Filtration Location						
Aluminum (Al)-Dissolved	0.0292		mg/L		0.1	19-MAR-19
Antimony (Sb)-Dissolved	0.00429		mg/L	0.006		19-MAR-19
Arsenic (As)-Dissolved	0.0121		mg/L	0.01		19-MAR-19
Barium (Ba)-Dissolved	0.0292		mg/L	1		19-MAR-19
Beryllium (Be)-Dissolved	<0.00010		mg/L			19-MAR-19
Bismuth (Bi)-Dissolved	<0.000050		mg/L			19-MAR-19
Boron (B)-Dissolved	0.116		mg/L	5		19-MAR-19
Cadmium (Cd)-Dissolved	<0.0000050		mg/L	0.005		19-MAR-19
Calcium (Ca)-Dissolved	44.9		mg/L			19-MAR-19
Cesium (Cs)-Dissolved	0.000016		mg/L			19-MAR-19
Chromium (Cr)-Dissolved	0.00233		mg/L	0.05		19-MAR-19
Cobalt (Co)-Dissolved	0.00013		mg/L			19-MAR-19
Copper (Cu)-Dissolved	0.00200		mg/L	2.0	1.0	19-MAR-19
Iron (Fe)-Dissolved	<0.010		mg/L		0.3	19-MAR-19
Lead (Pb)-Dissolved	0.000052		mg/L	0.01		19-MAR-19



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ATTN: ERIC LEVAY

Date: 29-MAR-19
PO No.:
WO No.: L2245232
Project Ref: 18-0300-05
Sample ID: TH19-KGS-19
Sampled By:
Date Collected: 11-MAR-19
Lab Sample ID: L2245232-31
Matrix: WATER

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
ROU4W Dissolved						
Dissolved Metals in Water by CRC ICPMS						
Lithium (Li)-Dissolved	0.0334		mg/L			19-MAR-19
Magnesium (Mg)-Dissolved	77.3		mg/L			19-MAR-19
Manganese (Mn)-Dissolved	0.00082		mg/L		0.05	19-MAR-19
Molybdenum (Mo)-Dissolved	0.00887		mg/L			19-MAR-19
Nickel (Ni)-Dissolved	0.00138		mg/L			19-MAR-19
Phosphorus (P)-Dissolved	0.041		mg/L			19-MAR-19
Potassium (K)-Dissolved	5.32		mg/L			19-MAR-19
Rubidium (Rb)-Dissolved	0.00379		mg/L			19-MAR-19
Selenium (Se)-Dissolved	0.00134		mg/L	0.05		19-MAR-19
Silicon (Si)-Dissolved	19.2		mg/L			19-MAR-19
Silver (Ag)-Dissolved	<0.000010		mg/L			19-MAR-19
Sodium (Na)-Dissolved	37.1		mg/L		200	19-MAR-19
Strontium (Sr)-Dissolved	0.283		mg/L			19-MAR-19
Sulfur (S)-Dissolved	35.4		mg/L			19-MAR-19
Tellurium (Te)-Dissolved	<0.00020		mg/L			19-MAR-19
Thallium (Tl)-Dissolved	<0.000010		mg/L			19-MAR-19
Thorium (Th)-Dissolved	<0.00010		mg/L			19-MAR-19
Tin (Sn)-Dissolved	0.00015		mg/L			19-MAR-19
Titanium (Ti)-Dissolved	0.00037		mg/L			19-MAR-19
Tungsten (W)-Dissolved	0.121		mg/L			19-MAR-19
Uranium (U)-Dissolved	0.00218		mg/L	0.02		19-MAR-19
Vanadium (V)-Dissolved	0.00796		mg/L			19-MAR-19
Zinc (Zn)-Dissolved	0.0051		mg/L		5.0	19-MAR-19
Zirconium (Zr)-Dissolved	0.000191		mg/L			19-MAR-19
Conductivity						
Conductivity	785		umhos/cm			23-MAR-19
Chloride in Water by IC (Low Level)						
Chloride (Cl)	14.0		mg/L		250	16-MAR-19
Alkalinity, Total (as CaCO3)						
Alkalinity, Total (as CaCO3)	348		mg/L			23-MAR-19



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865 Waverly Street - 3rd Floor
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ATTN: ERIC LEVAY

Date: 29-MAR-19
PO No.:
WO No.: L2245232
Project Ref: 18-0300-05
Sample ID: TH19-KGS-19
Sampled By:
Date Collected: 11-MAR-19
Lab Sample ID: L2245232-31
Matrix: WATER

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
<p>CDWQG = Health Canada Guideline Limits updated</p> <p>* CDWQG for Nitrate+Nitrite-N is the limit for nitrate only. If present as Nitrate then the limit is 10mg/L < or N.D. = less than detection limit. * Turbidity guideline based on membrane filtration. For guidelines on conventional treatment and slow sand or diatomaceous earth filtration please see Summary Table of Guidelines for Canadian Drinking Water Quality - A blank entry designates no known limit. - A shaded value in the Results column exceeds CDWQG MAC and/ or Aesthetic Objective.</p>	MAY 2018					
<p>Approved by <u>Hua Wo</u> Hua Wo Account Manager</p>						



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ATTN: ERIC LEVAY

Date: 29-MAR-19
PO No.:
WO No.: L2245232
Project Ref: 18-0300-05
Sample ID: TH19-KGS-20
Sampled By:
Date Collected: 14-MAR-19
Lab Sample ID: L2245232-32
Matrix: WATER

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
ROU4W Dissolved						
Bicarbonate (HCO3)	436		mg/L			25-MAR-19
Carbonate (CO3)	3.00		mg/L			25-MAR-19
Hydroxide (OH)	<0.34		mg/L			25-MAR-19
*Nitrate and Nitrite as N	0.029		mg/L	10		21-MAR-19
pH						
pH	8.31		pH units			23-MAR-19
Turbidity						
*Turbidity	>4000		NTU			16-MAR-19
TDS calculated						
TDS (Calculated)	594		mg/L		500	25-MAR-19
Sulfate in Water by IC						
Sulfate (SO4)	147		mg/L		500	16-MAR-19
Nitrite in Water by IC (Low Level)						
*Nitrite (as N)	0.0056		mg/L	1		16-MAR-19
Nitrate in Water by IC (Low Level)						
*Nitrate (as N)	0.024		mg/L	10		16-MAR-19
Ion Balance Calculation						
Hardness Calculated						
Hardness (as CaCO3)	215		mg/L		500	20-MAR-19
Fluoride in Water by IC						
Fluoride (F)	0.539		mg/L	1.5		16-MAR-19
Dissolved Metals in Water by CRC ICPMS						
Dissolved Metals	FIELD					19-MAR-19
Filtration Location						
Aluminum (Al)-Dissolved	0.0013		mg/L		0.1	19-MAR-19
Antimony (Sb)-Dissolved	0.00021		mg/L	0.006		19-MAR-19
Arsenic (As)-Dissolved	0.00053		mg/L	0.01		19-MAR-19
Barium (Ba)-Dissolved	0.0152		mg/L	1		19-MAR-19
Beryllium (Be)-Dissolved	<0.00010		mg/L			19-MAR-19
Bismuth (Bi)-Dissolved	<0.000050		mg/L			19-MAR-19
Boron (B)-Dissolved	0.142		mg/L	5		19-MAR-19
Cadmium (Cd)-Dissolved	<0.0000050		mg/L	0.005		19-MAR-19
Calcium (Ca)-Dissolved	32.5		mg/L			19-MAR-19
Cesium (Cs)-Dissolved	<0.000010		mg/L			19-MAR-19
Chromium (Cr)-Dissolved	<0.00010		mg/L	0.05		19-MAR-19
Cobalt (Co)-Dissolved	0.00085		mg/L			19-MAR-19
Copper (Cu)-Dissolved	0.00023		mg/L	2.0	1.0	19-MAR-19
Iron (Fe)-Dissolved	<0.010		mg/L		0.3	19-MAR-19
Lead (Pb)-Dissolved	<0.000050		mg/L	0.01		19-MAR-19

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ATTN: ERIC LEVAY

Date: 29-MAR-19
PO No.:
WO No.: L2245232
Project Ref: 18-0300-05
Sample ID: TH19-KGS-20
Sampled By:
Date Collected: 14-MAR-19
Lab Sample ID: L2245232-32
Matrix: WATER

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
ROU4W Dissolved						
Dissolved Metals in Water by CRC ICPMS						
Lithium (Li)-Dissolved	0.0326		mg/L			19-MAR-19
Magnesium (Mg)-Dissolved	32.5		mg/L			19-MAR-19
Manganese (Mn)-Dissolved	0.0197		mg/L		0.05	19-MAR-19
Molybdenum (Mo)-Dissolved	0.00806		mg/L			19-MAR-19
Nickel (Ni)-Dissolved	0.00129		mg/L			19-MAR-19
Phosphorus (P)-Dissolved	<0.030		mg/L			19-MAR-19
Potassium (K)-Dissolved	4.50		mg/L			19-MAR-19
Rubidium (Rb)-Dissolved	0.00202		mg/L			19-MAR-19
Selenium (Se)-Dissolved	0.000527		mg/L	0.05		19-MAR-19
Silicon (Si)-Dissolved	3.97		mg/L			19-MAR-19
Silver (Ag)-Dissolved	<0.000010		mg/L			19-MAR-19
Sodium (Na)-Dissolved	139		mg/L		200	19-MAR-19
Strontium (Sr)-Dissolved	0.224		mg/L			19-MAR-19
Sulfur (S)-Dissolved	49.8		mg/L			19-MAR-19
Tellurium (Te)-Dissolved	<0.00020		mg/L			19-MAR-19
Thallium (Tl)-Dissolved	<0.000010		mg/L			19-MAR-19
Thorium (Th)-Dissolved	<0.00010		mg/L			19-MAR-19
Tin (Sn)-Dissolved	<0.00010		mg/L			19-MAR-19
Titanium (Ti)-Dissolved	<0.00030		mg/L			19-MAR-19
Tungsten (W)-Dissolved	0.00603		mg/L			19-MAR-19
Uranium (U)-Dissolved	0.00155		mg/L	0.02		19-MAR-19
Vanadium (V)-Dissolved	<0.00050		mg/L			19-MAR-19
Zinc (Zn)-Dissolved	<0.0010		mg/L		5.0	19-MAR-19
Zirconium (Zr)-Dissolved	<0.000060		mg/L			19-MAR-19
Conductivity						
Conductivity	951		umhos/cm			23-MAR-19
Chloride in Water by IC (Low Level)						
Chloride (Cl)	21.3		mg/L		250	16-MAR-19
Alkalinity, Total (as CaCO3)						
Alkalinity, Total (as CaCO3)	362		mg/L			23-MAR-19



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Date: 29-MAR-19
PO No.:
WO No.: L2245232
Project Ref: 18-0300-05
Sample ID: TH19-KGS-20
Sampled By:
Date Collected: 14-MAR-19
Lab Sample ID: L2245232-32
Matrix: WATER

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
<p>CDWQG = Health Canada Guideline Limits updated</p> <p>* CDWQG for Nitrate+Nitrite-N is the limit for nitrate only. If present as Nitrate then the limit is 10mg/L < or N.D. = less than detection limit. * Turbidity guideline based on membrane filtration. For guidelines on conventional treatment and slow sand or diatomaceous earth filtration please see Summary Table of Guidelines for Canadian Drinking Water Quality - A blank entry designates no known limit. - A shaded value in the Results column exceeds CDWQG MAC and/ or Aesthetic Objective.</p>	MAY 2018					
<p>Approved by <u><i>Hua Wo</i></u> Hua Wo Account Manager</p>						



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Date: 29-MAR-19
PO No.:
WO No.: L2245232
Project Ref: 18-0300-05
Sample ID: TH300
Sampled By:
Date Collected: 14-MAR-19
Lab Sample ID: L2245232-33
Matrix: WATER

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
ROU4W Dissolved						
Bicarbonate (HCO3)	426		mg/L			25-MAR-19
Carbonate (CO3)	2.28		mg/L			25-MAR-19
Hydroxide (OH)	<0.34		mg/L			25-MAR-19
*Nitrate and Nitrite as N	0.036		mg/L	10		21-MAR-19
pH						
pH	8.30		pH units			23-MAR-19
Turbidity						
*Turbidity	>4000		NTU			16-MAR-19
TDS calculated						
TDS (Calculated)	591		mg/L		500	25-MAR-19
Sulfate in Water by IC						
Sulfate (SO4)	147		mg/L		500	16-MAR-19
Nitrite in Water by IC (Low Level)						
*Nitrite (as N)	0.0048		mg/L	1		16-MAR-19
Nitrate in Water by IC (Low Level)						
*Nitrate (as N)	0.032		mg/L	10		16-MAR-19
Ion Balance Calculation						
Hardness Calculated						
Hardness (as CaCO3)	215		mg/L		500	20-MAR-19
Fluoride in Water by IC						
Fluoride (F)	0.535		mg/L	1.5		16-MAR-19
Dissolved Metals in Water by CRC ICPMS						
Dissolved Metals	FIELD					19-MAR-19
Filtration Location						
Aluminum (Al)-Dissolved	0.0010		mg/L		0.1	19-MAR-19
Antimony (Sb)-Dissolved	0.00020		mg/L	0.006		19-MAR-19
Arsenic (As)-Dissolved	0.00047		mg/L	0.01		19-MAR-19
Barium (Ba)-Dissolved	0.0151		mg/L	1		19-MAR-19
Beryllium (Be)-Dissolved	<0.00010		mg/L			19-MAR-19
Bismuth (Bi)-Dissolved	<0.000050		mg/L			19-MAR-19
Boron (B)-Dissolved	0.150		mg/L	5		19-MAR-19
Cadmium (Cd)-Dissolved	<0.0000050		mg/L	0.005		19-MAR-19
Calcium (Ca)-Dissolved	32.1		mg/L			19-MAR-19
Cesium (Cs)-Dissolved	<0.000010		mg/L			19-MAR-19
Chromium (Cr)-Dissolved	<0.00010		mg/L	0.05		19-MAR-19
Cobalt (Co)-Dissolved	0.00075		mg/L			19-MAR-19
Copper (Cu)-Dissolved	0.00022		mg/L	2.0	1.0	19-MAR-19
Iron (Fe)-Dissolved	<0.010		mg/L		0.3	19-MAR-19
Lead (Pb)-Dissolved	<0.000050		mg/L	0.01		19-MAR-19

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Date: 29-MAR-19
PO No.:
WO No.: L2245232
Project Ref: 18-0300-05
Sample ID: TH300
Sampled By:
Date Collected: 14-MAR-19
Lab Sample ID: L2245232-33
Matrix: WATER

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
ROU4W Dissolved						
Dissolved Metals in Water by CRC ICPMS						
Lithium (Li)-Dissolved	0.0327		mg/L			19-MAR-19
Magnesium (Mg)-Dissolved	32.7		mg/L			19-MAR-19
Manganese (Mn)-Dissolved	0.0199		mg/L		0.05	19-MAR-19
Molybdenum (Mo)-Dissolved	0.00774		mg/L			19-MAR-19
Nickel (Ni)-Dissolved	0.00115		mg/L			19-MAR-19
Phosphorus (P)-Dissolved	<0.030		mg/L			19-MAR-19
Potassium (K)-Dissolved	4.41		mg/L			19-MAR-19
Rubidium (Rb)-Dissolved	0.00197		mg/L			19-MAR-19
Selenium (Se)-Dissolved	0.000450		mg/L	0.05		19-MAR-19
Silicon (Si)-Dissolved	3.99		mg/L			19-MAR-19
Silver (Ag)-Dissolved	<0.000010		mg/L			19-MAR-19
Sodium (Na)-Dissolved	141		mg/L		200	19-MAR-19
Strontium (Sr)-Dissolved	0.219		mg/L			19-MAR-19
Sulfur (S)-Dissolved	49.9		mg/L			19-MAR-19
Tellurium (Te)-Dissolved	<0.00020		mg/L			19-MAR-19
Thallium (Tl)-Dissolved	<0.000010		mg/L			19-MAR-19
Thorium (Th)-Dissolved	<0.00010		mg/L			19-MAR-19
Tin (Sn)-Dissolved	<0.00010		mg/L			19-MAR-19
Titanium (Ti)-Dissolved	<0.00030		mg/L			19-MAR-19
Tungsten (W)-Dissolved	0.00595		mg/L			19-MAR-19
Uranium (U)-Dissolved	0.00145		mg/L	0.02		19-MAR-19
Vanadium (V)-Dissolved	<0.00050		mg/L			19-MAR-19
Zinc (Zn)-Dissolved	<0.0010		mg/L		5.0	19-MAR-19
Zirconium (Zr)-Dissolved	<0.000060		mg/L			19-MAR-19
Conductivity						
Conductivity	945		umhos/cm			23-MAR-19
Chloride in Water by IC (Low Level)						
Chloride (Cl)	21.3		mg/L		250	16-MAR-19
Alkalinity, Total (as CaCO3)						
Alkalinity, Total (as CaCO3)	353		mg/L			23-MAR-19



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Date: 29-MAR-19
PO No.:
WO No.: L2245232
Project Ref: 18-0300-05
Sample ID: TH300
Sampled By:
Date Collected: 14-MAR-19
Lab Sample ID: L2245232-33
Matrix: WATER

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
<p>CDWQG = Health Canada Guideline Limits updated</p> <p>* CDWQG for Nitrate+Nitrite-N is the limit for nitrate only. If present as Nitrate then the limit is 10mg/L < or N.D. = less than detection limit. * Turbidity guideline based on membrane filtration. For guidelines on conventional treatment and slow sand or diatomaceous earth filtration please see Summary Table of Guidelines for Canadian Drinking Water Quality - A blank entry designates no known limit. - A shaded value in the Results column exceeds CDWQG MAC and/ or Aesthetic Objective.</p>	MAY 2018					
<p>Approved by <u><i>Hua Wo</i></u> Hua Wo Account Manager</p>						



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ATTN: ERIC LEVAY

Date: 29-MAR-19
PO No.:
WO No.: L2245232
Project Ref: 18-0300-05
Sample ID: TH19-KGS-12B
Sampled By:
Date Collected: 14-MAR-19
Lab Sample ID: L2245232-34
Matrix: WATER

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
ROU4W Dissolved						
Bicarbonate (HCO3)	452		mg/L			25-MAR-19
Carbonate (CO3)	<0.60		mg/L			25-MAR-19
Hydroxide (OH)	<0.34		mg/L			25-MAR-19
*Nitrate and Nitrite as N	<0.010		mg/L	10		21-MAR-19
pH						
pH	8.29		pH units			23-MAR-19
Turbidity						
*Turbidity	676		NTU			16-MAR-19
TDS calculated						
TDS (Calculated)	481		mg/L		500	25-MAR-19
Sulfate in Water by IC						
Sulfate (SO4)	81.8		mg/L		500	16-MAR-19
Nitrite in Water by IC (Low Level)						
*Nitrite (as N)	<0.0020	DLM	mg/L	1		16-MAR-19
Nitrate in Water by IC (Low Level)						
*Nitrate (as N)	<0.010	DLM	mg/L	10		16-MAR-19
Ion Balance Calculation						
Hardness Calculated						
Hardness (as CaCO3)	425		mg/L		500	20-MAR-19
Fluoride in Water by IC						
Fluoride (F)	0.573		mg/L	1.5		16-MAR-19
Dissolved Metals in Water by CRC ICPMS						
Dissolved Metals	FIELD					19-MAR-19
Filtration Location						
Aluminum (Al)-Dissolved	0.0048		mg/L		0.1	19-MAR-19
Antimony (Sb)-Dissolved	0.00075		mg/L	0.006		19-MAR-19
Arsenic (As)-Dissolved	0.00071		mg/L	0.01		19-MAR-19
Barium (Ba)-Dissolved	0.0197		mg/L	1		19-MAR-19
Beryllium (Be)-Dissolved	<0.00010		mg/L			19-MAR-19
Bismuth (Bi)-Dissolved	<0.000050		mg/L			19-MAR-19
Boron (B)-Dissolved	0.167		mg/L	5		19-MAR-19
Cadmium (Cd)-Dissolved	0.0000147		mg/L	0.005		19-MAR-19
Calcium (Ca)-Dissolved	57.6		mg/L			19-MAR-19
Cesium (Cs)-Dissolved	<0.000010		mg/L			19-MAR-19
Chromium (Cr)-Dissolved	<0.00010		mg/L	0.05		19-MAR-19
Cobalt (Co)-Dissolved	0.00267		mg/L			19-MAR-19
Copper (Cu)-Dissolved	0.00324		mg/L	2.0	1.0	19-MAR-19
Iron (Fe)-Dissolved	<0.010		mg/L		0.3	19-MAR-19
Lead (Pb)-Dissolved	<0.000050		mg/L	0.01		19-MAR-19

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Date: 29-MAR-19
PO No.:
WO No.: L2245232
Project Ref: 18-0300-05
Sample ID: TH19-KGS-12B
Sampled By:
Date Collected: 14-MAR-19
Lab Sample ID: L2245232-34
Matrix: WATER

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
ROU4W Dissolved						
Dissolved Metals in Water by CRC ICPMS						
Lithium (Li)-Dissolved	0.0432		mg/L			19-MAR-19
Magnesium (Mg)-Dissolved	68.2		mg/L			19-MAR-19
Manganese (Mn)-Dissolved	0.0753		mg/L		0.05	19-MAR-19
Molybdenum (Mo)-Dissolved	0.00812		mg/L			19-MAR-19
Nickel (Ni)-Dissolved	0.00284		mg/L			19-MAR-19
Phosphorus (P)-Dissolved	0.049		mg/L			19-MAR-19
Potassium (K)-Dissolved	5.82		mg/L			19-MAR-19
Rubidium (Rb)-Dissolved	0.00151		mg/L			19-MAR-19
Selenium (Se)-Dissolved	0.000216		mg/L	0.05		19-MAR-19
Silicon (Si)-Dissolved	7.08		mg/L			19-MAR-19
Silver (Ag)-Dissolved	<0.000010		mg/L			19-MAR-19
Sodium (Na)-Dissolved	31.1		mg/L		200	19-MAR-19
Strontium (Sr)-Dissolved	0.307		mg/L			19-MAR-19
Sulfur (S)-Dissolved	27.9		mg/L			19-MAR-19
Tellurium (Te)-Dissolved	<0.00020		mg/L			19-MAR-19
Thallium (Tl)-Dissolved	0.000033		mg/L			19-MAR-19
Thorium (Th)-Dissolved	<0.00010		mg/L			19-MAR-19
Tin (Sn)-Dissolved	0.00035		mg/L			19-MAR-19
Titanium (Ti)-Dissolved	<0.00030		mg/L			19-MAR-19
Tungsten (W)-Dissolved	0.0573		mg/L			19-MAR-19
Uranium (U)-Dissolved	0.00416		mg/L	0.02		19-MAR-19
Vanadium (V)-Dissolved	<0.00050		mg/L			19-MAR-19
Zinc (Zn)-Dissolved	0.0289		mg/L		5.0	19-MAR-19
Zirconium (Zr)-Dissolved	0.000226		mg/L			19-MAR-19
Conductivity						
Conductivity	791		umhos/cm			23-MAR-19
Chloride in Water by IC (Low Level)						
Chloride (Cl)	13.6		mg/L		250	16-MAR-19
Alkalinity, Total (as CaCO3)						
Alkalinity, Total (as CaCO3)	371		mg/L			23-MAR-19



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Date: 29-MAR-19
PO No.:
WO No.: L2245232
Project Ref: 18-0300-05
Sample ID: TH19-KGS-12B
Sampled By:
Date Collected: 14-MAR-19
Lab Sample ID: L2245232-34
Matrix: WATER

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
<p>CDWQG = Health Canada Guideline Limits updated</p> <p>* CDWQG for Nitrate+Nitrite-N is the limit for nitrate only. If present as Nitrate then the limit is 10mg/L < or N.D. = less than detection limit. * Turbidity guideline based on membrane filtration. For guidelines on conventional treatment and slow sand or diatomaceous earth filtration please see Summary Table of Guidelines for Canadian Drinking Water Quality - A blank entry designates no known limit. - A shaded value in the Results column exceeds CDWQG MAC and/ or Aesthetic Objective.</p>	MAY 2018					
<p>Approved by </p> <hr/> <p>Hua Wo Account Manager</p>						



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ATTN: ERIC LEVAY

Date: 29-MAR-19
PO No.:
WO No.: L2245232
Project Ref: 18-0300-05
Sample ID: TH19-KGS-16B
Sampled By:
Date Collected: 09-MAR-19
Lab Sample ID: L2245232-35
Matrix: WATER

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
ROU4W Dissolved						
Bicarbonate (HCO3)	575		mg/L			25-MAR-19
Carbonate (CO3)	<0.60		mg/L			25-MAR-19
Hydroxide (OH)	<0.34		mg/L			25-MAR-19
*Nitrate and Nitrite as N	0.052		mg/L	10		21-MAR-19
pH						
pH	7.95		pH units			23-MAR-19
Turbidity						
*Turbidity	>4000		NTU			16-MAR-19
TDS calculated						
TDS (Calculated)	521		mg/L		500	25-MAR-19
Sulfate in Water by IC						
Sulfate (SO4)	22.9		mg/L		500	16-MAR-19
Nitrite in Water by IC (Low Level)						
*Nitrite (as N)	0.0044		mg/L	1		16-MAR-19
Nitrate in Water by IC (Low Level)						
*Nitrate (as N)	0.047		mg/L	10		16-MAR-19
Ion Balance Calculation						
Hardness Calculated						
Hardness (as CaCO3)	623		mg/L		500	20-MAR-19
Fluoride in Water by IC						
Fluoride (F)	0.183		mg/L	1.5		16-MAR-19
Dissolved Metals in Water by CRC ICPMS						
Dissolved Metals	FIELD					19-MAR-19
Filtration Location						
Aluminum (Al)-Dissolved	0.838		mg/L		0.1	19-MAR-19
Antimony (Sb)-Dissolved	<0.00010		mg/L	0.006		19-MAR-19
Arsenic (As)-Dissolved	0.00122		mg/L	0.01		19-MAR-19
Barium (Ba)-Dissolved	0.0816		mg/L	1		19-MAR-19
Beryllium (Be)-Dissolved	<0.00010		mg/L			19-MAR-19
Bismuth (Bi)-Dissolved	<0.000050		mg/L			19-MAR-19
Boron (B)-Dissolved	0.103		mg/L	5		19-MAR-19
Cadmium (Cd)-Dissolved	0.0000301		mg/L	0.005		19-MAR-19
Calcium (Ca)-Dissolved	129		mg/L			19-MAR-19
Cesium (Cs)-Dissolved	0.000049		mg/L			19-MAR-19
Chromium (Cr)-Dissolved	0.00153		mg/L	0.05		19-MAR-19
Cobalt (Co)-Dissolved	0.00195		mg/L			19-MAR-19
Copper (Cu)-Dissolved	0.00353		mg/L	2.0	1.0	19-MAR-19
Iron (Fe)-Dissolved	0.934		mg/L		0.3	19-MAR-19
Lead (Pb)-Dissolved	0.00166		mg/L	0.01		19-MAR-19

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Winnipeg MB R3T 5P4
ATTN: ERIC LEVAY

Date: 29-MAR-19
PO No.:
WO No.: L2245232
Project Ref: 18-0300-05
Sample ID: TH19-KGS-16B
Sampled By:
Date Collected: 09-MAR-19
Lab Sample ID: L2245232-35
Matrix: WATER

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
ROU4W Dissolved						
Dissolved Metals in Water by CRC ICPMS						
Lithium (Li)-Dissolved	0.0186		mg/L			19-MAR-19
Magnesium (Mg)-Dissolved	73.1		mg/L			19-MAR-19
Manganese (Mn)-Dissolved	0.390		mg/L		0.05	19-MAR-19
Molybdenum (Mo)-Dissolved	0.000866		mg/L			19-MAR-19
Nickel (Ni)-Dissolved	0.00356		mg/L			19-MAR-19
Phosphorus (P)-Dissolved	0.102		mg/L			19-MAR-19
Potassium (K)-Dissolved	2.63		mg/L			19-MAR-19
Rubidium (Rb)-Dissolved	0.00265		mg/L			19-MAR-19
Selenium (Se)-Dissolved	<0.000050		mg/L	0.05		19-MAR-19
Silicon (Si)-Dissolved	8.20		mg/L			19-MAR-19
Silver (Ag)-Dissolved	<0.000010		mg/L			19-MAR-19
Sodium (Na)-Dissolved	8.26		mg/L		200	19-MAR-19
Strontium (Sr)-Dissolved	0.177		mg/L			19-MAR-19
Sulfur (S)-Dissolved	8.21		mg/L			19-MAR-19
Tellurium (Te)-Dissolved	<0.00020		mg/L			19-MAR-19
Thallium (Tl)-Dissolved	0.000029		mg/L			19-MAR-19
Thorium (Th)-Dissolved	0.00014		mg/L			19-MAR-19
Tin (Sn)-Dissolved	0.00024		mg/L			19-MAR-19
Titanium (Ti)-Dissolved	0.0205		mg/L			19-MAR-19
Tungsten (W)-Dissolved	0.00041		mg/L			19-MAR-19
Uranium (U)-Dissolved	0.0101		mg/L	0.02		19-MAR-19
Vanadium (V)-Dissolved	0.00259		mg/L			19-MAR-19
Zinc (Zn)-Dissolved	0.0103		mg/L		5.0	19-MAR-19
Zirconium (Zr)-Dissolved	0.000878		mg/L			19-MAR-19
Conductivity						
Conductivity	809		umhos/cm			23-MAR-19
Chloride in Water by IC (Low Level)						
Chloride (Cl)	2.31		mg/L		250	16-MAR-19
Alkalinity, Total (as CaCO3)						
Alkalinity, Total (as CaCO3)	472		mg/L			23-MAR-19



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WO No.: L2245232
Project Ref: 18-0300-05
Sample ID: TH19-KGS-16B
Sampled By:
Date Collected: 09-MAR-19
Lab Sample ID: L2245232-35
Matrix: WATER

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
<p>CDWQG = Health Canada Guideline Limits updated</p> <p>* CDWQG for Nitrate+Nitrite-N is the limit for nitrate only. If present as Nitrate then the limit is 10mg/L < or N.D. = less than detection limit. * Turbidity guideline based on membrane filtration. For guidelines on conventional treatment and slow sand or diatomaceous earth filtration please see Summary Table of Guidelines for Canadian Drinking Water Quality - A blank entry designates no known limit. - A shaded value in the Results column exceeds CDWQG MAC and/ or Aesthetic Objective.</p>	MAY 2018					
<p>Approved by <u>Hua Wo</u> Hua Wo Account Manager</p>						



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Date: 29-MAR-19
PO No.:
WO No.: L2245232
Project Ref: 18-0300-05
Sample ID: TH19-KGS-08
Sampled By:
Date Collected: 08-MAR-19
Lab Sample ID: L2245232-36
Matrix: WATER

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
ROU4W Dissolved						
Bicarbonate (HCO3)	416		mg/L			25-MAR-19
Carbonate (CO3)	<0.60		mg/L			25-MAR-19
Hydroxide (OH)	<0.34		mg/L			25-MAR-19
*Nitrate and Nitrite as N	0.0060		mg/L	10		21-MAR-19
pH						
pH	8.19		pH units			23-MAR-19
Turbidity						
*Turbidity	267		NTU			16-MAR-19
TDS calculated						
TDS (Calculated)	347		mg/L		500	25-MAR-19
Sulfate in Water by IC						
Sulfate (SO4)	22.1		mg/L		500	16-MAR-19
Nitrite in Water by IC (Low Level)						
*Nitrite (as N)	<0.0010		mg/L	1		16-MAR-19
Nitrate in Water by IC (Low Level)						
*Nitrate (as N)	0.0060		mg/L	10		16-MAR-19
Ion Balance Calculation						
Hardness Calculated						
Hardness (as CaCO3)	352		mg/L		500	20-MAR-19
Fluoride in Water by IC						
Fluoride (F)	0.237		mg/L	1.5		16-MAR-19
Dissolved Metals in Water by CRC ICPMS						
Dissolved Metals	FIELD					19-MAR-19
Filtration Location						
Aluminum (Al)-Dissolved	0.0047		mg/L		0.1	19-MAR-19
Antimony (Sb)-Dissolved	<0.00010		mg/L	0.006		19-MAR-19
Arsenic (As)-Dissolved	0.00020		mg/L	0.01		19-MAR-19
Barium (Ba)-Dissolved	0.0602		mg/L	1		19-MAR-19
Beryllium (Be)-Dissolved	<0.00010		mg/L			19-MAR-19
Bismuth (Bi)-Dissolved	<0.000050		mg/L			19-MAR-19
Boron (B)-Dissolved	0.102		mg/L	5		19-MAR-19
Cadmium (Cd)-Dissolved	<0.0000050		mg/L	0.005		19-MAR-19
Calcium (Ca)-Dissolved	58.3		mg/L			19-MAR-19
Cesium (Cs)-Dissolved	<0.000010		mg/L			19-MAR-19
Chromium (Cr)-Dissolved	<0.00010		mg/L	0.05		19-MAR-19
Cobalt (Co)-Dissolved	0.00019		mg/L			19-MAR-19
Copper (Cu)-Dissolved	<0.00020		mg/L	2.0	1.0	19-MAR-19
Iron (Fe)-Dissolved	0.062		mg/L		0.3	19-MAR-19
Lead (Pb)-Dissolved	<0.000050		mg/L	0.01		19-MAR-19

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Date: 29-MAR-19
PO No.:
WO No.: L2245232
Project Ref: 18-0300-05
Sample ID: TH19-KGS-08
Sampled By:
Date Collected: 08-MAR-19
Lab Sample ID: L2245232-36
Matrix: WATER

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
ROU4W Dissolved						
Dissolved Metals in Water by CRC ICPMS						
Lithium (Li)-Dissolved	0.0172		mg/L			19-MAR-19
Magnesium (Mg)-Dissolved	50.2		mg/L			19-MAR-19
Manganese (Mn)-Dissolved	0.0261		mg/L		0.05	19-MAR-19
Molybdenum (Mo)-Dissolved	0.000317		mg/L			19-MAR-19
Nickel (Ni)-Dissolved	<0.00050		mg/L			19-MAR-19
Phosphorus (P)-Dissolved	<0.030		mg/L			19-MAR-19
Potassium (K)-Dissolved	4.13		mg/L			19-MAR-19
Rubidium (Rb)-Dissolved	0.00252		mg/L			19-MAR-19
Selenium (Se)-Dissolved	<0.000050		mg/L	0.05		19-MAR-19
Silicon (Si)-Dissolved	4.85		mg/L			19-MAR-19
Silver (Ag)-Dissolved	<0.000010		mg/L			19-MAR-19
Sodium (Na)-Dissolved	7.17		mg/L		200	19-MAR-19
Strontium (Sr)-Dissolved	0.161		mg/L			19-MAR-19
Sulfur (S)-Dissolved	7.63		mg/L			19-MAR-19
Tellurium (Te)-Dissolved	<0.00020		mg/L			19-MAR-19
Thallium (Tl)-Dissolved	<0.000010		mg/L			19-MAR-19
Thorium (Th)-Dissolved	<0.00010		mg/L			19-MAR-19
Tin (Sn)-Dissolved	<0.00010		mg/L			19-MAR-19
Titanium (Ti)-Dissolved	<0.00030		mg/L			19-MAR-19
Tungsten (W)-Dissolved	<0.00010		mg/L			19-MAR-19
Uranium (U)-Dissolved	0.000262		mg/L	0.02		19-MAR-19
Vanadium (V)-Dissolved	<0.00050		mg/L			19-MAR-19
Zinc (Zn)-Dissolved	0.0036		mg/L		5.0	19-MAR-19
Zirconium (Zr)-Dissolved	<0.000060		mg/L			19-MAR-19
Conductivity						
Conductivity	600		umhos/cm			23-MAR-19
Chloride in Water by IC (Low Level)						
Chloride (Cl)	1.07		mg/L		250	16-MAR-19
Alkalinity, Total (as CaCO3)						
Alkalinity, Total (as CaCO3)	341		mg/L			23-MAR-19



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WO No.: L2245232
Project Ref: 18-0300-05
Sample ID: TH19-KGS-08
Sampled By:
Date Collected: 08-MAR-19
Lab Sample ID: L2245232-36
Matrix: WATER

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
<p>CDWQG = Health Canada Guideline Limits updated</p> <p>* CDWQG for Nitrate+Nitrite-N is the limit for nitrate only. If present as Nitrate then the limit is 10mg/L < or N.D. = less than detection limit. * Turbidity guideline based on membrane filtration. For guidelines on conventional treatment and slow sand or diatomaceous earth filtration please see Summary Table of Guidelines for Canadian Drinking Water Quality - A blank entry designates no known limit. - A shaded value in the Results column exceeds CDWQG MAC and/ or Aesthetic Objective.</p>	MAY 2018					
<p>Approved by <u>Hua Wo</u> Hua Wo Account Manager</p>						



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Date: 29-MAR-19
PO No.:
WO No.: L2245232
Project Ref: 18-0300-05
Sample ID: TH19-KGS-11
Sampled By:
Date Collected: 08-MAR-19
Lab Sample ID: L2245232-37
Matrix: WATER

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
ROU4W Dissolved						
Bicarbonate (HCO3)	335		mg/L			25-MAR-19
Carbonate (CO3)	<0.60		mg/L			25-MAR-19
Hydroxide (OH)	<0.34		mg/L			25-MAR-19
*Nitrate and Nitrite as N	0.0317		mg/L	10		21-MAR-19
pH						
pH	8.23		pH units			23-MAR-19
Turbidity						
*Turbidity	>4000		NTU			16-MAR-19
TDS calculated						
TDS (Calculated)	440		mg/L		500	25-MAR-19
Sulfate in Water by IC						
Sulfate (SO4)	121		mg/L		500	16-MAR-19
Nitrite in Water by IC (Low Level)						
*Nitrite (as N)	0.0045		mg/L	1		16-MAR-19
Nitrate in Water by IC (Low Level)						
*Nitrate (as N)	0.0272		mg/L	10		16-MAR-19
Ion Balance Calculation						
Hardness Calculated						
Hardness (as CaCO3)	316		mg/L		500	20-MAR-19
Fluoride in Water by IC						
Fluoride (F)	1.15		mg/L	1.5		16-MAR-19
Dissolved Metals in Water by CRC ICPMS						
Dissolved Metals	FIELD					19-MAR-19
Filtration Location						
Aluminum (Al)-Dissolved	0.0042		mg/L		0.1	19-MAR-19
Antimony (Sb)-Dissolved	<0.00010		mg/L	0.006		19-MAR-19
Arsenic (As)-Dissolved	0.00206		mg/L	0.01		19-MAR-19
Barium (Ba)-Dissolved	0.0164		mg/L	1		19-MAR-19
Beryllium (Be)-Dissolved	<0.00010		mg/L			19-MAR-19
Bismuth (Bi)-Dissolved	<0.000050		mg/L			19-MAR-19
Boron (B)-Dissolved	0.412		mg/L	5		19-MAR-19
Cadmium (Cd)-Dissolved	<0.000050		mg/L	0.005		19-MAR-19
Calcium (Ca)-Dissolved	56.2		mg/L			19-MAR-19
Cesium (Cs)-Dissolved	0.000022		mg/L			19-MAR-19
Chromium (Cr)-Dissolved	<0.00010		mg/L	0.05		19-MAR-19
Cobalt (Co)-Dissolved	0.00014		mg/L			19-MAR-19
Copper (Cu)-Dissolved	<0.00020		mg/L	2.0	1.0	19-MAR-19
Iron (Fe)-Dissolved	0.044		mg/L		0.3	19-MAR-19
Lead (Pb)-Dissolved	<0.000050		mg/L	0.01		19-MAR-19



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Date: 29-MAR-19
PO No.:
WO No.: L2245232
Project Ref: 18-0300-05
Sample ID: TH19-KGS-11
Sampled By:
Date Collected: 08-MAR-19
Lab Sample ID: L2245232-37
Matrix: WATER

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
ROU4W Dissolved						
Dissolved Metals in Water by CRC ICPMS						
Lithium (Li)-Dissolved	0.0311		mg/L			19-MAR-19
Magnesium (Mg)-Dissolved	42.6		mg/L			19-MAR-19
Manganese (Mn)-Dissolved	0.0163		mg/L		0.05	19-MAR-19
Molybdenum (Mo)-Dissolved	0.00464		mg/L			19-MAR-19
Nickel (Ni)-Dissolved	0.00091		mg/L			19-MAR-19
Phosphorus (P)-Dissolved	<0.030		mg/L			19-MAR-19
Potassium (K)-Dissolved	5.88		mg/L			19-MAR-19
Rubidium (Rb)-Dissolved	0.00419		mg/L			19-MAR-19
Selenium (Se)-Dissolved	0.000142		mg/L	0.05		19-MAR-19
Silicon (Si)-Dissolved	4.29		mg/L			19-MAR-19
Silver (Ag)-Dissolved	<0.000010		mg/L			19-MAR-19
Sodium (Na)-Dissolved	39.4		mg/L		200	19-MAR-19
Strontium (Sr)-Dissolved	0.291		mg/L			19-MAR-19
Sulfur (S)-Dissolved	33.0		mg/L			19-MAR-19
Tellurium (Te)-Dissolved	<0.00020		mg/L			19-MAR-19
Thallium (Tl)-Dissolved	<0.000010		mg/L			19-MAR-19
Thorium (Th)-Dissolved	<0.00010		mg/L			19-MAR-19
Tin (Sn)-Dissolved	0.00015		mg/L			19-MAR-19
Titanium (Ti)-Dissolved	<0.00030		mg/L			19-MAR-19
Tungsten (W)-Dissolved	0.00197		mg/L			19-MAR-19
Uranium (U)-Dissolved	0.000908		mg/L	0.02		19-MAR-19
Vanadium (V)-Dissolved	<0.00050		mg/L			19-MAR-19
Zinc (Zn)-Dissolved	<0.0010		mg/L		5.0	19-MAR-19
Zirconium (Zr)-Dissolved	0.000061		mg/L			19-MAR-19
Conductivity						
Conductivity	732		umhos/cm			23-MAR-19
Chloride in Water by IC (Low Level)						
Chloride (Cl)	9.93		mg/L		250	16-MAR-19
Alkalinity, Total (as CaCO3)						
Alkalinity, Total (as CaCO3)	275		mg/L			23-MAR-19



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Date: 29-MAR-19
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Project Ref: 18-0300-05
Sample ID: TH19-KGS-11
Sampled By:
Date Collected: 08-MAR-19
Lab Sample ID: L2245232-37
Matrix: WATER

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
<p>CDWQG = Health Canada Guideline Limits updated</p> <p>* CDWQG for Nitrate+Nitrite-N is the limit for nitrate only. If present as Nitrate then the limit is 10mg/L < or N.D. = less than detection limit. * Turbidity guideline based on membrane filtration. For guidelines on conventional treatment and slow sand or diatomaceous earth filtration please see Summary Table of Guidelines for Canadian Drinking Water Quality - A blank entry designates no known limit. - A shaded value in the Results column exceeds CDWQG MAC and/ or Aesthetic Objective.</p>	MAY 2018					
<p>Approved by </p> <hr/> <p>Hua Wo Account Manager</p>						



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ATTN: ERIC LEVAY

Date: 29-MAR-19
PO No.:
WO No.: L2245232
Project Ref: 18-0300-05
Sample ID: TH19-KGS-18
Sampled By:
Date Collected: 11-MAR-19
Lab Sample ID: L2245232-38
Matrix: WATER

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
ROU4W Dissolved						
Bicarbonate (HCO3)	789		mg/L			25-MAR-19
Carbonate (CO3)	<0.60		mg/L			25-MAR-19
Hydroxide (OH)	<0.34		mg/L			25-MAR-19
*Nitrate and Nitrite as N	<0.010		mg/L	10		21-MAR-19
pH						
pH	7.77		pH units			23-MAR-19
Turbidity						
*Turbidity	>4000		NTU			16-MAR-19
TDS calculated						
TDS (Calculated)	607		mg/L		500	25-MAR-19
Sulfate in Water by IC						
Sulfate (SO4)	3.00		mg/L		500	16-MAR-19
Nitrite in Water by IC (Low Level)						
*Nitrite (as N)	<0.0020	DLM	mg/L	1		16-MAR-19
Nitrate in Water by IC (Low Level)						
*Nitrate (as N)	<0.010	DLM	mg/L	10		16-MAR-19
Ion Balance Calculation						
Hardness Calculated						
Hardness (as CaCO3)	637		mg/L		500	20-MAR-19
Fluoride in Water by IC						
Fluoride (F)	0.181		mg/L	1.5		16-MAR-19
Dissolved Metals in Water by CRC ICPMS						
Dissolved Metals	FIELD					19-MAR-19
Filtration Location						
Aluminum (Al)-Dissolved	0.0023		mg/L		0.1	19-MAR-19
Antimony (Sb)-Dissolved	0.00031		mg/L	0.006		19-MAR-19
Arsenic (As)-Dissolved	0.00101		mg/L	0.01		19-MAR-19
Barium (Ba)-Dissolved	0.0975		mg/L	1		19-MAR-19
Beryllium (Be)-Dissolved	<0.00010		mg/L			19-MAR-19
Bismuth (Bi)-Dissolved	<0.000050		mg/L			19-MAR-19
Boron (B)-Dissolved	0.093		mg/L	5		19-MAR-19
Cadmium (Cd)-Dissolved	<0.0000050		mg/L	0.005		19-MAR-19
Calcium (Ca)-Dissolved	114		mg/L			19-MAR-19
Cesium (Cs)-Dissolved	<0.000010		mg/L			19-MAR-19
Chromium (Cr)-Dissolved	<0.00010		mg/L	0.05		19-MAR-19
Cobalt (Co)-Dissolved	0.00086		mg/L			19-MAR-19
Copper (Cu)-Dissolved	0.00048		mg/L	2.0	1.0	19-MAR-19
Iron (Fe)-Dissolved	0.213		mg/L		0.3	19-MAR-19
Lead (Pb)-Dissolved	<0.000050		mg/L	0.01		19-MAR-19

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Date: 29-MAR-19
PO No.:
WO No.: L2245232
Project Ref: 18-0300-05
Sample ID: TH19-KGS-18
Sampled By:
Date Collected: 11-MAR-19
Lab Sample ID: L2245232-38
Matrix: WATER

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
ROU4W Dissolved						
Dissolved Metals in Water by CRC ICPMS						
Lithium (Li)-Dissolved	0.0400		mg/L			19-MAR-19
Magnesium (Mg)-Dissolved	85.4		mg/L			19-MAR-19
Manganese (Mn)-Dissolved	0.0478		mg/L		0.05	19-MAR-19
Molybdenum (Mo)-Dissolved	0.00526		mg/L			19-MAR-19
Nickel (Ni)-Dissolved	0.00259		mg/L			19-MAR-19
Phosphorus (P)-Dissolved	<0.030		mg/L			19-MAR-19
Potassium (K)-Dissolved	2.88		mg/L			19-MAR-19
Rubidium (Rb)-Dissolved	0.00226		mg/L			19-MAR-19
Selenium (Se)-Dissolved	0.000111		mg/L	0.05		19-MAR-19
Silicon (Si)-Dissolved	10.7		mg/L			19-MAR-19
Silver (Ag)-Dissolved	<0.000010		mg/L			19-MAR-19
Sodium (Na)-Dissolved	12.3		mg/L		200	19-MAR-19
Strontium (Sr)-Dissolved	0.308		mg/L			19-MAR-19
Sulfur (S)-Dissolved	2.38		mg/L			19-MAR-19
Tellurium (Te)-Dissolved	<0.00020		mg/L			19-MAR-19
Thallium (Tl)-Dissolved	<0.000010		mg/L			19-MAR-19
Thorium (Th)-Dissolved	<0.00010		mg/L			19-MAR-19
Tin (Sn)-Dissolved	<0.00010		mg/L			19-MAR-19
Titanium (Ti)-Dissolved	<0.00030		mg/L			19-MAR-19
Tungsten (W)-Dissolved	0.00101		mg/L			19-MAR-19
Uranium (U)-Dissolved	0.000459		mg/L	0.02		19-MAR-19
Vanadium (V)-Dissolved	<0.00050		mg/L			19-MAR-19
Zinc (Zn)-Dissolved	0.0099		mg/L		5.0	19-MAR-19
Zirconium (Zr)-Dissolved	0.000108		mg/L			19-MAR-19
Conductivity						
Conductivity	1040		umhos/cm			23-MAR-19
Chloride in Water by IC (Low Level)						
Chloride (Cl)	1.26		mg/L		250	16-MAR-19
Alkalinity, Total (as CaCO3)						
Alkalinity, Total (as CaCO3)	646		mg/L			23-MAR-19



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Date: 29-MAR-19
PO No.:
WO No.: L2245232
Project Ref: 18-0300-05
Sample ID: TH19-KGS-18
Sampled By:
Date Collected: 11-MAR-19
Lab Sample ID: L2245232-38
Matrix: WATER

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
<p>CDWQG = Health Canada Guideline Limits updated</p> <p>* CDWQG for Nitrate+Nitrite-N is the limit for nitrate only. If present as Nitrate then the limit is 10mg/L < or N.D. = less than detection limit. * Turbidity guideline based on membrane filtration. For guidelines on conventional treatment and slow sand or diatomaceous earth filtration please see Summary Table of Guidelines for Canadian Drinking Water Quality - A blank entry designates no known limit. - A shaded value in the Results column exceeds CDWQG MAC and/ or Aesthetic Objective.</p>	MAY 2018					
<p>Approved by <u><i>Hua Wo</i></u> Hua Wo Account Manager</p>						



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Date: 29-MAR-19
PO No.:
WO No.: L2245232
Project Ref: 18-0300-05
Sample ID: TH19-KGS-14
Sampled By:
Date Collected: 08-MAR-19
Lab Sample ID: L2245232-39
Matrix: WATER

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
ROU4W Dissolved						
Bicarbonate (HCO3)	425		mg/L			25-MAR-19
Carbonate (CO3)	<0.60		mg/L			25-MAR-19
Hydroxide (OH)	<0.34		mg/L			25-MAR-19
*Nitrate and Nitrite as N	<0.0051		mg/L	10		21-MAR-19
pH						
pH	8.15		pH units			23-MAR-19
Turbidity						
*Turbidity	2840		NTU			16-MAR-19
TDS calculated						
TDS (Calculated)	380		mg/L		500	25-MAR-19
Sulfate in Water by IC						
Sulfate (SO4)	41.0		mg/L		500	16-MAR-19
Nitrite in Water by IC (Low Level)						
*Nitrite (as N)	<0.0010		mg/L	1		16-MAR-19
Nitrate in Water by IC (Low Level)						
*Nitrate (as N)	<0.0050		mg/L	10		16-MAR-19
Ion Balance Calculation						
Hardness Calculated						
Hardness (as CaCO3)	363		mg/L		500	20-MAR-19
Fluoride in Water by IC						
Fluoride (F)	0.266		mg/L	1.5		16-MAR-19
Dissolved Metals in Water by CRC ICPMS						
Dissolved Metals	FIELD					19-MAR-19
Filtration Location						
Aluminum (Al)-Dissolved	0.0017		mg/L		0.1	19-MAR-19
Antimony (Sb)-Dissolved	<0.00010		mg/L	0.006		19-MAR-19
Arsenic (As)-Dissolved	0.00027		mg/L	0.01		19-MAR-19
Barium (Ba)-Dissolved	0.0371		mg/L	1		19-MAR-19
Beryllium (Be)-Dissolved	<0.00010		mg/L			19-MAR-19
Bismuth (Bi)-Dissolved	<0.000050		mg/L			19-MAR-19
Boron (B)-Dissolved	0.136		mg/L	5		19-MAR-19
Cadmium (Cd)-Dissolved	<0.000050		mg/L	0.005		19-MAR-19
Calcium (Ca)-Dissolved	60.5		mg/L			19-MAR-19
Cesium (Cs)-Dissolved	0.000010		mg/L			19-MAR-19
Chromium (Cr)-Dissolved	<0.00010		mg/L	0.05		19-MAR-19
Cobalt (Co)-Dissolved	0.00013		mg/L			19-MAR-19
Copper (Cu)-Dissolved	<0.00020		mg/L	2.0	1.0	19-MAR-19
Iron (Fe)-Dissolved	0.034		mg/L		0.3	19-MAR-19
Lead (Pb)-Dissolved	<0.000050		mg/L	0.01		19-MAR-19

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ATTN: ERIC LEVAY

Date: 29-MAR-19
PO No.:
WO No.: L2245232
Project Ref: 18-0300-05
Sample ID: TH19-KGS-14
Sampled By:
Date Collected: 08-MAR-19
Lab Sample ID: L2245232-39
Matrix: WATER

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
ROU4W Dissolved						
Dissolved Metals in Water by CRC ICPMS						
Lithium (Li)-Dissolved	0.0233		mg/L			19-MAR-19
Magnesium (Mg)-Dissolved	51.4		mg/L			19-MAR-19
Manganese (Mn)-Dissolved	0.0209		mg/L		0.05	19-MAR-19
Molybdenum (Mo)-Dissolved	0.000275		mg/L			19-MAR-19
Nickel (Ni)-Dissolved	<0.00050		mg/L			19-MAR-19
Phosphorus (P)-Dissolved	<0.030		mg/L			19-MAR-19
Potassium (K)-Dissolved	4.00		mg/L			19-MAR-19
Rubidium (Rb)-Dissolved	0.00281		mg/L			19-MAR-19
Selenium (Se)-Dissolved	<0.000050		mg/L	0.05		19-MAR-19
Silicon (Si)-Dissolved	4.72		mg/L			19-MAR-19
Silver (Ag)-Dissolved	<0.000010		mg/L			19-MAR-19
Sodium (Na)-Dissolved	12.6		mg/L		200	19-MAR-19
Strontium (Sr)-Dissolved	0.162		mg/L			19-MAR-19
Sulfur (S)-Dissolved	14.7		mg/L			19-MAR-19
Tellurium (Te)-Dissolved	<0.00020		mg/L			19-MAR-19
Thallium (Tl)-Dissolved	<0.000010		mg/L			19-MAR-19
Thorium (Th)-Dissolved	<0.00010		mg/L			19-MAR-19
Tin (Sn)-Dissolved	<0.00010		mg/L			19-MAR-19
Titanium (Ti)-Dissolved	<0.00030		mg/L			19-MAR-19
Tungsten (W)-Dissolved	0.00013		mg/L			19-MAR-19
Uranium (U)-Dissolved	0.000199		mg/L	0.02		19-MAR-19
Vanadium (V)-Dissolved	<0.00050		mg/L			19-MAR-19
Zinc (Zn)-Dissolved	0.0014		mg/L		5.0	19-MAR-19
Zirconium (Zr)-Dissolved	<0.000060		mg/L			19-MAR-19
Conductivity						
Conductivity	650		umhos/cm			23-MAR-19
Chloride in Water by IC (Low Level)						
Chloride (Cl)	1.60		mg/L		250	16-MAR-19
Alkalinity, Total (as CaCO3)						
Alkalinity, Total (as CaCO3)	348		mg/L			23-MAR-19



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Date: 29-MAR-19
PO No.:
WO No.: L2245232
Project Ref: 18-0300-05
Sample ID: TH19-KGS-14
Sampled By:
Date Collected: 08-MAR-19
Lab Sample ID: L2245232-39
Matrix: WATER

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
<p>CDWQG = Health Canada Guideline Limits updated</p> <p>* CDWQG for Nitrate+Nitrite-N is the limit for nitrate only. If present as Nitrate then the limit is 10mg/L < or N.D. = less than detection limit. * Turbidity guideline based on membrane filtration. For guidelines on conventional treatment and slow sand or diatomaceous earth filtration please see Summary Table of Guidelines for Canadian Drinking Water Quality - A blank entry designates no known limit. - A shaded value in the Results column exceeds CDWQG MAC and/ or Aesthetic Objective.</p>	MAY 2018					
<p>Approved by <u><i>Hua Wo</i></u> Hua Wo Account Manager</p>						



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ATTN: ERIC LEVAY

Date: 29-MAR-19
PO No.:
WO No.: L2245232
Project Ref: 18-0300-05
Sample ID: TH19-KGS-03A
Sampled By:
Date Collected: 08-MAR-19
Lab Sample ID: L2245232-40
Matrix: WATER

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
ROU4W Dissolved						
Bicarbonate (HCO3)	439		mg/L			25-MAR-19
Carbonate (CO3)	<0.60		mg/L			25-MAR-19
Hydroxide (OH)	<0.34		mg/L			25-MAR-19
*Nitrate and Nitrite as N	0.0502		mg/L	10		21-MAR-19
pH						
pH	8.05		pH units			23-MAR-19
Turbidity						
*Turbidity	>4000		NTU			16-MAR-19
TDS calculated						
TDS (Calculated)	373		mg/L		500	25-MAR-19
Sulfate in Water by IC						
Sulfate (SO4)	11.1		mg/L		500	16-MAR-19
Nitrite in Water by IC (Low Level)						
*Nitrite (as N)	0.0060		mg/L	1		16-MAR-19
Nitrate in Water by IC (Low Level)						
*Nitrate (as N)	0.0442		mg/L	10		16-MAR-19
Ion Balance Calculation						
Hardness Calculated						
Hardness (as CaCO3)	367		mg/L		500	20-MAR-19
Fluoride in Water by IC						
Fluoride (F)	0.199		mg/L	1.5		16-MAR-19
Dissolved Metals in Water by CRC ICPMS						
Dissolved Metals	FIELD					19-MAR-19
Filtration Location						
Aluminum (Al)-Dissolved	0.0143		mg/L		0.1	19-MAR-19
Antimony (Sb)-Dissolved	<0.00010		mg/L	0.006		19-MAR-19
Arsenic (As)-Dissolved	0.00089		mg/L	0.01		19-MAR-19
Barium (Ba)-Dissolved	0.0364		mg/L	1		19-MAR-19
Beryllium (Be)-Dissolved	<0.00010		mg/L			19-MAR-19
Bismuth (Bi)-Dissolved	<0.000050		mg/L			19-MAR-19
Boron (B)-Dissolved	0.028		mg/L	5		19-MAR-19
Cadmium (Cd)-Dissolved	0.000055		mg/L	0.005		19-MAR-19
Calcium (Ca)-Dissolved	73.0		mg/L			19-MAR-19
Cesium (Cs)-Dissolved	<0.000010		mg/L			19-MAR-19
Chromium (Cr)-Dissolved	0.00020		mg/L	0.05		19-MAR-19
Cobalt (Co)-Dissolved	0.00049		mg/L			19-MAR-19
Copper (Cu)-Dissolved	0.00071		mg/L	2.0	1.0	19-MAR-19
Iron (Fe)-Dissolved	0.756		mg/L		0.3	19-MAR-19
Lead (Pb)-Dissolved	<0.000050		mg/L	0.01		19-MAR-19



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Date: 29-MAR-19
PO No.:
WO No.: L2245232
Project Ref: 18-0300-05
Sample ID: TH19-KGS-03A
Sampled By:
Date Collected: 08-MAR-19
Lab Sample ID: L2245232-40
Matrix: WATER

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
ROU4W Dissolved						
Dissolved Metals in Water by CRC ICPMS						
Lithium (Li)-Dissolved	0.0129		mg/L			19-MAR-19
Magnesium (Mg)-Dissolved	44.9		mg/L			19-MAR-19
Manganese (Mn)-Dissolved	0.0770		mg/L		0.05	19-MAR-19
Molybdenum (Mo)-Dissolved	0.000905		mg/L			19-MAR-19
Nickel (Ni)-Dissolved	0.00072		mg/L			19-MAR-19
Phosphorus (P)-Dissolved	0.092		mg/L			19-MAR-19
Potassium (K)-Dissolved	0.634		mg/L			19-MAR-19
Rubidium (Rb)-Dissolved	0.00116		mg/L			19-MAR-19
Selenium (Se)-Dissolved	0.000107		mg/L	0.05		19-MAR-19
Silicon (Si)-Dissolved	6.06		mg/L			19-MAR-19
Silver (Ag)-Dissolved	<0.000010		mg/L			19-MAR-19
Sodium (Na)-Dissolved	14.0		mg/L		200	19-MAR-19
Strontium (Sr)-Dissolved	0.125		mg/L			19-MAR-19
Sulfur (S)-Dissolved	3.43		mg/L			19-MAR-19
Tellurium (Te)-Dissolved	<0.00020		mg/L			19-MAR-19
Thallium (Tl)-Dissolved	<0.000010		mg/L			19-MAR-19
Thorium (Th)-Dissolved	<0.00010		mg/L			19-MAR-19
Tin (Sn)-Dissolved	0.00023		mg/L			19-MAR-19
Titanium (Ti)-Dissolved	<0.00030		mg/L			19-MAR-19
Tungsten (W)-Dissolved	<0.00010		mg/L			19-MAR-19
Uranium (U)-Dissolved	0.00116		mg/L	0.02		19-MAR-19
Vanadium (V)-Dissolved	<0.00050		mg/L			19-MAR-19
Zinc (Zn)-Dissolved	0.0048		mg/L		5.0	19-MAR-19
Zirconium (Zr)-Dissolved	0.000172		mg/L			19-MAR-19
Conductivity						
Conductivity	650		umhos/cm			23-MAR-19
Chloride in Water by IC (Low Level)						
Chloride (Cl)	13.6		mg/L		250	16-MAR-19
Alkalinity, Total (as CaCO3)						
Alkalinity, Total (as CaCO3)	360		mg/L			23-MAR-19



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WO No.: L2245232
Project Ref: 18-0300-05
Sample ID: TH19-KGS-03A
Sampled By:
Date Collected: 08-MAR-19
Lab Sample ID: L2245232-40
Matrix: WATER

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
<p>CDWQG = Health Canada Guideline Limits updated</p> <p>* CDWQG for Nitrate+Nitrite-N is the limit for nitrate only. If present as Nitrate then the limit is 10mg/L < or N.D. = less than detection limit. * Turbidity guideline based on membrane filtration. For guidelines on conventional treatment and slow sand or diatomaceous earth filtration please see Summary Table of Guidelines for Canadian Drinking Water Quality - A blank entry designates no known limit. - A shaded value in the Results column exceeds CDWQG MAC and/ or Aesthetic Objective.</p>	MAY 2018					
<p>Approved by <u><i>Hua Wo</i></u> Hua Wo Account Manager</p>						



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Date: 29-MAR-19
PO No.:
WO No.: L2245232
Project Ref: 18-0300-05
Sample ID: TH19-KGS-100
Sampled By:
Date Collected: 07-MAR-19
Lab Sample ID: L2245232-41
Matrix: WATER

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
ROU4W Dissolved						
Bicarbonate (HCO3)	562		mg/L			25-MAR-19
Carbonate (CO3)	<0.60		mg/L			25-MAR-19
Hydroxide (OH)	<0.34		mg/L			25-MAR-19
*Nitrate and Nitrite as N	<0.010		mg/L	10		21-MAR-19
pH						
pH	7.62		pH units			23-MAR-19
Turbidity						
*Turbidity	307		NTU			16-MAR-19
TDS calculated						
TDS (Calculated)	439		mg/L		500	25-MAR-19
Sulfate in Water by IC						
Sulfate (SO4)	1.71		mg/L		500	16-MAR-19
Nitrite in Water by IC (Low Level)						
*Nitrite (as N)	0.0044		mg/L	1		16-MAR-19
Nitrate in Water by IC (Low Level)						
*Nitrate (as N)	<0.010	DLM	mg/L	10		16-MAR-19
Ion Balance Calculation						
Hardness Calculated						
Hardness (as CaCO3)	450		mg/L		500	20-MAR-19
Fluoride in Water by IC						
Fluoride (F)	0.208		mg/L	1.5		16-MAR-19
Dissolved Metals in Water by CRC ICPMS						
Dissolved Metals	FIELD					19-MAR-19
Filtration Location						
Aluminum (Al)-Dissolved	0.0101		mg/L		0.1	19-MAR-19
Antimony (Sb)-Dissolved	<0.00010		mg/L	0.006		19-MAR-19
Arsenic (As)-Dissolved	0.00082		mg/L	0.01		19-MAR-19
Barium (Ba)-Dissolved	0.0507		mg/L	1		19-MAR-19
Beryllium (Be)-Dissolved	<0.00010		mg/L			19-MAR-19
Bismuth (Bi)-Dissolved	<0.000050		mg/L			19-MAR-19
Boron (B)-Dissolved	0.056		mg/L	5		19-MAR-19
Cadmium (Cd)-Dissolved	<0.000050		mg/L	0.005		19-MAR-19
Calcium (Ca)-Dissolved	81.0		mg/L			19-MAR-19
Cesium (Cs)-Dissolved	<0.000010		mg/L			19-MAR-19
Chromium (Cr)-Dissolved	0.00019		mg/L	0.05		19-MAR-19
Cobalt (Co)-Dissolved	0.00022		mg/L			19-MAR-19
Copper (Cu)-Dissolved	0.00128		mg/L	2.0	1.0	19-MAR-19
Iron (Fe)-Dissolved	0.420		mg/L		0.3	19-MAR-19
Lead (Pb)-Dissolved	0.000053		mg/L	0.01		19-MAR-19

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Date: 29-MAR-19
PO No.:
WO No.: L2245232
Project Ref: 18-0300-05
Sample ID: TH19-KGS-100
Sampled By:
Date Collected: 07-MAR-19
Lab Sample ID: L2245232-41
Matrix: WATER

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
ROU4W Dissolved						
Dissolved Metals in Water by CRC ICPMS						
Lithium (Li)-Dissolved	0.0181		mg/L			19-MAR-19
Magnesium (Mg)-Dissolved	60.3		mg/L			19-MAR-19
Manganese (Mn)-Dissolved	0.139		mg/L		0.05	19-MAR-19
Molybdenum (Mo)-Dissolved	0.000134		mg/L			19-MAR-19
Nickel (Ni)-Dissolved	<0.00050		mg/L			19-MAR-19
Phosphorus (P)-Dissolved	0.129		mg/L			19-MAR-19
Potassium (K)-Dissolved	0.532		mg/L			19-MAR-19
Rubidium (Rb)-Dissolved	0.00061		mg/L			19-MAR-19
Selenium (Se)-Dissolved	0.000159		mg/L	0.05		19-MAR-19
Silicon (Si)-Dissolved	9.96		mg/L			19-MAR-19
Silver (Ag)-Dissolved	<0.000010		mg/L			19-MAR-19
Sodium (Na)-Dissolved	12.5		mg/L		200	19-MAR-19
Strontium (Sr)-Dissolved	0.203		mg/L			19-MAR-19
Sulfur (S)-Dissolved	3.60		mg/L			19-MAR-19
Tellurium (Te)-Dissolved	<0.00020		mg/L			19-MAR-19
Thallium (Tl)-Dissolved	<0.000010		mg/L			19-MAR-19
Thorium (Th)-Dissolved	<0.00010		mg/L			19-MAR-19
Tin (Sn)-Dissolved	<0.00010		mg/L			19-MAR-19
Titanium (Ti)-Dissolved	0.00036		mg/L			19-MAR-19
Tungsten (W)-Dissolved	<0.00010		mg/L			19-MAR-19
Uranium (U)-Dissolved	0.000316		mg/L	0.02		19-MAR-19
Vanadium (V)-Dissolved	<0.00050		mg/L			19-MAR-19
Zinc (Zn)-Dissolved	<0.0010		mg/L		5.0	19-MAR-19
Zirconium (Zr)-Dissolved	0.000182		mg/L			19-MAR-19
Conductivity						
Conductivity	767		umhos/cm			23-MAR-19
Chloride in Water by IC (Low Level)						
Chloride (Cl)	6.32		mg/L		250	16-MAR-19
Alkalinity, Total (as CaCO3)						
Alkalinity, Total (as CaCO3)	461		mg/L			23-MAR-19



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Date: 29-MAR-19
PO No.:
WO No.: L2245232
Project Ref: 18-0300-05
Sample ID: TH19-KGS-100
Sampled By:
Date Collected: 07-MAR-19
Lab Sample ID: L2245232-41
Matrix: WATER

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
<p>CDWQG = Health Canada Guideline Limits updated</p> <p>* CDWQG for Nitrate+Nitrite-N is the limit for nitrate only. If present as Nitrate then the limit is 10mg/L < or N.D. = less than detection limit. * Turbidity guideline based on membrane filtration. For guidelines on conventional treatment and slow sand or diatomaceous earth filtration please see Summary Table of Guidelines for Canadian Drinking Water Quality - A blank entry designates no known limit. - A shaded value in the Results column exceeds CDWQG MAC and/ or Aesthetic Objective.</p>	MAY 2018					
<p>Approved by <u>Hua Wo</u> Hua Wo Account Manager</p>						

Guidelines & Objectives

Sample Parameter Qualifier key listed:

Qualifier	Description
DLM	Detection Limit Adjusted due to sample matrix effects (e.g. chemical interference, colour, turbidity).

Health Canada MAC Health Related Criteria Limits

Nitrate/Nitrite-N*	Criteria limit is 10 mg/L (1.0 mg/L if present as all Nitrite-N). High concentrations may contribute to blue baby syndrome in infants.
Lead*	A cumulative body poison, uncommon in naturally occurring hard waters.
Fluoride*	Present in fluoridated water supplies at 0.8 mg/L to reduce dental caries. Elevated levels causes fluorosis (mottling of teeth).
Total Coliforms*	Criteria is 0 CFU/100mL. Adverse health effects.
E. Coli*	Criteria is 0 CFU/100 mL. Certain E. Coli bacteria can be life threatening.

*Health Canada Canadian Drinking Water Quality Guidelines (MAC limit)

Aesthetic Objective Concentration Levels

Alkalinity	Acid neutralizing capacity. Usually a measure of carbonate and bicarbonates and calculated and reported as calcium carbonate.
Balance	Quality control parameter ratioing cations to anions
Bicarbonate	See Alkalinity. Report as the anion HCO ₃ -1
Carbonate	See Alkalinity. Reported at the anion CO ₃ -2
Calcium	See Hardness. Common major cation of water chemistry.
Chloride	Common major anion of water chemistry.
Conductance	Physical test measuring water salinity (dissolved ions or solids)
Hardness	Classical measure or capacity of water to precipitate soap (chiefly calcium and magnesium ions). Causes scaling tendency in water if carbonates/bicarbonates are present (if >200 mg/L). For drinking water purposes waters with results <200 mg/L are considered acceptable, results >200 mg/L are considered poor but can be tolerated. Results >500 mg/L are unacceptable.
Hydroxide	See alkalinity
Magnesium	See hardness. Common major cation of water chemistry. Elevated levels (>125 mg/L) may exert a cathartic or diuretic action.
pH	Measure of water acidity/alkalinity. Normal range is 7.0-8.5.
Potassium	Common major cation of water chemistry.
Sodium	Common major cation of water chemistry. Measure of salinity (saltiness).The aesthetic objective (not related to health) for sodium in drinking water is 200 mg/L. However, where sodium concentration of the drinking water exceeds 20 mg/L, it is recommended that any person on a sodium restricted diet consult with his/her physician or Medical Officer of Health concerning the use of that water.
Sulphate	Common major anion of water chemistry. Elevated levels may exert a cathartic or diuretic action.
Total Dissolved Solids	A measure of water salinity.
Iron	Causes staining to laundry and porcelain and astringent taste. Oxidizes to red-brown precipitate on exposure to air.
Manganese	Elevated levels may cause staining of laundry and porcelain.
Heterotrophic Plate Count	Criteria is 500 cfu/mL Measure of heterotrophic bacteria present.

GLOSSARY OF REPORT TERMS

Surrogates are compounds that are similar in behaviour to target analyte(s), but that do not normally occur in environmental samples. For applicable tests, surrogates are added to samples prior to analysis as a check on recovery. In reports that display the D.L. column, laboratory objectives for surrogates are listed there.

mg/kg - milligrams per kilogram based on dry weight of sample

mg/kg wwt - milligrams per kilogram based on wet weight of sample

mg/kg lwt - milligrams per kilogram based on lipid-adjusted weight

mg/L - unit of concentration based on volume, parts per million.

< - Less than.

D.L. - The reporting limit.

N/A - Result not available. Refer to qualifier code and definition for explanation.

Test results reported relate only to the samples as received by the laboratory.

UNLESS OTHERWISE STATED, ALL SAMPLES WERE RECEIVED IN ACCEPTABLE CONDITION.

Analytical results in unsigned test reports with the DRAFT watermark are subject to change, pending final QC review.



Quality Control Report

Workorder: L2245232

Report Date: 29-MAR-19

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Client: KGS Group Consultants (Winnipeg)
 865 Waverly Street - 3rd Floor
 Winnipeg MB R3T 5P4

Contact: ERIC LEVAY

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
ALK-TITR-WP								
	Water							
Batch	R4573259							
WG3010024-10	DUP	L2245232-2						
Alkalinity, Total (as CaCO3)		377	377		mg/L	0.0	20	19-MAR-19
WG3010024-14	LCS							
Alkalinity, Total (as CaCO3)			104.6		%		85-115	19-MAR-19
WG3010024-9	LCS							
Alkalinity, Total (as CaCO3)			105.6		%		85-115	19-MAR-19
WG3010024-11	MB							
Alkalinity, Total (as CaCO3)			1.0		mg/L		1	19-MAR-19
WG3010024-6	MB							
Alkalinity, Total (as CaCO3)			<1.0		mg/L		1	19-MAR-19
Batch	R4580551							
WG3013045-10	DUP	L2245232-40						
Alkalinity, Total (as CaCO3)		360	352		mg/L	2.3	20	23-MAR-19
WG3013045-5	DUP	L2245232-36						
Alkalinity, Total (as CaCO3)		341	339		mg/L	0.5	20	23-MAR-19
WG3013045-4	LCS							
Alkalinity, Total (as CaCO3)			106.1		%		85-115	23-MAR-19
WG3013045-9	LCS							
Alkalinity, Total (as CaCO3)			106.2		%		85-115	23-MAR-19
WG3013045-1	MB							
Alkalinity, Total (as CaCO3)			<1.0		mg/L		1	23-MAR-19
WG3013045-6	MB							
Alkalinity, Total (as CaCO3)			1.0		mg/L		1	23-MAR-19
CL-L-IC-N-WP								
	Water							
Batch	R4575596							
WG3008313-11	DUP	L2245232-39						
Chloride (Cl)		1.60	1.61		mg/L	0.5	20	16-MAR-19
WG3008313-10	LCS							
Chloride (Cl)			99.4		%		90-110	16-MAR-19
WG3008313-2	LCS							
Chloride (Cl)			99.4		%		90-110	16-MAR-19
WG3008313-6	LCS							
Chloride (Cl)			99.6		%		90-110	16-MAR-19
WG3008313-1	MB							
Chloride (Cl)			<0.10		mg/L		0.1	16-MAR-19
WG3008313-5	MB							
Chloride (Cl)			<0.10		mg/L		0.1	16-MAR-19
WG3008313-9	MB							



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Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
CL-L-IC-N-WP								
Batch R4575596								
WG3008313-9	MB							
Chloride (Cl)			<0.10		mg/L		0.1	16-MAR-19
WG3008313-12	MS	L2245232-39						
Chloride (Cl)			106.9		%		75-125	16-MAR-19
EC-WP								
Batch R4573259								
WG3010024-10	DUP	L2245232-2						
Conductivity		737	737		umhos/cm	0.0	10	19-MAR-19
WG3010024-13	LCS							
Conductivity			96.6		%		90-110	19-MAR-19
WG3010024-8	LCS							
Conductivity			96.3		%		90-110	19-MAR-19
WG3010024-11	MB							
Conductivity			<1.0		umhos/cm		1	19-MAR-19
WG3010024-6	MB							
Conductivity			<1.0		umhos/cm		1	19-MAR-19
Batch R4580551								
WG3013045-10	DUP	L2245232-40						
Conductivity		650	637		umhos/cm	2.0	10	23-MAR-19
WG3013045-5	DUP	L2245232-36						
Conductivity		600	599		umhos/cm	0.2	10	23-MAR-19
WG3013045-3	LCS							
Conductivity			100.9		%		90-110	23-MAR-19
WG3013045-8	LCS							
Conductivity			101.2		%		90-110	23-MAR-19
WG3013045-1	MB							
Conductivity			<1.0		umhos/cm		1	23-MAR-19
WG3013045-6	MB							
Conductivity			<1.0		umhos/cm		1	23-MAR-19
F-IC-N-WP								
Batch R4575596								
WG3008313-11	DUP	L2245232-39						
Fluoride (F)		0.266	0.263		mg/L	0.9	20	16-MAR-19
WG3008313-10	LCS							
Fluoride (F)			97.8		%		90-110	16-MAR-19
WG3008313-2	LCS							
Fluoride (F)			98.7		%		90-110	16-MAR-19
WG3008313-6	LCS							

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Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
F-IC-N-WP								
	Water							
Batch	R4575596							
WG3008313-6	LCS							
Fluoride (F)			99.4		%		90-110	16-MAR-19
WG3008313-1	MB							
Fluoride (F)			<0.020		mg/L		0.02	16-MAR-19
WG3008313-5	MB							
Fluoride (F)			<0.020		mg/L		0.02	16-MAR-19
WG3008313-9	MB							
Fluoride (F)			<0.020		mg/L		0.02	16-MAR-19
WG3008313-12	MS	L2245232-39						
Fluoride (F)			112.8		%		75-125	16-MAR-19
MET-D-CCMS-WP								
	Water							
Batch	R4572208							
WG3009599-2	LCS							
Aluminum (Al)-Dissolved			102.5		%		80-120	19-MAR-19
Antimony (Sb)-Dissolved			97.3		%		80-120	19-MAR-19
Arsenic (As)-Dissolved			97.6		%		80-120	19-MAR-19
Barium (Ba)-Dissolved			98.0		%		80-120	19-MAR-19
Beryllium (Be)-Dissolved			100.5		%		80-120	19-MAR-19
Bismuth (Bi)-Dissolved			96.6		%		80-120	19-MAR-19
Boron (B)-Dissolved			100.2		%		80-120	19-MAR-19
Cadmium (Cd)-Dissolved			99.1		%		80-120	19-MAR-19
Calcium (Ca)-Dissolved			98.2		%		80-120	19-MAR-19
Cesium (Cs)-Dissolved			95.9		%		80-120	19-MAR-19
Chromium (Cr)-Dissolved			98.6		%		80-120	19-MAR-19
Cobalt (Co)-Dissolved			98.0		%		80-120	19-MAR-19
Copper (Cu)-Dissolved			97.0		%		80-120	19-MAR-19
Iron (Fe)-Dissolved			89.3		%		80-120	19-MAR-19
Lead (Pb)-Dissolved			94.8		%		80-120	19-MAR-19
Lithium (Li)-Dissolved			101.1		%		80-120	19-MAR-19
Magnesium (Mg)-Dissolved			113.3		%		80-120	19-MAR-19
Manganese (Mn)-Dissolved			99.5		%		80-120	19-MAR-19
Molybdenum (Mo)-Dissolved			98.9		%		80-120	19-MAR-19
Nickel (Ni)-Dissolved			97.0		%		80-120	19-MAR-19
Phosphorus (P)-Dissolved			106.3		%		80-120	19-MAR-19
Potassium (K)-Dissolved			89.2		%		80-120	19-MAR-19
Rubidium (Rb)-Dissolved			96.0		%		80-120	19-MAR-19

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Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
MET-D-CCMS-WP								
	Water							
Batch	R4572208							
WG3009599-2	LCS							
Selenium (Se)-Dissolved			98.9		%		80-120	19-MAR-19
Silicon (Si)-Dissolved			101.2		%		80-120	19-MAR-19
Silver (Ag)-Dissolved			95.5		%		80-120	19-MAR-19
Sodium (Na)-Dissolved			99.5		%		80-120	19-MAR-19
Strontium (Sr)-Dissolved			96.0		%		80-120	19-MAR-19
Sulfur (S)-Dissolved			95.1		%		80-120	19-MAR-19
Tellurium (Te)-Dissolved			102.6		%		80-120	19-MAR-19
Thallium (Tl)-Dissolved			94.6		%		80-120	19-MAR-19
Thorium (Th)-Dissolved			94.7		%		80-120	19-MAR-19
Tin (Sn)-Dissolved			98.1		%		80-120	19-MAR-19
Titanium (Ti)-Dissolved			98.8		%		80-120	19-MAR-19
Tungsten (W)-Dissolved			96.8		%		80-120	19-MAR-19
Uranium (U)-Dissolved			97.2		%		80-120	19-MAR-19
Vanadium (V)-Dissolved			99.0		%		80-120	19-MAR-19
Zinc (Zn)-Dissolved			99.3		%		80-120	19-MAR-19
Zirconium (Zr)-Dissolved			92.8		%		80-120	19-MAR-19
WG3009601-2	LCS							
Aluminum (Al)-Dissolved			100.2		%		80-120	19-MAR-19
Antimony (Sb)-Dissolved			98.3		%		80-120	19-MAR-19
Arsenic (As)-Dissolved			95.2		%		80-120	19-MAR-19
Barium (Ba)-Dissolved			96.8		%		80-120	19-MAR-19
Beryllium (Be)-Dissolved			100.5		%		80-120	19-MAR-19
Bismuth (Bi)-Dissolved			95.0		%		80-120	19-MAR-19
Boron (B)-Dissolved			101.1		%		80-120	19-MAR-19
Cadmium (Cd)-Dissolved			97.7		%		80-120	19-MAR-19
Calcium (Ca)-Dissolved			97.0		%		80-120	19-MAR-19
Cesium (Cs)-Dissolved			96.6		%		80-120	19-MAR-19
Chromium (Cr)-Dissolved			97.1		%		80-120	19-MAR-19
Cobalt (Co)-Dissolved			95.4		%		80-120	19-MAR-19
Copper (Cu)-Dissolved			95.9		%		80-120	19-MAR-19
Iron (Fe)-Dissolved			87.2		%		80-120	19-MAR-19
Lead (Pb)-Dissolved			94.0		%		80-120	19-MAR-19
Lithium (Li)-Dissolved			100.7		%		80-120	19-MAR-19
Magnesium (Mg)-Dissolved			106.2		%		80-120	19-MAR-19

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Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
MET-D-CCMS-WP								
	Water							
Batch	R4572208							
WG3009601-2	LCS							
Manganese (Mn)-Dissolved			96.1		%		80-120	19-MAR-19
Molybdenum (Mo)-Dissolved			99.5		%		80-120	19-MAR-19
Nickel (Ni)-Dissolved			95.3		%		80-120	19-MAR-19
Phosphorus (P)-Dissolved			106.7		%		80-120	19-MAR-19
Potassium (K)-Dissolved			88.6		%		80-120	19-MAR-19
Rubidium (Rb)-Dissolved			95.3		%		80-120	19-MAR-19
Selenium (Se)-Dissolved			96.1		%		80-120	19-MAR-19
Silicon (Si)-Dissolved			99.2		%		80-120	19-MAR-19
Silver (Ag)-Dissolved			95.5		%		80-120	19-MAR-19
Sodium (Na)-Dissolved			101.2		%		80-120	19-MAR-19
Strontium (Sr)-Dissolved			97.0		%		80-120	19-MAR-19
Sulfur (S)-Dissolved			113.2		%		80-120	19-MAR-19
Tellurium (Te)-Dissolved			99.4		%		80-120	19-MAR-19
Thallium (Tl)-Dissolved			95.6		%		80-120	19-MAR-19
Thorium (Th)-Dissolved			93.2		%		80-120	19-MAR-19
Tin (Sn)-Dissolved			97.7		%		80-120	19-MAR-19
Titanium (Ti)-Dissolved			96.3		%		80-120	19-MAR-19
Tungsten (W)-Dissolved			95.3		%		80-120	19-MAR-19
Uranium (U)-Dissolved			91.4		%		80-120	19-MAR-19
Vanadium (V)-Dissolved			97.0		%		80-120	19-MAR-19
Zinc (Zn)-Dissolved			96.0		%		80-120	19-MAR-19
Zirconium (Zr)-Dissolved			92.3		%		80-120	19-MAR-19
WG3009603-2	LCS							
Aluminum (Al)-Dissolved			102.6		%		80-120	19-MAR-19
Antimony (Sb)-Dissolved			97.3		%		80-120	19-MAR-19
Arsenic (As)-Dissolved			97.7		%		80-120	19-MAR-19
Barium (Ba)-Dissolved			97.4		%		80-120	19-MAR-19
Beryllium (Be)-Dissolved			100.4		%		80-120	19-MAR-19
Bismuth (Bi)-Dissolved			97.5		%		80-120	19-MAR-19
Boron (B)-Dissolved			100.5		%		80-120	19-MAR-19
Cadmium (Cd)-Dissolved			98.6		%		80-120	19-MAR-19
Calcium (Ca)-Dissolved			97.1		%		80-120	19-MAR-19
Cesium (Cs)-Dissolved			94.4		%		80-120	19-MAR-19
Chromium (Cr)-Dissolved			98.3		%		80-120	19-MAR-19

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Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
MET-D-CCMS-WP								
	Water							
Batch	R4572208							
WG3009603-2	LCS							
Cobalt (Co)-Dissolved			98.6		%		80-120	19-MAR-19
Copper (Cu)-Dissolved			98.9		%		80-120	19-MAR-19
Iron (Fe)-Dissolved			88.7		%		80-120	19-MAR-19
Lead (Pb)-Dissolved			99.0		%		80-120	19-MAR-19
Lithium (Li)-Dissolved			100.2		%		80-120	19-MAR-19
Magnesium (Mg)-Dissolved			112.2		%		80-120	19-MAR-19
Manganese (Mn)-Dissolved			98.6		%		80-120	19-MAR-19
Molybdenum (Mo)-Dissolved			99.8		%		80-120	19-MAR-19
Nickel (Ni)-Dissolved			97.3		%		80-120	19-MAR-19
Phosphorus (P)-Dissolved			108.6		%		80-120	19-MAR-19
Potassium (K)-Dissolved			91.6		%		80-120	19-MAR-19
Rubidium (Rb)-Dissolved			98.1		%		80-120	19-MAR-19
Selenium (Se)-Dissolved			98.5		%		80-120	19-MAR-19
Silicon (Si)-Dissolved			103.3		%		80-120	19-MAR-19
Silver (Ag)-Dissolved			95.6		%		80-120	19-MAR-19
Sodium (Na)-Dissolved			102.5		%		80-120	19-MAR-19
Strontium (Sr)-Dissolved			96.1		%		80-120	19-MAR-19
Sulfur (S)-Dissolved			101.8		%		80-120	19-MAR-19
Tellurium (Te)-Dissolved			97.0		%		80-120	19-MAR-19
Thallium (Tl)-Dissolved			101.2		%		80-120	19-MAR-19
Thorium (Th)-Dissolved			96.2		%		80-120	19-MAR-19
Tin (Sn)-Dissolved			98.5		%		80-120	19-MAR-19
Titanium (Ti)-Dissolved			99.5		%		80-120	19-MAR-19
Tungsten (W)-Dissolved			101.5		%		80-120	19-MAR-19
Uranium (U)-Dissolved			99.0		%		80-120	19-MAR-19
Vanadium (V)-Dissolved			100.5		%		80-120	19-MAR-19
Zinc (Zn)-Dissolved			99.9		%		80-120	19-MAR-19
Zirconium (Zr)-Dissolved			95.0		%		80-120	19-MAR-19
WG3009599-1	MB							
Aluminum (Al)-Dissolved			<0.0010		mg/L		0.001	19-MAR-19
Antimony (Sb)-Dissolved			<0.00010		mg/L		0.0001	19-MAR-19
Arsenic (As)-Dissolved			<0.00010		mg/L		0.0001	19-MAR-19
Barium (Ba)-Dissolved			<0.00010		mg/L		0.0001	19-MAR-19
Beryllium (Be)-Dissolved			<0.00010		mg/L		0.0001	19-MAR-19

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Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
MET-D-CCMS-WP								
	Water							
Batch	R4572208							
WG3009599-1	MB							
Bismuth (Bi)-Dissolved			<0.000050		mg/L		0.00005	19-MAR-19
Boron (B)-Dissolved			<0.010		mg/L		0.01	19-MAR-19
Cadmium (Cd)-Dissolved			<0.0000050		mg/L		0.000005	19-MAR-19
Calcium (Ca)-Dissolved			<0.050		mg/L		0.05	19-MAR-19
Cesium (Cs)-Dissolved			<0.000010		mg/L		0.00001	19-MAR-19
Chromium (Cr)-Dissolved			<0.00010		mg/L		0.0001	19-MAR-19
Cobalt (Co)-Dissolved			<0.00010		mg/L		0.0001	19-MAR-19
Copper (Cu)-Dissolved			<0.00020		mg/L		0.0002	19-MAR-19
Iron (Fe)-Dissolved			<0.010		mg/L		0.01	19-MAR-19
Lead (Pb)-Dissolved			<0.000050		mg/L		0.00005	19-MAR-19
Lithium (Li)-Dissolved			<0.0010		mg/L		0.001	19-MAR-19
Magnesium (Mg)-Dissolved			<0.0050		mg/L		0.005	19-MAR-19
Manganese (Mn)-Dissolved			<0.00010		mg/L		0.0001	19-MAR-19
Molybdenum (Mo)-Dissolved			<0.000050		mg/L		0.00005	19-MAR-19
Nickel (Ni)-Dissolved			<0.00050		mg/L		0.0005	19-MAR-19
Phosphorus (P)-Dissolved			<0.030		mg/L		0.03	19-MAR-19
Potassium (K)-Dissolved			<0.050		mg/L		0.05	19-MAR-19
Rubidium (Rb)-Dissolved			<0.00020		mg/L		0.0002	19-MAR-19
Selenium (Se)-Dissolved			<0.000050		mg/L		0.00005	19-MAR-19
Silicon (Si)-Dissolved			<0.050		mg/L		0.05	19-MAR-19
Silver (Ag)-Dissolved			<0.000010		mg/L		0.00001	19-MAR-19
Sodium (Na)-Dissolved			<0.050		mg/L		0.05	19-MAR-19
Strontium (Sr)-Dissolved			<0.00010		mg/L		0.0001	19-MAR-19
Sulfur (S)-Dissolved			<0.50		mg/L		0.5	19-MAR-19
Tellurium (Te)-Dissolved			<0.00020		mg/L		0.0002	19-MAR-19
Thallium (Tl)-Dissolved			<0.000010		mg/L		0.00001	19-MAR-19
Thorium (Th)-Dissolved			<0.00010		mg/L		0.0001	19-MAR-19
Tin (Sn)-Dissolved			<0.00010		mg/L		0.0001	19-MAR-19
Titanium (Ti)-Dissolved			<0.00030		mg/L		0.0003	19-MAR-19
Tungsten (W)-Dissolved			<0.00010		mg/L		0.0001	19-MAR-19
Uranium (U)-Dissolved			<0.000010		mg/L		0.00001	19-MAR-19
Vanadium (V)-Dissolved			<0.00050		mg/L		0.0005	19-MAR-19
Zinc (Zn)-Dissolved			<0.0010		mg/L		0.001	19-MAR-19
Zirconium (Zr)-Dissolved			<0.000060		mg/L		0.00006	19-MAR-19



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Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
MET-D-CCMS-WP								
	Water							
Batch	R4572208							
WG3009601-1	MB							
Aluminum (Al)-Dissolved			<0.0010		mg/L		0.001	19-MAR-19
Antimony (Sb)-Dissolved			<0.00010		mg/L		0.0001	19-MAR-19
Arsenic (As)-Dissolved			<0.00010		mg/L		0.0001	19-MAR-19
Barium (Ba)-Dissolved			<0.00010		mg/L		0.0001	19-MAR-19
Beryllium (Be)-Dissolved			<0.00010		mg/L		0.0001	19-MAR-19
Bismuth (Bi)-Dissolved			<0.000050		mg/L		0.00005	19-MAR-19
Boron (B)-Dissolved			<0.010		mg/L		0.01	19-MAR-19
Cadmium (Cd)-Dissolved			<0.0000050		mg/L		0.000005	19-MAR-19
Calcium (Ca)-Dissolved			<0.050		mg/L		0.05	19-MAR-19
Cesium (Cs)-Dissolved			<0.000010		mg/L		0.00001	19-MAR-19
Chromium (Cr)-Dissolved			<0.00010		mg/L		0.0001	19-MAR-19
Cobalt (Co)-Dissolved			<0.00010		mg/L		0.0001	19-MAR-19
Copper (Cu)-Dissolved			<0.00020		mg/L		0.0002	19-MAR-19
Iron (Fe)-Dissolved			<0.010		mg/L		0.01	19-MAR-19
Lead (Pb)-Dissolved			<0.000050		mg/L		0.00005	19-MAR-19
Lithium (Li)-Dissolved			<0.0010		mg/L		0.001	19-MAR-19
Magnesium (Mg)-Dissolved			<0.0050		mg/L		0.005	19-MAR-19
Manganese (Mn)-Dissolved			<0.00010		mg/L		0.0001	19-MAR-19
Molybdenum (Mo)-Dissolved			<0.000050		mg/L		0.00005	19-MAR-19
Nickel (Ni)-Dissolved			<0.00050		mg/L		0.0005	19-MAR-19
Phosphorus (P)-Dissolved			<0.030		mg/L		0.03	19-MAR-19
Potassium (K)-Dissolved			<0.050		mg/L		0.05	19-MAR-19
Rubidium (Rb)-Dissolved			<0.00020		mg/L		0.0002	19-MAR-19
Selenium (Se)-Dissolved			<0.000050		mg/L		0.00005	19-MAR-19
Silicon (Si)-Dissolved			<0.050		mg/L		0.05	19-MAR-19
Silver (Ag)-Dissolved			<0.000010		mg/L		0.00001	19-MAR-19
Sodium (Na)-Dissolved			<0.050		mg/L		0.05	19-MAR-19
Strontium (Sr)-Dissolved			<0.00010		mg/L		0.0001	19-MAR-19
Sulfur (S)-Dissolved			<0.50		mg/L		0.5	19-MAR-19
Tellurium (Te)-Dissolved			<0.00020		mg/L		0.0002	19-MAR-19
Thallium (Tl)-Dissolved			<0.000010		mg/L		0.00001	19-MAR-19
Thorium (Th)-Dissolved			<0.00010		mg/L		0.0001	19-MAR-19
Tin (Sn)-Dissolved			<0.00010		mg/L		0.0001	19-MAR-19
Titanium (Ti)-Dissolved			<0.00030		mg/L		0.0003	19-MAR-19



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Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
MET-D-CCMS-WP								
	Water							
Batch	R4572208							
WG3009601-1	MB							
Tungsten (W)-Dissolved			<0.00010		mg/L		0.0001	19-MAR-19
Uranium (U)-Dissolved			<0.000010		mg/L		0.00001	19-MAR-19
Vanadium (V)-Dissolved			<0.00050		mg/L		0.0005	19-MAR-19
Zinc (Zn)-Dissolved			<0.0010		mg/L		0.001	19-MAR-19
Zirconium (Zr)-Dissolved			<0.000060		mg/L		0.00006	19-MAR-19
WG3009603-1	MB							
Aluminum (Al)-Dissolved			<0.0010		mg/L		0.001	19-MAR-19
Antimony (Sb)-Dissolved			<0.00010		mg/L		0.0001	19-MAR-19
Arsenic (As)-Dissolved			<0.00010		mg/L		0.0001	19-MAR-19
Barium (Ba)-Dissolved			<0.00010		mg/L		0.0001	19-MAR-19
Beryllium (Be)-Dissolved			<0.00010		mg/L		0.0001	19-MAR-19
Bismuth (Bi)-Dissolved			<0.000050		mg/L		0.00005	19-MAR-19
Boron (B)-Dissolved			<0.010		mg/L		0.01	19-MAR-19
Cadmium (Cd)-Dissolved			<0.0000050		mg/L		0.000005	19-MAR-19
Calcium (Ca)-Dissolved			<0.050		mg/L		0.05	19-MAR-19
Cesium (Cs)-Dissolved			<0.000010		mg/L		0.00001	19-MAR-19
Chromium (Cr)-Dissolved			<0.00010		mg/L		0.0001	19-MAR-19
Cobalt (Co)-Dissolved			<0.00010		mg/L		0.0001	19-MAR-19
Copper (Cu)-Dissolved			<0.00020		mg/L		0.0002	19-MAR-19
Iron (Fe)-Dissolved			<0.010		mg/L		0.01	19-MAR-19
Lead (Pb)-Dissolved			<0.000050		mg/L		0.00005	19-MAR-19
Lithium (Li)-Dissolved			<0.0010		mg/L		0.001	19-MAR-19
Magnesium (Mg)-Dissolved			<0.0050		mg/L		0.005	19-MAR-19
Manganese (Mn)-Dissolved			<0.00010		mg/L		0.0001	19-MAR-19
Molybdenum (Mo)-Dissolved			<0.000050		mg/L		0.00005	19-MAR-19
Nickel (Ni)-Dissolved			<0.00050		mg/L		0.0005	19-MAR-19
Phosphorus (P)-Dissolved			<0.030		mg/L		0.03	19-MAR-19
Potassium (K)-Dissolved			<0.050		mg/L		0.05	19-MAR-19
Rubidium (Rb)-Dissolved			<0.00020		mg/L		0.0002	19-MAR-19
Selenium (Se)-Dissolved			<0.000050		mg/L		0.00005	19-MAR-19
Silicon (Si)-Dissolved			<0.050		mg/L		0.05	19-MAR-19
Silver (Ag)-Dissolved			<0.000010		mg/L		0.00001	19-MAR-19
Sodium (Na)-Dissolved			<0.050		mg/L		0.05	19-MAR-19
Strontium (Sr)-Dissolved			<0.00010		mg/L		0.0001	19-MAR-19



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Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
MET-D-CCMS-WP								
	Water							
Batch	R4572208							
WG3009603-1	MB							
Sulfur (S)-Dissolved			<0.50		mg/L		0.5	19-MAR-19
Tellurium (Te)-Dissolved			<0.00020		mg/L		0.0002	19-MAR-19
Thallium (Tl)-Dissolved			<0.000010		mg/L		0.00001	19-MAR-19
Thorium (Th)-Dissolved			<0.00010		mg/L		0.0001	19-MAR-19
Tin (Sn)-Dissolved			<0.00010		mg/L		0.0001	19-MAR-19
Titanium (Ti)-Dissolved			<0.00030		mg/L		0.0003	19-MAR-19
Tungsten (W)-Dissolved			<0.00010		mg/L		0.0001	19-MAR-19
Uranium (U)-Dissolved			<0.000010		mg/L		0.00001	19-MAR-19
Vanadium (V)-Dissolved			<0.00050		mg/L		0.0005	19-MAR-19
Zinc (Zn)-Dissolved			<0.0010		mg/L		0.001	19-MAR-19
Zirconium (Zr)-Dissolved			<0.000060		mg/L		0.00006	19-MAR-19
NO2-L-IC-N-WP								
	Water							
Batch	R4575596							
WG3008313-11	DUP	L2245232-39						
Nitrite (as N)		<0.0010	<0.0010	RPD-NA	mg/L	N/A	20	16-MAR-19
WG3008313-10	LCS							
Nitrite (as N)			96.1		%		90-110	16-MAR-19
WG3008313-2	LCS							
Nitrite (as N)			96.5		%		90-110	16-MAR-19
WG3008313-6	LCS							
Nitrite (as N)			96.3		%		90-110	16-MAR-19
WG3008313-1	MB							
Nitrite (as N)			<0.0010		mg/L		0.001	16-MAR-19
WG3008313-5	MB							
Nitrite (as N)			<0.0010		mg/L		0.001	16-MAR-19
WG3008313-9	MB							
Nitrite (as N)			<0.0010		mg/L		0.001	16-MAR-19
WG3008313-12	MS	L2245232-39						
Nitrite (as N)			98.3		%		75-125	16-MAR-19
NO3-L-IC-N-WP								
	Water							
Batch	R4575596							
WG3008313-11	DUP	L2245232-39						
Nitrate (as N)		<0.0050	<0.0050	RPD-NA	mg/L	N/A	20	16-MAR-19
WG3008313-10	LCS							
Nitrate (as N)			99.2		%		90-110	16-MAR-19
WG3008313-2	LCS							

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Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
NO3-L-IC-N-WP								
Batch R4575596								
WG3008313-2	LCS							
Nitrate (as N)			99.1		%		90-110	16-MAR-19
WG3008313-6	LCS							
Nitrate (as N)			99.1		%		90-110	16-MAR-19
WG3008313-1	MB							
Nitrate (as N)			<0.0050		mg/L		0.005	16-MAR-19
WG3008313-5	MB							
Nitrate (as N)			<0.0050		mg/L		0.005	16-MAR-19
WG3008313-9	MB							
Nitrate (as N)			<0.0050		mg/L		0.005	16-MAR-19
WG3008313-12	MS	L2245232-39						
Nitrate (as N)			106.3		%		75-125	16-MAR-19
PH-WP								
Batch R4573259								
WG3010024-10	DUP	L2245232-2						
pH		7.98	7.98	J	pH units	0.00	0.2	19-MAR-19
WG3010024-12	LCS							
pH			7.36		pH units		7.3-7.5	19-MAR-19
WG3010024-7	LCS							
pH			7.36		pH units		7.3-7.5	19-MAR-19
Batch R4580551								
WG3013045-10	DUP	L2245232-40						
pH		8.05	7.92	J	pH units	0.13	0.2	23-MAR-19
WG3013045-5	DUP	L2245232-36						
pH		8.19	8.17	J	pH units	0.02	0.2	23-MAR-19
WG3013045-2	LCS							
pH			7.37		pH units		7.3-7.5	23-MAR-19
WG3013045-7	LCS							
pH			7.39		pH units		7.3-7.5	23-MAR-19
SO4-IC-N-WP								
Batch R4575596								
WG3008313-11	DUP	L2245232-39						
Sulfate (SO4)		41.0	41.1		mg/L	0.1	20	16-MAR-19
WG3008313-10	LCS							
Sulfate (SO4)			99.5		%		90-110	16-MAR-19
WG3008313-2	LCS							
Sulfate (SO4)			99.6		%		90-110	16-MAR-19
WG3008313-6	LCS							

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Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
SO4-IC-N-WP								
Batch R4575596								
WG3008313-6	LCS							
Sulfate (SO4)			99.6		%		90-110	16-MAR-19
WG3008313-1	MB							
Sulfate (SO4)			<0.30		mg/L		0.3	16-MAR-19
WG3008313-5	MB							
Sulfate (SO4)			<0.30		mg/L		0.3	16-MAR-19
WG3008313-9	MB							
Sulfate (SO4)			<0.30		mg/L		0.3	16-MAR-19
WG3008313-12	MS	L2245232-39						
Sulfate (SO4)			103.9		%		75-125	16-MAR-19
TC,EC-QT51-WP								
Batch R4568563								
WG3008474-1	MB							
Total Coliforms			0		MPN/100mL		1	16-MAR-19
Escherichia Coli			0		MPN/100mL		1	16-MAR-19
TURBIDITY-WP								
Batch R4576108								
WG3011364-17	DUP	L2245232-1						
Turbidity		3970	3980		NTU	0.3	15	16-MAR-19
WG3011364-20	DUP	L2245232-26						
Turbidity		233	236		NTU	1.3	15	16-MAR-19
WG3011364-23	DUP	L2245232-5						
Turbidity		>4000	>4000		NTU	0.0	15	16-MAR-19
WG3011364-18	LCS							
Turbidity			101.0		%		85-115	16-MAR-19
WG3011364-21	LCS							
Turbidity			100.5		%		85-115	16-MAR-19
WG3011364-24	LCS							
Turbidity			100.5		%		85-115	16-MAR-19
WG3011364-16	MB							
Turbidity			<0.10		NTU		0.1	16-MAR-19
WG3011364-19	MB							
Turbidity			<0.10		NTU		0.1	16-MAR-19
WG3011364-22	MB							
Turbidity			<0.10		NTU		0.1	16-MAR-19

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Legend:

Limit	ALS Control Limit (Data Quality Objectives)
DUP	Duplicate
RPD	Relative Percent Difference
N/A	Not Available
LCS	Laboratory Control Sample
SRM	Standard Reference Material
MS	Matrix Spike
MSD	Matrix Spike Duplicate
ADE	Average Desorption Efficiency
MB	Method Blank
IRM	Internal Reference Material
CRM	Certified Reference Material
CCV	Continuing Calibration Verification
CVS	Calibration Verification Standard
LCSD	Laboratory Control Sample Duplicate

Sample Parameter Qualifier Definitions:

Qualifier	Description
J	Duplicate results and limits are expressed in terms of absolute difference.
RPD-NA	Relative Percent Difference Not Available due to result(s) being less than detection limit.

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Hold Time Exceedances:

ALS Product Description	Sample ID	Sampling Date	Date Processed	Rec. HT	Actual HT	Units	Qualifier
Physical Tests							
Turbidity							
	1	07-MAR-19	16-MAR-19 15:00	3	9	days	EHTR
	2	12-MAR-19	16-MAR-19 15:00	3	4	days	EHTR
	3	07-MAR-19	16-MAR-19 15:00	3	9	days	EHTR
	4	08-MAR-19	16-MAR-19 15:00	3	8	days	EHTR
	5	09-MAR-19	16-MAR-19 15:00	3	7	days	EHTR
	6	08-MAR-19	16-MAR-19 15:00	3	8	days	EHTR
	7	09-MAR-19	16-MAR-19 15:00	3	7	days	EHTR
	9	08-MAR-19	16-MAR-19 15:00	3	8	days	EHTR
	10	07-MAR-19	16-MAR-19 15:00	3	9	days	EHTR
	11	07-MAR-19	16-MAR-19 15:00	3	9	days	EHTR
	12	09-MAR-19	16-MAR-19 15:00	3	7	days	EHTR
	15	10-MAR-19	16-MAR-19 15:00	3	6	days	EHTR
	16	11-MAR-19	16-MAR-19 15:00	3	5	days	EHTR
	17	07-MAR-19	16-MAR-19 15:00	3	9	days	EHTR
	18	11-MAR-19	16-MAR-19 15:00	3	5	days	EHTR
	19	07-MAR-19	16-MAR-19 15:00	3	9	days	EHTR
	20	08-MAR-19	16-MAR-19 15:00	3	8	days	EHTR
	21	10-MAR-19	16-MAR-19 15:00	3	6	days	EHTR
	22	11-MAR-19	16-MAR-19 15:00	3	5	days	EHTR
	23	10-MAR-19	16-MAR-19 15:00	3	6	days	EHTR
	28	12-MAR-19	16-MAR-19 15:00	3	4	days	EHTR
	29	09-MAR-19	16-MAR-19 15:00	3	7	days	EHTR
	30	09-MAR-19	16-MAR-19 15:00	3	7	days	EHTR
	31	11-MAR-19	16-MAR-19 15:00	3	5	days	EHTR
	35	09-MAR-19	16-MAR-19 15:00	3	7	days	EHTR
	36	08-MAR-19	16-MAR-19 15:00	3	8	days	EHTR
	37	08-MAR-19	16-MAR-19 15:00	3	8	days	EHTR
	38	11-MAR-19	16-MAR-19 15:00	3	5	days	EHTR
	39	08-MAR-19	16-MAR-19 15:00	3	8	days	EHTR
	40	08-MAR-19	16-MAR-19 15:00	3	8	days	EHTR
	41	07-MAR-19	16-MAR-19 15:00	3	9	days	EHTR
pH							
	1	07-MAR-19	19-MAR-19 12:00	0.25	288	hours	EHTR-FM
	2	12-MAR-19	19-MAR-19 12:00	0.25	168	hours	EHTR-FM
	3	07-MAR-19	19-MAR-19 12:00	0.25	288	hours	EHTR-FM
	4	08-MAR-19	19-MAR-19 12:00	0.25	264	hours	EHTR-FM
	5	09-MAR-19	19-MAR-19 12:00	0.25	240	hours	EHTR-FM
	6	08-MAR-19	19-MAR-19 12:00	0.25	264	hours	EHTR-FM
	7	09-MAR-19	19-MAR-19 12:00	0.25	240	hours	EHTR-FM
	8	Not provided	19-MAR-19 12:00	0.25	74	hours	EHTR-FM
	9	08-MAR-19	19-MAR-19 12:00	0.25	264	hours	EHTR-FM
	10	07-MAR-19	19-MAR-19 12:00	0.25	288	hours	EHTR-FM
	11	07-MAR-19	19-MAR-19 12:00	0.25	288	hours	EHTR-FM
	12	09-MAR-19	19-MAR-19 12:00	0.25	240	hours	EHTR-FM
	13	15-MAR-19	19-MAR-19 12:00	0.25	96	hours	EHTR-FM
	14	15-MAR-19	19-MAR-19 12:00	0.25	96	hours	EHTR-FM
	15	10-MAR-19	19-MAR-19 12:00	0.25	216	hours	EHTR-FM
	16	11-MAR-19	19-MAR-19 12:00	0.25	192	hours	EHTR-FM
	17	07-MAR-19	19-MAR-19 12:00	0.25	288	hours	EHTR-FM
	18	11-MAR-19	23-MAR-19 12:00	0.25	288	hours	EHTR-FM
	19	07-MAR-19	23-MAR-19 12:00	0.25	384	hours	EHTR-FM
	20	08-MAR-19	23-MAR-19 12:00	0.25	360	hours	EHTR-FM
	21	10-MAR-19	23-MAR-19 12:00	0.25	312	hours	EHTR-FM
	22	11-MAR-19	23-MAR-19 12:00	0.25	288	hours	EHTR-FM
	23	10-MAR-19	23-MAR-19 12:00	0.25	312	hours	EHTR-FM
	24	14-MAR-19	23-MAR-19 12:00	0.25	216	hours	EHTR-FM
	25	14-MAR-19	23-MAR-19 12:00	0.25	216	hours	EHTR-FM

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Hold Time Exceedances:

ALS Product Description	Sample ID	Sampling Date	Date Processed	Rec. HT	Actual HT	Units	Qualifier
Physical Tests							
pH							
	26	13-MAR-19	23-MAR-19 12:00	0.25	240	hours	EHTR-FM
	27	13-MAR-19	23-MAR-19 12:00	0.25	240	hours	EHTR-FM
	28	12-MAR-19	23-MAR-19 12:00	0.25	264	hours	EHTR-FM
	29	09-MAR-19	23-MAR-19 12:00	0.25	336	hours	EHTR-FM
	30	09-MAR-19	23-MAR-19 12:00	0.25	336	hours	EHTR-FM
	31	11-MAR-19	23-MAR-19 12:00	0.25	288	hours	EHTR-FM
	32	14-MAR-19	23-MAR-19 12:00	0.25	216	hours	EHTR-FM
	33	14-MAR-19	23-MAR-19 12:00	0.25	216	hours	EHTR-FM
	34	14-MAR-19	23-MAR-19 12:00	0.25	216	hours	EHTR-FM
	35	09-MAR-19	23-MAR-19 12:00	0.25	336	hours	EHTR-FM
	36	08-MAR-19	23-MAR-19 12:00	0.25	360	hours	EHTR-FM
	37	08-MAR-19	23-MAR-19 12:00	0.25	360	hours	EHTR-FM
	38	11-MAR-19	23-MAR-19 12:00	0.25	288	hours	EHTR-FM
	39	08-MAR-19	23-MAR-19 12:00	0.25	360	hours	EHTR-FM
	40	08-MAR-19	23-MAR-19 12:00	0.25	360	hours	EHTR-FM
	41	07-MAR-19	23-MAR-19 12:00	0.25	384	hours	EHTR-FM

Anions and Nutrients

Alkalinity, Total (as CaCO3)

	19	07-MAR-19	23-MAR-19 12:00	14	16	days	EHT
	20	08-MAR-19	23-MAR-19 12:00	14	15	days	EHT
	36	08-MAR-19	23-MAR-19 12:00	14	15	days	EHT
	37	08-MAR-19	23-MAR-19 12:00	14	15	days	EHT
	39	08-MAR-19	23-MAR-19 12:00	14	15	days	EHT
	40	08-MAR-19	23-MAR-19 12:00	14	15	days	EHT
	41	07-MAR-19	23-MAR-19 12:00	14	16	days	EHT

Nitrate in Water by IC (Low Level)

	1	07-MAR-19	16-MAR-19 11:30	3	9	days	EHTR
	2	12-MAR-19	16-MAR-19 11:30	3	4	days	EHTR
	3	07-MAR-19	16-MAR-19 11:30	3	9	days	EHTR
	4	08-MAR-19	16-MAR-19 11:30	3	8	days	EHTR
	5	09-MAR-19	16-MAR-19 11:30	3	7	days	EHTR
	6	08-MAR-19	16-MAR-19 11:30	3	8	days	EHTR
	7	09-MAR-19	16-MAR-19 11:30	3	7	days	EHTR
	9	08-MAR-19	16-MAR-19 11:30	3	8	days	EHTR
	10	07-MAR-19	16-MAR-19 11:30	3	9	days	EHTR
	11	07-MAR-19	16-MAR-19 11:30	3	9	days	EHTR
	12	09-MAR-19	16-MAR-19 11:30	3	7	days	EHTR
	15	10-MAR-19	16-MAR-19 11:30	3	6	days	EHTR
	16	11-MAR-19	16-MAR-19 11:30	3	5	days	EHTR
	17	07-MAR-19	16-MAR-19 11:30	3	9	days	EHTR
	18	11-MAR-19	16-MAR-19 11:30	3	5	days	EHTR
	19	07-MAR-19	16-MAR-19 11:30	3	9	days	EHTR
	20	08-MAR-19	16-MAR-19 11:30	3	8	days	EHTR
	21	10-MAR-19	16-MAR-19 11:30	3	6	days	EHTR
	22	11-MAR-19	16-MAR-19 11:30	3	5	days	EHTR
	23	10-MAR-19	16-MAR-19 11:30	3	6	days	EHTR
	28	12-MAR-19	16-MAR-19 11:30	3	4	days	EHTR
	29	09-MAR-19	16-MAR-19 11:30	3	7	days	EHTR
	30	09-MAR-19	16-MAR-19 11:30	3	7	days	EHTR
	31	11-MAR-19	16-MAR-19 11:30	3	5	days	EHTR
	35	09-MAR-19	16-MAR-19 11:30	3	7	days	EHTR
	36	08-MAR-19	16-MAR-19 11:30	3	8	days	EHTR
	37	08-MAR-19	16-MAR-19 11:30	3	8	days	EHTR
	38	11-MAR-19	16-MAR-19 11:30	3	5	days	EHTR
	39	08-MAR-19	16-MAR-19 11:30	3	8	days	EHTR
	40	08-MAR-19	16-MAR-19 11:30	3	8	days	EHTR
	41	07-MAR-19	16-MAR-19 11:30	3	9	days	EHTR

Quality Control Report

Workorder: L2245232

Report Date: 29-MAR-19

Page 16 of 17

Hold Time Exceedances:

ALS Product Description	Sample ID	Sampling Date	Date Processed	Rec. HT	Actual HT	Units	Qualifier
Anions and Nutrients							
Nitrite in Water by IC (Low Level)							
	1	07-MAR-19	16-MAR-19 11:30	3	9	days	EHTR
	2	12-MAR-19	16-MAR-19 11:30	3	4	days	EHTR
	3	07-MAR-19	16-MAR-19 11:30	3	9	days	EHTR
	4	08-MAR-19	16-MAR-19 11:30	3	8	days	EHTR
	5	09-MAR-19	16-MAR-19 11:30	3	7	days	EHTR
	6	08-MAR-19	16-MAR-19 11:30	3	8	days	EHTR
	7	09-MAR-19	16-MAR-19 11:30	3	7	days	EHTR
	9	08-MAR-19	16-MAR-19 11:30	3	8	days	EHTR
	10	07-MAR-19	16-MAR-19 11:30	3	9	days	EHTR
	11	07-MAR-19	16-MAR-19 11:30	3	9	days	EHTR
	12	09-MAR-19	16-MAR-19 11:30	3	7	days	EHTR
	15	10-MAR-19	16-MAR-19 11:30	3	6	days	EHTR
	16	11-MAR-19	16-MAR-19 11:30	3	5	days	EHTR
	17	07-MAR-19	16-MAR-19 11:30	3	9	days	EHTR
	18	11-MAR-19	16-MAR-19 11:30	3	5	days	EHTR
	19	07-MAR-19	16-MAR-19 11:30	3	9	days	EHTR
	20	08-MAR-19	16-MAR-19 11:30	3	8	days	EHTR
	21	10-MAR-19	16-MAR-19 11:30	3	6	days	EHTR
	22	11-MAR-19	16-MAR-19 11:30	3	5	days	EHTR
	23	10-MAR-19	16-MAR-19 11:30	3	6	days	EHTR
	28	12-MAR-19	16-MAR-19 11:30	3	4	days	EHTR
	29	09-MAR-19	16-MAR-19 11:30	3	7	days	EHTR
	30	09-MAR-19	16-MAR-19 11:30	3	7	days	EHTR
	31	11-MAR-19	16-MAR-19 11:30	3	5	days	EHTR
	35	09-MAR-19	16-MAR-19 11:30	3	7	days	EHTR
	36	08-MAR-19	16-MAR-19 11:30	3	8	days	EHTR
	37	08-MAR-19	16-MAR-19 11:30	3	8	days	EHTR
	38	11-MAR-19	16-MAR-19 11:30	3	5	days	EHTR
	39	08-MAR-19	16-MAR-19 11:30	3	8	days	EHTR
	40	08-MAR-19	16-MAR-19 11:30	3	8	days	EHTR
	41	07-MAR-19	16-MAR-19 11:30	3	9	days	EHTR

Bacteriological Tests

Total Coliform and E.coli

	24	14-MAR-19	16-MAR-19 14:25	30	50	hours	EHTR
	26	13-MAR-19	16-MAR-19 14:25	30	74	hours	EHTR
	27	13-MAR-19	16-MAR-19 14:25	30	74	hours	EHTR
	28	12-MAR-19	16-MAR-19 14:25	30	98	hours	EHTR

Legend & Qualifier Definitions:

- EHTR-FM: Exceeded ALS recommended hold time prior to sample receipt. Field Measurement recommended.
- EHTR: Exceeded ALS recommended hold time prior to sample receipt.
- EHTL: Exceeded ALS recommended hold time prior to analysis. Sample was received less than 24 hours prior to expiry.
- EHT: Exceeded ALS recommended hold time prior to analysis.
- Rec. HT: ALS recommended hold time (see units).

Notes*:

Where actual sampling date is not provided to ALS, the date (& time) of receipt is used for calculation purposes.
 Where actual sampling time is not provided to ALS, the earlier of 12 noon on the sampling date or the time (& date) of receipt is used for calculation purposes. Samples for L2245232 were received on 16-MAR-19 09:50.

ALS recommended hold times may vary by province. They are assigned to meet known provincial and/or federal government requirements. In the absence of regulatory hold times, ALS establishes recommendations based on guidelines published by the US EPA, APHA Standard Methods, or Environment Canada (where available). For more information, please contact ALS.

Quality Control Report

Workorder: L2245232

Report Date: 29-MAR-19

Page 17 of 17

The ALS Quality Control Report is provided to ALS clients upon request. ALS includes comprehensive QC checks with every analysis to ensure our high standards of quality are met. Each QC result has a known or expected target value, which is compared against pre-determined data quality objectives to provide confidence in the accuracy of associated test results.

Please note that this report may contain QC results from anonymous Sample Duplicates and Matrix Spikes that do not originate from this Work Order.



Chain of Custody (COC) / Analytical Request Form

Canada Toll Free: 1 800 668 9878

www.alsglobal.com



L2245232-COFC

COC Number: 17 - 747304

Page of

Report To Contact and company name below will appear on the final report		Report Format / Distribution		Select service level below - Contact your AM to confirm all E&P TATs (surcharges may apply)																																																							
Company:	KGS Group	Select Report Format:	<input type="checkbox"/> PDF <input checked="" type="checkbox"/> EXCEL <input type="checkbox"/> EDD (DIGITAL)	Regular [R] <input checked="" type="checkbox"/> Standard TAT if received by 3 pm - business days - no surcharges apply																																																							
Contact:	Paul Lindell	Quality Control (QC) Report with Report	<input type="checkbox"/> YES <input checked="" type="checkbox"/> NO	PRIORITY (Business Days)	4 day [P4-20%] <input type="checkbox"/>																																																						
Phone:	204-896-1209	<input type="checkbox"/> Compare Results to Criteria on Report - provide details below if box checked			3 day [P3-25%] <input type="checkbox"/>	EMERGENCY																																																					
Company address below will appear on the final report		Select Distribution:	<input checked="" type="checkbox"/> EMAIL <input type="checkbox"/> MAIL <input type="checkbox"/> FAX	2 day [P2-50%] <input type="checkbox"/>	1 Business day [E - 100%] <input type="checkbox"/>																																																						
Street:	3rd Floor, 1665 Waverly St	Email 1 or Fax:	PLindell@kgsgrp.com	Date and Time Required for all E&P TATs: _____ dd-mmm-yy hh:mm																																																							
City/Province:	Wpg, MB	Email 2:	ELoray@kgsgrp.com	For tests that can not be performed according to the service level selected, you will be contacted.																																																							
Postal Code:	R2T 5P4	Email 3:		Analysis Request																																																							
Invoice To	Same as Report To <input checked="" type="checkbox"/> YES <input type="checkbox"/> NO	Invoice Distribution		<table border="1"> <tr> <td rowspan="4" style="writing-mode: vertical-rl; transform: rotate(180deg);">NUMBER OF CONTAINERS</td> <td colspan="12">Indicate Filtered (F), Preserved (P) or Filtered and Preserved (F/P) below</td> <td rowspan="4" style="writing-mode: vertical-rl; transform: rotate(180deg);">SAMPLES ON HOLD</td> <td rowspan="4" style="writing-mode: vertical-rl; transform: rotate(180deg);">SUSPECTED HAZARD (see Special Instructions)</td> </tr> <tr> <td>ROLU4W-net-0-L</td> <td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td> </tr> <tr> <td>TC, EC - QTS1</td> <td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td> </tr> <tr> <td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td> </tr> </table>		NUMBER OF CONTAINERS	Indicate Filtered (F), Preserved (P) or Filtered and Preserved (F/P) below												SAMPLES ON HOLD	SUSPECTED HAZARD (see Special Instructions)	ROLU4W-net-0-L													TC, EC - QTS1																									
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Contact:		Email 2:																																																									
Project Information		Oil and Gas Required Fields (client use)																																																									
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Job #:	18-00300-05	Major/Minor Code:		Routing Code:																																																							
PO / AFE:		Requisitioner:																																																									
LSD:		Location:																																																									
ALS Lab Work Order # (lab use only):		ALS Contact:		Sampler:																																																							
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13	TH19-KGS-500	15-03-19		Water	2 X																																																						
14	TH19-KGS-16	15-03-19		"	2 X																																																						
15	TH19-KGS-17B	10-03-19		"	2 X																																																						
16	TH19-KGS-19A	11-03-19		"	2 X																																																						
17	TH19-KGS-13A	07-03-19		"	2 X																																																						
18	TH19-KGS-02B	11-03-19		"	2 X																																																						
19	TH19-KGS-12	07-03-19		"	2 X																																																						
20	TH19-KGS-11A	08-03-19		"	2 X																																																						
21	TH19-KGS-17A	10-03-19		"	2 X																																																						
22	TH19-KGS-18A	11-03-19		"	2 X																																																						
23	TH19-KGS-17	10-03-19		"	2 X																																																						
24	PW19-KGS-03	14-03-19		"	3 X X																																																						
Drinking Water (DW) Samples (client use)		Special Instructions / Specify Criteria to add on report by clicking on the drop-down list below (electronic COC only)		SAMPLE CONDITION AS RECEIVED (lab use only)																																																							
Are samples taken from a Regulated DW System? <input type="checkbox"/> YES <input checked="" type="checkbox"/> NO		All metal samples are field filtered + preserved		Frozen <input type="checkbox"/> SIF Observations Yes <input type="checkbox"/> No <input type="checkbox"/>																																																							
Are samples for human consumption/ use? <input type="checkbox"/> YES <input checked="" type="checkbox"/> NO				Ice Packs <input type="checkbox"/> Ice Cubes <input type="checkbox"/> Custody seal intact Yes <input type="checkbox"/> No <input type="checkbox"/>																																																							
				Cooling Initiated <input type="checkbox"/> 6.3																																																							
				INITIAL COOLER TEMPERATURES °C																																																							
				FINAL COOLER TEMPERATURES °C																																																							
SHIPMENT RELEASE (client use)		INITIAL SHIPMENT RECEPTION (lab use only)		FINAL SHIPMENT RECEPTION (lab use only)																																																							
Released by:	Date: 15-03-19	Time: 18:00	Received by:	Date: 16 Mar 19	Time: 9:50																																																						

REFER TO BACK PAGE FOR ALS LOCATIONS AND SAMPLING INFORMATION

WHITE - LABORATORY COPY YELLOW - CLIENT COPY

ALM 2018 FRONT

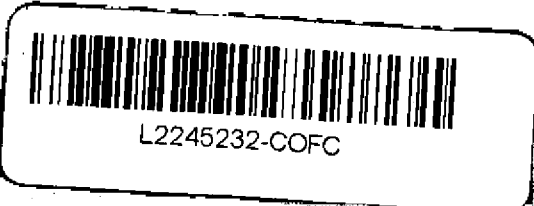
1. If any water samples are taken from a Regulated Drinking Water (DW) System, please submit using an Authorized DW COC form.



Chain of Custody (COC) / Analytical Request Form

Canada Toll Free: 1 800 668 9878

www.alsglobal.com



COC Number: 17 - 747303

Page of

Report To Contact and company name below will appear on the final report		Report Format / Distribution			Select Service Level Below - Contact your AM to confirm all E&P TATs (surcharges may apply)																																								
Company: KGS Group		Select Report Format: <input checked="" type="checkbox"/> PDF <input checked="" type="checkbox"/> EXCEL EDD (DIGITAL)			Regular (R) <input checked="" type="checkbox"/> Standard TAT if received by 3 pm - business days - no surcharges apply																																								
Contact: Eric Lewis		Quality Control (QC) Report with Report <input type="checkbox"/> YES <input type="checkbox"/> NO			PROPERTY (Business Days)	4 day [P4-20%] <input type="checkbox"/>		EMERGENCY																																					
Phone: 204-229-1136		<input type="checkbox"/> Compare Results to Criteria on Report - provide details below if box checked				3 day [P3-25%] <input type="checkbox"/>		1 Business day [E - 100%] <input type="checkbox"/>																																					
Company address below will appear on the final report		Select Distribution: <input checked="" type="checkbox"/> EMAIL MAIL <input type="checkbox"/> FAX			2 day [P2-50%] <input type="checkbox"/>		Same Day, Weekend or Statutory holiday [E2 -200% (Laboratory opening fees may apply)] <input type="checkbox"/>																																						
Street: 3rd Floor 865 Waverley St		Email 1 or Fax: ELevay@kgs-group.com			Date and Time Required for all E&P TATs: dd-mmm-yy hh:mm																																								
City/Province: Winnipeg MB		Email 2: PLindell@kgs-group.com			For tests that can not be performed according to the service level selected, you will be contacted.																																								
Postal Code: R3T 5P4		Email 3:			Analysis Request																																								
Invoice To: Same as Report To <input checked="" type="checkbox"/> YES <input type="checkbox"/> NO		Invoice Distribution			Indicate Filtered (F), Preserved (P) or Filtered and Preserved (F/P) below																																								
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REFER TO BACK PAGE FOR ALS LOCATIONS AND SAMPLING INFORMATION

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1. If any water samples are taken from a Regulated Drinking Water (DW) System, please submit using an Authorized DW COC form.



KGS Group Consultants (Winnipeg)
865 Waverly Street - 3rd Floor
Winnipeg MB R3T 5P4
ATTN: PAUL LINDELL

Date: 24-JUN-19
PO No.:
WO No.: L2290890
Project Ref: 18-0300-005
Sample ID: PW19-KGS-01
Sampled By: PJL
Date Collected: 11-JUN-19
Lab Sample ID: L2290890-1
Matrix: GW

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
ROU4W Dissolved						
Bicarbonate (HCO3)	412		mg/L			14-JUN-19
Carbonate (CO3)	<0.60		mg/L			14-JUN-19
Hydroxide (OH)	<0.34		mg/L			14-JUN-19
*Nitrate and Nitrite as N	<0.0051		mg/L	10		19-JUN-19
pH						
pH	7.65		pH units			13-JUN-19
Turbidity						
*Turbidity	1.12		NTU			15-JUN-19
TDS calculated						
TDS (Calculated)	428		mg/L		500	17-JUN-19
Sulfate in Water by IC						
Sulfate (SO4)	77.0		mg/L		500	13-JUN-19
Nitrite in Water by IC (Low Level)						
*Nitrite (as N)	<0.0010		mg/L	1		13-JUN-19
Nitrate in Water by IC (Low Level)						
*Nitrate (as N)	<0.0050		mg/L	10		13-JUN-19
Ion Balance Calculation						
Hardness Calculated						
Hardness (as CaCO3)	353		mg/L		500	17-JUN-19
Fluoride in Water by IC						
Fluoride (F)	0.263		mg/L	1.5		13-JUN-19
Dissolved Metals in Water by CRC ICPMS						
Dissolved Metals	FIELD					14-JUN-19
Filtration Location						
Aluminum (Al)-Dissolved	<0.0010		mg/L		0.1	14-JUN-19
Antimony (Sb)-Dissolved	<0.00010		mg/L	0.006		14-JUN-19
Arsenic (As)-Dissolved	0.00049		mg/L	0.01		14-JUN-19
Barium (Ba)-Dissolved	0.0254		mg/L	1		14-JUN-19
Beryllium (Be)-Dissolved	<0.00010		mg/L			14-JUN-19
Bismuth (Bi)-Dissolved	<0.000050		mg/L			14-JUN-19
Boron (B)-Dissolved	0.133		mg/L	5		14-JUN-19
Cadmium (Cd)-Dissolved	<0.000050		mg/L	0.005		14-JUN-19
Calcium (Ca)-Dissolved	51.9		mg/L			14-JUN-19
Cesium (Cs)-Dissolved	<0.000010		mg/L			14-JUN-19
Chromium (Cr)-Dissolved	<0.00010		mg/L	0.05		14-JUN-19
Cobalt (Co)-Dissolved	0.00024		mg/L			14-JUN-19
Copper (Cu)-Dissolved	<0.00020		mg/L	2.0	1.0	14-JUN-19
Iron (Fe)-Dissolved	0.051		mg/L		0.3	14-JUN-19
Lead (Pb)-Dissolved	<0.000050		mg/L	0.005		14-JUN-19

ADDRESS: 1329 Niakwa Road East, Unit 12, Winnipeg, MB R2J 3T4 Canada | Phone: +1 204 255 9720 | Fax: +1 204 255 9721
 ALS CANADA LTD Part of the ALS Group A Campbell Brothers Limited Company



KGS Group Consultants (Winnipeg)
865 Waverly Street - 3rd Floor
Winnipeg MB R3T 5P4
ATTN: PAUL LINDELL

Date: 24-JUN-19
PO No.:
WO No.: L2290890
Project Ref: 18-0300-005
Sample ID: PW19-KGS-01
Sampled By: PJL
Date Collected: 11-JUN-19
Lab Sample ID: L2290890-1
Matrix: GW

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
ROU4W Dissolved						
Dissolved Metals in Water by CRC ICPMS						
Lithium (Li)-Dissolved	0.0247		mg/L			14-JUN-19
Magnesium (Mg)-Dissolved	54.3		mg/L			14-JUN-19
Manganese (Mn)-Dissolved	0.00673		mg/L	0.12	0.02	14-JUN-19
Molybdenum (Mo)-Dissolved	0.00106		mg/L			14-JUN-19
Nickel (Ni)-Dissolved	0.00065		mg/L			14-JUN-19
Phosphorus (P)-Dissolved	<0.030		mg/L			14-JUN-19
Potassium (K)-Dissolved	4.91		mg/L			14-JUN-19
Rubidium (Rb)-Dissolved	0.00139		mg/L			14-JUN-19
Selenium (Se)-Dissolved	<0.000050		mg/L	0.05		14-JUN-19
Silicon (Si)-Dissolved	5.81		mg/L			14-JUN-19
Silver (Ag)-Dissolved	<0.000010		mg/L			14-JUN-19
Sodium (Na)-Dissolved	27.9		mg/L		200	14-JUN-19
Strontium (Sr)-Dissolved	0.214		mg/L			14-JUN-19
Sulfur (S)-Dissolved	26.7		mg/L			14-JUN-19
Tellurium (Te)-Dissolved	<0.00020		mg/L			14-JUN-19
Thallium (Tl)-Dissolved	<0.000010		mg/L			14-JUN-19
Thorium (Th)-Dissolved	<0.00010		mg/L			14-JUN-19
Tin (Sn)-Dissolved	<0.00010		mg/L			14-JUN-19
Titanium (Ti)-Dissolved	<0.00030		mg/L			14-JUN-19
Tungsten (W)-Dissolved	<0.00010		mg/L			14-JUN-19
Uranium (U)-Dissolved	0.00184		mg/L	0.02		14-JUN-19
Vanadium (V)-Dissolved	<0.00050		mg/L			14-JUN-19
Zinc (Zn)-Dissolved	0.0013		mg/L		5.0	14-JUN-19
Zirconium (Zr)-Dissolved	<0.000060		mg/L			14-JUN-19
Conductivity						
Conductivity	705		umhos/cm			13-JUN-19
Chloride in Water by IC (Low Level)						
Chloride (Cl)	9.05		mg/L		250	13-JUN-19
Alkalinity, Total (as CaCO3)						
Alkalinity, Total (as CaCO3)	338		mg/L			13-JUN-19
Total Coliform and E.coli						
Total Coliforms	0	PEHT	MPN/100mL	0		13-JUN-19
Escherichia Coli	0	PEHT	MPN/100mL	0		13-JUN-19



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ATTN: PAUL LINDELL

Date: 24-JUN-19
PO No.:
WO No.: L2290890
Project Ref: 18-0300-005
Sample ID: PW19-KGS-01
Sampled By: PJL
Date Collected: 11-JUN-19
Lab Sample ID: L2290890-1
Matrix: GW

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
<p>CDWQG = Health Canada Guideline Limits updated JUNE 2019</p> <p>* CDWQG for Nitrate+Nitrite-N is the limit for nitrate only. If present as Nitrate then the limit is 10mg/L < or N.D. = less than detection limit. * Turbidity guideline based on membrane filtration. For guidelines on conventional treatment and slow sand or diatomaceous earth filtration please see Summary Table of Guidelines for Canadian Drinking Water Quality - A blank entry designates no known limit. - A shaded value in the Results column exceeds CDWQG MAC and/ or Aesthetic Objective.</p>						
<p>Approved by <u><i>Hua Wo</i></u> Hua Wo Account Manager</p>						



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ATTN: PAUL LINDELL

Date: 24-JUN-19
PO No.:
WO No.: L2290890
Project Ref: 18-0300-005
Sample ID: PW19-KGS-02
Sampled By: PJL
Date Collected: 11-JUN-19
Lab Sample ID: L2290890-2
Matrix: GW

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
ROU4W Dissolved						
Bicarbonate (HCO3)	399		mg/L			14-JUN-19
Carbonate (CO3)	<0.60		mg/L			14-JUN-19
Hydroxide (OH)	<0.34		mg/L			14-JUN-19
*Nitrate and Nitrite as N	<0.0051		mg/L	10		19-JUN-19
pH						
pH	7.79		pH units			13-JUN-19
Turbidity						
*Turbidity	2.57		NTU			15-JUN-19
TDS calculated						
TDS (Calculated)	449		mg/L		500	17-JUN-19
Sulfate in Water by IC						
Sulfate (SO4)	89.0		mg/L		500	13-JUN-19
Nitrite in Water by IC (Low Level)						
*Nitrite (as N)	<0.0010		mg/L	1		13-JUN-19
Nitrate in Water by IC (Low Level)						
*Nitrate (as N)	<0.0050		mg/L	10		13-JUN-19
Ion Balance Calculation						
Hardness Calculated						
Hardness (as CaCO3)	362		mg/L		500	17-JUN-19
Fluoride in Water by IC						
Fluoride (F)	0.317		mg/L	1.5		13-JUN-19
Dissolved Metals in Water by CRC ICPMS						
Dissolved Metals	FIELD					14-JUN-19
Filtration Location						
Aluminum (Al)-Dissolved	<0.0010		mg/L		0.1	14-JUN-19
Antimony (Sb)-Dissolved	<0.00010		mg/L	0.006		14-JUN-19
Arsenic (As)-Dissolved	0.00161		mg/L	0.01		14-JUN-19
Barium (Ba)-Dissolved	0.0250		mg/L	1		14-JUN-19
Beryllium (Be)-Dissolved	<0.00010		mg/L			14-JUN-19
Bismuth (Bi)-Dissolved	<0.000050		mg/L			14-JUN-19
Boron (B)-Dissolved	0.129		mg/L	5		14-JUN-19
Cadmium (Cd)-Dissolved	<0.0000050		mg/L	0.005		14-JUN-19
Calcium (Ca)-Dissolved	55.1		mg/L			14-JUN-19
Cesium (Cs)-Dissolved	0.000012		mg/L			14-JUN-19
Chromium (Cr)-Dissolved	<0.00010		mg/L	0.05		14-JUN-19
Cobalt (Co)-Dissolved	0.00016		mg/L			14-JUN-19
Copper (Cu)-Dissolved	0.00122		mg/L	2.0	1.0	14-JUN-19
Iron (Fe)-Dissolved	0.112		mg/L		0.3	14-JUN-19
Lead (Pb)-Dissolved	0.000057		mg/L	0.005		14-JUN-19

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ATTN: PAUL LINDELL

Date: 24-JUN-19
PO No.:
WO No.: L2290890
Project Ref: 18-0300-005
Sample ID: PW19-KGS-02
Sampled By: PJL
Date Collected: 11-JUN-19
Lab Sample ID: L2290890-2
Matrix: GW

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
ROU4W Dissolved						
Dissolved Metals in Water by CRC ICPMS						
Lithium (Li)-Dissolved	0.0253		mg/L			14-JUN-19
Magnesium (Mg)-Dissolved	54.6		mg/L			14-JUN-19
Manganese (Mn)-Dissolved	0.00503		mg/L	0.12	0.02	14-JUN-19
Molybdenum (Mo)-Dissolved	0.000424		mg/L			14-JUN-19
Nickel (Ni)-Dissolved	<0.00050		mg/L			14-JUN-19
Phosphorus (P)-Dissolved	<0.030		mg/L			14-JUN-19
Potassium (K)-Dissolved	4.71		mg/L			14-JUN-19
Rubidium (Rb)-Dissolved	0.00241		mg/L			14-JUN-19
Selenium (Se)-Dissolved	<0.000050		mg/L	0.05		14-JUN-19
Silicon (Si)-Dissolved	5.80		mg/L			14-JUN-19
Silver (Ag)-Dissolved	<0.000010		mg/L			14-JUN-19
Sodium (Na)-Dissolved	35.7		mg/L		200	14-JUN-19
Strontium (Sr)-Dissolved	0.202		mg/L			14-JUN-19
Sulfur (S)-Dissolved	30.6		mg/L			14-JUN-19
Tellurium (Te)-Dissolved	<0.00020		mg/L			14-JUN-19
Thallium (Tl)-Dissolved	<0.000010		mg/L			14-JUN-19
Thorium (Th)-Dissolved	<0.00010		mg/L			14-JUN-19
Tin (Sn)-Dissolved	<0.00010		mg/L			14-JUN-19
Titanium (Ti)-Dissolved	<0.00030		mg/L			14-JUN-19
Tungsten (W)-Dissolved	<0.00010		mg/L			14-JUN-19
Uranium (U)-Dissolved	0.000996		mg/L	0.02		14-JUN-19
Vanadium (V)-Dissolved	<0.00050		mg/L			14-JUN-19
Zinc (Zn)-Dissolved	0.0040		mg/L		5.0	14-JUN-19
Zirconium (Zr)-Dissolved	<0.000060		mg/L			14-JUN-19
Conductivity						
Conductivity	735		umhos/cm			13-JUN-19
Chloride in Water by IC (Low Level)						
Chloride (Cl)	14.1		mg/L		250	13-JUN-19
Alkalinity, Total (as CaCO3)						
Alkalinity, Total (as CaCO3)	327		mg/L			13-JUN-19
Total Coliform and E.coli						
Total Coliforms	0	PEHT	MPN/100mL	0		13-JUN-19
Escherichia Coli	0	PEHT	MPN/100mL	0		13-JUN-19



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ATTN: PAUL LINDELL

Date: 24-JUN-19
PO No.:
WO No.: L2290890
Project Ref: 18-0300-005
Sample ID: PW19-KGS-02
Sampled By: PJL
Date Collected: 11-JUN-19
Lab Sample ID: L2290890-2
Matrix: GW

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
<p>CDWQG = Health Canada Guideline Limits updated JUNE 2019</p> <p>* CDWQG for Nitrate+Nitrite-N is the limit for nitrate only. If present as Nitrate then the limit is 10mg/L < or N.D. = less than detection limit. * Turbidity guideline based on membrane filtration. For guidelines on conventional treatment and slow sand or diatomaceous earth filtration please see Summary Table of Guidelines for Canadian Drinking Water Quality - A blank entry designates no known limit. - A shaded value in the Results column exceeds CDWQG MAC and/ or Aesthetic Objective.</p>						
<p>Approved by <u>Hua Wo</u> Hua Wo Account Manager</p>						



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ATTN: PAUL LINDELL

Date: 24-JUN-19
PO No.:
WO No.: L2290890
Project Ref: 18-0300-005
Sample ID: PW19-KGS-03
Sampled By: PJL
Date Collected: 11-JUN-19
Lab Sample ID: L2290890-3
Matrix: GW

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
ROU4W Dissolved						
Bicarbonate (HCO3)	402		mg/L			14-JUN-19
Carbonate (CO3)	<0.60		mg/L			14-JUN-19
Hydroxide (OH)	<0.34		mg/L			14-JUN-19
*Nitrate and Nitrite as N	<0.0051		mg/L	10		19-JUN-19
pH						
pH	7.71		pH units			13-JUN-19
Turbidity						
*Turbidity	2.16		NTU			15-JUN-19
TDS calculated						
TDS (Calculated)	349		mg/L		500	17-JUN-19
Sulfate in Water by IC						
Sulfate (SO4)	31.3		mg/L		500	13-JUN-19
Nitrite in Water by IC (Low Level)						
*Nitrite (as N)	<0.0010		mg/L	1		13-JUN-19
Nitrate in Water by IC (Low Level)						
*Nitrate (as N)	<0.0050		mg/L	10		13-JUN-19
Ion Balance Calculation						
Hardness Calculated						
Hardness (as CaCO3)	344		mg/L		500	17-JUN-19
Fluoride in Water by IC						
Fluoride (F)	0.175		mg/L	1.5		13-JUN-19
Dissolved Metals in Water by CRC ICPMS						
Dissolved Metals	FIELD					14-JUN-19
Filtration Location						
Aluminum (Al)-Dissolved	<0.0010		mg/L		0.1	14-JUN-19
Antimony (Sb)-Dissolved	<0.00010		mg/L	0.006		14-JUN-19
Arsenic (As)-Dissolved	0.00037		mg/L	0.01		14-JUN-19
Barium (Ba)-Dissolved	0.0538		mg/L	1		14-JUN-19
Beryllium (Be)-Dissolved	<0.00010		mg/L			14-JUN-19
Bismuth (Bi)-Dissolved	<0.000050		mg/L			14-JUN-19
Boron (B)-Dissolved	0.092		mg/L	5		14-JUN-19
Cadmium (Cd)-Dissolved	<0.0000050		mg/L	0.005		14-JUN-19
Calcium (Ca)-Dissolved	56.4		mg/L			14-JUN-19
Cesium (Cs)-Dissolved	<0.000010		mg/L			14-JUN-19
Chromium (Cr)-Dissolved	<0.00010		mg/L	0.05		14-JUN-19
Cobalt (Co)-Dissolved	0.00056		mg/L			14-JUN-19
Copper (Cu)-Dissolved	<0.00020		mg/L	2.0	1.0	14-JUN-19
Iron (Fe)-Dissolved	0.216		mg/L		0.3	14-JUN-19
Lead (Pb)-Dissolved	<0.000050		mg/L	0.005		14-JUN-19

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Date: 24-JUN-19
PO No.:
WO No.: L2290890
Project Ref: 18-0300-005
Sample ID: PW19-KGS-03
Sampled By: PJL
Date Collected: 11-JUN-19
Lab Sample ID: L2290890-3
Matrix: GW

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
ROU4W Dissolved						
Dissolved Metals in Water by CRC ICPMS						
Lithium (Li)-Dissolved	0.0194		mg/L			14-JUN-19
Magnesium (Mg)-Dissolved	49.4		mg/L			14-JUN-19
Manganese (Mn)-Dissolved	0.0711		mg/L	0.12	0.02	14-JUN-19
Molybdenum (Mo)-Dissolved	0.000131		mg/L			14-JUN-19
Nickel (Ni)-Dissolved	0.00097		mg/L			14-JUN-19
Phosphorus (P)-Dissolved	<0.030		mg/L			14-JUN-19
Potassium (K)-Dissolved	4.30		mg/L			14-JUN-19
Rubidium (Rb)-Dissolved	0.00257		mg/L			14-JUN-19
Selenium (Se)-Dissolved	<0.000050		mg/L	0.05		14-JUN-19
Silicon (Si)-Dissolved	5.46		mg/L			14-JUN-19
Silver (Ag)-Dissolved	<0.000010		mg/L			14-JUN-19
Sodium (Na)-Dissolved	8.58		mg/L		200	14-JUN-19
Strontium (Sr)-Dissolved	0.149		mg/L			14-JUN-19
Sulfur (S)-Dissolved	11.3		mg/L			14-JUN-19
Tellurium (Te)-Dissolved	<0.00020		mg/L			14-JUN-19
Thallium (Tl)-Dissolved	<0.000010		mg/L			14-JUN-19
Thorium (Th)-Dissolved	<0.00010		mg/L			14-JUN-19
Tin (Sn)-Dissolved	<0.00010		mg/L			14-JUN-19
Titanium (Ti)-Dissolved	<0.00030		mg/L			14-JUN-19
Tungsten (W)-Dissolved	<0.00010		mg/L			14-JUN-19
Uranium (U)-Dissolved	0.000491		mg/L	0.02		14-JUN-19
Vanadium (V)-Dissolved	<0.00050		mg/L			14-JUN-19
Zinc (Zn)-Dissolved	0.0011		mg/L		5.0	14-JUN-19
Zirconium (Zr)-Dissolved	<0.000060		mg/L			14-JUN-19
Conductivity						
Conductivity	606		umhos/cm			13-JUN-19
Chloride in Water by IC (Low Level)						
Chloride (Cl)	1.12		mg/L		250	13-JUN-19
Alkalinity, Total (as CaCO3)						
Alkalinity, Total (as CaCO3)	330		mg/L			13-JUN-19
Total Coliform and E.coli						
Total Coliforms	0	MBHT	MPN/100mL	0		13-JUN-19
Escherichia Coli	0	MBHT	MPN/100mL	0		13-JUN-19



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Date: 24-JUN-19
PO No.:
WO No.: L2290890
Project Ref: 18-0300-005
Sample ID: PW19-KGS-03
Sampled By: PJL
Date Collected: 11-JUN-19
Lab Sample ID: L2290890-3
Matrix: GW

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
<p>CDWQG = Health Canada Guideline Limits updated JUNE 2019</p> <p>* CDWQG for Nitrate+Nitrite-N is the limit for nitrate only. If present as Nitrate then the limit is 10mg/L < or N.D. = less than detection limit. * Turbidity guideline based on membrane filtration. For guidelines on conventional treatment and slow sand or diatomaceous earth filtration please see Summary Table of Guidelines for Canadian Drinking Water Quality - A blank entry designates no known limit. - A shaded value in the Results column exceeds CDWQG MAC and/ or Aesthetic Objective.</p>						
<p>Approved by <u>Hua Wo</u> Hua Wo Account Manager</p>						



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Date: 24-JUN-19
PO No.:
WO No.: L2290890
Project Ref: 18-0300-005
Sample ID: PW19-KGS-200
Sampled By: PJL
Date Collected: 11-JUN-19
Lab Sample ID: L2290890-4
Matrix: GW

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
ROU4W Dissolved						
Bicarbonate (HCO3)	406		mg/L			14-JUN-19
Carbonate (CO3)	<0.60		mg/L			14-JUN-19
Hydroxide (OH)	<0.34		mg/L			14-JUN-19
*Nitrate and Nitrite as N	<0.0051		mg/L	10		19-JUN-19
pH						
pH	7.71		pH units			13-JUN-19
Turbidity						
*Turbidity	2.33		NTU			15-JUN-19
TDS calculated						
TDS (Calculated)	352		mg/L		500	17-JUN-19
Sulfate in Water by IC						
Sulfate (SO4)	31.8		mg/L		500	13-JUN-19
Nitrite in Water by IC (Low Level)						
*Nitrite (as N)	<0.0010		mg/L	1		13-JUN-19
Nitrate in Water by IC (Low Level)						
*Nitrate (as N)	<0.0050		mg/L	10		13-JUN-19
Ion Balance Calculation						
Hardness Calculated						
Hardness (as CaCO3)	348		mg/L		500	17-JUN-19
Fluoride in Water by IC						
Fluoride (F)	0.176		mg/L	1.5		13-JUN-19
Dissolved Metals in Water by CRC ICPMS						
Dissolved Metals	FIELD					14-JUN-19
Filtration Location						
Aluminum (Al)-Dissolved	<0.0010		mg/L		0.1	14-JUN-19
Antimony (Sb)-Dissolved	<0.00010		mg/L	0.006		14-JUN-19
Arsenic (As)-Dissolved	0.00037		mg/L	0.01		14-JUN-19
Barium (Ba)-Dissolved	0.0527		mg/L	1		14-JUN-19
Beryllium (Be)-Dissolved	<0.00010		mg/L			14-JUN-19
Bismuth (Bi)-Dissolved	<0.000050		mg/L			14-JUN-19
Boron (B)-Dissolved	0.091		mg/L	5		14-JUN-19
Cadmium (Cd)-Dissolved	<0.0000050		mg/L	0.005		14-JUN-19
Calcium (Ca)-Dissolved	56.8		mg/L			14-JUN-19
Cesium (Cs)-Dissolved	<0.000010		mg/L			14-JUN-19
Chromium (Cr)-Dissolved	<0.00010		mg/L	0.05		14-JUN-19
Cobalt (Co)-Dissolved	0.00058		mg/L			14-JUN-19
Copper (Cu)-Dissolved	<0.00020		mg/L	2.0	1.0	14-JUN-19
Iron (Fe)-Dissolved	0.202		mg/L		0.3	14-JUN-19
Lead (Pb)-Dissolved	<0.000050		mg/L	0.005		14-JUN-19

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ATTN: PAUL LINDELL

Date: 24-JUN-19
PO No.:
WO No.: L2290890
Project Ref: 18-0300-005
Sample ID: PW19-KGS-200
Sampled By: PJL
Date Collected: 11-JUN-19
Lab Sample ID: L2290890-4
Matrix: GW

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
ROU4W Dissolved						
Dissolved Metals in Water by CRC ICPMS						
Lithium (Li)-Dissolved	0.0197		mg/L			14-JUN-19
Magnesium (Mg)-Dissolved	50.2		mg/L			14-JUN-19
Manganese (Mn)-Dissolved	0.0694		mg/L	0.12	0.02	14-JUN-19
Molybdenum (Mo)-Dissolved	0.000118		mg/L			14-JUN-19
Nickel (Ni)-Dissolved	0.00094		mg/L			14-JUN-19
Phosphorus (P)-Dissolved	<0.030		mg/L			14-JUN-19
Potassium (K)-Dissolved	4.28		mg/L			14-JUN-19
Rubidium (Rb)-Dissolved	0.00258		mg/L			14-JUN-19
Selenium (Se)-Dissolved	<0.000050		mg/L	0.05		14-JUN-19
Silicon (Si)-Dissolved	5.41		mg/L			14-JUN-19
Silver (Ag)-Dissolved	<0.000010		mg/L			14-JUN-19
Sodium (Na)-Dissolved	8.60		mg/L		200	14-JUN-19
Strontium (Sr)-Dissolved	0.147		mg/L			14-JUN-19
Sulfur (S)-Dissolved	11.1		mg/L			14-JUN-19
Tellurium (Te)-Dissolved	<0.00020		mg/L			14-JUN-19
Thallium (Tl)-Dissolved	0.000010		mg/L			14-JUN-19
Thorium (Th)-Dissolved	<0.00010		mg/L			14-JUN-19
Tin (Sn)-Dissolved	<0.00010		mg/L			14-JUN-19
Titanium (Ti)-Dissolved	<0.00030		mg/L			14-JUN-19
Tungsten (W)-Dissolved	<0.00010		mg/L			14-JUN-19
Uranium (U)-Dissolved	0.000481		mg/L	0.02		14-JUN-19
Vanadium (V)-Dissolved	<0.00050		mg/L			14-JUN-19
Zinc (Zn)-Dissolved	<0.0010		mg/L		5.0	14-JUN-19
Zirconium (Zr)-Dissolved	<0.000060		mg/L			14-JUN-19
Conductivity						
Conductivity	609		umhos/cm			13-JUN-19
Chloride in Water by IC (Low Level)						
Chloride (Cl)	1.15		mg/L		250	13-JUN-19
Alkalinity, Total (as CaCO3)						
Alkalinity, Total (as CaCO3)	333		mg/L			13-JUN-19
Total Coliform and E.coli						
Total Coliforms	0	MBHT	MPN/100mL	0		13-JUN-19
Escherichia Coli	0	MBHT	MPN/100mL	0		13-JUN-19



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ATTN: PAUL LINDELL

Date: 24-JUN-19
PO No.:
WO No.: L2290890
Project Ref: 18-0300-005
Sample ID: PW19-KGS-200
Sampled By: PJL
Date Collected: 11-JUN-19
Lab Sample ID: L2290890-4
Matrix: GW

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
<p>CDWQG = Health Canada Guideline Limits updated JUNE 2019</p> <p>* CDWQG for Nitrate+Nitrite-N is the limit for nitrate only. If present as Nitrate then the limit is 10mg/L < or N.D. = less than detection limit. * Turbidity guideline based on membrane filtration. For guidelines on conventional treatment and slow sand or diatomaceous earth filtration please see Summary Table of Guidelines for Canadian Drinking Water Quality - A blank entry designates no known limit. - A shaded value in the Results column exceeds CDWQG MAC and/ or Aesthetic Objective.</p>						
<p>Approved by <u>Hua Wo</u> Hua Wo Account Manager</p>						



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ATTN: PAUL LINDELL

Date: 24-JUN-19
PO No.:
WO No.: L2290890
Project Ref: 18-0300-005
Sample ID: TH19-KGS-12
Sampled By: PJL
Date Collected: 12-JUN-19
Lab Sample ID: L2290890-5
Matrix: GW

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
ROU4W Dissolved						
Bicarbonate (HCO3)	505		mg/L			14-JUN-19
Carbonate (CO3)	<0.60		mg/L			14-JUN-19
Hydroxide (OH)	<0.34		mg/L			14-JUN-19
*Nitrate and Nitrite as N	<0.0051		mg/L	10		19-JUN-19
pH						
pH	7.85		pH units			13-JUN-19
Turbidity						
*Turbidity	>4000		NTU			15-JUN-19
TDS calculated						
TDS (Calculated)	475		mg/L		500	17-JUN-19
Sulfate in Water by IC						
Sulfate (SO4)	71.5		mg/L		500	13-JUN-19
Nitrite in Water by IC (Low Level)						
*Nitrite (as N)	<0.0010		mg/L	1		13-JUN-19
Nitrate in Water by IC (Low Level)						
*Nitrate (as N)	<0.0050		mg/L	10		13-JUN-19
Ion Balance Calculation						
Hardness Calculated						
Hardness (as CaCO3)	402		mg/L		500	17-JUN-19
Fluoride in Water by IC						
Fluoride (F)	0.292		mg/L	1.5		13-JUN-19
Dissolved Metals in Water by CRC ICPMS						
Dissolved Metals	FIELD					14-JUN-19
Filtration Location						
Aluminum (Al)-Dissolved	0.0011		mg/L		0.1	14-JUN-19
Antimony (Sb)-Dissolved	0.00024		mg/L	0.006		14-JUN-19
Arsenic (As)-Dissolved	0.00041		mg/L	0.01		14-JUN-19
Barium (Ba)-Dissolved	0.0602		mg/L	1		14-JUN-19
Beryllium (Be)-Dissolved	<0.00010		mg/L			14-JUN-19
Bismuth (Bi)-Dissolved	<0.000050		mg/L			14-JUN-19
Boron (B)-Dissolved	0.115		mg/L	5		14-JUN-19
Cadmium (Cd)-Dissolved	<0.0000050		mg/L	0.005		14-JUN-19
Calcium (Ca)-Dissolved	48.5		mg/L			14-JUN-19
Cesium (Cs)-Dissolved	<0.000010		mg/L			14-JUN-19
Chromium (Cr)-Dissolved	<0.00010		mg/L	0.05		14-JUN-19
Cobalt (Co)-Dissolved	0.00088		mg/L			14-JUN-19
Copper (Cu)-Dissolved	0.00022		mg/L	2.0	1.0	14-JUN-19
Iron (Fe)-Dissolved	1.82		mg/L		0.3	14-JUN-19
Lead (Pb)-Dissolved	<0.000050		mg/L	0.005		14-JUN-19

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KGS Group Consultants (Winnipeg)
865 Waverly Street - 3rd Floor
Winnipeg MB R3T 5P4
ATTN: PAUL LINDELL

Date: 24-JUN-19
PO No.:
WO No.: L2290890
Project Ref: 18-0300-005
Sample ID: TH19-KGS-12
Sampled By: PJL
Date Collected: 12-JUN-19
Lab Sample ID: L2290890-5
Matrix: GW

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
ROU4W Dissolved						
Dissolved Metals in Water by CRC ICPMS						
Lithium (Li)-Dissolved	0.0361		mg/L			14-JUN-19
Magnesium (Mg)-Dissolved	68.2		mg/L			14-JUN-19
Manganese (Mn)-Dissolved	0.246		mg/L	0.12	0.02	14-JUN-19
Molybdenum (Mo)-Dissolved	0.0164		mg/L			14-JUN-19
Nickel (Ni)-Dissolved	0.00373		mg/L			14-JUN-19
Phosphorus (P)-Dissolved	<0.030		mg/L			14-JUN-19
Potassium (K)-Dissolved	4.55		mg/L			14-JUN-19
Rubidium (Rb)-Dissolved	0.00208		mg/L			14-JUN-19
Selenium (Se)-Dissolved	<0.000050		mg/L	0.05		14-JUN-19
Silicon (Si)-Dissolved	5.81		mg/L			14-JUN-19
Silver (Ag)-Dissolved	<0.000010		mg/L			14-JUN-19
Sodium (Na)-Dissolved	30.1		mg/L		200	14-JUN-19
Strontium (Sr)-Dissolved	0.234		mg/L			14-JUN-19
Sulfur (S)-Dissolved	24.1		mg/L			14-JUN-19
Tellurium (Te)-Dissolved	<0.00020		mg/L			14-JUN-19
Thallium (Tl)-Dissolved	<0.000010		mg/L			14-JUN-19
Thorium (Th)-Dissolved	<0.00010		mg/L			14-JUN-19
Tin (Sn)-Dissolved	<0.00010		mg/L			14-JUN-19
Titanium (Ti)-Dissolved	<0.00030		mg/L			14-JUN-19
Tungsten (W)-Dissolved	0.00048		mg/L			14-JUN-19
Uranium (U)-Dissolved	0.000106		mg/L	0.02		14-JUN-19
Vanadium (V)-Dissolved	<0.00050		mg/L			14-JUN-19
Zinc (Zn)-Dissolved	0.0016		mg/L		5.0	14-JUN-19
Zirconium (Zr)-Dissolved	<0.000060		mg/L			14-JUN-19
Conductivity						
Conductivity	777		umhos/cm			13-JUN-19
Chloride in Water by IC (Low Level)						
Chloride (Cl)	4.20		mg/L		250	13-JUN-19
Alkalinity, Total (as CaCO3)						
Alkalinity, Total (as CaCO3)	414		mg/L			13-JUN-19
Total and E. coli, 1:10 dilution by QT97						
Total Coliforms	<10		MPN/100mL	0		13-JUN-19
Escherichia Coli	<10		MPN/100mL	0		13-JUN-19



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ATTN: PAUL LINDELL

Date: 24-JUN-19
PO No.:
WO No.: L2290890
Project Ref: 18-0300-005
Sample ID: TH19-KGS-12
Sampled By: PJL
Date Collected: 12-JUN-19
Lab Sample ID: L2290890-5
Matrix: GW

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
<p>CDWQG = Health Canada Guideline Limits updated JUNE 2019</p> <p>* CDWQG for Nitrate+Nitrite-N is the limit for nitrate only. If present as Nitrate then the limit is 10mg/L < or N.D. = less than detection limit. * Turbidity guideline based on membrane filtration. For guidelines on conventional treatment and slow sand or diatomaceous earth filtration please see Summary Table of Guidelines for Canadian Drinking Water Quality - A blank entry designates no known limit. - A shaded value in the Results column exceeds CDWQG MAC and/ or Aesthetic Objective.</p>						
<p>Approved by <u><i>Hua Wo</i></u> Hua Wo Account Manager</p>						



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Winnipeg MB R3T 5P4
ATTN: PAUL LINDELL

Date: 24-JUN-19
PO No.:
WO No.: L2290890
Project Ref: 18-0300-005
Sample ID: TH19-KGS-17
Sampled By: PJL
Date Collected: 12-JUN-19
Lab Sample ID: L2290890-6
Matrix: GW

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
ROU4W Dissolved						
Bicarbonate (HCO3)	405		mg/L			14-JUN-19
Carbonate (CO3)	<0.60		mg/L			14-JUN-19
Hydroxide (OH)	<0.34		mg/L			14-JUN-19
*Nitrate and Nitrite as N	0.0089		mg/L	10		19-JUN-19
pH						
pH	7.71		pH units			13-JUN-19
Turbidity						
*Turbidity	860		NTU			15-JUN-19
TDS calculated						
TDS (Calculated)	365		mg/L		500	17-JUN-19
Sulfate in Water by IC						
Sulfate (SO4)	42.2		mg/L		500	13-JUN-19
Nitrite in Water by IC (Low Level)						
*Nitrite (as N)	<0.0010		mg/L	1		13-JUN-19
Nitrate in Water by IC (Low Level)						
*Nitrate (as N)	0.0089		mg/L	10		13-JUN-19
Ion Balance Calculation						
Hardness Calculated						
Hardness (as CaCO3)	342		mg/L		500	17-JUN-19
Fluoride in Water by IC						
Fluoride (F)	0.214		mg/L	1.5		13-JUN-19
Dissolved Metals in Water by CRC ICPMS						
Dissolved Metals	FIELD					14-JUN-19
Filtration Location						
Aluminum (Al)-Dissolved	0.0045		mg/L		0.1	14-JUN-19
Antimony (Sb)-Dissolved	0.00015		mg/L	0.006		14-JUN-19
Arsenic (As)-Dissolved	0.00270		mg/L	0.01		14-JUN-19
Barium (Ba)-Dissolved	0.0429		mg/L	1		14-JUN-19
Beryllium (Be)-Dissolved	<0.00010		mg/L			14-JUN-19
Bismuth (Bi)-Dissolved	<0.000050		mg/L			14-JUN-19
Boron (B)-Dissolved	0.085		mg/L	5		14-JUN-19
Cadmium (Cd)-Dissolved	<0.0000050		mg/L	0.005		14-JUN-19
Calcium (Ca)-Dissolved	49.8		mg/L			14-JUN-19
Cesium (Cs)-Dissolved	<0.000010		mg/L			14-JUN-19
Chromium (Cr)-Dissolved	<0.00010		mg/L	0.05		14-JUN-19
Cobalt (Co)-Dissolved	0.00025		mg/L			14-JUN-19
Copper (Cu)-Dissolved	<0.00020		mg/L	2.0	1.0	14-JUN-19
Iron (Fe)-Dissolved	0.063		mg/L		0.3	14-JUN-19
Lead (Pb)-Dissolved	<0.000050		mg/L	0.005		14-JUN-19



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Date: 24-JUN-19
PO No.:
WO No.: L2290890
Project Ref: 18-0300-005
Sample ID: TH19-KGS-17
Sampled By: PJL
Date Collected: 12-JUN-19
Lab Sample ID: L2290890-6
Matrix: GW

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
ROU4W Dissolved						
Dissolved Metals in Water by CRC ICPMS						
Lithium (Li)-Dissolved	0.0170		mg/L			14-JUN-19
Magnesium (Mg)-Dissolved	53.0		mg/L			14-JUN-19
Manganese (Mn)-Dissolved	0.0341		mg/L	0.12	0.02	14-JUN-19
Molybdenum (Mo)-Dissolved	0.0101		mg/L			14-JUN-19
Nickel (Ni)-Dissolved	0.00087		mg/L			14-JUN-19
Phosphorus (P)-Dissolved	<0.030		mg/L			14-JUN-19
Potassium (K)-Dissolved	3.47		mg/L			14-JUN-19
Rubidium (Rb)-Dissolved	0.00227		mg/L			14-JUN-19
Selenium (Se)-Dissolved	0.000912		mg/L	0.05		14-JUN-19
Silicon (Si)-Dissolved	4.66		mg/L			14-JUN-19
Silver (Ag)-Dissolved	<0.000010		mg/L			14-JUN-19
Sodium (Na)-Dissolved	16.0		mg/L		200	14-JUN-19
Strontium (Sr)-Dissolved	0.146		mg/L			14-JUN-19
Sulfur (S)-Dissolved	16.8		mg/L			14-JUN-19
Tellurium (Te)-Dissolved	<0.00020		mg/L			14-JUN-19
Thallium (Tl)-Dissolved	<0.000010		mg/L			14-JUN-19
Thorium (Th)-Dissolved	<0.00010		mg/L			14-JUN-19
Tin (Sn)-Dissolved	<0.00010		mg/L			14-JUN-19
Titanium (Ti)-Dissolved	<0.00030		mg/L			14-JUN-19
Tungsten (W)-Dissolved	0.00038		mg/L			14-JUN-19
Uranium (U)-Dissolved	0.000263		mg/L	0.02		14-JUN-19
Vanadium (V)-Dissolved	<0.00050		mg/L			14-JUN-19
Zinc (Zn)-Dissolved	<0.0010		mg/L		5.0	14-JUN-19
Zirconium (Zr)-Dissolved	<0.000060		mg/L			14-JUN-19
Conductivity						
Conductivity	622		umhos/cm			13-JUN-19
Chloride in Water by IC (Low Level)						
Chloride (Cl)	0.96		mg/L		250	13-JUN-19
Alkalinity, Total (as CaCO3)						
Alkalinity, Total (as CaCO3)	332		mg/L			13-JUN-19
Total and E. coli, 1:10 dilution by QT97						
Total Coliforms	<10	MBHT	MPN/100mL	0		13-JUN-19
Escherichia Coli	<10	MBHT	MPN/100mL	0		13-JUN-19



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ATTN: PAUL LINDELL

Date: 24-JUN-19
PO No.:
WO No.: L2290890
Project Ref: 18-0300-005
Sample ID: TH19-KGS-17
Sampled By: PJL
Date Collected: 12-JUN-19
Lab Sample ID: L2290890-6
Matrix: GW

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
<p>CDWQG = Health Canada Guideline Limits updated JUNE 2019</p> <p>* CDWQG for Nitrate+Nitrite-N is the limit for nitrate only. If present as Nitrate then the limit is 10mg/L < or N.D. = less than detection limit. * Turbidity guideline based on membrane filtration. For guidelines on conventional treatment and slow sand or diatomaceous earth filtration please see Summary Table of Guidelines for Canadian Drinking Water Quality - A blank entry designates no known limit. - A shaded value in the Results column exceeds CDWQG MAC and/ or Aesthetic Objective.</p>						
<p>Approved by <u><i>Hua Wo</i></u> Hua Wo Account Manager</p>						



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ATTN: PAUL LINDELL

Date: 24-JUN-19
PO No.:
WO No.: L2290890
Project Ref: 18-0300-005
Sample ID: TH19-KGS-18
Sampled By: PJL
Date Collected: 12-JUN-19
Lab Sample ID: L2290890-7
Matrix: GW

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
ROU4W Dissolved						
Bicarbonate (HCO3)	764		mg/L			14-JUN-19
Carbonate (CO3)	<0.60		mg/L			14-JUN-19
Hydroxide (OH)	<0.34		mg/L			14-JUN-19
*Nitrate and Nitrite as N	<0.010		mg/L	10		19-JUN-19
pH						
pH	7.14		pH units			13-JUN-19
Turbidity						
*Turbidity	>4000		NTU			15-JUN-19
TDS calculated						
TDS (Calculated)	587		mg/L		500	17-JUN-19
Sulfate in Water by IC						
Sulfate (SO4)	<0.60	DLM	mg/L		500	13-JUN-19
Nitrite in Water by IC (Low Level)						
*Nitrite (as N)	<0.0020	DLM	mg/L	1		13-JUN-19
Nitrate in Water by IC (Low Level)						
*Nitrate (as N)	<0.010	DLM	mg/L	10		13-JUN-19
Ion Balance Calculation						
Hardness Calculated						
Hardness (as CaCO3)	620		mg/L		500	17-JUN-19
Fluoride in Water by IC						
Fluoride (F)	0.135		mg/L	1.5		13-JUN-19
Dissolved Metals in Water by CRC ICPMS						
Dissolved Metals	FIELD					14-JUN-19
Filtration Location						
Aluminum (Al)-Dissolved	0.0018		mg/L		0.1	14-JUN-19
Antimony (Sb)-Dissolved	0.00011		mg/L	0.006		14-JUN-19
Arsenic (As)-Dissolved	0.00190		mg/L	0.01		14-JUN-19
Barium (Ba)-Dissolved	0.154		mg/L	1		14-JUN-19
Beryllium (Be)-Dissolved	<0.00010		mg/L			14-JUN-19
Bismuth (Bi)-Dissolved	<0.000050		mg/L			14-JUN-19
Boron (B)-Dissolved	0.052		mg/L	5		14-JUN-19
Cadmium (Cd)-Dissolved	<0.0000050		mg/L	0.005		14-JUN-19
Calcium (Ca)-Dissolved	116		mg/L			14-JUN-19
Cesium (Cs)-Dissolved	<0.000010		mg/L			14-JUN-19
Chromium (Cr)-Dissolved	<0.00010		mg/L	0.05		14-JUN-19
Cobalt (Co)-Dissolved	0.00154		mg/L			14-JUN-19
Copper (Cu)-Dissolved	<0.00020		mg/L	2.0	1.0	14-JUN-19
Iron (Fe)-Dissolved	1.08		mg/L		0.3	14-JUN-19
Lead (Pb)-Dissolved	<0.000050		mg/L	0.005		14-JUN-19

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ATTN: PAUL LINDELL

Date: 24-JUN-19
PO No.:
WO No.: L2290890
Project Ref: 18-0300-005
Sample ID: TH19-KGS-18
Sampled By: PJL
Date Collected: 12-JUN-19
Lab Sample ID: L2290890-7
Matrix: GW

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
ROU4W Dissolved						
Dissolved Metals in Water by CRC ICPMS						
Lithium (Li)-Dissolved	0.0357		mg/L			14-JUN-19
Magnesium (Mg)-Dissolved	80.1		mg/L			14-JUN-19
Manganese (Mn)-Dissolved	0.209		mg/L	0.12	0.02	14-JUN-19
Molybdenum (Mo)-Dissolved	0.00167		mg/L			14-JUN-19
Nickel (Ni)-Dissolved	0.00461		mg/L			14-JUN-19
Phosphorus (P)-Dissolved	<0.030		mg/L			14-JUN-19
Potassium (K)-Dissolved	2.22		mg/L			14-JUN-19
Rubidium (Rb)-Dissolved	0.00167		mg/L			14-JUN-19
Selenium (Se)-Dissolved	<0.000050		mg/L	0.05		14-JUN-19
Silicon (Si)-Dissolved	10.6		mg/L			14-JUN-19
Silver (Ag)-Dissolved	<0.000010		mg/L			14-JUN-19
Sodium (Na)-Dissolved	11.3		mg/L		200	14-JUN-19
Strontium (Sr)-Dissolved	0.290		mg/L			14-JUN-19
Sulfur (S)-Dissolved	<0.50		mg/L			14-JUN-19
Tellurium (Te)-Dissolved	<0.00020		mg/L			14-JUN-19
Thallium (Tl)-Dissolved	<0.000010		mg/L			14-JUN-19
Thorium (Th)-Dissolved	<0.00010		mg/L			14-JUN-19
Tin (Sn)-Dissolved	<0.00010		mg/L			14-JUN-19
Titanium (Ti)-Dissolved	<0.00030		mg/L			14-JUN-19
Tungsten (W)-Dissolved	0.00016		mg/L			14-JUN-19
Uranium (U)-Dissolved	0.000586		mg/L	0.02		14-JUN-19
Vanadium (V)-Dissolved	<0.00050		mg/L			14-JUN-19
Zinc (Zn)-Dissolved	0.0047		mg/L		5.0	14-JUN-19
Zirconium (Zr)-Dissolved	0.000193		mg/L			14-JUN-19
Conductivity						
Conductivity	989		umhos/cm			13-JUN-19
Chloride in Water by IC (Low Level)						
Chloride (Cl)	0.83		mg/L		250	13-JUN-19
Alkalinity, Total (as CaCO3)						
Alkalinity, Total (as CaCO3)	627		mg/L			13-JUN-19
Total and E. coli, 1:10 dilution by QT97						
Total Coliforms	<10	MBHT	MPN/100mL	0		13-JUN-19
Escherichia Coli	<10	MBHT	MPN/100mL	0		13-JUN-19



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ATTN: PAUL LINDELL

Date: 24-JUN-19
PO No.:
WO No.: L2290890
Project Ref: 18-0300-005
Sample ID: TH19-KGS-18
Sampled By: PJL
Date Collected: 12-JUN-19
Lab Sample ID: L2290890-7
Matrix: GW

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
<p>CDWQG = Health Canada Guideline Limits updated JUNE 2019</p> <p>* CDWQG for Nitrate+Nitrite-N is the limit for nitrate only. If present as Nitrate then the limit is 10mg/L < or N.D. = less than detection limit. * Turbidity guideline based on membrane filtration. For guidelines on conventional treatment and slow sand or diatomaceous earth filtration please see Summary Table of Guidelines for Canadian Drinking Water Quality - A blank entry designates no known limit. - A shaded value in the Results column exceeds CDWQG MAC and/ or Aesthetic Objective.</p>						
<p>Approved by <u><i>Hua Wo</i></u> Hua Wo Account Manager</p>						



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ATTN: PAUL LINDELL

Date: 24-JUN-19
PO No.:
WO No.: L2290890
Project Ref: 18-0300-005
Sample ID: TH19-KGS-19
Sampled By: PJL
Date Collected: 12-JUN-19
Lab Sample ID: L2290890-8
Matrix: GW

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
ROU4W Dissolved						
Bicarbonate (HCO3)	646		mg/L			14-JUN-19
Carbonate (CO3)	<0.60		mg/L			14-JUN-19
Hydroxide (OH)	<0.34		mg/L			14-JUN-19
*Nitrate and Nitrite as N	0.016		mg/L	10		19-JUN-19
pH						
pH	8.29		pH units			13-JUN-19
Turbidity						
*Turbidity	>4000		NTU			15-JUN-19
TDS calculated						
TDS (Calculated)	633		mg/L		500	17-JUN-19
Sulfate in Water by IC						
Sulfate (SO4)	110		mg/L		500	13-JUN-19
Nitrite in Water by IC (Low Level)						
*Nitrite (as N)	<0.0020	DLM	mg/L	1		13-JUN-19
Nitrate in Water by IC (Low Level)						
*Nitrate (as N)	0.016		mg/L	10		13-JUN-19
Ion Balance Calculation						
Hardness Calculated						
Hardness (as CaCO3)	489		mg/L		500	17-JUN-19
Fluoride in Water by IC						
Fluoride (F)	0.288		mg/L	1.5		13-JUN-19
Dissolved Metals in Water by CRC ICPMS						
Dissolved Metals	FIELD					14-JUN-19
Filtration Location						
Aluminum (Al)-Dissolved	0.0128		mg/L		0.1	14-JUN-19
Antimony (Sb)-Dissolved	0.00027		mg/L	0.006		14-JUN-19
Arsenic (As)-Dissolved	0.0167		mg/L	0.01		14-JUN-19
Barium (Ba)-Dissolved	0.0881		mg/L	1		14-JUN-19
Beryllium (Be)-Dissolved	0.00014		mg/L			14-JUN-19
Bismuth (Bi)-Dissolved	<0.000050		mg/L			14-JUN-19
Boron (B)-Dissolved	0.097		mg/L	5		14-JUN-19
Cadmium (Cd)-Dissolved	0.000097		mg/L	0.005		14-JUN-19
Calcium (Ca)-Dissolved	66.7		mg/L			14-JUN-19
Cesium (Cs)-Dissolved	0.000051		mg/L			14-JUN-19
Chromium (Cr)-Dissolved	<0.00010		mg/L	0.05		14-JUN-19
Cobalt (Co)-Dissolved	0.00035		mg/L			14-JUN-19
Copper (Cu)-Dissolved	0.00101		mg/L	2.0	1.0	14-JUN-19
Iron (Fe)-Dissolved	<0.010		mg/L		0.3	14-JUN-19
Lead (Pb)-Dissolved	0.000068		mg/L	0.005		14-JUN-19



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ATTN: PAUL LINDELL

Date: 24-JUN-19
PO No.:
WO No.: L2290890
Project Ref: 18-0300-005
Sample ID: TH19-KGS-19
Sampled By: PJL
Date Collected: 12-JUN-19
Lab Sample ID: L2290890-8
Matrix: GW

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
ROU4W Dissolved						
Dissolved Metals in Water by CRC ICPMS						
Lithium (Li)-Dissolved	0.0351		mg/L			14-JUN-19
Magnesium (Mg)-Dissolved	78.2		mg/L			14-JUN-19
Manganese (Mn)-Dissolved	0.139		mg/L	0.12	0.02	14-JUN-19
Molybdenum (Mo)-Dissolved	0.00524		mg/L			14-JUN-19
Nickel (Ni)-Dissolved	0.00216		mg/L			14-JUN-19
Phosphorus (P)-Dissolved	<0.030		mg/L			14-JUN-19
Potassium (K)-Dissolved	5.01		mg/L			14-JUN-19
Rubidium (Rb)-Dissolved	0.00370		mg/L			14-JUN-19
Selenium (Se)-Dissolved	0.000281		mg/L	0.05		14-JUN-19
Silicon (Si)-Dissolved	8.02		mg/L			14-JUN-19
Silver (Ag)-Dissolved	0.000021		mg/L			14-JUN-19
Sodium (Na)-Dissolved	48.5		mg/L		200	14-JUN-19
Strontium (Sr)-Dissolved	0.921		mg/L			14-JUN-19
Sulfur (S)-Dissolved	30.9		mg/L			14-JUN-19
Tellurium (Te)-Dissolved	<0.00020		mg/L			14-JUN-19
Thallium (Tl)-Dissolved	0.000119		mg/L			14-JUN-19
Thorium (Th)-Dissolved	<0.00010		mg/L			14-JUN-19
Tin (Sn)-Dissolved	<0.00010		mg/L			14-JUN-19
Titanium (Ti)-Dissolved	0.00061		mg/L			14-JUN-19
Tungsten (W)-Dissolved	0.0293		mg/L			14-JUN-19
Uranium (U)-Dissolved	0.00203		mg/L	0.02		14-JUN-19
Vanadium (V)-Dissolved	0.00135		mg/L			14-JUN-19
Zinc (Zn)-Dissolved	0.0026		mg/L		5.0	14-JUN-19
Zirconium (Zr)-Dissolved	0.000287		mg/L			14-JUN-19
Conductivity						
Conductivity	902		umhos/cm			13-JUN-19
Chloride in Water by IC (Low Level)						
Chloride (Cl)	7.08		mg/L		250	13-JUN-19
Alkalinity, Total (as CaCO3)						
Alkalinity, Total (as CaCO3)	529		mg/L			13-JUN-19
Total and E. coli, 1:10 dilution by QT97						
Total Coliforms	10	MBHT	MPN/100mL	0		13-JUN-19
Escherichia Coli	<10	MBHT	MPN/100mL	0		13-JUN-19



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Date: 24-JUN-19
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Project Ref: 18-0300-005
Sample ID: TH19-KGS-19
Sampled By: PJL
Date Collected: 12-JUN-19
Lab Sample ID: L2290890-8
Matrix: GW

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
<p>CDWQG = Health Canada Guideline Limits updated JUNE 2019</p> <p>* CDWQG for Nitrate+Nitrite-N is the limit for nitrate only. If present as Nitrate then the limit is 10mg/L < or N.D. = less than detection limit. * Turbidity guideline based on membrane filtration. For guidelines on conventional treatment and slow sand or diatomaceous earth filtration please see Summary Table of Guidelines for Canadian Drinking Water Quality - A blank entry designates no known limit. - A shaded value in the Results column exceeds CDWQG MAC and/ or Aesthetic Objective.</p>						
<p>Approved by <u>Hua Wo</u> Hua Wo Account Manager</p>						



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ATTN: PAUL LINDELL

Date: 24-JUN-19
PO No.:
WO No.: L2290890
Project Ref: 18-0300-005
Sample ID: TRIP BLANK
Sampled By: PJL
Date Collected: 11-JUN-19
Lab Sample ID: L2290890-9
Matrix: GW

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
ROU4W Dissolved						
Bicarbonate (HCO3)	2.0		mg/L			14-JUN-19
Carbonate (CO3)	<0.60		mg/L			14-JUN-19
Hydroxide (OH)	<0.34		mg/L			14-JUN-19
*Nitrate and Nitrite as N	<0.0051		mg/L	10		19-JUN-19
pH						
pH	5.70		pH units			13-JUN-19
Turbidity						
*Turbidity	0.44		NTU			15-JUN-19
TDS calculated						
TDS (Calculated)	<5.0		mg/L		500	17-JUN-19
Sulfate in Water by IC						
Sulfate (SO4)	<0.30		mg/L		500	13-JUN-19
Nitrite in Water by IC (Low Level)						
*Nitrite (as N)	<0.0010		mg/L	1		13-JUN-19
Nitrate in Water by IC (Low Level)						
*Nitrate (as N)	<0.0050		mg/L	10		13-JUN-19
Hardness Calculated						
Hardness (as CaCO3)	0.40		mg/L		500	17-JUN-19
Fluoride in Water by IC						
Fluoride (F)	<0.020		mg/L	1.5		13-JUN-19
Dissolved Metals in Water by CRC ICPMS						
Dissolved Metals	FIELD					14-JUN-19
Filtration Location						
Aluminum (Al)-Dissolved	<0.0010		mg/L		0.1	14-JUN-19
Antimony (Sb)-Dissolved	<0.00010		mg/L	0.006		14-JUN-19
Arsenic (As)-Dissolved	<0.00010		mg/L	0.01		14-JUN-19
Barium (Ba)-Dissolved	<0.00010		mg/L	1		14-JUN-19
Beryllium (Be)-Dissolved	<0.00010		mg/L			14-JUN-19
Bismuth (Bi)-Dissolved	<0.000050		mg/L			14-JUN-19
Boron (B)-Dissolved	<0.010		mg/L	5		14-JUN-19
Cadmium (Cd)-Dissolved	<0.0000050		mg/L	0.005		14-JUN-19
Calcium (Ca)-Dissolved	0.141		mg/L			14-JUN-19
Cesium (Cs)-Dissolved	<0.000010		mg/L			14-JUN-19
Chromium (Cr)-Dissolved	<0.00010		mg/L	0.05		14-JUN-19
Cobalt (Co)-Dissolved	<0.00010		mg/L			14-JUN-19
Copper (Cu)-Dissolved	<0.00020		mg/L	2.0	1.0	14-JUN-19
Iron (Fe)-Dissolved	<0.010		mg/L		0.3	14-JUN-19
Lead (Pb)-Dissolved	<0.000050		mg/L	0.005		14-JUN-19
Lithium (Li)-Dissolved	<0.0010		mg/L			14-JUN-19
Magnesium (Mg)-	0.0120		mg/L			14-JUN-19

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WO No.: L2290890
Project Ref: 18-0300-005
Sample ID: TRIP BLANK
Sampled By: PJL
Date Collected: 11-JUN-19
Lab Sample ID: L2290890-9
Matrix: GW

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
ROU4W Dissolved						
Dissolved Metals in Water by CRC ICPMS						
Dissolved						
Manganese (Mn)-Dissolved	<0.00010		mg/L	0.12	0.02	14-JUN-19
Molybdenum (Mo)-Dissolved	<0.000050		mg/L			14-JUN-19
Nickel (Ni)-Dissolved	<0.00050		mg/L			14-JUN-19
Phosphorus (P)-Dissolved	<0.030		mg/L			14-JUN-19
Potassium (K)-Dissolved	<0.050		mg/L			14-JUN-19
Rubidium (Rb)-Dissolved	<0.00020		mg/L			14-JUN-19
Selenium (Se)-Dissolved	<0.000050		mg/L	0.05		14-JUN-19
Silicon (Si)-Dissolved	<0.050		mg/L			14-JUN-19
Silver (Ag)-Dissolved	<0.000010		mg/L			14-JUN-19
Sodium (Na)-Dissolved	<0.050		mg/L		200	14-JUN-19
Strontium (Sr)-Dissolved	<0.00010		mg/L			14-JUN-19
Sulfur (S)-Dissolved	<0.50		mg/L			14-JUN-19
Tellurium (Te)-Dissolved	<0.00020		mg/L			14-JUN-19
Thallium (Tl)-Dissolved	<0.000010		mg/L			14-JUN-19
Thorium (Th)-Dissolved	<0.00010		mg/L			14-JUN-19
Tin (Sn)-Dissolved	<0.00010		mg/L			14-JUN-19
Titanium (Ti)-Dissolved	<0.00030		mg/L			14-JUN-19
Tungsten (W)-Dissolved	<0.00010		mg/L			14-JUN-19
Uranium (U)-Dissolved	<0.000010		mg/L	0.02		14-JUN-19
Vanadium (V)-Dissolved	<0.00050		mg/L			14-JUN-19
Zinc (Zn)-Dissolved	<0.0010		mg/L		5.0	14-JUN-19
Zirconium (Zr)-Dissolved	<0.000060		mg/L			14-JUN-19
Conductivity						
Conductivity	<1.0		umhos/cm			13-JUN-19
Chloride in Water by IC (Low Level)						
Chloride (Cl)	<0.10		mg/L		250	13-JUN-19
Alkalinity, Total (as CaCO3)						
Alkalinity, Total (as CaCO3)	1.6		mg/L			13-JUN-19
Total Coliform and E.coli						
Total Coliforms	0	PEHT	MPN/100mL	0		13-JUN-19
Escherichia Coli	0	PEHT	MPN/100mL	0		13-JUN-19



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Date: 24-JUN-19
PO No.:
WO No.: L2290890
Project Ref: 18-0300-005
Sample ID: TRIP BLANK
Sampled By: PJL
Date Collected: 11-JUN-19
Lab Sample ID: L2290890-9
Matrix: GW

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
<p>CDWQG = Health Canada Guideline Limits updated JUNE 2019</p> <p>* CDWQG for Nitrate+Nitrite-N is the limit for nitrate only. If present as Nitrate then the limit is 10mg/L < or N.D. = less than detection limit. * Turbidity guideline based on membrane filtration. For guidelines on conventional treatment and slow sand or diatomaceous earth filtration please see Summary Table of Guidelines for Canadian Drinking Water Quality - A blank entry designates no known limit. - A shaded value in the Results column exceeds CDWQG MAC and/ or Aesthetic Objective.</p>						
<p>Approved by <u><i>Hua Wo</i></u> Hua Wo Account Manager</p>						



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ATTN: PAUL LINDELL

Date: 24-JUN-19
PO No.:
WO No.: L2290890
Project Ref: 18-0300-005
Sample ID: R3-SW
Sampled By: PJL
Date Collected: 11-JUN-19
Lab Sample ID: L2290890-10
Matrix: SW

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
ROU4W Dissolved						
Bicarbonate (HCO3)	290		mg/L			14-JUN-19
Carbonate (CO3)	14.0		mg/L			14-JUN-19
Hydroxide (OH)	<0.34		mg/L			14-JUN-19
*Nitrate and Nitrite as N	<0.0051		mg/L	10		19-JUN-19
pH						
pH	8.57		pH units			13-JUN-19
Turbidity						
*Turbidity	6.93		NTU			15-JUN-19
TDS calculated						
TDS (Calculated)	267		mg/L		500	20-JUN-19
Sulfate in Water by IC						
Sulfate (SO4)	16.8		mg/L		500	13-JUN-19
Nitrite in Water by IC (Low Level)						
*Nitrite (as N)	<0.0010		mg/L	1		13-JUN-19
Nitrate in Water by IC (Low Level)						
*Nitrate (as N)	<0.0050		mg/L	10		13-JUN-19
Ion Balance Calculation						
Hardness Calculated						
Hardness (as CaCO3)	269		mg/L		500	20-JUN-19
Fluoride in Water by IC						
Fluoride (F)	0.159		mg/L	1.5		13-JUN-19
Dissolved Metals in Water by CRC ICPMS						
Dissolved Metals	FIELD					14-JUN-19
Filtration Location						
Aluminum (Al)-Dissolved	0.0044		mg/L		0.1	14-JUN-19
Antimony (Sb)-Dissolved	<0.00010		mg/L	0.006		14-JUN-19
Arsenic (As)-Dissolved	0.00083		mg/L	0.01		14-JUN-19
Barium (Ba)-Dissolved	0.0380		mg/L	1		14-JUN-19
Beryllium (Be)-Dissolved	<0.00010		mg/L			14-JUN-19
Bismuth (Bi)-Dissolved	<0.000050		mg/L			14-JUN-19
Boron (B)-Dissolved	0.048		mg/L	5		14-JUN-19
Cadmium (Cd)-Dissolved	<0.0000050		mg/L	0.005		14-JUN-19
Calcium (Ca)-Dissolved	38.3		mg/L			14-JUN-19
Cesium (Cs)-Dissolved	<0.000010		mg/L			14-JUN-19
Chromium (Cr)-Dissolved	<0.00010		mg/L	0.05		14-JUN-19
Cobalt (Co)-Dissolved	<0.00010		mg/L			14-JUN-19
Copper (Cu)-Dissolved	0.00199		mg/L	2.0	1.0	14-JUN-19
Iron (Fe)-Dissolved	0.012		mg/L		0.3	14-JUN-19
Lead (Pb)-Dissolved	<0.000050		mg/L	0.005		14-JUN-19

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ATTN: PAUL LINDELL

Date: 24-JUN-19
PO No.:
WO No.: L2290890
Project Ref: 18-0300-005
Sample ID: R3-SW
Sampled By: PJL
Date Collected: 11-JUN-19
Lab Sample ID: L2290890-10
Matrix: SW

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
ROU4W Dissolved						
Dissolved Metals in Water by CRC ICPMS						
Lithium (Li)-Dissolved	0.0145		mg/L			14-JUN-19
Magnesium (Mg)-Dissolved	42.1		mg/L			14-JUN-19
Manganese (Mn)-Dissolved	0.00547		mg/L	0.12	0.02	14-JUN-19
Molybdenum (Mo)-Dissolved	0.000564		mg/L			14-JUN-19
Nickel (Ni)-Dissolved	0.00068		mg/L			14-JUN-19
Phosphorus (P)-Dissolved	<0.030		mg/L			14-JUN-19
Potassium (K)-Dissolved	3.38		mg/L			14-JUN-19
Rubidium (Rb)-Dissolved	0.00174		mg/L			14-JUN-19
Selenium (Se)-Dissolved	0.000055		mg/L	0.05		14-JUN-19
Silicon (Si)-Dissolved	0.707		mg/L			14-JUN-19
Silver (Ag)-Dissolved	<0.000010		mg/L			14-JUN-19
Sodium (Na)-Dissolved	6.84		mg/L		200	14-JUN-19
Strontium (Sr)-Dissolved	0.111		mg/L			14-JUN-19
Sulfur (S)-Dissolved	6.46		mg/L			14-JUN-19
Tellurium (Te)-Dissolved	<0.00020		mg/L			14-JUN-19
Thallium (Tl)-Dissolved	<0.000010		mg/L			14-JUN-19
Thorium (Th)-Dissolved	<0.00010		mg/L			14-JUN-19
Tin (Sn)-Dissolved	<0.00010		mg/L			14-JUN-19
Titanium (Ti)-Dissolved	<0.00030		mg/L			14-JUN-19
Tungsten (W)-Dissolved	<0.00010		mg/L			14-JUN-19
Uranium (U)-Dissolved	0.00177		mg/L	0.02		14-JUN-19
Vanadium (V)-Dissolved	0.00057		mg/L			14-JUN-19
Zinc (Zn)-Dissolved	0.0020		mg/L		5.0	14-JUN-19
Zirconium (Zr)-Dissolved	0.000098		mg/L			14-JUN-19
Conductivity						
Conductivity	456		umhos/cm			13-JUN-19
Chloride in Water by IC (Low Level)						
Chloride (Cl)	0.97		mg/L		250	13-JUN-19
Alkalinity, Total (as CaCO3)						
Alkalinity, Total (as CaCO3)	262		mg/L			13-JUN-19
Total Metals in Water by CRC ICPMS						
Aluminum (Al)-Total	0.263		mg/L		0.1	19-JUN-19
Antimony (Sb)-Total	<0.00010		mg/L	0.006		19-JUN-19
Arsenic (As)-Total	0.00098		mg/L	0.01		19-JUN-19
Barium (Ba)-Total	0.0396		mg/L	1		19-JUN-19
Beryllium (Be)-Total	<0.00010		mg/L			19-JUN-19
Bismuth (Bi)-Total	<0.000050		mg/L			19-JUN-19



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Project Ref: 18-0300-005
Sample ID: R3-SW
Sampled By: PJL
Date Collected: 11-JUN-19
Lab Sample ID: L2290890-10
Matrix: SW

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
Total Metals in Water by CRC ICPMS						
Boron (B)-Total	0.040		mg/L	5		19-JUN-19
Cadmium (Cd)-Total	<0.0000050		mg/L	0.005		19-JUN-19
Calcium (Ca)-Total	40.0		mg/L			19-JUN-19
Cesium (Cs)-Total	0.000032		mg/L			19-JUN-19
Chromium (Cr)-Total	0.00046		mg/L	0.05		19-JUN-19
Cobalt (Co)-Total	0.00019		mg/L			19-JUN-19
Copper (Cu)-Total	0.00164		mg/L	2.0	1.0	19-JUN-19
Iron (Fe)-Total	0.294		mg/L		0.3	19-JUN-19
Lead (Pb)-Total	0.000149		mg/L	0.005		19-JUN-19
Lithium (Li)-Total	0.0143		mg/L			19-JUN-19
Magnesium (Mg)-Total	42.0		mg/L			19-JUN-19
Manganese (Mn)-Total	0.0210		mg/L	0.12	0.02	19-JUN-19
Molybdenum (Mo)-Total	0.000566		mg/L			19-JUN-19
Nickel (Ni)-Total	0.00105		mg/L			19-JUN-19
Potassium (K)-Total	3.48		mg/L			19-JUN-19
Phosphorus (P)-Total	<0.030		mg/L			19-JUN-19
Rubidium (Rb)-Total	0.00220		mg/L			19-JUN-19
Selenium (Se)-Total	0.000066		mg/L	0.05		19-JUN-19
Silicon (Si)-Total	1.33		mg/L			19-JUN-19
Silver (Ag)-Total	<0.000010		mg/L			19-JUN-19
Sodium (Na)-Total	6.85		mg/L		200	19-JUN-19
Strontium (Sr)-Total	0.117		mg/L			19-JUN-19
Sulfur (S)-Total	6.31		mg/L			19-JUN-19
Tellurium (Te)-Total	<0.00020		mg/L			19-JUN-19
Thallium (Tl)-Total	0.000011		mg/L			19-JUN-19
Thorium (Th)-Total	<0.00010		mg/L			19-JUN-19
Tin (Sn)-Total	<0.00010		mg/L			19-JUN-19
Titanium (Ti)-Total	0.0106		mg/L			19-JUN-19
Tungsten (W)-Total	<0.00010		mg/L			19-JUN-19
Uranium (U)-Total	0.00191		mg/L	0.02		19-JUN-19
Vanadium (V)-Total	0.00120		mg/L			19-JUN-19
Zinc (Zn)-Total	<0.0030		mg/L		5.0	19-JUN-19
Zirconium (Zr)-Total	0.00029		mg/L			19-JUN-19



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Project Ref: 18-0300-005
Sample ID: R3-SW
Sampled By: PJL
Date Collected: 11-JUN-19
Lab Sample ID: L2290890-10
Matrix: SW

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
<p>CDWQG = Health Canada Guideline Limits updated JUNE 2019</p> <p>* CDWQG for Nitrate+Nitrite-N is the limit for nitrate only. If present as Nitrate then the limit is 10mg/L < or N.D. = less than detection limit. * Turbidity guideline based on membrane filtration. For guidelines on conventional treatment and slow sand or diatomaceous earth filtration please see Summary Table of Guidelines for Canadian Drinking Water Quality - A blank entry designates no known limit. - A shaded value in the Results column exceeds CDWQG MAC and/ or Aesthetic Objective.</p>						
<p>Approved by <u><i>Hua Wo</i></u> Hua Wo Account Manager</p>						



KGS Group Consultants (Winnipeg)
865 Waverly Street - 3rd Floor
Winnipeg MB R3T 5P4
ATTN: PAUL LINDELL

Date: 24-JUN-19
PO No.:
WO No.: L2290890
Project Ref: 18-0300-005
Sample ID: FIELD BLANK
Sampled By: PJL
Date Collected: 12-JUN-19
Lab Sample ID: L2290890-11
Matrix: WTP

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
ROU4W Dissolved						
Bicarbonate (HCO3)	2.1		mg/L			14-JUN-19
Carbonate (CO3)	<0.60		mg/L			14-JUN-19
Hydroxide (OH)	<0.34		mg/L			14-JUN-19
*Nitrate and Nitrite as N	<0.0051		mg/L	10		19-JUN-19
pH						
pH	6.12		pH units			13-JUN-19
Turbidity						
*Turbidity	0.17		NTU			15-JUN-19
TDS calculated						
TDS (Calculated)	<5.0		mg/L		500	17-JUN-19
Sulfate in Water by IC						
Sulfate (SO4)	<0.30		mg/L		500	13-JUN-19
Nitrite in Water by IC (Low Level)						
*Nitrite (as N)	<0.0010		mg/L	1		13-JUN-19
Nitrate in Water by IC (Low Level)						
*Nitrate (as N)	<0.0050		mg/L	10		13-JUN-19
Hardness Calculated						
Hardness (as CaCO3)	0.40		mg/L		500	17-JUN-19
Fluoride in Water by IC						
Fluoride (F)	<0.020		mg/L	1.5		13-JUN-19
Dissolved Metals in Water by CRC ICPMS						
Dissolved Metals	FIELD					14-JUN-19
Filtration Location						
Aluminum (Al)-Dissolved	0.0025		mg/L		0.1	14-JUN-19
Antimony (Sb)-Dissolved	<0.00010		mg/L	0.006		14-JUN-19
Arsenic (As)-Dissolved	<0.00010		mg/L	0.01		14-JUN-19
Barium (Ba)-Dissolved	0.00018		mg/L	1		14-JUN-19
Beryllium (Be)-Dissolved	<0.00010		mg/L			14-JUN-19
Bismuth (Bi)-Dissolved	<0.000050		mg/L			14-JUN-19
Boron (B)-Dissolved	<0.010		mg/L	5		14-JUN-19
Cadmium (Cd)-Dissolved	<0.0000050		mg/L	0.005		14-JUN-19
Calcium (Ca)-Dissolved	0.106		mg/L			14-JUN-19
Cesium (Cs)-Dissolved	<0.000010		mg/L			14-JUN-19
Chromium (Cr)-Dissolved	<0.00010		mg/L	0.05		14-JUN-19
Cobalt (Co)-Dissolved	<0.00010		mg/L			14-JUN-19
Copper (Cu)-Dissolved	0.00091		mg/L	2.0	1.0	14-JUN-19
Iron (Fe)-Dissolved	<0.010		mg/L		0.3	14-JUN-19
Lead (Pb)-Dissolved	<0.000050		mg/L	0.005		14-JUN-19
Lithium (Li)-Dissolved	<0.0010		mg/L			14-JUN-19
Magnesium (Mg)-	0.0325		mg/L			14-JUN-19

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Matrix: WTP

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
ROU4W Dissolved						
Dissolved Metals in Water by CRC ICPMS						
Dissolved						
Manganese (Mn)-Dissolved	0.00027		mg/L	0.12	0.02	14-JUN-19
Molybdenum (Mo)-Dissolved	<0.000050		mg/L			14-JUN-19
Nickel (Ni)-Dissolved	<0.00050		mg/L			14-JUN-19
Phosphorus (P)-Dissolved	<0.030		mg/L			14-JUN-19
Potassium (K)-Dissolved	0.078		mg/L			14-JUN-19
Rubidium (Rb)-Dissolved	<0.00020		mg/L			14-JUN-19
Selenium (Se)-Dissolved	<0.000050		mg/L	0.05		14-JUN-19
Silicon (Si)-Dissolved	<0.050		mg/L			14-JUN-19
Silver (Ag)-Dissolved	<0.000010		mg/L			14-JUN-19
Sodium (Na)-Dissolved	0.123		mg/L		200	14-JUN-19
Strontium (Sr)-Dissolved	0.00012		mg/L			14-JUN-19
Sulfur (S)-Dissolved	0.54		mg/L			14-JUN-19
Tellurium (Te)-Dissolved	<0.00020		mg/L			14-JUN-19
Thallium (Tl)-Dissolved	<0.000010		mg/L			14-JUN-19
Thorium (Th)-Dissolved	<0.00010		mg/L			14-JUN-19
Tin (Sn)-Dissolved	<0.00010		mg/L			14-JUN-19
Titanium (Ti)-Dissolved	<0.00030		mg/L			14-JUN-19
Tungsten (W)-Dissolved	<0.00010		mg/L			14-JUN-19
Uranium (U)-Dissolved	<0.000010		mg/L	0.02		14-JUN-19
Vanadium (V)-Dissolved	<0.00050		mg/L			14-JUN-19
Zinc (Zn)-Dissolved	0.0033		mg/L		5.0	14-JUN-19
Zirconium (Zr)-Dissolved	<0.000060		mg/L			14-JUN-19
Conductivity						
Conductivity	<1.0		umhos/cm			13-JUN-19
Chloride in Water by IC (Low Level)						
Chloride (Cl)	<0.10		mg/L		250	13-JUN-19
Alkalinity, Total (as CaCO3)						
Alkalinity, Total (as CaCO3)	1.7		mg/L			13-JUN-19
Total Coliform and E.coli						
Total Coliforms	0	MBHT	MPN/100mL	0		13-JUN-19
Escherichia Coli	0	MBHT	MPN/100mL	0		13-JUN-19



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Lab Sample ID: L2290890-11
Matrix: WTP

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
<p>CDWQG = Health Canada Guideline Limits updated JUNE 2019</p> <p>* CDWQG for Nitrate+Nitrite-N is the limit for nitrate only. If present as Nitrate then the limit is 10mg/L < or N.D. = less than detection limit. * Turbidity guideline based on membrane filtration. For guidelines on conventional treatment and slow sand or diatomaceous earth filtration please see Summary Table of Guidelines for Canadian Drinking Water Quality - A blank entry designates no known limit. - A shaded value in the Results column exceeds CDWQG MAC and/ or Aesthetic Objective.</p>						
<p>Approved by <u><i>Hua Wo</i></u> Hua Wo Account Manager</p>						

Guidelines & Objectives

Sample Parameter Qualifier key listed:

Qualifier	Description
MBHT	The APHA 30 hour hold time was exceeded for microbiological testing. Samples processed within 48 hours from time of sampling may

be valid in some cases (refer to Health Canada guidance).

PEHT	Parameter Exceeded Recommended Holding Time Prior to Analysis
DLM	Detection Limit Adjusted due to sample matrix effects (e.g. chemical interference, colour, turbidity).

Health Canada MAC Health Related Criteria Limits

Nitrate/Nitrite-N*	Criteria limit is 10 mg/L (1.0 mg/L if present as all Nitrite-N). High concentrations may contribute to blue baby syndrome in infants.
Lead*	A cumulative body poison, uncommon in naturally occurring hard waters.
Fluoride*	Present in fluoridated water supplies at 0.8 mg/L to reduce dental caries. Elevated levels causes fluorosis (mottling of teeth).
Total Coliforms*	Criteria is 0 CFU/100mL. Adverse health effects.
E. Coli*	Criteria is 0 CFU/100 mL. Certain E. Coli bacteria can be life threatening.

*Health Canada Canadian Drinking Water Quality Guidelines (MAC limit)

Aesthetic Objective Concentration Levels

Alkalinity	Acid neutralizing capacity. Usually a measure of carbonate and bicarbonates and calculated and reported as calcium carbonate.
Balance	Quality control parameter ratioing cations to anions
Bicarbonate	See Alkalinity. Report as the anion HCO ₃ -1
Carbonate	See Alkalinity. Reported at the anion CO ₃ -2
Calcium	See Hardness. Common major cation of water chemistry.
Chloride	Common major anion of water chemistry.
Conductance	Physical test measuring water salinity (dissolved ions or solids)
Hardness	Classical measure or capacity of water to precipitate soap (chiefly calcium and magnesium ions). Causes scaling tendency in water if carbonates/bicarbonates are present (if >200 mg/L). For drinking water purposes waters with results <200 mg/L are considered acceptable, results >200 mg/L are considered poor but can be tolerated. Results >500 mg/L are unacceptable.
Hydroxide	See alkalinity
Magnesium	See hardness. Common major cation of water chemistry. Elevated levels (>125 mg/L) may exert a cathartic or diuretic action.
pH	Measure of water acidity/alkalinity. Normal range is 7.0-8.5.
Potassium	Common major cation of water chemistry.
Sodium	Common major cation of water chemistry. Measure of salinity (saltiness). The aesthetic objective (not related to health) for sodium in drinking water is 200 mg/L. However, where sodium concentration of the drinking water exceeds 20 mg/L, it is recommended that any person on a sodium restricted diet consult with his/her physician or Medical Officer of Health concerning the use of that water.
Sulphate	Common major anion of water chemistry. Elevated levels may exert a cathartic or diuretic action.
Total Dissolved Solids	A measure of water salinity.
Iron	Causes staining to laundry and porcelain and astringent taste. Oxidizes to red-brown precipitate on exposure to air.
Manganese	Elevated levels may cause staining of laundry and porcelain.
Heterotrophic Plate Count	Criteria is 500 cfu/mL Measure of heterotrophic bacteria present.

GLOSSARY OF REPORT TERMS

Surrogates are compounds that are similar in behaviour to target analyte(s), but that do not normally occur in environmental samples. For applicable tests, surrogates are added to samples prior to analysis as a check on recovery. In reports that display the D.L. column, laboratory objectives for surrogates are listed there.

mg/kg - milligrams per kilogram based on dry weight of sample

mg/kg wwt - milligrams per kilogram based on wet weight of sample

mg/kg lwt - milligrams per kilogram based on lipid-adjusted weight

mg/L - unit of concentration based on volume, parts per million.

< - Less than.

D.L. - The reporting limit.

N/A - Result not available. Refer to qualifier code and definition for explanation.

Test results reported relate only to the samples as received by the laboratory.

UNLESS OTHERWISE STATED, ALL SAMPLES WERE RECEIVED IN ACCEPTABLE CONDITION.

Analytical results in unsigned test reports with the DRAFT watermark are subject to change, pending final QC review.

Quality Control Report

Workorder: L2290890

Report Date: 24-JUN-19

Page 1 of 13

Client: KGS Group Consultants (Winnipeg)
865 Waverly Street - 3rd Floor
Winnipeg MB R3T 5P4

Contact: PAUL LINDELL

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
ALK-TITR-WP								
	Water							
Batch	R4669808							
WG3077144-20	DUP	L2290890-8						
Alkalinity, Total (as CaCO3)		529	547		mg/L	3.4	20	13-JUN-19
WG3077144-14	LCS							
Alkalinity, Total (as CaCO3)			103.7		%		85-115	13-JUN-19
WG3077144-19	LCS							
Alkalinity, Total (as CaCO3)			104.5		%		85-115	13-JUN-19
WG3077144-11	MB							
Alkalinity, Total (as CaCO3)			<1.0		mg/L		1	13-JUN-19
WG3077144-16	MB							
Alkalinity, Total (as CaCO3)			1.0		mg/L		1	13-JUN-19
CL-L-IC-N-WP								
	Water							
Batch	R4673647							
WG3076575-3	DUP	L2290890-1						
Chloride (Cl)		9.05	9.09		mg/L	0.5	20	13-JUN-19
WG3076575-2	LCS							
Chloride (Cl)			99.98		%		90-110	13-JUN-19
WG3076575-1	MB							
Chloride (Cl)			<0.10		mg/L		0.1	13-JUN-19
WG3076575-4	MS	L2290890-1						
Chloride (Cl)			103.1		%		75-125	13-JUN-19
EC-WP								
	Water							
Batch	R4669808							
WG3077144-20	DUP	L2290890-8						
Conductivity		902	907		umhos/cm	0.6	10	13-JUN-19
WG3077144-13	LCS							
Conductivity			98.2		%		90-110	13-JUN-19
WG3077144-18	LCS							
Conductivity			98.4		%		90-110	13-JUN-19
WG3077144-11	MB							
Conductivity			<1.0		umhos/cm		1	13-JUN-19
WG3077144-16	MB							
Conductivity			<1.0		umhos/cm		1	13-JUN-19
F-IC-N-WP								
	Water							
Batch	R4673647							
WG3076575-3	DUP	L2290890-1						
Fluoride (F)		0.263	0.261		mg/L	0.8	20	13-JUN-19
WG3076575-2	LCS							
Fluoride (F)			99.4		%		90-110	13-JUN-19



Quality Control Report

Workorder: L2290890

Report Date: 24-JUN-19

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Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
F-IC-N-WP								
	Water							
Batch	R4673647							
WG3076575-1	MB							
Fluoride (F)			<0.020		mg/L		0.02	13-JUN-19
WG3076575-4	MS	L2290890-1						
Fluoride (F)			97.8		%		75-125	13-JUN-19
MET-D-CCMS-WP								
	Water							
Batch	R4671275							
WG3077972-2	LCS							
Aluminum (Al)-Dissolved			102.7		%		80-120	14-JUN-19
Antimony (Sb)-Dissolved			99.2		%		80-120	14-JUN-19
Arsenic (As)-Dissolved			101.0		%		80-120	14-JUN-19
Barium (Ba)-Dissolved			100.0		%		80-120	14-JUN-19
Beryllium (Be)-Dissolved			99.8		%		80-120	14-JUN-19
Bismuth (Bi)-Dissolved			103.1		%		80-120	14-JUN-19
Boron (B)-Dissolved			95.8		%		80-120	14-JUN-19
Cadmium (Cd)-Dissolved			98.3		%		80-120	14-JUN-19
Calcium (Ca)-Dissolved			97.7		%		80-120	14-JUN-19
Cesium (Cs)-Dissolved			99.4		%		80-120	14-JUN-19
Chromium (Cr)-Dissolved			99.8		%		80-120	14-JUN-19
Cobalt (Co)-Dissolved			98.4		%		80-120	14-JUN-19
Copper (Cu)-Dissolved			100.2		%		80-120	14-JUN-19
Iron (Fe)-Dissolved			92.2		%		80-120	14-JUN-19
Lead (Pb)-Dissolved			101.4		%		80-120	14-JUN-19
Lithium (Li)-Dissolved			101.4		%		80-120	14-JUN-19
Magnesium (Mg)-Dissolved			107.6		%		80-120	14-JUN-19
Manganese (Mn)-Dissolved			98.3		%		80-120	14-JUN-19
Molybdenum (Mo)-Dissolved			102.2		%		80-120	14-JUN-19
Nickel (Ni)-Dissolved			97.1		%		80-120	14-JUN-19
Phosphorus (P)-Dissolved			108.8		%		80-120	14-JUN-19
Potassium (K)-Dissolved			98.8		%		80-120	14-JUN-19
Rubidium (Rb)-Dissolved			100.6		%		80-120	14-JUN-19
Selenium (Se)-Dissolved			102.5		%		80-120	14-JUN-19
Silicon (Si)-Dissolved			101.0		%		80-120	14-JUN-19
Silver (Ag)-Dissolved			100.5		%		80-120	14-JUN-19
Sodium (Na)-Dissolved			99.97		%		80-120	14-JUN-19
Strontium (Sr)-Dissolved			100.1		%		80-120	14-JUN-19

Quality Control Report

Workorder: L2290890

Report Date: 24-JUN-19

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Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
MET-D-CCMS-WP								
	Water							
Batch	R4671275							
WG3077972-2	LCS							
Sulfur (S)-Dissolved			97.6		%		80-120	14-JUN-19
Tellurium (Te)-Dissolved			95.3		%		80-120	14-JUN-19
Thallium (Tl)-Dissolved			99.5		%		80-120	14-JUN-19
Thorium (Th)-Dissolved			100.6		%		80-120	14-JUN-19
Tin (Sn)-Dissolved			99.7		%		80-120	14-JUN-19
Titanium (Ti)-Dissolved			97.5		%		80-120	14-JUN-19
Tungsten (W)-Dissolved			100.6		%		80-120	14-JUN-19
Uranium (U)-Dissolved			103.0		%		80-120	14-JUN-19
Vanadium (V)-Dissolved			100.8		%		80-120	14-JUN-19
Zinc (Zn)-Dissolved			101.6		%		80-120	14-JUN-19
Zirconium (Zr)-Dissolved			99.3		%		80-120	14-JUN-19
WG3077977-2	LCS							
Aluminum (Al)-Dissolved			102.9		%		80-120	14-JUN-19
Antimony (Sb)-Dissolved			98.3		%		80-120	14-JUN-19
Arsenic (As)-Dissolved			101.1		%		80-120	14-JUN-19
Barium (Ba)-Dissolved			99.5		%		80-120	14-JUN-19
Beryllium (Be)-Dissolved			104.7		%		80-120	14-JUN-19
Bismuth (Bi)-Dissolved			101.3		%		80-120	14-JUN-19
Boron (B)-Dissolved			103.4		%		80-120	14-JUN-19
Cadmium (Cd)-Dissolved			100.2		%		80-120	14-JUN-19
Calcium (Ca)-Dissolved			100.7		%		80-120	14-JUN-19
Cesium (Cs)-Dissolved			98.3		%		80-120	14-JUN-19
Chromium (Cr)-Dissolved			99.4		%		80-120	14-JUN-19
Cobalt (Co)-Dissolved			98.8		%		80-120	14-JUN-19
Copper (Cu)-Dissolved			99.9		%		80-120	14-JUN-19
Iron (Fe)-Dissolved			93.2		%		80-120	14-JUN-19
Lead (Pb)-Dissolved			99.9		%		80-120	14-JUN-19
Lithium (Li)-Dissolved			105.6		%		80-120	14-JUN-19
Magnesium (Mg)-Dissolved			114.2		%		80-120	14-JUN-19
Manganese (Mn)-Dissolved			99.2		%		80-120	14-JUN-19
Molybdenum (Mo)-Dissolved			102.5		%		80-120	14-JUN-19
Nickel (Ni)-Dissolved			97.4		%		80-120	14-JUN-19
Phosphorus (P)-Dissolved			105.0		%		80-120	14-JUN-19
Potassium (K)-Dissolved			101.9		%		80-120	14-JUN-19

Quality Control Report

Workorder: L2290890

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Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
MET-D-CCMS-WP								
	Water							
Batch	R4671275							
WG3077977-2	LCS							
Rubidium (Rb)-Dissolved			98.9		%		80-120	14-JUN-19
Selenium (Se)-Dissolved			101.6		%		80-120	14-JUN-19
Silicon (Si)-Dissolved			107.5		%		80-120	14-JUN-19
Silver (Ag)-Dissolved			101.9		%		80-120	14-JUN-19
Sodium (Na)-Dissolved			103.5		%		80-120	14-JUN-19
Strontium (Sr)-Dissolved			99.8		%		80-120	14-JUN-19
Sulfur (S)-Dissolved			98.0		%		80-120	14-JUN-19
Tellurium (Te)-Dissolved			94.0		%		80-120	14-JUN-19
Thallium (Tl)-Dissolved			100.1		%		80-120	14-JUN-19
Thorium (Th)-Dissolved			99.1		%		80-120	14-JUN-19
Tin (Sn)-Dissolved			100.4		%		80-120	14-JUN-19
Titanium (Ti)-Dissolved			100.8		%		80-120	14-JUN-19
Tungsten (W)-Dissolved			99.5		%		80-120	14-JUN-19
Uranium (U)-Dissolved			101.8		%		80-120	14-JUN-19
Vanadium (V)-Dissolved			101.4		%		80-120	14-JUN-19
Zinc (Zn)-Dissolved			99.9		%		80-120	14-JUN-19
Zirconium (Zr)-Dissolved			96.2		%		80-120	14-JUN-19
WG3077972-1	MB							
Aluminum (Al)-Dissolved			<0.0010		mg/L		0.001	14-JUN-19
Antimony (Sb)-Dissolved			<0.00010		mg/L		0.0001	14-JUN-19
Arsenic (As)-Dissolved			<0.00010		mg/L		0.0001	14-JUN-19
Barium (Ba)-Dissolved			<0.00010		mg/L		0.0001	14-JUN-19
Beryllium (Be)-Dissolved			<0.00010		mg/L		0.0001	14-JUN-19
Bismuth (Bi)-Dissolved			<0.000050		mg/L		0.00005	14-JUN-19
Boron (B)-Dissolved			<0.010		mg/L		0.01	14-JUN-19
Cadmium (Cd)-Dissolved			<0.0000050		mg/L		0.000005	14-JUN-19
Calcium (Ca)-Dissolved			<0.050		mg/L		0.05	14-JUN-19
Cesium (Cs)-Dissolved			<0.000010		mg/L		0.00001	14-JUN-19
Chromium (Cr)-Dissolved			<0.00010		mg/L		0.0001	14-JUN-19
Cobalt (Co)-Dissolved			<0.00010		mg/L		0.0001	14-JUN-19
Copper (Cu)-Dissolved			<0.00020		mg/L		0.0002	14-JUN-19
Iron (Fe)-Dissolved			<0.010		mg/L		0.01	14-JUN-19
Lead (Pb)-Dissolved			<0.000050		mg/L		0.00005	14-JUN-19
Lithium (Li)-Dissolved			<0.0010		mg/L		0.001	14-JUN-19



Quality Control Report

Workorder: L2290890

Report Date: 24-JUN-19

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Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
MET-D-CCMS-WP		Water						
Batch	R4671275							
WG3077972-1 MB								
Magnesium (Mg)-Dissolved			<0.0050		mg/L		0.005	14-JUN-19
Manganese (Mn)-Dissolved			<0.00010		mg/L		0.0001	14-JUN-19
Molybdenum (Mo)-Dissolved			<0.000050		mg/L		0.00005	14-JUN-19
Nickel (Ni)-Dissolved			<0.00050		mg/L		0.0005	14-JUN-19
Phosphorus (P)-Dissolved			<0.030		mg/L		0.03	14-JUN-19
Potassium (K)-Dissolved			<0.050		mg/L		0.05	14-JUN-19
Rubidium (Rb)-Dissolved			<0.00020		mg/L		0.0002	14-JUN-19
Selenium (Se)-Dissolved			<0.000050		mg/L		0.00005	14-JUN-19
Silicon (Si)-Dissolved			<0.050		mg/L		0.05	14-JUN-19
Silver (Ag)-Dissolved			<0.000010		mg/L		0.00001	14-JUN-19
Sodium (Na)-Dissolved			<0.050		mg/L		0.05	14-JUN-19
Strontium (Sr)-Dissolved			<0.00010		mg/L		0.0001	14-JUN-19
Sulfur (S)-Dissolved			<0.50		mg/L		0.5	14-JUN-19
Tellurium (Te)-Dissolved			<0.00020		mg/L		0.0002	14-JUN-19
Thallium (Tl)-Dissolved			<0.000010		mg/L		0.00001	14-JUN-19
Thorium (Th)-Dissolved			<0.00010		mg/L		0.0001	14-JUN-19
Tin (Sn)-Dissolved			<0.00010		mg/L		0.0001	14-JUN-19
Titanium (Ti)-Dissolved			<0.00030		mg/L		0.0003	14-JUN-19
Tungsten (W)-Dissolved			<0.00010		mg/L		0.0001	14-JUN-19
Uranium (U)-Dissolved			<0.000010		mg/L		0.00001	14-JUN-19
Vanadium (V)-Dissolved			<0.00050		mg/L		0.0005	14-JUN-19
Zinc (Zn)-Dissolved			<0.0010		mg/L		0.001	14-JUN-19
Zirconium (Zr)-Dissolved			<0.000060		mg/L		0.00006	14-JUN-19
WG3077977-1 MB								
Aluminum (Al)-Dissolved			<0.0010		mg/L		0.001	14-JUN-19
Antimony (Sb)-Dissolved			<0.00010		mg/L		0.0001	14-JUN-19
Arsenic (As)-Dissolved			<0.00010		mg/L		0.0001	14-JUN-19
Barium (Ba)-Dissolved			<0.00010		mg/L		0.0001	14-JUN-19
Beryllium (Be)-Dissolved			<0.00010		mg/L		0.0001	14-JUN-19
Bismuth (Bi)-Dissolved			<0.000050		mg/L		0.00005	14-JUN-19
Boron (B)-Dissolved			<0.010		mg/L		0.01	14-JUN-19
Cadmium (Cd)-Dissolved			<0.0000050		mg/L		0.000005	14-JUN-19
Calcium (Ca)-Dissolved			<0.050		mg/L		0.05	14-JUN-19
Cesium (Cs)-Dissolved			<0.000010		mg/L		0.00001	14-JUN-19



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Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
MET-D-CCMS-WP		Water						
Batch	R4671275							
WG3077977-1	MB							
Chromium (Cr)-Dissolved			<0.00010		mg/L		0.0001	14-JUN-19
Cobalt (Co)-Dissolved			<0.00010		mg/L		0.0001	14-JUN-19
Copper (Cu)-Dissolved			<0.00020		mg/L		0.0002	14-JUN-19
Iron (Fe)-Dissolved			<0.010		mg/L		0.01	14-JUN-19
Lead (Pb)-Dissolved			<0.000050		mg/L		0.00005	14-JUN-19
Lithium (Li)-Dissolved			<0.0010		mg/L		0.001	14-JUN-19
Magnesium (Mg)-Dissolved			<0.0050		mg/L		0.005	14-JUN-19
Manganese (Mn)-Dissolved			<0.00010		mg/L		0.0001	14-JUN-19
Molybdenum (Mo)-Dissolved			<0.000050		mg/L		0.00005	14-JUN-19
Nickel (Ni)-Dissolved			<0.00050		mg/L		0.0005	14-JUN-19
Phosphorus (P)-Dissolved			<0.030		mg/L		0.03	14-JUN-19
Potassium (K)-Dissolved			<0.050		mg/L		0.05	14-JUN-19
Rubidium (Rb)-Dissolved			<0.00020		mg/L		0.0002	14-JUN-19
Selenium (Se)-Dissolved			<0.000050		mg/L		0.00005	14-JUN-19
Silicon (Si)-Dissolved			<0.050		mg/L		0.05	14-JUN-19
Silver (Ag)-Dissolved			<0.000010		mg/L		0.00001	14-JUN-19
Sodium (Na)-Dissolved			<0.050		mg/L		0.05	14-JUN-19
Strontium (Sr)-Dissolved			<0.00010		mg/L		0.0001	14-JUN-19
Sulfur (S)-Dissolved			<0.50		mg/L		0.5	14-JUN-19
Tellurium (Te)-Dissolved			<0.00020		mg/L		0.0002	14-JUN-19
Thallium (Tl)-Dissolved			<0.000010		mg/L		0.00001	14-JUN-19
Thorium (Th)-Dissolved			<0.00010		mg/L		0.0001	14-JUN-19
Tin (Sn)-Dissolved			<0.00010		mg/L		0.0001	14-JUN-19
Titanium (Ti)-Dissolved			<0.00030		mg/L		0.0003	14-JUN-19
Tungsten (W)-Dissolved			<0.00010		mg/L		0.0001	14-JUN-19
Uranium (U)-Dissolved			<0.000010		mg/L		0.00001	14-JUN-19
Vanadium (V)-Dissolved			<0.00050		mg/L		0.0005	14-JUN-19
Zinc (Zn)-Dissolved			<0.0010		mg/L		0.001	14-JUN-19
Zirconium (Zr)-Dissolved			<0.000060		mg/L		0.00006	14-JUN-19
MET-T-CCMS-WP		Water						
Batch	R4676666							
WG3081705-2	LCS							
Aluminum (Al)-Total			102.9		%		80-120	19-JUN-19
Antimony (Sb)-Total			101.3		%		80-120	19-JUN-19



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Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
MET-T-CCMS-WP								
	Water							
Batch	R4676666							
WG3081705-2	LCS							
Arsenic (As)-Total			99.4		%		80-120	19-JUN-19
Barium (Ba)-Total			100.6		%		80-120	19-JUN-19
Beryllium (Be)-Total			93.5		%		80-120	19-JUN-19
Bismuth (Bi)-Total			96.8		%		80-120	19-JUN-19
Boron (B)-Total			84.1		%		80-120	19-JUN-19
Cadmium (Cd)-Total			100.8		%		80-120	19-JUN-19
Calcium (Ca)-Total			98.9		%		80-120	19-JUN-19
Cesium (Cs)-Total			103.1		%		80-120	19-JUN-19
Chromium (Cr)-Total			97.2		%		80-120	19-JUN-19
Cobalt (Co)-Total			96.7		%		80-120	19-JUN-19
Copper (Cu)-Total			97.1		%		80-120	19-JUN-19
Iron (Fe)-Total			96.6		%		80-120	19-JUN-19
Lead (Pb)-Total			99.6		%		80-120	19-JUN-19
Lithium (Li)-Total			96.4		%		80-120	19-JUN-19
Magnesium (Mg)-Total			107.4		%		80-120	19-JUN-19
Manganese (Mn)-Total			100.4		%		80-120	19-JUN-19
Molybdenum (Mo)-Total			99.0		%		80-120	19-JUN-19
Nickel (Ni)-Total			97.1		%		80-120	19-JUN-19
Potassium (K)-Total			101.6		%		80-120	19-JUN-19
Phosphorus (P)-Total			104.0		%		80-120	19-JUN-19
Rubidium (Rb)-Total			100.4		%		80-120	19-JUN-19
Selenium (Se)-Total			102.6		%		80-120	19-JUN-19
Silicon (Si)-Total			103.7		%		80-120	19-JUN-19
Silver (Ag)-Total			98.8		%		80-120	19-JUN-19
Sodium (Na)-Total			96.1		%		80-120	19-JUN-19
Strontium (Sr)-Total			101.9		%		80-120	19-JUN-19
Sulfur (S)-Total			96.8		%		80-120	19-JUN-19
Tellurium (Te)-Total			95.6		%		80-120	19-JUN-19
Thallium (Tl)-Total			99.9		%		80-120	19-JUN-19
Thorium (Th)-Total			98.0		%		80-120	19-JUN-19
Tin (Sn)-Total			99.7		%		80-120	19-JUN-19
Titanium (Ti)-Total			96.4		%		80-120	19-JUN-19
Tungsten (W)-Total			100.6		%		80-120	19-JUN-19
Uranium (U)-Total			103.2		%		80-120	19-JUN-19



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Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
MET-T-CCMS-WP		Water						
Batch	R4676666							
WG3081705-2 LCS								
Vanadium (V)-Total			98.4		%		80-120	19-JUN-19
Zinc (Zn)-Total			97.4		%		80-120	19-JUN-19
Zirconium (Zr)-Total			97.3		%		80-120	19-JUN-19
WG3081705-1 MB								
Aluminum (Al)-Total			<0.0030		mg/L		0.003	19-JUN-19
Antimony (Sb)-Total			<0.00010		mg/L		0.0001	19-JUN-19
Arsenic (As)-Total			<0.00010		mg/L		0.0001	19-JUN-19
Barium (Ba)-Total			<0.00010		mg/L		0.0001	19-JUN-19
Beryllium (Be)-Total			<0.00010		mg/L		0.0001	19-JUN-19
Bismuth (Bi)-Total			<0.000050		mg/L		0.00005	19-JUN-19
Boron (B)-Total			<0.010		mg/L		0.01	19-JUN-19
Cadmium (Cd)-Total			<0.0000050		mg/L		0.000005	19-JUN-19
Calcium (Ca)-Total			<0.050		mg/L		0.05	19-JUN-19
Cesium (Cs)-Total			<0.000010		mg/L		0.00001	19-JUN-19
Chromium (Cr)-Total			<0.00010		mg/L		0.0001	19-JUN-19
Cobalt (Co)-Total			<0.00010		mg/L		0.0001	19-JUN-19
Copper (Cu)-Total			<0.00050		mg/L		0.0005	19-JUN-19
Iron (Fe)-Total			<0.010		mg/L		0.01	19-JUN-19
Lead (Pb)-Total			<0.000050		mg/L		0.00005	19-JUN-19
Lithium (Li)-Total			<0.0010		mg/L		0.001	19-JUN-19
Magnesium (Mg)-Total			<0.0050		mg/L		0.005	19-JUN-19
Manganese (Mn)-Total			<0.00010		mg/L		0.0001	19-JUN-19
Molybdenum (Mo)-Total			<0.000050		mg/L		0.00005	19-JUN-19
Nickel (Ni)-Total			<0.00050		mg/L		0.0005	19-JUN-19
Potassium (K)-Total			<0.050		mg/L		0.05	19-JUN-19
Phosphorus (P)-Total			<0.030		mg/L		0.03	19-JUN-19
Rubidium (Rb)-Total			<0.00020		mg/L		0.0002	19-JUN-19
Selenium (Se)-Total			<0.000050		mg/L		0.00005	19-JUN-19
Silicon (Si)-Total			<0.10		mg/L		0.1	19-JUN-19
Silver (Ag)-Total			<0.000010		mg/L		0.00001	19-JUN-19
Sodium (Na)-Total			<0.050		mg/L		0.05	19-JUN-19
Strontium (Sr)-Total			<0.00020		mg/L		0.0002	19-JUN-19
Sulfur (S)-Total			<0.50		mg/L		0.5	19-JUN-19
Tellurium (Te)-Total			<0.00020		mg/L		0.0002	19-JUN-19



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Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
MET-T-CCMS-WP								
Water								
Batch	R4676666							
WG3081705-1	MB							
Thallium (Tl)-Total			<0.000010		mg/L		0.00001	19-JUN-19
Thorium (Th)-Total			<0.00010		mg/L		0.0001	19-JUN-19
Tin (Sn)-Total			<0.00010		mg/L		0.0001	19-JUN-19
Titanium (Ti)-Total			<0.00030		mg/L		0.0003	19-JUN-19
Tungsten (W)-Total			<0.00010		mg/L		0.0001	19-JUN-19
Uranium (U)-Total			<0.000010		mg/L		0.00001	19-JUN-19
Vanadium (V)-Total			<0.00050		mg/L		0.0005	19-JUN-19
Zinc (Zn)-Total			<0.0030		mg/L		0.003	19-JUN-19
Zirconium (Zr)-Total			<0.00020		mg/L		0.0002	19-JUN-19
NO2-L-IC-N-WP								
Water								
Batch	R4673647							
WG3076575-3	DUP	L2290890-1						
Nitrite (as N)		<0.0010	<0.0010	RPD-NA	mg/L	N/A	20	13-JUN-19
WG3076575-2	LCS							
Nitrite (as N)			101.3		%		90-110	13-JUN-19
WG3076575-1	MB							
Nitrite (as N)			<0.0010		mg/L		0.001	13-JUN-19
WG3076575-4	MS	L2290890-1						
Nitrite (as N)			106.0		%		75-125	13-JUN-19
NO3-L-IC-N-WP								
Water								
Batch	R4673647							
WG3076575-3	DUP	L2290890-1						
Nitrate (as N)		<0.0050	<0.0050	RPD-NA	mg/L	N/A	20	13-JUN-19
WG3076575-2	LCS							
Nitrate (as N)			100.1		%		90-110	13-JUN-19
WG3076575-1	MB							
Nitrate (as N)			<0.0050		mg/L		0.005	13-JUN-19
WG3076575-4	MS	L2290890-1						
Nitrate (as N)			103.1		%		75-125	13-JUN-19
PH-WP								
Water								
Batch	R4669808							
WG3077144-20	DUP	L2290890-8						
pH		8.29	8.31	J	pH units	0.02	0.2	13-JUN-19
WG3077144-12	LCS							
pH			7.37		pH units		7.3-7.5	13-JUN-19
WG3077144-17	LCS							



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Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
PH-WP								
Water								
Batch R4669808								
WG3077144-17 LCS								
pH			7.37		pH units		7.3-7.5	13-JUN-19
SO4-IC-N-WP								
Water								
Batch R4673647								
WG3076575-3 DUP								
Sulfate (SO4)		L2290890-1 77.0	76.6		mg/L	0.6	20	13-JUN-19
WG3076575-2 LCS								
Sulfate (SO4)			100.7		%		90-110	13-JUN-19
WG3076575-1 MB								
Sulfate (SO4)			<0.30		mg/L		0.3	13-JUN-19
WG3076575-4 MS								
Sulfate (SO4)		L2290890-1	101.6		%		75-125	13-JUN-19
TC,EC-QT51-WP								
Water								
Batch R4669890								
WG3076370-4 DUP								
Total Coliforms		L2290890-11 0	0		MPN/100mL	0.0	65	13-JUN-19
Escherichia Coli		0	0		MPN/100mL	0.0	65	13-JUN-19
WG3076370-5 DUP								
Total Coliforms		L2290890-9 0	0		MPN/100mL	0.0	65	13-JUN-19
Escherichia Coli		0	0		MPN/100mL	0.0	65	13-JUN-19
WG3076370-6 DUP								
Total Coliforms		L2290890-4 0	0		MPN/100mL	0.0	65	13-JUN-19
Escherichia Coli		0	0		MPN/100mL	0.0	65	13-JUN-19
WG3076370-7 DUP								
Total Coliforms		L2290890-3 0	0		MPN/100mL	0.0	65	13-JUN-19
Escherichia Coli		0	0		MPN/100mL	0.0	65	13-JUN-19
WG3076370-8 DUP								
Total Coliforms		L2290890-2 0	0		MPN/100mL	0.0	65	13-JUN-19
Escherichia Coli		0	0		MPN/100mL	0.0	65	13-JUN-19
WG3076370-9 DUP								
Total Coliforms		L2290890-1 0	0		MPN/100mL	0.0	65	13-JUN-19
Escherichia Coli		0	0		MPN/100mL	0.0	65	13-JUN-19
WG3076370-1 MB								
Total Coliforms			0		MPN/100mL		1	13-JUN-19
Escherichia Coli			0		MPN/100mL		1	13-JUN-19
WG3076370-2 MB								
Total Coliforms			0		MPN/100mL		1	13-JUN-19

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Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
TC,EC-QT51-WP								
Batch	R4669890							
WG3076370-2 MB								
Escherichia Coli			0		MPN/100mL		1	13-JUN-19
WG3076370-3 MB								
Total Coliforms			0		MPN/100mL		1	13-JUN-19
Escherichia Coli			0		MPN/100mL		1	13-JUN-19
TC,EC10-QT97-WP								
Batch	R4670080							
WG3077524-2 DUP		L2290890-5						
Total Coliforms		<10	<10	RPD-NA	MPN/100mL	N/A	65	13-JUN-19
Escherichia Coli		<10	<10	RPD-NA	MPN/100mL	N/A	65	13-JUN-19
WG3077524-1 MB								
Total Coliforms			<1		MPN/100mL		1	13-JUN-19
Escherichia Coli			<1		MPN/100mL		1	13-JUN-19
TURBIDITY-WP								
Batch	R4670937							
WG3077331-5 LCS								
Turbidity			105.5		%		85-115	15-JUN-19
WG3077331-4 MB								
Turbidity			<0.10		NTU		0.1	15-JUN-19

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Legend:

Limit	ALS Control Limit (Data Quality Objectives)
DUP	Duplicate
RPD	Relative Percent Difference
N/A	Not Available
LCS	Laboratory Control Sample
SRM	Standard Reference Material
MS	Matrix Spike
MSD	Matrix Spike Duplicate
ADE	Average Desorption Efficiency
MB	Method Blank
IRM	Internal Reference Material
CRM	Certified Reference Material
CCV	Continuing Calibration Verification
CVS	Calibration Verification Standard
LCSD	Laboratory Control Sample Duplicate

Sample Parameter Qualifier Definitions:

Qualifier	Description
J	Duplicate results and limits are expressed in terms of absolute difference.
RPD-NA	Relative Percent Difference Not Available due to result(s) being less than detection limit.

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Hold Time Exceedances:

ALS Product Description	Sample ID	Sampling Date	Date Processed	Rec. HT	Actual HT	Units	Qualifier
Physical Tests							
Turbidity							
	1	11-JUN-19 09:40	15-JUN-19 10:00	3	4	days	EHTL
	2	11-JUN-19 11:50	15-JUN-19 10:00	3	4	days	EHT
	3	11-JUN-19 16:20	15-JUN-19 10:00	3	4	days	EHT
	4	11-JUN-19 20:00	15-JUN-19 10:00	3	4	days	EHT
	9	11-JUN-19 08:00	15-JUN-19 10:00	3	4	days	EHTL
	10	11-JUN-19 14:00	15-JUN-19 10:00	3	4	days	EHT
pH							
	1	11-JUN-19 09:40	13-JUN-19 12:00	0.25	50	hours	EHTR-FM
	2	11-JUN-19 11:50	13-JUN-19 12:00	0.25	48	hours	EHTR-FM
	3	11-JUN-19 16:20	13-JUN-19 12:00	0.25	44	hours	EHTR-FM
	4	11-JUN-19 20:00	13-JUN-19 12:00	0.25	40	hours	EHTR-FM
	5	12-JUN-19 13:30	13-JUN-19 12:00	0.25	23	hours	EHTR-FM
	6	12-JUN-19 08:40	13-JUN-19 12:00	0.25	27	hours	EHTR-FM
	7	12-JUN-19 10:20	13-JUN-19 12:00	0.25	26	hours	EHTR-FM
	8	12-JUN-19 09:50	13-JUN-19 12:00	0.25	26	hours	EHTR-FM
	9	11-JUN-19 08:00	13-JUN-19 12:00	0.25	52	hours	EHTR-FM
	10	11-JUN-19 14:00	13-JUN-19 12:00	0.25	46	hours	EHTR-FM
	11	12-JUN-19 08:20	13-JUN-19 12:00	0.25	28	hours	EHTR-FM
Bacteriological Tests							
Total Coliform and E.coli							
	1	11-JUN-19 09:40	13-JUN-19 14:40	30	53	hours	EHTR
	2	11-JUN-19 11:50	13-JUN-19 14:40	30	51	hours	EHTR
	3	11-JUN-19 16:20	13-JUN-19 14:40	30	46	hours	EHTR
	4	11-JUN-19 20:00	13-JUN-19 14:40	30	43	hours	EHTR
	9	11-JUN-19 08:00	13-JUN-19 14:40	30	55	hours	EHTR
Total and E. coli, 1:10 dilution by QT97							
	6	12-JUN-19 08:40	13-JUN-19 17:35	30	33	hours	EHTL
	7	12-JUN-19 10:20	13-JUN-19 17:35	30	31	hours	EHTL
	8	12-JUN-19 09:50	13-JUN-19 17:35	30	32	hours	EHTL

Legend & Qualifier Definitions:

- EHTR-FM: Exceeded ALS recommended hold time prior to sample receipt. Field Measurement recommended.
- EHTR: Exceeded ALS recommended hold time prior to sample receipt.
- EHTL: Exceeded ALS recommended hold time prior to analysis. Sample was received less than 24 hours prior to expiry.
- EHT: Exceeded ALS recommended hold time prior to analysis.
- Rec. HT: ALS recommended hold time (see units).

Notes*:

Where actual sampling date is not provided to ALS, the date (& time) of receipt is used for calculation purposes.
 Where actual sampling time is not provided to ALS, the earlier of 12 noon on the sampling date or the time (& date) of receipt is used for calculation purposes. Samples for L2290890 were received on 13-JUN-19 10:10.

ALS recommended hold times may vary by province. They are assigned to meet known provincial and/or federal government requirements. In the absence of regulatory hold times, ALS establishes recommendations based on guidelines published by the US EPA, APHA Standard Methods, or Environment Canada (where available). For more information, please contact ALS.

The ALS Quality Control Report is provided to ALS clients upon request. ALS includes comprehensive QC checks with every analysis to ensure our high standards of quality are met. Each QC result has a known or expected target value, which is compared against pre-determined data quality objectives to provide confidence in the accuracy of associated test results.

Please note that this report may contain QC results from anonymous Sample Duplicates and Matrix Spikes that do not originate from this Work Order.



Chain of Custody (COC) / Analytical Request Form

Canada Toll Free: 1 800 668 9878

www.alsglobal.com



L2290890-COFC

COC Number: 17-747657

Page (of)

Report To Contact and company name below will appear on the final report Company: KGS Group Contact: Paul Lindell Phone: 204-896-1209 Company address below will appear on the final report Street: 865 Waverley City/Province: WPA, MB Postal Code: R3T 5P4		Report Select Report Format: <input checked="" type="checkbox"/> EXCEL <input type="checkbox"/> EDD (DIGITAL) Quality Control (QC) Report with Report <input type="checkbox"/> YES <input type="checkbox"/> NO <input type="checkbox"/> Compare Results to Criteria on Report - provide details below if box checked Select Distribution: <input checked="" type="checkbox"/> EMAIL <input type="checkbox"/> MAIL <input type="checkbox"/> FAX Email 1 or Fax: plindell@kgsgruop.com Email 2: softman@kgsgruop.com Email 3:		Select service Level Below - Contact your AM to confirm all E&P TATs (surcharges may apply) Regular [R] <input checked="" type="checkbox"/> Standard TAT if received by 3 pm - business days - no surcharges apply EMERGENCY 4 day [P4-20%] <input type="checkbox"/> 1 Business day [E - 100%] <input type="checkbox"/> 3 day [P3-25%] <input type="checkbox"/> Same Day, Weekend or Statutory holiday [E2 -200% (Laboratory opening fees may apply)] <input type="checkbox"/> 2 day [P2-50%] <input type="checkbox"/> Date and Time Required for all E&P TATs: dd-mmm-yy hh:mm For tests that can not be performed according to the service level selected, you will be contacted.																																																																																																																																																																																																												
Invoice To Same as Report To <input type="checkbox"/> YES <input type="checkbox"/> NO Copy of Invoice with Report <input type="checkbox"/> YES <input type="checkbox"/> NO		Invoice Distribution Select Invoice Distribution: <input type="checkbox"/> EMAIL <input type="checkbox"/> MAIL <input type="checkbox"/> FAX Email 1 or Fax: payable@kgsgruop.com Email 2:		Analysis Request Indicate Filtered (F), Preserved (P) or Filtered and Preserved (F/P) below <table border="1"> <tr> <td rowspan="10" style="writing-mode: vertical-rl; transform: rotate(180deg);">NUMBER OF CONTAINERS</td> <td>ROU4W-Met-5L</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td rowspan="10" style="writing-mode: vertical-rl; transform: rotate(180deg);">SAMPLES ON HOLD</td> <td rowspan="10" style="writing-mode: vertical-rl; transform: rotate(180deg);">SUSPECTED HAZARD (see Special Instructions)</td> </tr> <tr> <td>TC-EU-QT57</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>Metals-T8tel</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> </table>		NUMBER OF CONTAINERS	ROU4W-Met-5L																				SAMPLES ON HOLD	SUSPECTED HAZARD (see Special Instructions)	TC-EU-QT57																				Metals-T8tel																																																																																																																																																															
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KGS Group Consultants (Winnipeg)
ATTN: ERIC LEVAY
865 Waverly Street - 3rd Floor
Winnipeg MB R3T 5P4

Date Received: 28-SEP-19
Report Date: 30-SEP-19 10:25 (MT)
Version: DRAFT

Client Phone: 204-896-1209

Certificate of Analysis

Lab Work Order #: L2356084
Project P.O. #: NOT SUBMITTED
Job Reference: 18-0300-05
C of C Numbers:
Legal Site Desc:

DRAFT

Judy Dalmaier
Account Manager

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ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2356084-1 SEUTINEL WELL #2 Sampled By: CLIENT on 27-SEP-19 @ 10:50 Matrix: WATER Total Coliform and E.coli Total Coliforms Escherichia Coli ROU4W Dissolved	 4 0	 	 0 0	 MPN/100mL MPN/100mL	 	 28-SEP-19 28-SEP-19	 R4850289 R4850289
L2356084-2 SEUTINEL WELL #3 Sampled By: CLIENT on 27-SEP-19 @ 14:50 Matrix: WATER Total Coliform and E.coli Total Coliforms Escherichia Coli ROU4W Dissolved	 6 0	 	 0 0	 MPN/100mL MPN/100mL	 	 28-SEP-19 28-SEP-19	 R4850289 R4850289
<div style="position: absolute; top: 50%; left: 50%; transform: translate(-50%, -50%) rotate(-45deg); opacity: 0.3; font-size: 100px; pointer-events: none;"> DRAFT </div>							

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

Reference Information

Test Method References:

ALS Test Code	Matrix	Test Description	Method Reference**
TC,EC-QT51-WP	Water	Total Coliform and E.coli	APHA 9223B QT51

This analysis is carried out using procedures adapted from APHA Method 9223B "Enzyme Substrate Coliform Test". E. coli and Total Coliform are determined simultaneously. The sample is mixed with a mixture of hydrolyzable substrates and then sealed in a 51-well packet. The packet is incubated at 35.0 – 0.5°C for 18 or 24 hours and then the number of wells exhibiting positive responses are counted. The final results are obtained by comparing the number of positive responses to a probability table.

** ALS test methods may incorporate modifications from specified reference methods to improve performance.

The last two letters of the above test code(s) indicate the laboratory that performed analytical analysis for that test. Refer to the list below:

Laboratory Definition Code	Laboratory Location
WP	ALS ENVIRONMENTAL - WINNIPEG, MANITOBA, CANADA

Chain of Custody Numbers:

GLOSSARY OF REPORT TERMS

Surrogates are compounds that are similar in behaviour to target analyte(s), but that do not normally occur in environmental samples. For applicable tests, surrogates are added to samples prior to analysis as a check on recovery. In reports that display the D.L. column, laboratory objectives for surrogates are listed there.

*mg/kg - milligrams per kilogram based on dry weight of sample
mg/kg wwt - milligrams per kilogram based on wet weight of sample
mg/kg lwt - milligrams per kilogram based on lipid-adjusted weight
mg/L - unit of concentration based on volume, parts per million.*

< - Less than.

D.L. - The reporting limit.

N/A - Result not available. Refer to qualifier code and definition for explanation.

Test results reported relate only to the samples as received by the laboratory.

UNLESS OTHERWISE STATED, ALL SAMPLES WERE RECEIVED IN ACCEPTABLE CONDITION.

Analytical results in unsigned test reports with the DRAFT watermark are subject to change, pending final QC review.



Quality Control Report

Workorder: L2356084

Report Date: 30-SEP-19

Page 1 of 2

Client: KGS Group Consultants (Winnipeg)
865 Waverly Street - 3rd Floor
Winnipeg MB R3T 5P4

Contact: ERIC LEVAY

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
TC,EC-QT51-WP								
	Water							
Batch	R4850289							
WG3176010-2	DUP	L2356084-1						
Total Coliforms		4	2	DUP-H	MPN/100mL	2	2	28-SEP-19
Escherichia Coli		0	0		MPN/100mL	0.0	65	28-SEP-19
WG3176010-3	DUP	L2356084-2						
Total Coliforms		6	5		MPN/100mL	18	65	28-SEP-19
Escherichia Coli		0	0		MPN/100mL	0.0	65	28-SEP-19
WG3176010-1	MB							
Total Coliforms			0		MPN/100mL		1	28-SEP-19
Escherichia Coli			0		MPN/100mL		1	28-SEP-19

DRAFT

Quality Control Report

Workorder: L2356084

Report Date: 30-SEP-19

Page 2 of 2

Legend:

Limit	ALS Control Limit (Data Quality Objectives)
DUP	Duplicate
RPD	Relative Percent Difference
N/A	Not Available
LCS	Laboratory Control Sample
SRM	Standard Reference Material
MS	Matrix Spike
MSD	Matrix Spike Duplicate
ADE	Average Desorption Efficiency
MB	Method Blank
IRM	Internal Reference Material
CRM	Certified Reference Material
CCV	Continuing Calibration Verification
CVS	Calibration Verification Standard
LCSD	Laboratory Control Sample Duplicate

Sample Parameter Qualifier Definitions:

Qualifier	Description
-----------	-------------

DUP-H	Duplicate results outside ALS DQO, due to sample heterogeneity.
-------	---

Hold Time Exceedances:

All test results reported with this submission were conducted within ALS recommended hold times.

ALS recommended hold times may vary by province. They are assigned to meet known provincial and/or federal government requirements. In the absence of regulatory hold times, ALS establishes recommendations based on guidelines published by the US EPA, APHA Standard Methods, or Environment Canada (where available). For more information, please contact ALS.

The ALS Quality Control Report is provided to ALS clients upon request. ALS includes comprehensive QC checks with every analysis to ensure our high standards of quality are met. Each QC result has a known or expected target value, which is compared against pre-determined data quality objectives to provide confidence in the accuracy of associated test results.

Please note that this report may contain QC results from anonymous Sample Duplicates and Matrix Spikes that do not originate from this Work Order.



KGS Group Consultants (Winnipeg)
ATTN: PAUL LINDELL
865 Waverly Street - 3rd Floor
Winnipeg MB R3T 5P4

Date Received: 24-OCT-19
Report Date: 07-NOV-19 10:41 (MT)
Version: FINAL

Client Phone: 204-896-1209

Certificate of Analysis

Lab Work Order #: L2371438
Project P.O. #: NOT SUBMITTED
Job Reference: 18-0300-005
C of C Numbers:
Legal Site Desc:

Comments: Note: Ground Water samples Frac -2 &-3 were too turbid to run for TC,EC-QT51 - had to do 1:10 Dilution and run by TC,EC10-QT97-WP. Frac -4 was still too turbid after 1:10 dilution and had to be run by multiple serial diultions to End Point (TC,EC-QT97-ENDPT)

Hua Wo
Chemistry Laboratory Manager

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ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2371438-1 TH19-KGS-19							
Sampled By: CLIENT on 23-OCT-19 @ 16:40							
Matrix: GW							
ROU4W Dissolved							
Alkalinity, Bicarbonate							
Bicarbonate (HCO3)	620		1.2	mg/L		29-OCT-19	
Alkalinity, Carbonate							
Carbonate (CO3)	3.48		0.60	mg/L		29-OCT-19	
Alkalinity, Hydroxide							
Hydroxide (OH)	<0.34		0.34	mg/L		29-OCT-19	
Alkalinity, Total (as CaCO3)							
Alkalinity, Total (as CaCO3)	514		1.0	mg/L		28-OCT-19	R4888741
Chloride in Water by IC (Low Level)							
Chloride (Cl)	4.32		0.10	mg/L		25-OCT-19	R4886074
Conductivity							
Conductivity	841		1.0	umhos/cm		28-OCT-19	R4888741
Dissolved Metals in Water by CRC ICPMS							
Dissolved Metals Filtration Location	FIELD					31-OCT-19	R4891430
Aluminum (Al)-Dissolved	0.0060		0.0010	mg/L	31-OCT-19	01-NOV-19	R4898393
Antimony (Sb)-Dissolved	<0.00010		0.00010	mg/L	31-OCT-19	01-NOV-19	R4898393
Arsenic (As)-Dissolved	0.00629		0.00010	mg/L	31-OCT-19	01-NOV-19	R4898393
Barium (Ba)-Dissolved	0.0983		0.00010	mg/L	31-OCT-19	01-NOV-19	R4898393
Beryllium (Be)-Dissolved	<0.00010		0.00010	mg/L	31-OCT-19	01-NOV-19	R4898393
Bismuth (Bi)-Dissolved	<0.000050		0.000050	mg/L	31-OCT-19	01-NOV-19	R4898393
Boron (B)-Dissolved	0.097		0.010	mg/L	31-OCT-19	01-NOV-19	R4898393
Cadmium (Cd)-Dissolved	<0.0000050		0.0000050	mg/L	31-OCT-19	01-NOV-19	R4898393
Calcium (Ca)-Dissolved	34.4		0.050	mg/L	31-OCT-19	01-NOV-19	R4898393
Cesium (Cs)-Dissolved	<0.000010		0.000010	mg/L	31-OCT-19	01-NOV-19	R4898393
Chromium (Cr)-Dissolved	<0.00010		0.00010	mg/L	31-OCT-19	01-NOV-19	R4898393
Cobalt (Co)-Dissolved	0.00018		0.00010	mg/L	31-OCT-19	01-NOV-19	R4898393
Copper (Cu)-Dissolved	<0.00020		0.00020	mg/L	31-OCT-19	01-NOV-19	R4898393
Iron (Fe)-Dissolved	0.018		0.010	mg/L	31-OCT-19	01-NOV-19	R4898393
Lead (Pb)-Dissolved	<0.000050		0.000050	mg/L	31-OCT-19	01-NOV-19	R4898393
Lithium (Li)-Dissolved	0.0331		0.0010	mg/L	31-OCT-19	01-NOV-19	R4898393
Magnesium (Mg)-Dissolved	76.2		0.0050	mg/L	31-OCT-19	01-NOV-19	R4898393
Manganese (Mn)-Dissolved	0.189		0.00010	mg/L	31-OCT-19	01-NOV-19	R4898393
Molybdenum (Mo)-Dissolved	0.00790		0.000050	mg/L	31-OCT-19	01-NOV-19	R4898393
Nickel (Ni)-Dissolved	0.00089		0.00050	mg/L	31-OCT-19	01-NOV-19	R4898393
Phosphorus (P)-Dissolved	<0.030		0.030	mg/L	31-OCT-19	01-NOV-19	R4898393
Potassium (K)-Dissolved	3.10		0.050	mg/L	31-OCT-19	01-NOV-19	R4898393
Rubidium (Rb)-Dissolved	0.00167		0.00020	mg/L	31-OCT-19	01-NOV-19	R4898393
Selenium (Se)-Dissolved	0.000101		0.000050	mg/L	31-OCT-19	01-NOV-19	R4898393
Silicon (Si)-Dissolved	7.92		0.050	mg/L	31-OCT-19	01-NOV-19	R4898393
Silver (Ag)-Dissolved	<0.000010		0.000010	mg/L	31-OCT-19	01-NOV-19	R4898393
Sodium (Na)-Dissolved	43.1		0.050	mg/L	31-OCT-19	01-NOV-19	R4898393
Strontium (Sr)-Dissolved	0.511		0.00010	mg/L	31-OCT-19	01-NOV-19	R4898393
Sulfur (S)-Dissolved	24.7		0.50	mg/L	31-OCT-19	01-NOV-19	R4898393
Tellurium (Te)-Dissolved	<0.00020		0.00020	mg/L	31-OCT-19	01-NOV-19	R4898393
Thallium (Tl)-Dissolved	<0.000010		0.000010	mg/L	31-OCT-19	01-NOV-19	R4898393
Thorium (Th)-Dissolved	<0.00010		0.00010	mg/L	31-OCT-19	01-NOV-19	R4898393
Tin (Sn)-Dissolved	0.00092		0.00010	mg/L	31-OCT-19	01-NOV-19	R4898393
Titanium (Ti)-Dissolved	<0.00030		0.00030	mg/L	31-OCT-19	01-NOV-19	R4898393
Tungsten (W)-Dissolved	0.0172		0.00010	mg/L	31-OCT-19	01-NOV-19	R4898393
Uranium (U)-Dissolved	0.00186		0.000010	mg/L	31-OCT-19	01-NOV-19	R4898393
Vanadium (V)-Dissolved	<0.00050		0.00050	mg/L	31-OCT-19	01-NOV-19	R4898393

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2371438-1 TH19-KGS-19 Sampled By: CLIENT on 23-OCT-19 @ 16:40 Matrix: GW							
Dissolved Metals in Water by CRC ICPMS							
Zinc (Zn)-Dissolved	0.0014		0.0010	mg/L	31-OCT-19	01-NOV-19	R4898393
Zirconium (Zr)-Dissolved	0.00023		0.00020	mg/L	31-OCT-19	01-NOV-19	R4898393
Fluoride in Water by IC							
Fluoride (F)	0.325		0.020	mg/L		25-OCT-19	R4886074
Hardness Calculated							
Hardness (as CaCO3)	400		0.20	mg/L		05-NOV-19	
Nitrate in Water by IC (Low Level)							
Nitrate (as N)	0.136		0.0050	mg/L		25-OCT-19	R4886074
Nitrate+Nitrite							
Nitrate and Nitrite as N	0.140		0.0051	mg/L		29-OCT-19	
Nitrite in Water by IC (Low Level)							
Nitrite (as N)	0.0042		0.0010	mg/L		25-OCT-19	R4886074
Sulfate in Water by IC							
Sulfate (SO4)	71.4		0.30	mg/L		25-OCT-19	R4886074
TDS calculated							
TDS (Calculated)	541		5.0	mg/L		05-NOV-19	
Turbidity							
Turbidity	37.7		0.10	NTU		24-OCT-19	R4883808
pH							
pH	8.30		0.10	pH units		28-OCT-19	R4888741
L2371438-2 TH19-KGS-18 Sampled By: CLIENT on 23-OCT-19 @ 11:45 Matrix: GW							
ROU4W Dissolved							
Alkalinity, Bicarbonate							
Bicarbonate (HCO3)	823		1.2	mg/L		29-OCT-19	
Alkalinity, Carbonate							
Carbonate (CO3)	<0.60		0.60	mg/L		29-OCT-19	
Alkalinity, Hydroxide							
Hydroxide (OH)	<0.34		0.34	mg/L		29-OCT-19	
Alkalinity, Total (as CaCO3)							
Alkalinity, Total (as CaCO3)	675		1.0	mg/L		28-OCT-19	R4888741
Chloride in Water by IC (Low Level)							
Chloride (Cl)	0.22		0.20	mg/L		25-OCT-19	R4886074
Conductivity							
Conductivity	913		1.0	umhos/cm		28-OCT-19	R4888741
Dissolved Metals in Water by CRC ICPMS							
Dissolved Metals Filtration Location							
Aluminum (Al)-Dissolved	0.0100		0.0010	mg/L	31-OCT-19	01-NOV-19	R4898393
Antimony (Sb)-Dissolved	<0.00010		0.00010	mg/L	31-OCT-19	01-NOV-19	R4898393
Arsenic (As)-Dissolved	0.00099		0.00010	mg/L	31-OCT-19	01-NOV-19	R4898393
Barium (Ba)-Dissolved	0.154		0.00010	mg/L	31-OCT-19	01-NOV-19	R4898393
Beryllium (Be)-Dissolved	<0.00010		0.00010	mg/L	31-OCT-19	01-NOV-19	R4898393
Bismuth (Bi)-Dissolved	<0.000050		0.000050	mg/L	31-OCT-19	01-NOV-19	R4898393
Boron (B)-Dissolved	0.060		0.010	mg/L	31-OCT-19	01-NOV-19	R4898393
Cadmium (Cd)-Dissolved	<0.0000050		0.0000050	mg/L	31-OCT-19	01-NOV-19	R4898393
Calcium (Ca)-Dissolved	119		0.050	mg/L	31-OCT-19	01-NOV-19	R4898393
Cesium (Cs)-Dissolved	0.000010		0.000010	mg/L	31-OCT-19	01-NOV-19	R4898393
Chromium (Cr)-Dissolved	<0.00010		0.00010	mg/L	31-OCT-19	01-NOV-19	R4898393
Cobalt (Co)-Dissolved	0.00073		0.00010	mg/L	31-OCT-19	01-NOV-19	R4898393
Copper (Cu)-Dissolved	0.00035		0.00020	mg/L	31-OCT-19	01-NOV-19	R4898393

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2371438-2 TH19-KGS-18 Sampled By: CLIENT on 23-OCT-19 @ 11:45 Matrix: GW							
Dissolved Metals in Water by CRC ICPMS							
Iron (Fe)-Dissolved	1.71		0.010	mg/L	31-OCT-19	01-NOV-19	R4898393
Lead (Pb)-Dissolved	0.000134		0.000050	mg/L	31-OCT-19	01-NOV-19	R4898393
Lithium (Li)-Dissolved	0.0323		0.0010	mg/L	31-OCT-19	01-NOV-19	R4898393
Magnesium (Mg)-Dissolved	73.3		0.0050	mg/L	31-OCT-19	01-NOV-19	R4898393
Manganese (Mn)-Dissolved	0.0643		0.00010	mg/L	31-OCT-19	01-NOV-19	R4898393
Molybdenum (Mo)-Dissolved	0.000785		0.000050	mg/L	31-OCT-19	01-NOV-19	R4898393
Nickel (Ni)-Dissolved	0.00177		0.00050	mg/L	31-OCT-19	01-NOV-19	R4898393
Phosphorus (P)-Dissolved	<0.030		0.030	mg/L	31-OCT-19	01-NOV-19	R4898393
Potassium (K)-Dissolved	1.98		0.050	mg/L	31-OCT-19	01-NOV-19	R4898393
Rubidium (Rb)-Dissolved	0.00147		0.00020	mg/L	31-OCT-19	01-NOV-19	R4898393
Selenium (Se)-Dissolved	0.000095		0.000050	mg/L	31-OCT-19	01-NOV-19	R4898393
Silicon (Si)-Dissolved	9.86		0.050	mg/L	31-OCT-19	01-NOV-19	R4898393
Silver (Ag)-Dissolved	0.000022		0.000010	mg/L	31-OCT-19	01-NOV-19	R4898393
Sodium (Na)-Dissolved	11.2		0.050	mg/L	31-OCT-19	01-NOV-19	R4898393
Strontium (Sr)-Dissolved	0.305		0.00010	mg/L	31-OCT-19	01-NOV-19	R4898393
Sulfur (S)-Dissolved	<0.50		0.50	mg/L	31-OCT-19	01-NOV-19	R4898393
Tellurium (Te)-Dissolved	<0.00020		0.00020	mg/L	31-OCT-19	01-NOV-19	R4898393
Thallium (Tl)-Dissolved	<0.000010		0.000010	mg/L	31-OCT-19	01-NOV-19	R4898393
Thorium (Th)-Dissolved	<0.00010		0.00010	mg/L	31-OCT-19	01-NOV-19	R4898393
Tin (Sn)-Dissolved	<0.00010		0.00010	mg/L	31-OCT-19	01-NOV-19	R4898393
Titanium (Ti)-Dissolved	0.00047		0.00030	mg/L	31-OCT-19	01-NOV-19	R4898393
Tungsten (W)-Dissolved	<0.00010		0.00010	mg/L	31-OCT-19	01-NOV-19	R4898393
Uranium (U)-Dissolved	0.000294		0.000010	mg/L	31-OCT-19	01-NOV-19	R4898393
Vanadium (V)-Dissolved	<0.00050		0.00050	mg/L	31-OCT-19	01-NOV-19	R4898393
Zinc (Zn)-Dissolved	0.0014		0.0010	mg/L	31-OCT-19	01-NOV-19	R4898393
Zirconium (Zr)-Dissolved	<0.00020		0.00020	mg/L	31-OCT-19	01-NOV-19	R4898393
Fluoride in Water by IC							
Fluoride (F)	0.123		0.040	mg/L		25-OCT-19	R4886074
Hardness Calculated							
Hardness (as CaCO3)	600		0.20	mg/L		05-NOV-19	
Nitrate in Water by IC (Low Level)							
Nitrate (as N)	0.011		0.010	mg/L		25-OCT-19	R4886074
Nitrate+Nitrite							
Nitrate and Nitrite as N	0.011		0.010	mg/L		29-OCT-19	
Nitrite in Water by IC (Low Level)							
Nitrite (as N)	<0.0020	DLM	0.0020	mg/L		25-OCT-19	R4886074
Sulfate in Water by IC							
Sulfate (SO4)	<0.60	DLM	0.60	mg/L		25-OCT-19	R4886074
TDS calculated							
TDS (Calculated)	611		5.0	mg/L		05-NOV-19	
Turbidity							
Turbidity	2370		0.10	NTU		24-OCT-19	R4883808
pH							
pH	7.86		0.10	pH units		28-OCT-19	R4888741
L2371438-3 TH19-KGS-17 Sampled By: CLIENT on 23-OCT-19 @ 12:40 Matrix: GW							
ROU4W Dissolved							
Alkalinity, Bicarbonate							
Bicarbonate (HCO3)	446		1.2	mg/L		29-OCT-19	
Alkalinity, Carbonate							

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2371438-3 TH19-KGS-17							
Sampled By: CLIENT on 23-OCT-19 @ 12:40							
Matrix: GW							
Alkalinity, Carbonate							
Carbonate (CO3)	<0.60		0.60	mg/L		29-OCT-19	
Alkalinity, Hydroxide							
Hydroxide (OH)	<0.34		0.34	mg/L		29-OCT-19	
Alkalinity, Total (as CaCO3)							
Alkalinity, Total (as CaCO3)	365		1.0	mg/L		28-OCT-19	R4888741
Chloride in Water by IC (Low Level)							
Chloride (Cl)	0.92		0.10	mg/L		25-OCT-19	R4886074
Conductivity							
Conductivity	591		1.0	umhos/cm		28-OCT-19	R4888741
Dissolved Metals in Water by CRC ICPMS							
Dissolved Metals Filtration Location	FIELD					31-OCT-19	R4891430
Aluminum (Al)-Dissolved	0.0015		0.0010	mg/L	31-OCT-19	01-NOV-19	R4898393
Antimony (Sb)-Dissolved	<0.00010		0.00010	mg/L	31-OCT-19	01-NOV-19	R4898393
Arsenic (As)-Dissolved	0.00137		0.00010	mg/L	31-OCT-19	01-NOV-19	R4898393
Barium (Ba)-Dissolved	0.0428		0.00010	mg/L	31-OCT-19	01-NOV-19	R4898393
Beryllium (Be)-Dissolved	<0.00010		0.00010	mg/L	31-OCT-19	01-NOV-19	R4898393
Bismuth (Bi)-Dissolved	<0.000050		0.000050	mg/L	31-OCT-19	01-NOV-19	R4898393
Boron (B)-Dissolved	0.082		0.010	mg/L	31-OCT-19	01-NOV-19	R4898393
Cadmium (Cd)-Dissolved	<0.000050		0.000050	mg/L	31-OCT-19	01-NOV-19	R4898393
Calcium (Ca)-Dissolved	53.9		0.050	mg/L	31-OCT-19	01-NOV-19	R4898393
Cesium (Cs)-Dissolved	<0.000010		0.000010	mg/L	31-OCT-19	01-NOV-19	R4898393
Chromium (Cr)-Dissolved	<0.00010		0.00010	mg/L	31-OCT-19	01-NOV-19	R4898393
Cobalt (Co)-Dissolved	0.00011		0.00010	mg/L	31-OCT-19	01-NOV-19	R4898393
Copper (Cu)-Dissolved	0.00033		0.00020	mg/L	31-OCT-19	01-NOV-19	R4898393
Iron (Fe)-Dissolved	0.159		0.010	mg/L	31-OCT-19	01-NOV-19	R4898393
Lead (Pb)-Dissolved	<0.000050		0.000050	mg/L	31-OCT-19	01-NOV-19	R4898393
Lithium (Li)-Dissolved	0.0174		0.0010	mg/L	31-OCT-19	01-NOV-19	R4898393
Magnesium (Mg)-Dissolved	52.2		0.0050	mg/L	31-OCT-19	01-NOV-19	R4898393
Manganese (Mn)-Dissolved	0.0405		0.00010	mg/L	31-OCT-19	01-NOV-19	R4898393
Molybdenum (Mo)-Dissolved	0.000591		0.000050	mg/L	31-OCT-19	01-NOV-19	R4898393
Nickel (Ni)-Dissolved	<0.00050		0.00050	mg/L	31-OCT-19	01-NOV-19	R4898393
Phosphorus (P)-Dissolved	<0.030		0.030	mg/L	31-OCT-19	01-NOV-19	R4898393
Potassium (K)-Dissolved	3.18		0.050	mg/L	31-OCT-19	01-NOV-19	R4898393
Rubidium (Rb)-Dissolved	0.00192		0.00020	mg/L	31-OCT-19	01-NOV-19	R4898393
Selenium (Se)-Dissolved	<0.000050		0.000050	mg/L	31-OCT-19	01-NOV-19	R4898393
Silicon (Si)-Dissolved	4.35		0.050	mg/L	31-OCT-19	01-NOV-19	R4898393
Silver (Ag)-Dissolved	<0.000010		0.000010	mg/L	31-OCT-19	01-NOV-19	R4898393
Sodium (Na)-Dissolved	9.11		0.050	mg/L	31-OCT-19	01-NOV-19	R4898393
Strontium (Sr)-Dissolved	0.166		0.00010	mg/L	31-OCT-19	01-NOV-19	R4898393
Sulfur (S)-Dissolved	13.6		0.50	mg/L	31-OCT-19	01-NOV-19	R4898393
Tellurium (Te)-Dissolved	<0.00020		0.00020	mg/L	31-OCT-19	01-NOV-19	R4898393
Thallium (Tl)-Dissolved	<0.000010		0.000010	mg/L	31-OCT-19	01-NOV-19	R4898393
Thorium (Th)-Dissolved	<0.00010		0.00010	mg/L	31-OCT-19	01-NOV-19	R4898393
Tin (Sn)-Dissolved	<0.00010		0.00010	mg/L	31-OCT-19	01-NOV-19	R4898393
Titanium (Ti)-Dissolved	<0.00030		0.00030	mg/L	31-OCT-19	01-NOV-19	R4898393
Tungsten (W)-Dissolved	0.00012		0.00010	mg/L	31-OCT-19	01-NOV-19	R4898393
Uranium (U)-Dissolved	0.000137		0.000010	mg/L	31-OCT-19	01-NOV-19	R4898393
Vanadium (V)-Dissolved	<0.00050		0.00050	mg/L	31-OCT-19	01-NOV-19	R4898393
Zinc (Zn)-Dissolved	<0.0010		0.0010	mg/L	31-OCT-19	01-NOV-19	R4898393
Zirconium (Zr)-Dissolved	<0.00020		0.00020	mg/L	31-OCT-19	01-NOV-19	R4898393
Fluoride in Water by IC							
Fluoride (F)	0.237		0.020	mg/L		25-OCT-19	R4886074

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2371438-3 TH19-KGS-17 Sampled By: CLIENT on 23-OCT-19 @ 12:40 Matrix: GW							
Hardness Calculated							
Hardness (as CaCO3)	350		0.20	mg/L		05-NOV-19	
Nitrate in Water by IC (Low Level)							
Nitrate (as N)	0.0067		0.0050	mg/L		25-OCT-19	R4886074
Nitrate+Nitrite							
Nitrate and Nitrite as N	0.0080		0.0051	mg/L		29-OCT-19	
Nitrite in Water by IC (Low Level)							
Nitrite (as N)	0.0013		0.0010	mg/L		25-OCT-19	R4886074
Sulfate in Water by IC							
Sulfate (SO4)	40.6		0.30	mg/L		25-OCT-19	R4886074
TDS calculated							
TDS (Calculated)	379		5.0	mg/L		05-NOV-19	
Turbidity							
Turbidity	2000		0.10	NTU		24-OCT-19	R4883808
pH							
pH	8.23		0.10	pH units		28-OCT-19	R4888741
L2371438-4 TH19-KGS-12 Sampled By: CLIENT on 23-OCT-19 @ 16:15 Matrix: GW							
ROU4W Dissolved							
Alkalinity, Bicarbonate							
Bicarbonate (HCO3)	567		1.2	mg/L		29-OCT-19	
Alkalinity, Carbonate							
Carbonate (CO3)	6.36		0.60	mg/L		29-OCT-19	
Alkalinity, Hydroxide							
Hydroxide (OH)	<0.34		0.34	mg/L		29-OCT-19	
Alkalinity, Total (as CaCO3)							
Alkalinity, Total (as CaCO3)	475		1.0	mg/L		28-OCT-19	R4888741
Chloride in Water by IC (Low Level)							
Chloride (Cl)	5.27		0.10	mg/L		25-OCT-19	R4886074
Conductivity							
Conductivity	715		1.0	umhos/cm		28-OCT-19	R4888741
Dissolved Metals in Water by CRC ICPMS							
Dissolved Metals Filtration Location	FIELD					31-OCT-19	R4891430
Aluminum (Al)-Dissolved	0.0057		0.0010	mg/L	31-OCT-19	01-NOV-19	R4898393
Antimony (Sb)-Dissolved	0.00063		0.00010	mg/L	31-OCT-19	01-NOV-19	R4898393
Arsenic (As)-Dissolved	0.00109		0.00010	mg/L	31-OCT-19	01-NOV-19	R4898393
Barium (Ba)-Dissolved	0.0919		0.00010	mg/L	31-OCT-19	01-NOV-19	R4898393
Beryllium (Be)-Dissolved	<0.00010		0.00010	mg/L	31-OCT-19	01-NOV-19	R4898393
Bismuth (Bi)-Dissolved	<0.000050		0.000050	mg/L	31-OCT-19	01-NOV-19	R4898393
Boron (B)-Dissolved	0.109		0.010	mg/L	31-OCT-19	01-NOV-19	R4898393
Cadmium (Cd)-Dissolved	<0.0000050		0.0000050	mg/L	31-OCT-19	01-NOV-19	R4898393
Calcium (Ca)-Dissolved	37.5		0.050	mg/L	31-OCT-19	01-NOV-19	R4898393
Cesium (Cs)-Dissolved	<0.000010		0.000010	mg/L	31-OCT-19	01-NOV-19	R4898393
Chromium (Cr)-Dissolved	0.00017		0.00010	mg/L	31-OCT-19	01-NOV-19	R4898393
Cobalt (Co)-Dissolved	0.00071		0.00010	mg/L	31-OCT-19	01-NOV-19	R4898393
Copper (Cu)-Dissolved	0.00058		0.00020	mg/L	31-OCT-19	01-NOV-19	R4898393
Iron (Fe)-Dissolved	0.422		0.010	mg/L	31-OCT-19	01-NOV-19	R4898393
Lead (Pb)-Dissolved	<0.000050		0.000050	mg/L	31-OCT-19	01-NOV-19	R4898393
Lithium (Li)-Dissolved	0.0327		0.0010	mg/L	31-OCT-19	01-NOV-19	R4898393
Magnesium (Mg)-Dissolved	57.9		0.0050	mg/L	31-OCT-19	01-NOV-19	R4898393
Manganese (Mn)-Dissolved	0.0686		0.00010	mg/L	31-OCT-19	01-NOV-19	R4898393

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2371438-4 TH19-KGS-12							
Sampled By: CLIENT on 23-OCT-19 @ 16:15							
Matrix: GW							
Dissolved Metals in Water by CRC ICPMS							
Molybdenum (Mo)-Dissolved	0.0470		0.000050	mg/L	31-OCT-19	01-NOV-19	R4898393
Nickel (Ni)-Dissolved	0.00573		0.00050	mg/L	31-OCT-19	01-NOV-19	R4898393
Phosphorus (P)-Dissolved	<0.030		0.030	mg/L	31-OCT-19	01-NOV-19	R4898393
Potassium (K)-Dissolved	4.57		0.050	mg/L	31-OCT-19	01-NOV-19	R4898393
Rubidium (Rb)-Dissolved	0.00213		0.00020	mg/L	31-OCT-19	01-NOV-19	R4898393
Selenium (Se)-Dissolved	0.000098		0.000050	mg/L	31-OCT-19	01-NOV-19	R4898393
Silicon (Si)-Dissolved	5.22		0.050	mg/L	31-OCT-19	01-NOV-19	R4898393
Silver (Ag)-Dissolved	<0.000010		0.000010	mg/L	31-OCT-19	01-NOV-19	R4898393
Sodium (Na)-Dissolved	51.2		0.050	mg/L	31-OCT-19	01-NOV-19	R4898393
Strontium (Sr)-Dissolved	0.222		0.00010	mg/L	31-OCT-19	01-NOV-19	R4898393
Sulfur (S)-Dissolved	20.8		0.50	mg/L	31-OCT-19	01-NOV-19	R4898393
Tellurium (Te)-Dissolved	<0.00020		0.00020	mg/L	31-OCT-19	01-NOV-19	R4898393
Thallium (Tl)-Dissolved	<0.000010		0.000010	mg/L	31-OCT-19	01-NOV-19	R4898393
Thorium (Th)-Dissolved	<0.00010		0.00010	mg/L	31-OCT-19	01-NOV-19	R4898393
Tin (Sn)-Dissolved	0.00019		0.00010	mg/L	31-OCT-19	01-NOV-19	R4898393
Titanium (Ti)-Dissolved	<0.00030		0.00030	mg/L	31-OCT-19	01-NOV-19	R4898393
Tungsten (W)-Dissolved	0.00138		0.00010	mg/L	31-OCT-19	01-NOV-19	R4898393
Uranium (U)-Dissolved	0.000043		0.000010	mg/L	31-OCT-19	01-NOV-19	R4898393
Vanadium (V)-Dissolved	<0.00050		0.00050	mg/L	31-OCT-19	01-NOV-19	R4898393
Zinc (Zn)-Dissolved	0.0013		0.0010	mg/L	31-OCT-19	01-NOV-19	R4898393
Zirconium (Zr)-Dissolved	<0.00020		0.00020	mg/L	31-OCT-19	01-NOV-19	R4898393
Fluoride in Water by IC							
Fluoride (F)	0.356		0.020	mg/L		25-OCT-19	R4886074
Hardness Calculated							
Hardness (as CaCO3)	332		0.20	mg/L		05-NOV-19	
Nitrate in Water by IC (Low Level)							
Nitrate (as N)	0.0152		0.0050	mg/L		25-OCT-19	R4886074
Nitrate+Nitrite							
Nitrate and Nitrite as N	0.0183		0.0051	mg/L		29-OCT-19	
Nitrite in Water by IC (Low Level)							
Nitrite (as N)	0.0031		0.0010	mg/L		25-OCT-19	R4886074
Sulfate in Water by IC							
Sulfate (SO4)	65.9		0.30	mg/L		25-OCT-19	R4886074
TDS calculated							
TDS (Calculated)	508		5.0	mg/L		05-NOV-19	
Turbidity							
Turbidity	>4000		0.10	NTU		25-OCT-19	R4886035
pH							
pH	8.37		0.10	pH units		28-OCT-19	R4888741

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

Reference Information

Sample Parameter Qualifier Key:

Qualifier	Description
DLM	Detection Limit Adjusted due to sample matrix effects (e.g. chemical interference, colour, turbidity).
MS-B	Matrix Spike recovery could not be accurately calculated due to high analyte background in sample.

Test Method References:

ALS Test Code	Matrix	Test Description	Method Reference**
ALK-CO3CO3-CALC-WP	Water	Alkalinity, Carbonate	CALCULATION
The Alkalinity of water is a measure of its acid neutralizing capacity. Alkalinity is imparted by bicarbonate, carbonate and hydroxide components of water. The fraction of alkalinity contributed by carbonate is calculated and reported as mg CO ₃ ²⁻ /L.			
ALK-HCO3HCO3-CALC-WP	Water	Alkalinity, Bicarbonate	CALCULATION
The Alkalinity of water is a measure of its acid neutralizing capacity. Alkalinity is imparted by bicarbonate, carbonate and hydroxide components of water. The fraction of alkalinity contributed by bicarbonate is calculated and reported as mg HCO ₃ ⁻ /L.			
ALK-OHOH-CALC-WP	Water	Alkalinity, Hydroxide	CALCULATION
The Alkalinity of water is a measure of its acid neutralizing capacity. Alkalinity is imparted by bicarbonate, carbonate and hydroxide components of water. The fraction of alkalinity contributed by hydroxide is calculated and reported as mg OH ⁻ /L.			
ALK-TITR-WP	Water	Alkalinity, Total (as CaCO ₃)	APHA 2320B
The Alkalinity of water is a measure of its acid neutralizing capacity. Alkalinity is imparted by bicarbonate, carbonate and hydroxide components of water. Total alkalinity is determined by titration with a strong standard mineral acid to the successive HCO ₃ ⁻ and H ₂ CO ₃ endpoints indicated electrometrically.			
CL-L-IC-N-WP	Water	Chloride in Water by IC (Low Level)	EPA 300.1 (mod)
Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.			
EC-WP	Water	Conductivity	APHA 2510B
Conductivity of an aqueous solution refers to its ability to carry an electric current. Conductance of a solution is measured between two spatially fixed and chemically inert electrodes.			
ETL-SOLIDS-CALC-WP	Water	TDS calculated	CALCULATION
F-IC-N-WP	Water	Fluoride in Water by IC	EPA 300.1 (mod)
Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.			
HARDNESS-CALC-WP	Water	Hardness Calculated	APHA 2340B
Hardness (also known as Total Hardness) is calculated from the sum of Calcium and Magnesium concentrations, expressed in CaCO ₃ equivalents. Dissolved Calcium and Magnesium concentrations are preferentially used for the hardness calculation.			
IONBALANCE-CALC-WP	Water	Ion Balance Calculation	APHA 1030E
Cation Sum, Anion Sum, and Ion Balance (as % difference) are calculated based on guidance from APHA Standard Methods (1030E Checking Correctness of Analysis). Because all aqueous solutions are electrically neutral, the calculated ion balance (% difference of cations minus anions) should be near-zero.			
Cation and Anion Sums are the total meq/L concentration of major cations and anions. Dissolved species are used where available. Minor ions are included where data is present. Ion Balance (as % difference) cannot be calculated accurately for waters with very low electrical conductivity (EC), and is reported as "Low EC" where EC < 100 uS/cm (umhos/cm). Ion Balance is calculated as:			
$\text{Ion Balance (\%)} = \frac{[\text{Cation Sum} - \text{Anion Sum}]}{[\text{Cation Sum} + \text{Anion Sum}]}$			
MET-D-CCMS-WP	Water	Dissolved Metals in Water by CRC ICPMS	APHA 3030B/6020B (mod)
Water samples are filtered (0.45 um), preserved with nitric acid, and analyzed by CRC ICPMS.			
Method Limitation (re: Sulfur): Sulfide and volatile sulfur species may not be recovered by this method.			
NO2+NO3-CALC-L-WP	Water	Nitrate+Nitrite	CALCULATION

Reference Information

Test Method References:

ALS Test Code	Matrix	Test Description	Method Reference**
NO2-L-IC-N-WP	Water	Nitrite in Water by IC (Low Level)	EPA 300.1 (mod)
Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.			
NO3-L-IC-N-WP	Water	Nitrate in Water by IC (Low Level)	EPA 300.1 (mod)
Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.			
PH-WP	Water	pH	APHA 4500H
The pH of a sample is the determination of the activity of the hydrogen ions by potentiometric measurement using a standard hydrogen electrode and a reference electrode.			
SO4-IC-N-WP	Water	Sulfate in Water by IC	EPA 300.1 (mod)
Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.			
TURBIDITY-WP	Water	Turbidity	APHA 2130B (modified)
Turbidity in aqueous matrices is determined by the nephelometric method.			

** ALS test methods may incorporate modifications from specified reference methods to improve performance.

The last two letters of the above test code(s) indicate the laboratory that performed analytical analysis for that test. Refer to the list below:

Laboratory Definition Code	Laboratory Location
WP	ALS ENVIRONMENTAL - WINNIPEG, MANITOBA, CANADA

Chain of Custody Numbers:

GLOSSARY OF REPORT TERMS

Surrogates are compounds that are similar in behaviour to target analyte(s), but that do not normally occur in environmental samples. For applicable tests, surrogates are added to samples prior to analysis as a check on recovery. In reports that display the D.L. column, laboratory objectives for surrogates are listed there.

mg/kg - milligrams per kilogram based on dry weight of sample

mg/kg wwt - milligrams per kilogram based on wet weight of sample

mg/kg lwt - milligrams per kilogram based on lipid-adjusted weight

mg/L - unit of concentration based on volume, parts per million.

< - Less than.

D.L. - The reporting limit.

N/A - Result not available. Refer to qualifier code and definition for explanation.

Test results reported relate only to the samples as received by the laboratory.

UNLESS OTHERWISE STATED, ALL SAMPLES WERE RECEIVED IN ACCEPTABLE CONDITION.

Analytical results in unsigned test reports with the DRAFT watermark are subject to change, pending final QC review.



Quality Control Report

Workorder: L2371438

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Client: KGS Group Consultants (Winnipeg)
 865 Waverly Street - 3rd Floor
 Winnipeg MB R3T 5P4

Contact: PAUL LINDELL

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
ALK-TITR-WP								
	Water							
Batch	R4888741							
WG3204356-5	DUP	L2371438-1						
Alkalinity, Total (as CaCO3)		514	502		mg/L	2.3	20	28-OCT-19
WG3204356-4	LCS							
Alkalinity, Total (as CaCO3)			113.1		%		85-115	28-OCT-19
WG3204356-1	MB							
Alkalinity, Total (as CaCO3)			<1.0		mg/L		1	28-OCT-19
CL-L-IC-N-WP								
	Water							
Batch	R4886074							
WG3201699-2	LCS							
Chloride (Cl)			98.3		%		90-110	25-OCT-19
WG3201699-1	MB							
Chloride (Cl)			<0.10		mg/L		0.1	25-OCT-19
EC-WP								
	Water							
Batch	R4888741							
WG3204356-5	DUP	L2371438-1						
Conductivity		841	842		umhos/cm	0.1	10	28-OCT-19
WG3204356-3	LCS							
Conductivity			97.6		%		90-110	28-OCT-19
WG3204356-1	MB							
Conductivity			<1.0		umhos/cm		1	28-OCT-19
F-IC-N-WP								
	Water							
Batch	R4886074							
WG3201699-2	LCS							
Fluoride (F)			98.1		%		90-110	25-OCT-19
WG3201699-1	MB							
Fluoride (F)			<0.020		mg/L		0.02	25-OCT-19
MET-D-CCMS-WP								
	Water							
Batch	R4898393							
WG3207155-2	LCS							
Aluminum (Al)-Dissolved			99.2		%		80-120	01-NOV-19
Antimony (Sb)-Dissolved			97.3		%		80-120	01-NOV-19
Arsenic (As)-Dissolved			96.5		%		80-120	01-NOV-19
Barium (Ba)-Dissolved			98.2		%		80-120	01-NOV-19
Beryllium (Be)-Dissolved			97.5		%		80-120	01-NOV-19
Bismuth (Bi)-Dissolved			96.8		%		80-120	01-NOV-19
Boron (B)-Dissolved			93.5		%		80-120	01-NOV-19
Cadmium (Cd)-Dissolved			95.0		%		80-120	01-NOV-19



Quality Control Report

Workorder: L2371438

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Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
MET-D-CCMS-WP								
	Water							
Batch	R4898393							
WG3207155-2	LCS							
Calcium (Ca)-Dissolved			97.7		%		80-120	01-NOV-19
Cesium (Cs)-Dissolved			101.4		%		80-120	01-NOV-19
Chromium (Cr)-Dissolved			98.4		%		80-120	01-NOV-19
Cobalt (Co)-Dissolved			97.7		%		80-120	01-NOV-19
Copper (Cu)-Dissolved			97.1		%		80-120	01-NOV-19
Iron (Fe)-Dissolved			90.3		%		80-120	01-NOV-19
Lead (Pb)-Dissolved			97.1		%		80-120	01-NOV-19
Lithium (Li)-Dissolved			100.3		%		80-120	01-NOV-19
Magnesium (Mg)-Dissolved			98.4		%		80-120	01-NOV-19
Manganese (Mn)-Dissolved			98.4		%		80-120	01-NOV-19
Molybdenum (Mo)-Dissolved			99.3		%		80-120	01-NOV-19
Nickel (Ni)-Dissolved			95.1		%		80-120	01-NOV-19
Phosphorus (P)-Dissolved			103.6		%		80-120	01-NOV-19
Potassium (K)-Dissolved			93.1		%		80-120	01-NOV-19
Rubidium (Rb)-Dissolved			101.7		%		80-120	01-NOV-19
Selenium (Se)-Dissolved			96.7		%		80-120	01-NOV-19
Silicon (Si)-Dissolved			99.0		%		80-120	01-NOV-19
Silver (Ag)-Dissolved			97.7		%		80-120	01-NOV-19
Sodium (Na)-Dissolved			102.4		%		80-120	01-NOV-19
Strontium (Sr)-Dissolved			102.0		%		80-120	01-NOV-19
Sulfur (S)-Dissolved			100.6		%		80-120	01-NOV-19
Tellurium (Te)-Dissolved			97.3		%		80-120	01-NOV-19
Thallium (Tl)-Dissolved			96.3		%		80-120	01-NOV-19
Thorium (Th)-Dissolved			95.2		%		80-120	01-NOV-19
Tin (Sn)-Dissolved			98.7		%		80-120	01-NOV-19
Titanium (Ti)-Dissolved			95.9		%		80-120	01-NOV-19
Tungsten (W)-Dissolved			98.4		%		80-120	01-NOV-19
Uranium (U)-Dissolved			96.8		%		80-120	01-NOV-19
Vanadium (V)-Dissolved			98.0		%		80-120	01-NOV-19
Zinc (Zn)-Dissolved			100.1		%		80-120	01-NOV-19
Zirconium (Zr)-Dissolved			94.7		%		80-120	01-NOV-19
WG3207155-1	MB							
Aluminum (Al)-Dissolved			<0.0010		mg/L		0.001	01-NOV-19
Antimony (Sb)-Dissolved			<0.00010		mg/L		0.0001	01-NOV-19



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Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
MET-D-CCMS-WP								
	Water							
Batch	R4898393							
WG3207155-1	MB							
Arsenic (As)-Dissolved			<0.00010		mg/L		0.0001	01-NOV-19
Barium (Ba)-Dissolved			<0.00010		mg/L		0.0001	01-NOV-19
Beryllium (Be)-Dissolved			<0.00010		mg/L		0.0001	01-NOV-19
Bismuth (Bi)-Dissolved			<0.000050		mg/L		0.00005	01-NOV-19
Boron (B)-Dissolved			<0.010		mg/L		0.01	01-NOV-19
Cadmium (Cd)-Dissolved			<0.0000050		mg/L		0.000005	01-NOV-19
Calcium (Ca)-Dissolved			<0.050		mg/L		0.05	01-NOV-19
Cesium (Cs)-Dissolved			<0.000010		mg/L		0.00001	01-NOV-19
Chromium (Cr)-Dissolved			<0.00010		mg/L		0.0001	01-NOV-19
Cobalt (Co)-Dissolved			<0.00010		mg/L		0.0001	01-NOV-19
Copper (Cu)-Dissolved			<0.00020		mg/L		0.0002	01-NOV-19
Iron (Fe)-Dissolved			<0.010		mg/L		0.01	01-NOV-19
Lead (Pb)-Dissolved			<0.000050		mg/L		0.00005	01-NOV-19
Lithium (Li)-Dissolved			<0.0010		mg/L		0.001	01-NOV-19
Magnesium (Mg)-Dissolved			<0.0050		mg/L		0.005	01-NOV-19
Manganese (Mn)-Dissolved			<0.00010		mg/L		0.0001	01-NOV-19
Molybdenum (Mo)-Dissolved			<0.000050		mg/L		0.00005	01-NOV-19
Nickel (Ni)-Dissolved			<0.00050		mg/L		0.0005	01-NOV-19
Phosphorus (P)-Dissolved			<0.030		mg/L		0.03	01-NOV-19
Potassium (K)-Dissolved			<0.050		mg/L		0.05	01-NOV-19
Rubidium (Rb)-Dissolved			<0.00020		mg/L		0.0002	01-NOV-19
Selenium (Se)-Dissolved			<0.000050		mg/L		0.00005	01-NOV-19
Silicon (Si)-Dissolved			<0.050		mg/L		0.05	01-NOV-19
Silver (Ag)-Dissolved			<0.000010		mg/L		0.00001	01-NOV-19
Sodium (Na)-Dissolved			<0.050		mg/L		0.05	01-NOV-19
Strontium (Sr)-Dissolved			<0.00010		mg/L		0.0001	01-NOV-19
Sulfur (S)-Dissolved			<0.50		mg/L		0.5	01-NOV-19
Tellurium (Te)-Dissolved			<0.00020		mg/L		0.0002	01-NOV-19
Thallium (Tl)-Dissolved			<0.000010		mg/L		0.00001	01-NOV-19
Thorium (Th)-Dissolved			<0.00010		mg/L		0.0001	01-NOV-19
Tin (Sn)-Dissolved			<0.00010		mg/L		0.0001	01-NOV-19
Titanium (Ti)-Dissolved			<0.00030		mg/L		0.0003	01-NOV-19
Tungsten (W)-Dissolved			<0.00010		mg/L		0.0001	01-NOV-19
Uranium (U)-Dissolved			<0.000010		mg/L		0.00001	01-NOV-19



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Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
MET-D-CCMS-WP								
Water								
Batch	R4898393							
WG3207155-1	MB							
Vanadium (V)-Dissolved			<0.00050		mg/L		0.0005	01-NOV-19
Zinc (Zn)-Dissolved			<0.0010		mg/L		0.001	01-NOV-19
Zirconium (Zr)-Dissolved			<0.00020		mg/L		0.0002	01-NOV-19
NO2-L-IC-N-WP								
Water								
Batch	R4886074							
WG3201699-2	LCS							
Nitrite (as N)			100.0		%		90-110	25-OCT-19
WG3201699-1	MB							
Nitrite (as N)			<0.0010		mg/L		0.001	25-OCT-19
NO3-L-IC-N-WP								
Water								
Batch	R4886074							
WG3201699-2	LCS							
Nitrate (as N)			98.4		%		90-110	25-OCT-19
WG3201699-1	MB							
Nitrate (as N)			<0.0050		mg/L		0.005	25-OCT-19
PH-WP								
Water								
Batch	R4888741							
WG3204356-5	DUP	L2371438-1						
pH		8.30	8.29	J	pH units	0.01	0.2	28-OCT-19
WG3204356-2	LCS							
pH			7.37		pH units		7.3-7.5	28-OCT-19
SO4-IC-N-WP								
Water								
Batch	R4886074							
WG3201699-2	LCS							
Sulfate (SO4)			99.99		%		90-110	25-OCT-19
WG3201699-1	MB							
Sulfate (SO4)			<0.30		mg/L		0.3	25-OCT-19
TURBIDITY-WP								
Water								
Batch	R4883808							
WG3201155-2	LCS							
Turbidity			102.5		%		85-115	24-OCT-19
WG3201155-1	MB							
Turbidity			<0.10		NTU		0.1	24-OCT-19



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Workorder: L2371438

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Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
TURBIDITY-WP	Water							
Batch	R4886035							
WG3201869-2	LCS							
Turbidity			104.5		%		85-115	25-OCT-19
WG3201869-1	MB							
Turbidity			<0.10		NTU		0.1	25-OCT-19

Quality Control Report

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Legend:

Limit	ALS Control Limit (Data Quality Objectives)
DUP	Duplicate
RPD	Relative Percent Difference
N/A	Not Available
LCS	Laboratory Control Sample
SRM	Standard Reference Material
MS	Matrix Spike
MSD	Matrix Spike Duplicate
ADE	Average Desorption Efficiency
MB	Method Blank
IRM	Internal Reference Material
CRM	Certified Reference Material
CCV	Continuing Calibration Verification
CVS	Calibration Verification Standard
LCSD	Laboratory Control Sample Duplicate

Sample Parameter Qualifier Definitions:

Qualifier	Description
J	Duplicate results and limits are expressed in terms of absolute difference.

Quality Control Report

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Hold Time Exceedances:

ALS Product Description	Sample ID	Sampling Date	Date Processed	Rec. HT	Actual HT	Units	Qualifier
Physical Tests							
pH	1	23-OCT-19 16:40	28-OCT-19 12:00	0.25	115	hours	EHTR-FM
	2	23-OCT-19 11:45	28-OCT-19 12:00	0.25	120	hours	EHTR-FM
	3	23-OCT-19 12:40	28-OCT-19 12:00	0.25	119	hours	EHTR-FM
	4	23-OCT-19 16:15	28-OCT-19 12:00	0.25	116	hours	EHTR-FM

Legend & Qualifier Definitions:

- EHTR-FM: Exceeded ALS recommended hold time prior to sample receipt. Field Measurement recommended.
- EHTR: Exceeded ALS recommended hold time prior to sample receipt.
- EHTL: Exceeded ALS recommended hold time prior to analysis. Sample was received less than 24 hours prior to expiry.
- EHT: Exceeded ALS recommended hold time prior to analysis.
- Rec. HT: ALS recommended hold time (see units).

Notes*:

Where actual sampling date is not provided to ALS, the date (& time) of receipt is used for calculation purposes.
Where actual sampling time is not provided to ALS, the earlier of 12 noon on the sampling date or the time (& date) of receipt is used for calculation purposes. Samples for L2371438 were received on 24-OCT-19 14:55.

ALS recommended hold times may vary by province. They are assigned to meet known provincial and/or federal government requirements. In the absence of regulatory hold times, ALS establishes recommendations based on guidelines published by the US EPA, APHA Standard Methods, or Environment Canada (where available). For more information, please contact ALS.

The ALS Quality Control Report is provided to ALS clients upon request. ALS includes comprehensive QC checks with every analysis to ensure our high standards of quality are met. Each QC result has a known or expected target value, which is compared against pre-determined data quality objectives to provide confidence in the accuracy of associated test results.

Please note that this report may contain QC results from anonymous Sample Duplicates and Matrix Spikes that do not originate from this Work Order.



KGS Group Consultants (Winnipeg)
865 Waverly Street - 3rd Floor
Winnipeg MB R3T 5P4
ATTN: PAUL LINDELL

Date: 05-NOV-19
PO No.:
WO No.: L2371920
Project Ref: 18-0300-005
Sample ID: PW19-KGS-01
Sampled By: PJJ/NB
Date Collected: 24-OCT-19
Lab Sample ID: L2371920-1
Matrix: GW

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
ROU4W Dissolved						
Bicarbonate (HCO3)	443		mg/L			29-OCT-19
Carbonate (CO3)	<0.60		mg/L			29-OCT-19
Hydroxide (OH)	<0.34		mg/L			29-OCT-19
*Nitrate and Nitrite as N	<0.0051		mg/L	10		29-OCT-19
pH						
pH	8.18		pH units			28-OCT-19
Turbidity						
*Turbidity	78.3		NTU			25-OCT-19
TDS calculated						
TDS (Calculated)	467		mg/L		500	05-NOV-19
Sulfate in Water by IC						
Sulfate (SO4)	78.6		mg/L		500	25-OCT-19
Nitrite in Water by IC (Low Level)						
*Nitrite (as N)	<0.0010		mg/L	1		25-OCT-19
Nitrate in Water by IC (Low Level)						
*Nitrate (as N)	<0.0050		mg/L	10		25-OCT-19
Ion Balance Calculation						
Hardness Calculated						
Hardness (as CaCO3)	420		mg/L		500	05-NOV-19
Fluoride in Water by IC						
Fluoride (F)	0.305		mg/L	1.5		25-OCT-19
Dissolved Metals in Water by CRC ICPMS						
Dissolved Metals	FIELD					31-OCT-19
Filtration Location						
Aluminum (Al)-Dissolved	0.206		mg/L		0.1	01-NOV-19
Antimony (Sb)-Dissolved	<0.00010		mg/L	0.006		01-NOV-19
Arsenic (As)-Dissolved	0.00063		mg/L	0.01		01-NOV-19
Barium (Ba)-Dissolved	0.0290		mg/L	1		01-NOV-19
Beryllium (Be)-Dissolved	<0.00010		mg/L			01-NOV-19
Bismuth (Bi)-Dissolved	<0.000050		mg/L			01-NOV-19
Boron (B)-Dissolved	0.142		mg/L	5		01-NOV-19
Cadmium (Cd)-Dissolved	<0.0000050		mg/L	0.005		01-NOV-19
Calcium (Ca)-Dissolved	66.6		mg/L			01-NOV-19
Cesium (Cs)-Dissolved	0.000054		mg/L			01-NOV-19
Chromium (Cr)-Dissolved	0.00060		mg/L	0.05		01-NOV-19
Cobalt (Co)-Dissolved	0.00049		mg/L			01-NOV-19
Copper (Cu)-Dissolved	0.00186		mg/L	2.0	1.0	01-NOV-19
Iron (Fe)-Dissolved	0.390		mg/L		0.3	01-NOV-19
Lead (Pb)-Dissolved	0.00122		mg/L	0.005		01-NOV-19

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KGS Group Consultants (Winnipeg)
865 Waverly Street - 3rd Floor
Winnipeg MB R3T 5P4
ATTN: PAUL LINDELL


Date: 05-NOV-19
PO No.:
WO No.: L2371920
Project Ref: 18-0300-005
Sample ID: PW19-KGS-01
Sampled By: P.JL/NB
Date Collected: 24-OCT-19
Lab Sample ID: L2371920-1
Matrix: GW

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
ROU4W Dissolved						
Dissolved Metals in Water by CRC ICPMS						
Lithium (Li)-Dissolved	0.0242		mg/L			01-NOV-19
Magnesium (Mg)-Dissolved	61.5		mg/L			01-NOV-19
Manganese (Mn)-Dissolved	0.0226		mg/L	0.12	0.02	01-NOV-19
Molybdenum (Mo)-Dissolved	0.000894		mg/L			01-NOV-19
Nickel (Ni)-Dissolved	0.00141		mg/L			01-NOV-19
Phosphorus (P)-Dissolved	0.037		mg/L			01-NOV-19
Potassium (K)-Dissolved	4.93		mg/L			01-NOV-19
Rubidium (Rb)-Dissolved	0.00202		mg/L			01-NOV-19
Selenium (Se)-Dissolved	<0.000050		mg/L	0.05		01-NOV-19
Silicon (Si)-Dissolved	6.14		mg/L			01-NOV-19
Silver (Ag)-Dissolved	<0.000010		mg/L			01-NOV-19
Sodium (Na)-Dissolved	28.0		mg/L		200	01-NOV-19
Strontium (Sr)-Dissolved	0.222		mg/L	7		01-NOV-19
Sulfur (S)-Dissolved	25.9		mg/L			01-NOV-19
Tellurium (Te)-Dissolved	<0.00020		mg/L			01-NOV-19
Thallium (Tl)-Dissolved	0.000014		mg/L			01-NOV-19
Thorium (Th)-Dissolved	0.00021		mg/L			01-NOV-19
Tin (Sn)-Dissolved	<0.00010		mg/L			01-NOV-19
Titanium (Ti)-Dissolved	0.0130		mg/L			01-NOV-19
Tungsten (W)-Dissolved	<0.00010		mg/L			01-NOV-19
Uranium (U)-Dissolved	0.00211		mg/L	0.02		01-NOV-19
Vanadium (V)-Dissolved	0.00056		mg/L			01-NOV-19
Zinc (Zn)-Dissolved	0.0042		mg/L		5.0	01-NOV-19
Zirconium (Zr)-Dissolved	0.00026		mg/L			01-NOV-19
Conductivity						
Conductivity	694		umhos/cm			28-OCT-19
Chloride in Water by IC (Low Level)						
Chloride (Cl)	9.35		mg/L		250	25-OCT-19
Alkalinity, Total (as CaCO3)						
Alkalinity, Total (as CaCO3)	363		mg/L			28-OCT-19
Total Coliform and E.coli						
Total Coliforms	0		MPN/100mL	0		25-OCT-19
Escherichia Coli	0		MPN/100mL	0		25-OCT-19



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Date: 05-NOV-19
PO No.:
WO No.: L2371920
Project Ref: 18-0300-005
Sample ID: PW19-KGS-01
Sampled By: PJJ/NB
Date Collected: 24-OCT-19
Lab Sample ID: L2371920-1
Matrix: GW

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
<p>CDWQG = Health Canada Guideline Limits updated</p> <p>* CDWQG for Nitrate+Nitrite-N is the limit for nitrate only. If present as Nitrate then the limit is 10mg/L < or N.D. = less than detection limit. * Turbidity guideline based on membrane filtration. For guidelines on conventional treatment and slow sand or diatomaceous earth filtration please see Summary Table of Guidelines for Canadian Drinking Water Quality - A blank entry designates no known limit. - A shaded value in the Results column exceeds CDWQG MAC and/ or Aesthetic Objective.</p>	JUNE 2019					
<p>Approved by </p> <hr/> <p>Hua Wo Account Manager</p>						



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ATTN: PAUL LINDELL

Date: 05-NOV-19
PO No.:
WO No.: L2371920
Project Ref: 18-0300-005
Sample ID: PW19-KGS-02
Sampled By: PJJ/NB
Date Collected: 24-OCT-19
Lab Sample ID: L2371920-2
Matrix: GW

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
ROU4W Dissolved						
Bicarbonate (HCO3)	446		mg/L			29-OCT-19
Carbonate (CO3)	<0.60		mg/L			29-OCT-19
Hydroxide (OH)	<0.34		mg/L			29-OCT-19
*Nitrate and Nitrite as N	0.0082		mg/L	10		29-OCT-19
pH						
pH	8.22		pH units			28-OCT-19
Turbidity						
*Turbidity	1.33		NTU			25-OCT-19
TDS calculated						
TDS (Calculated)	471		mg/L		500	05-NOV-19
Sulfate in Water by IC						
Sulfate (SO4)	93.1		mg/L		500	25-OCT-19
Nitrite in Water by IC (Low Level)						
*Nitrite (as N)	<0.0010		mg/L	1		25-OCT-19
Nitrate in Water by IC (Low Level)						
*Nitrate (as N)	0.0082		mg/L	10		25-OCT-19
Ion Balance Calculation						
Hardness Calculated						
Hardness (as CaCO3)	371		mg/L		500	05-NOV-19
Fluoride in Water by IC						
Fluoride (F)	0.339		mg/L	1.5		25-OCT-19
Dissolved Metals in Water by CRC ICPMS						
Dissolved Metals	FIELD					31-OCT-19
Filtration Location						
Aluminum (Al)-Dissolved	<0.0010		mg/L		0.1	01-NOV-19
Antimony (Sb)-Dissolved	<0.00010		mg/L	0.006		01-NOV-19
Arsenic (As)-Dissolved	0.00125		mg/L	0.01		01-NOV-19
Barium (Ba)-Dissolved	0.0258		mg/L	1		01-NOV-19
Beryllium (Be)-Dissolved	<0.00010		mg/L			01-NOV-19
Bismuth (Bi)-Dissolved	<0.000050		mg/L			01-NOV-19
Boron (B)-Dissolved	0.137		mg/L	5		01-NOV-19
Cadmium (Cd)-Dissolved	<0.000050		mg/L	0.005		01-NOV-19
Calcium (Ca)-Dissolved	57.2		mg/L			01-NOV-19
Cesium (Cs)-Dissolved	0.000016		mg/L			01-NOV-19
Chromium (Cr)-Dissolved	<0.00010		mg/L	0.05		01-NOV-19
Cobalt (Co)-Dissolved	0.00015		mg/L			01-NOV-19
Copper (Cu)-Dissolved	0.00079		mg/L	2.0	1.0	01-NOV-19
Iron (Fe)-Dissolved	0.116		mg/L		0.3	01-NOV-19
Lead (Pb)-Dissolved	0.000070		mg/L	0.005		01-NOV-19

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Date: 05-NOV-19
PO No.:
WO No.: L2371920
Project Ref: 18-0300-005
Sample ID: PW19-KGS-02
Sampled By: P.JL/NB
Date Collected: 24-OCT-19
Lab Sample ID: L2371920-2
Matrix: GW

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
ROU4W Dissolved						
Dissolved Metals in Water by CRC ICPMS						
Lithium (Li)-Dissolved	0.0245		mg/L			01-NOV-19
Magnesium (Mg)-Dissolved	55.5		mg/L			01-NOV-19
Manganese (Mn)-Dissolved	0.00436		mg/L	0.12	0.02	01-NOV-19
Molybdenum (Mo)-Dissolved	0.000343		mg/L			01-NOV-19
Nickel (Ni)-Dissolved	<0.00050		mg/L			01-NOV-19
Phosphorus (P)-Dissolved	<0.030		mg/L			01-NOV-19
Potassium (K)-Dissolved	5.06		mg/L			01-NOV-19
Rubidium (Rb)-Dissolved	0.00281		mg/L			01-NOV-19
Selenium (Se)-Dissolved	<0.000050		mg/L	0.05		01-NOV-19
Silicon (Si)-Dissolved	5.50		mg/L			01-NOV-19
Silver (Ag)-Dissolved	<0.000010		mg/L			01-NOV-19
Sodium (Na)-Dissolved	31.9		mg/L		200	01-NOV-19
Strontium (Sr)-Dissolved	0.207		mg/L	7		01-NOV-19
Sulfur (S)-Dissolved	30.7		mg/L			01-NOV-19
Tellurium (Te)-Dissolved	<0.00020		mg/L			01-NOV-19
Thallium (Tl)-Dissolved	<0.000010		mg/L			01-NOV-19
Thorium (Th)-Dissolved	<0.00010		mg/L			01-NOV-19
Tin (Sn)-Dissolved	<0.00010		mg/L			01-NOV-19
Titanium (Ti)-Dissolved	<0.00030		mg/L			01-NOV-19
Tungsten (W)-Dissolved	<0.00010		mg/L			01-NOV-19
Uranium (U)-Dissolved	0.000727		mg/L	0.02		01-NOV-19
Vanadium (V)-Dissolved	<0.00050		mg/L			01-NOV-19
Zinc (Zn)-Dissolved	0.0019		mg/L		5.0	01-NOV-19
Zirconium (Zr)-Dissolved	<0.00020		mg/L			01-NOV-19
Conductivity						
Conductivity	729		umhos/cm			28-OCT-19
Chloride in Water by IC (Low Level)						
Chloride (Cl)	8.52		mg/L		250	25-OCT-19
Alkalinity, Total (as CaCO3)						
Alkalinity, Total (as CaCO3)	366		mg/L			28-OCT-19
Total Coliform and E.coli						
Total Coliforms	3		MPN/100mL	0		25-OCT-19
Escherichia Coli	0		MPN/100mL	0		25-OCT-19



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Date: 05-NOV-19
PO No.:
WO No.: L2371920
Project Ref: 18-0300-005
Sample ID: PW19-KGS-02
Sampled By: PJJ/NB
Date Collected: 24-OCT-19
Lab Sample ID: L2371920-2
Matrix: GW

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
<p>CDWQG = Health Canada Guideline Limits updated JUNE 2019</p> <p>* CDWQG for Nitrate+Nitrite-N is the limit for nitrate only. If present as Nitrate then the limit is 10mg/L < or N.D. = less than detection limit. * Turbidity guideline based on membrane filtration. For guidelines on conventional treatment and slow sand or diatomaceous earth filtration please see Summary Table of Guidelines for Canadian Drinking Water Quality - A blank entry designates no known limit. - A shaded value in the Results column exceeds CDWQG MAC and/ or Aesthetic Objective.</p>						
<p>Approved by <u><i>Hua Wo</i></u> Hua Wo Account Manager</p>						



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Date: 05-NOV-19
PO No.:
WO No.: L2371920
Project Ref: 18-0300-005
Sample ID: PW19-KGS-03
Sampled By: PJJ/NB
Date Collected: 24-OCT-19
Lab Sample ID: L2371920-3
Matrix: GW

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
ROU4W Dissolved						
Bicarbonate (HCO3)	403		mg/L			29-OCT-19
Carbonate (CO3)	<0.60		mg/L			29-OCT-19
Hydroxide (OH)	<0.34		mg/L			29-OCT-19
*Nitrate and Nitrite as N	<0.0051		mg/L	10		29-OCT-19
pH						
pH	8.11		pH units			28-OCT-19
Turbidity						
*Turbidity	1.06		NTU			25-OCT-19
TDS calculated						
TDS (Calculated)	344		mg/L		500	05-NOV-19
Sulfate in Water by IC						
Sulfate (SO4)	31.8		mg/L		500	25-OCT-19
Nitrite in Water by IC (Low Level)						
*Nitrite (as N)	<0.0010		mg/L	1		25-OCT-19
Nitrate in Water by IC (Low Level)						
*Nitrate (as N)	<0.0050		mg/L	10		25-OCT-19
Ion Balance Calculation						
Hardness Calculated						
Hardness (as CaCO3)	327		mg/L		500	05-NOV-19
Fluoride in Water by IC						
Fluoride (F)	0.181		mg/L	1.5		25-OCT-19
Dissolved Metals in Water by CRC ICPMS						
Dissolved Metals	FIELD					31-OCT-19
Filtration Location						
Aluminum (Al)-Dissolved	0.0090		mg/L		0.1	01-NOV-19
Antimony (Sb)-Dissolved	<0.00010		mg/L	0.006		01-NOV-19
Arsenic (As)-Dissolved	0.00110		mg/L	0.01		01-NOV-19
Barium (Ba)-Dissolved	0.0619		mg/L	1		01-NOV-19
Beryllium (Be)-Dissolved	<0.00010		mg/L			01-NOV-19
Bismuth (Bi)-Dissolved	<0.000050		mg/L			01-NOV-19
Boron (B)-Dissolved	0.068		mg/L	5		01-NOV-19
Cadmium (Cd)-Dissolved	<0.0000050		mg/L	0.005		01-NOV-19
Calcium (Ca)-Dissolved	68.3		mg/L			01-NOV-19
Cesium (Cs)-Dissolved	<0.000010		mg/L			01-NOV-19
Chromium (Cr)-Dissolved	0.00010		mg/L	0.05		01-NOV-19
Cobalt (Co)-Dissolved	0.00198		mg/L			01-NOV-19
Copper (Cu)-Dissolved	0.00041		mg/L	2.0	1.0	01-NOV-19
Iron (Fe)-Dissolved	1.25		mg/L		0.3	01-NOV-19
Lead (Pb)-Dissolved	0.000065		mg/L	0.005		01-NOV-19

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Date: 05-NOV-19
PO No.:
WO No.: L2371920
Project Ref: 18-0300-005
Sample ID: PW19-KGS-03
Sampled By: P.JL/NB
Date Collected: 24-OCT-19
Lab Sample ID: L2371920-3
Matrix: GW

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
ROU4W Dissolved						
Dissolved Metals in Water by CRC ICPMS						
Lithium (Li)-Dissolved	0.0124		mg/L			01-NOV-19
Magnesium (Mg)-Dissolved	38.0		mg/L			01-NOV-19
Manganese (Mn)-Dissolved	0.276		mg/L	0.12	0.02	01-NOV-19
Molybdenum (Mo)-Dissolved	0.000440		mg/L			01-NOV-19
Nickel (Ni)-Dissolved	0.00505		mg/L			01-NOV-19
Phosphorus (P)-Dissolved	<0.030		mg/L			01-NOV-19
Potassium (K)-Dissolved	2.51		mg/L			01-NOV-19
Rubidium (Rb)-Dissolved	0.00179		mg/L			01-NOV-19
Selenium (Se)-Dissolved	0.000067		mg/L	0.05		01-NOV-19
Silicon (Si)-Dissolved	5.22		mg/L			01-NOV-19
Silver (Ag)-Dissolved	0.000011		mg/L			01-NOV-19
Sodium (Na)-Dissolved	3.76		mg/L		200	01-NOV-19
Strontium (Sr)-Dissolved	0.123		mg/L	7		01-NOV-19
Sulfur (S)-Dissolved	10.5		mg/L			01-NOV-19
Tellurium (Te)-Dissolved	<0.00020		mg/L			01-NOV-19
Thallium (Tl)-Dissolved	<0.000010		mg/L			01-NOV-19
Thorium (Th)-Dissolved	<0.00010		mg/L			01-NOV-19
Tin (Sn)-Dissolved	0.00075		mg/L			01-NOV-19
Titanium (Ti)-Dissolved	0.00035		mg/L			01-NOV-19
Tungsten (W)-Dissolved	<0.00010		mg/L			01-NOV-19
Uranium (U)-Dissolved	0.00221		mg/L	0.02		01-NOV-19
Vanadium (V)-Dissolved	0.00117		mg/L			01-NOV-19
Zinc (Zn)-Dissolved	0.0013		mg/L		5.0	01-NOV-19
Zirconium (Zr)-Dissolved	0.00060		mg/L			01-NOV-19
Conductivity						
Conductivity	550		umhos/cm			28-OCT-19
Chloride in Water by IC (Low Level)						
Chloride (Cl)	0.91		mg/L		250	25-OCT-19
Alkalinity, Total (as CaCO3)						
Alkalinity, Total (as CaCO3)	331		mg/L			28-OCT-19
Total Coliform and E.coli						
Total Coliforms	130		MPN/100mL	0		25-OCT-19
Escherichia Coli	0		MPN/100mL	0		25-OCT-19

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Date: 05-NOV-19
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WO No.: L2371920
Project Ref: 18-0300-005
Sample ID: PW19-KGS-03
Sampled By: PJJ/NB
Date Collected: 24-OCT-19
Lab Sample ID: L2371920-3
Matrix: GW

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
<p>CDWQG = Health Canada Guideline Limits updated</p> <p>* CDWQG for Nitrate+Nitrite-N is the limit for nitrate only. If present as Nitrate then the limit is 10mg/L < or N.D. = less than detection limit. * Turbidity guideline based on membrane filtration. For guidelines on conventional treatment and slow sand or diatomaceous earth filtration please see Summary Table of Guidelines for Canadian Drinking Water Quality - A blank entry designates no known limit. - A shaded value in the Results column exceeds CDWQG MAC and/ or Aesthetic Objective.</p>	JUNE 2019					
<p>Approved by <u><i>Hua Wo</i></u> Hua Wo Account Manager</p>						



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Date: 05-NOV-19
PO No.:
WO No.: L2371920
Project Ref: 18-0300-005
Sample ID: PW-200
Sampled By: P.JL/NB
Date Collected: 24-OCT-19
Lab Sample ID: L2371920-4
Matrix: GW

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
ROU4W Dissolved						
Bicarbonate (HCO3)	436		mg/L			29-OCT-19
Carbonate (CO3)	<0.60		mg/L			29-OCT-19
Hydroxide (OH)	<0.34		mg/L			29-OCT-19
*Nitrate and Nitrite as N	<0.0051		mg/L	10		29-OCT-19
pH						
pH	8.21		pH units			28-OCT-19
Turbidity						
*Turbidity	81.2		NTU			25-OCT-19
TDS calculated						
TDS (Calculated)	469		mg/L		500	05-NOV-19
Sulfate in Water by IC						
Sulfate (SO4)	79.3		mg/L		500	25-OCT-19
Nitrite in Water by IC (Low Level)						
*Nitrite (as N)	<0.0010		mg/L	1		25-OCT-19
Nitrate in Water by IC (Low Level)						
*Nitrate (as N)	<0.0050		mg/L	10		25-OCT-19
Ion Balance Calculation						
Hardness Calculated						
Hardness (as CaCO3)	431		mg/L		500	05-NOV-19
Fluoride in Water by IC						
Fluoride (F)	0.302		mg/L	1.5		25-OCT-19
Dissolved Metals in Water by CRC ICPMS						
Dissolved Metals	FIELD					31-OCT-19
Filtration Location						
Aluminum (Al)-Dissolved	0.212		mg/L		0.1	01-NOV-19
Antimony (Sb)-Dissolved	<0.00010		mg/L	0.006		01-NOV-19
Arsenic (As)-Dissolved	0.00064		mg/L	0.01		01-NOV-19
Barium (Ba)-Dissolved	0.0295		mg/L	1		01-NOV-19
Beryllium (Be)-Dissolved	<0.00010		mg/L			01-NOV-19
Bismuth (Bi)-Dissolved	<0.000050		mg/L			01-NOV-19
Boron (B)-Dissolved	0.144		mg/L	5		01-NOV-19
Cadmium (Cd)-Dissolved	<0.0000050		mg/L	0.005		01-NOV-19
Calcium (Ca)-Dissolved	68.0		mg/L			01-NOV-19
Cesium (Cs)-Dissolved	0.000055		mg/L			01-NOV-19
Chromium (Cr)-Dissolved	0.00063		mg/L	0.05		01-NOV-19
Cobalt (Co)-Dissolved	0.00051		mg/L			01-NOV-19
Copper (Cu)-Dissolved	0.00153		mg/L	2.0	1.0	01-NOV-19
Iron (Fe)-Dissolved	0.412		mg/L		0.3	01-NOV-19
Lead (Pb)-Dissolved	0.00118		mg/L	0.005		01-NOV-19

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PO No.:
WO No.: L2371920
Project Ref: 18-0300-005
Sample ID: PW-200
Sampled By: P.JL/NB
Date Collected: 24-OCT-19
Lab Sample ID: L2371920-4
Matrix: GW

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
ROU4W Dissolved						
Dissolved Metals in Water by CRC ICPMS						
Lithium (Li)-Dissolved	0.0243		mg/L			01-NOV-19
Magnesium (Mg)-Dissolved	63.4		mg/L			01-NOV-19
Manganese (Mn)-Dissolved	0.0228		mg/L	0.12	0.02	01-NOV-19
Molybdenum (Mo)-Dissolved	0.000916		mg/L			01-NOV-19
Nickel (Ni)-Dissolved	0.00143		mg/L			01-NOV-19
Phosphorus (P)-Dissolved	<0.030		mg/L			01-NOV-19
Potassium (K)-Dissolved	5.05		mg/L			01-NOV-19
Rubidium (Rb)-Dissolved	0.00210		mg/L			01-NOV-19
Selenium (Se)-Dissolved	<0.000050		mg/L	0.05		01-NOV-19
Silicon (Si)-Dissolved	6.14		mg/L			01-NOV-19
Silver (Ag)-Dissolved	<0.000010		mg/L			01-NOV-19
Sodium (Na)-Dissolved	29.0		mg/L		200	01-NOV-19
Strontium (Sr)-Dissolved	0.228		mg/L	7		01-NOV-19
Sulfur (S)-Dissolved	25.9		mg/L			01-NOV-19
Tellurium (Te)-Dissolved	<0.00020		mg/L			01-NOV-19
Thallium (Tl)-Dissolved	0.000014		mg/L			01-NOV-19
Thorium (Th)-Dissolved	0.00023		mg/L			01-NOV-19
Tin (Sn)-Dissolved	<0.00010		mg/L			01-NOV-19
Titanium (Ti)-Dissolved	0.0128		mg/L			01-NOV-19
Tungsten (W)-Dissolved	<0.00010		mg/L			01-NOV-19
Uranium (U)-Dissolved	0.00212		mg/L	0.02		01-NOV-19
Vanadium (V)-Dissolved	0.00055		mg/L			01-NOV-19
Zinc (Zn)-Dissolved	0.0026		mg/L		5.0	01-NOV-19
Zirconium (Zr)-Dissolved	0.00028		mg/L			01-NOV-19
Conductivity						
Conductivity	697		umhos/cm			28-OCT-19
Chloride in Water by IC (Low Level)						
Chloride (Cl)	9.87		mg/L		250	25-OCT-19
Alkalinity, Total (as CaCO3)						
Alkalinity, Total (as CaCO3)	357		mg/L			28-OCT-19
Total Coliform and E.coli						
Total Coliforms	0		MPN/100mL	0		25-OCT-19
Escherichia Coli	0		MPN/100mL	0		25-OCT-19



KGS Group Consultants (Winnipeg)
865 Waverly Street - 3rd Floor
Winnipeg MB R3T 5P4
ATTN: PAUL LINDELL

Date: 05-NOV-19
PO No.:
WO No.: L2371920
Project Ref: 18-0300-005
Sample ID: PW-200
Sampled By: PJJ/NB
Date Collected: 24-OCT-19
Lab Sample ID: L2371920-4
Matrix: GW

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
<p>CDWQG = Health Canada Guideline Limits updated</p> <p>* CDWQG for Nitrate+Nitrite-N is the limit for nitrate only. If present as Nitrate then the limit is 10mg/L < or N.D. = less than detection limit. * Turbidity guideline based on membrane filtration. For guidelines on conventional treatment and slow sand or diatomaceous earth filtration please see Summary Table of Guidelines for Canadian Drinking Water Quality - A blank entry designates no known limit. - A shaded value in the Results column exceeds CDWQG MAC and/ or Aesthetic Objective.</p>	JUNE 2019					
<p>Approved by </p> <hr/> <p>Hua Wo Account Manager</p>						



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865 Waverly Street - 3rd Floor
Winnipeg MB R3T 5P4
ATTN: PAUL LINDELL

Date: 05-NOV-19
PO No.:
WO No.: L2371920
Project Ref: 18-0300-005
Sample ID: R3-SW
Sampled By: PJJ/NB
Date Collected: 24-OCT-19
Lab Sample ID: L2371920-5
Matrix: SW

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
ROU4W Dissolved						
Bicarbonate (HCO3)	131		mg/L			29-OCT-19
Carbonate (CO3)	<0.60		mg/L			29-OCT-19
Hydroxide (OH)	<0.34		mg/L			29-OCT-19
*Nitrate and Nitrite as N	<0.0051		mg/L	10		29-OCT-19
pH						
pH	8.02		pH units			28-OCT-19
Turbidity						
*Turbidity	1.20		NTU			25-OCT-19
TDS calculated						
TDS (Calculated)	103		mg/L		500	05-NOV-19
Sulfate in Water by IC						
Sulfate (SO4)	1.52		mg/L		500	25-OCT-19
Nitrite in Water by IC (Low Level)						
*Nitrite (as N)	<0.0010		mg/L	1		25-OCT-19
Nitrate in Water by IC (Low Level)						
*Nitrate (as N)	<0.0050		mg/L	10		25-OCT-19
Ion Balance Calculation						
Hardness Calculated						
Hardness (as CaCO3)	106		mg/L		500	05-NOV-19
Fluoride in Water by IC						
Fluoride (F)	0.044		mg/L	1.5		25-OCT-19
Dissolved Metals in Water by CRC ICPMS						
Dissolved Metals	FIELD					31-OCT-19
Filtration Location						
Aluminum (Al)-Dissolved	0.0048		mg/L		0.1	01-NOV-19
Antimony (Sb)-Dissolved	<0.00010		mg/L	0.006		01-NOV-19
Arsenic (As)-Dissolved	0.00064		mg/L	0.01		01-NOV-19
Barium (Ba)-Dissolved	0.00618		mg/L	1		01-NOV-19
Beryllium (Be)-Dissolved	<0.00010		mg/L			01-NOV-19
Bismuth (Bi)-Dissolved	<0.000050		mg/L			01-NOV-19
Boron (B)-Dissolved	0.012		mg/L	5		01-NOV-19
Cadmium (Cd)-Dissolved	<0.0000050		mg/L	0.005		01-NOV-19
Calcium (Ca)-Dissolved	20.8		mg/L			01-NOV-19
Cesium (Cs)-Dissolved	<0.000010		mg/L			01-NOV-19
Chromium (Cr)-Dissolved	0.00011		mg/L	0.05		01-NOV-19
Cobalt (Co)-Dissolved	<0.00010		mg/L			01-NOV-19
Copper (Cu)-Dissolved	0.00070		mg/L	2.0	1.0	01-NOV-19
Iron (Fe)-Dissolved	0.014		mg/L		0.3	01-NOV-19
Lead (Pb)-Dissolved	<0.000050		mg/L	0.005		01-NOV-19



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865 Waverly Street - 3rd Floor
Winnipeg MB R3T 5P4
ATTN: PAUL LINDELL

Date: 05-NOV-19
PO No.:
WO No.: L2371920
Project Ref: 18-0300-005
Sample ID: R3-SW
Sampled By: P.JL/NB
Date Collected: 24-OCT-19
Lab Sample ID: L2371920-5
Matrix: SW

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
ROU4W Dissolved						
Dissolved Metals in Water by CRC ICPMS						
Lithium (Li)-Dissolved	0.0021		mg/L			01-NOV-19
Magnesium (Mg)-Dissolved	13.1		mg/L			01-NOV-19
Manganese (Mn)-Dissolved	0.00141		mg/L	0.12	0.02	01-NOV-19
Molybdenum (Mo)-Dissolved	0.000081		mg/L			01-NOV-19
Nickel (Ni)-Dissolved	<0.00050		mg/L			01-NOV-19
Phosphorus (P)-Dissolved	<0.030		mg/L			01-NOV-19
Potassium (K)-Dissolved	2.02		mg/L			01-NOV-19
Rubidium (Rb)-Dissolved	0.00356		mg/L			01-NOV-19
Selenium (Se)-Dissolved	0.000100		mg/L	0.05		01-NOV-19
Silicon (Si)-Dissolved	4.04		mg/L			01-NOV-19
Silver (Ag)-Dissolved	<0.000010		mg/L			01-NOV-19
Sodium (Na)-Dissolved	0.916		mg/L		200	01-NOV-19
Strontium (Sr)-Dissolved	0.0223		mg/L	7		01-NOV-19
Sulfur (S)-Dissolved	<0.50		mg/L			01-NOV-19
Tellurium (Te)-Dissolved	<0.00020		mg/L			01-NOV-19
Thallium (Tl)-Dissolved	<0.000010		mg/L			01-NOV-19
Thorium (Th)-Dissolved	<0.00010		mg/L			01-NOV-19
Tin (Sn)-Dissolved	<0.00010		mg/L			01-NOV-19
Titanium (Ti)-Dissolved	<0.00030		mg/L			01-NOV-19
Tungsten (W)-Dissolved	<0.00010		mg/L			01-NOV-19
Uranium (U)-Dissolved	0.000057		mg/L	0.02		01-NOV-19
Vanadium (V)-Dissolved	<0.00050		mg/L			01-NOV-19
Zinc (Zn)-Dissolved	0.0016		mg/L		5.0	01-NOV-19
Zirconium (Zr)-Dissolved	<0.00020		mg/L			01-NOV-19
Conductivity						
Conductivity	176		umhos/cm			28-OCT-19
Chloride in Water by IC (Low Level)						
Chloride (Cl)	0.66		mg/L		250	25-OCT-19
Alkalinity, Total (as CaCO3)						
Alkalinity, Total (as CaCO3)	107		mg/L			28-OCT-19
Total Metals in Water by CRC ICPMS						
Aluminum (Al)-Total	0.0342		mg/L		0.1	01-NOV-19
Antimony (Sb)-Total	<0.00010		mg/L	0.006		01-NOV-19
Arsenic (As)-Total	0.00068		mg/L	0.01		01-NOV-19
Barium (Ba)-Total	0.00697		mg/L	1		01-NOV-19
Beryllium (Be)-Total	<0.00010		mg/L			01-NOV-19
Bismuth (Bi)-Total	<0.000050		mg/L			01-NOV-19



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Date: 05-NOV-19
PO No.:
WO No.: L2371920
Project Ref: 18-0300-005
Sample ID: R3-SW
Sampled By: PJJ/NB
Date Collected: 24-OCT-19
Lab Sample ID: L2371920-5
Matrix: SW

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
Total Metals in Water by CRC ICPMS						
Boron (B)-Total	<0.010		mg/L	5		01-NOV-19
Cadmium (Cd)-Total	0.0000128		mg/L	0.005		01-NOV-19
Calcium (Ca)-Total	21.5		mg/L			01-NOV-19
Cesium (Cs)-Total	<0.000010		mg/L			01-NOV-19
Chromium (Cr)-Total	0.00016		mg/L	0.05		01-NOV-19
Cobalt (Co)-Total	<0.00010		mg/L			01-NOV-19
Copper (Cu)-Total	<0.00050		mg/L	2.0	1.0	01-NOV-19
Iron (Fe)-Total	0.035		mg/L		0.3	01-NOV-19
Lead (Pb)-Total	<0.000050		mg/L	0.005		01-NOV-19
Lithium (Li)-Total	0.0023		mg/L			01-NOV-19
Magnesium (Mg)-Total	13.5		mg/L			01-NOV-19
Manganese (Mn)-Total	0.00204		mg/L	0.12	0.02	01-NOV-19
Molybdenum (Mo)-Total	0.000085		mg/L			01-NOV-19
Nickel (Ni)-Total	<0.00050		mg/L			01-NOV-19
Potassium (K)-Total	2.00		mg/L			01-NOV-19
Phosphorus (P)-Total	<0.030		mg/L			01-NOV-19
Rubidium (Rb)-Total	0.00355		mg/L			01-NOV-19
Selenium (Se)-Total	0.000108		mg/L	0.05		01-NOV-19
Silicon (Si)-Total	4.17		mg/L			01-NOV-19
Silver (Ag)-Total	<0.000010		mg/L			01-NOV-19
Sodium (Na)-Total	1.03		mg/L		200	01-NOV-19
Strontium (Sr)-Total	0.0233		mg/L	7		01-NOV-19
Sulfur (S)-Total	1.27		mg/L			01-NOV-19
Tellurium (Te)-Total	<0.00020		mg/L			01-NOV-19
Thallium (Tl)-Total	<0.000010		mg/L			01-NOV-19
Thorium (Th)-Total	<0.00010		mg/L			01-NOV-19
Tin (Sn)-Total	<0.00010		mg/L			01-NOV-19
Titanium (Ti)-Total	0.00117		mg/L			01-NOV-19
Tungsten (W)-Total	<0.00010		mg/L			01-NOV-19
Uranium (U)-Total	0.000061		mg/L	0.02		01-NOV-19
Vanadium (V)-Total	<0.00050		mg/L			01-NOV-19
Zinc (Zn)-Total	<0.0030		mg/L		5.0	01-NOV-19
Zirconium (Zr)-Total	<0.00020		mg/L			01-NOV-19
Total Coliform and E.coli						
Total Coliforms	>200		MPN/100mL	0		25-OCT-19
Escherichia Coli	1		MPN/100mL	0		25-OCT-19



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Project Ref: 18-0300-005
Sample ID: R3-SW
Sampled By: PJJ/NB
Date Collected: 24-OCT-19
Lab Sample ID: L2371920-5
Matrix: SW

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
<p>CDWQG = Health Canada Guideline Limits updated JUNE 2019</p> <p>* CDWQG for Nitrate+Nitrite-N is the limit for nitrate only. If present as Nitrate then the limit is 10mg/L < or N.D. = less than detection limit. * Turbidity guideline based on membrane filtration. For guidelines on conventional treatment and slow sand or diatomaceous earth filtration please see Summary Table of Guidelines for Canadian Drinking Water Quality - A blank entry designates no known limit. - A shaded value in the Results column exceeds CDWQG MAC and/ or Aesthetic Objective.</p>						
<p>Approved by <u><i>Hua Wo</i></u> Hua Wo Account Manager</p>						

Guidelines & Objectives

Health Canada MAC Health Related Criteria Limits

Nitrate/Nitrite-N*	Criteria limit is 10 mg/L (1.0 mg/L if present as all Nitrite-N). High concentrations may contribute to blue baby syndrome in infants.
Lead*	A cumulative body poison, uncommon in naturally occurring hard waters.
Fluoride*	Present in fluoridated water supplies at 0.8 mg/L to reduce dental caries. Elevated levels causes fluorosis (mottling of teeth).
Total Coliforms*	Criteria is 0 CFU/100mL. Adverse health effects.
E. Coli*	Criteria is 0 CFU/100 mL. Certain E. Coli bacteria can be life threatening.
Manganese*	Criteria limit is 0.12 mg/L. Possible neurological effects in infants.

*Health Canada Canadian Drinking Water Quality Guidelines (MAC limit)

Aesthetic Objective Concentration Levels

Alkalinity	Acid neutralizing capacity. Usually a measure of carbonate and bicarbonates and calculated and reported as calcium carbonate.
Balance	Quality control parameter ratioing cations to anions
Bicarbonate	See Alkalinity. Report as the anion HCO ₃ -1
Carbonate	See Alkalinity. Reported at the anion CO ₃ -2
Calcium	See Hardness. Common major cation of water chemistry.
Chloride	Common major anion of water chemistry.
Conductance	Physical test measuring water salinity (dissolved ions or solids)
Hardness	Classical measure or capacity of water to precipitate soap (chiefly calcium and magnesium ions). Causes scaling tendency in water if carbonates/bicarbonates are present (if >200 mg/L). For drinking water purposes waters with results <200 mg/L are considered acceptable, results >200 mg/L are considered poor but can be tolerated. Results >500 mg/L are unacceptable.
Hydroxide	See alkalinity
Magnesium	See hardness. Common major cation of water chemistry. Elevated levels (>125 mg/L) may exert a cathartic or diuretic action.
pH	Measure of water acidity/alkalinity. Normal range is 7.0-8.5.
Potassium	Common major cation of water chemistry.
Sodium	Common major cation of water chemistry. Measure of salinity (saltiness).The aesthetic objective (not related to health) for sodium in drinking water is 200 mg/L. However, where sodium concentration of the drinking water exceeds 20 mg/L, it is recommended that any person on a sodium restricted diet consult with his/her physician or Medical Officer of Health concerning the use of that water.
Sulphate	Common major anion of water chemistry. Elevated levels may exert a cathartic or diuretic action.
Total Dissolved Solids	A measure of water salinity.
Iron	Causes staining to laundry and porcelain and astringent taste. Oxidizes to red-brown precipitate on exposure to air.
Heterotrophic Plate Count	Criteria is 500 cfu/mL Measure of heterotrophic bacteria present.

GLOSSARY OF REPORT TERMS

Surrogates are compounds that are similar in behaviour to target analyte(s), but that do not normally occur in environmental samples. For applicable tests, surrogates are added to samples prior to analysis as a check on recovery. In reports that display the D.L. column, laboratory objectives for surrogates are listed there.

mg/kg - milligrams per kilogram based on dry weight of sample

mg/kg wwt - milligrams per kilogram based on wet weight of sample

mg/kg lwt - milligrams per kilogram based on lipid-adjusted weight

mg/L - unit of concentration based on volume, parts per million.

< - Less than.

D.L. - The reporting limit.

N/A - Result not available. Refer to qualifier code and definition for explanation.

Test results reported relate only to the samples as received by the laboratory.

UNLESS OTHERWISE STATED, ALL SAMPLES WERE RECEIVED IN ACCEPTABLE CONDITION.

Analytical results in unsigned test reports with the DRAFT watermark are subject to change, pending final QC review.

Quality Control Report

Workorder: L2371920

Report Date: 05-NOV-19

Page 1 of 9

Client: KGS Group Consultants (Winnipeg)
 865 Waverly Street - 3rd Floor
 Winnipeg MB R3T 5P4

Contact: PAUL LINDELL

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
ALK-TITR-WP		Water						
Batch	R4888741							
WG3204356-19	LCS							
Alkalinity, Total (as CaCO3)			114.1		%		85-115	28-OCT-19
WG3204356-16	MB							
Alkalinity, Total (as CaCO3)			<1.0		mg/L		1	28-OCT-19
CL-L-IC-N-WP		Water						
Batch	R4885628							
WG3202025-2	LCS							
Chloride (Cl)			99.1		%		90-110	25-OCT-19
WG3202025-1	MB							
Chloride (Cl)			<0.10		mg/L		0.1	25-OCT-19
EC-WP		Water						
Batch	R4888741							
WG3204356-18	LCS							
Conductivity			98.0		%		90-110	28-OCT-19
WG3204356-16	MB							
Conductivity			<1.0		umhos/cm		1	28-OCT-19
F-IC-N-WP		Water						
Batch	R4885628							
WG3202025-2	LCS							
Fluoride (F)			94.1		%		90-110	25-OCT-19
WG3202025-1	MB							
Fluoride (F)			<0.020		mg/L		0.02	25-OCT-19
MET-D-CCMS-WP		Water						
Batch	R4898393							
WG3207162-2	LCS							
Aluminum (Al)-Dissolved			102.7		%		80-120	01-NOV-19
Antimony (Sb)-Dissolved			103.2		%		80-120	01-NOV-19
Arsenic (As)-Dissolved			102.7		%		80-120	01-NOV-19
Barium (Ba)-Dissolved			102.4		%		80-120	01-NOV-19
Beryllium (Be)-Dissolved			104.2		%		80-120	01-NOV-19
Bismuth (Bi)-Dissolved			101.6		%		80-120	01-NOV-19
Boron (B)-Dissolved			101.0		%		80-120	01-NOV-19
Cadmium (Cd)-Dissolved			103.1		%		80-120	01-NOV-19
Calcium (Ca)-Dissolved			102.0		%		80-120	01-NOV-19
Cesium (Cs)-Dissolved			105.8		%		80-120	01-NOV-19
Chromium (Cr)-Dissolved			99.9		%		80-120	01-NOV-19



Quality Control Report

Workorder: L2371920

Report Date: 05-NOV-19

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Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
MET-D-CCMS-WP		Water						
Batch	R4898393							
WG3207162-2	LCS							
Cobalt (Co)-Dissolved			100.4		%		80-120	01-NOV-19
Copper (Cu)-Dissolved			101.7		%		80-120	01-NOV-19
Iron (Fe)-Dissolved			92.6		%		80-120	01-NOV-19
Lead (Pb)-Dissolved			102.1		%		80-120	01-NOV-19
Lithium (Li)-Dissolved			102.1		%		80-120	01-NOV-19
Magnesium (Mg)-Dissolved			114.4		%		80-120	01-NOV-19
Manganese (Mn)-Dissolved			104.3		%		80-120	01-NOV-19
Molybdenum (Mo)-Dissolved			100.8		%		80-120	01-NOV-19
Nickel (Ni)-Dissolved			101.4		%		80-120	01-NOV-19
Phosphorus (P)-Dissolved			102.8		%		80-120	01-NOV-19
Potassium (K)-Dissolved			95.8		%		80-120	01-NOV-19
Rubidium (Rb)-Dissolved			105.8		%		80-120	01-NOV-19
Selenium (Se)-Dissolved			103.0		%		80-120	01-NOV-19
Silicon (Si)-Dissolved			102.9		%		80-120	01-NOV-19
Silver (Ag)-Dissolved			100.7		%		80-120	01-NOV-19
Sodium (Na)-Dissolved			102.6		%		80-120	01-NOV-19
Strontium (Sr)-Dissolved			99.9		%		80-120	01-NOV-19
Sulfur (S)-Dissolved			93.1		%		80-120	01-NOV-19
Tellurium (Te)-Dissolved			104.0		%		80-120	01-NOV-19
Thallium (Tl)-Dissolved			95.9		%		80-120	01-NOV-19
Thorium (Th)-Dissolved			104.0		%		80-120	01-NOV-19
Tin (Sn)-Dissolved			101.8		%		80-120	01-NOV-19
Titanium (Ti)-Dissolved			101.5		%		80-120	01-NOV-19
Tungsten (W)-Dissolved			104.5		%		80-120	01-NOV-19
Uranium (U)-Dissolved			106.6		%		80-120	01-NOV-19
Vanadium (V)-Dissolved			103.2		%		80-120	01-NOV-19
Zinc (Zn)-Dissolved			101.2		%		80-120	01-NOV-19
Zirconium (Zr)-Dissolved			100.7		%		80-120	01-NOV-19
WG3207162-1	MB							
Aluminum (Al)-Dissolved			<0.0010		mg/L		0.001	01-NOV-19
Antimony (Sb)-Dissolved			<0.00010		mg/L		0.0001	01-NOV-19
Arsenic (As)-Dissolved			<0.00010		mg/L		0.0001	01-NOV-19
Barium (Ba)-Dissolved			<0.00010		mg/L		0.0001	01-NOV-19
Beryllium (Be)-Dissolved			<0.00010		mg/L		0.0001	01-NOV-19



Quality Control Report

Workorder: L2371920

Report Date: 05-NOV-19

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Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
MET-D-CCMS-WP								
	Water							
Batch	R4898393							
WG3207162-1	MB							
Bismuth (Bi)-Dissolved			<0.000050		mg/L		0.00005	01-NOV-19
Boron (B)-Dissolved			<0.010		mg/L		0.01	01-NOV-19
Cadmium (Cd)-Dissolved			<0.0000050		mg/L		0.000005	01-NOV-19
Calcium (Ca)-Dissolved			<0.050		mg/L		0.05	01-NOV-19
Cesium (Cs)-Dissolved			<0.000010		mg/L		0.00001	01-NOV-19
Chromium (Cr)-Dissolved			<0.00010		mg/L		0.0001	01-NOV-19
Cobalt (Co)-Dissolved			<0.00010		mg/L		0.0001	01-NOV-19
Copper (Cu)-Dissolved			<0.00020		mg/L		0.0002	01-NOV-19
Iron (Fe)-Dissolved			<0.010		mg/L		0.01	01-NOV-19
Lead (Pb)-Dissolved			<0.000050		mg/L		0.00005	01-NOV-19
Lithium (Li)-Dissolved			<0.0010		mg/L		0.001	01-NOV-19
Magnesium (Mg)-Dissolved			<0.0050		mg/L		0.005	01-NOV-19
Manganese (Mn)-Dissolved			<0.00010		mg/L		0.0001	01-NOV-19
Molybdenum (Mo)-Dissolved			<0.000050		mg/L		0.00005	01-NOV-19
Nickel (Ni)-Dissolved			<0.00050		mg/L		0.0005	01-NOV-19
Phosphorus (P)-Dissolved			<0.030		mg/L		0.03	01-NOV-19
Potassium (K)-Dissolved			<0.050		mg/L		0.05	01-NOV-19
Rubidium (Rb)-Dissolved			<0.00020		mg/L		0.0002	01-NOV-19
Selenium (Se)-Dissolved			<0.000050		mg/L		0.00005	01-NOV-19
Silicon (Si)-Dissolved			<0.050		mg/L		0.05	01-NOV-19
Silver (Ag)-Dissolved			<0.000010		mg/L		0.00001	01-NOV-19
Sodium (Na)-Dissolved			<0.050		mg/L		0.05	01-NOV-19
Strontium (Sr)-Dissolved			<0.00010		mg/L		0.0001	01-NOV-19
Sulfur (S)-Dissolved			<0.50		mg/L		0.5	01-NOV-19
Tellurium (Te)-Dissolved			<0.00020		mg/L		0.0002	01-NOV-19
Thallium (Tl)-Dissolved			<0.000010		mg/L		0.00001	01-NOV-19
Thorium (Th)-Dissolved			<0.00010		mg/L		0.0001	01-NOV-19
Tin (Sn)-Dissolved			<0.00010		mg/L		0.0001	01-NOV-19
Titanium (Ti)-Dissolved			<0.00030		mg/L		0.0003	01-NOV-19
Tungsten (W)-Dissolved			<0.00010		mg/L		0.0001	01-NOV-19
Uranium (U)-Dissolved			<0.000010		mg/L		0.00001	01-NOV-19
Vanadium (V)-Dissolved			<0.00050		mg/L		0.0005	01-NOV-19
Zinc (Zn)-Dissolved			<0.0010		mg/L		0.001	01-NOV-19
Zirconium (Zr)-Dissolved			<0.00020		mg/L		0.0002	01-NOV-19



Quality Control Report

Workorder: L2371920

Report Date: 05-NOV-19

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Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
MET-T-CCMS-WP								
	Water							
Batch	R4898393							
WG3204244-2	LCS							
Aluminum (Al)-Total			104.4		%		80-120	01-NOV-19
Antimony (Sb)-Total			104.7		%		80-120	01-NOV-19
Arsenic (As)-Total			104.6		%		80-120	01-NOV-19
Barium (Ba)-Total			105.0		%		80-120	01-NOV-19
Beryllium (Be)-Total			101.2		%		80-120	01-NOV-19
Bismuth (Bi)-Total			104.6		%		80-120	01-NOV-19
Boron (B)-Total			101.8		%		80-120	01-NOV-19
Cadmium (Cd)-Total			102.7		%		80-120	01-NOV-19
Calcium (Ca)-Total			101.3		%		80-120	01-NOV-19
Cesium (Cs)-Total			106.4		%		80-120	01-NOV-19
Chromium (Cr)-Total			104.5		%		80-120	01-NOV-19
Cobalt (Co)-Total			102.2		%		80-120	01-NOV-19
Copper (Cu)-Total			102.8		%		80-120	01-NOV-19
Iron (Fe)-Total			97.1		%		80-120	01-NOV-19
Lead (Pb)-Total			104.9		%		80-120	01-NOV-19
Lithium (Li)-Total			99.0		%		80-120	01-NOV-19
Magnesium (Mg)-Total			113.4		%		80-120	01-NOV-19
Manganese (Mn)-Total			103.4		%		80-120	01-NOV-19
Molybdenum (Mo)-Total			103.2		%		80-120	01-NOV-19
Nickel (Ni)-Total			103.1		%		80-120	01-NOV-19
Potassium (K)-Total			98.0		%		80-120	01-NOV-19
Phosphorus (P)-Total			106.1		%		80-120	01-NOV-19
Rubidium (Rb)-Total			103.6		%		80-120	01-NOV-19
Selenium (Se)-Total			102.0		%		80-120	01-NOV-19
Silicon (Si)-Total			105.8		%		80-120	01-NOV-19
Silver (Ag)-Total			99.99		%		80-120	01-NOV-19
Sodium (Na)-Total			106.4		%		80-120	01-NOV-19
Strontium (Sr)-Total			104.6		%		80-120	01-NOV-19
Sulfur (S)-Total			115.6		%		80-120	01-NOV-19
Tellurium (Te)-Total			101.4		%		80-120	01-NOV-19
Thallium (Tl)-Total			104.7		%		80-120	01-NOV-19
Thorium (Th)-Total			108.1		%		80-120	01-NOV-19
Tin (Sn)-Total			104.0		%		80-120	01-NOV-19
Titanium (Ti)-Total			101.9		%		80-120	01-NOV-19



Quality Control Report

Workorder: L2371920

Report Date: 05-NOV-19

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Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
MET-T-CCMS-WP		Water						
Batch	R4898393							
WG3204244-2	LCS							
Tungsten (W)-Total			104.8		%		80-120	01-NOV-19
Uranium (U)-Total			115.6		%		80-120	01-NOV-19
Vanadium (V)-Total			103.9		%		80-120	01-NOV-19
Zinc (Zn)-Total			105.0		%		80-120	01-NOV-19
Zirconium (Zr)-Total			101.2		%		80-120	01-NOV-19
WG3204244-1	MB							
Aluminum (Al)-Total			<0.0030		mg/L		0.003	01-NOV-19
Antimony (Sb)-Total			<0.00010		mg/L		0.0001	01-NOV-19
Arsenic (As)-Total			<0.00010		mg/L		0.0001	01-NOV-19
Barium (Ba)-Total			<0.00010		mg/L		0.0001	01-NOV-19
Beryllium (Be)-Total			<0.00010		mg/L		0.0001	01-NOV-19
Bismuth (Bi)-Total			<0.000050		mg/L		0.00005	01-NOV-19
Boron (B)-Total			<0.010		mg/L		0.01	01-NOV-19
Cadmium (Cd)-Total			<0.0000050		mg/L		0.000005	01-NOV-19
Calcium (Ca)-Total			<0.050		mg/L		0.05	01-NOV-19
Cesium (Cs)-Total			<0.000010		mg/L		0.00001	01-NOV-19
Chromium (Cr)-Total			<0.00010		mg/L		0.0001	01-NOV-19
Cobalt (Co)-Total			<0.00010		mg/L		0.0001	01-NOV-19
Copper (Cu)-Total			<0.00050		mg/L		0.0005	01-NOV-19
Iron (Fe)-Total			<0.010		mg/L		0.01	01-NOV-19
Lead (Pb)-Total			<0.000050		mg/L		0.00005	01-NOV-19
Lithium (Li)-Total			<0.0010		mg/L		0.001	01-NOV-19
Magnesium (Mg)-Total			<0.0050		mg/L		0.005	01-NOV-19
Manganese (Mn)-Total			<0.00010		mg/L		0.0001	01-NOV-19
Molybdenum (Mo)-Total			<0.000050		mg/L		0.00005	01-NOV-19
Nickel (Ni)-Total			<0.00050		mg/L		0.0005	01-NOV-19
Potassium (K)-Total			<0.050		mg/L		0.05	01-NOV-19
Phosphorus (P)-Total			<0.030		mg/L		0.03	01-NOV-19
Rubidium (Rb)-Total			<0.00020		mg/L		0.0002	01-NOV-19
Selenium (Se)-Total			<0.000050		mg/L		0.00005	01-NOV-19
Silicon (Si)-Total			<0.10		mg/L		0.1	01-NOV-19
Silver (Ag)-Total			<0.000010		mg/L		0.00001	01-NOV-19
Sodium (Na)-Total			<0.050		mg/L		0.05	01-NOV-19
Strontium (Sr)-Total			<0.00020		mg/L		0.0002	01-NOV-19



Quality Control Report

Workorder: L2371920

Report Date: 05-NOV-19

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Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
MET-T-CCMS-WP		Water						
Batch	R4898393							
WG3204244-1	MB							
Sulfur (S)-Total			<0.50		mg/L		0.5	01-NOV-19
Tellurium (Te)-Total			<0.00020		mg/L		0.0002	01-NOV-19
Thallium (Tl)-Total			<0.000010		mg/L		0.00001	01-NOV-19
Thorium (Th)-Total			<0.00010		mg/L		0.0001	01-NOV-19
Tin (Sn)-Total			<0.00010		mg/L		0.0001	01-NOV-19
Titanium (Ti)-Total			<0.00030		mg/L		0.0003	01-NOV-19
Tungsten (W)-Total			<0.00010		mg/L		0.0001	01-NOV-19
Uranium (U)-Total			<0.000010		mg/L		0.00001	01-NOV-19
Vanadium (V)-Total			<0.00050		mg/L		0.0005	01-NOV-19
Zinc (Zn)-Total			<0.0030		mg/L		0.003	01-NOV-19
Zirconium (Zr)-Total			<0.00020		mg/L		0.0002	01-NOV-19
NO2-L-IC-N-WP		Water						
Batch	R4885628							
WG3202025-2	LCS							
Nitrite (as N)			99.4		%		90-110	25-OCT-19
WG3202025-1	MB							
Nitrite (as N)			<0.0010		mg/L		0.001	25-OCT-19
NO3-L-IC-N-WP		Water						
Batch	R4885628							
WG3202025-2	LCS							
Nitrate (as N)			99.7		%		90-110	25-OCT-19
WG3202025-1	MB							
Nitrate (as N)			<0.0050		mg/L		0.005	25-OCT-19
PH-WP		Water						
Batch	R4888741							
WG3204356-17	LCS							
pH			7.37		pH units		7.3-7.5	28-OCT-19
SO4-IC-N-WP		Water						
Batch	R4885628							
WG3202025-2	LCS							
Sulfate (SO4)			99.3		%		90-110	25-OCT-19
WG3202025-1	MB							
Sulfate (SO4)			<0.30		mg/L		0.3	25-OCT-19
TC,EC-QT51-WP		Water						



Quality Control Report

Workorder: L2371920

Report Date: 05-NOV-19

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Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
TC,EC-QT51-WP								
	Water							
Batch	R4885887							
WG3201991-5	DUP	L2371920-5						
Total Coliforms		>200	>200		MPN/100mL	0.0	65	25-OCT-19
Escherichia Coli		1	1		MPN/100mL	0.0	65	25-OCT-19
WG3201991-6	DUP	L2371920-4						
Total Coliforms		0	0		MPN/100mL	0.0	65	25-OCT-19
Escherichia Coli		0	0		MPN/100mL	0.0	65	25-OCT-19
WG3201991-7	DUP	L2371920-3						
Total Coliforms		130	118		MPN/100mL	9.7	65	25-OCT-19
Escherichia Coli		0	0		MPN/100mL	0.0	65	25-OCT-19
WG3201991-8	DUP	L2371920-2						
Total Coliforms		3	0	DUPM	MPN/100mL	3	2	25-OCT-19
Escherichia Coli		0	0		MPN/100mL	0.0	65	25-OCT-19
WG3201991-9	DUP	L2371920-1						
Total Coliforms		0	0		MPN/100mL	0.0	65	25-OCT-19
Escherichia Coli		0	0		MPN/100mL	0.0	65	25-OCT-19
WG3201991-1	MB							
Total Coliforms			0		MPN/100mL		1	25-OCT-19
Escherichia Coli			0		MPN/100mL		1	25-OCT-19
WG3201991-2	MB							
Total Coliforms			0		MPN/100mL		1	25-OCT-19
Escherichia Coli			0		MPN/100mL		1	25-OCT-19
WG3201991-3	MB							
Total Coliforms			0		MPN/100mL		1	25-OCT-19
Escherichia Coli			0		MPN/100mL		1	25-OCT-19
TURBIDITY-WP								
	Water							
Batch	R4886035							
WG3201869-6	DUP	L2371920-4						
Turbidity		81.2	81.4		NTU	0.2	15	25-OCT-19
WG3201869-5	LCS							
Turbidity			102.5		%		85-115	25-OCT-19
WG3201869-4	MB							
Turbidity			<0.10		NTU		0.1	25-OCT-19

Quality Control Report

Workorder: L2371920

Report Date: 05-NOV-19

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Legend:

Limit	ALS Control Limit (Data Quality Objectives)
DUP	Duplicate
RPD	Relative Percent Difference
N/A	Not Available
LCS	Laboratory Control Sample
SRM	Standard Reference Material
MS	Matrix Spike
MSD	Matrix Spike Duplicate
ADE	Average Desorption Efficiency
MB	Method Blank
IRM	Internal Reference Material
CRM	Certified Reference Material
CCV	Continuing Calibration Verification
CVS	Calibration Verification Standard
LCSD	Laboratory Control Sample Duplicate

Sample Parameter Qualifier Definitions:

Qualifier	Description
DUPM	MPN duplicate results were outside default ALS Data Quality Objective, but within 95% confidence interval for MPN reference method. Sample results are reliable.

Quality Control Report

Workorder: L2371920

Report Date: 05-NOV-19

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Hold Time Exceedances:

ALS Product Description	Sample ID	Sampling Date	Date Processed	Rec. HT	Actual HT	Units	Qualifier
Physical Tests							
pH	1	24-OCT-19 14:20	28-OCT-19 12:00	0.25	94	hours	EHTR-FM
	2	24-OCT-19 16:20	28-OCT-19 12:00	0.25	92	hours	EHTR-FM
	3	24-OCT-19 11:20	28-OCT-19 12:00	0.25	97	hours	EHTR-FM
	4	24-OCT-19 11:50	28-OCT-19 12:00	0.25	96	hours	EHTR-FM
	5	24-OCT-19	28-OCT-19 12:00	0.25	96	hours	EHTR-FM
Bacteriological Tests							
Total Coliform and E.coli	3	24-OCT-19 11:20	25-OCT-19 18:15	30	31	hours	EHTL

Legend & Qualifier Definitions:

- EHTR-FM: Exceeded ALS recommended hold time prior to sample receipt. Field Measurement recommended.
EHTR: Exceeded ALS recommended hold time prior to sample receipt.
EHTL: Exceeded ALS recommended hold time prior to analysis. Sample was received less than 24 hours prior to expiry.
EHT: Exceeded ALS recommended hold time prior to analysis.
Rec. HT: ALS recommended hold time (see units).

Notes*:
Where actual sampling date is not provided to ALS, the date (& time) of receipt is used for calculation purposes.
Where actual sampling time is not provided to ALS, the earlier of 12 noon on the sampling date or the time (& date) of receipt is used for calculation purposes. Samples for L2371920 were received on 25-OCT-19 11:50.

ALS recommended hold times may vary by province. They are assigned to meet known provincial and/or federal government requirements. In the absence of regulatory hold times, ALS establishes recommendations based on guidelines published by the US EPA, APHA Standard Methods, or Environment Canada (where available). For more information, please contact ALS.

The ALS Quality Control Report is provided to ALS clients upon request. ALS includes comprehensive QC checks with every analysis to ensure our high standards of quality are met. Each QC result has a known or expected target value, which is compared against pre-determined data quality objectives to provide confidence in the accuracy of associated test results.

Please note that this report may contain QC results from anonymous Sample Duplicates and Matrix Spikes that do not originate from this Work Order.



KGS Group Consultants (Winnipeg)
865 Waverly Street - 3rd Floor
Winnipeg MB R3T 5P4
ATTN: PAUL LINDELL

Date: 30-JUN-20
PO No.:
WO No.: L2462330
Project Ref: 18-0300-005.2302.04
Sample ID: TH19-KGS-18
Sampled By: PL/SB
Date Collected: 16-JUN-20
Lab Sample ID: L2462330-1
Matrix: GROUNDWATER

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
ROU4W Dissolved						
Bicarbonate (HCO3)	404		mg/L			22-JUN-20
Carbonate (CO3)	<0.60		mg/L			22-JUN-20
Hydroxide (OH)	<0.34		mg/L			22-JUN-20
*Nitrate and Nitrite as N	<0.0051		mg/L	10		23-JUN-20
pH						
pH	7.41		pH units			19-JUN-20
Turbidity						
*Turbidity	821		NTU			18-JUN-20
TDS calculated						
TDS (Calculated)	323		mg/L		500	22-JUN-20
Sulfate in Water by IC						
Sulfate (SO4)	5.69		mg/L		500	19-JUN-20
Nitrite in Water by IC (Low Level)						
*Nitrite (as N)	<0.0010		mg/L	1		19-JUN-20
Nitrate in Water by IC (Low Level)						
*Nitrate (as N)	<0.0050		mg/L	10		19-JUN-20
Ion Balance Calculation						
Hardness Calculated						
Hardness (as CaCO3)	333		mg/L		500	22-JUN-20
Fluoride in Water by IC						
Fluoride (F)	0.127		mg/L	1.5		19-JUN-20
Dissolved Metals in Water by CRC ICPMS						
Dissolved Metals	FIELD					19-JUN-20
Filtration Location						
Aluminum (Al)-Dissolved	0.0163		mg/L		0.1	19-JUN-20
Antimony (Sb)-Dissolved	0.00014		mg/L	0.006		19-JUN-20
Arsenic (As)-Dissolved	0.00163		mg/L	0.01		19-JUN-20
Barium (Ba)-Dissolved	0.0434		mg/L	2		19-JUN-20
Beryllium (Be)-Dissolved	<0.00010		mg/L			19-JUN-20
Bismuth (Bi)-Dissolved	<0.000050		mg/L			19-JUN-20
Boron (B)-Dissolved	0.028		mg/L	5		19-JUN-20
Cadmium (Cd)-Dissolved	<0.0000050		mg/L	0.005		19-JUN-20
Calcium (Ca)-Dissolved	77.6		mg/L			19-JUN-20
Cesium (Cs)-Dissolved	<0.000010		mg/L			19-JUN-20
Chromium (Cr)-Dissolved	0.00047		mg/L	0.05		19-JUN-20
Cobalt (Co)-Dissolved	0.00065		mg/L			19-JUN-20
Copper (Cu)-Dissolved	<0.00020		mg/L	2.0	1.0	19-JUN-20
Iron (Fe)-Dissolved	1.78		mg/L		0.3	19-JUN-20
Lead (Pb)-Dissolved	<0.000050		mg/L	0.005		19-JUN-20

ADDRESS: 1329 Niakwa Road East, Unit 12, Winnipeg, MB R2J 3T4 Canada | Phone: +1 204 255 9720 | Fax: +1 204 255 9721
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KGS Group Consultants (Winnipeg)
865 Waverly Street - 3rd Floor
Winnipeg MB R3T 5P4
ATTN: PAUL LINDELL

Date: 30-JUN-20
PO No.:
WO No.: L2462330
Project Ref: 18-0300-005.2302.04
Sample ID: TH19-KGS-18
Sampled By: PL/SB
Date Collected: 16-JUN-20
Lab Sample ID: L2462330-1
Matrix: GROUNDWATER

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
ROU4W Dissolved						
Dissolved Metals in Water by CRC ICPMS						
Lithium (Li)-Dissolved	0.0089		mg/L			19-JUN-20
Magnesium (Mg)-Dissolved	33.9		mg/L			19-JUN-20
Manganese (Mn)-Dissolved	0.112		mg/L	0.12	0.02	19-JUN-20
Molybdenum (Mo)-Dissolved	0.000534		mg/L			19-JUN-20
Nickel (Ni)-Dissolved	0.00174		mg/L			19-JUN-20
Phosphorus (P)-Dissolved	<0.030		mg/L			19-JUN-20
Potassium (K)-Dissolved	0.616		mg/L			19-JUN-20
Rubidium (Rb)-Dissolved	0.00131		mg/L			19-JUN-20
Selenium (Se)-Dissolved	0.000918		mg/L	0.05		19-JUN-20
Silicon (Si)-Dissolved	6.99		mg/L			19-JUN-20
Silver (Ag)-Dissolved	<0.000010		mg/L			19-JUN-20
Sodium (Na)-Dissolved	6.56		mg/L		200	19-JUN-20
Strontium (Sr)-Dissolved	0.108		mg/L	7		19-JUN-20
Sulfur (S)-Dissolved	9.68		mg/L			19-JUN-20
Tellurium (Te)-Dissolved	<0.00020		mg/L			19-JUN-20
Thallium (Tl)-Dissolved	<0.000010		mg/L			19-JUN-20
Thorium (Th)-Dissolved	<0.00010		mg/L			19-JUN-20
Tin (Sn)-Dissolved	<0.00010		mg/L			19-JUN-20
Titanium (Ti)-Dissolved	0.00081		mg/L			19-JUN-20
Tungsten (W)-Dissolved	0.00013		mg/L			19-JUN-20
Uranium (U)-Dissolved	0.000545		mg/L	0.02		19-JUN-20
Vanadium (V)-Dissolved	0.00102		mg/L			19-JUN-20
Zinc (Zn)-Dissolved	<0.0010		mg/L		5.0	19-JUN-20
Zirconium (Zr)-Dissolved	0.00053		mg/L			19-JUN-20
Conductivity						
Conductivity	566		umhos/cm			19-JUN-20
Chloride in Water by IC (Low Level)						
Chloride (Cl)	0.38		mg/L		250	19-JUN-20
Alkalinity, Total (as CaCO3)						
Alkalinity, Total (as CaCO3)	331		mg/L			19-JUN-20
Total Coliform and E.coli						
Total Coliforms	1	MBHT	MPN/100mL	0		18-JUN-20
Escherichia Coli	0	MBHT	MPN/100mL	0		18-JUN-20



KGS Group Consultants (Winnipeg)
865 Waverly Street - 3rd Floor
Winnipeg MB R3T 5P4
ATTN: PAUL LINDELL

Date: 30-JUN-20
PO No.:
WO No.: L2462330
Project Ref: 18-0300-005.2302.04
Sample ID: TH19-KGS-18
Sampled By: PL/SB
Date Collected: 16-JUN-20
Lab Sample ID: L2462330-1
Matrix: GROUNDWATER

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
<p>CDWQG = Health Canada Guideline Limits updated JUNE 2019</p> <p>* CDWQG for Nitrate+Nitrite-N is the limit for nitrate only. If present as Nitrate then the limit is 10mg/L < or N.D. = less than detection limit. * Turbidity guideline based on membrane filtration. For guidelines on conventional treatment and slow sand or diatomaceous earth filtration please see Summary Table of Guidelines for Canadian Drinking Water Quality - A blank entry designates no known limit. - A shaded value in the Results column exceeds CDWQG MAC and/ or Aesthetic Objective.</p>						
<p>Approved by <u><i>Hua Wo</i></u> Hua Wo Account Manager</p>						



KGS Group Consultants (Winnipeg)
865 Waverly Street - 3rd Floor
Winnipeg MB R3T 5P4
ATTN: PAUL LINDELL

Date: 30-JUN-20
PO No.:
WO No.: L2462330
Project Ref: 18-0300-005.2302.04
Sample ID: TH19-KGS-17
Sampled By: PL/SB
Date Collected: 16-JUN-20
Lab Sample ID: L2462330-2
Matrix: GROUNDWATER

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
ROU4W Dissolved						
Bicarbonate (HCO3)	394		mg/L			22-JUN-20
Carbonate (CO3)	<0.60		mg/L			22-JUN-20
Hydroxide (OH)	<0.34		mg/L			22-JUN-20
*Nitrate and Nitrite as N	<0.0051		mg/L	10		23-JUN-20
pH						
pH	8.12		pH units			19-JUN-20
Turbidity						
*Turbidity	>4000	TMV	NTU			18-JUN-20
TDS calculated						
TDS (Calculated)	361		mg/L		500	22-JUN-20
Sulfate in Water by IC						
Sulfate (SO4)	43.9		mg/L		500	19-JUN-20
Nitrite in Water by IC (Low Level)						
*Nitrite (as N)	<0.0010		mg/L	1		19-JUN-20
Nitrate in Water by IC (Low Level)						
*Nitrate (as N)	<0.0050		mg/L	10		19-JUN-20
Ion Balance Calculation						
Hardness Calculated						
Hardness (as CaCO3)	365		mg/L		500	22-JUN-20
Fluoride in Water by IC						
Fluoride (F)	0.275		mg/L	1.5		19-JUN-20
Dissolved Metals in Water by CRC ICPMS						
Dissolved Metals	FIELD					19-JUN-20
Filtration Location						
Aluminum (Al)-Dissolved	0.0030		mg/L		0.1	19-JUN-20
Antimony (Sb)-Dissolved	<0.00010		mg/L	0.006		19-JUN-20
Arsenic (As)-Dissolved	0.00120		mg/L	0.01		19-JUN-20
Barium (Ba)-Dissolved	0.0414		mg/L	2		19-JUN-20
Beryllium (Be)-Dissolved	<0.00010		mg/L			19-JUN-20
Bismuth (Bi)-Dissolved	<0.000050		mg/L			19-JUN-20
Boron (B)-Dissolved	0.087		mg/L	5		19-JUN-20
Cadmium (Cd)-Dissolved	<0.0000050		mg/L	0.005		19-JUN-20
Calcium (Ca)-Dissolved	55.5		mg/L			19-JUN-20
Cesium (Cs)-Dissolved	<0.000010		mg/L			19-JUN-20
Chromium (Cr)-Dissolved	<0.00010		mg/L	0.05		19-JUN-20
Cobalt (Co)-Dissolved	<0.00010		mg/L			19-JUN-20
Copper (Cu)-Dissolved	<0.00020		mg/L	2.0	1.0	19-JUN-20
Iron (Fe)-Dissolved	0.140		mg/L		0.3	19-JUN-20
Lead (Pb)-Dissolved	<0.000050		mg/L	0.005		19-JUN-20

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Sample ID: TH19-KGS-17
Sampled By: PL/SB
Date Collected: 16-JUN-20
Lab Sample ID: L2462330-2
Matrix: GROUNDWATER

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
ROU4W Dissolved						
Dissolved Metals in Water by CRC ICPMS						
Lithium (Li)-Dissolved	0.0177		mg/L			19-JUN-20
Magnesium (Mg)-Dissolved	55.0		mg/L			19-JUN-20
Manganese (Mn)-Dissolved	0.0204		mg/L	0.12	0.02	19-JUN-20
Molybdenum (Mo)-Dissolved	0.000557		mg/L			19-JUN-20
Nickel (Ni)-Dissolved	<0.00050		mg/L			19-JUN-20
Phosphorus (P)-Dissolved	<0.030		mg/L			19-JUN-20
Potassium (K)-Dissolved	3.34		mg/L			19-JUN-20
Rubidium (Rb)-Dissolved	0.00187		mg/L			19-JUN-20
Selenium (Se)-Dissolved	0.000140		mg/L	0.05		19-JUN-20
Silicon (Si)-Dissolved	4.29		mg/L			19-JUN-20
Silver (Ag)-Dissolved	<0.000010		mg/L			19-JUN-20
Sodium (Na)-Dissolved	9.00		mg/L		200	19-JUN-20
Strontium (Sr)-Dissolved	0.163		mg/L	7		19-JUN-20
Sulfur (S)-Dissolved	13.9		mg/L			19-JUN-20
Tellurium (Te)-Dissolved	<0.00020		mg/L			19-JUN-20
Thallium (Tl)-Dissolved	<0.000010		mg/L			19-JUN-20
Thorium (Th)-Dissolved	<0.00010		mg/L			19-JUN-20
Tin (Sn)-Dissolved	<0.00010		mg/L			19-JUN-20
Titanium (Ti)-Dissolved	<0.00030		mg/L			19-JUN-20
Tungsten (W)-Dissolved	<0.00010		mg/L			19-JUN-20
Uranium (U)-Dissolved	0.000116		mg/L	0.02		19-JUN-20
Vanadium (V)-Dissolved	<0.00050		mg/L			19-JUN-20
Zinc (Zn)-Dissolved	<0.0010		mg/L		5.0	19-JUN-20
Zirconium (Zr)-Dissolved	<0.00020		mg/L			19-JUN-20
Conductivity						
Conductivity	617		umhos/cm			19-JUN-20
Chloride in Water by IC (Low Level)						
Chloride (Cl)	0.86		mg/L		250	19-JUN-20
Alkalinity, Total (as CaCO3)						
Alkalinity, Total (as CaCO3)	323		mg/L			19-JUN-20
Total Coliform and E.coli by MPN QT97						
Total Coliforms	<1	MBHT	MPN/100mL	0		18-JUN-20
Escherichia Coli	<1	MBHT	MPN/100mL	0		18-JUN-20



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Project Ref: 18-0300-005.2302.04
Sample ID: TH19-KGS-17
Sampled By: PL/SB
Date Collected: 16-JUN-20
Lab Sample ID: L2462330-2
Matrix: GROUNDWATER

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
<p>CDWQG = Health Canada Guideline Limits updated JUNE 2019</p> <p>* CDWQG for Nitrate+Nitrite-N is the limit for nitrate only. If present as Nitrate then the limit is 10mg/L < or N.D. = less than detection limit. * Turbidity guideline based on membrane filtration. For guidelines on conventional treatment and slow sand or diatomaceous earth filtration please see Summary Table of Guidelines for Canadian Drinking Water Quality - A blank entry designates no known limit. - A shaded value in the Results column exceeds CDWQG MAC and/ or Aesthetic Objective.</p>						
<p>Approved by <u><i>Hua Wo</i></u> Hua Wo Account Manager</p>						



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Date: 30-JUN-20
PO No.:
WO No.: L2462330
Project Ref: 18-0300-005.2302.04
Sample ID: TH19-KGS-12
Sampled By: PL/SB
Date Collected: 16-JUN-20
Lab Sample ID: L2462330-3
Matrix: GROUNDWATER

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
ROU4W Dissolved						
Bicarbonate (HCO3)	463		mg/L			22-JUN-20
Carbonate (CO3)	<0.60		mg/L			22-JUN-20
Hydroxide (OH)	<0.34		mg/L			22-JUN-20
*Nitrate and Nitrite as N	0.0121		mg/L	10		23-JUN-20
pH						
pH	8.24		pH units			19-JUN-20
Turbidity						
*Turbidity	3020		NTU			18-JUN-20
TDS calculated						
TDS (Calculated)	429		mg/L		500	22-JUN-20
Sulfate in Water by IC						
Sulfate (SO4)	46.9		mg/L		500	19-JUN-20
Nitrite in Water by IC (Low Level)						
*Nitrite (as N)	<0.0010		mg/L	1		19-JUN-20
Nitrate in Water by IC (Low Level)						
*Nitrate (as N)	0.0121		mg/L	10		19-JUN-20
Ion Balance Calculation						
Hardness Calculated						
Hardness (as CaCO3)	402		mg/L		500	22-JUN-20
Fluoride in Water by IC						
Fluoride (F)	0.391		mg/L	1.5		19-JUN-20
Dissolved Metals in Water by CRC ICPMS						
Dissolved Metals	FIELD					19-JUN-20
Filtration Location						
Aluminum (Al)-Dissolved	0.0010		mg/L		0.1	19-JUN-20
Antimony (Sb)-Dissolved	0.00011		mg/L	0.006		19-JUN-20
Arsenic (As)-Dissolved	0.00121		mg/L	0.01		19-JUN-20
Barium (Ba)-Dissolved	0.0783		mg/L	2		19-JUN-20
Beryllium (Be)-Dissolved	<0.00010		mg/L			19-JUN-20
Bismuth (Bi)-Dissolved	<0.000050		mg/L			19-JUN-20
Boron (B)-Dissolved	0.126		mg/L	5		19-JUN-20
Cadmium (Cd)-Dissolved	<0.0000050		mg/L	0.005		19-JUN-20
Calcium (Ca)-Dissolved	45.5		mg/L			19-JUN-20
Cesium (Cs)-Dissolved	<0.000010		mg/L			19-JUN-20
Chromium (Cr)-Dissolved	<0.00010		mg/L	0.05		19-JUN-20
Cobalt (Co)-Dissolved	0.00057		mg/L			19-JUN-20
Copper (Cu)-Dissolved	0.00041		mg/L	2.0	1.0	19-JUN-20
Iron (Fe)-Dissolved	0.597		mg/L		0.3	19-JUN-20
Lead (Pb)-Dissolved	<0.000050		mg/L	0.005		19-JUN-20

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Sample ID: TH19-KGS-12
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Date Collected: 16-JUN-20
Lab Sample ID: L2462330-3
Matrix: GROUNDWATER

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
ROU4W Dissolved						
Dissolved Metals in Water by CRC ICPMS						
Lithium (Li)-Dissolved	0.0359		mg/L			19-JUN-20
Magnesium (Mg)-Dissolved	70.1		mg/L			19-JUN-20
Manganese (Mn)-Dissolved	0.209		mg/L	0.12	0.02	19-JUN-20
Molybdenum (Mo)-Dissolved	0.00380		mg/L			19-JUN-20
Nickel (Ni)-Dissolved	0.00167		mg/L			19-JUN-20
Phosphorus (P)-Dissolved	<0.030		mg/L			19-JUN-20
Potassium (K)-Dissolved	4.50		mg/L			19-JUN-20
Rubidium (Rb)-Dissolved	0.00203		mg/L			19-JUN-20
Selenium (Se)-Dissolved	<0.000050		mg/L	0.05		19-JUN-20
Silicon (Si)-Dissolved	6.17		mg/L			19-JUN-20
Silver (Ag)-Dissolved	<0.000010		mg/L			19-JUN-20
Sodium (Na)-Dissolved	29.3		mg/L		200	19-JUN-20
Strontium (Sr)-Dissolved	0.244		mg/L	7		19-JUN-20
Sulfur (S)-Dissolved	19.1		mg/L			19-JUN-20
Tellurium (Te)-Dissolved	<0.00020		mg/L			19-JUN-20
Thallium (Tl)-Dissolved	<0.000010		mg/L			19-JUN-20
Thorium (Th)-Dissolved	<0.00010		mg/L			19-JUN-20
Tin (Sn)-Dissolved	0.00022		mg/L			19-JUN-20
Titanium (Ti)-Dissolved	<0.00030		mg/L			19-JUN-20
Tungsten (W)-Dissolved	0.00018		mg/L			19-JUN-20
Uranium (U)-Dissolved	0.000235		mg/L	0.02		19-JUN-20
Vanadium (V)-Dissolved	<0.00050		mg/L			19-JUN-20
Zinc (Zn)-Dissolved	0.0034		mg/L		5.0	19-JUN-20
Zirconium (Zr)-Dissolved	<0.00020		mg/L			19-JUN-20
Conductivity						
Conductivity	717		umhos/cm			19-JUN-20
Chloride in Water by IC (Low Level)						
Chloride (Cl)	4.39		mg/L		250	19-JUN-20
Alkalinity, Total (as CaCO3)						
Alkalinity, Total (as CaCO3)	380		mg/L			19-JUN-20
Total Coliform and E.coli by MPN QT97						
Total Coliforms	<1	MBHT	MPN/100mL	0		18-JUN-20
Escherichia Coli	<1	MBHT	MPN/100mL	0		18-JUN-20



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Project Ref: 18-0300-005.2302.04
Sample ID: TH19-KGS-12
Sampled By: PL/SB
Date Collected: 16-JUN-20
Lab Sample ID: L2462330-3
Matrix: GROUNDWATER

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
<p>CDWQG = Health Canada Guideline Limits updated JUNE 2019</p> <p>* CDWQG for Nitrate+Nitrite-N is the limit for nitrate only. If present as Nitrate then the limit is 10mg/L < or N.D. = less than detection limit. * Turbidity guideline based on membrane filtration. For guidelines on conventional treatment and slow sand or diatomaceous earth filtration please see Summary Table of Guidelines for Canadian Drinking Water Quality - A blank entry designates no known limit. - A shaded value in the Results column exceeds CDWQG MAC and/ or Aesthetic Objective.</p>						
<p>Approved by <u><i>Hua Wo</i></u> Hua Wo Account Manager</p>						



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Date: 30-JUN-20
PO No.:
WO No.: L2462330
Project Ref: 18-0300-005.2302.04
Sample ID: PW19-KGS-02
Sampled By: PL/SB
Date Collected: 16-JUN-20
Lab Sample ID: L2462330-4
Matrix: GROUNDWATER

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
ROU4W Dissolved						
Bicarbonate (HCO3)	399		mg/L			22-JUN-20
Carbonate (CO3)	3.96		mg/L			22-JUN-20
Hydroxide (OH)	<0.34		mg/L			22-JUN-20
*Nitrate and Nitrite as N	<0.0051		mg/L	10		23-JUN-20
pH						
pH	8.32		pH units			19-JUN-20
Turbidity						
*Turbidity	1.13		NTU			18-JUN-20
TDS calculated						
TDS (Calculated)	453		mg/L		500	22-JUN-20
Sulfate in Water by IC						
Sulfate (SO4)	89.6		mg/L		500	19-JUN-20
Nitrite in Water by IC (Low Level)						
*Nitrite (as N)	<0.0010		mg/L	1		19-JUN-20
Nitrate in Water by IC (Low Level)						
*Nitrate (as N)	<0.0050		mg/L	10		19-JUN-20
Ion Balance Calculation						
Hardness Calculated						
Hardness (as CaCO3)	378		mg/L		500	22-JUN-20
Fluoride in Water by IC						
Fluoride (F)	0.310		mg/L	1.5		19-JUN-20
Dissolved Metals in Water by CRC ICPMS						
Dissolved Metals	FIELD					19-JUN-20
Filtration Location						
Aluminum (Al)-Dissolved	<0.0010		mg/L		0.1	19-JUN-20
Antimony (Sb)-Dissolved	<0.00010		mg/L	0.006		19-JUN-20
Arsenic (As)-Dissolved	0.00129		mg/L	0.01		19-JUN-20
Barium (Ba)-Dissolved	0.0246		mg/L	2		19-JUN-20
Beryllium (Be)-Dissolved	<0.00010		mg/L			19-JUN-20
Bismuth (Bi)-Dissolved	<0.000050		mg/L			19-JUN-20
Boron (B)-Dissolved	0.144		mg/L	5		19-JUN-20
Cadmium (Cd)-Dissolved	<0.000050		mg/L	0.005		19-JUN-20
Calcium (Ca)-Dissolved	57.8		mg/L			19-JUN-20
Cesium (Cs)-Dissolved	<0.000010		mg/L			19-JUN-20
Chromium (Cr)-Dissolved	<0.00010		mg/L	0.05		19-JUN-20
Cobalt (Co)-Dissolved	0.00015		mg/L			19-JUN-20
Copper (Cu)-Dissolved	0.00050		mg/L	2.0	1.0	19-JUN-20
Iron (Fe)-Dissolved	0.138		mg/L		0.3	19-JUN-20
Lead (Pb)-Dissolved	0.000055		mg/L	0.005		19-JUN-20

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WO No.: L2462330
Project Ref: 18-0300-005.2302.04
Sample ID: PW19-KGS-02
Sampled By: PL/SB
Date Collected: 16-JUN-20
Lab Sample ID: L2462330-4
Matrix: GROUNDWATER

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
ROU4W Dissolved						
Dissolved Metals in Water by CRC ICPMS						
Lithium (Li)-Dissolved	0.0253		mg/L			19-JUN-20
Magnesium (Mg)-Dissolved	56.7		mg/L			19-JUN-20
Manganese (Mn)-Dissolved	0.00495		mg/L	0.12	0.02	19-JUN-20
Molybdenum (Mo)-Dissolved	0.000406		mg/L			19-JUN-20
Nickel (Ni)-Dissolved	<0.00050		mg/L			19-JUN-20
Phosphorus (P)-Dissolved	<0.030		mg/L			19-JUN-20
Potassium (K)-Dissolved	4.73		mg/L			19-JUN-20
Rubidium (Rb)-Dissolved	0.00266		mg/L			19-JUN-20
Selenium (Se)-Dissolved	<0.000050		mg/L	0.05		19-JUN-20
Silicon (Si)-Dissolved	5.39		mg/L			19-JUN-20
Silver (Ag)-Dissolved	<0.000010		mg/L			19-JUN-20
Sodium (Na)-Dissolved	32.9		mg/L		200	19-JUN-20
Strontium (Sr)-Dissolved	0.205		mg/L	7		19-JUN-20
Sulfur (S)-Dissolved	28.8		mg/L			19-JUN-20
Tellurium (Te)-Dissolved	<0.00020		mg/L			19-JUN-20
Thallium (Tl)-Dissolved	<0.000010		mg/L			19-JUN-20
Thorium (Th)-Dissolved	<0.00010		mg/L			19-JUN-20
Tin (Sn)-Dissolved	<0.00010		mg/L			19-JUN-20
Titanium (Ti)-Dissolved	<0.00030		mg/L			19-JUN-20
Tungsten (W)-Dissolved	<0.00010		mg/L			19-JUN-20
Uranium (U)-Dissolved	0.000739		mg/L	0.02		19-JUN-20
Vanadium (V)-Dissolved	<0.00050		mg/L			19-JUN-20
Zinc (Zn)-Dissolved	<0.0010		mg/L		5.0	19-JUN-20
Zirconium (Zr)-Dissolved	<0.00020		mg/L			19-JUN-20
Conductivity						
Conductivity	736		umhos/cm			19-JUN-20
Chloride in Water by IC (Low Level)						
Chloride (Cl)	10.9		mg/L		250	19-JUN-20
Alkalinity, Total (as CaCO3)						
Alkalinity, Total (as CaCO3)	334		mg/L			19-JUN-20
Total Coliform and E.coli						
Total Coliforms	0	MBHT	MPN/100mL	0		18-JUN-20
Escherichia Coli	0	MBHT	MPN/100mL	0		18-JUN-20



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Project Ref: 18-0300-005.2302.04
Sample ID: PW19-KGS-02
Sampled By: PL/SB
Date Collected: 16-JUN-20
Lab Sample ID: L2462330-4
Matrix: GROUNDWATER

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
<p>CDWQG = Health Canada Guideline Limits updated</p> <p>* CDWQG for Nitrate+Nitrite-N is the limit for nitrate only. If present as Nitrate then the limit is 10mg/L < or N.D. = less than detection limit. * Turbidity guideline based on membrane filtration. For guidelines on conventional treatment and slow sand or diatomaceous earth filtration please see Summary Table of Guidelines for Canadian Drinking Water Quality - A blank entry designates no known limit. - A shaded value in the Results column exceeds CDWQG MAC and/ or Aesthetic Objective.</p>	JUNE 2019					
<p>Approved by </p> <hr/> <p>Hua Wo Account Manager</p>						



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865 Waverly Street - 3rd Floor
Winnipeg MB R3T 5P4
ATTN: PAUL LINDELL

Date: 30-JUN-20
PO No.:
WO No.: L2462330
Project Ref: 18-0300-005.2302.04
Sample ID: PW19-KGS-03
Sampled By: PL/SB
Date Collected: 17-JUN-20
Lab Sample ID: L2462330-5
Matrix: GROUNDWATER

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
ROU4W Dissolved						
Bicarbonate (HCO3)	365		mg/L			22-JUN-20
Carbonate (CO3)	<0.60		mg/L			22-JUN-20
Hydroxide (OH)	<0.34		mg/L			22-JUN-20
*Nitrate and Nitrite as N	<0.0051		mg/L	10		23-JUN-20
pH						
pH	8.24		pH units			19-JUN-20
Turbidity						
*Turbidity	2.10		NTU			18-JUN-20
TDS calculated						
TDS (Calculated)	313		mg/L		500	22-JUN-20
Sulfate in Water by IC						
Sulfate (SO4)	25.8		mg/L		500	19-JUN-20
Nitrite in Water by IC (Low Level)						
*Nitrite (as N)	<0.0010		mg/L	1		19-JUN-20
Nitrate in Water by IC (Low Level)						
*Nitrate (as N)	<0.0050		mg/L	10		19-JUN-20
Ion Balance Calculation						
Hardness Calculated						
Hardness (as CaCO3)	314		mg/L		500	22-JUN-20
Fluoride in Water by IC						
Fluoride (F)	0.199		mg/L	1.5		19-JUN-20
Dissolved Metals in Water by CRC ICPMS						
Dissolved Metals	FIELD					19-JUN-20
Filtration Location						
Aluminum (Al)-Dissolved	0.0018		mg/L		0.1	19-JUN-20
Antimony (Sb)-Dissolved	<0.00010		mg/L	0.006		19-JUN-20
Arsenic (As)-Dissolved	0.00072		mg/L	0.01		19-JUN-20
Barium (Ba)-Dissolved	0.0487		mg/L	2		19-JUN-20
Beryllium (Be)-Dissolved	<0.00010		mg/L			19-JUN-20
Bismuth (Bi)-Dissolved	<0.000050		mg/L			19-JUN-20
Boron (B)-Dissolved	0.077		mg/L	5		19-JUN-20
Cadmium (Cd)-Dissolved	<0.0000050		mg/L	0.005		19-JUN-20
Calcium (Ca)-Dissolved	55.6		mg/L			19-JUN-20
Cesium (Cs)-Dissolved	<0.000010		mg/L			19-JUN-20
Chromium (Cr)-Dissolved	<0.00010		mg/L	0.05		19-JUN-20
Cobalt (Co)-Dissolved	0.00094		mg/L			19-JUN-20
Copper (Cu)-Dissolved	<0.00020		mg/L	2.0	1.0	19-JUN-20
Iron (Fe)-Dissolved	0.243		mg/L		0.3	19-JUN-20
Lead (Pb)-Dissolved	<0.000050		mg/L	0.005		19-JUN-20



KGS Group Consultants (Winnipeg)
865 Waverly Street - 3rd Floor
Winnipeg MB R3T 5P4
ATTN: PAUL LINDELL

Date: 30-JUN-20
PO No.:
WO No.: L2462330
Project Ref: 18-0300-005.2302.04
Sample ID: PW19-KGS-03
Sampled By: PL/SB
Date Collected: 17-JUN-20
Lab Sample ID: L2462330-5
Matrix: GROUNDWATER

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
ROU4W Dissolved						
Dissolved Metals in Water by CRC ICPMS						
Lithium (Li)-Dissolved	0.0139		mg/L			19-JUN-20
Magnesium (Mg)-Dissolved	42.4		mg/L			19-JUN-20
Manganese (Mn)-Dissolved	0.119		mg/L	0.12	0.02	19-JUN-20
Molybdenum (Mo)-Dissolved	0.000318		mg/L			19-JUN-20
Nickel (Ni)-Dissolved	0.00214		mg/L			19-JUN-20
Phosphorus (P)-Dissolved	<0.030		mg/L			19-JUN-20
Potassium (K)-Dissolved	2.83		mg/L			19-JUN-20
Rubidium (Rb)-Dissolved	0.00170		mg/L			19-JUN-20
Selenium (Se)-Dissolved	<0.000050		mg/L	0.05		19-JUN-20
Silicon (Si)-Dissolved	4.51		mg/L			19-JUN-20
Silver (Ag)-Dissolved	<0.000010		mg/L			19-JUN-20
Sodium (Na)-Dissolved	5.83		mg/L		200	19-JUN-20
Strontium (Sr)-Dissolved	0.128		mg/L	7		19-JUN-20
Sulfur (S)-Dissolved	8.60		mg/L			19-JUN-20
Tellurium (Te)-Dissolved	<0.00020		mg/L			19-JUN-20
Thallium (Tl)-Dissolved	0.000015		mg/L			19-JUN-20
Thorium (Th)-Dissolved	<0.00010		mg/L			19-JUN-20
Tin (Sn)-Dissolved	<0.00010		mg/L			19-JUN-20
Titanium (Ti)-Dissolved	<0.00030		mg/L			19-JUN-20
Tungsten (W)-Dissolved	<0.00010		mg/L			19-JUN-20
Uranium (U)-Dissolved	0.00179		mg/L	0.02		19-JUN-20
Vanadium (V)-Dissolved	<0.00050		mg/L			19-JUN-20
Zinc (Zn)-Dissolved	<0.0010		mg/L		5.0	19-JUN-20
Zirconium (Zr)-Dissolved	<0.00020		mg/L			19-JUN-20
Conductivity						
Conductivity	536		umhos/cm			19-JUN-20
Chloride in Water by IC (Low Level)						
Chloride (Cl)	0.86		mg/L		250	19-JUN-20
Alkalinity, Total (as CaCO3)						
Alkalinity, Total (as CaCO3)	300		mg/L			19-JUN-20
Total Coliform and E.coli						
Total Coliforms	200		MPN/100mL	0		18-JUN-20
Escherichia Coli	0		MPN/100mL	0		18-JUN-20



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Winnipeg MB R3T 5P4
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Date: 30-JUN-20
PO No.:
WO No.: L2462330
Project Ref: 18-0300-005.2302.04
Sample ID: PW19-KGS-03
Sampled By: PL/SB
Date Collected: 17-JUN-20
Lab Sample ID: L2462330-5
Matrix: GROUNDWATER

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
<p>CDWQG = Health Canada Guideline Limits updated JUNE 2019</p> <p>* CDWQG for Nitrate+Nitrite-N is the limit for nitrate only. If present as Nitrate then the limit is 10mg/L < or N.D. = less than detection limit. * Turbidity guideline based on membrane filtration. For guidelines on conventional treatment and slow sand or diatomaceous earth filtration please see Summary Table of Guidelines for Canadian Drinking Water Quality - A blank entry designates no known limit. - A shaded value in the Results column exceeds CDWQG MAC and/ or Aesthetic Objective.</p>						
<p>Approved by <u><i>Hua Wo</i></u> Hua Wo Account Manager</p>						



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865 Waverly Street - 3rd Floor
Winnipeg MB R3T 5P4
ATTN: PAUL LINDELL

Date: 30-JUN-20
PO No.:
WO No.: L2462330
Project Ref: 18-0300-005.2302.04
Sample ID: PW19-KGS-300
Sampled By: PL/SB
Date Collected: 17-JUN-20
Lab Sample ID: L2462330-6
Matrix: GROUNDWATER

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
ROU4W Dissolved						
Bicarbonate (HCO3)	363		mg/L			22-JUN-20
Carbonate (CO3)	<0.60		mg/L			22-JUN-20
Hydroxide (OH)	<0.34		mg/L			22-JUN-20
*Nitrate and Nitrite as N	<0.0051		mg/L	10		23-JUN-20
pH						
pH	8.23		pH units			19-JUN-20
Turbidity						
*Turbidity	1.37		NTU			18-JUN-20
TDS calculated						
TDS (Calculated)	312		mg/L		500	22-JUN-20
Sulfate in Water by IC						
Sulfate (SO4)	25.9		mg/L		500	19-JUN-20
Nitrite in Water by IC (Low Level)						
*Nitrite (as N)	<0.0010		mg/L	1		19-JUN-20
Nitrate in Water by IC (Low Level)						
*Nitrate (as N)	<0.0050		mg/L	10		19-JUN-20
Ion Balance Calculation						
Hardness Calculated						
Hardness (as CaCO3)	315		mg/L		500	22-JUN-20
Fluoride in Water by IC						
Fluoride (F)	0.198		mg/L	1.5		19-JUN-20
Dissolved Metals in Water by CRC ICPMS						
Dissolved Metals	FIELD					19-JUN-20
Filtration Location						
Aluminum (Al)-Dissolved	0.0019		mg/L		0.1	19-JUN-20
Antimony (Sb)-Dissolved	<0.00010		mg/L	0.006		19-JUN-20
Arsenic (As)-Dissolved	0.00067		mg/L	0.01		19-JUN-20
Barium (Ba)-Dissolved	0.0492		mg/L	2		19-JUN-20
Beryllium (Be)-Dissolved	<0.00010		mg/L			19-JUN-20
Bismuth (Bi)-Dissolved	<0.000050		mg/L			19-JUN-20
Boron (B)-Dissolved	0.076		mg/L	5		19-JUN-20
Cadmium (Cd)-Dissolved	<0.0000050		mg/L	0.005		19-JUN-20
Calcium (Ca)-Dissolved	55.2		mg/L			19-JUN-20
Cesium (Cs)-Dissolved	0.000011		mg/L			19-JUN-20
Chromium (Cr)-Dissolved	<0.00010		mg/L	0.05		19-JUN-20
Cobalt (Co)-Dissolved	0.00090		mg/L			19-JUN-20
Copper (Cu)-Dissolved	<0.00020		mg/L	2.0	1.0	19-JUN-20
Iron (Fe)-Dissolved	0.248		mg/L		0.3	19-JUN-20
Lead (Pb)-Dissolved	0.000074		mg/L	0.005		19-JUN-20



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Winnipeg MB R3T 5P4
ATTN: PAUL LINDELL

Date: 30-JUN-20
PO No.:
WO No.: L2462330
Project Ref: 18-0300-005.2302.04
Sample ID: PW19-KGS-300
Sampled By: PL/SB
Date Collected: 17-JUN-20
Lab Sample ID: L2462330-6
Matrix: GROUNDWATER

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
ROU4W Dissolved						
Dissolved Metals in Water by CRC ICPMS						
Lithium (Li)-Dissolved	0.0139		mg/L			19-JUN-20
Magnesium (Mg)-Dissolved	42.9		mg/L			19-JUN-20
Manganese (Mn)-Dissolved	0.119		mg/L	0.12	0.02	19-JUN-20
Molybdenum (Mo)-Dissolved	0.000335		mg/L			19-JUN-20
Nickel (Ni)-Dissolved	0.00215		mg/L			19-JUN-20
Phosphorus (P)-Dissolved	<0.030		mg/L			19-JUN-20
Potassium (K)-Dissolved	2.83		mg/L			19-JUN-20
Rubidium (Rb)-Dissolved	0.00173		mg/L			19-JUN-20
Selenium (Se)-Dissolved	<0.000050		mg/L	0.05		19-JUN-20
Silicon (Si)-Dissolved	4.55		mg/L			19-JUN-20
Silver (Ag)-Dissolved	<0.000010		mg/L			19-JUN-20
Sodium (Na)-Dissolved	5.72		mg/L		200	19-JUN-20
Strontium (Sr)-Dissolved	0.130		mg/L	7		19-JUN-20
Sulfur (S)-Dissolved	8.82		mg/L			19-JUN-20
Tellurium (Te)-Dissolved	<0.00020		mg/L			19-JUN-20
Thallium (Tl)-Dissolved	0.000015		mg/L			19-JUN-20
Thorium (Th)-Dissolved	<0.00010		mg/L			19-JUN-20
Tin (Sn)-Dissolved	<0.00010		mg/L			19-JUN-20
Titanium (Ti)-Dissolved	<0.00030		mg/L			19-JUN-20
Tungsten (W)-Dissolved	<0.00010		mg/L			19-JUN-20
Uranium (U)-Dissolved	0.00179		mg/L	0.02		19-JUN-20
Vanadium (V)-Dissolved	<0.00050		mg/L			19-JUN-20
Zinc (Zn)-Dissolved	<0.0010		mg/L		5.0	19-JUN-20
Zirconium (Zr)-Dissolved	<0.00020		mg/L			19-JUN-20
Conductivity						
Conductivity	535		umhos/cm			19-JUN-20
Chloride in Water by IC (Low Level)						
Chloride (Cl)	0.87		mg/L		250	19-JUN-20
Alkalinity, Total (as CaCO3)						
Alkalinity, Total (as CaCO3)	298		mg/L			19-JUN-20
Total Coliform and E.coli						
Total Coliforms	165		MPN/100mL	0		18-JUN-20
Escherichia Coli	0		MPN/100mL	0		18-JUN-20



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Winnipeg MB R3T 5P4
ATTN: PAUL LINDELL

Date: 30-JUN-20
PO No.:
WO No.: L2462330
Project Ref: 18-0300-005.2302.04
Sample ID: PW19-KGS-300
Sampled By: PL/SB
Date Collected: 17-JUN-20
Lab Sample ID: L2462330-6
Matrix: GROUNDWATER

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
<p>CDWQG = Health Canada Guideline Limits updated JUNE 2019</p> <p>* CDWQG for Nitrate+Nitrite-N is the limit for nitrate only. If present as Nitrate then the limit is 10mg/L < or N.D. = less than detection limit. * Turbidity guideline based on membrane filtration. For guidelines on conventional treatment and slow sand or diatomaceous earth filtration please see Summary Table of Guidelines for Canadian Drinking Water Quality - A blank entry designates no known limit. - A shaded value in the Results column exceeds CDWQG MAC and/ or Aesthetic Objective.</p>						
<p>Approved by <u><i>Hua Wo</i></u> Hua Wo Account Manager</p>						



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ATTN: PAUL LINDELL

Date: 30-JUN-20
PO No.:
WO No.: L2462330
Project Ref: 18-0300-005.2302.04
Sample ID: TH19-KGS-19
Sampled By: PL/SB
Date Collected: 17-JUN-20
Lab Sample ID: L2462330-7
Matrix: GROUNDWATER

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
ROU4W Dissolved						
Bicarbonate (HCO3)	566		mg/L			22-JUN-20
Carbonate (CO3)	7.20		mg/L			22-JUN-20
Hydroxide (OH)	<0.34		mg/L			22-JUN-20
*Nitrate and Nitrite as N	<0.010		mg/L	10		23-JUN-20
pH						
pH	8.34		pH units			19-JUN-20
Turbidity						
*Turbidity	36.3		NTU			18-JUN-20
TDS calculated						
TDS (Calculated)	533		mg/L		500	22-JUN-20
Sulfate in Water by IC						
Sulfate (SO4)	68.2		mg/L		500	19-JUN-20
Nitrite in Water by IC (Low Level)						
*Nitrite (as N)	<0.0020	DLM	mg/L	1		19-JUN-20
Nitrate in Water by IC (Low Level)						
*Nitrate (as N)	<0.010	DLM	mg/L	10		19-JUN-20
Ion Balance Calculation						
Hardness Calculated						
Hardness (as CaCO3)	487		mg/L		500	22-JUN-20
Fluoride in Water by IC						
Fluoride (F)	0.275		mg/L	1.5		19-JUN-20
Dissolved Metals in Water by CRC ICPMS						
Dissolved Metals	FIELD					19-JUN-20
Filtration Location						
Aluminum (Al)-Dissolved	0.0025		mg/L		0.1	19-JUN-20
Antimony (Sb)-Dissolved	<0.00010		mg/L	0.006		19-JUN-20
Arsenic (As)-Dissolved	0.00520		mg/L	0.01		19-JUN-20
Barium (Ba)-Dissolved	0.265		mg/L	2		19-JUN-20
Beryllium (Be)-Dissolved	<0.00010		mg/L			19-JUN-20
Bismuth (Bi)-Dissolved	<0.000050		mg/L			19-JUN-20
Boron (B)-Dissolved	0.112		mg/L	5		19-JUN-20
Cadmium (Cd)-Dissolved	<0.0000050		mg/L	0.005		19-JUN-20
Calcium (Ca)-Dissolved	50.3		mg/L			19-JUN-20
Cesium (Cs)-Dissolved	<0.000010		mg/L			19-JUN-20
Chromium (Cr)-Dissolved	0.00012		mg/L	0.05		19-JUN-20
Cobalt (Co)-Dissolved	0.00108		mg/L			19-JUN-20
Copper (Cu)-Dissolved	0.00048		mg/L	2.0	1.0	19-JUN-20
Iron (Fe)-Dissolved	0.015		mg/L		0.3	19-JUN-20
Lead (Pb)-Dissolved	<0.000050		mg/L	0.005		19-JUN-20

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865 Waverly Street - 3rd Floor
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ATTN: PAUL LINDELL

Date: 30-JUN-20
PO No.:
WO No.: L2462330
Project Ref: 18-0300-005.2302.04
Sample ID: TH19-KGS-19
Sampled By: PL/SB
Date Collected: 17-JUN-20
Lab Sample ID: L2462330-7
Matrix: GROUNDWATER

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
ROU4W Dissolved						
Dissolved Metals in Water by CRC ICPMS						
Lithium (Li)-Dissolved	0.0335		mg/L			19-JUN-20
Magnesium (Mg)-Dissolved	87.7		mg/L			19-JUN-20
Manganese (Mn)-Dissolved	0.406		mg/L	0.12	0.02	19-JUN-20
Molybdenum (Mo)-Dissolved	0.00415		mg/L			19-JUN-20
Nickel (Ni)-Dissolved	0.00311		mg/L			19-JUN-20
Phosphorus (P)-Dissolved	<0.030		mg/L			19-JUN-20
Potassium (K)-Dissolved	4.20		mg/L			19-JUN-20
Rubidium (Rb)-Dissolved	0.00146		mg/L			19-JUN-20
Selenium (Se)-Dissolved	<0.000050		mg/L	0.05		19-JUN-20
Silicon (Si)-Dissolved	7.21		mg/L			19-JUN-20
Silver (Ag)-Dissolved	<0.000010		mg/L			19-JUN-20
Sodium (Na)-Dissolved	34.6		mg/L		200	19-JUN-20
Strontium (Sr)-Dissolved	0.920		mg/L	7		19-JUN-20
Sulfur (S)-Dissolved	22.2		mg/L			19-JUN-20
Tellurium (Te)-Dissolved	<0.00020		mg/L			19-JUN-20
Thallium (Tl)-Dissolved	<0.000010		mg/L			19-JUN-20
Thorium (Th)-Dissolved	<0.00010		mg/L			19-JUN-20
Tin (Sn)-Dissolved	0.00019		mg/L			19-JUN-20
Titanium (Ti)-Dissolved	<0.00030		mg/L			19-JUN-20
Tungsten (W)-Dissolved	0.00355		mg/L			19-JUN-20
Uranium (U)-Dissolved	0.00146		mg/L	0.02		19-JUN-20
Vanadium (V)-Dissolved	<0.00050		mg/L			19-JUN-20
Zinc (Zn)-Dissolved	0.0030		mg/L		5.0	19-JUN-20
Zirconium (Zr)-Dissolved	0.00021		mg/L			19-JUN-20
Conductivity						
Conductivity	860		umhos/cm			19-JUN-20
Chloride in Water by IC (Low Level)						
Chloride (Cl)	2.30		mg/L		250	19-JUN-20
Alkalinity, Total (as CaCO3)						
Alkalinity, Total (as CaCO3)	476		mg/L			19-JUN-20
Total Coliform and E.coli						
Total Coliforms	1		MPN/100mL	0		18-JUN-20
Escherichia Coli	0		MPN/100mL	0		18-JUN-20



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ATTN: PAUL LINDELL

Date: 30-JUN-20
PO No.:
WO No.: L2462330
Project Ref: 18-0300-005.2302.04
Sample ID: TH19-KGS-19
Sampled By: PL/SB
Date Collected: 17-JUN-20
Lab Sample ID: L2462330-7
Matrix: GROUNDWATER

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
<p>CDWQG = Health Canada Guideline Limits updated JUNE 2019</p> <p>* CDWQG for Nitrate+Nitrite-N is the limit for nitrate only. If present as Nitrate then the limit is 10mg/L < or N.D. = less than detection limit. * Turbidity guideline based on membrane filtration. For guidelines on conventional treatment and slow sand or diatomaceous earth filtration please see Summary Table of Guidelines for Canadian Drinking Water Quality - A blank entry designates no known limit. - A shaded value in the Results column exceeds CDWQG MAC and/ or Aesthetic Objective.</p>						
<p>Approved by <u><i>Hua Wo</i></u> Hua Wo Account Manager</p>						



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Winnipeg MB R3T 5P4
ATTN: PAUL LINDELL

Date: 30-JUN-20
PO No.:
WO No.: L2462330
Project Ref: 18-0300-005.2302.04
Sample ID: SW-R3
Sampled By: PL/SB
Date Collected: 17-JUN-20
Lab Sample ID: L2462330-8
Matrix: SW

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
BTEX plus F1-F4						
Xylenes (Total)	<0.00064		mg/L	0.09	0.02	25-JUN-20
CCME Total Hydrocarbons						
F1-BTEX	<0.10		mg/L			25-JUN-20
Total Hydrocarbons (C6-C50)	<0.38		mg/L			25-JUN-20
CCME PHC F2-F4 in Water						
F2 (C10-C16)	<0.10		mg/L			20-JUN-20
F3 (C16-C34)	<0.25		mg/L			20-JUN-20
F4 (C34-C50)	<0.25		mg/L			20-JUN-20
Surr: 2-Bromobenzotrifluoride	107.3		%			20-JUN-20
BTX plus F1 by GCMS						
Benzene	<0.00050		mg/L	0.005		23-JUN-20
Toluene	<0.0010		mg/L	0.06	0.024	23-JUN-20
Ethyl benzene	<0.00050		mg/L	0.14	0.0016	23-JUN-20
o-Xylene	<0.00050		mg/L			23-JUN-20
m+p-Xylenes	<0.00040		mg/L			23-JUN-20
F1 (C6-C10)	<0.10		mg/L			23-JUN-20
Surr: 4-Bromofluorobenzene (SS)	93.2		%			23-JUN-20
Nitrogen Total						
*Nitrate and Nitrite as N	<0.070		mg/L	10		23-JUN-20
Total Kjeldahl Nitrogen						
Total Kjeldahl Nitrogen	0.55		mg/L			22-JUN-20
Nitrite in Water by IC						
*Nitrite (as N)	<0.010		mg/L	1		19-JUN-20
Nitrate in Water by IC						
*Nitrate (as N)	<0.020		mg/L	10		19-JUN-20
Phosphorus (P)-Total Dissolved	0.0084		mg/L			24-JUN-20
Mercury Dissolved						
Dissolved Mercury Filtration Location	FIELD					25-JUN-20
Mercury (Hg)-Dissolved	<0.0000050		mg/L	0.001		30-JUN-20
Mercury (Hg)-Total	<0.0000050		mg/L	0.001		30-JUN-20
Phosphorus (P)-Total	0.0171		mg/L			22-JUN-20
Ammonia, Total (as N)	0.012		mg/L			23-JUN-20
Total Nitrogen	0.55		mg/L			23-JUN-20
Total Suspended Solids	8.0		mg/L			24-JUN-20
*Turbidity	16.1		NTU			18-JUN-20



KGS Group Consultants (Winnipeg)
865 Waverly Street - 3rd Floor
Winnipeg MB R3T 5P4
ATTN: PAUL LINDELL

Date: 30-JUN-20
PO No.:
WO No.: L2462330
Project Ref: 18-0300-005.2302.04
Sample ID: SW-R3
Sampled By: PL/SB
Date Collected: 17-JUN-20
Lab Sample ID: L2462330-8
Matrix: SW

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
<p>CDWQG = Health Canada Guideline Limits updated JUNE 2019</p> <p>* CDWQG for Nitrate+Nitrite-N is the limit for nitrate only. If present as Nitrate then the limit is 10mg/L < or N.D. = less than detection limit. * Turbidity guideline based on membrane filtration. For guidelines on conventional treatment and slow sand or diatomaceous earth filtration please see Summary Table of Guidelines for Canadian Drinking Water Quality - A blank entry designates no known limit. - A shaded value in the Results column exceeds CDWQG MAC and/ or Aesthetic Objective.</p>						
<p>Approved by <u><i>Hua Wo</i></u> Hua Wo Account Manager</p>						



KGS Group Consultants (Winnipeg)
865 Waverly Street - 3rd Floor
Winnipeg MB R3T 5P4
ATTN: PAUL LINDELL


Date: 30-JUN-20
PO No.:
WO No.: L2462330
Project Ref: 18-0300-005.2302.04
Sample ID: LSMOC-OUTLET1
Sampled By: PL/SB
Date Collected: 17-JUN-20
Lab Sample ID: L2462330-9
Matrix: SW

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
BTEX plus F1-F4						
Xylenes (Total)	<0.00064		mg/L	0.09	0.02	25-JUN-20
CCME Total Hydrocarbons						
F1-BTEX	<0.10		mg/L			25-JUN-20
Total Hydrocarbons (C6-C50)	<0.38		mg/L			25-JUN-20
CCME PHC F2-F4 in Water						
F2 (C10-C16)	<0.10		mg/L			20-JUN-20
F3 (C16-C34)	<0.25		mg/L			20-JUN-20
F4 (C34-C50)	<0.25		mg/L			20-JUN-20
Surr: 2-Bromobenzotrifluoride	107.7		%			20-JUN-20
BTX plus F1 by GCMS						
Benzene	<0.00050		mg/L	0.005		23-JUN-20
Toluene	<0.0010		mg/L	0.06	0.024	23-JUN-20
Ethyl benzene	<0.00050		mg/L	0.14	0.0016	23-JUN-20
o-Xylene	<0.00050		mg/L			23-JUN-20
m+p-Xylenes	<0.00040		mg/L			23-JUN-20
F1 (C6-C10)	<0.10		mg/L			23-JUN-20
Surr: 4-Bromofluorobenzene (SS)	91.5		%			23-JUN-20
Nitrogen Total						
*Nitrate and Nitrite as N	<0.070		mg/L	10		23-JUN-20
Total Kjeldahl Nitrogen						
Total Kjeldahl Nitrogen	0.52		mg/L			22-JUN-20
Nitrite in Water by IC						
*Nitrite (as N)	<0.010		mg/L	1		19-JUN-20
Nitrate in Water by IC						
*Nitrate (as N)	<0.020		mg/L	10		19-JUN-20
Phosphorus (P)-Total Dissolved	0.0105		mg/L			24-JUN-20
Mercury Dissolved						
Dissolved Mercury Filtration Location	FIELD					25-JUN-20
Mercury (Hg)-Dissolved	<0.0000050		mg/L	0.001		30-JUN-20
Mercury (Hg)-Total	<0.0000050		mg/L	0.001		30-JUN-20
Phosphorus (P)-Total	0.0207		mg/L			22-JUN-20
Ammonia, Total (as N)	<0.010		mg/L			23-JUN-20
Total Nitrogen	0.52		mg/L			23-JUN-20
Total Suspended Solids	<3.0		mg/L			24-JUN-20
*Turbidity	4.38		NTU			18-JUN-20



KGS Group Consultants (Winnipeg)
865 Waverly Street - 3rd Floor
Winnipeg MB R3T 5P4
ATTN: PAUL LINDELL

Date: 30-JUN-20
PO No.:
WO No.: L2462330
Project Ref: 18-0300-005.2302.04
Sample ID: LSMOC-OUTLET1
Sampled By: PL/SB
Date Collected: 17-JUN-20
Lab Sample ID: L2462330-9
Matrix: SW

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
<p>CDWQG = Health Canada Guideline Limits updated</p> <p>* CDWQG for Nitrate+Nitrite-N is the limit for nitrate only. If present as Nitrate then the limit is 10mg/L < or N.D. = less than detection limit. * Turbidity guideline based on membrane filtration. For guidelines on conventional treatment and slow sand or diatomaceous earth filtration please see Summary Table of Guidelines for Canadian Drinking Water Quality - A blank entry designates no known limit. - A shaded value in the Results column exceeds CDWQG MAC and/ or Aesthetic Objective.</p>	JUNE 2019					
<p>Approved by </p> <hr/> <p>Hua Wo Account Manager</p>						



KGS Group Consultants (Winnipeg)
865 Waverly Street - 3rd Floor
Winnipeg MB R3T 5P4
ATTN: PAUL LINDELL

Date: 30-JUN-20
PO No.:
WO No.: L2462330
Project Ref: 18-0300-005.2302.04
Sample ID: CR3-1
Sampled By: PL/SB
Date Collected: 17-JUN-20
Lab Sample ID: L2462330-10
Matrix: SW

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
BTEX plus F1-F4						
Xylenes (Total)	<0.00064		mg/L	0.09	0.02	25-JUN-20
CCME Total Hydrocarbons						
F1-BTEX	<0.10		mg/L			25-JUN-20
Total Hydrocarbons (C6-C50)	<0.38		mg/L			25-JUN-20
CCME PHC F2-F4 in Water						
F2 (C10-C16)	<0.10		mg/L			20-JUN-20
F3 (C16-C34)	<0.25		mg/L			20-JUN-20
F4 (C34-C50)	<0.25		mg/L			20-JUN-20
Surr: 2-Bromobenzotrifluoride	105.9		%			20-JUN-20
BTX plus F1 by GCMS						
Benzene	<0.00050		mg/L	0.005		23-JUN-20
Toluene	<0.0010		mg/L	0.06	0.024	23-JUN-20
Ethyl benzene	<0.00050		mg/L	0.14	0.0016	23-JUN-20
o-Xylene	<0.00050		mg/L			23-JUN-20
m+p-Xylenes	<0.00040		mg/L			23-JUN-20
F1 (C6-C10)	<0.10		mg/L			23-JUN-20
Surr: 4-Bromofluorobenzene (SS)	91.4		%			23-JUN-20
Nitrogen Total						
*Nitrate and Nitrite as N	<0.070		mg/L	10		23-JUN-20
Total Kjeldahl Nitrogen						
Total Kjeldahl Nitrogen	0.64		mg/L			22-JUN-20
Nitrite in Water by IC						
*Nitrite (as N)	<0.010		mg/L	1		19-JUN-20
Nitrate in Water by IC						
*Nitrate (as N)	<0.020		mg/L	10		19-JUN-20
Phosphorus (P)-Total Dissolved	0.0053		mg/L			24-JUN-20
Mercury Dissolved						
Dissolved Mercury Filtration Location	FIELD					25-JUN-20
Mercury (Hg)-Dissolved	<0.0000050		mg/L	0.001		30-JUN-20
Mercury (Hg)-Total	<0.0000050		mg/L	0.001		30-JUN-20
Phosphorus (P)-Total	0.0073		mg/L			26-JUN-20
Ammonia, Total (as N)	<0.010		mg/L			23-JUN-20
Total Nitrogen	0.64		mg/L			23-JUN-20
Total Suspended Solids	<3.0		mg/L			24-JUN-20
*Turbidity	0.16		NTU			18-JUN-20



KGS Group Consultants (Winnipeg)
865 Waverly Street - 3rd Floor
Winnipeg MB R3T 5P4
ATTN: PAUL LINDELL

Date: 30-JUN-20
PO No.:
WO No.: L2462330
Project Ref: 18-0300-005.2302.04
Sample ID: CR3-1
Sampled By: PL/SB
Date Collected: 17-JUN-20
Lab Sample ID: L2462330-10
Matrix: SW

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
<p>CDWQG = Health Canada Guideline Limits updated JUNE 2019</p> <p>* CDWQG for Nitrate+Nitrite-N is the limit for nitrate only. If present as Nitrate then the limit is 10mg/L < or N.D. = less than detection limit. * Turbidity guideline based on membrane filtration. For guidelines on conventional treatment and slow sand or diatomaceous earth filtration please see Summary Table of Guidelines for Canadian Drinking Water Quality - A blank entry designates no known limit. - A shaded value in the Results column exceeds CDWQG MAC and/ or Aesthetic Objective.</p>						
<p>Approved by <u><i>Hua Wo</i></u> Hua Wo Account Manager</p>						



KGS Group Consultants (Winnipeg)
865 Waverly Street - 3rd Floor
Winnipeg MB R3T 5P4
ATTN: PAUL LINDELL

Date: 30-JUN-20
PO No.:
WO No.: L2462330
Project Ref: 18-0300-005.2302.04
Sample ID: CR3-2
Sampled By: PL/SB
Date Collected: 17-JUN-20
Lab Sample ID: L2462330-11
Matrix: SW

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
BTEX plus F1-F4						
Xylenes (Total)	<0.00064		mg/L	0.09	0.02	25-JUN-20
CCME Total Hydrocarbons						
F1-BTEX	<0.10		mg/L			25-JUN-20
Total Hydrocarbons (C6-C50)	<0.38		mg/L			25-JUN-20
CCME PHC F2-F4 in Water						
F2 (C10-C16)	<0.10		mg/L			20-JUN-20
F3 (C16-C34)	<0.25		mg/L			20-JUN-20
F4 (C34-C50)	<0.25		mg/L			20-JUN-20
Surr: 2-Bromobenzotrifluoride	108.0		%			20-JUN-20
BTX plus F1 by GCMS						
Benzene	<0.00050		mg/L	0.005		23-JUN-20
Toluene	<0.0010		mg/L	0.06	0.024	23-JUN-20
Ethyl benzene	<0.00050		mg/L	0.14	0.0016	23-JUN-20
o-Xylene	<0.00050		mg/L			23-JUN-20
m+p-Xylenes	<0.00040		mg/L			23-JUN-20
F1 (C6-C10)	<0.10		mg/L			23-JUN-20
Surr: 4-Bromofluorobenzene (SS)	92.9		%			23-JUN-20
Nitrogen Total						
*Nitrate and Nitrite as N	<0.070		mg/L	10		23-JUN-20
Total Kjeldahl Nitrogen						
Total Kjeldahl Nitrogen	0.63		mg/L			22-JUN-20
Nitrite in Water by IC						
*Nitrite (as N)	<0.010		mg/L	1		19-JUN-20
Nitrate in Water by IC						
*Nitrate (as N)	<0.020		mg/L	10		19-JUN-20
Phosphorus (P)-Total Dissolved	0.0065		mg/L			24-JUN-20
Mercury Dissolved						
Dissolved Mercury Filtration Location	FIELD					25-JUN-20
Mercury (Hg)-Dissolved	<0.0000050		mg/L	0.001		30-JUN-20
Mercury (Hg)-Total	<0.0000050		mg/L	0.001		30-JUN-20
Phosphorus (P)-Total	0.0093		mg/L			22-JUN-20
Ammonia, Total (as N)	0.013		mg/L			23-JUN-20
Total Nitrogen	0.63		mg/L			23-JUN-20
Total Suspended Solids	4.6		mg/L			24-JUN-20
*Turbidity	3.68		NTU			18-JUN-20



KGS Group Consultants (Winnipeg)
865 Waverly Street - 3rd Floor
Winnipeg MB R3T 5P4
ATTN: PAUL LINDELL

Date: 30-JUN-20
PO No.:
WO No.: L2462330
Project Ref: 18-0300-005.2302.04
Sample ID: CR3-2
Sampled By: PL/SB
Date Collected: 17-JUN-20
Lab Sample ID: L2462330-11
Matrix: SW

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
<p>CDWQG = Health Canada Guideline Limits updated JUNE 2019</p> <p>* CDWQG for Nitrate+Nitrite-N is the limit for nitrate only. If present as Nitrate then the limit is 10mg/L < or N.D. = less than detection limit. * Turbidity guideline based on membrane filtration. For guidelines on conventional treatment and slow sand or diatomaceous earth filtration please see Summary Table of Guidelines for Canadian Drinking Water Quality - A blank entry designates no known limit. - A shaded value in the Results column exceeds CDWQG MAC and/ or Aesthetic Objective.</p>						
<p>Approved by <u>Hua Wo</u> Hua Wo Account Manager</p>						

Guidelines & Objectives

Sample Parameter Qualifier key listed:

Qualifier	Description
MBHT	The APHA 30 hour hold time was exceeded for microbiological testing. Samples processed within 48 hours from time of sampling may

be valid in some cases (refer to Health Canada guidance).

TMV Turbidity exceeded upper limit of the nephelometric method. Minimum value reported.

DLM Detection Limit Adjusted due to sample matrix effects (e.g. chemical interference, colour, turbidity).

Health Canada MAC Health Related Criteria Limits

Nitrate/Nitrite-N*	Criteria limit is 10 mg/L (1.0 mg/L if present as all Nitrite-N). High concentrations may contribute to blue baby syndrome in infants.
Lead*	A cumulative body poison, uncommon in naturally occurring hard waters.
Fluoride*	Present in fluoridated water supplies at 0.8 mg/L to reduce dental caries. Elevated levels causes fluorosis (mottling of teeth).
Total Coliforms*	Criteria is 0 CFU/100mL. Adverse health effects.
E. Coli*	Criteria is 0 CFU/100 mL. Certain E. Coli bacteria can be life threatening.
Manganese*	Criteria limit is 0.12 mg/L. Possible neurological effects in infants.

*Health Canada Canadian Drinking Water Quality Guidelines (MAC limit)

Aesthetic Objective Concentration Levels

Alkalinity	Acid neutralizing capacity. Usually a measure of carbonate and bicarbonates and calculated and reported as calcium carbonate.
Balance	Quality control parameter ratioing cations to anions
Bicarbonate	See Alkalinity. Report as the anion HCO ₃ -1
Carbonate	See Alkalinity. Reported at the anion CO ₃ -2
Calcium	See Hardness. Common major cation of water chemistry.
Chloride	Common major anion of water chemistry.
Conductance	Physical test measuring water salinity (dissolved ions or solids)
Hardness	Classical measure or capacity of water to precipitate soap (chiefly calcium and magnesium ions). Causes scaling tendency in water if carbonates/bicarbonates are present (if >200 mg/L). For drinking water purposes waters with results <200 mg/L are considered acceptable, results >200 mg/L are considered poor but can be tolerated. Results >500 mg/L are unacceptable.
Hydroxide	See alkalinity
Magnesium	See hardness. Common major cation of water chemistry. Elevated levels (>125 mg/L) may exert a cathartic or diuretic action.
pH	Measure of water acidity/alkalinity. Normal range is 7.0-8.5.
Potassium	Common major cation of water chemistry.
Sodium	Common major cation of water chemistry. Measure of salinity (saltiness).The aesthetic objective (not related to health) for sodium in drinking water is 200 mg/L. However, where sodium concentration of the drinking water exceeds 20 mg/L, it is recommended that any person on a sodium restricted diet consult with his/her physician or Medical Officer of Health concerning the use of that water.
Sulphate	Common major anion of water chemistry. Elevated levels may exert a cathartic or diuretic action.
Total Dissolved Solids	A measure of water salinity.
Iron	Causes staining to laundry and porcelain and astringent taste. Oxidizes to red-brown precipitate on exposure to air.
Heterotrophic Plate Count	Criteria is 500 cfu/mL Measure of heterotrophic bacteria present.

GLOSSARY OF REPORT TERMS

Surrogates are compounds that are similar in behaviour to target analyte(s), but that do not normally occur in environmental samples. For applicable tests, surrogates are added to samples prior to analysis as a check on recovery. In reports that display the D.L. column, laboratory objectives for surrogates are listed there.

mg/kg - milligrams per kilogram based on dry weight of sample

mg/kg wwt - milligrams per kilogram based on wet weight of sample

mg/kg lwt - milligrams per kilogram based on lipid-adjusted weight

mg/L - unit of concentration based on volume, parts per million.

< - Less than.

D.L. - The reporting limit.

N/A - Result not available. Refer to qualifier code and definition for explanation.

Test results reported relate only to the samples as received by the laboratory.

UNLESS OTHERWISE STATED, ALL SAMPLES WERE RECEIVED IN ACCEPTABLE CONDITION.

Analytical results in unsigned test reports with the DRAFT watermark are subject to change, pending final QC review.

Quality Control Report

Workorder: L2462330

Report Date: 30-JUN-20

Page 1 of 10

Client: KGS Group Consultants (Winnipeg)
 865 Waverly Street - 3rd Floor
 Winnipeg MB R3T 5P4

Contact: PAUL LINDELL

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
ALK-TITR-WP								
	Water							
Batch	R5126860							
WG3346888-14	LCS							
Alkalinity, Total (as CaCO3)			104.1		%		85-115	19-JUN-20
WG3346888-11	MB							
Alkalinity, Total (as CaCO3)			<1.0		mg/L		1	19-JUN-20
BTEXS+F1-HSMS-WP								
	Water							
Batch	R5131240							
WG3347130-2	LCS							
Benzene			104.4		%		70-130	22-JUN-20
Toluene			101.9		%		70-130	22-JUN-20
Ethyl benzene			101.2		%		70-130	22-JUN-20
o-Xylene			108.4		%		70-130	22-JUN-20
m+p-Xylenes			104.2		%		70-130	22-JUN-20
WG3347130-3	LCS							
F1 (C6-C10)			108.2		%		70-130	22-JUN-20
WG3347130-1	MB							
Benzene			<0.00050		mg/L		0.0005	22-JUN-20
Toluene			<0.0010		mg/L		0.001	22-JUN-20
Ethyl benzene			<0.00050		mg/L		0.0005	22-JUN-20
o-Xylene			<0.00050		mg/L		0.0005	22-JUN-20
m+p-Xylenes			<0.00040		mg/L		0.0004	22-JUN-20
F1 (C6-C10)			<0.10		mg/L		0.1	22-JUN-20
Surrogate: 4-Bromofluorobenzene (SS)			96.1		%		70-130	22-JUN-20
CL-L-IC-N-WP								
	Water							
Batch	R5129756							
WG3346282-2	LCS							
Chloride (Cl)			103.1		%		90-110	19-JUN-20
WG3346282-1	MB							
Chloride (Cl)			<0.10		mg/L		0.1	19-JUN-20
EC-WP								
	Water							
Batch	R5126860							
WG3346888-13	LCS							
Conductivity			99.2		%		90-110	19-JUN-20
WG3346888-11	MB							
Conductivity			<1.0		umhos/cm		1	19-JUN-20
F-IC-N-WP								
	Water							



Quality Control Report

Workorder: L2462330

Report Date: 30-JUN-20

Page 2 of 10

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
F-IC-N-WP								
Water								
Batch	R5129756							
WG3346282-2	LCS							
Fluoride (F)			104.1		%		90-110	19-JUN-20
WG3346282-1	MB							
Fluoride (F)			<0.020		mg/L		0.02	19-JUN-20
F2-F4-FID-WP								
Water								
Batch	R5128566							
WG3346557-4	LCS							
F2 (C10-C16)			106.6		%		70-130	20-JUN-20
F3 (C16-C34)			96.5		%		70-130	20-JUN-20
F4 (C34-C50)			105.3		%		70-130	20-JUN-20
WG3346557-3	MB							
F2 (C10-C16)			<0.10		mg/L		0.1	20-JUN-20
F3 (C16-C34)			<0.25		mg/L		0.25	20-JUN-20
F4 (C34-C50)			<0.25		mg/L		0.25	20-JUN-20
Surrogate: 2-Bromobenzotrifluoride			103.5		%		60-140	20-JUN-20
HG-D-CVAA-WP								
Water								
Batch	R5138697							
WG3353190-3	DUP	L2462330-8						
Mercury (Hg)-Dissolved		<0.0000050	<0.0000050	RPD-NA	mg/L	N/A	20	30-JUN-20
WG3353190-2	LCS							
Mercury (Hg)-Dissolved			107.0		%		80-120	30-JUN-20
WG3353190-1	MB							
Mercury (Hg)-Dissolved			<0.0000050		mg/L		0.000005	30-JUN-20
WG3353190-4	MS	L2462330-9						
Mercury (Hg)-Dissolved			100.0		%		70-130	30-JUN-20
HG-T-CVAA-WP								
Water								
Batch	R5138801							
WG3353244-3	DUP	L2462330-9						
Mercury (Hg)-Total		<0.0000050	<0.0000050	RPD-NA	mg/L	N/A	20	30-JUN-20
WG3353182-2	LCS							
Mercury (Hg)-Total			107.0		%		80-120	30-JUN-20
WG3353244-2	LCS							
Mercury (Hg)-Total			107.0		%		80-120	30-JUN-20
WG3353182-1	MB							
Mercury (Hg)-Total			<0.0000050		mg/L		0.000005	30-JUN-20
WG3353244-1	MB							
Mercury (Hg)-Total			<0.0000050		mg/L		0.000005	30-JUN-20



Quality Control Report

Workorder: L2462330

Report Date: 30-JUN-20

Page 3 of 10

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
HG-T-CVAA-WP								
	Water							
Batch	R5138801							
WG3353244-4 MS		L2462330-10						
Mercury (Hg)-Total			102.0		%		70-130	30-JUN-20
MET-D-CCMS-WP								
	Water							
Batch	R5126483							
WG3346153-2 LCS								
Aluminum (Al)-Dissolved			99.6		%		80-120	19-JUN-20
Antimony (Sb)-Dissolved			99.0		%		80-120	19-JUN-20
Arsenic (As)-Dissolved			102.3		%		80-120	19-JUN-20
Barium (Ba)-Dissolved			101.0		%		80-120	19-JUN-20
Beryllium (Be)-Dissolved			100.8		%		80-120	19-JUN-20
Bismuth (Bi)-Dissolved			96.3		%		80-120	19-JUN-20
Boron (B)-Dissolved			95.6		%		80-120	19-JUN-20
Cadmium (Cd)-Dissolved			103.0		%		80-120	19-JUN-20
Calcium (Ca)-Dissolved			100.0		%		80-120	19-JUN-20
Cesium (Cs)-Dissolved			101.2		%		80-120	19-JUN-20
Chromium (Cr)-Dissolved			101.0		%		80-120	19-JUN-20
Cobalt (Co)-Dissolved			100.9		%		80-120	19-JUN-20
Copper (Cu)-Dissolved			101.5		%		80-120	19-JUN-20
Iron (Fe)-Dissolved			92.1		%		80-120	19-JUN-20
Lead (Pb)-Dissolved			97.3		%		80-120	19-JUN-20
Lithium (Li)-Dissolved			100.7		%		80-120	19-JUN-20
Magnesium (Mg)-Dissolved			102.0		%		80-120	19-JUN-20
Manganese (Mn)-Dissolved			101.9		%		80-120	19-JUN-20
Molybdenum (Mo)-Dissolved			100.7		%		80-120	19-JUN-20
Nickel (Ni)-Dissolved			100.4		%		80-120	19-JUN-20
Phosphorus (P)-Dissolved			106.0		%		80-120	19-JUN-20
Potassium (K)-Dissolved			101.7		%		80-120	19-JUN-20
Rubidium (Rb)-Dissolved			103.8		%		80-120	19-JUN-20
Selenium (Se)-Dissolved			100.3		%		80-120	19-JUN-20
Silicon (Si)-Dissolved			103.4		%		80-120	19-JUN-20
Silver (Ag)-Dissolved			99.8		%		80-120	19-JUN-20
Sodium (Na)-Dissolved			103.3		%		80-120	19-JUN-20
Strontium (Sr)-Dissolved			102.1		%		80-120	19-JUN-20
Sulfur (S)-Dissolved			101.5		%		80-120	19-JUN-20



Quality Control Report

Workorder: L2462330

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Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
MET-D-CCMS-WP		Water						
Batch	R5126483							
WG3346153-2 LCS								
Tellurium (Te)-Dissolved			93.0		%		80-120	19-JUN-20
Thallium (Tl)-Dissolved			97.3		%		80-120	19-JUN-20
Thorium (Th)-Dissolved			92.5		%		80-120	19-JUN-20
Tin (Sn)-Dissolved			99.5		%		80-120	19-JUN-20
Titanium (Ti)-Dissolved			95.7		%		80-120	19-JUN-20
Tungsten (W)-Dissolved			97.3		%		80-120	19-JUN-20
Uranium (U)-Dissolved			97.9		%		80-120	19-JUN-20
Vanadium (V)-Dissolved			101.9		%		80-120	19-JUN-20
Zinc (Zn)-Dissolved			101.3		%		80-120	19-JUN-20
Zirconium (Zr)-Dissolved			96.5		%		80-120	19-JUN-20
WG3346153-1 MB								
Aluminum (Al)-Dissolved			<0.0010		mg/L		0.001	19-JUN-20
Antimony (Sb)-Dissolved			<0.00010		mg/L		0.0001	19-JUN-20
Arsenic (As)-Dissolved			<0.00010		mg/L		0.0001	19-JUN-20
Barium (Ba)-Dissolved			<0.00010		mg/L		0.0001	19-JUN-20
Beryllium (Be)-Dissolved			<0.00010		mg/L		0.0001	19-JUN-20
Bismuth (Bi)-Dissolved			<0.000050		mg/L		0.00005	19-JUN-20
Boron (B)-Dissolved			<0.010		mg/L		0.01	19-JUN-20
Cadmium (Cd)-Dissolved			<0.0000050		mg/L		0.000005	19-JUN-20
Calcium (Ca)-Dissolved			<0.050		mg/L		0.05	19-JUN-20
Cesium (Cs)-Dissolved			<0.000010		mg/L		0.00001	19-JUN-20
Chromium (Cr)-Dissolved			<0.00010		mg/L		0.0001	19-JUN-20
Cobalt (Co)-Dissolved			<0.00010		mg/L		0.0001	19-JUN-20
Copper (Cu)-Dissolved			<0.00020		mg/L		0.0002	19-JUN-20
Iron (Fe)-Dissolved			<0.010		mg/L		0.01	19-JUN-20
Lead (Pb)-Dissolved			<0.000050		mg/L		0.00005	19-JUN-20
Lithium (Li)-Dissolved			<0.0010		mg/L		0.001	19-JUN-20
Magnesium (Mg)-Dissolved			<0.0050		mg/L		0.005	19-JUN-20
Manganese (Mn)-Dissolved			<0.00010		mg/L		0.0001	19-JUN-20
Molybdenum (Mo)-Dissolved			<0.000050		mg/L		0.00005	19-JUN-20
Nickel (Ni)-Dissolved			<0.00050		mg/L		0.0005	19-JUN-20
Phosphorus (P)-Dissolved			<0.030		mg/L		0.03	19-JUN-20
Potassium (K)-Dissolved			<0.050		mg/L		0.05	19-JUN-20
Rubidium (Rb)-Dissolved			<0.00020		mg/L		0.0002	19-JUN-20

Quality Control Report

Workorder: L2462330

Report Date: 30-JUN-20

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Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
MET-D-CCMS-WP		Water						
Batch	R5126483							
WG3346153-1	MB							
Selenium (Se)-Dissolved			<0.000050		mg/L		0.00005	19-JUN-20
Silicon (Si)-Dissolved			<0.050		mg/L		0.05	19-JUN-20
Silver (Ag)-Dissolved			<0.000010		mg/L		0.00001	19-JUN-20
Sodium (Na)-Dissolved			<0.050		mg/L		0.05	19-JUN-20
Strontium (Sr)-Dissolved			<0.00010		mg/L		0.0001	19-JUN-20
Sulfur (S)-Dissolved			<0.50		mg/L		0.5	19-JUN-20
Tellurium (Te)-Dissolved			<0.00020		mg/L		0.0002	19-JUN-20
Thallium (Tl)-Dissolved			<0.000010		mg/L		0.00001	19-JUN-20
Thorium (Th)-Dissolved			<0.00010		mg/L		0.0001	19-JUN-20
Tin (Sn)-Dissolved			<0.00010		mg/L		0.0001	19-JUN-20
Titanium (Ti)-Dissolved			<0.00030		mg/L		0.0003	19-JUN-20
Tungsten (W)-Dissolved			<0.00010		mg/L		0.0001	19-JUN-20
Uranium (U)-Dissolved			<0.000010		mg/L		0.00001	19-JUN-20
Vanadium (V)-Dissolved			<0.00050		mg/L		0.0005	19-JUN-20
Zinc (Zn)-Dissolved			<0.0010		mg/L		0.001	19-JUN-20
Zirconium (Zr)-Dissolved			<0.00020		mg/L		0.0002	19-JUN-20
N-TOTKJ-WP		Water						
Batch	R5127098							
WG3344867-2	LCS							
Total Kjeldahl Nitrogen			103.1		%		75-125	22-JUN-20
WG3344867-1	MB							
Total Kjeldahl Nitrogen			<0.20		mg/L		0.2	22-JUN-20
NH3-COL-WP		Water						
Batch	R5131205							
WG3348980-10	LCS							
Ammonia, Total (as N)			105.3		%		85-115	23-JUN-20
WG3348980-9	MB							
Ammonia, Total (as N)			<0.010		mg/L		0.01	23-JUN-20
NO2-IC-N-WP		Water						
Batch	R5129756							
WG3346282-2	LCS							
Nitrite (as N)			103.6		%		90-110	19-JUN-20
WG3346282-6	LCS							
Nitrite (as N)			103.4		%		90-110	19-JUN-20
WG3346282-1	MB							



Quality Control Report

Workorder: L2462330

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Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
NO2-IC-N-WP		Water						
Batch	R5129756							
WG3346282-1	MB							
Nitrite (as N)			<0.010		mg/L		0.01	19-JUN-20
WG3346282-5	MB							
Nitrite (as N)			<0.010		mg/L		0.01	19-JUN-20
NO2-L-IC-N-WP		Water						
Batch	R5129756							
WG3346282-2	LCS							
Nitrite (as N)			103.6		%		90-110	19-JUN-20
WG3346282-1	MB							
Nitrite (as N)			<0.0010		mg/L		0.001	19-JUN-20
NO3-IC-N-WP		Water						
Batch	R5129756							
WG3346282-2	LCS							
Nitrate (as N)			102.8		%		90-110	19-JUN-20
WG3346282-6	LCS							
Nitrate (as N)			103.9		%		90-110	19-JUN-20
WG3346282-1	MB							
Nitrate (as N)			<0.020		mg/L		0.02	19-JUN-20
WG3346282-5	MB							
Nitrate (as N)			<0.020		mg/L		0.02	19-JUN-20
NO3-L-IC-N-WP		Water						
Batch	R5129756							
WG3346282-2	LCS							
Nitrate (as N)			102.8		%		90-110	19-JUN-20
WG3346282-1	MB							
Nitrate (as N)			<0.0050		mg/L		0.005	19-JUN-20
P-T-COL-WP		Water						
Batch	R5127191							
WG3346931-18	LCS							
Phosphorus (P)-Total			98.0		%		80-120	22-JUN-20
WG3346931-17	MB							
Phosphorus (P)-Total			<0.0030		mg/L		0.003	22-JUN-20
P-T-L-COL-WP		Water						
Batch	R5135492							
WG3351878-2	LCS							
Phosphorus (P)-Total			95.7		%		80-120	26-JUN-20
WG3351878-1	MB							



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Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
P-T-L-COL-WP Water								
Batch	R5135492							
WG3351878-1	MB							
Phosphorus (P)-Total			<0.0010		mg/L		0.001	26-JUN-20
P-TD-COL-WP Water								
Batch	R5131182							
WG3348693-2	LCS							
Phosphorus (P)-Total Dissolved			98.4		%		80-120	24-JUN-20
WG3348693-1	MB							
Phosphorus (P)-Total Dissolved			<0.0030		mg/L		0.003	24-JUN-20
PH-WP Water								
Batch	R5126860							
WG3346888-12	LCS							
pH			7.38		pH units		7.3-7.5	19-JUN-20
SO4-IC-N-WP Water								
Batch	R5129756							
WG3346282-2	LCS							
Sulfate (SO4)			103.6		%		90-110	19-JUN-20
WG3346282-1	MB							
Sulfate (SO4)			<0.30		mg/L		0.3	19-JUN-20
SOLIDS-TOTSUS-WP Water								
Batch	R5132616							
WG3348929-2	LCS							
Total Suspended Solids			86.7		%		85-115	24-JUN-20
WG3348929-1	MB							
Total Suspended Solids			<3.0		mg/L		3	24-JUN-20
TC,EC-QT51-WP Water								
Batch	R5126072							
WG3344904-2	DUP	L2462330-7						
Total Coliforms		1	0	J	MPN/100mL	1	2	18-JUN-20
Escherichia Coli		0	0		MPN/100mL	0.0	65	18-JUN-20
WG3344904-3	DUP	L2462330-6						
Total Coliforms		165	165		MPN/100mL	0.0	65	18-JUN-20
Escherichia Coli		0	0		MPN/100mL	0.0	65	18-JUN-20
WG3344904-4	DUP	L2462330-5						
Total Coliforms		200	200		MPN/100mL	0.0	65	18-JUN-20
Escherichia Coli		0	0		MPN/100mL	0.0	65	18-JUN-20



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Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
TC,EC-QT51-WP								
	Water							
Batch	R5126072							
WG3344904-5	DUP	L2462330-4						
Total Coliforms		0	0		MPN/100mL	0.0	65	18-JUN-20
Escherichia Coli		0	0		MPN/100mL	0.0	65	18-JUN-20
WG3344904-6	DUP	L2462330-1						
Total Coliforms		1	1		MPN/100mL	0.0	65	18-JUN-20
Escherichia Coli		0	0		MPN/100mL	0.0	65	18-JUN-20
WG3344904-1	MB							
Total Coliforms			0		MPN/100mL		1	18-JUN-20
Escherichia Coli			0		MPN/100mL		1	18-JUN-20
TC,EC-QT97-WP								
	Water							
Batch	R5126098							
WG3345194-2	DUP	L2462330-2						
Total Coliforms		<1	<1	RPD-NA	MPN/100mL	N/A	65	18-JUN-20
Escherichia Coli		<1	<1	RPD-NA	MPN/100mL	N/A	65	18-JUN-20
WG3345194-1	MB							
Total Coliforms			<1		MPN/100mL		1	18-JUN-20
Escherichia Coli			<1		MPN/100mL		1	18-JUN-20
TURBIDITY-WP								
	Water							
Batch	R5125843							
WG3345751-6	DUP	L2462330-8						
Turbidity		16.1	16.0		NTU	0.6	15	18-JUN-20
WG3345751-2	LCS							
Turbidity			102.0		%		85-115	18-JUN-20
WG3345751-5	LCS							
Turbidity			101.5		%		85-115	18-JUN-20
WG3345751-1	MB							
Turbidity			<0.10		NTU		0.1	18-JUN-20
WG3345751-4	MB							
Turbidity			<0.10		NTU		0.1	18-JUN-20

Quality Control Report

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Legend:

Limit	ALS Control Limit (Data Quality Objectives)
DUP	Duplicate
RPD	Relative Percent Difference
N/A	Not Available
LCS	Laboratory Control Sample
SRM	Standard Reference Material
MS	Matrix Spike
MSD	Matrix Spike Duplicate
ADE	Average Desorption Efficiency
MB	Method Blank
IRM	Internal Reference Material
CRM	Certified Reference Material
CCV	Continuing Calibration Verification
CVS	Calibration Verification Standard
LCSD	Laboratory Control Sample Duplicate

Sample Parameter Qualifier Definitions:

Qualifier	Description
J	Duplicate results and limits are expressed in terms of absolute difference.
RPD-NA	Relative Percent Difference Not Available due to result(s) being less than detection limit.

Quality Control Report

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Hold Time Exceedances:

ALS Product Description	Sample ID	Sampling Date	Date Processed	Rec. HT	Actual HT	Units	Qualifier
Physical Tests							
pH							
	1	16-JUN-20 11:00	19-JUN-20 12:00	0.25	73	hours	EHTR-FM
	2	16-JUN-20 12:15	19-JUN-20 12:00	0.25	72	hours	EHTR-FM
	3	16-JUN-20 14:45	19-JUN-20 12:00	0.25	69	hours	EHTR-FM
	4	16-JUN-20 17:30	19-JUN-20 12:00	0.25	66	hours	EHTR-FM
	5	17-JUN-20 10:00	19-JUN-20 12:00	0.25	50	hours	EHTR-FM
	6	17-JUN-20 12:00	19-JUN-20 12:00	0.25	48	hours	EHTR-FM
	7	17-JUN-20 13:12	19-JUN-20 12:00	0.25	47	hours	EHTR-FM

Bacteriological Tests

Total Coliform and E.coli

	1	16-JUN-20 11:00	18-JUN-20 10:45	30	48	hours	EHTR
	4	16-JUN-20 17:30	18-JUN-20 10:45	30	41	hours	EHTR

Total Coliform and E.coli by MPN QT97

	2	16-JUN-20 12:15	18-JUN-20 12:10	30	48	hours	EHTR
	3	16-JUN-20 14:45	18-JUN-20 12:10	30	45	hours	EHTR

Legend & Qualifier Definitions:

EHTR-FM:	Exceeded ALS recommended hold time prior to sample receipt. Field Measurement recommended.
EHTR:	Exceeded ALS recommended hold time prior to sample receipt.
EHTL:	Exceeded ALS recommended hold time prior to analysis. Sample was received less than 24 hours prior to expiry.
EHT:	Exceeded ALS recommended hold time prior to analysis.
Rec. HT:	ALS recommended hold time (see units).

Notes*:

Where actual sampling date is not provided to ALS, the date (& time) of receipt is used for calculation purposes.
Where actual sampling time is not provided to ALS, the earlier of 12 noon on the sampling date or the time (& date) of receipt is used for calculation purposes. Samples for L2462330 were received on 18-JUN-20 07:50.

ALS recommended hold times may vary by province. They are assigned to meet known provincial and/or federal government requirements. In the absence of regulatory hold times, ALS establishes recommendations based on guidelines published by the US EPA, APHA Standard Methods, or Environment Canada (where available). For more information, please contact ALS.

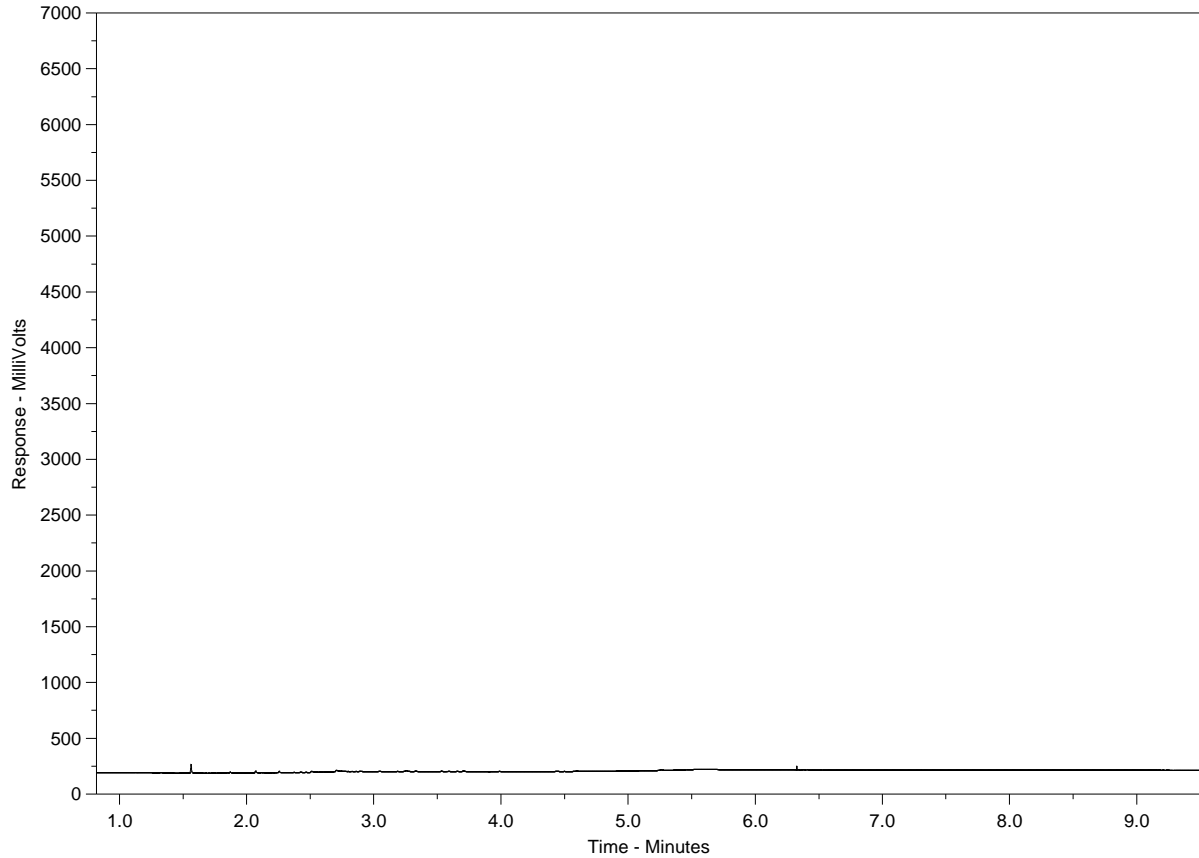
The ALS Quality Control Report is provided to ALS clients upon request. ALS includes comprehensive QC checks with every analysis to ensure our high standards of quality are met. Each QC result has a known or expected target value, which is compared against pre-determined data quality objectives to provide confidence in the accuracy of associated test results.

Please note that this report may contain QC results from anonymous Sample Duplicates and Matrix Spikes that do not originate from this Work Order.

CCME F2-F4 HYDROCARBON DISTRIBUTION REPORT



ALS Sample ID: L2462330-8
 Client Sample ID: SW-R3



← F2 →		← F3 →		← F4 →	
nC10	nC16		nC34		nC50
174°C	287°C		481°C		575°C
346°F	549°F		898°F		1067°F
← Gasoline →		← Motor Oils / Lube Oils / Grease →			
← Diesel / Jet Fuels →					

The CCME F2-F4 Hydrocarbon Distribution Report (HDR) is intended to assist you in characterizing hydrocarbon products that may be present in your sample.

The scale at the bottom of the chromatogram indicates the approximate retention times of common petroleum products and four n-alkane hydrocarbon marker compounds. Retention times may vary between samples, but general patterns and distributions will remain similar.

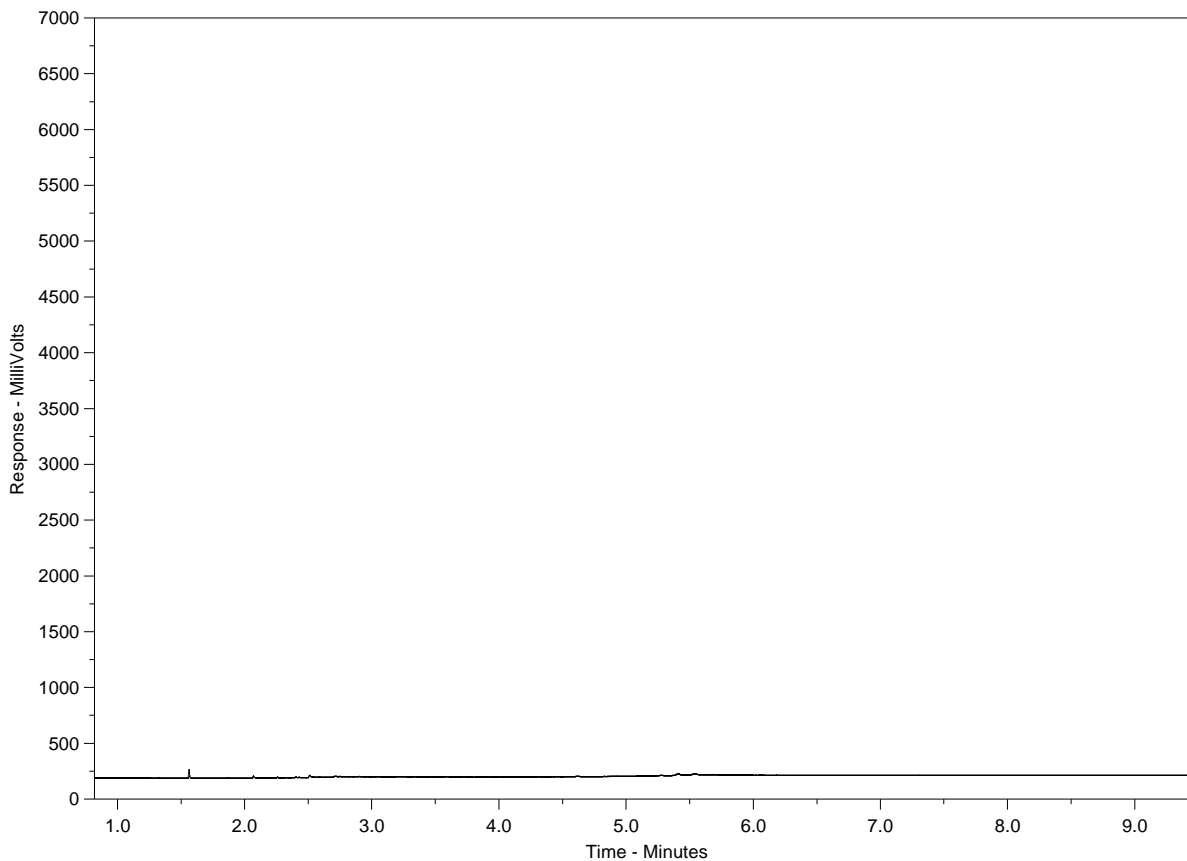
Peak heights in this report are a function of the sample concentration, the sample amount extracted, the sample dilution factor, and the scale at left.

Note: This chromatogram was produced using GC conditions that are specific to ALS Canada CCME F2-F4 method. Refer to the ALS Canada CCME F2-F4 Hydrocarbon Library for a collection of chromatograms from common reference samples (fuels, oils, etc.). The HDR library can be found at www.alsglobal.com.

CCME F2-F4 HYDROCARBON DISTRIBUTION REPORT



ALS Sample ID: L2462330-9
 Client Sample ID: LSMOC-OUTLET1



← F2 →		← F3 →		← F4 →	
nC10	nC16	nC34	nC50		
174°C	287°C	481°C	575°C		
346°F	549°F	898°F	1067°F		
← Gasoline →		← Motor Oils / Lube Oils / Grease →			
← Diesel / Jet Fuels →					

The CCME F2-F4 Hydrocarbon Distribution Report (HDR) is intended to assist you in characterizing hydrocarbon products that may be present in your sample.

The scale at the bottom of the chromatogram indicates the approximate retention times of common petroleum products and four n-alkane hydrocarbon marker compounds. Retention times may vary between samples, but general patterns and distributions will remain similar.

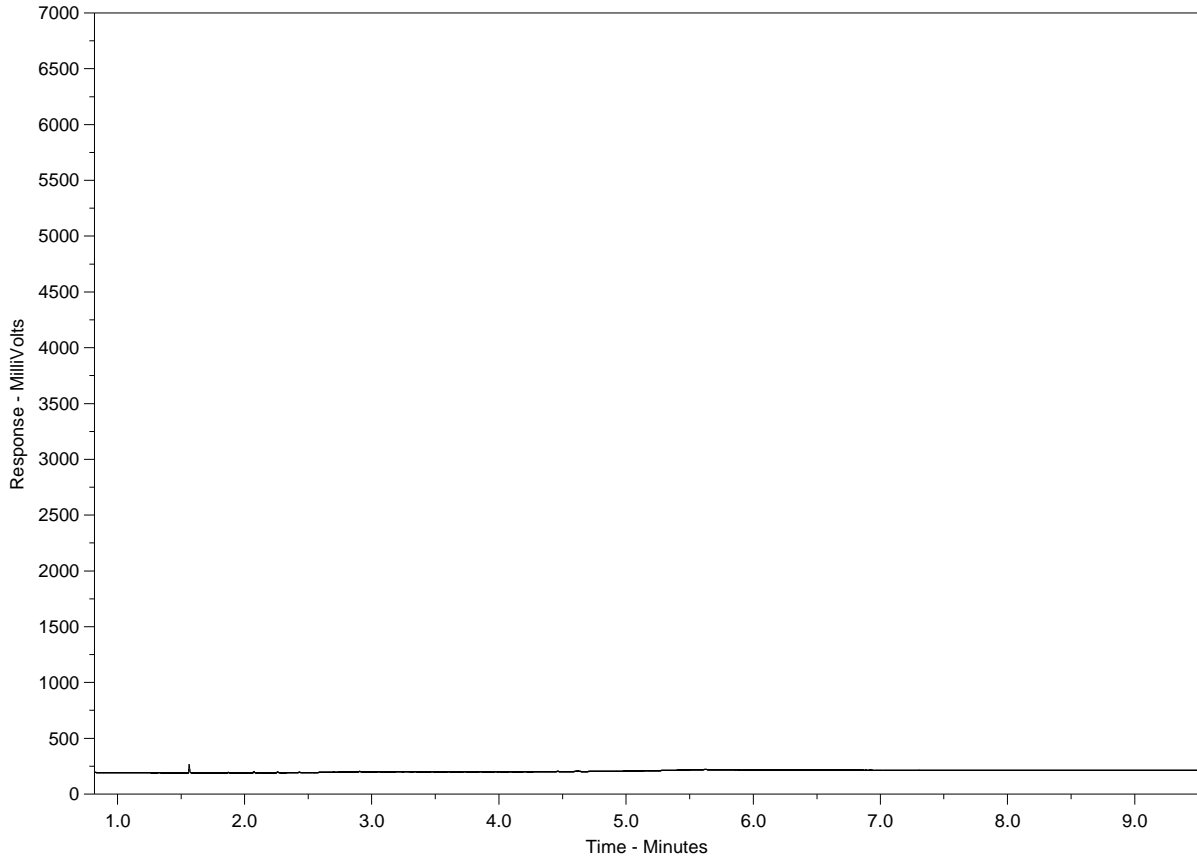
Peak heights in this report are a function of the sample concentration, the sample amount extracted, the sample dilution factor, and the scale at left.

Note: This chromatogram was produced using GC conditions that are specific to ALS Canada CCME F2-F4 method. Refer to the ALS Canada CCME F2-F4 Hydrocarbon Library for a collection of chromatograms from common reference samples (fuels, oils, etc.). The HDR library can be found at www.alsglobal.com.

CCME F2-F4 HYDROCARBON DISTRIBUTION REPORT



ALS Sample ID: L2462330-10
 Client Sample ID: CR3-1



← F2 →		← F3 →		← F4 →	
nC10	nC16	nC34	nC50		
174°C	287°C	481°C	575°C		
346°F	549°F	898°F	1067°F		
← Gasoline →		← Motor Oils / Lube Oils / Grease →			
← Diesel / Jet Fuels →					

The CCME F2-F4 Hydrocarbon Distribution Report (HDR) is intended to assist you in characterizing hydrocarbon products that may be present in your sample.

The scale at the bottom of the chromatogram indicates the approximate retention times of common petroleum products and four n-alkane hydrocarbon marker compounds. Retention times may vary between samples, but general patterns and distributions will remain similar.

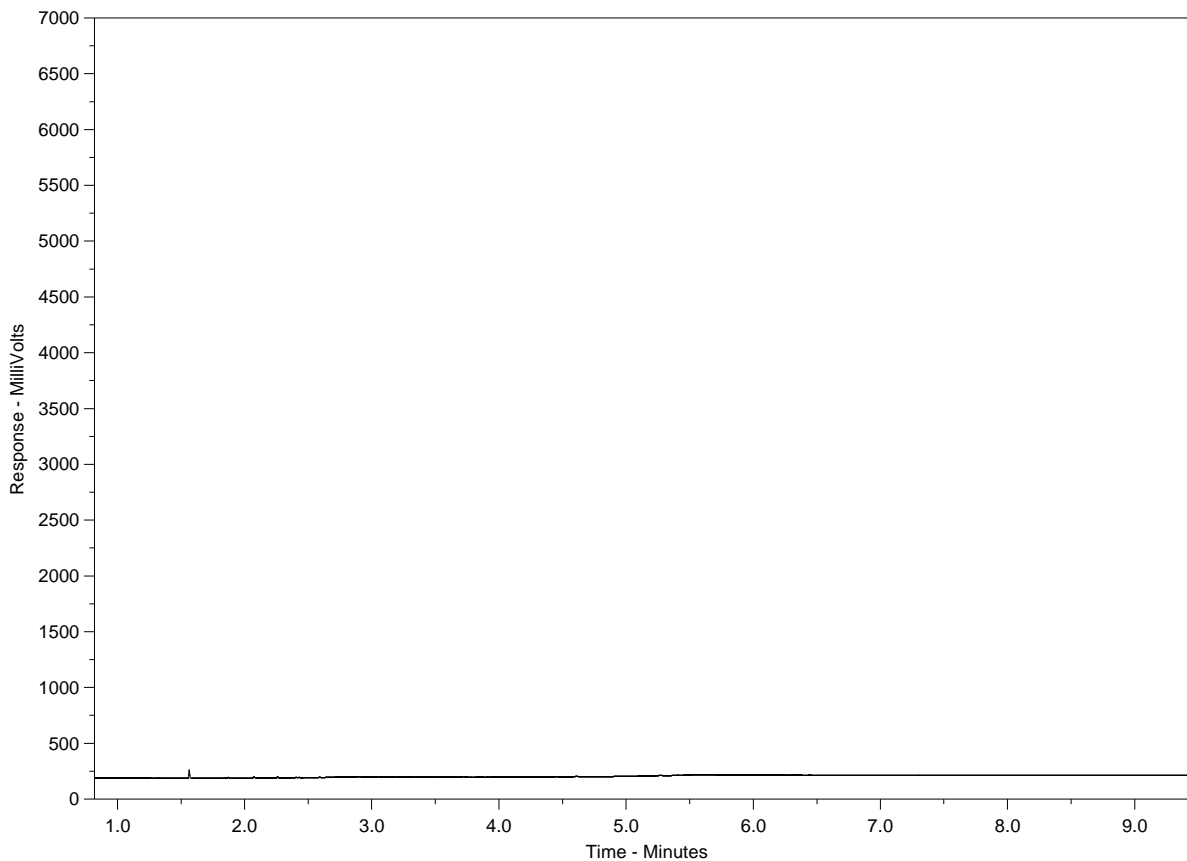
Peak heights in this report are a function of the sample concentration, the sample amount extracted, the sample dilution factor, and the scale at left.

Note: This chromatogram was produced using GC conditions that are specific to ALS Canada CCME F2-F4 method. Refer to the ALS Canada CCME F2-F4 Hydrocarbon Library for a collection of chromatograms from common reference samples (fuels, oils, etc.). The HDR library can be found at www.alsglobal.com.

CCME F2-F4 HYDROCARBON DISTRIBUTION REPORT



ALS Sample ID: L2462330-11
 Client Sample ID: CR3-2



← F2 →		← F3 →		← F4 →	
nC10	nC16		nC34		nC50
174°C	287°C		481°C		575°C
346°F	549°F		898°F		1067°F
← Gasoline →		← Motor Oils / Lube Oils / Grease →			
← Diesel / Jet Fuels →					

The CCME F2-F4 Hydrocarbon Distribution Report (HDR) is intended to assist you in characterizing hydrocarbon products that may be present in your sample.

The scale at the bottom of the chromatogram indicates the approximate retention times of common petroleum products and four n-alkane hydrocarbon marker compounds. Retention times may vary between samples, but general patterns and distributions will remain similar.

Peak heights in this report are a function of the sample concentration, the sample amount extracted, the sample dilution factor, and the scale at left.

Note: This chromatogram was produced using GC conditions that are specific to ALS Canada CCME F2-F4 method. Refer to the ALS Canada CCME F2-F4 Hydrocarbon Library for a collection of chromatograms from common reference samples (fuels, oils, etc.). The HDR library can be found at www.alsglobal.com.



KGS Group Consultants (Winnipeg)
865 Waverly Street - 3rd Floor
Winnipeg MB R3T 5P4
ATTN: P. LINDELL

Date: 30-JUN-20
PO No.:
WO No.: L2463404
Project Ref: 18-0300-005.2302.04
Sample ID: PW19-KGS-01
Sampled By: P.JL/SGB
Date Collected: 17-JUN-20
Lab Sample ID: L2463404-1
Matrix: GW

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
ROU4W Dissolved						
Bicarbonate (HCO3)	461		mg/L			23-JUN-20
Carbonate (CO3)	<0.60		mg/L			23-JUN-20
Hydroxide (OH)	<0.34		mg/L			23-JUN-20
*Nitrate and Nitrite as N	<0.0051		mg/L	10		25-JUN-20
pH						
pH	7.89		pH units			22-JUN-20
Turbidity						
*Turbidity	3.20		NTU			19-JUN-20
TDS calculated						
TDS (Calculated)	515		mg/L		500	24-JUN-20
Sulfate in Water by IC						
Sulfate (SO4)	87.5		mg/L		500	22-JUN-20
Nitrite in Water by IC (Low Level)						
*Nitrite (as N)	<0.0010		mg/L	1		22-JUN-20
Nitrate in Water by IC (Low Level)						
*Nitrate (as N)	<0.0050		mg/L	10		22-JUN-20
Ion Balance Calculation						
Hardness Calculated						
Hardness (as CaCO3)	396		mg/L		500	24-JUN-20
Fluoride in Water by IC						
Fluoride (F)	0.339		mg/L	1.5		22-JUN-20
Dissolved Metals in Water by CRC ICPMS						
Dissolved Metals	FIELD					23-JUN-20
Filtration Location						
Aluminum (Al)-Dissolved	<0.0010		mg/L		0.1	23-JUN-20
Antimony (Sb)-Dissolved	<0.00010		mg/L	0.006		23-JUN-20
Arsenic (As)-Dissolved	0.00036		mg/L	0.01		23-JUN-20
Barium (Ba)-Dissolved	0.0282		mg/L	2		23-JUN-20
Beryllium (Be)-Dissolved	<0.00010		mg/L			23-JUN-20
Bismuth (Bi)-Dissolved	<0.000050		mg/L			23-JUN-20
Boron (B)-Dissolved	0.180		mg/L	5		23-JUN-20
Cadmium (Cd)-Dissolved	<0.0000050		mg/L	0.005		23-JUN-20
Calcium (Ca)-Dissolved	61.3		mg/L			23-JUN-20
Cesium (Cs)-Dissolved	0.000010		mg/L			23-JUN-20
Chromium (Cr)-Dissolved	<0.00010		mg/L	0.05		23-JUN-20
Cobalt (Co)-Dissolved	0.00016		mg/L			23-JUN-20
Copper (Cu)-Dissolved	<0.00020		mg/L	2.0	1.0	23-JUN-20
Iron (Fe)-Dissolved	0.134		mg/L		0.3	23-JUN-20
Lead (Pb)-Dissolved	<0.000050		mg/L	0.005		23-JUN-20

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KGS Group Consultants (Winnipeg)
865 Waverly Street - 3rd Floor
Winnipeg MB R3T 5P4
ATTN: P. LINDELL

Date: 30-JUN-20
PO No.:
WO No.: L2463404
Project Ref: 18-0300-005.2302.04
Sample ID: PW19-KGS-01
Sampled By: P.JL/SGB
Date Collected: 17-JUN-20
Lab Sample ID: L2463404-1
Matrix: GW

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
ROU4W Dissolved						
Dissolved Metals in Water by CRC ICPMS						
Lithium (Li)-Dissolved	0.0312		mg/L			23-JUN-20
Magnesium (Mg)-Dissolved	59.1		mg/L			23-JUN-20
Manganese (Mn)-Dissolved	0.0162		mg/L	0.12	0.02	23-JUN-20
Molybdenum (Mo)-Dissolved	0.00149		mg/L			23-JUN-20
Nickel (Ni)-Dissolved	<0.00050		mg/L			23-JUN-20
Phosphorus (P)-Dissolved	<0.030		mg/L			23-JUN-20
Potassium (K)-Dissolved	6.44		mg/L			23-JUN-20
Rubidium (Rb)-Dissolved	0.00338		mg/L			23-JUN-20
Selenium (Se)-Dissolved	<0.000050		mg/L	0.05		23-JUN-20
Silicon (Si)-Dissolved	4.50		mg/L			23-JUN-20
Silver (Ag)-Dissolved	0.000010		mg/L			23-JUN-20
Sodium (Na)-Dissolved	45.4		mg/L		200	23-JUN-20
Strontium (Sr)-Dissolved	0.227		mg/L	7		23-JUN-20
Sulfur (S)-Dissolved	25.3		mg/L			23-JUN-20
Tellurium (Te)-Dissolved	<0.00020		mg/L			23-JUN-20
Thallium (Tl)-Dissolved	<0.000010		mg/L			23-JUN-20
Thorium (Th)-Dissolved	<0.00010		mg/L			23-JUN-20
Tin (Sn)-Dissolved	<0.00010		mg/L			23-JUN-20
Titanium (Ti)-Dissolved	<0.00030		mg/L			23-JUN-20
Tungsten (W)-Dissolved	<0.00010		mg/L			23-JUN-20
Uranium (U)-Dissolved	0.000875		mg/L	0.02		23-JUN-20
Vanadium (V)-Dissolved	<0.00050		mg/L			23-JUN-20
Zinc (Zn)-Dissolved	<0.0010		mg/L		5.0	23-JUN-20
Zirconium (Zr)-Dissolved	<0.00020		mg/L			23-JUN-20
Conductivity						
Conductivity	866		umhos/cm			22-JUN-20
Chloride in Water by IC (Low Level)						
Chloride (Cl)	29.0		mg/L		250	22-JUN-20
Alkalinity, Total (as CaCO3)						
Alkalinity, Total (as CaCO3)	378		mg/L			22-JUN-20
Total Coliform and E.coli						
Total Coliforms	0		MPN/100mL	0		19-JUN-20
Escherichia Coli	0		MPN/100mL	0		19-JUN-20



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Project Ref: 18-0300-005.2302.04
Sample ID: PW19-KGS-01
Sampled By: P.JL/SGB
Date Collected: 17-JUN-20
Lab Sample ID: L2463404-1
Matrix: GW

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
<p>CDWQG = Health Canada Guideline Limits updated JUNE 2019</p> <p>* CDWQG for Nitrate+Nitrite-N is the limit for nitrate only. If present as Nitrate then the limit is 10mg/L < or N.D. = less than detection limit. * Turbidity guideline based on membrane filtration. For guidelines on conventional treatment and slow sand or diatomaceous earth filtration please see Summary Table of Guidelines for Canadian Drinking Water Quality - A blank entry designates no known limit. - A shaded value in the Results column exceeds CDWQG MAC and/ or Aesthetic Objective.</p>						
<p>Approved by <u><i>Hua Wo</i></u> Hua Wo Account Manager</p>						



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Date: 30-JUN-20
PO No.:
WO No.: L2463404
Project Ref: 18-0300-005.2302.04
Sample ID: SW19-KGS-01
Sampled By: P.JL/SGB
Date Collected: 18-JUN-20
Lab Sample ID: L2463404-2
Matrix: GW

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
ROU4W Dissolved						
Bicarbonate (HCO3)	400		mg/L			24-JUN-20
Carbonate (CO3)	1.08		mg/L			24-JUN-20
Hydroxide (OH)	<0.34		mg/L			24-JUN-20
*Nitrate and Nitrite as N	<0.0051		mg/L	10		25-JUN-20
pH						
pH	8.29		pH units			23-JUN-20
Turbidity						
*Turbidity	0.52		NTU			19-JUN-20
TDS calculated						
TDS (Calculated)	432		mg/L		500	24-JUN-20
Sulfate in Water by IC						
Sulfate (SO4)	80.4		mg/L		500	22-JUN-20
Nitrite in Water by IC (Low Level)						
*Nitrite (as N)	<0.0010		mg/L	1		22-JUN-20
Nitrate in Water by IC (Low Level)						
*Nitrate (as N)	<0.0050		mg/L	10		22-JUN-20
Ion Balance Calculation						
Hardness Calculated						
Hardness (as CaCO3)	368		mg/L		500	24-JUN-20
Fluoride in Water by IC						
Fluoride (F)	0.273		mg/L	1.5		22-JUN-20
Dissolved Metals in Water by CRC ICPMS						
Dissolved Metals	FIELD					23-JUN-20
Filtration Location						
Aluminum (Al)-Dissolved	<0.0010		mg/L		0.1	23-JUN-20
Antimony (Sb)-Dissolved	<0.00010		mg/L	0.006		23-JUN-20
Arsenic (As)-Dissolved	0.00050		mg/L	0.01		23-JUN-20
Barium (Ba)-Dissolved	0.0245		mg/L	2		23-JUN-20
Beryllium (Be)-Dissolved	<0.00010		mg/L			23-JUN-20
Bismuth (Bi)-Dissolved	<0.000050		mg/L			23-JUN-20
Boron (B)-Dissolved	0.143		mg/L	5		23-JUN-20
Cadmium (Cd)-Dissolved	<0.0000050		mg/L	0.005		23-JUN-20
Calcium (Ca)-Dissolved	58.6		mg/L			23-JUN-20
Cesium (Cs)-Dissolved	0.000012		mg/L			23-JUN-20
Chromium (Cr)-Dissolved	<0.00010		mg/L	0.05		23-JUN-20
Cobalt (Co)-Dissolved	0.00022		mg/L			23-JUN-20
Copper (Cu)-Dissolved	<0.00020		mg/L	2.0	1.0	23-JUN-20
Iron (Fe)-Dissolved	0.072		mg/L		0.3	23-JUN-20
Lead (Pb)-Dissolved	<0.000050		mg/L	0.005		23-JUN-20

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Sample ID: SW19-KGS-01
Sampled By: P.JL/SGB
Date Collected: 18-JUN-20
Lab Sample ID: L2463404-2
Matrix: GW

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
ROU4W Dissolved						
Dissolved Metals in Water by CRC ICPMS						
Lithium (Li)-Dissolved	0.0253		mg/L			23-JUN-20
Magnesium (Mg)-Dissolved	53.8		mg/L			23-JUN-20
Manganese (Mn)-Dissolved	0.00547		mg/L	0.12	0.02	23-JUN-20
Molybdenum (Mo)-Dissolved	0.00117		mg/L			23-JUN-20
Nickel (Ni)-Dissolved	0.00053		mg/L			23-JUN-20
Phosphorus (P)-Dissolved	<0.030		mg/L			23-JUN-20
Potassium (K)-Dissolved	4.52		mg/L			23-JUN-20
Rubidium (Rb)-Dissolved	0.00125		mg/L			23-JUN-20
Selenium (Se)-Dissolved	<0.000050		mg/L	0.05		23-JUN-20
Silicon (Si)-Dissolved	6.02		mg/L			23-JUN-20
Silver (Ag)-Dissolved	<0.000010		mg/L			23-JUN-20
Sodium (Na)-Dissolved	27.3		mg/L		200	23-JUN-20
Strontium (Sr)-Dissolved	0.230		mg/L	7		23-JUN-20
Sulfur (S)-Dissolved	26.4		mg/L			23-JUN-20
Tellurium (Te)-Dissolved	<0.00020		mg/L			23-JUN-20
Thallium (Tl)-Dissolved	<0.000010		mg/L			23-JUN-20
Thorium (Th)-Dissolved	<0.00010		mg/L			23-JUN-20
Tin (Sn)-Dissolved	<0.00010		mg/L			23-JUN-20
Titanium (Ti)-Dissolved	<0.00030		mg/L			23-JUN-20
Tungsten (W)-Dissolved	<0.00010		mg/L			23-JUN-20
Uranium (U)-Dissolved	0.00195		mg/L	0.02		23-JUN-20
Vanadium (V)-Dissolved	<0.00050		mg/L			23-JUN-20
Zinc (Zn)-Dissolved	<0.0010		mg/L		5.0	23-JUN-20
Zirconium (Zr)-Dissolved	<0.00020		mg/L			23-JUN-20
Conductivity						
Conductivity	700		umhos/cm			23-JUN-20
Chloride in Water by IC (Low Level)						
Chloride (Cl)	9.60		mg/L		250	22-JUN-20
Alkalinity, Total (as CaCO3)						
Alkalinity, Total (as CaCO3)	330		mg/L			23-JUN-20
Total Coliform and E.coli						
Total Coliforms	0		MPN/100mL	0		19-JUN-20
Escherichia Coli	0		MPN/100mL	0		19-JUN-20

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Date: 30-JUN-20
PO No.:
WO No.: L2463404
Project Ref: 18-0300-005.2302.04
Sample ID: SW19-KGS-01
Sampled By: P.JL/SGB
Date Collected: 18-JUN-20
Lab Sample ID: L2463404-2
Matrix: GW

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
<p>CDWQG = Health Canada Guideline Limits updated JUNE 2019</p> <p>* CDWQG for Nitrate+Nitrite-N is the limit for nitrate only. If present as Nitrate then the limit is 10mg/L < or N.D. = less than detection limit. * Turbidity guideline based on membrane filtration. For guidelines on conventional treatment and slow sand or diatomaceous earth filtration please see Summary Table of Guidelines for Canadian Drinking Water Quality - A blank entry designates no known limit. - A shaded value in the Results column exceeds CDWQG MAC and/ or Aesthetic Objective.</p>						
<p>Approved by <u><i>Hua Wo</i></u> Hua Wo Account Manager</p>						



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ATTN: P. LINDELL

Date: 30-JUN-20
PO No.:
WO No.: L2463404
Project Ref: 18-0300-005.2302.04
Sample ID: SW19-KGS-02
Sampled By: P.JL/SGB
Date Collected: 18-JUN-20
Lab Sample ID: L2463404-3
Matrix: GW

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
ROU4W Dissolved						
Bicarbonate (HCO3)	421		mg/L			24-JUN-20
Carbonate (CO3)	<0.60		mg/L			24-JUN-20
Hydroxide (OH)	<0.34		mg/L			24-JUN-20
*Nitrate and Nitrite as N	<0.010		mg/L	10		25-JUN-20
pH						
pH	8.26		pH units			23-JUN-20
Turbidity						
*Turbidity	0.91		NTU			19-JUN-20
TDS calculated						
TDS (Calculated)	759		mg/L		500	24-JUN-20
Sulfate in Water by IC						
Sulfate (SO4)	204		mg/L		500	22-JUN-20
Nitrite in Water by IC (Low Level)						
*Nitrite (as N)	<0.0020	DLM	mg/L	1		22-JUN-20
Nitrate in Water by IC (Low Level)						
*Nitrate (as N)	<0.010	DLM	mg/L	10		22-JUN-20
Ion Balance Calculation						
Hardness Calculated						
Hardness (as CaCO3)	449		mg/L		500	24-JUN-20
Fluoride in Water by IC						
Fluoride (F)	0.284		mg/L	1.5		22-JUN-20
Dissolved Metals in Water by CRC ICPMS						
Dissolved Metals	FIELD					23-JUN-20
Filtration Location						
Aluminum (Al)-Dissolved	<0.0010		mg/L		0.1	23-JUN-20
Antimony (Sb)-Dissolved	<0.00010		mg/L	0.006		23-JUN-20
Arsenic (As)-Dissolved	<0.00010		mg/L	0.01		23-JUN-20
Barium (Ba)-Dissolved	0.0124		mg/L	2		23-JUN-20
Beryllium (Be)-Dissolved	<0.00010		mg/L			23-JUN-20
Bismuth (Bi)-Dissolved	<0.000050		mg/L			23-JUN-20
Boron (B)-Dissolved	0.190		mg/L	5		23-JUN-20
Cadmium (Cd)-Dissolved	<0.0000050		mg/L	0.005		23-JUN-20
Calcium (Ca)-Dissolved	70.1		mg/L			23-JUN-20
Cesium (Cs)-Dissolved	0.000020		mg/L			23-JUN-20
Chromium (Cr)-Dissolved	<0.00010		mg/L	0.05		23-JUN-20
Cobalt (Co)-Dissolved	0.00017		mg/L			23-JUN-20
Copper (Cu)-Dissolved	<0.00020		mg/L	2.0	1.0	23-JUN-20
Iron (Fe)-Dissolved	0.099		mg/L		0.3	23-JUN-20
Lead (Pb)-Dissolved	<0.000050		mg/L	0.005		23-JUN-20

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Project Ref: 18-0300-005.2302.04
Sample ID: SW19-KGS-02
Sampled By: P.JL/SGB
Date Collected: 18-JUN-20
Lab Sample ID: L2463404-3
Matrix: GW

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
ROU4W Dissolved						
Dissolved Metals in Water by CRC ICPMS						
Lithium (Li)-Dissolved	0.0381		mg/L			23-JUN-20
Magnesium (Mg)-Dissolved	66.6		mg/L			23-JUN-20
Manganese (Mn)-Dissolved	0.00999		mg/L	0.12	0.02	23-JUN-20
Molybdenum (Mo)-Dissolved	0.000083		mg/L			23-JUN-20
Nickel (Ni)-Dissolved	<0.00050		mg/L			23-JUN-20
Phosphorus (P)-Dissolved	<0.030		mg/L			23-JUN-20
Potassium (K)-Dissolved	7.43		mg/L			23-JUN-20
Rubidium (Rb)-Dissolved	0.00401		mg/L			23-JUN-20
Selenium (Se)-Dissolved	<0.000050		mg/L	0.05		23-JUN-20
Silicon (Si)-Dissolved	4.02		mg/L			23-JUN-20
Silver (Ag)-Dissolved	0.000023		mg/L			23-JUN-20
Sodium (Na)-Dissolved	107		mg/L		200	23-JUN-20
Strontium (Sr)-Dissolved	0.248		mg/L	7		23-JUN-20
Sulfur (S)-Dissolved	56.3		mg/L			23-JUN-20
Tellurium (Te)-Dissolved	<0.00020		mg/L			23-JUN-20
Thallium (Tl)-Dissolved	<0.000010		mg/L			23-JUN-20
Thorium (Th)-Dissolved	<0.00010		mg/L			23-JUN-20
Tin (Sn)-Dissolved	<0.00010		mg/L			23-JUN-20
Titanium (Ti)-Dissolved	<0.00030		mg/L			23-JUN-20
Tungsten (W)-Dissolved	<0.00010		mg/L			23-JUN-20
Uranium (U)-Dissolved	0.000200		mg/L	0.02		23-JUN-20
Vanadium (V)-Dissolved	<0.00050		mg/L			23-JUN-20
Zinc (Zn)-Dissolved	<0.0010		mg/L		5.0	23-JUN-20
Zirconium (Zr)-Dissolved	<0.00020		mg/L			23-JUN-20
Conductivity						
Conductivity	1180		umhos/cm			23-JUN-20
Chloride in Water by IC (Low Level)						
Chloride (Cl)	97.2		mg/L		250	22-JUN-20
Alkalinity, Total (as CaCO3)						
Alkalinity, Total (as CaCO3)	345		mg/L			23-JUN-20
Total Coliform and E.coli						
Total Coliforms	0		MPN/100mL	0		19-JUN-20
Escherichia Coli	0		MPN/100mL	0		19-JUN-20

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Date: 30-JUN-20
PO No.:
WO No.: L2463404
Project Ref: 18-0300-005.2302.04
Sample ID: SW19-KGS-02
Sampled By: P.JL/SGB
Date Collected: 18-JUN-20
Lab Sample ID: L2463404-3
Matrix: GW

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
<p>CDWQG = Health Canada Guideline Limits updated JUNE 2019</p> <p>* CDWQG for Nitrate+Nitrite-N is the limit for nitrate only. If present as Nitrate then the limit is 10mg/L < or N.D. = less than detection limit. * Turbidity guideline based on membrane filtration. For guidelines on conventional treatment and slow sand or diatomaceous earth filtration please see Summary Table of Guidelines for Canadian Drinking Water Quality - A blank entry designates no known limit. - A shaded value in the Results column exceeds CDWQG MAC and/ or Aesthetic Objective.</p>						
<p>Approved by <u><i>Hua Wo</i></u> Hua Wo Account Manager</p>						



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Project Ref: 18-0300-005.2302.04
Sample ID: SW19-KGS-03
Sampled By: P.JL/SGB
Date Collected: 18-JUN-20
Lab Sample ID: L2463404-4
Matrix: GW

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
ROU4W Dissolved						
Bicarbonate (HCO3)	447		mg/L			24-JUN-20
Carbonate (CO3)	3.96		mg/L			24-JUN-20
Hydroxide (OH)	<0.34		mg/L			24-JUN-20
*Nitrate and Nitrite as N	<0.010		mg/L	10		25-JUN-20
pH						
pH	8.33		pH units			23-JUN-20
Turbidity						
*Turbidity	1.29		NTU			19-JUN-20
TDS calculated						
TDS (Calculated)	576		mg/L		500	24-JUN-20
Sulfate in Water by IC						
Sulfate (SO4)	117		mg/L		500	22-JUN-20
Nitrite in Water by IC (Low Level)						
*Nitrite (as N)	<0.0020	DLM	mg/L	1		22-JUN-20
Nitrate in Water by IC (Low Level)						
*Nitrate (as N)	<0.010	DLM	mg/L	10		22-JUN-20
Ion Balance Calculation						
Hardness Calculated						
Hardness (as CaCO3)	420		mg/L		500	24-JUN-20
Fluoride in Water by IC						
Fluoride (F)	0.308		mg/L	1.5		22-JUN-20
Dissolved Metals in Water by CRC ICPMS						
Dissolved Metals	FIELD					23-JUN-20
Filtration Location						
Aluminum (Al)-Dissolved	<0.0010		mg/L		0.1	23-JUN-20
Antimony (Sb)-Dissolved	<0.00010		mg/L	0.006		23-JUN-20
Arsenic (As)-Dissolved	0.00019		mg/L	0.01		23-JUN-20
Barium (Ba)-Dissolved	0.0175		mg/L	2		23-JUN-20
Beryllium (Be)-Dissolved	<0.00010		mg/L			23-JUN-20
Bismuth (Bi)-Dissolved	<0.000050		mg/L			23-JUN-20
Boron (B)-Dissolved	0.190		mg/L	5		23-JUN-20
Cadmium (Cd)-Dissolved	<0.0000050		mg/L	0.005		23-JUN-20
Calcium (Ca)-Dissolved	64.8		mg/L			23-JUN-20
Cesium (Cs)-Dissolved	0.000019		mg/L			23-JUN-20
Chromium (Cr)-Dissolved	<0.00010		mg/L	0.05		23-JUN-20
Cobalt (Co)-Dissolved	0.00023		mg/L			23-JUN-20
Copper (Cu)-Dissolved	<0.00020		mg/L	2.0	1.0	23-JUN-20
Iron (Fe)-Dissolved	0.110		mg/L		0.3	23-JUN-20
Lead (Pb)-Dissolved	<0.000050		mg/L	0.005		23-JUN-20

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KGS Group Consultants (Winnipeg)
865 Waverly Street - 3rd Floor
Winnipeg MB R3T 5P4
ATTN: P. LINDELL

Date: 30-JUN-20
PO No.:
WO No.: L2463404
Project Ref: 18-0300-005.2302.04
Sample ID: SW19-KGS-03
Sampled By: P.JL/SGB
Date Collected: 18-JUN-20
Lab Sample ID: L2463404-4
Matrix: GW

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
ROU4W Dissolved						
Dissolved Metals in Water by CRC ICPMS						
Lithium (Li)-Dissolved	0.0339		mg/L			23-JUN-20
Magnesium (Mg)-Dissolved	62.8		mg/L			23-JUN-20
Manganese (Mn)-Dissolved	0.0146		mg/L	0.12	0.02	23-JUN-20
Molybdenum (Mo)-Dissolved	0.000182		mg/L			23-JUN-20
Nickel (Ni)-Dissolved	<0.00050		mg/L			23-JUN-20
Phosphorus (P)-Dissolved	<0.030		mg/L			23-JUN-20
Potassium (K)-Dissolved	6.56		mg/L			23-JUN-20
Rubidium (Rb)-Dissolved	0.00342		mg/L			23-JUN-20
Selenium (Se)-Dissolved	<0.000050		mg/L	0.05		23-JUN-20
Silicon (Si)-Dissolved	4.75		mg/L			23-JUN-20
Silver (Ag)-Dissolved	<0.000010		mg/L			23-JUN-20
Sodium (Na)-Dissolved	58.5		mg/L		200	23-JUN-20
Strontium (Sr)-Dissolved	0.241		mg/L	7		23-JUN-20
Sulfur (S)-Dissolved	36.6		mg/L			23-JUN-20
Tellurium (Te)-Dissolved	<0.00020		mg/L			23-JUN-20
Thallium (Tl)-Dissolved	<0.000010		mg/L			23-JUN-20
Thorium (Th)-Dissolved	<0.00010		mg/L			23-JUN-20
Tin (Sn)-Dissolved	<0.00010		mg/L			23-JUN-20
Titanium (Ti)-Dissolved	<0.00030		mg/L			23-JUN-20
Tungsten (W)-Dissolved	<0.00010		mg/L			23-JUN-20
Uranium (U)-Dissolved	0.000175		mg/L	0.02		23-JUN-20
Vanadium (V)-Dissolved	<0.00050		mg/L			23-JUN-20
Zinc (Zn)-Dissolved	<0.0010		mg/L		5.0	23-JUN-20
Zirconium (Zr)-Dissolved	<0.00020		mg/L			23-JUN-20
Conductivity						
Conductivity	930		umhos/cm			23-JUN-20
Chloride in Water by IC (Low Level)						
Chloride (Cl)	42.4		mg/L		250	22-JUN-20
Alkalinity, Total (as CaCO3)						
Alkalinity, Total (as CaCO3)	373		mg/L			23-JUN-20
Total Coliform and E.coli						
Total Coliforms	0		MPN/100mL	0		19-JUN-20
Escherichia Coli	0		MPN/100mL	0		19-JUN-20



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ATTN: P. LINDELL

Date: 30-JUN-20
PO No.:
WO No.: L2463404
Project Ref: 18-0300-005.2302.04
Sample ID: SW19-KGS-03
Sampled By: P.JL/SGB
Date Collected: 18-JUN-20
Lab Sample ID: L2463404-4
Matrix: GW

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
<p>CDWQG = Health Canada Guideline Limits updated JUNE 2019</p> <p>* CDWQG for Nitrate+Nitrite-N is the limit for nitrate only. If present as Nitrate then the limit is 10mg/L < or N.D. = less than detection limit. * Turbidity guideline based on membrane filtration. For guidelines on conventional treatment and slow sand or diatomaceous earth filtration please see Summary Table of Guidelines for Canadian Drinking Water Quality - A blank entry designates no known limit. - A shaded value in the Results column exceeds CDWQG MAC and/ or Aesthetic Objective.</p>						
<p>Approved by <u><i>Hua Wo</i></u> Hua Wo Account Manager</p>						



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ATTN: P. LINDELL

Date: 30-JUN-20
PO No.:
WO No.: L2463404
Project Ref: 18-0300-005.2302.04
Sample ID: LSMOC-INLET-1A
Sampled By: P.JL/SGB
Date Collected: 17-JUN-20
Lab Sample ID: L2463404-5
Matrix: GW

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
BTEX plus F1-F4						
Xylenes (Total)	<0.00064		mg/L	0.09	0.02	25-JUN-20
CCME Total Hydrocarbons						
F1-BTEX	<0.10		mg/L			25-JUN-20
Total Hydrocarbons (C6-C50)	<0.38		mg/L			25-JUN-20
CCME PHC F2-F4 in Water						
F2 (C10-C16)	<0.10		mg/L			20-JUN-20
F3 (C16-C34)	<0.25		mg/L			20-JUN-20
F4 (C34-C50)	<0.25		mg/L			20-JUN-20
Surr: 2-Bromobenzotrifluoride	135.0		%			20-JUN-20
BTX plus F1 by GCMS						
Benzene	<0.00050		mg/L	0.005		23-JUN-20
Toluene	<0.0010		mg/L	0.06	0.024	23-JUN-20
Ethyl benzene	<0.00050		mg/L	0.14	0.0016	23-JUN-20
o-Xylene	<0.00050		mg/L			23-JUN-20
m+p-Xylenes	<0.00040		mg/L			23-JUN-20
F1 (C6-C10)	<0.10		mg/L			23-JUN-20
Surr: 4-Bromofluorobenzene (SS)	94.6		%			23-JUN-20
Nitrogen Total						
*Nitrate and Nitrite as N	<0.070		mg/L	10		25-JUN-20
Total Nitrogen	0.84		mg/L			25-JUN-20
Total Kjeldahl Nitrogen						
Total Kjeldahl Nitrogen	0.84		mg/L			24-JUN-20
Nitrite in Water by IC						
*Nitrite (as N)	<0.010		mg/L	1		22-JUN-20
Nitrate in Water by IC						
*Nitrate (as N)	<0.020		mg/L	10		22-JUN-20
Phosphorus (P)-Total Dissolved	0.0055		mg/L			24-JUN-20
Mercury Dissolved						
Dissolved Mercury Filtration Location	FIELD					25-JUN-20
Mercury (Hg)-Dissolved	<0.0000050		mg/L	0.001		30-JUN-20
Mercury (Hg)-Total	<0.0000050		mg/L	0.001		30-JUN-20
Phosphorus (P)-Total	0.0275		mg/L			26-JUN-20
Ammonia, Total (as N)	0.025		mg/L			26-JUN-20
Total Suspended Solids	8.4		mg/L			24-JUN-20
*Turbidity	4.85		NTU			19-JUN-20

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Winnipeg MB R3T 5P4
ATTN: P. LINDELL

Date: 30-JUN-20
PO No.:
WO No.: L2463404
Project Ref: 18-0300-005.2302.04
Sample ID: LSMOC-INLET-1A
Sampled By: P.JL/SGB
Date Collected: 17-JUN-20
Lab Sample ID: L2463404-5
Matrix: GW

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
<p>CDWQG = Health Canada Guideline Limits updated JUNE 2019</p> <p>* CDWQG for Nitrate+Nitrite-N is the limit for nitrate only. If present as Nitrate then the limit is 10mg/L < or N.D. = less than detection limit. * Turbidity guideline based on membrane filtration. For guidelines on conventional treatment and slow sand or diatomaceous earth filtration please see Summary Table of Guidelines for Canadian Drinking Water Quality - A blank entry designates no known limit. - A shaded value in the Results column exceeds CDWQG MAC and/ or Aesthetic Objective.</p>						
<p>Approved by <u><i>Hua Wo</i></u> Hua Wo Account Manager</p>						



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Winnipeg MB R3T 5P4
ATTN: P. LINDELL

Date: 30-JUN-20
PO No.:
WO No.: L2463404
Project Ref: 18-0300-005.2302.04
Sample ID: BC-05
Sampled By: P.JL/SGB
Date Collected: 17-JUN-20
Lab Sample ID: L2463404-6
Matrix: SW

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
BTEX plus F1-F4						
Xylenes (Total)	<0.00064		mg/L	0.09	0.02	25-JUN-20
CCME Total Hydrocarbons						
F1-BTEX	<0.10		mg/L			25-JUN-20
Total Hydrocarbons (C6-C50)	<0.38		mg/L			25-JUN-20
CCME PHC F2-F4 in Water						
F2 (C10-C16)	<0.10		mg/L			20-JUN-20
F3 (C16-C34)	<0.25		mg/L			20-JUN-20
F4 (C34-C50)	<0.25		mg/L			20-JUN-20
Surr: 2-Bromobenzotrifluoride	107.6		%			20-JUN-20
BTX plus F1 by GCMS						
Benzene	<0.00050		mg/L	0.005		23-JUN-20
Toluene	<0.0010		mg/L	0.06	0.024	23-JUN-20
Ethyl benzene	<0.00050		mg/L	0.14	0.0016	23-JUN-20
o-Xylene	<0.00050		mg/L			23-JUN-20
m+p-Xylenes	<0.00040		mg/L			23-JUN-20
F1 (C6-C10)	<0.10		mg/L			23-JUN-20
Surr: 4-Bromofluorobenzene (SS)	93.1		%			23-JUN-20
Nitrogen Total						
*Nitrate and Nitrite as N	<0.070		mg/L	10		25-JUN-20
Total Nitrogen	1.30		mg/L			25-JUN-20
Total Kjeldahl Nitrogen						
Total Kjeldahl Nitrogen	1.30		mg/L			24-JUN-20
Nitrite in Water by IC						
*Nitrite (as N)	<0.010		mg/L	1		22-JUN-20
Nitrate in Water by IC						
*Nitrate (as N)	<0.020		mg/L	10		22-JUN-20
Phosphorus (P)-Total Dissolved	0.0089		mg/L			24-JUN-20
Mercury Dissolved						
Dissolved Mercury Filtration Location	FIELD					25-JUN-20
Mercury (Hg)-Dissolved	<0.0000050		mg/L	0.001		30-JUN-20
Mercury (Hg)-Total	<0.0000050		mg/L	0.001		30-JUN-20
Phosphorus (P)-Total	0.0486		mg/L			26-JUN-20
Ammonia, Total (as N)	0.016		mg/L			26-JUN-20
Total Suspended Solids	35.0		mg/L			24-JUN-20
*Turbidity	26.3		NTU			19-JUN-20

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Date: 30-JUN-20
PO No.:
WO No.: L2463404
Project Ref: 18-0300-005.2302.04
Sample ID: BC-05
Sampled By: P.JL/SGB
Date Collected: 17-JUN-20
Lab Sample ID: L2463404-6
Matrix: SW

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
<p>CDWQG = Health Canada Guideline Limits updated JUNE 2019</p> <p>* CDWQG for Nitrate+Nitrite-N is the limit for nitrate only. If present as Nitrate then the limit is 10mg/L < or N.D. = less than detection limit. * Turbidity guideline based on membrane filtration. For guidelines on conventional treatment and slow sand or diatomaceous earth filtration please see Summary Table of Guidelines for Canadian Drinking Water Quality - A blank entry designates no known limit. - A shaded value in the Results column exceeds CDWQG MAC and/ or Aesthetic Objective.</p>						
<p>Approved by <u><i>Hua Wo</i></u> Hua Wo Account Manager</p>						



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ATTN: P. LINDELL

Date: 30-JUN-20
PO No.:
WO No.: L2463404
Project Ref: 18-0300-005.2302.04
Sample ID: BC-02
Sampled By: P.JL/SGB
Date Collected: 17-JUN-20
Lab Sample ID: L2463404-7
Matrix: SW

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
BTEX plus F1-F4						
Xylenes (Total)	<0.00064		mg/L	0.09	0.02	25-JUN-20
CCME Total Hydrocarbons						
F1-BTEX	<0.10		mg/L			25-JUN-20
Total Hydrocarbons (C6-C50)	<0.38		mg/L			25-JUN-20
CCME PHC F2-F4 in Water						
F2 (C10-C16)	<0.10		mg/L			20-JUN-20
F3 (C16-C34)	<0.25		mg/L			20-JUN-20
F4 (C34-C50)	<0.25		mg/L			20-JUN-20
Surr: 2-Bromobenzotrifluoride	107.9		%			20-JUN-20
BTX plus F1 by GCMS						
Benzene	<0.00050		mg/L	0.005		23-JUN-20
Toluene	<0.0010		mg/L	0.06	0.024	23-JUN-20
Ethyl benzene	<0.00050		mg/L	0.14	0.0016	23-JUN-20
o-Xylene	<0.00050		mg/L			23-JUN-20
m+p-Xylenes	<0.00040		mg/L			23-JUN-20
F1 (C6-C10)	<0.10		mg/L			23-JUN-20
Surr: 4-Bromofluorobenzene (SS)	92.0		%			23-JUN-20
Nitrogen Total						
*Nitrate and Nitrite as N	<0.070		mg/L	10		30-JUN-20
Total Nitrogen	1.14		mg/L			30-JUN-20
Total Kjeldahl Nitrogen						
Total Kjeldahl Nitrogen	1.14		mg/L			24-JUN-20
Nitrite in Water by IC						
*Nitrite (as N)	<0.010		mg/L	1		26-JUN-20
Nitrate in Water by IC						
*Nitrate (as N)	<0.020		mg/L	10		26-JUN-20
Phosphorus (P)-Total Dissolved	0.0085		mg/L			24-JUN-20
Mercury Dissolved						
Dissolved Mercury Filtration Location	FIELD					25-JUN-20
Mercury (Hg)-Dissolved	<0.0000050		mg/L	0.001		30-JUN-20
Mercury (Hg)-Total	<0.0000050		mg/L	0.001		30-JUN-20
Phosphorus (P)-Total	0.0551		mg/L			26-JUN-20
Ammonia, Total (as N)	0.029		mg/L			26-JUN-20
Total Suspended Solids	3.2		mg/L			26-JUN-20
*Turbidity	2.12		NTU			26-JUN-20

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Date: 30-JUN-20
PO No.:
WO No.: L2463404
Project Ref: 18-0300-005.2302.04
Sample ID: BC-02
Sampled By: P.JL/SGB
Date Collected: 17-JUN-20
Lab Sample ID: L2463404-7
Matrix: SW

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
<p>CDWQG = Health Canada Guideline Limits updated JUNE 2019</p> <p>* CDWQG for Nitrate+Nitrite-N is the limit for nitrate only. If present as Nitrate then the limit is 10mg/L < or N.D. = less than detection limit. * Turbidity guideline based on membrane filtration. For guidelines on conventional treatment and slow sand or diatomaceous earth filtration please see Summary Table of Guidelines for Canadian Drinking Water Quality - A blank entry designates no known limit. - A shaded value in the Results column exceeds CDWQG MAC and/ or Aesthetic Objective.</p>						
<p>Approved by <u><i>Hua Wo</i></u> Hua Wo Account Manager</p>						



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Winnipeg MB R3T 5P4
ATTN: P. LINDELL

Date: 30-JUN-20
PO No.:
WO No.: L2463404
Project Ref: 18-0300-005.2302.04
Sample ID: TRIP
Sampled By: P.JL/SGB
Date Collected:
Lab Sample ID: L2463404-8
Matrix: SW

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
ROU4W Dissolved						
Bicarbonate (HCO3)	<1.2		mg/L			25-JUN-20
Carbonate (CO3)	<0.60		mg/L			25-JUN-20
Hydroxide (OH)	<0.34		mg/L			25-JUN-20
*Nitrate and Nitrite as N	<0.0051		mg/L	10		25-JUN-20
pH						
pH	5.55		pH units			24-JUN-20
Turbidity						
*Turbidity	<0.10		NTU			19-JUN-20
TDS calculated						
TDS (Calculated)	<5.0		mg/L		500	29-JUN-20
Sulfate in Water by IC						
Sulfate (SO4)	<0.30		mg/L		500	22-JUN-20
Nitrite in Water by IC (Low Level)						
*Nitrite (as N)	<0.0010		mg/L	1		22-JUN-20
Nitrate in Water by IC (Low Level)						
*Nitrate (as N)	<0.0050		mg/L	10		22-JUN-20
Hardness Calculated						
Hardness (as CaCO3)	<0.20		mg/L		500	29-JUN-20
Fluoride in Water by IC						
Fluoride (F)	<0.020		mg/L	1.5		22-JUN-20
Dissolved Metals in Water by CRC ICPMS						
Dissolved Metals	FIELD					23-JUN-20
Filtration Location						
Aluminum (Al)-Dissolved	<0.0010		mg/L		0.1	23-JUN-20
Antimony (Sb)-Dissolved	<0.00010		mg/L	0.006		23-JUN-20
Arsenic (As)-Dissolved	<0.00010		mg/L	0.01		23-JUN-20
Barium (Ba)-Dissolved	<0.00010		mg/L	2		23-JUN-20
Beryllium (Be)-Dissolved	<0.00010		mg/L			23-JUN-20
Bismuth (Bi)-Dissolved	<0.000050		mg/L			23-JUN-20
Boron (B)-Dissolved	<0.010		mg/L	5		23-JUN-20
Cadmium (Cd)-Dissolved	<0.0000050		mg/L	0.005		23-JUN-20
Calcium (Ca)-Dissolved	<0.050		mg/L			26-JUN-20
Cesium (Cs)-Dissolved	<0.000010		mg/L			23-JUN-20
Chromium (Cr)-Dissolved	<0.00010		mg/L	0.05		23-JUN-20
Cobalt (Co)-Dissolved	<0.00010		mg/L			23-JUN-20
Copper (Cu)-Dissolved	<0.00020		mg/L	2.0	1.0	23-JUN-20
Iron (Fe)-Dissolved	<0.010		mg/L		0.3	23-JUN-20
Lead (Pb)-Dissolved	<0.000050		mg/L	0.005		23-JUN-20
Lithium (Li)-Dissolved	<0.0010		mg/L			23-JUN-20
Magnesium (Mg)-	<0.0050		mg/L			26-JUN-20

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Date: 30-JUN-20
PO No.:
WO No.: L2463404
Project Ref: 18-0300-005.2302.04
Sample ID: TRIP
Sampled By: P.JL/SGB
Date Collected:
Lab Sample ID: L2463404-8
Matrix: SW

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
ROU4W Dissolved						
Dissolved Metals in Water by CRC ICPMS						
Dissolved						
Manganese (Mn)-Dissolved	<0.00010		mg/L	0.12	0.02	23-JUN-20
Molybdenum (Mo)-Dissolved	<0.000050		mg/L			23-JUN-20
Nickel (Ni)-Dissolved	<0.00050		mg/L			23-JUN-20
Phosphorus (P)-Dissolved	<0.030		mg/L			23-JUN-20
Potassium (K)-Dissolved	<0.050		mg/L			23-JUN-20
Rubidium (Rb)-Dissolved	<0.00020		mg/L			23-JUN-20
Selenium (Se)-Dissolved	<0.000050		mg/L	0.05		23-JUN-20
Silicon (Si)-Dissolved	<0.050		mg/L			23-JUN-20
Silver (Ag)-Dissolved	<0.000010		mg/L			23-JUN-20
Sodium (Na)-Dissolved	<0.050		mg/L		200	23-JUN-20
Strontium (Sr)-Dissolved	<0.00010		mg/L	7		26-JUN-20
Sulfur (S)-Dissolved	<0.50		mg/L			23-JUN-20
Tellurium (Te)-Dissolved	<0.00020		mg/L			23-JUN-20
Thallium (Tl)-Dissolved	<0.000010		mg/L			23-JUN-20
Thorium (Th)-Dissolved	<0.00010		mg/L			23-JUN-20
Tin (Sn)-Dissolved	<0.00010		mg/L			23-JUN-20
Titanium (Ti)-Dissolved	<0.00030		mg/L			23-JUN-20
Tungsten (W)-Dissolved	<0.00010		mg/L			23-JUN-20
Uranium (U)-Dissolved	<0.000010		mg/L	0.02		23-JUN-20
Vanadium (V)-Dissolved	<0.00050		mg/L			23-JUN-20
Zinc (Zn)-Dissolved	<0.0010		mg/L		5.0	23-JUN-20
Zirconium (Zr)-Dissolved	<0.00020		mg/L			23-JUN-20
Conductivity						
Conductivity	<1.0		umhos/cm			24-JUN-20
Chloride in Water by IC (Low Level)						
Chloride (Cl)	<0.10		mg/L		250	22-JUN-20
Alkalinity, Total (as CaCO3)						
Alkalinity, Total (as CaCO3)	<1.0		mg/L			24-JUN-20
Total Coliform and E.coli						
Total Coliforms	0		MPN/100mL	0		19-JUN-20
Escherichia Coli	0		MPN/100mL	0		19-JUN-20



KGS Group Consultants (Winnipeg)
 865 Waverly Street - 3rd Floor
 Winnipeg MB R3T 5P4
 ATTN: P. LINDELL

Date: 30-JUN-20
PO No.:
WO No.: L2463404
Project Ref: 18-0300-005.2302.04
Sample ID: TRIP
Sampled By: P.JL/SGB
Date Collected:
Lab Sample ID: L2463404-8
Matrix: SW

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
<p>CDWQG = Health Canada Guideline Limits updated JUNE 2019</p> <p>* CDWQG for Nitrate+Nitrite-N is the limit for nitrate only. If present as Nitrate then the limit is 10mg/L < or N.D. = less than detection limit. * Turbidity guideline based on membrane filtration. For guidelines on conventional treatment and slow sand or diatomaceous earth filtration please see Summary Table of Guidelines for Canadian Drinking Water Quality - A blank entry designates no known limit. - A shaded value in the Results column exceeds CDWQG MAC and/ or Aesthetic Objective.</p>						
<p>Approved by <u><i>Hua Wo</i></u> Hua Wo Account Manager</p>						

Guidelines & Objectives

Sample Parameter Qualifier key listed:

Qualifier	Description
DLM	Detection Limit Adjusted due to sample matrix effects (e.g. chemical interference, colour, turbidity).

Health Canada MAC Health Related Criteria Limits

Nitrate/Nitrite-N*	Criteria limit is 10 mg/L (1.0 mg/L if present as all Nitrite-N). High concentrations may contribute to blue baby syndrome in infants.
Lead*	A cumulative body poison, uncommon in naturally occurring hard waters.
Fluoride*	Present in fluoridated water supplies at 0.8 mg/L to reduce dental caries. Elevated levels causes fluorosis (mottling of teeth).
Total Coliforms*	Criteria is 0 CFU/100mL. Adverse health effects.
E. Coli*	Criteria is 0 CFU/100 mL. Certain E. Coli bacteria can be life threatening.
Manganese*	Criteria limit is 0.12 mg/L. Possible neurological effects in infants.

*Health Canada Canadian Drinking Water Quality Guidelines (MAC limit)

Aesthetic Objective Concentration Levels

Alkalinity	Acid neutralizing capacity. Usually a measure of carbonate and bicarbonates and calculated and reported as calcium carbonate.
Balance	Quality control parameter ratioing cations to anions
Bicarbonate	See Alkalinity. Reported as the anion HCO ₃ -1
Carbonate	See Alkalinity. Reported at the anion CO ₃ -2
Calcium	See Hardness. Common major cation of water chemistry.
Chloride	Common major anion of water chemistry.
Conductance	Physical test measuring water salinity (dissolved ions or solids)
Hardness	Classical measure or capacity of water to precipitate soap (chiefly calcium and magnesium ions). Causes scaling tendency in water if carbonates/bicarbonates are present (if >200 mg/L). For drinking water purposes waters with results <200 mg/L are considered acceptable, results >200 mg/L are considered poor but can be tolerated. Results >500 mg/L are unacceptable.
Hydroxide	See alkalinity
Magnesium	See hardness. Common major cation of water chemistry. Elevated levels (>125 mg/L) may exert a cathartic or diuretic action.
pH	Measure of water acidity/alkalinity. Normal range is 7.0-8.5.
Potassium	Common major cation of water chemistry.
Sodium	Common major cation of water chemistry. Measure of salinity (saltiness).The aesthetic objective (not related to health) for sodium in drinking water is 200 mg/L. However, where sodium concentration of the drinking water exceeds 20 mg/L, it is recommended that any person on a sodium restricted diet consult with his/her physician or Medical Officer of Health concerning the use of that water.
Sulphate	Common major anion of water chemistry. Elevated levels may exert a cathartic or diuretic action.
Total Dissolved Solids	A measure of water salinity.
Iron	Causes staining to laundry and porcelain and astringent taste. Oxidizes to red-brown precipitate on exposure to air.
Heterotrophic Plate Count	Criteria is 500 cfu/mL Measure of heterotrophic bacteria present.

GLOSSARY OF REPORT TERMS

Surrogates are compounds that are similar in behaviour to target analyte(s), but that do not normally occur in environmental samples. For applicable tests, surrogates are added to samples prior to analysis as a check on recovery. In reports that display the D.L. column, laboratory objectives for surrogates are listed there.

mg/kg - milligrams per kilogram based on dry weight of sample

mg/kg wwt - milligrams per kilogram based on wet weight of sample

mg/kg lwt - milligrams per kilogram based on lipid-adjusted weight

mg/L - unit of concentration based on volume, parts per million.

< - Less than.

D.L. - The reporting limit.

N/A - Result not available. Refer to qualifier code and definition for explanation.

Test results reported relate only to the samples as received by the laboratory.

UNLESS OTHERWISE STATED, ALL SAMPLES WERE RECEIVED IN ACCEPTABLE CONDITION.

Analytical results in unsigned test reports with the DRAFT watermark are subject to change, pending final QC review.



Quality Control Report

Workorder: L2463404

Report Date: 30-JUN-20

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Client: KGS Group Consultants (Winnipeg)
 865 Waverly Street - 3rd Floor
 Winnipeg MB R3T 5P4

Contact: P. LINDELL

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
ALK-TITR-WP								
	Water							
Batch	R5129241							
WG3347902-19	LCS							
Alkalinity, Total (as CaCO3)			103.2		%		85-115	22-JUN-20
WG3347902-16	MB							
Alkalinity, Total (as CaCO3)			<1.0		mg/L		1	22-JUN-20
Batch	R5131095							
WG3348907-10	DUP	L2463404-2						
Alkalinity, Total (as CaCO3)		330	328		mg/L	0.5	20	23-JUN-20
WG3348907-4	LCS							
Alkalinity, Total (as CaCO3)			101.4		%		85-115	23-JUN-20
WG3348907-9	LCS							
Alkalinity, Total (as CaCO3)			101.4		%		85-115	23-JUN-20
WG3348907-1	MB							
Alkalinity, Total (as CaCO3)			<1.0		mg/L		1	23-JUN-20
WG3348907-6	MB							
Alkalinity, Total (as CaCO3)			<1.0		mg/L		1	23-JUN-20
Batch	R5131733							
WG3349652-4	LCS							
Alkalinity, Total (as CaCO3)			100.7		%		85-115	24-JUN-20
WG3349652-1	MB							
Alkalinity, Total (as CaCO3)			<1.0		mg/L		1	24-JUN-20
BTEXS+F1-HSMS-WP								
	Water							
Batch	R5131240							
WG3347130-2	LCS							
Benzene			104.4		%		70-130	22-JUN-20
Toluene			101.9		%		70-130	22-JUN-20
Ethyl benzene			101.2		%		70-130	22-JUN-20
o-Xylene			108.4		%		70-130	22-JUN-20
m+p-Xylenes			104.2		%		70-130	22-JUN-20
WG3347130-3	LCS							
F1 (C6-C10)			108.2		%		70-130	22-JUN-20
WG3347130-1	MB							
Benzene			<0.00050		mg/L		0.0005	22-JUN-20
Toluene			<0.0010		mg/L		0.001	22-JUN-20
Ethyl benzene			<0.00050		mg/L		0.0005	22-JUN-20
o-Xylene			<0.00050		mg/L		0.0005	22-JUN-20
m+p-Xylenes			<0.00040		mg/L		0.0004	22-JUN-20
F1 (C6-C10)			<0.10		mg/L		0.1	22-JUN-20

Quality Control Report

Workorder: L2463404

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Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
BTEXS+F1-HSMS-WP Water								
Batch R5131240								
WG3347130-1 MB								
Surrogate: 4-Bromofluorobenzene (SS)								
			96.1		%		70-130	22-JUN-20
CL-L-IC-N-WP Water								
Batch R5131382								
WG3346559-2 LCS								
Chloride (Cl)								
			104.6		%		90-110	22-JUN-20
WG3346559-1 MB								
Chloride (Cl)								
			<0.10		mg/L		0.1	22-JUN-20
EC-WP Water								
Batch R5129241								
WG3347902-18 LCS								
Conductivity								
			99.4		%		90-110	22-JUN-20
WG3347902-16 MB								
Conductivity								
			<1.0		umhos/cm		1	22-JUN-20
Batch R5131095								
WG3348907-10 DUP								
Conductivity								
		L2463404-2	696		umhos/cm	0.6	10	23-JUN-20
		700						
WG3348907-3 LCS								
Conductivity								
			98.8		%		90-110	23-JUN-20
WG3348907-8 LCS								
Conductivity								
			98.5		%		90-110	23-JUN-20
WG3348907-1 MB								
Conductivity								
			<1.0		umhos/cm		1	23-JUN-20
Batch R5131733								
WG3349652-3 LCS								
Conductivity								
			98.3		%		90-110	24-JUN-20
WG3349652-1 MB								
Conductivity								
			<1.0		umhos/cm		1	24-JUN-20
F-IC-N-WP Water								
Batch R5131382								
WG3346559-2 LCS								
Fluoride (F)								
			102.8		%		90-110	22-JUN-20
WG3346559-1 MB								
Fluoride (F)								
			<0.020		mg/L		0.02	22-JUN-20
F2-F4-FID-WP Water								

Quality Control Report

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Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
F2-F4-FID-WP		Water						
Batch	R5128566							
WG3346557-4	LCS							
F2 (C10-C16)			106.6		%		70-130	20-JUN-20
F3 (C16-C34)			96.5		%		70-130	20-JUN-20
F4 (C34-C50)			105.3		%		70-130	20-JUN-20
WG3346557-3	MB							
F2 (C10-C16)			<0.10		mg/L		0.1	20-JUN-20
F3 (C16-C34)			<0.25		mg/L		0.25	20-JUN-20
F4 (C34-C50)			<0.25		mg/L		0.25	20-JUN-20
Surrogate: 2-Bromobenzotrifluoride			103.5		%		60-140	20-JUN-20
HG-D-CVAA-WP		Water						
Batch	R5138697							
WG3353190-2	LCS							
Mercury (Hg)-Dissolved			107.0		%		80-120	30-JUN-20
WG3353190-1	MB							
Mercury (Hg)-Dissolved			<0.000005C		mg/L		0.000005	30-JUN-20
HG-T-CVAA-WP		Water						
Batch	R5138801							
WG3353182-2	LCS							
Mercury (Hg)-Total			107.0		%		80-120	30-JUN-20
WG3353182-1	MB							
Mercury (Hg)-Total			<0.000005C		mg/L		0.000005	30-JUN-20
MET-D-CCMS-WP		Water						
Batch	R5131179							
WG3348148-2	LCS							
Aluminum (Al)-Dissolved			98.9		%		80-120	23-JUN-20
Antimony (Sb)-Dissolved			103.4		%		80-120	23-JUN-20
Arsenic (As)-Dissolved			97.6		%		80-120	23-JUN-20
Barium (Ba)-Dissolved			99.99		%		80-120	23-JUN-20
Beryllium (Be)-Dissolved			105.6		%		80-120	23-JUN-20
Bismuth (Bi)-Dissolved			106.8		%		80-120	23-JUN-20
Boron (B)-Dissolved			93.4		%		80-120	23-JUN-20
Cadmium (Cd)-Dissolved			98.3		%		80-120	23-JUN-20
Calcium (Ca)-Dissolved			108.7		%		80-120	23-JUN-20
Cesium (Cs)-Dissolved			108.2		%		80-120	23-JUN-20
Chromium (Cr)-Dissolved			98.8		%		80-120	23-JUN-20
Cobalt (Co)-Dissolved			99.0		%		80-120	23-JUN-20

Quality Control Report

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Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
MET-D-CCMS-WP								
	Water							
Batch	R5131179							
WG3348148-2	LCS							
Copper (Cu)-Dissolved			100.6		%		80-120	23-JUN-20
Iron (Fe)-Dissolved			92.4		%		80-120	23-JUN-20
Lead (Pb)-Dissolved			107.1		%		80-120	23-JUN-20
Lithium (Li)-Dissolved			108.3		%		80-120	23-JUN-20
Magnesium (Mg)-Dissolved			110.6		%		80-120	23-JUN-20
Manganese (Mn)-Dissolved			97.1		%		80-120	23-JUN-20
Molybdenum (Mo)-Dissolved			106.0		%		80-120	23-JUN-20
Nickel (Ni)-Dissolved			98.6		%		80-120	23-JUN-20
Phosphorus (P)-Dissolved			95.4		%		80-120	23-JUN-20
Potassium (K)-Dissolved			100.8		%		80-120	23-JUN-20
Rubidium (Rb)-Dissolved			99.3		%		80-120	23-JUN-20
Selenium (Se)-Dissolved			109.3		%		80-120	23-JUN-20
Silicon (Si)-Dissolved			111.9		%		80-120	23-JUN-20
Silver (Ag)-Dissolved			103.8		%		80-120	23-JUN-20
Sodium (Na)-Dissolved			104.3		%		80-120	23-JUN-20
Strontium (Sr)-Dissolved			107.8		%		80-120	23-JUN-20
Sulfur (S)-Dissolved			113.9		%		80-120	23-JUN-20
Tellurium (Te)-Dissolved			104.3		%		80-120	23-JUN-20
Thallium (Tl)-Dissolved			107.4		%		80-120	23-JUN-20
Thorium (Th)-Dissolved			107.1		%		80-120	23-JUN-20
Tin (Sn)-Dissolved			98.7		%		80-120	23-JUN-20
Titanium (Ti)-Dissolved			94.9		%		80-120	23-JUN-20
Tungsten (W)-Dissolved			106.0		%		80-120	23-JUN-20
Uranium (U)-Dissolved			107.2		%		80-120	23-JUN-20
Vanadium (V)-Dissolved			99.4		%		80-120	23-JUN-20
Zinc (Zn)-Dissolved			96.8		%		80-120	23-JUN-20
Zirconium (Zr)-Dissolved			102.7		%		80-120	23-JUN-20
WG3348148-1	MB							
Aluminum (Al)-Dissolved			<0.0010		mg/L		0.001	23-JUN-20
Antimony (Sb)-Dissolved			<0.00010		mg/L		0.0001	23-JUN-20
Arsenic (As)-Dissolved			<0.00010		mg/L		0.0001	23-JUN-20
Barium (Ba)-Dissolved			<0.00010		mg/L		0.0001	23-JUN-20
Beryllium (Be)-Dissolved			<0.00010		mg/L		0.0001	23-JUN-20
Bismuth (Bi)-Dissolved			<0.000050		mg/L		0.00005	23-JUN-20



Quality Control Report

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Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
MET-D-CCMS-WP		Water						
Batch	R5131179							
WG3348148-1	MB							
Boron (B)-Dissolved			<0.010		mg/L		0.01	23-JUN-20
Cadmium (Cd)-Dissolved			<0.0000050		mg/L		0.000005	23-JUN-20
Calcium (Ca)-Dissolved			<0.050		mg/L		0.05	23-JUN-20
Cesium (Cs)-Dissolved			<0.000010		mg/L		0.00001	23-JUN-20
Chromium (Cr)-Dissolved			<0.00010		mg/L		0.0001	23-JUN-20
Cobalt (Co)-Dissolved			<0.00010		mg/L		0.0001	23-JUN-20
Copper (Cu)-Dissolved			<0.00020		mg/L		0.0002	23-JUN-20
Iron (Fe)-Dissolved			<0.010		mg/L		0.01	23-JUN-20
Lead (Pb)-Dissolved			<0.000050		mg/L		0.00005	23-JUN-20
Lithium (Li)-Dissolved			<0.0010		mg/L		0.001	23-JUN-20
Magnesium (Mg)-Dissolved			<0.0050		mg/L		0.005	23-JUN-20
Manganese (Mn)-Dissolved			<0.00010		mg/L		0.0001	23-JUN-20
Molybdenum (Mo)-Dissolved			<0.000050		mg/L		0.00005	23-JUN-20
Nickel (Ni)-Dissolved			<0.00050		mg/L		0.0005	23-JUN-20
Phosphorus (P)-Dissolved			<0.030		mg/L		0.03	23-JUN-20
Potassium (K)-Dissolved			<0.050		mg/L		0.05	23-JUN-20
Rubidium (Rb)-Dissolved			<0.00020		mg/L		0.0002	23-JUN-20
Selenium (Se)-Dissolved			<0.000050		mg/L		0.00005	23-JUN-20
Silicon (Si)-Dissolved			<0.050		mg/L		0.05	23-JUN-20
Silver (Ag)-Dissolved			<0.000010		mg/L		0.00001	23-JUN-20
Sodium (Na)-Dissolved			<0.050		mg/L		0.05	23-JUN-20
Strontium (Sr)-Dissolved			<0.00010		mg/L		0.0001	23-JUN-20
Sulfur (S)-Dissolved			<0.50		mg/L		0.5	23-JUN-20
Tellurium (Te)-Dissolved			<0.00020		mg/L		0.0002	23-JUN-20
Thallium (Tl)-Dissolved			<0.000010		mg/L		0.00001	23-JUN-20
Thorium (Th)-Dissolved			<0.00010		mg/L		0.0001	23-JUN-20
Tin (Sn)-Dissolved			<0.00010		mg/L		0.0001	23-JUN-20
Titanium (Ti)-Dissolved			<0.00030		mg/L		0.0003	23-JUN-20
Tungsten (W)-Dissolved			<0.00010		mg/L		0.0001	23-JUN-20
Uranium (U)-Dissolved			<0.000010		mg/L		0.00001	23-JUN-20
Vanadium (V)-Dissolved			<0.00050		mg/L		0.0005	23-JUN-20
Zinc (Zn)-Dissolved			<0.0010		mg/L		0.001	23-JUN-20
Zirconium (Zr)-Dissolved			<0.00020		mg/L		0.0002	23-JUN-20

N-TOTKJ-WP

Water

Quality Control Report

Workorder: L2463404

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Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
N-TOTKJ-WP								
Water								
Batch R5131171								
WG3347032-6 LCS								
Total Kjeldahl Nitrogen			95.2		%		75-125	24-JUN-20
WG3347032-5 MB								
Total Kjeldahl Nitrogen			<0.20		mg/L		0.2	24-JUN-20
NH3-COL-WP								
Water								
Batch R5135765								
WG3351968-2 LCS								
Ammonia, Total (as N)			97.9		%		85-115	26-JUN-20
WG3351968-1 MB								
Ammonia, Total (as N)			<0.010		mg/L		0.01	26-JUN-20
NO2-IC-N-WP								
Water								
Batch R5131382								
WG3346559-2 LCS								
Nitrite (as N)			103.1		%		90-110	22-JUN-20
WG3346559-1 MB								
Nitrite (as N)			<0.010		mg/L		0.01	22-JUN-20
NO2-L-IC-N-WP								
Water								
Batch R5131382								
WG3346559-2 LCS								
Nitrite (as N)			103.1		%		90-110	22-JUN-20
WG3346559-1 MB								
Nitrite (as N)			<0.0010		mg/L		0.001	22-JUN-20
NO3-IC-N-WP								
Water								
Batch R5131382								
WG3346559-2 LCS								
Nitrate (as N)			104.9		%		90-110	22-JUN-20
WG3346559-1 MB								
Nitrate (as N)			<0.020		mg/L		0.02	22-JUN-20
NO3-L-IC-N-WP								
Water								
Batch R5131382								
WG3346559-2 LCS								
Nitrate (as N)			104.9		%		90-110	22-JUN-20
WG3346559-1 MB								
Nitrate (as N)			<0.0050		mg/L		0.005	22-JUN-20
P-T-COL-WP								
Water								



Quality Control Report

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Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
P-T-COL-WP Water								
Batch	R5133944							
WG3350549-2	LCS							
Phosphorus (P)-Total			101.1		%		80-120	26-JUN-20
WG3350549-1	MB							
Phosphorus (P)-Total			<0.0030		mg/L		0.003	26-JUN-20
P-TD-COL-WP Water								
Batch	R5131182							
WG3348693-6	LCS							
Phosphorus (P)-Total Dissolved			97.7		%		80-120	24-JUN-20
WG3348693-5	MB							
Phosphorus (P)-Total Dissolved			<0.0030		mg/L		0.003	24-JUN-20
PH-WP Water								
Batch	R5129241							
WG3347902-17	LCS							
pH			7.34		pH units		7.3-7.5	22-JUN-20
Batch	R5131095							
WG3348907-10	DUP	L2463404-2						
pH		8.29	8.31	J	pH units	0.02	0.2	23-JUN-20
WG3348907-2	LCS							
pH			7.33		pH units		7.3-7.5	23-JUN-20
WG3348907-7	LCS							
pH			7.31		pH units		7.3-7.5	23-JUN-20
Batch	R5131733							
WG3349652-2	LCS							
pH			7.35		pH units		7.3-7.5	24-JUN-20
SO4-IC-N-WP Water								
Batch	R5131382							
WG3346559-2	LCS							
Sulfate (SO4)			105.6		%		90-110	22-JUN-20
WG3346559-1	MB							
Sulfate (SO4)			<0.30		mg/L		0.3	22-JUN-20
SOLIDS-TOTSUS-WP Water								
Batch	R5132616							
WG3348929-2	LCS							
Total Suspended Solids			86.7		%		85-115	24-JUN-20
WG3348929-1	MB							

Quality Control Report

Workorder: L2463404

Report Date: 30-JUN-20

Page 8 of 12

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
SOLIDS-TOTSUS-WP		Water						
Batch	R5132616							
WG3348929-1	MB							
Total Suspended Solids			<3.0		mg/L		3	24-JUN-20
Batch	R5137800							
WG3350740-2	LCS							
Total Suspended Solids			91.0		%		85-115	26-JUN-20
WG3350740-1	MB							
Total Suspended Solids			<3.0		mg/L		3	26-JUN-20
TC,EC-QT51-WP		Water						
Batch	R5126494							
WG3346218-2	DUP	L2463404-8						
Total Coliforms		0	0		MPN/100mL	0.0	65	19-JUN-20
Escherichia Coli		0	0		MPN/100mL	0.0	65	19-JUN-20
WG3346218-3	DUP	L2463404-4						
Total Coliforms		0	0		MPN/100mL	0.0	65	19-JUN-20
Escherichia Coli		0	0		MPN/100mL	0.0	65	19-JUN-20
WG3346218-4	DUP	L2463404-3						
Total Coliforms		0	0		MPN/100mL	0.0	65	19-JUN-20
Escherichia Coli		0	0		MPN/100mL	0.0	65	19-JUN-20
WG3346218-5	DUP	L2463404-2						
Total Coliforms		0	0		MPN/100mL	0.0	65	19-JUN-20
Escherichia Coli		0	0		MPN/100mL	0.0	65	19-JUN-20
WG3346218-6	DUP	L2463404-1						
Total Coliforms		0	0		MPN/100mL	0.0	65	19-JUN-20
Escherichia Coli		0	0		MPN/100mL	0.0	65	19-JUN-20
WG3346218-1	MB							
Total Coliforms			0		MPN/100mL		1	19-JUN-20
Escherichia Coli			0		MPN/100mL		1	19-JUN-20
TURBIDITY-WP		Water						
Batch	R5126854							
WG3346878-9	DUP	L2463404-6						
Turbidity		26.3	26.0		NTU	1.1	15	19-JUN-20
WG3346878-5	LCS							
Turbidity			101.5		%		85-115	19-JUN-20
WG3346878-8	LCS							
Turbidity			102.5		%		85-115	19-JUN-20
WG3346878-4	MB							



Quality Control Report

Workorder: L2463404

Report Date: 30-JUN-20

Page 9 of 12

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
TURBIDITY-WP								
	Water							
Batch	R5126854							
WG3346878-4	MB							
Turbidity			<0.10		NTU		0.1	19-JUN-20
WG3346878-7	MB							
Turbidity			<0.10		NTU		0.1	19-JUN-20
Batch	R5136957							
WG3352105-2	LCS							
Turbidity			103.5		%		85-115	26-JUN-20
WG3352105-1	MB							
Turbidity			<0.10		NTU		0.1	26-JUN-20

Quality Control Report

Workorder: L2463404

Report Date: 30-JUN-20

Page 10 of 12

Legend:

Limit	ALS Control Limit (Data Quality Objectives)
DUP	Duplicate
RPD	Relative Percent Difference
N/A	Not Available
LCS	Laboratory Control Sample
SRM	Standard Reference Material
MS	Matrix Spike
MSD	Matrix Spike Duplicate
ADE	Average Desorption Efficiency
MB	Method Blank
IRM	Internal Reference Material
CRM	Certified Reference Material
CCV	Continuing Calibration Verification
CVS	Calibration Verification Standard
LCSD	Laboratory Control Sample Duplicate

Sample Parameter Qualifier Definitions:

Qualifier	Description
J	Duplicate results and limits are expressed in terms of absolute difference.

Quality Control Report

Workorder: L2463404

Report Date: 30-JUN-20

Page 11 of 12

Hold Time Exceedances:

ALS Product Description	Sample ID	Sampling Date	Date Processed	Rec. HT	Actual HT	Units	Qualifier
Physical Tests							
Total Suspended Solids	7	17-JUN-20 17:35	26-JUN-20 12:30	7	9	days	EHT
Turbidity	7	17-JUN-20 17:35	26-JUN-20 07:00	3	9	days	EHT
pH	1	17-JUN-20 16:30	22-JUN-20 12:00	0.25	115	hours	EHTR-FM
	2	18-JUN-20 11:25	23-JUN-20 12:00	0.25	120	hours	EHTR-FM
	3	18-JUN-20 15:15	23-JUN-20 12:00	0.25	117	hours	EHTR-FM
	4	18-JUN-20 13:50	23-JUN-20 12:00	0.25	118	hours	EHTR-FM
	8	Not provided	24-JUN-20 12:00	0.25	119	hours	EHTR-FM
Anions and Nutrients							
Nitrate in Water by IC	5	17-JUN-20 17:00	22-JUN-20 13:00	3	5	days	EHT
	6	17-JUN-20 17:25	22-JUN-20 13:00	3	5	days	EHT
	7	17-JUN-20 17:35	26-JUN-20 13:00	3	9	days	EHT
Nitrate in Water by IC (Low Level)	1	17-JUN-20 16:30	22-JUN-20 13:00	3	5	days	EHT
	2	18-JUN-20 11:25	22-JUN-20 13:00	3	4	days	EHT
	3	18-JUN-20 15:15	22-JUN-20 13:00	3	4	days	EHT
	4	18-JUN-20 13:50	22-JUN-20 13:00	3	4	days	EHT
Nitrite in Water by IC	5	17-JUN-20 17:00	22-JUN-20 13:00	3	5	days	EHT
	6	17-JUN-20 17:25	22-JUN-20 13:00	3	5	days	EHT
	7	17-JUN-20 17:35	26-JUN-20 13:00	3	9	days	EHT
Nitrite in Water by IC (Low Level)	1	17-JUN-20 16:30	22-JUN-20 13:00	3	5	days	EHT
	2	18-JUN-20 11:25	22-JUN-20 13:00	3	4	days	EHT
	3	18-JUN-20 15:15	22-JUN-20 13:00	3	4	days	EHT
	4	18-JUN-20 13:50	22-JUN-20 13:00	3	4	days	EHT
Bacteriological Tests							
Total Coliform and E.coli	1	17-JUN-20 16:30	19-JUN-20 16:55	30	48	hours	EHTR

Legend & Qualifier Definitions:

- EHTR-FM: Exceeded ALS recommended hold time prior to sample receipt. Field Measurement recommended.
- EHTR: Exceeded ALS recommended hold time prior to sample receipt.
- EHTL: Exceeded ALS recommended hold time prior to analysis. Sample was received less than 24 hours prior to expiry.
- EHT: Exceeded ALS recommended hold time prior to analysis.
- Rec. HT: ALS recommended hold time (see units).

Notes*:

Where actual sampling date is not provided to ALS, the date (& time) of receipt is used for calculation purposes.
 Where actual sampling time is not provided to ALS, the earlier of 12 noon on the sampling date or the time (& date) of receipt is used for calculation purposes. Samples for L2463404 were received on 19-JUN-20 13:00.

ALS recommended hold times may vary by province. They are assigned to meet known provincial and/or federal government requirements. In the absence of regulatory hold times, ALS establishes recommendations based on guidelines published by the US EPA, APHA Standard Methods, or Environment Canada (where available). For more information, please contact ALS.

Quality Control Report

Workorder: L2463404

Report Date: 30-JUN-20

Page 12 of 12

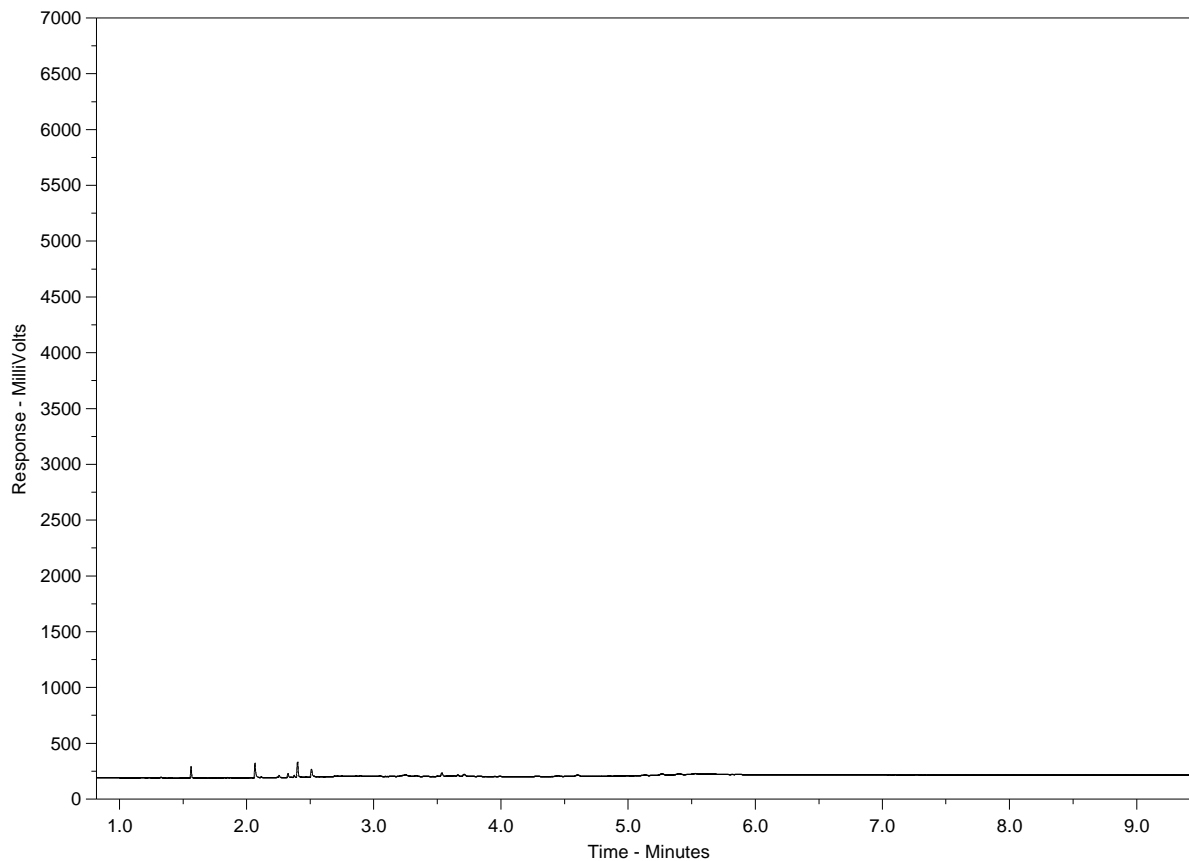
The ALS Quality Control Report is provided to ALS clients upon request. ALS includes comprehensive QC checks with every analysis to ensure our high standards of quality are met. Each QC result has a known or expected target value, which is compared against pre-determined data quality objectives to provide confidence in the accuracy of associated test results.

Please note that this report may contain QC results from anonymous Sample Duplicates and Matrix Spikes that do not originate from this Work Order.

CCME F2-F4 HYDROCARBON DISTRIBUTION REPORT



ALS Sample ID: L2463404-5
 Client Sample ID: LSMOC-INLET-1A



← F2 →		← F3 →		← F4 →	
nC10	nC16	nC34	nC50		
174°C	287°C	481°C	575°C		
346°F	549°F	898°F	1067°F		
← Gasoline →		← Motor Oils / Lube Oils / Grease →			
← Diesel / Jet Fuels →					

The CCME F2-F4 Hydrocarbon Distribution Report (HDR) is intended to assist you in characterizing hydrocarbon products that may be present in your sample.

The scale at the bottom of the chromatogram indicates the approximate retention times of common petroleum products and four n-alkane hydrocarbon marker compounds. Retention times may vary between samples, but general patterns and distributions will remain similar.

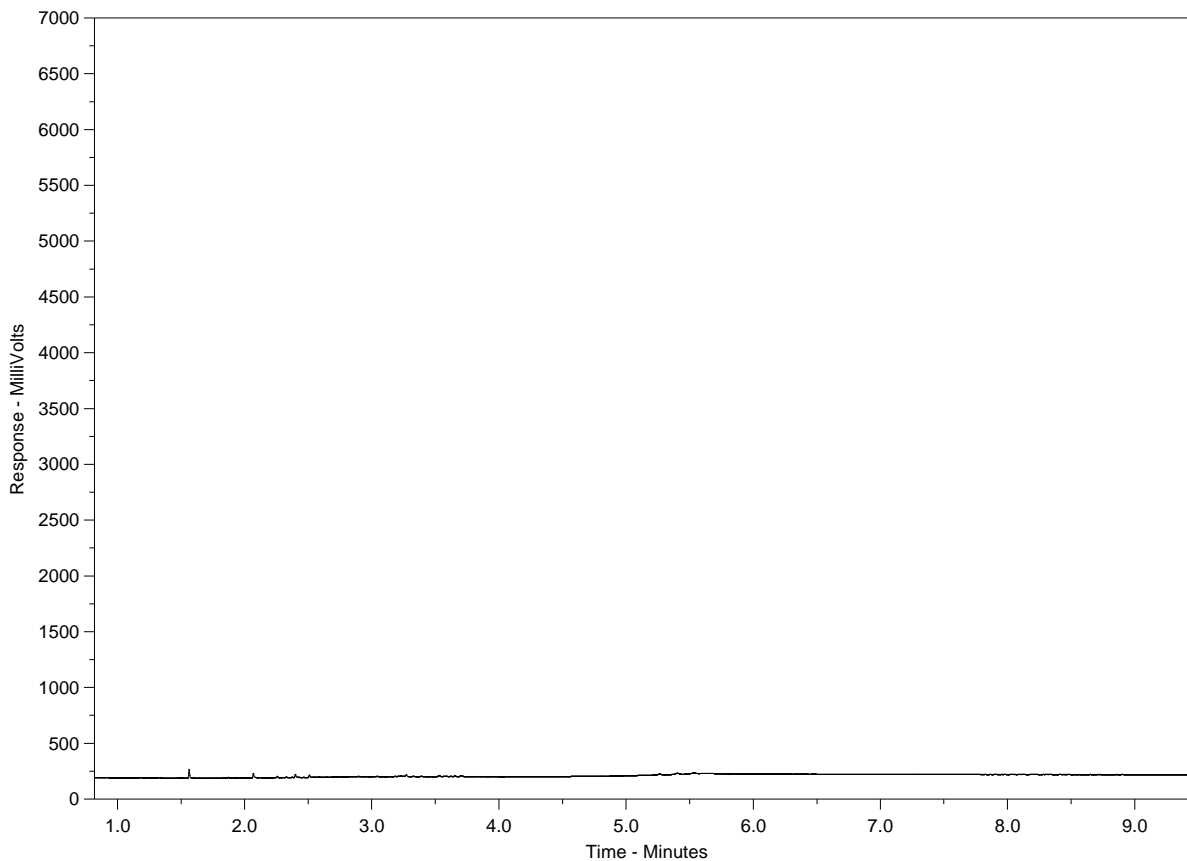
Peak heights in this report are a function of the sample concentration, the sample amount extracted, the sample dilution factor, and the scale at left.

Note: This chromatogram was produced using GC conditions that are specific to ALS Canada CCME F2-F4 method. Refer to the ALS Canada CCME F2-F4 Hydrocarbon Library for a collection of chromatograms from common reference samples (fuels, oils, etc.). The HDR library can be found at www.alsglobal.com.

CCME F2-F4 HYDROCARBON DISTRIBUTION REPORT



ALS Sample ID: L2463404-6
 Client Sample ID: BC-05



← F2 →		← F3 →		← F4 →	
nC10	nC16	nC34	nC50		
174°C	287°C	481°C	575°C		
346°F	549°F	898°F	1067°F		
← Gasoline →		← Motor Oils / Lube Oils / Grease →			
← Diesel / Jet Fuels →					

The CCME F2-F4 Hydrocarbon Distribution Report (HDR) is intended to assist you in characterizing hydrocarbon products that may be present in your sample.

The scale at the bottom of the chromatogram indicates the approximate retention times of common petroleum products and four n-alkane hydrocarbon marker compounds. Retention times may vary between samples, but general patterns and distributions will remain similar.

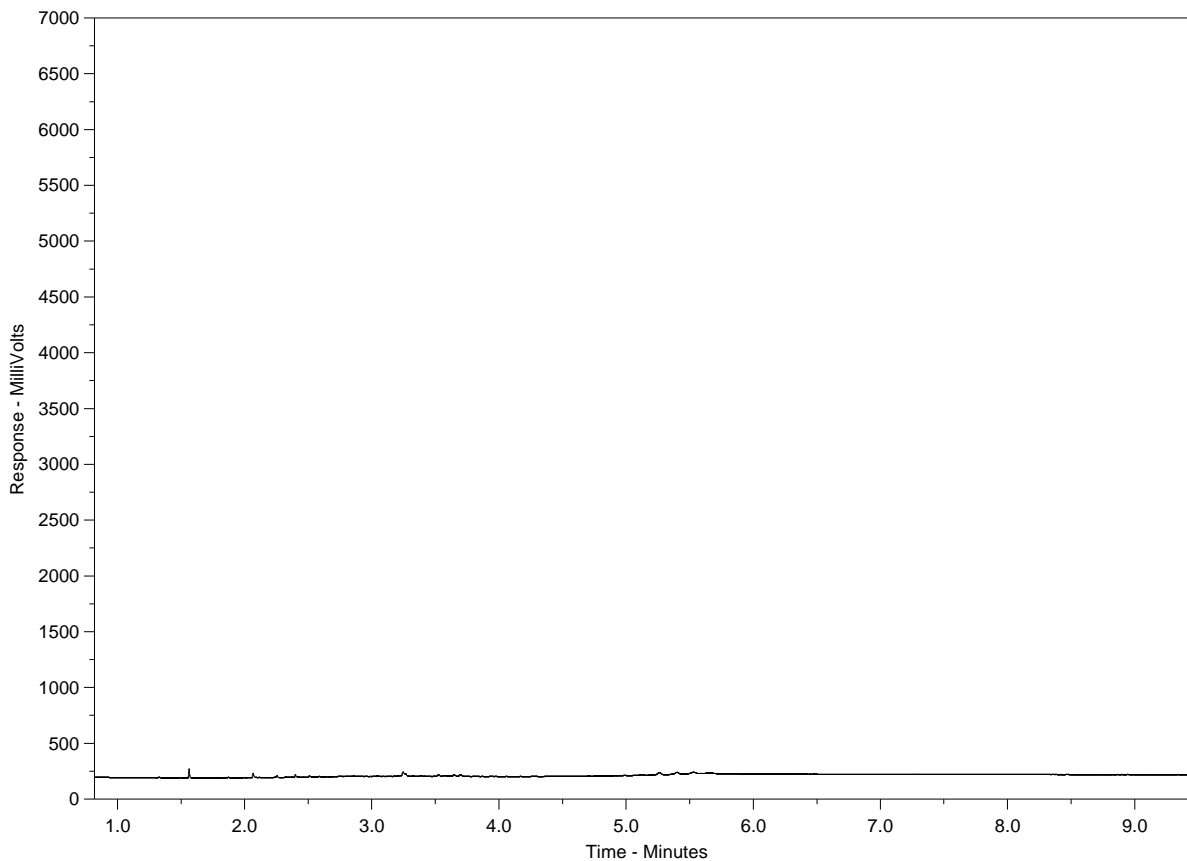
Peak heights in this report are a function of the sample concentration, the sample amount extracted, the sample dilution factor, and the scale at left.

Note: This chromatogram was produced using GC conditions that are specific to ALS Canada CCME F2-F4 method. Refer to the ALS Canada CCME F2-F4 Hydrocarbon Library for a collection of chromatograms from common reference samples (fuels, oils, etc.). The HDR library can be found at www.alsglobal.com.

CCME F2-F4 HYDROCARBON DISTRIBUTION REPORT



ALS Sample ID: L2463404-7
 Client Sample ID: BC-02



← F2 →		← F3 →		← F4 →	
nC10	nC16		nC34		nC50
174°C	287°C		481°C		575°C
346°F	549°F		898°F		1067°F
← Gasoline →		← Motor Oils / Lube Oils / Grease →			
← Diesel / Jet Fuels →					

The CCME F2-F4 Hydrocarbon Distribution Report (HDR) is intended to assist you in characterizing hydrocarbon products that may be present in your sample.

The scale at the bottom of the chromatogram indicates the approximate retention times of common petroleum products and four n-alkane hydrocarbon marker compounds. Retention times may vary between samples, but general patterns and distributions will remain similar.

Peak heights in this report are a function of the sample concentration, the sample amount extracted, the sample dilution factor, and the scale at left.

Note: This chromatogram was produced using GC conditions that are specific to ALS Canada CCME F2-F4 method. Refer to the ALS Canada CCME F2-F4 Hydrocarbon Library for a collection of chromatograms from common reference samples (fuels, oils, etc.). The HDR library can be found at www.alsglobal.com.



Report To Contact and company name below will appear on the final report		Report Format / Distribution		Select Service Level Below - Contact your AM to confirm all E&P TATs (surcharges may apply)																																																																																																																	
Company: KGS Group		Select Report Format: <input checked="" type="checkbox"/> PDF <input checked="" type="checkbox"/> EXCEL <input type="checkbox"/> EDD (DIGITAL)		Regular [R] <input checked="" type="checkbox"/> Standard TAT if received by 3 pm - business days - no surcharges apply																																																																																																																	
Contact: P. Lindell		Quality Control (QC) Report with Report <input type="checkbox"/> YES <input type="checkbox"/> NO		4 day [P4-20%] <input type="checkbox"/> EMERGENCY 1 Business day [E - 100%] <input type="checkbox"/>																																																																																																																	
Phone: 204-803-0720		<input type="checkbox"/> Compare Results to Criteria on Report - provide details below if box checked		3 day [P3-25%] <input type="checkbox"/> Same Day, Weekend or Statutory holiday [E2-200% (Laboratory opening fees may apply)] <input type="checkbox"/>																																																																																																																	
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Street: 865 Waverley St.		Email 1 or 2: plindell@kgsgroup.com		Date and Time Required for all E&P TATs: dd-mmm-yy hh:mm																																																																																																																	
City/Province: Wpg, MB		Email 2: soffmah@kgsgroup.com		For tests that can not be performed according to the service level selected, you will be contacted.																																																																																																																	
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Copy of Invoice with Report <input type="checkbox"/> YES <input type="checkbox"/> NO		Select Invoice Distribution: <input checked="" type="checkbox"/> EMAIL <input type="checkbox"/> MAIL <input type="checkbox"/> FAX		<table border="1" style="width:100%; border-collapse: collapse;"> <tr> <th style="writing-mode: vertical-rl; transform: rotate(180deg);">NUMBER OF CONTAINERS</th> <td>BTEX, FI-F4</td> <td>Conductivity by Source (only)</td> <td>Tot. Nitrogen Calculated</td> <td>Mercury Dissolved</td> <td>Mercury Total</td> <td>Ammonia by Colour</td> <td>Nitrogen Total</td> <td>Phosphorus Total</td> <td>Phosphorus Total Dissolved</td> <td>ROU4W Dissolved</td> <td>Total Suspended Solids</td> <td>Turbidity</td> <td>TC, EC, QTS</td> </tr> <tr> <td>2</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>2</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>2</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>2</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>10</td> <td>X</td> <td>X</td> <td>X</td> <td>X</td> <td>X</td> <td>X</td> <td>X</td> <td>X</td> <td>X</td> <td>X</td> <td>X</td> <td>X</td> <td></td> </tr> <tr> <td>10</td> <td>↓</td> <td>↓</td> <td>↓</td> <td>↓</td> <td>↓</td> <td>↓</td> <td>↓</td> <td>↓</td> <td>↓</td> <td>↓</td> <td>↓</td> <td>↓</td> <td></td> </tr> <tr> <td>3</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td>X</td> <td></td> <td></td> <td>X</td> </tr> </table>		NUMBER OF CONTAINERS	BTEX, FI-F4	Conductivity by Source (only)	Tot. Nitrogen Calculated	Mercury Dissolved	Mercury Total	Ammonia by Colour	Nitrogen Total	Phosphorus Total	Phosphorus Total Dissolved	ROU4W Dissolved	Total Suspended Solids	Turbidity	TC, EC, QTS	2														2														2														2														10	X	X	X	X	X	X	X	X	X	X	X	X		10	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓		3										X			X
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Sample Identification and/or Coordinates (This description will appear on the report)		Date (dd-mmm-yy)	Time (hh:mm)	Sample Type																																																																																																																	
PW19-KGS-01		17-Jun-20	16:30	GW																																																																																																																	
SW19-KGS-01		18-Jun-20	11:25																																																																																																																		
SW19-KGS-02			15:15																																																																																																																		
SW19-KGS-03			13:50																																																																																																																		
LSMOC-INLET-1A1		17-Jun-20	17:00	SW																																																																																																																	
BC-05			17:25																																																																																																																		
BC-02			17:35																																																																																																																		
TRIP																																																																																																																					
Drinking Water (DW) Samples¹ (client use)		Special Instructions / Specify Criteria to add on report by clicking on the drop-down list below (electronic COC only)		SAMPLE CONDITION AS RECEIVED (lab use only)																																																																																																																	
Are samples taken from a Regulated DW System? <input type="checkbox"/> YES <input checked="" type="checkbox"/> NO		GW - Metals bottle - F/P SW - Mercury & Amber - F/P TRIP - Water from Lab.		Frozen <input type="checkbox"/> SIF Observations Yes <input type="checkbox"/> No <input type="checkbox"/>																																																																																																																	
Are samples for human consumption/ use? <input type="checkbox"/> YES <input checked="" type="checkbox"/> NO				Ice Packs <input type="checkbox"/> Ice Cubes <input type="checkbox"/> Custody seal intact Yes <input type="checkbox"/> No <input type="checkbox"/>																																																																																																																	
				Cooling Initiated <input type="checkbox"/>																																																																																																																	
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SHIPMENT RELEASE (client use)		INITIAL SHIPMENT RECEPTION (lab use only)		FINAL SHIPMENT RECEPTION (lab use only)																																																																																																																	
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REFER TO BACK PAGE FOR ALS LOCATIONS AND SAMPLING INFORMATION

WHITE - LABORATORY COPY YELLOW - CLIENT COPY

JUNE 2015 FRONT

1. If any water samples are taken from a Regulated Drinking Water (DW) System, please submit using an Authorized DW COC form.



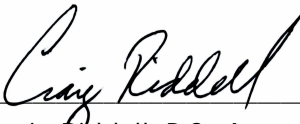
KGS Group Consultants (Winnipeg)
ATTN: PAUL LINDELL
865 Waverly Street - 3rd Floor
Winnipeg MB R3T 5P4

Date Received: 29-OCT-20
Report Date: 05-NOV-20 14:10 (MT)
Version: FINAL

Client Phone: 204-896-1209

Certificate of Analysis

Lab Work Order #: L2523514
Project P.O. #: NOT SUBMITTED
Job Reference: 18-0300-005.2302.04
C of C Numbers:
Legal Site Desc:



Craig Riddell, B.Sc.Ag
Account Manager

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ADDRESS: 1329 Niakwa Road East, Unit 12, Winnipeg, MB R2J 3T4 Canada | Phone: +1 204 255 9720 | Fax: +1 204 255 9721
ALS CANADA LTD Part of the ALS Group An ALS Limited Company

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2523514-1 PW19-KGS-01							
Sampled By: PJJ/NB on 27-OCT-20 @ 10:00							
Matrix: GW							
Total Coliform and E.coli							
Total Coliforms	0	PEHR	0	MPN/100mL		29-OCT-20	R5271879
Escherichia Coli	0	PEHR	0	MPN/100mL		29-OCT-20	R5271879
ROU4W Dissolved							
Alkalinity, Bicarbonate							
Bicarbonate (HCO3)	398		1.2	mg/L		02-NOV-20	
Alkalinity, Carbonate							
Carbonate (CO3)	<0.60		0.60	mg/L		02-NOV-20	
Alkalinity, Hydroxide							
Hydroxide (OH)	<0.34		0.34	mg/L		02-NOV-20	
Alkalinity, Total (as CaCO3)							
Alkalinity, Total (as CaCO3)	327		1.0	mg/L		30-OCT-20	R5272787
Chloride in Water by IC (Low Level)							
Chloride (Cl)	9.46		0.10	mg/L		31-OCT-20	R5278767
Conductivity							
Conductivity	726		1.0	umhos/cm		30-OCT-20	R5272787
Dissolved Metals in Water by CRC ICPMS							
Dissolved Metals Filtration Location	FIELD					02-NOV-20	R5272875
Aluminum (Al)-Dissolved	<0.0010		0.0010	mg/L	02-NOV-20	02-NOV-20	R5275295
Antimony (Sb)-Dissolved	<0.00010		0.00010	mg/L	02-NOV-20	02-NOV-20	R5275295
Arsenic (As)-Dissolved	0.00078		0.00010	mg/L	02-NOV-20	02-NOV-20	R5275295
Barium (Ba)-Dissolved	0.0243		0.00010	mg/L	02-NOV-20	02-NOV-20	R5275295
Beryllium (Be)-Dissolved	<0.00010		0.00010	mg/L	02-NOV-20	02-NOV-20	R5275295
Bismuth (Bi)-Dissolved	<0.000050		0.000050	mg/L	02-NOV-20	02-NOV-20	R5275295
Boron (B)-Dissolved	0.145		0.010	mg/L	02-NOV-20	02-NOV-20	R5275295
Cadmium (Cd)-Dissolved	<0.000050		0.000050	mg/L	02-NOV-20	02-NOV-20	R5275295
Calcium (Ca)-Dissolved	51.7		0.050	mg/L	02-NOV-20	02-NOV-20	R5275295
Cesium (Cs)-Dissolved	<0.000010		0.000010	mg/L	02-NOV-20	02-NOV-20	R5275295
Chromium (Cr)-Dissolved	<0.00010		0.00010	mg/L	02-NOV-20	02-NOV-20	R5275295
Cobalt (Co)-Dissolved	0.00019		0.00010	mg/L	02-NOV-20	02-NOV-20	R5275295
Copper (Cu)-Dissolved	<0.00020		0.00020	mg/L	02-NOV-20	02-NOV-20	R5275295
Iron (Fe)-Dissolved	0.152		0.010	mg/L	02-NOV-20	02-NOV-20	R5275295
Lead (Pb)-Dissolved	<0.000050		0.000050	mg/L	02-NOV-20	02-NOV-20	R5275295
Lithium (Li)-Dissolved	0.0227		0.0010	mg/L	02-NOV-20	02-NOV-20	R5275295
Magnesium (Mg)-Dissolved	50.2		0.0050	mg/L	02-NOV-20	02-NOV-20	R5275295
Manganese (Mn)-Dissolved	0.00596		0.00010	mg/L	02-NOV-20	02-NOV-20	R5275295
Molybdenum (Mo)-Dissolved	0.00106		0.000050	mg/L	02-NOV-20	02-NOV-20	R5275295
Nickel (Ni)-Dissolved	<0.00050		0.00050	mg/L	02-NOV-20	02-NOV-20	R5275295
Phosphorus (P)-Dissolved	<0.030		0.030	mg/L	02-NOV-20	02-NOV-20	R5275295
Potassium (K)-Dissolved	4.40		0.050	mg/L	02-NOV-20	02-NOV-20	R5275295
Rubidium (Rb)-Dissolved	0.00128		0.00020	mg/L	02-NOV-20	02-NOV-20	R5275295
Selenium (Se)-Dissolved	<0.000050		0.000050	mg/L	02-NOV-20	02-NOV-20	R5275295
Silicon (Si)-Dissolved	5.72		0.050	mg/L	02-NOV-20	02-NOV-20	R5275295
Silver (Ag)-Dissolved	<0.000010		0.000010	mg/L	02-NOV-20	02-NOV-20	R5275295
Sodium (Na)-Dissolved	26.9		0.050	mg/L	02-NOV-20	02-NOV-20	R5275295
Strontium (Sr)-Dissolved	0.222		0.00010	mg/L	02-NOV-20	02-NOV-20	R5275295
Sulfur (S)-Dissolved	25.9		0.50	mg/L	02-NOV-20	02-NOV-20	R5275295
Tellurium (Te)-Dissolved	<0.00020		0.00020	mg/L	02-NOV-20	02-NOV-20	R5275295
Thallium (Tl)-Dissolved	<0.000010		0.000010	mg/L	02-NOV-20	02-NOV-20	R5275295
Thorium (Th)-Dissolved	<0.00010		0.00010	mg/L	02-NOV-20	02-NOV-20	R5275295
Tin (Sn)-Dissolved	<0.00010		0.00010	mg/L	02-NOV-20	02-NOV-20	R5275295
Titanium (Ti)-Dissolved	<0.00030		0.00030	mg/L	02-NOV-20	02-NOV-20	R5275295

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2523514-1 PW19-KGS-01 Sampled By: PJJ/NB on 27-OCT-20 @ 10:00 Matrix: GW							
Dissolved Metals in Water by CRC ICPMS							
Tungsten (W)-Dissolved	<0.00010		0.00010	mg/L	02-NOV-20	02-NOV-20	R5275295
Uranium (U)-Dissolved	0.00162		0.000010	mg/L	02-NOV-20	02-NOV-20	R5275295
Vanadium (V)-Dissolved	<0.00050		0.00050	mg/L	02-NOV-20	02-NOV-20	R5275295
Zinc (Zn)-Dissolved	<0.0010		0.0010	mg/L	02-NOV-20	02-NOV-20	R5275295
Zirconium (Zr)-Dissolved	<0.00020		0.00020	mg/L	02-NOV-20	02-NOV-20	R5275295
Fluoride in Water by IC							
Fluoride (F)	0.251		0.020	mg/L		31-OCT-20	R5278767
Hardness Calculated							
Hardness (as CaCO3)	336		0.20	mg/L		03-NOV-20	
Nitrate in Water by IC (Low Level)							
Nitrate (as N)	<0.0050		0.0050	mg/L		31-OCT-20	R5278767
Nitrate+Nitrite							
Nitrate and Nitrite as N	<0.0051		0.0051	mg/L		04-NOV-20	
Nitrite in Water by IC (Low Level)							
Nitrite (as N)	<0.0010		0.0010	mg/L		31-OCT-20	R5278767
Sulfate in Water by IC							
Sulfate (SO4)	70.5		0.30	mg/L		31-OCT-20	R5278767
TDS calculated							
TDS (Calculated)	409		5.0	mg/L		03-NOV-20	
Turbidity							
Turbidity	1.91		0.10	NTU		30-OCT-20	R5275126
pH							
pH	8.26		0.10	pH units		30-OCT-20	R5272787
L2523514-2 PW19-KGS-02 Sampled By: PJJ/NB on 28-OCT-20 @ 17:30 Matrix: GW							
Total Coliform and E.coli							
Total Coliforms	0		0	MPN/100mL		29-OCT-20	R5271879
Escherichia Coli	0		0	MPN/100mL		29-OCT-20	R5271879
ROU4W Dissolved							
Alkalinity, Bicarbonate							
Bicarbonate (HCO3)	401		1.2	mg/L		02-NOV-20	
Alkalinity, Carbonate							
Carbonate (CO3)	<0.60		0.60	mg/L		02-NOV-20	
Alkalinity, Hydroxide							
Hydroxide (OH)	<0.34		0.34	mg/L		02-NOV-20	
Alkalinity, Total (as CaCO3)							
Alkalinity, Total (as CaCO3)	329		1.0	mg/L		30-OCT-20	R5272787
Chloride in Water by IC (Low Level)							
Chloride (Cl)	16.9		0.10	mg/L		31-OCT-20	R5278767
Conductivity							
Conductivity	787		1.0	umhos/cm		30-OCT-20	R5272787
Dissolved Metals in Water by CRC ICPMS							
Dissolved Metals Filtration Location	FIELD					02-NOV-20	R5272875
Aluminum (Al)-Dissolved	<0.0010		0.0010	mg/L	02-NOV-20	02-NOV-20	R5275295
Antimony (Sb)-Dissolved	<0.00010		0.00010	mg/L	02-NOV-20	02-NOV-20	R5275295
Arsenic (As)-Dissolved	0.00185		0.00010	mg/L	02-NOV-20	02-NOV-20	R5275295
Barium (Ba)-Dissolved	0.0245		0.00010	mg/L	02-NOV-20	02-NOV-20	R5275295
Beryllium (Be)-Dissolved	<0.00010		0.00010	mg/L	02-NOV-20	02-NOV-20	R5275295
Bismuth (Bi)-Dissolved	<0.000050		0.000050	mg/L	02-NOV-20	02-NOV-20	R5275295
Boron (B)-Dissolved	0.139		0.010	mg/L	02-NOV-20	02-NOV-20	R5275295

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2523514-2 PW19-KGS-02							
Sampled By: PJJ/NB on 28-OCT-20 @ 17:30							
Matrix: GW							
Dissolved Metals in Water by CRC ICPMS							
Cadmium (Cd)-Dissolved	<0.0000050		0.0000050	mg/L	02-NOV-20	02-NOV-20	R5275295
Calcium (Ca)-Dissolved	54.2		0.050	mg/L	02-NOV-20	02-NOV-20	R5275295
Cesium (Cs)-Dissolved	0.000010		0.000010	mg/L	02-NOV-20	02-NOV-20	R5275295
Chromium (Cr)-Dissolved	<0.00010		0.00010	mg/L	02-NOV-20	02-NOV-20	R5275295
Cobalt (Co)-Dissolved	0.00015		0.00010	mg/L	02-NOV-20	02-NOV-20	R5275295
Copper (Cu)-Dissolved	<0.00020		0.00020	mg/L	02-NOV-20	02-NOV-20	R5275295
Iron (Fe)-Dissolved	0.191		0.010	mg/L	02-NOV-20	02-NOV-20	R5275295
Lead (Pb)-Dissolved	<0.000050		0.000050	mg/L	02-NOV-20	02-NOV-20	R5275295
Lithium (Li)-Dissolved	0.0240		0.0010	mg/L	02-NOV-20	02-NOV-20	R5275295
Magnesium (Mg)-Dissolved	50.6		0.0050	mg/L	02-NOV-20	02-NOV-20	R5275295
Manganese (Mn)-Dissolved	0.00685		0.00010	mg/L	02-NOV-20	02-NOV-20	R5275295
Molybdenum (Mo)-Dissolved	0.000503		0.000050	mg/L	02-NOV-20	02-NOV-20	R5275295
Nickel (Ni)-Dissolved	<0.00050		0.00050	mg/L	02-NOV-20	02-NOV-20	R5275295
Phosphorus (P)-Dissolved	<0.030		0.030	mg/L	02-NOV-20	02-NOV-20	R5275295
Potassium (K)-Dissolved	4.50		0.050	mg/L	02-NOV-20	02-NOV-20	R5275295
Rubidium (Rb)-Dissolved	0.00253		0.00020	mg/L	02-NOV-20	02-NOV-20	R5275295
Selenium (Se)-Dissolved	<0.000050		0.000050	mg/L	02-NOV-20	02-NOV-20	R5275295
Silicon (Si)-Dissolved	5.69		0.050	mg/L	02-NOV-20	02-NOV-20	R5275295
Silver (Ag)-Dissolved	<0.000010		0.000010	mg/L	02-NOV-20	02-NOV-20	R5275295
Sodium (Na)-Dissolved	34.5		0.050	mg/L	02-NOV-20	02-NOV-20	R5275295
Strontium (Sr)-Dissolved	0.218		0.00010	mg/L	02-NOV-20	02-NOV-20	R5275295
Sulfur (S)-Dissolved	29.1		0.50	mg/L	02-NOV-20	02-NOV-20	R5275295
Tellurium (Te)-Dissolved	<0.00020		0.00020	mg/L	02-NOV-20	02-NOV-20	R5275295
Thallium (Tl)-Dissolved	<0.000010		0.000010	mg/L	02-NOV-20	02-NOV-20	R5275295
Thorium (Th)-Dissolved	<0.00010		0.00010	mg/L	02-NOV-20	02-NOV-20	R5275295
Tin (Sn)-Dissolved	<0.00010		0.00010	mg/L	02-NOV-20	02-NOV-20	R5275295
Titanium (Ti)-Dissolved	<0.00030		0.00030	mg/L	02-NOV-20	02-NOV-20	R5275295
Tungsten (W)-Dissolved	<0.00010		0.00010	mg/L	02-NOV-20	02-NOV-20	R5275295
Uranium (U)-Dissolved	0.000935		0.000010	mg/L	02-NOV-20	02-NOV-20	R5275295
Vanadium (V)-Dissolved	<0.00050		0.00050	mg/L	02-NOV-20	02-NOV-20	R5275295
Zinc (Zn)-Dissolved	<0.0010		0.0010	mg/L	02-NOV-20	02-NOV-20	R5275295
Zirconium (Zr)-Dissolved	<0.00020		0.00020	mg/L	02-NOV-20	02-NOV-20	R5275295
Fluoride in Water by IC							
Fluoride (F)	0.330		0.020	mg/L		31-OCT-20	R5278767
Hardness Calculated							
Hardness (as CaCO3)	344		0.20	mg/L		03-NOV-20	
Nitrate in Water by IC (Low Level)							
Nitrate (as N)	<0.0050		0.0050	mg/L		31-OCT-20	R5278767
Nitrate+Nitrite							
Nitrate and Nitrite as N	<0.0051		0.0051	mg/L		04-NOV-20	
Nitrite in Water by IC (Low Level)							
Nitrite (as N)	<0.0010		0.0010	mg/L		31-OCT-20	R5278767
Sulfate in Water by IC							
Sulfate (SO4)	85.5		0.30	mg/L		31-OCT-20	R5278767
TDS calculated							
TDS (Calculated)	444		5.0	mg/L		03-NOV-20	
Turbidity							
Turbidity	2.96		0.10	NTU		30-OCT-20	R5275126
pH							
pH	8.24		0.10	pH units		30-OCT-20	R5272787

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2523514-3 PW19-KGS-03							
Sampled By: PJJ/NB on 27-OCT-20 @ 17:10							
Matrix: GW							
Total Coliform and E.coli							
Total Coliforms	0	PEHT	0	MPN/100mL		29-OCT-20	R5271879
Escherichia Coli	0	PEHT	0	MPN/100mL		29-OCT-20	R5271879
ROU4W Dissolved							
Alkalinity, Bicarbonate							
Bicarbonate (HCO3)	388		1.2	mg/L		02-NOV-20	
Alkalinity, Carbonate							
Carbonate (CO3)	<0.60		0.60	mg/L		02-NOV-20	
Alkalinity, Hydroxide							
Hydroxide (OH)	<0.34		0.34	mg/L		02-NOV-20	
Alkalinity, Total (as CaCO3)							
Alkalinity, Total (as CaCO3)	318		1.0	mg/L		30-OCT-20	R5272787
Chloride in Water by IC (Low Level)							
Chloride (Cl)	0.99		0.10	mg/L		31-OCT-20	R5278767
Conductivity							
Conductivity	608		1.0	umhos/cm		30-OCT-20	R5272787
Dissolved Metals in Water by CRC ICPMS							
Dissolved Metals Filtration Location	FIELD					02-NOV-20	R5272875
Aluminum (Al)-Dissolved	<0.0010		0.0010	mg/L	02-NOV-20	02-NOV-20	R5275295
Antimony (Sb)-Dissolved	<0.00010		0.00010	mg/L	02-NOV-20	02-NOV-20	R5275295
Arsenic (As)-Dissolved	0.00091		0.00010	mg/L	02-NOV-20	02-NOV-20	R5275295
Barium (Ba)-Dissolved	0.0546		0.00010	mg/L	02-NOV-20	02-NOV-20	R5275295
Beryllium (Be)-Dissolved	<0.00010		0.00010	mg/L	02-NOV-20	02-NOV-20	R5275295
Bismuth (Bi)-Dissolved	<0.000050		0.000050	mg/L	02-NOV-20	02-NOV-20	R5275295
Boron (B)-Dissolved	0.094		0.010	mg/L	02-NOV-20	02-NOV-20	R5275295
Cadmium (Cd)-Dissolved	<0.0000050		0.0000050	mg/L	02-NOV-20	02-NOV-20	R5275295
Calcium (Ca)-Dissolved	56.2		0.050	mg/L	02-NOV-20	02-NOV-20	R5275295
Cesium (Cs)-Dissolved	<0.000010		0.000010	mg/L	02-NOV-20	02-NOV-20	R5275295
Chromium (Cr)-Dissolved	<0.00010		0.00010	mg/L	02-NOV-20	02-NOV-20	R5275295
Cobalt (Co)-Dissolved	0.00082		0.00010	mg/L	02-NOV-20	02-NOV-20	R5275295
Copper (Cu)-Dissolved	<0.00020		0.00020	mg/L	02-NOV-20	02-NOV-20	R5275295
Iron (Fe)-Dissolved	0.362		0.010	mg/L	02-NOV-20	02-NOV-20	R5275295
Lead (Pb)-Dissolved	<0.000050		0.000050	mg/L	02-NOV-20	02-NOV-20	R5275295
Lithium (Li)-Dissolved	0.0160		0.0010	mg/L	02-NOV-20	02-NOV-20	R5275295
Magnesium (Mg)-Dissolved	43.1		0.0050	mg/L	02-NOV-20	02-NOV-20	R5275295
Manganese (Mn)-Dissolved	0.126		0.00010	mg/L	02-NOV-20	02-NOV-20	R5275295
Molybdenum (Mo)-Dissolved	0.000355		0.000050	mg/L	02-NOV-20	02-NOV-20	R5275295
Nickel (Ni)-Dissolved	0.00140		0.00050	mg/L	02-NOV-20	02-NOV-20	R5275295
Phosphorus (P)-Dissolved	<0.030		0.030	mg/L	02-NOV-20	02-NOV-20	R5275295
Potassium (K)-Dissolved	3.32		0.050	mg/L	02-NOV-20	02-NOV-20	R5275295
Rubidium (Rb)-Dissolved	0.00210		0.00020	mg/L	02-NOV-20	02-NOV-20	R5275295
Selenium (Se)-Dissolved	<0.000050		0.000050	mg/L	02-NOV-20	02-NOV-20	R5275295
Silicon (Si)-Dissolved	5.10		0.050	mg/L	02-NOV-20	02-NOV-20	R5275295
Silver (Ag)-Dissolved	<0.000010		0.000010	mg/L	02-NOV-20	02-NOV-20	R5275295
Sodium (Na)-Dissolved	7.05		0.050	mg/L	02-NOV-20	02-NOV-20	R5275295
Strontium (Sr)-Dissolved	0.148		0.00010	mg/L	02-NOV-20	02-NOV-20	R5275295
Sulfur (S)-Dissolved	9.81		0.50	mg/L	02-NOV-20	02-NOV-20	R5275295
Tellurium (Te)-Dissolved	<0.00020		0.00020	mg/L	02-NOV-20	02-NOV-20	R5275295
Thallium (Tl)-Dissolved	0.000010		0.000010	mg/L	02-NOV-20	02-NOV-20	R5275295
Thorium (Th)-Dissolved	<0.00010		0.00010	mg/L	02-NOV-20	02-NOV-20	R5275295
Tin (Sn)-Dissolved	<0.00010		0.00010	mg/L	02-NOV-20	02-NOV-20	R5275295
Titanium (Ti)-Dissolved	<0.00030		0.00030	mg/L	02-NOV-20	02-NOV-20	R5275295

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2523514-3 PW19-KGS-03 Sampled By: PJJ/NB on 27-OCT-20 @ 17:10 Matrix: GW							
Dissolved Metals in Water by CRC ICPMS							
Tungsten (W)-Dissolved	<0.00010		0.00010	mg/L	02-NOV-20	02-NOV-20	R5275295
Uranium (U)-Dissolved	0.00145		0.000010	mg/L	02-NOV-20	02-NOV-20	R5275295
Vanadium (V)-Dissolved	<0.00050		0.00050	mg/L	02-NOV-20	02-NOV-20	R5275295
Zinc (Zn)-Dissolved	<0.0010		0.0010	mg/L	02-NOV-20	02-NOV-20	R5275295
Zirconium (Zr)-Dissolved	<0.00020		0.00020	mg/L	02-NOV-20	02-NOV-20	R5275295
Fluoride in Water by IC							
Fluoride (F)	0.202		0.020	mg/L		31-OCT-20	R5278767
Hardness Calculated							
Hardness (as CaCO3)	318		0.20	mg/L		03-NOV-20	
Nitrate in Water by IC (Low Level)							
Nitrate (as N)	<0.0050		0.0050	mg/L		31-OCT-20	R5278767
Nitrate+Nitrite							
Nitrate and Nitrite as N	<0.0051		0.0051	mg/L		04-NOV-20	
Nitrite in Water by IC (Low Level)							
Nitrite (as N)	<0.0010		0.0010	mg/L		31-OCT-20	R5278767
Sulfate in Water by IC							
Sulfate (SO4)	27.1		0.30	mg/L		31-OCT-20	R5278767
TDS calculated							
TDS (Calculated)	329		5.0	mg/L		03-NOV-20	
Turbidity							
Turbidity	0.82		0.10	NTU		30-OCT-20	R5275126
pH							
pH	8.21		0.10	pH units		30-OCT-20	R5272787
L2523514-4 TH19-KGS-12 Sampled By: PJJ/NB on 28-OCT-20 @ 12:50 Matrix: GW							
Total Coliform and E.coli							
Total Coliforms	0		0	MPN/100mL		29-OCT-20	R5271879
Escherichia Coli	0		0	MPN/100mL		29-OCT-20	R5271879
ROU4W Dissolved							
Alkalinity, Bicarbonate							
Bicarbonate (HCO3)	502		1.2	mg/L		02-NOV-20	
Alkalinity, Carbonate							
Carbonate (CO3)	<0.60		0.60	mg/L		02-NOV-20	
Alkalinity, Hydroxide							
Hydroxide (OH)	<0.34		0.34	mg/L		02-NOV-20	
Alkalinity, Total (as CaCO3)							
Alkalinity, Total (as CaCO3)	412		1.0	mg/L		30-OCT-20	R5272787
Chloride in Water by IC (Low Level)							
Chloride (Cl)	3.06		0.10	mg/L		31-OCT-20	R5278767
Conductivity							
Conductivity	775		1.0	umhos/cm		30-OCT-20	R5272787
Dissolved Metals in Water by CRC ICPMS							
Dissolved Metals Filtration Location	FIELD					02-NOV-20	R5272875
Aluminum (Al)-Dissolved	0.0062		0.0010	mg/L	02-NOV-20	03-NOV-20	R5278083
Antimony (Sb)-Dissolved	0.00025		0.00010	mg/L	02-NOV-20	02-NOV-20	R5275295
Arsenic (As)-Dissolved	0.00214		0.00010	mg/L	02-NOV-20	02-NOV-20	R5275295
Barium (Ba)-Dissolved	0.107		0.00010	mg/L	02-NOV-20	02-NOV-20	R5275295
Beryllium (Be)-Dissolved	<0.00010		0.00010	mg/L	02-NOV-20	02-NOV-20	R5275295
Bismuth (Bi)-Dissolved	<0.000050		0.000050	mg/L	02-NOV-20	02-NOV-20	R5275295
Boron (B)-Dissolved	0.135		0.010	mg/L	02-NOV-20	02-NOV-20	R5275295

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2523514-4 TH19-KGS-12							
Sampled By: PJJ/NB on 28-OCT-20 @ 12:50							
Matrix: GW							
Dissolved Metals in Water by CRC ICPMS							
Cadmium (Cd)-Dissolved	<0.000050		0.000050	mg/L	02-NOV-20	02-NOV-20	R5275295
Calcium (Ca)-Dissolved	45.3		0.050	mg/L	02-NOV-20	02-NOV-20	R5275295
Cesium (Cs)-Dissolved	<0.000010		0.000010	mg/L	02-NOV-20	02-NOV-20	R5275295
Chromium (Cr)-Dissolved	0.00020		0.00010	mg/L	02-NOV-20	02-NOV-20	R5275295
Cobalt (Co)-Dissolved	0.00168		0.00010	mg/L	02-NOV-20	02-NOV-20	R5275295
Copper (Cu)-Dissolved	0.00030		0.00020	mg/L	02-NOV-20	02-NOV-20	R5275295
Iron (Fe)-Dissolved	0.423		0.010	mg/L	02-NOV-20	02-NOV-20	R5275295
Lead (Pb)-Dissolved	<0.000050		0.000050	mg/L	02-NOV-20	02-NOV-20	R5275295
Lithium (Li)-Dissolved	0.0353		0.0010	mg/L	02-NOV-20	02-NOV-20	R5275295
Magnesium (Mg)-Dissolved	64.1		0.0050	mg/L	02-NOV-20	02-NOV-20	R5275295
Manganese (Mn)-Dissolved	0.227		0.00010	mg/L	02-NOV-20	02-NOV-20	R5275295
Molybdenum (Mo)-Dissolved	0.00605		0.000050	mg/L	02-NOV-20	02-NOV-20	R5275295
Nickel (Ni)-Dissolved	0.00540		0.00050	mg/L	02-NOV-20	02-NOV-20	R5275295
Phosphorus (P)-Dissolved	<0.030		0.030	mg/L	02-NOV-20	02-NOV-20	R5275295
Potassium (K)-Dissolved	4.55		0.050	mg/L	02-NOV-20	02-NOV-20	R5275295
Rubidium (Rb)-Dissolved	0.00200		0.00020	mg/L	02-NOV-20	02-NOV-20	R5275295
Selenium (Se)-Dissolved	<0.000050		0.000050	mg/L	02-NOV-20	02-NOV-20	R5275295
Silicon (Si)-Dissolved	6.07		0.050	mg/L	02-NOV-20	02-NOV-20	R5275295
Silver (Ag)-Dissolved	<0.000010		0.000010	mg/L	02-NOV-20	02-NOV-20	R5275295
Sodium (Na)-Dissolved	26.4		0.050	mg/L	02-NOV-20	02-NOV-20	R5275295
Strontium (Sr)-Dissolved	0.261		0.00010	mg/L	02-NOV-20	02-NOV-20	R5275295
Sulfur (S)-Dissolved	20.7		0.50	mg/L	02-NOV-20	02-NOV-20	R5275295
Tellurium (Te)-Dissolved	<0.00020		0.00020	mg/L	02-NOV-20	02-NOV-20	R5275295
Thallium (Tl)-Dissolved	<0.000010		0.000010	mg/L	02-NOV-20	02-NOV-20	R5275295
Thorium (Th)-Dissolved	<0.00010		0.00010	mg/L	02-NOV-20	02-NOV-20	R5275295
Tin (Sn)-Dissolved	<0.00010		0.00010	mg/L	02-NOV-20	02-NOV-20	R5275295
Titanium (Ti)-Dissolved	<0.00030		0.00030	mg/L	02-NOV-20	02-NOV-20	R5275295
Tungsten (W)-Dissolved	0.00024		0.00010	mg/L	02-NOV-20	02-NOV-20	R5275295
Uranium (U)-Dissolved	0.000273		0.000010	mg/L	02-NOV-20	02-NOV-20	R5275295
Vanadium (V)-Dissolved	<0.00050		0.00050	mg/L	02-NOV-20	02-NOV-20	R5275295
Zinc (Zn)-Dissolved	0.0013		0.0010	mg/L	02-NOV-20	02-NOV-20	R5275295
Zirconium (Zr)-Dissolved	<0.00020		0.00020	mg/L	02-NOV-20	02-NOV-20	R5275295
Fluoride in Water by IC							
Fluoride (F)	0.319		0.020	mg/L		31-OCT-20	R5278767
Hardness Calculated							
Hardness (as CaCO3)	377		0.20	mg/L		04-NOV-20	
Nitrate in Water by IC (Low Level)							
Nitrate (as N)	0.0101		0.0050	mg/L		31-OCT-20	R5278767
Nitrate+Nitrite							
Nitrate and Nitrite as N	0.0101		0.0051	mg/L		04-NOV-20	
Nitrite in Water by IC (Low Level)							
Nitrite (as N)	<0.0010		0.0010	mg/L		31-OCT-20	R5278767
Sulfate in Water by IC							
Sulfate (SO4)	59.2		0.30	mg/L		31-OCT-20	R5278767
TDS calculated							
TDS (Calculated)	450		5.0	mg/L		04-NOV-20	
Turbidity							
Turbidity	3240		0.10	NTU		30-OCT-20	R5275126
pH							
pH	8.20		0.10	pH units		30-OCT-20	R5272787

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2523514-5 TH19-KGS-17							
Sampled By: PJJ/NB on 27-OCT-20 @ 15:10							
Matrix: GW							
Total Coliform and E.coli							
Total Coliforms	0	PEHR	0	MPN/100mL		29-OCT-20	R5271879
Escherichia Coli	0	PEHR	0	MPN/100mL		29-OCT-20	R5271879
ROU4W Dissolved							
Alkalinity, Bicarbonate							
Bicarbonate (HCO3)	393		1.2	mg/L		02-NOV-20	
Alkalinity, Carbonate							
Carbonate (CO3)	<0.60		0.60	mg/L		02-NOV-20	
Alkalinity, Hydroxide							
Hydroxide (OH)	<0.34		0.34	mg/L		02-NOV-20	
Alkalinity, Total (as CaCO3)							
Alkalinity, Total (as CaCO3)	322		1.0	mg/L		30-OCT-20	R5272787
Chloride in Water by IC (Low Level)							
Chloride (Cl)	0.92		0.10	mg/L		31-OCT-20	R5278767
Conductivity							
Conductivity	637		1.0	umhos/cm		30-OCT-20	R5272787
Dissolved Metals in Water by CRC ICPMS							
Dissolved Metals Filtration Location	FIELD					02-NOV-20	R5272875
Aluminum (Al)-Dissolved	1.25		0.0010	mg/L	02-NOV-20	02-NOV-20	R5275295
Antimony (Sb)-Dissolved	<0.00010		0.00010	mg/L	02-NOV-20	02-NOV-20	R5275295
Arsenic (As)-Dissolved	0.00134		0.00010	mg/L	02-NOV-20	02-NOV-20	R5275295
Barium (Ba)-Dissolved	0.0607		0.00010	mg/L	02-NOV-20	02-NOV-20	R5275295
Beryllium (Be)-Dissolved	0.00012		0.00010	mg/L	02-NOV-20	02-NOV-20	R5275295
Bismuth (Bi)-Dissolved	<0.000050		0.000050	mg/L	02-NOV-20	02-NOV-20	R5275295
Boron (B)-Dissolved	0.094		0.010	mg/L	02-NOV-20	02-NOV-20	R5275295
Cadmium (Cd)-Dissolved	0.0000064		0.0000050	mg/L	02-NOV-20	02-NOV-20	R5275295
Calcium (Ca)-Dissolved	67.7		0.050	mg/L	02-NOV-20	02-NOV-20	R5275295
Cesium (Cs)-Dissolved	0.000298		0.000010	mg/L	02-NOV-20	02-NOV-20	R5275295
Chromium (Cr)-Dissolved	0.00224		0.00010	mg/L	02-NOV-20	02-NOV-20	R5275295
Cobalt (Co)-Dissolved	0.00119		0.00010	mg/L	02-NOV-20	02-NOV-20	R5275295
Copper (Cu)-Dissolved	0.00168		0.00020	mg/L	02-NOV-20	02-NOV-20	R5275295
Iron (Fe)-Dissolved	1.35		0.010	mg/L	02-NOV-20	02-NOV-20	R5275295
Lead (Pb)-Dissolved	0.00282		0.000050	mg/L	02-NOV-20	02-NOV-20	R5275295
Lithium (Li)-Dissolved	0.0192		0.0010	mg/L	02-NOV-20	02-NOV-20	R5275295
Magnesium (Mg)-Dissolved	60.5		0.0050	mg/L	02-NOV-20	02-NOV-20	R5275295
Manganese (Mn)-Dissolved	0.0417		0.00010	mg/L	02-NOV-20	02-NOV-20	R5275295
Molybdenum (Mo)-Dissolved	0.000300		0.000050	mg/L	02-NOV-20	02-NOV-20	R5275295
Nickel (Ni)-Dissolved	0.00344		0.00050	mg/L	02-NOV-20	02-NOV-20	R5275295
Phosphorus (P)-Dissolved	0.094		0.030	mg/L	02-NOV-20	02-NOV-20	R5275295
Potassium (K)-Dissolved	3.84		0.050	mg/L	02-NOV-20	02-NOV-20	R5275295
Rubidium (Rb)-Dissolved	0.00528		0.00020	mg/L	02-NOV-20	02-NOV-20	R5275295
Selenium (Se)-Dissolved	<0.000050		0.000050	mg/L	02-NOV-20	02-NOV-20	R5275295
Silicon (Si)-Dissolved	6.22		0.050	mg/L	02-NOV-20	02-NOV-20	R5275295
Silver (Ag)-Dissolved	<0.000010		0.000010	mg/L	02-NOV-20	02-NOV-20	R5275295
Sodium (Na)-Dissolved	8.63		0.050	mg/L	02-NOV-20	02-NOV-20	R5275295
Strontium (Sr)-Dissolved	0.169		0.00010	mg/L	02-NOV-20	02-NOV-20	R5275295
Sulfur (S)-Dissolved	15.9		0.50	mg/L	02-NOV-20	02-NOV-20	R5275295
Tellurium (Te)-Dissolved	<0.00020		0.00020	mg/L	02-NOV-20	02-NOV-20	R5275295
Thallium (Tl)-Dissolved	0.000020		0.000010	mg/L	02-NOV-20	02-NOV-20	R5275295
Thorium (Th)-Dissolved	0.00081		0.00010	mg/L	02-NOV-20	02-NOV-20	R5275295
Tin (Sn)-Dissolved	<0.00010		0.00010	mg/L	02-NOV-20	02-NOV-20	R5275295
Titanium (Ti)-Dissolved	0.0471		0.00030	mg/L	02-NOV-20	02-NOV-20	R5275295

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2523514-5 TH19-KGS-17 Sampled By: PJJ/NB on 27-OCT-20 @ 15:10 Matrix: GW							
Dissolved Metals in Water by CRC ICPMS							
Tungsten (W)-Dissolved	<0.00010		0.00010	mg/L	02-NOV-20	02-NOV-20	R5275295
Uranium (U)-Dissolved	0.000232		0.000010	mg/L	02-NOV-20	02-NOV-20	R5275295
Vanadium (V)-Dissolved	0.00216		0.00050	mg/L	02-NOV-20	02-NOV-20	R5275295
Zinc (Zn)-Dissolved	0.0071		0.0010	mg/L	02-NOV-20	02-NOV-20	R5275295
Zirconium (Zr)-Dissolved	0.00189		0.00020	mg/L	02-NOV-20	02-NOV-20	R5275295
Fluoride in Water by IC							
Fluoride (F)	0.245		0.020	mg/L		31-OCT-20	R5278767
Hardness Calculated							
Hardness (as CaCO3)	418		0.20	mg/L		03-NOV-20	
Nitrate in Water by IC (Low Level)							
Nitrate (as N)	<0.0050		0.0050	mg/L		31-OCT-20	R5278767
Nitrate+Nitrite							
Nitrate and Nitrite as N	<0.0051		0.0051	mg/L		04-NOV-20	
Nitrite in Water by IC (Low Level)							
Nitrite (as N)	<0.0010		0.0010	mg/L		31-OCT-20	R5278767
Sulfate in Water by IC							
Sulfate (SO4)	42.7		0.30	mg/L		31-OCT-20	R5278767
TDS calculated							
TDS (Calculated)	378		5.0	mg/L		03-NOV-20	
Turbidity							
Turbidity	>4000	TMV	0.10	NTU		30-OCT-20	R5275126
pH							
pH	8.20		0.10	pH units		30-OCT-20	R5272787
L2523514-6 TH19-KGS-18 Sampled By: PJJ/NB on 27-OCT-20 @ 13:40 Matrix: GW							
Total Coliform and E.coli							
Total Coliforms	0	PEHR	0	MPN/100mL		29-OCT-20	R5271879
Escherichia Coli	0	PEHR	0	MPN/100mL		29-OCT-20	R5271879
ROU4W Dissolved							
Alkalinity, Bicarbonate							
Bicarbonate (HCO3)	655		1.2	mg/L		02-NOV-20	
Alkalinity, Carbonate							
Carbonate (CO3)	<0.60		0.60	mg/L		02-NOV-20	
Alkalinity, Hydroxide							
Hydroxide (OH)	<0.34		0.34	mg/L		02-NOV-20	
Alkalinity, Total (as CaCO3)							
Alkalinity, Total (as CaCO3)	537		1.0	mg/L		30-OCT-20	R5272787
Chloride in Water by IC (Low Level)							
Chloride (Cl)	0.17		0.10	mg/L		31-OCT-20	R5278767
Conductivity							
Conductivity	908		1.0	umhos/cm		30-OCT-20	R5272787
Dissolved Metals in Water by CRC ICPMS							
Dissolved Metals Filtration Location	FIELD					02-NOV-20	R5272875
Aluminum (Al)-Dissolved	0.0030		0.0010	mg/L	02-NOV-20	03-NOV-20	R5278083
Antimony (Sb)-Dissolved	<0.00010		0.00010	mg/L	02-NOV-20	02-NOV-20	R5275295
Arsenic (As)-Dissolved	0.00163		0.00010	mg/L	02-NOV-20	02-NOV-20	R5275295
Barium (Ba)-Dissolved	0.0871		0.00010	mg/L	02-NOV-20	02-NOV-20	R5275295
Beryllium (Be)-Dissolved	<0.00010		0.00010	mg/L	02-NOV-20	02-NOV-20	R5275295
Bismuth (Bi)-Dissolved	<0.000050		0.000050	mg/L	02-NOV-20	02-NOV-20	R5275295
Boron (B)-Dissolved	0.063		0.010	mg/L	02-NOV-20	02-NOV-20	R5275295

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2523514-6 TH19-KGS-18							
Sampled By: PJJ/NB on 27-OCT-20 @ 13:40							
Matrix: GW							
Dissolved Metals in Water by CRC ICPMS							
Cadmium (Cd)-Dissolved	<0.0000050		0.0000050	mg/L	02-NOV-20	02-NOV-20	R5275295
Calcium (Ca)-Dissolved	108		0.050	mg/L	02-NOV-20	02-NOV-20	R5275295
Cesium (Cs)-Dissolved	<0.000010		0.000010	mg/L	02-NOV-20	02-NOV-20	R5275295
Chromium (Cr)-Dissolved	0.00020		0.00010	mg/L	02-NOV-20	02-NOV-20	R5275295
Cobalt (Co)-Dissolved	0.00042		0.00010	mg/L	02-NOV-20	02-NOV-20	R5275295
Copper (Cu)-Dissolved	<0.00020		0.00020	mg/L	02-NOV-20	02-NOV-20	R5275295
Iron (Fe)-Dissolved	1.53		0.010	mg/L	02-NOV-20	02-NOV-20	R5275295
Lead (Pb)-Dissolved	<0.000050		0.000050	mg/L	02-NOV-20	02-NOV-20	R5275295
Lithium (Li)-Dissolved	0.0227		0.0010	mg/L	02-NOV-20	02-NOV-20	R5275295
Magnesium (Mg)-Dissolved	55.2		0.0050	mg/L	02-NOV-20	02-NOV-20	R5275295
Manganese (Mn)-Dissolved	0.0492		0.00010	mg/L	02-NOV-20	02-NOV-20	R5275295
Molybdenum (Mo)-Dissolved	0.000614		0.000050	mg/L	02-NOV-20	02-NOV-20	R5275295
Nickel (Ni)-Dissolved	0.00136		0.00050	mg/L	02-NOV-20	02-NOV-20	R5275295
Phosphorus (P)-Dissolved	<0.030		0.030	mg/L	02-NOV-20	02-NOV-20	R5275295
Potassium (K)-Dissolved	1.14		0.050	mg/L	02-NOV-20	02-NOV-20	R5275295
Rubidium (Rb)-Dissolved	0.00157		0.00020	mg/L	02-NOV-20	02-NOV-20	R5275295
Selenium (Se)-Dissolved	0.000063		0.000050	mg/L	02-NOV-20	02-NOV-20	R5275295
Silicon (Si)-Dissolved	8.64		0.050	mg/L	02-NOV-20	02-NOV-20	R5275295
Silver (Ag)-Dissolved	<0.000010		0.000010	mg/L	02-NOV-20	02-NOV-20	R5275295
Sodium (Na)-Dissolved	9.36		0.050	mg/L	02-NOV-20	02-NOV-20	R5275295
Strontium (Sr)-Dissolved	0.227		0.00010	mg/L	02-NOV-20	02-NOV-20	R5275295
Sulfur (S)-Dissolved	2.14		0.50	mg/L	02-NOV-20	02-NOV-20	R5275295
Tellurium (Te)-Dissolved	<0.00020		0.00020	mg/L	02-NOV-20	02-NOV-20	R5275295
Thallium (Tl)-Dissolved	<0.000010		0.000010	mg/L	02-NOV-20	02-NOV-20	R5275295
Thorium (Th)-Dissolved	<0.00010		0.00010	mg/L	02-NOV-20	02-NOV-20	R5275295
Tin (Sn)-Dissolved	<0.00010		0.00010	mg/L	02-NOV-20	02-NOV-20	R5275295
Titanium (Ti)-Dissolved	<0.00030		0.00030	mg/L	02-NOV-20	02-NOV-20	R5275295
Tungsten (W)-Dissolved	<0.00010		0.00010	mg/L	02-NOV-20	02-NOV-20	R5275295
Uranium (U)-Dissolved	0.000475		0.000010	mg/L	02-NOV-20	02-NOV-20	R5275295
Vanadium (V)-Dissolved	<0.00050		0.00050	mg/L	02-NOV-20	02-NOV-20	R5275295
Zinc (Zn)-Dissolved	<0.0010		0.0010	mg/L	02-NOV-20	02-NOV-20	R5275295
Zirconium (Zr)-Dissolved	0.00046		0.00020	mg/L	02-NOV-20	02-NOV-20	R5275295
Fluoride in Water by IC							
Fluoride (F)	0.143		0.020	mg/L		31-OCT-20	R5278767
Hardness Calculated							
Hardness (as CaCO3)	498		0.20	mg/L		04-NOV-20	
Nitrate in Water by IC (Low Level)							
Nitrate (as N)	<0.0050		0.0050	mg/L		31-OCT-20	R5278767
Nitrate+Nitrite							
Nitrate and Nitrite as N	<0.0051		0.0051	mg/L		04-NOV-20	
Nitrite in Water by IC (Low Level)							
Nitrite (as N)	<0.0010		0.0010	mg/L		31-OCT-20	R5278767
Sulfate in Water by IC							
Sulfate (SO4)	1.20		0.30	mg/L		31-OCT-20	R5278767
TDS calculated							
TDS (Calculated)	498		5.0	mg/L		04-NOV-20	
Turbidity							
Turbidity	1880		0.10	NTU		30-OCT-20	R5275126
pH							
pH	7.81		0.10	pH units		30-OCT-20	R5272787

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2523514-7 TH19-KGS-19							
Sampled By: PJJ/NB on 27-OCT-20 @ 11:40							
Matrix: GW							
Total Coliform and E.coli							
Total Coliforms	1	PEHR	0	MPN/100mL		29-OCT-20	R5271879
Escherichia Coli	0	PEHR	0	MPN/100mL		29-OCT-20	R5271879
ROU4W Dissolved							
Alkalinity, Bicarbonate							
Bicarbonate (HCO3)	568		1.2	mg/L		02-NOV-20	
Alkalinity, Carbonate							
Carbonate (CO3)	<0.60		0.60	mg/L		02-NOV-20	
Alkalinity, Hydroxide							
Hydroxide (OH)	<0.34		0.34	mg/L		02-NOV-20	
Alkalinity, Total (as CaCO3)							
Alkalinity, Total (as CaCO3)	466		1.0	mg/L		30-OCT-20	R5272787
Chloride in Water by IC (Low Level)							
Chloride (Cl)	1.88		0.10	mg/L		31-OCT-20	R5278767
Conductivity							
Conductivity	890		1.0	umhos/cm		30-OCT-20	R5272787
Dissolved Metals in Water by CRC ICPMS							
Dissolved Metals Filtration Location	FIELD					02-NOV-20	R5272878
Aluminum (Al)-Dissolved	0.0094		0.0010	mg/L	02-NOV-20	02-NOV-20	R5275295
Antimony (Sb)-Dissolved	<0.00010		0.00010	mg/L	02-NOV-20	02-NOV-20	R5275295
Arsenic (As)-Dissolved	0.00352		0.00010	mg/L	02-NOV-20	02-NOV-20	R5275295
Barium (Ba)-Dissolved	0.195		0.00010	mg/L	02-NOV-20	02-NOV-20	R5275295
Beryllium (Be)-Dissolved	<0.00010		0.00010	mg/L	02-NOV-20	02-NOV-20	R5275295
Bismuth (Bi)-Dissolved	<0.000050		0.000050	mg/L	02-NOV-20	02-NOV-20	R5275295
Boron (B)-Dissolved	0.112		0.010	mg/L	02-NOV-20	02-NOV-20	R5275295
Cadmium (Cd)-Dissolved	<0.000050		0.000050	mg/L	02-NOV-20	02-NOV-20	R5275295
Calcium (Ca)-Dissolved	62.7		0.050	mg/L	02-NOV-20	02-NOV-20	R5275295
Cesium (Cs)-Dissolved	<0.000010		0.000010	mg/L	02-NOV-20	02-NOV-20	R5275295
Chromium (Cr)-Dissolved	0.00012		0.00010	mg/L	02-NOV-20	02-NOV-20	R5275295
Cobalt (Co)-Dissolved	<0.00010		0.00010	mg/L	02-NOV-20	02-NOV-20	R5275295
Copper (Cu)-Dissolved	<0.00020		0.00020	mg/L	02-NOV-20	02-NOV-20	R5275295
Iron (Fe)-Dissolved	0.026		0.010	mg/L	02-NOV-20	02-NOV-20	R5275295
Lead (Pb)-Dissolved	<0.000050		0.000050	mg/L	02-NOV-20	02-NOV-20	R5275295
Lithium (Li)-Dissolved	0.0341		0.0010	mg/L	02-NOV-20	02-NOV-20	R5275295
Magnesium (Mg)-Dissolved	81.2		0.0050	mg/L	02-NOV-20	02-NOV-20	R5275295
Manganese (Mn)-Dissolved	0.469		0.00010	mg/L	02-NOV-20	02-NOV-20	R5275295
Molybdenum (Mo)-Dissolved	0.000099		0.000050	mg/L	02-NOV-20	02-NOV-20	R5275295
Nickel (Ni)-Dissolved	<0.00050		0.00050	mg/L	02-NOV-20	02-NOV-20	R5275295
Phosphorus (P)-Dissolved	<0.030		0.030	mg/L	02-NOV-20	02-NOV-20	R5275295
Potassium (K)-Dissolved	4.15		0.050	mg/L	02-NOV-20	02-NOV-20	R5275295
Rubidium (Rb)-Dissolved	0.00144		0.00020	mg/L	02-NOV-20	02-NOV-20	R5275295
Selenium (Se)-Dissolved	0.000337		0.000050	mg/L	02-NOV-20	02-NOV-20	R5275295
Silicon (Si)-Dissolved	8.12		0.050	mg/L	02-NOV-20	02-NOV-20	R5275295
Silver (Ag)-Dissolved	<0.000010		0.000010	mg/L	02-NOV-20	02-NOV-20	R5275295
Sodium (Na)-Dissolved	23.4		0.050	mg/L	02-NOV-20	02-NOV-20	R5275295
Strontium (Sr)-Dissolved	0.711		0.00010	mg/L	02-NOV-20	02-NOV-20	R5275295
Sulfur (S)-Dissolved	65.2		0.50	mg/L	02-NOV-20	02-NOV-20	R5275295
Tellurium (Te)-Dissolved	<0.00020		0.00020	mg/L	02-NOV-20	02-NOV-20	R5275295
Thallium (Tl)-Dissolved	<0.000010		0.000010	mg/L	02-NOV-20	02-NOV-20	R5275295
Thorium (Th)-Dissolved	<0.00010		0.00010	mg/L	02-NOV-20	02-NOV-20	R5275295
Tin (Sn)-Dissolved	0.00016		0.00010	mg/L	02-NOV-20	02-NOV-20	R5275295
Titanium (Ti)-Dissolved	0.00032		0.00030	mg/L	02-NOV-20	02-NOV-20	R5275295

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2523514-7 TH19-KGS-19 Sampled By: PJJ/NB on 27-OCT-20 @ 11:40 Matrix: GW							
Dissolved Metals in Water by CRC ICPMS							
Tungsten (W)-Dissolved	0.00189		0.00010	mg/L	02-NOV-20	02-NOV-20	R5275295
Uranium (U)-Dissolved	0.000842		0.000010	mg/L	02-NOV-20	02-NOV-20	R5275295
Vanadium (V)-Dissolved	<0.00050		0.00050	mg/L	02-NOV-20	02-NOV-20	R5275295
Zinc (Zn)-Dissolved	<0.0010		0.0010	mg/L	02-NOV-20	02-NOV-20	R5275295
Zirconium (Zr)-Dissolved	0.00031		0.00020	mg/L	02-NOV-20	02-NOV-20	R5275295
Fluoride in Water by IC							
Fluoride (F)	0.242		0.020	mg/L		31-OCT-20	R5278767
Hardness Calculated							
Hardness (as CaCO3)	491		0.20	mg/L		03-NOV-20	
Nitrate in Water by IC (Low Level)							
Nitrate (as N)	0.0166		0.0050	mg/L		31-OCT-20	R5278767
Nitrate+Nitrite							
Nitrate and Nitrite as N	0.0166		0.0051	mg/L		04-NOV-20	
Nitrite in Water by IC (Low Level)							
Nitrite (as N)	<0.0010		0.0010	mg/L		31-OCT-20	R5278767
Sulfate in Water by IC							
Sulfate (SO4)	68.5		0.30	mg/L		31-OCT-20	R5278767
TDS calculated							
TDS (Calculated)	521		5.0	mg/L		03-NOV-20	
Turbidity							
Turbidity	32.4		0.10	NTU		30-OCT-20	R5275126
pH							
pH	8.21		0.10	pH units		30-OCT-20	R5272787
L2523514-8 PW-100 Sampled By: PJJ/NB on 28-OCT-20 @ 17:35 Matrix: GW							
Total Coliform and E.coli							
Total Coliforms	0		0	MPN/100mL		29-OCT-20	R5271879
Escherichia Coli	0		0	MPN/100mL		29-OCT-20	R5271879
ROU4W Dissolved							
Alkalinity, Bicarbonate							
Bicarbonate (HCO3)	398		1.2	mg/L		02-NOV-20	
Alkalinity, Carbonate							
Carbonate (CO3)	<0.60		0.60	mg/L		02-NOV-20	
Alkalinity, Hydroxide							
Hydroxide (OH)	<0.34		0.34	mg/L		02-NOV-20	
Alkalinity, Total (as CaCO3)							
Alkalinity, Total (as CaCO3)	326		1.0	mg/L		30-OCT-20	R5272787
Chloride in Water by IC (Low Level)							
Chloride (Cl)	16.8		0.10	mg/L		31-OCT-20	R5278767
Conductivity							
Conductivity	790		1.0	umhos/cm		30-OCT-20	R5272787
Dissolved Metals in Water by CRC ICPMS							
Dissolved Metals Filtration Location	FIELD					02-NOV-20	R5272878
Aluminum (Al)-Dissolved	<0.0010		0.0010	mg/L	02-NOV-20	02-NOV-20	R5275295
Antimony (Sb)-Dissolved	<0.00010		0.00010	mg/L	02-NOV-20	02-NOV-20	R5275295
Arsenic (As)-Dissolved	0.00182		0.00010	mg/L	02-NOV-20	02-NOV-20	R5275295
Barium (Ba)-Dissolved	0.0248		0.00010	mg/L	02-NOV-20	02-NOV-20	R5275295
Beryllium (Be)-Dissolved	<0.00010		0.00010	mg/L	02-NOV-20	02-NOV-20	R5275295
Bismuth (Bi)-Dissolved	<0.000050		0.000050	mg/L	02-NOV-20	02-NOV-20	R5275295
Boron (B)-Dissolved	0.139		0.010	mg/L	02-NOV-20	02-NOV-20	R5275295

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2523514-8 PW-100							
Sampled By: PJJ/NB on 28-OCT-20 @ 17:35							
Matrix: GW							
Dissolved Metals in Water by CRC ICPMS							
Cadmium (Cd)-Dissolved	<0.0000050		0.0000050	mg/L	02-NOV-20	02-NOV-20	R5275295
Calcium (Ca)-Dissolved	55.4		0.050	mg/L	02-NOV-20	02-NOV-20	R5275295
Cesium (Cs)-Dissolved	0.000023		0.000010	mg/L	02-NOV-20	02-NOV-20	R5275295
Chromium (Cr)-Dissolved	<0.00010		0.00010	mg/L	02-NOV-20	02-NOV-20	R5275295
Cobalt (Co)-Dissolved	0.00016		0.00010	mg/L	02-NOV-20	02-NOV-20	R5275295
Copper (Cu)-Dissolved	<0.00020		0.00020	mg/L	02-NOV-20	02-NOV-20	R5275295
Iron (Fe)-Dissolved	0.202		0.010	mg/L	02-NOV-20	02-NOV-20	R5275295
Lead (Pb)-Dissolved	<0.000050		0.000050	mg/L	02-NOV-20	02-NOV-20	R5275295
Lithium (Li)-Dissolved	0.0249		0.0010	mg/L	02-NOV-20	02-NOV-20	R5275295
Magnesium (Mg)-Dissolved	51.4		0.0050	mg/L	02-NOV-20	02-NOV-20	R5275295
Manganese (Mn)-Dissolved	0.00694		0.00010	mg/L	02-NOV-20	02-NOV-20	R5275295
Molybdenum (Mo)-Dissolved	0.000502		0.000050	mg/L	02-NOV-20	02-NOV-20	R5275295
Nickel (Ni)-Dissolved	<0.00050		0.00050	mg/L	02-NOV-20	02-NOV-20	R5275295
Phosphorus (P)-Dissolved	<0.030		0.030	mg/L	02-NOV-20	02-NOV-20	R5275295
Potassium (K)-Dissolved	4.53		0.050	mg/L	02-NOV-20	02-NOV-20	R5275295
Rubidium (Rb)-Dissolved	0.00244		0.00020	mg/L	02-NOV-20	02-NOV-20	R5275295
Selenium (Se)-Dissolved	0.00151		0.000050	mg/L	02-NOV-20	02-NOV-20	R5275295
Silicon (Si)-Dissolved	5.74		0.050	mg/L	02-NOV-20	02-NOV-20	R5275295
Silver (Ag)-Dissolved	<0.000010		0.000010	mg/L	02-NOV-20	02-NOV-20	R5275295
Sodium (Na)-Dissolved	35.7		0.050	mg/L	02-NOV-20	02-NOV-20	R5275295
Strontium (Sr)-Dissolved	0.222		0.00010	mg/L	02-NOV-20	02-NOV-20	R5275295
Sulfur (S)-Dissolved	30.2		0.50	mg/L	02-NOV-20	02-NOV-20	R5275295
Tellurium (Te)-Dissolved	<0.00020		0.00020	mg/L	02-NOV-20	02-NOV-20	R5275295
Thallium (Tl)-Dissolved	<0.000010		0.000010	mg/L	02-NOV-20	02-NOV-20	R5275295
Thorium (Th)-Dissolved	<0.00010		0.00010	mg/L	02-NOV-20	02-NOV-20	R5275295
Tin (Sn)-Dissolved	<0.00010		0.00010	mg/L	02-NOV-20	02-NOV-20	R5275295
Titanium (Ti)-Dissolved	<0.00030		0.00030	mg/L	02-NOV-20	02-NOV-20	R5275295
Tungsten (W)-Dissolved	<0.00010		0.00010	mg/L	02-NOV-20	02-NOV-20	R5275295
Uranium (U)-Dissolved	0.000952		0.000010	mg/L	02-NOV-20	02-NOV-20	R5275295
Vanadium (V)-Dissolved	<0.00050		0.00050	mg/L	02-NOV-20	02-NOV-20	R5275295
Zinc (Zn)-Dissolved	<0.0010		0.0010	mg/L	02-NOV-20	02-NOV-20	R5275295
Zirconium (Zr)-Dissolved	<0.00020		0.00020	mg/L	02-NOV-20	02-NOV-20	R5275295
Fluoride in Water by IC							
Fluoride (F)	0.344		0.020	mg/L		31-OCT-20	R5278767
Hardness Calculated							
Hardness (as CaCO3)	350		0.20	mg/L		03-NOV-20	
Nitrate in Water by IC (Low Level)							
Nitrate (as N)	<0.0050		0.0050	mg/L		31-OCT-20	R5278767
Nitrate+Nitrite							
Nitrate and Nitrite as N	<0.0051		0.0051	mg/L		04-NOV-20	
Nitrite in Water by IC (Low Level)							
Nitrite (as N)	<0.0010		0.0010	mg/L		31-OCT-20	R5278767
Sulfate in Water by IC							
Sulfate (SO4)	85.4		0.30	mg/L		31-OCT-20	R5278767
TDS calculated							
TDS (Calculated)	445		5.0	mg/L		03-NOV-20	
Turbidity							
Turbidity	2.47		0.10	NTU		30-OCT-20	R5275126
pH							
pH	8.08		0.10	pH units		30-OCT-20	R5272787

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2523514-9 SW19-KGS-02							
Sampled By: PJJ/NB on 29-OCT-20 @ 12:25							
Matrix: GW							
Total Coliform and E.coli							
Total Coliforms	0		0	MPN/100mL		29-OCT-20	R5271879
Escherichia Coli	0		0	MPN/100mL		29-OCT-20	R5271879
ROU4W Dissolved							
Alkalinity, Bicarbonate							
Bicarbonate (HCO3)	415		1.2	mg/L		02-NOV-20	
Alkalinity, Carbonate							
Carbonate (CO3)	<0.60		0.60	mg/L		02-NOV-20	
Alkalinity, Hydroxide							
Hydroxide (OH)	<0.34		0.34	mg/L		02-NOV-20	
Alkalinity, Total (as CaCO3)							
Alkalinity, Total (as CaCO3)	340		1.0	mg/L		30-OCT-20	R5272787
Chloride in Water by IC (Low Level)							
Chloride (Cl)	89.0		0.10	mg/L		31-OCT-20	R5278767
Conductivity							
Conductivity	1240		1.0	umhos/cm		30-OCT-20	R5272787
Dissolved Metals in Water by CRC ICPMS							
Dissolved Metals Filtration Location	FIELD					02-NOV-20	R5272878
Aluminum (Al)-Dissolved	<0.0010		0.0010	mg/L	02-NOV-20	02-NOV-20	R5275295
Antimony (Sb)-Dissolved	<0.00010		0.00010	mg/L	02-NOV-20	02-NOV-20	R5275295
Arsenic (As)-Dissolved	<0.00010		0.00010	mg/L	02-NOV-20	02-NOV-20	R5275295
Barium (Ba)-Dissolved	0.0122		0.00010	mg/L	02-NOV-20	02-NOV-20	R5275295
Beryllium (Be)-Dissolved	<0.00010		0.00010	mg/L	02-NOV-20	02-NOV-20	R5275295
Bismuth (Bi)-Dissolved	<0.000050		0.000050	mg/L	02-NOV-20	02-NOV-20	R5275295
Boron (B)-Dissolved	0.203		0.010	mg/L	02-NOV-20	02-NOV-20	R5275295
Cadmium (Cd)-Dissolved	<0.000050		0.000050	mg/L	02-NOV-20	02-NOV-20	R5275295
Calcium (Ca)-Dissolved	65.0		0.050	mg/L	02-NOV-20	02-NOV-20	R5275295
Cesium (Cs)-Dissolved	0.000014		0.000010	mg/L	02-NOV-20	02-NOV-20	R5275295
Chromium (Cr)-Dissolved	<0.00010		0.00010	mg/L	02-NOV-20	02-NOV-20	R5275295
Cobalt (Co)-Dissolved	0.00017		0.00010	mg/L	02-NOV-20	02-NOV-20	R5275295
Copper (Cu)-Dissolved	<0.00020		0.00020	mg/L	02-NOV-20	02-NOV-20	R5275295
Iron (Fe)-Dissolved	0.102		0.010	mg/L	02-NOV-20	02-NOV-20	R5275295
Lead (Pb)-Dissolved	<0.000050		0.000050	mg/L	02-NOV-20	02-NOV-20	R5275295
Lithium (Li)-Dissolved	0.0364		0.0010	mg/L	02-NOV-20	02-NOV-20	R5275295
Magnesium (Mg)-Dissolved	63.5		0.0050	mg/L	02-NOV-20	02-NOV-20	R5275295
Manganese (Mn)-Dissolved	0.0103		0.00010	mg/L	02-NOV-20	02-NOV-20	R5275295
Molybdenum (Mo)-Dissolved	0.000102		0.000050	mg/L	02-NOV-20	02-NOV-20	R5275295
Nickel (Ni)-Dissolved	<0.00050		0.00050	mg/L	02-NOV-20	02-NOV-20	R5275295
Phosphorus (P)-Dissolved	<0.030		0.030	mg/L	02-NOV-20	02-NOV-20	R5275295
Potassium (K)-Dissolved	7.39		0.050	mg/L	02-NOV-20	02-NOV-20	R5275295
Rubidium (Rb)-Dissolved	0.00408		0.00020	mg/L	02-NOV-20	02-NOV-20	R5275295
Selenium (Se)-Dissolved	0.000791		0.000050	mg/L	02-NOV-20	02-NOV-20	R5275295
Silicon (Si)-Dissolved	4.37		0.050	mg/L	02-NOV-20	02-NOV-20	R5275295
Silver (Ag)-Dissolved	<0.000010		0.000010	mg/L	02-NOV-20	02-NOV-20	R5275295
Sodium (Na)-Dissolved	106		0.050	mg/L	02-NOV-20	02-NOV-20	R5275295
Strontium (Sr)-Dissolved	0.246		0.00010	mg/L	02-NOV-20	02-NOV-20	R5275295
Sulfur (S)-Dissolved	65.9		0.50	mg/L	02-NOV-20	02-NOV-20	R5275295
Tellurium (Te)-Dissolved	<0.00020		0.00020	mg/L	02-NOV-20	02-NOV-20	R5275295
Thallium (Tl)-Dissolved	<0.000010		0.000010	mg/L	02-NOV-20	02-NOV-20	R5275295
Thorium (Th)-Dissolved	<0.00010		0.00010	mg/L	02-NOV-20	02-NOV-20	R5275295
Tin (Sn)-Dissolved	<0.00010		0.00010	mg/L	02-NOV-20	02-NOV-20	R5275295
Titanium (Ti)-Dissolved	<0.00030		0.00030	mg/L	02-NOV-20	02-NOV-20	R5275295

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2523514-9 SW19-KGS-02 Sampled By: PJJ/NB on 29-OCT-20 @ 12:25 Matrix: GW							
Dissolved Metals in Water by CRC ICPMS							
Tungsten (W)-Dissolved	<0.00010		0.00010	mg/L	02-NOV-20	02-NOV-20	R5275295
Uranium (U)-Dissolved	0.000183		0.000010	mg/L	02-NOV-20	02-NOV-20	R5275295
Vanadium (V)-Dissolved	<0.00050		0.00050	mg/L	02-NOV-20	02-NOV-20	R5275295
Zinc (Zn)-Dissolved	<0.0010		0.0010	mg/L	02-NOV-20	02-NOV-20	R5275295
Zirconium (Zr)-Dissolved	<0.00020		0.00020	mg/L	02-NOV-20	02-NOV-20	R5275295
Fluoride in Water by IC							
Fluoride (F)	0.291		0.020	mg/L		31-OCT-20	R5278767
Hardness Calculated							
Hardness (as CaCO3)	424		0.20	mg/L		03-NOV-20	
Nitrate in Water by IC (Low Level)							
Nitrate (as N)	<0.0050		0.0050	mg/L		31-OCT-20	R5278767
Nitrate+Nitrite							
Nitrate and Nitrite as N	<0.0051		0.0051	mg/L		04-NOV-20	
Nitrite in Water by IC (Low Level)							
Nitrite (as N)	<0.0010		0.0010	mg/L		31-OCT-20	R5278767
Sulfate in Water by IC							
Sulfate (SO4)	187		0.30	mg/L		31-OCT-20	R5278767
TDS calculated							
TDS (Calculated)	722		5.0	mg/L		03-NOV-20	
Turbidity							
Turbidity	1.17		0.10	NTU		30-OCT-20	R5275126
pH							
pH	8.06		0.10	pH units		30-OCT-20	R5272787
L2523514-10 SW19-KGS-03 Sampled By: PJJ/NB on 29-OCT-20 @ 11:00 Matrix: GW							
Total Coliform and E.coli							
Total Coliforms	2		0	MPN/100mL		29-OCT-20	R5271879
Escherichia Coli	0		0	MPN/100mL		29-OCT-20	R5271879
ROU4W Dissolved							
Alkalinity, Bicarbonate							
Bicarbonate (HCO3)	456		1.2	mg/L		02-NOV-20	
Alkalinity, Carbonate							
Carbonate (CO3)	<0.60		0.60	mg/L		02-NOV-20	
Alkalinity, Hydroxide							
Hydroxide (OH)	<0.34		0.34	mg/L		02-NOV-20	
Alkalinity, Total (as CaCO3)							
Alkalinity, Total (as CaCO3)	374		1.0	mg/L		30-OCT-20	R5272787
Chloride in Water by IC (Low Level)							
Chloride (Cl)	39.3		0.10	mg/L		31-OCT-20	R5278767
Conductivity							
Conductivity	979		1.0	umhos/cm		30-OCT-20	R5272787
Dissolved Metals in Water by CRC ICPMS							
Dissolved Metals Filtration Location	FIELD					02-NOV-20	R5272878
Aluminum (Al)-Dissolved	<0.0010		0.0010	mg/L	02-NOV-20	02-NOV-20	R5275295
Antimony (Sb)-Dissolved	<0.00010		0.00010	mg/L	02-NOV-20	02-NOV-20	R5275295
Arsenic (As)-Dissolved	0.00022		0.00010	mg/L	02-NOV-20	02-NOV-20	R5275295
Barium (Ba)-Dissolved	0.0180		0.00010	mg/L	02-NOV-20	02-NOV-20	R5275295
Beryllium (Be)-Dissolved	<0.00010		0.00010	mg/L	02-NOV-20	02-NOV-20	R5275295
Bismuth (Bi)-Dissolved	<0.000050		0.000050	mg/L	02-NOV-20	02-NOV-20	R5275295
Boron (B)-Dissolved	0.206		0.010	mg/L	02-NOV-20	02-NOV-20	R5275295

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2523514-10 SW19-KGS-03							
Sampled By: PJJ/NB on 29-OCT-20 @ 11:00							
Matrix: GW							
Dissolved Metals in Water by CRC ICPMS							
Cadmium (Cd)-Dissolved	<0.0000050		0.0000050	mg/L	02-NOV-20	02-NOV-20	R5275295
Calcium (Ca)-Dissolved	60.2		0.050	mg/L	02-NOV-20	02-NOV-20	R5275295
Cesium (Cs)-Dissolved	0.000020		0.000010	mg/L	02-NOV-20	02-NOV-20	R5275295
Chromium (Cr)-Dissolved	<0.00010		0.00010	mg/L	02-NOV-20	02-NOV-20	R5275295
Cobalt (Co)-Dissolved	0.00024		0.00010	mg/L	02-NOV-20	02-NOV-20	R5275295
Copper (Cu)-Dissolved	<0.00020		0.00020	mg/L	02-NOV-20	02-NOV-20	R5275295
Iron (Fe)-Dissolved	0.116		0.010	mg/L	02-NOV-20	02-NOV-20	R5275295
Lead (Pb)-Dissolved	<0.000050		0.000050	mg/L	02-NOV-20	02-NOV-20	R5275295
Lithium (Li)-Dissolved	0.0326		0.0010	mg/L	02-NOV-20	02-NOV-20	R5275295
Magnesium (Mg)-Dissolved	62.4		0.0050	mg/L	02-NOV-20	02-NOV-20	R5275295
Manganese (Mn)-Dissolved	0.0152		0.00010	mg/L	02-NOV-20	02-NOV-20	R5275295
Molybdenum (Mo)-Dissolved	0.000188		0.000050	mg/L	02-NOV-20	02-NOV-20	R5275295
Nickel (Ni)-Dissolved	<0.00050		0.00050	mg/L	02-NOV-20	02-NOV-20	R5275295
Phosphorus (P)-Dissolved	<0.030		0.030	mg/L	02-NOV-20	02-NOV-20	R5275295
Potassium (K)-Dissolved	6.74		0.050	mg/L	02-NOV-20	02-NOV-20	R5275295
Rubidium (Rb)-Dissolved	0.00356		0.00020	mg/L	02-NOV-20	02-NOV-20	R5275295
Selenium (Se)-Dissolved	0.000544		0.000050	mg/L	02-NOV-20	02-NOV-20	R5275295
Silicon (Si)-Dissolved	4.74		0.050	mg/L	02-NOV-20	02-NOV-20	R5275295
Silver (Ag)-Dissolved	<0.000010		0.000010	mg/L	02-NOV-20	02-NOV-20	R5275295
Sodium (Na)-Dissolved	59.8		0.050	mg/L	02-NOV-20	02-NOV-20	R5275295
Strontium (Sr)-Dissolved	0.240		0.00010	mg/L	02-NOV-20	02-NOV-20	R5275295
Sulfur (S)-Dissolved	38.1		0.50	mg/L	02-NOV-20	02-NOV-20	R5275295
Tellurium (Te)-Dissolved	<0.00020		0.00020	mg/L	02-NOV-20	02-NOV-20	R5275295
Thallium (Tl)-Dissolved	<0.000010		0.000010	mg/L	02-NOV-20	02-NOV-20	R5275295
Thorium (Th)-Dissolved	<0.00010		0.00010	mg/L	02-NOV-20	02-NOV-20	R5275295
Tin (Sn)-Dissolved	<0.00010		0.00010	mg/L	02-NOV-20	02-NOV-20	R5275295
Titanium (Ti)-Dissolved	<0.00030		0.00030	mg/L	02-NOV-20	02-NOV-20	R5275295
Tungsten (W)-Dissolved	<0.00010		0.00010	mg/L	02-NOV-20	02-NOV-20	R5275295
Uranium (U)-Dissolved	0.000164		0.000010	mg/L	02-NOV-20	02-NOV-20	R5275295
Vanadium (V)-Dissolved	<0.00050		0.00050	mg/L	02-NOV-20	02-NOV-20	R5275295
Zinc (Zn)-Dissolved	<0.0010		0.0010	mg/L	02-NOV-20	02-NOV-20	R5275295
Zirconium (Zr)-Dissolved	<0.00020		0.00020	mg/L	02-NOV-20	02-NOV-20	R5275295
Fluoride in Water by IC							
Fluoride (F)	0.319		0.020	mg/L		31-OCT-20	R5278767
Hardness Calculated							
Hardness (as CaCO3)	407		0.20	mg/L		03-NOV-20	
Nitrate in Water by IC (Low Level)							
Nitrate (as N)	<0.0050		0.0050	mg/L		31-OCT-20	R5278767
Nitrate+Nitrite							
Nitrate and Nitrite as N	<0.0051		0.0051	mg/L		04-NOV-20	
Nitrite in Water by IC (Low Level)							
Nitrite (as N)	<0.0010		0.0010	mg/L		31-OCT-20	R5278767
Sulfate in Water by IC							
Sulfate (SO4)	109		0.30	mg/L		31-OCT-20	R5278767
TDS calculated							
TDS (Calculated)	562		5.0	mg/L		03-NOV-20	
Turbidity							
Turbidity	1.44		0.10	NTU		30-OCT-20	R5275126
pH							
pH	8.03		0.10	pH units		30-OCT-20	R5272787

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2523514-11 TRIP BLANK							
Sampled By: PJJ/NB on 26-OCT-20							
Matrix:							
Total Coliform and E.coli							
Total Coliforms	0	PEHR	0	MPN/100mL		29-OCT-20	R5271879
Escherichia Coli	0	PEHR	0	MPN/100mL		29-OCT-20	R5271879
ROU4W Dissolved							
Alkalinity, Bicarbonate							
Bicarbonate (HCO3)	<1.2		1.2	mg/L		02-NOV-20	
Alkalinity, Carbonate							
Carbonate (CO3)	<0.60		0.60	mg/L		02-NOV-20	
Alkalinity, Hydroxide							
Hydroxide (OH)	<0.34		0.34	mg/L		02-NOV-20	
Alkalinity, Total (as CaCO3)							
Alkalinity, Total (as CaCO3)	<1.0		1.0	mg/L		02-NOV-20	R5273180
Chloride in Water by IC (Low Level)							
Chloride (Cl)	<0.10		0.10	mg/L		31-OCT-20	R5278767
Conductivity							
Conductivity	<1.0		1.0	umhos/cm		02-NOV-20	R5273180
Dissolved Metals in Water by CRC ICPMS							
Dissolved Metals Filtration Location	FIELD					02-NOV-20	R5272878
Aluminum (Al)-Dissolved	<0.0010		0.0010	mg/L	02-NOV-20	02-NOV-20	R5275295
Antimony (Sb)-Dissolved	<0.00010		0.00010	mg/L	02-NOV-20	02-NOV-20	R5275295
Arsenic (As)-Dissolved	<0.00010		0.00010	mg/L	02-NOV-20	02-NOV-20	R5275295
Barium (Ba)-Dissolved	<0.00010		0.00010	mg/L	02-NOV-20	02-NOV-20	R5275295
Beryllium (Be)-Dissolved	<0.00010		0.00010	mg/L	02-NOV-20	02-NOV-20	R5275295
Bismuth (Bi)-Dissolved	<0.000050		0.000050	mg/L	02-NOV-20	02-NOV-20	R5275295
Boron (B)-Dissolved	<0.010		0.010	mg/L	02-NOV-20	02-NOV-20	R5275295
Cadmium (Cd)-Dissolved	<0.000050		0.000050	mg/L	02-NOV-20	02-NOV-20	R5275295
Calcium (Ca)-Dissolved	<0.050		0.050	mg/L	02-NOV-20	02-NOV-20	R5275295
Cesium (Cs)-Dissolved	<0.000010		0.000010	mg/L	02-NOV-20	02-NOV-20	R5275295
Chromium (Cr)-Dissolved	<0.00010		0.00010	mg/L	02-NOV-20	02-NOV-20	R5275295
Cobalt (Co)-Dissolved	<0.00010		0.00010	mg/L	02-NOV-20	02-NOV-20	R5275295
Copper (Cu)-Dissolved	<0.00020		0.00020	mg/L	02-NOV-20	02-NOV-20	R5275295
Iron (Fe)-Dissolved	<0.010		0.010	mg/L	02-NOV-20	02-NOV-20	R5275295
Lead (Pb)-Dissolved	<0.000050		0.000050	mg/L	02-NOV-20	02-NOV-20	R5275295
Lithium (Li)-Dissolved	<0.0010		0.0010	mg/L	02-NOV-20	02-NOV-20	R5275295
Magnesium (Mg)-Dissolved	<0.0050		0.0050	mg/L	02-NOV-20	02-NOV-20	R5275295
Manganese (Mn)-Dissolved	<0.00010		0.00010	mg/L	02-NOV-20	02-NOV-20	R5275295
Molybdenum (Mo)-Dissolved	<0.000050		0.000050	mg/L	02-NOV-20	02-NOV-20	R5275295
Nickel (Ni)-Dissolved	<0.00050		0.00050	mg/L	02-NOV-20	02-NOV-20	R5275295
Phosphorus (P)-Dissolved	<0.030		0.030	mg/L	02-NOV-20	02-NOV-20	R5275295
Potassium (K)-Dissolved	<0.050		0.050	mg/L	02-NOV-20	02-NOV-20	R5275295
Rubidium (Rb)-Dissolved	<0.00020		0.00020	mg/L	02-NOV-20	02-NOV-20	R5275295
Selenium (Se)-Dissolved	0.000090		0.000050	mg/L	02-NOV-20	02-NOV-20	R5275295
Silicon (Si)-Dissolved	<0.050		0.050	mg/L	02-NOV-20	02-NOV-20	R5275295
Silver (Ag)-Dissolved	<0.000010		0.000010	mg/L	02-NOV-20	02-NOV-20	R5275295
Sodium (Na)-Dissolved	<0.050		0.050	mg/L	02-NOV-20	02-NOV-20	R5275295
Strontium (Sr)-Dissolved	<0.00010		0.00010	mg/L	02-NOV-20	02-NOV-20	R5275295
Sulfur (S)-Dissolved	<0.50		0.50	mg/L	02-NOV-20	02-NOV-20	R5275295
Tellurium (Te)-Dissolved	<0.00020		0.00020	mg/L	02-NOV-20	02-NOV-20	R5275295
Thallium (Tl)-Dissolved	<0.000010		0.000010	mg/L	02-NOV-20	02-NOV-20	R5275295
Thorium (Th)-Dissolved	<0.00010		0.00010	mg/L	02-NOV-20	02-NOV-20	R5275295
Tin (Sn)-Dissolved	<0.00010		0.00010	mg/L	02-NOV-20	02-NOV-20	R5275295
Titanium (Ti)-Dissolved	<0.00030		0.00030	mg/L	02-NOV-20	02-NOV-20	R5275295

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2523514-11 TRIP BLANK							
Sampled By: PJJ/NB on 26-OCT-20							
Matrix:							
Dissolved Metals in Water by CRC ICPMS							
Tungsten (W)-Dissolved	<0.00010		0.00010	mg/L	02-NOV-20	02-NOV-20	R5275295
Uranium (U)-Dissolved	<0.000010		0.000010	mg/L	02-NOV-20	02-NOV-20	R5275295
Vanadium (V)-Dissolved	<0.00050		0.00050	mg/L	02-NOV-20	02-NOV-20	R5275295
Zinc (Zn)-Dissolved	<0.0010		0.0010	mg/L	02-NOV-20	02-NOV-20	R5275295
Zirconium (Zr)-Dissolved	<0.00020		0.00020	mg/L	02-NOV-20	02-NOV-20	R5275295
Fluoride in Water by IC							
Fluoride (F)	<0.020		0.020	mg/L		31-OCT-20	R5278767
Hardness Calculated							
Hardness (as CaCO3)	<0.20		0.20	mg/L		03-NOV-20	
Nitrate in Water by IC (Low Level)							
Nitrate (as N)	<0.0050		0.0050	mg/L		31-OCT-20	R5278767
Nitrate+Nitrite							
Nitrate and Nitrite as N	<0.0051		0.0051	mg/L		04-NOV-20	
Nitrite in Water by IC (Low Level)							
Nitrite (as N)	<0.0010		0.0010	mg/L		31-OCT-20	R5278767
Sulfate in Water by IC							
Sulfate (SO4)	<0.30		0.30	mg/L		31-OCT-20	R5278767
TDS calculated							
TDS (Calculated)	<5.0		5.0	mg/L		03-NOV-20	
Turbidity							
Turbidity	<0.10		0.10	NTU		30-OCT-20	R5275126
pH							
pH	5.57		0.10	pH units		02-NOV-20	R5273180

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

Reference Information

Sample Parameter Qualifier Key:

Qualifier	Description
B	Method Blank exceeds ALS DQO. Associated sample results which are < Limit of Reporting or > 5 times blank level are considered reliable.
DUP-H	Duplicate results outside ALS DQO, due to sample heterogeneity.
MES	Data Quality Objective was marginally exceeded (by < 10% absolute) for < 10% of analytes in a Multi-Element Scan / Multi-Parameter Scan (considered acceptable as per OMOE & CCME).
MS-B	Matrix Spike recovery could not be accurately calculated due to high analyte background in sample.
PEHR	Parameter Exceeded Recommended Holding Time On Receipt: Proceed With Analysis As Requested.
PEHT	Parameter Exceeded Recommended Holding Time Prior to Analysis
TMV	Turbidity exceeded upper limit of the nephelometric method. Minimum value reported.

Test Method References:

ALS Test Code	Matrix	Test Description	Method Reference**
ALK-CO3CO3-CALC-WP	Water	Alkalinity, Carbonate	CALCULATION
The Alkalinity of water is a measure of its acid neutralizing capacity. Alkalinity is imparted by bicarbonate, carbonate and hydroxide components of water. The fraction of alkalinity contributed by carbonate is calculated and reported as mg CO ₃ ²⁻ /L.			
ALK-HCO3HCO3-CALC-WP	Water	Alkalinity, Bicarbonate	CALCULATION
The Alkalinity of water is a measure of its acid neutralizing capacity. Alkalinity is imparted by bicarbonate, carbonate and hydroxide components of water. The fraction of alkalinity contributed by bicarbonate is calculated and reported as mg HCO ₃ ⁻ /L.			
ALK-OHOH-CALC-WP	Water	Alkalinity, Hydroxide	CALCULATION
The Alkalinity of water is a measure of its acid neutralizing capacity. Alkalinity is imparted by bicarbonate, carbonate and hydroxide components of water. The fraction of alkalinity contributed by hydroxide is calculated and reported as mg OH ⁻ /L.			
ALK-TITR-WP	Water	Alkalinity, Total (as CaCO ₃)	APHA 2320B
The Alkalinity of water is a measure of its acid neutralizing capacity. Alkalinity is imparted by bicarbonate, carbonate and hydroxide components of water. Total alkalinity is determined by titration with a strong standard mineral acid to the successive HCO ₃ ⁻ and H ₂ CO ₃ endpoints indicated electrometrically.			
CL-L-IC-N-WP	Water	Chloride in Water by IC (Low Level)	EPA 300.1 (mod)
Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.			
EC-WP	Water	Conductivity	APHA 2510B
Conductivity of an aqueous solution refers to its ability to carry an electric current. Conductance of a solution is measured between two spatially fixed and chemically inert electrodes.			
ETL-SOLIDS-CALC-WP	Water	TDS calculated	CALCULATION
F-IC-N-WP	Water	Fluoride in Water by IC	EPA 300.1 (mod)
Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.			
HARDNESS-CALC-WP	Water	Hardness Calculated	APHA 2340B
Hardness (also known as Total Hardness) is calculated from the sum of Calcium and Magnesium concentrations, expressed in CaCO ₃ equivalents. Dissolved Calcium and Magnesium concentrations are preferentially used for the hardness calculation.			
IONBALANCE-CALC-WP	Water	Ion Balance Calculation	APHA 1030E
Cation Sum, Anion Sum, and Ion Balance (as % difference) are calculated based on guidance from APHA Standard Methods (1030E Checking Correctness of Analysis). Because all aqueous solutions are electrically neutral, the calculated ion balance (% difference of cations minus anions) should be near-zero.			
Cation and Anion Sums are the total meq/L concentration of major cations and anions. Dissolved species are used where available. Minor ions are included where data is present. Ion Balance (as % difference) cannot be calculated accurately for waters with very low electrical conductivity (EC), and is reported as "Low EC" where EC < 100 uS/cm (umhos/cm). Ion Balance is calculated as:			
Ion Balance (%) = [Cation Sum - Anion Sum] / [Cation Sum + Anion Sum]			
MET-D-CCMS-WP	Water	Dissolved Metals in Water by CRC ICPMS	APHA 3030B/6020B (mod)

Reference Information

Test Method References:

ALS Test Code	Matrix	Test Description	Method Reference**
Water samples are filtered (0.45 um), preserved with nitric acid, and analyzed by CRC ICPMS.			
Method Limitation (re: Sulfur): Sulfide and volatile sulfur species may not be recovered by this method.			
NO2+NO3-CALC-L-WP	Water	Nitrate+Nitrite	CALCULATION
NO2-L-IC-N-WP	Water	Nitrite in Water by IC (Low Level)	EPA 300.1 (mod)
Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.			
NO3-L-IC-N-WP	Water	Nitrate in Water by IC (Low Level)	EPA 300.1 (mod)
Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.			
PH-WP	Water	pH	APHA 4500H
The pH of a sample is the determination of the activity of the hydrogen ions by potentiometric measurement using a standard hydrogen electrode and a reference electrode.			
SO4-IC-N-WP	Water	Sulfate in Water by IC	EPA 300.1 (mod)
Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.			
TC,EC-QT51-WP	Water	Total Coliform and E.coli	APHA 9223B QT51
This analysis is carried out using procedures adapted from APHA Method 9223B "Enzyme Substrate Coliform Test". E. coli and Total Coliform are determined simultaneously. The sample is mixed with a mixture of hydrolyzable substrates and then sealed in a 51-well packet. The packet is incubated at 35.0 +/- 0.5 degrees C for 18 or 24 hours and then the number of wells exhibiting positive responses are counted. The final results are obtained by comparing the number of positive responses to a probability table.			
TURBIDITY-WP	Water	Turbidity	APHA 2130B (modified)
Turbidity in aqueous matrices is determined by the nephelometric method.			

** ALS test methods may incorporate modifications from specified reference methods to improve performance.

The last two letters of the above test code(s) indicate the laboratory that performed analytical analysis for that test. Refer to the list below:

Laboratory Definition Code	Laboratory Location
WP	ALS ENVIRONMENTAL - WINNIPEG, MANITOBA, CANADA

Chain of Custody Numbers:

GLOSSARY OF REPORT TERMS

Surrogates are compounds that are similar in behaviour to target analyte(s), but that do not normally occur in environmental samples. For applicable tests, surrogates are added to samples prior to analysis as a check on recovery. In reports that display the D.L. column, laboratory objectives for surrogates are listed there.

*mg/kg - milligrams per kilogram based on dry weight of sample
mg/kg wwt - milligrams per kilogram based on wet weight of sample
mg/kg lwt - milligrams per kilogram based on lipid-adjusted weight
mg/L - unit of concentration based on volume, parts per million.*

< - Less than.

D.L. - The reporting limit.

N/A - Result not available. Refer to qualifier code and definition for explanation.

Test results reported relate only to the samples as received by the laboratory.

UNLESS OTHERWISE STATED, ALL SAMPLES WERE RECEIVED IN ACCEPTABLE CONDITION.

Analytical results in unsigned test reports with the DRAFT watermark are subject to change, pending final QC review.



Quality Control Report

Workorder: L2523514

Report Date: 05-NOV-20

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Client: KGS Group Consultants (Winnipeg)
 865 Waverly Street - 3rd Floor
 Winnipeg MB R3T 5P4

Contact: PAUL LINDELL

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
ALK-TITR-WP								
	Water							
Batch	R5272787							
WG3436899-15	DUP	L2523514-8						
Alkalinity, Total (as CaCO3)		326	326		mg/L	0.0	20	30-OCT-20
WG3436899-14	LCS							
Alkalinity, Total (as CaCO3)			96.3		%		85-115	30-OCT-20
WG3436899-24	LCS							
Alkalinity, Total (as CaCO3)			98.3		%		85-115	30-OCT-20
WG3436899-11	MB							
Alkalinity, Total (as CaCO3)			1.1	B	mg/L		1	30-OCT-20
WG3436899-21	MB							
Alkalinity, Total (as CaCO3)			1.5	B	mg/L		1	30-OCT-20
Batch	R5273180							
WG3437150-4	LCS							
Alkalinity, Total (as CaCO3)			98.5		%		85-115	02-NOV-20
WG3437150-1	MB							
Alkalinity, Total (as CaCO3)			<1.0		mg/L		1	02-NOV-20
CL-L-IC-N-WP								
	Water							
Batch	R5278767							
WG3436253-10	LCS							
Chloride (Cl)			96.6		%		90-110	31-OCT-20
WG3436253-6	LCS							
Chloride (Cl)			96.7		%		90-110	31-OCT-20
WG3436253-5	MB							
Chloride (Cl)			<0.10		mg/L		0.1	31-OCT-20
WG3436253-9	MB							
Chloride (Cl)			<0.10		mg/L		0.1	31-OCT-20
EC-WP								
	Water							
Batch	R5272787							
WG3436899-15	DUP	L2523514-8						
Conductivity		790	788		umhos/cm	0.3	10	30-OCT-20
WG3436899-13	LCS							
Conductivity			102.4		%		90-110	30-OCT-20
WG3436899-23	LCS							
Conductivity			103.0		%		90-110	30-OCT-20
WG3436899-11	MB							
Conductivity			<1.0		umhos/cm		1	30-OCT-20
WG3436899-21	MB							
Conductivity			1.6	B	umhos/cm		1	30-OCT-20



Quality Control Report

Workorder: L2523514

Report Date: 05-NOV-20

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Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
EC-WP		Water						
Batch	R5273180							
WG3437150-3	LCS							
Conductivity			100.2		%		90-110	02-NOV-20
WG3437150-1	MB							
Conductivity			<1.0		umhos/cm		1	02-NOV-20
F-IC-N-WP		Water						
Batch	R5278767							
WG3436253-10	LCS							
Fluoride (F)			98.1		%		90-110	31-OCT-20
WG3436253-6	LCS							
Fluoride (F)			98.0		%		90-110	31-OCT-20
WG3436253-5	MB							
Fluoride (F)			<0.020		mg/L		0.02	31-OCT-20
WG3436253-9	MB							
Fluoride (F)			<0.020		mg/L		0.02	31-OCT-20
MET-D-CCMS-WP		Water						
Batch	R5275295							
WG3436937-4	DUP	L2523514-7						
Aluminum (Al)-Dissolved		0.0094	0.0115	DUP-H	mg/L	21	20	02-NOV-20
Antimony (Sb)-Dissolved		<0.00010	<0.00010	RPD-NA	mg/L	N/A	20	02-NOV-20
Arsenic (As)-Dissolved		0.00352	0.00356		mg/L	1.1	20	02-NOV-20
Barium (Ba)-Dissolved		0.195	0.196		mg/L	0.7	20	02-NOV-20
Beryllium (Be)-Dissolved		<0.00010	<0.00010	RPD-NA	mg/L	N/A	20	02-NOV-20
Bismuth (Bi)-Dissolved		<0.000050	<0.000050	RPD-NA	mg/L	N/A	20	02-NOV-20
Boron (B)-Dissolved		0.112	0.116		mg/L	3.0	20	02-NOV-20
Cadmium (Cd)-Dissolved		<0.0000050	<0.0000050	RPD-NA	mg/L	N/A	20	02-NOV-20
Calcium (Ca)-Dissolved		62.7	64.4		mg/L	2.7	20	02-NOV-20
Cesium (Cs)-Dissolved		<0.000010	<0.000010	RPD-NA	mg/L	N/A	20	02-NOV-20
Chromium (Cr)-Dissolved		0.00012	0.00011		mg/L	10	20	02-NOV-20
Cobalt (Co)-Dissolved		<0.00010	<0.00010	RPD-NA	mg/L	N/A	20	02-NOV-20
Copper (Cu)-Dissolved		<0.00020	<0.00020	RPD-NA	mg/L	N/A	20	02-NOV-20
Iron (Fe)-Dissolved		0.026	0.026		mg/L	0.7	20	02-NOV-20
Lead (Pb)-Dissolved		<0.000050	<0.000050	RPD-NA	mg/L	N/A	20	02-NOV-20
Lithium (Li)-Dissolved		0.0341	0.0341		mg/L	0.0	20	02-NOV-20
Magnesium (Mg)-Dissolved		81.2	81.4		mg/L	0.3	20	02-NOV-20
Manganese (Mn)-Dissolved		0.469	0.462		mg/L	1.5	20	02-NOV-20
Molybdenum (Mo)-Dissolved		0.000099	0.000102		mg/L	3.1	20	02-NOV-20



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Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
MET-D-CCMS-WP								
	Water							
Batch	R5275295							
WG3436937-4	DUP	L2523514-7						
Nickel (Ni)-Dissolved		<0.00050	<0.00050	RPD-NA	mg/L	N/A	20	02-NOV-20
Phosphorus (P)-Dissolved		<0.030	<0.030	RPD-NA	mg/L	N/A	20	02-NOV-20
Potassium (K)-Dissolved		4.15	4.12		mg/L	0.8	20	02-NOV-20
Rubidium (Rb)-Dissolved		0.00144	0.00139		mg/L	3.5	20	02-NOV-20
Selenium (Se)-Dissolved		0.000337	0.000398		mg/L	17	20	02-NOV-20
Silicon (Si)-Dissolved		8.12	7.97		mg/L	1.9	20	02-NOV-20
Silver (Ag)-Dissolved		<0.000010	<0.000010	RPD-NA	mg/L	N/A	20	02-NOV-20
Sodium (Na)-Dissolved		23.4	23.2		mg/L	0.8	20	02-NOV-20
Strontium (Sr)-Dissolved		0.711	0.707		mg/L	0.6	20	02-NOV-20
Sulfur (S)-Dissolved		65.2	72.1		mg/L	10	20	02-NOV-20
Tellurium (Te)-Dissolved		<0.00020	<0.00020	RPD-NA	mg/L	N/A	20	02-NOV-20
Thallium (Tl)-Dissolved		<0.000010	<0.000010	RPD-NA	mg/L	N/A	20	02-NOV-20
Thorium (Th)-Dissolved		<0.00010	<0.00010	RPD-NA	mg/L	N/A	20	02-NOV-20
Tin (Sn)-Dissolved		0.00016	0.00016		mg/L	2.9	20	02-NOV-20
Titanium (Ti)-Dissolved		0.00032	0.00042	J	mg/L	0.00010	0.0006	02-NOV-20
Tungsten (W)-Dissolved		0.00189	0.00194		mg/L	2.8	20	02-NOV-20
Uranium (U)-Dissolved		0.000842	0.000872		mg/L	3.5	20	02-NOV-20
Vanadium (V)-Dissolved		<0.00050	<0.00050	RPD-NA	mg/L	N/A	20	02-NOV-20
Zinc (Zn)-Dissolved		<0.0010	<0.0010	RPD-NA	mg/L	N/A	20	02-NOV-20
Zirconium (Zr)-Dissolved		0.00031	0.00031		mg/L	1.8	20	02-NOV-20
WG3436936-2	LCS							
Aluminum (Al)-Dissolved			103.1		%		80-120	02-NOV-20
Antimony (Sb)-Dissolved			99.1		%		80-120	02-NOV-20
Arsenic (As)-Dissolved			101.0		%		80-120	02-NOV-20
Barium (Ba)-Dissolved			100.1		%		80-120	02-NOV-20
Beryllium (Be)-Dissolved			102.2		%		80-120	02-NOV-20
Bismuth (Bi)-Dissolved			99.6		%		80-120	02-NOV-20
Boron (B)-Dissolved			101.8		%		80-120	02-NOV-20
Cadmium (Cd)-Dissolved			101.4		%		80-120	02-NOV-20
Calcium (Ca)-Dissolved			99.98		%		80-120	02-NOV-20
Cesium (Cs)-Dissolved			100.2		%		80-120	02-NOV-20
Chromium (Cr)-Dissolved			101.6		%		80-120	02-NOV-20
Cobalt (Co)-Dissolved			100.7		%		80-120	02-NOV-20
Copper (Cu)-Dissolved			101.8		%		80-120	02-NOV-20

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Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
MET-D-CCMS-WP								
	Water							
Batch	R5275295							
WG3436936-2	LCS							
Iron (Fe)-Dissolved			97.3		%		80-120	02-NOV-20
Lead (Pb)-Dissolved			99.3		%		80-120	02-NOV-20
Lithium (Li)-Dissolved			104.4		%		80-120	02-NOV-20
Magnesium (Mg)-Dissolved			108.0		%		80-120	02-NOV-20
Manganese (Mn)-Dissolved			102.3		%		80-120	02-NOV-20
Molybdenum (Mo)-Dissolved			101.3		%		80-120	02-NOV-20
Nickel (Ni)-Dissolved			100.3		%		80-120	02-NOV-20
Phosphorus (P)-Dissolved			101.0		%		80-120	02-NOV-20
Potassium (K)-Dissolved			102.5		%		80-120	02-NOV-20
Rubidium (Rb)-Dissolved			99.9		%		80-120	02-NOV-20
Selenium (Se)-Dissolved			100.4		%		80-120	02-NOV-20
Silicon (Si)-Dissolved			98.9		%		80-120	02-NOV-20
Silver (Ag)-Dissolved			101.4		%		80-120	02-NOV-20
Sodium (Na)-Dissolved			102.5		%		80-120	02-NOV-20
Strontium (Sr)-Dissolved			101.3		%		80-120	02-NOV-20
Sulfur (S)-Dissolved			103.8		%		80-120	02-NOV-20
Tellurium (Te)-Dissolved			100.8		%		80-120	02-NOV-20
Thallium (Tl)-Dissolved			99.7		%		80-120	02-NOV-20
Thorium (Th)-Dissolved			93.6		%		80-120	02-NOV-20
Tin (Sn)-Dissolved			99.2		%		80-120	02-NOV-20
Titanium (Ti)-Dissolved			96.4		%		80-120	02-NOV-20
Tungsten (W)-Dissolved			97.5		%		80-120	02-NOV-20
Uranium (U)-Dissolved			95.4		%		80-120	02-NOV-20
Vanadium (V)-Dissolved			102.0		%		80-120	02-NOV-20
Zinc (Zn)-Dissolved			101.2		%		80-120	02-NOV-20
Zirconium (Zr)-Dissolved			93.5		%		80-120	02-NOV-20
WG3436937-2	LCS							
Aluminum (Al)-Dissolved			101.8		%		80-120	02-NOV-20
Antimony (Sb)-Dissolved			98.0		%		80-120	02-NOV-20
Arsenic (As)-Dissolved			99.1		%		80-120	02-NOV-20
Barium (Ba)-Dissolved			101.4		%		80-120	02-NOV-20
Beryllium (Be)-Dissolved			95.6		%		80-120	02-NOV-20
Bismuth (Bi)-Dissolved			96.7		%		80-120	02-NOV-20
Boron (B)-Dissolved			99.0		%		80-120	02-NOV-20

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Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
MET-D-CCMS-WP								
	Water							
Batch	R5275295							
WG3436937-2	LCS							
Cadmium (Cd)-Dissolved			102.1		%		80-120	02-NOV-20
Calcium (Ca)-Dissolved			98.4		%		80-120	02-NOV-20
Cesium (Cs)-Dissolved			100.3		%		80-120	02-NOV-20
Chromium (Cr)-Dissolved			98.7		%		80-120	02-NOV-20
Cobalt (Co)-Dissolved			97.7		%		80-120	02-NOV-20
Copper (Cu)-Dissolved			97.5		%		80-120	02-NOV-20
Iron (Fe)-Dissolved			93.6		%		80-120	02-NOV-20
Lead (Pb)-Dissolved			97.4		%		80-120	02-NOV-20
Lithium (Li)-Dissolved			101.7		%		80-120	02-NOV-20
Magnesium (Mg)-Dissolved			104.3		%		80-120	02-NOV-20
Manganese (Mn)-Dissolved			100.6		%		80-120	02-NOV-20
Molybdenum (Mo)-Dissolved			101.3		%		80-120	02-NOV-20
Nickel (Ni)-Dissolved			96.4		%		80-120	02-NOV-20
Phosphorus (P)-Dissolved			103.0		%		80-120	02-NOV-20
Potassium (K)-Dissolved			101.8		%		80-120	02-NOV-20
Rubidium (Rb)-Dissolved			104.9		%		80-120	02-NOV-20
Selenium (Se)-Dissolved			96.6		%		80-120	02-NOV-20
Silicon (Si)-Dissolved			96.5		%		80-120	02-NOV-20
Silver (Ag)-Dissolved			99.0		%		80-120	02-NOV-20
Sodium (Na)-Dissolved			99.2		%		80-120	02-NOV-20
Strontium (Sr)-Dissolved			102.7		%		80-120	02-NOV-20
Sulfur (S)-Dissolved			101.8		%		80-120	02-NOV-20
Tellurium (Te)-Dissolved			94.2		%		80-120	02-NOV-20
Thallium (Tl)-Dissolved			97.8		%		80-120	02-NOV-20
Thorium (Th)-Dissolved			93.6		%		80-120	02-NOV-20
Tin (Sn)-Dissolved			97.9		%		80-120	02-NOV-20
Titanium (Ti)-Dissolved			95.4		%		80-120	02-NOV-20
Tungsten (W)-Dissolved			97.2		%		80-120	02-NOV-20
Uranium (U)-Dissolved			93.5		%		80-120	02-NOV-20
Vanadium (V)-Dissolved			99.6		%		80-120	02-NOV-20
Zinc (Zn)-Dissolved			101.6		%		80-120	02-NOV-20
Zirconium (Zr)-Dissolved			95.9		%		80-120	02-NOV-20
WG3436936-1	MB							
Aluminum (Al)-Dissolved			0.0046	B	mg/L		0.001	02-NOV-20



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Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
MET-D-CCMS-WP								
	Water							
Batch	R5275295							
WG3436936-1	MB							
Antimony (Sb)-Dissolved			<0.00010		mg/L		0.0001	02-NOV-20
Arsenic (As)-Dissolved			<0.00010		mg/L		0.0001	02-NOV-20
Barium (Ba)-Dissolved			<0.00010		mg/L		0.0001	02-NOV-20
Beryllium (Be)-Dissolved			<0.00010		mg/L		0.0001	02-NOV-20
Bismuth (Bi)-Dissolved			<0.000050		mg/L		0.00005	02-NOV-20
Boron (B)-Dissolved			<0.010		mg/L		0.01	02-NOV-20
Cadmium (Cd)-Dissolved			<0.0000050		mg/L		0.000005	02-NOV-20
Calcium (Ca)-Dissolved			<0.050		mg/L		0.05	02-NOV-20
Cesium (Cs)-Dissolved			<0.000010		mg/L		0.00001	02-NOV-20
Chromium (Cr)-Dissolved			<0.00010		mg/L		0.0001	02-NOV-20
Cobalt (Co)-Dissolved			<0.00010		mg/L		0.0001	02-NOV-20
Copper (Cu)-Dissolved			<0.00020		mg/L		0.0002	02-NOV-20
Iron (Fe)-Dissolved			<0.010		mg/L		0.01	02-NOV-20
Lead (Pb)-Dissolved			<0.000050		mg/L		0.00005	02-NOV-20
Lithium (Li)-Dissolved			<0.0010		mg/L		0.001	02-NOV-20
Magnesium (Mg)-Dissolved			<0.0050		mg/L		0.005	02-NOV-20
Manganese (Mn)-Dissolved			<0.00010		mg/L		0.0001	02-NOV-20
Molybdenum (Mo)-Dissolved			<0.000050		mg/L		0.00005	02-NOV-20
Nickel (Ni)-Dissolved			<0.00050		mg/L		0.0005	02-NOV-20
Phosphorus (P)-Dissolved			<0.030		mg/L		0.03	02-NOV-20
Potassium (K)-Dissolved			<0.050		mg/L		0.05	02-NOV-20
Rubidium (Rb)-Dissolved			<0.00020		mg/L		0.0002	02-NOV-20
Selenium (Se)-Dissolved			<0.000050		mg/L		0.00005	02-NOV-20
Silicon (Si)-Dissolved			<0.050		mg/L		0.05	02-NOV-20
Silver (Ag)-Dissolved			<0.000010		mg/L		0.00001	02-NOV-20
Sodium (Na)-Dissolved			<0.050		mg/L		0.05	02-NOV-20
Strontium (Sr)-Dissolved			<0.00010		mg/L		0.0001	02-NOV-20
Sulfur (S)-Dissolved			<0.50		mg/L		0.5	02-NOV-20
Tellurium (Te)-Dissolved			<0.00020		mg/L		0.0002	02-NOV-20
Thallium (Tl)-Dissolved			<0.000010		mg/L		0.00001	02-NOV-20
Thorium (Th)-Dissolved			<0.00010		mg/L		0.0001	02-NOV-20
Tin (Sn)-Dissolved			<0.00010		mg/L		0.0001	02-NOV-20
Titanium (Ti)-Dissolved			<0.00030		mg/L		0.0003	02-NOV-20
Tungsten (W)-Dissolved			<0.00010		mg/L		0.0001	02-NOV-20



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Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
MET-D-CCMS-WP								
	Water							
Batch	R5275295							
WG3436936-1	MB							
Uranium (U)-Dissolved			<0.000010		mg/L		0.00001	02-NOV-20
Vanadium (V)-Dissolved			<0.00050		mg/L		0.0005	02-NOV-20
Zinc (Zn)-Dissolved			<0.0010		mg/L		0.001	02-NOV-20
Zirconium (Zr)-Dissolved			<0.00020		mg/L		0.0002	02-NOV-20
WG3436937-1	MB							
Aluminum (Al)-Dissolved			<0.0010		mg/L		0.001	02-NOV-20
Antimony (Sb)-Dissolved			<0.00010		mg/L		0.0001	02-NOV-20
Arsenic (As)-Dissolved			<0.00010		mg/L		0.0001	02-NOV-20
Barium (Ba)-Dissolved			<0.00010		mg/L		0.0001	02-NOV-20
Beryllium (Be)-Dissolved			<0.00010		mg/L		0.0001	02-NOV-20
Bismuth (Bi)-Dissolved			<0.000050		mg/L		0.00005	02-NOV-20
Boron (B)-Dissolved			<0.010		mg/L		0.01	02-NOV-20
Cadmium (Cd)-Dissolved			<0.0000050		mg/L		0.000005	02-NOV-20
Calcium (Ca)-Dissolved			<0.050		mg/L		0.05	02-NOV-20
Cesium (Cs)-Dissolved			<0.000010		mg/L		0.00001	02-NOV-20
Chromium (Cr)-Dissolved			<0.00010		mg/L		0.0001	02-NOV-20
Cobalt (Co)-Dissolved			<0.00010		mg/L		0.0001	02-NOV-20
Copper (Cu)-Dissolved			<0.00020		mg/L		0.0002	02-NOV-20
Iron (Fe)-Dissolved			<0.010		mg/L		0.01	02-NOV-20
Lead (Pb)-Dissolved			<0.000050		mg/L		0.00005	02-NOV-20
Lithium (Li)-Dissolved			<0.0010		mg/L		0.001	02-NOV-20
Magnesium (Mg)-Dissolved			<0.0050		mg/L		0.005	02-NOV-20
Manganese (Mn)-Dissolved			<0.00010		mg/L		0.0001	02-NOV-20
Molybdenum (Mo)-Dissolved			<0.000050		mg/L		0.00005	02-NOV-20
Nickel (Ni)-Dissolved			<0.00050		mg/L		0.0005	02-NOV-20
Phosphorus (P)-Dissolved			<0.030		mg/L		0.03	02-NOV-20
Potassium (K)-Dissolved			<0.050		mg/L		0.05	02-NOV-20
Rubidium (Rb)-Dissolved			<0.00020		mg/L		0.0002	02-NOV-20
Selenium (Se)-Dissolved			<0.000050		mg/L		0.00005	02-NOV-20
Silicon (Si)-Dissolved			<0.050		mg/L		0.05	02-NOV-20
Silver (Ag)-Dissolved			<0.000010		mg/L		0.00001	02-NOV-20
Sodium (Na)-Dissolved			<0.050		mg/L		0.05	02-NOV-20
Strontium (Sr)-Dissolved			<0.00010		mg/L		0.0001	02-NOV-20
Sulfur (S)-Dissolved			<0.50		mg/L		0.5	02-NOV-20



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Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
MET-D-CCMS-WP								
	Water							
Batch	R5275295							
WG3436937-1	MB							
Tellurium (Te)-Dissolved			<0.00020		mg/L		0.0002	02-NOV-20
Thallium (Tl)-Dissolved			<0.000010		mg/L		0.00001	02-NOV-20
Thorium (Th)-Dissolved			<0.00010		mg/L		0.0001	02-NOV-20
Tin (Sn)-Dissolved			<0.00010		mg/L		0.0001	02-NOV-20
Titanium (Ti)-Dissolved			<0.00030		mg/L		0.0003	02-NOV-20
Tungsten (W)-Dissolved			<0.00010		mg/L		0.0001	02-NOV-20
Uranium (U)-Dissolved			<0.000010		mg/L		0.00001	02-NOV-20
Vanadium (V)-Dissolved			<0.00050		mg/L		0.0005	02-NOV-20
Zinc (Zn)-Dissolved			<0.0010		mg/L		0.001	02-NOV-20
Zirconium (Zr)-Dissolved			<0.00020		mg/L		0.0002	02-NOV-20
WG3436937-5	MS	L2523514-7						
Aluminum (Al)-Dissolved			92.0		%		70-130	02-NOV-20
Antimony (Sb)-Dissolved			91.8		%		70-130	02-NOV-20
Arsenic (As)-Dissolved			93.4		%		70-130	02-NOV-20
Barium (Ba)-Dissolved			N/A	MS-B	%		-	02-NOV-20
Beryllium (Be)-Dissolved			87.1		%		70-130	02-NOV-20
Bismuth (Bi)-Dissolved			70.0		%		70-130	02-NOV-20
Boron (B)-Dissolved			N/A	MS-B	%		-	02-NOV-20
Cadmium (Cd)-Dissolved			88.6		%		70-130	02-NOV-20
Calcium (Ca)-Dissolved			N/A	MS-B	%		-	02-NOV-20
Cesium (Cs)-Dissolved			90.6		%		70-130	02-NOV-20
Chromium (Cr)-Dissolved			87.5		%		70-130	02-NOV-20
Cobalt (Co)-Dissolved			85.3		%		70-130	02-NOV-20
Copper (Cu)-Dissolved			81.7		%		70-130	02-NOV-20
Iron (Fe)-Dissolved			86.5		%		70-130	02-NOV-20
Lead (Pb)-Dissolved			83.7		%		70-130	02-NOV-20
Lithium (Li)-Dissolved			93.0		%		70-130	02-NOV-20
Magnesium (Mg)-Dissolved			N/A	MS-B	%		-	02-NOV-20
Manganese (Mn)-Dissolved			N/A	MS-B	%		-	02-NOV-20
Molybdenum (Mo)-Dissolved			92.1		%		70-130	02-NOV-20
Nickel (Ni)-Dissolved			83.6		%		70-130	02-NOV-20
Phosphorus (P)-Dissolved			96.2		%		70-130	02-NOV-20
Potassium (K)-Dissolved			N/A	MS-B	%		-	02-NOV-20
Rubidium (Rb)-Dissolved			89.0		%		70-130	02-NOV-20

Quality Control Report

Workorder: L2523514

Report Date: 05-NOV-20

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Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
MET-D-CCMS-WP								
	Water							
Batch	R5275295							
WG3436937-5	MS	L2523514-7						
Selenium (Se)-Dissolved			62.4	MES	%		70-130	02-NOV-20
Silicon (Si)-Dissolved			81.9		%		70-130	02-NOV-20
Silver (Ag)-Dissolved			76.1		%		70-130	02-NOV-20
Sodium (Na)-Dissolved			N/A	MS-B	%		-	02-NOV-20
Strontium (Sr)-Dissolved			N/A	MS-B	%		-	02-NOV-20
Sulfur (S)-Dissolved			N/A	MS-B	%		-	02-NOV-20
Tellurium (Te)-Dissolved			75.5		%		70-130	02-NOV-20
Thallium (Tl)-Dissolved			83.2		%		70-130	02-NOV-20
Thorium (Th)-Dissolved			87.8		%		70-130	02-NOV-20
Tin (Sn)-Dissolved			88.6		%		70-130	02-NOV-20
Titanium (Ti)-Dissolved			88.4		%		70-130	02-NOV-20
Tungsten (W)-Dissolved			87.6		%		70-130	02-NOV-20
Uranium (U)-Dissolved			87.5		%		70-130	02-NOV-20
Vanadium (V)-Dissolved			91.0		%		70-130	02-NOV-20
Zinc (Zn)-Dissolved			86.6		%		70-130	02-NOV-20
Zirconium (Zr)-Dissolved			93.4		%		70-130	02-NOV-20
NO2-L-IC-N-WP								
	Water							
Batch	R5278767							
WG3436253-10	LCS							
Nitrite (as N)			97.1		%		90-110	31-OCT-20
WG3436253-6	LCS							
Nitrite (as N)			96.4		%		90-110	31-OCT-20
WG3436253-5	MB							
Nitrite (as N)			<0.0010		mg/L		0.001	31-OCT-20
WG3436253-9	MB							
Nitrite (as N)			<0.0010		mg/L		0.001	31-OCT-20
NO3-L-IC-N-WP								
	Water							
Batch	R5278767							
WG3436253-10	LCS							
Nitrate (as N)			96.9		%		90-110	31-OCT-20
WG3436253-6	LCS							
Nitrate (as N)			96.9		%		90-110	31-OCT-20
WG3436253-5	MB							
Nitrate (as N)			<0.0050		mg/L		0.005	31-OCT-20
WG3436253-9	MB							



Quality Control Report

Workorder: L2523514

Report Date: 05-NOV-20

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Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
NO3-L-IC-N-WP		Water						
Batch	R5278767							
WG3436253-9	MB							
Nitrate (as N)			<0.0050		mg/L		0.005	31-OCT-20
PH-WP		Water						
Batch	R5272787							
WG3436899-15	DUP	L2523514-8						
pH		8.08	8.11	J	pH units	0.03	0.2	30-OCT-20
WG3436899-12	LCS							
pH			7.36		pH units		7.3-7.5	30-OCT-20
WG3436899-22	LCS							
pH			7.35		pH units		7.3-7.5	30-OCT-20
Batch	R5273180							
WG3437150-2	LCS							
pH			7.34		pH units		7.3-7.5	02-NOV-20
SO4-IC-N-WP		Water						
Batch	R5278767							
WG3436253-10	LCS							
Sulfate (SO4)			97.4		%		90-110	31-OCT-20
WG3436253-6	LCS							
Sulfate (SO4)			97.4		%		90-110	31-OCT-20
WG3436253-5	MB							
Sulfate (SO4)			<0.30		mg/L		0.3	31-OCT-20
WG3436253-9	MB							
Sulfate (SO4)			<0.30		mg/L		0.3	31-OCT-20
TC,EC-QT51-WP		Water						
Batch	R5271879							
WG3435308-7	DUP	L2523514-1						
Total Coliforms		0	0		MPN/100mL	0.0	65	29-OCT-20
Escherichia Coli		0	0		MPN/100mL	0.0	65	29-OCT-20
WG3435308-8	DUP	L2523514-3						
Total Coliforms		0	0		MPN/100mL	0.0	65	29-OCT-20
Escherichia Coli		0	0		MPN/100mL	0.0	65	29-OCT-20
WG3435308-1	MB							
Total Coliforms			0		MPN/100mL		1	29-OCT-20
Escherichia Coli			0		MPN/100mL		1	29-OCT-20
WG3435308-2	MB							
Total Coliforms			0		MPN/100mL		1	29-OCT-20



Quality Control Report

Workorder: L2523514

Report Date: 05-NOV-20

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Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
TC,EC-QT51-WP								
	Water							
Batch	R5271879							
WG3435308-2	MB							
Escherichia Coli			0		MPN/100mL		1	29-OCT-20
WG3435308-3	MB							
Total Coliforms			0		MPN/100mL		1	29-OCT-20
Escherichia Coli			0		MPN/100mL		1	29-OCT-20
WG3435308-4	MB							
Total Coliforms			0		MPN/100mL		1	29-OCT-20
Escherichia Coli			0		MPN/100mL		1	29-OCT-20
TURBIDITY-WP								
	Water							
Batch	R5275126							
WG3436977-2	LCS							
Turbidity			99.5		%		85-115	30-OCT-20
WG3436977-5	LCS							
Turbidity			98.5		%		85-115	30-OCT-20
WG3436977-1	MB							
Turbidity			<0.10		NTU		0.1	30-OCT-20
WG3436977-4	MB							
Turbidity			<0.10		NTU		0.1	30-OCT-20

Quality Control Report

Workorder: L2523514

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Legend:

Limit	ALS Control Limit (Data Quality Objectives)
DUP	Duplicate
RPD	Relative Percent Difference
N/A	Not Available
LCS	Laboratory Control Sample
SRM	Standard Reference Material
MS	Matrix Spike
MSD	Matrix Spike Duplicate
ADE	Average Desorption Efficiency
MB	Method Blank
IRM	Internal Reference Material
CRM	Certified Reference Material
CCV	Continuing Calibration Verification
CVS	Calibration Verification Standard
LCSD	Laboratory Control Sample Duplicate

Sample Parameter Qualifier Definitions:

Qualifier	Description
B	Method Blank exceeds ALS DQO. Associated sample results which are < Limit of Reporting or > 5 times blank level are considered reliable.
DUP-H	Duplicate results outside ALS DQO, due to sample heterogeneity.
J	Duplicate results and limits are expressed in terms of absolute difference.
MES	Data Quality Objective was marginally exceeded (by < 10% absolute) for < 10% of analytes in a Multi-Element Scan / Multi-Parameter Scan (considered acceptable as per OMOE & CCME).
MS-B	Matrix Spike recovery could not be accurately calculated due to high analyte background in sample.
RPD-NA	Relative Percent Difference Not Available due to result(s) being less than detection limit.

Quality Control Report

Workorder: L2523514

Report Date: 05-NOV-20

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Hold Time Exceedances:

ALS Product Description	Sample ID	Sampling Date	Date Processed	Rec. HT	Actual HT	Units	Qualifier
Physical Tests							
Turbidity	11	26-OCT-20	30-OCT-20 12:00	3	4	days	EHTR
pH	1	27-OCT-20 10:00	30-OCT-20 12:00	0.25	74	hours	EHTR-FM
	2	28-OCT-20 17:30	30-OCT-20 12:00	0.25	42	hours	EHTR-FM
	3	27-OCT-20 17:10	30-OCT-20 12:00	0.25	67	hours	EHTR-FM
	4	28-OCT-20 12:50	30-OCT-20 12:00	0.25	47	hours	EHTR-FM
	5	27-OCT-20 15:10	30-OCT-20 12:00	0.25	69	hours	EHTR-FM
	6	27-OCT-20 13:40	30-OCT-20 12:00	0.25	70	hours	EHTR-FM
	7	27-OCT-20 11:40	30-OCT-20 12:00	0.25	72	hours	EHTR-FM
	8	28-OCT-20 17:35	30-OCT-20 12:00	0.25	42	hours	EHTR-FM
	9	29-OCT-20 12:25	30-OCT-20 12:00	0.25	24	hours	EHTR-FM
	10	29-OCT-20 11:00	30-OCT-20 12:00	0.25	25	hours	EHTR-FM
	11	26-OCT-20	02-NOV-20 12:00	0.25	168	hours	EHTR-FM
Anions and Nutrients							
Nitrate in Water by IC (Low Level)							
	1	27-OCT-20 10:00	31-OCT-20 05:30	3	4	days	EHTL
	3	27-OCT-20 17:10	31-OCT-20 05:30	3	4	days	EHT
	5	27-OCT-20 15:10	31-OCT-20 05:30	3	4	days	EHTL
	6	27-OCT-20 13:40	31-OCT-20 05:30	3	4	days	EHTL
	7	27-OCT-20 11:40	31-OCT-20 05:30	3	4	days	EHTL
	11	26-OCT-20	31-OCT-20 05:30	3	5	days	EHTR
Nitrite in Water by IC (Low Level)							
	1	27-OCT-20 10:00	31-OCT-20 05:30	3	4	days	EHTL
	3	27-OCT-20 17:10	31-OCT-20 05:30	3	4	days	EHT
	5	27-OCT-20 15:10	31-OCT-20 05:30	3	4	days	EHTL
	6	27-OCT-20 13:40	31-OCT-20 05:30	3	4	days	EHTL
	7	27-OCT-20 11:40	31-OCT-20 05:30	3	4	days	EHTL
	11	26-OCT-20	31-OCT-20 05:30	3	5	days	EHTR
Bacteriological Tests							
Total Coliform and E.coli							
	1	27-OCT-20 10:00	29-OCT-20 18:10	30	56	hours	EHTR
	3	27-OCT-20 17:10	29-OCT-20 18:10	30	49	hours	EHTR
	5	27-OCT-20 15:10	29-OCT-20 18:10	30	51	hours	EHTR
	6	27-OCT-20 13:40	29-OCT-20 18:10	30	53	hours	EHTR
	7	27-OCT-20 11:40	29-OCT-20 18:10	30	54	hours	EHTR
	11	26-OCT-20	29-OCT-20 18:10	30	78	hours	EHTR

Legend & Qualifier Definitions:

- EHTR-FM: Exceeded ALS recommended hold time prior to sample receipt. Field Measurement recommended.
- EHTR: Exceeded ALS recommended hold time prior to sample receipt.
- EHTL: Exceeded ALS recommended hold time prior to analysis. Sample was received less than 24 hours prior to expiry.
- EHT: Exceeded ALS recommended hold time prior to analysis.
- Rec. HT: ALS recommended hold time (see units).

Notes*:
 Where actual sampling date is not provided to ALS, the date (& time) of receipt is used for calculation purposes.
 Where actual sampling time is not provided to ALS, the earlier of 12 noon on the sampling date or the time (& date) of receipt is used for calculation purposes. Samples for L2523514 were received on 29-OCT-20 16:40.

ALS recommended hold times may vary by province. They are assigned to meet known provincial and/or federal government requirements. In the absence of regulatory hold times, ALS establishes recommendations based on guidelines published by the US EPA, APHA Standard Methods, or Environment Canada (where available). For more information, please contact ALS.

Quality Control Report

Workorder: L2523514

Report Date: 05-NOV-20

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The ALS Quality Control Report is provided to ALS clients upon request. ALS includes comprehensive QC checks with every analysis to ensure our high standards of quality are met. Each QC result has a known or expected target value, which is compared against pre-determined data quality objectives to provide confidence in the accuracy of associated test results.

Please note that this report may contain QC results from anonymous Sample Duplicates and Matrix Spikes that do not originate from this Work Order.



KGS Group Consultants (Winnipeg)
865 Waverly Street - 3rd Floor
Winnipeg MB R3T 5P4
ATTN: PAUL LINDELL

Date: 10-NOV-20
PO No.:
WO No.: L2523516
Project Ref: 18-0300-005.2302.004
Sample ID: LSMDC-INLET-1A
Sampled By: PJJ/NB
Date Collected: 28-OCT-20
Lab Sample ID: L2523516-1
Matrix: SW


Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
BTEX plus F1-F4						
Xylenes (Total)	<0.00064		mg/L	0.09	0.02	09-NOV-20
CCME Total Hydrocarbons						
F1-BTEX	<0.10		mg/L			10-NOV-20
Total Hydrocarbons (C6-C50)	<0.38		mg/L			10-NOV-20
CCME PHC F2-F4 in Water						
F2 (C10-C16)	<0.10		mg/L			07-NOV-20
F3 (C16-C34)	<0.25		mg/L			07-NOV-20
F4 (C34-C50)	<0.25		mg/L			07-NOV-20
Surr: 2-Bromobenzotrifluoride	104.0		%			07-NOV-20
BTX plus F1 by GCMS						
Benzene	<0.00050		mg/L	0.005		04-NOV-20
Toluene	<0.0010		mg/L	0.06	0.024	04-NOV-20
Ethyl benzene	<0.00050		mg/L	0.14	0.0016	04-NOV-20
o-Xylene	<0.00050		mg/L			04-NOV-20
m+p-Xylenes	<0.00040		mg/L			04-NOV-20
F1 (C6-C10)	<0.10		mg/L			04-NOV-20
Surr: 4-Bromofluorobenzene (SS)	77.0		%			04-NOV-20
Nitrogen Total						
*Nitrate and Nitrite as N	<0.070		mg/L	10		04-NOV-20
Total Nitrogen	1.21		mg/L			05-NOV-20
Total Kjeldahl Nitrogen						
Total Kjeldahl Nitrogen	1.21		mg/L			05-NOV-20
Nitrite in Water by IC						
*Nitrite (as N)	<0.010		mg/L	1		31-OCT-20
Nitrate in Water by IC						
*Nitrate (as N)	<0.020		mg/L	10		31-OCT-20
Phosphorus (P)-Total Dissolved	0.0078		mg/L			05-NOV-20
Mercury Dissolved						
Dissolved Mercury Filtration Location	FIELD					05-NOV-20
Mercury (Hg)-Dissolved	<0.0000050		mg/L	0.001		06-NOV-20
Mercury (Hg)-Total	<0.0000050		mg/L	0.001		04-NOV-20
Phosphorus (P)-Total	0.0204		mg/L			03-NOV-20
Ammonia, Total (as N)	0.047		mg/L			03-NOV-20
Total Suspended Solids	5.8		mg/L			03-NOV-20
*Turbidity	4.46		NTU			30-OCT-20

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KGS Group Consultants (Winnipeg)
865 Waverly Street - 3rd Floor
Winnipeg MB R3T 5P4
ATTN: PAUL LINDELL

Date: 10-NOV-20
PO No.:
WO No.: L2523516
Project Ref: 18-0300-005.2302.004
Sample ID: LSMDC-INLET-1A
Sampled By: PJJ/NB
Date Collected: 28-OCT-20
Lab Sample ID: L2523516-1
Matrix: SW

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
<p>CDWQG = Health Canada Guideline Limits updated</p> <p>* CDWQG for Nitrate+Nitrite-N is the limit for nitrate only. If present as Nitrate then the limit is 10mg/L < or N.D. = less than detection limit. * Turbidity guideline based on membrane filtration. For guidelines on conventional treatment and slow sand or diatomaceous earth filtration please see Summary Table of Guidelines for Canadian Drinking Water Quality - A blank entry designates no known limit. - A shaded value in the Results column exceeds CDWQG MAC and/ or Aesthetic Objective.</p>	JUNE 2019					
<p>Approved by </p> <hr/> <p>Hua Wo Account Manager</p>						



KGS Group Consultants (Winnipeg)
865 Waverly Street - 3rd Floor
Winnipeg MB R3T 5P4
ATTN: PAUL LINDELL

Date: 10-NOV-20
PO No.:
WO No.: L2523516
Project Ref: 18-0300-005.2302.004
Sample ID: LSMDC-OUTLET-1A
Sampled By: PJJ/NB
Date Collected: 27-OCT-20
Lab Sample ID: L2523516-2
Matrix: SW


Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
BTEX plus F1-F4						
Xylenes (Total)	<0.00064		mg/L	0.09	0.02	09-NOV-20
CCME Total Hydrocarbons						
F1-BTEX	<0.10		mg/L			10-NOV-20
Total Hydrocarbons (C6-C50)	<0.38		mg/L			10-NOV-20
CCME PHC F2-F4 in Water						
F2 (C10-C16)	<0.10		mg/L			07-NOV-20
F3 (C16-C34)	<0.25		mg/L			07-NOV-20
F4 (C34-C50)	<0.25		mg/L			07-NOV-20
Surr: 2-Bromobenzotrifluoride	100.3		%			07-NOV-20
BTX plus F1 by GCMS						
Benzene	<0.00050		mg/L	0.005		04-NOV-20
Toluene	<0.0010		mg/L	0.06	0.024	04-NOV-20
Ethyl benzene	<0.00050		mg/L	0.14	0.0016	04-NOV-20
o-Xylene	<0.00050		mg/L			04-NOV-20
m+p-Xylenes	<0.00040		mg/L			04-NOV-20
F1 (C6-C10)	<0.10		mg/L			04-NOV-20
Surr: 4-Bromofluorobenzene (SS)	78.0		%			04-NOV-20
Nitrogen Total						
*Nitrate and Nitrite as N	<0.070		mg/L	10		04-NOV-20
Total Nitrogen	0.48		mg/L			05-NOV-20
Total Kjeldahl Nitrogen						
Total Kjeldahl Nitrogen	0.48		mg/L			05-NOV-20
Nitrite in Water by IC						
*Nitrite (as N)	<0.010		mg/L	1		31-OCT-20
Nitrate in Water by IC						
*Nitrate (as N)	0.051		mg/L	10		31-OCT-20
Phosphorus (P)-Total Dissolved	0.0313		mg/L			05-NOV-20
Mercury Dissolved						
Dissolved Mercury Filtration Location	FIELD					05-NOV-20
Mercury (Hg)-Dissolved	<0.0000050		mg/L	0.001		06-NOV-20
Mercury (Hg)-Total	<0.0000050		mg/L	0.001		06-NOV-20
Phosphorus (P)-Total	0.0670		mg/L			03-NOV-20
Ammonia, Total (as N)	0.031		mg/L			03-NOV-20
Total Suspended Solids	11.4		mg/L			30-OCT-20
*Turbidity	14.1		NTU			30-OCT-20

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KGS Group Consultants (Winnipeg)
865 Waverly Street - 3rd Floor
Winnipeg MB R3T 5P4
ATTN: PAUL LINDELL

Date: 10-NOV-20
PO No.:
WO No.: L2523516
Project Ref: 18-0300-005.2302.004
Sample ID: LSMDC-OUTLET-1A
Sampled By: PJJ/NB
Date Collected: 27-OCT-20
Lab Sample ID: L2523516-2
Matrix: SW

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
<p>CDWQG = Health Canada Guideline Limits updated</p> <p>* CDWQG for Nitrate+Nitrite-N is the limit for nitrate only. If present as Nitrate then the limit is 10mg/L < or N.D. = less than detection limit. * Turbidity guideline based on membrane filtration. For guidelines on conventional treatment and slow sand or diatomaceous earth filtration please see Summary Table of Guidelines for Canadian Drinking Water Quality - A blank entry designates no known limit. - A shaded value in the Results column exceeds CDWQG MAC and/ or Aesthetic Objective.</p>	JUNE 2019					
<p>Approved by </p> <hr/> <p>Hua Wo Account Manager</p>						



KGS Group Consultants (Winnipeg)
865 Waverly Street - 3rd Floor
Winnipeg MB R3T 5P4
ATTN: PAUL LINDELL

Date: 10-NOV-20
PO No.:
WO No.: L2523516
Project Ref: 18-0300-005.2302.004
Sample ID: BC-02
Sampled By: P.JL/NB
Date Collected: 28-OCT-20
Lab Sample ID: L2523516-3
Matrix: SW

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
BTEX plus F1-F4						
Xylenes (Total)	<0.00064		mg/L	0.09	0.02	09-NOV-20
CCME Total Hydrocarbons						
F1-BTEX	<0.10		mg/L			10-NOV-20
Total Hydrocarbons (C6-C50)	<0.38		mg/L			10-NOV-20
CCME PHC F2-F4 in Water						
F2 (C10-C16)	<0.10		mg/L			07-NOV-20
F3 (C16-C34)	<0.25		mg/L			07-NOV-20
F4 (C34-C50)	<0.25		mg/L			07-NOV-20
Surr: 2-Bromobenzotrifluoride	101.2		%			07-NOV-20
BTX plus F1 by GCMS						
Benzene	<0.00050		mg/L	0.005		04-NOV-20
Toluene	<0.0010		mg/L	0.06	0.024	04-NOV-20
Ethyl benzene	<0.00050		mg/L	0.14	0.0016	04-NOV-20
o-Xylene	<0.00050		mg/L			04-NOV-20
m+p-Xylenes	<0.00040		mg/L			04-NOV-20
F1 (C6-C10)	<0.10		mg/L			04-NOV-20
Surr: 4-Bromofluorobenzene (SS)	79.0		%			04-NOV-20
Nitrogen Total						
*Nitrate and Nitrite as N	<0.070		mg/L	10		04-NOV-20
Total Nitrogen	1.28		mg/L			05-NOV-20
Total Kjeldahl Nitrogen						
Total Kjeldahl Nitrogen	1.28		mg/L			05-NOV-20
Nitrite in Water by IC						
*Nitrite (as N)	<0.010		mg/L	1		31-OCT-20
Nitrate in Water by IC						
*Nitrate (as N)	0.020		mg/L	10		31-OCT-20
Phosphorus (P)-Total Dissolved	0.0189		mg/L			05-NOV-20
Mercury Dissolved						
Dissolved Mercury Filtration Location	FIELD					05-NOV-20
Mercury (Hg)-Dissolved	<0.0000050		mg/L	0.001		06-NOV-20
Mercury (Hg)-Total	<0.0000050		mg/L	0.001		06-NOV-20
Phosphorus (P)-Total	0.0162		mg/L			03-NOV-20
Ammonia, Total (as N)	0.026		mg/L			05-NOV-20
Total Suspended Solids	8.6		mg/L			03-NOV-20
*Turbidity	5.25		NTU			30-OCT-20

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KGS Group Consultants (Winnipeg)
865 Waverly Street - 3rd Floor
Winnipeg MB R3T 5P4
ATTN: PAUL LINDELL

Date: 10-NOV-20
PO No.:
WO No.: L2523516
Project Ref: 18-0300-005.2302.004
Sample ID: BC-02
Sampled By: PJJ/NB
Date Collected: 28-OCT-20
Lab Sample ID: L2523516-3
Matrix: SW

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
<p>CDWQG = Health Canada Guideline Limits updated JUNE 2019</p> <p>* CDWQG for Nitrate+Nitrite-N is the limit for nitrate only. If present as Nitrate then the limit is 10mg/L < or N.D. = less than detection limit. * Turbidity guideline based on membrane filtration. For guidelines on conventional treatment and slow sand or diatomaceous earth filtration please see Summary Table of Guidelines for Canadian Drinking Water Quality - A blank entry designates no known limit. - A shaded value in the Results column exceeds CDWQG MAC and/ or Aesthetic Objective.</p>						
<p>Approved by <u><i>Hua Wo</i></u> Hua Wo Account Manager</p>						



KGS Group Consultants (Winnipeg)
865 Waverly Street - 3rd Floor
Winnipeg MB R3T 5P4
ATTN: PAUL LINDELL

Date: 10-NOV-20
PO No.:
WO No.: L2523516
Project Ref: 18-0300-005.2302.004
Sample ID: BC-05
Sampled By: P.JL/NB
Date Collected: 28-OCT-20
Lab Sample ID: L2523516-4
Matrix: SW

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
BTEX plus F1-F4						
Xylenes (Total)	<0.00064		mg/L	0.09	0.02	09-NOV-20
CCME Total Hydrocarbons						
F1-BTEX	<0.10		mg/L			10-NOV-20
Total Hydrocarbons (C6-C50)	<0.38		mg/L			10-NOV-20
CCME PHC F2-F4 in Water						
F2 (C10-C16)	<0.10		mg/L			07-NOV-20
F3 (C16-C34)	<0.25		mg/L			07-NOV-20
F4 (C34-C50)	<0.25		mg/L			07-NOV-20
Surr: 2-Bromobenzotrifluoride	100.6		%			07-NOV-20
BTX plus F1 by GCMS						
Benzene	<0.00050		mg/L	0.005		04-NOV-20
Toluene	<0.0010		mg/L	0.06	0.024	04-NOV-20
Ethyl benzene	<0.00050		mg/L	0.14	0.0016	04-NOV-20
o-Xylene	<0.00050		mg/L			04-NOV-20
m+p-Xylenes	<0.00040		mg/L			04-NOV-20
F1 (C6-C10)	<0.10		mg/L			04-NOV-20
Surr: 4-Bromofluorobenzene (SS)	80.0		%			04-NOV-20
Nitrogen Total						
*Nitrate and Nitrite as N	<0.070		mg/L	10		04-NOV-20
Total Nitrogen	1.07		mg/L			05-NOV-20
Total Kjeldahl Nitrogen						
Total Kjeldahl Nitrogen	1.07		mg/L			05-NOV-20
Nitrite in Water by IC						
*Nitrite (as N)	<0.010		mg/L	1		31-OCT-20
Nitrate in Water by IC						
*Nitrate (as N)	<0.020		mg/L	10		31-OCT-20
Phosphorus (P)-Total Dissolved	0.0064		mg/L			05-NOV-20
Mercury Dissolved						
Dissolved Mercury Filtration Location	FIELD					05-NOV-20
Mercury (Hg)-Dissolved	<0.0000050		mg/L	0.001		06-NOV-20
Mercury (Hg)-Total	<0.0000050		mg/L	0.001		06-NOV-20
Phosphorus (P)-Total	0.0223		mg/L			03-NOV-20
Ammonia, Total (as N)	0.016		mg/L			03-NOV-20
Total Suspended Solids	10.8		mg/L			03-NOV-20
*Turbidity	5.19		NTU			30-OCT-20



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Date: 10-NOV-20
PO No.:
WO No.: L2523516
Project Ref: 18-0300-005.2302.004
Sample ID: BC-05
Sampled By: PJJ/NB
Date Collected: 28-OCT-20
Lab Sample ID: L2523516-4
Matrix: SW

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
<p>CDWQG = Health Canada Guideline Limits updated JUNE 2019</p> <p>* CDWQG for Nitrate+Nitrite-N is the limit for nitrate only. If present as Nitrate then the limit is 10mg/L < or N.D. = less than detection limit. * Turbidity guideline based on membrane filtration. For guidelines on conventional treatment and slow sand or diatomaceous earth filtration please see Summary Table of Guidelines for Canadian Drinking Water Quality - A blank entry designates no known limit. - A shaded value in the Results column exceeds CDWQG MAC and/ or Aesthetic Objective.</p>						
<p>Approved by <u><i>Hua Wo</i></u> Hua Wo Account Manager</p>						



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ATTN: PAUL LINDELL


Date: 10-NOV-20
PO No.:
WO No.: L2523516
Project Ref: 18-0300-005.2302.004
Sample ID: CR3-1
Sampled By: P.JL/NB
Date Collected: 28-OCT-20
Lab Sample ID: L2523516-5
Matrix: SW

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
BTEX plus F1-F4						
Xylenes (Total)	<0.00064		mg/L	0.09	0.02	09-NOV-20
CCME Total Hydrocarbons						
F1-BTEX	<0.10		mg/L			10-NOV-20
Total Hydrocarbons (C6-C50)	<0.38		mg/L			10-NOV-20
CCME PHC F2-F4 in Water						
F2 (C10-C16)	<0.10		mg/L			07-NOV-20
F3 (C16-C34)	<0.25		mg/L			07-NOV-20
F4 (C34-C50)	<0.25		mg/L			07-NOV-20
Surr: 2-Bromobenzotrifluoride	100.0		%			07-NOV-20
BTX plus F1 by GCMS						
Benzene	<0.00050		mg/L	0.005		04-NOV-20
Toluene	<0.0010		mg/L	0.06	0.024	04-NOV-20
Ethyl benzene	<0.00050		mg/L	0.14	0.0016	04-NOV-20
o-Xylene	<0.00050		mg/L			04-NOV-20
m+p-Xylenes	<0.00040		mg/L			04-NOV-20
F1 (C6-C10)	<0.10		mg/L			04-NOV-20
Surr: 4-Bromofluorobenzene (SS)	76.0		%			04-NOV-20
Nitrogen Total						
*Nitrate and Nitrite as N	<0.070		mg/L	10		04-NOV-20
Total Nitrogen	0.50		mg/L			05-NOV-20
Total Kjeldahl Nitrogen						
Total Kjeldahl Nitrogen	0.50		mg/L			05-NOV-20
Nitrite in Water by IC						
*Nitrite (as N)	<0.010		mg/L	1		31-OCT-20
Nitrate in Water by IC						
*Nitrate (as N)	<0.020		mg/L	10		31-OCT-20
Phosphorus (P)-Total Dissolved	0.0029		mg/L			10-NOV-20
Mercury Dissolved						
Dissolved Mercury Filtration Location	FIELD					05-NOV-20
Mercury (Hg)-Dissolved	<0.0000050		mg/L	0.001		06-NOV-20
Mercury (Hg)-Total	<0.0000050		mg/L	0.001		06-NOV-20
Phosphorus (P)-Total	0.0051		mg/L			03-NOV-20
Ammonia, Total (as N)	<0.010		mg/L			03-NOV-20
Total Suspended Solids	<3.0		mg/L			03-NOV-20
*Turbidity	0.16		NTU			30-OCT-20



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Date: 10-NOV-20
PO No.:
WO No.: L2523516
Project Ref: 18-0300-005.2302.004
Sample ID: CR3-1
Sampled By: PJJ/NB
Date Collected: 28-OCT-20
Lab Sample ID: L2523516-5
Matrix: SW

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
<p>CDWQG = Health Canada Guideline Limits updated</p> <p>* CDWQG for Nitrate+Nitrite-N is the limit for nitrate only. If present as Nitrate then the limit is 10mg/L < or N.D. = less than detection limit. * Turbidity guideline based on membrane filtration. For guidelines on conventional treatment and slow sand or diatomaceous earth filtration please see Summary Table of Guidelines for Canadian Drinking Water Quality - A blank entry designates no known limit. - A shaded value in the Results column exceeds CDWQG MAC and/ or Aesthetic Objective.</p>	JUNE 2019					
<p>Approved by </p> <hr/> <p>Hua Wo Account Manager</p>						



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Date: 10-NOV-20
PO No.:
WO No.: L2523516
Project Ref: 18-0300-005.2302.004
Sample ID: CR3-2
Sampled By: P.JL/NB
Date Collected: 28-OCT-20
Lab Sample ID: L2523516-6
Matrix: SW

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
BTEX plus F1-F4						
Xylenes (Total)	<0.00064		mg/L	0.09	0.02	09-NOV-20
CCME Total Hydrocarbons						
F1-BTEX	<0.10		mg/L			10-NOV-20
Total Hydrocarbons (C6-C50)	<0.38		mg/L			10-NOV-20
CCME PHC F2-F4 in Water						
F2 (C10-C16)	<0.10		mg/L			07-NOV-20
F3 (C16-C34)	<0.25		mg/L			07-NOV-20
F4 (C34-C50)	<0.25		mg/L			07-NOV-20
Surr: 2-Bromobenzotrifluoride	100.7		%			07-NOV-20
BTX plus F1 by GCMS						
Benzene	<0.00050		mg/L	0.005		04-NOV-20
Toluene	<0.0010		mg/L	0.06	0.024	04-NOV-20
Ethyl benzene	<0.00050		mg/L	0.14	0.0016	04-NOV-20
o-Xylene	<0.00050		mg/L			04-NOV-20
m+p-Xylenes	<0.00040		mg/L			04-NOV-20
F1 (C6-C10)	<0.10		mg/L			04-NOV-20
Surr: 4-Bromofluorobenzene (SS)	79.0		%			04-NOV-20
Nitrogen Total						
*Nitrate and Nitrite as N	<0.070		mg/L	10		04-NOV-20
Total Nitrogen	0.53		mg/L			05-NOV-20
Total Kjeldahl Nitrogen						
Total Kjeldahl Nitrogen	0.53		mg/L			05-NOV-20
Nitrite in Water by IC						
*Nitrite (as N)	<0.010		mg/L	1		31-OCT-20
Nitrate in Water by IC						
*Nitrate (as N)	0.064		mg/L	10		31-OCT-20
Phosphorus (P)-Total Dissolved	0.0050		mg/L			05-NOV-20
Mercury Dissolved						
Dissolved Mercury Filtration Location	FIELD					05-NOV-20
Mercury (Hg)-Dissolved	<0.0000050		mg/L	0.001		06-NOV-20
Mercury (Hg)-Total	<0.0000050		mg/L	0.001		06-NOV-20
Phosphorus (P)-Total	0.0104		mg/L			03-NOV-20
Ammonia, Total (as N)	0.017		mg/L			03-NOV-20
Total Suspended Solids	<3.0		mg/L			03-NOV-20
*Turbidity	0.89		NTU			30-OCT-20



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Winnipeg MB R3T 5P4
ATTN: PAUL LINDELL

Date: 10-NOV-20
PO No.:
WO No.: L2523516
Project Ref: 18-0300-005.2302.004
Sample ID: CR3-2
Sampled By: PJJ/NB
Date Collected: 28-OCT-20
Lab Sample ID: L2523516-6
Matrix: SW

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
<p>CDWQG = Health Canada Guideline Limits updated</p> <p>* CDWQG for Nitrate+Nitrite-N is the limit for nitrate only. If present as Nitrate then the limit is 10mg/L < or N.D. = less than detection limit. * Turbidity guideline based on membrane filtration. For guidelines on conventional treatment and slow sand or diatomaceous earth filtration please see Summary Table of Guidelines for Canadian Drinking Water Quality - A blank entry designates no known limit. - A shaded value in the Results column exceeds CDWQG MAC and/ or Aesthetic Objective.</p>	JUNE 2019					
<p>Approved by </p> <hr/> <p>Hua Wo Account Manager</p>						



KGS Group Consultants (Winnipeg)
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Winnipeg MB R3T 5P4
ATTN: PAUL LINDELL


Date: 10-NOV-20
PO No.:
WO No.: L2523516
Project Ref: 18-0300-005.2302.004
Sample ID: SW-R3
Sampled By: P.JL/NB
Date Collected: 28-OCT-20
Lab Sample ID: L2523516-7
Matrix: SW

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
BTEX plus F1-F4						
Xylenes (Total)	<0.00064		mg/L	0.09	0.02	09-NOV-20
CCME Total Hydrocarbons						
F1-BTEX	<0.10		mg/L			10-NOV-20
Total Hydrocarbons (C6-C50)	<0.38		mg/L			10-NOV-20
CCME PHC F2-F4 in Water						
F2 (C10-C16)	<0.10		mg/L			07-NOV-20
F3 (C16-C34)	<0.25		mg/L			07-NOV-20
F4 (C34-C50)	<0.25		mg/L			07-NOV-20
Surr: 2-Bromobenzotrifluoride	102.5		%			07-NOV-20
BTX plus F1 by GCMS						
Benzene	<0.00050		mg/L	0.005		04-NOV-20
Toluene	<0.0010		mg/L	0.06	0.024	04-NOV-20
Ethyl benzene	<0.00050		mg/L	0.14	0.0016	04-NOV-20
o-Xylene	<0.00050		mg/L			04-NOV-20
m+p-Xylenes	<0.00040		mg/L			04-NOV-20
F1 (C6-C10)	<0.10		mg/L			04-NOV-20
Surr: 4-Bromofluorobenzene (SS)	79.0		%			04-NOV-20
Nitrogen Total						
*Nitrate and Nitrite as N	<0.070		mg/L	10		04-NOV-20
Total Nitrogen	0.49		mg/L			05-NOV-20
Total Kjeldahl Nitrogen						
Total Kjeldahl Nitrogen	0.49		mg/L			05-NOV-20
Nitrite in Water by IC						
*Nitrite (as N)	<0.010		mg/L	1		31-OCT-20
Nitrate in Water by IC						
*Nitrate (as N)	<0.020		mg/L	10		31-OCT-20
Phosphorus (P)-Total Dissolved	0.0028		mg/L			10-NOV-20
Mercury Dissolved						
Dissolved Mercury Filtration Location	FIELD					05-NOV-20
Mercury (Hg)-Dissolved	<0.0000050		mg/L	0.001		06-NOV-20
Mercury (Hg)-Total	<0.0000050		mg/L	0.001		06-NOV-20
Phosphorus (P)-Total	0.0052		mg/L			05-NOV-20
Ammonia, Total (as N)	<0.010		mg/L			03-NOV-20
Total Suspended Solids	<3.0		mg/L			03-NOV-20
*Turbidity	1.58		NTU			30-OCT-20



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Winnipeg MB R3T 5P4
ATTN: PAUL LINDELL

Date: 10-NOV-20
PO No.:
WO No.: L2523516
Project Ref: 18-0300-005.2302.004
Sample ID: SW-R3
Sampled By: PJJ/NB
Date Collected: 28-OCT-20
Lab Sample ID: L2523516-7
Matrix: SW

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
<p>CDWQG = Health Canada Guideline Limits updated</p> <p>* CDWQG for Nitrate+Nitrite-N is the limit for nitrate only. If present as Nitrate then the limit is 10mg/L < or N.D. = less than detection limit. * Turbidity guideline based on membrane filtration. For guidelines on conventional treatment and slow sand or diatomaceous earth filtration please see Summary Table of Guidelines for Canadian Drinking Water Quality - A blank entry designates no known limit. - A shaded value in the Results column exceeds CDWQG MAC and/ or Aesthetic Objective.</p>	JUNE 2019					
<p>Approved by </p> <hr/> <p>Hua Wo Account Manager</p>						



KGS Group Consultants (Winnipeg)
865 Waverly Street - 3rd Floor
Winnipeg MB R3T 5P4
ATTN: PAUL LINDELL

Date: 10-NOV-20
PO No.:
WO No.: L2523516
Project Ref: 18-0300-005.2302.004
Sample ID: SW-100
Sampled By: P.JL/NB
Date Collected: 28-OCT-20
Lab Sample ID: L2523516-8
Matrix: SW

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
BTEX plus F1-F4						
Xylenes (Total)	<0.00064		mg/L	0.09	0.02	09-NOV-20
CCME Total Hydrocarbons						
F1-BTEX	<0.10		mg/L			10-NOV-20
Total Hydrocarbons (C6-C50)	<0.38		mg/L			10-NOV-20
CCME PHC F2-F4 in Water						
F2 (C10-C16)	<0.10		mg/L			07-NOV-20
F3 (C16-C34)	<0.25		mg/L			07-NOV-20
F4 (C34-C50)	<0.25		mg/L			07-NOV-20
Surr: 2-Bromobenzotrifluoride	100.7		%			07-NOV-20
BTX plus F1 by GCMS						
Benzene	<0.00050		mg/L	0.005		05-NOV-20
Toluene	<0.0010		mg/L	0.06	0.024	05-NOV-20
Ethyl benzene	<0.00050		mg/L	0.14	0.0016	05-NOV-20
o-Xylene	<0.00050		mg/L			05-NOV-20
m+p-Xylenes	<0.00040		mg/L			05-NOV-20
F1 (C6-C10)	<0.10		mg/L			05-NOV-20
Surr: 4-Bromofluorobenzene (SS)	78.0		%			05-NOV-20
Nitrogen Total						
*Nitrate and Nitrite as N	<0.070		mg/L	10		04-NOV-20
Total Nitrogen	0.48		mg/L			05-NOV-20
Total Kjeldahl Nitrogen						
Total Kjeldahl Nitrogen	0.48		mg/L			05-NOV-20
Nitrite in Water by IC						
*Nitrite (as N)	<0.010		mg/L	1		31-OCT-20
Nitrate in Water by IC						
*Nitrate (as N)	<0.020		mg/L	10		31-OCT-20
Phosphorus (P)-Total Dissolved	0.0034		mg/L			10-NOV-20
Mercury Dissolved						
Dissolved Mercury Filtration Location	FIELD					05-NOV-20
Mercury (Hg)-Dissolved	<0.0000050		mg/L	0.001		06-NOV-20
Mercury (Hg)-Total	<0.0000050		mg/L	0.001		06-NOV-20
Phosphorus (P)-Total	0.0045		mg/L			05-NOV-20
Ammonia, Total (as N)	0.013		mg/L			03-NOV-20
Total Suspended Solids	<3.0		mg/L			03-NOV-20
*Turbidity	1.54		NTU			30-OCT-20



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Winnipeg MB R3T 5P4
ATTN: PAUL LINDELL

Date: 10-NOV-20
PO No.:
WO No.: L2523516
Project Ref: 18-0300-005.2302.004
Sample ID: SW-100
Sampled By: PJJ/NB
Date Collected: 28-OCT-20
Lab Sample ID: L2523516-8
Matrix: SW

Test Description	Result	Qualifier	Units of Measure	CDWQG MAC	Aesthetic Objective	Date Analyzed
<p>CDWQG = Health Canada Guideline Limits updated JUNE 2019</p> <p>* CDWQG for Nitrate+Nitrite-N is the limit for nitrate only. If present as Nitrate then the limit is 10mg/L < or N.D. = less than detection limit. * Turbidity guideline based on membrane filtration. For guidelines on conventional treatment and slow sand or diatomaceous earth filtration please see Summary Table of Guidelines for Canadian Drinking Water Quality - A blank entry designates no known limit. - A shaded value in the Results column exceeds CDWQG MAC and/ or Aesthetic Objective.</p>						
<p>Approved by <u><i>Hua Wo</i></u> Hua Wo Account Manager</p>						

Guidelines & Objectives

Health Canada MAC Health Related Criteria Limits

Nitrate/Nitrite-N*	Criteria limit is 10 mg/L (1.0 mg/L if present as all Nitrite-N). High concentrations may contribute to blue baby syndrome in infants.
Lead*	A cumulative body poison, uncommon in naturally occurring hard waters.
Fluoride*	Present in fluoridated water supplies at 0.8 mg/L to reduce dental caries. Elevated levels causes fluorosis (mottling of teeth).
Total Coliforms*	Criteria is 0 CFU/100mL. Adverse health effects.
E. Coli*	Criteria is 0 CFU/100 mL. Certain E. Coli bacteria can be life threatening.
Manganese*	Criteria limit is 0.12 mg/L. Possible neurological effects in infants.

*Health Canada Canadian Drinking Water Quality Guidelines (MAC limit)

Aesthetic Objective Concentration Levels

Alkalinity	Acid neutralizing capacity. Usually a measure of carbonate and bicarbonates and calculated and reported as calcium carbonate.
Balance	Quality control parameter ratioing cations to anions
Bicarbonate	See Alkalinity. Report as the anion HCO ₃ -1
Carbonate	See Alkalinity. Reported at the anion CO ₃ -2
Calcium	See Hardness. Common major cation of water chemistry.
Chloride	Common major anion of water chemistry.
Conductance	Physical test measuring water salinity (dissolved ions or solids)
Hardness	Classical measure or capacity of water to precipitate soap (chiefly calcium and magnesium ions). Causes scaling tendency in water if carbonates/bicarbonates are present (if >200 mg/L). For drinking water purposes waters with results <200 mg/L are considered acceptable, results >200 mg/L are considered poor but can be tolerated. Results >500 mg/L are unacceptable.
Hydroxide	See alkalinity
Magnesium	See hardness. Common major cation of water chemistry. Elevated levels (>125 mg/L) may exert a cathartic or diuretic action.
pH	Measure of water acidity/alkalinity. Normal range is 7.0-8.5.
Potassium	Common major cation of water chemistry.
Sodium	Common major cation of water chemistry. Measure of salinity (saltiness).The aesthetic objective (not related to health) for sodium in drinking water is 200 mg/L. However, where sodium concentration of the drinking water exceeds 20 mg/L, it is recommended that any person on a sodium restricted diet consult with his/her physician or Medical Officer of Health concerning the use of that water.
Sulphate	Common major anion of water chemistry. Elevated levels may exert a cathartic or diuretic action.
Total Dissolved Solids	A measure of water salinity.
Iron	Causes staining to laundry and porcelain and astringent taste. Oxidizes to red-brown precipitate on exposure to air.
Heterotrophic Plate Count	Criteria is 500 cfu/mL Measure of heterotrophic bacteria present.

GLOSSARY OF REPORT TERMS

Surrogates are compounds that are similar in behaviour to target analyte(s), but that do not normally occur in environmental samples. For applicable tests, surrogates are added to samples prior to analysis as a check on recovery. In reports that display the D.L. column, laboratory objectives for surrogates are listed there.

mg/kg - milligrams per kilogram based on dry weight of sample

mg/kg wwt - milligrams per kilogram based on wet weight of sample

mg/kg lwt - milligrams per kilogram based on lipid-adjusted weight

mg/L - unit of concentration based on volume, parts per million.

< - Less than.

D.L. - The reporting limit.

N/A - Result not available. Refer to qualifier code and definition for explanation.

Test results reported relate only to the samples as received by the laboratory.

UNLESS OTHERWISE STATED, ALL SAMPLES WERE RECEIVED IN ACCEPTABLE CONDITION.

Analytical results in unsigned test reports with the DRAFT watermark are subject to change, pending final QC review.

Quality Control Report

Workorder: L2523516

Report Date: 10-NOV-20

Page 1 of 7

Client: KGS Group Consultants (Winnipeg)
 865 Waverly Street - 3rd Floor
 Winnipeg MB R3T 5P4

Contact: PAUL LINDELL

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
BTEXS+F1-HSMS-WP								
	Water							
Batch	R5281357							
WG3438951-4	DUP	L2523516-1						
Benzene		<0.00050	<0.00050	RPD-NA	mg/L	N/A	30	04-NOV-20
Toluene		<0.0010	<0.0010	RPD-NA	mg/L	N/A	30	04-NOV-20
Ethyl benzene		<0.00050	<0.00050	RPD-NA	mg/L	N/A	30	04-NOV-20
o-Xylene		<0.00050	<0.00050	RPD-NA	mg/L	N/A	30	04-NOV-20
m+p-Xylenes		<0.00040	<0.00040	RPD-NA	mg/L	N/A	30	04-NOV-20
F1 (C6-C10)		<0.10	<0.10	RPD-NA	mg/L	N/A	30	04-NOV-20
WG3438951-2	LCS							
Benzene			113.0		%		70-130	04-NOV-20
Toluene			80.0		%		70-130	04-NOV-20
Ethyl benzene			83.4		%		70-130	04-NOV-20
o-Xylene			101.8		%		70-130	04-NOV-20
m+p-Xylenes			112.4		%		70-130	04-NOV-20
WG3438951-3	LCS							
F1 (C6-C10)			122.4		%		70-130	04-NOV-20
WG3438951-1	MB							
Benzene			<0.00050		mg/L		0.0005	04-NOV-20
Toluene			<0.0010		mg/L		0.001	04-NOV-20
Ethyl benzene			<0.00050		mg/L		0.0005	04-NOV-20
o-Xylene			<0.00050		mg/L		0.0005	04-NOV-20
m+p-Xylenes			<0.00040		mg/L		0.0004	04-NOV-20
F1 (C6-C10)			<0.10		mg/L		0.1	04-NOV-20
Surrogate: 4-Bromofluorobenzene (SS)			80.0		%		70-130	04-NOV-20
WG3438951-5	MS	L2523516-2						
Benzene			101.3		%		50-150	04-NOV-20
Toluene			84.9		%		50-150	04-NOV-20
Ethyl benzene			89.8		%		50-150	04-NOV-20
o-Xylene			107.5		%		50-150	04-NOV-20
m+p-Xylenes			107.6		%		50-150	04-NOV-20
WG3438951-6	MS	L2523516-3						
F1 (C6-C10)			103.8		%		50-150	04-NOV-20
F2-F4-FID-WP								
	Water							
Batch	R5283401							
WG3440738-2	LCS							
F2 (C10-C16)			92.6		%		70-130	07-NOV-20
F3 (C16-C34)			88.8		%		70-130	07-NOV-20



Quality Control Report

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Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
F2-F4-FID-WP		Water						
Batch R5283401								
WG3440738-2	LCS							
F4 (C34-C50)			93.5		%		70-130	07-NOV-20
WG3440738-1	MB							
F2 (C10-C16)			<0.10		mg/L		0.1	07-NOV-20
F3 (C16-C34)			<0.25		mg/L		0.25	07-NOV-20
F4 (C34-C50)			<0.25		mg/L		0.25	07-NOV-20
Surrogate: 2-Bromobenzotrifluoride			106.2		%		60-140	07-NOV-20
HG-D-CVAA-WP		Water						
Batch R5281894								
WG3440773-2	LCS							
Mercury (Hg)-Dissolved			98.8		%		80-120	06-NOV-20
WG3440773-1	MB							
Mercury (Hg)-Dissolved			<0.000005C		mg/L		0.000005	06-NOV-20
HG-T-CVAA-WP		Water						
Batch R5280436								
WG3439608-2	LCS							
Mercury (Hg)-Total			100.5		%		80-120	04-NOV-20
WG3439608-1	MB							
Mercury (Hg)-Total			<0.000005C		mg/L		0.000005	04-NOV-20
Batch R5281894								
WG3440770-3	DUP	L2523516-2						
Mercury (Hg)-Total		<0.0000050	<0.000005C	RPD-NA	mg/L	N/A	20	06-NOV-20
WG3440770-2	LCS							
Mercury (Hg)-Total			98.3		%		80-120	06-NOV-20
WG3440770-1	MB							
Mercury (Hg)-Total			<0.000005C		mg/L		0.000005	06-NOV-20
WG3440770-4	MS	L2523516-3						
Mercury (Hg)-Total			78.9		%		70-130	06-NOV-20
N-TOTKJ-WP		Water						
Batch R5281040								
WG3435825-2	LCS							
Total Kjeldahl Nitrogen			102.1		%		75-125	05-NOV-20
WG3435825-1	MB							
Total Kjeldahl Nitrogen			<0.20		mg/L		0.2	05-NOV-20
NH3-COL-WP		Water						

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Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
NH3-COL-WP								
Water								
Batch	R5278600							
WG3438910-6	LCS							
Ammonia, Total (as N)			100.1		%		85-115	03-NOV-20
WG3438910-5	MB							
Ammonia, Total (as N)			<0.010		mg/L		0.01	03-NOV-20
Batch	R5280713							
WG3439701-2	LCS							
Ammonia, Total (as N)			102.4		%		85-115	05-NOV-20
WG3439701-1	MB							
Ammonia, Total (as N)			<0.010		mg/L		0.01	05-NOV-20
NO2-IC-N-WP								
Water								
Batch	R5278767							
WG3436253-7	DUP	L2523516-2						
Nitrite (as N)		<0.010	<0.010	RPD-NA	mg/L	N/A	20	31-OCT-20
WG3436253-10	LCS							
Nitrite (as N)			97.1		%		90-110	31-OCT-20
WG3436253-6	LCS							
Nitrite (as N)			96.4		%		90-110	31-OCT-20
WG3436253-5	MB							
Nitrite (as N)			<0.010		mg/L		0.01	31-OCT-20
WG3436253-9	MB							
Nitrite (as N)			<0.010		mg/L		0.01	31-OCT-20
WG3436253-8	MS	L2523516-2						
Nitrite (as N)			107.1		%		75-125	31-OCT-20
NO3-IC-N-WP								
Water								
Batch	R5278767							
WG3436253-7	DUP	L2523516-2						
Nitrate (as N)		0.051	0.052		mg/L	1.3	20	31-OCT-20
WG3436253-10	LCS							
Nitrate (as N)			96.9		%		90-110	31-OCT-20
WG3436253-6	LCS							
Nitrate (as N)			96.9		%		90-110	31-OCT-20
WG3436253-5	MB							
Nitrate (as N)			<0.020		mg/L		0.02	31-OCT-20
WG3436253-9	MB							
Nitrate (as N)			<0.020		mg/L		0.02	31-OCT-20
WG3436253-8	MS	L2523516-2						
Nitrate (as N)			109.5		%		75-125	31-OCT-20
P-T-COL-WP	Water							



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Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
P-T-COL-WP								
Water								
Batch	R5275487							
WG3437482-15	DUP	L2523516-1						
Phosphorus (P)-Total		0.0204	0.0204		mg/L	0.0	20	03-NOV-20
WG3437482-14	LCS							
Phosphorus (P)-Total			95.5		%		80-120	03-NOV-20
WG3437482-13	MB							
Phosphorus (P)-Total			<0.0030		mg/L		0.003	03-NOV-20
WG3437482-16	MS	L2523516-2						
Phosphorus (P)-Total			102.0		%		70-130	03-NOV-20
P-T-L-COL-WP								
Water								
Batch	R5279660							
WG3439015-2	LCS							
Phosphorus (P)-Total			82.1		%		80-120	05-NOV-20
WG3439015-1	MB							
Phosphorus (P)-Total			<0.0010		mg/L		0.001	05-NOV-20
P-TD-COL-WP								
Water								
Batch	R5281504							
WG3439016-2	LCS							
Phosphorus (P)-Total Dissolved			96.1		%		80-120	05-NOV-20
WG3439016-1	MB							
Phosphorus (P)-Total Dissolved			<0.0030		mg/L		0.003	05-NOV-20
P-TD-L-COL-WP								
Water								
Batch	R5283269							
WG3442294-2	LCS							
Phosphorus (P)-Total Dissolved			87.4		%		80-120	10-NOV-20
WG3442294-1	MB							
Phosphorus (P)-Total Dissolved			<0.0010		mg/L		0.001	10-NOV-20
SOLIDS-TOTSUS-WP								
Water								
Batch	R5272859							
WG3435672-5	LCS							
Total Suspended Solids			93.6		%		85-115	30-OCT-20
WG3435672-4	MB							
Total Suspended Solids			<3.0		mg/L		3	30-OCT-20
Batch	R5277996							
WG3437693-2	LCS							
Total Suspended Solids			110.3		%		85-115	03-NOV-20
WG3437693-1	MB							
Total Suspended Solids			<3.0		mg/L		3	03-NOV-20



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Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
TURBIDITY-WP	Water							
Batch	R5275126							
WG3436977-5	LCS							
Turbidity			98.5		%		85-115	30-OCT-20
WG3436977-4	MB							
Turbidity			<0.10		NTU		0.1	30-OCT-20

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Legend:

Limit	ALS Control Limit (Data Quality Objectives)
DUP	Duplicate
RPD	Relative Percent Difference
N/A	Not Available
LCS	Laboratory Control Sample
SRM	Standard Reference Material
MS	Matrix Spike
MSD	Matrix Spike Duplicate
ADE	Average Desorption Efficiency
MB	Method Blank
IRM	Internal Reference Material
CRM	Certified Reference Material
CCV	Continuing Calibration Verification
CVS	Calibration Verification Standard
LCSD	Laboratory Control Sample Duplicate

Sample Parameter Qualifier Definitions:

Qualifier	Description
RPD-NA	Relative Percent Difference Not Available due to result(s) being less than detection limit.

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Hold Time Exceedances:

ALS Product Description	Sample ID	Sampling Date	Date Processed	Rec. HT	Actual HT	Units	Qualifier
Anions and Nutrients							
Nitrate in Water by IC	2	27-OCT-20 12:45	31-OCT-20 05:30	3	4	days	EHTL
Nitrite in Water by IC	2	27-OCT-20 12:45	31-OCT-20 05:30	3	4	days	EHTL

Legend & Qualifier Definitions:

EHTR-FM:	Exceeded ALS recommended hold time prior to sample receipt. Field Measurement recommended.
EHTR:	Exceeded ALS recommended hold time prior to sample receipt.
EHTL:	Exceeded ALS recommended hold time prior to analysis. Sample was received less than 24 hours prior to expiry.
EHT:	Exceeded ALS recommended hold time prior to analysis.
Rec. HT:	ALS recommended hold time (see units).

Notes*:

Where actual sampling date is not provided to ALS, the date (& time) of receipt is used for calculation purposes.
Where actual sampling time is not provided to ALS, the earlier of 12 noon on the sampling date or the time (& date) of receipt is used for calculation purposes. Samples for L2523516 were received on 29-OCT-20 16:40.

ALS recommended hold times may vary by province. They are assigned to meet known provincial and/or federal government requirements. In the absence of regulatory hold times, ALS establishes recommendations based on guidelines published by the US EPA, APHA Standard Methods, or Environment Canada (where available). For more information, please contact ALS.

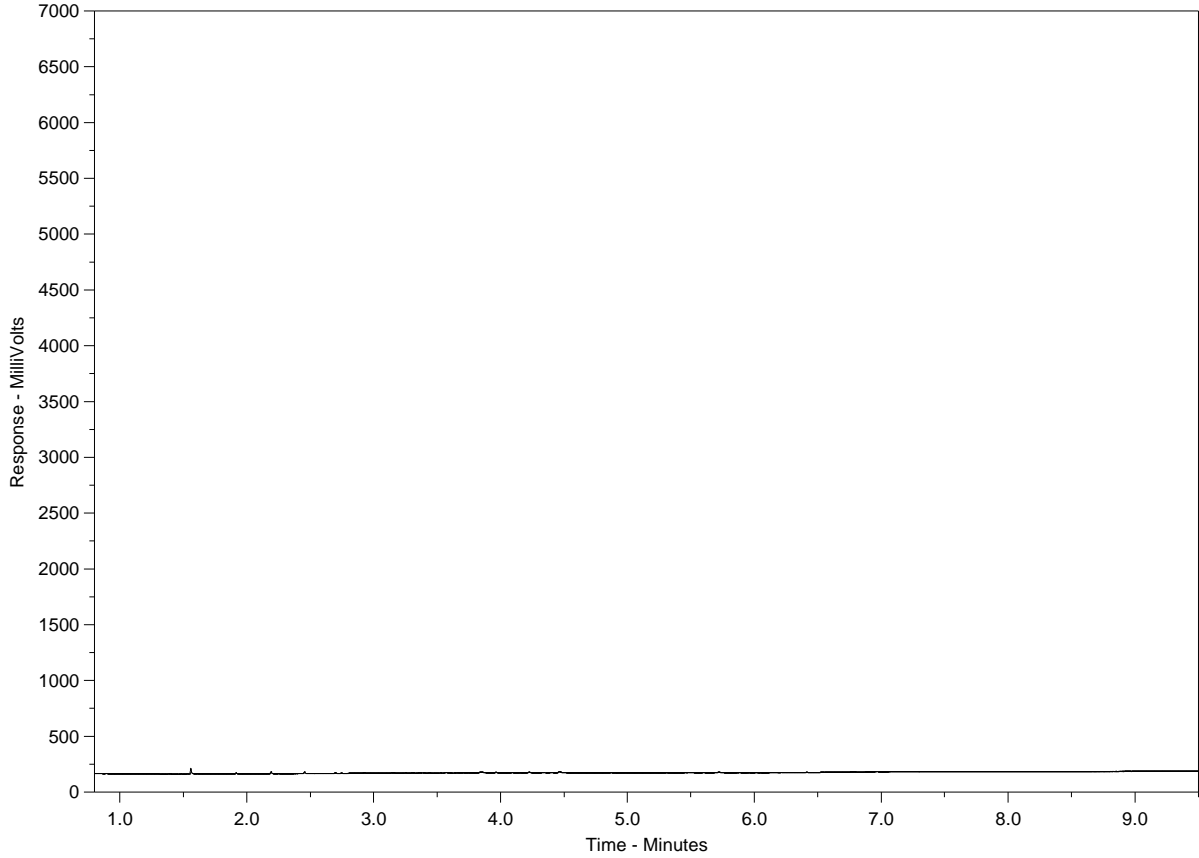
The ALS Quality Control Report is provided to ALS clients upon request. ALS includes comprehensive QC checks with every analysis to ensure our high standards of quality are met. Each QC result has a known or expected target value, which is compared against pre-determined data quality objectives to provide confidence in the accuracy of associated test results.

Please note that this report may contain QC results from anonymous Sample Duplicates and Matrix Spikes that do not originate from this Work Order.

CCME F2-F4 HYDROCARBON DISTRIBUTION REPORT



ALS Sample ID: L2523516-1
 Client Sample ID: LSMDC-INLET-1A



← F2 →		← F3 →		← F4 →	
nC10	nC16	nC34	nC50		
174°C	287°C	481°C	575°C		
346°F	549°F	898°F	1067°F		
← Gasoline →		← Motor Oils / Lube Oils / Grease →			
← Diesel / Jet Fuels →					

The CCME F2-F4 Hydrocarbon Distribution Report (HDR) is intended to assist you in characterizing hydrocarbon products that may be present in your sample.

The scale at the bottom of the chromatogram indicates the approximate retention times of common petroleum products and four n-alkane hydrocarbon marker compounds. Retention times may vary between samples, but general patterns and distributions will remain similar.

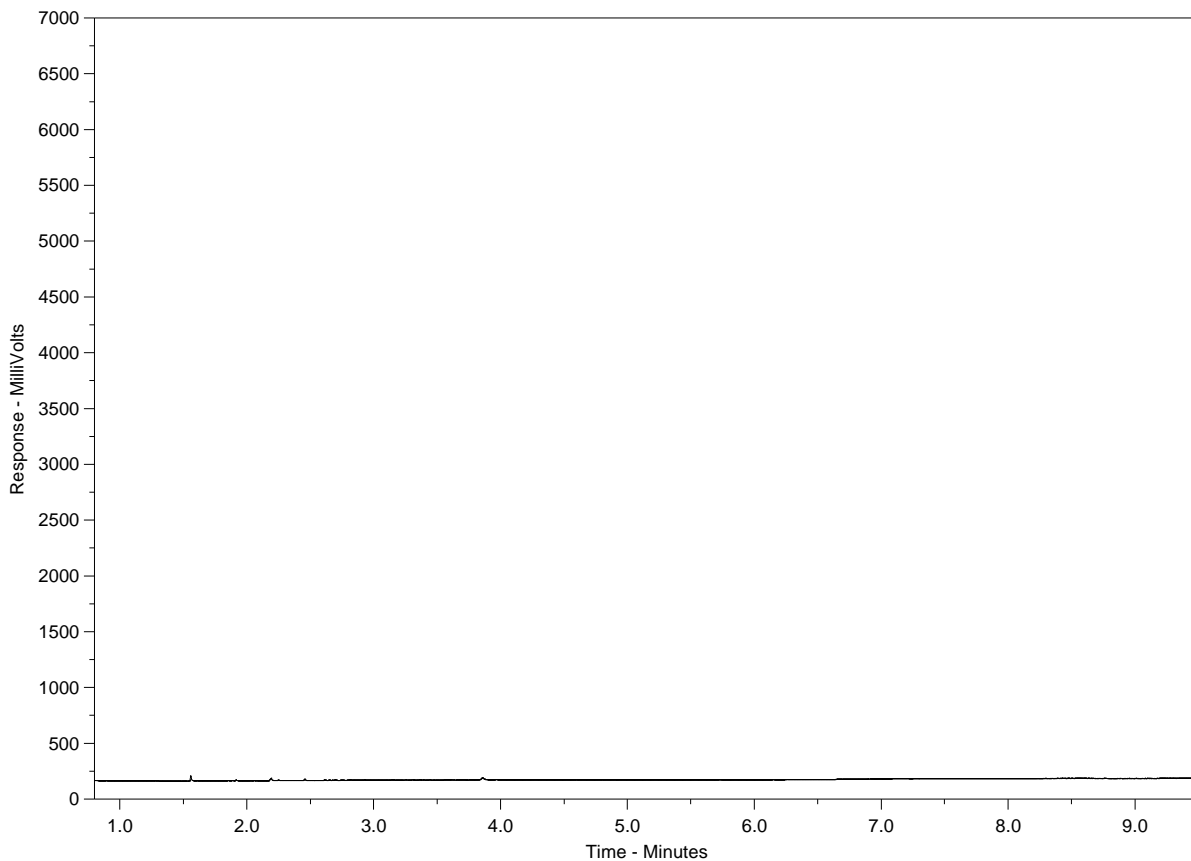
Peak heights in this report are a function of the sample concentration, the sample amount extracted, the sample dilution factor, and the scale at left.

Note: This chromatogram was produced using GC conditions that are specific to ALS Canada CCME F2-F4 method. Refer to the ALS Canada CCME F2-F4 Hydrocarbon Library for a collection of chromatograms from common reference samples (fuels, oils, etc.). The HDR library can be found at www.alsglobal.com.

CCME F2-F4 HYDROCARBON DISTRIBUTION REPORT



ALS Sample ID: L2523516-2
 Client Sample ID: LSMDC-OUTLET-1A



← F2 →		← F3 →		← F4 →	
nC10	nC16		nC34		nC50
174°C	287°C		481°C		575°C
346°F	549°F		898°F		1067°F
← Gasoline →		← Motor Oils / Lube Oils / Grease →			
← Diesel / Jet Fuels →					

The CCME F2-F4 Hydrocarbon Distribution Report (HDR) is intended to assist you in characterizing hydrocarbon products that may be present in your sample.

The scale at the bottom of the chromatogram indicates the approximate retention times of common petroleum products and four n-alkane hydrocarbon marker compounds. Retention times may vary between samples, but general patterns and distributions will remain similar.

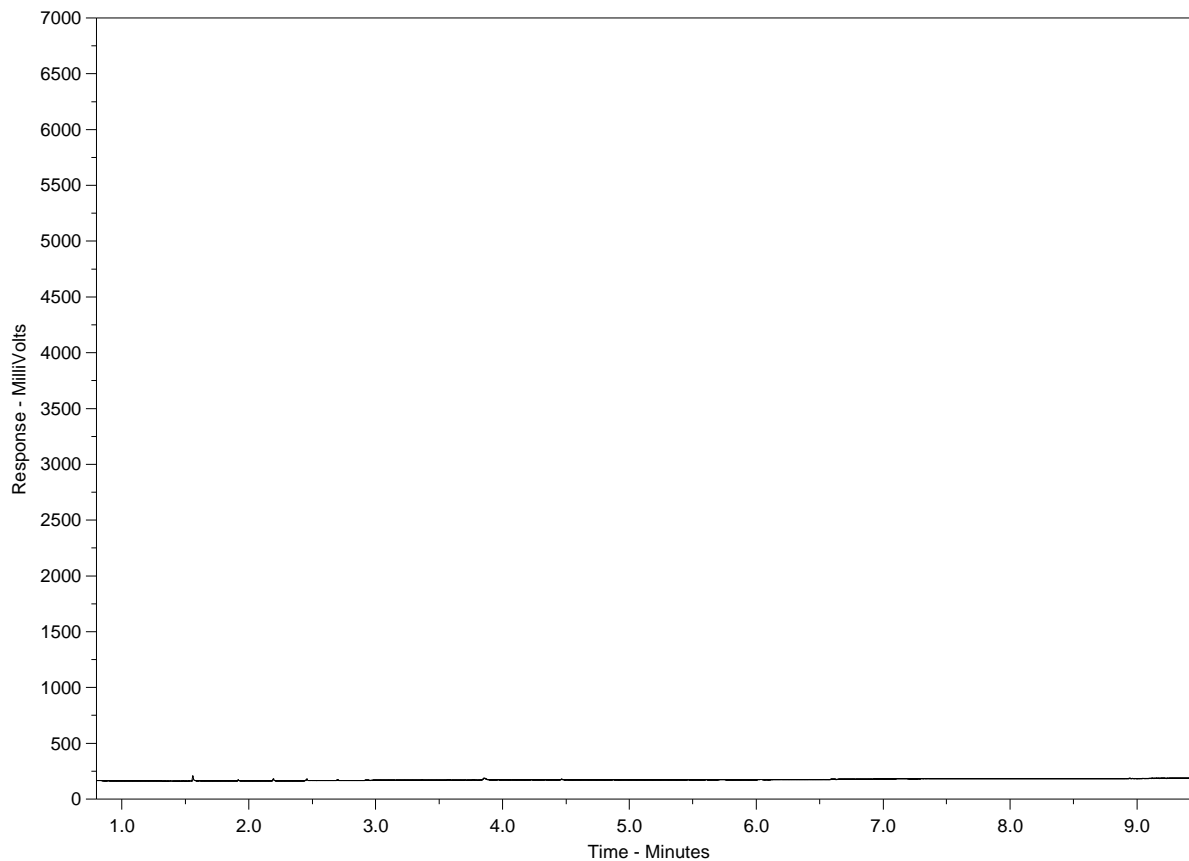
Peak heights in this report are a function of the sample concentration, the sample amount extracted, the sample dilution factor, and the scale at left.

Note: This chromatogram was produced using GC conditions that are specific to ALS Canada CCME F2-F4 method. Refer to the ALS Canada CCME F2-F4 Hydrocarbon Library for a collection of chromatograms from common reference samples (fuels, oils, etc.). The HDR library can be found at www.alsglobal.com.

CCME F2-F4 HYDROCARBON DISTRIBUTION REPORT



ALS Sample ID: L2523516-3
 Client Sample ID: BC-02



← F2 →		← F3 →		← F4 →	
nC10	nC16	nC34	nC50		
174°C	287°C	481°C	575°C		
346°F	549°F	898°F	1067°F		
← Gasoline →		← Motor Oils / Lube Oils / Grease →			
← Diesel / Jet Fuels →					

The CCME F2-F4 Hydrocarbon Distribution Report (HDR) is intended to assist you in characterizing hydrocarbon products that may be present in your sample.

The scale at the bottom of the chromatogram indicates the approximate retention times of common petroleum products and four n-alkane hydrocarbon marker compounds. Retention times may vary between samples, but general patterns and distributions will remain similar.

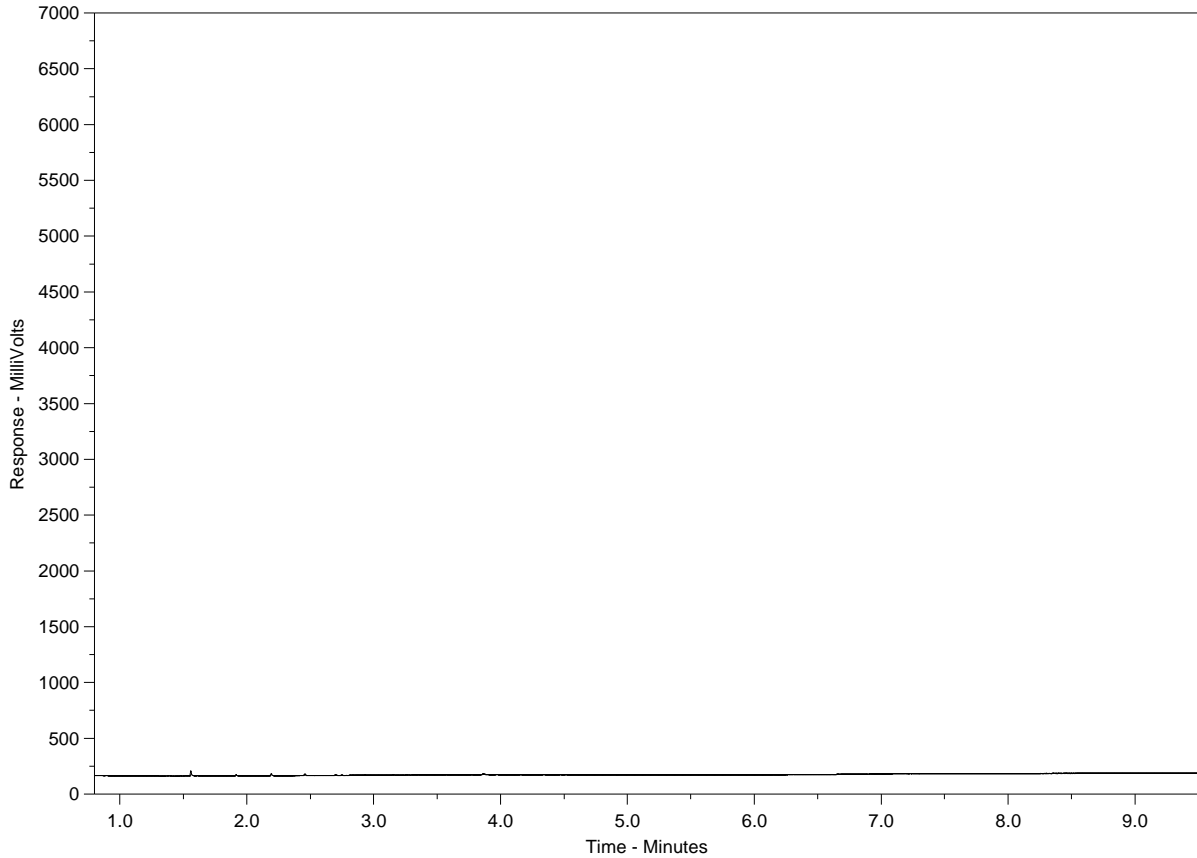
Peak heights in this report are a function of the sample concentration, the sample amount extracted, the sample dilution factor, and the scale at left.

Note: This chromatogram was produced using GC conditions that are specific to ALS Canada CCME F2-F4 method. Refer to the ALS Canada CCME F2-F4 Hydrocarbon Library for a collection of chromatograms from common reference samples (fuels, oils, etc.). The HDR library can be found at www.alsglobal.com.

CCME F2-F4 HYDROCARBON DISTRIBUTION REPORT



ALS Sample ID: L2523516-4
 Client Sample ID: BC-05



← F2 →		← F3 →		← F4 →	
nC10	nC16	nC34	nC50		
174°C	287°C	481°C	575°C		
346°F	549°F	898°F	1067°F		
← Gasoline →		← Motor Oils / Lube Oils / Grease →			
← Diesel / Jet Fuels →					

The CCME F2-F4 Hydrocarbon Distribution Report (HDR) is intended to assist you in characterizing hydrocarbon products that may be present in your sample.

The scale at the bottom of the chromatogram indicates the approximate retention times of common petroleum products and four n-alkane hydrocarbon marker compounds. Retention times may vary between samples, but general patterns and distributions will remain similar.

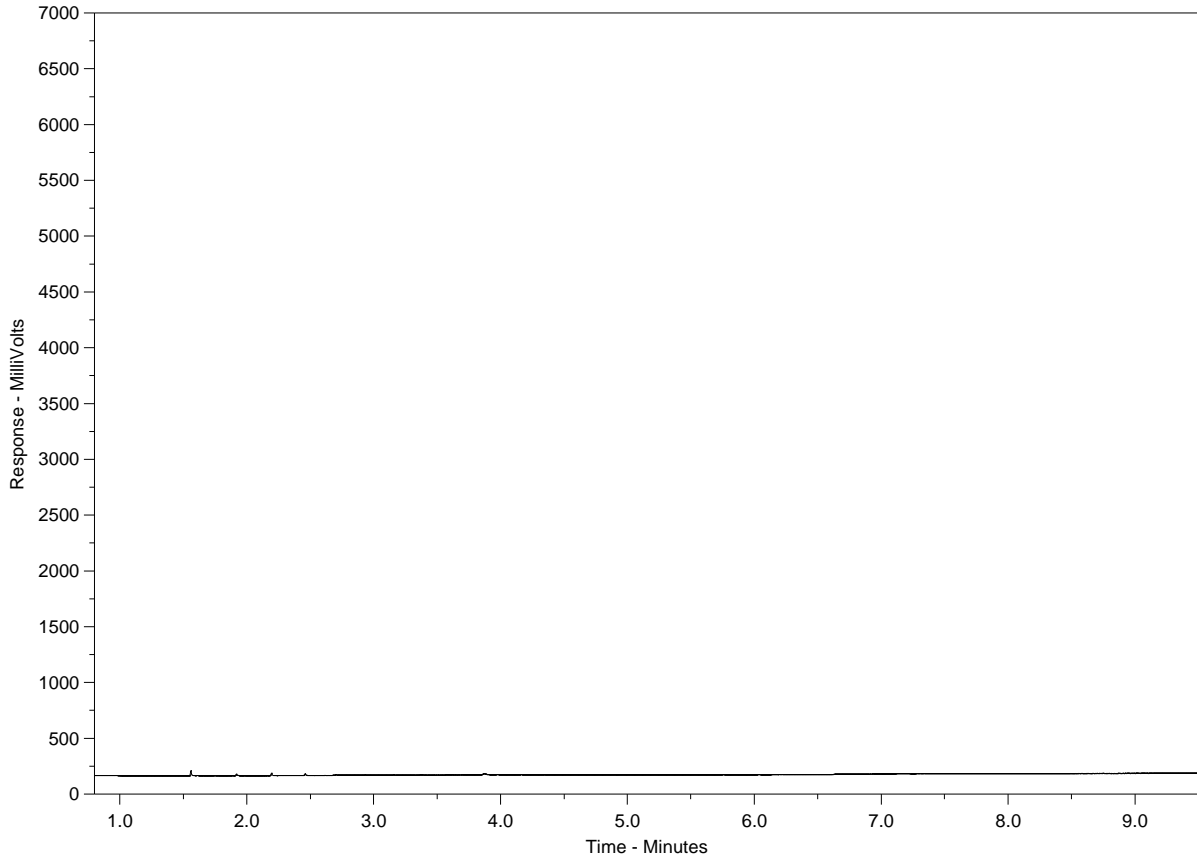
Peak heights in this report are a function of the sample concentration, the sample amount extracted, the sample dilution factor, and the scale at left.

Note: This chromatogram was produced using GC conditions that are specific to ALS Canada CCME F2-F4 method. Refer to the ALS Canada CCME F2-F4 Hydrocarbon Library for a collection of chromatograms from common reference samples (fuels, oils, etc.). The HDR library can be found at www.alsglobal.com.

CCME F2-F4 HYDROCARBON DISTRIBUTION REPORT



ALS Sample ID: L2523516-5
 Client Sample ID: CR3-1



← F2 →		← F3 →		← F4 →	
nC10	nC16	nC34	nC50		
174°C	287°C	481°C	575°C		
346°F	549°F	898°F	1067°F		
← Gasoline →		← Motor Oils / Lube Oils / Grease →			
← Diesel / Jet Fuels →					

The CCME F2-F4 Hydrocarbon Distribution Report (HDR) is intended to assist you in characterizing hydrocarbon products that may be present in your sample.

The scale at the bottom of the chromatogram indicates the approximate retention times of common petroleum products and four n-alkane hydrocarbon marker compounds. Retention times may vary between samples, but general patterns and distributions will remain similar.

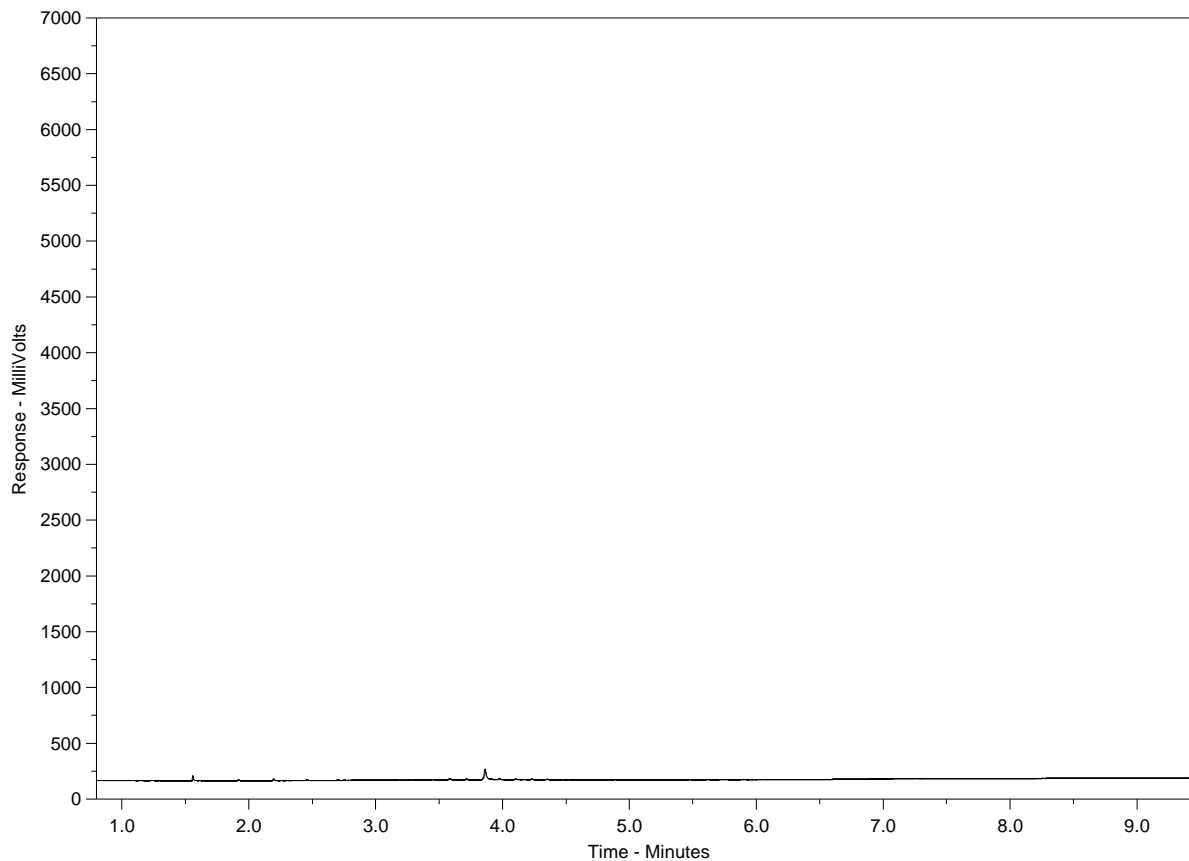
Peak heights in this report are a function of the sample concentration, the sample amount extracted, the sample dilution factor, and the scale at left.

Note: This chromatogram was produced using GC conditions that are specific to ALS Canada CCME F2-F4 method. Refer to the ALS Canada CCME F2-F4 Hydrocarbon Library for a collection of chromatograms from common reference samples (fuels, oils, etc.). The HDR library can be found at www.alsglobal.com.

CCME F2-F4 HYDROCARBON DISTRIBUTION REPORT



ALS Sample ID: L2523516-6
 Client Sample ID: CR3-2



← F2 →		← F3 →		← F4 →	
nC10	nC16		nC34		nC50
174°C	287°C		481°C		575°C
346°F	549°F		898°F		1067°F
← Gasoline →		← Motor Oils / Lube Oils / Grease →			
← Diesel / Jet Fuels →					

The CCME F2-F4 Hydrocarbon Distribution Report (HDR) is intended to assist you in characterizing hydrocarbon products that may be present in your sample.

The scale at the bottom of the chromatogram indicates the approximate retention times of common petroleum products and four n-alkane hydrocarbon marker compounds. Retention times may vary between samples, but general patterns and distributions will remain similar.

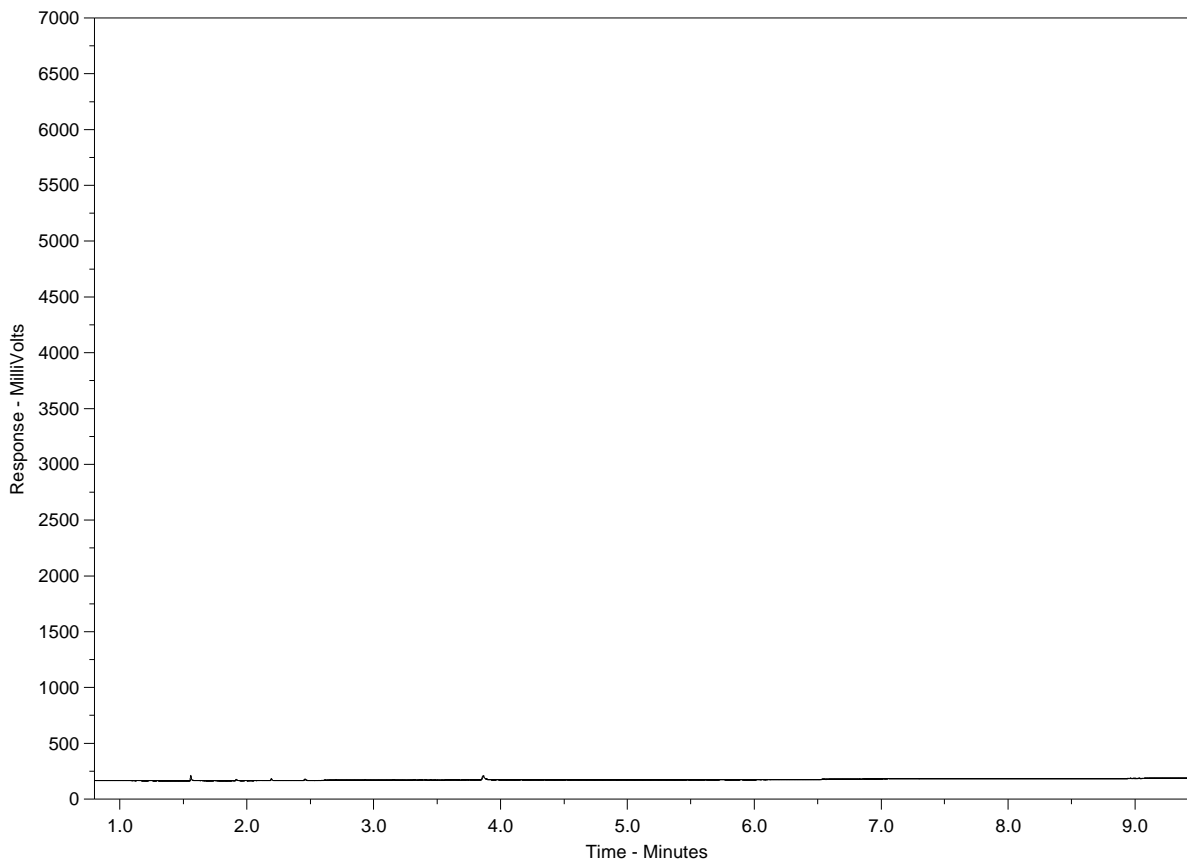
Peak heights in this report are a function of the sample concentration, the sample amount extracted, the sample dilution factor, and the scale at left.

Note: This chromatogram was produced using GC conditions that are specific to ALS Canada CCME F2-F4 method. Refer to the ALS Canada CCME F2-F4 Hydrocarbon Library for a collection of chromatograms from common reference samples (fuels, oils, etc.). The HDR library can be found at www.alsglobal.com.

CCME F2-F4 HYDROCARBON DISTRIBUTION REPORT



ALS Sample ID: L2523516-7
 Client Sample ID: SW-R3



← F2 →		← F3 →		← F4 →	
nC10	nC16		nC34		nC50
174°C	287°C		481°C		575°C
346°F	549°F		898°F		1067°F
← Gasoline →		← Motor Oils / Lube Oils / Grease →			
← Diesel / Jet Fuels →					

The CCME F2-F4 Hydrocarbon Distribution Report (HDR) is intended to assist you in characterizing hydrocarbon products that may be present in your sample.

The scale at the bottom of the chromatogram indicates the approximate retention times of common petroleum products and four n-alkane hydrocarbon marker compounds. Retention times may vary between samples, but general patterns and distributions will remain similar.

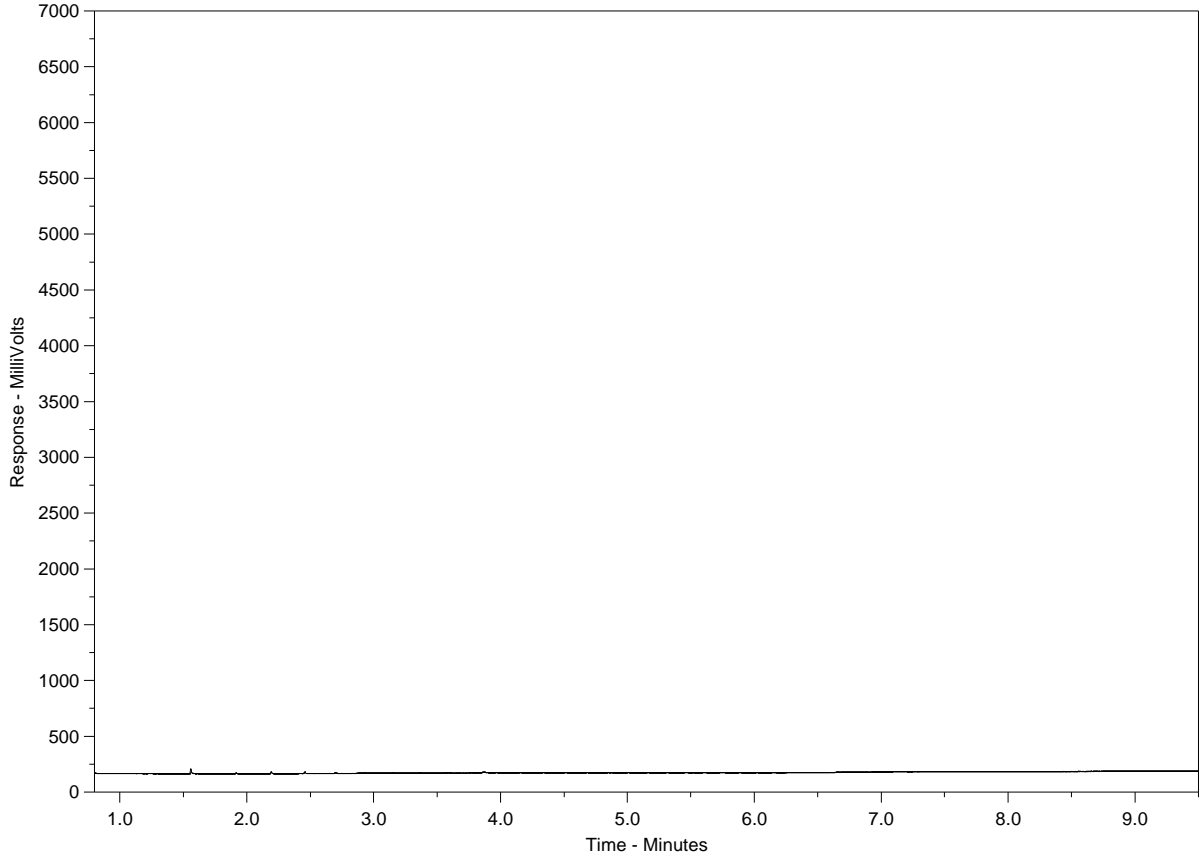
Peak heights in this report are a function of the sample concentration, the sample amount extracted, the sample dilution factor, and the scale at left.

Note: This chromatogram was produced using GC conditions that are specific to ALS Canada CCME F2-F4 method. Refer to the ALS Canada CCME F2-F4 Hydrocarbon Library for a collection of chromatograms from common reference samples (fuels, oils, etc.). The HDR library can be found at www.alsglobal.com.

CCME F2-F4 HYDROCARBON DISTRIBUTION REPORT



ALS Sample ID: L2523516-8
 Client Sample ID: SW-100



← F2 →		← F3 →		← F4 →	
nC10	nC16	nC34	nC50		
174°C	287°C	481°C	575°C		
346°F	549°F	898°F	1067°F		
← Gasoline →		← Motor Oils / Lube Oils / Grease →			
← Diesel / Jet Fuels →					

The CCME F2-F4 Hydrocarbon Distribution Report (HDR) is intended to assist you in characterizing hydrocarbon products that may be present in your sample.

The scale at the bottom of the chromatogram indicates the approximate retention times of common petroleum products and four n-alkane hydrocarbon marker compounds. Retention times may vary between samples, but general patterns and distributions will remain similar.

Peak heights in this report are a function of the sample concentration, the sample amount extracted, the sample dilution factor, and the scale at left.

Note: This chromatogram was produced using GC conditions that are specific to ALS Canada CCME F2-F4 method. Refer to the ALS Canada CCME F2-F4 Hydrocarbon Library for a collection of chromatograms from common reference samples (fuels, oils, etc.). The HDR library can be found at www.alsglobal.com.

#	Sample	Date	Lab#	$\delta^{18}\text{O}$			$\delta^2\text{H}$			E3H	$\pm 1\sigma$		Repeat	$\pm 1\sigma$		pH	EC μS/cm	AZD
				H ₂ O	VSMOW	± 0.2‰	H ₂ O	VSMOW	± 0.8‰		± 0.8 T.U.	± 0.8 T.U.						
1	Sentinel Well 1	08-Mar-19	420126	X	-15.01	-15.03	X	-114.68	-113.97	X	<0.8	0.3			7.70	940		
2	PW19-KGS-02	13-Mar-19	420127	X	-14.81		X	-113.18		X	<0.8	0.3			7.90	796		
3	PW19-KGS-03	14-Mar-19	420128	X	-14.92	-14.90	X	-111.49	-111.57	X	1.7	0.4			7.80	663		
4	PW19-KGS-04	14-Mar-19	420129	X	-15.00		X	-111.60		X	1.9	0.4			7.80	663		
5	PW19-KGS-01	12-Mar-19	420130	X	-14.64	-14.60	X	-113.02	-112.81	X	<0.8	0.3			8.10	782		
6	PW19-KGS-05	13-Mar-19	420131	X	-15.19		X	-114.56		X	<0.8	0.3			7.90	796		
7	TH19-KGS-17	10-Mar-19	420132	X	-15.11		X	-112.37		X	<0.8	0.3			7.58	640		
8	TH19-KGS-18	11-Mar-19	420133	X	-14.87		X	-109.46		X	<0.8	0.3			6.70	957		
9	TH19-KGS-19	11-Mar-19	420134	X	-15.13		X	-112.49		X	<0.8	0.3	<0.8	0.5	8.76	769		
10	TH19-KGS-11	08-Mar-19	420135	X	-15.12	-15.16	X	-115.62	-115.73						6.64	786		
11	TH15-04	08-Mar-19	420136	X	-15.04		X	-112.65							7.37	536		
12	TH19-KGS-13	07-Mar-19	420137	X	-14.06	-14.10	X	-112.59	-112.80						7.08	786		
13	TH300	14-Mar-19	420138	X	-14.59		X	-114.05							7.28	1008		
14	TH19-KGS-10	09-Mar-19	420139	X	-15.21		X	-112.31							7.57	707		
15	TH19-KGS-04	09-Mar-19	420140	X	-14.83	-14.87	X	-113.99	-113.75						7.58	1018		
16	TH19-KGS-14	08-Mar-19	420141	X	-15.18		X	-113.03							6.90	592		
17	TH19-KGS-08	08-Mar-19	420142	X	-15.14		X	-112.26							6.93	546		
18	TH200	09-Mar-19	420143	X	-15.21		X	-112.80							7.57	707		
19	TH19-KGS-12	07-Mar-19	420144	X	-15.33		X	-115.76							6.79	904		
20	TH19-KGS-15	09-Mar-19	420145	X	-15.19	-15.17	X	-112.73	-112.66						7.15	768		
21	TH19-KGS-01B	09-Mar-19	420146	X	-14.62		X	-114.07							7.35	957		
22	TH19-KGS-09	12-Mar-19	420147	X	-15.21		X	-114.44							7.56	737		
23	TH19-KGS-20	14-Mar-19	420148	X	-14.76	-14.68	X	-114.41	-114.65						7.28	1008		
24	TH15-05	08-Mar-19	420149	X	-15.16		X	-112.77							6.86	531		
25	Trip	-	420150	X	-6.57	-6.58	X	-60.17	-60.04									
26	Field Blank	-	420151	X	-6.55		X	-60.19										
27	TH19-KGS-100	07-Mar-19	420152	X	-14.80		X	-108.59							6.85	756		
28	TH19-KGS-500	15-Mar-19	420153	X	-15.19		X	-112.75										
29	TH19-KGS-16	15-Mar-19	420154	X	-14.99	-15.01	X	-112.14	-112.18									
30	TH19-KGS-07	07-Mar-19	420155												7.10	688		
31	TH19-KGS-02B	11-Mar-19	420156												7.63	1888		
32	TH19-KGS-13A	07-Mar-19	420157												7.00	436		
33	TH19-KGS-12B	14-Mar-19	420158												7.82	918		
34	TH19-KGS-19A	11-Mar-19	420159												7.07	787		
35	TH19-KGS-07A	07-Mar-19	420160												6.95	852		
36	TH19-KGS-11A	08-Mar-19	420161												6.51	648		
37	TH19-KGS-03A	08-Mar-19	420162												7.02	605		
38	TH19-KGS-18A	11-Mar-19	420163												6.97	496		
39	TH19-KGS-16B	09-Mar-19	420164												6.89	889		
40	TH19-KGS-17A	10-Mar-19	420165												7.22	544		
41	TH19-KGS-14A	08-Mar-19	420166												6.84	446		
42	TH19-KGS-17B	10-Mar-19	420167												7.12	904		

Hold samples until further instructions from client.

Tritium is reported in Tritium Units.

1TU = 3.221 Picocuries/L per IAEA, 2000 Report.

1TU = 0.11919 Becquerels/L per IAEA, 2000 Report.

Client: Lindell
 KGS Group
 Project:18-0300-005

ISO# 2019360
 Location:
 9 for 18O+2H, E3H

Environmental Isotope Lab
 2019-08-19
 1 of 1

#	Sample	Date	Lab#	$\delta^{18}\text{O}$			$\delta^2\text{H}$			E3H	Result $\pm 1\sigma$		Repeat	$\pm 1\sigma$	pH	EC	AZD
				H ₂ O	VSMOW	$\pm 0.2\text{‰}$	H ₂ O	VSMOW	$\pm 0.8\text{‰}$		± 0.8 T.U.	± 0.8 T.U.					
1	PW19-KGS-01	11-Jun-2019	425182	X	-14.69	-14.65	X	-114.25	-114.23	X	<0.8	0.8			7.32	688	
2	PW19-KGS-02	11-Jun-2019	425183	X	-14.76		X	-114.39		X	<0.8	0.8			7.34	724	
3	PW19-KGS-03	11-Jun-2019	425184	X	-14.68	-14.71	X	-112.66	-112.62	X	<0.8	0.8			7.3	591	
4	PW19-KGS-200	11-Jun-2019	425185	X	-14.73		X	-112.61		X	<0.8	0.8			7.3	591	
5	TH19-KGS-12	12-Jun-2019	425186	X	-15.54		X	-119.09		X	<0.8	0.8			7.48	732.6	
6	TH19-KGS-17	11-Jun-2019	425187	X	-14.17	-13.99	X	-110.08	-109.25	X	<0.8	0.8			7.54	626	
7	TH19-KGS-18	12-Jun-2019	425188	X	-14.43		X	-108.74		X	10.6	0.8			7.03	972	
8	TH19-KGS-19	12-Jun-2019	425189	X	-14.94		X	-113.71		X	<0.8	0.8			7.79	915	
9	R3-SW	11-Jun-2019	425190	X	-11.48	-11.52	X	-98.79	-98.59	X	7.3	0.8			8.58	455.5	

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To Contact uwEILAB:
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 rkhmskrk@uwaterloo.ca
 519 888 4567 ext 35838

Client: Levay
 KGS Group
 Project: 18-0300-005

ISO# 2019544
 Location:
 2 for 18O+2H, E3H

Environmental Isotope Lab
 2019-11-22
 1 of 1

#	Sample	Date	Lab#	$\delta^{18}\text{O}$		$\delta^2\text{H}$		E3H	Result $\pm 1\sigma$		Repeat $\pm 1\sigma$		pH	EC $\mu\text{S/cm}$	AZD
				H ₂ O	VSMOW $\pm 0.2\text{‰}$	H ₂ O	VSMOW $\pm 0.8\text{‰}$		± 0.8 T.U.	± 0.8 T.U.					
1	Sentinel Well 2	2019-09-27	430024	X	-15.29	-15.35	X	-116.35	-115.60	X	< 0.8	0.3	8.40	1202	
2	Sentinel Well 3	2019-09-27	430025	X	-15.21	-15.22	X	-114.63	-114.84	X	< 0.8	0.3	8.15	961	

Tritium is reported in Tritium Units.

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 519 888 4567 ext 35838

Client: Lindell
 KGS Group
 Project: 18-0300-005.2302.04

ISO# 2019633
 Location:
 9 for 18O+2H, E3H

Environmental Isotope Lab
 2020-01-10
 1 of 1

#	Sample	Date	Lab#	$\delta^{18}\text{O}$	Result	Repeat	$\delta^2\text{H}$	Result	Repeat	E3H	Result	$\pm 1\sigma$	Repeat	$\pm 1\sigma$	pH	EC	AZD
				H ₂ O	VSMOW $\pm 0.2\text{‰}$		H ₂ O	VSMOW $\pm 0.8\text{‰}$			± 0.8 T.U.		± 0.8 T.U.				
1	PW19-KGS-01	2019-10-24	432033	X	-14.87	-14.79	X	-113.88	-113.94	X	< 0.8	0.2			7.42	717	
2	PW19-KGS-02	2019-10-24	432034	X	-15.11		X	-114.15		X	< 0.8	0.2			7.32	751	
3	PW19-KGS-03	2019-10-24	432035	X	-13.62	-13.58	X	-97.15	-97.62	X	7.3	0.6	6.3	0.5	7.25	569	
4	TH19-KGS-12	2019-10-23	432036	X	-16.17		X	-119.73		X	< 0.8	0.2			7.36	748	
5	TH19-KGS-17	2019-10-23	432037	X	-15.40		X	-113.58		X	< 0.8	0.2			7.41	633	
6	TH19-KGS-18	2019-10-23	432038	X	-14.94		X	-108.99		X	10.7	0.8			6.95	1023	
7	TH19-KGS-19	2019-10-23	432039	X	-15.39	-15.34	X	-114.44	-114.12	X	< 0.8	0.2			8.17	783	
8	PW-200	2019-10-24	432040	X	-15.09		X	-114.97		X	< 0.8	0.2			7.42	717	
9	R3-SW	2019-10-24	432041	X	-14.58	-14.56	X	-102.10	-102.51	X	8.2	0.6			8.58	456	

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 rkhmskrk@uwaterloo.ca
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#	Sample	Date	Lab#	$\delta^{18}\text{O}$	Result	Repeat	$\delta^2\text{H}$	Result	Repeat	E3H	Result $\pm 2\sigma$	Repeat $\pm 2\sigma$	3H	Result $\pm 1\sigma$	Repeat $\pm 1\sigma$	pH	EC	AZD
				H ₂ O	VSMOW $\pm 0.2\text{‰}$		H ₂ O	VSMOW $\pm 0.8\text{‰}$			$\pm 0.8 \text{ T.U.}$	$\pm 0.8 \text{ T.U.}$		$\pm 6.0 \text{ T.U.}$	$\pm 6.0 \text{ T.U.}$		$\mu\text{S/cm}$	
1	PW19-KGS-01	17-Jun-2020	443388	X	-14.93	-14.92	X	-113.94	-114.16	X						7.20	683.8	
2	PW19-KGS-02	16-Jun-2020	443389	X	-15.22		X	-114.90		X						6.98	810	
3	PW19-KGS-03	17-Jun-2020	443390	X	-14.73		X	-108.26		X						7.12	522.6	
4	TH19-KGS-12	16-Jun-2020	443391	X	-16.27		X	-119.72		X						6.99	810	
5	TH19-KGS-17	16-Jun-2020	443392	X	-15.27	-15.23	X	-113.09	-112.77	X						7.03	685.8	
6	TH19-KGS-18	16-Jun-2020	443393	X	-14.74		X	-105.73		X						6.56	566.5	
7	TH19-KGS-19	17-Jun-2020	443394	X	-15.27		X	-113.47		X						7.83	813	
8	PW19-KGS-300	17-Jun-2020	443395	X	-14.83		X	-108.20		X						7.12	522.6	
9	R3-SW	17-Jun-2020	443396	X	-11.32		X	-87.43		X						8.04	285.7	
10	LSMOC OUTLET 1A	17-Jun-2020	443397	X	-9.46	-9.36	X	-80.35	-80.11	X						8.02	625	
11	LSMOC INLET 1A	17-Jun-2020	443398	X	-7.63		X	-69.95		X						8.50	793	
12	CR3-1	17-Jun-2020	443399	X	-12.41		X	-89.75					X			7.27	228.9	
13	CR3-2	17-Jun-2020	443400	X	-12.47		X	-89.83		X						7.75	258.3	
14	BC-02	17-Jun-2020	443401	X	-10.54		X	-82.06		X						8.42	407	
15	BC-05	17-Jun-2020	443402	X	-11.14	-11.07	X	-85.12	-85.06	X						8.35	433.9	
16	SW19-KGS-01	18-Jun-2020	443403	X	-15.62		X	-114.73		X						7.08	784	
17	SW19-KGS-02	18-Jun-2020	443404	X	-15.79		X	-117.26		X						7.01	1102	
18	SW19-KGS-03	18-Jun-2020	443405	X	-15.58	-15.57	X	-115.47	-115.91	X						6.93	874	

Tritium is reported in Tritium Units.
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 1TU = 0.11919 Becquerels/L per IAEA, 2000 Report.

#	Sample	Date	Lab#	δ ¹⁸ O		δ ² H		E3H	3H		pH	EC	AZD	
				Result	Repeat	Result	Repeat		Result ± 2σ	Repeat ± 2σ				Result ± 1σ
				H ₂ O	VSMOW ± 0.2‰	H ₂ O	VSMOW ± 0.8‰		± 0.8 T.U.	± 0.8 T.U.		μS/cm		
1	PW19-KGS-01	2020-10-27	446559	X	-15.00	-14.92	X	-114.41	-114.40	X		7.38	709.8	
2	PW19-KGS-02	2020-10-28	446560	X	-15.28		X	-115.47		X		7.14	794.1	
3	PW19-KGS-03	2020-10-27	446561	X	-14.93		X	-111.13		X		7.24	592.1	
4	TH19-KGS-12	2020-10-28	446562	X	-16.19		X	-120.34		X		7.47	758.7	
5	TH19-KGS-17	2020-10-27	446563	X	-15.19	-15.17	X	-113.33	-113.22	X		6.68	640.7	
6	TH19-KGS-18	2020-10-27	446564	X	-14.71		X	-108.28		X		6.51	910	
7	TH19-KGS-19	2020-10-27	446565	X	-15.19		X	-113.88		X		7.06	947	
8	PW-100	2020-10-28	446566	X	-15.23		X	-115.40		X		7.14	794.1	
9	SW-R3	2020-10-28	446567	X	-13.38		X	-100.06		X		7.29	389	
10	LSMOC OUTLET 1A	2020-10-27	446568	X	-10.17	-10.13	X	-85.85	-85.45	X		8.02	625	
11	LSMOC INLET 1A	2020-10-28	446569	X	-7.88	-7.81	X	-72.08	-72.06	X		6.48	1278	
12	CR3-1	2020-10-28	446570	X	-13.25		X	-96.67		X		6.98	281.2	
13	CR3-2	2020-10-28	446571	X	-13.09		X	-96.32		X		7.10	290.8	
14	BC-02	2020-10-28	446572	X	-10.73		X	-86.72		X		8.09	572.7	
15	BC-05	2020-10-28	446573	X	-11.75	-11.61	X	-91.79	-90.95	X		7.78	630.2	
16	SW19-KGS-02	2020-10-29	446574	X	-15.25		X	-116.37		X		7.30	1163	
17	SW19-KGS-03	2020-10-29	446575	X	-15.09		X	-114.86		X		6.97	921	
18	SW-100	2020-10-28	446576	X	-13.35	-13.33	X	-99.46	-99.38		X	7.29	389	

Tritium is reported in Tritium Units.
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 1TU = 0.11919 Becquerels/L per IAEA, 2000 Report.

*1x40ml arrived broken