

# **Appendix D.3**

## **SW Lab Reports**



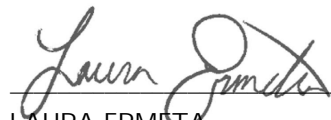
GHD Limited (Waterloo)  
ATTN: PREETI GURURAJAN  
651 COLBY DRIVE  
WATERLOO ON N2V 1C2

Date Received: 07-OCT-16  
Report Date: 18-OCT-16 14:29 (MT)  
Version: FINAL

Client Phone: 519-884-0510

## Certificate of Analysis

Lab Work Order #: L1840926  
Project P.O. #: PENDING  
Job Reference: 11115650-100  
C of C Numbers: 15-545034  
Legal Site Desc:

  
LAURA ERMETA  
Account Manager

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# ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L1840926-1 SW-11115650-100716-LM-001 Sampled By: L. MARSHALL on 07-OCT-16 @ 08:25 Matrix: WATER							
<b>Physical Tests</b>							
Hardness (as CaCO3)	209		10	mg/L		12-OCT-16	
Total Suspended Solids	14.5		2.0	mg/L	13-OCT-16	14-OCT-16	R3570988
<b>Anions and Nutrients</b>							
Total Kjeldahl Nitrogen	2.18		0.15	mg/L	13-OCT-16	13-OCT-16	R3570268
Phosphorus, Total	0.0748		0.0030	mg/L	12-OCT-16	13-OCT-16	R3569647
<b>Total Metals</b>							
Aluminum (Al)-Total	0.237		0.010	mg/L	08-OCT-16	11-OCT-16	R3568325
Antimony (Sb)-Total	0.00025		0.00010	mg/L	08-OCT-16	11-OCT-16	R3568325
Arsenic (As)-Total	0.00132		0.00010	mg/L	08-OCT-16	11-OCT-16	R3568325
Beryllium (Be)-Total	<0.00010		0.00010	mg/L	08-OCT-16	11-OCT-16	R3568325
Boron (B)-Total	0.078		0.010	mg/L	08-OCT-16	11-OCT-16	R3568325
Cadmium (Cd)-Total	<0.000010		0.000010	mg/L	08-OCT-16	11-OCT-16	R3568325
Chromium (Cr)-Total	0.00057		0.00050	mg/L	08-OCT-16	11-OCT-16	R3568325
Cobalt (Co)-Total	0.00029		0.00010	mg/L	08-OCT-16	11-OCT-16	R3568325
Copper (Cu)-Total	0.0017		0.0010	mg/L	08-OCT-16	11-OCT-16	R3568325
Iron (Fe)-Total	0.518		0.050	mg/L	08-OCT-16	11-OCT-16	R3568325
Lead (Pb)-Total	0.00043		0.00010	mg/L	08-OCT-16	11-OCT-16	R3568325
Mercury (Hg)-Total	<0.000010		0.000010	mg/L		17-OCT-16	R3572777
Molybdenum (Mo)-Total	0.000929		0.000050	mg/L	08-OCT-16	11-OCT-16	R3568325
Nickel (Ni)-Total	0.00129		0.00050	mg/L	08-OCT-16	11-OCT-16	R3568325
Selenium (Se)-Total	0.000094		0.000050	mg/L	08-OCT-16	11-OCT-16	R3568325
Silver (Ag)-Total	<0.000050		0.000050	mg/L	08-OCT-16	11-OCT-16	R3568325
Thallium (Tl)-Total	<0.000010		0.000010	mg/L	08-OCT-16	11-OCT-16	R3568325
Tungsten (W)-Total	<0.00010		0.00010	mg/L	08-OCT-16	11-OCT-16	R3568325
Uranium (U)-Total	0.000478		0.000010	mg/L	08-OCT-16	11-OCT-16	R3568325
Vanadium (V)-Total	0.00109		0.00050	mg/L	08-OCT-16	11-OCT-16	R3568325
Zinc (Zn)-Total	0.0066		0.0030	mg/L	08-OCT-16	11-OCT-16	R3568325
Zirconium (Zr)-Total	<0.00030		0.00030	mg/L	08-OCT-16	11-OCT-16	R3568325
<b>Dissolved Metals</b>							
Dissolved Metals Filtration Location	LAB					11-OCT-16	R3567854
Aluminum (Al)-Dissolved	0.0111		0.0050	mg/L	11-OCT-16	11-OCT-16	R3568690
Calcium (Ca)-Dissolved	60.9		0.050	mg/L	11-OCT-16	11-OCT-16	R3568690
Magnesium (Mg)-Dissolved	13.7		0.050	mg/L	11-OCT-16	11-OCT-16	R3568690
<b>Speciated Metals</b>							
Chromium, Hexavalent	<1.0		1.0	ug/L		11-OCT-16	R3569022
L1840926-2 SW-11115650-100716-LM-002 Sampled By: L. MARSHALL on 07-OCT-16 @ 08:35 Matrix: WATER							
<b>Physical Tests</b>							
Hardness (as CaCO3)	<10		10	mg/L		12-OCT-16	
Total Suspended Solids	<2.0		2.0	mg/L	13-OCT-16	14-OCT-16	R3570988
<b>Anions and Nutrients</b>							

\* 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
L1840926-2 SW-11115650-100716-LM-002 Sampled By: L. MARSHALL on 07-OCT-16 @ 08:35 Matrix: WATER							
<b>Anions and Nutrients</b>							
Total Kjeldahl Nitrogen	4.21	RRV	0.15	mg/L	13-OCT-16	13-OCT-16	R3570268
Phosphorus, Total	<0.0030		0.0030	mg/L	12-OCT-16	13-OCT-16	R3569647
<b>Total Metals</b>							
Aluminum (Al)-Total	<0.010		0.010	mg/L	08-OCT-16	11-OCT-16	R3568325
Antimony (Sb)-Total	<0.00010		0.00010	mg/L	08-OCT-16	11-OCT-16	R3568325
Arsenic (As)-Total	<0.00010		0.00010	mg/L	08-OCT-16	11-OCT-16	R3568325
Beryllium (Be)-Total	<0.00010		0.00010	mg/L	08-OCT-16	11-OCT-16	R3568325
Boron (B)-Total	<0.010		0.010	mg/L	08-OCT-16	11-OCT-16	R3568325
Cadmium (Cd)-Total	<0.000010		0.000010	mg/L	08-OCT-16	11-OCT-16	R3568325
Chromium (Cr)-Total	<0.00050		0.00050	mg/L	08-OCT-16	11-OCT-16	R3568325
Cobalt (Co)-Total	<0.00010		0.00010	mg/L	08-OCT-16	11-OCT-16	R3568325
Copper (Cu)-Total	<0.0010		0.0010	mg/L	08-OCT-16	11-OCT-16	R3568325
Iron (Fe)-Total	<0.050		0.050	mg/L	08-OCT-16	11-OCT-16	R3568325
Lead (Pb)-Total	<0.00010		0.00010	mg/L	08-OCT-16	11-OCT-16	R3568325
Mercury (Hg)-Total	<0.000010		0.000010	mg/L		17-OCT-16	R3572777
Molybdenum (Mo)-Total	<0.000050		0.000050	mg/L	08-OCT-16	11-OCT-16	R3568325
Nickel (Ni)-Total	<0.00050		0.00050	mg/L	08-OCT-16	11-OCT-16	R3568325
Selenium (Se)-Total	<0.000050		0.000050	mg/L	08-OCT-16	11-OCT-16	R3568325
Silver (Ag)-Total	<0.000050		0.000050	mg/L	08-OCT-16	11-OCT-16	R3568325
Thallium (Tl)-Total	<0.000010		0.000010	mg/L	08-OCT-16	11-OCT-16	R3568325
Tungsten (W)-Total	<0.00010		0.00010	mg/L	08-OCT-16	11-OCT-16	R3568325
Uranium (U)-Total	<0.000010		0.000010	mg/L	08-OCT-16	11-OCT-16	R3568325
Vanadium (V)-Total	<0.00050		0.00050	mg/L	08-OCT-16	11-OCT-16	R3568325
Zinc (Zn)-Total	<0.0030		0.0030	mg/L	08-OCT-16	11-OCT-16	R3568325
Zirconium (Zr)-Total	<0.00030		0.00030	mg/L	08-OCT-16	11-OCT-16	R3568325
<b>Dissolved Metals</b>							
Dissolved Metals Filtration Location	LAB					11-OCT-16	R3567854
Aluminum (Al)-Dissolved	<0.0050		0.0050	mg/L	11-OCT-16	11-OCT-16	R3568690
Calcium (Ca)-Dissolved	<0.050		0.050	mg/L	11-OCT-16	11-OCT-16	R3568690
Magnesium (Mg)-Dissolved	<0.050		0.050	mg/L	11-OCT-16	11-OCT-16	R3568690
<b>Speciated Metals</b>							
Chromium, Hexavalent	<1.0		1.0	ug/L		11-OCT-16	R3569022
L1840926-3 SW-11115650-100716-LM-003 Sampled By: L. MARSHALL on 07-OCT-16 @ 09:42 Matrix: WATER							
<b>Physical Tests</b>							
Hardness (as CaCO3)	357		10	mg/L		12-OCT-16	
Total Suspended Solids	3.5		2.0	mg/L	13-OCT-16	14-OCT-16	R3571038
<b>Anions and Nutrients</b>							
Total Kjeldahl Nitrogen	2.52		0.15	mg/L	13-OCT-16	13-OCT-16	R3570268
Phosphorus, Total	0.0334		0.0030	mg/L	12-OCT-16	13-OCT-16	R3569647
<b>Total Metals</b>							

\* 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
L1840926-3 SW-11115650-100716-LM-003 Sampled By: L. MARSHALL on 07-OCT-16 @ 09:42 Matrix: WATER							
<b>Total Metals</b>							
Aluminum (Al)-Total	0.018		0.010	mg/L	08-OCT-16	11-OCT-16	R3568325
Antimony (Sb)-Total	0.00039		0.00010	mg/L	08-OCT-16	11-OCT-16	R3568325
Arsenic (As)-Total	0.00101		0.00010	mg/L	08-OCT-16	11-OCT-16	R3568325
Beryllium (Be)-Total	<0.00010		0.00010	mg/L	08-OCT-16	11-OCT-16	R3568325
Boron (B)-Total	0.085		0.010	mg/L	08-OCT-16	11-OCT-16	R3568325
Cadmium (Cd)-Total	0.000013		0.000010	mg/L	08-OCT-16	11-OCT-16	R3568325
Chromium (Cr)-Total	<0.00050		0.00050	mg/L	08-OCT-16	11-OCT-16	R3568325
Cobalt (Co)-Total	<0.00010		0.00010	mg/L	08-OCT-16	11-OCT-16	R3568325
Copper (Cu)-Total	0.0051		0.0010	mg/L	08-OCT-16	11-OCT-16	R3568325
Iron (Fe)-Total	0.089		0.050	mg/L	08-OCT-16	11-OCT-16	R3568325
Lead (Pb)-Total	<0.00010		0.00010	mg/L	08-OCT-16	11-OCT-16	R3568325
Mercury (Hg)-Total	<0.000010		0.000010	mg/L		17-OCT-16	R3572777
Molybdenum (Mo)-Total	0.000848		0.000050	mg/L	08-OCT-16	11-OCT-16	R3568325
Nickel (Ni)-Total	0.00121		0.00050	mg/L	08-OCT-16	11-OCT-16	R3568325
Selenium (Se)-Total	0.000137		0.000050	mg/L	08-OCT-16	11-OCT-16	R3568325
Silver (Ag)-Total	<0.000050		0.000050	mg/L	08-OCT-16	11-OCT-16	R3568325
Thallium (Tl)-Total	<0.000010		0.000010	mg/L	08-OCT-16	11-OCT-16	R3568325
Tungsten (W)-Total	<0.00010		0.00010	mg/L	08-OCT-16	11-OCT-16	R3568325
Uranium (U)-Total	0.00332		0.000010	mg/L	08-OCT-16	11-OCT-16	R3568325
Vanadium (V)-Total	0.00062		0.00050	mg/L	08-OCT-16	11-OCT-16	R3568325
Zinc (Zn)-Total	0.0056		0.0030	mg/L	08-OCT-16	11-OCT-16	R3568325
Zirconium (Zr)-Total	<0.00030		0.00030	mg/L	08-OCT-16	11-OCT-16	R3568325
<b>Dissolved Metals</b>							
Dissolved Metals Filtration Location	LAB					11-OCT-16	R3567854
Aluminum (Al)-Dissolved	0.0052		0.0050	mg/L	11-OCT-16	11-OCT-16	R3568690
Calcium (Ca)-Dissolved	106		0.050	mg/L	11-OCT-16	11-OCT-16	R3568690
Magnesium (Mg)-Dissolved	22.1		0.050	mg/L	11-OCT-16	11-OCT-16	R3568690
<b>Speciated Metals</b>							
Chromium, Hexavalent	<1.0		1.0	ug/L		11-OCT-16	R3569022
L1840926-4 SW-11115650-100716-LM-004 Sampled By: L. MARSHALL on 07-OCT-16 @ 09:42 Matrix: WATER							
<b>Physical Tests</b>							
Hardness (as CaCO3)	352		10	mg/L		12-OCT-16	
Total Suspended Solids	3.5		2.0	mg/L	13-OCT-16	14-OCT-16	R3571038
<b>Anions and Nutrients</b>							
Total Kjeldahl Nitrogen	1.83		0.15	mg/L	13-OCT-16	13-OCT-16	R3570268
Phosphorus, Total	0.0346		0.0030	mg/L	12-OCT-16	13-OCT-16	R3569647
<b>Total Metals</b>							
Aluminum (Al)-Total	0.016		0.010	mg/L	08-OCT-16	11-OCT-16	R3568325
Antimony (Sb)-Total	0.00041		0.00010	mg/L	08-OCT-16	11-OCT-16	R3568325
Arsenic (As)-Total	0.00100		0.00010	mg/L	08-OCT-16	11-OCT-16	R3568325

\* 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
L1840926-4 SW-11115650-100716-LM-004 Sampled By: L. MARSHALL on 07-OCT-16 @ 09:42 Matrix: WATER							
<b>Total Metals</b>							
Beryllium (Be)-Total	<0.00010		0.00010	mg/L	08-OCT-16	11-OCT-16	R3568325
Boron (B)-Total	0.087		0.010	mg/L	08-OCT-16	11-OCT-16	R3568325
Cadmium (Cd)-Total	0.000014		0.000010	mg/L	08-OCT-16	11-OCT-16	R3568325
Chromium (Cr)-Total	<0.00050		0.00050	mg/L	08-OCT-16	11-OCT-16	R3568325
Cobalt (Co)-Total	0.00010		0.00010	mg/L	08-OCT-16	11-OCT-16	R3568325
Copper (Cu)-Total	0.0050		0.0010	mg/L	08-OCT-16	11-OCT-16	R3568325
Iron (Fe)-Total	0.085		0.050	mg/L	08-OCT-16	11-OCT-16	R3568325
Lead (Pb)-Total	0.00010		0.00010	mg/L	08-OCT-16	11-OCT-16	R3568325
Mercury (Hg)-Total	<0.000010		0.000010	mg/L		17-OCT-16	R3572777
Molybdenum (Mo)-Total	0.000864		0.000050	mg/L	08-OCT-16	11-OCT-16	R3568325
Nickel (Ni)-Total	0.00099		0.00050	mg/L	08-OCT-16	11-OCT-16	R3568325
Selenium (Se)-Total	0.000103		0.000050	mg/L	08-OCT-16	11-OCT-16	R3568325
Silver (Ag)-Total	<0.000050		0.000050	mg/L	08-OCT-16	11-OCT-16	R3568325
Thallium (Tl)-Total	<0.000010		0.000010	mg/L	08-OCT-16	11-OCT-16	R3568325
Tungsten (W)-Total	<0.00010		0.00010	mg/L	08-OCT-16	11-OCT-16	R3568325
Uranium (U)-Total	0.00339		0.000010	mg/L	08-OCT-16	11-OCT-16	R3568325
Vanadium (V)-Total	0.00064		0.000050	mg/L	08-OCT-16	11-OCT-16	R3568325
Zinc (Zn)-Total	0.0067		0.0030	mg/L	08-OCT-16	11-OCT-16	R3568325
Zirconium (Zr)-Total	<0.00030		0.00030	mg/L	08-OCT-16	11-OCT-16	R3568325
<b>Dissolved Metals</b>							
Dissolved Metals Filtration Location	LAB					11-OCT-16	R3567854
Aluminum (Al)-Dissolved	0.0056		0.0050	mg/L	11-OCT-16	11-OCT-16	R3568690
Calcium (Ca)-Dissolved	105		0.050	mg/L	11-OCT-16	11-OCT-16	R3568690
Magnesium (Mg)-Dissolved	22.1		0.050	mg/L	11-OCT-16	11-OCT-16	R3568690
<b>Speciated Metals</b>							
Chromium, Hexavalent	<1.0		1.0	ug/L		11-OCT-16	R3569022
L1840926-5 SW-11115650-100716-LM-005 Sampled By: L. MARSHALL on 07-OCT-16 @ 11:45 Matrix: WATER							
<b>Physical Tests</b>							
Hardness (as CaCO3)	363		10	mg/L		12-OCT-16	
Total Suspended Solids	<2.0		2.0	mg/L	13-OCT-16	14-OCT-16	R3571038
<b>Anions and Nutrients</b>							
Total Kjeldahl Nitrogen	1.21		0.15	mg/L	13-OCT-16	13-OCT-16	R3570268
Phosphorus, Total	0.0595		0.0030	mg/L	12-OCT-16	13-OCT-16	R3569647
<b>Total Metals</b>							
Aluminum (Al)-Total	0.020		0.010	mg/L	08-OCT-16	11-OCT-16	R3568325
Antimony (Sb)-Total	0.00035		0.00010	mg/L	08-OCT-16	11-OCT-16	R3568325
Arsenic (As)-Total	0.00115		0.00010	mg/L	08-OCT-16	11-OCT-16	R3568325
Beryllium (Be)-Total	<0.00010		0.00010	mg/L	08-OCT-16	11-OCT-16	R3568325
Boron (B)-Total	0.076		0.010	mg/L	08-OCT-16	11-OCT-16	R3568325
Cadmium (Cd)-Total	0.000019		0.000010	mg/L	08-OCT-16	11-OCT-16	R3568325

\* 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
L1840926-5 SW-11115650-100716-LM-005 Sampled By: L. MARSHALL on 07-OCT-16 @ 11:45 Matrix: WATER							
<b>Total Metals</b>							
Chromium (Cr)-Total	<0.00050		0.00050	mg/L	08-OCT-16	11-OCT-16	R3568325
Cobalt (Co)-Total	0.00033		0.00010	mg/L	08-OCT-16	11-OCT-16	R3568325
Copper (Cu)-Total	0.0082		0.0010	mg/L	08-OCT-16	11-OCT-16	R3568325
Iron (Fe)-Total	0.143		0.050	mg/L	08-OCT-16	11-OCT-16	R3568325
Lead (Pb)-Total	<0.00010		0.00010	mg/L	08-OCT-16	11-OCT-16	R3568325
Mercury (Hg)-Total	<0.000010		0.000010	mg/L		17-OCT-16	R3572777
Molybdenum (Mo)-Total	0.000906		0.000050	mg/L	08-OCT-16	11-OCT-16	R3568325
Nickel (Ni)-Total	0.00116		0.00050	mg/L	08-OCT-16	11-OCT-16	R3568325
Selenium (Se)-Total	0.000150		0.000050	mg/L	08-OCT-16	11-OCT-16	R3568325
Silver (Ag)-Total	<0.000050		0.000050	mg/L	08-OCT-16	11-OCT-16	R3568325
Thallium (Tl)-Total	0.000012		0.000010	mg/L	08-OCT-16	11-OCT-16	R3568325
Tungsten (W)-Total	<0.00010		0.00010	mg/L	08-OCT-16	11-OCT-16	R3568325
Uranium (U)-Total	0.00409		0.000010	mg/L	08-OCT-16	11-OCT-16	R3568325
Vanadium (V)-Total	0.00061		0.00050	mg/L	08-OCT-16	11-OCT-16	R3568325
Zinc (Zn)-Total	0.0077		0.0030	mg/L	08-OCT-16	11-OCT-16	R3568325
Zirconium (Zr)-Total	0.00084		0.00030	mg/L	08-OCT-16	11-OCT-16	R3568325
<b>Dissolved Metals</b>							
Dissolved Metals Filtration Location	LAB					11-OCT-16	R3567854
Aluminum (Al)-Dissolved	0.0062		0.0050	mg/L	11-OCT-16	11-OCT-16	R3568690
Calcium (Ca)-Dissolved	106		0.050	mg/L	11-OCT-16	11-OCT-16	R3568690
Magnesium (Mg)-Dissolved	23.6		0.050	mg/L	11-OCT-16	11-OCT-16	R3568690
<b>Speciated Metals</b>							
Chromium, Hexavalent	<1.0		1.0	ug/L		11-OCT-16	R3569022
L1840926-6 SW-11115650-100716-LM-006 Sampled By: L. MARSHALL on 07-OCT-16 @ 13:25 Matrix: WATER							
<b>Physical Tests</b>							
Hardness (as CaCO3)	275		10	mg/L		12-OCT-16	
Total Suspended Solids	<2.0		2.0	mg/L	13-OCT-16	14-OCT-16	R3571038
<b>Anions and Nutrients</b>							
Total Kjeldahl Nitrogen	1.82		0.15	mg/L	13-OCT-16	13-OCT-16	R3570268
Phosphorus, Total	0.0643		0.0030	mg/L	12-OCT-16	13-OCT-16	R3569647
<b>Total Metals</b>							
Aluminum (Al)-Total	0.017		0.010	mg/L	08-OCT-16	11-OCT-16	R3568325
Antimony (Sb)-Total	0.00031		0.00010	mg/L	08-OCT-16	11-OCT-16	R3568325
Arsenic (As)-Total	0.00092		0.00010	mg/L	08-OCT-16	11-OCT-16	R3568325
Beryllium (Be)-Total	<0.00010		0.00010	mg/L	08-OCT-16	11-OCT-16	R3568325
Boron (B)-Total	0.074		0.010	mg/L	08-OCT-16	11-OCT-16	R3568325
Cadmium (Cd)-Total	<0.000010		0.000010	mg/L	08-OCT-16	11-OCT-16	R3568325
Chromium (Cr)-Total	<0.00050		0.00050	mg/L	08-OCT-16	11-OCT-16	R3568325
Cobalt (Co)-Total	<0.00010		0.00010	mg/L	08-OCT-16	11-OCT-16	R3568325
Copper (Cu)-Total	0.0140		0.0010	mg/L	08-OCT-16	11-OCT-16	R3568325

\* 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
L1840926-6 SW-11115650-100716-LM-006 Sampled By: L. MARSHALL on 07-OCT-16 @ 13:25 Matrix: WATER							
<b>Total Metals</b>							
Iron (Fe)-Total	0.099		0.050	mg/L	08-OCT-16	11-OCT-16	R3568325
Lead (Pb)-Total	<0.00010		0.00010	mg/L	08-OCT-16	11-OCT-16	R3568325
Mercury (Hg)-Total	<0.000010		0.000010	mg/L		17-OCT-16	R3572777
Molybdenum (Mo)-Total	0.000855		0.000050	mg/L	08-OCT-16	11-OCT-16	R3568325
Nickel (Ni)-Total	0.00080		0.00050	mg/L	08-OCT-16	11-OCT-16	R3568325
Selenium (Se)-Total	0.000162		0.000050	mg/L	08-OCT-16	11-OCT-16	R3568325
Silver (Ag)-Total	<0.000050		0.000050	mg/L	08-OCT-16	11-OCT-16	R3568325
Thallium (Tl)-Total	<0.000010		0.000010	mg/L	08-OCT-16	11-OCT-16	R3568325
Tungsten (W)-Total	<0.00010		0.00010	mg/L	08-OCT-16	11-OCT-16	R3568325
Uranium (U)-Total	0.000653		0.000010	mg/L	08-OCT-16	11-OCT-16	R3568325
Vanadium (V)-Total	0.00067		0.00050	mg/L	08-OCT-16	11-OCT-16	R3568325
Zinc (Zn)-Total	0.0056		0.0030	mg/L	08-OCT-16	11-OCT-16	R3568325
Zirconium (Zr)-Total	<0.00030		0.00030	mg/L	08-OCT-16	11-OCT-16	R3568325
<b>Dissolved Metals</b>							
Dissolved Metals Filtration Location	LAB					11-OCT-16	R3567854
Aluminum (Al)-Dissolved	0.0100		0.0050	mg/L	11-OCT-16	11-OCT-16	R3568690
Calcium (Ca)-Dissolved	79.2		0.050	mg/L	11-OCT-16	11-OCT-16	R3568690
Magnesium (Mg)-Dissolved	18.7		0.050	mg/L	11-OCT-16	11-OCT-16	R3568690
<b>Speciated Metals</b>							
Chromium, Hexavalent	<1.0		1.0	ug/L		11-OCT-16	R3569022

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



## Reference Information

### QC Samples with Qualifiers & Comments:

QC Type Description	Parameter	Qualifier	Applies to Sample Number(s)
Matrix Spike	Calcium (Ca)-Dissolved	MS-B	L1840926-1, -2, -3, -4, -5, -6
Matrix Spike	Magnesium (Mg)-Dissolved	MS-B	L1840926-1, -2, -3, -4, -5, -6
Matrix Spike	Aluminum (Al)-Total	MS-B	L1840926-1, -2, -3, -4, -5, -6
Matrix Spike	Boron (B)-Total	MS-B	L1840926-1, -2, -3, -4, -5, -6
Matrix Spike	Iron (Fe)-Total	MS-B	L1840926-1, -2, -3, -4, -5, -6
Matrix Spike	Uranium (U)-Total	MS-B	L1840926-1, -2, -3, -4, -5, -6
Matrix Spike	Total Kjeldahl Nitrogen	MS-B	L1840926-1, -2, -3, -4, -5, -6

### Sample Parameter Qualifier key listed:

Qualifier	Description
MS-B	Matrix Spike recovery could not be accurately calculated due to high analyte background in sample.
RRV	Reported Result Verified By Repeat Analysis

### Test Method References:

ALS Test Code	Matrix	Test Description	Method Reference**
CR-CR6-PWQO-IC-WT	Water	Chromium +6	EPA 7199
<p>This analysis is carried out using procedures adapted from "Test Methods for Evaluating Solid Waste" SW-846, Method 7199, published by the United States Environmental Protection Agency (EPA). The procedure involves analysis for chromium (VI) by ion chromatography using diphenylcarbazide in a sulphuric acid solution. Chromium (III) is calculated as the difference between the total chromium and the chromium (VI) results.</p> <p>Analysis conducted in accordance with the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act (July 1, 2011).</p>			
HARDNESS-CALC-WT	Water	Hardness	APHA 2340 B
<p>Hardness (also known as Total Hardness) is calculated from the sum of Calcium and Magnesium concentrations, expressed in CaCO<sub>3</sub> equivalents. Dissolved Calcium and Magnesium concentrations are preferentially used for the hardness calculation.</p>			
HG-T-CVAA-WT	Water	Total Mercury in Water by CVAAS	EPA 1631E (mod)
<p>Water samples undergo a cold-oxidation using bromine monochloride prior to reduction with stannous chloride, and analyzed by CVAAS.</p>			
MET-D-CCMS-WT	Water	Dissolved Metals in Water by CRC ICPMS	APHA 3030B/6020A (mod)
<p>Water samples are filtered (0.45 um), preserved with nitric acid, and analyzed by CRC ICPMS.</p> <p>Method Limitation (re: Sulfur): Sulfide and volatile sulfur species may not be recovered by this method.</p> <p>Analysis conducted in accordance with the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act (July 1, 2011).</p>			
MET-T-CCMS-WT	Water	Total Metals by CRC ICPMS	EPA 200.2/6020A (mod)
<p>Water samples are digested with nitric and hydrochloric acids, and analyzed by CRC ICPMS.</p> <p>Method Limitation (re: Sulfur): Sulfide and volatile sulfur species may not be recovered by this method.</p> <p>Analysis conducted in accordance with the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act (July 1, 2011).</p>			
P-T-COL-WT	Water	Total P in Water by Colour	APHA 4500-P PHOSPHORUS
<p>This analysis is carried out using procedures adapted from APHA Method 4500-P "Phosphorus". Total Phosphorus is determined colourimetrically after persulphate digestion of the sample.</p>			
SOLIDS-TSS-WT	Water	Suspended solids	APHA 2540 D-Gravimetric
<p>A well-mixed sample is filtered through a weighed standard glass fibre filter and the residue retained is dried in an oven at 104–1°C for a minimum of four hours or until a constant weight is achieved.</p>			
TKN-WT	Water	Total Kjeldahl Nitrogen	APHA 4500-N
<p>Sample is digested to convert the TKN to ammonium sulphate. The ammonia ions are heated to produce a colour complex. The absorbance measured by the instrument is proportional to the concentration of ammonium sulphate in the sample and is reported as TKN.</p>			

\*\* 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
WT	ALS ENVIRONMENTAL - WATERLOO, ONTARIO, CANADA

## Reference Information

### Chain of Custody Numbers:

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15-545034

### 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 weight of sample*

*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: L1840926

Report Date: 18-OCT-16

Page 1 of 6

Client: GHD Limited (Waterloo)  
651 COLBY DRIVE  
WATERLOO ON N2V 1C2

Contact: PREETI GURURAJAN

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
<b>CR-CR6-PWQO-IC-WT</b>								
<b>Water</b>								
<b>Batch</b>	<b>R3569022</b>							
<b>WG2407829-4</b>	<b>DUP</b>	<b>WG2407829-3</b>						
Chromium, Hexavalent		<1.0	<1.0	RPD-NA	ug/L	N/A	20	11-OCT-16
<b>WG2407829-2</b>	<b>LCS</b>							
Chromium, Hexavalent			102.7		%		80-120	11-OCT-16
<b>WG2407829-1</b>	<b>MB</b>							
Chromium, Hexavalent			<1.0		ug/L		1	11-OCT-16
<b>WG2407829-5</b>	<b>MS</b>	<b>WG2407829-3</b>						
Chromium, Hexavalent			102.0		%		70-130	11-OCT-16
<b>HG-T-CVAA-WT</b>								
<b>Water</b>								
<b>Batch</b>	<b>R3572777</b>							
<b>WG2411744-3</b>	<b>DUP</b>	<b>L1840926-1</b>						
Mercury (Hg)-Total		<0.000010	<0.000010	RPD-NA	mg/L	N/A	20	17-OCT-16
<b>WG2411744-2</b>	<b>LCS</b>							
Mercury (Hg)-Total			103.0		%		80-120	17-OCT-16
<b>WG2411744-1</b>	<b>MB</b>							
Mercury (Hg)-Total			<0.000010		mg/L		0.00001	17-OCT-16
<b>WG2411744-4</b>	<b>MS</b>	<b>L1840926-2</b>						
Mercury (Hg)-Total			96.2		%		70-130	17-OCT-16
<b>MET-D-CCMS-WT</b>								
<b>Water</b>								
<b>Batch</b>	<b>R3568690</b>							
<b>WG2407489-4</b>	<b>DUP</b>	<b>WG2407489-3</b>						
Aluminum (Al)-Dissolved		<0.0050	<0.0050	RPD-NA	mg/L	N/A	20	11-OCT-16
Calcium (Ca)-Dissolved		73.6	72.1		mg/L	2.1	20	11-OCT-16
Magnesium (Mg)-Dissolved		29.7	29.3		mg/L	1.2	20	11-OCT-16
<b>WG2407489-2</b>	<b>LCS</b>							
Aluminum (Al)-Dissolved			101.5		%		80-120	11-OCT-16
Calcium (Ca)-Dissolved			95.2		%		80-120	11-OCT-16
Magnesium (Mg)-Dissolved			99.7		%		80-120	11-OCT-16
<b>WG2407489-1</b>	<b>MB</b>							
Aluminum (Al)-Dissolved			<0.0050		mg/L		0.005	11-OCT-16
Calcium (Ca)-Dissolved			<0.050		mg/L		0.05	11-OCT-16
Magnesium (Mg)-Dissolved			<0.050		mg/L		0.05	11-OCT-16
<b>WG2407489-5</b>	<b>MS</b>	<b>WG2407489-3</b>						
Aluminum (Al)-Dissolved			84.9		%		70-130	11-OCT-16
Calcium (Ca)-Dissolved			N/A	MS-B	%		-	11-OCT-16
Magnesium (Mg)-Dissolved			N/A	MS-B	%		-	11-OCT-16
<b>MET-T-CCMS-WT</b>								
<b>Water</b>								



### Quality Control Report

Workorder: L1840926

Report Date: 18-OCT-16

Page 2 of 6

Client: GHD Limited (Waterloo)  
 651 COLBY DRIVE  
 WATERLOO ON N2V 1C2

Contact: PREETI GURURAJAN

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
<b>MET-T-CCMS-WT</b>								
	<b>Water</b>							
<b>Batch</b>	<b>R3568325</b>							
<b>WG2406894-4</b>	<b>DUP</b>	<b>WG2406894-3</b>						
Aluminum (Al)-Total		0.237	0.208		mg/L	13	20	11-OCT-16
Antimony (Sb)-Total		0.00025	0.00024		mg/L	6.2	20	11-OCT-16
Arsenic (As)-Total		0.00132	0.00125		mg/L	5.5	20	11-OCT-16
Beryllium (Be)-Total		<0.00010	<0.00010	RPD-NA	mg/L	N/A	20	11-OCT-16
Boron (B)-Total		0.078	0.077		mg/L	1.4	20	11-OCT-16
Cadmium (Cd)-Total		<0.000010	<0.000010	RPD-NA	mg/L	N/A	20	11-OCT-16
Chromium (Cr)-Total		0.00057	0.00056		mg/L	1.6	20	11-OCT-16
Cobalt (Co)-Total		0.00029	0.00030		mg/L	2.4	20	11-OCT-16
Copper (Cu)-Total		0.0017	0.0017		mg/L	1.6	20	11-OCT-16
Iron (Fe)-Total		0.518	0.496		mg/L	4.3	20	11-OCT-16
Lead (Pb)-Total		0.00043	0.00042		mg/L	0.9	20	11-OCT-16
Molybdenum (Mo)-Total		0.000929	0.000917		mg/L	1.3	20	11-OCT-16
Nickel (Ni)-Total		0.00129	0.00134		mg/L	3.6	20	11-OCT-16
Selenium (Se)-Total		0.000094	0.000091		mg/L	2.9	20	11-OCT-16
Silver (Ag)-Total		<0.000050	<0.000050	RPD-NA	mg/L	N/A	20	11-OCT-16
Thallium (Tl)-Total		<0.000010	<0.000010	RPD-NA	mg/L	N/A	20	11-OCT-16
Tungsten (W)-Total		<0.00010	<0.00010	RPD-NA	mg/L	N/A	20	11-OCT-16
Uranium (U)-Total		0.000478	0.000465		mg/L	2.7	20	11-OCT-16
Vanadium (V)-Total		0.00109	0.00098		mg/L	11	20	11-OCT-16
Zinc (Zn)-Total		0.0066	0.0067		mg/L	2.3	20	11-OCT-16
Zirconium (Zr)-Total		<0.00030	<0.00030	RPD-NA	mg/L	N/A	20	11-OCT-16
<b>WG2406894-2</b>	<b>LCS</b>							
Aluminum (Al)-Total			97.8		%		80-120	11-OCT-16
Antimony (Sb)-Total			97.4		%		80-120	11-OCT-16
Arsenic (As)-Total			98.6		%		80-120	11-OCT-16
Beryllium (Be)-Total			87.6		%		80-120	11-OCT-16
Boron (B)-Total			86.7		%		80-120	11-OCT-16
Cadmium (Cd)-Total			94.9		%		80-120	11-OCT-16
Chromium (Cr)-Total			96.8		%		80-120	11-OCT-16
Cobalt (Co)-Total			98.2		%		80-120	11-OCT-16
Copper (Cu)-Total			97.3		%		80-120	11-OCT-16
Iron (Fe)-Total			90.9		%		80-120	11-OCT-16
Lead (Pb)-Total			94.9		%		80-120	11-OCT-16



## Quality Control Report

Workorder: L1840926

Report Date: 18-OCT-16

Page 3 of 6

Client: GHD Limited (Waterloo)  
 651 COLBY DRIVE  
 WATERLOO ON N2V 1C2  
 Contact: PREETI GURURAJAN

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
<b>MET-T-CCMS-WT</b>								
	<b>Water</b>							
<b>Batch</b>	<b>R3568325</b>							
<b>WG2406894-2</b>	<b>LCS</b>							
Molybdenum (Mo)-Total			92.2		%		80-120	11-OCT-16
Nickel (Ni)-Total			96.7		%		80-120	11-OCT-16
Selenium (Se)-Total			93.7		%		80-120	11-OCT-16
Silver (Ag)-Total			99.1		%		80-120	11-OCT-16
Thallium (Tl)-Total			97.6		%		80-120	11-OCT-16
Tungsten (W)-Total			95.6		%		80-120	11-OCT-16
Uranium (U)-Total			94.9		%		80-120	11-OCT-16
Vanadium (V)-Total			99.1		%		80-120	11-OCT-16
Zinc (Zn)-Total			93.9		%		80-120	11-OCT-16
Zirconium (Zr)-Total			87.8		%		80-120	11-OCT-16
<b>WG2406894-1</b>	<b>MB</b>							
Aluminum (Al)-Total			<0.010		mg/L		0.01	11-OCT-16
Antimony (Sb)-Total			<0.00010		mg/L		0.0001	11-OCT-16
Arsenic (As)-Total			<0.00010		mg/L		0.0001	11-OCT-16
Beryllium (Be)-Total			<0.00010		mg/L		0.0001	11-OCT-16
Boron (B)-Total			<0.010		mg/L		0.01	11-OCT-16
Cadmium (Cd)-Total			<0.000010		mg/L		0.00001	11-OCT-16
Chromium (Cr)-Total			<0.00050		mg/L		0.0005	11-OCT-16
Cobalt (Co)-Total			<0.00010		mg/L		0.0001	11-OCT-16
Copper (Cu)-Total			<0.0010		mg/L		0.001	11-OCT-16
Iron (Fe)-Total			<0.050		mg/L		0.05	11-OCT-16
Lead (Pb)-Total			<0.00010		mg/L		0.0001	11-OCT-16
Molybdenum (Mo)-Total			<0.000050		mg/L		0.00005	11-OCT-16
Nickel (Ni)-Total			<0.00050		mg/L		0.0005	11-OCT-16
Selenium (Se)-Total			<0.000050		mg/L		0.00005	11-OCT-16
Silver (Ag)-Total			<0.000050		mg/L		0.00005	11-OCT-16
Thallium (Tl)-Total			<0.000010		mg/L		0.00001	11-OCT-16
Tungsten (W)-Total			<0.00010		mg/L		0.0001	11-OCT-16
Uranium (U)-Total			<0.000010		mg/L		0.00001	11-OCT-16
Vanadium (V)-Total			<0.00050		mg/L		0.0005	11-OCT-16
Zinc (Zn)-Total			<0.0030		mg/L		0.003	11-OCT-16
Zirconium (Zr)-Total			<0.00030		mg/L		0.0003	11-OCT-16
<b>WG2406894-5</b>	<b>MS</b>	<b>WG2406894-3</b>						
Aluminum (Al)-Total			N/A	MS-B	%		-	11-OCT-16





### Quality Control Report

Workorder: L1840926

Report Date: 18-OCT-16

Page 5 of 6

Client: GHD Limited (Waterloo)  
 651 COLBY DRIVE  
 WATERLOO ON N2V 1C2  
 Contact: PREETI GURURAJAN

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
<b>SOLIDS-TSS-WT</b>								
	Water							
<b>Batch</b>	<b>R3570988</b>							
<b>WG2409468-2</b>	<b>LCS</b>							
Total Suspended Solids			94.0		%		85-115	14-OCT-16
<b>WG2409468-1</b>	<b>MB</b>							
Total Suspended Solids			<2.0		mg/L		2	14-OCT-16
<b>Batch</b>	<b>R3571038</b>							
<b>WG2409673-3</b>	<b>DUP</b>	<b>L1840754-4</b>						
Total Suspended Solids		338	372		mg/L	9.7	20	14-OCT-16
<b>WG2409673-2</b>	<b>LCS</b>							
Total Suspended Solids			102.8		%		85-115	14-OCT-16
<b>WG2409673-1</b>	<b>MB</b>							
Total Suspended Solids			<2.0		mg/L		2	14-OCT-16
<b>TKN-WT</b>								
	Water							
<b>Batch</b>	<b>R3570268</b>							
<b>WG2409364-3</b>	<b>DUP</b>	<b>L1840622-1</b>						
Total Kjeldahl Nitrogen		237	211		mg/L	11	20	13-OCT-16
<b>WG2409364-2</b>	<b>LCS</b>							
Total Kjeldahl Nitrogen			103.5		%		75-125	13-OCT-16
<b>WG2409364-1</b>	<b>MB</b>							
Total Kjeldahl Nitrogen			<0.15		mg/L		0.15	13-OCT-16
<b>WG2409364-4</b>	<b>MS</b>	<b>L1840622-1</b>						
Total Kjeldahl Nitrogen			N/A	MS-B	%		-	13-OCT-16

# Quality Control Report

Workorder: L1840926

Report Date: 18-OCT-16

Client: GHD Limited (Waterloo)  
651 COLBY DRIVE  
WATERLOO ON N2V 1C2  
Contact: PREETI GURURAJAN

Page 6 of 6

## Legend:

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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:

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Qualifier	Description
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.

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## 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.

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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.





L1840926-COFC

<b>Report To</b> Contact and company name below will appear on the final report		<b>Report Format / Distribution</b>			<b>Select Service Level Below - Please confirm all E&amp;P TATs with your AM - surcharges will apply</b>										
Company: <b>GHD Ltd.</b>		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: <b>Preeti Gururajan</b>		Quality Control (QC) Report with Report <input type="checkbox"/> YES <input type="checkbox"/> NO			4 day [P4] <input type="checkbox"/>					1 Business day [E1] <input type="checkbox"/>					
Phone: <b>519 884-0510</b>		<input type="checkbox"/> Compare Results to Criteria on Report - provide details below if box checked			3 day [P3] <input type="checkbox"/>					Same Day, Weekend or Statutory holiday [E0] <input type="checkbox"/>					
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] <input type="checkbox"/>					Date and Time Required for all E&P TATs: dd/mm/yy hh:mm					
Street: <b>651 Colby Dr</b>		Email 1 or Fax: <b>preeti.gururajan@ghd.com</b>			For tests that can not be performed according to the service level selected, you will be contacted.										
City/Province: <b>Waterloo ON</b>		Email 2: <b>sarah.andrew@ghd.com</b>			<b>Analysis Request</b>										
Postal Code: <b>N2V 1C2</b>		Email 3:			Indicate Filtered (F), Preserved (P) or Filtered and Preserved (FIP) below										
<b>Invoice To</b>		<b>Invoice Distribution</b>													
Same as Report To <input checked="" type="checkbox"/> YES <input type="checkbox"/> NO		Select Invoice Distribution: <input type="checkbox"/> EMAIL <input type="checkbox"/> MAIL <input type="checkbox"/> FAX													
Copy of invoice with Report <input checked="" type="checkbox"/> YES <input type="checkbox"/> NO		Email 1 or Fax:													
Company: <b>GHD Ltd.</b>		Email 2:													
Contact: <b>Preeti Gururajan</b>		Email 3:													
<b>Project Information</b>		<b>Oil and Gas Required Fields (client use)</b>													
ALS Account # / Quote #		AFE/Cost Center:			PO#									Number of Containers	
Job #: <b>11115650-100</b>		Major/Minor Code:			Routing Code:										
PO / AFE:		Requisitioner:													
LSD:		Location:													
ALS Lab Work Order # (lab use only)		ALS Contact:			Sampler: <b>L. Marshall</b>										
<b>L1840926</b>		<b>Oct 7</b>													
<b>ALS Sample # (lab use only)</b>	<b>Sample Identification and/or Coordinates (This description will appear on the report)</b>				<b>Date (dd-mm-yy)</b>	<b>Time (hh:mm)</b>	<b>Sample Type</b>	<b>TSS</b>	<b>TKN - TP</b>	<b>PW&amp;O Total Metals</b>	<b>Dissolved AL</b>	<b>Dissolved HG</b>	<b>Total CR VI</b>		
1	SW-11115650-10071b-LM-001				07/Oct/16	8:25	SW	X	X	X	X	X	X		6
2	SW-11115650-10071b-LM-002				↓	8:35	↓	X	X	X	X	X	X		6
3	SW-11115650-10071b-LM-003				↓	9:42	↓	X	X	X	X	X	X		6
4	SW-11115650-10071b-LM-004				↓	9:42	↓	X	X	X	X	X	X		6
5	SW-11115650-10071b-LM-005				↓	11:45	↓	X	X	X	X	X	X		6
6	SW-11115650-10071b-LM-006				↓	13:25	↓	X	X	X	X	X	X		6
<b>Drinking Water (DW) Samples<sup>1</sup> (client use)</b>		<b>Special Instructions / Specify Criteria to add on report by clicking on the drop-down list below (electronic COC only)</b>			<b>SAMPLE CONDITION AS RECEIVED (lab use only)</b>										
Are samples taken from a Regulated DW System? <input type="checkbox"/> YES <input checked="" type="checkbox"/> NO		<b>NOTE: No bottles were field filtered.</b>			Frozen <input type="checkbox"/>					SIF Observations Yes <input type="checkbox"/> No <input type="checkbox"/>					
Are samples for human drinking water use? <input type="checkbox"/> YES <input checked="" type="checkbox"/> NO					Ice Packs <input checked="" type="checkbox"/> Ice Cubes <input type="checkbox"/>					Custody seal intact Yes <input type="checkbox"/> No <input type="checkbox"/>					
					Cooling Initiated <input type="checkbox"/>					INITIAL COOLER TEMPERATURES °C					
										FINAL COOLER TEMPERATURES °C					
										6.7					
<b>SHIPMENT RELEASE (client use)</b>		<b>INITIAL SHIPMENT RECEPTION (lab use only)</b>			<b>FINAL SHIPMENT RECEPTION (lab use only)</b>										
Released by: <b>Leah Marshall</b> Date: <b>Oct 7/2016</b>		Received by: <b>YS</b> Date: <b>Oct 7, 2016</b>			Time: <b>16:40</b>										

PM



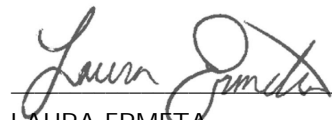
GHD Limited (Waterloo)  
ATTN: PREETI GURURAJAN  
651 COLBY DRIVE  
WATERLOO ON N2V 1C2

Date Received: 20-OCT-16  
Report Date: 27-OCT-16 11:42 (MT)  
Version: FINAL

Client Phone: 519-884-0510

## Certificate of Analysis

Lab Work Order #: L1846520  
Project P.O. #: PENDING  
Job Reference: 11115650  
C of C Numbers: 15-545063  
Legal Site Desc:

  
LAURA ERMETA  
Account Manager

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ADDRESS: 60 Northland Road, Unit 1, Waterloo, ON N2V 2B8 Canada | Phone: +1 519 886 6910 | Fax: +1 519 886 9047  
ALS CANADA LTD Part of the ALS Group A Campbell Brothers Limited Company

## ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L1846520-1 SW-11115650-102016-LM-001 Sampled By: L. MARSHALL on 20-OCT-16 @ 10:50 Matrix: WATER							
<b>Physical Tests</b>							
Hardness (as CaCO <sub>3</sub> )	162		10	mg/L		24-OCT-16	
Total Suspended Solids	156	DLHC	10	mg/L	26-OCT-16	27-OCT-16	R3580978
<b>Anions and Nutrients</b>							
Total Kjeldahl Nitrogen	2.37		0.15	mg/L	21-OCT-16	21-OCT-16	R3577223
Phosphorus, Total	0.297		0.0030	mg/L	25-OCT-16	25-OCT-16	R3579632
<b>Total Metals</b>							
Aluminum (Al)-Total	3.01		0.010	mg/L	21-OCT-16	22-OCT-16	R3577995
Antimony (Sb)-Total	0.00061		0.00010	mg/L	21-OCT-16	22-OCT-16	R3577995
Arsenic (As)-Total	0.00194		0.00010	mg/L	21-OCT-16	22-OCT-16	R3577995
Beryllium (Be)-Total	0.00014		0.00010	mg/L	21-OCT-16	22-OCT-16	R3577995
Boron (B)-Total	0.196		0.010	mg/L	21-OCT-16	22-OCT-16	R3577995
Cadmium (Cd)-Total	0.000077		0.000010	mg/L	21-OCT-16	22-OCT-16	R3577995
Chromium (Cr)-Total	0.00549		0.00050	mg/L	21-OCT-16	22-OCT-16	R3577995
Cobalt (Co)-Total	0.00196		0.00010	mg/L	21-OCT-16	22-OCT-16	R3577995
Copper (Cu)-Total	0.0195		0.0010	mg/L	21-OCT-16	22-OCT-16	R3577995
Iron (Fe)-Total	4.48		0.050	mg/L	21-OCT-16	22-OCT-16	R3577995
Lead (Pb)-Total	0.00511		0.00010	mg/L	21-OCT-16	22-OCT-16	R3577995
Mercury (Hg)-Total	<0.000010		0.000010	mg/L		21-OCT-16	R3576477
Molybdenum (Mo)-Total	0.000924		0.000050	mg/L	21-OCT-16	22-OCT-16	R3577995
Nickel (Ni)-Total	0.00485		0.00050	mg/L	21-OCT-16	22-OCT-16	R3577995
Selenium (Se)-Total	0.000156		0.000050	mg/L	21-OCT-16	22-OCT-16	R3577995
Silver (Ag)-Total	<0.000050		0.000050	mg/L	21-OCT-16	22-OCT-16	R3577995
Thallium (Tl)-Total	0.000039		0.000010	mg/L	21-OCT-16	22-OCT-16	R3577995
Tungsten (W)-Total	0.00012		0.00010	mg/L	21-OCT-16	22-OCT-16	R3577995
Uranium (U)-Total	0.000427		0.000010	mg/L	21-OCT-16	22-OCT-16	R3577995
Vanadium (V)-Total	0.00662		0.00050	mg/L	21-OCT-16	22-OCT-16	R3577995
Zinc (Zn)-Total	0.0580		0.0030	mg/L	21-OCT-16	22-OCT-16	R3577995
Zirconium (Zr)-Total	0.00070		0.00030	mg/L	21-OCT-16	22-OCT-16	R3577995
<b>Dissolved Metals</b>							
Dissolved Metals Filtration Location	LAB					21-OCT-16	R3576678
Aluminum (Al)-Dissolved	0.0396		0.0050	mg/L	21-OCT-16	21-OCT-16	R3577308
Calcium (Ca)-Dissolved	48.2		0.050	mg/L	21-OCT-16	21-OCT-16	R3577308
Magnesium (Mg)-Dissolved	10.2		0.050	mg/L	21-OCT-16	21-OCT-16	R3577308
<b>Speciated Metals</b>							
Chromium, Hexavalent	<1.0		1.0	ug/L		24-OCT-16	R3579180
L1846520-2 SW-11115650-102016-LM-002 Sampled By: L. MARSHALL on 20-OCT-16 @ 10:55 Matrix: WATER							
<b>Physical Tests</b>							
Hardness (as CaCO <sub>3</sub> )	<10		10	mg/L		24-OCT-16	
Total Suspended Solids	<2.0		2.0	mg/L	26-OCT-16	27-OCT-16	R3580978
<b>Anions and Nutrients</b>							

\* 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
L1846520-2 SW-11115650-102016-LM-002 Sampled By: L. MARSHALL on 20-OCT-16 @ 10:55 Matrix: WATER							
<b>Anions and Nutrients</b>							
Total Kjeldahl Nitrogen	4.52		0.15	mg/L	21-OCT-16	21-OCT-16	R3577223
Phosphorus, Total	0.0055		0.0030	mg/L	25-OCT-16	25-OCT-16	R3579632
<b>Total Metals</b>							
Aluminum (Al)-Total	0.014		0.010	mg/L	21-OCT-16	24-OCT-16	R3577995
Antimony (Sb)-Total	<0.00010		0.00010	mg/L	21-OCT-16	22-OCT-16	R3577995
Arsenic (As)-Total	0.00011		0.00010	mg/L	21-OCT-16	24-OCT-16	R3577995
Beryllium (Be)-Total	<0.00010		0.00010	mg/L	21-OCT-16	22-OCT-16	R3577995
Boron (B)-Total	<0.010		0.010	mg/L	21-OCT-16	22-OCT-16	R3577995
Cadmium (Cd)-Total	<0.000010		0.000010	mg/L	21-OCT-16	22-OCT-16	R3577995
Chromium (Cr)-Total	<0.00050		0.00050	mg/L	21-OCT-16	22-OCT-16	R3577995
Cobalt (Co)-Total	<0.00010		0.00010	mg/L	21-OCT-16	22-OCT-16	R3577995
Copper (Cu)-Total	<0.0010		0.0010	mg/L	21-OCT-16	22-OCT-16	R3577995
Iron (Fe)-Total	<0.050		0.050	mg/L	21-OCT-16	22-OCT-16	R3577995
Lead (Pb)-Total	<0.00010		0.00010	mg/L	21-OCT-16	22-OCT-16	R3577995
Mercury (Hg)-Total	<0.000010		0.000010	mg/L		21-OCT-16	R3576477
Molybdenum (Mo)-Total	<0.000050		0.000050	mg/L	21-OCT-16	22-OCT-16	R3577995
Nickel (Ni)-Total	<0.00050		0.00050	mg/L	21-OCT-16	22-OCT-16	R3577995
Selenium (Se)-Total	<0.000050		0.000050	mg/L	21-OCT-16	22-OCT-16	R3577995
Silver (Ag)-Total	<0.000050		0.000050	mg/L	21-OCT-16	22-OCT-16	R3577995
Thallium (Tl)-Total	<0.000010		0.000010	mg/L	21-OCT-16	22-OCT-16	R3577995
Tungsten (W)-Total	<0.00010		0.00010	mg/L	21-OCT-16	22-OCT-16	R3577995
Uranium (U)-Total	<0.000010		0.000010	mg/L	21-OCT-16	22-OCT-16	R3577995
Vanadium (V)-Total	<0.00050		0.00050	mg/L	21-OCT-16	22-OCT-16	R3577995
Zinc (Zn)-Total	0.0420		0.0030	mg/L	21-OCT-16	24-OCT-16	R3577995
Zirconium (Zr)-Total	<0.00030		0.00030	mg/L	21-OCT-16	22-OCT-16	R3577995
<b>Dissolved Metals</b>							
Dissolved Metals Filtration Location	LAB					21-OCT-16	R3576678
Aluminum (Al)-Dissolved	0.0085		0.0050	mg/L	21-OCT-16	21-OCT-16	R3577308
Calcium (Ca)-Dissolved	<0.050		0.050	mg/L	21-OCT-16	21-OCT-16	R3577308
Magnesium (Mg)-Dissolved	<0.050		0.050	mg/L	21-OCT-16	21-OCT-16	R3577308
<b>Speciated Metals</b>							
Chromium, Hexavalent	<1.0		1.0	ug/L		24-OCT-16	R3579180
L1846520-3 SW-11115650-102016-LM-003 Sampled By: L. MARSHALL on 20-OCT-16 @ 11:56 Matrix: WATER							
<b>Physical Tests</b>							
Hardness (as CaCO3)	159		10	mg/L		24-OCT-16	
Total Suspended Solids	3.0		2.0	mg/L	26-OCT-16	27-OCT-16	R3580978
<b>Anions and Nutrients</b>							
Total Kjeldahl Nitrogen	1.50		0.15	mg/L	21-OCT-16	21-OCT-16	R3577223
Phosphorus, Total	0.145		0.0030	mg/L	25-OCT-16	25-OCT-16	R3579632
<b>Total Metals</b>							

\* 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
L1846520-3 SW-11115650-102016-LM-003 Sampled By: L. MARSHALL on 20-OCT-16 @ 11:56 Matrix: WATER							
<b>Total Metals</b>							
Aluminum (Al)-Total	0.120		0.010	mg/L	21-OCT-16	22-OCT-16	R3577995
Antimony (Sb)-Total	0.00053		0.00010	mg/L	21-OCT-16	22-OCT-16	R3577995
Arsenic (As)-Total	0.00100		0.00010	mg/L	21-OCT-16	22-OCT-16	R3577995
Beryllium (Be)-Total	<0.00010		0.00010	mg/L	21-OCT-16	22-OCT-16	R3577995
Boron (B)-Total	0.040		0.010	mg/L	21-OCT-16	22-OCT-16	R3577995
Cadmium (Cd)-Total	0.000014		0.000010	mg/L	21-OCT-16	22-OCT-16	R3577995
Chromium (Cr)-Total	0.00077		0.00050	mg/L	21-OCT-16	22-OCT-16	R3577995
Cobalt (Co)-Total	0.00015		0.00010	mg/L	21-OCT-16	22-OCT-16	R3577995
Copper (Cu)-Total	0.0112		0.0010	mg/L	21-OCT-16	22-OCT-16	R3577995
Iron (Fe)-Total	0.279		0.050	mg/L	21-OCT-16	22-OCT-16	R3577995
Lead (Pb)-Total	0.00030		0.00010	mg/L	21-OCT-16	22-OCT-16	R3577995
Mercury (Hg)-Total	<0.000010		0.000010	mg/L		21-OCT-16	R3576477
Molybdenum (Mo)-Total	0.000662		0.000050	mg/L	21-OCT-16	22-OCT-16	R3577995
Nickel (Ni)-Total	0.00093		0.00050	mg/L	21-OCT-16	22-OCT-16	R3577995
Selenium (Se)-Total	0.000124		0.000050	mg/L	21-OCT-16	22-OCT-16	R3577995
Silver (Ag)-Total	<0.000050		0.000050	mg/L	21-OCT-16	22-OCT-16	R3577995
Thallium (Tl)-Total	<0.000010		0.000010	mg/L	21-OCT-16	22-OCT-16	R3577995
Tungsten (W)-Total	<0.00010		0.00010	mg/L	21-OCT-16	22-OCT-16	R3577995
Uranium (U)-Total	0.000276		0.000010	mg/L	21-OCT-16	22-OCT-16	R3577995
Vanadium (V)-Total	0.00100		0.00050	mg/L	21-OCT-16	22-OCT-16	R3577995
Zinc (Zn)-Total	0.0126		0.0030	mg/L	21-OCT-16	22-OCT-16	R3577995
Zirconium (Zr)-Total	<0.00030		0.00030	mg/L	21-OCT-16	22-OCT-16	R3577995
<b>Dissolved Metals</b>							
Dissolved Metals Filtration Location	LAB					21-OCT-16	R3576678
Aluminum (Al)-Dissolved	0.0213		0.0050	mg/L	21-OCT-16	21-OCT-16	R3577308
Calcium (Ca)-Dissolved	47.3		0.050	mg/L	21-OCT-16	21-OCT-16	R3577308
Magnesium (Mg)-Dissolved	9.91		0.050	mg/L	21-OCT-16	21-OCT-16	R3577308
<b>Speciated Metals</b>							
Chromium, Hexavalent	<1.0		1.0	ug/L		24-OCT-16	R3579180
L1846520-4 SW-11115650-102016-LM-004 Sampled By: L. MARSHALL on 20-OCT-16 @ 13:00 Matrix: WATER							
<b>Physical Tests</b>							
Hardness (as CaCO3)	185		10	mg/L		24-OCT-16	
Total Suspended Solids	2.5		2.0	mg/L	26-OCT-16	27-OCT-16	R3580978
<b>Anions and Nutrients</b>							
Total Kjeldahl Nitrogen	5.33		0.15	mg/L	21-OCT-16	21-OCT-16	R3577223
Phosphorus, Total	0.150		0.0030	mg/L	25-OCT-16	25-OCT-16	R3579632
<b>Total Metals</b>							
Aluminum (Al)-Total	0.080		0.010	mg/L	21-OCT-16	22-OCT-16	R3577995
Antimony (Sb)-Total	0.00069		0.00010	mg/L	21-OCT-16	22-OCT-16	R3577995
Arsenic (As)-Total	0.00116		0.00010	mg/L	21-OCT-16	22-OCT-16	R3577995

\* 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
L1846520-4 SW-11115650-102016-LM-004 Sampled By: L. MARSHALL on 20-OCT-16 @ 13:00 Matrix: WATER							
<b>Total Metals</b>							
Beryllium (Be)-Total	<0.00010		0.00010	mg/L	21-OCT-16	22-OCT-16	R3577995
Boron (B)-Total	0.292		0.010	mg/L	21-OCT-16	22-OCT-16	R3577995
Cadmium (Cd)-Total	0.000022		0.000010	mg/L	21-OCT-16	22-OCT-16	R3577995
Chromium (Cr)-Total	0.00129		0.00050	mg/L	21-OCT-16	22-OCT-16	R3577995
Cobalt (Co)-Total	0.00018		0.00010	mg/L	21-OCT-16	22-OCT-16	R3577995
Copper (Cu)-Total	0.0132		0.0010	mg/L	21-OCT-16	22-OCT-16	R3577995
Iron (Fe)-Total	0.230		0.050	mg/L	21-OCT-16	22-OCT-16	R3577995
Lead (Pb)-Total	0.00026		0.00010	mg/L	21-OCT-16	22-OCT-16	R3577995
Mercury (Hg)-Total	<0.000010		0.000010	mg/L		21-OCT-16	R3576477
Molybdenum (Mo)-Total	0.000692		0.000050	mg/L	21-OCT-16	22-OCT-16	R3577995
Nickel (Ni)-Total	0.00172		0.00050	mg/L	21-OCT-16	22-OCT-16	R3577995
Selenium (Se)-Total	0.000138		0.000050	mg/L	21-OCT-16	22-OCT-16	R3577995
Silver (Ag)-Total	<0.000050		0.000050	mg/L	21-OCT-16	22-OCT-16	R3577995
Thallium (Tl)-Total	<0.000010		0.000010	mg/L	21-OCT-16	22-OCT-16	R3577995
Tungsten (W)-Total	<0.00010		0.00010	mg/L	21-OCT-16	22-OCT-16	R3577995
Uranium (U)-Total	0.000922		0.000010	mg/L	21-OCT-16	22-OCT-16	R3577995
Vanadium (V)-Total	0.00088		0.00050	mg/L	21-OCT-16	22-OCT-16	R3577995
Zinc (Zn)-Total	0.0146		0.0030	mg/L	21-OCT-16	22-OCT-16	R3577995
Zirconium (Zr)-Total	<0.00030		0.00030	mg/L	21-OCT-16	22-OCT-16	R3577995
<b>Dissolved Metals</b>							
Dissolved Metals Filtration Location	LAB					21-OCT-16	R3576678
Aluminum (Al)-Dissolved	0.0203		0.0050	mg/L	21-OCT-16	21-OCT-16	R3577308
Calcium (Ca)-Dissolved	56.5		0.050	mg/L	21-OCT-16	21-OCT-16	R3577308
Magnesium (Mg)-Dissolved	10.6		0.050	mg/L	21-OCT-16	21-OCT-16	R3577308
<b>Speciated Metals</b>							
Chromium, Hexavalent	1.1		1.0	ug/L		24-OCT-16	R3579180
L1846520-5 SW-11115650-102016-LM-005 Sampled By: L. MARSHALL on 20-OCT-16 @ 13:00 Matrix: WATER							
<b>Physical Tests</b>							
Hardness (as CaCO3)	175		10	mg/L		24-OCT-16	
Total Suspended Solids	2.9		2.0	mg/L	26-OCT-16	27-OCT-16	R3580978
<b>Anions and Nutrients</b>							
Total Kjeldahl Nitrogen	6.17		0.15	mg/L	21-OCT-16	21-OCT-16	R3577223
Phosphorus, Total	0.159		0.0030	mg/L	25-OCT-16	25-OCT-16	R3579632
<b>Total Metals</b>							
Aluminum (Al)-Total	0.079		0.010	mg/L	21-OCT-16	22-OCT-16	R3577995
Antimony (Sb)-Total	0.00064		0.00010	mg/L	21-OCT-16	22-OCT-16	R3577995
Arsenic (As)-Total	0.00115		0.00010	mg/L	21-OCT-16	22-OCT-16	R3577995
Beryllium (Be)-Total	<0.00010		0.00010	mg/L	21-OCT-16	22-OCT-16	R3577995
Boron (B)-Total	0.286		0.010	mg/L	21-OCT-16	22-OCT-16	R3577995
Cadmium (Cd)-Total	0.000020		0.000010	mg/L	21-OCT-16	22-OCT-16	R3577995

\* 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
L1846520-5 SW-11115650-102016-LM-005 Sampled By: L. MARSHALL on 20-OCT-16 @ 13:00 Matrix: WATER							
<b>Total Metals</b>							
Chromium (Cr)-Total	0.00133		0.00050	mg/L	21-OCT-16	22-OCT-16	R3577995
Cobalt (Co)-Total	0.00019		0.00010	mg/L	21-OCT-16	22-OCT-16	R3577995
Copper (Cu)-Total	0.0130		0.0010	mg/L	21-OCT-16	22-OCT-16	R3577995
Iron (Fe)-Total	0.229		0.050	mg/L	21-OCT-16	22-OCT-16	R3577995
Lead (Pb)-Total	0.00026		0.00010	mg/L	21-OCT-16	22-OCT-16	R3577995
Mercury (Hg)-Total	<0.000010		0.000010	mg/L		21-OCT-16	R3576477
Molybdenum (Mo)-Total	0.000714		0.000050	mg/L	21-OCT-16	22-OCT-16	R3577995
Nickel (Ni)-Total	0.00173		0.00050	mg/L	21-OCT-16	22-OCT-16	R3577995
Selenium (Se)-Total	0.000118		0.000050	mg/L	21-OCT-16	22-OCT-16	R3577995
Silver (Ag)-Total	<0.000050		0.000050	mg/L	21-OCT-16	22-OCT-16	R3577995
Thallium (Tl)-Total	<0.000010		0.000010	mg/L	21-OCT-16	22-OCT-16	R3577995
Tungsten (W)-Total	<0.00010		0.00010	mg/L	21-OCT-16	22-OCT-16	R3577995
Uranium (U)-Total	0.000943		0.000010	mg/L	21-OCT-16	22-OCT-16	R3577995
Vanadium (V)-Total	0.00089		0.00050	mg/L	21-OCT-16	22-OCT-16	R3577995
Zinc (Zn)-Total	0.0143		0.0030	mg/L	21-OCT-16	22-OCT-16	R3577995
Zirconium (Zr)-Total	<0.00030		0.00030	mg/L	21-OCT-16	22-OCT-16	R3577995
<b>Dissolved Metals</b>							
Dissolved Metals Filtration Location	LAB					21-OCT-16	R3576678
Aluminum (Al)-Dissolved	0.0214		0.0050	mg/L	21-OCT-16	21-OCT-16	R3577308
Calcium (Ca)-Dissolved	53.0		0.050	mg/L	21-OCT-16	21-OCT-16	R3577308
Magnesium (Mg)-Dissolved	10.4		0.050	mg/L	21-OCT-16	21-OCT-16	R3577308
<b>Speciated Metals</b>							
Chromium, Hexavalent	<1.0		1.0	ug/L		24-OCT-16	R3579180
L1846520-6 SW-11115650-102016-LM-006 Sampled By: L. MARSHALL on 20-OCT-16 @ 13:55 Matrix: WATER							
<b>Physical Tests</b>							
Hardness (as CaCO3)	173		10	mg/L		24-OCT-16	
Total Suspended Solids	3.4		2.0	mg/L	26-OCT-16	27-OCT-16	R3580978
<b>Anions and Nutrients</b>							
Total Kjeldahl Nitrogen	1.85		0.15	mg/L	21-OCT-16	21-OCT-16	R3577223
Phosphorus, Total	0.0909		0.0030	mg/L	25-OCT-16	25-OCT-16	R3579632
<b>Total Metals</b>							
Aluminum (Al)-Total	0.080		0.010	mg/L	21-OCT-16	22-OCT-16	R3577995
Antimony (Sb)-Total	0.00086		0.00010	mg/L	21-OCT-16	22-OCT-16	R3577995
Arsenic (As)-Total	0.00087		0.00010	mg/L	21-OCT-16	22-OCT-16	R3577995
Beryllium (Be)-Total	<0.00010		0.00010	mg/L	21-OCT-16	22-OCT-16	R3577995
Boron (B)-Total	0.066		0.010	mg/L	21-OCT-16	22-OCT-16	R3577995
Cadmium (Cd)-Total	0.000016		0.000010	mg/L	21-OCT-16	22-OCT-16	R3577995
Chromium (Cr)-Total	0.00178		0.00050	mg/L	21-OCT-16	22-OCT-16	R3577995
Cobalt (Co)-Total	0.00019		0.00010	mg/L	21-OCT-16	22-OCT-16	R3577995
Copper (Cu)-Total	0.0078		0.0010	mg/L	21-OCT-16	22-OCT-16	R3577995

\* 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
L1846520-6 SW-11115650-102016-LM-006 Sampled By: L. MARSHALL on 20-OCT-16 @ 13:55 Matrix: WATER							
<b>Total Metals</b>							
Iron (Fe)-Total	0.230		0.050	mg/L	21-OCT-16	22-OCT-16	R3577995
Lead (Pb)-Total	0.00034		0.00010	mg/L	21-OCT-16	22-OCT-16	R3577995
Mercury (Hg)-Total	<0.000010		0.000010	mg/L		21-OCT-16	R3576477
Molybdenum (Mo)-Total	0.00103		0.000050	mg/L	21-OCT-16	22-OCT-16	R3577995
Nickel (Ni)-Total	0.00109		0.00050	mg/L	21-OCT-16	22-OCT-16	R3577995
Selenium (Se)-Total	0.000110		0.000050	mg/L	21-OCT-16	22-OCT-16	R3577995
Silver (Ag)-Total	<0.000050		0.000050	mg/L	21-OCT-16	22-OCT-16	R3577995
Thallium (Tl)-Total	<0.000010		0.000010	mg/L	21-OCT-16	22-OCT-16	R3577995
Tungsten (W)-Total	<0.00010		0.00010	mg/L	21-OCT-16	22-OCT-16	R3577995
Uranium (U)-Total	0.00125		0.000010	mg/L	21-OCT-16	22-OCT-16	R3577995
Vanadium (V)-Total	0.00093		0.00050	mg/L	21-OCT-16	22-OCT-16	R3577995
Zinc (Zn)-Total	0.0141		0.0030	mg/L	21-OCT-16	22-OCT-16	R3577995
Zirconium (Zr)-Total	<0.00030		0.00030	mg/L	21-OCT-16	22-OCT-16	R3577995
<b>Dissolved Metals</b>							
Dissolved Metals Filtration Location	LAB					21-OCT-16	R3576678
Aluminum (Al)-Dissolved	0.0211		0.0050	mg/L	21-OCT-16	21-OCT-16	R3577308
Calcium (Ca)-Dissolved	48.5		0.050	mg/L	21-OCT-16	21-OCT-16	R3577308
Magnesium (Mg)-Dissolved	12.6		0.050	mg/L	21-OCT-16	21-OCT-16	R3577308
<b>Speciated Metals</b>							
Chromium, Hexavalent	1.4		1.0	ug/L		24-OCT-16	R3579180

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



## Reference Information

### QC Samples with Qualifiers & Comments:

QC Type Description	Parameter	Qualifier	Applies to Sample Number(s)
Matrix Spike	Calcium (Ca)-Dissolved	MS-B	L1846520-1, -2, -3, -4, -5, -6
Matrix Spike	Magnesium (Mg)-Dissolved	MS-B	L1846520-1, -2, -3, -4, -5, -6
Matrix Spike	Boron (B)-Total	MS-B	L1846520-1, -2, -3, -4, -5, -6
Matrix Spike	Iron (Fe)-Total	MS-B	L1846520-1, -2, -3, -4, -5, -6
Matrix Spike	Uranium (U)-Total	MS-B	L1846520-1, -2, -3, -4, -5, -6
Matrix Spike	Total Kjeldahl Nitrogen	MS-B	L1846520-1, -2, -3, -4, -5, -6

### Sample Parameter Qualifier key listed:

Qualifier	Description
DLHC	Detection Limit Raised: Dilution required due to high concentration of test analyte(s).
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**
CR-CR6-PWQO-IC-WT	Water	Chromium +6	EPA 7199
<p>This analysis is carried out using procedures adapted from "Test Methods for Evaluating Solid Waste" SW-846, Method 7199, published by the United States Environmental Protection Agency (EPA). The procedure involves analysis for chromium (VI) by ion chromatography using diphenylcarbazide in a sulphuric acid solution. Chromium (III) is calculated as the difference between the total chromium and the chromium (VI) results.</p> <p>Analysis conducted in accordance with the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act (July 1, 2011).</p>			
HARDNESS-CALC-WT	Water	Hardness	APHA 2340 B
<p>Hardness (also known as Total Hardness) is calculated from the sum of Calcium and Magnesium concentrations, expressed in CaCO<sub>3</sub> equivalents. Dissolved Calcium and Magnesium concentrations are preferentially used for the hardness calculation.</p>			
HG-T-CVAA-WT	Water	Total Mercury in Water by CVAAS	EPA 1631E (mod)
<p>Water samples undergo a cold-oxidation using bromine monochloride prior to reduction with stannous chloride, and analyzed by CVAAS.</p>			
MET-D-CCMS-WT	Water	Dissolved Metals in Water by CRC ICPMS	APHA 3030B/6020A (mod)
<p>Water samples are filtered (0.45 um), preserved with nitric acid, and analyzed by CRC ICPMS.</p> <p>Method Limitation (re: Sulfur): Sulfide and volatile sulfur species may not be recovered by this method.</p> <p>Analysis conducted in accordance with the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act (July 1, 2011).</p>			
MET-T-CCMS-WT	Water	Total Metals by CRC ICPMS	EPA 200.2/6020A (mod)
<p>Water samples are digested with nitric and hydrochloric acids, and analyzed by CRC ICPMS.</p> <p>Method Limitation (re: Sulfur): Sulfide and volatile sulfur species may not be recovered by this method.</p> <p>Analysis conducted in accordance with the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act (July 1, 2011).</p>			
P-T-COL-WT	Water	Total P in Water by Colour	APHA 4500-P PHOSPHORUS
<p>This analysis is carried out using procedures adapted from APHA Method 4500-P "Phosphorus". Total Phosphorus is determined colourimetrically after persulphate digestion of the sample.</p>			
SOLIDS-TSS-WT	Water	Suspended solids	APHA 2540 D-Gravimetric
<p>A well-mixed sample is filtered through a weighed standard glass fibre filter and the residue retained is dried in an oven at 104–1°C for a minimum of four hours or until a constant weight is achieved.</p>			
TKN-WT	Water	Total Kjeldahl Nitrogen	APHA 4500-N
<p>Sample is digested to convert the TKN to ammonium sulphate. The ammonia ions are heated to produce a colour complex. The absorbance measured by the instrument is proportional to the concentration of ammonium sulphate in the sample and is reported as TKN.</p>			

\*\* 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
WT	ALS ENVIRONMENTAL - WATERLOO, ONTARIO, CANADA

### Chain of Custody Numbers:

## Reference Information

15-545063

### 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 weight of sample*

*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: L1846520

Report Date: 27-OCT-16

Page 1 of 6

Client: GHD Limited (Waterloo)  
651 COLBY DRIVE  
WATERLOO ON N2V 1C2

Contact: PREETI GURURAJAN

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
<b>CR-CR6-PWQO-IC-WT</b>								
<b>Water</b>								
<b>Batch</b>	<b>R3579180</b>							
<b>WG2417468-4</b>	<b>DUP</b>	<b>WG2417468-3</b>						
Chromium, Hexavalent		<1.0	<1.0	RPD-NA	ug/L	N/A	20	24-OCT-16
<b>WG2417468-2</b>	<b>LCS</b>							
Chromium, Hexavalent			107.3		%		80-120	24-OCT-16
<b>WG2417468-1</b>	<b>MB</b>							
Chromium, Hexavalent			<1.0		ug/L		1	24-OCT-16
<b>WG2417468-5</b>	<b>MS</b>	<b>WG2417468-3</b>						
Chromium, Hexavalent			106.4		%		70-130	24-OCT-16
<b>HG-T-CVAA-WT</b>								
<b>Water</b>								
<b>Batch</b>	<b>R3576477</b>							
<b>WG2415686-3</b>	<b>DUP</b>	<b>L1846520-1</b>						
Mercury (Hg)-Total		<0.000010	<0.000010	RPD-NA	mg/L	N/A	20	21-OCT-16
<b>WG2415686-2</b>	<b>LCS</b>							
Mercury (Hg)-Total			102.0		%		80-120	21-OCT-16
<b>WG2415686-1</b>	<b>MB</b>							
Mercury (Hg)-Total			<0.000010		mg/L		0.00001	21-OCT-16
<b>WG2415686-4</b>	<b>MS</b>	<b>L1846520-2</b>						
Mercury (Hg)-Total			94.9		%		70-130	21-OCT-16
<b>MET-D-CCMS-WT</b>								
<b>Water</b>								
<b>Batch</b>	<b>R3577308</b>							
<b>WG2416062-4</b>	<b>DUP</b>	<b>WG2416062-3</b>						
Aluminum (Al)-Dissolved		0.0396	0.0412		mg/L	3.9	20	21-OCT-16
Calcium (Ca)-Dissolved		48.2	48.5		mg/L	0.6	20	21-OCT-16
Magnesium (Mg)-Dissolved		10.2	10.5		mg/L	3.0	20	21-OCT-16
<b>WG2416062-2</b>	<b>LCS</b>							
Aluminum (Al)-Dissolved			97.3		%		80-120	21-OCT-16
Calcium (Ca)-Dissolved			100.2		%		80-120	21-OCT-16
Magnesium (Mg)-Dissolved			96.5		%		80-120	21-OCT-16
<b>WG2416062-1</b>	<b>MB</b>							
Aluminum (Al)-Dissolved			<0.0050		mg/L		0.005	21-OCT-16
Calcium (Ca)-Dissolved			<0.050		mg/L		0.05	21-OCT-16
Magnesium (Mg)-Dissolved			<0.050		mg/L		0.05	21-OCT-16
<b>WG2416062-5</b>	<b>MS</b>	<b>WG2416062-3</b>						
Aluminum (Al)-Dissolved			98.8		%		70-130	21-OCT-16
Calcium (Ca)-Dissolved			N/A	MS-B	%		-	21-OCT-16
Magnesium (Mg)-Dissolved			N/A	MS-B	%		-	21-OCT-16
<b>MET-T-CCMS-WT</b>								
<b>Water</b>								



### Quality Control Report

Workorder: L1846520

Report Date: 27-OCT-16

Page 2 of 6

Client: GHD Limited (Waterloo)  
 651 COLBY DRIVE  
 WATERLOO ON N2V 1C2

Contact: PREETI GURURAJAN

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
<b>MET-T-CCMS-WT</b>								
	<b>Water</b>							
<b>Batch</b>	<b>R3577995</b>							
<b>WG2415449-4 DUP</b>		<b>WG2415449-3</b>						
Aluminum (Al)-Total		0.083	0.072		mg/L	15	20	22-OCT-16
Antimony (Sb)-Total		0.00193	0.00193		mg/L	0.1	20	22-OCT-16
Arsenic (As)-Total		0.00138	0.00131		mg/L	5.3	20	22-OCT-16
Beryllium (Be)-Total		<0.00010	<0.00010	RPD-NA	mg/L	N/A	20	22-OCT-16
Boron (B)-Total		0.119	0.120		mg/L	1.1	20	22-OCT-16
Cadmium (Cd)-Total		0.000022	0.000021		mg/L	1.0	20	22-OCT-16
Chromium (Cr)-Total		0.00071	0.00058		mg/L	20	20	22-OCT-16
Cobalt (Co)-Total		0.00036	0.00037		mg/L	1.4	20	22-OCT-16
Copper (Cu)-Total		0.0015	0.0014		mg/L	5.7	20	22-OCT-16
Iron (Fe)-Total		0.147	0.145		mg/L	1.3	20	22-OCT-16
Lead (Pb)-Total		0.00161	0.00162		mg/L	0.4	20	22-OCT-16
Molybdenum (Mo)-Total		0.00308	0.00311		mg/L	0.9	20	22-OCT-16
Nickel (Ni)-Total		0.00361	0.00364		mg/L	0.8	20	22-OCT-16
Selenium (Se)-Total		0.000149	0.000145		mg/L	2.8	20	22-OCT-16
Silver (Ag)-Total		<0.000050	<0.000050	RPD-NA	mg/L	N/A	20	22-OCT-16
Thallium (Tl)-Total		<0.000010	<0.000010	RPD-NA	mg/L	N/A	20	22-OCT-16
Tungsten (W)-Total		0.00014	0.00013		mg/L	3.0	20	22-OCT-16
Uranium (U)-Total		0.000365	0.000366		mg/L	0.1	20	22-OCT-16
Vanadium (V)-Total		0.00085	0.00079		mg/L	7.3	20	22-OCT-16
Zinc (Zn)-Total		0.0093	0.0093		mg/L	0.7	20	22-OCT-16
Zirconium (Zr)-Total		<0.00030	<0.00030	RPD-NA	mg/L	N/A	20	22-OCT-16
<b>WG2415449-2 LCS</b>								
Aluminum (Al)-Total			102.1		%		80-120	22-OCT-16
Antimony (Sb)-Total			101.8		%		80-120	22-OCT-16
Arsenic (As)-Total			99.5		%		80-120	22-OCT-16
Beryllium (Be)-Total			102.7		%		80-120	22-OCT-16
Boron (B)-Total			99.0		%		80-120	22-OCT-16
Cadmium (Cd)-Total			99.6		%		80-120	22-OCT-16
Chromium (Cr)-Total			101.5		%		80-120	22-OCT-16
Cobalt (Co)-Total			99.6		%		80-120	22-OCT-16
Copper (Cu)-Total			99.0		%		80-120	22-OCT-16
Iron (Fe)-Total			94.6		%		80-120	22-OCT-16
Lead (Pb)-Total			100.3		%		80-120	22-OCT-16



## Quality Control Report

Workorder: L1846520

Report Date: 27-OCT-16

Page 3 of 6

Client: GHD Limited (Waterloo)  
 651 COLBY DRIVE  
 WATERLOO ON N2V 1C2  
 Contact: PREETI GURURAJAN

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
<b>MET-T-CCMS-WT</b>								
	<b>Water</b>							
<b>Batch</b>	<b>R3577995</b>							
<b>WG2415449-2</b>	<b>LCS</b>							
Molybdenum (Mo)-Total			96.2		%		80-120	22-OCT-16
Nickel (Ni)-Total			98.4		%		80-120	22-OCT-16
Selenium (Se)-Total			95.4		%		80-120	22-OCT-16
Silver (Ag)-Total			103.3		%		80-120	22-OCT-16
Thallium (Tl)-Total			98.6		%		80-120	22-OCT-16
Tungsten (W)-Total			100.6		%		80-120	22-OCT-16
Uranium (U)-Total			97.6		%		80-120	22-OCT-16
Vanadium (V)-Total			100.8		%		80-120	22-OCT-16
Zinc (Zn)-Total			92.5		%		80-120	22-OCT-16
Zirconium (Zr)-Total			93.1		%		80-120	22-OCT-16
<b>WG2415449-1</b>	<b>MB</b>							
Aluminum (Al)-Total			<0.010		mg/L		0.01	22-OCT-16
Antimony (Sb)-Total			<0.00010		mg/L		0.0001	22-OCT-16
Arsenic (As)-Total			<0.00010		mg/L		0.0001	22-OCT-16
Beryllium (Be)-Total			<0.00010		mg/L		0.0001	22-OCT-16
Boron (B)-Total			<0.010		mg/L		0.01	22-OCT-16
Cadmium (Cd)-Total			<0.000010		mg/L		0.00001	22-OCT-16
Chromium (Cr)-Total			<0.00050		mg/L		0.0005	22-OCT-16
Cobalt (Co)-Total			<0.00010		mg/L		0.0001	22-OCT-16
Copper (Cu)-Total			<0.0010		mg/L		0.001	22-OCT-16
Iron (Fe)-Total			<0.050		mg/L		0.05	22-OCT-16
Lead (Pb)-Total			<0.00010		mg/L		0.0001	22-OCT-16
Molybdenum (Mo)-Total			<0.000050		mg/L		0.00005	22-OCT-16
Nickel (Ni)-Total			<0.00050		mg/L		0.0005	22-OCT-16
Selenium (Se)-Total			<0.000050		mg/L		0.00005	22-OCT-16
Silver (Ag)-Total			<0.000050		mg/L		0.00005	22-OCT-16
Thallium (Tl)-Total			<0.000010		mg/L		0.00001	22-OCT-16
Tungsten (W)-Total			<0.00010		mg/L		0.0001	22-OCT-16
Uranium (U)-Total			<0.000010		mg/L		0.00001	22-OCT-16
Vanadium (V)-Total			<0.00050		mg/L		0.0005	22-OCT-16
Zinc (Zn)-Total			<0.0030		mg/L		0.003	24-OCT-16
Zirconium (Zr)-Total			<0.00030		mg/L		0.0003	22-OCT-16
<b>WG2415449-5</b>	<b>MS</b>	<b>WG2415449-3</b>						
Aluminum (Al)-Total			83.8		%		70-130	22-OCT-16





### Quality Control Report

Workorder: L1846520

Report Date: 27-OCT-16

Page 5 of 6

Client: GHD Limited (Waterloo)  
651 COLBY DRIVE  
WATERLOO ON N2V 1C2

Contact: PREETI GURURAJAN

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
<b>SOLIDS-TSS-WT</b>	<b>Water</b>							
<b>Batch R3580978</b>								
<b>WG2419027-2 LCS</b>								
Total Suspended Solids			101.6		%		85-115	27-OCT-16
<b>WG2419027-1 MB</b>								
Total Suspended Solids			<2.0		mg/L		2	27-OCT-16
<b>TKN-WT</b>	<b>Water</b>							
<b>Batch R3577223</b>								
<b>WG2415566-3 DUP</b>		<b>L1846033-1</b>						
Total Kjeldahl Nitrogen		58.2	58.8		mg/L	0.9	20	21-OCT-16
<b>WG2415566-2 LCS</b>								
Total Kjeldahl Nitrogen			104.3		%		75-125	21-OCT-16
<b>WG2415566-1 MB</b>								
Total Kjeldahl Nitrogen			<0.15		mg/L		0.15	21-OCT-16
<b>WG2415566-4 MS</b>		<b>L1846033-1</b>						
Total Kjeldahl Nitrogen			N/A	MS-B	%		-	21-OCT-16

# Quality Control Report

Workorder: L1846520

Report Date: 27-OCT-16

Client: GHD Limited (Waterloo)  
651 COLBY DRIVE  
WATERLOO ON N2V 1C2  
Contact: PREETI GURURAJAN

Page 6 of 6

## Legend:

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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:

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Qualifier	Description
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.

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## 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.

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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.





L1846520-COFC

<b>Report To</b> Contact and company name below will appear on the final report		<b>Report Format / Distribution</b>			Select service level below. All E&P TATs with your AM - surcharges will apply																																																																									
Company: <b>GHD Ltd.</b>		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: <b>Preeh Gururajan</b>		Quality Control (QC) Report with Report <input type="checkbox"/> YES <input type="checkbox"/> NO			PRIORITY (business days) 4 day [P4] <input type="checkbox"/> 3 day [P3] <input type="checkbox"/> 2 day [P2] <input type="checkbox"/>		EMERGENCY 1 Business day [E1] <input type="checkbox"/> Same Day, Weekend or Statutory holiday [E0] <input type="checkbox"/>																																																																							
Phone: <b>519 889 0510</b>		Compare Results to Criteria on Report - provide details below if box checked <input type="checkbox"/>																																																																												
Company address below will appear on the final report		Select Distribution: <input type="checkbox"/> EMAIL <input type="checkbox"/> MAIL <input type="checkbox"/> FAX																																																																												
Street: <b>651 Colby Dr</b>		Email 1 or Fax: <b>preeh.gururajan@GHD.com</b>			Date and Time Required for all E&P TATs: <b>dd-mm-yy hh:mm</b>																																																																									
City/Province: <b>Waterloo</b>		Email 2: <b>leah.marshall@GHD.com</b>			For tests that can not be performed according to the service level selected, you will be contacted.																																																																									
Postal Code:		Email 3: <b>sarah.andrew@GHD.com</b>			<b>Analysis Request</b>																																																																									
<b>Invoice To</b>		<b>Invoice Distribution</b>			Indicate Filtered (F), Preserved (P) or Filtered and Preserved (F/P) below																																																																									
Same as Report To <input checked="" type="checkbox"/> YES <input type="checkbox"/> NO		Select Invoice Distribution: <input type="checkbox"/> EMAIL <input type="checkbox"/> MAIL <input type="checkbox"/> FAX			<table border="1" style="width:100%; border-collapse: collapse;"> <tr> <td style="width:5%;">TSS</td> <td style="width:5%;">TKN</td> <td style="width:5%;">TP</td> <td style="width:5%;">Total Metals</td> <td style="width:5%;">Dissolved AL</td> <td style="width:5%;">Dissolved Hg</td> <td style="width:5%;">Total CR VI</td> <td colspan="4"></td> <td rowspan="6" style="writing-mode: vertical-rl; text-orientation: mixed;">Number of Containers</td> </tr> <tr> <td>X</td><td>X</td><td>X</td><td>X</td><td>X</td><td>X</td><td>X</td><td></td><td></td><td></td><td></td><td rowspan="6" style="text-align: center; vertical-align: middle;">6</td> </tr> <tr> <td>X</td><td>X</td><td>X</td><td>X</td><td>X</td><td>X</td><td>X</td><td></td><td></td><td></td><td></td> </tr> <tr> <td>X</td><td>X</td><td>X</td><td>X</td><td>X</td><td>X</td><td>X</td><td></td><td></td><td></td><td></td> </tr> <tr> <td>X</td><td>X</td><td>X</td><td>X</td><td>X</td><td>X</td><td>X</td><td></td><td></td><td></td><td></td> </tr> <tr> <td>X</td><td>X</td><td>X</td><td>X</td><td>X</td><td>X</td><td>X</td><td></td><td></td><td></td><td></td> </tr> </table>						TSS	TKN	TP	Total Metals	Dissolved AL	Dissolved Hg	Total CR VI					Number of Containers	X	X	X	X	X	X	X					6	X	X	X	X	X	X	X					X	X	X	X	X	X	X					X	X	X	X	X	X	X					X	X	X	X	X	X	X				
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Copy of Invoice with Report <input checked="" type="checkbox"/> YES <input type="checkbox"/> NO		Email 1 or Fax:																																																																												
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LSD: <b>Oct 20</b>		Location:																																																																												
ALS Lab Work Order # (lab use only): <b>L1846520 al</b>		ALS Contact:			Sampler: <b>L. Marshall</b>																																																																									
<b>ALS Sample # (lab use only)</b>		<b>Sample Identification and/or Coordinates (This description will appear on the report)</b>			<b>Date (dd-mm-yy)</b>		<b>Time (hh:mm)</b>		<b>Sample Type</b>																																																																					
1	SW-11115650-102016-LM-001			20-Oct-16	10:50	SW	X	X	X	X	X	X																																																																		
2	SW-11115650-102016-LM-002			↓	10:55	↓	X	X	X	X	X	X																																																																		
3	SW-11115650-102016-LM-003				11:56		X	X	X	X	X	X	X																																																																	
4	SW-11115650-102016-LM-004				13:00		X	X	X	X	X	X	X																																																																	
5	SW-11115650-102016-LM-005				13:00		X	X	X	X	X	X	X																																																																	
6	SW-11115650-102016-LM-006				13:55		X	X	X	X	X	X	X																																																																	

<b>Drinking Water (DW) Samples<sup>1</sup> (client use)</b>		<b>Special Instructions / Specify Criteria to add on report by clicking on the drop-down list below (electronic COC only)</b>		<b>SAMPLE CONDITION AS RECEIVED (lab use only)</b>			
Are samples taken from a Regulated DW System? <input type="checkbox"/> YES <input checked="" type="checkbox"/> NO		<b>No samples were field filtered.</b>		Frozen <input type="checkbox"/>		SIF Observations Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	
Are samples for human drinking water use? <input type="checkbox"/> YES <input checked="" type="checkbox"/> NO				Ice Packs <input checked="" type="checkbox"/>		Ice Cubes <input type="checkbox"/>	
				Cooling Initiated <input type="checkbox"/>			
				INITIAL COOLER TEMPERATURES °C		FINAL COOLER TEMPERATURES °C	
						4.9	
<b>SHIPMENT RELEASE (client use)</b>		<b>INITIAL SHIPMENT RECEPTION (lab use only)</b>		<b>FINAL SHIPMENT RECEPTION (lab use only)</b>			
Released by: <b>Leah Marshall</b> Date: <b>Oct 20/16</b> Time: <b>15:20</b>		Received by: _____ Date: _____ Time: _____		Received by: <b>[Signature]</b> Date: <b>Oct 20, 2016</b> Time: <b>[Signature]</b>			

15:20  
PM