



City of Winnipeg - Solid Waste Services Div
(1120 Waverley)
ATTN: CHRIS KOZAK
Solid Waste Services Division
1120 Waverley Street
Winnipeg MB R3T 0P4

Date Received: 03-OCT-19
Report Date: 25-OCT-19 08:41 (MT)
Version: FINAL

Client Phone: 204-986-2384

Certificate of Analysis

Lab Work Order #: L2359261
Project P.O. #: NOT SUBMITTED
Job Reference: SECTION B - BRRMF GROUNDWATER
C of C Numbers:
Legal Site Desc:

Connor Cattani
Account Manager

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ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2359261-1 GWQ25 - 6N60E							
Sampled By: CLIENT on 03-OCT-19 @ 11:30							
Matrix: WATER							
Alkalinity species as HCO3, CO3, OH							
Alkalinity, Bicarbonate							
Bicarbonate (HCO3)	658000		1200	ug/L		07-OCT-19	
Alkalinity, Carbonate							
Carbonate (CO3)	<600		600	ug/L		07-OCT-19	
Alkalinity, Hydroxide							
Hydroxide (OH)	<340		340	ug/L		07-OCT-19	
Alkalinity, Total (as CaCO3)							
Alkalinity, Total (as CaCO3)	539000		1000	ug/L		04-OCT-19	R4860614
Dissolved Carbons							
Dissolved Inorganic Carbon by Combustion							
Dissolved Inorganic Carbon	97800		500	ug/L		08-OCT-19	R4862244
Dissolved Organic Carbon by Combustion							
Dissolved Organic Carbon	7530		500	ug/L		07-OCT-19	R4861745
Total Dissolved Carbon by Calculation							
Total Dissolved Carbon	105000		1000	ug/L		09-OCT-19	
Miscellaneous Parameters							
Ammonia, Total (as N)	640		100	ug/L		15-OCT-19	R4869837
Chloride (Cl)	402000		10000	ug/L		04-OCT-19	R4861319
Chromium, Hexavalent	<0.50		0.50	ug/L		08-OCT-19	R4863110
Cyanide, Total	2.1		1.0	ug/L		08-OCT-19	R4863666
Mercury (Hg)-Total	0.0150		0.0050	ug/L	10-OCT-19	10-OCT-19	R4866644
Phenols (4AAP)	12.5	DLM	2.0	ug/L		08-OCT-19	R4863473
Sulfate (SO4)	1450000		6000	ug/L		04-OCT-19	R4861319
Dissolved Metals in Water by CRC ICPMS							
Dissolved Metals Filtration Location	FIELD					15-OCT-19	R4871909
Aluminum (Al)-Dissolved	10.2		1.0	ug/L	15-OCT-19	15-OCT-19	R4872211
Antimony (Sb)-Dissolved	0.14		0.10	ug/L	15-OCT-19	15-OCT-19	R4872211
Arsenic (As)-Dissolved	1.24		0.10	ug/L	15-OCT-19	15-OCT-19	R4872211
Barium (Ba)-Dissolved	8.38		0.10	ug/L	15-OCT-19	15-OCT-19	R4872211
Beryllium (Be)-Dissolved	<0.10		0.10	ug/L	15-OCT-19	15-OCT-19	R4872211
Bismuth (Bi)-Dissolved	<0.050		0.050	ug/L	15-OCT-19	15-OCT-19	R4872211
Boron (B)-Dissolved	380		10	ug/L	15-OCT-19	15-OCT-19	R4872211
Cadmium (Cd)-Dissolved	0.0941		0.0050	ug/L	15-OCT-19	15-OCT-19	R4872211
Calcium (Ca)-Dissolved	434000		50	ug/L	15-OCT-19	15-OCT-19	R4872211
Cesium (Cs)-Dissolved	0.025		0.010	ug/L	15-OCT-19	15-OCT-19	R4872211
Chromium (Cr)-Dissolved	<0.10		0.10	ug/L	15-OCT-19	15-OCT-19	R4872211
Cobalt (Co)-Dissolved	4.20		0.10	ug/L	15-OCT-19	15-OCT-19	R4872211
Copper (Cu)-Dissolved	1.29		0.20	ug/L	15-OCT-19	15-OCT-19	R4872211
Iron (Fe)-Dissolved	38		10	ug/L	15-OCT-19	15-OCT-19	R4872211
Lead (Pb)-Dissolved	<0.050		0.050	ug/L	15-OCT-19	15-OCT-19	R4872211
Lithium (Li)-Dissolved	510		100	ug/L	15-OCT-19	15-OCT-19	R4872211
Magnesium (Mg)-Dissolved	206000		5.0	ug/L	15-OCT-19	15-OCT-19	R4872211
Manganese (Mn)-Dissolved	1090		10	ug/L	15-OCT-19	15-OCT-19	R4872211
Molybdenum (Mo)-Dissolved	3.24		0.050	ug/L	15-OCT-19	15-OCT-19	R4872211
Nickel (Ni)-Dissolved	7.88		0.50	ug/L	15-OCT-19	15-OCT-19	R4872211
Phosphorus (P)-Dissolved	<30		30	ug/L	15-OCT-19	15-OCT-19	R4872211
Potassium (K)-Dissolved	8940		50	ug/L	15-OCT-19	15-OCT-19	R4872211
Rubidium (Rb)-Dissolved	4.53		0.20	ug/L	15-OCT-19	15-OCT-19	R4872211
Selenium (Se)-Dissolved	0.053		0.050	ug/L	15-OCT-19	15-OCT-19	R4872211
Silicon (Si)-Dissolved	11500		50	ug/L	15-OCT-19	15-OCT-19	R4872211
Silver (Ag)-Dissolved	0.025		0.010	ug/L	15-OCT-19	15-OCT-19	R4872211

* 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
L2359261-1 GWQ25 - 6N60E Sampled By: CLIENT on 03-OCT-19 @ 11:30 Matrix: WATER							
Dissolved Metals in Water by CRC ICPMS							
Sodium (Na)-Dissolved	372000		50	ug/L	15-OCT-19	15-OCT-19	R4872211
Strontium (Sr)-Dissolved	2690		10	ug/L	15-OCT-19	15-OCT-19	R4872211
Sulfur (S)-Dissolved	533000		50000	ug/L	15-OCT-19	15-OCT-19	R4872211
Tellurium (Te)-Dissolved	<0.20		0.20	ug/L	15-OCT-19	15-OCT-19	R4872211
Thallium (Tl)-Dissolved	0.030		0.010	ug/L	15-OCT-19	15-OCT-19	R4872211
Thorium (Th)-Dissolved	<0.10		0.10	ug/L	15-OCT-19	15-OCT-19	R4872211
Tin (Sn)-Dissolved	<0.10		0.10	ug/L	15-OCT-19	15-OCT-19	R4872211
Titanium (Ti)-Dissolved	0.54		0.30	ug/L	15-OCT-19	15-OCT-19	R4872211
Tungsten (W)-Dissolved	0.10		0.10	ug/L	15-OCT-19	15-OCT-19	R4872211
Uranium (U)-Dissolved	45.6		0.010	ug/L	15-OCT-19	15-OCT-19	R4872211
Vanadium (V)-Dissolved	<0.50		0.50	ug/L	15-OCT-19	15-OCT-19	R4872211
Zinc (Zn)-Dissolved	3.8		1.0	ug/L	15-OCT-19	15-OCT-19	R4872211
Zirconium (Zr)-Dissolved	0.33		0.20	ug/L	15-OCT-19	15-OCT-19	R4872211
L2359261-2 GWQ25 - 5N62E Sampled By: CLIENT on 03-OCT-19 @ 13:25 Matrix: WATER							
Alkalinity species as HCO3, CO3, OH							
Alkalinity, Bicarbonate							
Bicarbonate (HCO3)	271000		1200	ug/L		07-OCT-19	
Alkalinity, Carbonate							
Carbonate (CO3)	<600		600	ug/L		07-OCT-19	
Alkalinity, Hydroxide							
Hydroxide (OH)	<340		340	ug/L		07-OCT-19	
Alkalinity, Total (as CaCO3)							
Alkalinity, Total (as CaCO3)	222000		1000	ug/L		04-OCT-19	R4860614
Dissolved Carbons							
Dissolved Inorganic Carbon by Combustion							
Dissolved Inorganic Carbon	32900		500	ug/L		08-OCT-19	R4862244
Dissolved Organic Carbon by Combustion							
Dissolved Organic Carbon	1610		500	ug/L		07-OCT-19	R4861745
Total Dissolved Carbon by Calculation							
Total Dissolved Carbon	34500		1000	ug/L		09-OCT-19	
Miscellaneous Parameters							
Ammonia, Total (as N)	1370		100	ug/L		15-OCT-19	R4869837
Chloride (Cl)	2320000		25000	ug/L		04-OCT-19	R4861319
Chromium, Hexavalent	<0.50		0.50	ug/L		08-OCT-19	R4863110
Cyanide, Total	1.2		1.0	ug/L		08-OCT-19	R4863666
Mercury (Hg)-Total	<0.0050		0.0050	ug/L	10-OCT-19	10-OCT-19	R4866644
Phenols (4AAP)	3.9		1.0	ug/L		08-OCT-19	R4863473
Sulfate (SO4)	802000		15000	ug/L		04-OCT-19	R4861319
Dissolved Metals in Water by CRC ICPMS							
Dissolved Metals Filtration Location	FIELD					15-OCT-19	R4871921
Aluminum (Al)-Dissolved	<1.0		1.0	ug/L	15-OCT-19	15-OCT-19	R4872211
Antimony (Sb)-Dissolved	<0.10		0.10	ug/L	15-OCT-19	15-OCT-19	R4872211
Arsenic (As)-Dissolved	4.63		0.10	ug/L	15-OCT-19	15-OCT-19	R4872211
Barium (Ba)-Dissolved	12.0		0.10	ug/L	15-OCT-19	15-OCT-19	R4872211
Beryllium (Be)-Dissolved	<0.10		0.10	ug/L	15-OCT-19	15-OCT-19	R4872211
Bismuth (Bi)-Dissolved	<0.050		0.050	ug/L	15-OCT-19	15-OCT-19	R4872211
Boron (B)-Dissolved	990		100	ug/L	15-OCT-19	22-OCT-19	R4880780
Cadmium (Cd)-Dissolved	0.0124		0.0050	ug/L	15-OCT-19	15-OCT-19	R4872211
Calcium (Ca)-Dissolved	319000		50	ug/L	15-OCT-19	15-OCT-19	R4872211

* 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
L2359261-2 GWQ25 - 5N62E Sampled By: CLIENT on 03-OCT-19 @ 13:25 Matrix: WATER							
Dissolved Metals in Water by CRC ICPMS							
Cesium (Cs)-Dissolved	0.019		0.010	ug/L	15-OCT-19	15-OCT-19	R4872211
Chromium (Cr)-Dissolved	<0.10		0.10	ug/L	15-OCT-19	24-OCT-19	R4883807
Cobalt (Co)-Dissolved	0.66		0.10	ug/L	15-OCT-19	15-OCT-19	R4872211
Copper (Cu)-Dissolved	<0.20		0.20	ug/L	15-OCT-19	15-OCT-19	R4872211
Iron (Fe)-Dissolved	502		10	ug/L	15-OCT-19	15-OCT-19	R4872211
Lead (Pb)-Dissolved	<0.050		0.050	ug/L	15-OCT-19	15-OCT-19	R4872211
Lithium (Li)-Dissolved	310		100	ug/L	15-OCT-19	15-OCT-19	R4872211
Magnesium (Mg)-Dissolved	182000		5.0	ug/L	15-OCT-19	15-OCT-19	R4872211
Manganese (Mn)-Dissolved	58.1		0.10	ug/L	15-OCT-19	15-OCT-19	R4872211
Molybdenum (Mo)-Dissolved	2.83		0.050	ug/L	15-OCT-19	15-OCT-19	R4872211
Nickel (Ni)-Dissolved	1.23		0.50	ug/L	15-OCT-19	15-OCT-19	R4872211
Phosphorus (P)-Dissolved	<30		30	ug/L	15-OCT-19	15-OCT-19	R4872211
Potassium (K)-Dissolved	36400		50	ug/L	15-OCT-19	15-OCT-19	R4872211
Rubidium (Rb)-Dissolved	14.8		0.20	ug/L	15-OCT-19	15-OCT-19	R4872211
Selenium (Se)-Dissolved	<0.050		0.050	ug/L	15-OCT-19	15-OCT-19	R4872211
Silicon (Si)-Dissolved	5700		50	ug/L	15-OCT-19	15-OCT-19	R4872211
Silver (Ag)-Dissolved	0.032		0.010	ug/L	15-OCT-19	15-OCT-19	R4872211
Sodium (Na)-Dissolved	1380000		5000	ug/L	15-OCT-19	15-OCT-19	R4872211
Strontium (Sr)-Dissolved	3870		10	ug/L	15-OCT-19	15-OCT-19	R4872211
Sulfur (S)-Dissolved	318000		500	ug/L	15-OCT-19	15-OCT-19	R4872211
Tellurium (Te)-Dissolved	<0.20		0.20	ug/L	15-OCT-19	15-OCT-19	R4872211
Thallium (Tl)-Dissolved	<0.010		0.010	ug/L	15-OCT-19	15-OCT-19	R4872211
Thorium (Th)-Dissolved	<0.10		0.10	ug/L	15-OCT-19	15-OCT-19	R4872211
Tin (Sn)-Dissolved	0.14		0.10	ug/L	15-OCT-19	15-OCT-19	R4872211
Titanium (Ti)-Dissolved	<0.30		0.30	ug/L	15-OCT-19	15-OCT-19	R4872211
Tungsten (W)-Dissolved	<0.10		0.10	ug/L	15-OCT-19	15-OCT-19	R4872211
Uranium (U)-Dissolved	3.11		0.010	ug/L	15-OCT-19	15-OCT-19	R4872211
Vanadium (V)-Dissolved	<0.50		0.50	ug/L	15-OCT-19	15-OCT-19	R4872211
Zinc (Zn)-Dissolved	1.8		1.0	ug/L	15-OCT-19	15-OCT-19	R4872211
Zirconium (Zr)-Dissolved	<0.20		0.20	ug/L	15-OCT-19	15-OCT-19	R4872211
L2359261-3 GWQ25 - 102 Sampled By: CLIENT on 03-OCT-19 @ 12:45 Matrix: WATER							
Alkalinity species as HCO3, CO3, OH							
Alkalinity, Bicarbonate							
Bicarbonate (HCO3)	405000		1200	ug/L		07-OCT-19	
Alkalinity, Carbonate							
Carbonate (CO3)	<600		600	ug/L		07-OCT-19	
Alkalinity, Hydroxide							
Hydroxide (OH)	<340		340	ug/L		07-OCT-19	
Alkalinity, Total (as CaCO3)							
Alkalinity, Total (as CaCO3)	332000		1000	ug/L		04-OCT-19	R4860614
Dissolved Carbons							
Dissolved Inorganic Carbon by Combustion							
Dissolved Inorganic Carbon	53900		500	ug/L		08-OCT-19	R4862244
Dissolved Organic Carbon by Combustion							
Dissolved Organic Carbon	2990		500	ug/L		07-OCT-19	R4861745
Total Dissolved Carbon by Calculation							
Total Dissolved Carbon	56900		1000	ug/L		09-OCT-19	
Miscellaneous Parameters							
Ammonia, Total (as N)	1380		100	ug/L		15-OCT-19	R4870869

* 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
L2359261-3 GWQ25 - 102							
Sampled By: CLIENT on 03-OCT-19 @ 12:45							
Matrix: WATER							
Chloride (Cl)	2080000		25000	ug/L		04-OCT-19	R4861319
Chromium, Hexavalent	<0.50		0.50	ug/L		08-OCT-19	R4863110
Cyanide, Total	1.1		1.0	ug/L		08-OCT-19	R4863666
Mercury (Hg)-Total	<0.0050		0.0050	ug/L	10-OCT-19	10-OCT-19	R4866644
Phenols (4AAP)	12.9	DLM	2.0	ug/L		08-OCT-19	R4863473
Sulfate (SO4)	1060000		15000	ug/L		04-OCT-19	R4861319
Dissolved Metals in Water by CRC ICPMS							
Dissolved Metals Filtration Location	FIELD					15-OCT-19	R4871921
Aluminum (Al)-Dissolved	1.2		1.0	ug/L	15-OCT-19	15-OCT-19	R4872211
Antimony (Sb)-Dissolved	0.17		0.10	ug/L	15-OCT-19	15-OCT-19	R4872211
Arsenic (As)-Dissolved	1.29		0.10	ug/L	15-OCT-19	15-OCT-19	R4872211
Barium (Ba)-Dissolved	13.1		0.10	ug/L	15-OCT-19	15-OCT-19	R4872211
Beryllium (Be)-Dissolved	<0.10		0.10	ug/L	15-OCT-19	15-OCT-19	R4872211
Bismuth (Bi)-Dissolved	<0.050		0.050	ug/L	15-OCT-19	15-OCT-19	R4872211
Boron (B)-Dissolved	800		100	ug/L	15-OCT-19	22-OCT-19	R4880780
Cadmium (Cd)-Dissolved	0.0295		0.0050	ug/L	15-OCT-19	15-OCT-19	R4872211
Calcium (Ca)-Dissolved	492000		50	ug/L	15-OCT-19	15-OCT-19	R4872211
Cesium (Cs)-Dissolved	0.041		0.010	ug/L	15-OCT-19	15-OCT-19	R4872211
Chromium (Cr)-Dissolved	<0.10		0.10	ug/L	15-OCT-19	24-OCT-19	R4883807
Cobalt (Co)-Dissolved	2.16		0.10	ug/L	15-OCT-19	15-OCT-19	R4872211
Copper (Cu)-Dissolved	0.33		0.20	ug/L	15-OCT-19	15-OCT-19	R4872211
Iron (Fe)-Dissolved	191		10	ug/L	15-OCT-19	15-OCT-19	R4872211
Lead (Pb)-Dissolved	<0.050		0.050	ug/L	15-OCT-19	15-OCT-19	R4872211
Lithium (Li)-Dissolved	360		100	ug/L	15-OCT-19	15-OCT-19	R4872211
Magnesium (Mg)-Dissolved	258000		5.0	ug/L	15-OCT-19	15-OCT-19	R4872211
Manganese (Mn)-Dissolved	387		0.10	ug/L	15-OCT-19	15-OCT-19	R4872211
Molybdenum (Mo)-Dissolved	2.72		0.050	ug/L	15-OCT-19	15-OCT-19	R4872211
Nickel (Ni)-Dissolved	3.17		0.50	ug/L	15-OCT-19	15-OCT-19	R4872211
Phosphorus (P)-Dissolved	<30		30	ug/L	15-OCT-19	15-OCT-19	R4872211
Potassium (K)-Dissolved	21900		50	ug/L	15-OCT-19	15-OCT-19	R4872211
Rubidium (Rb)-Dissolved	7.72		0.20	ug/L	15-OCT-19	15-OCT-19	R4872211
Selenium (Se)-Dissolved	3.56		0.050	ug/L	15-OCT-19	15-OCT-19	R4872211
Silicon (Si)-Dissolved	9010		50	ug/L	15-OCT-19	15-OCT-19	R4872211
Silver (Ag)-Dissolved	0.034		0.010	ug/L	15-OCT-19	15-OCT-19	R4872211
Sodium (Na)-Dissolved	1100000		5000	ug/L	15-OCT-19	15-OCT-19	R4872211
Strontium (Sr)-Dissolved	3730		10	ug/L	15-OCT-19	15-OCT-19	R4872211
Sulfur (S)-Dissolved	383000		500	ug/L	15-OCT-19	15-OCT-19	R4872211
Tellurium (Te)-Dissolved	<0.20		0.20	ug/L	15-OCT-19	15-OCT-19	R4872211
Thallium (Tl)-Dissolved	0.045		0.010	ug/L	15-OCT-19	15-OCT-19	R4872211
Thorium (Th)-Dissolved	<0.10		0.10	ug/L	15-OCT-19	15-OCT-19	R4872211
Tin (Sn)-Dissolved	<0.10		0.10	ug/L	15-OCT-19	15-OCT-19	R4872211
Titanium (Ti)-Dissolved	<0.30		0.30	ug/L	15-OCT-19	15-OCT-19	R4872211
Tungsten (W)-Dissolved	<0.10		0.10	ug/L	15-OCT-19	15-OCT-19	R4872211
Uranium (U)-Dissolved	29.5		0.010	ug/L	15-OCT-19	15-OCT-19	R4872211
Vanadium (V)-Dissolved	<0.50		0.50	ug/L	15-OCT-19	15-OCT-19	R4872211
Zinc (Zn)-Dissolved	1.7		1.0	ug/L	15-OCT-19	15-OCT-19	R4872211
Zirconium (Zr)-Dissolved	<0.20		0.20	ug/L	15-OCT-19	15-OCT-19	R4872211

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

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.			
C-DIC-HTC-WP	Water	Dissolved Inorganic Carbon by Combustion	APHA 5310 B-WP
Filtered (0.45 µm) sample is injected into a heated reaction chamber where it is acidified, converting all inorganic carbon to CO ₂ which is then transported in the carrier gas stream and measured via a non-dispersive infrared analyzer.			
C-DOC-HTC-WP	Water	Dissolved Organic Carbon by Combustion	APHA 5310 B-WP
Filtered (0.45 µm) sample is acidified and purged to remove inorganic carbon, then injected into a heated reaction chamber where organic carbon is oxidized to CO ₂ which is then transported in the carrier gas stream and measured via a non-dispersive infrared analyzer.			
C-TDC-CALC-WP	Water	Total Dissolved Carbon by Calculation	CALCULATED
Total dissolved carbon represents the sum of dissolved inorganic carbon and dissolved organic carbon. For the purpose of calculation, results less than the detection limit (DL) are treated as zero.			
CL-IC-N-WP	Water	Chloride in Water by IC	EPA 300.1 (mod)
Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.			
CN-T-L-CFA-WT	Water	Low Level Total Cyanide in water by CFA	ISO 14403-2:2002
This analysis is carried out using procedures adapted from ISO Method 14403:2002 "Determination of Total Cyanide using Flow Analysis (FIA and CFA)". Total or strong acid dissociable (SAD) cyanide is determined by in-line UV digestion along with sample distillation and final determination by colourimetric analysis. Method Limitation: This method is susceptible to interference from thiocyanate (SCN ⁻). If SCN ⁻ is present in the sample, there could be a positive interference with this method, however it would be less than 1% and could be as low as zero.			
CR-CR6-IC-WT	Water	Chromium +6	EPA 7199
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.			
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).			

Reference Information

Test Method References:

ALS Test Code	Matrix	Test Description	Method Reference**
EC-SCREEN-WP	Water	Conductivity Screen (Internal Use Only)	APHA 2510
		Qualitative analysis of conductivity where required during preparation of other test eg. IC, TDS, TSS, etc	
HG-T-CVAA-WP	Water	Mercury Total	EPA 1631E (mod)
		Water samples undergo a cold-oxidation using bromine monochloride prior to reduction with stannous chloride, and analyzed by CVAAS.	
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.	
NH3-COL-WP	Water	Ammonia by colour	APHA 4500 NH3 F
		Ammonia in water samples forms indophenol when reacted with hypochlorite and phenol. The intensity is amplified by the addition of sodium nitroprusside and measured colourmetrically.	
PHENOLS-4AAP-WT	Water	Phenol (4AAP)	EPA 9066
		An automated method is used to distill the sample. The distillate is then buffered to pH 9.4 which reacts with 4AAP and potassium ferricyanide to form a red complex which is measured colorimetrically.	
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.	

** 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
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

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Client: City of Winnipeg - Solid Waste Services Div (1120 Waverley)
Solid Waste Services Division 1120 Waverley Street
Winnipeg MB R3T 0P4

Contact: CHRIS KOZAK

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
ALK-TITR-WP								
	Water							
Batch	R4860614							
WG3183951-9	LCS							
Alkalinity, Total (as CaCO3)			99.4		%		85-115	04-OCT-19
WG3183951-6	MB							
Alkalinity, Total (as CaCO3)			<1.0		mg/L		1	04-OCT-19
C-DIC-HTC-WP								
	Water							
Batch	R4862244							
WG3186139-3	DUP	L2359261-1						
Dissolved Inorganic Carbon		97.8	94.1		mg/L	3.9	20	08-OCT-19
WG3186139-2	LCS							
Dissolved Inorganic Carbon			95.2		%		80-120	08-OCT-19
WG3186139-1	MB							
Dissolved Inorganic Carbon			<0.50		mg/L		0.5	08-OCT-19
WG3186139-4	MS	L2359261-2						
Dissolved Inorganic Carbon			N/A	MS-B	%		-	08-OCT-19
C-DOC-HTC-WP								
	Water							
Batch	R4861745							
WG3185241-2	LCS							
Dissolved Organic Carbon			100.3		%		80-120	07-OCT-19
WG3185241-1	MB							
Dissolved Organic Carbon			<0.50		mg/L		0.5	07-OCT-19
CL-IC-N-WP								
	Water							
Batch	R4861319							
WG3182276-2	LCS							
Chloride (Cl)			99.0		%		90-110	04-OCT-19
WG3182276-1	MB							
Chloride (Cl)			<0.50		mg/L		0.5	04-OCT-19
CN-T-L-CFA-WT								
	Water							
Batch	R4863666							
WG3184971-2	LCS							
Cyanide, Total			105.4		%		80-120	08-OCT-19
WG3184971-1	MB							
Cyanide, Total			<0.0010		mg/L		0.001	08-OCT-19
CR-CR6-IC-WT								
	Water							
Batch	R4863110							
WG3184042-2	LCS							
Chromium, Hexavalent			95.3		%		80-120	08-OCT-19
WG3184042-1	MB							



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Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
CR-CR6-IC-WT		Water						
Batch	R4863110							
WG3184042-1	MB							
Chromium, Hexavalent			<0.00050		mg/L		0.0005	08-OCT-19
HG-T-CVAA-WP		Water						
Batch	R4866644							
WG3189284-2	LCS							
Mercury (Hg)-Total			108.0		%		80-120	10-OCT-19
WG3189284-1	MB							
Mercury (Hg)-Total			<0.0000050		mg/L		0.000005	10-OCT-19
MET-D-CCMS-WP		Water						
Batch	R4872211							
WG3192657-2	LCS							
Aluminum (Al)-Dissolved			106.7		%		80-120	15-OCT-19
Antimony (Sb)-Dissolved			98.0		%		80-120	15-OCT-19
Arsenic (As)-Dissolved			105.4		%		80-120	15-OCT-19
Barium (Ba)-Dissolved			103.0		%		80-120	15-OCT-19
Beryllium (Be)-Dissolved			101.2		%		80-120	15-OCT-19
Bismuth (Bi)-Dissolved			100.2		%		80-120	15-OCT-19
Boron (B)-Dissolved			98.5		%		80-120	15-OCT-19
Cadmium (Cd)-Dissolved			104.2		%		80-120	15-OCT-19
Calcium (Ca)-Dissolved			100.6		%		80-120	15-OCT-19
Cesium (Cs)-Dissolved			97.2		%		80-120	15-OCT-19
Chromium (Cr)-Dissolved			105.9		%		80-120	15-OCT-19
Cobalt (Co)-Dissolved			103.3		%		80-120	15-OCT-19
Copper (Cu)-Dissolved			105.1		%		80-120	15-OCT-19
Iron (Fe)-Dissolved			93.7		%		80-120	15-OCT-19
Lead (Pb)-Dissolved			100.1		%		80-120	15-OCT-19
Lithium (Li)-Dissolved			102.3		%		80-120	15-OCT-19
Magnesium (Mg)-Dissolved			120.6	MES	%		80-120	15-OCT-19
Manganese (Mn)-Dissolved			105.6		%		80-120	15-OCT-19
Molybdenum (Mo)-Dissolved			98.3		%		80-120	15-OCT-19
Nickel (Ni)-Dissolved			104.9		%		80-120	15-OCT-19
Phosphorus (P)-Dissolved			108.8		%		80-120	15-OCT-19
Potassium (K)-Dissolved			108.0		%		80-120	15-OCT-19
Rubidium (Rb)-Dissolved			104.9		%		80-120	15-OCT-19
Selenium (Se)-Dissolved			104.7		%		80-120	15-OCT-19



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Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
MET-D-CCMS-WP								
	Water							
Batch	R4872211							
WG3192657-2	LCS							
Silicon (Si)-Dissolved			105.2		%		80-120	15-OCT-19
Silver (Ag)-Dissolved			99.2		%		80-120	15-OCT-19
Sodium (Na)-Dissolved			106.5		%		80-120	15-OCT-19
Strontium (Sr)-Dissolved			95.5		%		80-120	15-OCT-19
Sulfur (S)-Dissolved			97.9		%		80-120	15-OCT-19
Tellurium (Te)-Dissolved			98.2		%		80-120	15-OCT-19
Thallium (Tl)-Dissolved			100.7		%		80-120	15-OCT-19
Thorium (Th)-Dissolved			90.7		%		80-120	15-OCT-19
Tin (Sn)-Dissolved			97.5		%		80-120	15-OCT-19
Titanium (Ti)-Dissolved			98.3		%		80-120	15-OCT-19
Tungsten (W)-Dissolved			100.2		%		80-120	15-OCT-19
Uranium (U)-Dissolved			98.9		%		80-120	15-OCT-19
Vanadium (V)-Dissolved			105.7		%		80-120	15-OCT-19
Zinc (Zn)-Dissolved			107.2		%		80-120	15-OCT-19
Zirconium (Zr)-Dissolved			90.9		%		80-120	15-OCT-19
WG3192660-2	LCS							
Aluminum (Al)-Dissolved			96.2		%		80-120	15-OCT-19
Antimony (Sb)-Dissolved			93.0		%		80-120	15-OCT-19
Arsenic (As)-Dissolved			92.7		%		80-120	15-OCT-19
Barium (Ba)-Dissolved			92.5		%		80-120	15-OCT-19
Beryllium (Be)-Dissolved			89.6		%		80-120	15-OCT-19
Bismuth (Bi)-Dissolved			96.0		%		80-120	15-OCT-19
Boron (B)-Dissolved			90.8		%		80-120	15-OCT-19
Cadmium (Cd)-Dissolved			93.3		%		80-120	15-OCT-19
Calcium (Ca)-Dissolved			89.7		%		80-120	15-OCT-19
Cesium (Cs)-Dissolved			90.7		%		80-120	15-OCT-19
Chromium (Cr)-Dissolved			94.1		%		80-120	15-OCT-19
Cobalt (Co)-Dissolved			91.7		%		80-120	15-OCT-19
Copper (Cu)-Dissolved			92.0		%		80-120	15-OCT-19
Iron (Fe)-Dissolved			83.4		%		80-120	15-OCT-19
Lead (Pb)-Dissolved			97.4		%		80-120	15-OCT-19
Lithium (Li)-Dissolved			92.5		%		80-120	15-OCT-19
Magnesium (Mg)-Dissolved			110.9		%		80-120	15-OCT-19
Manganese (Mn)-Dissolved			94.7		%		80-120	15-OCT-19

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Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
MET-D-CCMS-WP								
	Water							
Batch	R4872211							
WG3192660-2	LCS							
Molybdenum (Mo)-Dissolved			94.1		%		80-120	15-OCT-19
Nickel (Ni)-Dissolved			91.0		%		80-120	15-OCT-19
Phosphorus (P)-Dissolved			101.5		%		80-120	15-OCT-19
Potassium (K)-Dissolved			98.5		%		80-120	15-OCT-19
Rubidium (Rb)-Dissolved			92.8		%		80-120	15-OCT-19
Selenium (Se)-Dissolved			93.3		%		80-120	15-OCT-19
Silicon (Si)-Dissolved			95.9		%		80-120	15-OCT-19
Silver (Ag)-Dissolved			93.8		%		80-120	15-OCT-19
Sodium (Na)-Dissolved			96.1		%		80-120	15-OCT-19
Strontium (Sr)-Dissolved			91.3		%		80-120	15-OCT-19
Sulfur (S)-Dissolved			100.3		%		80-120	15-OCT-19
Tellurium (Te)-Dissolved			92.7		%		80-120	15-OCT-19
Thallium (Tl)-Dissolved			96.2		%		80-120	15-OCT-19
Thorium (Th)-Dissolved			83.2		%		80-120	15-OCT-19
Tin (Sn)-Dissolved			90.8		%		80-120	15-OCT-19
Titanium (Ti)-Dissolved			87.0		%		80-120	15-OCT-19
Tungsten (W)-Dissolved			94.6		%		80-120	15-OCT-19
Uranium (U)-Dissolved			95.5		%		80-120	15-OCT-19
Vanadium (V)-Dissolved			93.1		%		80-120	15-OCT-19
Zinc (Zn)-Dissolved			94.1		%		80-120	15-OCT-19
Zirconium (Zr)-Dissolved			84.8		%		80-120	15-OCT-19
WG3192657-1	MB							
Aluminum (Al)-Dissolved			<0.0010		mg/L		0.001	15-OCT-19
Antimony (Sb)-Dissolved			<0.00010		mg/L		0.0001	15-OCT-19
Arsenic (As)-Dissolved			<0.00010		mg/L		0.0001	15-OCT-19
Barium (Ba)-Dissolved			<0.00010		mg/L		0.0001	15-OCT-19
Beryllium (Be)-Dissolved			<0.00010		mg/L		0.0001	15-OCT-19
Bismuth (Bi)-Dissolved			<0.000050		mg/L		0.00005	15-OCT-19
Boron (B)-Dissolved			<0.010		mg/L		0.01	15-OCT-19
Cadmium (Cd)-Dissolved			<0.0000050		mg/L		0.000005	15-OCT-19
Calcium (Ca)-Dissolved			<0.050		mg/L		0.05	15-OCT-19
Cesium (Cs)-Dissolved			<0.000010		mg/L		0.00001	15-OCT-19
Chromium (Cr)-Dissolved			<0.00010		mg/L		0.0001	15-OCT-19
Cobalt (Co)-Dissolved			<0.00010		mg/L		0.0001	15-OCT-19



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Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
MET-D-CCMS-WP								
	Water							
Batch	R4872211							
WG3192657-1	MB							
Copper (Cu)-Dissolved			<0.00020		mg/L		0.0002	15-OCT-19
Iron (Fe)-Dissolved			<0.010		mg/L		0.01	15-OCT-19
Lead (Pb)-Dissolved			<0.000050		mg/L		0.00005	15-OCT-19
Lithium (Li)-Dissolved			<0.0010		mg/L		0.001	15-OCT-19
Magnesium (Mg)-Dissolved			0.0133	B	mg/L		0.005	15-OCT-19
Manganese (Mn)-Dissolved			0.00024	B	mg/L		0.0001	15-OCT-19
Molybdenum (Mo)-Dissolved			<0.000050		mg/L		0.00005	15-OCT-19
Nickel (Ni)-Dissolved			<0.00050		mg/L		0.0005	15-OCT-19
Phosphorus (P)-Dissolved			<0.030		mg/L		0.03	15-OCT-19
Potassium (K)-Dissolved			<0.050		mg/L		0.05	15-OCT-19
Rubidium (Rb)-Dissolved			<0.00020		mg/L		0.0002	15-OCT-19
Selenium (Se)-Dissolved			<0.000050		mg/L		0.00005	15-OCT-19
Silicon (Si)-Dissolved			<0.050		mg/L		0.05	15-OCT-19
Silver (Ag)-Dissolved			<0.000010		mg/L		0.00001	15-OCT-19
Sodium (Na)-Dissolved			<0.050		mg/L		0.05	15-OCT-19
Strontium (Sr)-Dissolved			<0.00010		mg/L		0.0001	15-OCT-19
Sulfur (S)-Dissolved			<0.50		mg/L		0.5	15-OCT-19
Tellurium (Te)-Dissolved			<0.00020		mg/L		0.0002	15-OCT-19
Thallium (Tl)-Dissolved			<0.000010		mg/L		0.00001	15-OCT-19
Thorium (Th)-Dissolved			<0.00010		mg/L		0.0001	15-OCT-19
Tin (Sn)-Dissolved			<0.00010		mg/L		0.0001	15-OCT-19
Titanium (Ti)-Dissolved			<0.00030		mg/L		0.0003	15-OCT-19
Tungsten (W)-Dissolved			<0.00010		mg/L		0.0001	15-OCT-19
Uranium (U)-Dissolved			<0.000010		mg/L		0.00001	15-OCT-19
Vanadium (V)-Dissolved			<0.00050		mg/L		0.0005	15-OCT-19
Zinc (Zn)-Dissolved			<0.0010		mg/L		0.001	15-OCT-19
Zirconium (Zr)-Dissolved			<0.00020		mg/L		0.0002	15-OCT-19
WG3192660-1	MB							
Aluminum (Al)-Dissolved			<0.0010		mg/L		0.001	15-OCT-19
Antimony (Sb)-Dissolved			<0.00010		mg/L		0.0001	15-OCT-19
Arsenic (As)-Dissolved			<0.00010		mg/L		0.0001	15-OCT-19
Barium (Ba)-Dissolved			<0.00010		mg/L		0.0001	15-OCT-19
Beryllium (Be)-Dissolved			<0.00010		mg/L		0.0001	15-OCT-19
Bismuth (Bi)-Dissolved			<0.000050		mg/L		0.00005	15-OCT-19



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Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
MET-D-CCMS-WP								
	Water							
Batch	R4872211							
WG3192660-1	MB							
Boron (B)-Dissolved			<0.010		mg/L		0.01	15-OCT-19
Cadmium (Cd)-Dissolved			<0.0000050		mg/L		0.000005	15-OCT-19
Calcium (Ca)-Dissolved			<0.050		mg/L		0.05	15-OCT-19
Cesium (Cs)-Dissolved			<0.000010		mg/L		0.00001	15-OCT-19
Chromium (Cr)-Dissolved			0.00022	B	mg/L		0.0001	15-OCT-19
Cobalt (Co)-Dissolved			<0.00010		mg/L		0.0001	15-OCT-19
Copper (Cu)-Dissolved			<0.00020		mg/L		0.0002	15-OCT-19
Iron (Fe)-Dissolved			<0.010		mg/L		0.01	15-OCT-19
Lead (Pb)-Dissolved			<0.000050		mg/L		0.00005	15-OCT-19
Lithium (Li)-Dissolved			<0.0010		mg/L		0.001	15-OCT-19
Magnesium (Mg)-Dissolved			<0.0050		mg/L		0.005	15-OCT-19
Manganese (Mn)-Dissolved			<0.00010		mg/L		0.0001	15-OCT-19
Molybdenum (Mo)-Dissolved			<0.000050		mg/L		0.00005	15-OCT-19
Nickel (Ni)-Dissolved			<0.00050		mg/L		0.0005	15-OCT-19
Phosphorus (P)-Dissolved			<0.030		mg/L		0.03	15-OCT-19
Potassium (K)-Dissolved			<0.050		mg/L		0.05	15-OCT-19
Rubidium (Rb)-Dissolved			<0.00020		mg/L		0.0002	15-OCT-19
Selenium (Se)-Dissolved			<0.000050		mg/L		0.00005	15-OCT-19
Silicon (Si)-Dissolved			<0.050		mg/L		0.05	15-OCT-19
Silver (Ag)-Dissolved			<0.000010		mg/L		0.00001	15-OCT-19
Sodium (Na)-Dissolved			<0.050		mg/L		0.05	15-OCT-19
Strontium (Sr)-Dissolved			<0.00010		mg/L		0.0001	15-OCT-19
Sulfur (S)-Dissolved			<0.50		mg/L		0.5	15-OCT-19
Tellurium (Te)-Dissolved			<0.00020		mg/L		0.0002	15-OCT-19
Thallium (Tl)-Dissolved			<0.000010		mg/L		0.00001	15-OCT-19
Thorium (Th)-Dissolved			<0.00010		mg/L		0.0001	15-OCT-19
Tin (Sn)-Dissolved			<0.00010		mg/L		0.0001	15-OCT-19
Titanium (Ti)-Dissolved			<0.00030		mg/L		0.0003	15-OCT-19
Tungsten (W)-Dissolved			<0.00010		mg/L		0.0001	15-OCT-19
Uranium (U)-Dissolved			<0.000010		mg/L		0.00001	15-OCT-19
Vanadium (V)-Dissolved			<0.00050		mg/L		0.0005	15-OCT-19
Zinc (Zn)-Dissolved			<0.0010		mg/L		0.001	15-OCT-19
Zirconium (Zr)-Dissolved			<0.00020		mg/L		0.0002	15-OCT-19

NH3-COL-WP

Water

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Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
NH3-COL-WP		Water						
Batch	R4869837							
WG3191087-2	LCS							
Ammonia, Total (as N)			99.3		%		85-115	11-OCT-19
WG3191087-6	LCS							
Ammonia, Total (as N)			103.2		%		85-115	11-OCT-19
WG3191087-1	MB							
Ammonia, Total (as N)			<0.010		mg/L		0.01	11-OCT-19
WG3191087-5	MB							
Ammonia, Total (as N)			<0.010		mg/L		0.01	11-OCT-19
Batch		R4870869						
WG3191609-2	LCS							
Ammonia, Total (as N)			100.1		%		85-115	15-OCT-19
WG3191609-1	MB							
Ammonia, Total (as N)			<0.010		mg/L		0.01	15-OCT-19
PHENOLS-4AAP-WT		Water						
Batch	R4863473							
WG3185092-2	LCS							
Phenols (4AAP)			112.2		%		85-115	08-OCT-19
WG3185092-1	MB							
Phenols (4AAP)			<0.0010		mg/L		0.001	08-OCT-19
SO4-IC-N-WP		Water						
Batch	R4861319							
WG3182276-2	LCS							
Sulfate (SO4)			99.8		%		90-110	04-OCT-19
WG3182276-1	MB							
Sulfate (SO4)			<0.30		mg/L		0.3	04-OCT-19

Quality Control Report

Workorder: L2359261

Report Date: 25-OCT-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
B	Method Blank exceeds ALS DQO. Associated sample results which are < Limit of Reporting or > 5 times blank level are considered reliable.
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.

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.

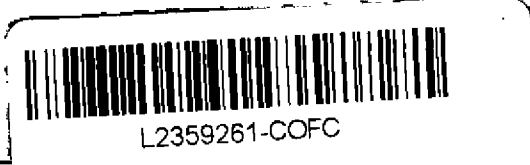
Please note that this report may contain QC results from anonymous Sample Duplicates and Matrix Spikes that do not originate from this Work Order.



Chain of Custody (COC) / Analytical Request Form

Canada Toll Free: 1 800 668 9878

www.alsglobal.com



COC Number: 15 -

Page of

Report To Contact and company name below will appear on the final report		Report Format Select Report Format: <input checked="" type="checkbox"/> PDF <input type="checkbox"/> EXCEL <input type="checkbox"/> EDD (DIGITAL)		Standard TAT if received by 3 pm - business days - no surcharges apply	
Company:	City of Winnipeg	Quality Control (QC) Report with Report <input checked="" type="checkbox"/> YES <input type="checkbox"/> NO		Regular [R] <input type="checkbox"/> Standard TAT if received by 3 pm - business days - no surcharges apply	
Contact:	Chris Kozak	<input type="checkbox"/> Compare Results to Criteria on Report - provide details below if box checked		4 day [P4] <input type="checkbox"/>	
Phone:	204-986-2384	Select Distribution: <input checked="" type="checkbox"/> EMAIL <input type="checkbox"/> MAIL <input type="checkbox"/> FAX		3 day [P3] <input type="checkbox"/>	
Company address below will appear on the final report		Email 1 or Fax ckozak@winnipeg.ca		2 day [P2] <input type="checkbox"/>	
Street:	1120 Waverly Street	Email 2		EMERGENCY <input type="checkbox"/> 1 Business day [E1] <input type="checkbox"/>	
City/Province:	Winnipeg, Manitoba	Email 3		Same Day, Weekend or Statutory holiday [E0] <input type="checkbox"/>	
Postal Code:	R3T 0P4	Date and Time Required for all E&P TATs: dd-mmm-yy hh:mm			
Invoice To		Invoice Distribution		For tests that can not be performed according to the service level selected, you will be contacted.	
Same as Report To <input type="checkbox"/> YES <input type="checkbox"/> NO		Select Invoice Distribution: <input type="checkbox"/> EMAIL <input checked="" type="checkbox"/> MAIL <input type="checkbox"/> FAX		Analysis Request	
Copy of Invoice with Report <input type="checkbox"/> YES <input type="checkbox"/> NO		Email 1 or Fax		Indicate Filtered (F), Preserved (P) or Filtered and Preserved (FP) below	
Company:		Email 2		Number of Containers	
Contact:		Email 3			
Project Information		Oil and Gas Required Fields (client use)			
ALS Account # / Quote #: W10051/Q67317		AFE/Cost Center:		PO#	
Job #: Section B - BRRMF Groundwater		Major/Minor Code:		Routing Code:	
PO / AFE:		Requisitioner:			
LSD:		Location:			
ALS Lab Work Order # (lab use only)		ALS Contact:		Sampler:	
ALS Sample # (lab use only)	Sample Identification and/or Coordinates (This description will appear on the report)	Date (dd-mmm-yy)	Time (hh:mm)	Sample Type	
	GW025 - 6N60E 245479	03/10/19	11:30	WATER	CL-IC-N-WP, SO4-IC-N-WP, ALK-SPEC-WP
	GW025 - 5N62E 245480	"	15:25	WATER	NH3-COL-WP
	GW025 - 102 245481	"	12:45	WATER	C-TDC,DIC,DOC-H-C-WP
				WATER	MET-D-CCMS-WP (DISSOLVED)
				WATER	HG-T-CVAA-WP (TOTAL)
				WATER	CR-CR6-IC-WT
				WATER	PHENOLS-4AAP-WT
				WATER	CN-T-L-CFA-VA
				WATER	
				WATER	
				WATER	
				WATER	
				WATER	
				WATER	
				WATER	
				WATER	
				WATER	
				WATER	
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)			
Are samples taken from a Regulated DW System? <input type="checkbox"/> YES <input type="checkbox"/> NO		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 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"/>			
		INITIAL COOLER TEMPERATURES °C		FINAL COOLER TEMPERATURES °C	
		8.1			
SHIPMENT RELEASE (client use)		INITIAL SHIPMENT RECEPTION (lab use only)		FINAL SHIPMENT RECEPTION (lab use only)	
Released by: <i>[Signature]</i>	Date: 03/10/19	Time: 2:15	Received by: <i>[Signature]</i>	Date: 3-10-19	Time: 2:12
				Received by: <i>[Signature]</i>	Date: OCT 03 2019



City of Winnipeg - Solid Waste Services Div
(1120 Waverley)
ATTN: CHRIS KOZAK
Solid Waste Services Division
1120 Waverley Street
Winnipeg MB R3T 0P4

Date Received: 03-OCT-19
Report Date: 21-OCT-19 07:28 (MT)
Version: FINAL

Client Phone: 204-986-2384

Certificate of Analysis

Lab Work Order #: L2359271
Project P.O. #: NOT SUBMITTED
Job Reference: SECTION B - BRRMF GROUNDWATER
C of C Numbers:
Legal Site Desc:

Hua Wo
Chemistry Laboratory Manager

[This report shall not be reproduced except in full without the written authority of the Laboratory.]

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
L2359271-1 GWQ25 - W13A							
Sampled By: CLIENT on 03-OCT-19 @ 12:45							
Matrix: WATER							
Alkalinity species as HCO3, CO3, OH							
Alkalinity, Bicarbonate							
Bicarbonate (HCO3)	414000		1200	ug/L		07-OCT-19	
Alkalinity, Carbonate							
Carbonate (CO3)	<600		600	ug/L		07-OCT-19	
Alkalinity, Hydroxide							
Hydroxide (OH)	<340		340	ug/L		07-OCT-19	
Alkalinity, Total (as CaCO3)							
Alkalinity, Total (as CaCO3)	339000		1000	ug/L		04-OCT-19	R4860614
Dissolved Carbons							
Dissolved Inorganic Carbon by Combustion							
Dissolved Inorganic Carbon	54000		500	ug/L		08-OCT-19	R4862244
Dissolved Organic Carbon by Combustion							
Dissolved Organic Carbon	3000		500	ug/L		07-OCT-19	R4861745
Total Dissolved Carbon by Calculation							
Total Dissolved Carbon	57000		1000	ug/L		09-OCT-19	
Miscellaneous Parameters							
Ammonia, Total (as N)	1160		100	ug/L		09-OCT-19	R4866430
Chloride (Cl)	2090000		25000	ug/L		04-OCT-19	R4861319
Chromium, Hexavalent	<0.50		0.50	ug/L		07-OCT-19	R4861182
Mercury (Hg)-Total	<0.0050		0.0050	ug/L	10-OCT-19	10-OCT-19	R4866644
Phenols (4AAP)	2.1		1.0	ug/L		07-OCT-19	R4861668
Sulfate (SO4)	995000		15000	ug/L		04-OCT-19	R4861319
Dissolved Metals in Water by CRC ICPMS							
Dissolved Metals Filtration Location	FIELD					08-OCT-19	R4861965
Aluminum (Al)-Dissolved	<1.0		1.0	ug/L	08-OCT-19	07-OCT-19	R4865820
Antimony (Sb)-Dissolved	<0.10		0.10	ug/L	08-OCT-19	07-OCT-19	R4865820
Arsenic (As)-Dissolved	1.18		0.10	ug/L	08-OCT-19	07-OCT-19	R4865820
Barium (Ba)-Dissolved	11.2		0.10	ug/L	08-OCT-19	07-OCT-19	R4865820
Beryllium (Be)-Dissolved	<0.10		0.10	ug/L	08-OCT-19	07-OCT-19	R4865820
Bismuth (Bi)-Dissolved	<0.050		0.050	ug/L	08-OCT-19	07-OCT-19	R4865820
Boron (B)-Dissolved	721		10	ug/L	08-OCT-19	07-OCT-19	R4865820
Cadmium (Cd)-Dissolved	0.0236		0.0050	ug/L	08-OCT-19	07-OCT-19	R4865820
Calcium (Ca)-Dissolved	532000		50	ug/L	08-OCT-19	07-OCT-19	R4865820
Cesium (Cs)-Dissolved	0.028		0.010	ug/L	08-OCT-19	07-OCT-19	R4865820
Chromium (Cr)-Dissolved	<0.10		0.10	ug/L	08-OCT-19	07-OCT-19	R4865820
Cobalt (Co)-Dissolved	2.02		0.10	ug/L	08-OCT-19	07-OCT-19	R4865820
Copper (Cu)-Dissolved	0.35		0.20	ug/L	08-OCT-19	07-OCT-19	R4865820
Iron (Fe)-Dissolved	169		10	ug/L	08-OCT-19	07-OCT-19	R4865820
Lead (Pb)-Dissolved	<0.050		0.050	ug/L	08-OCT-19	07-OCT-19	R4865820
Lithium (Li)-Dissolved	422		10	ug/L	08-OCT-19	18-OCT-19	R4874979
Magnesium (Mg)-Dissolved	202000		5.0	ug/L	08-OCT-19	07-OCT-19	R4865820
Manganese (Mn)-Dissolved	322		0.10	ug/L	08-OCT-19	07-OCT-19	R4865820
Molybdenum (Mo)-Dissolved	1.92		0.050	ug/L	08-OCT-19	07-OCT-19	R4865820
Nickel (Ni)-Dissolved	3.12		0.50	ug/L	08-OCT-19	07-OCT-19	R4865820
Phosphorus (P)-Dissolved	<30		30	ug/L	08-OCT-19	07-OCT-19	R4865820
Potassium (K)-Dissolved	19800		50	ug/L	08-OCT-19	07-OCT-19	R4865820
Rubidium (Rb)-Dissolved	7.99		0.20	ug/L	08-OCT-19	07-OCT-19	R4865820
Selenium (Se)-Dissolved	2.70		0.050	ug/L	08-OCT-19	07-OCT-19	R4865820
Silicon (Si)-Dissolved	6740		50	ug/L	08-OCT-19	07-OCT-19	R4865820
Silver (Ag)-Dissolved	<0.010		0.010	ug/L	08-OCT-19	07-OCT-19	R4865820
Sodium (Na)-Dissolved	1040000		500	ug/L	08-OCT-19	18-OCT-19	R4874979

* 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
L2359271-1 GWQ25 - W13A Sampled By: CLIENT on 03-OCT-19 @ 12:45 Matrix: WATER							
Dissolved Metals in Water by CRC ICPMS							
Strontium (Sr)-Dissolved	3680		1.0	ug/L	08-OCT-19	18-OCT-19	R4874979
Sulfur (S)-Dissolved	294000		500	ug/L	08-OCT-19	07-OCT-19	R4865820
Tellurium (Te)-Dissolved	<0.20		0.20	ug/L	08-OCT-19	07-OCT-19	R4865820
Thallium (Tl)-Dissolved	0.035		0.010	ug/L	08-OCT-19	07-OCT-19	R4865820
Thorium (Th)-Dissolved	<0.10		0.10	ug/L	08-OCT-19	07-OCT-19	R4865820
Tin (Sn)-Dissolved	<0.10		0.10	ug/L	08-OCT-19	07-OCT-19	R4865820
Titanium (Ti)-Dissolved	<0.30		0.30	ug/L	08-OCT-19	07-OCT-19	R4865820
Tungsten (W)-Dissolved	<0.10		0.10	ug/L	08-OCT-19	07-OCT-19	R4865820
Uranium (U)-Dissolved	23.7		0.010	ug/L	08-OCT-19	07-OCT-19	R4865820
Vanadium (V)-Dissolved	<0.50		0.50	ug/L	08-OCT-19	07-OCT-19	R4865820
Zinc (Zn)-Dissolved	1.9		1.0	ug/L	08-OCT-19	07-OCT-19	R4865820
Zirconium (Zr)-Dissolved	<0.20		0.20	ug/L	08-OCT-19	07-OCT-19	R4865820
L2359271-2 GWQ25 - W14A Sampled By: CLIENT on 03-OCT-19 @ 13:45 Matrix: WATER							
Alkalinity species as HCO3, CO3, OH							
Alkalinity, Bicarbonate							
Bicarbonate (HCO3)	323000		1200	ug/L		07-OCT-19	
Alkalinity, Carbonate							
Carbonate (CO3)	<600		600	ug/L		07-OCT-19	
Alkalinity, Hydroxide							
Hydroxide (OH)	<340		340	ug/L		07-OCT-19	
Alkalinity, Total (as CaCO3)							
Alkalinity, Total (as CaCO3)	265000		1000	ug/L		04-OCT-19	R4860614
Dissolved Carbons							
Dissolved Inorganic Carbon by Combustion							
Dissolved Inorganic Carbon	30500		500	ug/L		08-OCT-19	R4862244
Dissolved Organic Carbon by Combustion							
Dissolved Organic Carbon	1580		500	ug/L		07-OCT-19	R4861745
Total Dissolved Carbon by Calculation							
Total Dissolved Carbon	32100		1000	ug/L		09-OCT-19	
Miscellaneous Parameters							
Ammonia, Total (as N)	1520		100	ug/L		09-OCT-19	R4866430
Chloride (Cl)	2290000		25000	ug/L		04-OCT-19	R4861319
Chromium, Hexavalent	<0.50		0.50	ug/L		07-OCT-19	R4861182
Mercury (Hg)-Total	0.140		0.050	ug/L	10-OCT-19	10-OCT-19	R4866644
Phenols (4AAP)	6.4		1.0	ug/L		07-OCT-19	R4861668
Sulfate (SO4)	843000		15000	ug/L		04-OCT-19	R4861319
Dissolved Metals in Water by CRC ICPMS							
Dissolved Metals Filtration Location	FIELD					08-OCT-19	R4861965
Aluminum (Al)-Dissolved	1.7		1.0	ug/L	08-OCT-19	07-OCT-19	R4865820
Antimony (Sb)-Dissolved	<0.10		0.10	ug/L	08-OCT-19	07-OCT-19	R4865820
Arsenic (As)-Dissolved	6.58		0.10	ug/L	08-OCT-19	07-OCT-19	R4865820
Barium (Ba)-Dissolved	10.9		0.10	ug/L	08-OCT-19	07-OCT-19	R4865820
Beryllium (Be)-Dissolved	<0.10		0.10	ug/L	08-OCT-19	07-OCT-19	R4865820
Bismuth (Bi)-Dissolved	<0.050		0.050	ug/L	08-OCT-19	07-OCT-19	R4865820
Boron (B)-Dissolved	896		10	ug/L	08-OCT-19	07-OCT-19	R4865820
Cadmium (Cd)-Dissolved	<0.0050		0.0050	ug/L	08-OCT-19	07-OCT-19	R4865820
Calcium (Ca)-Dissolved	388000		50	ug/L	08-OCT-19	07-OCT-19	R4865820
Cesium (Cs)-Dissolved	0.021		0.010	ug/L	08-OCT-19	07-OCT-19	R4865820
Chromium (Cr)-Dissolved	<0.10		0.10	ug/L	08-OCT-19	07-OCT-19	R4865820

* 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
L2359271-2 GWQ25 - W14A							
Sampled By: CLIENT on 03-OCT-19 @ 13:45							
Matrix: WATER							
Dissolved Metals in Water by CRC ICPMS							
Cobalt (Co)-Dissolved	1.41		0.10	ug/L	08-OCT-19	07-OCT-19	R4865820
Copper (Cu)-Dissolved	0.21		0.20	ug/L	08-OCT-19	07-OCT-19	R4865820
Iron (Fe)-Dissolved	615		10	ug/L	08-OCT-19	07-OCT-19	R4865820
Lead (Pb)-Dissolved	<0.050		0.050	ug/L	08-OCT-19	07-OCT-19	R4865820
Lithium (Li)-Dissolved	267		1.0	ug/L	08-OCT-19	07-OCT-19	R4865820
Magnesium (Mg)-Dissolved	153000		5.0	ug/L	08-OCT-19	07-OCT-19	R4865820
Manganese (Mn)-Dissolved	219		0.10	ug/L	08-OCT-19	07-OCT-19	R4865820
Molybdenum (Mo)-Dissolved	1.96		0.050	ug/L	08-OCT-19	07-OCT-19	R4865820
Nickel (Ni)-Dissolved	1.89		0.50	ug/L	08-OCT-19	07-OCT-19	R4865820
Phosphorus (P)-Dissolved	<30		30	ug/L	08-OCT-19	07-OCT-19	R4865820
Potassium (K)-Dissolved	29600		50	ug/L	08-OCT-19	07-OCT-19	R4865820
Rubidium (Rb)-Dissolved	11.5		0.20	ug/L	08-OCT-19	07-OCT-19	R4865820
Selenium (Se)-Dissolved	<0.050		0.050	ug/L	08-OCT-19	07-OCT-19	R4865820
Silicon (Si)-Dissolved	5180		50	ug/L	08-OCT-19	07-OCT-19	R4865820
Silver (Ag)-Dissolved	<0.010		0.010	ug/L	08-OCT-19	07-OCT-19	R4865820
Sodium (Na)-Dissolved	1250000		500	ug/L	08-OCT-19	18-OCT-19	R4874979
Strontium (Sr)-Dissolved	3820		1.0	ug/L	08-OCT-19	18-OCT-19	R4874979
Sulfur (S)-Dissolved	262000		500	ug/L	08-OCT-19	07-OCT-19	R4865820
Tellurium (Te)-Dissolved	<0.20		0.20	ug/L	08-OCT-19	07-OCT-19	R4865820
Thallium (Tl)-Dissolved	0.019		0.010	ug/L	08-OCT-19	07-OCT-19	R4865820
Thorium (Th)-Dissolved	<0.10		0.10	ug/L	08-OCT-19	07-OCT-19	R4865820
Tin (Sn)-Dissolved	<0.10		0.10	ug/L	08-OCT-19	07-OCT-19	R4865820
Titanium (Ti)-Dissolved	<0.30		0.30	ug/L	08-OCT-19	07-OCT-19	R4865820
Tungsten (W)-Dissolved	<0.10		0.10	ug/L	08-OCT-19	07-OCT-19	R4865820
Uranium (U)-Dissolved	2.21		0.010	ug/L	08-OCT-19	07-OCT-19	R4865820
Vanadium (V)-Dissolved	<0.50		0.50	ug/L	08-OCT-19	07-OCT-19	R4865820
Zinc (Zn)-Dissolved	1.3		1.0	ug/L	08-OCT-19	07-OCT-19	R4865820
Zirconium (Zr)-Dissolved	<0.20		0.20	ug/L	08-OCT-19	07-OCT-19	R4865820

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

Reference Information

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.			
C-DIC-HTC-WP	Water	Dissolved Inorganic Carbon by Combustion	APHA 5310 B-WP
Filtered (0.45 µm) sample is injected into a heated reaction chamber where it is acidified, converting all inorganic carbon to CO ₂ which is then transported in the carrier gas stream and measured via a non-dispersive infrared analyzer.			
C-DOC-HTC-WP	Water	Dissolved Organic Carbon by Combustion	APHA 5310 B-WP
Filtered (0.45 µm) sample is acidified and purged to remove inorganic carbon, then injected into a heated reaction chamber where organic carbon is oxidized to CO ₂ which is then transported in the carrier gas stream and measured via a non-dispersive infrared analyzer.			
C-TDC-CALC-WP	Water	Total Dissolved Carbon by Calculation	CALCULATED
Total dissolved carbon represents the sum of dissolved inorganic carbon and dissolved organic carbon. For the purpose of calculation, results less than the detection limit (DL) are treated as zero.			
CL-IC-N-WP	Water	Chloride in Water by IC	EPA 300.1 (mod)
Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.			
CR-CR6-IC-WT	Water	Chromium +6	EPA 7199
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.			
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).			
EC-SCREEN-WP	Water	Conductivity Screen (Internal Use Only)	APHA 2510
Qualitative analysis of conductivity where required during preparation of other test eg. IC, TDS, TSS, etc			
HG-T-CVAA-WP	Water	Mercury Total	EPA 1631E (mod)
Water samples undergo a cold-oxidation using bromine monochloride prior to reduction with stannous chloride, and analyzed by CVAAS.			
MET-D-CCMS-WP	Water	Dissolved Metals in Water by CRC ICPMS	APHA 3030B/6020B (mod)
Water samples are filtered (0.45 µm), 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.			
NH3-COL-WP	Water	Ammonia by colour	APHA 4500 NH ₃ F
Ammonia in water samples forms indophenol when reacted with hypochlorite and phenol. The intensity is amplified by the addition of sodium nitroprusside and measured colourmetrically.			
PHENOLS-4AAP-WT	Water	Phenol (4AAP)	EPA 9066
An automated method is used to distill the sample. The distillate is then buffered to pH 9.4 which reacts with 4AAP and potassium ferricyanide to form a red complex which is measured colorimetrically.			

Reference Information

Test Method References:

ALS Test Code	Matrix	Test Description	Method Reference**
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.			

** 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
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: L2359271

Report Date: 21-OCT-19

Page 1 of 5

Client: City of Winnipeg - Solid Waste Services Div (1120 Waverley)
 Solid Waste Services Division 1120 Waverley Street
 Winnipeg MB R3T 0P4

Contact: CHRIS KOZAK

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
ALK-TITR-WP		Water						
Batch	R4860614							
WG3183951-9	LCS							
Alkalinity, Total (as CaCO3)			99.4		%		85-115	04-OCT-19
WG3183951-6	MB							
Alkalinity, Total (as CaCO3)			<1.0		mg/L		1	04-OCT-19
C-DIC-HTC-WP		Water						
Batch	R4862244							
WG3186139-2	LCS							
Dissolved Inorganic Carbon			95.2		%		80-120	08-OCT-19
WG3186139-1	MB							
Dissolved Inorganic Carbon			<0.50		mg/L		0.5	08-OCT-19
C-DOC-HTC-WP		Water						
Batch	R4861745							
WG3185241-2	LCS							
Dissolved Organic Carbon			100.3		%		80-120	07-OCT-19
WG3185241-1	MB							
Dissolved Organic Carbon			<0.50		mg/L		0.5	07-OCT-19
CL-IC-N-WP		Water						
Batch	R4861319							
WG3182276-2	LCS							
Chloride (Cl)			99.0		%		90-110	04-OCT-19
WG3182276-1	MB							
Chloride (Cl)			<0.50		mg/L		0.5	04-OCT-19
CR-CR6-IC-WT		Water						
Batch	R4861182							
WG3184041-2	LCS							
Chromium, Hexavalent			96.6		%		80-120	07-OCT-19
WG3184041-1	MB							
Chromium, Hexavalent			<0.00050		mg/L		0.0005	07-OCT-19
HG-T-CVAA-WP		Water						
Batch	R4866644							
WG3189293-2	LCS							
Mercury (Hg)-Total			92.0		%		80-120	10-OCT-19
WG3189293-1	MB							
Mercury (Hg)-Total			<0.000005C		mg/L		0.000005	10-OCT-19
MET-D-CCMS-WP		Water						



Quality Control Report

Workorder: L2359271

Report Date: 21-OCT-19

Page 2 of 5

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
MET-D-CCMS-WP								
	Water							
Batch	R4865820							
WG3185722-2	LCS							
Aluminum (Al)-Dissolved			103.9		%		80-120	07-OCT-19
Antimony (Sb)-Dissolved			108.7		%		80-120	07-OCT-19
Arsenic (As)-Dissolved			102.2		%		80-120	07-OCT-19
Barium (Ba)-Dissolved			102.7		%		80-120	07-OCT-19
Beryllium (Be)-Dissolved			112.0		%		80-120	07-OCT-19
Bismuth (Bi)-Dissolved			109.5		%		80-120	07-OCT-19
Boron (B)-Dissolved			100.9		%		80-120	07-OCT-19
Cadmium (Cd)-Dissolved			101.7		%		80-120	07-OCT-19
Calcium (Ca)-Dissolved			109.7		%		80-120	07-OCT-19
Cesium (Cs)-Dissolved			105.8		%		80-120	07-OCT-19
Chromium (Cr)-Dissolved			102.7		%		80-120	07-OCT-19
Cobalt (Co)-Dissolved			101.0		%		80-120	07-OCT-19
Copper (Cu)-Dissolved			101.6		%		80-120	07-OCT-19
Iron (Fe)-Dissolved			83.3		%		80-120	07-OCT-19
Lead (Pb)-Dissolved			109.8		%		80-120	07-OCT-19
Lithium (Li)-Dissolved			108.7		%		80-120	07-OCT-19
Magnesium (Mg)-Dissolved			99.6		%		80-120	07-OCT-19
Manganese (Mn)-Dissolved			100.6		%		80-120	07-OCT-19
Molybdenum (Mo)-Dissolved			109.4		%		80-120	07-OCT-19
Nickel (Ni)-Dissolved			99.9		%		80-120	07-OCT-19
Phosphorus (P)-Dissolved			104.8		%		80-120	07-OCT-19
Potassium (K)-Dissolved			97.1		%		80-120	07-OCT-19
Rubidium (Rb)-Dissolved			100.5		%		80-120	07-OCT-19
Selenium (Se)-Dissolved			89.6		%		80-120	07-OCT-19
Silicon (Si)-Dissolved			84.2		%		80-120	07-OCT-19
Silver (Ag)-Dissolved			108.6		%		80-120	07-OCT-19
Sulfur (S)-Dissolved			95.8		%		80-120	07-OCT-19
Tellurium (Te)-Dissolved			116.5		%		80-120	07-OCT-19
Thallium (Tl)-Dissolved			107.5		%		80-120	07-OCT-19
Thorium (Th)-Dissolved			107.7		%		80-120	07-OCT-19
Tin (Sn)-Dissolved			99.7		%		80-120	07-OCT-19
Titanium (Ti)-Dissolved			94.0		%		80-120	07-OCT-19
Tungsten (W)-Dissolved			109.5		%		80-120	07-OCT-19
Uranium (U)-Dissolved			111.4		%		80-120	07-OCT-19

Quality Control Report

Workorder: L2359271

Report Date: 21-OCT-19

Page 3 of 5

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
MET-D-CCMS-WP								
	Water							
Batch	R4865820							
WG3185722-2	LCS							
Vanadium (V)-Dissolved			101.0		%		80-120	07-OCT-19
Zinc (Zn)-Dissolved			96.3		%		80-120	07-OCT-19
Zirconium (Zr)-Dissolved			108.2		%		80-120	07-OCT-19
WG3185722-1	MB							
Aluminum (Al)-Dissolved			<0.0010		mg/L		0.001	07-OCT-19
Antimony (Sb)-Dissolved			<0.00010		mg/L		0.0001	07-OCT-19
Arsenic (As)-Dissolved			<0.00010		mg/L		0.0001	07-OCT-19
Barium (Ba)-Dissolved			<0.00010		mg/L		0.0001	07-OCT-19
Beryllium (Be)-Dissolved			<0.00010		mg/L		0.0001	07-OCT-19
Bismuth (Bi)-Dissolved			<0.000050		mg/L		0.00005	07-OCT-19
Boron (B)-Dissolved			<0.010		mg/L		0.01	07-OCT-19
Cadmium (Cd)-Dissolved			<0.0000050		mg/L		0.000005	07-OCT-19
Calcium (Ca)-Dissolved			<0.050		mg/L		0.05	07-OCT-19
Cesium (Cs)-Dissolved			<0.000010		mg/L		0.00001	07-OCT-19
Chromium (Cr)-Dissolved			<0.00010		mg/L		0.0001	07-OCT-19
Cobalt (Co)-Dissolved			<0.00010		mg/L		0.0001	07-OCT-19
Copper (Cu)-Dissolved			<0.00020		mg/L		0.0002	07-OCT-19
Iron (Fe)-Dissolved			<0.010		mg/L		0.01	07-OCT-19
Lead (Pb)-Dissolved			<0.000050		mg/L		0.00005	07-OCT-19
Lithium (Li)-Dissolved			<0.0010		mg/L		0.001	07-OCT-19
Magnesium (Mg)-Dissolved			<0.0050		mg/L		0.005	07-OCT-19
Manganese (Mn)-Dissolved			<0.00010		mg/L		0.0001	07-OCT-19
Molybdenum (Mo)-Dissolved			<0.000050		mg/L		0.00005	07-OCT-19
Nickel (Ni)-Dissolved			<0.00050		mg/L		0.0005	07-OCT-19
Phosphorus (P)-Dissolved			<0.030		mg/L		0.03	07-OCT-19
Potassium (K)-Dissolved			<0.050		mg/L		0.05	07-OCT-19
Rubidium (Rb)-Dissolved			<0.00020		mg/L		0.0002	07-OCT-19
Selenium (Se)-Dissolved			<0.000050		mg/L		0.00005	07-OCT-19
Silicon (Si)-Dissolved			<0.050		mg/L		0.05	07-OCT-19
Silver (Ag)-Dissolved			<0.000010		mg/L		0.00001	07-OCT-19
Sulfur (S)-Dissolved			<0.50		mg/L		0.5	07-OCT-19
Tellurium (Te)-Dissolved			<0.00020		mg/L		0.0002	07-OCT-19
Thallium (Tl)-Dissolved			<0.000010		mg/L		0.00001	07-OCT-19
Thorium (Th)-Dissolved			<0.00010		mg/L		0.0001	07-OCT-19



Quality Control Report

Workorder: L2359271

Report Date: 21-OCT-19

Page 4 of 5

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
MET-D-CCMS-WP		Water						
Batch	R4865820							
WG3185722-1	MB							
Tin (Sn)-Dissolved			<0.00010		mg/L		0.0001	07-OCT-19
Titanium (Ti)-Dissolved			<0.00030		mg/L		0.0003	07-OCT-19
Tungsten (W)-Dissolved			<0.00010		mg/L		0.0001	07-OCT-19
Uranium (U)-Dissolved			<0.000010		mg/L		0.00001	07-OCT-19
Vanadium (V)-Dissolved			<0.00050		mg/L		0.0005	07-OCT-19
Zinc (Zn)-Dissolved			<0.0010		mg/L		0.001	07-OCT-19
Zirconium (Zr)-Dissolved			<0.00020		mg/L		0.0002	07-OCT-19
NH3-COL-WP		Water						
Batch	R4866430							
WG3187884-14	LCS							
Ammonia, Total (as N)			99.2		%		85-115	09-OCT-19
WG3187884-13	MB							
Ammonia, Total (as N)			<0.010		mg/L		0.01	09-OCT-19
PHENOLS-4AAP-WT		Water						
Batch	R4861668							
WG3183904-2	LCS							
Phenols (4AAP)			113.7		%		85-115	07-OCT-19
WG3183904-1	MB							
Phenols (4AAP)			<0.0010		mg/L		0.001	07-OCT-19
SO4-IC-N-WP		Water						
Batch	R4861319							
WG3182276-2	LCS							
Sulfate (SO4)			99.8		%		90-110	04-OCT-19
WG3182276-1	MB							
Sulfate (SO4)			<0.30		mg/L		0.3	04-OCT-19

Quality Control Report

Workorder: L2359271

Report Date: 21-OCT-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

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.



L2359271-COFC

Report To Contact and company name below will appear on the final report		Report Format / Distribution			Select Service Level Below - Please confirm all E&P TATs with your AM - surcharges will apply							
Company:	City of Winnipeg	Select Report Format: <input checked="" type="checkbox"/> PDF <input type="checkbox"/> EXCEL <input type="checkbox"/> EDD (DIGITAL)			Regular [R] <input type="checkbox"/> Standard TAT if received by 3 pm - business days - no surcharges apply							
Contact:	Chris Kozak	Quality Control (QC) Report with Report <input checked="" type="checkbox"/> YES <input type="checkbox"/> NO			PRIORITY (Business Day)	4 day [P4] <input type="checkbox"/>			EMERGENCY	1 Business day [E1] <input type="checkbox"/>		
Phone:	204-986-2384	<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"/>						
Street:	1120 Waverly Street	Email 1 or Fax ckozak@winnipeg.ca			Date and Time Required for all E&P TATs: dd-mmm-yy hh:mm							
City/Province:	Winnipeg, Manitoba	Email 2			For tests that can not be performed according to the service level selected, you will be contacted.							
Postal Code:	R3T 0P4	Email 3			Analysis Request							
Invoice To		Invoice Distribution			Indicate Filtered (F), Preserved (P) or Filtered and Preserved (F/P) below							
Same as Report To <input type="checkbox"/> YES <input type="checkbox"/> NO		Select Invoice Distribution: <input type="checkbox"/> EMAIL <input checked="" type="checkbox"/> MAIL <input type="checkbox"/> FAX										
Copy of Invoice with Report <input type="checkbox"/> YES <input type="checkbox"/> NO		Email 1 or Fax			Number of Containers							
Company:		Email 2										
Contact:												
Project Information		Oil and Gas Required Fields (client use)										
ALS Account # / Quote #: W10051/Q67317		AFE/Cost Center: PO#										
Job #: Section B - BRRMF Groundwater		Major/Minor Code: Routing Code:										
PO / AFE:		Requisitioner:			CL-IC-N-WP, S04-IC-N-WP, ALK-SPEC-WP NH3-COL-WP C-TDC, DIC, DOC-HTC-WP MET-D-CCMS-WP (DISSOLVED) HG-T-CVAA-WP (TOTAL) CR-CR6-IC-WT PHENOLS-4AP-WT							
LSD:		Location:										
ALS Lab Work Order # (lab use only)		ALS Contact:		Sampler:								
ALS Sample # (lab use only)	Sample Identification and/or Coordinates (This description will appear on the report)		Date (dd-mmm-yy)	Time (hh:mm)	Sample Type							
	GW025-W13A 2454874		03/10/19	12:45	WATER	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	
	11 - W14A 245475		"	13:45	WATER	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	
					WATER							
					WATER							
					WATER							
					WATER							
					WATER							
					WATER							
					WATER							
					WATER							
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 type="checkbox"/> NO					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 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"/>							
					INITIAL COOLER TEMPERATURES °C			FINAL COOLER TEMPERATURES °C				
					8.1							
SHIPMENT RELEASE (client use)			INITIAL SHIPMENT RECEPTION (lab use only)			FINAL SHIPMENT RECEPTION (lab use only)						
Released by: <i>B. Kozak</i>	Date: 03/10/19	Time: 2:15	Received by: <i>CM</i>	Date: 3-10-19	Time: 2:12	Received by: <i>[Signature]</i>	Date: OCT 03 2019	Time: <i>[Signature]</i>				

REFER TO BACK PAGE FOR ALS LOCATIONS AND SAMPLING INFORMATION

WHITE - LABORATORY COPY YELLOW - CLIENT COPY

OCTOBER 2015 PRINT

Failure to complete all portions of this form may delay analysis. Please fill in this form LEGIBLY. By the use of this form the user acknowledges and agrees with the Terms and Conditions as specified on the back page of the white-report copy.

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



City of Winnipeg - Solid Waste Services Div
(1120 Waverley)
ATTN: CHRIS KOZAK
Solid Waste Services Division
1120 Waverley Street
Winnipeg MB R3T 0P4

Date Received: 07-OCT-19
Report Date: 24-OCT-19 07:16 (MT)
Version: FINAL

Client Phone: 204-986-2384

Certificate of Analysis

Lab Work Order #: L2360962
Project P.O. #: NOT SUBMITTED
Job Reference: SECTION B - BRRMF GROUNDWATER
C of C Numbers:
Legal Site Desc:

Hua Wo
Chemistry Laboratory Manager

[This report shall not be reproduced except in full without the written authority of the Laboratory.]

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
L2360962-1 GWQ25-W4							
Sampled By: CLIENT on 07-OCT-19 @ 12:43							
Matrix: WATER							
Alkalinity species as HCO3, CO3, OH							
Alkalinity, Bicarbonate							
Bicarbonate (HCO3)	75000		1200	ug/L		10-OCT-19	
Alkalinity, Carbonate							
Carbonate (CO3)	<600		600	ug/L		10-OCT-19	
Alkalinity, Hydroxide							
Hydroxide (OH)	<340		340	ug/L		10-OCT-19	
Alkalinity, Total (as CaCO3)							
Alkalinity, Total (as CaCO3)	61500		1000	ug/L		09-OCT-19	R4865629
Dissolved Carbons							
Dissolved Inorganic Carbon by Combustion							
Dissolved Inorganic Carbon	9010		500	ug/L		08-OCT-19	R4862244
Dissolved Organic Carbon by Combustion							
Dissolved Organic Carbon	1020		500	ug/L		09-OCT-19	R4866503
Total Dissolved Carbon by Calculation							
Total Dissolved Carbon	10000		1000	ug/L		11-OCT-19	
Miscellaneous Parameters							
Ammonia, Total (as N)	890		100	ug/L		15-OCT-19	R4873241
Chloride (Cl)	2130000		25000	ug/L		08-OCT-19	R4862447
Chromium, Hexavalent	<0.50		0.50	ug/L		10-OCT-19	R4866934
Cyanide, Total	<1.0		1.0	ug/L		11-OCT-19	R4869948
Mercury (Hg)-Total	<0.0050		0.0050	ug/L	10-OCT-19	10-OCT-19	R4866644
Phenols (4AAP)	3.2		1.0	ug/L		10-OCT-19	R4867047
Sulfate (SO4)	601000		15000	ug/L		08-OCT-19	R4862447
Dissolved Metals in Water by CRC ICPMS							
Dissolved Metals Filtration Location	FIELD					18-OCT-19	R4874269
Aluminum (Al)-Dissolved	1.1		1.0	ug/L	18-OCT-19	18-OCT-19	R4875228
Antimony (Sb)-Dissolved	<0.10		0.10	ug/L	18-OCT-19	18-OCT-19	R4875228
Arsenic (As)-Dissolved	0.44		0.10	ug/L	18-OCT-19	18-OCT-19	R4875228
Barium (Ba)-Dissolved	10.6		0.10	ug/L	18-OCT-19	18-OCT-19	R4875228
Beryllium (Be)-Dissolved	<0.10		0.10	ug/L	18-OCT-19	18-OCT-19	R4875228
Bismuth (Bi)-Dissolved	<0.050		0.050	ug/L	18-OCT-19	18-OCT-19	R4875228
Boron (B)-Dissolved	536		10	ug/L	18-OCT-19	18-OCT-19	R4875228
Cadmium (Cd)-Dissolved	<0.0050		0.0050	ug/L	18-OCT-19	18-OCT-19	R4875228
Calcium (Ca)-Dissolved	181000		50	ug/L	18-OCT-19	18-OCT-19	R4875228
Cesium (Cs)-Dissolved	0.040		0.010	ug/L	18-OCT-19	18-OCT-19	R4875228
Chromium (Cr)-Dissolved	<0.10		0.10	ug/L	18-OCT-19	18-OCT-19	R4875228
Cobalt (Co)-Dissolved	<0.10		0.10	ug/L	18-OCT-19	18-OCT-19	R4875228
Copper (Cu)-Dissolved	<0.20		0.20	ug/L	18-OCT-19	18-OCT-19	R4875228
Iron (Fe)-Dissolved	2170		10	ug/L	18-OCT-19	18-OCT-19	R4875228
Lead (Pb)-Dissolved	<0.050		0.050	ug/L	18-OCT-19	18-OCT-19	R4875228
Lithium (Li)-Dissolved	205		1.0	ug/L	18-OCT-19	18-OCT-19	R4875228
Magnesium (Mg)-Dissolved	101000		5.0	ug/L	18-OCT-19	18-OCT-19	R4875228
Manganese (Mn)-Dissolved	26.3		0.10	ug/L	18-OCT-19	18-OCT-19	R4875228
Molybdenum (Mo)-Dissolved	4.70		0.050	ug/L	18-OCT-19	18-OCT-19	R4875228
Nickel (Ni)-Dissolved	<0.50		0.50	ug/L	18-OCT-19	18-OCT-19	R4875228
Phosphorus (P)-Dissolved	<30		30	ug/L	18-OCT-19	18-OCT-19	R4875228
Potassium (K)-Dissolved	28800		50	ug/L	18-OCT-19	18-OCT-19	R4875228
Rubidium (Rb)-Dissolved	13.7		0.20	ug/L	18-OCT-19	18-OCT-19	R4875228
Selenium (Se)-Dissolved	0.096		0.050	ug/L	18-OCT-19	18-OCT-19	R4875228
Silicon (Si)-Dissolved	2610		50	ug/L	18-OCT-19	18-OCT-19	R4875228
Silver (Ag)-Dissolved	0.011		0.010	ug/L	18-OCT-19	18-OCT-19	R4875228

* 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
L2360962-1 GWQ25-W4							
Sampled By: CLIENT on 07-OCT-19 @ 12:43							
Matrix: WATER							
Dissolved Metals in Water by CRC ICPMS							
Sodium (Na)-Dissolved	1320000		5000	ug/L	18-OCT-19	22-OCT-19	R4880780
Strontium (Sr)-Dissolved	2670		10	ug/L	18-OCT-19	22-OCT-19	R4880780
Sulfur (S)-Dissolved	218000		500	ug/L	18-OCT-19	18-OCT-19	R4875228
Tellurium (Te)-Dissolved	<0.20		0.20	ug/L	18-OCT-19	18-OCT-19	R4875228
Thallium (Tl)-Dissolved	<0.010		0.010	ug/L	18-OCT-19	18-OCT-19	R4875228
Thorium (Th)-Dissolved	<0.10		0.10	ug/L	18-OCT-19	18-OCT-19	R4875228
Tin (Sn)-Dissolved	<0.10		0.10	ug/L	18-OCT-19	18-OCT-19	R4875228
Titanium (Ti)-Dissolved	<0.30		0.30	ug/L	18-OCT-19	18-OCT-19	R4875228
Tungsten (W)-Dissolved	2.58		0.10	ug/L	18-OCT-19	18-OCT-19	R4875228
Uranium (U)-Dissolved	0.098		0.010	ug/L	18-OCT-19	18-OCT-19	R4875228
Vanadium (V)-Dissolved	<0.50		0.50	ug/L	18-OCT-19	18-OCT-19	R4875228
Zinc (Zn)-Dissolved	<1.0		1.0	ug/L	18-OCT-19	18-OCT-19	R4875228
Zirconium (Zr)-Dissolved	<0.20		0.20	ug/L	18-OCT-19	18-OCT-19	R4875228
Polyaromatic Hydrocarbons (PAHs)							
1-Methyl Naphthalene	<0.020		0.020	ug/L	08-OCT-19	12-OCT-19	R4867488
2-Methyl Naphthalene	<0.020		0.020	ug/L	08-OCT-19	12-OCT-19	R4867488
Acenaphthene	<0.020		0.020	ug/L	08-OCT-19	12-OCT-19	R4867488
Acenaphthylene	<0.020		0.020	ug/L	08-OCT-19	12-OCT-19	R4867488
Anthracene	<0.010		0.010	ug/L	08-OCT-19	12-OCT-19	R4867488
Acridine	<0.020		0.020	ug/L	08-OCT-19	12-OCT-19	R4867488
Benzo(a)anthracene	<0.010		0.010	ug/L	08-OCT-19	12-OCT-19	R4867488
Benzo(a)pyrene	<0.0050		0.0050	ug/L	08-OCT-19	12-OCT-19	R4867488
Benzo(b&j)fluoranthene	<0.010		0.010	ug/L	08-OCT-19	12-OCT-19	R4867488
Benzo(g,h,i)perylene	<0.020		0.020	ug/L	08-OCT-19	12-OCT-19	R4867488
Benzo(k)fluoranthene	<0.010		0.010	ug/L	08-OCT-19	12-OCT-19	R4867488
Chrysene	<0.020		0.020	ug/L	08-OCT-19	12-OCT-19	R4867488
Dibenzo(a,h)anthracene	<0.0050		0.0050	ug/L	08-OCT-19	12-OCT-19	R4867488
Fluoranthene	<0.020		0.020	ug/L	08-OCT-19	12-OCT-19	R4867488
Fluorene	<0.020		0.020	ug/L	08-OCT-19	12-OCT-19	R4867488
Indeno(1,2,3-cd)pyrene	<0.010		0.010	ug/L	08-OCT-19	12-OCT-19	R4867488
Naphthalene	<0.050		0.050	ug/L	08-OCT-19	12-OCT-19	R4867488
Phenanthrene	<0.050		0.050	ug/L	08-OCT-19	12-OCT-19	R4867488
Pyrene	<0.010		0.010	ug/L	08-OCT-19	12-OCT-19	R4867488
Quinoline	<0.020		0.020	ug/L	08-OCT-19	12-OCT-19	R4867488
B(a)P Total Potency Equivalent	<0.030		0.030	ug/L	08-OCT-19	12-OCT-19	R4867488
Surrogate: Acenaphthene d10	113.5		60-130	%	08-OCT-19	12-OCT-19	R4867488
Surrogate: Acridine d9	114.7		60-130	%	08-OCT-19	12-OCT-19	R4867488
Surrogate: Chrysene d12	101.6		60-130	%	08-OCT-19	12-OCT-19	R4867488
Surrogate: Naphthalene d8	112.6		50-130	%	08-OCT-19	12-OCT-19	R4867488
Surrogate: Phenanthrene d10	118.5		60-130	%	08-OCT-19	12-OCT-19	R4867488
Herbicides in Water							
Clopyralid	<0.10		0.10	ug/L	15-OCT-19	16-OCT-19	R4871854
Dicamba	<0.10		0.10	ug/L	15-OCT-19	16-OCT-19	R4871854
Mecoprop	<0.10		0.10	ug/L	15-OCT-19	16-OCT-19	R4871854
MCPA	<0.10		0.10	ug/L	15-OCT-19	16-OCT-19	R4871854
2,4-D	<0.10		0.10	ug/L	15-OCT-19	16-OCT-19	R4871854
Bromoxynil	<0.10		0.10	ug/L	15-OCT-19	16-OCT-19	R4871854
Triclopyr	<0.10		0.10	ug/L	15-OCT-19	16-OCT-19	R4871854
2,4,5-T	<0.10		0.10	ug/L	15-OCT-19	16-OCT-19	R4871854
2,4,5-TP	<0.10		0.10	ug/L	15-OCT-19	16-OCT-19	R4871854
Picloram	<0.10		0.10	ug/L	15-OCT-19	16-OCT-19	R4871854

* 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
L2360962-1 GWQ25-W4							
Sampled By: CLIENT on 07-OCT-19 @ 12:43							
Matrix: WATER							
Herbicides in Water							
2,4-DB	<0.10		0.10	ug/L	15-OCT-19	16-OCT-19	R4871854
2,4-DP	<0.10		0.10	ug/L	15-OCT-19	16-OCT-19	R4871854
Dinoseb	<0.10		0.10	ug/L	15-OCT-19	16-OCT-19	R4871854
MCPB	<0.10		0.10	ug/L	15-OCT-19	16-OCT-19	R4871854
Surrogate: 2,4-Dichlorophenylacetic Acid	96.0		50-130	%	15-OCT-19	16-OCT-19	R4871854
Miscellaneous Pesticides							
Diazinon	<0.10		0.10	ug/L	16-OCT-19	17-OCT-19	R4873066
Surrogate: 2-Fluorobiphenyl	76.3		40-130	%	16-OCT-19	17-OCT-19	R4873066
Surrogate: d14-Terphenyl	77.1		40-130	%	16-OCT-19	17-OCT-19	R4873066
Total, Fecal Coliforms, E Coli by QT97							
Fecal Coliform by MPN QT97							
Fecal Coliforms	<1		1	MPN/100mL		07-OCT-19	R4861467
Total Coliform and E.coli by MPN QT97							
Total Coliforms	<1		1	MPN/100mL		07-OCT-19	R4861463
Escherichia Coli	<1		1	MPN/100mL		07-OCT-19	R4861463
VOC, F1-F4 (O.Reg.153/04)							
CCME Total Hydrocarbons							
F1-BTEX	<100		100	ug/L		16-OCT-19	
Total Hydrocarbons (C6-C50)	<380		380	ug/L		16-OCT-19	
F1 (O.Reg.153/04)							
F1 (C6-C10)	<100		100	ug/L		16-OCT-19	R4871009
Surrogate: 3,4-Dichlorotoluene	107.9		60-140	%		16-OCT-19	R4871009
F2-F4 (O.Reg.153/04)							
F2 (C10-C16)	<100		100	ug/L	10-OCT-19	11-OCT-19	R4868886
F3 (C16-C34)	<250		250	ug/L	10-OCT-19	11-OCT-19	R4868886
F4 (C34-C50)	<250		250	ug/L	10-OCT-19	11-OCT-19	R4868886
Chrom. to baseline at nC50	YES				10-OCT-19	11-OCT-19	R4868886
Surrogate: 2-Bromobenzotrifluoride	87.9		60-140	%	10-OCT-19	11-OCT-19	R4868886
Sum of Xylene Isomer Concentrations							
Xylenes (Total)	<1.1		1.1	ug/L		16-OCT-19	
Total Trihalomethanes (THMs)							
Total THMs	<2.0		2.0	ug/L		16-OCT-19	
Volatile Organic Compounds							
1,1,1,2-Tetrachloroethane	<0.50		0.50	ug/L		16-OCT-19	R4871009
1,1,2,2-Tetrachloroethane	<0.50		0.50	ug/L		16-OCT-19	R4871009
1,1,1-Trichloroethane	<0.50		0.50	ug/L		16-OCT-19	R4871009
1,1,2-Trichloroethane	<0.50		0.50	ug/L		16-OCT-19	R4871009
1,2-Dibromoethane	<0.20		0.20	ug/L		16-OCT-19	R4871009
1,1-Dichloroethane	<0.50		0.50	ug/L		16-OCT-19	R4871009
1,1-Dichloroethylene	<0.50		0.50	ug/L		16-OCT-19	R4871009
1,2-Dichlorobenzene	<0.50		0.50	ug/L		16-OCT-19	R4871009
1,2-Dichloroethane	<0.50		0.50	ug/L		16-OCT-19	R4871009
1,2-Dichloropropane	<0.50		0.50	ug/L		16-OCT-19	R4871009
1,3-Dichlorobenzene	<0.50		0.50	ug/L		16-OCT-19	R4871009
1,4-Dichlorobenzene	<0.50		0.50	ug/L		16-OCT-19	R4871009
2-Hexanone	<20		20	ug/L		16-OCT-19	R4871009
Acetone	<20		20	ug/L		16-OCT-19	R4871009
Benzene	<0.50		0.50	ug/L		16-OCT-19	R4871009
Bromodichloromethane	<1.0		1.0	ug/L		16-OCT-19	R4871009
Bromoform	<1.0		1.0	ug/L		16-OCT-19	R4871009
Bromomethane	<0.50		0.50	ug/L		16-OCT-19	R4871009
Carbon Disulfide	<1.0		1.0	ug/L		16-OCT-19	R4871009

* 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
L2360962-1 GWQ25-W4							
Sampled By: CLIENT on 07-OCT-19 @ 12:43							
Matrix: WATER							
Volatile Organic Compounds							
Carbon tetrachloride	<0.50		0.50	ug/L		16-OCT-19	R4871009
Chlorobenzene	<0.50		0.50	ug/L		16-OCT-19	R4871009
Chloroethane	<1.0		1.0	ug/L		16-OCT-19	R4871009
Chloroform	<1.0		1.0	ug/L		16-OCT-19	R4871009
Chloromethane	<1.0		1.0	ug/L		16-OCT-19	R4871009
cis-1,2-Dichloroethylene	<0.50		0.50	ug/L		16-OCT-19	R4871009
cis-1,3-Dichloropropene	<0.50		0.50	ug/L		16-OCT-19	R4871009
Dibromochloromethane	<1.0		1.0	ug/L		16-OCT-19	R4871009
Dichlorodifluoromethane	<1.0		1.0	ug/L		16-OCT-19	R4871009
Dichloromethane	<2.0		2.0	ug/L		16-OCT-19	R4871009
Ethylbenzene	<0.50		0.50	ug/L		16-OCT-19	R4871009
m+p-Xylenes	<1.0		1.0	ug/L		16-OCT-19	R4871009
Methyl Ethyl Ketone	<20		20	ug/L		16-OCT-19	R4871009
Methyl Isobutyl Ketone	<20		20	ug/L		16-OCT-19	R4871009
n-Hexane	<0.50		0.50	ug/L		16-OCT-19	R4871009
MTBE	<0.50		0.50	ug/L		16-OCT-19	R4871009
o-Xylene	<0.50		0.50	ug/L		16-OCT-19	R4871009
Styrene	<0.50		0.50	ug/L		16-OCT-19	R4871009
Tetrachloroethylene	<0.50		0.50	ug/L		16-OCT-19	R4871009
Toluene	<0.50		0.50	ug/L		16-OCT-19	R4871009
trans-1,2-Dichloroethylene	<0.50		0.50	ug/L		16-OCT-19	R4871009
trans-1,3-Dichloropropene	<0.50		0.50	ug/L		16-OCT-19	R4871009
Trichloroethylene	<0.50		0.50	ug/L		16-OCT-19	R4871009
Trichlorofluoromethane	<1.0		1.0	ug/L		16-OCT-19	R4871009
Vinyl chloride	<0.50		0.50	ug/L		16-OCT-19	R4871009
Surrogate: 1,4-Difluorobenzene	102.1		70-130	%		16-OCT-19	R4871009
Surrogate: 4-Bromofluorobenzene	100.1		70-130	%		16-OCT-19	R4871009

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

Reference Information

Sample Parameter Qualifier Key:

Qualifier	Description
K	Matrix Spike recovery outside ALS DQO due to sample matrix effects.
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.

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.			
C-DIC-HTC-WP	Water	Dissolved Inorganic Carbon by Combustion	APHA 5310 B-WP
Filtered (0.45 um) sample is injected into a heated reaction chamber where it is acidified, converting all inorganic carbon to CO ₂ which is then transported in the carrier gas stream and measured via a non-dispersive infrared analyzer.			
C-DOC-HTC-WP	Water	Dissolved Organic Carbon by Combustion	APHA 5310 B-WP
Filtered (0.45 um) sample is acidified and purged to remove inorganic carbon, then injected into a heated reaction chamber where organic carbon is oxidized to CO ₂ which is then transported in the carrier gas stream and measured via a non-dispersive infrared analyzer.			
C-TDC-CALC-WP	Water	Total Dissolved Carbon by Calculation	CALCULATED
Total dissolved carbon represents the sum of dissolved inorganic carbon and dissolved organic carbon. For the purpose of calculation, results less than the detection limit (DL) are treated as zero.			
CL-IC-N-WP	Water	Chloride in Water by IC	EPA 300.1 (mod)
Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.			
CN-T-L-CFA-WT	Water	Low Level Total Cyanide in water by CFA	ISO 14403-2:2002
This analysis is carried out using procedures adapted from ISO Method 14403:2002 "Determination of Total Cyanide using Flow Analysis (FIA and CFA)". Total or strong acid dissociable (SAD) cyanide is determined by in-line UV digestion along with sample distillation and final determination by colourimetric analysis. Method Limitation: This method is susceptible to interference from thiocyanate (SCN). If SCN is present in the sample, there could be a positive interference with this method, however it would be less than 1% and could be as low as zero.			
CR-CR6-IC-WT	Water	Chromium +6	EPA 7199
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.			
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).			
EC-SCREEN-WP	Water	Conductivity Screen (Internal Use Only)	APHA 2510
Qualitative analysis of conductivity where required during preparation of other test eg. IC, TDS, TSS, etc			

Reference Information

Test Method References:

ALS Test Code	Matrix	Test Description	Method Reference**
F1-F4-CALC-WT	Water	CCME Total Hydrocarbons	CCME CWS-PHC, Pub #1310, Dec 2001-L
Analytical methods used for analysis of CCME Petroleum Hydrocarbons have been validated and comply with the Reference Method for the CWS PHC.			
In cases where results for both F4 and F4G are reported, the greater of the two results must be used in any application of the CWS PHC guidelines and the gravimetric heavy hydrocarbons cannot be added to the C6 to C50 hydrocarbons.			
In samples where BTEX and F1 were analyzed, F1-BTEX represents a value where the sum of Benzene, Toluene, Ethylbenzene and total Xylenes has been subtracted from F1.			
In samples where PAHs, F2 and F3 were analyzed, F2-Naphth represents the result where Naphthalene has been subtracted from F2. F3-PAH represents a result where the sum of Benzo(a)anthracene, Benzo(a)pyrene, Benzo(b)fluoranthene, Benzo(k)fluoranthene, Dibenzo(a,h)anthracene, Fluoranthene, Indeno(1,2,3-cd)pyrene, Phenanthrene, and Pyrene has been subtracted from F3.			
Unless otherwise qualified, the following quality control criteria have been met for the F1 hydrocarbon range:			
1. All extraction and analysis holding times were met.			
2. Instrument performance showing response factors for C6 and C10 within 30% of the response factor for toluene.			
3. Linearity of gasoline response within 15% throughout the calibration range.			
Unless otherwise qualified, the following quality control criteria have been met for the F2-F4 hydrocarbon ranges:			
1. All extraction and analysis holding times were met.			
2. Instrument performance showing C10, C16 and C34 response factors within 10% of their average.			
3. Instrument performance showing the C50 response factor within 30% of the average of the C10, C16 and C34 response factors.			
4. Linearity of diesel or motor oil response within 15% throughout the calibration range.			
F1-HS-WT	Water	F1 (O.Reg.153/04)	E3421/CCME (HS)
Fraction F1 is determined by analyzing by headspace-GC/FID.			
F2-F4-WT	Water	F2-F4 (O.Reg.153/04)	MOE DECPH-E3421/CCME TIER 1
Petroleum Hydrocarbons (F2-F4 fractions) are extracted from water using a hexane micro-extraction technique. Instrumental analysis is by GC-FID, as per the Reference Method for the Canada-Wide Standard for Petroleum Hydrocarbons in Soil Tier 1 Method, CCME, 2001.			
FC-QT97-WP	Water	Fecal Coliform by MPN QT97	APHA 9223B QT97
This analysis is carried out using procedures adapted from APHA Method 9223B "Enzyme Substrate Coliform Test". The sample is mixed with a mixture of hydrolyzable substrates and then sealed in a 97-well packet. The packet is incubated at 44.5 – 0.2°C for 18 hours and then the number of wells exhibiting a positive response are counted. The final result is obtained by comparing the number of positive responses to a probability table.			
HERBSCR-LCMS-WT	Water	Herbicides in Water	E3552
Water samples are subjected filtration and analyzed by direct injection without sample preparation using liquid chromatography tandem mass spectrometry (LC-MS/MS).			
HG-T-CVAA-WP	Water	Mercury Total	EPA 1631E (mod)
Water samples undergo a cold-oxidation using bromine monochloride prior to reduction with stannous chloride, and analyzed by CVAAS.			
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.			
NH3-COL-WP	Water	Ammonia by colour	APHA 4500 NH3 F
Ammonia in water samples forms indophenol when reacted with hypochlorite and phenol. The intensity is amplified by the addition of sodium nitroprusside and measured colourmetrically.			
PAH,PANH-WP	Water	Polyaromatic Hydrocarbons (PAHs)	EPA 3511/8270D (mod)
PAHs are extracted from water using a hexane micro-extraction technique, with analysis by GC/MS. Because the two isomers cannot be readily separated chromatographically, benzo(j)fluoranthene is reported as part of the benzo(b)fluoranthene parameter.			
PEST-DIAZINON-WT	Water	Miscellaneous Pesticides	SW846 8270
PHENOLS-4AAP-WT	Water	Phenol (4AAP)	EPA 9066
An automated method is used to distill the sample. The distillate is then buffered to pH 9.4 which reacts with 4AAP and potassium ferricyanide to form a red complex which is measured colorimetrically.			

Reference Information

Test Method References:

ALS Test Code	Matrix	Test Description	Method Reference**
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-QT97-WP	Water	Total Coliform and E.coli by MPN QT97	APHA 9223B QT97
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 97-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.			
THM-SUM-CALC-WT	Water	Total Trihalomethanes (THMs)	CALCULATION
Total Trihalomethanes (THMs) represents the sum of bromodichloromethane, bromoform, chlorodibromomethane and chloroform. For the purpose of calculation, results less than the detection limit (DL) are treated as zero.			
VOC-ROU-HS-WT	Water	Volatile Organic Compounds	SW846 8260
Aqueous samples are analyzed by headspace-GC/MS.			
XYLENES-SUM-CALC-WT	Water	Sum of Xylene Isomer Concentrations	CALCULATION
Total xylenes represents the sum of o-xylene and m&p-xylene.			

** 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
WT	ALS ENVIRONMENTAL - WATERLOO, ONTARIO, 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: L2360962

Report Date: 24-OCT-19

Page 1 of 12

Client: City of Winnipeg - Solid Waste Services Div (1120 Waverley)
 Solid Waste Services Division 1120 Waverley Street
 Winnipeg MB R3T 0P4

Contact: CHRIS KOZAK

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
ALK-TITR-WP		Water						
Batch	R4865629							
WG3187521-4	LCS							
Alkalinity, Total (as CaCO3)			98.7		%		85-115	09-OCT-19
WG3187521-1	MB							
Alkalinity, Total (as CaCO3)			1.0		mg/L		1	09-OCT-19
C-DIC-HTC-WP		Water						
Batch	R4862244							
WG3186139-2	LCS							
Dissolved Inorganic Carbon			95.2		%		80-120	08-OCT-19
WG3186139-1	MB							
Dissolved Inorganic Carbon			<0.50		mg/L		0.5	08-OCT-19
C-DOC-HTC-WP		Water						
Batch	R4866503							
WG3187911-2	LCS							
Dissolved Organic Carbon			105.5		%		80-120	09-OCT-19
WG3187911-1	MB							
Dissolved Organic Carbon			<0.50		mg/L		0.5	09-OCT-19
CL-IC-N-WP		Water						
Batch	R4862447							
WG3185139-2	LCS							
Chloride (Cl)			100.9		%		90-110	08-OCT-19
WG3185139-1	MB							
Chloride (Cl)			<0.50		mg/L		0.5	08-OCT-19
CN-T-L-CFA-WT		Water						
Batch	R4869948							
WG3188974-2	LCS							
Cyanide, Total			91.8		%		80-120	11-OCT-19
WG3188974-1	MB							
Cyanide, Total			<0.0010		mg/L		0.001	11-OCT-19
CR-CR6-IC-WT		Water						
Batch	R4866934							
WG3187786-2	LCS							
Chromium, Hexavalent			92.7		%		80-120	10-OCT-19
WG3187786-1	MB							
Chromium, Hexavalent			<0.00050		mg/L		0.0005	10-OCT-19
F1-HS-WT	Water							



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Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
F1-HS-WT		Water						
Batch	R4871009							
WG3190633-1	LCS							
F1 (C6-C10)			106.5		%		80-120	16-OCT-19
WG3190633-2	MB							
F1 (C6-C10)			<100		ug/L		100	16-OCT-19
Surrogate: 3,4-Dichlorotoluene			121.9		%		60-140	16-OCT-19
F2-F4-WT		Water						
Batch	R4868886							
WG3187373-2	LCS							
F2 (C10-C16)			95.8		%		65-135	11-OCT-19
F3 (C16-C34)			104.7		%		65-135	11-OCT-19
F4 (C34-C50)			90.8		%		65-135	11-OCT-19
WG3187373-1	MB							
F2 (C10-C16)			<100		ug/L		100	11-OCT-19
F3 (C16-C34)			<250		ug/L		250	11-OCT-19
F4 (C34-C50)			<250		ug/L		250	11-OCT-19
Surrogate: 2-Bromobenzotrifluoride			77.6		%		60-140	11-OCT-19
FC-QT97-WP		Water						
Batch	R4861467							
WG3184320-2	DUP	L2360962-1						
Fecal Coliforms		<1	<1	RPD-NA	MPN/100mL	N/A	65	07-OCT-19
WG3184320-1	MB							
Fecal Coliforms			<1		MPN/100mL		1	07-OCT-19
HERBSCR-LCMS-WT		Water						
Batch	R4871854							
WG3191133-2	LCS							
Clopyralid			98.0		%		50-150	16-OCT-19
Dicamba			104.0		%		65-130	16-OCT-19
Mecoprop			109.0		%		65-130	16-OCT-19
MCPA			98.9		%		65-130	16-OCT-19
2,4-D			111.0		%		65-130	16-OCT-19
Bromoxynil			91.8		%		65-130	16-OCT-19
Triclopyr			104.0		%		65-130	16-OCT-19
2,4,5-T			98.6		%		65-130	16-OCT-19
2,4,5-TP			115.0		%		65-130	16-OCT-19
Picloram			109.0		%		50-150	16-OCT-19
2,4-DB			95.5		%		65-130	16-OCT-19



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Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
HERBSCR-LCMS-WT		Water						
Batch	R4871854							
WG3191133-2	LCS							
2,4-DP			102.0		%		65-130	16-OCT-19
Dinoseb			85.8		%		50-150	16-OCT-19
MCPB			107.0		%		65-130	16-OCT-19
WG3191133-1	MB							
Clopyralid			<0.00010		mg/L		0.0001	16-OCT-19
Dicamba			<0.00010		mg/L		0.0001	16-OCT-19
Mecoprop			<0.00010		mg/L		0.0001	16-OCT-19
MCPA			<0.00010		mg/L		0.0001	16-OCT-19
2,4-D			<0.00010		mg/L		0.0001	16-OCT-19
Bromoxynil			<0.00010		mg/L		0.0001	16-OCT-19
Triclopyr			<0.00010		mg/L		0.0001	16-OCT-19
2,4,5-T			<0.00010		mg/L		0.0001	16-OCT-19
2,4,5-TP			<0.00010		mg/L		0.0001	16-OCT-19
Picloram			<0.00010		mg/L		0.0001	16-OCT-19
2,4-DB			<0.00010		mg/L		0.0001	16-OCT-19
2,4-DP			<0.00010		mg/L		0.0001	16-OCT-19
Dinoseb			<0.00010		mg/L		0.0001	16-OCT-19
MCPB			<0.00010		mg/L		0.0001	16-OCT-19
Surrogate: 2,4-Dichlorophenylacetic Acid			109.0		%		50-130	16-OCT-19
HG-T-CVAA-WP		Water						
Batch	R4866644							
WG3189284-2	LCS							
Mercury (Hg)-Total			108.0		%		80-120	10-OCT-19
WG3189284-1	MB							
Mercury (Hg)-Total			<0.000005C		mg/L		0.000005	10-OCT-19
MET-D-CCMS-WP		Water						
Batch	R4875228							
WG3195204-2	LCS							
Aluminum (Al)-Dissolved			105.1		%		80-120	18-OCT-19
Antimony (Sb)-Dissolved			99.6		%		80-120	18-OCT-19
Arsenic (As)-Dissolved			104.8		%		80-120	18-OCT-19
Barium (Ba)-Dissolved			104.6		%		80-120	18-OCT-19
Beryllium (Be)-Dissolved			103.4		%		80-120	18-OCT-19
Bismuth (Bi)-Dissolved			105.5		%		80-120	18-OCT-19
Boron (B)-Dissolved			101.6		%		80-120	18-OCT-19

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Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
MET-D-CCMS-WP		Water						
Batch	R4875228							
WG3195204-2	LCS							
Cadmium (Cd)-Dissolved			103.9		%		80-120	18-OCT-19
Calcium (Ca)-Dissolved			103.3		%		80-120	18-OCT-19
Cesium (Cs)-Dissolved			104.5		%		80-120	18-OCT-19
Chromium (Cr)-Dissolved			104.5		%		80-120	18-OCT-19
Cobalt (Co)-Dissolved			103.4		%		80-120	18-OCT-19
Copper (Cu)-Dissolved			104.4		%		80-120	18-OCT-19
Iron (Fe)-Dissolved			94.6		%		80-120	18-OCT-19
Lead (Pb)-Dissolved			105.2		%		80-120	18-OCT-19
Lithium (Li)-Dissolved			104.6		%		80-120	18-OCT-19
Magnesium (Mg)-Dissolved			111.7		%		80-120	18-OCT-19
Manganese (Mn)-Dissolved			104.1		%		80-120	18-OCT-19
Molybdenum (Mo)-Dissolved			101.2		%		80-120	18-OCT-19
Nickel (Ni)-Dissolved			102.1		%		80-120	18-OCT-19
Phosphorus (P)-Dissolved			110.4		%		80-120	18-OCT-19
Potassium (K)-Dissolved			103.1		%		80-120	18-OCT-19
Rubidium (Rb)-Dissolved			104.2		%		80-120	18-OCT-19
Selenium (Se)-Dissolved			103.6		%		80-120	18-OCT-19
Silicon (Si)-Dissolved			102.6		%		80-120	18-OCT-19
Silver (Ag)-Dissolved			102.1		%		80-120	18-OCT-19
Sulfur (S)-Dissolved			107.2		%		80-120	18-OCT-19
Tellurium (Te)-Dissolved			103.2		%		80-120	18-OCT-19
Thallium (Tl)-Dissolved			104.9		%		80-120	18-OCT-19
Thorium (Th)-Dissolved			97.7		%		80-120	18-OCT-19
Tin (Sn)-Dissolved			100.4		%		80-120	18-OCT-19
Titanium (Ti)-Dissolved			98.9		%		80-120	18-OCT-19
Tungsten (W)-Dissolved			104.7		%		80-120	18-OCT-19
Uranium (U)-Dissolved			104.2		%		80-120	18-OCT-19
Vanadium (V)-Dissolved			104.1		%		80-120	18-OCT-19
Zinc (Zn)-Dissolved			102.5		%		80-120	18-OCT-19
Zirconium (Zr)-Dissolved			95.9		%		80-120	18-OCT-19
WG3195204-1	MB							
Aluminum (Al)-Dissolved			<0.0010		mg/L		0.001	18-OCT-19
Antimony (Sb)-Dissolved			<0.00010		mg/L		0.0001	18-OCT-19
Arsenic (As)-Dissolved			<0.00010		mg/L		0.0001	18-OCT-19



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Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
MET-D-CCMS-WP								
	Water							
Batch	R4875228							
WG3195204-1	MB							
Barium (Ba)-Dissolved			<0.00010		mg/L		0.0001	18-OCT-19
Beryllium (Be)-Dissolved			<0.00010		mg/L		0.0001	18-OCT-19
Bismuth (Bi)-Dissolved			<0.000050		mg/L		0.00005	18-OCT-19
Boron (B)-Dissolved			<0.010		mg/L		0.01	18-OCT-19
Cadmium (Cd)-Dissolved			<0.0000050		mg/L		0.000005	18-OCT-19
Calcium (Ca)-Dissolved			<0.050		mg/L		0.05	18-OCT-19
Cesium (Cs)-Dissolved			<0.000010		mg/L		0.00001	18-OCT-19
Chromium (Cr)-Dissolved			<0.00010		mg/L		0.0001	18-OCT-19
Cobalt (Co)-Dissolved			<0.00010		mg/L		0.0001	18-OCT-19
Copper (Cu)-Dissolved			<0.00020		mg/L		0.0002	18-OCT-19
Iron (Fe)-Dissolved			<0.010		mg/L		0.01	18-OCT-19
Lead (Pb)-Dissolved			<0.000050		mg/L		0.00005	18-OCT-19
Lithium (Li)-Dissolved			<0.0010		mg/L		0.001	18-OCT-19
Magnesium (Mg)-Dissolved			<0.0050		mg/L		0.005	18-OCT-19
Manganese (Mn)-Dissolved			<0.00010		mg/L		0.0001	18-OCT-19
Molybdenum (Mo)-Dissolved			<0.000050		mg/L		0.00005	18-OCT-19
Nickel (Ni)-Dissolved			<0.00050		mg/L		0.0005	18-OCT-19
Phosphorus (P)-Dissolved			<0.030		mg/L		0.03	18-OCT-19
Potassium (K)-Dissolved			<0.050		mg/L		0.05	18-OCT-19
Rubidium (Rb)-Dissolved			<0.00020		mg/L		0.0002	18-OCT-19
Selenium (Se)-Dissolved			<0.000050		mg/L		0.00005	18-OCT-19
Silicon (Si)-Dissolved			<0.050		mg/L		0.05	18-OCT-19
Silver (Ag)-Dissolved			<0.000010		mg/L		0.00001	18-OCT-19
Sulfur (S)-Dissolved			<0.50		mg/L		0.5	18-OCT-19
Tellurium (Te)-Dissolved			<0.00020		mg/L		0.0002	18-OCT-19
Thallium (Tl)-Dissolved			<0.000010		mg/L		0.00001	18-OCT-19
Thorium (Th)-Dissolved			<0.00010		mg/L		0.0001	18-OCT-19
Tin (Sn)-Dissolved			<0.00010		mg/L		0.0001	18-OCT-19
Titanium (Ti)-Dissolved			<0.00030		mg/L		0.0003	18-OCT-19
Tungsten (W)-Dissolved			<0.00010		mg/L		0.0001	18-OCT-19
Uranium (U)-Dissolved			<0.000010		mg/L		0.00001	18-OCT-19
Vanadium (V)-Dissolved			<0.00050		mg/L		0.0005	18-OCT-19
Zinc (Zn)-Dissolved			<0.0010		mg/L		0.001	18-OCT-19
Zirconium (Zr)-Dissolved			<0.00020		mg/L		0.0002	18-OCT-19

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Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
NH3-COL-WP		Water						
Batch	R4873241							
WG3193729-18	LCS							
Ammonia, Total (as N)			98.8		%		85-115	15-OCT-19
WG3193729-17	MB							
Ammonia, Total (as N)			<0.010		mg/L		0.01	16-OCT-19
PAH,PANH-WP		Water						
Batch	R4867488							
WG3187877-2	LCS							
1-Methyl Naphthalene			112.1		%		60-130	11-OCT-19
2-Methyl Naphthalene			100.6		%		60-130	11-OCT-19
Acenaphthene			114.3		%		60-130	11-OCT-19
Acenaphthylene			91.5		%		60-130	11-OCT-19
Anthracene			73.4		%		60-130	11-OCT-19
Acridine			86.8		%		60-130	11-OCT-19
Benzo(a)anthracene			84.3		%		60-130	11-OCT-19
Benzo(a)pyrene			84.0		%		60-130	11-OCT-19
Benzo(b&j)fluoranthene			87.0		%		60-130	11-OCT-19
Benzo(g,h,i)perylene			102.7		%		60-130	11-OCT-19
Benzo(k)fluoranthene			103.4		%		60-130	11-OCT-19
Chrysene			98.7		%		60-130	11-OCT-19
Dibenzo(a,h)anthracene			103.3		%		60-130	11-OCT-19
Fluoranthene			104.8		%		60-130	11-OCT-19
Fluorene			93.2		%		60-130	11-OCT-19
Indeno(1,2,3-cd)pyrene			73.0		%		60-130	11-OCT-19
Naphthalene			108.8		%		50-130	11-OCT-19
Phenanthrene			108.2		%		60-130	11-OCT-19
Pyrene			103.5		%		60-130	11-OCT-19
Quinoline			105.4		%		60-130	11-OCT-19
WG3187877-1	MB							
1-Methyl Naphthalene			<0.000020		mg/L		0.00002	11-OCT-19
2-Methyl Naphthalene			<0.000020		mg/L		0.00002	11-OCT-19
Acenaphthene			<0.000020		mg/L		0.00002	11-OCT-19
Acenaphthylene			<0.000020		mg/L		0.00002	11-OCT-19
Anthracene			<0.000010		mg/L		0.00001	11-OCT-19
Acridine			<0.000020		mg/L		0.00002	11-OCT-19
Benzo(a)anthracene			<0.000010		mg/L		0.00001	11-OCT-19
Benzo(a)pyrene			<0.0000050		mg/L		0.000005	11-OCT-19



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Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
PAH,PANH-WP								
	Water							
Batch	R4867488							
WG3187877-1	MB							
Benzo(b&j)fluoranthene			<0.000010		mg/L		0.00001	11-OCT-19
Benzo(g,h,i)perylene			<0.000020		mg/L		0.00002	11-OCT-19
Benzo(k)fluoranthene			<0.000010		mg/L		0.00001	11-OCT-19
Chrysene			<0.000020		mg/L		0.00002	11-OCT-19
Dibenzo(a,h)anthracene			<0.0000050		mg/L		0.000005	11-OCT-19
Fluoranthene			<0.000020		mg/L		0.00002	11-OCT-19
Fluorene			<0.000020		mg/L		0.00002	11-OCT-19
Indeno(1,2,3-cd)pyrene			<0.000010		mg/L		0.00001	11-OCT-19
Naphthalene			<0.000050		mg/L		0.00005	11-OCT-19
Phenanthrene			<0.000050		mg/L		0.00005	11-OCT-19
Pyrene			<0.000010		mg/L		0.00001	11-OCT-19
Quinoline			<0.000020		mg/L		0.00002	11-OCT-19
Surrogate: Acenaphthene d10			101.1		%		60-130	11-OCT-19
Surrogate: Acridine d9			96.6		%		60-130	11-OCT-19
Surrogate: Chrysene d12			119.8		%		60-130	11-OCT-19
Surrogate: Naphthalene d8			100.9		%		50-130	11-OCT-19
Surrogate: Phenanthrene d10			108.5		%		60-130	11-OCT-19
PEST-DIAZINON-WT								
	Water							
Batch	R4873066							
WG3191821-2	LCS							
Diazinon			93.0		%		60-130	17-OCT-19
WG3191821-1	MB							
Diazinon			<0.10		ug/L		0.1	17-OCT-19
Surrogate: 2-Fluorobiphenyl			80.5		%		40-130	17-OCT-19
Surrogate: d14-Terphenyl			80.8		%		40-130	17-OCT-19
PHENOLS-4AAP-WT								
	Water							
Batch	R4867047							
WG3187955-3	DUP	L2360962-1						
Phenols (4AAP)		0.0032	0.0039	J	mg/L	0.0007	0.002	10-OCT-19
WG3187955-2	LCS							
Phenols (4AAP)			111.6		%		85-115	10-OCT-19
WG3187955-1	MB							
Phenols (4AAP)			<0.0010		mg/L		0.001	10-OCT-19
WG3187955-4	MS	L2360962-1						
Phenols (4AAP)			112.3		%		75-125	10-OCT-19

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SO4-IC-N-WP								
Batch	R4862447							
WG3185139-2	LCS							
Sulfate (SO4)			102.4		%		90-110	08-OCT-19
WG3185139-1	MB							
Sulfate (SO4)			<0.30		mg/L		0.3	08-OCT-19
TC,EC-QT97-WP								
Batch	R4861463							
WG3184326-2	DUP	L2360962-1						
Total Coliforms		<1	<1	RPD-NA	MPN/100mL	N/A	65	07-OCT-19
Escherichia Coli		<1	<1	RPD-NA	MPN/100mL	N/A	65	07-OCT-19
WG3184326-1	MB							
Total Coliforms			<1		MPN/100mL		1	07-OCT-19
Escherichia Coli			<1		MPN/100mL		1	07-OCT-19
VOC-ROU-HS-WT								
Batch	R4871009							
WG3190633-1	LCS							
1,1,1,2-Tetrachloroethane			101.7		%		70-130	16-OCT-19
1,1,2,2-Tetrachloroethane			111.5		%		70-130	16-OCT-19
1,1,1-Trichloroethane			103.5		%		70-130	16-OCT-19
1,1,2-Trichloroethane			107.1		%		70-130	16-OCT-19
1,2-Dibromoethane			106.2		%		70-130	16-OCT-19
1,1-Dichloroethane			106.1		%		70-130	16-OCT-19
1,1-Dichloroethylene			97.9		%		70-130	16-OCT-19
1,2-Dichlorobenzene			103.8		%		70-130	16-OCT-19
1,2-Dichloroethane			109.8		%		70-130	16-OCT-19
1,2-Dichloropropane			106.5		%		70-130	16-OCT-19
1,3-Dichlorobenzene			101.5		%		70-130	16-OCT-19
1,4-Dichlorobenzene			102.7		%		70-130	16-OCT-19
2-Hexanone			98.5		%		60-140	16-OCT-19
Acetone			116.3		%		60-140	16-OCT-19
Benzene			106.7		%		70-130	16-OCT-19
Bromodichloromethane			105.0		%		70-130	16-OCT-19
Bromoform			106.5		%		70-130	16-OCT-19
Bromomethane			97.2		%		60-140	16-OCT-19
Carbon Disulfide			104.7		%		70-130	16-OCT-19
Carbon tetrachloride			100.8		%		70-130	16-OCT-19
Chlorobenzene			103.5		%		70-130	16-OCT-19

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VOC-ROU-HS-WT		Water						
Batch	R4871009							
WG3190633-1	LCS							
Chloroethane			113.6		%		70-130	16-OCT-19
Chloroform			106.0		%		70-130	16-OCT-19
Chloromethane			103.2		%		60-140	16-OCT-19
cis-1,2-Dichloroethylene			101.2		%		70-130	16-OCT-19
cis-1,3-Dichloropropene			110.6		%		70-130	16-OCT-19
Dibromochloromethane			102.3		%		70-130	16-OCT-19
Dichlorodifluoromethane			93.9		%		50-140	16-OCT-19
Dichloromethane			106.4		%		70-130	16-OCT-19
Ethylbenzene			95.3		%		70-130	16-OCT-19
m+p-Xylenes			98.6		%		70-130	16-OCT-19
Methyl Ethyl Ketone			115.6		%		60-140	16-OCT-19
Methyl Isobutyl Ketone			103.3		%		50-150	16-OCT-19
n-Hexane			94.8		%		70-130	16-OCT-19
MTBE			102.6		%		70-130	16-OCT-19
o-Xylene			95.4		%		70-130	16-OCT-19
Styrene			94.5		%		70-130	16-OCT-19
Tetrachloroethylene			99.9		%		70-130	16-OCT-19
Toluene			98.9		%		70-130	16-OCT-19
trans-1,2-Dichloroethylene			100.8		%		70-130	16-OCT-19
trans-1,3-Dichloropropene			109.8		%		70-130	16-OCT-19
Trichloroethylene			101.5		%		70-130	16-OCT-19
Trichlorofluoromethane			100.7		%		60-140	16-OCT-19
Vinyl chloride			109.7		%		60-140	16-OCT-19
WG3190633-2	MB							
1,1,1,2-Tetrachloroethane			<0.50		ug/L		0.5	16-OCT-19
1,1,2,2-Tetrachloroethane			<0.50		ug/L		0.5	16-OCT-19
1,1,1-Trichloroethane			<0.50		ug/L		0.5	16-OCT-19
1,1,2-Trichloroethane			<0.50		ug/L		0.5	16-OCT-19
1,2-Dibromoethane			<0.20		ug/L		0.2	16-OCT-19
1,1-Dichloroethane			<0.50		ug/L		0.5	16-OCT-19
1,1-Dichloroethylene			<0.50		ug/L		0.5	16-OCT-19
1,2-Dichlorobenzene			<0.50		ug/L		0.5	16-OCT-19
1,2-Dichloroethane			<0.50		ug/L		0.5	16-OCT-19
1,2-Dichloropropane			<0.50		ug/L		0.5	16-OCT-19

Quality Control Report

Workorder: L2360962

Report Date: 24-OCT-19

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Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
VOC-ROU-HS-WT								
	Water							
Batch	R4871009							
WG3190633-2 MB								
1,3-Dichlorobenzene			<0.50		ug/L		0.5	16-OCT-19
1,4-Dichlorobenzene			<0.50		ug/L		0.5	16-OCT-19
2-Hexanone			<20		ug/L		20	16-OCT-19
Acetone			<20		ug/L		20	16-OCT-19
Benzene			<0.50		ug/L		0.5	16-OCT-19
Bromodichloromethane			<1.0		ug/L		1	16-OCT-19
Bromoform			<1.0		ug/L		1	16-OCT-19
Bromomethane			<0.50		ug/L		0.5	16-OCT-19
Carbon Disulfide			<1.0		ug/L		1	16-OCT-19
Carbon tetrachloride			<0.50		ug/L		0.5	16-OCT-19
Chlorobenzene			<0.50		ug/L		0.5	16-OCT-19
Chloroethane			<1.0		ug/L		1	16-OCT-19
Chloroform			<1.0		ug/L		1	16-OCT-19
Chloromethane			<1.0		ug/L		1	16-OCT-19
cis-1,2-Dichloroethylene			<0.50		ug/L		0.5	16-OCT-19
cis-1,3-Dichloropropene			<0.50		ug/L		0.5	16-OCT-19
Dibromochloromethane			<1.0		ug/L		1	16-OCT-19
Dichlorodifluoromethane			<1.0		ug/L		1	16-OCT-19
Dichloromethane			<2.0		ug/L		2	16-OCT-19
Ethylbenzene			<0.50		ug/L		0.5	16-OCT-19
m+p-Xylenes			<1.0		ug/L		1	16-OCT-19
Methyl Ethyl Ketone			<20		ug/L		20	16-OCT-19
Methyl Isobutyl Ketone			<20		ug/L		20	16-OCT-19
n-Hexane			<0.50		ug/L		0.5	16-OCT-19
MTBE			<0.50		ug/L		0.5	16-OCT-19
o-Xylene			<0.50		ug/L		0.5	16-OCT-19
Styrene			<0.50		ug/L		0.5	16-OCT-19
Tetrachloroethylene			<0.50		ug/L		0.5	16-OCT-19
Toluene			<0.50		ug/L		0.5	16-OCT-19
trans-1,2-Dichloroethylene			<0.50		ug/L		0.5	16-OCT-19
trans-1,3-Dichloropropene			<0.50		ug/L		0.5	16-OCT-19
Trichloroethylene			<0.50		ug/L		0.5	16-OCT-19
Trichlorofluoromethane			<1.0		ug/L		1	16-OCT-19
Vinyl chloride			<0.50		ug/L		0.5	16-OCT-19



Quality Control Report

Workorder: L2360962

Report Date: 24-OCT-19

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Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
VOC-ROU-HS-WT	Water							
Batch	R4871009							
WG3190633-2	MB							
Surrogate: 1,4-Difluorobenzene			101.6		%		70-130	16-OCT-19
Surrogate: 4-Bromofluorobenzene			101.2		%		70-130	16-OCT-19

Quality Control Report

Workorder: L2360962

Report Date: 24-OCT-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.

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.

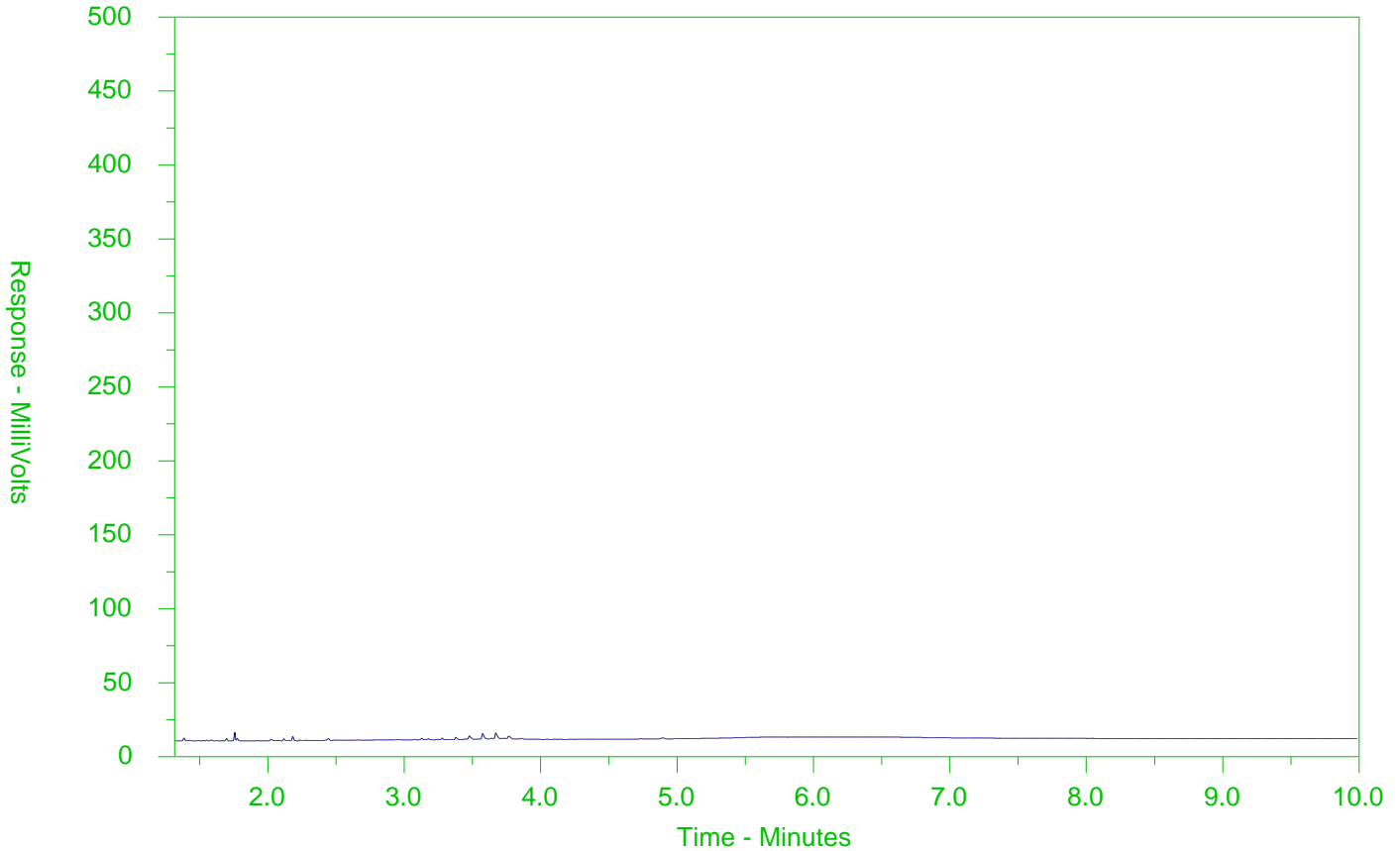
The ALS Quality Control Report is provided to ALS clients upon request. ALS includes comprehensive QC checks with every analysis to ensure our high standards of quality are met. Each QC result has a known or expected target value, which is compared against pre-determined data quality objectives to provide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

CCME F2-F4 HYDROCARBON DISTRIBUTION REPORT



ALS Sample ID: L2360962-1
 Client Sample ID: GWQ25-W4



← 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 the 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.



Chain of Custody (COC) / Analytical Request Form

Canada Toll Free: 1 800 668 9878

www.alsglobal.com



L2360962-COFC

COC Number: 15 -

Page of

Report To Contact and company name below will appear on the final report		Report Format / Distribution			Select Service Level Below - Please confirm all E&P TATs with your AM - surcharges will apply															
Company: City of Winnipeg		Select Report Format: <input checked="" type="checkbox"/> PDF <input type="checkbox"/> EXCEL <input type="checkbox"/> EDD (DIGITAL)			Regular [R] <input type="checkbox"/> Standard TAT if received by 3 pm - business days - no surcharges apply					EMERGENCY										
Contact: Chris Kozak		Quality Control (QC) Report with Report <input checked="" type="checkbox"/> YES <input type="checkbox"/> NO			4 day [P4] <input type="checkbox"/>		1 Business day [E1] <input type="checkbox"/>													
Phone: 204-986-2384		<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			Date and Time Required for all E&P TATs: dd-mmm-yy hh:mm															
Street: 1120 Waverly Street		Email 1 or Fax ckozak@winnipeg.ca			For tests that can not be performed according to the service level selected, you will be contacted.															
City/Province: Winnipeg, Manitoba		Email 2			Analysis Request															
Postal Code: R3T 0P4		Email 3			Indicate Filtered (F), Preserved (P) or Filtered and Preserved (F/P) below															
Invoice To		Invoice Distribution																		
Same as Report To <input type="checkbox"/> YES <input type="checkbox"/> NO		Select Invoice Distribution: <input type="checkbox"/> EMAIL <input checked="" type="checkbox"/> MAIL <input type="checkbox"/> FAX																		
Copy of Invoice with Report <input type="checkbox"/> YES <input type="checkbox"/> NO		Email 1 or Fax																		
Company:		Email 2																		
Contact:		Email 3																		
Project Information				Oil and Gas Required Fields (client use)																
ALS Account # / Quote #: W10051/Q67317				AFE/Cost Center:		PO#														
Job #: Section B - BRRMF Groundwater				Major/Minor Code:		Routing Code:														
PO / AFE:				Requisitioner:																
LSD:				Location:																
ALS Lab Work Order # (lab use only)				ALS Contact:		Sampler:														
ALS Sample # (lab use only)	Sample Identification and/or Coordinates (This description will appear on the report)			Date (dd-mmm-yy)	Time (hh:mm)	Sample Type	CNT-L-CFA-VA	PEST-DIAZINON-WT	HERBSCR-LCMS-WT	TC-F.C.EC-QT97-WP	CL-IC-NWP, SO4-IC-NWP, ALK-SPEC-WP	NH3-COL-WP	C-TDC.DIC.DOC-HTC-WP	MET-D-CCMS-WP (DISSOLVED)	HG-T-CVAA-WP (TOTAL)	CR-CR6-IC-WT	PHENOLS-4AAP-WT	VOC-F1-F4-WP	PAH-PANIH-WP	Number of Containers
	CWQ 25-W4 * 245 460			07-10-19	12:43	WATER	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	
	GW 25-W4 * 245 460					WATER														
						WATER														
						WATER														
						WATER														
						WATER														
						WATER														
						WATER														
						WATER														
						WATER														
						WATER														
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)																
Are samples taken from a Regulated DW System? <input type="checkbox"/> YES <input type="checkbox"/> NO																				
Are samples for human drinking water use? <input type="checkbox"/> YES <input type="checkbox"/> NO																				
SAMPLE CONDITION AS RECEIVED (lab use only)																				
Frozen <input type="checkbox"/>					SIF Observations Yes <input type="checkbox"/> No <input type="checkbox"/>					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"/>																				
INITIAL COOLER TEMPERATURES °C					11.9					FINAL COOLER TEMPERATURES °C										
SHIPMENT RELEASE (client use)							INITIAL SHIPMENT RECEPTION (lab use only)							FINAL SHIPMENT RECEPTION (lab use only)						
Released by: Adam Cox		Date: 07-10-19		Time: 14:33		Received by: CA		Date: 07-10-19		Time: 14:33		Received by:		Date:		Time:				

REFER TO BACK PAGE FOR ALS LOCATIONS AND SAMPLING INFORMATION

WHITE - LABORATORY COPY YELLOW - CLIENT COPY

OCT03EN 2015 FROTH

Failure to complete all portions of this form may delay analysis. Please fill in this form LEGIBLY. By the use of this form the user acknowledges and agrees with the Terms and Conditions as specified on the back page of the white - report copy.

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



City of Winnipeg - Solid Waste Services Div
(1120 Waverley)
ATTN: CHRIS KOZAK
Solid Waste Services Division
1120 Waverley Street
Winnipeg MB R3T 0P4

Date Received: 07-OCT-19
Report Date: 24-OCT-19 07:17 (MT)
Version: FINAL

Client Phone: 204-986-2384

Certificate of Analysis

Lab Work Order #: L2360974
Project P.O. #: NOT SUBMITTED
Job Reference: SECTION B- BRRMF - GROUNDWATER
C of C Numbers:
Legal Site Desc:

Hua Wo
Chemistry Laboratory Manager

[This report shall not be reproduced except in full without the written authority of the Laboratory.]

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
L2360974-1 GWQ25-W5							
Sampled By: CLIENT on 07-OCT-19 @ 12:00							
Matrix: WATER							
Alkalinity species as HCO3, CO3, OH							
Alkalinity, Bicarbonate							
Bicarbonate (HCO3)	157000		1200	ug/L		10-OCT-19	
Alkalinity, Carbonate							
Carbonate (CO3)	<600		600	ug/L		10-OCT-19	
Alkalinity, Hydroxide							
Hydroxide (OH)	<340		340	ug/L		10-OCT-19	
Alkalinity, Total (as CaCO3)							
Alkalinity, Total (as CaCO3)	129000		1000	ug/L		09-OCT-19	R4865629
Dissolved Carbons							
Dissolved Inorganic Carbon by Combustion							
Dissolved Inorganic Carbon	26700		500	ug/L		08-OCT-19	R4862244
Dissolved Organic Carbon by Combustion							
Dissolved Organic Carbon	1690		500	ug/L		09-OCT-19	R4866503
Total Dissolved Carbon by Calculation							
Total Dissolved Carbon	28400		1000	ug/L		11-OCT-19	
Miscellaneous Parameters							
Ammonia, Total (as N)	1150		100	ug/L		15-OCT-19	R4873241
Chloride (Cl)	2450000		25000	ug/L		08-OCT-19	R4862447
Chromium, Hexavalent	<0.50		0.50	ug/L		10-OCT-19	R4866934
Mercury (Hg)-Total	<0.0050		0.0050	ug/L	10-OCT-19	10-OCT-19	R4866644
Phenols (4AAP)	12.2		1.0	ug/L		10-OCT-19	R4867047
Sulfate (SO4)	911000		15000	ug/L		08-OCT-19	R4862447
Dissolved Metals in Water by CRC ICPMS							
Dissolved Metals Filtration Location	FIELD					18-OCT-19	R4874269
Aluminum (Al)-Dissolved	2.8		1.0	ug/L	18-OCT-19	18-OCT-19	R4875228
Antimony (Sb)-Dissolved	<0.10		0.10	ug/L	18-OCT-19	18-OCT-19	R4875228
Arsenic (As)-Dissolved	5.74		0.10	ug/L	18-OCT-19	18-OCT-19	R4875228
Barium (Ba)-Dissolved	14.3		0.10	ug/L	18-OCT-19	18-OCT-19	R4875228
Beryllium (Be)-Dissolved	<0.10		0.10	ug/L	18-OCT-19	18-OCT-19	R4875228
Bismuth (Bi)-Dissolved	<0.050		0.050	ug/L	18-OCT-19	18-OCT-19	R4875228
Boron (B)-Dissolved	1110		100	ug/L	18-OCT-19	22-OCT-19	R4880780
Cadmium (Cd)-Dissolved	<0.0050		0.0050	ug/L	18-OCT-19	18-OCT-19	R4875228
Calcium (Ca)-Dissolved	311000		50	ug/L	18-OCT-19	18-OCT-19	R4875228
Cesium (Cs)-Dissolved	0.138		0.010	ug/L	18-OCT-19	18-OCT-19	R4875228
Chromium (Cr)-Dissolved	<0.10		0.10	ug/L	18-OCT-19	18-OCT-19	R4875228
Cobalt (Co)-Dissolved	0.55		0.10	ug/L	18-OCT-19	18-OCT-19	R4875228
Copper (Cu)-Dissolved	0.21		0.20	ug/L	18-OCT-19	18-OCT-19	R4875228
Iron (Fe)-Dissolved	770		10	ug/L	18-OCT-19	18-OCT-19	R4875228
Lead (Pb)-Dissolved	<0.050		0.050	ug/L	18-OCT-19	18-OCT-19	R4875228
Lithium (Li)-Dissolved	265		1.0	ug/L	18-OCT-19	18-OCT-19	R4875228
Magnesium (Mg)-Dissolved	171000		5.0	ug/L	18-OCT-19	18-OCT-19	R4875228
Manganese (Mn)-Dissolved	35.6		0.10	ug/L	18-OCT-19	18-OCT-19	R4875228
Molybdenum (Mo)-Dissolved	2.44		0.050	ug/L	18-OCT-19	18-OCT-19	R4875228
Nickel (Ni)-Dissolved	1.50		0.50	ug/L	18-OCT-19	18-OCT-19	R4875228
Phosphorus (P)-Dissolved	<30		30	ug/L	18-OCT-19	18-OCT-19	R4875228
Potassium (K)-Dissolved	34700		50	ug/L	18-OCT-19	18-OCT-19	R4875228
Rubidium (Rb)-Dissolved	14.9		0.20	ug/L	18-OCT-19	18-OCT-19	R4875228
Selenium (Se)-Dissolved	<0.050		0.050	ug/L	18-OCT-19	18-OCT-19	R4875228
Silicon (Si)-Dissolved	5730		50	ug/L	18-OCT-19	18-OCT-19	R4875228
Silver (Ag)-Dissolved	0.019		0.010	ug/L	18-OCT-19	18-OCT-19	R4875228
Sodium (Na)-Dissolved	1390000		500	ug/L	18-OCT-19	22-OCT-19	R4880780

* 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
L2360974-1 GWQ25-W5							
Sampled By: CLIENT on 07-OCT-19 @ 12:00							
Matrix: WATER							
Dissolved Metals in Water by CRC ICPMS							
Strontium (Sr)-Dissolved	4050		1.0	ug/L	18-OCT-19	22-OCT-19	R4880780
Sulfur (S)-Dissolved	338000		500	ug/L	18-OCT-19	18-OCT-19	R4875228
Tellurium (Te)-Dissolved	0.24		0.20	ug/L	18-OCT-19	18-OCT-19	R4875228
Thallium (Tl)-Dissolved	<0.010		0.010	ug/L	18-OCT-19	18-OCT-19	R4875228
Thorium (Th)-Dissolved	<0.10		0.10	ug/L	18-OCT-19	18-OCT-19	R4875228
Tin (Sn)-Dissolved	<0.10		0.10	ug/L	18-OCT-19	18-OCT-19	R4875228
Titanium (Ti)-Dissolved	<0.30		0.30	ug/L	18-OCT-19	18-OCT-19	R4875228
Tungsten (W)-Dissolved	<0.10		0.10	ug/L	18-OCT-19	18-OCT-19	R4875228
Uranium (U)-Dissolved	0.628		0.010	ug/L	18-OCT-19	18-OCT-19	R4875228
Vanadium (V)-Dissolved	<0.50		0.50	ug/L	18-OCT-19	18-OCT-19	R4875228
Zinc (Zn)-Dissolved	47.1		1.0	ug/L	18-OCT-19	18-OCT-19	R4875228
Zirconium (Zr)-Dissolved	<0.20		0.20	ug/L	18-OCT-19	18-OCT-19	R4875228
Total, Fecal Coliforms, E Coli by QT97							
Fecal Coliform by MPN QT97							
Fecal Coliforms	<1		1	MPN/100mL		07-OCT-19	R4861467
Total Coliform and E.coli by MPN QT97							
Total Coliforms	<1		1	MPN/100mL		07-OCT-19	R4861463
Escherichia Coli	<1		1	MPN/100mL		07-OCT-19	R4861463

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

Reference Information

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.			
C-DIC-HTC-WP	Water	Dissolved Inorganic Carbon by Combustion	APHA 5310 B-WP
Filtered (0.45 µm) sample is injected into a heated reaction chamber where it is acidified, converting all inorganic carbon to CO ₂ which is then transported in the carrier gas stream and measured via a non-dispersive infrared analyzer.			
C-DOC-HTC-WP	Water	Dissolved Organic Carbon by Combustion	APHA 5310 B-WP
Filtered (0.45 µm) sample is acidified and purged to remove inorganic carbon, then injected into a heated reaction chamber where organic carbon is oxidized to CO ₂ which is then transported in the carrier gas stream and measured via a non-dispersive infrared analyzer.			
C-TDC-CALC-WP	Water	Total Dissolved Carbon by Calculation	CALCULATED
Total dissolved carbon represents the sum of dissolved inorganic carbon and dissolved organic carbon. For the purpose of calculation, results less than the detection limit (DL) are treated as zero.			
CL-IC-N-WP	Water	Chloride in Water by IC	EPA 300.1 (mod)
Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.			
CR-CR6-IC-WT	Water	Chromium +6	EPA 7199
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.			
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).			
EC-SCREEN-WP	Water	Conductivity Screen (Internal Use Only)	APHA 2510
Qualitative analysis of conductivity where required during preparation of other test eg. IC, TDS, TSS, etc			
FC-QT97-WP	Water	Fecal Coliform by MPN QT97	APHA 9223B QT97
This analysis is carried out using procedures adapted from APHA Method 9223B "Enzyme Substrate Coliform Test". The sample is mixed with a mixture of hydrolyzable substrates and then sealed in a 97-well packet. The packet is incubated at 44.5 – 0.2°C for 18 hours and then the number of wells exhibiting a positive response are counted. The final result is obtained by comparing the number of positive responses to a probability table.			
HG-T-CVAA-WP	Water	Mercury Total	EPA 1631E (mod)
Water samples undergo a cold-oxidation using bromine monochloride prior to reduction with stannous chloride, and analyzed by CVAAS.			
MET-D-CCMS-WP	Water	Dissolved Metals in Water by CRC ICPMS	APHA 3030B/6020B (mod)
Water samples are filtered (0.45 µm), 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.			
NH3-COL-WP	Water	Ammonia by colour	APHA 4500 NH3 F
Ammonia in water samples forms indophenol when reacted with hypochlorite and phenol. The intensity is amplified by the addition of sodium			

Reference Information

Test Method References:

ALS Test Code	Matrix	Test Description	Method Reference**
		nitroprusside and measured colourmetrically.	
PHENOLS-4AAP-WT	Water	Phenol (4AAP)	EPA 9066
		An automated method is used to distill the sample. The distillate is then buffered to pH 9.4 which reacts with 4AAP and potassium ferricyanide to form a red complex which is measured colorimetrically.	
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-QT97-WP	Water	Total Coliform and E.coli by MPN QT97	APHA 9223B QT97
		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 97-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
WT	ALS ENVIRONMENTAL - WATERLOO, ONTARIO, CANADA
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: L2360974

Report Date: 24-OCT-19

Page 1 of 5

Client: City of Winnipeg - Solid Waste Services Div (1120 Waverley)
 Solid Waste Services Division 1120 Waverley Street
 Winnipeg MB R3T 0P4

Contact: CHRIS KOZAK

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
ALK-TITR-WP		Water						
Batch	R4865629							
WG3187521-4	LCS							
Alkalinity, Total (as CaCO3)			98.7		%		85-115	09-OCT-19
WG3187521-1	MB							
Alkalinity, Total (as CaCO3)			1.0		mg/L		1	09-OCT-19
C-DIC-HTC-WP		Water						
Batch	R4862244							
WG3186139-2	LCS							
Dissolved Inorganic Carbon			95.2		%		80-120	08-OCT-19
WG3186139-1	MB							
Dissolved Inorganic Carbon			<0.50		mg/L		0.5	08-OCT-19
C-DOC-HTC-WP		Water						
Batch	R4866503							
WG3187911-2	LCS							
Dissolved Organic Carbon			105.5		%		80-120	09-OCT-19
WG3187911-1	MB							
Dissolved Organic Carbon			<0.50		mg/L		0.5	09-OCT-19
CL-IC-N-WP		Water						
Batch	R4862447							
WG3185139-2	LCS							
Chloride (Cl)			100.9		%		90-110	08-OCT-19
WG3185139-1	MB							
Chloride (Cl)			<0.50		mg/L		0.5	08-OCT-19
CR-CR6-IC-WT		Water						
Batch	R4866934							
WG3187786-2	LCS							
Chromium, Hexavalent			92.7		%		80-120	10-OCT-19
WG3187786-1	MB							
Chromium, Hexavalent			<0.00050		mg/L		0.0005	10-OCT-19
FC-QT97-WP		Water						
Batch	R4861467							
WG3184320-1	MB							
Fecal Coliforms			<1		MPN/100mL		1	07-OCT-19
HG-T-CVAA-WP		Water						



Quality Control Report

Workorder: L2360974

Report Date: 24-OCT-19

Page 2 of 5

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
HG-T-CVAA-WP		Water						
Batch	R4866644							
WG3189284-2	LCS							
Mercury (Hg)-Total			108.0		%		80-120	10-OCT-19
WG3189284-1	MB							
Mercury (Hg)-Total			<0.000005C		mg/L		0.000005	10-OCT-19
MET-D-CCMS-WP		Water						
Batch	R4875228							
WG3195204-2	LCS							
Aluminum (Al)-Dissolved			105.1		%		80-120	18-OCT-19
Antimony (Sb)-Dissolved			99.6		%		80-120	18-OCT-19
Arsenic (As)-Dissolved			104.8		%		80-120	18-OCT-19
Barium (Ba)-Dissolved			104.6		%		80-120	18-OCT-19
Beryllium (Be)-Dissolved			103.4		%		80-120	18-OCT-19
Bismuth (Bi)-Dissolved			105.5		%		80-120	18-OCT-19
Cadmium (Cd)-Dissolved			103.9		%		80-120	18-OCT-19
Calcium (Ca)-Dissolved			103.3		%		80-120	18-OCT-19
Cesium (Cs)-Dissolved			104.5		%		80-120	18-OCT-19
Chromium (Cr)-Dissolved			104.5		%		80-120	18-OCT-19
Cobalt (Co)-Dissolved			103.4		%		80-120	18-OCT-19
Copper (Cu)-Dissolved			104.4		%		80-120	18-OCT-19
Iron (Fe)-Dissolved			94.6		%		80-120	18-OCT-19
Lead (Pb)-Dissolved			105.2		%		80-120	18-OCT-19
Lithium (Li)-Dissolved			104.6		%		80-120	18-OCT-19
Magnesium (Mg)-Dissolved			111.7		%		80-120	18-OCT-19
Manganese (Mn)-Dissolved			104.1		%		80-120	18-OCT-19
Molybdenum (Mo)-Dissolved			101.2		%		80-120	18-OCT-19
Nickel (Ni)-Dissolved			102.1		%		80-120	18-OCT-19
Phosphorus (P)-Dissolved			110.4		%		80-120	18-OCT-19
Potassium (K)-Dissolved			103.1		%		80-120	18-OCT-19
Rubidium (Rb)-Dissolved			104.2		%		80-120	18-OCT-19
Selenium (Se)-Dissolved			103.6		%		80-120	18-OCT-19
Silicon (Si)-Dissolved			102.6		%		80-120	18-OCT-19
Silver (Ag)-Dissolved			102.1		%		80-120	18-OCT-19
Sulfur (S)-Dissolved			107.2		%		80-120	18-OCT-19
Tellurium (Te)-Dissolved			103.2		%		80-120	18-OCT-19
Thallium (Tl)-Dissolved			104.9		%		80-120	18-OCT-19



Quality Control Report

Workorder: L2360974

Report Date: 24-OCT-19

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Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
MET-D-CCMS-WP		Water						
Batch	R4875228							
WG3195204-2	LCS							
Thorium (Th)-Dissolved			97.7		%		80-120	18-OCT-19
Tin (Sn)-Dissolved			100.4		%		80-120	18-OCT-19
Titanium (Ti)-Dissolved			98.9		%		80-120	18-OCT-19
Tungsten (W)-Dissolved			104.7		%		80-120	18-OCT-19
Uranium (U)-Dissolved			104.2		%		80-120	18-OCT-19
Vanadium (V)-Dissolved			104.1		%		80-120	18-OCT-19
Zinc (Zn)-Dissolved			102.5		%		80-120	18-OCT-19
Zirconium (Zr)-Dissolved			95.9		%		80-120	18-OCT-19
WG3195204-1	MB							
Aluminum (Al)-Dissolved			<0.0010		mg/L		0.001	18-OCT-19
Antimony (Sb)-Dissolved			<0.00010		mg/L		0.0001	18-OCT-19
Arsenic (As)-Dissolved			<0.00010		mg/L		0.0001	18-OCT-19
Barium (Ba)-Dissolved			<0.00010		mg/L		0.0001	18-OCT-19
Beryllium (Be)-Dissolved			<0.00010		mg/L		0.0001	18-OCT-19
Bismuth (Bi)-Dissolved			<0.000050		mg/L		0.00005	18-OCT-19
Cadmium (Cd)-Dissolved			<0.0000050		mg/L		0.000005	18-OCT-19
Calcium (Ca)-Dissolved			<0.050		mg/L		0.05	18-OCT-19
Cesium (Cs)-Dissolved			<0.000010		mg/L		0.00001	18-OCT-19
Chromium (Cr)-Dissolved			<0.00010		mg/L		0.0001	18-OCT-19
Cobalt (Co)-Dissolved			<0.00010		mg/L		0.0001	18-OCT-19
Copper (Cu)-Dissolved			<0.00020		mg/L		0.0002	18-OCT-19
Iron (Fe)-Dissolved			<0.010		mg/L		0.01	18-OCT-19
Lead (Pb)-Dissolved			<0.000050		mg/L		0.00005	18-OCT-19
Lithium (Li)-Dissolved			<0.0010		mg/L		0.001	18-OCT-19
Magnesium (Mg)-Dissolved			<0.0050		mg/L		0.005	18-OCT-19
Manganese (Mn)-Dissolved			<0.00010		mg/L		0.0001	18-OCT-19
Molybdenum (Mo)-Dissolved			<0.000050		mg/L		0.00005	18-OCT-19
Nickel (Ni)-Dissolved			<0.00050		mg/L		0.0005	18-OCT-19
Phosphorus (P)-Dissolved			<0.030		mg/L		0.03	18-OCT-19
Potassium (K)-Dissolved			<0.050		mg/L		0.05	18-OCT-19
Rubidium (Rb)-Dissolved			<0.00020		mg/L		0.0002	18-OCT-19
Selenium (Se)-Dissolved			<0.000050		mg/L		0.00005	18-OCT-19
Silicon (Si)-Dissolved			<0.050		mg/L		0.05	18-OCT-19
Silver (Ag)-Dissolved			<0.000010		mg/L		0.00001	18-OCT-19



Quality Control Report

Workorder: L2360974

Report Date: 24-OCT-19

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Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
MET-D-CCMS-WP		Water						
Batch	R4875228							
WG3195204-1	MB							
Sulfur (S)-Dissolved			<0.50		mg/L		0.5	18-OCT-19
Tellurium (Te)-Dissolved			<0.00020		mg/L		0.0002	18-OCT-19
Thallium (Tl)-Dissolved			<0.000010		mg/L		0.00001	18-OCT-19
Thorium (Th)-Dissolved			<0.00010		mg/L		0.0001	18-OCT-19
Tin (Sn)-Dissolved			<0.00010		mg/L		0.0001	18-OCT-19
Titanium (Ti)-Dissolved			<0.00030		mg/L		0.0003	18-OCT-19
Tungsten (W)-Dissolved			<0.00010		mg/L		0.0001	18-OCT-19
Uranium (U)-Dissolved			<0.000010		mg/L		0.00001	18-OCT-19
Vanadium (V)-Dissolved			<0.00050		mg/L		0.0005	18-OCT-19
Zinc (Zn)-Dissolved			<0.0010		mg/L		0.001	18-OCT-19
Zirconium (Zr)-Dissolved			<0.00020		mg/L		0.0002	18-OCT-19
NH3-COL-WP		Water						
Batch	R4873241							
WG3193729-18	LCS							
Ammonia, Total (as N)			98.8		%		85-115	15-OCT-19
WG3193729-17	MB							
Ammonia, Total (as N)			<0.010		mg/L		0.01	16-OCT-19
PHENOLS-4AAP-WT		Water						
Batch	R4867047							
WG3187955-2	LCS							
Phenols (4AAP)			111.6		%		85-115	10-OCT-19
WG3187955-1	MB							
Phenols (4AAP)			<0.0010		mg/L		0.001	10-OCT-19
SO4-IC-N-WP		Water						
Batch	R4862447							
WG3185139-2	LCS							
Sulfate (SO4)			102.4		%		90-110	08-OCT-19
WG3185139-1	MB							
Sulfate (SO4)			<0.30		mg/L		0.3	08-OCT-19
TC,EC-QT97-WP		Water						
Batch	R4861463							
WG3184326-1	MB							
Total Coliforms			<1		MPN/100mL		1	07-OCT-19
Escherichia Coli			<1		MPN/100mL		1	07-OCT-19

Quality Control Report

Workorder: L2360974

Report Date: 24-OCT-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

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.



Chain of Custody (COC) / Analytical Request Form

Canada Toll Free: 1 800 668 9878

www.alsglobal.com



L2360974-COFC

COC Number: 15 -

Page of

Report To Contact and company name below will appear on the final report		Report Format / Distribution			Select Service Level Below - Please confirm all E&P TATs with your AM - surcharges will apply																																																					
Company:	City of Winnipeg	Select Report Format: <input checked="" type="checkbox"/> PDF <input type="checkbox"/> EXCEL <input type="checkbox"/> EDD (DIGITAL)			Regular [R] <input type="checkbox"/> Standard TAT if received by 3 pm - business days - no surcharges apply					EMERGENCY																																																
Contact:	Chris Kozak	Quality Control (QC) Report with Report <input checked="" type="checkbox"/> YES <input type="checkbox"/> NO			PROSITY (Business Day)		4 day [P4] <input type="checkbox"/>		3 day [P3] <input type="checkbox"/>		2 day [P2] <input type="checkbox"/>		1 Business day [E1] <input type="checkbox"/>																																													
Phone:	204-986-2384	<input type="checkbox"/> Compare Results to Criteria on Report - provide details below if box checked											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			Date and Time Required for all E&P TATs:					du-mmm-yy h:mm																																																
Street:	1120 Waverly Street	Email 1 or Fax ckozak@winnipeg.ca			For tests that can not be performed according to the service level selected, you will be contacted.																																																					
City/Province:	Winnipeg, Manitoba	Email 2			Analysis Request																																																					
Postal Code:	R3T 0P4	Email 3			Indicate Filtered (F), Preserved (P) or Filtered and Preserved (F/P) below																																																					
Invoice To	Same as Report To <input type="checkbox"/> YES <input type="checkbox"/> NO	Invoice Distribution			<table border="1"> <tr> <td>CL-IC-N-WP, SO4-IC-N-WP, ALK-SPEC-WP</td> <td>NH3-COL-WP</td> <td>C-TDC,DIC,DOC-HTC-WP</td> <td>MET-D-CCMS-WP (DISSOLVED)</td> <td>HG-T-CVAA-WP (TOTAL)</td> <td>CR-CR&IC-WT</td> <td>PHENOLS-4A&P-WT</td> <td>TC,FC,EC-QT97-WP</td> <td colspan="3">Number of Containers</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> </tr> <tr> <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> </tr> </table>										CL-IC-N-WP, SO4-IC-N-WP, ALK-SPEC-WP	NH3-COL-WP	C-TDC,DIC,DOC-HTC-WP	MET-D-CCMS-WP (DISSOLVED)	HG-T-CVAA-WP (TOTAL)	CR-CR&IC-WT	PHENOLS-4A&P-WT	TC,FC,EC-QT97-WP	Number of Containers																																			
CL-IC-N-WP, SO4-IC-N-WP, ALK-SPEC-WP	NH3-COL-WP	C-TDC,DIC,DOC-HTC-WP	MET-D-CCMS-WP (DISSOLVED)	HG-T-CVAA-WP (TOTAL)											CR-CR&IC-WT	PHENOLS-4A&P-WT	TC,FC,EC-QT97-WP	Number of Containers																																								
	Copy of Invoice with Report <input type="checkbox"/> YES <input type="checkbox"/> NO	Select Invoice Distribution: <input type="checkbox"/> EMAIL <input checked="" type="checkbox"/> MAIL <input type="checkbox"/> FAX																																																								
Company:		Email 1 or Fax																																																								
Contact:		Email 2																																																								
Project Information		Oil and Gas Required Fields (client use)																																																								
ALS Account # / Quote #:	W10051/Q67317	AFE/Cost Center:		PO#																																																						
Job #:	Section B - BRRMF Groundwater	Major/Minor Code:		Routing Code:																																																						
PO / AFE:		Requisitioner:																																																								
LSD:		Location:																																																								
ALS Lab Work Order # (lab use only)		ALS Contact:		Sampler:																																																						
ALS Sample # (lab use only)	Sample Identification and/or Coordinates (This description will appear on the report)	Date (dd-mmm-yy)	Time (hh:mm)	Sample Type																																																						
	GWQ25-W4 # 245460			WATER																																																						
	GWQ25-W4 # 245460			WATER																																																						
	GWQ25-W5 # 245470	07-10-19	12:00	WATER		✓	✓	✓	✓	✓	✓	✓	✓																																													
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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 type="checkbox"/> NO					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 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"/>																																																					
					INITIAL COOLER TEMPERATURES °C					FINAL COOLER TEMPERATURES °C																																																
					11.9																																																					
SHIPMENT RELEASE (client use)				INITIAL SHIPMENT RECEPTION (lab use only)				FINAL SHIPMENT RECEPTION (lab use only)																																																		
Released by:	Date:	Time:	Received by:	Date:	Time:	Received by:	Date:	Time:	Received by:	Date:	Time:																																															
Adam Cox	07-10-19	14:33	CEL	08 7	14:33																																																					



City of Winnipeg - Solid Waste Services Div
(1120 Waverley)
ATTN: CHRIS KOZAK
Solid Waste Services Division
1120 Waverley Street
Winnipeg MB R3T 0P4

Date Received: 08-OCT-19
Report Date: 29-OCT-19 10:41 (MT)
Version: FINAL

Client Phone: 204-986-2384

Certificate of Analysis

Lab Work Order #: L2361823
Project P.O. #: NOT SUBMITTED
Job Reference: SECTION B - BRRMF GROUNDWATER
C of C Numbers:
Legal Site Desc:

Hua Wo
Chemistry Laboratory Manager

[This report shall not be reproduced except in full without the written authority of the Laboratory.]

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
L2361823-1 GWQ25-W9							
Sampled By: CLIENT on 08-OCT-19 @ 09:46							
Matrix: WATER							
Alkalinity species as HCO3, CO3, OH							
Alkalinity, Bicarbonate							
Bicarbonate (HCO3)	177000		1200	ug/L		10-OCT-19	
Alkalinity, Carbonate							
Carbonate (CO3)	<600		600	ug/L		10-OCT-19	
Alkalinity, Hydroxide							
Hydroxide (OH)	<340		340	ug/L		10-OCT-19	
Alkalinity, Total (as CaCO3)							
Alkalinity, Total (as CaCO3)	145000		1000	ug/L		09-OCT-19	R4865629
Dissolved Carbons							
Dissolved Inorganic Carbon by Combustion							
Dissolved Inorganic Carbon	28100		500	ug/L		09-OCT-19	R4865326
Dissolved Organic Carbon by Combustion							
Dissolved Organic Carbon	1870		500	ug/L		11-OCT-19	R4870106
Total Dissolved Carbon by Calculation							
Total Dissolved Carbon	29900		1000	ug/L		15-OCT-19	
Miscellaneous Parameters							
Ammonia, Total (as N)	1440		100	ug/L		16-OCT-19	R4873241
Chloride (Cl)	2840000		25000	ug/L		09-OCT-19	R4866519
Chromium, Hexavalent	<0.50		0.50	ug/L		15-OCT-19	R4870968
Cyanide, Total	<1.0		1.0	ug/L		16-OCT-19	R4872581
Mercury (Hg)-Total	<0.0050		0.0050	ug/L	16-OCT-19	16-OCT-19	R4871875
Phenols (4AAP)	<1.0		1.0	ug/L		15-OCT-19	R4871063
Sulfate (SO4)	941000		15000	ug/L		09-OCT-19	R4866519
Dissolved Metals in Water by CRC ICPMS							
Dissolved Metals Filtration Location	FIELD					24-OCT-19	R4881867
Aluminum (Al)-Dissolved	1.1		1.0	ug/L	24-OCT-19	24-OCT-19	R4887526
Antimony (Sb)-Dissolved	<0.10		0.10	ug/L	24-OCT-19	24-OCT-19	R4887526
Arsenic (As)-Dissolved	7.11		0.10	ug/L	24-OCT-19	24-OCT-19	R4887526
Barium (Ba)-Dissolved	12.2		0.10	ug/L	24-OCT-19	24-OCT-19	R4887526
Beryllium (Be)-Dissolved	<0.10		0.10	ug/L	24-OCT-19	24-OCT-19	R4887526
Bismuth (Bi)-Dissolved	<0.50		0.50	ug/L	24-OCT-19	28-OCT-19	R4888724
Boron (B)-Dissolved	1060		100	ug/L	24-OCT-19	28-OCT-19	R4888724
Cadmium (Cd)-Dissolved	<0.0050		0.0050	ug/L	24-OCT-19	24-OCT-19	R4887526
Calcium (Ca)-Dissolved	329000		50	ug/L	24-OCT-19	24-OCT-19	R4887526
Cesium (Cs)-Dissolved	0.178		0.010	ug/L	24-OCT-19	24-OCT-19	R4887526
Chromium (Cr)-Dissolved	<0.10		0.10	ug/L	24-OCT-19	24-OCT-19	R4887526
Cobalt (Co)-Dissolved	0.89		0.10	ug/L	24-OCT-19	24-OCT-19	R4887526
Copper (Cu)-Dissolved	<0.20		0.20	ug/L	24-OCT-19	24-OCT-19	R4887526
Iron (Fe)-Dissolved	899		10	ug/L	24-OCT-19	24-OCT-19	R4887526
Lead (Pb)-Dissolved	<0.50		0.50	ug/L	24-OCT-19	28-OCT-19	R4888724
Lithium (Li)-Dissolved	361		10	ug/L	24-OCT-19	28-OCT-19	R4888724
Magnesium (Mg)-Dissolved	152000		5.0	ug/L	24-OCT-19	24-OCT-19	R4887526
Manganese (Mn)-Dissolved	22.0		0.10	ug/L	24-OCT-19	24-OCT-19	R4887526
Molybdenum (Mo)-Dissolved	3.45		0.050	ug/L	24-OCT-19	24-OCT-19	R4887526
Nickel (Ni)-Dissolved	1.62		0.50	ug/L	24-OCT-19	24-OCT-19	R4887526
Phosphorus (P)-Dissolved	<30		30	ug/L	24-OCT-19	24-OCT-19	R4887526
Potassium (K)-Dissolved	39200		50	ug/L	24-OCT-19	24-OCT-19	R4887526
Rubidium (Rb)-Dissolved	18.0		0.20	ug/L	24-OCT-19	24-OCT-19	R4887526
Selenium (Se)-Dissolved	<0.050		0.050	ug/L	24-OCT-19	24-OCT-19	R4887526
Silicon (Si)-Dissolved	4670		50	ug/L	24-OCT-19	24-OCT-19	R4887526
Silver (Ag)-Dissolved	<0.010		0.010	ug/L	24-OCT-19	24-OCT-19	R4887526

* 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
L2361823-1 GWQ25-W9							
Sampled By: CLIENT on 08-OCT-19 @ 09:46							
Matrix: WATER							
Dissolved Metals in Water by CRC ICPMS							
Sodium (Na)-Dissolved	1570000		500	ug/L	24-OCT-19	28-OCT-19	R4888724
Strontium (Sr)-Dissolved	4900		1.0	ug/L	24-OCT-19	28-OCT-19	R4888724
Sulfur (S)-Dissolved	345000		500	ug/L	24-OCT-19	24-OCT-19	R4887526
Tellurium (Te)-Dissolved	<0.20		0.20	ug/L	24-OCT-19	24-OCT-19	R4887526
Thallium (Tl)-Dissolved	<0.10		0.10	ug/L	24-OCT-19	28-OCT-19	R4888724
Thorium (Th)-Dissolved	<1.0		1.0	ug/L	24-OCT-19	28-OCT-19	R4888724
Tin (Sn)-Dissolved	<0.10		0.10	ug/L	24-OCT-19	24-OCT-19	R4887526
Titanium (Ti)-Dissolved	<0.30		0.30	ug/L	24-OCT-19	24-OCT-19	R4887526
Tungsten (W)-Dissolved	<1.0		1.0	ug/L	24-OCT-19	28-OCT-19	R4888724
Uranium (U)-Dissolved	1.22		0.10	ug/L	24-OCT-19	28-OCT-19	R4888724
Vanadium (V)-Dissolved	<0.50		0.50	ug/L	24-OCT-19	24-OCT-19	R4887526
Zinc (Zn)-Dissolved	<1.0		1.0	ug/L	24-OCT-19	24-OCT-19	R4887526
Zirconium (Zr)-Dissolved	<0.20		0.20	ug/L	24-OCT-19	24-OCT-19	R4887526
Polyaromatic Hydrocarbons (PAHs)							
1-Methyl Naphthalene	<0.020		0.020	ug/L	10-OCT-19	18-OCT-19	R4874070
2-Methyl Naphthalene	<0.020		0.020	ug/L	10-OCT-19	18-OCT-19	R4874070
Acenaphthene	<0.020		0.020	ug/L	10-OCT-19	18-OCT-19	R4874070
Acenaphthylene	<0.020		0.020	ug/L	10-OCT-19	18-OCT-19	R4874070
Anthracene	<0.010		0.010	ug/L	10-OCT-19	18-OCT-19	R4874070
Acridine	<0.020		0.020	ug/L	10-OCT-19	18-OCT-19	R4874070
Benzo(a)anthracene	<0.010		0.010	ug/L	10-OCT-19	18-OCT-19	R4874070
Benzo(a)pyrene	<0.0050		0.0050	ug/L	10-OCT-19	18-OCT-19	R4874070
Benzo(b&j)fluoranthene	<0.010		0.010	ug/L	10-OCT-19	18-OCT-19	R4874070
Benzo(g,h,i)perylene	<0.020		0.020	ug/L	10-OCT-19	18-OCT-19	R4874070
Benzo(k)fluoranthene	<0.010		0.010	ug/L	10-OCT-19	18-OCT-19	R4874070
Chrysene	<0.020		0.020	ug/L	10-OCT-19	18-OCT-19	R4874070
Dibenzo(a,h)anthracene	<0.0050		0.0050	ug/L	10-OCT-19	18-OCT-19	R4874070
Fluoranthene	<0.020		0.020	ug/L	10-OCT-19	18-OCT-19	R4874070
Fluorene	<0.020		0.020	ug/L	10-OCT-19	18-OCT-19	R4874070
Indeno(1,2,3-cd)pyrene	<0.010		0.010	ug/L	10-OCT-19	18-OCT-19	R4874070
Naphthalene	<0.050		0.050	ug/L	10-OCT-19	18-OCT-19	R4874070
Phenanthrene	<0.050		0.050	ug/L	10-OCT-19	18-OCT-19	R4874070
Pyrene	<0.010		0.010	ug/L	10-OCT-19	18-OCT-19	R4874070
Quinoline	<0.020		0.020	ug/L	10-OCT-19	18-OCT-19	R4874070
B(a)P Total Potency Equivalent	<0.030		0.030	ug/L	10-OCT-19	18-OCT-19	R4874070
Surrogate: Acenaphthene d10	96.6		60-130	%	10-OCT-19	18-OCT-19	R4874070
Surrogate: Acridine d9	87.4		60-130	%	10-OCT-19	18-OCT-19	R4874070
Surrogate: Chrysene d12	112.8		60-130	%	10-OCT-19	18-OCT-19	R4874070
Surrogate: Naphthalene d8	90.3		50-130	%	10-OCT-19	18-OCT-19	R4874070
Surrogate: Phenanthrene d10	92.7		60-130	%	10-OCT-19	18-OCT-19	R4874070
Herbicides in Water							
Clopyralid	<0.10		0.10	ug/L	15-OCT-19	16-OCT-19	R4871854
Dicamba	<0.10		0.10	ug/L	15-OCT-19	16-OCT-19	R4871854
Mecoprop	<0.10		0.10	ug/L	15-OCT-19	16-OCT-19	R4871854
MCPA	<0.10		0.10	ug/L	15-OCT-19	16-OCT-19	R4871854
2,4-D	<0.10		0.10	ug/L	15-OCT-19	16-OCT-19	R4871854
Bromoxynil	<0.10		0.10	ug/L	15-OCT-19	16-OCT-19	R4871854
Triclopyr	<0.10		0.10	ug/L	15-OCT-19	16-OCT-19	R4871854
2,4,5-T	<0.10		0.10	ug/L	15-OCT-19	16-OCT-19	R4871854
2,4,5-TP	<0.10		0.10	ug/L	15-OCT-19	16-OCT-19	R4871854
Picloram	<0.10		0.10	ug/L	15-OCT-19	16-OCT-19	R4871854

* 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
L2361823-1 GWQ25-W9							
Sampled By: CLIENT on 08-OCT-19 @ 09:46							
Matrix: WATER							
Herbicides in Water							
2,4-DB	<0.10		0.10	ug/L	15-OCT-19	16-OCT-19	R4871854
2,4-DP	<0.10		0.10	ug/L	15-OCT-19	16-OCT-19	R4871854
Dinoseb	<0.10		0.10	ug/L	15-OCT-19	16-OCT-19	R4871854
MCPB	<0.10		0.10	ug/L	15-OCT-19	16-OCT-19	R4871854
Surrogate: 2,4-Dichlorophenylacetic Acid	84.0		50-130	%	15-OCT-19	16-OCT-19	R4871854
Miscellaneous Pesticides							
Diazinon	<0.10		0.10	ug/L	18-OCT-19	21-OCT-19	R4876371
Surrogate: 2-Fluorobiphenyl	82.2		40-130	%	18-OCT-19	21-OCT-19	R4876371
Surrogate: d14-Terphenyl	87.3		40-130	%	18-OCT-19	21-OCT-19	R4876371
Total, Fecal Coliforms, E Coli by QT97							
Fecal Coliform by MPN QT97							
Fecal Coliforms	<1		1	MPN/100mL		08-OCT-19	R4863435
Total Coliform and E.coli by MPN QT97							
Total Coliforms	<1		1	MPN/100mL		08-OCT-19	R4863452
Escherichia Coli	<1		1	MPN/100mL		08-OCT-19	R4863452
VOC plus F1 to F4							
CCME PHC F2-F4 in Water							
F2 (C10-C16)	<100		100	ug/L	17-OCT-19	17-OCT-19	R4874822
F3 (C16-C34)	<250		250	ug/L	17-OCT-19	17-OCT-19	R4874822
F4 (C34-C50)	<250		250	ug/L	17-OCT-19	17-OCT-19	R4874822
Surrogate: 2-Bromobenzotrifluoride	74.0		60-140	%	17-OCT-19	17-OCT-19	R4874822
CCME Total Hydrocarbons							
F1-BTEX	<100		100	ug/L		24-OCT-19	
F2-Naphth	<100		100	ug/L		24-OCT-19	
F3-PAH	<250		250	ug/L		24-OCT-19	
Total Hydrocarbons (C6-C50)	<380		380	ug/L		24-OCT-19	
Sum of Xylene Isomer Concentrations							
Xylenes (Total)	<0.64		0.64	ug/L		24-OCT-19	
Total Trihalomethanes (THMs)							
Total THMs	<1.3		1.3	ug/L		24-OCT-19	
VOC plus F1 by GCMS							
Acetone	<50		50	ug/L		17-OCT-19	R4879694
Benzene	<0.50		0.50	ug/L		17-OCT-19	R4879694
Bromobenzene	<1.0		1.0	ug/L		17-OCT-19	R4879694
Bromochloromethane	<1.0		1.0	ug/L		17-OCT-19	R4879694
Bromodichloromethane	<0.50		0.50	ug/L		17-OCT-19	R4879694
Bromoform	<1.0		1.0	ug/L		17-OCT-19	R4879694
Bromomethane	<1.0		1.0	ug/L		17-OCT-19	R4879694
n-Butylbenzene	<1.0		1.0	ug/L		17-OCT-19	R4879694
sec-Butylbenzene	<1.0		1.0	ug/L		17-OCT-19	R4879694
tert-Butylbenzene	<1.0		1.0	ug/L		17-OCT-19	R4879694
Carbon disulfide	<5.0		5.0	ug/L		17-OCT-19	R4879694
Carbon Tetrachloride	<0.50		0.50	ug/L		17-OCT-19	R4879694
Chlorobenzene	<1.0		1.0	ug/L		17-OCT-19	R4879694
Chloroethane	<1.0		1.0	ug/L		17-OCT-19	R4879694
Chloroform	<0.50		0.50	ug/L		17-OCT-19	R4879694
Chloromethane	<5.0		5.0	ug/L		17-OCT-19	R4879694
2-Chlorotoluene	<20		20	ug/L		17-OCT-19	R4879694
4-Chlorotoluene	<1.0		1.0	ug/L		17-OCT-19	R4879694
Dibromochloromethane	<0.50		0.50	ug/L		17-OCT-19	R4879694
1,2-Dibromo-3-chloropropane	<1.0		1.0	ug/L		17-OCT-19	R4879694
1,2-Dibromoethane	<1.0		1.0	ug/L		17-OCT-19	R4879694

* 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
L2361823-1 GWQ25-W9							
Sampled By: CLIENT on 08-OCT-19 @ 09:46							
Matrix: WATER							
VOC plus F1 by GCMS							
Dibromomethane	<1.0		1.0	ug/L		17-OCT-19	R4879694
1,2-Dichlorobenzene	<0.50		0.50	ug/L		17-OCT-19	R4879694
1,3-Dichlorobenzene	<1.0		1.0	ug/L		17-OCT-19	R4879694
1,4-Dichlorobenzene	<1.0		1.0	ug/L		17-OCT-19	R4879694
Dichlorodifluoromethane	<1.0		1.0	ug/L		17-OCT-19	R4879694
1,1-dichloroethane	<0.50		0.50	ug/L		17-OCT-19	R4879694
1,2-Dichloroethane	<0.50		0.50	ug/L		17-OCT-19	R4879694
1,1-dichloroethene	<0.50		0.50	ug/L		17-OCT-19	R4879694
cis-1,2-Dichloroethene	<1.0		1.0	ug/L		17-OCT-19	R4879694
trans-1,2-Dichloroethene	<1.0		1.0	ug/L		17-OCT-19	R4879694
Dichloromethane	<5.0		5.0	ug/L		17-OCT-19	R4879694
1,2-Dichloropropane	<1.0		1.0	ug/L		17-OCT-19	R4879694
1,3-Dichloropropane	<1.0		1.0	ug/L		17-OCT-19	R4879694
2,2-Dichloropropane	<1.0		1.0	ug/L		17-OCT-19	R4879694
1,1-Dichloropropene	<1.0		1.0	ug/L		17-OCT-19	R4879694
cis-1,3-Dichloropropene	<1.0		1.0	ug/L		17-OCT-19	R4879694
trans-1,3-Dichloropropene	<1.0		1.0	ug/L		17-OCT-19	R4879694
Ethylbenzene	<0.50		0.50	ug/L		17-OCT-19	R4879694
F1	<100		100	ug/L		17-OCT-19	R4879694
Hexachlorobutadiene	<1.0		1.0	ug/L		17-OCT-19	R4879694
Hexane	<1.0		1.0	ug/L		17-OCT-19	R4879694
2-Hexanone (Methyl butyl ketone)	<20		20	ug/L		17-OCT-19	R4879694
Isopropylbenzene	<1.0		1.0	ug/L		17-OCT-19	R4879694
4-Isopropyltoluene	<1.0		1.0	ug/L		17-OCT-19	R4879694
MEK	<20		20	ug/L		17-OCT-19	R4879694
MIBK	<20		20	ug/L		17-OCT-19	R4879694
MTBE	<0.50		0.50	ug/L		17-OCT-19	R4879694
Styrene	<1.0		1.0	ug/L		17-OCT-19	R4879694
1,1,1,2-Tetrachloroethane	<0.50		0.50	ug/L		17-OCT-19	R4879694
1,1,2,2-Tetrachloroethane	<0.50		0.50	ug/L		17-OCT-19	R4879694
Tetrachloroethene	<0.50		0.50	ug/L		17-OCT-19	R4879694
Toluene	<0.50		0.50	ug/L		17-OCT-19	R4879694
1,2,3-Trichlorobenzene	<1.0		1.0	ug/L		17-OCT-19	R4879694
1,2,4-Trichlorobenzene	<1.0		1.0	ug/L		17-OCT-19	R4879694
1,1,1-Trichloroethane	<0.50		0.50	ug/L		17-OCT-19	R4879694
1,1,2-Trichloroethane	<0.50		0.50	ug/L		17-OCT-19	R4879694
Trichloroethene	<0.50		0.50	ug/L		17-OCT-19	R4879694
Trichlorofluoromethane	<1.0		1.0	ug/L		17-OCT-19	R4879694
1,2,3-Trichloropropane	<1.0		1.0	ug/L		17-OCT-19	R4879694
1,2,4-Trimethylbenzene	<1.0		1.0	ug/L		17-OCT-19	R4879694
1,3,5-Trimethylbenzene	<1.0		1.0	ug/L		17-OCT-19	R4879694
Vinyl Chloride	<0.50		0.50	ug/L		17-OCT-19	R4879694
m+p-Xylenes	<0.40		0.40	ug/L		17-OCT-19	R4879694
o-Xylene	<0.50		0.50	ug/L		17-OCT-19	R4879694
Surrogate: 4-Bromofluorobenzene (SS)	92.8		70-130	%		17-OCT-19	R4879694
Surrogate: 1,4-Difluorobenzene (SS)	99.3		70-130	%		17-OCT-19	R4879694
L2361823-2 GWQ25-W13							
Sampled By: CLIENT on 08-OCT-19 @ 12:43							
Matrix: WATER							
Alkalinity species as HCO3, CO3, OH							
Alkalinity, Bicarbonate							

* 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
L2361823-2 GWQ25-W13							
Sampled By: CLIENT on 08-OCT-19 @ 12:43							
Matrix: WATER							
Alkalinity, Bicarbonate							
Bicarbonate (HCO ₃)	261000		1200	ug/L		10-OCT-19	
Alkalinity, Carbonate							
Carbonate (CO ₃)	<600		600	ug/L		10-OCT-19	
Alkalinity, Hydroxide							
Hydroxide (OH)	<340		340	ug/L		10-OCT-19	
Alkalinity, Total (as CaCO₃)							
Alkalinity, Total (as CaCO ₃)	214000		1000	ug/L		09-OCT-19	R4865629
Dissolved Carbons							
Dissolved Inorganic Carbon by Combustion							
Dissolved Inorganic Carbon	42000		500	ug/L		09-OCT-19	R4865326
Dissolved Organic Carbon by Combustion							
Dissolved Organic Carbon	3930		500	ug/L		11-OCT-19	R4870106
Total Dissolved Carbon by Calculation							
Total Dissolved Carbon	46000		1000	ug/L		15-OCT-19	
Miscellaneous Parameters							
Ammonia, Total (as N)	1300		100	ug/L		16-OCT-19	R4873241
Chloride (Cl)	2410000		25000	ug/L		09-OCT-19	R4866519
Chromium, Hexavalent	<0.50		0.50	ug/L		15-OCT-19	R4870968
Cyanide, Total	<1.0		1.0	ug/L		16-OCT-19	R4872581
Mercury (Hg)-Total	<0.0050		0.0050	ug/L	16-OCT-19	16-OCT-19	R4871875
Phenols (4AAP)	3.9		1.0	ug/L		15-OCT-19	R4871063
Sulfate (SO ₄)	806000		15000	ug/L		09-OCT-19	R4866519
Dissolved Metals in Water by CRC ICPMS							
Dissolved Metals Filtration Location	FIELD					24-OCT-19	R4881867
Aluminum (Al)-Dissolved	4.2		1.0	ug/L	24-OCT-19	24-OCT-19	R4887526
Antimony (Sb)-Dissolved	3.34		0.10	ug/L	24-OCT-19	24-OCT-19	R4887526
Arsenic (As)-Dissolved	0.72		0.10	ug/L	24-OCT-19	24-OCT-19	R4887526
Barium (Ba)-Dissolved	25.1		0.10	ug/L	24-OCT-19	24-OCT-19	R4887526
Beryllium (Be)-Dissolved	<0.10		0.10	ug/L	24-OCT-19	24-OCT-19	R4887526
Bismuth (Bi)-Dissolved	<0.50		0.50	ug/L	24-OCT-19	28-OCT-19	R4888724
Boron (B)-Dissolved	610		100	ug/L	24-OCT-19	28-OCT-19	R4888724
Cadmium (Cd)-Dissolved	2.27		0.0050	ug/L	24-OCT-19	24-OCT-19	R4887526
Calcium (Ca)-Dissolved	309000		50	ug/L	24-OCT-19	24-OCT-19	R4887526
Cesium (Cs)-Dissolved	0.080		0.010	ug/L	24-OCT-19	24-OCT-19	R4887526
Chromium (Cr)-Dissolved	0.85		0.10	ug/L	24-OCT-19	24-OCT-19	R4887526
Cobalt (Co)-Dissolved	0.54		0.10	ug/L	24-OCT-19	24-OCT-19	R4887526
Copper (Cu)-Dissolved	6.62		0.20	ug/L	24-OCT-19	24-OCT-19	R4887526
Iron (Fe)-Dissolved	23		10	ug/L	24-OCT-19	24-OCT-19	R4887526
Lead (Pb)-Dissolved	<0.50		0.50	ug/L	24-OCT-19	28-OCT-19	R4888724
Lithium (Li)-Dissolved	247		1.0	ug/L	24-OCT-19	24-OCT-19	R4887526
Magnesium (Mg)-Dissolved	125000		5.0	ug/L	24-OCT-19	24-OCT-19	R4887526
Manganese (Mn)-Dissolved	61.9		0.10	ug/L	24-OCT-19	24-OCT-19	R4887526
Molybdenum (Mo)-Dissolved	1.69		0.050	ug/L	24-OCT-19	24-OCT-19	R4887526
Nickel (Ni)-Dissolved	3.97		0.50	ug/L	24-OCT-19	24-OCT-19	R4887526
Phosphorus (P)-Dissolved	52		30	ug/L	24-OCT-19	24-OCT-19	R4887526
Potassium (K)-Dissolved	20100		50	ug/L	24-OCT-19	24-OCT-19	R4887526
Rubidium (Rb)-Dissolved	7.55		0.20	ug/L	24-OCT-19	24-OCT-19	R4887526
Selenium (Se)-Dissolved	<0.050		0.050	ug/L	24-OCT-19	24-OCT-19	R4887526
Silicon (Si)-Dissolved	5840		50	ug/L	24-OCT-19	24-OCT-19	R4887526
Silver (Ag)-Dissolved	<0.010		0.010	ug/L	24-OCT-19	24-OCT-19	R4887526
Sodium (Na)-Dissolved	864000		500	ug/L	24-OCT-19	28-OCT-19	R4888724

* 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
L2361823-2 GWQ25-W13							
Sampled By: CLIENT on 08-OCT-19 @ 12:43							
Matrix: WATER							
Dissolved Metals in Water by CRC ICPMS							
Strontium (Sr)-Dissolved	3120		1.0	ug/L	24-OCT-19	28-OCT-19	R4888724
Sulfur (S)-Dissolved	217000		500	ug/L	24-OCT-19	24-OCT-19	R4887526
Tellurium (Te)-Dissolved	<0.20		0.20	ug/L	24-OCT-19	24-OCT-19	R4887526
Thallium (Tl)-Dissolved	<0.10		0.10	ug/L	24-OCT-19	28-OCT-19	R4888724
Thorium (Th)-Dissolved	<1.0		1.0	ug/L	24-OCT-19	28-OCT-19	R4888724
Tin (Sn)-Dissolved	1.66		0.10	ug/L	24-OCT-19	24-OCT-19	R4887526
Titanium (Ti)-Dissolved	<0.30		0.30	ug/L	24-OCT-19	24-OCT-19	R4887526
Tungsten (W)-Dissolved	1.4		1.0	ug/L	24-OCT-19	28-OCT-19	R4888724
Uranium (U)-Dissolved	5.45		0.10	ug/L	24-OCT-19	28-OCT-19	R4888724
Vanadium (V)-Dissolved	<0.50		0.50	ug/L	24-OCT-19	24-OCT-19	R4887526
Zinc (Zn)-Dissolved	161		1.0	ug/L	24-OCT-19	24-OCT-19	R4887526
Zirconium (Zr)-Dissolved	<0.20		0.20	ug/L	24-OCT-19	24-OCT-19	R4887526
Polyaromatic Hydrocarbons (PAHs)							
1-Methyl Naphthalene	<0.020		0.020	ug/L	18-OCT-19	21-OCT-19	R4878390
2-Methyl Naphthalene	<0.020		0.020	ug/L	18-OCT-19	21-OCT-19	R4878390
Acenaphthene	<0.020		0.020	ug/L	18-OCT-19	21-OCT-19	R4878390
Acenaphthylene	<0.020		0.020	ug/L	18-OCT-19	21-OCT-19	R4878390
Anthracene	<0.010		0.010	ug/L	18-OCT-19	21-OCT-19	R4878390
Acridine	<0.020		0.020	ug/L	18-OCT-19	21-OCT-19	R4878390
Benzo(a)anthracene	<0.010		0.010	ug/L	18-OCT-19	21-OCT-19	R4878390
Benzo(a)pyrene	<0.0050		0.0050	ug/L	18-OCT-19	21-OCT-19	R4878390
Benzo(b&j)fluoranthene	<0.010		0.010	ug/L	18-OCT-19	21-OCT-19	R4878390
Benzo(g,h,i)perylene	<0.020		0.020	ug/L	18-OCT-19	21-OCT-19	R4878390
Benzo(k)fluoranthene	<0.010		0.010	ug/L	18-OCT-19	21-OCT-19	R4878390
Chrysene	<0.020		0.020	ug/L	18-OCT-19	21-OCT-19	R4878390
Dibenzo(a,h)anthracene	<0.0050		0.0050	ug/L	18-OCT-19	21-OCT-19	R4878390
Fluoranthene	<0.020		0.020	ug/L	18-OCT-19	21-OCT-19	R4878390
Fluorene	<0.020		0.020	ug/L	18-OCT-19	21-OCT-19	R4878390
Indeno(1,2,3-cd)pyrene	<0.010		0.010	ug/L	18-OCT-19	21-OCT-19	R4878390
Naphthalene	<0.050		0.050	ug/L	18-OCT-19	21-OCT-19	R4878390
Phenanthrene	<0.050		0.050	ug/L	18-OCT-19	21-OCT-19	R4878390
Pyrene	<0.010		0.010	ug/L	18-OCT-19	21-OCT-19	R4878390
Quinoline	<0.020		0.020	ug/L	18-OCT-19	21-OCT-19	R4878390
B(a)P Total Potency Equivalent	<0.030		0.030	ug/L	18-OCT-19	21-OCT-19	R4878390
Surrogate: Acenaphthene d10	100.6		60-130	%	18-OCT-19	21-OCT-19	R4878390
Surrogate: Acridine d9	96.2		60-130	%	18-OCT-19	21-OCT-19	R4878390
Surrogate: Chrysene d12	111.3		60-130	%	18-OCT-19	21-OCT-19	R4878390
Surrogate: Naphthalene d8	104.0		50-130	%	18-OCT-19	21-OCT-19	R4878390
Surrogate: Phenanthrene d10	101.0		60-130	%	18-OCT-19	21-OCT-19	R4878390
Herbicides in Water							
Clopyralid	<0.10		0.10	ug/L	15-OCT-19	16-OCT-19	R4871854
Dicamba	<0.10		0.10	ug/L	15-OCT-19	16-OCT-19	R4871854
Mecoprop	<0.10		0.10	ug/L	15-OCT-19	16-OCT-19	R4871854
MCPA	<0.10		0.10	ug/L	15-OCT-19	16-OCT-19	R4871854
2,4-D	<0.10		0.10	ug/L	15-OCT-19	16-OCT-19	R4871854
Bromoxynil	<0.10		0.10	ug/L	15-OCT-19	16-OCT-19	R4871854
Triclopyr	<0.10		0.10	ug/L	15-OCT-19	16-OCT-19	R4871854
2,4,5-T	<0.10		0.10	ug/L	15-OCT-19	16-OCT-19	R4871854
2,4,5-TP	<0.10		0.10	ug/L	15-OCT-19	16-OCT-19	R4871854
Picloram	<0.10		0.10	ug/L	15-OCT-19	16-OCT-19	R4871854
2,4-DB	<0.10		0.10	ug/L	15-OCT-19	16-OCT-19	R4871854

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ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2361823-2 GWQ25-W13							
Sampled By: CLIENT on 08-OCT-19 @ 12:43							
Matrix: WATER							
Herbicides in Water							
2,4-DP	<0.10		0.10	ug/L	15-OCT-19	16-OCT-19	R4871854
Dinoseb	<0.10		0.10	ug/L	15-OCT-19	16-OCT-19	R4871854
MCPB	<0.10		0.10	ug/L	15-OCT-19	16-OCT-19	R4871854
Surrogate: 2,4-Dichlorophenylacetic Acid	87.0		50-130	%	15-OCT-19	16-OCT-19	R4871854
Miscellaneous Pesticides							
Diazinon	<0.10		0.10	ug/L	18-OCT-19	21-OCT-19	R4876371
Surrogate: 2-Fluorobiphenyl	83.6		40-130	%	18-OCT-19	21-OCT-19	R4876371
Surrogate: d14-Terphenyl	84.8		40-130	%	18-OCT-19	21-OCT-19	R4876371
Total, Fecal Coliforms, E Coli by QT97							
Fecal Coliform by MPN QT97							
Fecal Coliforms	<1		1	MPN/100mL		08-OCT-19	R4863435
Total Coliform and E.coli by MPN QT97							
Total Coliforms	<1		1	MPN/100mL		08-OCT-19	R4863452
Escherichia Coli	<1		1	MPN/100mL		08-OCT-19	R4863452
VOC plus F1 to F4							
CCME PHC F2-F4 in Water							
F2 (C10-C16)	<100		100	ug/L	17-OCT-19	17-OCT-19	R4874822
F3 (C16-C34)	<250		250	ug/L	17-OCT-19	17-OCT-19	R4874822
F4 (C34-C50)	<250		250	ug/L	17-OCT-19	17-OCT-19	R4874822
Surrogate: 2-Bromobenzotrifluoride	75.7		60-140	%	17-OCT-19	17-OCT-19	R4874822
CCME Total Hydrocarbons							
F1-BTEX	120		100	ug/L		24-OCT-19	
F2-Naphth	<100		100	ug/L		24-OCT-19	
F3-PAH	<250		250	ug/L		24-OCT-19	
Total Hydrocarbons (C6-C50)	<380		380	ug/L		24-OCT-19	
Sum of Xylene Isomer Concentrations							
Xylenes (Total)	<0.64		0.64	ug/L		24-OCT-19	
Total Trihalomethanes (THMs)							
Total THMs	2.9		1.3	ug/L		24-OCT-19	
VOC plus F1 by GCMS							
Acetone	<50		50	ug/L		17-OCT-19	R4879694
Benzene	<0.50		0.50	ug/L		17-OCT-19	R4879694
Bromobenzene	<1.0		1.0	ug/L		17-OCT-19	R4879694
Bromochloromethane	<1.0		1.0	ug/L		17-OCT-19	R4879694
Bromodichloromethane	<0.50		0.50	ug/L		17-OCT-19	R4879694
Bromoform	<1.0		1.0	ug/L		17-OCT-19	R4879694
Bromomethane	<1.0		1.0	ug/L		17-OCT-19	R4879694
n-Butylbenzene	<1.0		1.0	ug/L		17-OCT-19	R4879694
sec-Butylbenzene	<1.0		1.0	ug/L		17-OCT-19	R4879694
tert-Butylbenzene	<1.0		1.0	ug/L		17-OCT-19	R4879694
Carbon disulfide	<5.0		5.0	ug/L		17-OCT-19	R4879694
Carbon Tetrachloride	<0.50		0.50	ug/L		17-OCT-19	R4879694
Chlorobenzene	<1.0		1.0	ug/L		17-OCT-19	R4879694
Chloroethane	<1.0		1.0	ug/L		17-OCT-19	R4879694
Chloroform	2.90		0.50	ug/L		17-OCT-19	R4879694
Chloromethane	<5.0		5.0	ug/L		17-OCT-19	R4879694
2-Chlorotoluene	<20		20	ug/L		17-OCT-19	R4879694
4-Chlorotoluene	<1.0		1.0	ug/L		17-OCT-19	R4879694
Dibromochloromethane	<0.50		0.50	ug/L		17-OCT-19	R4879694
1,2-Dibromo-3-chloropropane	<1.0		1.0	ug/L		17-OCT-19	R4879694
1,2-Dibromoethane	<1.0		1.0	ug/L		17-OCT-19	R4879694
Dibromomethane	1.8		1.0	ug/L		17-OCT-19	R4879694

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ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2361823-2 GWQ25-W13							
Sampled By: CLIENT on 08-OCT-19 @ 12:43							
Matrix: WATER							
VOC plus F1 by GCMS							
1,2-Dichlorobenzene	<0.50		0.50	ug/L		17-OCT-19	R4879694
1,3-Dichlorobenzene	<1.0		1.0	ug/L		17-OCT-19	R4879694
1,4-Dichlorobenzene	<1.0		1.0	ug/L		17-OCT-19	R4879694
Dichlorodifluoromethane	<1.0		1.0	ug/L		17-OCT-19	R4879694
1,1-dichloroethane	<0.50		0.50	ug/L		17-OCT-19	R4879694
1,2-Dichloroethane	<0.50		0.50	ug/L		17-OCT-19	R4879694
1,1-dichloroethene	<0.50		0.50	ug/L		17-OCT-19	R4879694
cis-1,2-Dichloroethene	<1.0		1.0	ug/L		17-OCT-19	R4879694
trans-1,2-Dichloroethene	<1.0		1.0	ug/L		17-OCT-19	R4879694
Dichloromethane	<5.0		5.0	ug/L		17-OCT-19	R4879694
1,2-Dichloropropane	<1.0		1.0	ug/L		17-OCT-19	R4879694
1,3-Dichloropropane	<1.0		1.0	ug/L		17-OCT-19	R4879694
2,2-Dichloropropane	<1.0		1.0	ug/L		17-OCT-19	R4879694
1,1-Dichloropropene	<1.0		1.0	ug/L		17-OCT-19	R4879694
cis-1,3-Dichloropropene	<1.0		1.0	ug/L		17-OCT-19	R4879694
trans-1,3-Dichloropropene	<1.0		1.0	ug/L		17-OCT-19	R4879694
Ethylbenzene	<0.50		0.50	ug/L		17-OCT-19	R4879694
F1	120		100	ug/L		17-OCT-19	R4879694
Hexachlorobutadiene	<1.0		1.0	ug/L		17-OCT-19	R4879694
Hexane	<1.0		1.0	ug/L		17-OCT-19	R4879694
2-Hexanone (Methyl butyl ketone)	<20		20	ug/L		17-OCT-19	R4879694
Isopropylbenzene	<1.0		1.0	ug/L		17-OCT-19	R4879694
4-Isopropyltoluene	<1.0		1.0	ug/L		17-OCT-19	R4879694
MEK	<20		20	ug/L		17-OCT-19	R4879694
MIBK	<20		20	ug/L		17-OCT-19	R4879694
MTBE	<0.50		0.50	ug/L		17-OCT-19	R4879694
Styrene	<1.0		1.0	ug/L		17-OCT-19	R4879694
1,1,1,2-Tetrachloroethane	<0.50		0.50	ug/L		17-OCT-19	R4879694
1,1,1,2,2-Tetrachloroethane	<0.50		0.50	ug/L		17-OCT-19	R4879694
Tetrachloroethene	<0.50		0.50	ug/L		17-OCT-19	R4879694
Toluene	<0.50		0.50	ug/L		17-OCT-19	R4879694
1,2,3-Trichlorobenzene	<1.0		1.0	ug/L		17-OCT-19	R4879694
1,2,4-Trichlorobenzene	<1.0		1.0	ug/L		17-OCT-19	R4879694
1,1,1-Trichloroethane	<0.50		0.50	ug/L		17-OCT-19	R4879694
1,1,2-Trichloroethane	<0.50		0.50	ug/L		17-OCT-19	R4879694
Trichloroethene	<0.50		0.50	ug/L		17-OCT-19	R4879694
Trichlorofluoromethane	<1.0		1.0	ug/L		17-OCT-19	R4879694
1,2,3-Trichloropropane	<1.0		1.0	ug/L		17-OCT-19	R4879694
1,2,4-Trimethylbenzene	<1.0		1.0	ug/L		17-OCT-19	R4879694
1,3,5-Trimethylbenzene	<1.0		1.0	ug/L		17-OCT-19	R4879694
Vinyl Chloride	<0.50		0.50	ug/L		17-OCT-19	R4879694
m+p-Xylenes	<0.40		0.40	ug/L		17-OCT-19	R4879694
o-Xylene	<0.50		0.50	ug/L		17-OCT-19	R4879694
Surrogate: 4-Bromofluorobenzene (SS)	92.8		70-130	%		17-OCT-19	R4879694
Surrogate: 1,4-Difluorobenzene (SS)	98.3		70-130	%		17-OCT-19	R4879694
L2361823-3 GWQ25-100							
Sampled By: CLIENT on 08-OCT-19 @ 12:01							
Matrix: WATER							
Alkalinity species as HCO3, CO3, OH							
Alkalinity, Bicarbonate							
Bicarbonate (HCO3)	176000		1200	ug/L		10-OCT-19	

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ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2361823-3 GWQ25-100							
Sampled By: CLIENT on 08-OCT-19 @ 12:01							
Matrix: WATER							
Alkalinity, Carbonate							
Carbonate (CO3)	<600		600	ug/L		10-OCT-19	
Alkalinity, Hydroxide							
Hydroxide (OH)	<340		340	ug/L		10-OCT-19	
Alkalinity, Total (as CaCO3)							
Alkalinity, Total (as CaCO3)	144000		1000	ug/L		09-OCT-19	R4865629
Dissolved Carbons							
Dissolved Inorganic Carbon by Combustion							
Dissolved Inorganic Carbon	28300		500	ug/L		09-OCT-19	R4865326
Dissolved Organic Carbon by Combustion							
Dissolved Organic Carbon	1760		500	ug/L		11-OCT-19	R4870106
Total Dissolved Carbon by Calculation							
Total Dissolved Carbon	30000		1000	ug/L		15-OCT-19	
Miscellaneous Parameters							
Ammonia, Total (as N)	1500		100	ug/L		16-OCT-19	R4873241
Chloride (Cl)	2860000		25000	ug/L		09-OCT-19	R4866519
Chromium, Hexavalent	<0.50		0.50	ug/L		15-OCT-19	R4870968
Cyanide, Total	<1.0		1.0	ug/L		16-OCT-19	R4872581
Mercury (Hg)-Total	<0.0050		0.0050	ug/L	16-OCT-19	16-OCT-19	R4871875
Phenols (4AAP)	2.5		1.0	ug/L		15-OCT-19	R4871063
Sulfate (SO4)	958000		15000	ug/L		09-OCT-19	R4866519
Dissolved Metals in Water by CRC ICPMS							
Dissolved Metals Filtration Location	FIELD					24-OCT-19	R4881867
Aluminum (Al)-Dissolved	2.4		1.0	ug/L	24-OCT-19	24-OCT-19	R4887526
Antimony (Sb)-Dissolved	<0.10		0.10	ug/L	24-OCT-19	24-OCT-19	R4887526
Arsenic (As)-Dissolved	6.96		0.10	ug/L	24-OCT-19	24-OCT-19	R4887526
Barium (Ba)-Dissolved	11.8		0.10	ug/L	24-OCT-19	24-OCT-19	R4887526
Beryllium (Be)-Dissolved	<0.10		0.10	ug/L	24-OCT-19	24-OCT-19	R4887526
Bismuth (Bi)-Dissolved	<0.50		0.50	ug/L	24-OCT-19	28-OCT-19	R4888724
Boron (B)-Dissolved	1100		100	ug/L	24-OCT-19	28-OCT-19	R4888724
Cadmium (Cd)-Dissolved	<0.0050		0.0050	ug/L	24-OCT-19	24-OCT-19	R4887526
Calcium (Ca)-Dissolved	333000		50	ug/L	24-OCT-19	24-OCT-19	R4887526
Cesium (Cs)-Dissolved	0.078		0.010	ug/L	24-OCT-19	24-OCT-19	R4887526
Chromium (Cr)-Dissolved	<0.10		0.10	ug/L	24-OCT-19	24-OCT-19	R4887526
Cobalt (Co)-Dissolved	0.89		0.10	ug/L	24-OCT-19	24-OCT-19	R4887526
Copper (Cu)-Dissolved	<0.20		0.20	ug/L	24-OCT-19	24-OCT-19	R4887526
Iron (Fe)-Dissolved	928		10	ug/L	24-OCT-19	24-OCT-19	R4887526
Lead (Pb)-Dissolved	<0.50		0.50	ug/L	24-OCT-19	28-OCT-19	R4888724
Lithium (Li)-Dissolved	365		10	ug/L	24-OCT-19	28-OCT-19	R4888724
Magnesium (Mg)-Dissolved	149000		5.0	ug/L	24-OCT-19	24-OCT-19	R4887526
Manganese (Mn)-Dissolved	22.4		0.10	ug/L	24-OCT-19	24-OCT-19	R4887526
Molybdenum (Mo)-Dissolved	3.55		0.050	ug/L	24-OCT-19	24-OCT-19	R4887526
Nickel (Ni)-Dissolved	1.61		0.50	ug/L	24-OCT-19	24-OCT-19	R4887526
Phosphorus (P)-Dissolved	<30		30	ug/L	24-OCT-19	24-OCT-19	R4887526
Potassium (K)-Dissolved	40200		50	ug/L	24-OCT-19	24-OCT-19	R4887526
Rubidium (Rb)-Dissolved	18.6		0.20	ug/L	24-OCT-19	24-OCT-19	R4887526
Selenium (Se)-Dissolved	<0.050		0.050	ug/L	24-OCT-19	24-OCT-19	R4887526
Silicon (Si)-Dissolved	4770		50	ug/L	24-OCT-19	24-OCT-19	R4887526
Silver (Ag)-Dissolved	0.026		0.010	ug/L	24-OCT-19	24-OCT-19	R4887526
Sodium (Na)-Dissolved	1610000		500	ug/L	24-OCT-19	28-OCT-19	R4888724
Strontium (Sr)-Dissolved	4850		1.0	ug/L	24-OCT-19	28-OCT-19	R4888724
Sulfur (S)-Dissolved	343000		500	ug/L	24-OCT-19	24-OCT-19	R4887526

* 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
L2361823-3 GWQ25-100							
Sampled By: CLIENT on 08-OCT-19 @ 12:01							
Matrix: WATER							
Dissolved Metals in Water by CRC ICPMS							
Tellurium (Te)-Dissolved	<0.20		0.20	ug/L	24-OCT-19	24-OCT-19	R4887526
Thallium (Tl)-Dissolved	<0.10		0.10	ug/L	24-OCT-19	28-OCT-19	R4888724
Thorium (Th)-Dissolved	<1.0		1.0	ug/L	24-OCT-19	28-OCT-19	R4888724
Tin (Sn)-Dissolved	<0.10		0.10	ug/L	24-OCT-19	24-OCT-19	R4887526
Titanium (Ti)-Dissolved	<0.30		0.30	ug/L	24-OCT-19	24-OCT-19	R4887526
Tungsten (W)-Dissolved	<1.0		1.0	ug/L	24-OCT-19	28-OCT-19	R4888724
Uranium (U)-Dissolved	1.20		0.10	ug/L	24-OCT-19	28-OCT-19	R4888724
Vanadium (V)-Dissolved	<0.50		0.50	ug/L	24-OCT-19	24-OCT-19	R4887526
Zinc (Zn)-Dissolved	1.7		1.0	ug/L	24-OCT-19	24-OCT-19	R4887526
Zirconium (Zr)-Dissolved	<0.20		0.20	ug/L	24-OCT-19	24-OCT-19	R4887526
Polyaromatic Hydrocarbons (PAHs)							
1-Methyl Naphthalene	<0.020		0.020	ug/L	18-OCT-19	21-OCT-19	R4878390
2-Methyl Naphthalene	<0.020		0.020	ug/L	18-OCT-19	21-OCT-19	R4878390
Acenaphthene	<0.020		0.020	ug/L	18-OCT-19	21-OCT-19	R4878390
Acenaphthylene	<0.020		0.020	ug/L	18-OCT-19	21-OCT-19	R4878390
Anthracene	<0.010		0.010	ug/L	18-OCT-19	21-OCT-19	R4878390
Acridine	<0.020		0.020	ug/L	18-OCT-19	21-OCT-19	R4878390
Benzo(a)anthracene	<0.010		0.010	ug/L	18-OCT-19	21-OCT-19	R4878390
Benzo(a)pyrene	<0.0050		0.0050	ug/L	18-OCT-19	21-OCT-19	R4878390
Benzo(b&j)fluoranthene	<0.010		0.010	ug/L	18-OCT-19	21-OCT-19	R4878390
Benzo(g,h,i)perylene	<0.020		0.020	ug/L	18-OCT-19	21-OCT-19	R4878390
Benzo(k)fluoranthene	<0.010		0.010	ug/L	18-OCT-19	21-OCT-19	R4878390
Chrysene	<0.020		0.020	ug/L	18-OCT-19	21-OCT-19	R4878390
Dibenzo(a,h)anthracene	<0.0050		0.0050	ug/L	18-OCT-19	21-OCT-19	R4878390
Fluoranthene	<0.020		0.020	ug/L	18-OCT-19	21-OCT-19	R4878390
Fluorene	<0.020		0.020	ug/L	18-OCT-19	21-OCT-19	R4878390
Indeno(1,2,3-cd)pyrene	<0.010		0.010	ug/L	18-OCT-19	21-OCT-19	R4878390
Naphthalene	<0.050		0.050	ug/L	18-OCT-19	21-OCT-19	R4878390
Phenanthrene	<0.050		0.050	ug/L	18-OCT-19	21-OCT-19	R4878390
Pyrene	<0.010		0.010	ug/L	18-OCT-19	21-OCT-19	R4878390
Quinoline	<0.020		0.020	ug/L	18-OCT-19	21-OCT-19	R4878390
B(a)P Total Potency Equivalent	<0.030		0.030	ug/L	18-OCT-19	21-OCT-19	R4878390
Surrogate: Acenaphthene d10	98.3		60-130	%	18-OCT-19	21-OCT-19	R4878390
Surrogate: Acridine d9	96.0		60-130	%	18-OCT-19	21-OCT-19	R4878390
Surrogate: Chrysene d12	119.9		60-130	%	18-OCT-19	21-OCT-19	R4878390
Surrogate: Naphthalene d8	104.4		50-130	%	18-OCT-19	21-OCT-19	R4878390
Surrogate: Phenanthrene d10	101.6		60-130	%	18-OCT-19	21-OCT-19	R4878390
Herbicides in Water							
Clopyralid	<0.10		0.10	ug/L	15-OCT-19	16-OCT-19	R4871854
Dicamba	<0.10		0.10	ug/L	15-OCT-19	16-OCT-19	R4871854
Mecoprop	<0.10		0.10	ug/L	15-OCT-19	16-OCT-19	R4871854
MCPA	<0.10		0.10	ug/L	15-OCT-19	16-OCT-19	R4871854
2,4-D	<0.10		0.10	ug/L	15-OCT-19	16-OCT-19	R4871854
Bromoxynil	<0.10		0.10	ug/L	15-OCT-19	16-OCT-19	R4871854
Triclopyr	<0.10		0.10	ug/L	15-OCT-19	16-OCT-19	R4871854
2,4,5-T	<0.10		0.10	ug/L	15-OCT-19	16-OCT-19	R4871854
2,4,5-TP	<0.10		0.10	ug/L	15-OCT-19	16-OCT-19	R4871854
Picloram	<0.10		0.10	ug/L	15-OCT-19	16-OCT-19	R4871854
2,4-DB	<0.10		0.10	ug/L	15-OCT-19	16-OCT-19	R4871854
2,4-DP	<0.10		0.10	ug/L	15-OCT-19	16-OCT-19	R4871854
Dinoseb	<0.10		0.10	ug/L	15-OCT-19	16-OCT-19	R4871854

* 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
L2361823-3 GWQ25-100							
Sampled By: CLIENT on 08-OCT-19 @ 12:01							
Matrix: WATER							
Herbicides in Water							
MCPB	<0.10		0.10	ug/L	15-OCT-19	16-OCT-19	R4871854
Surrogate: 2,4-Dichlorophenylacetic Acid	78.0		50-130	%	15-OCT-19	16-OCT-19	R4871854
Miscellaneous Pesticides							
Diazinon	<0.10		0.10	ug/L	18-OCT-19	21-OCT-19	R4876371
Surrogate: 2-Fluorobiphenyl	80.2		40-130	%	18-OCT-19	21-OCT-19	R4876371
Surrogate: d14-Terphenyl	91.1		40-130	%	18-OCT-19	21-OCT-19	R4876371
Total, Fecal Coliforms, E Coli by QT97							
Fecal Coliform by MPN QT97							
Fecal Coliforms	<1		1	MPN/100mL		08-OCT-19	R4863435
Total Coliform and E.coli by MPN QT97							
Total Coliforms	<1		1	MPN/100mL		08-OCT-19	R4863452
Escherichia Coli	<1		1	MPN/100mL		08-OCT-19	R4863452
VOC plus F1 to F4							
CCME PHC F2-F4 in Water							
F2 (C10-C16)	<100		100	ug/L	17-OCT-19	17-OCT-19	R4874822
F3 (C16-C34)	<250		250	ug/L	17-OCT-19	17-OCT-19	R4874822
F4 (C34-C50)	<250		250	ug/L	17-OCT-19	17-OCT-19	R4874822
Surrogate: 2-Bromobenzotrifluoride	76.7		60-140	%	17-OCT-19	17-OCT-19	R4874822
CCME Total Hydrocarbons							
F1-BTEX	<100		100	ug/L		24-OCT-19	
F2-Naphth	<100		100	ug/L		24-OCT-19	
F3-PAH	<250		250	ug/L		24-OCT-19	
Total Hydrocarbons (C6-C50)	<380		380	ug/L		24-OCT-19	
Sum of Xylene Isomer Concentrations							
Xylenes (Total)	<0.64		0.64	ug/L		24-OCT-19	
Total Trihalomethanes (THMs)							
Total THMs	<1.3		1.3	ug/L		24-OCT-19	
VOC plus F1 by GCMS							
Acetone	<50		50	ug/L		17-OCT-19	R4879694
Benzene	<0.50		0.50	ug/L		17-OCT-19	R4879694
Bromobenzene	<1.0		1.0	ug/L		17-OCT-19	R4879694
Bromochloromethane	<1.0		1.0	ug/L		17-OCT-19	R4879694
Bromodichloromethane	<0.50		0.50	ug/L		17-OCT-19	R4879694
Bromoform	<1.0		1.0	ug/L		17-OCT-19	R4879694
Bromomethane	<1.0		1.0	ug/L		17-OCT-19	R4879694
n-Butylbenzene	<1.0		1.0	ug/L		17-OCT-19	R4879694
sec-Butylbenzene	<1.0		1.0	ug/L		17-OCT-19	R4879694
tert-Butylbenzene	<1.0		1.0	ug/L		17-OCT-19	R4879694
Carbon disulfide	<5.0		5.0	ug/L		17-OCT-19	R4879694
Carbon Tetrachloride	<0.50		0.50	ug/L		17-OCT-19	R4879694
Chlorobenzene	<1.0		1.0	ug/L		17-OCT-19	R4879694
Chloroethane	<1.0		1.0	ug/L		17-OCT-19	R4879694
Chloroform	<0.50		0.50	ug/L		17-OCT-19	R4879694
Chloromethane	<5.0		5.0	ug/L		17-OCT-19	R4879694
2-Chlorotoluene	<20		20	ug/L		17-OCT-19	R4879694
4-Chlorotoluene	<1.0		1.0	ug/L		17-OCT-19	R4879694
Dibromochloromethane	<0.50		0.50	ug/L		17-OCT-19	R4879694
1,2-Dibromo-3-chloropropane	<1.0		1.0	ug/L		17-OCT-19	R4879694
1,2-Dibromoethane	<1.0		1.0	ug/L		17-OCT-19	R4879694
Dibromomethane	<1.0		1.0	ug/L		17-OCT-19	R4879694
1,2-Dichlorobenzene	<0.50		0.50	ug/L		17-OCT-19	R4879694
1,3-Dichlorobenzene	<1.0		1.0	ug/L		17-OCT-19	R4879694

* 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
L2361823-3 GWQ25-100							
Sampled By: CLIENT on 08-OCT-19 @ 12:01							
Matrix: WATER							
VOC plus F1 by GCMS							
1,4-Dichlorobenzene	<1.0		1.0	ug/L		17-OCT-19	R4879694
Dichlorodifluoromethane	<1.0		1.0	ug/L		17-OCT-19	R4879694
1,1-dichloroethane	<0.50		0.50	ug/L		17-OCT-19	R4879694
1,2-Dichloroethane	<0.50		0.50	ug/L		17-OCT-19	R4879694
1,1-dichloroethene	<0.50		0.50	ug/L		17-OCT-19	R4879694
cis-1,2-Dichloroethene	<1.0		1.0	ug/L		17-OCT-19	R4879694
trans-1,2-Dichloroethene	<1.0		1.0	ug/L		17-OCT-19	R4879694
Dichloromethane	<5.0		5.0	ug/L		17-OCT-19	R4879694
1,2-Dichloropropane	<1.0		1.0	ug/L		17-OCT-19	R4879694
1,3-Dichloropropane	<1.0		1.0	ug/L		17-OCT-19	R4879694
2,2-Dichloropropane	<1.0		1.0	ug/L		17-OCT-19	R4879694
1,1-Dichloropropene	<1.0		1.0	ug/L		17-OCT-19	R4879694
cis-1,3-Dichloropropene	<1.0		1.0	ug/L		17-OCT-19	R4879694
trans-1,3-Dichloropropene	<1.0		1.0	ug/L		17-OCT-19	R4879694
Ethylbenzene	<0.50		0.50	ug/L		17-OCT-19	R4879694
F1	<100		100	ug/L		17-OCT-19	R4879694
Hexachlorobutadiene	<1.0		1.0	ug/L		17-OCT-19	R4879694
Hexane	<1.0		1.0	ug/L		17-OCT-19	R4879694
2-Hexanone (Methyl butyl ketone)	<20		20	ug/L		17-OCT-19	R4879694
Isopropylbenzene	<1.0		1.0	ug/L		17-OCT-19	R4879694
4-Isopropyltoluene	<1.0		1.0	ug/L		17-OCT-19	R4879694
MEK	<20		20	ug/L		17-OCT-19	R4879694
MIBK	<20		20	ug/L		17-OCT-19	R4879694
MTBE	<0.50		0.50	ug/L		17-OCT-19	R4879694
Styrene	<1.0		1.0	ug/L		17-OCT-19	R4879694
1,1,1,2-Tetrachloroethane	<0.50		0.50	ug/L		17-OCT-19	R4879694
1,1,2,2-Tetrachloroethane	<0.50		0.50	ug/L		17-OCT-19	R4879694
Tetrachloroethene	<0.50		0.50	ug/L		17-OCT-19	R4879694
Toluene	<0.50		0.50	ug/L		17-OCT-19	R4879694
1,2,3-Trichlorobenzene	<1.0		1.0	ug/L		17-OCT-19	R4879694
1,2,4-Trichlorobenzene	<1.0		1.0	ug/L		17-OCT-19	R4879694
1,1,1-Trichloroethane	<0.50		0.50	ug/L		17-OCT-19	R4879694
1,1,2-Trichloroethane	<0.50		0.50	ug/L		17-OCT-19	R4879694
Trichloroethene	<0.50		0.50	ug/L		17-OCT-19	R4879694
Trichlorofluoromethane	<1.0		1.0	ug/L		17-OCT-19	R4879694
1,2,3-Trichloropropane	<1.0		1.0	ug/L		17-OCT-19	R4879694
1,2,4-Trimethylbenzene	<1.0		1.0	ug/L		17-OCT-19	R4879694
1,3,5-Trimethylbenzene	<1.0		1.0	ug/L		17-OCT-19	R4879694
Vinyl Chloride	<0.50		0.50	ug/L		17-OCT-19	R4879694
M+P-Xylenes	<0.40		0.40	ug/L		17-OCT-19	R4879694
o-Xylene	<0.50		0.50	ug/L		17-OCT-19	R4879694
Surrogate: 4-Bromofluorobenzene (SS)	92.1		70-130	%		17-OCT-19	R4879694
Surrogate: 1,4-Difluorobenzene (SS)	98.6		70-130	%		17-OCT-19	R4879694
L2361823-4 GWQ25-W11							
Sampled By: CLIENT on 08-OCT-19 @ 12:05							
Matrix: WATER							
Alkalinity species as HCO3, CO3, OH							
Alkalinity, Bicarbonate							
Bicarbonate (HCO3)	168000		1200	ug/L		10-OCT-19	
Alkalinity, Carbonate							
Carbonate (CO3)	<600		600	ug/L		10-OCT-19	

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ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2361823-4 GWQ25-W11							
Sampled By: CLIENT on 08-OCT-19 @ 12:05							
Matrix: WATER							
Alkalinity, Hydroxide							
Hydroxide (OH)	<340		340	ug/L		10-OCT-19	
Alkalinity, Total (as CaCO3)							
Alkalinity, Total (as CaCO3)	137000		1000	ug/L		09-OCT-19	R4865629
Dissolved Carbons							
Dissolved Inorganic Carbon by Combustion							
Dissolved Inorganic Carbon	26700		500	ug/L		09-OCT-19	R4865326
Dissolved Organic Carbon by Combustion							
Dissolved Organic Carbon	1130		500	ug/L		11-OCT-19	R4870106
Total Dissolved Carbon by Calculation							
Total Dissolved Carbon	27800		1000	ug/L		15-OCT-19	
Miscellaneous Parameters							
Ammonia, Total (as N)	1150		100	ug/L		16-OCT-19	R4873241
Chloride (Cl)	2590000		25000	ug/L		09-OCT-19	R4866519
Chromium, Hexavalent	<0.50		0.50	ug/L		15-OCT-19	R4870968
Cyanide, Total	<1.0		1.0	ug/L		16-OCT-19	R4872581
Mercury (Hg)-Total	<0.0050		0.0050	ug/L	16-OCT-19	16-OCT-19	R4871875
Phenols (4AAP)	1.8		1.0	ug/L		15-OCT-19	R4871063
Sulfate (SO4)	757000		15000	ug/L		09-OCT-19	R4866519
Dissolved Metals in Water by CRC ICPMS							
Dissolved Metals Filtration Location	FIELD					24-OCT-19	R4881867
Aluminum (Al)-Dissolved	2.5		1.0	ug/L	24-OCT-19	24-OCT-19	R4887526
Antimony (Sb)-Dissolved	<0.10		0.10	ug/L	24-OCT-19	24-OCT-19	R4887526
Arsenic (As)-Dissolved	5.99		0.10	ug/L	24-OCT-19	24-OCT-19	R4887526
Barium (Ba)-Dissolved	14.8		0.10	ug/L	24-OCT-19	24-OCT-19	R4887526
Beryllium (Be)-Dissolved	<0.10		0.10	ug/L	24-OCT-19	24-OCT-19	R4887526
Bismuth (Bi)-Dissolved	<0.50		0.50	ug/L	24-OCT-19	28-OCT-19	R4888724
Boron (B)-Dissolved	1000		100	ug/L	24-OCT-19	28-OCT-19	R4888724
Cadmium (Cd)-Dissolved	<0.0050		0.0050	ug/L	24-OCT-19	24-OCT-19	R4887526
Calcium (Ca)-Dissolved	284000		50	ug/L	24-OCT-19	24-OCT-19	R4887526
Cesium (Cs)-Dissolved	0.095		0.010	ug/L	24-OCT-19	24-OCT-19	R4887526
Chromium (Cr)-Dissolved	<0.10		0.10	ug/L	24-OCT-19	24-OCT-19	R4887526
Cobalt (Co)-Dissolved	0.32		0.10	ug/L	24-OCT-19	24-OCT-19	R4887526
Copper (Cu)-Dissolved	<0.20		0.20	ug/L	24-OCT-19	24-OCT-19	R4887526
Iron (Fe)-Dissolved	501		10	ug/L	24-OCT-19	24-OCT-19	R4887526
Lead (Pb)-Dissolved	<0.50		0.50	ug/L	24-OCT-19	28-OCT-19	R4888724
Lithium (Li)-Dissolved	315		10	ug/L	24-OCT-19	28-OCT-19	R4888724
Magnesium (Mg)-Dissolved	120000		5.0	ug/L	24-OCT-19	24-OCT-19	R4887526
Manganese (Mn)-Dissolved	30.9		0.10	ug/L	24-OCT-19	24-OCT-19	R4887526
Molybdenum (Mo)-Dissolved	3.39		0.050	ug/L	24-OCT-19	24-OCT-19	R4887526
Nickel (Ni)-Dissolved	0.68		0.50	ug/L	24-OCT-19	24-OCT-19	R4887526
Phosphorus (P)-Dissolved	<30		30	ug/L	24-OCT-19	24-OCT-19	R4887526
Potassium (K)-Dissolved	37700		50	ug/L	24-OCT-19	24-OCT-19	R4887526
Rubidium (Rb)-Dissolved	18.1		0.20	ug/L	24-OCT-19	24-OCT-19	R4887526
Selenium (Se)-Dissolved	<0.050		0.050	ug/L	24-OCT-19	24-OCT-19	R4887526
Silicon (Si)-Dissolved	4540		50	ug/L	24-OCT-19	24-OCT-19	R4887526
Silver (Ag)-Dissolved	<0.010		0.010	ug/L	24-OCT-19	24-OCT-19	R4887526
Sodium (Na)-Dissolved	1440000		500	ug/L	24-OCT-19	28-OCT-19	R4888724
Strontium (Sr)-Dissolved	4060		1.0	ug/L	24-OCT-19	28-OCT-19	R4888724
Sulfur (S)-Dissolved	280000		500	ug/L	24-OCT-19	24-OCT-19	R4887526
Tellurium (Te)-Dissolved	<0.20		0.20	ug/L	24-OCT-19	24-OCT-19	R4887526
Thallium (Tl)-Dissolved	<0.10		0.10	ug/L	24-OCT-19	28-OCT-19	R4888724

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ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2361823-4 GWQ25-W11							
Sampled By: CLIENT on 08-OCT-19 @ 12:05							
Matrix: WATER							
Dissolved Metals in Water by CRC ICPMS							
Thorium (Th)-Dissolved	<1.0		1.0	ug/L	24-OCT-19	28-OCT-19	R4888724
Tin (Sn)-Dissolved	0.12		0.10	ug/L	24-OCT-19	24-OCT-19	R4887526
Titanium (Ti)-Dissolved	<0.30		0.30	ug/L	24-OCT-19	24-OCT-19	R4887526
Tungsten (W)-Dissolved	<1.0		1.0	ug/L	24-OCT-19	28-OCT-19	R4888724
Uranium (U)-Dissolved	0.54		0.10	ug/L	24-OCT-19	28-OCT-19	R4888724
Vanadium (V)-Dissolved	<0.50		0.50	ug/L	24-OCT-19	24-OCT-19	R4887526
Zinc (Zn)-Dissolved	<1.0		1.0	ug/L	24-OCT-19	24-OCT-19	R4887526
Zirconium (Zr)-Dissolved	<0.20		0.20	ug/L	24-OCT-19	24-OCT-19	R4887526
Polyaromatic Hydrocarbons (PAHs)							
1-Methyl Naphthalene	<0.020		0.020	ug/L	18-OCT-19	22-OCT-19	R4878390
2-Methyl Naphthalene	<0.020		0.020	ug/L	18-OCT-19	22-OCT-19	R4878390
Acenaphthene	<0.020		0.020	ug/L	18-OCT-19	22-OCT-19	R4878390
Acenaphthylene	<0.020		0.020	ug/L	18-OCT-19	22-OCT-19	R4878390
Anthracene	<0.010		0.010	ug/L	18-OCT-19	22-OCT-19	R4878390
Acridine	<0.020		0.020	ug/L	18-OCT-19	22-OCT-19	R4878390
Benzo(a)anthracene	<0.010		0.010	ug/L	18-OCT-19	22-OCT-19	R4878390
Benzo(a)pyrene	<0.0050		0.0050	ug/L	18-OCT-19	22-OCT-19	R4878390
Benzo(b&j)fluoranthene	<0.010		0.010	ug/L	18-OCT-19	22-OCT-19	R4878390
Benzo(g,h,i)perylene	<0.020		0.020	ug/L	18-OCT-19	22-OCT-19	R4878390
Benzo(k)fluoranthene	<0.010		0.010	ug/L	18-OCT-19	22-OCT-19	R4878390
Chrysene	<0.020		0.020	ug/L	18-OCT-19	22-OCT-19	R4878390
Dibenzo(a,h)anthracene	<0.0050		0.0050	ug/L	18-OCT-19	22-OCT-19	R4878390
Fluoranthene	<0.020		0.020	ug/L	18-OCT-19	22-OCT-19	R4878390
Fluorene	<0.020		0.020	ug/L	18-OCT-19	22-OCT-19	R4878390
Indeno(1,2,3-cd)pyrene	<0.010		0.010	ug/L	18-OCT-19	22-OCT-19	R4878390
Naphthalene	<0.050		0.050	ug/L	18-OCT-19	22-OCT-19	R4878390
Phenanthrene	<0.050		0.050	ug/L	18-OCT-19	22-OCT-19	R4878390
Pyrene	<0.010		0.010	ug/L	18-OCT-19	22-OCT-19	R4878390
Quinoline	<0.020		0.020	ug/L	18-OCT-19	22-OCT-19	R4878390
B(a)P Total Potency Equivalent	<0.030		0.030	ug/L	18-OCT-19	22-OCT-19	R4878390
Surrogate: Acenaphthene d10	99.4		60-130	%	18-OCT-19	22-OCT-19	R4878390
Surrogate: Acridine d9	95.9		60-130	%	18-OCT-19	22-OCT-19	R4878390
Surrogate: Chrysene d12	111.4		60-130	%	18-OCT-19	22-OCT-19	R4878390
Surrogate: Naphthalene d8	102.9		50-130	%	18-OCT-19	22-OCT-19	R4878390
Surrogate: Phenanthrene d10	101.1		60-130	%	18-OCT-19	22-OCT-19	R4878390
Herbicides in Water							
Clopyralid	<0.10		0.10	ug/L	15-OCT-19	16-OCT-19	R4871854
Dicamba	<0.10		0.10	ug/L	15-OCT-19	16-OCT-19	R4871854
Mecoprop	<0.10		0.10	ug/L	15-OCT-19	16-OCT-19	R4871854
MCPA	<0.10		0.10	ug/L	15-OCT-19	16-OCT-19	R4871854
2,4-D	<0.10		0.10	ug/L	15-OCT-19	16-OCT-19	R4871854
Bromoxynil	<0.10		0.10	ug/L	15-OCT-19	16-OCT-19	R4871854
Triclopyr	<0.10		0.10	ug/L	15-OCT-19	16-OCT-19	R4871854
2,4,5-T	<0.10		0.10	ug/L	15-OCT-19	16-OCT-19	R4871854
2,4,5-TP	<0.10		0.10	ug/L	15-OCT-19	16-OCT-19	R4871854
Picloram	<0.10		0.10	ug/L	15-OCT-19	16-OCT-19	R4871854
2,4-DB	<0.10		0.10	ug/L	15-OCT-19	16-OCT-19	R4871854
2,4-DP	<0.10		0.10	ug/L	15-OCT-19	16-OCT-19	R4871854
Dinoseb	<0.10		0.10	ug/L	15-OCT-19	16-OCT-19	R4871854
MCPB	<0.10		0.10	ug/L	15-OCT-19	16-OCT-19	R4871854
Surrogate: 2,4-Dichlorophenylacetic Acid	81.0		50-130	%	15-OCT-19	16-OCT-19	R4871854
Miscellaneous Pesticides							

* 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
L2361823-4 GWQ25-W11							
Sampled By: CLIENT on 08-OCT-19 @ 12:05							
Matrix: WATER							
Miscellaneous Pesticides							
Diazinon	<0.10		0.10	ug/L	18-OCT-19	21-OCT-19	R4876371
Surrogate: 2-Fluorobiphenyl	79.4		40-130	%	18-OCT-19	21-OCT-19	R4876371
Surrogate: d14-Terphenyl	87.9		40-130	%	18-OCT-19	21-OCT-19	R4876371
Total, Fecal Coliforms, E Coli by QT97							
Fecal Coliform by MPN QT97							
Fecal Coliforms	<1		1	MPN/100mL		08-OCT-19	R4863435
Total Coliform and E.coli by MPN QT97							
Total Coliforms	<1		1	MPN/100mL		08-OCT-19	R4863452
Escherichia Coli	<1		1	MPN/100mL		08-OCT-19	R4863452
VOC plus F1 to F4							
CCME PHC F2-F4 in Water							
F2 (C10-C16)	<100		100	ug/L	17-OCT-19	17-OCT-19	R4874822
F3 (C16-C34)	<250		250	ug/L	17-OCT-19	17-OCT-19	R4874822
F4 (C34-C50)	<250		250	ug/L	17-OCT-19	17-OCT-19	R4874822
Surrogate: 2-Bromobenzotrifluoride	77.2		60-140	%	17-OCT-19	17-OCT-19	R4874822
CCME Total Hydrocarbons							
F1-BTEX	<100		100	ug/L		24-OCT-19	
F2-Naphth	<100		100	ug/L		24-OCT-19	
F3-PAH	<250		250	ug/L		24-OCT-19	
Total Hydrocarbons (C6-C50)	<380		380	ug/L		24-OCT-19	
Sum of Xylene Isomer Concentrations							
Xylenes (Total)	<0.64		0.64	ug/L		24-OCT-19	
Total Trihalomethanes (THMs)							
Total THMs	<1.3		1.3	ug/L		24-OCT-19	
VOC plus F1 by GCMS							
Acetone	<50		50	ug/L		17-OCT-19	R4879694
Benzene	<0.50		0.50	ug/L		17-OCT-19	R4879694
Bromobenzene	<1.0		1.0	ug/L		17-OCT-19	R4879694
Bromochloromethane	<1.0		1.0	ug/L		17-OCT-19	R4879694
Bromodichloromethane	<0.50		0.50	ug/L		17-OCT-19	R4879694
Bromoform	<1.0		1.0	ug/L		17-OCT-19	R4879694
Bromomethane	<1.0		1.0	ug/L		17-OCT-19	R4879694
n-Butylbenzene	<1.0		1.0	ug/L		17-OCT-19	R4879694
sec-Butylbenzene	<1.0		1.0	ug/L		17-OCT-19	R4879694
tert-Butylbenzene	<1.0		1.0	ug/L		17-OCT-19	R4879694
Carbon disulfide	<5.0		5.0	ug/L		17-OCT-19	R4879694
Carbon Tetrachloride	<0.50		0.50	ug/L		17-OCT-19	R4879694
Chlorobenzene	<1.0		1.0	ug/L		17-OCT-19	R4879694
Chloroethane	<1.0		1.0	ug/L		17-OCT-19	R4879694
Chloroform	<0.50		0.50	ug/L		17-OCT-19	R4879694
Chloromethane	<5.0		5.0	ug/L		17-OCT-19	R4879694
2-Chlorotoluene	<20		20	ug/L		17-OCT-19	R4879694
4-Chlorotoluene	<1.0		1.0	ug/L		17-OCT-19	R4879694
Dibromochloromethane	<0.50		0.50	ug/L		17-OCT-19	R4879694
1,2-Dibromo-3-chloropropane	<1.0		1.0	ug/L		17-OCT-19	R4879694
1,2-Dibromoethane	<1.0		1.0	ug/L		17-OCT-19	R4879694
Dibromomethane	<1.0		1.0	ug/L		17-OCT-19	R4879694
1,2-Dichlorobenzene	<0.50		0.50	ug/L		17-OCT-19	R4879694
1,3-Dichlorobenzene	<1.0		1.0	ug/L		17-OCT-19	R4879694
1,4-Dichlorobenzene	<1.0		1.0	ug/L		17-OCT-19	R4879694
Dichlorodifluoromethane	<1.0		1.0	ug/L		17-OCT-19	R4879694
1,1-dichloroethane	<0.50		0.50	ug/L		17-OCT-19	R4879694

* 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
L2361823-4 GWQ25-W11							
Sampled By: CLIENT on 08-OCT-19 @ 12:05							
Matrix: WATER							
VOC plus F1 by GCMS							
1,2-Dichloroethane	<0.50		0.50	ug/L		17-OCT-19	R4879694
1,1-dichloroethene	<0.50		0.50	ug/L		17-OCT-19	R4879694
cis-1,2-Dichloroethene	<1.0		1.0	ug/L		17-OCT-19	R4879694
trans-1,2-Dichloroethene	<1.0		1.0	ug/L		17-OCT-19	R4879694
Dichloromethane	<5.0		5.0	ug/L		17-OCT-19	R4879694
1,2-Dichloropropane	<1.0		1.0	ug/L		17-OCT-19	R4879694
1,3-Dichloropropane	<1.0		1.0	ug/L		17-OCT-19	R4879694
2,2-Dichloropropane	<1.0		1.0	ug/L		17-OCT-19	R4879694
1,1-Dichloropropene	<1.0		1.0	ug/L		17-OCT-19	R4879694
cis-1,3-Dichloropropene	<1.0		1.0	ug/L		17-OCT-19	R4879694
trans-1,3-Dichloropropene	<1.0		1.0	ug/L		17-OCT-19	R4879694
Ethylbenzene	<0.50		0.50	ug/L		17-OCT-19	R4879694
F1	<100		100	ug/L		17-OCT-19	R4879694
Hexachlorobutadiene	<1.0		1.0	ug/L		17-OCT-19	R4879694
Hexane	<1.0		1.0	ug/L		17-OCT-19	R4879694
2-Hexanone (Methyl butyl ketone)	<20		20	ug/L		17-OCT-19	R4879694
Isopropylbenzene	<1.0		1.0	ug/L		17-OCT-19	R4879694
4-Isopropyltoluene	<1.0		1.0	ug/L		17-OCT-19	R4879694
MEK	<20		20	ug/L		17-OCT-19	R4879694
MIBK	<20		20	ug/L		17-OCT-19	R4879694
MTBE	<0.50		0.50	ug/L		17-OCT-19	R4879694
Styrene	<1.0		1.0	ug/L		17-OCT-19	R4879694
1,1,1,2-Tetrachloroethane	<0.50		0.50	ug/L		17-OCT-19	R4879694
1,1,2,2-Tetrachloroethane	<0.50		0.50	ug/L		17-OCT-19	R4879694
Tetrachloroethene	<0.50		0.50	ug/L		17-OCT-19	R4879694
Toluene	<0.50		0.50	ug/L		17-OCT-19	R4879694
1,2,3-Trichlorobenzene	<1.0		1.0	ug/L		17-OCT-19	R4879694
1,2,4-Trichlorobenzene	<1.0		1.0	ug/L		17-OCT-19	R4879694
1,1,1-Trichloroethane	<0.50		0.50	ug/L		17-OCT-19	R4879694
1,1,2-Trichloroethane	<0.50		0.50	ug/L		17-OCT-19	R4879694
Trichloroethene	<0.50		0.50	ug/L		17-OCT-19	R4879694
Trichlorofluoromethane	<1.0		1.0	ug/L		17-OCT-19	R4879694
1,2,3-Trichloropropane	<1.0		1.0	ug/L		17-OCT-19	R4879694
1,2,4-Trimethylbenzene	<1.0		1.0	ug/L		17-OCT-19	R4879694
1,3,5-Trimethylbenzene	<1.0		1.0	ug/L		17-OCT-19	R4879694
Vinyl Chloride	<0.50		0.50	ug/L		17-OCT-19	R4879694
M+P-Xylenes	<0.40		0.40	ug/L		17-OCT-19	R4879694
o-Xylene	<0.50		0.50	ug/L		17-OCT-19	R4879694
Surrogate: 4-Bromofluorobenzene (SS)	94.4		70-130	%		17-OCT-19	R4879694
Surrogate: 1,4-Difluorobenzene (SS)	98.2		70-130	%		17-OCT-19	R4879694

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

Reference Information

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.			
C-DIC-HTC-WP	Water	Dissolved Inorganic Carbon by Combustion	APHA 5310 B-WP
Filtered (0.45 µm) sample is injected into a heated reaction chamber where it is acidified, converting all inorganic carbon to CO ₂ which is then transported in the carrier gas stream and measured via a non-dispersive infrared analyzer.			
C-DOC-HTC-WP	Water	Dissolved Organic Carbon by Combustion	APHA 5310 B-WP
Filtered (0.45 µm) sample is acidified and purged to remove inorganic carbon, then injected into a heated reaction chamber where organic carbon is oxidized to CO ₂ which is then transported in the carrier gas stream and measured via a non-dispersive infrared analyzer.			
C-TDC-CALC-WP	Water	Total Dissolved Carbon by Calculation	CALCULATED
Total dissolved carbon represents the sum of dissolved inorganic carbon and dissolved organic carbon. For the purpose of calculation, results less than the detection limit (DL) are treated as zero.			
CL-IC-N-WP	Water	Chloride in Water by IC	EPA 300.1 (mod)
Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.			
CN-T-L-CFA-WT	Water	Low Level Total Cyanide in water by CFA	ISO 14403-2:2002
This analysis is carried out using procedures adapted from ISO Method 14403:2002 "Determination of Total Cyanide using Flow Analysis (FIA and CFA)". Total or strong acid dissociable (SAD) cyanide is determined by in-line UV digestion along with sample distillation and final determination by colourimetric analysis. Method Limitation: This method is susceptible to interference from thiocyanate (SCN ⁻). If SCN ⁻ is present in the sample, there could be a positive interference with this method, however it would be less than 1% and could be as low as zero.			
CR-CR6-IC-WT	Water	Chromium +6	EPA 7199
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.			
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).			
EC-SCREEN-WP	Water	Conductivity Screen (Internal Use Only)	APHA 2510
Qualitative analysis of conductivity where required during preparation of other test eg. IC, TDS, TSS, etc			
F1-F4-CALC-WP	Water	CCME Total Hydrocarbons	CCME CWS-PHC, Pub #1310, Dec 2001-L
Analytical methods used for analysis of CCME Petroleum Hydrocarbons have been validated and comply with the Reference Method for the CWS PHC.			
In cases where results for both F4 and F4G are reported, the greater of the two results must be used in any application of the CWS PHC guidelines and the gravimetric heavy hydrocarbons cannot be added to the C6 to C50 hydrocarbons.			
In samples where BTEX and F1 were analyzed, F1-BTEX represents a value where the sum of Benzene, Toluene, Ethylbenzene and total Xylenes has been subtracted from F1.			

Reference Information

Test Method References:

ALS Test Code	Matrix	Test Description	Method Reference**
<p>In samples where PAHs, F2 and F3 were analyzed, F2-Naphth represents the result where Naphthalene has been subtracted from F2. F3-PAH represents a result where the sum of Benzo(a)anthracene, Benzo(a)pyrene, Benzo(b)fluoranthene, Benzo(k)fluoranthene, Dibenzo(a,h)anthracene, Fluoranthene, Indeno(1,2,3-cd)pyrene, Phenanthrene, and Pyrene has been subtracted from F3.</p> <p>Unless otherwise qualified, the following quality control criteria have been met for the F1 hydrocarbon range:</p> <ol style="list-style-type: none"> 1. All extraction and analysis holding times were met. 2. Instrument performance showing response factors for C6 and C10 within 30% of the response factor for toluene. 3. Linearity of gasoline response within 15% throughout the calibration range. <p>Unless otherwise qualified, the following quality control criteria have been met for the F2-F4 hydrocarbon ranges:</p> <ol style="list-style-type: none"> 1. All extraction and analysis holding times were met. 2. Instrument performance showing C10, C16 and C34 response factors within 10% of their average. 3. Instrument performance showing the C50 response factor within 30% of the average of the C10, C16 and C34 response factors. 4. Linearity of diesel or motor oil response within 15% throughout the calibration range. 			
F2-F4-FID-WP	Water	CCME PHC F2-F4 in Water	EPA 3511
<p>Petroleum hydrocarbons in water are determined by liquid-liquid micro-scale solvent extraction using a reciprocal shaker extraction apparatus prior to capillary column gas chromatography with flame ionization detection (GC-FID) analysis.</p>			
FC-QT97-WP	Water	Fecal Coliform by MPN QT97	APHA 9223B QT97
<p>This analysis is carried out using procedures adapted from APHA Method 9223B "Enzyme Substrate Coliform Test". The sample is mixed with a mixture of hydrolyzable substrates and then sealed in a 97-well packet. The packet is incubated at 44.5 – 0.2°C for 18 hours and then the number of wells exhibiting a positive response are counted. The final result is obtained by comparing the number of positive responses to a probability table.</p>			
HERBSCR-LCMS-WT	Water	Herbicides in Water	E3552
<p>Water samples are subjected filtration and analyzed by direct injection without sample preparation using liquid chromatography tandem mass spectrometry (LC-MS/MS).</p>			
HG-T-CVAA-WP	Water	Mercury Total	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-WP	Water	Dissolved Metals in Water by CRC ICPMS	APHA 3030B/6020B (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>			
NH3-COL-WP	Water	Ammonia by colour	APHA 4500 NH3 F
<p>Ammonia in water samples forms indophenol when reacted with hypochlorite and phenol. The intensity is amplified by the addition of sodium nitroprusside and measured colourmetrically.</p>			
PAH,PANH-WP	Water	Polyaromatic Hydrocarbons (PAHs)	EPA 3511/8270D (mod)
<p>PAHs are extracted from water using a hexane micro-extraction technique, with analysis by GC/MS. Because the two isomers cannot be readily separated chromatographically, benzo(j)fluoranthene is reported as part of the benzo(b)fluoranthene parameter.</p>			
PEST-DIAZINON-WT	Water	Miscellaneous Pesticides	SW846 8270
PHENOLS-4AAP-WT	Water	Phenol (4AAP)	EPA 9066
<p>An automated method is used to distill the sample. The distillate is then buffered to pH 9.4 which reacts with 4AAP and potassium ferricyanide to form a red complex which is measured colorimetrically.</p>			
SO4-IC-N-WP	Water	Sulfate in Water by IC	EPA 300.1 (mod)
<p>Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.</p>			
TC,EC-QT97-WP	Water	Total Coliform and E.coli by MPN QT97	APHA 9223B QT97
<p>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 97-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.</p>			
THM-SUM-CALC-WP	Water	Total Trihalomethanes (THMs)	CALCULATION
<p>Total Trihalomethanes (THMs) represents the sum of bromodichloromethane, bromoform, chlorodibromomethane and chloroform. For the purpose of calculation, results less than the detection limit (DL) are treated as zero.</p>			

Reference Information

Test Method References:

ALS Test Code	Matrix	Test Description	Method Reference**
VOC+F1-HSMS-WP	Water	VOC plus F1 by GCMS	EPA 8260C / EPA 5021A
In this method samples are analyzed using a headspace autosampler interfaced to a dual column gas chromatograph with MS and Flame Ionization detectors.			
XYLENES-SUM-CALC-WP	Water	Sum of Xylene Isomer Concentrations	CALCULATED RESULT
Total xylenes represents the sum of o-xylene and m&p-xylene.			

** 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
WT	ALS ENVIRONMENTAL - WATERLOO, ONTARIO, 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: L2361823

Report Date: 29-OCT-19

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Client: City of Winnipeg - Solid Waste Services Div (1120 Waverley)
 Solid Waste Services Division 1120 Waverley Street
 Winnipeg MB R3T 0P4

Contact: CHRIS KOZAK

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
ALK-TITR-WP								
	Water							
Batch	R4865629							
WG3187521-19	LCS							
Alkalinity, Total (as CaCO3)			107.4		%		85-115	09-OCT-19
WG3187521-29	LCS							
Alkalinity, Total (as CaCO3)			107.3		%		85-115	09-OCT-19
WG3187521-16	MB							
Alkalinity, Total (as CaCO3)			<1.0		mg/L		1	09-OCT-19
WG3187521-26	MB							
Alkalinity, Total (as CaCO3)			<1.0		mg/L		1	09-OCT-19
C-DIC-HTC-WP								
	Water							
Batch	R4865326							
WG3187430-3	DUP	L2361823-4						
Dissolved Inorganic Carbon		26.7	26.9		mg/L	0.8	20	09-OCT-19
WG3187430-2	LCS							
Dissolved Inorganic Carbon			101.7		%		80-120	09-OCT-19
WG3187430-1	MB							
Dissolved Inorganic Carbon			<0.50		mg/L		0.5	09-OCT-19
C-DOC-HTC-WP								
	Water							
Batch	R4870106							
WG3190720-2	LCS							
Dissolved Organic Carbon			105.5		%		80-120	11-OCT-19
WG3190720-1	MB							
Dissolved Organic Carbon			<0.50		mg/L		0.5	11-OCT-19
CL-IC-N-WP								
	Water							
Batch	R4866519							
WG3186552-10	LCS							
Chloride (Cl)			98.9		%		90-110	09-OCT-19
WG3186552-9	MB							
Chloride (Cl)			<0.50		mg/L		0.5	09-OCT-19
CN-T-L-CFA-WT								
	Water							
Batch	R4872581							
WG3192447-3	DUP	L2361823-4						
Cyanide, Total		<0.0010	<0.0010	RPD-NA	mg/L	N/A	20	16-OCT-19
WG3192447-2	LCS							
Cyanide, Total			96.7		%		80-120	16-OCT-19
WG3192447-1	MB							
Cyanide, Total			<0.0010		mg/L		0.001	16-OCT-19
WG3192447-4	MS	L2361823-4						

Quality Control Report

Workorder: L2361823

Report Date: 29-OCT-19

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Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
CN-T-L-CFA-WT	Water							
Batch	R4872581							
WG3192447-4 MS		L2361823-4						
Cyanide, Total			93.6		%		70-130	16-OCT-19
CR-CR6-IC-WT	Water							
Batch	R4870968							
WG3191274-2 LCS								
Chromium, Hexavalent			94.3		%		80-120	15-OCT-19
WG3191274-1 MB								
Chromium, Hexavalent			<0.00050		mg/L		0.0005	15-OCT-19
F2-F4-FID-WP	Water							
Batch	R4874822							
WG3193707-2 LCS								
F2 (C10-C16)			98.3		%		70-130	17-OCT-19
F3 (C16-C34)			91.1		%		70-130	17-OCT-19
F4 (C34-C50)			93.2		%		70-130	17-OCT-19
WG3193707-1 MB								
F2 (C10-C16)			<0.10		mg/L		0.1	17-OCT-19
F3 (C16-C34)			<0.25		mg/L		0.25	17-OCT-19
F4 (C34-C50)			<0.25		mg/L		0.25	17-OCT-19
Surrogate: 2-Bromobenzotrifluoride			79.9		%		60-140	17-OCT-19
FC-QT97-WP	Water							
Batch	R4863435							
WG3185721-2 DUP		L2361823-1						
Fecal Coliforms		<1	<1	RPD-NA	MPN/100mL	N/A	65	08-OCT-19
WG3185721-1 MB								
Fecal Coliforms			<1		MPN/100mL		1	08-OCT-19
HERBSCR-LCMS-WT	Water							
Batch	R4871854							
WG3191133-2 LCS								
Clopyralid			98.0		%		50-150	16-OCT-19
Dicamba			104.0		%		65-130	16-OCT-19
Mecoprop			109.0		%		65-130	16-OCT-19
MCPA			98.9		%		65-130	16-OCT-19
2,4-D			111.0		%		65-130	16-OCT-19
Bromoxynil			91.8		%		65-130	16-OCT-19
Triclopyr			104.0		%		65-130	16-OCT-19

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Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
HERBSCR-LCMS-WT		Water						
Batch	R4871854							
WG3191133-2	LCS							
2,4,5-T			98.6		%		65-130	16-OCT-19
2,4,5-TP			115.0		%		65-130	16-OCT-19
Picloram			109.0		%		50-150	16-OCT-19
2,4-DB			95.5		%		65-130	16-OCT-19
2,4-DP			102.0		%		65-130	16-OCT-19
Dinoseb			85.8		%		50-150	16-OCT-19
MCPB			107.0		%		65-130	16-OCT-19
WG3191133-1	MB							
Clopyralid			<0.00010		mg/L		0.0001	16-OCT-19
Dicamba			<0.00010		mg/L		0.0001	16-OCT-19
Mecoprop			<0.00010		mg/L		0.0001	16-OCT-19
MCPA			<0.00010		mg/L		0.0001	16-OCT-19
2,4-D			<0.00010		mg/L		0.0001	16-OCT-19
Bromoxynil			<0.00010		mg/L		0.0001	16-OCT-19
Triclopyr			<0.00010		mg/L		0.0001	16-OCT-19
2,4,5-T			<0.00010		mg/L		0.0001	16-OCT-19
2,4,5-TP			<0.00010		mg/L		0.0001	16-OCT-19
Picloram			<0.00010		mg/L		0.0001	16-OCT-19
2,4-DB			<0.00010		mg/L		0.0001	16-OCT-19
2,4-DP			<0.00010		mg/L		0.0001	16-OCT-19
Dinoseb			<0.00010		mg/L		0.0001	16-OCT-19
MCPB			<0.00010		mg/L		0.0001	16-OCT-19
Surrogate: 2,4-Dichlorophenylacetic Acid			109.0		%		50-130	16-OCT-19
HG-T-CVAA-WP		Water						
Batch	R4871875							
WG3192570-2	LCS							
Mercury (Hg)-Total			101.0		%		80-120	16-OCT-19
WG3192570-1	MB							
Mercury (Hg)-Total			<0.000005C		mg/L		0.000005	16-OCT-19
MET-D-CCMS-WP		Water						
Batch	R4887526							
WG3200346-2	LCS							
Aluminum (Al)-Dissolved			108.5		%		80-120	24-OCT-19
Antimony (Sb)-Dissolved			116.1		%		80-120	24-OCT-19
Arsenic (As)-Dissolved			103.8		%		80-120	24-OCT-19



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Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
MET-D-CCMS-WP		Water						
Batch	R4887526							
WG3200346-2	LCS							
Barium (Ba)-Dissolved			102.6		%		80-120	24-OCT-19
Beryllium (Be)-Dissolved			104.1		%		80-120	24-OCT-19
Cadmium (Cd)-Dissolved			106.2		%		80-120	24-OCT-19
Calcium (Ca)-Dissolved			108.6		%		80-120	24-OCT-19
Cesium (Cs)-Dissolved			116.9		%		80-120	24-OCT-19
Chromium (Cr)-Dissolved			108.6		%		80-120	24-OCT-19
Cobalt (Co)-Dissolved			107.3		%		80-120	24-OCT-19
Copper (Cu)-Dissolved			105.6		%		80-120	24-OCT-19
Iron (Fe)-Dissolved			117.5		%		80-120	24-OCT-19
Lithium (Li)-Dissolved			106.0		%		80-120	24-OCT-19
Magnesium (Mg)-Dissolved			110.6		%		80-120	24-OCT-19
Manganese (Mn)-Dissolved			108.5		%		80-120	24-OCT-19
Molybdenum (Mo)-Dissolved			112.5		%		80-120	24-OCT-19
Nickel (Ni)-Dissolved			106.4		%		80-120	24-OCT-19
Phosphorus (P)-Dissolved			119.3		%		80-120	24-OCT-19
Potassium (K)-Dissolved			104.3		%		80-120	24-OCT-19
Rubidium (Rb)-Dissolved			99.6		%		80-120	24-OCT-19
Selenium (Se)-Dissolved			113.0		%		80-120	24-OCT-19
Silicon (Si)-Dissolved			106.7		%		80-120	24-OCT-19
Silver (Ag)-Dissolved			116.4		%		80-120	24-OCT-19
Sulfur (S)-Dissolved			106.5		%		80-120	24-OCT-19
Tellurium (Te)-Dissolved			113.6		%		80-120	24-OCT-19
Tin (Sn)-Dissolved			103.3		%		80-120	24-OCT-19
Titanium (Ti)-Dissolved			97.1		%		80-120	24-OCT-19
Vanadium (V)-Dissolved			108.3		%		80-120	24-OCT-19
Zinc (Zn)-Dissolved			109.6		%		80-120	24-OCT-19
Zirconium (Zr)-Dissolved			106.6		%		80-120	24-OCT-19
WG3200346-1	MB							
Aluminum (Al)-Dissolved			<0.0010		mg/L		0.001	24-OCT-19
Antimony (Sb)-Dissolved			<0.00010		mg/L		0.0001	24-OCT-19
Arsenic (As)-Dissolved			<0.00010		mg/L		0.0001	24-OCT-19
Barium (Ba)-Dissolved			<0.00010		mg/L		0.0001	24-OCT-19
Beryllium (Be)-Dissolved			<0.00010		mg/L		0.0001	24-OCT-19
Cadmium (Cd)-Dissolved			<0.000005C		mg/L		0.000005	24-OCT-19



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Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
MET-D-CCMS-WP		Water						
Batch	R4887526							
WG3200346-1	MB							
Calcium (Ca)-Dissolved			<0.050		mg/L		0.05	24-OCT-19
Cesium (Cs)-Dissolved			<0.000010		mg/L		0.00001	24-OCT-19
Chromium (Cr)-Dissolved			<0.00010		mg/L		0.0001	24-OCT-19
Cobalt (Co)-Dissolved			<0.00010		mg/L		0.0001	24-OCT-19
Copper (Cu)-Dissolved			<0.00020		mg/L		0.0002	24-OCT-19
Iron (Fe)-Dissolved			<0.010		mg/L		0.01	24-OCT-19
Lithium (Li)-Dissolved			<0.0010		mg/L		0.001	24-OCT-19
Magnesium (Mg)-Dissolved			<0.0050		mg/L		0.005	24-OCT-19
Manganese (Mn)-Dissolved			<0.00010		mg/L		0.0001	24-OCT-19
Molybdenum (Mo)-Dissolved			<0.000050		mg/L		0.00005	24-OCT-19
Nickel (Ni)-Dissolved			<0.00050		mg/L		0.0005	24-OCT-19
Phosphorus (P)-Dissolved			<0.030		mg/L		0.03	24-OCT-19
Potassium (K)-Dissolved			<0.050		mg/L		0.05	24-OCT-19
Rubidium (Rb)-Dissolved			<0.00020		mg/L		0.0002	24-OCT-19
Selenium (Se)-Dissolved			<0.000050		mg/L		0.00005	24-OCT-19
Silicon (Si)-Dissolved			<0.050		mg/L		0.05	24-OCT-19
Silver (Ag)-Dissolved			<0.000010		mg/L		0.00001	24-OCT-19
Sulfur (S)-Dissolved			<0.50		mg/L		0.5	24-OCT-19
Tellurium (Te)-Dissolved			<0.00020		mg/L		0.0002	24-OCT-19
Tin (Sn)-Dissolved			<0.00010		mg/L		0.0001	24-OCT-19
Titanium (Ti)-Dissolved			<0.00030		mg/L		0.0003	24-OCT-19
Vanadium (V)-Dissolved			<0.00050		mg/L		0.0005	24-OCT-19
Zinc (Zn)-Dissolved			<0.0010		mg/L		0.001	24-OCT-19
Zirconium (Zr)-Dissolved			<0.00020		mg/L		0.0002	24-OCT-19
Batch	R4888724							
WG3200346-2	LCS							
Bismuth (Bi)-Dissolved			107.5		%		80-120	28-OCT-19
Lead (Pb)-Dissolved			107.9		%		80-120	28-OCT-19
Thallium (Tl)-Dissolved			105.0		%		80-120	28-OCT-19
Thorium (Th)-Dissolved			108.9		%		80-120	28-OCT-19
Tungsten (W)-Dissolved			106.6		%		80-120	28-OCT-19
Uranium (U)-Dissolved			118.2		%		80-120	28-OCT-19
NH3-COL-WP	Water							

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Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
NH3-COL-WP		Water						
Batch	R4873241							
WG3193729-26	LCS							
Ammonia, Total (as N)			98.6		%		85-115	15-OCT-19
WG3193729-25	MB							
Ammonia, Total (as N)			<0.010		mg/L		0.01	16-OCT-19
PAH,PANH-WP		Water						
Batch	R4874070							
WG3187869-2	LCS							
1-Methyl Naphthalene			122.4		%		60-130	17-OCT-19
2-Methyl Naphthalene			112.4		%		60-130	17-OCT-19
Acenaphthene			122.9		%		60-130	17-OCT-19
Acenaphthylene			106.5		%		60-130	17-OCT-19
Anthracene			85.2		%		60-130	17-OCT-19
Acridine			97.2		%		60-130	17-OCT-19
Benzo(a)anthracene			90.0		%		60-130	17-OCT-19
Benzo(a)pyrene			109.6		%		60-130	17-OCT-19
Benzo(b&j)fluoranthene			106.4		%		60-130	17-OCT-19
Benzo(g,h,i)perylene			115.1		%		60-130	17-OCT-19
Benzo(k)fluoranthene			108.1		%		60-130	17-OCT-19
Chrysene			110.7		%		60-130	17-OCT-19
Dibenzo(a,h)anthracene			121.6		%		60-130	17-OCT-19
Fluoranthene			122.9		%		60-130	17-OCT-19
Fluorene			83.7		%		60-130	17-OCT-19
Indeno(1,2,3-cd)pyrene			102.8		%		60-130	17-OCT-19
Naphthalene			124.2		%		50-130	17-OCT-19
Phenanthrene			116.7		%		60-130	17-OCT-19
Pyrene			123.3		%		60-130	17-OCT-19
Quinoline			104.5		%		60-130	17-OCT-19
WG3187869-1	MB							
1-Methyl Naphthalene			<0.000020		mg/L		0.00002	17-OCT-19
2-Methyl Naphthalene			<0.000020		mg/L		0.00002	17-OCT-19
Acenaphthene			<0.000020		mg/L		0.00002	17-OCT-19
Acenaphthylene			<0.000020		mg/L		0.00002	17-OCT-19
Anthracene			<0.000010		mg/L		0.00001	17-OCT-19
Acridine			<0.000020		mg/L		0.00002	17-OCT-19
Benzo(a)anthracene			<0.000010		mg/L		0.00001	17-OCT-19
Benzo(a)pyrene			<0.0000050		mg/L		0.000005	17-OCT-19

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Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
PAH,PANH-WP		Water						
Batch	R4874070							
WG3187869-1	MB							
Benzo(b&j)fluoranthene			<0.000010		mg/L		0.00001	17-OCT-19
Benzo(g,h,i)perylene			<0.000020		mg/L		0.00002	17-OCT-19
Benzo(k)fluoranthene			<0.000010		mg/L		0.00001	17-OCT-19
Chrysene			<0.000020		mg/L		0.00002	17-OCT-19
Dibenzo(a,h)anthracene			<0.0000050		mg/L		0.000005	17-OCT-19
Fluoranthene			<0.000020		mg/L		0.00002	17-OCT-19
Fluorene			<0.000020		mg/L		0.00002	17-OCT-19
Indeno(1,2,3-cd)pyrene			<0.000010		mg/L		0.00001	17-OCT-19
Naphthalene			<0.000050		mg/L		0.00005	17-OCT-19
Phenanthrene			<0.000050		mg/L		0.00005	17-OCT-19
Pyrene			<0.000010		mg/L		0.00001	17-OCT-19
Quinoline			<0.000020		mg/L		0.00002	17-OCT-19
Surrogate: Acenaphthene d10			94.4		%		60-130	17-OCT-19
Surrogate: Acridine d9			88.2		%		60-130	17-OCT-19
Surrogate: Chrysene d12			105.3		%		60-130	17-OCT-19
Surrogate: Naphthalene d8			94.9		%		50-130	17-OCT-19
Surrogate: Phenanthrene d10			99.5		%		60-130	17-OCT-19
Batch	R4878390							
WG3197086-2	LCS							
1-Methyl Naphthalene			102.4		%		60-130	21-OCT-19
2-Methyl Naphthalene			98.4		%		60-130	21-OCT-19
Acenaphthene			118.7		%		60-130	21-OCT-19
Acenaphthylene			108.9		%		60-130	21-OCT-19
Anthracene			91.7		%		60-130	21-OCT-19
Acridine			99.99		%		60-130	21-OCT-19
Benzo(a)anthracene			109.2		%		60-130	21-OCT-19
Benzo(a)pyrene			108.8		%		60-130	21-OCT-19
Benzo(b&j)fluoranthene			108.9		%		60-130	21-OCT-19
Benzo(g,h,i)perylene			115.4		%		60-130	21-OCT-19
Benzo(k)fluoranthene			97.8		%		60-130	21-OCT-19
Chrysene			101.0		%		60-130	21-OCT-19
Dibenzo(a,h)anthracene			97.5		%		60-130	21-OCT-19
Fluoranthene			117.2		%		60-130	21-OCT-19
Fluorene			106.8		%		60-130	21-OCT-19

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PAH,PANH-WP		Water						
Batch	R4878390							
WG3197086-2	LCS							
Indeno(1,2,3-cd)pyrene			100.3		%		60-130	21-OCT-19
Naphthalene			100.7		%		50-130	21-OCT-19
Phenanthrene			110.4		%		60-130	21-OCT-19
Pyrene			118.7		%		60-130	21-OCT-19
Quinoline			109.1		%		60-130	21-OCT-19
WG3197086-1	MB							
1-Methyl Naphthalene			<0.000020		mg/L		0.00002	21-OCT-19
2-Methyl Naphthalene			<0.000020		mg/L		0.00002	21-OCT-19
Acenaphthene			<0.000020		mg/L		0.00002	21-OCT-19
Acenaphthylene			<0.000020		mg/L		0.00002	21-OCT-19
Anthracene			<0.000010		mg/L		0.00001	21-OCT-19
Acridine			<0.000020		mg/L		0.00002	21-OCT-19
Benzo(a)anthracene			<0.000010		mg/L		0.00001	21-OCT-19
Benzo(a)pyrene			<0.0000050		mg/L		0.000005	21-OCT-19
Benzo(b&j)fluoranthene			<0.000010		mg/L		0.00001	21-OCT-19
Benzo(g,h,i)perylene			<0.000020		mg/L		0.00002	21-OCT-19
Benzo(k)fluoranthene			<0.000010		mg/L		0.00001	21-OCT-19
Chrysene			<0.000020		mg/L		0.00002	21-OCT-19
Dibenzo(a,h)anthracene			<0.0000050		mg/L		0.000005	21-OCT-19
Fluoranthene			<0.000020		mg/L		0.00002	21-OCT-19
Fluorene			<0.000020		mg/L		0.00002	21-OCT-19
Indeno(1,2,3-cd)pyrene			<0.000010		mg/L		0.00001	21-OCT-19
Naphthalene			<0.000050		mg/L		0.00005	21-OCT-19
Phenanthrene			<0.000050		mg/L		0.00005	21-OCT-19
Pyrene			<0.000010		mg/L		0.00001	21-OCT-19
Quinoline			<0.000020		mg/L		0.00002	21-OCT-19
Surrogate: Acenaphthene d10			99.4		%		60-130	21-OCT-19
Surrogate: Acridine d9			97.1		%		60-130	21-OCT-19
Surrogate: Chrysene d12			123.9		%		60-130	21-OCT-19
Surrogate: Naphthalene d8			102.9		%		50-130	21-OCT-19
Surrogate: Phenanthrene d10			101.8		%		60-130	21-OCT-19

PEST-DIAZINON-WT **Water**



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Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
PEST-DIAZINON-WT								
Water								
Batch	R4876371							
WG3195154-2	LCS							
Diazinon			91.3		%		60-130	21-OCT-19
WG3195154-1	MB							
Diazinon			<0.10		ug/L		0.1	21-OCT-19
Surrogate: 2-Fluorobiphenyl			79.1		%		40-130	21-OCT-19
Surrogate: d14-Terphenyl			81.1		%		40-130	21-OCT-19
PHENOLS-4AAP-WT								
Water								
Batch	R4871063							
WG3190915-2	LCS							
Phenols (4AAP)			108.7		%		85-115	15-OCT-19
WG3190915-1	MB							
Phenols (4AAP)			<0.0010		mg/L		0.001	15-OCT-19
SO4-IC-N-WP								
Water								
Batch	R4866519							
WG3186552-10	LCS							
Sulfate (SO4)			100.7		%		90-110	09-OCT-19
WG3186552-9	MB							
Sulfate (SO4)			<0.30		mg/L		0.3	09-OCT-19
TC,EC-QT97-WP								
Water								
Batch	R4863452							
WG3185736-2	DUP	L2361823-1						
Total Coliforms		<1	<1	RPD-NA	MPN/100mL	N/A	65	08-OCT-19
Escherichia Coli		<1	<1	RPD-NA	MPN/100mL	N/A	65	08-OCT-19
WG3185736-1	MB							
Total Coliforms			<1		MPN/100mL		1	08-OCT-19
Escherichia Coli			<1		MPN/100mL		1	08-OCT-19
VOC+F1-HSMS-WP								
Water								
Batch	R4879694							
WG3193957-8	DUP	L2361823-1						
Acetone		<0.050	<0.050	RPD-NA	mg/L	N/A	30	17-OCT-19
Benzene		<0.00050	<0.00050	RPD-NA	mg/L	N/A	30	17-OCT-19
Bromobenzene		<0.0010	<0.0010	RPD-NA	mg/L	N/A	30	17-OCT-19
Bromochloromethane		<0.0010	<0.0010	RPD-NA	mg/L	N/A	30	17-OCT-19
Bromodichloromethane		<0.00050	<0.00050	RPD-NA	mg/L	N/A	30	17-OCT-19
Bromoform		<0.0010	<0.0010	RPD-NA	mg/L	N/A	30	17-OCT-19
Bromomethane		<0.0010	<0.0010	RPD-NA	mg/L	N/A	50	17-OCT-19

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VOC+F1-HSMS-WP								
	Water							
Batch	R4879694							
WG3193957-8	DUP	L2361823-1						
n-Butylbenzene		<0.0010	<0.0010	RPD-NA	mg/L	N/A	30	17-OCT-19
sec-Butylbenzene		<0.0010	<0.0010	RPD-NA	mg/L	N/A	30	17-OCT-19
tert-Butylbenzene		<0.0010	<0.0010	RPD-NA	mg/L	N/A	30	17-OCT-19
Carbon disulfide		<0.0050	<0.0050	RPD-NA	mg/L	N/A	30	17-OCT-19
Carbon Tetrachloride		<0.00050	<0.00050	RPD-NA	mg/L	N/A	30	17-OCT-19
Chlorobenzene		<0.0010	<0.0010	RPD-NA	mg/L	N/A	30	17-OCT-19
Chloroethane		<0.0010	<0.0010	RPD-NA	mg/L	N/A	50	17-OCT-19
Chloroform		<0.00050	<0.00050	RPD-NA	mg/L	N/A	30	17-OCT-19
Chloromethane		<0.0050	<0.0050	RPD-NA	mg/L	N/A	50	17-OCT-19
2-Chlorotoluene		<0.020	<0.020	RPD-NA	mg/L	N/A	30	17-OCT-19
4-Chlorotoluene		<0.0010	<0.0010	RPD-NA	mg/L	N/A	30	17-OCT-19
Dibromochloromethane		<0.00050	<0.00050	RPD-NA	mg/L	N/A	30	17-OCT-19
1,2-Dibromo-3-chloropropane		<0.0010	<0.0020	RPD-NA	mg/L	N/A	30	17-OCT-19
1,2-Dibromoethane		<0.0010	<0.0010	RPD-NA	mg/L	N/A	30	17-OCT-19
Dibromomethane		<0.0010	<0.0010	RPD-NA	mg/L	N/A	30	17-OCT-19
1,2-Dichlorobenzene		<0.00050	<0.00050	RPD-NA	mg/L	N/A	30	17-OCT-19
1,3-Dichlorobenzene		<0.0010	<0.0010	RPD-NA	mg/L	N/A	30	17-OCT-19
1,4-Dichlorobenzene		<0.0010	<0.0010	RPD-NA	mg/L	N/A	30	17-OCT-19
Dichlorodifluoromethane		<0.0010	<0.0010	RPD-NA	mg/L	N/A	50	17-OCT-19
1,1-dichloroethane		<0.00050	<0.00050	RPD-NA	mg/L	N/A	30	17-OCT-19
1,2-Dichloroethane		<0.00050	<0.00050	RPD-NA	mg/L	N/A	30	17-OCT-19
1,1-dichloroethene		<0.00050	<0.00050	RPD-NA	mg/L	N/A	30	17-OCT-19
cis-1,2-Dichloroethene		<0.0010	<0.0010	RPD-NA	mg/L	N/A	30	17-OCT-19
trans-1,2-Dichloroethene		<0.0010	<0.0010	RPD-NA	mg/L	N/A	30	17-OCT-19
Dichloromethane		<0.0050	<0.0050	RPD-NA	mg/L	N/A	30	17-OCT-19
1,2-Dichloropropane		<0.0010	<0.0010	RPD-NA	mg/L	N/A	30	17-OCT-19
1,3-Dichloropropane		<0.0010	<0.0010	RPD-NA	mg/L	N/A	30	17-OCT-19
2,2-Dichloropropane		<0.0010	<0.0020	RPD-NA	mg/L	N/A	30	17-OCT-19
1,1-Dichloropropene		<0.0010	<0.0010	RPD-NA	mg/L	N/A	30	17-OCT-19
cis-1,3-Dichloropropene		<0.0010	<0.0020	RPD-NA	mg/L	N/A	30	17-OCT-19
trans-1,3-Dichloropropene		<0.0010	<0.0020	RPD-NA	mg/L	N/A	30	17-OCT-19
Ethylbenzene		<0.00050	<0.00050	RPD-NA	mg/L	N/A	30	17-OCT-19
F1		<0.10	<0.10	RPD-NA	mg/L	N/A	30	17-OCT-19
Hexachlorobutadiene		<0.0010	<0.0010	RPD-NA	mg/L	N/A	30	17-OCT-19

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Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
VOC+F1-HSMS-WP								
	Water							
Batch	R4879694							
WG3193957-8	DUP	L2361823-1						
Hexane		<0.0010	<0.0010	RPD-NA	mg/L	N/A	30	17-OCT-19
2-Hexanone (Methyl butyl ketone)		<0.020	<0.040	RPD-NA	mg/L	N/A	30	17-OCT-19
Isopropylbenzene		<0.0010	<0.0010	RPD-NA	mg/L	N/A	30	17-OCT-19
4-Isopropyltoluene		<0.0010	<0.0010	RPD-NA	mg/L	N/A	30	17-OCT-19
MEK		<0.020	<0.020	RPD-NA	mg/L	N/A	30	17-OCT-19
MIBK		<0.020	<0.040	RPD-NA	mg/L	N/A	30	17-OCT-19
MTBE		<0.00050	<0.00050	RPD-NA	mg/L	N/A	30	17-OCT-19
Styrene		<0.0010	<0.0010	RPD-NA	mg/L	N/A	30	17-OCT-19
1,1,1,2-Tetrachloroethane		<0.00050	<0.00050	RPD-NA	mg/L	N/A	30	17-OCT-19
1,1,2,2-Tetrachloroethane		<0.00050	<0.00050	RPD-NA	mg/L	N/A	30	17-OCT-19
Tetrachloroethene		<0.00050	<0.00050	RPD-NA	mg/L	N/A	30	17-OCT-19
Toluene		<0.00050	<0.00050	RPD-NA	mg/L	N/A	30	17-OCT-19
1,2,3-Trichlorobenzene		<0.0010	<0.0010	RPD-NA	mg/L	N/A	30	17-OCT-19
1,2,4-Trichlorobenzene		<0.0010	<0.0010	RPD-NA	mg/L	N/A	30	17-OCT-19
1,1,1-Trichloroethane		<0.00050	<0.00050	RPD-NA	mg/L	N/A	30	17-OCT-19
1,1,2-Trichloroethane		<0.00050	<0.00050	RPD-NA	mg/L	N/A	30	17-OCT-19
Trichloroethene		<0.00050	<0.00050	RPD-NA	mg/L	N/A	30	17-OCT-19
Trichlorofluoromethane		<0.0010	<0.0010	RPD-NA	mg/L	N/A	50	17-OCT-19
1,2,3-Trichloropropane		<0.0010	<0.0010	RPD-NA	mg/L	N/A	30	17-OCT-19
1,2,4-Trimethylbenzene		<0.0010	<0.0010	RPD-NA	mg/L	N/A	30	17-OCT-19
1,3,5-Trimethylbenzene		<0.0010	<0.0010	RPD-NA	mg/L	N/A	30	17-OCT-19
Vinyl Chloride		<0.00050	<0.00050	RPD-NA	mg/L	N/A	50	17-OCT-19
M+P-Xylenes		<0.00040	<0.00040	RPD-NA	mg/L	N/A	30	17-OCT-19
o-Xylene		<0.00050	<0.00050	RPD-NA	mg/L	N/A	30	17-OCT-19
WG3193957-2	LCS							
Acetone			92.3		%		70-130	17-OCT-19
Benzene			97.0		%		70-130	17-OCT-19
Bromobenzene			99.0		%		70-130	17-OCT-19
Bromochloromethane			95.0		%		70-130	17-OCT-19
Bromodichloromethane			96.5		%		70-130	17-OCT-19
Bromoform			91.2		%		70-130	17-OCT-19
Bromomethane			89.0		%		60-140	17-OCT-19
n-Butylbenzene			94.7		%		70-130	17-OCT-19
sec-Butylbenzene			107.5		%		70-130	17-OCT-19

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Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
VOC+F1-HSMS-WP	Water							
Batch	R4879694							
WG3193957-2	LCS							
tert-Butylbenzene			107.2		%		70-130	17-OCT-19
Carbon disulfide			87.6		%		70-130	17-OCT-19
Carbon Tetrachloride			94.7		%		70-130	17-OCT-19
Chlorobenzene			101.5		%		70-130	17-OCT-19
Chloroethane			88.5		%		60-140	17-OCT-19
Chloroform			97.6		%		70-130	17-OCT-19
Chloromethane			106.5		%		60-140	17-OCT-19
2-Chlorotoluene			110.6		%		70-130	17-OCT-19
4-Chlorotoluene			107.3		%		70-130	17-OCT-19
Dibromochloromethane			94.4		%		70-130	17-OCT-19
1,2-Dibromo-3-chloropropane			98.1		%		70-130	17-OCT-19
1,2-Dibromoethane			98.4		%		70-130	17-OCT-19
Dibromomethane			98.0		%		70-130	17-OCT-19
1,2-Dichlorobenzene			103.7		%		70-130	17-OCT-19
1,3-Dichlorobenzene			99.7		%		70-130	17-OCT-19
1,4-Dichlorobenzene			100.9		%		70-130	17-OCT-19
Dichlorodifluoromethane			99.2		%		60-140	17-OCT-19
1,1-dichloroethane			97.7		%		70-130	17-OCT-19
1,2-Dichloroethane			97.9		%		70-130	17-OCT-19
1,1-dichloroethene			94.3		%		70-130	17-OCT-19
cis-1,2-Dichloroethene			97.2		%		70-130	17-OCT-19
trans-1,2-Dichloroethene			98.2		%		70-130	17-OCT-19
Dichloromethane			95.4		%		70-130	17-OCT-19
1,2-Dichloropropane			95.8		%		70-130	17-OCT-19
1,3-Dichloropropane			98.1		%		70-130	17-OCT-19
2,2-Dichloropropane			99.97		%		70-130	17-OCT-19
1,1-Dichloropropene			99.98		%		70-130	17-OCT-19
cis-1,3-Dichloropropene			96.7		%		70-130	17-OCT-19
trans-1,3-Dichloropropene			97.5		%		70-130	17-OCT-19
Ethylbenzene			109.7		%		70-130	17-OCT-19
Hexachlorobutadiene			97.1		%		70-130	17-OCT-19
Hexane			88.7		%		70-130	17-OCT-19
2-Hexanone (Methyl butyl ketone)			97.9		%		70-130	17-OCT-19
Isopropylbenzene			98.3		%		70-130	17-OCT-19

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Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
VOC+F1-HSMS-WP		Water						
Batch	R4879694							
WG3193957-2	LCS							
4-Isopropyltoluene			107.7		%		70-130	17-OCT-19
MEK			94.7		%		70-130	17-OCT-19
MIBK			97.7		%		70-130	17-OCT-19
MTBE			105.4		%		70-130	17-OCT-19
Styrene			95.3		%		70-130	17-OCT-19
1,1,1,2-Tetrachloroethane			97.3		%		70-130	17-OCT-19
1,1,2,2-Tetrachloroethane			96.4		%		70-130	17-OCT-19
Tetrachloroethene			97.5		%		70-130	17-OCT-19
Toluene			104.9		%		70-130	17-OCT-19
1,2,3-Trichlorobenzene			97.9		%		70-130	17-OCT-19
1,2,4-Trichlorobenzene			97.3		%		70-130	17-OCT-19
1,1,1-Trichloroethane			97.0		%		70-130	17-OCT-19
1,1,2-Trichloroethane			98.9		%		70-130	17-OCT-19
Trichloroethene			98.6		%		70-130	17-OCT-19
Trichlorofluoromethane			95.0		%		60-140	17-OCT-19
1,2,3-Trichloropropane			96.1		%		70-130	17-OCT-19
1,2,4-Trimethylbenzene			108.0		%		70-130	17-OCT-19
1,3,5-Trimethylbenzene			98.2		%		70-130	17-OCT-19
Vinyl Chloride			104.3		%		60-140	17-OCT-19
M+P-Xylenes			100.9		%		70-130	17-OCT-19
o-Xylene			98.2		%		70-130	17-OCT-19
WG3193957-3	LCS							
F1			111.0		%		70-130	17-OCT-19
WG3193957-6	LCS							
Acetone			98.8		%		70-130	17-OCT-19
Benzene			100.8		%		70-130	17-OCT-19
Bromobenzene			103.1		%		70-130	17-OCT-19
Bromochloromethane			98.7		%		70-130	17-OCT-19
Bromodichloromethane			101.1		%		70-130	17-OCT-19
Bromoform			96.7		%		70-130	17-OCT-19
Bromomethane			95.9		%		60-140	17-OCT-19
n-Butylbenzene			94.0		%		70-130	17-OCT-19
sec-Butylbenzene			111.3		%		70-130	17-OCT-19
tert-Butylbenzene			110.2		%		70-130	17-OCT-19
Carbon disulfide			90.8		%		70-130	17-OCT-19

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Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
VOC+F1-HSMS-WP								
	Water							
Batch	R4879694							
WG3193957-6	LCS							
Carbon Tetrachloride			98.8		%		70-130	17-OCT-19
Chlorobenzene			103.2		%		70-130	17-OCT-19
Chloroethane			91.0		%		60-140	17-OCT-19
Chloroform			102.3		%		70-130	17-OCT-19
Chloromethane			108.7		%		60-140	17-OCT-19
2-Chlorotoluene			114.5		%		70-130	17-OCT-19
4-Chlorotoluene			112.4		%		70-130	17-OCT-19
Dibromochloromethane			96.8		%		70-130	17-OCT-19
1,2-Dibromo-3-chloropropane			99.99		%		70-130	17-OCT-19
1,2-Dibromoethane			98.5		%		70-130	17-OCT-19
Dibromomethane			102.3		%		70-130	17-OCT-19
1,2-Dichlorobenzene			105.3		%		70-130	17-OCT-19
1,3-Dichlorobenzene			99.9		%		70-130	17-OCT-19
1,4-Dichlorobenzene			101.2		%		70-130	17-OCT-19
Dichlorodifluoromethane			101.3		%		60-140	17-OCT-19
1,1-dichloroethane			101.3		%		70-130	17-OCT-19
1,2-Dichloroethane			102.1		%		70-130	17-OCT-19
1,1-dichloroethene			98.2		%		70-130	17-OCT-19
cis-1,2-Dichloroethene			100.9		%		70-130	17-OCT-19
trans-1,2-Dichloroethene			101.3		%		70-130	17-OCT-19
Dichloromethane			99.6		%		70-130	17-OCT-19
1,2-Dichloropropane			98.8		%		70-130	17-OCT-19
1,3-Dichloropropane			99.6		%		70-130	17-OCT-19
2,2-Dichloropropane			105.9		%		70-130	17-OCT-19
1,1-Dichloropropene			103.1		%		70-130	17-OCT-19
cis-1,3-Dichloropropene			102.6		%		70-130	17-OCT-19
trans-1,3-Dichloropropene			104.9		%		70-130	17-OCT-19
Ethylbenzene			109.8		%		70-130	17-OCT-19
Hexachlorobutadiene			95.4		%		70-130	17-OCT-19
Hexane			91.7		%		70-130	17-OCT-19
2-Hexanone (Methyl butyl ketone)			101.6		%		70-130	17-OCT-19
Isopropylbenzene			101.6		%		70-130	17-OCT-19
4-Isopropyltoluene			110.3		%		70-130	17-OCT-19
MEK			97.9		%		70-130	17-OCT-19



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Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
VOC+F1-HSMS-WP								
	Water							
Batch	R4879694							
WG3193957-6	LCS							
MIBK			103.2		%		70-130	17-OCT-19
MTBE			106.7		%		70-130	17-OCT-19
Styrene			99.4		%		70-130	17-OCT-19
1,1,1,2-Tetrachloroethane			100.6		%		70-130	17-OCT-19
1,1,2,2-Tetrachloroethane			104.3		%		70-130	17-OCT-19
Tetrachloroethene			98.5		%		70-130	17-OCT-19
Toluene			104.6		%		70-130	17-OCT-19
1,2,3-Trichlorobenzene			97.9		%		70-130	17-OCT-19
1,2,4-Trichlorobenzene			98.0		%		70-130	17-OCT-19
1,1,1-Trichloroethane			100.4		%		70-130	17-OCT-19
1,1,2-Trichloroethane			100.6		%		70-130	17-OCT-19
Trichloroethene			102.2		%		70-130	17-OCT-19
Trichlorofluoromethane			98.9		%		60-140	17-OCT-19
1,2,3-Trichloropropane			102.7		%		70-130	17-OCT-19
1,2,4-Trimethylbenzene			111.3		%		70-130	17-OCT-19
1,3,5-Trimethylbenzene			102.2		%		70-130	17-OCT-19
Vinyl Chloride			105.9		%		60-140	17-OCT-19
M+P-Xylenes			102.3		%		70-130	17-OCT-19
o-Xylene			100.6		%		70-130	17-OCT-19
WG3193957-7	LCS							
F1			121.8		%		70-130	17-OCT-19
WG3193957-1	MB							
Acetone			<0.050		mg/L		0.05	17-OCT-19
Benzene			<0.00050		mg/L		0.0005	17-OCT-19
Bromobenzene			<0.0010		mg/L		0.001	17-OCT-19
Bromochloromethane			<0.0010		mg/L		0.001	17-OCT-19
Bromodichloromethane			<0.00050		mg/L		0.0005	17-OCT-19
Bromoform			<0.0010		mg/L		0.001	17-OCT-19
Bromomethane			<0.0010		mg/L		0.001	17-OCT-19
n-Butylbenzene			<0.0010		mg/L		0.001	17-OCT-19
sec-Butylbenzene			<0.0010		mg/L		0.001	17-OCT-19
tert-Butylbenzene			<0.0010		mg/L		0.001	17-OCT-19
Carbon disulfide			<0.0050		mg/L		0.005	17-OCT-19
Carbon Tetrachloride			<0.00050		mg/L		0.0005	17-OCT-19
Chlorobenzene			<0.0010		mg/L		0.001	17-OCT-19

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VOC+F1-HSMS-WP								
	Water							
Batch	R4879694							
WG3193957-1	MB							
Chloroethane			<0.0010		mg/L		0.001	17-OCT-19
Chloroform			<0.00050		mg/L		0.0005	17-OCT-19
Chloromethane			<0.0050		mg/L		0.005	17-OCT-19
2-Chlorotoluene			<0.020		mg/L		0.02	17-OCT-19
4-Chlorotoluene			<0.0010		mg/L		0.001	17-OCT-19
Dibromochloromethane			<0.00050		mg/L		0.0005	17-OCT-19
1,2-Dibromo-3-chloropropane			<0.0010		mg/L		0.001	17-OCT-19
1,2-Dibromoethane			<0.0010		mg/L		0.001	17-OCT-19
Dibromomethane			<0.0010		mg/L		0.001	17-OCT-19
1,2-Dichlorobenzene			<0.00050		mg/L		0.0005	17-OCT-19
1,3-Dichlorobenzene			<0.0010		mg/L		0.001	17-OCT-19
1,4-Dichlorobenzene			<0.0010		mg/L		0.001	17-OCT-19
Dichlorodifluoromethane			<0.0010		mg/L		0.001	17-OCT-19
1,1-dichloroethane			<0.00050		mg/L		0.0005	17-OCT-19
1,2-Dichloroethane			<0.00050		mg/L		0.0005	17-OCT-19
1,1-dichloroethene			<0.00050		mg/L		0.0005	17-OCT-19
cis-1,2-Dichloroethene			<0.0010		mg/L		0.001	17-OCT-19
trans-1,2-Dichloroethene			<0.0010		mg/L		0.001	17-OCT-19
Dichloromethane			<0.0050		mg/L		0.005	17-OCT-19
1,2-Dichloropropane			<0.0010		mg/L		0.001	17-OCT-19
1,3-Dichloropropane			<0.0010		mg/L		0.001	17-OCT-19
2,2-Dichloropropane			<0.0010		mg/L		0.001	17-OCT-19
1,1-Dichloropropene			<0.0010		mg/L		0.001	17-OCT-19
cis-1,3-Dichloropropene			<0.0010		mg/L		0.001	17-OCT-19
trans-1,3-Dichloropropene			<0.0010		mg/L		0.001	17-OCT-19
Ethylbenzene			<0.00050		mg/L		0.0005	17-OCT-19
F1			<0.10		mg/L		0.1	17-OCT-19
Hexachlorobutadiene			<0.0010		mg/L		0.001	17-OCT-19
Hexane			<0.0010		mg/L		0.001	17-OCT-19
2-Hexanone (Methyl butyl ketone)			<0.020		mg/L		0.02	17-OCT-19
Isopropylbenzene			<0.0010		mg/L		0.001	17-OCT-19
4-Isopropyltoluene			<0.0010		mg/L		0.001	17-OCT-19
MEK			<0.020		mg/L		0.02	17-OCT-19
MIBK			<0.020		mg/L		0.02	17-OCT-19



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VOC+F1-HSMS-WP								
	Water							
Batch	R4879694							
WG3193957-1	MB							
MTBE			<0.00050		mg/L		0.0005	17-OCT-19
Styrene			<0.0010		mg/L		0.001	17-OCT-19
1,1,1,2-Tetrachloroethane			<0.00050		mg/L		0.0005	17-OCT-19
1,1,2,2-Tetrachloroethane			<0.00050		mg/L		0.0005	17-OCT-19
Tetrachloroethene			<0.00050		mg/L		0.0005	17-OCT-19
Toluene			<0.00050		mg/L		0.0005	17-OCT-19
1,2,3-Trichlorobenzene			<0.0010		mg/L		0.001	17-OCT-19
1,2,4-Trichlorobenzene			<0.0010		mg/L		0.001	17-OCT-19
1,1,1-Trichloroethane			<0.00050		mg/L		0.0005	17-OCT-19
1,1,2-Trichloroethane			<0.00050		mg/L		0.0005	17-OCT-19
Trichloroethene			<0.00050		mg/L		0.0005	17-OCT-19
Trichlorofluoromethane			<0.0010		mg/L		0.001	17-OCT-19
1,2,3-Trichloropropane			<0.0010		mg/L		0.001	17-OCT-19
1,2,4-Trimethylbenzene			<0.0010		mg/L		0.001	17-OCT-19
1,3,5-Trimethylbenzene			<0.0010		mg/L		0.001	17-OCT-19
Vinyl Chloride			<0.00050		mg/L		0.0005	17-OCT-19
M+P-Xylenes			<0.00040		mg/L		0.0004	17-OCT-19
o-Xylene			<0.00050		mg/L		0.0005	17-OCT-19
Surrogate: 4-Bromofluorobenzene (SS)			95.4		%		70-130	17-OCT-19
Surrogate: 1,4-Difluorobenzene (SS)			98.8		%		70-130	17-OCT-19
WG3193957-5	MB							
Acetone			<0.050		mg/L		0.05	17-OCT-19
Benzene			<0.00050		mg/L		0.0005	17-OCT-19
Bromobenzene			<0.0010		mg/L		0.001	17-OCT-19
Bromochloromethane			<0.0010		mg/L		0.001	17-OCT-19
Bromodichloromethane			<0.00050		mg/L		0.0005	17-OCT-19
Bromoform			<0.0010		mg/L		0.001	17-OCT-19
Bromomethane			<0.0010		mg/L		0.001	17-OCT-19
n-Butylbenzene			<0.0010		mg/L		0.001	17-OCT-19
sec-Butylbenzene			<0.0010		mg/L		0.001	17-OCT-19
tert-Butylbenzene			<0.0010		mg/L		0.001	17-OCT-19
Carbon disulfide			<0.0050		mg/L		0.005	17-OCT-19
Carbon Tetrachloride			<0.00050		mg/L		0.0005	17-OCT-19
Chlorobenzene			<0.0010		mg/L		0.001	17-OCT-19

Quality Control Report

Workorder: L2361823

Report Date: 29-OCT-19

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Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
VOC+F1-HSMS-WP								
	Water							
Batch	R4879694							
WG3193957-5	MB							
Chloroethane			<0.0010		mg/L		0.001	17-OCT-19
Chloroform			<0.00050		mg/L		0.0005	17-OCT-19
Chloromethane			<0.0050		mg/L		0.005	17-OCT-19
2-Chlorotoluene			<0.020		mg/L		0.02	17-OCT-19
4-Chlorotoluene			<0.0010		mg/L		0.001	17-OCT-19
Dibromochloromethane			<0.00050		mg/L		0.0005	17-OCT-19
1,2-Dibromo-3-chloropropane			<0.0010		mg/L		0.001	17-OCT-19
1,2-Dibromoethane			<0.0010		mg/L		0.001	17-OCT-19
Dibromomethane			<0.0010		mg/L		0.001	17-OCT-19
1,2-Dichlorobenzene			<0.00050		mg/L		0.0005	17-OCT-19
1,3-Dichlorobenzene			<0.0010		mg/L		0.001	17-OCT-19
1,4-Dichlorobenzene			<0.0010		mg/L		0.001	17-OCT-19
Dichlorodifluoromethane			<0.0010		mg/L		0.001	17-OCT-19
1,1-dichloroethane			<0.00050		mg/L		0.0005	17-OCT-19
1,2-Dichloroethane			<0.00050		mg/L		0.0005	17-OCT-19
1,1-dichloroethene			<0.00050		mg/L		0.0005	17-OCT-19
cis-1,2-Dichloroethene			<0.0010		mg/L		0.001	17-OCT-19
trans-1,2-Dichloroethene			<0.0010		mg/L		0.001	17-OCT-19
Dichloromethane			<0.0050		mg/L		0.005	17-OCT-19
1,2-Dichloropropane			<0.0010		mg/L		0.001	17-OCT-19
1,3-Dichloropropane			<0.0010		mg/L		0.001	17-OCT-19
2,2-Dichloropropane			<0.0010		mg/L		0.001	17-OCT-19
1,1-Dichloropropene			<0.0010		mg/L		0.001	17-OCT-19
cis-1,3-Dichloropropene			<0.0010		mg/L		0.001	17-OCT-19
trans-1,3-Dichloropropene			<0.0010		mg/L		0.001	17-OCT-19
Ethylbenzene			<0.00050		mg/L		0.0005	17-OCT-19
F1			<0.10		mg/L		0.1	17-OCT-19
Hexachlorobutadiene			<0.0010		mg/L		0.001	17-OCT-19
Hexane			<0.0010		mg/L		0.001	17-OCT-19
2-Hexanone (Methyl butyl ketone)			<0.020		mg/L		0.02	17-OCT-19
Isopropylbenzene			<0.0010		mg/L		0.001	17-OCT-19
4-Isopropyltoluene			<0.0010		mg/L		0.001	17-OCT-19
MEK			<0.020		mg/L		0.02	17-OCT-19
MIBK			<0.020		mg/L		0.02	17-OCT-19



Quality Control Report

Workorder: L2361823

Report Date: 29-OCT-19

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Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
VOC+F1-HSMS-WP								
	Water							
Batch	R4879694							
WG3193957-5	MB							
MTBE			<0.00050		mg/L		0.0005	17-OCT-19
Styrene			<0.0010		mg/L		0.001	17-OCT-19
1,1,1,2-Tetrachloroethane			<0.00050		mg/L		0.0005	17-OCT-19
1,1,2,2-Tetrachloroethane			<0.00050		mg/L		0.0005	17-OCT-19
Tetrachloroethene			<0.00050		mg/L		0.0005	17-OCT-19
Toluene			<0.00050		mg/L		0.0005	17-OCT-19
1,2,3-Trichlorobenzene			<0.0010		mg/L		0.001	17-OCT-19
1,2,4-Trichlorobenzene			<0.0010		mg/L		0.001	17-OCT-19
1,1,1-Trichloroethane			<0.00050		mg/L		0.0005	17-OCT-19
1,1,2-Trichloroethane			<0.00050		mg/L		0.0005	17-OCT-19
Trichloroethene			<0.00050		mg/L		0.0005	17-OCT-19
Trichlorofluoromethane			<0.0010		mg/L		0.001	17-OCT-19
1,2,3-Trichloropropane			<0.0010		mg/L		0.001	17-OCT-19
1,2,4-Trimethylbenzene			<0.0010		mg/L		0.001	17-OCT-19
1,3,5-Trimethylbenzene			<0.0010		mg/L		0.001	17-OCT-19
Vinyl Chloride			<0.00050		mg/L		0.0005	17-OCT-19
M+P-Xylenes			<0.00040		mg/L		0.0004	17-OCT-19
o-Xylene			<0.00050		mg/L		0.0005	17-OCT-19
Surrogate: 4-Bromofluorobenzene (SS)			94.6		%		70-130	17-OCT-19
Surrogate: 1,4-Difluorobenzene (SS)			99.5		%		70-130	17-OCT-19

Quality Control Report

Workorder: L2361823

Report Date: 29-OCT-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
RPD-NA	Relative Percent Difference Not Available due to result(s) being less than detection limit.

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.

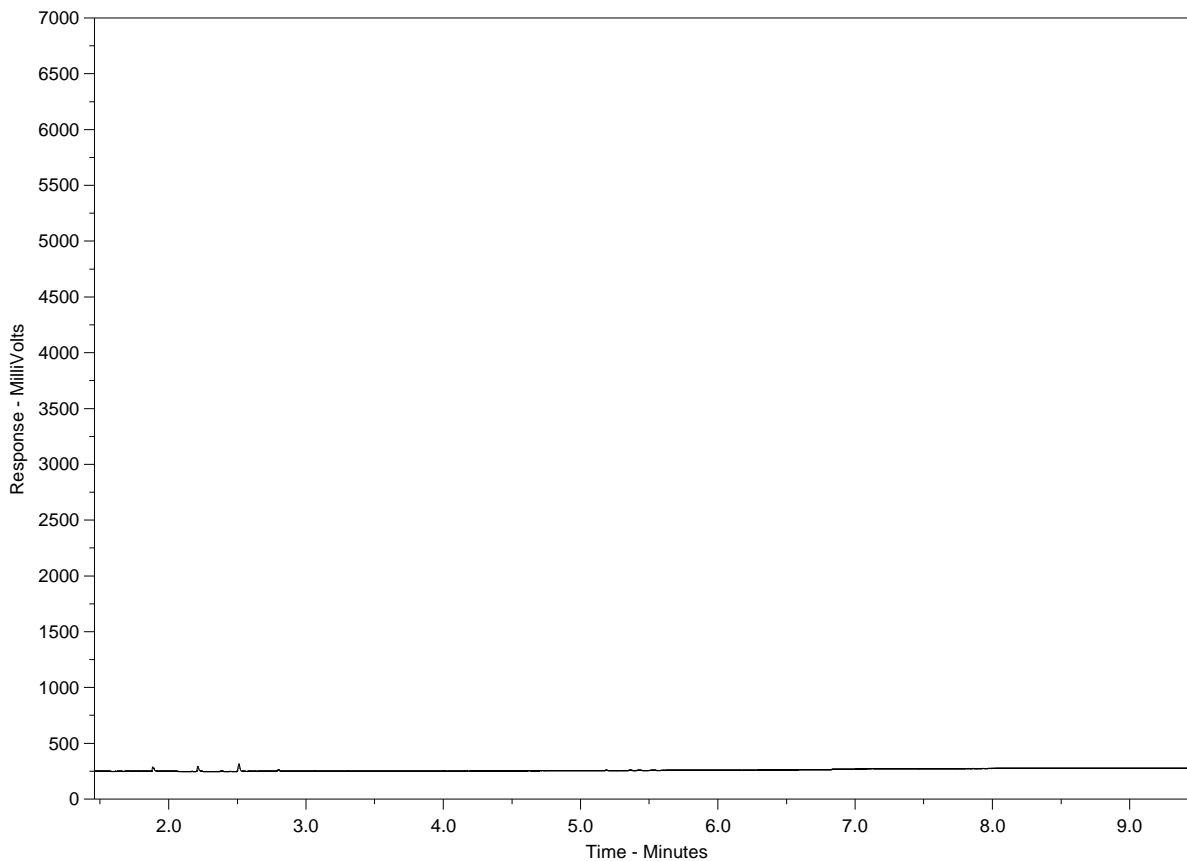
The ALS Quality Control Report is provided to ALS clients upon request. ALS includes comprehensive QC checks with every analysis to ensure our high standards of quality are met. Each QC result has a known or expected target value, which is compared against pre-determined data quality objectives to provide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

CCME F2-F4 HYDROCARBON DISTRIBUTION REPORT



ALS Sample ID: L2361823-1
 Client Sample ID: GWQ25-W9



← 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.

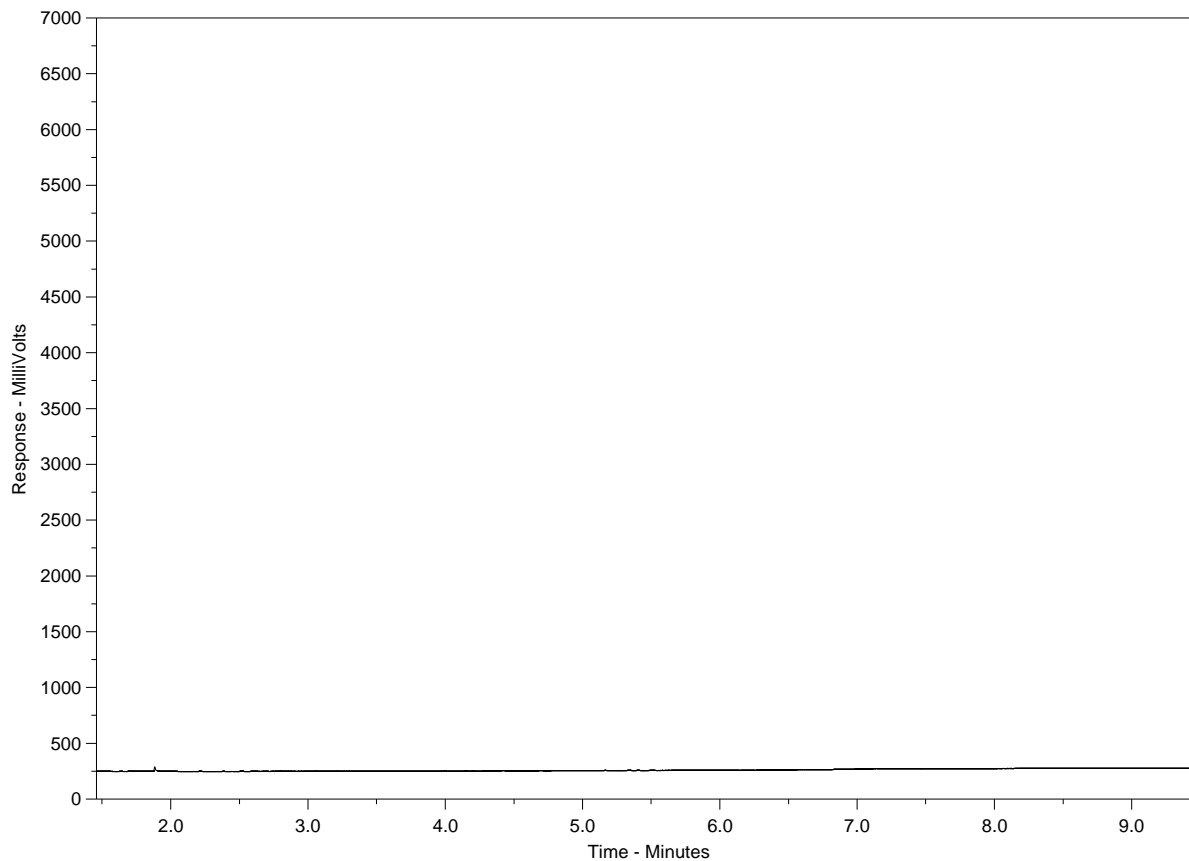
Peak heights in this report are a function of the sample concentration, the sample amount extracted, the sample dilution factor, and the scale at left.

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: L2361823-2
 Client Sample ID: GWQ25-W13



← 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.

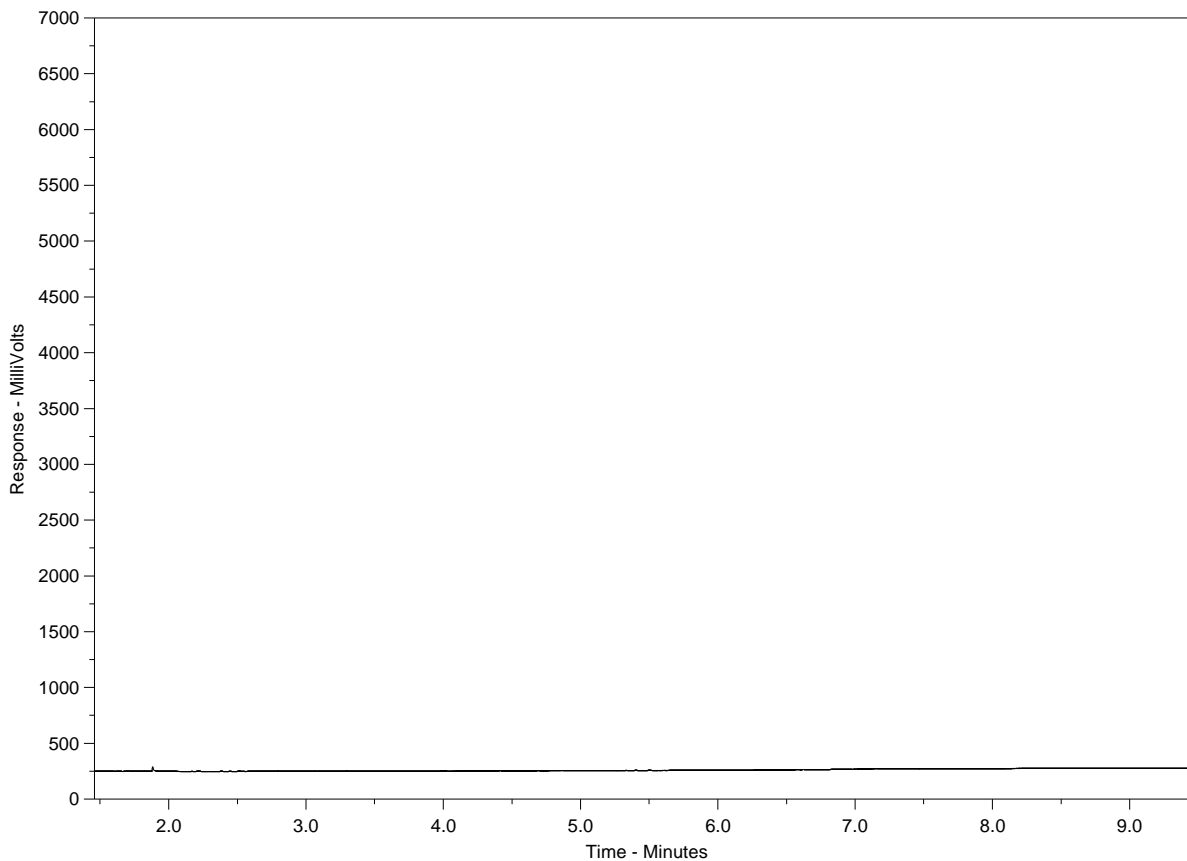
Peak heights in this report are a function of the sample concentration, the sample amount extracted, the sample dilution factor, and the scale at left.

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: L2361823-3
 Client Sample ID: GWQ25-100



← 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.

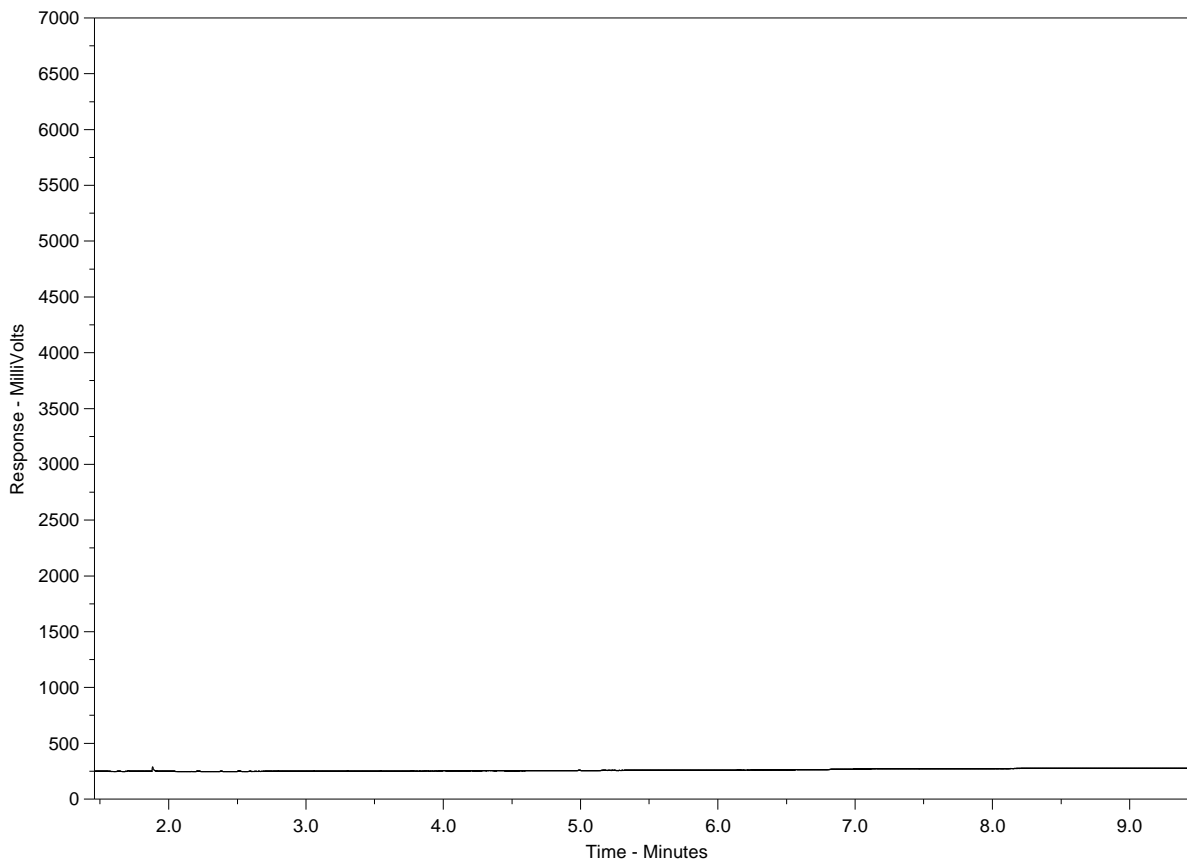
Peak heights in this report are a function of the sample concentration, the sample amount extracted, the sample dilution factor, and the scale at left.

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.

CCME F2-F4 HYDROCARBON DISTRIBUTION REPORT



ALS Sample ID: L2361823-4
 Client Sample ID: GWQ25-W11



← 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.



Chain of Custody (COC) / Analytical Request Form

Canada Toll Free: 1 800 668 9878

www.alsglobal.com



L2361823-COFC

COC Number: 15 -

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L2361823

Report To Contact and company name below will appear on the final report		Report		Select Service Level Below - Please confirm all E&P TATs with your AM - surcharges will apply																															
Company:	City of Winnipeg	Select Report Format:	<input checked="" type="checkbox"/> PDF <input type="checkbox"/> EXCEL <input type="checkbox"/> EDD (DIGITAL)	Regular [R] <input type="checkbox"/> Standard TAT if received by 3 pm - business days - no surcharges apply																															
Contact:	Chris Kozak	Quality Control (QC) Report with Report	<input checked="" type="checkbox"/> YES <input type="checkbox"/> NO	PRIORITY (Business Days)	4 day [P4] <input type="checkbox"/>				EMERGENCY	1 Business day [E1] <input type="checkbox"/>																									
Phone:	204-986-2384	<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"/>																														
Street:	1120 Waverly Street	Email 1 or Fax	ckozak@winnipeg.ca	Date and Time Required for all E&P TATs:						dd-mmm-yy hh:mm																									
City/Province:	Winnipeg, Manitoba	Email 2		For tests that can not be performed according to the service level selected, you will be contacted.																															
Postal Code:	R3T 0P4	Email 3		Analysis Request																															
Invoice To	Same as Report To <input type="checkbox"/> YES <input type="checkbox"/> NO	Invoice Distribution		Indicate Filtered (F), Preserved (P) or Filtered and Preserved (F/P) below																															
	Copy of Invoice with Report <input type="checkbox"/> YES <input type="checkbox"/> NO	Select Invoice Distribution:	<input type="checkbox"/> EMAIL <input checked="" type="checkbox"/> MAIL <input type="checkbox"/> FAX																																
Company:		Email 1 or Fax		CN-T-L-CFA-VA	PEST-DIAZINON-WT	HERBSCR-LCMS-WT	TC-FC-EC-QT97-WP	CL-IC-N-WP, SO4-IC-N-WP, ALK-SPEC-WP	NH3-COL-WP	C-TDC-DIC-DOC-HTC-WP	MET-D-CCMS-WP (DISSOLVED)	HG-T-CVAA-WP (TOTAL)	CR-CR6-IC-WT	PHENOLS-4AAP-WT	VOC-F1-F4-WP	PAH-PANH-WP	Number of Containers																		
Contact:		Email 2																																	
Project Information		Oil and Gas Required Fields (client use)																																	
ALS Account # / Quote #:	W10051/Q67317	AFE/Cost Center:	PO#																																
Job #:	Section B - BRRMF Groundwater	Major/Minor Code:	Routing Code:																																
PO / AFE:		Requisitioner:																																	
LSD:		Location:																																	
ALS Lab Work Order # (lab use only)		ALS Contact:																																	
ALS Sample # (lab use only)	Sample Identification and/or Coordinates (This description will appear on the report)	Date (dd-mmm-yy)	Time (hh:mm)															Sample Type																	
	GW025-W19 # 245463	08-10-19	9:46															WATER																	
	GW025-W13 # 245465	08-10-19	12:43	WATER																															
	GW025-100 # 245469	08-10-19	12:01	WATER																															
	GW025-W11 # 245464	08-10-19	12:05	WATER																															
				WATER																															
				WATER																															
				WATER																															
				WATER																															
				WATER																															
				WATER																															
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 type="checkbox"/> NO				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 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"/>																															
				INITIAL COOLER TEMPERATURES °C							FINAL COOLER TEMPERATURES °C																								
				12.6																															
SHIPMENT RELEASE (client use)				INITIAL SHIPMENT RECEPTION (lab use only)				FINAL SHIPMENT RECEPTION (lab use only)																											
Released by:	Date:	Time:	Received by:	Date:	Time:	Received by:	Date:	Time:																											
Adam Cox	08-10-19	14:50	AK	Oct 8/19	2:50	AK	OCT 8 2019	3																											



City of Winnipeg - Solid Waste Services Div
(1120 Waverley)
ATTN: CHRIS KOZAK
Solid Waste Services Division
1120 Waverley Street
Winnipeg MB R3T 0P4

Date Received: 08-OCT-19
Report Date: 25-OCT-19 10:31 (MT)
Version: FINAL

Client Phone: 204-986-2384

Certificate of Analysis

Lab Work Order #: L2361838
Project P.O. #: NOT SUBMITTED
Job Reference: SECTION B - BRRMF GROUNDWATER
C of C Numbers:
Legal Site Desc:

Hua Wo
Chemistry Laboratory Manager

[This report shall not be reproduced except in full without the written authority of the Laboratory.]

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
L2361838-1 GWQ25-W10							
Sampled By: CLIENT on 08-OCT-19 @ 10:40							
Matrix: WATER							
Alkalinity species as HCO3, CO3, OH							
Alkalinity, Bicarbonate							
Bicarbonate (HCO3)	174000		1200	ug/L		10-OCT-19	
Alkalinity, Carbonate							
Carbonate (CO3)	<600		600	ug/L		10-OCT-19	
Alkalinity, Hydroxide							
Hydroxide (OH)	<340		340	ug/L		10-OCT-19	
Alkalinity, Total (as CaCO3)							
Alkalinity, Total (as CaCO3)	143000		1000	ug/L		09-OCT-19	R4865629
Dissolved Carbons							
Dissolved Inorganic Carbon by Combustion							
Dissolved Inorganic Carbon	26800		500	ug/L		09-OCT-19	R4865326
Dissolved Organic Carbon by Combustion							
Dissolved Organic Carbon	1570		500	ug/L		11-OCT-19	R4870106
Total Dissolved Carbon by Calculation							
Total Dissolved Carbon	28400		1000	ug/L		15-OCT-19	
Miscellaneous Parameters							
Ammonia, Total (as N)	1400		100	ug/L		16-OCT-19	R4873241
Chloride (Cl)	2570000		25000	ug/L		09-OCT-19	R4866519
Chromium, Hexavalent	<0.50		0.50	ug/L		15-OCT-19	R4870968
Mercury (Hg)-Total	<0.0050		0.0050	ug/L	16-OCT-19	16-OCT-19	R4871875
Phenols (4AAP)	3.0		1.0	ug/L		15-OCT-19	R4871063
Sulfate (SO4)	830000		15000	ug/L		09-OCT-19	R4866519
Dissolved Metals in Water by CRC ICPMS							
Dissolved Metals Filtration Location	LAB					22-OCT-19	R4879416
Aluminum (Al)-Dissolved	<1.0		1.0	ug/L	22-OCT-19	22-OCT-19	R4879650
Antimony (Sb)-Dissolved	<0.10		0.10	ug/L	22-OCT-19	22-OCT-19	R4879650
Arsenic (As)-Dissolved	5.60		0.10	ug/L	22-OCT-19	22-OCT-19	R4879650
Barium (Ba)-Dissolved	13.2		0.10	ug/L	22-OCT-19	22-OCT-19	R4879650
Beryllium (Be)-Dissolved	<0.10		0.10	ug/L	22-OCT-19	22-OCT-19	R4879650
Bismuth (Bi)-Dissolved	<0.050		0.050	ug/L	22-OCT-19	22-OCT-19	R4879650
Boron (B)-Dissolved	2200		1000	ug/L	22-OCT-19	23-OCT-19	R4883809
Cadmium (Cd)-Dissolved	<0.0050		0.0050	ug/L	22-OCT-19	22-OCT-19	R4879650
Calcium (Ca)-Dissolved	338000		50	ug/L	22-OCT-19	22-OCT-19	R4879650
Cesium (Cs)-Dissolved	0.114		0.010	ug/L	22-OCT-19	22-OCT-19	R4879650
Chromium (Cr)-Dissolved	<0.10		0.10	ug/L	22-OCT-19	22-OCT-19	R4879650
Cobalt (Co)-Dissolved	0.29		0.10	ug/L	22-OCT-19	22-OCT-19	R4879650
Copper (Cu)-Dissolved	<0.20		0.20	ug/L	22-OCT-19	22-OCT-19	R4879650
Iron (Fe)-Dissolved	904		10	ug/L	22-OCT-19	22-OCT-19	R4879650
Lead (Pb)-Dissolved	<0.050		0.050	ug/L	22-OCT-19	22-OCT-19	R4879650
Lithium (Li)-Dissolved	380		100	ug/L	22-OCT-19	23-OCT-19	R4883809
Magnesium (Mg)-Dissolved	161000		5.0	ug/L	22-OCT-19	22-OCT-19	R4879650
Manganese (Mn)-Dissolved	14.7		0.10	ug/L	22-OCT-19	22-OCT-19	R4879650
Molybdenum (Mo)-Dissolved	3.42		0.050	ug/L	22-OCT-19	22-OCT-19	R4879650
Nickel (Ni)-Dissolved	1.37		0.50	ug/L	22-OCT-19	22-OCT-19	R4879650
Phosphorus (P)-Dissolved	<30		30	ug/L	22-OCT-19	22-OCT-19	R4879650
Potassium (K)-Dissolved	41100		50	ug/L	22-OCT-19	22-OCT-19	R4879650
Rubidium (Rb)-Dissolved	19.6		0.20	ug/L	22-OCT-19	22-OCT-19	R4879650
Selenium (Se)-Dissolved	<0.050		0.050	ug/L	22-OCT-19	22-OCT-19	R4879650
Silicon (Si)-Dissolved	4960		50	ug/L	22-OCT-19	22-OCT-19	R4879650
Silver (Ag)-Dissolved	0.045		0.010	ug/L	22-OCT-19	22-OCT-19	R4879650
Sodium (Na)-Dissolved	1500000		5000	ug/L	22-OCT-19	23-OCT-19	R4883809

* 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
L2361838-1 GWQ25-W10							
Sampled By: CLIENT on 08-OCT-19 @ 10:40							
Matrix: WATER							
Dissolved Metals in Water by CRC ICPMS							
Strontium (Sr)-Dissolved	4250		10	ug/L	22-OCT-19	23-OCT-19	R4883809
Sulfur (S)-Dissolved	320000		500	ug/L	22-OCT-19	22-OCT-19	R4879650
Tellurium (Te)-Dissolved	0.26		0.20	ug/L	22-OCT-19	22-OCT-19	R4879650
Thallium (Tl)-Dissolved	<0.010		0.010	ug/L	22-OCT-19	22-OCT-19	R4879650
Thorium (Th)-Dissolved	<0.10		0.10	ug/L	22-OCT-19	22-OCT-19	R4879650
Tin (Sn)-Dissolved	<0.10		0.10	ug/L	22-OCT-19	22-OCT-19	R4879650
Titanium (Ti)-Dissolved	<0.30		0.30	ug/L	22-OCT-19	22-OCT-19	R4879650
Tungsten (W)-Dissolved	<0.10		0.10	ug/L	22-OCT-19	22-OCT-19	R4879650
Uranium (U)-Dissolved	0.612		0.010	ug/L	22-OCT-19	22-OCT-19	R4879650
Vanadium (V)-Dissolved	<0.50		0.50	ug/L	22-OCT-19	22-OCT-19	R4879650
Zinc (Zn)-Dissolved	<1.0		1.0	ug/L	22-OCT-19	22-OCT-19	R4879650
Zirconium (Zr)-Dissolved	<0.20		0.20	ug/L	22-OCT-19	22-OCT-19	R4879650
Total, Fecal Coliforms, E Coli by QT97							
Fecal Coliform by MPN QT97							
Fecal Coliforms	<1		1	MPN/100mL		08-OCT-19	R4863435
Total Coliform and E.coli by MPN QT97							
Total Coliforms	<1		1	MPN/100mL		08-OCT-19	R4863452
Escherichia Coli	<1		1	MPN/100mL		08-OCT-19	R4863452

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

Reference Information

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.			
C-DIC-HTC-WP	Water	Dissolved Inorganic Carbon by Combustion	APHA 5310 B-WP
Filtered (0.45 µm) sample is injected into a heated reaction chamber where it is acidified, converting all inorganic carbon to CO ₂ which is then transported in the carrier gas stream and measured via a non-dispersive infrared analyzer.			
C-DOC-HTC-WP	Water	Dissolved Organic Carbon by Combustion	APHA 5310 B-WP
Filtered (0.45 µm) sample is acidified and purged to remove inorganic carbon, then injected into a heated reaction chamber where organic carbon is oxidized to CO ₂ which is then transported in the carrier gas stream and measured via a non-dispersive infrared analyzer.			
C-TDC-CALC-WP	Water	Total Dissolved Carbon by Calculation	CALCULATED
Total dissolved carbon represents the sum of dissolved inorganic carbon and dissolved organic carbon. For the purpose of calculation, results less than the detection limit (DL) are treated as zero.			
CL-IC-N-WP	Water	Chloride in Water by IC	EPA 300.1 (mod)
Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.			
CR-CR6-IC-WT	Water	Chromium +6	EPA 7199
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.			
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).			
EC-SCREEN-WP	Water	Conductivity Screen (Internal Use Only)	APHA 2510
Qualitative analysis of conductivity where required during preparation of other test eg. IC, TDS, TSS, etc			
FC-QT97-WP	Water	Fecal Coliform by MPN QT97	APHA 9223B QT97
This analysis is carried out using procedures adapted from APHA Method 9223B "Enzyme Substrate Coliform Test". The sample is mixed with a mixture of hydrolyzable substrates and then sealed in a 97-well packet. The packet is incubated at 44.5 – 0.2°C for 18 hours and then the number of wells exhibiting a positive response are counted. The final result is obtained by comparing the number of positive responses to a probability table.			
HG-T-CVAA-WP	Water	Mercury Total	EPA 1631E (mod)
Water samples undergo a cold-oxidation using bromine monochloride prior to reduction with stannous chloride, and analyzed by CVAAS.			
MET-D-CCMS-WP	Water	Dissolved Metals in Water by CRC ICPMS	APHA 3030B/6020B (mod)
Water samples are filtered (0.45 µm), 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.			
NH3-COL-WP	Water	Ammonia by colour	APHA 4500 NH3 F
Ammonia in water samples forms indophenol when reacted with hypochlorite and phenol. The intensity is amplified by the addition of sodium			

Reference Information

Test Method References:

ALS Test Code	Matrix	Test Description	Method Reference**
		nitroprusside and measured colourmetrically.	
PHENOLS-4AAP-WT	Water	Phenol (4AAP)	EPA 9066
		An automated method is used to distill the sample. The distillate is then buffered to pH 9.4 which reacts with 4AAP and potassium ferricyanide to form a red complex which is measured colorimetrically.	
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-QT97-WP	Water	Total Coliform and E.coli by MPN QT97	APHA 9223B QT97
		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 97-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
WT	ALS ENVIRONMENTAL - WATERLOO, ONTARIO, CANADA
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: L2361838

Report Date: 25-OCT-19

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Client: City of Winnipeg - Solid Waste Services Div (1120 Waverley)
 Solid Waste Services Division 1120 Waverley Street
 Winnipeg MB R3T 0P4

Contact: CHRIS KOZAK

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
ALK-TITR-WP								
	Water							
Batch	R4865629							
WG3187521-29	LCS							
Alkalinity, Total (as CaCO3)			107.3		%		85-115	09-OCT-19
WG3187521-26	MB							
Alkalinity, Total (as CaCO3)			<1.0		mg/L		1	09-OCT-19
C-DIC-HTC-WP								
	Water							
Batch	R4865326							
WG3187430-2	LCS							
Dissolved Inorganic Carbon			101.7		%		80-120	09-OCT-19
WG3187430-1	MB							
Dissolved Inorganic Carbon			<0.50		mg/L		0.5	09-OCT-19
WG3187430-4	MS	L2361838-1						
Dissolved Inorganic Carbon			N/A	MS-B	%		-	09-OCT-19
C-DOC-HTC-WP								
	Water							
Batch	R4870106							
WG3190720-2	LCS							
Dissolved Organic Carbon			105.5		%		80-120	11-OCT-19
WG3190720-1	MB							
Dissolved Organic Carbon			<0.50		mg/L		0.5	11-OCT-19
CL-IC-N-WP								
	Water							
Batch	R4866519							
WG3186552-10	LCS							
Chloride (Cl)			98.9		%		90-110	09-OCT-19
WG3186552-9	MB							
Chloride (Cl)			<0.50		mg/L		0.5	09-OCT-19
CR-CR6-IC-WT								
	Water							
Batch	R4870968							
WG3191274-2	LCS							
Chromium, Hexavalent			94.3		%		80-120	15-OCT-19
WG3191274-1	MB							
Chromium, Hexavalent			<0.00050		mg/L		0.0005	15-OCT-19
FC-QT97-WP								
	Water							
Batch	R4863435							
WG3185721-1	MB							
Fecal Coliforms			<1		MPN/100mL		1	08-OCT-19
HG-T-CVAA-WP								
	Water							



Quality Control Report

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Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
HG-T-CVAA-WP		Water						
Batch	R4871875							
WG3192562-2	LCS							
Mercury (Hg)-Total			98.0		%		80-120	16-OCT-19
WG3192562-1	MB							
Mercury (Hg)-Total			<0.000005C		mg/L		0.000005	16-OCT-19
MET-D-CCMS-WP		Water						
Batch	R4879650							
WG3198225-2	LCS							
Aluminum (Al)-Dissolved			107.7		%		80-120	22-OCT-19
Antimony (Sb)-Dissolved			101.4		%		80-120	22-OCT-19
Arsenic (As)-Dissolved			104.3		%		80-120	22-OCT-19
Barium (Ba)-Dissolved			101.9		%		80-120	22-OCT-19
Beryllium (Be)-Dissolved			89.7		%		80-120	22-OCT-19
Bismuth (Bi)-Dissolved			100.4		%		80-120	22-OCT-19
Cadmium (Cd)-Dissolved			99.7		%		80-120	22-OCT-19
Calcium (Ca)-Dissolved			112.9		%		80-120	22-OCT-19
Cesium (Cs)-Dissolved			106.1		%		80-120	22-OCT-19
Chromium (Cr)-Dissolved			101.5		%		80-120	22-OCT-19
Cobalt (Co)-Dissolved			100.1		%		80-120	22-OCT-19
Copper (Cu)-Dissolved			99.6		%		80-120	22-OCT-19
Iron (Fe)-Dissolved			91.9		%		80-120	22-OCT-19
Lead (Pb)-Dissolved			105.1		%		80-120	22-OCT-19
Magnesium (Mg)-Dissolved			116.5		%		80-120	22-OCT-19
Manganese (Mn)-Dissolved			104.6		%		80-120	22-OCT-19
Molybdenum (Mo)-Dissolved			110.2		%		80-120	22-OCT-19
Nickel (Ni)-Dissolved			99.3		%		80-120	22-OCT-19
Phosphorus (P)-Dissolved			110.8		%		80-120	22-OCT-19
Potassium (K)-Dissolved			113.7		%		80-120	22-OCT-19
Rubidium (Rb)-Dissolved			104.8		%		80-120	22-OCT-19
Selenium (Se)-Dissolved			103.0		%		80-120	22-OCT-19
Silicon (Si)-Dissolved			112.5		%		80-120	22-OCT-19
Silver (Ag)-Dissolved			102.9		%		80-120	22-OCT-19
Sulfur (S)-Dissolved			113.3		%		80-120	22-OCT-19
Tellurium (Te)-Dissolved			109.2		%		80-120	22-OCT-19
Thallium (Tl)-Dissolved			103.0		%		80-120	22-OCT-19
Thorium (Th)-Dissolved			86.0		%		80-120	22-OCT-19



Quality Control Report

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Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
MET-D-CCMS-WP								
	Water							
Batch	R4879650							
WG3198225-2	LCS							
Tin (Sn)-Dissolved			100.4		%		80-120	22-OCT-19
Titanium (Ti)-Dissolved			100.1		%		80-120	22-OCT-19
Tungsten (W)-Dissolved			97.3		%		80-120	22-OCT-19
Uranium (U)-Dissolved			106.4		%		80-120	22-OCT-19
Vanadium (V)-Dissolved			104.6		%		80-120	22-OCT-19
Zinc (Zn)-Dissolved			103.5		%		80-120	22-OCT-19
Zirconium (Zr)-Dissolved			107.7		%		80-120	22-OCT-19
WG3198225-1	MB							
Aluminum (Al)-Dissolved			<0.0010		mg/L		0.001	22-OCT-19
Antimony (Sb)-Dissolved			<0.00010		mg/L		0.0001	22-OCT-19
Arsenic (As)-Dissolved			<0.00010		mg/L		0.0001	22-OCT-19
Barium (Ba)-Dissolved			<0.00010		mg/L		0.0001	22-OCT-19
Beryllium (Be)-Dissolved			<0.00010		mg/L		0.0001	22-OCT-19
Bismuth (Bi)-Dissolved			<0.000050		mg/L		0.00005	22-OCT-19
Cadmium (Cd)-Dissolved			<0.0000050		mg/L		0.000005	22-OCT-19
Calcium (Ca)-Dissolved			<0.050		mg/L		0.05	22-OCT-19
Cesium (Cs)-Dissolved			<0.000010		mg/L		0.00001	22-OCT-19
Chromium (Cr)-Dissolved			<0.00010		mg/L		0.0001	22-OCT-19
Cobalt (Co)-Dissolved			<0.00010		mg/L		0.0001	22-OCT-19
Copper (Cu)-Dissolved			<0.00020		mg/L		0.0002	22-OCT-19
Iron (Fe)-Dissolved			<0.010		mg/L		0.01	22-OCT-19
Lead (Pb)-Dissolved			<0.000050		mg/L		0.00005	22-OCT-19
Magnesium (Mg)-Dissolved			<0.0050		mg/L		0.005	22-OCT-19
Manganese (Mn)-Dissolved			<0.00010		mg/L		0.0001	22-OCT-19
Molybdenum (Mo)-Dissolved			<0.000050		mg/L		0.00005	22-OCT-19
Nickel (Ni)-Dissolved			<0.00050		mg/L		0.0005	22-OCT-19
Phosphorus (P)-Dissolved			<0.030		mg/L		0.03	22-OCT-19
Potassium (K)-Dissolved			<0.050		mg/L		0.05	22-OCT-19
Rubidium (Rb)-Dissolved			<0.00020		mg/L		0.0002	22-OCT-19
Selenium (Se)-Dissolved			<0.000050		mg/L		0.00005	22-OCT-19
Silicon (Si)-Dissolved			<0.050		mg/L		0.05	22-OCT-19
Silver (Ag)-Dissolved			<0.000010		mg/L		0.00001	22-OCT-19
Sulfur (S)-Dissolved			<0.50		mg/L		0.5	22-OCT-19
Tellurium (Te)-Dissolved			<0.00020		mg/L		0.0002	22-OCT-19



Quality Control Report

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Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
MET-D-CCMS-WP		Water						
Batch	R4879650							
WG3198225-1	MB							
Thallium (Tl)-Dissolved			<0.000010		mg/L		0.00001	22-OCT-19
Thorium (Th)-Dissolved			<0.00010		mg/L		0.0001	22-OCT-19
Tin (Sn)-Dissolved			<0.00010		mg/L		0.0001	22-OCT-19
Titanium (Ti)-Dissolved			<0.00030		mg/L		0.0003	22-OCT-19
Tungsten (W)-Dissolved			<0.00010		mg/L		0.0001	22-OCT-19
Uranium (U)-Dissolved			<0.000010		mg/L		0.00001	22-OCT-19
Vanadium (V)-Dissolved			<0.00050		mg/L		0.0005	22-OCT-19
Zinc (Zn)-Dissolved			<0.0010		mg/L		0.001	22-OCT-19
Zirconium (Zr)-Dissolved			<0.00020		mg/L		0.0002	22-OCT-19
NH3-COL-WP		Water						
Batch	R4873241							
WG3193729-26	LCS							
Ammonia, Total (as N)			98.6		%		85-115	15-OCT-19
WG3193729-25	MB							
Ammonia, Total (as N)			<0.010		mg/L		0.01	16-OCT-19
PHENOLS-4AAP-WT		Water						
Batch	R4871063							
WG3190915-2	LCS							
Phenols (4AAP)			108.7		%		85-115	15-OCT-19
WG3190915-1	MB							
Phenols (4AAP)			<0.0010		mg/L		0.001	15-OCT-19
SO4-IC-N-WP		Water						
Batch	R4866519							
WG3186552-10	LCS							
Sulfate (SO4)			100.7		%		90-110	09-OCT-19
WG3186552-9	MB							
Sulfate (SO4)			<0.30		mg/L		0.3	09-OCT-19
TC,EC-QT97-WP		Water						
Batch	R4863452							
WG3185736-1	MB							
Total Coliforms			<1		MPN/100mL		1	08-OCT-19
Escherichia Coli			<1		MPN/100mL		1	08-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
MS-B	Matrix Spike recovery could not be accurately calculated due to high analyte background in sample.

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.



ALS Environmental

www.alsglobal.com

Chain of Custody (COC) / Analytical Request Form

Canada Toll Free: 1 800 668 9878



L2361838-COFC

COC Number: 15 -

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Report To Contact and company name below will appear on the final report		Report From Select Report Format: <input checked="" type="checkbox"/> PDF <input type="checkbox"/> EXCEL <input type="checkbox"/> EDD (DIGITAL)			We confirm all E&P TATs with your AM - surcharges will apply	
Company:	City of Winnipeg	Quality Control (QC) Report with Report <input checked="" type="checkbox"/> YES <input type="checkbox"/> NO			Regular [R] <input type="checkbox"/> Standard TAT if received by 3 pm - business days - no surcharges apply	
Contact:	Chris Kozak	<input type="checkbox"/> Compare Results to Criteria on Report - provide details below if box checked			4 day [P4] <input type="checkbox"/>	
Phone:	204-986-2384	Select Distribution: <input checked="" type="checkbox"/> EMAIL <input type="checkbox"/> MAIL <input type="checkbox"/> FAX			3 day [P3] <input type="checkbox"/>	
Company address below will appear on the final report		Email 1 or Fax ckozak@winnipeg.ca			2 day [P2] <input type="checkbox"/>	
Street:	1120 Waverly Street	Email 2			EMERGENCY 1 Business day [E1] <input type="checkbox"/>	
City/Province:	Winnipeg, Manitoba	Email 3			Same Day, Weekend or Statutory holiday [E0] <input type="checkbox"/>	
Postal Code:	R3T 0P4	Invoice Distribution			Date and Time Required for all E&P TATs:	
Invoice To Same as Report To <input type="checkbox"/> YES <input type="checkbox"/> NO		Select Invoice Distribution: <input type="checkbox"/> EMAIL <input checked="" type="checkbox"/> MAIL <input type="checkbox"/> FAX			For tests that can not be performed according to the service level selected, you will be contacted.	
Copy of Invoice with Report <input type="checkbox"/> YES <input type="checkbox"/> NO		Email 1 or Fax			Analysis Request	
Company:		Email 2			Indicate Filtered (F), Preserved (P) or Filtered and Preserved (F/P) below	
Contact:		Location:			Number of Containers	
Project Information		Oil and Gas Required Fields (client use)				
ALS Account # / Quote #:	W10051/Q67317	AFE/Cost Center:	PO#			
Job #:	Section B - BRRMF Groundwater	Major/Minor Code:	Routing Code:			
PO / AFE:		Requisitioner:				
LSD:		Location:				
ALS Lab Work Order # (lab use only)		ALS Contact:		Sampler:		
ALS Sample # (lab use only)	Sample Identification and/or Coordinates (This description will appear on the report)	Date (dd-mm-yy)	Time (hh:mm)	Sample Type		
	QW025-N10 # 245472	08-10-19	10:40	WATER	CL-IC-NWP, SO4-IC-NWP, ALK-SPEC-WP	
				WATER	NH3-COL-WP	
				WATER	C-TDC,DIC,DOC-HTC-WP	
				WATER	MET-D-CCMS-WP (DISSOLVED)	
				WATER	HG-T-CVAA-WP (TOTAL)	
				WATER	CR-CR6-IC-WT	
				WATER	PHENOLS-1AAP-WT	
				WATER	TC,FC,EC-OT97-WP	
				WATER		
				WATER		
				WATER		
				WATER		
				WATER		
				WATER		
				WATER		
				WATER		
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 type="checkbox"/> NO					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 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"/>	
					INITIAL COOLER TEMPERATURES °C	
					FINAL COOLER TEMPERATURES °C	
					12-6	
SHIPMENT RELEASE (client use)		INITIAL SHIPMENT RECEPTION (lab use only)			FINAL SHIPMENT RECEPTION (lab use only)	
Released by:	Adam Gek	Date:	08-10-19	Time:	14:50	Received by:
		Date:		Date:	Oct 8/19	Time:
		Time:		Time:	2:50	Received by:
						Dr
						OCT 08 2019

REFER TO BACK PAGE FOR ALS LOCATIONS AND SAMPLING INFORMATION

WHITE - LABORATORY COPY YELLOW - CLIENT COPY

OCTOBER 2019

Failure to complete all portions of this form may delay analysis. Please fill in this form LEGIBLY. By the use of this form the user acknowledges and agrees with the Terms and Conditions as specified on the back page of the white - report copy.

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



City of Winnipeg - Solid Waste Services Div
(1120 Waverley)
ATTN: CHRIS KOZAK
Solid Waste Services Division
1120 Waverley Street
Winnipeg MB R3T 0P4

Date Received: 09-OCT-19
Report Date: 29-OCT-19 10:44 (MT)
Version: FINAL

Client Phone: 204-986-2384

Certificate of Analysis

Lab Work Order #: L2362652
Project P.O. #: NOT SUBMITTED
Job Reference: SECTION B - BRRMF GROUNDWATER
C of C Numbers:
Legal Site Desc:

Hua Wo
Chemistry Laboratory Manager

[This report shall not be reproduced except in full without the written authority of the Laboratory.]

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
L2362652-1 GWQ25-15A							
Sampled By: CLIENT on 09-OCT-19 @ 09:28							
Matrix: WATER							
Alkalinity species as HCO3, CO3, OH							
Alkalinity, Bicarbonate							
Bicarbonate (HCO3)	520000		1200	ug/L		11-OCT-19	
Alkalinity, Carbonate							
Carbonate (CO3)	<600		600	ug/L		11-OCT-19	
Alkalinity, Hydroxide							
Hydroxide (OH)	<340		340	ug/L		11-OCT-19	
Alkalinity, Total (as CaCO3)							
Alkalinity, Total (as CaCO3)	427000		1000	ug/L		10-OCT-19	R4867136
Dissolved Carbons							
Dissolved Inorganic Carbon by Combustion							
Dissolved Inorganic Carbon	79300		500	ug/L		16-OCT-19	R4873268
Dissolved Organic Carbon by Combustion							
Dissolved Organic Carbon	14800		500	ug/L		16-OCT-19	R4873294
Total Dissolved Carbon by Calculation							
Total Dissolved Carbon	94100		1000	ug/L		17-OCT-19	
Miscellaneous Parameters							
Ammonia, Total (as N)	730		100	ug/L		16-OCT-19	R4873241
Chloride (Cl)	1430000		10000	ug/L		11-OCT-19	R4871591
Chromium, Hexavalent	<0.50		0.50	ug/L		15-OCT-19	R4870968
Mercury (Hg)-Total	<0.0050		0.0050	ug/L	16-OCT-19	16-OCT-19	R4871875
Phenols (4AAP)	5.1		1.0	ug/L		15-OCT-19	R4871063
Sulfate (SO4)	1670000		6000	ug/L		11-OCT-19	R4871591
Dissolved Metals in Water by CRC ICPMS							
Dissolved Metals Filtration Location	FIELD					24-OCT-19	R4881874
Aluminum (Al)-Dissolved	2.6		1.0	ug/L	24-OCT-19	24-OCT-19	R4887526
Antimony (Sb)-Dissolved	<0.10		0.10	ug/L	24-OCT-19	24-OCT-19	R4887526
Arsenic (As)-Dissolved	1.12		0.10	ug/L	24-OCT-19	24-OCT-19	R4887526
Barium (Ba)-Dissolved	13.3		0.10	ug/L	24-OCT-19	24-OCT-19	R4887526
Beryllium (Be)-Dissolved	<0.10		0.10	ug/L	24-OCT-19	24-OCT-19	R4887526
Bismuth (Bi)-Dissolved	<0.050		0.050	ug/L	24-OCT-19	24-OCT-19	R4887526
Boron (B)-Dissolved	479		10	ug/L	24-OCT-19	24-OCT-19	R4887526
Cadmium (Cd)-Dissolved	0.0290		0.0050	ug/L	24-OCT-19	24-OCT-19	R4887526
Calcium (Ca)-Dissolved	843000		5000	ug/L	24-OCT-19	28-OCT-19	R4888724
Cesium (Cs)-Dissolved	0.014		0.010	ug/L	24-OCT-19	24-OCT-19	R4887526
Chromium (Cr)-Dissolved	<0.10		0.10	ug/L	24-OCT-19	24-OCT-19	R4887526
Cobalt (Co)-Dissolved	8.64		0.10	ug/L	24-OCT-19	24-OCT-19	R4887526
Copper (Cu)-Dissolved	<0.20		0.20	ug/L	24-OCT-19	24-OCT-19	R4887526
Iron (Fe)-Dissolved	1310		10	ug/L	24-OCT-19	24-OCT-19	R4887526
Lead (Pb)-Dissolved	<0.050		0.050	ug/L	24-OCT-19	24-OCT-19	R4887526
Lithium (Li)-Dissolved	640		100	ug/L	24-OCT-19	28-OCT-19	R4888724
Magnesium (Mg)-Dissolved	241000		5.0	ug/L	24-OCT-19	24-OCT-19	R4887526
Manganese (Mn)-Dissolved	2240		10	ug/L	24-OCT-19	28-OCT-19	R4888724
Molybdenum (Mo)-Dissolved	0.440		0.050	ug/L	24-OCT-19	24-OCT-19	R4887526
Nickel (Ni)-Dissolved	9.61		0.50	ug/L	24-OCT-19	24-OCT-19	R4887526
Phosphorus (P)-Dissolved	<30		30	ug/L	24-OCT-19	24-OCT-19	R4887526
Potassium (K)-Dissolved	13200		50	ug/L	24-OCT-19	24-OCT-19	R4887526
Rubidium (Rb)-Dissolved	6.08		0.20	ug/L	24-OCT-19	24-OCT-19	R4887526
Selenium (Se)-Dissolved	0.174		0.050	ug/L	24-OCT-19	24-OCT-19	R4887526
Silicon (Si)-Dissolved	11200		50	ug/L	24-OCT-19	24-OCT-19	R4887526
Silver (Ag)-Dissolved	<0.010		0.010	ug/L	24-OCT-19	24-OCT-19	R4887526
Sodium (Na)-Dissolved	616000		5000	ug/L	24-OCT-19	28-OCT-19	R4888724

* 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
L2362652-1 GWQ25-15A Sampled By: CLIENT on 09-OCT-19 @ 09:28 Matrix: WATER							
Dissolved Metals in Water by CRC ICPMS							
Strontium (Sr)-Dissolved	5540		10	ug/L	24-OCT-19	28-OCT-19	R4888724
Sulfur (S)-Dissolved	746000		50000	ug/L	24-OCT-19	28-OCT-19	R4888724
Tellurium (Te)-Dissolved	<0.20		0.20	ug/L	24-OCT-19	24-OCT-19	R4887526
Thallium (Tl)-Dissolved	0.058		0.010	ug/L	24-OCT-19	24-OCT-19	R4887526
Thorium (Th)-Dissolved	<0.10		0.10	ug/L	24-OCT-19	24-OCT-19	R4887526
Tin (Sn)-Dissolved	<0.10		0.10	ug/L	24-OCT-19	24-OCT-19	R4887526
Titanium (Ti)-Dissolved	<0.30		0.30	ug/L	24-OCT-19	24-OCT-19	R4887526
Tungsten (W)-Dissolved	<0.10		0.10	ug/L	24-OCT-19	24-OCT-19	R4887526
Uranium (U)-Dissolved	42.7		0.010	ug/L	24-OCT-19	24-OCT-19	R4887526
Vanadium (V)-Dissolved	<0.50		0.50	ug/L	24-OCT-19	24-OCT-19	R4887526
Zinc (Zn)-Dissolved	4.8		1.0	ug/L	24-OCT-19	24-OCT-19	R4887526
Zirconium (Zr)-Dissolved	<0.20		0.20	ug/L	24-OCT-19	24-OCT-19	R4887526
L2362652-2 GWQ25-16A Sampled By: CLIENT on 09-OCT-19 @ 09:40 Matrix: WATER							
Alkalinity species as HCO3, CO3, OH							
Alkalinity, Bicarbonate							
Bicarbonate (HCO3)	464000		1200	ug/L		11-OCT-19	
Alkalinity, Carbonate							
Carbonate (CO3)	<600		600	ug/L		11-OCT-19	
Alkalinity, Hydroxide							
Hydroxide (OH)	<340		340	ug/L		11-OCT-19	
Alkalinity, Total (as CaCO3)							
Alkalinity, Total (as CaCO3)	380000		1000	ug/L		10-OCT-19	R4867136
Dissolved Carbons							
Dissolved Inorganic Carbon by Combustion							
Dissolved Inorganic Carbon	71500		500	ug/L		16-OCT-19	R4873268
Dissolved Organic Carbon by Combustion							
Dissolved Organic Carbon	6760		500	ug/L		16-OCT-19	R4873294
Total Dissolved Carbon by Calculation							
Total Dissolved Carbon	78300		1000	ug/L		17-OCT-19	
Miscellaneous Parameters							
Ammonia, Total (as N)	560		100	ug/L		16-OCT-19	R4873241
Chloride (Cl)	1040000		10000	ug/L		11-OCT-19	R4871591
Chromium, Hexavalent	<0.50		0.50	ug/L		15-OCT-19	R4870968
Mercury (Hg)-Total	0.0050		0.0050	ug/L	16-OCT-19	16-OCT-19	R4871875
Phenols (4AAP)	23.7	DLM	5.0	ug/L		15-OCT-19	R4871063
Sulfate (SO4)	1130000		6000	ug/L		11-OCT-19	R4871591
Dissolved Metals in Water by CRC ICPMS							
Dissolved Metals Filtration Location	FIELD					24-OCT-19	R4881874
Aluminum (Al)-Dissolved	3.6		1.0	ug/L	24-OCT-19	24-OCT-19	R4887526
Antimony (Sb)-Dissolved	<0.10		0.10	ug/L	24-OCT-19	24-OCT-19	R4887526
Arsenic (As)-Dissolved	0.96		0.10	ug/L	24-OCT-19	24-OCT-19	R4887526
Barium (Ba)-Dissolved	13.0		0.10	ug/L	24-OCT-19	24-OCT-19	R4887526
Beryllium (Be)-Dissolved	<0.10		0.10	ug/L	24-OCT-19	24-OCT-19	R4887526
Bismuth (Bi)-Dissolved	<0.050		0.050	ug/L	24-OCT-19	24-OCT-19	R4887526
Boron (B)-Dissolved	530		10	ug/L	24-OCT-19	24-OCT-19	R4887526
Cadmium (Cd)-Dissolved	0.176		0.0050	ug/L	24-OCT-19	24-OCT-19	R4887526
Calcium (Ca)-Dissolved	536000		50	ug/L	24-OCT-19	24-OCT-19	R4887526
Cesium (Cs)-Dissolved	0.017		0.010	ug/L	24-OCT-19	24-OCT-19	R4887526
Chromium (Cr)-Dissolved	<0.10		0.10	ug/L	24-OCT-19	24-OCT-19	R4887526

* 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
L2362652-2 GWQ25-16A							
Sampled By: CLIENT on 09-OCT-19 @ 09:40							
Matrix: WATER							
Dissolved Metals in Water by CRC ICPMS							
Cobalt (Co)-Dissolved	5.53		0.10	ug/L	24-OCT-19	24-OCT-19	R4887526
Copper (Cu)-Dissolved	0.22		0.20	ug/L	24-OCT-19	24-OCT-19	R4887526
Iron (Fe)-Dissolved	35		10	ug/L	24-OCT-19	24-OCT-19	R4887526
Lead (Pb)-Dissolved	<0.050		0.050	ug/L	24-OCT-19	24-OCT-19	R4887526
Lithium (Li)-Dissolved	370		100	ug/L	24-OCT-19	28-OCT-19	R4888724
Magnesium (Mg)-Dissolved	190000		5.0	ug/L	24-OCT-19	24-OCT-19	R4887526
Manganese (Mn)-Dissolved	914		0.10	ug/L	24-OCT-19	24-OCT-19	R4887526
Molybdenum (Mo)-Dissolved	0.719		0.050	ug/L	24-OCT-19	24-OCT-19	R4887526
Nickel (Ni)-Dissolved	6.61		0.50	ug/L	24-OCT-19	24-OCT-19	R4887526
Phosphorus (P)-Dissolved	<30		30	ug/L	24-OCT-19	24-OCT-19	R4887526
Potassium (K)-Dissolved	11200		50	ug/L	24-OCT-19	24-OCT-19	R4887526
Rubidium (Rb)-Dissolved	5.68		0.20	ug/L	24-OCT-19	24-OCT-19	R4887526
Selenium (Se)-Dissolved	0.130		0.050	ug/L	24-OCT-19	24-OCT-19	R4887526
Silicon (Si)-Dissolved	10600		50	ug/L	24-OCT-19	24-OCT-19	R4887526
Silver (Ag)-Dissolved	<0.010		0.010	ug/L	24-OCT-19	24-OCT-19	R4887526
Sodium (Na)-Dissolved	469000		50	ug/L	24-OCT-19	24-OCT-19	R4887526
Strontium (Sr)-Dissolved	3900		10	ug/L	24-OCT-19	28-OCT-19	R4888724
Sulfur (S)-Dissolved	421000		500	ug/L	24-OCT-19	24-OCT-19	R4887526
Tellurium (Te)-Dissolved	<0.20		0.20	ug/L	24-OCT-19	24-OCT-19	R4887526
Thallium (Tl)-Dissolved	0.035		0.010	ug/L	24-OCT-19	24-OCT-19	R4887526
Thorium (Th)-Dissolved	<0.10		0.10	ug/L	24-OCT-19	24-OCT-19	R4887526
Tin (Sn)-Dissolved	<0.10		0.10	ug/L	24-OCT-19	24-OCT-19	R4887526
Titanium (Ti)-Dissolved	<0.30		0.30	ug/L	24-OCT-19	24-OCT-19	R4887526
Tungsten (W)-Dissolved	<0.10		0.10	ug/L	24-OCT-19	24-OCT-19	R4887526
Uranium (U)-Dissolved	17.0		0.010	ug/L	24-OCT-19	24-OCT-19	R4887526
Vanadium (V)-Dissolved	<0.50		0.50	ug/L	24-OCT-19	24-OCT-19	R4887526
Zinc (Zn)-Dissolved	5.0		1.0	ug/L	24-OCT-19	24-OCT-19	R4887526
Zirconium (Zr)-Dissolved	<0.20		0.20	ug/L	24-OCT-19	24-OCT-19	R4887526

* 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.			
C-DIC-HTC-WP	Water	Dissolved Inorganic Carbon by Combustion	APHA 5310 B-WP
Filtered (0.45 µm) sample is injected into a heated reaction chamber where it is acidified, converting all inorganic carbon to CO ₂ which is then transported in the carrier gas stream and measured via a non-dispersive infrared analyzer.			
C-DOC-HTC-WP	Water	Dissolved Organic Carbon by Combustion	APHA 5310 B-WP
Filtered (0.45 µm) sample is acidified and purged to remove inorganic carbon, then injected into a heated reaction chamber where organic carbon is oxidized to CO ₂ which is then transported in the carrier gas stream and measured via a non-dispersive infrared analyzer.			
C-TDC-CALC-WP	Water	Total Dissolved Carbon by Calculation	CALCULATED
Total dissolved carbon represents the sum of dissolved inorganic carbon and dissolved organic carbon. For the purpose of calculation, results less than the detection limit (DL) are treated as zero.			
CL-IC-N-WP	Water	Chloride in Water by IC	EPA 300.1 (mod)
Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.			
CR-CR6-IC-WT	Water	Chromium +6	EPA 7199
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.			
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).			
EC-SCREEN-WP	Water	Conductivity Screen (Internal Use Only)	APHA 2510
Qualitative analysis of conductivity where required during preparation of other test eg. IC, TDS, TSS, etc			
HG-T-CVAA-WP	Water	Mercury Total	EPA 1631E (mod)
Water samples undergo a cold-oxidation using bromine monochloride prior to reduction with stannous chloride, and analyzed by CVAAS.			
MET-D-CCMS-WP	Water	Dissolved Metals in Water by CRC ICPMS	APHA 3030B/6020B (mod)
Water samples are filtered (0.45 µm), 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.			
NH3-COL-WP	Water	Ammonia by colour	APHA 4500 NH3 F

Reference Information

Test Method References:

ALS Test Code	Matrix	Test Description	Method Reference**
		Ammonia in water samples forms indophenol when reacted with hypochlorite and phenol. The intensity is amplified by the addition of sodium nitroprusside and measured colourmetrically.	
PHENOLS-4AAP-WT	Water	Phenol (4AAP)	EPA 9066
		An automated method is used to distill the sample. The distillate is then buffered to pH 9.4 which reacts with 4AAP and potassium ferricyanide to form a red complex which is measured colorimetrically.	
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.	

** 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
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: L2362652

Report Date: 29-OCT-19

Page 1 of 5

Client: City of Winnipeg - Solid Waste Services Div (1120 Waverley)
 Solid Waste Services Division 1120 Waverley Street
 Winnipeg MB R3T 0P4

Contact: CHRIS KOZAK

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
ALK-TITR-WP		Water						
Batch	R4867136							
WG3188916-24	LCS							
Alkalinity, Total (as CaCO3)			110.8		%		85-115	10-OCT-19
WG3188916-21	MB							
Alkalinity, Total (as CaCO3)			<1.0		mg/L		1	10-OCT-19
C-DIC-HTC-WP		Water						
Batch	R4873268							
WG3192320-2	LCS							
Dissolved Inorganic Carbon			99.5		%		80-120	16-OCT-19
WG3192320-4	LCS							
Dissolved Inorganic Carbon			100.3		%		80-120	16-OCT-19
WG3192320-1	MB							
Dissolved Inorganic Carbon			<0.50		mg/L		0.5	16-OCT-19
C-DOC-HTC-WP		Water						
Batch	R4873294							
WG3192292-2	LCS							
Dissolved Organic Carbon			104.8		%		80-120	16-OCT-19
WG3192292-1	MB							
Dissolved Organic Carbon			<0.50		mg/L		0.5	16-OCT-19
CL-IC-N-WP		Water						
Batch	R4871591							
WG3187983-6	LCS							
Chloride (Cl)			99.6		%		90-110	11-OCT-19
WG3187983-5	MB							
Chloride (Cl)			<0.50		mg/L		0.5	11-OCT-19
CR-CR6-IC-WT		Water						
Batch	R4870968							
WG3191274-2	LCS							
Chromium, Hexavalent			94.3		%		80-120	15-OCT-19
WG3191274-1	MB							
Chromium, Hexavalent			<0.00050		mg/L		0.0005	15-OCT-19
HG-T-CVAA-WP		Water						
Batch	R4871875							
WG3192574-2	LCS							
Mercury (Hg)-Total			111.0		%		80-120	16-OCT-19
WG3192574-1	MB							
Mercury (Hg)-Total			<0.0000050		mg/L		0.000005	16-OCT-19
MET-D-CCMS-WP		Water						



Quality Control Report

Workorder: L2362652

Report Date: 29-OCT-19

Page 2 of 5

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
MET-D-CCMS-WP								
	Water							
Batch	R4887526							
WG3200352-2	LCS							
Aluminum (Al)-Dissolved			108.7		%		80-120	24-OCT-19
Antimony (Sb)-Dissolved			102.4		%		80-120	24-OCT-19
Arsenic (As)-Dissolved			104.0		%		80-120	24-OCT-19
Barium (Ba)-Dissolved			102.9		%		80-120	24-OCT-19
Beryllium (Be)-Dissolved			108.6		%		80-120	24-OCT-19
Bismuth (Bi)-Dissolved			101.3		%		80-120	24-OCT-19
Boron (B)-Dissolved			106.9		%		80-120	24-OCT-19
Cadmium (Cd)-Dissolved			103.2		%		80-120	24-OCT-19
Calcium (Ca)-Dissolved			105.2		%		80-120	24-OCT-19
Cesium (Cs)-Dissolved			106.5		%		80-120	24-OCT-19
Chromium (Cr)-Dissolved			107.9		%		80-120	24-OCT-19
Cobalt (Co)-Dissolved			104.8		%		80-120	24-OCT-19
Copper (Cu)-Dissolved			103.3		%		80-120	24-OCT-19
Iron (Fe)-Dissolved			109.9		%		80-120	24-OCT-19
Lead (Pb)-Dissolved			105.0		%		80-120	24-OCT-19
Magnesium (Mg)-Dissolved			109.4		%		80-120	24-OCT-19
Manganese (Mn)-Dissolved			106.9		%		80-120	24-OCT-19
Molybdenum (Mo)-Dissolved			99.0		%		80-120	24-OCT-19
Nickel (Ni)-Dissolved			104.5		%		80-120	24-OCT-19
Phosphorus (P)-Dissolved			107.4		%		80-120	24-OCT-19
Potassium (K)-Dissolved			110.0		%		80-120	24-OCT-19
Rubidium (Rb)-Dissolved			101.5		%		80-120	24-OCT-19
Selenium (Se)-Dissolved			108.0		%		80-120	24-OCT-19
Silicon (Si)-Dissolved			106.8		%		80-120	24-OCT-19
Silver (Ag)-Dissolved			104.4		%		80-120	24-OCT-19
Sodium (Na)-Dissolved			105.9		%		80-120	24-OCT-19
Sulfur (S)-Dissolved			107.8		%		80-120	24-OCT-19
Tellurium (Te)-Dissolved			102.5		%		80-120	24-OCT-19
Thallium (Tl)-Dissolved			100.8		%		80-120	24-OCT-19
Thorium (Th)-Dissolved			102.8		%		80-120	24-OCT-19
Tin (Sn)-Dissolved			100.9		%		80-120	24-OCT-19
Titanium (Ti)-Dissolved			100.3		%		80-120	24-OCT-19
Tungsten (W)-Dissolved			101.6		%		80-120	24-OCT-19
Uranium (U)-Dissolved			105.4		%		80-120	24-OCT-19



Quality Control Report

Workorder: L2362652

Report Date: 29-OCT-19

Page 3 of 5

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
MET-D-CCMS-WP		Water						
Batch	R4887526							
WG3200352-2 LCS								
Vanadium (V)-Dissolved			106.9		%		80-120	24-OCT-19
Zinc (Zn)-Dissolved			104.7		%		80-120	24-OCT-19
Zirconium (Zr)-Dissolved			97.6		%		80-120	24-OCT-19
WG3200352-1 MB								
Aluminum (Al)-Dissolved			<0.0010		mg/L		0.001	24-OCT-19
Antimony (Sb)-Dissolved			<0.00010		mg/L		0.0001	24-OCT-19
Arsenic (As)-Dissolved			<0.00010		mg/L		0.0001	24-OCT-19
Barium (Ba)-Dissolved			<0.00010		mg/L		0.0001	24-OCT-19
Beryllium (Be)-Dissolved			<0.00010		mg/L		0.0001	24-OCT-19
Bismuth (Bi)-Dissolved			<0.000050		mg/L		0.00005	24-OCT-19
Boron (B)-Dissolved			<0.010		mg/L		0.01	24-OCT-19
Cadmium (Cd)-Dissolved			<0.0000050		mg/L		0.000005	24-OCT-19
Calcium (Ca)-Dissolved			<0.050		mg/L		0.05	24-OCT-19
Cesium (Cs)-Dissolved			<0.000010		mg/L		0.00001	24-OCT-19
Chromium (Cr)-Dissolved			<0.00010		mg/L		0.0001	24-OCT-19
Cobalt (Co)-Dissolved			<0.00010		mg/L		0.0001	24-OCT-19
Copper (Cu)-Dissolved			<0.00020		mg/L		0.0002	24-OCT-19
Iron (Fe)-Dissolved			<0.010		mg/L		0.01	24-OCT-19
Lead (Pb)-Dissolved			<0.000050		mg/L		0.00005	24-OCT-19
Magnesium (Mg)-Dissolved			<0.0050		mg/L		0.005	24-OCT-19
Manganese (Mn)-Dissolved			<0.00010		mg/L		0.0001	24-OCT-19
Molybdenum (Mo)-Dissolved			<0.000050		mg/L		0.00005	24-OCT-19
Nickel (Ni)-Dissolved			<0.00050		mg/L		0.0005	24-OCT-19
Phosphorus (P)-Dissolved			<0.030		mg/L		0.03	24-OCT-19
Potassium (K)-Dissolved			<0.050		mg/L		0.05	24-OCT-19
Rubidium (Rb)-Dissolved			<0.00020		mg/L		0.0002	24-OCT-19
Selenium (Se)-Dissolved			<0.000050		mg/L		0.00005	24-OCT-19
Silicon (Si)-Dissolved			<0.050		mg/L		0.05	24-OCT-19
Silver (Ag)-Dissolved			<0.000010		mg/L		0.00001	24-OCT-19
Sodium (Na)-Dissolved			<0.050		mg/L		0.05	24-OCT-19
Sulfur (S)-Dissolved			<0.50		mg/L		0.5	24-OCT-19
Tellurium (Te)-Dissolved			<0.00020		mg/L		0.0002	24-OCT-19
Thallium (Tl)-Dissolved			<0.000010		mg/L		0.00001	24-OCT-19
Thorium (Th)-Dissolved			<0.00010		mg/L		0.0001	24-OCT-19



Quality Control Report

Workorder: L2362652

Report Date: 29-OCT-19

Page 4 of 5

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
MET-D-CCMS-WP		Water						
Batch	R4887526							
WG3200352-1	MB							
Tin (Sn)-Dissolved			<0.00010		mg/L		0.0001	24-OCT-19
Titanium (Ti)-Dissolved			<0.00030		mg/L		0.0003	24-OCT-19
Tungsten (W)-Dissolved			<0.00010		mg/L		0.0001	24-OCT-19
Uranium (U)-Dissolved			<0.000010		mg/L		0.00001	24-OCT-19
Vanadium (V)-Dissolved			<0.00050		mg/L		0.0005	24-OCT-19
Zinc (Zn)-Dissolved			<0.0010		mg/L		0.001	24-OCT-19
Zirconium (Zr)-Dissolved			<0.00020		mg/L		0.0002	24-OCT-19
NH3-COL-WP		Water						
Batch	R4873241							
WG3193729-38	LCS							
Ammonia, Total (as N)			100.8		%		85-115	15-OCT-19
WG3193729-37	MB							
Ammonia, Total (as N)			<0.010		mg/L		0.01	16-OCT-19
PHENOLS-4AAP-WT		Water						
Batch	R4871063							
WG3190915-2	LCS							
Phenols (4AAP)			108.7		%		85-115	15-OCT-19
WG3190915-1	MB							
Phenols (4AAP)			<0.0010		mg/L		0.001	15-OCT-19
SO4-IC-N-WP		Water						
Batch	R4871591							
WG3187983-6	LCS							
Sulfate (SO4)			99.5		%		90-110	11-OCT-19
WG3187983-5	MB							
Sulfate (SO4)			<0.30		mg/L		0.3	11-OCT-19

Quality Control Report

Workorder: L2362652

Report Date: 29-OCT-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

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.



Chain of Custody (COC) / Analytical Request Form

Canada Toll Free: 1 800 668 9878



L2362652-COFC

COC Number: 15 -

Page of

www.alsglobal.com

Report To Contact and company name below will appear on the final report Company: City of Winnipeg Contact: Chris Kozak Phone: 204-986-2384 Company address below will appear on the final report Street: 1120 Waverly Street City/Province: Winnipeg, Manitoba Postal Code: R3T 0P4			Report Format / Distribution Select Report Format: <input checked="" type="checkbox"/> PDF <input type="checkbox"/> EXCEL <input type="checkbox"/> EDD (DIGITAL) Quality Control (QC) Report with Report <input checked="" 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: ckozak@winnipeg.ca Email 2 Email 3			Confirm all E&P TATs with your AM - surcharges will apply Regular [R] Standard TAT if received by 3 pm - business days - no surcharges apply 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"/> 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 Company: Contact:			Invoice Distribution Select Invoice Distribution: <input type="checkbox"/> EMAIL <input checked="" type="checkbox"/> MAIL <input type="checkbox"/> FAX Email 1 or Fax Email 2			Analysis Request Indicate Filtered (F), Preserved (P) or Filtered and Preserved (F/P) below <table border="1"> <thead> <tr> <th>CL-IC-N-WP</th> <th>SO4-IC-N-WP</th> <th>ALK-SPEC-WP</th> <th>NH3-COL-WP</th> <th>C-TDC.DIC.DOC-HTC-WP</th> <th>MET-D-CCMS-WP (DISSOLVED)</th> <th>HG-T-CVAA-WP (TOTAL)</th> <th>CR-CR6-IC-WT</th> <th>PHENOLS-4AAP-WT</th> <th>Number of Containers</th> </tr> </thead> <tbody> <tr> <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>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></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></tr> <tr><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></tr> <tr><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></tr> <tr><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></tr> <tr><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></tr> <tr><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></tr> <tr><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></tr> <tr><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></tr> </tbody> </table>			CL-IC-N-WP	SO4-IC-N-WP	ALK-SPEC-WP	NH3-COL-WP	C-TDC.DIC.DOC-HTC-WP	MET-D-CCMS-WP (DISSOLVED)	HG-T-CVAA-WP (TOTAL)	CR-CR6-IC-WT	PHENOLS-4AAP-WT	Number of Containers	X	X	X	X	X	X	X	X	X		X	X	X	X	X	X	X	X	X																																																																																																																																																																	
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Project Information ALS Account # / Quote #: W10051/Q67317 Job #: Section B - BRRMF Groundwater PO / AFE: LSD:			Oil and Gas Required Fields (client use) AFE/Cost Center: PO# Major/Minor Code: Routing Code: Requisitioner: Location:																																																																																																																																																																																																			
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ALS Sample # (lab use only)	Sample Identification and/or Coordinates (This description will appear on the report)	Date (dd-mmm-yy)	Time (hh:mm)	Sample Type	CL-IC-N-WP	SO4-IC-N-WP	ALK-SPEC-WP	NH3-COL-WP	C-TDC.DIC.DOC-HTC-WP	MET-D-CCMS-WP (DISSOLVED)	HG-T-CVAA-WP (TOTAL)	CR-CR6-IC-WT	PHENOLS-4AAP-WT	Number of Containers																																																																																																																																																																																								
	GWQ25-15A	245476	09-OCT-19 09:28	WATER	X	X	X	X	X	X	X	X	X																																																																																																																																																																																									
	GWQ25-16A	245477	09-OCT-19 09:40	WATER	X	X	X	X	X	X	X	X	X																																																																																																																																																																																									
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Drinking Water (DW) Samples¹ (client use) Are samples taken from a Regulated DW System? <input type="checkbox"/> YES <input checked="" type="checkbox"/> NO Are samples for human drinking water use? <input type="checkbox"/> YES <input checked="" type="checkbox"/> NO		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) Frozen <input type="checkbox"/> SIF Observations Yes <input type="checkbox"/> No <input type="checkbox"/> 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"/> INITIAL COOLER TEMPERATURES °C: F.3°C FINAL COOLER TEMPERATURES °C:			
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SHIPMENT RELEASE (client use) Released by: <i>[Signature]</i> Date: 9-OCT-19 Time: 13:01			INITIAL SHIPMENT RECEPTION (lab use only) Received by: <i>[Signature]</i> Date: Oct. 9, 2019 Time: 14:00			FINAL SHIPMENT RECEPTION (lab use only) Received by: <i>[Signature]</i> Date: OCT 9 2019 Time: <i>[Signature]</i>		
--	--	--	--	--	--	---	--	--

REFER TO BACK PAGE FOR ALS LOCATIONS AND SAMPLING INFORMATION
 Failure to complete all portions of this form may delay analysis. Please fill in this form LEGIBLY. By the use of this form the user acknowledges and agrees with the Terms and Conditions as specified on the back page of the white - report copy.
 1. If any water samples are taken from a Regulated Drinking Water (DW) System, please submit using an Authorized DW COC form.



City of Winnipeg - Solid Waste Services Div
(1120 Waverley)
ATTN: CHRIS KOZAK
Solid Waste Services Division
1120 Waverley Street
Winnipeg MB R3T 0P4

Date Received: 13-NOV-19
Report Date: 29-NOV-19 11:16 (MT)
Version: FINAL

Client Phone: 204-986-2384

Certificate of Analysis

Lab Work Order #: L2381742
Project P.O. #: NOT SUBMITTED
Job Reference: SECTION B - BRRMF GROUNDWATER
C of C Numbers:
Legal Site Desc:

Hua Wo
Chemistry Laboratory 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
L2381742-1 GWQ25 - W7 245471							
Sampled By: CLIENT on 13-NOV-19 @ 10:31							
Matrix: WATER							
Alkalinity species as HCO3, CO3, OH							
Alkalinity, Bicarbonate							
Bicarbonate (HCO3)	155000		1200	ug/L		15-NOV-19	
Alkalinity, Carbonate							
Carbonate (CO3)	<600		600	ug/L		15-NOV-19	
Alkalinity, Hydroxide							
Hydroxide (OH)	<340		340	ug/L		15-NOV-19	
Alkalinity, Total (as CaCO3)							
Alkalinity, Total (as CaCO3)	127000		1000	ug/L		14-NOV-19	R4909330
Dissolved Carbons							
Dissolved Inorganic Carbon by Combustion							
Dissolved Inorganic Carbon	25200		500	ug/L		21-NOV-19	R4921551
Dissolved Organic Carbon by Combustion							
Dissolved Organic Carbon	4990		500	ug/L		14-NOV-19	R4909394
Total Dissolved Carbon by Calculation							
Total Dissolved Carbon	30200		1000	ug/L		22-NOV-19	
Miscellaneous Parameters							
Ammonia, Total (as N)	2040		100	ug/L		15-NOV-19	R4910232
Chloride (Cl)	1850000		10000	ug/L		14-NOV-19	R4912006
Cyanide, Total	2.0		1.0	ug/L		25-NOV-19	R4924527
Mercury (Hg)-Total	<0.0050		0.0050	ug/L	26-NOV-19	26-NOV-19	R4925108
Phenols (4AAP)	6.0		1.0	ug/L		18-NOV-19	R4915159
Sulfate (SO4)	608000		6000	ug/L		14-NOV-19	R4912006
Dissolved Metals in Water by CRC ICPMS							
Dissolved Metals Filtration Location	FIELD					25-NOV-19	R4922696
Aluminum (Al)-Dissolved	1.8		1.0	ug/L	25-NOV-19	26-NOV-19	R4926087
Antimony (Sb)-Dissolved	3.30		0.10	ug/L	25-NOV-19	26-NOV-19	R4926087
Arsenic (As)-Dissolved	0.48		0.10	ug/L	25-NOV-19	26-NOV-19	R4926087
Barium (Ba)-Dissolved	46.8		0.10	ug/L	25-NOV-19	26-NOV-19	R4926087
Beryllium (Be)-Dissolved	<0.10		0.10	ug/L	25-NOV-19	26-NOV-19	R4926087
Bismuth (Bi)-Dissolved	<0.050		0.050	ug/L	25-NOV-19	26-NOV-19	R4926087
Boron (B)-Dissolved	436		10	ug/L	25-NOV-19	26-NOV-19	R4926087
Cadmium (Cd)-Dissolved	0.0157		0.0050	ug/L	25-NOV-19	26-NOV-19	R4926087
Calcium (Ca)-Dissolved	348000		50	ug/L	25-NOV-19	26-NOV-19	R4926087
Cesium (Cs)-Dissolved	0.535		0.010	ug/L	25-NOV-19	26-NOV-19	R4926087
Chromium (Cr)-Dissolved	19.7		0.10	ug/L	25-NOV-19	26-NOV-19	R4926087
Cobalt (Co)-Dissolved	<0.10		0.10	ug/L	25-NOV-19	26-NOV-19	R4926087
Copper (Cu)-Dissolved	1.16		0.20	ug/L	25-NOV-19	26-NOV-19	R4926087
Iron (Fe)-Dissolved	30		10	ug/L	25-NOV-19	26-NOV-19	R4926087
Lead (Pb)-Dissolved	<0.050		0.050	ug/L	25-NOV-19	26-NOV-19	R4926087
Lithium (Li)-Dissolved	294		1.0	ug/L	25-NOV-19	26-NOV-19	R4926087
Magnesium (Mg)-Dissolved	34900		5.0	ug/L	25-NOV-19	26-NOV-19	R4926087
Manganese (Mn)-Dissolved	0.85		0.10	ug/L	25-NOV-19	26-NOV-19	R4926087
Molybdenum (Mo)-Dissolved	6.28		0.050	ug/L	25-NOV-19	26-NOV-19	R4926087
Nickel (Ni)-Dissolved	<0.50		0.50	ug/L	25-NOV-19	26-NOV-19	R4926087
Phosphorus (P)-Dissolved	<30		30	ug/L	25-NOV-19	26-NOV-19	R4926087
Potassium (K)-Dissolved	25800		50	ug/L	25-NOV-19	26-NOV-19	R4926087
Rubidium (Rb)-Dissolved	14.6		0.20	ug/L	25-NOV-19	26-NOV-19	R4926087
Selenium (Se)-Dissolved	0.061		0.050	ug/L	25-NOV-19	26-NOV-19	R4926087
Silicon (Si)-Dissolved	785		50	ug/L	25-NOV-19	26-NOV-19	R4926087
Silver (Ag)-Dissolved	<0.010		0.010	ug/L	25-NOV-19	26-NOV-19	R4926087
Sodium (Na)-Dissolved	786000		500	ug/L	25-NOV-19	28-NOV-19	R4928432

* 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
L2381742-1 GWQ25 - W7 245471 Sampled By: CLIENT on 13-NOV-19 @ 10:31 Matrix: WATER							
Dissolved Metals in Water by CRC ICPMS							
Strontium (Sr)-Dissolved	3950		1.0	ug/L	25-NOV-19	28-NOV-19	R4928432
Sulfur (S)-Dissolved	232000		500	ug/L	25-NOV-19	26-NOV-19	R4926087
Tellurium (Te)-Dissolved	<0.20		0.20	ug/L	25-NOV-19	26-NOV-19	R4926087
Thallium (Tl)-Dissolved	<0.010		0.010	ug/L	25-NOV-19	26-NOV-19	R4926087
Thorium (Th)-Dissolved	<0.10		0.10	ug/L	25-NOV-19	26-NOV-19	R4926087
Tin (Sn)-Dissolved	0.26		0.10	ug/L	25-NOV-19	26-NOV-19	R4926087
Titanium (Ti)-Dissolved	<0.30		0.30	ug/L	25-NOV-19	26-NOV-19	R4926087
Tungsten (W)-Dissolved	0.41		0.10	ug/L	25-NOV-19	26-NOV-19	R4926087
Uranium (U)-Dissolved	0.020		0.010	ug/L	25-NOV-19	26-NOV-19	R4926087
Vanadium (V)-Dissolved	<0.50		0.50	ug/L	25-NOV-19	26-NOV-19	R4926087
Zinc (Zn)-Dissolved	3.2		1.0	ug/L	25-NOV-19	26-NOV-19	R4926087
Zirconium (Zr)-Dissolved	<0.20		0.20	ug/L	25-NOV-19	26-NOV-19	R4926087
Total, Fecal Coliforms, E Coli by QT97							
Fecal Coliform by MPN QT97							
Fecal Coliforms	<1		1	MPN/100mL		13-NOV-19	R4906582
Total Coliform and E.coli by MPN QT97							
Total Coliforms	<1		1	MPN/100mL		13-NOV-19	R4906574
Escherichia Coli	<1		1	MPN/100mL		13-NOV-19	R4906574
L2381742-2 GWQ25 - W6 245461 Sampled By: CLIENT on 13-NOV-19 @ 11:39 Matrix: WATER							
Alkalinity species as HCO3, CO3, OH							
Alkalinity, Bicarbonate							
Bicarbonate (HCO3)	171000		1200	ug/L		15-NOV-19	
Alkalinity, Carbonate							
Carbonate (CO3)	<600		600	ug/L		15-NOV-19	
Alkalinity, Hydroxide							
Hydroxide (OH)	<340		340	ug/L		15-NOV-19	
Alkalinity, Total (as CaCO3)							
Alkalinity, Total (as CaCO3)	141000		1000	ug/L		14-NOV-19	R4909330
Dissolved Carbons							
Dissolved Inorganic Carbon by Combustion							
Dissolved Inorganic Carbon	23400		500	ug/L		18-NOV-19	R4915689
Dissolved Organic Carbon by Combustion							
Dissolved Organic Carbon	2700		500	ug/L		15-NOV-19	R4914359
Total Dissolved Carbon by Calculation							
Total Dissolved Carbon	26100		1000	ug/L		19-NOV-19	
Miscellaneous Parameters							
Ammonia, Total (as N)	1580		100	ug/L		15-NOV-19	R4910232
Chloride (Cl)	3000000		25000	ug/L		14-NOV-19	R4912006
Chromium, Hexavalent	0.80		0.50	ug/L		22-NOV-19	R4922220
Cyanide, Total	1.1		1.0	ug/L		25-NOV-19	R4924527
Mercury (Hg)-Total	<0.0050		0.0050	ug/L	26-NOV-19	26-NOV-19	R4925108
Phenols (4AAP)	8.4		1.0	ug/L		18-NOV-19	R4915159
Sulfate (SO4)	995000		15000	ug/L		14-NOV-19	R4912006
Dissolved Metals in Water by CRC ICPMS							
Dissolved Metals Filtration Location	FIELD					25-NOV-19	R4922696
Aluminum (Al)-Dissolved	<1.0		1.0	ug/L	25-NOV-19	26-NOV-19	R4926087
Antimony (Sb)-Dissolved	1.99		0.10	ug/L	25-NOV-19	26-NOV-19	R4926087
Arsenic (As)-Dissolved	0.91		0.10	ug/L	25-NOV-19	26-NOV-19	R4926087
Barium (Ba)-Dissolved	15.2		0.10	ug/L	25-NOV-19	26-NOV-19	R4926087

* 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
L2381742-2 GWQ25 - W6 245461							
Sampled By: CLIENT on 13-NOV-19 @ 11:39							
Matrix: WATER							
Dissolved Metals in Water by CRC ICPMS							
Beryllium (Be)-Dissolved	<0.10		0.10	ug/L	25-NOV-19	26-NOV-19	R4926087
Bismuth (Bi)-Dissolved	<0.050		0.050	ug/L	25-NOV-19	26-NOV-19	R4926087
Boron (B)-Dissolved	1190		100	ug/L	25-NOV-19	28-NOV-19	R4928432
Cadmium (Cd)-Dissolved	0.160		0.0050	ug/L	25-NOV-19	26-NOV-19	R4926087
Calcium (Ca)-Dissolved	341000		50	ug/L	25-NOV-19	26-NOV-19	R4926087
Cesium (Cs)-Dissolved	0.092		0.010	ug/L	25-NOV-19	26-NOV-19	R4926087
Chromium (Cr)-Dissolved	0.51		0.10	ug/L	25-NOV-19	26-NOV-19	R4926087
Cobalt (Co)-Dissolved	0.49		0.10	ug/L	25-NOV-19	26-NOV-19	R4926087
Copper (Cu)-Dissolved	2.00		0.20	ug/L	25-NOV-19	26-NOV-19	R4926087
Iron (Fe)-Dissolved	<10		10	ug/L	25-NOV-19	26-NOV-19	R4926087
Lead (Pb)-Dissolved	<0.050		0.050	ug/L	25-NOV-19	26-NOV-19	R4926087
Lithium (Li)-Dissolved	409		10	ug/L	25-NOV-19	28-NOV-19	R4928432
Magnesium (Mg)-Dissolved	182000		5.0	ug/L	25-NOV-19	26-NOV-19	R4926087
Manganese (Mn)-Dissolved	37.4		0.10	ug/L	25-NOV-19	26-NOV-19	R4926087
Molybdenum (Mo)-Dissolved	4.21		0.050	ug/L	25-NOV-19	26-NOV-19	R4926087
Nickel (Ni)-Dissolved	2.80		0.50	ug/L	25-NOV-19	26-NOV-19	R4926087
Phosphorus (P)-Dissolved	<30		30	ug/L	25-NOV-19	26-NOV-19	R4926087
Potassium (K)-Dissolved	50600		50	ug/L	25-NOV-19	26-NOV-19	R4926087
Rubidium (Rb)-Dissolved	23.0		0.20	ug/L	25-NOV-19	26-NOV-19	R4926087
Selenium (Se)-Dissolved	<0.050		0.050	ug/L	25-NOV-19	26-NOV-19	R4926087
Silicon (Si)-Dissolved	4780		50	ug/L	25-NOV-19	26-NOV-19	R4926087
Silver (Ag)-Dissolved	0.012		0.010	ug/L	25-NOV-19	26-NOV-19	R4926087
Sodium (Na)-Dissolved	1760000		500	ug/L	25-NOV-19	28-NOV-19	R4928432
Strontium (Sr)-Dissolved	5140		1.0	ug/L	25-NOV-19	28-NOV-19	R4928432
Sulfur (S)-Dissolved	395000		500	ug/L	25-NOV-19	26-NOV-19	R4926087
Tellurium (Te)-Dissolved	<0.20		0.20	ug/L	25-NOV-19	26-NOV-19	R4926087
Thallium (Tl)-Dissolved	<0.010		0.010	ug/L	25-NOV-19	26-NOV-19	R4926087
Thorium (Th)-Dissolved	<0.10		0.10	ug/L	25-NOV-19	26-NOV-19	R4926087
Tin (Sn)-Dissolved	<0.10		0.10	ug/L	25-NOV-19	26-NOV-19	R4926087
Titanium (Ti)-Dissolved	<0.30		0.30	ug/L	25-NOV-19	26-NOV-19	R4926087
Tungsten (W)-Dissolved	0.60		0.10	ug/L	25-NOV-19	26-NOV-19	R4926087
Uranium (U)-Dissolved	0.473		0.010	ug/L	25-NOV-19	26-NOV-19	R4926087
Vanadium (V)-Dissolved	<0.50		0.50	ug/L	25-NOV-19	26-NOV-19	R4926087
Zinc (Zn)-Dissolved	65.3		1.0	ug/L	25-NOV-19	26-NOV-19	R4926087
Zirconium (Zr)-Dissolved	<0.20		0.20	ug/L	25-NOV-19	26-NOV-19	R4926087
Polyaromatic Hydrocarbons (PAHs)							
1-Methyl Naphthalene	<0.020		0.020	ug/L	15-NOV-19	17-NOV-19	R4915091
2-Methyl Naphthalene	<0.020		0.020	ug/L	15-NOV-19	17-NOV-19	R4915091
Acenaphthene	<0.020		0.020	ug/L	15-NOV-19	17-NOV-19	R4915091
Acenaphthylene	<0.020		0.020	ug/L	15-NOV-19	17-NOV-19	R4915091
Anthracene	<0.010		0.010	ug/L	15-NOV-19	17-NOV-19	R4915091
Acridine	<0.020		0.020	ug/L	15-NOV-19	17-NOV-19	R4915091
Benzo(a)anthracene	<0.010		0.010	ug/L	15-NOV-19	17-NOV-19	R4915091
Benzo(a)pyrene	<0.0050		0.0050	ug/L	15-NOV-19	17-NOV-19	R4915091
Benzo(b&j)fluoranthene	<0.010		0.010	ug/L	15-NOV-19	17-NOV-19	R4915091
Benzo(g,h,i)perylene	<0.020		0.020	ug/L	15-NOV-19	17-NOV-19	R4915091
Benzo(k)fluoranthene	<0.010		0.010	ug/L	15-NOV-19	17-NOV-19	R4915091
Chrysene	<0.020		0.020	ug/L	15-NOV-19	17-NOV-19	R4915091
Dibenzo(a,h)anthracene	<0.0050		0.0050	ug/L	15-NOV-19	17-NOV-19	R4915091
Fluoranthene	<0.020		0.020	ug/L	15-NOV-19	17-NOV-19	R4915091
Fluorene	<0.020		0.020	ug/L	15-NOV-19	17-NOV-19	R4915091

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ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2381742-2 GWQ25 - W6 245461							
Sampled By: CLIENT on 13-NOV-19 @ 11:39							
Matrix: WATER							
Polyaromatic Hydrocarbons (PAHs)							
Indeno(1,2,3-cd)pyrene	<0.010		0.010	ug/L	15-NOV-19	17-NOV-19	R4915091
Naphthalene	<0.050		0.050	ug/L	15-NOV-19	17-NOV-19	R4915091
Phenanthrene	<0.050		0.050	ug/L	15-NOV-19	17-NOV-19	R4915091
Pyrene	<0.010		0.010	ug/L	15-NOV-19	17-NOV-19	R4915091
Quinoline	<0.020		0.020	ug/L	15-NOV-19	17-NOV-19	R4915091
B(a)P Total Potency Equivalent	<0.030		0.030	ug/L	15-NOV-19	17-NOV-19	R4915091
Surrogate: Acenaphthene d10	98.9		60-130	%	15-NOV-19	17-NOV-19	R4915091
Surrogate: Acridine d9	106.4		60-130	%	15-NOV-19	17-NOV-19	R4915091
Surrogate: Chrysene d12	108.1		60-130	%	15-NOV-19	17-NOV-19	R4915091
Surrogate: Naphthalene d8	100.7		50-130	%	15-NOV-19	17-NOV-19	R4915091
Surrogate: Phenanthrene d10	106.4		60-130	%	15-NOV-19	17-NOV-19	R4915091
Herbicides in Water							
Clopyralid	<0.10		0.10	ug/L	18-NOV-19	18-NOV-19	R4915730
Dicamba	<0.10		0.10	ug/L	18-NOV-19	18-NOV-19	R4915730
Mecoprop	<0.10		0.10	ug/L	18-NOV-19	18-NOV-19	R4915730
MCPA	<0.10		0.10	ug/L	18-NOV-19	18-NOV-19	R4915730
2,4-D	<0.10		0.10	ug/L	18-NOV-19	18-NOV-19	R4915730
Bromoxynil	<0.10		0.10	ug/L	18-NOV-19	18-NOV-19	R4915730
Triclopyr	<0.10		0.10	ug/L	18-NOV-19	18-NOV-19	R4915730
2,4,5-T	<0.10		0.10	ug/L	18-NOV-19	18-NOV-19	R4915730
2,4,5-TP	<0.10		0.10	ug/L	18-NOV-19	18-NOV-19	R4915730
Picloram	<0.10		0.10	ug/L	18-NOV-19	18-NOV-19	R4915730
2,4-DB	<0.10		0.10	ug/L	18-NOV-19	18-NOV-19	R4915730
2,4-DP	<0.10		0.10	ug/L	18-NOV-19	18-NOV-19	R4915730
Dinoseb	<0.10		0.10	ug/L	18-NOV-19	18-NOV-19	R4915730
MCPB	<0.10		0.10	ug/L	18-NOV-19	18-NOV-19	R4915730
Surrogate: 2,4-Dichlorophenylacetic Acid	121.0		50-130	%	18-NOV-19	18-NOV-19	R4915730
Miscellaneous Pesticides							
Diazinon	<0.10		0.10	ug/L	16-NOV-19	19-NOV-19	R4915793
Surrogate: 2-Fluorobiphenyl	83.0		40-130	%	16-NOV-19	19-NOV-19	R4915793
Surrogate: d14-Terphenyl	80.0		40-130	%	16-NOV-19	19-NOV-19	R4915793
Total, Fecal Coliforms, E Coli by QT97							
Fecal Coliform by MPN QT97							
Fecal Coliforms	<1		1	MPN/100mL		13-NOV-19	R4906582
Total Coliform and E.coli by MPN QT97							
Total Coliforms	1		1	MPN/100mL		13-NOV-19	R4906574
Escherichia Coli	<1		1	MPN/100mL		13-NOV-19	R4906574
VOC plus F1 to F4							
CCME PHC F2-F4 in Water							
F2 (C10-C16)	<100		100	ug/L	22-NOV-19	23-NOV-19	R4927450
F3 (C16-C34)	<250		250	ug/L	22-NOV-19	23-NOV-19	R4927450
F4 (C34-C50)	<250		250	ug/L	22-NOV-19	23-NOV-19	R4927450
Surrogate: 2-Bromobenzotrifluoride	94.7		60-140	%	22-NOV-19	23-NOV-19	R4927450
CCME Total Hydrocarbons							
F1-BTEX	<100		100	ug/L		28-NOV-19	
F2-Naphth	<100		100	ug/L		28-NOV-19	
F3-PAH	<250		250	ug/L		28-NOV-19	
Total Hydrocarbons (C6-C50)	<380		380	ug/L		28-NOV-19	
Sum of Xylene Isomer Concentrations							
Xylenes (Total)	<0.64		0.64	ug/L		22-NOV-19	
Total Trihalomethanes (THMs)							
Total THMs	3.7		1.3	ug/L		22-NOV-19	

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ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2381742-2 GWQ25 - W6 245461							
Sampled By: CLIENT on 13-NOV-19 @ 11:39							
Matrix: WATER							
VOC plus F1 by GCMS							
Acetone	<50		50	ug/L		18-NOV-19	R4919315
Benzene	<0.50		0.50	ug/L		18-NOV-19	R4919315
Bromobenzene	<1.0		1.0	ug/L		18-NOV-19	R4919315
Bromochloromethane	<1.0		1.0	ug/L		18-NOV-19	R4919315
Bromodichloromethane	<0.50		0.50	ug/L		18-NOV-19	R4919315
Bromoform	2.3		1.0	ug/L		18-NOV-19	R4919315
Bromomethane	<1.0		1.0	ug/L		18-NOV-19	R4919315
n-Butylbenzene	<1.0		1.0	ug/L		18-NOV-19	R4919315
sec-Butylbenzene	<1.0		1.0	ug/L		18-NOV-19	R4919315
tert-Butylbenzene	<1.0		1.0	ug/L		18-NOV-19	R4919315
Carbon disulfide	<5.0		5.0	ug/L		18-NOV-19	R4919315
Carbon Tetrachloride	<0.50		0.50	ug/L		18-NOV-19	R4919315
Chlorobenzene	<1.0		1.0	ug/L		18-NOV-19	R4919315
Chloroethane	<1.0		1.0	ug/L		18-NOV-19	R4919315
Chloroform	1.30		0.50	ug/L		18-NOV-19	R4919315
Chloromethane	<5.0		5.0	ug/L		18-NOV-19	R4919315
2-Chlorotoluene	<20		20	ug/L		18-NOV-19	R4919315
4-Chlorotoluene	<1.0		1.0	ug/L		18-NOV-19	R4919315
Dibromochloromethane	<0.50		0.50	ug/L		18-NOV-19	R4919315
1,2-Dibromo-3-chloropropane	<1.0		1.0	ug/L		18-NOV-19	R4919315
1,2-Dibromoethane	<1.0		1.0	ug/L		18-NOV-19	R4919315
Dibromomethane	<1.0		1.0	ug/L		18-NOV-19	R4919315
1,2-Dichlorobenzene	<0.50		0.50	ug/L		18-NOV-19	R4919315
1,3-Dichlorobenzene	<1.0		1.0	ug/L		18-NOV-19	R4919315
1,4-Dichlorobenzene	<1.0		1.0	ug/L		18-NOV-19	R4919315
Dichlorodifluoromethane	<1.0		1.0	ug/L		18-NOV-19	R4919315
1,1-dichloroethane	<0.50		0.50	ug/L		18-NOV-19	R4919315
1,2-Dichloroethane	<0.50		0.50	ug/L		18-NOV-19	R4919315
1,1-dichloroethene	<0.50		0.50	ug/L		18-NOV-19	R4919315
cis-1,2-Dichloroethene	<1.0		1.0	ug/L		18-NOV-19	R4919315
trans-1,2-Dichloroethene	<1.0		1.0	ug/L		18-NOV-19	R4919315
Dichloromethane	<5.0		5.0	ug/L		18-NOV-19	R4919315
1,2-Dichloropropane	<1.0		1.0	ug/L		18-NOV-19	R4919315
1,3-Dichloropropane	<1.0		1.0	ug/L		18-NOV-19	R4919315
2,2-Dichloropropane	<1.0		1.0	ug/L		18-NOV-19	R4919315
1,1-Dichloropropene	<1.0		1.0	ug/L		18-NOV-19	R4919315
cis-1,3-Dichloropropene	<1.0		1.0	ug/L		18-NOV-19	R4919315
trans-1,3-Dichloropropene	<2.0	DLM	2.0	ug/L		18-NOV-19	R4919315
Ethylbenzene	<0.50		0.50	ug/L		18-NOV-19	R4919315
F1	<100		100	ug/L		18-NOV-19	R4919315
Hexachlorobutadiene	<1.0		1.0	ug/L		18-NOV-19	R4919315
Hexane	<1.0		1.0	ug/L		18-NOV-19	R4919315
2-Hexanone (Methyl butyl ketone)	<20		20	ug/L		18-NOV-19	R4919315
Isopropylbenzene	<1.0		1.0	ug/L		18-NOV-19	R4919315
4-Isopropyltoluene	<1.0		1.0	ug/L		18-NOV-19	R4919315
MEK	<20		20	ug/L		18-NOV-19	R4919315
MIBK	<20		20	ug/L		18-NOV-19	R4919315
MTBE	<0.50		0.50	ug/L		18-NOV-19	R4919315
Styrene	<1.0		1.0	ug/L		18-NOV-19	R4919315
1,1,1,2-Tetrachloroethane	<0.50		0.50	ug/L		18-NOV-19	R4919315
1,1,2,2-Tetrachloroethane	<0.50		0.50	ug/L		18-NOV-19	R4919315

* 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
L2381742-2 GWQ25 - W6 245461 Sampled By: CLIENT on 13-NOV-19 @ 11:39 Matrix: WATER							
VOC plus F1 by GCMS							
Tetrachloroethene	<0.50		0.50	ug/L		18-NOV-19	R4919315
Toluene	<0.50		0.50	ug/L		18-NOV-19	R4919315
1,2,3-Trichlorobenzene	<1.0		1.0	ug/L		18-NOV-19	R4919315
1,2,4-Trichlorobenzene	<1.0		1.0	ug/L		18-NOV-19	R4919315
1,1,1-Trichloroethane	<0.50		0.50	ug/L		18-NOV-19	R4919315
1,1,2-Trichloroethane	<0.50		0.50	ug/L		18-NOV-19	R4919315
Trichloroethene	<0.50		0.50	ug/L		18-NOV-19	R4919315
Trichlorofluoromethane	<1.0		1.0	ug/L		18-NOV-19	R4919315
1,2,3-Trichloropropane	<1.0		1.0	ug/L		18-NOV-19	R4919315
1,2,4-Trimethylbenzene	<1.0		1.0	ug/L		18-NOV-19	R4919315
1,3,5-Trimethylbenzene	<1.0		1.0	ug/L		18-NOV-19	R4919315
Vinyl Chloride	<0.50		0.50	ug/L		18-NOV-19	R4919315
M+P-Xylenes	<0.40		0.40	ug/L		18-NOV-19	R4919315
o-Xylene	<0.50		0.50	ug/L		18-NOV-19	R4919315
Surrogate: 4-Bromofluorobenzene (SS)	79.7		70-130	%		18-NOV-19	R4919315
Surrogate: 1,4-Difluorobenzene (SS)	91.0		70-130	%		18-NOV-19	R4919315
Surrogate: 3,4-Dichlorotoluene (SS)	72.9		70-130	%		18-NOV-19	R4919315
L2381742-3 GWQ25 - W14 245466 Sampled By: CLIENT on 13-NOV-19 @ 13:07 Matrix: WATER							
Alkalinity species as HCO3, CO3, OH							
Alkalinity, Bicarbonate							
Bicarbonate (HCO3)	157000		1200	ug/L		15-NOV-19	
Alkalinity, Carbonate							
Carbonate (CO3)	<600		600	ug/L		15-NOV-19	
Alkalinity, Hydroxide							
Hydroxide (OH)	<340		340	ug/L		15-NOV-19	
Alkalinity, Total (as CaCO3)							
Alkalinity, Total (as CaCO3)	129000		1000	ug/L		14-NOV-19	R4909330
Dissolved Carbons							
Dissolved Inorganic Carbon by Combustion							
Dissolved Inorganic Carbon	23800		500	ug/L		18-NOV-19	R4915689
Dissolved Organic Carbon by Combustion							
Dissolved Organic Carbon	1090		500	ug/L		15-NOV-19	R4914359
Total Dissolved Carbon by Calculation							
Total Dissolved Carbon	24900		1000	ug/L		19-NOV-19	
Miscellaneous Parameters							
Ammonia, Total (as N)	48		10	ug/L		14-NOV-19	R4910232
Chloride (Cl)	2420000		25000	ug/L		14-NOV-19	R4912006
Chromium, Hexavalent	<0.50		0.50	ug/L		22-NOV-19	R4922220
Cyanide, Total	<1.0		1.0	ug/L		25-NOV-19	R4924527
Mercury (Hg)-Total	<0.0050		0.0050	ug/L	26-NOV-19	26-NOV-19	R4925108
Phenols (4AAP)	2.0		1.0	ug/L		18-NOV-19	R4915159
Sulfate (SO4)	708000		15000	ug/L		14-NOV-19	R4912006
Dissolved Metals in Water by CRC ICPMS							
Dissolved Metals Filtration Location	FIELD					25-NOV-19	R4922696
Aluminum (Al)-Dissolved	<1.0		1.0	ug/L	25-NOV-19	26-NOV-19	R4926087
Antimony (Sb)-Dissolved	0.30		0.10	ug/L	25-NOV-19	26-NOV-19	R4926087
Arsenic (As)-Dissolved	0.75		0.10	ug/L	25-NOV-19	26-NOV-19	R4926087
Barium (Ba)-Dissolved	19.0		0.10	ug/L	25-NOV-19	26-NOV-19	R4926087
Beryllium (Be)-Dissolved	<0.10		0.10	ug/L	25-NOV-19	26-NOV-19	R4926087

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ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2381742-3 GWQ25 - W14 245466							
Sampled By: CLIENT on 13-NOV-19 @ 13:07							
Matrix: WATER							
Dissolved Metals in Water by CRC ICPMS							
Bismuth (Bi)-Dissolved	<0.050		0.050	ug/L	25-NOV-19	26-NOV-19	R4926087
Boron (B)-Dissolved	950		100	ug/L	25-NOV-19	28-NOV-19	R4928432
Cadmium (Cd)-Dissolved	0.0373		0.0050	ug/L	25-NOV-19	26-NOV-19	R4926087
Calcium (Ca)-Dissolved	251000		50	ug/L	25-NOV-19	26-NOV-19	R4926087
Cesium (Cs)-Dissolved	0.091		0.010	ug/L	25-NOV-19	26-NOV-19	R4926087
Chromium (Cr)-Dissolved	<0.10		0.10	ug/L	25-NOV-19	26-NOV-19	R4926087
Cobalt (Co)-Dissolved	0.22		0.10	ug/L	25-NOV-19	26-NOV-19	R4926087
Copper (Cu)-Dissolved	2.19		0.20	ug/L	25-NOV-19	26-NOV-19	R4926087
Iron (Fe)-Dissolved	<10		10	ug/L	25-NOV-19	26-NOV-19	R4926087
Lead (Pb)-Dissolved	<0.050		0.050	ug/L	25-NOV-19	26-NOV-19	R4926087
Lithium (Li)-Dissolved	268		1.0	ug/L	25-NOV-19	26-NOV-19	R4926087
Magnesium (Mg)-Dissolved	140000		5.0	ug/L	25-NOV-19	26-NOV-19	R4926087
Manganese (Mn)-Dissolved	14.8		0.10	ug/L	25-NOV-19	26-NOV-19	R4926087
Molybdenum (Mo)-Dissolved	3.53		0.050	ug/L	25-NOV-19	26-NOV-19	R4926087
Nickel (Ni)-Dissolved	0.55		0.50	ug/L	25-NOV-19	26-NOV-19	R4926087
Phosphorus (P)-Dissolved	<30		30	ug/L	25-NOV-19	26-NOV-19	R4926087
Potassium (K)-Dissolved	40800		50	ug/L	25-NOV-19	26-NOV-19	R4926087
Rubidium (Rb)-Dissolved	18.5		0.20	ug/L	25-NOV-19	26-NOV-19	R4926087
Selenium (Se)-Dissolved	<0.050		0.050	ug/L	25-NOV-19	26-NOV-19	R4926087
Silicon (Si)-Dissolved	4410		50	ug/L	25-NOV-19	26-NOV-19	R4926087
Silver (Ag)-Dissolved	0.011		0.010	ug/L	25-NOV-19	26-NOV-19	R4926087
Sodium (Na)-Dissolved	1410000		500	ug/L	25-NOV-19	28-NOV-19	R4928432
Strontium (Sr)-Dissolved	3720		1.0	ug/L	25-NOV-19	28-NOV-19	R4928432
Sulfur (S)-Dissolved	276000		500	ug/L	25-NOV-19	26-NOV-19	R4926087
Tellurium (Te)-Dissolved	<0.20		0.20	ug/L	25-NOV-19	26-NOV-19	R4926087
Thallium (Tl)-Dissolved	<0.010		0.010	ug/L	25-NOV-19	26-NOV-19	R4926087
Thorium (Th)-Dissolved	<0.10		0.10	ug/L	25-NOV-19	26-NOV-19	R4926087
Tin (Sn)-Dissolved	<0.10		0.10	ug/L	25-NOV-19	26-NOV-19	R4926087
Titanium (Ti)-Dissolved	<0.30		0.30	ug/L	25-NOV-19	26-NOV-19	R4926087
Tungsten (W)-Dissolved	<0.10		0.10	ug/L	25-NOV-19	26-NOV-19	R4926087
Uranium (U)-Dissolved	0.510		0.010	ug/L	25-NOV-19	26-NOV-19	R4926087
Vanadium (V)-Dissolved	<0.50		0.50	ug/L	25-NOV-19	26-NOV-19	R4926087
Zinc (Zn)-Dissolved	20.7		1.0	ug/L	25-NOV-19	26-NOV-19	R4926087
Zirconium (Zr)-Dissolved	<0.20		0.20	ug/L	25-NOV-19	26-NOV-19	R4926087
Polyaromatic Hydrocarbons (PAHs)							
1-Methyl Naphthalene	<0.020		0.020	ug/L	15-NOV-19	17-NOV-19	R4915091
2-Methyl Naphthalene	<0.020		0.020	ug/L	15-NOV-19	17-NOV-19	R4915091
Acenaphthene	<0.020		0.020	ug/L	15-NOV-19	17-NOV-19	R4915091
Acenaphthylene	<0.020		0.020	ug/L	15-NOV-19	17-NOV-19	R4915091
Anthracene	<0.010		0.010	ug/L	15-NOV-19	17-NOV-19	R4915091
Acridine	<0.020		0.020	ug/L	15-NOV-19	17-NOV-19	R4915091
Benzo(a)anthracene	<0.010		0.010	ug/L	15-NOV-19	17-NOV-19	R4915091
Benzo(a)pyrene	<0.0050		0.0050	ug/L	15-NOV-19	17-NOV-19	R4915091
Benzo(b&j)fluoranthene	<0.010		0.010	ug/L	15-NOV-19	17-NOV-19	R4915091
Benzo(g,h,i)perylene	<0.020		0.020	ug/L	15-NOV-19	17-NOV-19	R4915091
Benzo(k)fluoranthene	<0.010		0.010	ug/L	15-NOV-19	17-NOV-19	R4915091
Chrysene	<0.020		0.020	ug/L	15-NOV-19	17-NOV-19	R4915091
Dibenzo(a,h)anthracene	<0.0050		0.0050	ug/L	15-NOV-19	17-NOV-19	R4915091
Fluoranthene	<0.020		0.020	ug/L	15-NOV-19	17-NOV-19	R4915091
Fluorene	<0.020		0.020	ug/L	15-NOV-19	17-NOV-19	R4915091
Indeno(1,2,3-cd)pyrene	<0.010		0.010	ug/L	15-NOV-19	17-NOV-19	R4915091

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ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2381742-3 GWQ25 - W14 245466							
Sampled By: CLIENT on 13-NOV-19 @ 13:07							
Matrix: WATER							
Polyaromatic Hydrocarbons (PAHs)							
Naphthalene	<0.050		0.050	ug/L	15-NOV-19	17-NOV-19	R4915091
Phenanthrene	<0.050		0.050	ug/L	15-NOV-19	17-NOV-19	R4915091
Pyrene	0.024		0.010	ug/L	15-NOV-19	17-NOV-19	R4915091
Quinoline	<0.020		0.020	ug/L	15-NOV-19	17-NOV-19	R4915091
B(a)P Total Potency Equivalent	<0.030		0.030	ug/L	15-NOV-19	17-NOV-19	R4915091
Surrogate: Acenaphthene d10	96.8		60-130	%	15-NOV-19	17-NOV-19	R4915091
Surrogate: Acridine d9	105.1		60-130	%	15-NOV-19	17-NOV-19	R4915091
Surrogate: Chrysene d12	117.5		60-130	%	15-NOV-19	17-NOV-19	R4915091
Surrogate: Naphthalene d8	99.2		50-130	%	15-NOV-19	17-NOV-19	R4915091
Surrogate: Phenanthrene d10	113.5		60-130	%	15-NOV-19	17-NOV-19	R4915091
Herbicides in Water							
Clopyralid	<0.10		0.10	ug/L	18-NOV-19	18-NOV-19	R4915730
Dicamba	<0.10		0.10	ug/L	18-NOV-19	18-NOV-19	R4915730
Mecoprop	<0.10		0.10	ug/L	18-NOV-19	18-NOV-19	R4915730
MCPA	<0.10		0.10	ug/L	18-NOV-19	18-NOV-19	R4915730
2,4-D	<0.10		0.10	ug/L	18-NOV-19	18-NOV-19	R4915730
Bromoxynil	<0.10		0.10	ug/L	18-NOV-19	18-NOV-19	R4915730
Triclopyr	<0.10		0.10	ug/L	18-NOV-19	18-NOV-19	R4915730
2,4,5-T	<0.10		0.10	ug/L	18-NOV-19	18-NOV-19	R4915730
2,4,5-TP	<0.10		0.10	ug/L	18-NOV-19	18-NOV-19	R4915730
Picloram	<0.10		0.10	ug/L	18-NOV-19	18-NOV-19	R4915730
2,4-DB	<0.10		0.10	ug/L	18-NOV-19	18-NOV-19	R4915730
2,4-DP	<0.10		0.10	ug/L	18-NOV-19	18-NOV-19	R4915730
Dinoseb	<0.10		0.10	ug/L	18-NOV-19	18-NOV-19	R4915730
MCPB	<0.10		0.10	ug/L	18-NOV-19	18-NOV-19	R4915730
Surrogate: 2,4-Dichlorophenylacetic Acid	98.0		50-130	%	18-NOV-19	18-NOV-19	R4915730
Miscellaneous Pesticides							
Diazinon	<0.10		0.10	ug/L	16-NOV-19	19-NOV-19	R4915793
Surrogate: 2-Fluorobiphenyl	78.1		40-130	%	16-NOV-19	19-NOV-19	R4915793
Surrogate: d14-Terphenyl	78.4		40-130	%	16-NOV-19	19-NOV-19	R4915793
Total, Fecal Coliforms, E Coli by QT97							
Fecal Coliform by MPN QT97							
Fecal Coliforms	<1		1	MPN/100mL		13-NOV-19	R4906582
Total Coliform and E.coli by MPN QT97							
Total Coliforms	<1		1	MPN/100mL		13-NOV-19	R4906574
Escherichia Coli	<1		1	MPN/100mL		13-NOV-19	R4906574
VOC plus F1 to F4							
CCME PHC F2-F4 in Water							
F2 (C10-C16)	<100		100	ug/L	22-NOV-19	23-NOV-19	R4927450
F3 (C16-C34)	<250		250	ug/L	22-NOV-19	23-NOV-19	R4927450
F4 (C34-C50)	<250		250	ug/L	22-NOV-19	23-NOV-19	R4927450
Surrogate: 2-Bromobenzotrifluoride	93.7		60-140	%	22-NOV-19	23-NOV-19	R4927450
CCME Total Hydrocarbons							
F1-BTEX	<100		100	ug/L		28-NOV-19	
F2-Naphth	<100		100	ug/L		28-NOV-19	
F3-PAH	<250		250	ug/L		28-NOV-19	
Total Hydrocarbons (C6-C50)	<380		380	ug/L		28-NOV-19	
Sum of Xylene Isomer Concentrations							
Xylenes (Total)	<0.64		0.64	ug/L		22-NOV-19	
Total Trihalomethanes (THMs)							
Total THMs	<1.3		1.3	ug/L		22-NOV-19	
VOC plus F1 by GCMS							

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ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2381742-3 GWQ25 - W14 245466							
Sampled By: CLIENT on 13-NOV-19 @ 13:07							
Matrix: WATER							
VOC plus F1 by GCMS							
Acetone	<50		50	ug/L		18-NOV-19	R4919315
Benzene	<0.50		0.50	ug/L		18-NOV-19	R4919315
Bromobenzene	<1.0		1.0	ug/L		18-NOV-19	R4919315
Bromochloromethane	<1.0		1.0	ug/L		18-NOV-19	R4919315
Bromodichloromethane	<0.50		0.50	ug/L		18-NOV-19	R4919315
Bromoform	<1.0		1.0	ug/L		18-NOV-19	R4919315
Bromomethane	<1.0		1.0	ug/L		18-NOV-19	R4919315
n-Butylbenzene	<1.0		1.0	ug/L		18-NOV-19	R4919315
sec-Butylbenzene	<1.0		1.0	ug/L		18-NOV-19	R4919315
tert-Butylbenzene	<1.0		1.0	ug/L		18-NOV-19	R4919315
Carbon disulfide	<5.0		5.0	ug/L		18-NOV-19	R4919315
Carbon Tetrachloride	<0.50		0.50	ug/L		18-NOV-19	R4919315
Chlorobenzene	<1.0		1.0	ug/L		18-NOV-19	R4919315
Chloroethane	<1.0		1.0	ug/L		18-NOV-19	R4919315
Chloroform	<0.50		0.50	ug/L		18-NOV-19	R4919315
Chloromethane	<5.0		5.0	ug/L		18-NOV-19	R4919315
2-Chlorotoluene	<20		20	ug/L		18-NOV-19	R4919315
4-Chlorotoluene	<1.0		1.0	ug/L		18-NOV-19	R4919315
Dibromochloromethane	<0.50		0.50	ug/L		18-NOV-19	R4919315
1,2-Dibromo-3-chloropropane	<1.0		1.0	ug/L		18-NOV-19	R4919315
1,2-Dibromoethane	<1.0		1.0	ug/L		18-NOV-19	R4919315
Dibromomethane	<1.0		1.0	ug/L		18-NOV-19	R4919315
1,2-Dichlorobenzene	<0.50		0.50	ug/L		18-NOV-19	R4919315
1,3-Dichlorobenzene	<1.0		1.0	ug/L		18-NOV-19	R4919315
1,4-Dichlorobenzene	<1.0		1.0	ug/L		18-NOV-19	R4919315
Dichlorodifluoromethane	<1.0		1.0	ug/L		18-NOV-19	R4919315
1,1-dichloroethane	<0.50		0.50	ug/L		18-NOV-19	R4919315
1,2-Dichloroethane	<0.50		0.50	ug/L		18-NOV-19	R4919315
1,1-dichloroethene	<0.50		0.50	ug/L		18-NOV-19	R4919315
cis-1,2-Dichloroethene	<1.0		1.0	ug/L		18-NOV-19	R4919315
trans-1,2-Dichloroethene	<1.0		1.0	ug/L		18-NOV-19	R4919315
Dichloromethane	<5.0		5.0	ug/L		18-NOV-19	R4919315
1,2-Dichloropropane	<1.0		1.0	ug/L		18-NOV-19	R4919315
1,3-Dichloropropane	<1.0		1.0	ug/L		18-NOV-19	R4919315
2,2-Dichloropropane	<1.0		1.0	ug/L		18-NOV-19	R4919315
1,1-Dichloropropene	<1.0		1.0	ug/L		18-NOV-19	R4919315
cis-1,3-Dichloropropene	<1.0		1.0	ug/L		18-NOV-19	R4919315
trans-1,3-Dichloropropene	<2.0	DLM	2.0	ug/L		18-NOV-19	R4919315
Ethylbenzene	<0.50		0.50	ug/L		18-NOV-19	R4919315
F1	<100		100	ug/L		18-NOV-19	R4919315
Hexachlorobutadiene	<1.0		1.0	ug/L		18-NOV-19	R4919315
Hexane	<1.0		1.0	ug/L		18-NOV-19	R4919315
2-Hexanone (Methyl butyl ketone)	<20		20	ug/L		18-NOV-19	R4919315
Isopropylbenzene	<1.0		1.0	ug/L		18-NOV-19	R4919315
4-Isopropyltoluene	<1.0		1.0	ug/L		18-NOV-19	R4919315
MEK	<20		20	ug/L		18-NOV-19	R4919315
MIBK	<20		20	ug/L		18-NOV-19	R4919315
MTBE	<0.50		0.50	ug/L		18-NOV-19	R4919315
Styrene	<1.0		1.0	ug/L		18-NOV-19	R4919315
1,1,1,2-Tetrachloroethane	<0.50		0.50	ug/L		18-NOV-19	R4919315
1,1,2,2-Tetrachloroethane	<0.50		0.50	ug/L		18-NOV-19	R4919315

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ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2381742-3 GWQ25 - W14 245466 Sampled By: CLIENT on 13-NOV-19 @ 13:07 Matrix: WATER VOC plus F1 by GCMS							
Tetrachloroethene	<0.50		0.50	ug/L		18-NOV-19	R4919315
Toluene	<0.50		0.50	ug/L		18-NOV-19	R4919315
1,2,3-Trichlorobenzene	<1.0		1.0	ug/L		18-NOV-19	R4919315
1,2,4-Trichlorobenzene	<1.0		1.0	ug/L		18-NOV-19	R4919315
1,1,1-Trichloroethane	<0.50		0.50	ug/L		18-NOV-19	R4919315
1,1,2-Trichloroethane	<0.50		0.50	ug/L		18-NOV-19	R4919315
Trichloroethene	<0.50		0.50	ug/L		18-NOV-19	R4919315
Trichlorofluoromethane	<1.0		1.0	ug/L		18-NOV-19	R4919315
1,2,3-Trichloropropane	<1.0		1.0	ug/L		18-NOV-19	R4919315
1,2,4-Trimethylbenzene	<1.0		1.0	ug/L		18-NOV-19	R4919315
1,3,5-Trimethylbenzene	<1.0		1.0	ug/L		18-NOV-19	R4919315
Vinyl Chloride	<0.50		0.50	ug/L		18-NOV-19	R4919315
M+P-Xylenes	<0.40		0.40	ug/L		18-NOV-19	R4919315
o-Xylene	<0.50		0.50	ug/L		18-NOV-19	R4919315
Surrogate: 4-Bromofluorobenzene (SS)	81.6		70-130	%		18-NOV-19	R4919315
Surrogate: 1,4-Difluorobenzene (SS)	91.7		70-130	%		18-NOV-19	R4919315
Surrogate: 3,4-Dichlorotoluene (SS)	70.3		70-130	%		18-NOV-19	R4919315
L2381742-4 GWQ25 - W8 245462 Sampled By: CLIENT on 13-NOV-19 @ 14:06 Matrix: WATER Alkalinity species as HCO3, CO3, OH							
Alkalinity, Bicarbonate							
Bicarbonate (HCO3)	171000		1200	ug/L		15-NOV-19	
Alkalinity, Carbonate							
Carbonate (CO3)	<600		600	ug/L		15-NOV-19	
Alkalinity, Hydroxide							
Hydroxide (OH)	<340		340	ug/L		15-NOV-19	
Alkalinity, Total (as CaCO3)							
Alkalinity, Total (as CaCO3)	140000		1000	ug/L		14-NOV-19	R4909330
Dissolved Carbons							
Dissolved Inorganic Carbon by Combustion							
Dissolved Inorganic Carbon	25900		500	ug/L		18-NOV-19	R4915689
Dissolved Organic Carbon by Combustion							
Dissolved Organic Carbon	9640		500	ug/L		14-NOV-19	R4909394
Total Dissolved Carbon by Calculation							
Total Dissolved Carbon	35500		1000	ug/L		19-NOV-19	
Miscellaneous Parameters							
Ammonia, Total (as N)	1200		100	ug/L		15-NOV-19	R4910232
Chloride (Cl)	2540000		25000	ug/L		14-NOV-19	R4912006
Chromium, Hexavalent	<0.50		0.50	ug/L		22-NOV-19	R4922220
Cyanide, Total	<1.0		1.0	ug/L		25-NOV-19	R4924527
Mercury (Hg)-Total	<0.0050		0.0050	ug/L	26-NOV-19	26-NOV-19	R4925108
Phenols (4AAP)	9.1		1.0	ug/L		18-NOV-19	R4915159
Sulfate (SO4)	863000		15000	ug/L		14-NOV-19	R4912006
Dissolved Metals in Water by CRC ICPMS							
Dissolved Metals Filtration Location	FIELD					25-NOV-19	R4922696
Aluminum (Al)-Dissolved	7.8		1.0	ug/L	25-NOV-19	26-NOV-19	R4926087
Antimony (Sb)-Dissolved	9.00		0.10	ug/L	25-NOV-19	26-NOV-19	R4926087
Arsenic (As)-Dissolved	0.45		0.10	ug/L	25-NOV-19	26-NOV-19	R4926087
Barium (Ba)-Dissolved	61.7		0.10	ug/L	25-NOV-19	26-NOV-19	R4926087
Beryllium (Be)-Dissolved	<0.10		0.10	ug/L	25-NOV-19	26-NOV-19	R4926087

* 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
L2381742-4 GWQ25 - W8 245462							
Sampled By: CLIENT on 13-NOV-19 @ 14:06							
Matrix: WATER							
Dissolved Metals in Water by CRC ICPMS							
Bismuth (Bi)-Dissolved	<0.050		0.050	ug/L	25-NOV-19	26-NOV-19	R4926087
Boron (B)-Dissolved	160		10	ug/L	25-NOV-19	26-NOV-19	R4926087
Cadmium (Cd)-Dissolved	0.0168		0.0050	ug/L	25-NOV-19	26-NOV-19	R4926087
Calcium (Ca)-Dissolved	817000		500	ug/L	25-NOV-19	28-NOV-19	R4928432
Cesium (Cs)-Dissolved	0.375		0.010	ug/L	25-NOV-19	26-NOV-19	R4926087
Chromium (Cr)-Dissolved	54.9		0.10	ug/L	25-NOV-19	26-NOV-19	R4926087
Cobalt (Co)-Dissolved	0.10		0.10	ug/L	25-NOV-19	26-NOV-19	R4926087
Copper (Cu)-Dissolved	3.39		0.20	ug/L	25-NOV-19	26-NOV-19	R4926087
Iron (Fe)-Dissolved	<10		10	ug/L	25-NOV-19	26-NOV-19	R4926087
Lead (Pb)-Dissolved	0.491		0.050	ug/L	25-NOV-19	26-NOV-19	R4926087
Lithium (Li)-Dissolved	710		10	ug/L	25-NOV-19	28-NOV-19	R4928432
Magnesium (Mg)-Dissolved	446		5.0	ug/L	25-NOV-19	26-NOV-19	R4926087
Manganese (Mn)-Dissolved	<0.10		0.10	ug/L	25-NOV-19	26-NOV-19	R4926087
Molybdenum (Mo)-Dissolved	5.52		0.050	ug/L	25-NOV-19	26-NOV-19	R4926087
Nickel (Ni)-Dissolved	<0.50		0.50	ug/L	25-NOV-19	26-NOV-19	R4926087
Phosphorus (P)-Dissolved	<30		30	ug/L	25-NOV-19	26-NOV-19	R4926087
Potassium (K)-Dissolved	22700		50	ug/L	25-NOV-19	26-NOV-19	R4926087
Rubidium (Rb)-Dissolved	11.7		0.20	ug/L	25-NOV-19	26-NOV-19	R4926087
Selenium (Se)-Dissolved	0.657		0.050	ug/L	25-NOV-19	26-NOV-19	R4926087
Silicon (Si)-Dissolved	437		50	ug/L	25-NOV-19	26-NOV-19	R4926087
Silver (Ag)-Dissolved	0.011		0.010	ug/L	25-NOV-19	26-NOV-19	R4926087
Sodium (Na)-Dissolved	663000		500	ug/L	25-NOV-19	28-NOV-19	R4928432
Strontium (Sr)-Dissolved	4980		1.0	ug/L	25-NOV-19	28-NOV-19	R4928432
Sulfur (S)-Dissolved	189000		500	ug/L	25-NOV-19	26-NOV-19	R4926087
Tellurium (Te)-Dissolved	<0.20		0.20	ug/L	25-NOV-19	26-NOV-19	R4926087
Thallium (Tl)-Dissolved	<0.010		0.010	ug/L	25-NOV-19	26-NOV-19	R4926087
Thorium (Th)-Dissolved	<0.10		0.10	ug/L	25-NOV-19	26-NOV-19	R4926087
Tin (Sn)-Dissolved	0.65		0.10	ug/L	25-NOV-19	26-NOV-19	R4926087
Titanium (Ti)-Dissolved	<0.30		0.30	ug/L	25-NOV-19	26-NOV-19	R4926087
Tungsten (W)-Dissolved	7.86		0.10	ug/L	25-NOV-19	26-NOV-19	R4926087
Uranium (U)-Dissolved	<0.010		0.010	ug/L	25-NOV-19	26-NOV-19	R4926087
Vanadium (V)-Dissolved	<0.50		0.50	ug/L	25-NOV-19	26-NOV-19	R4926087
Zinc (Zn)-Dissolved	4.1		1.0	ug/L	25-NOV-19	26-NOV-19	R4926087
Zirconium (Zr)-Dissolved	<0.20		0.20	ug/L	25-NOV-19	26-NOV-19	R4926087
Polyaromatic Hydrocarbons (PAHs)							
1-Methyl Naphthalene	<0.020		0.020	ug/L	15-NOV-19	17-NOV-19	R4915091
2-Methyl Naphthalene	<0.020		0.020	ug/L	15-NOV-19	17-NOV-19	R4915091
Acenaphthene	<0.020		0.020	ug/L	15-NOV-19	17-NOV-19	R4915091
Acenaphthylene	<0.020		0.020	ug/L	15-NOV-19	17-NOV-19	R4915091
Anthracene	<0.010		0.010	ug/L	15-NOV-19	17-NOV-19	R4915091
Acridine	<0.020		0.020	ug/L	15-NOV-19	17-NOV-19	R4915091
Benzo(a)anthracene	<0.010		0.010	ug/L	15-NOV-19	17-NOV-19	R4915091
Benzo(a)pyrene	<0.0050		0.0050	ug/L	15-NOV-19	17-NOV-19	R4915091
Benzo(b&j)fluoranthene	<0.010		0.010	ug/L	15-NOV-19	17-NOV-19	R4915091
Benzo(g,h,i)perylene	<0.020		0.020	ug/L	15-NOV-19	17-NOV-19	R4915091
Benzo(k)fluoranthene	<0.010		0.010	ug/L	15-NOV-19	17-NOV-19	R4915091
Chrysene	<0.020		0.020	ug/L	15-NOV-19	17-NOV-19	R4915091
Dibenzo(a,h)anthracene	<0.0050		0.0050	ug/L	15-NOV-19	17-NOV-19	R4915091
Fluoranthene	<0.020		0.020	ug/L	15-NOV-19	17-NOV-19	R4915091
Fluorene	<0.020		0.020	ug/L	15-NOV-19	17-NOV-19	R4915091
Indeno(1,2,3-cd)pyrene	<0.010		0.010	ug/L	15-NOV-19	17-NOV-19	R4915091

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ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2381742-4 GWQ25 - W8 245462							
Sampled By: CLIENT on 13-NOV-19 @ 14:06							
Matrix: WATER							
Polyaromatic Hydrocarbons (PAHs)							
Naphthalene	<0.050		0.050	ug/L	15-NOV-19	17-NOV-19	R4915091
Phenanthrene	<0.050		0.050	ug/L	15-NOV-19	17-NOV-19	R4915091
Pyrene	<0.010		0.010	ug/L	15-NOV-19	17-NOV-19	R4915091
Quinoline	<0.020		0.020	ug/L	15-NOV-19	17-NOV-19	R4915091
B(a)P Total Potency Equivalent	<0.030		0.030	ug/L	15-NOV-19	17-NOV-19	R4915091
Surrogate: Acenaphthene d10	106.5		60-130	%	15-NOV-19	17-NOV-19	R4915091
Surrogate: Acridine d9	111.7		60-130	%	15-NOV-19	17-NOV-19	R4915091
Surrogate: Chrysene d12	113.3		60-130	%	15-NOV-19	17-NOV-19	R4915091
Surrogate: Naphthalene d8	109.0		50-130	%	15-NOV-19	17-NOV-19	R4915091
Surrogate: Phenanthrene d10	118.5		60-130	%	15-NOV-19	17-NOV-19	R4915091
Herbicides in Water							
Clopyralid	<0.10		0.10	ug/L	18-NOV-19	18-NOV-19	R4915730
Dicamba	<0.10		0.10	ug/L	18-NOV-19	18-NOV-19	R4915730
Mecoprop	<0.10		0.10	ug/L	18-NOV-19	18-NOV-19	R4915730
MCPA	<0.10		0.10	ug/L	18-NOV-19	18-NOV-19	R4915730
2,4-D	<0.10		0.10	ug/L	18-NOV-19	18-NOV-19	R4915730
Bromoxynil	<0.10		0.10	ug/L	18-NOV-19	18-NOV-19	R4915730
Triclopyr	<0.10		0.10	ug/L	18-NOV-19	18-NOV-19	R4915730
2,4,5-T	<0.10		0.10	ug/L	18-NOV-19	18-NOV-19	R4915730
2,4,5-TP	<0.10		0.10	ug/L	18-NOV-19	18-NOV-19	R4915730
Picloram	<0.10		0.10	ug/L	18-NOV-19	18-NOV-19	R4915730
2,4-DB	<0.10		0.10	ug/L	18-NOV-19	18-NOV-19	R4915730
2,4-DP	<0.10		0.10	ug/L	18-NOV-19	18-NOV-19	R4915730
Dinoseb	<0.10		0.10	ug/L	18-NOV-19	18-NOV-19	R4915730
MCPB	<0.10		0.10	ug/L	18-NOV-19	18-NOV-19	R4915730
Surrogate: 2,4-Dichlorophenylacetic Acid	133.0	SURR-ND	50-130	%	18-NOV-19	18-NOV-19	R4915730
Miscellaneous Pesticides							
Diazinon	<0.10		0.10	ug/L	16-NOV-19	19-NOV-19	R4915793
Surrogate: 2-Fluorobiphenyl	80.5		40-130	%	16-NOV-19	19-NOV-19	R4915793
Surrogate: d14-Terphenyl	86.6		40-130	%	16-NOV-19	19-NOV-19	R4915793
Total, Fecal Coliforms, E Coli by QT97							
Fecal Coliform by MPN QT97							
Fecal Coliforms	<1		1	MPN/100mL		13-NOV-19	R4906582
Total Coliform and E.coli by MPN QT97							
Total Coliforms	<1		1	MPN/100mL		13-NOV-19	R4906574
Escherichia Coli	<1		1	MPN/100mL		13-NOV-19	R4906574
VOC plus F1 to F4							
CCME PHC F2-F4 in Water							
F2 (C10-C16)	<100		100	ug/L	22-NOV-19	23-NOV-19	R4927450
F3 (C16-C34)	260		250	ug/L	22-NOV-19	23-NOV-19	R4927450
F4 (C34-C50)	<250		250	ug/L	22-NOV-19	23-NOV-19	R4927450
Surrogate: 2-Bromobenzotrifluoride	94.0		60-140	%	22-NOV-19	23-NOV-19	R4927450
CCME Total Hydrocarbons							
F1-BTEX	<100		100	ug/L		28-NOV-19	
F2-Naphth	<100		100	ug/L		28-NOV-19	
F3-PAH	260		250	ug/L		28-NOV-19	
Total Hydrocarbons (C6-C50)	<380		380	ug/L		28-NOV-19	
Sum of Xylene Isomer Concentrations							
Xylenes (Total)	<0.64		0.64	ug/L		26-NOV-19	
Total Trihalomethanes (THMs)							
Total THMs	4.2		1.3	ug/L		26-NOV-19	
VOC plus F1 by GCMS							

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ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2381742-4 GWQ25 - W8 245462							
Sampled By: CLIENT on 13-NOV-19 @ 14:06							
Matrix: WATER							
VOC plus F1 by GCMS							
Acetone	<50		50	ug/L		22-NOV-19	R4922695
Benzene	<0.50		0.50	ug/L		22-NOV-19	R4922695
Bromobenzene	<1.0		1.0	ug/L		22-NOV-19	R4922695
Bromochloromethane	<1.0		1.0	ug/L		22-NOV-19	R4922695
Bromodichloromethane	<0.50		0.50	ug/L		22-NOV-19	R4922695
Bromoform	<1.0		1.0	ug/L		22-NOV-19	R4922695
Bromomethane	<1.0		1.0	ug/L		22-NOV-19	R4922695
n-Butylbenzene	<1.0		1.0	ug/L		22-NOV-19	R4922695
sec-Butylbenzene	<1.0		1.0	ug/L		22-NOV-19	R4922695
tert-Butylbenzene	<1.0		1.0	ug/L		22-NOV-19	R4922695
Carbon disulfide	<5.0		5.0	ug/L		22-NOV-19	R4922695
Carbon Tetrachloride	<0.50		0.50	ug/L		22-NOV-19	R4922695
Chlorobenzene	<1.0		1.0	ug/L		22-NOV-19	R4922695
Chloroethane	<1.0		1.0	ug/L		22-NOV-19	R4922695
Chloroform	4.18		0.50	ug/L		22-NOV-19	R4922695
Chloromethane	<5.0		5.0	ug/L		22-NOV-19	R4922695
2-Chlorotoluene	<20		20	ug/L		22-NOV-19	R4922695
4-Chlorotoluene	<1.0		1.0	ug/L		22-NOV-19	R4922695
Dibromochloromethane	<0.50		0.50	ug/L		22-NOV-19	R4922695
1,2-Dibromo-3-chloropropane	<1.0		1.0	ug/L		22-NOV-19	R4922695
1,2-Dibromoethane	<1.0		1.0	ug/L		22-NOV-19	R4922695
Dibromomethane	<1.0		1.0	ug/L		22-NOV-19	R4922695
1,2-Dichlorobenzene	<0.50		0.50	ug/L		22-NOV-19	R4922695
1,3-Dichlorobenzene	<1.0		1.0	ug/L		22-NOV-19	R4922695
1,4-Dichlorobenzene	<1.0		1.0	ug/L		22-NOV-19	R4922695
Dichlorodifluoromethane	<1.0		1.0	ug/L		22-NOV-19	R4922695
1,1-dichloroethane	<0.50		0.50	ug/L		22-NOV-19	R4922695
1,2-Dichloroethane	<0.50		0.50	ug/L		22-NOV-19	R4922695
1,1-dichloroethene	<0.50		0.50	ug/L		22-NOV-19	R4922695
cis-1,2-Dichloroethene	<1.0		1.0	ug/L		22-NOV-19	R4922695
trans-1,2-Dichloroethene	<1.0		1.0	ug/L		22-NOV-19	R4922695
Dichloromethane	<5.0		5.0	ug/L		22-NOV-19	R4922695
1,2-Dichloropropane	<1.0		1.0	ug/L		22-NOV-19	R4922695
1,3-Dichloropropane	<1.0		1.0	ug/L		22-NOV-19	R4922695
2,2-Dichloropropane	<2.0	DLM	2.0	ug/L		22-NOV-19	R4922695
1,1-Dichloropropene	<1.0		1.0	ug/L		22-NOV-19	R4922695
cis-1,3-Dichloropropene	<2.0	DLM	2.0	ug/L		22-NOV-19	R4922695
trans-1,3-Dichloropropene	<2.0	DLM	2.0	ug/L		22-NOV-19	R4922695
Ethylbenzene	<0.50		0.50	ug/L		22-NOV-19	R4922695
F1	<100		100	ug/L		22-NOV-19	R4922695
Hexachlorobutadiene	<1.0		1.0	ug/L		22-NOV-19	R4922695
Hexane	<1.0		1.0	ug/L		22-NOV-19	R4922695
2-Hexanone (Methyl butyl ketone)	<20		20	ug/L		22-NOV-19	R4922695
Isopropylbenzene	<1.0		1.0	ug/L		22-NOV-19	R4922695
4-Isopropyltoluene	<1.0		1.0	ug/L		22-NOV-19	R4922695
MEK	<20		20	ug/L		22-NOV-19	R4922695
MIBK	<20		20	ug/L		22-NOV-19	R4922695
MTBE	<0.50		0.50	ug/L		22-NOV-19	R4922695
Styrene	<1.0		1.0	ug/L		22-NOV-19	R4922695
1,1,1,2-Tetrachloroethane	<0.50		0.50	ug/L		22-NOV-19	R4922695
1,1,2,2-Tetrachloroethane	<0.50		0.50	ug/L		22-NOV-19	R4922695

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ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2381742-4 GWQ25 - W8 245462							
Sampled By: CLIENT on 13-NOV-19 @ 14:06							
Matrix: WATER							
VOC plus F1 by GCMS							
Tetrachloroethene	<0.50		0.50	ug/L		22-NOV-19	R4922695
Toluene	<0.50		0.50	ug/L		22-NOV-19	R4922695
1,2,3-Trichlorobenzene	<1.0		1.0	ug/L		22-NOV-19	R4922695
1,2,4-Trichlorobenzene	<1.0		1.0	ug/L		22-NOV-19	R4922695
1,1,1-Trichloroethane	<0.50		0.50	ug/L		22-NOV-19	R4922695
1,1,2-Trichloroethane	<0.50		0.50	ug/L		22-NOV-19	R4922695
Trichloroethene	<0.50		0.50	ug/L		22-NOV-19	R4922695
Trichlorofluoromethane	<1.0		1.0	ug/L		22-NOV-19	R4922695
1,2,3-Trichloropropane	<1.0		1.0	ug/L		22-NOV-19	R4922695
1,2,4-Trimethylbenzene	<1.0		1.0	ug/L		22-NOV-19	R4922695
1,3,5-Trimethylbenzene	<1.0		1.0	ug/L		22-NOV-19	R4922695
Vinyl Chloride	<0.50		0.50	ug/L		22-NOV-19	R4922695
M+P-Xylenes	<0.40		0.40	ug/L		22-NOV-19	R4922695
o-Xylene	<0.50		0.50	ug/L		22-NOV-19	R4922695
Surrogate: 4-Bromofluorobenzene (SS)	84.1		70-130	%		22-NOV-19	R4922695
Surrogate: 1,4-Difluorobenzene (SS)	93.1		70-130	%		22-NOV-19	R4922695
Surrogate: 3,4-Dichlorotoluene (SS)	70.8		70-130	%		22-NOV-19	R4922695

* 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.
SURR-ND	Surrogate recovery marginally exceeded ALS DQO. Reported non-detect results for associated samples were deemed to be unaffected.

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.			
C-DIC-HTC-WP	Water	Dissolved Inorganic Carbon by Combustion	APHA 5310 B-WP
Filtered (0.45 µm) sample is injected into a heated reaction chamber where it is acidified, converting all inorganic carbon to CO ₂ which is then transported in the carrier gas stream and measured via a non-dispersive infrared analyzer.			
C-DOC-HTC-WP	Water	Dissolved Organic Carbon by Combustion	APHA 5310 B-WP
Filtered (0.45 µm) sample is acidified and purged to remove inorganic carbon, then injected into a heated reaction chamber where organic carbon is oxidized to CO ₂ which is then transported in the carrier gas stream and measured via a non-dispersive infrared analyzer.			
C-TDC-CALC-WP	Water	Total Dissolved Carbon by Calculation	CALCULATED
Total dissolved carbon represents the sum of dissolved inorganic carbon and dissolved organic carbon. For the purpose of calculation, results less than the detection limit (DL) are treated as zero.			
CL-IC-N-WP	Water	Chloride in Water by IC	EPA 300.1 (mod)
Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.			
CN-T-L-CFA-VA	Water	Low Level Total Cyanide in water by CFA	ISO 14403:2002
This analysis is carried out using procedures adapted from ISO Method 14403:2002 "Determination of Total Cyanide using Flow Analysis (FIA and CFA)". Total or strong acid dissociable (SAD) cyanide is determined by in-line UV digestion along with sample distillation and final determination by colourimetric analysis. Method Limitation: This method is susceptible to interference from thiocyanate (SCN). If SCN is present in the sample, there could be a positive interference with this method, but it would be less than 1% and could be as low as zero.			
CR-CR6-IC-WT	Water	Chromium +6	EPA 7199
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.			
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).			
EC-SCREEN-WP	Water	Conductivity Screen (Internal Use Only)	APHA 2510
Qualitative analysis of conductivity where required during preparation of other test eg. IC, TDS, TSS, etc			
F1-F4-CALC-WP	Water	CCME Total Hydrocarbons	CCME CWS-PHC, Pub #1310, Dec 2001-L
Analytical methods used for analysis of CCME Petroleum Hydrocarbons have been validated and comply with the Reference Method for the CWS PHC.			
In cases where results for both F4 and F4G are reported, the greater of the two results must be used in any application of the CWS PHC guidelines and			

Reference Information

Test Method References:

ALS Test Code	Matrix	Test Description	Method Reference**
		the gravimetric heavy hydrocarbons cannot be added to the C6 to C50 hydrocarbons. In samples where BTEX and F1 were analyzed , F1-BTEX represents a value where the sum of Benzene, Toluene, Ethylbenzene and total Xylenes has been subtracted from F1.	
		In samples where PAHs, F2 and F3 were analyzed, F2-Naphth represents the result where Naphthalene has been subtracted from F2. F3-PAH represents a result where the sum of Benzo(a)anthracene, Benzo(a)pyrene, Benzo(b)fluoranthene, Benzo(k)fluoranthene, Dibenzo(a,h)anthracene, Fluoranthene, Indeno(1,2,3-cd)pyrene, Phenanthrene, and Pyrene has been subtracted from F3.	
		Unless otherwise qualified, the following quality control criteria have been met for the F1 hydrocarbon range: 1. All extraction and analysis holding times were met. 2. Instrument performance showing response factors for C6 and C10 within 30% of the response factor for toluene. 3. Linearity of gasoline response within 15% throughout the calibration range.	
		Unless otherwise qualified, the following quality control criteria have been met for the F2-F4 hydrocarbon ranges: 1. All extraction and analysis holding times were met. 2. Instrument performance showing C10, C16 and C34 response factors within 10% of their average. 3. Instrument performance showing the C50 response factor within 30% of the average of the C10, C16 and C34 response factors. 4. Linearity of diesel or motor oil response within 15% throughout the calibration range.	
F2-F4-FID-WP	Water	CCME PHC F2-F4 in Water	EPA 3511
		Petroleum hydrocarbons in water are determined by liquid-liquid micro-scale solvent extraction using a reciprocal shaker extraction apparatus prior to capillary column gas chromatography with flame ionization detection (GC-FID) analysis.	
FC-QT97-WP	Water	Fecal Coliform by MPN QT97	APHA 9223B QT97
		This analysis is carried out using procedures adapted from APHA Method 9223B "Enzyme Substrate Coliform Test". The sample is mixed with a mixture of hydrolyzable substrates and then sealed in a 97-well packet. The packet is incubated at 44.5 +/- 0.2 degrees C for 18 hours and then the number of wells exhibiting a positive response are counted. The final result is obtained by comparing the number of positive responses to a probability table.	
HERBSCR-LCMS-WT	Water	Herbicides in Water	E3552
		Water samples are subjected filtration and analyzed by direct injection without sample preparation using liquid chromatography tandem mass spectrometry (LC-MS/MS).	
HG-T-CVAA-WP	Water	Mercury Total	EPA 1631E (mod)
		Water samples undergo a cold-oxidation using bromine monochloride prior to reduction with stannous chloride, and analyzed by CVAAS.	
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.	
NH3-COL-WP	Water	Ammonia by colour	APHA 4500 NH3 F
		Ammonia in water samples forms indophenol when reacted with hypochlorite and phenol. The intensity is amplified by the addition of sodium nitroprusside and measured colourmetrically.	
PAH,PANH-WP	Water	Polyaromatic Hydrocarbons (PAHs)	EPA 3511/8270D (mod)
		PAHs are extracted from water using a hexane micro-extraction technique, with analysis by GC/MS. Because the two isomers cannot be readily separated chromatographically, benzo(j)fluoranthene is reported as part of the benzo(b)fluoranthene parameter.	
PEST-DIAZINON-WT	Water	Miscellaneous Pesticides	SW846 8270
PHENOLS-4AAP-WT	Water	Phenol (4AAP)	EPA 9066
		An automated method is used to distill the sample. The distillate is then buffered to pH 9.4 which reacts with 4AAP and potassium ferricyanide to form a red complex which is measured colorimetrically.	
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-QT97-WP	Water	Total Coliform and E.coli by MPN QT97	APHA 9223B QT97
		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 97-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	

Reference Information

Test Method References:

ALS Test Code	Matrix	Test Description	Method Reference**
		comparing the number of positive responses to a probability table.	
THM-SUM-CALC-WP	Water	Total Trihalomethanes (THMs)	CALCULATION
		Total Trihalomethanes (THMs) represents the sum of bromodichloromethane, bromoform, chlorodibromomethane and chloroform. For the purpose of calculation, results less than the detection limit (DL) are treated as zero.	
VOC+F1-HSMS-WP	Water	VOC plus F1 by GCMS	EPA 8260C / EPA 5021A
		In this method samples are analyzed using a headspace autosampler interfaced to a dual column gas chromatograph with MS and Flame Ionization detectors.	
XYLENES-SUM-CALC-WP	Water	Sum of Xylene Isomer Concentrations	CALCULATED RESULT
		Total xylenes represents the sum of o-xylene and m&p-xylene.	

** 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
WT	ALS ENVIRONMENTAL - WATERLOO, ONTARIO, CANADA
VA	ALS ENVIRONMENTAL - VANCOUVER, BRITISH COLUMBIA, 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

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Client: City of Winnipeg - Solid Waste Services Div (1120 Waverley)
 Solid Waste Services Division 1120 Waverley Street
 Winnipeg MB R3T 0P4

Contact: CHRIS KOZAK

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
ALK-TITR-WP								
	Water							
Batch	R4909330							
WG3219659-4	LCS							
Alkalinity, Total (as CaCO3)			103.0		%		85-115	14-NOV-19
WG3219659-1	MB							
Alkalinity, Total (as CaCO3)			<1.0		mg/L		1	14-NOV-19
C-DIC-HTC-WP								
	Water							
Batch	R4915689							
WG3222149-2	LCS							
Dissolved Inorganic Carbon			94.6		%		80-120	18-NOV-19
WG3222149-1	MB							
Dissolved Inorganic Carbon			<0.50		mg/L		0.5	18-NOV-19
WG3222149-4	MS	L2381742-2						
Dissolved Inorganic Carbon			N/A	MS-B	%		-	18-NOV-19
Batch	R4921551							
WG3226197-3	DUP	L2381742-1						
Dissolved Inorganic Carbon		25.2	25.5		mg/L	1.1	20	21-NOV-19
WG3226197-2	LCS							
Dissolved Inorganic Carbon			99.2		%		80-120	21-NOV-19
WG3226197-1	MB							
Dissolved Inorganic Carbon			<0.50		mg/L		0.5	21-NOV-19
C-DOC-HTC-WP								
	Water							
Batch	R4909394							
WG3219645-2	LCS							
Dissolved Organic Carbon			106.0		%		80-120	14-NOV-19
WG3219645-1	MB							
Dissolved Organic Carbon			<0.50		mg/L		0.5	14-NOV-19
Batch	R4914359							
WG3221055-2	LCS							
Dissolved Organic Carbon			93.0		%		80-120	15-NOV-19
WG3221055-1	MB							
Dissolved Organic Carbon			<0.50		mg/L		0.5	15-NOV-19
CL-IC-N-WP								
	Water							
Batch	R4912006							
WG3218422-2	LCS							
Chloride (Cl)			99.8		%		90-110	14-NOV-19
WG3218422-6	LCS							
Chloride (Cl)			102.4		%		90-110	14-NOV-19
WG3218422-1	MB							
Chloride (Cl)			<0.50		mg/L		0.5	14-NOV-19



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Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
CL-IC-N-WP Water								
Batch	R4912006							
WG3218422-5	MB							
Chloride (Cl)			<0.50		mg/L		0.5	14-NOV-19
CN-T-L-CFA-VA Water								
Batch	R4924527							
WG3227248-2	LCS							
Cyanide, Total			98.3		%		80-120	25-NOV-19
WG3227248-1	MB							
Cyanide, Total			<0.0010		mg/L		0.001	25-NOV-19
CR-CR6-IC-WT Water								
Batch	R4922220							
WG3226163-2	LCS							
Chromium, Hexavalent			100.0		%		80-120	22-NOV-19
WG3226163-1	MB							
Chromium, Hexavalent			<0.00050		mg/L		0.0005	22-NOV-19
F2-F4-FID-WP Water								
Batch	R4927450							
WG3226636-2	LCS							
F2 (C10-C16)			102.3		%		70-130	23-NOV-19
F3 (C16-C34)			94.0		%		70-130	23-NOV-19
F4 (C34-C50)			97.0		%		70-130	23-NOV-19
WG3226636-1	MB							
F2 (C10-C16)			<0.10		mg/L		0.1	23-NOV-19
F3 (C16-C34)			<0.25		mg/L		0.25	23-NOV-19
F4 (C34-C50)			<0.25		mg/L		0.25	23-NOV-19
Surrogate: 2-Bromobenzotrifluoride			92.9		%		60-140	23-NOV-19
FC-QT97-WP Water								
Batch	R4906582							
WG3218014-2	DUP	L2381742-1						
Fecal Coliforms		<1	<1	RPD-NA	MPN/100mL	N/A	65	13-NOV-19
WG3218014-1	MB							
Fecal Coliforms			<1		MPN/100mL		1	13-NOV-19
HERBSCR-LCMS-WT Water								
Batch	R4915730							
WG3221193-13	DUP	L2381742-2						
Clopyralid		<0.00010	<0.00010	RPD-NA	mg/L	N/A	30	18-NOV-19
Dicamba		<0.00010	<0.00010	RPD-NA	mg/L	N/A	30	18-NOV-19



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Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
HERBSCR-LCMS-WT		Water						
Batch	R4915730							
WG3221193-13	DUP	L2381742-2						
Mecoprop		<0.00010	<0.00010	RPD-NA	mg/L	N/A	30	18-NOV-19
MCPA		<0.00010	<0.00010	RPD-NA	mg/L	N/A	30	18-NOV-19
2,4-D		<0.00010	<0.00010	RPD-NA	mg/L	N/A	30	18-NOV-19
Bromoxynil		<0.00010	<0.00010	RPD-NA	mg/L	N/A	30	18-NOV-19
Triclopyr		<0.00010	<0.00010	RPD-NA	mg/L	N/A	30	18-NOV-19
2,4,5-T		<0.00010	<0.00010	RPD-NA	mg/L	N/A	30	18-NOV-19
2,4,5-TP		<0.00010	<0.00010	RPD-NA	mg/L	N/A	30	18-NOV-19
Picloram		<0.00010	<0.00010	RPD-NA	mg/L	N/A	30	18-NOV-19
2,4-DB		<0.00010	<0.00010	RPD-NA	mg/L	N/A	30	18-NOV-19
2,4-DP		<0.00010	<0.00010	RPD-NA	mg/L	N/A	30	18-NOV-19
Dinoseb		<0.00010	<0.00010	RPD-NA	mg/L	N/A	30	18-NOV-19
MCPB		<0.00010	<0.00010	RPD-NA	mg/L	N/A	30	18-NOV-19
WG3221193-12	LCS							
Clopyralid			95.5		%		50-150	18-NOV-19
Dicamba			92.5		%		65-130	18-NOV-19
Mecoprop			102.0		%		65-130	18-NOV-19
MCPA			92.3		%		65-130	18-NOV-19
2,4-D			92.5		%		65-130	18-NOV-19
Bromoxynil			90.7		%		65-130	18-NOV-19
Triclopyr			90.5		%		65-130	18-NOV-19
2,4,5-T			83.6		%		65-130	18-NOV-19
2,4,5-TP			92.0		%		65-130	18-NOV-19
Picloram			102.5		%		50-150	18-NOV-19
2,4-DB			85.9		%		65-130	18-NOV-19
2,4-DP			94.8		%		65-130	18-NOV-19
Dinoseb			83.2		%		50-150	18-NOV-19
MCPB			102.0		%		65-130	18-NOV-19
WG3221193-11	MB							
Clopyralid			<0.00010		mg/L		0.0001	18-NOV-19
Dicamba			<0.00010		mg/L		0.0001	18-NOV-19
Mecoprop			<0.00010		mg/L		0.0001	18-NOV-19
MCPA			<0.00010		mg/L		0.0001	18-NOV-19
2,4-D			<0.00010		mg/L		0.0001	18-NOV-19
Bromoxynil			<0.00010		mg/L		0.0001	18-NOV-19
Triclopyr			<0.00010		mg/L		0.0001	18-NOV-19



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Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
HERBSCR-LCMS-WT								
	Water							
Batch	R4915730							
WG3221193-11	MB							
2,4,5-T			<0.00010		mg/L		0.0001	18-NOV-19
2,4,5-TP			<0.00010		mg/L		0.0001	18-NOV-19
Picloram			<0.00010		mg/L		0.0001	18-NOV-19
2,4-DB			<0.00010		mg/L		0.0001	18-NOV-19
2,4-DP			<0.00010		mg/L		0.0001	18-NOV-19
Dinoseb			<0.00010		mg/L		0.0001	18-NOV-19
MCPB			<0.00010		mg/L		0.0001	18-NOV-19
Surrogate: 2,4-Dichlorophenylacetic Acid			98.0		%		50-130	18-NOV-19
WG3221193-14	MS	L2381742-2						
Clopyralid			114.5		%		50-150	18-NOV-19
Dicamba			94.7		%		50-130	18-NOV-19
Mecoprop			119.0		%		50-130	18-NOV-19
MCPA			92.2		%		50-130	18-NOV-19
2,4-D			98.6		%		50-130	18-NOV-19
Bromoxynil			126.0		%		50-130	18-NOV-19
Triclopyr			52.7		%		50-130	18-NOV-19
2,4,5-T			101.6		%		50-130	18-NOV-19
2,4,5-TP			87.1		%		50-130	18-NOV-19
Picloram			111.0		%		50-150	18-NOV-19
2,4-DB			60.9		%		50-130	18-NOV-19
2,4-DP			109.0		%		50-130	18-NOV-19
Dinoseb			144.8		%		50-150	18-NOV-19
MCPB			63.3		%		50-130	18-NOV-19
HG-T-CVAA-WP								
	Water							
Batch	R4925108							
WG3228720-3	DUP	L2381742-1						
Mercury (Hg)-Total		<0.0000050	<0.0000050	RPD-NA	mg/L	N/A	20	26-NOV-19
WG3228720-2	LCS							
Mercury (Hg)-Total			98.0		%		80-120	26-NOV-19
WG3228720-1	MB							
Mercury (Hg)-Total			<0.0000050		mg/L		0.000005	26-NOV-19
WG3228720-4	MS	L2381742-2						
Mercury (Hg)-Total			86.0		%		70-130	26-NOV-19
MET-D-CCMS-WP								
	Water							



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Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
MET-D-CCMS-WP								
	Water							
Batch	R4926087							
WG3227607-2	LCS							
Aluminum (Al)-Dissolved			103.0		%		80-120	26-NOV-19
Antimony (Sb)-Dissolved			103.6		%		80-120	26-NOV-19
Arsenic (As)-Dissolved			102.9		%		80-120	26-NOV-19
Barium (Ba)-Dissolved			100.6		%		80-120	26-NOV-19
Beryllium (Be)-Dissolved			98.1		%		80-120	26-NOV-19
Bismuth (Bi)-Dissolved			100.3		%		80-120	26-NOV-19
Boron (B)-Dissolved			97.1		%		80-120	26-NOV-19
Cadmium (Cd)-Dissolved			102.8		%		80-120	26-NOV-19
Calcium (Ca)-Dissolved			98.8		%		80-120	26-NOV-19
Cesium (Cs)-Dissolved			107.3		%		80-120	26-NOV-19
Chromium (Cr)-Dissolved			102.5		%		80-120	26-NOV-19
Cobalt (Co)-Dissolved			99.8		%		80-120	26-NOV-19
Copper (Cu)-Dissolved			101.0		%		80-120	26-NOV-19
Iron (Fe)-Dissolved			92.9		%		80-120	26-NOV-19
Lead (Pb)-Dissolved			102.6		%		80-120	26-NOV-19
Lithium (Li)-Dissolved			96.7		%		80-120	26-NOV-19
Magnesium (Mg)-Dissolved			109.5		%		80-120	26-NOV-19
Manganese (Mn)-Dissolved			102.3		%		80-120	26-NOV-19
Molybdenum (Mo)-Dissolved			106.2		%		80-120	26-NOV-19
Nickel (Ni)-Dissolved			100.2		%		80-120	26-NOV-19
Phosphorus (P)-Dissolved			107.4		%		80-120	26-NOV-19
Potassium (K)-Dissolved			101.8		%		80-120	26-NOV-19
Rubidium (Rb)-Dissolved			99.7		%		80-120	26-NOV-19
Selenium (Se)-Dissolved			101.2		%		80-120	26-NOV-19
Silicon (Si)-Dissolved			103.1		%		80-120	26-NOV-19
Silver (Ag)-Dissolved			105.4		%		80-120	26-NOV-19
Sulfur (S)-Dissolved			102.5		%		80-120	26-NOV-19
Tellurium (Te)-Dissolved			108.6		%		80-120	26-NOV-19
Thallium (Tl)-Dissolved			101.8		%		80-120	26-NOV-19
Thorium (Th)-Dissolved			101.5		%		80-120	26-NOV-19
Tin (Sn)-Dissolved			101.1		%		80-120	26-NOV-19
Titanium (Ti)-Dissolved			97.8		%		80-120	26-NOV-19
Tungsten (W)-Dissolved			102.6		%		80-120	26-NOV-19
Uranium (U)-Dissolved			107.4		%		80-120	26-NOV-19



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Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
MET-D-CCMS-WP		Water						
Batch	R4926087							
WG3227607-2	LCS							
Vanadium (V)-Dissolved			102.4		%		80-120	26-NOV-19
Zinc (Zn)-Dissolved			99.4		%		80-120	26-NOV-19
Zirconium (Zr)-Dissolved			100.5		%		80-120	26-NOV-19
WG3227607-1	MB							
Aluminum (Al)-Dissolved			<0.0010		mg/L		0.001	26-NOV-19
Antimony (Sb)-Dissolved			<0.00010		mg/L		0.0001	26-NOV-19
Arsenic (As)-Dissolved			<0.00010		mg/L		0.0001	26-NOV-19
Barium (Ba)-Dissolved			<0.00010		mg/L		0.0001	26-NOV-19
Beryllium (Be)-Dissolved			<0.00010		mg/L		0.0001	26-NOV-19
Bismuth (Bi)-Dissolved			<0.000050		mg/L		0.00005	26-NOV-19
Boron (B)-Dissolved			<0.010		mg/L		0.01	26-NOV-19
Cadmium (Cd)-Dissolved			<0.0000050		mg/L		0.000005	26-NOV-19
Calcium (Ca)-Dissolved			<0.050		mg/L		0.05	26-NOV-19
Cesium (Cs)-Dissolved			<0.000010		mg/L		0.00001	26-NOV-19
Chromium (Cr)-Dissolved			<0.00010		mg/L		0.0001	26-NOV-19
Cobalt (Co)-Dissolved			<0.00010		mg/L		0.0001	26-NOV-19
Copper (Cu)-Dissolved			<0.00020		mg/L		0.0002	26-NOV-19
Iron (Fe)-Dissolved			<0.010		mg/L		0.01	26-NOV-19
Lead (Pb)-Dissolved			<0.000050		mg/L		0.00005	26-NOV-19
Lithium (Li)-Dissolved			<0.0010		mg/L		0.001	26-NOV-19
Magnesium (Mg)-Dissolved			<0.0050		mg/L		0.005	26-NOV-19
Manganese (Mn)-Dissolved			<0.00010		mg/L		0.0001	26-NOV-19
Molybdenum (Mo)-Dissolved			<0.000050		mg/L		0.00005	26-NOV-19
Nickel (Ni)-Dissolved			<0.00050		mg/L		0.0005	26-NOV-19
Phosphorus (P)-Dissolved			<0.030		mg/L		0.03	26-NOV-19
Potassium (K)-Dissolved			<0.050		mg/L		0.05	26-NOV-19
Rubidium (Rb)-Dissolved			<0.00020		mg/L		0.0002	26-NOV-19
Selenium (Se)-Dissolved			<0.000050		mg/L		0.00005	26-NOV-19
Silicon (Si)-Dissolved			<0.050		mg/L		0.05	26-NOV-19
Silver (Ag)-Dissolved			<0.000010		mg/L		0.00001	26-NOV-19
Sulfur (S)-Dissolved			<0.50		mg/L		0.5	26-NOV-19
Tellurium (Te)-Dissolved			<0.00020		mg/L		0.0002	26-NOV-19
Thallium (Tl)-Dissolved			<0.000010		mg/L		0.00001	26-NOV-19
Thorium (Th)-Dissolved			<0.00010		mg/L		0.0001	26-NOV-19

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Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
MET-D-CCMS-WP		Water						
Batch	R4926087							
WG3227607-1	MB							
Tin (Sn)-Dissolved			<0.00010		mg/L		0.0001	26-NOV-19
Titanium (Ti)-Dissolved			<0.00030		mg/L		0.0003	26-NOV-19
Tungsten (W)-Dissolved			<0.00010		mg/L		0.0001	26-NOV-19
Uranium (U)-Dissolved			<0.000010		mg/L		0.00001	26-NOV-19
Vanadium (V)-Dissolved			<0.00050		mg/L		0.0005	26-NOV-19
Zinc (Zn)-Dissolved			<0.0010		mg/L		0.001	26-NOV-19
Zirconium (Zr)-Dissolved			<0.00020		mg/L		0.0002	26-NOV-19
NH3-COL-WP		Water						
Batch	R4910232							
WG3219935-2	LCS							
Ammonia, Total (as N)			98.7		%		85-115	15-NOV-19
WG3219935-1	MB							
Ammonia, Total (as N)			<0.010		mg/L		0.01	14-NOV-19
PAH,PANH-WP		Water						
Batch	R4915091							
WG3220672-2	LCS							
1-Methyl Naphthalene			108.4		%		60-130	17-NOV-19
2-Methyl Naphthalene			115.0		%		60-130	17-NOV-19
Acenaphthene			119.9		%		60-130	17-NOV-19
Acenaphthylene			111.1		%		60-130	17-NOV-19
Anthracene			102.7		%		60-130	17-NOV-19
Acridine			117.2		%		60-130	17-NOV-19
Benzo(a)anthracene			108.1		%		60-130	17-NOV-19
Benzo(a)pyrene			96.5		%		60-130	17-NOV-19
Benzo(b&j)fluoranthene			99.3		%		60-130	17-NOV-19
Benzo(g,h,i)perylene			98.1		%		60-130	17-NOV-19
Benzo(k)fluoranthene			97.9		%		60-130	17-NOV-19
Chrysene			100.2		%		60-130	17-NOV-19
Dibenzo(a,h)anthracene			111.8		%		60-130	17-NOV-19
Fluoranthene			114.9		%		60-130	17-NOV-19
Fluorene			108.6		%		60-130	17-NOV-19
Indeno(1,2,3-cd)pyrene			105.0		%		60-130	17-NOV-19
Naphthalene			117.2		%		50-130	17-NOV-19
Phenanthrene			113.3		%		60-130	17-NOV-19
Pyrene			118.8		%		60-130	17-NOV-19

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Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
PAH,PANH-WP		Water						
Batch	R4915091							
WG3220672-2	LCS							
Quinoline			103.8		%		60-130	17-NOV-19
WG3220672-1	MB							
1-Methyl Naphthalene			<0.000020		mg/L		0.00002	17-NOV-19
2-Methyl Naphthalene			<0.000020		mg/L		0.00002	17-NOV-19
Acenaphthene			<0.000020		mg/L		0.00002	17-NOV-19
Acenaphthylene			<0.000020		mg/L		0.00002	17-NOV-19
Anthracene			<0.000010		mg/L		0.00001	17-NOV-19
Acridine			<0.000020		mg/L		0.00002	17-NOV-19
Benzo(a)anthracene			<0.000010		mg/L		0.00001	17-NOV-19
Benzo(a)pyrene			<0.0000050		mg/L		0.000005	17-NOV-19
Benzo(b&j)fluoranthene			<0.000010		mg/L		0.00001	17-NOV-19
Benzo(g,h,i)perylene			<0.000020		mg/L		0.00002	17-NOV-19
Benzo(k)fluoranthene			<0.000010		mg/L		0.00001	17-NOV-19
Chrysene			<0.000020		mg/L		0.00002	17-NOV-19
Dibenzo(a,h)anthracene			<0.0000050		mg/L		0.000005	17-NOV-19
Fluoranthene			<0.000020		mg/L		0.00002	17-NOV-19
Fluorene			<0.000020		mg/L		0.00002	17-NOV-19
Indeno(1,2,3-cd)pyrene			<0.000010		mg/L		0.00001	17-NOV-19
Naphthalene			<0.000050		mg/L		0.00005	17-NOV-19
Phenanthrene			<0.000050		mg/L		0.00005	17-NOV-19
Pyrene			<0.000010		mg/L		0.00001	17-NOV-19
Quinoline			<0.000020		mg/L		0.00002	17-NOV-19
Surrogate: Acenaphthene d10			115.4		%		60-130	17-NOV-19
Surrogate: Acridine d9			110.9		%		60-130	17-NOV-19
Surrogate: Chrysene d12			107.9		%		60-130	17-NOV-19
Surrogate: Naphthalene d8			117.1		%		50-130	17-NOV-19
Surrogate: Phenanthrene d10			121.9		%		60-130	17-NOV-19
PEST-DIAZINON-WT		Water						
Batch	R4915793							
WG3220411-2	LCS							
Diazinon			71.6		%		60-130	19-NOV-19
WG3220411-1	MB							
Diazinon			<0.10		ug/L		0.1	19-NOV-19
Surrogate: 2-Fluorobiphenyl			80.0		%		40-130	19-NOV-19
Surrogate: d14-Terphenyl			78.3		%		40-130	19-NOV-19

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Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
PHENOLS-4AAP-WT								
Batch	R4915159							
WG3221241-14	LCS							
Phenols (4AAP)			98.8		%		85-115	18-NOV-19
WG3221241-13	MB							
Phenols (4AAP)			<0.0010		mg/L		0.001	18-NOV-19
SO4-IC-N-WP								
Batch	R4912006							
WG3218422-2	LCS							
Sulfate (SO4)			99.9		%		90-110	14-NOV-19
WG3218422-6	LCS							
Sulfate (SO4)			102.9		%		90-110	14-NOV-19
WG3218422-1	MB							
Sulfate (SO4)			<0.30		mg/L		0.3	14-NOV-19
WG3218422-5	MB							
Sulfate (SO4)			<0.30		mg/L		0.3	14-NOV-19
TC,EC-QT97-WP								
Batch	R4906574							
WG3218013-2	DUP	L2381742-1						
Total Coliforms		<1	<1	RPD-NA	MPN/100mL	N/A	65	13-NOV-19
Escherichia Coli		<1	<1	RPD-NA	MPN/100mL	N/A	65	13-NOV-19
WG3218013-1	MB							
Total Coliforms			<1		MPN/100mL		1	13-NOV-19
Escherichia Coli			<1		MPN/100mL		1	13-NOV-19
VOC+F1-HSMS-WP								
Batch	R4919315							
WG3220667-4	DUP	L2381742-2						
Acetone		<0.050	<0.050	RPD-NA	mg/L	N/A	30	18-NOV-19
Benzene		<0.00050	<0.00050	RPD-NA	mg/L	N/A	30	18-NOV-19
Bromobenzene		<0.0010	<0.0010	RPD-NA	mg/L	N/A	30	18-NOV-19
Bromochloromethane		<0.0010	<0.0010	RPD-NA	mg/L	N/A	30	18-NOV-19
Bromodichloromethane		<0.00050	<0.00050	RPD-NA	mg/L	N/A	30	18-NOV-19
Bromoform		0.0023	0.0023		mg/L	2.7	30	18-NOV-19
Bromomethane		<0.0010	<0.0010	RPD-NA	mg/L	N/A	50	18-NOV-19
n-Butylbenzene		<0.0010	<0.0010	RPD-NA	mg/L	N/A	30	18-NOV-19
sec-Butylbenzene		<0.0010	<0.0010	RPD-NA	mg/L	N/A	30	18-NOV-19
tert-Butylbenzene		<0.0010	<0.0010	RPD-NA	mg/L	N/A	30	18-NOV-19
Carbon disulfide		<0.0050	<0.0050	RPD-NA	mg/L	N/A	30	18-NOV-19

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Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
VOC+F1-HSMS-WP								
	Water							
Batch	R4919315							
WG3220667-4	DUP	L2381742-2						
Carbon Tetrachloride		<0.00050	<0.00050	RPD-NA	mg/L	N/A	30	18-NOV-19
Chlorobenzene		<0.0010	<0.0010	RPD-NA	mg/L	N/A	30	18-NOV-19
Chloroethane		<0.0010	<0.0010	RPD-NA	mg/L	N/A	50	18-NOV-19
Chloroform		0.00130	0.00122		mg/L	6.1	30	18-NOV-19
Chloromethane		<0.0050	<0.0050	RPD-NA	mg/L	N/A	50	18-NOV-19
2-Chlorotoluene		<0.020	<0.020	RPD-NA	mg/L	N/A	30	18-NOV-19
4-Chlorotoluene		<0.0010	<0.0010	RPD-NA	mg/L	N/A	30	18-NOV-19
Dibromochloromethane		<0.00050	<0.00050	RPD-NA	mg/L	N/A	30	18-NOV-19
1,2-Dibromo-3-chloropropane		<0.0010	<0.0010	RPD-NA	mg/L	N/A	30	18-NOV-19
1,2-Dibromoethane		<0.0010	<0.0010	RPD-NA	mg/L	N/A	30	18-NOV-19
Dibromomethane		<0.0010	<0.0010	RPD-NA	mg/L	N/A	30	18-NOV-19
1,2-Dichlorobenzene		<0.00050	<0.00050	RPD-NA	mg/L	N/A	30	18-NOV-19
1,3-Dichlorobenzene		<0.0010	<0.0010	RPD-NA	mg/L	N/A	30	18-NOV-19
1,4-Dichlorobenzene		<0.0010	<0.0010	RPD-NA	mg/L	N/A	30	18-NOV-19
Dichlorodifluoromethane		<0.0010	<0.0010	RPD-NA	mg/L	N/A	50	18-NOV-19
1,1-dichloroethane		<0.00050	<0.00050	RPD-NA	mg/L	N/A	30	18-NOV-19
1,2-Dichloroethane		<0.00050	<0.00050	RPD-NA	mg/L	N/A	30	18-NOV-19
1,1-dichloroethene		<0.00050	<0.00050	RPD-NA	mg/L	N/A	30	18-NOV-19
cis-1,2-Dichloroethene		<0.0010	<0.0010	RPD-NA	mg/L	N/A	30	18-NOV-19
trans-1,2-Dichloroethene		<0.0010	<0.0010	RPD-NA	mg/L	N/A	30	18-NOV-19
Dichloromethane		<0.0050	<0.0050	RPD-NA	mg/L	N/A	30	18-NOV-19
1,2-Dichloropropane		<0.0010	<0.0010	RPD-NA	mg/L	N/A	30	18-NOV-19
1,3-Dichloropropane		<0.0010	<0.0010	RPD-NA	mg/L	N/A	30	18-NOV-19
2,2-Dichloropropane		<0.0010	<0.0010	RPD-NA	mg/L	N/A	30	18-NOV-19
1,1-Dichloropropene		<0.0010	<0.0010	RPD-NA	mg/L	N/A	30	18-NOV-19
cis-1,3-Dichloropropene		<0.0010	<0.0010	RPD-NA	mg/L	N/A	30	18-NOV-19
trans-1,3-Dichloropropene		<0.0020	<0.0020	RPD-NA	mg/L	N/A	30	18-NOV-19
Ethylbenzene		<0.00050	<0.00050	RPD-NA	mg/L	N/A	30	18-NOV-19
F1		<0.10	<0.10	RPD-NA	mg/L	N/A	30	18-NOV-19
Hexachlorobutadiene		<0.0010	<0.0010	RPD-NA	mg/L	N/A	30	18-NOV-19
Hexane		<0.0010	<0.0010	RPD-NA	mg/L	N/A	30	18-NOV-19
2-Hexanone (Methyl butyl ketone)		<0.020	<0.020	RPD-NA	mg/L	N/A	30	18-NOV-19
Isopropylbenzene		<0.0010	<0.0010	RPD-NA	mg/L	N/A	30	18-NOV-19
4-Isopropyltoluene		<0.0010	<0.0010	RPD-NA	mg/L	N/A	30	18-NOV-19

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Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
VOC+F1-HSMS-WP								
	Water							
Batch	R4919315							
WG3220667-4	DUP	L2381742-2						
MEK		<0.020	<0.020	RPD-NA	mg/L	N/A	30	18-NOV-19
MIBK		<0.020	<0.020	RPD-NA	mg/L	N/A	30	18-NOV-19
MTBE		<0.00050	<0.00050	RPD-NA	mg/L	N/A	30	18-NOV-19
Styrene		<0.0010	<0.0010	RPD-NA	mg/L	N/A	30	18-NOV-19
1,1,1,2-Tetrachloroethane		<0.00050	<0.00050	RPD-NA	mg/L	N/A	30	18-NOV-19
1,1,2,2-Tetrachloroethane		<0.00050	<0.00050	RPD-NA	mg/L	N/A	30	18-NOV-19
Tetrachloroethene		<0.00050	<0.00050	RPD-NA	mg/L	N/A	30	18-NOV-19
Toluene		<0.00050	<0.00050	RPD-NA	mg/L	N/A	30	18-NOV-19
1,2,3-Trichlorobenzene		<0.0010	<0.0010	RPD-NA	mg/L	N/A	30	18-NOV-19
1,2,4-Trichlorobenzene		<0.0010	<0.0010	RPD-NA	mg/L	N/A	30	18-NOV-19
1,1,1-Trichloroethane		<0.00050	<0.00050	RPD-NA	mg/L	N/A	30	18-NOV-19
1,1,2-Trichloroethane		<0.00050	<0.00050	RPD-NA	mg/L	N/A	30	18-NOV-19
Trichloroethene		<0.00050	<0.00050	RPD-NA	mg/L	N/A	30	18-NOV-19
Trichlorofluoromethane		<0.0010	<0.0010	RPD-NA	mg/L	N/A	50	18-NOV-19
1,2,3-Trichloropropane		<0.0010	<0.0010	RPD-NA	mg/L	N/A	30	18-NOV-19
1,2,4-Trimethylbenzene		<0.0010	<0.0010	RPD-NA	mg/L	N/A	30	18-NOV-19
1,3,5-Trimethylbenzene		<0.0010	<0.0010	RPD-NA	mg/L	N/A	30	18-NOV-19
Vinyl Chloride		<0.00050	<0.00050	RPD-NA	mg/L	N/A	50	18-NOV-19
M+P-Xylenes		<0.00040	<0.00040	RPD-NA	mg/L	N/A	30	18-NOV-19
o-Xylene		<0.00050	<0.00050	RPD-NA	mg/L	N/A	30	18-NOV-19
WG3220667-2	LCS							
Acetone			83.1		%		70-130	16-NOV-19
Benzene			86.8		%		70-130	16-NOV-19
Bromobenzene			96.3		%		70-130	16-NOV-19
Bromochloromethane			86.7		%		70-130	16-NOV-19
Bromodichloromethane			85.1		%		70-130	16-NOV-19
Bromoform			89.0		%		70-130	16-NOV-19
Bromomethane			87.6		%		60-140	16-NOV-19
n-Butylbenzene			91.8		%		70-130	16-NOV-19
sec-Butylbenzene			88.2		%		70-130	16-NOV-19
tert-Butylbenzene			90.3		%		70-130	16-NOV-19
Carbon disulfide			91.9		%		70-130	16-NOV-19
Carbon Tetrachloride			83.0		%		70-130	16-NOV-19
Chlorobenzene			96.5		%		70-130	16-NOV-19

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Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
VOC+F1-HSMS-WP								
	Water							
Batch	R4919315							
WG3220667-2	LCS							
Chloroethane			93.1		%		60-140	16-NOV-19
Chloroform			85.4		%		70-130	16-NOV-19
Chloromethane			113.1		%		60-140	16-NOV-19
2-Chlorotoluene			96.5		%		70-130	16-NOV-19
4-Chlorotoluene			94.7		%		70-130	16-NOV-19
Dibromochloromethane			90.1		%		70-130	16-NOV-19
1,2-Dibromo-3-chloropropane			96.2		%		70-130	16-NOV-19
1,2-Dibromoethane			93.5		%		70-130	16-NOV-19
Dibromomethane			86.8		%		70-130	16-NOV-19
1,2-Dichlorobenzene			98.3		%		70-130	16-NOV-19
1,3-Dichlorobenzene			95.8		%		70-130	16-NOV-19
1,4-Dichlorobenzene			101.8		%		70-130	16-NOV-19
Dichlorodifluoromethane			102.1		%		60-140	16-NOV-19
1,1-dichloroethane			86.8		%		70-130	16-NOV-19
1,2-Dichloroethane			88.1		%		70-130	16-NOV-19
1,1-dichloroethene			93.8		%		70-130	16-NOV-19
cis-1,2-Dichloroethene			89.7		%		70-130	16-NOV-19
trans-1,2-Dichloroethene			92.8		%		70-130	16-NOV-19
Dichloromethane			93.0		%		70-130	16-NOV-19
1,2-Dichloropropane			88.7		%		70-130	16-NOV-19
1,3-Dichloropropane			90.6		%		70-130	16-NOV-19
2,2-Dichloropropane			96.4		%		70-130	16-NOV-19
1,1-Dichloropropene			92.5		%		70-130	16-NOV-19
cis-1,3-Dichloropropene			106.8		%		70-130	16-NOV-19
trans-1,3-Dichloropropene			115.0		%		70-130	16-NOV-19
Ethylbenzene			94.0		%		70-130	16-NOV-19
Hexachlorobutadiene			85.1		%		70-130	16-NOV-19
Hexane			90.0		%		70-130	16-NOV-19
2-Hexanone (Methyl butyl ketone)			92.2		%		70-130	16-NOV-19
Isopropylbenzene			89.3		%		70-130	16-NOV-19
4-Isopropyltoluene			91.4		%		70-130	16-NOV-19
MEK			82.8		%		70-130	16-NOV-19
MIBK			87.9		%		70-130	16-NOV-19
MTBE			101.8		%		70-130	16-NOV-19

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Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
VOC+F1-HSMS-WP								
	Water							
Batch	R4919315							
WG3220667-2	LCS							
Styrene			96.1		%		70-130	16-NOV-19
1,1,1,2-Tetrachloroethane			88.5		%		70-130	16-NOV-19
1,1,2,2-Tetrachloroethane			94.5		%		70-130	16-NOV-19
Tetrachloroethene			89.1		%		70-130	16-NOV-19
Toluene			103.7		%		70-130	16-NOV-19
1,2,3-Trichlorobenzene			92.3		%		70-130	16-NOV-19
1,2,4-Trichlorobenzene			97.7		%		70-130	16-NOV-19
1,1,1-Trichloroethane			85.6		%		70-130	16-NOV-19
1,1,2-Trichloroethane			90.7		%		70-130	16-NOV-19
Trichloroethene			87.8		%		70-130	16-NOV-19
Trichlorofluoromethane			85.2		%		60-140	16-NOV-19
1,2,3-Trichloropropane			93.4		%		70-130	16-NOV-19
1,2,4-Trimethylbenzene			94.1		%		70-130	16-NOV-19
1,3,5-Trimethylbenzene			91.2		%		70-130	16-NOV-19
Vinyl Chloride			107.9		%		60-140	16-NOV-19
M+P-Xylenes			91.0		%		70-130	16-NOV-19
o-Xylene			92.9		%		70-130	16-NOV-19
WG3220667-3	LCS							
F1			123.2		%		70-130	16-NOV-19
WG3220667-1	MB							
Acetone			<0.050		mg/L		0.05	17-NOV-19
Benzene			<0.00050		mg/L		0.0005	17-NOV-19
Bromobenzene			<0.0010		mg/L		0.001	17-NOV-19
Bromochloromethane			<0.0010		mg/L		0.001	17-NOV-19
Bromodichloromethane			<0.00050		mg/L		0.0005	17-NOV-19
Bromoform			<0.0010		mg/L		0.001	17-NOV-19
Bromomethane			<0.0010		mg/L		0.001	17-NOV-19
n-Butylbenzene			<0.0010		mg/L		0.001	17-NOV-19
sec-Butylbenzene			<0.0010		mg/L		0.001	17-NOV-19
tert-Butylbenzene			<0.0010		mg/L		0.001	17-NOV-19
Carbon disulfide			<0.0050		mg/L		0.005	17-NOV-19
Carbon Tetrachloride			<0.00050		mg/L		0.0005	17-NOV-19
Chlorobenzene			<0.0010		mg/L		0.001	17-NOV-19
Chloroethane			<0.0010		mg/L		0.001	17-NOV-19
Chloroform			<0.00050		mg/L		0.0005	17-NOV-19

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Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
VOC+F1-HSMS-WP	Water							
Batch	R4919315							
WG3220667-1	MB							
Chloromethane			<0.0050		mg/L		0.005	17-NOV-19
2-Chlorotoluene			<0.020		mg/L		0.02	17-NOV-19
4-Chlorotoluene			<0.0010		mg/L		0.001	17-NOV-19
Dibromochloromethane			<0.00050		mg/L		0.0005	17-NOV-19
1,2-Dibromo-3-chloropropane			<0.0010		mg/L		0.001	17-NOV-19
1,2-Dibromoethane			<0.0010		mg/L		0.001	17-NOV-19
Dibromomethane			<0.0010		mg/L		0.001	17-NOV-19
1,2-Dichlorobenzene			<0.00050		mg/L		0.0005	17-NOV-19
1,3-Dichlorobenzene			<0.0010		mg/L		0.001	17-NOV-19
1,4-Dichlorobenzene			<0.0010		mg/L		0.001	17-NOV-19
Dichlorodifluoromethane			<0.0010		mg/L		0.001	17-NOV-19
1,1-dichloroethane			<0.00050		mg/L		0.0005	17-NOV-19
1,2-Dichloroethane			<0.00050		mg/L		0.0005	17-NOV-19
1,1-dichloroethene			<0.00050		mg/L		0.0005	17-NOV-19
cis-1,2-Dichloroethene			<0.0010		mg/L		0.001	17-NOV-19
trans-1,2-Dichloroethene			<0.0010		mg/L		0.001	17-NOV-19
Dichloromethane			<0.0050		mg/L		0.005	17-NOV-19
1,2-Dichloropropane			<0.0010		mg/L		0.001	17-NOV-19
1,3-Dichloropropane			<0.0010		mg/L		0.001	17-NOV-19
2,2-Dichloropropane			<0.0010		mg/L		0.001	17-NOV-19
1,1-Dichloropropene			<0.0010		mg/L		0.001	17-NOV-19
cis-1,3-Dichloropropene			<0.0010		mg/L		0.001	17-NOV-19
trans-1,3-Dichloropropene			<0.0010		mg/L		0.001	17-NOV-19
Ethylbenzene			<0.00050		mg/L		0.0005	17-NOV-19
F1			<0.10		mg/L		0.1	17-NOV-19
Hexachlorobutadiene			<0.0010		mg/L		0.001	17-NOV-19
Hexane			<0.0010		mg/L		0.001	17-NOV-19
2-Hexanone (Methyl butyl ketone)			<0.020		mg/L		0.02	17-NOV-19
Isopropylbenzene			<0.0010		mg/L		0.001	17-NOV-19
4-Isopropyltoluene			<0.0010		mg/L		0.001	17-NOV-19
MEK			<0.020		mg/L		0.02	17-NOV-19
MIBK			<0.020		mg/L		0.02	17-NOV-19
MTBE			<0.00050		mg/L		0.0005	17-NOV-19
Styrene			<0.0010		mg/L		0.001	17-NOV-19



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Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
VOC+F1-HSMS-WP		Water						
Batch	R4919315							
WG3220667-1	MB							
1,1,1,2-Tetrachloroethane			<0.00050		mg/L		0.0005	17-NOV-19
1,1,2,2-Tetrachloroethane			<0.00050		mg/L		0.0005	17-NOV-19
Tetrachloroethene			<0.00050		mg/L		0.0005	17-NOV-19
Toluene			<0.00050		mg/L		0.0005	17-NOV-19
1,2,3-Trichlorobenzene			<0.0010		mg/L		0.001	17-NOV-19
1,2,4-Trichlorobenzene			<0.0010		mg/L		0.001	17-NOV-19
1,1,1-Trichloroethane			<0.00050		mg/L		0.0005	17-NOV-19
1,1,2-Trichloroethane			<0.00050		mg/L		0.0005	17-NOV-19
Trichloroethene			<0.00050		mg/L		0.0005	17-NOV-19
Trichlorofluoromethane			<0.0010		mg/L		0.001	17-NOV-19
1,2,3-Trichloropropane			<0.0010		mg/L		0.001	17-NOV-19
1,2,4-Trimethylbenzene			<0.0010		mg/L		0.001	17-NOV-19
1,3,5-Trimethylbenzene			<0.0010		mg/L		0.001	17-NOV-19
Vinyl Chloride			<0.00050		mg/L		0.0005	17-NOV-19
M+P-Xylenes			<0.00040		mg/L		0.0004	17-NOV-19
o-Xylene			<0.00050		mg/L		0.0005	17-NOV-19
Surrogate: 4-Bromofluorobenzene (SS)			86.7		%		70-130	17-NOV-19
Surrogate: 1,4-Difluorobenzene (SS)			96.4		%		70-130	17-NOV-19
Surrogate: 3,4-Dichlorotoluene (SS)			86.2		%		70-130	17-NOV-19
Batch	R4922695							
WG3224974-2	LCS							
Acetone			90.4		%		70-130	21-NOV-19
Benzene			90.3		%		70-130	21-NOV-19
Bromobenzene			94.0		%		70-130	21-NOV-19
Bromochloromethane			87.9		%		70-130	21-NOV-19
Bromodichloromethane			91.3		%		70-130	21-NOV-19
Bromoform			88.9		%		70-130	21-NOV-19
Bromomethane			88.0		%		60-140	21-NOV-19
n-Butylbenzene			98.9		%		70-130	21-NOV-19
sec-Butylbenzene			99.9		%		70-130	21-NOV-19
tert-Butylbenzene			96.1		%		70-130	21-NOV-19
Carbon disulfide			95.3		%		70-130	21-NOV-19
Carbon Tetrachloride			86.4		%		70-130	21-NOV-19
Chlorobenzene			91.3		%		70-130	21-NOV-19

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Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
VOC+F1-HSMS-WP								
	Water							
Batch	R4922695							
WG3224974-2	LCS							
Chloroethane			82.6		%		60-140	21-NOV-19
Chloroform			91.0		%		70-130	21-NOV-19
Chloromethane			103.6		%		60-140	21-NOV-19
2-Chlorotoluene			97.4		%		70-130	21-NOV-19
4-Chlorotoluene			98.6		%		70-130	21-NOV-19
Dibromochloromethane			84.0		%		70-130	21-NOV-19
1,2-Dibromo-3-chloropropane			88.4		%		70-130	21-NOV-19
1,2-Dibromoethane			90.5		%		70-130	21-NOV-19
Dibromomethane			94.6		%		70-130	21-NOV-19
1,2-Dichlorobenzene			92.7		%		70-130	21-NOV-19
1,3-Dichlorobenzene			91.6		%		70-130	21-NOV-19
1,4-Dichlorobenzene			96.4		%		70-130	21-NOV-19
Dichlorodifluoromethane			101.9		%		60-140	21-NOV-19
1,1-dichloroethane			89.5		%		70-130	21-NOV-19
1,2-Dichloroethane			93.6		%		70-130	21-NOV-19
1,1-dichloroethene			86.1		%		70-130	21-NOV-19
cis-1,2-Dichloroethene			89.2		%		70-130	21-NOV-19
trans-1,2-Dichloroethene			91.5		%		70-130	21-NOV-19
Dichloromethane			91.0		%		70-130	21-NOV-19
1,2-Dichloropropane			84.5		%		70-130	21-NOV-19
1,3-Dichloropropane			89.7		%		70-130	21-NOV-19
2,2-Dichloropropane			101.6		%		70-130	21-NOV-19
1,1-Dichloropropene			92.0		%		70-130	21-NOV-19
cis-1,3-Dichloropropene			102.3		%		70-130	21-NOV-19
trans-1,3-Dichloropropene			95.2		%		70-130	21-NOV-19
Ethylbenzene			93.2		%		70-130	21-NOV-19
Hexachlorobutadiene			81.3		%		70-130	21-NOV-19
Hexane			84.3		%		70-130	21-NOV-19
2-Hexanone (Methyl butyl ketone)			87.0		%		70-130	21-NOV-19
Isopropylbenzene			95.8		%		70-130	21-NOV-19
4-Isopropyltoluene			97.7		%		70-130	21-NOV-19
MEK			85.5		%		70-130	21-NOV-19
MIBK			87.6		%		70-130	21-NOV-19
MTBE			90.2		%		70-130	21-NOV-19

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Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
VOC+F1-HSMS-WP		Water						
Batch	R4922695							
WG3224974-2	LCS							
Styrene			95.7		%		70-130	21-NOV-19
1,1,1,2-Tetrachloroethane			85.5		%		70-130	21-NOV-19
1,1,2,2-Tetrachloroethane			89.7		%		70-130	21-NOV-19
Tetrachloroethene			83.6		%		70-130	21-NOV-19
Toluene			92.1		%		70-130	21-NOV-19
1,2,3-Trichlorobenzene			90.3		%		70-130	21-NOV-19
1,2,4-Trichlorobenzene			87.7		%		70-130	21-NOV-19
1,1,1-Trichloroethane			88.7		%		70-130	21-NOV-19
1,1,2-Trichloroethane			86.7		%		70-130	21-NOV-19
Trichloroethene			90.4		%		70-130	21-NOV-19
Trichlorofluoromethane			87.6		%		60-140	21-NOV-19
1,2,3-Trichloropropane			91.6		%		70-130	21-NOV-19
1,2,4-Trimethylbenzene			98.3		%		70-130	21-NOV-19
1,3,5-Trimethylbenzene			98.5		%		70-130	21-NOV-19
Vinyl Chloride			99.0		%		60-140	21-NOV-19
M+P-Xylenes			87.3		%		70-130	21-NOV-19
o-Xylene			93.3		%		70-130	21-NOV-19
WG3224974-3	LCS							
F1			88.7		%		70-130	21-NOV-19
WG3224974-1	MB							
Acetone			<0.050		mg/L		0.05	22-NOV-19
Benzene			<0.00050		mg/L		0.0005	22-NOV-19
Bromobenzene			<0.0010		mg/L		0.001	22-NOV-19
Bromochloromethane			<0.0010		mg/L		0.001	22-NOV-19
Bromodichloromethane			<0.00050		mg/L		0.0005	22-NOV-19
Bromoform			<0.0010		mg/L		0.001	22-NOV-19
Bromomethane			<0.0010		mg/L		0.001	22-NOV-19
n-Butylbenzene			<0.0010		mg/L		0.001	22-NOV-19
sec-Butylbenzene			<0.0010		mg/L		0.001	22-NOV-19
tert-Butylbenzene			<0.0010		mg/L		0.001	22-NOV-19
Carbon disulfide			<0.0050		mg/L		0.005	22-NOV-19
Carbon Tetrachloride			<0.00050		mg/L		0.0005	22-NOV-19
Chlorobenzene			<0.0010		mg/L		0.001	22-NOV-19
Chloroethane			<0.0010		mg/L		0.001	22-NOV-19
Chloroform			<0.00050		mg/L		0.0005	22-NOV-19

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Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
VOC+F1-HSMS-WP	Water							
Batch	R4922695							
WG3224974-1 MB								
Chloromethane			<0.0050		mg/L		0.005	22-NOV-19
2-Chlorotoluene			<0.020		mg/L		0.02	22-NOV-19
4-Chlorotoluene			<0.0010		mg/L		0.001	22-NOV-19
Dibromochloromethane			<0.00050		mg/L		0.0005	22-NOV-19
1,2-Dibromo-3-chloropropane			<0.0010		mg/L		0.001	22-NOV-19
1,2-Dibromoethane			<0.0010		mg/L		0.001	22-NOV-19
Dibromomethane			<0.0010		mg/L		0.001	22-NOV-19
1,2-Dichlorobenzene			<0.00050		mg/L		0.0005	22-NOV-19
1,3-Dichlorobenzene			<0.0010		mg/L		0.001	22-NOV-19
1,4-Dichlorobenzene			<0.0010		mg/L		0.001	22-NOV-19
Dichlorodifluoromethane			<0.0010		mg/L		0.001	22-NOV-19
1,1-dichloroethane			<0.00050		mg/L		0.0005	22-NOV-19
1,2-Dichloroethane			<0.00050		mg/L		0.0005	22-NOV-19
1,1-dichloroethene			<0.00050		mg/L		0.0005	22-NOV-19
cis-1,2-Dichloroethene			<0.0010		mg/L		0.001	22-NOV-19
trans-1,2-Dichloroethene			<0.0010		mg/L		0.001	22-NOV-19
Dichloromethane			<0.0050		mg/L		0.005	22-NOV-19
1,2-Dichloropropane			<0.0010		mg/L		0.001	22-NOV-19
1,3-Dichloropropane			<0.0010		mg/L		0.001	22-NOV-19
2,2-Dichloropropane			<0.0020		mg/L		0.002	22-NOV-19
1,1-Dichloropropene			<0.0010		mg/L		0.001	22-NOV-19
cis-1,3-Dichloropropene			<0.0020		mg/L		0.002	22-NOV-19
trans-1,3-Dichloropropene			<0.0020		mg/L		0.002	22-NOV-19
Ethylbenzene			<0.00050		mg/L		0.0005	22-NOV-19
F1			<0.10		mg/L		0.1	22-NOV-19
Hexachlorobutadiene			<0.0010		mg/L		0.001	22-NOV-19
Hexane			<0.0010		mg/L		0.001	22-NOV-19
2-Hexanone (Methyl butyl ketone)			<0.020		mg/L		0.02	22-NOV-19
Isopropylbenzene			<0.0010		mg/L		0.001	22-NOV-19
4-Isopropyltoluene			<0.0010		mg/L		0.001	22-NOV-19
MEK			<0.020		mg/L		0.02	22-NOV-19
MIBK			<0.020		mg/L		0.02	22-NOV-19
MTBE			<0.00050		mg/L		0.0005	22-NOV-19
Styrene			<0.0010		mg/L		0.001	22-NOV-19



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Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
VOC+F1-HSMS-WP								
	Water							
Batch	R4922695							
WG3224974-1	MB							
1,1,1,2-Tetrachloroethane			<0.00050		mg/L		0.0005	22-NOV-19
1,1,2,2-Tetrachloroethane			<0.00050		mg/L		0.0005	22-NOV-19
Tetrachloroethene			<0.00050		mg/L		0.0005	22-NOV-19
Toluene			<0.00050		mg/L		0.0005	22-NOV-19
1,2,3-Trichlorobenzene			<0.0010		mg/L		0.001	22-NOV-19
1,2,4-Trichlorobenzene			<0.0010		mg/L		0.001	22-NOV-19
1,1,1-Trichloroethane			<0.00050		mg/L		0.0005	22-NOV-19
1,1,2-Trichloroethane			<0.00050		mg/L		0.0005	22-NOV-19
Trichloroethene			<0.00050		mg/L		0.0005	22-NOV-19
Trichlorofluoromethane			<0.0010		mg/L		0.001	22-NOV-19
1,2,3-Trichloropropane			<0.0010		mg/L		0.001	22-NOV-19
1,2,4-Trimethylbenzene			<0.0010		mg/L		0.001	22-NOV-19
1,3,5-Trimethylbenzene			<0.0010		mg/L		0.001	22-NOV-19
Vinyl Chloride			<0.00050		mg/L		0.0005	22-NOV-19
M+P-Xylenes			<0.00040		mg/L		0.0004	22-NOV-19
o-Xylene			<0.00050		mg/L		0.0005	22-NOV-19
Surrogate: 4-Bromofluorobenzene (SS)			86.6		%		70-130	22-NOV-19
Surrogate: 1,4-Difluorobenzene (SS)			97.9		%		70-130	22-NOV-19
Surrogate: 3,4-Dichlorotoluene (SS)			78.2		%		70-130	22-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
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.

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.

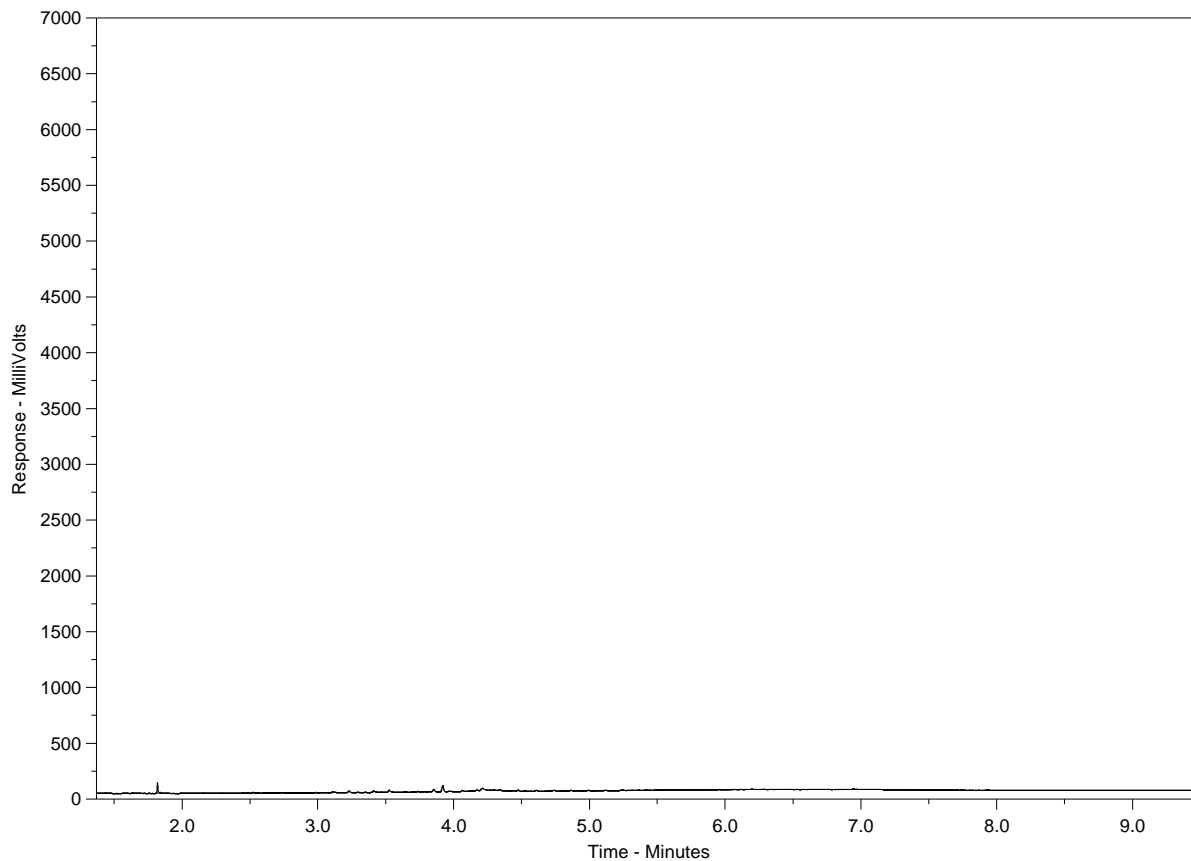
The ALS Quality Control Report is provided to ALS clients upon request. ALS includes comprehensive QC checks with every analysis to ensure our high standards of quality are met. Each QC result has a known or expected target value, which is compared against pre-determined data quality objectives to provide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

CCME F2-F4 HYDROCARBON DISTRIBUTION REPORT



ALS Sample ID: L2381742-2
 Client Sample ID: GWQ25 - W6 245461



← 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.

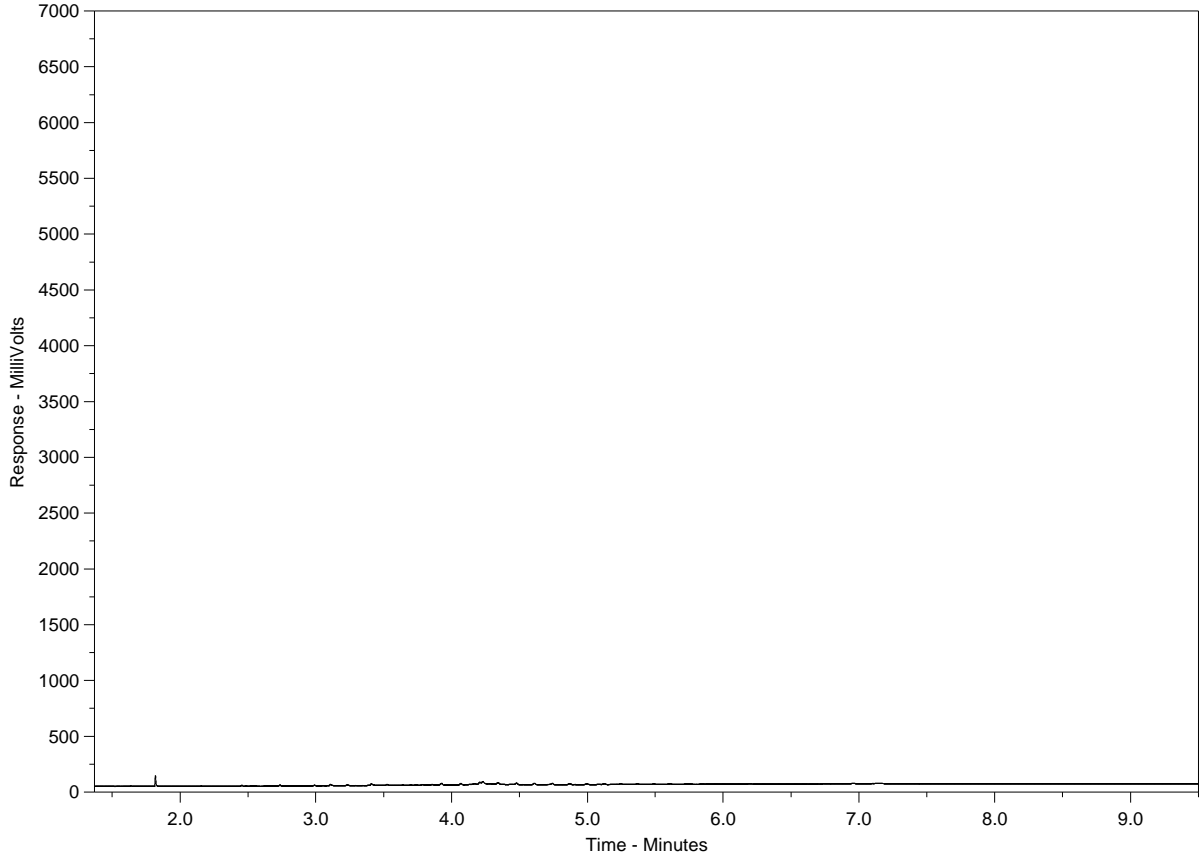
Peak heights in this report are a function of the sample concentration, the sample amount extracted, the sample dilution factor, and the scale at left.

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: L2381742-3
 Client Sample ID: GWQ25 - W14 245466



← 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.

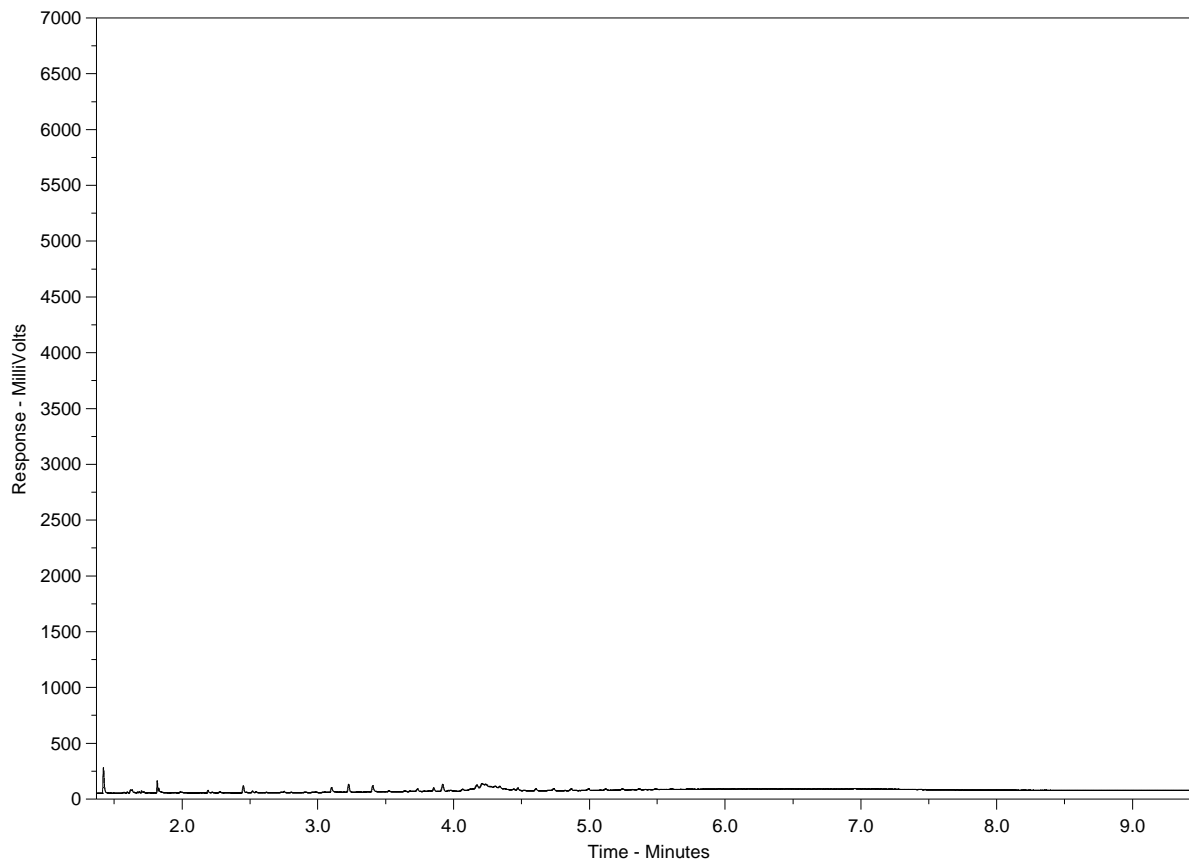
Peak heights in this report are a function of the sample concentration, the sample amount extracted, the sample dilution factor, and the scale at left.

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: L2381742-4
 Client Sample ID: GWQ25 - W8 245462



← 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.

Canada Toll Free



L2381742-COFC

code label here
(use only)

Page of

Report To
www.alsglobal.com
Contact and company name below will appear on the final report

Company: City of Winnipeg
Contact: Chris Kozak
Phone: 204-986-2384

Company address below will appear on the final report

Street: 1120 Waverly Street
City/Province: Winnipeg, Manitoba
Postal Code: R3T 0P4

Invoice To
Same as Report To YES NO
Copy of Invoice with Report YES NO

Company:
Contact:

Project Information

ALS Account # / Quote #: W10051/Q67317
Job #: Section B - BRRMF Groundwater
PO / AFE:
LSD:

ALS Lab Work Order # (lab use only)

ALS Sample # (lab use only)

Quality Control (QC) Report with Report YES NO
 Compare Results to Criteria on Report - provide details below if box checked

Select Distribution: EMAIL MAIL FAX

Email 1 or Fax: ckozak@winnipeg.ca
Email 2:
Email 3:

Invoice Distribution

Select Invoice Distribution: EMAIL MAIL FAX

Email 1 or Fax:
Email 2:
Email 3:

Oil and Gas Required Fields (client use)

AFE/Cost Center: PO#
Major/Minor Code: Routing Code:
Requisitioner:
Location:

ALS Contact:
Sampler:

Select Service Level Below - Please confirm all E&P TATs with your AM - surcharges will apply

Regular [R] Standard TAT if received by 3 pm - business days - no surcharges apply

PRIORITY (Business Days)	4 day [P4] <input type="checkbox"/>	EMERGENCY	1 Business day [E1] <input type="checkbox"/>
	3 day [P3] <input type="checkbox"/>		Same Day, Weekend or Statutory holiday [E0] <input type="checkbox"/>
	2 day [P2] <input type="checkbox"/>		

Date and Time Required for all E&P TATs:

For tests that can not be performed according to the service level selected, you will be contacted.

Analysis Request

Indicate Filtered (F), Preserved (P) or Filtered and Preserved (F/P) below

	CN-TL-CFA-VA	PEST-DIAZINON-WT	HERBSCR-LCMS-WT	TC.FC.EC-QT97-WP	CL-IC-N-WP, SO4-IC-N-WP, ALK-SPEC-WP	NH3-COL-WP	C-TOC.DIC.DOC-HTC-WP	MET-D-COMS-WP (DISSOLVED)	HG-T-CVAA-WP (TOTAL)	CR-CR6-IC-WT	PHENOLS-4AAP-WT	VOC.F-1-F4-WP	PAH/PANH-WP	Number of Containers
	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	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	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	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	X	X	X	X	X	

Sample Identification and/or Coordinates
(This description will appear on the report)

ALS Sample # (lab use only)	Sample Identification and/or Coordinates	Date (dd-mmm-yy)	Time (hh:mm)	Sample Type
	W625-W7	245471		
	W6	245461	13 NOV-19 10:31	WATER
	W14	245466	11:39	WATER
	W8	245462	13:07	WATER
			14:06	WATER
				WATER
				WATER
				WATER
				WATER
				WATER
				WATER
				WATER
				WATER

Drinking Water (DW) Samples¹ (client use)

Are samples taken from a Regulated DW System? YES NO

Are samples for human drinking water use? YES NO

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)

Frozen SIF Observations Yes No

Ice Packs Ice Cubes Custody seal intact Yes No

Cooling Initiated

INITIAL COOLER TEMPERATURES °C: 4.2

FINAL COOLER TEMPERATURES °C:

Released by: [Signature] Date: 13 NOV 19 Time: 15:21

INITIAL SHIPMENT RECEPTION (lab use only)

Received by: CEL Date: Nov. 13 Time: 3:30

FINAL SHIPMENT RECEPTION (lab use only)

Received by: CEL Date: [Signature] Time: 246



City of Winnipeg - Solid Waste Services Div
(1120 Waverley)
ATTN: CHRIS KOZAK
Solid Waste Services Division
1120 Waverley Street
Winnipeg MB R3T 0P4

Date Received: 14-NOV-19
Report Date: 30-NOV-19 14:05 (MT)
Version: FINAL

Client Phone: 204-986-2384

Certificate of Analysis

Lab Work Order #: L2382348
Project P.O. #: NOT SUBMITTED
Job Reference: SECTION B - BRRMF GROUNDWATER
C of C Numbers:
Legal Site Desc:

Hua Wo
Chemistry Laboratory 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
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ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2382348-1 GWQ25 - W12							
Sampled By: CLIENT on 14-NOV-19 @ 10:45							
Matrix: WATER							
Alkalinity species as HCO3, CO3, OH							
Alkalinity, Bicarbonate							
Bicarbonate (HCO3)	169000		1200	ug/L		15-NOV-19	
Alkalinity, Carbonate							
Carbonate (CO3)	<600		600	ug/L		15-NOV-19	
Alkalinity, Hydroxide							
Hydroxide (OH)	<340		340	ug/L		15-NOV-19	
Alkalinity, Total (as CaCO3)							
Alkalinity, Total (as CaCO3)	139000		1000	ug/L		14-NOV-19	R4909330
Dissolved Carbons							
Dissolved Inorganic Carbon by Combustion							
Dissolved Inorganic Carbon	25800		500	ug/L		18-NOV-19	R4915689
Dissolved Organic Carbon by Combustion							
Dissolved Organic Carbon	1160		500	ug/L		19-NOV-19	R4917113
Total Dissolved Carbon by Calculation							
Total Dissolved Carbon	27000		1000	ug/L		20-NOV-19	
Miscellaneous Parameters							
Ammonia, Total (as N)	1290		100	ug/L		15-NOV-19	R4910232
Chloride (Cl)	2560000		25000	ug/L		15-NOV-19	R4915651
Chromium, Hexavalent	<0.50		0.50	ug/L		19-NOV-19	R4917829
Mercury (Hg)-Total	<0.0050		0.0050	ug/L	26-NOV-19	26-NOV-19	R4925108
Phenols (4AAP)	7.7		1.0	ug/L		18-NOV-19	R4915159
Sulfate (SO4)	881000		15000	ug/L		15-NOV-19	R4915651
Dissolved Metals in Water by CRC ICPMS							
Dissolved Metals Filtration Location	FIELD					20-NOV-19	R4917629
Aluminum (Al)-Dissolved	<100		100	ug/L	20-NOV-19	29-NOV-19	R4929075
Antimony (Sb)-Dissolved	<10		10	ug/L	20-NOV-19	29-NOV-19	R4929075
Arsenic (As)-Dissolved	12		10	ug/L	20-NOV-19	29-NOV-19	R4929075
Barium (Ba)-Dissolved	18		10	ug/L	20-NOV-19	29-NOV-19	R4929075
Beryllium (Be)-Dissolved	<10		10	ug/L	20-NOV-19	29-NOV-19	R4929075
Bismuth (Bi)-Dissolved	<5.0		5.0	ug/L	20-NOV-19	29-NOV-19	R4929075
Boron (B)-Dissolved	<1000		1000	ug/L	20-NOV-19	29-NOV-19	R4929075
Cadmium (Cd)-Dissolved	<0.50		0.50	ug/L	20-NOV-19	29-NOV-19	R4929075
Calcium (Ca)-Dissolved	325000		5000	ug/L	20-NOV-19	29-NOV-19	R4929075
Cesium (Cs)-Dissolved	1.7		1.0	ug/L	20-NOV-19	29-NOV-19	R4929075
Chromium (Cr)-Dissolved	<10		10	ug/L	20-NOV-19	29-NOV-19	R4929075
Cobalt (Co)-Dissolved	<10		10	ug/L	20-NOV-19	29-NOV-19	R4929075
Copper (Cu)-Dissolved	46		20	ug/L	20-NOV-19	29-NOV-19	R4929075
Iron (Fe)-Dissolved	<1000		1000	ug/L	20-NOV-19	29-NOV-19	R4929075
Lead (Pb)-Dissolved	<5.0		5.0	ug/L	20-NOV-19	29-NOV-19	R4929075
Lithium (Li)-Dissolved	350		100	ug/L	20-NOV-19	29-NOV-19	R4929075
Magnesium (Mg)-Dissolved	168000		500	ug/L	20-NOV-19	29-NOV-19	R4929075
Manganese (Mn)-Dissolved	63		10	ug/L	20-NOV-19	29-NOV-19	R4929075
Molybdenum (Mo)-Dissolved	7.9		5.0	ug/L	20-NOV-19	29-NOV-19	R4929075
Nickel (Ni)-Dissolved	<50		50	ug/L	20-NOV-19	29-NOV-19	R4929075
Phosphorus (P)-Dissolved	<3000		3000	ug/L	20-NOV-19	29-NOV-19	R4929075
Potassium (K)-Dissolved	36900		5000	ug/L	20-NOV-19	29-NOV-19	R4929075
Rubidium (Rb)-Dissolved	<20		20	ug/L	20-NOV-19	29-NOV-19	R4929075
Selenium (Se)-Dissolved	<5.0		5.0	ug/L	20-NOV-19	29-NOV-19	R4929075
Silicon (Si)-Dissolved	5200		5000	ug/L	20-NOV-19	29-NOV-19	R4929075
Silver (Ag)-Dissolved	<1.0		1.0	ug/L	20-NOV-19	29-NOV-19	R4929075
Sodium (Na)-Dissolved	1390000		5000	ug/L	20-NOV-19	29-NOV-19	R4929075

* 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
L2382348-1 GWQ25 - W12 Sampled By: CLIENT on 14-NOV-19 @ 10:45 Matrix: WATER							
Dissolved Metals in Water by CRC ICPMS							
Strontium (Sr)-Dissolved	4460		10	ug/L	20-NOV-19	29-NOV-19	R4929075
Sulfur (S)-Dissolved	342000		50000	ug/L	20-NOV-19	29-NOV-19	R4929075
Tellurium (Te)-Dissolved	<20		20	ug/L	20-NOV-19	29-NOV-19	R4929075
Thallium (Tl)-Dissolved	1.1		1.0	ug/L	20-NOV-19	29-NOV-19	R4929075
Thorium (Th)-Dissolved	<10		10	ug/L	20-NOV-19	29-NOV-19	R4929075
Tin (Sn)-Dissolved	<10		10	ug/L	20-NOV-19	29-NOV-19	R4929075
Titanium (Ti)-Dissolved	<30		30	ug/L	20-NOV-19	29-NOV-19	R4929075
Tungsten (W)-Dissolved	<10		10	ug/L	20-NOV-19	29-NOV-19	R4929075
Uranium (U)-Dissolved	12.4		1.0	ug/L	20-NOV-19	29-NOV-19	R4929075
Vanadium (V)-Dissolved	<50		50	ug/L	20-NOV-19	29-NOV-19	R4929075
Zinc (Zn)-Dissolved	<100		100	ug/L	20-NOV-19	29-NOV-19	R4929075
Zirconium (Zr)-Dissolved	<20		20	ug/L	20-NOV-19	29-NOV-19	R4929075
Total, Fecal Coliforms, E Coli by QT97							
Fecal Coliform by MPN QT97							
Fecal Coliforms	<1		1	MPN/100mL		14-NOV-19	R4909310
Total Coliform and E.coli by MPN QT97							
Total Coliforms	<1		1	MPN/100mL		14-NOV-19	R4909286
Escherichia Coli	<1		1	MPN/100mL		14-NOV-19	R4909286
L2382348-2 GWQ25 - 101 Sampled By: CLIENT on 14-NOV-19 @ 10:30 Matrix: WATER							
Alkalinity species as HCO3, CO3, OH							
Alkalinity, Bicarbonate							
Bicarbonate (HCO3)	172000		1200	ug/L		15-NOV-19	
Alkalinity, Carbonate							
Carbonate (CO3)	<600		600	ug/L		15-NOV-19	
Alkalinity, Hydroxide							
Hydroxide (OH)	<340		340	ug/L		15-NOV-19	
Alkalinity, Total (as CaCO3)							
Alkalinity, Total (as CaCO3)	141000		1000	ug/L		14-NOV-19	R4909330
Dissolved Carbons							
Dissolved Inorganic Carbon by Combustion							
Dissolved Inorganic Carbon	25200		500	ug/L		18-NOV-19	R4915689
Dissolved Organic Carbon by Combustion							
Dissolved Organic Carbon	1420		500	ug/L		15-NOV-19	R4914359
Total Dissolved Carbon by Calculation							
Total Dissolved Carbon	26600		1000	ug/L		19-NOV-19	
Miscellaneous Parameters							
Ammonia, Total (as N)	1260		100	ug/L		15-NOV-19	R4910232
Chloride (Cl)	2510000		25000	ug/L		15-NOV-19	R4915651
Chromium, Hexavalent	<0.50		0.50	ug/L		19-NOV-19	R4917829
Mercury (Hg)-Total	<0.0050		0.0050	ug/L	26-NOV-19	26-NOV-19	R4925108
Phenols (4AAP)	6.1		1.0	ug/L		18-NOV-19	R4915159
Sulfate (SO4)	861000		15000	ug/L		15-NOV-19	R4915651
Dissolved Metals in Water by CRC ICPMS							
Dissolved Metals Filtration Location	FIELD					25-NOV-19	R4922696
Aluminum (Al)-Dissolved	1.1		1.0	ug/L	25-NOV-19	26-NOV-19	R4926087
Antimony (Sb)-Dissolved	<0.10		0.10	ug/L	25-NOV-19	26-NOV-19	R4926087
Arsenic (As)-Dissolved	5.00		0.10	ug/L	25-NOV-19	26-NOV-19	R4926087
Barium (Ba)-Dissolved	12.7		0.10	ug/L	25-NOV-19	26-NOV-19	R4926087
Beryllium (Be)-Dissolved	<0.10		0.10	ug/L	25-NOV-19	26-NOV-19	R4926087

* 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
L2382348-2 GWQ25 - 101 Sampled By: CLIENT on 14-NOV-19 @ 10:30 Matrix: WATER							
Dissolved Metals in Water by CRC ICPMS							
Bismuth (Bi)-Dissolved	<0.050		0.050	ug/L	25-NOV-19	26-NOV-19	R4926087
Boron (B)-Dissolved	1020		100	ug/L	25-NOV-19	28-NOV-19	R4928432
Cadmium (Cd)-Dissolved	<0.0050		0.0050	ug/L	25-NOV-19	26-NOV-19	R4926087
Calcium (Ca)-Dissolved	313000		50	ug/L	25-NOV-19	26-NOV-19	R4926087
Cesium (Cs)-Dissolved	0.077		0.010	ug/L	25-NOV-19	26-NOV-19	R4926087
Chromium (Cr)-Dissolved	<0.10		0.10	ug/L	25-NOV-19	26-NOV-19	R4926087
Cobalt (Co)-Dissolved	0.69		0.10	ug/L	25-NOV-19	26-NOV-19	R4926087
Copper (Cu)-Dissolved	<0.20		0.20	ug/L	25-NOV-19	26-NOV-19	R4926087
Iron (Fe)-Dissolved	612		10	ug/L	25-NOV-19	26-NOV-19	R4926087
Lead (Pb)-Dissolved	<0.050		0.050	ug/L	25-NOV-19	26-NOV-19	R4926087
Lithium (Li)-Dissolved	344		10	ug/L	25-NOV-19	28-NOV-19	R4928432
Magnesium (Mg)-Dissolved	179000		5.0	ug/L	25-NOV-19	26-NOV-19	R4926087
Manganese (Mn)-Dissolved	40.9		0.10	ug/L	25-NOV-19	26-NOV-19	R4926087
Molybdenum (Mo)-Dissolved	3.26		0.050	ug/L	25-NOV-19	26-NOV-19	R4926087
Nickel (Ni)-Dissolved	1.42		0.50	ug/L	25-NOV-19	26-NOV-19	R4926087
Phosphorus (P)-Dissolved	32		30	ug/L	25-NOV-19	26-NOV-19	R4926087
Potassium (K)-Dissolved	42200		50	ug/L	25-NOV-19	26-NOV-19	R4926087
Rubidium (Rb)-Dissolved	17.0		0.20	ug/L	25-NOV-19	26-NOV-19	R4926087
Selenium (Se)-Dissolved	<0.050		0.050	ug/L	25-NOV-19	26-NOV-19	R4926087
Silicon (Si)-Dissolved	5250		50	ug/L	25-NOV-19	26-NOV-19	R4926087
Silver (Ag)-Dissolved	0.017		0.010	ug/L	25-NOV-19	26-NOV-19	R4926087
Sodium (Na)-Dissolved	1440000		500	ug/L	25-NOV-19	28-NOV-19	R4928432
Strontium (Sr)-Dissolved	4410		1.0	ug/L	25-NOV-19	28-NOV-19	R4928432
Sulfur (S)-Dissolved	357000		500	ug/L	25-NOV-19	26-NOV-19	R4926087
Tellurium (Te)-Dissolved	<0.20		0.20	ug/L	25-NOV-19	26-NOV-19	R4926087
Thallium (Tl)-Dissolved	<0.010		0.010	ug/L	25-NOV-19	26-NOV-19	R4926087
Thorium (Th)-Dissolved	<0.10		0.10	ug/L	25-NOV-19	26-NOV-19	R4926087
Tin (Sn)-Dissolved	<0.10		0.10	ug/L	25-NOV-19	26-NOV-19	R4926087
Titanium (Ti)-Dissolved	<0.30		0.30	ug/L	25-NOV-19	26-NOV-19	R4926087
Tungsten (W)-Dissolved	<0.10		0.10	ug/L	25-NOV-19	26-NOV-19	R4926087
Uranium (U)-Dissolved	1.56		0.010	ug/L	25-NOV-19	26-NOV-19	R4926087
Vanadium (V)-Dissolved	<0.50		0.50	ug/L	25-NOV-19	26-NOV-19	R4926087
Zinc (Zn)-Dissolved	<1.0		1.0	ug/L	25-NOV-19	26-NOV-19	R4926087
Zirconium (Zr)-Dissolved	<0.20		0.20	ug/L	25-NOV-19	26-NOV-19	R4926087
L2382348-3 GWQ25 - FIELD BLANK Sampled By: CLIENT on 14-NOV-19 @ 10:15 Matrix: WATER							
Alkalinity species as HCO3, CO3, OH							
Alkalinity, Bicarbonate							
Bicarbonate (HCO3)	<1200		1200	ug/L		15-NOV-19	
Alkalinity, Carbonate							
Carbonate (CO3)	<600		600	ug/L		15-NOV-19	
Alkalinity, Hydroxide							
Hydroxide (OH)	<340		340	ug/L		15-NOV-19	
Alkalinity, Total (as CaCO3)							
Alkalinity, Total (as CaCO3)	<1000		1000	ug/L		14-NOV-19	R4909330
Dissolved Carbons							
Dissolved Inorganic Carbon by Combustion							
Dissolved Inorganic Carbon	<500		500	ug/L		21-NOV-19	R4921551
Dissolved Organic Carbon by Combustion							
Dissolved Organic Carbon	1400		500	ug/L		15-NOV-19	R4914359

* 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
L2382348-3 GWQ25 - FIELD BLANK							
Sampled By: CLIENT on 14-NOV-19 @ 10:15							
Matrix: WATER							
Total Dissolved Carbon by Calculation							
Total Dissolved Carbon	1400		1000	ug/L		22-NOV-19	
Miscellaneous Parameters							
Ammonia, Total (as N)	86		10	ug/L		15-NOV-19	R4910232
Chloride (Cl)	<500		500	ug/L		15-NOV-19	R4915651
Chromium, Hexavalent	<0.50		0.50	ug/L		19-NOV-19	R4917829
Cyanide, Total	<1.0		1.0	ug/L		25-NOV-19	R4924527
Mercury (Hg)-Total	<0.0050		0.0050	ug/L	26-NOV-19	26-NOV-19	R4925108
Phenols (4AAP)	6.9		1.0	ug/L		19-NOV-19	R4917190
Sulfate (SO4)	<300		300	ug/L		15-NOV-19	R4915651
Dissolved Metals in Water by CRC ICPMS							
Dissolved Metals Filtration Location	LAB					25-NOV-19	R4922696
Aluminum (Al)-Dissolved	<1.0		1.0	ug/L	25-NOV-19	26-NOV-19	R4926087
Antimony (Sb)-Dissolved	<0.10		0.10	ug/L	25-NOV-19	26-NOV-19	R4926087
Arsenic (As)-Dissolved	<0.10		0.10	ug/L	25-NOV-19	26-NOV-19	R4926087
Barium (Ba)-Dissolved	<0.10		0.10	ug/L	25-NOV-19	26-NOV-19	R4926087
Beryllium (Be)-Dissolved	<0.10		0.10	ug/L	25-NOV-19	26-NOV-19	R4926087
Bismuth (Bi)-Dissolved	<0.050		0.050	ug/L	25-NOV-19	26-NOV-19	R4926087
Boron (B)-Dissolved	<10		10	ug/L	25-NOV-19	26-NOV-19	R4926087
Cadmium (Cd)-Dissolved	<0.0050		0.0050	ug/L	25-NOV-19	26-NOV-19	R4926087
Calcium (Ca)-Dissolved	<50		50	ug/L	25-NOV-19	28-NOV-19	R4928432
Cesium (Cs)-Dissolved	<0.010		0.010	ug/L	25-NOV-19	26-NOV-19	R4926087
Chromium (Cr)-Dissolved	<0.10		0.10	ug/L	25-NOV-19	26-NOV-19	R4926087
Cobalt (Co)-Dissolved	<0.10		0.10	ug/L	25-NOV-19	26-NOV-19	R4926087
Copper (Cu)-Dissolved	<0.20		0.20	ug/L	25-NOV-19	26-NOV-19	R4926087
Iron (Fe)-Dissolved	<10		10	ug/L	25-NOV-19	26-NOV-19	R4926087
Lead (Pb)-Dissolved	<0.050		0.050	ug/L	25-NOV-19	26-NOV-19	R4926087
Lithium (Li)-Dissolved	<1.0		1.0	ug/L	25-NOV-19	26-NOV-19	R4926087
Magnesium (Mg)-Dissolved	<5.0		5.0	ug/L	25-NOV-19	26-NOV-19	R4926087
Manganese (Mn)-Dissolved	<0.10		0.10	ug/L	25-NOV-19	26-NOV-19	R4926087
Molybdenum (Mo)-Dissolved	<0.050		0.050	ug/L	25-NOV-19	26-NOV-19	R4926087
Nickel (Ni)-Dissolved	<0.50		0.50	ug/L	25-NOV-19	26-NOV-19	R4926087
Phosphorus (P)-Dissolved	<30		30	ug/L	25-NOV-19	26-NOV-19	R4926087
Potassium (K)-Dissolved	<50		50	ug/L	25-NOV-19	26-NOV-19	R4926087
Rubidium (Rb)-Dissolved	<0.20		0.20	ug/L	25-NOV-19	26-NOV-19	R4926087
Selenium (Se)-Dissolved	<0.050		0.050	ug/L	25-NOV-19	26-NOV-19	R4926087
Silicon (Si)-Dissolved	<50		50	ug/L	25-NOV-19	26-NOV-19	R4926087
Silver (Ag)-Dissolved	<0.010		0.010	ug/L	25-NOV-19	26-NOV-19	R4926087
Sodium (Na)-Dissolved	<50		50	ug/L	25-NOV-19	28-NOV-19	R4928432
Strontium (Sr)-Dissolved	<0.10		0.10	ug/L	25-NOV-19	28-NOV-19	R4928432
Sulfur (S)-Dissolved	720		500	ug/L	25-NOV-19	26-NOV-19	R4926087
Tellurium (Te)-Dissolved	<0.20		0.20	ug/L	25-NOV-19	26-NOV-19	R4926087
Thallium (Tl)-Dissolved	<0.010		0.010	ug/L	25-NOV-19	26-NOV-19	R4926087
Thorium (Th)-Dissolved	<0.10		0.10	ug/L	25-NOV-19	26-NOV-19	R4926087
Tin (Sn)-Dissolved	0.92		0.10	ug/L	25-NOV-19	26-NOV-19	R4926087
Titanium (Ti)-Dissolved	<0.30		0.30	ug/L	25-NOV-19	26-NOV-19	R4926087
Tungsten (W)-Dissolved	<0.10		0.10	ug/L	25-NOV-19	26-NOV-19	R4926087
Uranium (U)-Dissolved	<0.010		0.010	ug/L	25-NOV-19	26-NOV-19	R4926087
Vanadium (V)-Dissolved	<0.50		0.50	ug/L	25-NOV-19	26-NOV-19	R4926087
Zinc (Zn)-Dissolved	<1.0		1.0	ug/L	25-NOV-19	26-NOV-19	R4926087
Zirconium (Zr)-Dissolved	<0.20		0.20	ug/L	25-NOV-19	26-NOV-19	R4926087

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

Reference Information

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.			
C-DIC-HTC-WP	Water	Dissolved Inorganic Carbon by Combustion	APHA 5310 B-WP
Filtered (0.45 µm) sample is injected into a heated reaction chamber where it is acidified, converting all inorganic carbon to CO ₂ which is then transported in the carrier gas stream and measured via a non-dispersive infrared analyzer.			
C-DOC-HTC-WP	Water	Dissolved Organic Carbon by Combustion	APHA 5310 B-WP
Filtered (0.45 µm) sample is acidified and purged to remove inorganic carbon, then injected into a heated reaction chamber where organic carbon is oxidized to CO ₂ which is then transported in the carrier gas stream and measured via a non-dispersive infrared analyzer.			
C-TDC-CALC-WP	Water	Total Dissolved Carbon by Calculation	CALCULATED
Total dissolved carbon represents the sum of dissolved inorganic carbon and dissolved organic carbon. For the purpose of calculation, results less than the detection limit (DL) are treated as zero.			
CL-IC-N-WP	Water	Chloride in Water by IC	EPA 300.1 (mod)
Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.			
CN-T-L-CFA-VA	Water	Low Level Total Cyanide in water by CFA	ISO 14403:2002
This analysis is carried out using procedures adapted from ISO Method 14403:2002 "Determination of Total Cyanide using Flow Analysis (FIA and CFA)". Total or strong acid dissociable (SAD) cyanide is determined by in-line UV digestion along with sample distillation and final determination by colourimetric analysis. Method Limitation: This method is susceptible to interference from thiocyanate (SCN ⁻). If SCN ⁻ is present in the sample, there could be a positive interference with this method, but it would be less than 1% and could be as low as zero.			
CR-CR6-IC-WT	Water	Chromium +6	EPA 7199
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.			
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).			
EC-SCREEN-WP	Water	Conductivity Screen (Internal Use Only)	APHA 2510
Qualitative analysis of conductivity where required during preparation of other test eg. IC, TDS, TSS, etc			
FC-QT97-WP	Water	Fecal Coliform by MPN QT97	APHA 9223B QT97
This analysis is carried out using procedures adapted from APHA Method 9223B "Enzyme Substrate Coliform Test". The sample is mixed with a mixture of hydrolyzable substrates and then sealed in a 97-well packet. The packet is incubated at 44.5 +/- 0.2 degrees C for 18 hours and then the number of wells exhibiting a positive response are counted. The final result is obtained by comparing the number of positive responses to a probability table.			
HG-T-CVAA-WP	Water	Mercury Total	EPA 1631E (mod)
Water samples undergo a cold-oxidation using bromine monochloride prior to reduction with stannous chloride, and analyzed by CVAAS.			
MET-D-CCMS-WP	Water	Dissolved Metals in Water by CRC ICPMS	APHA 3030B/6020B (mod)
Water samples are filtered (0.45 µm), 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.			

Reference Information

Test Method References:

ALS Test Code	Matrix	Test Description	Method Reference**
NH3-COL-WP	Water	Ammonia by colour	APHA 4500 NH3 F
Ammonia in water samples forms indophenol when reacted with hypochlorite and phenol. The intensity is amplified by the addition of sodium nitroprusside and measured colourmetrically.			
PHENOLS-4AAP-WT	Water	Phenol (4AAP)	EPA 9066
An automated method is used to distill the sample. The distillate is then buffered to pH 9.4 which reacts with 4AAP and potassium ferricyanide to form a red complex which is measured colorimetrically.			
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-QT97-WP	Water	Total Coliform and E.coli by MPN QT97	APHA 9223B QT97
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 97-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.			

** 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
WP	ALS ENVIRONMENTAL - WINNIPEG, MANITOBA, CANADA
VA	ALS ENVIRONMENTAL - VANCOUVER, BRITISH COLUMBIA, 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: L2382348

Report Date: 30-NOV-19

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Client: City of Winnipeg - Solid Waste Services Div (1120 Waverley)
Solid Waste Services Division 1120 Waverley Street
Winnipeg MB R3T 0P4

Contact: CHRIS KOZAK

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
ALK-TITR-WP								
	Water							
Batch	R4909330							
WG3219659-14	LCS							
Alkalinity, Total (as CaCO3)			104.6		%		85-115	14-NOV-19
WG3219659-11	MB							
Alkalinity, Total (as CaCO3)			<1.0		mg/L		1	14-NOV-19
C-DIC-HTC-WP								
	Water							
Batch	R4915689							
WG3222149-2	LCS							
Dissolved Inorganic Carbon			94.6		%		80-120	18-NOV-19
WG3222149-1	MB							
Dissolved Inorganic Carbon			<0.50		mg/L		0.5	18-NOV-19
Batch	R4921551							
WG3226197-2	LCS							
Dissolved Inorganic Carbon			99.2		%		80-120	21-NOV-19
WG3226197-1	MB							
Dissolved Inorganic Carbon			<0.50		mg/L		0.5	21-NOV-19
C-DOC-HTC-WP								
	Water							
Batch	R4914359							
WG3221055-2	LCS							
Dissolved Organic Carbon			93.0		%		80-120	15-NOV-19
WG3221055-1	MB							
Dissolved Organic Carbon			<0.50		mg/L		0.5	15-NOV-19
Batch	R4917113							
WG3223272-3	DUP	L2382348-1						
Dissolved Organic Carbon		1.16	1.12		mg/L	3.5	20	19-NOV-19
WG3223272-2	LCS							
Dissolved Organic Carbon			100.0		%		80-120	19-NOV-19
WG3223272-1	MB							
Dissolved Organic Carbon			<0.50		mg/L		0.5	19-NOV-19
CL-IC-N-WP								
	Water							
Batch	R4915651							
WG3219741-2	LCS							
Chloride (Cl)			101.7		%		90-110	15-NOV-19
WG3219741-1	MB							
Chloride (Cl)			<0.50		mg/L		0.5	15-NOV-19
CN-T-L-CFA-VA								
	Water							



Quality Control Report

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Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
CN-T-L-CFA-VA								
Batch R4924527								
WG3227248-2	LCS							
Cyanide, Total			98.3		%		80-120	25-NOV-19
WG3227248-1	MB							
Cyanide, Total			<0.0010		mg/L		0.001	25-NOV-19
CR-CR6-IC-WT								
Batch R4917829								
WG3221063-2	LCS							
Chromium, Hexavalent			99.5		%		80-120	19-NOV-19
WG3221063-1	MB							
Chromium, Hexavalent			<0.00050		mg/L		0.0005	19-NOV-19
FC-QT97-WP								
Batch R4909310								
WG3219056-2	DUP	L2382348-1						
Fecal Coliforms		<1	<1	RPD-NA	MPN/100mL	N/A	65	14-NOV-19
WG3219056-1	MB							
Fecal Coliforms			<1		MPN/100mL		1	14-NOV-19
HG-T-CVAA-WP								
Batch R4925108								
WG3228720-2	LCS							
Mercury (Hg)-Total			98.0		%		80-120	26-NOV-19
WG3228720-1	MB							
Mercury (Hg)-Total			<0.0000050		mg/L		0.000005	26-NOV-19
MET-D-CCMS-WP								
Batch R4926087								
WG3227607-2	LCS							
Aluminum (Al)-Dissolved			103.0		%		80-120	26-NOV-19
Antimony (Sb)-Dissolved			103.6		%		80-120	26-NOV-19
Arsenic (As)-Dissolved			102.9		%		80-120	26-NOV-19
Barium (Ba)-Dissolved			100.6		%		80-120	26-NOV-19
Beryllium (Be)-Dissolved			98.1		%		80-120	26-NOV-19
Bismuth (Bi)-Dissolved			100.3		%		80-120	26-NOV-19
Boron (B)-Dissolved			97.1		%		80-120	26-NOV-19
Cadmium (Cd)-Dissolved			102.8		%		80-120	26-NOV-19
Calcium (Ca)-Dissolved			98.8		%		80-120	26-NOV-19
Cesium (Cs)-Dissolved			107.3		%		80-120	26-NOV-19
Chromium (Cr)-Dissolved			102.5		%		80-120	26-NOV-19



Quality Control Report

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Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
MET-D-CCMS-WP		Water						
Batch	R4926087							
WG3227607-2		LCS						
Cobalt (Co)-Dissolved			99.8		%		80-120	26-NOV-19
Copper (Cu)-Dissolved			101.0		%		80-120	26-NOV-19
Iron (Fe)-Dissolved			92.9		%		80-120	26-NOV-19
Lead (Pb)-Dissolved			102.6		%		80-120	26-NOV-19
Lithium (Li)-Dissolved			96.7		%		80-120	26-NOV-19
Magnesium (Mg)-Dissolved			109.5		%		80-120	26-NOV-19
Manganese (Mn)-Dissolved			102.3		%		80-120	26-NOV-19
Molybdenum (Mo)-Dissolved			106.2		%		80-120	26-NOV-19
Nickel (Ni)-Dissolved			100.2		%		80-120	26-NOV-19
Phosphorus (P)-Dissolved			107.4		%		80-120	26-NOV-19
Potassium (K)-Dissolved			101.8		%		80-120	26-NOV-19
Rubidium (Rb)-Dissolved			99.7		%		80-120	26-NOV-19
Selenium (Se)-Dissolved			101.2		%		80-120	26-NOV-19
Silicon (Si)-Dissolved			103.1		%		80-120	26-NOV-19
Silver (Ag)-Dissolved			105.4		%		80-120	26-NOV-19
Sulfur (S)-Dissolved			102.5		%		80-120	26-NOV-19
Tellurium (Te)-Dissolved			108.6		%		80-120	26-NOV-19
Thallium (Tl)-Dissolved			101.8		%		80-120	26-NOV-19
Thorium (Th)-Dissolved			101.5		%		80-120	26-NOV-19
Tin (Sn)-Dissolved			101.1		%		80-120	26-NOV-19
Titanium (Ti)-Dissolved			97.8		%		80-120	26-NOV-19
Tungsten (W)-Dissolved			102.6		%		80-120	26-NOV-19
Uranium (U)-Dissolved			107.4		%		80-120	26-NOV-19
Vanadium (V)-Dissolved			102.4		%		80-120	26-NOV-19
Zinc (Zn)-Dissolved			99.4		%		80-120	26-NOV-19
Zirconium (Zr)-Dissolved			100.5		%		80-120	26-NOV-19
WG3227607-1		MB						
Aluminum (Al)-Dissolved			<0.0010		mg/L		0.001	26-NOV-19
Antimony (Sb)-Dissolved			<0.00010		mg/L		0.0001	26-NOV-19
Arsenic (As)-Dissolved			<0.00010		mg/L		0.0001	26-NOV-19
Barium (Ba)-Dissolved			<0.00010		mg/L		0.0001	26-NOV-19
Beryllium (Be)-Dissolved			<0.00010		mg/L		0.0001	26-NOV-19
Bismuth (Bi)-Dissolved			<0.000050		mg/L		0.00005	26-NOV-19
Boron (B)-Dissolved			<0.010		mg/L		0.01	26-NOV-19



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Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
MET-D-CCMS-WP		Water						
Batch	R4926087							
WG3227607-1	MB							
Cadmium (Cd)-Dissolved			<0.0000050		mg/L		0.000005	26-NOV-19
Calcium (Ca)-Dissolved			<0.050		mg/L		0.05	26-NOV-19
Cesium (Cs)-Dissolved			<0.000010		mg/L		0.00001	26-NOV-19
Chromium (Cr)-Dissolved			<0.00010		mg/L		0.0001	26-NOV-19
Cobalt (Co)-Dissolved			<0.00010		mg/L		0.0001	26-NOV-19
Copper (Cu)-Dissolved			<0.00020		mg/L		0.0002	26-NOV-19
Iron (Fe)-Dissolved			<0.010		mg/L		0.01	26-NOV-19
Lead (Pb)-Dissolved			<0.000050		mg/L		0.00005	26-NOV-19
Lithium (Li)-Dissolved			<0.0010		mg/L		0.001	26-NOV-19
Magnesium (Mg)-Dissolved			<0.0050		mg/L		0.005	26-NOV-19
Manganese (Mn)-Dissolved			<0.00010		mg/L		0.0001	26-NOV-19
Molybdenum (Mo)-Dissolved			<0.000050		mg/L		0.00005	26-NOV-19
Nickel (Ni)-Dissolved			<0.00050		mg/L		0.0005	26-NOV-19
Phosphorus (P)-Dissolved			<0.030		mg/L		0.03	26-NOV-19
Potassium (K)-Dissolved			<0.050		mg/L		0.05	26-NOV-19
Rubidium (Rb)-Dissolved			<0.00020		mg/L		0.0002	26-NOV-19
Selenium (Se)-Dissolved			<0.000050		mg/L		0.00005	26-NOV-19
Silicon (Si)-Dissolved			<0.050		mg/L		0.05	26-NOV-19
Silver (Ag)-Dissolved			<0.000010		mg/L		0.00001	26-NOV-19
Sulfur (S)-Dissolved			<0.50		mg/L		0.5	26-NOV-19
Tellurium (Te)-Dissolved			<0.00020		mg/L		0.0002	26-NOV-19
Thallium (Tl)-Dissolved			<0.000010		mg/L		0.00001	26-NOV-19
Thorium (Th)-Dissolved			<0.00010		mg/L		0.0001	26-NOV-19
Tin (Sn)-Dissolved			<0.00010		mg/L		0.0001	26-NOV-19
Titanium (Ti)-Dissolved			<0.00030		mg/L		0.0003	26-NOV-19
Tungsten (W)-Dissolved			<0.00010		mg/L		0.0001	26-NOV-19
Uranium (U)-Dissolved			<0.000010		mg/L		0.00001	26-NOV-19
Vanadium (V)-Dissolved			<0.00050		mg/L		0.0005	26-NOV-19
Zinc (Zn)-Dissolved			<0.0010		mg/L		0.001	26-NOV-19
Zirconium (Zr)-Dissolved			<0.00020		mg/L		0.0002	26-NOV-19

NH3-COL-WP

Water

Quality Control Report

Workorder: L2382348

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Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
NH3-COL-WP								
Batch	R4910232							
WG3219935-10	LCS							
Ammonia, Total (as N)			99.5		%		85-115	15-NOV-19
WG3219935-9	MB							
Ammonia, Total (as N)			<0.010		mg/L		0.01	14-NOV-19
PHENOLS-4AAP-WT								
Batch	R4915159							
WG3221241-10	LCS							
Phenols (4AAP)			97.5		%		85-115	18-NOV-19
WG3221241-9	MB							
Phenols (4AAP)			<0.0010		mg/L		0.001	18-NOV-19
Batch	R4917190							
WG3222537-2	LCS							
Phenols (4AAP)			97.0		%		85-115	19-NOV-19
WG3222537-1	MB							
Phenols (4AAP)			<0.0010		mg/L		0.001	19-NOV-19
SO4-IC-N-WP								
Batch	R4915651							
WG3219741-2	LCS							
Sulfate (SO4)			103.5		%		90-110	15-NOV-19
WG3219741-1	MB							
Sulfate (SO4)			<0.30		mg/L		0.3	15-NOV-19
TC,EC-QT97-WP								
Batch	R4909286							
WG3219063-2	DUP	L2382348-1						
Total Coliforms		<1	<1	RPD-NA	MPN/100mL	N/A	65	14-NOV-19
Escherichia Coli		<1	<1	RPD-NA	MPN/100mL	N/A	65	14-NOV-19
WG3219063-1	MB							
Total Coliforms			<1		MPN/100mL		1	14-NOV-19
Escherichia Coli			<1		MPN/100mL		1	14-NOV-19

Quality Control Report

Workorder: L2382348

Report Date: 30-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
RPD-NA	Relative Percent Difference Not Available due to result(s) being less than detection limit.

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.



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Report To Contact and company name below will appear on the final report		Report Format / Distribution			Select Service Level Below - Please confirm all E&P TATs with your AM - surcharges will apply																
Company: City of Winnipeg		Select Report Format: <input checked="" type="checkbox"/> PDF <input 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					EMERGENCY											
Contact: Chris Kozak		Quality Control (QC) Report with Report <input checked="" type="checkbox"/> YES <input type="checkbox"/> NO			PRIORITY (Business Days)		4 day [P4] <input type="checkbox"/>				1 Business day [E1] <input type="checkbox"/>										
Phone: 204-986-2384		<input type="checkbox"/> Compare Results to Criteria on Report - provide details below if box checked			3 day [P3] <input type="checkbox"/>		2 day [P2] <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			Date and Time Required for all E&P TATs: dd-mm-yy hh:mm																
Street: 1120 Waverly Street		Email 1 or Fax: ckozak@winnipeg.ca			For tests that can not be performed according to the service level selected, you will be contacted.																
City/Province: Winnipeg, Manitoba		Email 2			Analysis Request																
Postal Code: R3T 0P4		Email 3			Indicate Filtered (F), Preserved (P) or Filtered and Preserved (F/P) below																
Invoice To		Invoice Distribution																			
Same as Report To <input type="checkbox"/> YES <input type="checkbox"/> NO		Select Invoice Distribution: <input type="checkbox"/> EMAIL <input checked="" type="checkbox"/> MAIL <input type="checkbox"/> FAX																			
Copy of Invoice with Report <input type="checkbox"/> YES <input type="checkbox"/> NO		Email 1 or Fax																			
Company:		Email 2																			
Contact:		Email 3																			
Project Information				Oil and Gas Required Fields (client use)																	
ALS Account # / Quote #: W10051/Q67317				AFE/Cost Center:		PO#															
Job #: Section B - BRRMF Groundwater				Major/Minor Code:		Routing Code:															
PO / AFE:				Requisitioner:																	
LSD:				Location:																	
ALS Lab Work Order # (lab use only)				ALS Contact:			Sampler:														
ALS Sample # (lab use only)	Sample Identification and/or Coordinates (This description will appear on the report)				Date (dd-mm-yy)	Time (hh:mm)	Sample Type	CL-IC-N-WP, SO4-IC-N-WP, ALK-SPEC-WP	NH3-COL-WP	C-TDC,DIC,DOC-HTC-WP	MET-D-COMS-WP (DISSOLVED)	HG-T-CVAA-WP (TOTAL)	CR-CR6-IC-WT	PHENOLS-4AAP-WT	TC,FC,EC-QT97-WP	CN-T-L-CFA-YA	Number of Containers				
	GNQ25 - W12. 245473				14-NOV-19	10:45	WATER	X	X	X	X	X	X	X	X						
	GNQ25 - 101				↓	10:30	WATER	X	X	X	X	X	X	X	X						
	GNQ25 - FIELD BLANK. 245483				↓	10:15	WATER	X	X	X	X	X	X	X	X						
							WATER														
							WATER														
							WATER														
							WATER														
							WATER														
							WATER														
							WATER														
							WATER														
							WATER														
							WATER														
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		Field blank - was not field filtered (metal only).					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 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														
							6.3														
							FINAL COOLER TEMPERATURES °C														
SHIPMENT RELEASE (client use)			INITIAL SHIPMENT RECEPTION (lab use only)				FINAL SHIPMENT RECEPTION (lab use only)														
Released by: <i>AKW/ALW</i>	Date: NOV 19	Time: 12:28	Received by: <i>AL</i>	Date: NOV 14	Time: 12:25	Received by:	Date:	Time:	Received by:	Date:	Time:	Received by:	Date:	Time:	Received by:	Date:	Time:				



City of Winnipeg - Solid Waste Services Div
(1120 Waverley)
ATTN: CHRIS KOZAK
Solid Waste Services Division
1120 Waverley Street
Winnipeg MB R3T 0P4

Date Received: 05-DEC-19
Report Date: 23-DEC-19 07:31 (MT)
Version: FINAL

Client Phone: 204-986-2384

Certificate of Analysis

Lab Work Order #: L2392592
Project P.O. #: NOT SUBMITTED
Job Reference: SECTION B - BRRMF GROUNDWATER FULL
C of C Numbers:
Legal Site Desc:

Hua Wo
Chemistry Laboratory 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
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ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2392592-1 GWQ25 - 16							
Sampled By: CLIENT on 05-DEC-19 @ 11:30							
Matrix: WATER							
Alkalinity species as HCO3, CO3, OH							
Alkalinity, Bicarbonate							
Bicarbonate (HCO3)	192000		1200	ug/L		12-DEC-19	
Alkalinity, Carbonate							
Carbonate (CO3)	<600		600	ug/L		12-DEC-19	
Alkalinity, Hydroxide							
Hydroxide (OH)	<340		340	ug/L		12-DEC-19	
Alkalinity, Total (as CaCO3)							
Alkalinity, Total (as CaCO3)	157000		1000	ug/L		11-DEC-19	R4941615
Dissolved Carbons							
Dissolved Inorganic Carbon by Combustion							
Dissolved Inorganic Carbon	26500		500	ug/L		09-DEC-19	R4939905
Dissolved Organic Carbon by Combustion							
Dissolved Organic Carbon	3120		500	ug/L		06-DEC-19	R4937533
Total Dissolved Carbon by Calculation							
Total Dissolved Carbon	29600		1000	ug/L		10-DEC-19	
Miscellaneous Parameters							
Ammonia, Total (as N)	68		10	ug/L		09-DEC-19	R4940169
Chloride (Cl)	2090000		25000	ug/L		06-DEC-19	R4939627
Chromium, Hexavalent	<0.50		0.50	ug/L		10-DEC-19	R4940397
Cyanide, Total	<1.0		1.0	ug/L		12-DEC-19	R4942678
Mercury (Hg)-Total	<0.0050		0.0050	ug/L	10-DEC-19	10-DEC-19	R4940668
Phenols (4AAP)	5.7		1.0	ug/L		09-DEC-19	R4937632
Sulfate (SO4)	815000		15000	ug/L		06-DEC-19	R4939627
Dissolved Metals in Water by CRC ICPMS							
Dissolved Metals Filtration Location	FIELD					06-DEC-19	R4936619
Aluminum (Al)-Dissolved	3.0		1.0	ug/L	06-DEC-19	06-DEC-19	R4939729
Antimony (Sb)-Dissolved	1.23		0.10	ug/L	06-DEC-19	06-DEC-19	R4939729
Arsenic (As)-Dissolved	1.42		0.10	ug/L	06-DEC-19	06-DEC-19	R4939729
Barium (Ba)-Dissolved	17.6		0.10	ug/L	06-DEC-19	06-DEC-19	R4939729
Beryllium (Be)-Dissolved	<0.10		0.10	ug/L	06-DEC-19	06-DEC-19	R4939729
Bismuth (Bi)-Dissolved	<0.050		0.050	ug/L	06-DEC-19	06-DEC-19	R4939729
Boron (B)-Dissolved	920		100	ug/L	06-DEC-19	06-DEC-19	R4939729
Cadmium (Cd)-Dissolved	0.107		0.0050	ug/L	06-DEC-19	06-DEC-19	R4939729
Calcium (Ca)-Dissolved	279000		50	ug/L	06-DEC-19	06-DEC-19	R4939729
Cesium (Cs)-Dissolved	0.042		0.010	ug/L	06-DEC-19	06-DEC-19	R4939729
Chromium (Cr)-Dissolved	0.21		0.10	ug/L	06-DEC-19	06-DEC-19	R4939729
Cobalt (Co)-Dissolved	0.42		0.10	ug/L	06-DEC-19	06-DEC-19	R4939729
Copper (Cu)-Dissolved	2.95		0.20	ug/L	06-DEC-19	06-DEC-19	R4939729
Iron (Fe)-Dissolved	<10		10	ug/L	06-DEC-19	06-DEC-19	R4939729
Lead (Pb)-Dissolved	<0.050		0.050	ug/L	06-DEC-19	06-DEC-19	R4939729
Lithium (Li)-Dissolved	317		10	ug/L	06-DEC-19	06-DEC-19	R4939729
Magnesium (Mg)-Dissolved	173000		5.0	ug/L	06-DEC-19	06-DEC-19	R4939729
Manganese (Mn)-Dissolved	50.8		0.10	ug/L	06-DEC-19	06-DEC-19	R4939729
Molybdenum (Mo)-Dissolved	3.65		0.050	ug/L	06-DEC-19	06-DEC-19	R4939729
Nickel (Ni)-Dissolved	2.75		0.50	ug/L	06-DEC-19	06-DEC-19	R4939729
Phosphorus (P)-Dissolved	<30		30	ug/L	06-DEC-19	06-DEC-19	R4939729
Potassium (K)-Dissolved	32800		50	ug/L	06-DEC-19	06-DEC-19	R4939729
Rubidium (Rb)-Dissolved	13.8		0.20	ug/L	06-DEC-19	06-DEC-19	R4939729
Selenium (Se)-Dissolved	0.505		0.050	ug/L	06-DEC-19	06-DEC-19	R4939729
Silicon (Si)-Dissolved	5360		50	ug/L	06-DEC-19	06-DEC-19	R4939729
Silver (Ag)-Dissolved	0.020		0.010	ug/L	06-DEC-19	06-DEC-19	R4939729

* 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
L2392592-1 GWQ25 - 16							
Sampled By: CLIENT on 05-DEC-19 @ 11:30							
Matrix: WATER							
Dissolved Metals in Water by CRC ICPMS							
Sodium (Na)-Dissolved	1220000		500	ug/L	06-DEC-19	06-DEC-19	R4939729
Strontium (Sr)-Dissolved	3740		1.0	ug/L	06-DEC-19	06-DEC-19	R4939729
Sulfur (S)-Dissolved	304000		500	ug/L	06-DEC-19	06-DEC-19	R4939729
Tellurium (Te)-Dissolved	<0.20		0.20	ug/L	06-DEC-19	06-DEC-19	R4939729
Thallium (Tl)-Dissolved	<0.010		0.010	ug/L	06-DEC-19	06-DEC-19	R4939729
Thorium (Th)-Dissolved	<0.10		0.10	ug/L	06-DEC-19	06-DEC-19	R4939729
Tin (Sn)-Dissolved	0.37		0.10	ug/L	06-DEC-19	06-DEC-19	R4939729
Titanium (Ti)-Dissolved	<0.30		0.30	ug/L	06-DEC-19	06-DEC-19	R4939729
Tungsten (W)-Dissolved	0.69		0.10	ug/L	06-DEC-19	06-DEC-19	R4939729
Uranium (U)-Dissolved	1.69		0.010	ug/L	06-DEC-19	06-DEC-19	R4939729
Vanadium (V)-Dissolved	<0.50		0.50	ug/L	06-DEC-19	06-DEC-19	R4939729
Zinc (Zn)-Dissolved	35.0		1.0	ug/L	06-DEC-19	06-DEC-19	R4939729
Zirconium (Zr)-Dissolved	<0.20		0.20	ug/L	06-DEC-19	06-DEC-19	R4939729
Polyaromatic Hydrocarbons (PAHs)							
1-Methyl Naphthalene	<0.020		0.020	ug/L	12-DEC-19	18-DEC-19	R4949449
2-Methyl Naphthalene	<0.020		0.020	ug/L	12-DEC-19	18-DEC-19	R4949449
Acenaphthene	<0.020		0.020	ug/L	12-DEC-19	18-DEC-19	R4949449
Acenaphthylene	<0.020		0.020	ug/L	12-DEC-19	18-DEC-19	R4949449
Anthracene	<0.010		0.010	ug/L	12-DEC-19	18-DEC-19	R4949449
Acridine	<0.020		0.020	ug/L	12-DEC-19	18-DEC-19	R4949449
Benzo(a)anthracene	<0.010		0.010	ug/L	12-DEC-19	18-DEC-19	R4949449
Benzo(a)pyrene	<0.0050		0.0050	ug/L	12-DEC-19	18-DEC-19	R4949449
Benzo(b&j)fluoranthene	<0.010		0.010	ug/L	12-DEC-19	18-DEC-19	R4949449
Benzo(g,h,i)perylene	<0.020		0.020	ug/L	12-DEC-19	18-DEC-19	R4949449
Benzo(k)fluoranthene	<0.010		0.010	ug/L	12-DEC-19	18-DEC-19	R4949449
Chrysene	<0.020		0.020	ug/L	12-DEC-19	18-DEC-19	R4949449
Dibenzo(a,h)anthracene	<0.0050		0.0050	ug/L	12-DEC-19	18-DEC-19	R4949449
Fluoranthene	<0.020		0.020	ug/L	12-DEC-19	18-DEC-19	R4949449
Fluorene	<0.020		0.020	ug/L	12-DEC-19	18-DEC-19	R4949449
Indeno(1,2,3-cd)pyrene	<0.010		0.010	ug/L	12-DEC-19	18-DEC-19	R4949449
Naphthalene	<0.050		0.050	ug/L	12-DEC-19	18-DEC-19	R4949449
Phenanthrene	<0.050		0.050	ug/L	12-DEC-19	18-DEC-19	R4949449
Pyrene	0.014	EMPC	0.010	ug/L	12-DEC-19	18-DEC-19	R4949449
Quinoline	<0.020		0.020	ug/L	12-DEC-19	18-DEC-19	R4949449
B(a)P Total Potency Equivalent	<0.030		0.030	ug/L	12-DEC-19	18-DEC-19	R4949449
Surrogate: Acenaphthene d10	85.2		60-130	%	12-DEC-19	18-DEC-19	R4949449
Surrogate: Acridine d9	92.0		60-130	%	12-DEC-19	18-DEC-19	R4949449
Surrogate: Chrysene d12	116.4		60-130	%	12-DEC-19	18-DEC-19	R4949449
Surrogate: Naphthalene d8	80.8		50-130	%	12-DEC-19	18-DEC-19	R4949449
Surrogate: Phenanthrene d10	91.9		60-130	%	12-DEC-19	18-DEC-19	R4949449
Herbicides in Water							
Clopyralid	<0.10		0.10	ug/L	09-DEC-19	09-DEC-19	R4938008
Dicamba	<0.10		0.10	ug/L	09-DEC-19	09-DEC-19	R4938008
Mecoprop	<0.10		0.10	ug/L	09-DEC-19	09-DEC-19	R4938008
MCPA	<0.10		0.10	ug/L	09-DEC-19	09-DEC-19	R4938008
2,4-D	<0.10		0.10	ug/L	09-DEC-19	09-DEC-19	R4938008
Bromoxynil	<0.10		0.10	ug/L	09-DEC-19	09-DEC-19	R4938008
Triclopyr	<0.10		0.10	ug/L	09-DEC-19	09-DEC-19	R4938008
2,4,5-T	<0.10		0.10	ug/L	09-DEC-19	09-DEC-19	R4938008
2,4,5-TP	<0.10		0.10	ug/L	09-DEC-19	09-DEC-19	R4938008
Picloram	<0.10		0.10	ug/L	09-DEC-19	09-DEC-19	R4938008

* 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
L2392592-1 GWQ25 - 16							
Sampled By: CLIENT on 05-DEC-19 @ 11:30							
Matrix: WATER							
Herbicides in Water							
2,4-DB	<0.10		0.10	ug/L	09-DEC-19	09-DEC-19	R4938008
2,4-DP	<0.10		0.10	ug/L	09-DEC-19	09-DEC-19	R4938008
Dinoseb	<0.10		0.10	ug/L	09-DEC-19	09-DEC-19	R4938008
MCPB	<0.10		0.10	ug/L	09-DEC-19	09-DEC-19	R4938008
Surrogate: 2,4-Dichlorophenylacetic Acid	135.0	SURR-ND	50-130	%	09-DEC-19	09-DEC-19	R4938008
Miscellaneous Pesticides							
Diazinon	<0.10		0.10	ug/L	09-DEC-19	10-DEC-19	R4940186
Surrogate: 2-Fluorobiphenyl	81.9		40-130	%	09-DEC-19	10-DEC-19	R4940186
Surrogate: d14-Terphenyl	75.1		40-130	%	09-DEC-19	10-DEC-19	R4940186
Total, Fecal Coliforms, E Coli by QT97							
Fecal Coliform by MPN QT97							
Fecal Coliforms	<1		1	MPN/100mL		05-DEC-19	R4936529
Total Coliform and E.coli by MPN QT97							
Total Coliforms	<1		1	MPN/100mL		05-DEC-19	R4936526
Escherichia Coli	<1		1	MPN/100mL		05-DEC-19	R4936526
VOC plus F1 to F4							
CCME PHC F2-F4 in Water							
F2 (C10-C16)	<100		100	ug/L	07-DEC-19	07-DEC-19	R4939831
F3 (C16-C34)	<250		250	ug/L	07-DEC-19	07-DEC-19	R4939831
F4 (C34-C50)	<250		250	ug/L	07-DEC-19	07-DEC-19	R4939831
Surrogate: 2-Bromobenzotrifluoride	100.7		60-140	%	07-DEC-19	07-DEC-19	R4939831
CCME Total Hydrocarbons							
F1-BTEX	<100		100	ug/L		20-DEC-19	
F2-Naphth	<100		100	ug/L		20-DEC-19	
F3-PAH	<250		250	ug/L		20-DEC-19	
Total Hydrocarbons (C6-C50)	<380		380	ug/L		20-DEC-19	
Sum of Xylene Isomer Concentrations							
Xylenes (Total)	<0.64		0.64	ug/L		20-DEC-19	
Total Trihalomethanes (THMs)							
Total THMs	11.7		1.3	ug/L		20-DEC-19	
VOC plus F1 by GCMS							
Acetone	<50		50	ug/L		19-DEC-19	R4948859
Benzene	<0.50		0.50	ug/L		19-DEC-19	R4948859
Bromobenzene	<1.0		1.0	ug/L		19-DEC-19	R4948859
Bromochloromethane	<1.0		1.0	ug/L		19-DEC-19	R4948859
Bromodichloromethane	<0.50		0.50	ug/L		19-DEC-19	R4948859
Bromoform	9.4		1.0	ug/L		19-DEC-19	R4948859
Bromomethane	<1.0		1.0	ug/L		19-DEC-19	R4948859
n-Butylbenzene	<1.0		1.0	ug/L		19-DEC-19	R4948859
sec-Butylbenzene	<1.0		1.0	ug/L		19-DEC-19	R4948859
tert-Butylbenzene	<1.0		1.0	ug/L		19-DEC-19	R4948859
Carbon disulfide	<5.0		5.0	ug/L		19-DEC-19	R4948859
Carbon Tetrachloride	<0.50		0.50	ug/L		19-DEC-19	R4948859
Chlorobenzene	<1.0		1.0	ug/L		19-DEC-19	R4948859
Chloroethane	<1.0		1.0	ug/L		19-DEC-19	R4948859
Chloroform	1.12		0.50	ug/L		19-DEC-19	R4948859
Chloromethane	<5.0		5.0	ug/L		19-DEC-19	R4948859
2-Chlorotoluene	<20		20	ug/L		19-DEC-19	R4948859
4-Chlorotoluene	<1.0		1.0	ug/L		19-DEC-19	R4948859
Dibromochloromethane	1.22		0.50	ug/L		19-DEC-19	R4948859
1,2-Dibromo-3-chloropropane	<1.0		1.0	ug/L		19-DEC-19	R4948859
1,2-Dibromoethane	<1.0		1.0	ug/L		19-DEC-19	R4948859

* 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
L2392592-1 GWQ25 - 16							
Sampled By: CLIENT on 05-DEC-19 @ 11:30							
Matrix: WATER							
VOC plus F1 by GCMS							
Dibromomethane	<1.0		1.0	ug/L		19-DEC-19	R4948859
1,2-Dichlorobenzene	<0.50		0.50	ug/L		19-DEC-19	R4948859
1,3-Dichlorobenzene	<1.0		1.0	ug/L		19-DEC-19	R4948859
1,4-Dichlorobenzene	<1.0		1.0	ug/L		19-DEC-19	R4948859
Dichlorodifluoromethane	<1.0		1.0	ug/L		19-DEC-19	R4948859
1,1-dichloroethane	<0.50		0.50	ug/L		19-DEC-19	R4948859
1,2-Dichloroethane	<0.50		0.50	ug/L		19-DEC-19	R4948859
1,1-dichloroethene	<0.50		0.50	ug/L		19-DEC-19	R4948859
cis-1,2-Dichloroethene	<1.0		1.0	ug/L		19-DEC-19	R4948859
trans-1,2-Dichloroethene	<1.0		1.0	ug/L		19-DEC-19	R4948859
Dichloromethane	<5.0		5.0	ug/L		19-DEC-19	R4948859
1,2-Dichloropropane	<1.0		1.0	ug/L		19-DEC-19	R4948859
1,3-Dichloropropane	<1.0		1.0	ug/L		19-DEC-19	R4948859
2,2-Dichloropropane	<1.0		1.0	ug/L		19-DEC-19	R4948859
1,1-Dichloropropene	<1.0		1.0	ug/L		19-DEC-19	R4948859
cis-1,3-Dichloropropene	<1.0		1.0	ug/L		19-DEC-19	R4948859
trans-1,3-Dichloropropene	<1.0		1.0	ug/L		19-DEC-19	R4948859
Ethylbenzene	<0.50		0.50	ug/L		19-DEC-19	R4948859
F1	<100		100	ug/L		19-DEC-19	R4948859
Hexachlorobutadiene	<1.0		1.0	ug/L		19-DEC-19	R4948859
Hexane	<1.0		1.0	ug/L		19-DEC-19	R4948859
2-Hexanone (Methyl butyl ketone)	<20		20	ug/L		19-DEC-19	R4948859
Isopropylbenzene	<1.0		1.0	ug/L		19-DEC-19	R4948859
4-Isopropyltoluene	<1.0		1.0	ug/L		19-DEC-19	R4948859
MEK	<20		20	ug/L		19-DEC-19	R4948859
MIBK	<20		20	ug/L		19-DEC-19	R4948859
MTBE	<0.50		0.50	ug/L		19-DEC-19	R4948859
Styrene	<1.0		1.0	ug/L		19-DEC-19	R4948859
1,1,1,2-Tetrachloroethane	<0.50		0.50	ug/L		19-DEC-19	R4948859
1,1,2,2-Tetrachloroethane	<0.50		0.50	ug/L		19-DEC-19	R4948859
Tetrachloroethene	<0.50		0.50	ug/L		19-DEC-19	R4948859
Toluene	<0.50		0.50	ug/L		19-DEC-19	R4948859
1,2,3-Trichlorobenzene	<1.0		1.0	ug/L		19-DEC-19	R4948859
1,2,4-Trichlorobenzene	<1.0		1.0	ug/L		19-DEC-19	R4948859
1,1,1-Trichloroethane	<0.50		0.50	ug/L		19-DEC-19	R4948859
1,1,2-Trichloroethane	<0.50		0.50	ug/L		19-DEC-19	R4948859
Trichloroethene	<0.50		0.50	ug/L		19-DEC-19	R4948859
Trichlorofluoromethane	<1.0		1.0	ug/L		19-DEC-19	R4948859
1,2,3-Trichloropropane	<1.0		1.0	ug/L		19-DEC-19	R4948859
1,2,4-Trimethylbenzene	<1.0		1.0	ug/L		19-DEC-19	R4948859
1,3,5-Trimethylbenzene	<1.0		1.0	ug/L		19-DEC-19	R4948859
Vinyl Chloride	<0.50		0.50	ug/L		19-DEC-19	R4948859
M+P-Xylenes	<0.40		0.40	ug/L		19-DEC-19	R4948859
o-Xylene	<0.50		0.50	ug/L		19-DEC-19	R4948859
Surrogate: 4-Bromofluorobenzene (SS)	90.5		70-130	%		19-DEC-19	R4948859
Surrogate: 1,4-Difluorobenzene (SS)	98.9		70-130	%		19-DEC-19	R4948859
Surrogate: 3,4-Dichlorotoluene (SS)	103.1		70-130	%		19-DEC-19	R4948859
L2392592-2 GWQ25 - 15							
Sampled By: CLIENT on 05-DEC-19 @ 13:15							
Matrix: WATER							
Alkalinity species as HCO3, CO3, OH							

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ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2392592-2 GWQ25 - 15							
Sampled By: CLIENT on 05-DEC-19 @ 13:15							
Matrix: WATER							
Alkalinity, Bicarbonate							
Bicarbonate (HCO3)	270000		1200	ug/L		12-DEC-19	
Alkalinity, Carbonate							
Carbonate (CO3)	<600		600	ug/L		12-DEC-19	
Alkalinity, Hydroxide							
Hydroxide (OH)	<340		340	ug/L		12-DEC-19	
Alkalinity, Total (as CaCO3)							
Alkalinity, Total (as CaCO3)	222000		1000	ug/L		11-DEC-19	R4941615
Dissolved Carbons							
Dissolved Inorganic Carbon by Combustion							
Dissolved Inorganic Carbon	41800		500	ug/L		09-DEC-19	R4939905
Dissolved Organic Carbon by Combustion							
Dissolved Organic Carbon	11100		500	ug/L		06-DEC-19	R4937533
Total Dissolved Carbon by Calculation							
Total Dissolved Carbon	53000		1000	ug/L		10-DEC-19	
Miscellaneous Parameters							
Ammonia, Total (as N)	150		10	ug/L		09-DEC-19	R4940169
Chloride (Cl)	223000		5000	ug/L		06-DEC-19	R4939627
Chromium, Hexavalent	<0.50		0.50	ug/L		10-DEC-19	R4940397
Cyanide, Total	<1.0		1.0	ug/L		12-DEC-19	R4942678
Mercury (Hg)-Total	<0.0050		0.0050	ug/L	10-DEC-19	10-DEC-19	R4940668
Phenols (4AAP)	7.1		1.0	ug/L		09-DEC-19	R4937632
Sulfate (SO4)	999000		3000	ug/L		06-DEC-19	R4939627
Dissolved Metals in Water by CRC ICPMS							
Dissolved Metals Filtration Location	FIELD					06-DEC-19	R4936619
Aluminum (Al)-Dissolved	1.7		1.0	ug/L	06-DEC-19	06-DEC-19	R4939729
Antimony (Sb)-Dissolved	0.93		0.10	ug/L	06-DEC-19	06-DEC-19	R4939729
Arsenic (As)-Dissolved	1.94		0.10	ug/L	06-DEC-19	06-DEC-19	R4939729
Barium (Ba)-Dissolved	28.9		0.10	ug/L	06-DEC-19	06-DEC-19	R4939729
Beryllium (Be)-Dissolved	<0.10		0.10	ug/L	06-DEC-19	06-DEC-19	R4939729
Bismuth (Bi)-Dissolved	<0.050		0.050	ug/L	06-DEC-19	06-DEC-19	R4939729
Boron (B)-Dissolved	157		10	ug/L	06-DEC-19	06-DEC-19	R4939729
Cadmium (Cd)-Dissolved	0.0472		0.0050	ug/L	06-DEC-19	06-DEC-19	R4939729
Calcium (Ca)-Dissolved	118000		50	ug/L	06-DEC-19	06-DEC-19	R4939729
Cesium (Cs)-Dissolved	0.022		0.010	ug/L	06-DEC-19	06-DEC-19	R4939729
Chromium (Cr)-Dissolved	0.18		0.10	ug/L	06-DEC-19	06-DEC-19	R4939729
Cobalt (Co)-Dissolved	0.30		0.10	ug/L	06-DEC-19	06-DEC-19	R4939729
Copper (Cu)-Dissolved	8.56		0.20	ug/L	06-DEC-19	06-DEC-19	R4939729
Iron (Fe)-Dissolved	11		10	ug/L	06-DEC-19	06-DEC-19	R4939729
Lead (Pb)-Dissolved	<0.050		0.050	ug/L	06-DEC-19	06-DEC-19	R4939729
Lithium (Li)-Dissolved	141		1.0	ug/L	06-DEC-19	06-DEC-19	R4939729
Magnesium (Mg)-Dissolved	236000		5.0	ug/L	06-DEC-19	06-DEC-19	R4939729
Manganese (Mn)-Dissolved	9.06		0.10	ug/L	06-DEC-19	06-DEC-19	R4939729
Molybdenum (Mo)-Dissolved	7.04		0.050	ug/L	06-DEC-19	06-DEC-19	R4939729
Nickel (Ni)-Dissolved	8.22		0.50	ug/L	06-DEC-19	06-DEC-19	R4939729
Phosphorus (P)-Dissolved	99		30	ug/L	06-DEC-19	06-DEC-19	R4939729
Potassium (K)-Dissolved	10300		50	ug/L	06-DEC-19	06-DEC-19	R4939729
Rubidium (Rb)-Dissolved	3.48		0.20	ug/L	06-DEC-19	06-DEC-19	R4939729
Selenium (Se)-Dissolved	1.71		0.050	ug/L	06-DEC-19	06-DEC-19	R4939729
Silicon (Si)-Dissolved	2930		50	ug/L	06-DEC-19	06-DEC-19	R4939729
Silver (Ag)-Dissolved	<0.010		0.010	ug/L	06-DEC-19	06-DEC-19	R4939729
Sodium (Na)-Dissolved	196000		50	ug/L	06-DEC-19	06-DEC-19	R4939729

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ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2392592-2 GWQ25 - 15							
Sampled By: CLIENT on 05-DEC-19 @ 13:15							
Matrix: WATER							
Dissolved Metals in Water by CRC ICPMS							
Strontium (Sr)-Dissolved	765		0.10	ug/L	06-DEC-19	06-DEC-19	R4939729
Sulfur (S)-Dissolved	354000		500	ug/L	06-DEC-19	06-DEC-19	R4939729
Tellurium (Te)-Dissolved	<0.20		0.20	ug/L	06-DEC-19	06-DEC-19	R4939729
Thallium (Tl)-Dissolved	<0.010		0.010	ug/L	06-DEC-19	06-DEC-19	R4939729
Thorium (Th)-Dissolved	<0.10		0.10	ug/L	06-DEC-19	06-DEC-19	R4939729
Tin (Sn)-Dissolved	1.31		0.10	ug/L	06-DEC-19	06-DEC-19	R4939729
Titanium (Ti)-Dissolved	<0.30		0.30	ug/L	06-DEC-19	06-DEC-19	R4939729
Tungsten (W)-Dissolved	11.5		0.10	ug/L	06-DEC-19	06-DEC-19	R4939729
Uranium (U)-Dissolved	4.73		0.010	ug/L	06-DEC-19	06-DEC-19	R4939729
Vanadium (V)-Dissolved	<0.50		0.50	ug/L	06-DEC-19	06-DEC-19	R4939729
Zinc (Zn)-Dissolved	21.2		1.0	ug/L	06-DEC-19	06-DEC-19	R4939729
Zirconium (Zr)-Dissolved	<0.20		0.20	ug/L	06-DEC-19	06-DEC-19	R4939729
Polyaromatic Hydrocarbons (PAHs)							
1-Methyl Naphthalene	<0.020		0.020	ug/L	12-DEC-19	18-DEC-19	R4949449
2-Methyl Naphthalene	0.025		0.020	ug/L	12-DEC-19	18-DEC-19	R4949449
Acenaphthene	<0.020		0.020	ug/L	12-DEC-19	18-DEC-19	R4949449
Acenaphthylene	<0.020		0.020	ug/L	12-DEC-19	18-DEC-19	R4949449
Anthracene	<0.010		0.010	ug/L	12-DEC-19	18-DEC-19	R4949449
Acridine	<0.020		0.020	ug/L	12-DEC-19	18-DEC-19	R4949449
Benzo(a)anthracene	<0.010		0.010	ug/L	12-DEC-19	18-DEC-19	R4949449
Benzo(a)pyrene	<0.0050		0.0050	ug/L	12-DEC-19	18-DEC-19	R4949449
Benzo(b&j)fluoranthene	<0.010		0.010	ug/L	12-DEC-19	18-DEC-19	R4949449
Benzo(g,h,i)perylene	0.021		0.020	ug/L	12-DEC-19	18-DEC-19	R4949449
Benzo(k)fluoranthene	<0.010		0.010	ug/L	12-DEC-19	18-DEC-19	R4949449
Chrysene	<0.020		0.020	ug/L	12-DEC-19	18-DEC-19	R4949449
Dibenzo(a,h)anthracene	<0.0050		0.0050	ug/L	12-DEC-19	18-DEC-19	R4949449
Fluoranthene	0.033	EMPC	0.020	ug/L	12-DEC-19	18-DEC-19	R4949449
Fluorene	<0.020		0.020	ug/L	12-DEC-19	18-DEC-19	R4949449
Indeno(1,2,3-cd)pyrene	<0.010		0.010	ug/L	12-DEC-19	18-DEC-19	R4949449
Naphthalene	0.065		0.050	ug/L	12-DEC-19	18-DEC-19	R4949449
Phenanthrene	<0.050		0.050	ug/L	12-DEC-19	18-DEC-19	R4949449
Pyrene	0.130		0.010	ug/L	12-DEC-19	18-DEC-19	R4949449
Quinoline	<0.020		0.020	ug/L	12-DEC-19	18-DEC-19	R4949449
B(a)P Total Potency Equivalent	<0.030		0.030	ug/L	12-DEC-19	18-DEC-19	R4949449
Surrogate: Acenaphthene d10	86.3		60-130	%	12-DEC-19	18-DEC-19	R4949449
Surrogate: Acridine d9	90.8		60-130	%	12-DEC-19	18-DEC-19	R4949449
Surrogate: Chrysene d12	114.1		60-130	%	12-DEC-19	18-DEC-19	R4949449
Surrogate: Naphthalene d8	76.0		50-130	%	12-DEC-19	18-DEC-19	R4949449
Surrogate: Phenanthrene d10	96.6		60-130	%	12-DEC-19	18-DEC-19	R4949449
Herbicides in Water							
Clopyralid	<0.10		0.10	ug/L	09-DEC-19	09-DEC-19	R4938008
Dicamba	<0.10		0.10	ug/L	09-DEC-19	09-DEC-19	R4938008
Mecoprop	<0.10		0.10	ug/L	09-DEC-19	09-DEC-19	R4938008
MCPA	<0.10		0.10	ug/L	09-DEC-19	09-DEC-19	R4938008
2,4-D	<0.10		0.10	ug/L	09-DEC-19	09-DEC-19	R4938008
Bromoxynil	<0.10		0.10	ug/L	09-DEC-19	09-DEC-19	R4938008
Triclopyr	<0.10		0.10	ug/L	09-DEC-19	09-DEC-19	R4938008
2,4,5-T	<0.10		0.10	ug/L	09-DEC-19	09-DEC-19	R4938008
2,4,5-TP	<0.10		0.10	ug/L	09-DEC-19	09-DEC-19	R4938008
Picloram	<0.10		0.10	ug/L	09-DEC-19	09-DEC-19	R4938008
2,4-DB	<0.10		0.10	ug/L	09-DEC-19	09-DEC-19	R4938008

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ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2392592-2 GWQ25 - 15							
Sampled By: CLIENT on 05-DEC-19 @ 13:15							
Matrix: WATER							
Herbicides in Water							
2,4-DP	<0.10		0.10	ug/L	09-DEC-19	09-DEC-19	R4938008
Dinoseb	<0.10		0.10	ug/L	09-DEC-19	09-DEC-19	R4938008
MCPB	<0.10		0.10	ug/L	09-DEC-19	09-DEC-19	R4938008
Surrogate: 2,4-Dichlorophenylacetic Acid	90.0		50-130	%	09-DEC-19	09-DEC-19	R4938008
Miscellaneous Pesticides							
Diazinon	<0.10		0.10	ug/L	09-DEC-19	10-DEC-19	R4940186
Surrogate: 2-Fluorobiphenyl	84.9		40-130	%	09-DEC-19	10-DEC-19	R4940186
Surrogate: d14-Terphenyl	82.0		40-130	%	09-DEC-19	10-DEC-19	R4940186
Total, Fecal Coliforms, E Coli by QT97							
Fecal Coliform by MPN QT97							
Fecal Coliforms	<1		1	MPN/100mL		05-DEC-19	R4936529
Total Coliform and E.coli by MPN QT97							
Total Coliforms	<1		1	MPN/100mL		05-DEC-19	R4936526
Escherichia Coli	<1		1	MPN/100mL		05-DEC-19	R4936526
VOC plus F1 to F4							
CCME PHC F2-F4 in Water							
F2 (C10-C16)	<100		100	ug/L	07-DEC-19	07-DEC-19	R4939831
F3 (C16-C34)	380		250	ug/L	07-DEC-19	07-DEC-19	R4939831
F4 (C34-C50)	620		250	ug/L	07-DEC-19	07-DEC-19	R4939831
Surrogate: 2-Bromobenzotrifluoride	100.8		60-140	%	07-DEC-19	07-DEC-19	R4939831
CCME Total Hydrocarbons							
F1-BTEX	<100		100	ug/L		20-DEC-19	
F2-Naphth	<100		100	ug/L		20-DEC-19	
F3-PAH	380		250	ug/L		20-DEC-19	
Total Hydrocarbons (C6-C50)	1000		380	ug/L		20-DEC-19	
Sum of Xylene Isomer Concentrations							
Xylenes (Total)	<0.64		0.64	ug/L		20-DEC-19	
Total Trihalomethanes (THMs)							
Total THMs	<1.3		1.3	ug/L		20-DEC-19	
VOC plus F1 by GCMS							
Acetone	<50		50	ug/L		19-DEC-19	R4948859
Benzene	<0.50		0.50	ug/L		19-DEC-19	R4948859
Bromobenzene	<1.0		1.0	ug/L		19-DEC-19	R4948859
Bromochloromethane	<1.0		1.0	ug/L		19-DEC-19	R4948859
Bromodichloromethane	<0.50		0.50	ug/L		19-DEC-19	R4948859
Bromoform	<1.0		1.0	ug/L		19-DEC-19	R4948859
Bromomethane	<1.0		1.0	ug/L		19-DEC-19	R4948859
n-Butylbenzene	<1.0		1.0	ug/L		19-DEC-19	R4948859
sec-Butylbenzene	<1.0		1.0	ug/L		19-DEC-19	R4948859
tert-Butylbenzene	<1.0		1.0	ug/L		19-DEC-19	R4948859
Carbon disulfide	<5.0		5.0	ug/L		19-DEC-19	R4948859
Carbon Tetrachloride	<0.50		0.50	ug/L		19-DEC-19	R4948859
Chlorobenzene	<1.0		1.0	ug/L		19-DEC-19	R4948859
Chloroethane	<1.0		1.0	ug/L		19-DEC-19	R4948859
Chloroform	<0.50		0.50	ug/L		19-DEC-19	R4948859
Chloromethane	<5.0		5.0	ug/L		19-DEC-19	R4948859
2-Chlorotoluene	<20		20	ug/L		19-DEC-19	R4948859
4-Chlorotoluene	<1.0		1.0	ug/L		19-DEC-19	R4948859
Dibromochloromethane	<0.50		0.50	ug/L		19-DEC-19	R4948859
1,2-Dibromo-3-chloropropane	<1.0		1.0	ug/L		19-DEC-19	R4948859
1,2-Dibromoethane	<1.0		1.0	ug/L		19-DEC-19	R4948859
Dibromomethane	<1.0		1.0	ug/L		19-DEC-19	R4948859

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ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2392592-2 GWQ25 - 15							
Sampled By: CLIENT on 05-DEC-19 @ 13:15							
Matrix: WATER							
VOC plus F1 by GCMS							
1,2-Dichlorobenzene	<0.50		0.50	ug/L		19-DEC-19	R4948859
1,3-Dichlorobenzene	<1.0		1.0	ug/L		19-DEC-19	R4948859
1,4-Dichlorobenzene	<1.0		1.0	ug/L		19-DEC-19	R4948859
Dichlorodifluoromethane	<1.0		1.0	ug/L		19-DEC-19	R4948859
1,1-dichloroethane	<0.50		0.50	ug/L		19-DEC-19	R4948859
1,2-Dichloroethane	<0.50		0.50	ug/L		19-DEC-19	R4948859
1,1-dichloroethene	<0.50		0.50	ug/L		19-DEC-19	R4948859
cis-1,2-Dichloroethene	<1.0		1.0	ug/L		19-DEC-19	R4948859
trans-1,2-Dichloroethene	<1.0		1.0	ug/L		19-DEC-19	R4948859
Dichloromethane	<5.0		5.0	ug/L		19-DEC-19	R4948859
1,2-Dichloropropane	<1.0		1.0	ug/L		19-DEC-19	R4948859
1,3-Dichloropropane	<1.0		1.0	ug/L		19-DEC-19	R4948859
2,2-Dichloropropane	<1.0		1.0	ug/L		19-DEC-19	R4948859
1,1-Dichloropropene	<1.0		1.0	ug/L		19-DEC-19	R4948859
cis-1,3-Dichloropropene	<1.0		1.0	ug/L		19-DEC-19	R4948859
trans-1,3-Dichloropropene	<1.0		1.0	ug/L		19-DEC-19	R4948859
Ethylbenzene	<0.50		0.50	ug/L		19-DEC-19	R4948859
F1	<100		100	ug/L		19-DEC-19	R4948859
Hexachlorobutadiene	<1.0		1.0	ug/L		19-DEC-19	R4948859
Hexane	<1.0		1.0	ug/L		19-DEC-19	R4948859
2-Hexanone (Methyl butyl ketone)	<20		20	ug/L		19-DEC-19	R4948859
Isopropylbenzene	<1.0		1.0	ug/L		19-DEC-19	R4948859
4-Isopropyltoluene	<1.0		1.0	ug/L		19-DEC-19	R4948859
MEK	<20		20	ug/L		19-DEC-19	R4948859
MIBK	<20		20	ug/L		19-DEC-19	R4948859
MTBE	<0.50		0.50	ug/L		19-DEC-19	R4948859
Styrene	<1.0		1.0	ug/L		19-DEC-19	R4948859
1,1,1,2-Tetrachloroethane	<0.50		0.50	ug/L		19-DEC-19	R4948859
1,1,2,2-Tetrachloroethane	<0.50		0.50	ug/L		19-DEC-19	R4948859
Tetrachloroethene	<0.50		0.50	ug/L		19-DEC-19	R4948859
Toluene	<0.50		0.50	ug/L		19-DEC-19	R4948859
1,2,3-Trichlorobenzene	<1.0		1.0	ug/L		19-DEC-19	R4948859
1,2,4-Trichlorobenzene	<1.0		1.0	ug/L		19-DEC-19	R4948859
1,1,1-Trichloroethane	<0.50		0.50	ug/L		19-DEC-19	R4948859
1,1,2-Trichloroethane	<0.50		0.50	ug/L		19-DEC-19	R4948859
Trichloroethene	<0.50		0.50	ug/L		19-DEC-19	R4948859
Trichlorofluoromethane	<1.0		1.0	ug/L		19-DEC-19	R4948859
1,2,3-Trichloropropane	<1.0		1.0	ug/L		19-DEC-19	R4948859
1,2,4-Trimethylbenzene	<1.0		1.0	ug/L		19-DEC-19	R4948859
1,3,5-Trimethylbenzene	<1.0		1.0	ug/L		19-DEC-19	R4948859
Vinyl Chloride	<0.50		0.50	ug/L		19-DEC-19	R4948859
m+p-Xylenes	<0.40		0.40	ug/L		19-DEC-19	R4948859
o-Xylene	<0.50		0.50	ug/L		19-DEC-19	R4948859
Surrogate: 4-Bromofluorobenzene (SS)	82.8		70-130	%		19-DEC-19	R4948859
Surrogate: 1,4-Difluorobenzene (SS)	96.5		70-130	%		19-DEC-19	R4948859
Surrogate: 3,4-Dichlorotoluene (SS)	70.5		70-130	%		19-DEC-19	R4948859
L2392592-3 GWQ25 - TRIP BLANK							
Sampled By: CLIENT on 05-DEC-19 @ 08:00							
Matrix: WATER							
Alkalinity species as HCO3, CO3, OH							
Alkalinity, Bicarbonate							

* 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
L2392592-3 GWQ25 - TRIP BLANK							
Sampled By: CLIENT on 05-DEC-19 @ 08:00							
Matrix: WATER							
Alkalinity, Bicarbonate							
Bicarbonate (HCO3)	<1200		1200	ug/L		12-DEC-19	
Alkalinity, Carbonate							
Carbonate (CO3)	<600		600	ug/L		12-DEC-19	
Alkalinity, Hydroxide							
Hydroxide (OH)	<340		340	ug/L		12-DEC-19	
Alkalinity, Total (as CaCO3)							
Alkalinity, Total (as CaCO3)	<1000		1000	ug/L		11-DEC-19	R4941615
Dissolved Carbons							
Dissolved Inorganic Carbon by Combustion							
Dissolved Inorganic Carbon	<500		500	ug/L		09-DEC-19	R4939905
Dissolved Organic Carbon by Combustion							
Dissolved Organic Carbon	<500		500	ug/L		06-DEC-19	R4937533
Total Dissolved Carbon by Calculation							
Total Dissolved Carbon	<1000		1000	ug/L		10-DEC-19	
Miscellaneous Parameters							
Ammonia, Total (as N)	<10		10	ug/L		09-DEC-19	R4940169
Chloride (Cl)	<500		500	ug/L		06-DEC-19	R4939627
Chromium, Hexavalent	<0.50		0.50	ug/L		10-DEC-19	R4940397
Cyanide, Total	<1.0		1.0	ug/L		12-DEC-19	R4942678
Mercury (Hg)-Total	<0.0050		0.0050	ug/L	19-DEC-19	19-DEC-19	R4947031
Phenols (4AAP)	<1.0		1.0	ug/L		09-DEC-19	R4937632
Sulfate (SO4)	<300		300	ug/L		06-DEC-19	R4939627
Dissolved Metals in Water by CRC ICPMS							
Dissolved Metals Filtration Location	LAB					06-DEC-19	R4936619
Aluminum (Al)-Dissolved	<1.0		1.0	ug/L	06-DEC-19	06-DEC-19	R4939729
Antimony (Sb)-Dissolved	<0.10		0.10	ug/L	06-DEC-19	06-DEC-19	R4939729
Arsenic (As)-Dissolved	<0.10		0.10	ug/L	06-DEC-19	06-DEC-19	R4939729
Barium (Ba)-Dissolved	<0.10		0.10	ug/L	06-DEC-19	06-DEC-19	R4939729
Beryllium (Be)-Dissolved	<0.10		0.10	ug/L	06-DEC-19	06-DEC-19	R4939729
Bismuth (Bi)-Dissolved	<0.050		0.050	ug/L	06-DEC-19	06-DEC-19	R4939729
Boron (B)-Dissolved	<10		10	ug/L	06-DEC-19	06-DEC-19	R4939729
Cadmium (Cd)-Dissolved	<0.0050		0.0050	ug/L	06-DEC-19	06-DEC-19	R4939729
Calcium (Ca)-Dissolved	<50		50	ug/L	06-DEC-19	06-DEC-19	R4939729
Cesium (Cs)-Dissolved	<0.010		0.010	ug/L	06-DEC-19	06-DEC-19	R4939729
Chromium (Cr)-Dissolved	<0.10		0.10	ug/L	06-DEC-19	06-DEC-19	R4939729
Cobalt (Co)-Dissolved	<0.10		0.10	ug/L	06-DEC-19	06-DEC-19	R4939729
Copper (Cu)-Dissolved	<0.20		0.20	ug/L	06-DEC-19	06-DEC-19	R4939729
Iron (Fe)-Dissolved	<10		10	ug/L	06-DEC-19	06-DEC-19	R4939729
Lead (Pb)-Dissolved	<0.050		0.050	ug/L	06-DEC-19	06-DEC-19	R4939729
Lithium (Li)-Dissolved	<1.0		1.0	ug/L	06-DEC-19	06-DEC-19	R4939729
Magnesium (Mg)-Dissolved	5.6		5.0	ug/L	06-DEC-19	06-DEC-19	R4939729
Manganese (Mn)-Dissolved	<0.10		0.10	ug/L	06-DEC-19	06-DEC-19	R4939729
Molybdenum (Mo)-Dissolved	<0.050		0.050	ug/L	06-DEC-19	06-DEC-19	R4939729
Nickel (Ni)-Dissolved	<0.50		0.50	ug/L	06-DEC-19	06-DEC-19	R4939729
Phosphorus (P)-Dissolved	<30		30	ug/L	06-DEC-19	06-DEC-19	R4939729
Potassium (K)-Dissolved	<50		50	ug/L	06-DEC-19	06-DEC-19	R4939729
Rubidium (Rb)-Dissolved	<0.20		0.20	ug/L	06-DEC-19	06-DEC-19	R4939729
Selenium (Se)-Dissolved	0.125		0.050	ug/L	06-DEC-19	06-DEC-19	R4939729
Silicon (Si)-Dissolved	<50		50	ug/L	06-DEC-19	06-DEC-19	R4939729
Silver (Ag)-Dissolved	<0.010		0.010	ug/L	06-DEC-19	06-DEC-19	R4939729
Sodium (Na)-Dissolved	206		50	ug/L	06-DEC-19	06-DEC-19	R4939729

* 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
L2392592-3 GWQ25 - TRIP BLANK							
Sampled By: CLIENT on 05-DEC-19 @ 08:00							
Matrix: WATER							
Dissolved Metals in Water by CRC ICPMS							
Strontium (Sr)-Dissolved	<0.10		0.10	ug/L	06-DEC-19	06-DEC-19	R4939729
Sulfur (S)-Dissolved	<500		500	ug/L	06-DEC-19	06-DEC-19	R4939729
Tellurium (Te)-Dissolved	<0.20		0.20	ug/L	06-DEC-19	06-DEC-19	R4939729
Thallium (Tl)-Dissolved	<0.010		0.010	ug/L	06-DEC-19	06-DEC-19	R4939729
Thorium (Th)-Dissolved	<0.10		0.10	ug/L	06-DEC-19	06-DEC-19	R4939729
Tin (Sn)-Dissolved	<0.10		0.10	ug/L	06-DEC-19	06-DEC-19	R4939729
Titanium (Ti)-Dissolved	<0.30		0.30	ug/L	06-DEC-19	06-DEC-19	R4939729
Tungsten (W)-Dissolved	<0.10		0.10	ug/L	06-DEC-19	06-DEC-19	R4939729
Uranium (U)-Dissolved	<0.010		0.010	ug/L	06-DEC-19	06-DEC-19	R4939729
Vanadium (V)-Dissolved	<0.50		0.50	ug/L	06-DEC-19	06-DEC-19	R4939729
Zinc (Zn)-Dissolved	<1.0		1.0	ug/L	06-DEC-19	06-DEC-19	R4939729
Zirconium (Zr)-Dissolved	<0.20		0.20	ug/L	06-DEC-19	06-DEC-19	R4939729

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

Reference Information

Sample Parameter Qualifier Key:

Qualifier	Description
EMPC	Estimated Maximum Possible Concentration. Parameter detected but didn't meet all criteria for positive identification.
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.
SURR-ND	Surrogate recovery marginally exceeded ALS DQO. Reported non-detect results for associated samples were deemed to be unaffected.

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 CO3 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 HCO3-/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 CaCO3)	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 HCO3- and H2CO3 endpoints indicated electrometrically.			
C-DIC-HTC-WP	Water	Dissolved Inorganic Carbon by Combustion	APHA 5310 B-WP
Filtered (0.45 um) sample is injected into a heated reaction chamber where it is acidified, converting all inorganic carbon to CO2 which is then transported in the carrier gas stream and measured via a non-dispersive infrared analyzer.			
C-DOC-HTC-WP	Water	Dissolved Organic Carbon by Combustion	APHA 5310 B-WP
Filtered (0.45 um) sample is acidified and purged to remove inorganic carbon, then injected into a heated reaction chamber where organic carbon is oxidized to CO2 which is then transported in the carrier gas stream and measured via a non-dispersive infrared analyzer.			
C-TDC-CALC-WP	Water	Total Dissolved Carbon by Calculation	CALCULATED
Total dissolved carbon represents the sum of dissolved inorganic carbon and dissolved organic carbon. For the purpose of calculation, results less than the detection limit (DL) are treated as zero.			
CL-IC-N-WP	Water	Chloride in Water by IC	EPA 300.1 (mod)
Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.			
CN-T-L-CFA-VA	Water	Low Level Total Cyanide in water by CFA	ISO 14403:2002
This analysis is carried out using procedures adapted from ISO Method 14403:2002 "Determination of Total Cyanide using Flow Analysis (FIA and CFA)". Total or strong acid dissociable (SAD) cyanide is determined by in-line UV digestion along with sample distillation and final determination by colourimetric analysis. Method Limitation: This method is susceptible to interference from thiocyanate (SCN). If SCN is present in the sample, there could be a positive interference with this method, but it would be less than 1% and could be as low as zero.			
CR-CR6-IC-WT	Water	Chromium +6	EPA 7199
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.			
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).			
EC-SCREEN-WP	Water	Conductivity Screen (Internal Use Only)	APHA 2510
Qualitative analysis of conductivity where required during preparation of other test eg. IC, TDS, TSS, etc			
F1-F4-CALC-WP	Water	CCME Total Hydrocarbons	CCME CWS-PHC, Pub #1310, Dec 2001-L
Analytical methods used for analysis of CCME Petroleum Hydrocarbons have been validated and comply with the Reference Method for the CWS PHC.			

Reference Information

Test Method References:

ALS Test Code	Matrix	Test Description	Method Reference**
<p>In cases where results for both F4 and F4G are reported, the greater of the two results must be used in any application of the CWS PHC guidelines and the gravimetric heavy hydrocarbons cannot be added to the C6 to C50 hydrocarbons.</p> <p>In samples where BTEX and F1 were analyzed, F1-BTEX represents a value where the sum of Benzene, Toluene, Ethylbenzene and total Xylenes has been subtracted from F1.</p> <p>In samples where PAHs, F2 and F3 were analyzed, F2-Naphth represents the result where Naphthalene has been subtracted from F2. F3-PAH represents a result where the sum of Benzo(a)anthracene, Benzo(a)pyrene, Benzo(b)fluoranthene, Benzo(k)fluoranthene, Dibenzo(a,h)anthracene, Fluoranthene, Indeno(1,2,3-cd)pyrene, Phenanthrene, and Pyrene has been subtracted from F3.</p> <p>Unless otherwise qualified, the following quality control criteria have been met for the F1 hydrocarbon range:</p> <ol style="list-style-type: none"> 1. All extraction and analysis holding times were met. 2. Instrument performance showing response factors for C6 and C10 within 30% of the response factor for toluene. 3. Linearity of gasoline response within 15% throughout the calibration range. <p>Unless otherwise qualified, the following quality control criteria have been met for the F2-F4 hydrocarbon ranges:</p> <ol style="list-style-type: none"> 1. All extraction and analysis holding times were met. 2. Instrument performance showing C10, C16 and C34 response factors within 10% of their average. 3. Instrument performance showing the C50 response factor within 30% of the average of the C10, C16 and C34 response factors. 4. Linearity of diesel or motor oil response within 15% throughout the calibration range. 			
F2-F4-FID-WP	Water	CCME PHC F2-F4 in Water	EPA 3511
<p>Petroleum hydrocarbons in water are determined by liquid-liquid micro-scale solvent extraction using a reciprocal shaker extraction apparatus prior to capillary column gas chromatography with flame ionization detection (GC-FID) analysis.</p>			
FC-QT97-WP	Water	Fecal Coliform by MPN QT97	APHA 9223B QT97
<p>This analysis is carried out using procedures adapted from APHA Method 9223B "Enzyme Substrate Coliform Test". The sample is mixed with a mixture of hydrolyzable substrates and then sealed in a 97-well packet. The packet is incubated at 44.5 +/- 0.2 degrees C for 18 hours and then the number of wells exhibiting a positive response are counted. The final result is obtained by comparing the number of positive responses to a probability table.</p>			
HERBSCR-LCMS-WT	Water	Herbicides in Water	E3552
<p>Water samples are subjected filtration and analyzed by direct injection without sample preparation using liquid chromatography tandem mass spectrometry (LC-MS/MS).</p>			
HG-T-CVAA-WP	Water	Mercury Total	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-WP	Water	Dissolved Metals in Water by CRC ICPMS	APHA 3030B/6020B (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>			
NH3-COL-WP	Water	Ammonia by colour	APHA 4500 NH3 F
<p>Ammonia in water samples forms indophenol when reacted with hypochlorite and phenol. The intensity is amplified by the addition of sodium nitroprusside and measured colourmetrically.</p>			
PAH,PANH-WP	Water	Polyaromatic Hydrocarbons (PAHs)	EPA 3511/8270D (mod)
<p>PAHs are extracted from water using a hexane micro-extraction technique, with analysis by GC/MS. Because the two isomers cannot be readily separated chromatographically, benzo(j)fluoranthene is reported as part of the benzo(b)fluoranthene parameter.</p>			
PEST-DIAZINON-WT	Water	Miscellaneous Pesticides	SW846 8270
PHENOLS-4AAP-WT	Water	Phenol (4AAP)	EPA 9066
<p>An automated method is used to distill the sample. The distillate is then buffered to pH 9.4 which reacts with 4AAP and potassium ferricyanide to form a red complex which is measured colorimetrically.</p>			
SO4-IC-N-WP	Water	Sulfate in Water by IC	EPA 300.1 (mod)
<p>Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.</p>			
TC,EC-QT97-WP	Water	Total Coliform and E.coli by MPN QT97	APHA 9223B QT97
<p>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 97-well packet. The packet is incubated</p>			

Reference Information

Test Method References:

ALS Test Code	Matrix	Test Description	Method Reference**
		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.	
THM-SUM-CALC-WP	Water	Total Trihalomethanes (THMs)	CALCULATION
		Total Trihalomethanes (THMs) represents the sum of bromodichloromethane, bromoform, chlorodibromomethane and chloroform. For the purpose of calculation, results less than the detection limit (DL) are treated as zero.	
VOC+F1-HSMS-WP	Water	VOC plus F1 by GCMS	EPA 8260C / EPA 5021A
		In this method samples are analyzed using a headspace autosampler interfaced to a dual column gas chromatograph with MS and Flame Ionization detectors.	
XYLENES-SUM-CALC-WP	Water	Sum of Xylene Isomer Concentrations	CALCULATED RESULT
		Total xylenes represents the sum of o-xylene and m&p-xylene.	

** 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
WT	ALS ENVIRONMENTAL - WATERLOO, ONTARIO, CANADA
VA	ALS ENVIRONMENTAL - VANCOUVER, BRITISH COLUMBIA, 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: L2392592

Report Date: 23-DEC-19

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Client: City of Winnipeg - Solid Waste Services Div (1120 Waverley)
 Solid Waste Services Division 1120 Waverley Street
 Winnipeg MB R3T 0P4

Contact: CHRIS KOZAK

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
ALK-TITR-WP								
	Water							
Batch	R4941615							
WG3239080-9	LCS							
Alkalinity, Total (as CaCO3)			101.2		%		85-115	11-DEC-19
WG3239080-6	MB							
Alkalinity, Total (as CaCO3)			<1.0		mg/L		1	11-DEC-19
C-DIC-HTC-WP								
	Water							
Batch	R4939905							
WG3239135-3	DUP	L2392592-1						
Dissolved Inorganic Carbon		26.5	27.6		mg/L	4.0	20	09-DEC-19
WG3239135-2	LCS							
Dissolved Inorganic Carbon			96.4		%		80-120	09-DEC-19
WG3239135-1	MB							
Dissolved Inorganic Carbon			<0.50		mg/L		0.5	09-DEC-19
WG3239135-4	MS	L2392592-2						
Dissolved Inorganic Carbon			N/A	MS-B	%		-	09-DEC-19
C-DOC-HTC-WP								
	Water							
Batch	R4937533							
WG3238135-2	LCS							
Dissolved Organic Carbon			98.9		%		80-120	06-DEC-19
WG3238135-1	MB							
Dissolved Organic Carbon			<0.50		mg/L		0.5	06-DEC-19
CL-IC-N-WP								
	Water							
Batch	R4939627							
WG3236988-6	LCS							
Chloride (Cl)			98.9		%		90-110	06-DEC-19
WG3236988-5	MB							
Chloride (Cl)			<0.50		mg/L		0.5	06-DEC-19
CN-T-L-CFA-VA								
	Water							
Batch	R4942678							
WG3241010-2	LCS							
Cyanide, Total			100.0		%		80-120	12-DEC-19
WG3241010-1	MB							
Cyanide, Total			<0.0010		mg/L		0.001	12-DEC-19
CR-CR6-IC-WT								
	Water							
Batch	R4940397							
WG3238308-2	LCS							
Chromium, Hexavalent			99.2		%		80-120	10-DEC-19
WG3238308-1	MB							



Quality Control Report

Workorder: L2392592

Report Date: 23-DEC-19

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Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
CR-CR6-IC-WT Water								
Batch R4940397								
WG3238308-1 MB								
Chromium, Hexavalent								
			<0.00050		mg/L		0.0005	10-DEC-19
F2-F4-FID-WP Water								
Batch R4939831								
WG3237617-2 LCS								
			106.3		%		70-130	07-DEC-19
			97.7		%		70-130	07-DEC-19
			98.3		%		70-130	07-DEC-19
WG3237617-1 MB								
			<0.10		mg/L		0.1	07-DEC-19
			<0.25		mg/L		0.25	07-DEC-19
			<0.25		mg/L		0.25	07-DEC-19
			103.2		%		60-140	07-DEC-19
Surrogate: 2-Bromobenzotrifluoride								
FC-QT97-WP Water								
Batch R4936529								
WG3236397-2 DUP								
		L2392592-1	<1	RPD-NA	MPN/100mL	N/A	65	05-DEC-19
WG3236397-1 MB								
			<1		MPN/100mL		1	05-DEC-19
HERBSCR-LCMS-WT Water								
Batch R4938008								
WG3237988-2 LCS								
			98.5		%		50-150	09-DEC-19
			102.5		%		65-130	09-DEC-19
			106.0		%		65-130	09-DEC-19
			85.5		%		65-130	09-DEC-19
			90.3		%		65-130	09-DEC-19
			98.7		%		65-130	09-DEC-19
			90.9		%		65-130	09-DEC-19
			87.5		%		65-130	09-DEC-19
			100.0		%		65-130	09-DEC-19
			107.5		%		50-150	09-DEC-19
			91.2		%		65-130	09-DEC-19
			93.9		%		65-130	09-DEC-19
			98.7		%		50-150	09-DEC-19

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Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
HERBSCR-LCMS-WT								
	Water							
Batch	R4938008							
WG3237988-2	LCS							
MCPB			100.0		%		65-130	09-DEC-19
WG3237988-1	MB							
Clopyralid			<0.00010		mg/L		0.0001	09-DEC-19
Dicamba			<0.00010		mg/L		0.0001	09-DEC-19
Mecoprop			<0.00010		mg/L		0.0001	09-DEC-19
MCPA			<0.00010		mg/L		0.0001	09-DEC-19
2,4-D			<0.00010		mg/L		0.0001	09-DEC-19
Bromoxynil			<0.00010		mg/L		0.0001	09-DEC-19
Triclopyr			<0.00010		mg/L		0.0001	09-DEC-19
2,4,5-T			<0.00010		mg/L		0.0001	09-DEC-19
2,4,5-TP			<0.00010		mg/L		0.0001	09-DEC-19
Picloram			<0.00010		mg/L		0.0001	09-DEC-19
2,4-DB			<0.00010		mg/L		0.0001	09-DEC-19
2,4-DP			<0.00010		mg/L		0.0001	09-DEC-19
Dinoseb			<0.00010		mg/L		0.0001	09-DEC-19
MCPB			<0.00010		mg/L		0.0001	09-DEC-19
Surrogate: 2,4-Dichlorophenylacetic Acid			96.0		%		50-130	09-DEC-19
HG-T-CVAA-WP								
	Water							
Batch	R4940668							
WG3240078-2	LCS							
Mercury (Hg)-Total			98.0		%		80-120	10-DEC-19
WG3240078-1	MB							
Mercury (Hg)-Total			<0.000005C		mg/L		0.000005	10-DEC-19
Batch	R4947031							
WG3246670-3	DUP	L2392592-3						
Mercury (Hg)-Total		<0.0000050	<0.000005C	RPD-NA	mg/L	N/A	20	19-DEC-19
WG3246670-2	LCS							
Mercury (Hg)-Total			99.0		%		80-120	19-DEC-19
WG3246670-1	MB							
Mercury (Hg)-Total			<0.000005C		mg/L		0.000005	19-DEC-19
MET-D-CCMS-WP								
	Water							
Batch	R4939729							
WG3237032-2	LCS							
Aluminum (Al)-Dissolved			105.1		%		80-120	06-DEC-19
Antimony (Sb)-Dissolved			99.98		%		80-120	06-DEC-19



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Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
MET-D-CCMS-WP								
	Water							
Batch	R4939729							
WG3237032-2	LCS							
Arsenic (As)-Dissolved			101.2		%		80-120	06-DEC-19
Barium (Ba)-Dissolved			100.7		%		80-120	06-DEC-19
Beryllium (Be)-Dissolved			109.6		%		80-120	06-DEC-19
Bismuth (Bi)-Dissolved			101.3		%		80-120	06-DEC-19
Boron (B)-Dissolved			106.2		%		80-120	06-DEC-19
Cadmium (Cd)-Dissolved			101.6		%		80-120	06-DEC-19
Calcium (Ca)-Dissolved			102.8		%		80-120	06-DEC-19
Cesium (Cs)-Dissolved			99.4		%		80-120	06-DEC-19
Chromium (Cr)-Dissolved			102.8		%		80-120	06-DEC-19
Cobalt (Co)-Dissolved			102.3		%		80-120	06-DEC-19
Copper (Cu)-Dissolved			103.4		%		80-120	06-DEC-19
Iron (Fe)-Dissolved			98.3		%		80-120	06-DEC-19
Lead (Pb)-Dissolved			101.7		%		80-120	06-DEC-19
Lithium (Li)-Dissolved			106.6		%		80-120	06-DEC-19
Magnesium (Mg)-Dissolved			111.7		%		80-120	06-DEC-19
Manganese (Mn)-Dissolved			103.0		%		80-120	06-DEC-19
Molybdenum (Mo)-Dissolved			98.8		%		80-120	06-DEC-19
Nickel (Ni)-Dissolved			100.1		%		80-120	06-DEC-19
Phosphorus (P)-Dissolved			110.3		%		80-120	06-DEC-19
Potassium (K)-Dissolved			99.4		%		80-120	06-DEC-19
Rubidium (Rb)-Dissolved			100.7		%		80-120	06-DEC-19
Selenium (Se)-Dissolved			104.0		%		80-120	06-DEC-19
Silicon (Si)-Dissolved			107.3		%		80-120	06-DEC-19
Silver (Ag)-Dissolved			96.7		%		80-120	06-DEC-19
Sodium (Na)-Dissolved			105.3		%		80-120	06-DEC-19
Strontium (Sr)-Dissolved			101.0		%		80-120	06-DEC-19
Sulfur (S)-Dissolved			115.4		%		80-120	06-DEC-19
Tellurium (Te)-Dissolved			107.0		%		80-120	06-DEC-19
Thallium (Tl)-Dissolved			102.3		%		80-120	06-DEC-19
Thorium (Th)-Dissolved			99.7		%		80-120	06-DEC-19
Tin (Sn)-Dissolved			102.4		%		80-120	06-DEC-19
Titanium (Ti)-Dissolved			99.7		%		80-120	06-DEC-19
Tungsten (W)-Dissolved			103.3		%		80-120	06-DEC-19
Uranium (U)-Dissolved			105.3		%		80-120	06-DEC-19



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Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
MET-D-CCMS-WP		Water						
Batch	R4939729							
WG3237032-2	LCS							
Vanadium (V)-Dissolved			100.7		%		80-120	06-DEC-19
Zinc (Zn)-Dissolved			101.3		%		80-120	06-DEC-19
Zirconium (Zr)-Dissolved			95.6		%		80-120	06-DEC-19
WG3237032-1	MB							
Aluminum (Al)-Dissolved			<0.0010		mg/L		0.001	06-DEC-19
Antimony (Sb)-Dissolved			<0.00010		mg/L		0.0001	06-DEC-19
Arsenic (As)-Dissolved			<0.00010		mg/L		0.0001	06-DEC-19
Barium (Ba)-Dissolved			<0.00010		mg/L		0.0001	06-DEC-19
Beryllium (Be)-Dissolved			<0.00010		mg/L		0.0001	06-DEC-19
Bismuth (Bi)-Dissolved			<0.000050		mg/L		0.00005	06-DEC-19
Boron (B)-Dissolved			<0.010		mg/L		0.01	06-DEC-19
Cadmium (Cd)-Dissolved			<0.0000050		mg/L		0.000005	06-DEC-19
Calcium (Ca)-Dissolved			<0.050		mg/L		0.05	06-DEC-19
Cesium (Cs)-Dissolved			<0.000010		mg/L		0.00001	06-DEC-19
Chromium (Cr)-Dissolved			<0.00010		mg/L		0.0001	06-DEC-19
Cobalt (Co)-Dissolved			<0.00010		mg/L		0.0001	06-DEC-19
Copper (Cu)-Dissolved			<0.00020		mg/L		0.0002	06-DEC-19
Iron (Fe)-Dissolved			<0.010		mg/L		0.01	06-DEC-19
Lead (Pb)-Dissolved			<0.000050		mg/L		0.00005	06-DEC-19
Lithium (Li)-Dissolved			<0.0010		mg/L		0.001	06-DEC-19
Magnesium (Mg)-Dissolved			<0.0050		mg/L		0.005	06-DEC-19
Manganese (Mn)-Dissolved			<0.00010		mg/L		0.0001	06-DEC-19
Molybdenum (Mo)-Dissolved			<0.000050		mg/L		0.00005	06-DEC-19
Nickel (Ni)-Dissolved			<0.00050		mg/L		0.0005	06-DEC-19
Phosphorus (P)-Dissolved			<0.030		mg/L		0.03	06-DEC-19
Potassium (K)-Dissolved			<0.050		mg/L		0.05	06-DEC-19
Rubidium (Rb)-Dissolved			<0.00020		mg/L		0.0002	06-DEC-19
Selenium (Se)-Dissolved			<0.000050		mg/L		0.00005	06-DEC-19
Silicon (Si)-Dissolved			<0.050		mg/L		0.05	06-DEC-19
Silver (Ag)-Dissolved			<0.000010		mg/L		0.00001	06-DEC-19
Sodium (Na)-Dissolved			<0.050		mg/L		0.05	06-DEC-19
Strontium (Sr)-Dissolved			<0.00010		mg/L		0.0001	06-DEC-19
Sulfur (S)-Dissolved			<0.50		mg/L		0.5	06-DEC-19
Tellurium (Te)-Dissolved			<0.00020		mg/L		0.0002	06-DEC-19

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Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
MET-D-CCMS-WP		Water						
Batch	R4939729							
WG3237032-1	MB							
Thallium (Tl)-Dissolved			<0.000010		mg/L		0.00001	06-DEC-19
Thorium (Th)-Dissolved			<0.00010		mg/L		0.0001	06-DEC-19
Tin (Sn)-Dissolved			<0.00010		mg/L		0.0001	06-DEC-19
Titanium (Ti)-Dissolved			<0.00030		mg/L		0.0003	06-DEC-19
Tungsten (W)-Dissolved			<0.00010		mg/L		0.0001	06-DEC-19
Uranium (U)-Dissolved			<0.000010		mg/L		0.00001	06-DEC-19
Vanadium (V)-Dissolved			<0.00050		mg/L		0.0005	06-DEC-19
Zinc (Zn)-Dissolved			<0.0010		mg/L		0.001	06-DEC-19
Zirconium (Zr)-Dissolved			<0.00020		mg/L		0.0002	06-DEC-19
NH3-COL-WP		Water						
Batch	R4940169							
WG3239398-14	LCS							
Ammonia, Total (as N)			99.6		%		85-115	09-DEC-19
WG3239398-13	MB							
Ammonia, Total (as N)			<0.010		mg/L		0.01	09-DEC-19
PAH,PANH-WP		Water						
Batch	R4949449							
WG3243349-2	LCS							
1-Methyl Naphthalene			109.9		%		60-130	18-DEC-19
2-Methyl Naphthalene			103.1		%		60-130	18-DEC-19
Acenaphthene			112.8		%		60-130	18-DEC-19
Acenaphthylene			99.2		%		60-130	18-DEC-19
Anthracene			87.5		%		60-130	18-DEC-19
Acridine			101.9		%		60-130	18-DEC-19
Benzo(a)anthracene			104.6		%		60-130	18-DEC-19
Benzo(a)pyrene			88.1		%		60-130	18-DEC-19
Benzo(b&j)fluoranthene			123.4		%		60-130	18-DEC-19
Benzo(g,h,i)perylene			100.0		%		60-130	18-DEC-19
Benzo(k)fluoranthene			117.0		%		60-130	18-DEC-19
Chrysene			108.8		%		60-130	18-DEC-19
Dibenzo(a,h)anthracene			112.0		%		60-130	18-DEC-19
Fluoranthene			105.8		%		60-130	18-DEC-19
Fluorene			101.9		%		60-130	18-DEC-19
Indeno(1,2,3-cd)pyrene			103.9		%		60-130	18-DEC-19
Naphthalene			106.4		%		50-130	18-DEC-19



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Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
PAH,PANH-WP		Water						
Batch	R4949449							
WG3243349-2	LCS							
Phenanthrene			113.3		%		60-130	18-DEC-19
Pyrene			111.0		%		60-130	18-DEC-19
Quinoline			98.6		%		60-130	18-DEC-19
WG3243349-1	MB							
1-Methyl Naphthalene			<0.000020		mg/L		0.00002	18-DEC-19
2-Methyl Naphthalene			<0.000020		mg/L		0.00002	18-DEC-19
Acenaphthene			<0.000020		mg/L		0.00002	18-DEC-19
Acenaphthylene			<0.000020		mg/L		0.00002	18-DEC-19
Anthracene			<0.000010		mg/L		0.00001	18-DEC-19
Acridine			<0.000020		mg/L		0.00002	18-DEC-19
Benzo(a)anthracene			<0.000010		mg/L		0.00001	18-DEC-19
Benzo(a)pyrene			<0.0000050		mg/L		0.000005	18-DEC-19
Benzo(b&j)fluoranthene			<0.000010		mg/L		0.00001	18-DEC-19
Benzo(g,h,i)perylene			<0.000020		mg/L		0.00002	18-DEC-19
Benzo(k)fluoranthene			<0.000010		mg/L		0.00001	18-DEC-19
Chrysene			<0.000020		mg/L		0.00002	18-DEC-19
Dibenzo(a,h)anthracene			<0.0000050		mg/L		0.000005	18-DEC-19
Fluoranthene			<0.000020		mg/L		0.00002	18-DEC-19
Fluorene			<0.000020		mg/L		0.00002	18-DEC-19
Indeno(1,2,3-cd)pyrene			<0.000010		mg/L		0.00001	18-DEC-19
Naphthalene			<0.000050		mg/L		0.00005	18-DEC-19
Phenanthrene			<0.000050		mg/L		0.00005	18-DEC-19
Pyrene			<0.000010		mg/L		0.00001	18-DEC-19
Quinoline			<0.000020		mg/L		0.00002	18-DEC-19
Surrogate: Acenaphthene d10			87.6		%		60-130	18-DEC-19
Surrogate: Acridine d9			83.8		%		60-130	18-DEC-19
Surrogate: Chrysene d12			109.2		%		60-130	18-DEC-19
Surrogate: Naphthalene d8			75.6		%		50-130	18-DEC-19
Surrogate: Phenanthrene d10			81.2		%		60-130	18-DEC-19
PEST-DIAZINON-WT		Water						
Batch	R4940186							
WG3238414-2	LCS							
Diazinon			92.7		%		60-130	10-DEC-19
WG3238414-1	MB							
Diazinon			<0.10		ug/L		0.1	10-DEC-19



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PEST-DIAZINON-WT								
	Water							
Batch	R4940186							
WG3238414-1	MB							
Surrogate: 2-Fluorobiphenyl			84.0		%		40-130	10-DEC-19
Surrogate: d14-Terphenyl			85.3		%		40-130	10-DEC-19
PHENOLS-4AAP-WT								
	Water							
Batch	R4937632							
WG3238038-2	LCS							
Phenols (4AAP)			111.2		%		85-115	09-DEC-19
WG3238038-1	MB							
Phenols (4AAP)			<0.0010		mg/L		0.001	09-DEC-19
SO4-IC-N-WP								
	Water							
Batch	R4939627							
WG3236988-6	LCS							
Sulfate (SO4)			101.3		%		90-110	06-DEC-19
WG3236988-5	MB							
Sulfate (SO4)			<0.30		mg/L		0.3	06-DEC-19
TC,EC-QT97-WP								
	Water							
Batch	R4936526							
WG3236395-2	DUP	L2392592-1						
Total Coliforms		<1	<1	RPD-NA	MPN/100mL	N/A	65	05-DEC-19
Escherichia Coli		<1	<1	RPD-NA	MPN/100mL	N/A	65	05-DEC-19
WG3236395-1	MB							
Total Coliforms			<1		MPN/100mL		1	05-DEC-19
Escherichia Coli			<1		MPN/100mL		1	05-DEC-19
VOC+F1-HSMS-WP								
	Water							
Batch	R4948859							
WG3240287-4	DUP	L2392592-1						
Acetone		<0.050	<0.050	RPD-NA	mg/L	N/A	30	19-DEC-19
Benzene		<0.00050	<0.00050	RPD-NA	mg/L	N/A	30	19-DEC-19
Bromobenzene		<0.0010	<0.0010	RPD-NA	mg/L	N/A	30	19-DEC-19
Bromochloromethane		<0.0010	<0.0010	RPD-NA	mg/L	N/A	30	19-DEC-19
Bromodichloromethane		<0.00050	<0.00050	RPD-NA	mg/L	N/A	30	19-DEC-19
Bromoform		0.0094	0.0089		mg/L	5.2	30	19-DEC-19
Bromomethane		<0.0010	<0.0010	RPD-NA	mg/L	N/A	50	19-DEC-19
n-Butylbenzene		<0.0010	<0.0010	RPD-NA	mg/L	N/A	30	19-DEC-19
sec-Butylbenzene		<0.0010	<0.0010	RPD-NA	mg/L	N/A	30	19-DEC-19
tert-Butylbenzene		<0.0010	<0.0010	RPD-NA	mg/L	N/A	30	19-DEC-19

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Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
VOC+F1-HSMS-WP								
	Water							
Batch	R4948859							
WG3240287-4	DUP	L2392592-1						
Carbon disulfide		<0.0050	<0.0050	RPD-NA	mg/L	N/A	30	19-DEC-19
Carbon Tetrachloride		<0.00050	<0.00050	RPD-NA	mg/L	N/A	30	19-DEC-19
Chlorobenzene		<0.0010	<0.0010	RPD-NA	mg/L	N/A	30	19-DEC-19
Chloroethane		<0.0010	<0.0010	RPD-NA	mg/L	N/A	50	19-DEC-19
Chloroform		0.00112	0.00123		mg/L	9.2	30	19-DEC-19
Chloromethane		<0.0050	<0.0050	RPD-NA	mg/L	N/A	50	19-DEC-19
2-Chlorotoluene		<0.020	<0.020	RPD-NA	mg/L	N/A	30	19-DEC-19
4-Chlorotoluene		<0.0010	<0.0010	RPD-NA	mg/L	N/A	30	19-DEC-19
Dibromochloromethane		0.00122	0.00135		mg/L	9.7	30	19-DEC-19
1,2-Dibromo-3-chloropropane		<0.0010	<0.0010	RPD-NA	mg/L	N/A	30	19-DEC-19
1,2-Dibromoethane		<0.0010	<0.0010	RPD-NA	mg/L	N/A	30	19-DEC-19
Dibromomethane		<0.0010	<0.0010	RPD-NA	mg/L	N/A	30	19-DEC-19
1,2-Dichlorobenzene		<0.00050	<0.00050	RPD-NA	mg/L	N/A	30	19-DEC-19
1,3-Dichlorobenzene		<0.0010	<0.0010	RPD-NA	mg/L	N/A	30	19-DEC-19
1,4-Dichlorobenzene		<0.0010	<0.0010	RPD-NA	mg/L	N/A	30	19-DEC-19
Dichlorodifluoromethane		<0.0010	<0.0010	RPD-NA	mg/L	N/A	50	19-DEC-19
1,1-dichloroethane		<0.00050	<0.00050	RPD-NA	mg/L	N/A	30	19-DEC-19
1,2-Dichloroethane		<0.00050	<0.00050	RPD-NA	mg/L	N/A	30	19-DEC-19
1,1-dichloroethene		<0.00050	<0.00050	RPD-NA	mg/L	N/A	30	19-DEC-19
cis-1,2-Dichloroethene		<0.0010	<0.0010	RPD-NA	mg/L	N/A	30	19-DEC-19
trans-1,2-Dichloroethene		<0.0010	<0.0010	RPD-NA	mg/L	N/A	30	19-DEC-19
Dichloromethane		<0.0050	<0.0050	RPD-NA	mg/L	N/A	30	19-DEC-19
1,2-Dichloropropane		<0.0010	<0.0010	RPD-NA	mg/L	N/A	30	19-DEC-19
1,3-Dichloropropane		<0.0010	<0.0010	RPD-NA	mg/L	N/A	30	19-DEC-19
2,2-Dichloropropane		<0.0010	<0.0010	RPD-NA	mg/L	N/A	30	19-DEC-19
1,1-Dichloropropene		<0.0010	<0.0010	RPD-NA	mg/L	N/A	30	19-DEC-19
cis-1,3-Dichloropropene		<0.0010	<0.0010	RPD-NA	mg/L	N/A	30	19-DEC-19
trans-1,3-Dichloropropene		<0.0010	<0.0010	RPD-NA	mg/L	N/A	30	19-DEC-19
Ethylbenzene		<0.00050	<0.00050	RPD-NA	mg/L	N/A	30	19-DEC-19
F1		<0.10	<0.10	RPD-NA	mg/L	N/A	30	19-DEC-19
Hexachlorobutadiene		<0.0010	<0.0010	RPD-NA	mg/L	N/A	30	19-DEC-19
Hexane		<0.0010	<0.0010	RPD-NA	mg/L	N/A	30	19-DEC-19
2-Hexanone (Methyl butyl ketone)		<0.020	<0.020	RPD-NA	mg/L	N/A	30	19-DEC-19
Isopropylbenzene		<0.0010	<0.0010	RPD-NA	mg/L	N/A	30	19-DEC-19



Quality Control Report

Workorder: L2392592

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Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
VOC+F1-HSMS-WP								
	Water							
Batch	R4948859							
WG3240287-4	DUP	L2392592-1						
4-Isopropyltoluene		<0.0010	<0.0010	RPD-NA	mg/L	N/A	30	19-DEC-19
MEK		<0.020	<0.020	RPD-NA	mg/L	N/A	30	19-DEC-19
MIBK		<0.020	<0.020	RPD-NA	mg/L	N/A	30	19-DEC-19
MTBE		<0.00050	<0.00050	RPD-NA	mg/L	N/A	30	19-DEC-19
Styrene		<0.0010	<0.0010	RPD-NA	mg/L	N/A	30	19-DEC-19
1,1,1,2-Tetrachloroethane		<0.00050	<0.00050	RPD-NA	mg/L	N/A	30	19-DEC-19
1,1,2,2-Tetrachloroethane		<0.00050	<0.00050	RPD-NA	mg/L	N/A	30	19-DEC-19
Tetrachloroethene		<0.00050	<0.00050	RPD-NA	mg/L	N/A	30	19-DEC-19
Toluene		<0.00050	<0.00050	RPD-NA	mg/L	N/A	30	19-DEC-19
1,2,3-Trichlorobenzene		<0.0010	<0.0010	RPD-NA	mg/L	N/A	30	19-DEC-19
1,2,4-Trichlorobenzene		<0.0010	<0.0010	RPD-NA	mg/L	N/A	30	19-DEC-19
1,1,1-Trichloroethane		<0.00050	<0.00050	RPD-NA	mg/L	N/A	30	19-DEC-19
1,1,2-Trichloroethane		<0.00050	<0.00050	RPD-NA	mg/L	N/A	30	19-DEC-19
Trichloroethene		<0.00050	<0.00050	RPD-NA	mg/L	N/A	30	19-DEC-19
Trichlorofluoromethane		<0.0010	<0.0010	RPD-NA	mg/L	N/A	50	19-DEC-19
1,2,3-Trichloropropane		<0.0010	<0.0010	RPD-NA	mg/L	N/A	30	19-DEC-19
1,2,4-Trimethylbenzene		<0.0010	<0.0010	RPD-NA	mg/L	N/A	30	19-DEC-19
1,3,5-Trimethylbenzene		<0.0010	<0.0010	RPD-NA	mg/L	N/A	30	19-DEC-19
Vinyl Chloride		<0.00050	<0.00050	RPD-NA	mg/L	N/A	50	19-DEC-19
M+P-Xylenes		<0.00040	<0.00040	RPD-NA	mg/L	N/A	30	19-DEC-19
o-Xylene		<0.00050	<0.00050	RPD-NA	mg/L	N/A	30	19-DEC-19
WG3240287-2	LCS							
Acetone			94.1		%		70-130	19-DEC-19
Benzene			77.3		%		70-130	19-DEC-19
Bromobenzene			79.0		%		70-130	19-DEC-19
Bromochloromethane			83.8		%		70-130	19-DEC-19
Bromodichloromethane			80.8		%		70-130	19-DEC-19
Bromoform			86.9		%		70-130	19-DEC-19
Bromomethane			79.0		%		60-140	19-DEC-19
n-Butylbenzene			71.2		%		70-130	19-DEC-19
sec-Butylbenzene			76.8		%		70-130	19-DEC-19
tert-Butylbenzene			73.1		%		70-130	19-DEC-19
Carbon disulfide			70.0		%		70-130	19-DEC-19
Carbon Tetrachloride			71.3		%		70-130	19-DEC-19

Quality Control Report

Workorder: L2392592

Report Date: 23-DEC-19

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Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
VOC+F1-HSMS-WP								
	Water							
Batch	R4948859							
WG3240287-2	LCS							
Chlorobenzene			80.1		%		70-130	19-DEC-19
Chloroethane			75.2		%		60-140	19-DEC-19
Chloroform			79.9		%		70-130	19-DEC-19
Chloromethane			102.6		%		60-140	19-DEC-19
2-Chlorotoluene			83.9		%		70-130	19-DEC-19
4-Chlorotoluene			79.0		%		70-130	19-DEC-19
Dibromochloromethane			83.9		%		70-130	19-DEC-19
1,2-Dibromo-3-chloropropane			86.1		%		70-130	19-DEC-19
1,2-Dibromoethane			84.9		%		70-130	19-DEC-19
Dibromomethane			86.9		%		70-130	19-DEC-19
1,2-Dichlorobenzene			77.2		%		70-130	19-DEC-19
1,3-Dichlorobenzene			72.2		%		70-130	19-DEC-19
1,4-Dichlorobenzene			77.5		%		70-130	19-DEC-19
Dichlorodifluoromethane			89.2		%		60-140	19-DEC-19
1,1-dichloroethane			77.5		%		70-130	19-DEC-19
1,2-Dichloroethane			85.8		%		70-130	19-DEC-19
1,1-dichloroethene			71.7		%		70-130	19-DEC-19
cis-1,2-Dichloroethene			79.6		%		70-130	19-DEC-19
trans-1,2-Dichloroethene			72.5		%		70-130	19-DEC-19
Dichloromethane			83.0		%		70-130	19-DEC-19
1,2-Dichloropropane			80.0		%		70-130	19-DEC-19
1,3-Dichloropropane			84.9		%		70-130	19-DEC-19
2,2-Dichloropropane			82.4		%		70-130	19-DEC-19
1,1-Dichloropropene			71.5		%		70-130	19-DEC-19
cis-1,3-Dichloropropene			75.7		%		70-130	19-DEC-19
trans-1,3-Dichloropropene			76.4		%		70-130	19-DEC-19
Ethylbenzene			72.9		%		70-130	19-DEC-19
Hexachlorobutadiene			68.7	MES	%		70-130	19-DEC-19
Hexane			81.9		%		70-130	19-DEC-19
2-Hexanone (Methyl butyl ketone)			89.8		%		70-130	19-DEC-19
Isopropylbenzene			74.3		%		70-130	19-DEC-19
4-Isopropyltoluene			72.6		%		70-130	19-DEC-19
MEK			87.5		%		70-130	19-DEC-19
MIBK			92.3		%		70-130	19-DEC-19

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Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
VOC+F1-HSMS-WP								
	Water							
Batch	R4948859							
WG3240287-2	LCS							
MTBE			71.0		%		70-130	19-DEC-19
Styrene			81.7		%		70-130	19-DEC-19
1,1,1,2-Tetrachloroethane			80.3		%		70-130	19-DEC-19
1,1,2,2-Tetrachloroethane			91.7		%		70-130	19-DEC-19
Tetrachloroethene			74.3		%		70-130	19-DEC-19
Toluene			80.8		%		70-130	19-DEC-19
1,2,3-Trichlorobenzene			73.1		%		70-130	19-DEC-19
1,2,4-Trichlorobenzene			71.4		%		70-130	19-DEC-19
1,1,1-Trichloroethane			73.5		%		70-130	19-DEC-19
1,1,2-Trichloroethane			86.7		%		70-130	19-DEC-19
Trichloroethene			74.0		%		70-130	19-DEC-19
Trichlorofluoromethane			76.5		%		60-140	19-DEC-19
1,2,3-Trichloropropane			92.6		%		70-130	19-DEC-19
1,2,4-Trimethylbenzene			76.3		%		70-130	19-DEC-19
1,3,5-Trimethylbenzene			75.9		%		70-130	19-DEC-19
Vinyl Chloride			88.7		%		60-140	19-DEC-19
M+P-Xylenes			79.1		%		70-130	19-DEC-19
o-Xylene			79.7		%		70-130	19-DEC-19
WG3240287-3	LCS							
F1			99.3		%		70-130	19-DEC-19
WG3240287-1	MB							
Acetone			<0.050		mg/L		0.05	18-DEC-19
Benzene			<0.00050		mg/L		0.0005	18-DEC-19
Bromobenzene			<0.0010		mg/L		0.001	18-DEC-19
Bromochloromethane			<0.0010		mg/L		0.001	18-DEC-19
Bromodichloromethane			<0.00050		mg/L		0.0005	18-DEC-19
Bromoform			<0.0010		mg/L		0.001	18-DEC-19
Bromomethane			<0.0010		mg/L		0.001	18-DEC-19
n-Butylbenzene			<0.0010		mg/L		0.001	18-DEC-19
sec-Butylbenzene			<0.0010		mg/L		0.001	18-DEC-19
tert-Butylbenzene			<0.0010		mg/L		0.001	18-DEC-19
Carbon disulfide			<0.0050		mg/L		0.005	18-DEC-19
Carbon Tetrachloride			<0.00050		mg/L		0.0005	18-DEC-19
Chlorobenzene			<0.0010		mg/L		0.001	18-DEC-19
Chloroethane			<0.0010		mg/L		0.001	18-DEC-19

Quality Control Report

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Report Date: 23-DEC-19

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Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
VOC+F1-HSMS-WP								
	Water							
Batch	R4948859							
WG3240287-1	MB							
Chloroform			<0.00050		mg/L		0.0005	18-DEC-19
Chloromethane			<0.0050		mg/L		0.005	18-DEC-19
2-Chlorotoluene			<0.020		mg/L		0.02	18-DEC-19
4-Chlorotoluene			<0.0010		mg/L		0.001	18-DEC-19
Dibromochloromethane			<0.00050		mg/L		0.0005	18-DEC-19
1,2-Dibromo-3-chloropropane			<0.0010		mg/L		0.001	18-DEC-19
1,2-Dibromoethane			<0.0010		mg/L		0.001	18-DEC-19
Dibromomethane			<0.0010		mg/L		0.001	18-DEC-19
1,2-Dichlorobenzene			<0.00050		mg/L		0.0005	18-DEC-19
1,3-Dichlorobenzene			<0.0010		mg/L		0.001	18-DEC-19
1,4-Dichlorobenzene			<0.0010		mg/L		0.001	18-DEC-19
Dichlorodifluoromethane			<0.0010		mg/L		0.001	18-DEC-19
1,1-dichloroethane			<0.00050		mg/L		0.0005	18-DEC-19
1,2-Dichloroethane			<0.00050		mg/L		0.0005	18-DEC-19
1,1-dichloroethene			<0.00050		mg/L		0.0005	18-DEC-19
cis-1,2-Dichloroethene			<0.0010		mg/L		0.001	18-DEC-19
trans-1,2-Dichloroethene			<0.0010		mg/L		0.001	18-DEC-19
Dichloromethane			<0.0050		mg/L		0.005	18-DEC-19
1,2-Dichloropropane			<0.0010		mg/L		0.001	18-DEC-19
1,3-Dichloropropane			<0.0010		mg/L		0.001	18-DEC-19
2,2-Dichloropropane			<0.0010		mg/L		0.001	18-DEC-19
1,1-Dichloropropene			<0.0010		mg/L		0.001	18-DEC-19
cis-1,3-Dichloropropene			<0.0010		mg/L		0.001	18-DEC-19
trans-1,3-Dichloropropene			<0.0010		mg/L		0.001	18-DEC-19
Ethylbenzene			<0.00050		mg/L		0.0005	18-DEC-19
F1			<0.10		mg/L		0.1	18-DEC-19
Hexachlorobutadiene			<0.0010		mg/L		0.001	18-DEC-19
Hexane			<0.0010		mg/L		0.001	18-DEC-19
2-Hexanone (Methyl butyl ketone)			<0.020		mg/L		0.02	18-DEC-19
Isopropylbenzene			<0.0010		mg/L		0.001	18-DEC-19
4-Isopropyltoluene			<0.0010		mg/L		0.001	18-DEC-19
MEK			<0.020		mg/L		0.02	18-DEC-19
MIBK			<0.020		mg/L		0.02	18-DEC-19
MTBE			<0.00050		mg/L		0.0005	18-DEC-19



Quality Control Report

Workorder: L2392592

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Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
VOC+F1-HSMS-WP		Water						
Batch	R4948859							
WG3240287-1	MB							
Styrene			<0.0010		mg/L		0.001	18-DEC-19
1,1,1,2-Tetrachloroethane			<0.00050		mg/L		0.0005	18-DEC-19
1,1,2,2-Tetrachloroethane			<0.00050		mg/L		0.0005	18-DEC-19
Tetrachloroethene			<0.00050		mg/L		0.0005	18-DEC-19
Toluene			<0.00050		mg/L		0.0005	18-DEC-19
1,2,3-Trichlorobenzene			<0.0010		mg/L		0.001	18-DEC-19
1,2,4-Trichlorobenzene			<0.0010		mg/L		0.001	18-DEC-19
1,1,1-Trichloroethane			<0.00050		mg/L		0.0005	18-DEC-19
1,1,2-Trichloroethane			<0.00050		mg/L		0.0005	18-DEC-19
Trichloroethene			<0.00050		mg/L		0.0005	18-DEC-19
Trichlorofluoromethane			<0.0010		mg/L		0.001	18-DEC-19
1,2,3-Trichloropropane			<0.0010		mg/L		0.001	18-DEC-19
1,2,4-Trimethylbenzene			<0.0010		mg/L		0.001	18-DEC-19
1,3,5-Trimethylbenzene			<0.0010		mg/L		0.001	18-DEC-19
Vinyl Chloride			<0.00050		mg/L		0.0005	18-DEC-19
M+P-Xylenes			<0.00040		mg/L		0.0004	18-DEC-19
o-Xylene			<0.00050		mg/L		0.0005	18-DEC-19
Surrogate: 4-Bromofluorobenzene (SS)			96.1		%		70-130	18-DEC-19
Surrogate: 1,4-Difluorobenzene (SS)			98.7		%		70-130	18-DEC-19
Surrogate: 3,4-Dichlorotoluene (SS)			94.1		%		70-130	18-DEC-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
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.

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.

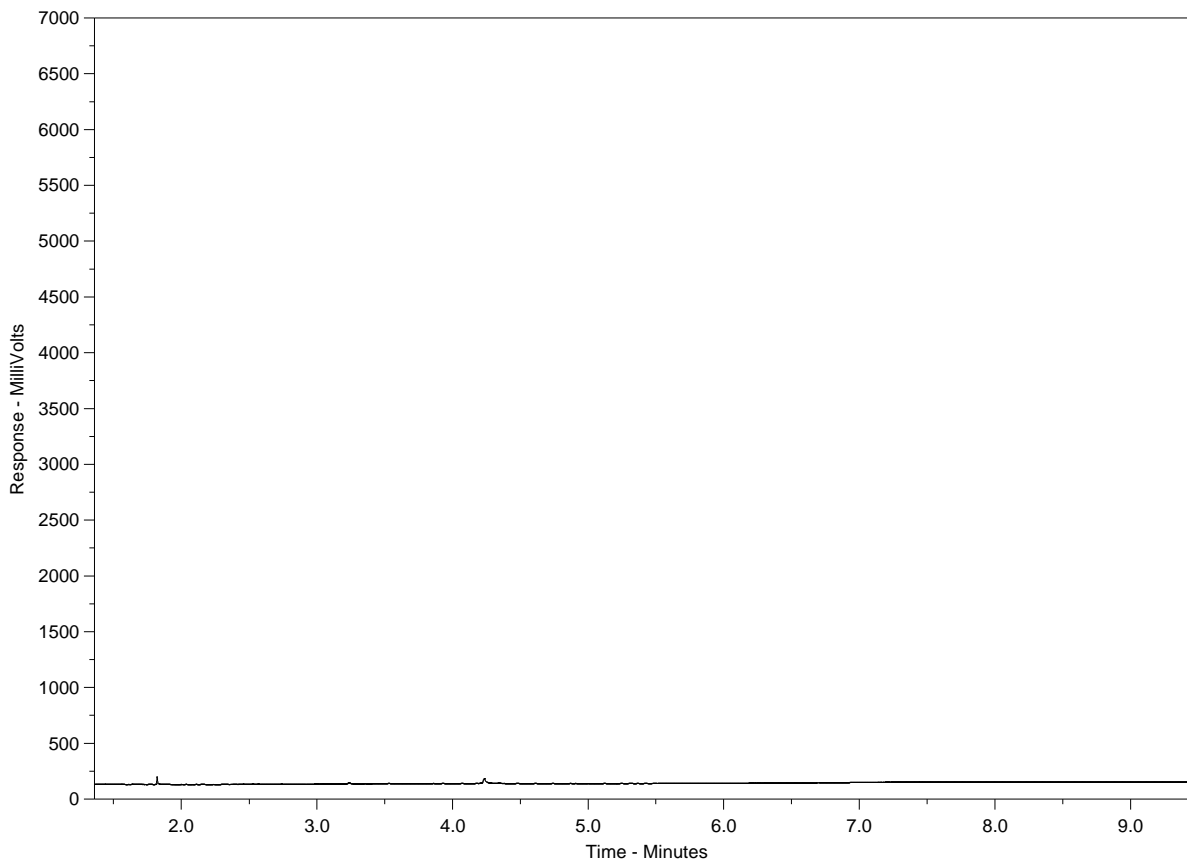
The ALS Quality Control Report is provided to ALS clients upon request. ALS includes comprehensive QC checks with every analysis to ensure our high standards of quality are met. Each QC result has a known or expected target value, which is compared against pre-determined data quality objectives to provide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

CCME F2-F4 HYDROCARBON DISTRIBUTION REPORT



ALS Sample ID: L2392592-1
 Client Sample ID: GWQ25 - 16



← 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.

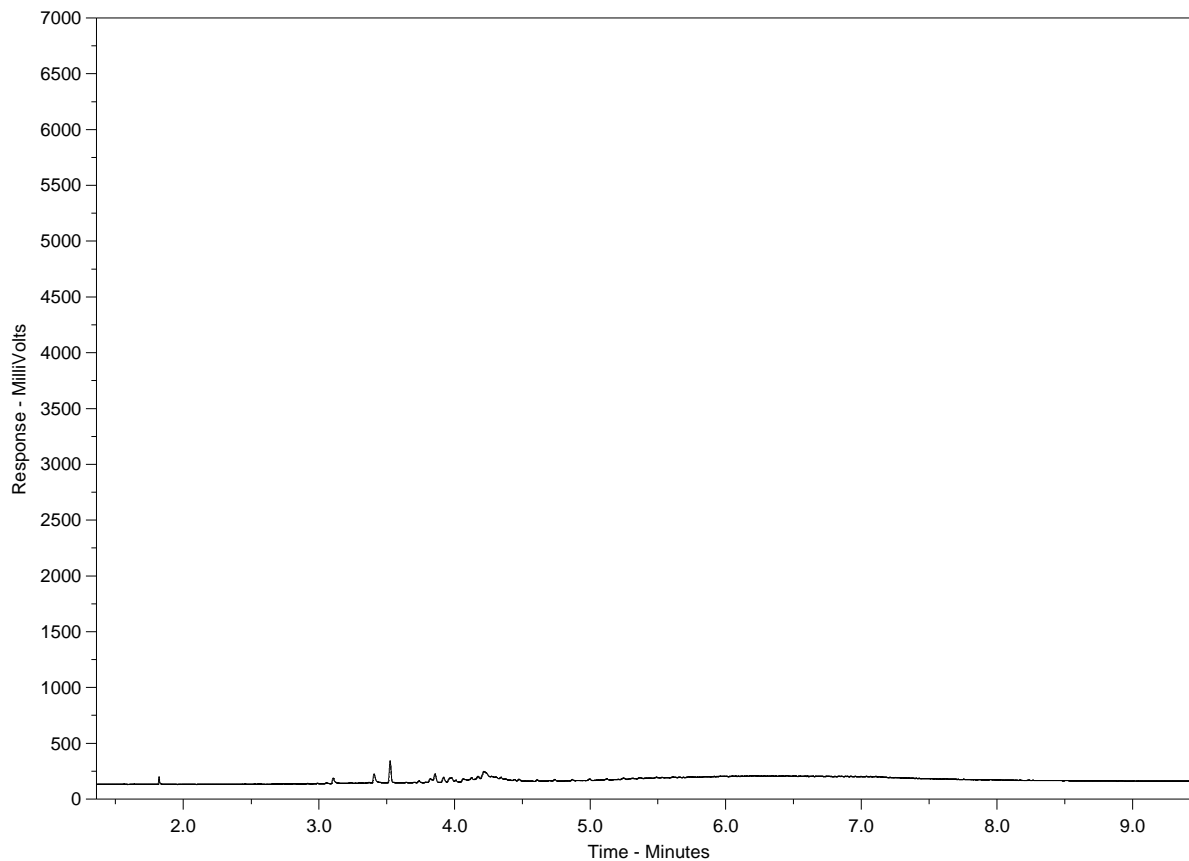
Peak heights in this report are a function of the sample concentration, the sample amount extracted, the sample dilution factor, and the scale at left.

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: L2392592-2
 Client Sample ID: GWQ25 - 15



← 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.



Chain of Custody (COC) / Analytical Request Form

Canada Toll Free: 1 800 668 9878

www.alsglobal.com



COC Number: 15 -

Page of

Report To Contact and company name below will appear on the final report		Report Format /		E&P TATs with your AM - surcharges will apply	
Company:	City of Winnipeg	Select Report Format:	<input checked="" type="checkbox"/> PDF <input type="checkbox"/> EXCEL <input type="checkbox"/> EDD (DIGITAL)	Regular [R] <input type="checkbox"/> Standard TAT if received by 3 pm - business days - no surcharges apply	
Contact:	Chris Kozak	Quality Control (QC) Report with Report	<input checked="" type="checkbox"/> YES <input type="checkbox"/> NO	PRIORITY (Business Days)	4 day [P4] <input type="checkbox"/>
Phone:	204-986-2384	<input type="checkbox"/> Compare Results to Criteria on Report - provide details below if box checked	<input type="checkbox"/>		3 day [P3] <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"/>	1 Business day [E1] <input type="checkbox"/>
Street:	1120 Waverly Street	Email 1 or Fax	ckozak@winnipeg.ca	Date and Time Required for all E&P TATs:	
City/Province:	Winnipeg, Manitoba	Email 2		For tests that can not be performed according to the service level selected, you will be contacted	
Postal Code:	R3T 0P4	Email 3		Analysis Request	

Invoice To	Same as Report To <input type="checkbox"/> YES <input type="checkbox"/> NO	Invoice Distribution		Indicate Filtered (F), Preserved (P) or Filtered and Preserved (F/P) below													
	Copy of Invoice with Report <input type="checkbox"/> YES <input type="checkbox"/> NO	Select Invoice Distribution:	<input type="checkbox"/> EMAIL <input checked="" type="checkbox"/> MAIL <input type="checkbox"/> FAX	CN-T-L-CFA-VA	PEST DIAZINON-WT	HERBSCR-LCMS-WT	TC-FC-EC-QT97-WP	CL-IC-N-WP, S04-IC-N-WP, ALK-SPEC-WP	NH3-COL-WP	C-TDC,DIC,DOC-HTC-WP	MET-D-CCMS-WP (DISSOLVED)	H8-T-CVAA-WP (TOTAL)	CR-CR6-IC-WT	PHENOLS-4AAP-WT	VOC-F1-F4-WP	PAH-PANH-WP	Number of Containers
Company:		Email 1 or Fax															
Contact:		Email 2															
Project Information		Oil and Gas Required Fields (client use)															

ALS Account # / Quote #:	W10051/Q67317	AFE/Cost Center:	PO#
Job #:	Section B - BRRMF Groundwater FULL	Major/Minor Code:	Routing Code:
PO / AFE:		Requisitioner:	
LSD:		Location:	

ALS Lab Work Order # (lab use only)	ALS Contact:	Sampler:	ALS Sample # (lab use only)	Sample Identification and/or Coordinates (This description will appear on the report)	Date (dd-mmm-yy)	Time (hh:mm)	Sample Type	CN-T-L-CFA-VA	PEST DIAZINON-WT	HERBSCR-LCMS-WT	TC-FC-EC-QT97-WP	CL-IC-N-WP, S04-IC-N-WP, ALK-SPEC-WP	NH3-COL-WP	C-TDC,DIC,DOC-HTC-WP	MET-D-CCMS-WP (DISSOLVED)	H8-T-CVAA-WP (TOTAL)	CR-CR6-IC-WT	PHENOLS-4AAP-WT	VOC-F1-F4-WP	PAH-PANH-WP	Number of Containers
				GWQ 25 - 16	5-12-19	11:30	WATER	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	
				GWQ 25 - 15	" "	13:15	WATER	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	
				GWQ 25 - Trip Blank	" "	8:00	WATER	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	
							WATER														
							WATER														
							WATER														
							WATER														
							WATER														
							WATER														
							WATER														

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 type="checkbox"/> NO		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 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"/>	
		INITIAL COOLER TEMPERATURES °C	FINAL COOLER TEMPERATURES °C
		7.9	

SHIPMENT RELEASE (client use)			INITIAL SHIPMENT RECEPTION (lab use only)			FINAL SHIPMENT RECEPTION (lab use only)		
Released by:	Date:	Time:	Received by:	Date:	Time:	Received by:	Date:	Time:
			<i>AK</i>	Dec 5	10:00	<i>AK</i>	DEC 05 2019	1:00



City of Winnipeg - Solid Waste Services Div
(1120 Waverley)
ATTN: CHRIS KOZAK
Solid Waste Services Division
1120 Waverley Street
Winnipeg MB R3T 0P4

Date Received: 09-MAY-19
Report Date: 22-MAY-19 15:39 (MT)
Version: FINAL

Client Phone: 204-986-2384

Certificate of Analysis

Lab Work Order #: L2270472
Project P.O. #: NOT SUBMITTED
Job Reference: SECTION B - BRRMF GROUNDWATER
C of C Numbers:
Legal Site Desc:

Hua Wo
Chemistry Laboratory 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
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ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2270472-1 GWQ25-W4							
Sampled By: CLIENT on 09-MAY-19 @ 10:05							
Matrix: WATER							
Miscellaneous Parameters							
Chromium, Hexavalent	<0.50		0.50	ug/L		10-MAY-19	R4631866
Mercury (Hg)-Total	<0.0050		0.0050	ug/L	13-MAY-19	14-MAY-19	R4635168
Phenols (4AAP)	11.1		1.0	ug/L		10-MAY-19	R4630533
Cyanide, Total	<1.0		1.0	ug/L		16-MAY-19	R4637164
Dissolved Metals in Water by CRC ICPMS							
Dissolved Metals Filtration Location	FIELD					13-MAY-19	R4632516
Aluminum (Al)-Dissolved	1.6		1.0	ug/L	13-MAY-19	13-MAY-19	R4633791
Antimony (Sb)-Dissolved	<0.10		0.10	ug/L	13-MAY-19	13-MAY-19	R4633791
Arsenic (As)-Dissolved	0.72		0.10	ug/L	13-MAY-19	13-MAY-19	R4633791
Barium (Ba)-Dissolved	10.5		0.10	ug/L	13-MAY-19	13-MAY-19	R4633791
Beryllium (Be)-Dissolved	<0.10		0.10	ug/L	13-MAY-19	13-MAY-19	R4633791
Bismuth (Bi)-Dissolved	<0.050		0.050	ug/L	13-MAY-19	13-MAY-19	R4633791
Boron (B)-Dissolved	660		100	ug/L	13-MAY-19	14-MAY-19	R4635018
Cadmium (Cd)-Dissolved	<0.0050		0.0050	ug/L	13-MAY-19	13-MAY-19	R4633791
Calcium (Ca)-Dissolved	187000		50	ug/L	13-MAY-19	13-MAY-19	R4633791
Cesium (Cs)-Dissolved	0.023		0.010	ug/L	13-MAY-19	13-MAY-19	R4633791
Chromium (Cr)-Dissolved	<0.10		0.10	ug/L	13-MAY-19	13-MAY-19	R4633791
Cobalt (Co)-Dissolved	<0.10		0.10	ug/L	13-MAY-19	13-MAY-19	R4633791
Copper (Cu)-Dissolved	<0.20		0.20	ug/L	13-MAY-19	13-MAY-19	R4633791
Iron (Fe)-Dissolved	2930		10	ug/L	13-MAY-19	13-MAY-19	R4633791
Lead (Pb)-Dissolved	0.063		0.050	ug/L	13-MAY-19	13-MAY-19	R4633791
Lithium (Li)-Dissolved	228		1.0	ug/L	13-MAY-19	13-MAY-19	R4633791
Magnesium (Mg)-Dissolved	102000		5.0	ug/L	13-MAY-19	13-MAY-19	R4633791
Manganese (Mn)-Dissolved	34.2		0.10	ug/L	13-MAY-19	13-MAY-19	R4633791
Molybdenum (Mo)-Dissolved	4.64		0.050	ug/L	13-MAY-19	13-MAY-19	R4633791
Nickel (Ni)-Dissolved	<0.50		0.50	ug/L	13-MAY-19	13-MAY-19	R4633791
Phosphorus (P)-Dissolved	<30		30	ug/L	13-MAY-19	13-MAY-19	R4633791
Potassium (K)-Dissolved	30200		50	ug/L	13-MAY-19	13-MAY-19	R4633791
Rubidium (Rb)-Dissolved	13.4		0.20	ug/L	13-MAY-19	13-MAY-19	R4633791
Selenium (Se)-Dissolved	<0.050		0.050	ug/L	13-MAY-19	13-MAY-19	R4633791
Silicon (Si)-Dissolved	2190		50	ug/L	13-MAY-19	13-MAY-19	R4633791
Silver (Ag)-Dissolved	0.075		0.010	ug/L	13-MAY-19	13-MAY-19	R4633791
Sodium (Na)-Dissolved	1250000		5000	ug/L	13-MAY-19	13-MAY-19	R4633791
Strontium (Sr)-Dissolved	2860		10	ug/L	13-MAY-19	13-MAY-19	R4633791
Sulfur (S)-Dissolved	190000		500	ug/L	13-MAY-19	13-MAY-19	R4633791
Tellurium (Te)-Dissolved	<0.20		0.20	ug/L	13-MAY-19	13-MAY-19	R4633791
Thallium (Tl)-Dissolved	<0.010		0.010	ug/L	13-MAY-19	13-MAY-19	R4633791
Thorium (Th)-Dissolved	<0.10		0.10	ug/L	13-MAY-19	13-MAY-19	R4633791
Tin (Sn)-Dissolved	<0.10		0.10	ug/L	13-MAY-19	13-MAY-19	R4633791
Titanium (Ti)-Dissolved	<0.30		0.30	ug/L	13-MAY-19	13-MAY-19	R4633791
Tungsten (W)-Dissolved	2.38		0.10	ug/L	13-MAY-19	13-MAY-19	R4633791
Uranium (U)-Dissolved	<0.010		0.010	ug/L	13-MAY-19	13-MAY-19	R4633791
Vanadium (V)-Dissolved	<0.50		0.50	ug/L	13-MAY-19	13-MAY-19	R4633791
Zinc (Zn)-Dissolved	1.8		1.0	ug/L	13-MAY-19	13-MAY-19	R4633791
Zirconium (Zr)-Dissolved	<0.060		0.060	ug/L	13-MAY-19	13-MAY-19	R4633791
Polyaromatic Hydrocarbons (PAHs)							
1-Methyl Naphthalene	<0.020		0.020	ug/L	14-MAY-19	16-MAY-19	R4639787
2-Methyl Naphthalene	<0.020		0.020	ug/L	14-MAY-19	16-MAY-19	R4639787
Acenaphthene	<0.020		0.020	ug/L	14-MAY-19	16-MAY-19	R4639787
Acenaphthylene	<0.020		0.020	ug/L	14-MAY-19	16-MAY-19	R4639787
Anthracene	<0.010		0.010	ug/L	14-MAY-19	16-MAY-19	R4639787

* 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
L2270472-1 GWQ25-W4							
Sampled By: CLIENT on 09-MAY-19 @ 10:05							
Matrix: WATER							
Polyaromatic Hydrocarbons (PAHs)							
Acridine	<0.020		0.020	ug/L	14-MAY-19	16-MAY-19	R4639787
Benzo(a)anthracene	<0.010		0.010	ug/L	14-MAY-19	16-MAY-19	R4639787
Benzo(a)pyrene	<0.0050		0.0050	ug/L	14-MAY-19	16-MAY-19	R4639787
Benzo(b&j)fluoranthene	<0.010		0.010	ug/L	14-MAY-19	16-MAY-19	R4639787
Benzo(g,h,i)perylene	<0.020		0.020	ug/L	14-MAY-19	16-MAY-19	R4639787
Benzo(k)fluoranthene	<0.010		0.010	ug/L	14-MAY-19	16-MAY-19	R4639787
Chrysene	<0.020		0.020	ug/L	14-MAY-19	16-MAY-19	R4639787
Dibenzo(a,h)anthracene	<0.0050		0.0050	ug/L	14-MAY-19	16-MAY-19	R4639787
Fluoranthene	<0.020		0.020	ug/L	14-MAY-19	16-MAY-19	R4639787
Fluorene	<0.020		0.020	ug/L	14-MAY-19	16-MAY-19	R4639787
Indeno(1,2,3-cd)pyrene	<0.010		0.010	ug/L	14-MAY-19	16-MAY-19	R4639787
Naphthalene	0.068		0.050	ug/L	14-MAY-19	16-MAY-19	R4639787
Phenanthrene	<0.050		0.050	ug/L	14-MAY-19	16-MAY-19	R4639787
Pyrene	<0.010		0.010	ug/L	14-MAY-19	16-MAY-19	R4639787
Quinoline	<0.020		0.020	ug/L	14-MAY-19	16-MAY-19	R4639787
B(a)P Total Potency Equivalent	<0.030		0.030	ug/L	14-MAY-19	16-MAY-19	R4639787
Surrogate: Acenaphthene d10	95.5		60-130	%	14-MAY-19	16-MAY-19	R4639787
Surrogate: Acridine d9	67.0		60-130	%	14-MAY-19	16-MAY-19	R4639787
Surrogate: Chrysene d12	73.1		60-130	%	14-MAY-19	16-MAY-19	R4639787
Surrogate: Naphthalene d8	90.4		50-130	%	14-MAY-19	16-MAY-19	R4639787
Surrogate: Phenanthrene d10	95.3		60-130	%	14-MAY-19	16-MAY-19	R4639787
Herbicides in Water							
Clopyralid	<0.10		0.10	ug/L	15-MAY-19	16-MAY-19	R4636170
Dicamba	<0.10		0.10	ug/L	15-MAY-19	16-MAY-19	R4636170
Mecoprop	<0.10		0.10	ug/L	15-MAY-19	16-MAY-19	R4636170
MCPA	<0.10		0.10	ug/L	15-MAY-19	16-MAY-19	R4636170
2,4-D	<0.10		0.10	ug/L	15-MAY-19	16-MAY-19	R4636170
Bromoxynil	<0.10		0.10	ug/L	15-MAY-19	16-MAY-19	R4636170
Triclopyr	<0.10		0.10	ug/L	15-MAY-19	16-MAY-19	R4636170
2,4,5-T	<0.10		0.10	ug/L	15-MAY-19	16-MAY-19	R4636170
2,4,5-TP	<0.10		0.10	ug/L	15-MAY-19	16-MAY-19	R4636170
Picloram	<0.10		0.10	ug/L	15-MAY-19	16-MAY-19	R4636170
2,4-DB	<0.10		0.10	ug/L	15-MAY-19	16-MAY-19	R4636170
2,4-DP	<0.10		0.10	ug/L	15-MAY-19	16-MAY-19	R4636170
Dinoseb	<0.10		0.10	ug/L	15-MAY-19	16-MAY-19	R4636170
MCPB	<0.10		0.10	ug/L	15-MAY-19	16-MAY-19	R4636170
Surrogate: 2,4-Dichlorophenylacetic Acid	105.0		50-130	%	15-MAY-19	16-MAY-19	R4636170
Miscellaneous Pesticides							
Diazinon	<0.10		0.10	ug/L	10-MAY-19	14-MAY-19	R4634572
Surrogate: 2-Fluorobiphenyl	85.2		40-130	%	10-MAY-19	14-MAY-19	R4634572
Surrogate: d14-Terphenyl	78.2		40-130	%	10-MAY-19	14-MAY-19	R4634572
Total, Fecal Coliforms, E Coli by QT97							
Fecal Coliform by MPN QT97							
Fecal Coliforms	<1		1	MPN/100mL		09-MAY-19	R4630656
Total Coliform and E.coli by MPN QT97							
Total Coliforms	<1		1	MPN/100mL		09-MAY-19	R4630661
Escherichia Coli	<1		1	MPN/100mL		09-MAY-19	R4630661
VOC plus F1 to F4							
CCME PHC F2-F4 in Water							
F2 (C10-C16)	<100		100	ug/L	10-MAY-19	11-MAY-19	R4631199
F3 (C16-C34)	<250		250	ug/L	10-MAY-19	11-MAY-19	R4631199
F4 (C34-C50)	<250		250	ug/L	10-MAY-19	11-MAY-19	R4631199

* 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
L2270472-1 GWQ25-W4							
Sampled By: CLIENT on 09-MAY-19 @ 10:05							
Matrix: WATER							
CCME PHC F2-F4 in Water							
Surrogate: 2-Bromobenzotrifluoride	81.4		60-140	%	10-MAY-19	11-MAY-19	R4631199
CCME Total Hydrocarbons							
F1-BTEX	<100		100	ug/L		22-MAY-19	
F2-Naphth	<100		100	ug/L		22-MAY-19	
F3-PAH	<250		250	ug/L		22-MAY-19	
Total Hydrocarbons (C6-C50)	<380		380	ug/L		22-MAY-19	
Sum of Xylene Isomer Concentrations							
Xylenes (Total)	<0.50		0.50	ug/L		15-MAY-19	
Total Trihalomethanes (THMs)							
Total THMs	<1.0		1.0	ug/L		15-MAY-19	
VOC plus F1 by GCMS							
Acetone	<20		20	ug/L		11-MAY-19	R4632815
Benzene	<0.50		0.50	ug/L		11-MAY-19	R4632815
Bromobenzene	<0.50		0.50	ug/L		11-MAY-19	R4632815
Bromochloromethane	<0.50		0.50	ug/L		11-MAY-19	R4632815
Bromodichloromethane	<0.50		0.50	ug/L		11-MAY-19	R4632815
Bromoform	<0.50		0.50	ug/L		11-MAY-19	R4632815
Bromomethane	<1.0		1.0	ug/L		11-MAY-19	R4632815
n-Butylbenzene	<0.50		0.50	ug/L		11-MAY-19	R4632815
sec-Butylbenzene	<0.50		0.50	ug/L		11-MAY-19	R4632815
tert-Butylbenzene	<0.50		0.50	ug/L		11-MAY-19	R4632815
Carbon disulfide	<0.50		0.50	ug/L		11-MAY-19	R4632815
Carbon Tetrachloride	<0.50		0.50	ug/L		11-MAY-19	R4632815
Chlorobenzene	<0.50		0.50	ug/L		11-MAY-19	R4632815
Chloroethane	<1.0		1.0	ug/L		11-MAY-19	R4632815
Chloroform	<0.50		0.50	ug/L		11-MAY-19	R4632815
Chloromethane	<1.0		1.0	ug/L		11-MAY-19	R4632815
2-Chlorotoluene	<20		20	ug/L		11-MAY-19	R4632815
4-Chlorotoluene	<0.50		0.50	ug/L		11-MAY-19	R4632815
Dibromochloromethane	<0.50		0.50	ug/L		11-MAY-19	R4632815
1,2-Dibromo-3-chloropropane	<0.50		0.50	ug/L		11-MAY-19	R4632815
1,2-Dibromoethane	<0.50		0.50	ug/L		11-MAY-19	R4632815
Dibromomethane	<0.50		0.50	ug/L		11-MAY-19	R4632815
1,2-Dichlorobenzene	<0.50		0.50	ug/L		11-MAY-19	R4632815
1,3-Dichlorobenzene	<0.50		0.50	ug/L		11-MAY-19	R4632815
1,4-Dichlorobenzene	<0.50		0.50	ug/L		11-MAY-19	R4632815
Dichlorodifluoromethane	<1.0		1.0	ug/L		11-MAY-19	R4632815
1,1-dichloroethane	<0.50		0.50	ug/L		11-MAY-19	R4632815
1,2-Dichloroethane	<0.50		0.50	ug/L		11-MAY-19	R4632815
1,1-dichloroethene	<0.50		0.50	ug/L		11-MAY-19	R4632815
cis-1,2-Dichloroethene	<0.50		0.50	ug/L		11-MAY-19	R4632815
trans-1,2-Dichloroethene	<0.50		0.50	ug/L		11-MAY-19	R4632815
Dichloromethane	<0.50		0.50	ug/L		11-MAY-19	R4632815
1,2-Dichloropropane	<0.50		0.50	ug/L		11-MAY-19	R4632815
1,3-Dichloropropane	<0.50		0.50	ug/L		11-MAY-19	R4632815
2,2-Dichloropropane	<0.50		0.50	ug/L		11-MAY-19	R4632815
1,1-Dichloropropene	<0.50		0.50	ug/L		11-MAY-19	R4632815
cis-1,3-Dichloropropene	<0.50		0.50	ug/L		11-MAY-19	R4632815
trans-1,3-Dichloropropene	<0.50		0.50	ug/L		11-MAY-19	R4632815
Ethylbenzene	<0.50		0.50	ug/L		11-MAY-19	R4632815
F1	<100		100	ug/L		11-MAY-19	R4632815
Hexachlorobutadiene	<0.50		0.50	ug/L		11-MAY-19	R4632815

* 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
L2270472-1 GWQ25-W4							
Sampled By: CLIENT on 09-MAY-19 @ 10:05							
Matrix: WATER							
VOC plus F1 by GCMS							
Hexane	<0.50		0.50	ug/L		11-MAY-19	R4632815
2-Hexanone (Methyl butyl ketone)	<20		20	ug/L		11-MAY-19	R4632815
Isopropylbenzene	<0.50		0.50	ug/L		11-MAY-19	R4632815
4-Isopropyltoluene	<1.0		1.0	ug/L		11-MAY-19	R4632815
MEK	<20		20	ug/L		11-MAY-19	R4632815
MIBK	<20		20	ug/L		11-MAY-19	R4632815
MTBE	<0.50		0.50	ug/L		11-MAY-19	R4632815
Styrene	<0.50		0.50	ug/L		11-MAY-19	R4632815
1,1,1,2-Tetrachloroethane	<0.50		0.50	ug/L		11-MAY-19	R4632815
1,1,2,2-Tetrachloroethane	<0.50		0.50	ug/L		11-MAY-19	R4632815
Tetrachloroethene	<0.50		0.50	ug/L		11-MAY-19	R4632815
Toluene	<0.50		0.50	ug/L		11-MAY-19	R4632815
1,2,3-Trichlorobenzene	<0.50		0.50	ug/L		11-MAY-19	R4632815
1,2,4-Trichlorobenzene	<0.50		0.50	ug/L		11-MAY-19	R4632815
1,1,1-Trichloroethane	<0.50		0.50	ug/L		11-MAY-19	R4632815
1,1,2-Trichloroethane	<0.50		0.50	ug/L		11-MAY-19	R4632815
Trichloroethene	<0.50		0.50	ug/L		11-MAY-19	R4632815
Trichlorofluoromethane	<1.0		1.0	ug/L		11-MAY-19	R4632815
1,2,3-Trichloropropane	<0.50		0.50	ug/L		11-MAY-19	R4632815
1,2,4-Trimethylbenzene	<0.50		0.50	ug/L		11-MAY-19	R4632815
1,3,5-Trimethylbenzene	<0.50		0.50	ug/L		11-MAY-19	R4632815
Vinyl Chloride	<0.50		0.50	ug/L		11-MAY-19	R4632815
M+P-Xylenes	<0.40		0.40	ug/L		11-MAY-19	R4632815
o-Xylene	<0.30		0.30	ug/L		11-MAY-19	R4632815
Surrogate: 4-Bromofluorobenzene (SS)	95.3		70-130	%		11-MAY-19	R4632815
Surrogate: 1,4-Difluorobenzene (SS)	97.8		70-130	%		11-MAY-19	R4632815
L2270472-2 GWQ25-W5							
Sampled By: CLIENT on 09-MAY-19 @ 11:30							
Matrix: WATER							
Miscellaneous Parameters							
Chromium, Hexavalent	<0.50		0.50	ug/L		10-MAY-19	R4631866
Mercury (Hg)-Total	<0.0050		0.0050	ug/L	13-MAY-19	14-MAY-19	R4635168
Phenols (4AAP)	9.3		1.0	ug/L		10-MAY-19	R4630533
Cyanide, Total	<1.0		1.0	ug/L		16-MAY-19	R4637164
Dissolved Metals in Water by CRC ICPMS							
Dissolved Metals Filtration Location	FIELD					13-MAY-19	R4632516
Aluminum (Al)-Dissolved	2.4		1.0	ug/L	13-MAY-19	13-MAY-19	R4633791
Antimony (Sb)-Dissolved	<0.10		0.10	ug/L	13-MAY-19	13-MAY-19	R4633791
Arsenic (As)-Dissolved	4.56		0.10	ug/L	13-MAY-19	13-MAY-19	R4633791
Barium (Ba)-Dissolved	13.5		0.10	ug/L	13-MAY-19	13-MAY-19	R4633791
Beryllium (Be)-Dissolved	<0.10		0.10	ug/L	13-MAY-19	13-MAY-19	R4633791
Bismuth (Bi)-Dissolved	<0.050		0.050	ug/L	13-MAY-19	13-MAY-19	R4633791
Boron (B)-Dissolved	970		100	ug/L	13-MAY-19	14-MAY-19	R4635018
Cadmium (Cd)-Dissolved	<0.0050		0.0050	ug/L	13-MAY-19	13-MAY-19	R4633791
Calcium (Ca)-Dissolved	317000		50	ug/L	13-MAY-19	13-MAY-19	R4633791
Cesium (Cs)-Dissolved	0.101		0.010	ug/L	13-MAY-19	13-MAY-19	R4633791
Chromium (Cr)-Dissolved	<0.10		0.10	ug/L	13-MAY-19	13-MAY-19	R4633791
Cobalt (Co)-Dissolved	0.34		0.10	ug/L	13-MAY-19	13-MAY-19	R4633791
Copper (Cu)-Dissolved	<0.20		0.20	ug/L	13-MAY-19	13-MAY-19	R4633791
Iron (Fe)-Dissolved	559		10	ug/L	13-MAY-19	13-MAY-19	R4633791
Lead (Pb)-Dissolved	<0.050		0.050	ug/L	13-MAY-19	13-MAY-19	R4633791

* 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
L2270472-2 GWQ25-W5							
Sampled By: CLIENT on 09-MAY-19 @ 11:30							
Matrix: WATER							
Dissolved Metals in Water by CRC ICPMS							
Lithium (Li)-Dissolved	310		100	ug/L	13-MAY-19	13-MAY-19	R4633791
Magnesium (Mg)-Dissolved	171000		5.0	ug/L	13-MAY-19	13-MAY-19	R4633791
Manganese (Mn)-Dissolved	22.4		0.10	ug/L	13-MAY-19	13-MAY-19	R4633791
Molybdenum (Mo)-Dissolved	2.01		0.050	ug/L	13-MAY-19	13-MAY-19	R4633791
Nickel (Ni)-Dissolved	1.08		0.50	ug/L	13-MAY-19	13-MAY-19	R4633791
Phosphorus (P)-Dissolved	<30		30	ug/L	13-MAY-19	13-MAY-19	R4633791
Potassium (K)-Dissolved	35800		50	ug/L	13-MAY-19	13-MAY-19	R4633791
Rubidium (Rb)-Dissolved	14.5		0.20	ug/L	13-MAY-19	13-MAY-19	R4633791
Selenium (Se)-Dissolved	0.055		0.050	ug/L	13-MAY-19	13-MAY-19	R4633791
Silicon (Si)-Dissolved	4670		50	ug/L	13-MAY-19	13-MAY-19	R4633791
Silver (Ag)-Dissolved	<0.010		0.010	ug/L	13-MAY-19	13-MAY-19	R4633791
Sodium (Na)-Dissolved	1330000		5000	ug/L	13-MAY-19	13-MAY-19	R4633791
Strontium (Sr)-Dissolved	3960		10	ug/L	13-MAY-19	13-MAY-19	R4633791
Sulfur (S)-Dissolved	284000		500	ug/L	13-MAY-19	13-MAY-19	R4633791
Tellurium (Te)-Dissolved	<0.20		0.20	ug/L	13-MAY-19	13-MAY-19	R4633791
Thallium (Tl)-Dissolved	<0.010		0.010	ug/L	13-MAY-19	13-MAY-19	R4633791
Thorium (Th)-Dissolved	<0.10		0.10	ug/L	13-MAY-19	13-MAY-19	R4633791
Tin (Sn)-Dissolved	<0.10		0.10	ug/L	13-MAY-19	13-MAY-19	R4633791
Titanium (Ti)-Dissolved	<0.30		0.30	ug/L	13-MAY-19	13-MAY-19	R4633791
Tungsten (W)-Dissolved	<0.10		0.10	ug/L	13-MAY-19	13-MAY-19	R4633791
Uranium (U)-Dissolved	0.472		0.010	ug/L	13-MAY-19	13-MAY-19	R4633791
Vanadium (V)-Dissolved	<0.50		0.50	ug/L	13-MAY-19	13-MAY-19	R4633791
Zinc (Zn)-Dissolved	3.1		1.0	ug/L	13-MAY-19	13-MAY-19	R4633791
Zirconium (Zr)-Dissolved	<0.060		0.060	ug/L	13-MAY-19	13-MAY-19	R4633791
Polyaromatic Hydrocarbons (PAHs)							
1-Methyl Naphthalene	<0.020		0.020	ug/L	14-MAY-19	16-MAY-19	R4639787
2-Methyl Naphthalene	<0.020		0.020	ug/L	14-MAY-19	16-MAY-19	R4639787
Acenaphthene	<0.020		0.020	ug/L	14-MAY-19	16-MAY-19	R4639787
Acenaphthylene	<0.020		0.020	ug/L	14-MAY-19	16-MAY-19	R4639787
Anthracene	<0.010		0.010	ug/L	14-MAY-19	16-MAY-19	R4639787
Acridine	<0.020		0.020	ug/L	14-MAY-19	16-MAY-19	R4639787
Benzo(a)anthracene	<0.010		0.010	ug/L	14-MAY-19	16-MAY-19	R4639787
Benzo(a)pyrene	<0.0050		0.0050	ug/L	14-MAY-19	16-MAY-19	R4639787
Benzo(b&j)fluoranthene	<0.010		0.010	ug/L	14-MAY-19	16-MAY-19	R4639787
Benzo(g,h,i)perylene	<0.020		0.020	ug/L	14-MAY-19	16-MAY-19	R4639787
Benzo(k)fluoranthene	<0.010		0.010	ug/L	14-MAY-19	16-MAY-19	R4639787
Chrysene	<0.020		0.020	ug/L	14-MAY-19	16-MAY-19	R4639787
Dibenzo(a,h)anthracene	<0.0050		0.0050	ug/L	14-MAY-19	16-MAY-19	R4639787
Fluoranthene	<0.020		0.020	ug/L	14-MAY-19	16-MAY-19	R4639787
Fluorene	<0.020		0.020	ug/L	14-MAY-19	16-MAY-19	R4639787
Indeno(1,2,3-cd)pyrene	<0.010		0.010	ug/L	14-MAY-19	16-MAY-19	R4639787
Naphthalene	<0.050		0.050	ug/L	14-MAY-19	16-MAY-19	R4639787
Phenanthrene	<0.050		0.050	ug/L	14-MAY-19	16-MAY-19	R4639787
Pyrene	<0.010		0.010	ug/L	14-MAY-19	16-MAY-19	R4639787
Quinoline	<0.020		0.020	ug/L	14-MAY-19	16-MAY-19	R4639787
B(a)P Total Potency Equivalent	<0.030		0.030	ug/L	14-MAY-19	16-MAY-19	R4639787
Surrogate: Acenaphthene d10	85.7		60-130	%	14-MAY-19	16-MAY-19	R4639787
Surrogate: Acridine d9	64.4		60-130	%	14-MAY-19	16-MAY-19	R4639787
Surrogate: Chrysene d12	75.3		60-130	%	14-MAY-19	16-MAY-19	R4639787
Surrogate: Naphthalene d8	82.2		50-130	%	14-MAY-19	16-MAY-19	R4639787
Surrogate: Phenanthrene d10	89.0		60-130	%	14-MAY-19	16-MAY-19	R4639787

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ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2270472-2 GWQ25-W5							
Sampled By: CLIENT on 09-MAY-19 @ 11:30							
Matrix: WATER							
Herbicides in Water							
Clopyralid	<0.10		0.10	ug/L	15-MAY-19	16-MAY-19	R4636170
Dicamba	<0.10		0.10	ug/L	15-MAY-19	16-MAY-19	R4636170
Mecoprop	<0.10		0.10	ug/L	15-MAY-19	16-MAY-19	R4636170
MCPA	<0.10		0.10	ug/L	15-MAY-19	16-MAY-19	R4636170
2,4-D	<0.10		0.10	ug/L	15-MAY-19	16-MAY-19	R4636170
Bromoxynil	<0.10		0.10	ug/L	15-MAY-19	16-MAY-19	R4636170
Triclopyr	<0.10		0.10	ug/L	15-MAY-19	16-MAY-19	R4636170
2,4,5-T	<0.10		0.10	ug/L	15-MAY-19	16-MAY-19	R4636170
2,4,5-TP	<0.10		0.10	ug/L	15-MAY-19	16-MAY-19	R4636170
Picloram	<0.10		0.10	ug/L	15-MAY-19	16-MAY-19	R4636170
2,4-DB	<0.10		0.10	ug/L	15-MAY-19	16-MAY-19	R4636170
2,4-DP	<0.10		0.10	ug/L	15-MAY-19	16-MAY-19	R4636170
Dinoseb	<0.10		0.10	ug/L	15-MAY-19	16-MAY-19	R4636170
MCPB	<0.10		0.10	ug/L	15-MAY-19	16-MAY-19	R4636170
Surrogate: 2,4-Dichlorophenylacetic Acid	129.0		50-130	%	15-MAY-19	16-MAY-19	R4636170
Miscellaneous Pesticides							
Diazinon	<0.10		0.10	ug/L	10-MAY-19	14-MAY-19	R4634572
Surrogate: 2-Fluorobiphenyl	85.9		40-130	%	10-MAY-19	14-MAY-19	R4634572
Surrogate: d14-Terphenyl	73.3		40-130	%	10-MAY-19	14-MAY-19	R4634572
Total, Fecal Coliforms, E Coli by QT97							
Fecal Coliform by MPN QT97							
Fecal Coliforms	<1		1	MPN/100mL		09-MAY-19	R4630656
Total Coliform and E.coli by MPN QT97							
Total Coliforms	<1		1	MPN/100mL		09-MAY-19	R4630661
Escherichia Coli	<1		1	MPN/100mL		09-MAY-19	R4630661
VOC plus F1 to F4							
CCME PHC F2-F4 in Water							
F2 (C10-C16)	<100		100	ug/L	10-MAY-19	11-MAY-19	R4631199
F3 (C16-C34)	<250		250	ug/L	10-MAY-19	11-MAY-19	R4631199
F4 (C34-C50)	<250		250	ug/L	10-MAY-19	11-MAY-19	R4631199
Surrogate: 2-Bromobenzotrifluoride	83.1		60-140	%	10-MAY-19	11-MAY-19	R4631199
CCME Total Hydrocarbons							
F1-BTEX	290		100	ug/L		22-MAY-19	
F2-Naphth	<100		100	ug/L		22-MAY-19	
F3-PAH	<250		250	ug/L		22-MAY-19	
Total Hydrocarbons (C6-C50)	<380		380	ug/L		22-MAY-19	
Sum of Xylene Isomer Concentrations							
Xylenes (Total)	<0.50		0.50	ug/L		15-MAY-19	
Total Trihalomethanes (THMs)							
Total THMs	<1.0		1.0	ug/L		15-MAY-19	
VOC plus F1 by GCMS							
Acetone	<20		20	ug/L		11-MAY-19	R4632815
Benzene	<0.50		0.50	ug/L		11-MAY-19	R4632815
Bromobenzene	<0.50		0.50	ug/L		11-MAY-19	R4632815
Bromochloromethane	<0.50		0.50	ug/L		11-MAY-19	R4632815
Bromodichloromethane	<0.50		0.50	ug/L		11-MAY-19	R4632815
Bromoform	<0.50		0.50	ug/L		11-MAY-19	R4632815
Bromomethane	<1.0		1.0	ug/L		11-MAY-19	R4632815
n-Butylbenzene	<0.50		0.50	ug/L		11-MAY-19	R4632815
sec-Butylbenzene	<0.50		0.50	ug/L		11-MAY-19	R4632815
tert-Butylbenzene	<0.50		0.50	ug/L		11-MAY-19	R4632815
Carbon disulfide	<0.50		0.50	ug/L		11-MAY-19	R4632815

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ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2270472-2 GWQ25-W5							
Sampled By: CLIENT on 09-MAY-19 @ 11:30							
Matrix: WATER							
VOC plus F1 by GCMS							
Carbon Tetrachloride	<0.50		0.50	ug/L		11-MAY-19	R4632815
Chlorobenzene	<0.50		0.50	ug/L		11-MAY-19	R4632815
Chloroethane	<1.0		1.0	ug/L		11-MAY-19	R4632815
Chloroform	<0.50		0.50	ug/L		11-MAY-19	R4632815
Chloromethane	<1.0		1.0	ug/L		11-MAY-19	R4632815
2-Chlorotoluene	<20		20	ug/L		11-MAY-19	R4632815
4-Chlorotoluene	<0.50		0.50	ug/L		11-MAY-19	R4632815
Dibromochloromethane	<0.50		0.50	ug/L		11-MAY-19	R4632815
1,2-Dibromo-3-chloropropane	<0.50		0.50	ug/L		11-MAY-19	R4632815
1,2-Dibromoethane	<0.50		0.50	ug/L		11-MAY-19	R4632815
Dibromomethane	<0.50		0.50	ug/L		11-MAY-19	R4632815
1,2-Dichlorobenzene	<0.50		0.50	ug/L		11-MAY-19	R4632815
1,3-Dichlorobenzene	<0.50		0.50	ug/L		11-MAY-19	R4632815
1,4-Dichlorobenzene	<0.50		0.50	ug/L		11-MAY-19	R4632815
Dichlorodifluoromethane	<1.0		1.0	ug/L		11-MAY-19	R4632815
1,1-dichloroethane	<0.50		0.50	ug/L		11-MAY-19	R4632815
1,2-Dichloroethane	<0.50		0.50	ug/L		11-MAY-19	R4632815
1,1-dichloroethene	<0.50		0.50	ug/L		11-MAY-19	R4632815
cis-1,2-Dichloroethene	<0.50		0.50	ug/L		11-MAY-19	R4632815
trans-1,2-Dichloroethene	<0.50		0.50	ug/L		11-MAY-19	R4632815
Dichloromethane	<0.50		0.50	ug/L		11-MAY-19	R4632815
1,2-Dichloropropane	<0.50		0.50	ug/L		11-MAY-19	R4632815
1,3-Dichloropropane	<0.50		0.50	ug/L		11-MAY-19	R4632815
2,2-Dichloropropane	<0.50		0.50	ug/L		11-MAY-19	R4632815
1,1-Dichloropropene	<0.50		0.50	ug/L		11-MAY-19	R4632815
cis-1,3-Dichloropropene	<0.50		0.50	ug/L		11-MAY-19	R4632815
trans-1,3-Dichloropropene	<0.50		0.50	ug/L		11-MAY-19	R4632815
Ethylbenzene	<0.50		0.50	ug/L		11-MAY-19	R4632815
F1	290		100	ug/L		11-MAY-19	R4632815
Hexachlorobutadiene	<0.50		0.50	ug/L		11-MAY-19	R4632815
Hexane	<0.50		0.50	ug/L		11-MAY-19	R4632815
2-Hexanone (Methyl butyl ketone)	<20		20	ug/L		11-MAY-19	R4632815
Isopropylbenzene	<0.50		0.50	ug/L		11-MAY-19	R4632815
4-Isopropyltoluene	<1.0		1.0	ug/L		11-MAY-19	R4632815
MEK	<20		20	ug/L		11-MAY-19	R4632815
MIBK	<20		20	ug/L		11-MAY-19	R4632815
MTBE	<0.50		0.50	ug/L		11-MAY-19	R4632815
Styrene	<0.50		0.50	ug/L		11-MAY-19	R4632815
1,1,1,2-Tetrachloroethane	<0.50		0.50	ug/L		11-MAY-19	R4632815
1,1,2,2-Tetrachloroethane	<0.50		0.50	ug/L		11-MAY-19	R4632815
Tetrachloroethene	<0.50		0.50	ug/L		11-MAY-19	R4632815
Toluene	<0.50		0.50	ug/L		11-MAY-19	R4632815
1,2,3-Trichlorobenzene	<0.50		0.50	ug/L		11-MAY-19	R4632815
1,2,4-Trichlorobenzene	<0.50		0.50	ug/L		11-MAY-19	R4632815
1,1,1-Trichloroethane	<0.50		0.50	ug/L		11-MAY-19	R4632815
1,1,2-Trichloroethane	<0.50		0.50	ug/L		11-MAY-19	R4632815
Trichloroethene	<0.50		0.50	ug/L		11-MAY-19	R4632815
Trichlorofluoromethane	<1.0		1.0	ug/L		11-MAY-19	R4632815
1,2,3-Trichloropropane	<0.50		0.50	ug/L		11-MAY-19	R4632815
1,2,4-Trimethylbenzene	<0.50		0.50	ug/L		11-MAY-19	R4632815
1,3,5-Trimethylbenzene	<0.50		0.50	ug/L		11-MAY-19	R4632815

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ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2270472-2 GWQ25-W5 Sampled By: CLIENT on 09-MAY-19 @ 11:30 Matrix: WATER VOC plus F1 by GCMS							
Vinyl Chloride	<0.50		0.50	ug/L		11-MAY-19	R4632815
M+P-Xylenes	<0.40		0.40	ug/L		11-MAY-19	R4632815
o-Xylene	<0.30		0.30	ug/L		11-MAY-19	R4632815
Surrogate: 4-Bromofluorobenzene (SS)	93.5		70-130	%		11-MAY-19	R4632815
Surrogate: 1,4-Difluorobenzene (SS)	98.0		70-130	%		11-MAY-19	R4632815
L2270472-3 GWQ25-100 Sampled By: CLIENT on 09-MAY-19 @ 11:00 Matrix: WATER Miscellaneous Parameters							
Chromium, Hexavalent	<0.50		0.50	ug/L		10-MAY-19	R4631866
Mercury (Hg)-Total	<0.0050		0.0050	ug/L	13-MAY-19	14-MAY-19	R4635168
Phenols (4AAP)	9.5		1.0	ug/L		10-MAY-19	R4630533
Cyanide, Total	<1.0		1.0	ug/L		16-MAY-19	R4637164
Dissolved Metals in Water by CRC ICMS							
Dissolved Metals Filtration Location	FIELD					13-MAY-19	R4632516
Aluminum (Al)-Dissolved	2.3		1.0	ug/L	13-MAY-19	13-MAY-19	R4633791
Antimony (Sb)-Dissolved	<0.10		0.10	ug/L	13-MAY-19	13-MAY-19	R4633791
Arsenic (As)-Dissolved	4.38		0.10	ug/L	13-MAY-19	13-MAY-19	R4633791
Barium (Ba)-Dissolved	14.1		0.10	ug/L	13-MAY-19	13-MAY-19	R4633791
Beryllium (Be)-Dissolved	<0.10		0.10	ug/L	13-MAY-19	13-MAY-19	R4633791
Bismuth (Bi)-Dissolved	<0.050		0.050	ug/L	13-MAY-19	13-MAY-19	R4633791
Boron (B)-Dissolved	900		100	ug/L	13-MAY-19	14-MAY-19	R4635018
Cadmium (Cd)-Dissolved	0.0129		0.0050	ug/L	13-MAY-19	13-MAY-19	R4633791
Calcium (Ca)-Dissolved	290000		50	ug/L	13-MAY-19	13-MAY-19	R4633791
Cesium (Cs)-Dissolved	0.095		0.010	ug/L	13-MAY-19	13-MAY-19	R4633791
Chromium (Cr)-Dissolved	0.98		0.10	ug/L	13-MAY-19	13-MAY-19	R4633791
Cobalt (Co)-Dissolved	0.35		0.10	ug/L	13-MAY-19	13-MAY-19	R4633791
Copper (Cu)-Dissolved	<0.20		0.20	ug/L	13-MAY-19	13-MAY-19	R4633791
Iron (Fe)-Dissolved	340		10	ug/L	13-MAY-19	13-MAY-19	R4633791
Lead (Pb)-Dissolved	0.080		0.050	ug/L	13-MAY-19	13-MAY-19	R4633791
Lithium (Li)-Dissolved	310		100	ug/L	13-MAY-19	13-MAY-19	R4633791
Magnesium (Mg)-Dissolved	153000		5.0	ug/L	13-MAY-19	13-MAY-19	R4633791
Manganese (Mn)-Dissolved	27.0		0.10	ug/L	13-MAY-19	13-MAY-19	R4633791
Molybdenum (Mo)-Dissolved	6.83		0.050	ug/L	13-MAY-19	13-MAY-19	R4633791
Nickel (Ni)-Dissolved	4.81		0.50	ug/L	13-MAY-19	13-MAY-19	R4633791
Phosphorus (P)-Dissolved	<30		30	ug/L	13-MAY-19	13-MAY-19	R4633791
Potassium (K)-Dissolved	33700		50	ug/L	13-MAY-19	13-MAY-19	R4633791
Rubidium (Rb)-Dissolved	14.4		0.20	ug/L	13-MAY-19	13-MAY-19	R4633791
Selenium (Se)-Dissolved	0.093		0.050	ug/L	13-MAY-19	13-MAY-19	R4633791
Silicon (Si)-Dissolved	4780		50	ug/L	13-MAY-19	13-MAY-19	R4633791
Silver (Ag)-Dissolved	<0.010		0.010	ug/L	13-MAY-19	13-MAY-19	R4633791
Sodium (Na)-Dissolved	1290000		5000	ug/L	13-MAY-19	13-MAY-19	R4633791
Strontium (Sr)-Dissolved	3710		10	ug/L	13-MAY-19	13-MAY-19	R4633791
Sulfur (S)-Dissolved	286000		500	ug/L	13-MAY-19	13-MAY-19	R4633791
Tellurium (Te)-Dissolved	<0.20		0.20	ug/L	13-MAY-19	13-MAY-19	R4633791
Thallium (Tl)-Dissolved	<0.010		0.010	ug/L	13-MAY-19	13-MAY-19	R4633791
Thorium (Th)-Dissolved	<0.10		0.10	ug/L	13-MAY-19	13-MAY-19	R4633791
Tin (Sn)-Dissolved	<0.10		0.10	ug/L	13-MAY-19	13-MAY-19	R4633791
Titanium (Ti)-Dissolved	<0.30		0.30	ug/L	13-MAY-19	13-MAY-19	R4633791
Tungsten (W)-Dissolved	<0.10		0.10	ug/L	13-MAY-19	13-MAY-19	R4633791
Uranium (U)-Dissolved	12.3		0.010	ug/L	13-MAY-19	13-MAY-19	R4633791

* 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
L2270472-3 GWQ25-100							
Sampled By: CLIENT on 09-MAY-19 @ 11:00							
Matrix: WATER							
Dissolved Metals in Water by CRC ICPMS							
Vanadium (V)-Dissolved	<0.50		0.50	ug/L	13-MAY-19	13-MAY-19	R4633791
Zinc (Zn)-Dissolved	2.1		1.0	ug/L	13-MAY-19	13-MAY-19	R4633791
Zirconium (Zr)-Dissolved	0.160		0.060	ug/L	13-MAY-19	13-MAY-19	R4633791
Polyaromatic Hydrocarbons (PAHs)							
1-Methyl Naphthalene	<0.020		0.020	ug/L	14-MAY-19	16-MAY-19	R4639787
2-Methyl Naphthalene	<0.020		0.020	ug/L	14-MAY-19	16-MAY-19	R4639787
Acenaphthene	<0.020		0.020	ug/L	14-MAY-19	16-MAY-19	R4639787
Acenaphthylene	<0.020		0.020	ug/L	14-MAY-19	16-MAY-19	R4639787
Anthracene	<0.010		0.010	ug/L	14-MAY-19	16-MAY-19	R4639787
Acridine	<0.020		0.020	ug/L	14-MAY-19	16-MAY-19	R4639787
Benzo(a)anthracene	<0.010		0.010	ug/L	14-MAY-19	16-MAY-19	R4639787
Benzo(a)pyrene	<0.0050		0.0050	ug/L	14-MAY-19	16-MAY-19	R4639787
Benzo(b&j)fluoranthene	<0.010		0.010	ug/L	14-MAY-19	16-MAY-19	R4639787
Benzo(g,h,i)perylene	<0.020		0.020	ug/L	14-MAY-19	16-MAY-19	R4639787
Benzo(k)fluoranthene	<0.010		0.010	ug/L	14-MAY-19	16-MAY-19	R4639787
Chrysene	<0.020		0.020	ug/L	14-MAY-19	16-MAY-19	R4639787
Dibenzo(a,h)anthracene	<0.0050		0.0050	ug/L	14-MAY-19	16-MAY-19	R4639787
Fluoranthene	<0.020		0.020	ug/L	14-MAY-19	16-MAY-19	R4639787
Fluorene	<0.020		0.020	ug/L	14-MAY-19	16-MAY-19	R4639787
Indeno(1,2,3-cd)pyrene	<0.010		0.010	ug/L	14-MAY-19	16-MAY-19	R4639787
Naphthalene	<0.050		0.050	ug/L	14-MAY-19	16-MAY-19	R4639787
Phenanthrene	<0.050		0.050	ug/L	14-MAY-19	16-MAY-19	R4639787
Pyrene	<0.010		0.010	ug/L	14-MAY-19	16-MAY-19	R4639787
Quinoline	<0.020		0.020	ug/L	14-MAY-19	16-MAY-19	R4639787
B(a)P Total Potency Equivalent	<0.030		0.030	ug/L	14-MAY-19	16-MAY-19	R4639787
Surrogate: Acenaphthene d10	81.3		60-130	%	14-MAY-19	16-MAY-19	R4639787
Surrogate: Acridine d9	74.0		60-130	%	14-MAY-19	16-MAY-19	R4639787
Surrogate: Chrysene d12	75.1		60-130	%	14-MAY-19	16-MAY-19	R4639787
Surrogate: Naphthalene d8	78.3		50-130	%	14-MAY-19	16-MAY-19	R4639787
Surrogate: Phenanthrene d10	91.7		60-130	%	14-MAY-19	16-MAY-19	R4639787
Herbicides in Water							
Clopyralid	<0.10		0.10	ug/L	15-MAY-19	16-MAY-19	R4636170
Dicamba	<0.10		0.10	ug/L	15-MAY-19	16-MAY-19	R4636170
Mecoprop	<0.10		0.10	ug/L	15-MAY-19	16-MAY-19	R4636170
MCPA	<0.10		0.10	ug/L	15-MAY-19	16-MAY-19	R4636170
2,4-D	0.11		0.10	ug/L	15-MAY-19	16-MAY-19	R4636170
Bromoxynil	<0.10		0.10	ug/L	15-MAY-19	16-MAY-19	R4636170
Triclopyr	<0.10		0.10	ug/L	15-MAY-19	16-MAY-19	R4636170
2,4,5-T	<0.10		0.10	ug/L	15-MAY-19	16-MAY-19	R4636170
2,4,5-TP	<0.10		0.10	ug/L	15-MAY-19	16-MAY-19	R4636170
Picloram	<0.10		0.10	ug/L	15-MAY-19	16-MAY-19	R4636170
2,4-DB	<0.10		0.10	ug/L	15-MAY-19	16-MAY-19	R4636170
2,4-DP	<0.10		0.10	ug/L	15-MAY-19	16-MAY-19	R4636170
Dinoseb	<0.10		0.10	ug/L	15-MAY-19	16-MAY-19	R4636170
MCPB	<0.10		0.10	ug/L	15-MAY-19	16-MAY-19	R4636170
Surrogate: 2,4-Dichlorophenylacetic Acid	111.0		50-130	%	15-MAY-19	16-MAY-19	R4636170
Miscellaneous Pesticides							
Diazinon	<0.10		0.10	ug/L	10-MAY-19	14-MAY-19	R4634572
Surrogate: 2-Fluorobiphenyl	84.1		40-130	%	10-MAY-19	14-MAY-19	R4634572
Surrogate: d14-Terphenyl	68.0		40-130	%	10-MAY-19	14-MAY-19	R4634572
Total, Fecal Coliforms, E Coli by QT97							
Fecal Coliform by MPN QT97							

* 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
L2270472-3 GWQ25-100							
Sampled By: CLIENT on 09-MAY-19 @ 11:00							
Matrix: WATER							
Fecal Coliform by MPN QT97							
Fecal Coliforms	<1		1	MPN/100mL		09-MAY-19	R4630656
Total Coliform and E.coli by MPN QT97							
Total Coliforms	<1		1	MPN/100mL		09-MAY-19	R4630661
Escherichia Coli	<1		1	MPN/100mL		09-MAY-19	R4630661
VOC plus F1 to F4							
CCME PHC F2-F4 in Water							
F2 (C10-C16)	110		100	ug/L	10-MAY-19	11-MAY-19	R4631199
F3 (C16-C34)	<250		250	ug/L	10-MAY-19	11-MAY-19	R4631199
F4 (C34-C50)	<250		250	ug/L	10-MAY-19	11-MAY-19	R4631199
Surrogate: 2-Bromobenzotrifluoride	80.7		60-140	%	10-MAY-19	11-MAY-19	R4631199
CCME Total Hydrocarbons							
F1-BTEX	280		100	ug/L		22-MAY-19	
F2-Naphth	110		100	ug/L		22-MAY-19	
F3-PAH	<250		250	ug/L		22-MAY-19	
Total Hydrocarbons (C6-C50)	390		380	ug/L		22-MAY-19	
Sum of Xylene Isomer Concentrations							
Xylenes (Total)	<0.50		0.50	ug/L		15-MAY-19	
Total Trihalomethanes (THMs)							
Total THMs	<1.0		1.0	ug/L		15-MAY-19	
VOC plus F1 by GCMS							
Acetone	<20		20	ug/L		11-MAY-19	R4632815
Benzene	<0.50		0.50	ug/L		11-MAY-19	R4632815
Bromobenzene	<0.50		0.50	ug/L		11-MAY-19	R4632815
Bromochloromethane	<0.50		0.50	ug/L		11-MAY-19	R4632815
Bromodichloromethane	<0.50		0.50	ug/L		11-MAY-19	R4632815
Bromoform	<0.50		0.50	ug/L		11-MAY-19	R4632815
Bromomethane	<1.0		1.0	ug/L		11-MAY-19	R4632815
n-Butylbenzene	<0.50		0.50	ug/L		11-MAY-19	R4632815
sec-Butylbenzene	<0.50		0.50	ug/L		11-MAY-19	R4632815
tert-Butylbenzene	<0.50		0.50	ug/L		11-MAY-19	R4632815
Carbon disulfide	<0.50		0.50	ug/L		11-MAY-19	R4632815
Carbon Tetrachloride	<0.50		0.50	ug/L		11-MAY-19	R4632815
Chlorobenzene	<0.50		0.50	ug/L		11-MAY-19	R4632815
Chloroethane	<1.0		1.0	ug/L		11-MAY-19	R4632815
Chloroform	<0.50		0.50	ug/L		11-MAY-19	R4632815
Chloromethane	<1.0		1.0	ug/L		11-MAY-19	R4632815
2-Chlorotoluene	<20		20	ug/L		11-MAY-19	R4632815
4-Chlorotoluene	<0.50		0.50	ug/L		11-MAY-19	R4632815
Dibromochloromethane	<0.50		0.50	ug/L		11-MAY-19	R4632815
1,2-Dibromo-3-chloropropane	<0.50		0.50	ug/L		11-MAY-19	R4632815
1,2-Dibromoethane	<0.50		0.50	ug/L		11-MAY-19	R4632815
Dibromomethane	<0.50		0.50	ug/L		11-MAY-19	R4632815
1,2-Dichlorobenzene	<0.50		0.50	ug/L		11-MAY-19	R4632815
1,3-Dichlorobenzene	<0.50		0.50	ug/L		11-MAY-19	R4632815
1,4-Dichlorobenzene	<0.50		0.50	ug/L		11-MAY-19	R4632815
Dichlorodifluoromethane	<1.0		1.0	ug/L		11-MAY-19	R4632815
1,1-dichloroethane	<0.50		0.50	ug/L		11-MAY-19	R4632815
1,2-Dichloroethane	<0.50		0.50	ug/L		11-MAY-19	R4632815
1,1-dichloroethene	<0.50		0.50	ug/L		11-MAY-19	R4632815
cis-1,2-Dichloroethene	<0.50		0.50	ug/L		11-MAY-19	R4632815
trans-1,2-Dichloroethene	<0.50		0.50	ug/L		11-MAY-19	R4632815
Dichloromethane	<0.50		0.50	ug/L		11-MAY-19	R4632815

* 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
L2270472-3 GWQ25-100							
Sampled By: CLIENT on 09-MAY-19 @ 11:00							
Matrix: WATER							
VOC plus F1 by GCMS							
1,2-Dichloropropane	<0.50		0.50	ug/L		11-MAY-19	R4632815
1,3-Dichloropropane	<0.50		0.50	ug/L		11-MAY-19	R4632815
2,2-Dichloropropane	<0.50		0.50	ug/L		11-MAY-19	R4632815
1,1-Dichloropropene	<0.50		0.50	ug/L		11-MAY-19	R4632815
cis-1,3-Dichloropropene	<0.50		0.50	ug/L		11-MAY-19	R4632815
trans-1,3-Dichloropropene	<0.50		0.50	ug/L		11-MAY-19	R4632815
Ethylbenzene	<0.50		0.50	ug/L		11-MAY-19	R4632815
F1	280		100	ug/L		11-MAY-19	R4632815
Hexachlorobutadiene	<0.50		0.50	ug/L		11-MAY-19	R4632815
Hexane	<0.50		0.50	ug/L		11-MAY-19	R4632815
2-Hexanone (Methyl butyl ketone)	<20		20	ug/L		11-MAY-19	R4632815
Isopropylbenzene	<0.50		0.50	ug/L		11-MAY-19	R4632815
4-Isopropyltoluene	<1.0		1.0	ug/L		11-MAY-19	R4632815
MEK	<20		20	ug/L		11-MAY-19	R4632815
MIBK	<20		20	ug/L		11-MAY-19	R4632815
MTBE	<0.50		0.50	ug/L		11-MAY-19	R4632815
Styrene	<0.50		0.50	ug/L		11-MAY-19	R4632815
1,1,1,2-Tetrachloroethane	<0.50		0.50	ug/L		11-MAY-19	R4632815
1,1,1,2,2-Tetrachloroethane	<0.50		0.50	ug/L		11-MAY-19	R4632815
Tetrachloroethene	<0.50		0.50	ug/L		11-MAY-19	R4632815
Toluene	<0.50		0.50	ug/L		11-MAY-19	R4632815
1,2,3-Trichlorobenzene	<0.50		0.50	ug/L		11-MAY-19	R4632815
1,2,4-Trichlorobenzene	<0.50		0.50	ug/L		11-MAY-19	R4632815
1,1,1-Trichloroethane	<0.50		0.50	ug/L		11-MAY-19	R4632815
1,1,2-Trichloroethane	<0.50		0.50	ug/L		11-MAY-19	R4632815
Trichloroethene	<0.50		0.50	ug/L		11-MAY-19	R4632815
Trichlorofluoromethane	<1.0		1.0	ug/L		11-MAY-19	R4632815
1,2,3-Trichloropropane	<0.50		0.50	ug/L		11-MAY-19	R4632815
1,2,4-Trimethylbenzene	<0.50		0.50	ug/L		11-MAY-19	R4632815
1,3,5-Trimethylbenzene	<0.50		0.50	ug/L		11-MAY-19	R4632815
Vinyl Chloride	<0.50		0.50	ug/L		11-MAY-19	R4632815
M+P-Xylenes	<0.40		0.40	ug/L		11-MAY-19	R4632815
o-Xylene	<0.30		0.30	ug/L		11-MAY-19	R4632815
Surrogate: 4-Bromofluorobenzene (SS)	94.5		70-130	%		11-MAY-19	R4632815
Surrogate: 1,4-Difluorobenzene (SS)	98.0		70-130	%		11-MAY-19	R4632815

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

Reference Information

Test Method References:

ALS Test Code	Matrix	Test Description	Method Reference**
CN-T-CFA-WP	Water	Total Cyanide in water by CFA	ISO 14403-2
This analysis is carried out using procedures adapted from ISO Method 14403-2:2012 "Determination of Total Cyanide using Flow Analysis (FIA and CFA)". Total or strong acid dissociable (SAD) cyanide is determined by in-line UV digestion along with sample distillation and final determination by colourmetric analysis.			
CR-CR6-IC-WT	Water	Chromium +6	EPA 7199
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.			
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).			
F1-F4-CALC-WP	Water	CCME Total Hydrocarbons	CCME CWS-PHC, Pub #1310, Dec 2001-L
Analytical methods used for analysis of CCME Petroleum Hydrocarbons have been validated and comply with the Reference Method for the CWS PHC.			
In cases where results for both F4 and F4G are reported, the greater of the two results must be used in any application of the CWS PHC guidelines and the gravimetric heavy hydrocarbons cannot be added to the C6 to C50 hydrocarbons.			
In samples where BTEX and F1 were analyzed, F1-BTEX represents a value where the sum of Benzene, Toluene, Ethylbenzene and total Xylenes has been subtracted from F1.			
In samples where PAHs, F2 and F3 were analyzed, F2-Naphth represents the result where Naphthalene has been subtracted from F2. F3-PAH represents a result where the sum of Benzo(a)anthracene, Benzo(a)pyrene, Benzo(b)fluoranthene, Benzo(k)fluoranthene, Dibenzo(a,h)anthracene, Fluoranthene, Indeno(1,2,3-cd)pyrene, Phenanthrene, and Pyrene has been subtracted from F3.			
Unless otherwise qualified, the following quality control criteria have been met for the F1 hydrocarbon range:			
1. All extraction and analysis holding times were met.			
2. Instrument performance showing response factors for C6 and C10 within 30% of the response factor for toluene.			
3. Linearity of gasoline response within 15% throughout the calibration range.			
Unless otherwise qualified, the following quality control criteria have been met for the F2-F4 hydrocarbon ranges:			
1. All extraction and analysis holding times were met.			
2. Instrument performance showing C10, C16 and C34 response factors within 10% of their average.			
3. Instrument performance showing the C50 response factor within 30% of the average of the C10, C16 and C34 response factors.			
4. Linearity of diesel or motor oil response within 15% throughout the calibration range.			
F2-F4-FID-WP	Water	CCME PHC F2-F4 in Water	EPA 3511
Petroleum hydrocarbons in water are determined by liquid-liquid micro-scale solvent extraction using a reciprocal shaker extraction apparatus prior to capillary column gas chromatography with flame ionization detection (GC-FID) analysis.			
FC-QT97-WP	Water	Fecal Coliform by MPN QT97	APHA 9223B QT97
This analysis is carried out using procedures adapted from APHA Method 9223B "Enzyme Substrate Coliform Test". The sample is mixed with a mixture of hydrolyzable substrates and then sealed in a 97-well packet. The packet is incubated at 44.5 – 0.2°C for 18 hours and then the number of wells exhibiting a positive response are counted. The final result is obtained by comparing the number of positive responses to a probability table.			
HERBSCR-LCMS-WT	Water	Herbicides in Water	E3552
Water samples are subjected filtration and analyzed by direct injection without sample preparation using liquid chromatography tandem mass spectrometry (LC-MS/MS).			
HERBSCR-LCMS-WT	Water	Herbicides in Water	SW846 8270
Water samples are subjected filtration and analyzed by direct injection without sample preparation using liquid chromatography tandem mass spectrometry (LC-MS/MS).			
HG-T-CVAA-WP	Water	Mercury Total	EPA 1631E (mod)
Water samples undergo a cold-oxidation using bromine monochloride prior to reduction with stannous chloride, and analyzed by CVAAS.			
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.			
PAH,PANH-WP	Water	Polyaromatic Hydrocarbons (PAHs)	EPA 3511/8270D (mod)

Reference Information

Test Method References:

ALS Test Code	Matrix	Test Description	Method Reference**
PAHs are extracted from water using a hexane micro-extraction technique, with analysis by GC/MS. Because the two isomers cannot be readily separated chromatographically, benzo(j)fluoranthene is reported as part of the benzo(b)fluoranthene parameter.			
PEST-DIAZINON-WT	Water	Miscellaneous Pesticides	SW846 8270
PHENOLS-4AAP-WT	Water	Phenol (4AAP)	EPA 9066
An automated method is used to distill the sample. The distillate is then buffered to pH 9.4 which reacts with 4AAP and potassium ferricyanide to form a red complex which is measured colorimetrically.			
TC,EC-QT97-WP	Water	Total Coliform and E.coli by MPN QT97	APHA 9223B QT97
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 97-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.			
THM-SUM-CALC-WP	Water	Total Trihalomethanes (THMs)	CALCULATION
Total Trihalomethanes (THMs) represents the sum of bromodichloromethane, bromoform, chlorodibromomethane and chloroform. For the purpose of calculation, results less than the detection limit (DL) are treated as zero.			
VOC+F1-HSMS-WP	Water	VOC plus F1 by GCMS	EPA 8260C / EPA 5021A
In this method samples are analyzed using a headspace autosampler interfaced to a dual column gas chromatograph with MS and Flame Ionization detectors.			
XYLENES-SUM-CALC-WP	Water	Sum of Xylene Isomer Concentrations	CALCULATED RESULT
Total xylenes represents the sum of o-xylene and m&p-xylene.			

** 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
WT	ALS ENVIRONMENTAL - WATERLOO, ONTARIO, 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: L2270472

Report Date: 22-MAY-19

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Client: City of Winnipeg - Solid Waste Services Div (1120 Waverley)
 Solid Waste Services Division 1120 Waverley Street
 Winnipeg MB R3T 0P4

Contact: CHRIS KOZAK

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
CN-T-CFA-WP								
	Water							
Batch	R4637164							
WG3052241-2	LCS							
Cyanide, Total			96.1		%		80-120	16-MAY-19
WG3052241-1	MB							
Cyanide, Total			<0.0010		mg/L		0.001	16-MAY-19
CR-CR6-IC-WT								
	Water							
Batch	R4631866							
WG3046452-7	LCS							
Chromium, Hexavalent			99.5		%		80-120	10-MAY-19
WG3046452-6	MB							
Chromium, Hexavalent			<0.00050		mg/L		0.0005	10-MAY-19
F2-F4-FID-WP								
	Water							
Batch	R4631199							
WG3046481-2	LCS							
F2 (C10-C16)			107.3		%		70-130	10-MAY-19
F3 (C16-C34)			100.7		%		70-130	10-MAY-19
F4 (C34-C50)			100.8		%		70-130	10-MAY-19
WG3046481-4	LCS							
F2 (C10-C16)			109.8		%		70-130	10-MAY-19
F3 (C16-C34)			100.5		%		70-130	10-MAY-19
F4 (C34-C50)			100.4		%		70-130	10-MAY-19
WG3046481-1	MB							
F2 (C10-C16)			<0.10		mg/L		0.1	10-MAY-19
F3 (C16-C34)			<0.25		mg/L		0.25	10-MAY-19
F4 (C34-C50)			<0.25		mg/L		0.25	10-MAY-19
Surrogate: 2-Bromobenzotrifluoride			81.8		%		60-140	10-MAY-19
WG3046481-3	MB							
F2 (C10-C16)			<0.10		mg/L		0.1	10-MAY-19
F3 (C16-C34)			<0.25		mg/L		0.25	10-MAY-19
F4 (C34-C50)			<0.25		mg/L		0.25	10-MAY-19
Surrogate: 2-Bromobenzotrifluoride			78.9		%		60-140	10-MAY-19
FC-QT97-WP								
	Water							
Batch	R4630656							
WG3045892-2	DUP	L2270472-1						
Fecal Coliforms		<1	<1	RPD-NA	MPN/100mL	N/A	65	09-MAY-19
WG3045892-1	MB							
Fecal Coliforms			<1		MPN/100mL		1	09-MAY-19
HERBSCR-LCMS-WT								
	Water							

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Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
HERBSCR-LCMS-WT		Water						
Batch	R4636170							
WG3049998-7	LCS							
Clopyralid			84.5		%		50-150	16-MAY-19
Dicamba			77.0		%		65-130	16-MAY-19
Mecoprop			88.4		%		65-130	16-MAY-19
MCPA			85.1		%		65-130	16-MAY-19
2,4-D			77.4		%		65-130	16-MAY-19
Bromoxynil			119.0		%		65-130	16-MAY-19
Triclopyr			85.3		%		65-130	16-MAY-19
2,4,5-T			80.2		%		65-130	16-MAY-19
2,4,5-TP			88.9		%		65-130	16-MAY-19
Picloram			83.0		%		50-150	16-MAY-19
2,4-DB			106.0		%		65-130	16-MAY-19
2,4-DP			84.1		%		65-130	16-MAY-19
Dinoseb			99.9		%		50-150	16-MAY-19
MCPB			114.0		%		65-130	16-MAY-19
WG3049998-6	MB							
Clopyralid			<0.00010		mg/L		0.0001	16-MAY-19
Dicamba			<0.00010		mg/L		0.0001	16-MAY-19
Mecoprop			<0.00010		mg/L		0.0001	16-MAY-19
MCPA			<0.00010		mg/L		0.0001	16-MAY-19
2,4-D			<0.00010		mg/L		0.0001	16-MAY-19
Bromoxynil			<0.00010		mg/L		0.0001	16-MAY-19
Triclopyr			<0.00010		mg/L		0.0001	16-MAY-19
2,4,5-T			<0.00010		mg/L		0.0001	16-MAY-19
2,4,5-TP			<0.00010		mg/L		0.0001	16-MAY-19
Picloram			<0.00010		mg/L		0.0001	16-MAY-19
2,4-DB			<0.00010		mg/L		0.0001	16-MAY-19
2,4-DP			<0.00010		mg/L		0.0001	16-MAY-19
Dinoseb			<0.00010		mg/L		0.0001	16-MAY-19
MCPB			<0.00010		mg/L		0.0001	16-MAY-19
Surrogate: 2,4-Dichlorophenylacetic Acid			102.0		%		50-130	16-MAY-19
HG-T-CVAA-WP		Water						
Batch	R4635168							
WG3050075-2	LCS							
Mercury (Hg)-Total			98.0		%		80-120	14-MAY-19
WG3050075-1	MB							



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Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
HG-T-CVAA-WP								
	Water							
Batch	R4635168							
WG3050075-1	MB							
Mercury (Hg)-Total			<0.000005C		mg/L		0.000005	14-MAY-19
WG3050075-4	MS	L2270472-1						
Mercury (Hg)-Total			93.0		%		70-130	14-MAY-19
MET-D-CCMS-WP								
	Water							
Batch	R4633791							
WG3048324-2	LCS							
Aluminum (Al)-Dissolved			104.4		%		80-120	13-MAY-19
Antimony (Sb)-Dissolved			101.2		%		80-120	13-MAY-19
Arsenic (As)-Dissolved			99.8		%		80-120	13-MAY-19
Barium (Ba)-Dissolved			100.1		%		80-120	13-MAY-19
Beryllium (Be)-Dissolved			105.0		%		80-120	13-MAY-19
Bismuth (Bi)-Dissolved			99.9		%		80-120	13-MAY-19
Cadmium (Cd)-Dissolved			101.4		%		80-120	13-MAY-19
Calcium (Ca)-Dissolved			101.8		%		80-120	13-MAY-19
Cesium (Cs)-Dissolved			102.0		%		80-120	13-MAY-19
Chromium (Cr)-Dissolved			101.2		%		80-120	13-MAY-19
Cobalt (Co)-Dissolved			100.1		%		80-120	13-MAY-19
Copper (Cu)-Dissolved			101.0		%		80-120	13-MAY-19
Iron (Fe)-Dissolved			92.7		%		80-120	13-MAY-19
Lead (Pb)-Dissolved			99.4		%		80-120	13-MAY-19
Lithium (Li)-Dissolved			106.6		%		80-120	13-MAY-19
Magnesium (Mg)-Dissolved			115.4		%		80-120	13-MAY-19
Manganese (Mn)-Dissolved			101.8		%		80-120	13-MAY-19
Molybdenum (Mo)-Dissolved			103.3		%		80-120	13-MAY-19
Nickel (Ni)-Dissolved			99.3		%		80-120	13-MAY-19
Phosphorus (P)-Dissolved			104.9		%		80-120	13-MAY-19
Potassium (K)-Dissolved			96.0		%		80-120	13-MAY-19
Rubidium (Rb)-Dissolved			97.6		%		80-120	13-MAY-19
Selenium (Se)-Dissolved			99.2		%		80-120	13-MAY-19
Silicon (Si)-Dissolved			105.0		%		80-120	13-MAY-19
Silver (Ag)-Dissolved			99.3		%		80-120	13-MAY-19
Sodium (Na)-Dissolved			105.2		%		80-120	13-MAY-19
Strontium (Sr)-Dissolved			102.0		%		80-120	13-MAY-19
Sulfur (S)-Dissolved			101.0		%		80-120	13-MAY-19



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Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
MET-D-CCMS-WP								
	Water							
Batch	R4633791							
WG3048324-2	LCS							
Tellurium (Te)-Dissolved			99.8		%		80-120	13-MAY-19
Thallium (Tl)-Dissolved			99.3		%		80-120	13-MAY-19
Thorium (Th)-Dissolved			97.4		%		80-120	13-MAY-19
Tin (Sn)-Dissolved			101.9		%		80-120	13-MAY-19
Titanium (Ti)-Dissolved			102.2		%		80-120	13-MAY-19
Tungsten (W)-Dissolved			99.9		%		80-120	13-MAY-19
Uranium (U)-Dissolved			97.3		%		80-120	13-MAY-19
Vanadium (V)-Dissolved			102.0		%		80-120	13-MAY-19
Zinc (Zn)-Dissolved			101.3		%		80-120	13-MAY-19
Zirconium (Zr)-Dissolved			99.7		%		80-120	13-MAY-19
WG3048324-1	MB							
Aluminum (Al)-Dissolved			<0.0010		mg/L		0.001	13-MAY-19
Antimony (Sb)-Dissolved			<0.00010		mg/L		0.0001	13-MAY-19
Arsenic (As)-Dissolved			<0.00010		mg/L		0.0001	13-MAY-19
Barium (Ba)-Dissolved			<0.00010		mg/L		0.0001	13-MAY-19
Beryllium (Be)-Dissolved			<0.00010		mg/L		0.0001	13-MAY-19
Bismuth (Bi)-Dissolved			<0.000050		mg/L		0.00005	13-MAY-19
Cadmium (Cd)-Dissolved			<0.0000050		mg/L		0.000005	13-MAY-19
Calcium (Ca)-Dissolved			<0.050		mg/L		0.05	13-MAY-19
Cesium (Cs)-Dissolved			<0.000010		mg/L		0.00001	13-MAY-19
Chromium (Cr)-Dissolved			<0.00010		mg/L		0.0001	13-MAY-19
Cobalt (Co)-Dissolved			<0.00010		mg/L		0.0001	13-MAY-19
Copper (Cu)-Dissolved			<0.00020		mg/L		0.0002	13-MAY-19
Iron (Fe)-Dissolved			<0.010		mg/L		0.01	13-MAY-19
Lead (Pb)-Dissolved			<0.000050		mg/L		0.00005	13-MAY-19
Lithium (Li)-Dissolved			<0.0010		mg/L		0.001	13-MAY-19
Magnesium (Mg)-Dissolved			<0.0050		mg/L		0.005	13-MAY-19
Manganese (Mn)-Dissolved			<0.00010		mg/L		0.0001	13-MAY-19
Molybdenum (Mo)-Dissolved			<0.000050		mg/L		0.00005	13-MAY-19
Nickel (Ni)-Dissolved			<0.00050		mg/L		0.0005	13-MAY-19
Phosphorus (P)-Dissolved			<0.030		mg/L		0.03	13-MAY-19
Potassium (K)-Dissolved			<0.050		mg/L		0.05	13-MAY-19
Rubidium (Rb)-Dissolved			<0.00020		mg/L		0.0002	13-MAY-19
Selenium (Se)-Dissolved			<0.000050		mg/L		0.00005	13-MAY-19

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Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
MET-D-CCMS-WP		Water						
Batch	R4633791							
WG3048324-1	MB							
Silicon (Si)-Dissolved			<0.050		mg/L		0.05	13-MAY-19
Silver (Ag)-Dissolved			<0.000010		mg/L		0.00001	13-MAY-19
Sodium (Na)-Dissolved			<0.050		mg/L		0.05	13-MAY-19
Strontium (Sr)-Dissolved			<0.00010		mg/L		0.0001	13-MAY-19
Sulfur (S)-Dissolved			<0.50		mg/L		0.5	13-MAY-19
Tellurium (Te)-Dissolved			<0.00020		mg/L		0.0002	13-MAY-19
Thallium (Tl)-Dissolved			<0.000010		mg/L		0.00001	13-MAY-19
Thorium (Th)-Dissolved			<0.00010		mg/L		0.0001	13-MAY-19
Tin (Sn)-Dissolved			<0.00010		mg/L		0.0001	13-MAY-19
Titanium (Ti)-Dissolved			<0.00030		mg/L		0.0003	13-MAY-19
Tungsten (W)-Dissolved			<0.00010		mg/L		0.0001	13-MAY-19
Uranium (U)-Dissolved			<0.000010		mg/L		0.00001	13-MAY-19
Vanadium (V)-Dissolved			<0.00050		mg/L		0.0005	13-MAY-19
Zinc (Zn)-Dissolved			<0.0010		mg/L		0.001	13-MAY-19
Zirconium (Zr)-Dissolved			<0.000060		mg/L		0.00006	13-MAY-19
PAH,PANH-WP		Water						
Batch	R4639787							
WG3050782-2	LCS							
1-Methyl Naphthalene			105.2		%		60-130	16-MAY-19
2-Methyl Naphthalene			98.6		%		60-130	16-MAY-19
Acenaphthene			100.3		%		60-130	16-MAY-19
Acenaphthylene			93.4		%		60-130	16-MAY-19
Anthracene			86.3		%		60-130	16-MAY-19
Acridine			77.3		%		60-130	16-MAY-19
Benzo(a)anthracene			84.0		%		60-130	16-MAY-19
Benzo(a)pyrene			76.8		%		60-130	16-MAY-19
Benzo(b&j)fluoranthene			78.9		%		60-130	16-MAY-19
Benzo(g,h,i)perylene			94.9		%		60-130	16-MAY-19
Benzo(k)fluoranthene			102.2		%		60-130	16-MAY-19
Chrysene			110.0		%		60-130	16-MAY-19
Dibenzo(a,h)anthracene			83.9		%		60-130	16-MAY-19
Fluoranthene			97.4		%		60-130	16-MAY-19
Fluorene			97.8		%		60-130	16-MAY-19
Indeno(1,2,3-cd)pyrene			79.9		%		60-130	16-MAY-19

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Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
PAH,PANH-WP		Water						
Batch	R4639787							
WG3050782-2	LCS							
Naphthalene			99.9		%		50-130	16-MAY-19
Phenanthrene			107.5		%		60-130	16-MAY-19
Pyrene			95.0		%		60-130	16-MAY-19
Quinoline			86.8		%		60-130	16-MAY-19
WG3050782-1	MB							
1-Methyl Naphthalene			<0.000020		mg/L		0.00002	16-MAY-19
2-Methyl Naphthalene			<0.000020		mg/L		0.00002	16-MAY-19
Acenaphthene			<0.000020		mg/L		0.00002	16-MAY-19
Acenaphthylene			<0.000020		mg/L		0.00002	16-MAY-19
Anthracene			<0.000010		mg/L		0.00001	16-MAY-19
Acridine			<0.000020		mg/L		0.00002	16-MAY-19
Benzo(a)anthracene			<0.000010		mg/L		0.00001	16-MAY-19
Benzo(a)pyrene			<0.0000050		mg/L		0.000005	16-MAY-19
Benzo(b&j)fluoranthene			<0.000010		mg/L		0.00001	16-MAY-19
Benzo(g,h,i)perylene			<0.000020		mg/L		0.00002	16-MAY-19
Benzo(k)fluoranthene			<0.000010		mg/L		0.00001	16-MAY-19
Chrysene			<0.000020		mg/L		0.00002	16-MAY-19
Dibenzo(a,h)anthracene			<0.0000050		mg/L		0.000005	16-MAY-19
Fluoranthene			<0.000020		mg/L		0.00002	16-MAY-19
Fluorene			<0.000020		mg/L		0.00002	16-MAY-19
Indeno(1,2,3-cd)pyrene			<0.000010		mg/L		0.00001	16-MAY-19
Naphthalene			<0.000050		mg/L		0.00005	16-MAY-19
Phenanthrene			<0.000050		mg/L		0.00005	16-MAY-19
Pyrene			<0.000010		mg/L		0.00001	16-MAY-19
Quinoline			<0.000020		mg/L		0.00002	16-MAY-19
Surrogate: Acenaphthene d10			91.4		%		60-130	16-MAY-19
Surrogate: Acridine d9			74.6		%		60-130	16-MAY-19
Surrogate: Chrysene d12			100.5		%		60-130	16-MAY-19
Surrogate: Naphthalene d8			85.8		%		50-130	16-MAY-19
Surrogate: Phenanthrene d10			95.0		%		60-130	16-MAY-19
PEST-DIAZINON-WT		Water						
Batch	R4634572							
WG3046631-2	LCS							
Diazinon			91.8		%		60-130	14-MAY-19
WG3046631-1	MB							

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Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
PEST-DIAZINON-WT								
Water								
Batch	R4634572							
WG3046631-1	MB							
Diazinon			<0.10		ug/L		0.1	14-MAY-19
Surrogate: 2-Fluorobiphenyl			86.3		%		40-130	14-MAY-19
Surrogate: d14-Terphenyl			72.8		%		40-130	14-MAY-19
PHENOLS-4AAP-WT								
Water								
Batch	R4630533							
WG3046397-10	LCS							
Phenols (4AAP)			90.7		%		85-115	10-MAY-19
WG3046397-9	MB							
Phenols (4AAP)			<0.0010		mg/L		0.001	10-MAY-19
TC,EC-QT97-WP								
Water								
Batch	R4630661							
WG3045896-2	DUP	L2270472-1						
Total Coliforms		<1	<1	RPD-NA	MPN/100mL	N/A	65	09-MAY-19
Escherichia Coli		<1	<1	RPD-NA	MPN/100mL	N/A	65	09-MAY-19
WG3045896-1	MB							
Total Coliforms			<1		MPN/100mL		1	09-MAY-19
Escherichia Coli			<1		MPN/100mL		1	09-MAY-19
VOC+F1-HSMS-WP								
Water								
Batch	R4632815							
WG3046857-2	LCS							
Acetone			96.4		%		70-130	11-MAY-19
Benzene			104.3		%		70-130	11-MAY-19
Bromobenzene			109.1		%		70-130	11-MAY-19
Bromochloromethane			103.1		%		70-130	11-MAY-19
Bromodichloromethane			107.1		%		70-130	11-MAY-19
Bromoform			104.7		%		70-130	11-MAY-19
Bromomethane			93.5		%		60-140	11-MAY-19
n-Butylbenzene			115.0		%		70-130	11-MAY-19
sec-Butylbenzene			107.2		%		70-130	11-MAY-19
tert-Butylbenzene			119.0		%		70-130	11-MAY-19
Carbon disulfide			96.4		%		70-130	11-MAY-19
Carbon Tetrachloride			109.1		%		70-130	11-MAY-19
Chlorobenzene			104.8		%		70-130	11-MAY-19
Chloroethane			115.2		%		60-140	11-MAY-19
Chloroform			107.4		%		70-130	11-MAY-19

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Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
VOC+F1-HSMS-WP	Water							
Batch	R4632815							
WG3046857-2	LCS							
Chloromethane			101.0		%		60-140	11-MAY-19
2-Chlorotoluene			113.1		%		70-130	11-MAY-19
4-Chlorotoluene			102.8		%		70-130	11-MAY-19
Dibromochloromethane			110.0		%		70-130	11-MAY-19
1,2-Dibromo-3-chloropropane			101.5		%		70-130	11-MAY-19
1,2-Dibromoethane			103.4		%		70-130	11-MAY-19
Dibromomethane			107.0		%		70-130	11-MAY-19
1,2-Dichlorobenzene			105.2		%		70-130	11-MAY-19
1,3-Dichlorobenzene			102.0		%		70-130	11-MAY-19
1,4-Dichlorobenzene			102.7		%		70-130	11-MAY-19
Dichlorodifluoromethane			119.5		%		60-140	11-MAY-19
1,1-dichloroethane			108.0		%		70-130	11-MAY-19
1,2-Dichloroethane			104.9		%		70-130	11-MAY-19
1,1-dichloroethene			97.5		%		70-130	11-MAY-19
cis-1,2-Dichloroethene			104.3		%		70-130	11-MAY-19
trans-1,2-Dichloroethene			100.3		%		70-130	11-MAY-19
Dichloromethane			102.3		%		70-130	11-MAY-19
1,2-Dichloropropane			105.0		%		70-130	11-MAY-19
1,3-Dichloropropane			105.5		%		70-130	11-MAY-19
2,2-Dichloropropane			91.0		%		70-130	11-MAY-19
1,1-Dichloropropene			106.3		%		70-130	11-MAY-19
cis-1,3-Dichloropropene			103.5		%		70-130	11-MAY-19
trans-1,3-Dichloropropene			105.8		%		70-130	11-MAY-19
Ethylbenzene			113.2		%		70-130	11-MAY-19
Hexachlorobutadiene			101.3		%		70-130	11-MAY-19
Hexane			101.0		%		70-130	11-MAY-19
2-Hexanone (Methyl butyl ketone)			109.9		%		70-130	11-MAY-19
Isopropylbenzene			115.5		%		70-130	11-MAY-19
4-Isopropyltoluene			107.2		%		70-130	11-MAY-19
MEK			100.0		%		70-130	11-MAY-19
MIBK			117.6		%		70-130	11-MAY-19
MTBE			109.2		%		70-130	11-MAY-19
Styrene			117.0		%		70-130	11-MAY-19
1,1,1,2-Tetrachloroethane			114.3		%		70-130	11-MAY-19

Quality Control Report

Workorder: L2270472

Report Date: 22-MAY-19

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Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
VOC+F1-HSMS-WP								
	Water							
Batch	R4632815							
WG3046857-2	LCS							
1,1,2,2-Tetrachloroethane			111.9		%		70-130	11-MAY-19
Tetrachloroethene			105.3		%		70-130	11-MAY-19
Toluene			108.2		%		70-130	11-MAY-19
1,2,3-Trichlorobenzene			101.5		%		70-130	11-MAY-19
1,2,4-Trichlorobenzene			100.9		%		70-130	11-MAY-19
1,1,1-Trichloroethane			111.6		%		70-130	11-MAY-19
1,1,2-Trichloroethane			104.8		%		70-130	11-MAY-19
Trichloroethene			108.6		%		70-130	11-MAY-19
Trichlorofluoromethane			104.2		%		60-140	11-MAY-19
1,2,3-Trichloropropane			107.5		%		70-130	11-MAY-19
1,2,4-Trimethylbenzene			106.4		%		70-130	11-MAY-19
1,3,5-Trimethylbenzene			109.6		%		70-130	11-MAY-19
Vinyl Chloride			107.6		%		60-140	11-MAY-19
M+P-Xylenes			111.9		%		70-130	11-MAY-19
o-Xylene			113.7		%		70-130	11-MAY-19
WG3046857-3	LCS							
F1			110.4		%		70-130	10-MAY-19
WG3046857-1	MB							
Acetone			<0.020		mg/L		0.02	11-MAY-19
Benzene			<0.00050		mg/L		0.0005	11-MAY-19
Bromobenzene			<0.00050		mg/L		0.0005	11-MAY-19
Bromochloromethane			<0.00050		mg/L		0.0005	11-MAY-19
Bromodichloromethane			<0.00050		mg/L		0.0005	11-MAY-19
Bromoform			<0.00050		mg/L		0.0005	11-MAY-19
Bromomethane			<0.0010		mg/L		0.001	11-MAY-19
n-Butylbenzene			<0.00050		mg/L		0.0005	11-MAY-19
sec-Butylbenzene			<0.00050		mg/L		0.0005	11-MAY-19
tert-Butylbenzene			<0.00050		mg/L		0.0005	11-MAY-19
Carbon disulfide			<0.00050		mg/L		0.0005	11-MAY-19
Carbon Tetrachloride			<0.00050		mg/L		0.0005	11-MAY-19
Chlorobenzene			<0.00050		mg/L		0.0005	11-MAY-19
Chloroethane			<0.0010		mg/L		0.001	11-MAY-19
Chloroform			<0.00050		mg/L		0.0005	11-MAY-19
Chloromethane			<0.0010		mg/L		0.001	11-MAY-19
2-Chlorotoluene			<0.020		mg/L		0.02	11-MAY-19

Quality Control Report

Workorder: L2270472

Report Date: 22-MAY-19

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Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
VOC+F1-HSMS-WP								
	Water							
Batch	R4632815							
WG3046857-1	MB							
4-Chlorotoluene			<0.00050		mg/L		0.0005	11-MAY-19
Dibromochloromethane			<0.00050		mg/L		0.0005	11-MAY-19
1,2-Dibromo-3-chloropropane			<0.00050		mg/L		0.0005	11-MAY-19
1,2-Dibromoethane			<0.00050		mg/L		0.0005	11-MAY-19
Dibromomethane			<0.00050		mg/L		0.0005	11-MAY-19
1,2-Dichlorobenzene			<0.00050		mg/L		0.0005	11-MAY-19
1,3-Dichlorobenzene			<0.00050		mg/L		0.0005	11-MAY-19
1,4-Dichlorobenzene			<0.00050		mg/L		0.0005	11-MAY-19
Dichlorodifluoromethane			<0.0010		mg/L		0.001	11-MAY-19
1,1-dichloroethane			<0.00050		mg/L		0.0005	11-MAY-19
1,2-Dichloroethane			<0.00050		mg/L		0.0005	11-MAY-19
1,1-dichloroethene			<0.00050		mg/L		0.0005	11-MAY-19
cis-1,2-Dichloroethene			<0.00050		mg/L		0.0005	11-MAY-19
trans-1,2-Dichloroethene			<0.00050		mg/L		0.0005	11-MAY-19
Dichloromethane			<0.00050		mg/L		0.0005	11-MAY-19
1,2-Dichloropropane			<0.00050		mg/L		0.0005	11-MAY-19
1,3-Dichloropropane			<0.00050		mg/L		0.0005	11-MAY-19
2,2-Dichloropropane			<0.00050		mg/L		0.0005	11-MAY-19
1,1-Dichloropropene			<0.00050		mg/L		0.0005	11-MAY-19
cis-1,3-Dichloropropene			<0.00050		mg/L		0.0005	11-MAY-19
trans-1,3-Dichloropropene			<0.00050		mg/L		0.0005	11-MAY-19
Ethylbenzene			<0.00050		mg/L		0.0005	11-MAY-19
F1			<0.10		mg/L		0.1	11-MAY-19
Hexachlorobutadiene			<0.00050		mg/L		0.0005	11-MAY-19
Hexane			<0.00050		mg/L		0.0005	11-MAY-19
2-Hexanone (Methyl butyl ketone)			<0.020		mg/L		0.02	11-MAY-19
Isopropylbenzene			<0.00050		mg/L		0.0005	11-MAY-19
4-Isopropyltoluene			<0.0010		mg/L		0.001	11-MAY-19
MEK			<0.020		mg/L		0.02	11-MAY-19
MIBK			<0.020		mg/L		0.02	11-MAY-19
MTBE			<0.00050		mg/L		0.0005	11-MAY-19
Styrene			<0.00050		mg/L		0.0005	11-MAY-19
1,1,1,2-Tetrachloroethane			<0.00050		mg/L		0.0005	11-MAY-19
1,1,2,2-Tetrachloroethane			<0.00050		mg/L		0.0005	11-MAY-19



Quality Control Report

Workorder: L2270472

Report Date: 22-MAY-19

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Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
VOC+F1-HSMS-WP	Water							
Batch	R4632815							
WG3046857-1	MB							
Tetrachloroethene			<0.00050		mg/L		0.0005	11-MAY-19
Toluene			<0.00050		mg/L		0.0005	11-MAY-19
1,2,3-Trichlorobenzene			<0.00050		mg/L		0.0005	11-MAY-19
1,2,4-Trichlorobenzene			<0.00050		mg/L		0.0005	11-MAY-19
1,1,1-Trichloroethane			<0.00050		mg/L		0.0005	11-MAY-19
1,1,2-Trichloroethane			<0.00050		mg/L		0.0005	11-MAY-19
Trichloroethene			<0.00050		mg/L		0.0005	11-MAY-19
Trichlorofluoromethane			<0.0010		mg/L		0.001	11-MAY-19
1,2,3-Trichloropropane			<0.00050		mg/L		0.0005	11-MAY-19
1,2,4-Trimethylbenzene			<0.00050		mg/L		0.0005	11-MAY-19
1,3,5-Trimethylbenzene			<0.00050		mg/L		0.0005	11-MAY-19
Vinyl Chloride			<0.00050		mg/L		0.0005	11-MAY-19
M+P-Xylenes			<0.00040		mg/L		0.0004	11-MAY-19
o-Xylene			<0.00030		mg/L		0.0003	11-MAY-19
Surrogate: 4-Bromofluorobenzene (SS)			96.2		%		70-130	11-MAY-19
Surrogate: 1,4-Difluorobenzene (SS)			98.5		%		70-130	11-MAY-19

Quality Control Report

Workorder: L2270472

Report Date: 22-MAY-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
RPD-NA	Relative Percent Difference Not Available due to result(s) being less than detection limit.

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.

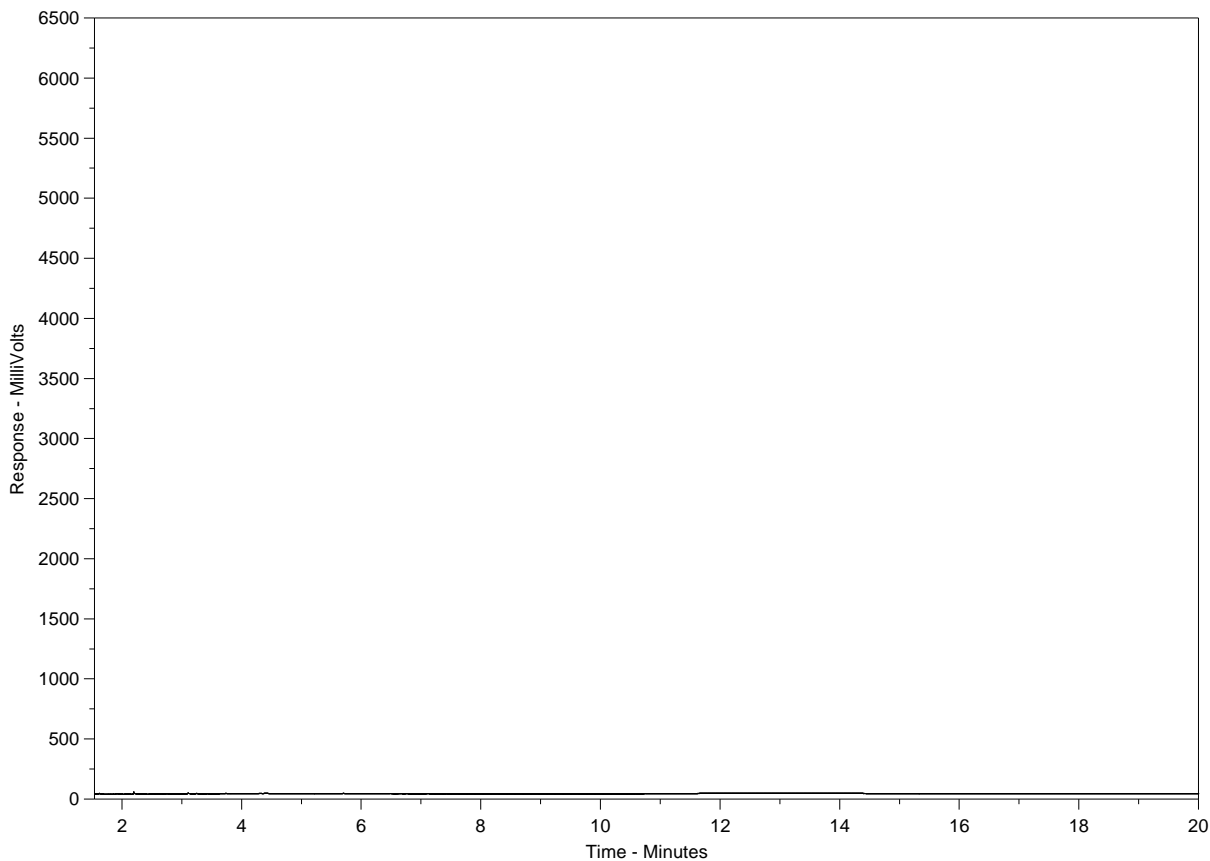
The ALS Quality Control Report is provided to ALS clients upon request. ALS includes comprehensive QC checks with every analysis to ensure our high standards of quality are met. Each QC result has a known or expected target value, which is compared against pre-determined data quality objectives to provide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

CCME F2-F4 HYDROCARBON DISTRIBUTION REPORT



ALS Sample ID: L2270472-1
 Client Sample ID: GWQ25-W4



← 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.

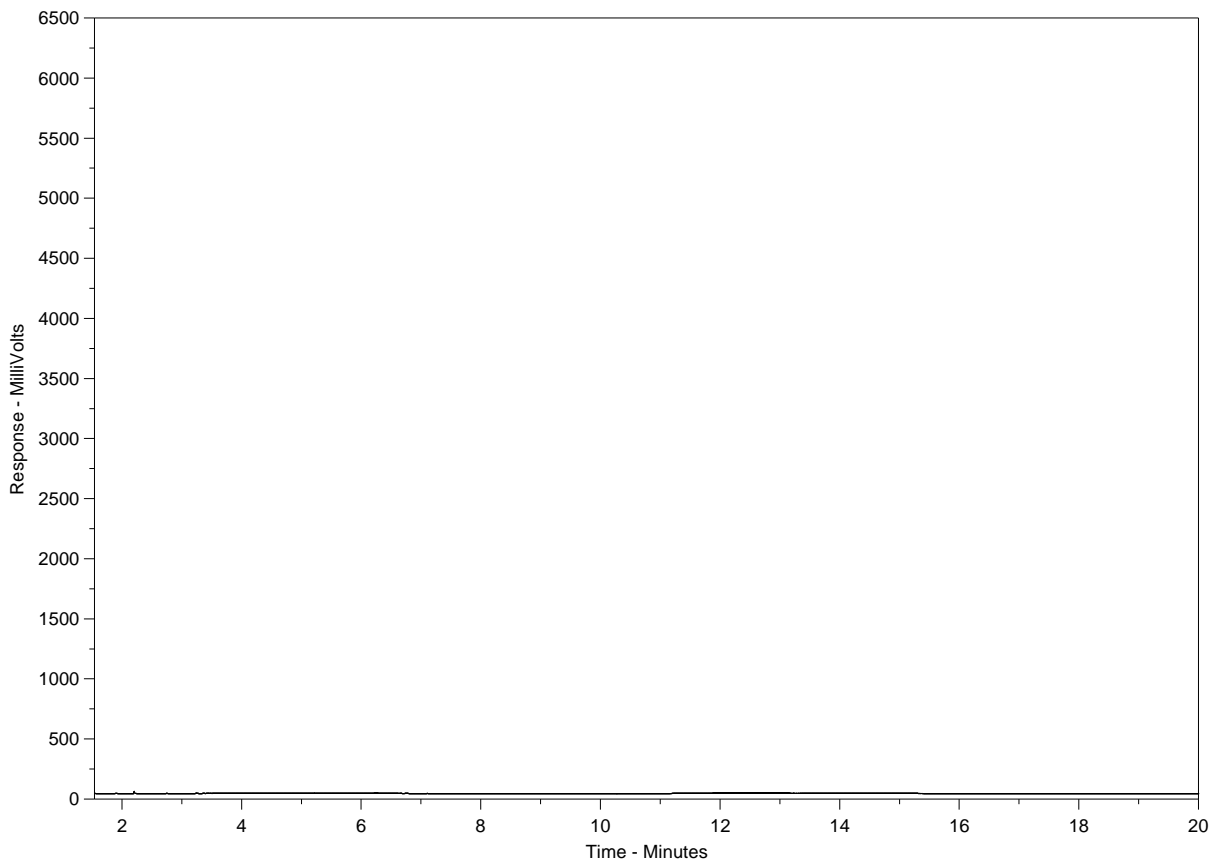
Peak heights in this report are a function of the sample concentration, the sample amount extracted, the sample dilution factor, and the scale at left.

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: L2270472-2
 Client Sample ID: GWQ25-W5



← 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.

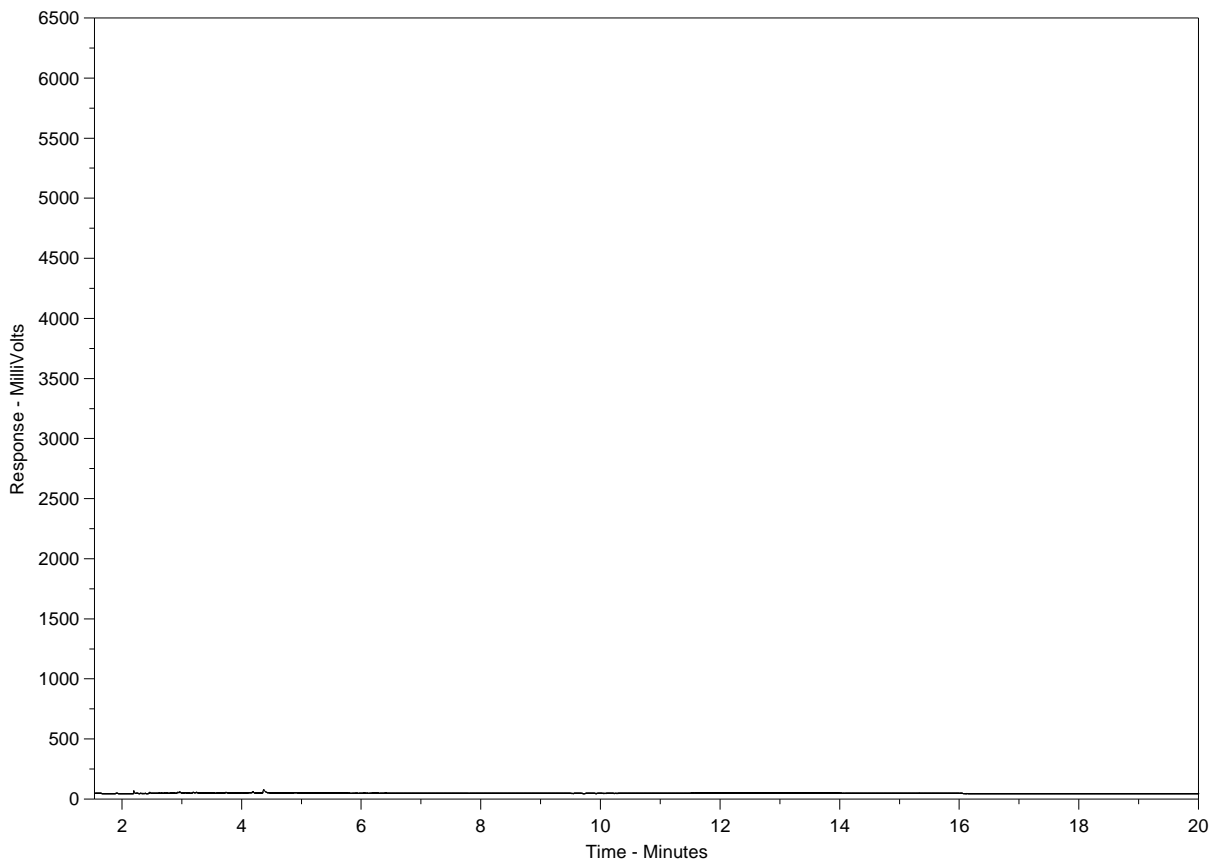
Peak heights in this report are a function of the sample concentration, the sample amount extracted, the sample dilution factor, and the scale at left.

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: L2270472-3
 Client Sample ID: GWQ25-100



← 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.

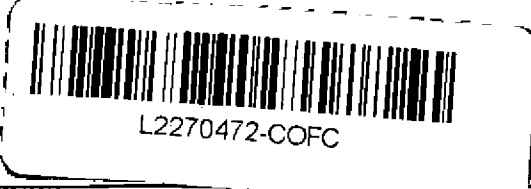
Note: This chromatogram was produced using GC conditions that are specific to ALS Canada CCME F2-F4 method. Refer to the ALS Canada CCME F2-F4 Hydrocarbon Library for a collection of chromatograms from common reference samples (fuels, oils, etc.). The HDR library can be found at www.alsglobal.com.



Chain of Custody (COC) / Analytical Request Form

Canada Toll Free: 1 800 668 9878

www.alsglobal.com



COC Number: 15 -

Page of

Report To Contact and company name below will appear on the final report		Report Format / Distribution			Select Service Level with your AM - surcharges will apply												
Company:	City of Winnipeg	Select Report Format: <input checked="" type="checkbox"/> PDF <input 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					EMERGENCY							
Contact:	Chris Kozak	Quality Control (QC) Report with Report <input checked="" type="checkbox"/> YES <input type="checkbox"/> NO			4 day [P4] <input type="checkbox"/>		1 Business day [E1] <input type="checkbox"/>										
Phone:	204-986-2384	<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"/>												
Street:	1120 Waverly Street	Email 1 or Fax: ckozak@winnipeg.ca			Date and Time Required for all E&P TATs:												
City/Province:	Winnipeg, Manitoba	Email 2			For tests that can not be performed according to the service level selected, you will be contacted.												
Postal Code:	R3T 0P4	Email 3			Analysis Request												
Invoice To	Same as Report To <input type="checkbox"/> YES <input type="checkbox"/> NO	Invoice Distribution			Indicate Filtered (F), Preserved (P) or Filtered and Preserved (F/P) below												
	Copy of Invoice with Report <input type="checkbox"/> YES <input type="checkbox"/> NO	Select Invoice Distribution: <input type="checkbox"/> EMAIL <input checked="" type="checkbox"/> MAIL <input type="checkbox"/> FAX															
Company:		Email 1 or Fax															
Contact:		Email 2															
Project Information		Oil and Gas Required Fields (client use)															
ALS Account # / Quote #: W10051/Q67317		AFE/Cost Center:		PO#													
Job #: Section B - BRRMF Groundwater		Major/Minor Code:		Routing Code:													
PO / AFE:		Requisitioner:															
LSD:		Location:															
ALS Lab Work Order # (lab use only)		ALS Contact:		Sampler:													
ALS Sample # (lab use only)	Sample Identification and/or Coordinates (This description will appear on the report)		Date (dd-mmm-yy)	Time (hh:mm)	Sample Type	ION-T-CFA-WP	PEST-DIAZINON-WT	HERBSCR-LOMS-WT	TC.FC.EC-Q197-WP	MET-D-CCMS-WP (DISSOLVED)	HG-T-CVAA-WP (TOTAL)	CR-CR6-IC-WT	PHENDLS-4AAP-WT	VOC-F1-F4-WP	PAH-PANH-WP	Number of Containers	
	GW025-W4		202734	9-MAY-19	10:05	WATER	X	X	X	X	X	X	X	X	X		
	GW025-W5		202743		11:30	WATER	X	X	X	X	X	X	X	X	X		
	GW025-W6																
	GW025-W7																
	GW025-100		202747		11:00	WATER	X	X	X	X	X	X	X	X	X		
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)															
Are samples taken from a Regulated DW System? <input type="checkbox"/> YES <input checked="" type="checkbox"/> NO																	
Are samples for human drinking water use? <input type="checkbox"/> YES <input checked="" type="checkbox"/> NO																	
SHIPMENT RELEASE (client use)		INITIAL SHIPMENT RECEPTION (lab use only)					FINAL SHIPMENT RECEPTION (lab use only)										
Released by: <i>[Signature]</i>	Date: 9 MAY 19	Time: 1405	Received by: AAL	Date: 9/5/19	Time: 2:10	Received by:	Date:	Time:	Received by:	Date:	Time:	Received by:	Date:	Time:	Received by:	Date:	Time:



City of Winnipeg - Solid Waste Services Div
(1120 Waverley)
ATTN: CHRIS KOZAK
Solid Waste Services Division
1120 Waverley Street
Winnipeg MB R3T 0P4

Date Received: 13-MAY-19
Report Date: 24-MAY-19 14:38 (MT)
Version: FINAL

Client Phone: 204-986-2384

Certificate of Analysis

Lab Work Order #: L2271988
Project P.O. #: NOT SUBMITTED
Job Reference: SECTION B - BRRMF - GROUNDWATER
C of C Numbers:
Legal Site Desc:

Hua Wo
Chemistry Laboratory Manager

[This report shall not be reproduced except in full without the written authority of the Laboratory.]

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
L2271988-1 GWQ25-W13							
Sampled By: CLIENT on 13-MAY-19 @ 10:10							
Matrix: WATER							
Miscellaneous Parameters							
Chromium, Hexavalent	<0.50		0.50	ug/L		16-MAY-19	R4636462
Mercury (Hg)-Total	<0.0050		0.0050	ug/L	15-MAY-19	21-MAY-19	R4640150
Phenols (4AAP)	19.1		1.0	ug/L		16-MAY-19	R4636409
Cyanide, Total	<1.0		1.0	ug/L		17-MAY-19	R4637332
Dissolved Metals in Water by CRC ICPMS							
Dissolved Metals Filtration Location	FIELD					14-MAY-19	R4634569
Aluminum (Al)-Dissolved	3.8		1.0	ug/L	14-MAY-19	14-MAY-19	R4635018
Antimony (Sb)-Dissolved	1.20		0.10	ug/L	14-MAY-19	14-MAY-19	R4635018
Arsenic (As)-Dissolved	3.54		0.10	ug/L	14-MAY-19	14-MAY-19	R4635018
Barium (Ba)-Dissolved	24.4		0.10	ug/L	14-MAY-19	14-MAY-19	R4635018
Beryllium (Be)-Dissolved	<0.10		0.10	ug/L	14-MAY-19	14-MAY-19	R4635018
Bismuth (Bi)-Dissolved	<0.050		0.050	ug/L	14-MAY-19	14-MAY-19	R4635018
Boron (B)-Dissolved	730		100	ug/L	14-MAY-19	15-MAY-19	R4635959
Cadmium (Cd)-Dissolved	0.197		0.0050	ug/L	14-MAY-19	14-MAY-19	R4635018
Calcium (Ca)-Dissolved	351000		50	ug/L	14-MAY-19	14-MAY-19	R4635018
Cesium (Cs)-Dissolved	0.030		0.010	ug/L	14-MAY-19	14-MAY-19	R4635018
Chromium (Cr)-Dissolved	1.32		0.10	ug/L	14-MAY-19	14-MAY-19	R4635018
Cobalt (Co)-Dissolved	0.40		0.10	ug/L	14-MAY-19	14-MAY-19	R4635018
Copper (Cu)-Dissolved	0.74		0.20	ug/L	14-MAY-19	14-MAY-19	R4635018
Iron (Fe)-Dissolved	191		10	ug/L	14-MAY-19	14-MAY-19	R4635018
Lead (Pb)-Dissolved	<0.050		0.050	ug/L	14-MAY-19	14-MAY-19	R4635018
Lithium (Li)-Dissolved	330		100	ug/L	14-MAY-19	14-MAY-19	R4635018
Magnesium (Mg)-Dissolved	148000		5.0	ug/L	14-MAY-19	14-MAY-19	R4635018
Manganese (Mn)-Dissolved	81.7		0.10	ug/L	14-MAY-19	14-MAY-19	R4635018
Molybdenum (Mo)-Dissolved	0.872		0.050	ug/L	14-MAY-19	14-MAY-19	R4635018
Nickel (Ni)-Dissolved	1.98		0.50	ug/L	14-MAY-19	14-MAY-19	R4635018
Phosphorus (P)-Dissolved	42		30	ug/L	14-MAY-19	14-MAY-19	R4635018
Potassium (K)-Dissolved	24500		50	ug/L	14-MAY-19	14-MAY-19	R4635018
Rubidium (Rb)-Dissolved	9.08		0.20	ug/L	14-MAY-19	14-MAY-19	R4635018
Selenium (Se)-Dissolved	0.568		0.050	ug/L	14-MAY-19	14-MAY-19	R4635018
Silicon (Si)-Dissolved	6370		50	ug/L	14-MAY-19	14-MAY-19	R4635018
Silver (Ag)-Dissolved	<0.010		0.010	ug/L	14-MAY-19	14-MAY-19	R4635018
Sodium (Na)-Dissolved	989000		5000	ug/L	14-MAY-19	14-MAY-19	R4635018
Strontium (Sr)-Dissolved	3230		10	ug/L	14-MAY-19	14-MAY-19	R4635018
Sulfur (S)-Dissolved	239000		500	ug/L	14-MAY-19	14-MAY-19	R4635018
Tellurium (Te)-Dissolved	<0.20		0.20	ug/L	14-MAY-19	14-MAY-19	R4635018
Thallium (Tl)-Dissolved	<0.010		0.010	ug/L	14-MAY-19	14-MAY-19	R4635018
Thorium (Th)-Dissolved	<0.10		0.10	ug/L	14-MAY-19	14-MAY-19	R4635018
Tin (Sn)-Dissolved	0.49		0.10	ug/L	14-MAY-19	14-MAY-19	R4635018
Titanium (Ti)-Dissolved	<0.30		0.30	ug/L	14-MAY-19	14-MAY-19	R4635018
Tungsten (W)-Dissolved	1.65		0.10	ug/L	14-MAY-19	14-MAY-19	R4635018
Uranium (U)-Dissolved	5.51		0.010	ug/L	14-MAY-19	14-MAY-19	R4635018
Vanadium (V)-Dissolved	<0.50		0.50	ug/L	14-MAY-19	14-MAY-19	R4635018
Zinc (Zn)-Dissolved	1.6		1.0	ug/L	14-MAY-19	14-MAY-19	R4635018
Zirconium (Zr)-Dissolved	0.139		0.060	ug/L	14-MAY-19	14-MAY-19	R4635018
Polyaromatic Hydrocarbons (PAHs)							
1-Methyl Naphthalene	<0.020		0.020	ug/L	14-MAY-19	17-MAY-19	R4639787
2-Methyl Naphthalene	0.023		0.020	ug/L	14-MAY-19	17-MAY-19	R4639787
Acenaphthene	<0.020		0.020	ug/L	14-MAY-19	17-MAY-19	R4639787
Acenaphthylene	<0.020		0.020	ug/L	14-MAY-19	17-MAY-19	R4639787
Anthracene	<0.010		0.010	ug/L	14-MAY-19	17-MAY-19	R4639787

* 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
L2271988-1 GWQ25-W13							
Sampled By: CLIENT on 13-MAY-19 @ 10:10							
Matrix: WATER							
Polyaromatic Hydrocarbons (PAHs)							
Acridine	<0.020		0.020	ug/L	14-MAY-19	17-MAY-19	R4639787
Benzo(a)anthracene	<0.010		0.010	ug/L	14-MAY-19	17-MAY-19	R4639787
Benzo(a)pyrene	<0.0050		0.0050	ug/L	14-MAY-19	17-MAY-19	R4639787
Benzo(b&j)fluoranthene	<0.010		0.010	ug/L	14-MAY-19	17-MAY-19	R4639787
Benzo(g,h,i)perylene	<0.020		0.020	ug/L	14-MAY-19	17-MAY-19	R4639787
Benzo(k)fluoranthene	<0.010		0.010	ug/L	14-MAY-19	17-MAY-19	R4639787
Chrysene	<0.020		0.020	ug/L	14-MAY-19	17-MAY-19	R4639787
Dibenzo(a,h)anthracene	<0.0050		0.0050	ug/L	14-MAY-19	17-MAY-19	R4639787
Fluoranthene	<0.020		0.020	ug/L	14-MAY-19	17-MAY-19	R4639787
Fluorene	<0.020		0.020	ug/L	14-MAY-19	17-MAY-19	R4639787
Indeno(1,2,3-cd)pyrene	<0.010		0.010	ug/L	14-MAY-19	17-MAY-19	R4639787
Naphthalene	0.062		0.050	ug/L	14-MAY-19	17-MAY-19	R4639787
Phenanthrene	<0.050		0.050	ug/L	14-MAY-19	17-MAY-19	R4639787
Pyrene	0.036		0.010	ug/L	14-MAY-19	17-MAY-19	R4639787
Quinoline	0.127	EMPC	0.020	ug/L	14-MAY-19	17-MAY-19	R4639787
B(a)P Total Potency Equivalent	<0.030		0.030	ug/L	14-MAY-19	17-MAY-19	R4639787
Surrogate: Acenaphthene d10	81.3		60-130	%	14-MAY-19	17-MAY-19	R4639787
Surrogate: Acridine d9	75.8		60-130	%	14-MAY-19	17-MAY-19	R4639787
Surrogate: Chrysene d12	87.2		60-130	%	14-MAY-19	17-MAY-19	R4639787
Surrogate: Naphthalene d8	76.0		50-130	%	14-MAY-19	17-MAY-19	R4639787
Surrogate: Phenanthrene d10	91.9		60-130	%	14-MAY-19	17-MAY-19	R4639787
Herbicides in Water							
Clopyralid	<0.10		0.10	ug/L	15-MAY-19	16-MAY-19	R4636327
Dicamba	<0.10		0.10	ug/L	15-MAY-19	16-MAY-19	R4636327
Mecoprop	<0.10		0.10	ug/L	15-MAY-19	16-MAY-19	R4636327
MCPA	<0.10		0.10	ug/L	15-MAY-19	16-MAY-19	R4636327
2,4-D	<0.10		0.10	ug/L	15-MAY-19	16-MAY-19	R4636327
Bromoxynil	<0.10		0.10	ug/L	15-MAY-19	16-MAY-19	R4636327
Triclopyr	<0.10		0.10	ug/L	15-MAY-19	16-MAY-19	R4636327
2,4,5-T	<0.10		0.10	ug/L	15-MAY-19	16-MAY-19	R4636327
2,4,5-TP	<0.10		0.10	ug/L	15-MAY-19	16-MAY-19	R4636327
Picloram	<0.10		0.10	ug/L	15-MAY-19	16-MAY-19	R4636327
2,4-DB	<0.10		0.10	ug/L	15-MAY-19	16-MAY-19	R4636327
2,4-DP	<0.10		0.10	ug/L	15-MAY-19	16-MAY-19	R4636327
Dinoseb	<0.10		0.10	ug/L	15-MAY-19	16-MAY-19	R4636327
MCPB	<0.10		0.10	ug/L	15-MAY-19	16-MAY-19	R4636327
Surrogate: 2,4-Dichlorophenylacetic Acid	127.0		50-130	%	15-MAY-19	16-MAY-19	R4636327
Miscellaneous Pesticides							
Diazinon	<0.10		0.10	ug/L	16-MAY-19	21-MAY-19	R4639694
Surrogate: 2-Fluorobiphenyl	67.9		40-130	%	16-MAY-19	21-MAY-19	R4639694
Surrogate: d14-Terphenyl	66.5		40-130	%	16-MAY-19	21-MAY-19	R4639694
Total, Fecal Coliforms, E Coli by QT97							
Fecal Coliform by MPN QT97							
Fecal Coliforms	1		1	MPN/100mL		13-MAY-19	R4634323
Total Coliform and E.coli by MPN QT97							
Total Coliforms	25		1	MPN/100mL		13-MAY-19	R4634326
Escherichia Coli	<1		1	MPN/100mL		13-MAY-19	R4634326
VOC plus F1 to F4							
CCME PHC F2-F4 in Water							
F2 (C10-C16)	<100		100	ug/L	15-MAY-19	15-MAY-19	R4636128
F3 (C16-C34)	<250		250	ug/L	15-MAY-19	15-MAY-19	R4636128
F4 (C34-C50)	<250		250	ug/L	15-MAY-19	15-MAY-19	R4636128

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ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2271988-1 GWQ25-W13							
Sampled By: CLIENT on 13-MAY-19 @ 10:10							
Matrix: WATER							
CCME PHC F2-F4 in Water							
Surrogate: 2-Bromobenzotrifluoride	81.3		60-140	%	15-MAY-19	15-MAY-19	R4636128
CCME Total Hydrocarbons							
F1-BTEX	<100		100	ug/L		24-MAY-19	
F2-Naphth	<100		100	ug/L		24-MAY-19	
F3-PAH	<250		250	ug/L		24-MAY-19	
Total Hydrocarbons (C6-C50)	<380		380	ug/L		24-MAY-19	
Sum of Xylene Isomer Concentrations							
Xylenes (Total)	<0.50		0.50	ug/L		23-MAY-19	
Total Trihalomethanes (THMs)							
Total THMs	2.2		1.0	ug/L		23-MAY-19	
VOC plus F1 by GCMS							
Acetone	<20		20	ug/L		23-MAY-19	R4641582
Benzene	<0.50		0.50	ug/L		23-MAY-19	R4641582
Bromobenzene	<0.50		0.50	ug/L		23-MAY-19	R4641582
Bromochloromethane	0.51		0.50	ug/L		23-MAY-19	R4641582
Bromodichloromethane	<0.50		0.50	ug/L		23-MAY-19	R4641582
Bromoform	<0.50		0.50	ug/L		23-MAY-19	R4641582
Bromomethane	<1.0		1.0	ug/L		23-MAY-19	R4641582
n-Butylbenzene	<0.50		0.50	ug/L		23-MAY-19	R4641582
sec-Butylbenzene	<0.50		0.50	ug/L		23-MAY-19	R4641582
tert-Butylbenzene	<0.50		0.50	ug/L		23-MAY-19	R4641582
Carbon disulfide	2.88		0.50	ug/L		23-MAY-19	R4641582
Carbon Tetrachloride	<0.50		0.50	ug/L		23-MAY-19	R4641582
Chlorobenzene	<0.50		0.50	ug/L		23-MAY-19	R4641582
Chloroethane	<1.0		1.0	ug/L		23-MAY-19	R4641582
Chloroform	2.19		0.50	ug/L		23-MAY-19	R4641582
Chloromethane	<1.0		1.0	ug/L		23-MAY-19	R4641582
2-Chlorotoluene	<20		20	ug/L		23-MAY-19	R4641582
4-Chlorotoluene	<0.50		0.50	ug/L		23-MAY-19	R4641582
Dibromochloromethane	<0.50		0.50	ug/L		23-MAY-19	R4641582
1,2-Dibromo-3-chloropropane	<0.50		0.50	ug/L		23-MAY-19	R4641582
1,2-Dibromoethane	<0.50		0.50	ug/L		23-MAY-19	R4641582
Dibromomethane	1.52		0.50	ug/L		23-MAY-19	R4641582
1,2-Dichlorobenzene	<0.50		0.50	ug/L		23-MAY-19	R4641582
1,3-Dichlorobenzene	<0.50		0.50	ug/L		23-MAY-19	R4641582
1,4-Dichlorobenzene	<0.50		0.50	ug/L		23-MAY-19	R4641582
Dichlorodifluoromethane	<1.0		1.0	ug/L		23-MAY-19	R4641582
1,1-dichloroethane	<0.50		0.50	ug/L		23-MAY-19	R4641582
1,2-Dichloroethane	<0.50		0.50	ug/L		23-MAY-19	R4641582
1,1-dichloroethene	<0.50		0.50	ug/L		23-MAY-19	R4641582
cis-1,2-Dichloroethene	<0.50		0.50	ug/L		23-MAY-19	R4641582
trans-1,2-Dichloroethene	<0.50		0.50	ug/L		23-MAY-19	R4641582
Dichloromethane	<0.50		0.50	ug/L		23-MAY-19	R4641582
1,2-Dichloropropane	<0.50		0.50	ug/L		23-MAY-19	R4641582
1,3-Dichloropropane	<0.50		0.50	ug/L		23-MAY-19	R4641582
2,2-Dichloropropane	<0.50		0.50	ug/L		23-MAY-19	R4641582
1,1-Dichloropropene	<0.50		0.50	ug/L		23-MAY-19	R4641582
cis-1,3-Dichloropropene	<0.50		0.50	ug/L		23-MAY-19	R4641582
trans-1,3-Dichloropropene	<0.50		0.50	ug/L		23-MAY-19	R4641582
Ethylbenzene	<0.50		0.50	ug/L		23-MAY-19	R4641582
F1	<100		100	ug/L		23-MAY-19	R4641582
Hexachlorobutadiene	<0.50		0.50	ug/L		23-MAY-19	R4641582

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ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2271988-1 GWQ25-W13							
Sampled By: CLIENT on 13-MAY-19 @ 10:10							
Matrix: WATER							
VOC plus F1 by GCMS							
Hexane	<0.50		0.50	ug/L		23-MAY-19	R4641582
2-Hexanone (Methyl butyl ketone)	<20		20	ug/L		23-MAY-19	R4641582
Isopropylbenzene	<0.50		0.50	ug/L		23-MAY-19	R4641582
4-Isopropyltoluene	<1.0		1.0	ug/L		23-MAY-19	R4641582
MEK	<20		20	ug/L		23-MAY-19	R4641582
MIBK	<20		20	ug/L		23-MAY-19	R4641582
MTBE	<0.50		0.50	ug/L		23-MAY-19	R4641582
Styrene	<0.50		0.50	ug/L		23-MAY-19	R4641582
1,1,1,2-Tetrachloroethane	<0.50		0.50	ug/L		23-MAY-19	R4641582
1,1,2,2-Tetrachloroethane	<0.50		0.50	ug/L		23-MAY-19	R4641582
Tetrachloroethene	<0.50		0.50	ug/L		23-MAY-19	R4641582
Toluene	<0.50		0.50	ug/L		23-MAY-19	R4641582
1,2,3-Trichlorobenzene	<0.50		0.50	ug/L		23-MAY-19	R4641582
1,2,4-Trichlorobenzene	<0.50		0.50	ug/L		23-MAY-19	R4641582
1,1,1-Trichloroethane	<0.50		0.50	ug/L		23-MAY-19	R4641582
1,1,2-Trichloroethane	<0.50		0.50	ug/L		23-MAY-19	R4641582
Trichloroethene	<0.50		0.50	ug/L		23-MAY-19	R4641582
Trichlorofluoromethane	<1.0		1.0	ug/L		23-MAY-19	R4641582
1,2,3-Trichloropropane	<0.50		0.50	ug/L		23-MAY-19	R4641582
1,2,4-Trimethylbenzene	<0.50		0.50	ug/L		23-MAY-19	R4641582
1,3,5-Trimethylbenzene	<0.50		0.50	ug/L		23-MAY-19	R4641582
Vinyl Chloride	<0.50		0.50	ug/L		23-MAY-19	R4641582
M+P-Xylenes	<0.40		0.40	ug/L		23-MAY-19	R4641582
o-Xylene	<0.30		0.30	ug/L		23-MAY-19	R4641582
Surrogate: 4-Bromofluorobenzene (SS)	91.1		70-130	%		23-MAY-19	R4641582
Surrogate: 1,4-Difluorobenzene (SS)	95.7		70-130	%		23-MAY-19	R4641582
L2271988-2 GWQ25-W8							
Sampled By: CLIENT on 13-MAY-19 @ 11:25							
Matrix: WATER							
Miscellaneous Parameters							
Chromium, Hexavalent	48.5		0.50	ug/L		16-MAY-19	R4636462
Mercury (Hg)-Total	<0.0050		0.0050	ug/L	15-MAY-19	21-MAY-19	R4640150
Phenols (4AAP)	3.2		1.0	ug/L		16-MAY-19	R4636409
Cyanide, Total	<1.0		1.0	ug/L		17-MAY-19	R4637332
Dissolved Metals in Water by CRC ICPMS							
Dissolved Metals Filtration Location	FIELD					14-MAY-19	R4634569
Aluminum (Al)-Dissolved	6.5		1.0	ug/L	14-MAY-19	14-MAY-19	R4635018
Antimony (Sb)-Dissolved	7.53		0.10	ug/L	14-MAY-19	14-MAY-19	R4635018
Arsenic (As)-Dissolved	3.61		0.10	ug/L	14-MAY-19	14-MAY-19	R4635018
Barium (Ba)-Dissolved	65.0		0.10	ug/L	14-MAY-19	14-MAY-19	R4635018
Beryllium (Be)-Dissolved	<0.10		0.10	ug/L	14-MAY-19	14-MAY-19	R4635018
Bismuth (Bi)-Dissolved	<0.050		0.050	ug/L	14-MAY-19	14-MAY-19	R4635018
Boron (B)-Dissolved	146		10	ug/L	14-MAY-19	14-MAY-19	R4635018
Cadmium (Cd)-Dissolved	0.0051		0.0050	ug/L	14-MAY-19	14-MAY-19	R4635018
Calcium (Ca)-Dissolved	776000		5000	ug/L	14-MAY-19	14-MAY-19	R4635018
Cesium (Cs)-Dissolved	0.406		0.010	ug/L	14-MAY-19	14-MAY-19	R4635018
Chromium (Cr)-Dissolved	50.4		0.10	ug/L	14-MAY-19	14-MAY-19	R4635018
Cobalt (Co)-Dissolved	<0.10		0.10	ug/L	14-MAY-19	14-MAY-19	R4635018
Copper (Cu)-Dissolved	3.27		0.20	ug/L	14-MAY-19	14-MAY-19	R4635018
Iron (Fe)-Dissolved	<10		10	ug/L	14-MAY-19	14-MAY-19	R4635018
Lead (Pb)-Dissolved	0.215		0.050	ug/L	14-MAY-19	14-MAY-19	R4635018

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ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2271988-2 GWQ25-W8							
Sampled By: CLIENT on 13-MAY-19 @ 11:25							
Matrix: WATER							
Dissolved Metals in Water by CRC ICPMS							
Lithium (Li)-Dissolved	690		100	ug/L	14-MAY-19	14-MAY-19	R4635018
Magnesium (Mg)-Dissolved	888		5.0	ug/L	14-MAY-19	14-MAY-19	R4635018
Manganese (Mn)-Dissolved	0.20		0.10	ug/L	14-MAY-19	14-MAY-19	R4635018
Molybdenum (Mo)-Dissolved	4.93		0.050	ug/L	14-MAY-19	14-MAY-19	R4635018
Nickel (Ni)-Dissolved	0.65		0.50	ug/L	14-MAY-19	14-MAY-19	R4635018
Phosphorus (P)-Dissolved	<30		30	ug/L	14-MAY-19	14-MAY-19	R4635018
Potassium (K)-Dissolved	20100		50	ug/L	14-MAY-19	14-MAY-19	R4635018
Rubidium (Rb)-Dissolved	11.3		0.20	ug/L	14-MAY-19	14-MAY-19	R4635018
Selenium (Se)-Dissolved	0.747		0.050	ug/L	14-MAY-19	14-MAY-19	R4635018
Silicon (Si)-Dissolved	396		50	ug/L	14-MAY-19	14-MAY-19	R4635018
Silver (Ag)-Dissolved	0.016		0.010	ug/L	14-MAY-19	14-MAY-19	R4635018
Sodium (Na)-Dissolved	596000		5000	ug/L	14-MAY-19	14-MAY-19	R4635018
Strontium (Sr)-Dissolved	4270		10	ug/L	14-MAY-19	14-MAY-19	R4635018
Sulfur (S)-Dissolved	172000		500	ug/L	14-MAY-19	14-MAY-19	R4635018
Tellurium (Te)-Dissolved	<0.20		0.20	ug/L	14-MAY-19	14-MAY-19	R4635018
Thallium (Tl)-Dissolved	<0.010		0.010	ug/L	14-MAY-19	14-MAY-19	R4635018
Thorium (Th)-Dissolved	<0.10		0.10	ug/L	14-MAY-19	14-MAY-19	R4635018
Tin (Sn)-Dissolved	0.63		0.10	ug/L	14-MAY-19	14-MAY-19	R4635018
Titanium (Ti)-Dissolved	<0.30		0.30	ug/L	14-MAY-19	14-MAY-19	R4635018
Tungsten (W)-Dissolved	8.20		0.10	ug/L	14-MAY-19	14-MAY-19	R4635018
Uranium (U)-Dissolved	0.013		0.010	ug/L	14-MAY-19	14-MAY-19	R4635018
Vanadium (V)-Dissolved	<0.50		0.50	ug/L	14-MAY-19	14-MAY-19	R4635018
Zinc (Zn)-Dissolved	1.5		1.0	ug/L	14-MAY-19	14-MAY-19	R4635018
Zirconium (Zr)-Dissolved	<0.060		0.060	ug/L	14-MAY-19	14-MAY-19	R4635018
Polyaromatic Hydrocarbons (PAHs)							
1-Methyl Naphthalene	0.051		0.020	ug/L	14-MAY-19	17-MAY-19	R4639787
2-Methyl Naphthalene	0.076		0.020	ug/L	14-MAY-19	17-MAY-19	R4639787
Acenaphthene	<0.020		0.020	ug/L	14-MAY-19	17-MAY-19	R4639787
Acenaphthylene	<0.020		0.020	ug/L	14-MAY-19	17-MAY-19	R4639787
Anthracene	<0.010		0.010	ug/L	14-MAY-19	17-MAY-19	R4639787
Acridine	<0.020		0.020	ug/L	14-MAY-19	17-MAY-19	R4639787
Benzo(a)anthracene	<0.010		0.010	ug/L	14-MAY-19	17-MAY-19	R4639787
Benzo(a)pyrene	<0.0050		0.0050	ug/L	14-MAY-19	17-MAY-19	R4639787
Benzo(b&j)fluoranthene	<0.010		0.010	ug/L	14-MAY-19	17-MAY-19	R4639787
Benzo(g,h,i)perylene	<0.020		0.020	ug/L	14-MAY-19	17-MAY-19	R4639787
Benzo(k)fluoranthene	<0.010		0.010	ug/L	14-MAY-19	17-MAY-19	R4639787
Chrysene	<0.020		0.020	ug/L	14-MAY-19	17-MAY-19	R4639787
Dibenzo(a,h)anthracene	<0.0050		0.0050	ug/L	14-MAY-19	17-MAY-19	R4639787
Fluoranthene	0.026		0.020	ug/L	14-MAY-19	17-MAY-19	R4639787
Fluorene	<0.020		0.020	ug/L	14-MAY-19	17-MAY-19	R4639787
Indeno(1,2,3-cd)pyrene	<0.010		0.010	ug/L	14-MAY-19	17-MAY-19	R4639787
Naphthalene	0.161		0.050	ug/L	14-MAY-19	17-MAY-19	R4639787
Phenanthrene	<0.050		0.050	ug/L	14-MAY-19	17-MAY-19	R4639787
Pyrene	0.082		0.010	ug/L	14-MAY-19	17-MAY-19	R4639787
Quinoline	0.034	EMPC	0.020	ug/L	14-MAY-19	17-MAY-19	R4639787
B(a)P Total Potency Equivalent	<0.030		0.030	ug/L	14-MAY-19	17-MAY-19	R4639787
Surrogate: Acenaphthene d10	80.9		60-130	%	14-MAY-19	17-MAY-19	R4639787
Surrogate: Acridine d9	76.5		60-130	%	14-MAY-19	17-MAY-19	R4639787
Surrogate: Chrysene d12	85.3		60-130	%	14-MAY-19	17-MAY-19	R4639787
Surrogate: Naphthalene d8	76.0		50-130	%	14-MAY-19	17-MAY-19	R4639787
Surrogate: Phenanthrene d10	92.6		60-130	%	14-MAY-19	17-MAY-19	R4639787

* 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
L2271988-2 GWQ25-W8							
Sampled By: CLIENT on 13-MAY-19 @ 11:25							
Matrix: WATER							
Herbicides in Water							
Clopyralid	<0.10		0.10	ug/L	15-MAY-19	16-MAY-19	R4636327
Dicamba	<0.10		0.10	ug/L	15-MAY-19	16-MAY-19	R4636327
Mecoprop	<0.10		0.10	ug/L	15-MAY-19	16-MAY-19	R4636327
MCPA	<0.10		0.10	ug/L	15-MAY-19	16-MAY-19	R4636327
2,4-D	<0.10		0.10	ug/L	15-MAY-19	16-MAY-19	R4636327
Bromoxynil	<0.10		0.10	ug/L	15-MAY-19	16-MAY-19	R4636327
Triclopyr	<0.10		0.10	ug/L	15-MAY-19	16-MAY-19	R4636327
2,4,5-T	<0.10		0.10	ug/L	15-MAY-19	16-MAY-19	R4636327
2,4,5-TP	<0.10		0.10	ug/L	15-MAY-19	16-MAY-19	R4636327
Picloram	<0.10		0.10	ug/L	15-MAY-19	16-MAY-19	R4636327
2,4-DB	<0.10		0.10	ug/L	15-MAY-19	16-MAY-19	R4636327
2,4-DP	<0.10		0.10	ug/L	15-MAY-19	16-MAY-19	R4636327
Dinoseb	<0.10		0.10	ug/L	15-MAY-19	16-MAY-19	R4636327
MCPB	<0.10		0.10	ug/L	15-MAY-19	16-MAY-19	R4636327
Surrogate: 2,4-Dichlorophenylacetic Acid	117.0		50-130	%	15-MAY-19	16-MAY-19	R4636327
Miscellaneous Pesticides							
Diazinon	<0.10		0.10	ug/L	16-MAY-19	21-MAY-19	R4639694
Surrogate: 2-Fluorobiphenyl	65.0		40-130	%	16-MAY-19	21-MAY-19	R4639694
Surrogate: d14-Terphenyl	61.7		40-130	%	16-MAY-19	21-MAY-19	R4639694
Total, Fecal Coliforms, E Coli by QT97							
Fecal Coliform by MPN QT97							
Fecal Coliforms	<1		1	MPN/100mL		13-MAY-19	R4634323
Total Coliform and E.coli by MPN QT97							
Total Coliforms	<1		1	MPN/100mL		13-MAY-19	R4634326
Escherichia Coli	<1		1	MPN/100mL		13-MAY-19	R4634326
VOC plus F1 to F4							
CCME PHC F2-F4 in Water							
F2 (C10-C16)	110		100	ug/L	15-MAY-19	15-MAY-19	R4636128
F3 (C16-C34)	<250		250	ug/L	15-MAY-19	15-MAY-19	R4636128
F4 (C34-C50)	<250		250	ug/L	15-MAY-19	15-MAY-19	R4636128
Surrogate: 2-Bromobenzotrifluoride	82.5		60-140	%	15-MAY-19	15-MAY-19	R4636128
CCME Total Hydrocarbons							
F1-BTEX	<100		100	ug/L		24-MAY-19	
F2-Naphth	110		100	ug/L		24-MAY-19	
F3-PAH	<250		250	ug/L		24-MAY-19	
Total Hydrocarbons (C6-C50)	<380		380	ug/L		24-MAY-19	
Sum of Xylene Isomer Concentrations							
Xylenes (Total)	<0.50		0.50	ug/L		23-MAY-19	
Total Trihalomethanes (THMs)							
Total THMs	3.7		1.0	ug/L		23-MAY-19	
VOC plus F1 by GCMS							
Acetone	21		20	ug/L		23-MAY-19	R4641582
Benzene	<0.50		0.50	ug/L		23-MAY-19	R4641582
Bromobenzene	<0.50		0.50	ug/L		23-MAY-19	R4641582
Bromochloromethane	<0.50		0.50	ug/L		23-MAY-19	R4641582
Bromodichloromethane	<0.50		0.50	ug/L		23-MAY-19	R4641582
Bromoform	<0.50		0.50	ug/L		23-MAY-19	R4641582
Bromomethane	<1.0		1.0	ug/L		23-MAY-19	R4641582
n-Butylbenzene	<0.50		0.50	ug/L		23-MAY-19	R4641582
sec-Butylbenzene	<0.50		0.50	ug/L		23-MAY-19	R4641582
tert-Butylbenzene	<0.50		0.50	ug/L		23-MAY-19	R4641582
Carbon disulfide	<0.50		0.50	ug/L		23-MAY-19	R4641582

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ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2271988-2 GWQ25-W8							
Sampled By: CLIENT on 13-MAY-19 @ 11:25							
Matrix: WATER							
VOC plus F1 by GCMS							
Carbon Tetrachloride	<0.50		0.50	ug/L		23-MAY-19	R4641582
Chlorobenzene	<0.50		0.50	ug/L		23-MAY-19	R4641582
Chloroethane	<1.0		1.0	ug/L		23-MAY-19	R4641582
Chloroform	3.68		0.50	ug/L		23-MAY-19	R4641582
Chloromethane	<1.0		1.0	ug/L		23-MAY-19	R4641582
2-Chlorotoluene	<20		20	ug/L		23-MAY-19	R4641582
4-Chlorotoluene	<0.50		0.50	ug/L		23-MAY-19	R4641582
Dibromochloromethane	<0.50		0.50	ug/L		23-MAY-19	R4641582
1,2-Dibromo-3-chloropropane	<0.50		0.50	ug/L		23-MAY-19	R4641582
1,2-Dibromoethane	<0.50		0.50	ug/L		23-MAY-19	R4641582
Dibromomethane	<0.50		0.50	ug/L		23-MAY-19	R4641582
1,2-Dichlorobenzene	<0.50		0.50	ug/L		23-MAY-19	R4641582
1,3-Dichlorobenzene	<0.50		0.50	ug/L		23-MAY-19	R4641582
1,4-Dichlorobenzene	<0.50		0.50	ug/L		23-MAY-19	R4641582
Dichlorodifluoromethane	<1.0		1.0	ug/L		23-MAY-19	R4641582
1,1-dichloroethane	<0.50		0.50	ug/L		23-MAY-19	R4641582
1,2-Dichloroethane	<0.50		0.50	ug/L		23-MAY-19	R4641582
1,1-dichloroethene	<0.50		0.50	ug/L		23-MAY-19	R4641582
cis-1,2-Dichloroethene	<0.50		0.50	ug/L		23-MAY-19	R4641582
trans-1,2-Dichloroethene	<0.50		0.50	ug/L		23-MAY-19	R4641582
Dichloromethane	<0.50		0.50	ug/L		23-MAY-19	R4641582
1,2-Dichloropropane	<0.50		0.50	ug/L		23-MAY-19	R4641582
1,3-Dichloropropane	<0.50		0.50	ug/L		23-MAY-19	R4641582
2,2-Dichloropropane	<0.50		0.50	ug/L		23-MAY-19	R4641582
1,1-Dichloropropene	<0.50		0.50	ug/L		23-MAY-19	R4641582
cis-1,3-Dichloropropene	<0.50		0.50	ug/L		23-MAY-19	R4641582
trans-1,3-Dichloropropene	<0.50		0.50	ug/L		23-MAY-19	R4641582
Ethylbenzene	<0.50		0.50	ug/L		23-MAY-19	R4641582
F1	<100		100	ug/L		23-MAY-19	R4641582
Hexachlorobutadiene	<0.50		0.50	ug/L		23-MAY-19	R4641582
Hexane	<0.50		0.50	ug/L		23-MAY-19	R4641582
2-Hexanone (Methyl butyl ketone)	<20		20	ug/L		23-MAY-19	R4641582
Isopropylbenzene	<0.50		0.50	ug/L		23-MAY-19	R4641582
4-Isopropyltoluene	<1.0		1.0	ug/L		23-MAY-19	R4641582
MEK	<20		20	ug/L		23-MAY-19	R4641582
MIBK	<20		20	ug/L		23-MAY-19	R4641582
MTBE	<0.50		0.50	ug/L		23-MAY-19	R4641582
Styrene	<0.50		0.50	ug/L		23-MAY-19	R4641582
1,1,1,2-Tetrachloroethane	<0.50		0.50	ug/L		23-MAY-19	R4641582
1,1,2,2-Tetrachloroethane	<0.50		0.50	ug/L		23-MAY-19	R4641582
Tetrachloroethene	<0.50		0.50	ug/L		23-MAY-19	R4641582
Toluene	<0.50		0.50	ug/L		23-MAY-19	R4641582
1,2,3-Trichlorobenzene	<0.50		0.50	ug/L		23-MAY-19	R4641582
1,2,4-Trichlorobenzene	<0.50		0.50	ug/L		23-MAY-19	R4641582
1,1,1-Trichloroethane	<0.50		0.50	ug/L		23-MAY-19	R4641582
1,1,2-Trichloroethane	<0.50		0.50	ug/L		23-MAY-19	R4641582
Trichloroethene	<0.50		0.50	ug/L		23-MAY-19	R4641582
Trichlorofluoromethane	<1.0		1.0	ug/L		23-MAY-19	R4641582
1,2,3-Trichloropropane	<0.50		0.50	ug/L		23-MAY-19	R4641582
1,2,4-Trimethylbenzene	<0.50		0.50	ug/L		23-MAY-19	R4641582
1,3,5-Trimethylbenzene	<0.50		0.50	ug/L		23-MAY-19	R4641582

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ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2271988-2 GWQ25-W8 Sampled By: CLIENT on 13-MAY-19 @ 11:25 Matrix: WATER VOC plus F1 by GCMS							
Vinyl Chloride	<0.50		0.50	ug/L		23-MAY-19	R4641582
M+P-Xylenes	<0.40		0.40	ug/L		23-MAY-19	R4641582
o-Xylene	<0.30		0.30	ug/L		23-MAY-19	R4641582
Surrogate: 4-Bromofluorobenzene (SS)	90.7		70-130	%		23-MAY-19	R4641582
Surrogate: 1,4-Difluorobenzene (SS)	95.8		70-130	%		23-MAY-19	R4641582
L2271988-3 GWQ25-W14 Sampled By: CLIENT on 13-MAY-19 @ 12:35 Matrix: WATER Miscellaneous Parameters							
Chromium, Hexavalent	<0.50		0.50	ug/L		16-MAY-19	R4636462
Mercury (Hg)-Total	<0.0050		0.0050	ug/L	15-MAY-19	21-MAY-19	R4640150
Phenols (4AAP)	2.0		1.0	ug/L		16-MAY-19	R4636409
Cyanide, Total	<1.0		1.0	ug/L		17-MAY-19	R4637332
Dissolved Metals in Water by CRC ICPMS							
Dissolved Metals Filtration Location	FIELD					14-MAY-19	R4634569
Aluminum (Al)-Dissolved	1.8		1.0	ug/L	14-MAY-19	14-MAY-19	R4635018
Antimony (Sb)-Dissolved	0.64		0.10	ug/L	14-MAY-19	14-MAY-19	R4635018
Arsenic (As)-Dissolved	2.88		0.10	ug/L	14-MAY-19	14-MAY-19	R4635018
Barium (Ba)-Dissolved	18.5		0.10	ug/L	14-MAY-19	14-MAY-19	R4635018
Beryllium (Be)-Dissolved	<0.10		0.10	ug/L	14-MAY-19	14-MAY-19	R4635018
Bismuth (Bi)-Dissolved	<0.050		0.050	ug/L	14-MAY-19	14-MAY-19	R4635018
Boron (B)-Dissolved	880		100	ug/L	14-MAY-19	15-MAY-19	R4635959
Cadmium (Cd)-Dissolved	0.0183		0.0050	ug/L	14-MAY-19	14-MAY-19	R4635018
Calcium (Ca)-Dissolved	255000		50	ug/L	14-MAY-19	14-MAY-19	R4635018
Cesium (Cs)-Dissolved	0.139		0.010	ug/L	14-MAY-19	14-MAY-19	R4635018
Chromium (Cr)-Dissolved	0.13		0.10	ug/L	14-MAY-19	14-MAY-19	R4635018
Cobalt (Co)-Dissolved	0.23		0.10	ug/L	14-MAY-19	14-MAY-19	R4635018
Copper (Cu)-Dissolved	2.89		0.20	ug/L	14-MAY-19	14-MAY-19	R4635018
Iron (Fe)-Dissolved	<10		10	ug/L	14-MAY-19	14-MAY-19	R4635018
Lead (Pb)-Dissolved	<0.050		0.050	ug/L	14-MAY-19	14-MAY-19	R4635018
Lithium (Li)-Dissolved	233		1.0	ug/L	14-MAY-19	14-MAY-19	R4635018
Magnesium (Mg)-Dissolved	108000		5.0	ug/L	14-MAY-19	14-MAY-19	R4635018
Manganese (Mn)-Dissolved	14.5		0.10	ug/L	14-MAY-19	14-MAY-19	R4635018
Molybdenum (Mo)-Dissolved	3.10		0.050	ug/L	14-MAY-19	14-MAY-19	R4635018
Nickel (Ni)-Dissolved	0.83		0.50	ug/L	14-MAY-19	14-MAY-19	R4635018
Phosphorus (P)-Dissolved	<30		30	ug/L	14-MAY-19	14-MAY-19	R4635018
Potassium (K)-Dissolved	35500		50	ug/L	14-MAY-19	14-MAY-19	R4635018
Rubidium (Rb)-Dissolved	17.2		0.20	ug/L	14-MAY-19	14-MAY-19	R4635018
Selenium (Se)-Dissolved	0.052		0.050	ug/L	14-MAY-19	14-MAY-19	R4635018
Silicon (Si)-Dissolved	3760		50	ug/L	14-MAY-19	14-MAY-19	R4635018
Silver (Ag)-Dissolved	0.028		0.010	ug/L	14-MAY-19	14-MAY-19	R4635018
Sodium (Na)-Dissolved	1270000		5000	ug/L	14-MAY-19	14-MAY-19	R4635018
Strontium (Sr)-Dissolved	3290		10	ug/L	14-MAY-19	14-MAY-19	R4635018
Sulfur (S)-Dissolved	233000		500	ug/L	14-MAY-19	14-MAY-19	R4635018
Tellurium (Te)-Dissolved	<0.20		0.20	ug/L	14-MAY-19	14-MAY-19	R4635018
Thallium (Tl)-Dissolved	<0.010		0.010	ug/L	14-MAY-19	14-MAY-19	R4635018
Thorium (Th)-Dissolved	<0.10		0.10	ug/L	14-MAY-19	14-MAY-19	R4635018
Tin (Sn)-Dissolved	1.01		0.10	ug/L	14-MAY-19	14-MAY-19	R4635018
Titanium (Ti)-Dissolved	<0.30		0.30	ug/L	14-MAY-19	14-MAY-19	R4635018
Tungsten (W)-Dissolved	0.27		0.10	ug/L	14-MAY-19	14-MAY-19	R4635018
Uranium (U)-Dissolved	0.589		0.010	ug/L	14-MAY-19	14-MAY-19	R4635018

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ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2271988-3 GWQ25-W14							
Sampled By: CLIENT on 13-MAY-19 @ 12:35							
Matrix: WATER							
Dissolved Metals in Water by CRC ICPMS							
Vanadium (V)-Dissolved	<0.50		0.50	ug/L	14-MAY-19	14-MAY-19	R4635018
Zinc (Zn)-Dissolved	9.6		1.0	ug/L	14-MAY-19	14-MAY-19	R4635018
Zirconium (Zr)-Dissolved	<0.060		0.060	ug/L	14-MAY-19	14-MAY-19	R4635018
Polyaromatic Hydrocarbons (PAHs)							
1-Methyl Naphthalene	<0.020		0.020	ug/L	14-MAY-19	17-MAY-19	R4639787
2-Methyl Naphthalene	<0.020		0.020	ug/L	14-MAY-19	17-MAY-19	R4639787
Acenaphthene	<0.020		0.020	ug/L	14-MAY-19	17-MAY-19	R4639787
Acenaphthylene	<0.020		0.020	ug/L	14-MAY-19	17-MAY-19	R4639787
Anthracene	<0.010		0.010	ug/L	14-MAY-19	17-MAY-19	R4639787
Acridine	<0.020		0.020	ug/L	14-MAY-19	17-MAY-19	R4639787
Benzo(a)anthracene	<0.010		0.010	ug/L	14-MAY-19	17-MAY-19	R4639787
Benzo(a)pyrene	<0.0050		0.0050	ug/L	14-MAY-19	17-MAY-19	R4639787
Benzo(b&j)fluoranthene	<0.010		0.010	ug/L	14-MAY-19	17-MAY-19	R4639787
Benzo(g,h,i)perylene	<0.020		0.020	ug/L	14-MAY-19	17-MAY-19	R4639787
Benzo(k)fluoranthene	<0.010		0.010	ug/L	14-MAY-19	17-MAY-19	R4639787
Chrysene	<0.020		0.020	ug/L	14-MAY-19	17-MAY-19	R4639787
Dibenzo(a,h)anthracene	<0.0050		0.0050	ug/L	14-MAY-19	17-MAY-19	R4639787
Fluoranthene	<0.020		0.020	ug/L	14-MAY-19	17-MAY-19	R4639787
Fluorene	<0.020		0.020	ug/L	14-MAY-19	17-MAY-19	R4639787
Indeno(1,2,3-cd)pyrene	<0.010		0.010	ug/L	14-MAY-19	17-MAY-19	R4639787
Naphthalene	<0.050		0.050	ug/L	14-MAY-19	17-MAY-19	R4639787
Phenanthrene	<0.050		0.050	ug/L	14-MAY-19	17-MAY-19	R4639787
Pyrene	0.045		0.010	ug/L	14-MAY-19	17-MAY-19	R4639787
Quinoline	<0.020		0.020	ug/L	14-MAY-19	17-MAY-19	R4639787
B(a)P Total Potency Equivalent	<0.030		0.030	ug/L	14-MAY-19	17-MAY-19	R4639787
Surrogate: Acenaphthene d10	76.4		60-130	%	14-MAY-19	17-MAY-19	R4639787
Surrogate: Acridine d9	63.4		60-130	%	14-MAY-19	17-MAY-19	R4639787
Surrogate: Chrysene d12	77.8		60-130	%	14-MAY-19	17-MAY-19	R4639787
Surrogate: Naphthalene d8	71.1		50-130	%	14-MAY-19	17-MAY-19	R4639787
Surrogate: Phenanthrene d10	81.7		60-130	%	14-MAY-19	17-MAY-19	R4639787
Herbicides in Water							
Clopyralid	<0.10		0.10	ug/L	15-MAY-19	16-MAY-19	R4636327
Dicamba	<0.10		0.10	ug/L	15-MAY-19	16-MAY-19	R4636327
Mecoprop	<0.10		0.10	ug/L	15-MAY-19	16-MAY-19	R4636327
MCPA	<0.10		0.10	ug/L	15-MAY-19	16-MAY-19	R4636327
2,4-D	<0.10		0.10	ug/L	15-MAY-19	16-MAY-19	R4636327
Bromoxynil	<0.10		0.10	ug/L	15-MAY-19	16-MAY-19	R4636327
Triclopyr	<0.10		0.10	ug/L	15-MAY-19	16-MAY-19	R4636327
2,4,5-T	<0.10		0.10	ug/L	15-MAY-19	16-MAY-19	R4636327
2,4,5-TP	<0.10		0.10	ug/L	15-MAY-19	16-MAY-19	R4636327
Picloram	<0.10		0.10	ug/L	15-MAY-19	16-MAY-19	R4636327
2,4-DB	<0.10		0.10	ug/L	15-MAY-19	16-MAY-19	R4636327
2,4-DP	<0.10		0.10	ug/L	15-MAY-19	16-MAY-19	R4636327
Dinoseb	<0.10		0.10	ug/L	15-MAY-19	16-MAY-19	R4636327
MCPB	<0.10		0.10	ug/L	15-MAY-19	16-MAY-19	R4636327
Surrogate: 2,4-Dichlorophenylacetic Acid	140.0	SURR-ND	50-130	%	15-MAY-19	16-MAY-19	R4636327
Miscellaneous Pesticides							
Diazinon	<0.10		0.10	ug/L	16-MAY-19	21-MAY-19	R4639694
Surrogate: 2-Fluorobiphenyl	72.7		40-130	%	16-MAY-19	21-MAY-19	R4639694
Surrogate: d14-Terphenyl	67.0		40-130	%	16-MAY-19	21-MAY-19	R4639694
Total, Fecal Coliforms, E Coli by QT97							
Fecal Coliform by MPN QT97							

* 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
L2271988-3 GWQ25-W14							
Sampled By: CLIENT on 13-MAY-19 @ 12:35							
Matrix: WATER							
Fecal Coliform by MPN QT97							
Fecal Coliforms	<1		1	MPN/100mL		13-MAY-19	R4634323
Total Coliform and E.coli by MPN QT97							
Total Coliforms	<1		1	MPN/100mL		13-MAY-19	R4634326
Escherichia Coli	<1		1	MPN/100mL		13-MAY-19	R4634326
VOC plus F1 to F4							
CCME PHC F2-F4 in Water							
F2 (C10-C16)	<100		100	ug/L	15-MAY-19	15-MAY-19	R4636128
F3 (C16-C34)	<250		250	ug/L	15-MAY-19	15-MAY-19	R4636128
F4 (C34-C50)	<250		250	ug/L	15-MAY-19	15-MAY-19	R4636128
Surrogate: 2-Bromobenzotrifluoride	81.8		60-140	%	15-MAY-19	15-MAY-19	R4636128
CCME Total Hydrocarbons							
F1-BTEX	<100		100	ug/L		24-MAY-19	
F2-Naphth	<100		100	ug/L		24-MAY-19	
F3-PAH	<250		250	ug/L		24-MAY-19	
Total Hydrocarbons (C6-C50)	<380		380	ug/L		24-MAY-19	
Sum of Xylene Isomer Concentrations							
Xylenes (Total)	<0.50		0.50	ug/L		23-MAY-19	
Total Trihalomethanes (THMs)							
Total THMs	<1.0		1.0	ug/L		23-MAY-19	
VOC plus F1 by GCMS							
Acetone	<20		20	ug/L		23-MAY-19	R4641582
Benzene	<0.50		0.50	ug/L		23-MAY-19	R4641582
Bromobenzene	<0.50		0.50	ug/L		23-MAY-19	R4641582
Bromochloromethane	<0.50		0.50	ug/L		23-MAY-19	R4641582
Bromodichloromethane	<0.50		0.50	ug/L		23-MAY-19	R4641582
Bromoform	<0.50		0.50	ug/L		23-MAY-19	R4641582
Bromomethane	<1.0		1.0	ug/L		23-MAY-19	R4641582
n-Butylbenzene	<0.50		0.50	ug/L		23-MAY-19	R4641582
sec-Butylbenzene	<0.50		0.50	ug/L		23-MAY-19	R4641582
tert-Butylbenzene	<0.50		0.50	ug/L		23-MAY-19	R4641582
Carbon disulfide	<0.50		0.50	ug/L		23-MAY-19	R4641582
Carbon Tetrachloride	<0.50		0.50	ug/L		23-MAY-19	R4641582
Chlorobenzene	<0.50		0.50	ug/L		23-MAY-19	R4641582
Chloroethane	<1.0		1.0	ug/L		23-MAY-19	R4641582
Chloroform	<0.50		0.50	ug/L		23-MAY-19	R4641582
Chloromethane	<1.0		1.0	ug/L		23-MAY-19	R4641582
2-Chlorotoluene	<20		20	ug/L		23-MAY-19	R4641582
4-Chlorotoluene	<0.50		0.50	ug/L		23-MAY-19	R4641582
Dibromochloromethane	<0.50		0.50	ug/L		23-MAY-19	R4641582
1,2-Dibromo-3-chloropropane	<0.50		0.50	ug/L		23-MAY-19	R4641582
1,2-Dibromoethane	<0.50		0.50	ug/L		23-MAY-19	R4641582
Dibromomethane	<0.50		0.50	ug/L		23-MAY-19	R4641582
1,2-Dichlorobenzene	<0.50		0.50	ug/L		23-MAY-19	R4641582
1,3-Dichlorobenzene	<0.50		0.50	ug/L		23-MAY-19	R4641582
1,4-Dichlorobenzene	<0.50		0.50	ug/L		23-MAY-19	R4641582
Dichlorodifluoromethane	<1.0		1.0	ug/L		23-MAY-19	R4641582
1,1-dichloroethane	<0.50		0.50	ug/L		23-MAY-19	R4641582
1,2-Dichloroethane	<0.50		0.50	ug/L		23-MAY-19	R4641582
1,1-dichloroethene	<0.50		0.50	ug/L		23-MAY-19	R4641582
cis-1,2-Dichloroethene	<0.50		0.50	ug/L		23-MAY-19	R4641582
trans-1,2-Dichloroethene	<0.50		0.50	ug/L		23-MAY-19	R4641582
Dichloromethane	<0.50		0.50	ug/L		23-MAY-19	R4641582

* 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
L2271988-3 GWQ25-W14							
Sampled By: CLIENT on 13-MAY-19 @ 12:35							
Matrix: WATER							
VOC plus F1 by GCMS							
1,2-Dichloropropane	<0.50		0.50	ug/L		23-MAY-19	R4641582
1,3-Dichloropropane	<0.50		0.50	ug/L		23-MAY-19	R4641582
2,2-Dichloropropane	<0.50		0.50	ug/L		23-MAY-19	R4641582
1,1-Dichloropropene	<0.50		0.50	ug/L		23-MAY-19	R4641582
cis-1,3-Dichloropropene	<0.50		0.50	ug/L		23-MAY-19	R4641582
trans-1,3-Dichloropropene	<0.50		0.50	ug/L		23-MAY-19	R4641582
Ethylbenzene	<0.50		0.50	ug/L		23-MAY-19	R4641582
F1	<100		100	ug/L		23-MAY-19	R4641582
Hexachlorobutadiene	<0.50		0.50	ug/L		23-MAY-19	R4641582
Hexane	<0.50		0.50	ug/L		23-MAY-19	R4641582
2-Hexanone (Methyl butyl ketone)	<20		20	ug/L		23-MAY-19	R4641582
Isopropylbenzene	<0.50		0.50	ug/L		23-MAY-19	R4641582
4-Isopropyltoluene	<1.0		1.0	ug/L		23-MAY-19	R4641582
MEK	<20		20	ug/L		23-MAY-19	R4641582
MIBK	<20		20	ug/L		23-MAY-19	R4641582
MTBE	<0.50		0.50	ug/L		23-MAY-19	R4641582
Styrene	<0.50		0.50	ug/L		23-MAY-19	R4641582
1,1,1,2-Tetrachloroethane	<0.50		0.50	ug/L		23-MAY-19	R4641582
1,1,1,2,2-Tetrachloroethane	<0.50		0.50	ug/L		23-MAY-19	R4641582
Tetrachloroethene	<0.50		0.50	ug/L		23-MAY-19	R4641582
Toluene	<0.50		0.50	ug/L		23-MAY-19	R4641582
1,2,3-Trichlorobenzene	<0.50		0.50	ug/L		23-MAY-19	R4641582
1,2,4-Trichlorobenzene	<0.50		0.50	ug/L		23-MAY-19	R4641582
1,1,1-Trichloroethane	<0.50		0.50	ug/L		23-MAY-19	R4641582
1,1,2-Trichloroethane	<0.50		0.50	ug/L		23-MAY-19	R4641582
Trichloroethene	<0.50		0.50	ug/L		23-MAY-19	R4641582
Trichlorofluoromethane	<1.0		1.0	ug/L		23-MAY-19	R4641582
1,2,3-Trichloropropane	<0.50		0.50	ug/L		23-MAY-19	R4641582
1,2,4-Trimethylbenzene	<0.50		0.50	ug/L		23-MAY-19	R4641582
1,3,5-Trimethylbenzene	<0.50		0.50	ug/L		23-MAY-19	R4641582
Vinyl Chloride	<0.50		0.50	ug/L		23-MAY-19	R4641582
M+P-Xylenes	<0.40		0.40	ug/L		23-MAY-19	R4641582
o-Xylene	<0.30		0.30	ug/L		23-MAY-19	R4641582
Surrogate: 4-Bromofluorobenzene (SS)	89.1		70-130	%		23-MAY-19	R4641582
Surrogate: 1,4-Difluorobenzene (SS)	95.1		70-130	%		23-MAY-19	R4641582

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

Reference Information

Sample Parameter Qualifier Key:

Qualifier	Description
EMPC	Estimated Maximum Possible Concentration. Parameter detected but didn't meet all criteria for positive identification.
MS-B	Matrix Spike recovery could not be accurately calculated due to high analyte background in sample.
SURR-ND	Surrogate recovery marginally exceeded ALS DQO. Reported non-detect results for associated samples were deemed to be unaffected.

Test Method References:

ALS Test Code	Matrix	Test Description	Method Reference**
CN-T-CFA-WP	Water	Total Cyanide in water by CFA	ISO 14403-2
This analysis is carried out using procedures adapted from ISO Method 14403-2:2012 "Determination of Total Cyanide using Flow Analysis (FIA and CFA)". Total or strong acid dissociable (SAD) cyanide is determined by in-line UV digestion along with sample distillation and final determination by colourimetric analysis.			
CR-CR6-IC-WT	Water	Chromium +6	EPA 7199
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.			
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).			
F1-F4-CALC-WP	Water	CCME Total Hydrocarbons	CCME CWS-PHC, Pub #1310, Dec 2001-L
Analytical methods used for analysis of CCME Petroleum Hydrocarbons have been validated and comply with the Reference Method for the CWS PHC.			
In cases where results for both F4 and F4G are reported, the greater of the two results must be used in any application of the CWS PHC guidelines and the gravimetric heavy hydrocarbons cannot be added to the C6 to C50 hydrocarbons.			
In samples where BTEX and F1 were analyzed, F1-BTEX represents a value where the sum of Benzene, Toluene, Ethylbenzene and total Xylenes has been subtracted from F1.			
In samples where PAHs, F2 and F3 were analyzed, F2-Naphth represents the result where Naphthalene has been subtracted from F2. F3-PAH represents a result where the sum of Benzo(a)anthracene, Benzo(a)pyrene, Benzo(b)fluoranthene, Benzo(k)fluoranthene, Dibenzo(a,h)anthracene, Fluoranthene, Indeno(1,2,3-cd)pyrene, Phenanthrene, and Pyrene has been subtracted from F3.			
Unless otherwise qualified, the following quality control criteria have been met for the F1 hydrocarbon range:			
1. All extraction and analysis holding times were met.			
2. Instrument performance showing response factors for C6 and C10 within 30% of the response factor for toluene.			
3. Linearity of gasoline response within 15% throughout the calibration range.			
Unless otherwise qualified, the following quality control criteria have been met for the F2-F4 hydrocarbon ranges:			
1. All extraction and analysis holding times were met.			
2. Instrument performance showing C10, C16 and C34 response factors within 10% of their average.			
3. Instrument performance showing the C50 response factor within 30% of the average of the C10, C16 and C34 response factors.			
4. Linearity of diesel or motor oil response within 15% throughout the calibration range.			
F2-F4-FID-WP	Water	CCME PHC F2-F4 in Water	EPA 3511
Petroleum hydrocarbons in water are determined by liquid-liquid micro-scale solvent extraction using a reciprocal shaker extraction apparatus prior to capillary column gas chromatography with flame ionization detection (GC-FID) analysis.			
FC-QT97-WP	Water	Fecal Coliform by MPN QT97	APHA 9223B QT97
This analysis is carried out using procedures adapted from APHA Method 9223B "Enzyme Substrate Coliform Test". The sample is mixed with a mixture of hydrolyzable substrates and then sealed in a 97-well packet. The packet is incubated at 44.5 – 0.2°C for 18 hours and then the number of wells exhibiting a positive response are counted. The final result is obtained by comparing the number of positive responses to a probability table.			
HERBSCR-LCMS-WT	Water	Herbicides in Water	E3552
Water samples are subjected filtration and analyzed by direct injection without sample preparation using liquid chromatography tandem mass spectrometry (LC-MS/MS).			
HERBSCR-LCMS-WT	Water	Herbicides in Water	SW846 8270
Water samples are subjected filtration and analyzed by direct injection without sample preparation using liquid chromatography tandem mass spectrometry (LC-MS/MS).			
HG-T-CVAA-WP	Water	Mercury Total	EPA 1631E (mod)
Water samples undergo a cold-oxidation using bromine monochloride prior to reduction with stannous chloride, and analyzed by CVAAS.			
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.			
PAH,PANH-WP	Water	Polyaromatic Hydrocarbons (PAHs)	EPA 3511/8270D (mod)
PAHs are extracted from water using a hexane micro-extraction technique, with analysis by GC/MS. Because the two isomers cannot be readily separated chromatographically, benzo(j)fluoranthene is reported as part of the benzo(b)fluoranthene parameter.			
PEST-DIAZINON-WT	Water	Miscellaneous Pesticides	SW846 8270
PHENOLS-4AAP-WT	Water	Phenol (4AAP)	EPA 9066
An automated method is used to distill the sample. The distillate is then buffered to pH 9.4 which reacts with 4AAP and potassium ferricyanide to form a red complex which is measured colorimetrically.			
TC,EC-QT97-WP	Water	Total Coliform and E.coli by MPN QT97	APHA 9223B QT97
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 97-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.			
THM-SUM-CALC-WP	Water	Total Trihalomethanes (THMs)	CALCULATION
Total Trihalomethanes (THMs) represents the sum of bromodichloromethane, bromoform, chlorodibromomethane and chloroform. For the purpose of calculation, results less than the detection limit (DL) are treated as zero.			
VOC+F1-HSMS-WP	Water	VOC plus F1 by GCMS	EPA 8260C / EPA 5021A
In this method samples are analyzed using a headspace autosampler interfaced to a dual column gas chromatograph with MS and Flame Ionization detectors.			
XYLENES-SUM-CALC-WP	Water	Sum of Xylene Isomer Concentrations	CALCULATED RESULT
Total xylenes represents the sum of o-xylene and m&p-xylene.			

** 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
WT	ALS ENVIRONMENTAL - WATERLOO, ONTARIO, CANADA

Chain of Custody Numbers:

Reference Information

Test Method References:

ALS Test Code	Matrix	Test Description	Method Reference**
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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: L2271988

Report Date: 24-MAY-19

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Client: City of Winnipeg - Solid Waste Services Div (1120 Waverley)
 Solid Waste Services Division 1120 Waverley Street
 Winnipeg MB R3T 0P4

Contact: CHRIS KOZAK

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
CN-T-CFA-WP								
	Water							
Batch	R4637332							
WG3052681-2	LCS							
Cyanide, Total			96.6		%		80-120	17-MAY-19
WG3052681-1	MB							
Cyanide, Total			<0.0010		mg/L		0.001	17-MAY-19
CR-CR6-IC-WT								
	Water							
Batch	R4636462							
WG3051173-2	LCS							
Chromium, Hexavalent			96.8		%		80-120	16-MAY-19
WG3051173-1	MB							
Chromium, Hexavalent			<0.00050		mg/L		0.0005	16-MAY-19
F2-F4-FID-WP								
	Water							
Batch	R4636128							
WG3050381-2	LCS							
F2 (C10-C16)			109.8		%		70-130	15-MAY-19
F3 (C16-C34)			93.9		%		70-130	15-MAY-19
F4 (C34-C50)			98.0		%		70-130	15-MAY-19
WG3050381-1	MB							
F2 (C10-C16)			<0.10		mg/L		0.1	15-MAY-19
F3 (C16-C34)			<0.25		mg/L		0.25	15-MAY-19
F4 (C34-C50)			<0.25		mg/L		0.25	15-MAY-19
Surrogate: 2-Bromobenzotrifluoride			80.6		%		60-140	15-MAY-19
FC-QT97-WP								
	Water							
Batch	R4634323							
WG3048438-2	DUP	L2271988-1						
Fecal Coliforms		1	<1	RPD-NA	MPN/100mL	N/A	65	13-MAY-19
WG3048438-1	MB							
Fecal Coliforms			<1		MPN/100mL		1	13-MAY-19
HERBSCR-LCMS-WT								
	Water							
Batch	R4636327							
WG3050000-2	LCS							
Clopyralid			84.5		%		50-150	16-MAY-19
Dicamba			76.0		%		65-130	16-MAY-19
Mecoprop			88.4		%		65-130	16-MAY-19
MCPA			85.1		%		65-130	16-MAY-19
2,4-D			77.4		%		65-130	16-MAY-19
Bromoxynil			119.0		%		65-130	16-MAY-19



Quality Control Report

Workorder: L2271988

Report Date: 24-MAY-19

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Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
HERBSCR-LCMS-WT		Water						
Batch	R4636327							
WG3050000-2	LCS							
Triclopyr			85.3		%		65-130	16-MAY-19
2,4,5-T			77.7		%		65-130	16-MAY-19
2,4,5-TP			86.2		%		65-130	16-MAY-19
Picloram			83.5		%		50-150	16-MAY-19
2,4-DB			106.0		%		65-130	16-MAY-19
2,4-DP			84.1		%		65-130	16-MAY-19
Dinoseb			99.9		%		50-150	16-MAY-19
MCPB			114.0		%		65-130	16-MAY-19
WG3050000-1	MB							
Clopyralid			<0.00010		mg/L		0.0001	16-MAY-19
Dicamba			<0.00010		mg/L		0.0001	16-MAY-19
Mecoprop			<0.00010		mg/L		0.0001	16-MAY-19
MCPA			<0.00010		mg/L		0.0001	16-MAY-19
2,4-D			<0.00010		mg/L		0.0001	16-MAY-19
Bromoxynil			<0.00010		mg/L		0.0001	16-MAY-19
Triclopyr			<0.00010		mg/L		0.0001	16-MAY-19
2,4,5-T			<0.00010		mg/L		0.0001	16-MAY-19
2,4,5-TP			<0.00010		mg/L		0.0001	16-MAY-19
Picloram			<0.00010		mg/L		0.0001	16-MAY-19
2,4-DB			<0.00010		mg/L		0.0001	16-MAY-19
2,4-DP			<0.00010		mg/L		0.0001	16-MAY-19
Dinoseb			<0.00010		mg/L		0.0001	16-MAY-19
MCPB			<0.00010		mg/L		0.0001	16-MAY-19
Surrogate: 2,4-Dichlorophenylacetic Acid			103.0		%		50-130	16-MAY-19
HG-T-CVAA-WP		Water						
Batch	R4640150							
WG3055213-2	LCS							
Mercury (Hg)-Total			99.0		%		80-120	21-MAY-19
WG3055213-1	MB							
Mercury (Hg)-Total			<0.000005C		mg/L		0.000005	21-MAY-19
MET-D-CCMS-WP		Water						
Batch	R4635018							
WG3049285-2	LCS							
Aluminum (Al)-Dissolved			104.5		%		80-120	14-MAY-19
Antimony (Sb)-Dissolved			101.7		%		80-120	14-MAY-19



Quality Control Report

Workorder: L2271988

Report Date: 24-MAY-19

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Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
MET-D-CCMS-WP								
	Water							
Batch	R4635018							
WG3049285-2	LCS							
Arsenic (As)-Dissolved			99.3		%		80-120	14-MAY-19
Barium (Ba)-Dissolved			102.4		%		80-120	14-MAY-19
Beryllium (Be)-Dissolved			99.6		%		80-120	14-MAY-19
Bismuth (Bi)-Dissolved			98.3		%		80-120	14-MAY-19
Boron (B)-Dissolved			97.6		%		80-120	14-MAY-19
Cadmium (Cd)-Dissolved			100.5		%		80-120	14-MAY-19
Calcium (Ca)-Dissolved			98.8		%		80-120	14-MAY-19
Cesium (Cs)-Dissolved			101.3		%		80-120	14-MAY-19
Chromium (Cr)-Dissolved			102.1		%		80-120	14-MAY-19
Cobalt (Co)-Dissolved			99.2		%		80-120	14-MAY-19
Copper (Cu)-Dissolved			99.3		%		80-120	14-MAY-19
Iron (Fe)-Dissolved			102.4		%		80-120	14-MAY-19
Lead (Pb)-Dissolved			99.6		%		80-120	14-MAY-19
Lithium (Li)-Dissolved			100.2		%		80-120	14-MAY-19
Magnesium (Mg)-Dissolved			100.3		%		80-120	14-MAY-19
Manganese (Mn)-Dissolved			99.9		%		80-120	14-MAY-19
Molybdenum (Mo)-Dissolved			102.7		%		80-120	14-MAY-19
Nickel (Ni)-Dissolved			98.8		%		80-120	14-MAY-19
Phosphorus (P)-Dissolved			110.4		%		80-120	14-MAY-19
Potassium (K)-Dissolved			103.1		%		80-120	14-MAY-19
Rubidium (Rb)-Dissolved			101.2		%		80-120	14-MAY-19
Selenium (Se)-Dissolved			103.0		%		80-120	14-MAY-19
Silicon (Si)-Dissolved			103.3		%		80-120	14-MAY-19
Silver (Ag)-Dissolved			101.9		%		80-120	14-MAY-19
Sodium (Na)-Dissolved			98.5		%		80-120	14-MAY-19
Strontium (Sr)-Dissolved			99.1		%		80-120	14-MAY-19
Sulfur (S)-Dissolved			103.0		%		80-120	14-MAY-19
Tellurium (Te)-Dissolved			101.3		%		80-120	14-MAY-19
Thallium (Tl)-Dissolved			99.1		%		80-120	14-MAY-19
Thorium (Th)-Dissolved			103.8		%		80-120	14-MAY-19
Tin (Sn)-Dissolved			100.2		%		80-120	14-MAY-19
Titanium (Ti)-Dissolved			99.7		%		80-120	14-MAY-19
Tungsten (W)-Dissolved			99.6		%		80-120	14-MAY-19
Uranium (U)-Dissolved			99.3		%		80-120	14-MAY-19



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Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
MET-D-CCMS-WP		Water						
Batch	R4635018							
WG3049285-2	LCS							
Vanadium (V)-Dissolved			102.0		%		80-120	14-MAY-19
Zinc (Zn)-Dissolved			102.4		%		80-120	14-MAY-19
Zirconium (Zr)-Dissolved			99.6		%		80-120	14-MAY-19
WG3049285-1	MB							
Aluminum (Al)-Dissolved			<0.0010		mg/L		0.001	14-MAY-19
Antimony (Sb)-Dissolved			<0.00010		mg/L		0.0001	14-MAY-19
Arsenic (As)-Dissolved			<0.00010		mg/L		0.0001	14-MAY-19
Barium (Ba)-Dissolved			<0.00010		mg/L		0.0001	14-MAY-19
Beryllium (Be)-Dissolved			<0.00010		mg/L		0.0001	14-MAY-19
Bismuth (Bi)-Dissolved			<0.000050		mg/L		0.00005	14-MAY-19
Boron (B)-Dissolved			<0.010		mg/L		0.01	14-MAY-19
Cadmium (Cd)-Dissolved			<0.0000050		mg/L		0.000005	14-MAY-19
Calcium (Ca)-Dissolved			<0.050		mg/L		0.05	14-MAY-19
Cesium (Cs)-Dissolved			<0.000010		mg/L		0.00001	14-MAY-19
Chromium (Cr)-Dissolved			<0.00010		mg/L		0.0001	14-MAY-19
Cobalt (Co)-Dissolved			<0.00010		mg/L		0.0001	14-MAY-19
Copper (Cu)-Dissolved			<0.00020		mg/L		0.0002	14-MAY-19
Iron (Fe)-Dissolved			<0.010		mg/L		0.01	14-MAY-19
Lead (Pb)-Dissolved			<0.000050		mg/L		0.00005	14-MAY-19
Lithium (Li)-Dissolved			<0.0010		mg/L		0.001	14-MAY-19
Magnesium (Mg)-Dissolved			<0.0050		mg/L		0.005	14-MAY-19
Manganese (Mn)-Dissolved			<0.00010		mg/L		0.0001	14-MAY-19
Molybdenum (Mo)-Dissolved			<0.000050		mg/L		0.00005	14-MAY-19
Nickel (Ni)-Dissolved			<0.00050		mg/L		0.0005	14-MAY-19
Phosphorus (P)-Dissolved			<0.030		mg/L		0.03	14-MAY-19
Potassium (K)-Dissolved			<0.050		mg/L		0.05	14-MAY-19
Rubidium (Rb)-Dissolved			<0.00020		mg/L		0.0002	14-MAY-19
Selenium (Se)-Dissolved			<0.000050		mg/L		0.00005	14-MAY-19
Silicon (Si)-Dissolved			<0.050		mg/L		0.05	14-MAY-19
Silver (Ag)-Dissolved			<0.000010		mg/L		0.00001	14-MAY-19
Sodium (Na)-Dissolved			<0.050		mg/L		0.05	14-MAY-19
Strontium (Sr)-Dissolved			<0.00010		mg/L		0.0001	14-MAY-19
Sulfur (S)-Dissolved			<0.50		mg/L		0.5	14-MAY-19
Tellurium (Te)-Dissolved			<0.00020		mg/L		0.0002	14-MAY-19

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MET-D-CCMS-WP		Water						
Batch	R4635018							
WG3049285-1 MB								
Thallium (Tl)-Dissolved			<0.000010		mg/L		0.00001	14-MAY-19
Thorium (Th)-Dissolved			<0.00010		mg/L		0.0001	14-MAY-19
Tin (Sn)-Dissolved			<0.00010		mg/L		0.0001	14-MAY-19
Titanium (Ti)-Dissolved			<0.00030		mg/L		0.0003	14-MAY-19
Tungsten (W)-Dissolved			<0.00010		mg/L		0.0001	14-MAY-19
Uranium (U)-Dissolved			<0.000010		mg/L		0.00001	14-MAY-19
Vanadium (V)-Dissolved			<0.00050		mg/L		0.0005	14-MAY-19
Zinc (Zn)-Dissolved			<0.0010		mg/L		0.001	14-MAY-19
Zirconium (Zr)-Dissolved			<0.000060		mg/L		0.00006	14-MAY-19
PAH,PANH-WP		Water						
Batch	R4639787							
WG3050782-2 LCS								
1-Methyl Naphthalene			105.2		%		60-130	16-MAY-19
2-Methyl Naphthalene			98.6		%		60-130	16-MAY-19
Acenaphthene			100.3		%		60-130	16-MAY-19
Acenaphthylene			93.4		%		60-130	16-MAY-19
Anthracene			86.3		%		60-130	16-MAY-19
Acridine			77.3		%		60-130	16-MAY-19
Benzo(a)anthracene			84.0		%		60-130	16-MAY-19
Benzo(a)pyrene			76.8		%		60-130	16-MAY-19
Benzo(b&j)fluoranthene			78.9		%		60-130	16-MAY-19
Benzo(g,h,i)perylene			94.9		%		60-130	16-MAY-19
Benzo(k)fluoranthene			102.2		%		60-130	16-MAY-19
Chrysene			110.0		%		60-130	16-MAY-19
Dibenzo(a,h)anthracene			83.9		%		60-130	16-MAY-19
Fluoranthene			97.4		%		60-130	16-MAY-19
Fluorene			97.8		%		60-130	16-MAY-19
Indeno(1,2,3-cd)pyrene			79.9		%		60-130	16-MAY-19
Naphthalene			99.9		%		50-130	16-MAY-19
Phenanthrene			107.5		%		60-130	16-MAY-19
Pyrene			95.0		%		60-130	16-MAY-19
Quinoline			86.8		%		60-130	16-MAY-19
WG3050782-1 MB								
1-Methyl Naphthalene			<0.000020		mg/L		0.00002	16-MAY-19

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Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
PAH,PANH-WP		Water						
Batch	R4639787							
WG3050782-1	MB							
2-Methyl Naphthalene			<0.000020		mg/L		0.00002	16-MAY-19
Acenaphthene			<0.000020		mg/L		0.00002	16-MAY-19
Acenaphthylene			<0.000020		mg/L		0.00002	16-MAY-19
Anthracene			<0.000010		mg/L		0.00001	16-MAY-19
Acridine			<0.000020		mg/L		0.00002	16-MAY-19
Benzo(a)anthracene			<0.000010		mg/L		0.00001	16-MAY-19
Benzo(a)pyrene			<0.000005C		mg/L		0.000005	16-MAY-19
Benzo(b&j)fluoranthene			<0.000010		mg/L		0.00001	16-MAY-19
Benzo(g,h,i)perylene			<0.000020		mg/L		0.00002	16-MAY-19
Benzo(k)fluoranthene			<0.000010		mg/L		0.00001	16-MAY-19
Chrysene			<0.000020		mg/L		0.00002	16-MAY-19
Dibenzo(a,h)anthracene			<0.000005C		mg/L		0.000005	16-MAY-19
Fluoranthene			<0.000020		mg/L		0.00002	16-MAY-19
Fluorene			<0.000020		mg/L		0.00002	16-MAY-19
Indeno(1,2,3-cd)pyrene			<0.000010		mg/L		0.00001	16-MAY-19
Naphthalene			<0.000050		mg/L		0.00005	16-MAY-19
Phenanthrene			<0.000050		mg/L		0.00005	16-MAY-19
Pyrene			<0.000010		mg/L		0.00001	16-MAY-19
Quinoline			<0.000020		mg/L		0.00002	16-MAY-19
Surrogate: Acenaphthene d10			91.4		%		60-130	16-MAY-19
Surrogate: Acridine d9			74.6		%		60-130	16-MAY-19
Surrogate: Chrysene d12			100.5		%		60-130	16-MAY-19
Surrogate: Naphthalene d8			85.8		%		50-130	16-MAY-19
Surrogate: Phenanthrene d10			95.0		%		60-130	16-MAY-19
PEST-DIAZINON-WT		Water						
Batch	R4639694							
WG3051036-2	LCS							
Diazinon			80.4		%		60-130	21-MAY-19
WG3051036-1	MB							
Diazinon			<0.10		ug/L		0.1	21-MAY-19
Surrogate: 2-Fluorobiphenyl			76.9		%		40-130	21-MAY-19
Surrogate: d14-Terphenyl			73.5		%		40-130	21-MAY-19
PHENOLS-4AAP-WT		Water						

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Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
PHENOLS-4AAP-WT								
Water								
Batch R4636409								
WG3051429-6 LCS								
Phenols (4AAP)			93.4		%		85-115	16-MAY-19
WG3051429-5 MB								
Phenols (4AAP)			<0.0010		mg/L		0.001	16-MAY-19
TC,EC-QT97-WP								
Water								
Batch R4634326								
WG3048443-2 DUP								
Total Coliforms		L2271988-1 25	21		MPN/100mL	15	65	13-MAY-19
Escherichia Coli		<1	<1	RPD-NA	MPN/100mL	N/A	65	13-MAY-19
WG3048443-1 MB								
Total Coliforms			<1		MPN/100mL		1	13-MAY-19
Escherichia Coli			<1		MPN/100mL		1	13-MAY-19
VOC+F1-HSMS-WP								
Water								
Batch R4641582								
WG3052815-2 LCS								
Acetone			89.6		%		70-130	22-MAY-19
Benzene			93.2		%		70-130	22-MAY-19
Bromobenzene			104.8		%		70-130	22-MAY-19
Bromochloromethane			86.6		%		70-130	22-MAY-19
Bromodichloromethane			96.5		%		70-130	22-MAY-19
Bromoform			98.4		%		70-130	22-MAY-19
Bromomethane			88.3		%		60-140	22-MAY-19
n-Butylbenzene			118.8		%		70-130	22-MAY-19
sec-Butylbenzene			105.3		%		70-130	22-MAY-19
tert-Butylbenzene			118.0		%		70-130	22-MAY-19
Carbon disulfide			98.1		%		70-130	22-MAY-19
Carbon Tetrachloride			100.8		%		70-130	22-MAY-19
Chlorobenzene			101.0		%		70-130	22-MAY-19
Chloroethane			108.9		%		60-140	22-MAY-19
Chloroform			97.1		%		70-130	22-MAY-19
Chloromethane			96.7		%		60-140	22-MAY-19
2-Chlorotoluene			111.8		%		70-130	22-MAY-19
4-Chlorotoluene			102.4		%		70-130	22-MAY-19
Dibromochloromethane			103.0		%		70-130	22-MAY-19
1,2-Dibromo-3-chloropropane			102.7		%		70-130	22-MAY-19
1,2-Dibromoethane			94.0		%		70-130	22-MAY-19

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Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
VOC+F1-HSMS-WP								
	Water							
Batch	R4641582							
WG3052815-2	LCS							
Dibromomethane			92.6		%		70-130	22-MAY-19
1,2-Dichlorobenzene			105.5		%		70-130	22-MAY-19
1,3-Dichlorobenzene			106.7		%		70-130	22-MAY-19
1,4-Dichlorobenzene			107.9		%		70-130	22-MAY-19
Dichlorodifluoromethane			118.8		%		60-140	22-MAY-19
1,1-dichloroethane			97.1		%		70-130	22-MAY-19
1,2-Dichloroethane			90.6		%		70-130	22-MAY-19
1,1-dichloroethene			93.2		%		70-130	22-MAY-19
cis-1,2-Dichloroethene			94.1		%		70-130	22-MAY-19
trans-1,2-Dichloroethene			96.1		%		70-130	22-MAY-19
Dichloromethane			82.5		%		70-130	22-MAY-19
1,2-Dichloropropane			92.3		%		70-130	22-MAY-19
1,3-Dichloropropane			95.6		%		70-130	22-MAY-19
2,2-Dichloropropane			111.7		%		70-130	22-MAY-19
1,1-Dichloropropene			98.6		%		70-130	22-MAY-19
cis-1,3-Dichloropropene			101.2		%		70-130	22-MAY-19
trans-1,3-Dichloropropene			106.2		%		70-130	22-MAY-19
Ethylbenzene			113.5		%		70-130	22-MAY-19
Hexachlorobutadiene			101.8		%		70-130	22-MAY-19
Hexane			96.0		%		70-130	22-MAY-19
2-Hexanone (Methyl butyl ketone)			98.8		%		70-130	22-MAY-19
Isopropylbenzene			114.1		%		70-130	22-MAY-19
4-Isopropyltoluene			106.7		%		70-130	22-MAY-19
MEK			88.2		%		70-130	22-MAY-19
MIBK			100.4		%		70-130	22-MAY-19
MTBE			101.5		%		70-130	22-MAY-19
Styrene			115.4		%		70-130	22-MAY-19
1,1,1,2-Tetrachloroethane			109.3		%		70-130	22-MAY-19
1,1,2,2-Tetrachloroethane			100.4		%		70-130	22-MAY-19
Tetrachloroethene			104.7		%		70-130	22-MAY-19
Toluene			106.9		%		70-130	22-MAY-19
1,2,3-Trichlorobenzene			107.9		%		70-130	22-MAY-19
1,2,4-Trichlorobenzene			108.4		%		70-130	22-MAY-19
1,1,1-Trichloroethane			102.5		%		70-130	22-MAY-19

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VOC+F1-HSMS-WP								
	Water							
Batch	R4641582							
WG3052815-2	LCS							
1,1,2-Trichloroethane			98.6		%		70-130	22-MAY-19
Trichloroethene			100.7		%		70-130	22-MAY-19
Trichlorofluoromethane			101.0		%		60-140	22-MAY-19
1,2,3-Trichloropropane			98.1		%		70-130	22-MAY-19
1,2,4-Trimethylbenzene			103.0		%		70-130	22-MAY-19
1,3,5-Trimethylbenzene			108.8		%		70-130	22-MAY-19
Vinyl Chloride			102.8		%		60-140	22-MAY-19
M+P-Xylenes			113.5		%		70-130	22-MAY-19
o-Xylene			111.9		%		70-130	22-MAY-19
WG3052815-3	LCS							
F1			90.8		%		70-130	22-MAY-19
WG3052815-1	MB							
Acetone			<0.020		mg/L		0.02	22-MAY-19
Benzene			<0.00050		mg/L		0.0005	22-MAY-19
Bromobenzene			<0.00050		mg/L		0.0005	22-MAY-19
Bromochloromethane			<0.00050		mg/L		0.0005	22-MAY-19
Bromodichloromethane			<0.00050		mg/L		0.0005	22-MAY-19
Bromoform			<0.00050		mg/L		0.0005	22-MAY-19
Bromomethane			<0.0010		mg/L		0.001	22-MAY-19
n-Butylbenzene			<0.00050		mg/L		0.0005	22-MAY-19
sec-Butylbenzene			<0.00050		mg/L		0.0005	22-MAY-19
tert-Butylbenzene			<0.00050		mg/L		0.0005	22-MAY-19
Carbon disulfide			<0.00050		mg/L		0.0005	22-MAY-19
Carbon Tetrachloride			<0.00050		mg/L		0.0005	22-MAY-19
Chlorobenzene			<0.00050		mg/L		0.0005	22-MAY-19
Chloroethane			<0.0010		mg/L		0.001	22-MAY-19
Chloroform			<0.00050		mg/L		0.0005	22-MAY-19
Chloromethane			<0.0010		mg/L		0.001	22-MAY-19
2-Chlorotoluene			<0.020		mg/L		0.02	22-MAY-19
4-Chlorotoluene			<0.00050		mg/L		0.0005	22-MAY-19
Dibromochloromethane			<0.00050		mg/L		0.0005	22-MAY-19
1,2-Dibromo-3-chloropropane			<0.00050		mg/L		0.0005	22-MAY-19
1,2-Dibromoethane			<0.00050		mg/L		0.0005	22-MAY-19
Dibromomethane			<0.00050		mg/L		0.0005	22-MAY-19
1,2-Dichlorobenzene			<0.00050		mg/L		0.0005	22-MAY-19

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Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
VOC+F1-HSMS-WP								
	Water							
Batch	R4641582							
WG3052815-1	MB							
1,3-Dichlorobenzene			<0.00050		mg/L		0.0005	22-MAY-19
1,4-Dichlorobenzene			<0.00050		mg/L		0.0005	22-MAY-19
Dichlorodifluoromethane			<0.0010		mg/L		0.001	22-MAY-19
1,1-dichloroethane			<0.00050		mg/L		0.0005	22-MAY-19
1,2-Dichloroethane			<0.00050		mg/L		0.0005	22-MAY-19
1,1-dichloroethene			<0.00050		mg/L		0.0005	22-MAY-19
cis-1,2-Dichloroethene			<0.00050		mg/L		0.0005	22-MAY-19
trans-1,2-Dichloroethene			<0.00050		mg/L		0.0005	22-MAY-19
Dichloromethane			<0.00050		mg/L		0.0005	22-MAY-19
1,2-Dichloropropane			<0.00050		mg/L		0.0005	22-MAY-19
1,3-Dichloropropane			<0.00050		mg/L		0.0005	22-MAY-19
2,2-Dichloropropane			<0.00050		mg/L		0.0005	22-MAY-19
1,1-Dichloropropene			<0.00050		mg/L		0.0005	22-MAY-19
cis-1,3-Dichloropropene			<0.00050		mg/L		0.0005	22-MAY-19
trans-1,3-Dichloropropene			<0.00050		mg/L		0.0005	22-MAY-19
Ethylbenzene			<0.00050		mg/L		0.0005	22-MAY-19
F1			<0.10		mg/L		0.1	22-MAY-19
Hexachlorobutadiene			<0.00050		mg/L		0.0005	22-MAY-19
Hexane			<0.00050		mg/L		0.0005	22-MAY-19
2-Hexanone (Methyl butyl ketone)			<0.020		mg/L		0.02	22-MAY-19
Isopropylbenzene			<0.00050		mg/L		0.0005	22-MAY-19
4-Isopropyltoluene			<0.0010		mg/L		0.001	22-MAY-19
MEK			<0.020		mg/L		0.02	22-MAY-19
MIBK			<0.020		mg/L		0.02	22-MAY-19
MTBE			<0.00050		mg/L		0.0005	22-MAY-19
Styrene			<0.00050		mg/L		0.0005	22-MAY-19
1,1,1,2-Tetrachloroethane			<0.00050		mg/L		0.0005	22-MAY-19
1,1,2,2-Tetrachloroethane			<0.00050		mg/L		0.0005	22-MAY-19
Tetrachloroethene			<0.00050		mg/L		0.0005	22-MAY-19
Toluene			<0.00050		mg/L		0.0005	22-MAY-19
1,2,3-Trichlorobenzene			<0.00050		mg/L		0.0005	22-MAY-19
1,2,4-Trichlorobenzene			<0.00050		mg/L		0.0005	22-MAY-19
1,1,1-Trichloroethane			<0.00050		mg/L		0.0005	22-MAY-19
1,1,2-Trichloroethane			<0.00050		mg/L		0.0005	22-MAY-19



Quality Control Report

Workorder: L2271988

Report Date: 24-MAY-19

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Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
VOC+F1-HSMS-WP	Water							
Batch	R4641582							
WG3052815-1	MB							
Trichloroethene			<0.00050		mg/L		0.0005	22-MAY-19
Trichlorofluoromethane			<0.0010		mg/L		0.001	22-MAY-19
1,2,3-Trichloropropane			<0.00050		mg/L		0.0005	22-MAY-19
1,2,4-Trimethylbenzene			<0.00050		mg/L		0.0005	22-MAY-19
1,3,5-Trimethylbenzene			<0.00050		mg/L		0.0005	22-MAY-19
Vinyl Chloride			<0.00050		mg/L		0.0005	22-MAY-19
M+P-Xylenes			<0.00040		mg/L		0.0004	22-MAY-19
o-Xylene			<0.00030		mg/L		0.0003	22-MAY-19
Surrogate: 4-Bromofluorobenzene (SS)			93.4		%		70-130	22-MAY-19
Surrogate: 1,4-Difluorobenzene (SS)			96.8		%		70-130	22-MAY-19

Quality Control Report

Workorder: L2271988

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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.

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.

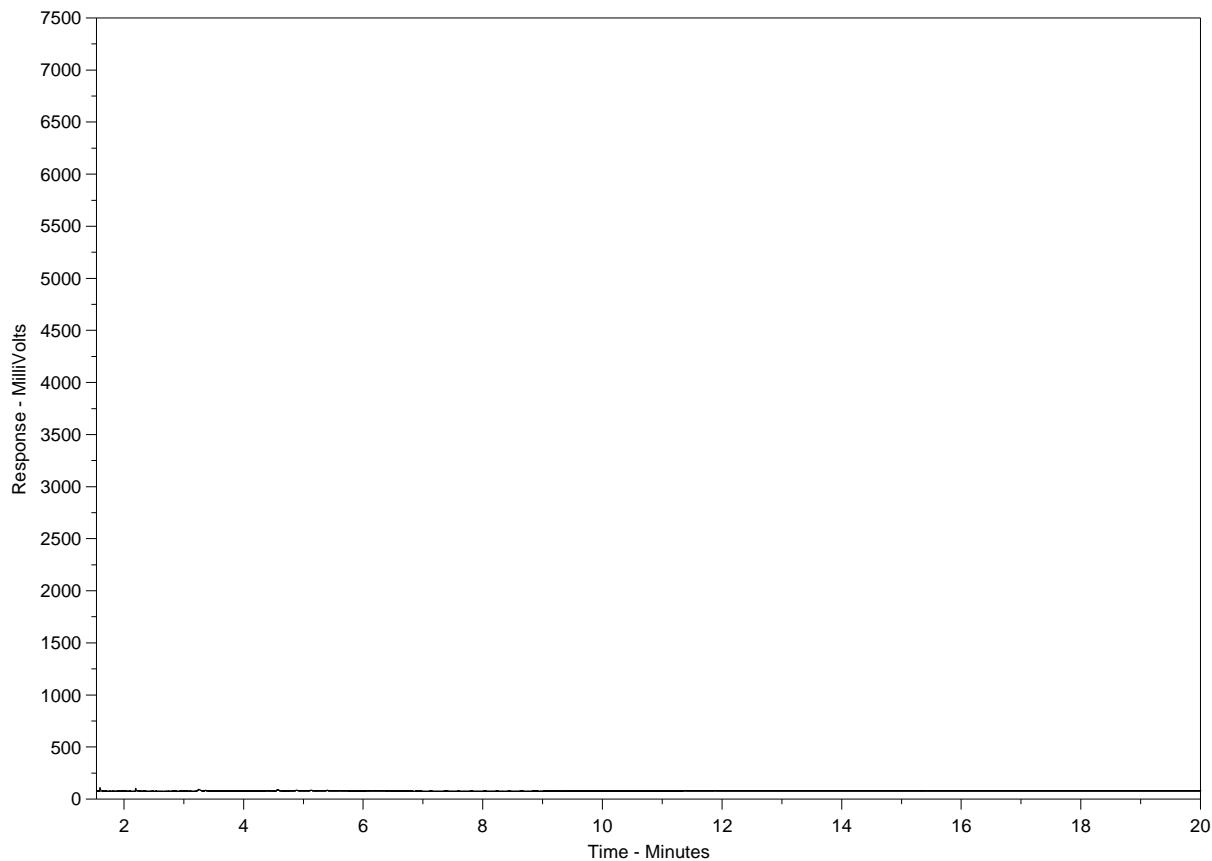
The ALS Quality Control Report is provided to ALS clients upon request. ALS includes comprehensive QC checks with every analysis to ensure our high standards of quality are met. Each QC result has a known or expected target value, which is compared against pre-determined data quality objectives to provide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

CCME F2-F4 HYDROCARBON DISTRIBUTION REPORT



ALS Sample ID: L2271988-1
 Client Sample ID: GWQ25-W13



← 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.

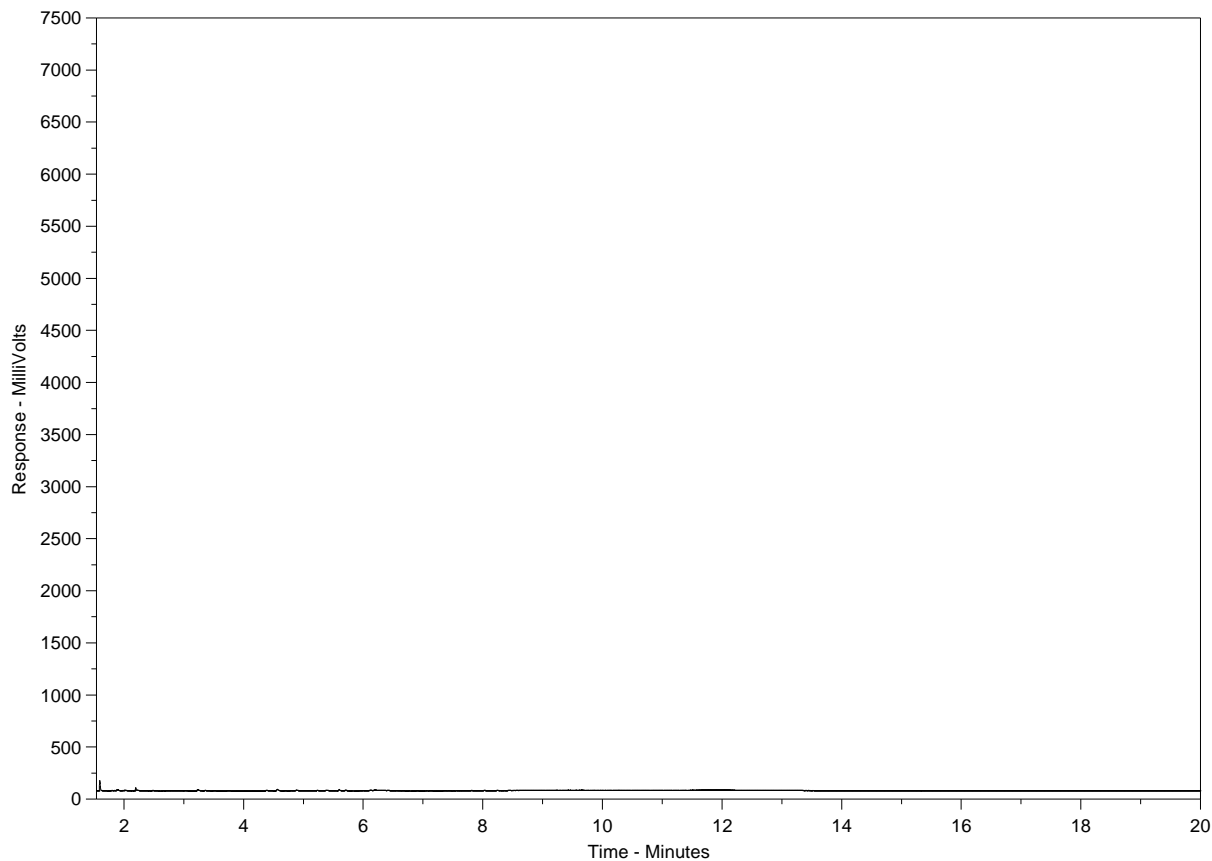
Peak heights in this report are a function of the sample concentration, the sample amount extracted, the sample dilution factor, and the scale at left.

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: L2271988-2
 Client Sample ID: GWQ25-W8



← 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.

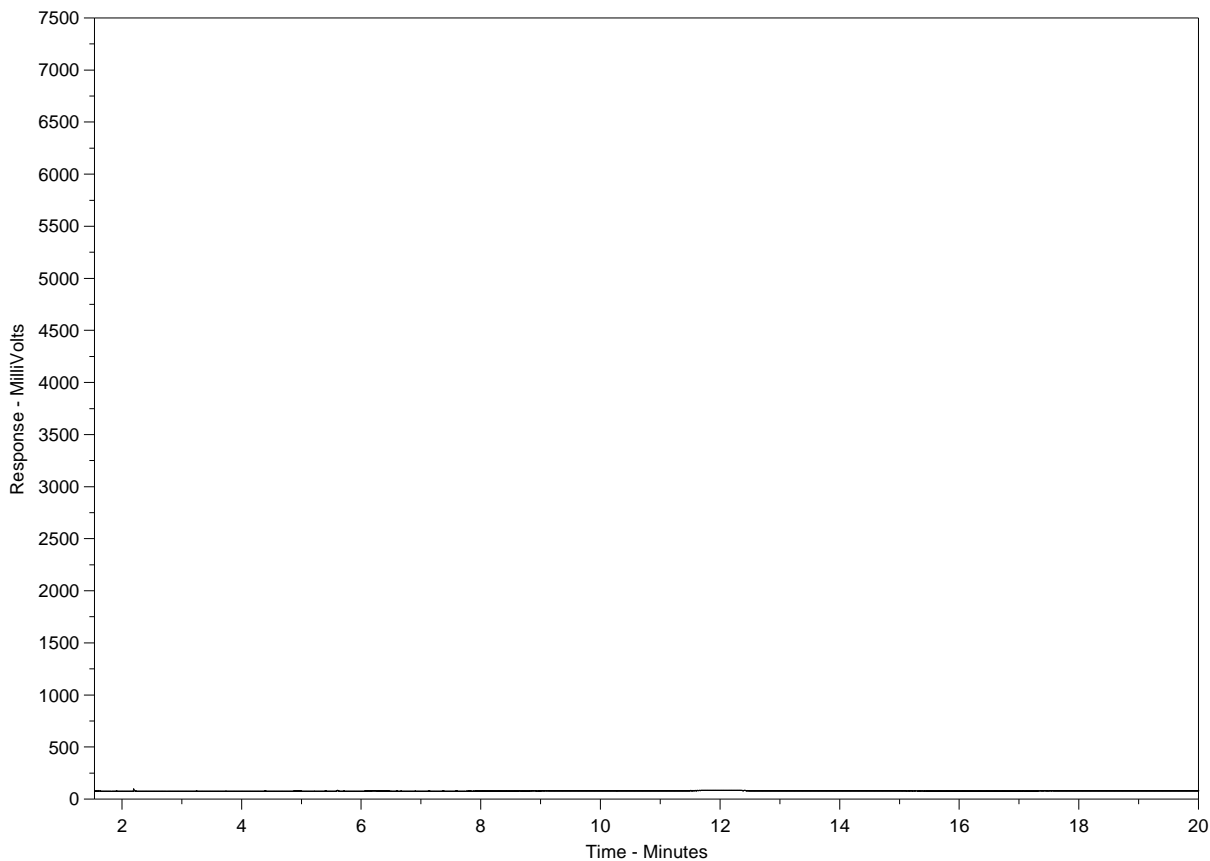
Peak heights in this report are a function of the sample concentration, the sample amount extracted, the sample dilution factor, and the scale at left.

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: L2271988-3
 Client Sample ID: GWQ25-W14



← 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.



L2271988-COFC

Report To Contact and company name below will appear on the final report		Report Format /		<small>All E&P TATs with your AM - surcharges will apply</small>													
Company: City of Winnipeg		Select Report Format: <input checked="" type="checkbox"/> PDF <input type="checkbox"/> EXCEL <input type="checkbox"/> EDD (DIGITAL)		Regular [R] <input type="checkbox"/> Standard TAT if received by 3 pm - business days - no surcharges apply					EMERGENCY								
Contact: Chris Kozak		Quality Control (QC) Report with Report <input checked="" type="checkbox"/> YES <input type="checkbox"/> NO		4 day [P4] <input type="checkbox"/>		1 Business day [E1] <input type="checkbox"/>											
Phone: 204-986-2384		<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"/>													
Street: 1120 Waverly Street		Email 1 or Fax: ckozak@winnipeg.ca		Date and Time Required for all E&P TATs:													
City/Province: Winnipeg, Manitoba		Email 2		For tests that can not be performed according to the service level selected, you will be contacted.													
Postal Code: R3T 0P4		Email 3		Analysis Request													
Invoice To: Same as Report To <input type="checkbox"/> YES <input type="checkbox"/> NO		Invoice Distribution		Indicate Filtered (F), Preserved (P) or Filtered and Preserved (F/P) below													
Copy of Invoice with Report <input type="checkbox"/> YES <input type="checkbox"/> NO		Select Invoice Distribution: <input type="checkbox"/> EMAIL <input checked="" type="checkbox"/> MAIL <input type="checkbox"/> FAX															
Company:		Email 1 or Fax															
Contact:		Email 2															
Project Information		Oil and Gas Required Fields (client use)															
ALS Account # / Quote #: W10051/Q67317		AFE/Cost Center:		PO#													
Job #: Section B - BRRMF Groundwater		Major/Minor Code:		Routing Code:													
PO / AFE:		Requisitioner:															
LSD:		Location:															
ALS Lab Work Order # (lab use only)		ALS Contact:		Sampler:													
ALS Sample # (lab use only)	Sample Identification and/or Coordinates (This description will appear on the report)	Date (dd-mmm-yy)	Time (hh:mm)	Sample Type	CN-T-CFA-WP	PEST-DIAZINON-WT	HERBSCR-LCMS-WT	TC.FC.EC-QT97-WP	MET-D-CCMS-WP (DISSOLVED)	PG-T-CVAA-WP (TOTAL)	CR-CR6-IC-WT	PHENOLS-AAAP-WT	VOC-F1-F4-WP	PAH-PANH-WP	Number of Containers		
	GND18-W13	13/may/19	10:10	WATER	X	X	X	X	X	X	X	X	X	X			
	GND18-W18	"	11:25	WATER	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓			
	GND18-W14	"	12:35	WATER													
				WATER													
				WATER													
				WATER													
				WATER													
				WATER													
				WATER													
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)															
Are samples taken from a Regulated DW System? <input type="checkbox"/> YES <input type="checkbox"/> NO		20.4cc															
Are samples for human drinking water use? <input type="checkbox"/> YES <input type="checkbox"/> NO																	
					SAMPLE CONDITION AS RECEIVED (lab use only)												
					Frozen <input type="checkbox"/>					SIF Observations Yes <input type="checkbox"/> No <input type="checkbox"/>							
					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"/>												
					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: <i>[Signature]</i>		Date: 13/may/19		Time: 1:37		Received by: <i>[Signature]</i>		Date: 13/may/19		Time: 1:37		Received by:		Date:		Time:	

REFER TO BACK PAGE FOR ALS LOCATIONS AND SAMPLING INFORMATION

WHITE - LABORATORY COPY YELLOW - CLIENT COPY

Failure to complete all portions of this form may delay analysis. Please fill in this form LEGIBLY. By the use of this form the user acknowledges and agrees with the Terms and Conditions as specified on the back page of the white - report copy.

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



City of Winnipeg - Solid Waste Services Div
(1120 Waverley)
ATTN: CHRIS KOZAK
Solid Waste Services Division
1120 Waverley Street
Winnipeg MB R3T 0P4

Date Received: 14-MAY-19
Report Date: 24-MAY-19 14:37 (MT)
Version: FINAL

Client Phone: 204-986-2384

Certificate of Analysis

Lab Work Order #: L2272736
Project P.O. #: NOT SUBMITTED
Job Reference: SECTION B - BRRMF GROUNDWATER
C of C Numbers:
Legal Site Desc:

Hua Wo
Chemistry Laboratory Manager

[This report shall not be reproduced except in full without the written authority of the Laboratory.]

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
L2272736-1 GWQ25-W6							
Sampled By: CLIENT on 14-MAY-19 @ 10:20							
Matrix: WATER							
Miscellaneous Parameters							
Chromium, Hexavalent	0.73		0.50	ug/L		16-MAY-19	R4636462
Mercury (Hg)-Total	<0.0050		0.0050	ug/L	15-MAY-19	21-MAY-19	R4640150
Phenols (4AAP)	11.1		1.0	ug/L		17-MAY-19	R4637262
Cyanide, Total	<1.0		1.0	ug/L		22-MAY-19	R4641107
Dissolved Metals in Water by CRC ICPMS							
Dissolved Metals Filtration Location	FIELD					15-MAY-19	R4635640
Aluminum (Al)-Dissolved	4.5		1.0	ug/L	15-MAY-19	15-MAY-19	R4635959
Antimony (Sb)-Dissolved	1.93		0.10	ug/L	15-MAY-19	15-MAY-19	R4635959
Arsenic (As)-Dissolved	0.82		0.10	ug/L	15-MAY-19	15-MAY-19	R4635959
Barium (Ba)-Dissolved	14.6		0.10	ug/L	15-MAY-19	15-MAY-19	R4635959
Beryllium (Be)-Dissolved	<0.10		0.10	ug/L	15-MAY-19	15-MAY-19	R4635959
Bismuth (Bi)-Dissolved	<0.050		0.050	ug/L	15-MAY-19	15-MAY-19	R4635959
Boron (B)-Dissolved	1210		100	ug/L	15-MAY-19	15-MAY-19	R4635959
Cadmium (Cd)-Dissolved	0.119		0.0050	ug/L	15-MAY-19	15-MAY-19	R4635959
Calcium (Ca)-Dissolved	364000		50	ug/L	15-MAY-19	15-MAY-19	R4635959
Cesium (Cs)-Dissolved	0.084		0.010	ug/L	15-MAY-19	15-MAY-19	R4635959
Chromium (Cr)-Dissolved	0.52		0.10	ug/L	15-MAY-19	15-MAY-19	R4635959
Cobalt (Co)-Dissolved	0.54		0.10	ug/L	15-MAY-19	15-MAY-19	R4635959
Copper (Cu)-Dissolved	5.23		0.20	ug/L	15-MAY-19	15-MAY-19	R4635959
Iron (Fe)-Dissolved	<10		10	ug/L	15-MAY-19	15-MAY-19	R4635959
Lead (Pb)-Dissolved	0.163		0.050	ug/L	15-MAY-19	15-MAY-19	R4635959
Lithium (Li)-Dissolved	383		10	ug/L	15-MAY-19	15-MAY-19	R4635959
Magnesium (Mg)-Dissolved	150000		5.0	ug/L	15-MAY-19	15-MAY-19	R4635959
Manganese (Mn)-Dissolved	37.8		0.10	ug/L	15-MAY-19	15-MAY-19	R4635959
Molybdenum (Mo)-Dissolved	3.73		0.050	ug/L	15-MAY-19	15-MAY-19	R4635959
Nickel (Ni)-Dissolved	2.97		0.50	ug/L	15-MAY-19	15-MAY-19	R4635959
Phosphorus (P)-Dissolved	<30		30	ug/L	15-MAY-19	15-MAY-19	R4635959
Potassium (K)-Dissolved	47400		50	ug/L	15-MAY-19	15-MAY-19	R4635959
Rubidium (Rb)-Dissolved	22.4		0.20	ug/L	15-MAY-19	15-MAY-19	R4635959
Selenium (Se)-Dissolved	0.053		0.050	ug/L	15-MAY-19	15-MAY-19	R4635959
Silicon (Si)-Dissolved	4710		50	ug/L	15-MAY-19	15-MAY-19	R4635959
Silver (Ag)-Dissolved	0.016		0.010	ug/L	15-MAY-19	15-MAY-19	R4635959
Sodium (Na)-Dissolved	1740000		500	ug/L	15-MAY-19	15-MAY-19	R4635959
Strontium (Sr)-Dissolved	4680		1.0	ug/L	15-MAY-19	15-MAY-19	R4635959
Sulfur (S)-Dissolved	377000		500	ug/L	15-MAY-19	15-MAY-19	R4635959
Tellurium (Te)-Dissolved	<0.20		0.20	ug/L	15-MAY-19	15-MAY-19	R4635959
Thallium (Tl)-Dissolved	<0.010		0.010	ug/L	15-MAY-19	15-MAY-19	R4635959
Thorium (Th)-Dissolved	<0.10		0.10	ug/L	15-MAY-19	15-MAY-19	R4635959
Tin (Sn)-Dissolved	<0.10		0.10	ug/L	15-MAY-19	15-MAY-19	R4635959
Titanium (Ti)-Dissolved	<0.30		0.30	ug/L	15-MAY-19	15-MAY-19	R4635959
Tungsten (W)-Dissolved	0.35		0.10	ug/L	15-MAY-19	15-MAY-19	R4635959
Uranium (U)-Dissolved	0.420		0.010	ug/L	15-MAY-19	15-MAY-19	R4635959
Vanadium (V)-Dissolved	<0.50		0.50	ug/L	15-MAY-19	15-MAY-19	R4635959
Zinc (Zn)-Dissolved	38.3		1.0	ug/L	15-MAY-19	15-MAY-19	R4635959
Zirconium (Zr)-Dissolved	<0.060		0.060	ug/L	15-MAY-19	15-MAY-19	R4635959
Polyaromatic Hydrocarbons (PAHs)							
1-Methyl Naphthalene	<0.020		0.020	ug/L	17-MAY-19	19-MAY-19	R4641977
2-Methyl Naphthalene	0.026		0.020	ug/L	17-MAY-19	19-MAY-19	R4641977
Acenaphthene	<0.020		0.020	ug/L	17-MAY-19	19-MAY-19	R4641977
Acenaphthylene	<0.020		0.020	ug/L	17-MAY-19	19-MAY-19	R4641977
Anthracene	<0.010		0.010	ug/L	17-MAY-19	19-MAY-19	R4641977

* 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
L2272736-1 GWQ25-W6							
Sampled By: CLIENT on 14-MAY-19 @ 10:20							
Matrix: WATER							
Polyaromatic Hydrocarbons (PAHs)							
Acridine	<0.020		0.020	ug/L	17-MAY-19	19-MAY-19	R4641977
Benzo(a)anthracene	<0.010		0.010	ug/L	17-MAY-19	19-MAY-19	R4641977
Benzo(a)pyrene	<0.0050		0.0050	ug/L	17-MAY-19	19-MAY-19	R4641977
Benzo(b&j)fluoranthene	<0.010		0.010	ug/L	17-MAY-19	19-MAY-19	R4641977
Benzo(g,h,i)perylene	<0.020		0.020	ug/L	17-MAY-19	19-MAY-19	R4641977
Benzo(k)fluoranthene	<0.010		0.010	ug/L	17-MAY-19	19-MAY-19	R4641977
Chrysene	<0.020		0.020	ug/L	17-MAY-19	19-MAY-19	R4641977
Dibenzo(a,h)anthracene	<0.0050		0.0050	ug/L	17-MAY-19	19-MAY-19	R4641977
Fluoranthene	<0.020		0.020	ug/L	17-MAY-19	19-MAY-19	R4641977
Fluorene	<0.020		0.020	ug/L	17-MAY-19	19-MAY-19	R4641977
Indeno(1,2,3-cd)pyrene	<0.010		0.010	ug/L	17-MAY-19	19-MAY-19	R4641977
Naphthalene	<0.050		0.050	ug/L	17-MAY-19	19-MAY-19	R4641977
Phenanthrene	<0.050		0.050	ug/L	17-MAY-19	19-MAY-19	R4641977
Pyrene	0.044		0.010	ug/L	17-MAY-19	19-MAY-19	R4641977
Quinoline	<0.020		0.020	ug/L	17-MAY-19	19-MAY-19	R4641977
B(a)P Total Potency Equivalent	<0.030		0.030	ug/L	17-MAY-19	19-MAY-19	R4641977
Surrogate: Acenaphthene d10	81.6		60-130	%	17-MAY-19	19-MAY-19	R4641977
Surrogate: Acridine d9	66.8		60-130	%	17-MAY-19	19-MAY-19	R4641977
Surrogate: Chrysene d12	82.4		60-130	%	17-MAY-19	19-MAY-19	R4641977
Surrogate: Naphthalene d8	78.3		50-130	%	17-MAY-19	19-MAY-19	R4641977
Surrogate: Phenanthrene d10	87.6		60-130	%	17-MAY-19	19-MAY-19	R4641977
Herbicides in Water							
Clopyralid	<0.10		0.10	ug/L	22-MAY-19	22-MAY-19	R4641179
Dicamba	<0.10		0.10	ug/L	22-MAY-19	22-MAY-19	R4641179
Mecoprop	<0.10		0.10	ug/L	22-MAY-19	22-MAY-19	R4641179
MCPA	<0.10		0.10	ug/L	22-MAY-19	22-MAY-19	R4641179
2,4-D	<0.10		0.10	ug/L	22-MAY-19	22-MAY-19	R4641179
Bromoxynil	<0.10		0.10	ug/L	22-MAY-19	22-MAY-19	R4641179
Triclopyr	<0.10		0.10	ug/L	22-MAY-19	22-MAY-19	R4641179
2,4,5-T	<0.10		0.10	ug/L	22-MAY-19	22-MAY-19	R4641179
2,4,5-TP	<0.10		0.10	ug/L	22-MAY-19	22-MAY-19	R4641179
Picloram	<0.10		0.10	ug/L	22-MAY-19	22-MAY-19	R4641179
2,4-DB	<0.10		0.10	ug/L	22-MAY-19	22-MAY-19	R4641179
2,4-DP	<0.10		0.10	ug/L	22-MAY-19	22-MAY-19	R4641179
Dinoseb	<0.10		0.10	ug/L	22-MAY-19	22-MAY-19	R4641179
MCPB	<0.10		0.10	ug/L	22-MAY-19	22-MAY-19	R4641179
Surrogate: 2,4-Dichlorophenylacetic Acid	118.0		50-130	%	22-MAY-19	22-MAY-19	R4641179
Miscellaneous Pesticides							
Diazinon	<0.10		0.10	ug/L	16-MAY-19	21-MAY-19	R4639729
Surrogate: 2-Fluorobiphenyl	83.1		40-130	%	16-MAY-19	21-MAY-19	R4639729
Surrogate: d14-Terphenyl	70.4		40-130	%	16-MAY-19	21-MAY-19	R4639729
Total, Fecal Coliforms, E Coli by QT97							
Fecal Coliform by MPN QT97							
Fecal Coliforms	<1		1	MPN/100mL		14-MAY-19	R4635520
Total Coliform and E.coli by MPN QT97							
Total Coliforms	<1		1	MPN/100mL		14-MAY-19	R4635522
Escherichia Coli	<1		1	MPN/100mL		14-MAY-19	R4635522
VOC plus F1 to F4							
CCME PHC F2-F4 in Water							
F2 (C10-C16)	<100		100	ug/L	15-MAY-19	15-MAY-19	R4636128
F3 (C16-C34)	<250		250	ug/L	15-MAY-19	15-MAY-19	R4636128
F4 (C34-C50)	<250		250	ug/L	15-MAY-19	15-MAY-19	R4636128

* 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
L2272736-1 GWQ25-W6							
Sampled By: CLIENT on 14-MAY-19 @ 10:20							
Matrix: WATER							
CCME PHC F2-F4 in Water							
Surrogate: 2-Bromobenzotrifluoride	83.0		60-140	%	15-MAY-19	15-MAY-19	R4636128
CCME Total Hydrocarbons							
F1-BTEX	<100		100	ug/L		24-MAY-19	
F2-Naphth	<100		100	ug/L		24-MAY-19	
F3-PAH	<250		250	ug/L		24-MAY-19	
Total Hydrocarbons (C6-C50)	<380		380	ug/L		24-MAY-19	
Sum of Xylene Isomer Concentrations							
Xylenes (Total)	<0.50		0.50	ug/L		23-MAY-19	
Total Trihalomethanes (THMs)							
Total THMs	3.0		1.0	ug/L		23-MAY-19	
VOC plus F1 by GCMS							
Acetone	<20		20	ug/L		23-MAY-19	R4641582
Benzene	<0.50		0.50	ug/L		23-MAY-19	R4641582
Bromobenzene	<0.50		0.50	ug/L		23-MAY-19	R4641582
Bromochloromethane	<0.50		0.50	ug/L		23-MAY-19	R4641582
Bromodichloromethane	<0.50		0.50	ug/L		23-MAY-19	R4641582
Bromoform	1.76		0.50	ug/L		23-MAY-19	R4641582
Bromomethane	<1.0		1.0	ug/L		23-MAY-19	R4641582
n-Butylbenzene	<0.50		0.50	ug/L		23-MAY-19	R4641582
sec-Butylbenzene	<0.50		0.50	ug/L		23-MAY-19	R4641582
tert-Butylbenzene	<0.50		0.50	ug/L		23-MAY-19	R4641582
Carbon disulfide	<0.50		0.50	ug/L		23-MAY-19	R4641582
Carbon Tetrachloride	<0.50		0.50	ug/L		23-MAY-19	R4641582
Chlorobenzene	<0.50		0.50	ug/L		23-MAY-19	R4641582
Chloroethane	<1.0		1.0	ug/L		23-MAY-19	R4641582
Chloroform	1.27		0.50	ug/L		23-MAY-19	R4641582
Chloromethane	<1.0		1.0	ug/L		23-MAY-19	R4641582
2-Chlorotoluene	<20		20	ug/L		23-MAY-19	R4641582
4-Chlorotoluene	<0.50		0.50	ug/L		23-MAY-19	R4641582
Dibromochloromethane	<0.50		0.50	ug/L		23-MAY-19	R4641582
1,2-Dibromo-3-chloropropane	<0.50		0.50	ug/L		23-MAY-19	R4641582
1,2-Dibromoethane	<0.50		0.50	ug/L		23-MAY-19	R4641582
Dibromomethane	<0.50		0.50	ug/L		23-MAY-19	R4641582
1,2-Dichlorobenzene	<0.50		0.50	ug/L		23-MAY-19	R4641582
1,3-Dichlorobenzene	<0.50		0.50	ug/L		23-MAY-19	R4641582
1,4-Dichlorobenzene	<0.50		0.50	ug/L		23-MAY-19	R4641582
Dichlorodifluoromethane	<1.0		1.0	ug/L		23-MAY-19	R4641582
1,1-dichloroethane	<0.50		0.50	ug/L		23-MAY-19	R4641582
1,2-Dichloroethane	<0.50		0.50	ug/L		23-MAY-19	R4641582
1,1-dichloroethene	<0.50		0.50	ug/L		23-MAY-19	R4641582
cis-1,2-Dichloroethene	<0.50		0.50	ug/L		23-MAY-19	R4641582
trans-1,2-Dichloroethene	<0.50		0.50	ug/L		23-MAY-19	R4641582
Dichloromethane	<0.50		0.50	ug/L		23-MAY-19	R4641582
1,2-Dichloropropane	<0.50		0.50	ug/L		23-MAY-19	R4641582
1,3-Dichloropropane	<0.50		0.50	ug/L		23-MAY-19	R4641582
2,2-Dichloropropane	<0.50		0.50	ug/L		23-MAY-19	R4641582
1,1-Dichloropropene	<0.50		0.50	ug/L		23-MAY-19	R4641582
cis-1,3-Dichloropropene	<0.50		0.50	ug/L		23-MAY-19	R4641582
trans-1,3-Dichloropropene	<0.50		0.50	ug/L		23-MAY-19	R4641582
Ethylbenzene	<0.50		0.50	ug/L		23-MAY-19	R4641582
F1	<100		100	ug/L		23-MAY-19	R4641582
Hexachlorobutadiene	<0.50		0.50	ug/L		23-MAY-19	R4641582

* 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
L2272736-1 GWQ25-W6 Sampled By: CLIENT on 14-MAY-19 @ 10:20 Matrix: WATER VOC plus F1 by GCMS							
Hexane	<0.50		0.50	ug/L		23-MAY-19	R4641582
2-Hexanone (Methyl butyl ketone)	<20		20	ug/L		23-MAY-19	R4641582
Isopropylbenzene	<0.50		0.50	ug/L		23-MAY-19	R4641582
4-Isopropyltoluene	<1.0		1.0	ug/L		23-MAY-19	R4641582
MEK	<20		20	ug/L		23-MAY-19	R4641582
MIBK	<20		20	ug/L		23-MAY-19	R4641582
MTBE	<0.50		0.50	ug/L		23-MAY-19	R4641582
Styrene	<0.50		0.50	ug/L		23-MAY-19	R4641582
1,1,1,2-Tetrachloroethane	<0.50		0.50	ug/L		23-MAY-19	R4641582
1,1,2,2-Tetrachloroethane	<0.50		0.50	ug/L		23-MAY-19	R4641582
Tetrachloroethene	<0.50		0.50	ug/L		23-MAY-19	R4641582
Toluene	<0.50		0.50	ug/L		23-MAY-19	R4641582
1,2,3-Trichlorobenzene	<0.50		0.50	ug/L		23-MAY-19	R4641582
1,2,4-Trichlorobenzene	<0.50		0.50	ug/L		23-MAY-19	R4641582
1,1,1-Trichloroethane	<0.50		0.50	ug/L		23-MAY-19	R4641582
1,1,2-Trichloroethane	<0.50		0.50	ug/L		23-MAY-19	R4641582
Trichloroethene	<0.50		0.50	ug/L		23-MAY-19	R4641582
Trichlorofluoromethane	<1.0		1.0	ug/L		23-MAY-19	R4641582
1,2,3-Trichloropropane	<0.50		0.50	ug/L		23-MAY-19	R4641582
1,2,4-Trimethylbenzene	<0.50		0.50	ug/L		23-MAY-19	R4641582
1,3,5-Trimethylbenzene	<0.50		0.50	ug/L		23-MAY-19	R4641582
Vinyl Chloride	<0.50		0.50	ug/L		23-MAY-19	R4641582
M+P-Xylenes	<0.40		0.40	ug/L		23-MAY-19	R4641582
o-Xylene	<0.30		0.30	ug/L		23-MAY-19	R4641582
Surrogate: 4-Bromofluorobenzene (SS)	86.8		70-130	%		23-MAY-19	R4641582
Surrogate: 1,4-Difluorobenzene (SS)	94.5		70-130	%		23-MAY-19	R4641582
L2272736-2 GWQ25-W7 Sampled By: CLIENT on 14-MAY-19 @ 12:00 Matrix: WATER Miscellaneous Parameters							
Chromium, Hexavalent	20.2		0.50	ug/L		16-MAY-19	R4636462
Mercury (Hg)-Total	<0.0050		0.0050	ug/L	15-MAY-19	21-MAY-19	R4640150
Phenols (4AAP)	2.1		1.0	ug/L		17-MAY-19	R4637262
Cyanide, Total	<1.0		1.0	ug/L		22-MAY-19	R4641107
Dissolved Metals in Water by CRC ICPMS							
Dissolved Metals Filtration Location	FIELD					15-MAY-19	R4635640
Aluminum (Al)-Dissolved	5.7		1.0	ug/L	15-MAY-19	15-MAY-19	R4635959
Antimony (Sb)-Dissolved	3.25		0.10	ug/L	15-MAY-19	15-MAY-19	R4635959
Arsenic (As)-Dissolved	0.33		0.10	ug/L	15-MAY-19	15-MAY-19	R4635959
Barium (Ba)-Dissolved	48.0		0.10	ug/L	15-MAY-19	15-MAY-19	R4635959
Beryllium (Be)-Dissolved	<0.10		0.10	ug/L	15-MAY-19	15-MAY-19	R4635959
Bismuth (Bi)-Dissolved	<0.050		0.050	ug/L	15-MAY-19	15-MAY-19	R4635959
Boron (B)-Dissolved	363		10	ug/L	15-MAY-19	15-MAY-19	R4635959
Cadmium (Cd)-Dissolved	0.0167		0.0050	ug/L	15-MAY-19	15-MAY-19	R4635959
Calcium (Ca)-Dissolved	384000		50	ug/L	15-MAY-19	15-MAY-19	R4635959
Cesium (Cs)-Dissolved	0.526		0.010	ug/L	15-MAY-19	15-MAY-19	R4635959
Chromium (Cr)-Dissolved	20.9		0.10	ug/L	15-MAY-19	15-MAY-19	R4635959
Cobalt (Co)-Dissolved	<0.10		0.10	ug/L	15-MAY-19	15-MAY-19	R4635959
Copper (Cu)-Dissolved	2.14		0.20	ug/L	15-MAY-19	15-MAY-19	R4635959
Iron (Fe)-Dissolved	<10		10	ug/L	15-MAY-19	15-MAY-19	R4635959
Lead (Pb)-Dissolved	<0.050		0.050	ug/L	15-MAY-19	15-MAY-19	R4635959

* 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
L2272736-2 GWQ25-W7							
Sampled By: CLIENT on 14-MAY-19 @ 12:00							
Matrix: WATER							
Dissolved Metals in Water by CRC ICPMS							
Lithium (Li)-Dissolved	235		1.0	ug/L	15-MAY-19	15-MAY-19	R4635959
Magnesium (Mg)-Dissolved	23400		5.0	ug/L	15-MAY-19	15-MAY-19	R4635959
Manganese (Mn)-Dissolved	0.43		0.10	ug/L	15-MAY-19	15-MAY-19	R4635959
Molybdenum (Mo)-Dissolved	5.79		0.050	ug/L	15-MAY-19	15-MAY-19	R4635959
Nickel (Ni)-Dissolved	0.63		0.50	ug/L	15-MAY-19	15-MAY-19	R4635959
Phosphorus (P)-Dissolved	<30		30	ug/L	15-MAY-19	15-MAY-19	R4635959
Potassium (K)-Dissolved	23800		50	ug/L	15-MAY-19	15-MAY-19	R4635959
Rubidium (Rb)-Dissolved	13.7		0.20	ug/L	15-MAY-19	15-MAY-19	R4635959
Selenium (Se)-Dissolved	0.092		0.050	ug/L	15-MAY-19	15-MAY-19	R4635959
Silicon (Si)-Dissolved	905		50	ug/L	15-MAY-19	15-MAY-19	R4635959
Silver (Ag)-Dissolved	<0.010		0.010	ug/L	15-MAY-19	15-MAY-19	R4635959
Sodium (Na)-Dissolved	750000		500	ug/L	15-MAY-19	15-MAY-19	R4635959
Strontium (Sr)-Dissolved	3670		1.0	ug/L	15-MAY-19	15-MAY-19	R4635959
Sulfur (S)-Dissolved	225000		500	ug/L	15-MAY-19	15-MAY-19	R4635959
Tellurium (Te)-Dissolved	<0.20		0.20	ug/L	15-MAY-19	15-MAY-19	R4635959
Thallium (Tl)-Dissolved	<0.010		0.010	ug/L	15-MAY-19	15-MAY-19	R4635959
Thorium (Th)-Dissolved	<0.10		0.10	ug/L	15-MAY-19	15-MAY-19	R4635959
Tin (Sn)-Dissolved	0.16		0.10	ug/L	15-MAY-19	15-MAY-19	R4635959
Titanium (Ti)-Dissolved	<0.30		0.30	ug/L	15-MAY-19	15-MAY-19	R4635959
Tungsten (W)-Dissolved	0.28		0.10	ug/L	15-MAY-19	15-MAY-19	R4635959
Uranium (U)-Dissolved	0.015		0.010	ug/L	15-MAY-19	15-MAY-19	R4635959
Vanadium (V)-Dissolved	<0.50		0.50	ug/L	15-MAY-19	15-MAY-19	R4635959
Zinc (Zn)-Dissolved	4.7		1.0	ug/L	15-MAY-19	15-MAY-19	R4635959
Zirconium (Zr)-Dissolved	<0.060		0.060	ug/L	15-MAY-19	15-MAY-19	R4635959
Polyaromatic Hydrocarbons (PAHs)							
1-Methyl Naphthalene	0.041		0.020	ug/L	17-MAY-19	19-MAY-19	R4641977
2-Methyl Naphthalene	0.069		0.020	ug/L	17-MAY-19	19-MAY-19	R4641977
Acenaphthene	<0.020		0.020	ug/L	17-MAY-19	19-MAY-19	R4641977
Acenaphthylene	<0.020		0.020	ug/L	17-MAY-19	19-MAY-19	R4641977
Anthracene	<0.010		0.010	ug/L	17-MAY-19	19-MAY-19	R4641977
Acridine	<0.020		0.020	ug/L	17-MAY-19	19-MAY-19	R4641977
Benzo(a)anthracene	<0.010		0.010	ug/L	17-MAY-19	19-MAY-19	R4641977
Benzo(a)pyrene	<0.0050		0.0050	ug/L	17-MAY-19	19-MAY-19	R4641977
Benzo(b&j)fluoranthene	<0.010		0.010	ug/L	17-MAY-19	19-MAY-19	R4641977
Benzo(g,h,i)perylene	<0.020		0.020	ug/L	17-MAY-19	19-MAY-19	R4641977
Benzo(k)fluoranthene	<0.010		0.010	ug/L	17-MAY-19	19-MAY-19	R4641977
Chrysene	<0.020		0.020	ug/L	17-MAY-19	19-MAY-19	R4641977
Dibenzo(a,h)anthracene	<0.0050		0.0050	ug/L	17-MAY-19	19-MAY-19	R4641977
Fluoranthene	<0.020		0.020	ug/L	17-MAY-19	19-MAY-19	R4641977
Fluorene	<0.020		0.020	ug/L	17-MAY-19	19-MAY-19	R4641977
Indeno(1,2,3-cd)pyrene	<0.010		0.010	ug/L	17-MAY-19	19-MAY-19	R4641977
Naphthalene	0.135		0.050	ug/L	17-MAY-19	19-MAY-19	R4641977
Phenanthrene	<0.050		0.050	ug/L	17-MAY-19	19-MAY-19	R4641977
Pyrene	0.068		0.010	ug/L	17-MAY-19	19-MAY-19	R4641977
Quinoline	0.036		0.020	ug/L	17-MAY-19	19-MAY-19	R4641977
B(a)P Total Potency Equivalent	<0.030		0.030	ug/L	17-MAY-19	19-MAY-19	R4641977
Surrogate: Acenaphthene d10	77.2		60-130	%	17-MAY-19	19-MAY-19	R4641977
Surrogate: Acridine d9	74.6		60-130	%	17-MAY-19	19-MAY-19	R4641977
Surrogate: Chrysene d12	86.1		60-130	%	17-MAY-19	19-MAY-19	R4641977
Surrogate: Naphthalene d8	74.1		50-130	%	17-MAY-19	19-MAY-19	R4641977
Surrogate: Phenanthrene d10	87.2		60-130	%	17-MAY-19	19-MAY-19	R4641977

* 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
L2272736-2 GWQ25-W7							
Sampled By: CLIENT on 14-MAY-19 @ 12:00							
Matrix: WATER							
Herbicides in Water							
Clopyralid	<0.10		0.10	ug/L	22-MAY-19	22-MAY-19	R4641179
Dicamba	<0.10		0.10	ug/L	22-MAY-19	22-MAY-19	R4641179
Mecoprop	<0.10		0.10	ug/L	22-MAY-19	22-MAY-19	R4641179
MCPA	<0.10		0.10	ug/L	22-MAY-19	22-MAY-19	R4641179
2,4-D	<0.10		0.10	ug/L	22-MAY-19	22-MAY-19	R4641179
Bromoxynil	<0.10		0.10	ug/L	22-MAY-19	22-MAY-19	R4641179
Triclopyr	<0.10		0.10	ug/L	22-MAY-19	22-MAY-19	R4641179
2,4,5-T	<0.10		0.10	ug/L	22-MAY-19	22-MAY-19	R4641179
2,4,5-TP	<0.10		0.10	ug/L	22-MAY-19	22-MAY-19	R4641179
Picloram	<0.10		0.10	ug/L	22-MAY-19	22-MAY-19	R4641179
2,4-DB	<0.10		0.10	ug/L	22-MAY-19	22-MAY-19	R4641179
2,4-DP	<0.10		0.10	ug/L	22-MAY-19	22-MAY-19	R4641179
Dinoseb	<0.10		0.10	ug/L	22-MAY-19	22-MAY-19	R4641179
MCPB	<0.10		0.10	ug/L	22-MAY-19	22-MAY-19	R4641179
Surrogate: 2,4-Dichlorophenylacetic Acid	107.0		50-130	%	22-MAY-19	22-MAY-19	R4641179
Miscellaneous Pesticides							
Diazinon	<0.10		0.10	ug/L	16-MAY-19	21-MAY-19	R4639729
Surrogate: 2-Fluorobiphenyl	84.5		40-130	%	16-MAY-19	21-MAY-19	R4639729
Surrogate: d14-Terphenyl	75.6		40-130	%	16-MAY-19	21-MAY-19	R4639729
Total, Fecal Coliforms, E Coli by QT97							
Fecal Coliform by MPN QT97							
Fecal Coliforms	<1		1	MPN/100mL		14-MAY-19	R4635520
Total Coliform and E.coli by MPN QT97							
Total Coliforms	<1		1	MPN/100mL		14-MAY-19	R4635522
Escherichia Coli	<1		1	MPN/100mL		14-MAY-19	R4635522
VOC plus F1 to F4							
CCME PHC F2-F4 in Water							
F2 (C10-C16)	190		100	ug/L	15-MAY-19	15-MAY-19	R4636128
F3 (C16-C34)	<250		250	ug/L	15-MAY-19	15-MAY-19	R4636128
F4 (C34-C50)	<250		250	ug/L	15-MAY-19	15-MAY-19	R4636128
Surrogate: 2-Bromobenzotrifluoride	82.9		60-140	%	15-MAY-19	15-MAY-19	R4636128
CCME Total Hydrocarbons							
F1-BTEX	<100		100	ug/L		24-MAY-19	
F2-Naphth	190		100	ug/L		24-MAY-19	
F3-PAH	<250		250	ug/L		24-MAY-19	
Total Hydrocarbons (C6-C50)	<380		380	ug/L		24-MAY-19	
Sum of Xylene Isomer Concentrations							
Xylenes (Total)	1.63		0.50	ug/L		23-MAY-19	
Total Trihalomethanes (THMs)							
Total THMs	3.0		1.0	ug/L		23-MAY-19	
VOC plus F1 by GCMS							
Acetone	<20		20	ug/L		23-MAY-19	R4641582
Benzene	<0.50		0.50	ug/L		23-MAY-19	R4641582
Bromobenzene	<0.50		0.50	ug/L		23-MAY-19	R4641582
Bromochloromethane	<0.50		0.50	ug/L		23-MAY-19	R4641582
Bromodichloromethane	<0.50		0.50	ug/L		23-MAY-19	R4641582
Bromoform	<0.50		0.50	ug/L		23-MAY-19	R4641582
Bromomethane	<1.0		1.0	ug/L		23-MAY-19	R4641582
n-Butylbenzene	<0.50		0.50	ug/L		23-MAY-19	R4641582
sec-Butylbenzene	<0.50		0.50	ug/L		23-MAY-19	R4641582
tert-Butylbenzene	<0.50		0.50	ug/L		23-MAY-19	R4641582
Carbon disulfide	<0.50		0.50	ug/L		23-MAY-19	R4641582

* 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
L2272736-2 GWQ25-W7							
Sampled By: CLIENT on 14-MAY-19 @ 12:00							
Matrix: WATER							
VOC plus F1 by GCMS							
Carbon Tetrachloride	<0.50		0.50	ug/L		23-MAY-19	R4641582
Chlorobenzene	<0.50		0.50	ug/L		23-MAY-19	R4641582
Chloroethane	<1.0		1.0	ug/L		23-MAY-19	R4641582
Chloroform	2.96		0.50	ug/L		23-MAY-19	R4641582
Chloromethane	<1.0		1.0	ug/L		23-MAY-19	R4641582
2-Chlorotoluene	<20		20	ug/L		23-MAY-19	R4641582
4-Chlorotoluene	<0.50		0.50	ug/L		23-MAY-19	R4641582
Dibromochloromethane	<0.50		0.50	ug/L		23-MAY-19	R4641582
1,2-Dibromo-3-chloropropane	<0.50		0.50	ug/L		23-MAY-19	R4641582
1,2-Dibromoethane	<0.50		0.50	ug/L		23-MAY-19	R4641582
Dibromomethane	<0.50		0.50	ug/L		23-MAY-19	R4641582
1,2-Dichlorobenzene	<0.50		0.50	ug/L		23-MAY-19	R4641582
1,3-Dichlorobenzene	<0.50		0.50	ug/L		23-MAY-19	R4641582
1,4-Dichlorobenzene	<0.50		0.50	ug/L		23-MAY-19	R4641582
Dichlorodifluoromethane	<1.0		1.0	ug/L		23-MAY-19	R4641582
1,1-dichloroethane	<0.50		0.50	ug/L		23-MAY-19	R4641582
1,2-Dichloroethane	<0.50		0.50	ug/L		23-MAY-19	R4641582
1,1-dichloroethene	<0.50		0.50	ug/L		23-MAY-19	R4641582
cis-1,2-Dichloroethene	<0.50		0.50	ug/L		23-MAY-19	R4641582
trans-1,2-Dichloroethene	<0.50		0.50	ug/L		23-MAY-19	R4641582
Dichloromethane	<0.50		0.50	ug/L		23-MAY-19	R4641582
1,2-Dichloropropane	<0.50		0.50	ug/L		23-MAY-19	R4641582
1,3-Dichloropropane	<0.50		0.50	ug/L		23-MAY-19	R4641582
2,2-Dichloropropane	<0.50		0.50	ug/L		23-MAY-19	R4641582
1,1-Dichloropropene	<0.50		0.50	ug/L		23-MAY-19	R4641582
cis-1,3-Dichloropropene	<0.50		0.50	ug/L		23-MAY-19	R4641582
trans-1,3-Dichloropropene	<0.50		0.50	ug/L		23-MAY-19	R4641582
Ethylbenzene	<0.50		0.50	ug/L		23-MAY-19	R4641582
F1	<100		100	ug/L		23-MAY-19	R4641582
Hexachlorobutadiene	<0.50		0.50	ug/L		23-MAY-19	R4641582
Hexane	<0.50		0.50	ug/L		23-MAY-19	R4641582
2-Hexanone (Methyl butyl ketone)	<20		20	ug/L		23-MAY-19	R4641582
Isopropylbenzene	<0.50		0.50	ug/L		23-MAY-19	R4641582
4-Isopropyltoluene	<1.0		1.0	ug/L		23-MAY-19	R4641582
MEK	<20		20	ug/L		23-MAY-19	R4641582
MIBK	<20		20	ug/L		23-MAY-19	R4641582
MTBE	<0.50		0.50	ug/L		23-MAY-19	R4641582
Styrene	<0.50		0.50	ug/L		23-MAY-19	R4641582
1,1,1,2-Tetrachloroethane	<0.50		0.50	ug/L		23-MAY-19	R4641582
1,1,2,2-Tetrachloroethane	<0.50		0.50	ug/L		23-MAY-19	R4641582
Tetrachloroethene	<0.50		0.50	ug/L		23-MAY-19	R4641582
Toluene	<0.50		0.50	ug/L		23-MAY-19	R4641582
1,2,3-Trichlorobenzene	<0.50		0.50	ug/L		23-MAY-19	R4641582
1,2,4-Trichlorobenzene	<0.50		0.50	ug/L		23-MAY-19	R4641582
1,1,1-Trichloroethane	<0.50		0.50	ug/L		23-MAY-19	R4641582
1,1,2-Trichloroethane	<0.50		0.50	ug/L		23-MAY-19	R4641582
Trichloroethene	<0.50		0.50	ug/L		23-MAY-19	R4641582
Trichlorofluoromethane	<1.0		1.0	ug/L		23-MAY-19	R4641582
1,2,3-Trichloropropane	<0.50		0.50	ug/L		23-MAY-19	R4641582
1,2,4-Trimethylbenzene	<0.50		0.50	ug/L		23-MAY-19	R4641582
1,3,5-Trimethylbenzene	<0.50		0.50	ug/L		23-MAY-19	R4641582

* 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
L2272736-2 GWQ25-W7							
Sampled By: CLIENT on 14-MAY-19 @ 12:00							
Matrix: WATER							
VOC plus F1 by GCMS							
Vinyl Chloride	<0.50		0.50	ug/L		23-MAY-19	R4641582
M+P-Xylenes	1.04		0.40	ug/L		23-MAY-19	R4641582
o-Xylene	0.59		0.30	ug/L		23-MAY-19	R4641582
Surrogate: 4-Bromofluorobenzene (SS)	89.5		70-130	%		23-MAY-19	R4641582
Surrogate: 1,4-Difluorobenzene (SS)	95.1		70-130	%		23-MAY-19	R4641582

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

Reference Information

Test Method References:

ALS Test Code	Matrix	Test Description	Method Reference**
CN-T-CFA-WP	Water	Total Cyanide in water by CFA	ISO 14403-2
This analysis is carried out using procedures adapted from ISO Method 14403-2:2012 "Determination of Total Cyanide using Flow Analysis (FIA and CFA)". Total or strong acid dissociable (SAD) cyanide is determined by in-line UV digestion along with sample distillation and final determination by colourmetric analysis.			
CR-CR6-IC-WT	Water	Chromium +6	EPA 7199
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.			
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).			
F1-F4-CALC-WP	Water	CCME Total Hydrocarbons	CCME CWS-PHC, Pub #1310, Dec 2001-L
Analytical methods used for analysis of CCME Petroleum Hydrocarbons have been validated and comply with the Reference Method for the CWS PHC.			
In cases where results for both F4 and F4G are reported, the greater of the two results must be used in any application of the CWS PHC guidelines and the gravimetric heavy hydrocarbons cannot be added to the C6 to C50 hydrocarbons.			
In samples where BTEX and F1 were analyzed, F1-BTEX represents a value where the sum of Benzene, Toluene, Ethylbenzene and total Xylenes has been subtracted from F1.			
In samples where PAHs, F2 and F3 were analyzed, F2-Naphth represents the result where Naphthalene has been subtracted from F2. F3-PAH represents a result where the sum of Benzo(a)anthracene, Benzo(a)pyrene, Benzo(b)fluoranthene, Benzo(k)fluoranthene, Dibenzo(a,h)anthracene, Fluoranthene, Indeno(1,2,3-cd)pyrene, Phenanthrene, and Pyrene has been subtracted from F3.			
Unless otherwise qualified, the following quality control criteria have been met for the F1 hydrocarbon range:			
1. All extraction and analysis holding times were met.			
2. Instrument performance showing response factors for C6 and C10 within 30% of the response factor for toluene.			
3. Linearity of gasoline response within 15% throughout the calibration range.			
Unless otherwise qualified, the following quality control criteria have been met for the F2-F4 hydrocarbon ranges:			
1. All extraction and analysis holding times were met.			
2. Instrument performance showing C10, C16 and C34 response factors within 10% of their average.			
3. Instrument performance showing the C50 response factor within 30% of the average of the C10, C16 and C34 response factors.			
4. Linearity of diesel or motor oil response within 15% throughout the calibration range.			
F2-F4-FID-WP	Water	CCME PHC F2-F4 in Water	EPA 3511
Petroleum hydrocarbons in water are determined by liquid-liquid micro-scale solvent extraction using a reciprocal shaker extraction apparatus prior to capillary column gas chromatography with flame ionization detection (GC-FID) analysis.			
FC-QT97-WP	Water	Fecal Coliform by MPN QT97	APHA 9223B QT97
This analysis is carried out using procedures adapted from APHA Method 9223B "Enzyme Substrate Coliform Test". The sample is mixed with a mixture of hydrolyzable substrates and then sealed in a 97-well packet. The packet is incubated at 44.5 – 0.2°C for 18 hours and then the number of wells exhibiting a positive response are counted. The final result is obtained by comparing the number of positive responses to a probability table.			
HERBSCR-LCMS-WT	Water	Herbicides in Water	E3552
Water samples are subjected filtration and analyzed by direct injection without sample preparation using liquid chromatography tandem mass spectrometry (LC-MS/MS).			
HERBSCR-LCMS-WT	Water	Herbicides in Water	SW846 8270
Water samples are subjected filtration and analyzed by direct injection without sample preparation using liquid chromatography tandem mass spectrometry (LC-MS/MS).			
HG-T-CVAA-WP	Water	Mercury Total	EPA 1631E (mod)
Water samples undergo a cold-oxidation using bromine monochloride prior to reduction with stannous chloride, and analyzed by CVAAS.			
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.			
PAH,PANH-WP	Water	Polyaromatic Hydrocarbons (PAHs)	EPA 3511/8270D (mod)

Reference Information

Test Method References:

ALS Test Code	Matrix	Test Description	Method Reference**
PAHs are extracted from water using a hexane micro-extraction technique, with analysis by GC/MS. Because the two isomers cannot be readily separated chromatographically, benzo(j)fluoranthene is reported as part of the benzo(b)fluoranthene parameter.			
PEST-DIAZINON-WT	Water	Miscellaneous Pesticides	SW846 8270
PHENOLS-4AAP-WT	Water	Phenol (4AAP)	EPA 9066
An automated method is used to distill the sample. The distillate is then buffered to pH 9.4 which reacts with 4AAP and potassium ferricyanide to form a red complex which is measured colorimetrically.			
TC,EC-QT97-WP	Water	Total Coliform and E.coli by MPN QT97	APHA 9223B QT97
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 97-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.			
THM-SUM-CALC-WP	Water	Total Trihalomethanes (THMs)	CALCULATION
Total Trihalomethanes (THMs) represents the sum of bromodichloromethane, bromoform, chlorodibromomethane and chloroform. For the purpose of calculation, results less than the detection limit (DL) are treated as zero.			
VOC+F1-HSMS-WP	Water	VOC plus F1 by GCMS	EPA 8260C / EPA 5021A
In this method samples are analyzed using a headspace autosampler interfaced to a dual column gas chromatograph with MS and Flame Ionization detectors.			
XYLENES-SUM-CALC-WP	Water	Sum of Xylene Isomer Concentrations	CALCULATED RESULT
Total xylenes represents the sum of o-xylene and m&p-xylene.			

** 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
WT	ALS ENVIRONMENTAL - WATERLOO, ONTARIO, 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: L2272736

Report Date: 24-MAY-19

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Client: City of Winnipeg - Solid Waste Services Div (1120 Waverley)
 Solid Waste Services Division 1120 Waverley Street
 Winnipeg MB R3T 0P4

Contact: CHRIS KOZAK

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
CN-T-CFA-WP								
	Water							
Batch	R4641107							
WG3056160-2	LCS							
Cyanide, Total			95.1		%		80-120	22-MAY-19
WG3056160-1	MB							
Cyanide, Total			<0.0010		mg/L		0.001	22-MAY-19
CR-CR6-IC-WT								
	Water							
Batch	R4636462							
WG3051173-2	LCS							
Chromium, Hexavalent			96.8		%		80-120	16-MAY-19
WG3051173-1	MB							
Chromium, Hexavalent			<0.00050		mg/L		0.0005	16-MAY-19
F2-F4-FID-WP								
	Water							
Batch	R4636128							
WG3050381-2	LCS							
F2 (C10-C16)			109.8		%		70-130	15-MAY-19
F3 (C16-C34)			93.9		%		70-130	15-MAY-19
F4 (C34-C50)			98.0		%		70-130	15-MAY-19
WG3050381-1	MB							
F2 (C10-C16)			<0.10		mg/L		0.1	15-MAY-19
F3 (C16-C34)			<0.25		mg/L		0.25	15-MAY-19
F4 (C34-C50)			<0.25		mg/L		0.25	15-MAY-19
Surrogate: 2-Bromobenzotrifluoride			80.6		%		60-140	15-MAY-19
FC-QT97-WP								
	Water							
Batch	R4635520							
WG3049474-2	DUP	L2272736-1						
Fecal Coliforms		<1	<1	RPD-NA	MPN/100mL	N/A	65	14-MAY-19
WG3049474-1	MB							
Fecal Coliforms			<1		MPN/100mL		1	14-MAY-19
HERBSCR-LCMS-WT								
	Water							
Batch	R4641179							
WG3055164-2	LCS							
Clopyralid			92.5		%		50-150	22-MAY-19
Dicamba			84.0		%		65-130	22-MAY-19
Mecoprop			102.0		%		65-130	22-MAY-19
MCPA			97.7		%		65-130	22-MAY-19
2,4-D			84.4		%		65-130	22-MAY-19
Bromoxynil			121.0		%		65-130	22-MAY-19



Quality Control Report

Workorder: L2272736

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Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
HERBSCR-LCMS-WT		Water						
Batch	R4641179							
WG3055164-2	LCS							
Triclopyr			77.7		%		65-130	22-MAY-19
2,4,5-T			92.9		%		65-130	22-MAY-19
2,4,5-TP			99.4		%		65-130	22-MAY-19
Picloram			93.0		%		50-150	22-MAY-19
2,4-DB			87.3		%		65-130	22-MAY-19
2,4-DP			82.9		%		65-130	22-MAY-19
Dinoseb			121.0		%		50-150	22-MAY-19
MCPB			110.0		%		65-130	22-MAY-19
WG3055164-1	MB							
Clopyralid			<0.00010		mg/L		0.0001	22-MAY-19
Dicamba			<0.00010		mg/L		0.0001	22-MAY-19
Mecoprop			<0.00010		mg/L		0.0001	22-MAY-19
MCPA			<0.00010		mg/L		0.0001	22-MAY-19
2,4-D			<0.00010		mg/L		0.0001	22-MAY-19
Bromoxynil			<0.00010		mg/L		0.0001	22-MAY-19
Triclopyr			<0.00010		mg/L		0.0001	22-MAY-19
2,4,5-T			<0.00010		mg/L		0.0001	22-MAY-19
2,4,5-TP			<0.00010		mg/L		0.0001	22-MAY-19
Picloram			<0.00010		mg/L		0.0001	22-MAY-19
2,4-DB			<0.00010		mg/L		0.0001	22-MAY-19
2,4-DP			<0.00010		mg/L		0.0001	22-MAY-19
Dinoseb			<0.00010		mg/L		0.0001	22-MAY-19
MCPB			<0.00010		mg/L		0.0001	22-MAY-19
Surrogate: 2,4-Dichlorophenylacetic Acid			95.0		%		50-130	22-MAY-19
HG-T-CVAA-WP		Water						
Batch	R4640150							
WG3055215-2	LCS							
Mercury (Hg)-Total			98.0		%		80-120	21-MAY-19
WG3055215-1	MB							
Mercury (Hg)-Total			<0.000005C		mg/L		0.000005	21-MAY-19
MET-D-CCMS-WP		Water						
Batch	R4635959							
WG3050572-2	LCS							
Aluminum (Al)-Dissolved			101.1		%		80-120	15-MAY-19
Antimony (Sb)-Dissolved			103.0		%		80-120	15-MAY-19



Quality Control Report

Workorder: L2272736

Report Date: 24-MAY-19

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Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
MET-D-CCMS-WP								
	Water							
Batch	R4635959							
WG3050572-2	LCS							
Arsenic (As)-Dissolved			98.0		%		80-120	15-MAY-19
Barium (Ba)-Dissolved			103.9		%		80-120	15-MAY-19
Beryllium (Be)-Dissolved			101.2		%		80-120	15-MAY-19
Bismuth (Bi)-Dissolved			101.0		%		80-120	15-MAY-19
Boron (B)-Dissolved			101.7		%		80-120	15-MAY-19
Cadmium (Cd)-Dissolved			100.5		%		80-120	15-MAY-19
Calcium (Ca)-Dissolved			103.7		%		80-120	15-MAY-19
Cesium (Cs)-Dissolved			100.5		%		80-120	15-MAY-19
Chromium (Cr)-Dissolved			99.4		%		80-120	15-MAY-19
Cobalt (Co)-Dissolved			99.9		%		80-120	15-MAY-19
Copper (Cu)-Dissolved			98.4		%		80-120	15-MAY-19
Iron (Fe)-Dissolved			101.0		%		80-120	15-MAY-19
Lead (Pb)-Dissolved			101.5		%		80-120	15-MAY-19
Lithium (Li)-Dissolved			98.0		%		80-120	15-MAY-19
Magnesium (Mg)-Dissolved			101.0		%		80-120	15-MAY-19
Manganese (Mn)-Dissolved			98.7		%		80-120	15-MAY-19
Molybdenum (Mo)-Dissolved			101.1		%		80-120	15-MAY-19
Nickel (Ni)-Dissolved			98.0		%		80-120	15-MAY-19
Phosphorus (P)-Dissolved			112.9		%		80-120	15-MAY-19
Potassium (K)-Dissolved			101.8		%		80-120	15-MAY-19
Rubidium (Rb)-Dissolved			100.1		%		80-120	15-MAY-19
Selenium (Se)-Dissolved			102.9		%		80-120	15-MAY-19
Silicon (Si)-Dissolved			103.0		%		80-120	15-MAY-19
Silver (Ag)-Dissolved			102.6		%		80-120	15-MAY-19
Sodium (Na)-Dissolved			101.7		%		80-120	15-MAY-19
Strontium (Sr)-Dissolved			102.8		%		80-120	15-MAY-19
Sulfur (S)-Dissolved			92.9		%		80-120	15-MAY-19
Tellurium (Te)-Dissolved			103.1		%		80-120	15-MAY-19
Thallium (Tl)-Dissolved			101.8		%		80-120	15-MAY-19
Thorium (Th)-Dissolved			98.6		%		80-120	15-MAY-19
Tin (Sn)-Dissolved			101.5		%		80-120	15-MAY-19
Titanium (Ti)-Dissolved			101.9		%		80-120	15-MAY-19
Tungsten (W)-Dissolved			102.8		%		80-120	15-MAY-19
Uranium (U)-Dissolved			105.7		%		80-120	15-MAY-19



Quality Control Report

Workorder: L2272736

Report Date: 24-MAY-19

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Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
MET-D-CCMS-WP		Water						
Batch	R4635959							
WG3050572-2	LCS							
Vanadium (V)-Dissolved			102.4		%		80-120	15-MAY-19
Zinc (Zn)-Dissolved			92.0		%		80-120	15-MAY-19
Zirconium (Zr)-Dissolved			98.9		%		80-120	15-MAY-19
WG3050572-1	MB							
Aluminum (Al)-Dissolved			<0.0010		mg/L		0.001	15-MAY-19
Antimony (Sb)-Dissolved			<0.00010		mg/L		0.0001	15-MAY-19
Arsenic (As)-Dissolved			<0.00010		mg/L		0.0001	15-MAY-19
Barium (Ba)-Dissolved			<0.00010		mg/L		0.0001	15-MAY-19
Beryllium (Be)-Dissolved			<0.00010		mg/L		0.0001	15-MAY-19
Bismuth (Bi)-Dissolved			<0.000050		mg/L		0.00005	15-MAY-19
Boron (B)-Dissolved			<0.010		mg/L		0.01	15-MAY-19
Cadmium (Cd)-Dissolved			<0.0000050		mg/L		0.000005	15-MAY-19
Calcium (Ca)-Dissolved			<0.050		mg/L		0.05	15-MAY-19
Cesium (Cs)-Dissolved			<0.000010		mg/L		0.00001	15-MAY-19
Chromium (Cr)-Dissolved			<0.00010		mg/L		0.0001	15-MAY-19
Cobalt (Co)-Dissolved			<0.00010		mg/L		0.0001	15-MAY-19
Copper (Cu)-Dissolved			<0.00020		mg/L		0.0002	15-MAY-19
Iron (Fe)-Dissolved			<0.010		mg/L		0.01	15-MAY-19
Lead (Pb)-Dissolved			<0.000050		mg/L		0.00005	15-MAY-19
Lithium (Li)-Dissolved			<0.0010		mg/L		0.001	15-MAY-19
Magnesium (Mg)-Dissolved			<0.0050		mg/L		0.005	15-MAY-19
Manganese (Mn)-Dissolved			<0.00010		mg/L		0.0001	15-MAY-19
Molybdenum (Mo)-Dissolved			<0.000050		mg/L		0.00005	15-MAY-19
Nickel (Ni)-Dissolved			<0.00050		mg/L		0.0005	15-MAY-19
Phosphorus (P)-Dissolved			<0.030		mg/L		0.03	15-MAY-19
Potassium (K)-Dissolved			<0.050		mg/L		0.05	15-MAY-19
Rubidium (Rb)-Dissolved			<0.00020		mg/L		0.0002	15-MAY-19
Selenium (Se)-Dissolved			<0.000050		mg/L		0.00005	15-MAY-19
Silicon (Si)-Dissolved			<0.050		mg/L		0.05	15-MAY-19
Silver (Ag)-Dissolved			<0.000010		mg/L		0.00001	15-MAY-19
Sodium (Na)-Dissolved			<0.050		mg/L		0.05	15-MAY-19
Strontium (Sr)-Dissolved			<0.00010		mg/L		0.0001	15-MAY-19
Sulfur (S)-Dissolved			<0.50		mg/L		0.5	15-MAY-19
Tellurium (Te)-Dissolved			<0.00020		mg/L		0.0002	15-MAY-19

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Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
MET-D-CCMS-WP		Water						
Batch	R4635959							
WG3050572-1 MB								
Thallium (Tl)-Dissolved			<0.000010		mg/L		0.00001	15-MAY-19
Thorium (Th)-Dissolved			<0.00010		mg/L		0.0001	15-MAY-19
Tin (Sn)-Dissolved			<0.00010		mg/L		0.0001	15-MAY-19
Titanium (Ti)-Dissolved			<0.00030		mg/L		0.0003	15-MAY-19
Tungsten (W)-Dissolved			<0.00010		mg/L		0.0001	15-MAY-19
Uranium (U)-Dissolved			<0.000010		mg/L		0.00001	15-MAY-19
Vanadium (V)-Dissolved			<0.00050		mg/L		0.0005	15-MAY-19
Zinc (Zn)-Dissolved			<0.0010		mg/L		0.001	15-MAY-19
Zirconium (Zr)-Dissolved			<0.000060		mg/L		0.00006	15-MAY-19
PAH,PANH-WP		Water						
Batch	R4641977							
WG3052974-2 LCS								
1-Methyl Naphthalene			119.2		%		60-130	19-MAY-19
2-Methyl Naphthalene			110.1		%		60-130	19-MAY-19
Acenaphthene			125.0		%		60-130	19-MAY-19
Acenaphthylene			105.8		%		60-130	19-MAY-19
Anthracene			97.7		%		60-130	19-MAY-19
Acridine			100.4		%		60-130	19-MAY-19
Benzo(a)anthracene			91.9		%		60-130	19-MAY-19
Benzo(a)pyrene			88.7		%		60-130	19-MAY-19
Benzo(b&j)fluoranthene			91.4		%		60-130	19-MAY-19
Benzo(g,h,i)perylene			91.8		%		60-130	19-MAY-19
Benzo(k)fluoranthene			111.8		%		60-130	19-MAY-19
Chrysene			113.2		%		60-130	19-MAY-19
Dibenzo(a,h)anthracene			87.5		%		60-130	19-MAY-19
Fluoranthene			113.9		%		60-130	19-MAY-19
Fluorene			106.2		%		60-130	19-MAY-19
Indeno(1,2,3-cd)pyrene			78.2		%		60-130	19-MAY-19
Naphthalene			122.3		%		50-130	19-MAY-19
Phenanthrene			123.7		%		60-130	19-MAY-19
Pyrene			112.2		%		60-130	19-MAY-19
Quinoline			89.8		%		60-130	19-MAY-19
WG3052974-1 MB								
1-Methyl Naphthalene			<0.000020		mg/L		0.00002	19-MAY-19

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Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
PAH,PANH-WP		Water						
Batch	R4641977							
WG3052974-1	MB							
2-Methyl Naphthalene			<0.000020		mg/L		0.00002	19-MAY-19
Acenaphthene			<0.000020		mg/L		0.00002	19-MAY-19
Acenaphthylene			<0.000020		mg/L		0.00002	19-MAY-19
Anthracene			<0.000010		mg/L		0.00001	19-MAY-19
Acridine			<0.000020		mg/L		0.00002	19-MAY-19
Benzo(a)anthracene			<0.000010		mg/L		0.00001	19-MAY-19
Benzo(a)pyrene			<0.000005C		mg/L		0.000005	19-MAY-19
Benzo(b&j)fluoranthene			<0.000010		mg/L		0.00001	19-MAY-19
Benzo(g,h,i)perylene			<0.000020		mg/L		0.00002	19-MAY-19
Benzo(k)fluoranthene			<0.000010		mg/L		0.00001	19-MAY-19
Chrysene			<0.000020		mg/L		0.00002	19-MAY-19
Dibenzo(a,h)anthracene			<0.000005C		mg/L		0.000005	19-MAY-19
Fluoranthene			<0.000020		mg/L		0.00002	19-MAY-19
Fluorene			<0.000020		mg/L		0.00002	19-MAY-19
Indeno(1,2,3-cd)pyrene			<0.000010		mg/L		0.00001	19-MAY-19
Naphthalene			<0.000050		mg/L		0.00005	19-MAY-19
Phenanthrene			<0.000050		mg/L		0.00005	19-MAY-19
Pyrene			<0.000010		mg/L		0.00001	19-MAY-19
Quinoline			<0.000020		mg/L		0.00002	19-MAY-19
Surrogate: Acenaphthene d10			100.5		%		60-130	19-MAY-19
Surrogate: Acridine d9			89.5		%		60-130	19-MAY-19
Surrogate: Chrysene d12			108.4		%		60-130	19-MAY-19
Surrogate: Naphthalene d8			93.5		%		50-130	19-MAY-19
Surrogate: Phenanthrene d10			107.1		%		60-130	19-MAY-19
PEST-DIAZINON-WT		Water						
Batch	R4639729							
WG3051573-2	LCS							
Diazinon			95.9		%		60-130	21-MAY-19
WG3051573-1	MB							
Diazinon			<0.10		ug/L		0.1	21-MAY-19
Surrogate: 2-Fluorobiphenyl			80.4		%		40-130	21-MAY-19
Surrogate: d14-Terphenyl			75.0		%		40-130	21-MAY-19
PHENOLS-4AAP-WT		Water						



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Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
PHENOLS-4AAP-WT								
Batch	R4637262							
WG3052499-2	LCS							
Phenols (4AAP)			95.7		%		85-115	17-MAY-19
WG3052499-1	MB							
Phenols (4AAP)			<0.0010		mg/L		0.001	17-MAY-19
TC,EC-QT97-WP								
Batch	R4635522							
WG3049476-2	DUP	L2272736-1						
Total Coliforms		<1	<1	RPD-NA	MPN/100mL	N/A	65	14-MAY-19
Escherichia Coli		<1	<1	RPD-NA	MPN/100mL	N/A	65	14-MAY-19
WG3049476-1	MB							
Total Coliforms			<1		MPN/100mL		1	14-MAY-19
Escherichia Coli			<1		MPN/100mL		1	14-MAY-19
VOC+F1-HSMS-WP								
Batch	R4641582							
WG3052815-2	LCS							
Acetone			89.6		%		70-130	22-MAY-19
Benzene			93.2		%		70-130	22-MAY-19
Bromobenzene			104.8		%		70-130	22-MAY-19
Bromochloromethane			86.6		%		70-130	22-MAY-19
Bromodichloromethane			96.5		%		70-130	22-MAY-19
Bromoform			98.4		%		70-130	22-MAY-19
Bromomethane			88.3		%		60-140	22-MAY-19
n-Butylbenzene			118.8		%		70-130	22-MAY-19
sec-Butylbenzene			105.3		%		70-130	22-MAY-19
tert-Butylbenzene			118.0		%		70-130	22-MAY-19
Carbon disulfide			98.1		%		70-130	22-MAY-19
Carbon Tetrachloride			100.8		%		70-130	22-MAY-19
Chlorobenzene			101.0		%		70-130	22-MAY-19
Chloroethane			108.9		%		60-140	22-MAY-19
Chloroform			97.1		%		70-130	22-MAY-19
Chloromethane			96.7		%		60-140	22-MAY-19
2-Chlorotoluene			111.8		%		70-130	22-MAY-19
4-Chlorotoluene			102.4		%		70-130	22-MAY-19
Dibromochloromethane			103.0		%		70-130	22-MAY-19
1,2-Dibromo-3-chloropropane			102.7		%		70-130	22-MAY-19
1,2-Dibromoethane			94.0		%		70-130	22-MAY-19

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Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
VOC+F1-HSMS-WP								
	Water							
Batch	R4641582							
WG3052815-2	LCS							
Dibromomethane			92.6		%		70-130	22-MAY-19
1,2-Dichlorobenzene			105.5		%		70-130	22-MAY-19
1,3-Dichlorobenzene			106.7		%		70-130	22-MAY-19
1,4-Dichlorobenzene			107.9		%		70-130	22-MAY-19
Dichlorodifluoromethane			118.8		%		60-140	22-MAY-19
1,1-dichloroethane			97.1		%		70-130	22-MAY-19
1,2-Dichloroethane			90.6		%		70-130	22-MAY-19
1,1-dichloroethene			93.2		%		70-130	22-MAY-19
cis-1,2-Dichloroethene			94.1		%		70-130	22-MAY-19
trans-1,2-Dichloroethene			96.1		%		70-130	22-MAY-19
Dichloromethane			82.5		%		70-130	22-MAY-19
1,2-Dichloropropane			92.3		%		70-130	22-MAY-19
1,3-Dichloropropane			95.6		%		70-130	22-MAY-19
2,2-Dichloropropane			111.7		%		70-130	22-MAY-19
1,1-Dichloropropene			98.6		%		70-130	22-MAY-19
cis-1,3-Dichloropropene			101.2		%		70-130	22-MAY-19
trans-1,3-Dichloropropene			106.2		%		70-130	22-MAY-19
Ethylbenzene			113.5		%		70-130	22-MAY-19
Hexachlorobutadiene			101.8		%		70-130	22-MAY-19
Hexane			96.0		%		70-130	22-MAY-19
2-Hexanone (Methyl butyl ketone)			98.8		%		70-130	22-MAY-19
Isopropylbenzene			114.1		%		70-130	22-MAY-19
4-Isopropyltoluene			106.7		%		70-130	22-MAY-19
MEK			88.2		%		70-130	22-MAY-19
MIBK			100.4		%		70-130	22-MAY-19
MTBE			101.5		%		70-130	22-MAY-19
Styrene			115.4		%		70-130	22-MAY-19
1,1,1,2-Tetrachloroethane			109.3		%		70-130	22-MAY-19
1,1,2,2-Tetrachloroethane			100.4		%		70-130	22-MAY-19
Tetrachloroethene			104.7		%		70-130	22-MAY-19
Toluene			106.9		%		70-130	22-MAY-19
1,2,3-Trichlorobenzene			107.9		%		70-130	22-MAY-19
1,2,4-Trichlorobenzene			108.4		%		70-130	22-MAY-19
1,1,1-Trichloroethane			102.5		%		70-130	22-MAY-19

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Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
VOC+F1-HSMS-WP								
	Water							
Batch	R4641582							
WG3052815-2	LCS							
1,1,2-Trichloroethane			98.6		%		70-130	22-MAY-19
Trichloroethene			100.7		%		70-130	22-MAY-19
Trichlorofluoromethane			101.0		%		60-140	22-MAY-19
1,2,3-Trichloropropane			98.1		%		70-130	22-MAY-19
1,2,4-Trimethylbenzene			103.0		%		70-130	22-MAY-19
1,3,5-Trimethylbenzene			108.8		%		70-130	22-MAY-19
Vinyl Chloride			102.8		%		60-140	22-MAY-19
M+P-Xylenes			113.5		%		70-130	22-MAY-19
o-Xylene			111.9		%		70-130	22-MAY-19
WG3052815-3	LCS							
F1			90.8		%		70-130	22-MAY-19
WG3052815-1	MB							
Acetone			<0.020		mg/L		0.02	22-MAY-19
Benzene			<0.00050		mg/L		0.0005	22-MAY-19
Bromobenzene			<0.00050		mg/L		0.0005	22-MAY-19
Bromochloromethane			<0.00050		mg/L		0.0005	22-MAY-19
Bromodichloromethane			<0.00050		mg/L		0.0005	22-MAY-19
Bromoform			<0.00050		mg/L		0.0005	22-MAY-19
Bromomethane			<0.0010		mg/L		0.001	22-MAY-19
n-Butylbenzene			<0.00050		mg/L		0.0005	22-MAY-19
sec-Butylbenzene			<0.00050		mg/L		0.0005	22-MAY-19
tert-Butylbenzene			<0.00050		mg/L		0.0005	22-MAY-19
Carbon disulfide			<0.00050		mg/L		0.0005	22-MAY-19
Carbon Tetrachloride			<0.00050		mg/L		0.0005	22-MAY-19
Chlorobenzene			<0.00050		mg/L		0.0005	22-MAY-19
Chloroethane			<0.0010		mg/L		0.001	22-MAY-19
Chloroform			<0.00050		mg/L		0.0005	22-MAY-19
Chloromethane			<0.0010		mg/L		0.001	22-MAY-19
2-Chlorotoluene			<0.020		mg/L		0.02	22-MAY-19
4-Chlorotoluene			<0.00050		mg/L		0.0005	22-MAY-19
Dibromochloromethane			<0.00050		mg/L		0.0005	22-MAY-19
1,2-Dibromo-3-chloropropane			<0.00050		mg/L		0.0005	22-MAY-19
1,2-Dibromoethane			<0.00050		mg/L		0.0005	22-MAY-19
Dibromomethane			<0.00050		mg/L		0.0005	22-MAY-19
1,2-Dichlorobenzene			<0.00050		mg/L		0.0005	22-MAY-19

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Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
VOC+F1-HSMS-WP								
	Water							
Batch	R4641582							
WG3052815-1	MB							
1,3-Dichlorobenzene			<0.00050		mg/L		0.0005	22-MAY-19
1,4-Dichlorobenzene			<0.00050		mg/L		0.0005	22-MAY-19
Dichlorodifluoromethane			<0.0010		mg/L		0.001	22-MAY-19
1,1-dichloroethane			<0.00050		mg/L		0.0005	22-MAY-19
1,2-Dichloroethane			<0.00050		mg/L		0.0005	22-MAY-19
1,1-dichloroethene			<0.00050		mg/L		0.0005	22-MAY-19
cis-1,2-Dichloroethene			<0.00050		mg/L		0.0005	22-MAY-19
trans-1,2-Dichloroethene			<0.00050		mg/L		0.0005	22-MAY-19
Dichloromethane			<0.00050		mg/L		0.0005	22-MAY-19
1,2-Dichloropropane			<0.00050		mg/L		0.0005	22-MAY-19
1,3-Dichloropropane			<0.00050		mg/L		0.0005	22-MAY-19
2,2-Dichloropropane			<0.00050		mg/L		0.0005	22-MAY-19
1,1-Dichloropropene			<0.00050		mg/L		0.0005	22-MAY-19
cis-1,3-Dichloropropene			<0.00050		mg/L		0.0005	22-MAY-19
trans-1,3-Dichloropropene			<0.00050		mg/L		0.0005	22-MAY-19
Ethylbenzene			<0.00050		mg/L		0.0005	22-MAY-19
F1			<0.10		mg/L		0.1	22-MAY-19
Hexachlorobutadiene			<0.00050		mg/L		0.0005	22-MAY-19
Hexane			<0.00050		mg/L		0.0005	22-MAY-19
2-Hexanone (Methyl butyl ketone)			<0.020		mg/L		0.02	22-MAY-19
Isopropylbenzene			<0.00050		mg/L		0.0005	22-MAY-19
4-Isopropyltoluene			<0.0010		mg/L		0.001	22-MAY-19
MEK			<0.020		mg/L		0.02	22-MAY-19
MIBK			<0.020		mg/L		0.02	22-MAY-19
MTBE			<0.00050		mg/L		0.0005	22-MAY-19
Styrene			<0.00050		mg/L		0.0005	22-MAY-19
1,1,1,2-Tetrachloroethane			<0.00050		mg/L		0.0005	22-MAY-19
1,1,2,2-Tetrachloroethane			<0.00050		mg/L		0.0005	22-MAY-19
Tetrachloroethene			<0.00050		mg/L		0.0005	22-MAY-19
Toluene			<0.00050		mg/L		0.0005	22-MAY-19
1,2,3-Trichlorobenzene			<0.00050		mg/L		0.0005	22-MAY-19
1,2,4-Trichlorobenzene			<0.00050		mg/L		0.0005	22-MAY-19
1,1,1-Trichloroethane			<0.00050		mg/L		0.0005	22-MAY-19
1,1,2-Trichloroethane			<0.00050		mg/L		0.0005	22-MAY-19



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Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
VOC+F1-HSMS-WP								
	Water							
Batch	R4641582							
WG3052815-1	MB							
Trichloroethene			<0.00050		mg/L		0.0005	22-MAY-19
Trichlorofluoromethane			<0.0010		mg/L		0.001	22-MAY-19
1,2,3-Trichloropropane			<0.00050		mg/L		0.0005	22-MAY-19
1,2,4-Trimethylbenzene			<0.00050		mg/L		0.0005	22-MAY-19
1,3,5-Trimethylbenzene			<0.00050		mg/L		0.0005	22-MAY-19
Vinyl Chloride			<0.00050		mg/L		0.0005	22-MAY-19
M+P-Xylenes			<0.00040		mg/L		0.0004	22-MAY-19
o-Xylene			<0.00030		mg/L		0.0003	22-MAY-19
Surrogate: 4-Bromofluorobenzene (SS)			93.4		%		70-130	22-MAY-19
Surrogate: 1,4-Difluorobenzene (SS)			96.8		%		70-130	22-MAY-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
RPD-NA	Relative Percent Difference Not Available due to result(s) being less than detection limit.

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.

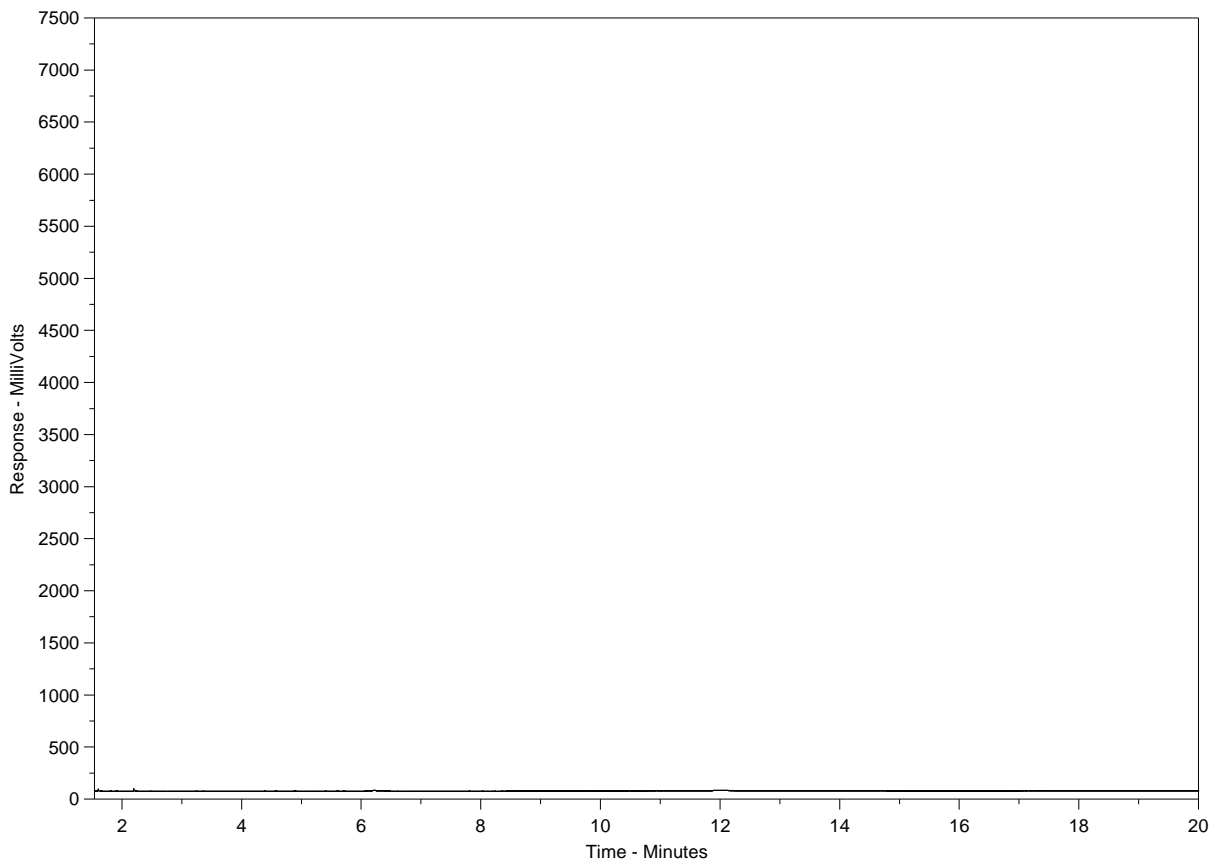
The ALS Quality Control Report is provided to ALS clients upon request. ALS includes comprehensive QC checks with every analysis to ensure our high standards of quality are met. Each QC result has a known or expected target value, which is compared against pre-determined data quality objectives to provide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

CCME F2-F4 HYDROCARBON DISTRIBUTION REPORT



ALS Sample ID: L2272736-1
 Client Sample ID: GWQ25-W6



← 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.

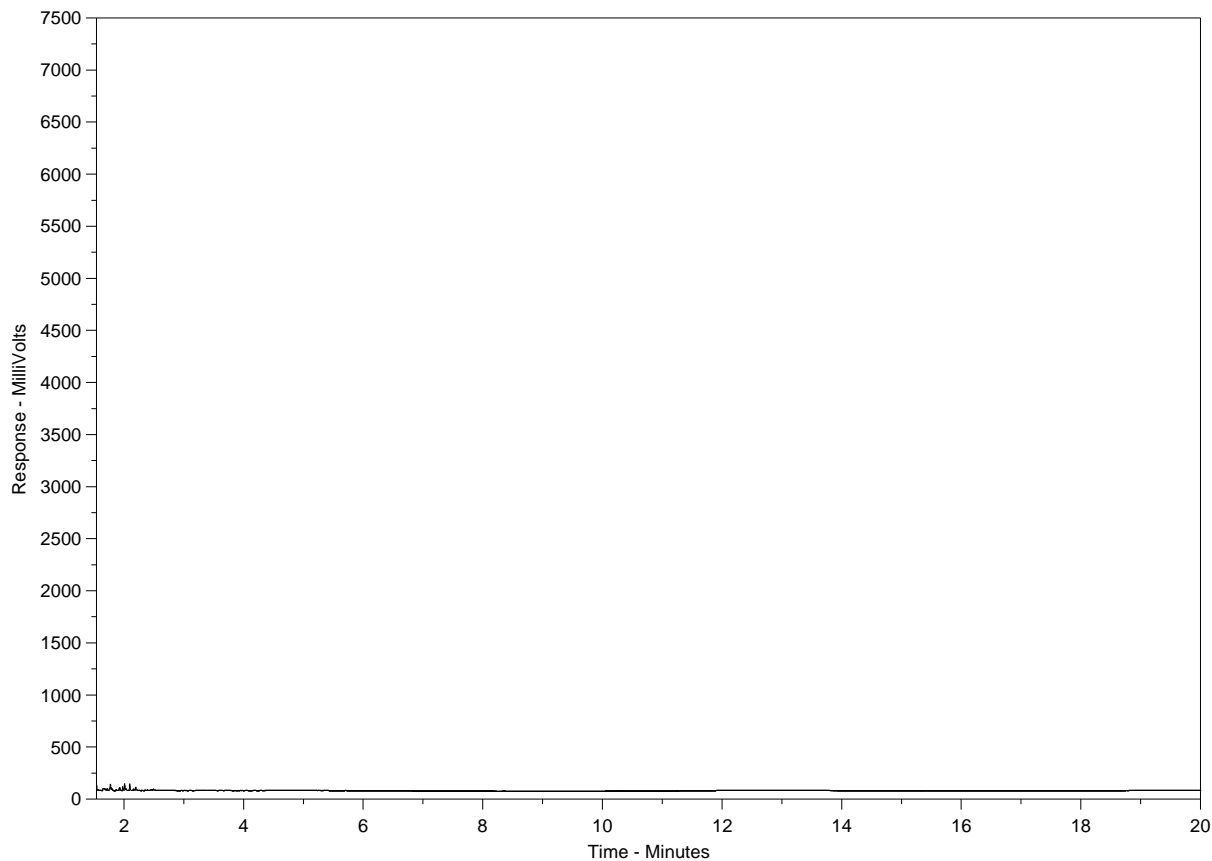
Peak heights in this report are a function of the sample concentration, the sample amount extracted, the sample dilution factor, and the scale at left.

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: L2272736-2
 Client Sample ID: GWQ25-W7



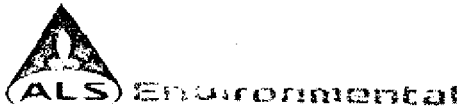
← F2 →		← F3 →		← F4 →	
nC10	nC16	nC34	nC50		
174°C	287°C	481°C	575°C		
346°F	549°F	898°F	1067°F		
← Gasoline →		← Motor Oils / Lube Oils / Grease →			
← Diesel / Jet Fuels →					

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.



Chain of Custody (COC) / Analytical Request Form

Canada Toll Free: 1 800 668 9878

www.alsglobal.com



L2272736-COFC

COC Number: 15 -

Page of

Report To Company: City of Winnipeg Contact: Chris Kozak Phone: 204-986-2384 Company address below will appear on the final report Street: 1120 Waverly Street City/Province: Winnipeg, Manitoba Postal Code: R3T 0P4		Report For Select Report Format: <input checked="" type="checkbox"/> PDF <input type="checkbox"/> EXCEL <input type="checkbox"/> EDD (DIGITAL) Quality Control (QC) Report with Report <input checked="" 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: ckozak@winnipeg.ca Email 2 Email 3		confirm all E&P TATs with your AM - surcharges will apply <input type="checkbox"/> Standard TAT if received by 3 pm - business days - no surcharges apply Regular [R] <input type="checkbox"/> 4 day [P4] <input type="checkbox"/> <input type="checkbox"/> 3 day [P3] <input type="checkbox"/> <input type="checkbox"/> 2 day [P2] <input type="checkbox"/> EMERGENCY <input type="checkbox"/> 1 Business day [E1] <input type="checkbox"/> <input type="checkbox"/> Same Day, Weekend or Statutory holiday [E0] <input type="checkbox"/> Date and Time Required for all E&P TATs:																																
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 Company: Contact:		Invoice Distribution Select Invoice Distribution: <input type="checkbox"/> EMAIL <input checked="" type="checkbox"/> MAIL <input type="checkbox"/> FAX Email 1 or Fax Email 2		Analysis Request Indicate Filtered (F), Preserved (P) or Filtered and Preserved (F/P) below																																
Project Information ALS Account # / Quote #: W10051/Q67317 Job #: Section B - BRRMF Groundwater PO / AFE: LSD:		Oil and Gas Required Fields (client use) AFE/Cost Center: PO# Major/Minor Code: Routing Code: Requisitioner: Location:		<table border="1"> <tr> <td>CNT-CFA-WP</td> <td>PEST-DIAZINON-WT</td> <td>HERBSCR-LCMS-WT</td> <td>TC.FC.EC-OT97-WP</td> <td>MET-D-COMS-WP (DISSOLVED)</td> <td>HG-T-CVAA-WP (TOTAL)</td> <td>CR-CRG-IC-WT</td> <td>PHENOLS-4AAP-WT</td> <td>VOC.F1-F4-WP</td> <td>PAH.PANH-WP</td> <td rowspan="3">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>X</td> <td>X</td> <td>X</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>X</td> <td>X</td> <td>X</td> </tr> </table>		CNT-CFA-WP	PEST-DIAZINON-WT	HERBSCR-LCMS-WT	TC.FC.EC-OT97-WP	MET-D-COMS-WP (DISSOLVED)	HG-T-CVAA-WP (TOTAL)	CR-CRG-IC-WT	PHENOLS-4AAP-WT	VOC.F1-F4-WP	PAH.PANH-WP	Number of Containers	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
CNT-CFA-WP	PEST-DIAZINON-WT	HERBSCR-LCMS-WT	TC.FC.EC-OT97-WP			MET-D-COMS-WP (DISSOLVED)	HG-T-CVAA-WP (TOTAL)	CR-CRG-IC-WT	PHENOLS-4AAP-WT	VOC.F1-F4-WP	PAH.PANH-WP	Number of Containers																								
X	X	X	X			X	X	X	X	X	X																									
X	X	X	X	X	X	X	X	X	X																											
ALS Lab Work Order # (lab use only)		ALS Contact:		Sampler:																																
ALS Sample # (lab use only)	Sample Identification and/or Coordinates (This description will appear on the report)	Date (dd-mmm-yy)	Time (hh:mm)	Sample Type																																
	GWQ25 - W6	14/MAY/19	10:20	WATER																																
	GWQ25 - W7	"	12:00	WATER																																
				WATER																																
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Drinking Water (DW) Samples (client use) Are samples taken from a Regulated DW System? <input type="checkbox"/> YES <input type="checkbox"/> NO Are samples for human drinking water use? <input type="checkbox"/> YES <input type="checkbox"/> NO		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) Frozen <input type="checkbox"/> SIF Observations Yes <input type="checkbox"/> No <input type="checkbox"/> 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"/> INITIAL COOLER TEMPERATURES °C: 14.6°C FINAL COOLER TEMPERATURES °C:																																
SHIPMENT RELEASE (client use) Released by: <i>B. Kozak</i> Date: 14/MAY/19 Time: 12:50		INITIAL SHIPMENT RECEPTION (lab use only) Received by: <i>JK</i> Date: May 14 Time: 12:55		FINAL SHIPMENT RECEPTION (lab use only) Received by: Date: Time:																																

REFER TO BACK PAGE FOR ALS LOCATIONS AND SAMPLING INFORMATION
Failure to complete all portions of this form may delay analysis. Please fill in this form LEGIBLY. By the use of this form the user acknowledges and agrees with the Terms and Conditions as specified on the back page of the white - report copy.
1. If any water samples are taken from a Regulated Drinking Water (DW) System, please submit using an Authorized DW COC form.



City of Winnipeg - Solid Waste Services Div
(1120 Waverley)
ATTN: CHRIS KOZAK
Solid Waste Services Division
1120 Waverley Street
Winnipeg MB R3T 0P4

Date Received: 15-MAY-19
Report Date: 24-MAY-19 14:42 (MT)
Version: FINAL

Client Phone: 204-986-2384

Certificate of Analysis

Lab Work Order #: L2273711
Project P.O. #: NOT SUBMITTED
Job Reference: SECTION B - BRRMF - GROUNDWATER
C of C Numbers:
Legal Site Desc:

Hua Wo
Chemistry Laboratory Manager

[This report shall not be reproduced except in full without the written authority of the Laboratory.]

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
L2273711-1 GWQ25-W16							
Sampled By: CLIENT on 15-MAY-19 @ 10:26							
Matrix: WATER							
Miscellaneous Parameters							
Chromium, Hexavalent	0.53		0.50	ug/L		17-MAY-19	R4638648
Mercury (Hg)-Total	<0.0050		0.0050	ug/L	15-MAY-19	21-MAY-19	R4640150
Phenols (4AAP)	5.0		1.0	ug/L		21-MAY-19	R4639681
Cyanide, Total	1.1		1.0	ug/L		22-MAY-19	R4641107
Dissolved Metals in Water by CRC ICPMS							
Dissolved Metals Filtration Location	FIELD					16-MAY-19	R4636422
Aluminum (Al)-Dissolved	<1.0		1.0	ug/L	16-MAY-19	16-MAY-19	R4636867
Antimony (Sb)-Dissolved	1.38		0.10	ug/L	16-MAY-19	16-MAY-19	R4636867
Arsenic (As)-Dissolved	1.29		0.10	ug/L	16-MAY-19	16-MAY-19	R4636867
Barium (Ba)-Dissolved	17.1		0.10	ug/L	16-MAY-19	16-MAY-19	R4636867
Beryllium (Be)-Dissolved	<0.10		0.10	ug/L	16-MAY-19	16-MAY-19	R4636867
Bismuth (Bi)-Dissolved	<0.050		0.050	ug/L	16-MAY-19	16-MAY-19	R4636867
Boron (B)-Dissolved	1200		1000	ug/L	16-MAY-19	16-MAY-19	R4636867
Cadmium (Cd)-Dissolved	0.0704		0.0050	ug/L	16-MAY-19	16-MAY-19	R4636867
Calcium (Ca)-Dissolved	312000		50	ug/L	16-MAY-19	16-MAY-19	R4636867
Cesium (Cs)-Dissolved	0.037		0.010	ug/L	16-MAY-19	16-MAY-19	R4636867
Chromium (Cr)-Dissolved	0.35		0.10	ug/L	16-MAY-19	16-MAY-19	R4636867
Cobalt (Co)-Dissolved	0.41		0.10	ug/L	16-MAY-19	16-MAY-19	R4636867
Copper (Cu)-Dissolved	6.76		0.20	ug/L	16-MAY-19	16-MAY-19	R4636867
Iron (Fe)-Dissolved	<10		10	ug/L	16-MAY-19	16-MAY-19	R4636867
Lead (Pb)-Dissolved	<0.050		0.050	ug/L	16-MAY-19	16-MAY-19	R4636867
Lithium (Li)-Dissolved	310		100	ug/L	16-MAY-19	16-MAY-19	R4636867
Magnesium (Mg)-Dissolved	174000		5.0	ug/L	16-MAY-19	16-MAY-19	R4636867
Manganese (Mn)-Dissolved	50.1		0.10	ug/L	16-MAY-19	16-MAY-19	R4636867
Molybdenum (Mo)-Dissolved	3.85		0.050	ug/L	16-MAY-19	16-MAY-19	R4636867
Nickel (Ni)-Dissolved	2.77		0.50	ug/L	16-MAY-19	16-MAY-19	R4636867
Phosphorus (P)-Dissolved	<30		30	ug/L	16-MAY-19	16-MAY-19	R4636867
Potassium (K)-Dissolved	32000		50	ug/L	16-MAY-19	16-MAY-19	R4636867
Rubidium (Rb)-Dissolved	13.8		0.20	ug/L	16-MAY-19	16-MAY-19	R4636867
Selenium (Se)-Dissolved	0.174		0.050	ug/L	16-MAY-19	16-MAY-19	R4636867
Silicon (Si)-Dissolved	5290		50	ug/L	16-MAY-19	16-MAY-19	R4636867
Silver (Ag)-Dissolved	0.043		0.010	ug/L	16-MAY-19	16-MAY-19	R4636867
Sodium (Na)-Dissolved	1190000		5000	ug/L	16-MAY-19	16-MAY-19	R4636867
Strontium (Sr)-Dissolved	4250		10	ug/L	16-MAY-19	16-MAY-19	R4636867
Sulfur (S)-Dissolved	309000		500	ug/L	16-MAY-19	16-MAY-19	R4636867
Tellurium (Te)-Dissolved	<0.20		0.20	ug/L	16-MAY-19	16-MAY-19	R4636867
Thallium (Tl)-Dissolved	0.010		0.010	ug/L	16-MAY-19	16-MAY-19	R4636867
Thorium (Th)-Dissolved	<0.10		0.10	ug/L	16-MAY-19	16-MAY-19	R4636867
Tin (Sn)-Dissolved	0.29		0.10	ug/L	16-MAY-19	16-MAY-19	R4636867
Titanium (Ti)-Dissolved	<0.30		0.30	ug/L	16-MAY-19	16-MAY-19	R4636867
Tungsten (W)-Dissolved	0.51		0.10	ug/L	16-MAY-19	16-MAY-19	R4636867
Uranium (U)-Dissolved	1.62		0.010	ug/L	16-MAY-19	16-MAY-19	R4636867
Vanadium (V)-Dissolved	<0.50		0.50	ug/L	16-MAY-19	16-MAY-19	R4636867
Zinc (Zn)-Dissolved	28.9		1.0	ug/L	16-MAY-19	16-MAY-19	R4636867
Zirconium (Zr)-Dissolved	<0.060		0.060	ug/L	16-MAY-19	16-MAY-19	R4636867
Polyaromatic Hydrocarbons (PAHs)							
1-Methyl Naphthalene	<0.020		0.020	ug/L	17-MAY-19	19-MAY-19	R4641977
2-Methyl Naphthalene	<0.020		0.020	ug/L	17-MAY-19	19-MAY-19	R4641977
Acenaphthene	<0.020		0.020	ug/L	17-MAY-19	19-MAY-19	R4641977
Acenaphthylene	<0.020		0.020	ug/L	17-MAY-19	19-MAY-19	R4641977
Anthracene	<0.010		0.010	ug/L	17-MAY-19	19-MAY-19	R4641977

* 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
L2273711-1 GWQ25-W16							
Sampled By: CLIENT on 15-MAY-19 @ 10:26							
Matrix: WATER							
Polyaromatic Hydrocarbons (PAHs)							
Acridine	<0.020		0.020	ug/L	17-MAY-19	19-MAY-19	R4641977
Benzo(a)anthracene	<0.010		0.010	ug/L	17-MAY-19	19-MAY-19	R4641977
Benzo(a)pyrene	<0.0050		0.0050	ug/L	17-MAY-19	19-MAY-19	R4641977
Benzo(b&j)fluoranthene	<0.010		0.010	ug/L	17-MAY-19	19-MAY-19	R4641977
Benzo(g,h,i)perylene	<0.020		0.020	ug/L	17-MAY-19	19-MAY-19	R4641977
Benzo(k)fluoranthene	<0.010		0.010	ug/L	17-MAY-19	19-MAY-19	R4641977
Chrysene	<0.020		0.020	ug/L	17-MAY-19	19-MAY-19	R4641977
Dibenzo(a,h)anthracene	<0.0050		0.0050	ug/L	17-MAY-19	19-MAY-19	R4641977
Fluoranthene	<0.020		0.020	ug/L	17-MAY-19	19-MAY-19	R4641977
Fluorene	<0.020		0.020	ug/L	17-MAY-19	19-MAY-19	R4641977
Indeno(1,2,3-cd)pyrene	<0.010		0.010	ug/L	17-MAY-19	19-MAY-19	R4641977
Naphthalene	<0.050		0.050	ug/L	17-MAY-19	19-MAY-19	R4641977
Phenanthrene	<0.050		0.050	ug/L	17-MAY-19	19-MAY-19	R4641977
Pyrene	0.017		0.010	ug/L	17-MAY-19	19-MAY-19	R4641977
Quinoline	0.028		0.020	ug/L	17-MAY-19	19-MAY-19	R4641977
B(a)P Total Potency Equivalent	<0.030		0.030	ug/L	17-MAY-19	19-MAY-19	R4641977
Surrogate: Acenaphthene d10	83.3		60-130	%	17-MAY-19	19-MAY-19	R4641977
Surrogate: Acridine d9	95.6		60-130	%	17-MAY-19	19-MAY-19	R4641977
Surrogate: Chrysene d12	97.3		60-130	%	17-MAY-19	19-MAY-19	R4641977
Surrogate: Naphthalene d8	78.5		50-130	%	17-MAY-19	19-MAY-19	R4641977
Surrogate: Phenanthrene d10	95.0		60-130	%	17-MAY-19	19-MAY-19	R4641977
Herbicides in Water							
Clopyralid	<0.10		0.10	ug/L	22-MAY-19	22-MAY-19	R4641179
Dicamba	<0.10		0.10	ug/L	22-MAY-19	22-MAY-19	R4641179
Mecoprop	<0.10		0.10	ug/L	22-MAY-19	22-MAY-19	R4641179
MCPA	<0.10		0.10	ug/L	22-MAY-19	22-MAY-19	R4641179
2,4-D	<0.10		0.10	ug/L	22-MAY-19	22-MAY-19	R4641179
Bromoxynil	<0.10		0.10	ug/L	22-MAY-19	22-MAY-19	R4641179
Triclopyr	<0.10		0.10	ug/L	22-MAY-19	22-MAY-19	R4641179
2,4,5-T	<0.10		0.10	ug/L	22-MAY-19	22-MAY-19	R4641179
2,4,5-TP	<0.10		0.10	ug/L	22-MAY-19	22-MAY-19	R4641179
Picloram	<0.10		0.10	ug/L	22-MAY-19	22-MAY-19	R4641179
2,4-DB	<0.10		0.10	ug/L	22-MAY-19	22-MAY-19	R4641179
2,4-DP	<0.10		0.10	ug/L	22-MAY-19	22-MAY-19	R4641179
Dinoseb	<0.10		0.10	ug/L	22-MAY-19	22-MAY-19	R4641179
MCPB	<0.10		0.10	ug/L	22-MAY-19	22-MAY-19	R4641179
Surrogate: 2,4-Dichlorophenylacetic Acid	113.0		50-130	%	22-MAY-19	22-MAY-19	R4641179
Miscellaneous Pesticides							
Diazinon	<0.10		0.10	ug/L	21-MAY-19	22-MAY-19	R4640195
Surrogate: 2-Fluorobiphenyl	79.6		40-130	%	21-MAY-19	22-MAY-19	R4640195
Surrogate: d14-Terphenyl	76.7		40-130	%	21-MAY-19	22-MAY-19	R4640195
Total, Fecal Coliforms, E Coli by QT97							
Fecal Coliform by MPN QT97							
Fecal Coliforms	2	MBFT	1	MPN/100mL		15-MAY-19	R4636563
Total Coliform and E.coli by MPN QT97							
Total Coliforms	<1		1	MPN/100mL		15-MAY-19	R4636556
Escherichia Coli	<1		1	MPN/100mL		15-MAY-19	R4636556
VOC plus F1 to F4							
CCME PHC F2-F4 in Water							
F2 (C10-C16)	<100		100	ug/L	17-MAY-19	17-MAY-19	R4637345
F3 (C16-C34)	<250		250	ug/L	17-MAY-19	17-MAY-19	R4637345
F4 (C34-C50)	<250		250	ug/L	17-MAY-19	17-MAY-19	R4637345

* 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
L2273711-1 GWQ25-W16							
Sampled By: CLIENT on 15-MAY-19 @ 10:26							
Matrix: WATER							
CCME PHC F2-F4 in Water							
Surrogate: 2-Bromobenzotrifluoride	90.1		60-140	%	17-MAY-19	17-MAY-19	R4637345
CCME Total Hydrocarbons							
F1-BTEX	<100		100	ug/L		24-MAY-19	
F2-Naphth	<100		100	ug/L		24-MAY-19	
F3-PAH	<250		250	ug/L		24-MAY-19	
Total Hydrocarbons (C6-C50)	<380		380	ug/L		24-MAY-19	
Sum of Xylene Isomer Concentrations							
Xylenes (Total)	<0.50		0.50	ug/L		23-MAY-19	
Total Trihalomethanes (THMs)							
Total THMs	12.3		1.0	ug/L		23-MAY-19	
VOC plus F1 by GCMS							
Acetone	<20		20	ug/L		23-MAY-19	R4641582
Benzene	<0.50		0.50	ug/L		23-MAY-19	R4641582
Bromobenzene	<0.50		0.50	ug/L		23-MAY-19	R4641582
Bromochloromethane	<0.50		0.50	ug/L		23-MAY-19	R4641582
Bromodichloromethane	0.60		0.50	ug/L		23-MAY-19	R4641582
Bromoform	8.59		0.50	ug/L		23-MAY-19	R4641582
Bromomethane	<1.0		1.0	ug/L		23-MAY-19	R4641582
n-Butylbenzene	<0.50		0.50	ug/L		23-MAY-19	R4641582
sec-Butylbenzene	<0.50		0.50	ug/L		23-MAY-19	R4641582
tert-Butylbenzene	<0.50		0.50	ug/L		23-MAY-19	R4641582
Carbon disulfide	<0.50		0.50	ug/L		23-MAY-19	R4641582
Carbon Tetrachloride	<0.50		0.50	ug/L		23-MAY-19	R4641582
Chlorobenzene	<0.50		0.50	ug/L		23-MAY-19	R4641582
Chloroethane	<1.0		1.0	ug/L		23-MAY-19	R4641582
Chloroform	1.67		0.50	ug/L		23-MAY-19	R4641582
Chloromethane	<1.0		1.0	ug/L		23-MAY-19	R4641582
2-Chlorotoluene	<20		20	ug/L		23-MAY-19	R4641582
4-Chlorotoluene	<0.50		0.50	ug/L		23-MAY-19	R4641582
Dibromochloromethane	1.41		0.50	ug/L		23-MAY-19	R4641582
1,2-Dibromo-3-chloropropane	<0.50		0.50	ug/L		23-MAY-19	R4641582
1,2-Dibromoethane	<0.50		0.50	ug/L		23-MAY-19	R4641582
Dibromomethane	0.50		0.50	ug/L		23-MAY-19	R4641582
1,2-Dichlorobenzene	<0.50		0.50	ug/L		23-MAY-19	R4641582
1,3-Dichlorobenzene	<0.50		0.50	ug/L		23-MAY-19	R4641582
1,4-Dichlorobenzene	<0.50		0.50	ug/L		23-MAY-19	R4641582
Dichlorodifluoromethane	<1.0		1.0	ug/L		23-MAY-19	R4641582
1,1-dichloroethane	<0.50		0.50	ug/L		23-MAY-19	R4641582
1,2-Dichloroethane	<0.50		0.50	ug/L		23-MAY-19	R4641582
1,1-dichloroethene	<0.50		0.50	ug/L		23-MAY-19	R4641582
cis-1,2-Dichloroethene	<0.50		0.50	ug/L		23-MAY-19	R4641582
trans-1,2-Dichloroethene	<0.50		0.50	ug/L		23-MAY-19	R4641582
Dichloromethane	<0.50		0.50	ug/L		23-MAY-19	R4641582
1,2-Dichloropropane	<0.50		0.50	ug/L		23-MAY-19	R4641582
1,3-Dichloropropane	<0.50		0.50	ug/L		23-MAY-19	R4641582
2,2-Dichloropropane	<0.50		0.50	ug/L		23-MAY-19	R4641582
1,1-Dichloropropene	<0.50		0.50	ug/L		23-MAY-19	R4641582
cis-1,3-Dichloropropene	<0.50		0.50	ug/L		23-MAY-19	R4641582
trans-1,3-Dichloropropene	<0.50		0.50	ug/L		23-MAY-19	R4641582
Ethylbenzene	<0.50		0.50	ug/L		23-MAY-19	R4641582
F1	<100		100	ug/L		23-MAY-19	R4641582
Hexachlorobutadiene	<0.50		0.50	ug/L		23-MAY-19	R4641582

* 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
L2273711-1 GWQ25-W16 Sampled By: CLIENT on 15-MAY-19 @ 10:26 Matrix: WATER VOC plus F1 by GCMS							
Hexane	<0.50		0.50	ug/L		23-MAY-19	R4641582
2-Hexanone (Methyl butyl ketone)	<20		20	ug/L		23-MAY-19	R4641582
Isopropylbenzene	<0.50		0.50	ug/L		23-MAY-19	R4641582
4-Isopropyltoluene	<1.0		1.0	ug/L		23-MAY-19	R4641582
MEK	<20		20	ug/L		23-MAY-19	R4641582
MIBK	<20		20	ug/L		23-MAY-19	R4641582
MTBE	<0.50		0.50	ug/L		23-MAY-19	R4641582
Styrene	<0.50		0.50	ug/L		23-MAY-19	R4641582
1,1,1,2-Tetrachloroethane	<0.50		0.50	ug/L		23-MAY-19	R4641582
1,1,2,2-Tetrachloroethane	<0.50		0.50	ug/L		23-MAY-19	R4641582
Tetrachloroethene	<0.50		0.50	ug/L		23-MAY-19	R4641582
Toluene	<0.50		0.50	ug/L		23-MAY-19	R4641582
1,2,3-Trichlorobenzene	<0.50		0.50	ug/L		23-MAY-19	R4641582
1,2,4-Trichlorobenzene	<0.50		0.50	ug/L		23-MAY-19	R4641582
1,1,1-Trichloroethane	<0.50		0.50	ug/L		23-MAY-19	R4641582
1,1,2-Trichloroethane	<0.50		0.50	ug/L		23-MAY-19	R4641582
Trichloroethene	<0.50		0.50	ug/L		23-MAY-19	R4641582
Trichlorofluoromethane	<1.0		1.0	ug/L		23-MAY-19	R4641582
1,2,3-Trichloropropane	<0.50		0.50	ug/L		23-MAY-19	R4641582
1,2,4-Trimethylbenzene	<0.50		0.50	ug/L		23-MAY-19	R4641582
1,3,5-Trimethylbenzene	<0.50		0.50	ug/L		23-MAY-19	R4641582
Vinyl Chloride	<0.50		0.50	ug/L		23-MAY-19	R4641582
M+P-Xylenes	<0.40		0.40	ug/L		23-MAY-19	R4641582
o-Xylene	<0.30		0.30	ug/L		23-MAY-19	R4641582
Surrogate: 4-Bromofluorobenzene (SS)	87.4		70-130	%		23-MAY-19	R4641582
Surrogate: 1,4-Difluorobenzene (SS)	94.8		70-130	%		23-MAY-19	R4641582
L2273711-2 GWQ25-W15 Sampled By: CLIENT on 15-MAY-19 @ 11:45 Matrix: WATER Miscellaneous Parameters							
Chromium, Hexavalent	<0.50		0.50	ug/L		17-MAY-19	R4638648
Mercury (Hg)-Total	<0.0050		0.0050	ug/L	15-MAY-19	21-MAY-19	R4640150
Phenols (4AAP)	5.7		1.0	ug/L		21-MAY-19	R4639681
Cyanide, Total	<1.0		1.0	ug/L		22-MAY-19	R4641107
Dissolved Metals in Water by CRC ICPMS							
Dissolved Metals Filtration Location	FIELD					16-MAY-19	R4636422
Aluminum (Al)-Dissolved	<1.0		1.0	ug/L	16-MAY-19	16-MAY-19	R4636867
Antimony (Sb)-Dissolved	0.84		0.10	ug/L	16-MAY-19	16-MAY-19	R4636867
Arsenic (As)-Dissolved	1.87		0.10	ug/L	16-MAY-19	16-MAY-19	R4636867
Barium (Ba)-Dissolved	30.2		0.10	ug/L	16-MAY-19	16-MAY-19	R4636867
Beryllium (Be)-Dissolved	<0.10		0.10	ug/L	16-MAY-19	16-MAY-19	R4636867
Bismuth (Bi)-Dissolved	<0.050		0.050	ug/L	16-MAY-19	16-MAY-19	R4636867
Boron (B)-Dissolved	131		10	ug/L	16-MAY-19	16-MAY-19	R4636867
Cadmium (Cd)-Dissolved	0.0342		0.0050	ug/L	16-MAY-19	16-MAY-19	R4636867
Calcium (Ca)-Dissolved	102000		50	ug/L	16-MAY-19	16-MAY-19	R4636867
Cesium (Cs)-Dissolved	0.013		0.010	ug/L	16-MAY-19	16-MAY-19	R4636867
Chromium (Cr)-Dissolved	0.21		0.10	ug/L	16-MAY-19	16-MAY-19	R4636867
Cobalt (Co)-Dissolved	0.27		0.10	ug/L	16-MAY-19	16-MAY-19	R4636867
Copper (Cu)-Dissolved	11.9		0.20	ug/L	16-MAY-19	16-MAY-19	R4636867
Iron (Fe)-Dissolved	<10		10	ug/L	16-MAY-19	16-MAY-19	R4636867
Lead (Pb)-Dissolved	<0.050		0.050	ug/L	16-MAY-19	16-MAY-19	R4636867

* 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
L2273711-2 GWQ25-W15							
Sampled By: CLIENT on 15-MAY-19 @ 11:45							
Matrix: WATER							
Dissolved Metals in Water by CRC ICPMS							
Lithium (Li)-Dissolved	109		1.0	ug/L	16-MAY-19	16-MAY-19	R4636867
Magnesium (Mg)-Dissolved	169000		5.0	ug/L	16-MAY-19	16-MAY-19	R4636867
Manganese (Mn)-Dissolved	10.4		0.10	ug/L	16-MAY-19	16-MAY-19	R4636867
Molybdenum (Mo)-Dissolved	6.41		0.050	ug/L	16-MAY-19	16-MAY-19	R4636867
Nickel (Ni)-Dissolved	7.18		0.50	ug/L	16-MAY-19	16-MAY-19	R4636867
Phosphorus (P)-Dissolved	169		30	ug/L	16-MAY-19	16-MAY-19	R4636867
Potassium (K)-Dissolved	10700		50	ug/L	16-MAY-19	16-MAY-19	R4636867
Rubidium (Rb)-Dissolved	3.50		0.20	ug/L	16-MAY-19	16-MAY-19	R4636867
Selenium (Se)-Dissolved	1.10		0.050	ug/L	16-MAY-19	16-MAY-19	R4636867
Silicon (Si)-Dissolved	2580		50	ug/L	16-MAY-19	16-MAY-19	R4636867
Silver (Ag)-Dissolved	<0.010		0.010	ug/L	16-MAY-19	16-MAY-19	R4636867
Sodium (Na)-Dissolved	131000		50	ug/L	16-MAY-19	16-MAY-19	R4636867
Strontium (Sr)-Dissolved	689		0.10	ug/L	16-MAY-19	16-MAY-19	R4636867
Sulfur (S)-Dissolved	235000		500	ug/L	16-MAY-19	16-MAY-19	R4636867
Tellurium (Te)-Dissolved	<0.20		0.20	ug/L	16-MAY-19	16-MAY-19	R4636867
Thallium (Tl)-Dissolved	<0.010		0.010	ug/L	16-MAY-19	16-MAY-19	R4636867
Thorium (Th)-Dissolved	<0.10		0.10	ug/L	16-MAY-19	16-MAY-19	R4636867
Tin (Sn)-Dissolved	1.35		0.10	ug/L	16-MAY-19	16-MAY-19	R4636867
Titanium (Ti)-Dissolved	<0.30		0.30	ug/L	16-MAY-19	16-MAY-19	R4636867
Tungsten (W)-Dissolved	10.2		0.10	ug/L	16-MAY-19	16-MAY-19	R4636867
Uranium (U)-Dissolved	3.53		0.010	ug/L	16-MAY-19	16-MAY-19	R4636867
Vanadium (V)-Dissolved	0.67		0.50	ug/L	16-MAY-19	16-MAY-19	R4636867
Zinc (Zn)-Dissolved	14.6		1.0	ug/L	16-MAY-19	16-MAY-19	R4636867
Zirconium (Zr)-Dissolved	0.104		0.060	ug/L	16-MAY-19	16-MAY-19	R4636867
Polyaromatic Hydrocarbons (PAHs)							
1-Methyl Naphthalene	<0.020		0.020	ug/L	17-MAY-19	19-MAY-19	R4641977
2-Methyl Naphthalene	<0.020		0.020	ug/L	17-MAY-19	19-MAY-19	R4641977
Acenaphthene	<0.020		0.020	ug/L	17-MAY-19	19-MAY-19	R4641977
Acenaphthylene	<0.020		0.020	ug/L	17-MAY-19	19-MAY-19	R4641977
Anthracene	<0.010		0.010	ug/L	17-MAY-19	19-MAY-19	R4641977
Acridine	<0.020		0.020	ug/L	17-MAY-19	19-MAY-19	R4641977
Benzo(a)anthracene	<0.010		0.010	ug/L	17-MAY-19	19-MAY-19	R4641977
Benzo(a)pyrene	<0.0050		0.0050	ug/L	17-MAY-19	19-MAY-19	R4641977
Benzo(b&j)fluoranthene	<0.010		0.010	ug/L	17-MAY-19	19-MAY-19	R4641977
Benzo(g,h,i)perylene	<0.020		0.020	ug/L	17-MAY-19	19-MAY-19	R4641977
Benzo(k)fluoranthene	<0.010		0.010	ug/L	17-MAY-19	19-MAY-19	R4641977
Chrysene	<0.020		0.020	ug/L	17-MAY-19	19-MAY-19	R4641977
Dibenzo(a,h)anthracene	<0.0050		0.0050	ug/L	17-MAY-19	19-MAY-19	R4641977
Fluoranthene	<0.020		0.020	ug/L	17-MAY-19	19-MAY-19	R4641977
Fluorene	<0.020		0.020	ug/L	17-MAY-19	19-MAY-19	R4641977
Indeno(1,2,3-cd)pyrene	<0.010		0.010	ug/L	17-MAY-19	19-MAY-19	R4641977
Naphthalene	<0.050		0.050	ug/L	17-MAY-19	19-MAY-19	R4641977
Phenanthrene	<0.050		0.050	ug/L	17-MAY-19	19-MAY-19	R4641977
Pyrene	0.034		0.010	ug/L	17-MAY-19	19-MAY-19	R4641977
Quinoline	<0.020		0.020	ug/L	17-MAY-19	19-MAY-19	R4641977
B(a)P Total Potency Equivalent	<0.030		0.030	ug/L	17-MAY-19	19-MAY-19	R4641977
Surrogate: Acenaphthene d10	82.0		60-130	%	17-MAY-19	19-MAY-19	R4641977
Surrogate: Acridine d9	97.2		60-130	%	17-MAY-19	19-MAY-19	R4641977
Surrogate: Chrysene d12	102.3		60-130	%	17-MAY-19	19-MAY-19	R4641977
Surrogate: Naphthalene d8	77.7		50-130	%	17-MAY-19	19-MAY-19	R4641977
Surrogate: Phenanthrene d10	97.6		60-130	%	17-MAY-19	19-MAY-19	R4641977

* 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
L2273711-2 GWQ25-W15							
Sampled By: CLIENT on 15-MAY-19 @ 11:45							
Matrix: WATER							
Herbicides in Water							
Clopyralid	<0.10		0.10	ug/L	22-MAY-19	22-MAY-19	R4641179
Dicamba	<0.10		0.10	ug/L	22-MAY-19	22-MAY-19	R4641179
Mecoprop	<0.10		0.10	ug/L	22-MAY-19	22-MAY-19	R4641179
MCPA	<0.10		0.10	ug/L	22-MAY-19	22-MAY-19	R4641179
2,4-D	<0.10		0.10	ug/L	22-MAY-19	22-MAY-19	R4641179
Bromoxynil	<0.10		0.10	ug/L	22-MAY-19	22-MAY-19	R4641179
Triclopyr	<0.10		0.10	ug/L	22-MAY-19	22-MAY-19	R4641179
2,4,5-T	<0.10		0.10	ug/L	22-MAY-19	22-MAY-19	R4641179
2,4,5-TP	<0.10		0.10	ug/L	22-MAY-19	22-MAY-19	R4641179
Picloram	<0.10		0.10	ug/L	22-MAY-19	22-MAY-19	R4641179
2,4-DB	<0.10		0.10	ug/L	22-MAY-19	22-MAY-19	R4641179
2,4-DP	<0.10		0.10	ug/L	22-MAY-19	22-MAY-19	R4641179
Dinoseb	<0.10		0.10	ug/L	22-MAY-19	22-MAY-19	R4641179
MCPB	<0.10		0.10	ug/L	22-MAY-19	22-MAY-19	R4641179
Surrogate: 2,4-Dichlorophenylacetic Acid	101.0		50-130	%	22-MAY-19	22-MAY-19	R4641179
Miscellaneous Pesticides							
Diazinon	<0.10		0.10	ug/L	21-MAY-19	22-MAY-19	R4640195
Surrogate: 2-Fluorobiphenyl	79.2		40-130	%	21-MAY-19	22-MAY-19	R4640195
Surrogate: d14-Terphenyl	75.1		40-130	%	21-MAY-19	22-MAY-19	R4640195
Total, Fecal Coliforms, E Coli by QT97							
Fecal Coliform by MPN QT97							
Fecal Coliforms	12	MBFT	1	MPN/100mL		15-MAY-19	R4636563
Total Coliform and E.coli by MPN QT97							
Total Coliforms	4		1	MPN/100mL		15-MAY-19	R4636556
Escherichia Coli	<1		1	MPN/100mL		15-MAY-19	R4636556
VOC plus F1 to F4							
CCME PHC F2-F4 in Water							
F2 (C10-C16)	<100		100	ug/L	17-MAY-19	17-MAY-19	R4637345
F3 (C16-C34)	310		250	ug/L	17-MAY-19	17-MAY-19	R4637345
F4 (C34-C50)	280		250	ug/L	17-MAY-19	17-MAY-19	R4637345
Surrogate: 2-Bromobenzotrifluoride	93.0		60-140	%	17-MAY-19	17-MAY-19	R4637345
CCME Total Hydrocarbons							
F1-BTEX	<100		100	ug/L		24-MAY-19	
F2-Naphth	<100		100	ug/L		24-MAY-19	
F3-PAH	310		250	ug/L		24-MAY-19	
Total Hydrocarbons (C6-C50)	590		380	ug/L		24-MAY-19	
Sum of Xylene Isomer Concentrations							
Xylenes (Total)	<0.50		0.50	ug/L		23-MAY-19	
Total Trihalomethanes (THMs)							
Total THMs	<1.0		1.0	ug/L		23-MAY-19	
VOC plus F1 by GCMS							
Acetone	<20		20	ug/L		23-MAY-19	R4641582
Benzene	<0.50		0.50	ug/L		23-MAY-19	R4641582
Bromobenzene	<0.50		0.50	ug/L		23-MAY-19	R4641582
Bromochloromethane	<0.50		0.50	ug/L		23-MAY-19	R4641582
Bromodichloromethane	<0.50		0.50	ug/L		23-MAY-19	R4641582
Bromoform	<0.50		0.50	ug/L		23-MAY-19	R4641582
Bromomethane	<1.0		1.0	ug/L		23-MAY-19	R4641582
n-Butylbenzene	<0.50		0.50	ug/L		23-MAY-19	R4641582
sec-Butylbenzene	<0.50		0.50	ug/L		23-MAY-19	R4641582
tert-Butylbenzene	<0.50		0.50	ug/L		23-MAY-19	R4641582
Carbon disulfide	<0.50		0.50	ug/L		23-MAY-19	R4641582

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ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2273711-2 GWQ25-W15							
Sampled By: CLIENT on 15-MAY-19 @ 11:45							
Matrix: WATER							
VOC plus F1 by GCMS							
Carbon Tetrachloride	<0.50		0.50	ug/L		23-MAY-19	R4641582
Chlorobenzene	<0.50		0.50	ug/L		23-MAY-19	R4641582
Chloroethane	<1.0		1.0	ug/L		23-MAY-19	R4641582
Chloroform	<0.50		0.50	ug/L		23-MAY-19	R4641582
Chloromethane	<1.0		1.0	ug/L		23-MAY-19	R4641582
2-Chlorotoluene	<20		20	ug/L		23-MAY-19	R4641582
4-Chlorotoluene	<0.50		0.50	ug/L		23-MAY-19	R4641582
Dibromochloromethane	<0.50		0.50	ug/L		23-MAY-19	R4641582
1,2-Dibromo-3-chloropropane	<0.50		0.50	ug/L		23-MAY-19	R4641582
1,2-Dibromoethane	<0.50		0.50	ug/L		23-MAY-19	R4641582
Dibromomethane	<0.50		0.50	ug/L		23-MAY-19	R4641582
1,2-Dichlorobenzene	<0.50		0.50	ug/L		23-MAY-19	R4641582
1,3-Dichlorobenzene	<0.50		0.50	ug/L		23-MAY-19	R4641582
1,4-Dichlorobenzene	<0.50		0.50	ug/L		23-MAY-19	R4641582
Dichlorodifluoromethane	<1.0		1.0	ug/L		23-MAY-19	R4641582
1,1-dichloroethane	<0.50		0.50	ug/L		23-MAY-19	R4641582
1,2-Dichloroethane	<0.50		0.50	ug/L		23-MAY-19	R4641582
1,1-dichloroethene	<0.50		0.50	ug/L		23-MAY-19	R4641582
cis-1,2-Dichloroethene	<0.50		0.50	ug/L		23-MAY-19	R4641582
trans-1,2-Dichloroethene	<0.50		0.50	ug/L		23-MAY-19	R4641582
Dichloromethane	<0.50		0.50	ug/L		23-MAY-19	R4641582
1,2-Dichloropropane	<0.50		0.50	ug/L		23-MAY-19	R4641582
1,3-Dichloropropane	<0.50		0.50	ug/L		23-MAY-19	R4641582
2,2-Dichloropropane	<0.50		0.50	ug/L		23-MAY-19	R4641582
1,1-Dichloropropene	<0.50		0.50	ug/L		23-MAY-19	R4641582
cis-1,3-Dichloropropene	<0.50		0.50	ug/L		23-MAY-19	R4641582
trans-1,3-Dichloropropene	<0.50		0.50	ug/L		23-MAY-19	R4641582
Ethylbenzene	<0.50		0.50	ug/L		23-MAY-19	R4641582
F1	<100		100	ug/L		23-MAY-19	R4641582
Hexachlorobutadiene	<0.50		0.50	ug/L		23-MAY-19	R4641582
Hexane	<0.50		0.50	ug/L		23-MAY-19	R4641582
2-Hexanone (Methyl butyl ketone)	<20		20	ug/L		23-MAY-19	R4641582
Isopropylbenzene	<0.50		0.50	ug/L		23-MAY-19	R4641582
4-Isopropyltoluene	<1.0		1.0	ug/L		23-MAY-19	R4641582
MEK	<20		20	ug/L		23-MAY-19	R4641582
MIBK	<20		20	ug/L		23-MAY-19	R4641582
MTBE	<0.50		0.50	ug/L		23-MAY-19	R4641582
Styrene	<0.50		0.50	ug/L		23-MAY-19	R4641582
1,1,1,2-Tetrachloroethane	<0.50		0.50	ug/L		23-MAY-19	R4641582
1,1,2,2-Tetrachloroethane	<0.50		0.50	ug/L		23-MAY-19	R4641582
Tetrachloroethene	<0.50		0.50	ug/L		23-MAY-19	R4641582
Toluene	<0.50		0.50	ug/L		23-MAY-19	R4641582
1,2,3-Trichlorobenzene	<0.50		0.50	ug/L		23-MAY-19	R4641582
1,2,4-Trichlorobenzene	<0.50		0.50	ug/L		23-MAY-19	R4641582
1,1,1-Trichloroethane	<0.50		0.50	ug/L		23-MAY-19	R4641582
1,1,2-Trichloroethane	<0.50		0.50	ug/L		23-MAY-19	R4641582
Trichloroethene	<0.50		0.50	ug/L		23-MAY-19	R4641582
Trichlorofluoromethane	<1.0		1.0	ug/L		23-MAY-19	R4641582
1,2,3-Trichloropropane	<0.50		0.50	ug/L		23-MAY-19	R4641582
1,2,4-Trimethylbenzene	<0.50		0.50	ug/L		23-MAY-19	R4641582
1,3,5-Trimethylbenzene	<0.50		0.50	ug/L		23-MAY-19	R4641582

* 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
L2273711-2 GWQ25-W15 Sampled By: CLIENT on 15-MAY-19 @ 11:45 Matrix: WATER VOC plus F1 by GCMS							
Vinyl Chloride	<0.50		0.50	ug/L		23-MAY-19	R4641582
M+P-Xylenes	<0.40		0.40	ug/L		23-MAY-19	R4641582
o-Xylene	<0.30		0.30	ug/L		23-MAY-19	R4641582
Surrogate: 4-Bromofluorobenzene (SS)	88.5		70-130	%		23-MAY-19	R4641582
Surrogate: 1,4-Difluorobenzene (SS)	94.7		70-130	%		23-MAY-19	R4641582
L2273711-3 GWQ25-14A Sampled By: CLIENT on 15-MAY-19 @ 12:12 Matrix: WATER Miscellaneous Parameters							
Chromium, Hexavalent	<0.50		0.50	ug/L		17-MAY-19	R4638648
Mercury (Hg)-Total	0.130	DLM	0.050	ug/L	15-MAY-19	21-MAY-19	R4640150
Phenols (4AAP)	1.5		1.0	ug/L		21-MAY-19	R4639681
Cyanide, Total	<1.0		1.0	ug/L		22-MAY-19	R4641107
Dissolved Metals in Water by CRC ICPMS							
Dissolved Metals Filtration Location	LAB					16-MAY-19	R4636422
Aluminum (Al)-Dissolved	<1.0		1.0	ug/L	16-MAY-19	16-MAY-19	R4636867
Antimony (Sb)-Dissolved	<0.10		0.10	ug/L	16-MAY-19	16-MAY-19	R4636867
Arsenic (As)-Dissolved	4.51		0.10	ug/L	16-MAY-19	16-MAY-19	R4636867
Barium (Ba)-Dissolved	13.1		0.10	ug/L	16-MAY-19	16-MAY-19	R4636867
Beryllium (Be)-Dissolved	<0.10		0.10	ug/L	16-MAY-19	16-MAY-19	R4636867
Bismuth (Bi)-Dissolved	<0.050		0.050	ug/L	16-MAY-19	16-MAY-19	R4636867
Boron (B)-Dissolved	1100		1000	ug/L	16-MAY-19	16-MAY-19	R4636867
Cadmium (Cd)-Dissolved	0.0107		0.0050	ug/L	16-MAY-19	16-MAY-19	R4636867
Calcium (Ca)-Dissolved	337000		50	ug/L	16-MAY-19	16-MAY-19	R4636867
Cesium (Cs)-Dissolved	0.030		0.010	ug/L	16-MAY-19	16-MAY-19	R4636867
Chromium (Cr)-Dissolved	<0.10		0.10	ug/L	16-MAY-19	16-MAY-19	R4636867
Cobalt (Co)-Dissolved	1.07		0.10	ug/L	16-MAY-19	16-MAY-19	R4636867
Copper (Cu)-Dissolved	<0.20		0.20	ug/L	16-MAY-19	16-MAY-19	R4636867
Iron (Fe)-Dissolved	<10		10	ug/L	16-MAY-19	16-MAY-19	R4636867
Lead (Pb)-Dissolved	<0.050		0.050	ug/L	16-MAY-19	16-MAY-19	R4636867
Lithium (Li)-Dissolved	330		100	ug/L	16-MAY-19	16-MAY-19	R4636867
Magnesium (Mg)-Dissolved	175000		5.0	ug/L	16-MAY-19	16-MAY-19	R4636867
Manganese (Mn)-Dissolved	122		0.10	ug/L	16-MAY-19	16-MAY-19	R4636867
Molybdenum (Mo)-Dissolved	2.61		0.050	ug/L	16-MAY-19	16-MAY-19	R4636867
Nickel (Ni)-Dissolved	1.54		0.50	ug/L	16-MAY-19	16-MAY-19	R4636867
Phosphorus (P)-Dissolved	<30		30	ug/L	16-MAY-19	16-MAY-19	R4636867
Potassium (K)-Dissolved	33000		50	ug/L	16-MAY-19	16-MAY-19	R4636867
Rubidium (Rb)-Dissolved	13.3		0.20	ug/L	16-MAY-19	16-MAY-19	R4636867
Selenium (Se)-Dissolved	<0.050		0.050	ug/L	16-MAY-19	16-MAY-19	R4636867
Silicon (Si)-Dissolved	5310		50	ug/L	16-MAY-19	16-MAY-19	R4636867
Silver (Ag)-Dissolved	0.038		0.010	ug/L	16-MAY-19	16-MAY-19	R4636867
Sodium (Na)-Dissolved	1320000		5000	ug/L	16-MAY-19	16-MAY-19	R4636867
Strontium (Sr)-Dissolved	4230		10	ug/L	16-MAY-19	16-MAY-19	R4636867
Sulfur (S)-Dissolved	313000		500	ug/L	16-MAY-19	16-MAY-19	R4636867
Tellurium (Te)-Dissolved	0.21		0.20	ug/L	16-MAY-19	16-MAY-19	R4636867
Thallium (Tl)-Dissolved	0.026		0.010	ug/L	16-MAY-19	16-MAY-19	R4636867
Thorium (Th)-Dissolved	<0.10		0.10	ug/L	16-MAY-19	16-MAY-19	R4636867
Tin (Sn)-Dissolved	<0.10		0.10	ug/L	16-MAY-19	16-MAY-19	R4636867
Titanium (Ti)-Dissolved	<0.30		0.30	ug/L	16-MAY-19	16-MAY-19	R4636867
Tungsten (W)-Dissolved	<0.10		0.10	ug/L	16-MAY-19	16-MAY-19	R4636867
Uranium (U)-Dissolved	2.15		0.010	ug/L	16-MAY-19	16-MAY-19	R4636867

* 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
L2273711-3 GWQ25-14A							
Sampled By: CLIENT on 15-MAY-19 @ 12:12							
Matrix: WATER							
Dissolved Metals in Water by CRC ICPMS							
Vanadium (V)-Dissolved	<0.50		0.50	ug/L	16-MAY-19	16-MAY-19	R4636867
Zinc (Zn)-Dissolved	<1.0		1.0	ug/L	16-MAY-19	16-MAY-19	R4636867
Zirconium (Zr)-Dissolved	<0.060		0.060	ug/L	16-MAY-19	16-MAY-19	R4636867
Polyaromatic Hydrocarbons (PAHs)							
1-Methyl Naphthalene	0.023		0.020	ug/L	17-MAY-19	19-MAY-19	R4641977
2-Methyl Naphthalene	0.056		0.020	ug/L	17-MAY-19	19-MAY-19	R4641977
Acenaphthene	<0.020		0.020	ug/L	17-MAY-19	19-MAY-19	R4641977
Acenaphthylene	<0.020		0.020	ug/L	17-MAY-19	19-MAY-19	R4641977
Anthracene	<0.010		0.010	ug/L	17-MAY-19	19-MAY-19	R4641977
Acridine	<0.020		0.020	ug/L	17-MAY-19	19-MAY-19	R4641977
Benzo(a)anthracene	<0.010		0.010	ug/L	17-MAY-19	19-MAY-19	R4641977
Benzo(a)pyrene	<0.0050		0.0050	ug/L	17-MAY-19	19-MAY-19	R4641977
Benzo(b&j)fluoranthene	<0.010		0.010	ug/L	17-MAY-19	19-MAY-19	R4641977
Benzo(g,h,i)perylene	<0.020		0.020	ug/L	17-MAY-19	19-MAY-19	R4641977
Benzo(k)fluoranthene	<0.010		0.010	ug/L	17-MAY-19	19-MAY-19	R4641977
Chrysene	<0.020		0.020	ug/L	17-MAY-19	19-MAY-19	R4641977
Dibenzo(a,h)anthracene	<0.0050		0.0050	ug/L	17-MAY-19	19-MAY-19	R4641977
Fluoranthene	<0.020		0.020	ug/L	17-MAY-19	19-MAY-19	R4641977
Fluorene	<0.020		0.020	ug/L	17-MAY-19	19-MAY-19	R4641977
Indeno(1,2,3-cd)pyrene	<0.010		0.010	ug/L	17-MAY-19	19-MAY-19	R4641977
Naphthalene	<0.050		0.050	ug/L	17-MAY-19	19-MAY-19	R4641977
Phenanthrene	<0.050		0.050	ug/L	17-MAY-19	19-MAY-19	R4641977
Pyrene	0.010		0.010	ug/L	17-MAY-19	19-MAY-19	R4641977
Quinoline	<0.020		0.020	ug/L	17-MAY-19	19-MAY-19	R4641977
B(a)P Total Potency Equivalent	<0.030		0.030	ug/L	17-MAY-19	19-MAY-19	R4641977
Surrogate: Acenaphthene d10	77.0		60-130	%	17-MAY-19	19-MAY-19	R4641977
Surrogate: Acridine d9	71.3		60-130	%	17-MAY-19	19-MAY-19	R4641977
Surrogate: Chrysene d12	93.1		60-130	%	17-MAY-19	19-MAY-19	R4641977
Surrogate: Naphthalene d8	72.8		50-130	%	17-MAY-19	19-MAY-19	R4641977
Surrogate: Phenanthrene d10	89.3		60-130	%	17-MAY-19	19-MAY-19	R4641977
Herbicides in Water							
Clopyralid	<0.10		0.10	ug/L	22-MAY-19	22-MAY-19	R4641179
Dicamba	<0.10		0.10	ug/L	22-MAY-19	22-MAY-19	R4641179
Mecoprop	<0.10		0.10	ug/L	22-MAY-19	22-MAY-19	R4641179
MCPA	<0.10		0.10	ug/L	22-MAY-19	22-MAY-19	R4641179
2,4-D	<0.10		0.10	ug/L	22-MAY-19	22-MAY-19	R4641179
Bromoxynil	<0.10		0.10	ug/L	22-MAY-19	22-MAY-19	R4641179
Tricopyr	<0.10		0.10	ug/L	22-MAY-19	22-MAY-19	R4641179
2,4,5-T	<0.10		0.10	ug/L	22-MAY-19	22-MAY-19	R4641179
2,4,5-TP	<0.10		0.10	ug/L	22-MAY-19	22-MAY-19	R4641179
Picloram	<0.10		0.10	ug/L	22-MAY-19	22-MAY-19	R4641179
2,4-DB	<0.10		0.10	ug/L	22-MAY-19	22-MAY-19	R4641179
2,4-DP	<0.10		0.10	ug/L	22-MAY-19	22-MAY-19	R4641179
Dinoseb	<0.10		0.10	ug/L	22-MAY-19	22-MAY-19	R4641179
MCPB	<0.10		0.10	ug/L	22-MAY-19	22-MAY-19	R4641179
Surrogate: 2,4-Dichlorophenylacetic Acid	115.0		50-130	%	22-MAY-19	22-MAY-19	R4641179
Miscellaneous Pesticides							
Diazinon	<0.10		0.10	ug/L	21-MAY-19	22-MAY-19	R4640195
Surrogate: 2-Fluorobiphenyl	80.3		40-130	%	21-MAY-19	22-MAY-19	R4640195
Surrogate: d14-Terphenyl	80.1		40-130	%	21-MAY-19	22-MAY-19	R4640195
VOC plus F1 to F4							
CCME PHC F2-F4 in Water							

* 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
L2273711-3 GWQ25-14A							
Sampled By: CLIENT on 15-MAY-19 @ 12:12							
Matrix: WATER							
CCME PHC F2-F4 in Water							
F2 (C10-C16)	<100		100	ug/L	17-MAY-19	17-MAY-19	R4637345
F3 (C16-C34)	<250		250	ug/L	17-MAY-19	17-MAY-19	R4637345
F4 (C34-C50)	<250		250	ug/L	17-MAY-19	17-MAY-19	R4637345
Surrogate: 2-Bromobenzotrifluoride	88.4		60-140	%	17-MAY-19	17-MAY-19	R4637345
CCME Total Hydrocarbons							
F1-BTEX	<100		100	ug/L		24-MAY-19	
F2-Naphth	<100		100	ug/L		24-MAY-19	
F3-PAH	<250		250	ug/L		24-MAY-19	
Total Hydrocarbons (C6-C50)	<380		380	ug/L		24-MAY-19	
Sum of Xylene Isomer Concentrations							
Xylenes (Total)	<0.50		0.50	ug/L		23-MAY-19	
Total Trihalomethanes (THMs)							
Total THMs	<1.0		1.0	ug/L		23-MAY-19	
VOC plus F1 by GCMS							
Acetone	<20		20	ug/L		23-MAY-19	R4641582
Benzene	<0.50		0.50	ug/L		23-MAY-19	R4641582
Bromobenzene	<0.50		0.50	ug/L		23-MAY-19	R4641582
Bromochloromethane	<0.50		0.50	ug/L		23-MAY-19	R4641582
Bromodichloromethane	<0.50		0.50	ug/L		23-MAY-19	R4641582
Bromoform	<0.50		0.50	ug/L		23-MAY-19	R4641582
Bromomethane	<1.0		1.0	ug/L		23-MAY-19	R4641582
n-Butylbenzene	<0.50		0.50	ug/L		23-MAY-19	R4641582
sec-Butylbenzene	<0.50		0.50	ug/L		23-MAY-19	R4641582
tert-Butylbenzene	<0.50		0.50	ug/L		23-MAY-19	R4641582
Carbon disulfide	<0.50		0.50	ug/L		23-MAY-19	R4641582
Carbon Tetrachloride	<0.50		0.50	ug/L		23-MAY-19	R4641582
Chlorobenzene	<0.50		0.50	ug/L		23-MAY-19	R4641582
Chloroethane	<1.0		1.0	ug/L		23-MAY-19	R4641582
Chloroform	<0.50		0.50	ug/L		23-MAY-19	R4641582
Chloromethane	<1.0		1.0	ug/L		23-MAY-19	R4641582
2-Chlorotoluene	<20		20	ug/L		23-MAY-19	R4641582
4-Chlorotoluene	<0.50		0.50	ug/L		23-MAY-19	R4641582
Dibromochloromethane	<0.50		0.50	ug/L		23-MAY-19	R4641582
1,2-Dibromo-3-chloropropane	<0.50		0.50	ug/L		23-MAY-19	R4641582
1,2-Dibromoethane	<0.50		0.50	ug/L		23-MAY-19	R4641582
Dibromomethane	<0.50		0.50	ug/L		23-MAY-19	R4641582
1,2-Dichlorobenzene	<0.50		0.50	ug/L		23-MAY-19	R4641582
1,3-Dichlorobenzene	<0.50		0.50	ug/L		23-MAY-19	R4641582
1,4-Dichlorobenzene	<0.50		0.50	ug/L		23-MAY-19	R4641582
Dichlorodifluoromethane	<1.0		1.0	ug/L		23-MAY-19	R4641582
1,1-dichloroethane	<0.50		0.50	ug/L		23-MAY-19	R4641582
1,2-Dichloroethane	<0.50		0.50	ug/L		23-MAY-19	R4641582
1,1-dichloroethene	<0.50		0.50	ug/L		23-MAY-19	R4641582
cis-1,2-Dichloroethene	<0.50		0.50	ug/L		23-MAY-19	R4641582
trans-1,2-Dichloroethene	<0.50		0.50	ug/L		23-MAY-19	R4641582
Dichloromethane	<0.50		0.50	ug/L		23-MAY-19	R4641582
1,2-Dichloropropane	<0.50		0.50	ug/L		23-MAY-19	R4641582
1,3-Dichloropropane	<0.50		0.50	ug/L		23-MAY-19	R4641582
2,2-Dichloropropane	<0.50		0.50	ug/L		23-MAY-19	R4641582
1,1-Dichloropropene	<0.50		0.50	ug/L		23-MAY-19	R4641582
cis-1,3-Dichloropropene	<0.50		0.50	ug/L		23-MAY-19	R4641582
trans-1,3-Dichloropropene	<0.50		0.50	ug/L		23-MAY-19	R4641582

* 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
L2273711-3 GWQ25-14A Sampled By: CLIENT on 15-MAY-19 @ 12:12 Matrix: WATER VOC plus F1 by GCMS							
Ethylbenzene	<0.50		0.50	ug/L		23-MAY-19	R4641582
F1	<100		100	ug/L		23-MAY-19	R4641582
Hexachlorobutadiene	<0.50		0.50	ug/L		23-MAY-19	R4641582
Hexane	<0.50		0.50	ug/L		23-MAY-19	R4641582
2-Hexanone (Methyl butyl ketone)	<20		20	ug/L		23-MAY-19	R4641582
Isopropylbenzene	<0.50		0.50	ug/L		23-MAY-19	R4641582
4-Isopropyltoluene	<1.0		1.0	ug/L		23-MAY-19	R4641582
MEK	<20		20	ug/L		23-MAY-19	R4641582
MIBK	<20		20	ug/L		23-MAY-19	R4641582
MTBE	<0.50		0.50	ug/L		23-MAY-19	R4641582
Styrene	<0.50		0.50	ug/L		23-MAY-19	R4641582
1,1,1,2-Tetrachloroethane	<0.50		0.50	ug/L		23-MAY-19	R4641582
1,1,2,2-Tetrachloroethane	<0.50		0.50	ug/L		23-MAY-19	R4641582
Tetrachloroethene	<0.50		0.50	ug/L		23-MAY-19	R4641582
Toluene	<0.50		0.50	ug/L		23-MAY-19	R4641582
1,2,3-Trichlorobenzene	<0.50		0.50	ug/L		23-MAY-19	R4641582
1,2,4-Trichlorobenzene	<0.50		0.50	ug/L		23-MAY-19	R4641582
1,1,1-Trichloroethane	<0.50		0.50	ug/L		23-MAY-19	R4641582
1,1,2-Trichloroethane	<0.50		0.50	ug/L		23-MAY-19	R4641582
Trichloroethene	<0.50		0.50	ug/L		23-MAY-19	R4641582
Trichlorofluoromethane	<1.0		1.0	ug/L		23-MAY-19	R4641582
1,2,3-Trichloropropane	<0.50		0.50	ug/L		23-MAY-19	R4641582
1,2,4-Trimethylbenzene	<0.50		0.50	ug/L		23-MAY-19	R4641582
1,3,5-Trimethylbenzene	<0.50		0.50	ug/L		23-MAY-19	R4641582
Vinyl Chloride	<0.50		0.50	ug/L		23-MAY-19	R4641582
m+p-Xylenes	<0.40		0.40	ug/L		23-MAY-19	R4641582
o-Xylene	<0.30		0.30	ug/L		23-MAY-19	R4641582
Surrogate: 4-Bromofluorobenzene (SS)	89.6		70-130	%		23-MAY-19	R4641582
Surrogate: 1,4-Difluorobenzene (SS)	95.2		70-130	%		23-MAY-19	R4641582
L2273711-4 GWQ25-13A Sampled By: CLIENT on 15-MAY-19 @ 12:45 Matrix: WATER Miscellaneous Parameters							
Chromium, Hexavalent	<0.50		0.50	ug/L		17-MAY-19	R4638648
Mercury (Hg)-Total	0.130	DLM	0.050	ug/L	15-MAY-19	21-MAY-19	R4640150
Phenols (4AAP)	2.2		1.0	ug/L		21-MAY-19	R4639681
Cyanide, Total	<1.0		1.0	ug/L		22-MAY-19	R4641107
Dissolved Metals in Water by CRC ICPMS							
Dissolved Metals Filtration Location	FIELD					16-MAY-19	R4636422
Aluminum (Al)-Dissolved	<1.0		1.0	ug/L	16-MAY-19	16-MAY-19	R4636867
Antimony (Sb)-Dissolved	<0.10		0.10	ug/L	16-MAY-19	16-MAY-19	R4636867
Arsenic (As)-Dissolved	3.27		0.10	ug/L	16-MAY-19	16-MAY-19	R4636867
Barium (Ba)-Dissolved	13.2		0.10	ug/L	16-MAY-19	16-MAY-19	R4636867
Beryllium (Be)-Dissolved	<0.10		0.10	ug/L	16-MAY-19	16-MAY-19	R4636867
Bismuth (Bi)-Dissolved	<0.050		0.050	ug/L	16-MAY-19	16-MAY-19	R4636867
Boron (B)-Dissolved	800		100	ug/L	16-MAY-19	17-MAY-19	R4638587
Cadmium (Cd)-Dissolved	0.0186		0.0050	ug/L	16-MAY-19	16-MAY-19	R4636867
Calcium (Ca)-Dissolved	442000		50	ug/L	16-MAY-19	16-MAY-19	R4636867
Cesium (Cs)-Dissolved	0.032		0.010	ug/L	16-MAY-19	16-MAY-19	R4636867
Chromium (Cr)-Dissolved	<0.10		0.10	ug/L	16-MAY-19	16-MAY-19	R4636867
Cobalt (Co)-Dissolved	1.84		0.10	ug/L	16-MAY-19	16-MAY-19	R4636867

* 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
L2273711-4 GWQ25-13A							
Sampled By: CLIENT on 15-MAY-19 @ 12:45							
Matrix: WATER							
Dissolved Metals in Water by CRC ICPMS							
Copper (Cu)-Dissolved	<0.20		0.20	ug/L	16-MAY-19	16-MAY-19	R4636867
Iron (Fe)-Dissolved	387		10	ug/L	16-MAY-19	16-MAY-19	R4636867
Lead (Pb)-Dissolved	<0.050		0.050	ug/L	16-MAY-19	16-MAY-19	R4636867
Lithium (Li)-Dissolved	390		100	ug/L	16-MAY-19	16-MAY-19	R4636867
Magnesium (Mg)-Dissolved	206000		5.0	ug/L	16-MAY-19	16-MAY-19	R4636867
Manganese (Mn)-Dissolved	245		0.10	ug/L	16-MAY-19	16-MAY-19	R4636867
Molybdenum (Mo)-Dissolved	1.63		0.050	ug/L	16-MAY-19	16-MAY-19	R4636867
Nickel (Ni)-Dissolved	2.39		0.50	ug/L	16-MAY-19	16-MAY-19	R4636867
Phosphorus (P)-Dissolved	<30		30	ug/L	16-MAY-19	16-MAY-19	R4636867
Potassium (K)-Dissolved	22300		50	ug/L	16-MAY-19	16-MAY-19	R4636867
Rubidium (Rb)-Dissolved	7.92		0.20	ug/L	16-MAY-19	16-MAY-19	R4636867
Selenium (Se)-Dissolved	<0.050		0.050	ug/L	16-MAY-19	16-MAY-19	R4636867
Silicon (Si)-Dissolved	7430		50	ug/L	16-MAY-19	16-MAY-19	R4636867
Silver (Ag)-Dissolved	0.013		0.010	ug/L	16-MAY-19	16-MAY-19	R4636867
Sodium (Na)-Dissolved	1110000		5000	ug/L	16-MAY-19	16-MAY-19	R4636867
Strontium (Sr)-Dissolved	4140		10	ug/L	16-MAY-19	16-MAY-19	R4636867
Sulfur (S)-Dissolved	313000		500	ug/L	16-MAY-19	16-MAY-19	R4636867
Tellurium (Te)-Dissolved	<0.20		0.20	ug/L	16-MAY-19	16-MAY-19	R4636867
Thallium (Tl)-Dissolved	0.039		0.010	ug/L	16-MAY-19	16-MAY-19	R4636867
Thorium (Th)-Dissolved	<0.10		0.10	ug/L	16-MAY-19	16-MAY-19	R4636867
Tin (Sn)-Dissolved	<0.10		0.10	ug/L	16-MAY-19	16-MAY-19	R4636867
Titanium (Ti)-Dissolved	<0.30		0.30	ug/L	16-MAY-19	16-MAY-19	R4636867
Tungsten (W)-Dissolved	<0.10		0.10	ug/L	16-MAY-19	16-MAY-19	R4636867
Uranium (U)-Dissolved	9.50		0.010	ug/L	16-MAY-19	16-MAY-19	R4636867
Vanadium (V)-Dissolved	<0.50		0.50	ug/L	16-MAY-19	16-MAY-19	R4636867
Zinc (Zn)-Dissolved	2.0		1.0	ug/L	16-MAY-19	16-MAY-19	R4636867
Zirconium (Zr)-Dissolved	<0.060		0.060	ug/L	16-MAY-19	16-MAY-19	R4636867
Polyaromatic Hydrocarbons (PAHs)							
1-Methyl Naphthalene	<0.020		0.020	ug/L	17-MAY-19	19-MAY-19	R4641977
2-Methyl Naphthalene	<0.020		0.020	ug/L	17-MAY-19	19-MAY-19	R4641977
Acenaphthene	<0.020		0.020	ug/L	17-MAY-19	19-MAY-19	R4641977
Acenaphthylene	<0.020		0.020	ug/L	17-MAY-19	19-MAY-19	R4641977
Anthracene	<0.010		0.010	ug/L	17-MAY-19	19-MAY-19	R4641977
Acridine	<0.020		0.020	ug/L	17-MAY-19	19-MAY-19	R4641977
Benzo(a)anthracene	<0.010		0.010	ug/L	17-MAY-19	19-MAY-19	R4641977
Benzo(a)pyrene	<0.0050		0.0050	ug/L	17-MAY-19	19-MAY-19	R4641977
Benzo(b&j)fluoranthene	<0.010		0.010	ug/L	17-MAY-19	19-MAY-19	R4641977
Benzo(g,h,i)perylene	<0.020		0.020	ug/L	17-MAY-19	19-MAY-19	R4641977
Benzo(k)fluoranthene	<0.010		0.010	ug/L	17-MAY-19	19-MAY-19	R4641977
Chrysene	<0.020		0.020	ug/L	17-MAY-19	19-MAY-19	R4641977
Dibenzo(a,h)anthracene	<0.0050		0.0050	ug/L	17-MAY-19	19-MAY-19	R4641977
Fluoranthene	<0.020		0.020	ug/L	17-MAY-19	19-MAY-19	R4641977
Fluorene	<0.020		0.020	ug/L	17-MAY-19	19-MAY-19	R4641977
Indeno(1,2,3-cd)pyrene	<0.010		0.010	ug/L	17-MAY-19	19-MAY-19	R4641977
Naphthalene	<0.050		0.050	ug/L	17-MAY-19	19-MAY-19	R4641977
Phenanthrene	<0.050		0.050	ug/L	17-MAY-19	19-MAY-19	R4641977
Pyrene	<0.010		0.010	ug/L	17-MAY-19	19-MAY-19	R4641977
Quinoline	<0.020		0.020	ug/L	17-MAY-19	19-MAY-19	R4641977
B(a)P Total Potency Equivalent	<0.030		0.030	ug/L	17-MAY-19	19-MAY-19	R4641977
Surrogate: Acenaphthene d10	77.7		60-130	%	17-MAY-19	19-MAY-19	R4641977
Surrogate: Acridine d9	63.6		60-130	%	17-MAY-19	19-MAY-19	R4641977

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ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2273711-4 GWQ25-13A							
Sampled By: CLIENT on 15-MAY-19 @ 12:45							
Matrix: WATER							
Polyaromatic Hydrocarbons (PAHs)							
Surrogate: Chrysene d12	81.5		60-130	%	17-MAY-19	19-MAY-19	R4641977
Surrogate: Naphthalene d8	73.4		50-130	%	17-MAY-19	19-MAY-19	R4641977
Surrogate: Phenanthrene d10	88.4		60-130	%	17-MAY-19	19-MAY-19	R4641977
Herbicides in Water							
Clopyralid	<0.10		0.10	ug/L	22-MAY-19	22-MAY-19	R4641179
Dicamba	<0.10		0.10	ug/L	22-MAY-19	22-MAY-19	R4641179
Mecoprop	<0.10		0.10	ug/L	22-MAY-19	22-MAY-19	R4641179
MCPA	<0.10		0.10	ug/L	22-MAY-19	22-MAY-19	R4641179
2,4-D	<0.10		0.10	ug/L	22-MAY-19	22-MAY-19	R4641179
Bromoxynil	<0.10		0.10	ug/L	22-MAY-19	22-MAY-19	R4641179
Triclopyr	<0.10		0.10	ug/L	22-MAY-19	22-MAY-19	R4641179
2,4,5-T	<0.10		0.10	ug/L	22-MAY-19	22-MAY-19	R4641179
2,4,5-TP	<0.10		0.10	ug/L	22-MAY-19	22-MAY-19	R4641179
Picloram	<0.10		0.10	ug/L	22-MAY-19	22-MAY-19	R4641179
2,4-DB	<0.10		0.10	ug/L	22-MAY-19	22-MAY-19	R4641179
2,4-DP	<0.10		0.10	ug/L	22-MAY-19	22-MAY-19	R4641179
Dinoseb	<0.10		0.10	ug/L	22-MAY-19	22-MAY-19	R4641179
MCPB	<0.10		0.10	ug/L	22-MAY-19	22-MAY-19	R4641179
Surrogate: 2,4-Dichlorophenylacetic Acid	107.0		50-130	%	22-MAY-19	22-MAY-19	R4641179
Miscellaneous Pesticides							
Diazinon	<0.10		0.10	ug/L	21-MAY-19	22-MAY-19	R4640195
Surrogate: 2-Fluorobiphenyl	75.5		40-130	%	21-MAY-19	22-MAY-19	R4640195
Surrogate: d14-Terphenyl	69.5		40-130	%	21-MAY-19	22-MAY-19	R4640195
VOC plus F1 to F4							
CCME PHC F2-F4 in Water							
F2 (C10-C16)	<100		100	ug/L	17-MAY-19	17-MAY-19	R4637345
F3 (C16-C34)	<250		250	ug/L	17-MAY-19	17-MAY-19	R4637345
F4 (C34-C50)	<250		250	ug/L	17-MAY-19	17-MAY-19	R4637345
Surrogate: 2-Bromobenzotrifluoride	85.6		60-140	%	17-MAY-19	17-MAY-19	R4637345
CCME Total Hydrocarbons							
F1-BTEX	<100		100	ug/L		24-MAY-19	
F2-Naphth	<100		100	ug/L		24-MAY-19	
F3-PAH	<250		250	ug/L		24-MAY-19	
Total Hydrocarbons (C6-C50)	<380		380	ug/L		24-MAY-19	
Sum of Xylene Isomer Concentrations							
Xylenes (Total)	<0.50		0.50	ug/L		23-MAY-19	
Total Trihalomethanes (THMs)							
Total THMs	<1.0		1.0	ug/L		23-MAY-19	
VOC plus F1 by GCMS							
Acetone	<20		20	ug/L		23-MAY-19	R4641582
Benzene	<0.50		0.50	ug/L		23-MAY-19	R4641582
Bromobenzene	<0.50		0.50	ug/L		23-MAY-19	R4641582
Bromochloromethane	<0.50		0.50	ug/L		23-MAY-19	R4641582
Bromodichloromethane	<0.50		0.50	ug/L		23-MAY-19	R4641582
Bromoform	<0.50		0.50	ug/L		23-MAY-19	R4641582
Bromomethane	<1.0		1.0	ug/L		23-MAY-19	R4641582
n-Butylbenzene	<0.50		0.50	ug/L		23-MAY-19	R4641582
sec-Butylbenzene	<0.50		0.50	ug/L		23-MAY-19	R4641582
tert-Butylbenzene	<0.50		0.50	ug/L		23-MAY-19	R4641582
Carbon disulfide	<0.50		0.50	ug/L		23-MAY-19	R4641582
Carbon Tetrachloride	<0.50		0.50	ug/L		23-MAY-19	R4641582
Chlorobenzene	<0.50		0.50	ug/L		23-MAY-19	R4641582

* 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
L2273711-4 GWQ25-13A							
Sampled By: CLIENT on 15-MAY-19 @ 12:45							
Matrix: WATER							
VOC plus F1 by GCMS							
Chloroethane	<1.0		1.0	ug/L		23-MAY-19	R4641582
Chloroform	<0.50		0.50	ug/L		23-MAY-19	R4641582
Chloromethane	<1.0		1.0	ug/L		23-MAY-19	R4641582
2-Chlorotoluene	<20		20	ug/L		23-MAY-19	R4641582
4-Chlorotoluene	<0.50		0.50	ug/L		23-MAY-19	R4641582
Dibromochloromethane	<0.50		0.50	ug/L		23-MAY-19	R4641582
1,2-Dibromo-3-chloropropane	<0.50		0.50	ug/L		23-MAY-19	R4641582
1,2-Dibromoethane	<0.50		0.50	ug/L		23-MAY-19	R4641582
Dibromomethane	<0.50		0.50	ug/L		23-MAY-19	R4641582
1,2-Dichlorobenzene	<0.50		0.50	ug/L		23-MAY-19	R4641582
1,3-Dichlorobenzene	<0.50		0.50	ug/L		23-MAY-19	R4641582
1,4-Dichlorobenzene	<0.50		0.50	ug/L		23-MAY-19	R4641582
Dichlorodifluoromethane	<1.0		1.0	ug/L		23-MAY-19	R4641582
1,1-dichloroethane	<0.50		0.50	ug/L		23-MAY-19	R4641582
1,2-Dichloroethane	<0.50		0.50	ug/L		23-MAY-19	R4641582
1,1-dichloroethene	<0.50		0.50	ug/L		23-MAY-19	R4641582
cis-1,2-Dichloroethene	<0.50		0.50	ug/L		23-MAY-19	R4641582
trans-1,2-Dichloroethene	<0.50		0.50	ug/L		23-MAY-19	R4641582
Dichloromethane	<0.50		0.50	ug/L		23-MAY-19	R4641582
1,2-Dichloropropane	<0.50		0.50	ug/L		23-MAY-19	R4641582
1,3-Dichloropropane	<0.50		0.50	ug/L		23-MAY-19	R4641582
2,2-Dichloropropane	<0.50		0.50	ug/L		23-MAY-19	R4641582
1,1-Dichloropropene	<0.50		0.50	ug/L		23-MAY-19	R4641582
cis-1,3-Dichloropropene	<0.50		0.50	ug/L		23-MAY-19	R4641582
trans-1,3-Dichloropropene	<0.50		0.50	ug/L		23-MAY-19	R4641582
Ethylbenzene	<0.50		0.50	ug/L		23-MAY-19	R4641582
F1	<100		100	ug/L		23-MAY-19	R4641582
Hexachlorobutadiene	<0.50		0.50	ug/L		23-MAY-19	R4641582
Hexane	<0.50		0.50	ug/L		23-MAY-19	R4641582
2-Hexanone (Methyl butyl ketone)	<20		20	ug/L		23-MAY-19	R4641582
Isopropylbenzene	<0.50		0.50	ug/L		23-MAY-19	R4641582
4-Isopropyltoluene	<1.0		1.0	ug/L		23-MAY-19	R4641582
MEK	<20		20	ug/L		23-MAY-19	R4641582
MIBK	<20		20	ug/L		23-MAY-19	R4641582
MTBE	<0.50		0.50	ug/L		23-MAY-19	R4641582
Styrene	<0.50		0.50	ug/L		23-MAY-19	R4641582
1,1,1,2-Tetrachloroethane	<0.50		0.50	ug/L		23-MAY-19	R4641582
1,1,1,2,2-Tetrachloroethane	<0.50		0.50	ug/L		23-MAY-19	R4641582
Tetrachloroethene	<0.50		0.50	ug/L		23-MAY-19	R4641582
Toluene	<0.50		0.50	ug/L		23-MAY-19	R4641582
1,2,3-Trichlorobenzene	<0.50		0.50	ug/L		23-MAY-19	R4641582
1,2,4-Trichlorobenzene	<0.50		0.50	ug/L		23-MAY-19	R4641582
1,1,1-Trichloroethane	<0.50		0.50	ug/L		23-MAY-19	R4641582
1,1,2-Trichloroethane	<0.50		0.50	ug/L		23-MAY-19	R4641582
Trichloroethene	<0.50		0.50	ug/L		23-MAY-19	R4641582
Trichlorofluoromethane	<1.0		1.0	ug/L		23-MAY-19	R4641582
1,2,3-Trichloropropane	<0.50		0.50	ug/L		23-MAY-19	R4641582
1,2,4-Trimethylbenzene	<0.50		0.50	ug/L		23-MAY-19	R4641582
1,3,5-Trimethylbenzene	<0.50		0.50	ug/L		23-MAY-19	R4641582
Vinyl Chloride	<0.50		0.50	ug/L		23-MAY-19	R4641582
M+P-Xylenes	<0.40		0.40	ug/L		23-MAY-19	R4641582

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ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2273711-4 GWQ25-13A Sampled By: CLIENT on 15-MAY-19 @ 12:45 Matrix: WATER VOC plus F1 by GCMS							
o-Xylene	<0.30		0.30	ug/L		23-MAY-19	R4641582
Surrogate: 4-Bromofluorobenzene (SS)	90.7		70-130	%		23-MAY-19	R4641582
Surrogate: 1,4-Difluorobenzene (SS)	95.9		70-130	%		23-MAY-19	R4641582
L2273711-5 GWQ25-101 Sampled By: CLIENT on 15-MAY-19 @ 12:00 Matrix: WATER Miscellaneous Parameters							
Chromium, Hexavalent	<0.50		0.50	ug/L		17-MAY-19	R4638648
Mercury (Hg)-Total	0.160	DLM	0.050	ug/L	15-MAY-19	21-MAY-19	R4640150
Phenols (4AAP)	1.1		1.0	ug/L		21-MAY-19	R4639681
Cyanide, Total	<1.0		1.0	ug/L		22-MAY-19	R4641107
Dissolved Metals in Water by CRC ICPMS							
Dissolved Metals Filtration Location	FIELD					16-MAY-19	R4636422
Aluminum (Al)-Dissolved	13.8		1.0	ug/L	16-MAY-19	16-MAY-19	R4636867
Antimony (Sb)-Dissolved	<0.10		0.10	ug/L	16-MAY-19	16-MAY-19	R4636867
Arsenic (As)-Dissolved	3.32		0.10	ug/L	16-MAY-19	16-MAY-19	R4636867
Barium (Ba)-Dissolved	13.3		0.10	ug/L	16-MAY-19	16-MAY-19	R4636867
Beryllium (Be)-Dissolved	<0.10		0.10	ug/L	16-MAY-19	16-MAY-19	R4636867
Bismuth (Bi)-Dissolved	<0.050		0.050	ug/L	16-MAY-19	16-MAY-19	R4636867
Boron (B)-Dissolved	790		100	ug/L	16-MAY-19	17-MAY-19	R4638587
Cadmium (Cd)-Dissolved	0.0190		0.0050	ug/L	16-MAY-19	16-MAY-19	R4636867
Calcium (Ca)-Dissolved	447000		50	ug/L	16-MAY-19	16-MAY-19	R4636867
Cesium (Cs)-Dissolved	0.032		0.010	ug/L	16-MAY-19	16-MAY-19	R4636867
Chromium (Cr)-Dissolved	0.12		0.10	ug/L	16-MAY-19	16-MAY-19	R4636867
Cobalt (Co)-Dissolved	1.85		0.10	ug/L	16-MAY-19	16-MAY-19	R4636867
Copper (Cu)-Dissolved	<0.20		0.20	ug/L	16-MAY-19	16-MAY-19	R4636867
Iron (Fe)-Dissolved	415		10	ug/L	16-MAY-19	16-MAY-19	R4636867
Lead (Pb)-Dissolved	<0.050		0.050	ug/L	16-MAY-19	16-MAY-19	R4636867
Lithium (Li)-Dissolved	380		100	ug/L	16-MAY-19	16-MAY-19	R4636867
Magnesium (Mg)-Dissolved	209000		5.0	ug/L	16-MAY-19	16-MAY-19	R4636867
Manganese (Mn)-Dissolved	246		0.10	ug/L	16-MAY-19	16-MAY-19	R4636867
Molybdenum (Mo)-Dissolved	1.56		0.050	ug/L	16-MAY-19	16-MAY-19	R4636867
Nickel (Ni)-Dissolved	2.47		0.50	ug/L	16-MAY-19	16-MAY-19	R4636867
Phosphorus (P)-Dissolved	<30		30	ug/L	16-MAY-19	16-MAY-19	R4636867
Potassium (K)-Dissolved	22300		50	ug/L	16-MAY-19	16-MAY-19	R4636867
Rubidium (Rb)-Dissolved	7.85		0.20	ug/L	16-MAY-19	16-MAY-19	R4636867
Selenium (Se)-Dissolved	<0.050		0.050	ug/L	16-MAY-19	16-MAY-19	R4636867
Silicon (Si)-Dissolved	7220		50	ug/L	16-MAY-19	16-MAY-19	R4636867
Silver (Ag)-Dissolved	0.011		0.010	ug/L	16-MAY-19	16-MAY-19	R4636867
Sodium (Na)-Dissolved	1130000		5000	ug/L	16-MAY-19	16-MAY-19	R4636867
Strontium (Sr)-Dissolved	4110		10	ug/L	16-MAY-19	16-MAY-19	R4636867
Sulfur (S)-Dissolved	308000		500	ug/L	16-MAY-19	16-MAY-19	R4636867
Tellurium (Te)-Dissolved	<0.20		0.20	ug/L	16-MAY-19	16-MAY-19	R4636867
Thallium (Tl)-Dissolved	0.040		0.010	ug/L	16-MAY-19	16-MAY-19	R4636867
Thorium (Th)-Dissolved	<0.10		0.10	ug/L	16-MAY-19	16-MAY-19	R4636867
Tin (Sn)-Dissolved	<0.10		0.10	ug/L	16-MAY-19	16-MAY-19	R4636867
Titanium (Ti)-Dissolved	1.08		0.30	ug/L	16-MAY-19	16-MAY-19	R4636867
Tungsten (W)-Dissolved	<0.10		0.10	ug/L	16-MAY-19	16-MAY-19	R4636867
Uranium (U)-Dissolved	9.90		0.010	ug/L	16-MAY-19	16-MAY-19	R4636867
Vanadium (V)-Dissolved	<0.50		0.50	ug/L	16-MAY-19	16-MAY-19	R4636867
Zinc (Zn)-Dissolved	1.9		1.0	ug/L	16-MAY-19	16-MAY-19	R4636867

* 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
L2273711-5 GWQ25-101							
Sampled By: CLIENT on 15-MAY-19 @ 12:00							
Matrix: WATER							
Dissolved Metals in Water by CRC ICPMS							
Zirconium (Zr)-Dissolved	0.070		0.060	ug/L	16-MAY-19	16-MAY-19	R4636867
Polyaromatic Hydrocarbons (PAHs)							
1-Methyl Naphthalene	<0.020		0.020	ug/L	17-MAY-19	19-MAY-19	R4641977
2-Methyl Naphthalene	<0.020		0.020	ug/L	17-MAY-19	19-MAY-19	R4641977
Acenaphthene	<0.020		0.020	ug/L	17-MAY-19	19-MAY-19	R4641977
Acenaphthylene	<0.020		0.020	ug/L	17-MAY-19	19-MAY-19	R4641977
Anthracene	<0.010		0.010	ug/L	17-MAY-19	19-MAY-19	R4641977
Acridine	<0.020		0.020	ug/L	17-MAY-19	19-MAY-19	R4641977
Benzo(a)anthracene	<0.010		0.010	ug/L	17-MAY-19	19-MAY-19	R4641977
Benzo(a)pyrene	<0.0050		0.0050	ug/L	17-MAY-19	19-MAY-19	R4641977
Benzo(b&j)fluoranthene	<0.010		0.010	ug/L	17-MAY-19	19-MAY-19	R4641977
Benzo(g,h,i)perylene	<0.020		0.020	ug/L	17-MAY-19	19-MAY-19	R4641977
Benzo(k)fluoranthene	<0.010		0.010	ug/L	17-MAY-19	19-MAY-19	R4641977
Chrysene	<0.020		0.020	ug/L	17-MAY-19	19-MAY-19	R4641977
Dibenzo(a,h)anthracene	<0.0050		0.0050	ug/L	17-MAY-19	19-MAY-19	R4641977
Fluoranthene	<0.020		0.020	ug/L	17-MAY-19	19-MAY-19	R4641977
Fluorene	<0.020		0.020	ug/L	17-MAY-19	19-MAY-19	R4641977
Indeno(1,2,3-cd)pyrene	<0.010		0.010	ug/L	17-MAY-19	19-MAY-19	R4641977
Naphthalene	<0.050		0.050	ug/L	17-MAY-19	19-MAY-19	R4641977
Phenanthrene	<0.050		0.050	ug/L	17-MAY-19	19-MAY-19	R4641977
Pyrene	<0.010		0.010	ug/L	17-MAY-19	19-MAY-19	R4641977
Quinoline	<0.020		0.020	ug/L	17-MAY-19	19-MAY-19	R4641977
B(a)P Total Potency Equivalent	<0.030		0.030	ug/L	17-MAY-19	19-MAY-19	R4641977
Surrogate: Acenaphthene d10	76.6		60-130	%	17-MAY-19	19-MAY-19	R4641977
Surrogate: Acridine d9	61.8		60-130	%	17-MAY-19	19-MAY-19	R4641977
Surrogate: Chrysene d12	82.1		60-130	%	17-MAY-19	19-MAY-19	R4641977
Surrogate: Naphthalene d8	71.0		50-130	%	17-MAY-19	19-MAY-19	R4641977
Surrogate: Phenanthrene d10	87.1		60-130	%	17-MAY-19	19-MAY-19	R4641977
Herbicides in Water							
Clopyralid	<0.10		0.10	ug/L	22-MAY-19	22-MAY-19	R4641179
Dicamba	<0.10		0.10	ug/L	22-MAY-19	22-MAY-19	R4641179
Mecoprop	<0.10		0.10	ug/L	22-MAY-19	22-MAY-19	R4641179
MCPA	<0.10		0.10	ug/L	22-MAY-19	22-MAY-19	R4641179
2,4-D	<0.10		0.10	ug/L	22-MAY-19	22-MAY-19	R4641179
Bromoxynil	<0.10		0.10	ug/L	22-MAY-19	22-MAY-19	R4641179
Triclopyr	<0.10		0.10	ug/L	22-MAY-19	22-MAY-19	R4641179
2,4,5-T	<0.10		0.10	ug/L	22-MAY-19	22-MAY-19	R4641179
2,4,5-TP	<0.10		0.10	ug/L	22-MAY-19	22-MAY-19	R4641179
Picloram	<0.10		0.10	ug/L	22-MAY-19	22-MAY-19	R4641179
2,4-DB	<0.10		0.10	ug/L	22-MAY-19	22-MAY-19	R4641179
2,4-DP	<0.10		0.10	ug/L	22-MAY-19	22-MAY-19	R4641179
Dinoseb	<0.10		0.10	ug/L	22-MAY-19	22-MAY-19	R4641179
MCPB	<0.10		0.10	ug/L	22-MAY-19	22-MAY-19	R4641179
Surrogate: 2,4-Dichlorophenylacetic Acid	118.0		50-130	%	22-MAY-19	22-MAY-19	R4641179
Miscellaneous Pesticides							
Diazinon	<0.10		0.10	ug/L	21-MAY-19	22-MAY-19	R4640195
Surrogate: 2-Fluorobiphenyl	77.7		40-130	%	21-MAY-19	22-MAY-19	R4640195
Surrogate: d14-Terphenyl	71.6		40-130	%	21-MAY-19	22-MAY-19	R4640195
VOC plus F1 to F4							
CCME PHC F2-F4 in Water							
F2 (C10-C16)	<100		100	ug/L	17-MAY-19	17-MAY-19	R4637345
F3 (C16-C34)	<250		250	ug/L	17-MAY-19	17-MAY-19	R4637345

* 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
L2273711-5 GWQ25-101							
Sampled By: CLIENT on 15-MAY-19 @ 12:00							
Matrix: WATER							
CCME PHC F2-F4 in Water							
F4 (C34-C50)	<250		250	ug/L	17-MAY-19	17-MAY-19	R4637345
Surrogate: 2-Bromobenzotrifluoride	87.5		60-140	%	17-MAY-19	17-MAY-19	R4637345
CCME Total Hydrocarbons							
F1-BTEX	<100		100	ug/L		24-MAY-19	
F2-Naphth	<100		100	ug/L		24-MAY-19	
F3-PAH	<250		250	ug/L		24-MAY-19	
Total Hydrocarbons (C6-C50)	<380		380	ug/L		24-MAY-19	
Sum of Xylene Isomer Concentrations							
Xylenes (Total)	<0.50		0.50	ug/L		23-MAY-19	
Total Trihalomethanes (THMs)							
Total THMs	<1.0		1.0	ug/L		23-MAY-19	
VOC plus F1 by GCMS							
Acetone	<20		20	ug/L		23-MAY-19	R4641582
Benzene	<0.50		0.50	ug/L		23-MAY-19	R4641582
Bromobenzene	<0.50		0.50	ug/L		23-MAY-19	R4641582
Bromochloromethane	<0.50		0.50	ug/L		23-MAY-19	R4641582
Bromodichloromethane	<0.50		0.50	ug/L		23-MAY-19	R4641582
Bromoform	<0.50		0.50	ug/L		23-MAY-19	R4641582
Bromomethane	<1.0		1.0	ug/L		23-MAY-19	R4641582
n-Butylbenzene	<0.50		0.50	ug/L		23-MAY-19	R4641582
sec-Butylbenzene	<0.50		0.50	ug/L		23-MAY-19	R4641582
tert-Butylbenzene	<0.50		0.50	ug/L		23-MAY-19	R4641582
Carbon disulfide	<0.50		0.50	ug/L		23-MAY-19	R4641582
Carbon Tetrachloride	<0.50		0.50	ug/L		23-MAY-19	R4641582
Chlorobenzene	<0.50		0.50	ug/L		23-MAY-19	R4641582
Chloroethane	<1.0		1.0	ug/L		23-MAY-19	R4641582
Chloroform	<0.50		0.50	ug/L		23-MAY-19	R4641582
Chloromethane	<1.0		1.0	ug/L		23-MAY-19	R4641582
2-Chlorotoluene	<20		20	ug/L		23-MAY-19	R4641582
4-Chlorotoluene	<0.50		0.50	ug/L		23-MAY-19	R4641582
Dibromochloromethane	<0.50		0.50	ug/L		23-MAY-19	R4641582
1,2-Dibromo-3-chloropropane	<0.50		0.50	ug/L		23-MAY-19	R4641582
1,2-Dibromoethane	<0.50		0.50	ug/L		23-MAY-19	R4641582
Dibromomethane	<0.50		0.50	ug/L		23-MAY-19	R4641582
1,2-Dichlorobenzene	<0.50		0.50	ug/L		23-MAY-19	R4641582
1,3-Dichlorobenzene	<0.50		0.50	ug/L		23-MAY-19	R4641582
1,4-Dichlorobenzene	<0.50		0.50	ug/L		23-MAY-19	R4641582
Dichlorodifluoromethane	<1.0		1.0	ug/L		23-MAY-19	R4641582
1,1-dichloroethane	<0.50		0.50	ug/L		23-MAY-19	R4641582
1,2-Dichloroethane	<0.50		0.50	ug/L		23-MAY-19	R4641582
1,1-dichloroethene	<0.50		0.50	ug/L		23-MAY-19	R4641582
cis-1,2-Dichloroethene	<0.50		0.50	ug/L		23-MAY-19	R4641582
trans-1,2-Dichloroethene	<0.50		0.50	ug/L		23-MAY-19	R4641582
Dichloromethane	<0.50		0.50	ug/L		23-MAY-19	R4641582
1,2-Dichloropropane	<0.50		0.50	ug/L		23-MAY-19	R4641582
1,3-Dichloropropane	<0.50		0.50	ug/L		23-MAY-19	R4641582
2,2-Dichloropropane	<0.50		0.50	ug/L		23-MAY-19	R4641582
1,1-Dichloropropene	<0.50		0.50	ug/L		23-MAY-19	R4641582
cis-1,3-Dichloropropene	<0.50		0.50	ug/L		23-MAY-19	R4641582
trans-1,3-Dichloropropene	<0.50		0.50	ug/L		23-MAY-19	R4641582
Ethylbenzene	<0.50		0.50	ug/L		23-MAY-19	R4641582
F1	<100		100	ug/L		23-MAY-19	R4641582

* 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
L2273711-5 GWQ25-101							
Sampled By: CLIENT on 15-MAY-19 @ 12:00							
Matrix: WATER							
VOC plus F1 by GCMS							
Hexachlorobutadiene	<0.50		0.50	ug/L		23-MAY-19	R4641582
Hexane	<0.50		0.50	ug/L		23-MAY-19	R4641582
2-Hexanone (Methyl butyl ketone)	<20		20	ug/L		23-MAY-19	R4641582
Isopropylbenzene	<0.50		0.50	ug/L		23-MAY-19	R4641582
4-Isopropyltoluene	<1.0		1.0	ug/L		23-MAY-19	R4641582
MEK	<20		20	ug/L		23-MAY-19	R4641582
MIBK	<20		20	ug/L		23-MAY-19	R4641582
MTBE	<0.50		0.50	ug/L		23-MAY-19	R4641582
Styrene	<0.50		0.50	ug/L		23-MAY-19	R4641582
1,1,1,2-Tetrachloroethane	<0.50		0.50	ug/L		23-MAY-19	R4641582
1,1,2,2-Tetrachloroethane	<0.50		0.50	ug/L		23-MAY-19	R4641582
Tetrachloroethene	<0.50		0.50	ug/L		23-MAY-19	R4641582
Toluene	<0.50		0.50	ug/L		23-MAY-19	R4641582
1,2,3-Trichlorobenzene	<0.50		0.50	ug/L		23-MAY-19	R4641582
1,2,4-Trichlorobenzene	<0.50		0.50	ug/L		23-MAY-19	R4641582
1,1,1-Trichloroethane	<0.50		0.50	ug/L		23-MAY-19	R4641582
1,1,2-Trichloroethane	<0.50		0.50	ug/L		23-MAY-19	R4641582
Trichloroethene	<0.50		0.50	ug/L		23-MAY-19	R4641582
Trichlorofluoromethane	<1.0		1.0	ug/L		23-MAY-19	R4641582
1,2,3-Trichloropropane	<0.50		0.50	ug/L		23-MAY-19	R4641582
1,2,4-Trimethylbenzene	<0.50		0.50	ug/L		23-MAY-19	R4641582
1,3,5-Trimethylbenzene	<0.50		0.50	ug/L		23-MAY-19	R4641582
Vinyl Chloride	<0.50		0.50	ug/L		23-MAY-19	R4641582
M+P-Xylenes	<0.40		0.40	ug/L		23-MAY-19	R4641582
o-Xylene	<0.30		0.30	ug/L		23-MAY-19	R4641582
Surrogate: 4-Bromofluorobenzene (SS)	87.3		70-130	%		23-MAY-19	R4641582
Surrogate: 1,4-Difluorobenzene (SS)	94.4		70-130	%		23-MAY-19	R4641582

* 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).
MBFT	Microbiological test results for Fecal Coliforms > Total Coliforms due to sample heterogeneity. Both test results are within normal variability for MPN tests.
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**
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CN-T-CFA-WP	Water	Total Cyanide in water by CFA	ISO 14403-2
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This analysis is carried out using procedures adapted from ISO Method 14403-2:2012 "Determination of Total Cyanide using Flow Analysis (FIA and CFA)". Total or strong acid dissociable (SAD) cyanide is determined by in-line UV digestion along with sample distillation and final determination by colourimetric analysis.

CR-CR6-IC-WT	Water	Chromium +6	EPA 7199
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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.

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).

F1-F4-CALC-WP	Water	CCME Total Hydrocarbons	CCME CWS-PHC, Pub #1310, Dec 2001-L
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Analytical methods used for analysis of CCME Petroleum Hydrocarbons have been validated and comply with the Reference Method for the CWS PHC.

In cases where results for both F4 and F4G are reported, the greater of the two results must be used in any application of the CWS PHC guidelines and the gravimetric heavy hydrocarbons cannot be added to the C6 to C50 hydrocarbons.

In samples where BTEX and F1 were analyzed, F1-BTEX represents a value where the sum of Benzene, Toluene, Ethylbenzene and total Xylenes has been subtracted from F1.

In samples where PAHs, F2 and F3 were analyzed, F2-Naphth represents the result where Naphthalene has been subtracted from F2. F3-PAH represents a result where the sum of Benzo(a)anthracene, Benzo(a)pyrene, Benzo(b)fluoranthene, Benzo(k)fluoranthene, Dibenzo(a,h)anthracene, Fluoranthene, Indeno(1,2,3-cd)pyrene, Phenanthrene, and Pyrene has been subtracted from F3.

Unless otherwise qualified, the following quality control criteria have been met for the F1 hydrocarbon range:

1. All extraction and analysis holding times were met.
2. Instrument performance showing response factors for C6 and C10 within 30% of the response factor for toluene.
3. Linearity of gasoline response within 15% throughout the calibration range.

Unless otherwise qualified, the following quality control criteria have been met for the F2-F4 hydrocarbon ranges:

1. All extraction and analysis holding times were met.
2. Instrument performance showing C10, C16 and C34 response factors within 10% of their average.
3. Instrument performance showing the C50 response factor within 30% of the average of the C10, C16 and C34 response factors.
4. Linearity of diesel or motor oil response within 15% throughout the calibration range.

F2-F4-FID-WP	Water	CCME PHC F2-F4 in Water	EPA 3511
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Petroleum hydrocarbons in water are determined by liquid-liquid micro-scale solvent extraction using a reciprocal shaker extraction apparatus prior to capillary column gas chromatography with flame ionization detection (GC-FID) analysis.

FC-QT97-WP	Water	Fecal Coliform by MPN QT97	APHA 9223B QT97
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This analysis is carried out using procedures adapted from APHA Method 9223B "Enzyme Substrate Coliform Test". The sample is mixed with a mixture of hydrolyzable substrates and then sealed in a 97-well packet. The packet is incubated at 44.5 – 0.2°C for 18 hours and then the number of wells exhibiting a positive response are counted. The final result is obtained by comparing the number of positive responses to a probability table.

HERBSCR-LCMS-WT	Water	Herbicides in Water	E3552
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Water samples are subjected filtration and analyzed by direct injection without sample preparation using liquid chromatography tandem mass spectrometry (LC-MS/MS).

HERBSCR-LCMS-WT	Water	Herbicides in Water	SW846 8270
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Water samples are subjected filtration and analyzed by direct injection without sample preparation using liquid chromatography tandem mass spectrometry (LC-MS/MS).

HG-T-CVAA-WP	Water	Mercury Total	EPA 1631E (mod)
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Water samples undergo a cold-oxidation using bromine monochloride prior to reduction with stannous chloride, and analyzed by CVAAS.

MET-D-CCMS-WP	Water	Dissolved Metals in Water by CRC ICPMS	APHA 3030B/6020B (mod)
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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.			
PAH,PANH-WP	Water	Polyaromatic Hydrocarbons (PAHs)	EPA 3511/8270D (mod)
PAHs are extracted from water using a hexane micro-extraction technique, with analysis by GC/MS. Because the two isomers cannot be readily separated chromatographically, benzo(j)fluoranthene is reported as part of the benzo(b)fluoranthene parameter.			
PEST-DIAZINON-WT	Water	Miscellaneous Pesticides	SW846 8270
PHENOLS-4AAP-WT	Water	Phenol (4AAP)	EPA 9066
An automated method is used to distill the sample. The distillate is then buffered to pH 9.4 which reacts with 4AAP and potassium ferricyanide to form a red complex which is measured colorimetrically.			
TC,EC-QT97-WP	Water	Total Coliform and E.coli by MPN QT97	APHA 9223B QT97
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 97-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.			
THM-SUM-CALC-WP	Water	Total Trihalomethanes (THMs)	CALCULATION
Total Trihalomethanes (THMs) represents the sum of bromodichloromethane, bromoform, chlorodibromomethane and chloroform. For the purpose of calculation, results less than the detection limit (DL) are treated as zero.			
VOC+F1-HSMS-WP	Water	VOC plus F1 by GCMS	EPA 8260C / EPA 5021A
In this method samples are analyzed using a headspace autosampler interfaced to a dual column gas chromatograph with MS and Flame Ionization detectors.			
XYLENES-SUM-CALC-WP	Water	Sum of Xylene Isomer Concentrations	CALCULATED RESULT
Total xylenes represents the sum of o-xylene and m&p-xylene.			

** 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
WT	ALS ENVIRONMENTAL - WATERLOO, ONTARIO, CANADA

Chain of Custody Numbers:

Reference Information

Test Method References:

ALS Test Code	Matrix	Test Description	Method Reference**
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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: L2273711

Report Date: 24-MAY-19

Page 1 of 12

Client: City of Winnipeg - Solid Waste Services Div (1120 Waverley)
 Solid Waste Services Division 1120 Waverley Street
 Winnipeg MB R3T 0P4

Contact: CHRIS KOZAK

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
CN-T-CFA-WP								
	Water							
Batch	R4641107							
WG3056160-2	LCS							
Cyanide, Total			95.1		%		80-120	22-MAY-19
WG3056160-1	MB							
Cyanide, Total			<0.0010		mg/L		0.001	22-MAY-19
CR-CR6-IC-WT								
	Water							
Batch	R4638648							
WG3052446-12	LCS							
Chromium, Hexavalent			95.8		%		80-120	17-MAY-19
WG3052446-11	MB							
Chromium, Hexavalent			<0.00050		mg/L		0.0005	17-MAY-19
F2-F4-FID-WP								
	Water							
Batch	R4637345							
WG3052255-2	LCS							
F2 (C10-C16)			107.3		%		70-130	17-MAY-19
F3 (C16-C34)			103.6		%		70-130	17-MAY-19
F4 (C34-C50)			104.0		%		70-130	17-MAY-19
WG3052255-1	MB							
F2 (C10-C16)			<0.10		mg/L		0.1	17-MAY-19
F3 (C16-C34)			<0.25		mg/L		0.25	17-MAY-19
F4 (C34-C50)			<0.25		mg/L		0.25	17-MAY-19
Surrogate: 2-Bromobenzotrifluoride			79.6		%		60-140	17-MAY-19
FC-QT97-WP								
	Water							
Batch	R4636563							
WG3050764-2	DUP	L2273711-1						
Fecal Coliforms		2	1	J	MPN/100mL	1	2	15-MAY-19
WG3050764-1	MB							
Fecal Coliforms			<1		MPN/100mL		1	15-MAY-19
HERBSCR-LCMS-WT								
	Water							
Batch	R4641179							
WG3055164-2	LCS							
Clopyralid			92.5		%		50-150	22-MAY-19
Dicamba			84.0		%		65-130	22-MAY-19
Mecoprop			102.0		%		65-130	22-MAY-19
MCPA			97.7		%		65-130	22-MAY-19
2,4-D			84.4		%		65-130	22-MAY-19
Bromoxynil			121.0		%		65-130	22-MAY-19



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Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
HERBSCR-LCMS-WT		Water						
Batch	R4641179							
WG3055164-2	LCS							
Triclopyr			77.7		%		65-130	22-MAY-19
2,4,5-T			92.9		%		65-130	22-MAY-19
2,4,5-TP			99.4		%		65-130	22-MAY-19
Picloram			93.0		%		50-150	22-MAY-19
2,4-DB			87.3		%		65-130	22-MAY-19
2,4-DP			82.9		%		65-130	22-MAY-19
Dinoseb			121.0		%		50-150	22-MAY-19
MCPB			110.0		%		65-130	22-MAY-19
WG3055164-1	MB							
Clopyralid			<0.00010		mg/L		0.0001	22-MAY-19
Dicamba			<0.00010		mg/L		0.0001	22-MAY-19
Mecoprop			<0.00010		mg/L		0.0001	22-MAY-19
MCPA			<0.00010		mg/L		0.0001	22-MAY-19
2,4-D			<0.00010		mg/L		0.0001	22-MAY-19
Bromoxynil			<0.00010		mg/L		0.0001	22-MAY-19
Triclopyr			<0.00010		mg/L		0.0001	22-MAY-19
2,4,5-T			<0.00010		mg/L		0.0001	22-MAY-19
2,4,5-TP			<0.00010		mg/L		0.0001	22-MAY-19
Picloram			<0.00010		mg/L		0.0001	22-MAY-19
2,4-DB			<0.00010		mg/L		0.0001	22-MAY-19
2,4-DP			<0.00010		mg/L		0.0001	22-MAY-19
Dinoseb			<0.00010		mg/L		0.0001	22-MAY-19
MCPB			<0.00010		mg/L		0.0001	22-MAY-19
Surrogate: 2,4-Dichlorophenylacetic Acid			95.0		%		50-130	22-MAY-19
HG-T-CVAA-WP		Water						
Batch	R4640150							
WG3055215-2	LCS							
Mercury (Hg)-Total			98.0		%		80-120	21-MAY-19
WG3055215-1	MB							
Mercury (Hg)-Total			<0.000005C		mg/L		0.000005	21-MAY-19
MET-D-CCMS-WP		Water						
Batch	R4636867							
WG3051624-2	LCS							
Aluminum (Al)-Dissolved			98.8		%		80-120	16-MAY-19
Antimony (Sb)-Dissolved			102.0		%		80-120	16-MAY-19



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Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
MET-D-CCMS-WP								
	Water							
Batch	R4636867							
WG3051624-2	LCS							
Arsenic (As)-Dissolved			101.2		%		80-120	16-MAY-19
Barium (Ba)-Dissolved			103.8		%		80-120	16-MAY-19
Beryllium (Be)-Dissolved			103.1		%		80-120	16-MAY-19
Bismuth (Bi)-Dissolved			105.4		%		80-120	16-MAY-19
Boron (B)-Dissolved			103.5		%		80-120	16-MAY-19
Cadmium (Cd)-Dissolved			103.6		%		80-120	16-MAY-19
Calcium (Ca)-Dissolved			103.9		%		80-120	16-MAY-19
Cesium (Cs)-Dissolved			99.3		%		80-120	16-MAY-19
Chromium (Cr)-Dissolved			99.97		%		80-120	16-MAY-19
Cobalt (Co)-Dissolved			99.8		%		80-120	16-MAY-19
Copper (Cu)-Dissolved			109.4		%		80-120	16-MAY-19
Iron (Fe)-Dissolved			93.5		%		80-120	16-MAY-19
Lead (Pb)-Dissolved			102.8		%		80-120	16-MAY-19
Lithium (Li)-Dissolved			104.9		%		80-120	16-MAY-19
Magnesium (Mg)-Dissolved			112.0		%		80-120	16-MAY-19
Manganese (Mn)-Dissolved			102.3		%		80-120	16-MAY-19
Molybdenum (Mo)-Dissolved			102.5		%		80-120	16-MAY-19
Nickel (Ni)-Dissolved			99.5		%		80-120	16-MAY-19
Phosphorus (P)-Dissolved			110.0		%		80-120	16-MAY-19
Potassium (K)-Dissolved			105.4		%		80-120	16-MAY-19
Rubidium (Rb)-Dissolved			102.8		%		80-120	16-MAY-19
Selenium (Se)-Dissolved			104.3		%		80-120	16-MAY-19
Silicon (Si)-Dissolved			102.4		%		80-120	16-MAY-19
Silver (Ag)-Dissolved			97.8		%		80-120	16-MAY-19
Sodium (Na)-Dissolved			104.5		%		80-120	16-MAY-19
Strontium (Sr)-Dissolved			101.5		%		80-120	16-MAY-19
Sulfur (S)-Dissolved			113.8		%		80-120	16-MAY-19
Tellurium (Te)-Dissolved			104.1		%		80-120	16-MAY-19
Thallium (Tl)-Dissolved			103.6		%		80-120	16-MAY-19
Thorium (Th)-Dissolved			99.5		%		80-120	16-MAY-19
Tin (Sn)-Dissolved			102.6		%		80-120	16-MAY-19
Titanium (Ti)-Dissolved			101.4		%		80-120	16-MAY-19
Tungsten (W)-Dissolved			105.1		%		80-120	16-MAY-19
Uranium (U)-Dissolved			104.8		%		80-120	16-MAY-19



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Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
MET-D-CCMS-WP		Water						
Batch	R4636867							
WG3051624-2	LCS							
Vanadium (V)-Dissolved			103.6		%		80-120	16-MAY-19
Zinc (Zn)-Dissolved			104.1		%		80-120	16-MAY-19
Zirconium (Zr)-Dissolved			98.5		%		80-120	16-MAY-19
WG3051624-1	MB							
Aluminum (Al)-Dissolved			<0.0010		mg/L		0.001	16-MAY-19
Antimony (Sb)-Dissolved			<0.00010		mg/L		0.0001	16-MAY-19
Arsenic (As)-Dissolved			<0.00010		mg/L		0.0001	16-MAY-19
Barium (Ba)-Dissolved			<0.00010		mg/L		0.0001	16-MAY-19
Beryllium (Be)-Dissolved			<0.00010		mg/L		0.0001	16-MAY-19
Bismuth (Bi)-Dissolved			<0.000050		mg/L		0.00005	16-MAY-19
Boron (B)-Dissolved			<0.010		mg/L		0.01	16-MAY-19
Cadmium (Cd)-Dissolved			<0.0000050		mg/L		0.000005	16-MAY-19
Calcium (Ca)-Dissolved			<0.050		mg/L		0.05	16-MAY-19
Cesium (Cs)-Dissolved			<0.000010		mg/L		0.00001	16-MAY-19
Chromium (Cr)-Dissolved			<0.00010		mg/L		0.0001	16-MAY-19
Cobalt (Co)-Dissolved			<0.00010		mg/L		0.0001	16-MAY-19
Copper (Cu)-Dissolved			<0.00020		mg/L		0.0002	16-MAY-19
Iron (Fe)-Dissolved			<0.010		mg/L		0.01	16-MAY-19
Lead (Pb)-Dissolved			<0.000050		mg/L		0.00005	16-MAY-19
Lithium (Li)-Dissolved			<0.0010		mg/L		0.001	16-MAY-19
Magnesium (Mg)-Dissolved			<0.0050		mg/L		0.005	16-MAY-19
Manganese (Mn)-Dissolved			<0.00010		mg/L		0.0001	16-MAY-19
Molybdenum (Mo)-Dissolved			<0.000050		mg/L		0.00005	16-MAY-19
Nickel (Ni)-Dissolved			<0.00050		mg/L		0.0005	16-MAY-19
Phosphorus (P)-Dissolved			<0.030		mg/L		0.03	16-MAY-19
Potassium (K)-Dissolved			<0.050		mg/L		0.05	16-MAY-19
Rubidium (Rb)-Dissolved			<0.00020		mg/L		0.0002	16-MAY-19
Selenium (Se)-Dissolved			<0.000050		mg/L		0.00005	16-MAY-19
Silicon (Si)-Dissolved			<0.050		mg/L		0.05	16-MAY-19
Silver (Ag)-Dissolved			<0.000010		mg/L		0.00001	16-MAY-19
Sodium (Na)-Dissolved			<0.050		mg/L		0.05	16-MAY-19
Strontium (Sr)-Dissolved			<0.00010		mg/L		0.0001	16-MAY-19
Sulfur (S)-Dissolved			<0.50		mg/L		0.5	16-MAY-19
Tellurium (Te)-Dissolved			<0.00020		mg/L		0.0002	16-MAY-19

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Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
MET-D-CCMS-WP		Water						
Batch	R4636867							
WG3051624-1 MB								
Thallium (Tl)-Dissolved			<0.000010		mg/L		0.00001	16-MAY-19
Thorium (Th)-Dissolved			<0.00010		mg/L		0.0001	16-MAY-19
Tin (Sn)-Dissolved			<0.00010		mg/L		0.0001	16-MAY-19
Titanium (Ti)-Dissolved			<0.00030		mg/L		0.0003	16-MAY-19
Tungsten (W)-Dissolved			<0.00010		mg/L		0.0001	16-MAY-19
Uranium (U)-Dissolved			<0.000010		mg/L		0.00001	16-MAY-19
Vanadium (V)-Dissolved			<0.00050		mg/L		0.0005	16-MAY-19
Zinc (Zn)-Dissolved			<0.0010		mg/L		0.001	16-MAY-19
Zirconium (Zr)-Dissolved			<0.000060		mg/L		0.00006	16-MAY-19
PAH,PANH-WP		Water						
Batch	R4641977							
WG3052974-2 LCS								
1-Methyl Naphthalene			119.2		%		60-130	19-MAY-19
2-Methyl Naphthalene			110.1		%		60-130	19-MAY-19
Acenaphthene			125.0		%		60-130	19-MAY-19
Acenaphthylene			105.8		%		60-130	19-MAY-19
Anthracene			97.7		%		60-130	19-MAY-19
Acridine			100.4		%		60-130	19-MAY-19
Benzo(a)anthracene			91.9		%		60-130	19-MAY-19
Benzo(a)pyrene			88.7		%		60-130	19-MAY-19
Benzo(b&j)fluoranthene			91.4		%		60-130	19-MAY-19
Benzo(g,h,i)perylene			91.8		%		60-130	19-MAY-19
Benzo(k)fluoranthene			111.8		%		60-130	19-MAY-19
Chrysene			113.2		%		60-130	19-MAY-19
Dibenzo(a,h)anthracene			87.5		%		60-130	19-MAY-19
Fluoranthene			113.9		%		60-130	19-MAY-19
Fluorene			106.2		%		60-130	19-MAY-19
Indeno(1,2,3-cd)pyrene			78.2		%		60-130	19-MAY-19
Naphthalene			122.3		%		50-130	19-MAY-19
Phenanthrene			123.7		%		60-130	19-MAY-19
Pyrene			112.2		%		60-130	19-MAY-19
Quinoline			89.8		%		60-130	19-MAY-19
WG3052974-1 MB								
1-Methyl Naphthalene			<0.000020		mg/L		0.00002	19-MAY-19

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Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
PAH,PANH-WP		Water						
Batch	R4641977							
WG3052974-1	MB							
2-Methyl Naphthalene			<0.000020		mg/L		0.00002	19-MAY-19
Acenaphthene			<0.000020		mg/L		0.00002	19-MAY-19
Acenaphthylene			<0.000020		mg/L		0.00002	19-MAY-19
Anthracene			<0.000010		mg/L		0.00001	19-MAY-19
Acridine			<0.000020		mg/L		0.00002	19-MAY-19
Benzo(a)anthracene			<0.000010		mg/L		0.00001	19-MAY-19
Benzo(a)pyrene			<0.000005C		mg/L		0.000005	19-MAY-19
Benzo(b&j)fluoranthene			<0.000010		mg/L		0.00001	19-MAY-19
Benzo(g,h,i)perylene			<0.000020		mg/L		0.00002	19-MAY-19
Benzo(k)fluoranthene			<0.000010		mg/L		0.00001	19-MAY-19
Chrysene			<0.000020		mg/L		0.00002	19-MAY-19
Dibenzo(a,h)anthracene			<0.000005C		mg/L		0.000005	19-MAY-19
Fluoranthene			<0.000020		mg/L		0.00002	19-MAY-19
Fluorene			<0.000020		mg/L		0.00002	19-MAY-19
Indeno(1,2,3-cd)pyrene			<0.000010		mg/L		0.00001	19-MAY-19
Naphthalene			<0.000050		mg/L		0.00005	19-MAY-19
Phenanthrene			<0.000050		mg/L		0.00005	19-MAY-19
Pyrene			<0.000010		mg/L		0.00001	19-MAY-19
Quinoline			<0.000020		mg/L		0.00002	19-MAY-19
Surrogate: Acenaphthene d10			100.5		%		60-130	19-MAY-19
Surrogate: Acridine d9			89.5		%		60-130	19-MAY-19
Surrogate: Chrysene d12			108.4		%		60-130	19-MAY-19
Surrogate: Naphthalene d8			93.5		%		50-130	19-MAY-19
Surrogate: Phenanthrene d10			107.1		%		60-130	19-MAY-19
PEST-DIAZINON-WT		Water						
Batch	R4640195							
WG3054005-2	LCS							
Diazinon			89.7		%		60-130	22-MAY-19
WG3054005-1	MB							
Diazinon			<0.10		ug/L		0.1	22-MAY-19
Surrogate: 2-Fluorobiphenyl			91.1		%		40-130	22-MAY-19
Surrogate: d14-Terphenyl			78.8		%		40-130	22-MAY-19
PHENOLS-4AAP-WT		Water						

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PHENOLS-4AAP-WT								
Batch	R4639681							
WG3054396-14	LCS							
Phenols (4AAP)			96.3		%		85-115	21-MAY-19
WG3054396-18	LCS							
Phenols (4AAP)			94.6		%		85-115	21-MAY-19
WG3054396-13	MB							
Phenols (4AAP)			<0.0010		mg/L		0.001	21-MAY-19
WG3054396-17	MB							
Phenols (4AAP)			<0.0010		mg/L		0.001	21-MAY-19
TC,EC-QT97-WP								
Batch	R4636556							
WG3050765-2	DUP	L2273711-1						
Total Coliforms		<1	<1	RPD-NA	MPN/100mL	N/A	65	15-MAY-19
Escherichia Coli		<1	<1	RPD-NA	MPN/100mL	N/A	65	15-MAY-19
WG3050765-1	MB							
Total Coliforms			<1		MPN/100mL		1	15-MAY-19
Escherichia Coli			<1		MPN/100mL		1	15-MAY-19
VOC+F1-HSMS-WP								
Batch	R4641582							
WG3052815-2	LCS							
Acetone			89.6		%		70-130	22-MAY-19
Benzene			93.2		%		70-130	22-MAY-19
Bromobenzene			104.8		%		70-130	22-MAY-19
Bromochloromethane			86.6		%		70-130	22-MAY-19
Bromodichloromethane			96.5		%		70-130	22-MAY-19
Bromoform			98.4		%		70-130	22-MAY-19
Bromomethane			88.3		%		60-140	22-MAY-19
n-Butylbenzene			118.8		%		70-130	22-MAY-19
sec-Butylbenzene			105.3		%		70-130	22-MAY-19
tert-Butylbenzene			118.0		%		70-130	22-MAY-19
Carbon disulfide			98.1		%		70-130	22-MAY-19
Carbon Tetrachloride			100.8		%		70-130	22-MAY-19
Chlorobenzene			101.0		%		70-130	22-MAY-19
Chloroethane			108.9		%		60-140	22-MAY-19
Chloroform			97.1		%		70-130	22-MAY-19
Chloromethane			96.7		%		60-140	22-MAY-19
2-Chlorotoluene			111.8		%		70-130	22-MAY-19

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VOC+F1-HSMS-WP								
	Water							
Batch	R4641582							
WG3052815-2	LCS							
4-Chlorotoluene			102.4		%		70-130	22-MAY-19
Dibromochloromethane			103.0		%		70-130	22-MAY-19
1,2-Dibromo-3-chloropropane			102.7		%		70-130	22-MAY-19
1,2-Dibromoethane			94.0		%		70-130	22-MAY-19
Dibromomethane			92.6		%		70-130	22-MAY-19
1,2-Dichlorobenzene			105.5		%		70-130	22-MAY-19
1,3-Dichlorobenzene			106.7		%		70-130	22-MAY-19
1,4-Dichlorobenzene			107.9		%		70-130	22-MAY-19
Dichlorodifluoromethane			118.8		%		60-140	22-MAY-19
1,1-dichloroethane			97.1		%		70-130	22-MAY-19
1,2-Dichloroethane			90.6		%		70-130	22-MAY-19
1,1-dichloroethene			93.2		%		70-130	22-MAY-19
cis-1,2-Dichloroethene			94.1		%		70-130	22-MAY-19
trans-1,2-Dichloroethene			96.1		%		70-130	22-MAY-19
Dichloromethane			82.5		%		70-130	22-MAY-19
1,2-Dichloropropane			92.3		%		70-130	22-MAY-19
1,3-Dichloropropane			95.6		%		70-130	22-MAY-19
2,2-Dichloropropane			111.7		%		70-130	22-MAY-19
1,1-Dichloropropene			98.6		%		70-130	22-MAY-19
cis-1,3-Dichloropropene			101.2		%		70-130	22-MAY-19
trans-1,3-Dichloropropene			106.2		%		70-130	22-MAY-19
Ethylbenzene			113.5		%		70-130	22-MAY-19
Hexachlorobutadiene			101.8		%		70-130	22-MAY-19
Hexane			96.0		%		70-130	22-MAY-19
2-Hexanone (Methyl butyl ketone)			98.8		%		70-130	22-MAY-19
Isopropylbenzene			114.1		%		70-130	22-MAY-19
4-Isopropyltoluene			106.7		%		70-130	22-MAY-19
MEK			88.2		%		70-130	22-MAY-19
MIBK			100.4		%		70-130	22-MAY-19
MTBE			101.5		%		70-130	22-MAY-19
Styrene			115.4		%		70-130	22-MAY-19
1,1,1,2-Tetrachloroethane			109.3		%		70-130	22-MAY-19
1,1,2,2-Tetrachloroethane			100.4		%		70-130	22-MAY-19
Tetrachloroethene			104.7		%		70-130	22-MAY-19

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VOC+F1-HSMS-WP								
	Water							
Batch	R4641582							
WG3052815-2	LCS							
Toluene			106.9		%		70-130	22-MAY-19
1,2,3-Trichlorobenzene			107.9		%		70-130	22-MAY-19
1,2,4-Trichlorobenzene			108.4		%		70-130	22-MAY-19
1,1,1-Trichloroethane			102.5		%		70-130	22-MAY-19
1,1,2-Trichloroethane			98.6		%		70-130	22-MAY-19
Trichloroethene			100.7		%		70-130	22-MAY-19
Trichlorofluoromethane			101.0		%		60-140	22-MAY-19
1,2,3-Trichloropropane			98.1		%		70-130	22-MAY-19
1,2,4-Trimethylbenzene			103.0		%		70-130	22-MAY-19
1,3,5-Trimethylbenzene			108.8		%		70-130	22-MAY-19
Vinyl Chloride			102.8		%		60-140	22-MAY-19
M+P-Xylenes			113.5		%		70-130	22-MAY-19
o-Xylene			111.9		%		70-130	22-MAY-19
WG3052815-3	LCS							
F1			90.8		%		70-130	22-MAY-19
WG3052815-1	MB							
Acetone			<0.020		mg/L		0.02	22-MAY-19
Benzene			<0.00050		mg/L		0.0005	22-MAY-19
Bromobenzene			<0.00050		mg/L		0.0005	22-MAY-19
Bromochloromethane			<0.00050		mg/L		0.0005	22-MAY-19
Bromodichloromethane			<0.00050		mg/L		0.0005	22-MAY-19
Bromoform			<0.00050		mg/L		0.0005	22-MAY-19
Bromomethane			<0.0010		mg/L		0.001	22-MAY-19
n-Butylbenzene			<0.00050		mg/L		0.0005	22-MAY-19
sec-Butylbenzene			<0.00050		mg/L		0.0005	22-MAY-19
tert-Butylbenzene			<0.00050		mg/L		0.0005	22-MAY-19
Carbon disulfide			<0.00050		mg/L		0.0005	22-MAY-19
Carbon Tetrachloride			<0.00050		mg/L		0.0005	22-MAY-19
Chlorobenzene			<0.00050		mg/L		0.0005	22-MAY-19
Chloroethane			<0.0010		mg/L		0.001	22-MAY-19
Chloroform			<0.00050		mg/L		0.0005	22-MAY-19
Chloromethane			<0.0010		mg/L		0.001	22-MAY-19
2-Chlorotoluene			<0.020		mg/L		0.02	22-MAY-19
4-Chlorotoluene			<0.00050		mg/L		0.0005	22-MAY-19
Dibromochloromethane			<0.00050		mg/L		0.0005	22-MAY-19

Quality Control Report

Workorder: L2273711

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Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
VOC+F1-HSMS-WP								
	Water							
Batch	R4641582							
WG3052815-1	MB							
1,2-Dibromo-3-chloropropane			<0.00050		mg/L		0.0005	22-MAY-19
1,2-Dibromoethane			<0.00050		mg/L		0.0005	22-MAY-19
Dibromomethane			<0.00050		mg/L		0.0005	22-MAY-19
1,2-Dichlorobenzene			<0.00050		mg/L		0.0005	22-MAY-19
1,3-Dichlorobenzene			<0.00050		mg/L		0.0005	22-MAY-19
1,4-Dichlorobenzene			<0.00050		mg/L		0.0005	22-MAY-19
Dichlorodifluoromethane			<0.0010		mg/L		0.001	22-MAY-19
1,1-dichloroethane			<0.00050		mg/L		0.0005	22-MAY-19
1,2-Dichloroethane			<0.00050		mg/L		0.0005	22-MAY-19
1,1-dichloroethene			<0.00050		mg/L		0.0005	22-MAY-19
cis-1,2-Dichloroethene			<0.00050		mg/L		0.0005	22-MAY-19
trans-1,2-Dichloroethene			<0.00050		mg/L		0.0005	22-MAY-19
Dichloromethane			<0.00050		mg/L		0.0005	22-MAY-19
1,2-Dichloropropane			<0.00050		mg/L		0.0005	22-MAY-19
1,3-Dichloropropane			<0.00050		mg/L		0.0005	22-MAY-19
2,2-Dichloropropane			<0.00050		mg/L		0.0005	22-MAY-19
1,1-Dichloropropene			<0.00050		mg/L		0.0005	22-MAY-19
cis-1,3-Dichloropropene			<0.00050		mg/L		0.0005	22-MAY-19
trans-1,3-Dichloropropene			<0.00050		mg/L		0.0005	22-MAY-19
Ethylbenzene			<0.00050		mg/L		0.0005	22-MAY-19
F1			<0.10		mg/L		0.1	22-MAY-19
Hexachlorobutadiene			<0.00050		mg/L		0.0005	22-MAY-19
Hexane			<0.00050		mg/L		0.0005	22-MAY-19
2-Hexanone (Methyl butyl ketone)			<0.020		mg/L		0.02	22-MAY-19
Isopropylbenzene			<0.00050		mg/L		0.0005	22-MAY-19
4-Isopropyltoluene			<0.0010		mg/L		0.001	22-MAY-19
MEK			<0.020		mg/L		0.02	22-MAY-19
MIBK			<0.020		mg/L		0.02	22-MAY-19
MTBE			<0.00050		mg/L		0.0005	22-MAY-19
Styrene			<0.00050		mg/L		0.0005	22-MAY-19
1,1,1,2-Tetrachloroethane			<0.00050		mg/L		0.0005	22-MAY-19
1,1,2,2-Tetrachloroethane			<0.00050		mg/L		0.0005	22-MAY-19
Tetrachloroethene			<0.00050		mg/L		0.0005	22-MAY-19
Toluene			<0.00050		mg/L		0.0005	22-MAY-19



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Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
VOC+F1-HSMS-WP	Water							
Batch	R4641582							
WG3052815-1	MB							
1,2,3-Trichlorobenzene			<0.00050		mg/L		0.0005	22-MAY-19
1,2,4-Trichlorobenzene			<0.00050		mg/L		0.0005	22-MAY-19
1,1,1-Trichloroethane			<0.00050		mg/L		0.0005	22-MAY-19
1,1,2-Trichloroethane			<0.00050		mg/L		0.0005	22-MAY-19
Trichloroethene			<0.00050		mg/L		0.0005	22-MAY-19
Trichlorofluoromethane			<0.0010		mg/L		0.001	22-MAY-19
1,2,3-Trichloropropane			<0.00050		mg/L		0.0005	22-MAY-19
1,2,4-Trimethylbenzene			<0.00050		mg/L		0.0005	22-MAY-19
1,3,5-Trimethylbenzene			<0.00050		mg/L		0.0005	22-MAY-19
Vinyl Chloride			<0.00050		mg/L		0.0005	22-MAY-19
M+P-Xylenes			<0.00040		mg/L		0.0004	22-MAY-19
o-Xylene			<0.00030		mg/L		0.0003	22-MAY-19
Surrogate: 4-Bromofluorobenzene (SS)			93.4		%		70-130	22-MAY-19
Surrogate: 1,4-Difluorobenzene (SS)			96.8		%		70-130	22-MAY-19

Quality Control Report

Workorder: L2273711

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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.

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.

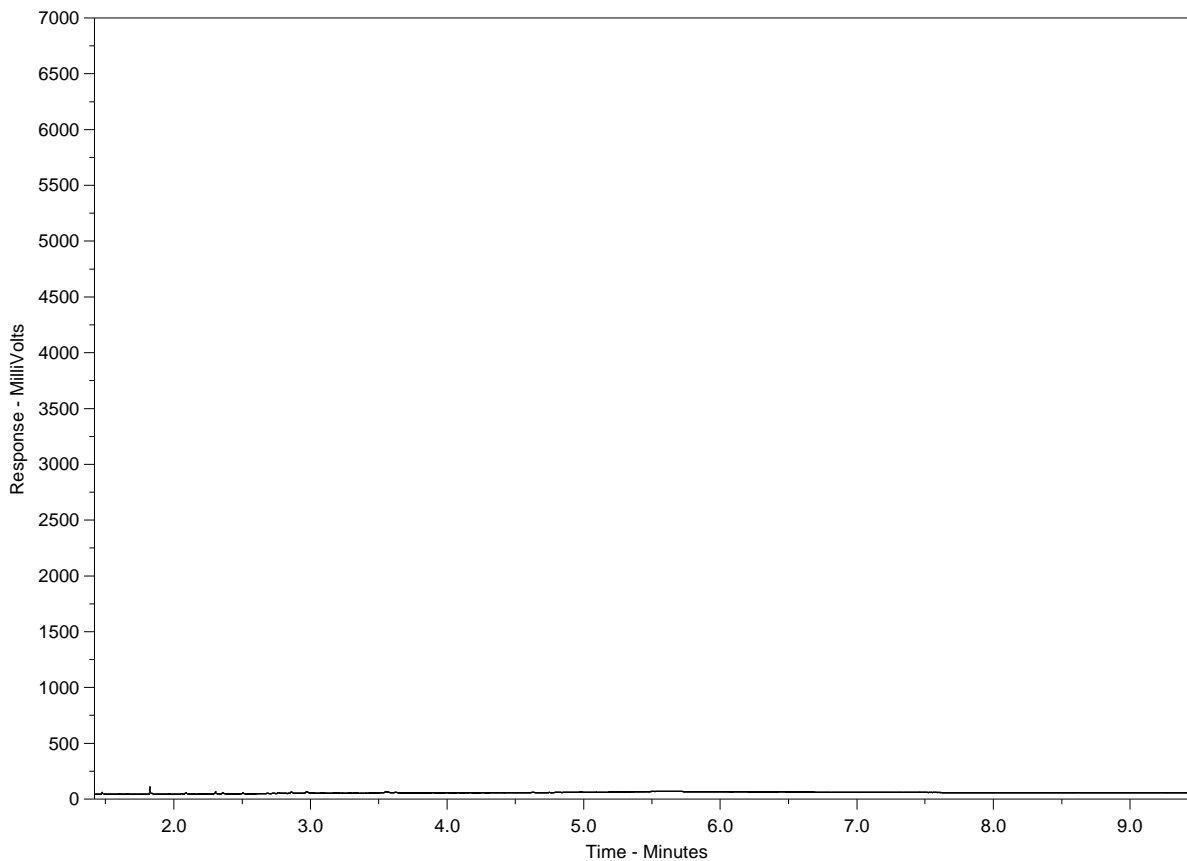
The ALS Quality Control Report is provided to ALS clients upon request. ALS includes comprehensive QC checks with every analysis to ensure our high standards of quality are met. Each QC result has a known or expected target value, which is compared against pre-determined data quality objectives to provide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

CCME F2-F4 HYDROCARBON DISTRIBUTION REPORT



ALS Sample ID: L2273711-1
 Client Sample ID: GWQ25-W16



← 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.

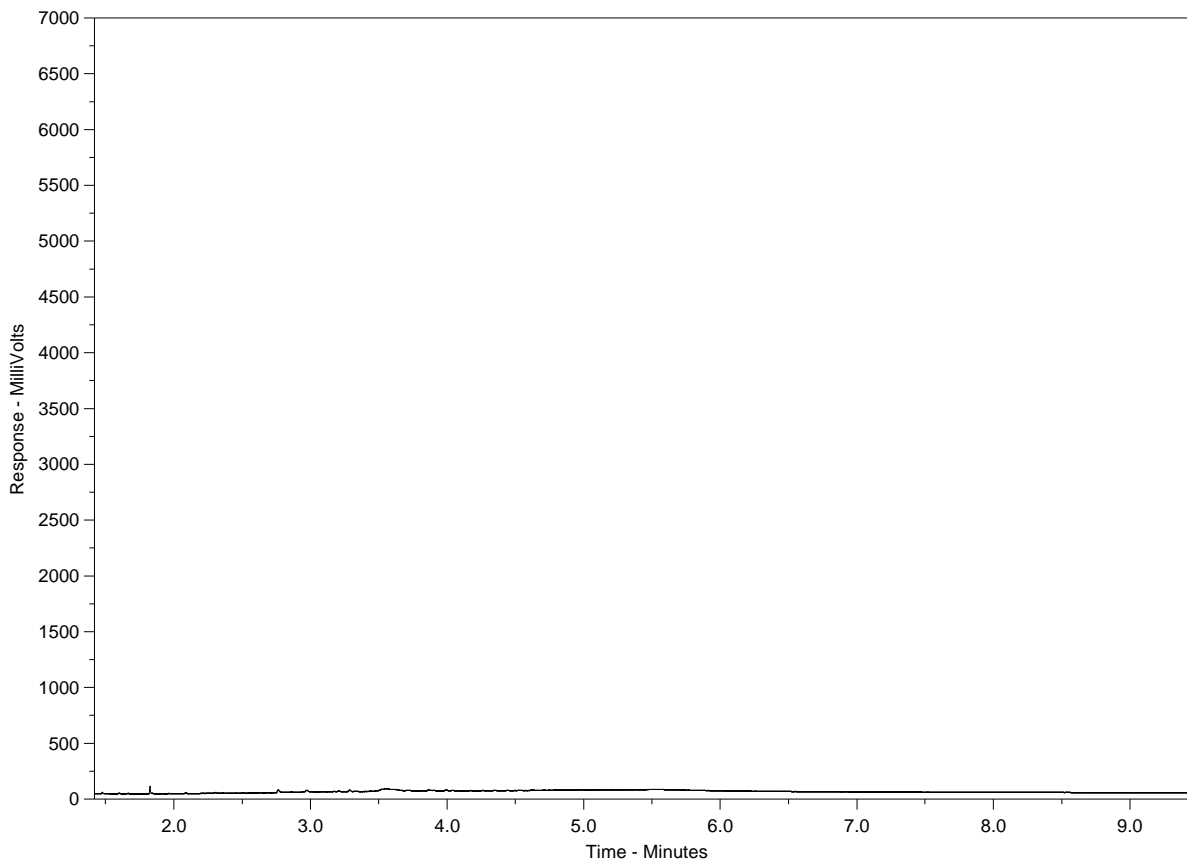
Peak heights in this report are a function of the sample concentration, the sample amount extracted, the sample dilution factor, and the scale at left.

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: L2273711-2
 Client Sample ID: GWQ25-W15



← 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.

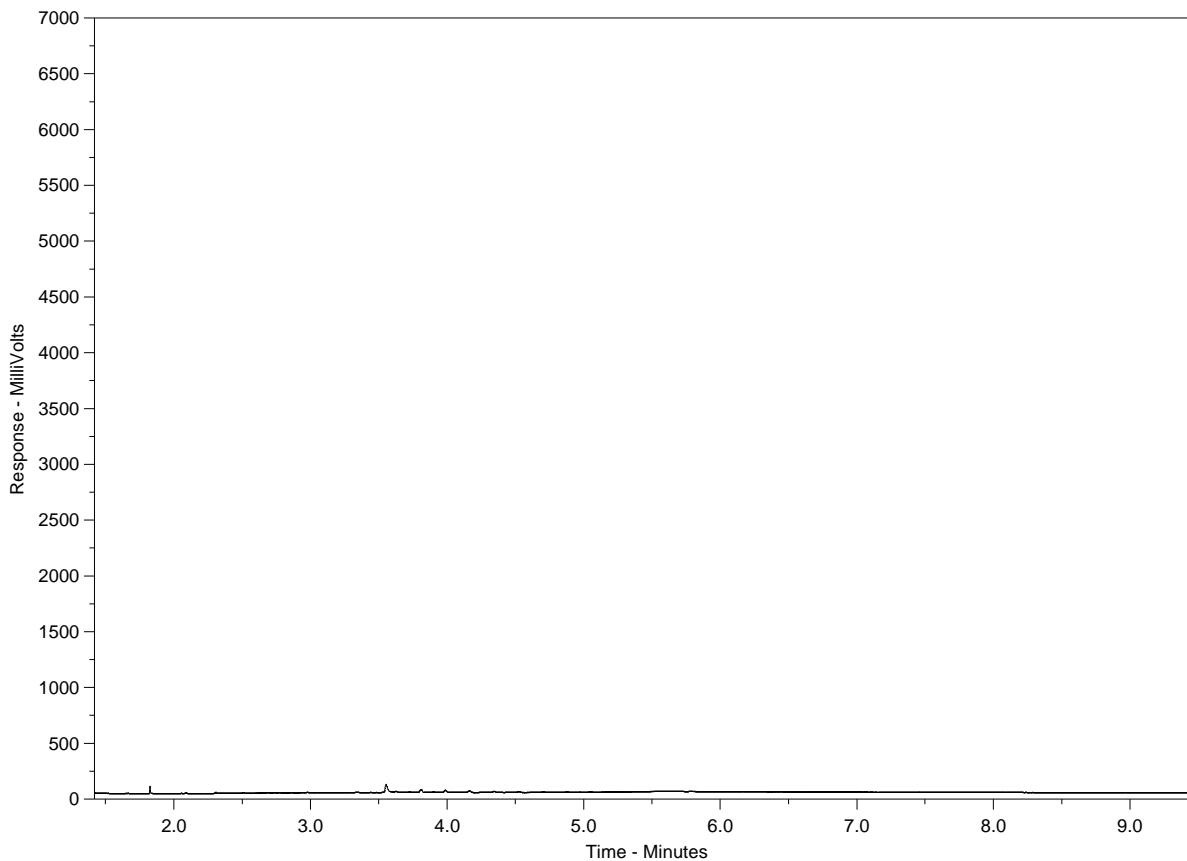
Peak heights in this report are a function of the sample concentration, the sample amount extracted, the sample dilution factor, and the scale at left.

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: L2273711-3
 Client Sample ID: GWQ25-14A



← 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.

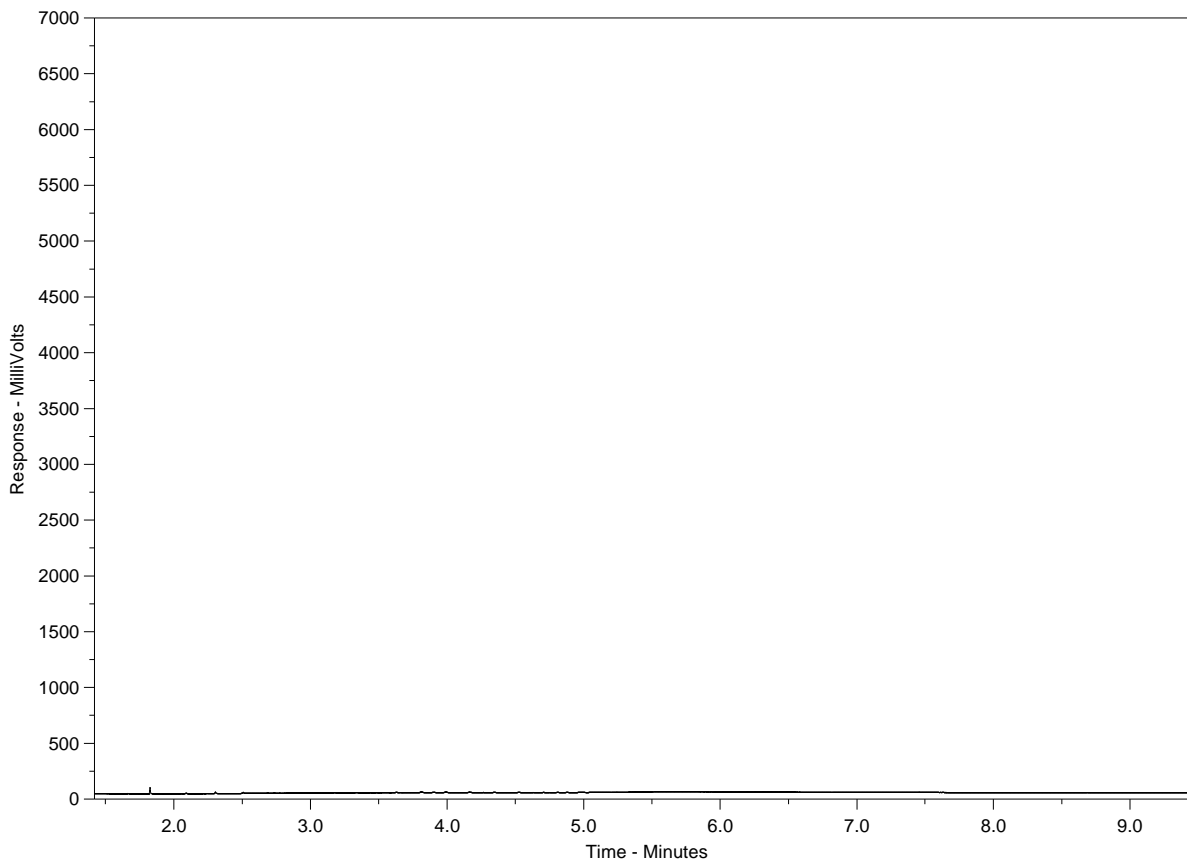
Peak heights in this report are a function of the sample concentration, the sample amount extracted, the sample dilution factor, and the scale at left.

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: L2273711-4
 Client Sample ID: GWQ25-13A



← 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.

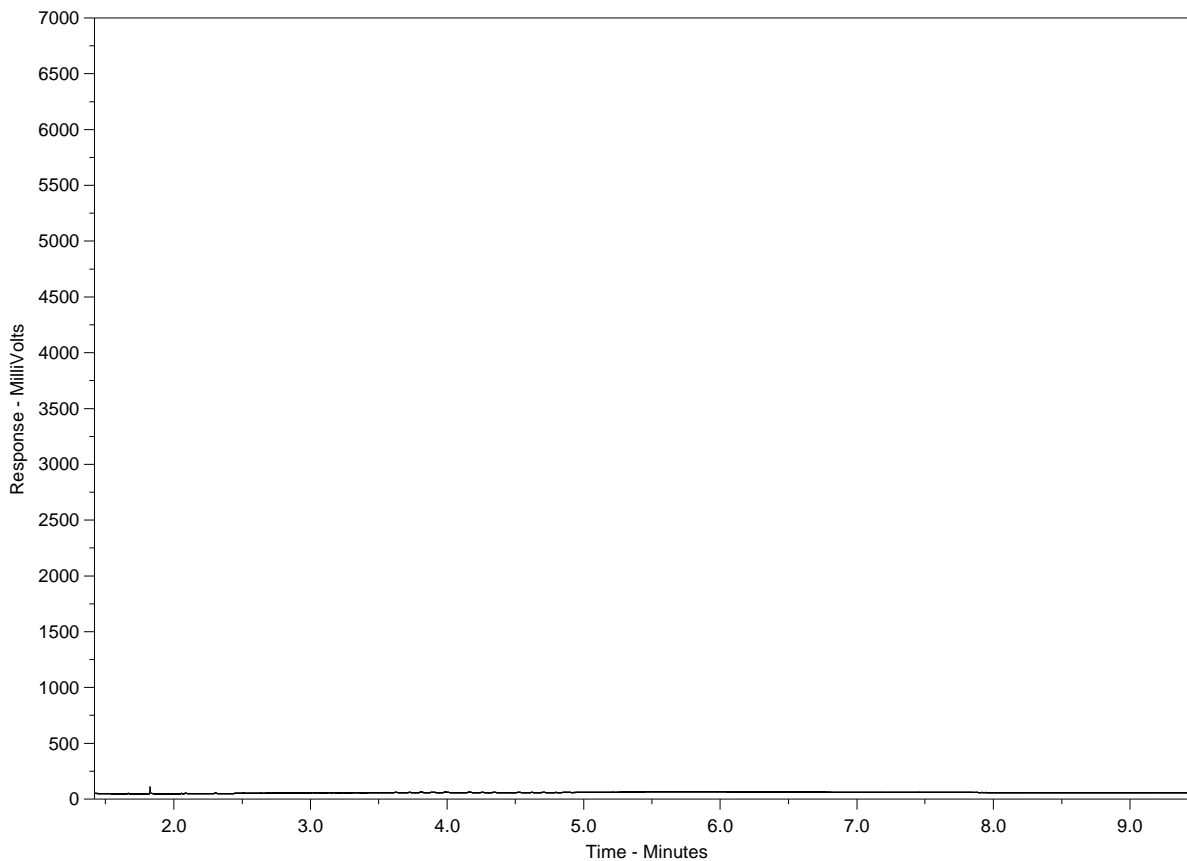
Peak heights in this report are a function of the sample concentration, the sample amount extracted, the sample dilution factor, and the scale at left.

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: L2273711-5
 Client Sample ID: GWQ25-101



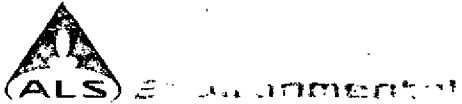
← F2 →		← F3 →		← F4 →	
nC10	nC16	nC34	nC50		
174°C	287°C	481°C	575°C		
346°F	549°F	898°F	1067°F		
← Gasoline →		← Motor Oils / Lube Oils / Grease →			
← Diesel / Jet Fuels →					

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.



Chain of Custody (COC) / Anal Request Form



COC Number: 15 -

Canada Toll Free: 1 800 668 987

L2273711-COFC

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Report To Contact and company name below will appear on the final report				Rep		Please confirm all E&P TATs with your AM - surcharges will apply																																																																																																																																																																																																																																																										
Company: City of Winnipeg Contact: Chris Kozak Phone: 204-986-2384				Select Report Format: <input checked="" type="checkbox"/> PDF <input type="checkbox"/> EXCEL <input type="checkbox"/> EDD (DIGITAL) Quality Control (QC) Report with Report <input checked="" type="checkbox"/> YES <input type="checkbox"/> NO <input type="checkbox"/> Compare Results to Criteria on Report - provide details below if box checked		Regular [R] <input type="checkbox"/> Standard TAT if received by 3 pm - business days - no surcharges apply 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"/>																																																																																																																																																																																																																																																							
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Project Information ALS Account # / Quote #: W10051/Q67317 Job #: Section B - BRRMF Groundwater PO / AFE: LSD:				Oil and Gas Required Fields (client use) AFE/Cost Center: PO# Major/Minor Code: Routing Code: Requisitioner: Location:		Number of Containers																																																																																																																																																																																																																																																										
ALS Lab Work Order # (lab use only)				ALS Contact:		Sampler:		<table border="1" style="width: 100%; border-collapse: collapse; text-align: center;"> <thead> <tr> <th></th> <th>CH-T-CFA-WP</th> <th>PEST-DIAZINON-WT</th> <th>HERBSCR-LCMS-WT</th> <th>TC,FC,EC-QT97-WP</th> <th>MET-D-CCMS-WP (DISSOLVED)</th> <th>HGT-CVAA-WP (TOTAL)</th> <th>CR-CRG-IC-WT</th> <th>PHENOLS-IAAP-WT</th> <th>VOC-FI-FA-WP</th> <th>PAH-PANH-WP</th> <th colspan="2"></th> </tr> </thead> <tbody> <tr> <td>ALS Sample # (lab use only)</td> <td colspan="11">Sample Identification and/or Coordinates (This description will appear on the report)</td> <td colspan="2">Date (dd-mmm-yy)</td> <td colspan="2">Time (hh:mm)</td> <td colspan="2">Sample Type</td> </tr> <tr> <td></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><td></td> </tr> <tr> <td></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><td></td> </tr> <tr> <td></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><td></td> </tr> <tr> <td></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><td></td> </tr> <tr> <td></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><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> </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> </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> </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> </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> </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> </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> </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> </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> </tr> </tbody> </table>									CH-T-CFA-WP	PEST-DIAZINON-WT	HERBSCR-LCMS-WT	TC,FC,EC-QT97-WP	MET-D-CCMS-WP (DISSOLVED)	HGT-CVAA-WP (TOTAL)	CR-CRG-IC-WT	PHENOLS-IAAP-WT	VOC-FI-FA-WP	PAH-PANH-WP			ALS Sample # (lab use only)	Sample Identification and/or Coordinates (This description will appear on the report)											Date (dd-mmm-yy)		Time (hh:mm)		Sample Type			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	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	X	X	X	X																																																																																																																																									
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Drinking Water (DW) Samples¹ (client use) Are samples taken from a Regulated DW System? <input type="checkbox"/> YES <input checked="" type="checkbox"/> NO Are samples for human drinking water use? <input type="checkbox"/> YES <input checked="" type="checkbox"/> NO				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) Frozen <input type="checkbox"/> SIF Observations Yes <input type="checkbox"/> No <input type="checkbox"/> 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"/> INITIAL COOLER TEMPERATURES °C: 10.5°C FINAL COOLER TEMPERATURES °C:																																																																																																																																																																																																																																																								
SHIPMENT RELEASE (client use) Released by: [Signature] Date: 15 May 19 Time: 13:26				INITIAL SHIPMENT RECEPTION (lab use only) Received by: [Signature] Date: May 15 Time: 1:30				FINAL SHIPMENT RECEPTION (lab use only) Received by: Date: Time:																																																																																																																																																																																																																																																								

REFER TO BACK PAGE FOR ALS LOCATIONS AND SAMPLING INFORMATION WHITE - LABORATORY COPY YELLOW - CLIENT COPY
 Failure to complete all portions of this form may delay analysis. Please fill in this form LEGIBLY. By the use of this form the user acknowledges and agrees with the Terms and Conditions as specified on the back page of the white - report copy.
 1. If any water samples are taken from a Regulated Drinking Water (DW) System, please submit using an Authorized DW COC form.



City of Winnipeg - Solid Waste Services Div
(1120 Waverley)
ATTN: CHRIS KOZAK
Solid Waste Services Division
1120 Waverley Street
Winnipeg MB R3T 0P4

Date Received: 15-MAY-19
Report Date: 28-MAY-19 12:07 (MT)
Version: FINAL

Client Phone: 204-986-2384

Certificate of Analysis

Lab Work Order #: L2273858
Project P.O. #: NOT SUBMITTED
Job Reference: SECTION B - BRRMF GROUNDWATER
C of C Numbers:
Legal Site Desc:

Hua Wo
Chemistry Laboratory 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
L2273858-1 GWQ25-W9							
Sampled By: CLIENT on 15-MAY-19 @ 10:00							
Matrix: WATER							
Miscellaneous Parameters							
Chromium, Hexavalent	<0.50		0.50	ug/L		17-MAY-19	R4638648
Mercury (Hg)-Total	<0.0050		0.0050	ug/L	21-MAY-19	23-MAY-19	R4642548
Phenols (4AAP)	<1.0		1.0	ug/L		21-MAY-19	R4639681
Cyanide, Total	<1.0		1.0	ug/L		22-MAY-19	R4641107
Dissolved Metals in Water by CRC ICPMS							
Dissolved Metals Filtration Location	FIELD					16-MAY-19	R4636422
Aluminum (Al)-Dissolved	<1.0		1.0	ug/L	16-MAY-19	16-MAY-19	R4636867
Antimony (Sb)-Dissolved	<0.10		0.10	ug/L	16-MAY-19	16-MAY-19	R4636867
Arsenic (As)-Dissolved	7.14		0.10	ug/L	16-MAY-19	16-MAY-19	R4636867
Barium (Ba)-Dissolved	11.5		0.10	ug/L	16-MAY-19	16-MAY-19	R4636867
Beryllium (Be)-Dissolved	<0.10		0.10	ug/L	16-MAY-19	16-MAY-19	R4636867
Bismuth (Bi)-Dissolved	<0.050		0.050	ug/L	16-MAY-19	16-MAY-19	R4636867
Boron (B)-Dissolved	1100		1000	ug/L	16-MAY-19	16-MAY-19	R4636867
Cadmium (Cd)-Dissolved	<0.0050		0.0050	ug/L	16-MAY-19	16-MAY-19	R4636867
Calcium (Ca)-Dissolved	325000		50	ug/L	16-MAY-19	16-MAY-19	R4636867
Cesium (Cs)-Dissolved	0.035		0.010	ug/L	16-MAY-19	16-MAY-19	R4636867
Chromium (Cr)-Dissolved	<0.10		0.10	ug/L	16-MAY-19	16-MAY-19	R4636867
Cobalt (Co)-Dissolved	0.83		0.10	ug/L	16-MAY-19	16-MAY-19	R4636867
Copper (Cu)-Dissolved	<0.20		0.20	ug/L	16-MAY-19	16-MAY-19	R4636867
Iron (Fe)-Dissolved	884		10	ug/L	16-MAY-19	16-MAY-19	R4636867
Lead (Pb)-Dissolved	<0.050		0.050	ug/L	16-MAY-19	16-MAY-19	R4636867
Lithium (Li)-Dissolved	370		100	ug/L	16-MAY-19	16-MAY-19	R4636867
Magnesium (Mg)-Dissolved	170000		5.0	ug/L	16-MAY-19	16-MAY-19	R4636867
Manganese (Mn)-Dissolved	21.7		0.10	ug/L	16-MAY-19	16-MAY-19	R4636867
Molybdenum (Mo)-Dissolved	3.49		0.050	ug/L	16-MAY-19	16-MAY-19	R4636867
Nickel (Ni)-Dissolved	1.41		0.50	ug/L	16-MAY-19	16-MAY-19	R4636867
Phosphorus (P)-Dissolved	<30		30	ug/L	16-MAY-19	16-MAY-19	R4636867
Potassium (K)-Dissolved	39900		50	ug/L	16-MAY-19	16-MAY-19	R4636867
Rubidium (Rb)-Dissolved	18.3		0.20	ug/L	16-MAY-19	16-MAY-19	R4636867
Selenium (Se)-Dissolved	<0.050		0.050	ug/L	16-MAY-19	16-MAY-19	R4636867
Silicon (Si)-Dissolved	4580		50	ug/L	16-MAY-19	16-MAY-19	R4636867
Silver (Ag)-Dissolved	0.012		0.010	ug/L	16-MAY-19	16-MAY-19	R4636867
Sodium (Na)-Dissolved	1590000		5000	ug/L	16-MAY-19	16-MAY-19	R4636867
Strontium (Sr)-Dissolved	5020		10	ug/L	16-MAY-19	16-MAY-19	R4636867
Sulfur (S)-Dissolved	345000		500	ug/L	16-MAY-19	16-MAY-19	R4636867
Tellurium (Te)-Dissolved	<0.20		0.20	ug/L	16-MAY-19	16-MAY-19	R4636867
Thallium (Tl)-Dissolved	<0.010		0.010	ug/L	16-MAY-19	16-MAY-19	R4636867
Thorium (Th)-Dissolved	<0.10		0.10	ug/L	16-MAY-19	16-MAY-19	R4636867
Tin (Sn)-Dissolved	<0.10		0.10	ug/L	16-MAY-19	16-MAY-19	R4636867
Titanium (Ti)-Dissolved	<0.30		0.30	ug/L	16-MAY-19	16-MAY-19	R4636867
Tungsten (W)-Dissolved	<0.10		0.10	ug/L	16-MAY-19	16-MAY-19	R4636867
Uranium (U)-Dissolved	1.02		0.010	ug/L	16-MAY-19	16-MAY-19	R4636867
Vanadium (V)-Dissolved	<0.50		0.50	ug/L	16-MAY-19	16-MAY-19	R4636867
Zinc (Zn)-Dissolved	1.2		1.0	ug/L	16-MAY-19	16-MAY-19	R4636867
Zirconium (Zr)-Dissolved	<0.060		0.060	ug/L	16-MAY-19	16-MAY-19	R4636867
Polyaromatic Hydrocarbons (PAHs)							
1-Methyl Naphthalene	<0.020		0.020	ug/L	17-MAY-19	19-MAY-19	R4641977
2-Methyl Naphthalene	<0.020		0.020	ug/L	17-MAY-19	19-MAY-19	R4641977
Acenaphthene	<0.020		0.020	ug/L	17-MAY-19	19-MAY-19	R4641977
Acenaphthylene	<0.020		0.020	ug/L	17-MAY-19	19-MAY-19	R4641977
Anthracene	<0.010		0.010	ug/L	17-MAY-19	19-MAY-19	R4641977

* 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
L2273858-1 GWQ25-W9							
Sampled By: CLIENT on 15-MAY-19 @ 10:00							
Matrix: WATER							
Polyaromatic Hydrocarbons (PAHs)							
Acridine	<0.020		0.020	ug/L	17-MAY-19	19-MAY-19	R4641977
Benzo(a)anthracene	<0.010		0.010	ug/L	17-MAY-19	19-MAY-19	R4641977
Benzo(a)pyrene	<0.0050		0.0050	ug/L	17-MAY-19	19-MAY-19	R4641977
Benzo(b&j)fluoranthene	<0.010		0.010	ug/L	17-MAY-19	19-MAY-19	R4641977
Benzo(g,h,i)perylene	<0.020		0.020	ug/L	17-MAY-19	19-MAY-19	R4641977
Benzo(k)fluoranthene	<0.010		0.010	ug/L	17-MAY-19	19-MAY-19	R4641977
Chrysene	<0.020		0.020	ug/L	17-MAY-19	19-MAY-19	R4641977
Dibenzo(a,h)anthracene	<0.0050		0.0050	ug/L	17-MAY-19	19-MAY-19	R4641977
Fluoranthene	<0.020		0.020	ug/L	17-MAY-19	19-MAY-19	R4641977
Fluorene	<0.020		0.020	ug/L	17-MAY-19	19-MAY-19	R4641977
Indeno(1,2,3-cd)pyrene	<0.010		0.010	ug/L	17-MAY-19	19-MAY-19	R4641977
Naphthalene	<0.050		0.050	ug/L	17-MAY-19	19-MAY-19	R4641977
Phenanthrene	<0.050		0.050	ug/L	17-MAY-19	19-MAY-19	R4641977
Pyrene	<0.010		0.010	ug/L	17-MAY-19	19-MAY-19	R4641977
Quinoline	<0.020		0.020	ug/L	17-MAY-19	19-MAY-19	R4641977
B(a)P Total Potency Equivalent	<0.030		0.030	ug/L	17-MAY-19	19-MAY-19	R4641977
Surrogate: Acenaphthene d10	97.7		60-130	%	17-MAY-19	19-MAY-19	R4641977
Surrogate: Acridine d9	99.0		60-130	%	17-MAY-19	19-MAY-19	R4641977
Surrogate: Chrysene d12	104.3		60-130	%	17-MAY-19	19-MAY-19	R4641977
Surrogate: Naphthalene d8	90.2		50-130	%	17-MAY-19	19-MAY-19	R4641977
Surrogate: Phenanthrene d10	107.9		60-130	%	17-MAY-19	19-MAY-19	R4641977
Herbicides in Water							
Clopyralid	<0.10		0.10	ug/L	22-MAY-19	22-MAY-19	R4641179
Dicamba	<0.10		0.10	ug/L	22-MAY-19	22-MAY-19	R4641179
Mecoprop	<0.10		0.10	ug/L	22-MAY-19	22-MAY-19	R4641179
MCPA	<0.10		0.10	ug/L	22-MAY-19	22-MAY-19	R4641179
2,4-D	<0.10		0.10	ug/L	22-MAY-19	22-MAY-19	R4641179
Bromoxynil	<0.10		0.10	ug/L	22-MAY-19	22-MAY-19	R4641179
Triclopyr	<0.10		0.10	ug/L	22-MAY-19	22-MAY-19	R4641179
2,4,5-T	<0.10		0.10	ug/L	22-MAY-19	22-MAY-19	R4641179
2,4,5-TP	<0.10		0.10	ug/L	22-MAY-19	22-MAY-19	R4641179
Picloram	<0.10		0.10	ug/L	22-MAY-19	22-MAY-19	R4641179
2,4-DB	<0.10		0.10	ug/L	22-MAY-19	22-MAY-19	R4641179
2,4-DP	<0.10		0.10	ug/L	22-MAY-19	22-MAY-19	R4641179
Dinoseb	<0.10		0.10	ug/L	22-MAY-19	22-MAY-19	R4641179
MCPB	<0.10		0.10	ug/L	22-MAY-19	22-MAY-19	R4641179
Surrogate: 2,4-Dichlorophenylacetic Acid	129.0		50-130	%	22-MAY-19	22-MAY-19	R4641179
Miscellaneous Pesticides							
Diazinon	<0.10		0.10	ug/L	21-MAY-19	22-MAY-19	R4640195
Surrogate: 2-Fluorobiphenyl	78.3		40-130	%	21-MAY-19	22-MAY-19	R4640195
Surrogate: d14-Terphenyl	83.6		40-130	%	21-MAY-19	22-MAY-19	R4640195
Total, Fecal Coliforms, E Coli by QT97							
Fecal Coliform by MPN QT97							
Fecal Coliforms	<1		1	MPN/100mL		15-MAY-19	R4636563
Total Coliform and E.coli by MPN QT97							
Total Coliforms	<1		1	MPN/100mL		15-MAY-19	R4636556
Escherichia Coli	<1		1	MPN/100mL		15-MAY-19	R4636556
VOC plus F1 to F4							
CCME PHC F2-F4 in Water							
F2 (C10-C16)	<100		100	ug/L	17-MAY-19	17-MAY-19	R4637345
F3 (C16-C34)	<250		250	ug/L	17-MAY-19	17-MAY-19	R4637345
F4 (C34-C50)	<250		250	ug/L	17-MAY-19	17-MAY-19	R4637345

* 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
L2273858-1 GWQ25-W9							
Sampled By: CLIENT on 15-MAY-19 @ 10:00							
Matrix: WATER							
CCME PHC F2-F4 in Water							
Surrogate: 2-Bromobenzotrifluoride	87.4		60-140	%	17-MAY-19	17-MAY-19	R4637345
CCME Total Hydrocarbons							
F1-BTEX	<100		100	ug/L		28-MAY-19	
F2-Naphth	<100		100	ug/L		28-MAY-19	
F3-PAH	<250		250	ug/L		28-MAY-19	
Total Hydrocarbons (C6-C50)	<380		380	ug/L		28-MAY-19	
Sum of Xylene Isomer Concentrations							
Xylenes (Total)	<0.50		0.50	ug/L		28-MAY-19	
Total Trihalomethanes (THMs)							
Total THMs	<1.0		1.0	ug/L		28-MAY-19	
VOC plus F1 by GCMS							
Acetone	<20		20	ug/L		25-MAY-19	R4645483
Benzene	<0.50		0.50	ug/L		25-MAY-19	R4645483
Bromobenzene	<0.50		0.50	ug/L		25-MAY-19	R4645483
Bromochloromethane	<0.50		0.50	ug/L		25-MAY-19	R4645483
Bromodichloromethane	<0.50		0.50	ug/L		25-MAY-19	R4645483
Bromoform	<0.50		0.50	ug/L		25-MAY-19	R4645483
Bromomethane	<1.0		1.0	ug/L		25-MAY-19	R4645483
n-Butylbenzene	<0.50		0.50	ug/L		25-MAY-19	R4645483
sec-Butylbenzene	<0.50		0.50	ug/L		25-MAY-19	R4645483
tert-Butylbenzene	<0.50		0.50	ug/L		25-MAY-19	R4645483
Carbon disulfide	<0.50		0.50	ug/L		25-MAY-19	R4645483
Carbon Tetrachloride	<0.50		0.50	ug/L		25-MAY-19	R4645483
Chlorobenzene	<0.50		0.50	ug/L		25-MAY-19	R4645483
Chloroethane	<1.0		1.0	ug/L		25-MAY-19	R4645483
Chloroform	<0.50		0.50	ug/L		25-MAY-19	R4645483
Chloromethane	<1.0		1.0	ug/L		25-MAY-19	R4645483
2-Chlorotoluene	<20		20	ug/L		25-MAY-19	R4645483
4-Chlorotoluene	<0.50		0.50	ug/L		25-MAY-19	R4645483
Dibromochloromethane	<0.50		0.50	ug/L		25-MAY-19	R4645483
1,2-Dibromo-3-chloropropane	<0.50		0.50	ug/L		25-MAY-19	R4645483
1,2-Dibromoethane	<0.50		0.50	ug/L		25-MAY-19	R4645483
Dibromomethane	<0.50		0.50	ug/L		25-MAY-19	R4645483
1,2-Dichlorobenzene	<0.50		0.50	ug/L		25-MAY-19	R4645483
1,3-Dichlorobenzene	<0.50		0.50	ug/L		25-MAY-19	R4645483
1,4-Dichlorobenzene	<0.50		0.50	ug/L		25-MAY-19	R4645483
Dichlorodifluoromethane	<1.0		1.0	ug/L		25-MAY-19	R4645483
1,1-dichloroethane	<0.50		0.50	ug/L		25-MAY-19	R4645483
1,2-Dichloroethane	<0.50		0.50	ug/L		25-MAY-19	R4645483
1,1-dichloroethene	<0.50		0.50	ug/L		25-MAY-19	R4645483
cis-1,2-Dichloroethene	<0.50		0.50	ug/L		25-MAY-19	R4645483
trans-1,2-Dichloroethene	<0.50		0.50	ug/L		25-MAY-19	R4645483
Dichloromethane	<0.50		0.50	ug/L		25-MAY-19	R4645483
1,2-Dichloropropane	<0.50		0.50	ug/L		25-MAY-19	R4645483
1,3-Dichloropropane	<0.50		0.50	ug/L		25-MAY-19	R4645483
2,2-Dichloropropane	<1.0	DLM	1.0	ug/L		25-MAY-19	R4645483
1,1-Dichloropropene	<0.50		0.50	ug/L		25-MAY-19	R4645483
cis-1,3-Dichloropropene	<1.0	DLM	1.0	ug/L		25-MAY-19	R4645483
trans-1,3-Dichloropropene	<1.0	DLM	1.0	ug/L		25-MAY-19	R4645483
Ethylbenzene	<0.50		0.50	ug/L		25-MAY-19	R4645483
F1	<100		100	ug/L		25-MAY-19	R4645483
Hexachlorobutadiene	<0.50		0.50	ug/L		25-MAY-19	R4645483

* 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
L2273858-1 GWQ25-W9							
Sampled By: CLIENT on 15-MAY-19 @ 10:00							
Matrix: WATER							
VOC plus F1 by GCMS							
Hexane	<0.50		0.50	ug/L		25-MAY-19	R4645483
2-Hexanone (Methyl butyl ketone)	<20		20	ug/L		25-MAY-19	R4645483
Isopropylbenzene	<0.50		0.50	ug/L		25-MAY-19	R4645483
4-Isopropyltoluene	<1.0		1.0	ug/L		25-MAY-19	R4645483
MEK	<20		20	ug/L		25-MAY-19	R4645483
MIBK	<20		20	ug/L		25-MAY-19	R4645483
MTBE	<0.50		0.50	ug/L		25-MAY-19	R4645483
Styrene	<0.50		0.50	ug/L		25-MAY-19	R4645483
1,1,1,2-Tetrachloroethane	<0.50		0.50	ug/L		25-MAY-19	R4645483
1,1,2,2-Tetrachloroethane	<0.50		0.50	ug/L		25-MAY-19	R4645483
Tetrachloroethene	<0.50		0.50	ug/L		25-MAY-19	R4645483
Toluene	<0.50		0.50	ug/L		25-MAY-19	R4645483
1,2,3-Trichlorobenzene	<0.50		0.50	ug/L		25-MAY-19	R4645483
1,2,4-Trichlorobenzene	<0.50		0.50	ug/L		25-MAY-19	R4645483
1,1,1-Trichloroethane	<0.50		0.50	ug/L		25-MAY-19	R4645483
1,1,2-Trichloroethane	<0.50		0.50	ug/L		25-MAY-19	R4645483
Trichloroethene	<0.50		0.50	ug/L		25-MAY-19	R4645483
Trichlorofluoromethane	<1.0		1.0	ug/L		25-MAY-19	R4645483
1,2,3-Trichloropropane	<0.50		0.50	ug/L		25-MAY-19	R4645483
1,2,4-Trimethylbenzene	<0.50		0.50	ug/L		25-MAY-19	R4645483
1,3,5-Trimethylbenzene	<0.50		0.50	ug/L		25-MAY-19	R4645483
Vinyl Chloride	<0.50		0.50	ug/L		25-MAY-19	R4645483
M+P-Xylenes	<0.40		0.40	ug/L		25-MAY-19	R4645483
o-Xylene	<0.30		0.30	ug/L		25-MAY-19	R4645483
Surrogate: 4-Bromofluorobenzene (SS)	96.1		70-130	%		25-MAY-19	R4645483
Surrogate: 1,4-Difluorobenzene (SS)	98.6		70-130	%		25-MAY-19	R4645483
L2273858-2 GWQ25-W10							
Sampled By: CLIENT on 15-MAY-19 @ 10:38							
Matrix: WATER							
Miscellaneous Parameters							
Chromium, Hexavalent	<0.50		0.50	ug/L		17-MAY-19	R4638648
Mercury (Hg)-Total	<0.0050		0.0050	ug/L	21-MAY-19	23-MAY-19	R4642548
Phenols (4AAP)	1.3		1.0	ug/L		21-MAY-19	R4639681
Cyanide, Total	<1.0		1.0	ug/L		22-MAY-19	R4641107
Dissolved Metals in Water by CRC ICPMS							
Dissolved Metals Filtration Location	FIELD					16-MAY-19	R4636422
Aluminum (Al)-Dissolved	<1.0		1.0	ug/L	16-MAY-19	16-MAY-19	R4636867
Antimony (Sb)-Dissolved	<0.10		0.10	ug/L	16-MAY-19	16-MAY-19	R4636867
Arsenic (As)-Dissolved	5.77		0.10	ug/L	16-MAY-19	16-MAY-19	R4636867
Barium (Ba)-Dissolved	14.4		0.10	ug/L	16-MAY-19	16-MAY-19	R4636867
Beryllium (Be)-Dissolved	<0.10		0.10	ug/L	16-MAY-19	16-MAY-19	R4636867
Bismuth (Bi)-Dissolved	<0.050		0.050	ug/L	16-MAY-19	16-MAY-19	R4636867
Boron (B)-Dissolved	1300		1000	ug/L	16-MAY-19	16-MAY-19	R4636867
Cadmium (Cd)-Dissolved	0.0051		0.0050	ug/L	16-MAY-19	16-MAY-19	R4636867
Calcium (Ca)-Dissolved	281000		50	ug/L	16-MAY-19	16-MAY-19	R4636867
Cesium (Cs)-Dissolved	0.058		0.010	ug/L	16-MAY-19	16-MAY-19	R4636867
Chromium (Cr)-Dissolved	<0.10		0.10	ug/L	16-MAY-19	16-MAY-19	R4636867
Cobalt (Co)-Dissolved	0.29		0.10	ug/L	16-MAY-19	16-MAY-19	R4636867
Copper (Cu)-Dissolved	<0.20		0.20	ug/L	16-MAY-19	16-MAY-19	R4636867
Iron (Fe)-Dissolved	484		10	ug/L	16-MAY-19	16-MAY-19	R4636867
Lead (Pb)-Dissolved	<0.050		0.050	ug/L	16-MAY-19	16-MAY-19	R4636867

* 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
L2273858-2 GWQ25-W10							
Sampled By: CLIENT on 15-MAY-19 @ 10:38							
Matrix: WATER							
Dissolved Metals in Water by CRC ICPMS							
Lithium (Li)-Dissolved	310		100	ug/L	16-MAY-19	16-MAY-19	R4636867
Magnesium (Mg)-Dissolved	138000		5.0	ug/L	16-MAY-19	16-MAY-19	R4636867
Manganese (Mn)-Dissolved	29.9		0.10	ug/L	16-MAY-19	16-MAY-19	R4636867
Molybdenum (Mo)-Dissolved	3.45		0.050	ug/L	16-MAY-19	16-MAY-19	R4636867
Nickel (Ni)-Dissolved	0.56		0.50	ug/L	16-MAY-19	16-MAY-19	R4636867
Phosphorus (P)-Dissolved	<30		30	ug/L	16-MAY-19	16-MAY-19	R4636867
Potassium (K)-Dissolved	37000		50	ug/L	16-MAY-19	16-MAY-19	R4636867
Rubidium (Rb)-Dissolved	17.8		0.20	ug/L	16-MAY-19	16-MAY-19	R4636867
Selenium (Se)-Dissolved	<0.050		0.050	ug/L	16-MAY-19	16-MAY-19	R4636867
Silicon (Si)-Dissolved	4360		50	ug/L	16-MAY-19	16-MAY-19	R4636867
Silver (Ag)-Dissolved	0.011		0.010	ug/L	16-MAY-19	16-MAY-19	R4636867
Sodium (Na)-Dissolved	1320000		5000	ug/L	16-MAY-19	16-MAY-19	R4636867
Strontium (Sr)-Dissolved	3750		10	ug/L	16-MAY-19	16-MAY-19	R4636867
Sulfur (S)-Dissolved	281000		500	ug/L	16-MAY-19	16-MAY-19	R4636867
Tellurium (Te)-Dissolved	<0.20		0.20	ug/L	16-MAY-19	16-MAY-19	R4636867
Thallium (Tl)-Dissolved	<0.010		0.010	ug/L	16-MAY-19	16-MAY-19	R4636867
Thorium (Th)-Dissolved	<0.10		0.10	ug/L	16-MAY-19	16-MAY-19	R4636867
Tin (Sn)-Dissolved	<0.10		0.10	ug/L	16-MAY-19	16-MAY-19	R4636867
Titanium (Ti)-Dissolved	<0.30		0.30	ug/L	16-MAY-19	16-MAY-19	R4636867
Tungsten (W)-Dissolved	<0.10		0.10	ug/L	16-MAY-19	16-MAY-19	R4636867
Uranium (U)-Dissolved	0.436		0.010	ug/L	16-MAY-19	16-MAY-19	R4636867
Vanadium (V)-Dissolved	<0.50		0.50	ug/L	16-MAY-19	16-MAY-19	R4636867
Zinc (Zn)-Dissolved	<1.0		1.0	ug/L	16-MAY-19	16-MAY-19	R4636867
Zirconium (Zr)-Dissolved	<0.060		0.060	ug/L	16-MAY-19	16-MAY-19	R4636867
Polyaromatic Hydrocarbons (PAHs)							
1-Methyl Naphthalene	<0.020		0.020	ug/L	17-MAY-19	19-MAY-19	R4641977
2-Methyl Naphthalene	<0.020		0.020	ug/L	17-MAY-19	19-MAY-19	R4641977
Acenaphthene	<0.020		0.020	ug/L	17-MAY-19	19-MAY-19	R4641977
Acenaphthylene	<0.020		0.020	ug/L	17-MAY-19	19-MAY-19	R4641977
Anthracene	<0.010		0.010	ug/L	17-MAY-19	19-MAY-19	R4641977
Acridine	<0.020		0.020	ug/L	17-MAY-19	19-MAY-19	R4641977
Benzo(a)anthracene	<0.010		0.010	ug/L	17-MAY-19	19-MAY-19	R4641977
Benzo(a)pyrene	<0.0050		0.0050	ug/L	17-MAY-19	19-MAY-19	R4641977
Benzo(b&j)fluoranthene	<0.010		0.010	ug/L	17-MAY-19	19-MAY-19	R4641977
Benzo(g,h,i)perylene	<0.020		0.020	ug/L	17-MAY-19	19-MAY-19	R4641977
Benzo(k)fluoranthene	<0.010		0.010	ug/L	17-MAY-19	19-MAY-19	R4641977
Chrysene	<0.020		0.020	ug/L	17-MAY-19	19-MAY-19	R4641977
Dibenzo(a,h)anthracene	<0.0050		0.0050	ug/L	17-MAY-19	19-MAY-19	R4641977
Fluoranthene	<0.020		0.020	ug/L	17-MAY-19	19-MAY-19	R4641977
Fluorene	<0.020		0.020	ug/L	17-MAY-19	19-MAY-19	R4641977
Indeno(1,2,3-cd)pyrene	<0.010		0.010	ug/L	17-MAY-19	19-MAY-19	R4641977
Naphthalene	<0.050		0.050	ug/L	17-MAY-19	19-MAY-19	R4641977
Phenanthrene	<0.050		0.050	ug/L	17-MAY-19	19-MAY-19	R4641977
Pyrene	<0.010		0.010	ug/L	17-MAY-19	19-MAY-19	R4641977
Quinoline	<0.020		0.020	ug/L	17-MAY-19	19-MAY-19	R4641977
B(a)P Total Potency Equivalent	<0.030		0.030	ug/L	17-MAY-19	19-MAY-19	R4641977
Surrogate: Acenaphthene d10	106.0		60-130	%	17-MAY-19	19-MAY-19	R4641977
Surrogate: Acridine d9	101.4		60-130	%	17-MAY-19	19-MAY-19	R4641977
Surrogate: Chrysene d12	108.4		60-130	%	17-MAY-19	19-MAY-19	R4641977
Surrogate: Naphthalene d8	99.5		50-130	%	17-MAY-19	19-MAY-19	R4641977
Surrogate: Phenanthrene d10	113.8		60-130	%	17-MAY-19	19-MAY-19	R4641977

* 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
L2273858-2 GWQ25-W10							
Sampled By: CLIENT on 15-MAY-19 @ 10:38							
Matrix: WATER							
Herbicides in Water							
Clopyralid	<0.10		0.10	ug/L	22-MAY-19	22-MAY-19	R4641179
Dicamba	<0.10		0.10	ug/L	22-MAY-19	22-MAY-19	R4641179
Mecoprop	<0.10		0.10	ug/L	22-MAY-19	22-MAY-19	R4641179
MCPA	<0.10		0.10	ug/L	22-MAY-19	22-MAY-19	R4641179
2,4-D	<0.10		0.10	ug/L	22-MAY-19	22-MAY-19	R4641179
Bromoxynil	<0.10		0.10	ug/L	22-MAY-19	22-MAY-19	R4641179
Triclopyr	<0.10		0.10	ug/L	22-MAY-19	22-MAY-19	R4641179
2,4,5-T	<0.10		0.10	ug/L	22-MAY-19	22-MAY-19	R4641179
2,4,5-TP	<0.10		0.10	ug/L	22-MAY-19	22-MAY-19	R4641179
Picloram	<0.10		0.10	ug/L	22-MAY-19	22-MAY-19	R4641179
2,4-DB	<0.10		0.10	ug/L	22-MAY-19	22-MAY-19	R4641179
2,4-DP	<0.10		0.10	ug/L	22-MAY-19	22-MAY-19	R4641179
Dinoseb	<0.10		0.10	ug/L	22-MAY-19	22-MAY-19	R4641179
MCPB	<0.10		0.10	ug/L	22-MAY-19	22-MAY-19	R4641179
Surrogate: 2,4-Dichlorophenylacetic Acid	125.0		50-130	%	22-MAY-19	22-MAY-19	R4641179
Miscellaneous Pesticides							
Diazinon	<0.10		0.10	ug/L	21-MAY-19	22-MAY-19	R4640195
Surrogate: 2-Fluorobiphenyl	79.3		40-130	%	21-MAY-19	22-MAY-19	R4640195
Surrogate: d14-Terphenyl	79.9		40-130	%	21-MAY-19	22-MAY-19	R4640195
Total, Fecal Coliforms, E Coli by QT97							
Fecal Coliform by MPN QT97							
Fecal Coliforms	<1		1	MPN/100mL		15-MAY-19	R4636563
Total Coliform and E.coli by MPN QT97							
Total Coliforms	<1		1	MPN/100mL		15-MAY-19	R4636556
Escherichia Coli	<1		1	MPN/100mL		15-MAY-19	R4636556
VOC plus F1 to F4							
CCME PHC F2-F4 in Water							
F2 (C10-C16)	<100		100	ug/L	17-MAY-19	17-MAY-19	R4637345
F3 (C16-C34)	<250		250	ug/L	17-MAY-19	17-MAY-19	R4637345
F4 (C34-C50)	<250		250	ug/L	17-MAY-19	17-MAY-19	R4637345
Surrogate: 2-Bromobenzotrifluoride	87.5		60-140	%	17-MAY-19	17-MAY-19	R4637345
CCME Total Hydrocarbons							
F1-BTEX	<100		100	ug/L		28-MAY-19	
F2-Naphth	<100		100	ug/L		28-MAY-19	
F3-PAH	<250		250	ug/L		28-MAY-19	
Total Hydrocarbons (C6-C50)	<380		380	ug/L		28-MAY-19	
Sum of Xylene Isomer Concentrations							
Xylenes (Total)	<0.50		0.50	ug/L		28-MAY-19	
Total Trihalomethanes (THMs)							
Total THMs	<1.0		1.0	ug/L		28-MAY-19	
VOC plus F1 by GCMS							
Acetone	<20		20	ug/L		25-MAY-19	R4645483
Benzene	<0.50		0.50	ug/L		25-MAY-19	R4645483
Bromobenzene	<0.50		0.50	ug/L		25-MAY-19	R4645483
Bromochloromethane	<0.50		0.50	ug/L		25-MAY-19	R4645483
Bromodichloromethane	<0.50		0.50	ug/L		25-MAY-19	R4645483
Bromoform	<0.50		0.50	ug/L		25-MAY-19	R4645483
Bromomethane	<1.0		1.0	ug/L		25-MAY-19	R4645483
n-Butylbenzene	<0.50		0.50	ug/L		25-MAY-19	R4645483
sec-Butylbenzene	<0.50		0.50	ug/L		25-MAY-19	R4645483
tert-Butylbenzene	<0.50		0.50	ug/L		25-MAY-19	R4645483
Carbon disulfide	<0.50		0.50	ug/L		25-MAY-19	R4645483

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ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2273858-2 GWQ25-W10							
Sampled By: CLIENT on 15-MAY-19 @ 10:38							
Matrix: WATER							
VOC plus F1 by GCMS							
Carbon Tetrachloride	<0.50		0.50	ug/L		25-MAY-19	R4645483
Chlorobenzene	<0.50		0.50	ug/L		25-MAY-19	R4645483
Chloroethane	<1.0		1.0	ug/L		25-MAY-19	R4645483
Chloroform	<0.50		0.50	ug/L		25-MAY-19	R4645483
Chloromethane	<1.0		1.0	ug/L		25-MAY-19	R4645483
2-Chlorotoluene	<20		20	ug/L		25-MAY-19	R4645483
4-Chlorotoluene	<0.50		0.50	ug/L		25-MAY-19	R4645483
Dibromochloromethane	<0.50		0.50	ug/L		25-MAY-19	R4645483
1,2-Dibromo-3-chloropropane	<0.50		0.50	ug/L		25-MAY-19	R4645483
1,2-Dibromoethane	<0.50		0.50	ug/L		25-MAY-19	R4645483
Dibromomethane	<0.50		0.50	ug/L		25-MAY-19	R4645483
1,2-Dichlorobenzene	<0.50		0.50	ug/L		25-MAY-19	R4645483
1,3-Dichlorobenzene	<0.50		0.50	ug/L		25-MAY-19	R4645483
1,4-Dichlorobenzene	<0.50		0.50	ug/L		25-MAY-19	R4645483
Dichlorodifluoromethane	<1.0		1.0	ug/L		25-MAY-19	R4645483
1,1-dichloroethane	<0.50		0.50	ug/L		25-MAY-19	R4645483
1,2-Dichloroethane	<0.50		0.50	ug/L		25-MAY-19	R4645483
1,1-dichloroethene	<0.50		0.50	ug/L		25-MAY-19	R4645483
cis-1,2-Dichloroethene	<0.50		0.50	ug/L		25-MAY-19	R4645483
trans-1,2-Dichloroethene	<0.50		0.50	ug/L		25-MAY-19	R4645483
Dichloromethane	<0.50		0.50	ug/L		25-MAY-19	R4645483
1,2-Dichloropropane	<0.50		0.50	ug/L		25-MAY-19	R4645483
1,3-Dichloropropane	<0.50		0.50	ug/L		25-MAY-19	R4645483
2,2-Dichloropropane	<1.0	DLM	1.0	ug/L		25-MAY-19	R4645483
1,1-Dichloropropene	<0.50		0.50	ug/L		25-MAY-19	R4645483
cis-1,3-Dichloropropene	<1.0	DLM	1.0	ug/L		25-MAY-19	R4645483
trans-1,3-Dichloropropene	<1.0	DLM	1.0	ug/L		25-MAY-19	R4645483
Ethylbenzene	<0.50		0.50	ug/L		25-MAY-19	R4645483
F1	<100		100	ug/L		25-MAY-19	R4645483
Hexachlorobutadiene	<0.50		0.50	ug/L		25-MAY-19	R4645483
Hexane	<0.50		0.50	ug/L		25-MAY-19	R4645483
2-Hexanone (Methyl butyl ketone)	<20		20	ug/L		25-MAY-19	R4645483
Isopropylbenzene	<0.50		0.50	ug/L		25-MAY-19	R4645483
4-Isopropyltoluene	<1.0		1.0	ug/L		25-MAY-19	R4645483
MEK	<20		20	ug/L		25-MAY-19	R4645483
MIBK	<20		20	ug/L		25-MAY-19	R4645483
MTBE	<0.50		0.50	ug/L		25-MAY-19	R4645483
Styrene	<0.50		0.50	ug/L		25-MAY-19	R4645483
1,1,1,2-Tetrachloroethane	<0.50		0.50	ug/L		25-MAY-19	R4645483
1,1,2,2-Tetrachloroethane	<0.50		0.50	ug/L		25-MAY-19	R4645483
Tetrachloroethene	<0.50		0.50	ug/L		25-MAY-19	R4645483
Toluene	<0.50		0.50	ug/L		25-MAY-19	R4645483
1,2,3-Trichlorobenzene	<0.50		0.50	ug/L		25-MAY-19	R4645483
1,2,4-Trichlorobenzene	<0.50		0.50	ug/L		25-MAY-19	R4645483
1,1,1-Trichloroethane	<0.50		0.50	ug/L		25-MAY-19	R4645483
1,1,2-Trichloroethane	<0.50		0.50	ug/L		25-MAY-19	R4645483
Trichloroethene	<0.50		0.50	ug/L		25-MAY-19	R4645483
Trichlorofluoromethane	<1.0		1.0	ug/L		25-MAY-19	R4645483
1,2,3-Trichloropropane	<0.50		0.50	ug/L		25-MAY-19	R4645483
1,2,4-Trimethylbenzene	<0.50		0.50	ug/L		25-MAY-19	R4645483
1,3,5-Trimethylbenzene	<0.50		0.50	ug/L		25-MAY-19	R4645483

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ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2273858-2 GWQ25-W10 Sampled By: CLIENT on 15-MAY-19 @ 10:38 Matrix: WATER VOC plus F1 by GCMS							
Vinyl Chloride	<0.50		0.50	ug/L		25-MAY-19	R4645483
M+P-Xylenes	<0.40		0.40	ug/L		25-MAY-19	R4645483
o-Xylene	<0.30		0.30	ug/L		25-MAY-19	R4645483
Surrogate: 4-Bromofluorobenzene (SS)	93.8		70-130	%		25-MAY-19	R4645483
Surrogate: 1,4-Difluorobenzene (SS)	98.5		70-130	%		25-MAY-19	R4645483
L2273858-3 GWQ25-W11 Sampled By: CLIENT on 15-MAY-19 @ 11:18 Matrix: WATER Miscellaneous Parameters							
Chromium, Hexavalent	<0.50		0.50	ug/L		17-MAY-19	R4638648
Mercury (Hg)-Total	<0.0050		0.0050	ug/L	21-MAY-19	23-MAY-19	R4642548
Phenols (4AAP)	1.7		1.0	ug/L		21-MAY-19	R4639681
Cyanide, Total	<1.0		1.0	ug/L		22-MAY-19	R4641107
Dissolved Metals in Water by CRC ICMS							
Dissolved Metals Filtration Location	FIELD					16-MAY-19	R4636422
Aluminum (Al)-Dissolved	26.1		1.0	ug/L	16-MAY-19	16-MAY-19	R4636867
Antimony (Sb)-Dissolved	<0.10		0.10	ug/L	16-MAY-19	16-MAY-19	R4636867
Arsenic (As)-Dissolved	5.43		0.10	ug/L	16-MAY-19	16-MAY-19	R4636867
Barium (Ba)-Dissolved	13.2		0.10	ug/L	16-MAY-19	16-MAY-19	R4636867
Beryllium (Be)-Dissolved	<0.10		0.10	ug/L	16-MAY-19	16-MAY-19	R4636867
Bismuth (Bi)-Dissolved	<0.050		0.050	ug/L	16-MAY-19	16-MAY-19	R4636867
Boron (B)-Dissolved	1400		1000	ug/L	16-MAY-19	16-MAY-19	R4636867
Cadmium (Cd)-Dissolved	<0.0050		0.0050	ug/L	16-MAY-19	16-MAY-19	R4636867
Calcium (Ca)-Dissolved	315000		50	ug/L	16-MAY-19	16-MAY-19	R4636867
Cesium (Cs)-Dissolved	0.119		0.010	ug/L	16-MAY-19	16-MAY-19	R4636867
Chromium (Cr)-Dissolved	<0.10		0.10	ug/L	16-MAY-19	16-MAY-19	R4636867
Cobalt (Co)-Dissolved	0.26		0.10	ug/L	16-MAY-19	16-MAY-19	R4636867
Copper (Cu)-Dissolved	<0.20		0.20	ug/L	16-MAY-19	16-MAY-19	R4636867
Iron (Fe)-Dissolved	914		10	ug/L	16-MAY-19	16-MAY-19	R4636867
Lead (Pb)-Dissolved	0.051		0.050	ug/L	16-MAY-19	16-MAY-19	R4636867
Lithium (Li)-Dissolved	360		100	ug/L	16-MAY-19	16-MAY-19	R4636867
Magnesium (Mg)-Dissolved	152000		5.0	ug/L	16-MAY-19	16-MAY-19	R4636867
Manganese (Mn)-Dissolved	15.0		0.10	ug/L	16-MAY-19	16-MAY-19	R4636867
Molybdenum (Mo)-Dissolved	3.26		0.050	ug/L	16-MAY-19	16-MAY-19	R4636867
Nickel (Ni)-Dissolved	1.37		0.50	ug/L	16-MAY-19	16-MAY-19	R4636867
Phosphorus (P)-Dissolved	<30		30	ug/L	16-MAY-19	16-MAY-19	R4636867
Potassium (K)-Dissolved	40200		50	ug/L	16-MAY-19	16-MAY-19	R4636867
Rubidium (Rb)-Dissolved	20.0		0.20	ug/L	16-MAY-19	16-MAY-19	R4636867
Selenium (Se)-Dissolved	<0.050		0.050	ug/L	16-MAY-19	16-MAY-19	R4636867
Silicon (Si)-Dissolved	4250		50	ug/L	16-MAY-19	16-MAY-19	R4636867
Silver (Ag)-Dissolved	0.011		0.010	ug/L	16-MAY-19	16-MAY-19	R4636867
Sodium (Na)-Dissolved	1520000		5000	ug/L	16-MAY-19	16-MAY-19	R4636867
Strontium (Sr)-Dissolved	4720		10	ug/L	16-MAY-19	16-MAY-19	R4636867
Sulfur (S)-Dissolved	312000		500	ug/L	16-MAY-19	16-MAY-19	R4636867
Tellurium (Te)-Dissolved	<0.20		0.20	ug/L	16-MAY-19	16-MAY-19	R4636867
Thallium (Tl)-Dissolved	<0.010		0.010	ug/L	16-MAY-19	16-MAY-19	R4636867
Thorium (Th)-Dissolved	<0.10		0.10	ug/L	16-MAY-19	16-MAY-19	R4636867
Tin (Sn)-Dissolved	<0.10		0.10	ug/L	16-MAY-19	16-MAY-19	R4636867
Titanium (Ti)-Dissolved	1.34		0.30	ug/L	16-MAY-19	16-MAY-19	R4636867
Tungsten (W)-Dissolved	<0.10		0.10	ug/L	16-MAY-19	16-MAY-19	R4636867
Uranium (U)-Dissolved	0.547		0.010	ug/L	16-MAY-19	16-MAY-19	R4636867

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ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2273858-3 GWQ25-W11							
Sampled By: CLIENT on 15-MAY-19 @ 11:18							
Matrix: WATER							
Dissolved Metals in Water by CRC ICPMS							
Vanadium (V)-Dissolved	<0.50		0.50	ug/L	16-MAY-19	16-MAY-19	R4636867
Zinc (Zn)-Dissolved	<1.0		1.0	ug/L	16-MAY-19	16-MAY-19	R4636867
Zirconium (Zr)-Dissolved	<0.060		0.060	ug/L	16-MAY-19	16-MAY-19	R4636867
Polyaromatic Hydrocarbons (PAHs)							
1-Methyl Naphthalene	<0.020		0.020	ug/L	17-MAY-19	19-MAY-19	R4641977
2-Methyl Naphthalene	<0.020		0.020	ug/L	17-MAY-19	19-MAY-19	R4641977
Acenaphthene	<0.020		0.020	ug/L	17-MAY-19	19-MAY-19	R4641977
Acenaphthylene	<0.020		0.020	ug/L	17-MAY-19	19-MAY-19	R4641977
Anthracene	<0.010		0.010	ug/L	17-MAY-19	19-MAY-19	R4641977
Acridine	<0.020		0.020	ug/L	17-MAY-19	19-MAY-19	R4641977
Benzo(a)anthracene	<0.010		0.010	ug/L	17-MAY-19	19-MAY-19	R4641977
Benzo(a)pyrene	<0.0050		0.0050	ug/L	17-MAY-19	19-MAY-19	R4641977
Benzo(b&j)fluoranthene	<0.010		0.010	ug/L	17-MAY-19	19-MAY-19	R4641977
Benzo(g,h,i)perylene	<0.020		0.020	ug/L	17-MAY-19	19-MAY-19	R4641977
Benzo(k)fluoranthene	<0.010		0.010	ug/L	17-MAY-19	19-MAY-19	R4641977
Chrysene	<0.020		0.020	ug/L	17-MAY-19	19-MAY-19	R4641977
Dibenzo(a,h)anthracene	<0.0050		0.0050	ug/L	17-MAY-19	19-MAY-19	R4641977
Fluoranthene	<0.020		0.020	ug/L	17-MAY-19	19-MAY-19	R4641977
Fluorene	<0.020		0.020	ug/L	17-MAY-19	19-MAY-19	R4641977
Indeno(1,2,3-cd)pyrene	<0.010		0.010	ug/L	17-MAY-19	19-MAY-19	R4641977
Naphthalene	<0.050		0.050	ug/L	17-MAY-19	19-MAY-19	R4641977
Phenanthrene	<0.050		0.050	ug/L	17-MAY-19	19-MAY-19	R4641977
Pyrene	<0.010		0.010	ug/L	17-MAY-19	19-MAY-19	R4641977
Quinoline	<0.020		0.020	ug/L	17-MAY-19	19-MAY-19	R4641977
B(a)P Total Potency Equivalent	<0.030		0.030	ug/L	17-MAY-19	19-MAY-19	R4641977
Surrogate: Acenaphthene d10	97.4		60-130	%	17-MAY-19	19-MAY-19	R4641977
Surrogate: Acridine d9	93.5		60-130	%	17-MAY-19	19-MAY-19	R4641977
Surrogate: Chrysene d12	99.8		60-130	%	17-MAY-19	19-MAY-19	R4641977
Surrogate: Naphthalene d8	91.4		50-130	%	17-MAY-19	19-MAY-19	R4641977
Surrogate: Phenanthrene d10	107.4		60-130	%	17-MAY-19	19-MAY-19	R4641977
Herbicides in Water							
Clopyralid	<0.10		0.10	ug/L	22-MAY-19	22-MAY-19	R4641179
Dicamba	<0.10		0.10	ug/L	22-MAY-19	22-MAY-19	R4641179
Mecoprop	<0.10		0.10	ug/L	22-MAY-19	22-MAY-19	R4641179
MCPA	<0.10		0.10	ug/L	22-MAY-19	22-MAY-19	R4641179
2,4-D	<0.10		0.10	ug/L	22-MAY-19	22-MAY-19	R4641179
Bromoxynil	<0.10		0.10	ug/L	22-MAY-19	22-MAY-19	R4641179
Triclopyr	<0.10		0.10	ug/L	22-MAY-19	22-MAY-19	R4641179
2,4,5-T	<0.10		0.10	ug/L	22-MAY-19	22-MAY-19	R4641179
2,4,5-TP	<0.10		0.10	ug/L	22-MAY-19	22-MAY-19	R4641179
Picloram	<0.10		0.10	ug/L	22-MAY-19	22-MAY-19	R4641179
2,4-DB	<0.10		0.10	ug/L	22-MAY-19	22-MAY-19	R4641179
2,4-DP	<0.10		0.10	ug/L	22-MAY-19	22-MAY-19	R4641179
Dinoseb	<0.10		0.10	ug/L	22-MAY-19	22-MAY-19	R4641179
MCPB	<0.10		0.10	ug/L	22-MAY-19	22-MAY-19	R4641179
Surrogate: 2,4-Dichlorophenylacetic Acid	122.0		50-130	%	22-MAY-19	22-MAY-19	R4641179
Miscellaneous Pesticides							
Diazinon	<0.10		0.10	ug/L	22-MAY-19	24-MAY-19	R4641955
Surrogate: 2-Fluorobiphenyl	85.0		40-130	%	22-MAY-19	24-MAY-19	R4641955
Surrogate: d14-Terphenyl	81.4		40-130	%	22-MAY-19	24-MAY-19	R4641955
Total, Fecal Coliforms, E Coli by QT97							
Fecal Coliform by MPN QT97							

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ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2273858-3 GWQ25-W11							
Sampled By: CLIENT on 15-MAY-19 @ 11:18							
Matrix: WATER							
Fecal Coliform by MPN QT97							
Fecal Coliforms	<1		1	MPN/100mL		15-MAY-19	R4636563
Total Coliform and E.coli by MPN QT97							
Total Coliforms	<1		1	MPN/100mL		15-MAY-19	R4636556
Escherichia Coli	<1		1	MPN/100mL		15-MAY-19	R4636556
VOC plus F1 to F4							
CCME PHC F2-F4 in Water							
F2 (C10-C16)	<100		100	ug/L	17-MAY-19	17-MAY-19	R4637345
F3 (C16-C34)	<250		250	ug/L	17-MAY-19	17-MAY-19	R4637345
F4 (C34-C50)	<250		250	ug/L	17-MAY-19	17-MAY-19	R4637345
Surrogate: 2-Bromobenzotrifluoride	89.5		60-140	%	17-MAY-19	17-MAY-19	R4637345
CCME Total Hydrocarbons							
F1-BTEX	<100		100	ug/L		28-MAY-19	
F2-Naphth	<100		100	ug/L		28-MAY-19	
F3-PAH	<250		250	ug/L		28-MAY-19	
Total Hydrocarbons (C6-C50)	<380		380	ug/L		28-MAY-19	
Sum of Xylene Isomer Concentrations							
Xylenes (Total)	<0.50		0.50	ug/L		28-MAY-19	
Total Trihalomethanes (THMs)							
Total THMs	<1.0		1.0	ug/L		28-MAY-19	
VOC plus F1 by GCMS							
Acetone	<20		20	ug/L		25-MAY-19	R4645483
Benzene	<0.50		0.50	ug/L		25-MAY-19	R4645483
Bromobenzene	<0.50		0.50	ug/L		25-MAY-19	R4645483
Bromochloromethane	<0.50		0.50	ug/L		25-MAY-19	R4645483
Bromodichloromethane	<0.50		0.50	ug/L		25-MAY-19	R4645483
Bromoform	<0.50		0.50	ug/L		25-MAY-19	R4645483
Bromomethane	<1.0		1.0	ug/L		25-MAY-19	R4645483
n-Butylbenzene	<0.50		0.50	ug/L		25-MAY-19	R4645483
sec-Butylbenzene	<0.50		0.50	ug/L		25-MAY-19	R4645483
tert-Butylbenzene	<0.50		0.50	ug/L		25-MAY-19	R4645483
Carbon disulfide	<0.50		0.50	ug/L		25-MAY-19	R4645483
Carbon Tetrachloride	<0.50		0.50	ug/L		25-MAY-19	R4645483
Chlorobenzene	<0.50		0.50	ug/L		25-MAY-19	R4645483
Chloroethane	<1.0		1.0	ug/L		25-MAY-19	R4645483
Chloroform	<0.50		0.50	ug/L		25-MAY-19	R4645483
Chloromethane	<1.0		1.0	ug/L		25-MAY-19	R4645483
2-Chlorotoluene	<20		20	ug/L		25-MAY-19	R4645483
4-Chlorotoluene	<0.50		0.50	ug/L		25-MAY-19	R4645483
Dibromochloromethane	<0.50		0.50	ug/L		25-MAY-19	R4645483
1,2-Dibromo-3-chloropropane	<0.50		0.50	ug/L		25-MAY-19	R4645483
1,2-Dibromoethane	<0.50		0.50	ug/L		25-MAY-19	R4645483
Dibromomethane	<0.50		0.50	ug/L		25-MAY-19	R4645483
1,2-Dichlorobenzene	<0.50		0.50	ug/L		25-MAY-19	R4645483
1,3-Dichlorobenzene	<0.50		0.50	ug/L		25-MAY-19	R4645483
1,4-Dichlorobenzene	<0.50		0.50	ug/L		25-MAY-19	R4645483
Dichlorodifluoromethane	<1.0		1.0	ug/L		25-MAY-19	R4645483
1,1-dichloroethane	<0.50		0.50	ug/L		25-MAY-19	R4645483
1,2-Dichloroethane	<0.50		0.50	ug/L		25-MAY-19	R4645483
1,1-dichloroethene	<0.50		0.50	ug/L		25-MAY-19	R4645483
cis-1,2-Dichloroethene	<0.50		0.50	ug/L		25-MAY-19	R4645483
trans-1,2-Dichloroethene	<0.50		0.50	ug/L		25-MAY-19	R4645483
Dichloromethane	<0.50		0.50	ug/L		25-MAY-19	R4645483

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ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2273858-3 GWQ25-W11							
Sampled By: CLIENT on 15-MAY-19 @ 11:18							
Matrix: WATER							
VOC plus F1 by GCMS							
1,2-Dichloropropane	<0.50		0.50	ug/L		25-MAY-19	R4645483
1,3-Dichloropropane	<0.50		0.50	ug/L		25-MAY-19	R4645483
2,2-Dichloropropane	<1.0	DLM	1.0	ug/L		25-MAY-19	R4645483
1,1-Dichloropropene	<0.50		0.50	ug/L		25-MAY-19	R4645483
cis-1,3-Dichloropropene	<1.0	DLM	1.0	ug/L		25-MAY-19	R4645483
trans-1,3-Dichloropropene	<1.0	DLM	1.0	ug/L		25-MAY-19	R4645483
Ethylbenzene	<0.50		0.50	ug/L		25-MAY-19	R4645483
F1	<100		100	ug/L		25-MAY-19	R4645483
Hexachlorobutadiene	<0.50		0.50	ug/L		25-MAY-19	R4645483
Hexane	<0.50		0.50	ug/L		25-MAY-19	R4645483
2-Hexanone (Methyl butyl ketone)	<20		20	ug/L		25-MAY-19	R4645483
Isopropylbenzene	<0.50		0.50	ug/L		25-MAY-19	R4645483
4-Isopropyltoluene	<1.0		1.0	ug/L		25-MAY-19	R4645483
MEK	<20		20	ug/L		25-MAY-19	R4645483
MIBK	<20		20	ug/L		25-MAY-19	R4645483
MTBE	<0.50		0.50	ug/L		25-MAY-19	R4645483
Styrene	<0.50		0.50	ug/L		25-MAY-19	R4645483
1,1,1,2-Tetrachloroethane	<0.50		0.50	ug/L		25-MAY-19	R4645483
1,1,2,2-Tetrachloroethane	<0.50		0.50	ug/L		25-MAY-19	R4645483
Tetrachloroethene	<0.50		0.50	ug/L		25-MAY-19	R4645483
Toluene	<0.50		0.50	ug/L		25-MAY-19	R4645483
1,2,3-Trichlorobenzene	<0.50		0.50	ug/L		25-MAY-19	R4645483
1,2,4-Trichlorobenzene	<0.50		0.50	ug/L		25-MAY-19	R4645483
1,1,1-Trichloroethane	<0.50		0.50	ug/L		25-MAY-19	R4645483
1,1,2-Trichloroethane	<0.50		0.50	ug/L		25-MAY-19	R4645483
Trichloroethene	<0.50		0.50	ug/L		25-MAY-19	R4645483
Trichlorofluoromethane	<1.0		1.0	ug/L		25-MAY-19	R4645483
1,2,3-Trichloropropane	<0.50		0.50	ug/L		25-MAY-19	R4645483
1,2,4-Trimethylbenzene	<0.50		0.50	ug/L		25-MAY-19	R4645483
1,3,5-Trimethylbenzene	<0.50		0.50	ug/L		25-MAY-19	R4645483
Vinyl Chloride	<0.50		0.50	ug/L		25-MAY-19	R4645483
M+P-Xylenes	<0.40		0.40	ug/L		25-MAY-19	R4645483
o-Xylene	<0.30		0.30	ug/L		25-MAY-19	R4645483
Surrogate: 4-Bromofluorobenzene (SS)	96.0		70-130	%		25-MAY-19	R4645483
Surrogate: 1,4-Difluorobenzene (SS)	98.6		70-130	%		25-MAY-19	R4645483
L2273858-4 GWQ25-W12							
Sampled By: CLIENT on 15-MAY-19 @ 12:10							
Matrix: WATER							
Miscellaneous Parameters							
Chromium, Hexavalent	<0.50		0.50	ug/L		17-MAY-19	R4638648
Mercury (Hg)-Total	<0.0050		0.0050	ug/L	21-MAY-19	23-MAY-19	R4642548
Phenols (4AAP)	<1.0		1.0	ug/L		21-MAY-19	R4639681
Cyanide, Total	<1.0		1.0	ug/L		22-MAY-19	R4641107
Dissolved Metals in Water by CRC ICPMS							
Dissolved Metals Filtration Location	FIELD					16-MAY-19	R4636422
Aluminum (Al)-Dissolved	<1.0		1.0	ug/L	16-MAY-19	16-MAY-19	R4636867
Antimony (Sb)-Dissolved	<0.10		0.10	ug/L	16-MAY-19	16-MAY-19	R4636867
Arsenic (As)-Dissolved	4.68		0.10	ug/L	16-MAY-19	16-MAY-19	R4636867
Barium (Ba)-Dissolved	12.3		0.10	ug/L	16-MAY-19	16-MAY-19	R4636867
Beryllium (Be)-Dissolved	<0.10		0.10	ug/L	16-MAY-19	16-MAY-19	R4636867
Bismuth (Bi)-Dissolved	<0.050		0.050	ug/L	16-MAY-19	16-MAY-19	R4636867

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ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2273858-4 GWQ25-W12							
Sampled By: CLIENT on 15-MAY-19 @ 12:10							
Matrix: WATER							
Dissolved Metals in Water by CRC ICPMS							
Boron (B)-Dissolved	1400		1000	ug/L	16-MAY-19	16-MAY-19	R4636867
Cadmium (Cd)-Dissolved	<0.0050		0.0050	ug/L	16-MAY-19	16-MAY-19	R4636867
Calcium (Ca)-Dissolved	322000		50	ug/L	16-MAY-19	16-MAY-19	R4636867
Cesium (Cs)-Dissolved	0.061		0.010	ug/L	16-MAY-19	16-MAY-19	R4636867
Chromium (Cr)-Dissolved	<0.10		0.10	ug/L	16-MAY-19	16-MAY-19	R4636867
Cobalt (Co)-Dissolved	0.62		0.10	ug/L	16-MAY-19	16-MAY-19	R4636867
Copper (Cu)-Dissolved	<0.20		0.20	ug/L	16-MAY-19	16-MAY-19	R4636867
Iron (Fe)-Dissolved	577		10	ug/L	16-MAY-19	16-MAY-19	R4636867
Lead (Pb)-Dissolved	<0.050		0.050	ug/L	16-MAY-19	16-MAY-19	R4636867
Lithium (Li)-Dissolved	400		100	ug/L	16-MAY-19	16-MAY-19	R4636867
Magnesium (Mg)-Dissolved	163000		5.0	ug/L	16-MAY-19	16-MAY-19	R4636867
Manganese (Mn)-Dissolved	32.0		0.10	ug/L	16-MAY-19	16-MAY-19	R4636867
Molybdenum (Mo)-Dissolved	2.95		0.050	ug/L	16-MAY-19	16-MAY-19	R4636867
Nickel (Ni)-Dissolved	1.34		0.50	ug/L	16-MAY-19	16-MAY-19	R4636867
Phosphorus (P)-Dissolved	<30		30	ug/L	16-MAY-19	16-MAY-19	R4636867
Potassium (K)-Dissolved	37400		50	ug/L	16-MAY-19	16-MAY-19	R4636867
Rubidium (Rb)-Dissolved	16.5		0.20	ug/L	16-MAY-19	16-MAY-19	R4636867
Selenium (Se)-Dissolved	<0.050		0.050	ug/L	16-MAY-19	16-MAY-19	R4636867
Silicon (Si)-Dissolved	4780		50	ug/L	16-MAY-19	16-MAY-19	R4636867
Silver (Ag)-Dissolved	0.011		0.010	ug/L	16-MAY-19	16-MAY-19	R4636867
Sodium (Na)-Dissolved	1400000		5000	ug/L	16-MAY-19	16-MAY-19	R4636867
Strontium (Sr)-Dissolved	4390		10	ug/L	16-MAY-19	16-MAY-19	R4636867
Sulfur (S)-Dissolved	342000		500	ug/L	16-MAY-19	16-MAY-19	R4636867
Tellurium (Te)-Dissolved	<0.20		0.20	ug/L	16-MAY-19	16-MAY-19	R4636867
Thallium (Tl)-Dissolved	<0.010		0.010	ug/L	16-MAY-19	16-MAY-19	R4636867
Thorium (Th)-Dissolved	<0.10		0.10	ug/L	16-MAY-19	16-MAY-19	R4636867
Tin (Sn)-Dissolved	<0.10		0.10	ug/L	16-MAY-19	16-MAY-19	R4636867
Titanium (Ti)-Dissolved	<0.30		0.30	ug/L	16-MAY-19	16-MAY-19	R4636867
Tungsten (W)-Dissolved	<0.10		0.10	ug/L	16-MAY-19	16-MAY-19	R4636867
Uranium (U)-Dissolved	1.27		0.010	ug/L	16-MAY-19	16-MAY-19	R4636867
Vanadium (V)-Dissolved	<0.50		0.50	ug/L	16-MAY-19	16-MAY-19	R4636867
Zinc (Zn)-Dissolved	1.6		1.0	ug/L	16-MAY-19	16-MAY-19	R4636867
Zirconium (Zr)-Dissolved	<0.060		0.060	ug/L	16-MAY-19	16-MAY-19	R4636867
Polyaromatic Hydrocarbons (PAHs)							
1-Methyl Naphthalene	<0.020		0.020	ug/L	17-MAY-19	19-MAY-19	R4641977
2-Methyl Naphthalene	<0.020		0.020	ug/L	17-MAY-19	19-MAY-19	R4641977
Acenaphthene	<0.020		0.020	ug/L	17-MAY-19	19-MAY-19	R4641977
Acenaphthylene	<0.020		0.020	ug/L	17-MAY-19	19-MAY-19	R4641977
Anthracene	<0.010		0.010	ug/L	17-MAY-19	19-MAY-19	R4641977
Acridine	<0.020		0.020	ug/L	17-MAY-19	19-MAY-19	R4641977
Benzo(a)anthracene	<0.010		0.010	ug/L	17-MAY-19	19-MAY-19	R4641977
Benzo(a)pyrene	<0.0050		0.0050	ug/L	17-MAY-19	19-MAY-19	R4641977
Benzo(b&j)fluoranthene	0.014	EMPC	0.010	ug/L	17-MAY-19	19-MAY-19	R4641977
Benzo(g,h,i)perylene	<0.020		0.020	ug/L	17-MAY-19	19-MAY-19	R4641977
Benzo(k)fluoranthene	0.013		0.010	ug/L	17-MAY-19	19-MAY-19	R4641977
Chrysene	<0.020		0.020	ug/L	17-MAY-19	19-MAY-19	R4641977
Dibenzo(a,h)anthracene	0.0121		0.0050	ug/L	17-MAY-19	19-MAY-19	R4641977
Fluoranthene	<0.020		0.020	ug/L	17-MAY-19	19-MAY-19	R4641977
Fluorene	<0.020		0.020	ug/L	17-MAY-19	19-MAY-19	R4641977
Indeno(1,2,3-cd)pyrene	0.013	EMPC	0.010	ug/L	17-MAY-19	19-MAY-19	R4641977
Naphthalene	<0.050		0.050	ug/L	17-MAY-19	19-MAY-19	R4641977

* 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
L2273858-4 GWQ25-W12							
Sampled By: CLIENT on 15-MAY-19 @ 12:10							
Matrix: WATER							
Polyaromatic Hydrocarbons (PAHs)							
Phenanthrene	<0.050		0.050	ug/L	17-MAY-19	19-MAY-19	R4641977
Pyrene	<0.010		0.010	ug/L	17-MAY-19	19-MAY-19	R4641977
Quinoline	<0.020		0.020	ug/L	17-MAY-19	19-MAY-19	R4641977
B(a)P Total Potency Equivalent	<0.030		0.030	ug/L	17-MAY-19	19-MAY-19	R4641977
Surrogate: Acenaphthene d10	93.9		60-130	%	17-MAY-19	19-MAY-19	R4641977
Surrogate: Acridine d9	86.7		60-130	%	17-MAY-19	19-MAY-19	R4641977
Surrogate: Chrysene d12	96.4		60-130	%	17-MAY-19	19-MAY-19	R4641977
Surrogate: Naphthalene d8	87.7		50-130	%	17-MAY-19	19-MAY-19	R4641977
Surrogate: Phenanthrene d10	102.7		60-130	%	17-MAY-19	19-MAY-19	R4641977
Herbicides in Water							
Clopyralid	<0.10		0.10	ug/L	22-MAY-19	22-MAY-19	R4641179
Dicamba	<0.10		0.10	ug/L	22-MAY-19	22-MAY-19	R4641179
Mecoprop	<0.10		0.10	ug/L	22-MAY-19	22-MAY-19	R4641179
MCPA	<0.10		0.10	ug/L	22-MAY-19	22-MAY-19	R4641179
2,4-D	<0.10		0.10	ug/L	22-MAY-19	22-MAY-19	R4641179
Bromoxynil	<0.10		0.10	ug/L	22-MAY-19	22-MAY-19	R4641179
Triclopyr	<0.10		0.10	ug/L	22-MAY-19	22-MAY-19	R4641179
2,4,5-T	<0.10		0.10	ug/L	22-MAY-19	22-MAY-19	R4641179
2,4,5-TP	<0.10		0.10	ug/L	22-MAY-19	22-MAY-19	R4641179
Picloram	<0.10		0.10	ug/L	22-MAY-19	22-MAY-19	R4641179
2,4-DB	<0.10		0.10	ug/L	22-MAY-19	22-MAY-19	R4641179
2,4-DP	<0.10		0.10	ug/L	22-MAY-19	22-MAY-19	R4641179
Dinoseb	<0.10		0.10	ug/L	22-MAY-19	22-MAY-19	R4641179
MCPB	<0.10		0.10	ug/L	22-MAY-19	22-MAY-19	R4641179
Surrogate: 2,4-Dichlorophenylacetic Acid	111.0		50-130	%	22-MAY-19	22-MAY-19	R4641179
Miscellaneous Pesticides							
Diazinon	<0.10		0.10	ug/L	22-MAY-19	24-MAY-19	R4641955
Surrogate: 2-Fluorobiphenyl	87.7		40-130	%	22-MAY-19	24-MAY-19	R4641955
Surrogate: d14-Terphenyl	77.1		40-130	%	22-MAY-19	24-MAY-19	R4641955
Total, Fecal Coliforms, E Coli by QT97							
Fecal Coliform by MPN QT97							
Fecal Coliforms	<1		1	MPN/100mL		15-MAY-19	R4636563
Total Coliform and E.coli by MPN QT97							
Total Coliforms	<1		1	MPN/100mL		15-MAY-19	R4636556
Escherichia Coli	<1		1	MPN/100mL		15-MAY-19	R4636556
VOC plus F1 to F4							
CCME PHC F2-F4 in Water							
F2 (C10-C16)	<100		100	ug/L	17-MAY-19	17-MAY-19	R4637345
F3 (C16-C34)	<250		250	ug/L	17-MAY-19	17-MAY-19	R4637345
F4 (C34-C50)	<250		250	ug/L	17-MAY-19	17-MAY-19	R4637345
Surrogate: 2-Bromobenzotrifluoride	94.7		60-140	%	17-MAY-19	17-MAY-19	R4637345
CCME Total Hydrocarbons							
F1-BTEX	<100		100	ug/L		28-MAY-19	
F2-Naphth	<100		100	ug/L		28-MAY-19	
F3-PAH	<250		250	ug/L		28-MAY-19	
Total Hydrocarbons (C6-C50)	<380		380	ug/L		28-MAY-19	
Sum of Xylene Isomer Concentrations							
Xylenes (Total)	<0.50		0.50	ug/L		28-MAY-19	
Total Trihalomethanes (THMs)							
Total THMs	<1.0		1.0	ug/L		28-MAY-19	
VOC plus F1 by GCMS							
Acetone	<20		20	ug/L		25-MAY-19	R4645483

* 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
L2273858-4 GWQ25-W12							
Sampled By: CLIENT on 15-MAY-19 @ 12:10							
Matrix: WATER							
VOC plus F1 by GCMS							
Benzene	<0.50		0.50	ug/L		25-MAY-19	R4645483
Bromobenzene	<0.50		0.50	ug/L		25-MAY-19	R4645483
Bromochloromethane	<0.50		0.50	ug/L		25-MAY-19	R4645483
Bromodichloromethane	<0.50		0.50	ug/L		25-MAY-19	R4645483
Bromoform	<0.50		0.50	ug/L		25-MAY-19	R4645483
Bromomethane	<1.0		1.0	ug/L		25-MAY-19	R4645483
n-Butylbenzene	<0.50		0.50	ug/L		25-MAY-19	R4645483
sec-Butylbenzene	<0.50		0.50	ug/L		25-MAY-19	R4645483
tert-Butylbenzene	<0.50		0.50	ug/L		25-MAY-19	R4645483
Carbon disulfide	<0.50		0.50	ug/L		25-MAY-19	R4645483
Carbon Tetrachloride	<0.50		0.50	ug/L		25-MAY-19	R4645483
Chlorobenzene	<0.50		0.50	ug/L		25-MAY-19	R4645483
Chloroethane	<1.0		1.0	ug/L		25-MAY-19	R4645483
Chloroform	<0.50		0.50	ug/L		25-MAY-19	R4645483
Chloromethane	<1.0		1.0	ug/L		25-MAY-19	R4645483
2-Chlorotoluene	<20		20	ug/L		25-MAY-19	R4645483
4-Chlorotoluene	<0.50		0.50	ug/L		25-MAY-19	R4645483
Dibromochloromethane	<0.50		0.50	ug/L		25-MAY-19	R4645483
1,2-Dibromo-3-chloropropane	<0.50		0.50	ug/L		25-MAY-19	R4645483
1,2-Dibromoethane	<0.50		0.50	ug/L		25-MAY-19	R4645483
Dibromomethane	<0.50		0.50	ug/L		25-MAY-19	R4645483
1,2-Dichlorobenzene	<0.50		0.50	ug/L		25-MAY-19	R4645483
1,3-Dichlorobenzene	<0.50		0.50	ug/L		25-MAY-19	R4645483
1,4-Dichlorobenzene	<0.50		0.50	ug/L		25-MAY-19	R4645483
Dichlorodifluoromethane	<1.0		1.0	ug/L		25-MAY-19	R4645483
1,1-dichloroethane	<0.50		0.50	ug/L		25-MAY-19	R4645483
1,2-Dichloroethane	<0.50		0.50	ug/L		25-MAY-19	R4645483
1,1-dichloroethene	<0.50		0.50	ug/L		25-MAY-19	R4645483
cis-1,2-Dichloroethene	<0.50		0.50	ug/L		25-MAY-19	R4645483
trans-1,2-Dichloroethene	<0.50		0.50	ug/L		25-MAY-19	R4645483
Dichloromethane	<0.50		0.50	ug/L		25-MAY-19	R4645483
1,2-Dichloropropane	<0.50		0.50	ug/L		25-MAY-19	R4645483
1,3-Dichloropropane	<0.50		0.50	ug/L		25-MAY-19	R4645483
2,2-Dichloropropane	<1.0	DLM	1.0	ug/L		25-MAY-19	R4645483
1,1-Dichloropropene	<0.50		0.50	ug/L		25-MAY-19	R4645483
cis-1,3-Dichloropropene	<1.0	DLM	1.0	ug/L		25-MAY-19	R4645483
trans-1,3-Dichloropropene	<1.0	DLM	1.0	ug/L		25-MAY-19	R4645483
Ethylbenzene	<0.50		0.50	ug/L		25-MAY-19	R4645483
F1	<100		100	ug/L		25-MAY-19	R4645483
Hexachlorobutadiene	<0.50		0.50	ug/L		25-MAY-19	R4645483
Hexane	<0.50		0.50	ug/L		25-MAY-19	R4645483
2-Hexanone (Methyl butyl ketone)	<20		20	ug/L		25-MAY-19	R4645483
Isopropylbenzene	<0.50		0.50	ug/L		25-MAY-19	R4645483
4-Isopropyltoluene	<1.0		1.0	ug/L		25-MAY-19	R4645483
MEK	<20		20	ug/L		25-MAY-19	R4645483
MIBK	<20		20	ug/L		25-MAY-19	R4645483
MTBE	<0.50		0.50	ug/L		25-MAY-19	R4645483
Styrene	<0.50		0.50	ug/L		25-MAY-19	R4645483
1,1,1,2-Tetrachloroethane	<0.50		0.50	ug/L		25-MAY-19	R4645483
1,1,2,2-Tetrachloroethane	<0.50		0.50	ug/L		25-MAY-19	R4645483
Tetrachloroethene	<0.50		0.50	ug/L		25-MAY-19	R4645483

* 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
L2273858-4 GWQ25-W12							
Sampled By: CLIENT on 15-MAY-19 @ 12:10							
Matrix: WATER							
VOC plus F1 by GCMS							
Toluene	<0.50		0.50	ug/L		25-MAY-19	R4645483
1,2,3-Trichlorobenzene	<0.50		0.50	ug/L		25-MAY-19	R4645483
1,2,4-Trichlorobenzene	<0.50		0.50	ug/L		25-MAY-19	R4645483
1,1,1-Trichloroethane	<0.50		0.50	ug/L		25-MAY-19	R4645483
1,1,2-Trichloroethane	<0.50		0.50	ug/L		25-MAY-19	R4645483
Trichloroethene	<0.50		0.50	ug/L		25-MAY-19	R4645483
Trichlorofluoromethane	<1.0		1.0	ug/L		25-MAY-19	R4645483
1,2,3-Trichloropropane	<0.50		0.50	ug/L		25-MAY-19	R4645483
1,2,4-Trimethylbenzene	<0.50		0.50	ug/L		25-MAY-19	R4645483
1,3,5-Trimethylbenzene	<0.50		0.50	ug/L		25-MAY-19	R4645483
Vinyl Chloride	<0.50		0.50	ug/L		25-MAY-19	R4645483
M+P-Xylenes	<0.40		0.40	ug/L		25-MAY-19	R4645483
o-Xylene	<0.30		0.30	ug/L		25-MAY-19	R4645483
Surrogate: 4-Bromofluorobenzene (SS)	96.1		70-130	%		25-MAY-19	R4645483
Surrogate: 1,4-Difluorobenzene (SS)	99.0		70-130	%		25-MAY-19	R4645483

* 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).
EMPC	Estimated Maximum Possible Concentration. Parameter detected but didn't meet all criteria for positive identification.
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**
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CN-T-CFA-WP	Water	Total Cyanide in water by CFA	ISO 14403-2
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This analysis is carried out using procedures adapted from ISO Method 14403-2:2012 "Determination of Total Cyanide using Flow Analysis (FIA and CFA)". Total or strong acid dissociable (SAD) cyanide is determined by in-line UV digestion along with sample distillation and final determination by colourmetric analysis.

CR-CR6-IC-WT	Water	Chromium +6	EPA 7199
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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 diphenylcarbazine in a sulphuric acid solution. Chromium (III) is calculated as the difference between the total chromium and the chromium (VI) results.

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).

F1-F4-CALC-WP	Water	CCME Total Hydrocarbons	CCME CWS-PHC, Pub #1310, Dec 2001-L
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Analytical methods used for analysis of CCME Petroleum Hydrocarbons have been validated and comply with the Reference Method for the CWS PHC.

In cases where results for both F4 and F4G are reported, the greater of the two results must be used in any application of the CWS PHC guidelines and the gravimetric heavy hydrocarbons cannot be added to the C6 to C50 hydrocarbons.

In samples where BTEX and F1 were analyzed, F1-BTEX represents a value where the sum of Benzene, Toluene, Ethylbenzene and total Xylenes has been subtracted from F1.

In samples where PAHs, F2 and F3 were analyzed, F2-Naphth represents the result where Naphthalene has been subtracted from F2. F3-PAH represents a result where the sum of Benzo(a)anthracene, Benzo(a)pyrene, Benzo(b)fluoranthene, Benzo(k)fluoranthene, Dibenzo(a,h)anthracene, Fluoranthene, Indeno(1,2,3-cd)pyrene, Phenanthrene, and Pyrene has been subtracted from F3.

Unless otherwise qualified, the following quality control criteria have been met for the F1 hydrocarbon range:

1. All extraction and analysis holding times were met.
2. Instrument performance showing response factors for C6 and C10 within 30% of the response factor for toluene.
3. Linearity of gasoline response within 15% throughout the calibration range.

Unless otherwise qualified, the following quality control criteria have been met for the F2-F4 hydrocarbon ranges:

1. All extraction and analysis holding times were met.
2. Instrument performance showing C10, C16 and C34 response factors within 10% of their average.
3. Instrument performance showing the C50 response factor within 30% of the average of the C10, C16 and C34 response factors.
4. Linearity of diesel or motor oil response within 15% throughout the calibration range.

F2-F4-FID-WP	Water	CCME PHC F2-F4 in Water	EPA 3511
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Petroleum hydrocarbons in water are determined by liquid-liquid micro-scale solvent extraction using a reciprocal shaker extraction apparatus prior to capillary column gas chromatography with flame ionization detection (GC-FID) analysis.

FC-QT97-WP	Water	Fecal Coliform by MPN QT97	APHA 9223B QT97
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This analysis is carried out using procedures adapted from APHA Method 9223B "Enzyme Substrate Coliform Test". The sample is mixed with a mixture of hydrolyzable substrates and then sealed in a 97-well packet. The packet is incubated at 44.5 – 0.2°C for 18 hours and then the number of wells exhibiting a positive response are counted. The final result is obtained by comparing the number of positive responses to a probability table.

HERBSCR-LCMS-WT	Water	Herbicides in Water	E3552
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Water samples are subjected filtration and analyzed by direct injection without sample preparation using liquid chromatography tandem mass spectrometry (LC-MS/MS).

HERBSCR-LCMS-WT	Water	Herbicides in Water	SW846 8270
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Water samples are subjected filtration and analyzed by direct injection without sample preparation using liquid chromatography tandem mass spectrometry (LC-MS/MS).

HG-T-CVAA-WP	Water	Mercury Total	EPA 1631E (mod)
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Water samples undergo a cold-oxidation using bromine monochloride prior to reduction with stannous chloride, and analyzed by CVAAS.

MET-D-CCMS-WP	Water	Dissolved Metals in Water by CRC ICPMS	APHA 3030B/6020B (mod)
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Water samples are filtered (0.45 um), preserved with nitric acid, and analyzed by CRC ICPMS.

Reference Information

Test Method References:

ALS Test Code	Matrix	Test Description	Method Reference**
PAH,PANH-WP	Water	Polyaromatic Hydrocarbons (PAHs)	EPA 3511/8270D (mod)
PAHs are extracted from water using a hexane micro-extraction technique, with analysis by GC/MS. Because the two isomers cannot be readily separated chromatographically, benzo(j)fluoranthene is reported as part of the benzo(b)fluoranthene parameter.			
PEST-DIAZINON-WT	Water	Miscellaneous Pesticides	SW846 8270
PHENOLS-4AAP-WT	Water	Phenol (4AAP)	EPA 9066
An automated method is used to distill the sample. The distillate is then buffered to pH 9.4 which reacts with 4AAP and potassium ferricyanide to form a red complex which is measured colorimetrically.			
TC,EC-QT97-WP	Water	Total Coliform and E.coli by MPN QT97	APHA 9223B QT97
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 97-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.			
THM-SUM-CALC-WP	Water	Total Trihalomethanes (THMs)	CALCULATION
Total Trihalomethanes (THMs) represents the sum of bromodichloromethane, bromoform, chlorodibromomethane and chloroform. For the purpose of calculation, results less than the detection limit (DL) are treated as zero.			
VOC+F1-HSMS-WP	Water	VOC plus F1 by GCMS	EPA 8260C / EPA 5021A
In this method samples are analyzed using a headspace autosampler interfaced to a dual column gas chromatograph with MS and Flame Ionization detectors.			
XYLENES-SUM-CALC-WP	Water	Sum of Xylene Isomer Concentrations	CALCULATED RESULT
Total xylenes represents the sum of o-xylene and m&p-xylene.			

** 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
WT	ALS ENVIRONMENTAL - WATERLOO, ONTARIO, 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: L2273858

Report Date: 28-MAY-19

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Client: City of Winnipeg - Solid Waste Services Div (1120 Waverley)
 Solid Waste Services Division 1120 Waverley Street
 Winnipeg MB R3T 0P4

Contact: CHRIS KOZAK

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
CN-T-CFA-WP		Water						
Batch	R4641107							
WG3056160-2	LCS							
Cyanide, Total			95.1		%		80-120	22-MAY-19
WG3056160-1	MB							
Cyanide, Total			<0.0010		mg/L		0.001	22-MAY-19
CR-CR6-IC-WT		Water						
Batch	R4638648							
WG3052446-12	LCS							
Chromium, Hexavalent			95.8		%		80-120	17-MAY-19
WG3052446-11	MB							
Chromium, Hexavalent			<0.00050		mg/L		0.0005	17-MAY-19
F2-F4-FID-WP		Water						
Batch	R4637345							
WG3052255-2	LCS							
F2 (C10-C16)			107.3		%		70-130	17-MAY-19
F3 (C16-C34)			103.6		%		70-130	17-MAY-19
F4 (C34-C50)			104.0		%		70-130	17-MAY-19
WG3052255-1	MB							
F2 (C10-C16)			<0.10		mg/L		0.1	17-MAY-19
F3 (C16-C34)			<0.25		mg/L		0.25	17-MAY-19
F4 (C34-C50)			<0.25		mg/L		0.25	17-MAY-19
Surrogate: 2-Bromobenzotrifluoride			79.6		%		60-140	17-MAY-19
FC-QT97-WP		Water						
Batch	R4636563							
WG3050764-1	MB							
Fecal Coliforms			<1		MPN/100mL		1	15-MAY-19
HERBSCR-LCMS-WT		Water						
Batch	R4641179							
WG3055164-2	LCS							
Clopyralid			92.5		%		50-150	22-MAY-19
Dicamba			84.0		%		65-130	22-MAY-19
Mecoprop			102.0		%		65-130	22-MAY-19
MCPA			97.7		%		65-130	22-MAY-19
2,4-D			84.4		%		65-130	22-MAY-19
Bromoxynil			121.0		%		65-130	22-MAY-19
Triclopyr			77.7		%		65-130	22-MAY-19



Quality Control Report

Workorder: L2273858

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Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
HERBSCR-LCMS-WT		Water						
Batch	R4641179							
WG3055164-2	LCS							
2,4,5-T			92.9		%		65-130	22-MAY-19
2,4,5-TP			99.4		%		65-130	22-MAY-19
Picloram			93.0		%		50-150	22-MAY-19
2,4-DB			87.3		%		65-130	22-MAY-19
2,4-DP			82.9		%		65-130	22-MAY-19
Dinoseb			121.0		%		50-150	22-MAY-19
MCPB			110.0		%		65-130	22-MAY-19
WG3055164-1	MB							
Clopyralid			<0.00010		mg/L		0.0001	22-MAY-19
Dicamba			<0.00010		mg/L		0.0001	22-MAY-19
Mecoprop			<0.00010		mg/L		0.0001	22-MAY-19
MCPA			<0.00010		mg/L		0.0001	22-MAY-19
2,4-D			<0.00010		mg/L		0.0001	22-MAY-19
Bromoxynil			<0.00010		mg/L		0.0001	22-MAY-19
Triclopyr			<0.00010		mg/L		0.0001	22-MAY-19
2,4,5-T			<0.00010		mg/L		0.0001	22-MAY-19
2,4,5-TP			<0.00010		mg/L		0.0001	22-MAY-19
Picloram			<0.00010		mg/L		0.0001	22-MAY-19
2,4-DB			<0.00010		mg/L		0.0001	22-MAY-19
2,4-DP			<0.00010		mg/L		0.0001	22-MAY-19
Dinoseb			<0.00010		mg/L		0.0001	22-MAY-19
MCPB			<0.00010		mg/L		0.0001	22-MAY-19
Surrogate: 2,4-Dichlorophenylacetic Acid			95.0		%		50-130	22-MAY-19
HG-T-CVAA-WP		Water						
Batch	R4642548							
WG3057799-3	DUP	L2273858-1						
Mercury (Hg)-Total		<0.0000050	<0.000005C	RPD-NA	mg/L	N/A	20	23-MAY-19
WG3057799-2	LCS							
Mercury (Hg)-Total			101.0		%		80-120	23-MAY-19
WG3057799-1	MB							
Mercury (Hg)-Total			<0.000005C		mg/L		0.000005	23-MAY-19
WG3057799-4	MS	L2273858-2						
Mercury (Hg)-Total			97.0		%		70-130	23-MAY-19
MET-D-CCMS-WP		Water						



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Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
MET-D-CCMS-WP								
	Water							
Batch	R4636867							
WG3051624-2	LCS							
Aluminum (Al)-Dissolved			98.8		%		80-120	16-MAY-19
Antimony (Sb)-Dissolved			102.0		%		80-120	16-MAY-19
Arsenic (As)-Dissolved			101.2		%		80-120	16-MAY-19
Barium (Ba)-Dissolved			103.8		%		80-120	16-MAY-19
Beryllium (Be)-Dissolved			103.1		%		80-120	16-MAY-19
Bismuth (Bi)-Dissolved			105.4		%		80-120	16-MAY-19
Boron (B)-Dissolved			103.5		%		80-120	16-MAY-19
Cadmium (Cd)-Dissolved			103.6		%		80-120	16-MAY-19
Calcium (Ca)-Dissolved			103.9		%		80-120	16-MAY-19
Cesium (Cs)-Dissolved			99.3		%		80-120	16-MAY-19
Chromium (Cr)-Dissolved			99.97		%		80-120	16-MAY-19
Cobalt (Co)-Dissolved			99.8		%		80-120	16-MAY-19
Copper (Cu)-Dissolved			109.4		%		80-120	16-MAY-19
Iron (Fe)-Dissolved			93.5		%		80-120	16-MAY-19
Lead (Pb)-Dissolved			102.8		%		80-120	16-MAY-19
Lithium (Li)-Dissolved			104.9		%		80-120	16-MAY-19
Magnesium (Mg)-Dissolved			112.0		%		80-120	16-MAY-19
Manganese (Mn)-Dissolved			102.3		%		80-120	16-MAY-19
Molybdenum (Mo)-Dissolved			102.5		%		80-120	16-MAY-19
Nickel (Ni)-Dissolved			99.5		%		80-120	16-MAY-19
Phosphorus (P)-Dissolved			110.0		%		80-120	16-MAY-19
Potassium (K)-Dissolved			105.4		%		80-120	16-MAY-19
Rubidium (Rb)-Dissolved			102.8		%		80-120	16-MAY-19
Selenium (Se)-Dissolved			104.3		%		80-120	16-MAY-19
Silicon (Si)-Dissolved			102.4		%		80-120	16-MAY-19
Silver (Ag)-Dissolved			97.8		%		80-120	16-MAY-19
Sodium (Na)-Dissolved			104.5		%		80-120	16-MAY-19
Strontium (Sr)-Dissolved			101.5		%		80-120	16-MAY-19
Sulfur (S)-Dissolved			113.8		%		80-120	16-MAY-19
Tellurium (Te)-Dissolved			104.1		%		80-120	16-MAY-19
Thallium (Tl)-Dissolved			103.6		%		80-120	16-MAY-19
Thorium (Th)-Dissolved			99.5		%		80-120	16-MAY-19
Tin (Sn)-Dissolved			102.6		%		80-120	16-MAY-19
Titanium (Ti)-Dissolved			101.4		%		80-120	16-MAY-19



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Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
MET-D-CCMS-WP		Water						
Batch	R4636867							
WG3051624-2 LCS								
Tungsten (W)-Dissolved			105.1		%		80-120	16-MAY-19
Uranium (U)-Dissolved			104.8		%		80-120	16-MAY-19
Vanadium (V)-Dissolved			103.6		%		80-120	16-MAY-19
Zinc (Zn)-Dissolved			104.1		%		80-120	16-MAY-19
Zirconium (Zr)-Dissolved			98.5		%		80-120	16-MAY-19
WG3051624-1 MB								
Aluminum (Al)-Dissolved			<0.0010		mg/L		0.001	16-MAY-19
Antimony (Sb)-Dissolved			<0.00010		mg/L		0.0001	16-MAY-19
Arsenic (As)-Dissolved			<0.00010		mg/L		0.0001	16-MAY-19
Barium (Ba)-Dissolved			<0.00010		mg/L		0.0001	16-MAY-19
Beryllium (Be)-Dissolved			<0.00010		mg/L		0.0001	16-MAY-19
Bismuth (Bi)-Dissolved			<0.000050		mg/L		0.00005	16-MAY-19
Boron (B)-Dissolved			<0.010		mg/L		0.01	16-MAY-19
Cadmium (Cd)-Dissolved			<0.0000050		mg/L		0.000005	16-MAY-19
Calcium (Ca)-Dissolved			<0.050		mg/L		0.05	16-MAY-19
Cesium (Cs)-Dissolved			<0.000010		mg/L		0.00001	16-MAY-19
Chromium (Cr)-Dissolved			<0.00010		mg/L		0.0001	16-MAY-19
Cobalt (Co)-Dissolved			<0.00010		mg/L		0.0001	16-MAY-19
Copper (Cu)-Dissolved			<0.00020		mg/L		0.0002	16-MAY-19
Iron (Fe)-Dissolved			<0.010		mg/L		0.01	16-MAY-19
Lead (Pb)-Dissolved			<0.000050		mg/L		0.00005	16-MAY-19
Lithium (Li)-Dissolved			<0.0010		mg/L		0.001	16-MAY-19
Magnesium (Mg)-Dissolved			<0.0050		mg/L		0.005	16-MAY-19
Manganese (Mn)-Dissolved			<0.00010		mg/L		0.0001	16-MAY-19
Molybdenum (Mo)-Dissolved			<0.000050		mg/L		0.00005	16-MAY-19
Nickel (Ni)-Dissolved			<0.00050		mg/L		0.0005	16-MAY-19
Phosphorus (P)-Dissolved			<0.030		mg/L		0.03	16-MAY-19
Potassium (K)-Dissolved			<0.050		mg/L		0.05	16-MAY-19
Rubidium (Rb)-Dissolved			<0.00020		mg/L		0.0002	16-MAY-19
Selenium (Se)-Dissolved			<0.000050		mg/L		0.00005	16-MAY-19
Silicon (Si)-Dissolved			<0.050		mg/L		0.05	16-MAY-19
Silver (Ag)-Dissolved			<0.000010		mg/L		0.00001	16-MAY-19
Sodium (Na)-Dissolved			<0.050		mg/L		0.05	16-MAY-19
Strontium (Sr)-Dissolved			<0.00010		mg/L		0.0001	16-MAY-19



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Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
MET-D-CCMS-WP		Water						
Batch	R4636867							
WG3051624-1	MB							
Sulfur (S)-Dissolved			<0.50		mg/L		0.5	16-MAY-19
Tellurium (Te)-Dissolved			<0.00020		mg/L		0.0002	16-MAY-19
Thallium (Tl)-Dissolved			<0.000010		mg/L		0.00001	16-MAY-19
Thorium (Th)-Dissolved			<0.00010		mg/L		0.0001	16-MAY-19
Tin (Sn)-Dissolved			<0.00010		mg/L		0.0001	16-MAY-19
Titanium (Ti)-Dissolved			<0.00030		mg/L		0.0003	16-MAY-19
Tungsten (W)-Dissolved			<0.00010		mg/L		0.0001	16-MAY-19
Uranium (U)-Dissolved			<0.000010		mg/L		0.00001	16-MAY-19
Vanadium (V)-Dissolved			<0.00050		mg/L		0.0005	16-MAY-19
Zinc (Zn)-Dissolved			<0.0010		mg/L		0.001	16-MAY-19
Zirconium (Zr)-Dissolved			<0.000060		mg/L		0.00006	16-MAY-19
PAH,PANH-WP		Water						
Batch	R4641977							
WG3052974-2	LCS							
1-Methyl Naphthalene			119.2		%		60-130	19-MAY-19
2-Methyl Naphthalene			110.1		%		60-130	19-MAY-19
Acenaphthene			125.0		%		60-130	19-MAY-19
Acenaphthylene			105.8		%		60-130	19-MAY-19
Anthracene			97.7		%		60-130	19-MAY-19
Acridine			100.4		%		60-130	19-MAY-19
Benzo(a)anthracene			91.9		%		60-130	19-MAY-19
Benzo(a)pyrene			88.7		%		60-130	19-MAY-19
Benzo(b&j)fluoranthene			91.4		%		60-130	19-MAY-19
Benzo(g,h,i)perylene			91.8		%		60-130	19-MAY-19
Benzo(k)fluoranthene			111.8		%		60-130	19-MAY-19
Chrysene			113.2		%		60-130	19-MAY-19
Dibenzo(a,h)anthracene			87.5		%		60-130	19-MAY-19
Fluoranthene			113.9		%		60-130	19-MAY-19
Fluorene			106.2		%		60-130	19-MAY-19
Indeno(1,2,3-cd)pyrene			78.2		%		60-130	19-MAY-19
Naphthalene			122.3		%		50-130	19-MAY-19
Phenanthrene			123.7		%		60-130	19-MAY-19
Pyrene			112.2		%		60-130	19-MAY-19
Quinoline			89.8		%		60-130	19-MAY-19



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Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
PAH,PANH-WP		Water						
Batch	R4641977							
WG3052974-1	MB							
1-Methyl Naphthalene			<0.000020		mg/L		0.00002	19-MAY-19
2-Methyl Naphthalene			<0.000020		mg/L		0.00002	19-MAY-19
Acenaphthene			<0.000020		mg/L		0.00002	19-MAY-19
Acenaphthylene			<0.000020		mg/L		0.00002	19-MAY-19
Anthracene			<0.000010		mg/L		0.00001	19-MAY-19
Acridine			<0.000020		mg/L		0.00002	19-MAY-19
Benzo(a)anthracene			<0.000010		mg/L		0.00001	19-MAY-19
Benzo(a)pyrene			<0.000005C		mg/L		0.000005	19-MAY-19
Benzo(b&j)fluoranthene			<0.000010		mg/L		0.00001	19-MAY-19
Benzo(g,h,i)perylene			<0.000020		mg/L		0.00002	19-MAY-19
Benzo(k)fluoranthene			<0.000010		mg/L		0.00001	19-MAY-19
Chrysene			<0.000020		mg/L		0.00002	19-MAY-19
Dibenzo(a,h)anthracene			<0.000005C		mg/L		0.000005	19-MAY-19
Fluoranthene			<0.000020		mg/L		0.00002	19-MAY-19
Fluorene			<0.000020		mg/L		0.00002	19-MAY-19
Indeno(1,2,3-cd)pyrene			<0.000010		mg/L		0.00001	19-MAY-19
Naphthalene			<0.000050		mg/L		0.00005	19-MAY-19
Phenanthrene			<0.000050		mg/L		0.00005	19-MAY-19
Pyrene			<0.000010		mg/L		0.00001	19-MAY-19
Quinoline			<0.000020		mg/L		0.00002	19-MAY-19
Surrogate: Acenaphthene d10			100.5		%		60-130	19-MAY-19
Surrogate: Acridine d9			89.5		%		60-130	19-MAY-19
Surrogate: Chrysene d12			108.4		%		60-130	19-MAY-19
Surrogate: Naphthalene d8			93.5		%		50-130	19-MAY-19
Surrogate: Phenanthrene d10			107.1		%		60-130	19-MAY-19
PEST-DIAZINON-WT		Water						
Batch	R4640195							
WG3054005-2	LCS							
Diazinon			89.7		%		60-130	22-MAY-19
WG3054005-1	MB							
Diazinon			<0.10		ug/L		0.1	22-MAY-19
Surrogate: 2-Fluorobiphenyl			91.1		%		40-130	22-MAY-19
Surrogate: d14-Terphenyl			78.8		%		40-130	22-MAY-19



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Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
PEST-DIAZINON-WT								
	Water							
Batch	R4641955							
WG3055549-2	LCS							
Diazinon			89.7		%		60-130	24-MAY-19
WG3055549-1	MB							
Diazinon			<0.10		ug/L		0.1	24-MAY-19
Surrogate: 2-Fluorobiphenyl			84.5		%		40-130	24-MAY-19
Surrogate: d14-Terphenyl			86.3		%		40-130	24-MAY-19
PHENOLS-4AAP-WT								
	Water							
Batch	R4639681							
WG3054396-18	LCS							
Phenols (4AAP)			94.6		%		85-115	21-MAY-19
WG3054396-17	MB							
Phenols (4AAP)			<0.0010		mg/L		0.001	21-MAY-19
TC,EC-QT97-WP								
	Water							
Batch	R4636556							
WG3050765-1	MB							
Total Coliforms			<1		MPN/100mL		1	15-MAY-19
Escherichia Coli			<1		MPN/100mL		1	15-MAY-19
VOC+F1-HSMS-WP								
	Water							
Batch	R4645483							
WG3058066-4	DUP	L2273858-1						
Acetone		<0.020	<0.020	RPD-NA	mg/L	N/A	30	25-MAY-19
Benzene		<0.00050	<0.00050	RPD-NA	mg/L	N/A	30	25-MAY-19
Bromobenzene		<0.00050	<0.00050	RPD-NA	mg/L	N/A	30	25-MAY-19
Bromochloromethane		<0.00050	<0.00050	RPD-NA	mg/L	N/A	30	25-MAY-19
Bromodichloromethane		<0.00050	<0.00050	RPD-NA	mg/L	N/A	30	25-MAY-19
Bromoform		<0.00050	<0.00050	RPD-NA	mg/L	N/A	30	25-MAY-19
Bromomethane		<0.0010	<0.0010	RPD-NA	mg/L	N/A	50	25-MAY-19
n-Butylbenzene		<0.00050	<0.00050	RPD-NA	mg/L	N/A	30	25-MAY-19
sec-Butylbenzene		<0.00050	<0.00050	RPD-NA	mg/L	N/A	30	25-MAY-19
tert-Butylbenzene		<0.00050	<0.00050	RPD-NA	mg/L	N/A	30	25-MAY-19
Carbon disulfide		<0.00050	<0.00050	RPD-NA	mg/L	N/A	30	25-MAY-19
Carbon Tetrachloride		<0.00050	<0.00050	RPD-NA	mg/L	N/A	30	25-MAY-19
Chlorobenzene		<0.00050	<0.00050	RPD-NA	mg/L	N/A	30	25-MAY-19
Chloroethane		<0.0010	<0.0010	RPD-NA	mg/L	N/A	50	25-MAY-19
Chloroform		<0.00050	<0.00050	RPD-NA	mg/L	N/A	30	25-MAY-19
Chloromethane		<0.0010	<0.0010	RPD-NA	mg/L	N/A	50	25-MAY-19

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Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
VOC+F1-HSMS-WP								
	Water							
Batch	R4645483							
WG3058066-4	DUP	L2273858-1						
2-Chlorotoluene		<0.020	<0.020	RPD-NA	mg/L	N/A	30	25-MAY-19
4-Chlorotoluene		<0.00050	<0.00050	RPD-NA	mg/L	N/A	30	25-MAY-19
Dibromochloromethane		<0.00050	<0.00050	RPD-NA	mg/L	N/A	30	25-MAY-19
1,2-Dibromo-3-chloropropane		<0.00050	<0.00050	RPD-NA	mg/L	N/A	30	25-MAY-19
1,2-Dibromoethane		<0.00050	<0.00050	RPD-NA	mg/L	N/A	30	25-MAY-19
Dibromomethane		<0.00050	<0.00050	RPD-NA	mg/L	N/A	30	25-MAY-19
1,2-Dichlorobenzene		<0.00050	<0.00050	RPD-NA	mg/L	N/A	30	25-MAY-19
1,3-Dichlorobenzene		<0.00050	<0.00050	RPD-NA	mg/L	N/A	30	25-MAY-19
1,4-Dichlorobenzene		<0.00050	<0.00050	RPD-NA	mg/L	N/A	30	25-MAY-19
Dichlorodifluoromethane		<0.0010	<0.0010	RPD-NA	mg/L	N/A	50	25-MAY-19
1,1-dichloroethane		<0.00050	<0.00050	RPD-NA	mg/L	N/A	30	25-MAY-19
1,2-Dichloroethane		<0.00050	<0.00050	RPD-NA	mg/L	N/A	30	25-MAY-19
1,1-dichloroethene		<0.00050	<0.00050	RPD-NA	mg/L	N/A	30	25-MAY-19
cis-1,2-Dichloroethene		<0.00050	<0.00050	RPD-NA	mg/L	N/A	30	25-MAY-19
trans-1,2-Dichloroethene		<0.00050	<0.00050	RPD-NA	mg/L	N/A	30	25-MAY-19
Dichloromethane		<0.00050	<0.00050	RPD-NA	mg/L	N/A	30	25-MAY-19
1,2-Dichloropropane		<0.00050	<0.00050	RPD-NA	mg/L	N/A	30	25-MAY-19
1,3-Dichloropropane		<0.00050	<0.00050	RPD-NA	mg/L	N/A	30	25-MAY-19
2,2-Dichloropropane		<0.0010	<0.0010	RPD-NA	mg/L	N/A	30	25-MAY-19
1,1-Dichloropropene		<0.00050	<0.00050	RPD-NA	mg/L	N/A	30	25-MAY-19
cis-1,3-Dichloropropene		<0.0010	<0.0010	RPD-NA	mg/L	N/A	30	25-MAY-19
trans-1,3-Dichloropropene		<0.0010	<0.0010	RPD-NA	mg/L	N/A	30	25-MAY-19
Ethylbenzene		<0.00050	<0.00050	RPD-NA	mg/L	N/A	30	25-MAY-19
F1		<0.10	<0.10	RPD-NA	mg/L	N/A	30	25-MAY-19
Hexachlorobutadiene		<0.00050	<0.00050	RPD-NA	mg/L	N/A	30	25-MAY-19
Hexane		<0.00050	<0.00050	RPD-NA	mg/L	N/A	30	25-MAY-19
2-Hexanone (Methyl butyl ketone)		<0.020	<0.020	RPD-NA	mg/L	N/A	30	25-MAY-19
Isopropylbenzene		<0.00050	<0.00050	RPD-NA	mg/L	N/A	30	25-MAY-19
4-Isopropyltoluene		<0.0010	<0.0010	RPD-NA	mg/L	N/A	30	25-MAY-19
MEK		<0.020	<0.020	RPD-NA	mg/L	N/A	30	25-MAY-19
MIBK		<0.020	<0.020	RPD-NA	mg/L	N/A	30	25-MAY-19
MTBE		<0.00050	<0.00050	RPD-NA	mg/L	N/A	30	25-MAY-19
Styrene		<0.00050	<0.00050	RPD-NA	mg/L	N/A	30	25-MAY-19
1,1,1,2-Tetrachloroethane		<0.00050	<0.00050	RPD-NA	mg/L	N/A	30	25-MAY-19



Quality Control Report

Workorder: L2273858

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Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
VOC+F1-HSMS-WP								
	Water							
Batch	R4645483							
WG3058066-4	DUP	L2273858-1						
1,1,2,2-Tetrachloroethane		<0.00050	<0.00050	RPD-NA	mg/L	N/A	30	25-MAY-19
Tetrachloroethene		<0.00050	<0.00050	RPD-NA	mg/L	N/A	30	25-MAY-19
Toluene		<0.00050	<0.00050	RPD-NA	mg/L	N/A	30	25-MAY-19
1,2,3-Trichlorobenzene		<0.00050	<0.00050	RPD-NA	mg/L	N/A	30	25-MAY-19
1,2,4-Trichlorobenzene		<0.00050	<0.00050	RPD-NA	mg/L	N/A	30	25-MAY-19
1,1,1-Trichloroethane		<0.00050	<0.00050	RPD-NA	mg/L	N/A	30	25-MAY-19
1,1,2-Trichloroethane		<0.00050	<0.00050	RPD-NA	mg/L	N/A	30	25-MAY-19
Trichloroethene		<0.00050	<0.00050	RPD-NA	mg/L	N/A	30	25-MAY-19
Trichlorofluoromethane		<0.0010	<0.0010	RPD-NA	mg/L	N/A	50	25-MAY-19
1,2,3-Trichloropropane		<0.00050	<0.00050	RPD-NA	mg/L	N/A	30	25-MAY-19
1,2,4-Trimethylbenzene		<0.00050	<0.00050	RPD-NA	mg/L	N/A	30	25-MAY-19
1,3,5-Trimethylbenzene		<0.00050	<0.00050	RPD-NA	mg/L	N/A	30	25-MAY-19
Vinyl Chloride		<0.00050	<0.00050	RPD-NA	mg/L	N/A	50	25-MAY-19
M+P-Xylenes		<0.00040	<0.00040	RPD-NA	mg/L	N/A	30	25-MAY-19
o-Xylene		<0.00030	<0.00030	RPD-NA	mg/L	N/A	30	25-MAY-19
WG3058066-2	LCS							
Acetone			91.3		%		70-130	25-MAY-19
Benzene			101.4		%		70-130	25-MAY-19
Bromobenzene			104.3		%		70-130	25-MAY-19
Bromochloromethane			99.8		%		70-130	25-MAY-19
Bromodichloromethane			103.1		%		70-130	25-MAY-19
Bromoform			97.9		%		70-130	25-MAY-19
Bromomethane			92.0		%		60-140	25-MAY-19
n-Butylbenzene			114.0		%		70-130	25-MAY-19
sec-Butylbenzene			105.7		%		70-130	25-MAY-19
tert-Butylbenzene			120.3		%		70-130	25-MAY-19
Carbon disulfide			83.7		%		70-130	25-MAY-19
Carbon Tetrachloride			107.0		%		70-130	25-MAY-19
Chlorobenzene			101.1		%		70-130	25-MAY-19
Chloroethane			116.5		%		60-140	25-MAY-19
Chloroform			105.3		%		70-130	25-MAY-19
Chloromethane			102.9		%		60-140	25-MAY-19
2-Chlorotoluene			110.2		%		70-130	25-MAY-19
4-Chlorotoluene			97.3		%		70-130	25-MAY-19

Quality Control Report

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Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
VOC+F1-HSMS-WP								
	Water							
Batch	R4645483							
WG3058066-2	LCS							
Dibromochloromethane			103.9		%		70-130	25-MAY-19
1,2-Dibromo-3-chloropropane			101.3		%		70-130	25-MAY-19
1,2-Dibromoethane			97.7		%		70-130	25-MAY-19
Dibromomethane			102.0		%		70-130	25-MAY-19
1,2-Dichlorobenzene			102.8		%		70-130	25-MAY-19
1,3-Dichlorobenzene			98.8		%		70-130	25-MAY-19
1,4-Dichlorobenzene			98.7		%		70-130	25-MAY-19
Dichlorodifluoromethane			125.5		%		60-140	25-MAY-19
1,1-dichloroethane			105.3		%		70-130	25-MAY-19
1,2-Dichloroethane			101.5		%		70-130	25-MAY-19
1,1-dichloroethene			96.5		%		70-130	25-MAY-19
cis-1,2-Dichloroethene			100.7		%		70-130	25-MAY-19
trans-1,2-Dichloroethene			93.7		%		70-130	25-MAY-19
Dichloromethane			100.0		%		70-130	25-MAY-19
1,2-Dichloropropane			102.3		%		70-130	25-MAY-19
1,3-Dichloropropane			102.0		%		70-130	25-MAY-19
2,2-Dichloropropane			94.6		%		70-130	25-MAY-19
1,1-Dichloropropene			100.3		%		70-130	25-MAY-19
cis-1,3-Dichloropropene			96.3		%		70-130	25-MAY-19
trans-1,3-Dichloropropene			95.4		%		70-130	25-MAY-19
Ethylbenzene			111.1		%		70-130	25-MAY-19
Hexachlorobutadiene			100.7		%		70-130	25-MAY-19
Hexane			94.2		%		70-130	25-MAY-19
2-Hexanone (Methyl butyl ketone)			102.5		%		70-130	25-MAY-19
Isopropylbenzene			115.9		%		70-130	25-MAY-19
4-Isopropyltoluene			104.0		%		70-130	25-MAY-19
MEK			98.5		%		70-130	25-MAY-19
MIBK			100.1		%		70-130	25-MAY-19
MTBE			107.9		%		70-130	25-MAY-19
Styrene			113.9		%		70-130	25-MAY-19
1,1,1,2-Tetrachloroethane			111.1		%		70-130	25-MAY-19
1,1,1,2,2-Tetrachloroethane			102.5		%		70-130	25-MAY-19
Tetrachloroethene			99.0		%		70-130	25-MAY-19
Toluene			104.9		%		70-130	25-MAY-19

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Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
VOC+F1-HSMS-WP								
	Water							
Batch	R4645483							
WG3058066-2	LCS							
1,2,3-Trichlorobenzene			105.0		%		70-130	25-MAY-19
1,2,4-Trichlorobenzene			99.1		%		70-130	25-MAY-19
1,1,1-Trichloroethane			109.5		%		70-130	25-MAY-19
1,1,2-Trichloroethane			101.0		%		70-130	25-MAY-19
Trichloroethene			102.9		%		70-130	25-MAY-19
Trichlorofluoromethane			107.6		%		60-140	25-MAY-19
1,2,3-Trichloropropane			102.0		%		70-130	25-MAY-19
1,2,4-Trimethylbenzene			101.3		%		70-130	25-MAY-19
1,3,5-Trimethylbenzene			106.3		%		70-130	25-MAY-19
Vinyl Chloride			108.0		%		60-140	25-MAY-19
M+P-Xylenes			109.0		%		70-130	25-MAY-19
o-Xylene			111.5		%		70-130	25-MAY-19
WG3058066-3	LCS							
F1			89.7		%		70-130	24-MAY-19
WG3058066-1	MB							
Acetone			<0.020		mg/L		0.02	25-MAY-19
Benzene			<0.00050		mg/L		0.0005	25-MAY-19
Bromobenzene			<0.00050		mg/L		0.0005	25-MAY-19
Bromochloromethane			<0.00050		mg/L		0.0005	25-MAY-19
Bromodichloromethane			<0.00050		mg/L		0.0005	25-MAY-19
Bromoform			<0.00050		mg/L		0.0005	25-MAY-19
Bromomethane			<0.0010		mg/L		0.001	25-MAY-19
n-Butylbenzene			<0.00050		mg/L		0.0005	25-MAY-19
sec-Butylbenzene			<0.00050		mg/L		0.0005	25-MAY-19
tert-Butylbenzene			<0.00050		mg/L		0.0005	25-MAY-19
Carbon disulfide			<0.00050		mg/L		0.0005	25-MAY-19
Carbon Tetrachloride			<0.00050		mg/L		0.0005	25-MAY-19
Chlorobenzene			<0.00050		mg/L		0.0005	25-MAY-19
Chloroethane			<0.0010		mg/L		0.001	25-MAY-19
Chloroform			<0.00050		mg/L		0.0005	25-MAY-19
Chloromethane			<0.0010		mg/L		0.001	25-MAY-19
2-Chlorotoluene			<0.020		mg/L		0.02	25-MAY-19
4-Chlorotoluene			<0.00050		mg/L		0.0005	25-MAY-19
Dibromochloromethane			<0.00050		mg/L		0.0005	25-MAY-19
1,2-Dibromo-3-chloropropane			<0.00050		mg/L		0.0005	25-MAY-19

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Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
VOC+F1-HSMS-WP								
	Water							
Batch	R4645483							
WG3058066-1	MB							
1,2-Dibromoethane			<0.00050		mg/L		0.0005	25-MAY-19
Dibromomethane			<0.00050		mg/L		0.0005	25-MAY-19
1,2-Dichlorobenzene			<0.00050		mg/L		0.0005	25-MAY-19
1,3-Dichlorobenzene			<0.00050		mg/L		0.0005	25-MAY-19
1,4-Dichlorobenzene			<0.00050		mg/L		0.0005	25-MAY-19
Dichlorodifluoromethane			<0.0010		mg/L		0.001	25-MAY-19
1,1-dichloroethane			<0.00050		mg/L		0.0005	25-MAY-19
1,2-Dichloroethane			<0.00050		mg/L		0.0005	25-MAY-19
1,1-dichloroethene			<0.00050		mg/L		0.0005	25-MAY-19
cis-1,2-Dichloroethene			<0.00050		mg/L		0.0005	25-MAY-19
trans-1,2-Dichloroethene			<0.00050		mg/L		0.0005	25-MAY-19
Dichloromethane			<0.00050		mg/L		0.0005	25-MAY-19
1,2-Dichloropropane			<0.00050		mg/L		0.0005	25-MAY-19
1,3-Dichloropropane			<0.00050		mg/L		0.0005	25-MAY-19
2,2-Dichloropropane			<0.00050		mg/L		0.0005	25-MAY-19
1,1-Dichloropropene			<0.00050		mg/L		0.0005	25-MAY-19
cis-1,3-Dichloropropene			<0.00050		mg/L		0.0005	25-MAY-19
trans-1,3-Dichloropropene			<0.00050		mg/L		0.0005	25-MAY-19
Ethylbenzene			<0.00050		mg/L		0.0005	25-MAY-19
F1			<0.10		mg/L		0.1	25-MAY-19
Hexachlorobutadiene			<0.00050		mg/L		0.0005	25-MAY-19
Hexane			<0.00050		mg/L		0.0005	25-MAY-19
2-Hexanone (Methyl butyl ketone)			<0.020		mg/L		0.02	25-MAY-19
Isopropylbenzene			<0.00050		mg/L		0.0005	25-MAY-19
4-Isopropyltoluene			<0.0010		mg/L		0.001	25-MAY-19
MEK			<0.020		mg/L		0.02	25-MAY-19
MIBK			<0.020		mg/L		0.02	25-MAY-19
MTBE			<0.00050		mg/L		0.0005	25-MAY-19
Styrene			<0.00050		mg/L		0.0005	25-MAY-19
1,1,1,2-Tetrachloroethane			<0.00050		mg/L		0.0005	25-MAY-19
1,1,1,2,2-Tetrachloroethane			<0.00050		mg/L		0.0005	25-MAY-19
Tetrachloroethene			<0.00050		mg/L		0.0005	25-MAY-19
Toluene			<0.00050		mg/L		0.0005	25-MAY-19
1,2,3-Trichlorobenzene			<0.00050		mg/L		0.0005	25-MAY-19



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Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
VOC+F1-HSMS-WP	Water							
Batch	R4645483							
WG3058066-1	MB							
1,2,4-Trichlorobenzene			<0.00050		mg/L		0.0005	25-MAY-19
1,1,1-Trichloroethane			<0.00050		mg/L		0.0005	25-MAY-19
1,1,2-Trichloroethane			<0.00050		mg/L		0.0005	25-MAY-19
Trichloroethene			<0.00050		mg/L		0.0005	25-MAY-19
Trichlorofluoromethane			<0.0010		mg/L		0.001	25-MAY-19
1,2,3-Trichloropropane			<0.00050		mg/L		0.0005	25-MAY-19
1,2,4-Trimethylbenzene			<0.00050		mg/L		0.0005	25-MAY-19
1,3,5-Trimethylbenzene			<0.00050		mg/L		0.0005	25-MAY-19
Vinyl Chloride			<0.00050		mg/L		0.0005	25-MAY-19
M+P-Xylenes			<0.00040		mg/L		0.0004	25-MAY-19
o-Xylene			<0.00030		mg/L		0.0003	25-MAY-19
Surrogate: 4-Bromofluorobenzene (SS)			91.9		%		70-130	25-MAY-19
Surrogate: 1,4-Difluorobenzene (SS)			97.5		%		70-130	25-MAY-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
RPD-NA	Relative Percent Difference Not Available due to result(s) being less than detection limit.

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.

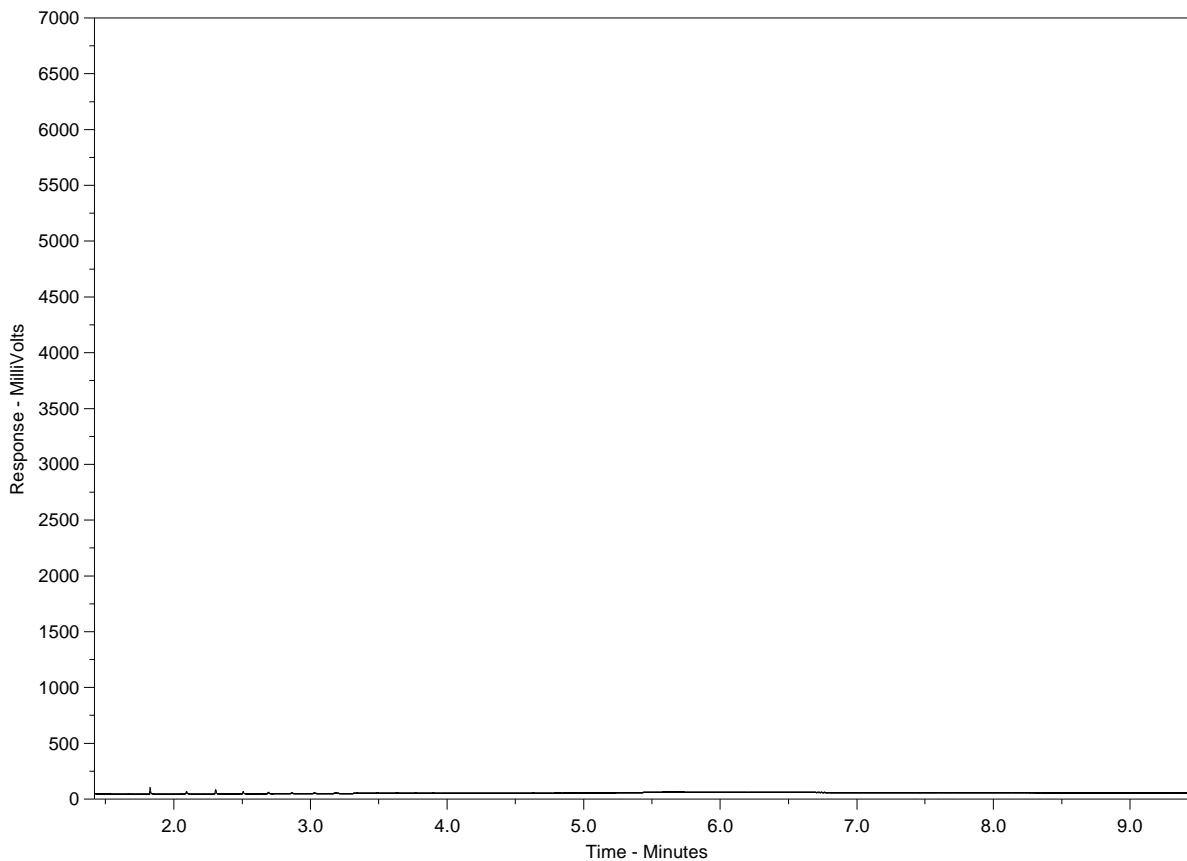
The ALS Quality Control Report is provided to ALS clients upon request. ALS includes comprehensive QC checks with every analysis to ensure our high standards of quality are met. Each QC result has a known or expected target value, which is compared against pre-determined data quality objectives to provide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

CCME F2-F4 HYDROCARBON DISTRIBUTION REPORT



ALS Sample ID: L2273858-1
 Client Sample ID: GWQ25-W9



← 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.

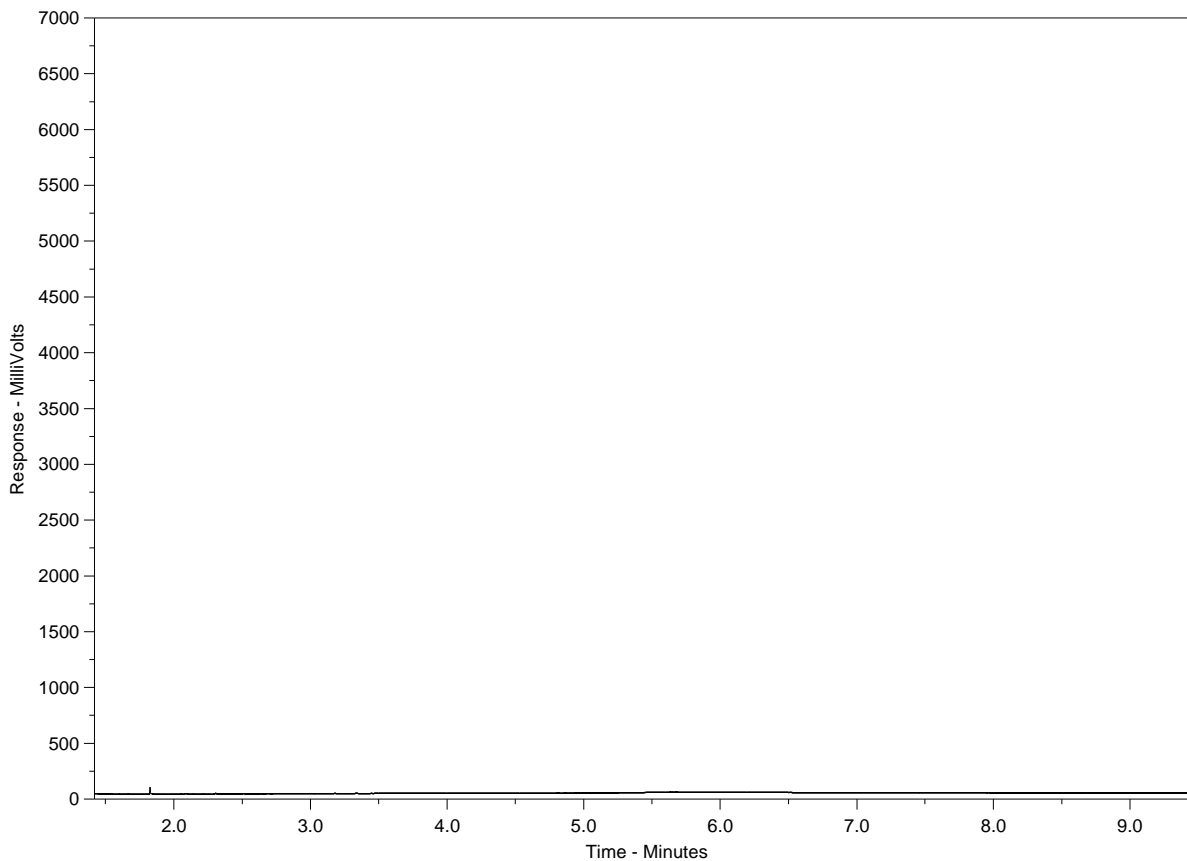
Peak heights in this report are a function of the sample concentration, the sample amount extracted, the sample dilution factor, and the scale at left.

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: L2273858-2
 Client Sample ID: GWQ25-W10



← 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.

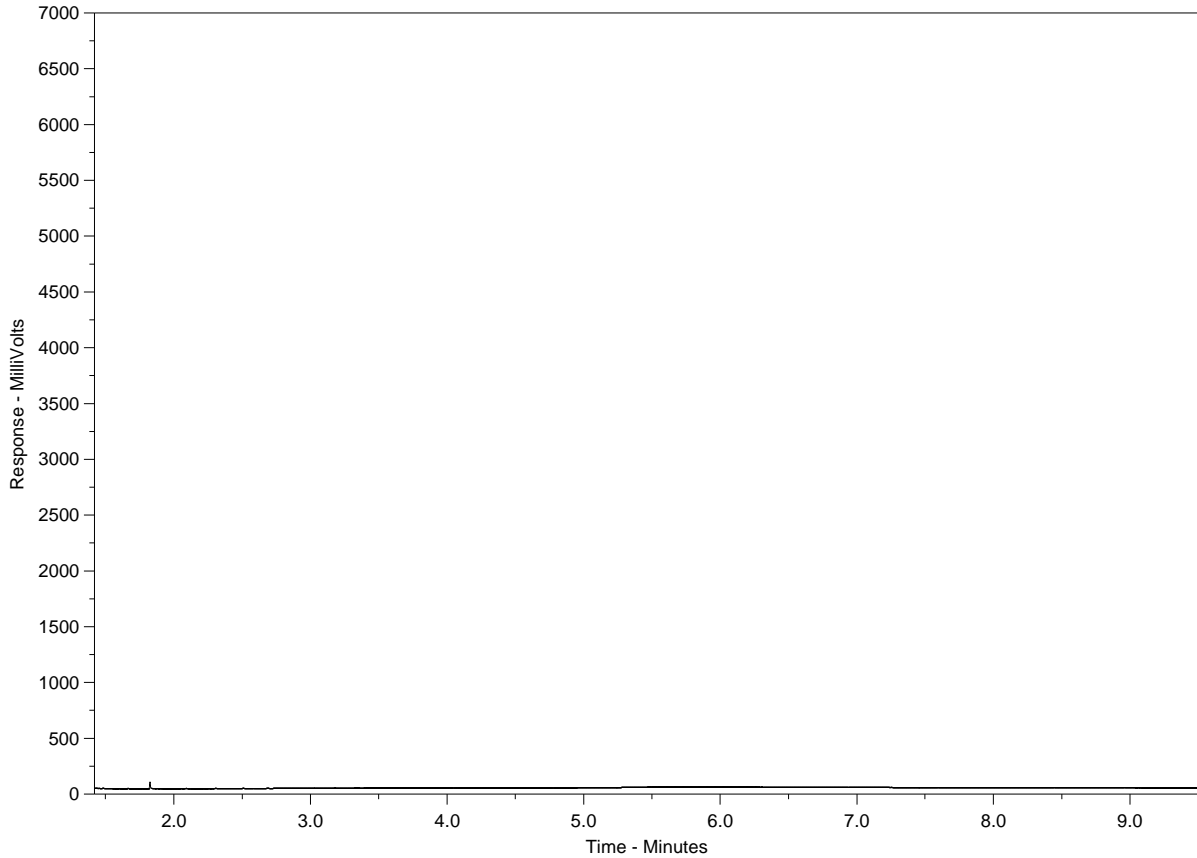
Peak heights in this report are a function of the sample concentration, the sample amount extracted, the sample dilution factor, and the scale at left.

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: L2273858-3
 Client Sample ID: GWQ25-W11



← 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.

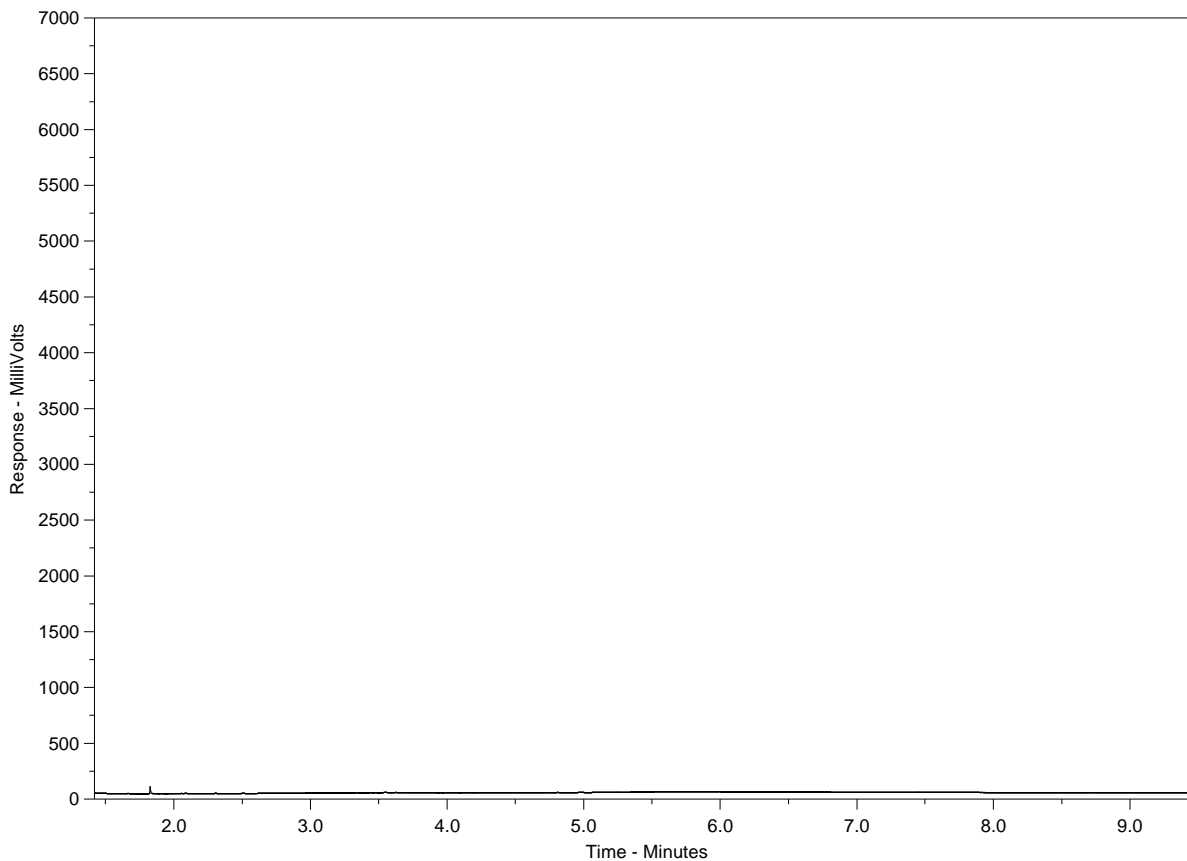
Peak heights in this report are a function of the sample concentration, the sample amount extracted, the sample dilution factor, and the scale at left.

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: L2273858-4
 Client Sample ID: GWQ25-W12



← 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.



Chain of Custody (COC) / Analytical Request Form

Canada Toll Free: 1 800 668 9878

www.alsglobal.com



COC Number: 15 -

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Report To Contact and company name below will appear on the final report		Report Format			In all E&P TATs with your Alt - surcharges will apply																																																																																																																							
Company:	City of Winnipeg	Select Report Format: <input checked="" type="checkbox"/> PDF <input type="checkbox"/> EXCEL <input type="checkbox"/> EDD (DIGITAL)			Regular [R] <input type="checkbox"/> Standard TAT if received by 3 pm - business days - no surcharges apply																																																																																																																							
Contact:	Chris Kozak	Quality Control (QC) Report with Report <input checked="" type="checkbox"/> YES <input type="checkbox"/> NO			PRIORITY (Business Days)	4 day [P4] <input type="checkbox"/>				EMERGENCY	1 Business day [E1] <input type="checkbox"/>																																																																																																																	
Phone:	204-986-2384	<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			Date and Time Required for all E&P TATs:																																																																																																																							
Street:	1120 Waverly Street	Email 1 or Fax: ckozak@winnipeg.ca			For tests that can not be performed according to the service level selected, you will be contacted.																																																																																																																							
City/Province:	Winnipeg, Manitoba	Email 2			Analysis Request Indicate Filtered (F), Preserved (P) or Filtered and Preserved (F/P) below																																																																																																																							
Postal Code:	R3T 0P4	Email 3																																																																																																																										
Invoice To	Same as Report To <input type="checkbox"/> YES <input type="checkbox"/> NO	Invoice Distribution			<table border="1" style="width:100%; border-collapse: collapse;"> <tr> <td style="writing-mode: vertical-rl; transform: rotate(180deg);">CN-T-CFA-WP</td> <td style="writing-mode: vertical-rl; transform: rotate(180deg);">PEST-DIAZINON-WT</td> <td style="writing-mode: vertical-rl; transform: rotate(180deg);">HERBSCR-LCMS-WT</td> <td style="writing-mode: vertical-rl; transform: rotate(180deg);">TC,FC,EC-OT97-WP</td> <td style="writing-mode: vertical-rl; transform: rotate(180deg);">MET-D-CCMS-WP (DISSOLVED)</td> <td style="writing-mode: vertical-rl; transform: rotate(180deg);">HG-T-CVAA-WP (TOTAL)</td> <td style="writing-mode: vertical-rl; transform: rotate(180deg);">CR-CRG-IC-WT</td> <td style="writing-mode: vertical-rl; transform: rotate(180deg);">PHENOLS-4AAP-WT</td> <td style="writing-mode: vertical-rl; transform: rotate(180deg);">VOC,F1-F4-WP</td> <td style="writing-mode: vertical-rl; transform: rotate(180deg);">PAH,PANH-WP</td> <td style="writing-mode: vertical-rl; transform: rotate(180deg);">Number of Containers</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></tr> <tr><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></tr> <tr><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></tr> <tr><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></tr> <tr><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></tr> </table>										CN-T-CFA-WP	PEST-DIAZINON-WT	HERBSCR-LCMS-WT	TC,FC,EC-OT97-WP	MET-D-CCMS-WP (DISSOLVED)	HG-T-CVAA-WP (TOTAL)	CR-CRG-IC-WT	PHENOLS-4AAP-WT	VOC,F1-F4-WP	PAH,PANH-WP	Number of Containers																																																																																																			
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Copy of Invoice with Report <input type="checkbox"/> YES <input type="checkbox"/> NO		Select Invoice Distribution: <input type="checkbox"/> EMAIL <input checked="" type="checkbox"/> MAIL <input type="checkbox"/> FAX																																																																																																																										
Company:		Email 1 or Fax																																																																																																																										
Contact:		Email 2																																																																																																																										
Project Information		Oil and Gas Required Fields (client use)																																																																																																																										
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Job #:	Section B - BRRMF Groundwater	Major/Minor Code:	Routing Code:																																																																																																																									
PO / AFE:		Requisitioner:																																																																																																																										
LSD:		Location:																																																																																																																										
ALS Lab Work Order # (lab use only)	L2273858	ALS Contact:	Sampler:																																																																																																																									
ALS Sample # (lab use only)	Sample Identification and/or Coordinates (This description will appear on the report)	Date (dd-mm-yy)	Time (hh:mm)	Sample Type																																																																																																																								
1	W9 #202737	15-05-19	10:00	WATER																																																																																																																								
2	W10 #202745	15-05-19	10:38	WATER																																																																																																																								
3	W11 #202738	15-05-19	11:18	WATER																																																																																																																								
4	W12 #202746	15-05-19	12:10	WATER																																																																																																																								

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 type="checkbox"/> NO					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 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"/>				
					INITIAL COOLER TEMPERATURES °C: 11.6				
					FINAL COOLER TEMPERATURES °C:				
SHIPMENT RELEASE (client use)		INITIAL SHIPMENT RECEPTION (lab use only)			FINAL SHIPMENT RECEPTION (lab use only)				
Released by: AC	Date: May 15/19	Time: 2:15	Received by: AH	Date: May 15	Time: 2:15	Received by:	Date:	Time:	

REFER TO BACK PAGE FOR ALS LOCATIONS AND SAMPLING INFORMATION
 Failure to complete all portions of this form may delay analysis. Please fill in this form LEGIBLY. By the use of this form the user acknowledges and agrees with the Terms and Conditions as specified on the back page of the white - report copy.
 1. If any water samples are taken from a Regulated Drinking Water (DW) System, please submit using an Authorized DW COC form.



City of Winnipeg - Solid Waste Services Div
(1120 Waverley)
ATTN: CHRIS KOZAK
Solid Waste Services Division
1120 Waverley Street
Winnipeg MB R3T 0P4

Date Received: 16-MAY-19
Report Date: 28-MAY-19 12:07 (MT)
Version: FINAL

Client Phone: 204-986-2384

Certificate of Analysis

Lab Work Order #: L2274487
Project P.O. #: NOT SUBMITTED
Job Reference: SECTION B - BRRMF GROUNDWATER
C of C Numbers:
Legal Site Desc:

Hua Wo
Chemistry Laboratory Manager

[This report shall not be reproduced except in full without the written authority of the Laboratory.]

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
L2274487-1 4N34 DR							
Sampled By: CLIENT on 16-MAY-19 @ 10:50							
Matrix: WATER							
Miscellaneous Parameters							
Chromium (VI)-Dissolved	<1.0		1.0	ug/L		17-MAY-19	R4638667
Mercury (Hg)-Total	0.0250		0.0050	ug/L	21-MAY-19	23-MAY-19	R4642548
Phenols (4AAP)	<1.0		1.0	ug/L		23-MAY-19	R4641227
Xylenes (Total)	<0.50		0.50	ug/L		28-MAY-19	
Cyanide, Total	<1.0		1.0	ug/L		22-MAY-19	R4641107
Total THMs	<1.0		1.0	ug/L		28-MAY-19	
Dissolved Metals in Water by CRC ICPMS							
Dissolved Metals Filtration Location	FIELD					17-MAY-19	R4637566
Aluminum (Al)-Dissolved	4.7		1.0	ug/L	17-MAY-19	17-MAY-19	R4638587
Antimony (Sb)-Dissolved	<0.10		0.10	ug/L	17-MAY-19	17-MAY-19	R4638587
Arsenic (As)-Dissolved	2.09		0.10	ug/L	17-MAY-19	17-MAY-19	R4638587
Barium (Ba)-Dissolved	10.7		0.10	ug/L	17-MAY-19	17-MAY-19	R4638587
Beryllium (Be)-Dissolved	<0.10		0.10	ug/L	17-MAY-19	17-MAY-19	R4638587
Bismuth (Bi)-Dissolved	<0.050		0.050	ug/L	17-MAY-19	17-MAY-19	R4638587
Boron (B)-Dissolved	496		10	ug/L	17-MAY-19	17-MAY-19	R4638587
Cadmium (Cd)-Dissolved	0.0182		0.0050	ug/L	17-MAY-19	17-MAY-19	R4638587
Calcium (Ca)-Dissolved	457000		50	ug/L	17-MAY-19	17-MAY-19	R4638587
Cesium (Cs)-Dissolved	0.014		0.010	ug/L	17-MAY-19	17-MAY-19	R4638587
Chromium (Cr)-Dissolved	<0.10		0.10	ug/L	17-MAY-19	17-MAY-19	R4638587
Cobalt (Co)-Dissolved	1.95		0.10	ug/L	17-MAY-19	17-MAY-19	R4638587
Copper (Cu)-Dissolved	0.59		0.20	ug/L	17-MAY-19	17-MAY-19	R4638587
Iron (Fe)-Dissolved	125		10	ug/L	17-MAY-19	17-MAY-19	R4638587
Lead (Pb)-Dissolved	<0.050		0.050	ug/L	17-MAY-19	17-MAY-19	R4638587
Lithium (Li)-Dissolved	470		100	ug/L	17-MAY-19	17-MAY-19	R4638587
Magnesium (Mg)-Dissolved	468000		5.0	ug/L	17-MAY-19	17-MAY-19	R4638587
Manganese (Mn)-Dissolved	62.4		0.10	ug/L	17-MAY-19	17-MAY-19	R4638587
Molybdenum (Mo)-Dissolved	1.26		0.050	ug/L	17-MAY-19	17-MAY-19	R4638587
Nickel (Ni)-Dissolved	5.08		0.50	ug/L	17-MAY-19	17-MAY-19	R4638587
Phosphorus (P)-Dissolved	<30		30	ug/L	17-MAY-19	17-MAY-19	R4638587
Potassium (K)-Dissolved	16200		50	ug/L	17-MAY-19	17-MAY-19	R4638587
Rubidium (Rb)-Dissolved	3.59		0.20	ug/L	17-MAY-19	17-MAY-19	R4638587
Selenium (Se)-Dissolved	0.115		0.050	ug/L	17-MAY-19	17-MAY-19	R4638587
Silicon (Si)-Dissolved	9420		50	ug/L	17-MAY-19	17-MAY-19	R4638587
Silver (Ag)-Dissolved	0.013		0.010	ug/L	17-MAY-19	17-MAY-19	R4638587
Sodium (Na)-Dissolved	598000		5000	ug/L	17-MAY-19	17-MAY-19	R4638587
Strontium (Sr)-Dissolved	4100		10	ug/L	17-MAY-19	17-MAY-19	R4638587
Sulfur (S)-Dissolved	987000		50000	ug/L	17-MAY-19	17-MAY-19	R4638587
Tellurium (Te)-Dissolved	<0.20		0.20	ug/L	17-MAY-19	17-MAY-19	R4638587
Thallium (Tl)-Dissolved	0.014		0.010	ug/L	17-MAY-19	17-MAY-19	R4638587
Thorium (Th)-Dissolved	<0.10		0.10	ug/L	17-MAY-19	17-MAY-19	R4638587
Tin (Sn)-Dissolved	<0.10		0.10	ug/L	17-MAY-19	17-MAY-19	R4638587
Titanium (Ti)-Dissolved	<0.30		0.30	ug/L	17-MAY-19	17-MAY-19	R4638587
Tungsten (W)-Dissolved	<0.10		0.10	ug/L	17-MAY-19	17-MAY-19	R4638587
Uranium (U)-Dissolved	30.2		0.010	ug/L	17-MAY-19	17-MAY-19	R4638587
Vanadium (V)-Dissolved	<0.50		0.50	ug/L	17-MAY-19	17-MAY-19	R4638587
Zinc (Zn)-Dissolved	2.6		1.0	ug/L	17-MAY-19	17-MAY-19	R4638587
Zirconium (Zr)-Dissolved	0.183		0.060	ug/L	17-MAY-19	17-MAY-19	R4638587
Polyaromatic Hydrocarbons (PAHs)							
1-Methyl Naphthalene	<0.020		0.020	ug/L	17-MAY-19	19-MAY-19	R4641977
2-Methyl Naphthalene	<0.020		0.020	ug/L	17-MAY-19	19-MAY-19	R4641977
Acenaphthene	<0.020		0.020	ug/L	17-MAY-19	19-MAY-19	R4641977

* 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
L2274487-1 4N34 DR							
Sampled By: CLIENT on 16-MAY-19 @ 10:50							
Matrix: WATER							
Polyaromatic Hydrocarbons (PAHs)							
Acenaphthylene	<0.020		0.020	ug/L	17-MAY-19	19-MAY-19	R4641977
Anthracene	<0.010		0.010	ug/L	17-MAY-19	19-MAY-19	R4641977
Acridine	<0.020		0.020	ug/L	17-MAY-19	19-MAY-19	R4641977
Benzo(a)anthracene	<0.010		0.010	ug/L	17-MAY-19	19-MAY-19	R4641977
Benzo(a)pyrene	<0.0050		0.0050	ug/L	17-MAY-19	19-MAY-19	R4641977
Benzo(b&j)fluoranthene	<0.010		0.010	ug/L	17-MAY-19	19-MAY-19	R4641977
Benzo(g,h,i)perylene	<0.020		0.020	ug/L	17-MAY-19	19-MAY-19	R4641977
Benzo(k)fluoranthene	<0.010		0.010	ug/L	17-MAY-19	19-MAY-19	R4641977
Chrysene	<0.020		0.020	ug/L	17-MAY-19	19-MAY-19	R4641977
Dibenzo(a,h)anthracene	<0.0050		0.0050	ug/L	17-MAY-19	19-MAY-19	R4641977
Fluoranthene	<0.020		0.020	ug/L	17-MAY-19	19-MAY-19	R4641977
Fluorene	<0.020		0.020	ug/L	17-MAY-19	19-MAY-19	R4641977
Indeno(1,2,3-cd)pyrene	<0.010		0.010	ug/L	17-MAY-19	19-MAY-19	R4641977
Naphthalene	<0.050		0.050	ug/L	17-MAY-19	19-MAY-19	R4641977
Phenanthrene	<0.050		0.050	ug/L	17-MAY-19	19-MAY-19	R4641977
Pyrene	<0.010		0.010	ug/L	17-MAY-19	19-MAY-19	R4641977
Quinoline	<0.020		0.020	ug/L	17-MAY-19	19-MAY-19	R4641977
B(a)P Total Potency Equivalent	<0.030		0.030	ug/L	17-MAY-19	19-MAY-19	R4641977
Surrogate: Acenaphthene d10	100.3		60-130	%	17-MAY-19	19-MAY-19	R4641977
Surrogate: Acridine d9	87.8		60-130	%	17-MAY-19	19-MAY-19	R4641977
Surrogate: Chrysene d12	99.1		60-130	%	17-MAY-19	19-MAY-19	R4641977
Surrogate: Naphthalene d8	94.5		50-130	%	17-MAY-19	19-MAY-19	R4641977
Surrogate: Phenanthrene d10	106.4		60-130	%	17-MAY-19	19-MAY-19	R4641977
Herbicides in Water							
Clopyralid	<1.0	DLM	1.0	ug/L	22-MAY-19	22-MAY-19	R4641179
Dicamba	<1.0	DLM	1.0	ug/L	22-MAY-19	22-MAY-19	R4641179
Mecoprop	<0.10		0.10	ug/L	22-MAY-19	22-MAY-19	R4641179
MCPA	<0.10		0.10	ug/L	22-MAY-19	22-MAY-19	R4641179
2,4-D	<0.10		0.10	ug/L	22-MAY-19	22-MAY-19	R4641179
Bromoxynil	<0.10		0.10	ug/L	22-MAY-19	22-MAY-19	R4641179
Triclopyr	<0.10		0.10	ug/L	22-MAY-19	22-MAY-19	R4641179
2,4,5-T	<1.0	DLM	1.0	ug/L	22-MAY-19	22-MAY-19	R4641179
2,4,5-TP	<1.0	DLM	1.0	ug/L	22-MAY-19	22-MAY-19	R4641179
Picloram	<1.0	DLM	1.0	ug/L	22-MAY-19	22-MAY-19	R4641179
2,4-DB	<0.10		0.10	ug/L	22-MAY-19	22-MAY-19	R4641179
2,4-DP	<0.10		0.10	ug/L	22-MAY-19	22-MAY-19	R4641179
Dinoseb	<0.10		0.10	ug/L	22-MAY-19	22-MAY-19	R4641179
MCPB	<0.10		0.10	ug/L	22-MAY-19	22-MAY-19	R4641179
Surrogate: 2,4-Dichlorophenylacetic Acid	112.0		50-130	%	22-MAY-19	22-MAY-19	R4641179
Miscellaneous Pesticides							
Diazinon	<0.10		0.10	ug/L	22-MAY-19	24-MAY-19	R4641955
Surrogate: 2-Fluorobiphenyl	79.7		40-130	%	22-MAY-19	24-MAY-19	R4641955
Surrogate: d14-Terphenyl	72.2		40-130	%	22-MAY-19	24-MAY-19	R4641955
VOC plus F1 to F4							
CCME PHC F2-F4 in Water							
F2 (C10-C16)	<100		100	ug/L	17-MAY-19	17-MAY-19	R4637345
F3 (C16-C34)	<250		250	ug/L	17-MAY-19	17-MAY-19	R4637345
F4 (C34-C50)	<250		250	ug/L	17-MAY-19	17-MAY-19	R4637345
Surrogate: 2-Bromobenzotrifluoride	92.8		60-140	%	17-MAY-19	17-MAY-19	R4637345
CCME Total Hydrocarbons							
F1-BTEX	<100		100	ug/L		28-MAY-19	
F2-Naphth	<100		100	ug/L		28-MAY-19	

* 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
L2274487-1 4N34 DR							
Sampled By: CLIENT on 16-MAY-19 @ 10:50							
Matrix: WATER							
CCME Total Hydrocarbons							
F3-PAH	<250		250	ug/L		28-MAY-19	
Total Hydrocarbons (C6-C50)	<380		380	ug/L		28-MAY-19	
VOC plus F1 by GCMS							
Acetone	<20		20	ug/L		25-MAY-19	R4645483
Benzene	<0.50		0.50	ug/L		25-MAY-19	R4645483
Bromobenzene	<0.50		0.50	ug/L		25-MAY-19	R4645483
Bromochloromethane	<0.50		0.50	ug/L		25-MAY-19	R4645483
Bromodichloromethane	<0.50		0.50	ug/L		25-MAY-19	R4645483
Bromoform	<0.50		0.50	ug/L		25-MAY-19	R4645483
Bromomethane	<1.0		1.0	ug/L		25-MAY-19	R4645483
n-Butylbenzene	<0.50		0.50	ug/L		25-MAY-19	R4645483
sec-Butylbenzene	<0.50		0.50	ug/L		25-MAY-19	R4645483
tert-Butylbenzene	<0.50		0.50	ug/L		25-MAY-19	R4645483
Carbon disulfide	<0.50		0.50	ug/L		25-MAY-19	R4645483
Carbon Tetrachloride	<0.50		0.50	ug/L		25-MAY-19	R4645483
Chlorobenzene	<0.50		0.50	ug/L		25-MAY-19	R4645483
Chloroethane	<1.0		1.0	ug/L		25-MAY-19	R4645483
Chloroform	<0.50		0.50	ug/L		25-MAY-19	R4645483
Chloromethane	<1.0		1.0	ug/L		25-MAY-19	R4645483
2-Chlorotoluene	<20		20	ug/L		25-MAY-19	R4645483
4-Chlorotoluene	<0.50		0.50	ug/L		25-MAY-19	R4645483
Dibromochloromethane	<0.50		0.50	ug/L		25-MAY-19	R4645483
1,2-Dibromo-3-chloropropane	<0.50		0.50	ug/L		25-MAY-19	R4645483
1,2-Dibromoethane	<0.50		0.50	ug/L		25-MAY-19	R4645483
Dibromomethane	<0.50		0.50	ug/L		25-MAY-19	R4645483
1,2-Dichlorobenzene	<0.50		0.50	ug/L		25-MAY-19	R4645483
1,3-Dichlorobenzene	<0.50		0.50	ug/L		25-MAY-19	R4645483
1,4-Dichlorobenzene	<0.50		0.50	ug/L		25-MAY-19	R4645483
Dichlorodifluoromethane	<1.0		1.0	ug/L		25-MAY-19	R4645483
1,1-dichloroethane	<0.50		0.50	ug/L		25-MAY-19	R4645483
1,2-Dichloroethane	<0.50		0.50	ug/L		25-MAY-19	R4645483
1,1-dichloroethene	<0.50		0.50	ug/L		25-MAY-19	R4645483
cis-1,2-Dichloroethene	<0.50		0.50	ug/L		25-MAY-19	R4645483
trans-1,2-Dichloroethene	<0.50		0.50	ug/L		25-MAY-19	R4645483
Dichloromethane	<0.50		0.50	ug/L		25-MAY-19	R4645483
1,2-Dichloropropane	<0.50		0.50	ug/L		25-MAY-19	R4645483
1,3-Dichloropropane	<0.50		0.50	ug/L		25-MAY-19	R4645483
2,2-Dichloropropane	<1.0	DLM	1.0	ug/L		25-MAY-19	R4645483
1,1-Dichloropropene	<0.50		0.50	ug/L		25-MAY-19	R4645483
cis-1,3-Dichloropropene	<1.0	DLM	1.0	ug/L		25-MAY-19	R4645483
trans-1,3-Dichloropropene	<1.0	DLM	1.0	ug/L		25-MAY-19	R4645483
Ethylbenzene	<0.50		0.50	ug/L		25-MAY-19	R4645483
F1	<100		100	ug/L		25-MAY-19	R4645483
Hexachlorobutadiene	<0.50		0.50	ug/L		25-MAY-19	R4645483
Hexane	<0.50		0.50	ug/L		25-MAY-19	R4645483
2-Hexanone (Methyl butyl ketone)	<20		20	ug/L		25-MAY-19	R4645483
Isopropylbenzene	<0.50		0.50	ug/L		25-MAY-19	R4645483
4-Isopropyltoluene	<1.0		1.0	ug/L		25-MAY-19	R4645483
MEK	<20		20	ug/L		25-MAY-19	R4645483
MIBK	<20		20	ug/L		25-MAY-19	R4645483
MTBE	<0.50		0.50	ug/L		25-MAY-19	R4645483

* 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
L2274487-1 4N34 DR Sampled By: CLIENT on 16-MAY-19 @ 10:50 Matrix: WATER VOC plus F1 by GCMS							
Styrene	<0.50		0.50	ug/L		25-MAY-19	R4645483
1,1,1,2-Tetrachloroethane	<0.50		0.50	ug/L		25-MAY-19	R4645483
1,1,2,2-Tetrachloroethane	<0.50		0.50	ug/L		25-MAY-19	R4645483
Tetrachloroethene	<0.50		0.50	ug/L		25-MAY-19	R4645483
Toluene	<0.50		0.50	ug/L		25-MAY-19	R4645483
1,2,3-Trichlorobenzene	<0.50		0.50	ug/L		25-MAY-19	R4645483
1,2,4-Trichlorobenzene	<0.50		0.50	ug/L		25-MAY-19	R4645483
1,1,1-Trichloroethane	<0.50		0.50	ug/L		25-MAY-19	R4645483
1,1,2-Trichloroethane	<0.50		0.50	ug/L		25-MAY-19	R4645483
Trichloroethene	<0.50		0.50	ug/L		25-MAY-19	R4645483
Trichlorofluoromethane	<1.0		1.0	ug/L		25-MAY-19	R4645483
1,2,3-Trichloropropane	<0.50		0.50	ug/L		25-MAY-19	R4645483
1,2,4-Trimethylbenzene	<0.50		0.50	ug/L		25-MAY-19	R4645483
1,3,5-Trimethylbenzene	<0.50		0.50	ug/L		25-MAY-19	R4645483
Vinyl Chloride	<0.50		0.50	ug/L		25-MAY-19	R4645483
M+P-Xylenes	<0.40		0.40	ug/L		25-MAY-19	R4645483
o-Xylene	<0.30		0.30	ug/L		25-MAY-19	R4645483
Surrogate: 4-Bromofluorobenzene (SS)	94.9		70-130	%		25-MAY-19	R4645483
Surrogate: 1,4-Difluorobenzene (SS)	98.3		70-130	%		25-MAY-19	R4645483
L2274487-2 4N34 B Sampled By: CLIENT on 16-MAY-19 @ 11:05 Matrix: WATER Miscellaneous Parameters							
Chromium, Hexavalent	<0.50		0.50	ug/L		17-MAY-19	R4638648
Mercury (Hg)-Total	0.0070		0.0050	ug/L	21-MAY-19	23-MAY-19	R4642548
Phenols (4AAP)	<1.0		1.0	ug/L		21-MAY-19	R4639681
Cyanide, Total	<1.0		1.0	ug/L		22-MAY-19	R4641107
Dissolved Metals in Water by CRC ICPMS							
Dissolved Metals Filtration Location	FIELD					17-MAY-19	R4637566
Aluminum (Al)-Dissolved	4.1		1.0	ug/L	17-MAY-19	17-MAY-19	R4638587
Antimony (Sb)-Dissolved	0.14		0.10	ug/L	17-MAY-19	17-MAY-19	R4638587
Arsenic (As)-Dissolved	0.76		0.10	ug/L	17-MAY-19	17-MAY-19	R4638587
Barium (Ba)-Dissolved	8.91		0.10	ug/L	17-MAY-19	17-MAY-19	R4638587
Beryllium (Be)-Dissolved	<0.10		0.10	ug/L	17-MAY-19	17-MAY-19	R4638587
Bismuth (Bi)-Dissolved	<0.050		0.050	ug/L	17-MAY-19	17-MAY-19	R4638587
Boron (B)-Dissolved	135		10	ug/L	17-MAY-19	17-MAY-19	R4638587
Cadmium (Cd)-Dissolved	0.110		0.0050	ug/L	17-MAY-19	17-MAY-19	R4638587
Calcium (Ca)-Dissolved	774000		5000	ug/L	17-MAY-19	17-MAY-19	R4638587
Cesium (Cs)-Dissolved	<0.010		0.010	ug/L	17-MAY-19	17-MAY-19	R4638587
Chromium (Cr)-Dissolved	0.21		0.10	ug/L	17-MAY-19	17-MAY-19	R4638587
Cobalt (Co)-Dissolved	0.26		0.10	ug/L	17-MAY-19	17-MAY-19	R4638587
Copper (Cu)-Dissolved	3.34		0.20	ug/L	17-MAY-19	17-MAY-19	R4638587
Iron (Fe)-Dissolved	13		10	ug/L	17-MAY-19	17-MAY-19	R4638587
Lead (Pb)-Dissolved	0.051		0.050	ug/L	17-MAY-19	17-MAY-19	R4638587
Lithium (Li)-Dissolved	1040		100	ug/L	17-MAY-19	17-MAY-19	R4638587
Magnesium (Mg)-Dissolved	629000		500	ug/L	17-MAY-19	17-MAY-19	R4638587
Manganese (Mn)-Dissolved	135		0.10	ug/L	17-MAY-19	17-MAY-19	R4638587
Molybdenum (Mo)-Dissolved	2.94		0.050	ug/L	17-MAY-19	17-MAY-19	R4638587
Nickel (Ni)-Dissolved	11.3		0.50	ug/L	17-MAY-19	17-MAY-19	R4638587
Phosphorus (P)-Dissolved	<30		30	ug/L	17-MAY-19	17-MAY-19	R4638587
Potassium (K)-Dissolved	10700		50	ug/L	17-MAY-19	17-MAY-19	R4638587

* 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
L2274487-2 4N34 B Sampled By: CLIENT on 16-MAY-19 @ 11:05 Matrix: WATER							
Dissolved Metals in Water by CRC ICPMS							
Rubidium (Rb)-Dissolved	1.35		0.20	ug/L	17-MAY-19	17-MAY-19	R4638587
Selenium (Se)-Dissolved	66.9		0.050	ug/L	17-MAY-19	17-MAY-19	R4638587
Silicon (Si)-Dissolved	8160		50	ug/L	17-MAY-19	17-MAY-19	R4638587
Silver (Ag)-Dissolved	0.035		0.010	ug/L	17-MAY-19	17-MAY-19	R4638587
Sodium (Na)-Dissolved	461000		50	ug/L	17-MAY-19	17-MAY-19	R4638587
Strontium (Sr)-Dissolved	6240		10	ug/L	17-MAY-19	17-MAY-19	R4638587
Sulfur (S)-Dissolved	1080000		50000	ug/L	17-MAY-19	17-MAY-19	R4638587
Tellurium (Te)-Dissolved	0.22		0.20	ug/L	17-MAY-19	17-MAY-19	R4638587
Thallium (Tl)-Dissolved	<0.010		0.010	ug/L	17-MAY-19	17-MAY-19	R4638587
Thorium (Th)-Dissolved	<0.10		0.10	ug/L	17-MAY-19	17-MAY-19	R4638587
Tin (Sn)-Dissolved	0.14		0.10	ug/L	17-MAY-19	17-MAY-19	R4638587
Titanium (Ti)-Dissolved	<0.30		0.30	ug/L	17-MAY-19	17-MAY-19	R4638587
Tungsten (W)-Dissolved	<0.10		0.10	ug/L	17-MAY-19	17-MAY-19	R4638587
Uranium (U)-Dissolved	252		0.010	ug/L	17-MAY-19	17-MAY-19	R4638587
Vanadium (V)-Dissolved	<0.50		0.50	ug/L	17-MAY-19	17-MAY-19	R4638587
Zinc (Zn)-Dissolved	2.5		1.0	ug/L	17-MAY-19	17-MAY-19	R4638587
Zirconium (Zr)-Dissolved	0.490		0.060	ug/L	17-MAY-19	17-MAY-19	R4638587
L2274487-3 4N34 CR Sampled By: CLIENT on 16-MAY-19 @ 11:13 Matrix: WATER							
Miscellaneous Parameters							
Chromium, Hexavalent	<0.50		0.50	ug/L		17-MAY-19	R4638648
Mercury (Hg)-Total	0.38	DLM	0.10	ug/L	21-MAY-19	23-MAY-19	R4642548
Phenols (4AAP)	3.7		1.0	ug/L		21-MAY-19	R4639681
Cyanide, Total	<1.0		1.0	ug/L		22-MAY-19	R4641107
Dissolved Metals in Water by CRC ICPMS							
Dissolved Metals Filtration Location	FIELD					17-MAY-19	R4637566
Aluminum (Al)-Dissolved	5.5		1.0	ug/L	17-MAY-19	17-MAY-19	R4638587
Antimony (Sb)-Dissolved	0.15		0.10	ug/L	17-MAY-19	17-MAY-19	R4638587
Arsenic (As)-Dissolved	1.30		0.10	ug/L	17-MAY-19	17-MAY-19	R4638587
Barium (Ba)-Dissolved	10.3		0.10	ug/L	17-MAY-19	17-MAY-19	R4638587
Beryllium (Be)-Dissolved	<0.10		0.10	ug/L	17-MAY-19	17-MAY-19	R4638587
Bismuth (Bi)-Dissolved	<0.050		0.050	ug/L	17-MAY-19	17-MAY-19	R4638587
Boron (B)-Dissolved	376		10	ug/L	17-MAY-19	17-MAY-19	R4638587
Cadmium (Cd)-Dissolved	0.158		0.0050	ug/L	17-MAY-19	17-MAY-19	R4638587
Calcium (Ca)-Dissolved	542000		5000	ug/L	17-MAY-19	17-MAY-19	R4638587
Cesium (Cs)-Dissolved	0.020		0.010	ug/L	17-MAY-19	17-MAY-19	R4638587
Chromium (Cr)-Dissolved	0.10		0.10	ug/L	17-MAY-19	17-MAY-19	R4638587
Cobalt (Co)-Dissolved	6.21		0.10	ug/L	17-MAY-19	17-MAY-19	R4638587
Copper (Cu)-Dissolved	1.12		0.20	ug/L	17-MAY-19	17-MAY-19	R4638587
Iron (Fe)-Dissolved	317		10	ug/L	17-MAY-19	17-MAY-19	R4638587
Lead (Pb)-Dissolved	<0.050		0.050	ug/L	17-MAY-19	17-MAY-19	R4638587
Lithium (Li)-Dissolved	600		100	ug/L	17-MAY-19	17-MAY-19	R4638587
Magnesium (Mg)-Dissolved	249000		5.0	ug/L	17-MAY-19	17-MAY-19	R4638587
Manganese (Mn)-Dissolved	1620		10	ug/L	17-MAY-19	17-MAY-19	R4638587
Molybdenum (Mo)-Dissolved	3.27		0.050	ug/L	17-MAY-19	17-MAY-19	R4638587
Nickel (Ni)-Dissolved	7.91		0.50	ug/L	17-MAY-19	17-MAY-19	R4638587
Phosphorus (P)-Dissolved	<30		30	ug/L	17-MAY-19	17-MAY-19	R4638587
Potassium (K)-Dissolved	9930		50	ug/L	17-MAY-19	17-MAY-19	R4638587
Rubidium (Rb)-Dissolved	5.32		0.20	ug/L	17-MAY-19	17-MAY-19	R4638587
Selenium (Se)-Dissolved	3.58		0.050	ug/L	17-MAY-19	17-MAY-19	R4638587

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

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Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2274487-3 4N34 CR Sampled By: CLIENT on 16-MAY-19 @ 11:13 Matrix: WATER							
Dissolved Metals in Water by CRC ICPMS							
Silicon (Si)-Dissolved	9930		50	ug/L	17-MAY-19	17-MAY-19	R4638587
Silver (Ag)-Dissolved	0.011		0.010	ug/L	17-MAY-19	17-MAY-19	R4638587
Sodium (Na)-Dissolved	435000		50	ug/L	17-MAY-19	17-MAY-19	R4638587
Strontium (Sr)-Dissolved	3670		10	ug/L	17-MAY-19	17-MAY-19	R4638587
Sulfur (S)-Dissolved	575000		50000	ug/L	17-MAY-19	17-MAY-19	R4638587
Tellurium (Te)-Dissolved	<0.20		0.20	ug/L	17-MAY-19	17-MAY-19	R4638587
Thallium (Tl)-Dissolved	0.059		0.010	ug/L	17-MAY-19	17-MAY-19	R4638587
Thorium (Th)-Dissolved	<0.10		0.10	ug/L	17-MAY-19	17-MAY-19	R4638587
Tin (Sn)-Dissolved	<0.10		0.10	ug/L	17-MAY-19	17-MAY-19	R4638587
Titanium (Ti)-Dissolved	<0.30		0.30	ug/L	17-MAY-19	17-MAY-19	R4638587
Tungsten (W)-Dissolved	<0.10		0.10	ug/L	17-MAY-19	17-MAY-19	R4638587
Uranium (U)-Dissolved	66.7		0.010	ug/L	17-MAY-19	17-MAY-19	R4638587
Vanadium (V)-Dissolved	<0.50		0.50	ug/L	17-MAY-19	17-MAY-19	R4638587
Zinc (Zn)-Dissolved	5.1		1.0	ug/L	17-MAY-19	17-MAY-19	R4638587
Zirconium (Zr)-Dissolved	0.233		0.060	ug/L	17-MAY-19	17-MAY-19	R4638587
L2274487-4 FIELD BLANK Sampled By: CLIENT on 16-MAY-19 @ 11:30 Matrix: WATER							
Miscellaneous Parameters							
Chromium, Hexavalent	<0.50		0.50	ug/L		17-MAY-19	R4638648
Mercury (Hg)-Total	<0.0050		0.0050	ug/L	21-MAY-19	23-MAY-19	R4642548
Phenols (4AAP)	1.9	RRV	1.0	ug/L		23-MAY-19	R4641227
Cyanide, Total	<1.0		1.0	ug/L		22-MAY-19	R4641107
Dissolved Metals in Water by CRC ICPMS							
Dissolved Metals Filtration Location	FIELD					17-MAY-19	R4637566
Aluminum (Al)-Dissolved	<1.0		1.0	ug/L	17-MAY-19	17-MAY-19	R4638587
Antimony (Sb)-Dissolved	<0.10		0.10	ug/L	17-MAY-19	17-MAY-19	R4638587
Arsenic (As)-Dissolved	<0.10		0.10	ug/L	17-MAY-19	17-MAY-19	R4638587
Barium (Ba)-Dissolved	<0.10		0.10	ug/L	17-MAY-19	17-MAY-19	R4638587
Beryllium (Be)-Dissolved	<0.10		0.10	ug/L	17-MAY-19	17-MAY-19	R4638587
Bismuth (Bi)-Dissolved	<0.050		0.050	ug/L	17-MAY-19	17-MAY-19	R4638587
Boron (B)-Dissolved	<10		10	ug/L	17-MAY-19	17-MAY-19	R4638587
Cadmium (Cd)-Dissolved	<0.0050		0.0050	ug/L	17-MAY-19	17-MAY-19	R4638587
Calcium (Ca)-Dissolved	<50		50	ug/L	17-MAY-19	17-MAY-19	R4638587
Cesium (Cs)-Dissolved	<0.010		0.010	ug/L	17-MAY-19	17-MAY-19	R4638587
Chromium (Cr)-Dissolved	<0.10		0.10	ug/L	17-MAY-19	17-MAY-19	R4638587
Cobalt (Co)-Dissolved	<0.10		0.10	ug/L	17-MAY-19	17-MAY-19	R4638587
Copper (Cu)-Dissolved	<0.20		0.20	ug/L	17-MAY-19	17-MAY-19	R4638587
Iron (Fe)-Dissolved	<10		10	ug/L	17-MAY-19	17-MAY-19	R4638587
Lead (Pb)-Dissolved	<0.050		0.050	ug/L	17-MAY-19	17-MAY-19	R4638587
Lithium (Li)-Dissolved	<1.0		1.0	ug/L	17-MAY-19	17-MAY-19	R4638587
Magnesium (Mg)-Dissolved	<5.0		5.0	ug/L	17-MAY-19	17-MAY-19	R4638587
Manganese (Mn)-Dissolved	<0.10		0.10	ug/L	17-MAY-19	17-MAY-19	R4638587
Molybdenum (Mo)-Dissolved	<0.050		0.050	ug/L	17-MAY-19	17-MAY-19	R4638587
Nickel (Ni)-Dissolved	<0.50		0.50	ug/L	17-MAY-19	17-MAY-19	R4638587
Phosphorus (P)-Dissolved	<30		30	ug/L	17-MAY-19	17-MAY-19	R4638587
Potassium (K)-Dissolved	<50		50	ug/L	17-MAY-19	17-MAY-19	R4638587
Rubidium (Rb)-Dissolved	<0.20		0.20	ug/L	17-MAY-19	17-MAY-19	R4638587
Selenium (Se)-Dissolved	<0.050		0.050	ug/L	17-MAY-19	17-MAY-19	R4638587
Silicon (Si)-Dissolved	<50		50	ug/L	17-MAY-19	17-MAY-19	R4638587
Silver (Ag)-Dissolved	<0.010		0.010	ug/L	17-MAY-19	17-MAY-19	R4638587

* 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
L2274487-4 FIELD BLANK							
Sampled By: CLIENT on 16-MAY-19 @ 11:30							
Matrix: WATER							
Dissolved Metals in Water by CRC ICPMS							
Sodium (Na)-Dissolved	<50		50	ug/L	17-MAY-19	17-MAY-19	R4638587
Strontium (Sr)-Dissolved	<0.10		0.10	ug/L	17-MAY-19	17-MAY-19	R4638587
Sulfur (S)-Dissolved	<500		500	ug/L	17-MAY-19	17-MAY-19	R4638587
Tellurium (Te)-Dissolved	<0.20		0.20	ug/L	17-MAY-19	17-MAY-19	R4638587
Thallium (Tl)-Dissolved	<0.010		0.010	ug/L	17-MAY-19	17-MAY-19	R4638587
Thorium (Th)-Dissolved	<0.10		0.10	ug/L	17-MAY-19	17-MAY-19	R4638587
Tin (Sn)-Dissolved	<0.10		0.10	ug/L	17-MAY-19	17-MAY-19	R4638587
Titanium (Ti)-Dissolved	<0.30		0.30	ug/L	17-MAY-19	17-MAY-19	R4638587
Tungsten (W)-Dissolved	<0.10		0.10	ug/L	17-MAY-19	17-MAY-19	R4638587
Uranium (U)-Dissolved	<0.010		0.010	ug/L	17-MAY-19	17-MAY-19	R4638587
Vanadium (V)-Dissolved	<0.50		0.50	ug/L	17-MAY-19	17-MAY-19	R4638587
Zinc (Zn)-Dissolved	<1.0		1.0	ug/L	17-MAY-19	17-MAY-19	R4638587
Zirconium (Zr)-Dissolved	<0.060		0.060	ug/L	17-MAY-19	17-MAY-19	R4638587

* 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.
RRV	Reported Result Verified By Repeat Analysis

Test Method References:

ALS Test Code	Matrix	Test Description	Method Reference**
CN-T-CFA-WP	Water	Total Cyanide in water by CFA	ISO 14403-2
This analysis is carried out using procedures adapted from ISO Method 14403-2:2012 "Determination of Total Cyanide using Flow Analysis (FIA and CFA)". Total or strong acid dissociable (SAD) cyanide is determined by in-line UV digestion along with sample distillation and final determination by colourmetric analysis.			
CR-CR6-DIS-WT	Water	Dissolved Hexavalent Chromium in Water	EPA 7199
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 filtration (EPA Method 3005A) and 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.			
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).			
CR-CR6-IC-WT	Water	Chromium +6	EPA 7199
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.			
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).			
F1-F4-CALC-WP	Water	CCME Total Hydrocarbons	CCME CWS-PHC, Pub #1310, Dec 2001-L
Analytical methods used for analysis of CCME Petroleum Hydrocarbons have been validated and comply with the Reference Method for the CWS PHC.			
In cases where results for both F4 and F4G are reported, the greater of the two results must be used in any application of the CWS PHC guidelines and the gravimetric heavy hydrocarbons cannot be added to the C6 to C50 hydrocarbons.			
In samples where BTEX and F1 were analyzed, F1-BTEX represents a value where the sum of Benzene, Toluene, Ethylbenzene and total Xylenes has been subtracted from F1.			
In samples where PAHs, F2 and F3 were analyzed, F2-Naphth represents the result where Naphthalene has been subtracted from F2. F3-PAH represents a result where the sum of Benzo(a)anthracene, Benzo(a)pyrene, Benzo(b)fluoranthene, Benzo(k)fluoranthene, Dibenzo(a,h)anthracene, Fluoranthene, Indeno(1,2,3-cd)pyrene, Phenanthrene, and Pyrene has been subtracted from F3.			
Unless otherwise qualified, the following quality control criteria have been met for the F1 hydrocarbon range:			
1. All extraction and analysis holding times were met.			
2. Instrument performance showing response factors for C6 and C10 within 30% of the response factor for toluene.			
3. Linearity of gasoline response within 15% throughout the calibration range.			
Unless otherwise qualified, the following quality control criteria have been met for the F2-F4 hydrocarbon ranges:			
1. All extraction and analysis holding times were met.			
2. Instrument performance showing C10, C16 and C34 response factors within 10% of their average.			
3. Instrument performance showing the C50 response factor within 30% of the average of the C10, C16 and C34 response factors.			
4. Linearity of diesel or motor oil response within 15% throughout the calibration range.			
F2-F4-FID-WP	Water	CCME PHC F2-F4 in Water	EPA 3511
Petroleum hydrocarbons in water are determined by liquid-liquid micro-scale solvent extraction using a reciprocal shaker extraction apparatus prior to capillary column gas chromatography with flame ionization detection (GC-FID) analysis.			
HERBSCR-LCMS-WT	Water	Herbicides in Water	E3552
Water samples are subjected filtration and analyzed by direct injection without sample preparation using liquid chromatography tandem mass spectrometry (LC-MS/MS).			
HERBSCR-LCMS-WT	Water	Herbicides in Water	SW846 8270
Water samples are subjected filtration and analyzed by direct injection without sample preparation using liquid chromatography tandem mass spectrometry (LC-MS/MS).			
HG-T-CVAA-WP	Water	Mercury Total	EPA 1631E (mod)

Reference Information

Test Method References:

ALS Test Code	Matrix	Test Description	Method Reference**
		Water samples undergo a cold-oxidation using bromine monochloride prior to reduction with stannous chloride, and analyzed by CVAAS.	
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.	
PAH,PANH-WP	Water	Polyaromatic Hydrocarbons (PAHs)	EPA 3511/8270D (mod)
		PAHs are extracted from water using a hexane micro-extraction technique, with analysis by GC/MS. Because the two isomers cannot be readily separated chromatographically, benzo(j)fluoranthene is reported as part of the benzo(b)fluoranthene parameter.	
PEST-DIAZINON-WT	Water	Miscellaneous Pesticides	SW846 8270
PHENOLS-4AAP-WT	Water	Phenol (4AAP)	EPA 9066
		An automated method is used to distill the sample. The distillate is then buffered to pH 9.4 which reacts with 4AAP and potassium ferricyanide to form a red complex which is measured colorimetrically.	
THM-SUM-CALC-WP	Water	Total Trihalomethanes (THMs)	CALCULATION
		Total Trihalomethanes (THMs) represents the sum of bromodichloromethane, bromoform, chlorodibromomethane and chloroform. For the purpose of calculation, results less than the detection limit (DL) are treated as zero.	
VOC+F1-HSMS-WP	Water	VOC plus F1 by GCMS	EPA 8260C / EPA 5021A
		In this method samples are analyzed using a headspace autosampler interfaced to a dual column gas chromatograph with MS and Flame Ionization detectors.	
XYLENES-SUM-CALC-WP	Water	Sum of Xylene Isomer Concentrations	CALCULATED RESULT
		Total xylenes represents the sum of o-xylene and m&p-xylene.	

** 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
WT	ALS ENVIRONMENTAL - WATERLOO, ONTARIO, 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

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Client: City of Winnipeg - Solid Waste Services Div (1120 Waverley)
 Solid Waste Services Division 1120 Waverley Street
 Winnipeg MB R3T 0P4

Contact: CHRIS KOZAK

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
CN-T-CFA-WP								
	Water							
Batch	R4641107							
WG3056160-2	LCS							
Cyanide, Total			95.1		%		80-120	22-MAY-19
WG3056160-1	MB							
Cyanide, Total			<0.0010		mg/L		0.001	22-MAY-19
CR-CR6-DIS-WT								
	Water							
Batch	R4638667							
WG3052813-3	DUP	L2274487-1						
Chromium (VI)-Dissolved		<0.0010	<0.0010	RPD-NA	mg/L	N/A	25	17-MAY-19
WG3052813-2	LCS							
Chromium (VI)-Dissolved			97.9		%		70-130	17-MAY-19
WG3052813-1	MB							
Chromium (VI)-Dissolved			<0.0010		mg/L		0.001	17-MAY-19
WG3052813-4	MS	L2274487-1						
Chromium (VI)-Dissolved			99.4		%		70-130	17-MAY-19
CR-CR6-IC-WT								
	Water							
Batch	R4638648							
WG3052446-12	LCS							
Chromium, Hexavalent			95.8		%		80-120	17-MAY-19
WG3052446-11	MB							
Chromium, Hexavalent			<0.00050		mg/L		0.0005	17-MAY-19
F2-F4-FID-WP								
	Water							
Batch	R4637345							
WG3052723-2	LCS							
F2 (C10-C16)			107.1		%		70-130	17-MAY-19
F3 (C16-C34)			101.7		%		70-130	17-MAY-19
F4 (C34-C50)			100.1		%		70-130	17-MAY-19
WG3052723-1	MB							
F2 (C10-C16)			<0.10		mg/L		0.1	17-MAY-19
F3 (C16-C34)			<0.25		mg/L		0.25	17-MAY-19
F4 (C34-C50)			<0.25		mg/L		0.25	17-MAY-19
Surrogate: 2-Bromobenzotrifluoride			88.0		%		60-140	17-MAY-19
HERBSCR-LCMS-WT								
	Water							
Batch	R4641179							
WG3055164-2	LCS							
Clopyralid			92.5		%		50-150	22-MAY-19
Dicamba			84.0		%		65-130	22-MAY-19
Mecoprop			102.0		%		65-130	22-MAY-19



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Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
HERBSCR-LCMS-WT		Water						
Batch	R4641179							
WG3055164-2	LCS							
MCPA			97.7		%		65-130	22-MAY-19
2,4-D			84.4		%		65-130	22-MAY-19
Bromoxynil			121.0		%		65-130	22-MAY-19
Triclopyr			77.7		%		65-130	22-MAY-19
2,4,5-T			92.9		%		65-130	22-MAY-19
2,4,5-TP			99.4		%		65-130	22-MAY-19
Picloram			93.0		%		50-150	22-MAY-19
2,4-DB			87.3		%		65-130	22-MAY-19
2,4-DP			82.9		%		65-130	22-MAY-19
Dinoseb			121.0		%		50-150	22-MAY-19
MCPB			110.0		%		65-130	22-MAY-19
WG3055164-1	MB							
Clopyralid			<0.00010		mg/L		0.0001	22-MAY-19
Dicamba			<0.00010		mg/L		0.0001	22-MAY-19
Mecoprop			<0.00010		mg/L		0.0001	22-MAY-19
MCPA			<0.00010		mg/L		0.0001	22-MAY-19
2,4-D			<0.00010		mg/L		0.0001	22-MAY-19
Bromoxynil			<0.00010		mg/L		0.0001	22-MAY-19
Triclopyr			<0.00010		mg/L		0.0001	22-MAY-19
2,4,5-T			<0.00010		mg/L		0.0001	22-MAY-19
2,4,5-TP			<0.00010		mg/L		0.0001	22-MAY-19
Picloram			<0.00010		mg/L		0.0001	22-MAY-19
2,4-DB			<0.00010		mg/L		0.0001	22-MAY-19
2,4-DP			<0.00010		mg/L		0.0001	22-MAY-19
Dinoseb			<0.00010		mg/L		0.0001	22-MAY-19
MCPB			<0.00010		mg/L		0.0001	22-MAY-19
Surrogate: 2,4-Dichlorophenylacetic Acid			95.0		%		50-130	22-MAY-19
HG-T-CVAA-WP		Water						
Batch	R4642548							
WG3057799-2	LCS							
Mercury (Hg)-Total			101.0		%		80-120	23-MAY-19
WG3057799-1	MB							
Mercury (Hg)-Total			<0.000005C		mg/L		0.000005	23-MAY-19
MET-D-CCMS-WP		Water						

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Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
MET-D-CCMS-WP								
	Water							
Batch	R4638587							
WG3052980-2	LCS							
Aluminum (Al)-Dissolved			107.3		%		80-120	17-MAY-19
Antimony (Sb)-Dissolved			104.1		%		80-120	17-MAY-19
Arsenic (As)-Dissolved			101.2		%		80-120	17-MAY-19
Barium (Ba)-Dissolved			100.3		%		80-120	17-MAY-19
Beryllium (Be)-Dissolved			105.0		%		80-120	17-MAY-19
Bismuth (Bi)-Dissolved			100.0		%		80-120	17-MAY-19
Boron (B)-Dissolved			108.5		%		80-120	17-MAY-19
Cadmium (Cd)-Dissolved			101.0		%		80-120	17-MAY-19
Calcium (Ca)-Dissolved			101.6		%		80-120	17-MAY-19
Cesium (Cs)-Dissolved			104.1		%		80-120	17-MAY-19
Chromium (Cr)-Dissolved			102.9		%		80-120	17-MAY-19
Cobalt (Co)-Dissolved			102.8		%		80-120	17-MAY-19
Copper (Cu)-Dissolved			104.2		%		80-120	17-MAY-19
Iron (Fe)-Dissolved			97.3		%		80-120	17-MAY-19
Lead (Pb)-Dissolved			100.1		%		80-120	17-MAY-19
Lithium (Li)-Dissolved			107.3		%		80-120	17-MAY-19
Magnesium (Mg)-Dissolved			115.7		%		80-120	17-MAY-19
Manganese (Mn)-Dissolved			102.2		%		80-120	17-MAY-19
Molybdenum (Mo)-Dissolved			104.5		%		80-120	17-MAY-19
Nickel (Ni)-Dissolved			101.6		%		80-120	17-MAY-19
Phosphorus (P)-Dissolved			109.5		%		80-120	17-MAY-19
Potassium (K)-Dissolved			98.1		%		80-120	17-MAY-19
Rubidium (Rb)-Dissolved			100.2		%		80-120	17-MAY-19
Selenium (Se)-Dissolved			104.8		%		80-120	17-MAY-19
Silicon (Si)-Dissolved			107.8		%		80-120	17-MAY-19
Silver (Ag)-Dissolved			101.3		%		80-120	17-MAY-19
Sodium (Na)-Dissolved			107.2		%		80-120	17-MAY-19
Strontium (Sr)-Dissolved			104.8		%		80-120	17-MAY-19
Sulfur (S)-Dissolved			101.6		%		80-120	17-MAY-19
Tellurium (Te)-Dissolved			100.8		%		80-120	17-MAY-19
Thallium (Tl)-Dissolved			99.1		%		80-120	17-MAY-19
Thorium (Th)-Dissolved			96.4		%		80-120	17-MAY-19
Tin (Sn)-Dissolved			101.2		%		80-120	17-MAY-19
Titanium (Ti)-Dissolved			99.5		%		80-120	17-MAY-19

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Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
MET-D-CCMS-WP		Water						
Batch	R4638587							
WG3052980-2	LCS							
Tungsten (W)-Dissolved			101.1		%		80-120	17-MAY-19
Uranium (U)-Dissolved			99.8		%		80-120	17-MAY-19
Vanadium (V)-Dissolved			103.9		%		80-120	17-MAY-19
Zinc (Zn)-Dissolved			103.1		%		80-120	17-MAY-19
Zirconium (Zr)-Dissolved			103.0		%		80-120	17-MAY-19
WG3052980-1	MB							
Aluminum (Al)-Dissolved			<0.0010		mg/L		0.001	17-MAY-19
Antimony (Sb)-Dissolved			<0.00010		mg/L		0.0001	17-MAY-19
Arsenic (As)-Dissolved			<0.00010		mg/L		0.0001	17-MAY-19
Barium (Ba)-Dissolved			<0.00010		mg/L		0.0001	17-MAY-19
Beryllium (Be)-Dissolved			<0.00010		mg/L		0.0001	17-MAY-19
Bismuth (Bi)-Dissolved			<0.000050		mg/L		0.00005	17-MAY-19
Boron (B)-Dissolved			<0.010		mg/L		0.01	17-MAY-19
Cadmium (Cd)-Dissolved			<0.0000050		mg/L		0.000005	17-MAY-19
Calcium (Ca)-Dissolved			<0.050		mg/L		0.05	17-MAY-19
Cesium (Cs)-Dissolved			<0.000010		mg/L		0.00001	17-MAY-19
Chromium (Cr)-Dissolved			<0.00010		mg/L		0.0001	17-MAY-19
Cobalt (Co)-Dissolved			<0.00010		mg/L		0.0001	17-MAY-19
Copper (Cu)-Dissolved			<0.00020		mg/L		0.0002	17-MAY-19
Iron (Fe)-Dissolved			<0.010		mg/L		0.01	17-MAY-19
Lead (Pb)-Dissolved			<0.000050		mg/L		0.00005	17-MAY-19
Lithium (Li)-Dissolved			<0.0010		mg/L		0.001	17-MAY-19
Magnesium (Mg)-Dissolved			<0.0050		mg/L		0.005	17-MAY-19
Manganese (Mn)-Dissolved			<0.00010		mg/L		0.0001	17-MAY-19
Molybdenum (Mo)-Dissolved			<0.000050		mg/L		0.00005	17-MAY-19
Nickel (Ni)-Dissolved			<0.00050		mg/L		0.0005	17-MAY-19
Phosphorus (P)-Dissolved			<0.030		mg/L		0.03	17-MAY-19
Potassium (K)-Dissolved			<0.050		mg/L		0.05	17-MAY-19
Rubidium (Rb)-Dissolved			<0.00020		mg/L		0.0002	17-MAY-19
Selenium (Se)-Dissolved			<0.000050		mg/L		0.00005	17-MAY-19
Silicon (Si)-Dissolved			<0.050		mg/L		0.05	17-MAY-19
Silver (Ag)-Dissolved			<0.000010		mg/L		0.00001	17-MAY-19
Sodium (Na)-Dissolved			<0.050		mg/L		0.05	17-MAY-19
Strontium (Sr)-Dissolved			<0.00010		mg/L		0.0001	17-MAY-19



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Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
MET-D-CCMS-WP		Water						
Batch	R4638587							
WG3052980-1	MB							
Sulfur (S)-Dissolved			<0.50		mg/L		0.5	17-MAY-19
Tellurium (Te)-Dissolved			<0.00020		mg/L		0.0002	17-MAY-19
Thallium (Tl)-Dissolved			<0.000010		mg/L		0.00001	17-MAY-19
Thorium (Th)-Dissolved			<0.00010		mg/L		0.0001	17-MAY-19
Tin (Sn)-Dissolved			<0.00010		mg/L		0.0001	17-MAY-19
Titanium (Ti)-Dissolved			<0.00030		mg/L		0.0003	17-MAY-19
Tungsten (W)-Dissolved			<0.00010		mg/L		0.0001	17-MAY-19
Uranium (U)-Dissolved			<0.000010		mg/L		0.00001	17-MAY-19
Vanadium (V)-Dissolved			<0.00050		mg/L		0.0005	17-MAY-19
Zinc (Zn)-Dissolved			<0.0010		mg/L		0.001	17-MAY-19
Zirconium (Zr)-Dissolved			<0.000060		mg/L		0.00006	17-MAY-19
PAH,PANH-WP		Water						
Batch	R4641977							
WG3052974-2	LCS							
1-Methyl Naphthalene			119.2		%		60-130	19-MAY-19
2-Methyl Naphthalene			110.1		%		60-130	19-MAY-19
Acenaphthene			125.0		%		60-130	19-MAY-19
Acenaphthylene			105.8		%		60-130	19-MAY-19
Anthracene			97.7		%		60-130	19-MAY-19
Acridine			100.4		%		60-130	19-MAY-19
Benzo(a)anthracene			91.9		%		60-130	19-MAY-19
Benzo(a)pyrene			88.7		%		60-130	19-MAY-19
Benzo(b&j)fluoranthene			91.4		%		60-130	19-MAY-19
Benzo(g,h,i)perylene			91.8		%		60-130	19-MAY-19
Benzo(k)fluoranthene			111.8		%		60-130	19-MAY-19
Chrysene			113.2		%		60-130	19-MAY-19
Dibenzo(a,h)anthracene			87.5		%		60-130	19-MAY-19
Fluoranthene			113.9		%		60-130	19-MAY-19
Fluorene			106.2		%		60-130	19-MAY-19
Indeno(1,2,3-cd)pyrene			78.2		%		60-130	19-MAY-19
Naphthalene			122.3		%		50-130	19-MAY-19
Phenanthrene			123.7		%		60-130	19-MAY-19
Pyrene			112.2		%		60-130	19-MAY-19
Quinoline			89.8		%		60-130	19-MAY-19



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Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
PAH,PANH-WP		Water						
Batch	R4641977							
WG3052974-1	MB							
1-Methyl Naphthalene			<0.000020		mg/L		0.00002	19-MAY-19
2-Methyl Naphthalene			<0.000020		mg/L		0.00002	19-MAY-19
Acenaphthene			<0.000020		mg/L		0.00002	19-MAY-19
Acenaphthylene			<0.000020		mg/L		0.00002	19-MAY-19
Anthracene			<0.000010		mg/L		0.00001	19-MAY-19
Acridine			<0.000020		mg/L		0.00002	19-MAY-19
Benzo(a)anthracene			<0.000010		mg/L		0.00001	19-MAY-19
Benzo(a)pyrene			<0.000005C		mg/L		0.000005	19-MAY-19
Benzo(b&j)fluoranthene			<0.000010		mg/L		0.00001	19-MAY-19
Benzo(g,h,i)perylene			<0.000020		mg/L		0.00002	19-MAY-19
Benzo(k)fluoranthene			<0.000010		mg/L		0.00001	19-MAY-19
Chrysene			<0.000020		mg/L		0.00002	19-MAY-19
Dibenzo(a,h)anthracene			<0.000005C		mg/L		0.000005	19-MAY-19
Fluoranthene			<0.000020		mg/L		0.00002	19-MAY-19
Fluorene			<0.000020		mg/L		0.00002	19-MAY-19
Indeno(1,2,3-cd)pyrene			<0.000010		mg/L		0.00001	19-MAY-19
Naphthalene			<0.000050		mg/L		0.00005	19-MAY-19
Phenanthrene			<0.000050		mg/L		0.00005	19-MAY-19
Pyrene			<0.000010		mg/L		0.00001	19-MAY-19
Quinoline			<0.000020		mg/L		0.00002	19-MAY-19
Surrogate: Acenaphthene d10			100.5		%		60-130	19-MAY-19
Surrogate: Acridine d9			89.5		%		60-130	19-MAY-19
Surrogate: Chrysene d12			108.4		%		60-130	19-MAY-19
Surrogate: Naphthalene d8			93.5		%		50-130	19-MAY-19
Surrogate: Phenanthrene d10			107.1		%		60-130	19-MAY-19
PEST-DIAZINON-WT		Water						
Batch	R4641955							
WG3055549-2	LCS							
Diazinon			89.7		%		60-130	24-MAY-19
WG3055549-1	MB							
Diazinon			<0.10		ug/L		0.1	24-MAY-19
Surrogate: 2-Fluorobiphenyl			84.5		%		40-130	24-MAY-19
Surrogate: d14-Terphenyl			86.3		%		40-130	24-MAY-19
PHENOLS-4AAP-WT		Water						

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Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
PHENOLS-4AAP-WT								
Water								
Batch	R4639681							
WG3054396-18	LCS							
Phenols (4AAP)			94.6		%		85-115	21-MAY-19
WG3054396-17	MB							
Phenols (4AAP)			<0.0010		mg/L		0.001	21-MAY-19
Batch	R4641227							
WG3056393-22	LCS							
Phenols (4AAP)			107.3		%		85-115	23-MAY-19
WG3056393-21	MB							
Phenols (4AAP)			<0.0010		mg/L		0.001	23-MAY-19
VOC+F1-HSMS-WP								
Water								
Batch	R4645483							
WG3058066-2	LCS							
Acetone			91.3		%		70-130	25-MAY-19
Benzene			101.4		%		70-130	25-MAY-19
Bromobenzene			104.3		%		70-130	25-MAY-19
Bromochloromethane			99.8		%		70-130	25-MAY-19
Bromodichloromethane			103.1		%		70-130	25-MAY-19
Bromoform			97.9		%		70-130	25-MAY-19
Bromomethane			92.0		%		60-140	25-MAY-19
n-Butylbenzene			114.0		%		70-130	25-MAY-19
sec-Butylbenzene			105.7		%		70-130	25-MAY-19
tert-Butylbenzene			120.3		%		70-130	25-MAY-19
Carbon disulfide			83.7		%		70-130	25-MAY-19
Carbon Tetrachloride			107.0		%		70-130	25-MAY-19
Chlorobenzene			101.1		%		70-130	25-MAY-19
Chloroethane			116.5		%		60-140	25-MAY-19
Chloroform			105.3		%		70-130	25-MAY-19
Chloromethane			102.9		%		60-140	25-MAY-19
2-Chlorotoluene			110.2		%		70-130	25-MAY-19
4-Chlorotoluene			97.3		%		70-130	25-MAY-19
Dibromochloromethane			103.9		%		70-130	25-MAY-19
1,2-Dibromo-3-chloropropane			101.3		%		70-130	25-MAY-19
1,2-Dibromoethane			97.7		%		70-130	25-MAY-19
Dibromomethane			102.0		%		70-130	25-MAY-19
1,2-Dichlorobenzene			102.8		%		70-130	25-MAY-19
1,3-Dichlorobenzene			98.8		%		70-130	25-MAY-19

Quality Control Report

Workorder: L2274487

Report Date: 28-MAY-19

Page 8 of 12

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
VOC+F1-HSMS-WP								
	Water							
Batch	R4645483							
WG3058066-2	LCS							
1,4-Dichlorobenzene			98.7		%		70-130	25-MAY-19
Dichlorodifluoromethane			125.5		%		60-140	25-MAY-19
1,1-dichloroethane			105.3		%		70-130	25-MAY-19
1,2-Dichloroethane			101.5		%		70-130	25-MAY-19
1,1-dichloroethene			96.5		%		70-130	25-MAY-19
cis-1,2-Dichloroethene			100.7		%		70-130	25-MAY-19
trans-1,2-Dichloroethene			93.7		%		70-130	25-MAY-19
Dichloromethane			100.0		%		70-130	25-MAY-19
1,2-Dichloropropane			102.3		%		70-130	25-MAY-19
1,3-Dichloropropane			102.0		%		70-130	25-MAY-19
2,2-Dichloropropane			94.6		%		70-130	25-MAY-19
1,1-Dichloropropene			100.3		%		70-130	25-MAY-19
cis-1,3-Dichloropropene			96.3		%		70-130	25-MAY-19
trans-1,3-Dichloropropene			95.4		%		70-130	25-MAY-19
Ethylbenzene			111.1		%		70-130	25-MAY-19
Hexachlorobutadiene			100.7		%		70-130	25-MAY-19
Hexane			94.2		%		70-130	25-MAY-19
2-Hexanone (Methyl butyl ketone)			102.5		%		70-130	25-MAY-19
Isopropylbenzene			115.9		%		70-130	25-MAY-19
4-Isopropyltoluene			104.0		%		70-130	25-MAY-19
MEK			98.5		%		70-130	25-MAY-19
MIBK			100.1		%		70-130	25-MAY-19
MTBE			107.9		%		70-130	25-MAY-19
Styrene			113.9		%		70-130	25-MAY-19
1,1,1,2-Tetrachloroethane			111.1		%		70-130	25-MAY-19
1,1,2,2-Tetrachloroethane			102.5		%		70-130	25-MAY-19
Tetrachloroethene			99.0		%		70-130	25-MAY-19
Toluene			104.9		%		70-130	25-MAY-19
1,2,3-Trichlorobenzene			105.0		%		70-130	25-MAY-19
1,2,4-Trichlorobenzene			99.1		%		70-130	25-MAY-19
1,1,1-Trichloroethane			109.5		%		70-130	25-MAY-19
1,1,2-Trichloroethane			101.0		%		70-130	25-MAY-19
Trichloroethene			102.9		%		70-130	25-MAY-19
Trichlorofluoromethane			107.6		%		60-140	25-MAY-19

Quality Control Report

Workorder: L2274487

Report Date: 28-MAY-19

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Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
VOC+F1-HSMS-WP								
	Water							
Batch	R4645483							
WG3058066-2	LCS							
1,2,3-Trichloropropane			102.0		%		70-130	25-MAY-19
1,2,4-Trimethylbenzene			101.3		%		70-130	25-MAY-19
1,3,5-Trimethylbenzene			106.3		%		70-130	25-MAY-19
Vinyl Chloride			108.0		%		60-140	25-MAY-19
M+P-Xylenes			109.0		%		70-130	25-MAY-19
o-Xylene			111.5		%		70-130	25-MAY-19
WG3058066-3	LCS							
F1			89.7		%		70-130	24-MAY-19
WG3058066-1	MB							
Acetone			<0.020		mg/L		0.02	25-MAY-19
Benzene			<0.00050		mg/L		0.0005	25-MAY-19
Bromobenzene			<0.00050		mg/L		0.0005	25-MAY-19
Bromochloromethane			<0.00050		mg/L		0.0005	25-MAY-19
Bromodichloromethane			<0.00050		mg/L		0.0005	25-MAY-19
Bromoform			<0.00050		mg/L		0.0005	25-MAY-19
Bromomethane			<0.0010		mg/L		0.001	25-MAY-19
n-Butylbenzene			<0.00050		mg/L		0.0005	25-MAY-19
sec-Butylbenzene			<0.00050		mg/L		0.0005	25-MAY-19
tert-Butylbenzene			<0.00050		mg/L		0.0005	25-MAY-19
Carbon disulfide			<0.00050		mg/L		0.0005	25-MAY-19
Carbon Tetrachloride			<0.00050		mg/L		0.0005	25-MAY-19
Chlorobenzene			<0.00050		mg/L		0.0005	25-MAY-19
Chloroethane			<0.0010		mg/L		0.001	25-MAY-19
Chloroform			<0.00050		mg/L		0.0005	25-MAY-19
Chloromethane			<0.0010		mg/L		0.001	25-MAY-19
2-Chlorotoluene			<0.020		mg/L		0.02	25-MAY-19
4-Chlorotoluene			<0.00050		mg/L		0.0005	25-MAY-19
Dibromochloromethane			<0.00050		mg/L		0.0005	25-MAY-19
1,2-Dibromo-3-chloropropane			<0.00050		mg/L		0.0005	25-MAY-19
1,2-Dibromoethane			<0.00050		mg/L		0.0005	25-MAY-19
Dibromomethane			<0.00050		mg/L		0.0005	25-MAY-19
1,2-Dichlorobenzene			<0.00050		mg/L		0.0005	25-MAY-19
1,3-Dichlorobenzene			<0.00050		mg/L		0.0005	25-MAY-19
1,4-Dichlorobenzene			<0.00050		mg/L		0.0005	25-MAY-19
Dichlorodifluoromethane			<0.0010		mg/L		0.001	25-MAY-19

Quality Control Report

Workorder: L2274487

Report Date: 28-MAY-19

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Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
VOC+F1-HSMS-WP								
	Water							
Batch	R4645483							
WG3058066-1	MB							
1,1-dichloroethane			<0.00050		mg/L		0.0005	25-MAY-19
1,2-Dichloroethane			<0.00050		mg/L		0.0005	25-MAY-19
1,1-dichloroethene			<0.00050		mg/L		0.0005	25-MAY-19
cis-1,2-Dichloroethene			<0.00050		mg/L		0.0005	25-MAY-19
trans-1,2-Dichloroethene			<0.00050		mg/L		0.0005	25-MAY-19
Dichloromethane			<0.00050		mg/L		0.0005	25-MAY-19
1,2-Dichloropropane			<0.00050		mg/L		0.0005	25-MAY-19
1,3-Dichloropropane			<0.00050		mg/L		0.0005	25-MAY-19
2,2-Dichloropropane			<0.00050		mg/L		0.0005	25-MAY-19
1,1-Dichloropropene			<0.00050		mg/L		0.0005	25-MAY-19
cis-1,3-Dichloropropene			<0.00050		mg/L		0.0005	25-MAY-19
trans-1,3-Dichloropropene			<0.00050		mg/L		0.0005	25-MAY-19
Ethylbenzene			<0.00050		mg/L		0.0005	25-MAY-19
F1			<0.10		mg/L		0.1	25-MAY-19
Hexachlorobutadiene			<0.00050		mg/L		0.0005	25-MAY-19
Hexane			<0.00050		mg/L		0.0005	25-MAY-19
2-Hexanone (Methyl butyl ketone)			<0.020		mg/L		0.02	25-MAY-19
Isopropylbenzene			<0.00050		mg/L		0.0005	25-MAY-19
4-Isopropyltoluene			<0.0010		mg/L		0.001	25-MAY-19
MEK			<0.020		mg/L		0.02	25-MAY-19
MIBK			<0.020		mg/L		0.02	25-MAY-19
MTBE			<0.00050		mg/L		0.0005	25-MAY-19
Styrene			<0.00050		mg/L		0.0005	25-MAY-19
1,1,1,2-Tetrachloroethane			<0.00050		mg/L		0.0005	25-MAY-19
1,1,2,2-Tetrachloroethane			<0.00050		mg/L		0.0005	25-MAY-19
Tetrachloroethene			<0.00050		mg/L		0.0005	25-MAY-19
Toluene			<0.00050		mg/L		0.0005	25-MAY-19
1,2,3-Trichlorobenzene			<0.00050		mg/L		0.0005	25-MAY-19
1,2,4-Trichlorobenzene			<0.00050		mg/L		0.0005	25-MAY-19
1,1,1-Trichloroethane			<0.00050		mg/L		0.0005	25-MAY-19
1,1,2-Trichloroethane			<0.00050		mg/L		0.0005	25-MAY-19
Trichloroethene			<0.00050		mg/L		0.0005	25-MAY-19
Trichlorofluoromethane			<0.0010		mg/L		0.001	25-MAY-19
1,2,3-Trichloropropane			<0.00050		mg/L		0.0005	25-MAY-19



Quality Control Report

Workorder: L2274487

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Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
VOC+F1-HSMS-WP								
	Water							
Batch	R4645483							
WG3058066-1	MB							
1,2,4-Trimethylbenzene			<0.00050		mg/L		0.0005	25-MAY-19
1,3,5-Trimethylbenzene			<0.00050		mg/L		0.0005	25-MAY-19
Vinyl Chloride			<0.00050		mg/L		0.0005	25-MAY-19
M+P-Xylenes			<0.00040		mg/L		0.0004	25-MAY-19
o-Xylene			<0.00030		mg/L		0.0003	25-MAY-19
Surrogate: 4-Bromofluorobenzene (SS)			91.9		%		70-130	25-MAY-19
Surrogate: 1,4-Difluorobenzene (SS)			97.5		%		70-130	25-MAY-19

Quality Control Report

Workorder: L2274487

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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.

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.

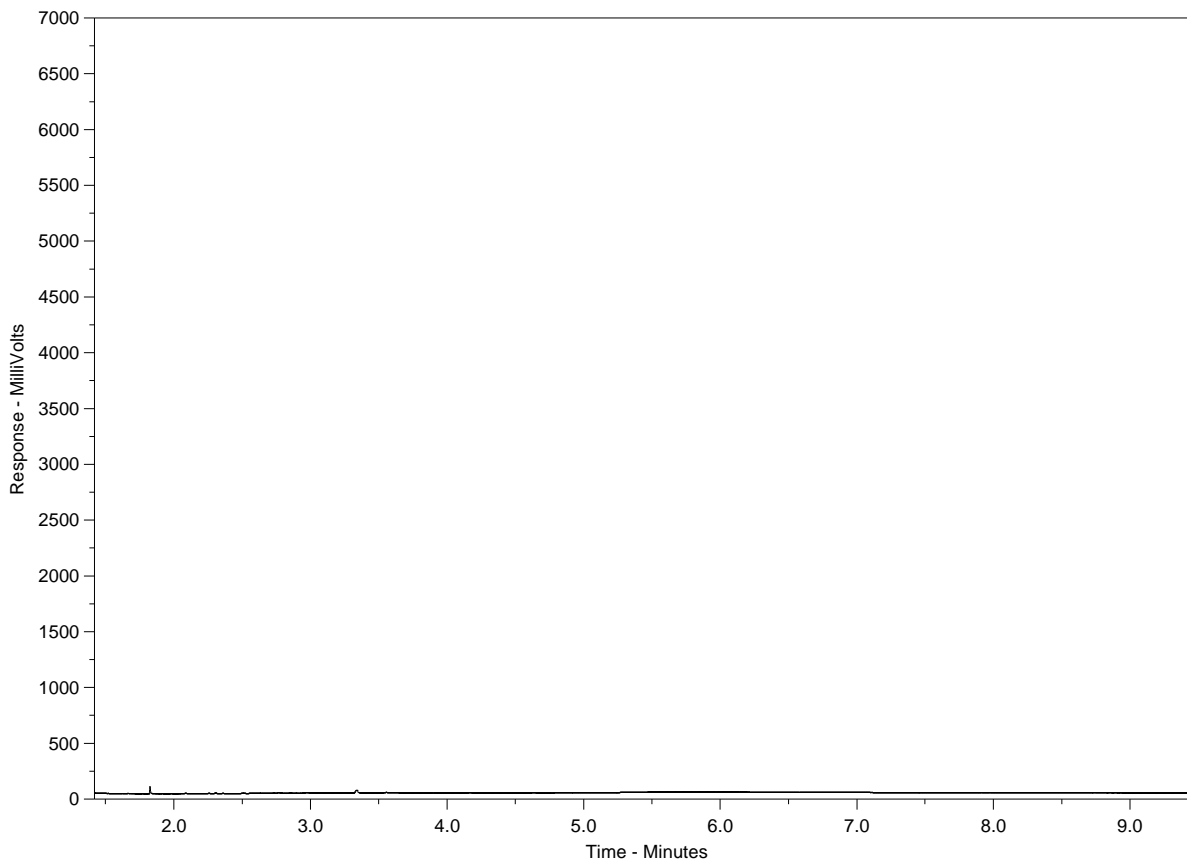
The ALS Quality Control Report is provided to ALS clients upon request. ALS includes comprehensive QC checks with every analysis to ensure our high standards of quality are met. Each QC result has a known or expected target value, which is compared against pre-determined data quality objectives to provide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

CCME F2-F4 HYDROCARBON DISTRIBUTION REPORT



ALS Sample ID: L2274487-1
 Client Sample ID: 4N34 DR



← 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.



Chain of Custody (COC) / Analytical Request Form

Canada Toll Free: 1 800 668 9878

www.alsglobal.com



COC Number: 15 -

Page of

Report To Contact and company name below will appear on the final report		Report Format / Distribution		Standard TATs with your AM - surcharges will apply																																																																																												
Company: City of Winnipeg	Select Report Format: <input checked="" type="checkbox"/> PDF <input type="checkbox"/> EXCEL <input type="checkbox"/> EDD (DIGITAL)	Quality Control (QC) Report with Report: <input checked="" type="checkbox"/> YES <input type="checkbox"/> NO		Regular [R] <input checked="" type="checkbox"/> Standard TAT if received by 3 pm - business days - no surcharges apply																																																																																												
Contact: Chris Kozak	Compare Results to Criteria on Report - provide details below if box checked		Priority (Business Days): 4 day [P4] <input type="checkbox"/>		EMERGENCY 1 Business day [E1] <input type="checkbox"/> Same Day, Weekend or Statutory holiday [E0] <input type="checkbox"/>																																																																																											
Phone: 204-986-2384	Select Distribution: <input checked="" type="checkbox"/> EMAIL <input type="checkbox"/> MAIL <input type="checkbox"/> FAX		3 day [P3] <input type="checkbox"/>																																																																																													
Company address below will appear on the final report		Email 1 or Fax: ckozak@winnipeg.ca		2 day [P2] <input type="checkbox"/>																																																																																												
Street: 1120 Waverly Street	Email 2:		Date and Time Required for all E&P TATs:																																																																																													
City/Province: Winnipeg, Manitoba	Email 3:		For tests that can not be performed according to the service level selected, you will be contacted.																																																																																													
Postal Code: R3T 0P4	Invoice To		Analysis Request																																																																																													
Same as Report To <input type="checkbox"/> YES <input type="checkbox"/> NO		Invoice Distribution		Indicate Filtered (F), Preserved (P) or Filtered and Preserved (F/P) below																																																																																												
Copy of Invoice with Report <input type="checkbox"/> YES <input type="checkbox"/> NO		Select Invoice Distribution: <input type="checkbox"/> EMAIL <input checked="" type="checkbox"/> MAIL <input type="checkbox"/> FAX		<table border="1" style="width:100%; border-collapse: collapse;"> <tr> <td>CN-T-CFA-WP</td> <td>PEST-DIAZINON-WT</td> <td>HERBSCR-LCMS-WT</td> <td>MET-D-CCMS-WP (DISSOLVED)</td> <td>HG-T-CVAAA-WP (TOTAL)</td> <td>CR-CR6-IC-WT</td> <td>PHENOLS-4AAP-WT</td> <td>VOC-F1-F4-WP</td> <td>PAH-PANH-WP</td> <td rowspan="10" style="writing-mode: vertical-rl; text-orientation: mixed;">Number of Containers</td> </tr> <tr><td>/</td><td>/</td><td>/</td><td>/</td><td>/</td><td>/</td><td>/</td><td>/</td><td></td></tr> <tr><td>X</td><td></td><td></td><td>X</td><td>X</td><td>X</td><td>X</td><td></td><td></td></tr> <tr><td>X</td><td></td><td></td><td>X</td><td>X</td><td>X</td><td>X</td><td></td><td></td></tr> <tr><td>X</td><td></td><td></td><td>X</td><td>X</td><td>X</td><td>X</td><td></td><td></td></tr> <tr><td>X</td><td>X</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></tr> <tr><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></tr> <tr><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr> </table>		CN-T-CFA-WP	PEST-DIAZINON-WT	HERBSCR-LCMS-WT	MET-D-CCMS-WP (DISSOLVED)	HG-T-CVAAA-WP (TOTAL)	CR-CR6-IC-WT	PHENOLS-4AAP-WT	VOC-F1-F4-WP	PAH-PANH-WP	Number of Containers	/	/	/	/	/	/	/	/		X			X	X	X	X			X			X	X	X	X			X			X	X	X	X			X	X	/	/	/	/	/	/		/	/	/	/	/	/	/	/																												
CN-T-CFA-WP	PEST-DIAZINON-WT	HERBSCR-LCMS-WT	MET-D-CCMS-WP (DISSOLVED)			HG-T-CVAAA-WP (TOTAL)	CR-CR6-IC-WT	PHENOLS-4AAP-WT	VOC-F1-F4-WP	PAH-PANH-WP	Number of Containers																																																																																					
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Project Information		Oil and Gas Required Fields (client use)																																																																																														
ALS Account # / Quote #: W10051/Q67317	AFE/Cost Center:	PO#:																																																																																														
Job #: Section B - BRRMF Groundwater	Major/Minor Code:	Routing Code:																																																																																														
PO / AFE:	Requisitioner:																																																																																															
LSD:	Location:																																																																																															
ALS Lab Work Order # (lab use only)	ALS Contact:	Sampler:																																																																																														
ALS Sample # (lab use only)	Sample Identification and/or Coordinates (This description will appear on the report)	Date (dd-mmm-yy)	Time (hh:mm)	Sample Type																																																																																												
	4N34 DK	202756	16 MAY 19	10:50	WATER	/	/	/	/	/	/	/	/																																																																																			
	4N34 B	202764	16 MAY 19	11:05	WATER	X			X	X	X	X																																																																																				
	4N34 CE	202765		11:13	WATER	X			X	X	X	X																																																																																				
	Field Blank	202768		11:30	WATER	X			X	X	X	X																																																																																				
	5N635	202755			WATER	X	X	/	/	/	/	/	/																																																																																			
	5N63D	202767			WATER	/	/	/	/	/	/	/	/																																																																																			
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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					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 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																																																																																											
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SHIPMENT RELEASE (client use)		INITIAL SHIPMENT RECEPTION (lab use only)			FINAL SHIPMENT RECEPTION (lab use only)																																																																																											
Released by: <i>[Signature]</i>	Date: 16 MAY 19	Time: 12:18	Received by: CM	Date: 16-5-19	Time: 12:29	Received by:	Date:	Time:																																																																																								



City of Winnipeg - Solid Waste Services Div
(1120 Waverley)
ATTN: CHRIS KOZAK
Solid Waste Services Division
1120 Waverley Street
Winnipeg MB R3T 0P4

Date Received: 21-MAY-19
Report Date: 27-MAY-19 14:16 (MT)
Version: FINAL

Client Phone: 204-986-2384

Certificate of Analysis

Lab Work Order #: L2276000
Project P.O. #: NOT SUBMITTED
Job Reference: SECTION B - BRRMF GORUNDWATER
C of C Numbers:
Legal Site Desc:

Hua Wo
Chemistry Laboratory Manager

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ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2276000-1 GWQ25 6N67E							
Sampled By: CLIENT on 21-MAY-19 @ 09:45							
Matrix: WATER							
Miscellaneous Parameters							
Chromium, Hexavalent	<0.50		0.50	ug/L		23-MAY-19	R4641775
Mercury (Hg)-Total	<0.050	DLM	0.050	ug/L	21-MAY-19	23-MAY-19	R4642548
Phenols (4AAP)	39.6		1.0	ug/L		24-MAY-19	R4642316
Cyanide, Total	<1.0		1.0	ug/L		23-MAY-19	R4644469
Dissolved Metals in Water by CRC ICPMS							
Dissolved Metals Filtration Location	FIELD					22-MAY-19	R4640452
Aluminum (Al)-Dissolved	5.3		1.0	ug/L	22-MAY-19	22-MAY-19	R4640850
Antimony (Sb)-Dissolved	<0.10		0.10	ug/L	22-MAY-19	22-MAY-19	R4640850
Arsenic (As)-Dissolved	0.44		0.10	ug/L	22-MAY-19	22-MAY-19	R4640850
Barium (Ba)-Dissolved	9.36		0.10	ug/L	22-MAY-19	22-MAY-19	R4640850
Beryllium (Be)-Dissolved	<0.10		0.10	ug/L	22-MAY-19	22-MAY-19	R4640850
Bismuth (Bi)-Dissolved	<0.050		0.050	ug/L	22-MAY-19	22-MAY-19	R4640850
Boron (B)-Dissolved	375		10	ug/L	22-MAY-19	22-MAY-19	R4640850
Cadmium (Cd)-Dissolved	0.328		0.0050	ug/L	22-MAY-19	22-MAY-19	R4640850
Calcium (Ca)-Dissolved	521000		50	ug/L	22-MAY-19	22-MAY-19	R4640850
Cesium (Cs)-Dissolved	0.020		0.010	ug/L	22-MAY-19	22-MAY-19	R4640850
Chromium (Cr)-Dissolved	0.14		0.10	ug/L	22-MAY-19	22-MAY-19	R4640850
Cobalt (Co)-Dissolved	0.59		0.10	ug/L	22-MAY-19	22-MAY-19	R4640850
Copper (Cu)-Dissolved	2.19		0.20	ug/L	22-MAY-19	22-MAY-19	R4640850
Iron (Fe)-Dissolved	<10		10	ug/L	22-MAY-19	22-MAY-19	R4640850
Lead (Pb)-Dissolved	0.060		0.050	ug/L	22-MAY-19	22-MAY-19	R4640850
Lithium (Li)-Dissolved	510		100	ug/L	22-MAY-19	22-MAY-19	R4640850
Magnesium (Mg)-Dissolved	222000		5.0	ug/L	22-MAY-19	22-MAY-19	R4640850
Manganese (Mn)-Dissolved	711		0.10	ug/L	22-MAY-19	22-MAY-19	R4640850
Molybdenum (Mo)-Dissolved	0.702		0.050	ug/L	22-MAY-19	22-MAY-19	R4640850
Nickel (Ni)-Dissolved	6.83		0.50	ug/L	22-MAY-19	22-MAY-19	R4640850
Phosphorus (P)-Dissolved	<30		30	ug/L	22-MAY-19	22-MAY-19	R4640850
Potassium (K)-Dissolved	9650		50	ug/L	22-MAY-19	22-MAY-19	R4640850
Rubidium (Rb)-Dissolved	5.50		0.20	ug/L	22-MAY-19	22-MAY-19	R4640850
Selenium (Se)-Dissolved	0.188		0.050	ug/L	22-MAY-19	22-MAY-19	R4640850
Silicon (Si)-Dissolved	9670		50	ug/L	22-MAY-19	22-MAY-19	R4640850
Silver (Ag)-Dissolved	0.022		0.010	ug/L	22-MAY-19	22-MAY-19	R4640850
Sodium (Na)-Dissolved	323000		50	ug/L	22-MAY-19	22-MAY-19	R4640850
Strontium (Sr)-Dissolved	3310		10	ug/L	22-MAY-19	22-MAY-19	R4640850
Sulfur (S)-Dissolved	556000		50000	ug/L	22-MAY-19	22-MAY-19	R4640850
Tellurium (Te)-Dissolved	0.31		0.20	ug/L	22-MAY-19	22-MAY-19	R4640850
Thallium (Tl)-Dissolved	0.044		0.010	ug/L	22-MAY-19	22-MAY-19	R4640850
Thorium (Th)-Dissolved	<0.10		0.10	ug/L	22-MAY-19	22-MAY-19	R4640850
Tin (Sn)-Dissolved	<0.10		0.10	ug/L	22-MAY-19	22-MAY-19	R4640850
Titanium (Ti)-Dissolved	<0.30		0.30	ug/L	22-MAY-19	22-MAY-19	R4640850
Tungsten (W)-Dissolved	<0.10		0.10	ug/L	22-MAY-19	22-MAY-19	R4640850
Uranium (U)-Dissolved	28.4		0.010	ug/L	22-MAY-19	22-MAY-19	R4640850
Vanadium (V)-Dissolved	<0.50		0.50	ug/L	22-MAY-19	22-MAY-19	R4640850
Zinc (Zn)-Dissolved	6.1		1.0	ug/L	22-MAY-19	22-MAY-19	R4640850
Zirconium (Zr)-Dissolved	0.362		0.060	ug/L	22-MAY-19	22-MAY-19	R4640850
L2276000-2 GWQ25 6N67F							
Sampled By: CLIENT on 21-MAY-19 @ 09:57							
Matrix: WATER							
Miscellaneous Parameters							
Chromium, Hexavalent	<0.50		0.50	ug/L		23-MAY-19	R4641775
Mercury (Hg)-Total	<0.0050		0.0050	ug/L	21-MAY-19	23-MAY-19	R4642548

* 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
L2276000-2 GWQ25 6N67F							
Sampled By: CLIENT on 21-MAY-19 @ 09:57							
Matrix: WATER							
Phenols (4AAP)	20.5		1.0	ug/L		24-MAY-19	R4642316
Cyanide, Total	<1.0		1.0	ug/L		23-MAY-19	R4644469
Dissolved Metals in Water by CRC ICPMS							
Dissolved Metals Filtration Location	FIELD					22-MAY-19	R4640452
Aluminum (Al)-Dissolved	2.4		1.0	ug/L	22-MAY-19	22-MAY-19	R4640850
Antimony (Sb)-Dissolved	<0.10		0.10	ug/L	22-MAY-19	22-MAY-19	R4640850
Arsenic (As)-Dissolved	1.29		0.10	ug/L	22-MAY-19	22-MAY-19	R4640850
Barium (Ba)-Dissolved	10.2		0.10	ug/L	22-MAY-19	22-MAY-19	R4640850
Beryllium (Be)-Dissolved	<0.10		0.10	ug/L	22-MAY-19	22-MAY-19	R4640850
Bismuth (Bi)-Dissolved	<0.050		0.050	ug/L	22-MAY-19	22-MAY-19	R4640850
Boron (B)-Dissolved	407		10	ug/L	22-MAY-19	22-MAY-19	R4640850
Cadmium (Cd)-Dissolved	0.0155		0.0050	ug/L	22-MAY-19	22-MAY-19	R4640850
Calcium (Ca)-Dissolved	407000		50	ug/L	22-MAY-19	22-MAY-19	R4640850
Cesium (Cs)-Dissolved	0.015		0.010	ug/L	22-MAY-19	22-MAY-19	R4640850
Chromium (Cr)-Dissolved	<0.10		0.10	ug/L	22-MAY-19	22-MAY-19	R4640850
Cobalt (Co)-Dissolved	2.73		0.10	ug/L	22-MAY-19	22-MAY-19	R4640850
Copper (Cu)-Dissolved	0.29		0.20	ug/L	22-MAY-19	22-MAY-19	R4640850
Iron (Fe)-Dissolved	12		10	ug/L	22-MAY-19	22-MAY-19	R4640850
Lead (Pb)-Dissolved	<0.050		0.050	ug/L	22-MAY-19	22-MAY-19	R4640850
Lithium (Li)-Dissolved	370		100	ug/L	22-MAY-19	22-MAY-19	R4640850
Magnesium (Mg)-Dissolved	231000		5.0	ug/L	22-MAY-19	22-MAY-19	R4640850
Manganese (Mn)-Dissolved	191		0.10	ug/L	22-MAY-19	22-MAY-19	R4640850
Molybdenum (Mo)-Dissolved	0.792		0.050	ug/L	22-MAY-19	22-MAY-19	R4640850
Nickel (Ni)-Dissolved	3.85		0.50	ug/L	22-MAY-19	22-MAY-19	R4640850
Phosphorus (P)-Dissolved	<30		30	ug/L	22-MAY-19	22-MAY-19	R4640850
Potassium (K)-Dissolved	9180		50	ug/L	22-MAY-19	22-MAY-19	R4640850
Rubidium (Rb)-Dissolved	3.70		0.20	ug/L	22-MAY-19	22-MAY-19	R4640850
Selenium (Se)-Dissolved	<0.050		0.050	ug/L	22-MAY-19	22-MAY-19	R4640850
Silicon (Si)-Dissolved	11400		50	ug/L	22-MAY-19	22-MAY-19	R4640850
Silver (Ag)-Dissolved	0.077		0.010	ug/L	22-MAY-19	22-MAY-19	R4640850
Sodium (Na)-Dissolved	305000		50	ug/L	22-MAY-19	22-MAY-19	R4640850
Strontium (Sr)-Dissolved	2890		10	ug/L	22-MAY-19	22-MAY-19	R4640850
Sulfur (S)-Dissolved	490000		500	ug/L	22-MAY-19	22-MAY-19	R4640850
Tellurium (Te)-Dissolved	0.30		0.20	ug/L	22-MAY-19	22-MAY-19	R4640850
Thallium (Tl)-Dissolved	0.021		0.010	ug/L	22-MAY-19	22-MAY-19	R4640850
Thorium (Th)-Dissolved	<0.10		0.10	ug/L	22-MAY-19	22-MAY-19	R4640850
Tin (Sn)-Dissolved	<0.10		0.10	ug/L	22-MAY-19	22-MAY-19	R4640850
Titanium (Ti)-Dissolved	<0.30		0.30	ug/L	22-MAY-19	22-MAY-19	R4640850
Tungsten (W)-Dissolved	<0.10		0.10	ug/L	22-MAY-19	22-MAY-19	R4640850
Uranium (U)-Dissolved	21.6		0.010	ug/L	22-MAY-19	22-MAY-19	R4640850
Vanadium (V)-Dissolved	<0.50		0.50	ug/L	22-MAY-19	22-MAY-19	R4640850
Zinc (Zn)-Dissolved	2.2		1.0	ug/L	22-MAY-19	22-MAY-19	R4640850
Zirconium (Zr)-Dissolved	0.099		0.060	ug/L	22-MAY-19	22-MAY-19	R4640850
L2276000-3 GWQ25 6N57DR							
Sampled By: CLIENT on 21-MAY-19 @ 10:19							
Matrix: WATER							
Miscellaneous Parameters							
Chromium, Hexavalent	<0.50		0.50	ug/L		23-MAY-19	R4641775
Mercury (Hg)-Total	<0.0050		0.0050	ug/L	21-MAY-19	23-MAY-19	R4642548
Phenols (4AAP)	11.3		1.0	ug/L		24-MAY-19	R4642316
Cyanide, Total	<1.0		1.0	ug/L		23-MAY-19	R4644469
Dissolved Metals in Water by CRC ICPMS							

* 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
L2276000-3 GWQ25 6N57DR							
Sampled By: CLIENT on 21-MAY-19 @ 10:19							
Matrix: WATER							
Dissolved Metals in Water by CRC ICPMS							
Dissolved Metals Filtration Location	FIELD					22-MAY-19	R4640452
Aluminum (Al)-Dissolved	3.8		1.0	ug/L	22-MAY-19	22-MAY-19	R4640850
Antimony (Sb)-Dissolved	0.17		0.10	ug/L	22-MAY-19	22-MAY-19	R4640850
Arsenic (As)-Dissolved	0.52		0.10	ug/L	22-MAY-19	22-MAY-19	R4640850
Barium (Ba)-Dissolved	9.29		0.10	ug/L	22-MAY-19	22-MAY-19	R4640850
Beryllium (Be)-Dissolved	<0.10		0.10	ug/L	22-MAY-19	22-MAY-19	R4640850
Bismuth (Bi)-Dissolved	<0.050		0.050	ug/L	22-MAY-19	22-MAY-19	R4640850
Boron (B)-Dissolved	319		10	ug/L	22-MAY-19	22-MAY-19	R4640850
Cadmium (Cd)-Dissolved	0.116		0.0050	ug/L	22-MAY-19	22-MAY-19	R4640850
Calcium (Ca)-Dissolved	676000		5000	ug/L	22-MAY-19	22-MAY-19	R4640850
Cesium (Cs)-Dissolved	0.023		0.010	ug/L	22-MAY-19	22-MAY-19	R4640850
Chromium (Cr)-Dissolved	<0.10		0.10	ug/L	22-MAY-19	22-MAY-19	R4640850
Cobalt (Co)-Dissolved	3.19		0.10	ug/L	22-MAY-19	22-MAY-19	R4640850
Copper (Cu)-Dissolved	2.18		0.20	ug/L	22-MAY-19	22-MAY-19	R4640850
Iron (Fe)-Dissolved	<10		10	ug/L	22-MAY-19	22-MAY-19	R4640850
Lead (Pb)-Dissolved	0.059		0.050	ug/L	22-MAY-19	22-MAY-19	R4640850
Lithium (Li)-Dissolved	700		100	ug/L	22-MAY-19	22-MAY-19	R4640850
Magnesium (Mg)-Dissolved	253000		5.0	ug/L	22-MAY-19	22-MAY-19	R4640850
Manganese (Mn)-Dissolved	2210		10	ug/L	22-MAY-19	22-MAY-19	R4640850
Molybdenum (Mo)-Dissolved	0.828		0.050	ug/L	22-MAY-19	22-MAY-19	R4640850
Nickel (Ni)-Dissolved	9.98		0.50	ug/L	22-MAY-19	22-MAY-19	R4640850
Phosphorus (P)-Dissolved	<30		30	ug/L	22-MAY-19	22-MAY-19	R4640850
Potassium (K)-Dissolved	11500		50	ug/L	22-MAY-19	22-MAY-19	R4640850
Rubidium (Rb)-Dissolved	5.54		0.20	ug/L	22-MAY-19	22-MAY-19	R4640850
Selenium (Se)-Dissolved	0.305		0.050	ug/L	22-MAY-19	22-MAY-19	R4640850
Silicon (Si)-Dissolved	10100		50	ug/L	22-MAY-19	22-MAY-19	R4640850
Silver (Ag)-Dissolved	0.019		0.010	ug/L	22-MAY-19	22-MAY-19	R4640850
Sodium (Na)-Dissolved	593000		5000	ug/L	22-MAY-19	22-MAY-19	R4640850
Strontium (Sr)-Dissolved	4180		10	ug/L	22-MAY-19	22-MAY-19	R4640850
Sulfur (S)-Dissolved	783000		50000	ug/L	22-MAY-19	22-MAY-19	R4640850
Tellurium (Te)-Dissolved	0.38		0.20	ug/L	22-MAY-19	22-MAY-19	R4640850
Thallium (Tl)-Dissolved	0.052		0.010	ug/L	22-MAY-19	22-MAY-19	R4640850
Thorium (Th)-Dissolved	<0.10		0.10	ug/L	22-MAY-19	22-MAY-19	R4640850
Tin (Sn)-Dissolved	<0.10		0.10	ug/L	22-MAY-19	22-MAY-19	R4640850
Titanium (Ti)-Dissolved	<0.30		0.30	ug/L	22-MAY-19	22-MAY-19	R4640850
Tungsten (W)-Dissolved	<0.10		0.10	ug/L	22-MAY-19	22-MAY-19	R4640850
Uranium (U)-Dissolved	39.6		0.010	ug/L	22-MAY-19	22-MAY-19	R4640850
Vanadium (V)-Dissolved	<0.50		0.50	ug/L	22-MAY-19	22-MAY-19	R4640850
Zinc (Zn)-Dissolved	6.1		1.0	ug/L	22-MAY-19	22-MAY-19	R4640850
Zirconium (Zr)-Dissolved	0.457		0.060	ug/L	22-MAY-19	22-MAY-19	R4640850
L2276000-4 GWQ25 6N57F							
Sampled By: CLIENT on 21-MAY-19 @ 10:27							
Matrix: WATER							
Miscellaneous Parameters							
Chromium, Hexavalent	<0.50		0.50	ug/L		23-MAY-19	R4641775
Mercury (Hg)-Total	0.070	DLM	0.050	ug/L	21-MAY-19	23-MAY-19	R4642548
Phenols (4AAP)	17.1		1.0	ug/L		24-MAY-19	R4642316
Cyanide, Total	1.0		1.0	ug/L		23-MAY-19	R4644469
Dissolved Metals in Water by CRC ICPMS							
Dissolved Metals Filtration Location	FIELD					22-MAY-19	R4640452
Aluminum (Al)-Dissolved	4.8		1.0	ug/L	22-MAY-19	22-MAY-19	R4640850

* 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
L2276000-4 GWQ25 6N57F							
Sampled By: CLIENT on 21-MAY-19 @ 10:27							
Matrix: WATER							
Dissolved Metals in Water by CRC ICPMS							
Antimony (Sb)-Dissolved	<0.10		0.10	ug/L	22-MAY-19	22-MAY-19	R4640850
Arsenic (As)-Dissolved	9.87		0.10	ug/L	22-MAY-19	22-MAY-19	R4640850
Barium (Ba)-Dissolved	9.50		0.10	ug/L	22-MAY-19	22-MAY-19	R4640850
Beryllium (Be)-Dissolved	<0.10		0.10	ug/L	22-MAY-19	22-MAY-19	R4640850
Bismuth (Bi)-Dissolved	<0.050		0.050	ug/L	22-MAY-19	22-MAY-19	R4640850
Boron (B)-Dissolved	477		10	ug/L	22-MAY-19	22-MAY-19	R4640850
Cadmium (Cd)-Dissolved	0.0086		0.0050	ug/L	22-MAY-19	22-MAY-19	R4640850
Calcium (Ca)-Dissolved	485000		50	ug/L	22-MAY-19	22-MAY-19	R4640850
Cesium (Cs)-Dissolved	0.017		0.010	ug/L	22-MAY-19	22-MAY-19	R4640850
Chromium (Cr)-Dissolved	<0.10		0.10	ug/L	22-MAY-19	22-MAY-19	R4640850
Cobalt (Co)-Dissolved	3.84		0.10	ug/L	22-MAY-19	22-MAY-19	R4640850
Copper (Cu)-Dissolved	<0.20		0.20	ug/L	22-MAY-19	22-MAY-19	R4640850
Iron (Fe)-Dissolved	1430		10	ug/L	22-MAY-19	22-MAY-19	R4640850
Lead (Pb)-Dissolved	<0.050		0.050	ug/L	22-MAY-19	22-MAY-19	R4640850
Lithium (Li)-Dissolved	470		100	ug/L	22-MAY-19	22-MAY-19	R4640850
Magnesium (Mg)-Dissolved	219000		5.0	ug/L	22-MAY-19	22-MAY-19	R4640850
Manganese (Mn)-Dissolved	505		0.10	ug/L	22-MAY-19	22-MAY-19	R4640850
Molybdenum (Mo)-Dissolved	1.39		0.050	ug/L	22-MAY-19	22-MAY-19	R4640850
Nickel (Ni)-Dissolved	5.22		0.50	ug/L	22-MAY-19	22-MAY-19	R4640850
Phosphorus (P)-Dissolved	<30		30	ug/L	22-MAY-19	22-MAY-19	R4640850
Potassium (K)-Dissolved	13500		50	ug/L	22-MAY-19	22-MAY-19	R4640850
Rubidium (Rb)-Dissolved	5.22		0.20	ug/L	22-MAY-19	22-MAY-19	R4640850
Selenium (Se)-Dissolved	<0.050		0.050	ug/L	22-MAY-19	22-MAY-19	R4640850
Silicon (Si)-Dissolved	11300		50	ug/L	22-MAY-19	22-MAY-19	R4640850
Silver (Ag)-Dissolved	0.024		0.010	ug/L	22-MAY-19	22-MAY-19	R4640850
Sodium (Na)-Dissolved	638000		5000	ug/L	22-MAY-19	22-MAY-19	R4640850
Strontium (Sr)-Dissolved	3470		10	ug/L	22-MAY-19	22-MAY-19	R4640850
Sulfur (S)-Dissolved	541000		50000	ug/L	22-MAY-19	22-MAY-19	R4640850
Tellurium (Te)-Dissolved	0.29		0.20	ug/L	22-MAY-19	22-MAY-19	R4640850
Thallium (Tl)-Dissolved	0.028		0.010	ug/L	22-MAY-19	22-MAY-19	R4640850
Thorium (Th)-Dissolved	<0.10		0.10	ug/L	22-MAY-19	22-MAY-19	R4640850
Tin (Sn)-Dissolved	<0.10		0.10	ug/L	22-MAY-19	22-MAY-19	R4640850
Titanium (Ti)-Dissolved	<0.30		0.30	ug/L	22-MAY-19	22-MAY-19	R4640850
Tungsten (W)-Dissolved	<0.10		0.10	ug/L	22-MAY-19	22-MAY-19	R4640850
Uranium (U)-Dissolved	23.0		0.010	ug/L	22-MAY-19	22-MAY-19	R4640850
Vanadium (V)-Dissolved	<0.50		0.50	ug/L	22-MAY-19	22-MAY-19	R4640850
Zinc (Zn)-Dissolved	2.2		1.0	ug/L	22-MAY-19	22-MAY-19	R4640850
Zirconium (Zr)-Dissolved	0.077		0.060	ug/L	22-MAY-19	22-MAY-19	R4640850

* 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**
CN-T-CFA-WP	Water	Total Cyanide in water by CFA	ISO 14403-2
This analysis is carried out using procedures adapted from ISO Method 14403-2:2012 "Determination of Total Cyanide using Flow Analysis (FIA and CFA)". Total or strong acid dissociable (SAD) cyanide is determined by in-line UV digestion along with sample distillation and final determination by colourmetric analysis.			
CR-CR6-IC-WT	Water	Chromium +6	EPA 7199
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.			
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).			
HG-T-CVAA-WP	Water	Mercury Total	EPA 1631E (mod)
Water samples undergo a cold-oxidation using bromine monochloride prior to reduction with stannous chloride, and analyzed by CVAAS.			
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.			
PHENOLS-4AAP-WT	Water	Phenol (4AAP)	EPA 9066
An automated method is used to distill the sample. The distillate is then buffered to pH 9.4 which reacts with 4AAP and potassium ferricyanide to form a red complex which is measured colorimetrically.			

** 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
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: L2276000

Report Date: 27-MAY-19

Page 1 of 4

Client: City of Winnipeg - Solid Waste Services Div (1120 Waverley)
 Solid Waste Services Division 1120 Waverley Street
 Winnipeg MB R3T 0P4

Contact: CHRIS KOZAK

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
CN-T-CFA-WP		Water						
Batch	R4644469							
WG3059059-2	LCS							
Cyanide, Total			89.9		%		80-120	23-MAY-19
WG3059059-1	MB							
Cyanide, Total			<0.0010		mg/L		0.001	23-MAY-19
CR-CR6-IC-WT		Water						
Batch	R4641775							
WG3056533-2	LCS							
Chromium, Hexavalent			97.4		%		80-120	23-MAY-19
WG3056533-1	MB							
Chromium, Hexavalent			<0.00050		mg/L		0.0005	23-MAY-19
HG-T-CVAA-WP		Water						
Batch	R4642548							
WG3057803-2	LCS							
Mercury (Hg)-Total			103.0		%		80-120	23-MAY-19
WG3057803-1	MB							
Mercury (Hg)-Total			<0.000005C		mg/L		0.000005	23-MAY-19
MET-D-CCMS-WP		Water						
Batch	R4640850							
WG3055633-2	LCS							
Aluminum (Al)-Dissolved			102.4		%		80-120	22-MAY-19
Antimony (Sb)-Dissolved			98.7		%		80-120	22-MAY-19
Arsenic (As)-Dissolved			98.9		%		80-120	22-MAY-19
Barium (Ba)-Dissolved			99.8		%		80-120	22-MAY-19
Beryllium (Be)-Dissolved			101.4		%		80-120	22-MAY-19
Bismuth (Bi)-Dissolved			98.0		%		80-120	22-MAY-19
Boron (B)-Dissolved			106.9		%		80-120	22-MAY-19
Cadmium (Cd)-Dissolved			99.7		%		80-120	22-MAY-19
Calcium (Ca)-Dissolved			100.6		%		80-120	22-MAY-19
Cesium (Cs)-Dissolved			100.4		%		80-120	22-MAY-19
Chromium (Cr)-Dissolved			102.4		%		80-120	22-MAY-19
Cobalt (Co)-Dissolved			101.0		%		80-120	22-MAY-19
Copper (Cu)-Dissolved			102.6		%		80-120	22-MAY-19
Iron (Fe)-Dissolved			95.4		%		80-120	22-MAY-19
Lead (Pb)-Dissolved			99.4		%		80-120	22-MAY-19
Lithium (Li)-Dissolved			99.1		%		80-120	22-MAY-19
Magnesium (Mg)-Dissolved			111.6		%		80-120	22-MAY-19



Quality Control Report

Workorder: L2276000

Report Date: 27-MAY-19

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Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
MET-D-CCMS-WP								
	Water							
Batch	R4640850							
WG3055633-2	LCS							
Manganese (Mn)-Dissolved			102.6		%		80-120	22-MAY-19
Molybdenum (Mo)-Dissolved			101.5		%		80-120	22-MAY-19
Nickel (Ni)-Dissolved			100.2		%		80-120	22-MAY-19
Phosphorus (P)-Dissolved			107.1		%		80-120	22-MAY-19
Potassium (K)-Dissolved			97.3		%		80-120	22-MAY-19
Rubidium (Rb)-Dissolved			100.7		%		80-120	22-MAY-19
Selenium (Se)-Dissolved			99.7		%		80-120	22-MAY-19
Silicon (Si)-Dissolved			100.0		%		80-120	22-MAY-19
Silver (Ag)-Dissolved			99.0		%		80-120	22-MAY-19
Sodium (Na)-Dissolved			101.9		%		80-120	22-MAY-19
Strontium (Sr)-Dissolved			99.9		%		80-120	22-MAY-19
Sulfur (S)-Dissolved			100.2		%		80-120	22-MAY-19
Tellurium (Te)-Dissolved			98.3		%		80-120	22-MAY-19
Thallium (Tl)-Dissolved			98.5		%		80-120	22-MAY-19
Thorium (Th)-Dissolved			98.6		%		80-120	22-MAY-19
Tin (Sn)-Dissolved			99.3		%		80-120	22-MAY-19
Titanium (Ti)-Dissolved			100.5		%		80-120	22-MAY-19
Tungsten (W)-Dissolved			100.5		%		80-120	22-MAY-19
Uranium (U)-Dissolved			102.9		%		80-120	22-MAY-19
Vanadium (V)-Dissolved			102.3		%		80-120	22-MAY-19
Zinc (Zn)-Dissolved			100.3		%		80-120	22-MAY-19
Zirconium (Zr)-Dissolved			99.3		%		80-120	22-MAY-19
WG3055633-1	MB							
Aluminum (Al)-Dissolved			<0.0010		mg/L		0.001	22-MAY-19
Antimony (Sb)-Dissolved			<0.00010		mg/L		0.0001	22-MAY-19
Arsenic (As)-Dissolved			<0.00010		mg/L		0.0001	22-MAY-19
Barium (Ba)-Dissolved			<0.00010		mg/L		0.0001	22-MAY-19
Beryllium (Be)-Dissolved			<0.00010		mg/L		0.0001	22-MAY-19
Bismuth (Bi)-Dissolved			<0.000050		mg/L		0.00005	22-MAY-19
Boron (B)-Dissolved			<0.010		mg/L		0.01	22-MAY-19
Cadmium (Cd)-Dissolved			<0.0000050		mg/L		0.000005	22-MAY-19
Calcium (Ca)-Dissolved			<0.050		mg/L		0.05	22-MAY-19
Cesium (Cs)-Dissolved			<0.000010		mg/L		0.00001	22-MAY-19
Chromium (Cr)-Dissolved			<0.00010		mg/L		0.0001	22-MAY-19



Quality Control Report

Workorder: L2276000

Report Date: 27-MAY-19

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Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
MET-D-CCMS-WP		Water						
Batch	R4640850							
WG3055633-1	MB							
Cobalt (Co)-Dissolved			<0.00010		mg/L		0.0001	22-MAY-19
Copper (Cu)-Dissolved			<0.00020		mg/L		0.0002	22-MAY-19
Iron (Fe)-Dissolved			<0.010		mg/L		0.01	22-MAY-19
Lead (Pb)-Dissolved			<0.000050		mg/L		0.00005	22-MAY-19
Lithium (Li)-Dissolved			<0.0010		mg/L		0.001	22-MAY-19
Magnesium (Mg)-Dissolved			<0.0050		mg/L		0.005	22-MAY-19
Manganese (Mn)-Dissolved			<0.00010		mg/L		0.0001	22-MAY-19
Molybdenum (Mo)-Dissolved			<0.000050		mg/L		0.00005	22-MAY-19
Nickel (Ni)-Dissolved			<0.00050		mg/L		0.0005	22-MAY-19
Phosphorus (P)-Dissolved			<0.030		mg/L		0.03	22-MAY-19
Potassium (K)-Dissolved			<0.050		mg/L		0.05	22-MAY-19
Rubidium (Rb)-Dissolved			<0.00020		mg/L		0.0002	22-MAY-19
Selenium (Se)-Dissolved			<0.000050		mg/L		0.00005	22-MAY-19
Silicon (Si)-Dissolved			<0.050		mg/L		0.05	22-MAY-19
Silver (Ag)-Dissolved			<0.000010		mg/L		0.00001	22-MAY-19
Sodium (Na)-Dissolved			<0.050		mg/L		0.05	22-MAY-19
Strontium (Sr)-Dissolved			<0.00010		mg/L		0.0001	22-MAY-19
Sulfur (S)-Dissolved			<0.50		mg/L		0.5	22-MAY-19
Tellurium (Te)-Dissolved			<0.00020		mg/L		0.0002	22-MAY-19
Thallium (Tl)-Dissolved			<0.000010		mg/L		0.00001	22-MAY-19
Thorium (Th)-Dissolved			<0.00010		mg/L		0.0001	22-MAY-19
Tin (Sn)-Dissolved			<0.00010		mg/L		0.0001	22-MAY-19
Titanium (Ti)-Dissolved			<0.00030		mg/L		0.0003	22-MAY-19
Tungsten (W)-Dissolved			<0.00010		mg/L		0.0001	22-MAY-19
Uranium (U)-Dissolved			<0.000010		mg/L		0.00001	22-MAY-19
Vanadium (V)-Dissolved			<0.00050		mg/L		0.0005	22-MAY-19
Zinc (Zn)-Dissolved			<0.0010		mg/L		0.001	22-MAY-19
Zirconium (Zr)-Dissolved			<0.000060		mg/L		0.00006	22-MAY-19
PHENOLS-4AAP-WT		Water						
Batch	R4642316							
WG3057627-10	LCS							
Phenols (4AAP)			95.0		%		85-115	24-MAY-19
WG3057627-9	MB							
Phenols (4AAP)			<0.0010		mg/L		0.001	24-MAY-19

Quality Control Report

Workorder: L2276000

Report Date: 27-MAY-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

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.



Chain of Custody (COC) / Analytical Request Form

Canada Toll Free: 1 800 668 9878



L2276000-COFC

COC Number: 15 -

Page of

www.alsglobal.com

Report To Contact and company name below will appear on the final report		Report Format / Distribution			Select Service Level Below - Please confirm all E&P TATs with your AM - surcharges will apply						
Company:	City of Winnipeg	Select Report Format: <input checked="" type="checkbox"/> PDF <input 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:	Chris Kozak	Quality Control (QC) Report with Report <input checked="" type="checkbox"/> YES <input type="checkbox"/> NO			PRIORITY (Business Days)	4 day [P4]	<input type="checkbox"/>	EMERGENCY	1 Business day [E1]		<input type="checkbox"/>
Phone:	204-986-2384	<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			Date and Time Required for all E&P TATs:		dd-mm-yy hh:mm				
Street:	1120 Waverly Street	Email 1 or Fax ckozak@winnipeg.ca			For tests that can not be performed according to the service level selected, you will be contacted.						
City/Province:	Winnipeg, Manitoba	Email 2			Analysis Request						
Postal Code:	R3T 0P4	Email 3			Indicate Filtered (F), Preserved (P) or Filtered and Preserved (F/P) below						
Invoice To	Same as Report To <input type="checkbox"/> YES <input type="checkbox"/> NO	Invoice Distribution			CNT-CFA-WP	MET-D-CCMS-WP (DISSOLVED)	HG-T-CVAA-WP (TOTAL)	CR-CR6-IC-WT	PHENOLS-4AAP-WT	Number of Containers	
Copy of Invoice with Report <input type="checkbox"/> YES <input type="checkbox"/> NO		Select Invoice Distribution: <input type="checkbox"/> EMAIL <input checked="" type="checkbox"/> MAIL <input type="checkbox"/> FAX									
Company:		Email 1 or Fax									
Contact:		Email 2									
Project Information		Oil and Gas Required Fields (client use)									
ALS Account # / Quote #:	W10051/Q67317	AFE/Cost Center:	PO#								
Job #:	Section B - BRRMF Groundwater	Major/Minor Code:	Routing Code:								
PO / AFE:		Requisitioner:									
LSD:		Location:									
ALS Lab Work Order # (lab use only)		ALS Contact:		Sampler:							
ALS Sample # (lab use only)	Sample Identification and/or Coordinates (This description will appear on the report)	Date (dd-mm-yy)	Time (hh:mm)	Sample Type							
	6N025 6N67E	202 762	21-MAY-19 09:45	WATER	X	X	X	X	X	5	
	" 6N67F	202 763	↓ 09:57	WATER	↓	↓	↓	↓	↓		
	" 6N57DR	202 760	↓ 10:19	WATER	↓	↓	↓	↓	↓		
	" 6N57F	202 761	↓ 10:27	WATER	↓	↓	↓	↓	↓		
				WATER							
				WATER							
				WATER							
				WATER							
				WATER							
				WATER							
				WATER							
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					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 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			
								17.5			
SHIPMENT RELEASE (client use)				INITIAL SHIPMENT RECEPTION (lab use only)				FINAL SHIPMENT RECEPTION (lab use only)			
Released by:	Date:	Time:	Received by:	Date:	Time:	Received by:	Date:	Time:	Received by:	Date:	Time:
<i>[Signature]</i>	21 MAY 19		<i>[Signature]</i>	21/19	10:50	<i>[Signature]</i>			<i>[Signature]</i>		



City of Winnipeg - Solid Waste Services Div
(1120 Waverley)
ATTN: CHRIS KOZAK
Solid Waste Services Division
1120 Waverley Street
Winnipeg MB R3T 0P4

Date Received: 21-MAY-19
Report Date: 31-MAY-19 13:15 (MT)
Version: FINAL

Client Phone: 204-986-2384

Certificate of Analysis

Lab Work Order #: L2276338
Project P.O. #: NOT SUBMITTED
Job Reference: SECTION B - BRRMF GROUNDWATER
C of C Numbers:
Legal Site Desc:

Hua Wo
Chemistry Laboratory Manager

[This report shall not be reproduced except in full without the written authority of the Laboratory.]

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
L2276338-1 6N60DR # 202753							
Sampled By: CLIENT on 21-MAY-19 @ 09:53							
Matrix: WATER							
Miscellaneous Parameters							
Chromium, Hexavalent	<0.50		0.50	ug/L		24-MAY-19	R4642032
Mercury (Hg)-Total	<0.0050		0.0050	ug/L	22-MAY-19	23-MAY-19	R4642548
Phenols (4AAP)	5.3		1.0	ug/L		27-MAY-19	R4645002
Cyanide, Total	<1.0		1.0	ug/L		28-MAY-19	R4647167
Dissolved Metals in Water by CRC ICPMS							
Dissolved Metals Filtration Location	FIELD					22-MAY-19	R4640452
Aluminum (Al)-Dissolved	2.0		1.0	ug/L	22-MAY-19	22-MAY-19	R4640850
Antimony (Sb)-Dissolved	<0.10		0.10	ug/L	22-MAY-19	22-MAY-19	R4640850
Arsenic (As)-Dissolved	0.48		0.10	ug/L	22-MAY-19	22-MAY-19	R4640850
Barium (Ba)-Dissolved	8.10		0.10	ug/L	22-MAY-19	22-MAY-19	R4640850
Beryllium (Be)-Dissolved	<0.10		0.10	ug/L	22-MAY-19	22-MAY-19	R4640850
Bismuth (Bi)-Dissolved	<0.050		0.050	ug/L	22-MAY-19	22-MAY-19	R4640850
Boron (B)-Dissolved	316		10	ug/L	22-MAY-19	22-MAY-19	R4640850
Cadmium (Cd)-Dissolved	0.0465		0.0050	ug/L	22-MAY-19	22-MAY-19	R4640850
Calcium (Ca)-Dissolved	579000		5000	ug/L	22-MAY-19	22-MAY-19	R4640850
Cesium (Cs)-Dissolved	0.016		0.010	ug/L	22-MAY-19	22-MAY-19	R4640850
Chromium (Cr)-Dissolved	<0.10		0.10	ug/L	22-MAY-19	22-MAY-19	R4640850
Cobalt (Co)-Dissolved	0.68		0.10	ug/L	22-MAY-19	22-MAY-19	R4640850
Copper (Cu)-Dissolved	1.40		0.20	ug/L	22-MAY-19	22-MAY-19	R4640850
Iron (Fe)-Dissolved	<10		10	ug/L	22-MAY-19	22-MAY-19	R4640850
Lead (Pb)-Dissolved	<0.050		0.050	ug/L	22-MAY-19	22-MAY-19	R4640850
Lithium (Li)-Dissolved	620		100	ug/L	22-MAY-19	22-MAY-19	R4640850
Magnesium (Mg)-Dissolved	212000		5.0	ug/L	22-MAY-19	22-MAY-19	R4640850
Manganese (Mn)-Dissolved	860		0.10	ug/L	22-MAY-19	22-MAY-19	R4640850
Molybdenum (Mo)-Dissolved	0.615		0.050	ug/L	22-MAY-19	22-MAY-19	R4640850
Nickel (Ni)-Dissolved	6.67		0.50	ug/L	22-MAY-19	22-MAY-19	R4640850
Phosphorus (P)-Dissolved	<30		30	ug/L	22-MAY-19	22-MAY-19	R4640850
Potassium (K)-Dissolved	10200		50	ug/L	22-MAY-19	22-MAY-19	R4640850
Rubidium (Rb)-Dissolved	4.83		0.20	ug/L	22-MAY-19	22-MAY-19	R4640850
Selenium (Se)-Dissolved	0.135		0.050	ug/L	22-MAY-19	22-MAY-19	R4640850
Silicon (Si)-Dissolved	10800		50	ug/L	22-MAY-19	22-MAY-19	R4640850
Silver (Ag)-Dissolved	0.010		0.010	ug/L	22-MAY-19	22-MAY-19	R4640850
Sodium (Na)-Dissolved	332000		50	ug/L	22-MAY-19	22-MAY-19	R4640850
Strontium (Sr)-Dissolved	3490		10	ug/L	22-MAY-19	22-MAY-19	R4640850
Sulfur (S)-Dissolved	629000		50000	ug/L	22-MAY-19	22-MAY-19	R4640850
Tellurium (Te)-Dissolved	<0.20		0.20	ug/L	22-MAY-19	22-MAY-19	R4640850
Thallium (Tl)-Dissolved	0.034		0.010	ug/L	22-MAY-19	22-MAY-19	R4640850
Thorium (Th)-Dissolved	<0.10		0.10	ug/L	22-MAY-19	22-MAY-19	R4640850
Tin (Sn)-Dissolved	<0.10		0.10	ug/L	22-MAY-19	22-MAY-19	R4640850
Titanium (Ti)-Dissolved	<0.30		0.30	ug/L	22-MAY-19	22-MAY-19	R4640850
Tungsten (W)-Dissolved	<0.10		0.10	ug/L	22-MAY-19	22-MAY-19	R4640850
Uranium (U)-Dissolved	34.3		0.010	ug/L	22-MAY-19	22-MAY-19	R4640850
Vanadium (V)-Dissolved	<0.50		0.50	ug/L	22-MAY-19	22-MAY-19	R4640850
Zinc (Zn)-Dissolved	4.5		1.0	ug/L	22-MAY-19	22-MAY-19	R4640850
Zirconium (Zr)-Dissolved	0.284		0.060	ug/L	22-MAY-19	22-MAY-19	R4640850
Polyaromatic Hydrocarbons (PAHs)							
1-Methyl Naphthalene	<0.020		0.020	ug/L	24-MAY-19	24-MAY-19	R4647527
2-Methyl Naphthalene	<0.020		0.020	ug/L	24-MAY-19	24-MAY-19	R4647527
Acenaphthene	<0.020		0.020	ug/L	24-MAY-19	24-MAY-19	R4647527
Acenaphthylene	<0.020		0.020	ug/L	24-MAY-19	24-MAY-19	R4647527
Anthracene	<0.010		0.010	ug/L	24-MAY-19	24-MAY-19	R4647527

* 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
L2276338-1 6N60DR # 202753							
Sampled By: CLIENT on 21-MAY-19 @ 09:53							
Matrix: WATER							
Polyaromatic Hydrocarbons (PAHs)							
Acridine	<0.020		0.020	ug/L	24-MAY-19	24-MAY-19	R4647527
Benzo(a)anthracene	<0.010		0.010	ug/L	24-MAY-19	24-MAY-19	R4647527
Benzo(a)pyrene	<0.0050		0.0050	ug/L	24-MAY-19	24-MAY-19	R4647527
Benzo(b&j)fluoranthene	<0.010		0.010	ug/L	24-MAY-19	24-MAY-19	R4647527
Benzo(g,h,i)perylene	<0.020		0.020	ug/L	24-MAY-19	24-MAY-19	R4647527
Benzo(k)fluoranthene	<0.010		0.010	ug/L	24-MAY-19	24-MAY-19	R4647527
Chrysene	<0.020		0.020	ug/L	24-MAY-19	24-MAY-19	R4647527
Dibenzo(a,h)anthracene	<0.0050		0.0050	ug/L	24-MAY-19	24-MAY-19	R4647527
Fluoranthene	<0.020		0.020	ug/L	24-MAY-19	24-MAY-19	R4647527
Fluorene	<0.020		0.020	ug/L	24-MAY-19	24-MAY-19	R4647527
Indeno(1,2,3-cd)pyrene	<0.010		0.010	ug/L	24-MAY-19	24-MAY-19	R4647527
Naphthalene	<0.050		0.050	ug/L	24-MAY-19	24-MAY-19	R4647527
Phenanthrene	<0.050		0.050	ug/L	24-MAY-19	24-MAY-19	R4647527
Pyrene	<0.010		0.010	ug/L	24-MAY-19	24-MAY-19	R4647527
Quinoline	<0.020		0.020	ug/L	24-MAY-19	24-MAY-19	R4647527
B(a)P Total Potency Equivalent	<0.030		0.030	ug/L	24-MAY-19	24-MAY-19	R4647527
Surrogate: Acenaphthene d10	96.8		60-130	%	24-MAY-19	24-MAY-19	R4647527
Surrogate: Acridine d9	64.5		60-130	%	24-MAY-19	24-MAY-19	R4647527
Surrogate: Chrysene d12	92.8		60-130	%	24-MAY-19	24-MAY-19	R4647527
Surrogate: Naphthalene d8	91.1		50-130	%	24-MAY-19	24-MAY-19	R4647527
Surrogate: Phenanthrene d10	99.3		60-130	%	24-MAY-19	24-MAY-19	R4647527
Herbicides in Water							
Clopyralid	<0.10		0.10	ug/L	28-MAY-19	29-MAY-19	R4652748
Dicamba	<0.10		0.10	ug/L	28-MAY-19	29-MAY-19	R4652748
Mecoprop	<0.10		0.10	ug/L	28-MAY-19	29-MAY-19	R4652748
MCPA	<0.10		0.10	ug/L	28-MAY-19	29-MAY-19	R4652748
2,4-D	<0.10		0.10	ug/L	28-MAY-19	29-MAY-19	R4652748
Bromoxynil	<0.10		0.10	ug/L	28-MAY-19	29-MAY-19	R4652748
Triclopyr	<0.10		0.10	ug/L	28-MAY-19	29-MAY-19	R4652748
2,4,5-T	<0.10		0.10	ug/L	28-MAY-19	29-MAY-19	R4652748
2,4,5-TP	<0.10		0.10	ug/L	28-MAY-19	29-MAY-19	R4652748
Picloram	<0.10		0.10	ug/L	28-MAY-19	29-MAY-19	R4652748
2,4-DB	<0.10		0.10	ug/L	28-MAY-19	29-MAY-19	R4652748
2,4-DP	<0.10		0.10	ug/L	28-MAY-19	29-MAY-19	R4652748
Dinoseb	<0.10		0.10	ug/L	28-MAY-19	29-MAY-19	R4652748
MCPB	<0.10		0.10	ug/L	28-MAY-19	29-MAY-19	R4652748
Surrogate: 2,4-Dichlorophenylacetic Acid	166.0	SURR-ND	50-130	%	28-MAY-19	29-MAY-19	R4652748
Miscellaneous Pesticides							
Diazinon	<0.10		0.10	ug/L	23-MAY-19	24-MAY-19	R4644622
Surrogate: 2-Fluorobiphenyl	86.5		40-130	%	23-MAY-19	24-MAY-19	R4644622
Surrogate: d14-Terphenyl	86.6		40-130	%	23-MAY-19	24-MAY-19	R4644622
VOC plus F1 to F4							
CCME PHC F2-F4 in Water							
F2 (C10-C16)	<100		100	ug/L	22-MAY-19	22-MAY-19	R4640991
F3 (C16-C34)	<250		250	ug/L	22-MAY-19	22-MAY-19	R4640991
F4 (C34-C50)	<250		250	ug/L	22-MAY-19	22-MAY-19	R4640991
Surrogate: 2-Bromobenzotrifluoride	82.2		60-140	%	22-MAY-19	22-MAY-19	R4640991
CCME Total Hydrocarbons							
F1-BTEX	<100		100	ug/L		31-MAY-19	
F2-Naphth	<100		100	ug/L		31-MAY-19	
F3-PAH	<250		250	ug/L		31-MAY-19	
Total Hydrocarbons (C6-C50)	<380		380	ug/L		31-MAY-19	

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ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2276338-1 6N60DR # 202753							
Sampled By: CLIENT on 21-MAY-19 @ 09:53							
Matrix: WATER							
Sum of Xylene Isomer Concentrations							
Xylenes (Total)	<0.50		0.50	ug/L		31-MAY-19	
Total Trihalomethanes (THMs)							
Total THMs	<1.0		1.0	ug/L		31-MAY-19	
VOC plus F1 by GCMS							
Acetone	<20		20	ug/L		30-MAY-19	R4645483
Benzene	<0.50		0.50	ug/L		30-MAY-19	R4645483
Bromobenzene	<0.50		0.50	ug/L		30-MAY-19	R4645483
Bromochloromethane	<0.50		0.50	ug/L		30-MAY-19	R4645483
Bromodichloromethane	<0.50		0.50	ug/L		30-MAY-19	R4645483
Bromoform	<0.50		0.50	ug/L		30-MAY-19	R4645483
Bromomethane	<1.0		1.0	ug/L		30-MAY-19	R4645483
n-Butylbenzene	<0.50		0.50	ug/L		30-MAY-19	R4645483
sec-Butylbenzene	<0.50		0.50	ug/L		30-MAY-19	R4645483
tert-Butylbenzene	<0.50		0.50	ug/L		30-MAY-19	R4645483
Carbon disulfide	<0.50		0.50	ug/L		30-MAY-19	R4645483
Carbon Tetrachloride	<0.50		0.50	ug/L		30-MAY-19	R4645483
Chlorobenzene	<0.50		0.50	ug/L		30-MAY-19	R4645483
Chloroethane	<1.0		1.0	ug/L		30-MAY-19	R4645483
Chloroform	<0.50		0.50	ug/L		30-MAY-19	R4645483
Chloromethane	<1.0		1.0	ug/L		30-MAY-19	R4645483
2-Chlorotoluene	<20		20	ug/L		30-MAY-19	R4645483
4-Chlorotoluene	<0.50		0.50	ug/L		30-MAY-19	R4645483
Dibromochloromethane	<0.50		0.50	ug/L		30-MAY-19	R4645483
1,2-Dibromo-3-chloropropane	<0.50		0.50	ug/L		30-MAY-19	R4645483
1,2-Dibromoethane	<0.50		0.50	ug/L		30-MAY-19	R4645483
Dibromomethane	<0.50		0.50	ug/L		30-MAY-19	R4645483
1,2-Dichlorobenzene	<0.50		0.50	ug/L		30-MAY-19	R4645483
1,3-Dichlorobenzene	<0.50		0.50	ug/L		30-MAY-19	R4645483
1,4-Dichlorobenzene	<0.50		0.50	ug/L		30-MAY-19	R4645483
Dichlorodifluoromethane	<1.0		1.0	ug/L		30-MAY-19	R4645483
1,1-dichloroethane	<0.50		0.50	ug/L		30-MAY-19	R4645483
1,2-Dichloroethane	<0.50		0.50	ug/L		30-MAY-19	R4645483
1,1-dichloroethene	<0.50		0.50	ug/L		30-MAY-19	R4645483
cis-1,2-Dichloroethene	<0.50		0.50	ug/L		30-MAY-19	R4645483
trans-1,2-Dichloroethene	<0.50		0.50	ug/L		30-MAY-19	R4645483
Dichloromethane	<0.50		0.50	ug/L		30-MAY-19	R4645483
1,2-Dichloropropane	<0.50		0.50	ug/L		30-MAY-19	R4645483
1,3-Dichloropropane	<0.50		0.50	ug/L		30-MAY-19	R4645483
2,2-Dichloropropane	<1.0	DLM	1.0	ug/L		30-MAY-19	R4645483
1,1-Dichloropropene	<0.50		0.50	ug/L		30-MAY-19	R4645483
cis-1,3-Dichloropropene	<1.0	DLM	1.0	ug/L		30-MAY-19	R4645483
trans-1,3-Dichloropropene	<1.0	DLM	1.0	ug/L		30-MAY-19	R4645483
Ethylbenzene	<0.50		0.50	ug/L		30-MAY-19	R4645483
F1	<100		100	ug/L		30-MAY-19	R4645483
Hexachlorobutadiene	<0.50		0.50	ug/L		30-MAY-19	R4645483
Hexane	<0.50		0.50	ug/L		30-MAY-19	R4645483
2-Hexanone (Methyl butyl ketone)	<20		20	ug/L		30-MAY-19	R4645483
Isopropylbenzene	<0.50		0.50	ug/L		30-MAY-19	R4645483
4-Isopropyltoluene	<1.0		1.0	ug/L		30-MAY-19	R4645483
MEK	<20		20	ug/L		30-MAY-19	R4645483
MIBK	<20		20	ug/L		30-MAY-19	R4645483

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ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2276338-1 6N60DR # 202753 Sampled By: CLIENT on 21-MAY-19 @ 09:53 Matrix: WATER VOC plus F1 by GCMS							
MTBE	<0.50		0.50	ug/L		30-MAY-19	R4645483
Styrene	<0.50		0.50	ug/L		30-MAY-19	R4645483
1,1,1,2-Tetrachloroethane	<0.50		0.50	ug/L		30-MAY-19	R4645483
1,1,2,2-Tetrachloroethane	<0.50		0.50	ug/L		30-MAY-19	R4645483
Tetrachloroethene	<0.50		0.50	ug/L		30-MAY-19	R4645483
Toluene	<0.50		0.50	ug/L		30-MAY-19	R4645483
1,2,3-Trichlorobenzene	<0.50		0.50	ug/L		30-MAY-19	R4645483
1,2,4-Trichlorobenzene	<0.50		0.50	ug/L		30-MAY-19	R4645483
1,1,1-Trichloroethane	<0.50		0.50	ug/L		30-MAY-19	R4645483
1,1,2-Trichloroethane	<0.50		0.50	ug/L		30-MAY-19	R4645483
Trichloroethene	<0.50		0.50	ug/L		30-MAY-19	R4645483
Trichlorofluoromethane	<1.0		1.0	ug/L		30-MAY-19	R4645483
1,2,3-Trichloropropane	<0.50		0.50	ug/L		30-MAY-19	R4645483
1,2,4-Trimethylbenzene	<0.50		0.50	ug/L		30-MAY-19	R4645483
1,3,5-Trimethylbenzene	<0.50		0.50	ug/L		30-MAY-19	R4645483
Vinyl Chloride	<0.50		0.50	ug/L		30-MAY-19	R4645483
M+P-Xylenes	<0.40		0.40	ug/L		30-MAY-19	R4645483
o-Xylene	<0.30		0.30	ug/L		30-MAY-19	R4645483
Surrogate: 4-Bromofluorobenzene (SS)	96.6		70-130	%		30-MAY-19	R4645483
Surrogate: 1,4-Difluorobenzene (SS)	99.5		70-130	%		30-MAY-19	R4645483
L2276338-2 6N60E # 202754 Sampled By: CLIENT on 21-MAY-19 @ 10:09 Matrix: WATER Miscellaneous Parameters							
Chromium, Hexavalent	<0.50		0.50	ug/L		24-MAY-19	R4642032
Mercury (Hg)-Total	0.0230		0.0050	ug/L	22-MAY-19	23-MAY-19	R4642548
Phenols (4AAP)	4.8		1.0	ug/L		27-MAY-19	R4645002
Cyanide, Total	<1.0		1.0	ug/L		28-MAY-19	R4647167
Dissolved Metals in Water by CRC ICPMS							
Dissolved Metals Filtration Location	FIELD					22-MAY-19	R4640452
Aluminum (Al)-Dissolved	1.7		1.0	ug/L	22-MAY-19	22-MAY-19	R4640850
Antimony (Sb)-Dissolved	0.22		0.10	ug/L	22-MAY-19	22-MAY-19	R4640850
Arsenic (As)-Dissolved	0.98		0.10	ug/L	22-MAY-19	22-MAY-19	R4640850
Barium (Ba)-Dissolved	7.69		0.10	ug/L	22-MAY-19	22-MAY-19	R4640850
Beryllium (Be)-Dissolved	<0.10		0.10	ug/L	22-MAY-19	22-MAY-19	R4640850
Bismuth (Bi)-Dissolved	<0.050		0.050	ug/L	22-MAY-19	22-MAY-19	R4640850
Boron (B)-Dissolved	346		10	ug/L	22-MAY-19	22-MAY-19	R4640850
Cadmium (Cd)-Dissolved	0.0199		0.0050	ug/L	22-MAY-19	22-MAY-19	R4640850
Calcium (Ca)-Dissolved	430000		50	ug/L	22-MAY-19	22-MAY-19	R4640850
Cesium (Cs)-Dissolved	0.024		0.010	ug/L	22-MAY-19	22-MAY-19	R4640850
Chromium (Cr)-Dissolved	<0.10		0.10	ug/L	22-MAY-19	22-MAY-19	R4640850
Cobalt (Co)-Dissolved	4.39		0.10	ug/L	22-MAY-19	22-MAY-19	R4640850
Copper (Cu)-Dissolved	1.42		0.20	ug/L	22-MAY-19	22-MAY-19	R4640850
Iron (Fe)-Dissolved	<10		10	ug/L	22-MAY-19	22-MAY-19	R4640850
Lead (Pb)-Dissolved	<0.050		0.050	ug/L	22-MAY-19	22-MAY-19	R4640850
Lithium (Li)-Dissolved	520		100	ug/L	22-MAY-19	22-MAY-19	R4640850
Magnesium (Mg)-Dissolved	184000		5.0	ug/L	22-MAY-19	22-MAY-19	R4640850
Manganese (Mn)-Dissolved	1240		10	ug/L	22-MAY-19	22-MAY-19	R4640850
Molybdenum (Mo)-Dissolved	3.85		0.050	ug/L	22-MAY-19	22-MAY-19	R4640850
Nickel (Ni)-Dissolved	7.93		0.50	ug/L	22-MAY-19	22-MAY-19	R4640850
Phosphorus (P)-Dissolved	<30		30	ug/L	22-MAY-19	22-MAY-19	R4640850

* 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
L2276338-2 6N60E # 202754							
Sampled By: CLIENT on 21-MAY-19 @ 10:09							
Matrix: WATER							
Dissolved Metals in Water by CRC ICPMS							
Potassium (K)-Dissolved	8290		50	ug/L	22-MAY-19	22-MAY-19	R4640850
Rubidium (Rb)-Dissolved	4.27		0.20	ug/L	22-MAY-19	22-MAY-19	R4640850
Selenium (Se)-Dissolved	0.104		0.050	ug/L	22-MAY-19	22-MAY-19	R4640850
Silicon (Si)-Dissolved	10700		50	ug/L	22-MAY-19	22-MAY-19	R4640850
Silver (Ag)-Dissolved	<0.010		0.010	ug/L	22-MAY-19	22-MAY-19	R4640850
Sodium (Na)-Dissolved	370000		50	ug/L	22-MAY-19	22-MAY-19	R4640850
Strontium (Sr)-Dissolved	2680		10	ug/L	22-MAY-19	22-MAY-19	R4640850
Sulfur (S)-Dissolved	538000		50000	ug/L	22-MAY-19	22-MAY-19	R4640850
Tellurium (Te)-Dissolved	<0.20		0.20	ug/L	22-MAY-19	22-MAY-19	R4640850
Thallium (Tl)-Dissolved	0.028		0.010	ug/L	22-MAY-19	22-MAY-19	R4640850
Thorium (Th)-Dissolved	<0.10		0.10	ug/L	22-MAY-19	22-MAY-19	R4640850
Tin (Sn)-Dissolved	<0.10		0.10	ug/L	22-MAY-19	22-MAY-19	R4640850
Titanium (Ti)-Dissolved	<0.30		0.30	ug/L	22-MAY-19	22-MAY-19	R4640850
Tungsten (W)-Dissolved	0.15		0.10	ug/L	22-MAY-19	22-MAY-19	R4640850
Uranium (U)-Dissolved	47.7		0.010	ug/L	22-MAY-19	22-MAY-19	R4640850
Vanadium (V)-Dissolved	<0.50		0.50	ug/L	22-MAY-19	22-MAY-19	R4640850
Zinc (Zn)-Dissolved	3.4		1.0	ug/L	22-MAY-19	22-MAY-19	R4640850
Zirconium (Zr)-Dissolved	0.395		0.060	ug/L	22-MAY-19	22-MAY-19	R4640850
Polyaromatic Hydrocarbons (PAHs)							
1-Methyl Naphthalene	<0.020		0.020	ug/L	24-MAY-19	24-MAY-19	R4647527
2-Methyl Naphthalene	<0.020		0.020	ug/L	24-MAY-19	24-MAY-19	R4647527
Acenaphthene	<0.020		0.020	ug/L	24-MAY-19	24-MAY-19	R4647527
Acenaphthylene	<0.020		0.020	ug/L	24-MAY-19	24-MAY-19	R4647527
Anthracene	<0.010		0.010	ug/L	24-MAY-19	24-MAY-19	R4647527
Acridine	<0.020		0.020	ug/L	24-MAY-19	24-MAY-19	R4647527
Benzo(a)anthracene	<0.010		0.010	ug/L	24-MAY-19	24-MAY-19	R4647527
Benzo(a)pyrene	<0.0050		0.0050	ug/L	24-MAY-19	24-MAY-19	R4647527
Benzo(b&j)fluoranthene	<0.010		0.010	ug/L	24-MAY-19	24-MAY-19	R4647527
Benzo(g,h,i)perylene	<0.020		0.020	ug/L	24-MAY-19	24-MAY-19	R4647527
Benzo(k)fluoranthene	<0.010		0.010	ug/L	24-MAY-19	24-MAY-19	R4647527
Chrysene	<0.020		0.020	ug/L	24-MAY-19	24-MAY-19	R4647527
Dibenzo(a,h)anthracene	<0.0050		0.0050	ug/L	24-MAY-19	24-MAY-19	R4647527
Fluoranthene	<0.020		0.020	ug/L	24-MAY-19	24-MAY-19	R4647527
Fluorene	<0.020		0.020	ug/L	24-MAY-19	24-MAY-19	R4647527
Indeno(1,2,3-cd)pyrene	<0.010		0.010	ug/L	24-MAY-19	24-MAY-19	R4647527
Naphthalene	<0.050		0.050	ug/L	24-MAY-19	24-MAY-19	R4647527
Phenanthrene	<0.050		0.050	ug/L	24-MAY-19	24-MAY-19	R4647527
Pyrene	<0.010		0.010	ug/L	24-MAY-19	24-MAY-19	R4647527
Quinoline	<0.020		0.020	ug/L	24-MAY-19	24-MAY-19	R4647527
B(a)P Total Potency Equivalent	<0.030		0.030	ug/L	24-MAY-19	24-MAY-19	R4647527
Surrogate: Acenaphthene d10	87.7		60-130	%	24-MAY-19	24-MAY-19	R4647527
Surrogate: Acridine d9	64.7		60-130	%	24-MAY-19	24-MAY-19	R4647527
Surrogate: Chrysene d12	98.5		60-130	%	24-MAY-19	24-MAY-19	R4647527
Surrogate: Naphthalene d8	81.0		50-130	%	24-MAY-19	24-MAY-19	R4647527
Surrogate: Phenanthrene d10	92.2		60-130	%	24-MAY-19	24-MAY-19	R4647527
Herbicides in Water							
Clopyralid	<0.10		0.10	ug/L	28-MAY-19	29-MAY-19	R4652748
Dicamba	<0.10		0.10	ug/L	28-MAY-19	29-MAY-19	R4652748
Mecoprop	<0.10		0.10	ug/L	28-MAY-19	29-MAY-19	R4652748
MCPA	<0.10		0.10	ug/L	28-MAY-19	29-MAY-19	R4652748
2,4-D	<0.10		0.10	ug/L	28-MAY-19	29-MAY-19	R4652748

* 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
L2276338-2 6N60E # 202754							
Sampled By: CLIENT on 21-MAY-19 @ 10:09							
Matrix: WATER							
Herbicides in Water							
Bromoxynil	<0.10		0.10	ug/L	28-MAY-19	29-MAY-19	R4652748
Triclopyr	<0.10		0.10	ug/L	28-MAY-19	29-MAY-19	R4652748
2,4,5-T	<0.10		0.10	ug/L	28-MAY-19	29-MAY-19	R4652748
2,4,5-TP	<0.10		0.10	ug/L	28-MAY-19	29-MAY-19	R4652748
Picloram	<0.10		0.10	ug/L	28-MAY-19	29-MAY-19	R4652748
2,4-DB	<0.10		0.10	ug/L	28-MAY-19	29-MAY-19	R4652748
2,4-DP	<0.10		0.10	ug/L	28-MAY-19	29-MAY-19	R4652748
Dinoseb	<0.10		0.10	ug/L	28-MAY-19	29-MAY-19	R4652748
MCPB	<0.10		0.10	ug/L	28-MAY-19	29-MAY-19	R4652748
Surrogate: 2,4-Dichlorophenylacetic Acid	150.0	SURR-ND	50-130	%	28-MAY-19	29-MAY-19	R4652748
Miscellaneous Pesticides							
Diazinon	<0.10		0.10	ug/L	23-MAY-19	24-MAY-19	R4644622
Surrogate: 2-Fluorobiphenyl	83.5		40-130	%	23-MAY-19	24-MAY-19	R4644622
Surrogate: d14-Terphenyl	85.6		40-130	%	23-MAY-19	24-MAY-19	R4644622
VOC plus F1 to F4							
CCME PHC F2-F4 in Water							
F2 (C10-C16)	<100		100	ug/L	22-MAY-19	22-MAY-19	R4640991
F3 (C16-C34)	<250		250	ug/L	22-MAY-19	22-MAY-19	R4640991
F4 (C34-C50)	<250		250	ug/L	22-MAY-19	22-MAY-19	R4640991
Surrogate: 2-Bromobenzotrifluoride	80.6		60-140	%	22-MAY-19	22-MAY-19	R4640991
CCME Total Hydrocarbons							
F1-BTEX	<100		100	ug/L		29-MAY-19	
F2-Naphth	<100		100	ug/L		29-MAY-19	
F3-PAH	<250		250	ug/L		29-MAY-19	
Total Hydrocarbons (C6-C50)	<380		380	ug/L		29-MAY-19	
Sum of Xylene Isomer Concentrations							
Xylenes (Total)	<0.50		0.50	ug/L		28-MAY-19	
Total Trihalomethanes (THMs)							
Total THMs	<1.0		1.0	ug/L		28-MAY-19	
VOC plus F1 by GCMS							
Acetone	<20		20	ug/L		25-MAY-19	R4645483
Benzene	<0.50		0.50	ug/L		25-MAY-19	R4645483
Bromobenzene	<0.50		0.50	ug/L		25-MAY-19	R4645483
Bromochloromethane	<0.50		0.50	ug/L		25-MAY-19	R4645483
Bromodichloromethane	<0.50		0.50	ug/L		25-MAY-19	R4645483
Bromoform	<0.50		0.50	ug/L		25-MAY-19	R4645483
Bromomethane	<1.0		1.0	ug/L		25-MAY-19	R4645483
n-Butylbenzene	<0.50		0.50	ug/L		25-MAY-19	R4645483
sec-Butylbenzene	<0.50		0.50	ug/L		25-MAY-19	R4645483
tert-Butylbenzene	<0.50		0.50	ug/L		25-MAY-19	R4645483
Carbon disulfide	<0.50		0.50	ug/L		25-MAY-19	R4645483
Carbon Tetrachloride	<0.50		0.50	ug/L		25-MAY-19	R4645483
Chlorobenzene	<0.50		0.50	ug/L		25-MAY-19	R4645483
Chloroethane	<1.0		1.0	ug/L		25-MAY-19	R4645483
Chloroform	<0.50		0.50	ug/L		25-MAY-19	R4645483
Chloromethane	<1.0		1.0	ug/L		25-MAY-19	R4645483
2-Chlorotoluene	<20		20	ug/L		25-MAY-19	R4645483
4-Chlorotoluene	<0.50		0.50	ug/L		25-MAY-19	R4645483
Dibromochloromethane	<0.50		0.50	ug/L		25-MAY-19	R4645483
1,2-Dibromo-3-chloropropane	<0.50		0.50	ug/L		25-MAY-19	R4645483
1,2-Dibromoethane	<0.50		0.50	ug/L		25-MAY-19	R4645483
Dibromomethane	<0.50		0.50	ug/L		25-MAY-19	R4645483

* 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
L2276338-2 6N60E # 202754 Sampled By: CLIENT on 21-MAY-19 @ 10:09 Matrix: WATER							
VOC plus F1 by GCMS							
1,2-Dichlorobenzene	<0.50		0.50	ug/L		25-MAY-19	R4645483
1,3-Dichlorobenzene	<0.50		0.50	ug/L		25-MAY-19	R4645483
1,4-Dichlorobenzene	<0.50		0.50	ug/L		25-MAY-19	R4645483
Dichlorodifluoromethane	<1.0		1.0	ug/L		25-MAY-19	R4645483
1,1-dichloroethane	<0.50		0.50	ug/L		25-MAY-19	R4645483
1,2-Dichloroethane	<0.50		0.50	ug/L		25-MAY-19	R4645483
1,1-dichloroethene	<0.50		0.50	ug/L		25-MAY-19	R4645483
cis-1,2-Dichloroethene	<0.50		0.50	ug/L		25-MAY-19	R4645483
trans-1,2-Dichloroethene	<0.50		0.50	ug/L		25-MAY-19	R4645483
Dichloromethane	<0.50		0.50	ug/L		25-MAY-19	R4645483
1,2-Dichloropropane	<0.50		0.50	ug/L		25-MAY-19	R4645483
1,3-Dichloropropane	<0.50		0.50	ug/L		25-MAY-19	R4645483
2,2-Dichloropropane	<1.0	DLM	1.0	ug/L		25-MAY-19	R4645483
1,1-Dichloropropene	<0.50		0.50	ug/L		25-MAY-19	R4645483
cis-1,3-Dichloropropene	<1.0	DLM	1.0	ug/L		25-MAY-19	R4645483
trans-1,3-Dichloropropene	<1.0	DLM	1.0	ug/L		25-MAY-19	R4645483
Ethylbenzene	<0.50		0.50	ug/L		25-MAY-19	R4645483
F1	<100		100	ug/L		25-MAY-19	R4645483
Hexachlorobutadiene	<0.50		0.50	ug/L		25-MAY-19	R4645483
Hexane	<0.50		0.50	ug/L		25-MAY-19	R4645483
2-Hexanone (Methyl butyl ketone)	<20		20	ug/L		25-MAY-19	R4645483
Isopropylbenzene	<0.50		0.50	ug/L		25-MAY-19	R4645483
4-Isopropyltoluene	<1.0		1.0	ug/L		25-MAY-19	R4645483
MEK	<20		20	ug/L		25-MAY-19	R4645483
MIBK	<20		20	ug/L		25-MAY-19	R4645483
MTBE	<0.50		0.50	ug/L		25-MAY-19	R4645483
Styrene	<0.50		0.50	ug/L		25-MAY-19	R4645483
1,1,1,2-Tetrachloroethane	<0.50		0.50	ug/L		25-MAY-19	R4645483
1,1,2,2-Tetrachloroethane	<0.50		0.50	ug/L		25-MAY-19	R4645483
Tetrachloroethene	<0.50		0.50	ug/L		25-MAY-19	R4645483
Toluene	<0.50		0.50	ug/L		25-MAY-19	R4645483
1,2,3-Trichlorobenzene	<0.50		0.50	ug/L		25-MAY-19	R4645483
1,2,4-Trichlorobenzene	<0.50		0.50	ug/L		25-MAY-19	R4645483
1,1,1-Trichloroethane	<0.50		0.50	ug/L		25-MAY-19	R4645483
1,1,2-Trichloroethane	<0.50		0.50	ug/L		25-MAY-19	R4645483
Trichloroethene	<0.50		0.50	ug/L		25-MAY-19	R4645483
Trichlorofluoromethane	<1.0		1.0	ug/L		25-MAY-19	R4645483
1,2,3-Trichloropropane	<0.50		0.50	ug/L		25-MAY-19	R4645483
1,2,4-Trimethylbenzene	<0.50		0.50	ug/L		25-MAY-19	R4645483
1,3,5-Trimethylbenzene	<0.50		0.50	ug/L		25-MAY-19	R4645483
Vinyl Chloride	<0.50		0.50	ug/L		25-MAY-19	R4645483
m+p-Xylenes	<0.40		0.40	ug/L		25-MAY-19	R4645483
o-Xylene	<0.30		0.30	ug/L		25-MAY-19	R4645483
Surrogate: 4-Bromofluorobenzene (SS)	90.3		70-130	%		25-MAY-19	R4645483
Surrogate: 1,4-Difluorobenzene (SS)	96.7		70-130	%		25-MAY-19	R4645483
L2276338-3 6N63E # 202758 Sampled By: CLIENT on 21-MAY-19 @ 10:36 Matrix: WATER							
Miscellaneous Parameters							
Chromium, Hexavalent	<0.50		0.50	ug/L		24-MAY-19	R4642032
Mercury (Hg)-Total	0.0060		0.0050	ug/L	22-MAY-19	23-MAY-19	R4642548

* 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
L2276338-3 6N63E # 202758							
Sampled By: CLIENT on 21-MAY-19 @ 10:36							
Matrix: WATER							
Phenols (4AAP)	3.1		1.0	ug/L		27-MAY-19	R4645002
Cyanide, Total	<1.0		1.0	ug/L		28-MAY-19	R4647167
Dissolved Metals in Water by CRC ICPMS							
Dissolved Metals Filtration Location	FIELD					22-MAY-19	R4640452
Aluminum (Al)-Dissolved	1.9		1.0	ug/L	22-MAY-19	22-MAY-19	R4640850
Antimony (Sb)-Dissolved	0.18		0.10	ug/L	22-MAY-19	22-MAY-19	R4640850
Arsenic (As)-Dissolved	0.66		0.10	ug/L	22-MAY-19	22-MAY-19	R4640850
Barium (Ba)-Dissolved	12.8		0.10	ug/L	22-MAY-19	22-MAY-19	R4640850
Beryllium (Be)-Dissolved	<0.10		0.10	ug/L	22-MAY-19	22-MAY-19	R4640850
Bismuth (Bi)-Dissolved	<0.050		0.050	ug/L	22-MAY-19	22-MAY-19	R4640850
Boron (B)-Dissolved	244		10	ug/L	22-MAY-19	22-MAY-19	R4640850
Cadmium (Cd)-Dissolved	0.101		0.0050	ug/L	22-MAY-19	22-MAY-19	R4640850
Calcium (Ca)-Dissolved	757000		5000	ug/L	22-MAY-19	22-MAY-19	R4640850
Cesium (Cs)-Dissolved	0.029		0.010	ug/L	22-MAY-19	22-MAY-19	R4640850
Chromium (Cr)-Dissolved	<0.10		0.10	ug/L	22-MAY-19	22-MAY-19	R4640850
Cobalt (Co)-Dissolved	6.79		0.10	ug/L	22-MAY-19	22-MAY-19	R4640850
Copper (Cu)-Dissolved	1.51		0.20	ug/L	22-MAY-19	22-MAY-19	R4640850
Iron (Fe)-Dissolved	<10		10	ug/L	22-MAY-19	22-MAY-19	R4640850
Lead (Pb)-Dissolved	<0.050		0.050	ug/L	22-MAY-19	22-MAY-19	R4640850
Lithium (Li)-Dissolved	770		100	ug/L	22-MAY-19	22-MAY-19	R4640850
Magnesium (Mg)-Dissolved	309000		5.0	ug/L	22-MAY-19	22-MAY-19	R4640850
Manganese (Mn)-Dissolved	2290		10	ug/L	22-MAY-19	22-MAY-19	R4640850
Molybdenum (Mo)-Dissolved	1.36		0.050	ug/L	22-MAY-19	22-MAY-19	R4640850
Nickel (Ni)-Dissolved	11.5		0.50	ug/L	22-MAY-19	22-MAY-19	R4640850
Phosphorus (P)-Dissolved	<30		30	ug/L	22-MAY-19	22-MAY-19	R4640850
Potassium (K)-Dissolved	12100		50	ug/L	22-MAY-19	22-MAY-19	R4640850
Rubidium (Rb)-Dissolved	6.43		0.20	ug/L	22-MAY-19	22-MAY-19	R4640850
Selenium (Se)-Dissolved	0.188		0.050	ug/L	22-MAY-19	22-MAY-19	R4640850
Silicon (Si)-Dissolved	11000		50	ug/L	22-MAY-19	22-MAY-19	R4640850
Silver (Ag)-Dissolved	0.015		0.010	ug/L	22-MAY-19	22-MAY-19	R4640850
Sodium (Na)-Dissolved	654000		5000	ug/L	22-MAY-19	22-MAY-19	R4640850
Strontium (Sr)-Dissolved	4760		10	ug/L	22-MAY-19	22-MAY-19	R4640850
Sulfur (S)-Dissolved	743000		50000	ug/L	22-MAY-19	22-MAY-19	R4640850
Tellurium (Te)-Dissolved	0.41		0.20	ug/L	22-MAY-19	22-MAY-19	R4640850
Thallium (Tl)-Dissolved	0.060		0.010	ug/L	22-MAY-19	22-MAY-19	R4640850
Thorium (Th)-Dissolved	<0.10		0.10	ug/L	22-MAY-19	22-MAY-19	R4640850
Tin (Sn)-Dissolved	<0.10		0.10	ug/L	22-MAY-19	22-MAY-19	R4640850
Titanium (Ti)-Dissolved	<0.30		0.30	ug/L	22-MAY-19	22-MAY-19	R4640850
Tungsten (W)-Dissolved	<0.10		0.10	ug/L	22-MAY-19	22-MAY-19	R4640850
Uranium (U)-Dissolved	69.2		0.010	ug/L	22-MAY-19	22-MAY-19	R4640850
Vanadium (V)-Dissolved	<0.50		0.50	ug/L	22-MAY-19	22-MAY-19	R4640850
Zinc (Zn)-Dissolved	5.7		1.0	ug/L	22-MAY-19	22-MAY-19	R4640850
Zirconium (Zr)-Dissolved	0.474		0.060	ug/L	22-MAY-19	22-MAY-19	R4640850
L2276338-4 6N63F # 202759 (CONTAINERS SAY 6N62F)							
Sampled By: CLIENT on 21-MAY-19 @ 10:55							
Matrix: WATER							
Miscellaneous Parameters							
Chromium, Hexavalent	<0.50		0.50	ug/L		24-MAY-19	R4642032
Mercury (Hg)-Total	0.0050		0.0050	ug/L	22-MAY-19	23-MAY-19	R4642548
Phenols (4AAP)	6.0		1.0	ug/L		27-MAY-19	R4645002
Cyanide, Total	<1.0		1.0	ug/L		28-MAY-19	R4647167
Dissolved Metals in Water by CRC ICPMS							

* 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
L2276338-4 6N63F # 202759 (CONTAINERS SAY 6N62F)							
Sampled By: CLIENT on 21-MAY-19 @ 10:55							
Matrix: WATER							
Dissolved Metals in Water by CRC ICPMS							
Dissolved Metals Filtration Location	FIELD					22-MAY-19	R4640452
Aluminum (Al)-Dissolved	1.8		1.0	ug/L	22-MAY-19	22-MAY-19	R4640850
Antimony (Sb)-Dissolved	<0.10		0.10	ug/L	22-MAY-19	22-MAY-19	R4640850
Arsenic (As)-Dissolved	2.12		0.10	ug/L	22-MAY-19	22-MAY-19	R4640850
Barium (Ba)-Dissolved	10.3		0.10	ug/L	22-MAY-19	22-MAY-19	R4640850
Beryllium (Be)-Dissolved	<0.10		0.10	ug/L	22-MAY-19	22-MAY-19	R4640850
Bismuth (Bi)-Dissolved	<0.050		0.050	ug/L	22-MAY-19	22-MAY-19	R4640850
Boron (B)-Dissolved	384		10	ug/L	22-MAY-19	22-MAY-19	R4640850
Cadmium (Cd)-Dissolved	0.0062		0.0050	ug/L	22-MAY-19	22-MAY-19	R4640850
Calcium (Ca)-Dissolved	527000		5000	ug/L	22-MAY-19	22-MAY-19	R4640850
Cesium (Cs)-Dissolved	0.019		0.010	ug/L	22-MAY-19	22-MAY-19	R4640850
Chromium (Cr)-Dissolved	<0.10		0.10	ug/L	22-MAY-19	22-MAY-19	R4640850
Cobalt (Co)-Dissolved	2.23		0.10	ug/L	22-MAY-19	22-MAY-19	R4640850
Copper (Cu)-Dissolved	0.23		0.20	ug/L	22-MAY-19	22-MAY-19	R4640850
Iron (Fe)-Dissolved	1450		10	ug/L	22-MAY-19	22-MAY-19	R4640850
Lead (Pb)-Dissolved	<0.050		0.050	ug/L	22-MAY-19	22-MAY-19	R4640850
Lithium (Li)-Dissolved	410		100	ug/L	22-MAY-19	22-MAY-19	R4640850
Magnesium (Mg)-Dissolved	314000		5.0	ug/L	22-MAY-19	22-MAY-19	R4640850
Manganese (Mn)-Dissolved	221		0.10	ug/L	22-MAY-19	22-MAY-19	R4640850
Molybdenum (Mo)-Dissolved	0.880		0.050	ug/L	22-MAY-19	22-MAY-19	R4640850
Nickel (Ni)-Dissolved	3.75		0.50	ug/L	22-MAY-19	22-MAY-19	R4640850
Phosphorus (P)-Dissolved	<30		30	ug/L	22-MAY-19	22-MAY-19	R4640850
Potassium (K)-Dissolved	11100		50	ug/L	22-MAY-19	22-MAY-19	R4640850
Rubidium (Rb)-Dissolved	4.55		0.20	ug/L	22-MAY-19	22-MAY-19	R4640850
Selenium (Se)-Dissolved	<0.050		0.050	ug/L	22-MAY-19	22-MAY-19	R4640850
Silicon (Si)-Dissolved	10700		50	ug/L	22-MAY-19	22-MAY-19	R4640850
Silver (Ag)-Dissolved	0.032		0.010	ug/L	22-MAY-19	22-MAY-19	R4640850
Sodium (Na)-Dissolved	570000		5000	ug/L	22-MAY-19	22-MAY-19	R4640850
Strontium (Sr)-Dissolved	3750		10	ug/L	22-MAY-19	22-MAY-19	R4640850
Sulfur (S)-Dissolved	460000		50000	ug/L	22-MAY-19	22-MAY-19	R4640850
Tellurium (Te)-Dissolved	0.39		0.20	ug/L	22-MAY-19	22-MAY-19	R4640850
Thallium (Tl)-Dissolved	0.013		0.010	ug/L	22-MAY-19	22-MAY-19	R4640850
Thorium (Th)-Dissolved	<0.10		0.10	ug/L	22-MAY-19	22-MAY-19	R4640850
Tin (Sn)-Dissolved	<0.10		0.10	ug/L	22-MAY-19	22-MAY-19	R4640850
Titanium (Ti)-Dissolved	<0.30		0.30	ug/L	22-MAY-19	22-MAY-19	R4640850
Tungsten (W)-Dissolved	<0.10		0.10	ug/L	22-MAY-19	22-MAY-19	R4640850
Uranium (U)-Dissolved	13.5		0.010	ug/L	22-MAY-19	22-MAY-19	R4640850
Vanadium (V)-Dissolved	<0.50		0.50	ug/L	22-MAY-19	22-MAY-19	R4640850
Zinc (Zn)-Dissolved	1.3		1.0	ug/L	22-MAY-19	22-MAY-19	R4640850
Zirconium (Zr)-Dissolved	<0.060		0.060	ug/L	22-MAY-19	22-MAY-19	R4640850
L2276338-5 102 # 202766							
Sampled By: CLIENT on 21-MAY-19 @ 12:00							
Matrix: WATER							
Miscellaneous Parameters							
Chromium, Hexavalent	<0.50		0.50	ug/L		24-MAY-19	R4642032
Mercury (Hg)-Total	0.0070		0.0050	ug/L	22-MAY-19	23-MAY-19	R4642548
Phenols (4AAP)	<1.0		1.0	ug/L		27-MAY-19	R4645002
Cyanide, Total	<1.0		1.0	ug/L		28-MAY-19	R4647167
Dissolved Metals in Water by CRC ICPMS							
Dissolved Metals Filtration Location	FIELD					22-MAY-19	R4640452
Aluminum (Al)-Dissolved	1.3		1.0	ug/L	22-MAY-19	22-MAY-19	R4640850

* 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
L2276338-5 102 # 202766							
Sampled By: CLIENT on 21-MAY-19 @ 12:00							
Matrix: WATER							
Dissolved Metals in Water by CRC ICPMS							
Antimony (Sb)-Dissolved	0.18		0.10	ug/L	22-MAY-19	22-MAY-19	R4640850
Arsenic (As)-Dissolved	0.68		0.10	ug/L	22-MAY-19	22-MAY-19	R4640850
Barium (Ba)-Dissolved	12.9		0.10	ug/L	22-MAY-19	22-MAY-19	R4640850
Beryllium (Be)-Dissolved	<0.10		0.10	ug/L	22-MAY-19	22-MAY-19	R4640850
Bismuth (Bi)-Dissolved	<0.050		0.050	ug/L	22-MAY-19	22-MAY-19	R4640850
Boron (B)-Dissolved	243		10	ug/L	22-MAY-19	22-MAY-19	R4640850
Cadmium (Cd)-Dissolved	0.0984		0.0050	ug/L	22-MAY-19	22-MAY-19	R4640850
Calcium (Ca)-Dissolved	787000		5000	ug/L	22-MAY-19	24-MAY-19	R4644428
Cesium (Cs)-Dissolved	0.028		0.010	ug/L	22-MAY-19	22-MAY-19	R4640850
Chromium (Cr)-Dissolved	<0.10		0.10	ug/L	22-MAY-19	22-MAY-19	R4640850
Cobalt (Co)-Dissolved	6.82		0.10	ug/L	22-MAY-19	22-MAY-19	R4640850
Copper (Cu)-Dissolved	1.50		0.20	ug/L	22-MAY-19	22-MAY-19	R4640850
Iron (Fe)-Dissolved	<10		10	ug/L	22-MAY-19	22-MAY-19	R4640850
Lead (Pb)-Dissolved	<0.050		0.050	ug/L	22-MAY-19	22-MAY-19	R4640850
Lithium (Li)-Dissolved	750		100	ug/L	22-MAY-19	24-MAY-19	R4644428
Magnesium (Mg)-Dissolved	315000		5.0	ug/L	22-MAY-19	22-MAY-19	R4640850
Manganese (Mn)-Dissolved	2370		10	ug/L	22-MAY-19	24-MAY-19	R4644428
Molybdenum (Mo)-Dissolved	1.31		0.050	ug/L	22-MAY-19	22-MAY-19	R4640850
Nickel (Ni)-Dissolved	11.6		0.50	ug/L	22-MAY-19	22-MAY-19	R4640850
Phosphorus (P)-Dissolved	<30		30	ug/L	22-MAY-19	22-MAY-19	R4640850
Potassium (K)-Dissolved	12200		50	ug/L	22-MAY-19	22-MAY-19	R4640850
Rubidium (Rb)-Dissolved	6.57		0.20	ug/L	22-MAY-19	22-MAY-19	R4640850
Selenium (Se)-Dissolved	0.190		0.050	ug/L	22-MAY-19	22-MAY-19	R4640850
Silicon (Si)-Dissolved	11000		50	ug/L	22-MAY-19	22-MAY-19	R4640850
Silver (Ag)-Dissolved	0.015		0.010	ug/L	22-MAY-19	22-MAY-19	R4640850
Sodium (Na)-Dissolved	651000		5000	ug/L	22-MAY-19	24-MAY-19	R4644428
Strontium (Sr)-Dissolved	4900		10	ug/L	22-MAY-19	24-MAY-19	R4644428
Sulfur (S)-Dissolved	747000		50000	ug/L	22-MAY-19	24-MAY-19	R4644428
Tellurium (Te)-Dissolved	0.49		0.20	ug/L	22-MAY-19	22-MAY-19	R4640850
Thallium (Tl)-Dissolved	0.060		0.010	ug/L	22-MAY-19	22-MAY-19	R4640850
Thorium (Th)-Dissolved	<0.10		0.10	ug/L	22-MAY-19	22-MAY-19	R4640850
Tin (Sn)-Dissolved	<0.10		0.10	ug/L	22-MAY-19	22-MAY-19	R4640850
Titanium (Ti)-Dissolved	<0.30		0.30	ug/L	22-MAY-19	22-MAY-19	R4640850
Tungsten (W)-Dissolved	<0.10		0.10	ug/L	22-MAY-19	22-MAY-19	R4640850
Uranium (U)-Dissolved	67.9		0.010	ug/L	22-MAY-19	22-MAY-19	R4640850
Vanadium (V)-Dissolved	<0.50		0.50	ug/L	22-MAY-19	22-MAY-19	R4640850
Zinc (Zn)-Dissolved	5.6		1.0	ug/L	22-MAY-19	22-MAY-19	R4640850
Zirconium (Zr)-Dissolved	0.436		0.060	ug/L	22-MAY-19	22-MAY-19	R4640850

* 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.
SURR-ND	Surrogate recovery marginally exceeded ALS DQO. Reported non-detect results for associated samples were deemed to be unaffected.

Test Method References:

ALS Test Code	Matrix	Test Description	Method Reference**
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CN-T-CFA-WP	Water	Total Cyanide in water by CFA	ISO 14403-2
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This analysis is carried out using procedures adapted from ISO Method 14403-2:2012 "Determination of Total Cyanide using Flow Analysis (FIA and CFA)". Total or strong acid dissociable (SAD) cyanide is determined by in-line UV digestion along with sample distillation and final determination by colourimetric analysis.

CR-CR6-IC-WT	Water	Chromium +6	EPA 7199
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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.

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).

F1-F4-CALC-WP	Water	CCME Total Hydrocarbons	CCME CWS-PHC, Pub #1310, Dec 2001-L
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Analytical methods used for analysis of CCME Petroleum Hydrocarbons have been validated and comply with the Reference Method for the CWS PHC.

In cases where results for both F4 and F4G are reported, the greater of the two results must be used in any application of the CWS PHC guidelines and the gravimetric heavy hydrocarbons cannot be added to the C6 to C50 hydrocarbons.

In samples where BTEX and F1 were analyzed, F1-BTEX represents a value where the sum of Benzene, Toluene, Ethylbenzene and total Xylenes has been subtracted from F1.

In samples where PAHs, F2 and F3 were analyzed, F2-Naphth represents the result where Naphthalene has been subtracted from F2. F3-PAH represents a result where the sum of Benzo(a)anthracene, Benzo(a)pyrene, Benzo(b)fluoranthene, Benzo(k)fluoranthene, Dibenzo(a,h)anthracene, Fluoranthene, Indeno(1,2,3-cd)pyrene, Phenanthrene, and Pyrene has been subtracted from F3.

Unless otherwise qualified, the following quality control criteria have been met for the F1 hydrocarbon range:

1. All extraction and analysis holding times were met.
2. Instrument performance showing response factors for C6 and C10 within 30% of the response factor for toluene.
3. Linearity of gasoline response within 15% throughout the calibration range.

Unless otherwise qualified, the following quality control criteria have been met for the F2-F4 hydrocarbon ranges:

1. All extraction and analysis holding times were met.
2. Instrument performance showing C10, C16 and C34 response factors within 10% of their average.
3. Instrument performance showing the C50 response factor within 30% of the average of the C10, C16 and C34 response factors.
4. Linearity of diesel or motor oil response within 15% throughout the calibration range.

F2-F4-FID-WP	Water	CCME PHC F2-F4 in Water	EPA 3511
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Petroleum hydrocarbons in water are determined by liquid-liquid micro-scale solvent extraction using a reciprocal shaker extraction apparatus prior to capillary column gas chromatography with flame ionization detection (GC-FID) analysis.

HERBSCR-LCMS-WT	Water	Herbicides in Water	E3552
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Water samples are subjected filtration and analyzed by direct injection without sample preparation using liquid chromatography tandem mass spectrometry (LC-MS/MS).

HERBSCR-LCMS-WT	Water	Herbicides in Water	SW846 8270
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Water samples are subjected filtration and analyzed by direct injection without sample preparation using liquid chromatography tandem mass spectrometry (LC-MS/MS).

HG-T-CVAA-WP	Water	Mercury Total	EPA 1631E (mod)
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Water samples undergo a cold-oxidation using bromine monochloride prior to reduction with stannous chloride, and analyzed by CVAAS.

MET-D-CCMS-WP	Water	Dissolved Metals in Water by CRC ICPMS	APHA 3030B/6020B (mod)
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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.

Reference Information

Test Method References:

ALS Test Code	Matrix	Test Description	Method Reference**
PAH,PANH-WP	Water	Polyaromatic Hydrocarbons (PAHs)	EPA 3511/8270D (mod)
PAHs are extracted from water using a hexane micro-extraction technique, with analysis by GC/MS. Because the two isomers cannot be readily separated chromatographically, benzo(j)fluoranthene is reported as part of the benzo(b)fluoranthene parameter.			
PEST-DIAZINON-WT	Water	Miscellaneous Pesticides	SW846 8270
PHENOLS-4AAP-WT	Water	Phenol (4AAP)	EPA 9066
An automated method is used to distill the sample. The distillate is then buffered to pH 9.4 which reacts with 4AAP and potassium ferricyanide to form a red complex which is measured colorimetrically.			
THM-SUM-CALC-WP	Water	Total Trihalomethanes (THMs)	CALCULATION
Total Trihalomethanes (THMs) represents the sum of bromodichloromethane, bromoform, chlorodibromomethane and chloroform. For the purpose of calculation, results less than the detection limit (DL) are treated as zero.			
VOC+F1-HSMS-WP	Water	VOC plus F1 by GCMS	EPA 8260C / EPA 5021A
In this method samples are analyzed using a headspace autosampler interfaced to a dual column gas chromatograph with MS and Flame Ionization detectors.			
XYLENES-SUM-CALC-WP	Water	Sum of Xylene Isomer Concentrations	CALCULATED RESULT
Total xylenes represents the sum of o-xylene and m&p-xylene.			

** 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
WT	ALS ENVIRONMENTAL - WATERLOO, ONTARIO, 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: L2276338

Report Date: 31-MAY-19

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Client: City of Winnipeg - Solid Waste Services Div (1120 Waverley)
 Solid Waste Services Division 1120 Waverley Street
 Winnipeg MB R3T 0P4

Contact: CHRIS KOZAK

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
CN-T-CFA-WP		Water						
Batch	R4647167							
WG3061364-2	LCS							
Cyanide, Total			87.1		%		80-120	28-MAY-19
WG3061364-1	MB							
Cyanide, Total			<0.0010		mg/L		0.001	28-MAY-19
CR-CR6-IC-WT		Water						
Batch	R4642032							
WG3057388-7	LCS							
Chromium, Hexavalent			97.8		%		80-120	24-MAY-19
WG3057388-6	MB							
Chromium, Hexavalent			<0.00050		mg/L		0.0005	24-MAY-19
F2-F4-FID-WP		Water						
Batch	R4640991							
WG3055413-2	LCS							
F2 (C10-C16)			107.3		%		70-130	22-MAY-19
F3 (C16-C34)			100.8		%		70-130	22-MAY-19
F4 (C34-C50)			100.2		%		70-130	22-MAY-19
WG3055413-1	MB							
F2 (C10-C16)			<0.10		mg/L		0.1	22-MAY-19
F3 (C16-C34)			<0.25		mg/L		0.25	22-MAY-19
F4 (C34-C50)			<0.25		mg/L		0.25	22-MAY-19
Surrogate: 2-Bromobenzotrifluoride			89.1		%		60-140	22-MAY-19
HERBSCR-LCMS-WT		Water						
Batch	R4652748							
WG3060117-6	LCS							
Clopyralid			71.5		%		50-150	28-MAY-19
Dicamba			86.0		%		65-130	28-MAY-19
Mecoprop			95.1		%		65-130	28-MAY-19
MCPA			88.0		%		65-130	28-MAY-19
2,4-D			80.2		%		65-130	28-MAY-19
Bromoxynil			118.0		%		65-130	28-MAY-19
Triclopyr			89.1		%		65-130	28-MAY-19
2,4,5-T			75.5		%		65-130	28-MAY-19
2,4,5-TP			87.7		%		65-130	28-MAY-19
Picloram			79.0		%		50-150	28-MAY-19
2,4-DB			91.4		%		65-130	28-MAY-19
2,4-DP			83.8		%		65-130	28-MAY-19

Quality Control Report

Workorder: L2276338

Report Date: 31-MAY-19

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Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
HERBSCR-LCMS-WT		Water						
Batch	R4652748							
WG3060117-6	LCS							
Dinoseb			118.0		%		50-150	28-MAY-19
MCPB			99.5		%		65-130	28-MAY-19
WG3060117-5	MB							
Clopyralid			<0.00010		mg/L		0.0001	29-MAY-19
Dicamba			<0.00010		mg/L		0.0001	29-MAY-19
Mecoprop			<0.00010		mg/L		0.0001	29-MAY-19
MCPA			<0.00010		mg/L		0.0001	29-MAY-19
2,4-D			<0.00010		mg/L		0.0001	29-MAY-19
Bromoxynil			<0.00010		mg/L		0.0001	29-MAY-19
Triclopyr			<0.00010		mg/L		0.0001	29-MAY-19
2,4,5-T			<0.00010		mg/L		0.0001	29-MAY-19
2,4,5-TP			<0.00010		mg/L		0.0001	29-MAY-19
Picloram			<0.00010		mg/L		0.0001	29-MAY-19
2,4-DB			<0.00010		mg/L		0.0001	29-MAY-19
2,4-DP			<0.00010		mg/L		0.0001	29-MAY-19
Dinoseb			<0.00010		mg/L		0.0001	29-MAY-19
MCPB			<0.00010		mg/L		0.0001	29-MAY-19
Surrogate: 2,4-Dichlorophenylacetic Acid			96.0		%		50-130	29-MAY-19
HG-T-CVAA-WP		Water						
Batch	R4642548							
WG3057808-2	LCS							
Mercury (Hg)-Total			102.0		%		80-120	23-MAY-19
WG3057808-1	MB							
Mercury (Hg)-Total			<0.000005C		mg/L		0.000005	23-MAY-19
MET-D-CCMS-WP		Water						
Batch	R4640850							
WG3055633-2	LCS							
Aluminum (Al)-Dissolved			102.4		%		80-120	22-MAY-19
Antimony (Sb)-Dissolved			98.7		%		80-120	22-MAY-19
Arsenic (As)-Dissolved			98.9		%		80-120	22-MAY-19
Barium (Ba)-Dissolved			99.8		%		80-120	22-MAY-19
Beryllium (Be)-Dissolved			101.4		%		80-120	22-MAY-19
Bismuth (Bi)-Dissolved			98.0		%		80-120	22-MAY-19
Boron (B)-Dissolved			106.9		%		80-120	22-MAY-19
Cadmium (Cd)-Dissolved			99.7		%		80-120	22-MAY-19

Quality Control Report

Workorder: L2276338

Report Date: 31-MAY-19

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Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
MET-D-CCMS-WP								
	Water							
Batch	R4640850							
WG3055633-2	LCS							
Calcium (Ca)-Dissolved			100.6		%		80-120	22-MAY-19
Cesium (Cs)-Dissolved			100.4		%		80-120	22-MAY-19
Chromium (Cr)-Dissolved			102.4		%		80-120	22-MAY-19
Cobalt (Co)-Dissolved			101.0		%		80-120	22-MAY-19
Copper (Cu)-Dissolved			102.6		%		80-120	22-MAY-19
Iron (Fe)-Dissolved			95.4		%		80-120	22-MAY-19
Lead (Pb)-Dissolved			99.4		%		80-120	22-MAY-19
Lithium (Li)-Dissolved			99.1		%		80-120	22-MAY-19
Magnesium (Mg)-Dissolved			111.6		%		80-120	22-MAY-19
Manganese (Mn)-Dissolved			102.6		%		80-120	22-MAY-19
Molybdenum (Mo)-Dissolved			101.5		%		80-120	22-MAY-19
Nickel (Ni)-Dissolved			100.2		%		80-120	22-MAY-19
Phosphorus (P)-Dissolved			107.1		%		80-120	22-MAY-19
Potassium (K)-Dissolved			97.3		%		80-120	22-MAY-19
Rubidium (Rb)-Dissolved			100.7		%		80-120	22-MAY-19
Selenium (Se)-Dissolved			99.7		%		80-120	22-MAY-19
Silicon (Si)-Dissolved			100.0		%		80-120	22-MAY-19
Silver (Ag)-Dissolved			99.0		%		80-120	22-MAY-19
Sodium (Na)-Dissolved			101.9		%		80-120	22-MAY-19
Strontium (Sr)-Dissolved			99.9		%		80-120	22-MAY-19
Sulfur (S)-Dissolved			100.2		%		80-120	22-MAY-19
Tellurium (Te)-Dissolved			98.3		%		80-120	22-MAY-19
Thallium (Tl)-Dissolved			98.5		%		80-120	22-MAY-19
Thorium (Th)-Dissolved			98.6		%		80-120	22-MAY-19
Tin (Sn)-Dissolved			99.3		%		80-120	22-MAY-19
Titanium (Ti)-Dissolved			100.5		%		80-120	22-MAY-19
Tungsten (W)-Dissolved			100.5		%		80-120	22-MAY-19
Uranium (U)-Dissolved			102.9		%		80-120	22-MAY-19
Vanadium (V)-Dissolved			102.3		%		80-120	22-MAY-19
Zinc (Zn)-Dissolved			100.3		%		80-120	22-MAY-19
Zirconium (Zr)-Dissolved			99.3		%		80-120	22-MAY-19
WG3055633-1	MB							
Aluminum (Al)-Dissolved			<0.0010		mg/L		0.001	22-MAY-19
Antimony (Sb)-Dissolved			<0.00010		mg/L		0.0001	22-MAY-19



Quality Control Report

Workorder: L2276338

Report Date: 31-MAY-19

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Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
MET-D-CCMS-WP								
	Water							
Batch	R4640850							
WG3055633-1	MB							
Arsenic (As)-Dissolved			<0.00010		mg/L		0.0001	22-MAY-19
Barium (Ba)-Dissolved			<0.00010		mg/L		0.0001	22-MAY-19
Beryllium (Be)-Dissolved			<0.00010		mg/L		0.0001	22-MAY-19
Bismuth (Bi)-Dissolved			<0.000050		mg/L		0.00005	22-MAY-19
Boron (B)-Dissolved			<0.010		mg/L		0.01	22-MAY-19
Cadmium (Cd)-Dissolved			<0.0000050		mg/L		0.000005	22-MAY-19
Calcium (Ca)-Dissolved			<0.050		mg/L		0.05	22-MAY-19
Cesium (Cs)-Dissolved			<0.000010		mg/L		0.00001	22-MAY-19
Chromium (Cr)-Dissolved			<0.00010		mg/L		0.0001	22-MAY-19
Cobalt (Co)-Dissolved			<0.00010		mg/L		0.0001	22-MAY-19
Copper (Cu)-Dissolved			<0.00020		mg/L		0.0002	22-MAY-19
Iron (Fe)-Dissolved			<0.010		mg/L		0.01	22-MAY-19
Lead (Pb)-Dissolved			<0.000050		mg/L		0.00005	22-MAY-19
Lithium (Li)-Dissolved			<0.0010		mg/L		0.001	22-MAY-19
Magnesium (Mg)-Dissolved			<0.0050		mg/L		0.005	22-MAY-19
Manganese (Mn)-Dissolved			<0.00010		mg/L		0.0001	22-MAY-19
Molybdenum (Mo)-Dissolved			<0.000050		mg/L		0.00005	22-MAY-19
Nickel (Ni)-Dissolved			<0.00050		mg/L		0.0005	22-MAY-19
Phosphorus (P)-Dissolved			<0.030		mg/L		0.03	22-MAY-19
Potassium (K)-Dissolved			<0.050		mg/L		0.05	22-MAY-19
Rubidium (Rb)-Dissolved			<0.00020		mg/L		0.0002	22-MAY-19
Selenium (Se)-Dissolved			<0.000050		mg/L		0.00005	22-MAY-19
Silicon (Si)-Dissolved			<0.050		mg/L		0.05	22-MAY-19
Silver (Ag)-Dissolved			<0.000010		mg/L		0.00001	22-MAY-19
Sodium (Na)-Dissolved			<0.050		mg/L		0.05	22-MAY-19
Strontium (Sr)-Dissolved			<0.00010		mg/L		0.0001	22-MAY-19
Sulfur (S)-Dissolved			<0.50		mg/L		0.5	22-MAY-19
Tellurium (Te)-Dissolved			<0.00020		mg/L		0.0002	22-MAY-19
Thallium (Tl)-Dissolved			<0.000010		mg/L		0.00001	22-MAY-19
Thorium (Th)-Dissolved			<0.00010		mg/L		0.0001	22-MAY-19
Tin (Sn)-Dissolved			<0.00010		mg/L		0.0001	22-MAY-19
Titanium (Ti)-Dissolved			<0.00030		mg/L		0.0003	22-MAY-19
Tungsten (W)-Dissolved			<0.00010		mg/L		0.0001	22-MAY-19
Uranium (U)-Dissolved			<0.000010		mg/L		0.00001	22-MAY-19



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Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
MET-D-CCMS-WP		Water						
Batch	R4640850							
WG3055633-1	MB							
Vanadium (V)-Dissolved			<0.00050		mg/L		0.0005	22-MAY-19
Zinc (Zn)-Dissolved			<0.0010		mg/L		0.001	22-MAY-19
Zirconium (Zr)-Dissolved			<0.000060		mg/L		0.00006	22-MAY-19
PAH,PANH-WP		Water						
Batch	R4647527							
WG3058184-2	LCS							
1-Methyl Naphthalene			110.9		%		60-130	24-MAY-19
2-Methyl Naphthalene			100.4		%		60-130	24-MAY-19
Acenaphthene			112.9		%		60-130	24-MAY-19
Acenaphthylene			98.0		%		60-130	24-MAY-19
Anthracene			89.6		%		60-130	24-MAY-19
Acridine			87.5		%		60-130	24-MAY-19
Benzo(a)anthracene			94.1		%		60-130	24-MAY-19
Benzo(a)pyrene			87.5		%		60-130	24-MAY-19
Benzo(b&j)fluoranthene			85.0		%		60-130	24-MAY-19
Benzo(g,h,i)perylene			87.1		%		60-130	24-MAY-19
Benzo(k)fluoranthene			85.2		%		60-130	24-MAY-19
Chrysene			118.1		%		60-130	24-MAY-19
Dibenzo(a,h)anthracene			75.2		%		60-130	24-MAY-19
Fluoranthene			110.9		%		60-130	24-MAY-19
Fluorene			102.6		%		60-130	24-MAY-19
Indeno(1,2,3-cd)pyrene			77.8		%		60-130	24-MAY-19
Naphthalene			112.2		%		50-130	24-MAY-19
Phenanthrene			123.7		%		60-130	24-MAY-19
Pyrene			108.5		%		60-130	24-MAY-19
Quinoline			87.3		%		60-130	24-MAY-19
WG3058184-1	MB							
1-Methyl Naphthalene			<0.000020		mg/L		0.00002	24-MAY-19
2-Methyl Naphthalene			<0.000020		mg/L		0.00002	24-MAY-19
Acenaphthene			<0.000020		mg/L		0.00002	24-MAY-19
Acenaphthylene			<0.000020		mg/L		0.00002	24-MAY-19
Anthracene			<0.000010		mg/L		0.00001	24-MAY-19
Acridine			<0.000020		mg/L		0.00002	24-MAY-19
Benzo(a)anthracene			<0.000010		mg/L		0.00001	24-MAY-19

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Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
PAH,PANH-WP								
	Water							
Batch	R4647527							
WG3058184-1	MB							
Benzo(a)pyrene			<0.000005C		mg/L		0.000005	24-MAY-19
Benzo(b&j)fluoranthene			<0.000010		mg/L		0.00001	24-MAY-19
Benzo(g,h,i)perylene			<0.000020		mg/L		0.00002	24-MAY-19
Benzo(k)fluoranthene			<0.000010		mg/L		0.00001	24-MAY-19
Chrysene			<0.000020		mg/L		0.00002	24-MAY-19
Dibenzo(a,h)anthracene			<0.000005C		mg/L		0.000005	24-MAY-19
Fluoranthene			<0.000020		mg/L		0.00002	24-MAY-19
Fluorene			<0.000020		mg/L		0.00002	24-MAY-19
Indeno(1,2,3-cd)pyrene			<0.000010		mg/L		0.00001	24-MAY-19
Naphthalene			<0.000050		mg/L		0.00005	24-MAY-19
Phenanthrene			<0.000050		mg/L		0.00005	24-MAY-19
Pyrene			<0.000010		mg/L		0.00001	24-MAY-19
Quinoline			<0.000020		mg/L		0.00002	24-MAY-19
Surrogate: Acenaphthene d10			88.7		%		60-130	24-MAY-19
Surrogate: Acridine d9			71.3		%		60-130	24-MAY-19
Surrogate: Chrysene d12			95.1		%		60-130	24-MAY-19
Surrogate: Naphthalene d8			82.6		%		50-130	24-MAY-19
Surrogate: Phenanthrene d10			92.2		%		60-130	24-MAY-19
PEST-DIAZINON-WT								
	Water							
Batch	R4644622							
WG3056794-2	LCS							
Diazinon			94.0		%		60-130	24-MAY-19
WG3056794-1	MB							
Diazinon			<0.10		ug/L		0.1	24-MAY-19
Surrogate: 2-Fluorobiphenyl			87.0		%		40-130	24-MAY-19
Surrogate: d14-Terphenyl			86.3		%		40-130	24-MAY-19
PHENOLS-4AAP-WT								
	Water							
Batch	R4645002							
WG3059262-15	DUP	L2276338-5						
Phenols (4AAP)		<0.0010	<0.0010	RPD-NA	mg/L	N/A	20	27-MAY-19
WG3059262-14	LCS							
Phenols (4AAP)			106.5		%		85-115	27-MAY-19
WG3059262-13	MB							
Phenols (4AAP)			<0.0010		mg/L		0.001	27-MAY-19
WG3059262-16	MS	L2276338-5						

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Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
PHENOLS-4AAP-WT	Water							
Batch	R4645002							
WG3059262-16 MS		L2276338-5						
Phenols (4AAP)			100.8		%		75-125	27-MAY-19
VOC+F1-HSMS-WP	Water							
Batch	R4645483							
WG3058066-2 LCS								
Acetone			91.3		%		70-130	25-MAY-19
Benzene			101.4		%		70-130	25-MAY-19
Bromobenzene			104.3		%		70-130	25-MAY-19
Bromochloromethane			99.8		%		70-130	25-MAY-19
Bromodichloromethane			103.1		%		70-130	25-MAY-19
Bromoform			97.9		%		70-130	25-MAY-19
Bromomethane			92.0		%		60-140	25-MAY-19
n-Butylbenzene			114.0		%		70-130	25-MAY-19
sec-Butylbenzene			105.7		%		70-130	25-MAY-19
tert-Butylbenzene			120.3		%		70-130	25-MAY-19
Carbon disulfide			83.7		%		70-130	25-MAY-19
Carbon Tetrachloride			107.0		%		70-130	25-MAY-19
Chlorobenzene			101.1		%		70-130	25-MAY-19
Chloroethane			116.5		%		60-140	25-MAY-19
Chloroform			105.3		%		70-130	25-MAY-19
Chloromethane			102.9		%		60-140	25-MAY-19
2-Chlorotoluene			110.2		%		70-130	25-MAY-19
4-Chlorotoluene			97.3		%		70-130	25-MAY-19
Dibromochloromethane			103.9		%		70-130	25-MAY-19
1,2-Dibromo-3-chloropropane			101.3		%		70-130	25-MAY-19
1,2-Dibromoethane			97.7		%		70-130	25-MAY-19
Dibromomethane			102.0		%		70-130	25-MAY-19
1,2-Dichlorobenzene			102.8		%		70-130	25-MAY-19
1,3-Dichlorobenzene			98.8		%		70-130	25-MAY-19
1,4-Dichlorobenzene			98.7		%		70-130	25-MAY-19
Dichlorodifluoromethane			125.5		%		60-140	25-MAY-19
1,1-dichloroethane			105.3		%		70-130	25-MAY-19
1,2-Dichloroethane			101.5		%		70-130	25-MAY-19
1,1-dichloroethene			96.5		%		70-130	25-MAY-19

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Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
VOC+F1-HSMS-WP								
	Water							
Batch	R4645483							
WG3058066-2	LCS							
cis-1,2-Dichloroethene			100.7		%		70-130	25-MAY-19
trans-1,2-Dichloroethene			93.7		%		70-130	25-MAY-19
Dichloromethane			100.0		%		70-130	25-MAY-19
1,2-Dichloropropane			102.3		%		70-130	25-MAY-19
1,3-Dichloropropane			102.0		%		70-130	25-MAY-19
2,2-Dichloropropane			94.6		%		70-130	25-MAY-19
1,1-Dichloropropene			100.3		%		70-130	25-MAY-19
cis-1,3-Dichloropropene			96.3		%		70-130	25-MAY-19
trans-1,3-Dichloropropene			95.4		%		70-130	25-MAY-19
Ethylbenzene			111.1		%		70-130	25-MAY-19
Hexachlorobutadiene			100.7		%		70-130	25-MAY-19
Hexane			94.2		%		70-130	25-MAY-19
2-Hexanone (Methyl butyl ketone)			102.5		%		70-130	25-MAY-19
Isopropylbenzene			115.9		%		70-130	25-MAY-19
4-Isopropyltoluene			104.0		%		70-130	25-MAY-19
MEK			98.5		%		70-130	25-MAY-19
MIBK			100.1		%		70-130	25-MAY-19
MTBE			107.9		%		70-130	25-MAY-19
Styrene			113.9		%		70-130	25-MAY-19
1,1,1,2-Tetrachloroethane			111.1		%		70-130	25-MAY-19
1,1,2,2-Tetrachloroethane			102.5		%		70-130	25-MAY-19
Tetrachloroethene			99.0		%		70-130	25-MAY-19
Toluene			104.9		%		70-130	25-MAY-19
1,2,3-Trichlorobenzene			105.0		%		70-130	25-MAY-19
1,2,4-Trichlorobenzene			99.1		%		70-130	25-MAY-19
1,1,1-Trichloroethane			109.5		%		70-130	25-MAY-19
1,1,2-Trichloroethane			101.0		%		70-130	25-MAY-19
Trichloroethene			102.9		%		70-130	25-MAY-19
Trichlorofluoromethane			107.6		%		60-140	25-MAY-19
1,2,3-Trichloropropane			102.0		%		70-130	25-MAY-19
1,2,4-Trimethylbenzene			101.3		%		70-130	25-MAY-19
1,3,5-Trimethylbenzene			106.3		%		70-130	25-MAY-19
Vinyl Chloride			108.0		%		60-140	25-MAY-19
M+P-Xylenes			109.0		%		70-130	25-MAY-19

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Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
VOC+F1-HSMS-WP								
	Water							
Batch	R4645483							
WG3058066-2	LCS							
o-Xylene			111.5		%		70-130	25-MAY-19
WG3058066-3	LCS							
F1			89.7		%		70-130	24-MAY-19
WG3058066-1	MB							
Acetone			<0.020		mg/L		0.02	25-MAY-19
Benzene			<0.00050		mg/L		0.0005	25-MAY-19
Bromobenzene			<0.00050		mg/L		0.0005	25-MAY-19
Bromochloromethane			<0.00050		mg/L		0.0005	25-MAY-19
Bromodichloromethane			<0.00050		mg/L		0.0005	25-MAY-19
Bromoform			<0.00050		mg/L		0.0005	25-MAY-19
Bromomethane			<0.0010		mg/L		0.001	25-MAY-19
n-Butylbenzene			<0.00050		mg/L		0.0005	25-MAY-19
sec-Butylbenzene			<0.00050		mg/L		0.0005	25-MAY-19
tert-Butylbenzene			<0.00050		mg/L		0.0005	25-MAY-19
Carbon disulfide			<0.00050		mg/L		0.0005	25-MAY-19
Carbon Tetrachloride			<0.00050		mg/L		0.0005	25-MAY-19
Chlorobenzene			<0.00050		mg/L		0.0005	25-MAY-19
Chloroethane			<0.0010		mg/L		0.001	25-MAY-19
Chloroform			<0.00050		mg/L		0.0005	25-MAY-19
Chloromethane			<0.0010		mg/L		0.001	25-MAY-19
2-Chlorotoluene			<0.020		mg/L		0.02	25-MAY-19
4-Chlorotoluene			<0.00050		mg/L		0.0005	25-MAY-19
Dibromochloromethane			<0.00050		mg/L		0.0005	25-MAY-19
1,2-Dibromo-3-chloropropane			<0.00050		mg/L		0.0005	25-MAY-19
1,2-Dibromoethane			<0.00050		mg/L		0.0005	25-MAY-19
Dibromomethane			<0.00050		mg/L		0.0005	25-MAY-19
1,2-Dichlorobenzene			<0.00050		mg/L		0.0005	25-MAY-19
1,3-Dichlorobenzene			<0.00050		mg/L		0.0005	25-MAY-19
1,4-Dichlorobenzene			<0.00050		mg/L		0.0005	25-MAY-19
Dichlorodifluoromethane			<0.0010		mg/L		0.001	25-MAY-19
1,1-dichloroethane			<0.00050		mg/L		0.0005	25-MAY-19
1,2-Dichloroethane			<0.00050		mg/L		0.0005	25-MAY-19
1,1-dichloroethene			<0.00050		mg/L		0.0005	25-MAY-19
cis-1,2-Dichloroethene			<0.00050		mg/L		0.0005	25-MAY-19
trans-1,2-Dichloroethene			<0.00050		mg/L		0.0005	25-MAY-19

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Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
VOC+F1-HSMS-WP								
	Water							
Batch	R4645483							
WG3058066-1	MB							
Dichloromethane			<0.00050		mg/L		0.0005	25-MAY-19
1,2-Dichloropropane			<0.00050		mg/L		0.0005	25-MAY-19
1,3-Dichloropropane			<0.00050		mg/L		0.0005	25-MAY-19
2,2-Dichloropropane			<0.00050		mg/L		0.0005	25-MAY-19
1,1-Dichloropropene			<0.00050		mg/L		0.0005	25-MAY-19
cis-1,3-Dichloropropene			<0.00050		mg/L		0.0005	25-MAY-19
trans-1,3-Dichloropropene			<0.00050		mg/L		0.0005	25-MAY-19
Ethylbenzene			<0.00050		mg/L		0.0005	25-MAY-19
F1			<0.10		mg/L		0.1	25-MAY-19
Hexachlorobutadiene			<0.00050		mg/L		0.0005	25-MAY-19
Hexane			<0.00050		mg/L		0.0005	25-MAY-19
2-Hexanone (Methyl butyl ketone)			<0.020		mg/L		0.02	25-MAY-19
Isopropylbenzene			<0.00050		mg/L		0.0005	25-MAY-19
4-Isopropyltoluene			<0.0010		mg/L		0.001	25-MAY-19
MEK			<0.020		mg/L		0.02	25-MAY-19
MIBK			<0.020		mg/L		0.02	25-MAY-19
MTBE			<0.00050		mg/L		0.0005	25-MAY-19
Styrene			<0.00050		mg/L		0.0005	25-MAY-19
1,1,1,2-Tetrachloroethane			<0.00050		mg/L		0.0005	25-MAY-19
1,1,2,2-Tetrachloroethane			<0.00050		mg/L		0.0005	25-MAY-19
Tetrachloroethene			<0.00050		mg/L		0.0005	25-MAY-19
Toluene			<0.00050		mg/L		0.0005	25-MAY-19
1,2,3-Trichlorobenzene			<0.00050		mg/L		0.0005	25-MAY-19
1,2,4-Trichlorobenzene			<0.00050		mg/L		0.0005	25-MAY-19
1,1,1-Trichloroethane			<0.00050		mg/L		0.0005	25-MAY-19
1,1,2-Trichloroethane			<0.00050		mg/L		0.0005	25-MAY-19
Trichloroethene			<0.00050		mg/L		0.0005	25-MAY-19
Trichlorofluoromethane			<0.0010		mg/L		0.001	25-MAY-19
1,2,3-Trichloropropane			<0.00050		mg/L		0.0005	25-MAY-19
1,2,4-Trimethylbenzene			<0.00050		mg/L		0.0005	25-MAY-19
1,3,5-Trimethylbenzene			<0.00050		mg/L		0.0005	25-MAY-19
Vinyl Chloride			<0.00050		mg/L		0.0005	25-MAY-19
M+P-Xylenes			<0.00040		mg/L		0.0004	25-MAY-19
o-Xylene			<0.00030		mg/L		0.0003	25-MAY-19



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Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
VOC+F1-HSMS-WP	Water							
Batch	R4645483							
WG3058066-1	MB							
Surrogate: 4-Bromofluorobenzene (SS)			91.9		%		70-130	25-MAY-19
Surrogate: 1,4-Difluorobenzene (SS)			97.5		%		70-130	25-MAY-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
RPD-NA	Relative Percent Difference Not Available due to result(s) being less than detection limit.

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.

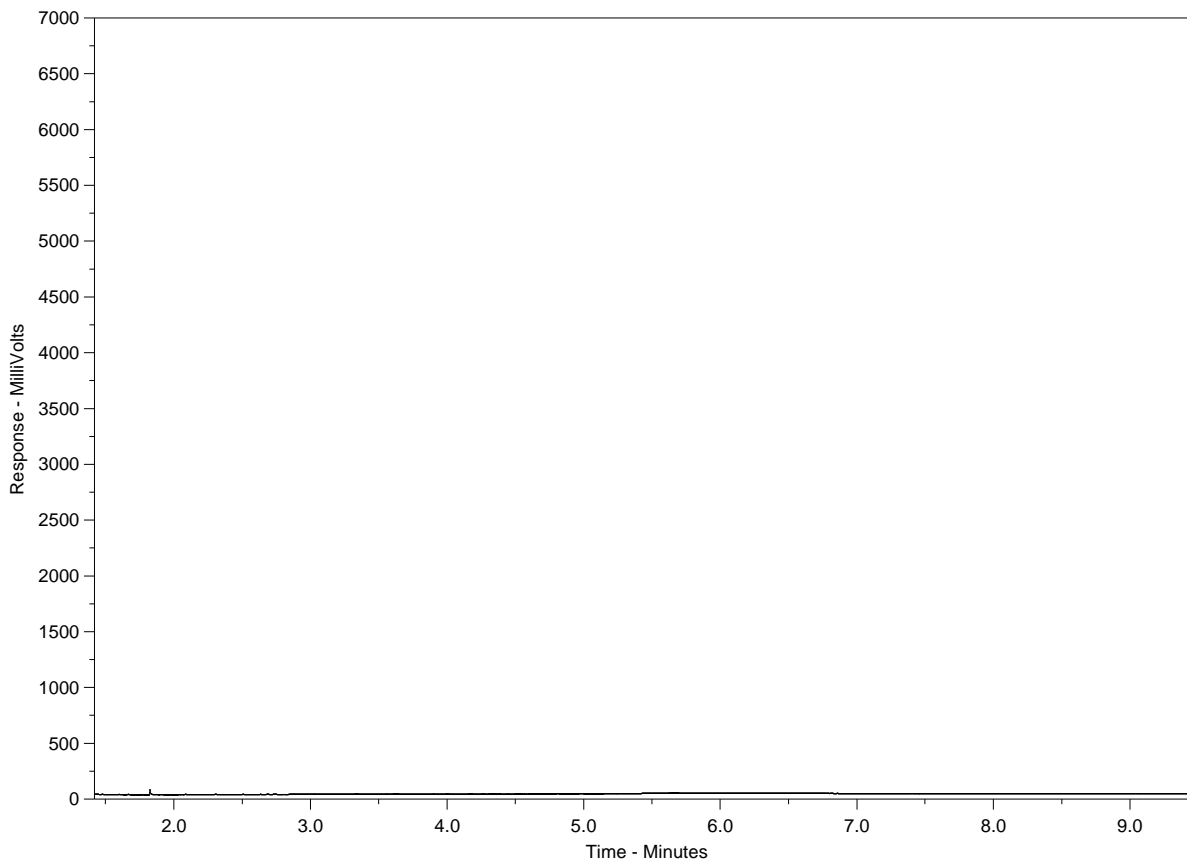
The ALS Quality Control Report is provided to ALS clients upon request. ALS includes comprehensive QC checks with every analysis to ensure our high standards of quality are met. Each QC result has a known or expected target value, which is compared against pre-determined data quality objectives to provide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

CCME F2-F4 HYDROCARBON DISTRIBUTION REPORT



ALS Sample ID: L2276338-1
 Client Sample ID: 6N60DR # 202753



← 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.

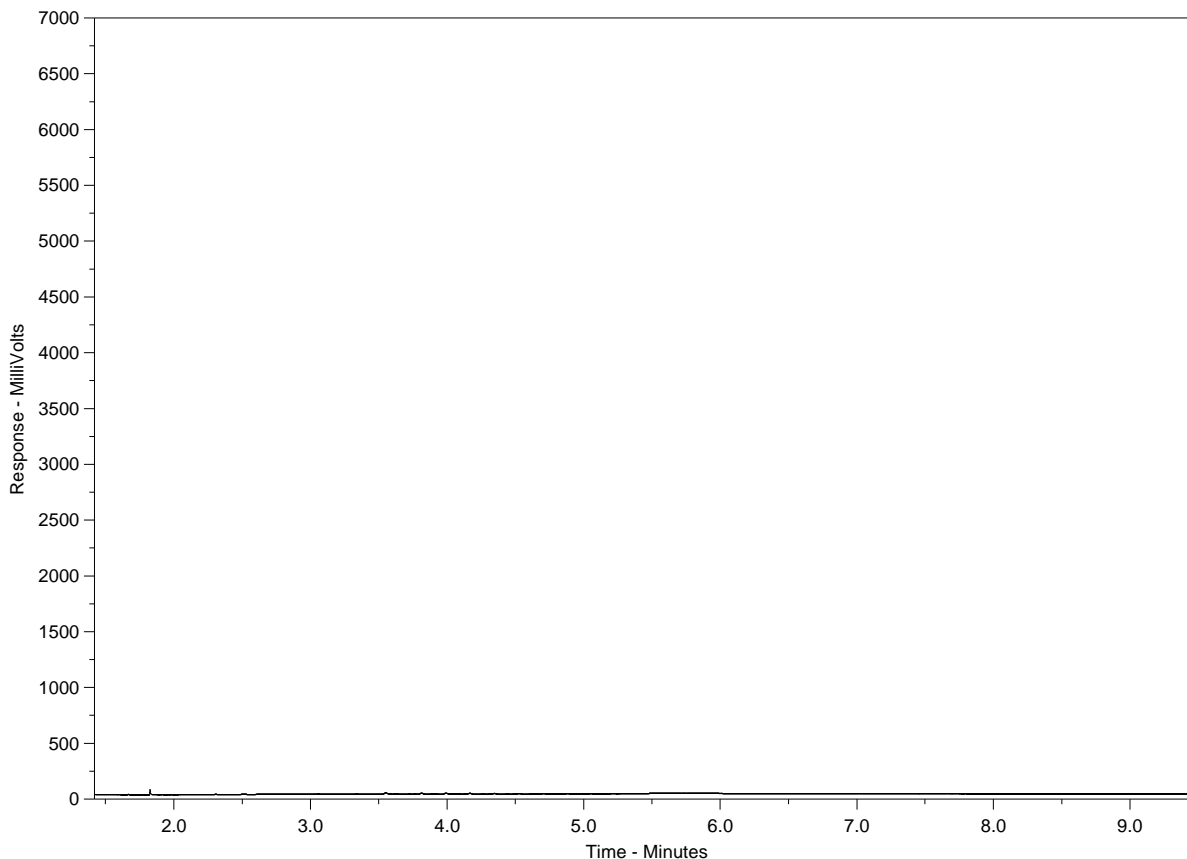
Peak heights in this report are a function of the sample concentration, the sample amount extracted, the sample dilution factor, and the scale at left.

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: L2276338-2
 Client Sample ID: 6N60E # 202754



← 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.

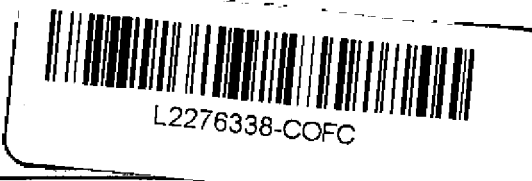
Note: This chromatogram was produced using GC conditions that are specific to ALS Canada CCME F2-F4 method. Refer to the ALS Canada CCME F2-F4 Hydrocarbon Library for a collection of chromatograms from common reference samples (fuels, oils, etc.). The HDR library can be found at www.alsglobal.com.



Chain of Custody (COC) / Analytical Request Form

Canada Toll Free: 1 800 668 9878

www.alsglobal.com



COC Number: 15 -

Page of

Report To Contact and company name below will appear on the final report		Report Format / Distribution			Select Service Level: <input type="checkbox"/> Standard TAT if received by 3 pm - business days - no surcharges apply										
Company:	City of Winnipeg	Select Report Format: <input checked="" type="checkbox"/> PDF <input type="checkbox"/> EXCEL <input type="checkbox"/> EDD (DIGITAL)			Regular [R] <input type="checkbox"/> Standard TAT if received by 3 pm - business days - no surcharges apply					EMERGENCY					
Contact:	Chris Kozak	Quality Control (QC) Report with Report <input checked="" type="checkbox"/> YES <input type="checkbox"/> NO			4 day [P4] <input type="checkbox"/>		1 Business day [E1] <input type="checkbox"/>								
Phone:	204-986-2384	<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"/>										
Street:	1120 Waverly Street	Email 1 or Fax: ckozak@winnipeg.ca			Date and Time Required for all E&P TATs:					date/time required					
City/Province:	Winnipeg, Manitoba	Email 2			For tests that can not be performed according to the service level selected, you will be contacted.										
Postal Code:	R3T 0P4	Email 3			Analysis Request										
Invoice To		Invoice Distribution			Indicate Filtered (F), Preserved (P) or Filtered and Preserved (F/P) below										
Same as Report To <input type="checkbox"/> YES <input type="checkbox"/> NO		Select Invoice Distribution: <input type="checkbox"/> EMAIL <input checked="" type="checkbox"/> MAIL <input type="checkbox"/> FAX													
Copy of Invoice with Report <input type="checkbox"/> YES <input type="checkbox"/> NO		Email 1 or Fax													
Company:		Email 2													
Contact:		Email 2													
Project Information		Oil and Gas Required Fields (client use)													
ALS Account # / Quote #: W10051/Q67317		AFE/Cost Center:		PO#											
Job #: Section B - BRRMF Groundwater		Major/Minor Code:		Routing Code:											
PO / AFE:		Requisitioner:													
LSD:		Location:													
ALS Lab Work Order # (lab use only)		ALS Contact:		Sampler:											
ALS Sample # (lab use only)	Sample Identification and/or Coordinates (This description will appear on the report)	Date (dd-mmm-yy)	Time (hh:mm)	Sample Type	CNT-CFA-WP	PEST-DIAZINON-WT	HERBSCR-LCMS-WT	TC-FC-EC-QT97-WP	MET-D-CCMS-WP (DISSOLVED)	HG-T-CVAA-WP (TOTAL)	CR-CRG-IC-WT	PHENOLS-AAAP-WT	VOC-F1-F4-WP	PAH-PANH-WP	Number of Containers
GNG0DR	# 202 753	21-05-19	9:53	WATER	✓	✓	✓		✓	✓	✓	✓	✓	✓	
GNG0E	# 202 754	↓	10:09	WATER	✓	✓	✓		✓	✓	✓	✓	✓	✓	
GNG3E	# 202 758		10:36	WATER	✓				✓	✓	✓	✓			
GNG3F	# 202 759		10:55	WATER	✓				✓	✓	✓	✓			
102	# 202 766		12:00	WATER	✓				✓	✓	✓	✓			
				WATER											
				WATER											
				WATER											
				WATER											
				WATER											
				WATER											
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 type="checkbox"/> NO					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 type="checkbox"/> NO					Ice Packs <input type="checkbox"/>					Ice Cubes <input type="checkbox"/>					
					Cooling Initiated <input type="checkbox"/>					Custody seal intact Yes <input type="checkbox"/> No <input type="checkbox"/>					
					INITIAL COOLER TEMPERATURES °C					FINAL COOLER TEMPERATURES °C					
					15.6°C										
SHIPMENT RELEASE (client use)				INITIAL SHIPMENT RECEPTION (lab use only)				FINAL SHIPMENT RECEPTION (lab use only)							
Released by:	Date:	Time:	Received by:	Date:	Time:	Received by:	Date:	Time:	Received by:	Date:	Time:				
Adam Cox	May 21/19	14:30	JH	May 21	14:30										



City of Winnipeg - Solid Waste Services Div
(1120 Waverley)
ATTN: CHRIS KOZAK
Solid Waste Services Division
1120 Waverley Street
Winnipeg MB R3T 0P4

Date Received: 22-MAY-19
Report Date: 31-MAY-19 13:15 (MT)
Version: FINAL

Client Phone: 204-986-2384

Certificate of Analysis

Lab Work Order #: L2277013
Project P.O. #: NOT SUBMITTED
Job Reference: SECTION B - BRRMF GROUNDWATER
C of C Numbers:
Legal Site Desc:

Hua Wo
Chemistry Laboratory Manager

[This report shall not be reproduced except in full without the written authority of the Laboratory.]

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
L2277013-1 W16A							
Sampled By: CLIENT on 22-MAY-19 @ 10:08							
Matrix: WATER							
Miscellaneous Parameters							
Chromium, Hexavalent	<0.50		0.50	ug/L		24-MAY-19	R4642032
Mercury (Hg)-Total	<0.050	DLM	0.050	ug/L	22-MAY-19	23-MAY-19	R4642548
Phenols (4AAP)	5.1		1.0	ug/L		29-MAY-19	R4650406
Cyanide, Total	1.1		1.0	ug/L		28-MAY-19	R4647167
Dissolved Metals in Water by CRC ICPMS							
Dissolved Metals Filtration Location	FIELD					23-MAY-19	R4641205
Aluminum (Al)-Dissolved	3.0		1.0	ug/L	23-MAY-19	24-MAY-19	R4644428
Antimony (Sb)-Dissolved	<0.10		0.10	ug/L	23-MAY-19	24-MAY-19	R4644428
Arsenic (As)-Dissolved	1.43		0.10	ug/L	23-MAY-19	24-MAY-19	R4644428
Barium (Ba)-Dissolved	11.4		0.10	ug/L	23-MAY-19	24-MAY-19	R4644428
Beryllium (Be)-Dissolved	<0.10		0.10	ug/L	23-MAY-19	24-MAY-19	R4644428
Bismuth (Bi)-Dissolved	<0.050		0.050	ug/L	23-MAY-19	24-MAY-19	R4644428
Boron (B)-Dissolved	525		10	ug/L	23-MAY-19	24-MAY-19	R4644428
Cadmium (Cd)-Dissolved	0.103		0.0050	ug/L	23-MAY-19	24-MAY-19	R4644428
Calcium (Ca)-Dissolved	530000		50	ug/L	23-MAY-19	24-MAY-19	R4644428
Cesium (Cs)-Dissolved	<0.010		0.010	ug/L	23-MAY-19	24-MAY-19	R4644428
Chromium (Cr)-Dissolved	<0.10		0.10	ug/L	23-MAY-19	24-MAY-19	R4644428
Cobalt (Co)-Dissolved	4.47		0.10	ug/L	23-MAY-19	24-MAY-19	R4644428
Copper (Cu)-Dissolved	0.43		0.20	ug/L	23-MAY-19	24-MAY-19	R4644428
Iron (Fe)-Dissolved	18		10	ug/L	23-MAY-19	24-MAY-19	R4644428
Lead (Pb)-Dissolved	<0.050		0.050	ug/L	23-MAY-19	24-MAY-19	R4644428
Lithium (Li)-Dissolved	390		100	ug/L	23-MAY-19	27-MAY-19	R4645266
Magnesium (Mg)-Dissolved	209000		5.0	ug/L	23-MAY-19	24-MAY-19	R4644428
Manganese (Mn)-Dissolved	850		0.10	ug/L	23-MAY-19	24-MAY-19	R4644428
Molybdenum (Mo)-Dissolved	0.656		0.050	ug/L	23-MAY-19	24-MAY-19	R4644428
Nickel (Ni)-Dissolved	5.61		0.50	ug/L	23-MAY-19	24-MAY-19	R4644428
Phosphorus (P)-Dissolved	<30		30	ug/L	23-MAY-19	24-MAY-19	R4644428
Potassium (K)-Dissolved	10700		50	ug/L	23-MAY-19	24-MAY-19	R4644428
Rubidium (Rb)-Dissolved	5.20		0.20	ug/L	23-MAY-19	24-MAY-19	R4644428
Selenium (Se)-Dissolved	0.064		0.050	ug/L	23-MAY-19	24-MAY-19	R4644428
Silicon (Si)-Dissolved	12300		50	ug/L	23-MAY-19	24-MAY-19	R4644428
Silver (Ag)-Dissolved	0.012		0.010	ug/L	23-MAY-19	24-MAY-19	R4644428
Sodium (Na)-Dissolved	474000		50	ug/L	23-MAY-19	24-MAY-19	R4644428
Strontium (Sr)-Dissolved	3290		10	ug/L	23-MAY-19	27-MAY-19	R4645266
Sulfur (S)-Dissolved	506000		500	ug/L	23-MAY-19	24-MAY-19	R4644428
Tellurium (Te)-Dissolved	<0.20		0.20	ug/L	23-MAY-19	24-MAY-19	R4644428
Thallium (Tl)-Dissolved	0.032		0.010	ug/L	23-MAY-19	24-MAY-19	R4644428
Thorium (Th)-Dissolved	<0.10		0.10	ug/L	23-MAY-19	24-MAY-19	R4644428
Tin (Sn)-Dissolved	<0.10		0.10	ug/L	23-MAY-19	24-MAY-19	R4644428
Titanium (Ti)-Dissolved	<0.30		0.30	ug/L	23-MAY-19	24-MAY-19	R4644428
Tungsten (W)-Dissolved	<0.10		0.10	ug/L	23-MAY-19	24-MAY-19	R4644428
Uranium (U)-Dissolved	16.7		0.010	ug/L	23-MAY-19	24-MAY-19	R4644428
Vanadium (V)-Dissolved	<0.50		0.50	ug/L	23-MAY-19	24-MAY-19	R4644428
Zinc (Zn)-Dissolved	4.0		1.0	ug/L	23-MAY-19	24-MAY-19	R4644428
Zirconium (Zr)-Dissolved	0.095		0.060	ug/L	23-MAY-19	24-MAY-19	R4644428
Polyaromatic Hydrocarbons (PAHs)							
1-Methyl Naphthalene	0.021		0.020	ug/L	24-MAY-19	24-MAY-19	R4647527
2-Methyl Naphthalene	0.051		0.020	ug/L	24-MAY-19	24-MAY-19	R4647527
Acenaphthene	<0.020		0.020	ug/L	24-MAY-19	24-MAY-19	R4647527
Acenaphthylene	<0.020		0.020	ug/L	24-MAY-19	24-MAY-19	R4647527
Anthracene	<0.010		0.010	ug/L	24-MAY-19	24-MAY-19	R4647527

* 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
L2277013-1 W16A							
Sampled By: CLIENT on 22-MAY-19 @ 10:08							
Matrix: WATER							
Polyaromatic Hydrocarbons (PAHs)							
Acridine	<0.020		0.020	ug/L	24-MAY-19	24-MAY-19	R4647527
Benzo(a)anthracene	<0.010		0.010	ug/L	24-MAY-19	24-MAY-19	R4647527
Benzo(a)pyrene	<0.0050		0.0050	ug/L	24-MAY-19	24-MAY-19	R4647527
Benzo(b&j)fluoranthene	<0.010		0.010	ug/L	24-MAY-19	24-MAY-19	R4647527
Benzo(g,h,i)perylene	<0.020		0.020	ug/L	24-MAY-19	24-MAY-19	R4647527
Benzo(k)fluoranthene	<0.010		0.010	ug/L	24-MAY-19	24-MAY-19	R4647527
Chrysene	<0.020		0.020	ug/L	24-MAY-19	24-MAY-19	R4647527
Dibenzo(a,h)anthracene	<0.0050		0.0050	ug/L	24-MAY-19	24-MAY-19	R4647527
Fluoranthene	<0.020		0.020	ug/L	24-MAY-19	24-MAY-19	R4647527
Fluorene	<0.020		0.020	ug/L	24-MAY-19	24-MAY-19	R4647527
Indeno(1,2,3-cd)pyrene	<0.010		0.010	ug/L	24-MAY-19	24-MAY-19	R4647527
Naphthalene	<0.050		0.050	ug/L	24-MAY-19	24-MAY-19	R4647527
Phenanthrene	<0.050		0.050	ug/L	24-MAY-19	24-MAY-19	R4647527
Pyrene	<0.010		0.010	ug/L	24-MAY-19	24-MAY-19	R4647527
Quinoline	<0.020		0.020	ug/L	24-MAY-19	24-MAY-19	R4647527
B(a)P Total Potency Equivalent	<0.030		0.030	ug/L	24-MAY-19	24-MAY-19	R4647527
Surrogate: Acenaphthene d10	85.9		60-130	%	24-MAY-19	24-MAY-19	R4647527
Surrogate: Acridine d9	67.9		60-130	%	24-MAY-19	24-MAY-19	R4647527
Surrogate: Chrysene d12	99.7		60-130	%	24-MAY-19	24-MAY-19	R4647527
Surrogate: Naphthalene d8	80.3		50-130	%	24-MAY-19	24-MAY-19	R4647527
Surrogate: Phenanthrene d10	94.9		60-130	%	24-MAY-19	24-MAY-19	R4647527
Herbicides in Water							
Clopyralid	<0.10		0.10	ug/L	28-MAY-19	29-MAY-19	R4652748
Dicamba	<0.10		0.10	ug/L	28-MAY-19	29-MAY-19	R4652748
Mecoprop	<0.10		0.10	ug/L	28-MAY-19	29-MAY-19	R4652748
MCPA	<0.10		0.10	ug/L	28-MAY-19	29-MAY-19	R4652748
2,4-D	<0.10		0.10	ug/L	28-MAY-19	29-MAY-19	R4652748
Bromoxynil	<0.10		0.10	ug/L	28-MAY-19	29-MAY-19	R4652748
Triclopyr	<0.10		0.10	ug/L	28-MAY-19	29-MAY-19	R4652748
2,4,5-T	<0.10		0.10	ug/L	28-MAY-19	29-MAY-19	R4652748
2,4,5-TP	<0.10		0.10	ug/L	28-MAY-19	29-MAY-19	R4652748
Picloram	<0.10		0.10	ug/L	28-MAY-19	29-MAY-19	R4652748
2,4-DB	<0.10		0.10	ug/L	28-MAY-19	29-MAY-19	R4652748
2,4-DP	<0.10		0.10	ug/L	28-MAY-19	29-MAY-19	R4652748
Dinoseb	<0.10		0.10	ug/L	28-MAY-19	29-MAY-19	R4652748
MCPB	<0.10		0.10	ug/L	28-MAY-19	29-MAY-19	R4652748
Surrogate: 2,4-Dichlorophenylacetic Acid	179.0	SURR-ND	50-130	%	28-MAY-19	29-MAY-19	R4652748
Miscellaneous Pesticides							
Diazinon	<0.10		0.10	ug/L	24-MAY-19	27-MAY-19	R4644675
Surrogate: 2-Fluorobiphenyl	86.4		40-130	%	24-MAY-19	27-MAY-19	R4644675
Surrogate: d14-Terphenyl	84.1		40-130	%	24-MAY-19	27-MAY-19	R4644675
VOC plus F1 to F4							
CCME PHC F2-F4 in Water							
F2 (C10-C16)	<100		100	ug/L	24-MAY-19	24-MAY-19	R4643909
F3 (C16-C34)	<250		250	ug/L	24-MAY-19	24-MAY-19	R4643909
F4 (C34-C50)	<250		250	ug/L	24-MAY-19	24-MAY-19	R4643909
Surrogate: 2-Bromobenzotrifluoride	100.8		60-140	%	24-MAY-19	24-MAY-19	R4643909
CCME Total Hydrocarbons							
F1-BTEX	<100		100	ug/L		29-MAY-19	
F2-Naphth	<100		100	ug/L		29-MAY-19	
F3-PAH	<250		250	ug/L		29-MAY-19	
Total Hydrocarbons (C6-C50)	<380		380	ug/L		29-MAY-19	

* 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
L2277013-1 W16A							
Sampled By: CLIENT on 22-MAY-19 @ 10:08							
Matrix: WATER							
Sum of Xylene Isomer Concentrations							
Xylenes (Total)	<0.50		0.50	ug/L		28-MAY-19	
Total Trihalomethanes (THMs)							
Total THMs	<1.0		1.0	ug/L		28-MAY-19	
VOC plus F1 by GCMS							
Acetone	<20		20	ug/L		25-MAY-19	R4645483
Benzene	<0.50		0.50	ug/L		25-MAY-19	R4645483
Bromobenzene	<0.50		0.50	ug/L		25-MAY-19	R4645483
Bromochloromethane	<0.50		0.50	ug/L		25-MAY-19	R4645483
Bromodichloromethane	<0.50		0.50	ug/L		25-MAY-19	R4645483
Bromoform	<0.50		0.50	ug/L		25-MAY-19	R4645483
Bromomethane	<1.0		1.0	ug/L		25-MAY-19	R4645483
n-Butylbenzene	<0.50		0.50	ug/L		25-MAY-19	R4645483
sec-Butylbenzene	<0.50		0.50	ug/L		25-MAY-19	R4645483
tert-Butylbenzene	<0.50		0.50	ug/L		25-MAY-19	R4645483
Carbon disulfide	<0.50		0.50	ug/L		25-MAY-19	R4645483
Carbon Tetrachloride	<0.50		0.50	ug/L		25-MAY-19	R4645483
Chlorobenzene	<0.50		0.50	ug/L		25-MAY-19	R4645483
Chloroethane	<1.0		1.0	ug/L		25-MAY-19	R4645483
Chloroform	<0.50		0.50	ug/L		25-MAY-19	R4645483
Chloromethane	<1.0		1.0	ug/L		25-MAY-19	R4645483
2-Chlorotoluene	<20		20	ug/L		25-MAY-19	R4645483
4-Chlorotoluene	<0.50		0.50	ug/L		25-MAY-19	R4645483
Dibromochloromethane	<0.50		0.50	ug/L		25-MAY-19	R4645483
1,2-Dibromo-3-chloropropane	<0.50		0.50	ug/L		25-MAY-19	R4645483
1,2-Dibromoethane	<0.50		0.50	ug/L		25-MAY-19	R4645483
Dibromomethane	<0.50		0.50	ug/L		25-MAY-19	R4645483
1,2-Dichlorobenzene	<0.50		0.50	ug/L		25-MAY-19	R4645483
1,3-Dichlorobenzene	<0.50		0.50	ug/L		25-MAY-19	R4645483
1,4-Dichlorobenzene	<0.50		0.50	ug/L		25-MAY-19	R4645483
Dichlorodifluoromethane	<1.0		1.0	ug/L		25-MAY-19	R4645483
1,1-dichloroethane	<0.50		0.50	ug/L		25-MAY-19	R4645483
1,2-Dichloroethane	<0.50		0.50	ug/L		25-MAY-19	R4645483
1,1-dichloroethene	<0.50		0.50	ug/L		25-MAY-19	R4645483
cis-1,2-Dichloroethene	<0.50		0.50	ug/L		25-MAY-19	R4645483
trans-1,2-Dichloroethene	<0.50		0.50	ug/L		25-MAY-19	R4645483
Dichloromethane	<0.50		0.50	ug/L		25-MAY-19	R4645483
1,2-Dichloropropane	<0.50		0.50	ug/L		25-MAY-19	R4645483
1,3-Dichloropropane	<0.50		0.50	ug/L		25-MAY-19	R4645483
2,2-Dichloropropane	<1.0	DLM	1.0	ug/L		25-MAY-19	R4645483
1,1-Dichloropropene	<0.50		0.50	ug/L		25-MAY-19	R4645483
cis-1,3-Dichloropropene	<1.0	DLM	1.0	ug/L		25-MAY-19	R4645483
trans-1,3-Dichloropropene	<1.0	DLM	1.0	ug/L		25-MAY-19	R4645483
Ethylbenzene	<0.50		0.50	ug/L		25-MAY-19	R4645483
F1	<100		100	ug/L		25-MAY-19	R4645483
Hexachlorobutadiene	<0.50		0.50	ug/L		25-MAY-19	R4645483
Hexane	<0.50		0.50	ug/L		25-MAY-19	R4645483
2-Hexanone (Methyl butyl ketone)	<20		20	ug/L		25-MAY-19	R4645483
Isopropylbenzene	<0.50		0.50	ug/L		25-MAY-19	R4645483
4-Isopropyltoluene	<1.0		1.0	ug/L		25-MAY-19	R4645483
MEK	<20		20	ug/L		25-MAY-19	R4645483
MIBK	<20		20	ug/L		25-MAY-19	R4645483

* 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
L2277013-1 W16A Sampled By: CLIENT on 22-MAY-19 @ 10:08 Matrix: WATER VOC plus F1 by GCMS							
MTBE	<0.50		0.50	ug/L		25-MAY-19	R4645483
Styrene	<0.50		0.50	ug/L		25-MAY-19	R4645483
1,1,1,2-Tetrachloroethane	<0.50		0.50	ug/L		25-MAY-19	R4645483
1,1,2,2-Tetrachloroethane	<0.50		0.50	ug/L		25-MAY-19	R4645483
Tetrachloroethene	<0.50		0.50	ug/L		25-MAY-19	R4645483
Toluene	<0.50		0.50	ug/L		25-MAY-19	R4645483
1,2,3-Trichlorobenzene	<0.50		0.50	ug/L		25-MAY-19	R4645483
1,2,4-Trichlorobenzene	<0.50		0.50	ug/L		25-MAY-19	R4645483
1,1,1-Trichloroethane	<0.50		0.50	ug/L		25-MAY-19	R4645483
1,1,2-Trichloroethane	<0.50		0.50	ug/L		25-MAY-19	R4645483
Trichloroethene	<0.50		0.50	ug/L		25-MAY-19	R4645483
Trichlorofluoromethane	<1.0		1.0	ug/L		25-MAY-19	R4645483
1,2,3-Trichloropropane	<0.50		0.50	ug/L		25-MAY-19	R4645483
1,2,4-Trimethylbenzene	<0.50		0.50	ug/L		25-MAY-19	R4645483
1,3,5-Trimethylbenzene	<0.50		0.50	ug/L		25-MAY-19	R4645483
Vinyl Chloride	<0.50		0.50	ug/L		25-MAY-19	R4645483
M+P-Xylenes	<0.40		0.40	ug/L		25-MAY-19	R4645483
o-Xylene	<0.30		0.30	ug/L		25-MAY-19	R4645483
Surrogate: 4-Bromofluorobenzene (SS)	89.0		70-130	%		25-MAY-19	R4645483
Surrogate: 1,4-Difluorobenzene (SS)	95.5		70-130	%		25-MAY-19	R4645483
L2277013-2 W15A Sampled By: CLIENT on 22-MAY-19 @ 10:30 Matrix: WATER Miscellaneous Parameters							
Chromium, Hexavalent	<0.50		0.50	ug/L		24-MAY-19	R4642032
Mercury (Hg)-Total	0.36	DLM	0.10	ug/L	22-MAY-19	23-MAY-19	R4642548
Phenols (4AAP)	3.0		1.0	ug/L		29-MAY-19	R4650406
Cyanide, Total	<1.0		1.0	ug/L		28-MAY-19	R4647167
Dissolved Metals in Water by CRC ICPMS							
Dissolved Metals Filtration Location	FIELD					23-MAY-19	R4641205
Aluminum (Al)-Dissolved	1.6		1.0	ug/L	23-MAY-19	24-MAY-19	R4644428
Antimony (Sb)-Dissolved	<0.10		0.10	ug/L	23-MAY-19	24-MAY-19	R4644428
Arsenic (As)-Dissolved	0.89		0.10	ug/L	23-MAY-19	24-MAY-19	R4644428
Barium (Ba)-Dissolved	12.6		0.10	ug/L	23-MAY-19	24-MAY-19	R4644428
Beryllium (Be)-Dissolved	<0.10		0.10	ug/L	23-MAY-19	24-MAY-19	R4644428
Bismuth (Bi)-Dissolved	<0.050		0.050	ug/L	23-MAY-19	24-MAY-19	R4644428
Boron (B)-Dissolved	491		10	ug/L	23-MAY-19	24-MAY-19	R4644428
Cadmium (Cd)-Dissolved	0.0317		0.0050	ug/L	23-MAY-19	24-MAY-19	R4644428
Calcium (Ca)-Dissolved	782000		5000	ug/L	23-MAY-19	27-MAY-19	R4645266
Cesium (Cs)-Dissolved	0.022		0.010	ug/L	23-MAY-19	24-MAY-19	R4644428
Chromium (Cr)-Dissolved	<0.10		0.10	ug/L	23-MAY-19	24-MAY-19	R4644428
Cobalt (Co)-Dissolved	6.30		0.10	ug/L	23-MAY-19	24-MAY-19	R4644428
Copper (Cu)-Dissolved	0.28		0.20	ug/L	23-MAY-19	24-MAY-19	R4644428
Iron (Fe)-Dissolved	396		10	ug/L	23-MAY-19	24-MAY-19	R4644428
Lead (Pb)-Dissolved	<0.050		0.050	ug/L	23-MAY-19	24-MAY-19	R4644428
Lithium (Li)-Dissolved	720		100	ug/L	23-MAY-19	27-MAY-19	R4645266
Magnesium (Mg)-Dissolved	270000		5.0	ug/L	23-MAY-19	24-MAY-19	R4644428
Manganese (Mn)-Dissolved	1650		10	ug/L	23-MAY-19	27-MAY-19	R4645266
Molybdenum (Mo)-Dissolved	0.510		0.050	ug/L	23-MAY-19	24-MAY-19	R4644428
Nickel (Ni)-Dissolved	7.43		0.50	ug/L	23-MAY-19	24-MAY-19	R4644428
Phosphorus (P)-Dissolved	<30		30	ug/L	23-MAY-19	24-MAY-19	R4644428

* 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
L2277013-2 W15A							
Sampled By: CLIENT on 22-MAY-19 @ 10:30							
Matrix: WATER							
Dissolved Metals in Water by CRC ICPMS							
Potassium (K)-Dissolved	14400		50	ug/L	23-MAY-19	24-MAY-19	R4644428
Rubidium (Rb)-Dissolved	6.32		0.20	ug/L	23-MAY-19	24-MAY-19	R4644428
Selenium (Se)-Dissolved	0.104		0.050	ug/L	23-MAY-19	24-MAY-19	R4644428
Silicon (Si)-Dissolved	12700		50	ug/L	23-MAY-19	24-MAY-19	R4644428
Silver (Ag)-Dissolved	0.020		0.010	ug/L	23-MAY-19	24-MAY-19	R4644428
Sodium (Na)-Dissolved	606000		5000	ug/L	23-MAY-19	27-MAY-19	R4645266
Strontium (Sr)-Dissolved	4360		10	ug/L	23-MAY-19	27-MAY-19	R4645266
Sulfur (S)-Dissolved	678000		50000	ug/L	23-MAY-19	27-MAY-19	R4645266
Tellurium (Te)-Dissolved	0.22		0.20	ug/L	23-MAY-19	24-MAY-19	R4644428
Thallium (Tl)-Dissolved	0.056		0.010	ug/L	23-MAY-19	24-MAY-19	R4644428
Thorium (Th)-Dissolved	<0.10		0.10	ug/L	23-MAY-19	24-MAY-19	R4644428
Tin (Sn)-Dissolved	<0.10		0.10	ug/L	23-MAY-19	24-MAY-19	R4644428
Titanium (Ti)-Dissolved	<0.30		0.30	ug/L	23-MAY-19	24-MAY-19	R4644428
Tungsten (W)-Dissolved	<0.10		0.10	ug/L	23-MAY-19	24-MAY-19	R4644428
Uranium (U)-Dissolved	35.5		0.010	ug/L	23-MAY-19	24-MAY-19	R4644428
Vanadium (V)-Dissolved	<0.50		0.50	ug/L	23-MAY-19	24-MAY-19	R4644428
Zinc (Zn)-Dissolved	3.7		1.0	ug/L	23-MAY-19	24-MAY-19	R4644428
Zirconium (Zr)-Dissolved	0.168		0.060	ug/L	23-MAY-19	24-MAY-19	R4644428
Polyaromatic Hydrocarbons (PAHs)							
1-Methyl Naphthalene	<0.020		0.020	ug/L	24-MAY-19	24-MAY-19	R4647527
2-Methyl Naphthalene	<0.020		0.020	ug/L	24-MAY-19	24-MAY-19	R4647527
Acenaphthene	<0.020		0.020	ug/L	24-MAY-19	24-MAY-19	R4647527
Acenaphthylene	<0.020		0.020	ug/L	24-MAY-19	24-MAY-19	R4647527
Anthracene	<0.010		0.010	ug/L	24-MAY-19	24-MAY-19	R4647527
Acridine	<0.020		0.020	ug/L	24-MAY-19	24-MAY-19	R4647527
Benzo(a)anthracene	<0.010		0.010	ug/L	24-MAY-19	24-MAY-19	R4647527
Benzo(a)pyrene	<0.0050		0.0050	ug/L	24-MAY-19	24-MAY-19	R4647527
Benzo(b&j)fluoranthene	<0.010		0.010	ug/L	24-MAY-19	24-MAY-19	R4647527
Benzo(g,h,i)perylene	<0.020		0.020	ug/L	24-MAY-19	24-MAY-19	R4647527
Benzo(k)fluoranthene	<0.010		0.010	ug/L	24-MAY-19	24-MAY-19	R4647527
Chrysene	<0.020		0.020	ug/L	24-MAY-19	24-MAY-19	R4647527
Dibenzo(a,h)anthracene	<0.0050		0.0050	ug/L	24-MAY-19	24-MAY-19	R4647527
Fluoranthene	<0.020		0.020	ug/L	24-MAY-19	24-MAY-19	R4647527
Fluorene	<0.020		0.020	ug/L	24-MAY-19	24-MAY-19	R4647527
Indeno(1,2,3-cd)pyrene	<0.010		0.010	ug/L	24-MAY-19	24-MAY-19	R4647527
Naphthalene	<0.050		0.050	ug/L	24-MAY-19	24-MAY-19	R4647527
Phenanthrene	<0.050		0.050	ug/L	24-MAY-19	24-MAY-19	R4647527
Pyrene	<0.010		0.010	ug/L	24-MAY-19	24-MAY-19	R4647527
Quinoline	<0.020		0.020	ug/L	24-MAY-19	24-MAY-19	R4647527
B(a)P Total Potency Equivalent	<0.030		0.030	ug/L	24-MAY-19	24-MAY-19	R4647527
Surrogate: Acenaphthene d10	77.8		60-130	%	24-MAY-19	24-MAY-19	R4647527
Surrogate: Acridine d9	70.6		60-130	%	24-MAY-19	24-MAY-19	R4647527
Surrogate: Chrysene d12	89.5		60-130	%	24-MAY-19	24-MAY-19	R4647527
Surrogate: Naphthalene d8	73.7		50-130	%	24-MAY-19	24-MAY-19	R4647527
Surrogate: Phenanthrene d10	87.0		60-130	%	24-MAY-19	24-MAY-19	R4647527
Herbicides in Water							
Clopyralid	<0.10		0.10	ug/L	28-MAY-19	29-MAY-19	R4652748
Dicamba	<0.10		0.10	ug/L	28-MAY-19	29-MAY-19	R4652748
Mecoprop	<0.10		0.10	ug/L	28-MAY-19	29-MAY-19	R4652748
MCPA	<0.10		0.10	ug/L	28-MAY-19	29-MAY-19	R4652748
2,4-D	<0.10		0.10	ug/L	28-MAY-19	29-MAY-19	R4652748

* 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
L2277013-2 W15A							
Sampled By: CLIENT on 22-MAY-19 @ 10:30							
Matrix: WATER							
Herbicides in Water							
Bromoxynil	<0.10		0.10	ug/L	28-MAY-19	29-MAY-19	R4652748
Triclopyr	<0.10		0.10	ug/L	28-MAY-19	29-MAY-19	R4652748
2,4,5-T	<0.10		0.10	ug/L	28-MAY-19	29-MAY-19	R4652748
2,4,5-TP	<0.10		0.10	ug/L	28-MAY-19	29-MAY-19	R4652748
Picloram	<0.10		0.10	ug/L	28-MAY-19	29-MAY-19	R4652748
2,4-DB	<0.10		0.10	ug/L	28-MAY-19	29-MAY-19	R4652748
2,4-DP	<0.10		0.10	ug/L	28-MAY-19	29-MAY-19	R4652748
Dinoseb	<0.10		0.10	ug/L	28-MAY-19	29-MAY-19	R4652748
MCPB	<0.10		0.10	ug/L	28-MAY-19	29-MAY-19	R4652748
Surrogate: 2,4-Dichlorophenylacetic Acid	168.0	SURR-ND	50-130	%	28-MAY-19	29-MAY-19	R4652748
Miscellaneous Pesticides							
Diazinon	<0.10		0.10	ug/L	24-MAY-19	27-MAY-19	R4644675
Surrogate: 2-Fluorobiphenyl	82.9		40-130	%	24-MAY-19	27-MAY-19	R4644675
Surrogate: d14-Terphenyl	49.8		40-130	%	24-MAY-19	27-MAY-19	R4644675
VOC plus F1 to F4							
CCME PHC F2-F4 in Water							
F2 (C10-C16)	<100		100	ug/L	24-MAY-19	24-MAY-19	R4643909
F3 (C16-C34)	<250		250	ug/L	24-MAY-19	24-MAY-19	R4643909
F4 (C34-C50)	<250		250	ug/L	24-MAY-19	24-MAY-19	R4643909
Surrogate: 2-Bromobenzotrifluoride	99.8		60-140	%	24-MAY-19	24-MAY-19	R4643909
CCME Total Hydrocarbons							
F1-BTEX	<100		100	ug/L		29-MAY-19	
F2-Naphth	<100		100	ug/L		29-MAY-19	
F3-PAH	<250		250	ug/L		29-MAY-19	
Total Hydrocarbons (C6-C50)	<380		380	ug/L		29-MAY-19	
Sum of Xylene Isomer Concentrations							
Xylenes (Total)	<0.50		0.50	ug/L		28-MAY-19	
Total Trihalomethanes (THMs)							
Total THMs	<1.0		1.0	ug/L		28-MAY-19	
VOC plus F1 by GCMS							
Acetone	<20		20	ug/L		25-MAY-19	R4645483
Benzene	<0.50		0.50	ug/L		25-MAY-19	R4645483
Bromobenzene	<0.50		0.50	ug/L		25-MAY-19	R4645483
Bromochloromethane	<0.50		0.50	ug/L		25-MAY-19	R4645483
Bromodichloromethane	<0.50		0.50	ug/L		25-MAY-19	R4645483
Bromoform	<0.50		0.50	ug/L		25-MAY-19	R4645483
Bromomethane	<1.0		1.0	ug/L		25-MAY-19	R4645483
n-Butylbenzene	<0.50		0.50	ug/L		25-MAY-19	R4645483
sec-Butylbenzene	<0.50		0.50	ug/L		25-MAY-19	R4645483
tert-Butylbenzene	<0.50		0.50	ug/L		25-MAY-19	R4645483
Carbon disulfide	<0.50		0.50	ug/L		25-MAY-19	R4645483
Carbon Tetrachloride	<0.50		0.50	ug/L		25-MAY-19	R4645483
Chlorobenzene	<0.50		0.50	ug/L		25-MAY-19	R4645483
Chloroethane	<1.0		1.0	ug/L		25-MAY-19	R4645483
Chloroform	<0.50		0.50	ug/L		25-MAY-19	R4645483
Chloromethane	<1.0		1.0	ug/L		25-MAY-19	R4645483
2-Chlorotoluene	<20		20	ug/L		25-MAY-19	R4645483
4-Chlorotoluene	<0.50		0.50	ug/L		25-MAY-19	R4645483
Dibromochloromethane	<0.50		0.50	ug/L		25-MAY-19	R4645483
1,2-Dibromo-3-chloropropane	<0.50		0.50	ug/L		25-MAY-19	R4645483
1,2-Dibromoethane	<0.50		0.50	ug/L		25-MAY-19	R4645483
Dibromomethane	<0.50		0.50	ug/L		25-MAY-19	R4645483

* 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
L2277013-2 W15A Sampled By: CLIENT on 22-MAY-19 @ 10:30 Matrix: WATER VOC plus F1 by GCMS							
1,2-Dichlorobenzene	<0.50		0.50	ug/L		25-MAY-19	R4645483
1,3-Dichlorobenzene	<0.50		0.50	ug/L		25-MAY-19	R4645483
1,4-Dichlorobenzene	<0.50		0.50	ug/L		25-MAY-19	R4645483
Dichlorodifluoromethane	<1.0		1.0	ug/L		25-MAY-19	R4645483
1,1-dichloroethane	<0.50		0.50	ug/L		25-MAY-19	R4645483
1,2-Dichloroethane	<0.50		0.50	ug/L		25-MAY-19	R4645483
1,1-dichloroethene	<0.50		0.50	ug/L		25-MAY-19	R4645483
cis-1,2-Dichloroethene	<0.50		0.50	ug/L		25-MAY-19	R4645483
trans-1,2-Dichloroethene	<0.50		0.50	ug/L		25-MAY-19	R4645483
Dichloromethane	<0.50		0.50	ug/L		25-MAY-19	R4645483
1,2-Dichloropropane	<0.50		0.50	ug/L		25-MAY-19	R4645483
1,3-Dichloropropane	<0.50		0.50	ug/L		25-MAY-19	R4645483
2,2-Dichloropropane	<1.0	DLM	1.0	ug/L		25-MAY-19	R4645483
1,1-Dichloropropene	<0.50		0.50	ug/L		25-MAY-19	R4645483
cis-1,3-Dichloropropene	<1.0	DLM	1.0	ug/L		25-MAY-19	R4645483
trans-1,3-Dichloropropene	<1.0	DLM	1.0	ug/L		25-MAY-19	R4645483
Ethylbenzene	<0.50		0.50	ug/L		25-MAY-19	R4645483
F1	<100		100	ug/L		25-MAY-19	R4645483
Hexachlorobutadiene	<0.50		0.50	ug/L		25-MAY-19	R4645483
Hexane	<0.50		0.50	ug/L		25-MAY-19	R4645483
2-Hexanone (Methyl butyl ketone)	<20		20	ug/L		25-MAY-19	R4645483
Isopropylbenzene	<0.50		0.50	ug/L		25-MAY-19	R4645483
4-Isopropyltoluene	<1.0		1.0	ug/L		25-MAY-19	R4645483
MEK	<20		20	ug/L		25-MAY-19	R4645483
MIBK	<20		20	ug/L		25-MAY-19	R4645483
MTBE	<0.50		0.50	ug/L		25-MAY-19	R4645483
Styrene	<0.50		0.50	ug/L		25-MAY-19	R4645483
1,1,1,2-Tetrachloroethane	<0.50		0.50	ug/L		25-MAY-19	R4645483
1,1,2,2-Tetrachloroethane	<0.50		0.50	ug/L		25-MAY-19	R4645483
Tetrachloroethene	<0.50		0.50	ug/L		25-MAY-19	R4645483
Toluene	<0.50		0.50	ug/L		25-MAY-19	R4645483
1,2,3-Trichlorobenzene	<0.50		0.50	ug/L		25-MAY-19	R4645483
1,2,4-Trichlorobenzene	<0.50		0.50	ug/L		25-MAY-19	R4645483
1,1,1-Trichloroethane	<0.50		0.50	ug/L		25-MAY-19	R4645483
1,1,2-Trichloroethane	<0.50		0.50	ug/L		25-MAY-19	R4645483
Trichloroethene	<0.50		0.50	ug/L		25-MAY-19	R4645483
Trichlorofluoromethane	<1.0		1.0	ug/L		25-MAY-19	R4645483
1,2,3-Trichloropropane	<0.50		0.50	ug/L		25-MAY-19	R4645483
1,2,4-Trimethylbenzene	<0.50		0.50	ug/L		25-MAY-19	R4645483
1,3,5-Trimethylbenzene	<0.50		0.50	ug/L		25-MAY-19	R4645483
Vinyl Chloride	<0.50		0.50	ug/L		25-MAY-19	R4645483
m+p-Xylenes	<0.40		0.40	ug/L		25-MAY-19	R4645483
o-Xylene	<0.30		0.30	ug/L		25-MAY-19	R4645483
Surrogate: 4-Bromofluorobenzene (SS)	88.4		70-130	%		25-MAY-19	R4645483
Surrogate: 1,4-Difluorobenzene (SS)	95.8		70-130	%		25-MAY-19	R4645483
L2277013-3 5N62D Sampled By: CLIENT on 22-MAY-19 @ 11:34 Matrix: WATER Miscellaneous Parameters							
Chromium, Hexavalent	<0.50		0.50	ug/L		24-MAY-19	R4642032
Mercury (Hg)-Total	<0.0050		0.0050	ug/L	22-MAY-19	23-MAY-19	R4642548

* 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
L2277013-3 5N62D							
Sampled By: CLIENT on 22-MAY-19 @ 11:34							
Matrix: WATER							
Phenols (4AAP)	7.7		1.0	ug/L		28-MAY-19	R4647693
Cyanide, Total	<1.0		1.0	ug/L		28-MAY-19	R4647167
Dissolved Metals in Water by CRC ICPMS							
Dissolved Metals Filtration Location	FIELD					23-MAY-19	R4641205
Aluminum (Al)-Dissolved	2.4		1.0	ug/L	23-MAY-19	24-MAY-19	R4644428
Antimony (Sb)-Dissolved	0.25		0.10	ug/L	23-MAY-19	24-MAY-19	R4644428
Arsenic (As)-Dissolved	0.87		0.10	ug/L	23-MAY-19	24-MAY-19	R4644428
Barium (Ba)-Dissolved	14.3		0.10	ug/L	23-MAY-19	24-MAY-19	R4644428
Beryllium (Be)-Dissolved	<0.10		0.10	ug/L	23-MAY-19	24-MAY-19	R4644428
Bismuth (Bi)-Dissolved	<0.050		0.050	ug/L	23-MAY-19	24-MAY-19	R4644428
Boron (B)-Dissolved	416		10	ug/L	23-MAY-19	24-MAY-19	R4644428
Cadmium (Cd)-Dissolved	0.118		0.0050	ug/L	23-MAY-19	24-MAY-19	R4644428
Calcium (Ca)-Dissolved	914000		5000	ug/L	23-MAY-19	27-MAY-19	R4645266
Cesium (Cs)-Dissolved	0.026		0.010	ug/L	23-MAY-19	24-MAY-19	R4644428
Chromium (Cr)-Dissolved	0.11		0.10	ug/L	23-MAY-19	24-MAY-19	R4644428
Cobalt (Co)-Dissolved	4.79		0.10	ug/L	23-MAY-19	24-MAY-19	R4644428
Copper (Cu)-Dissolved	2.04		0.20	ug/L	23-MAY-19	24-MAY-19	R4644428
Iron (Fe)-Dissolved	<10		10	ug/L	23-MAY-19	24-MAY-19	R4644428
Lead (Pb)-Dissolved	<0.050		0.050	ug/L	23-MAY-19	24-MAY-19	R4644428
Lithium (Li)-Dissolved	820		100	ug/L	23-MAY-19	27-MAY-19	R4645266
Magnesium (Mg)-Dissolved	341000		5.0	ug/L	23-MAY-19	24-MAY-19	R4644428
Manganese (Mn)-Dissolved	2300		10	ug/L	23-MAY-19	27-MAY-19	R4645266
Molybdenum (Mo)-Dissolved	2.34		0.050	ug/L	23-MAY-19	24-MAY-19	R4644428
Nickel (Ni)-Dissolved	10.8		0.50	ug/L	23-MAY-19	24-MAY-19	R4644428
Phosphorus (P)-Dissolved	<30		30	ug/L	23-MAY-19	24-MAY-19	R4644428
Potassium (K)-Dissolved	14700		50	ug/L	23-MAY-19	24-MAY-19	R4644428
Rubidium (Rb)-Dissolved	7.38		0.20	ug/L	23-MAY-19	24-MAY-19	R4644428
Selenium (Se)-Dissolved	0.155		0.050	ug/L	23-MAY-19	24-MAY-19	R4644428
Silicon (Si)-Dissolved	13300		50	ug/L	23-MAY-19	24-MAY-19	R4644428
Silver (Ag)-Dissolved	0.017		0.010	ug/L	23-MAY-19	24-MAY-19	R4644428
Sodium (Na)-Dissolved	831000		5000	ug/L	23-MAY-19	27-MAY-19	R4645266
Strontium (Sr)-Dissolved	5720		10	ug/L	23-MAY-19	27-MAY-19	R4645266
Sulfur (S)-Dissolved	779000		50000	ug/L	23-MAY-19	27-MAY-19	R4645266
Tellurium (Te)-Dissolved	0.21		0.20	ug/L	23-MAY-19	24-MAY-19	R4644428
Thallium (Tl)-Dissolved	0.079		0.010	ug/L	23-MAY-19	24-MAY-19	R4644428
Thorium (Th)-Dissolved	<0.10		0.10	ug/L	23-MAY-19	24-MAY-19	R4644428
Tin (Sn)-Dissolved	<0.10		0.10	ug/L	23-MAY-19	24-MAY-19	R4644428
Titanium (Ti)-Dissolved	<0.30		0.30	ug/L	23-MAY-19	24-MAY-19	R4644428
Tungsten (W)-Dissolved	<0.10		0.10	ug/L	23-MAY-19	24-MAY-19	R4644428
Uranium (U)-Dissolved	90.8		0.010	ug/L	23-MAY-19	24-MAY-19	R4644428
Vanadium (V)-Dissolved	<0.50		0.50	ug/L	23-MAY-19	24-MAY-19	R4644428
Zinc (Zn)-Dissolved	7.3		1.0	ug/L	23-MAY-19	24-MAY-19	R4644428
Zirconium (Zr)-Dissolved	0.447		0.060	ug/L	23-MAY-19	24-MAY-19	R4644428
L2277013-4 5N65E							
Sampled By: CLIENT on 22-MAY-19 @ 11:50							
Matrix: WATER							
Miscellaneous Parameters							
Chromium, Hexavalent	<0.50		0.50	ug/L		24-MAY-19	R4642032
Mercury (Hg)-Total	<0.025	DLM	0.025	ug/L	22-MAY-19	23-MAY-19	R4642548
Phenols (4AAP)	4.0		1.0	ug/L		29-MAY-19	R4650406
Cyanide, Total	<1.0		1.0	ug/L		28-MAY-19	R4647167
Dissolved Metals in Water by CRC ICPMS							

* 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
L2277013-4 5N65E							
Sampled By: CLIENT on 22-MAY-19 @ 11:50							
Matrix: WATER							
Dissolved Metals in Water by CRC ICPMS							
Dissolved Metals Filtration Location	FIELD					23-MAY-19	R4641205
Aluminum (Al)-Dissolved	1.1		1.0	ug/L	23-MAY-19	24-MAY-19	R4644428
Antimony (Sb)-Dissolved	<0.10		0.10	ug/L	23-MAY-19	24-MAY-19	R4644428
Arsenic (As)-Dissolved	2.54		0.10	ug/L	23-MAY-19	24-MAY-19	R4644428
Barium (Ba)-Dissolved	11.2		0.10	ug/L	23-MAY-19	24-MAY-19	R4644428
Beryllium (Be)-Dissolved	<0.10		0.10	ug/L	23-MAY-19	24-MAY-19	R4644428
Bismuth (Bi)-Dissolved	<0.050		0.050	ug/L	23-MAY-19	24-MAY-19	R4644428
Boron (B)-Dissolved	930		100	ug/L	23-MAY-19	27-MAY-19	R4645266
Cadmium (Cd)-Dissolved	0.0077		0.0050	ug/L	23-MAY-19	24-MAY-19	R4644428
Calcium (Ca)-Dissolved	338000		50	ug/L	23-MAY-19	24-MAY-19	R4644428
Cesium (Cs)-Dissolved	0.011		0.010	ug/L	23-MAY-19	24-MAY-19	R4644428
Chromium (Cr)-Dissolved	<0.10		0.10	ug/L	23-MAY-19	24-MAY-19	R4644428
Cobalt (Co)-Dissolved	0.60		0.10	ug/L	23-MAY-19	24-MAY-19	R4644428
Copper (Cu)-Dissolved	<0.20		0.20	ug/L	23-MAY-19	24-MAY-19	R4644428
Iron (Fe)-Dissolved	445		10	ug/L	23-MAY-19	24-MAY-19	R4644428
Lead (Pb)-Dissolved	<0.050		0.050	ug/L	23-MAY-19	24-MAY-19	R4644428
Lithium (Li)-Dissolved	368		10	ug/L	23-MAY-19	27-MAY-19	R4645266
Magnesium (Mg)-Dissolved	173000		5.0	ug/L	23-MAY-19	24-MAY-19	R4644428
Manganese (Mn)-Dissolved	71.8		0.10	ug/L	23-MAY-19	24-MAY-19	R4644428
Molybdenum (Mo)-Dissolved	2.73		0.050	ug/L	23-MAY-19	24-MAY-19	R4644428
Nickel (Ni)-Dissolved	1.17		0.50	ug/L	23-MAY-19	24-MAY-19	R4644428
Phosphorus (P)-Dissolved	<30		30	ug/L	23-MAY-19	24-MAY-19	R4644428
Potassium (K)-Dissolved	34200		50	ug/L	23-MAY-19	24-MAY-19	R4644428
Rubidium (Rb)-Dissolved	13.2		0.20	ug/L	23-MAY-19	24-MAY-19	R4644428
Selenium (Se)-Dissolved	<0.050		0.050	ug/L	23-MAY-19	24-MAY-19	R4644428
Silicon (Si)-Dissolved	5920		50	ug/L	23-MAY-19	24-MAY-19	R4644428
Silver (Ag)-Dissolved	0.011		0.010	ug/L	23-MAY-19	24-MAY-19	R4644428
Sodium (Na)-Dissolved	1310000		500	ug/L	23-MAY-19	27-MAY-19	R4645266
Strontium (Sr)-Dissolved	3670		1.0	ug/L	23-MAY-19	27-MAY-19	R4645266
Sulfur (S)-Dissolved	385000		500	ug/L	23-MAY-19	24-MAY-19	R4644428
Tellurium (Te)-Dissolved	<0.20		0.20	ug/L	23-MAY-19	24-MAY-19	R4644428
Thallium (Tl)-Dissolved	<0.010		0.010	ug/L	23-MAY-19	24-MAY-19	R4644428
Thorium (Th)-Dissolved	<0.10		0.10	ug/L	23-MAY-19	24-MAY-19	R4644428
Tin (Sn)-Dissolved	<0.10		0.10	ug/L	23-MAY-19	24-MAY-19	R4644428
Titanium (Ti)-Dissolved	<0.30		0.30	ug/L	23-MAY-19	24-MAY-19	R4644428
Tungsten (W)-Dissolved	<0.10		0.10	ug/L	23-MAY-19	24-MAY-19	R4644428
Uranium (U)-Dissolved	3.96		0.010	ug/L	23-MAY-19	24-MAY-19	R4644428
Vanadium (V)-Dissolved	<0.50		0.50	ug/L	23-MAY-19	24-MAY-19	R4644428
Zinc (Zn)-Dissolved	2.3		1.0	ug/L	23-MAY-19	24-MAY-19	R4644428
Zirconium (Zr)-Dissolved	<0.060		0.060	ug/L	23-MAY-19	24-MAY-19	R4644428
Polyaromatic Hydrocarbons (PAHs)							
1-Methyl Naphthalene	<0.020		0.020	ug/L	24-MAY-19	24-MAY-19	R4647527
2-Methyl Naphthalene	<0.020		0.020	ug/L	24-MAY-19	24-MAY-19	R4647527
Acenaphthene	<0.020		0.020	ug/L	24-MAY-19	24-MAY-19	R4647527
Acenaphthylene	<0.020		0.020	ug/L	24-MAY-19	24-MAY-19	R4647527
Anthracene	<0.010		0.010	ug/L	24-MAY-19	24-MAY-19	R4647527
Acridine	<0.020		0.020	ug/L	24-MAY-19	24-MAY-19	R4647527
Benzo(a)anthracene	<0.010		0.010	ug/L	24-MAY-19	24-MAY-19	R4647527
Benzo(a)pyrene	<0.0050		0.0050	ug/L	24-MAY-19	24-MAY-19	R4647527
Benzo(b&j)fluoranthene	<0.010		0.010	ug/L	24-MAY-19	24-MAY-19	R4647527
Benzo(g,h,i)perylene	<0.020		0.020	ug/L	24-MAY-19	24-MAY-19	R4647527

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ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2277013-4 5N65E							
Sampled By: CLIENT on 22-MAY-19 @ 11:50							
Matrix: WATER							
Polyaromatic Hydrocarbons (PAHs)							
Benzo(k)fluoranthene	<0.010		0.010	ug/L	24-MAY-19	24-MAY-19	R4647527
Chrysene	<0.020		0.020	ug/L	24-MAY-19	24-MAY-19	R4647527
Dibenzo(a,h)anthracene	<0.0050		0.0050	ug/L	24-MAY-19	24-MAY-19	R4647527
Fluoranthene	<0.020		0.020	ug/L	24-MAY-19	24-MAY-19	R4647527
Fluorene	<0.020		0.020	ug/L	24-MAY-19	24-MAY-19	R4647527
Indeno(1,2,3-cd)pyrene	<0.010		0.010	ug/L	24-MAY-19	24-MAY-19	R4647527
Naphthalene	<0.050		0.050	ug/L	24-MAY-19	24-MAY-19	R4647527
Phenanthrene	<0.050		0.050	ug/L	24-MAY-19	24-MAY-19	R4647527
Pyrene	<0.010		0.010	ug/L	24-MAY-19	24-MAY-19	R4647527
Quinoline	<0.020		0.020	ug/L	24-MAY-19	24-MAY-19	R4647527
B(a)P Total Potency Equivalent	<0.030		0.030	ug/L	24-MAY-19	24-MAY-19	R4647527
Surrogate: Acenaphthene d10	96.8		60-130	%	24-MAY-19	24-MAY-19	R4647527
Surrogate: Acridine d9	77.1		60-130	%	24-MAY-19	24-MAY-19	R4647527
Surrogate: Chrysene d12	104.2		60-130	%	24-MAY-19	24-MAY-19	R4647527
Surrogate: Naphthalene d8	91.7		50-130	%	24-MAY-19	24-MAY-19	R4647527
Surrogate: Phenanthrene d10	98.8		60-130	%	24-MAY-19	24-MAY-19	R4647527
Herbicides in Water							
Clopyralid	<0.10		0.10	ug/L	28-MAY-19	29-MAY-19	R4652748
Dicamba	<0.10		0.10	ug/L	28-MAY-19	29-MAY-19	R4652748
Mecoprop	<0.10		0.10	ug/L	28-MAY-19	29-MAY-19	R4652748
MCPA	<0.10		0.10	ug/L	28-MAY-19	29-MAY-19	R4652748
2,4-D	<0.10		0.10	ug/L	28-MAY-19	29-MAY-19	R4652748
Bromoxynil	<0.10		0.10	ug/L	28-MAY-19	29-MAY-19	R4652748
Triclopyr	<0.10		0.10	ug/L	28-MAY-19	29-MAY-19	R4652748
2,4,5-T	<0.10		0.10	ug/L	28-MAY-19	29-MAY-19	R4652748
2,4,5-TP	<0.10		0.10	ug/L	28-MAY-19	29-MAY-19	R4652748
Picloram	<0.10		0.10	ug/L	28-MAY-19	29-MAY-19	R4652748
2,4-DB	<0.10		0.10	ug/L	28-MAY-19	29-MAY-19	R4652748
2,4-DP	<0.10		0.10	ug/L	28-MAY-19	29-MAY-19	R4652748
Dinoseb	<0.10		0.10	ug/L	28-MAY-19	29-MAY-19	R4652748
MCPB	<0.10		0.10	ug/L	28-MAY-19	29-MAY-19	R4652748
Surrogate: 2,4-Dichlorophenylacetic Acid	178.0	SURR-ND	50-130	%	28-MAY-19	29-MAY-19	R4652748
Miscellaneous Pesticides							
Diazinon	<0.10		0.10	ug/L	24-MAY-19	27-MAY-19	R4644675
Surrogate: 2-Fluorobiphenyl	82.9		40-130	%	24-MAY-19	27-MAY-19	R4644675
Surrogate: d14-Terphenyl	85.5		40-130	%	24-MAY-19	27-MAY-19	R4644675
VOC plus F1 to F4							
CCME PHC F2-F4 in Water							
F2 (C10-C16)	<100		100	ug/L	24-MAY-19	24-MAY-19	R4643909
F3 (C16-C34)	<250		250	ug/L	24-MAY-19	24-MAY-19	R4643909
F4 (C34-C50)	<250		250	ug/L	24-MAY-19	24-MAY-19	R4643909
Surrogate: 2-Bromobenzotrifluoride	101.8		60-140	%	24-MAY-19	24-MAY-19	R4643909
CCME Total Hydrocarbons							
F1-BTEX	<100		100	ug/L		29-MAY-19	
F2-Naphth	<100		100	ug/L		29-MAY-19	
F3-PAH	<250		250	ug/L		29-MAY-19	
Total Hydrocarbons (C6-C50)	<380		380	ug/L		29-MAY-19	
Sum of Xylene Isomer Concentrations							
Xylenes (Total)	<0.50		0.50	ug/L		28-MAY-19	
Total Trihalomethanes (THMs)							
Total THMs	<1.0		1.0	ug/L		28-MAY-19	
VOC plus F1 by GCMS							

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ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2277013-4 5N65E							
Sampled By: CLIENT on 22-MAY-19 @ 11:50							
Matrix: WATER							
VOC plus F1 by GCMS							
Acetone	<20		20	ug/L		25-MAY-19	R4645483
Benzene	<0.50		0.50	ug/L		25-MAY-19	R4645483
Bromobenzene	<0.50		0.50	ug/L		25-MAY-19	R4645483
Bromochloromethane	<0.50		0.50	ug/L		25-MAY-19	R4645483
Bromodichloromethane	<0.50		0.50	ug/L		25-MAY-19	R4645483
Bromoform	<0.50		0.50	ug/L		25-MAY-19	R4645483
Bromomethane	<1.0		1.0	ug/L		25-MAY-19	R4645483
n-Butylbenzene	<0.50		0.50	ug/L		25-MAY-19	R4645483
sec-Butylbenzene	<0.50		0.50	ug/L		25-MAY-19	R4645483
tert-Butylbenzene	<0.50		0.50	ug/L		25-MAY-19	R4645483
Carbon disulfide	<0.50		0.50	ug/L		25-MAY-19	R4645483
Carbon Tetrachloride	<0.50		0.50	ug/L		25-MAY-19	R4645483
Chlorobenzene	<0.50		0.50	ug/L		25-MAY-19	R4645483
Chloroethane	<1.0		1.0	ug/L		25-MAY-19	R4645483
Chloroform	<0.50		0.50	ug/L		25-MAY-19	R4645483
Chloromethane	<1.0		1.0	ug/L		25-MAY-19	R4645483
2-Chlorotoluene	<20		20	ug/L		25-MAY-19	R4645483
4-Chlorotoluene	<0.50		0.50	ug/L		25-MAY-19	R4645483
Dibromochloromethane	<0.50		0.50	ug/L		25-MAY-19	R4645483
1,2-Dibromo-3-chloropropane	<0.50		0.50	ug/L		25-MAY-19	R4645483
1,2-Dibromoethane	<0.50		0.50	ug/L		25-MAY-19	R4645483
Dibromomethane	<0.50		0.50	ug/L		25-MAY-19	R4645483
1,2-Dichlorobenzene	<0.50		0.50	ug/L		25-MAY-19	R4645483
1,3-Dichlorobenzene	<0.50		0.50	ug/L		25-MAY-19	R4645483
1,4-Dichlorobenzene	<0.50		0.50	ug/L		25-MAY-19	R4645483
Dichlorodifluoromethane	<1.0		1.0	ug/L		25-MAY-19	R4645483
1,1-dichloroethane	<0.50		0.50	ug/L		25-MAY-19	R4645483
1,2-Dichloroethane	<0.50		0.50	ug/L		25-MAY-19	R4645483
1,1-dichloroethene	<0.50		0.50	ug/L		25-MAY-19	R4645483
cis-1,2-Dichloroethene	<0.50		0.50	ug/L		25-MAY-19	R4645483
trans-1,2-Dichloroethene	<0.50		0.50	ug/L		25-MAY-19	R4645483
Dichloromethane	<0.50		0.50	ug/L		25-MAY-19	R4645483
1,2-Dichloropropane	<0.50		0.50	ug/L		25-MAY-19	R4645483
1,3-Dichloropropane	<0.50		0.50	ug/L		25-MAY-19	R4645483
2,2-Dichloropropane	<1.0	DLM	1.0	ug/L		25-MAY-19	R4645483
1,1-Dichloropropene	<0.50		0.50	ug/L		25-MAY-19	R4645483
cis-1,3-Dichloropropene	<1.0	DLM	1.0	ug/L		25-MAY-19	R4645483
trans-1,3-Dichloropropene	<1.0	DLM	1.0	ug/L		25-MAY-19	R4645483
Ethylbenzene	<0.50		0.50	ug/L		25-MAY-19	R4645483
F1	<100		100	ug/L		25-MAY-19	R4645483
Hexachlorobutadiene	<0.50		0.50	ug/L		25-MAY-19	R4645483
Hexane	<0.50		0.50	ug/L		25-MAY-19	R4645483
2-Hexanone (Methyl butyl ketone)	<20		20	ug/L		25-MAY-19	R4645483
Isopropylbenzene	<0.50		0.50	ug/L		25-MAY-19	R4645483
4-Isopropyltoluene	<1.0		1.0	ug/L		25-MAY-19	R4645483
MEK	<20		20	ug/L		25-MAY-19	R4645483
MIBK	<20		20	ug/L		25-MAY-19	R4645483
MTBE	<0.50		0.50	ug/L		25-MAY-19	R4645483
Styrene	<0.50		0.50	ug/L		25-MAY-19	R4645483
1,1,1,2-Tetrachloroethane	<0.50		0.50	ug/L		25-MAY-19	R4645483
1,1,2,2-Tetrachloroethane	<0.50		0.50	ug/L		25-MAY-19	R4645483

* 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
L2277013-4 5N65E Sampled By: CLIENT on 22-MAY-19 @ 11:50 Matrix: WATER VOC plus F1 by GCMS							
Tetrachloroethene	<0.50		0.50	ug/L		25-MAY-19	R4645483
Toluene	<0.50		0.50	ug/L		25-MAY-19	R4645483
1,2,3-Trichlorobenzene	<0.50		0.50	ug/L		25-MAY-19	R4645483
1,2,4-Trichlorobenzene	<0.50		0.50	ug/L		25-MAY-19	R4645483
1,1,1-Trichloroethane	<0.50		0.50	ug/L		25-MAY-19	R4645483
1,1,2-Trichloroethane	<0.50		0.50	ug/L		25-MAY-19	R4645483
Trichloroethene	<0.50		0.50	ug/L		25-MAY-19	R4645483
Trichlorofluoromethane	<1.0		1.0	ug/L		25-MAY-19	R4645483
1,2,3-Trichloropropane	<0.50		0.50	ug/L		25-MAY-19	R4645483
1,2,4-Trimethylbenzene	<0.50		0.50	ug/L		25-MAY-19	R4645483
1,3,5-Trimethylbenzene	<0.50		0.50	ug/L		25-MAY-19	R4645483
Vinyl Chloride	<0.50		0.50	ug/L		25-MAY-19	R4645483
M+P-Xylenes	<0.40		0.40	ug/L		25-MAY-19	R4645483
o-Xylene	<0.30		0.30	ug/L		25-MAY-19	R4645483
Surrogate: 4-Bromofluorobenzene (SS)	89.8		70-130	%		25-MAY-19	R4645483
Surrogate: 1,4-Difluorobenzene (SS)	95.8		70-130	%		25-MAY-19	R4645483
L2277013-5 TRIP BLANK Sampled By: CLIENT on 22-MAY-19 @ 09:00 Matrix: WATER Miscellaneous Parameters							
Chromium, Hexavalent	<0.50		0.50	ug/L		24-MAY-19	R4642032
Mercury (Hg)-Total	<0.0050		0.0050	ug/L	22-MAY-19	23-MAY-19	R4642548
Phenols (4AAP)	12.2	RRV	1.0	ug/L		28-MAY-19	R4647693
Cyanide, Total	<1.0		1.0	ug/L		28-MAY-19	R4647167
Dissolved Metals in Water by CRC ICPMS							
Dissolved Metals Filtration Location	FIELD					23-MAY-19	R4641205
Aluminum (Al)-Dissolved	4.6		1.0	ug/L	23-MAY-19	24-MAY-19	R4644428
Antimony (Sb)-Dissolved	<0.10		0.10	ug/L	23-MAY-19	24-MAY-19	R4644428
Arsenic (As)-Dissolved	<0.10		0.10	ug/L	23-MAY-19	24-MAY-19	R4644428
Barium (Ba)-Dissolved	0.12		0.10	ug/L	23-MAY-19	24-MAY-19	R4644428
Beryllium (Be)-Dissolved	<0.10		0.10	ug/L	23-MAY-19	24-MAY-19	R4644428
Bismuth (Bi)-Dissolved	<0.050		0.050	ug/L	23-MAY-19	24-MAY-19	R4644428
Boron (B)-Dissolved	<10		10	ug/L	23-MAY-19	27-MAY-19	R4645266
Cadmium (Cd)-Dissolved	<0.0050		0.0050	ug/L	23-MAY-19	24-MAY-19	R4644428
Calcium (Ca)-Dissolved	65		50	ug/L	23-MAY-19	27-MAY-19	R4645266
Cesium (Cs)-Dissolved	<0.010		0.010	ug/L	23-MAY-19	24-MAY-19	R4644428
Chromium (Cr)-Dissolved	0.13		0.10	ug/L	23-MAY-19	24-MAY-19	R4644428
Cobalt (Co)-Dissolved	<0.10		0.10	ug/L	23-MAY-19	24-MAY-19	R4644428
Copper (Cu)-Dissolved	0.51		0.20	ug/L	23-MAY-19	24-MAY-19	R4644428
Iron (Fe)-Dissolved	<10		10	ug/L	23-MAY-19	24-MAY-19	R4644428
Lead (Pb)-Dissolved	0.054		0.050	ug/L	23-MAY-19	24-MAY-19	R4644428
Lithium (Li)-Dissolved	<1.0		1.0	ug/L	23-MAY-19	24-MAY-19	R4644428
Magnesium (Mg)-Dissolved	18.9		5.0	ug/L	23-MAY-19	27-MAY-19	R4645266
Manganese (Mn)-Dissolved	0.12		0.10	ug/L	23-MAY-19	27-MAY-19	R4645266
Molybdenum (Mo)-Dissolved	<0.050		0.050	ug/L	23-MAY-19	24-MAY-19	R4644428
Nickel (Ni)-Dissolved	<0.50		0.50	ug/L	23-MAY-19	24-MAY-19	R4644428
Phosphorus (P)-Dissolved	<30		30	ug/L	23-MAY-19	24-MAY-19	R4644428
Potassium (K)-Dissolved	<50		50	ug/L	23-MAY-19	24-MAY-19	R4644428
Rubidium (Rb)-Dissolved	<0.20		0.20	ug/L	23-MAY-19	24-MAY-19	R4644428
Selenium (Se)-Dissolved	<0.050		0.050	ug/L	23-MAY-19	24-MAY-19	R4644428
Silicon (Si)-Dissolved	91		50	ug/L	23-MAY-19	24-MAY-19	R4644428

* 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
L2277013-5 TRIP BLANK							
Sampled By: CLIENT on 22-MAY-19 @ 09:00							
Matrix: WATER							
Dissolved Metals in Water by CRC ICPMS							
Silver (Ag)-Dissolved	<0.010		0.010	ug/L	23-MAY-19	24-MAY-19	R4644428
Sodium (Na)-Dissolved	996		50	ug/L	23-MAY-19	24-MAY-19	R4644428
Strontium (Sr)-Dissolved	0.16		0.10	ug/L	23-MAY-19	27-MAY-19	R4645266
Sulfur (S)-Dissolved	<500		500	ug/L	23-MAY-19	24-MAY-19	R4644428
Tellurium (Te)-Dissolved	<0.20		0.20	ug/L	23-MAY-19	24-MAY-19	R4644428
Thallium (Tl)-Dissolved	<0.010		0.010	ug/L	23-MAY-19	24-MAY-19	R4644428
Thorium (Th)-Dissolved	<0.10		0.10	ug/L	23-MAY-19	24-MAY-19	R4644428
Tin (Sn)-Dissolved	8.24		0.10	ug/L	23-MAY-19	24-MAY-19	R4644428
Titanium (Ti)-Dissolved	<0.30		0.30	ug/L	23-MAY-19	24-MAY-19	R4644428
Tungsten (W)-Dissolved	<0.10		0.10	ug/L	23-MAY-19	24-MAY-19	R4644428
Uranium (U)-Dissolved	<0.010		0.010	ug/L	23-MAY-19	27-MAY-19	R4645266
Vanadium (V)-Dissolved	<0.50		0.50	ug/L	23-MAY-19	24-MAY-19	R4644428
Zinc (Zn)-Dissolved	1.2		1.0	ug/L	23-MAY-19	24-MAY-19	R4644428
Zirconium (Zr)-Dissolved	<0.060		0.060	ug/L	23-MAY-19	24-MAY-19	R4644428

* 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.
RRV	Reported Result Verified By Repeat Analysis
SURR-ND	Surrogate recovery marginally exceeded ALS DQO. Reported non-detect results for associated samples were deemed to be unaffected.

Test Method References:

ALS Test Code	Matrix	Test Description	Method Reference**
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CN-T-CFA-WP	Water	Total Cyanide in water by CFA	ISO 14403-2
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This analysis is carried out using procedures adapted from ISO Method 14403-2:2012 "Determination of Total Cyanide using Flow Analysis (FIA and CFA)". Total or strong acid dissociable (SAD) cyanide is determined by in-line UV digestion along with sample distillation and final determination by colourmetric analysis.

CR-CR6-IC-WT	Water	Chromium +6	EPA 7199
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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.

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).

F1-F4-CALC-WP	Water	CCME Total Hydrocarbons	CCME CWS-PHC, Pub #1310, Dec 2001-L
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Analytical methods used for analysis of CCME Petroleum Hydrocarbons have been validated and comply with the Reference Method for the CWS PHC.

In cases where results for both F4 and F4G are reported, the greater of the two results must be used in any application of the CWS PHC guidelines and the gravimetric heavy hydrocarbons cannot be added to the C6 to C50 hydrocarbons.

In samples where BTEX and F1 were analyzed, F1-BTEX represents a value where the sum of Benzene, Toluene, Ethylbenzene and total Xylenes has been subtracted from F1.

In samples where PAHs, F2 and F3 were analyzed, F2-Naphth represents the result where Naphthalene has been subtracted from F2. F3-PAH represents a result where the sum of Benzo(a)anthracene, Benzo(a)pyrene, Benzo(b)fluoranthene, Benzo(k)fluoranthene, Dibenzo(a,h)anthracene, Fluoranthene, Indeno(1,2,3-cd)pyrene, Phenanthrene, and Pyrene has been subtracted from F3.

Unless otherwise qualified, the following quality control criteria have been met for the F1 hydrocarbon range:

1. All extraction and analysis holding times were met.
2. Instrument performance showing response factors for C6 and C10 within 30% of the response factor for toluene.
3. Linearity of gasoline response within 15% throughout the calibration range.

Unless otherwise qualified, the following quality control criteria have been met for the F2-F4 hydrocarbon ranges:

1. All extraction and analysis holding times were met.
2. Instrument performance showing C10, C16 and C34 response factors within 10% of their average.
3. Instrument performance showing the C50 response factor within 30% of the average of the C10, C16 and C34 response factors.
4. Linearity of diesel or motor oil response within 15% throughout the calibration range.

F2-F4-FID-WP	Water	CCME PHC F2-F4 in Water	EPA 3511
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Petroleum hydrocarbons in water are determined by liquid-liquid micro-scale solvent extraction using a reciprocal shaker extraction apparatus prior to capillary column gas chromatography with flame ionization detection (GC-FID) analysis.

HERBSCR-LCMS-WT	Water	Herbicides in Water	E3552
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Water samples are subjected filtration and analyzed by direct injection without sample preparation using liquid chromatography tandem mass spectrometry (LC-MS/MS).

HERBSCR-LCMS-WT	Water	Herbicides in Water	SW846 8270
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Water samples are subjected filtration and analyzed by direct injection without sample preparation using liquid chromatography tandem mass spectrometry (LC-MS/MS).

HG-T-CVAA-WP	Water	Mercury Total	EPA 1631E (mod)
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Water samples undergo a cold-oxidation using bromine monochloride prior to reduction with stannous chloride, and analyzed by CVAAS.

MET-D-CCMS-WP	Water	Dissolved Metals in Water by CRC ICPMS	APHA 3030B/6020B (mod)
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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.

Reference Information

Test Method References:

ALS Test Code	Matrix	Test Description	Method Reference**
PAH,PANH-WP	Water	Polyaromatic Hydrocarbons (PAHs)	EPA 3511/8270D (mod)
PAHs are extracted from water using a hexane micro-extraction technique, with analysis by GC/MS. Because the two isomers cannot be readily separated chromatographically, benzo(j)fluoranthene is reported as part of the benzo(b)fluoranthene parameter.			
PEST-DIAZINON-WT	Water	Miscellaneous Pesticides	SW846 8270
PHENOLS-4AAP-WT	Water	Phenol (4AAP)	EPA 9066
An automated method is used to distill the sample. The distillate is then buffered to pH 9.4 which reacts with 4AAP and potassium ferricyanide to form a red complex which is measured colorimetrically.			
THM-SUM-CALC-WP	Water	Total Trihalomethanes (THMs)	CALCULATION
Total Trihalomethanes (THMs) represents the sum of bromodichloromethane, bromoform, chlorodibromomethane and chloroform. For the purpose of calculation, results less than the detection limit (DL) are treated as zero.			
VOC+F1-HSMS-WP	Water	VOC plus F1 by GCMS	EPA 8260C / EPA 5021A
In this method samples are analyzed using a headspace autosampler interfaced to a dual column gas chromatograph with MS and Flame Ionization detectors.			
XYLENES-SUM-CALC-WP	Water	Sum of Xylene Isomer Concentrations	CALCULATED RESULT
Total xylenes represents the sum of o-xylene and m&p-xylene.			

** 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
WT	ALS ENVIRONMENTAL - WATERLOO, ONTARIO, 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: L2277013

Report Date: 31-MAY-19

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Client: City of Winnipeg - Solid Waste Services Div (1120 Waverley)
 Solid Waste Services Division 1120 Waverley Street
 Winnipeg MB R3T 0P4

Contact: CHRIS KOZAK

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
CN-T-CFA-WP		Water						
Batch	R4647167							
WG3061364-2	LCS							
Cyanide, Total			87.1		%		80-120	28-MAY-19
WG3061364-1	MB							
Cyanide, Total			<0.0010		mg/L		0.001	28-MAY-19
CR-CR6-IC-WT		Water						
Batch	R4642032							
WG3057388-12	LCS							
Chromium, Hexavalent			97.7		%		80-120	24-MAY-19
WG3057388-11	MB							
Chromium, Hexavalent			<0.00050		mg/L		0.0005	24-MAY-19
F2-F4-FID-WP		Water						
Batch	R4643909							
WG3057604-2	LCS							
F2 (C10-C16)			109.8		%		70-130	24-MAY-19
F3 (C16-C34)			99.3		%		70-130	24-MAY-19
F4 (C34-C50)			107.2		%		70-130	24-MAY-19
WG3057604-1	MB							
F2 (C10-C16)			<0.10		mg/L		0.1	24-MAY-19
F3 (C16-C34)			<0.25		mg/L		0.25	24-MAY-19
F4 (C34-C50)			<0.25		mg/L		0.25	24-MAY-19
Surrogate: 2-Bromobenzotrifluoride			104.2		%		60-140	24-MAY-19
HERBSCR-LCMS-WT		Water						
Batch	R4652748							
WG3060117-6	LCS							
Clopyralid			71.5		%		50-150	28-MAY-19
Dicamba			86.0		%		65-130	28-MAY-19
Mecoprop			95.1		%		65-130	28-MAY-19
MCPA			88.0		%		65-130	28-MAY-19
2,4-D			80.2		%		65-130	28-MAY-19
Bromoxynil			118.0		%		65-130	28-MAY-19
Triclopyr			89.1		%		65-130	28-MAY-19
2,4,5-T			75.5		%		65-130	28-MAY-19
2,4,5-TP			87.7		%		65-130	28-MAY-19
Picloram			79.0		%		50-150	28-MAY-19
2,4-DB			91.4		%		65-130	28-MAY-19
2,4-DP			83.8		%		65-130	28-MAY-19



Quality Control Report

Workorder: L2277013

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Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
HERBSCR-LCMS-WT		Water						
Batch	R4652748							
WG3060117-6	LCS							
Dinoseb			118.0		%		50-150	28-MAY-19
MCPB			99.5		%		65-130	28-MAY-19
WG3060117-5	MB							
Clopyralid			<0.00010		mg/L		0.0001	29-MAY-19
Dicamba			<0.00010		mg/L		0.0001	29-MAY-19
Mecoprop			<0.00010		mg/L		0.0001	29-MAY-19
MCPA			<0.00010		mg/L		0.0001	29-MAY-19
2,4-D			<0.00010		mg/L		0.0001	29-MAY-19
Bromoxynil			<0.00010		mg/L		0.0001	29-MAY-19
Triclopyr			<0.00010		mg/L		0.0001	29-MAY-19
2,4,5-T			<0.00010		mg/L		0.0001	29-MAY-19
2,4,5-TP			<0.00010		mg/L		0.0001	29-MAY-19
Picloram			<0.00010		mg/L		0.0001	29-MAY-19
2,4-DB			<0.00010		mg/L		0.0001	29-MAY-19
2,4-DP			<0.00010		mg/L		0.0001	29-MAY-19
Dinoseb			<0.00010		mg/L		0.0001	29-MAY-19
MCPB			<0.00010		mg/L		0.0001	29-MAY-19
Surrogate: 2,4-Dichlorophenylacetic Acid			96.0		%		50-130	29-MAY-19
HG-T-CVAA-WP		Water						
Batch	R4642548							
WG3057808-2	LCS							
Mercury (Hg)-Total			102.0		%		80-120	23-MAY-19
WG3057808-1	MB							
Mercury (Hg)-Total			<0.000005C		mg/L		0.000005	23-MAY-19
MET-D-CCMS-WP		Water						
Batch	R4644428							
WG3056667-2	LCS							
Aluminum (Al)-Dissolved			105.1		%		80-120	24-MAY-19
Antimony (Sb)-Dissolved			104.6		%		80-120	24-MAY-19
Arsenic (As)-Dissolved			101.9		%		80-120	24-MAY-19
Barium (Ba)-Dissolved			102.2		%		80-120	24-MAY-19
Beryllium (Be)-Dissolved			105.2		%		80-120	24-MAY-19
Bismuth (Bi)-Dissolved			104.6		%		80-120	24-MAY-19
Boron (B)-Dissolved			102.3		%		80-120	24-MAY-19
Cadmium (Cd)-Dissolved			101.7		%		80-120	24-MAY-19

Quality Control Report

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Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
MET-D-CCMS-WP								
	Water							
Batch	R4644428							
WG3056667-2	LCS							
Calcium (Ca)-Dissolved			97.4		%		80-120	24-MAY-19
Cesium (Cs)-Dissolved			98.7		%		80-120	24-MAY-19
Chromium (Cr)-Dissolved			100.8		%		80-120	24-MAY-19
Cobalt (Co)-Dissolved			99.98		%		80-120	24-MAY-19
Copper (Cu)-Dissolved			101.2		%		80-120	24-MAY-19
Iron (Fe)-Dissolved			93.5		%		80-120	24-MAY-19
Lead (Pb)-Dissolved			103.5		%		80-120	24-MAY-19
Lithium (Li)-Dissolved			102.0		%		80-120	24-MAY-19
Magnesium (Mg)-Dissolved			117.2		%		80-120	24-MAY-19
Manganese (Mn)-Dissolved			100.4		%		80-120	24-MAY-19
Molybdenum (Mo)-Dissolved			104.0		%		80-120	24-MAY-19
Nickel (Ni)-Dissolved			99.5		%		80-120	24-MAY-19
Phosphorus (P)-Dissolved			107.5		%		80-120	24-MAY-19
Potassium (K)-Dissolved			105.5		%		80-120	24-MAY-19
Rubidium (Rb)-Dissolved			100.1		%		80-120	24-MAY-19
Selenium (Se)-Dissolved			103.9		%		80-120	24-MAY-19
Silicon (Si)-Dissolved			105.7		%		80-120	24-MAY-19
Silver (Ag)-Dissolved			97.9		%		80-120	24-MAY-19
Sodium (Na)-Dissolved			104.5		%		80-120	24-MAY-19
Sulfur (S)-Dissolved			107.3		%		80-120	24-MAY-19
Tellurium (Te)-Dissolved			99.5		%		80-120	24-MAY-19
Thallium (Tl)-Dissolved			104.3		%		80-120	24-MAY-19
Thorium (Th)-Dissolved			101.1		%		80-120	24-MAY-19
Tin (Sn)-Dissolved			100.2		%		80-120	24-MAY-19
Titanium (Ti)-Dissolved			100.3		%		80-120	24-MAY-19
Tungsten (W)-Dissolved			100.6		%		80-120	24-MAY-19
Uranium (U)-Dissolved			106.2		%		80-120	24-MAY-19
Vanadium (V)-Dissolved			102.2		%		80-120	24-MAY-19
Zinc (Zn)-Dissolved			100.5		%		80-120	24-MAY-19
Zirconium (Zr)-Dissolved			98.0		%		80-120	24-MAY-19
WG3056667-1	MB							
Aluminum (Al)-Dissolved			<0.0010		mg/L		0.001	24-MAY-19
Antimony (Sb)-Dissolved			<0.00010		mg/L		0.0001	24-MAY-19
Arsenic (As)-Dissolved			<0.00010		mg/L		0.0001	24-MAY-19



Quality Control Report

Workorder: L2277013

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Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
MET-D-CCMS-WP								
	Water							
Batch	R4644428							
WG3056667-1	MB							
Barium (Ba)-Dissolved			<0.00010		mg/L		0.0001	24-MAY-19
Beryllium (Be)-Dissolved			<0.00010		mg/L		0.0001	24-MAY-19
Bismuth (Bi)-Dissolved			<0.000050		mg/L		0.00005	24-MAY-19
Boron (B)-Dissolved			<0.010		mg/L		0.01	24-MAY-19
Cadmium (Cd)-Dissolved			<0.0000050		mg/L		0.000005	24-MAY-19
Calcium (Ca)-Dissolved			<0.050		mg/L		0.05	24-MAY-19
Cesium (Cs)-Dissolved			<0.000010		mg/L		0.00001	24-MAY-19
Chromium (Cr)-Dissolved			<0.00010		mg/L		0.0001	24-MAY-19
Cobalt (Co)-Dissolved			<0.00010		mg/L		0.0001	24-MAY-19
Copper (Cu)-Dissolved			<0.00020		mg/L		0.0002	24-MAY-19
Iron (Fe)-Dissolved			<0.010		mg/L		0.01	24-MAY-19
Lead (Pb)-Dissolved			<0.000050		mg/L		0.00005	24-MAY-19
Lithium (Li)-Dissolved			<0.0010		mg/L		0.001	24-MAY-19
Magnesium (Mg)-Dissolved			<0.0050		mg/L		0.005	24-MAY-19
Manganese (Mn)-Dissolved			<0.00010		mg/L		0.0001	24-MAY-19
Molybdenum (Mo)-Dissolved			<0.000050		mg/L		0.00005	24-MAY-19
Nickel (Ni)-Dissolved			<0.00050		mg/L		0.0005	24-MAY-19
Phosphorus (P)-Dissolved			<0.030		mg/L		0.03	24-MAY-19
Potassium (K)-Dissolved			<0.050		mg/L		0.05	24-MAY-19
Rubidium (Rb)-Dissolved			<0.00020		mg/L		0.0002	24-MAY-19
Selenium (Se)-Dissolved			<0.000050		mg/L		0.00005	24-MAY-19
Silicon (Si)-Dissolved			<0.050		mg/L		0.05	24-MAY-19
Silver (Ag)-Dissolved			<0.000010		mg/L		0.00001	24-MAY-19
Sodium (Na)-Dissolved			<0.050		mg/L		0.05	24-MAY-19
Sulfur (S)-Dissolved			<0.50		mg/L		0.5	24-MAY-19
Tellurium (Te)-Dissolved			<0.00020		mg/L		0.0002	24-MAY-19
Thallium (Tl)-Dissolved			<0.000010		mg/L		0.00001	24-MAY-19
Thorium (Th)-Dissolved			<0.00010		mg/L		0.0001	24-MAY-19
Tin (Sn)-Dissolved			<0.00010		mg/L		0.0001	24-MAY-19
Titanium (Ti)-Dissolved			<0.00030		mg/L		0.0003	24-MAY-19
Tungsten (W)-Dissolved			<0.00010		mg/L		0.0001	24-MAY-19
Uranium (U)-Dissolved			<0.000010		mg/L		0.00001	24-MAY-19
Vanadium (V)-Dissolved			<0.00050		mg/L		0.0005	24-MAY-19
Zinc (Zn)-Dissolved			<0.0010		mg/L		0.001	24-MAY-19

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Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
MET-D-CCMS-WP		Water						
Batch	R4644428							
WG3056667-1 MB								
Zirconium (Zr)-Dissolved			<0.000060		mg/L		0.00006	24-MAY-19
PAH,PANH-WP		Water						
Batch	R4647527							
WG3058184-2 LCS								
1-Methyl Naphthalene			110.9		%		60-130	24-MAY-19
2-Methyl Naphthalene			100.4		%		60-130	24-MAY-19
Acenaphthene			112.9		%		60-130	24-MAY-19
Acenaphthylene			98.0		%		60-130	24-MAY-19
Anthracene			89.6		%		60-130	24-MAY-19
Acridine			87.5		%		60-130	24-MAY-19
Benzo(a)anthracene			94.1		%		60-130	24-MAY-19
Benzo(a)pyrene			87.5		%		60-130	24-MAY-19
Benzo(b&j)fluoranthene			85.0		%		60-130	24-MAY-19
Benzo(g,h,i)perylene			87.1		%		60-130	24-MAY-19
Benzo(k)fluoranthene			85.2		%		60-130	24-MAY-19
Chrysene			118.1		%		60-130	24-MAY-19
Dibenzo(a,h)anthracene			75.2		%		60-130	24-MAY-19
Fluoranthene			110.9		%		60-130	24-MAY-19
Fluorene			102.6		%		60-130	24-MAY-19
Indeno(1,2,3-cd)pyrene			77.8		%		60-130	24-MAY-19
Naphthalene			112.2		%		50-130	24-MAY-19
Phenanthrene			123.7		%		60-130	24-MAY-19
Pyrene			108.5		%		60-130	24-MAY-19
Quinoline			87.3		%		60-130	24-MAY-19
WG3058184-1 MB								
1-Methyl Naphthalene			<0.000020		mg/L		0.00002	24-MAY-19
2-Methyl Naphthalene			<0.000020		mg/L		0.00002	24-MAY-19
Acenaphthene			<0.000020		mg/L		0.00002	24-MAY-19
Acenaphthylene			<0.000020		mg/L		0.00002	24-MAY-19
Anthracene			<0.000010		mg/L		0.00001	24-MAY-19
Acridine			<0.000020		mg/L		0.00002	24-MAY-19
Benzo(a)anthracene			<0.000010		mg/L		0.00001	24-MAY-19
Benzo(a)pyrene			<0.000005C		mg/L		0.000005	24-MAY-19
Benzo(b&j)fluoranthene			<0.000010		mg/L		0.00001	24-MAY-19

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Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
PAH,PANH-WP		Water						
Batch	R4647527							
WG3058184-1	MB							
Benzo(g,h,i)perylene			<0.000020		mg/L		0.00002	24-MAY-19
Benzo(k)fluoranthene			<0.000010		mg/L		0.00001	24-MAY-19
Chrysene			<0.000020		mg/L		0.00002	24-MAY-19
Dibenzo(a,h)anthracene			<0.0000050		mg/L		0.000005	24-MAY-19
Fluoranthene			<0.000020		mg/L		0.00002	24-MAY-19
Fluorene			<0.000020		mg/L		0.00002	24-MAY-19
Indeno(1,2,3-cd)pyrene			<0.000010		mg/L		0.00001	24-MAY-19
Naphthalene			<0.000050		mg/L		0.00005	24-MAY-19
Phenanthrene			<0.000050		mg/L		0.00005	24-MAY-19
Pyrene			<0.000010		mg/L		0.00001	24-MAY-19
Quinoline			<0.000020		mg/L		0.00002	24-MAY-19
Surrogate: Acenaphthene d10			88.7		%		60-130	24-MAY-19
Surrogate: Acridine d9			71.3		%		60-130	24-MAY-19
Surrogate: Chrysene d12			95.1		%		60-130	24-MAY-19
Surrogate: Naphthalene d8			82.6		%		50-130	24-MAY-19
Surrogate: Phenanthrene d10			92.2		%		60-130	24-MAY-19
PEST-DIAZINON-WT		Water						
Batch	R4644675							
WG3057737-2	LCS							
Diazinon			101.3		%		60-130	27-MAY-19
WG3057737-1	MB							
Diazinon			<0.10		ug/L		0.1	27-MAY-19
Surrogate: 2-Fluorobiphenyl			83.8		%		40-130	27-MAY-19
Surrogate: d14-Terphenyl			100.0		%		40-130	27-MAY-19
PHENOLS-4AAP-WT		Water						
Batch	R4647693							
WG3060333-18	LCS							
Phenols (4AAP)			99.8		%		85-115	28-MAY-19
WG3060333-2	LCS							
Phenols (4AAP)			100.3		%		85-115	28-MAY-19
WG3060333-1	MB							
Phenols (4AAP)			<0.0010		mg/L		0.001	28-MAY-19
WG3060333-17	MB							
Phenols (4AAP)			<0.0010		mg/L		0.001	28-MAY-19

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Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
PHENOLS-4AAP-WT								
Batch	R4650406							
WG3061833-22	LCS							
Phenols (4AAP)			99.9		%		85-115	29-MAY-19
WG3061833-21	MB							
Phenols (4AAP)			<0.0010		mg/L		0.001	29-MAY-19
VOC+F1-HSMS-WP								
Batch	R4645483							
WG3058066-2	LCS							
Acetone			91.3		%		70-130	25-MAY-19
Benzene			101.4		%		70-130	25-MAY-19
Bromobenzene			104.3		%		70-130	25-MAY-19
Bromochloromethane			99.8		%		70-130	25-MAY-19
Bromodichloromethane			103.1		%		70-130	25-MAY-19
Bromoform			97.9		%		70-130	25-MAY-19
Bromomethane			92.0		%		60-140	25-MAY-19
n-Butylbenzene			114.0		%		70-130	25-MAY-19
sec-Butylbenzene			105.7		%		70-130	25-MAY-19
tert-Butylbenzene			120.3		%		70-130	25-MAY-19
Carbon disulfide			83.7		%		70-130	25-MAY-19
Carbon Tetrachloride			107.0		%		70-130	25-MAY-19
Chlorobenzene			101.1		%		70-130	25-MAY-19
Chloroethane			116.5		%		60-140	25-MAY-19
Chloroform			105.3		%		70-130	25-MAY-19
Chloromethane			102.9		%		60-140	25-MAY-19
2-Chlorotoluene			110.2		%		70-130	25-MAY-19
4-Chlorotoluene			97.3		%		70-130	25-MAY-19
Dibromochloromethane			103.9		%		70-130	25-MAY-19
1,2-Dibromo-3-chloropropane			101.3		%		70-130	25-MAY-19
1,2-Dibromoethane			97.7		%		70-130	25-MAY-19
Dibromomethane			102.0		%		70-130	25-MAY-19
1,2-Dichlorobenzene			102.8		%		70-130	25-MAY-19
1,3-Dichlorobenzene			98.8		%		70-130	25-MAY-19
1,4-Dichlorobenzene			98.7		%		70-130	25-MAY-19
Dichlorodifluoromethane			125.5		%		60-140	25-MAY-19
1,1-dichloroethane			105.3		%		70-130	25-MAY-19
1,2-Dichloroethane			101.5		%		70-130	25-MAY-19

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Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
VOC+F1-HSMS-WP								
	Water							
Batch	R4645483							
WG3058066-2	LCS							
1,1-dichloroethene			96.5		%		70-130	25-MAY-19
cis-1,2-Dichloroethene			100.7		%		70-130	25-MAY-19
trans-1,2-Dichloroethene			93.7		%		70-130	25-MAY-19
Dichloromethane			100.0		%		70-130	25-MAY-19
1,2-Dichloropropane			102.3		%		70-130	25-MAY-19
1,3-Dichloropropane			102.0		%		70-130	25-MAY-19
2,2-Dichloropropane			94.6		%		70-130	25-MAY-19
1,1-Dichloropropene			100.3		%		70-130	25-MAY-19
cis-1,3-Dichloropropene			96.3		%		70-130	25-MAY-19
trans-1,3-Dichloropropene			95.4		%		70-130	25-MAY-19
Ethylbenzene			111.1		%		70-130	25-MAY-19
Hexachlorobutadiene			100.7		%		70-130	25-MAY-19
Hexane			94.2		%		70-130	25-MAY-19
2-Hexanone (Methyl butyl ketone)			102.5		%		70-130	25-MAY-19
Isopropylbenzene			115.9		%		70-130	25-MAY-19
4-Isopropyltoluene			104.0		%		70-130	25-MAY-19
MEK			98.5		%		70-130	25-MAY-19
MIBK			100.1		%		70-130	25-MAY-19
MTBE			107.9		%		70-130	25-MAY-19
Styrene			113.9		%		70-130	25-MAY-19
1,1,1,2-Tetrachloroethane			111.1		%		70-130	25-MAY-19
1,1,1,2,2-Tetrachloroethane			102.5		%		70-130	25-MAY-19
Tetrachloroethene			99.0		%		70-130	25-MAY-19
Toluene			104.9		%		70-130	25-MAY-19
1,2,3-Trichlorobenzene			105.0		%		70-130	25-MAY-19
1,2,4-Trichlorobenzene			99.1		%		70-130	25-MAY-19
1,1,1-Trichloroethane			109.5		%		70-130	25-MAY-19
1,1,2-Trichloroethane			101.0		%		70-130	25-MAY-19
Trichloroethene			102.9		%		70-130	25-MAY-19
Trichlorofluoromethane			107.6		%		60-140	25-MAY-19
1,2,3-Trichloropropane			102.0		%		70-130	25-MAY-19
1,2,4-Trimethylbenzene			101.3		%		70-130	25-MAY-19
1,3,5-Trimethylbenzene			106.3		%		70-130	25-MAY-19
Vinyl Chloride			108.0		%		60-140	25-MAY-19

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Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
VOC+F1-HSMS-WP		Water						
Batch	R4645483							
WG3058066-2	LCS							
M+P-Xylenes			109.0		%		70-130	25-MAY-19
o-Xylene			111.5		%		70-130	25-MAY-19
WG3058066-3	LCS							
F1			89.7		%		70-130	24-MAY-19
WG3058066-1	MB							
Acetone			<0.020		mg/L		0.02	25-MAY-19
Benzene			<0.00050		mg/L		0.0005	25-MAY-19
Bromobenzene			<0.00050		mg/L		0.0005	25-MAY-19
Bromochloromethane			<0.00050		mg/L		0.0005	25-MAY-19
Bromodichloromethane			<0.00050		mg/L		0.0005	25-MAY-19
Bromoform			<0.00050		mg/L		0.0005	25-MAY-19
Bromomethane			<0.0010		mg/L		0.001	25-MAY-19
n-Butylbenzene			<0.00050		mg/L		0.0005	25-MAY-19
sec-Butylbenzene			<0.00050		mg/L		0.0005	25-MAY-19
tert-Butylbenzene			<0.00050		mg/L		0.0005	25-MAY-19
Carbon disulfide			<0.00050		mg/L		0.0005	25-MAY-19
Carbon Tetrachloride			<0.00050		mg/L		0.0005	25-MAY-19
Chlorobenzene			<0.00050		mg/L		0.0005	25-MAY-19
Chloroethane			<0.0010		mg/L		0.001	25-MAY-19
Chloroform			<0.00050		mg/L		0.0005	25-MAY-19
Chloromethane			<0.0010		mg/L		0.001	25-MAY-19
2-Chlorotoluene			<0.020		mg/L		0.02	25-MAY-19
4-Chlorotoluene			<0.00050		mg/L		0.0005	25-MAY-19
Dibromochloromethane			<0.00050		mg/L		0.0005	25-MAY-19
1,2-Dibromo-3-chloropropane			<0.00050		mg/L		0.0005	25-MAY-19
1,2-Dibromoethane			<0.00050		mg/L		0.0005	25-MAY-19
Dibromomethane			<0.00050		mg/L		0.0005	25-MAY-19
1,2-Dichlorobenzene			<0.00050		mg/L		0.0005	25-MAY-19
1,3-Dichlorobenzene			<0.00050		mg/L		0.0005	25-MAY-19
1,4-Dichlorobenzene			<0.00050		mg/L		0.0005	25-MAY-19
Dichlorodifluoromethane			<0.0010		mg/L		0.001	25-MAY-19
1,1-dichloroethane			<0.00050		mg/L		0.0005	25-MAY-19
1,2-Dichloroethane			<0.00050		mg/L		0.0005	25-MAY-19
1,1-dichloroethene			<0.00050		mg/L		0.0005	25-MAY-19
cis-1,2-Dichloroethene			<0.00050		mg/L		0.0005	25-MAY-19

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Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
VOC+F1-HSMS-WP								
	Water							
Batch	R4645483							
WG3058066-1	MB							
trans-1,2-Dichloroethene			<0.00050		mg/L		0.0005	25-MAY-19
Dichloromethane			<0.00050		mg/L		0.0005	25-MAY-19
1,2-Dichloropropane			<0.00050		mg/L		0.0005	25-MAY-19
1,3-Dichloropropane			<0.00050		mg/L		0.0005	25-MAY-19
2,2-Dichloropropane			<0.00050		mg/L		0.0005	25-MAY-19
1,1-Dichloropropene			<0.00050		mg/L		0.0005	25-MAY-19
cis-1,3-Dichloropropene			<0.00050		mg/L		0.0005	25-MAY-19
trans-1,3-Dichloropropene			<0.00050		mg/L		0.0005	25-MAY-19
Ethylbenzene			<0.00050		mg/L		0.0005	25-MAY-19
F1			<0.10		mg/L		0.1	25-MAY-19
Hexachlorobutadiene			<0.00050		mg/L		0.0005	25-MAY-19
Hexane			<0.00050		mg/L		0.0005	25-MAY-19
2-Hexanone (Methyl butyl ketone)			<0.020		mg/L		0.02	25-MAY-19
Isopropylbenzene			<0.00050		mg/L		0.0005	25-MAY-19
4-Isopropyltoluene			<0.0010		mg/L		0.001	25-MAY-19
MEK			<0.020		mg/L		0.02	25-MAY-19
MIBK			<0.020		mg/L		0.02	25-MAY-19
MTBE			<0.00050		mg/L		0.0005	25-MAY-19
Styrene			<0.00050		mg/L		0.0005	25-MAY-19
1,1,1,2-Tetrachloroethane			<0.00050		mg/L		0.0005	25-MAY-19
1,1,2,2-Tetrachloroethane			<0.00050		mg/L		0.0005	25-MAY-19
Tetrachloroethene			<0.00050		mg/L		0.0005	25-MAY-19
Toluene			<0.00050		mg/L		0.0005	25-MAY-19
1,2,3-Trichlorobenzene			<0.00050		mg/L		0.0005	25-MAY-19
1,2,4-Trichlorobenzene			<0.00050		mg/L		0.0005	25-MAY-19
1,1,1-Trichloroethane			<0.00050		mg/L		0.0005	25-MAY-19
1,1,2-Trichloroethane			<0.00050		mg/L		0.0005	25-MAY-19
Trichloroethene			<0.00050		mg/L		0.0005	25-MAY-19
Trichlorofluoromethane			<0.0010		mg/L		0.001	25-MAY-19
1,2,3-Trichloropropane			<0.00050		mg/L		0.0005	25-MAY-19
1,2,4-Trimethylbenzene			<0.00050		mg/L		0.0005	25-MAY-19
1,3,5-Trimethylbenzene			<0.00050		mg/L		0.0005	25-MAY-19
Vinyl Chloride			<0.00050		mg/L		0.0005	25-MAY-19
M+P-Xylenes			<0.00040		mg/L		0.0004	25-MAY-19



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Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
VOC+F1-HSMS-WP	Water							
Batch	R4645483							
WG3058066-1 MB								
o-Xylene			<0.00030		mg/L		0.0003	25-MAY-19
Surrogate: 4-Bromofluorobenzene (SS)			91.9		%		70-130	25-MAY-19
Surrogate: 1,4-Difluorobenzene (SS)			97.5		%		70-130	25-MAY-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

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.

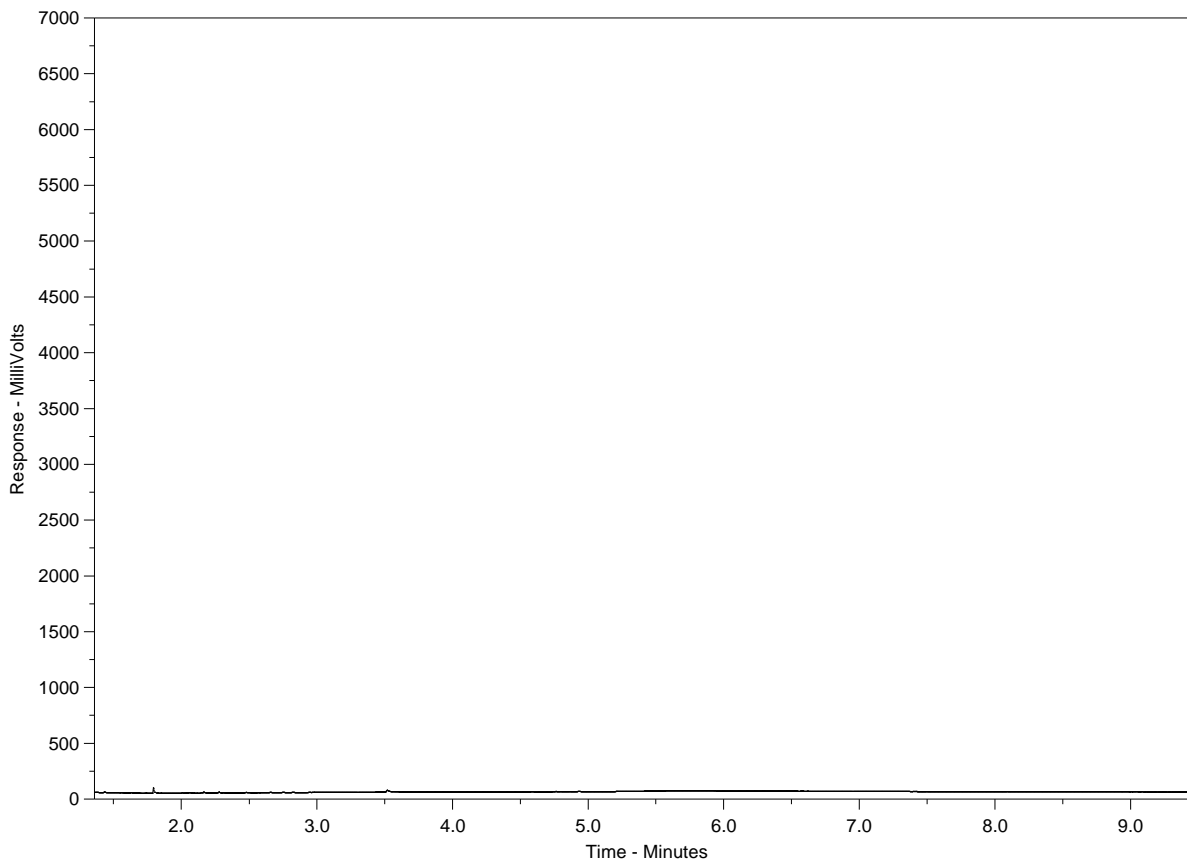
The ALS Quality Control Report is provided to ALS clients upon request. ALS includes comprehensive QC checks with every analysis to ensure our high standards of quality are met. Each QC result has a known or expected target value, which is compared against pre-determined data quality objectives to provide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

CCME F2-F4 HYDROCARBON DISTRIBUTION REPORT



ALS Sample ID: L2277013-1
 Client Sample ID: W16A



← 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.

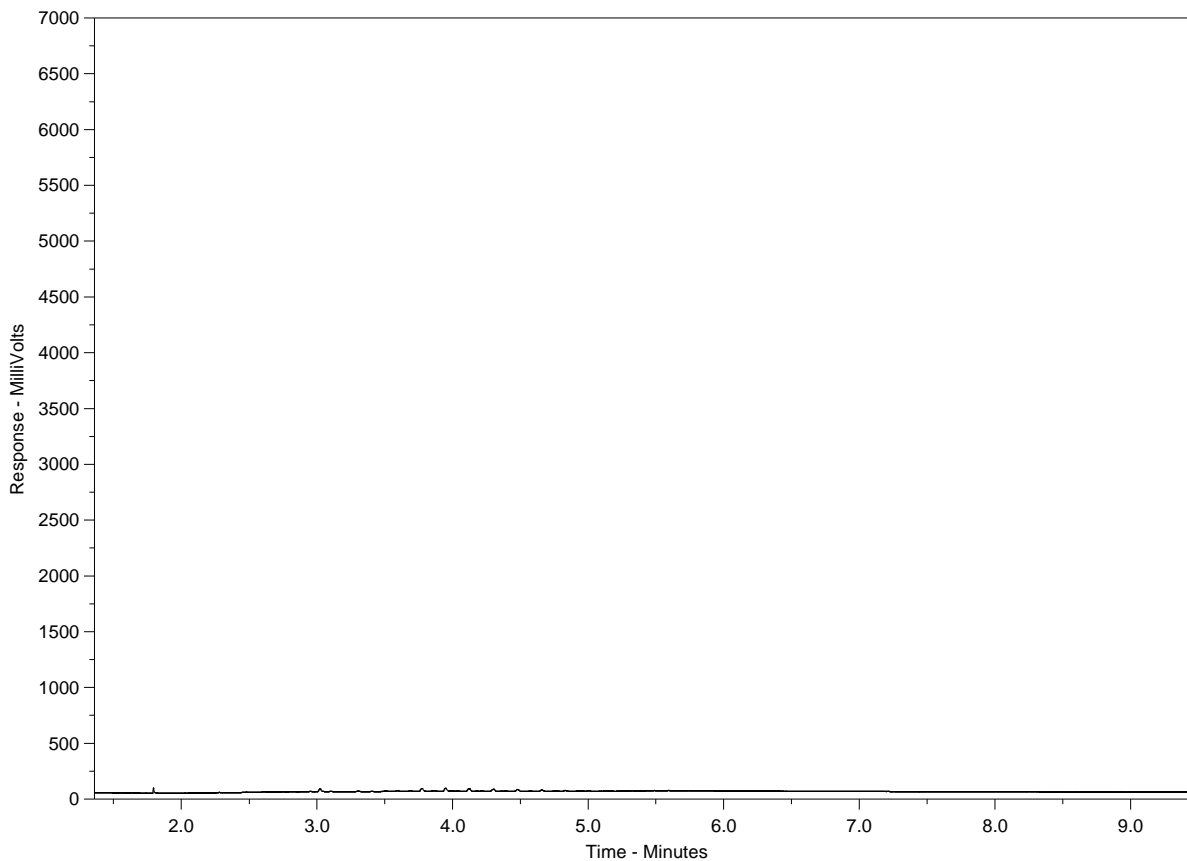
Peak heights in this report are a function of the sample concentration, the sample amount extracted, the sample dilution factor, and the scale at left.

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: L2277013-2
 Client Sample ID: W15A



← 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.

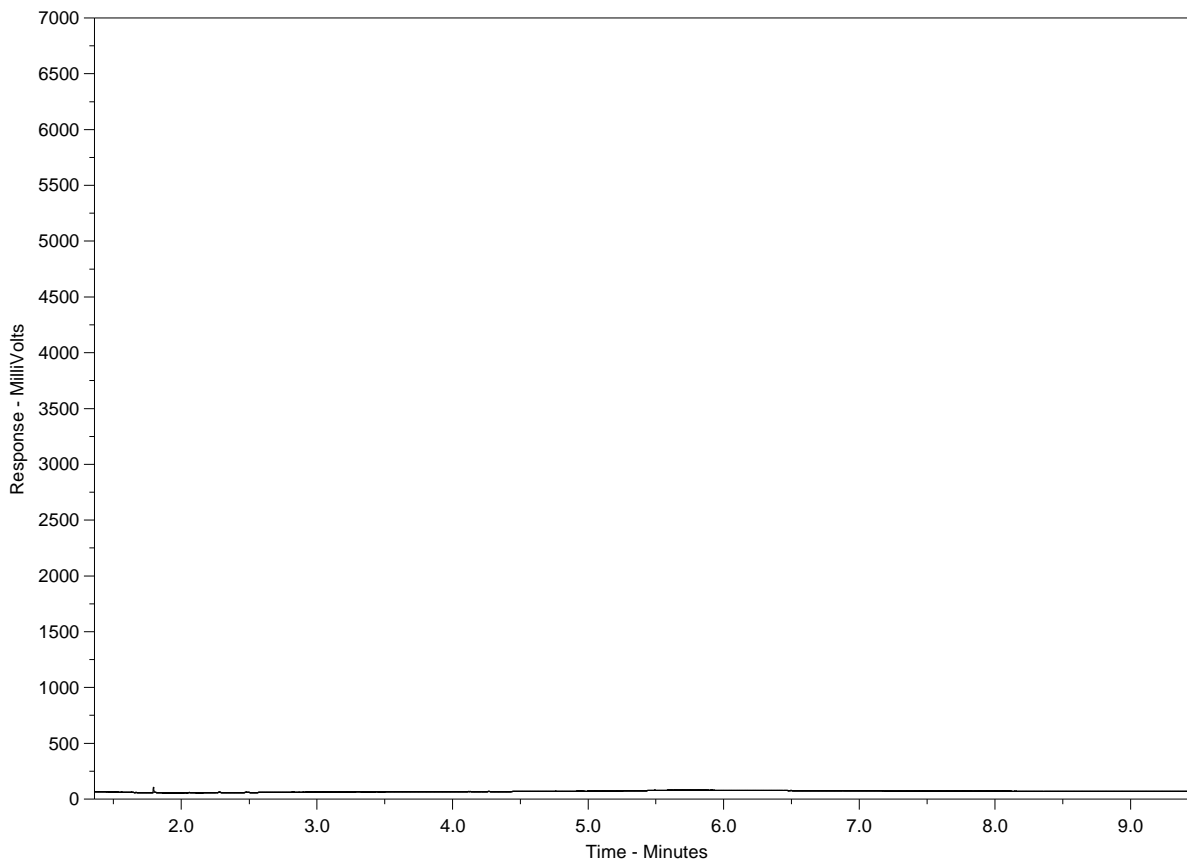
Peak heights in this report are a function of the sample concentration, the sample amount extracted, the sample dilution factor, and the scale at left.

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: L2277013-4
 Client Sample ID: 5N65E



← 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.



Chain of Custody (COC) / Analytical Request Form

Canada Toll Free: 1 800 668 9878

www.alsglobal.com



L2277013-COFC

COC Number: 15 -

Page of

Report To Contact and company name below will appear on the final report		Report Format Select Report Format: <input checked="" type="checkbox"/> PDF <input type="checkbox"/> EXCEL <input type="checkbox"/> EDD (DIGITAL)		Confirm all E&P TATs with your AM - surcharges will apply	
Company:	City of Winnipeg	Quality Control (QC) Report with Report <input checked="" type="checkbox"/> YES <input type="checkbox"/> NO		Regular [R] <input type="checkbox"/> Standard TAT if received by 3 pm - business days - no surcharges apply	
Contact:	Chris Kozak	<input type="checkbox"/> Compare Results to Criteria on Report - provide details below if box checked		4 day [P4] <input type="checkbox"/>	
Phone:	204-986-2384	Select Distribution: <input checked="" type="checkbox"/> EMAIL <input type="checkbox"/> MAIL <input type="checkbox"/> FAX		3 day [P3] <input type="checkbox"/>	
Company address below will appear on the final report		Street: 1120 Waverly Street		2 day [P2] <input type="checkbox"/>	
		City/Province: Winnipeg, Manitoba		EMERGENCY 1 Business day [E1] <input type="checkbox"/>	
		Postal Code: R3T 0P4		Same Day, Weekend or Statutory holiday [E0] <input type="checkbox"/>	
		Email 1 or Fax: ckozak@winnipeg.ca		Date and Time Required for all E&P TATs: dd-mmm-yy hh:mm	
		Email 2		For tests that can not be performed according to the service level selected, you will be contacted.	
		Email 3		Analysis Request	
Invoice To		Invoice Distribution		Indicate Filtered (F), Preserved (P) or Filtered and Preserved (F/P) below	
Same as Report To <input type="checkbox"/> YES <input type="checkbox"/> NO		Select Invoice Distribution: <input type="checkbox"/> EMAIL <input checked="" type="checkbox"/> MAIL <input type="checkbox"/> FAX			
Copy of invoice with Report <input type="checkbox"/> YES <input type="checkbox"/> NO		Email 1 or Fax			
Company:		Email 2			
Contact:					
Project Information		Oil and Gas Required Fields (client use)			
ALS Account # / Quote #: W10051/Q67317		AFE/Cost Center: PO#			
Job #: Section B - BRRMF Groundwater		Major/Minor Code: Routing Code:			
PO / AFE:		Requisitioner:			
LSD:		Location:			
ALS Lab Work Order # (lab use only)		ALS Contact:		Sampler:	
ALS Sample # (lab use only)	Sample Identification and/or Coordinates (This description will appear on the report)	Date (dd-mmm-yy)	Time (hh:mm)	Sample Type	
	W16A # 202751	22-05-19	10:08	WATER	<input checked="" type="checkbox"/> CN-T-CFA-WP <input checked="" type="checkbox"/> PEST-DIAZINON-WT <input checked="" type="checkbox"/> HERBSCR-LCMS-WT <input checked="" type="checkbox"/> MET-D-COMS-WP (DISSOLVED) <input checked="" type="checkbox"/> HG-T-CVAA-WP (TOTAL) <input checked="" type="checkbox"/> CR-CR6-IC-WT <input checked="" type="checkbox"/> PHENOLS-AAAP-WT <input checked="" type="checkbox"/> VOC-F1-F4-WP <input checked="" type="checkbox"/> PAH-PANH-WP
	W15A # 202750	22-05-19	10:30	WATER	<input checked="" type="checkbox"/> CN-T-CFA-WP <input checked="" type="checkbox"/> PEST-DIAZINON-WT <input checked="" type="checkbox"/> HERBSCR-LCMS-WT <input checked="" type="checkbox"/> MET-D-COMS-WP (DISSOLVED) <input checked="" type="checkbox"/> HG-T-CVAA-WP (TOTAL) <input checked="" type="checkbox"/> CR-CR6-IC-WT <input checked="" type="checkbox"/> PHENOLS-AAAP-WT <input checked="" type="checkbox"/> VOC-F1-F4-WP <input checked="" type="checkbox"/> PAH-PANH-WP
	5N62D # 202757	22-05-19	11:34	WATER	<input checked="" type="checkbox"/> CN-T-CFA-WP <input checked="" type="checkbox"/> PEST-DIAZINON-WT <input checked="" type="checkbox"/> HERBSCR-LCMS-WT <input checked="" type="checkbox"/> MET-D-COMS-WP (DISSOLVED) <input checked="" type="checkbox"/> HG-T-CVAA-WP (TOTAL) <input checked="" type="checkbox"/> CR-CR6-IC-WT <input checked="" type="checkbox"/> PHENOLS-AAAP-WT <input checked="" type="checkbox"/> VOC-F1-F4-WP <input checked="" type="checkbox"/> PAH-PANH-WP
	5N62E # 202755	22-05-19	11:50	WATER	<input checked="" type="checkbox"/> CN-T-CFA-WP <input checked="" type="checkbox"/> PEST-DIAZINON-WT <input checked="" type="checkbox"/> HERBSCR-LCMS-WT <input checked="" type="checkbox"/> MET-D-COMS-WP (DISSOLVED) <input checked="" type="checkbox"/> HG-T-CVAA-WP (TOTAL) <input checked="" type="checkbox"/> CR-CR6-IC-WT <input checked="" type="checkbox"/> PHENOLS-AAAP-WT <input checked="" type="checkbox"/> VOC-F1-F4-WP <input checked="" type="checkbox"/> PAH-PANH-WP
	Trip Blank # 202767	22-05-19	9:00	WATER	<input checked="" type="checkbox"/> CN-T-CFA-WP <input checked="" type="checkbox"/> PEST-DIAZINON-WT <input checked="" type="checkbox"/> HERBSCR-LCMS-WT <input checked="" type="checkbox"/> MET-D-COMS-WP (DISSOLVED) <input checked="" type="checkbox"/> HG-T-CVAA-WP (TOTAL) <input checked="" type="checkbox"/> CR-CR6-IC-WT <input checked="" type="checkbox"/> PHENOLS-AAAP-WT <input checked="" type="checkbox"/> VOC-F1-F4-WP <input checked="" type="checkbox"/> PAH-PANH-WP
				WATER	
				WATER	
				WATER	
				WATER	
				WATER	
				WATER	
				WATER	
				WATER	
				WATER	
				WATER	
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 type="checkbox"/> NO				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 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"/>	
				INITIAL COOLER TEMPERATURES °C	
				FINAL COOLER TEMPERATURES °C	
				8.5°C	
SHIPMENT RELEASE (client use)		INITIAL SHIPMENT RECEPTION (lab use only)		FINAL SHIPMENT RECEPTION (lab use only)	
Released by: Adam Cox	Date: May 22/19	Time: 12:45	Received by: JH	Date: May 22	Time: 12:45



City of Winnipeg - Solid Waste Services Div
(1120 Waverley)
ATTN: CHRIS KOZAK
Solid Waste Services Division
1120 Waverley Street
Winnipeg MB R3T 0P4

Date Received: 10-SEP-19
Report Date: 17-JAN-20 15:51 (MT)
Version: FINAL REV. 2

Client Phone: 204-986-2384

Certificate of Analysis

Lab Work Order #: L2344325
Project P.O. #: NOT SUBMITTED
Job Reference: SECTION C - BRRMF LEACHATE
C of C Numbers:
Legal Site Desc:

Comments: ADDITIONAL 17-JAN-20 13:35

Hua Wo
Chemistry Laboratory 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
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ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2344325-1 LQ25-LEACHATE TANK							
Sampled By: CLIENT on 10-SEP-19 @ 10:30							
Matrix: WATER							
Alkalinity species as HCO3, CO3, OH							
Alkalinity, Bicarbonate							
Bicarbonate (HCO3)	9640000		1200	ug/L		16-SEP-19	
Alkalinity, Carbonate							
Carbonate (CO3)	<600		600	ug/L		16-SEP-19	
Alkalinity, Hydroxide							
Hydroxide (OH)	<340		340	ug/L		16-SEP-19	
Alkalinity, Total (as CaCO3)							
Alkalinity, Total (as CaCO3)	7900000		1000	ug/L		13-SEP-19	R4809090
Dissolved Carbons							
Dissolved Inorganic Carbon by Combustion							
Dissolved Inorganic Carbon	1550000		5000	ug/L		13-SEP-19	R4809611
Dissolved Organic Carbon by Combustion							
Dissolved Organic Carbon	545000		50000	ug/L		12-SEP-19	R4805048
Total Dissolved Carbon by Calculation							
Total Dissolved Carbon	2100000		50000	ug/L		16-SEP-19	
Miscellaneous Parameters							
Ammonia, Total (as N)	884000		50000	ug/L		13-SEP-19	R4811053
Chloride (Cl)	2000000		50000	ug/L		11-SEP-19	R4804616
Chromium, Hexavalent	<10	DLM	10	ug/L		13-SEP-19	R4808850
Cyanide, Total	14.3	HTP	1.0	ug/L		21-SEP-19	R4831509
Mercury (Hg)-Total	0.0210		0.0050	ug/L	19-SEP-19	19-SEP-19	R4827412
Oil and Grease	17000		5000	ug/L		18-SEP-19	R4818408
Phenols (4AAP)	408	DLM	50	ug/L		16-SEP-19	R4810490
Sample Comment	Control failure. FC not reported.					12-SEP-19	
Sulfate (SO4)	<30000	DLM	30000	ug/L		11-SEP-19	R4804616
Total and E. coli to endpoint by QT97							
Total Coliforms	24200		1	MPN/100mL		10-SEP-19	R4797309
Escherichia Coli	109		1	MPN/100mL		10-SEP-19	R4797309
Total Metals in Water by CRC ICPMS							
Aluminum (Al)-Total	545	DLM	30	ug/L	18-SEP-19	18-SEP-19	R4823808
Antimony (Sb)-Total	7.1	DLM	1.0	ug/L	18-SEP-19	18-SEP-19	R4823808
Arsenic (As)-Total	61.8	DLM	1.0	ug/L	18-SEP-19	18-SEP-19	R4823808
Barium (Ba)-Total	350	DLM	1.0	ug/L	18-SEP-19	18-SEP-19	R4823808
Beryllium (Be)-Total	<1.0	DLM	1.0	ug/L	18-SEP-19	18-SEP-19	R4823808
Bismuth (Bi)-Total	<0.50	DLM	0.50	ug/L	18-SEP-19	18-SEP-19	R4823808
Cadmium (Cd)-Total	0.341	DLM	0.050	ug/L	18-SEP-19	18-SEP-19	R4823808
Calcium (Ca)-Total	161000	DLM	500	ug/L	18-SEP-19	18-SEP-19	R4823808
Cesium (Cs)-Total	0.61	DLM	0.10	ug/L	18-SEP-19	18-SEP-19	R4823808
Chromium (Cr)-Total	135	DLM	1.0	ug/L	18-SEP-19	18-SEP-19	R4823808
Cobalt (Co)-Total	51.0	DLM	1.0	ug/L	18-SEP-19	18-SEP-19	R4823808
Copper (Cu)-Total	8.9	DLM	5.0	ug/L	18-SEP-19	18-SEP-19	R4823808
Iron (Fe)-Total	4230	DLM	100	ug/L	18-SEP-19	18-SEP-19	R4823808
Lead (Pb)-Total	12.0	DLM	0.50	ug/L	18-SEP-19	18-SEP-19	R4823808
Lithium (Li)-Total	415	DLM	10	ug/L	18-SEP-19	18-SEP-19	R4823808
Magnesium (Mg)-Total	598000	DLM	50	ug/L	18-SEP-19	18-SEP-19	R4823808
Manganese (Mn)-Total	271	DLM	1.0	ug/L	18-SEP-19	18-SEP-19	R4823808
Molybdenum (Mo)-Total	6.19	DLM	0.50	ug/L	18-SEP-19	18-SEP-19	R4823808
Nickel (Ni)-Total	348	DLM	5.0	ug/L	18-SEP-19	18-SEP-19	R4823808
Potassium (K)-Total	577000	DLM	500	ug/L	18-SEP-19	18-SEP-19	R4823808
Phosphorus (P)-Total	6620	DLM	300	ug/L	18-SEP-19	18-SEP-19	R4823808

* 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
L2344325-1 LQ25-LEACHATE TANK							
Sampled By: CLIENT on 10-SEP-19 @ 10:30							
Matrix: WATER							
Total Metals in Water by CRC ICPMS							
Rubidium (Rb)-Total	199	DLM	2.0	ug/L	18-SEP-19	18-SEP-19	R4823808
Selenium (Se)-Total	2.53	DLM	0.50	ug/L	18-SEP-19	18-SEP-19	R4823808
Silicon (Si)-Total	21600	DLM	1000	ug/L	18-SEP-19	18-SEP-19	R4823808
Silver (Ag)-Total	0.20	DLM	0.10	ug/L	18-SEP-19	18-SEP-19	R4823808
Sodium (Na)-Total	1720000	DLM	500	ug/L	18-SEP-19	18-SEP-19	R4823808
Strontium (Sr)-Total	3320	DLM	2.0	ug/L	18-SEP-19	18-SEP-19	R4823808
Sulfur (S)-Total	44200	DLM	5000	ug/L	18-SEP-19	18-SEP-19	R4823808
Tellurium (Te)-Total	<2.0	DLM	2.0	ug/L	18-SEP-19	18-SEP-19	R4823808
Thallium (Tl)-Total	<0.10	DLM	0.10	ug/L	18-SEP-19	18-SEP-19	R4823808
Thorium (Th)-Total	<1.0	DLM	1.0	ug/L	18-SEP-19	18-SEP-19	R4823808
Tin (Sn)-Total	26.2	DLM	1.0	ug/L	18-SEP-19	18-SEP-19	R4823808
Titanium (Ti)-Total	143	DLM	3.0	ug/L	18-SEP-19	18-SEP-19	R4823808
Tungsten (W)-Total	4.9	DLM	1.0	ug/L	18-SEP-19	18-SEP-19	R4823808
Uranium (U)-Total	0.29	DLM	0.10	ug/L	18-SEP-19	18-SEP-19	R4823808
Vanadium (V)-Total	44.3	DLM	5.0	ug/L	18-SEP-19	18-SEP-19	R4823808
Zinc (Zn)-Total	152	DLM	30	ug/L	18-SEP-19	18-SEP-19	R4823808
Zirconium (Zr)-Total	93.7	DLM	2.0	ug/L	18-SEP-19	18-SEP-19	R4823808
Dissolved Metals in Water by CRC ICPMS							
Dissolved Metals Filtration Location	LAB					16-SEP-19	R4810969
Aluminum (Al)-Dissolved	238		1.0	ug/L	16-SEP-19	18-SEP-19	R4823808
Antimony (Sb)-Dissolved	3.29		0.10	ug/L	16-SEP-19	18-SEP-19	R4823808
Arsenic (As)-Dissolved	57		10	ug/L	16-SEP-19	30-SEP-19	R4854708
Barium (Ba)-Dissolved	316		0.10	ug/L	16-SEP-19	18-SEP-19	R4823808
Beryllium (Be)-Dissolved	0.16		0.10	ug/L	16-SEP-19	18-SEP-19	R4823808
Bismuth (Bi)-Dissolved	<0.050		0.050	ug/L	16-SEP-19	18-SEP-19	R4823808
Boron (B)-Dissolved	6890		10	ug/L	16-SEP-19	23-SEP-19	R4838508
Cadmium (Cd)-Dissolved	0.0363		0.0050	ug/L	16-SEP-19	18-SEP-19	R4823808
Calcium (Ca)-Dissolved	77600		50	ug/L	16-SEP-19	18-SEP-19	R4823808
Cesium (Cs)-Dissolved	0.273		0.010	ug/L	16-SEP-19	18-SEP-19	R4823808
Chromium (Cr)-Dissolved	118		0.10	ug/L	16-SEP-19	18-SEP-19	R4823808
Cobalt (Co)-Dissolved	42.1		0.10	ug/L	16-SEP-19	18-SEP-19	R4823808
Copper (Cu)-Dissolved	0.62		0.20	ug/L	16-SEP-19	18-SEP-19	R4823808
Iron (Fe)-Dissolved	2550		10	ug/L	16-SEP-19	18-SEP-19	R4823808
Lead (Pb)-Dissolved	0.294		0.050	ug/L	16-SEP-19	18-SEP-19	R4823808
Lithium (Li)-Dissolved	220		1.0	ug/L	16-SEP-19	18-SEP-19	R4823808
Magnesium (Mg)-Dissolved	547000		5.0	ug/L	16-SEP-19	18-SEP-19	R4823808
Manganese (Mn)-Dissolved	250		0.10	ug/L	16-SEP-19	18-SEP-19	R4823808
Molybdenum (Mo)-Dissolved	2.70		0.050	ug/L	16-SEP-19	18-SEP-19	R4823808
Nickel (Ni)-Dissolved	297		0.50	ug/L	16-SEP-19	18-SEP-19	R4823808
Phosphorus (P)-Dissolved	7040		30	ug/L	16-SEP-19	18-SEP-19	R4823808
Potassium (K)-Dissolved	545000		50	ug/L	16-SEP-19	18-SEP-19	R4823808
Rubidium (Rb)-Dissolved	186		0.20	ug/L	16-SEP-19	18-SEP-19	R4823808
Selenium (Se)-Dissolved	<5.0		5.0	ug/L	16-SEP-19	30-SEP-19	R4854708
Silicon (Si)-Dissolved	26100		50	ug/L	16-SEP-19	18-SEP-19	R4823808
Silver (Ag)-Dissolved	0.076		0.010	ug/L	16-SEP-19	18-SEP-19	R4823808
Sodium (Na)-Dissolved	1790000		50	ug/L	16-SEP-19	23-SEP-19	R4838508
Strontium (Sr)-Dissolved	2440		0.10	ug/L	16-SEP-19	23-SEP-19	R4838508
Sulfur (S)-Dissolved	39000		500	ug/L	16-SEP-19	18-SEP-19	R4823808
Tellurium (Te)-Dissolved	<0.20		0.20	ug/L	16-SEP-19	18-SEP-19	R4823808
Thallium (Tl)-Dissolved	<0.010		0.010	ug/L	16-SEP-19	18-SEP-19	R4823808
Thorium (Th)-Dissolved	0.41		0.10	ug/L	16-SEP-19	18-SEP-19	R4823808

* 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
L2344325-1 LQ25-LEACHATE TANK							
Sampled By: CLIENT on 10-SEP-19 @ 10:30							
Matrix: WATER							
Dissolved Metals in Water by CRC ICPMS							
Tin (Sn)-Dissolved	8.67		0.10	ug/L	16-SEP-19	18-SEP-19	R4823808
Titanium (Ti)-Dissolved	121		0.30	ug/L	16-SEP-19	18-SEP-19	R4823808
Tungsten (W)-Dissolved	3.89		0.10	ug/L	16-SEP-19	18-SEP-19	R4823808
Uranium (U)-Dissolved	0.101		0.010	ug/L	16-SEP-19	18-SEP-19	R4823808
Vanadium (V)-Dissolved	38.0		0.50	ug/L	16-SEP-19	18-SEP-19	R4823808
Zinc (Zn)-Dissolved	7.2		1.0	ug/L	16-SEP-19	18-SEP-19	R4823808
Zirconium (Zr)-Dissolved	66.3		0.20	ug/L	16-SEP-19	18-SEP-19	R4823808
Mercury Dissolved							
Dissolved Mercury Filtration Location	LAB					19-SEP-19	R4826797
Mercury (Hg)-Dissolved	<0.0050		0.0050	ug/L	19-SEP-19	19-SEP-19	R4827450
Benzo(a)pyrene							
Benzo(a)pyrene	<0.045	DLM	0.045	ug/L	12-SEP-19	17-JAN-20	R4972499
Surrogate: d14-Terphenyl	43.3		40-130	%	12-SEP-19	17-JAN-20	R4972499
Polyaromatic Hydrocarbons (PAHs)							
1-Methyl Naphthalene	1.47		0.020	ug/L	13-SEP-19	17-SEP-19	R4822268
2-Methyl Naphthalene	2.05		0.020	ug/L	13-SEP-19	17-SEP-19	R4822268
Acenaphthene	1.37		0.020	ug/L	13-SEP-19	17-SEP-19	R4822268
Acenaphthylene	0.022		0.020	ug/L	13-SEP-19	17-SEP-19	R4822268
Anthracene	0.225		0.010	ug/L	13-SEP-19	17-SEP-19	R4822268
Acridine	0.584		0.020	ug/L	13-SEP-19	17-SEP-19	R4822268
Benzo(a)anthracene	0.10		0.010	ug/L	13-SEP-19	17-SEP-19	R4822268
Benzo(a)pyrene	0.0298		0.0050	ug/L	13-SEP-19	17-SEP-19	R4822268
Benzo(b&j)fluoranthene	0.027		0.010	ug/L	13-SEP-19	17-SEP-19	R4822268
Benzo(g,h,i)perylene	<0.020		0.020	ug/L	13-SEP-19	17-SEP-19	R4822268
Benzo(k)fluoranthene	0.012		0.010	ug/L	13-SEP-19	17-SEP-19	R4822268
Chrysene	0.106		0.020	ug/L	13-SEP-19	17-SEP-19	R4822268
Dibenzo(a,h)anthracene	<0.0050		0.0050	ug/L	13-SEP-19	17-SEP-19	R4822268
Fluoranthene	0.345		0.020	ug/L	13-SEP-19	17-SEP-19	R4822268
Fluorene	0.976		0.020	ug/L	13-SEP-19	17-SEP-19	R4822268
Indeno(1,2,3-cd)pyrene	<0.010		0.010	ug/L	13-SEP-19	17-SEP-19	R4822268
Naphthalene	9.89		0.050	ug/L	13-SEP-19	17-SEP-19	R4822268
Phenanthrene	1.46		0.050	ug/L	13-SEP-19	17-SEP-19	R4822268
Pyrene	0.301	EMPC	0.010	ug/L	13-SEP-19	17-SEP-19	R4822268
Quinoline	0.086		0.020	ug/L	13-SEP-19	17-SEP-19	R4822268
B(a)P Total Potency Equivalent	0.048		0.030	ug/L	13-SEP-19	17-SEP-19	R4822268
Surrogate: Acenaphthene d10	95.5		60-130	%	13-SEP-19	17-SEP-19	R4822268
Surrogate: Acridine d9	106.0		60-130	%	13-SEP-19	17-SEP-19	R4822268
Surrogate: Chrysene d12	115.1		60-130	%	13-SEP-19	17-SEP-19	R4822268
Surrogate: Naphthalene d8	86.4		50-130	%	13-SEP-19	17-SEP-19	R4822268
Surrogate: Phenanthrene d10	107.1		60-130	%	13-SEP-19	17-SEP-19	R4822268
PCBs							
Aroclor 1016	<0.040	DLM	0.040	ug/L	13-SEP-19	13-SEP-19	R4805153
Aroclor 1221	<0.040	DLM	0.040	ug/L	13-SEP-19	13-SEP-19	R4805153
Aroclor 1232	<0.040	DLM	0.040	ug/L	13-SEP-19	13-SEP-19	R4805153
Aroclor 1242	<0.30	DLM	0.30	ug/L	13-SEP-19	13-SEP-19	R4805153
Aroclor 1248	<0.040	DLM	0.040	ug/L	13-SEP-19	13-SEP-19	R4805153
Aroclor 1254	<0.040	DLM	0.040	ug/L	13-SEP-19	13-SEP-19	R4805153
Aroclor 1260	<0.040	DLM	0.040	ug/L	13-SEP-19	13-SEP-19	R4805153
Aroclor 1262	<0.040	DLM	0.040	ug/L	13-SEP-19	13-SEP-19	R4805153
Aroclor 1268	<0.040	DLM	0.040	ug/L	13-SEP-19	13-SEP-19	R4805153
Total PCBs	<0.33	DLM	0.33	ug/L	13-SEP-19	13-SEP-19	R4805153
Surrogate: d14-Terphenyl	60.3		40-130	%	13-SEP-19	13-SEP-19	R4805153

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ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2344325-1 LQ25-LEACHATE TANK							
Sampled By: CLIENT on 10-SEP-19 @ 10:30							
Matrix: WATER							
Pesticides, Organochlorine in Water							
Aldrin	<0.20	DLM	0.20	ug/L	18-SEP-19	19-SEP-19	R4822286
gamma-hexachlorocyclohexane	<0.20	DLM	0.20	ug/L	18-SEP-19	19-SEP-19	R4822286
a-chlordane	<0.20	DLM	0.20	ug/L	18-SEP-19	19-SEP-19	R4822286
g-chlordane	<0.20	DLM	0.20	ug/L	18-SEP-19	19-SEP-19	R4822286
alpha-BHC	<0.20	DLM	0.20	ug/L	18-SEP-19	19-SEP-19	R4822286
beta-BHC	<0.20	DLM	0.20	ug/L	18-SEP-19	19-SEP-19	R4822286
delta-BHC	<0.20	DLM	0.20	ug/L	18-SEP-19	19-SEP-19	R4822286
o,p-DDD	<0.10	DLM	0.10	ug/L	18-SEP-19	19-SEP-19	R4822286
pp-DDD	<0.10	DLM	0.10	ug/L	18-SEP-19	19-SEP-19	R4822286
o,p-DDE	<0.10	DLM	0.10	ug/L	18-SEP-19	19-SEP-19	R4822286
pp-DDE	<0.10	DLM	0.10	ug/L	18-SEP-19	19-SEP-19	R4822286
op-DDT	<0.10	DLM	0.10	ug/L	18-SEP-19	19-SEP-19	R4822286
pp-DDT	<0.10	DLM	0.10	ug/L	18-SEP-19	19-SEP-19	R4822286
Dieldrin	<0.20	DLM	0.20	ug/L	18-SEP-19	19-SEP-19	R4822286
Endosulfan I	<0.18	DLM	0.18	ug/L	18-SEP-19	19-SEP-19	R4822286
Endosulfan II	<0.18	DLM	0.18	ug/L	18-SEP-19	19-SEP-19	R4822286
Endosulfan Sulfate	<0.18	DLM	0.18	ug/L	18-SEP-19	19-SEP-19	R4822286
Endrin	<0.25	DLM	0.25	ug/L	18-SEP-19	19-SEP-19	R4822286
Endrin Aldehyde	<0.25	DLM	0.25	ug/L	18-SEP-19	19-SEP-19	R4822286
Heptachlor	<0.20	DLM	0.20	ug/L	18-SEP-19	19-SEP-19	R4822286
Heptachlor Epoxide	<0.20	DLM	0.20	ug/L	18-SEP-19	19-SEP-19	R4822286
Hexachlorobenzene	<0.20	DLM	0.20	ug/L	18-SEP-19	19-SEP-19	R4822286
Hexachlorobutadiene	<0.20	DLM	0.20	ug/L	18-SEP-19	19-SEP-19	R4822286
Hexachloroethane	<0.20	DLM	0.20	ug/L	18-SEP-19	19-SEP-19	R4822286
Methoxychlor	<0.20	DLM	0.20	ug/L	18-SEP-19	19-SEP-19	R4822286
Mirex	<0.20	DLM	0.20	ug/L	18-SEP-19	19-SEP-19	R4822286
Oxychlordane	<0.20	DLM	0.20	ug/L	18-SEP-19	19-SEP-19	R4822286
Surrogate: Decachlorobiphenyl	37.7	RRR	40-130	%	18-SEP-19	19-SEP-19	R4822286
Surrogate: Tetrachloro-m-xylene	58.5		40-130	%	18-SEP-19	19-SEP-19	R4822286
Note: RRR: Surrogate recovery below ALS DQO. Detection limits have been adjusted.							
Herbicides in Water							
Clopyralid	<1.0	DLM	1.0	ug/L	16-SEP-19	17-SEP-19	R4813269
Dicamba	<1.0	DLM	1.0	ug/L	16-SEP-19	17-SEP-19	R4813269
Mecoprop	162	DLHC	10	ug/L	16-SEP-19	17-SEP-19	R4813269
MCPA	<1.0	DLM	1.0	ug/L	16-SEP-19	17-SEP-19	R4813269
2,4-D	<1.0	DLM	1.0	ug/L	16-SEP-19	17-SEP-19	R4813269
Bromoxynil	<1.0	DLM	1.0	ug/L	16-SEP-19	17-SEP-19	R4813269
Triclopyr	<1.0	DLM	1.0	ug/L	16-SEP-19	17-SEP-19	R4813269
2,4,5-T	<1.0	DLM	1.0	ug/L	16-SEP-19	17-SEP-19	R4813269
2,4,5-TP	<1.0	DLM	1.0	ug/L	16-SEP-19	17-SEP-19	R4813269
Picloram	<48	DLM	48	ug/L	16-SEP-19	17-SEP-19	R4813269
2,4-DB	<1.0	DLM	1.0	ug/L	16-SEP-19	17-SEP-19	R4813269
2,4-DP	<1.0	DLM	1.0	ug/L	16-SEP-19	17-SEP-19	R4813269
Dinoseb	<1.0	DLM	1.0	ug/L	16-SEP-19	17-SEP-19	R4813269
MCPB	<1.0	DLM	1.0	ug/L	16-SEP-19	17-SEP-19	R4813269
Surrogate: 2,4-Dichlorophenylacetic Acid	76.4		50-130	%	16-SEP-19	17-SEP-19	R4813269
Miscellaneous Pesticides							
Alachlor	<0.10		0.10	ug/L	12-SEP-19	17-JAN-20	R4809881
Ametryn	<0.10		0.10	ug/L	12-SEP-19	17-JAN-20	R4809881
Atrazine	<0.10		0.10	ug/L	12-SEP-19	17-JAN-20	R4809881
Atrazine Desethyl	<0.10		0.10	ug/L	12-SEP-19	17-JAN-20	R4809881

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ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2344325-1 LQ25-LEACHATE TANK							
Sampled By: CLIENT on 10-SEP-19 @ 10:30							
Matrix: WATER							
Miscellaneous Pesticides							
Azinphos-methyl	<1.3	DLM	1.3	ug/L	12-SEP-19	17-JAN-20	R4809881
Bendiocarb	<30	DLM	30	ug/L	12-SEP-19	17-JAN-20	R4809881
Carbaryl	<0.85	DLM	0.85	ug/L	12-SEP-19	17-JAN-20	R4809881
Carbofuran	<0.50		0.50	ug/L	12-SEP-19	17-JAN-20	R4809881
Chlorpyrifos	<0.10		0.10	ug/L	12-SEP-19	17-JAN-20	R4809881
Cyanazine	<0.20	DLM	0.20	ug/L	12-SEP-19	17-JAN-20	R4809881
Diazinon	<0.10		0.10	ug/L	12-SEP-19	17-JAN-20	R4809881
Diclofop-methyl	<0.10		0.10	ug/L	12-SEP-19	17-JAN-20	R4809881
Dimethoate	<0.10		0.10	ug/L	12-SEP-19	17-JAN-20	R4809881
Malathion	<0.10		0.10	ug/L	12-SEP-19	17-JAN-20	R4809881
Methyl Parathion	<0.10		0.10	ug/L	12-SEP-19	17-JAN-20	R4809881
Metolachlor	<0.10		0.10	ug/L	12-SEP-19	17-JAN-20	R4809881
Metribuzin	<1.0		1.0	ug/L	12-SEP-19	17-JAN-20	R4809881
Parathion	<0.10		0.10	ug/L	12-SEP-19	17-JAN-20	R4809881
Phorate	<0.10		0.10	ug/L	12-SEP-19	17-JAN-20	R4809881
Prometon	<0.10		0.10	ug/L	12-SEP-19	17-JAN-20	R4809881
Prometryne	<0.10		0.10	ug/L	12-SEP-19	17-JAN-20	R4809881
Propazine	<0.10		0.10	ug/L	12-SEP-19	17-JAN-20	R4809881
Simazine	<0.15	DLM	0.15	ug/L	12-SEP-19	17-JAN-20	R4809881
Temephos	<1.0		1.0	ug/L	12-SEP-19	17-JAN-20	R4809881
Terbufos	<0.10		0.10	ug/L	12-SEP-19	17-JAN-20	R4809881
Terbutryn	<0.10		0.10	ug/L	12-SEP-19	17-JAN-20	R4809881
Triallate	<0.10		0.10	ug/L	12-SEP-19	17-JAN-20	R4809881
Trifluralin	<0.10		0.10	ug/L	12-SEP-19	17-JAN-20	R4809881
Atrazine+N-Dealkylated Metabolites	<0.20		0.20	ug/L	12-SEP-19	17-JAN-20	R4809881
Surrogate: 2-Fluorobiphenyl	70.9		40-130	%	12-SEP-19	17-JAN-20	R4809881
Surrogate: d14-Terphenyl	43.3		40-130	%	12-SEP-19	17-JAN-20	R4809881
Miscellaneous Pesticides							
Diazinon	<0.10		0.10	ug/L	12-SEP-19	17-JAN-20	R4809881
Surrogate: 2-Fluorobiphenyl	70.9		40-130	%	12-SEP-19	17-JAN-20	R4809881
Surrogate: d14-Terphenyl	43.3		40-130	%	12-SEP-19	17-JAN-20	R4809881
4,4'-Methylenebis(2-chloroaniline)							
4,4'-Methylenebis(2-chloroaniline)	<0.50		0.50	ug/L	12-SEP-19	16-SEP-19	R4808909
Surrogate: p-Terphenyl d14	58.8		40-130	%	12-SEP-19	16-SEP-19	R4808909
VOC plus F1 to F4							
CCME PHC F2-F4 in Water							
F2 (C10-C16)	1810		100	ug/L	12-SEP-19	12-SEP-19	R4800048
F3 (C16-C34)	1080		250	ug/L	12-SEP-19	12-SEP-19	R4800048
F4 (C34-C50)	<250		250	ug/L	12-SEP-19	12-SEP-19	R4800048
Surrogate: 2-Bromobenzotrifluoride	100.1		60-140	%	12-SEP-19	12-SEP-19	R4800048
CCME Total Hydrocarbons							
F1-BTEX	130		100	ug/L		26-SEP-19	
F2-Naphth	1800		100	ug/L		26-SEP-19	
F3-PAH	1080		250	ug/L		26-SEP-19	
Total Hydrocarbons (C6-C50)	3320		380	ug/L		26-SEP-19	
Sum of Xylene Isomer Concentrations							
Xylenes (Total)	181		2.1	ug/L		26-SEP-19	
Total Trihalomethanes (THMs)							
Total THMs	<1.3		1.3	ug/L		26-SEP-19	
VOC plus F1 by GCMS							
Acetone	1730	DLHC	250	ug/L		12-SEP-19	R4800829
Benzene	5.12		0.50	ug/L		12-SEP-19	R4800829

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ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2344325-1 LQ25-LEACHATE TANK							
Sampled By: CLIENT on 10-SEP-19 @ 10:30							
Matrix: WATER							
VOC plus F1 by GCMS							
Bromobenzene	<1.0		1.0	ug/L		12-SEP-19	R4800829
Bromochloromethane	<1.0		1.0	ug/L		12-SEP-19	R4800829
Bromodichloromethane	<0.50		0.50	ug/L		12-SEP-19	R4800829
Bromoform	<1.0		1.0	ug/L		12-SEP-19	R4800829
Bromomethane	<1.0		1.0	ug/L		12-SEP-19	R4800829
n-Butylbenzene	<1.0		1.0	ug/L		12-SEP-19	R4800829
sec-Butylbenzene	1.3		1.0	ug/L		12-SEP-19	R4800829
tert-Butylbenzene	<1.0		1.0	ug/L		12-SEP-19	R4800829
Carbon disulfide	<5.0		5.0	ug/L		12-SEP-19	R4800829
Carbon Tetrachloride	<0.50		0.50	ug/L		12-SEP-19	R4800829
Chlorobenzene	2.2		1.0	ug/L		12-SEP-19	R4800829
Chloroethane	1.3		1.0	ug/L		12-SEP-19	R4800829
Chloroform	<0.50		0.50	ug/L		12-SEP-19	R4800829
Chloromethane	<5.0		5.0	ug/L		12-SEP-19	R4800829
2-Chlorotoluene	<20		20	ug/L		12-SEP-19	R4800829
4-Chlorotoluene	<1.0		1.0	ug/L		12-SEP-19	R4800829
Dibromochloromethane	<0.50		0.50	ug/L		12-SEP-19	R4800829
1,2-Dibromo-3-chloropropane	<1.0		1.0	ug/L		12-SEP-19	R4800829
1,2-Dibromoethane	<1.0		1.0	ug/L		12-SEP-19	R4800829
Dibromomethane	<1.0		1.0	ug/L		12-SEP-19	R4800829
1,2-Dichlorobenzene	<0.50		0.50	ug/L		12-SEP-19	R4800829
1,3-Dichlorobenzene	<1.0		1.0	ug/L		12-SEP-19	R4800829
1,4-Dichlorobenzene	5.3		1.0	ug/L		12-SEP-19	R4800829
Dichlorodifluoromethane	<1.0		1.0	ug/L		12-SEP-19	R4800829
1,1-dichloroethane	2.06		0.50	ug/L		12-SEP-19	R4800829
1,2-Dichloroethane	0.82		0.50	ug/L		12-SEP-19	R4800829
1,1-dichloroethene	<0.50		0.50	ug/L		12-SEP-19	R4800829
cis-1,2-Dichloroethene	<1.0		1.0	ug/L		12-SEP-19	R4800829
trans-1,2-Dichloroethene	<1.0		1.0	ug/L		12-SEP-19	R4800829
Dichloromethane	<5.0		5.0	ug/L		12-SEP-19	R4800829
1,2-Dichloropropane	<1.0		1.0	ug/L		12-SEP-19	R4800829
1,3-Dichloropropane	<1.0		1.0	ug/L		12-SEP-19	R4800829
2,2-Dichloropropane	<10	DLCI	10	ug/L		12-SEP-19	R4800829
1,1-Dichloropropene	<1.0		1.0	ug/L		12-SEP-19	R4800829
cis-1,3-Dichloropropene	<1.0		1.0	ug/L		12-SEP-19	R4800829
trans-1,3-Dichloropropene	<1.0		1.0	ug/L		12-SEP-19	R4800829
Ethylbenzene	52.1		0.50	ug/L		12-SEP-19	R4800829
F1	420		100	ug/L		12-SEP-19	R4800829
Hexachlorobutadiene	<1.0		1.0	ug/L		12-SEP-19	R4800829
Hexane	<1.0		1.0	ug/L		12-SEP-19	R4800829
2-Hexanone (Methyl butyl ketone)	<20		20	ug/L		12-SEP-19	R4800829
Isopropylbenzene	1.5		1.0	ug/L		12-SEP-19	R4800829
4-Isopropyltoluene	1.4		1.0	ug/L		12-SEP-19	R4800829
MEK	3430	DLHC	100	ug/L		12-SEP-19	R4800829
MIBK	45		20	ug/L		12-SEP-19	R4800829
MTBE	1.80		0.50	ug/L		12-SEP-19	R4800829
Styrene	<1.0		1.0	ug/L		12-SEP-19	R4800829
1,1,1,2-Tetrachloroethane	<0.50		0.50	ug/L		12-SEP-19	R4800829
1,1,2,2-Tetrachloroethane	<0.50		0.50	ug/L		12-SEP-19	R4800829
Tetrachloroethene	<0.50		0.50	ug/L		12-SEP-19	R4800829
Toluene	56.0		0.50	ug/L		12-SEP-19	R4800829

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ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2344325-1 LQ25-LEACHATE TANK Sampled By: CLIENT on 10-SEP-19 @ 10:30 Matrix: WATER VOC plus F1 by GCMS							
1,2,3-Trichlorobenzene	<1.0		1.0	ug/L		12-SEP-19	R4800829
1,2,4-Trichlorobenzene	<1.0		1.0	ug/L		12-SEP-19	R4800829
1,1,1-Trichloroethane	<0.50		0.50	ug/L		12-SEP-19	R4800829
1,1,2-Trichloroethane	<0.50		0.50	ug/L		12-SEP-19	R4800829
Trichloroethene	<0.50		0.50	ug/L		12-SEP-19	R4800829
Trichlorofluoromethane	<1.0		1.0	ug/L		12-SEP-19	R4800829
1,2,3-Trichloropropane	<2.0	DLCI	2.0	ug/L		12-SEP-19	R4800829
1,2,4-Trimethylbenzene	21.8		1.0	ug/L		12-SEP-19	R4800829
1,3,5-Trimethylbenzene	6.1		1.0	ug/L		12-SEP-19	R4800829
Vinyl Chloride	1.15		0.50	ug/L		12-SEP-19	R4800829
M+P-Xylenes	128	DLHC	2.0	ug/L		12-SEP-19	R4800829
o-Xylene	52.8		0.50	ug/L		12-SEP-19	R4800829
Surrogate: 4-Bromofluorobenzene (SS)	100.7		70-130	%		12-SEP-19	R4800829
Surrogate: 1,4-Difluorobenzene (SS)	100.8		70-130	%		12-SEP-19	R4800829
L2344325-2 LQ25-RI Sampled By: CLIENT on 10-SEP-19 @ 11:15 Matrix: WATER Alkalinity species as HCO3, CO3, OH							
Alkalinity, Bicarbonate Bicarbonate (HCO3)	11400000		1200	ug/L		16-SEP-19	
Alkalinity, Carbonate Carbonate (CO3)	<600		600	ug/L		16-SEP-19	
Alkalinity, Hydroxide Hydroxide (OH)	<340		340	ug/L		16-SEP-19	
Alkalinity, Total (as CaCO3) Alkalinity, Total (as CaCO3)	9310000		1000	ug/L		13-SEP-19	R4809090
Dissolved Carbons							
Dissolved Inorganic Carbon by Combustion Dissolved Inorganic Carbon	1910000		5000	ug/L		13-SEP-19	R4809611
Dissolved Organic Carbon by Combustion Dissolved Organic Carbon	929000		50000	ug/L		12-SEP-19	R4805048
Total Dissolved Carbon by Calculation Total Dissolved Carbon	2840000		50000	ug/L		16-SEP-19	
Miscellaneous Parameters							
Ammonia, Total (as N)	1490000		50000	ug/L		12-SEP-19	R4806402
Chloride (Cl)	2050000		50000	ug/L		11-SEP-19	R4804616
Chromium, Hexavalent	<10	DLM	10	ug/L		13-SEP-19	R4808850
Cyanide, Total	16.3	HTP	1.0	ug/L		21-SEP-19	R4831509
Mercury (Hg)-Total	0.0370		0.0050	ug/L	19-SEP-19	19-SEP-19	R4827412
Oil and Grease	19800		5000	ug/L		18-SEP-19	R4818408
Phenols (4AAP)	680	DLM	100	ug/L		16-SEP-19	R4810490
Sample Comment	Control failure. FC not reported.					12-SEP-19	
Sulfate (SO4)	<30000	DLM	30000	ug/L		11-SEP-19	R4804616
Total and E. coli to endpoint by QT97							
Total Coliforms	16100		1	MPN/100mL		10-SEP-19	R4797309
Escherichia Coli	100		1	MPN/100mL		10-SEP-19	R4797309
Total Metals in Water by CRC ICPMS							
Aluminum (Al)-Total	529	DLM	30	ug/L	18-SEP-19	18-SEP-19	R4823808
Antimony (Sb)-Total	5.2	DLM	1.0	ug/L	18-SEP-19	18-SEP-19	R4823808
Arsenic (As)-Total	93.7	DLM	1.0	ug/L	18-SEP-19	18-SEP-19	R4823808

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ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2344325-2 LQ25-RI							
Sampled By: CLIENT on 10-SEP-19 @ 11:15							
Matrix: WATER							
Total Metals in Water by CRC ICPMS							
Barium (Ba)-Total	126	DLM	1.0	ug/L	18-SEP-19	18-SEP-19	R4823808
Beryllium (Be)-Total	<1.0	DLM	1.0	ug/L	18-SEP-19	18-SEP-19	R4823808
Bismuth (Bi)-Total	<0.50	DLM	0.50	ug/L	18-SEP-19	18-SEP-19	R4823808
Cadmium (Cd)-Total	0.298	DLM	0.050	ug/L	18-SEP-19	18-SEP-19	R4823808
Calcium (Ca)-Total	88200	DLM	500	ug/L	18-SEP-19	18-SEP-19	R4823808
Cesium (Cs)-Total	0.41	DLM	0.10	ug/L	18-SEP-19	18-SEP-19	R4823808
Chromium (Cr)-Total	182	DLM	1.0	ug/L	18-SEP-19	18-SEP-19	R4823808
Cobalt (Co)-Total	54.6	DLM	1.0	ug/L	18-SEP-19	18-SEP-19	R4823808
Copper (Cu)-Total	11.3	DLM	5.0	ug/L	18-SEP-19	18-SEP-19	R4823808
Iron (Fe)-Total	1950	DLM	100	ug/L	18-SEP-19	18-SEP-19	R4823808
Lead (Pb)-Total	10.1	DLM	0.50	ug/L	18-SEP-19	18-SEP-19	R4823808
Lithium (Li)-Total	433	DLM	10	ug/L	18-SEP-19	18-SEP-19	R4823808
Magnesium (Mg)-Total	509000	DLM	50	ug/L	18-SEP-19	18-SEP-19	R4823808
Manganese (Mn)-Total	120	DLM	1.0	ug/L	18-SEP-19	18-SEP-19	R4823808
Molybdenum (Mo)-Total	2.13	DLM	0.50	ug/L	18-SEP-19	18-SEP-19	R4823808
Nickel (Ni)-Total	378	DLM	5.0	ug/L	18-SEP-19	18-SEP-19	R4823808
Potassium (K)-Total	493000	DLM	500	ug/L	18-SEP-19	18-SEP-19	R4823808
Phosphorus (P)-Total	6050	DLM	300	ug/L	18-SEP-19	18-SEP-19	R4823808
Rubidium (Rb)-Total	181	DLM	2.0	ug/L	18-SEP-19	18-SEP-19	R4823808
Selenium (Se)-Total	2.14	DLM	0.50	ug/L	18-SEP-19	18-SEP-19	R4823808
Silicon (Si)-Total	16400	DLM	1000	ug/L	18-SEP-19	18-SEP-19	R4823808
Silver (Ag)-Total	0.22	DLM	0.10	ug/L	18-SEP-19	18-SEP-19	R4823808
Sodium (Na)-Total	1730000	DLM	500	ug/L	18-SEP-19	18-SEP-19	R4823808
Strontium (Sr)-Total	1470	DLM	2.0	ug/L	18-SEP-19	18-SEP-19	R4823808
Sulfur (S)-Total	30000	DLM	5000	ug/L	18-SEP-19	18-SEP-19	R4823808
Tellurium (Te)-Total	<2.0	DLM	2.0	ug/L	18-SEP-19	18-SEP-19	R4823808
Thallium (Tl)-Total	<0.10	DLM	0.10	ug/L	18-SEP-19	18-SEP-19	R4823808
Thorium (Th)-Total	<1.0	DLM	1.0	ug/L	18-SEP-19	18-SEP-19	R4823808
Tin (Sn)-Total	19.2	DLM	1.0	ug/L	18-SEP-19	18-SEP-19	R4823808
Titanium (Ti)-Total	128	DLM	3.0	ug/L	18-SEP-19	18-SEP-19	R4823808
Tungsten (W)-Total	2.4	DLM	1.0	ug/L	18-SEP-19	18-SEP-19	R4823808
Uranium (U)-Total	0.11	DLM	0.10	ug/L	18-SEP-19	18-SEP-19	R4823808
Vanadium (V)-Total	68.5	DLM	5.0	ug/L	18-SEP-19	18-SEP-19	R4823808
Zinc (Zn)-Total	204	DLM	30	ug/L	18-SEP-19	18-SEP-19	R4823808
Zirconium (Zr)-Total	99.9	DLM	2.0	ug/L	18-SEP-19	18-SEP-19	R4823808
Dissolved Metals in Water by CRC ICPMS							
Dissolved Metals Filtration Location	LAB					16-SEP-19	R4810969
Aluminum (Al)-Dissolved	448		1.0	ug/L	16-SEP-19	18-SEP-19	R4823808
Antimony (Sb)-Dissolved	<10	DLM	10	ug/L	16-SEP-19	30-SEP-19	R4854708
Arsenic (As)-Dissolved	102		10	ug/L	16-SEP-19	30-SEP-19	R4854708
Barium (Ba)-Dissolved	134		0.10	ug/L	16-SEP-19	18-SEP-19	R4823808
Beryllium (Be)-Dissolved	0.26		0.10	ug/L	16-SEP-19	18-SEP-19	R4823808
Bismuth (Bi)-Dissolved	<0.050		0.050	ug/L	16-SEP-19	18-SEP-19	R4823808
Boron (B)-Dissolved	8190		10	ug/L	16-SEP-19	23-SEP-19	R4838508
Cadmium (Cd)-Dissolved	0.0874		0.0050	ug/L	16-SEP-19	18-SEP-19	R4823808
Calcium (Ca)-Dissolved	71100		50	ug/L	16-SEP-19	18-SEP-19	R4823808
Cesium (Cs)-Dissolved	0.402		0.010	ug/L	16-SEP-19	18-SEP-19	R4823808
Chromium (Cr)-Dissolved	236		0.10	ug/L	16-SEP-19	18-SEP-19	R4823808
Cobalt (Co)-Dissolved	60.7		0.10	ug/L	16-SEP-19	18-SEP-19	R4823808
Copper (Cu)-Dissolved	1.32		0.20	ug/L	16-SEP-19	18-SEP-19	R4823808
Iron (Fe)-Dissolved	1560		10	ug/L	16-SEP-19	18-SEP-19	R4823808

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ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2344325-2 LQ25-RI							
Sampled By: CLIENT on 10-SEP-19 @ 11:15							
Matrix: WATER							
Dissolved Metals in Water by CRC ICPMS							
Lead (Pb)-Dissolved	0.617		0.050	ug/L	16-SEP-19	18-SEP-19	R4823808
Lithium (Li)-Dissolved	355		1.0	ug/L	16-SEP-19	23-SEP-19	R4838508
Magnesium (Mg)-Dissolved	665000		5.0	ug/L	16-SEP-19	23-SEP-19	R4838508
Manganese (Mn)-Dissolved	140		0.10	ug/L	16-SEP-19	18-SEP-19	R4823808
Molybdenum (Mo)-Dissolved	<5.0	DLM	5.0	ug/L	16-SEP-19	30-SEP-19	R4854708
Nickel (Ni)-Dissolved	434		0.50	ug/L	16-SEP-19	18-SEP-19	R4823808
Phosphorus (P)-Dissolved	6350		30	ug/L	16-SEP-19	18-SEP-19	R4823808
Potassium (K)-Dissolved	513000		5000	ug/L	16-SEP-19	30-SEP-19	R4854708
Rubidium (Rb)-Dissolved	218		0.20	ug/L	16-SEP-19	18-SEP-19	R4823808
Selenium (Se)-Dissolved	<5.0		5.0	ug/L	16-SEP-19	30-SEP-19	R4854708
Silicon (Si)-Dissolved	19800		50	ug/L	16-SEP-19	18-SEP-19	R4823808
Silver (Ag)-Dissolved	0.227		0.010	ug/L	16-SEP-19	18-SEP-19	R4823808
Sodium (Na)-Dissolved	2220000		50	ug/L	16-SEP-19	23-SEP-19	R4838508
Strontium (Sr)-Dissolved	1050		0.10	ug/L	16-SEP-19	23-SEP-19	R4838508
Sulfur (S)-Dissolved	29000		500	ug/L	16-SEP-19	18-SEP-19	R4823808
Tellurium (Te)-Dissolved	0.23		0.20	ug/L	16-SEP-19	18-SEP-19	R4823808
Thallium (Tl)-Dissolved	<0.010		0.010	ug/L	16-SEP-19	18-SEP-19	R4823808
Thorium (Th)-Dissolved	0.18		0.10	ug/L	16-SEP-19	18-SEP-19	R4823808
Tin (Sn)-Dissolved	16.3		0.10	ug/L	16-SEP-19	18-SEP-19	R4823808
Titanium (Ti)-Dissolved	129		30	ug/L	16-SEP-19	30-SEP-19	R4854708
Tungsten (W)-Dissolved	16		10	ug/L	16-SEP-19	30-SEP-19	R4854708
Uranium (U)-Dissolved	0.079		0.010	ug/L	16-SEP-19	18-SEP-19	R4823808
Vanadium (V)-Dissolved	80.7		0.50	ug/L	16-SEP-19	18-SEP-19	R4823808
Zinc (Zn)-Dissolved	18.4		1.0	ug/L	16-SEP-19	18-SEP-19	R4823808
Zirconium (Zr)-Dissolved	102		20	ug/L	16-SEP-19	30-SEP-19	R4854708
Mercury Dissolved							
Dissolved Mercury Filtration Location	LAB					19-SEP-19	R4826797
Mercury (Hg)-Dissolved	<0.050	DLM	0.050	ug/L	19-SEP-19	24-SEP-19	R4841216
Benzo(a)pyrene							
Benzo(a)pyrene	<0.025	DLM	0.025	ug/L	12-SEP-19	13-SEP-19	R4972499
Surrogate: d14-Terphenyl	41.2		40-130	%	12-SEP-19	13-SEP-19	R4972499
Polyaromatic Hydrocarbons (PAHs)							
1-Methyl Naphthalene	0.177		0.020	ug/L	13-SEP-19	17-SEP-19	R4822268
2-Methyl Naphthalene	0.253		0.020	ug/L	13-SEP-19	17-SEP-19	R4822268
Acenaphthene	0.073		0.020	ug/L	13-SEP-19	17-SEP-19	R4822268
Acenaphthylene	<0.020		0.020	ug/L	13-SEP-19	17-SEP-19	R4822268
Anthracene	0.032	EMPC	0.010	ug/L	13-SEP-19	17-SEP-19	R4822268
Acridine	0.554		0.020	ug/L	13-SEP-19	17-SEP-19	R4822268
Benzo(a)anthracene	0.035		0.010	ug/L	13-SEP-19	17-SEP-19	R4822268
Benzo(a)pyrene	0.0174		0.0050	ug/L	13-SEP-19	17-SEP-19	R4822268
Benzo(b&j)fluoranthene	0.016	EMPC	0.010	ug/L	13-SEP-19	17-SEP-19	R4822268
Benzo(g,h,i)perylene	<0.020		0.020	ug/L	13-SEP-19	17-SEP-19	R4822268
Benzo(k)fluoranthene	<0.010		0.010	ug/L	13-SEP-19	17-SEP-19	R4822268
Chrysene	0.060		0.020	ug/L	13-SEP-19	17-SEP-19	R4822268
Dibenzo(a,h)anthracene	<0.0050		0.0050	ug/L	13-SEP-19	17-SEP-19	R4822268
Fluoranthene	0.069		0.020	ug/L	13-SEP-19	17-SEP-19	R4822268
Fluorene	0.145		0.020	ug/L	13-SEP-19	17-SEP-19	R4822268
Indeno(1,2,3-cd)pyrene	<0.010		0.010	ug/L	13-SEP-19	17-SEP-19	R4822268
Naphthalene	1.82		0.050	ug/L	13-SEP-19	17-SEP-19	R4822268
Phenanthrene	0.172		0.050	ug/L	13-SEP-19	17-SEP-19	R4822268
Pyrene	0.092	EMPC	0.010	ug/L	13-SEP-19	17-SEP-19	R4822268
Quinoline	0.294	EMPC	0.020	ug/L	13-SEP-19	17-SEP-19	R4822268

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ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2344325-2 LQ25-RI							
Sampled By: CLIENT on 10-SEP-19 @ 11:15							
Matrix: WATER							
Polyaromatic Hydrocarbons (PAHs)							
B(a)P Total Potency Equivalent	<0.030		0.030	ug/L	13-SEP-19	17-SEP-19	R4822268
Surrogate: Acenaphthene d10	102.2		60-130	%	13-SEP-19	17-SEP-19	R4822268
Surrogate: Acridine d9	121.7		60-130	%	13-SEP-19	17-SEP-19	R4822268
Surrogate: Chrysene d12	107.6		60-130	%	13-SEP-19	17-SEP-19	R4822268
Surrogate: Naphthalene d8	108.7		50-130	%	13-SEP-19	17-SEP-19	R4822268
Surrogate: Phenanthrene d10	121.8		60-130	%	13-SEP-19	17-SEP-19	R4822268
PCBs							
Aroclor 1016	<0.040	DLM	0.040	ug/L	13-SEP-19	13-SEP-19	R4805153
Aroclor 1221	<0.040	DLM	0.040	ug/L	13-SEP-19	13-SEP-19	R4805153
Aroclor 1232	<0.040	DLM	0.040	ug/L	13-SEP-19	13-SEP-19	R4805153
Aroclor 1242	<0.15	DLM	0.15	ug/L	13-SEP-19	13-SEP-19	R4805153
Aroclor 1248	<0.040	DLM	0.040	ug/L	13-SEP-19	13-SEP-19	R4805153
Aroclor 1254	<0.040	DLM	0.040	ug/L	13-SEP-19	13-SEP-19	R4805153
Aroclor 1260	<0.040	DLM	0.040	ug/L	13-SEP-19	13-SEP-19	R4805153
Aroclor 1262	<0.040	DLM	0.040	ug/L	13-SEP-19	13-SEP-19	R4805153
Aroclor 1268	<0.040	DLM	0.040	ug/L	13-SEP-19	13-SEP-19	R4805153
Total PCBs	<0.20	DLM	0.20	ug/L	13-SEP-19	13-SEP-19	R4805153
Surrogate: d14-Terphenyl	54.2		40-130	%	13-SEP-19	13-SEP-19	R4805153
Pesticides, Organochlorine in Water							
Aldrin	<0.080	DLM	0.080	ug/L	18-SEP-19	19-SEP-19	R4822286
gamma-hexachlorocyclohexane	<0.080	DLM	0.080	ug/L	18-SEP-19	19-SEP-19	R4822286
a-chlordane	<0.080	DLM	0.080	ug/L	18-SEP-19	19-SEP-19	R4822286
g-chlordane	<0.080	DLM	0.080	ug/L	18-SEP-19	19-SEP-19	R4822286
alpha-BHC	<0.080	DLM	0.080	ug/L	18-SEP-19	19-SEP-19	R4822286
beta-BHC	<0.080	DLM	0.080	ug/L	18-SEP-19	19-SEP-19	R4822286
delta-BHC	<0.080	DLM	0.080	ug/L	18-SEP-19	19-SEP-19	R4822286
o,p-DDD	<0.040	DLM	0.040	ug/L	18-SEP-19	19-SEP-19	R4822286
pp-DDD	<0.040	DLM	0.040	ug/L	18-SEP-19	19-SEP-19	R4822286
o,p-DDE	<0.040	DLM	0.040	ug/L	18-SEP-19	19-SEP-19	R4822286
pp-DDE	<0.040	DLM	0.040	ug/L	18-SEP-19	19-SEP-19	R4822286
op-DDT	<0.040	DLM	0.040	ug/L	18-SEP-19	19-SEP-19	R4822286
pp-DDT	<0.040	DLM	0.040	ug/L	18-SEP-19	19-SEP-19	R4822286
Dieldrin	<0.080	DLM	0.080	ug/L	18-SEP-19	19-SEP-19	R4822286
Endosulfan I	<0.070	DLM	0.070	ug/L	18-SEP-19	19-SEP-19	R4822286
Endosulfan II	<0.070	DLM	0.070	ug/L	18-SEP-19	19-SEP-19	R4822286
Endosulfan Sulfate	<0.070	DLM	0.070	ug/L	18-SEP-19	19-SEP-19	R4822286
Endrin	<0.10	DLM	0.10	ug/L	18-SEP-19	19-SEP-19	R4822286
Endrin Aldehyde	<0.10	DLM	0.10	ug/L	18-SEP-19	19-SEP-19	R4822286
Heptachlor	<0.080	DLM	0.080	ug/L	18-SEP-19	19-SEP-19	R4822286
Heptachlor Epoxide	<0.080	DLM	0.080	ug/L	18-SEP-19	19-SEP-19	R4822286
Hexachlorobenzene	<0.080	DLM	0.080	ug/L	18-SEP-19	19-SEP-19	R4822286
Hexachlorobutadiene	<0.080	DLM	0.080	ug/L	18-SEP-19	19-SEP-19	R4822286
Hexachloroethane	<0.080	DLM	0.080	ug/L	18-SEP-19	19-SEP-19	R4822286
Methoxychlor	<0.080	DLM	0.080	ug/L	18-SEP-19	19-SEP-19	R4822286
Mirex	<0.080	DLM	0.080	ug/L	18-SEP-19	19-SEP-19	R4822286
Oxychlordane	<0.080	DLM	0.080	ug/L	18-SEP-19	19-SEP-19	R4822286
Surrogate: Decachlorobiphenyl	50.5		40-130	%	18-SEP-19	19-SEP-19	R4822286
Surrogate: Tetrachloro-m-xylene	46.0		40-130	%	18-SEP-19	19-SEP-19	R4822286
Herbicides in Water							
Clopyralid	<1.0	DLM	1.0	ug/L	16-SEP-19	17-SEP-19	R4813269
Dicamba	<2.3	DLM	2.3	ug/L	16-SEP-19	17-SEP-19	R4813269
Mecoprop	136	DLHC	10	ug/L	16-SEP-19	17-SEP-19	R4813269

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ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2344325-2 LQ25-RI							
Sampled By: CLIENT on 10-SEP-19 @ 11:15							
Matrix: WATER							
Herbicides in Water							
MCPA	<1.0	DLM	1.0	ug/L	16-SEP-19	17-SEP-19	R4813269
2,4-D	<1.0	DLM	1.0	ug/L	16-SEP-19	17-SEP-19	R4813269
Bromoxynil	<1.0	DLM	1.0	ug/L	16-SEP-19	17-SEP-19	R4813269
Triclopyr	<1.0	DLM	1.0	ug/L	16-SEP-19	17-SEP-19	R4813269
2,4,5-T	<1.0	DLM	1.0	ug/L	16-SEP-19	17-SEP-19	R4813269
2,4,5-TP	<1.0	DLM	1.0	ug/L	16-SEP-19	17-SEP-19	R4813269
Picloram	<58	DLM	58	ug/L	16-SEP-19	17-SEP-19	R4813269
2,4-DB	<1.0	DLM	1.0	ug/L	16-SEP-19	17-SEP-19	R4813269
2,4-DP	<1.0	DLM	1.0	ug/L	16-SEP-19	17-SEP-19	R4813269
Dinoseb	<1.0	DLM	1.0	ug/L	16-SEP-19	17-SEP-19	R4813269
MCPB	<1.0	DLM	1.0	ug/L	16-SEP-19	17-SEP-19	R4813269
Surrogate: 2,4-Dichlorophenylacetic Acid	69.6		50-130	%	16-SEP-19	17-SEP-19	R4813269
Miscellaneous Pesticides							
Alachlor	<0.10		0.10	ug/L	12-SEP-19	13-SEP-19	R4809881
Ametryn	<0.10		0.10	ug/L	12-SEP-19	13-SEP-19	R4809881
Atrazine	<0.10		0.10	ug/L	12-SEP-19	13-SEP-19	R4809881
Atrazine Desethyl	<0.10		0.10	ug/L	12-SEP-19	13-SEP-19	R4809881
Azinphos-methyl	<1.3	DLM	1.3	ug/L	12-SEP-19	13-SEP-19	R4809881
Bendiocarb	<20	DLM	20	ug/L	12-SEP-19	13-SEP-19	R4809881
Carbaryl	<1.3	DLM	1.3	ug/L	12-SEP-19	13-SEP-19	R4809881
Carbofuran	<0.50		0.50	ug/L	12-SEP-19	13-SEP-19	R4809881
Chlorpyrifos	<0.10		0.10	ug/L	12-SEP-19	13-SEP-19	R4809881
Cyanazine	<0.20	DLM	0.20	ug/L	12-SEP-19	13-SEP-19	R4809881
Diazinon	<0.10		0.10	ug/L	12-SEP-19	13-SEP-19	R4809881
Diclofop-methyl	<0.10		0.10	ug/L	12-SEP-19	13-SEP-19	R4809881
Dimethoate	0.29	DLM	0.10	ug/L	12-SEP-19	13-SEP-19	R4809881
Malathion	<0.10		0.10	ug/L	12-SEP-19	13-SEP-19	R4809881
Methyl Parathion	<0.10		0.10	ug/L	12-SEP-19	13-SEP-19	R4809881
Metolachlor	<0.10		0.10	ug/L	12-SEP-19	13-SEP-19	R4809881
Metribuzin	<1.0		1.0	ug/L	12-SEP-19	13-SEP-19	R4809881
Parathion	<0.10		0.10	ug/L	12-SEP-19	13-SEP-19	R4809881
Phorate	<0.65	DLM	0.65	ug/L	12-SEP-19	13-SEP-19	R4809881
Prometon	<0.10		0.10	ug/L	12-SEP-19	13-SEP-19	R4809881
Prometryne	<0.10		0.10	ug/L	12-SEP-19	13-SEP-19	R4809881
Propazine	<0.10		0.10	ug/L	12-SEP-19	13-SEP-19	R4809881
Simazine	<0.10		0.10	ug/L	12-SEP-19	13-SEP-19	R4809881
Temephos	<1.0		1.0	ug/L	12-SEP-19	13-SEP-19	R4809881
Terbufos	<0.10		0.10	ug/L	12-SEP-19	13-SEP-19	R4809881
Terbutryn	<0.10		0.10	ug/L	12-SEP-19	13-SEP-19	R4809881
Triallate	<0.10		0.10	ug/L	12-SEP-19	13-SEP-19	R4809881
Trifluralin	<0.10		0.10	ug/L	12-SEP-19	13-SEP-19	R4809881
Atrazine+N-Dealkylated Metabolites	<0.20		0.20	ug/L	12-SEP-19	13-SEP-19	R4809881
Surrogate: 2-Fluorobiphenyl	63.7		40-130	%	12-SEP-19	13-SEP-19	R4809881
Surrogate: d14-Terphenyl	41.2		40-130	%	12-SEP-19	13-SEP-19	R4809881
Miscellaneous Pesticides							
Diazinon	<0.10		0.10	ug/L	12-SEP-19	13-SEP-19	R4809881
Surrogate: 2-Fluorobiphenyl	63.7		40-130	%	12-SEP-19	13-SEP-19	R4809881
Surrogate: d14-Terphenyl	41.2		40-130	%	12-SEP-19	13-SEP-19	R4809881
4,4'-Methylenebis(2-chloroaniline)							
4,4'-Methylenebis(2-chloroaniline)	<0.50		0.50	ug/L	12-SEP-19	16-SEP-19	R4808909
Surrogate: p-Terphenyl d14	51.0		40-130	%	12-SEP-19	16-SEP-19	R4808909
VOC plus F1 to F4							

* 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
L2344325-2 LQ25-RI							
Sampled By: CLIENT on 10-SEP-19 @ 11:15							
Matrix: WATER							
CCME PHC F2-F4 in Water							
F2 (C10-C16)	1870		100	ug/L	12-SEP-19	12-SEP-19	R4800048
F3 (C16-C34)	1220		250	ug/L	12-SEP-19	12-SEP-19	R4800048
F4 (C34-C50)	<250		250	ug/L	12-SEP-19	12-SEP-19	R4800048
Surrogate: 2-Bromobenzotrifluoride	95.3		60-140	%	12-SEP-19	12-SEP-19	R4800048
CCME Total Hydrocarbons							
F1-BTEX	120		100	ug/L		26-SEP-19	
F2-Naphth	1870		100	ug/L		26-SEP-19	
F3-PAH	1220		250	ug/L		26-SEP-19	
Total Hydrocarbons (C6-C50)	3380		380	ug/L		26-SEP-19	
Sum of Xylene Isomer Concentrations							
Xylenes (Total)	46.7		0.64	ug/L		26-SEP-19	
Total Trihalomethanes (THMs)							
Total THMs	<1.3		1.3	ug/L		26-SEP-19	
VOC plus F1 by GCMS							
Acetone	5760	DLHC	250	ug/L		12-SEP-19	R4800829
Benzene	6.09		0.50	ug/L		12-SEP-19	R4800829
Bromobenzene	<1.0		1.0	ug/L		12-SEP-19	R4800829
Bromochloromethane	<1.0		1.0	ug/L		12-SEP-19	R4800829
Bromodichloromethane	<0.50		0.50	ug/L		12-SEP-19	R4800829
Bromoform	<1.0		1.0	ug/L		12-SEP-19	R4800829
Bromomethane	<1.0		1.0	ug/L		12-SEP-19	R4800829
n-Butylbenzene	<1.0		1.0	ug/L		12-SEP-19	R4800829
sec-Butylbenzene	52.2		1.0	ug/L		12-SEP-19	R4800829
tert-Butylbenzene	<1.0		1.0	ug/L		12-SEP-19	R4800829
Carbon disulfide	<5.0		5.0	ug/L		12-SEP-19	R4800829
Carbon Tetrachloride	<0.50		0.50	ug/L		12-SEP-19	R4800829
Chlorobenzene	<1.0		1.0	ug/L		12-SEP-19	R4800829
Chloroethane	<1.0		1.0	ug/L		12-SEP-19	R4800829
Chloroform	<0.50		0.50	ug/L		12-SEP-19	R4800829
Chloromethane	<5.0		5.0	ug/L		12-SEP-19	R4800829
2-Chlorotoluene	<20		20	ug/L		12-SEP-19	R4800829
4-Chlorotoluene	<1.0		1.0	ug/L		12-SEP-19	R4800829
Dibromochloromethane	<0.50		0.50	ug/L		12-SEP-19	R4800829
1,2-Dibromo-3-chloropropane	<1.0		1.0	ug/L		12-SEP-19	R4800829
1,2-Dibromoethane	<1.0		1.0	ug/L		12-SEP-19	R4800829
Dibromomethane	<1.0		1.0	ug/L		12-SEP-19	R4800829
1,2-Dichlorobenzene	<0.50		0.50	ug/L		12-SEP-19	R4800829
1,3-Dichlorobenzene	<1.0		1.0	ug/L		12-SEP-19	R4800829
1,4-Dichlorobenzene	1.6		1.0	ug/L		12-SEP-19	R4800829
Dichlorodifluoromethane	<1.0		1.0	ug/L		12-SEP-19	R4800829
1,1-dichloroethane	<0.50		0.50	ug/L		12-SEP-19	R4800829
1,2-Dichloroethane	1.69		0.50	ug/L		12-SEP-19	R4800829
1,1-dichloroethene	<0.50		0.50	ug/L		12-SEP-19	R4800829
cis-1,2-Dichloroethene	1.0		1.0	ug/L		12-SEP-19	R4800829
trans-1,2-Dichloroethene	<1.0		1.0	ug/L		12-SEP-19	R4800829
Dichloromethane	<5.0		5.0	ug/L		12-SEP-19	R4800829
1,2-Dichloropropane	<1.0		1.0	ug/L		12-SEP-19	R4800829
1,3-Dichloropropane	<1.0		1.0	ug/L		12-SEP-19	R4800829
2,2-Dichloropropane	<15	DLCI	15	ug/L		12-SEP-19	R4800829
1,1-Dichloropropene	<1.0		1.0	ug/L		12-SEP-19	R4800829
cis-1,3-Dichloropropene	<1.0		1.0	ug/L		12-SEP-19	R4800829
trans-1,3-Dichloropropene	<1.0		1.0	ug/L		12-SEP-19	R4800829

* 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
L2344325-2 LQ25-RI							
Sampled By: CLIENT on 10-SEP-19 @ 11:15							
Matrix: WATER							
VOC plus F1 by GCMS							
Ethylbenzene	19.8		0.50	ug/L		12-SEP-19	R4800829
F1	290		100	ug/L		12-SEP-19	R4800829
Hexachlorobutadiene	<1.0		1.0	ug/L		12-SEP-19	R4800829
Hexane	<1.0		1.0	ug/L		12-SEP-19	R4800829
2-Hexanone (Methyl butyl ketone)	<20		20	ug/L		12-SEP-19	R4800829
Isopropylbenzene	<1.0		1.0	ug/L		12-SEP-19	R4800829
4-Isopropyltoluene	52.6		1.0	ug/L		12-SEP-19	R4800829
MEK	8100	DLHC	100	ug/L		12-SEP-19	R4800829
MIBK	88		20	ug/L		12-SEP-19	R4800829
MTBE	1.57		0.50	ug/L		12-SEP-19	R4800829
Styrene	<1.0		1.0	ug/L		12-SEP-19	R4800829
1,1,1,2-Tetrachloroethane	<0.50		0.50	ug/L		12-SEP-19	R4800829
1,1,2,2-Tetrachloroethane	<0.50		0.50	ug/L		12-SEP-19	R4800829
Tetrachloroethene	<0.50		0.50	ug/L		12-SEP-19	R4800829
Toluene	100		0.50	ug/L		12-SEP-19	R4800829
1,2,3-Trichlorobenzene	<1.0		1.0	ug/L		12-SEP-19	R4800829
1,2,4-Trichlorobenzene	<1.0		1.0	ug/L		12-SEP-19	R4800829
1,1,1-Trichloroethane	<0.50		0.50	ug/L		12-SEP-19	R4800829
1,1,2-Trichloroethane	<0.50		0.50	ug/L		12-SEP-19	R4800829
Trichloroethene	<0.50		0.50	ug/L		12-SEP-19	R4800829
Trichlorofluoromethane	<1.0		1.0	ug/L		12-SEP-19	R4800829
1,2,3-Trichloropropane	<1.0		1.0	ug/L		12-SEP-19	R4800829
1,2,4-Trimethylbenzene	5.5		1.0	ug/L		12-SEP-19	R4800829
1,3,5-Trimethylbenzene	1.5		1.0	ug/L		12-SEP-19	R4800829
Vinyl Chloride	0.95		0.50	ug/L		12-SEP-19	R4800829
m+p-Xylenes	32.4		0.40	ug/L		12-SEP-19	R4800829
o-Xylene	14.3		0.50	ug/L		12-SEP-19	R4800829
Surrogate: 4-Bromofluorobenzene (SS)	93.1		70-130	%		12-SEP-19	R4800829
Surrogate: 1,4-Difluorobenzene (SS)	101.7		70-130	%		12-SEP-19	R4800829
L2344325-3 LQ25-MH46							
Sampled By: CLIENT on 10-SEP-19 @ 12:15							
Matrix: WATER							
Alkalinity species as HCO3, CO3, OH							
Alkalinity, Bicarbonate							
Bicarbonate (HCO3)	7350000		1200	ug/L		16-SEP-19	
Alkalinity, Carbonate							
Carbonate (CO3)	<600		600	ug/L		16-SEP-19	
Alkalinity, Hydroxide							
Hydroxide (OH)	<340		340	ug/L		16-SEP-19	
Alkalinity, Total (as CaCO3)							
Alkalinity, Total (as CaCO3)	6020000		1000	ug/L		13-SEP-19	R4809090
Dissolved Carbons							
Dissolved Inorganic Carbon by Combustion							
Dissolved Inorganic Carbon	406000		5000	ug/L		16-SEP-19	R4819173
Dissolved Organic Carbon by Combustion							
Dissolved Organic Carbon	5910000		100000	ug/L		13-SEP-19	R4809441
Total Dissolved Carbon by Calculation							
Total Dissolved Carbon	6310000		100000	ug/L		18-SEP-19	
Miscellaneous Parameters							
Ammonia, Total (as N)	727000		50000	ug/L		12-SEP-19	R4806402
Chloride (Cl)	1050000		25000	ug/L		11-SEP-19	R4804616

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ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2344325-3 LQ25-MH46							
Sampled By: CLIENT on 10-SEP-19 @ 12:15							
Matrix: WATER							
Chromium, Hexavalent	<10	DLM	10	ug/L		13-SEP-19	R4808850
Cyanide, Total	9.0	HTP	1.0	ug/L		21-SEP-19	R4831509
Mercury (Hg)-Total	0.0180		0.0050	ug/L	19-SEP-19	19-SEP-19	R4827412
Oil and Grease	192000		5000	ug/L		18-SEP-19	R4818408
Phenols (4AAP)	3020	DLM	100	ug/L		16-SEP-19	R4810490
Sample Comment	Control failure. FC not reported.					12-SEP-19	
Sulfate (SO4)	48000		15000	ug/L		11-SEP-19	R4804616
Total and E. coli to endpoint by QT97							
Total Coliforms	199000		1	MPN/100mL		10-SEP-19	R4797309
Escherichia Coli	5610		1	MPN/100mL		10-SEP-19	R4797309
Total Metals in Water by CRC ICPMS							
Aluminum (Al)-Total	731	DLM	30	ug/L	18-SEP-19	18-SEP-19	R4823808
Antimony (Sb)-Total	13.8	DLM	1.0	ug/L	18-SEP-19	18-SEP-19	R4823808
Arsenic (As)-Total	33.0	DLM	1.0	ug/L	18-SEP-19	18-SEP-19	R4823808
Barium (Ba)-Total	235	DLM	1.0	ug/L	18-SEP-19	18-SEP-19	R4823808
Beryllium (Be)-Total	<1.0	DLM	1.0	ug/L	18-SEP-19	18-SEP-19	R4823808
Bismuth (Bi)-Total	<0.50	DLM	0.50	ug/L	18-SEP-19	18-SEP-19	R4823808
Cadmium (Cd)-Total	0.612	DLM	0.050	ug/L	18-SEP-19	18-SEP-19	R4823808
Calcium (Ca)-Total	1160000	DLM	500	ug/L	18-SEP-19	18-SEP-19	R4823808
Cesium (Cs)-Total	0.97	DLM	0.10	ug/L	18-SEP-19	18-SEP-19	R4823808
Chromium (Cr)-Total	183	DLM	1.0	ug/L	18-SEP-19	18-SEP-19	R4823808
Cobalt (Co)-Total	36.2	DLM	1.0	ug/L	18-SEP-19	18-SEP-19	R4823808
Copper (Cu)-Total	9.5	DLM	5.0	ug/L	18-SEP-19	18-SEP-19	R4823808
Iron (Fe)-Total	24300	DLM	100	ug/L	18-SEP-19	18-SEP-19	R4823808
Lead (Pb)-Total	6.05	DLM	0.50	ug/L	18-SEP-19	18-SEP-19	R4823808
Lithium (Li)-Total	366	DLM	10	ug/L	18-SEP-19	18-SEP-19	R4823808
Magnesium (Mg)-Total	444000	DLM	50	ug/L	18-SEP-19	18-SEP-19	R4823808
Manganese (Mn)-Total	7220	DLM	1.0	ug/L	18-SEP-19	18-SEP-19	R4823808
Molybdenum (Mo)-Total	6.01	DLM	0.50	ug/L	18-SEP-19	18-SEP-19	R4823808
Nickel (Ni)-Total	296	DLM	5.0	ug/L	18-SEP-19	18-SEP-19	R4823808
Potassium (K)-Total	487000	DLM	500	ug/L	18-SEP-19	18-SEP-19	R4823808
Phosphorus (P)-Total	39000	DLM	300	ug/L	18-SEP-19	18-SEP-19	R4823808
Rubidium (Rb)-Total	215	DLM	2.0	ug/L	18-SEP-19	18-SEP-19	R4823808
Selenium (Se)-Total	2.44	DLM	0.50	ug/L	18-SEP-19	18-SEP-19	R4823808
Silicon (Si)-Total	31500	DLM	1000	ug/L	18-SEP-19	18-SEP-19	R4823808
Silver (Ag)-Total	<0.10	DLM	0.10	ug/L	18-SEP-19	18-SEP-19	R4823808
Sodium (Na)-Total	1230000	DLM	500	ug/L	18-SEP-19	18-SEP-19	R4823808
Strontium (Sr)-Total	4810	DLM	2.0	ug/L	18-SEP-19	18-SEP-19	R4823808
Sulfur (S)-Total	62600	DLM	5000	ug/L	18-SEP-19	18-SEP-19	R4823808
Tellurium (Te)-Total	<2.0	DLM	2.0	ug/L	18-SEP-19	18-SEP-19	R4823808
Thallium (Tl)-Total	<0.10	DLM	0.10	ug/L	18-SEP-19	18-SEP-19	R4823808
Thorium (Th)-Total	<1.0	DLM	1.0	ug/L	18-SEP-19	18-SEP-19	R4823808
Tin (Sn)-Total	9.7	DLM	1.0	ug/L	18-SEP-19	18-SEP-19	R4823808
Titanium (Ti)-Total	65.9	DLM	3.0	ug/L	18-SEP-19	18-SEP-19	R4823808
Tungsten (W)-Total	3.1	DLM	1.0	ug/L	18-SEP-19	18-SEP-19	R4823808
Uranium (U)-Total	0.42	DLM	0.10	ug/L	18-SEP-19	18-SEP-19	R4823808
Vanadium (V)-Total	34.1	DLM	5.0	ug/L	18-SEP-19	18-SEP-19	R4823808
Zinc (Zn)-Total	964	DLM	30	ug/L	18-SEP-19	18-SEP-19	R4823808
Zirconium (Zr)-Total	12.2	DLM	2.0	ug/L	18-SEP-19	18-SEP-19	R4823808
Dissolved Metals in Water by CRC ICPMS							
Dissolved Metals Filtration Location	LAB					16-SEP-19	R4810969

* 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
L2344325-3 LQ25-MH46							
Sampled By: CLIENT on 10-SEP-19 @ 12:15							
Matrix: WATER							
Dissolved Metals in Water by CRC ICPMS							
Aluminum (Al)-Dissolved	60.5		1.0	ug/L	16-SEP-19	18-SEP-19	R4823808
Antimony (Sb)-Dissolved	12.7		0.10	ug/L	16-SEP-19	18-SEP-19	R4823808
Arsenic (As)-Dissolved	34.8		0.10	ug/L	16-SEP-19	23-SEP-19	R4838508
Barium (Ba)-Dissolved	55.2		0.10	ug/L	16-SEP-19	18-SEP-19	R4823808
Beryllium (Be)-Dissolved	0.26		0.10	ug/L	16-SEP-19	18-SEP-19	R4823808
Bismuth (Bi)-Dissolved	<0.050		0.050	ug/L	16-SEP-19	18-SEP-19	R4823808
Boron (B)-Dissolved	7310		10	ug/L	16-SEP-19	23-SEP-19	R4838508
Cadmium (Cd)-Dissolved	0.0097		0.0050	ug/L	16-SEP-19	18-SEP-19	R4823808
Calcium (Ca)-Dissolved	1220000		50	ug/L	16-SEP-19	23-SEP-19	R4838508
Cesium (Cs)-Dissolved	1.16		0.010	ug/L	16-SEP-19	18-SEP-19	R4823808
Chromium (Cr)-Dissolved	113		0.10	ug/L	16-SEP-19	18-SEP-19	R4823808
Cobalt (Co)-Dissolved	27.5		0.10	ug/L	16-SEP-19	18-SEP-19	R4823808
Copper (Cu)-Dissolved	0.73		0.20	ug/L	16-SEP-19	18-SEP-19	R4823808
Iron (Fe)-Dissolved	1490		10	ug/L	16-SEP-19	18-SEP-19	R4823808
Lead (Pb)-Dissolved	<0.050		0.050	ug/L	16-SEP-19	18-SEP-19	R4823808
Lithium (Li)-Dissolved	334		1.0	ug/L	16-SEP-19	23-SEP-19	R4838508
Magnesium (Mg)-Dissolved	459000		5.0	ug/L	16-SEP-19	18-SEP-19	R4823808
Manganese (Mn)-Dissolved	7590		0.10	ug/L	16-SEP-19	23-SEP-19	R4838508
Molybdenum (Mo)-Dissolved	3.58		0.050	ug/L	16-SEP-19	18-SEP-19	R4823808
Nickel (Ni)-Dissolved	265		0.50	ug/L	16-SEP-19	18-SEP-19	R4823808
Phosphorus (P)-Dissolved	40300		30	ug/L	16-SEP-19	18-SEP-19	R4823808
Potassium (K)-Dissolved	569000		50	ug/L	16-SEP-19	23-SEP-19	R4838508
Rubidium (Rb)-Dissolved	230		0.20	ug/L	16-SEP-19	18-SEP-19	R4823808
Selenium (Se)-Dissolved	2.46		0.050	ug/L	16-SEP-19	30-SEP-19	R4854708
Silicon (Si)-Dissolved	37000		50	ug/L	16-SEP-19	18-SEP-19	R4823808
Silver (Ag)-Dissolved	0.015		0.010	ug/L	16-SEP-19	18-SEP-19	R4823808
Sodium (Na)-Dissolved	1320000		50	ug/L	16-SEP-19	23-SEP-19	R4838508
Strontium (Sr)-Dissolved	5000		0.10	ug/L	16-SEP-19	23-SEP-19	R4838508
Sulfur (S)-Dissolved	62300		500	ug/L	16-SEP-19	18-SEP-19	R4823808
Tellurium (Te)-Dissolved	0.45		0.20	ug/L	16-SEP-19	18-SEP-19	R4823808
Thallium (Tl)-Dissolved	<0.010		0.010	ug/L	16-SEP-19	18-SEP-19	R4823808
Thorium (Th)-Dissolved	<0.10		0.10	ug/L	16-SEP-19	18-SEP-19	R4823808
Tin (Sn)-Dissolved	2.23		0.10	ug/L	16-SEP-19	18-SEP-19	R4823808
Titanium (Ti)-Dissolved	14.1		0.30	ug/L	16-SEP-19	18-SEP-19	R4823808
Tungsten (W)-Dissolved	4.00		0.10	ug/L	16-SEP-19	18-SEP-19	R4823808
Uranium (U)-Dissolved	0.10		0.010	ug/L	16-SEP-19	18-SEP-19	R4823808
Vanadium (V)-Dissolved	29.3		0.50	ug/L	16-SEP-19	18-SEP-19	R4823808
Zinc (Zn)-Dissolved	8.0		1.0	ug/L	16-SEP-19	18-SEP-19	R4823808
Zirconium (Zr)-Dissolved	6.89		0.20	ug/L	16-SEP-19	18-SEP-19	R4823808
Mercury Dissolved							
Dissolved Mercury Filtration Location	LAB					19-SEP-19	R4826797
Mercury (Hg)-Dissolved	<0.0050		0.0050	ug/L	19-SEP-19	19-SEP-19	R4827450
Benzo(a)pyrene							
Benzo(a)pyrene	<0.025	DLM	0.025	ug/L	12-SEP-19	13-SEP-19	R4972499
Surrogate: d14-Terphenyl	40.1		40-130	%	12-SEP-19	13-SEP-19	R4972499
Polyaromatic Hydrocarbons (PAHs)							
1-Methyl Naphthalene	0.263		0.020	ug/L	13-SEP-19	17-SEP-19	R4822268
2-Methyl Naphthalene	0.357		0.020	ug/L	13-SEP-19	17-SEP-19	R4822268
Acenaphthene	0.175		0.020	ug/L	13-SEP-19	17-SEP-19	R4822268
Acenaphthylene	<0.020		0.020	ug/L	13-SEP-19	17-SEP-19	R4822268
Anthracene	0.048	EMPC	0.010	ug/L	13-SEP-19	17-SEP-19	R4822268
Acridine	0.356		0.020	ug/L	13-SEP-19	17-SEP-19	R4822268

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ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2344325-3 LQ25-MH46							
Sampled By: CLIENT on 10-SEP-19 @ 12:15							
Matrix: WATER							
Polyaromatic Hydrocarbons (PAHs)							
Benzo(a)anthracene	0.027		0.010	ug/L	13-SEP-19	17-SEP-19	R4822268
Benzo(a)pyrene	<0.0050		0.0050	ug/L	13-SEP-19	17-SEP-19	R4822268
Benzo(b&j)fluoranthene	<0.010		0.010	ug/L	13-SEP-19	17-SEP-19	R4822268
Benzo(g,h,i)perylene	<0.020		0.020	ug/L	13-SEP-19	17-SEP-19	R4822268
Benzo(k)fluoranthene	<0.010		0.010	ug/L	13-SEP-19	17-SEP-19	R4822268
Chrysene	0.029		0.020	ug/L	13-SEP-19	17-SEP-19	R4822268
Dibenzo(a,h)anthracene	<0.0050		0.0050	ug/L	13-SEP-19	17-SEP-19	R4822268
Fluoranthene	0.039		0.020	ug/L	13-SEP-19	17-SEP-19	R4822268
Fluorene	0.122		0.020	ug/L	13-SEP-19	17-SEP-19	R4822268
Indeno(1,2,3-cd)pyrene	<0.010		0.010	ug/L	13-SEP-19	17-SEP-19	R4822268
Naphthalene	1.37		0.050	ug/L	13-SEP-19	17-SEP-19	R4822268
Phenanthrene	0.235		0.050	ug/L	13-SEP-19	17-SEP-19	R4822268
Pyrene	0.080	EMPC	0.010	ug/L	13-SEP-19	17-SEP-19	R4822268
Quinoline	0.188		0.020	ug/L	13-SEP-19	17-SEP-19	R4822268
B(a)P Total Potency Equivalent	<0.030		0.030	ug/L	13-SEP-19	17-SEP-19	R4822268
Surrogate: Acenaphthene d10	92.1		60-130	%	13-SEP-19	17-SEP-19	R4822268
Surrogate: Acridine d9	121.1		60-130	%	13-SEP-19	17-SEP-19	R4822268
Surrogate: Chrysene d12	123.5		60-130	%	13-SEP-19	17-SEP-19	R4822268
Surrogate: Naphthalene d8	104.6		50-130	%	13-SEP-19	17-SEP-19	R4822268
Surrogate: Phenanthrene d10	109.5		60-130	%	13-SEP-19	17-SEP-19	R4822268
PCBs							
Aroclor 1016	<0.040	DLM	0.040	ug/L	13-SEP-19	13-SEP-19	R4805153
Aroclor 1221	<0.040	DLM	0.040	ug/L	13-SEP-19	13-SEP-19	R4805153
Aroclor 1232	<0.040	DLM	0.040	ug/L	13-SEP-19	13-SEP-19	R4805153
Aroclor 1242	<0.42	DLM	0.42	ug/L	13-SEP-19	13-SEP-19	R4805153
Aroclor 1248	<0.040	DLM	0.040	ug/L	13-SEP-19	13-SEP-19	R4805153
Aroclor 1254	<0.040	DLM	0.040	ug/L	13-SEP-19	13-SEP-19	R4805153
Aroclor 1260	<0.040	DLM	0.040	ug/L	13-SEP-19	13-SEP-19	R4805153
Aroclor 1262	<0.040	DLM	0.040	ug/L	13-SEP-19	13-SEP-19	R4805153
Aroclor 1268	<0.040	DLM	0.040	ug/L	13-SEP-19	13-SEP-19	R4805153
Total PCBs	<0.44	DLM	0.44	ug/L	13-SEP-19	13-SEP-19	R4805153
Surrogate: d14-Terphenyl	50.8		40-130	%	13-SEP-19	13-SEP-19	R4805153
Pesticides, Organochlorine in Water							
Aldrin	<0.40	DLM	0.40	ug/L	18-SEP-19	19-SEP-19	R4822286
gamma-hexachlorocyclohexane	<0.40	DLM	0.40	ug/L	18-SEP-19	19-SEP-19	R4822286
a-chlordane	<0.40	DLM	0.40	ug/L	18-SEP-19	19-SEP-19	R4822286
g-chlordane	<0.40	DLM	0.40	ug/L	18-SEP-19	19-SEP-19	R4822286
alpha-BHC	<0.40	DLM	0.40	ug/L	18-SEP-19	19-SEP-19	R4822286
beta-BHC	<0.40	DLM	0.40	ug/L	18-SEP-19	19-SEP-19	R4822286
delta-BHC	<0.40	DLM	0.40	ug/L	18-SEP-19	19-SEP-19	R4822286
o,p-DDD	<0.20	DLM	0.20	ug/L	18-SEP-19	19-SEP-19	R4822286
pp-DDD	<0.20	DLM	0.20	ug/L	18-SEP-19	19-SEP-19	R4822286
o,p-DDE	<0.20	DLM	0.20	ug/L	18-SEP-19	19-SEP-19	R4822286
pp-DDE	<0.20	DLM	0.20	ug/L	18-SEP-19	19-SEP-19	R4822286
op-DDT	<0.20	DLM	0.20	ug/L	18-SEP-19	19-SEP-19	R4822286
pp-DDT	<0.20	DLM	0.20	ug/L	18-SEP-19	19-SEP-19	R4822286
Dieldrin	<0.40	DLM	0.40	ug/L	18-SEP-19	19-SEP-19	R4822286
Endosulfan I	<0.35	DLM	0.35	ug/L	18-SEP-19	19-SEP-19	R4822286
Endosulfan II	<0.35	DLM	0.35	ug/L	18-SEP-19	19-SEP-19	R4822286
Endosulfan Sulfate	<0.35	DLM	0.35	ug/L	18-SEP-19	19-SEP-19	R4822286
Endrin	<0.50	DLM	0.50	ug/L	18-SEP-19	19-SEP-19	R4822286

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ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2344325-3 LQ25-MH46							
Sampled By: CLIENT on 10-SEP-19 @ 12:15							
Matrix: WATER							
Pesticides, Organochlorine in Water							
Endrin Aldehyde	<0.50	DLM	0.50	ug/L	18-SEP-19	19-SEP-19	R4822286
Heptachlor	<0.40	DLM	0.40	ug/L	18-SEP-19	19-SEP-19	R4822286
Heptachlor Epoxide	<0.40	DLM	0.40	ug/L	18-SEP-19	19-SEP-19	R4822286
Hexachlorobenzene	<0.40	DLM	0.40	ug/L	18-SEP-19	19-SEP-19	R4822286
Hexachlorobutadiene	<0.40	DLM	0.40	ug/L	18-SEP-19	19-SEP-19	R4822286
Hexachloroethane	<0.40	DLM	0.40	ug/L	18-SEP-19	19-SEP-19	R4822286
Methoxychlor	<0.40	DLM	0.40	ug/L	18-SEP-19	19-SEP-19	R4822286
Mirex	<0.40	DLM	0.40	ug/L	18-SEP-19	19-SEP-19	R4822286
Oxychlorodane	<0.40	DLM	0.40	ug/L	18-SEP-19	19-SEP-19	R4822286
Surrogate: Decachlorobiphenyl	19.8	RRR	40-130	%	18-SEP-19	19-SEP-19	R4822286
Surrogate: Tetrachloro-m-xylene	61.9		40-130	%	18-SEP-19	19-SEP-19	R4822286
Note: RRR: Surrogate recovery below ALS DQO. Detection limits have been adjusted.							
Herbicides in Water							
Clopyralid	<1.0	DLM	1.0	ug/L	16-SEP-19	17-SEP-19	R4813269
Dicamba	7.3	DLM	1.0	ug/L	16-SEP-19	17-SEP-19	R4813269
Mecoprop	91	DLHC	10	ug/L	16-SEP-19	17-SEP-19	R4813269
MCPA	<1.0	DLM	1.0	ug/L	16-SEP-19	17-SEP-19	R4813269
2,4-D	6.0	DLM	1.0	ug/L	16-SEP-19	17-SEP-19	R4813269
Bromoxynil	<1.0	DLM	1.0	ug/L	16-SEP-19	17-SEP-19	R4813269
Triclopyr	<1.0	DLM	1.0	ug/L	16-SEP-19	17-SEP-19	R4813269
2,4,5-T	<1.0	DLM	1.0	ug/L	16-SEP-19	17-SEP-19	R4813269
2,4,5-TP	<1.0	DLM	1.0	ug/L	16-SEP-19	17-SEP-19	R4813269
Picloram	<22	DLM	22	ug/L	16-SEP-19	17-SEP-19	R4813269
2,4-DB	<1.0	DLM	1.0	ug/L	16-SEP-19	17-SEP-19	R4813269
2,4-DP	<1.0	DLM	1.0	ug/L	16-SEP-19	17-SEP-19	R4813269
Dinoseb	<1.0	DLM	1.0	ug/L	16-SEP-19	17-SEP-19	R4813269
MCPB	<1.0	DLM	1.0	ug/L	16-SEP-19	17-SEP-19	R4813269
Surrogate: 2,4-Dichlorophenylacetic Acid	88.2		50-130	%	16-SEP-19	17-SEP-19	R4813269
Miscellaneous Pesticides							
Alachlor	<0.10		0.10	ug/L	12-SEP-19	13-SEP-19	R4809881
Ametryn	<0.10		0.10	ug/L	12-SEP-19	13-SEP-19	R4809881
Atrazine	<0.10		0.10	ug/L	12-SEP-19	13-SEP-19	R4809881
Atrazine Desethyl	<0.10		0.10	ug/L	12-SEP-19	13-SEP-19	R4809881
Azinphos-methyl	<1.2	DLM	1.2	ug/L	12-SEP-19	13-SEP-19	R4809881
Bendiocarb	<41	DLM	41	ug/L	12-SEP-19	13-SEP-19	R4809881
Carbaryl	<1.8	DLM	1.8	ug/L	12-SEP-19	13-SEP-19	R4809881
Carbofuran	<1.4	DLM	1.4	ug/L	12-SEP-19	13-SEP-19	R4809881
Chlorpyrifos	<0.10		0.10	ug/L	12-SEP-19	13-SEP-19	R4809881
Cyanazine	<0.10		0.10	ug/L	12-SEP-19	13-SEP-19	R4809881
Diazinon	<0.35	DLM	0.35	ug/L	12-SEP-19	13-SEP-19	R4809881
Diclofop-methyl	<0.10		0.10	ug/L	12-SEP-19	13-SEP-19	R4809881
Dimethoate	<0.10		0.10	ug/L	12-SEP-19	13-SEP-19	R4809881
Malathion	<0.10		0.10	ug/L	12-SEP-19	13-SEP-19	R4809881
Methyl Parathion	<0.10		0.10	ug/L	12-SEP-19	13-SEP-19	R4809881
Metolachlor	<0.10		0.10	ug/L	12-SEP-19	13-SEP-19	R4809881
Metribuzin	<1.0		1.0	ug/L	12-SEP-19	13-SEP-19	R4809881
Parathion	<0.10		0.10	ug/L	12-SEP-19	13-SEP-19	R4809881
Phorate	<0.10		0.10	ug/L	12-SEP-19	13-SEP-19	R4809881
Prometon	<0.10		0.10	ug/L	12-SEP-19	13-SEP-19	R4809881
Prometryne	<0.10		0.10	ug/L	12-SEP-19	13-SEP-19	R4809881
Propazine	<0.10		0.10	ug/L	12-SEP-19	13-SEP-19	R4809881

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ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2344325-3 LQ25-MH46							
Sampled By: CLIENT on 10-SEP-19 @ 12:15							
Matrix: WATER							
Miscellaneous Pesticides							
Simazine	<0.10		0.10	ug/L	12-SEP-19	13-SEP-19	R4809881
Temephos	<1.0		1.0	ug/L	12-SEP-19	13-SEP-19	R4809881
Terbufos	<0.10		0.10	ug/L	12-SEP-19	13-SEP-19	R4809881
Terbutryn	<0.10		0.10	ug/L	12-SEP-19	13-SEP-19	R4809881
Triallate	<0.10		0.10	ug/L	12-SEP-19	13-SEP-19	R4809881
Trifluralin	<0.10		0.10	ug/L	12-SEP-19	13-SEP-19	R4809881
Atrazine+N-Dealkylated Metabolites	<0.20		0.20	ug/L	12-SEP-19	13-SEP-19	R4809881
Surrogate: 2-Fluorobiphenyl	70.8		40-130	%	12-SEP-19	13-SEP-19	R4809881
Surrogate: d14-Terphenyl	40.1		40-130	%	12-SEP-19	13-SEP-19	R4809881
Miscellaneous Pesticides							
Diazinon	<0.35	DLM	0.35	ug/L	12-SEP-19	13-SEP-19	R4809881
Surrogate: 2-Fluorobiphenyl	70.8		40-130	%	12-SEP-19	13-SEP-19	R4809881
Surrogate: d14-Terphenyl	40.1		40-130	%	12-SEP-19	13-SEP-19	R4809881
4,4'-Methylenebis(2-chloroaniline)							
4,4'-Methylenebis(2-chloroaniline)	<0.50		0.50	ug/L	12-SEP-19	16-SEP-19	R4808909
Surrogate: p-Terphenyl d14	50.1		40-130	%	12-SEP-19	16-SEP-19	R4808909
VOC plus F1 to F4							
CCME PHC F2-F4 in Water							
F2 (C10-C16)	6740		100	ug/L	12-SEP-19	12-SEP-19	R4800048
F3 (C16-C34)	2450		250	ug/L	12-SEP-19	12-SEP-19	R4800048
F4 (C34-C50)	<250		250	ug/L	12-SEP-19	12-SEP-19	R4800048
Surrogate: 2-Bromobenzotrifluoride	107.6		60-140	%	12-SEP-19	12-SEP-19	R4800048
CCME Total Hydrocarbons							
F1-BTEX	550		100	ug/L		27-SEP-19	
F2-Naphth	6740		100	ug/L		27-SEP-19	
F3-PAH	2450		250	ug/L		27-SEP-19	
Total Hydrocarbons (C6-C50)	9980		380	ug/L		27-SEP-19	
Sum of Xylene Isomer Concentrations							
Xylenes (Total)	127		0.64	ug/L		27-SEP-19	
Total Trihalomethanes (THMs)							
Total THMs	<1.3		1.3	ug/L		27-SEP-19	
VOC plus F1 by GCMS							
Acetone	9030	DLHC	250	ug/L		12-SEP-19	R4800829
Benzene	1.99		0.50	ug/L		12-SEP-19	R4800829
Bromobenzene	<1.0		1.0	ug/L		12-SEP-19	R4800829
Bromochloromethane	<1.0		1.0	ug/L		12-SEP-19	R4800829
Bromodichloromethane	<0.50		0.50	ug/L		12-SEP-19	R4800829
Bromoform	<1.0		1.0	ug/L		12-SEP-19	R4800829
Bromomethane	<1.0		1.0	ug/L		12-SEP-19	R4800829
n-Butylbenzene	<1.0		1.0	ug/L		12-SEP-19	R4800829
sec-Butylbenzene	<1.0		1.0	ug/L		12-SEP-19	R4800829
tert-Butylbenzene	<1.0		1.0	ug/L		12-SEP-19	R4800829
Carbon disulfide	19.2		5.0	ug/L		12-SEP-19	R4800829
Carbon Tetrachloride	<0.50		0.50	ug/L		12-SEP-19	R4800829
Chlorobenzene	<1.0		1.0	ug/L		12-SEP-19	R4800829
Chloroethane	2.8		1.0	ug/L		12-SEP-19	R4800829
Chloroform	<0.50		0.50	ug/L		12-SEP-19	R4800829
Chloromethane	<5.0		5.0	ug/L		12-SEP-19	R4800829
2-Chlorotoluene	<20		20	ug/L		12-SEP-19	R4800829
4-Chlorotoluene	<1.0		1.0	ug/L		12-SEP-19	R4800829
Dibromochloromethane	<0.50		0.50	ug/L		12-SEP-19	R4800829
1,2-Dibromo-3-chloropropane	<1.0		1.0	ug/L		12-SEP-19	R4800829

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ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2344325-3 LQ25-MH46							
Sampled By: CLIENT on 10-SEP-19 @ 12:15							
Matrix: WATER							
VOC plus F1 by GCMS							
1,2-Dibromoethane	<1.0		1.0	ug/L		12-SEP-19	R4800829
Dibromomethane	<1.0		1.0	ug/L		12-SEP-19	R4800829
1,2-Dichlorobenzene	<0.50		0.50	ug/L		12-SEP-19	R4800829
1,3-Dichlorobenzene	<1.0		1.0	ug/L		12-SEP-19	R4800829
1,4-Dichlorobenzene	1.3		1.0	ug/L		12-SEP-19	R4800829
Dichlorodifluoromethane	<1.0		1.0	ug/L		12-SEP-19	R4800829
1,1-dichloroethane	2.54		0.50	ug/L		12-SEP-19	R4800829
1,2-Dichloroethane	11.6		0.50	ug/L		12-SEP-19	R4800829
1,1-dichloroethene	<60	DLCI	60	ug/L		12-SEP-19	R4800829
cis-1,2-Dichloroethene	17.6		1.0	ug/L		12-SEP-19	R4800829
trans-1,2-Dichloroethene	1.1		1.0	ug/L		12-SEP-19	R4800829
Dichloromethane	126		5.0	ug/L		12-SEP-19	R4800829
1,2-Dichloropropane	<1.0		1.0	ug/L		12-SEP-19	R4800829
1,3-Dichloropropane	<1.0		1.0	ug/L		12-SEP-19	R4800829
2,2-Dichloropropane	<4.0	DLCI	4.0	ug/L		12-SEP-19	R4800829
1,1-Dichloropropene	<1.0		1.0	ug/L		12-SEP-19	R4800829
cis-1,3-Dichloropropene	<1.0		1.0	ug/L		12-SEP-19	R4800829
trans-1,3-Dichloropropene	<1.0		1.0	ug/L		12-SEP-19	R4800829
Ethylbenzene	28.0		0.50	ug/L		12-SEP-19	R4800829
F1	780		100	ug/L		12-SEP-19	R4800829
Hexachlorobutadiene	<1.0		1.0	ug/L		12-SEP-19	R4800829
Hexane	<1.0		1.0	ug/L		12-SEP-19	R4800829
2-Hexanone (Methyl butyl ketone)	137	EMPC	20	ug/L		12-SEP-19	R4800829
Isopropylbenzene	<1.0		1.0	ug/L		12-SEP-19	R4800829
4-Isopropyltoluene	7.1		1.0	ug/L		12-SEP-19	R4800829
MEK	25700	DLHC	1000	ug/L		12-SEP-19	R4800829
MIBK	301		20	ug/L		12-SEP-19	R4800829
MTBE	2.26		0.50	ug/L		12-SEP-19	R4800829
Styrene	2.5		1.0	ug/L		12-SEP-19	R4800829
1,1,1,2-Tetrachloroethane	<0.50		0.50	ug/L		12-SEP-19	R4800829
1,1,2,2-Tetrachloroethane	0.88		0.50	ug/L		12-SEP-19	R4800829
Tetrachloroethene	0.59		0.50	ug/L		12-SEP-19	R4800829
Toluene	73.3		0.50	ug/L		12-SEP-19	R4800829
1,2,3-Trichlorobenzene	<1.0		1.0	ug/L		12-SEP-19	R4800829
1,2,4-Trichlorobenzene	<1.0		1.0	ug/L		12-SEP-19	R4800829
1,1,1-Trichloroethane	<0.50		0.50	ug/L		12-SEP-19	R4800829
1,1,2-Trichloroethane	<0.50		0.50	ug/L		12-SEP-19	R4800829
Trichloroethene	2.74		0.50	ug/L		12-SEP-19	R4800829
Trichlorofluoromethane	6.3		1.0	ug/L		12-SEP-19	R4800829
1,2,3-Trichloropropane	<1.0		1.0	ug/L		12-SEP-19	R4800829
1,2,4-Trimethylbenzene	3.9		1.0	ug/L		12-SEP-19	R4800829
1,3,5-Trimethylbenzene	1.2		1.0	ug/L		12-SEP-19	R4800829
Vinyl Chloride	0.62		0.50	ug/L		12-SEP-19	R4800829
M+P-Xylenes	88.6		0.40	ug/L		12-SEP-19	R4800829
o-Xylene	38.6		0.50	ug/L		12-SEP-19	R4800829
Surrogate: 4-Bromofluorobenzene (SS)	106.0		70-130	%		12-SEP-19	R4800829
Surrogate: 1,4-Difluorobenzene (SS)	98.1		70-130	%		12-SEP-19	R4800829

* 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.
DLCI	Detection Limit Raised: Chromatographic Interference due to co-elution.
DLHC	Detection Limit Raised: Dilution required due to high concentration of test analyte(s).
DLM	Detection Limit Adjusted due to sample matrix effects (e.g. chemical interference, colour, turbidity).
DUPM	MPN duplicate results were outside default ALS Data Quality Objective, but within 95% confidence interval for MPN reference method. Sample results are reliable.
EMPC	Estimated Maximum Possible Concentration. Parameter detected but didn't meet all criteria for positive identification.
HTP	Sample preparation or preservation hold time was exceeded.
LCS-L	Lab Control Sample recovery was below ALS DQO. Reference Material and/or Matrix Spike results were acceptable. Non-detected sample results are considered reliable. Other results, if reported, have been qualified.
MS-B	Matrix Spike recovery could not be accurately calculated due to high analyte background in sample.
RRR	Refer to Report Remarks for issues regarding this analysis

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.			
BAP-WT	Water	Benzo(a)pyrene	SW486 8270
Sample is extracted at neutral pH using separate aliquots of dichloromethane with a modified separatory funnel technique, extracts are then concentrated and analyzed by GC/MSD.			
C-DIC-HTC-WP	Water	Dissolved Inorganic Carbon by Combustion	APHA 5310 B-WP
Filtered (0.45 um) sample is injected into a heated reaction chamber where it is acidified, converting all inorganic carbon to CO ₂ which is then transported in the carrier gas stream and measured via a non-dispersive infrared analyzer.			
C-DOC-HTC-WP	Water	Dissolved Organic Carbon by Combustion	APHA 5310 B-WP
Filtered (0.45 um) sample is acidified and purged to remove inorganic carbon, then injected into a heated reaction chamber where organic carbon is oxidized to CO ₂ which is then transported in the carrier gas stream and measured via a non-dispersive infrared analyzer.			
C-TDC-CALC-WP	Water	Total Dissolved Carbon by Calculation	CALCULATED
Total dissolved carbon represents the sum of dissolved inorganic carbon and dissolved organic carbon. For the purpose of calculation, results less than the detection limit (DL) are treated as zero.			
CL-IC-N-WP	Water	Chloride in Water by IC	EPA 300.1 (mod)
Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.			
CN-T-L-CFA-VA	Water	Low Level Total Cyanide in water by CFA	ISO 14403:2002
This analysis is carried out using procedures adapted from ISO Method 14403:2002 "Determination of Total Cyanide using Flow Analysis (FIA and CFA)". Total or strong acid dissociable (SAD) cyanide is determined by in-line UV digestion along with sample distillation and final determination by colourimetric analysis. Method Limitation: This method is susceptible to interference from thiocyanate (SCN). If SCN is present in the sample, there could be a positive interference with this method, but it would be less than 1% and could be as low as zero.			
CR-CR6-IC-WT	Water	Chromium +6	EPA 7199

Reference Information

Test Method References:

ALS Test Code	Matrix	Test Description	Method Reference**
		<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 diphenylcarbazine 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>	
EC-SCREEN-WP	Water	Conductivity Screen (Internal Use Only)	APHA 2510
		Qualitative analysis of conductivity where required during preparation of other test eg. IC, TDS, TSS, etc	
F1-F4-CALC-WP	Water	CCME Total Hydrocarbons	CCME CWS-PHC, Pub #1310, Dec 2001-L
		Analytical methods used for analysis of CCME Petroleum Hydrocarbons have been validated and comply with the Reference Method for the CWS PHC.	
		<p>In cases where results for both F4 and F4G are reported, the greater of the two results must be used in any application of the CWS PHC guidelines and the gravimetric heavy hydrocarbons cannot be added to the C6 to C50 hydrocarbons.</p> <p>In samples where BTEX and F1 were analyzed, F1-BTEX represents a value where the sum of Benzene, Toluene, Ethylbenzene and total Xylenes has been subtracted from F1.</p> <p>In samples where PAHs, F2 and F3 were analyzed, F2-Naphth represents the result where Naphthalene has been subtracted from F2. F3-PAH represents a result where the sum of Benzo(a)anthracene, Benzo(a)pyrene, Benzo(b)fluoranthene, Benzo(k)fluoranthene, Dibenzo(a,h)anthracene, Fluoranthene, Indeno(1,2,3-cd)pyrene, Phenanthrene, and Pyrene has been subtracted from F3.</p> <p>Unless otherwise qualified, the following quality control criteria have been met for the F1 hydrocarbon range:</p> <ol style="list-style-type: none"> 1. All extraction and analysis holding times were met. 2. Instrument performance showing response factors for C6 and C10 within 30% of the response factor for toluene. 3. Linearity of gasoline response within 15% throughout the calibration range. <p>Unless otherwise qualified, the following quality control criteria have been met for the F2-F4 hydrocarbon ranges:</p> <ol style="list-style-type: none"> 1. All extraction and analysis holding times were met. 2. Instrument performance showing C10, C16 and C34 response factors within 10% of their average. 3. Instrument performance showing the C50 response factor within 30% of the average of the C10, C16 and C34 response factors. 4. Linearity of diesel or motor oil response within 15% throughout the calibration range. 	
F2-F4-FID-WP	Water	CCME PHC F2-F4 in Water	EPA 3511
		Petroleum hydrocarbons in water are determined by liquid-liquid micro-scale solvent extraction using a reciprocal shaker extraction apparatus prior to capillary column gas chromatography with flame ionization detection (GC-FID) analysis.	
HERBSCR-LCMS-WT	Water	Herbicides in Water	E3552
		Water samples are subjected filtration and analyzed by direct injection without sample preparation using liquid chromatography tandem mass spectrometry (LC-MS/MS).	
HG-D-CVAA-WP	Water	Mercury Dissolved	APHA 3030B/EPA 1631E (mod)
		Water samples are filtered (0.45 um), preserved with hydrochloric acid, then undergo a cold-oxidation using bromine monochloride prior to reduction with stannous chloride, and analyzed by CVAAS.	
HG-T-CVAA-WP	Water	Mercury Total	EPA 1631E (mod)
		Water samples undergo a cold-oxidation using bromine monochloride prior to reduction with stannous chloride, and analyzed by CVAAS.	
MBOCA-WT	Water	4,4'-Methylenebis(2-chloroaniline)	SW846 8270
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.	
MET-T-CCMS-WP	Water	Total Metals in Water by CRC ICPMS	EPA 200.2/6020B (mod.)
		Water samples are digested with nitric and hydrochloric acids, and analyzed by CRC ICPMS.	
		Method Limitation (re: Sulfur): Sulfide and volatile sulfur species may not be recovered by this method.	
NH3-COL-WP	Water	Ammonia by colour	APHA 4500 NH3 F

Reference Information

Test Method References:

ALS Test Code	Matrix	Test Description	Method Reference**
		Ammonia in water samples forms indophenol when reacted with hypochlorite and phenol. The intensity is amplified by the addition of sodium nitroprusside and measured colourmetrically.	
OCP-ROUTINE-WT	Water	Pesticides, Organochlorine in Water	SW846 8270
		Samples are extracted using a solvent mixture and the resulting extracts are analyzed on GC/MSD	
OG-GRAV-WP	Water	Oil & Grease - Gravimetric	EPA 1664 (modified)
		Water samples are acidified and extracted with hexane; the hexane extract is collected in a pre-weighed vial. The solvent is evaporated and Total Oil & Grease is determined from the weight of the residue in the vial.	
PAH,PANH-WP	Water	Polyaromatic Hydrocarbons (PAHs)	EPA 3511/8270D (mod)
		PAHs are extracted from water using a hexane micro-extraction technique, with analysis by GC/MS. Because the two isomers cannot be readily separated chromatographically, benzo(j)fluoranthene is reported as part of the benzo(b)fluoranthene parameter.	
PCB9-WT	Water	PCBs	SW846 8270
		PCBs are extracted from an aqueous sample at neutral pH with aliquots of dichloromethane using a modified separatory funnel technique. The extracts are analyzed by GC/MSD.	
PEST-DIAZINON-WT	Water	Miscellaneous Pesticides	SW846 8270
PEST-MISC-WT	Water	Miscellaneous Pesticides	SW846 8270
		Pesticides are extracted from an aqueous sample using separate aliquots of solvent, extracts are concentrated down to a certain volume and analyzed on the GC/MSD.	
PHENOLS-4AAP-WT	Water	Phenol (4AAP)	EPA 9066
		An automated method is used to distill the sample. The distillate is then buffered to pH 9.4 which reacts with 4AAP and potassium ferricyanide to form a red complex which is measured colorimetrically.	
RESULT-NOT-REP-WP	Misc.	Result not reported	RESULT NOT REPORTED
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-QT97-ENDPT-WP	Water	Total and E. coli to endpoint by QT97	APHA 9223B QT97
		Analysis is carried out using procedures adapted from APHA 9223 "Enzyme Substrate Coliform Test". Total coliforms and Eschericia coli bacteria are simultaneously determined by mixing serial dilutions of sample with a product containing hydrolyzable substrates and sealing in a 97-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.	
THM-SUM-CALC-WP	Water	Total Trihalomethanes (THMs)	CALCULATION
		Total Trihalomethanes (THMs) represents the sum of bromodichloromethane, bromoform, chlorodibromomethane and chloroform. For the purpose of calculation, results less than the detection limit (DL) are treated as zero.	
VOC+F1-HSMS-WP	Water	VOC plus F1 by GCMS	EPA 8260C / EPA 5021A
		In this method samples are analyzed using a headspace autosampler interfaced to a dual column gas chromatograph with MS and Flame Ionization detectors.	
XYLENES-SUM-CALC-WP	Water	Sum of Xylene Isomer Concentrations	CALCULATED RESULT
		Total xylenes represents the sum of o-xylene and m&p-xylene.	

** 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
WT	ALS ENVIRONMENTAL - WATERLOO, ONTARIO, CANADA
VA	ALS ENVIRONMENTAL - VANCOUVER, BRITISH COLUMBIA, CANADA

Chain of Custody Numbers:

Reference Information

Test Method References:

ALS Test Code	Matrix	Test Description	Method Reference**
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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: L2344325

Report Date: 17-JAN-20

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Client: City of Winnipeg - Solid Waste Services Div (1120 Waverley)
 Solid Waste Services Division 1120 Waverley Street
 Winnipeg MB R3T 0P4

Contact: CHRIS KOZAK

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
ALK-TITR-WP								
	Water							
Batch	R4809090							
WG3162466-4	LCS							
Alkalinity, Total (as CaCO3)			96.8		%		85-115	13-SEP-19
WG3162466-1	MB							
Alkalinity, Total (as CaCO3)			1.0		mg/L		1	13-SEP-19
BAP-WT								
	Water							
Batch	R4972499							
WG3159195-4	LCS							
Benzo(a)pyrene			88.6		%		60-130	13-SEP-19
WG3159195-3	MB							
Benzo(a)pyrene			<0.0050		ug/L		0.005	13-SEP-19
Surrogate: d14-Terphenyl			81.7		%		40-130	13-SEP-19
C-DIC-HTC-WP								
	Water							
Batch	R4809611							
WG3162629-2	LCS							
Dissolved Inorganic Carbon			102.2		%		80-120	13-SEP-19
WG3162629-1	MB							
Dissolved Inorganic Carbon			<0.50		mg/L		0.5	13-SEP-19
Batch	R4819173							
WG3164955-2	LCS							
Dissolved Inorganic Carbon			98.5		%		80-120	16-SEP-19
WG3164955-1	MB							
Dissolved Inorganic Carbon			<0.50		mg/L		0.5	16-SEP-19
C-DOC-HTC-WP								
	Water							
Batch	R4805048							
WG3160790-2	LCS							
Dissolved Organic Carbon			103.2		%		80-120	12-SEP-19
WG3160790-1	MB							
Dissolved Organic Carbon			<0.50		mg/L		0.5	12-SEP-19
Batch	R4809441							
WG3162597-2	LCS							
Dissolved Organic Carbon			103.1		%		80-120	13-SEP-19
WG3162597-1	MB							
Dissolved Organic Carbon			<0.50		mg/L		0.5	13-SEP-19
CL-IC-N-WP								
	Water							



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Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
CL-IC-N-WP		Water						
Batch	R4804616							
WG3158186-6	LCS							
Chloride (Cl)			101.3		%		90-110	11-SEP-19
WG3158186-5	MB							
Chloride (Cl)			<0.50		mg/L		0.5	11-SEP-19
CN-T-L-CFA-VA		Water						
Batch	R4831509							
WG3168956-7	LCS							
Cyanide, Total			100.5		%		80-120	21-SEP-19
WG3168956-6	MB							
Cyanide, Total			<0.0010		mg/L		0.001	21-SEP-19
CR-CR6-IC-WT		Water						
Batch	R4808850							
WG3162409-2	LCS							
Chromium, Hexavalent			94.8		%		80-120	13-SEP-19
WG3162409-1	MB							
Chromium, Hexavalent			<0.00050		mg/L		0.0005	13-SEP-19
F2-F4-FID-WP		Water						
Batch	R4800048							
WG3158245-2	LCS							
F2 (C10-C16)			105.6		%		70-130	11-SEP-19
F3 (C16-C34)			101.7		%		70-130	11-SEP-19
F4 (C34-C50)			110.8		%		70-130	11-SEP-19
WG3158245-1	MB							
F2 (C10-C16)			<0.10		mg/L		0.1	11-SEP-19
F3 (C16-C34)			<0.25		mg/L		0.25	11-SEP-19
F4 (C34-C50)			<0.25		mg/L		0.25	11-SEP-19
Surrogate: 2-Bromobenzotrifluoride			105.7		%		60-140	11-SEP-19
HERBSCR-LCMS-WT		Water						
Batch	R4813269							
WG3159330-2	LCS							
Clopyralid			102.0		%		50-150	17-SEP-19
Dicamba			103.5		%		65-130	17-SEP-19
Mecoprop			97.4		%		65-130	17-SEP-19
MCPA			92.4		%		65-130	17-SEP-19
2,4-D			83.5		%		65-130	17-SEP-19
Bromoxynil			110.0		%		65-130	17-SEP-19



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Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
HERBSCR-LCMS-WT								
	Water							
Batch	R4813269							
WG3159330-2	LCS							
Triclopyr			61.4	LCS-L	%		65-130	17-SEP-19
2,4,5-T			76.8		%		65-130	17-SEP-19
2,4,5-TP			85.4		%		65-130	17-SEP-19
Picloram			108.0		%		50-150	17-SEP-19
2,4-DB			69.4		%		65-130	17-SEP-19
2,4-DP			88.2		%		65-130	17-SEP-19
Dinoseb			95.1		%		50-150	17-SEP-19
MCPB			85.0		%		65-130	17-SEP-19
WG3159330-1	MB							
Clopyralid			<0.00010		mg/L		0.0001	17-SEP-19
Dicamba			<0.00010		mg/L		0.0001	17-SEP-19
Mecoprop			<0.00010		mg/L		0.0001	17-SEP-19
MCPA			<0.00010		mg/L		0.0001	17-SEP-19
2,4-D			<0.00010		mg/L		0.0001	17-SEP-19
Bromoxynil			<0.00010		mg/L		0.0001	17-SEP-19
Triclopyr			<0.00010		mg/L		0.0001	17-SEP-19
2,4,5-T			<0.00010		mg/L		0.0001	17-SEP-19
2,4,5-TP			<0.00010		mg/L		0.0001	17-SEP-19
Picloram			<0.00010		mg/L		0.0001	17-SEP-19
2,4-DB			<0.00010		mg/L		0.0001	17-SEP-19
2,4-DP			<0.00010		mg/L		0.0001	17-SEP-19
Dinoseb			<0.00010		mg/L		0.0001	17-SEP-19
MCPB			<0.00010		mg/L		0.0001	17-SEP-19
Surrogate: 2,4-Dichlorophenylacetic Acid			98.8		%		50-130	17-SEP-19
HG-D-CVAA-WP								
	Water							
Batch	R4827450							
WG3167917-3	DUP	L2344325-1						
Mercury (Hg)-Dissolved		<0.0000050	<0.0000050	RPD-NA	mg/L	N/A	20	19-SEP-19
WG3167917-2	LCS							
Mercury (Hg)-Dissolved			103.0		%		80-120	19-SEP-19
WG3167917-1	MB							
Mercury (Hg)-Dissolved			<0.0000050		mg/L		0.000005	19-SEP-19
HG-T-CVAA-WP								
	Water							

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Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
HG-T-CVAA-WP		Water						
Batch	R4827412							
WG3167913-2	LCS							
Mercury (Hg)-Total			103.0		%		80-120	19-SEP-19
WG3167913-1	MB							
Mercury (Hg)-Total			<0.000005C		mg/L		0.000005	19-SEP-19
MBOCA-WT		Water						
Batch	R4808909							
WG3159195-2	LCS							
4,4'-Methylenebis(2-chloroaniline)			84.6		%		50-150	16-SEP-19
WG3159195-1	MB							
4,4'-Methylenebis(2-chloroaniline)			<0.50		ug/L		0.5	16-SEP-19
Surrogate: p-Terphenyl d14			86.3		%		40-130	16-SEP-19
MET-D-CCMS-WP		Water						
Batch	R4823808							
WG3163083-2	LCS							
Aluminum (Al)-Dissolved			101.3		%		80-120	18-SEP-19
Antimony (Sb)-Dissolved			102.9		%		80-120	18-SEP-19
Barium (Ba)-Dissolved			103.3		%		80-120	18-SEP-19
Beryllium (Be)-Dissolved			99.8		%		80-120	18-SEP-19
Bismuth (Bi)-Dissolved			100.3		%		80-120	18-SEP-19
Cadmium (Cd)-Dissolved			101.7		%		80-120	18-SEP-19
Calcium (Ca)-Dissolved			103.8		%		80-120	18-SEP-19
Cesium (Cs)-Dissolved			104.7		%		80-120	18-SEP-19
Chromium (Cr)-Dissolved			100.2		%		80-120	18-SEP-19
Cobalt (Co)-Dissolved			101.2		%		80-120	18-SEP-19
Copper (Cu)-Dissolved			101.6		%		80-120	18-SEP-19
Iron (Fe)-Dissolved			95.0		%		80-120	18-SEP-19
Lead (Pb)-Dissolved			98.7		%		80-120	18-SEP-19
Lithium (Li)-Dissolved			104.2		%		80-120	18-SEP-19
Magnesium (Mg)-Dissolved			102.5		%		80-120	18-SEP-19
Manganese (Mn)-Dissolved			101.0		%		80-120	18-SEP-19
Molybdenum (Mo)-Dissolved			104.3		%		80-120	18-SEP-19
Nickel (Ni)-Dissolved			99.2		%		80-120	18-SEP-19
Phosphorus (P)-Dissolved			99.8		%		80-120	18-SEP-19
Potassium (K)-Dissolved			97.3		%		80-120	18-SEP-19
Rubidium (Rb)-Dissolved			101.8		%		80-120	18-SEP-19
Silicon (Si)-Dissolved			100.8		%		80-120	18-SEP-19



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Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
MET-D-CCMS-WP		Water						
Batch	R4823808							
WG3163083-2	LCS							
Silver (Ag)-Dissolved			102.8		%		80-120	18-SEP-19
Sulfur (S)-Dissolved			83.9		%		80-120	18-SEP-19
Tellurium (Te)-Dissolved			101.7		%		80-120	18-SEP-19
Thallium (Tl)-Dissolved			99.8		%		80-120	18-SEP-19
Thorium (Th)-Dissolved			94.7		%		80-120	18-SEP-19
Tin (Sn)-Dissolved			99.2		%		80-120	18-SEP-19
Titanium (Ti)-Dissolved			99.6		%		80-120	18-SEP-19
Tungsten (W)-Dissolved			103.2		%		80-120	18-SEP-19
Uranium (U)-Dissolved			106.2		%		80-120	18-SEP-19
Vanadium (V)-Dissolved			101.4		%		80-120	18-SEP-19
Zinc (Zn)-Dissolved			100.3		%		80-120	18-SEP-19
Zirconium (Zr)-Dissolved			100.3		%		80-120	18-SEP-19
WG3163083-1	MB							
Aluminum (Al)-Dissolved			<0.0010		mg/L		0.001	18-SEP-19
Antimony (Sb)-Dissolved			<0.00010		mg/L		0.0001	18-SEP-19
Barium (Ba)-Dissolved			<0.00010		mg/L		0.0001	18-SEP-19
Beryllium (Be)-Dissolved			<0.00010		mg/L		0.0001	18-SEP-19
Bismuth (Bi)-Dissolved			<0.000050		mg/L		0.00005	18-SEP-19
Cadmium (Cd)-Dissolved			<0.0000050		mg/L		0.000005	18-SEP-19
Calcium (Ca)-Dissolved			<0.050		mg/L		0.05	18-SEP-19
Cesium (Cs)-Dissolved			<0.000010		mg/L		0.00001	18-SEP-19
Chromium (Cr)-Dissolved			<0.00010		mg/L		0.0001	18-SEP-19
Cobalt (Co)-Dissolved			<0.00010		mg/L		0.0001	18-SEP-19
Copper (Cu)-Dissolved			<0.00020		mg/L		0.0002	18-SEP-19
Iron (Fe)-Dissolved			<0.010		mg/L		0.01	18-SEP-19
Lead (Pb)-Dissolved			<0.000050		mg/L		0.00005	18-SEP-19
Lithium (Li)-Dissolved			<0.0010		mg/L		0.001	18-SEP-19
Magnesium (Mg)-Dissolved			<0.0050		mg/L		0.005	18-SEP-19
Manganese (Mn)-Dissolved			<0.00010		mg/L		0.0001	18-SEP-19
Molybdenum (Mo)-Dissolved			<0.000050		mg/L		0.00005	18-SEP-19
Nickel (Ni)-Dissolved			<0.00050		mg/L		0.0005	18-SEP-19
Phosphorus (P)-Dissolved			<0.030		mg/L		0.03	18-SEP-19
Potassium (K)-Dissolved			<0.050		mg/L		0.05	18-SEP-19
Rubidium (Rb)-Dissolved			<0.00020		mg/L		0.0002	18-SEP-19

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Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
MET-D-CCMS-WP		Water						
Batch	R4823808							
WG3163083-1	MB							
Silicon (Si)-Dissolved			<0.050		mg/L		0.05	18-SEP-19
Silver (Ag)-Dissolved			<0.000010		mg/L		0.00001	18-SEP-19
Sulfur (S)-Dissolved			<0.50	B	mg/L		0.5	18-SEP-19
Tellurium (Te)-Dissolved			<0.00020		mg/L		0.0002	18-SEP-19
Thallium (Tl)-Dissolved			<0.000010		mg/L		0.00001	18-SEP-19
Thorium (Th)-Dissolved			<0.00010		mg/L		0.0001	18-SEP-19
Tin (Sn)-Dissolved			<0.00010		mg/L		0.0001	18-SEP-19
Titanium (Ti)-Dissolved			<0.00030		mg/L		0.0003	18-SEP-19
Tungsten (W)-Dissolved			<0.00010		mg/L		0.0001	18-SEP-19
Uranium (U)-Dissolved			<0.000010		mg/L		0.00001	18-SEP-19
Vanadium (V)-Dissolved			<0.00050		mg/L		0.0005	18-SEP-19
Zinc (Zn)-Dissolved			<0.0010		mg/L		0.001	18-SEP-19
Zirconium (Zr)-Dissolved			<0.00020		mg/L		0.0002	18-SEP-19
MET-T-CCMS-WP		Water						
Batch	R4823808							
WG3165025-2	LCS							
Aluminum (Al)-Total			106.3		%		80-120	18-SEP-19
Antimony (Sb)-Total			104.7		%		80-120	18-SEP-19
Arsenic (As)-Total			104.1		%		80-120	18-SEP-19
Barium (Ba)-Total			101.3		%		80-120	18-SEP-19
Beryllium (Be)-Total			105.2		%		80-120	18-SEP-19
Bismuth (Bi)-Total			105.5		%		80-120	18-SEP-19
Cadmium (Cd)-Total			103.8		%		80-120	18-SEP-19
Calcium (Ca)-Total			104.2		%		80-120	18-SEP-19
Cesium (Cs)-Total			102.5		%		80-120	18-SEP-19
Chromium (Cr)-Total			105.6		%		80-120	18-SEP-19
Cobalt (Co)-Total			104.6		%		80-120	18-SEP-19
Copper (Cu)-Total			105.6		%		80-120	18-SEP-19
Iron (Fe)-Total			96.9		%		80-120	18-SEP-19
Lead (Pb)-Total			104.2		%		80-120	18-SEP-19
Lithium (Li)-Total			103.9		%		80-120	18-SEP-19
Magnesium (Mg)-Total			116.1		%		80-120	18-SEP-19
Manganese (Mn)-Total			104.9		%		80-120	18-SEP-19
Molybdenum (Mo)-Total			103.2		%		80-120	18-SEP-19



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Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
MET-T-CCMS-WP		Water						
Batch	R4823808							
WG3165025-2	LCS							
Nickel (Ni)-Total			104.6		%		80-120	18-SEP-19
Potassium (K)-Total			104.3		%		80-120	18-SEP-19
Phosphorus (P)-Total			111.4		%		80-120	18-SEP-19
Rubidium (Rb)-Total			101.2		%		80-120	18-SEP-19
Selenium (Se)-Total			101.4		%		80-120	18-SEP-19
Silicon (Si)-Total			101.2		%		80-120	18-SEP-19
Silver (Ag)-Total			101.7		%		80-120	18-SEP-19
Sodium (Na)-Total			108.9		%		80-120	18-SEP-19
Strontium (Sr)-Total			105.2		%		80-120	18-SEP-19
Sulfur (S)-Total			97.8		%		80-120	18-SEP-19
Tellurium (Te)-Total			97.0		%		80-120	18-SEP-19
Thallium (Tl)-Total			104.3		%		80-120	18-SEP-19
Thorium (Th)-Total			98.0		%		80-120	18-SEP-19
Tin (Sn)-Total			99.8		%		80-120	18-SEP-19
Titanium (Ti)-Total			100.6		%		80-120	18-SEP-19
Tungsten (W)-Total			103.1		%		80-120	18-SEP-19
Uranium (U)-Total			107.4		%		80-120	18-SEP-19
Vanadium (V)-Total			105.8		%		80-120	18-SEP-19
Zinc (Zn)-Total			106.7		%		80-120	18-SEP-19
Zirconium (Zr)-Total			100.3		%		80-120	18-SEP-19
WG3165025-1	MB							
Aluminum (Al)-Total			<0.0030		mg/L		0.003	18-SEP-19
Antimony (Sb)-Total			<0.00010		mg/L		0.0001	18-SEP-19
Arsenic (As)-Total			<0.00010		mg/L		0.0001	18-SEP-19
Barium (Ba)-Total			<0.00010		mg/L		0.0001	18-SEP-19
Beryllium (Be)-Total			<0.00010		mg/L		0.0001	18-SEP-19
Bismuth (Bi)-Total			<0.000050		mg/L		0.00005	18-SEP-19
Cadmium (Cd)-Total			<0.0000050		mg/L		0.000005	18-SEP-19
Calcium (Ca)-Total			<0.050		mg/L		0.05	18-SEP-19
Cesium (Cs)-Total			<0.000010		mg/L		0.00001	18-SEP-19
Chromium (Cr)-Total			<0.00010		mg/L		0.0001	18-SEP-19
Cobalt (Co)-Total			<0.00010		mg/L		0.0001	18-SEP-19
Copper (Cu)-Total			<0.00050		mg/L		0.0005	18-SEP-19
Iron (Fe)-Total			<0.010		mg/L		0.01	18-SEP-19



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Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
MET-T-CCMS-WP		Water						
Batch	R4823808							
WG3165025-1	MB							
Lead (Pb)-Total			<0.000050		mg/L		0.00005	18-SEP-19
Lithium (Li)-Total			<0.0010		mg/L		0.001	18-SEP-19
Magnesium (Mg)-Total			<0.0050		mg/L		0.005	18-SEP-19
Manganese (Mn)-Total			<0.00010		mg/L		0.0001	18-SEP-19
Molybdenum (Mo)-Total			<0.000050		mg/L		0.00005	18-SEP-19
Nickel (Ni)-Total			<0.00050		mg/L		0.0005	18-SEP-19
Potassium (K)-Total			<0.050		mg/L		0.05	18-SEP-19
Phosphorus (P)-Total			<0.030		mg/L		0.03	18-SEP-19
Rubidium (Rb)-Total			<0.00020		mg/L		0.0002	18-SEP-19
Selenium (Se)-Total			<0.000050		mg/L		0.00005	18-SEP-19
Silicon (Si)-Total			<0.10		mg/L		0.1	18-SEP-19
Silver (Ag)-Total			<0.000010		mg/L		0.00001	18-SEP-19
Sodium (Na)-Total			<0.050		mg/L		0.05	18-SEP-19
Strontium (Sr)-Total			<0.00020		mg/L		0.0002	18-SEP-19
Sulfur (S)-Total			<0.50		mg/L		0.5	18-SEP-19
Tellurium (Te)-Total			<0.00020		mg/L		0.0002	18-SEP-19
Thallium (Tl)-Total			<0.000010		mg/L		0.00001	18-SEP-19
Thorium (Th)-Total			<0.00010		mg/L		0.0001	18-SEP-19
Tin (Sn)-Total			<0.00010		mg/L		0.0001	18-SEP-19
Titanium (Ti)-Total			<0.00030		mg/L		0.0003	18-SEP-19
Tungsten (W)-Total			<0.00010		mg/L		0.0001	18-SEP-19
Uranium (U)-Total			<0.000010		mg/L		0.00001	18-SEP-19
Vanadium (V)-Total			<0.00050		mg/L		0.0005	18-SEP-19
Zinc (Zn)-Total			<0.0030		mg/L		0.003	18-SEP-19
Zirconium (Zr)-Total			<0.00020		mg/L		0.0002	18-SEP-19
NH3-COL-WP		Water						
Batch	R4806402							
WG3161174-10	LCS							
Ammonia, Total (as N)			101.0		%		85-115	12-SEP-19
WG3161174-9	MB							
Ammonia, Total (as N)			<0.010		mg/L		0.01	12-SEP-19
Batch	R4811053							
WG3163091-2	LCS							
Ammonia, Total (as N)			99.4		%		85-115	13-SEP-19
WG3163091-1	MB							



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Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
NH3-COL-WP		Water						
Batch	R4811053							
WG3163091-1	MB							
Ammonia, Total (as N)			<0.010		mg/L		0.01	13-SEP-19
OCP-ROUTINE-WT		Water						
Batch	R4822286							
WG3164875-2	LCS							
Aldrin			112.3		%		50-150	19-SEP-19
gamma-hexachlorocyclohexane			108.1		%		50-150	19-SEP-19
a-chlordane			115.7		%		50-150	19-SEP-19
g-chlordane			117.3		%		50-150	19-SEP-19
alpha-BHC			109.6		%		50-150	19-SEP-19
beta-BHC			94.8		%		50-150	19-SEP-19
delta-BHC			108.1		%		50-150	19-SEP-19
o,p-DDD			123.4		%		50-150	19-SEP-19
pp-DDD			126.7		%		50-150	19-SEP-19
o,p-DDE			116.4		%		50-150	19-SEP-19
pp-DDE			110.8		%		50-150	19-SEP-19
op-DDT			108.9		%		50-150	19-SEP-19
pp-DDT			108.1		%		50-150	19-SEP-19
Dieldrin			120.4		%		50-150	19-SEP-19
Endosulfan I			101.5		%		50-150	19-SEP-19
Endosulfan II			118.4		%		50-150	19-SEP-19
Endosulfan Sulfate			96.8		%		50-150	19-SEP-19
Endrin			100.1		%		50-150	19-SEP-19
Endrin Aldehyde			106.2		%		50-150	19-SEP-19
Heptachlor			87.4		%		50-150	19-SEP-19
Heptachlor Epoxide			105.3		%		50-150	19-SEP-19
Hexachlorobenzene			103.8		%		50-150	19-SEP-19
Hexachlorobutadiene			70.2		%		50-150	19-SEP-19
Hexachloroethane			76.3		%		50-150	19-SEP-19
Methoxychlor			105.7		%		50-150	19-SEP-19
Mirex			110.1		%		50-150	19-SEP-19
Oxychlordane			111.4		%		50-150	19-SEP-19
WG3164875-1	MB							
Aldrin			<0.0080		ug/L		0.008	19-SEP-19
gamma-hexachlorocyclohexane			<0.0080		ug/L		0.008	19-SEP-19



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OCP-ROUTINE-WT		Water						
Batch	R4822286							
WG3164875-1	MB							
a-chlordane			<0.0080		ug/L		0.008	19-SEP-19
g-chlordane			<0.0080		ug/L		0.008	19-SEP-19
alpha-BHC			<0.0080		ug/L		0.008	19-SEP-19
beta-BHC			<0.0080		ug/L		0.008	19-SEP-19
delta-BHC			<0.0080		ug/L		0.008	19-SEP-19
o,p-DDD			<0.0040		ug/L		0.004	19-SEP-19
pp-DDD			<0.0040		ug/L		0.004	19-SEP-19
o,p-DDE			<0.0040		ug/L		0.004	19-SEP-19
pp-DDE			<0.0040		ug/L		0.004	19-SEP-19
op-DDT			<0.0040		ug/L		0.004	19-SEP-19
pp-DDT			<0.0040		ug/L		0.004	19-SEP-19
Dieldrin			<0.0080		ug/L		0.008	19-SEP-19
Endosulfan I			<0.0070		ug/L		0.007	19-SEP-19
Endosulfan II			<0.0070		ug/L		0.007	19-SEP-19
Endosulfan Sulfate			<0.0070		ug/L		0.007	19-SEP-19
Endrin			<0.010		ug/L		0.01	19-SEP-19
Endrin Aldehyde			<0.010		ug/L		0.01	19-SEP-19
Heptachlor			<0.0080		ug/L		0.008	19-SEP-19
Heptachlor Epoxide			<0.0080		ug/L		0.008	19-SEP-19
Hexachlorobenzene			<0.0080		ug/L		0.008	19-SEP-19
Hexachlorobutadiene			<0.0080		ug/L		0.008	19-SEP-19
Hexachloroethane			<0.0080		ug/L		0.008	19-SEP-19
Methoxychlor			<0.0080		ug/L		0.008	19-SEP-19
Mirex			<0.0080		ug/L		0.008	19-SEP-19
Oxychlordane			<0.0080		ug/L		0.008	19-SEP-19
Surrogate: Decachlorobiphenyl			84.0		%		40-130	19-SEP-19
Surrogate: Tetrachloro-m-xylene			84.4		%		40-130	19-SEP-19
OG-GRAV-WP		Water						
Batch	R4818408							
WG3162455-2	LCS							
Oil and Grease			95.4		%		70-130	18-SEP-19
WG3162455-1	MB							
Oil and Grease			<5.0		mg/L		5	18-SEP-19
PAH,PANH-WP		Water						



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Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
PAH,PANH-WP		Water						
Batch	R4822268							
WG3162777-2	LCS							
1-Methyl Naphthalene			114.7		%		60-130	17-SEP-19
2-Methyl Naphthalene			118.5		%		60-130	17-SEP-19
Acenaphthene			122.2		%		60-130	17-SEP-19
Acenaphthylene			108.1		%		60-130	17-SEP-19
Anthracene			86.3		%		60-130	17-SEP-19
Acridine			95.4		%		60-130	17-SEP-19
Benzo(a)anthracene			97.1		%		60-130	17-SEP-19
Benzo(a)pyrene			82.4		%		60-130	17-SEP-19
Benzo(b&j)fluoranthene			90.9		%		60-130	17-SEP-19
Benzo(g,h,i)perylene			109.7		%		60-130	17-SEP-19
Benzo(k)fluoranthene			113.9		%		60-130	17-SEP-19
Chrysene			107.4		%		60-130	17-SEP-19
Dibenzo(a,h)anthracene			94.8		%		60-130	17-SEP-19
Fluoranthene			123.0		%		60-130	17-SEP-19
Fluorene			113.7		%		60-130	17-SEP-19
Indeno(1,2,3-cd)pyrene			81.7		%		60-130	17-SEP-19
Naphthalene			120.1		%		50-130	17-SEP-19
Phenanthrene			118.8		%		60-130	17-SEP-19
Pyrene			121.7		%		60-130	17-SEP-19
Quinoline			112.1		%		60-130	17-SEP-19
WG3162777-1	MB							
1-Methyl Naphthalene			<0.000020		mg/L		0.00002	17-SEP-19
2-Methyl Naphthalene			<0.000020		mg/L		0.00002	17-SEP-19
Acenaphthene			<0.000020		mg/L		0.00002	17-SEP-19
Acenaphthylene			<0.000020		mg/L		0.00002	17-SEP-19
Anthracene			<0.000010		mg/L		0.00001	17-SEP-19
Acridine			<0.000020		mg/L		0.00002	17-SEP-19
Benzo(a)anthracene			<0.000010		mg/L		0.00001	17-SEP-19
Benzo(a)pyrene			<0.0000050		mg/L		0.000005	17-SEP-19
Benzo(b&j)fluoranthene			<0.000010		mg/L		0.00001	17-SEP-19
Benzo(g,h,i)perylene			<0.000020		mg/L		0.00002	17-SEP-19
Benzo(k)fluoranthene			<0.000010		mg/L		0.00001	17-SEP-19
Chrysene			<0.000020		mg/L		0.00002	17-SEP-19
Dibenzo(a,h)anthracene			<0.0000050		mg/L		0.000005	17-SEP-19



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PAH,PANH-WP		Water						
Batch	R4822268							
WG3162777-1	MB							
Fluoranthene			<0.000020		mg/L		0.00002	17-SEP-19
Fluorene			<0.000020		mg/L		0.00002	17-SEP-19
Indeno(1,2,3-cd)pyrene			<0.000010		mg/L		0.00001	17-SEP-19
Naphthalene			<0.000050		mg/L		0.00005	17-SEP-19
Phenanthrene			<0.000050		mg/L		0.00005	17-SEP-19
Pyrene			<0.000010		mg/L		0.00001	17-SEP-19
Quinoline			<0.000020		mg/L		0.00002	17-SEP-19
Surrogate: Acenaphthene d10			108.2		%		60-130	17-SEP-19
Surrogate: Acridine d9			99.4		%		60-130	17-SEP-19
Surrogate: Chrysene d12			98.5		%		60-130	17-SEP-19
Surrogate: Naphthalene d8			108.2		%		50-130	17-SEP-19
Surrogate: Phenanthrene d10			105.4		%		60-130	17-SEP-19
PCB9-WT		Water						
Batch	R4805153							
WG3159195-2	LCS							
Aroclor 1242			105.5		%		65-130	13-SEP-19
Aroclor 1248			101.0		%		40-130	13-SEP-19
Aroclor 1254			98.9		%		65-135	13-SEP-19
Aroclor 1260			105.1		%		65-130	13-SEP-19
WG3159195-1	MB							
Aroclor 1016			<0.020		ug/L		0.02	13-SEP-19
Aroclor 1221			<0.020		ug/L		0.02	13-SEP-19
Aroclor 1232			<0.020		ug/L		0.02	13-SEP-19
Aroclor 1242			<0.020		ug/L		0.02	13-SEP-19
Aroclor 1248			<0.020		ug/L		0.02	13-SEP-19
Aroclor 1254			<0.020		ug/L		0.02	13-SEP-19
Aroclor 1260			<0.020		ug/L		0.02	13-SEP-19
Aroclor 1262			<0.020		ug/L		0.02	13-SEP-19
Aroclor 1268			<0.020		ug/L		0.02	13-SEP-19
Surrogate: d14-Terphenyl			92.2		%		40-130	13-SEP-19
PEST-DIAZINON-WT		Water						
Batch	R4809881							
WG3159195-2	LCS							
Diazinon			82.6		%		60-130	16-SEP-19
WG3159195-1	MB							



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Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
PEST-DIAZINON-WT		Water						
Batch	R4809881							
WG3159195-1	MB							
Diazinon			<0.10		ug/L		0.1	13-SEP-19
Surrogate: 2-Fluorobiphenyl			80.2		%		40-130	13-SEP-19
Surrogate: d14-Terphenyl			81.7		%		40-130	13-SEP-19
PEST-MISC-WT		Water						
Batch	R4809881							
WG3159195-2	LCS							
Alachlor			109.1		%		60-130	16-SEP-19
Ametryn			102.0		%		60-130	16-SEP-19
Atrazine			87.0		%		60-130	16-SEP-19
Atrazine Desethyl			59.9		%		50-130	16-SEP-19
Azinphos-methyl			121.5		%		60-140	16-SEP-19
Bendiocarb			101.1		%		50-140	16-SEP-19
Carbaryl			105.7		%		50-140	16-SEP-19
Carbofuran			102.6		%		60-140	16-SEP-19
Chlorpyrifos			104.4		%		60-130	16-SEP-19
Cyanazine			87.9		%		50-140	16-SEP-19
Diazinon			82.6		%		60-130	16-SEP-19
Diclofop-methyl			121.3		%		60-140	16-SEP-19
Dimethoate			88.2		%		60-130	16-SEP-19
Malathion			108.5		%		60-130	16-SEP-19
Methyl Parathion			91.3		%		60-130	16-SEP-19
Metolachlor			110.7		%		60-130	16-SEP-19
Metribuzin			96.9		%		60-130	16-SEP-19
Parathion			113.5		%		60-140	16-SEP-19
Phorate			98.2		%		30-140	16-SEP-19
Prometon			103.3		%		60-130	16-SEP-19
Prometryne			101.9		%		60-130	16-SEP-19
Propazine			100.3		%		60-130	16-SEP-19
Simazine			101.4		%		60-130	16-SEP-19
Temephos			89.2		%		50-140	16-SEP-19
Terbufos			92.5		%		60-130	16-SEP-19
Terbutryn			99.8		%		60-130	16-SEP-19
Triallate			102.8		%		60-130	16-SEP-19
Trifluralin			81.5		%		60-130	16-SEP-19



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Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
PEST-MISC-WT		Water						
Batch	R4809881							
WG3159195-1	MB							
Alachlor			<0.10		ug/L		0.1	13-SEP-19
Ametryn			<0.10		ug/L		0.1	13-SEP-19
Atrazine			<0.10		ug/L		0.1	13-SEP-19
Atrazine Desethyl			<0.10		ug/L		0.1	13-SEP-19
Azinphos-methyl			<0.10		ug/L		0.1	13-SEP-19
Bendiocarb			<0.50		ug/L		0.5	13-SEP-19
Carbaryl			<0.50		ug/L		0.5	13-SEP-19
Carbofuran			<0.50		ug/L		0.5	13-SEP-19
Chlorpyrifos			<0.10		ug/L		0.1	13-SEP-19
Cyanazine			<0.10		ug/L		0.1	13-SEP-19
Diazinon			<0.10		ug/L		0.1	13-SEP-19
Diclofop-methyl			<0.10		ug/L		0.1	13-SEP-19
Dimethoate			<0.10		ug/L		0.1	13-SEP-19
Malathion			<0.10		ug/L		0.1	13-SEP-19
Methyl Parathion			<0.10		ug/L		0.1	13-SEP-19
Metolachlor			<0.10		ug/L		0.1	13-SEP-19
Metribuzin			<1.0		ug/L		1	13-SEP-19
Parathion			<0.10		ug/L		0.1	13-SEP-19
Phorate			<0.10		ug/L		0.1	13-SEP-19
Prometon			<0.10		ug/L		0.1	13-SEP-19
Prometryne			<0.10		ug/L		0.1	13-SEP-19
Propazine			<0.10		ug/L		0.1	13-SEP-19
Simazine			<0.10		ug/L		0.1	13-SEP-19
Temephos			<1.0		ug/L		1	13-SEP-19
Terbufos			<0.10		ug/L		0.1	13-SEP-19
Terbutryn			<0.10		ug/L		0.1	13-SEP-19
Triallate			<0.10		ug/L		0.1	13-SEP-19
Trifluralin			<0.10		ug/L		0.1	13-SEP-19
Surrogate: 2-Fluorobiphenyl			80.2		%		40-130	13-SEP-19
Surrogate: d14-Terphenyl			81.7		%		40-130	13-SEP-19

PHENOLS-4AAP-WT **Water**

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Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
PHENOLS-4AAP-WT								
Batch R4810490								
WG3162590-8	DUP	L2344325-1						
Phenols (4AAP)		0.408	0.394		mg/L	3.4	20	16-SEP-19
WG3162590-6	LCS							
Phenols (4AAP)			100.0		%		85-115	16-SEP-19
WG3162590-5	MB							
Phenols (4AAP)			<0.0010		mg/L		0.001	16-SEP-19
WG3162590-7	MS	L2344325-1						
Phenols (4AAP)			N/A	MS-B	%		-	16-SEP-19
SO4-IC-N-WP								
Batch R4804616								
WG3158186-6	LCS							
Sulfate (SO4)			102.7		%		90-110	11-SEP-19
WG3158186-5	MB							
Sulfate (SO4)			<0.30		mg/L		0.3	11-SEP-19
TC,EC-QT97-ENDPT-WP								
Batch R4797309								
WG3157619-2	DUP	L2344325-1						
Total Coliforms		24200	10500	DUPM	MPN/100mL	79	65	10-SEP-19
Escherichia Coli		109	109		MPN/100mL	0.0	65	10-SEP-19
WG3157619-1	MB							
Total Coliforms			<1		MPN/100mL		1	10-SEP-19
Escherichia Coli			<1		MPN/100mL		1	10-SEP-19
VOC+F1-HSMS-WP								
Batch R4800829								
WG3159248-2	LCS							
Acetone			92.5		%		70-130	11-SEP-19
Benzene			83.5		%		70-130	11-SEP-19
Bromobenzene			106.0		%		70-130	11-SEP-19
Bromochloromethane			84.9		%		70-130	11-SEP-19
Bromodichloromethane			80.5		%		70-130	11-SEP-19
Bromoform			101.1		%		70-130	11-SEP-19
Bromomethane			90.6		%		60-140	11-SEP-19
n-Butylbenzene			102.8		%		70-130	11-SEP-19
sec-Butylbenzene			107.6		%		70-130	11-SEP-19
tert-Butylbenzene			109.0		%		70-130	11-SEP-19
Carbon disulfide			85.7		%		70-130	11-SEP-19

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Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
VOC+F1-HSMS-WP	Water							
Batch	R4800829							
WG3159248-2	LCS							
Carbon Tetrachloride			85.5		%		70-130	11-SEP-19
Chlorobenzene			84.6		%		70-130	11-SEP-19
Chloroethane			88.9		%		60-140	11-SEP-19
Chloroform			84.1		%		70-130	11-SEP-19
Chloromethane			111.0		%		60-140	11-SEP-19
2-Chlorotoluene			110.4		%		70-130	11-SEP-19
4-Chlorotoluene			106.2		%		70-130	11-SEP-19
Dibromochloromethane			83.1		%		70-130	11-SEP-19
1,2-Dibromo-3-chloropropane			87.7		%		70-130	11-SEP-19
1,2-Dibromoethane			80.8		%		70-130	11-SEP-19
Dibromomethane			81.9		%		70-130	11-SEP-19
1,2-Dichlorobenzene			103.1		%		70-130	11-SEP-19
1,3-Dichlorobenzene			104.4		%		70-130	11-SEP-19
1,4-Dichlorobenzene			103.4		%		70-130	11-SEP-19
Dichlorodifluoromethane			125.7		%		60-140	11-SEP-19
1,1-dichloroethane			83.8		%		70-130	11-SEP-19
1,2-Dichloroethane			81.3		%		70-130	11-SEP-19
1,1-dichloroethene			89.9		%		70-130	11-SEP-19
cis-1,2-Dichloroethene			84.0		%		70-130	11-SEP-19
trans-1,2-Dichloroethene			82.5		%		70-130	11-SEP-19
Dichloromethane			82.9		%		70-130	11-SEP-19
1,2-Dichloropropane			81.2		%		70-130	11-SEP-19
1,3-Dichloropropane			82.3		%		70-130	11-SEP-19
2,2-Dichloropropane			80.6		%		70-130	11-SEP-19
1,1-Dichloropropene			87.3		%		70-130	11-SEP-19
cis-1,3-Dichloropropene			80.7		%		70-130	11-SEP-19
trans-1,3-Dichloropropene			88.3		%		70-130	11-SEP-19
Ethylbenzene			87.1		%		70-130	11-SEP-19
Hexachlorobutadiene			105.3		%		70-130	11-SEP-19
Hexane			89.5		%		70-130	11-SEP-19
2-Hexanone (Methyl butyl ketone)			80.5		%		70-130	11-SEP-19
Isopropylbenzene			86.2		%		70-130	11-SEP-19
4-Isopropyltoluene			105.1		%		70-130	11-SEP-19
MEK			88.7		%		70-130	11-SEP-19

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Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
VOC+F1-HSMS-WP								
	Water							
Batch	R4800829							
WG3159248-2	LCS							
MIBK			85.4		%		70-130	11-SEP-19
MTBE			86.4		%		70-130	11-SEP-19
Styrene			83.5		%		70-130	11-SEP-19
1,1,1,2-Tetrachloroethane			84.4		%		70-130	11-SEP-19
1,1,2,2-Tetrachloroethane			96.2		%		70-130	11-SEP-19
Tetrachloroethene			85.4		%		70-130	11-SEP-19
Toluene			85.3		%		70-130	11-SEP-19
1,2,3-Trichlorobenzene			94.3		%		70-130	11-SEP-19
1,2,4-Trichlorobenzene			95.4		%		70-130	11-SEP-19
1,1,1-Trichloroethane			87.1		%		70-130	11-SEP-19
1,1,2-Trichloroethane			80.7		%		70-130	11-SEP-19
Trichloroethene			84.0		%		70-130	11-SEP-19
Trichlorofluoromethane			98.4		%		60-140	11-SEP-19
1,2,3-Trichloropropane			101.6		%		70-130	11-SEP-19
1,2,4-Trimethylbenzene			105.6		%		70-130	11-SEP-19
1,3,5-Trimethylbenzene			107.0		%		70-130	11-SEP-19
Vinyl Chloride			102.0		%		60-140	11-SEP-19
M+P-Xylenes			86.0		%		70-130	11-SEP-19
o-Xylene			85.6		%		70-130	11-SEP-19
WG3159248-3	LCS							
F1			108.2		%		70-130	11-SEP-19
WG3159248-1	MB							
Acetone			<0.050		mg/L		0.05	11-SEP-19
Benzene			<0.00050		mg/L		0.0005	11-SEP-19
Bromobenzene			<0.0010		mg/L		0.001	11-SEP-19
Bromochloromethane			<0.0010		mg/L		0.001	11-SEP-19
Bromodichloromethane			<0.00050		mg/L		0.0005	11-SEP-19
Bromoform			<0.0010		mg/L		0.001	11-SEP-19
Bromomethane			<0.0010		mg/L		0.001	11-SEP-19
n-Butylbenzene			<0.0010		mg/L		0.001	11-SEP-19
sec-Butylbenzene			<0.0010		mg/L		0.001	11-SEP-19
tert-Butylbenzene			<0.0010		mg/L		0.001	11-SEP-19
Carbon disulfide			<0.0050		mg/L		0.005	11-SEP-19
Carbon Tetrachloride			<0.00050		mg/L		0.0005	11-SEP-19
Chlorobenzene			<0.0010		mg/L		0.001	11-SEP-19



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Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
VOC+F1-HSMS-WP								
	Water							
Batch	R4800829							
WG3159248-1	MB							
Chloroethane			<0.0010		mg/L		0.001	11-SEP-19
Chloroform			<0.00050		mg/L		0.0005	11-SEP-19
Chloromethane			<0.0050		mg/L		0.005	11-SEP-19
2-Chlorotoluene			<0.020		mg/L		0.02	11-SEP-19
4-Chlorotoluene			<0.0010		mg/L		0.001	11-SEP-19
Dibromochloromethane			<0.00050		mg/L		0.0005	11-SEP-19
1,2-Dibromo-3-chloropropane			<0.0010		mg/L		0.001	11-SEP-19
1,2-Dibromoethane			<0.0010		mg/L		0.001	11-SEP-19
Dibromomethane			<0.0010		mg/L		0.001	11-SEP-19
1,2-Dichlorobenzene			<0.00050		mg/L		0.0005	11-SEP-19
1,3-Dichlorobenzene			<0.0010		mg/L		0.001	11-SEP-19
1,4-Dichlorobenzene			<0.0010		mg/L		0.001	11-SEP-19
Dichlorodifluoromethane			<0.0010		mg/L		0.001	11-SEP-19
1,1-dichloroethane			<0.00050		mg/L		0.0005	11-SEP-19
1,2-Dichloroethane			<0.00050		mg/L		0.0005	11-SEP-19
1,1-dichloroethene			<0.00050		mg/L		0.0005	11-SEP-19
cis-1,2-Dichloroethene			<0.0010		mg/L		0.001	11-SEP-19
trans-1,2-Dichloroethene			<0.0010		mg/L		0.001	11-SEP-19
Dichloromethane			<0.0050		mg/L		0.005	11-SEP-19
1,2-Dichloropropane			<0.0010		mg/L		0.001	11-SEP-19
1,3-Dichloropropane			<0.0010		mg/L		0.001	11-SEP-19
2,2-Dichloropropane			<0.0010		mg/L		0.001	11-SEP-19
1,1-Dichloropropene			<0.0010		mg/L		0.001	11-SEP-19
cis-1,3-Dichloropropene			<0.0010		mg/L		0.001	11-SEP-19
trans-1,3-Dichloropropene			<0.0010		mg/L		0.001	11-SEP-19
Ethylbenzene			<0.00050		mg/L		0.0005	11-SEP-19
F1			<0.10		mg/L		0.1	11-SEP-19
Hexachlorobutadiene			<0.0010		mg/L		0.001	11-SEP-19
Hexane			<0.0010		mg/L		0.001	11-SEP-19
2-Hexanone (Methyl butyl ketone)			<0.020		mg/L		0.02	11-SEP-19
Isopropylbenzene			<0.0010		mg/L		0.001	11-SEP-19
4-Isopropyltoluene			<0.0010		mg/L		0.001	11-SEP-19
MEK			<0.020		mg/L		0.02	11-SEP-19
MIBK			<0.020		mg/L		0.02	11-SEP-19



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Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
VOC+F1-HSMS-WP								
	Water							
Batch	R4800829							
WG3159248-1	MB							
MTBE			<0.00050		mg/L		0.0005	11-SEP-19
Styrene			<0.0010		mg/L		0.001	11-SEP-19
1,1,1,2-Tetrachloroethane			<0.00050		mg/L		0.0005	11-SEP-19
1,1,2,2-Tetrachloroethane			<0.00050		mg/L		0.0005	11-SEP-19
Tetrachloroethene			<0.00050		mg/L		0.0005	11-SEP-19
Toluene			<0.00050		mg/L		0.0005	11-SEP-19
1,2,3-Trichlorobenzene			<0.0010		mg/L		0.001	11-SEP-19
1,2,4-Trichlorobenzene			<0.0010		mg/L		0.001	11-SEP-19
1,1,1-Trichloroethane			<0.00050		mg/L		0.0005	11-SEP-19
1,1,2-Trichloroethane			<0.00050		mg/L		0.0005	11-SEP-19
Trichloroethene			<0.00050		mg/L		0.0005	11-SEP-19
Trichlorofluoromethane			<0.0010		mg/L		0.001	11-SEP-19
1,2,3-Trichloropropane			<0.0010		mg/L		0.001	11-SEP-19
1,2,4-Trimethylbenzene			<0.0010		mg/L		0.001	11-SEP-19
1,3,5-Trimethylbenzene			<0.0010		mg/L		0.001	11-SEP-19
Vinyl Chloride			<0.00050		mg/L		0.0005	11-SEP-19
M+P-Xylenes			<0.00040		mg/L		0.0004	11-SEP-19
o-Xylene			<0.00050		mg/L		0.0005	11-SEP-19
Surrogate: 4-Bromofluorobenzene (SS)			90.3		%		70-130	11-SEP-19
Surrogate: 1,4-Difluorobenzene (SS)			99.7		%		70-130	11-SEP-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
B	Method Blank exceeds ALS DQO. Associated sample results which are < Limit of Reporting or > 5 times blank level are considered reliable.
DUPM	MPN duplicate results were outside default ALS Data Quality Objective, but within 95% confidence interval for MPN reference method. Sample results are reliable.
LCS-L	Lab Control Sample recovery was below ALS DQO. Reference Material and/or Matrix Spike results were acceptable. Non-detected sample results are considered reliable. Other results, if reported, have been qualified.
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.

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.

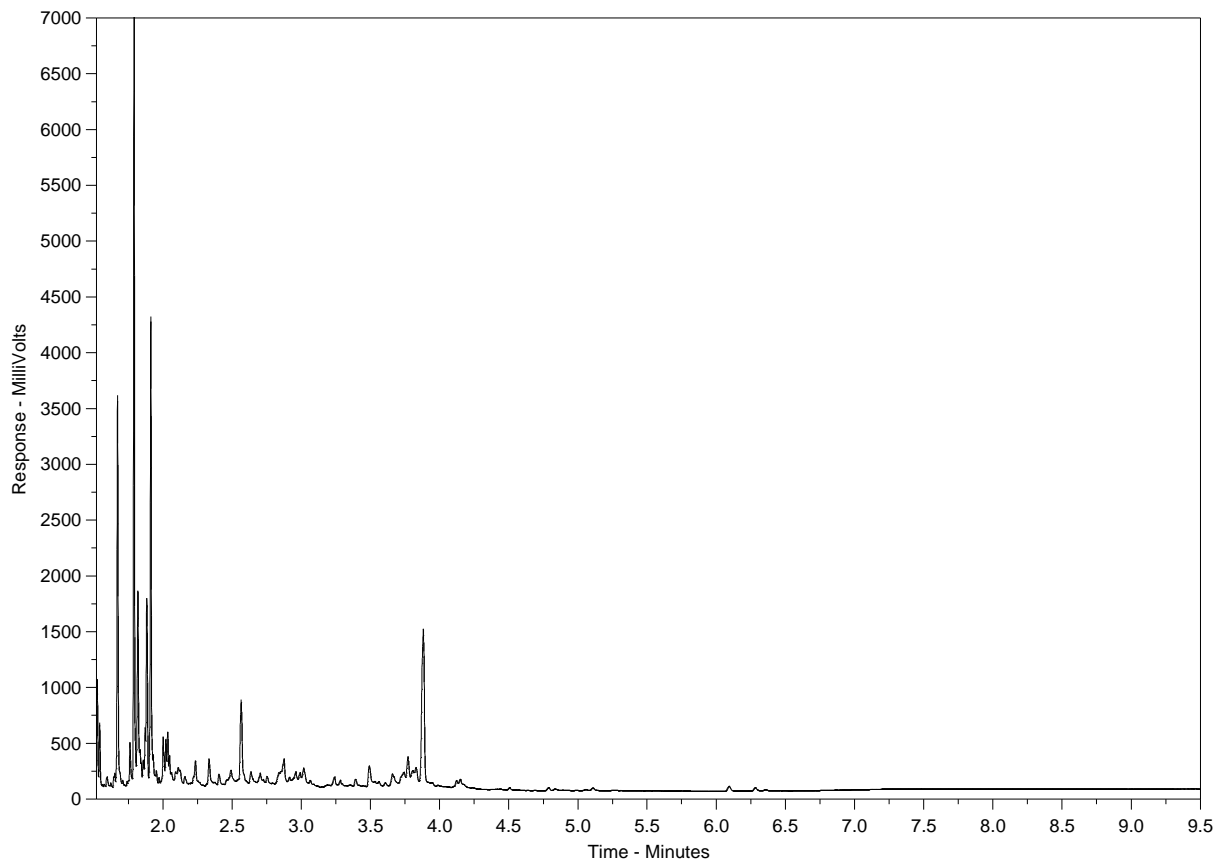
The ALS Quality Control Report is provided to ALS clients upon request. ALS includes comprehensive QC checks with every analysis to ensure our high standards of quality are met. Each QC result has a known or expected target value, which is compared against pre-determined data quality objectives to provide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

CCME F2-F4 HYDROCARBON DISTRIBUTION REPORT



ALS Sample ID: L2344325-1
 Client Sample ID: LQ25-LEACHATE TANK



← 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.

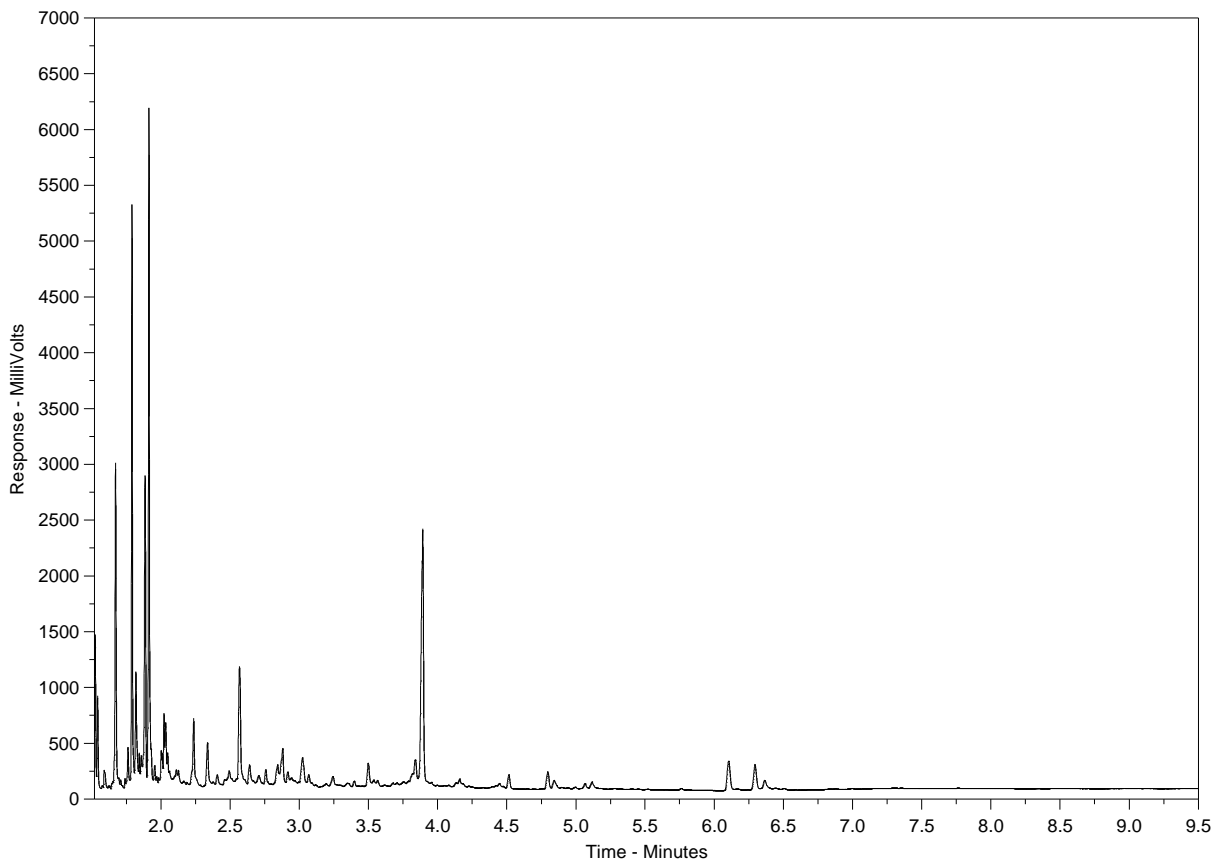
Peak heights in this report are a function of the sample concentration, the sample amount extracted, the sample dilution factor, and the scale at left.

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: L2344325-2
 Client Sample ID: LQ25-RI



← 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.

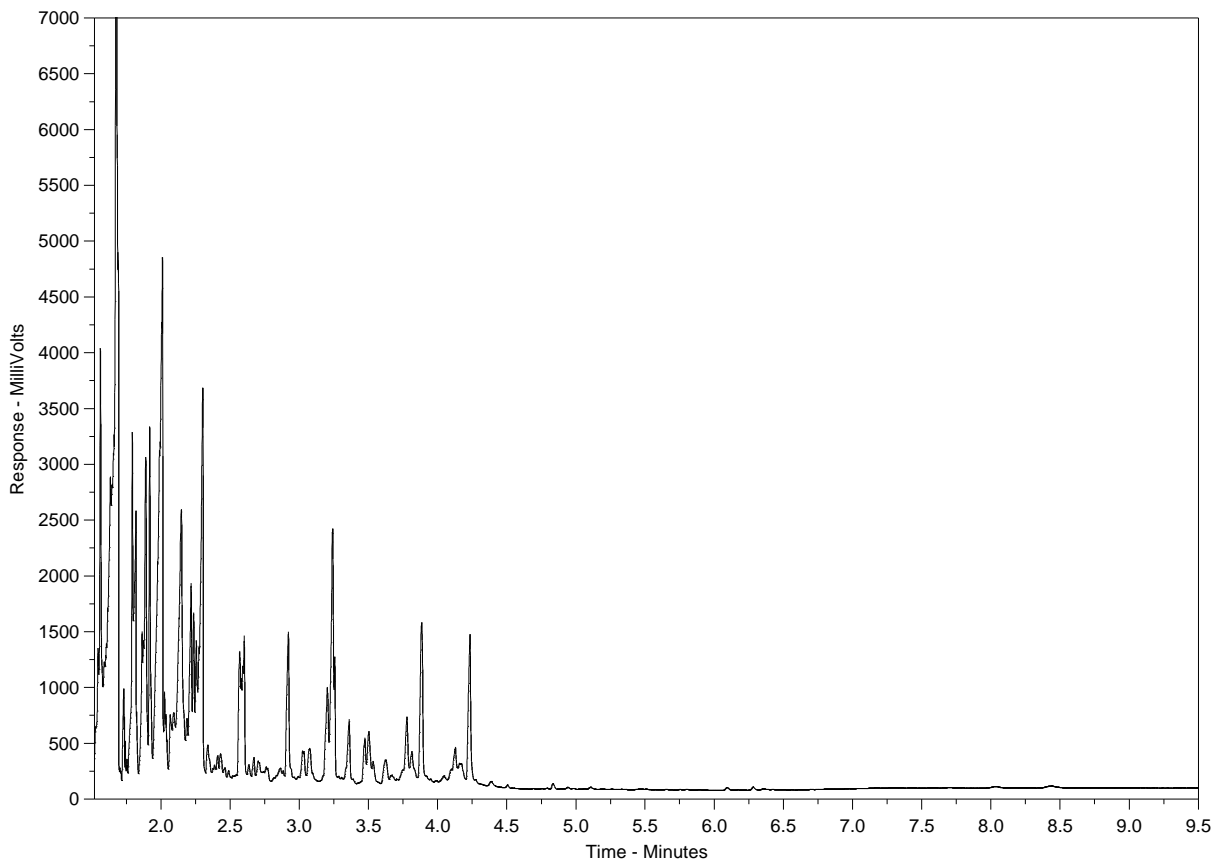
Peak heights in this report are a function of the sample concentration, the sample amount extracted, the sample dilution factor, and the scale at left.

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: L2344325-3
 Client Sample ID: LQ25-MH46



← 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.

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L2344325-COFC

COC Number: 15 -

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<input type="checkbox"/> YES <input type="checkbox"/> NO</td> <td colspan="3" rowspan="2">LQ25-MH46 Dissolved Metals preservative was empty</td> <td colspan="5">Frozen <input type="checkbox"/> SIF Observations Yes <input type="checkbox"/> No <input type="checkbox"/></td> <td colspan="5">Ice Packs <input checked="" type="checkbox"/> Ice Cubes <input type="checkbox"/> Custody seal intact Yes <input type="checkbox"/> No <input checked="" type="checkbox"/></td> </tr> <tr> <td colspan="2">Are samples for human drinking water use? <input type="checkbox"/> YES <input type="checkbox"/> NO</td> <td colspan="5">Cooling Initiated <input type="checkbox"/></td> <td colspan="5">INITIAL COOLER TEMPERATURES °C</td> <td colspan="5">FINAL COOLER TEMPERATURES °C</td> </tr> <tr> <td colspan="2">SHIPMENT RELEASE (client use)</td> <td colspan="3">INITIAL SHIPMENT RECEPTION (lab use only)</td> <td colspan="10">FINAL SHIPMENT RECEPTION (lab use only)</td> </tr> <tr> <td>Released by:</td> <td>Date:</td> <td>Time:</td> <td>Received by:</td> <td>Date:</td> <td>Time:</td> <td>Received by:</td> <td>Date:</td> <td colspan="7"></td> </tr> <tr> <td>Adam Oby</td> <td>Sept 10/19</td> <td>14:20</td> <td>CEL</td> <td>Sept 10</td> <td>2:20</td> <td>[Signature]</td> <td>SEP 10 2019</td> <td colspan="7">1270</td> </tr> </table>										Number of Containers	CN-T-L-CFA-VA, NH3-CO-L-WP	PEST-ROUTINE-WT, PEST-DIAZINON-WT	HERBSCR-LCMS-WT, PCB8-WT	TC,FC,EC-OT97-WP	CL-IC-N-WP, SO4-IC-N-WP, ALK-SPEC-WP	OCC-GRAV-WP	C-TDC,DIC,DOC-HTC-WP	MET-D-CCMS-WP, MET-T-CCMS-WP	HG-D-CVAF-WP, HG-T-CVAF-WP	CR-CR6-IC-WT	PHENOLS-4AP-WT	VOC,F1-F4-WP, PAH,PANH-WP	MBOCA-WT	Copy of Invoice with Report <input type="checkbox"/> YES <input type="checkbox"/> NO	Select Invoice Distribution: <input type="checkbox"/> EMAIL <input checked="" type="checkbox"/> MAIL <input type="checkbox"/> FAX													Company:	Email 1 or Fax													Contact:	Email 2													Project Information		Oil and Gas Required Fields (client use)													ALS Account # / Quote #:	W10051/Q67317	AFE/Cost Center:	PO#											Job #:	Section C - BRRMF LEACHATE	Major/Minor Code:	Routing Code:											PO / AFE:		Requisitioner:												LSD:		Location:												ALS Lab Work Order # (lab use only)		ALS Contact:		Sampler:										ALS Sample # (lab use only)	Sample Identification and/or Coordinates (This description will appear on the report)	Date (dd-mm-yy)	Time (hh:mm)	Sample Type											LQ25-leachate tank # 238 477	10-09-19	10:30	WATER	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓		LQ25-R1 # 238 472	↓	11:15	WATER	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓		LQ25-MH46 # 238 470	↓	12:15	WATER	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓					WATER															WATER															WATER															WATER															WATER															WATER															WATER															WATER											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? 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REFER TO BACK PAGE FOR ALS LOCATIONS AND SAMPLING INFORMATION

WHITE - LABORATORY COPY YELLOW - CLIENT COPY

OCTOBER 2015 FRONT

Failure to complete all portions of this form may delay analysis. Please fill in this form LEGIBLY. By the use of this form the user acknowledges and agrees with the Terms and Conditions as specified on the back page of the white - report copy.

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



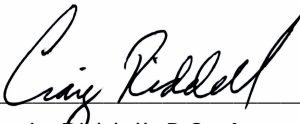
City of Winnipeg - Solid Waste Services Div
(1120 Waverley)
ATTN: CHRIS KOZAK
Solid Waste Services Division
1120 Waverley Street
Winnipeg MB R3T 0P4

Date Received: 11-SEP-19
Report Date: 03-OCT-19 07:38 (MT)
Version: FINAL

Client Phone: 204-986-2384

Certificate of Analysis

Lab Work Order #: L2345306
Project P.O. #: NOT SUBMITTED
Job Reference: SECTION C - BRRMF LECHATE
C of C Numbers:
Legal Site Desc:



Craig Riddell, B.Sc.Ag
Account Manager

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ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2345306-1 LQ25-MH13							
Sampled By: CLIENT on 11-SEP-19 @ 10:22							
Matrix: WATER							
Alkalinity species as HCO3, CO3, OH							
Alkalinity, Bicarbonate							
Bicarbonate (HCO3)	5840000		1200	ug/L		18-SEP-19	
Alkalinity, Carbonate							
Carbonate (CO3)	148000		600	ug/L		18-SEP-19	
Alkalinity, Hydroxide							
Hydroxide (OH)	<340		340	ug/L		18-SEP-19	
Alkalinity, Total (as CaCO3)							
Alkalinity, Total (as CaCO3)	5030000		1000	ug/L		16-SEP-19	R4817572
Dissolved Carbons							
Dissolved Inorganic Carbon by Combustion							
Dissolved Inorganic Carbon	1050000		5000	ug/L		16-SEP-19	R4819173
Dissolved Organic Carbon by Combustion							
Dissolved Organic Carbon	341000		5000	ug/L		17-SEP-19	R4819352
Total Dissolved Carbon by Calculation							
Total Dissolved Carbon	1390000		7100	ug/L		18-SEP-19	
Miscellaneous Parameters							
Ammonia, Total (as N)	481000		10000	ug/L		16-SEP-19	R4815489
Chloride (Cl)	1740000		25000	ug/L		13-SEP-19	R4820130
Chromium, Hexavalent	<10	DLM	10	ug/L		17-SEP-19	R4817691
Fecal Coliforms	50		10	MPN/100mL		11-SEP-19	R4801188
Cyanide, Total	7.9	HTP	1.0	ug/L		20-SEP-19	R4828109
Mercury (Hg)-Total	<0.050	DLM	0.050	ug/L	19-SEP-19	24-SEP-19	R4841216
Oil and Grease	24600		5000	ug/L		20-SEP-19	R4827930
Phenols (4AAP)	95	DLM	10	ug/L		17-SEP-19	R4814988
Sulfate (SO4)	123000		15000	ug/L		13-SEP-19	R4820130
Total and E. coli, 1:10 dilution by QT97							
Total Coliforms	15500		10	MPN/100mL		11-SEP-19	R4801209
Escherichia Coli	100		10	MPN/100mL		11-SEP-19	R4801209
Total Metals in Water by CRC ICPMS							
Aluminum (Al)-Total	533	DLM	30	ug/L	19-SEP-19	19-SEP-19	R4825608
Antimony (Sb)-Total	3.3	DLM	1.0	ug/L	19-SEP-19	19-SEP-19	R4825608
Arsenic (As)-Total	10.0	DLM	1.0	ug/L	19-SEP-19	19-SEP-19	R4825608
Barium (Ba)-Total	585	DLM	1.0	ug/L	19-SEP-19	19-SEP-19	R4825608
Beryllium (Be)-Total	<1.0	DLM	1.0	ug/L	19-SEP-19	19-SEP-19	R4825608
Bismuth (Bi)-Total	<0.50	DLM	0.50	ug/L	19-SEP-19	19-SEP-19	R4825608
Boron (B)-Total	6900		1000	ug/L	19-SEP-19	30-SEP-19	R4854708
Cadmium (Cd)-Total	0.389	DLM	0.050	ug/L	19-SEP-19	19-SEP-19	R4825608
Calcium (Ca)-Total	221000	DLM	500	ug/L	19-SEP-19	19-SEP-19	R4825608
Cesium (Cs)-Total	0.22	DLM	0.10	ug/L	19-SEP-19	19-SEP-19	R4825608
Chromium (Cr)-Total	37.6	DLM	1.0	ug/L	19-SEP-19	19-SEP-19	R4825608
Cobalt (Co)-Total	20.4	DLM	1.0	ug/L	19-SEP-19	19-SEP-19	R4825608
Copper (Cu)-Total	<5.0	DLM	5.0	ug/L	19-SEP-19	19-SEP-19	R4825608
Iron (Fe)-Total	7720	DLM	100	ug/L	19-SEP-19	19-SEP-19	R4825608
Lead (Pb)-Total	15.6	DLM	0.50	ug/L	19-SEP-19	19-SEP-19	R4825608
Lithium (Li)-Total	396	DLM	10	ug/L	19-SEP-19	19-SEP-19	R4825608
Magnesium (Mg)-Total	599000	DLM	50	ug/L	19-SEP-19	19-SEP-19	R4825608
Manganese (Mn)-Total	602	DLM	1.0	ug/L	19-SEP-19	19-SEP-19	R4825608
Molybdenum (Mo)-Total	3.22	DLM	0.50	ug/L	19-SEP-19	19-SEP-19	R4825608
Nickel (Ni)-Total	190	DLM	5.0	ug/L	19-SEP-19	19-SEP-19	R4825608
Potassium (K)-Total	391000	DLM	500	ug/L	19-SEP-19	19-SEP-19	R4825608
Phosphorus (P)-Total	3030	DLM	300	ug/L	19-SEP-19	19-SEP-19	R4825608

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ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2345306-1 LQ25-MH13							
Sampled By: CLIENT on 11-SEP-19 @ 10:22							
Matrix: WATER							
Total Metals in Water by CRC ICPMS							
Rubidium (Rb)-Total	125	DLM	2.0	ug/L	19-SEP-19	19-SEP-19	R4825608
Selenium (Se)-Total	1.21	DLM	0.50	ug/L	19-SEP-19	19-SEP-19	R4825608
Silicon (Si)-Total	19500	DLM	1000	ug/L	19-SEP-19	19-SEP-19	R4825608
Silver (Ag)-Total	<0.10	DLM	0.10	ug/L	19-SEP-19	19-SEP-19	R4825608
Sodium (Na)-Total	1220000	DLM	500	ug/L	19-SEP-19	19-SEP-19	R4825608
Strontium (Sr)-Total	3730	DLM	2.0	ug/L	19-SEP-19	19-SEP-19	R4825608
Sulfur (S)-Total	60200	DLM	5000	ug/L	19-SEP-19	19-SEP-19	R4825608
Tellurium (Te)-Total	<2.0	DLM	2.0	ug/L	19-SEP-19	19-SEP-19	R4825608
Thallium (Tl)-Total	<0.10	DLM	0.10	ug/L	19-SEP-19	19-SEP-19	R4825608
Thorium (Th)-Total	<1.0	DLM	1.0	ug/L	19-SEP-19	19-SEP-19	R4825608
Tin (Sn)-Total	12.2	DLM	1.0	ug/L	19-SEP-19	19-SEP-19	R4825608
Titanium (Ti)-Total	40.3	DLM	3.0	ug/L	19-SEP-19	19-SEP-19	R4825608
Tungsten (W)-Total	2.5	DLM	1.0	ug/L	19-SEP-19	19-SEP-19	R4825608
Uranium (U)-Total	0.59	DLM	0.10	ug/L	19-SEP-19	19-SEP-19	R4825608
Vanadium (V)-Total	9.7	DLM	5.0	ug/L	19-SEP-19	19-SEP-19	R4825608
Zinc (Zn)-Total	85	DLM	30	ug/L	19-SEP-19	19-SEP-19	R4825608
Zirconium (Zr)-Total	21.1	DLM	2.0	ug/L	19-SEP-19	19-SEP-19	R4825608
Dissolved Metals in Water by CRC ICPMS							
Dissolved Metals Filtration Location	LAB					18-SEP-19	R4818753
Aluminum (Al)-Dissolved	67	DLM	10	ug/L	18-SEP-19	18-SEP-19	R4821590
Antimony (Sb)-Dissolved	3.1	DLM	1.0	ug/L	18-SEP-19	18-SEP-19	R4821590
Arsenic (As)-Dissolved	8.2	DLM	1.0	ug/L	18-SEP-19	18-SEP-19	R4821590
Barium (Ba)-Dissolved	424	DLM	1.0	ug/L	18-SEP-19	18-SEP-19	R4821590
Beryllium (Be)-Dissolved	<1.0	DLM	1.0	ug/L	18-SEP-19	18-SEP-19	R4821590
Bismuth (Bi)-Dissolved	<0.50	DLM	0.50	ug/L	18-SEP-19	18-SEP-19	R4821590
Boron (B)-Dissolved	6200		1000	ug/L	18-SEP-19	19-SEP-19	R4831868
Cadmium (Cd)-Dissolved	<0.050	DLM	0.050	ug/L	18-SEP-19	18-SEP-19	R4821590
Calcium (Ca)-Dissolved	217000	DLM	500	ug/L	18-SEP-19	18-SEP-19	R4821590
Cesium (Cs)-Dissolved	0.26	DLM	0.10	ug/L	18-SEP-19	18-SEP-19	R4821590
Chromium (Cr)-Dissolved	37.5	DLM	1.0	ug/L	18-SEP-19	18-SEP-19	R4821590
Cobalt (Co)-Dissolved	23.1	DLM	1.0	ug/L	18-SEP-19	18-SEP-19	R4821590
Copper (Cu)-Dissolved	<2.0	DLM	2.0	ug/L	18-SEP-19	18-SEP-19	R4821590
Iron (Fe)-Dissolved	2710	DLM	100	ug/L	18-SEP-19	18-SEP-19	R4821590
Lead (Pb)-Dissolved	<0.50	DLM	0.50	ug/L	18-SEP-19	18-SEP-19	R4821590
Lithium (Li)-Dissolved	395	DLM	10	ug/L	18-SEP-19	18-SEP-19	R4821590
Magnesium (Mg)-Dissolved	554000	DLM	50	ug/L	18-SEP-19	18-SEP-19	R4821590
Manganese (Mn)-Dissolved	488	DLM	1.0	ug/L	18-SEP-19	18-SEP-19	R4821590
Molybdenum (Mo)-Dissolved	3.63	DLM	0.50	ug/L	18-SEP-19	18-SEP-19	R4821590
Nickel (Ni)-Dissolved	207	DLM	5.0	ug/L	18-SEP-19	18-SEP-19	R4821590
Phosphorus (P)-Dissolved	1820	DLM	300	ug/L	18-SEP-19	18-SEP-19	R4821590
Potassium (K)-Dissolved	460000	DLM	500	ug/L	18-SEP-19	18-SEP-19	R4821590
Rubidium (Rb)-Dissolved	133	DLM	2.0	ug/L	18-SEP-19	18-SEP-19	R4821590
Selenium (Se)-Dissolved	1.01	DLM	0.50	ug/L	18-SEP-19	18-SEP-19	R4821590
Silicon (Si)-Dissolved	20000	DLM	500	ug/L	18-SEP-19	18-SEP-19	R4821590
Silver (Ag)-Dissolved	<0.10	DLM	0.10	ug/L	18-SEP-19	18-SEP-19	R4821590
Sodium (Na)-Dissolved	1250000	DLM	500	ug/L	18-SEP-19	18-SEP-19	R4821590
Strontium (Sr)-Dissolved	3860	DLM	1.0	ug/L	18-SEP-19	18-SEP-19	R4821590
Sulfur (S)-Dissolved	60600	DLM	5000	ug/L	18-SEP-19	18-SEP-19	R4821590
Tellurium (Te)-Dissolved	<2.0	DLM	2.0	ug/L	18-SEP-19	18-SEP-19	R4821590
Thallium (Tl)-Dissolved	<0.10	DLM	0.10	ug/L	18-SEP-19	18-SEP-19	R4821590
Thorium (Th)-Dissolved	<1.0	DLM	1.0	ug/L	18-SEP-19	18-SEP-19	R4821590

* 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
L2345306-1 LQ25-MH13							
Sampled By: CLIENT on 11-SEP-19 @ 10:22							
Matrix: WATER							
Dissolved Metals in Water by CRC ICPMS							
Tin (Sn)-Dissolved	5.0	DLM	1.0	ug/L	18-SEP-19	18-SEP-19	R4821590
Titanium (Ti)-Dissolved	26.6	DLM	3.0	ug/L	18-SEP-19	18-SEP-19	R4821590
Tungsten (W)-Dissolved	4.4	DLM	1.0	ug/L	18-SEP-19	18-SEP-19	R4821590
Uranium (U)-Dissolved	0.64	DLM	0.10	ug/L	18-SEP-19	18-SEP-19	R4821590
Vanadium (V)-Dissolved	8.7	DLM	5.0	ug/L	18-SEP-19	18-SEP-19	R4821590
Zinc (Zn)-Dissolved	<10	DLM	10	ug/L	18-SEP-19	18-SEP-19	R4821590
Zirconium (Zr)-Dissolved	26.5	DLM	2.0	ug/L	18-SEP-19	18-SEP-19	R4821590
Mercury Dissolved							
Dissolved Mercury Filtration Location	LAB					19-SEP-19	R4826797
Mercury (Hg)-Dissolved	<0.0050		0.0050	ug/L	19-SEP-19	19-SEP-19	R4827450
Polyaromatic Hydrocarbons (PAHs)							
1-Methyl Naphthalene	9.34	DLM	0.20	ug/L	13-SEP-19	19-SEP-19	R4822268
2-Methyl Naphthalene	15.7	DLM	0.20	ug/L	13-SEP-19	19-SEP-19	R4822268
Acenaphthene	14.4	DLM	0.20	ug/L	13-SEP-19	19-SEP-19	R4822268
Acenaphthylene	0.49	DLM	0.20	ug/L	13-SEP-19	19-SEP-19	R4822268
Anthracene	13.4	DLM	0.10	ug/L	13-SEP-19	19-SEP-19	R4822268
Acridine	<0.50	DLM	0.50	ug/L	13-SEP-19	19-SEP-19	R4822268
Benzo(a)anthracene	20.2	DLM	0.10	ug/L	13-SEP-19	19-SEP-19	R4822268
Benzo(a)pyrene	9.76	DLM	0.050	ug/L	13-SEP-19	19-SEP-19	R4822268
Benzo(b&j)fluoranthene	13.5	DLM	0.10	ug/L	13-SEP-19	19-SEP-19	R4822268
Benzo(g,h,i)perylene	5.10	DLM	0.20	ug/L	13-SEP-19	19-SEP-19	R4822268
Benzo(k)fluoranthene	4.84	DLM	0.10	ug/L	13-SEP-19	19-SEP-19	R4822268
Chrysene	26.4	DLM	0.20	ug/L	13-SEP-19	19-SEP-19	R4822268
Dibenzo(a,h)anthracene	1.41	DLM	0.050	ug/L	13-SEP-19	19-SEP-19	R4822268
Fluoranthene	46.0	DLM	0.20	ug/L	13-SEP-19	19-SEP-19	R4822268
Fluorene	12.1	DLM	0.20	ug/L	13-SEP-19	19-SEP-19	R4822268
Indeno(1,2,3-cd)pyrene	5.22	DLM	0.10	ug/L	13-SEP-19	19-SEP-19	R4822268
Naphthalene	21.5	DLM	0.50	ug/L	13-SEP-19	19-SEP-19	R4822268
Phenanthrene	48.2	DLM	0.50	ug/L	13-SEP-19	19-SEP-19	R4822268
Pyrene	38.3	DLM	0.10	ug/L	13-SEP-19	19-SEP-19	R4822268
Quinoline	<1.0	DLM	1.0	ug/L	13-SEP-19	19-SEP-19	R4822268
B(a)P Total Potency Equivalent	15.9		0.072	ug/L	13-SEP-19	19-SEP-19	R4822268
Surrogate: Acenaphthene d10	96.6		60-130	%	13-SEP-19	19-SEP-19	R4822268
Surrogate: Acridine d9	87.6		60-130	%	13-SEP-19	19-SEP-19	R4822268
Surrogate: Chrysene d12	88.9		60-130	%	13-SEP-19	19-SEP-19	R4822268
Surrogate: Naphthalene d8	69.0		50-130	%	13-SEP-19	19-SEP-19	R4822268
Surrogate: Phenanthrene d10	92.7		60-130	%	13-SEP-19	19-SEP-19	R4822268
PCBs							
Aroclor 1016	<0.20	DLM	0.20	ug/L	20-SEP-19	20-SEP-19	R4813508
Aroclor 1221	<0.20	DLM	0.20	ug/L	20-SEP-19	20-SEP-19	R4813508
Aroclor 1232	<0.20	DLM	0.20	ug/L	20-SEP-19	20-SEP-19	R4813508
Aroclor 1242	<3.0	DLM	3.0	ug/L	20-SEP-19	20-SEP-19	R4813508
Aroclor 1248	<0.20	DLM	0.20	ug/L	20-SEP-19	20-SEP-19	R4813508
Aroclor 1254	<0.25	DLM	0.25	ug/L	20-SEP-19	20-SEP-19	R4813508
Aroclor 1260	<0.20	DLM	0.20	ug/L	20-SEP-19	20-SEP-19	R4813508
Aroclor 1262	<0.20	DLM	0.20	ug/L	20-SEP-19	20-SEP-19	R4813508
Aroclor 1268	<0.20	DLM	0.20	ug/L	20-SEP-19	20-SEP-19	R4813508
Total PCBs	3.1	DLM	3.1	ug/L	20-SEP-19	20-SEP-19	R4813508
Surrogate: d14-Terphenyl	84.5		40-130	%	20-SEP-19	20-SEP-19	R4813508
Pesticides, Organochlorine							
Aldrin	<50	DLM	50	ug/L	13-SEP-19	23-SEP-19	R4822711
a-chlordane	<50	DLM	50	ug/L	13-SEP-19	23-SEP-19	R4822711

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ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2345306-1 LQ25-MH13							
Sampled By: CLIENT on 11-SEP-19 @ 10:22							
Matrix: WATER							
Pesticides, Organochlorine							
g-chlordane	<50	DLM	50	ug/L	13-SEP-19	23-SEP-19	R4822711
alpha-BHC	<50	DLM	50	ug/L	13-SEP-19	23-SEP-19	R4822711
beta-BHC	<50	DLM	50	ug/L	13-SEP-19	23-SEP-19	R4822711
delta-BHC	<50	DLM	50	ug/L	13-SEP-19	23-SEP-19	R4822711
o,p-DDD	<50	DLM	50	ug/L	13-SEP-19	23-SEP-19	R4822711
pp-DDD	<50	DLM	50	ug/L	13-SEP-19	23-SEP-19	R4822711
o,p-DDE	<50	DLM	50	ug/L	13-SEP-19	23-SEP-19	R4822711
pp-DDE	<50	DLM	50	ug/L	13-SEP-19	23-SEP-19	R4822711
op-DDT	<50	DLM	50	ug/L	13-SEP-19	23-SEP-19	R4822711
pp-DDT	<50	DLM	50	ug/L	13-SEP-19	23-SEP-19	R4822711
Dieldrin	<50	DLM	50	ug/L	13-SEP-19	23-SEP-19	R4822711
alpha-Endosulfan	<50	DLM	50	ug/L	13-SEP-19	23-SEP-19	R4822711
beta-Endosulfan	<50	DLM	50	ug/L	13-SEP-19	23-SEP-19	R4822711
Endosulfan Sulfate	<50	DLM	50	ug/L	13-SEP-19	23-SEP-19	R4822711
Endrin	<50	DLM	50	ug/L	13-SEP-19	23-SEP-19	R4822711
Endrin Aldehyde	<50	DLM	50	ug/L	13-SEP-19	23-SEP-19	R4822711
Hexachlorobenzene	<50	DLM	50	ug/L	13-SEP-19	23-SEP-19	R4822711
Heptachlor	<50	DLM	50	ug/L	13-SEP-19	23-SEP-19	R4822711
Heptachlor Epoxide	<50	DLM	50	ug/L	13-SEP-19	23-SEP-19	R4822711
Lindane	<50	DLM	50	ug/L	13-SEP-19	23-SEP-19	R4822711
Methoxychlor	<50	DLM	50	ug/L	13-SEP-19	23-SEP-19	R4822711
Mirex	<50	DLM	50	ug/L	13-SEP-19	23-SEP-19	R4822711
Oxychlordane	<50	DLM	50	ug/L	13-SEP-19	23-SEP-19	R4822711
Surrogate: 2-Fluorobiphenyl	N/A	SDO:RNA	40-130	%	13-SEP-19	23-SEP-19	R4822711
Surrogate: d14-Terphenyl	N/A	SDO:RNA	40-130	%	13-SEP-19	23-SEP-19	R4822711
Herbicides in Water							
Clopyralid	<1.0	DLM	1.0	ug/L	16-SEP-19	17-SEP-19	R4813269
Dicamba	<1.0	DLM	1.0	ug/L	16-SEP-19	17-SEP-19	R4813269
Mecoprop	119	DLHC	10	ug/L	16-SEP-19	17-SEP-19	R4813269
MCPA	<1.0	DLM	1.0	ug/L	16-SEP-19	17-SEP-19	R4813269
2,4-D	<1.0	DLM	1.0	ug/L	16-SEP-19	17-SEP-19	R4813269
Bromoxynil	<1.0	DLM	1.0	ug/L	16-SEP-19	17-SEP-19	R4813269
Triclopyr	<1.0	DLM	1.0	ug/L	16-SEP-19	17-SEP-19	R4813269
2,4,5-T	<1.0	DLM	1.0	ug/L	16-SEP-19	17-SEP-19	R4813269
2,4,5-TP	<1.0	DLM	1.0	ug/L	16-SEP-19	17-SEP-19	R4813269
Picloram	<1.0	DLM	1.0	ug/L	16-SEP-19	17-SEP-19	R4813269
2,4-DB	<1.0	DLM	1.0	ug/L	16-SEP-19	17-SEP-19	R4813269
2,4-DP	<1.0	DLM	1.0	ug/L	16-SEP-19	17-SEP-19	R4813269
Dinoseb	<1.0	DLM	1.0	ug/L	16-SEP-19	17-SEP-19	R4813269
MCPB	<1.0	DLM	1.0	ug/L	16-SEP-19	17-SEP-19	R4813269
Surrogate: 2,4-Dichlorophenylacetic Acid	92.5		50-130	%	16-SEP-19	17-SEP-19	R4813269
Miscellaneous Pesticides							
Diazinon	<3.5	DLM	3.5	ug/L	13-SEP-19	18-SEP-19	R4818351
Surrogate: 2-Fluorobiphenyl	74.3		40-130	%	13-SEP-19	18-SEP-19	R4818351
Surrogate: d14-Terphenyl	75.8		40-130	%	13-SEP-19	18-SEP-19	R4818351
4,4'-Methylenebis(2-chloroaniline)							
4,4'-Methylenebis(2-chloroaniline)	<0.50		0.50	ug/L	13-SEP-19	16-SEP-19	R4811130
Surrogate: p-Terphenyl d14	86.6		40-130	%	13-SEP-19	16-SEP-19	R4811130
VOC plus F1 to F4							
CCME PHC F2-F4 in Water							
F2 (C10-C16)	2470		100	ug/L	13-SEP-19	14-SEP-19	R4800048
F3 (C16-C34)	13000		250	ug/L	13-SEP-19	14-SEP-19	R4800048

* 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
L2345306-1 LQ25-MH13							
Sampled By: CLIENT on 11-SEP-19 @ 10:22							
Matrix: WATER							
CCME PHC F2-F4 in Water							
F4 (C34-C50)	1480		250	ug/L	13-SEP-19	14-SEP-19	R4800048
Surrogate: 2-Bromobenzotrifluoride	94.7		60-140	%	13-SEP-19	14-SEP-19	R4800048
CCME Total Hydrocarbons							
F1-BTEX	370		110	ug/L		26-SEP-19	
F2-Naphth	2450		100	ug/L		26-SEP-19	
F3-PAH	12800		250	ug/L		26-SEP-19	
Total Hydrocarbons (C6-C50)	17700		380	ug/L		26-SEP-19	
Sum of Xylene Isomer Concentrations							
Xylenes (Total)	286		2.1	ug/L		26-SEP-19	
Total Trihalomethanes (THMs)							
Total THMs	<1.3		1.3	ug/L		26-SEP-19	
VOC plus F1 by GCMS							
Acetone	<50		50	ug/L		12-SEP-19	R4800829
Benzene	9.25		0.50	ug/L		12-SEP-19	R4800829
Bromobenzene	<1.0		1.0	ug/L		12-SEP-19	R4800829
Bromochloromethane	<1.0		1.0	ug/L		12-SEP-19	R4800829
Bromodichloromethane	<0.50		0.50	ug/L		12-SEP-19	R4800829
Bromoform	<1.0		1.0	ug/L		12-SEP-19	R4800829
Bromomethane	<1.0		1.0	ug/L		12-SEP-19	R4800829
n-Butylbenzene	<2.0	DLCI	2.0	ug/L		12-SEP-19	R4800829
sec-Butylbenzene	<1.0		1.0	ug/L		12-SEP-19	R4800829
tert-Butylbenzene	<1.0		1.0	ug/L		12-SEP-19	R4800829
Carbon disulfide	<5.0		5.0	ug/L		12-SEP-19	R4800829
Carbon Tetrachloride	<0.50		0.50	ug/L		12-SEP-19	R4800829
Chlorobenzene	3.7		1.0	ug/L		12-SEP-19	R4800829
Chloroethane	3.7		1.0	ug/L		12-SEP-19	R4800829
Chloroform	<0.50		0.50	ug/L		12-SEP-19	R4800829
Chloromethane	<5.0		5.0	ug/L		12-SEP-19	R4800829
2-Chlorotoluene	<20		20	ug/L		12-SEP-19	R4800829
4-Chlorotoluene	<1.0		1.0	ug/L		12-SEP-19	R4800829
Dibromochloromethane	0.58		0.50	ug/L		12-SEP-19	R4800829
1,2-Dibromo-3-chloropropane	<1.0		1.0	ug/L		12-SEP-19	R4800829
1,2-Dibromoethane	<1.0		1.0	ug/L		12-SEP-19	R4800829
Dibromomethane	<1.0		1.0	ug/L		12-SEP-19	R4800829
1,2-Dichlorobenzene	1.26		0.50	ug/L		12-SEP-19	R4800829
1,3-Dichlorobenzene	<1.0		1.0	ug/L		12-SEP-19	R4800829
1,4-Dichlorobenzene	9.2		1.0	ug/L		12-SEP-19	R4800829
Dichlorodifluoromethane	<1.0		1.0	ug/L		12-SEP-19	R4800829
1,1-dichloroethane	5.04		0.50	ug/L		12-SEP-19	R4800829
1,2-Dichloroethane	<0.50		0.50	ug/L		12-SEP-19	R4800829
1,1-dichloroethene	<0.50		0.50	ug/L		12-SEP-19	R4800829
cis-1,2-Dichloroethene	<1.0		1.0	ug/L		12-SEP-19	R4800829
trans-1,2-Dichloroethene	<1.0		1.0	ug/L		12-SEP-19	R4800829
Dichloromethane	<5.0		5.0	ug/L		12-SEP-19	R4800829
1,2-Dichloropropane	<1.0		1.0	ug/L		12-SEP-19	R4800829
1,3-Dichloropropane	<1.0		1.0	ug/L		12-SEP-19	R4800829
2,2-Dichloropropane	<4.0	DLCI	4.0	ug/L		12-SEP-19	R4800829
1,1-Dichloropropene	<1.0		1.0	ug/L		12-SEP-19	R4800829
cis-1,3-Dichloropropene	<1.0		1.0	ug/L		12-SEP-19	R4800829
trans-1,3-Dichloropropene	<1.0		1.0	ug/L		12-SEP-19	R4800829
Ethylbenzene	45.0	DLHC	2.5	ug/L		12-SEP-19	R4800829
F1	740		100	ug/L		12-SEP-19	R4800829

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ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2345306-1 LQ25-MH13 Sampled By: CLIENT on 11-SEP-19 @ 10:22 Matrix: WATER VOC plus F1 by GCMS							
Hexachlorobutadiene	<1.0		1.0	ug/L		12-SEP-19	R4800829
Hexane	<1.0		1.0	ug/L		12-SEP-19	R4800829
2-Hexanone (Methyl butyl ketone)	<20		20	ug/L		12-SEP-19	R4800829
Isopropylbenzene	4.3		1.0	ug/L		12-SEP-19	R4800829
4-Isopropyltoluene	24.9		1.0	ug/L		12-SEP-19	R4800829
MEK	<20		20	ug/L		12-SEP-19	R4800829
MIBK	<20		20	ug/L		12-SEP-19	R4800829
MTBE	3.09		0.50	ug/L		12-SEP-19	R4800829
Styrene	<1.0		1.0	ug/L		12-SEP-19	R4800829
1,1,1,2-Tetrachloroethane	<0.50		0.50	ug/L		12-SEP-19	R4800829
1,1,2,2-Tetrachloroethane	<0.50		0.50	ug/L		12-SEP-19	R4800829
Tetrachloroethene	<0.50		0.50	ug/L		12-SEP-19	R4800829
Toluene	26.0		0.50	ug/L		12-SEP-19	R4800829
1,2,3-Trichlorobenzene	<1.0		1.0	ug/L		12-SEP-19	R4800829
1,2,4-Trichlorobenzene	<1.0		1.0	ug/L		12-SEP-19	R4800829
1,1,1-Trichloroethane	<0.50		0.50	ug/L		12-SEP-19	R4800829
1,1,2-Trichloroethane	<0.50		0.50	ug/L		12-SEP-19	R4800829
Trichloroethene	<0.50		0.50	ug/L		12-SEP-19	R4800829
Trichlorofluoromethane	<1.0		1.0	ug/L		12-SEP-19	R4800829
1,2,3-Trichloropropane	<1.0		1.0	ug/L		12-SEP-19	R4800829
1,2,4-Trimethylbenzene	42.0		1.0	ug/L		12-SEP-19	R4800829
1,3,5-Trimethylbenzene	12.3		1.0	ug/L		12-SEP-19	R4800829
Vinyl Chloride	2.02		0.50	ug/L		12-SEP-19	R4800829
M+P-Xylenes	192	DLHC	2.0	ug/L		12-SEP-19	R4800829
o-Xylene	94.4		0.50	ug/L		12-SEP-19	R4800829
Surrogate: 4-Bromofluorobenzene (SS)	106.2		70-130	%		12-SEP-19	R4800829
Surrogate: 1,4-Difluorobenzene (SS)	99.2		70-130	%		12-SEP-19	R4800829
L2345306-2 LQ25-MH24 Sampled By: CLIENT on 11-SEP-19 @ 10:22 Matrix: WATER Alkalinity species as HCO3, CO3, OH							
Alkalinity, Bicarbonate Bicarbonate (HCO3)	4000000		1200	ug/L		16-SEP-19	
Alkalinity, Carbonate Carbonate (CO3)	<600		600	ug/L		16-SEP-19	
Alkalinity, Hydroxide Hydroxide (OH)	<340		340	ug/L		16-SEP-19	
Alkalinity, Total (as CaCO3) Alkalinity, Total (as CaCO3)	3280000		1000	ug/L		13-SEP-19	R4809090
Dissolved Carbons							
Dissolved Inorganic Carbon by Combustion Dissolved Inorganic Carbon	680000		5000	ug/L		16-SEP-19	R4819173
Dissolved Organic Carbon by Combustion Dissolved Organic Carbon	387000		5000	ug/L		17-SEP-19	R4819352
Total Dissolved Carbon by Calculation Total Dissolved Carbon	1070000		7100	ug/L		18-SEP-19	
Miscellaneous Parameters							
Ammonia, Total (as N)	877000		50000	ug/L		16-SEP-19	R4815489
Chloride (Cl)	925000		25000	ug/L		13-SEP-19	R4820130
Chromium, Hexavalent	<10	DLM	10	ug/L		17-SEP-19	R4817691
Fecal Coliforms	17300		10	MPN/100mL		11-SEP-19	R4801188

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ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2345306-2 LQ25-MH24							
Sampled By: CLIENT on 11-SEP-19 @ 10:22							
Matrix: WATER							
Cyanide, Total	16.4	HTP	1.0	ug/L		20-SEP-19	R4828109
Mercury (Hg)-Total	0.0060		0.0050	ug/L	19-SEP-19	19-SEP-19	R4827412
Oil and Grease	10900		5000	ug/L		20-SEP-19	R4827930
Phenols (4AAP)	31.2	DLM	5.0	ug/L		16-SEP-19	R4810490
Sulfate (SO4)	837000		15000	ug/L		13-SEP-19	R4820130
Total and E. coli, 1:10 dilution by QT97							
Total Coliforms	>24200		10	MPN/100mL		11-SEP-19	R4801209
Escherichia Coli	15500		10	MPN/100mL		11-SEP-19	R4801209
Total Metals in Water by CRC ICPMS							
Aluminum (Al)-Total	102	DLM	30	ug/L	19-SEP-19	19-SEP-19	R4825608
Antimony (Sb)-Total	1.1	DLM	1.0	ug/L	19-SEP-19	19-SEP-19	R4825608
Arsenic (As)-Total	13.7	DLM	1.0	ug/L	19-SEP-19	19-SEP-19	R4825608
Barium (Ba)-Total	293	DLM	1.0	ug/L	19-SEP-19	19-SEP-19	R4825608
Beryllium (Be)-Total	<1.0	DLM	1.0	ug/L	19-SEP-19	19-SEP-19	R4825608
Bismuth (Bi)-Total	<0.50	DLM	0.50	ug/L	19-SEP-19	19-SEP-19	R4825608
Boron (B)-Total	10500		1000	ug/L	19-SEP-19	23-SEP-19	R4838508
Cadmium (Cd)-Total	0.067	DLM	0.050	ug/L	19-SEP-19	19-SEP-19	R4825608
Calcium (Ca)-Total	203000	DLM	500	ug/L	19-SEP-19	19-SEP-19	R4825608
Cesium (Cs)-Total	0.34	DLM	0.10	ug/L	19-SEP-19	19-SEP-19	R4825608
Chromium (Cr)-Total	39.0	DLM	1.0	ug/L	19-SEP-19	19-SEP-19	R4825608
Cobalt (Co)-Total	25.5	DLM	1.0	ug/L	19-SEP-19	19-SEP-19	R4825608
Copper (Cu)-Total	<5.0	DLM	5.0	ug/L	19-SEP-19	19-SEP-19	R4825608
Iron (Fe)-Total	1170	DLM	100	ug/L	19-SEP-19	19-SEP-19	R4825608
Lead (Pb)-Total	1.19	DLM	0.50	ug/L	19-SEP-19	19-SEP-19	R4825608
Lithium (Li)-Total	292	DLM	10	ug/L	19-SEP-19	19-SEP-19	R4825608
Magnesium (Mg)-Total	406000	DLM	50	ug/L	19-SEP-19	19-SEP-19	R4825608
Manganese (Mn)-Total	310	DLM	1.0	ug/L	19-SEP-19	19-SEP-19	R4825608
Molybdenum (Mo)-Total	3.85	DLM	0.50	ug/L	19-SEP-19	19-SEP-19	R4825608
Nickel (Ni)-Total	127	DLM	5.0	ug/L	19-SEP-19	19-SEP-19	R4825608
Potassium (K)-Total	390000	DLM	500	ug/L	19-SEP-19	19-SEP-19	R4825608
Phosphorus (P)-Total	4730	DLM	300	ug/L	19-SEP-19	19-SEP-19	R4825608
Rubidium (Rb)-Total	138	DLM	2.0	ug/L	19-SEP-19	19-SEP-19	R4825608
Selenium (Se)-Total	1.91	DLM	0.50	ug/L	19-SEP-19	19-SEP-19	R4825608
Silicon (Si)-Total	21400	DLM	1000	ug/L	19-SEP-19	19-SEP-19	R4825608
Silver (Ag)-Total	<0.10	DLM	0.10	ug/L	19-SEP-19	19-SEP-19	R4825608
Sodium (Na)-Total	1170000	DLM	500	ug/L	19-SEP-19	19-SEP-19	R4825608
Strontium (Sr)-Total	4910	DLM	2.0	ug/L	19-SEP-19	19-SEP-19	R4825608
Sulfur (S)-Total	149000	DLM	5000	ug/L	19-SEP-19	19-SEP-19	R4825608
Tellurium (Te)-Total	<2.0	DLM	2.0	ug/L	19-SEP-19	19-SEP-19	R4825608
Thallium (Tl)-Total	<0.10	DLM	0.10	ug/L	19-SEP-19	19-SEP-19	R4825608
Thorium (Th)-Total	<1.0	DLM	1.0	ug/L	19-SEP-19	19-SEP-19	R4825608
Tin (Sn)-Total	10.1	DLM	1.0	ug/L	19-SEP-19	19-SEP-19	R4825608
Titanium (Ti)-Total	24.6	DLM	3.0	ug/L	19-SEP-19	19-SEP-19	R4825608
Tungsten (W)-Total	3.6	DLM	1.0	ug/L	19-SEP-19	19-SEP-19	R4825608
Uranium (U)-Total	5.36	DLM	0.10	ug/L	19-SEP-19	19-SEP-19	R4825608
Vanadium (V)-Total	7.5	DLM	5.0	ug/L	19-SEP-19	19-SEP-19	R4825608
Zinc (Zn)-Total	56	DLM	30	ug/L	19-SEP-19	19-SEP-19	R4825608
Zirconium (Zr)-Total	34.1	DLM	2.0	ug/L	19-SEP-19	19-SEP-19	R4825608
Dissolved Metals in Water by CRC ICPMS							
Dissolved Metals Filtration Location	LAB					18-SEP-19	R4818753
Aluminum (Al)-Dissolved	46	DLM	10	ug/L	18-SEP-19	18-SEP-19	R4821590
Antimony (Sb)-Dissolved	1.0	DLM	1.0	ug/L	18-SEP-19	18-SEP-19	R4821590

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ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2345306-2 LQ25-MH24							
Sampled By: CLIENT on 11-SEP-19 @ 10:22							
Matrix: WATER							
Dissolved Metals in Water by CRC ICPMS							
Arsenic (As)-Dissolved	14.9	DLM	1.0	ug/L	18-SEP-19	18-SEP-19	R4821590
Barium (Ba)-Dissolved	299	DLM	1.0	ug/L	18-SEP-19	18-SEP-19	R4821590
Beryllium (Be)-Dissolved	<1.0	DLM	1.0	ug/L	18-SEP-19	18-SEP-19	R4821590
Bismuth (Bi)-Dissolved	<0.50	DLM	0.50	ug/L	18-SEP-19	18-SEP-19	R4821590
Boron (B)-Dissolved	7800		1000	ug/L	18-SEP-19	19-SEP-19	R4831868
Cadmium (Cd)-Dissolved	<0.050	DLM	0.050	ug/L	18-SEP-19	18-SEP-19	R4821590
Calcium (Ca)-Dissolved	183000	DLM	500	ug/L	18-SEP-19	18-SEP-19	R4821590
Cesium (Cs)-Dissolved	0.40	DLM	0.10	ug/L	18-SEP-19	18-SEP-19	R4821590
Chromium (Cr)-Dissolved	43.2	DLM	1.0	ug/L	18-SEP-19	18-SEP-19	R4821590
Cobalt (Co)-Dissolved	29.8	DLM	1.0	ug/L	18-SEP-19	18-SEP-19	R4821590
Copper (Cu)-Dissolved	<2.0	DLM	2.0	ug/L	18-SEP-19	18-SEP-19	R4821590
Iron (Fe)-Dissolved	680	DLM	100	ug/L	18-SEP-19	18-SEP-19	R4821590
Lead (Pb)-Dissolved	<0.50	DLM	0.50	ug/L	18-SEP-19	18-SEP-19	R4821590
Lithium (Li)-Dissolved	283	DLM	10	ug/L	18-SEP-19	18-SEP-19	R4821590
Magnesium (Mg)-Dissolved	407000	DLM	50	ug/L	18-SEP-19	18-SEP-19	R4821590
Manganese (Mn)-Dissolved	197	DLM	1.0	ug/L	18-SEP-19	18-SEP-19	R4821590
Molybdenum (Mo)-Dissolved	3.19	DLM	0.50	ug/L	18-SEP-19	18-SEP-19	R4821590
Nickel (Ni)-Dissolved	146	DLM	5.0	ug/L	18-SEP-19	18-SEP-19	R4821590
Phosphorus (P)-Dissolved	5790	DLM	300	ug/L	18-SEP-19	18-SEP-19	R4821590
Potassium (K)-Dissolved	494000	DLM	500	ug/L	18-SEP-19	18-SEP-19	R4821590
Rubidium (Rb)-Dissolved	171	DLM	2.0	ug/L	18-SEP-19	18-SEP-19	R4821590
Selenium (Se)-Dissolved	1.07	DLM	0.50	ug/L	18-SEP-19	18-SEP-19	R4821590
Silicon (Si)-Dissolved	23600	DLM	500	ug/L	18-SEP-19	18-SEP-19	R4821590
Silver (Ag)-Dissolved	<0.10	DLM	0.10	ug/L	18-SEP-19	18-SEP-19	R4821590
Sodium (Na)-Dissolved	1370000	DLM	500	ug/L	18-SEP-19	18-SEP-19	R4821590
Strontium (Sr)-Dissolved	5590	DLM	1.0	ug/L	18-SEP-19	18-SEP-19	R4821590
Sulfur (S)-Dissolved	50000	DLM	5000	ug/L	18-SEP-19	18-SEP-19	R4821590
Tellurium (Te)-Dissolved	<2.0	DLM	2.0	ug/L	18-SEP-19	18-SEP-19	R4821590
Thallium (Tl)-Dissolved	<0.10	DLM	0.10	ug/L	18-SEP-19	18-SEP-19	R4821590
Thorium (Th)-Dissolved	<1.0	DLM	1.0	ug/L	18-SEP-19	18-SEP-19	R4821590
Tin (Sn)-Dissolved	6.8	DLM	1.0	ug/L	18-SEP-19	18-SEP-19	R4821590
Titanium (Ti)-Dissolved	20.6	DLM	3.0	ug/L	18-SEP-19	18-SEP-19	R4821590
Tungsten (W)-Dissolved	3.39		0.10	ug/L	18-SEP-19	23-SEP-19	R4838508
Uranium (U)-Dissolved	0.95	DLM	0.10	ug/L	18-SEP-19	18-SEP-19	R4821590
Vanadium (V)-Dissolved	7.3	DLM	5.0	ug/L	18-SEP-19	18-SEP-19	R4821590
Zinc (Zn)-Dissolved	<10	DLM	10	ug/L	18-SEP-19	18-SEP-19	R4821590
Zirconium (Zr)-Dissolved	42.8	DLM	2.0	ug/L	18-SEP-19	18-SEP-19	R4821590
Mercury Dissolved							
Dissolved Mercury Filtration Location	LAB					19-SEP-19	R4826797
Mercury (Hg)-Dissolved	<0.0050		0.0050	ug/L	19-SEP-19	19-SEP-19	R4827450
Polyaromatic Hydrocarbons (PAHs)							
1-Methyl Naphthalene	0.854		0.020	ug/L	13-SEP-19	18-SEP-19	R4822268
2-Methyl Naphthalene	1.23		0.020	ug/L	13-SEP-19	18-SEP-19	R4822268
Acenaphthene	1.08		0.020	ug/L	13-SEP-19	18-SEP-19	R4822268
Acenaphthylene	<0.020		0.020	ug/L	13-SEP-19	18-SEP-19	R4822268
Anthracene	0.388		0.010	ug/L	13-SEP-19	18-SEP-19	R4822268
Acridine	0.977		0.020	ug/L	13-SEP-19	18-SEP-19	R4822268
Benzo(a)anthracene	0.112		0.010	ug/L	13-SEP-19	18-SEP-19	R4822268
Benzo(a)pyrene	0.0331	EMPC	0.0050	ug/L	13-SEP-19	18-SEP-19	R4822268
Benzo(b&j)fluoranthene	0.042	EMPC	0.010	ug/L	13-SEP-19	18-SEP-19	R4822268
Benzo(g,h,i)perylene	<0.020		0.020	ug/L	13-SEP-19	18-SEP-19	R4822268

* 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
L2345306-2 LQ25-MH24							
Sampled By: CLIENT on 11-SEP-19 @ 10:22							
Matrix: WATER							
Polyaromatic Hydrocarbons (PAHs)							
Benzo(k)fluoranthene	0.016	EMPC	0.010	ug/L	13-SEP-19	18-SEP-19	R4822268
Chrysene	0.157		0.020	ug/L	13-SEP-19	18-SEP-19	R4822268
Dibenzo(a,h)anthracene	<0.0050		0.0050	ug/L	13-SEP-19	18-SEP-19	R4822268
Fluoranthene	0.589		0.020	ug/L	13-SEP-19	18-SEP-19	R4822268
Fluorene	1.07		0.020	ug/L	13-SEP-19	18-SEP-19	R4822268
Indeno(1,2,3-cd)pyrene	0.011		0.010	ug/L	13-SEP-19	18-SEP-19	R4822268
Naphthalene	10.2		0.050	ug/L	13-SEP-19	18-SEP-19	R4822268
Phenanthrene	1.55		0.050	ug/L	13-SEP-19	18-SEP-19	R4822268
Pyrene	0.490	EMPC	0.010	ug/L	13-SEP-19	18-SEP-19	R4822268
Quinoline	0.093	EMPC	0.020	ug/L	13-SEP-19	18-SEP-19	R4822268
B(a)P Total Potency Equivalent	0.055		0.030	ug/L	13-SEP-19	18-SEP-19	R4822268
Surrogate: Acenaphthene d10	100.7		60-130	%	13-SEP-19	18-SEP-19	R4822268
Surrogate: Acridine d9	105.5		60-130	%	13-SEP-19	18-SEP-19	R4822268
Surrogate: Chrysene d12	116.5		60-130	%	13-SEP-19	18-SEP-19	R4822268
Surrogate: Naphthalene d8	97.6		50-130	%	13-SEP-19	18-SEP-19	R4822268
Surrogate: Phenanthrene d10	113.4		60-130	%	13-SEP-19	18-SEP-19	R4822268
PCBs							
Aroclor 1016	<0.040	DLM	0.040	ug/L	20-SEP-19	20-SEP-19	R4813508
Aroclor 1221	<0.040	DLM	0.040	ug/L	20-SEP-19	20-SEP-19	R4813508
Aroclor 1232	<0.040	DLM	0.040	ug/L	20-SEP-19	20-SEP-19	R4813508
Aroclor 1242	<0.40	DLM	0.40	ug/L	20-SEP-19	20-SEP-19	R4813508
Aroclor 1248	<0.040	DLM	0.040	ug/L	20-SEP-19	20-SEP-19	R4813508
Aroclor 1254	<0.060	DLM	0.060	ug/L	20-SEP-19	20-SEP-19	R4813508
Aroclor 1260	<0.040	DLM	0.040	ug/L	20-SEP-19	20-SEP-19	R4813508
Aroclor 1262	<0.040	DLM	0.040	ug/L	20-SEP-19	20-SEP-19	R4813508
Aroclor 1268	<0.040	DLM	0.040	ug/L	20-SEP-19	20-SEP-19	R4813508
Total PCBs	<0.45	DLM	0.45	ug/L	20-SEP-19	20-SEP-19	R4813508
Surrogate: d14-Terphenyl	80.5		40-130	%	20-SEP-19	20-SEP-19	R4813508
Pesticides, Organochlorine							
Aldrin	<1.0	DLM	1.0	ug/L	13-SEP-19	23-SEP-19	R4822711
a-chlordane	<1.0	DLM	1.0	ug/L	13-SEP-19	23-SEP-19	R4822711
g-chlordane	<1.0	DLM	1.0	ug/L	13-SEP-19	23-SEP-19	R4822711
alpha-BHC	<1.0	DLM	1.0	ug/L	13-SEP-19	23-SEP-19	R4822711
beta-BHC	<2.1	DLM	2.1	ug/L	13-SEP-19	23-SEP-19	R4822711
delta-BHC	<1.0	DLM	1.0	ug/L	13-SEP-19	23-SEP-19	R4822711
o,p-DDD	<1.0	DLM	1.0	ug/L	13-SEP-19	23-SEP-19	R4822711
pp-DDD	<1.0	DLM	1.0	ug/L	13-SEP-19	23-SEP-19	R4822711
o,p-DDE	<1.0	DLM	1.0	ug/L	13-SEP-19	23-SEP-19	R4822711
pp-DDE	<1.0	DLM	1.0	ug/L	13-SEP-19	23-SEP-19	R4822711
op-DDT	<1.0	DLM	1.0	ug/L	13-SEP-19	23-SEP-19	R4822711
pp-DDT	<1.0	DLM	1.0	ug/L	13-SEP-19	23-SEP-19	R4822711
Dieldrin	<1.0	DLM	1.0	ug/L	13-SEP-19	23-SEP-19	R4822711
alpha-Endosulfan	<1.0	DLM	1.0	ug/L	13-SEP-19	23-SEP-19	R4822711
beta-Endosulfan	<1.0	DLM	1.0	ug/L	13-SEP-19	23-SEP-19	R4822711
Endosulfan Sulfate	<1.0	DLM	1.0	ug/L	13-SEP-19	23-SEP-19	R4822711
Endrin	<1.0	DLM	1.0	ug/L	13-SEP-19	23-SEP-19	R4822711
Endrin Aldehyde	<1.0	DLM	1.0	ug/L	13-SEP-19	23-SEP-19	R4822711
Hexachlorobenzene	<1.0	DLM	1.0	ug/L	13-SEP-19	23-SEP-19	R4822711
Heptachlor	<1.0	DLM	1.0	ug/L	13-SEP-19	23-SEP-19	R4822711
Heptachlor Epoxide	<1.0	DLM	1.0	ug/L	13-SEP-19	23-SEP-19	R4822711
Lindane	<1.0	DLM	1.0	ug/L	13-SEP-19	23-SEP-19	R4822711

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ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2345306-2 LQ25-MH24							
Sampled By: CLIENT on 11-SEP-19 @ 10:22							
Matrix: WATER							
Pesticides, Organochlorine							
Methoxychlor	<1.0	DLM	1.0	ug/L	13-SEP-19	23-SEP-19	R4822711
Mirex	<1.0	DLM	1.0	ug/L	13-SEP-19	23-SEP-19	R4822711
Oxychlorane	<1.0	DLM	1.0	ug/L	13-SEP-19	23-SEP-19	R4822711
Surrogate: 2-Fluorobiphenyl	115.6		40-130	%	13-SEP-19	23-SEP-19	R4822711
Surrogate: d14-Terphenyl	119.8		40-130	%	13-SEP-19	23-SEP-19	R4822711
Herbicides in Water							
Clopyralid	<1.0	DLM	1.0	ug/L	16-SEP-19	17-SEP-19	R4813269
Dicamba	<1.0	DLM	1.0	ug/L	16-SEP-19	17-SEP-19	R4813269
Mecoprop	30.8	DLM	1.0	ug/L	16-SEP-19	17-SEP-19	R4813269
MCPA	<1.0	DLM	1.0	ug/L	16-SEP-19	17-SEP-19	R4813269
2,4-D	<1.0	DLM	1.0	ug/L	16-SEP-19	17-SEP-19	R4813269
Bromoxynil	<1.0	DLM	1.0	ug/L	16-SEP-19	17-SEP-19	R4813269
Triclopyr	<1.0	DLM	1.0	ug/L	16-SEP-19	17-SEP-19	R4813269
2,4,5-T	<1.0	DLM	1.0	ug/L	16-SEP-19	17-SEP-19	R4813269
2,4,5-TP	<1.0	DLM	1.0	ug/L	16-SEP-19	17-SEP-19	R4813269
Picloram	<5.9	DLM	5.9	ug/L	16-SEP-19	17-SEP-19	R4813269
2,4-DB	<1.0	DLM	1.0	ug/L	16-SEP-19	17-SEP-19	R4813269
2,4-DP	<1.0	DLM	1.0	ug/L	16-SEP-19	17-SEP-19	R4813269
Dinoseb	<1.0	DLM	1.0	ug/L	16-SEP-19	17-SEP-19	R4813269
MCPB	<1.0	DLM	1.0	ug/L	16-SEP-19	17-SEP-19	R4813269
Surrogate: 2,4-Dichlorophenylacetic Acid	108.0		50-130	%	16-SEP-19	17-SEP-19	R4813269
Miscellaneous Pesticides							
Diazinon	<0.25	DLM	0.25	ug/L	13-SEP-19	18-SEP-19	R4818351
Surrogate: 2-Fluorobiphenyl	78.5		40-130	%	13-SEP-19	18-SEP-19	R4818351
Surrogate: d14-Terphenyl	76.1		40-130	%	13-SEP-19	18-SEP-19	R4818351
4,4'-Methylenebis(2-chloroaniline)							
4,4'-Methylenebis(2-chloroaniline)	<0.50		0.50	ug/L	13-SEP-19	16-SEP-19	R4811130
Surrogate: p-Terphenyl d14	84.8		40-130	%	13-SEP-19	16-SEP-19	R4811130
VOC plus F1 to F4							
CCME PHC F2-F4 in Water							
F2 (C10-C16)	720		100	ug/L	13-SEP-19	14-SEP-19	R4800048
F3 (C16-C34)	1880		250	ug/L	13-SEP-19	14-SEP-19	R4800048
F4 (C34-C50)	<250		250	ug/L	13-SEP-19	14-SEP-19	R4800048
Surrogate: 2-Bromobenzotrifluoride	99.8		60-140	%	13-SEP-19	14-SEP-19	R4800048
CCME Total Hydrocarbons							
F1-BTEX	<100		100	ug/L		24-SEP-19	
F2-Naphth	710		100	ug/L		24-SEP-19	
F3-PAH	1870		250	ug/L		24-SEP-19	
Total Hydrocarbons (C6-C50)	2590		380	ug/L		24-SEP-19	
Sum of Xylene Isomer Concentrations							
Xylenes (Total)	17.3		0.64	ug/L		24-SEP-19	
Total Trihalomethanes (THMs)							
Total THMs	<1.3		1.3	ug/L		24-SEP-19	
VOC plus F1 by GCMS							
Acetone	64		50	ug/L		12-SEP-19	R4800829
Benzene	<0.50		0.50	ug/L		12-SEP-19	R4800829
Bromobenzene	<1.0		1.0	ug/L		12-SEP-19	R4800829
Bromochloromethane	<1.0		1.0	ug/L		12-SEP-19	R4800829
Bromodichloromethane	<0.50		0.50	ug/L		12-SEP-19	R4800829
Bromoform	<1.0		1.0	ug/L		12-SEP-19	R4800829
Bromomethane	<1.0		1.0	ug/L		12-SEP-19	R4800829
n-Butylbenzene	<1.0		1.0	ug/L		12-SEP-19	R4800829

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ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2345306-2 LQ25-MH24							
Sampled By: CLIENT on 11-SEP-19 @ 10:22							
Matrix: WATER							
VOC plus F1 by GCMS							
sec-Butylbenzene	<1.0		1.0	ug/L		12-SEP-19	R4800829
tert-Butylbenzene	<1.0		1.0	ug/L		12-SEP-19	R4800829
Carbon disulfide	<5.0		5.0	ug/L		12-SEP-19	R4800829
Carbon Tetrachloride	<0.50		0.50	ug/L		12-SEP-19	R4800829
Chlorobenzene	<1.0		1.0	ug/L		12-SEP-19	R4800829
Chloroethane	<1.0		1.0	ug/L		12-SEP-19	R4800829
Chloroform	<0.50		0.50	ug/L		12-SEP-19	R4800829
Chloromethane	<5.0		5.0	ug/L		12-SEP-19	R4800829
2-Chlorotoluene	<20		20	ug/L		12-SEP-19	R4800829
4-Chlorotoluene	<1.0		1.0	ug/L		12-SEP-19	R4800829
Dibromochloromethane	<0.50		0.50	ug/L		12-SEP-19	R4800829
1,2-Dibromo-3-chloropropane	<1.0		1.0	ug/L		12-SEP-19	R4800829
1,2-Dibromoethane	<1.0		1.0	ug/L		12-SEP-19	R4800829
Dibromomethane	<1.0		1.0	ug/L		12-SEP-19	R4800829
1,2-Dichlorobenzene	<0.50		0.50	ug/L		12-SEP-19	R4800829
1,3-Dichlorobenzene	<1.0		1.0	ug/L		12-SEP-19	R4800829
1,4-Dichlorobenzene	<1.0		1.0	ug/L		12-SEP-19	R4800829
Dichlorodifluoromethane	<1.0		1.0	ug/L		12-SEP-19	R4800829
1,1-dichloroethane	<0.50		0.50	ug/L		12-SEP-19	R4800829
1,2-Dichloroethane	<0.50		0.50	ug/L		12-SEP-19	R4800829
1,1-dichloroethene	<0.50		0.50	ug/L		12-SEP-19	R4800829
cis-1,2-Dichloroethene	<1.0		1.0	ug/L		12-SEP-19	R4800829
trans-1,2-Dichloroethene	<1.0		1.0	ug/L		12-SEP-19	R4800829
Dichloromethane	<5.0		5.0	ug/L		12-SEP-19	R4800829
1,2-Dichloropropane	<1.0		1.0	ug/L		12-SEP-19	R4800829
1,3-Dichloropropane	<1.0		1.0	ug/L		12-SEP-19	R4800829
2,2-Dichloropropane	<1.0		1.0	ug/L		12-SEP-19	R4800829
1,1-Dichloropropene	<1.0		1.0	ug/L		12-SEP-19	R4800829
cis-1,3-Dichloropropene	<1.0		1.0	ug/L		12-SEP-19	R4800829
trans-1,3-Dichloropropene	<1.0		1.0	ug/L		12-SEP-19	R4800829
Ethylbenzene	4.48		0.50	ug/L		12-SEP-19	R4800829
F1	<100		100	ug/L		12-SEP-19	R4800829
Hexachlorobutadiene	<1.0		1.0	ug/L		12-SEP-19	R4800829
Hexane	<1.0		1.0	ug/L		12-SEP-19	R4800829
2-Hexanone (Methyl butyl ketone)	<20		20	ug/L		12-SEP-19	R4800829
Isopropylbenzene	<1.0		1.0	ug/L		12-SEP-19	R4800829
4-Isopropyltoluene	2.5		1.0	ug/L		12-SEP-19	R4800829
MEK	62		20	ug/L		12-SEP-19	R4800829
MIBK	<20		20	ug/L		12-SEP-19	R4800829
MTBE	<0.50		0.50	ug/L		12-SEP-19	R4800829
Styrene	<1.0		1.0	ug/L		12-SEP-19	R4800829
1,1,1,2-Tetrachloroethane	<0.50		0.50	ug/L		12-SEP-19	R4800829
1,1,1,2,2-Tetrachloroethane	<0.50		0.50	ug/L		12-SEP-19	R4800829
Tetrachloroethene	<0.50		0.50	ug/L		12-SEP-19	R4800829
Toluene	2.36		0.50	ug/L		12-SEP-19	R4800829
1,2,3-Trichlorobenzene	<1.0		1.0	ug/L		12-SEP-19	R4800829
1,2,4-Trichlorobenzene	<1.0		1.0	ug/L		12-SEP-19	R4800829
1,1,1-Trichloroethane	<0.50		0.50	ug/L		12-SEP-19	R4800829
1,1,2-Trichloroethane	<0.50		0.50	ug/L		12-SEP-19	R4800829
Trichloroethene	<0.50		0.50	ug/L		12-SEP-19	R4800829
Trichlorofluoromethane	<1.0		1.0	ug/L		12-SEP-19	R4800829

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ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2345306-2 LQ25-MH24							
Sampled By: CLIENT on 11-SEP-19 @ 10:22							
Matrix: WATER							
VOC plus F1 by GCMS							
1,2,3-Trichloropropane	<1.0		1.0	ug/L		12-SEP-19	R4800829
1,2,4-Trimethylbenzene	1.5		1.0	ug/L		12-SEP-19	R4800829
1,3,5-Trimethylbenzene	<1.0		1.0	ug/L		12-SEP-19	R4800829
Vinyl Chloride	<0.50		0.50	ug/L		12-SEP-19	R4800829
M+P-Xylenes	9.20		0.40	ug/L		12-SEP-19	R4800829
o-Xylene	8.07		0.50	ug/L		12-SEP-19	R4800829
Surrogate: 4-Bromofluorobenzene (SS)	95.2		70-130	%		12-SEP-19	R4800829
Surrogate: 1,4-Difluorobenzene (SS)	97.0		70-130	%		12-SEP-19	R4800829
L2345306-3 LQ25-100							
Sampled By: CLIENT on 11-SEP-19 @ 10:22							
Matrix: WATER							
Alkalinity species as HCO3, CO3, OH							
Alkalinity, Bicarbonate							
Bicarbonate (HCO3)	6150000		1200	ug/L		18-SEP-19	
Alkalinity, Carbonate							
Carbonate (CO3)	156000		600	ug/L		18-SEP-19	
Alkalinity, Hydroxide							
Hydroxide (OH)	<340		340	ug/L		18-SEP-19	
Alkalinity, Total (as CaCO3)							
Alkalinity, Total (as CaCO3)	5300000		1000	ug/L		16-SEP-19	R4817572
Dissolved Carbons							
Dissolved Inorganic Carbon by Combustion							
Dissolved Inorganic Carbon	1100000		5000	ug/L		16-SEP-19	R4819173
Dissolved Organic Carbon by Combustion							
Dissolved Organic Carbon	253000		5000	ug/L		17-SEP-19	R4819352
Total Dissolved Carbon by Calculation							
Total Dissolved Carbon	1350000		7100	ug/L		18-SEP-19	
Miscellaneous Parameters							
Ammonia, Total (as N)	277000		50000	ug/L		16-SEP-19	R4815489
Chloride (Cl)	1400000		25000	ug/L		13-SEP-19	R4820130
Chromium, Hexavalent	<10	DLM	10	ug/L		17-SEP-19	R4817691
Fecal Coliforms	14100		10	MPN/100mL		11-SEP-19	R4801188
Cyanide, Total	13.5		1.0	ug/L		20-SEP-19	R4828109
Mercury (Hg)-Total	<0.0050		0.0050	ug/L	19-SEP-19	19-SEP-19	R4827412
Oil and Grease	6600		5000	ug/L		20-SEP-19	R4827930
Phenols (4AAP)	32.1	DLM	5.0	ug/L		16-SEP-19	R4810490
Sulfate (SO4)	313000		15000	ug/L		13-SEP-19	R4820130
Total and E. coli, 1:10 dilution by QT97							
Total Coliforms	>24200		10	MPN/100mL		11-SEP-19	R4801209
Escherichia Coli	13000		10	MPN/100mL		11-SEP-19	R4801209
Total Metals in Water by CRC ICPMS							
Aluminum (Al)-Total	705	DLM	30	ug/L	19-SEP-19	19-SEP-19	R4825608
Antimony (Sb)-Total	1.1	DLM	1.0	ug/L	19-SEP-19	19-SEP-19	R4825608
Arsenic (As)-Total	13.4	DLM	1.0	ug/L	19-SEP-19	19-SEP-19	R4825608
Barium (Ba)-Total	289	DLM	1.0	ug/L	19-SEP-19	19-SEP-19	R4825608
Beryllium (Be)-Total	<1.0	DLM	1.0	ug/L	19-SEP-19	19-SEP-19	R4825608
Bismuth (Bi)-Total	<0.50	DLM	0.50	ug/L	19-SEP-19	19-SEP-19	R4825608
Boron (B)-Total	14800		1000	ug/L	19-SEP-19	23-SEP-19	R4838508
Cadmium (Cd)-Total	0.088	DLM	0.050	ug/L	19-SEP-19	19-SEP-19	R4825608
Calcium (Ca)-Total	271000	DLM	500	ug/L	19-SEP-19	19-SEP-19	R4825608
Cesium (Cs)-Total	0.41	DLM	0.10	ug/L	19-SEP-19	19-SEP-19	R4825608

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ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2345306-3 LQ25-100							
Sampled By: CLIENT on 11-SEP-19 @ 10:22							
Matrix: WATER							
Total Metals in Water by CRC ICPMS							
Chromium (Cr)-Total	35.7	DLM	1.0	ug/L	19-SEP-19	19-SEP-19	R4825608
Cobalt (Co)-Total	23.1	DLM	1.0	ug/L	19-SEP-19	19-SEP-19	R4825608
Copper (Cu)-Total	6.3	DLM	5.0	ug/L	19-SEP-19	19-SEP-19	R4825608
Iron (Fe)-Total	4570	DLM	100	ug/L	19-SEP-19	19-SEP-19	R4825608
Lead (Pb)-Total	2.83	DLM	0.50	ug/L	19-SEP-19	19-SEP-19	R4825608
Lithium (Li)-Total	302	DLM	10	ug/L	19-SEP-19	19-SEP-19	R4825608
Magnesium (Mg)-Total	419000	DLM	50	ug/L	19-SEP-19	19-SEP-19	R4825608
Manganese (Mn)-Total	426	DLM	1.0	ug/L	19-SEP-19	19-SEP-19	R4825608
Molybdenum (Mo)-Total	4.21	DLM	0.50	ug/L	19-SEP-19	19-SEP-19	R4825608
Nickel (Ni)-Total	119	DLM	5.0	ug/L	19-SEP-19	19-SEP-19	R4825608
Potassium (K)-Total	355000	DLM	500	ug/L	19-SEP-19	19-SEP-19	R4825608
Phosphorus (P)-Total	4710	DLM	300	ug/L	19-SEP-19	19-SEP-19	R4825608
Rubidium (Rb)-Total	127	DLM	2.0	ug/L	19-SEP-19	19-SEP-19	R4825608
Selenium (Se)-Total	1.94	DLM	0.50	ug/L	19-SEP-19	19-SEP-19	R4825608
Silicon (Si)-Total	21400	DLM	1000	ug/L	19-SEP-19	19-SEP-19	R4825608
Silver (Ag)-Total	<0.10	DLM	0.10	ug/L	19-SEP-19	19-SEP-19	R4825608
Sodium (Na)-Total	1070000	DLM	500	ug/L	19-SEP-19	19-SEP-19	R4825608
Strontium (Sr)-Total	4680	DLM	2.0	ug/L	19-SEP-19	19-SEP-19	R4825608
Sulfur (S)-Total	186000	DLM	5000	ug/L	19-SEP-19	19-SEP-19	R4825608
Tellurium (Te)-Total	<2.0	DLM	2.0	ug/L	19-SEP-19	19-SEP-19	R4825608
Thallium (Tl)-Total	<0.10	DLM	0.10	ug/L	19-SEP-19	19-SEP-19	R4825608
Thorium (Th)-Total	<1.0	DLM	1.0	ug/L	19-SEP-19	19-SEP-19	R4825608
Tin (Sn)-Total	8.9	DLM	1.0	ug/L	19-SEP-19	19-SEP-19	R4825608
Titanium (Ti)-Total	38.2	DLM	3.0	ug/L	19-SEP-19	19-SEP-19	R4825608
Tungsten (W)-Total	3.4	DLM	1.0	ug/L	19-SEP-19	19-SEP-19	R4825608
Uranium (U)-Total	7.81	DLM	0.10	ug/L	19-SEP-19	19-SEP-19	R4825608
Vanadium (V)-Total	8.9	DLM	5.0	ug/L	19-SEP-19	19-SEP-19	R4825608
Zinc (Zn)-Total	123	DLM	30	ug/L	19-SEP-19	19-SEP-19	R4825608
Zirconium (Zr)-Total	31.0	DLM	2.0	ug/L	19-SEP-19	19-SEP-19	R4825608
Dissolved Metals in Water by CRC ICPMS							
Dissolved Metals Filtration Location	LAB					18-SEP-19	R4818753
Aluminum (Al)-Dissolved	27	DLM	10	ug/L	18-SEP-19	18-SEP-19	R4821590
Antimony (Sb)-Dissolved	<1.0	DLM	1.0	ug/L	18-SEP-19	18-SEP-19	R4821590
Arsenic (As)-Dissolved	7.1	DLM	1.0	ug/L	18-SEP-19	18-SEP-19	R4821590
Barium (Ba)-Dissolved	177	DLM	1.0	ug/L	18-SEP-19	18-SEP-19	R4821590
Beryllium (Be)-Dissolved	<1.0	DLM	1.0	ug/L	18-SEP-19	18-SEP-19	R4821590
Bismuth (Bi)-Dissolved	<0.50	DLM	0.50	ug/L	18-SEP-19	18-SEP-19	R4821590
Boron (B)-Dissolved	3630	DLM	100	ug/L	18-SEP-19	18-SEP-19	R4821590
Cadmium (Cd)-Dissolved	<0.050	DLM	0.050	ug/L	18-SEP-19	18-SEP-19	R4821590
Calcium (Ca)-Dissolved	254000	DLM	500	ug/L	18-SEP-19	18-SEP-19	R4821590
Cesium (Cs)-Dissolved	0.17	DLM	0.10	ug/L	18-SEP-19	18-SEP-19	R4821590
Chromium (Cr)-Dissolved	18.7	DLM	1.0	ug/L	18-SEP-19	18-SEP-19	R4821590
Cobalt (Co)-Dissolved	14.5	DLM	1.0	ug/L	18-SEP-19	18-SEP-19	R4821590
Copper (Cu)-Dissolved	2.3	DLM	2.0	ug/L	18-SEP-19	18-SEP-19	R4821590
Iron (Fe)-Dissolved	840	DLM	100	ug/L	18-SEP-19	18-SEP-19	R4821590
Lead (Pb)-Dissolved	<0.50	DLM	0.50	ug/L	18-SEP-19	18-SEP-19	R4821590
Lithium (Li)-Dissolved	298	DLM	10	ug/L	18-SEP-19	18-SEP-19	R4821590
Magnesium (Mg)-Dissolved	299000	DLM	50	ug/L	18-SEP-19	18-SEP-19	R4821590
Manganese (Mn)-Dissolved	493	DLM	1.0	ug/L	18-SEP-19	18-SEP-19	R4821590
Molybdenum (Mo)-Dissolved	4.77	DLM	0.50	ug/L	18-SEP-19	18-SEP-19	R4821590
Nickel (Ni)-Dissolved	80.9	DLM	5.0	ug/L	18-SEP-19	18-SEP-19	R4821590

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ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2345306-3 LQ25-100							
Sampled By: CLIENT on 11-SEP-19 @ 10:22							
Matrix: WATER							
Dissolved Metals in Water by CRC ICPMS							
Phosphorus (P)-Dissolved	2120	DLM	300	ug/L	18-SEP-19	18-SEP-19	R4821590
Potassium (K)-Dissolved	230000	DLM	500	ug/L	18-SEP-19	18-SEP-19	R4821590
Rubidium (Rb)-Dissolved	73.2	DLM	2.0	ug/L	18-SEP-19	18-SEP-19	R4821590
Selenium (Se)-Dissolved	1.88	DLM	0.50	ug/L	18-SEP-19	18-SEP-19	R4821590
Silicon (Si)-Dissolved	15000	DLM	500	ug/L	18-SEP-19	18-SEP-19	R4821590
Silver (Ag)-Dissolved	<0.10	DLM	0.10	ug/L	18-SEP-19	18-SEP-19	R4821590
Sodium (Na)-Dissolved	665000	DLM	500	ug/L	18-SEP-19	18-SEP-19	R4821590
Strontium (Sr)-Dissolved	3490	DLM	1.0	ug/L	18-SEP-19	18-SEP-19	R4821590
Sulfur (S)-Dissolved	142000		500	ug/L	18-SEP-19	23-SEP-19	R4838508
Tellurium (Te)-Dissolved	<2.0	DLM	2.0	ug/L	18-SEP-19	18-SEP-19	R4821590
Thallium (Tl)-Dissolved	<0.10	DLM	0.10	ug/L	18-SEP-19	18-SEP-19	R4821590
Thorium (Th)-Dissolved	<1.0	DLM	1.0	ug/L	18-SEP-19	18-SEP-19	R4821590
Tin (Sn)-Dissolved	3.9	DLM	1.0	ug/L	18-SEP-19	18-SEP-19	R4821590
Titanium (Ti)-Dissolved	11.2	DLM	3.0	ug/L	18-SEP-19	18-SEP-19	R4821590
Tungsten (W)-Dissolved	2.4	DLM	1.0	ug/L	18-SEP-19	18-SEP-19	R4821590
Uranium (U)-Dissolved	3.12		0.010	ug/L	18-SEP-19	23-SEP-19	R4838508
Vanadium (V)-Dissolved	<5.0	DLM	5.0	ug/L	18-SEP-19	18-SEP-19	R4821590
Zinc (Zn)-Dissolved	<10	DLM	10	ug/L	18-SEP-19	18-SEP-19	R4821590
Zirconium (Zr)-Dissolved	18.0	DLM	2.0	ug/L	18-SEP-19	18-SEP-19	R4821590
Mercury Dissolved							
Dissolved Mercury Filtration Location	LAB					19-SEP-19	R4826797
Mercury (Hg)-Dissolved	<0.0050		0.0050	ug/L	19-SEP-19	19-SEP-19	R4827450
Polyaromatic Hydrocarbons (PAHs)							
1-Methyl Naphthalene	0.709		0.020	ug/L	13-SEP-19	18-SEP-19	R4822268
2-Methyl Naphthalene	1.00		0.020	ug/L	13-SEP-19	18-SEP-19	R4822268
Acenaphthene	0.912		0.020	ug/L	13-SEP-19	18-SEP-19	R4822268
Acenaphthylene	<0.020		0.020	ug/L	13-SEP-19	18-SEP-19	R4822268
Anthracene	0.290		0.010	ug/L	13-SEP-19	18-SEP-19	R4822268
Acridine	0.918		0.020	ug/L	13-SEP-19	18-SEP-19	R4822268
Benzo(a)anthracene	0.133		0.010	ug/L	13-SEP-19	18-SEP-19	R4822268
Benzo(a)pyrene	0.0439	EMPC	0.0050	ug/L	13-SEP-19	18-SEP-19	R4822268
Benzo(b&j)fluoranthene	0.060		0.010	ug/L	13-SEP-19	18-SEP-19	R4822268
Benzo(g,h,i)perylene	0.021		0.020	ug/L	13-SEP-19	18-SEP-19	R4822268
Benzo(k)fluoranthene	0.022		0.010	ug/L	13-SEP-19	18-SEP-19	R4822268
Chrysene	0.182		0.020	ug/L	13-SEP-19	18-SEP-19	R4822268
Dibenzo(a,h)anthracene	<0.0050		0.0050	ug/L	13-SEP-19	18-SEP-19	R4822268
Fluoranthene	0.537		0.020	ug/L	13-SEP-19	18-SEP-19	R4822268
Fluorene	0.880		0.020	ug/L	13-SEP-19	18-SEP-19	R4822268
Indeno(1,2,3-cd)pyrene	0.014		0.010	ug/L	13-SEP-19	18-SEP-19	R4822268
Naphthalene	8.58		0.050	ug/L	13-SEP-19	18-SEP-19	R4822268
Phenanthrene	1.10		0.050	ug/L	13-SEP-19	18-SEP-19	R4822268
Pyrene	0.482	EMPC	0.010	ug/L	13-SEP-19	18-SEP-19	R4822268
Quinoline	0.051		0.020	ug/L	13-SEP-19	18-SEP-19	R4822268
B(a)P Total Potency Equivalent	0.071		0.030	ug/L	13-SEP-19	18-SEP-19	R4822268
Surrogate: Acenaphthene d10	100.3		60-130	%	13-SEP-19	18-SEP-19	R4822268
Surrogate: Acridine d9	103.8		60-130	%	13-SEP-19	18-SEP-19	R4822268
Surrogate: Chrysene d12	110.0		60-130	%	13-SEP-19	18-SEP-19	R4822268
Surrogate: Naphthalene d8	109.1		50-130	%	13-SEP-19	18-SEP-19	R4822268
Surrogate: Phenanthrene d10	109.8		60-130	%	13-SEP-19	18-SEP-19	R4822268
PCBs							
Aroclor 1016	<0.040	DLM	0.040	ug/L	20-SEP-19	20-SEP-19	R4813508
Aroclor 1221	<0.040	DLM	0.040	ug/L	20-SEP-19	20-SEP-19	R4813508

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ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2345306-3 LQ25-100							
Sampled By: CLIENT on 11-SEP-19 @ 10:22							
Matrix: WATER							
PCBs							
Aroclor 1232	<0.040	DLM	0.040	ug/L	20-SEP-19	20-SEP-19	R4813508
Aroclor 1242	<0.25	DLM	0.25	ug/L	20-SEP-19	20-SEP-19	R4813508
Aroclor 1248	<0.040	DLM	0.040	ug/L	20-SEP-19	20-SEP-19	R4813508
Aroclor 1254	<0.040	DLM	0.040	ug/L	20-SEP-19	20-SEP-19	R4813508
Aroclor 1260	<0.040	DLM	0.040	ug/L	20-SEP-19	20-SEP-19	R4813508
Aroclor 1262	<0.040	DLM	0.040	ug/L	20-SEP-19	20-SEP-19	R4813508
Aroclor 1268	<0.040	DLM	0.040	ug/L	20-SEP-19	20-SEP-19	R4813508
Total PCBs	<0.28	DLM	0.28	ug/L	20-SEP-19	20-SEP-19	R4813508
Surrogate: d14-Terphenyl	85.2		40-130	%	20-SEP-19	20-SEP-19	R4813508
Pesticides, Organochlorine							
Aldrin	<1.0	DLM	1.0	ug/L	13-SEP-19	23-SEP-19	R4822711
a-chlordane	<1.0	DLM	1.0	ug/L	13-SEP-19	23-SEP-19	R4822711
g-chlordane	<1.0	DLM	1.0	ug/L	13-SEP-19	23-SEP-19	R4822711
alpha-BHC	<1.0	DLM	1.0	ug/L	13-SEP-19	23-SEP-19	R4822711
beta-BHC	<1.8	DLM	1.8	ug/L	13-SEP-19	23-SEP-19	R4822711
delta-BHC	<1.0	DLM	1.0	ug/L	13-SEP-19	23-SEP-19	R4822711
o,p-DDD	<1.0	DLM	1.0	ug/L	13-SEP-19	23-SEP-19	R4822711
pp-DDD	<1.0	DLM	1.0	ug/L	13-SEP-19	23-SEP-19	R4822711
o,p-DDE	<1.0	DLM	1.0	ug/L	13-SEP-19	23-SEP-19	R4822711
pp-DDE	<1.0	DLM	1.0	ug/L	13-SEP-19	23-SEP-19	R4822711
op-DDT	<1.0	DLM	1.0	ug/L	13-SEP-19	23-SEP-19	R4822711
pp-DDT	<1.0	DLM	1.0	ug/L	13-SEP-19	23-SEP-19	R4822711
Dieldrin	<1.0	DLM	1.0	ug/L	13-SEP-19	23-SEP-19	R4822711
alpha-Endosulfan	<1.0	DLM	1.0	ug/L	13-SEP-19	23-SEP-19	R4822711
beta-Endosulfan	<1.0	DLM	1.0	ug/L	13-SEP-19	23-SEP-19	R4822711
Endosulfan Sulfate	<1.0	DLM	1.0	ug/L	13-SEP-19	23-SEP-19	R4822711
Endrin	<1.0	DLM	1.0	ug/L	13-SEP-19	23-SEP-19	R4822711
Endrin Aldehyde	<1.0	DLM	1.0	ug/L	13-SEP-19	23-SEP-19	R4822711
Hexachlorobenzene	<1.0	DLM	1.0	ug/L	13-SEP-19	23-SEP-19	R4822711
Heptachlor	<1.0	DLM	1.0	ug/L	13-SEP-19	23-SEP-19	R4822711
Heptachlor Epoxide	<1.0	DLM	1.0	ug/L	13-SEP-19	23-SEP-19	R4822711
Lindane	<1.0	DLM	1.0	ug/L	13-SEP-19	23-SEP-19	R4822711
Methoxychlor	<1.0	DLM	1.0	ug/L	13-SEP-19	23-SEP-19	R4822711
Mirex	<1.0	DLM	1.0	ug/L	13-SEP-19	23-SEP-19	R4822711
Oxychlordane	<1.0	DLM	1.0	ug/L	13-SEP-19	23-SEP-19	R4822711
Surrogate: 2-Fluorobiphenyl	108.4		40-130	%	13-SEP-19	23-SEP-19	R4822711
Surrogate: d14-Terphenyl	123.4		40-130	%	13-SEP-19	23-SEP-19	R4822711
Herbicides in Water							
Clopyralid	<8.8	DLM	8.8	ug/L	16-SEP-19	17-SEP-19	R4813269
Dicamba	<1.0	DLM	1.0	ug/L	16-SEP-19	17-SEP-19	R4813269
Mecoprop	150	DLHC	10	ug/L	16-SEP-19	17-SEP-19	R4813269
MCPA	<1.0	DLM	1.0	ug/L	16-SEP-19	17-SEP-19	R4813269
2,4-D	<1.0	DLM	1.0	ug/L	16-SEP-19	17-SEP-19	R4813269
Bromoxynil	<1.0	DLM	1.0	ug/L	16-SEP-19	17-SEP-19	R4813269
Triclopyr	<1.0	DLM	1.0	ug/L	16-SEP-19	17-SEP-19	R4813269
2,4,5-T	<1.0	DLM	1.0	ug/L	16-SEP-19	17-SEP-19	R4813269
2,4,5-TP	<1.0	DLM	1.0	ug/L	16-SEP-19	17-SEP-19	R4813269
Picloram	<37	DLM	37	ug/L	16-SEP-19	17-SEP-19	R4813269
2,4-DB	<1.0	DLM	1.0	ug/L	16-SEP-19	17-SEP-19	R4813269
2,4-DP	<1.0	DLM	1.0	ug/L	16-SEP-19	17-SEP-19	R4813269
Dinoseb	<1.0	DLM	1.0	ug/L	16-SEP-19	17-SEP-19	R4813269

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ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2345306-3 LQ25-100							
Sampled By: CLIENT on 11-SEP-19 @ 10:22							
Matrix: WATER							
Herbicides in Water							
MCPB	<1.0	DLM	1.0	ug/L	16-SEP-19	17-SEP-19	R4813269
Surrogate: 2,4-Dichlorophenylacetic Acid	83.2		50-130	%	16-SEP-19	17-SEP-19	R4813269
Miscellaneous Pesticides							
Diazinon	<0.10		0.10	ug/L	13-SEP-19	18-SEP-19	R4818351
Surrogate: 2-Fluorobiphenyl	81.8		40-130	%	13-SEP-19	18-SEP-19	R4818351
Surrogate: d14-Terphenyl	82.6		40-130	%	13-SEP-19	18-SEP-19	R4818351
4,4'-Methylenebis(2-chloroaniline)							
4,4'-Methylenebis(2-chloroaniline)	<0.50		0.50	ug/L	13-SEP-19	16-SEP-19	R4811130
Surrogate: p-Terphenyl d14	86.3		40-130	%	13-SEP-19	16-SEP-19	R4811130
VOC plus F1 to F4							
CCME PHC F2-F4 in Water							
F2 (C10-C16)	1130		100	ug/L	13-SEP-19	14-SEP-19	R4800048
F3 (C16-C34)	1100		250	ug/L	13-SEP-19	14-SEP-19	R4800048
F4 (C34-C50)	<250		250	ug/L	13-SEP-19	14-SEP-19	R4800048
Surrogate: 2-Bromobenzotrifluoride	99.0		60-140	%	13-SEP-19	14-SEP-19	R4800048
CCME Total Hydrocarbons							
F1-BTEX	140		100	ug/L		30-SEP-19	
F2-Naphth	1130		100	ug/L		30-SEP-19	
F3-PAH	1100		250	ug/L		30-SEP-19	
Total Hydrocarbons (C6-C50)	2590		380	ug/L		30-SEP-19	
Sum of Xylene Isomer Concentrations							
Xylenes (Total)	158		0.64	ug/L		30-SEP-19	
Total Trihalomethanes (THMs)							
Total THMs	<1.3		1.3	ug/L		30-SEP-19	
VOC plus F1 by GCMS							
Acetone	183		50	ug/L		27-SEP-19	R4814109
Benzene	2.19		0.50	ug/L		27-SEP-19	R4814109
Bromobenzene	<1.0		1.0	ug/L		27-SEP-19	R4814109
Bromochloromethane	<1.0		1.0	ug/L		27-SEP-19	R4814109
Bromodichloromethane	<0.50		0.50	ug/L		27-SEP-19	R4814109
Bromoform	<1.0		1.0	ug/L		27-SEP-19	R4814109
Bromomethane	<1.0		1.0	ug/L		27-SEP-19	R4814109
n-Butylbenzene	<1.0		1.0	ug/L		27-SEP-19	R4814109
sec-Butylbenzene	<1.0		1.0	ug/L		27-SEP-19	R4814109
tert-Butylbenzene	<1.0		1.0	ug/L		27-SEP-19	R4814109
Carbon disulfide	49.0		5.0	ug/L		27-SEP-19	R4814109
Carbon Tetrachloride	<0.50		0.50	ug/L		27-SEP-19	R4814109
Chlorobenzene	2.2		1.0	ug/L		27-SEP-19	R4814109
Chloroethane	1.2		1.0	ug/L		27-SEP-19	R4814109
Chloroform	<0.50		0.50	ug/L		27-SEP-19	R4814109
Chloromethane	<5.0		5.0	ug/L		27-SEP-19	R4814109
2-Chlorotoluene	<20		20	ug/L		27-SEP-19	R4814109
4-Chlorotoluene	<1.0		1.0	ug/L		27-SEP-19	R4814109
Dibromochloromethane	<0.50		0.50	ug/L		27-SEP-19	R4814109
1,2-Dibromo-3-chloropropane	<1.0		1.0	ug/L		27-SEP-19	R4814109
1,2-Dibromoethane	<1.0		1.0	ug/L		27-SEP-19	R4814109
Dibromomethane	<1.0		1.0	ug/L		27-SEP-19	R4814109
1,2-Dichlorobenzene	<0.50		0.50	ug/L		27-SEP-19	R4814109
1,3-Dichlorobenzene	<1.0		1.0	ug/L		27-SEP-19	R4814109
1,4-Dichlorobenzene	4.8		1.0	ug/L		27-SEP-19	R4814109
Dichlorodifluoromethane	<1.0		1.0	ug/L		27-SEP-19	R4814109
1,1-dichloroethane	1.76		0.50	ug/L		27-SEP-19	R4814109

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ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2345306-3 LQ25-100							
Sampled By: CLIENT on 11-SEP-19 @ 10:22							
Matrix: WATER							
VOC plus F1 by GCMS							
1,2-Dichloroethane	<0.50		0.50	ug/L		27-SEP-19	R4814109
1,1-dichloroethene	<0.50		0.50	ug/L		27-SEP-19	R4814109
cis-1,2-Dichloroethene	<1.0		1.0	ug/L		27-SEP-19	R4814109
trans-1,2-Dichloroethene	<1.0		1.0	ug/L		27-SEP-19	R4814109
Dichloromethane	<5.0		5.0	ug/L		27-SEP-19	R4814109
1,2-Dichloropropane	<1.0		1.0	ug/L		27-SEP-19	R4814109
1,3-Dichloropropane	<1.0		1.0	ug/L		27-SEP-19	R4814109
2,2-Dichloropropane	<1.0		1.0	ug/L		27-SEP-19	R4814109
1,1-Dichloropropene	<1.0		1.0	ug/L		27-SEP-19	R4814109
cis-1,3-Dichloropropene	<1.0		1.0	ug/L		27-SEP-19	R4814109
trans-1,3-Dichloropropene	<1.0		1.0	ug/L		27-SEP-19	R4814109
Ethylbenzene	39.0		0.50	ug/L		27-SEP-19	R4814109
F1	360		100	ug/L		27-SEP-19	R4814109
Hexachlorobutadiene	<1.0		1.0	ug/L		27-SEP-19	R4814109
Hexane	<1.0		1.0	ug/L		27-SEP-19	R4814109
2-Hexanone (Methyl butyl ketone)	<20		20	ug/L		27-SEP-19	R4814109
Isopropylbenzene	1.1		1.0	ug/L		27-SEP-19	R4814109
4-Isopropyltoluene	14.6		1.0	ug/L		27-SEP-19	R4814109
MEK	244		20	ug/L		27-SEP-19	R4814109
MIBK	<20		20	ug/L		27-SEP-19	R4814109
MTBE	1.87		0.50	ug/L		27-SEP-19	R4814109
Styrene	<1.0		1.0	ug/L		27-SEP-19	R4814109
1,1,1,2-Tetrachloroethane	<0.50		0.50	ug/L		27-SEP-19	R4814109
1,1,2,2-Tetrachloroethane	<0.50		0.50	ug/L		27-SEP-19	R4814109
Tetrachloroethene	<0.50		0.50	ug/L		27-SEP-19	R4814109
Toluene	16.8		0.50	ug/L		27-SEP-19	R4814109
1,2,3-Trichlorobenzene	<1.0		1.0	ug/L		27-SEP-19	R4814109
1,2,4-Trichlorobenzene	<1.0		1.0	ug/L		27-SEP-19	R4814109
1,1,1-Trichloroethane	<0.50		0.50	ug/L		27-SEP-19	R4814109
1,1,2-Trichloroethane	<0.50		0.50	ug/L		27-SEP-19	R4814109
Trichloroethene	<0.50		0.50	ug/L		27-SEP-19	R4814109
Trichlorofluoromethane	<1.0		1.0	ug/L		27-SEP-19	R4814109
1,2,3-Trichloropropane	<1.0		1.0	ug/L		27-SEP-19	R4814109
1,2,4-Trimethylbenzene	18.6		1.0	ug/L		27-SEP-19	R4814109
1,3,5-Trimethylbenzene	3.8		1.0	ug/L		27-SEP-19	R4814109
Vinyl Chloride	0.64		0.50	ug/L		27-SEP-19	R4814109
M+P-Xylenes	113		0.40	ug/L		27-SEP-19	R4814109
o-Xylene	45.7		0.50	ug/L		27-SEP-19	R4814109
Surrogate: 4-Bromofluorobenzene (SS)	88.4		70-130	%		27-SEP-19	R4814109
Surrogate: 1,4-Difluorobenzene (SS)	101.4		70-130	%		27-SEP-19	R4814109
L2345306-4 LQ25-MH34							
Sampled By: CLIENT on 11-SEP-19 @ 10:22							
Matrix: WATER							
Alkalinity species as HCO3, CO3, OH							
Alkalinity, Bicarbonate							
Bicarbonate (HCO3)	469000		1200	ug/L		16-SEP-19	
Alkalinity, Carbonate							
Carbonate (CO3)	<600		600	ug/L		16-SEP-19	
Alkalinity, Hydroxide							
Hydroxide (OH)	<340		340	ug/L		16-SEP-19	
Alkalinity, Total (as CaCO3)							

* 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
L2345306-4 LQ25-MH34							
Sampled By: CLIENT on 11-SEP-19 @ 10:22							
Matrix: WATER							
Alkalinity, Total (as CaCO3)							
Alkalinity, Total (as CaCO3)	384000		1000	ug/L		13-SEP-19	R4809090
Dissolved Carbons							
Dissolved Inorganic Carbon by Combustion							
Dissolved Inorganic Carbon	82500		5000	ug/L		16-SEP-19	R4819173
Dissolved Organic Carbon by Combustion							
Dissolved Organic Carbon	15200		500	ug/L		17-SEP-19	R4819352
Total Dissolved Carbon by Calculation							
Total Dissolved Carbon	97700		5000	ug/L		18-SEP-19	
Miscellaneous Parameters							
Ammonia, Total (as N)	218		10	ug/L		16-SEP-19	R4815489
Chloride (Cl)	195000		2500	ug/L		13-SEP-19	R4820130
Chromium, Hexavalent	<0.50		0.50	ug/L		16-SEP-19	R4813728
Cyanide, Total	3.5	HTD	1.0	ug/L		23-SEP-19	R4837309
Mercury (Hg)-Total	<0.0050		0.0050	ug/L	19-SEP-19	19-SEP-19	R4827412
Oil and Grease	<5000		5000	ug/L		20-SEP-19	R4827930
Phenols (4AAP)	2.6		1.0	ug/L		16-SEP-19	R4810490
Sulfate (SO4)	202000		1500	ug/L		13-SEP-19	R4820130
Total Metals in Water by CRC ICPMS							
Aluminum (Al)-Total	75.1		3.0	ug/L	19-SEP-19	19-SEP-19	R4825608
Antimony (Sb)-Total	0.40		0.10	ug/L	19-SEP-19	19-SEP-19	R4825608
Arsenic (As)-Total	0.92		0.10	ug/L	19-SEP-19	19-SEP-19	R4825608
Barium (Ba)-Total	103		0.10	ug/L	19-SEP-19	19-SEP-19	R4825608
Beryllium (Be)-Total	<0.10		0.10	ug/L	19-SEP-19	19-SEP-19	R4825608
Bismuth (Bi)-Total	<0.050		0.050	ug/L	19-SEP-19	19-SEP-19	R4825608
Boron (B)-Total	247		10	ug/L	19-SEP-19	19-SEP-19	R4825608
Cadmium (Cd)-Total	0.0112		0.0050	ug/L	19-SEP-19	19-SEP-19	R4825608
Calcium (Ca)-Total	103000		50	ug/L	19-SEP-19	19-SEP-19	R4825608
Cesium (Cs)-Total	0.035		0.010	ug/L	19-SEP-19	19-SEP-19	R4825608
Chromium (Cr)-Total	0.59		0.10	ug/L	19-SEP-19	19-SEP-19	R4825608
Cobalt (Co)-Total	0.76		0.10	ug/L	19-SEP-19	19-SEP-19	R4825608
Copper (Cu)-Total	5.76		0.50	ug/L	19-SEP-19	19-SEP-19	R4825608
Iron (Fe)-Total	188		10	ug/L	19-SEP-19	19-SEP-19	R4825608
Lead (Pb)-Total	0.246		0.050	ug/L	19-SEP-19	19-SEP-19	R4825608
Lithium (Li)-Total	182		1.0	ug/L	19-SEP-19	19-SEP-19	R4825608
Magnesium (Mg)-Total	74100		5.0	ug/L	19-SEP-19	19-SEP-19	R4825608
Manganese (Mn)-Total	164		0.10	ug/L	19-SEP-19	19-SEP-19	R4825608
Molybdenum (Mo)-Total	9.37		0.050	ug/L	19-SEP-19	19-SEP-19	R4825608
Nickel (Ni)-Total	10.2		0.50	ug/L	19-SEP-19	19-SEP-19	R4825608
Potassium (K)-Total	45500		50	ug/L	19-SEP-19	19-SEP-19	R4825608
Phosphorus (P)-Total	34		30	ug/L	19-SEP-19	19-SEP-19	R4825608
Rubidium (Rb)-Total	9.69		0.20	ug/L	19-SEP-19	19-SEP-19	R4825608
Selenium (Se)-Total	0.304		0.050	ug/L	19-SEP-19	19-SEP-19	R4825608
Silicon (Si)-Total	5660		100	ug/L	19-SEP-19	19-SEP-19	R4825608
Silver (Ag)-Total	<0.010		0.010	ug/L	19-SEP-19	19-SEP-19	R4825608
Sodium (Na)-Total	76400		50	ug/L	19-SEP-19	19-SEP-19	R4825608
Strontium (Sr)-Total	575		0.20	ug/L	19-SEP-19	19-SEP-19	R4825608
Sulfur (S)-Total	61000		500	ug/L	19-SEP-19	19-SEP-19	R4825608
Tellurium (Te)-Total	<0.20		0.20	ug/L	19-SEP-19	19-SEP-19	R4825608
Thallium (Tl)-Total	<0.010		0.010	ug/L	19-SEP-19	19-SEP-19	R4825608
Thorium (Th)-Total	<0.10		0.10	ug/L	19-SEP-19	19-SEP-19	R4825608
Tin (Sn)-Total	<0.10		0.10	ug/L	19-SEP-19	19-SEP-19	R4825608

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ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2345306-4 LQ25-MH34							
Sampled By: CLIENT on 11-SEP-19 @ 10:22							
Matrix: WATER							
Total Metals in Water by CRC ICPMS							
Titanium (Ti)-Total	2.65		0.30	ug/L	19-SEP-19	19-SEP-19	R4825608
Tungsten (W)-Total	<0.10		0.10	ug/L	19-SEP-19	19-SEP-19	R4825608
Uranium (U)-Total	14.8		0.010	ug/L	19-SEP-19	19-SEP-19	R4825608
Vanadium (V)-Total	0.79		0.50	ug/L	19-SEP-19	19-SEP-19	R4825608
Zinc (Zn)-Total	6.1		3.0	ug/L	19-SEP-19	19-SEP-19	R4825608
Zirconium (Zr)-Total	0.66		0.20	ug/L	19-SEP-19	19-SEP-19	R4825608
Dissolved Metals in Water by CRC ICPMS							
Dissolved Metals Filtration Location	FIELD					18-SEP-19	R4818753
Aluminum (Al)-Dissolved	<10	DLM	10	ug/L	18-SEP-19	18-SEP-19	R4821590
Antimony (Sb)-Dissolved	<1.0	DLM	1.0	ug/L	18-SEP-19	18-SEP-19	R4821590
Arsenic (As)-Dissolved	<1.0	DLM	1.0	ug/L	18-SEP-19	18-SEP-19	R4821590
Barium (Ba)-Dissolved	96.8	DLM	1.0	ug/L	18-SEP-19	18-SEP-19	R4821590
Beryllium (Be)-Dissolved	<1.0	DLM	1.0	ug/L	18-SEP-19	18-SEP-19	R4821590
Bismuth (Bi)-Dissolved	<0.50	DLM	0.50	ug/L	18-SEP-19	18-SEP-19	R4821590
Boron (B)-Dissolved	320	DLM	100	ug/L	18-SEP-19	18-SEP-19	R4821590
Cadmium (Cd)-Dissolved	<0.050	DLM	0.050	ug/L	18-SEP-19	18-SEP-19	R4821590
Calcium (Ca)-Dissolved	109000	DLM	500	ug/L	18-SEP-19	18-SEP-19	R4821590
Cesium (Cs)-Dissolved	<0.10	DLM	0.10	ug/L	18-SEP-19	18-SEP-19	R4821590
Chromium (Cr)-Dissolved	<1.0	DLM	1.0	ug/L	18-SEP-19	18-SEP-19	R4821590
Cobalt (Co)-Dissolved	<1.0	DLM	1.0	ug/L	18-SEP-19	18-SEP-19	R4821590
Copper (Cu)-Dissolved	5.5	DLM	2.0	ug/L	18-SEP-19	18-SEP-19	R4821590
Iron (Fe)-Dissolved	<100	DLM	100	ug/L	18-SEP-19	18-SEP-19	R4821590
Lead (Pb)-Dissolved	<0.50	DLM	0.50	ug/L	18-SEP-19	18-SEP-19	R4821590
Lithium (Li)-Dissolved	196	DLM	10	ug/L	18-SEP-19	18-SEP-19	R4821590
Magnesium (Mg)-Dissolved	71600	DLM	50	ug/L	18-SEP-19	18-SEP-19	R4821590
Manganese (Mn)-Dissolved	149	DLM	1.0	ug/L	18-SEP-19	18-SEP-19	R4821590
Molybdenum (Mo)-Dissolved	9.54	DLM	0.50	ug/L	18-SEP-19	18-SEP-19	R4821590
Nickel (Ni)-Dissolved	10.5	DLM	5.0	ug/L	18-SEP-19	18-SEP-19	R4821590
Phosphorus (P)-Dissolved	<300	DLM	300	ug/L	18-SEP-19	18-SEP-19	R4821590
Potassium (K)-Dissolved	51000	DLM	500	ug/L	18-SEP-19	18-SEP-19	R4821590
Rubidium (Rb)-Dissolved	9.5	DLM	2.0	ug/L	18-SEP-19	18-SEP-19	R4821590
Selenium (Se)-Dissolved	<0.50	DLM	0.50	ug/L	18-SEP-19	18-SEP-19	R4821590
Silicon (Si)-Dissolved	5200	DLM	500	ug/L	18-SEP-19	18-SEP-19	R4821590
Silver (Ag)-Dissolved	<0.10	DLM	0.10	ug/L	18-SEP-19	18-SEP-19	R4821590
Sodium (Na)-Dissolved	77200	DLM	500	ug/L	18-SEP-19	18-SEP-19	R4821590
Strontium (Sr)-Dissolved	620	DLM	1.0	ug/L	18-SEP-19	18-SEP-19	R4821590
Sulfur (S)-Dissolved	55300	DLM	5000	ug/L	18-SEP-19	18-SEP-19	R4821590
Tellurium (Te)-Dissolved	<2.0	DLM	2.0	ug/L	18-SEP-19	18-SEP-19	R4821590
Thallium (Tl)-Dissolved	<0.10	DLM	0.10	ug/L	18-SEP-19	18-SEP-19	R4821590
Thorium (Th)-Dissolved	<1.0	DLM	1.0	ug/L	18-SEP-19	18-SEP-19	R4821590
Tin (Sn)-Dissolved	<1.0	DLM	1.0	ug/L	18-SEP-19	18-SEP-19	R4821590
Titanium (Ti)-Dissolved	<3.0	DLM	3.0	ug/L	18-SEP-19	18-SEP-19	R4821590
Tungsten (W)-Dissolved	<1.0	DLM	1.0	ug/L	18-SEP-19	18-SEP-19	R4821590
Uranium (U)-Dissolved	16.6	DLM	0.10	ug/L	18-SEP-19	18-SEP-19	R4821590
Vanadium (V)-Dissolved	<5.0	DLM	5.0	ug/L	18-SEP-19	18-SEP-19	R4821590
Zinc (Zn)-Dissolved	<10	DLM	10	ug/L	18-SEP-19	18-SEP-19	R4821590
Zirconium (Zr)-Dissolved	<2.0	DLM	2.0	ug/L	18-SEP-19	18-SEP-19	R4821590
Mercury Dissolved							
Dissolved Mercury Filtration Location	FIELD					19-SEP-19	R4826797
Mercury (Hg)-Dissolved	<0.0050		0.0050	ug/L	19-SEP-19	19-SEP-19	R4827450
Polyaromatic Hydrocarbons (PAHs)							
1-Methyl Naphthalene	<0.020		0.020	ug/L	13-SEP-19	18-SEP-19	R4822268

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ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2345306-4 LQ25-MH34							
Sampled By: CLIENT on 11-SEP-19 @ 10:22							
Matrix: WATER							
Polyaromatic Hydrocarbons (PAHs)							
2-Methyl Naphthalene	<0.020		0.020	ug/L	13-SEP-19	18-SEP-19	R4822268
Acenaphthene	0.048		0.020	ug/L	13-SEP-19	18-SEP-19	R4822268
Acenaphthylene	<0.020		0.020	ug/L	13-SEP-19	18-SEP-19	R4822268
Anthracene	0.020		0.010	ug/L	13-SEP-19	18-SEP-19	R4822268
Acridine	0.287		0.020	ug/L	13-SEP-19	18-SEP-19	R4822268
Benzo(a)anthracene	0.010	EMPC	0.010	ug/L	13-SEP-19	18-SEP-19	R4822268
Benzo(a)pyrene	0.0160		0.0050	ug/L	13-SEP-19	18-SEP-19	R4822268
Benzo(b&j)fluoranthene	0.033		0.010	ug/L	13-SEP-19	18-SEP-19	R4822268
Benzo(g,h,i)perylene	<0.020		0.020	ug/L	13-SEP-19	18-SEP-19	R4822268
Benzo(k)fluoranthene	0.012	EMPC	0.010	ug/L	13-SEP-19	18-SEP-19	R4822268
Chrysene	0.043		0.020	ug/L	13-SEP-19	18-SEP-19	R4822268
Dibenzo(a,h)anthracene	<0.0050		0.0050	ug/L	13-SEP-19	18-SEP-19	R4822268
Fluoranthene	0.067		0.020	ug/L	13-SEP-19	18-SEP-19	R4822268
Fluorene	0.052		0.020	ug/L	13-SEP-19	18-SEP-19	R4822268
Indeno(1,2,3-cd)pyrene	<0.010		0.010	ug/L	13-SEP-19	18-SEP-19	R4822268
Naphthalene	0.088		0.050	ug/L	13-SEP-19	18-SEP-19	R4822268
Phenanthrene	<0.050		0.050	ug/L	13-SEP-19	18-SEP-19	R4822268
Pyrene	0.069		0.010	ug/L	13-SEP-19	18-SEP-19	R4822268
Quinoline	0.071		0.020	ug/L	13-SEP-19	18-SEP-19	R4822268
B(a)P Total Potency Equivalent	<0.030		0.030	ug/L	13-SEP-19	18-SEP-19	R4822268
Surrogate: Acenaphthene d10	98.4		60-130	%	13-SEP-19	18-SEP-19	R4822268
Surrogate: Acridine d9	105.2		60-130	%	13-SEP-19	18-SEP-19	R4822268
Surrogate: Chrysene d12	110.8		60-130	%	13-SEP-19	18-SEP-19	R4822268
Surrogate: Naphthalene d8	95.1		50-130	%	13-SEP-19	18-SEP-19	R4822268
Surrogate: Phenanthrene d10	105.9		60-130	%	13-SEP-19	18-SEP-19	R4822268
PCBs							
Aroclor 1016	<0.040	DLM	0.040	ug/L	17-SEP-19	17-SEP-19	R4813508
Aroclor 1221	<0.040	DLM	0.040	ug/L	17-SEP-19	17-SEP-19	R4813508
Aroclor 1232	<0.040	DLM	0.040	ug/L	17-SEP-19	17-SEP-19	R4813508
Aroclor 1242	<0.040	DLM	0.040	ug/L	17-SEP-19	17-SEP-19	R4813508
Aroclor 1248	<0.040	DLM	0.040	ug/L	17-SEP-19	17-SEP-19	R4813508
Aroclor 1254	<0.040	DLM	0.040	ug/L	17-SEP-19	17-SEP-19	R4813508
Aroclor 1260	<0.040	DLM	0.040	ug/L	17-SEP-19	17-SEP-19	R4813508
Aroclor 1262	<0.040	DLM	0.040	ug/L	17-SEP-19	17-SEP-19	R4813508
Aroclor 1268	<0.040	DLM	0.040	ug/L	17-SEP-19	17-SEP-19	R4813508
Total PCBs	<0.12	DLM	0.12	ug/L	17-SEP-19	17-SEP-19	R4813508
Surrogate: d14-Terphenyl	89.7		40-130	%	17-SEP-19	17-SEP-19	R4813508
Pesticides, Organochlorine							
Aldrin	<1.0	DLM	1.0	ug/L	13-SEP-19	23-SEP-19	R4822711
a-chlordane	<1.0	DLM	1.0	ug/L	13-SEP-19	23-SEP-19	R4822711
g-chlordane	<1.0	DLM	1.0	ug/L	13-SEP-19	23-SEP-19	R4822711
alpha-BHC	<1.0	DLM	1.0	ug/L	13-SEP-19	23-SEP-19	R4822711
beta-BHC	<1.0	DLM	1.0	ug/L	13-SEP-19	23-SEP-19	R4822711
delta-BHC	<1.0	DLM	1.0	ug/L	13-SEP-19	23-SEP-19	R4822711
o,p-DDD	<1.0	DLM	1.0	ug/L	13-SEP-19	23-SEP-19	R4822711
pp-DDD	<1.0	DLM	1.0	ug/L	13-SEP-19	23-SEP-19	R4822711
o,p-DDE	<1.0	DLM	1.0	ug/L	13-SEP-19	23-SEP-19	R4822711
pp-DDE	<1.0	DLM	1.0	ug/L	13-SEP-19	23-SEP-19	R4822711
op-DDT	<1.0	DLM	1.0	ug/L	13-SEP-19	23-SEP-19	R4822711
pp-DDT	<1.0	DLM	1.0	ug/L	13-SEP-19	23-SEP-19	R4822711
Dieldrin	<1.0	DLM	1.0	ug/L	13-SEP-19	23-SEP-19	R4822711

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ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2345306-4 LQ25-MH34							
Sampled By: CLIENT on 11-SEP-19 @ 10:22							
Matrix: WATER							
Pesticides, Organochlorine							
alpha-Endosulfan	<1.0	DLM	1.0	ug/L	13-SEP-19	23-SEP-19	R4822711
beta-Endosulfan	<1.0	DLM	1.0	ug/L	13-SEP-19	23-SEP-19	R4822711
Endosulfan Sulfate	<1.0	DLM	1.0	ug/L	13-SEP-19	23-SEP-19	R4822711
Endrin	<1.0	DLM	1.0	ug/L	13-SEP-19	23-SEP-19	R4822711
Endrin Aldehyde	<1.0	DLM	1.0	ug/L	13-SEP-19	23-SEP-19	R4822711
Hexachlorobenzene	<1.0	DLM	1.0	ug/L	13-SEP-19	23-SEP-19	R4822711
Heptachlor	<1.0	DLM	1.0	ug/L	13-SEP-19	23-SEP-19	R4822711
Heptachlor Epoxide	<1.0	DLM	1.0	ug/L	13-SEP-19	23-SEP-19	R4822711
Lindane	<1.0	DLM	1.0	ug/L	13-SEP-19	23-SEP-19	R4822711
Methoxychlor	<1.0	DLM	1.0	ug/L	13-SEP-19	23-SEP-19	R4822711
Mirex	<1.0	DLM	1.0	ug/L	13-SEP-19	23-SEP-19	R4822711
Oxychlorodane	<1.0	DLM	1.0	ug/L	13-SEP-19	23-SEP-19	R4822711
Surrogate: 2-Fluorobiphenyl	106.6		40-130	%	13-SEP-19	23-SEP-19	R4822711
Surrogate: d14-Terphenyl	119.5		40-130	%	13-SEP-19	23-SEP-19	R4822711
Herbicides in Water							
Clopyralid	<1.0	DLM	1.0	ug/L	16-SEP-19	17-SEP-19	R4813269
Dicamba	<1.0	DLM	1.0	ug/L	16-SEP-19	17-SEP-19	R4813269
Mecoprop	<1.0	DLM	1.0	ug/L	16-SEP-19	17-SEP-19	R4813269
MCPA	<1.0	DLM	1.0	ug/L	16-SEP-19	17-SEP-19	R4813269
2,4-D	<1.0	DLM	1.0	ug/L	16-SEP-19	17-SEP-19	R4813269
Bromoxynil	<1.0	DLM	1.0	ug/L	16-SEP-19	17-SEP-19	R4813269
Triclopyr	<1.0	DLM	1.0	ug/L	16-SEP-19	17-SEP-19	R4813269
2,4,5-T	<1.0	DLM	1.0	ug/L	16-SEP-19	17-SEP-19	R4813269
2,4,5-TP	<1.0	DLM	1.0	ug/L	16-SEP-19	17-SEP-19	R4813269
Picloram	<1.0	DLM	1.0	ug/L	16-SEP-19	17-SEP-19	R4813269
2,4-DB	<1.0	DLM	1.0	ug/L	16-SEP-19	17-SEP-19	R4813269
2,4-DP	<1.0	DLM	1.0	ug/L	16-SEP-19	17-SEP-19	R4813269
Dinoseb	<1.0	DLM	1.0	ug/L	16-SEP-19	17-SEP-19	R4813269
MCPB	<1.0	DLM	1.0	ug/L	16-SEP-19	17-SEP-19	R4813269
Surrogate: 2,4-Dichlorophenylacetic Acid	101.0		50-130	%	16-SEP-19	17-SEP-19	R4813269
Miscellaneous Pesticides							
Diazinon	<0.25	DLM	0.25	ug/L	13-SEP-19	18-SEP-19	R4818351
Surrogate: 2-Fluorobiphenyl	80.2		40-130	%	13-SEP-19	18-SEP-19	R4818351
Surrogate: d14-Terphenyl	78.7		40-130	%	13-SEP-19	18-SEP-19	R4818351
4,4'-Methylenebis(2-chloroaniline)							
4,4'-Methylenebis(2-chloroaniline)	<0.50		0.50	ug/L	13-SEP-19	16-SEP-19	R4811130
Surrogate: p-Terphenyl d14	85.7		40-130	%	13-SEP-19	16-SEP-19	R4811130
Total, Fecal Coliforms, E Coli by QT97							
Fecal Coliform by MPN QT97							
Fecal Coliforms	2		1	MPN/100mL		11-SEP-19	R4801451
Total Coliform and E.coli by MPN QT97							
Total Coliforms	770		1	MPN/100mL		11-SEP-19	R4801410
Escherichia Coli	5	MBEF	1	MPN/100mL		11-SEP-19	R4801410
VOC plus F1 to F4							
CCME PHC F2-F4 in Water							
F2 (C10-C16)	<100		100	ug/L	13-SEP-19	14-SEP-19	R4800048
F3 (C16-C34)	<250		250	ug/L	13-SEP-19	14-SEP-19	R4800048
F4 (C34-C50)	<250		250	ug/L	13-SEP-19	14-SEP-19	R4800048
Surrogate: 2-Bromobenzotrifluoride	98.4		60-140	%	13-SEP-19	14-SEP-19	R4800048
CCME Total Hydrocarbons							
F1-BTEX	<100		100	ug/L		30-SEP-19	
F2-Naphth	<100		100	ug/L		30-SEP-19	

* 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
L2345306-4 LQ25-MH34							
Sampled By: CLIENT on 11-SEP-19 @ 10:22							
Matrix: WATER							
CCME Total Hydrocarbons							
F3-PAH	<250		250	ug/L		30-SEP-19	
Total Hydrocarbons (C6-C50)	<380		380	ug/L		30-SEP-19	
Sum of Xylene Isomer Concentrations							
Xylenes (Total)	<0.64		0.64	ug/L		30-SEP-19	
Total Trihalomethanes (THMs)							
Total THMs	<1.3		1.3	ug/L		30-SEP-19	
VOC plus F1 by GCMS							
Acetone	<50		50	ug/L		27-SEP-19	R4814109
Benzene	<0.50		0.50	ug/L		27-SEP-19	R4814109
Bromobenzene	<1.0		1.0	ug/L		27-SEP-19	R4814109
Bromochloromethane	<1.0		1.0	ug/L		27-SEP-19	R4814109
Bromodichloromethane	<0.50		0.50	ug/L		27-SEP-19	R4814109
Bromoform	<1.0		1.0	ug/L		27-SEP-19	R4814109
Bromomethane	<1.0		1.0	ug/L		27-SEP-19	R4814109
n-Butylbenzene	<1.0		1.0	ug/L		27-SEP-19	R4814109
sec-Butylbenzene	<1.0		1.0	ug/L		27-SEP-19	R4814109
tert-Butylbenzene	<1.0		1.0	ug/L		27-SEP-19	R4814109
Carbon disulfide	<5.0		5.0	ug/L		27-SEP-19	R4814109
Carbon Tetrachloride	<0.50		0.50	ug/L		27-SEP-19	R4814109
Chlorobenzene	<1.0		1.0	ug/L		27-SEP-19	R4814109
Chloroethane	<1.0		1.0	ug/L		27-SEP-19	R4814109
Chloroform	<0.50		0.50	ug/L		27-SEP-19	R4814109
Chloromethane	<5.0		5.0	ug/L		27-SEP-19	R4814109
2-Chlorotoluene	<20		20	ug/L		27-SEP-19	R4814109
4-Chlorotoluene	<1.0		1.0	ug/L		27-SEP-19	R4814109
Dibromochloromethane	<0.50		0.50	ug/L		27-SEP-19	R4814109
1,2-Dibromo-3-chloropropane	<1.0		1.0	ug/L		27-SEP-19	R4814109
1,2-Dibromoethane	<1.0		1.0	ug/L		27-SEP-19	R4814109
Dibromomethane	<1.0		1.0	ug/L		27-SEP-19	R4814109
1,2-Dichlorobenzene	<0.50		0.50	ug/L		27-SEP-19	R4814109
1,3-Dichlorobenzene	<1.0		1.0	ug/L		27-SEP-19	R4814109
1,4-Dichlorobenzene	<1.0		1.0	ug/L		27-SEP-19	R4814109
Dichlorodifluoromethane	<1.0		1.0	ug/L		27-SEP-19	R4814109
1,1-dichloroethane	<0.50		0.50	ug/L		27-SEP-19	R4814109
1,2-Dichloroethane	<0.50		0.50	ug/L		27-SEP-19	R4814109
1,1-dichloroethene	<0.50		0.50	ug/L		27-SEP-19	R4814109
cis-1,2-Dichloroethene	<1.0		1.0	ug/L		27-SEP-19	R4814109
trans-1,2-Dichloroethene	<1.0		1.0	ug/L		27-SEP-19	R4814109
Dichloromethane	<5.0		5.0	ug/L		27-SEP-19	R4814109
1,2-Dichloropropane	<1.0		1.0	ug/L		27-SEP-19	R4814109
1,3-Dichloropropane	<1.0		1.0	ug/L		27-SEP-19	R4814109
2,2-Dichloropropane	<1.0		1.0	ug/L		27-SEP-19	R4814109
1,1-Dichloropropene	<1.0		1.0	ug/L		27-SEP-19	R4814109
cis-1,3-Dichloropropene	<1.0		1.0	ug/L		27-SEP-19	R4814109
trans-1,3-Dichloropropene	<1.0		1.0	ug/L		27-SEP-19	R4814109
Ethylbenzene	<0.50		0.50	ug/L		27-SEP-19	R4814109
F1	<100		100	ug/L		27-SEP-19	R4814109
Hexachlorobutadiene	<1.0		1.0	ug/L		27-SEP-19	R4814109
Hexane	<1.0		1.0	ug/L		27-SEP-19	R4814109
2-Hexanone (Methyl butyl ketone)	<20		20	ug/L		27-SEP-19	R4814109
Isopropylbenzene	<1.0		1.0	ug/L		27-SEP-19	R4814109
4-Isopropyltoluene	<1.0		1.0	ug/L		27-SEP-19	R4814109

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ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2345306-4 LQ25-MH34							
Sampled By: CLIENT on 11-SEP-19 @ 10:22							
Matrix: WATER							
VOC plus F1 by GCMS							
MEK	<20		20	ug/L		27-SEP-19	R4814109
MIBK	<20		20	ug/L		27-SEP-19	R4814109
MTBE	<0.50		0.50	ug/L		27-SEP-19	R4814109
Styrene	<1.0		1.0	ug/L		27-SEP-19	R4814109
1,1,1,2-Tetrachloroethane	<0.50		0.50	ug/L		27-SEP-19	R4814109
1,1,2,2-Tetrachloroethane	<0.50		0.50	ug/L		27-SEP-19	R4814109
Tetrachloroethene	<0.50		0.50	ug/L		27-SEP-19	R4814109
Toluene	<0.50		0.50	ug/L		27-SEP-19	R4814109
1,2,3-Trichlorobenzene	<1.0		1.0	ug/L		27-SEP-19	R4814109
1,2,4-Trichlorobenzene	<1.0		1.0	ug/L		27-SEP-19	R4814109
1,1,1-Trichloroethane	<0.50		0.50	ug/L		27-SEP-19	R4814109
1,1,2-Trichloroethane	<0.50		0.50	ug/L		27-SEP-19	R4814109
Trichloroethene	<0.50		0.50	ug/L		27-SEP-19	R4814109
Trichlorofluoromethane	<1.0		1.0	ug/L		27-SEP-19	R4814109
1,2,3-Trichloropropane	<1.0		1.0	ug/L		27-SEP-19	R4814109
1,2,4-Trimethylbenzene	<1.0		1.0	ug/L		27-SEP-19	R4814109
1,3,5-Trimethylbenzene	<1.0		1.0	ug/L		27-SEP-19	R4814109
Vinyl Chloride	<0.50		0.50	ug/L		27-SEP-19	R4814109
M+P-Xylenes	<0.40		0.40	ug/L		27-SEP-19	R4814109
o-Xylene	<0.50		0.50	ug/L		27-SEP-19	R4814109
Surrogate: 4-Bromofluorobenzene (SS)	88.5		70-130	%		27-SEP-19	R4814109
Surrogate: 1,4-Difluorobenzene (SS)	100.5		70-130	%		27-SEP-19	R4814109
L2345306-5 LQ25-MH27							
Sampled By: CLIENT on 11-SEP-19 @ 10:22							
Matrix: WATER							
Alkalinity species as HCO3, CO3, OH							
Alkalinity, Bicarbonate							
Bicarbonate (HCO3)	491000		1200	ug/L		16-SEP-19	
Alkalinity, Carbonate							
Carbonate (CO3)	<600		600	ug/L		16-SEP-19	
Alkalinity, Hydroxide							
Hydroxide (OH)	<340		340	ug/L		16-SEP-19	
Alkalinity, Total (as CaCO3)							
Alkalinity, Total (as CaCO3)	402000		1000	ug/L		13-SEP-19	R4809090
Dissolved Carbons							
Dissolved Inorganic Carbon by Combustion							
Dissolved Inorganic Carbon	85100		5000	ug/L		16-SEP-19	R4819173
Dissolved Organic Carbon by Combustion							
Dissolved Organic Carbon	14400		500	ug/L		17-SEP-19	R4819352
Total Dissolved Carbon by Calculation							
Total Dissolved Carbon	99500		5000	ug/L		18-SEP-19	
Miscellaneous Parameters							
Ammonia, Total (as N)	1630		100	ug/L		17-SEP-19	R4815489
Chloride (Cl)	73700		1000	ug/L		13-SEP-19	R4820130
Chromium, Hexavalent	<0.50		0.50	ug/L		16-SEP-19	R4813728
Cyanide, Total	2.2	HTD	1.0	ug/L		23-SEP-19	R4837309
Mercury (Hg)-Total	<0.0050		0.0050	ug/L	19-SEP-19	19-SEP-19	R4827412
Oil and Grease	<5000		5000	ug/L		20-SEP-19	R4827930
Phenols (4AAP)	3.6		1.0	ug/L		16-SEP-19	R4810490
Sulfate (SO4)	140000		600	ug/L		13-SEP-19	R4820130
Total Metals in Water by CRC ICPMS							

* 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
L2345306-5 LQ25-MH27							
Sampled By: CLIENT on 11-SEP-19 @ 10:22							
Matrix: WATER							
Total Metals in Water by CRC ICPMS							
Aluminum (Al)-Total	13.4		3.0	ug/L	19-SEP-19	19-SEP-19	R4825608
Antimony (Sb)-Total	0.30		0.10	ug/L	19-SEP-19	19-SEP-19	R4825608
Arsenic (As)-Total	1.11		0.10	ug/L	19-SEP-19	19-SEP-19	R4825608
Barium (Ba)-Total	83.4		0.10	ug/L	19-SEP-19	19-SEP-19	R4825608
Beryllium (Be)-Total	<0.10		0.10	ug/L	19-SEP-19	19-SEP-19	R4825608
Bismuth (Bi)-Total	<0.050		0.050	ug/L	19-SEP-19	19-SEP-19	R4825608
Boron (B)-Total	134		10	ug/L	19-SEP-19	19-SEP-19	R4825608
Cadmium (Cd)-Total	<0.0050		0.0050	ug/L	19-SEP-19	19-SEP-19	R4825608
Calcium (Ca)-Total	90700		50	ug/L	19-SEP-19	19-SEP-19	R4825608
Cesium (Cs)-Total	0.026		0.010	ug/L	19-SEP-19	19-SEP-19	R4825608
Chromium (Cr)-Total	0.30		0.10	ug/L	19-SEP-19	19-SEP-19	R4825608
Cobalt (Co)-Total	0.49		0.10	ug/L	19-SEP-19	19-SEP-19	R4825608
Copper (Cu)-Total	1.59		0.50	ug/L	19-SEP-19	19-SEP-19	R4825608
Iron (Fe)-Total	113		10	ug/L	19-SEP-19	19-SEP-19	R4825608
Lead (Pb)-Total	0.076		0.050	ug/L	19-SEP-19	19-SEP-19	R4825608
Lithium (Li)-Total	58.5		1.0	ug/L	19-SEP-19	19-SEP-19	R4825608
Magnesium (Mg)-Total	66800		5.0	ug/L	19-SEP-19	19-SEP-19	R4825608
Manganese (Mn)-Total	134		0.10	ug/L	19-SEP-19	19-SEP-19	R4825608
Molybdenum (Mo)-Total	1.29		0.050	ug/L	19-SEP-19	19-SEP-19	R4825608
Nickel (Ni)-Total	4.23		0.50	ug/L	19-SEP-19	19-SEP-19	R4825608
Potassium (K)-Total	17500		50	ug/L	19-SEP-19	19-SEP-19	R4825608
Phosphorus (P)-Total	77		30	ug/L	19-SEP-19	19-SEP-19	R4825608
Rubidium (Rb)-Total	7.60		0.20	ug/L	19-SEP-19	19-SEP-19	R4825608
Selenium (Se)-Total	0.222		0.050	ug/L	19-SEP-19	19-SEP-19	R4825608
Silicon (Si)-Total	4150		100	ug/L	19-SEP-19	19-SEP-19	R4825608
Silver (Ag)-Total	<0.010		0.010	ug/L	19-SEP-19	19-SEP-19	R4825608
Sodium (Na)-Total	65000		50	ug/L	19-SEP-19	19-SEP-19	R4825608
Strontium (Sr)-Total	549		0.20	ug/L	19-SEP-19	19-SEP-19	R4825608
Sulfur (S)-Total	51100		500	ug/L	19-SEP-19	19-SEP-19	R4825608
Tellurium (Te)-Total	<0.20		0.20	ug/L	19-SEP-19	19-SEP-19	R4825608
Thallium (Tl)-Total	<0.010		0.010	ug/L	19-SEP-19	19-SEP-19	R4825608
Thorium (Th)-Total	<0.10		0.10	ug/L	19-SEP-19	19-SEP-19	R4825608
Tin (Sn)-Total	0.16		0.10	ug/L	19-SEP-19	19-SEP-19	R4825608
Titanium (Ti)-Total	0.43		0.30	ug/L	19-SEP-19	19-SEP-19	R4825608
Tungsten (W)-Total	<0.10		0.10	ug/L	19-SEP-19	19-SEP-19	R4825608
Uranium (U)-Total	5.77		0.010	ug/L	19-SEP-19	19-SEP-19	R4825608
Vanadium (V)-Total	0.74		0.50	ug/L	19-SEP-19	19-SEP-19	R4825608
Zinc (Zn)-Total	3.1		3.0	ug/L	19-SEP-19	19-SEP-19	R4825608
Zirconium (Zr)-Total	0.35		0.20	ug/L	19-SEP-19	19-SEP-19	R4825608
Dissolved Metals in Water by CRC ICPMS							
Dissolved Metals Filtration Location	FIELD					18-SEP-19	R4818753
Aluminum (Al)-Dissolved	10	DLM	10	ug/L	18-SEP-19	18-SEP-19	R4821590
Antimony (Sb)-Dissolved	<1.0	DLM	1.0	ug/L	18-SEP-19	18-SEP-19	R4821590
Arsenic (As)-Dissolved	1.3	DLM	1.0	ug/L	18-SEP-19	18-SEP-19	R4821590
Barium (Ba)-Dissolved	96.6	DLM	1.0	ug/L	18-SEP-19	18-SEP-19	R4821590
Beryllium (Be)-Dissolved	<1.0	DLM	1.0	ug/L	18-SEP-19	18-SEP-19	R4821590
Bismuth (Bi)-Dissolved	<0.50	DLM	0.50	ug/L	18-SEP-19	18-SEP-19	R4821590
Boron (B)-Dissolved	170	DLM	100	ug/L	18-SEP-19	18-SEP-19	R4821590
Cadmium (Cd)-Dissolved	<0.050	DLM	0.050	ug/L	18-SEP-19	18-SEP-19	R4821590
Calcium (Ca)-Dissolved	103000	DLM	500	ug/L	18-SEP-19	18-SEP-19	R4821590
Cesium (Cs)-Dissolved	<0.10	DLM	0.10	ug/L	18-SEP-19	18-SEP-19	R4821590

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ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2345306-5 LQ25-MH27							
Sampled By: CLIENT on 11-SEP-19 @ 10:22							
Matrix: WATER							
Dissolved Metals in Water by CRC ICPMS							
Chromium (Cr)-Dissolved	<1.0	DLM	1.0	ug/L	18-SEP-19	18-SEP-19	R4821590
Cobalt (Co)-Dissolved	<1.0	DLM	1.0	ug/L	18-SEP-19	18-SEP-19	R4821590
Copper (Cu)-Dissolved	<2.0	DLM	2.0	ug/L	18-SEP-19	18-SEP-19	R4821590
Iron (Fe)-Dissolved	300	DLM	100	ug/L	18-SEP-19	18-SEP-19	R4821590
Lead (Pb)-Dissolved	<0.50	DLM	0.50	ug/L	18-SEP-19	18-SEP-19	R4821590
Lithium (Li)-Dissolved	62	DLM	10	ug/L	18-SEP-19	18-SEP-19	R4821590
Magnesium (Mg)-Dissolved	67000	DLM	50	ug/L	18-SEP-19	18-SEP-19	R4821590
Manganese (Mn)-Dissolved	171		0.10	ug/L	18-SEP-19	23-SEP-19	R4838508
Molybdenum (Mo)-Dissolved	<0.50	DLM	0.50	ug/L	18-SEP-19	18-SEP-19	R4821590
Nickel (Ni)-Dissolved	<5.0	DLM	5.0	ug/L	18-SEP-19	18-SEP-19	R4821590
Phosphorus (P)-Dissolved	<300	DLM	300	ug/L	18-SEP-19	18-SEP-19	R4821590
Potassium (K)-Dissolved	19600	DLM	500	ug/L	18-SEP-19	18-SEP-19	R4821590
Rubidium (Rb)-Dissolved	6.4	DLM	2.0	ug/L	18-SEP-19	18-SEP-19	R4821590
Selenium (Se)-Dissolved	<0.50	DLM	0.50	ug/L	18-SEP-19	18-SEP-19	R4821590
Silicon (Si)-Dissolved	4630		50	ug/L	18-SEP-19	23-SEP-19	R4838508
Silver (Ag)-Dissolved	<0.10	DLM	0.10	ug/L	18-SEP-19	18-SEP-19	R4821590
Sodium (Na)-Dissolved	72300	DLM	500	ug/L	18-SEP-19	18-SEP-19	R4821590
Strontium (Sr)-Dissolved	616	DLM	1.0	ug/L	18-SEP-19	18-SEP-19	R4821590
Sulfur (S)-Dissolved	50500	DLM	5000	ug/L	18-SEP-19	18-SEP-19	R4821590
Tellurium (Te)-Dissolved	<2.0	DLM	2.0	ug/L	18-SEP-19	18-SEP-19	R4821590
Thallium (Tl)-Dissolved	<0.10	DLM	0.10	ug/L	18-SEP-19	18-SEP-19	R4821590
Thorium (Th)-Dissolved	<1.0	DLM	1.0	ug/L	18-SEP-19	18-SEP-19	R4821590
Tin (Sn)-Dissolved	<1.0	DLM	1.0	ug/L	18-SEP-19	18-SEP-19	R4821590
Titanium (Ti)-Dissolved	<3.0	DLM	3.0	ug/L	18-SEP-19	18-SEP-19	R4821590
Tungsten (W)-Dissolved	<1.0	DLM	1.0	ug/L	18-SEP-19	18-SEP-19	R4821590
Uranium (U)-Dissolved	4.67	DLM	0.10	ug/L	18-SEP-19	18-SEP-19	R4821590
Vanadium (V)-Dissolved	<5.0	DLM	5.0	ug/L	18-SEP-19	18-SEP-19	R4821590
Zinc (Zn)-Dissolved	<10	DLM	10	ug/L	18-SEP-19	18-SEP-19	R4821590
Zirconium (Zr)-Dissolved	<2.0	DLM	2.0	ug/L	18-SEP-19	18-SEP-19	R4821590
Mercury Dissolved							
Dissolved Mercury Filtration Location	FIELD					19-SEP-19	R4826797
Mercury (Hg)-Dissolved	<0.0050		0.0050	ug/L	19-SEP-19	19-SEP-19	R4827450
Polyaromatic Hydrocarbons (PAHs)							
1-Methyl Naphthalene	0.023		0.020	ug/L	13-SEP-19	18-SEP-19	R4822268
2-Methyl Naphthalene	<0.020		0.020	ug/L	13-SEP-19	18-SEP-19	R4822268
Acenaphthene	0.074		0.020	ug/L	13-SEP-19	18-SEP-19	R4822268
Acenaphthylene	<0.020		0.020	ug/L	13-SEP-19	18-SEP-19	R4822268
Anthracene	0.043		0.010	ug/L	13-SEP-19	18-SEP-19	R4822268
Acridine	0.060		0.020	ug/L	13-SEP-19	18-SEP-19	R4822268
Benzo(a)anthracene	0.053		0.010	ug/L	13-SEP-19	18-SEP-19	R4822268
Benzo(a)pyrene	0.0519		0.0050	ug/L	13-SEP-19	18-SEP-19	R4822268
Benzo(b&j)fluoranthene	0.155		0.010	ug/L	13-SEP-19	18-SEP-19	R4822268
Benzo(g,h,i)perylene	0.032		0.020	ug/L	13-SEP-19	18-SEP-19	R4822268
Benzo(k)fluoranthene	0.050		0.010	ug/L	13-SEP-19	18-SEP-19	R4822268
Chrysene	0.066		0.020	ug/L	13-SEP-19	18-SEP-19	R4822268
Dibenzo(a,h)anthracene	0.0075		0.0050	ug/L	13-SEP-19	18-SEP-19	R4822268
Fluoranthene	0.330		0.020	ug/L	13-SEP-19	18-SEP-19	R4822268
Fluorene	0.080		0.020	ug/L	13-SEP-19	18-SEP-19	R4822268
Indeno(1,2,3-cd)pyrene	0.041		0.010	ug/L	13-SEP-19	18-SEP-19	R4822268
Naphthalene	0.114		0.050	ug/L	13-SEP-19	18-SEP-19	R4822268
Phenanthrene	0.184		0.050	ug/L	13-SEP-19	18-SEP-19	R4822268

* 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
L2345306-5 LQ25-MH27							
Sampled By: CLIENT on 11-SEP-19 @ 10:22							
Matrix: WATER							
Polyaromatic Hydrocarbons (PAHs)							
Pyrene	0.273		0.010	ug/L	13-SEP-19	18-SEP-19	R4822268
Quinoline	<0.020		0.020	ug/L	13-SEP-19	18-SEP-19	R4822268
B(a)P Total Potency Equivalent	0.090		0.030	ug/L	13-SEP-19	18-SEP-19	R4822268
Surrogate: Acenaphthene d10	100.9		60-130	%	13-SEP-19	18-SEP-19	R4822268
Surrogate: Acridine d9	105.4		60-130	%	13-SEP-19	18-SEP-19	R4822268
Surrogate: Chrysene d12	111.1		60-130	%	13-SEP-19	18-SEP-19	R4822268
Surrogate: Naphthalene d8	99.4		50-130	%	13-SEP-19	18-SEP-19	R4822268
Surrogate: Phenanthrene d10	109.0		60-130	%	13-SEP-19	18-SEP-19	R4822268
PCBs							
Aroclor 1016	<0.040	DLM	0.040	ug/L	17-SEP-19	17-SEP-19	R4813508
Aroclor 1221	<0.040	DLM	0.040	ug/L	17-SEP-19	17-SEP-19	R4813508
Aroclor 1232	<0.040	DLM	0.040	ug/L	17-SEP-19	17-SEP-19	R4813508
Aroclor 1242	<0.040	DLM	0.040	ug/L	17-SEP-19	17-SEP-19	R4813508
Aroclor 1248	<0.040	DLM	0.040	ug/L	17-SEP-19	17-SEP-19	R4813508
Aroclor 1254	<0.040	DLM	0.040	ug/L	17-SEP-19	17-SEP-19	R4813508
Aroclor 1260	<0.040	DLM	0.040	ug/L	17-SEP-19	17-SEP-19	R4813508
Aroclor 1262	<0.040	DLM	0.040	ug/L	17-SEP-19	17-SEP-19	R4813508
Aroclor 1268	<0.040	DLM	0.040	ug/L	17-SEP-19	17-SEP-19	R4813508
Total PCBs	<0.12	DLM	0.12	ug/L	17-SEP-19	17-SEP-19	R4813508
Surrogate: d14-Terphenyl	91.2		40-130	%	17-SEP-19	17-SEP-19	R4813508
Pesticides, Organochlorine							
Aldrin	<1.0	DLM	1.0	ug/L	13-SEP-19	23-SEP-19	R4822711
a-chlordane	<1.0	DLM	1.0	ug/L	13-SEP-19	23-SEP-19	R4822711
g-chlordane	<1.0	DLM	1.0	ug/L	13-SEP-19	23-SEP-19	R4822711
alpha-BHC	<1.0	DLM	1.0	ug/L	13-SEP-19	23-SEP-19	R4822711
beta-BHC	<1.0	DLM	1.0	ug/L	13-SEP-19	23-SEP-19	R4822711
delta-BHC	<1.0	DLM	1.0	ug/L	13-SEP-19	23-SEP-19	R4822711
o,p-DDD	<1.0	DLM	1.0	ug/L	13-SEP-19	23-SEP-19	R4822711
pp-DDD	<1.0	DLM	1.0	ug/L	13-SEP-19	23-SEP-19	R4822711
o,p-DDE	<1.0	DLM	1.0	ug/L	13-SEP-19	23-SEP-19	R4822711
pp-DDE	<1.0	DLM	1.0	ug/L	13-SEP-19	23-SEP-19	R4822711
op-DDT	<1.0	DLM	1.0	ug/L	13-SEP-19	23-SEP-19	R4822711
pp-DDT	<1.0	DLM	1.0	ug/L	13-SEP-19	23-SEP-19	R4822711
Dieldrin	<1.0	DLM	1.0	ug/L	13-SEP-19	23-SEP-19	R4822711
alpha-Endosulfan	<1.0	DLM	1.0	ug/L	13-SEP-19	23-SEP-19	R4822711
beta-Endosulfan	<1.0	DLM	1.0	ug/L	13-SEP-19	23-SEP-19	R4822711
Endosulfan Sulfate	<1.0	DLM	1.0	ug/L	13-SEP-19	23-SEP-19	R4822711
Endrin	<1.0	DLM	1.0	ug/L	13-SEP-19	23-SEP-19	R4822711
Endrin Aldehyde	<1.0	DLM	1.0	ug/L	13-SEP-19	23-SEP-19	R4822711
Hexachlorobenzene	<1.0	DLM	1.0	ug/L	13-SEP-19	23-SEP-19	R4822711
Heptachlor	<1.0	DLM	1.0	ug/L	13-SEP-19	23-SEP-19	R4822711
Heptachlor Epoxide	<1.0	DLM	1.0	ug/L	13-SEP-19	23-SEP-19	R4822711
Lindane	<1.0	DLM	1.0	ug/L	13-SEP-19	23-SEP-19	R4822711
Methoxychlor	<1.0	DLM	1.0	ug/L	13-SEP-19	23-SEP-19	R4822711
Mirex	<1.0	DLM	1.0	ug/L	13-SEP-19	23-SEP-19	R4822711
Oxychlordane	<1.0	DLM	1.0	ug/L	13-SEP-19	23-SEP-19	R4822711
Surrogate: 2-Fluorobiphenyl	112.4		40-130	%	13-SEP-19	23-SEP-19	R4822711
Surrogate: d14-Terphenyl	122.4		40-130	%	13-SEP-19	23-SEP-19	R4822711
Herbicides in Water							
Clopyralid	<1.0	DLM	1.0	ug/L	16-SEP-19	17-SEP-19	R4813269
Dicamba	<1.0	DLM	1.0	ug/L	16-SEP-19	17-SEP-19	R4813269
Mecoprop	<1.0	DLM	1.0	ug/L	16-SEP-19	17-SEP-19	R4813269

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ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2345306-5 LQ25-MH27							
Sampled By: CLIENT on 11-SEP-19 @ 10:22							
Matrix: WATER							
Herbicides in Water							
MCPA	<1.0	DLM	1.0	ug/L	16-SEP-19	17-SEP-19	R4813269
2,4-D	<1.0	DLM	1.0	ug/L	16-SEP-19	17-SEP-19	R4813269
Bromoxynil	<1.0	DLM	1.0	ug/L	16-SEP-19	17-SEP-19	R4813269
Triclopyr	<1.0	DLM	1.0	ug/L	16-SEP-19	17-SEP-19	R4813269
2,4,5-T	<1.0	DLM	1.0	ug/L	16-SEP-19	17-SEP-19	R4813269
2,4,5-TP	<1.0	DLM	1.0	ug/L	16-SEP-19	17-SEP-19	R4813269
Picloram	<1.0	DLM	1.0	ug/L	16-SEP-19	17-SEP-19	R4813269
2,4-DB	<1.0	DLM	1.0	ug/L	16-SEP-19	17-SEP-19	R4813269
2,4-DP	<1.0	DLM	1.0	ug/L	16-SEP-19	17-SEP-19	R4813269
Dinoseb	<1.0	DLM	1.0	ug/L	16-SEP-19	17-SEP-19	R4813269
MCPB	<1.0	DLM	1.0	ug/L	16-SEP-19	17-SEP-19	R4813269
Surrogate: 2,4-Dichlorophenylacetic Acid	99.0		50-130	%	16-SEP-19	17-SEP-19	R4813269
Miscellaneous Pesticides							
Diazinon	<0.10		0.10	ug/L	13-SEP-19	18-SEP-19	R4818351
Surrogate: 2-Fluorobiphenyl	85.5		40-130	%	13-SEP-19	18-SEP-19	R4818351
Surrogate: d14-Terphenyl	80.9		40-130	%	13-SEP-19	18-SEP-19	R4818351
4,4'-Methylenebis(2-chloroaniline)							
4,4'-Methylenebis(2-chloroaniline)	<0.50		0.50	ug/L	13-SEP-19	16-SEP-19	R4811130
Surrogate: p-Terphenyl d14	84.9		40-130	%	13-SEP-19	16-SEP-19	R4811130
Total, Fecal Coliforms, E Coli by QT97							
Fecal Coliform by MPN QT97							
Fecal Coliforms	3		1	MPN/100mL		11-SEP-19	R4801451
Total Coliform and E.coli by MPN QT97							
Total Coliforms	>2420		1	MPN/100mL		11-SEP-19	R4801410
Escherichia Coli	<1		1	MPN/100mL		11-SEP-19	R4801410
VOC plus F1 to F4							
CCME PHC F2-F4 in Water							
F2 (C10-C16)	<100		100	ug/L	13-SEP-19	14-SEP-19	R4800048
F3 (C16-C34)	<250		250	ug/L	13-SEP-19	14-SEP-19	R4800048
F4 (C34-C50)	<250		250	ug/L	13-SEP-19	14-SEP-19	R4800048
Surrogate: 2-Bromobenzotrifluoride	97.9		60-140	%	13-SEP-19	14-SEP-19	R4800048
CCME Total Hydrocarbons							
F1-BTEX	<100		100	ug/L		24-SEP-19	
F2-Naphth	<100		100	ug/L		24-SEP-19	
F3-PAH	<250		250	ug/L		24-SEP-19	
Total Hydrocarbons (C6-C50)	<380		380	ug/L		24-SEP-19	
Sum of Xylene Isomer Concentrations							
Xylenes (Total)	<0.64		0.64	ug/L		24-SEP-19	
Total Trihalomethanes (THMs)							
Total THMs	<1.3		1.3	ug/L		24-SEP-19	
VOC plus F1 by GCMS							
Acetone	<50		50	ug/L		17-SEP-19	R4814109
Benzene	<0.50		0.50	ug/L		17-SEP-19	R4814109
Bromobenzene	<1.0		1.0	ug/L		17-SEP-19	R4814109
Bromochloromethane	<1.0		1.0	ug/L		17-SEP-19	R4814109
Bromodichloromethane	<0.50		0.50	ug/L		17-SEP-19	R4814109
Bromoform	<1.0		1.0	ug/L		17-SEP-19	R4814109
Bromomethane	<1.0		1.0	ug/L		17-SEP-19	R4814109
n-Butylbenzene	<1.0		1.0	ug/L		17-SEP-19	R4814109
sec-Butylbenzene	<1.0		1.0	ug/L		17-SEP-19	R4814109
tert-Butylbenzene	<1.0		1.0	ug/L		17-SEP-19	R4814109
Carbon disulfide	<5.0		5.0	ug/L		17-SEP-19	R4814109

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ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2345306-5 LQ25-MH27							
Sampled By: CLIENT on 11-SEP-19 @ 10:22							
Matrix: WATER							
VOC plus F1 by GCMS							
Carbon Tetrachloride	<0.50		0.50	ug/L		17-SEP-19	R4814109
Chlorobenzene	<1.0		1.0	ug/L		17-SEP-19	R4814109
Chloroethane	<1.0		1.0	ug/L		17-SEP-19	R4814109
Chloroform	<0.50		0.50	ug/L		17-SEP-19	R4814109
Chloromethane	<5.0		5.0	ug/L		17-SEP-19	R4814109
2-Chlorotoluene	<20		20	ug/L		17-SEP-19	R4814109
4-Chlorotoluene	<1.0		1.0	ug/L		17-SEP-19	R4814109
Dibromochloromethane	<0.50		0.50	ug/L		17-SEP-19	R4814109
1,2-Dibromo-3-chloropropane	<1.0		1.0	ug/L		17-SEP-19	R4814109
1,2-Dibromoethane	<1.0		1.0	ug/L		17-SEP-19	R4814109
Dibromomethane	<1.0		1.0	ug/L		17-SEP-19	R4814109
1,2-Dichlorobenzene	<0.50		0.50	ug/L		17-SEP-19	R4814109
1,3-Dichlorobenzene	<1.0		1.0	ug/L		17-SEP-19	R4814109
1,4-Dichlorobenzene	<1.0		1.0	ug/L		17-SEP-19	R4814109
Dichlorodifluoromethane	<2.0	DLM	2.0	ug/L		17-SEP-19	R4814109
1,1-dichloroethane	<0.50		0.50	ug/L		17-SEP-19	R4814109
1,2-Dichloroethane	<0.50		0.50	ug/L		17-SEP-19	R4814109
1,1-dichloroethene	<0.50		0.50	ug/L		17-SEP-19	R4814109
cis-1,2-Dichloroethene	<1.0		1.0	ug/L		17-SEP-19	R4814109
trans-1,2-Dichloroethene	<1.0		1.0	ug/L		17-SEP-19	R4814109
Dichloromethane	<5.0		5.0	ug/L		17-SEP-19	R4814109
1,2-Dichloropropane	<1.0		1.0	ug/L		17-SEP-19	R4814109
1,3-Dichloropropane	<1.0		1.0	ug/L		17-SEP-19	R4814109
2,2-Dichloropropane	<1.0		1.0	ug/L		17-SEP-19	R4814109
1,1-Dichloropropene	<1.0		1.0	ug/L		17-SEP-19	R4814109
cis-1,3-Dichloropropene	<1.0		1.0	ug/L		17-SEP-19	R4814109
trans-1,3-Dichloropropene	<1.0		1.0	ug/L		17-SEP-19	R4814109
Ethylbenzene	<0.50		0.50	ug/L		17-SEP-19	R4814109
F1	<100		100	ug/L		17-SEP-19	R4814109
Hexachlorobutadiene	<1.0		1.0	ug/L		17-SEP-19	R4814109
Hexane	<1.0		1.0	ug/L		17-SEP-19	R4814109
2-Hexanone (Methyl butyl ketone)	<20		20	ug/L		17-SEP-19	R4814109
Isopropylbenzene	<1.0		1.0	ug/L		17-SEP-19	R4814109
4-Isopropyltoluene	<1.0		1.0	ug/L		17-SEP-19	R4814109
MEK	<20		20	ug/L		17-SEP-19	R4814109
MIBK	<20		20	ug/L		17-SEP-19	R4814109
MTBE	<2.0	DLM	2.0	ug/L		17-SEP-19	R4814109
Styrene	<1.0		1.0	ug/L		17-SEP-19	R4814109
1,1,1,2-Tetrachloroethane	<0.50		0.50	ug/L		17-SEP-19	R4814109
1,1,2,2-Tetrachloroethane	<0.50		0.50	ug/L		17-SEP-19	R4814109
Tetrachloroethene	<0.50		0.50	ug/L		17-SEP-19	R4814109
Toluene	<0.50		0.50	ug/L		17-SEP-19	R4814109
1,2,3-Trichlorobenzene	<1.0		1.0	ug/L		17-SEP-19	R4814109
1,2,4-Trichlorobenzene	<1.0		1.0	ug/L		17-SEP-19	R4814109
1,1,1-Trichloroethane	<0.50		0.50	ug/L		17-SEP-19	R4814109
1,1,2-Trichloroethane	<0.50		0.50	ug/L		17-SEP-19	R4814109
Trichloroethene	<0.50		0.50	ug/L		17-SEP-19	R4814109
Trichlorofluoromethane	<1.0		1.0	ug/L		17-SEP-19	R4814109
1,2,3-Trichloropropane	<1.0		1.0	ug/L		17-SEP-19	R4814109
1,2,4-Trimethylbenzene	<1.0		1.0	ug/L		17-SEP-19	R4814109
1,3,5-Trimethylbenzene	<1.0		1.0	ug/L		17-SEP-19	R4814109

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ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2345306-5 LQ25-MH27							
Sampled By: CLIENT on 11-SEP-19 @ 10:22							
Matrix: WATER							
VOC plus F1 by GCMS							
Vinyl Chloride	<0.50		0.50	ug/L		17-SEP-19	R4814109
M+P-Xylenes	<0.40		0.40	ug/L		17-SEP-19	R4814109
o-Xylene	<0.50		0.50	ug/L		17-SEP-19	R4814109
Surrogate: 4-Bromofluorobenzene (SS)	94.9		70-130	%		17-SEP-19	R4814109
Surrogate: 1,4-Difluorobenzene (SS)	102.7		70-130	%		17-SEP-19	R4814109

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

Reference Information

Sample Parameter Qualifier Key:

Qualifier	Description
DLCI	Detection Limit Raised: Chromatographic Interference due to co-elution.
DLHC	Detection Limit Raised: Dilution required due to high concentration of test analyte(s).
DLM	Detection Limit Adjusted due to sample matrix effects (e.g. chemical interference, colour, turbidity).
EMPC	Estimated Maximum Possible Concentration. Parameter detected but didn't meet all criteria for positive identification.
HTD	Hold time exceeded for re-analysis or dilution, but initial testing was conducted within hold time.
HTP	Sample preparation or preservation hold time was exceeded.
LCS-L	Lab Control Sample recovery was below ALS DQO. Reference Material and/or Matrix Spike results were acceptable. Non-detected sample results are considered reliable. Other results, if reported, have been qualified.
MBEF	Microbiological test results for E. coli > Fecal Coliforms due to sample heterogeneity. Both test results are within normal variability for MPN tests.
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.
RRQC	Refer to report remarks for information regarding this QC result.
SDO:RNA	Surrogate diluted out:% recovery not available

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 CO3 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 HCO3-/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 CaCO3)	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 HCO3- and H2CO3 endpoints indicated electrometrically.			
C-DIC-HTC-WP	Water	Dissolved Inorganic Carbon by Combustion	APHA 5310 B-WP
Filtered (0.45 um) sample is injected into a heated reaction chamber where it is acidified, converting all inorganic carbon to CO2 which is then transported in the carrier gas stream and measured via a non-dispersive infrared analyzer.			
C-DOC-HTC-WP	Water	Dissolved Organic Carbon by Combustion	APHA 5310 B-WP
Filtered (0.45 um) sample is acidified and purged to remove inorganic carbon, then injected into a heated reaction chamber where organic carbon is oxidized to CO2 which is then transported in the carrier gas stream and measured via a non-dispersive infrared analyzer.			
C-TDC-CALC-WP	Water	Total Dissolved Carbon by Calculation	CALCULATED
Total dissolved carbon represents the sum of dissolved inorganic carbon and dissolved organic carbon. For the purpose of calculation, results less than the detection limit (DL) are treated as zero.			
CL-IC-N-WP	Water	Chloride in Water by IC	EPA 300.1 (mod)
Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.			
CN-T-L-CFA-VA	Water	Low Level Total Cyanide in water by CFA	ISO 14403:2002
This analysis is carried out using procedures adapted from ISO Method 14403:2002 "Determination of Total Cyanide using Flow Analysis (FIA and CFA)". Total or strong acid dissociable (SAD) cyanide is determined by in-line UV digestion along with sample distillation and final determination by colourimetric analysis. Method Limitation: This method is susceptible to interference from thiocyanate (SCN). If SCN is present in the sample, there could be a positive interference with this method, but it would be less than 1% and could be as low as zero.			
CR-CR6-IC-WT	Water	Chromium +6	EPA 7199

Reference Information

Test Method References:

ALS Test Code	Matrix	Test Description	Method Reference**
		<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 diphenylcarbazine 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>	
EC-SCREEN-WP	Water	Conductivity Screen (Internal Use Only)	APHA 2510
		Qualitative analysis of conductivity where required during preparation of other test eg. IC, TDS, TSS, etc	
F1-F4-CALC-WP	Water	CCME Total Hydrocarbons	CCME CWS-PHC, Pub #1310, Dec 2001-L
		Analytical methods used for analysis of CCME Petroleum Hydrocarbons have been validated and comply with the Reference Method for the CWS PHC.	
		<p>In cases where results for both F4 and F4G are reported, the greater of the two results must be used in any application of the CWS PHC guidelines and the gravimetric heavy hydrocarbons cannot be added to the C6 to C50 hydrocarbons.</p> <p>In samples where BTEX and F1 were analyzed, F1-BTEX represents a value where the sum of Benzene, Toluene, Ethylbenzene and total Xylenes has been subtracted from F1.</p> <p>In samples where PAHs, F2 and F3 were analyzed, F2-Naphth represents the result where Naphthalene has been subtracted from F2. F3-PAH represents a result where the sum of Benzo(a)anthracene, Benzo(a)pyrene, Benzo(b)fluoranthene, Benzo(k)fluoranthene, Dibenzo(a,h)anthracene, Fluoranthene, Indeno(1,2,3-cd)pyrene, Phenanthrene, and Pyrene has been subtracted from F3.</p> <p>Unless otherwise qualified, the following quality control criteria have been met for the F1 hydrocarbon range:</p> <ol style="list-style-type: none"> 1. All extraction and analysis holding times were met. 2. Instrument performance showing response factors for C6 and C10 within 30% of the response factor for toluene. 3. Linearity of gasoline response within 15% throughout the calibration range. <p>Unless otherwise qualified, the following quality control criteria have been met for the F2-F4 hydrocarbon ranges:</p> <ol style="list-style-type: none"> 1. All extraction and analysis holding times were met. 2. Instrument performance showing C10, C16 and C34 response factors within 10% of their average. 3. Instrument performance showing the C50 response factor within 30% of the average of the C10, C16 and C34 response factors. 4. Linearity of diesel or motor oil response within 15% throughout the calibration range. 	
F2-F4-FID-WP	Water	CCME PHC F2-F4 in Water	EPA 3511
		Petroleum hydrocarbons in water are determined by liquid-liquid micro-scale solvent extraction using a reciprocal shaker extraction apparatus prior to capillary column gas chromatography with flame ionization detection (GC-FID) analysis.	
FC-QT97-WP	Water	Fecal Coliform by MPN QT97	APHA 9223B QT97
		This analysis is carried out using procedures adapted from APHA Method 9223B "Enzyme Substrate Coliform Test". The sample is mixed with a mixture of hydrolyzable substrates and then sealed in a 97-well packet. The packet is incubated at 44.5 – 0.2°C for 18 hours and then the number of wells exhibiting a positive response are counted. The final result is obtained by comparing the number of positive responses to a probability table.	
FC10-QT97-WP	Water	Fecal coliforms, 1:10 dilution by QT97	APHA 9223B QT97
		Analysis is carried out using procedures adapted from APHA 9223 "Enzyme Substrate Coliform Test". Fecal (thermotolerant) coliform bacteria are determined by mixing a 1:10 dilution of sample with a product containing hydrolyzable substrates and sealing in a 97-well packet. The packet is incubated at 44.5 – 0.2°C for 18 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.	
HERBSCR-LCMS-WT	Water	Herbicides in Water	E3552
		Water samples are subjected filtration and analyzed by direct injection without sample preparation using liquid chromatography tandem mass spectrometry (LC-MS/MS).	
HG-D-CVAA-WP	Water	Mercury Dissolved	APHA 3030B/EPA 1631E (mod)
		Water samples are filtered (0.45 um), preserved with hydrochloric acid, then undergo a cold-oxidation using bromine monochloride prior to reduction with stannous chloride, and analyzed by CVAAS.	
HG-T-CVAA-WP	Water	Mercury Total	EPA 1631E (mod)
		Water samples undergo a cold-oxidation using bromine monochloride prior to reduction with stannous chloride, and analyzed by CVAAS.	
MBOCA-WT	Water	4,4'-Methylenebis(2-chloroaniline)	SW846 8270
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.

Reference Information

Test Method References:

ALS Test Code	Matrix	Test Description	Method Reference**
MET-T-CCMS-WP	Water	Total Metals in Water by CRC ICPMS	EPA 200.2/6020B (mod.)
Water samples are digested with nitric and hydrochloric acids, and analyzed by CRC ICPMS.			
Method Limitation (re: Sulfur): Sulfide and volatile sulfur species may not be recovered by this method.			
NH3-COL-WP	Water	Ammonia by colour	APHA 4500 NH3 F
Ammonia in water samples forms indophenol when reacted with hypochlorite and phenol. The intensity is amplified by the addition of sodium nitroprusside and measured colourmetrically.			
OG-GRAV-WP	Water	Oil & Grease - Gravimetric	EPA 1664 (modified)
Water samples are acidified and extracted with hexane; the hexane extract is collected in a pre-weighed vial. The solvent is evaporated and Total Oil & Grease is determined from the weight of the residue in the vial.			
PAH,PANH-WP	Water	Polyaromatic Hydrocarbons (PAHs)	EPA 3511/8270D (mod)
PAHs are extracted from water using a hexane micro-extraction technique, with analysis by GC/MS. Because the two isomers cannot be readily separated chromatographically, benzo(j)fluoranthene is reported as part of the benzo(b)fluoranthene parameter.			
PCB9-WT	Water	PCBs	SW846 8270
PCBs are extracted from an aqueous sample at neutral pH with aliquots of dichloromethane using a modified separatory funnel technique. The extracts are analyzed by GC/MSD.			
PEST-DIAZINON-WT	Water	Miscellaneous Pesticides	SW846 8270
PEST-OC-WT	Water	Pesticides, Organochlorine	SW846 8270
Pesticides are extracted from an aqueous sample at neutral pH using three separate aliquots. The extracts are combined, concentrated down to a known volume and analyzed on the GC/MSD.			
PHENOLS-4AAP-WT	Water	Phenol (4AAP)	EPA 9066
An automated method is used to distill the sample. The distillate is then buffered to pH 9.4 which reacts with 4AAP and potassium ferricyanide to form a red complex which is measured colorimetrically.			
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-QT97-WP	Water	Total Coliform and E.coli by MPN QT97	APHA 9223B QT97
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 97-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.			
TC,EC10-QT97-WP	Water	Total and E. coli, 1:10 dilution by QT97	APHA 9223B QT97
Analysis is carried out using procedures adapted from APHA 9223 "Enzyme Substrate Coliform Test". Total coliforms and Eschericia coli bacteria are simultaneously determined by mixing a 1:10 dilution of sample with a product containing hydrolyzable substrates and sealing in a 97-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.			
THM-SUM-CALC-WP	Water	Total Trihalomethanes (THMs)	CALCULATION
Total Trihalomethanes (THMs) represents the sum of bromodichloromethane, bromoform, chlorodibromomethane and chloroform. For the purpose of calculation, results less than the detection limit (DL) are treated as zero.			
VOC+F1-HSMS-WP	Water	VOC plus F1 by GCMS	EPA 8260C / EPA 5021A
In this method samples are analyzed using a headspace autosampler interfaced to a dual column gas chromatograph with MS and Flame Ionization detectors.			
XYLENES-SUM-CALC-WP	Water	Sum of Xylene Isomer Concentrations	CALCULATED RESULT
Total xylenes represents the sum of o-xylene and m&p-xylene.			

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

Reference Information

Test Method References:

ALS Test Code	Matrix	Test Description	Method Reference**
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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
WT	ALS ENVIRONMENTAL - WATERLOO, ONTARIO, CANADA
VA	ALS ENVIRONMENTAL - VANCOUVER, BRITISH COLUMBIA, 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: L2345306

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Client: City of Winnipeg - Solid Waste Services Div (1120 Waverley)
 Solid Waste Services Division 1120 Waverley Street
 Winnipeg MB R3T 0P4

Contact: CHRIS KOZAK

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
ALK-TITR-WP		Water						
Batch	R4809090							
WG3162466-4	LCS							
Alkalinity, Total (as CaCO3)			96.8		%		85-115	13-SEP-19
WG3162466-1	MB							
Alkalinity, Total (as CaCO3)			1.0		mg/L		1	13-SEP-19
Batch	R4817572							
WG3164805-4	LCS							
Alkalinity, Total (as CaCO3)			103.4		%		85-115	16-SEP-19
WG3164805-1	MB							
Alkalinity, Total (as CaCO3)			<1.0		mg/L		1	16-SEP-19
C-DIC-HTC-WP		Water						
Batch	R4819173							
WG3164955-2	LCS							
Dissolved Inorganic Carbon			98.5		%		80-120	16-SEP-19
WG3164955-1	MB							
Dissolved Inorganic Carbon			<0.50		mg/L		0.5	16-SEP-19
C-DOC-HTC-WP		Water						
Batch	R4819352							
WG3165116-2	LCS							
Dissolved Organic Carbon			104.2		%		80-120	17-SEP-19
WG3165116-1	MB							
Dissolved Organic Carbon			<0.50		mg/L		0.5	17-SEP-19
CL-IC-N-WP		Water						
Batch	R4820130							
WG3160643-2	LCS							
Chloride (Cl)			100.8		%		90-110	13-SEP-19
WG3160643-1	MB							
Chloride (Cl)			<0.50		mg/L		0.5	13-SEP-19
CN-T-L-CFA-VA		Water						
Batch	R4828109							
WG3167863-17	LCS							
Cyanide, Total			101.5		%		80-120	20-SEP-19
WG3167863-16	MB							
Cyanide, Total			<0.0010		mg/L		0.001	20-SEP-19
Batch	R4837309							
WG3169727-2	LCS							
Cyanide, Total			106.3		%		80-120	23-SEP-19
WG3169727-1	MB							



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Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
CN-T-L-CFA-VA								
Water								
Batch R4837309								
WG3169727-1 MB								
Cyanide, Total								
			<0.0010		mg/L		0.001	23-SEP-19
CR-CR6-IC-WT								
Water								
Batch R4813728								
WG3163035-2 LCS								
Chromium, Hexavalent								
			93.1		%		80-120	16-SEP-19
WG3163035-1 MB								
Chromium, Hexavalent								
			<0.00050		mg/L		0.0005	16-SEP-19
Batch R4817691								
WG3164340-2 LCS								
Chromium, Hexavalent								
			95.7		%		80-120	17-SEP-19
WG3164340-1 MB								
Chromium, Hexavalent								
			<0.00050		mg/L		0.0005	17-SEP-19
F2-F4-FID-WP								
Water								
Batch R4800048								
WG3160706-2 LCS								
F2 (C10-C16)								
			103.0		%		70-130	14-SEP-19
F3 (C16-C34)								
			94.5		%		70-130	14-SEP-19
F4 (C34-C50)								
			99.0		%		70-130	14-SEP-19
WG3160706-1 MB								
F2 (C10-C16)								
			<0.10		mg/L		0.1	14-SEP-19
F3 (C16-C34)								
			<0.25		mg/L		0.25	14-SEP-19
F4 (C34-C50)								
			<0.25		mg/L		0.25	14-SEP-19
Surrogate: 2-Bromobenzotrifluoride								
			96.9		%		60-140	14-SEP-19
FC-QT97-WP								
Water								
Batch R4801451								
WG3158846-2 DUP								
Fecal Coliforms								
		L2345306-4 2	<1	RPD-NA	MPN/100mL	N/A	65	11-SEP-19
WG3158846-1 MB								
Fecal Coliforms								
			<1		MPN/100mL		1	11-SEP-19
FC10-QT97-WP								
Water								
Batch R4801188								
WG3158833-2 DUP								
Fecal Coliforms								
		L2345306-1 50	40		MPN/100mL	24	65	11-SEP-19
WG3158833-1 MB								
Fecal Coliforms								
			<1		MPN/100mL		1	11-SEP-19



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Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
HERBSCR-LCMS-WT		Water						
Batch	R4813269							
WG3159330-2	LCS							
Clopyralid			102.0		%		50-150	17-SEP-19
Dicamba			103.5		%		65-130	17-SEP-19
Mecoprop			97.4		%		65-130	17-SEP-19
MCPA			92.4		%		65-130	17-SEP-19
2,4-D			83.5		%		65-130	17-SEP-19
Bromoxynil			110.0		%		65-130	17-SEP-19
Triclopyr			61.4	LCS-L	%		65-130	17-SEP-19
2,4,5-T			76.8		%		65-130	17-SEP-19
2,4,5-TP			85.4		%		65-130	17-SEP-19
Picloram			108.0		%		50-150	17-SEP-19
2,4-DB			69.4		%		65-130	17-SEP-19
2,4-DP			88.2		%		65-130	17-SEP-19
Dinoseb			95.1		%		50-150	17-SEP-19
MCPB			85.0		%		65-130	17-SEP-19
WG3159330-1	MB							
Clopyralid			<0.00010		mg/L		0.0001	17-SEP-19
Dicamba			<0.00010		mg/L		0.0001	17-SEP-19
Mecoprop			<0.00010		mg/L		0.0001	17-SEP-19
MCPA			<0.00010		mg/L		0.0001	17-SEP-19
2,4-D			<0.00010		mg/L		0.0001	17-SEP-19
Bromoxynil			<0.00010		mg/L		0.0001	17-SEP-19
Triclopyr			<0.00010		mg/L		0.0001	17-SEP-19
2,4,5-T			<0.00010		mg/L		0.0001	17-SEP-19
2,4,5-TP			<0.00010		mg/L		0.0001	17-SEP-19
Picloram			<0.00010		mg/L		0.0001	17-SEP-19
2,4-DB			<0.00010		mg/L		0.0001	17-SEP-19
2,4-DP			<0.00010		mg/L		0.0001	17-SEP-19
Dinoseb			<0.00010		mg/L		0.0001	17-SEP-19
MCPB			<0.00010		mg/L		0.0001	17-SEP-19
Surrogate: 2,4-Dichlorophenylacetic Acid			98.8		%		50-130	17-SEP-19
HG-D-CVAA-WP		Water						
Batch	R4827450							
WG3167917-2	LCS							
Mercury (Hg)-Dissolved			103.0		%		80-120	19-SEP-19
WG3167917-1	MB							

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Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
HG-D-CVAA-WP Water								
Batch	R4827450							
WG3167917-1 MB								
Mercury (Hg)-Dissolved			<0.000005C		mg/L		0.000005	19-SEP-19
HG-T-CVAA-WP Water								
Batch	R4827412							
WG3167921-2 LCS								
Mercury (Hg)-Total			104.0		%		80-120	19-SEP-19
WG3167921-1 MB								
Mercury (Hg)-Total			<0.000005C		mg/L		0.000005	19-SEP-19
MBOCA-WT Water								
Batch	R4811130							
WG3160465-2 LCS								
4,4'-Methylenebis(2-chloroaniline)			87.9		%		50-150	16-SEP-19
WG3160465-1 MB								
4,4'-Methylenebis(2-chloroaniline)			<0.50		ug/L		0.5	16-SEP-19
Surrogate: p-Terphenyl d14			83.0		%		40-130	16-SEP-19
MET-D-CCMS-WP Water								
Batch	R4821590							
WG3165272-2 LCS								
Aluminum (Al)-Dissolved			107.1		%		80-120	18-SEP-19
Antimony (Sb)-Dissolved			97.1		%		80-120	18-SEP-19
Arsenic (As)-Dissolved			100.7		%		80-120	18-SEP-19
Barium (Ba)-Dissolved			102.9		%		80-120	18-SEP-19
Beryllium (Be)-Dissolved			108.0		%		80-120	18-SEP-19
Bismuth (Bi)-Dissolved			93.5		%		80-120	18-SEP-19
Boron (B)-Dissolved			110.5		%		80-120	18-SEP-19
Cadmium (Cd)-Dissolved			102.3		%		80-120	18-SEP-19
Calcium (Ca)-Dissolved			113.2		%		80-120	18-SEP-19
Cesium (Cs)-Dissolved			99.7		%		80-120	18-SEP-19
Chromium (Cr)-Dissolved			101.2		%		80-120	18-SEP-19
Cobalt (Co)-Dissolved			100.1		%		80-120	18-SEP-19
Copper (Cu)-Dissolved			98.6		%		80-120	18-SEP-19
Iron (Fe)-Dissolved			98.7		%		80-120	18-SEP-19
Lead (Pb)-Dissolved			99.6		%		80-120	18-SEP-19
Lithium (Li)-Dissolved			111.3		%		80-120	18-SEP-19
Magnesium (Mg)-Dissolved			104.7		%		80-120	18-SEP-19



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Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
MET-D-CCMS-WP								
	Water							
Batch	R4821590							
WG3165272-2	LCS							
Manganese (Mn)-Dissolved			102.1		%		80-120	18-SEP-19
Molybdenum (Mo)-Dissolved			99.6		%		80-120	18-SEP-19
Nickel (Ni)-Dissolved			99.8		%		80-120	18-SEP-19
Phosphorus (P)-Dissolved			106.9		%		80-120	18-SEP-19
Potassium (K)-Dissolved			105.3		%		80-120	18-SEP-19
Rubidium (Rb)-Dissolved			99.8		%		80-120	18-SEP-19
Selenium (Se)-Dissolved			96.7		%		80-120	18-SEP-19
Silicon (Si)-Dissolved			102.8		%		80-120	18-SEP-19
Silver (Ag)-Dissolved			100.8		%		80-120	18-SEP-19
Sodium (Na)-Dissolved			104.5		%		80-120	18-SEP-19
Strontium (Sr)-Dissolved			103.2		%		80-120	18-SEP-19
Sulfur (S)-Dissolved			106.7		%		80-120	18-SEP-19
Tellurium (Te)-Dissolved			97.5		%		80-120	18-SEP-19
Thallium (Tl)-Dissolved			95.6		%		80-120	18-SEP-19
Thorium (Th)-Dissolved			95.5		%		80-120	18-SEP-19
Tin (Sn)-Dissolved			95.2		%		80-120	18-SEP-19
Titanium (Ti)-Dissolved			99.7		%		80-120	18-SEP-19
Tungsten (W)-Dissolved			100.1		%		80-120	18-SEP-19
Uranium (U)-Dissolved			105.4		%		80-120	18-SEP-19
Vanadium (V)-Dissolved			101.9		%		80-120	18-SEP-19
Zinc (Zn)-Dissolved			98.8		%		80-120	18-SEP-19
Zirconium (Zr)-Dissolved			94.6		%		80-120	18-SEP-19
WG3165272-1	MB							
Aluminum (Al)-Dissolved			<0.0010		mg/L		0.001	18-SEP-19
Antimony (Sb)-Dissolved			<0.00010		mg/L		0.0001	18-SEP-19
Arsenic (As)-Dissolved			<0.00010		mg/L		0.0001	18-SEP-19
Barium (Ba)-Dissolved			<0.00010		mg/L		0.0001	18-SEP-19
Beryllium (Be)-Dissolved			<0.00010		mg/L		0.0001	18-SEP-19
Bismuth (Bi)-Dissolved			<0.000050		mg/L		0.00005	18-SEP-19
Boron (B)-Dissolved			<0.010		mg/L		0.01	18-SEP-19
Cadmium (Cd)-Dissolved			<0.0000050		mg/L		0.000005	18-SEP-19
Calcium (Ca)-Dissolved			<0.050		mg/L		0.05	18-SEP-19
Cesium (Cs)-Dissolved			<0.000010		mg/L		0.00001	18-SEP-19
Chromium (Cr)-Dissolved			<0.00010		mg/L		0.0001	18-SEP-19



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Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
MET-D-CCMS-WP		Water						
Batch	R4821590							
WG3165272-1	MB							
Cobalt (Co)-Dissolved			<0.00010		mg/L		0.0001	18-SEP-19
Copper (Cu)-Dissolved			<0.00020		mg/L		0.0002	18-SEP-19
Iron (Fe)-Dissolved			<0.010		mg/L		0.01	18-SEP-19
Lead (Pb)-Dissolved			<0.000050		mg/L		0.00005	18-SEP-19
Lithium (Li)-Dissolved			<0.0010		mg/L		0.001	18-SEP-19
Magnesium (Mg)-Dissolved			<0.0050		mg/L		0.005	18-SEP-19
Manganese (Mn)-Dissolved			<0.00010		mg/L		0.0001	18-SEP-19
Molybdenum (Mo)-Dissolved			<0.000050		mg/L		0.00005	18-SEP-19
Nickel (Ni)-Dissolved			<0.00050		mg/L		0.0005	18-SEP-19
Phosphorus (P)-Dissolved			<0.030		mg/L		0.03	18-SEP-19
Potassium (K)-Dissolved			<0.050		mg/L		0.05	18-SEP-19
Rubidium (Rb)-Dissolved			<0.00020		mg/L		0.0002	18-SEP-19
Selenium (Se)-Dissolved			<0.000050		mg/L		0.00005	18-SEP-19
Silicon (Si)-Dissolved			<0.050		mg/L		0.05	18-SEP-19
Silver (Ag)-Dissolved			<0.000010		mg/L		0.00001	18-SEP-19
Sodium (Na)-Dissolved			<0.050		mg/L		0.05	18-SEP-19
Strontium (Sr)-Dissolved			<0.00010		mg/L		0.0001	18-SEP-19
Sulfur (S)-Dissolved			<0.50		mg/L		0.5	18-SEP-19
Tellurium (Te)-Dissolved			<0.00020		mg/L		0.0002	18-SEP-19
Thallium (Tl)-Dissolved			<0.000010		mg/L		0.00001	18-SEP-19
Thorium (Th)-Dissolved			<0.00010		mg/L		0.0001	18-SEP-19
Tin (Sn)-Dissolved			<0.00010		mg/L		0.0001	18-SEP-19
Titanium (Ti)-Dissolved			<0.00030		mg/L		0.0003	18-SEP-19
Tungsten (W)-Dissolved			<0.00010		mg/L		0.0001	18-SEP-19
Uranium (U)-Dissolved			<0.000010		mg/L		0.00001	18-SEP-19
Vanadium (V)-Dissolved			<0.00050		mg/L		0.0005	18-SEP-19
Zinc (Zn)-Dissolved			<0.0010		mg/L		0.001	18-SEP-19
Zirconium (Zr)-Dissolved			<0.00020		mg/L		0.0002	18-SEP-19
MET-T-CCMS-WP		Water						
Batch	R4825608							
WG3166236-2	LCS							
Aluminum (Al)-Total			104.5		%		80-120	19-SEP-19
Antimony (Sb)-Total			104.3		%		80-120	19-SEP-19
Arsenic (As)-Total			103.1		%		80-120	19-SEP-19



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Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
MET-T-CCMS-WP								
	Water							
Batch	R4825608							
WG3166236-2	LCS							
Barium (Ba)-Total			105.2		%		80-120	19-SEP-19
Beryllium (Be)-Total			104.5		%		80-120	19-SEP-19
Bismuth (Bi)-Total			105.1		%		80-120	19-SEP-19
Boron (B)-Total			102.8		%		80-120	19-SEP-19
Cadmium (Cd)-Total			105.7		%		80-120	19-SEP-19
Calcium (Ca)-Total			105.1		%		80-120	19-SEP-19
Cesium (Cs)-Total			106.5		%		80-120	19-SEP-19
Chromium (Cr)-Total			101.9		%		80-120	19-SEP-19
Cobalt (Co)-Total			101.3		%		80-120	19-SEP-19
Copper (Cu)-Total			103.5		%		80-120	19-SEP-19
Iron (Fe)-Total			99.2		%		80-120	19-SEP-19
Lead (Pb)-Total			103.2		%		80-120	19-SEP-19
Lithium (Li)-Total			101.6		%		80-120	19-SEP-19
Magnesium (Mg)-Total			114.2		%		80-120	19-SEP-19
Manganese (Mn)-Total			104.7		%		80-120	19-SEP-19
Molybdenum (Mo)-Total			101.5		%		80-120	19-SEP-19
Nickel (Ni)-Total			103.6		%		80-120	19-SEP-19
Potassium (K)-Total			100.4		%		80-120	19-SEP-19
Phosphorus (P)-Total			107.0		%		80-120	19-SEP-19
Rubidium (Rb)-Total			101.3		%		80-120	19-SEP-19
Selenium (Se)-Total			103.5		%		80-120	19-SEP-19
Silicon (Si)-Total			105.8		%		80-120	19-SEP-19
Silver (Ag)-Total			101.0		%		80-120	19-SEP-19
Sodium (Na)-Total			106.2		%		80-120	19-SEP-19
Strontium (Sr)-Total			107.0		%		80-120	19-SEP-19
Sulfur (S)-Total			103.5		%		80-120	19-SEP-19
Tellurium (Te)-Total			102.0		%		80-120	19-SEP-19
Thallium (Tl)-Total			104.0		%		80-120	19-SEP-19
Thorium (Th)-Total			99.2		%		80-120	19-SEP-19
Tin (Sn)-Total			100.4		%		80-120	19-SEP-19
Titanium (Ti)-Total			99.5		%		80-120	19-SEP-19
Tungsten (W)-Total			101.8		%		80-120	19-SEP-19
Uranium (U)-Total			104.2		%		80-120	19-SEP-19
Vanadium (V)-Total			104.2		%		80-120	19-SEP-19



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Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
MET-T-CCMS-WP		Water						
Batch	R4825608							
WG3166236-2	LCS							
Zinc (Zn)-Total			101.4		%		80-120	19-SEP-19
Zirconium (Zr)-Total			100.1		%		80-120	19-SEP-19
WG3166236-1	MB							
Aluminum (Al)-Total			<0.0030		mg/L		0.003	19-SEP-19
Antimony (Sb)-Total			<0.00010		mg/L		0.0001	19-SEP-19
Arsenic (As)-Total			<0.00010		mg/L		0.0001	19-SEP-19
Barium (Ba)-Total			<0.00010		mg/L		0.0001	19-SEP-19
Beryllium (Be)-Total			<0.00010		mg/L		0.0001	19-SEP-19
Bismuth (Bi)-Total			<0.000050		mg/L		0.00005	19-SEP-19
Boron (B)-Total			<0.010		mg/L		0.01	19-SEP-19
Cadmium (Cd)-Total			<0.0000050		mg/L		0.000005	19-SEP-19
Calcium (Ca)-Total			<0.050		mg/L		0.05	19-SEP-19
Cesium (Cs)-Total			<0.000010		mg/L		0.00001	19-SEP-19
Chromium (Cr)-Total			<0.00010		mg/L		0.0001	19-SEP-19
Cobalt (Co)-Total			<0.00010		mg/L		0.0001	19-SEP-19
Copper (Cu)-Total			<0.00050		mg/L		0.0005	19-SEP-19
Iron (Fe)-Total			<0.010		mg/L		0.01	19-SEP-19
Lead (Pb)-Total			<0.000050		mg/L		0.00005	19-SEP-19
Lithium (Li)-Total			<0.0010		mg/L		0.001	19-SEP-19
Magnesium (Mg)-Total			<0.0050		mg/L		0.005	19-SEP-19
Manganese (Mn)-Total			<0.00010		mg/L		0.0001	19-SEP-19
Molybdenum (Mo)-Total			<0.000050		mg/L		0.00005	19-SEP-19
Nickel (Ni)-Total			<0.00050		mg/L		0.0005	19-SEP-19
Potassium (K)-Total			<0.050		mg/L		0.05	19-SEP-19
Phosphorus (P)-Total			<0.030		mg/L		0.03	19-SEP-19
Rubidium (Rb)-Total			<0.00020		mg/L		0.0002	19-SEP-19
Selenium (Se)-Total			<0.000050		mg/L		0.00005	19-SEP-19
Silicon (Si)-Total			<0.10		mg/L		0.1	19-SEP-19
Silver (Ag)-Total			<0.000010		mg/L		0.00001	19-SEP-19
Sodium (Na)-Total			<0.050		mg/L		0.05	19-SEP-19
Strontium (Sr)-Total			<0.00020		mg/L		0.0002	19-SEP-19
Sulfur (S)-Total			<0.50		mg/L		0.5	19-SEP-19
Tellurium (Te)-Total			<0.00020		mg/L		0.0002	19-SEP-19
Thallium (Tl)-Total			<0.000010		mg/L		0.00001	19-SEP-19



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Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
MET-T-CCMS-WP		Water						
Batch	R4825608							
WG3166236-1	MB							
Thorium (Th)-Total			<0.00010		mg/L		0.0001	19-SEP-19
Tin (Sn)-Total			<0.00010		mg/L		0.0001	19-SEP-19
Titanium (Ti)-Total			<0.00030		mg/L		0.0003	19-SEP-19
Tungsten (W)-Total			<0.00010		mg/L		0.0001	19-SEP-19
Uranium (U)-Total			<0.000010		mg/L		0.00001	19-SEP-19
Vanadium (V)-Total			<0.00050		mg/L		0.0005	19-SEP-19
Zinc (Zn)-Total			<0.0030		mg/L		0.003	19-SEP-19
Zirconium (Zr)-Total			<0.00020		mg/L		0.0002	19-SEP-19
NH3-COL-WP		Water						
Batch	R4815489							
WG3164234-2	LCS							
Ammonia, Total (as N)			103.6		%		85-115	16-SEP-19
WG3164234-1	MB							
Ammonia, Total (as N)			<0.010		mg/L		0.01	16-SEP-19
OG-GRAV-WP		Water						
Batch	R4827930							
WG3163645-2	LCS							
Oil and Grease			92.0		%		70-130	20-SEP-19
WG3163645-1	MB							
Oil and Grease			<5.0		mg/L		5	20-SEP-19
PAH,PANH-WP		Water						
Batch	R4822268							
WG3162777-2	LCS							
1-Methyl Naphthalene			114.7		%		60-130	17-SEP-19
2-Methyl Naphthalene			118.5		%		60-130	17-SEP-19
Acenaphthene			122.2		%		60-130	17-SEP-19
Acenaphthylene			108.1		%		60-130	17-SEP-19
Anthracene			86.3		%		60-130	17-SEP-19
Acridine			95.4		%		60-130	17-SEP-19
Benzo(a)anthracene			97.1		%		60-130	17-SEP-19
Benzo(a)pyrene			82.4		%		60-130	17-SEP-19
Benzo(b&j)fluoranthene			90.9		%		60-130	17-SEP-19
Benzo(g,h,i)perylene			109.7		%		60-130	17-SEP-19
Benzo(k)fluoranthene			113.9		%		60-130	17-SEP-19
Chrysene			107.4		%		60-130	17-SEP-19

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Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
PAH,PANH-WP		Water						
Batch	R4822268							
WG3162777-2	LCS							
Dibenzo(a,h)anthracene			94.8		%		60-130	17-SEP-19
Fluoranthene			123.0		%		60-130	17-SEP-19
Fluorene			113.7		%		60-130	17-SEP-19
Indeno(1,2,3-cd)pyrene			81.7		%		60-130	17-SEP-19
Naphthalene			120.1		%		50-130	17-SEP-19
Phenanthrene			118.8		%		60-130	17-SEP-19
Pyrene			121.7		%		60-130	17-SEP-19
Quinoline			112.1		%		60-130	17-SEP-19
WG3162777-1	MB							
1-Methyl Naphthalene			<0.000020		mg/L		0.00002	17-SEP-19
2-Methyl Naphthalene			<0.000020		mg/L		0.00002	17-SEP-19
Acenaphthene			<0.000020		mg/L		0.00002	17-SEP-19
Acenaphthylene			<0.000020		mg/L		0.00002	17-SEP-19
Anthracene			<0.000010		mg/L		0.00001	17-SEP-19
Acridine			<0.000020		mg/L		0.00002	17-SEP-19
Benzo(a)anthracene			<0.000010		mg/L		0.00001	17-SEP-19
Benzo(a)pyrene			<0.0000050		mg/L		0.000005	17-SEP-19
Benzo(b&j)fluoranthene			<0.000010		mg/L		0.00001	17-SEP-19
Benzo(g,h,i)perylene			<0.000020		mg/L		0.00002	17-SEP-19
Benzo(k)fluoranthene			<0.000010		mg/L		0.00001	17-SEP-19
Chrysene			<0.000020		mg/L		0.00002	17-SEP-19
Dibenzo(a,h)anthracene			<0.0000050		mg/L		0.000005	17-SEP-19
Fluoranthene			<0.000020		mg/L		0.00002	17-SEP-19
Fluorene			<0.000020		mg/L		0.00002	17-SEP-19
Indeno(1,2,3-cd)pyrene			<0.000010		mg/L		0.00001	17-SEP-19
Naphthalene			<0.000050		mg/L		0.00005	17-SEP-19
Phenanthrene			<0.000050		mg/L		0.00005	17-SEP-19
Pyrene			<0.000010		mg/L		0.00001	17-SEP-19
Quinoline			<0.000020		mg/L		0.00002	17-SEP-19
Surrogate: Acenaphthene d10			108.2		%		60-130	17-SEP-19
Surrogate: Acridine d9			99.4		%		60-130	17-SEP-19
Surrogate: Chrysene d12			98.5		%		60-130	17-SEP-19
Surrogate: Naphthalene d8			108.2		%		50-130	17-SEP-19
Surrogate: Phenanthrene d10			105.4		%		60-130	17-SEP-19



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Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
PCB9-WT		Water						
Batch	R4813508							
WG3160465-2	LCS							
Aroclor 1242			101.3		%		65-130	17-SEP-19
Aroclor 1248			91.4		%		40-130	17-SEP-19
Aroclor 1254			91.5		%		65-135	17-SEP-19
Aroclor 1260			115.9		%		65-130	17-SEP-19
WG3160465-1	MB							
Aroclor 1016			<0.020		ug/L		0.02	17-SEP-19
Aroclor 1221			<0.020		ug/L		0.02	17-SEP-19
Aroclor 1232			<0.020		ug/L		0.02	17-SEP-19
Aroclor 1242			<0.020		ug/L		0.02	17-SEP-19
Aroclor 1248			<0.020		ug/L		0.02	17-SEP-19
Aroclor 1254			<0.020		ug/L		0.02	17-SEP-19
Aroclor 1260			<0.020		ug/L		0.02	17-SEP-19
Aroclor 1262			<0.020		ug/L		0.02	17-SEP-19
Aroclor 1268			<0.020		ug/L		0.02	17-SEP-19
Surrogate: d14-Terphenyl			83.7		%		40-130	17-SEP-19
PEST-DIAZINON-WT		Water						
Batch	R4818351							
WG3160465-2	LCS							
Diazinon			75.6		%		60-130	16-SEP-19
WG3160465-1	MB							
Diazinon			<0.10		ug/L		0.1	18-SEP-19
Surrogate: 2-Fluorobiphenyl			86.7		%		40-130	18-SEP-19
Surrogate: d14-Terphenyl			83.2		%		40-130	18-SEP-19
PEST-OC-WT		Water						
Batch	R4822711							
WG3160465-2	LCS							
Aldrin			68.7		%		50-150	19-SEP-19
a-chlordane			66.5		%		50-150	19-SEP-19
g-chlordane			66.5		%		50-150	19-SEP-19
alpha-BHC			96.8		%		50-150	19-SEP-19
beta-BHC			93.4		%		50-150	19-SEP-19
delta-BHC			95.7		%		50-150	19-SEP-19
o,p-DDD			72.2		%		50-150	19-SEP-19
pp-DDD			65.7		%		50-150	19-SEP-19
o,p-DDE			51.6		%		50-150	19-SEP-19

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Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
PEST-OC-WT		Water						
Batch	R4822711							
WG3160465-2	LCS							
pp-DDE			51.6		%		50-150	19-SEP-19
op-DDT			64.3		%		50-150	19-SEP-19
pp-DDT			67.5		%		50-150	19-SEP-19
Dieldrin			93.5		%		50-150	19-SEP-19
alpha-Endosulfan			78.8		%		50-150	19-SEP-19
beta-Endosulfan			87.4		%		50-150	19-SEP-19
Endosulfan Sulfate			97.4		%		50-150	19-SEP-19
Endrin			129.9		%		50-150	19-SEP-19
Endrin Aldehyde			59.1		%		50-150	19-SEP-19
Hexachlorobenzene			74.3		%		40-130	19-SEP-19
Heptachlor			69.8		%		50-150	19-SEP-19
Heptachlor Epoxide			76.4		%		50-150	19-SEP-19
Lindane			98.6		%		50-150	19-SEP-19
Methoxychlor			112.7		%		50-150	19-SEP-19
Mirex			42.8	MES	%		50-150	19-SEP-19
Oxychlorane			69.9		%		50-150	19-SEP-19
WG3160465-1	MB							
Aldrin			<0.10		ug/L		0.1	18-SEP-19
a-chlordane			<0.10		ug/L		0.1	18-SEP-19
g-chlordane			<0.10		ug/L		0.1	18-SEP-19
alpha-BHC			<0.10		ug/L		0.1	18-SEP-19
beta-BHC			<0.10		ug/L		0.1	18-SEP-19
delta-BHC			<0.10		ug/L		0.1	18-SEP-19
o,p-DDD			<0.10		ug/L		0.1	18-SEP-19
pp-DDD			<0.10		ug/L		0.1	18-SEP-19
o,p-DDE			<0.10		ug/L		0.1	18-SEP-19
pp-DDE			<0.10		ug/L		0.1	18-SEP-19
op-DDT			<0.10		ug/L		0.1	18-SEP-19
pp-DDT			<0.10		ug/L		0.1	18-SEP-19
Dieldrin			<0.10		ug/L		0.1	18-SEP-19
alpha-Endosulfan			<0.10		ug/L		0.1	18-SEP-19
beta-Endosulfan			<0.10		ug/L		0.1	18-SEP-19
Endosulfan Sulfate			<0.10		ug/L		0.1	18-SEP-19
Endrin			<0.10		ug/L		0.1	18-SEP-19



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Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
PEST-OC-WT								
	Water							
Batch	R4822711							
WG3160465-1	MB							
Endrin Aldehyde			<0.10		ug/L		0.1	18-SEP-19
Hexachlorobenzene			<0.10		ug/L		0.1	18-SEP-19
Heptachlor			<0.10		ug/L		0.1	18-SEP-19
Heptachlor Epoxide			<0.10		ug/L		0.1	18-SEP-19
Lindane			<0.10		ug/L		0.1	18-SEP-19
Methoxychlor			<0.10		ug/L		0.1	18-SEP-19
Mirex			<0.10		ug/L		0.1	18-SEP-19
Oxychlorane			<0.10		ug/L		0.1	18-SEP-19
Surrogate: 2-Fluorobiphenyl			79.1		%		40-130	18-SEP-19
Surrogate: d14-Terphenyl			122.0		%		40-130	18-SEP-19
PHENOLS-4AAP-WT								
	Water							
Batch	R4810490							
WG3162590-22	LCS							
Phenols (4AAP)			100.7		%		85-115	16-SEP-19
WG3162590-21	MB							
Phenols (4AAP)			<0.0010		mg/L		0.001	16-SEP-19
Batch	R4814988							
WG3163704-2	LCS							
Phenols (4AAP)			101.6		%		85-115	17-SEP-19
WG3163704-1	MB							
Phenols (4AAP)			<0.0010		mg/L		0.001	17-SEP-19
SO4-IC-N-WP								
	Water							
Batch	R4820130							
WG3160643-2	LCS							
Sulfate (SO4)			103.2		%		90-110	13-SEP-19
WG3160643-1	MB							
Sulfate (SO4)			<0.30		mg/L		0.3	13-SEP-19
TC,EC-QT97-WP								
	Water							
Batch	R4801410							
WG3158848-2	DUP	L2345306-4						
Total Coliforms		770	659		MPN/100mL	16	65	11-SEP-19
Escherichia Coli		5	3		MPN/100mL	51	65	11-SEP-19
WG3158848-1	MB							
Total Coliforms			<1		MPN/100mL		1	11-SEP-19
Escherichia Coli			<1		MPN/100mL		1	11-SEP-19



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Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
TC,EC10-QT97-WP								
	Water							
Batch	R4801209							
WG3158838-2	DUP	L2345306-1						
Total Coliforms		15500	15500		MPN/100mL	0.0	65	11-SEP-19
Escherichia Coli		100	50		MPN/100mL	61	65	11-SEP-19
WG3158838-1	MB							
Total Coliforms			<1		MPN/100mL		1	11-SEP-19
Escherichia Coli			<1		MPN/100mL		1	11-SEP-19
VOC+F1-HSMS-WP								
	Water							
Batch	R4800829							
WG3159248-2	LCS							
Acetone			92.5		%		70-130	11-SEP-19
Benzene			83.5		%		70-130	11-SEP-19
Bromobenzene			106.0		%		70-130	11-SEP-19
Bromochloromethane			84.9		%		70-130	11-SEP-19
Bromodichloromethane			80.5		%		70-130	11-SEP-19
Bromoform			101.1		%		70-130	11-SEP-19
Bromomethane			90.6		%		60-140	11-SEP-19
n-Butylbenzene			102.8		%		70-130	11-SEP-19
sec-Butylbenzene			107.6		%		70-130	11-SEP-19
tert-Butylbenzene			109.0		%		70-130	11-SEP-19
Carbon disulfide			85.7		%		70-130	11-SEP-19
Carbon Tetrachloride			85.5		%		70-130	11-SEP-19
Chlorobenzene			84.6		%		70-130	11-SEP-19
Chloroethane			88.9		%		60-140	11-SEP-19
Chloroform			84.1		%		70-130	11-SEP-19
Chloromethane			111.0		%		60-140	11-SEP-19
2-Chlorotoluene			110.4		%		70-130	11-SEP-19
4-Chlorotoluene			106.2		%		70-130	11-SEP-19
Dibromochloromethane			83.1		%		70-130	11-SEP-19
1,2-Dibromo-3-chloropropane			87.7		%		70-130	11-SEP-19
1,2-Dibromoethane			80.8		%		70-130	11-SEP-19
Dibromomethane			81.9		%		70-130	11-SEP-19
1,2-Dichlorobenzene			103.1		%		70-130	11-SEP-19
1,3-Dichlorobenzene			104.4		%		70-130	11-SEP-19
1,4-Dichlorobenzene			103.4		%		70-130	11-SEP-19
Dichlorodifluoromethane			125.7		%		60-140	11-SEP-19

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Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
VOC+F1-HSMS-WP								
	Water							
Batch	R4800829							
WG3159248-2	LCS							
1,1-dichloroethane			83.8		%		70-130	11-SEP-19
1,2-Dichloroethane			81.3		%		70-130	11-SEP-19
1,1-dichloroethene			89.9		%		70-130	11-SEP-19
cis-1,2-Dichloroethene			84.0		%		70-130	11-SEP-19
trans-1,2-Dichloroethene			82.5		%		70-130	11-SEP-19
Dichloromethane			82.9		%		70-130	11-SEP-19
1,2-Dichloropropane			81.2		%		70-130	11-SEP-19
1,3-Dichloropropane			82.3		%		70-130	11-SEP-19
2,2-Dichloropropane			80.6		%		70-130	11-SEP-19
1,1-Dichloropropene			87.3		%		70-130	11-SEP-19
cis-1,3-Dichloropropene			80.7		%		70-130	11-SEP-19
trans-1,3-Dichloropropene			88.3		%		70-130	11-SEP-19
Ethylbenzene			87.1		%		70-130	11-SEP-19
Hexachlorobutadiene			105.3		%		70-130	11-SEP-19
Hexane			89.5		%		70-130	11-SEP-19
2-Hexanone (Methyl butyl ketone)			80.5		%		70-130	11-SEP-19
Isopropylbenzene			86.2		%		70-130	11-SEP-19
4-Isopropyltoluene			105.1		%		70-130	11-SEP-19
MEK			88.7		%		70-130	11-SEP-19
MIBK			85.4		%		70-130	11-SEP-19
MTBE			86.4		%		70-130	11-SEP-19
Styrene			83.5		%		70-130	11-SEP-19
1,1,1,2-Tetrachloroethane			84.4		%		70-130	11-SEP-19
1,1,2,2-Tetrachloroethane			96.2		%		70-130	11-SEP-19
Tetrachloroethene			85.4		%		70-130	11-SEP-19
Toluene			85.3		%		70-130	11-SEP-19
1,2,3-Trichlorobenzene			94.3		%		70-130	11-SEP-19
1,2,4-Trichlorobenzene			95.4		%		70-130	11-SEP-19
1,1,1-Trichloroethane			87.1		%		70-130	11-SEP-19
1,1,2-Trichloroethane			80.7		%		70-130	11-SEP-19
Trichloroethene			84.0		%		70-130	11-SEP-19
Trichlorofluoromethane			98.4		%		60-140	11-SEP-19
1,2,3-Trichloropropane			101.6		%		70-130	11-SEP-19
1,2,4-Trimethylbenzene			105.6		%		70-130	11-SEP-19

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VOC+F1-HSMS-WP								
	Water							
Batch	R4800829							
WG3159248-2	LCS							
1,3,5-Trimethylbenzene			107.0		%		70-130	11-SEP-19
Vinyl Chloride			102.0		%		60-140	11-SEP-19
M+P-Xylenes			86.0		%		70-130	11-SEP-19
o-Xylene			85.6		%		70-130	11-SEP-19
WG3159248-3	LCS							
F1			108.2		%		70-130	11-SEP-19
WG3159248-1	MB							
Acetone			<0.050		mg/L		0.05	11-SEP-19
Benzene			<0.00050		mg/L		0.0005	11-SEP-19
Bromobenzene			<0.0010		mg/L		0.001	11-SEP-19
Bromochloromethane			<0.0010		mg/L		0.001	11-SEP-19
Bromodichloromethane			<0.00050		mg/L		0.0005	11-SEP-19
Bromoform			<0.0010		mg/L		0.001	11-SEP-19
Bromomethane			<0.0010		mg/L		0.001	11-SEP-19
n-Butylbenzene			<0.0010		mg/L		0.001	11-SEP-19
sec-Butylbenzene			<0.0010		mg/L		0.001	11-SEP-19
tert-Butylbenzene			<0.0010		mg/L		0.001	11-SEP-19
Carbon disulfide			<0.0050		mg/L		0.005	11-SEP-19
Carbon Tetrachloride			<0.00050		mg/L		0.0005	11-SEP-19
Chlorobenzene			<0.0010		mg/L		0.001	11-SEP-19
Chloroethane			<0.0010		mg/L		0.001	11-SEP-19
Chloroform			<0.00050		mg/L		0.0005	11-SEP-19
Chloromethane			<0.0050		mg/L		0.005	11-SEP-19
2-Chlorotoluene			<0.020		mg/L		0.02	11-SEP-19
4-Chlorotoluene			<0.0010		mg/L		0.001	11-SEP-19
Dibromochloromethane			<0.00050		mg/L		0.0005	11-SEP-19
1,2-Dibromo-3-chloropropane			<0.0010		mg/L		0.001	11-SEP-19
1,2-Dibromoethane			<0.0010		mg/L		0.001	11-SEP-19
Dibromomethane			<0.0010		mg/L		0.001	11-SEP-19
1,2-Dichlorobenzene			<0.00050		mg/L		0.0005	11-SEP-19
1,3-Dichlorobenzene			<0.0010		mg/L		0.001	11-SEP-19
1,4-Dichlorobenzene			<0.0010		mg/L		0.001	11-SEP-19
Dichlorodifluoromethane			<0.0010		mg/L		0.001	11-SEP-19
1,1-dichloroethane			<0.00050		mg/L		0.0005	11-SEP-19
1,2-Dichloroethane			<0.00050		mg/L		0.0005	11-SEP-19



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Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
VOC+F1-HSMS-WP								
	Water							
Batch	R4800829							
WG3159248-1	MB							
1,1-dichloroethene			<0.00050		mg/L		0.0005	11-SEP-19
cis-1,2-Dichloroethene			<0.0010		mg/L		0.001	11-SEP-19
trans-1,2-Dichloroethene			<0.0010		mg/L		0.001	11-SEP-19
Dichloromethane			<0.0050		mg/L		0.005	11-SEP-19
1,2-Dichloropropane			<0.0010		mg/L		0.001	11-SEP-19
1,3-Dichloropropane			<0.0010		mg/L		0.001	11-SEP-19
2,2-Dichloropropane			<0.0010		mg/L		0.001	11-SEP-19
1,1-Dichloropropene			<0.0010		mg/L		0.001	11-SEP-19
cis-1,3-Dichloropropene			<0.0010		mg/L		0.001	11-SEP-19
trans-1,3-Dichloropropene			<0.0010		mg/L		0.001	11-SEP-19
Ethylbenzene			<0.00050		mg/L		0.0005	11-SEP-19
F1			<0.10		mg/L		0.1	11-SEP-19
Hexachlorobutadiene			<0.0010		mg/L		0.001	11-SEP-19
Hexane			<0.0010		mg/L		0.001	11-SEP-19
2-Hexanone (Methyl butyl ketone)			<0.020		mg/L		0.02	11-SEP-19
Isopropylbenzene			<0.0010		mg/L		0.001	11-SEP-19
4-Isopropyltoluene			<0.0010		mg/L		0.001	11-SEP-19
MEK			<0.020		mg/L		0.02	11-SEP-19
MIBK			<0.020		mg/L		0.02	11-SEP-19
MTBE			<0.00050		mg/L		0.0005	11-SEP-19
Styrene			<0.0010		mg/L		0.001	11-SEP-19
1,1,1,2-Tetrachloroethane			<0.00050		mg/L		0.0005	11-SEP-19
1,1,2,2-Tetrachloroethane			<0.00050		mg/L		0.0005	11-SEP-19
Tetrachloroethene			<0.00050		mg/L		0.0005	11-SEP-19
Toluene			<0.00050		mg/L		0.0005	11-SEP-19
1,2,3-Trichlorobenzene			<0.0010		mg/L		0.001	11-SEP-19
1,2,4-Trichlorobenzene			<0.0010		mg/L		0.001	11-SEP-19
1,1,1-Trichloroethane			<0.00050		mg/L		0.0005	11-SEP-19
1,1,2-Trichloroethane			<0.00050		mg/L		0.0005	11-SEP-19
Trichloroethene			<0.00050		mg/L		0.0005	11-SEP-19
Trichlorofluoromethane			<0.0010		mg/L		0.001	11-SEP-19
1,2,3-Trichloropropane			<0.0010		mg/L		0.001	11-SEP-19
1,2,4-Trimethylbenzene			<0.0010		mg/L		0.001	11-SEP-19
1,3,5-Trimethylbenzene			<0.0010		mg/L		0.001	11-SEP-19



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Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
VOC+F1-HSMS-WP								
	Water							
Batch	R4800829							
WG3159248-1	MB							
Vinyl Chloride			<0.00050		mg/L		0.0005	11-SEP-19
M+P-Xylenes			<0.00040		mg/L		0.0004	11-SEP-19
o-Xylene			<0.00050		mg/L		0.0005	11-SEP-19
Surrogate: 4-Bromofluorobenzene (SS)			90.3		%		70-130	11-SEP-19
Surrogate: 1,4-Difluorobenzene (SS)			99.7		%		70-130	11-SEP-19
Batch	R4814109							
WG3163016-7	DUP	L2345306-5						
Acetone		<0.050	<0.050	RPD-NA	mg/L	N/A	30	17-SEP-19
Benzene		<0.00050	<0.00050	RPD-NA	mg/L	N/A	30	17-SEP-19
Bromobenzene		<0.0010	<0.0010	RPD-NA	mg/L	N/A	30	17-SEP-19
Bromochloromethane		<0.0010	<0.0010	RPD-NA	mg/L	N/A	30	17-SEP-19
Bromodichloromethane		<0.00050	<0.00050	RPD-NA	mg/L	N/A	30	17-SEP-19
Bromoform		<0.0010	<0.0010	RPD-NA	mg/L	N/A	30	17-SEP-19
Bromomethane		<0.0010	<0.0010	RPD-NA	mg/L	N/A	50	17-SEP-19
n-Butylbenzene		<0.0010	<0.0010	RPD-NA	mg/L	N/A	30	17-SEP-19
sec-Butylbenzene		<0.0010	<0.0010	RPD-NA	mg/L	N/A	30	17-SEP-19
tert-Butylbenzene		<0.0010	<0.0010	RPD-NA	mg/L	N/A	30	17-SEP-19
Carbon disulfide		<0.0050	<0.0050	RPD-NA	mg/L	N/A	30	17-SEP-19
Carbon Tetrachloride		<0.00050	<0.00050	RPD-NA	mg/L	N/A	30	17-SEP-19
Chlorobenzene		<0.0010	<0.0010	RPD-NA	mg/L	N/A	30	17-SEP-19
Chloroethane		<0.0010	<0.0010	RPD-NA	mg/L	N/A	50	17-SEP-19
Chloroform		<0.00050	<0.00050	RPD-NA	mg/L	N/A	30	17-SEP-19
Chloromethane		<0.0050	<0.0050	RPD-NA	mg/L	N/A	50	17-SEP-19
2-Chlorotoluene		<0.020	<0.020	RPD-NA	mg/L	N/A	30	17-SEP-19
4-Chlorotoluene		<0.0010	<0.0010	RPD-NA	mg/L	N/A	30	17-SEP-19
Dibromochloromethane		<0.00050	<0.00050	RPD-NA	mg/L	N/A	30	17-SEP-19
1,2-Dibromo-3-chloropropane		<0.0010	<0.0010	RPD-NA	mg/L	N/A	30	17-SEP-19
1,2-Dibromoethane		<0.0010	<0.0010	RPD-NA	mg/L	N/A	30	17-SEP-19
Dibromomethane		<0.0010	<0.0010	RPD-NA	mg/L	N/A	30	17-SEP-19
1,2-Dichlorobenzene		<0.00050	<0.00050	RPD-NA	mg/L	N/A	30	17-SEP-19
1,3-Dichlorobenzene		<0.0010	<0.0010	RPD-NA	mg/L	N/A	30	17-SEP-19
1,4-Dichlorobenzene		<0.0010	<0.0010	RPD-NA	mg/L	N/A	30	17-SEP-19
Dichlorodifluoromethane		<0.0020	<0.0020	RPD-NA	mg/L	N/A	50	17-SEP-19
1,1-dichloroethane		<0.00050	<0.00050	RPD-NA	mg/L	N/A	30	17-SEP-19

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VOC+F1-HSMS-WP								
	Water							
Batch	R4814109							
WG3163016-7 DUP		L2345306-5						
1,2-Dichloroethane		<0.00050	<0.00050	RPD-NA	mg/L	N/A	30	17-SEP-19
1,1-dichloroethene		<0.00050	<0.00050	RPD-NA	mg/L	N/A	30	17-SEP-19
cis-1,2-Dichloroethene		<0.0010	<0.0010	RPD-NA	mg/L	N/A	30	17-SEP-19
trans-1,2-Dichloroethene		<0.0010	<0.0010	RPD-NA	mg/L	N/A	30	17-SEP-19
Dichloromethane		<0.0050	<0.0050	RPD-NA	mg/L	N/A	30	17-SEP-19
1,2-Dichloropropane		<0.0010	<0.0010	RPD-NA	mg/L	N/A	30	17-SEP-19
1,3-Dichloropropane		<0.0010	<0.0010	RPD-NA	mg/L	N/A	30	17-SEP-19
2,2-Dichloropropane		<0.0010	<0.0010	RPD-NA	mg/L	N/A	30	17-SEP-19
1,1-Dichloropropene		<0.0010	<0.0010	RPD-NA	mg/L	N/A	30	17-SEP-19
cis-1,3-Dichloropropene		<0.0010	<0.0010	RPD-NA	mg/L	N/A	30	17-SEP-19
trans-1,3-Dichloropropene		<0.0010	<0.0010	RPD-NA	mg/L	N/A	30	17-SEP-19
Ethylbenzene		<0.00050	<0.00050	RPD-NA	mg/L	N/A	30	17-SEP-19
F1		<0.10	<0.10	RPD-NA	mg/L	N/A	30	17-SEP-19
Hexachlorobutadiene		<0.0010	<0.0010	RPD-NA	mg/L	N/A	30	17-SEP-19
Hexane		<0.0010	<0.0010	RPD-NA	mg/L	N/A	30	17-SEP-19
2-Hexanone (Methyl butyl ketone)		<0.020	<0.020	RPD-NA	mg/L	N/A	30	17-SEP-19
Isopropylbenzene		<0.0010	<0.0010	RPD-NA	mg/L	N/A	30	17-SEP-19
4-Isopropyltoluene		<0.0010	<0.0010	RPD-NA	mg/L	N/A	30	17-SEP-19
MEK		<0.020	<0.020	RPD-NA	mg/L	N/A	30	17-SEP-19
MIBK		<0.020	<0.020	RPD-NA	mg/L	N/A	30	17-SEP-19
MTBE		<0.0020	<0.0020	RPD-NA	mg/L	N/A	30	17-SEP-19
Styrene		<0.0010	<0.0010	RPD-NA	mg/L	N/A	30	17-SEP-19
1,1,1,2-Tetrachloroethane		<0.00050	<0.00050	RPD-NA	mg/L	N/A	30	17-SEP-19
1,1,2,2-Tetrachloroethane		<0.00050	<0.00050	RPD-NA	mg/L	N/A	30	17-SEP-19
Tetrachloroethene		<0.00050	<0.00050	RPD-NA	mg/L	N/A	30	17-SEP-19
Toluene		<0.00050	<0.00050	RPD-NA	mg/L	N/A	30	17-SEP-19
1,2,3-Trichlorobenzene		<0.0010	<0.0010	RPD-NA	mg/L	N/A	30	17-SEP-19
1,2,4-Trichlorobenzene		<0.0010	<0.0010	RPD-NA	mg/L	N/A	30	17-SEP-19
1,1,1-Trichloroethane		<0.00050	<0.00050	RPD-NA	mg/L	N/A	30	17-SEP-19
1,1,2-Trichloroethane		<0.00050	<0.00050	RPD-NA	mg/L	N/A	30	17-SEP-19
Trichloroethene		<0.00050	<0.00050	RPD-NA	mg/L	N/A	30	17-SEP-19
Trichlorofluoromethane		<0.0010	<0.0010	RPD-NA	mg/L	N/A	50	17-SEP-19
1,2,3-Trichloropropane		<0.0010	<0.0010	RPD-NA	mg/L	N/A	30	17-SEP-19
1,2,4-Trimethylbenzene		<0.0010	<0.0010	RPD-NA	mg/L	N/A	30	17-SEP-19

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VOC+F1-HSMS-WP								
	Water							
Batch	R4814109							
WG3163016-7	DUP	L2345306-5						
1,3,5-Trimethylbenzene		<0.0010	<0.0010	RPD-NA	mg/L	N/A	30	17-SEP-19
Vinyl Chloride		<0.00050	<0.00050	RPD-NA	mg/L	N/A	50	17-SEP-19
M+P-Xylenes		<0.00040	<0.00040	RPD-NA	mg/L	N/A	30	17-SEP-19
o-Xylene		<0.00050	<0.00050	RPD-NA	mg/L	N/A	30	17-SEP-19
WG3163016-2	LCS							
Acetone			117.4		%		70-130	16-SEP-19
Benzene			106.6		%		70-130	16-SEP-19
Bromobenzene			110.4		%		70-130	16-SEP-19
Bromochloromethane			112.7		%		70-130	16-SEP-19
Bromodichloromethane			103.8		%		70-130	16-SEP-19
Bromoform			107.6		%		70-130	16-SEP-19
Bromomethane			88.2		%		60-140	16-SEP-19
n-Butylbenzene			108.0		%		70-130	16-SEP-19
sec-Butylbenzene			115.4		%		70-130	16-SEP-19
tert-Butylbenzene			114.8		%		70-130	16-SEP-19
Carbon disulfide			91.6		%		70-130	16-SEP-19
Carbon Tetrachloride			106.7		%		70-130	16-SEP-19
Chlorobenzene			109.3		%		70-130	16-SEP-19
Chloroethane			90.5		%		60-140	16-SEP-19
Chloroform			107.1		%		70-130	16-SEP-19
Chloromethane			115.8		%		60-140	16-SEP-19
2-Chlorotoluene			122.1		%		70-130	16-SEP-19
4-Chlorotoluene			115.5		%		70-130	16-SEP-19
Dibromochloromethane			108.4		%		70-130	16-SEP-19
1,2-Dibromo-3-chloropropane			109.9		%		70-130	16-SEP-19
1,2-Dibromoethane			112.2		%		70-130	16-SEP-19
Dibromomethane			108.6		%		70-130	16-SEP-19
1,2-Dichlorobenzene			106.1		%		70-130	16-SEP-19
1,3-Dichlorobenzene			107.4		%		70-130	16-SEP-19
1,4-Dichlorobenzene			107.9		%		70-130	16-SEP-19
Dichlorodifluoromethane			119.1		%		60-140	16-SEP-19
1,1-dichloroethane			102.1		%		70-130	16-SEP-19
1,2-Dichloroethane			109.6		%		70-130	16-SEP-19
1,1-dichloroethene			104.8		%		70-130	16-SEP-19

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Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
VOC+F1-HSMS-WP	Water							
Batch	R4814109							
WG3163016-2	LCS							
cis-1,2-Dichloroethene			108.3		%		70-130	16-SEP-19
trans-1,2-Dichloroethene			99.8		%		70-130	16-SEP-19
Dichloromethane			101.6		%		70-130	16-SEP-19
1,2-Dichloropropane			106.0		%		70-130	16-SEP-19
1,3-Dichloropropane			110.7		%		70-130	16-SEP-19
2,2-Dichloropropane			90.0		%		70-130	16-SEP-19
1,1-Dichloropropene			108.1		%		70-130	16-SEP-19
cis-1,3-Dichloropropene			97.5		%		70-130	16-SEP-19
trans-1,3-Dichloropropene			103.8		%		70-130	16-SEP-19
Ethylbenzene			116.1		%		70-130	16-SEP-19
Hexachlorobutadiene			107.3		%		70-130	16-SEP-19
Hexane			90.1		%		70-130	16-SEP-19
2-Hexanone (Methyl butyl ketone)			101.5		%		70-130	16-SEP-19
Isopropylbenzene			107.1		%		70-130	16-SEP-19
4-Isopropyltoluene			109.7		%		70-130	16-SEP-19
MEK			102.1		%		70-130	16-SEP-19
MIBK			100.1		%		70-130	16-SEP-19
MTBE			109.4		%		70-130	16-SEP-19
Styrene			101.5		%		70-130	16-SEP-19
1,1,1,2-Tetrachloroethane			110.3		%		70-130	16-SEP-19
1,1,2,2-Tetrachloroethane			100.8		%		70-130	16-SEP-19
Tetrachloroethene			108.4		%		70-130	16-SEP-19
Toluene			113.3		%		70-130	16-SEP-19
1,2,3-Trichlorobenzene			100.1		%		70-130	16-SEP-19
1,2,4-Trichlorobenzene			101.7		%		70-130	16-SEP-19
1,1,1-Trichloroethane			107.8		%		70-130	16-SEP-19
1,1,2-Trichloroethane			113.6		%		70-130	16-SEP-19
Trichloroethene			105.2		%		70-130	16-SEP-19
Trichlorofluoromethane			124.5		%		60-140	16-SEP-19
1,2,3-Trichloropropane			110.1		%		70-130	16-SEP-19
1,2,4-Trimethylbenzene			112.8		%		70-130	16-SEP-19
1,3,5-Trimethylbenzene			112.6		%		70-130	16-SEP-19
Vinyl Chloride			111.2		%		60-140	16-SEP-19
M+P-Xylenes			117.8		%		70-130	16-SEP-19

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Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
VOC+F1-HSMS-WP		Water						
Batch	R4814109							
WG3163016-2	LCS							
o-Xylene			115.3		%		70-130	16-SEP-19
WG3163016-3	LCS							
F1			102.7		%		70-130	16-SEP-19
WG3163016-6	LCS							
Acetone			113.3		%		70-130	17-SEP-19
Benzene			104.1		%		70-130	17-SEP-19
Bromobenzene			107.3		%		70-130	17-SEP-19
Bromochloromethane			111.6		%		70-130	17-SEP-19
Bromodichloromethane			109.4		%		70-130	17-SEP-19
Bromoform			105.4		%		70-130	17-SEP-19
Bromomethane			75.0		%		60-140	17-SEP-19
n-Butylbenzene			108.6		%		70-130	17-SEP-19
sec-Butylbenzene			110.3		%		70-130	17-SEP-19
tert-Butylbenzene			108.6		%		70-130	17-SEP-19
Carbon disulfide			77.5		%		70-130	17-SEP-19
Carbon Tetrachloride			111.9		%		70-130	17-SEP-19
Chlorobenzene			107.2		%		70-130	17-SEP-19
Chloroethane			72.0		%		60-140	17-SEP-19
Chloroform			108.7		%		70-130	17-SEP-19
Chloromethane			45.1	RRQC	%		60-140	17-SEP-19
2-Chlorotoluene			116.0		%		70-130	17-SEP-19
4-Chlorotoluene			112.3		%		70-130	17-SEP-19
Dibromochloromethane			109.8		%		70-130	17-SEP-19
1,2-Dibromo-3-chloropropane			101.5		%		70-130	17-SEP-19
1,2-Dibromoethane			103.4		%		70-130	17-SEP-19
Dibromomethane			116.4		%		70-130	17-SEP-19
1,2-Dichlorobenzene			106.3		%		70-130	17-SEP-19
1,3-Dichlorobenzene			106.2		%		70-130	17-SEP-19
1,4-Dichlorobenzene			108.2		%		70-130	17-SEP-19
Dichlorodifluoromethane			20.5	RRQC	%		60-140	17-SEP-19
1,1-dichloroethane			107.4		%		70-130	17-SEP-19
1,2-Dichloroethane			104.8		%		70-130	17-SEP-19
1,1-dichloroethene			92.9		%		70-130	17-SEP-19
cis-1,2-Dichloroethene			106.3		%		70-130	17-SEP-19

COMMENTS: Chloromethane & dichlorodifluoromethane low recovery. Raised LOR in the affected samples

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Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
VOC+F1-HSMS-WP								
	Water							
Batch	R4814109							
WG3163016-6	LCS							
trans-1,2-Dichloroethene			102.9		%		70-130	17-SEP-19
Dichloromethane			99.2		%		70-130	17-SEP-19
1,2-Dichloropropane			109.8		%		70-130	17-SEP-19
1,3-Dichloropropane			106.8		%		70-130	17-SEP-19
2,2-Dichloropropane			115.4		%		70-130	17-SEP-19
1,1-Dichloropropene			111.2		%		70-130	17-SEP-19
cis-1,3-Dichloropropene			114.3		%		70-130	17-SEP-19
trans-1,3-Dichloropropene			115.2		%		70-130	17-SEP-19
Ethylbenzene			115.7		%		70-130	17-SEP-19
Hexachlorobutadiene			102.5		%		70-130	17-SEP-19
Hexane			81.6		%		70-130	17-SEP-19
2-Hexanone (Methyl butyl ketone)			98.1		%		70-130	17-SEP-19
Isopropylbenzene			108.6		%		70-130	17-SEP-19
4-Isopropyltoluene			107.1		%		70-130	17-SEP-19
MEK			102.3		%		70-130	17-SEP-19
MIBK			104.7		%		70-130	17-SEP-19
MTBE			105.7		%		70-130	17-SEP-19
Styrene			105.2		%		70-130	17-SEP-19
1,1,1,2-Tetrachloroethane			112.7		%		70-130	17-SEP-19
1,1,2,2-Tetrachloroethane			104.7		%		70-130	17-SEP-19
Tetrachloroethene			110.3		%		70-130	17-SEP-19
Toluene			108.8		%		70-130	17-SEP-19
1,2,3-Trichlorobenzene			99.5		%		70-130	17-SEP-19
1,2,4-Trichlorobenzene			100.0		%		70-130	17-SEP-19
1,1,1-Trichloroethane			113.1		%		70-130	17-SEP-19
1,1,2-Trichloroethane			104.4		%		70-130	17-SEP-19
Trichloroethene			110.5		%		70-130	17-SEP-19
Trichlorofluoromethane			93.8		%		60-140	17-SEP-19
1,2,3-Trichloropropane			101.2		%		70-130	17-SEP-19
1,2,4-Trimethylbenzene			88.1		%		70-130	17-SEP-19
1,3,5-Trimethylbenzene			108.2		%		70-130	17-SEP-19
Vinyl Chloride			63.4		%		60-140	17-SEP-19
M+P-Xylenes			117.9		%		70-130	17-SEP-19
o-Xylene			114.7		%		70-130	17-SEP-19

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Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
VOC+F1-HSMS-WP								
	Water							
Batch	R4814109							
WG3163016-9	LCS							
F1			114.4		%		70-130	17-SEP-19
WG3163016-1	MB							
Acetone			<0.050		mg/L		0.05	16-SEP-19
Benzene			<0.00050		mg/L		0.0005	16-SEP-19
Bromobenzene			<0.0010		mg/L		0.001	16-SEP-19
Bromochloromethane			<0.0010		mg/L		0.001	16-SEP-19
Bromodichloromethane			<0.00050		mg/L		0.0005	16-SEP-19
Bromoform			<0.0010		mg/L		0.001	16-SEP-19
Bromomethane			<0.0010		mg/L		0.001	16-SEP-19
n-Butylbenzene			<0.0010		mg/L		0.001	16-SEP-19
sec-Butylbenzene			<0.0010		mg/L		0.001	16-SEP-19
tert-Butylbenzene			<0.0010		mg/L		0.001	16-SEP-19
Carbon disulfide			<0.0050		mg/L		0.005	16-SEP-19
Carbon Tetrachloride			<0.00050		mg/L		0.0005	16-SEP-19
Chlorobenzene			<0.0010		mg/L		0.001	16-SEP-19
Chloroethane			<0.0010		mg/L		0.001	16-SEP-19
Chloroform			<0.00050		mg/L		0.0005	16-SEP-19
Chloromethane			<0.0050		mg/L		0.005	16-SEP-19
2-Chlorotoluene			<0.020		mg/L		0.02	16-SEP-19
4-Chlorotoluene			<0.0010		mg/L		0.001	16-SEP-19
Dibromochloromethane			<0.00050		mg/L		0.0005	16-SEP-19
1,2-Dibromo-3-chloropropane			<0.0010		mg/L		0.001	16-SEP-19
1,2-Dibromoethane			<0.0010		mg/L		0.001	16-SEP-19
Dibromomethane			<0.0010		mg/L		0.001	16-SEP-19
1,2-Dichlorobenzene			<0.00050		mg/L		0.0005	16-SEP-19
1,3-Dichlorobenzene			<0.0010		mg/L		0.001	16-SEP-19
1,4-Dichlorobenzene			<0.0010		mg/L		0.001	16-SEP-19
Dichlorodifluoromethane			<0.0010		mg/L		0.001	16-SEP-19
1,1-dichloroethane			<0.00050		mg/L		0.0005	16-SEP-19
1,2-Dichloroethane			<0.00050		mg/L		0.0005	16-SEP-19
1,1-dichloroethene			<0.00050		mg/L		0.0005	16-SEP-19
cis-1,2-Dichloroethene			<0.0010		mg/L		0.001	16-SEP-19
trans-1,2-Dichloroethene			<0.0010		mg/L		0.001	16-SEP-19
Dichloromethane			<0.0050		mg/L		0.005	16-SEP-19

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Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
VOC+F1-HSMS-WP								
	Water							
Batch	R4814109							
WG3163016-1 MB								
1,2-Dichloropropane			<0.0010		mg/L		0.001	16-SEP-19
1,3-Dichloropropane			<0.0010		mg/L		0.001	16-SEP-19
2,2-Dichloropropane			<0.0010		mg/L		0.001	16-SEP-19
1,1-Dichloropropene			<0.0010		mg/L		0.001	16-SEP-19
cis-1,3-Dichloropropene			<0.0010		mg/L		0.001	16-SEP-19
trans-1,3-Dichloropropene			<0.0010		mg/L		0.001	16-SEP-19
Ethylbenzene			<0.00050		mg/L		0.0005	16-SEP-19
F1			<0.10		mg/L		0.1	16-SEP-19
Hexachlorobutadiene			<0.0010		mg/L		0.001	16-SEP-19
Hexane			<0.0010		mg/L		0.001	16-SEP-19
2-Hexanone (Methyl butyl ketone)			<0.020		mg/L		0.02	16-SEP-19
Isopropylbenzene			<0.0010		mg/L		0.001	16-SEP-19
4-Isopropyltoluene			<0.0010		mg/L		0.001	16-SEP-19
MEK			<0.020		mg/L		0.02	16-SEP-19
MIBK			<0.020		mg/L		0.02	16-SEP-19
MTBE			<0.00050		mg/L		0.0005	16-SEP-19
Styrene			<0.0010		mg/L		0.001	16-SEP-19
1,1,1,2-Tetrachloroethane			<0.00050		mg/L		0.0005	16-SEP-19
1,1,2,2-Tetrachloroethane			<0.00050		mg/L		0.0005	16-SEP-19
Tetrachloroethene			<0.00050		mg/L		0.0005	16-SEP-19
Toluene			<0.00050		mg/L		0.0005	16-SEP-19
1,2,3-Trichlorobenzene			<0.0010		mg/L		0.001	16-SEP-19
1,2,4-Trichlorobenzene			<0.0010		mg/L		0.001	16-SEP-19
1,1,1-Trichloroethane			<0.00050		mg/L		0.0005	16-SEP-19
1,1,2-Trichloroethane			<0.00050		mg/L		0.0005	16-SEP-19
Trichloroethene			<0.00050		mg/L		0.0005	16-SEP-19
Trichlorofluoromethane			<0.0010		mg/L		0.001	16-SEP-19
1,2,3-Trichloropropane			<0.0010		mg/L		0.001	16-SEP-19
1,2,4-Trimethylbenzene			<0.0010		mg/L		0.001	16-SEP-19
1,3,5-Trimethylbenzene			<0.0010		mg/L		0.001	16-SEP-19
Vinyl Chloride			<0.00050		mg/L		0.0005	16-SEP-19
M+P-Xylenes			<0.00040		mg/L		0.0004	16-SEP-19
o-Xylene			<0.00050		mg/L		0.0005	16-SEP-19
Surrogate: 4-Bromofluorobenzene (SS)			92.1		%		70-130	16-SEP-19

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Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
VOC+F1-HSMS-WP		Water						
Batch	R4814109							
WG3163016-1	MB							
Surrogate: 1,4-Difluorobenzene (SS)			100.3		%		70-130	16-SEP-19
WG3163016-5	MB							
Acetone			<0.050		mg/L		0.05	17-SEP-19
Benzene			<0.00050		mg/L		0.0005	17-SEP-19
Bromobenzene			<0.0010		mg/L		0.001	17-SEP-19
Bromochloromethane			<0.0010		mg/L		0.001	17-SEP-19
Bromodichloromethane			<0.00050		mg/L		0.0005	17-SEP-19
Bromoform			<0.0010		mg/L		0.001	17-SEP-19
Bromomethane			<0.0010		mg/L		0.001	17-SEP-19
n-Butylbenzene			<0.0010		mg/L		0.001	17-SEP-19
sec-Butylbenzene			<0.0010		mg/L		0.001	17-SEP-19
tert-Butylbenzene			<0.0010		mg/L		0.001	17-SEP-19
Carbon disulfide			<0.0050		mg/L		0.005	17-SEP-19
Carbon Tetrachloride			<0.00050		mg/L		0.0005	17-SEP-19
Chlorobenzene			<0.0010		mg/L		0.001	17-SEP-19
Chloroethane			<0.0020		mg/L		0.002	17-SEP-19
Chloroform			<0.00050		mg/L		0.0005	17-SEP-19
Chloromethane			<0.0050		mg/L		0.005	17-SEP-19
2-Chlorotoluene			<0.020		mg/L		0.02	17-SEP-19
4-Chlorotoluene			<0.0010		mg/L		0.001	17-SEP-19
Dibromochloromethane			<0.00050		mg/L		0.0005	17-SEP-19
1,2-Dibromo-3-chloropropane			<0.0010		mg/L		0.001	17-SEP-19
1,2-Dibromoethane			<0.0010		mg/L		0.001	17-SEP-19
Dibromomethane			<0.0010		mg/L		0.001	17-SEP-19
1,2-Dichlorobenzene			<0.00050		mg/L		0.0005	17-SEP-19
1,3-Dichlorobenzene			<0.0010		mg/L		0.001	17-SEP-19
1,4-Dichlorobenzene			<0.0010		mg/L		0.001	17-SEP-19
Dichlorodifluoromethane			<0.0010		mg/L		0.001	17-SEP-19
1,1-dichloroethane			<0.00050		mg/L		0.0005	17-SEP-19
1,2-Dichloroethane			<0.00050		mg/L		0.0005	17-SEP-19
1,1-dichloroethene			<0.00050		mg/L		0.0005	17-SEP-19
cis-1,2-Dichloroethene			<0.0010		mg/L		0.001	17-SEP-19
trans-1,2-Dichloroethene			<0.0010		mg/L		0.001	17-SEP-19
Dichloromethane			<0.0050		mg/L		0.005	17-SEP-19



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Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
VOC+F1-HSMS-WP								
	Water							
Batch	R4814109							
WG3163016-5 MB								
1,2-Dichloropropane			<0.0010		mg/L		0.001	17-SEP-19
1,3-Dichloropropane			<0.0010		mg/L		0.001	17-SEP-19
2,2-Dichloropropane			<0.0010		mg/L		0.001	17-SEP-19
1,1-Dichloropropene			<0.0010		mg/L		0.001	17-SEP-19
cis-1,3-Dichloropropene			<0.0010		mg/L		0.001	17-SEP-19
trans-1,3-Dichloropropene			<0.0010		mg/L		0.001	17-SEP-19
Ethylbenzene			<0.00050		mg/L		0.0005	17-SEP-19
F1			<0.10		mg/L		0.1	17-SEP-19
Hexachlorobutadiene			<0.0010		mg/L		0.001	17-SEP-19
Hexane			<0.0010		mg/L		0.001	17-SEP-19
2-Hexanone (Methyl butyl ketone)			<0.020		mg/L		0.02	17-SEP-19
Isopropylbenzene			<0.0010		mg/L		0.001	17-SEP-19
4-Isopropyltoluene			<0.0010		mg/L		0.001	17-SEP-19
MEK			<0.020		mg/L		0.02	17-SEP-19
MIBK			<0.020		mg/L		0.02	17-SEP-19
MTBE			<0.00050		mg/L		0.0005	17-SEP-19
Styrene			<0.0010		mg/L		0.001	17-SEP-19
1,1,1,2-Tetrachloroethane			<0.00050		mg/L		0.0005	17-SEP-19
1,1,2,2-Tetrachloroethane			<0.00050		mg/L		0.0005	17-SEP-19
Tetrachloroethene			<0.00050		mg/L		0.0005	17-SEP-19
Toluene			<0.00050		mg/L		0.0005	17-SEP-19
1,2,3-Trichlorobenzene			<0.0010		mg/L		0.001	17-SEP-19
1,2,4-Trichlorobenzene			<0.0010		mg/L		0.001	17-SEP-19
1,1,1-Trichloroethane			<0.00050		mg/L		0.0005	17-SEP-19
1,1,2-Trichloroethane			<0.00050		mg/L		0.0005	17-SEP-19
Trichloroethene			<0.00050		mg/L		0.0005	17-SEP-19
Trichlorofluoromethane			<0.0010		mg/L		0.001	17-SEP-19
1,2,3-Trichloropropane			<0.0010		mg/L		0.001	17-SEP-19
1,2,4-Trimethylbenzene			<0.0010		mg/L		0.001	17-SEP-19
1,3,5-Trimethylbenzene			<0.0010		mg/L		0.001	17-SEP-19
Vinyl Chloride			<0.00050		mg/L		0.0005	17-SEP-19
M+P-Xylenes			<0.00040		mg/L		0.0004	17-SEP-19
o-Xylene			<0.00050		mg/L		0.0005	17-SEP-19
Surrogate: 4-Bromofluorobenzene (SS)			95.3		%		70-130	17-SEP-19



Quality Control Report

Workorder: L2345306

Report Date: 03-OCT-19

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Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
VOC+F1-HSMS-WP	Water							
Batch	R4814109							
WG3163016-5	MB							
Surrogate: 1,4-Difluorobenzene (SS)			101.4		%		70-130	17-SEP-19

Quality Control Report

Workorder: L2345306

Report Date: 03-OCT-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
LCS-L	Lab Control Sample recovery was below ALS DQO. Reference Material and/or Matrix Spike results were acceptable. Non-detected sample results are considered reliable. Other results, if reported, have been qualified.
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).
RPD-NA	Relative Percent Difference Not Available due to result(s) being less than detection limit.
RRQC	Refer to report remarks for information regarding this QC result.

Quality Control Report

Workorder: L2345306

Report Date: 03-OCT-19

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Hold Time Exceedances:

ALS Product Description	Sample ID	Sampling Date	Date Processed	Rec. HT	Actual HT	Units	Qualifier
Volatile Organic Compounds							
VOC plus F1 by GCMS							
	3	11-SEP-19 10:22	27-SEP-19 16:11	14	16	days	EHT
	4	11-SEP-19 10:22	27-SEP-19 15:37	14	16	days	EHT

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 L2345306 were received on 11-SEP-19 14:00.

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.

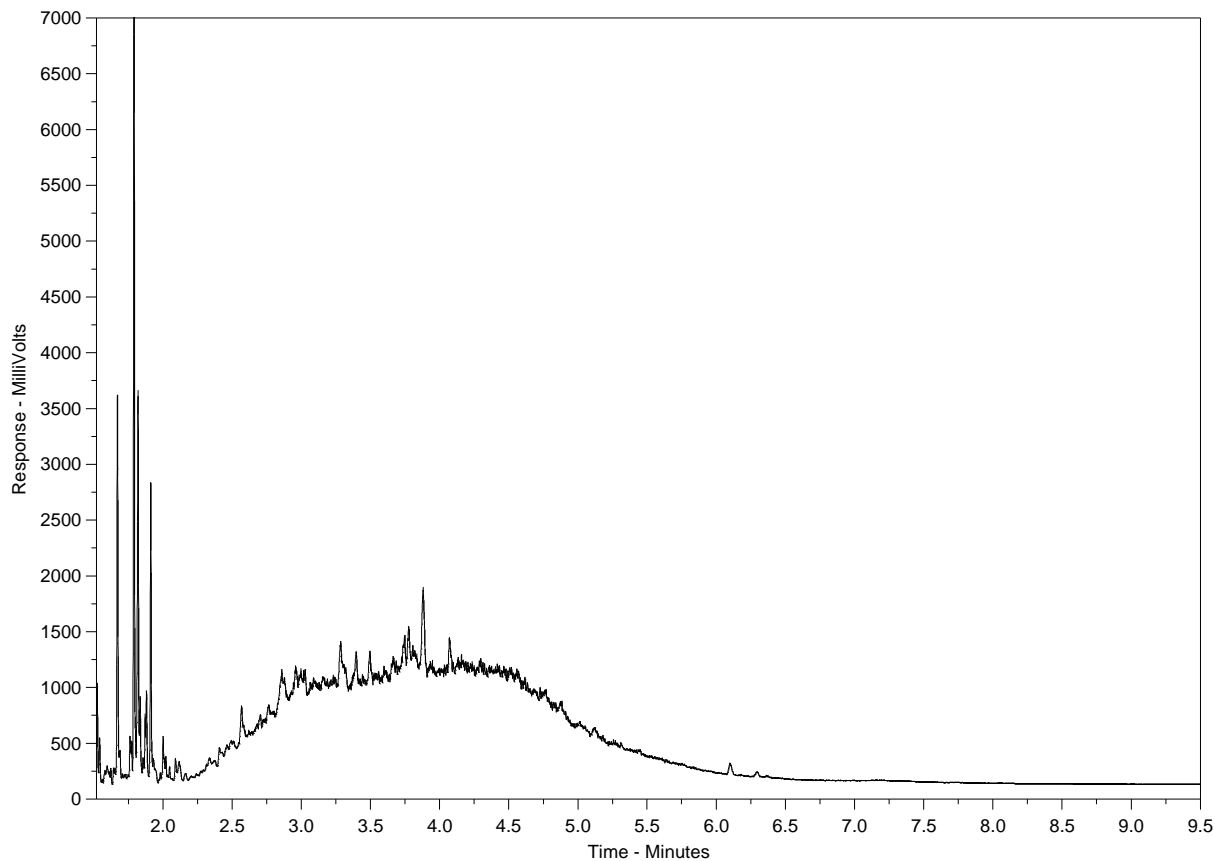
The ALS Quality Control Report is provided to ALS clients upon request. ALS includes comprehensive QC checks with every analysis to ensure our high standards of quality are met. Each QC result has a known or expected target value, which is compared against pre-determined data quality objectives to provide 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: L2345306-1
 Client Sample ID: LQ25-MH13



← 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.

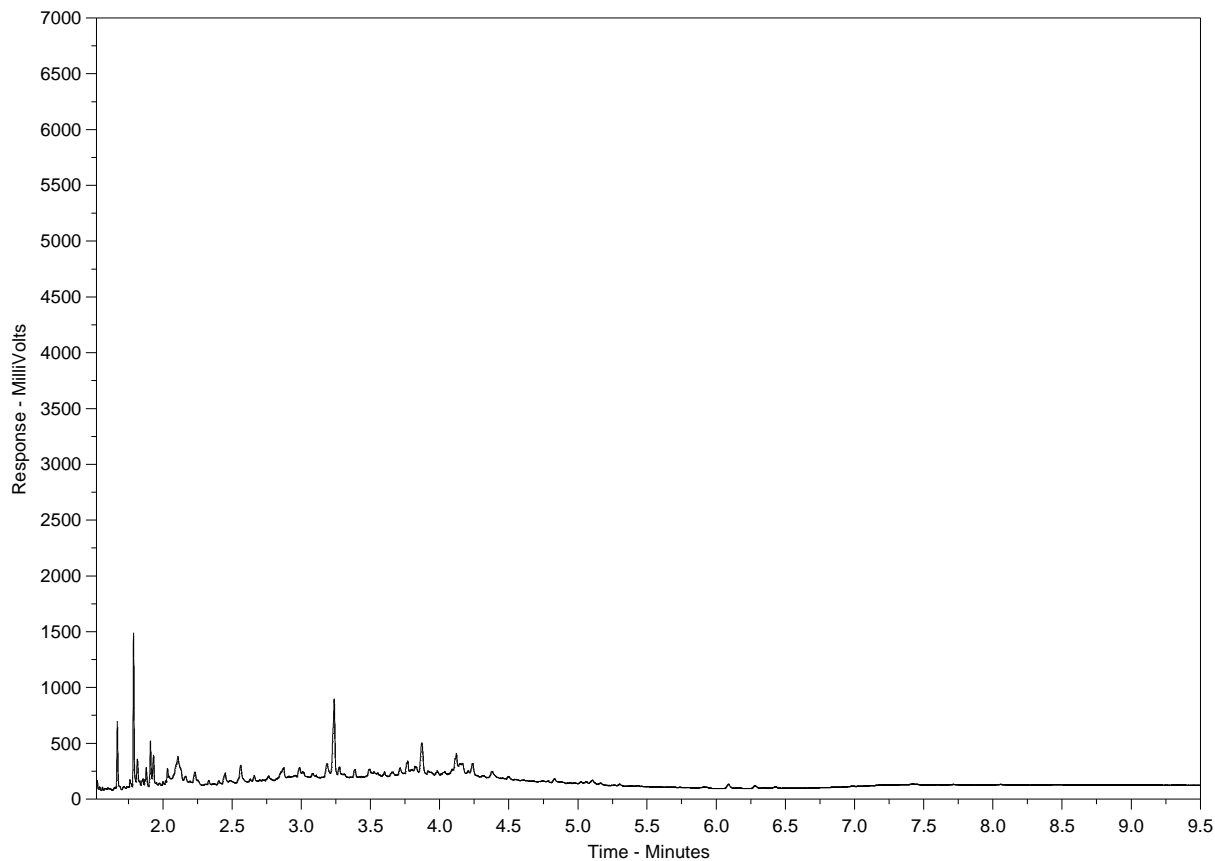
Peak heights in this report are a function of the sample concentration, the sample amount extracted, the sample dilution factor, and the scale at left.

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: L2345306-2
 Client Sample ID: LQ25-MH24



← 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.

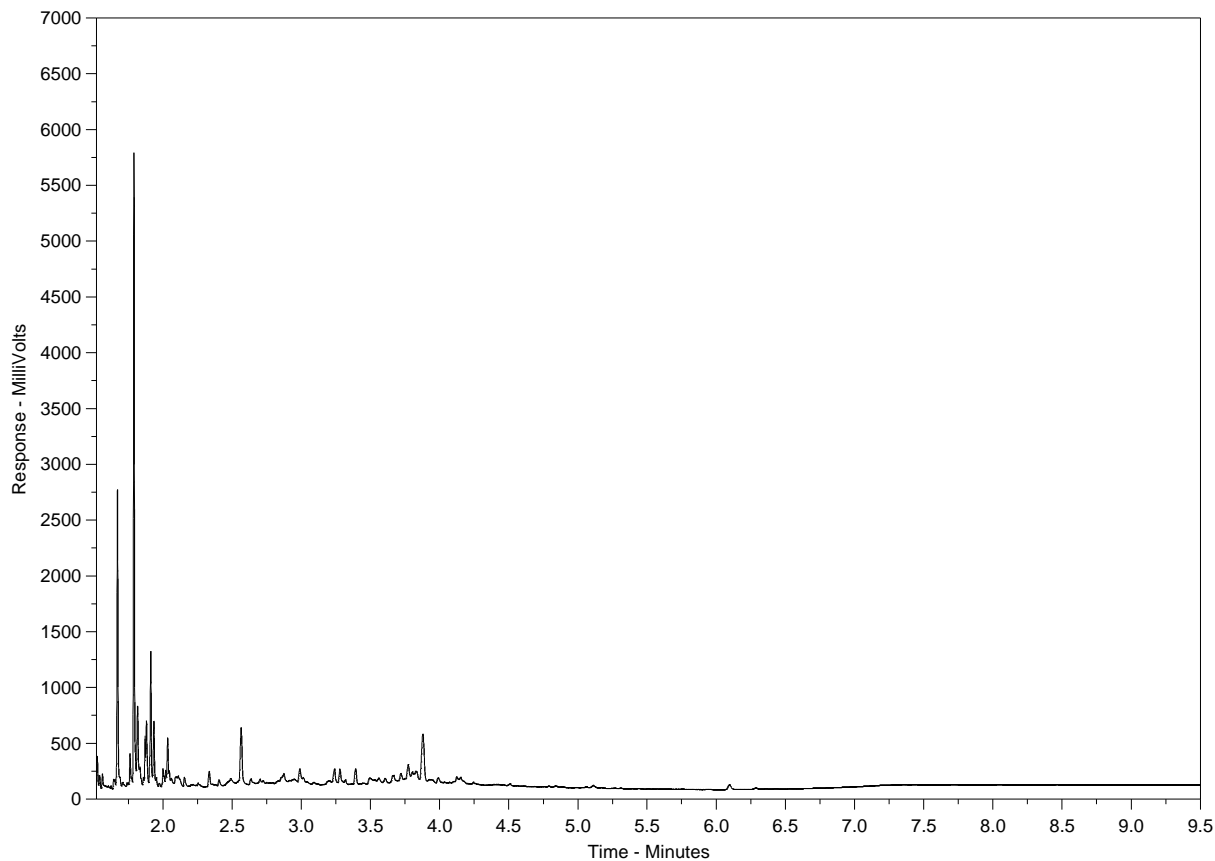
Peak heights in this report are a function of the sample concentration, the sample amount extracted, the sample dilution factor, and the scale at left.

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: L2345306-3
 Client Sample ID: LQ25-100



← 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.

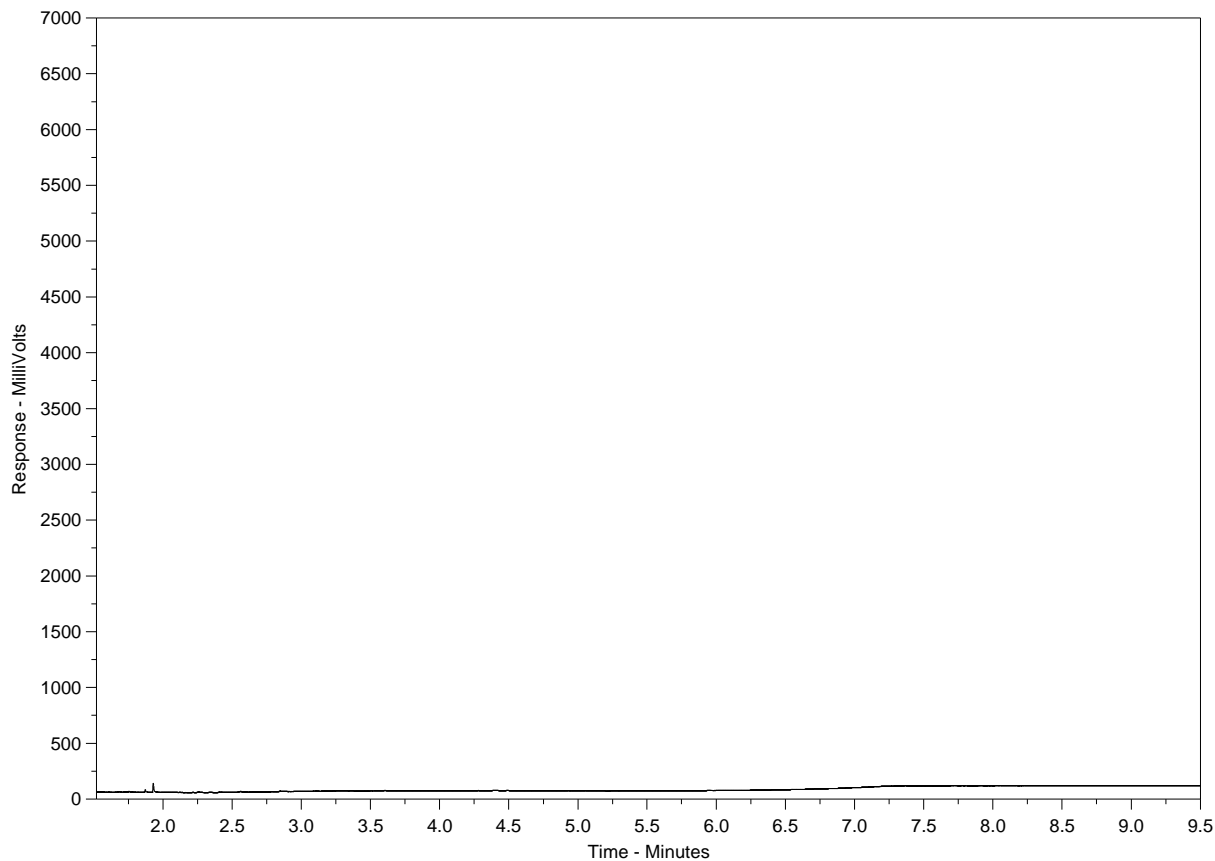
Peak heights in this report are a function of the sample concentration, the sample amount extracted, the sample dilution factor, and the scale at left.

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.

CCME F2-F4 HYDROCARBON DISTRIBUTION REPORT



ALS Sample ID: L2345306-4
 Client Sample ID: LQ25-MH34



← 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.

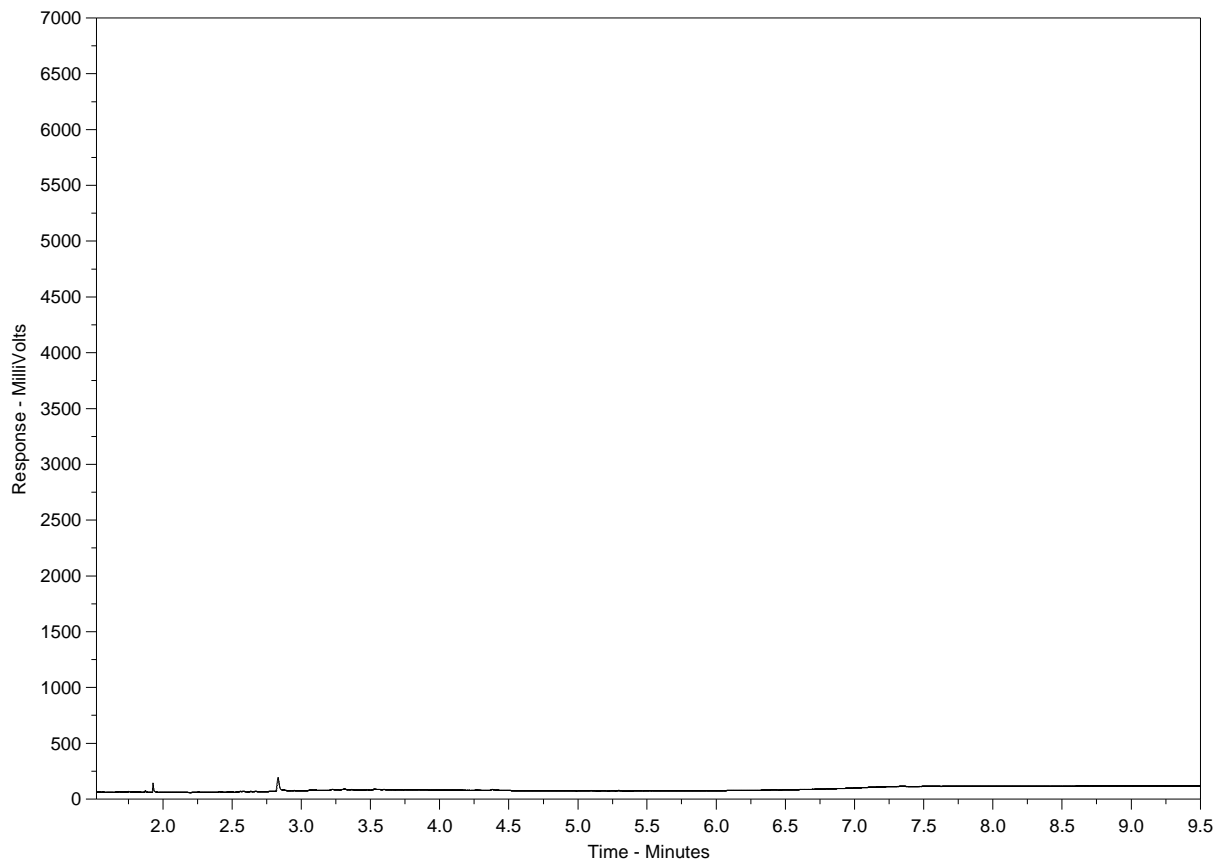
Peak heights in this report are a function of the sample concentration, the sample amount extracted, the sample dilution factor, and the scale at left.

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: L2345306-5
 Client Sample ID: LQ25-MH27



← 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.



City of Winnipeg - Solid Waste Services Div
(1120 Waverley)
ATTN: CHRIS KOZAK
Solid Waste Services Division
1120 Waverley Street
Winnipeg MB R3T 0P4

Date Received: 11-SEP-19
Report Date: 03-OCT-19 08:48 (MT)
Version: FINAL

Client Phone: 204-986-2384

Certificate of Analysis

Lab Work Order #: L2345437
Project P.O. #: NOT SUBMITTED
Job Reference: SECTION C - BRRRMF LEACHATE
C of C Numbers:
Legal Site Desc:

Hua Wo
Chemistry Laboratory Manager

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ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2345437-1 LQ25-MH3							
Sampled By: CLIENT on 11-SEP-19 @ 09:45							
Matrix: WATER							
Alkalinity species as HCO3, CO3, OH							
Alkalinity, Bicarbonate							
Bicarbonate (HCO3)	7330000		1200	ug/L		18-SEP-19	
Alkalinity, Carbonate							
Carbonate (CO3)	188000		600	ug/L		18-SEP-19	
Alkalinity, Hydroxide							
Hydroxide (OH)	<340		340	ug/L		18-SEP-19	
Alkalinity, Total (as CaCO3)							
Alkalinity, Total (as CaCO3)	6320000		1000	ug/L		16-SEP-19	R4817572
Dissolved Carbons							
Dissolved Inorganic Carbon by Combustion							
Dissolved Inorganic Carbon	1360000		5000	ug/L		16-SEP-19	R4819173
Dissolved Organic Carbon by Combustion							
Dissolved Organic Carbon	497000		5000	ug/L		17-SEP-19	R4819352
Total Dissolved Carbon by Calculation							
Total Dissolved Carbon	1860000		7100	ug/L		18-SEP-19	
Miscellaneous Parameters							
Ammonia, Total (as N)	887000		20000	ug/L		16-SEP-19	R4815489
Chloride (Cl)	2040000		50000	ug/L		12-SEP-19	R4818044
Chromium, Hexavalent	<10	DLM	10	ug/L		16-SEP-19	R4813728
Fecal Coliforms	620		10	MPN/100mL		11-SEP-19	R4801188
Cyanide, Total	13.6	HTP	1.0	ug/L		20-SEP-19	R4828109
Mercury (Hg)-Total	0.0260		0.0050	ug/L	19-SEP-19	19-SEP-19	R4827412
Oil and Grease	24800		5000	ug/L		20-SEP-19	R4827930
Phenols (4AAP)	92	DLM	10	ug/L		17-SEP-19	R4814988
Sulfate (SO4)	<30000	DLM	30000	ug/L		12-SEP-19	R4818044
Total and E. coli, 1:10 dilution by QT97							
Total Coliforms	>24200		10	MPN/100mL		11-SEP-19	R4801209
Escherichia Coli	520		10	MPN/100mL		11-SEP-19	R4801209
Total Metals in Water by CRC ICPMS							
Aluminum (Al)-Total	466		3.0	ug/L	19-SEP-19	19-SEP-19	R4825608
Antimony (Sb)-Total	3.62		0.10	ug/L	19-SEP-19	19-SEP-19	R4825608
Arsenic (As)-Total	21.6		0.10	ug/L	19-SEP-19	19-SEP-19	R4825608
Barium (Ba)-Total	717		0.10	ug/L	19-SEP-19	19-SEP-19	R4825608
Beryllium (Be)-Total	0.30		0.10	ug/L	19-SEP-19	19-SEP-19	R4825608
Bismuth (Bi)-Total	<0.050		0.050	ug/L	19-SEP-19	19-SEP-19	R4825608
Boron (B)-Total	9110		100	ug/L	19-SEP-19	30-SEP-19	R4854708
Cadmium (Cd)-Total	0.207		0.0050	ug/L	19-SEP-19	19-SEP-19	R4825608
Calcium (Ca)-Total	167000		50	ug/L	19-SEP-19	19-SEP-19	R4825608
Cesium (Cs)-Total	0.456		0.010	ug/L	19-SEP-19	19-SEP-19	R4825608
Chromium (Cr)-Total	191		0.10	ug/L	19-SEP-19	19-SEP-19	R4825608
Cobalt (Co)-Total	43.0		0.10	ug/L	19-SEP-19	19-SEP-19	R4825608
Copper (Cu)-Total	13.8		0.50	ug/L	19-SEP-19	19-SEP-19	R4825608
Iron (Fe)-Total	10000		10	ug/L	19-SEP-19	19-SEP-19	R4825608
Lead (Pb)-Total	12.1		0.050	ug/L	19-SEP-19	19-SEP-19	R4825608
Lithium (Li)-Total	352		10	ug/L	19-SEP-19	30-SEP-19	R4854708
Magnesium (Mg)-Total	530000		5.0	ug/L	19-SEP-19	19-SEP-19	R4825608
Manganese (Mn)-Total	223		0.10	ug/L	19-SEP-19	19-SEP-19	R4825608
Molybdenum (Mo)-Total	10.8		0.050	ug/L	19-SEP-19	19-SEP-19	R4825608
Nickel (Ni)-Total	313		0.50	ug/L	19-SEP-19	19-SEP-19	R4825608
Potassium (K)-Total	640000		500	ug/L	19-SEP-19	30-SEP-19	R4854708
Phosphorus (P)-Total	4230		30	ug/L	19-SEP-19	19-SEP-19	R4825608

* 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
L2345437-1 LQ25-MH3							
Sampled By: CLIENT on 11-SEP-19 @ 09:45							
Matrix: WATER							
Total Metals in Water by CRC ICPMS							
Rubidium (Rb)-Total	201		0.20	ug/L	19-SEP-19	19-SEP-19	R4825608
Selenium (Se)-Total	1.91		0.050	ug/L	19-SEP-19	19-SEP-19	R4825608
Silicon (Si)-Total	28500		100	ug/L	19-SEP-19	19-SEP-19	R4825608
Silver (Ag)-Total	0.218		0.010	ug/L	19-SEP-19	19-SEP-19	R4825608
Sodium (Na)-Total	1680000		500	ug/L	19-SEP-19	30-SEP-19	R4854708
Strontium (Sr)-Total	3920		2.0	ug/L	19-SEP-19	30-SEP-19	R4854708
Sulfur (S)-Total	47300		500	ug/L	19-SEP-19	19-SEP-19	R4825608
Tellurium (Te)-Total	0.35		0.20	ug/L	19-SEP-19	19-SEP-19	R4825608
Thallium (Tl)-Total	<0.010		0.010	ug/L	19-SEP-19	19-SEP-19	R4825608
Thorium (Th)-Total	<0.10		0.10	ug/L	19-SEP-19	19-SEP-19	R4825608
Tin (Sn)-Total	116		0.10	ug/L	19-SEP-19	19-SEP-19	R4825608
Titanium (Ti)-Total	131		0.30	ug/L	19-SEP-19	19-SEP-19	R4825608
Tungsten (W)-Total	5.81		0.10	ug/L	19-SEP-19	19-SEP-19	R4825608
Uranium (U)-Total	1.24		0.010	ug/L	19-SEP-19	19-SEP-19	R4825608
Vanadium (V)-Total	29.5		0.50	ug/L	19-SEP-19	19-SEP-19	R4825608
Zinc (Zn)-Total	71.0		3.0	ug/L	19-SEP-19	19-SEP-19	R4825608
Zirconium (Zr)-Total	140		0.20	ug/L	19-SEP-19	19-SEP-19	R4825608
Dissolved Metals in Water by CRC ICPMS							
Dissolved Metals Filtration Location	LAB					19-SEP-19	R4823571
Aluminum (Al)-Dissolved	169		1.0	ug/L	19-SEP-19	19-SEP-19	R4831868
Antimony (Sb)-Dissolved	1.55		0.10	ug/L	19-SEP-19	19-SEP-19	R4831868
Arsenic (As)-Dissolved	22.0		0.10	ug/L	19-SEP-19	19-SEP-19	R4831868
Barium (Ba)-Dissolved	480		0.10	ug/L	19-SEP-19	19-SEP-19	R4831868
Beryllium (Be)-Dissolved	<0.10		0.10	ug/L	19-SEP-19	19-SEP-19	R4831868
Bismuth (Bi)-Dissolved	<0.050		0.050	ug/L	19-SEP-19	19-SEP-19	R4831868
Boron (B)-Dissolved	9160		100	ug/L	19-SEP-19	30-SEP-19	R4854708
Cadmium (Cd)-Dissolved	0.0559		0.0050	ug/L	19-SEP-19	19-SEP-19	R4831868
Calcium (Ca)-Dissolved	78700		50	ug/L	19-SEP-19	19-SEP-19	R4831868
Cesium (Cs)-Dissolved	0.213		0.010	ug/L	19-SEP-19	19-SEP-19	R4831868
Chromium (Cr)-Dissolved	155		0.10	ug/L	19-SEP-19	19-SEP-19	R4831868
Cobalt (Co)-Dissolved	38.9		0.10	ug/L	19-SEP-19	19-SEP-19	R4831868
Copper (Cu)-Dissolved	2.60		0.20	ug/L	19-SEP-19	19-SEP-19	R4831868
Iron (Fe)-Dissolved	7980		10	ug/L	19-SEP-19	19-SEP-19	R4831868
Lead (Pb)-Dissolved	0.923		0.050	ug/L	19-SEP-19	19-SEP-19	R4831868
Lithium (Li)-Dissolved	143		1.0	ug/L	19-SEP-19	19-SEP-19	R4831868
Magnesium (Mg)-Dissolved	416000		5.0	ug/L	19-SEP-19	19-SEP-19	R4831868
Manganese (Mn)-Dissolved	205		0.10	ug/L	19-SEP-19	19-SEP-19	R4831868
Molybdenum (Mo)-Dissolved	4.27		0.050	ug/L	19-SEP-19	19-SEP-19	R4831868
Nickel (Ni)-Dissolved	284		0.50	ug/L	19-SEP-19	19-SEP-19	R4831868
Phosphorus (P)-Dissolved	3300		30	ug/L	19-SEP-19	19-SEP-19	R4831868
Potassium (K)-Dissolved	617000		500	ug/L	19-SEP-19	30-SEP-19	R4854708
Rubidium (Rb)-Dissolved	187		0.20	ug/L	19-SEP-19	19-SEP-19	R4831868
Selenium (Se)-Dissolved	1.91		0.50	ug/L	19-SEP-19	30-SEP-19	R4854708
Silicon (Si)-Dissolved	20600		50	ug/L	19-SEP-19	19-SEP-19	R4831868
Silver (Ag)-Dissolved	0.095		0.010	ug/L	19-SEP-19	19-SEP-19	R4831868
Sodium (Na)-Dissolved	1610000		500	ug/L	19-SEP-19	30-SEP-19	R4854708
Strontium (Sr)-Dissolved	4010		1.0	ug/L	19-SEP-19	30-SEP-19	R4854708
Sulfur (S)-Dissolved	39200		500	ug/L	19-SEP-19	19-SEP-19	R4831868
Tellurium (Te)-Dissolved	<0.20		0.20	ug/L	19-SEP-19	19-SEP-19	R4831868
Thallium (Tl)-Dissolved	<0.010		0.010	ug/L	19-SEP-19	19-SEP-19	R4831868
Thorium (Th)-Dissolved	<0.10		0.10	ug/L	19-SEP-19	19-SEP-19	R4831868

* 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
L2345437-1 LQ25-MH3							
Sampled By: CLIENT on 11-SEP-19 @ 09:45							
Matrix: WATER							
Dissolved Metals in Water by CRC ICPMS							
Tin (Sn)-Dissolved	45.5		0.10	ug/L	19-SEP-19	19-SEP-19	R4831868
Titanium (Ti)-Dissolved	105		0.30	ug/L	19-SEP-19	19-SEP-19	R4831868
Tungsten (W)-Dissolved	6.63		0.10	ug/L	19-SEP-19	19-SEP-19	R4831868
Uranium (U)-Dissolved	0.705		0.010	ug/L	19-SEP-19	19-SEP-19	R4831868
Vanadium (V)-Dissolved	25.4		0.50	ug/L	19-SEP-19	19-SEP-19	R4831868
Zinc (Zn)-Dissolved	16.3		1.0	ug/L	19-SEP-19	19-SEP-19	R4831868
Zirconium (Zr)-Dissolved	71.7		0.20	ug/L	19-SEP-19	19-SEP-19	R4831868
Mercury Dissolved							
Dissolved Mercury Filtration Location	LAB					19-SEP-19	R4826797
Mercury (Hg)-Dissolved	<0.0050		0.0050	ug/L	19-SEP-19	19-SEP-19	R4827450
Polyaromatic Hydrocarbons (PAHs)							
1-Methyl Naphthalene	1.76		0.020	ug/L	13-SEP-19	18-SEP-19	R4822268
2-Methyl Naphthalene	2.43		0.020	ug/L	13-SEP-19	18-SEP-19	R4822268
Acenaphthene	1.07		0.020	ug/L	13-SEP-19	18-SEP-19	R4822268
Acenaphthylene	<0.020		0.020	ug/L	13-SEP-19	18-SEP-19	R4822268
Anthracene	0.223		0.010	ug/L	13-SEP-19	18-SEP-19	R4822268
Acridine	0.324		0.020	ug/L	13-SEP-19	18-SEP-19	R4822268
Benzo(a)anthracene	0.095		0.010	ug/L	13-SEP-19	18-SEP-19	R4822268
Benzo(a)pyrene	0.0196		0.0050	ug/L	13-SEP-19	18-SEP-19	R4822268
Benzo(b&j)fluoranthene	0.031		0.010	ug/L	13-SEP-19	18-SEP-19	R4822268
Benzo(g,h,i)perylene	0.034		0.020	ug/L	13-SEP-19	18-SEP-19	R4822268
Benzo(k)fluoranthene	0.013	EMPC	0.010	ug/L	13-SEP-19	18-SEP-19	R4822268
Chrysene	0.113		0.020	ug/L	13-SEP-19	18-SEP-19	R4822268
Dibenzo(a,h)anthracene	<0.0050		0.0050	ug/L	13-SEP-19	18-SEP-19	R4822268
Fluoranthene	0.423		0.020	ug/L	13-SEP-19	18-SEP-19	R4822268
Fluorene	0.864		0.020	ug/L	13-SEP-19	18-SEP-19	R4822268
Indeno(1,2,3-cd)pyrene	<0.010		0.010	ug/L	13-SEP-19	18-SEP-19	R4822268
Naphthalene	8.77		0.050	ug/L	13-SEP-19	18-SEP-19	R4822268
Phenanthrene	1.41		0.050	ug/L	13-SEP-19	18-SEP-19	R4822268
Pyrene	0.414	EMPC	0.010	ug/L	13-SEP-19	18-SEP-19	R4822268
Quinoline	<0.020		0.020	ug/L	13-SEP-19	18-SEP-19	R4822268
B(a)P Total Potency Equivalent	0.038		0.030	ug/L	13-SEP-19	18-SEP-19	R4822268
Surrogate: Acenaphthene d10	103.1		60-130	%	13-SEP-19	18-SEP-19	R4822268
Surrogate: Acridine d9	110.7		60-130	%	13-SEP-19	18-SEP-19	R4822268
Surrogate: Chrysene d12	113.3		60-130	%	13-SEP-19	18-SEP-19	R4822268
Surrogate: Naphthalene d8	101.5		50-130	%	13-SEP-19	18-SEP-19	R4822268
Surrogate: Phenanthrene d10	113.4		60-130	%	13-SEP-19	18-SEP-19	R4822268
PCBs							
Aroclor 1016	<0.040	DLM	0.040	ug/L	17-SEP-19	17-SEP-19	R4813508
Aroclor 1221	<0.040	DLM	0.040	ug/L	17-SEP-19	17-SEP-19	R4813508
Aroclor 1232	<0.040	DLM	0.040	ug/L	17-SEP-19	17-SEP-19	R4813508
Aroclor 1242	<0.15	DLM	0.15	ug/L	17-SEP-19	17-SEP-19	R4813508
Aroclor 1248	<0.040	DLM	0.040	ug/L	17-SEP-19	17-SEP-19	R4813508
Aroclor 1254	<0.065	DLM	0.065	ug/L	17-SEP-19	17-SEP-19	R4813508
Aroclor 1260	<0.040	DLM	0.040	ug/L	17-SEP-19	17-SEP-19	R4813508
Aroclor 1262	<0.040	DLM	0.040	ug/L	17-SEP-19	17-SEP-19	R4813508
Aroclor 1268	<0.040	DLM	0.040	ug/L	17-SEP-19	17-SEP-19	R4813508
Total PCBs	<0.20	DLM	0.20	ug/L	17-SEP-19	17-SEP-19	R4813508
Surrogate: d14-Terphenyl	66.1		40-130	%	17-SEP-19	17-SEP-19	R4813508
Pesticides, Organochlorine							
Aldrin	<1.0	DLM	1.0	ug/L	13-SEP-19	23-SEP-19	R4822711
a-chlordane	<1.0	DLM	1.0	ug/L	13-SEP-19	23-SEP-19	R4822711

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ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2345437-1 LQ25-MH3							
Sampled By: CLIENT on 11-SEP-19 @ 09:45							
Matrix: WATER							
Pesticides, Organochlorine							
g-chlordane	<1.0	DLM	1.0	ug/L	13-SEP-19	23-SEP-19	R4822711
alpha-BHC	<1.0	DLM	1.0	ug/L	13-SEP-19	23-SEP-19	R4822711
beta-BHC	<8.6	DLM	8.6	ug/L	13-SEP-19	23-SEP-19	R4822711
delta-BHC	<1.0	DLM	1.0	ug/L	13-SEP-19	23-SEP-19	R4822711
o,p-DDD	<1.0	DLM	1.0	ug/L	13-SEP-19	23-SEP-19	R4822711
pp-DDD	<1.0	DLM	1.0	ug/L	13-SEP-19	23-SEP-19	R4822711
o,p-DDE	<1.0	DLM	1.0	ug/L	13-SEP-19	23-SEP-19	R4822711
pp-DDE	<1.0	DLM	1.0	ug/L	13-SEP-19	23-SEP-19	R4822711
op-DDT	<1.0	DLM	1.0	ug/L	13-SEP-19	23-SEP-19	R4822711
pp-DDT	<1.0	DLM	1.0	ug/L	13-SEP-19	23-SEP-19	R4822711
Dieldrin	<1.0	DLM	1.0	ug/L	13-SEP-19	23-SEP-19	R4822711
alpha-Endosulfan	<1.0	DLM	1.0	ug/L	13-SEP-19	23-SEP-19	R4822711
beta-Endosulfan	<1.0	DLM	1.0	ug/L	13-SEP-19	23-SEP-19	R4822711
Endosulfan Sulfate	<1.0	DLM	1.0	ug/L	13-SEP-19	23-SEP-19	R4822711
Endrin	<1.0	DLM	1.0	ug/L	13-SEP-19	23-SEP-19	R4822711
Endrin Aldehyde	<1.0	DLM	1.0	ug/L	13-SEP-19	23-SEP-19	R4822711
Hexachlorobenzene	<1.0	DLM	1.0	ug/L	13-SEP-19	23-SEP-19	R4822711
Heptachlor	<1.0	DLM	1.0	ug/L	13-SEP-19	23-SEP-19	R4822711
Heptachlor Epoxide	<1.0	DLM	1.0	ug/L	13-SEP-19	23-SEP-19	R4822711
Lindane	<1.0	DLM	1.0	ug/L	13-SEP-19	23-SEP-19	R4822711
Methoxychlor	<1.0	DLM	1.0	ug/L	13-SEP-19	23-SEP-19	R4822711
Mirex	<1.0	DLM	1.0	ug/L	13-SEP-19	23-SEP-19	R4822711
Oxychlordane	<1.0	DLM	1.0	ug/L	13-SEP-19	23-SEP-19	R4822711
Surrogate: 2-Fluorobiphenyl	94.1		40-130	%	13-SEP-19	23-SEP-19	R4822711
Surrogate: d14-Terphenyl	78.0		40-130	%	13-SEP-19	23-SEP-19	R4822711
Herbicides in Water							
Clopyralid	<1.0	DLM	1.0	ug/L	16-SEP-19	17-SEP-19	R4813269
Dicamba	<1.0	DLM	1.0	ug/L	16-SEP-19	17-SEP-19	R4813269
Mecoprop	226	DLHC	10	ug/L	16-SEP-19	17-SEP-19	R4813269
MCPA	<1.0	DLM	1.0	ug/L	16-SEP-19	17-SEP-19	R4813269
2,4-D	<1.0	DLM	1.0	ug/L	16-SEP-19	17-SEP-19	R4813269
Bromoxynil	<1.0	DLM	1.0	ug/L	16-SEP-19	17-SEP-19	R4813269
Triclopyr	<1.0	DLM	1.0	ug/L	16-SEP-19	17-SEP-19	R4813269
2,4,5-T	<1.0	DLM	1.0	ug/L	16-SEP-19	17-SEP-19	R4813269
2,4,5-TP	<1.0	DLM	1.0	ug/L	16-SEP-19	17-SEP-19	R4813269
Picloram	<1.0	DLM	1.0	ug/L	16-SEP-19	17-SEP-19	R4813269
2,4-DB	<1.0	DLM	1.0	ug/L	16-SEP-19	17-SEP-19	R4813269
2,4-DP	4.0	DLM	1.0	ug/L	16-SEP-19	17-SEP-19	R4813269
Dinoseb	<1.0	DLM	1.0	ug/L	16-SEP-19	17-SEP-19	R4813269
MCPB	1.1	DLM	1.0	ug/L	16-SEP-19	17-SEP-19	R4813269
Surrogate: 2,4-Dichlorophenylacetic Acid	78.5		50-130	%	16-SEP-19	17-SEP-19	R4813269
Miscellaneous Pesticides							
Diazinon	<0.10		0.10	ug/L	13-SEP-19	18-SEP-19	R4818351
Surrogate: 2-Fluorobiphenyl	75.5		40-130	%	13-SEP-19	18-SEP-19	R4818351
Surrogate: d14-Terphenyl	57.1		40-130	%	13-SEP-19	18-SEP-19	R4818351
4,4'-Methylenebis(2-chloroaniline)							
4,4'-Methylenebis(2-chloroaniline)	<5.0	DLM	5.0	ug/L	13-SEP-19	18-SEP-19	R4811130
Surrogate: p-Terphenyl d14	66.0		40-130	%	13-SEP-19	18-SEP-19	R4811130
VOC plus F1 to F4							
CCME PHC F2-F4 in Water							
F2 (C10-C16)	1830		100	ug/L	13-SEP-19	14-SEP-19	R4800048
F3 (C16-C34)	8450		250	ug/L	13-SEP-19	14-SEP-19	R4800048

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ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2345437-1 LQ25-MH3							
Sampled By: CLIENT on 11-SEP-19 @ 09:45							
Matrix: WATER							
CCME PHC F2-F4 in Water							
F4 (C34-C50)	1540		250	ug/L	13-SEP-19	14-SEP-19	R4800048
Surrogate: 2-Bromobenzotrifluoride	101.6		60-140	%	13-SEP-19	14-SEP-19	R4800048
CCME Total Hydrocarbons							
F1-BTEX	150		110	ug/L		26-SEP-19	
F2-Naphth	1820		100	ug/L		26-SEP-19	
F3-PAH	8440		250	ug/L		26-SEP-19	
Total Hydrocarbons (C6-C50)	12500		380	ug/L		26-SEP-19	
Sum of Xylene Isomer Concentrations							
Xylenes (Total)	517		0.64	ug/L		26-SEP-19	
Total Trihalomethanes (THMs)							
Total THMs	<1.3		1.3	ug/L		26-SEP-19	
VOC plus F1 by GCMS							
Acetone	159		50	ug/L		17-SEP-19	R4814109
Benzene	7.62		0.50	ug/L		17-SEP-19	R4814109
Bromobenzene	<1.0		1.0	ug/L		17-SEP-19	R4814109
Bromochloromethane	<1.0		1.0	ug/L		17-SEP-19	R4814109
Bromodichloromethane	<0.50		0.50	ug/L		17-SEP-19	R4814109
Bromoform	<1.0		1.0	ug/L		17-SEP-19	R4814109
Bromomethane	<1.0		1.0	ug/L		17-SEP-19	R4814109
n-Butylbenzene	<2.0	DLCI	2.0	ug/L		17-SEP-19	R4814109
sec-Butylbenzene	<1.0		1.0	ug/L		17-SEP-19	R4814109
tert-Butylbenzene	<1.0		1.0	ug/L		17-SEP-19	R4814109
Carbon disulfide	<5.0		5.0	ug/L		17-SEP-19	R4814109
Carbon Tetrachloride	<0.50		0.50	ug/L		17-SEP-19	R4814109
Chlorobenzene	4.7		1.0	ug/L		17-SEP-19	R4814109
Chloroethane	85.3		1.0	ug/L		17-SEP-19	R4814109
Chloroform	<0.50		0.50	ug/L		17-SEP-19	R4814109
Chloromethane	<10	DLM	10	ug/L		17-SEP-19	R4814109
2-Chlorotoluene	<20		20	ug/L		17-SEP-19	R4814109
4-Chlorotoluene	<1.0		1.0	ug/L		17-SEP-19	R4814109
Dibromochloromethane	<0.50		0.50	ug/L		17-SEP-19	R4814109
1,2-Dibromo-3-chloropropane	<1.0		1.0	ug/L		17-SEP-19	R4814109
1,2-Dibromoethane	<1.0		1.0	ug/L		17-SEP-19	R4814109
Dibromomethane	<1.0		1.0	ug/L		17-SEP-19	R4814109
1,2-Dichlorobenzene	<0.50		0.50	ug/L		17-SEP-19	R4814109
1,3-Dichlorobenzene	<1.0		1.0	ug/L		17-SEP-19	R4814109
1,4-Dichlorobenzene	8.7		1.0	ug/L		17-SEP-19	R4814109
Dichlorodifluoromethane	<4.0	DLM	4.0	ug/L		17-SEP-19	R4814109
1,1-dichloroethane	9.73		0.50	ug/L		17-SEP-19	R4814109
1,2-Dichloroethane	<0.50		0.50	ug/L		17-SEP-19	R4814109
1,1-dichloroethene	<0.50		0.50	ug/L		17-SEP-19	R4814109
cis-1,2-Dichloroethene	<1.0		1.0	ug/L		17-SEP-19	R4814109
trans-1,2-Dichloroethene	<1.0		1.0	ug/L		17-SEP-19	R4814109
Dichloromethane	<5.0		5.0	ug/L		17-SEP-19	R4814109
1,2-Dichloropropane	<1.0		1.0	ug/L		17-SEP-19	R4814109
1,3-Dichloropropane	<1.0		1.0	ug/L		17-SEP-19	R4814109
2,2-Dichloropropane	<10	DLCI	10	ug/L		17-SEP-19	R4814109
1,1-Dichloropropene	<1.0		1.0	ug/L		17-SEP-19	R4814109
cis-1,3-Dichloropropene	<1.0		1.0	ug/L		17-SEP-19	R4814109
trans-1,3-Dichloropropene	<1.0		1.0	ug/L		17-SEP-19	R4814109
Ethylbenzene	26.6		0.50	ug/L		17-SEP-19	R4814109
F1	730		100	ug/L		17-SEP-19	R4814109

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ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2345437-1 LQ25-MH3							
Sampled By: CLIENT on 11-SEP-19 @ 09:45							
Matrix: WATER							
VOC plus F1 by GCMS							
Hexachlorobutadiene	<1.0		1.0	ug/L		17-SEP-19	R4814109
Hexane	<1.0		1.0	ug/L		17-SEP-19	R4814109
2-Hexanone (Methyl butyl ketone)	<20		20	ug/L		17-SEP-19	R4814109
Isopropylbenzene	<1.0		1.0	ug/L		17-SEP-19	R4814109
4-Isopropyltoluene	38.8		1.0	ug/L		17-SEP-19	R4814109
MEK	107		20	ug/L		17-SEP-19	R4814109
MIBK	<20		20	ug/L		17-SEP-19	R4814109
MTBE	1.74		0.50	ug/L		17-SEP-19	R4814109
Styrene	<1.0		1.0	ug/L		17-SEP-19	R4814109
1,1,1,2-Tetrachloroethane	<0.50		0.50	ug/L		17-SEP-19	R4814109
1,1,2,2-Tetrachloroethane	<3.0	DLCI	3.0	ug/L		17-SEP-19	R4814109
Tetrachloroethene	<0.50		0.50	ug/L		17-SEP-19	R4814109
Toluene	30.8		0.50	ug/L		17-SEP-19	R4814109
1,2,3-Trichlorobenzene	<1.0		1.0	ug/L		17-SEP-19	R4814109
1,2,4-Trichlorobenzene	<1.0		1.0	ug/L		17-SEP-19	R4814109
1,1,1-Trichloroethane	1.35		0.50	ug/L		17-SEP-19	R4814109
1,1,2-Trichloroethane	<0.50		0.50	ug/L		17-SEP-19	R4814109
Trichloroethene	<0.50		0.50	ug/L		17-SEP-19	R4814109
Trichlorofluoromethane	<1.0		1.0	ug/L		17-SEP-19	R4814109
1,2,3-Trichloropropane	<1.0		1.0	ug/L		17-SEP-19	R4814109
1,2,4-Trimethylbenzene	42.3		1.0	ug/L		17-SEP-19	R4814109
1,3,5-Trimethylbenzene	10		1.0	ug/L		17-SEP-19	R4814109
Vinyl Chloride	0.94		0.50	ug/L		17-SEP-19	R4814109
M+P-Xylenes	393		0.40	ug/L		17-SEP-19	R4814109
o-Xylene	123		0.50	ug/L		17-SEP-19	R4814109
Surrogate: 4-Bromofluorobenzene (SS)	116.3		70-130	%		17-SEP-19	R4814109
Surrogate: 1,4-Difluorobenzene (SS)	101.7		70-130	%		17-SEP-19	R4814109
L2345437-2 LQ25-MH31							
Sampled By: CLIENT on 11-SEP-19 @ 09:45							
Matrix: WATER							
Alkalinity species as HCO3, CO3, OH							
Alkalinity, Bicarbonate							
Bicarbonate (HCO3)	4270000		1200	ug/L		16-SEP-19	
Alkalinity, Carbonate							
Carbonate (CO3)	<600		600	ug/L		16-SEP-19	
Alkalinity, Hydroxide							
Hydroxide (OH)	<340		340	ug/L		16-SEP-19	
Alkalinity, Total (as CaCO3)							
Alkalinity, Total (as CaCO3)	3500000		1000	ug/L		13-SEP-19	R4809090
Dissolved Carbons							
Dissolved Inorganic Carbon by Combustion							
Dissolved Inorganic Carbon	722000		5000	ug/L		16-SEP-19	R4819173
Dissolved Organic Carbon by Combustion							
Dissolved Organic Carbon	242000		5000	ug/L		17-SEP-19	R4819352
Total Dissolved Carbon by Calculation							
Total Dissolved Carbon	964000		7100	ug/L		18-SEP-19	
Miscellaneous Parameters							
Ammonia, Total (as N)	510000		100000	ug/L		16-SEP-19	R4815489
Chloride (Cl)	1260000		50000	ug/L		12-SEP-19	R4818044
Chromium, Hexavalent	<10	DLM	10	ug/L		17-SEP-19	R4817691
Fecal Coliforms	2140		10	MPN/100mL		11-SEP-19	R4801188

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ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2345437-2 LQ25-MH31							
Sampled By: CLIENT on 11-SEP-19 @ 09:45							
Matrix: WATER							
Cyanide, Total	44.2		1.0	ug/L		20-SEP-19	R4828109
Mercury (Hg)-Total	0.0130		0.0050	ug/L	19-SEP-19	19-SEP-19	R4827412
Oil and Grease	15300		5000	ug/L		20-SEP-19	R4827930
Phenols (4AAP)	29.9	DLM	5.0	ug/L		17-SEP-19	R4814988
Sulfate (SO4)	171000		30000	ug/L		12-SEP-19	R4818044
Total and E. coli, 1:10 dilution by QT97							
Total Coliforms	>24200		10	MPN/100mL		11-SEP-19	R4801209
Escherichia Coli	1900		10	MPN/100mL		11-SEP-19	R4801209
Total Metals in Water by CRC ICPMS							
Aluminum (Al)-Total	193		3.0	ug/L	19-SEP-19	19-SEP-19	R4825608
Antimony (Sb)-Total	4.60		0.10	ug/L	19-SEP-19	19-SEP-19	R4825608
Arsenic (As)-Total	11.9		0.10	ug/L	19-SEP-19	19-SEP-19	R4825608
Barium (Ba)-Total	255		0.10	ug/L	19-SEP-19	19-SEP-19	R4825608
Beryllium (Be)-Total	0.18		0.10	ug/L	19-SEP-19	19-SEP-19	R4825608
Bismuth (Bi)-Total	0.331		0.050	ug/L	19-SEP-19	19-SEP-19	R4825608
Boron (B)-Total	6220		100	ug/L	19-SEP-19	30-SEP-19	R4854708
Cadmium (Cd)-Total	0.323		0.0050	ug/L	19-SEP-19	19-SEP-19	R4825608
Calcium (Ca)-Total	134000		50	ug/L	19-SEP-19	19-SEP-19	R4825608
Cesium (Cs)-Total	0.374		0.010	ug/L	19-SEP-19	19-SEP-19	R4825608
Chromium (Cr)-Total	28.7		0.10	ug/L	19-SEP-19	19-SEP-19	R4825608
Cobalt (Co)-Total	30.5		0.10	ug/L	19-SEP-19	19-SEP-19	R4825608
Copper (Cu)-Total	32.7		0.50	ug/L	19-SEP-19	19-SEP-19	R4825608
Iron (Fe)-Total	1480		10	ug/L	19-SEP-19	19-SEP-19	R4825608
Lead (Pb)-Total	9.71		0.050	ug/L	19-SEP-19	19-SEP-19	R4825608
Lithium (Li)-Total	228		1.0	ug/L	19-SEP-19	19-SEP-19	R4825608
Magnesium (Mg)-Total	354000		5.0	ug/L	19-SEP-19	19-SEP-19	R4825608
Manganese (Mn)-Total	214		0.10	ug/L	19-SEP-19	19-SEP-19	R4825608
Molybdenum (Mo)-Total	15.7		0.050	ug/L	19-SEP-19	19-SEP-19	R4825608
Nickel (Ni)-Total	189		0.50	ug/L	19-SEP-19	19-SEP-19	R4825608
Potassium (K)-Total	329000		500	ug/L	19-SEP-19	30-SEP-19	R4854708
Phosphorus (P)-Total	950		30	ug/L	19-SEP-19	19-SEP-19	R4825608
Rubidium (Rb)-Total	102		0.20	ug/L	19-SEP-19	19-SEP-19	R4825608
Selenium (Se)-Total	1.67		0.050	ug/L	19-SEP-19	19-SEP-19	R4825608
Silicon (Si)-Total	15700		100	ug/L	19-SEP-19	19-SEP-19	R4825608
Silver (Ag)-Total	0.134		0.010	ug/L	19-SEP-19	19-SEP-19	R4825608
Sodium (Na)-Total	1040000		500	ug/L	19-SEP-19	30-SEP-19	R4854708
Strontium (Sr)-Total	2620		2.0	ug/L	19-SEP-19	30-SEP-19	R4854708
Sulfur (S)-Total	102000		500	ug/L	19-SEP-19	19-SEP-19	R4825608
Tellurium (Te)-Total	<0.20		0.20	ug/L	19-SEP-19	19-SEP-19	R4825608
Thallium (Tl)-Total	<0.010		0.010	ug/L	19-SEP-19	19-SEP-19	R4825608
Thorium (Th)-Total	<0.10		0.10	ug/L	19-SEP-19	19-SEP-19	R4825608
Tin (Sn)-Total	12.3		0.10	ug/L	19-SEP-19	19-SEP-19	R4825608
Titanium (Ti)-Total	16.0		0.30	ug/L	19-SEP-19	19-SEP-19	R4825608
Tungsten (W)-Total	3.15		0.10	ug/L	19-SEP-19	19-SEP-19	R4825608
Uranium (U)-Total	11.0		0.010	ug/L	19-SEP-19	19-SEP-19	R4825608
Vanadium (V)-Total	11.3		0.50	ug/L	19-SEP-19	19-SEP-19	R4825608
Zinc (Zn)-Total	164		3.0	ug/L	19-SEP-19	19-SEP-19	R4825608
Zirconium (Zr)-Total	50.5		0.20	ug/L	19-SEP-19	19-SEP-19	R4825608
Dissolved Metals in Water by CRC ICPMS							
Dissolved Metals Filtration Location	LAB					19-SEP-19	R4823571
Aluminum (Al)-Dissolved	42.4		1.0	ug/L	19-SEP-19	19-SEP-19	R4831868
Antimony (Sb)-Dissolved	2.76		0.10	ug/L	19-SEP-19	19-SEP-19	R4831868

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ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2345437-2 LQ25-MH31							
Sampled By: CLIENT on 11-SEP-19 @ 09:45							
Matrix: WATER							
Dissolved Metals in Water by CRC ICPMS							
Arsenic (As)-Dissolved	12.9		0.10	ug/L	19-SEP-19	19-SEP-19	R4831868
Barium (Ba)-Dissolved	211		0.10	ug/L	19-SEP-19	19-SEP-19	R4831868
Beryllium (Be)-Dissolved	<0.10		0.10	ug/L	19-SEP-19	19-SEP-19	R4831868
Bismuth (Bi)-Dissolved	0.138		0.050	ug/L	19-SEP-19	19-SEP-19	R4831868
Boron (B)-Dissolved	6820		100	ug/L	19-SEP-19	30-SEP-19	R4854708
Cadmium (Cd)-Dissolved	0.191		0.0050	ug/L	19-SEP-19	19-SEP-19	R4831868
Calcium (Ca)-Dissolved	74800		50	ug/L	19-SEP-19	19-SEP-19	R4831868
Cesium (Cs)-Dissolved	0.267		0.010	ug/L	19-SEP-19	19-SEP-19	R4831868
Chromium (Cr)-Dissolved	25.9		0.10	ug/L	19-SEP-19	19-SEP-19	R4831868
Cobalt (Co)-Dissolved	28.5		0.10	ug/L	19-SEP-19	19-SEP-19	R4831868
Copper (Cu)-Dissolved	23.2		0.20	ug/L	19-SEP-19	19-SEP-19	R4831868
Iron (Fe)-Dissolved	1330		10	ug/L	19-SEP-19	19-SEP-19	R4831868
Lead (Pb)-Dissolved	5.32		0.050	ug/L	19-SEP-19	19-SEP-19	R4831868
Lithium (Li)-Dissolved	126		1.0	ug/L	19-SEP-19	19-SEP-19	R4831868
Magnesium (Mg)-Dissolved	279000		5.0	ug/L	19-SEP-19	19-SEP-19	R4831868
Manganese (Mn)-Dissolved	202		0.10	ug/L	19-SEP-19	19-SEP-19	R4831868
Molybdenum (Mo)-Dissolved	9.56		0.050	ug/L	19-SEP-19	19-SEP-19	R4831868
Nickel (Ni)-Dissolved	171		0.50	ug/L	19-SEP-19	19-SEP-19	R4831868
Phosphorus (P)-Dissolved	797		30	ug/L	19-SEP-19	19-SEP-19	R4831868
Potassium (K)-Dissolved	341000		500	ug/L	19-SEP-19	30-SEP-19	R4854708
Rubidium (Rb)-Dissolved	94.2		0.20	ug/L	19-SEP-19	19-SEP-19	R4831868
Selenium (Se)-Dissolved	1.22		0.50	ug/L	19-SEP-19	30-SEP-19	R4854708
Silicon (Si)-Dissolved	15100		50	ug/L	19-SEP-19	19-SEP-19	R4831868
Silver (Ag)-Dissolved	0.059		0.010	ug/L	19-SEP-19	19-SEP-19	R4831868
Sodium (Na)-Dissolved	1090000		500	ug/L	19-SEP-19	30-SEP-19	R4854708
Strontium (Sr)-Dissolved	2700		1.0	ug/L	19-SEP-19	30-SEP-19	R4854708
Sulfur (S)-Dissolved	98300		500	ug/L	19-SEP-19	19-SEP-19	R4831868
Tellurium (Te)-Dissolved	<0.20		0.20	ug/L	19-SEP-19	19-SEP-19	R4831868
Thallium (Tl)-Dissolved	<0.010		0.010	ug/L	19-SEP-19	19-SEP-19	R4831868
Thorium (Th)-Dissolved	<0.10		0.10	ug/L	19-SEP-19	19-SEP-19	R4831868
Tin (Sn)-Dissolved	8.27		0.10	ug/L	19-SEP-19	19-SEP-19	R4831868
Titanium (Ti)-Dissolved	13.1		0.30	ug/L	19-SEP-19	19-SEP-19	R4831868
Tungsten (W)-Dissolved	2.97		0.10	ug/L	19-SEP-19	19-SEP-19	R4831868
Uranium (U)-Dissolved	7.34		0.010	ug/L	19-SEP-19	19-SEP-19	R4831868
Vanadium (V)-Dissolved	9.67		0.50	ug/L	19-SEP-19	19-SEP-19	R4831868
Zinc (Zn)-Dissolved	135		1.0	ug/L	19-SEP-19	19-SEP-19	R4831868
Zirconium (Zr)-Dissolved	32.3		0.20	ug/L	19-SEP-19	19-SEP-19	R4831868
Mercury Dissolved							
Dissolved Mercury Filtration Location	LAB					19-SEP-19	R4826797
Mercury (Hg)-Dissolved	0.0080		0.0050	ug/L	19-SEP-19	19-SEP-19	R4827450
Polyaromatic Hydrocarbons (PAHs)							
1-Methyl Naphthalene	0.438		0.020	ug/L	13-SEP-19	18-SEP-19	R4822268
2-Methyl Naphthalene	0.339		0.020	ug/L	13-SEP-19	18-SEP-19	R4822268
Acenaphthene	0.601		0.020	ug/L	13-SEP-19	18-SEP-19	R4822268
Acenaphthylene	<0.020		0.020	ug/L	13-SEP-19	18-SEP-19	R4822268
Anthracene	0.125		0.010	ug/L	13-SEP-19	18-SEP-19	R4822268
Acridine	0.085		0.020	ug/L	13-SEP-19	18-SEP-19	R4822268
Benzo(a)anthracene	0.072	EMPC	0.010	ug/L	13-SEP-19	18-SEP-19	R4822268
Benzo(a)pyrene	0.0259		0.0050	ug/L	13-SEP-19	18-SEP-19	R4822268
Benzo(b&j)fluoranthene	0.042		0.010	ug/L	13-SEP-19	18-SEP-19	R4822268
Benzo(g,h,i)perylene	0.035		0.020	ug/L	13-SEP-19	18-SEP-19	R4822268

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ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2345437-2 LQ25-MH31							
Sampled By: CLIENT on 11-SEP-19 @ 09:45							
Matrix: WATER							
Polyaromatic Hydrocarbons (PAHs)							
Benzo(k)fluoranthene	0.019		0.010	ug/L	13-SEP-19	18-SEP-19	R4822268
Chrysene	0.069		0.020	ug/L	13-SEP-19	18-SEP-19	R4822268
Dibenzo(a,h)anthracene	<0.0050		0.0050	ug/L	13-SEP-19	18-SEP-19	R4822268
Fluoranthene	0.379		0.020	ug/L	13-SEP-19	18-SEP-19	R4822268
Fluorene	0.515		0.020	ug/L	13-SEP-19	18-SEP-19	R4822268
Indeno(1,2,3-cd)pyrene	0.018	EMPC	0.010	ug/L	13-SEP-19	18-SEP-19	R4822268
Naphthalene	1.65		0.050	ug/L	13-SEP-19	18-SEP-19	R4822268
Phenanthrene	0.874		0.050	ug/L	13-SEP-19	18-SEP-19	R4822268
Pyrene	0.330	EMPC	0.010	ug/L	13-SEP-19	18-SEP-19	R4822268
Quinoline	0.080		0.020	ug/L	13-SEP-19	18-SEP-19	R4822268
B(a)P Total Potency Equivalent	0.044		0.030	ug/L	13-SEP-19	18-SEP-19	R4822268
Surrogate: Acenaphthene d10	99.4		60-130	%	13-SEP-19	18-SEP-19	R4822268
Surrogate: Acridine d9	108.9		60-130	%	13-SEP-19	18-SEP-19	R4822268
Surrogate: Chrysene d12	118.9		60-130	%	13-SEP-19	18-SEP-19	R4822268
Surrogate: Naphthalene d8	93.5		50-130	%	13-SEP-19	18-SEP-19	R4822268
Surrogate: Phenanthrene d10	106.9		60-130	%	13-SEP-19	18-SEP-19	R4822268
PCBs							
Aroclor 1016	<0.040	DLM	0.040	ug/L	17-SEP-19	17-SEP-19	R4813508
Aroclor 1221	<0.040	DLM	0.040	ug/L	17-SEP-19	17-SEP-19	R4813508
Aroclor 1232	<0.040	DLM	0.040	ug/L	17-SEP-19	17-SEP-19	R4813508
Aroclor 1242	<0.16	DLM	0.16	ug/L	17-SEP-19	17-SEP-19	R4813508
Aroclor 1248	<0.040	DLM	0.040	ug/L	17-SEP-19	17-SEP-19	R4813508
Aroclor 1254	<0.040	DLM	0.040	ug/L	17-SEP-19	17-SEP-19	R4813508
Aroclor 1260	<0.040	DLM	0.040	ug/L	17-SEP-19	17-SEP-19	R4813508
Aroclor 1262	<0.040	DLM	0.040	ug/L	17-SEP-19	17-SEP-19	R4813508
Aroclor 1268	<0.040	DLM	0.040	ug/L	17-SEP-19	17-SEP-19	R4813508
Total PCBs	<0.20	DLM	0.20	ug/L	17-SEP-19	17-SEP-19	R4813508
Surrogate: d14-Terphenyl	87.3		40-130	%	17-SEP-19	17-SEP-19	R4813508
Pesticides, Organochlorine							
Aldrin	<1.0	DLM	1.0	ug/L	13-SEP-19	23-SEP-19	R4822711
a-chlordane	<1.0	DLM	1.0	ug/L	13-SEP-19	23-SEP-19	R4822711
g-chlordane	<1.0	DLM	1.0	ug/L	13-SEP-19	23-SEP-19	R4822711
alpha-BHC	<1.0	DLM	1.0	ug/L	13-SEP-19	23-SEP-19	R4822711
beta-BHC	<1.0	DLM	1.0	ug/L	13-SEP-19	23-SEP-19	R4822711
delta-BHC	<1.0	DLM	1.0	ug/L	13-SEP-19	23-SEP-19	R4822711
o,p-DDD	<1.0	DLM	1.0	ug/L	13-SEP-19	23-SEP-19	R4822711
pp-DDD	<1.0	DLM	1.0	ug/L	13-SEP-19	23-SEP-19	R4822711
o,p-DDE	<1.0	DLM	1.0	ug/L	13-SEP-19	23-SEP-19	R4822711
pp-DDE	<1.0	DLM	1.0	ug/L	13-SEP-19	23-SEP-19	R4822711
op-DDT	<1.0	DLM	1.0	ug/L	13-SEP-19	23-SEP-19	R4822711
pp-DDT	<1.0	DLM	1.0	ug/L	13-SEP-19	23-SEP-19	R4822711
Dieldrin	<1.0	DLM	1.0	ug/L	13-SEP-19	23-SEP-19	R4822711
alpha-Endosulfan	<1.0	DLM	1.0	ug/L	13-SEP-19	23-SEP-19	R4822711
beta-Endosulfan	<1.0	DLM	1.0	ug/L	13-SEP-19	23-SEP-19	R4822711
Endosulfan Sulfate	<1.0	DLM	1.0	ug/L	13-SEP-19	23-SEP-19	R4822711
Endrin	<1.0	DLM	1.0	ug/L	13-SEP-19	23-SEP-19	R4822711
Endrin Aldehyde	<1.0	DLM	1.0	ug/L	13-SEP-19	23-SEP-19	R4822711
Hexachlorobenzene	<1.0	DLM	1.0	ug/L	13-SEP-19	23-SEP-19	R4822711
Heptachlor	<1.0	DLM	1.0	ug/L	13-SEP-19	23-SEP-19	R4822711
Heptachlor Epoxide	<1.0	DLM	1.0	ug/L	13-SEP-19	23-SEP-19	R4822711
Lindane	<1.0	DLM	1.0	ug/L	13-SEP-19	23-SEP-19	R4822711

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ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2345437-2 LQ25-MH31							
Sampled By: CLIENT on 11-SEP-19 @ 09:45							
Matrix: WATER							
Pesticides, Organochlorine							
Methoxychlor	<1.0	DLM	1.0	ug/L	13-SEP-19	23-SEP-19	R4822711
Mirex	<1.0	DLM	1.0	ug/L	13-SEP-19	23-SEP-19	R4822711
Oxychlorane	<1.0	DLM	1.0	ug/L	13-SEP-19	23-SEP-19	R4822711
Surrogate: 2-Fluorobiphenyl	98.9		40-130	%	13-SEP-19	23-SEP-19	R4822711
Surrogate: d14-Terphenyl	94.3		40-130	%	13-SEP-19	23-SEP-19	R4822711
Herbicides in Water							
Clopyralid	<9.1	DLM	9.1	ug/L	16-SEP-19	17-SEP-19	R4813269
Dicamba	<1.0	DLM	1.0	ug/L	16-SEP-19	17-SEP-19	R4813269
Mecoprop	92	DLHC	10	ug/L	16-SEP-19	17-SEP-19	R4813269
MCPA	<1.0	DLM	1.0	ug/L	16-SEP-19	17-SEP-19	R4813269
2,4-D	<1.0	DLM	1.0	ug/L	16-SEP-19	17-SEP-19	R4813269
Bromoxynil	<1.0	DLM	1.0	ug/L	16-SEP-19	17-SEP-19	R4813269
Triclopyr	<1.0	DLM	1.0	ug/L	16-SEP-19	17-SEP-19	R4813269
2,4,5-T	<1.0	DLM	1.0	ug/L	16-SEP-19	17-SEP-19	R4813269
2,4,5-TP	<1.0	DLM	1.0	ug/L	16-SEP-19	17-SEP-19	R4813269
Picloram	<1.0	DLM	1.0	ug/L	16-SEP-19	17-SEP-19	R4813269
2,4-DB	<1.0	DLM	1.0	ug/L	16-SEP-19	17-SEP-19	R4813269
2,4-DP	1.7	DLM	1.0	ug/L	16-SEP-19	17-SEP-19	R4813269
Dinoseb	<1.0	DLM	1.0	ug/L	16-SEP-19	17-SEP-19	R4813269
MCPB	<1.0	DLM	1.0	ug/L	16-SEP-19	17-SEP-19	R4813269
Surrogate: 2,4-Dichlorophenylacetic Acid	96.9		50-130	%	16-SEP-19	17-SEP-19	R4813269
Miscellaneous Pesticides							
Diazinon	<0.55	DLM	0.55	ug/L	13-SEP-19	18-SEP-19	R4818351
Surrogate: 2-Fluorobiphenyl	78.3		40-130	%	13-SEP-19	18-SEP-19	R4818351
Surrogate: d14-Terphenyl	73.5		40-130	%	13-SEP-19	18-SEP-19	R4818351
4,4'-Methylenebis(2-chloroaniline)							
4,4'-Methylenebis(2-chloroaniline)	<0.50		0.50	ug/L	13-SEP-19	16-SEP-19	R4811130
Surrogate: p-Terphenyl d14	83.2		40-130	%	13-SEP-19	16-SEP-19	R4811130
VOC plus F1 to F4							
CCME PHC F2-F4 in Water							
F2 (C10-C16)	460		100	ug/L	13-SEP-19	14-SEP-19	R4800048
F3 (C16-C34)	4500		250	ug/L	13-SEP-19	14-SEP-19	R4800048
F4 (C34-C50)	790		250	ug/L	13-SEP-19	14-SEP-19	R4800048
Surrogate: 2-Bromobenzotrifluoride	104.1		60-140	%	13-SEP-19	14-SEP-19	R4800048
CCME Total Hydrocarbons							
F1-BTEX	<100		100	ug/L		26-SEP-19	
F2-Naphth	460		100	ug/L		26-SEP-19	
F3-PAH	4500		250	ug/L		26-SEP-19	
Total Hydrocarbons (C6-C50)	5750		380	ug/L		26-SEP-19	
Sum of Xylene Isomer Concentrations							
Xylenes (Total)	12.3		0.64	ug/L		26-SEP-19	
Total Trihalomethanes (THMs)							
Total THMs	<1.3		1.3	ug/L		26-SEP-19	
VOC plus F1 by GCMS							
Acetone	<50		50	ug/L		17-SEP-19	R4814109
Benzene	0.77		0.50	ug/L		17-SEP-19	R4814109
Bromobenzene	<1.0		1.0	ug/L		17-SEP-19	R4814109
Bromochloromethane	<1.0		1.0	ug/L		17-SEP-19	R4814109
Bromodichloromethane	<0.50		0.50	ug/L		17-SEP-19	R4814109
Bromoform	<1.0		1.0	ug/L		17-SEP-19	R4814109
Bromomethane	<1.0		1.0	ug/L		17-SEP-19	R4814109
n-Butylbenzene	<1.0		1.0	ug/L		17-SEP-19	R4814109

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ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2345437-2 LQ25-MH31							
Sampled By: CLIENT on 11-SEP-19 @ 09:45							
Matrix: WATER							
VOC plus F1 by GCMS							
sec-Butylbenzene	<1.0		1.0	ug/L		17-SEP-19	R4814109
tert-Butylbenzene	<1.0		1.0	ug/L		17-SEP-19	R4814109
Carbon disulfide	<5.0		5.0	ug/L		17-SEP-19	R4814109
Carbon Tetrachloride	<0.50		0.50	ug/L		17-SEP-19	R4814109
Chlorobenzene	<1.0		1.0	ug/L		17-SEP-19	R4814109
Chloroethane	<1.0		1.0	ug/L		17-SEP-19	R4814109
Chloroform	<0.50		0.50	ug/L		17-SEP-19	R4814109
Chloromethane	<10	DLM	10	ug/L		17-SEP-19	R4814109
2-Chlorotoluene	<20		20	ug/L		17-SEP-19	R4814109
4-Chlorotoluene	<1.0		1.0	ug/L		17-SEP-19	R4814109
Dibromochloromethane	<0.50		0.50	ug/L		17-SEP-19	R4814109
1,2-Dibromo-3-chloropropane	<1.0		1.0	ug/L		17-SEP-19	R4814109
1,2-Dibromoethane	<1.0		1.0	ug/L		17-SEP-19	R4814109
Dibromomethane	<1.0		1.0	ug/L		17-SEP-19	R4814109
1,2-Dichlorobenzene	<0.50		0.50	ug/L		17-SEP-19	R4814109
1,3-Dichlorobenzene	<1.0		1.0	ug/L		17-SEP-19	R4814109
1,4-Dichlorobenzene	1.3		1.0	ug/L		17-SEP-19	R4814109
Dichlorodifluoromethane	<4.0	DLM	4.0	ug/L		17-SEP-19	R4814109
1,1-dichloroethane	<0.50		0.50	ug/L		17-SEP-19	R4814109
1,2-Dichloroethane	<0.50		0.50	ug/L		17-SEP-19	R4814109
1,1-dichloroethene	<0.50		0.50	ug/L		17-SEP-19	R4814109
cis-1,2-Dichloroethene	<1.0		1.0	ug/L		17-SEP-19	R4814109
trans-1,2-Dichloroethene	<1.0		1.0	ug/L		17-SEP-19	R4814109
Dichloromethane	<5.0		5.0	ug/L		17-SEP-19	R4814109
1,2-Dichloropropane	<1.0		1.0	ug/L		17-SEP-19	R4814109
1,3-Dichloropropane	<1.0		1.0	ug/L		17-SEP-19	R4814109
2,2-Dichloropropane	<4.0	DLCI	4.0	ug/L		17-SEP-19	R4814109
1,1-Dichloropropene	<1.0		1.0	ug/L		17-SEP-19	R4814109
cis-1,3-Dichloropropene	<1.0		1.0	ug/L		17-SEP-19	R4814109
trans-1,3-Dichloropropene	<1.0		1.0	ug/L		17-SEP-19	R4814109
Ethylbenzene	0.51		0.50	ug/L		17-SEP-19	R4814109
F1	<100		100	ug/L		17-SEP-19	R4814109
Hexachlorobutadiene	<1.0		1.0	ug/L		17-SEP-19	R4814109
Hexane	<1.0		1.0	ug/L		17-SEP-19	R4814109
2-Hexanone (Methyl butyl ketone)	<20		20	ug/L		17-SEP-19	R4814109
Isopropylbenzene	<1.0		1.0	ug/L		17-SEP-19	R4814109
4-Isopropyltoluene	<1.0		1.0	ug/L		17-SEP-19	R4814109
MEK	<20		20	ug/L		17-SEP-19	R4814109
MIBK	<20		20	ug/L		17-SEP-19	R4814109
MTBE	0.69		0.50	ug/L		17-SEP-19	R4814109
Styrene	<1.0		1.0	ug/L		17-SEP-19	R4814109
1,1,1,2-Tetrachloroethane	<0.50		0.50	ug/L		17-SEP-19	R4814109
1,1,2,2-Tetrachloroethane	<0.50		0.50	ug/L		17-SEP-19	R4814109
Tetrachloroethene	<0.50		0.50	ug/L		17-SEP-19	R4814109
Toluene	1.15		0.50	ug/L		17-SEP-19	R4814109
1,2,3-Trichlorobenzene	<1.0		1.0	ug/L		17-SEP-19	R4814109
1,2,4-Trichlorobenzene	<1.0		1.0	ug/L		17-SEP-19	R4814109
1,1,1-Trichloroethane	<0.50		0.50	ug/L		17-SEP-19	R4814109
1,1,2-Trichloroethane	<0.50		0.50	ug/L		17-SEP-19	R4814109
Trichloroethene	<0.50		0.50	ug/L		17-SEP-19	R4814109
Trichlorofluoromethane	<1.0		1.0	ug/L		17-SEP-19	R4814109

* 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
L2345437-2 LQ25-MH31							
Sampled By: CLIENT on 11-SEP-19 @ 09:45							
Matrix: WATER							
VOC plus F1 by GCMS							
1,2,3-Trichloropropane	<1.0		1.0	ug/L		17-SEP-19	R4814109
1,2,4-Trimethylbenzene	1.4		1.0	ug/L		17-SEP-19	R4814109
1,3,5-Trimethylbenzene	<1.0		1.0	ug/L		17-SEP-19	R4814109
Vinyl Chloride	<0.50		0.50	ug/L		17-SEP-19	R4814109
M+P-Xylenes	5.23		0.40	ug/L		17-SEP-19	R4814109
o-Xylene	7.04		0.50	ug/L		17-SEP-19	R4814109
Surrogate: 4-Bromofluorobenzene (SS)	97.9		70-130	%		17-SEP-19	R4814109
Surrogate: 1,4-Difluorobenzene (SS)	99.7		70-130	%		17-SEP-19	R4814109
L2345437-3 LQ25-MH8							
Sampled By: CLIENT on 11-SEP-19 @ 09:45							
Matrix: WATER							
Alkalinity species as HCO3, CO3, OH							
Alkalinity, Bicarbonate							
Bicarbonate (HCO3)	6810000		1200	ug/L		18-SEP-19	
Alkalinity, Carbonate							
Carbonate (CO3)	162000		600	ug/L		18-SEP-19	
Alkalinity, Hydroxide							
Hydroxide (OH)	<340		340	ug/L		18-SEP-19	
Alkalinity, Total (as CaCO3)							
Alkalinity, Total (as CaCO3)	5850000		1000	ug/L		16-SEP-19	R4817572
Dissolved Carbons							
Dissolved Inorganic Carbon by Combustion							
Dissolved Inorganic Carbon	1230000		5000	ug/L		16-SEP-19	R4819173
Dissolved Organic Carbon by Combustion							
Dissolved Organic Carbon	557000		500	ug/L		18-SEP-19	R4823514
Total Dissolved Carbon by Calculation							
Total Dissolved Carbon	1790000		5000	ug/L		19-SEP-19	
Miscellaneous Parameters							
Ammonia, Total (as N)	903000		20000	ug/L		16-SEP-19	R4815489
Chloride (Cl)	1630000		50000	ug/L		12-SEP-19	R4818044
Chromium, Hexavalent	<10	DLM	10	ug/L		16-SEP-19	R4813730
Fecal Coliforms	780		10	MPN/100mL		11-SEP-19	R4801188
Cyanide, Total	14.5	HTP	1.0	ug/L		21-SEP-19	R4831509
Mercury (Hg)-Total	0.0140		0.0050	ug/L	19-SEP-19	19-SEP-19	R4827412
Oil and Grease	731000		5000	ug/L		20-SEP-19	R4827930
Phenols (4AAP)	51	DLM	10	ug/L		17-SEP-19	R4814988
Sulfate (SO4)	200000		30000	ug/L		12-SEP-19	R4818044
Total and E. coli, 1:10 dilution by QT97							
Total Coliforms	>24200		10	MPN/100mL		11-SEP-19	R4801209
Escherichia Coli	1090		10	MPN/100mL		11-SEP-19	R4801209
Total Metals in Water by CRC ICPMS							
Aluminum (Al)-Total	1220		3.0	ug/L	19-SEP-19	19-SEP-19	R4825608
Antimony (Sb)-Total	2.45		0.10	ug/L	19-SEP-19	19-SEP-19	R4825608
Arsenic (As)-Total	30.8		0.10	ug/L	19-SEP-19	19-SEP-19	R4825608
Barium (Ba)-Total	604		0.10	ug/L	19-SEP-19	19-SEP-19	R4825608
Beryllium (Be)-Total	0.41		0.10	ug/L	19-SEP-19	19-SEP-19	R4825608
Bismuth (Bi)-Total	<0.050		0.050	ug/L	19-SEP-19	19-SEP-19	R4825608
Boron (B)-Total	13600		100	ug/L	19-SEP-19	30-SEP-19	R4854708
Cadmium (Cd)-Total	1.62		0.0050	ug/L	19-SEP-19	19-SEP-19	R4825608
Calcium (Ca)-Total	164000		50	ug/L	19-SEP-19	19-SEP-19	R4825608
Cesium (Cs)-Total	0.442		0.010	ug/L	19-SEP-19	19-SEP-19	R4825608

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ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2345437-3 LQ25-MH8							
Sampled By: CLIENT on 11-SEP-19 @ 09:45							
Matrix: WATER							
Total Metals in Water by CRC ICPMS							
Chromium (Cr)-Total	149		0.10	ug/L	19-SEP-19	19-SEP-19	R4825608
Cobalt (Co)-Total	43.3		0.10	ug/L	19-SEP-19	19-SEP-19	R4825608
Copper (Cu)-Total	12.6		0.50	ug/L	19-SEP-19	19-SEP-19	R4825608
Iron (Fe)-Total	5700		10	ug/L	19-SEP-19	19-SEP-19	R4825608
Lead (Pb)-Total	8.73		0.050	ug/L	19-SEP-19	19-SEP-19	R4825608
Lithium (Li)-Total	479		10	ug/L	19-SEP-19	30-SEP-19	R4854708
Magnesium (Mg)-Total	370000		5.0	ug/L	19-SEP-19	19-SEP-19	R4825608
Manganese (Mn)-Total	663		0.10	ug/L	19-SEP-19	19-SEP-19	R4825608
Molybdenum (Mo)-Total	7.36		0.050	ug/L	19-SEP-19	19-SEP-19	R4825608
Nickel (Ni)-Total	245		0.50	ug/L	19-SEP-19	19-SEP-19	R4825608
Potassium (K)-Total	466000		500	ug/L	19-SEP-19	30-SEP-19	R4854708
Phosphorus (P)-Total	6830		30	ug/L	19-SEP-19	19-SEP-19	R4825608
Rubidium (Rb)-Total	138		0.20	ug/L	19-SEP-19	19-SEP-19	R4825608
Selenium (Se)-Total	1.83		0.050	ug/L	19-SEP-19	19-SEP-19	R4825608
Silicon (Si)-Total	30100		100	ug/L	19-SEP-19	19-SEP-19	R4825608
Silver (Ag)-Total	0.122		0.010	ug/L	19-SEP-19	19-SEP-19	R4825608
Sodium (Na)-Total	1430000		500	ug/L	19-SEP-19	30-SEP-19	R4854708
Strontium (Sr)-Total	4980		2.0	ug/L	19-SEP-19	30-SEP-19	R4854708
Sulfur (S)-Total	142000		500	ug/L	19-SEP-19	19-SEP-19	R4825608
Tellurium (Te)-Total	0.38		0.20	ug/L	19-SEP-19	19-SEP-19	R4825608
Thallium (Tl)-Total	0.016		0.010	ug/L	19-SEP-19	19-SEP-19	R4825608
Thorium (Th)-Total	0.23		0.10	ug/L	19-SEP-19	19-SEP-19	R4825608
Tin (Sn)-Total	28.7		0.10	ug/L	19-SEP-19	19-SEP-19	R4825608
Titanium (Ti)-Total	157		0.30	ug/L	19-SEP-19	19-SEP-19	R4825608
Tungsten (W)-Total	4.32		0.10	ug/L	19-SEP-19	19-SEP-19	R4825608
Uranium (U)-Total	1.70		0.010	ug/L	19-SEP-19	19-SEP-19	R4825608
Vanadium (V)-Total	38.6		0.50	ug/L	19-SEP-19	19-SEP-19	R4825608
Zinc (Zn)-Total	1820		30	ug/L	19-SEP-19	30-SEP-19	R4854708
Zirconium (Zr)-Total	68.4		0.20	ug/L	19-SEP-19	19-SEP-19	R4825608
Dissolved Metals in Water by CRC ICPMS							
Dissolved Metals Filtration Location	LAB					19-SEP-19	R4823571
Aluminum (Al)-Dissolved	172		10	ug/L	19-SEP-19	30-SEP-19	R4854708
Antimony (Sb)-Dissolved	2.0		1.0	ug/L	19-SEP-19	30-SEP-19	R4854708
Arsenic (As)-Dissolved	27.5		1.0	ug/L	19-SEP-19	30-SEP-19	R4854708
Barium (Ba)-Dissolved	556		1.0	ug/L	19-SEP-19	30-SEP-19	R4854708
Beryllium (Be)-Dissolved	<1.0		1.0	ug/L	19-SEP-19	30-SEP-19	R4854708
Bismuth (Bi)-Dissolved	<0.50		0.50	ug/L	19-SEP-19	30-SEP-19	R4854708
Boron (B)-Dissolved	13200		100	ug/L	19-SEP-19	30-SEP-19	R4854708
Cadmium (Cd)-Dissolved	0.170		0.050	ug/L	19-SEP-19	30-SEP-19	R4854708
Calcium (Ca)-Dissolved	165000		500	ug/L	19-SEP-19	30-SEP-19	R4854708
Cesium (Cs)-Dissolved	0.36		0.10	ug/L	19-SEP-19	30-SEP-19	R4854708
Chromium (Cr)-Dissolved	141		1.0	ug/L	19-SEP-19	30-SEP-19	R4854708
Cobalt (Co)-Dissolved	46.2		1.0	ug/L	19-SEP-19	30-SEP-19	R4854708
Copper (Cu)-Dissolved	4.8		2.0	ug/L	19-SEP-19	30-SEP-19	R4854708
Iron (Fe)-Dissolved	3050		100	ug/L	19-SEP-19	30-SEP-19	R4854708
Lead (Pb)-Dissolved	5.28		0.50	ug/L	19-SEP-19	30-SEP-19	R4854708
Lithium (Li)-Dissolved	471		10	ug/L	19-SEP-19	30-SEP-19	R4854708
Magnesium (Mg)-Dissolved	318000		50	ug/L	19-SEP-19	30-SEP-19	R4854708
Manganese (Mn)-Dissolved	552		1.0	ug/L	19-SEP-19	30-SEP-19	R4854708
Molybdenum (Mo)-Dissolved	6.79		0.50	ug/L	19-SEP-19	30-SEP-19	R4854708
Nickel (Ni)-Dissolved	266		5.0	ug/L	19-SEP-19	30-SEP-19	R4854708

* 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
L2345437-3 LQ25-MH8							
Sampled By: CLIENT on 11-SEP-19 @ 09:45							
Matrix: WATER							
Dissolved Metals in Water by CRC ICPMS							
Phosphorus (P)-Dissolved	5690		300	ug/L	19-SEP-19	30-SEP-19	R4854708
Potassium (K)-Dissolved	463000		500	ug/L	19-SEP-19	30-SEP-19	R4854708
Rubidium (Rb)-Dissolved	140		2.0	ug/L	19-SEP-19	30-SEP-19	R4854708
Selenium (Se)-Dissolved	1.69		0.50	ug/L	19-SEP-19	30-SEP-19	R4854708
Silicon (Si)-Dissolved	24200		500	ug/L	19-SEP-19	30-SEP-19	R4854708
Silver (Ag)-Dissolved	0.16		0.10	ug/L	19-SEP-19	30-SEP-19	R4854708
Sodium (Na)-Dissolved	1420000		500	ug/L	19-SEP-19	30-SEP-19	R4854708
Strontium (Sr)-Dissolved	4900		1.0	ug/L	19-SEP-19	30-SEP-19	R4854708
Sulfur (S)-Dissolved	125000		5000	ug/L	19-SEP-19	30-SEP-19	R4854708
Tellurium (Te)-Dissolved	<2.0		2.0	ug/L	19-SEP-19	30-SEP-19	R4854708
Thallium (Tl)-Dissolved	<0.10		0.10	ug/L	19-SEP-19	30-SEP-19	R4854708
Thorium (Th)-Dissolved	<1.0		1.0	ug/L	19-SEP-19	30-SEP-19	R4854708
Tin (Sn)-Dissolved	24.6		1.0	ug/L	19-SEP-19	30-SEP-19	R4854708
Titanium (Ti)-Dissolved	120		3.0	ug/L	19-SEP-19	30-SEP-19	R4854708
Tungsten (W)-Dissolved	3.7		1.0	ug/L	19-SEP-19	30-SEP-19	R4854708
Uranium (U)-Dissolved	1.63		0.10	ug/L	19-SEP-19	30-SEP-19	R4854708
Vanadium (V)-Dissolved	34.4		5.0	ug/L	19-SEP-19	30-SEP-19	R4854708
Zinc (Zn)-Dissolved	532		10	ug/L	19-SEP-19	30-SEP-19	R4854708
Zirconium (Zr)-Dissolved	67.8		2.0	ug/L	19-SEP-19	30-SEP-19	R4854708
Mercury Dissolved							
Dissolved Mercury Filtration Location	LAB					19-SEP-19	R4826797
Mercury (Hg)-Dissolved	<0.0050		0.0050	ug/L	19-SEP-19	19-SEP-19	R4827450
Polyaromatic Hydrocarbons (PAHs)							
1-Methyl Naphthalene	4.64	DLM	0.20	ug/L	13-SEP-19	19-SEP-19	R4822268
2-Methyl Naphthalene	6.19	DLM	0.20	ug/L	13-SEP-19	19-SEP-19	R4822268
Acenaphthene	7.20	DLM	0.20	ug/L	13-SEP-19	19-SEP-19	R4822268
Acenaphthylene	<0.50	DLM	0.50	ug/L	13-SEP-19	19-SEP-19	R4822268
Anthracene	3.78	DLM	0.10	ug/L	13-SEP-19	19-SEP-19	R4822268
Acridine	1.04	DLM	0.20	ug/L	13-SEP-19	19-SEP-19	R4822268
Benzo(a)anthracene	2.04	DLM	0.10	ug/L	13-SEP-19	19-SEP-19	R4822268
Benzo(a)pyrene	0.640	DLM	0.050	ug/L	13-SEP-19	19-SEP-19	R4822268
Benzo(b&j)fluoranthene	1.16	EMPC	0.10	ug/L	13-SEP-19	19-SEP-19	R4822268
Benzo(g,h,i)perylene	1.03	DLM	0.20	ug/L	13-SEP-19	19-SEP-19	R4822268
Benzo(k)fluoranthene	0.49	EMPC	0.10	ug/L	13-SEP-19	19-SEP-19	R4822268
Chrysene	2.84	DLM	0.20	ug/L	13-SEP-19	19-SEP-19	R4822268
Dibenzo(a,h)anthracene	0.070	DLM	0.050	ug/L	13-SEP-19	19-SEP-19	R4822268
Fluoranthene	9.11	DLM	0.20	ug/L	13-SEP-19	19-SEP-19	R4822268
Fluorene	5.77	DLM	0.20	ug/L	13-SEP-19	19-SEP-19	R4822268
Indeno(1,2,3-cd)pyrene	0.25	DLM	0.10	ug/L	13-SEP-19	19-SEP-19	R4822268
Naphthalene	17.5	DLM	0.50	ug/L	13-SEP-19	19-SEP-19	R4822268
Phenanthrene	14.7	DLM	0.50	ug/L	13-SEP-19	19-SEP-19	R4822268
Pyrene	9.02	DLM	0.10	ug/L	13-SEP-19	19-SEP-19	R4822268
Quinoline	<0.20	DLM	0.20	ug/L	13-SEP-19	19-SEP-19	R4822268
B(a)P Total Potency Equivalent	1.14		0.072	ug/L	13-SEP-19	19-SEP-19	R4822268
Surrogate: Acenaphthene d10	111.1		60-130	%	13-SEP-19	19-SEP-19	R4822268
Surrogate: Acridine d9	97.9		60-130	%	13-SEP-19	19-SEP-19	R4822268
Surrogate: Chrysene d12	109.7		60-130	%	13-SEP-19	19-SEP-19	R4822268
Surrogate: Naphthalene d8	101.8		50-130	%	13-SEP-19	19-SEP-19	R4822268
Surrogate: Phenanthrene d10	112.5		60-130	%	13-SEP-19	19-SEP-19	R4822268
PCBs							
Aroclor 1016	<8.0	DLM	8.0	ug/L	19-SEP-19	19-SEP-19	R4813508
Aroclor 1221	<8.0	DLM	8.0	ug/L	19-SEP-19	19-SEP-19	R4813508

* 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
L2345437-3 LQ25-MH8							
Sampled By: CLIENT on 11-SEP-19 @ 09:45							
Matrix: WATER							
PCBs							
Aroclor 1232	<8.0	DLM	8.0	ug/L	19-SEP-19	19-SEP-19	R4813508
Aroclor 1242	<46	DLM	46	ug/L	19-SEP-19	19-SEP-19	R4813508
Aroclor 1248	<8.0	DLM	8.0	ug/L	19-SEP-19	19-SEP-19	R4813508
Aroclor 1254	<8.0	DLM	8.0	ug/L	19-SEP-19	19-SEP-19	R4813508
Aroclor 1260	<8.0	DLM	8.0	ug/L	19-SEP-19	19-SEP-19	R4813508
Aroclor 1262	<8.0	DLM	8.0	ug/L	19-SEP-19	19-SEP-19	R4813508
Aroclor 1268	<8.0	DLM	8.0	ug/L	19-SEP-19	19-SEP-19	R4813508
Total PCBs	<52	DLM	52	ug/L	19-SEP-19	19-SEP-19	R4813508
Surrogate: d14-Terphenyl	N/A	SDO:RNA	-	%	19-SEP-19	19-SEP-19	R4813508
Pesticides, Organochlorine							
Aldrin	<50	DLM	50	ug/L	13-SEP-19	23-SEP-19	R4822711
a-chlordane	<50	DLM	50	ug/L	13-SEP-19	23-SEP-19	R4822711
g-chlordane	<50	DLM	50	ug/L	13-SEP-19	23-SEP-19	R4822711
alpha-BHC	<50	DLM	50	ug/L	13-SEP-19	23-SEP-19	R4822711
beta-BHC	<50	DLM	50	ug/L	13-SEP-19	23-SEP-19	R4822711
delta-BHC	<50	DLM	50	ug/L	13-SEP-19	23-SEP-19	R4822711
o,p-DDD	<50	DLM	50	ug/L	13-SEP-19	23-SEP-19	R4822711
pp-DDD	<50	DLM	50	ug/L	13-SEP-19	23-SEP-19	R4822711
o,p-DDE	<50	DLM	50	ug/L	13-SEP-19	23-SEP-19	R4822711
pp-DDE	<50	DLM	50	ug/L	13-SEP-19	23-SEP-19	R4822711
op-DDT	<50	DLM	50	ug/L	13-SEP-19	23-SEP-19	R4822711
pp-DDT	<50	DLM	50	ug/L	13-SEP-19	23-SEP-19	R4822711
Dieldrin	<50	DLM	50	ug/L	13-SEP-19	23-SEP-19	R4822711
alpha-Endosulfan	<50	DLM	50	ug/L	13-SEP-19	23-SEP-19	R4822711
beta-Endosulfan	<50	DLM	50	ug/L	13-SEP-19	23-SEP-19	R4822711
Endosulfan Sulfate	<50	DLM	50	ug/L	13-SEP-19	23-SEP-19	R4822711
Endrin	<50	DLM	50	ug/L	13-SEP-19	23-SEP-19	R4822711
Endrin Aldehyde	<50	DLM	50	ug/L	13-SEP-19	23-SEP-19	R4822711
Hexachlorobenzene	<50	DLM	50	ug/L	13-SEP-19	23-SEP-19	R4822711
Heptachlor	<50	DLM	50	ug/L	13-SEP-19	23-SEP-19	R4822711
Heptachlor Epoxide	<50	DLM	50	ug/L	13-SEP-19	23-SEP-19	R4822711
Lindane	<50	DLM	50	ug/L	13-SEP-19	23-SEP-19	R4822711
Methoxychlor	<50	DLM	50	ug/L	13-SEP-19	23-SEP-19	R4822711
Mirex	<50	DLM	50	ug/L	13-SEP-19	23-SEP-19	R4822711
Oxychlordane	<50	DLM	50	ug/L	13-SEP-19	23-SEP-19	R4822711
Surrogate: 2-Fluorobiphenyl	N/A	SDO:RNA	40-130	%	13-SEP-19	23-SEP-19	R4822711
Surrogate: d14-Terphenyl	N/A	SDO:RNA	40-130	%	13-SEP-19	23-SEP-19	R4822711
Herbicides in Water							
Clopyralid	<8.1	DLM	8.1	ug/L	16-SEP-19	17-SEP-19	R4813269
Dicamba	<1.0	DLM	1.0	ug/L	16-SEP-19	17-SEP-19	R4813269
Mecoprop	171	DLHC	10	ug/L	16-SEP-19	17-SEP-19	R4813269
MCPA	<1.0	DLM	1.0	ug/L	16-SEP-19	17-SEP-19	R4813269
2,4-D	<1.0	DLM	1.0	ug/L	16-SEP-19	17-SEP-19	R4813269
Bromoxynil	<1.0	DLM	1.0	ug/L	16-SEP-19	17-SEP-19	R4813269
Triclopyr	<1.0	DLM	1.0	ug/L	16-SEP-19	17-SEP-19	R4813269
2,4,5-T	<1.0	DLM	1.0	ug/L	16-SEP-19	17-SEP-19	R4813269
2,4,5-TP	<1.0	DLM	1.0	ug/L	16-SEP-19	17-SEP-19	R4813269
Picloram	<1.0	DLM	1.0	ug/L	16-SEP-19	17-SEP-19	R4813269
2,4-DB	<1.0	DLM	1.0	ug/L	16-SEP-19	17-SEP-19	R4813269
2,4-DP	<1.0	DLM	1.0	ug/L	16-SEP-19	17-SEP-19	R4813269
Dinoseb	<1.0	DLM	1.0	ug/L	16-SEP-19	17-SEP-19	R4813269

* 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
L2345437-3 LQ25-MH8							
Sampled By: CLIENT on 11-SEP-19 @ 09:45							
Matrix: WATER							
Herbicides in Water							
MCPB	<1.0	DLM	1.0	ug/L	16-SEP-19	17-SEP-19	R4813269
Surrogate: 2,4-Dichlorophenylacetic Acid	82.7		50-130	%	16-SEP-19	17-SEP-19	R4813269
Miscellaneous Pesticides							
Diazinon	<19	DLM	19	ug/L	13-SEP-19	18-SEP-19	R4818351
Surrogate: 2-Fluorobiphenyl	127.5		40-130	%	13-SEP-19	18-SEP-19	R4818351
Surrogate: d14-Terphenyl	109.8		40-130	%	13-SEP-19	18-SEP-19	R4818351
4,4'-Methylenebis(2-chloroaniline)							
4,4'-Methylenebis(2-chloroaniline)	<50	DLM	50	ug/L	13-SEP-19	18-SEP-19	R4811130
Surrogate: p-Terphenyl d14	N/A	SDO:RNA	40-130	%	13-SEP-19	18-SEP-19	R4811130
VOC plus F1 to F4							
CCME PHC F2-F4 in Water							
F2 (C10-C16)	3940		100	ug/L	13-SEP-19	14-SEP-19	R4800048
F3 (C16-C34)	78500		250	ug/L	13-SEP-19	14-SEP-19	R4800048
F4 (C34-C50)	13900		250	ug/L	13-SEP-19	14-SEP-19	R4800048
Surrogate: 2-Bromobenzotrifluoride	96.8		60-140	%	13-SEP-19	14-SEP-19	R4800048
CCME Total Hydrocarbons							
F1-BTEX	<100		100	ug/L		01-OCT-19	
F2-Naphth	3920		100	ug/L		01-OCT-19	
F3-PAH	78500		250	ug/L		01-OCT-19	
Total Hydrocarbons (C6-C50)	96300		380	ug/L		01-OCT-19	
Sum of Xylene Isomer Concentrations							
Xylenes (Total)	69.3		0.64	ug/L		01-OCT-19	
Total Trihalomethanes (THMs)							
Total THMs	<1.3		1.3	ug/L		01-OCT-19	
VOC plus F1 by GCMS							
Acetone	<50		50	ug/L		30-SEP-19	R4814109
Benzene	3.91		0.50	ug/L		30-SEP-19	R4814109
Bromobenzene	<1.0		1.0	ug/L		30-SEP-19	R4814109
Bromochloromethane	<1.0		1.0	ug/L		30-SEP-19	R4814109
Bromodichloromethane	<0.50		0.50	ug/L		30-SEP-19	R4814109
Bromoform	<1.0		1.0	ug/L		30-SEP-19	R4814109
Bromomethane	<1.0		1.0	ug/L		30-SEP-19	R4814109
n-Butylbenzene	<1.0		1.0	ug/L		30-SEP-19	R4814109
sec-Butylbenzene	<1.0		1.0	ug/L		30-SEP-19	R4814109
tert-Butylbenzene	<1.0		1.0	ug/L		30-SEP-19	R4814109
Carbon disulfide	<5.0		5.0	ug/L		30-SEP-19	R4814109
Carbon Tetrachloride	<0.50		0.50	ug/L		30-SEP-19	R4814109
Chlorobenzene	2.7		1.0	ug/L		30-SEP-19	R4814109
Chloroethane	2.2		1.0	ug/L		30-SEP-19	R4814109
Chloroform	<0.50		0.50	ug/L		30-SEP-19	R4814109
Chloromethane	<5.0		5.0	ug/L		30-SEP-19	R4814109
2-Chlorotoluene	<20		20	ug/L		30-SEP-19	R4814109
4-Chlorotoluene	<1.0		1.0	ug/L		30-SEP-19	R4814109
Dibromochloromethane	<0.50		0.50	ug/L		30-SEP-19	R4814109
1,2-Dibromo-3-chloropropane	<1.0		1.0	ug/L		30-SEP-19	R4814109
1,2-Dibromoethane	<1.0		1.0	ug/L		30-SEP-19	R4814109
Dibromomethane	<1.0		1.0	ug/L		30-SEP-19	R4814109
1,2-Dichlorobenzene	<0.50		0.50	ug/L		30-SEP-19	R4814109
1,3-Dichlorobenzene	<1.0		1.0	ug/L		30-SEP-19	R4814109
1,4-Dichlorobenzene	4.0		1.0	ug/L		30-SEP-19	R4814109
Dichlorodifluoromethane	<1.0		1.0	ug/L		30-SEP-19	R4814109
1,1-dichloroethane	1.27		0.50	ug/L		30-SEP-19	R4814109

* 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
L2345437-3 LQ25-MH8							
Sampled By: CLIENT on 11-SEP-19 @ 09:45							
Matrix: WATER							
VOC plus F1 by GCMS							
1,2-Dichloroethane	<0.50		0.50	ug/L		30-SEP-19	R4814109
1,1-dichloroethene	<0.50		0.50	ug/L		30-SEP-19	R4814109
cis-1,2-Dichloroethene	<1.0		1.0	ug/L		30-SEP-19	R4814109
trans-1,2-Dichloroethene	<1.0		1.0	ug/L		30-SEP-19	R4814109
Dichloromethane	<5.0		5.0	ug/L		30-SEP-19	R4814109
1,2-Dichloropropane	<1.0		1.0	ug/L		30-SEP-19	R4814109
1,3-Dichloropropane	<1.0		1.0	ug/L		30-SEP-19	R4814109
2,2-Dichloropropane	<1.0		1.0	ug/L		30-SEP-19	R4814109
1,1-Dichloropropene	<1.0		1.0	ug/L		30-SEP-19	R4814109
cis-1,3-Dichloropropene	<1.0		1.0	ug/L		30-SEP-19	R4814109
trans-1,3-Dichloropropene	<2.0	DLM	2.0	ug/L		30-SEP-19	R4814109
Ethylbenzene	1.31		0.50	ug/L		30-SEP-19	R4814109
F1	<100		100	ug/L		30-SEP-19	R4814109
Hexachlorobutadiene	<1.0		1.0	ug/L		30-SEP-19	R4814109
Hexane	<1.0		1.0	ug/L		30-SEP-19	R4814109
2-Hexanone (Methyl butyl ketone)	<20		20	ug/L		30-SEP-19	R4814109
Isopropylbenzene	<1.0		1.0	ug/L		30-SEP-19	R4814109
4-Isopropyltoluene	7.2		1.0	ug/L		30-SEP-19	R4814109
MEK	<20		20	ug/L		30-SEP-19	R4814109
MIBK	<20		20	ug/L		30-SEP-19	R4814109
MTBE	0.97		0.50	ug/L		30-SEP-19	R4814109
Styrene	<1.0		1.0	ug/L		30-SEP-19	R4814109
1,1,1,2-Tetrachloroethane	<0.50		0.50	ug/L		30-SEP-19	R4814109
1,1,2,2-Tetrachloroethane	<0.50		0.50	ug/L		30-SEP-19	R4814109
Tetrachloroethene	<0.50		0.50	ug/L		30-SEP-19	R4814109
Toluene	3.97		0.50	ug/L		30-SEP-19	R4814109
1,2,3-Trichlorobenzene	<1.0		1.0	ug/L		30-SEP-19	R4814109
1,2,4-Trichlorobenzene	<1.0		1.0	ug/L		30-SEP-19	R4814109
1,1,1-Trichloroethane	<0.50		0.50	ug/L		30-SEP-19	R4814109
1,1,2-Trichloroethane	<0.50		0.50	ug/L		30-SEP-19	R4814109
Trichloroethene	<0.50		0.50	ug/L		30-SEP-19	R4814109
Trichlorofluoromethane	<1.0		1.0	ug/L		30-SEP-19	R4814109
1,2,3-Trichloropropane	<1.0		1.0	ug/L		30-SEP-19	R4814109
1,2,4-Trimethylbenzene	6.9		1.0	ug/L		30-SEP-19	R4814109
1,3,5-Trimethylbenzene	1.5		1.0	ug/L		30-SEP-19	R4814109
Vinyl Chloride	0.84		0.50	ug/L		30-SEP-19	R4814109
M+P-Xylenes	50.5		0.40	ug/L		30-SEP-19	R4814109
o-Xylene	18.8		0.50	ug/L		30-SEP-19	R4814109
Surrogate: 4-Bromofluorobenzene (SS)	91.1		70-130	%		30-SEP-19	R4814109
Surrogate: 1,4-Difluorobenzene (SS)	100.0		70-130	%		30-SEP-19	R4814109

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

Reference Information

Sample Parameter Qualifier Key:

Qualifier	Description
DLCI	Detection Limit Raised: Chromatographic Interference due to co-elution.
DLHC	Detection Limit Raised: Dilution required due to high concentration of test analyte(s).
DLM	Detection Limit Adjusted due to sample matrix effects (e.g. chemical interference, colour, turbidity).
EMPC	Estimated Maximum Possible Concentration. Parameter detected but didn't meet all criteria for positive identification.
HTP	Sample preparation or preservation hold time was exceeded.
LCS-L	Lab Control Sample recovery was below ALS DQO. Reference Material and/or Matrix Spike results were acceptable. Non-detected sample results are considered reliable. Other results, if reported, have been qualified.
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.
SDO:RNA	Surrogate diluted out:% recovery not available

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.			
C-DIC-HTC-WP	Water	Dissolved Inorganic Carbon by Combustion	APHA 5310 B-WP
Filtered (0.45 um) sample is injected into a heated reaction chamber where it is acidified, converting all inorganic carbon to CO ₂ which is then transported in the carrier gas stream and measured via a non-dispersive infrared analyzer.			
C-DOC-HTC-WP	Water	Dissolved Organic Carbon by Combustion	APHA 5310 B-WP
Filtered (0.45 um) sample is acidified and purged to remove inorganic carbon, then injected into a heated reaction chamber where organic carbon is oxidized to CO ₂ which is then transported in the carrier gas stream and measured via a non-dispersive infrared analyzer.			
C-TDC-CALC-WP	Water	Total Dissolved Carbon by Calculation	CALCULATED
Total dissolved carbon represents the sum of dissolved inorganic carbon and dissolved organic carbon. For the purpose of calculation, results less than the detection limit (DL) are treated as zero.			
CL-IC-N-WP	Water	Chloride in Water by IC	EPA 300.1 (mod)
Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.			
CN-T-L-CFA-VA	Water	Low Level Total Cyanide in water by CFA	ISO 14403:2002
This analysis is carried out using procedures adapted from ISO Method 14403:2002 "Determination of Total Cyanide using Flow Analysis (FIA and CFA)". Total or strong acid dissociable (SAD) cyanide is determined by in-line UV digestion along with sample distillation and final determination by colourimetric analysis. Method Limitation: This method is susceptible to interference from thiocyanate (SCN). If SCN is present in the sample, there could be a positive interference with this method, but it would be less than 1% and could be as low as zero.			
CR-CR6-IC-WT	Water	Chromium +6	EPA 7199
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.			
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).			

Reference Information

Test Method References:

ALS Test Code	Matrix	Test Description	Method Reference**
EC-SCREEN-WP	Water	Conductivity Screen (Internal Use Only)	APHA 2510
Qualitative analysis of conductivity where required during preparation of other test eg. IC, TDS, TSS, etc			
F1-F4-CALC-WP	Water	CCME Total Hydrocarbons	CCME CWS-PHC, Pub #1310, Dec 2001-L
Analytical methods used for analysis of CCME Petroleum Hydrocarbons have been validated and comply with the Reference Method for the CWS PHC.			
In cases where results for both F4 and F4G are reported, the greater of the two results must be used in any application of the CWS PHC guidelines and the gravimetric heavy hydrocarbons cannot be added to the C6 to C50 hydrocarbons.			
In samples where BTEX and F1 were analyzed , F1-BTEX represents a value where the sum of Benzene, Toluene, Ethylbenzene and total Xylenes has been subtracted from F1.			
In samples where PAHs, F2 and F3 were analyzed, F2-Naphth represents the result where Naphthalene has been subtracted from F2. F3-PAH represents a result where the sum of Benzo(a)anthracene, Benzo(a)pyrene, Benzo(b)fluoranthene, Benzo(k)fluoranthene, Dibenzo(a,h)anthracene, Fluoranthene, Indeno(1,2,3-cd)pyrene, Phenanthrene, and Pyrene has been subtracted from F3.			
Unless otherwise qualified, the following quality control criteria have been met for the F1 hydrocarbon range:			
1. All extraction and analysis holding times were met.			
2. Instrument performance showing response factors for C6 and C10 within 30% of the response factor for toluene.			
3. Linearity of gasoline response within 15% throughout the calibration range.			
Unless otherwise qualified, the following quality control criteria have been met for the F2-F4 hydrocarbon ranges:			
1. All extraction and analysis holding times were met.			
2. Instrument performance showing C10, C16 and C34 response factors within 10% of their average.			
3. Instrument performance showing the C50 response factor within 30% of the average of the C10, C16 and C34 response factors.			
4. Linearity of diesel or motor oil response within 15% throughout the calibration range.			
F2-F4-FID-WP	Water	CCME PHC F2-F4 in Water	EPA 3511
Petroleum hydrocarbons in water are determined by liquid-liquid micro-scale solvent extraction using a reciprocal shaker extraction apparatus prior to capillary column gas chromatography with flame ionization detection (GC-FID) analysis.			
FC10-QT97-WP	Water	Fecal coliforms, 1:10 dilution by QT97	APHA 9223B QT97
Analysis is carried out using procedures adapted from APHA 9223 "Enzyme Substrate Coliform Test". Fecal (thermotolerant) coliform bacteria are determined by mixing a 1:10 dilution of sample with a product containing hydrolyzable substrates and sealing in a 97-well packet. The packet is incubated at 44.5 – 0.2°C for 18 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.			
HERBSCR-LCMS-WT	Water	Herbicides in Water	E3552
Water samples are subjected filtration and analyzed by direct injection without sample preparation using liquid chromatography tandem mass spectrometry (LC-MS/MS).			
HG-D-CVAA-WP	Water	Mercury Dissolved	APHA 3030B/EPA 1631E (mod)
Water samples are filtered (0.45 um), preserved with hydrochloric acid, then undergo a cold-oxidation using bromine monochloride prior to reduction with stannous chloride, and analyzed by CVAAS.			
HG-T-CVAA-WP	Water	Mercury Total	EPA 1631E (mod)
Water samples undergo a cold-oxidation using bromine monochloride prior to reduction with stannous chloride, and analyzed by CVAAS.			
MBOCA-WT	Water	4,4'-Methylenebis(2-chloroaniline)	SW846 8270
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.			
MET-T-CCMS-WP	Water	Total Metals in Water by CRC ICPMS	EPA 200.2/6020B (mod.)
Water samples are digested with nitric and hydrochloric acids, and analyzed by CRC ICPMS.			
Method Limitation (re: Sulfur): Sulfide and volatile sulfur species may not be recovered by this method.			
NH3-COL-WP	Water	Ammonia by colour	APHA 4500 NH3 F

Reference Information

Test Method References:

ALS Test Code	Matrix	Test Description	Method Reference**
		Ammonia in water samples forms indophenol when reacted with hypochlorite and phenol. The intensity is amplified by the addition of sodium nitroprusside and measured colourmetrically.	
OG-GRAV-WP	Water	Oil & Grease - Gravimetric	EPA 1664 (modified)
		Water samples are acidified and extracted with hexane; the hexane extract is collected in a pre-weighed vial. The solvent is evaporated and Total Oil & Grease is determined from the weight of the residue in the vial.	
PAH,PANH-WP	Water	Polyaromatic Hydrocarbons (PAHs)	EPA 3511/8270D (mod)
		PAHs are extracted from water using a hexane micro-extraction technique, with analysis by GC/MS. Because the two isomers cannot be readily separated chromatographically, benzo(j)fluoranthene is reported as part of the benzo(b)fluoranthene parameter.	
PCB9-WT	Water	PCBs	SW846 8270
		PCBs are extracted from an aqueous sample at neutral pH with aliquots of dichloromethane using a modified separatory funnel technique. The extracts are analyzed by GC/MSD.	
PEST-DIAZINON-WT	Water	Miscellaneous Pesticides	SW846 8270
PEST-OC-WT	Water	Pesticides, Organochlorine	SW846 8270
		Pesticides are extracted from an aqueous sample at neutral pH using three separate aliquots. The extracts are combined, concentrated down to a known volume and analyzed on the GC/MSD.	
PHENOLS-4AAP-WT	Water	Phenol (4AAP)	EPA 9066
		An automated method is used to distill the sample. The distillate is then buffered to pH 9.4 which reacts with 4AAP and potassium ferricyanide to form a red complex which is measured colorimetrically.	
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,EC10-QT97-WP	Water	Total and E. coli, 1:10 dilution by QT97	APHA 9223B QT97
		Analysis is carried out using procedures adapted from APHA 9223 "Enzyme Substrate Coliform Test". Total coliforms and Eschericia coli bacteria are simultaneously determined by mixing a 1:10 dilution of sample with a product containing hydrolyzable substrates and sealing in a 97-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.	
THM-SUM-CALC-WP	Water	Total Trihalomethanes (THMs)	CALCULATION
		Total Trihalomethanes (THMs) represents the sum of bromodichloromethane, bromoform, chlorodibromomethane and chloroform. For the purpose of calculation, results less than the detection limit (DL) are treated as zero.	
VOC+F1-HSMS-WP	Water	VOC plus F1 by GCMS	EPA 8260C / EPA 5021A
		In this method samples are analyzed using a headspace autosampler interfaced to a dual column gas chromatograph with MS and Flame Ionization detectors.	
XYLENES-SUM-CALC-WP	Water	Sum of Xylene Isomer Concentrations	CALCULATED RESULT
		Total xylenes represents the sum of o-xylene and m&p-xylene.	

** 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
WT	ALS ENVIRONMENTAL - WATERLOO, ONTARIO, CANADA
VA	ALS ENVIRONMENTAL - VANCOUVER, BRITISH COLUMBIA, CANADA

Chain of Custody Numbers:

Reference Information

Test Method References:

ALS Test Code	Matrix	Test Description	Method Reference**
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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.

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Client: City of Winnipeg - Solid Waste Services Div (1120 Waverley)
Solid Waste Services Division 1120 Waverley Street
Winnipeg MB R3T 0P4

Contact: CHRIS KOZAK

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
ALK-TITR-WP		Water						
Batch	R4809090							
WG3162466-9	LCS							
Alkalinity, Total (as CaCO3)			99.3		%		85-115	13-SEP-19
WG3162466-6	MB							
Alkalinity, Total (as CaCO3)			<1.0		mg/L		1	13-SEP-19
Batch	R4817572							
WG3164805-4	LCS							
Alkalinity, Total (as CaCO3)			103.4		%		85-115	16-SEP-19
WG3164805-1	MB							
Alkalinity, Total (as CaCO3)			<1.0		mg/L		1	16-SEP-19
C-DIC-HTC-WP		Water						
Batch	R4819173							
WG3164955-2	LCS							
Dissolved Inorganic Carbon			98.5		%		80-120	16-SEP-19
WG3164955-1	MB							
Dissolved Inorganic Carbon			<0.50		mg/L		0.5	16-SEP-19
C-DOC-HTC-WP		Water						
Batch	R4819352							
WG3165116-2	LCS							
Dissolved Organic Carbon			104.2		%		80-120	17-SEP-19
WG3165116-1	MB							
Dissolved Organic Carbon			<0.50		mg/L		0.5	17-SEP-19
Batch	R4823514							
WG3166463-2	LCS							
Dissolved Organic Carbon			104.1		%		80-120	18-SEP-19
WG3166463-1	MB							
Dissolved Organic Carbon			<0.50		mg/L		0.5	18-SEP-19
CL-IC-N-WP		Water						
Batch	R4818044							
WG3160168-2	LCS							
Chloride (Cl)			99.3		%		90-110	12-SEP-19
WG3160168-1	MB							
Chloride (Cl)			<0.50		mg/L		0.5	12-SEP-19
CN-T-L-CFA-VA		Water						
Batch	R4828109							
WG3167863-17	LCS							
Cyanide, Total			101.5		%		80-120	20-SEP-19
WG3167863-16	MB							



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Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
CN-T-L-CFA-VA		Water						
Batch	R4828109							
WG3167863-16	MB							
Cyanide, Total			<0.0010		mg/L		0.001	20-SEP-19
Batch	R4831509							
WG3168956-7	LCS							
Cyanide, Total			100.5		%		80-120	21-SEP-19
WG3168956-6	MB							
Cyanide, Total			<0.0010		mg/L		0.001	21-SEP-19
CR-CR6-IC-WT		Water						
Batch	R4813728							
WG3163035-2	LCS							
Chromium, Hexavalent			93.1		%		80-120	16-SEP-19
WG3163035-1	MB							
Chromium, Hexavalent			<0.00050		mg/L		0.0005	16-SEP-19
Batch	R4813730							
WG3163038-2	LCS							
Chromium, Hexavalent			93.9		%		80-120	16-SEP-19
WG3163038-1	MB							
Chromium, Hexavalent			<0.00050		mg/L		0.0005	16-SEP-19
Batch	R4817691							
WG3164340-2	LCS							
Chromium, Hexavalent			95.7		%		80-120	17-SEP-19
WG3164340-1	MB							
Chromium, Hexavalent			<0.00050		mg/L		0.0005	17-SEP-19
F2-F4-FID-WP		Water						
Batch	R4800048							
WG3160706-2	LCS							
F2 (C10-C16)			103.0		%		70-130	14-SEP-19
F3 (C16-C34)			94.5		%		70-130	14-SEP-19
F4 (C34-C50)			99.0		%		70-130	14-SEP-19
WG3160706-1	MB							
F2 (C10-C16)			<0.10		mg/L		0.1	14-SEP-19
F3 (C16-C34)			<0.25		mg/L		0.25	14-SEP-19
F4 (C34-C50)			<0.25		mg/L		0.25	14-SEP-19
Surrogate: 2-Bromobenzotrifluoride			96.9		%		60-140	14-SEP-19
FC10-QT97-WP		Water						

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Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
FC10-QT97-WP		Water						
Batch	R4801188							
WG3158833-1	MB							
Fecal Coliforms			<1		MPN/100mL		1	11-SEP-19
HERBSCR-LCMS-WT		Water						
Batch	R4813269							
WG3159330-2	LCS							
Clopyralid			102.0		%		50-150	17-SEP-19
Dicamba			103.5		%		65-130	17-SEP-19
Mecoprop			97.4		%		65-130	17-SEP-19
MCPA			92.4		%		65-130	17-SEP-19
2,4-D			83.5		%		65-130	17-SEP-19
Bromoxynil			110.0		%		65-130	17-SEP-19
Triclopyr			61.4	LCS-L	%		65-130	17-SEP-19
2,4,5-T			76.8		%		65-130	17-SEP-19
2,4,5-TP			85.4		%		65-130	17-SEP-19
Picloram			108.0		%		50-150	17-SEP-19
2,4-DB			69.4		%		65-130	17-SEP-19
2,4-DP			88.2		%		65-130	17-SEP-19
Dinoseb			95.1		%		50-150	17-SEP-19
MCPB			85.0		%		65-130	17-SEP-19
WG3159330-1	MB							
Clopyralid			<0.00010		mg/L		0.0001	17-SEP-19
Dicamba			<0.00010		mg/L		0.0001	17-SEP-19
Mecoprop			<0.00010		mg/L		0.0001	17-SEP-19
MCPA			<0.00010		mg/L		0.0001	17-SEP-19
2,4-D			<0.00010		mg/L		0.0001	17-SEP-19
Bromoxynil			<0.00010		mg/L		0.0001	17-SEP-19
Triclopyr			<0.00010		mg/L		0.0001	17-SEP-19
2,4,5-T			<0.00010		mg/L		0.0001	17-SEP-19
2,4,5-TP			<0.00010		mg/L		0.0001	17-SEP-19
Picloram			<0.00010		mg/L		0.0001	17-SEP-19
2,4-DB			<0.00010		mg/L		0.0001	17-SEP-19
2,4-DP			<0.00010		mg/L		0.0001	17-SEP-19
Dinoseb			<0.00010		mg/L		0.0001	17-SEP-19
MCPB			<0.00010		mg/L		0.0001	17-SEP-19
Surrogate: 2,4-Dichlorophenylacetic Acid			98.8		%		50-130	17-SEP-19

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Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
HG-D-CVAA-WP		Water						
Batch	R4827450							
WG3167917-2	LCS							
Mercury (Hg)-Dissolved			103.0		%		80-120	19-SEP-19
WG3167917-1	MB							
Mercury (Hg)-Dissolved			<0.000005C		mg/L		0.000005	19-SEP-19
HG-T-CVAA-WP		Water						
Batch	R4827412							
WG3167921-2	LCS							
Mercury (Hg)-Total			104.0		%		80-120	19-SEP-19
WG3167921-1	MB							
Mercury (Hg)-Total			<0.000005C		mg/L		0.000005	19-SEP-19
MBOCA-WT		Water						
Batch	R4811130							
WG3160465-2	LCS							
4,4'-Methylenebis(2-chloroaniline)			87.9		%		50-150	16-SEP-19
WG3160465-1	MB							
4,4'-Methylenebis(2-chloroaniline)			<0.50		ug/L		0.5	16-SEP-19
Surrogate: p-Terphenyl d14			83.0		%		40-130	16-SEP-19
MET-D-CCMS-WP		Water						
Batch	R4831868							
WG3166929-2	LCS							
Aluminum (Al)-Dissolved			99.6		%		80-120	19-SEP-19
Antimony (Sb)-Dissolved			98.7		%		80-120	19-SEP-19
Arsenic (As)-Dissolved			101.9		%		80-120	19-SEP-19
Barium (Ba)-Dissolved			106.4		%		80-120	19-SEP-19
Beryllium (Be)-Dissolved			91.2		%		80-120	19-SEP-19
Bismuth (Bi)-Dissolved			104.7		%		80-120	19-SEP-19
Cadmium (Cd)-Dissolved			106.8		%		80-120	19-SEP-19
Calcium (Ca)-Dissolved			93.1		%		80-120	19-SEP-19
Cesium (Cs)-Dissolved			98.9		%		80-120	19-SEP-19
Chromium (Cr)-Dissolved			101.2		%		80-120	19-SEP-19
Cobalt (Co)-Dissolved			98.7		%		80-120	19-SEP-19
Copper (Cu)-Dissolved			100.1		%		80-120	19-SEP-19
Iron (Fe)-Dissolved			101.7		%		80-120	19-SEP-19
Lead (Pb)-Dissolved			106.6		%		80-120	19-SEP-19
Lithium (Li)-Dissolved			91.1		%		80-120	19-SEP-19
Magnesium (Mg)-Dissolved			100.4		%		80-120	19-SEP-19



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Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
MET-D-CCMS-WP								
	Water							
Batch	R4831868							
WG3166929-2	LCS							
Manganese (Mn)-Dissolved			103.7		%		80-120	19-SEP-19
Molybdenum (Mo)-Dissolved			102.2		%		80-120	19-SEP-19
Nickel (Ni)-Dissolved			99.3		%		80-120	19-SEP-19
Phosphorus (P)-Dissolved			102.3		%		80-120	19-SEP-19
Rubidium (Rb)-Dissolved			103.4		%		80-120	19-SEP-19
Silicon (Si)-Dissolved			96.8		%		80-120	19-SEP-19
Silver (Ag)-Dissolved			99.8		%		80-120	19-SEP-19
Sulfur (S)-Dissolved			90.7		%		80-120	19-SEP-19
Tellurium (Te)-Dissolved			101.2		%		80-120	19-SEP-19
Thallium (Tl)-Dissolved			104.2		%		80-120	19-SEP-19
Thorium (Th)-Dissolved			102.5		%		80-120	19-SEP-19
Tin (Sn)-Dissolved			97.2		%		80-120	19-SEP-19
Titanium (Ti)-Dissolved			96.2		%		80-120	19-SEP-19
Tungsten (W)-Dissolved			104.0		%		80-120	19-SEP-19
Uranium (U)-Dissolved			106.4		%		80-120	19-SEP-19
Vanadium (V)-Dissolved			100.7		%		80-120	19-SEP-19
Zinc (Zn)-Dissolved			100.3		%		80-120	19-SEP-19
Zirconium (Zr)-Dissolved			94.7		%		80-120	19-SEP-19
WG3166929-1	MB							
Aluminum (Al)-Dissolved			<0.0010		mg/L		0.001	19-SEP-19
Antimony (Sb)-Dissolved			<0.00010		mg/L		0.0001	19-SEP-19
Arsenic (As)-Dissolved			<0.00010		mg/L		0.0001	19-SEP-19
Barium (Ba)-Dissolved			<0.00010		mg/L		0.0001	19-SEP-19
Beryllium (Be)-Dissolved			<0.00010		mg/L		0.0001	19-SEP-19
Bismuth (Bi)-Dissolved			<0.000050		mg/L		0.00005	19-SEP-19
Cadmium (Cd)-Dissolved			<0.0000050		mg/L		0.000005	19-SEP-19
Calcium (Ca)-Dissolved			<0.050		mg/L		0.05	19-SEP-19
Cesium (Cs)-Dissolved			<0.000010		mg/L		0.00001	19-SEP-19
Chromium (Cr)-Dissolved			<0.00010		mg/L		0.0001	19-SEP-19
Cobalt (Co)-Dissolved			<0.00010		mg/L		0.0001	19-SEP-19
Copper (Cu)-Dissolved			<0.00020		mg/L		0.0002	19-SEP-19
Iron (Fe)-Dissolved			<0.010		mg/L		0.01	19-SEP-19
Lead (Pb)-Dissolved			<0.000050		mg/L		0.00005	19-SEP-19
Lithium (Li)-Dissolved			<0.0010		mg/L		0.001	19-SEP-19



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Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
MET-D-CCMS-WP		Water						
Batch	R4831868							
WG3166929-1	MB							
Magnesium (Mg)-Dissolved			<0.0050		mg/L		0.005	19-SEP-19
Manganese (Mn)-Dissolved			<0.00010		mg/L		0.0001	19-SEP-19
Molybdenum (Mo)-Dissolved			<0.000050		mg/L		0.00005	19-SEP-19
Nickel (Ni)-Dissolved			<0.00050		mg/L		0.0005	19-SEP-19
Phosphorus (P)-Dissolved			<0.030		mg/L		0.03	19-SEP-19
Rubidium (Rb)-Dissolved			<0.00020		mg/L		0.0002	19-SEP-19
Silicon (Si)-Dissolved			<0.050		mg/L		0.05	19-SEP-19
Silver (Ag)-Dissolved			<0.000010		mg/L		0.00001	19-SEP-19
Sulfur (S)-Dissolved			<0.50		mg/L		0.5	19-SEP-19
Tellurium (Te)-Dissolved			<0.00020		mg/L		0.0002	19-SEP-19
Thallium (Tl)-Dissolved			<0.000010		mg/L		0.00001	19-SEP-19
Thorium (Th)-Dissolved			<0.00010		mg/L		0.0001	19-SEP-19
Tin (Sn)-Dissolved			<0.00010		mg/L		0.0001	19-SEP-19
Titanium (Ti)-Dissolved			<0.00030		mg/L		0.0003	19-SEP-19
Tungsten (W)-Dissolved			<0.00010		mg/L		0.0001	19-SEP-19
Uranium (U)-Dissolved			<0.000010		mg/L		0.00001	19-SEP-19
Vanadium (V)-Dissolved			<0.00050		mg/L		0.0005	19-SEP-19
Zinc (Zn)-Dissolved			<0.0010		mg/L		0.001	19-SEP-19
Zirconium (Zr)-Dissolved			<0.00020		mg/L		0.0002	19-SEP-19
MET-T-CCMS-WP		Water						
Batch	R4825608							
WG3166243-2	LCS							
Aluminum (Al)-Total			105.8		%		80-120	19-SEP-19
Antimony (Sb)-Total			103.0		%		80-120	19-SEP-19
Arsenic (As)-Total			100.8		%		80-120	19-SEP-19
Barium (Ba)-Total			103.6		%		80-120	19-SEP-19
Beryllium (Be)-Total			103.8		%		80-120	19-SEP-19
Bismuth (Bi)-Total			105.1		%		80-120	19-SEP-19
Cadmium (Cd)-Total			103.0		%		80-120	19-SEP-19
Calcium (Ca)-Total			103.3		%		80-120	19-SEP-19
Cesium (Cs)-Total			106.6		%		80-120	19-SEP-19
Chromium (Cr)-Total			103.2		%		80-120	19-SEP-19
Cobalt (Co)-Total			100.3		%		80-120	19-SEP-19
Copper (Cu)-Total			102.8		%		80-120	19-SEP-19



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Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
MET-T-CCMS-WP		Water						
Batch	R4825608							
WG3166243-2	LCS							
Iron (Fe)-Total			97.1		%		80-120	19-SEP-19
Lead (Pb)-Total			102.3		%		80-120	19-SEP-19
Lithium (Li)-Total			105.7		%		80-120	19-SEP-19
Magnesium (Mg)-Total			114.0		%		80-120	19-SEP-19
Manganese (Mn)-Total			103.1		%		80-120	19-SEP-19
Molybdenum (Mo)-Total			100.5		%		80-120	19-SEP-19
Nickel (Ni)-Total			100.8		%		80-120	19-SEP-19
Phosphorus (P)-Total			105.7		%		80-120	19-SEP-19
Rubidium (Rb)-Total			101.3		%		80-120	19-SEP-19
Selenium (Se)-Total			101.5		%		80-120	19-SEP-19
Silicon (Si)-Total			106.4		%		80-120	19-SEP-19
Silver (Ag)-Total			100.1		%		80-120	19-SEP-19
Sulfur (S)-Total			105.2		%		80-120	19-SEP-19
Tellurium (Te)-Total			100.6		%		80-120	19-SEP-19
Thallium (Tl)-Total			102.5		%		80-120	19-SEP-19
Thorium (Th)-Total			100.0		%		80-120	19-SEP-19
Tin (Sn)-Total			99.4		%		80-120	19-SEP-19
Titanium (Ti)-Total			101.4		%		80-120	19-SEP-19
Tungsten (W)-Total			100.0		%		80-120	19-SEP-19
Uranium (U)-Total			109.0		%		80-120	19-SEP-19
Vanadium (V)-Total			104.0		%		80-120	19-SEP-19
Zinc (Zn)-Total			102.1		%		80-120	19-SEP-19
Zirconium (Zr)-Total			99.4		%		80-120	19-SEP-19
WG3166243-1	MB							
Aluminum (Al)-Total			<0.0030		mg/L		0.003	19-SEP-19
Antimony (Sb)-Total			<0.00010		mg/L		0.0001	19-SEP-19
Arsenic (As)-Total			<0.00010		mg/L		0.0001	19-SEP-19
Barium (Ba)-Total			<0.00010		mg/L		0.0001	19-SEP-19
Beryllium (Be)-Total			<0.00010		mg/L		0.0001	19-SEP-19
Bismuth (Bi)-Total			<0.000050		mg/L		0.00005	19-SEP-19
Cadmium (Cd)-Total			<0.0000050		mg/L		0.000005	19-SEP-19
Calcium (Ca)-Total			<0.050		mg/L		0.05	19-SEP-19
Cesium (Cs)-Total			<0.000010		mg/L		0.00001	19-SEP-19
Chromium (Cr)-Total			<0.00010		mg/L		0.0001	19-SEP-19



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Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
MET-T-CCMS-WP		Water						
Batch	R4825608							
WG3166243-1	MB							
Cobalt (Co)-Total			<0.00010		mg/L		0.0001	19-SEP-19
Copper (Cu)-Total			<0.00050		mg/L		0.0005	19-SEP-19
Iron (Fe)-Total			<0.010		mg/L		0.01	19-SEP-19
Lead (Pb)-Total			<0.000050		mg/L		0.00005	19-SEP-19
Lithium (Li)-Total			<0.0010		mg/L		0.001	19-SEP-19
Magnesium (Mg)-Total			<0.0050		mg/L		0.005	19-SEP-19
Manganese (Mn)-Total			<0.00010		mg/L		0.0001	19-SEP-19
Molybdenum (Mo)-Total			<0.000050		mg/L		0.00005	19-SEP-19
Nickel (Ni)-Total			<0.00050		mg/L		0.0005	19-SEP-19
Phosphorus (P)-Total			<0.030		mg/L		0.03	19-SEP-19
Rubidium (Rb)-Total			<0.00020		mg/L		0.0002	19-SEP-19
Selenium (Se)-Total			<0.000050		mg/L		0.00005	19-SEP-19
Silicon (Si)-Total			<0.10		mg/L		0.1	19-SEP-19
Silver (Ag)-Total			<0.000010		mg/L		0.00001	19-SEP-19
Sulfur (S)-Total			<0.50		mg/L		0.5	19-SEP-19
Tellurium (Te)-Total			<0.00020		mg/L		0.0002	19-SEP-19
Thallium (Tl)-Total			<0.000010		mg/L		0.00001	19-SEP-19
Thorium (Th)-Total			<0.00010		mg/L		0.0001	19-SEP-19
Tin (Sn)-Total			<0.00010		mg/L		0.0001	19-SEP-19
Titanium (Ti)-Total			<0.00030		mg/L		0.0003	19-SEP-19
Tungsten (W)-Total			<0.00010		mg/L		0.0001	19-SEP-19
Uranium (U)-Total			<0.000010		mg/L		0.00001	19-SEP-19
Vanadium (V)-Total			<0.00050		mg/L		0.0005	19-SEP-19
Zinc (Zn)-Total			<0.0030		mg/L		0.003	19-SEP-19
Zirconium (Zr)-Total			<0.00020		mg/L		0.0002	19-SEP-19
NH3-COL-WP		Water						
Batch	R4815489							
WG3164234-2	LCS							
Ammonia, Total (as N)			103.6		%		85-115	16-SEP-19
WG3164234-1	MB							
Ammonia, Total (as N)			<0.010		mg/L		0.01	16-SEP-19
OG-GRAV-WP		Water						



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Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
OG-GRAV-WP		Water						
Batch	R4827930							
WG3163645-2	LCS							
Oil and Grease			92.0		%		70-130	20-SEP-19
WG3163645-1	MB							
Oil and Grease			<5.0		mg/L		5	20-SEP-19
PAH,PANH-WP		Water						
Batch	R4822268							
WG3162777-2	LCS							
1-Methyl Naphthalene			114.7		%		60-130	17-SEP-19
2-Methyl Naphthalene			118.5		%		60-130	17-SEP-19
Acenaphthene			122.2		%		60-130	17-SEP-19
Acenaphthylene			108.1		%		60-130	17-SEP-19
Anthracene			86.3		%		60-130	17-SEP-19
Acridine			95.4		%		60-130	17-SEP-19
Benzo(a)anthracene			97.1		%		60-130	17-SEP-19
Benzo(a)pyrene			82.4		%		60-130	17-SEP-19
Benzo(b&j)fluoranthene			90.9		%		60-130	17-SEP-19
Benzo(g,h,i)perylene			109.7		%		60-130	17-SEP-19
Benzo(k)fluoranthene			113.9		%		60-130	17-SEP-19
Chrysene			107.4		%		60-130	17-SEP-19
Dibenzo(a,h)anthracene			94.8		%		60-130	17-SEP-19
Fluoranthene			123.0		%		60-130	17-SEP-19
Fluorene			113.7		%		60-130	17-SEP-19
Indeno(1,2,3-cd)pyrene			81.7		%		60-130	17-SEP-19
Naphthalene			120.1		%		50-130	17-SEP-19
Phenanthrene			118.8		%		60-130	17-SEP-19
Pyrene			121.7		%		60-130	17-SEP-19
Quinoline			112.1		%		60-130	17-SEP-19
WG3162777-1	MB							
1-Methyl Naphthalene			<0.000020		mg/L		0.00002	17-SEP-19
2-Methyl Naphthalene			<0.000020		mg/L		0.00002	17-SEP-19
Acenaphthene			<0.000020		mg/L		0.00002	17-SEP-19
Acenaphthylene			<0.000020		mg/L		0.00002	17-SEP-19
Anthracene			<0.000010		mg/L		0.00001	17-SEP-19
Acridine			<0.000020		mg/L		0.00002	17-SEP-19
Benzo(a)anthracene			<0.000010		mg/L		0.00001	17-SEP-19
Benzo(a)pyrene			<0.0000050		mg/L		0.000005	17-SEP-19



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Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
PAH,PANH-WP		Water						
Batch	R4822268							
WG3162777-1	MB							
Benzo(b&j)fluoranthene			<0.000010		mg/L		0.00001	17-SEP-19
Benzo(g,h,i)perylene			<0.000020		mg/L		0.00002	17-SEP-19
Benzo(k)fluoranthene			<0.000010		mg/L		0.00001	17-SEP-19
Chrysene			<0.000020		mg/L		0.00002	17-SEP-19
Dibenzo(a,h)anthracene			<0.0000050		mg/L		0.000005	17-SEP-19
Fluoranthene			<0.000020		mg/L		0.00002	17-SEP-19
Fluorene			<0.000020		mg/L		0.00002	17-SEP-19
Indeno(1,2,3-cd)pyrene			<0.000010		mg/L		0.00001	17-SEP-19
Naphthalene			<0.000050		mg/L		0.00005	17-SEP-19
Phenanthrene			<0.000050		mg/L		0.00005	17-SEP-19
Pyrene			<0.000010		mg/L		0.00001	17-SEP-19
Quinoline			<0.000020		mg/L		0.00002	17-SEP-19
Surrogate: Acenaphthene d10			108.2		%		60-130	17-SEP-19
Surrogate: Acridine d9			99.4		%		60-130	17-SEP-19
Surrogate: Chrysene d12			98.5		%		60-130	17-SEP-19
Surrogate: Naphthalene d8			108.2		%		50-130	17-SEP-19
Surrogate: Phenanthrene d10			105.4		%		60-130	17-SEP-19
PCB9-WT		Water						
Batch	R4813508							
WG3160465-2	LCS							
Aroclor 1242			101.3		%		65-130	17-SEP-19
Aroclor 1248			91.4		%		40-130	17-SEP-19
Aroclor 1254			91.5		%		65-135	17-SEP-19
Aroclor 1260			115.9		%		65-130	17-SEP-19
WG3160465-1	MB							
Aroclor 1016			<0.020		ug/L		0.02	17-SEP-19
Aroclor 1221			<0.020		ug/L		0.02	17-SEP-19
Aroclor 1232			<0.020		ug/L		0.02	17-SEP-19
Aroclor 1242			<0.020		ug/L		0.02	17-SEP-19
Aroclor 1248			<0.020		ug/L		0.02	17-SEP-19
Aroclor 1254			<0.020		ug/L		0.02	17-SEP-19
Aroclor 1260			<0.020		ug/L		0.02	17-SEP-19
Aroclor 1262			<0.020		ug/L		0.02	17-SEP-19
Aroclor 1268			<0.020		ug/L		0.02	17-SEP-19

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Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
PCB9-WT		Water						
Batch	R4813508							
WG3160465-1	MB							
Surrogate: d14-Terphenyl			83.7		%		40-130	17-SEP-19
PEST-DIAZINON-WT		Water						
Batch	R4818351							
WG3160465-2	LCS							
Diazinon			75.6		%		60-130	16-SEP-19
WG3160465-1	MB							
Diazinon			<0.10		ug/L		0.1	18-SEP-19
Surrogate: 2-Fluorobiphenyl			86.7		%		40-130	18-SEP-19
Surrogate: d14-Terphenyl			83.2		%		40-130	18-SEP-19
PEST-OC-WT		Water						
Batch	R4822711							
WG3160465-2	LCS							
Aldrin			68.7		%		50-150	19-SEP-19
a-chlordane			66.5		%		50-150	19-SEP-19
g-chlordane			66.5		%		50-150	19-SEP-19
alpha-BHC			96.8		%		50-150	19-SEP-19
beta-BHC			93.4		%		50-150	19-SEP-19
delta-BHC			95.7		%		50-150	19-SEP-19
o,p-DDD			72.2		%		50-150	19-SEP-19
pp-DDD			65.7		%		50-150	19-SEP-19
o,p-DDE			51.6		%		50-150	19-SEP-19
pp-DDE			51.6		%		50-150	19-SEP-19
op-DDT			64.3		%		50-150	19-SEP-19
pp-DDT			67.5		%		50-150	19-SEP-19
Dieldrin			93.5		%		50-150	19-SEP-19
alpha-Endosulfan			78.8		%		50-150	19-SEP-19
beta-Endosulfan			87.4		%		50-150	19-SEP-19
Endosulfan Sulfate			97.4		%		50-150	19-SEP-19
Endrin			129.9		%		50-150	19-SEP-19
Endrin Aldehyde			59.1		%		50-150	19-SEP-19
Hexachlorobenzene			74.3		%		40-130	19-SEP-19
Heptachlor			69.8		%		50-150	19-SEP-19
Heptachlor Epoxide			76.4		%		50-150	19-SEP-19
Lindane			98.6		%		50-150	19-SEP-19



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Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
PEST-OC-WT		Water						
Batch	R4822711							
WG3160465-2	LCS							
Methoxychlor			112.7		%		50-150	19-SEP-19
Mirex			42.8	MES	%		50-150	19-SEP-19
Oxychlorane			69.9		%		50-150	19-SEP-19
WG3160465-1	MB							
Aldrin			<0.10		ug/L		0.1	18-SEP-19
a-chlordane			<0.10		ug/L		0.1	18-SEP-19
g-chlordane			<0.10		ug/L		0.1	18-SEP-19
alpha-BHC			<0.10		ug/L		0.1	18-SEP-19
beta-BHC			<0.10		ug/L		0.1	18-SEP-19
delta-BHC			<0.10		ug/L		0.1	18-SEP-19
o,p-DDD			<0.10		ug/L		0.1	18-SEP-19
pp-DDD			<0.10		ug/L		0.1	18-SEP-19
o,p-DDE			<0.10		ug/L		0.1	18-SEP-19
pp-DDE			<0.10		ug/L		0.1	18-SEP-19
op-DDT			<0.10		ug/L		0.1	18-SEP-19
pp-DDT			<0.10		ug/L		0.1	18-SEP-19
Dieldrin			<0.10		ug/L		0.1	18-SEP-19
alpha-Endosulfan			<0.10		ug/L		0.1	18-SEP-19
beta-Endosulfan			<0.10		ug/L		0.1	18-SEP-19
Endosulfan Sulfate			<0.10		ug/L		0.1	18-SEP-19
Endrin			<0.10		ug/L		0.1	18-SEP-19
Endrin Aldehyde			<0.10		ug/L		0.1	18-SEP-19
Hexachlorobenzene			<0.10		ug/L		0.1	18-SEP-19
Heptachlor			<0.10		ug/L		0.1	18-SEP-19
Heptachlor Epoxide			<0.10		ug/L		0.1	18-SEP-19
Lindane			<0.10		ug/L		0.1	18-SEP-19
Methoxychlor			<0.10		ug/L		0.1	18-SEP-19
Mirex			<0.10		ug/L		0.1	18-SEP-19
Oxychlorane			<0.10		ug/L		0.1	18-SEP-19
Surrogate: 2-Fluorobiphenyl			79.1		%		40-130	18-SEP-19
Surrogate: d14-Terphenyl			122.0		%		40-130	18-SEP-19

PHENOLS-4AAP-WT **Water**

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PHENOLS-4AAP-WT		Water						
Batch	R4814988							
WG3163704-2	LCS							
Phenols (4AAP)			101.6		%		85-115	17-SEP-19
WG3163704-1	MB							
Phenols (4AAP)			<0.0010		mg/L		0.001	17-SEP-19
SO4-IC-N-WP		Water						
Batch	R4818044							
WG3160168-2	LCS							
Sulfate (SO4)			99.1		%		90-110	12-SEP-19
WG3160168-1	MB							
Sulfate (SO4)			<0.30		mg/L		0.3	12-SEP-19
TC,EC10-QT97-WP		Water						
Batch	R4801209							
WG3158838-1	MB							
Total Coliforms			<1		MPN/100mL		1	11-SEP-19
Escherichia Coli			<1		MPN/100mL		1	11-SEP-19
VOC+F1-HSMS-WP		Water						
Batch	R4814109							
WG3163016-2	LCS							
Acetone			117.4		%		70-130	16-SEP-19
Benzene			106.6		%		70-130	16-SEP-19
Bromobenzene			110.4		%		70-130	16-SEP-19
Bromochloromethane			112.7		%		70-130	16-SEP-19
Bromodichloromethane			103.8		%		70-130	16-SEP-19
Bromoform			107.6		%		70-130	16-SEP-19
Bromomethane			88.2		%		60-140	16-SEP-19
n-Butylbenzene			108.0		%		70-130	16-SEP-19
sec-Butylbenzene			115.4		%		70-130	16-SEP-19
tert-Butylbenzene			114.8		%		70-130	16-SEP-19
Carbon disulfide			91.6		%		70-130	16-SEP-19
Carbon Tetrachloride			106.7		%		70-130	16-SEP-19
Chlorobenzene			109.3		%		70-130	16-SEP-19
Chloroethane			90.5		%		60-140	16-SEP-19
Chloroform			107.1		%		70-130	16-SEP-19
Chloromethane			115.8		%		60-140	16-SEP-19
2-Chlorotoluene			122.1		%		70-130	16-SEP-19
4-Chlorotoluene			115.5		%		70-130	16-SEP-19

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Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
VOC+F1-HSMS-WP								
	Water							
Batch	R4814109							
WG3163016-2	LCS							
Dibromochloromethane			108.4		%		70-130	16-SEP-19
1,2-Dibromo-3-chloropropane			109.9		%		70-130	16-SEP-19
1,2-Dibromoethane			112.2		%		70-130	16-SEP-19
Dibromomethane			108.6		%		70-130	16-SEP-19
1,2-Dichlorobenzene			106.1		%		70-130	16-SEP-19
1,3-Dichlorobenzene			107.4		%		70-130	16-SEP-19
1,4-Dichlorobenzene			107.9		%		70-130	16-SEP-19
Dichlorodifluoromethane			119.1		%		60-140	16-SEP-19
1,1-dichloroethane			102.1		%		70-130	16-SEP-19
1,2-Dichloroethane			109.6		%		70-130	16-SEP-19
1,1-dichloroethene			104.8		%		70-130	16-SEP-19
cis-1,2-Dichloroethene			108.3		%		70-130	16-SEP-19
trans-1,2-Dichloroethene			99.8		%		70-130	16-SEP-19
Dichloromethane			101.6		%		70-130	16-SEP-19
1,2-Dichloropropane			106.0		%		70-130	16-SEP-19
1,3-Dichloropropane			110.7		%		70-130	16-SEP-19
2,2-Dichloropropane			90.0		%		70-130	16-SEP-19
1,1-Dichloropropene			108.1		%		70-130	16-SEP-19
cis-1,3-Dichloropropene			97.5		%		70-130	16-SEP-19
trans-1,3-Dichloropropene			103.8		%		70-130	16-SEP-19
Ethylbenzene			116.1		%		70-130	16-SEP-19
Hexachlorobutadiene			107.3		%		70-130	16-SEP-19
Hexane			90.1		%		70-130	16-SEP-19
2-Hexanone (Methyl butyl ketone)			101.5		%		70-130	16-SEP-19
Isopropylbenzene			107.1		%		70-130	16-SEP-19
4-Isopropyltoluene			109.7		%		70-130	16-SEP-19
MEK			102.1		%		70-130	16-SEP-19
MIBK			100.1		%		70-130	16-SEP-19
MTBE			109.4		%		70-130	16-SEP-19
Styrene			101.5		%		70-130	16-SEP-19
1,1,1,2-Tetrachloroethane			110.3		%		70-130	16-SEP-19
1,1,2,2-Tetrachloroethane			100.8		%		70-130	16-SEP-19
Tetrachloroethene			108.4		%		70-130	16-SEP-19
Toluene			113.3		%		70-130	16-SEP-19

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VOC+F1-HSMS-WP								
	Water							
Batch	R4814109							
WG3163016-2	LCS							
1,2,3-Trichlorobenzene			100.1		%		70-130	16-SEP-19
1,2,4-Trichlorobenzene			101.7		%		70-130	16-SEP-19
1,1,1-Trichloroethane			107.8		%		70-130	16-SEP-19
1,1,2-Trichloroethane			113.6		%		70-130	16-SEP-19
Trichloroethene			105.2		%		70-130	16-SEP-19
Trichlorofluoromethane			124.5		%		60-140	16-SEP-19
1,2,3-Trichloropropane			110.1		%		70-130	16-SEP-19
1,2,4-Trimethylbenzene			112.8		%		70-130	16-SEP-19
1,3,5-Trimethylbenzene			112.6		%		70-130	16-SEP-19
Vinyl Chloride			111.2		%		60-140	16-SEP-19
M+P-Xylenes			117.8		%		70-130	16-SEP-19
o-Xylene			115.3		%		70-130	16-SEP-19
WG3163016-3	LCS							
F1			102.7		%		70-130	16-SEP-19
WG3163016-1	MB							
Acetone			<0.050		mg/L		0.05	16-SEP-19
Benzene			<0.00050		mg/L		0.0005	16-SEP-19
Bromobenzene			<0.0010		mg/L		0.001	16-SEP-19
Bromochloromethane			<0.0010		mg/L		0.001	16-SEP-19
Bromodichloromethane			<0.00050		mg/L		0.0005	16-SEP-19
Bromoform			<0.0010		mg/L		0.001	16-SEP-19
Bromomethane			<0.0010		mg/L		0.001	16-SEP-19
n-Butylbenzene			<0.0010		mg/L		0.001	16-SEP-19
sec-Butylbenzene			<0.0010		mg/L		0.001	16-SEP-19
tert-Butylbenzene			<0.0010		mg/L		0.001	16-SEP-19
Carbon disulfide			<0.0050		mg/L		0.005	16-SEP-19
Carbon Tetrachloride			<0.00050		mg/L		0.0005	16-SEP-19
Chlorobenzene			<0.0010		mg/L		0.001	16-SEP-19
Chloroethane			<0.0010		mg/L		0.001	16-SEP-19
Chloroform			<0.00050		mg/L		0.0005	16-SEP-19
Chloromethane			<0.0050		mg/L		0.005	16-SEP-19
2-Chlorotoluene			<0.020		mg/L		0.02	16-SEP-19
4-Chlorotoluene			<0.0010		mg/L		0.001	16-SEP-19
Dibromochloromethane			<0.00050		mg/L		0.0005	16-SEP-19
1,2-Dibromo-3-chloropropane			<0.0010		mg/L		0.001	16-SEP-19



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VOC+F1-HSMS-WP	Water							
Batch	R4814109							
WG3163016-1 MB								
1,2-Dibromoethane			<0.0010		mg/L		0.001	16-SEP-19
Dibromomethane			<0.0010		mg/L		0.001	16-SEP-19
1,2-Dichlorobenzene			<0.00050		mg/L		0.0005	16-SEP-19
1,3-Dichlorobenzene			<0.0010		mg/L		0.001	16-SEP-19
1,4-Dichlorobenzene			<0.0010		mg/L		0.001	16-SEP-19
Dichlorodifluoromethane			<0.0010		mg/L		0.001	16-SEP-19
1,1-dichloroethane			<0.00050		mg/L		0.0005	16-SEP-19
1,2-Dichloroethane			<0.00050		mg/L		0.0005	16-SEP-19
1,1-dichloroethene			<0.00050		mg/L		0.0005	16-SEP-19
cis-1,2-Dichloroethene			<0.0010		mg/L		0.001	16-SEP-19
trans-1,2-Dichloroethene			<0.0010		mg/L		0.001	16-SEP-19
Dichloromethane			<0.0050		mg/L		0.005	16-SEP-19
1,2-Dichloropropane			<0.0010		mg/L		0.001	16-SEP-19
1,3-Dichloropropane			<0.0010		mg/L		0.001	16-SEP-19
2,2-Dichloropropane			<0.0010		mg/L		0.001	16-SEP-19
1,1-Dichloropropene			<0.0010		mg/L		0.001	16-SEP-19
cis-1,3-Dichloropropene			<0.0010		mg/L		0.001	16-SEP-19
trans-1,3-Dichloropropene			<0.0010		mg/L		0.001	16-SEP-19
Ethylbenzene			<0.00050		mg/L		0.0005	16-SEP-19
F1			<0.10		mg/L		0.1	16-SEP-19
Hexachlorobutadiene			<0.0010		mg/L		0.001	16-SEP-19
Hexane			<0.0010		mg/L		0.001	16-SEP-19
2-Hexanone (Methyl butyl ketone)			<0.020		mg/L		0.02	16-SEP-19
Isopropylbenzene			<0.0010		mg/L		0.001	16-SEP-19
4-Isopropyltoluene			<0.0010		mg/L		0.001	16-SEP-19
MEK			<0.020		mg/L		0.02	16-SEP-19
MIBK			<0.020		mg/L		0.02	16-SEP-19
MTBE			<0.00050		mg/L		0.0005	16-SEP-19
Styrene			<0.0010		mg/L		0.001	16-SEP-19
1,1,1,2-Tetrachloroethane			<0.00050		mg/L		0.0005	16-SEP-19
1,1,1,2,2-Tetrachloroethane			<0.00050		mg/L		0.0005	16-SEP-19
Tetrachloroethene			<0.00050		mg/L		0.0005	16-SEP-19
Toluene			<0.00050		mg/L		0.0005	16-SEP-19
1,2,3-Trichlorobenzene			<0.0010		mg/L		0.001	16-SEP-19



Quality Control Report

Workorder: L2345437

Report Date: 03-OCT-19

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Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
VOC+F1-HSMS-WP	Water							
Batch	R4814109							
WG3163016-1 MB								
1,2,4-Trichlorobenzene			<0.0010		mg/L		0.001	16-SEP-19
1,1,1-Trichloroethane			<0.00050		mg/L		0.0005	16-SEP-19
1,1,2-Trichloroethane			<0.00050		mg/L		0.0005	16-SEP-19
Trichloroethene			<0.00050		mg/L		0.0005	16-SEP-19
Trichlorofluoromethane			<0.0010		mg/L		0.001	16-SEP-19
1,2,3-Trichloropropane			<0.0010		mg/L		0.001	16-SEP-19
1,2,4-Trimethylbenzene			<0.0010		mg/L		0.001	16-SEP-19
1,3,5-Trimethylbenzene			<0.0010		mg/L		0.001	16-SEP-19
Vinyl Chloride			<0.00050		mg/L		0.0005	16-SEP-19
M+P-Xylenes			<0.00040		mg/L		0.0004	16-SEP-19
o-Xylene			<0.00050		mg/L		0.0005	16-SEP-19
Surrogate: 4-Bromofluorobenzene (SS)			92.1		%		70-130	16-SEP-19
Surrogate: 1,4-Difluorobenzene (SS)			100.3		%		70-130	16-SEP-19

Quality Control Report

Workorder: L2345437

Report Date: 03-OCT-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
LCS-L	Lab Control Sample recovery was below ALS DQO. Reference Material and/or Matrix Spike results were acceptable. Non-detected sample results are considered reliable. Other results, if reported, have been qualified.
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).

Quality Control Report

Workorder: L2345437

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Hold Time Exceedances:

ALS Product Description	Sample ID	Sampling Date	Date Processed	Rec. HT	Actual HT	Units	Qualifier
Volatile Organic Compounds							
VOC plus F1 by GCMS	3	11-SEP-19 09:45	30-SEP-19 15:06	14	19	days	EHT

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 L2345437 were received on 11-SEP-19 15:00.

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.

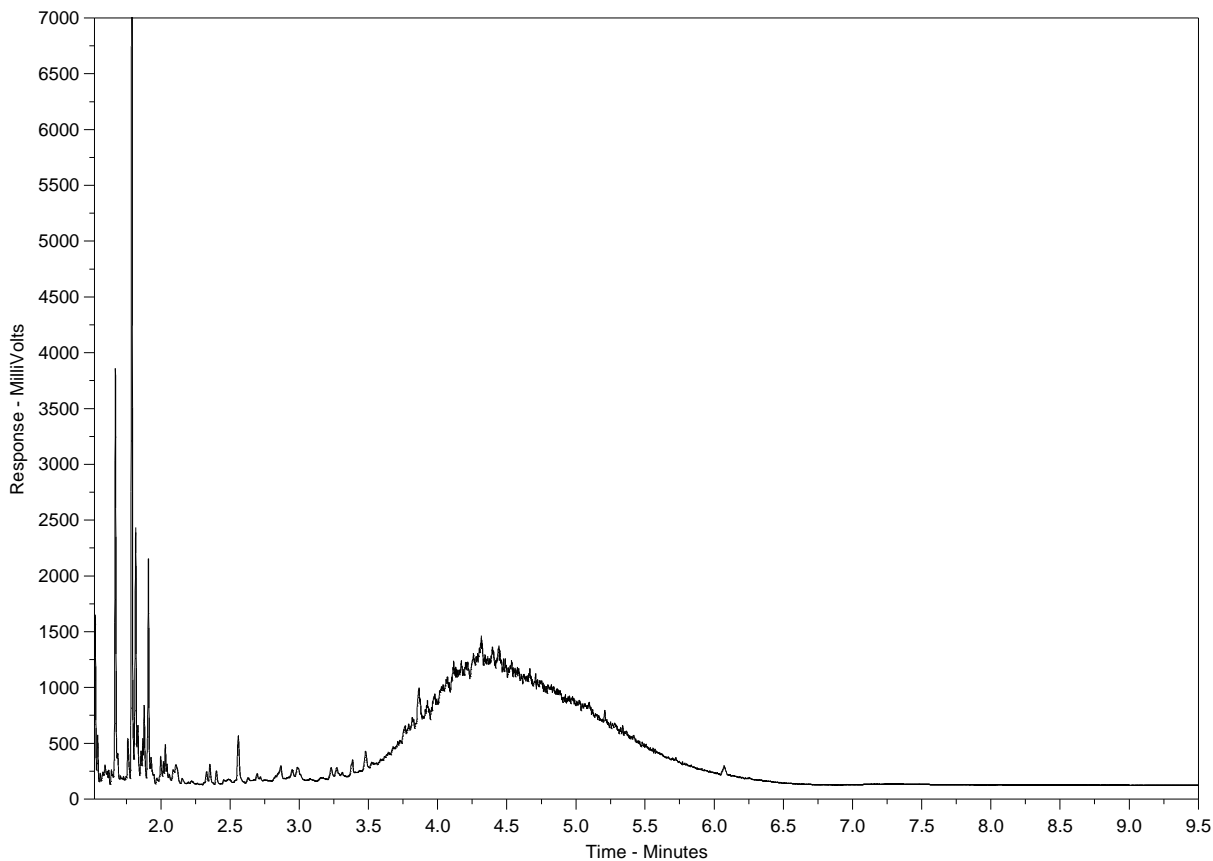
The ALS Quality Control Report is provided to ALS clients upon request. ALS includes comprehensive QC checks with every analysis to ensure our high standards of quality are met. Each QC result has a known or expected target value, which is compared against pre-determined data quality objectives to provide 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: L2345437-1
 Client Sample ID: LQ25-MH3



← 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.

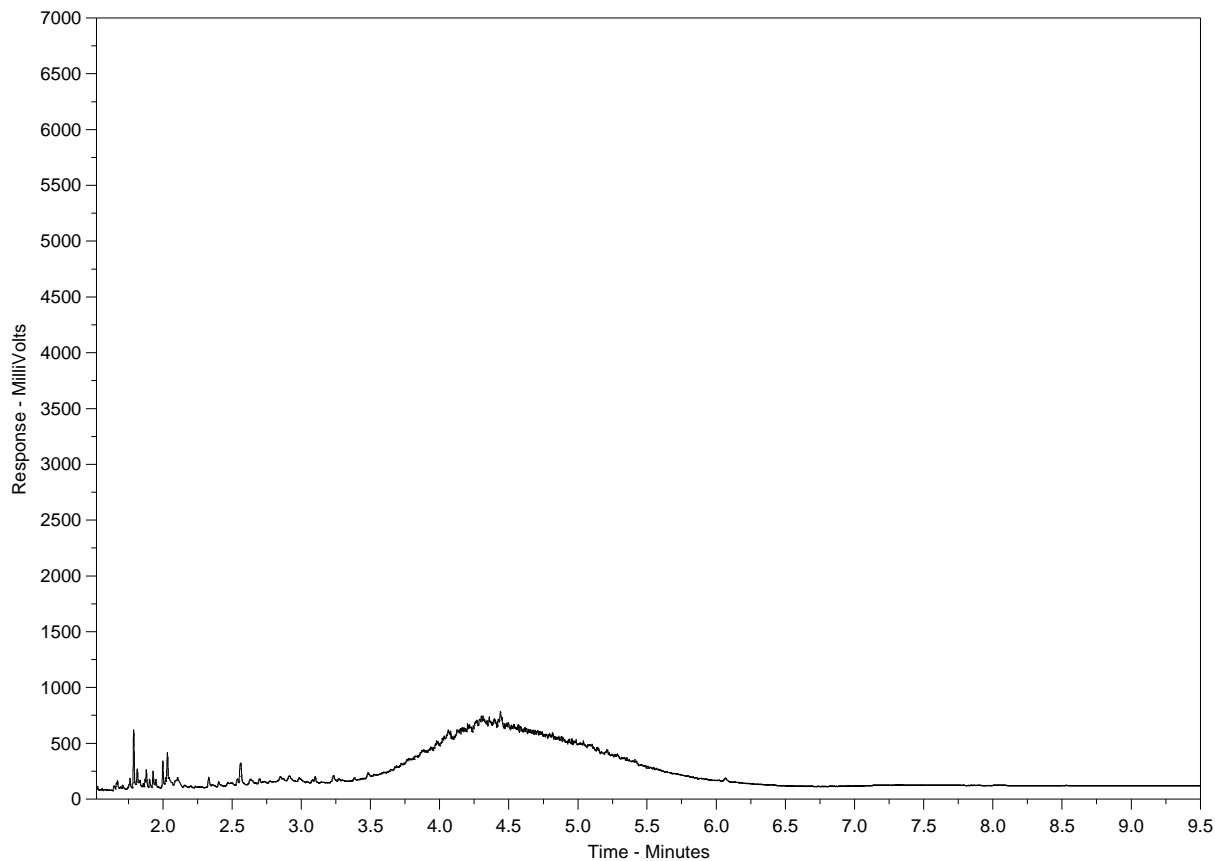
Peak heights in this report are a function of the sample concentration, the sample amount extracted, the sample dilution factor, and the scale at left.

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: L2345437-2
 Client Sample ID: LQ25-MH31



← 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.

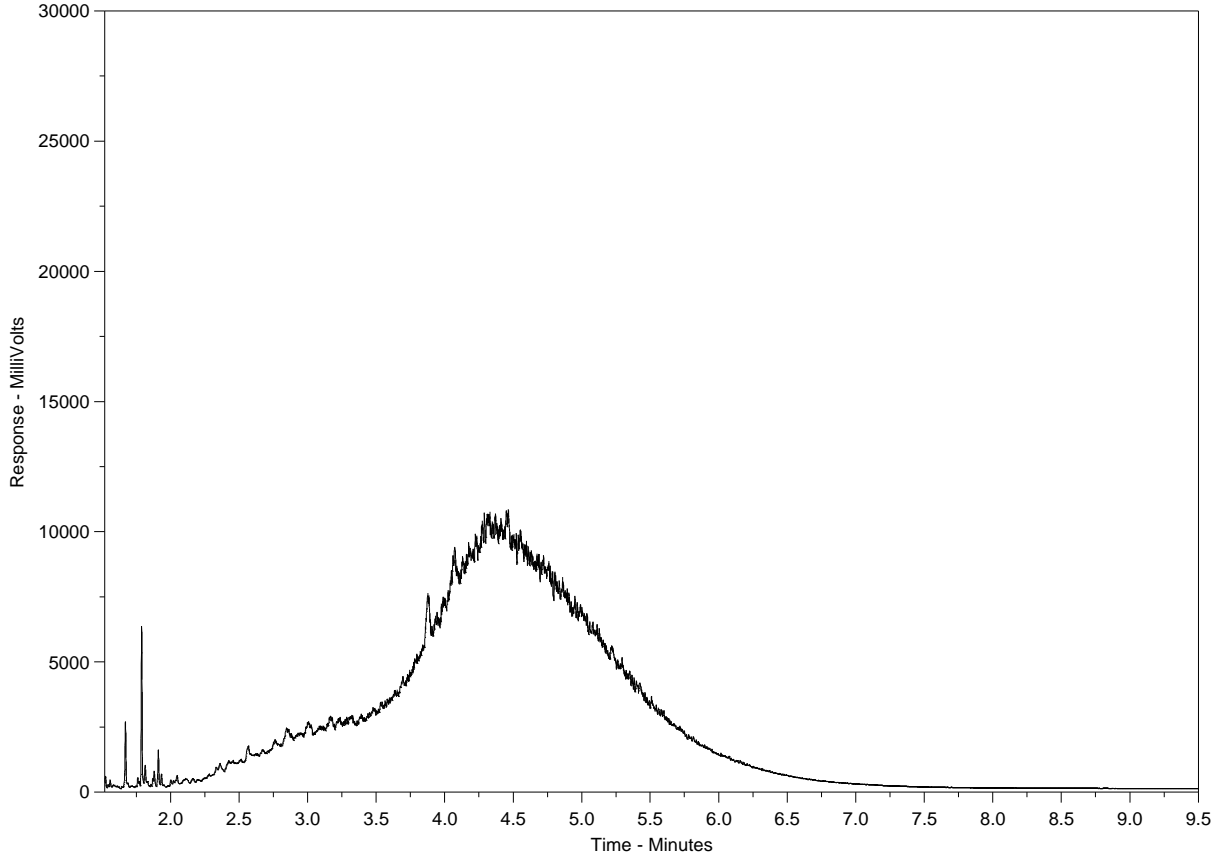
Peak heights in this report are a function of the sample concentration, the sample amount extracted, the sample dilution factor, and the scale at left.

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: L2345437-3
 Client Sample ID: LQ25-MH8



← 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.

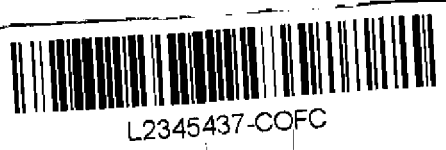
Note: This chromatogram was produced using GC conditions that are specific to ALS Canada CCME F2-F4 method. Refer to the ALS Canada CCME F2-F4 Hydrocarbon Library for a collection of chromatograms from common reference samples (fuels, oils, etc.). The HDR library can be found at www.alsglobal.com.



Chain of Custody (COC) / Analytical Request Form

Canada Toll Free: 1 800 668 9878

www.alsglobal.com



COC Number: 15 -

Page of

Report To Contact and company name below will appear on the final report		Report Format / Dist Please confirm all E&P TATs with your AM - surcharges will apply																						
Company: City of Winnipeg	Select Report Format: <input checked="" type="checkbox"/> PDF <input type="checkbox"/> EXCEL <input type="checkbox"/> EDD (DIGITAL)	Regular [R] <input type="checkbox"/> Standard TAT if received by 3 pm - business days - no surcharges apply																						
Contact: Chris Kozak	Quality Control (QC) Report with Report <input checked="" type="checkbox"/> YES <input type="checkbox"/> NO	PRIORITY (Business Days)	EMERGENCY																					
Phone: 204-986-2384	<input type="checkbox"/> Compare Results to Criteria on Report - provide details below if box checked	4 day [P4] <input type="checkbox"/>	1 Business day [E1] <input type="checkbox"/>																					
Company address below will appear on the final report		3 day [P3] <input type="checkbox"/>	Same Day, Weekend or Statutory holiday [E0] <input type="checkbox"/>																					
Street: 1120 Waverly Street	Select Distribution: <input checked="" type="checkbox"/> EMAIL <input type="checkbox"/> MAIL <input type="checkbox"/> FAX	Date and Time Required for all E&P TATs: _____																						
City/Province: Winnipeg, Manitoba	Email 1 or Fax: ckozak@winnipeg.ca	For tests that can not be performed according to the service level selected, you will be contacted.																						
Postal Code: R3T 0P4	Email 2	Analysis Request																						
Invoice To: Same as Report To <input type="checkbox"/> YES <input type="checkbox"/> NO	Invoice Distribution		Number of Containers																					
Copy of Invoice with Report <input type="checkbox"/> YES <input type="checkbox"/> NO	Select Invoice Distribution: <input type="checkbox"/> EMAIL <input checked="" type="checkbox"/> MAIL <input type="checkbox"/> FAX	Indicate Filtered (F), Preserved (P) or Filtered and Preserved (F/P) below																						
Company:	Email 1 or Fax	CN-T-L-CFA-VA, NH3-COL-WP		Number of Containers																				
Contact:	Email 2	PEST-ROUTINE-WT, PEST-DIAZINON-WT																						
Project Information		HERBSCR-LCMS-WT, PCB9-WT																						
ALS Account # / Quote #: W10051/Q67317	Oil and Gas Required Fields (client use)																							
Job #: Section C - BRRMF LEACHATE	AFE/Cost Center:	TC, FC, EC-QT97-WP																						
PO / AFE:	Major/Minor Code:	CL-IC-N-WP, SO4-IC-N-WP, ALK-SPEC-WP																						
LSD:	Requisitioner:	OGG-GRAV-WP																						
ALS Lab Work Order # (lab use only): L2345437	ALS Contact:	C-TDC, DIC, DOC-HTC-WP																						
	Sampler:	MET-D-COMS-WP, MET-T-COMS-WP																						
		HG-D-CVAF-WP, HG-T-CVAF-WP																						
ALS Sample # (lab use only)	Sample Identification and/or Coordinates (This description will appear on the report)	Date (dd-mm-yy)	Time (hh:mm)	Sample Type	CN-T-L-CFA-VA, NH3-COL-WP	PEST-ROUTINE-WT, PEST-DIAZINON-WT	HERBSCR-LCMS-WT, PCB9-WT	TC, FC, EC-QT97-WP	CL-IC-N-WP, SO4-IC-N-WP, ALK-SPEC-WP	OGG-GRAV-WP	C-TDC, DIC, DOC-HTC-WP	MET-D-COMS-WP, MET-T-COMS-WP	HG-D-CVAF-WP, HG-T-CVAF-WP	CR-CR6-IC-WT	PHENOLS-4AAP-WT	VOC-F1-F4-WP, PAH, PANH-WP	MBOCA-WT	Number of Containers						
	MHWB LQ25-MH3 # 238464	11-09-19	9:45	WATER																				
	LQ25-MH31 # 238469	11-09-19	10:45	WATER																				
	LQ25-MH8 # 238465	11-09-19	13:05	WATER																				
				WATER																				
				WATER																				
				WATER																				
				WATER																				
				WATER																				
				WATER																				
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 type="checkbox"/> NO				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 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"/>																				
				INITIAL COOLER TEMPERATURES °C								FINAL COOLER TEMPERATURES °C												
				12.1																				
SHIPMENT RELEASE (client use)				INITIAL SHIPMENT RECEPTION (lab use only)								FINAL SHIPMENT RECEPTION (lab use only)												
Released by: Adam Cox	Date: 11-09-19	Time: 14:59	Received by: [Signature]	Date: Sept 11	Time: 3	Received by: [Signature]	Date: Sept 11	Time: 3																



City of Winnipeg - Solid Waste Services Div
(1120 Waverley)
ATTN: CHRIS KOZAK
Solid Waste Services Division
1120 Waverley Street
Winnipeg MB R3T 0P4

Date Received: 12-SEP-19
Report Date: 27-SEP-19 15:22 (MT)
Version: FINAL

Client Phone: 204-986-2384

Certificate of Analysis

Lab Work Order #: L2346134
Project P.O. #: NOT SUBMITTED
Job Reference: SECTION C - BRRMF LEACHATE
C of C Numbers:
Legal Site Desc:

Hua Wo
Chemistry Laboratory Manager

[This report shall not be reproduced except in full without the written authority of the Laboratory.]

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
L2346134-1 LQ25 - TRIP BLANK							
Sampled By: CLIENT on 12-SEP-19 @ 08:30							
Matrix: WATER							
Alkalinity species as HCO3, CO3, OH							
Alkalinity, Bicarbonate							
Bicarbonate (HCO3)	<1200		1200	ug/L		16-SEP-19	
Alkalinity, Carbonate							
Carbonate (CO3)	<600		600	ug/L		16-SEP-19	
Alkalinity, Hydroxide							
Hydroxide (OH)	<340		340	ug/L		16-SEP-19	
Alkalinity, Total (as CaCO3)							
Alkalinity, Total (as CaCO3)	<1000		1000	ug/L		13-SEP-19	R4809090
Dissolved Carbons							
Dissolved Inorganic Carbon by Combustion							
Dissolved Inorganic Carbon	<500		500	ug/L		18-SEP-19	R4823547
Dissolved Organic Carbon by Combustion							
Dissolved Organic Carbon	<500		500	ug/L		17-SEP-19	R4819352
Total Dissolved Carbon by Calculation							
Total Dissolved Carbon	<1000		1000	ug/L		19-SEP-19	
Miscellaneous Parameters							
Ammonia, Total (as N)	17		10	ug/L		18-SEP-19	R4821389
Chloride (Cl)	<500		500	ug/L		13-SEP-19	R4819249
Chromium, Hexavalent	<0.50		0.50	ug/L		16-SEP-19	R4813730
Cyanide, Total	1.1		1.0	ug/L		26-SEP-19	R4848820
Mercury (Hg)-Total	<0.0050		0.0050	ug/L	19-SEP-19	19-SEP-19	R4827412
Oil and Grease	<5000		5000	ug/L		23-SEP-19	R4832794
Phenols (4AAP)	<1.0		1.0	ug/L		17-SEP-19	R4814988
Sulfate (SO4)	<300		300	ug/L		13-SEP-19	R4819249
Total Metals in Water by CRC ICPMS							
Aluminum (Al)-Total	<3.0		3.0	ug/L	19-SEP-19	19-SEP-19	R4831868
Antimony (Sb)-Total	<0.10		0.10	ug/L	19-SEP-19	19-SEP-19	R4831868
Arsenic (As)-Total	<0.10		0.10	ug/L	19-SEP-19	19-SEP-19	R4831868
Barium (Ba)-Total	<0.10		0.10	ug/L	19-SEP-19	19-SEP-19	R4831868
Beryllium (Be)-Total	<0.10		0.10	ug/L	19-SEP-19	19-SEP-19	R4831868
Bismuth (Bi)-Total	<0.050		0.050	ug/L	19-SEP-19	19-SEP-19	R4831868
Boron (B)-Total	<10		10	ug/L	19-SEP-19	19-SEP-19	R4831868
Cadmium (Cd)-Total	<0.0050		0.0050	ug/L	19-SEP-19	19-SEP-19	R4831868
Calcium (Ca)-Total	<50		50	ug/L	19-SEP-19	19-SEP-19	R4831868
Cesium (Cs)-Total	<0.010		0.010	ug/L	19-SEP-19	19-SEP-19	R4831868
Chromium (Cr)-Total	<0.10		0.10	ug/L	19-SEP-19	19-SEP-19	R4831868
Cobalt (Co)-Total	<0.10		0.10	ug/L	19-SEP-19	19-SEP-19	R4831868
Copper (Cu)-Total	1.25		0.50	ug/L	19-SEP-19	19-SEP-19	R4831868
Iron (Fe)-Total	<10		10	ug/L	19-SEP-19	19-SEP-19	R4831868
Lead (Pb)-Total	<0.050		0.050	ug/L	19-SEP-19	19-SEP-19	R4831868
Lithium (Li)-Total	<1.0		1.0	ug/L	19-SEP-19	19-SEP-19	R4831868
Magnesium (Mg)-Total	<5.0		5.0	ug/L	19-SEP-19	19-SEP-19	R4831868
Manganese (Mn)-Total	<0.10		0.10	ug/L	19-SEP-19	19-SEP-19	R4831868
Molybdenum (Mo)-Total	<0.050		0.050	ug/L	19-SEP-19	19-SEP-19	R4831868
Nickel (Ni)-Total	<0.50		0.50	ug/L	19-SEP-19	19-SEP-19	R4831868
Potassium (K)-Total	<50		50	ug/L	19-SEP-19	19-SEP-19	R4831868
Phosphorus (P)-Total	<30		30	ug/L	19-SEP-19	19-SEP-19	R4831868
Rubidium (Rb)-Total	<0.20		0.20	ug/L	19-SEP-19	19-SEP-19	R4831868
Selenium (Se)-Total	<0.050		0.050	ug/L	19-SEP-19	19-SEP-19	R4831868
Silicon (Si)-Total	<100		100	ug/L	19-SEP-19	19-SEP-19	R4831868
Silver (Ag)-Total	<0.010		0.010	ug/L	19-SEP-19	19-SEP-19	R4831868

* 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
L2346134-1 LQ25 - TRIP BLANK							
Sampled By: CLIENT on 12-SEP-19 @ 08:30							
Matrix: WATER							
Total Metals in Water by CRC ICPMS							
Sodium (Na)-Total	<50		50	ug/L	19-SEP-19	19-SEP-19	R4831868
Strontium (Sr)-Total	<0.20		0.20	ug/L	19-SEP-19	19-SEP-19	R4831868
Sulfur (S)-Total	<500		500	ug/L	19-SEP-19	19-SEP-19	R4831868
Tellurium (Te)-Total	<0.20		0.20	ug/L	19-SEP-19	19-SEP-19	R4831868
Thallium (Tl)-Total	<0.010		0.010	ug/L	19-SEP-19	19-SEP-19	R4831868
Thorium (Th)-Total	<0.10		0.10	ug/L	19-SEP-19	19-SEP-19	R4831868
Tin (Sn)-Total	<0.10		0.10	ug/L	19-SEP-19	19-SEP-19	R4831868
Titanium (Ti)-Total	<0.30		0.30	ug/L	19-SEP-19	19-SEP-19	R4831868
Tungsten (W)-Total	<0.10		0.10	ug/L	19-SEP-19	19-SEP-19	R4831868
Uranium (U)-Total	<0.010		0.010	ug/L	19-SEP-19	19-SEP-19	R4831868
Vanadium (V)-Total	<0.50		0.50	ug/L	19-SEP-19	19-SEP-19	R4831868
Zinc (Zn)-Total	<3.0		3.0	ug/L	19-SEP-19	19-SEP-19	R4831868
Zirconium (Zr)-Total	<0.20		0.20	ug/L	19-SEP-19	19-SEP-19	R4831868
Dissolved Metals in Water by CRC ICPMS							
Dissolved Metals Filtration Location	FIELD					19-SEP-19	R4823571
Aluminum (Al)-Dissolved	<1.0		1.0	ug/L	19-SEP-19	19-SEP-19	R4831868
Antimony (Sb)-Dissolved	<0.10		0.10	ug/L	19-SEP-19	19-SEP-19	R4831868
Arsenic (As)-Dissolved	<0.10		0.10	ug/L	19-SEP-19	19-SEP-19	R4831868
Barium (Ba)-Dissolved	<0.10		0.10	ug/L	19-SEP-19	19-SEP-19	R4831868
Beryllium (Be)-Dissolved	<0.10		0.10	ug/L	19-SEP-19	19-SEP-19	R4831868
Bismuth (Bi)-Dissolved	<0.050		0.050	ug/L	19-SEP-19	19-SEP-19	R4831868
Boron (B)-Dissolved	<10		10	ug/L	19-SEP-19	19-SEP-19	R4831868
Cadmium (Cd)-Dissolved	<0.0050		0.0050	ug/L	19-SEP-19	19-SEP-19	R4831868
Calcium (Ca)-Dissolved	<50		50	ug/L	19-SEP-19	19-SEP-19	R4831868
Cesium (Cs)-Dissolved	<0.010		0.010	ug/L	19-SEP-19	19-SEP-19	R4831868
Chromium (Cr)-Dissolved	<0.10		0.10	ug/L	19-SEP-19	19-SEP-19	R4831868
Cobalt (Co)-Dissolved	<0.10		0.10	ug/L	19-SEP-19	19-SEP-19	R4831868
Copper (Cu)-Dissolved	<0.20		0.20	ug/L	19-SEP-19	19-SEP-19	R4831868
Iron (Fe)-Dissolved	<10		10	ug/L	19-SEP-19	19-SEP-19	R4831868
Lead (Pb)-Dissolved	<0.050		0.050	ug/L	19-SEP-19	19-SEP-19	R4831868
Lithium (Li)-Dissolved	<1.0		1.0	ug/L	19-SEP-19	19-SEP-19	R4831868
Magnesium (Mg)-Dissolved	<5.0		5.0	ug/L	19-SEP-19	19-SEP-19	R4831868
Manganese (Mn)-Dissolved	<0.10		0.10	ug/L	19-SEP-19	19-SEP-19	R4831868
Molybdenum (Mo)-Dissolved	<0.050		0.050	ug/L	19-SEP-19	19-SEP-19	R4831868
Nickel (Ni)-Dissolved	<0.50		0.50	ug/L	19-SEP-19	19-SEP-19	R4831868
Phosphorus (P)-Dissolved	<30		30	ug/L	19-SEP-19	19-SEP-19	R4831868
Potassium (K)-Dissolved	<50		50	ug/L	19-SEP-19	19-SEP-19	R4831868
Rubidium (Rb)-Dissolved	<0.20		0.20	ug/L	19-SEP-19	19-SEP-19	R4831868
Selenium (Se)-Dissolved	<0.050		0.050	ug/L	19-SEP-19	19-SEP-19	R4831868
Silicon (Si)-Dissolved	<50		50	ug/L	19-SEP-19	19-SEP-19	R4831868
Silver (Ag)-Dissolved	<0.010		0.010	ug/L	19-SEP-19	19-SEP-19	R4831868
Sodium (Na)-Dissolved	<50		50	ug/L	19-SEP-19	19-SEP-19	R4831868
Strontium (Sr)-Dissolved	<0.10		0.10	ug/L	19-SEP-19	19-SEP-19	R4831868
Sulfur (S)-Dissolved	<500		500	ug/L	19-SEP-19	19-SEP-19	R4831868
Tellurium (Te)-Dissolved	<0.20		0.20	ug/L	19-SEP-19	19-SEP-19	R4831868
Thallium (Tl)-Dissolved	<0.010		0.010	ug/L	19-SEP-19	19-SEP-19	R4831868
Thorium (Th)-Dissolved	<0.10		0.10	ug/L	19-SEP-19	19-SEP-19	R4831868
Tin (Sn)-Dissolved	<0.10		0.10	ug/L	19-SEP-19	19-SEP-19	R4831868
Titanium (Ti)-Dissolved	<0.30		0.30	ug/L	19-SEP-19	19-SEP-19	R4831868
Tungsten (W)-Dissolved	<0.10		0.10	ug/L	19-SEP-19	19-SEP-19	R4831868
Uranium (U)-Dissolved	<0.010		0.010	ug/L	19-SEP-19	19-SEP-19	R4831868

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ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2346134-1 LQ25 - TRIP BLANK							
Sampled By: CLIENT on 12-SEP-19 @ 08:30							
Matrix: WATER							
Dissolved Metals in Water by CRC ICPMS							
Vanadium (V)-Dissolved	<0.50		0.50	ug/L	19-SEP-19	19-SEP-19	R4831868
Zinc (Zn)-Dissolved	<1.0		1.0	ug/L	19-SEP-19	19-SEP-19	R4831868
Zirconium (Zr)-Dissolved	<0.20		0.20	ug/L	19-SEP-19	19-SEP-19	R4831868
Mercury Dissolved							
Dissolved Mercury Filtration Location	FIELD					18-SEP-19	R4826808
Mercury (Hg)-Dissolved	<0.0050		0.0050	ug/L	19-SEP-19	19-SEP-19	R4827450
Polyaromatic Hydrocarbons (PAHs)							
1-Methyl Naphthalene	<0.020		0.020	ug/L	13-SEP-19	18-SEP-19	R4822268
2-Methyl Naphthalene	<0.020		0.020	ug/L	13-SEP-19	18-SEP-19	R4822268
Acenaphthene	<0.020		0.020	ug/L	13-SEP-19	18-SEP-19	R4822268
Acenaphthylene	<0.020		0.020	ug/L	13-SEP-19	18-SEP-19	R4822268
Anthracene	<0.010		0.010	ug/L	13-SEP-19	18-SEP-19	R4822268
Acridine	<0.020		0.020	ug/L	13-SEP-19	18-SEP-19	R4822268
Benzo(a)anthracene	<0.010		0.010	ug/L	13-SEP-19	18-SEP-19	R4822268
Benzo(a)pyrene	<0.0050		0.0050	ug/L	13-SEP-19	18-SEP-19	R4822268
Benzo(b&j)fluoranthene	<0.010		0.010	ug/L	13-SEP-19	18-SEP-19	R4822268
Benzo(g,h,i)perylene	<0.020		0.020	ug/L	13-SEP-19	18-SEP-19	R4822268
Benzo(k)fluoranthene	<0.010		0.010	ug/L	13-SEP-19	18-SEP-19	R4822268
Chrysene	<0.020		0.020	ug/L	13-SEP-19	18-SEP-19	R4822268
Dibenzo(a,h)anthracene	<0.0050		0.0050	ug/L	13-SEP-19	18-SEP-19	R4822268
Fluoranthene	<0.020		0.020	ug/L	13-SEP-19	18-SEP-19	R4822268
Fluorene	<0.020		0.020	ug/L	13-SEP-19	18-SEP-19	R4822268
Indeno(1,2,3-cd)pyrene	<0.010		0.010	ug/L	13-SEP-19	18-SEP-19	R4822268
Naphthalene	<0.050		0.050	ug/L	13-SEP-19	18-SEP-19	R4822268
Phenanthrene	<0.050		0.050	ug/L	13-SEP-19	18-SEP-19	R4822268
Pyrene	<0.010		0.010	ug/L	13-SEP-19	18-SEP-19	R4822268
Quinoline	<0.020		0.020	ug/L	13-SEP-19	18-SEP-19	R4822268
B(a)P Total Potency Equivalent	<0.030		0.030	ug/L	13-SEP-19	18-SEP-19	R4822268
Surrogate: Acenaphthene d10	98.4		60-130	%	13-SEP-19	18-SEP-19	R4822268
Surrogate: Acridine d9	109.6		60-130	%	13-SEP-19	18-SEP-19	R4822268
Surrogate: Chrysene d12	108.6		60-130	%	13-SEP-19	18-SEP-19	R4822268
Surrogate: Naphthalene d8	92.0		50-130	%	13-SEP-19	18-SEP-19	R4822268
Surrogate: Phenanthrene d10	103.1		60-130	%	13-SEP-19	18-SEP-19	R4822268
PCBs							
Aroclor 1016	<0.020		0.020	ug/L	19-SEP-19	19-SEP-19	R4823271
Aroclor 1221	<0.020		0.020	ug/L	19-SEP-19	19-SEP-19	R4823271
Aroclor 1232	<0.020		0.020	ug/L	19-SEP-19	19-SEP-19	R4823271
Aroclor 1242	<0.020		0.020	ug/L	19-SEP-19	19-SEP-19	R4823271
Aroclor 1248	<0.020		0.020	ug/L	19-SEP-19	19-SEP-19	R4823271
Aroclor 1254	<0.020		0.020	ug/L	19-SEP-19	19-SEP-19	R4823271
Aroclor 1260	<0.020		0.020	ug/L	19-SEP-19	19-SEP-19	R4823271
Aroclor 1262	<0.020		0.020	ug/L	19-SEP-19	19-SEP-19	R4823271
Aroclor 1268	<0.020		0.020	ug/L	19-SEP-19	19-SEP-19	R4823271
Total PCBs	<0.060		0.060	ug/L	19-SEP-19	19-SEP-19	R4823271
Surrogate: Decachlorobiphenyl	96.9		50-150	%	19-SEP-19	19-SEP-19	R4823271
Surrogate: Tetrachloro-m-xylene	88.4		50-150	%	19-SEP-19	19-SEP-19	R4823271
Pesticides, Organochlorine in Water							
Aldrin	<0.080	DLM	0.080	ug/L	18-SEP-19	19-SEP-19	R4822286
gamma-hexachlorocyclohexane	<0.080	DLM	0.080	ug/L	18-SEP-19	19-SEP-19	R4822286
a-chlordane	<0.080	DLM	0.080	ug/L	18-SEP-19	19-SEP-19	R4822286
g-chlordane	<0.080	DLM	0.080	ug/L	18-SEP-19	19-SEP-19	R4822286
alpha-BHC	<0.080	DLM	0.080	ug/L	18-SEP-19	19-SEP-19	R4822286

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ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2346134-1 LQ25 - TRIP BLANK							
Sampled By: CLIENT on 12-SEP-19 @ 08:30							
Matrix: WATER							
Pesticides, Organochlorine in Water							
beta-BHC	<0.080	DLM	0.080	ug/L	18-SEP-19	19-SEP-19	R4822286
delta-BHC	<0.080	DLM	0.080	ug/L	18-SEP-19	19-SEP-19	R4822286
o,p-DDD	<0.040	DLM	0.040	ug/L	18-SEP-19	19-SEP-19	R4822286
pp-DDD	<0.040	DLM	0.040	ug/L	18-SEP-19	19-SEP-19	R4822286
o,p-DDE	<0.040	DLM	0.040	ug/L	18-SEP-19	19-SEP-19	R4822286
pp-DDE	<0.040	DLM	0.040	ug/L	18-SEP-19	19-SEP-19	R4822286
op-DDT	<0.040	DLM	0.040	ug/L	18-SEP-19	19-SEP-19	R4822286
pp-DDT	<0.040	DLM	0.040	ug/L	18-SEP-19	19-SEP-19	R4822286
Dieldrin	<0.080	DLM	0.080	ug/L	18-SEP-19	19-SEP-19	R4822286
Endosulfan I	<0.070	DLM	0.070	ug/L	18-SEP-19	19-SEP-19	R4822286
Endosulfan II	<0.070	DLM	0.070	ug/L	18-SEP-19	19-SEP-19	R4822286
Endosulfan Sulfate	<0.070	DLM	0.070	ug/L	18-SEP-19	19-SEP-19	R4822286
Endrin	<0.10	DLM	0.10	ug/L	18-SEP-19	19-SEP-19	R4822286
Endrin Aldehyde	<0.10	DLM	0.10	ug/L	18-SEP-19	19-SEP-19	R4822286
Heptachlor	<0.080	DLM	0.080	ug/L	18-SEP-19	19-SEP-19	R4822286
Heptachlor Epoxide	<0.080	DLM	0.080	ug/L	18-SEP-19	19-SEP-19	R4822286
Hexachlorobenzene	<0.080	DLM	0.080	ug/L	18-SEP-19	19-SEP-19	R4822286
Hexachlorobutadiene	<0.080	DLM	0.080	ug/L	18-SEP-19	19-SEP-19	R4822286
Hexachloroethane	<0.080	DLM	0.080	ug/L	18-SEP-19	19-SEP-19	R4822286
Methoxychlor	<0.080	DLM	0.080	ug/L	18-SEP-19	19-SEP-19	R4822286
Mirex	<0.080	DLM	0.080	ug/L	18-SEP-19	19-SEP-19	R4822286
Oxychlorane	<0.080	DLM	0.080	ug/L	18-SEP-19	19-SEP-19	R4822286
Surrogate: Decachlorobiphenyl	98.0		40-130	%	18-SEP-19	19-SEP-19	R4822286
Surrogate: Tetrachloro-m-xylene	90.3		40-130	%	18-SEP-19	19-SEP-19	R4822286
Herbicides in Water							
Clopyralid	<0.10		0.10	ug/L	13-SEP-19	13-SEP-19	R4809956
Dicamba	<0.10		0.10	ug/L	13-SEP-19	13-SEP-19	R4809956
Mecoprop	<0.10		0.10	ug/L	13-SEP-19	13-SEP-19	R4809956
MCPA	<0.10		0.10	ug/L	13-SEP-19	13-SEP-19	R4809956
2,4-D	<0.10		0.10	ug/L	13-SEP-19	13-SEP-19	R4809956
Bromoxynil	<0.10		0.10	ug/L	13-SEP-19	13-SEP-19	R4809956
Triclopyr	<0.10		0.10	ug/L	13-SEP-19	13-SEP-19	R4809956
2,4,5-T	<0.10		0.10	ug/L	13-SEP-19	13-SEP-19	R4809956
2,4,5-TP	<0.10		0.10	ug/L	13-SEP-19	13-SEP-19	R4809956
Picloram	<0.10		0.10	ug/L	13-SEP-19	13-SEP-19	R4809956
2,4-DB	<0.10		0.10	ug/L	13-SEP-19	13-SEP-19	R4809956
2,4-DP	<0.10		0.10	ug/L	13-SEP-19	13-SEP-19	R4809956
Dinoseb	<0.10		0.10	ug/L	13-SEP-19	13-SEP-19	R4809956
MCPB	<0.10		0.10	ug/L	13-SEP-19	13-SEP-19	R4809956
Surrogate: 2,4-Dichlorophenylacetic Acid	113.0		50-130	%	13-SEP-19	13-SEP-19	R4809956
Miscellaneous Pesticides							
Diazinon	<0.10		0.10	ug/L	19-SEP-19	23-SEP-19	R4833867
Surrogate: 2-Fluorobiphenyl	75.5		40-130	%	19-SEP-19	23-SEP-19	R4833867
Surrogate: d14-Terphenyl	90.1		40-130	%	19-SEP-19	23-SEP-19	R4833867
4,4'-Methylenebis(2-chloroaniline)							
4,4'-Methylenebis(2-chloroaniline)	<0.50		0.50	ug/L	19-SEP-19	23-SEP-19	R4832116
Surrogate: p-Terphenyl d14	82.7		40-130	%	19-SEP-19	23-SEP-19	R4832116
Total, Fecal Coliforms, E Coli by QT97							
Fecal Coliform by MPN QT97							
Fecal Coliforms	<1		1	MPN/100mL		12-SEP-19	R4805353
Total Coliform and E.coli by MPN QT97							
Total Coliforms	<1		1	MPN/100mL		12-SEP-19	R4805349

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ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2346134-1 LQ25 - TRIP BLANK							
Sampled By: CLIENT on 12-SEP-19 @ 08:30							
Matrix: WATER							
Total Coliform and E.coli by MPN QT97							
Escherichia Coli	<1		1	MPN/100mL		12-SEP-19	R4805349
VOC plus F1 to F4							
CCME PHC F2-F4 in Water							
F2 (C10-C16)	<100		100	ug/L	20-SEP-19	20-SEP-19	R4830072
F3 (C16-C34)	<250		250	ug/L	20-SEP-19	20-SEP-19	R4830072
F4 (C34-C50)	<250		250	ug/L	20-SEP-19	20-SEP-19	R4830072
Surrogate: 2-Bromobenzotrifluoride	97.7		60-140	%	20-SEP-19	20-SEP-19	R4830072
CCME Total Hydrocarbons							
F1-BTEX	<100		100	ug/L		24-SEP-19	
F2-Naphth	<100		100	ug/L		24-SEP-19	
F3-PAH	<250		250	ug/L		24-SEP-19	
Total Hydrocarbons (C6-C50)	<380		380	ug/L		24-SEP-19	
Sum of Xylene Isomer Concentrations							
Xylenes (Total)	<0.64		0.64	ug/L		24-SEP-19	
Total Trihalomethanes (THMs)							
Total THMs	<1.3		1.3	ug/L		24-SEP-19	
VOC plus F1 by GCMS							
Acetone	<50		50	ug/L		17-SEP-19	R4814109
Benzene	<0.50		0.50	ug/L		17-SEP-19	R4814109
Bromobenzene	<1.0		1.0	ug/L		17-SEP-19	R4814109
Bromochloromethane	<1.0		1.0	ug/L		17-SEP-19	R4814109
Bromodichloromethane	<0.50		0.50	ug/L		17-SEP-19	R4814109
Bromoform	<1.0		1.0	ug/L		17-SEP-19	R4814109
Bromomethane	<1.0		1.0	ug/L		17-SEP-19	R4814109
n-Butylbenzene	<1.0		1.0	ug/L		17-SEP-19	R4814109
sec-Butylbenzene	<1.0		1.0	ug/L		17-SEP-19	R4814109
tert-Butylbenzene	<1.0		1.0	ug/L		17-SEP-19	R4814109
Carbon disulfide	<5.0		5.0	ug/L		17-SEP-19	R4814109
Carbon Tetrachloride	<0.50		0.50	ug/L		17-SEP-19	R4814109
Chlorobenzene	<1.0		1.0	ug/L		17-SEP-19	R4814109
Chloroethane	<1.0		1.0	ug/L		17-SEP-19	R4814109
Chloroform	1.22		0.50	ug/L		17-SEP-19	R4814109
Chloromethane	<5.0		5.0	ug/L		17-SEP-19	R4814109
2-Chlorotoluene	<20		20	ug/L		17-SEP-19	R4814109
4-Chlorotoluene	<1.0		1.0	ug/L		17-SEP-19	R4814109
Dibromochloromethane	<0.50		0.50	ug/L		17-SEP-19	R4814109
1,2-Dibromo-3-chloropropane	<1.0		1.0	ug/L		17-SEP-19	R4814109
1,2-Dibromoethane	<1.0		1.0	ug/L		17-SEP-19	R4814109
Dibromomethane	<1.0		1.0	ug/L		17-SEP-19	R4814109
1,2-Dichlorobenzene	<0.50		0.50	ug/L		17-SEP-19	R4814109
1,3-Dichlorobenzene	<1.0		1.0	ug/L		17-SEP-19	R4814109
1,4-Dichlorobenzene	<1.0		1.0	ug/L		17-SEP-19	R4814109
Dichlorodifluoromethane	<2.0	DLM	2.0	ug/L		17-SEP-19	R4814109
1,1-dichloroethane	<0.50		0.50	ug/L		17-SEP-19	R4814109
1,2-Dichloroethane	<0.50		0.50	ug/L		17-SEP-19	R4814109
1,1-dichloroethene	<0.50		0.50	ug/L		17-SEP-19	R4814109
cis-1,2-Dichloroethene	<1.0		1.0	ug/L		17-SEP-19	R4814109
trans-1,2-Dichloroethene	<1.0		1.0	ug/L		17-SEP-19	R4814109
Dichloromethane	<5.0		5.0	ug/L		17-SEP-19	R4814109
1,2-Dichloropropane	<1.0		1.0	ug/L		17-SEP-19	R4814109
1,3-Dichloropropane	<1.0		1.0	ug/L		17-SEP-19	R4814109
2,2-Dichloropropane	<1.0		1.0	ug/L		17-SEP-19	R4814109

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ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2346134-1 LQ25 - TRIP BLANK Sampled By: CLIENT on 12-SEP-19 @ 08:30 Matrix: WATER VOC plus F1 by GCMS							
1,1-Dichloropropene	<1.0		1.0	ug/L		17-SEP-19	R4814109
cis-1,3-Dichloropropene	<1.0		1.0	ug/L		17-SEP-19	R4814109
trans-1,3-Dichloropropene	<1.0		1.0	ug/L		17-SEP-19	R4814109
Ethylbenzene	<0.50		0.50	ug/L		17-SEP-19	R4814109
F1	<100		100	ug/L		17-SEP-19	R4814109
Hexachlorobutadiene	<1.0		1.0	ug/L		17-SEP-19	R4814109
Hexane	<1.0		1.0	ug/L		17-SEP-19	R4814109
2-Hexanone (Methyl butyl ketone)	<20		20	ug/L		17-SEP-19	R4814109
Isopropylbenzene	<1.0		1.0	ug/L		17-SEP-19	R4814109
4-Isopropyltoluene	<1.0		1.0	ug/L		17-SEP-19	R4814109
MEK	<20		20	ug/L		17-SEP-19	R4814109
MIBK	<20		20	ug/L		17-SEP-19	R4814109
MTBE	<2.0	DLM	2.0	ug/L		17-SEP-19	R4814109
Styrene	<1.0		1.0	ug/L		17-SEP-19	R4814109
1,1,1,2-Tetrachloroethane	<0.50		0.50	ug/L		17-SEP-19	R4814109
1,1,2,2-Tetrachloroethane	<0.50		0.50	ug/L		17-SEP-19	R4814109
Tetrachloroethene	<0.50		0.50	ug/L		17-SEP-19	R4814109
Toluene	<0.50		0.50	ug/L		17-SEP-19	R4814109
1,2,3-Trichlorobenzene	<1.0		1.0	ug/L		17-SEP-19	R4814109
1,2,4-Trichlorobenzene	<1.0		1.0	ug/L		17-SEP-19	R4814109
1,1,1-Trichloroethane	<0.50		0.50	ug/L		17-SEP-19	R4814109
1,1,2-Trichloroethane	<0.50		0.50	ug/L		17-SEP-19	R4814109
Trichloroethene	<0.50		0.50	ug/L		17-SEP-19	R4814109
Trichlorofluoromethane	<1.0		1.0	ug/L		17-SEP-19	R4814109
1,2,3-Trichloropropane	<1.0		1.0	ug/L		17-SEP-19	R4814109
1,2,4-Trimethylbenzene	<1.0		1.0	ug/L		17-SEP-19	R4814109
1,3,5-Trimethylbenzene	<1.0		1.0	ug/L		17-SEP-19	R4814109
Vinyl Chloride	<0.50		0.50	ug/L		17-SEP-19	R4814109
M+P-Xylenes	<0.40		0.40	ug/L		17-SEP-19	R4814109
o-Xylene	<0.50		0.50	ug/L		17-SEP-19	R4814109
Surrogate: 4-Bromofluorobenzene (SS)	88.8		70-130	%		17-SEP-19	R4814109
Surrogate: 1,4-Difluorobenzene (SS)	100.7		70-130	%		17-SEP-19	R4814109
L2346134-2 LQ25 - FIELD BLANK Sampled By: CLIENT on 12-SEP-19 @ 09:30 Matrix: WATER Alkalinity species as HCO3, CO3, OH							
Alkalinity, Bicarbonate Bicarbonate (HCO3)	<1200		1200	ug/L		16-SEP-19	
Alkalinity, Carbonate Carbonate (CO3)	<600		600	ug/L		16-SEP-19	
Alkalinity, Hydroxide Hydroxide (OH)	<340		340	ug/L		16-SEP-19	
Alkalinity, Total (as CaCO3) Alkalinity, Total (as CaCO3)	<1000		1000	ug/L		13-SEP-19	R4809090
Dissolved Carbons							
Dissolved Inorganic Carbon by Combustion Dissolved Inorganic Carbon	<500		500	ug/L		18-SEP-19	R4823547
Dissolved Organic Carbon by Combustion Dissolved Organic Carbon	<500		500	ug/L		17-SEP-19	R4819352
Total Dissolved Carbon by Calculation Total Dissolved Carbon	<1000		1000	ug/L		19-SEP-19	

* 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
L2346134-2 LQ25 - FIELD BLANK							
Sampled By: CLIENT on 12-SEP-19 @ 09:30							
Matrix: WATER							
Miscellaneous Parameters							
Ammonia, Total (as N)	<10		10	ug/L		18-SEP-19	R4821389
Chloride (Cl)	<500		500	ug/L		13-SEP-19	R4819249
Chromium, Hexavalent	<0.50		0.50	ug/L		18-SEP-19	R4825900
Cyanide, Total	<1.0		1.0	ug/L		26-SEP-19	R4848820
Mercury (Hg)-Total	<0.0050		0.0050	ug/L	19-SEP-19	19-SEP-19	R4827412
Oil and Grease	<5000		5000	ug/L		23-SEP-19	R4832794
Phenols (4AAP)	<1.0		1.0	ug/L		17-SEP-19	R4814988
Sulfate (SO4)	<300		300	ug/L		13-SEP-19	R4819249
Total Metals in Water by CRC ICPMS							
Aluminum (Al)-Total	<3.0		3.0	ug/L	19-SEP-19	19-SEP-19	R4831868
Antimony (Sb)-Total	<0.10		0.10	ug/L	19-SEP-19	19-SEP-19	R4831868
Arsenic (As)-Total	<0.10		0.10	ug/L	19-SEP-19	19-SEP-19	R4831868
Barium (Ba)-Total	<0.10		0.10	ug/L	19-SEP-19	19-SEP-19	R4831868
Beryllium (Be)-Total	<0.10		0.10	ug/L	19-SEP-19	19-SEP-19	R4831868
Bismuth (Bi)-Total	<0.050		0.050	ug/L	19-SEP-19	19-SEP-19	R4831868
Boron (B)-Total	<10		10	ug/L	19-SEP-19	19-SEP-19	R4831868
Cadmium (Cd)-Total	<0.0050		0.0050	ug/L	19-SEP-19	19-SEP-19	R4831868
Calcium (Ca)-Total	<50		50	ug/L	19-SEP-19	19-SEP-19	R4831868
Cesium (Cs)-Total	<0.010		0.010	ug/L	19-SEP-19	19-SEP-19	R4831868
Chromium (Cr)-Total	<0.10		0.10	ug/L	19-SEP-19	19-SEP-19	R4831868
Cobalt (Co)-Total	<0.10		0.10	ug/L	19-SEP-19	19-SEP-19	R4831868
Copper (Cu)-Total	<0.50		0.50	ug/L	19-SEP-19	19-SEP-19	R4831868
Iron (Fe)-Total	<10		10	ug/L	19-SEP-19	19-SEP-19	R4831868
Lead (Pb)-Total	<0.050		0.050	ug/L	19-SEP-19	19-SEP-19	R4831868
Lithium (Li)-Total	<1.0		1.0	ug/L	19-SEP-19	19-SEP-19	R4831868
Magnesium (Mg)-Total	<5.0		5.0	ug/L	19-SEP-19	19-SEP-19	R4831868
Manganese (Mn)-Total	<0.10		0.10	ug/L	19-SEP-19	19-SEP-19	R4831868
Molybdenum (Mo)-Total	<0.050		0.050	ug/L	19-SEP-19	19-SEP-19	R4831868
Nickel (Ni)-Total	<0.50		0.50	ug/L	19-SEP-19	19-SEP-19	R4831868
Potassium (K)-Total	<50		50	ug/L	19-SEP-19	19-SEP-19	R4831868
Phosphorus (P)-Total	<30		30	ug/L	19-SEP-19	19-SEP-19	R4831868
Rubidium (Rb)-Total	<0.20		0.20	ug/L	19-SEP-19	19-SEP-19	R4831868
Selenium (Se)-Total	<0.050		0.050	ug/L	19-SEP-19	19-SEP-19	R4831868
Silicon (Si)-Total	<100		100	ug/L	19-SEP-19	19-SEP-19	R4831868
Silver (Ag)-Total	<0.010		0.010	ug/L	19-SEP-19	19-SEP-19	R4831868
Sodium (Na)-Total	<50		50	ug/L	19-SEP-19	19-SEP-19	R4831868
Strontium (Sr)-Total	<0.20		0.20	ug/L	19-SEP-19	19-SEP-19	R4831868
Sulfur (S)-Total	<500		500	ug/L	19-SEP-19	19-SEP-19	R4831868
Tellurium (Te)-Total	<0.20		0.20	ug/L	19-SEP-19	19-SEP-19	R4831868
Thallium (Tl)-Total	<0.010		0.010	ug/L	19-SEP-19	19-SEP-19	R4831868
Thorium (Th)-Total	<0.10		0.10	ug/L	19-SEP-19	19-SEP-19	R4831868
Tin (Sn)-Total	<0.10		0.10	ug/L	19-SEP-19	19-SEP-19	R4831868
Titanium (Ti)-Total	<0.30		0.30	ug/L	19-SEP-19	19-SEP-19	R4831868
Tungsten (W)-Total	<0.10		0.10	ug/L	19-SEP-19	19-SEP-19	R4831868
Uranium (U)-Total	<0.010		0.010	ug/L	19-SEP-19	19-SEP-19	R4831868
Vanadium (V)-Total	<0.50		0.50	ug/L	19-SEP-19	19-SEP-19	R4831868
Zinc (Zn)-Total	<3.0		3.0	ug/L	19-SEP-19	19-SEP-19	R4831868
Zirconium (Zr)-Total	<0.20		0.20	ug/L	19-SEP-19	19-SEP-19	R4831868
Dissolved Metals in Water by CRC ICPMS							
Dissolved Metals Filtration Location	FIELD					19-SEP-19	R4823571
Aluminum (Al)-Dissolved	<1.0		1.0	ug/L	19-SEP-19	19-SEP-19	R4831868

* 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
L2346134-2 LQ25 - FIELD BLANK							
Sampled By: CLIENT on 12-SEP-19 @ 09:30							
Matrix: WATER							
Dissolved Metals in Water by CRC ICPMS							
Antimony (Sb)-Dissolved	<0.10		0.10	ug/L	19-SEP-19	19-SEP-19	R4831868
Arsenic (As)-Dissolved	<0.10		0.10	ug/L	19-SEP-19	19-SEP-19	R4831868
Barium (Ba)-Dissolved	<0.10		0.10	ug/L	19-SEP-19	19-SEP-19	R4831868
Beryllium (Be)-Dissolved	<0.10		0.10	ug/L	19-SEP-19	19-SEP-19	R4831868
Bismuth (Bi)-Dissolved	<0.050		0.050	ug/L	19-SEP-19	19-SEP-19	R4831868
Boron (B)-Dissolved	<10		10	ug/L	19-SEP-19	19-SEP-19	R4831868
Cadmium (Cd)-Dissolved	<0.0050		0.0050	ug/L	19-SEP-19	19-SEP-19	R4831868
Calcium (Ca)-Dissolved	<50		50	ug/L	19-SEP-19	19-SEP-19	R4831868
Cesium (Cs)-Dissolved	<0.010		0.010	ug/L	19-SEP-19	19-SEP-19	R4831868
Chromium (Cr)-Dissolved	<0.10		0.10	ug/L	19-SEP-19	19-SEP-19	R4831868
Cobalt (Co)-Dissolved	<0.10		0.10	ug/L	19-SEP-19	19-SEP-19	R4831868
Copper (Cu)-Dissolved	<0.20		0.20	ug/L	19-SEP-19	19-SEP-19	R4831868
Iron (Fe)-Dissolved	<10		10	ug/L	19-SEP-19	19-SEP-19	R4831868
Lead (Pb)-Dissolved	<0.050		0.050	ug/L	19-SEP-19	19-SEP-19	R4831868
Lithium (Li)-Dissolved	<1.0		1.0	ug/L	19-SEP-19	19-SEP-19	R4831868
Magnesium (Mg)-Dissolved	<5.0		5.0	ug/L	19-SEP-19	19-SEP-19	R4831868
Manganese (Mn)-Dissolved	<0.10		0.10	ug/L	19-SEP-19	19-SEP-19	R4831868
Molybdenum (Mo)-Dissolved	<0.050		0.050	ug/L	19-SEP-19	19-SEP-19	R4831868
Nickel (Ni)-Dissolved	<0.50		0.50	ug/L	19-SEP-19	19-SEP-19	R4831868
Phosphorus (P)-Dissolved	<30		30	ug/L	19-SEP-19	19-SEP-19	R4831868
Potassium (K)-Dissolved	<50		50	ug/L	19-SEP-19	19-SEP-19	R4831868
Rubidium (Rb)-Dissolved	<0.20		0.20	ug/L	19-SEP-19	19-SEP-19	R4831868
Selenium (Se)-Dissolved	<0.050		0.050	ug/L	19-SEP-19	19-SEP-19	R4831868
Silicon (Si)-Dissolved	<50		50	ug/L	19-SEP-19	19-SEP-19	R4831868
Silver (Ag)-Dissolved	<0.010		0.010	ug/L	19-SEP-19	19-SEP-19	R4831868
Sodium (Na)-Dissolved	<50		50	ug/L	19-SEP-19	19-SEP-19	R4831868
Strontium (Sr)-Dissolved	<0.10		0.10	ug/L	19-SEP-19	19-SEP-19	R4831868
Sulfur (S)-Dissolved	<500		500	ug/L	19-SEP-19	19-SEP-19	R4831868
Tellurium (Te)-Dissolved	<0.20		0.20	ug/L	19-SEP-19	19-SEP-19	R4831868
Thallium (Tl)-Dissolved	<0.010		0.010	ug/L	19-SEP-19	19-SEP-19	R4831868
Thorium (Th)-Dissolved	<0.10		0.10	ug/L	19-SEP-19	19-SEP-19	R4831868
Tin (Sn)-Dissolved	<0.10		0.10	ug/L	19-SEP-19	19-SEP-19	R4831868
Titanium (Ti)-Dissolved	<0.30		0.30	ug/L	19-SEP-19	19-SEP-19	R4831868
Tungsten (W)-Dissolved	<0.10		0.10	ug/L	19-SEP-19	19-SEP-19	R4831868
Uranium (U)-Dissolved	<0.010		0.010	ug/L	19-SEP-19	19-SEP-19	R4831868
Vanadium (V)-Dissolved	<0.50		0.50	ug/L	19-SEP-19	19-SEP-19	R4831868
Zinc (Zn)-Dissolved	<1.0		1.0	ug/L	19-SEP-19	19-SEP-19	R4831868
Zirconium (Zr)-Dissolved	<0.20		0.20	ug/L	19-SEP-19	19-SEP-19	R4831868
Mercury Dissolved							
Dissolved Mercury Filtration Location	FIELD					18-SEP-19	R4826808
Mercury (Hg)-Dissolved	<0.0050		0.0050	ug/L	19-SEP-19	19-SEP-19	R4827450
Polyaromatic Hydrocarbons (PAHs)							
1-Methyl Naphthalene	<0.020		0.020	ug/L	13-SEP-19	18-SEP-19	R4822268
2-Methyl Naphthalene	<0.020		0.020	ug/L	13-SEP-19	18-SEP-19	R4822268
Acenaphthene	<0.020		0.020	ug/L	13-SEP-19	18-SEP-19	R4822268
Acenaphthylene	<0.020		0.020	ug/L	13-SEP-19	18-SEP-19	R4822268
Anthracene	<0.010		0.010	ug/L	13-SEP-19	18-SEP-19	R4822268
Acridine	<0.020		0.020	ug/L	13-SEP-19	18-SEP-19	R4822268
Benzo(a)anthracene	<0.010		0.010	ug/L	13-SEP-19	18-SEP-19	R4822268
Benzo(a)pyrene	<0.0050		0.0050	ug/L	13-SEP-19	18-SEP-19	R4822268
Benzo(b&j)fluoranthene	<0.010		0.010	ug/L	13-SEP-19	18-SEP-19	R4822268

* 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
L2346134-2 LQ25 - FIELD BLANK							
Sampled By: CLIENT on 12-SEP-19 @ 09:30							
Matrix: WATER							
Polyaromatic Hydrocarbons (PAHs)							
Benzo(g,h,i)perylene	<0.020		0.020	ug/L	13-SEP-19	18-SEP-19	R4822268
Benzo(k)fluoranthene	<0.010		0.010	ug/L	13-SEP-19	18-SEP-19	R4822268
Chrysene	<0.020		0.020	ug/L	13-SEP-19	18-SEP-19	R4822268
Dibenzo(a,h)anthracene	<0.0050		0.0050	ug/L	13-SEP-19	18-SEP-19	R4822268
Fluoranthene	<0.020		0.020	ug/L	13-SEP-19	18-SEP-19	R4822268
Fluorene	<0.020		0.020	ug/L	13-SEP-19	18-SEP-19	R4822268
Indeno(1,2,3-cd)pyrene	<0.010		0.010	ug/L	13-SEP-19	18-SEP-19	R4822268
Naphthalene	<0.050		0.050	ug/L	13-SEP-19	18-SEP-19	R4822268
Phenanthrene	<0.050		0.050	ug/L	13-SEP-19	18-SEP-19	R4822268
Pyrene	<0.010		0.010	ug/L	13-SEP-19	18-SEP-19	R4822268
Quinoline	<0.020		0.020	ug/L	13-SEP-19	18-SEP-19	R4822268
B(a)P Total Potency Equivalent	<0.030		0.030	ug/L	13-SEP-19	18-SEP-19	R4822268
Surrogate: Acenaphthene d10	101.8		60-130	%	13-SEP-19	18-SEP-19	R4822268
Surrogate: Acridine d9	108.1		60-130	%	13-SEP-19	18-SEP-19	R4822268
Surrogate: Chrysene d12	112.0		60-130	%	13-SEP-19	18-SEP-19	R4822268
Surrogate: Naphthalene d8	95.9		50-130	%	13-SEP-19	18-SEP-19	R4822268
Surrogate: Phenanthrene d10	106.0		60-130	%	13-SEP-19	18-SEP-19	R4822268
PCBs							
Aroclor 1016	<0.020		0.020	ug/L	19-SEP-19	19-SEP-19	R4823271
Aroclor 1221	<0.020		0.020	ug/L	19-SEP-19	19-SEP-19	R4823271
Aroclor 1232	<0.020		0.020	ug/L	19-SEP-19	19-SEP-19	R4823271
Aroclor 1242	<0.020		0.020	ug/L	19-SEP-19	19-SEP-19	R4823271
Aroclor 1248	<0.020		0.020	ug/L	19-SEP-19	19-SEP-19	R4823271
Aroclor 1254	<0.020		0.020	ug/L	19-SEP-19	19-SEP-19	R4823271
Aroclor 1260	<0.020		0.020	ug/L	19-SEP-19	19-SEP-19	R4823271
Aroclor 1262	<0.020		0.020	ug/L	19-SEP-19	19-SEP-19	R4823271
Aroclor 1268	<0.020		0.020	ug/L	19-SEP-19	19-SEP-19	R4823271
Total PCBs	<0.060		0.060	ug/L	19-SEP-19	19-SEP-19	R4823271
Surrogate: Decachlorobiphenyl	89.6		50-150	%	19-SEP-19	19-SEP-19	R4823271
Surrogate: Tetrachloro-m-xylene	85.7		50-150	%	19-SEP-19	19-SEP-19	R4823271
Pesticides, Organochlorine in Water							
Aldrin	<0.080	DLM	0.080	ug/L	18-SEP-19	19-SEP-19	R4822286
gamma-hexachlorocyclohexane	<0.080	DLM	0.080	ug/L	18-SEP-19	19-SEP-19	R4822286
a-chlordane	<0.080	DLM	0.080	ug/L	18-SEP-19	19-SEP-19	R4822286
g-chlordane	<0.080	DLM	0.080	ug/L	18-SEP-19	19-SEP-19	R4822286
alpha-BHC	<0.080	DLM	0.080	ug/L	18-SEP-19	19-SEP-19	R4822286
beta-BHC	<0.080	DLM	0.080	ug/L	18-SEP-19	19-SEP-19	R4822286
delta-BHC	<0.080	DLM	0.080	ug/L	18-SEP-19	19-SEP-19	R4822286
o,p-DDD	<0.040	DLM	0.040	ug/L	18-SEP-19	19-SEP-19	R4822286
pp-DDD	<0.040	DLM	0.040	ug/L	18-SEP-19	19-SEP-19	R4822286
o,p-DDE	<0.040	DLM	0.040	ug/L	18-SEP-19	19-SEP-19	R4822286
pp-DDE	<0.040	DLM	0.040	ug/L	18-SEP-19	19-SEP-19	R4822286
op-DDT	<0.040	DLM	0.040	ug/L	18-SEP-19	19-SEP-19	R4822286
pp-DDT	<0.040	DLM	0.040	ug/L	18-SEP-19	19-SEP-19	R4822286
Dieldrin	<0.080	DLM	0.080	ug/L	18-SEP-19	19-SEP-19	R4822286
Endosulfan I	<0.070	DLM	0.070	ug/L	18-SEP-19	19-SEP-19	R4822286
Endosulfan II	<0.070	DLM	0.070	ug/L	18-SEP-19	19-SEP-19	R4822286
Endosulfan Sulfate	<0.070	DLM	0.070	ug/L	18-SEP-19	19-SEP-19	R4822286
Endrin	<0.10	DLM	0.10	ug/L	18-SEP-19	19-SEP-19	R4822286
Endrin Aldehyde	<0.10	DLM	0.10	ug/L	18-SEP-19	19-SEP-19	R4822286
Heptachlor	<0.080	DLM	0.080	ug/L	18-SEP-19	19-SEP-19	R4822286

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ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2346134-2 LQ25 - FIELD BLANK							
Sampled By: CLIENT on 12-SEP-19 @ 09:30							
Matrix: WATER							
Pesticides, Organochlorine in Water							
Heptachlor Epoxide	<0.080	DLM	0.080	ug/L	18-SEP-19	19-SEP-19	R4822286
Hexachlorobenzene	<0.080	DLM	0.080	ug/L	18-SEP-19	19-SEP-19	R4822286
Hexachlorobutadiene	<0.080	DLM	0.080	ug/L	18-SEP-19	19-SEP-19	R4822286
Hexachloroethane	<0.080	DLM	0.080	ug/L	18-SEP-19	19-SEP-19	R4822286
Methoxychlor	<0.080	DLM	0.080	ug/L	18-SEP-19	19-SEP-19	R4822286
Mirex	<0.080	DLM	0.080	ug/L	18-SEP-19	19-SEP-19	R4822286
Oxychlorane	<0.080	DLM	0.080	ug/L	18-SEP-19	19-SEP-19	R4822286
Surrogate: Decachlorobiphenyl	96.3		40-130	%	18-SEP-19	19-SEP-19	R4822286
Surrogate: Tetrachloro-m-xylene	88.9		40-130	%	18-SEP-19	19-SEP-19	R4822286
Herbicides in Water							
Clopyralid	<0.10		0.10	ug/L	13-SEP-19	13-SEP-19	R4809956
Dicamba	<0.10		0.10	ug/L	13-SEP-19	13-SEP-19	R4809956
Mecoprop	<0.10		0.10	ug/L	13-SEP-19	13-SEP-19	R4809956
MCPA	<0.10		0.10	ug/L	13-SEP-19	13-SEP-19	R4809956
2,4-D	<0.10		0.10	ug/L	13-SEP-19	13-SEP-19	R4809956
Bromoxynil	<0.10		0.10	ug/L	13-SEP-19	13-SEP-19	R4809956
Triclopyr	<0.10		0.10	ug/L	13-SEP-19	13-SEP-19	R4809956
2,4,5-T	<0.10		0.10	ug/L	13-SEP-19	13-SEP-19	R4809956
2,4,5-TP	<0.10		0.10	ug/L	13-SEP-19	13-SEP-19	R4809956
Picloram	<0.10		0.10	ug/L	13-SEP-19	13-SEP-19	R4809956
2,4-DB	<0.10		0.10	ug/L	13-SEP-19	13-SEP-19	R4809956
2,4-DP	<0.10		0.10	ug/L	13-SEP-19	13-SEP-19	R4809956
Dinoseb	<0.10		0.10	ug/L	13-SEP-19	13-SEP-19	R4809956
MCPB	<0.10		0.10	ug/L	13-SEP-19	13-SEP-19	R4809956
Surrogate: 2,4-Dichlorophenylacetic Acid	112.0		50-130	%	13-SEP-19	13-SEP-19	R4809956
Miscellaneous Pesticides							
Diazinon	<0.10		0.10	ug/L	19-SEP-19	23-SEP-19	R4833867
Surrogate: 2-Fluorobiphenyl	95.2		40-130	%	19-SEP-19	23-SEP-19	R4833867
Surrogate: d14-Terphenyl	98.5		40-130	%	19-SEP-19	23-SEP-19	R4833867
4,4'-Methylenebis(2-chloroaniline)							
4,4'-Methylenebis(2-chloroaniline)	<0.50		0.50	ug/L	19-SEP-19	23-SEP-19	R4832116
Surrogate: p-Terphenyl d14	88.0		40-130	%	19-SEP-19	23-SEP-19	R4832116
Total, Fecal Coliforms, E Coli by QT97							
Fecal Coliform by MPN QT97							
Fecal Coliforms	<1		1	MPN/100mL		12-SEP-19	R4805353
Total Coliform and E.coli by MPN QT97							
Total Coliforms	<1		1	MPN/100mL		12-SEP-19	R4805349
Escherichia Coli	<1		1	MPN/100mL		12-SEP-19	R4805349
VOC plus F1 to F4							
CCME PHC F2-F4 in Water							
F2 (C10-C16)	<100		100	ug/L	13-SEP-19	14-SEP-19	R4800048
F3 (C16-C34)	<250		250	ug/L	13-SEP-19	14-SEP-19	R4800048
F4 (C34-C50)	<250		250	ug/L	13-SEP-19	14-SEP-19	R4800048
Surrogate: 2-Bromobenzotrifluoride	96.2		60-140	%	13-SEP-19	14-SEP-19	R4800048
CCME Total Hydrocarbons							
F1-BTEX	<100		100	ug/L		24-SEP-19	
F2-Naphth	<100		100	ug/L		24-SEP-19	
F3-PAH	<250		250	ug/L		24-SEP-19	
Total Hydrocarbons (C6-C50)	<380		380	ug/L		24-SEP-19	
Sum of Xylene Isomer Concentrations							
Xylenes (Total)	<0.64		0.64	ug/L		24-SEP-19	
Total Trihalomethanes (THMs)							

* 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
L2346134-2 LQ25 - FIELD BLANK							
Sampled By: CLIENT on 12-SEP-19 @ 09:30							
Matrix: WATER							
Total Trihalomethanes (THMs)							
Total THMs	<1.3		1.3	ug/L		24-SEP-19	
VOC plus F1 by GCMS							
Acetone	<50		50	ug/L		17-SEP-19	R4814109
Benzene	<0.50		0.50	ug/L		17-SEP-19	R4814109
Bromobenzene	<1.0		1.0	ug/L		17-SEP-19	R4814109
Bromochloromethane	<1.0		1.0	ug/L		17-SEP-19	R4814109
Bromodichloromethane	<0.50		0.50	ug/L		17-SEP-19	R4814109
Bromoform	<1.0		1.0	ug/L		17-SEP-19	R4814109
Bromomethane	<1.0		1.0	ug/L		17-SEP-19	R4814109
n-Butylbenzene	<1.0		1.0	ug/L		17-SEP-19	R4814109
sec-Butylbenzene	<1.0		1.0	ug/L		17-SEP-19	R4814109
tert-Butylbenzene	<1.0		1.0	ug/L		17-SEP-19	R4814109
Carbon disulfide	<5.0		5.0	ug/L		17-SEP-19	R4814109
Carbon Tetrachloride	<0.50		0.50	ug/L		17-SEP-19	R4814109
Chlorobenzene	<1.0		1.0	ug/L		17-SEP-19	R4814109
Chloroethane	<1.0		1.0	ug/L		17-SEP-19	R4814109
Chloroform	1.15		0.50	ug/L		17-SEP-19	R4814109
Chloromethane	<5.0		5.0	ug/L		17-SEP-19	R4814109
2-Chlorotoluene	<20		20	ug/L		17-SEP-19	R4814109
4-Chlorotoluene	<1.0		1.0	ug/L		17-SEP-19	R4814109
Dibromochloromethane	<0.50		0.50	ug/L		17-SEP-19	R4814109
1,2-Dibromo-3-chloropropane	<1.0		1.0	ug/L		17-SEP-19	R4814109
1,2-Dibromoethane	<1.0		1.0	ug/L		17-SEP-19	R4814109
Dibromomethane	<1.0		1.0	ug/L		17-SEP-19	R4814109
1,2-Dichlorobenzene	<0.50		0.50	ug/L		17-SEP-19	R4814109
1,3-Dichlorobenzene	<1.0		1.0	ug/L		17-SEP-19	R4814109
1,4-Dichlorobenzene	<1.0		1.0	ug/L		17-SEP-19	R4814109
Dichlorodifluoromethane	<2.0	DLM	2.0	ug/L		17-SEP-19	R4814109
1,1-dichloroethane	<0.50		0.50	ug/L		17-SEP-19	R4814109
1,2-Dichloroethane	<0.50		0.50	ug/L		17-SEP-19	R4814109
1,1-dichloroethene	<0.50		0.50	ug/L		17-SEP-19	R4814109
cis-1,2-Dichloroethene	<1.0		1.0	ug/L		17-SEP-19	R4814109
trans-1,2-Dichloroethene	<1.0		1.0	ug/L		17-SEP-19	R4814109
Dichloromethane	<5.0		5.0	ug/L		17-SEP-19	R4814109
1,2-Dichloropropane	<1.0		1.0	ug/L		17-SEP-19	R4814109
1,3-Dichloropropane	<1.0		1.0	ug/L		17-SEP-19	R4814109
2,2-Dichloropropane	<1.0		1.0	ug/L		17-SEP-19	R4814109
1,1-Dichloropropene	<1.0		1.0	ug/L		17-SEP-19	R4814109
cis-1,3-Dichloropropene	<1.0		1.0	ug/L		17-SEP-19	R4814109
trans-1,3-Dichloropropene	<1.0		1.0	ug/L		17-SEP-19	R4814109
Ethylbenzene	<0.50		0.50	ug/L		17-SEP-19	R4814109
F1	<100		100	ug/L		17-SEP-19	R4814109
Hexachlorobutadiene	<1.0		1.0	ug/L		17-SEP-19	R4814109
Hexane	<1.0		1.0	ug/L		17-SEP-19	R4814109
2-Hexanone (Methyl butyl ketone)	<20		20	ug/L		17-SEP-19	R4814109
Isopropylbenzene	<1.0		1.0	ug/L		17-SEP-19	R4814109
4-Isopropyltoluene	<1.0		1.0	ug/L		17-SEP-19	R4814109
MEK	<20		20	ug/L		17-SEP-19	R4814109
MIBK	<20		20	ug/L		17-SEP-19	R4814109
MTBE	<2.0	DLM	2.0	ug/L		17-SEP-19	R4814109
Styrene	<1.0		1.0	ug/L		17-SEP-19	R4814109

* 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
L2346134-2 LQ25 - FIELD BLANK Sampled By: CLIENT on 12-SEP-19 @ 09:30 Matrix: WATER VOC plus F1 by GCMS							
1,1,1,2-Tetrachloroethane	<0.50		0.50	ug/L		17-SEP-19	R4814109
1,1,2,2-Tetrachloroethane	<0.50		0.50	ug/L		17-SEP-19	R4814109
Tetrachloroethene	<0.50		0.50	ug/L		17-SEP-19	R4814109
Toluene	<0.50		0.50	ug/L		17-SEP-19	R4814109
1,2,3-Trichlorobenzene	<1.0		1.0	ug/L		17-SEP-19	R4814109
1,2,4-Trichlorobenzene	<1.0		1.0	ug/L		17-SEP-19	R4814109
1,1,1-Trichloroethane	<0.50		0.50	ug/L		17-SEP-19	R4814109
1,1,2-Trichloroethane	<0.50		0.50	ug/L		17-SEP-19	R4814109
Trichloroethene	<0.50		0.50	ug/L		17-SEP-19	R4814109
Trichlorofluoromethane	<1.0		1.0	ug/L		17-SEP-19	R4814109
1,2,3-Trichloropropane	<1.0		1.0	ug/L		17-SEP-19	R4814109
1,2,4-Trimethylbenzene	<1.0		1.0	ug/L		17-SEP-19	R4814109
1,3,5-Trimethylbenzene	<1.0		1.0	ug/L		17-SEP-19	R4814109
Vinyl Chloride	<0.50		0.50	ug/L		17-SEP-19	R4814109
M+P-Xylenes	<0.40		0.40	ug/L		17-SEP-19	R4814109
o-Xylene	<0.50		0.50	ug/L		17-SEP-19	R4814109
Surrogate: 4-Bromofluorobenzene (SS)	88.7		70-130	%		17-SEP-19	R4814109
Surrogate: 1,4-Difluorobenzene (SS)	101.3		70-130	%		17-SEP-19	R4814109
L2346134-3 LQ25- R1 EC RESAMPLE Sampled By: CLIENT on 12-SEP-19 @ 10:15 Matrix: WATER Miscellaneous Parameters							
Fecal Coliforms	200		10	MPN/100mL		12-SEP-19	R4805289
Total and E. coli, 1:10 dilution by QT97							
Total Coliforms	>24200		10	MPN/100mL		12-SEP-19	R4805310
Escherichia Coli	110		10	MPN/100mL		12-SEP-19	R4805310
L2346134-4 LQ25 - MH46 EC RESAMPLE Sampled By: CLIENT on 12-SEP-19 @ 09:05 Matrix: WATER Miscellaneous Parameters							
Fecal Coliforms	24200		10	MPN/100mL		12-SEP-19	R4805289
Total and E. coli, 1:10 dilution by QT97							
Total Coliforms	>24200		10	MPN/100mL		12-SEP-19	R4805310
Escherichia Coli	6130		10	MPN/100mL		12-SEP-19	R4805310
L2346134-5 LQ25 - TANK EC RESAMPLE Sampled By: CLIENT on 12-SEP-19 @ 09:10 Matrix: WATER Miscellaneous Parameters							
Fecal Coliforms	13000		10	MPN/100mL		12-SEP-19	R4805289
Total and E. coli, 1:10 dilution by QT97							
Total Coliforms	10100	MBFT	10	MPN/100mL		12-SEP-19	R4805310
Escherichia Coli	2220		10	MPN/100mL		12-SEP-19	R4805310

* 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).
MBFT	Microbiological test results for Fecal Coliforms > Total Coliforms due to sample heterogeneity. Both test results are within normal variability for MPN tests.
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.			
C-DIC-HTC-WP	Water	Dissolved Inorganic Carbon by Combustion	APHA 5310 B-WP
Filtered (0.45 um) sample is injected into a heated reaction chamber where it is acidified, converting all inorganic carbon to CO ₂ which is then transported in the carrier gas stream and measured via a non-dispersive infrared analyzer.			
C-DOC-HTC-WP	Water	Dissolved Organic Carbon by Combustion	APHA 5310 B-WP
Filtered (0.45 um) sample is acidified and purged to remove inorganic carbon, then injected into a heated reaction chamber where organic carbon is oxidized to CO ₂ which is then transported in the carrier gas stream and measured via a non-dispersive infrared analyzer.			
C-TDC-CALC-WP	Water	Total Dissolved Carbon by Calculation	CALCULATED
Total dissolved carbon represents the sum of dissolved inorganic carbon and dissolved organic carbon. For the purpose of calculation, results less than the detection limit (DL) are treated as zero.			
CL-IC-N-WP	Water	Chloride in Water by IC	EPA 300.1 (mod)
Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.			
CN-T-L-CFA-VA	Water	Low Level Total Cyanide in water by CFA	ISO 14403:2002
This analysis is carried out using procedures adapted from ISO Method 14403:2002 "Determination of Total Cyanide using Flow Analysis (FIA and CFA)". Total or strong acid dissociable (SAD) cyanide is determined by in-line UV digestion along with sample distillation and final determination by colourimetric analysis. Method Limitation: This method is susceptible to interference from thiocyanate (SCN). If SCN is present in the sample, there could be a positive interference with this method, but it would be less than 1% and could be as low as zero.			
CR-CR6-IC-WT	Water	Chromium +6	EPA 7199
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.			
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).			
EC-SCREEN-WP	Water	Conductivity Screen (Internal Use Only)	APHA 2510
Qualitative analysis of conductivity where required during preparation of other test eg. IC, TDS, TSS, etc			
F1-F4-CALC-WP	Water	CCME Total Hydrocarbons	CCME CWS-PHC, Pub #1310, Dec 2001-L
Analytical methods used for analysis of CCME Petroleum Hydrocarbons have been validated and comply with the Reference Method for the CWS PHC.			
In cases where results for both F4 and F4G are reported, the greater of the two results must be used in any application of the CWS PHC guidelines and			

Reference Information

Test Method References:

ALS Test Code	Matrix	Test Description	Method Reference**
		the gravimetric heavy hydrocarbons cannot be added to the C6 to C50 hydrocarbons. In samples where BTEX and F1 were analyzed , F1-BTEX represents a value where the sum of Benzene, Toluene, Ethylbenzene and total Xylenes has been subtracted from F1.	
		In samples where PAHs, F2 and F3 were analyzed, F2-Naphth represents the result where Naphthalene has been subtracted from F2. F3-PAH represents a result where the sum of Benzo(a)anthracene, Benzo(a)pyrene, Benzo(b)fluoranthene, Benzo(k)fluoranthene, Dibenzo(a,h)anthracene, Fluoranthene, Indeno(1,2,3-cd)pyrene, Phenanthrene, and Pyrene has been subtracted from F3.	
		Unless otherwise qualified, the following quality control criteria have been met for the F1 hydrocarbon range: 1. All extraction and analysis holding times were met. 2. Instrument performance showing response factors for C6 and C10 within 30% of the response factor for toluene. 3. Linearity of gasoline response within 15% throughout the calibration range.	
		Unless otherwise qualified, the following quality control criteria have been met for the F2-F4 hydrocarbon ranges: 1. All extraction and analysis holding times were met. 2. Instrument performance showing C10, C16 and C34 response factors within 10% of their average. 3. Instrument performance showing the C50 response factor within 30% of the average of the C10, C16 and C34 response factors. 4. Linearity of diesel or motor oil response within 15% throughout the calibration range.	
F2-F4-FID-WP	Water	CCME PHC F2-F4 in Water	EPA 3511
		Petroleum hydrocarbons in water are determined by liquid-liquid micro-scale solvent extraction using a reciprocal shaker extraction apparatus prior to capillary column gas chromatography with flame ionization detection (GC-FID) analysis.	
FC-QT97-WP	Water	Fecal Coliform by MPN QT97	APHA 9223B QT97
		This analysis is carried out using procedures adapted from APHA Method 9223B "Enzyme Substrate Coliform Test". The sample is mixed with a mixture of hydrolyzable substrates and then sealed in a 97-well packet. The packet is incubated at 44.5 – 0.2°C for 18 hours and then the number of wells exhibiting a positive response are counted. The final result is obtained by comparing the number of positive responses to a probability table.	
FC10-QT97-WP	Water	Fecal coliforms, 1:10 dilution by QT97	APHA 9223B QT97
		Analysis is carried out using procedures adapted from APHA 9223 "Enzyme Substrate Coliform Test". Fecal (thermotolerant) coliform bacteria are determined by mixing a 1:10 dilution of sample with a product containing hydrolyzable substrates and sealing in a 97-well packet. The packet is incubated at 44.5 – 0.2°C for 18 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.	
HERBSCR-LCMS-WT	Water	Herbicides in Water	E3552
		Water samples are subjected filtration and analyzed by direct injection without sample preparation using liquid chromatography tandem mass spectrometry (LC-MS/MS).	
HG-D-CVAA-WP	Water	Mercury Dissolved	APHA 3030B/EPA 1631E (mod)
		Water samples are filtered (0.45 um), preserved with hydrochloric acid, then undergo a cold-oxidation using bromine monochloride prior to reduction with stannous chloride, and analyzed by CVAAS.	
HG-T-CVAA-WP	Water	Mercury Total	EPA 1631E (mod)
		Water samples undergo a cold-oxidation using bromine monochloride prior to reduction with stannous chloride, and analyzed by CVAAS.	
MBOCA-WT	Water	4,4'-Methylenebis(2-chloroaniline)	SW846 8270
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.	
MET-T-CCMS-WP	Water	Total Metals in Water by CRC ICPMS	EPA 200.2/6020B (mod.)
		Water samples are digested with nitric and hydrochloric acids, and analyzed by CRC ICPMS.	
		Method Limitation (re: Sulfur): Sulfide and volatile sulfur species may not be recovered by this method.	
NH3-COL-WP	Water	Ammonia by colour	APHA 4500 NH3 F
		Ammonia in water samples forms indophenol when reacted with hypochlorite and phenol. The intensity is amplified by the addition of sodium nitroprusside and measured colourmetrically.	

Reference Information

Test Method References:

ALS Test Code	Matrix	Test Description	Method Reference**
OCP-ROUTINE-WT	Water	Pesticides, Organochlorine in Water	SW846 8270
Samples are extracted using a solvent mixture and the resulting extracts are analyzed on GC/MSD			
OG-GRAV-WP	Water	Oil & Grease - Gravimetric	EPA 1664 (modified)
Water samples are acidified and extracted with hexane; the hexane extract is collected in a pre-weighed vial. The solvent is evaporated and Total Oil & Grease is determined from the weight of the residue in the vial.			
PAH,PANH-WP	Water	Polyaromatic Hydrocarbons (PAHs)	EPA 3511/8270D (mod)
PAHs are extracted from water using a hexane micro-extraction technique, with analysis by GC/MS. Because the two isomers cannot be readily separated chromatographically, benzo(j)fluoranthene is reported as part of the benzo(b)fluoranthene parameter.			
PCB9-WT	Water	PCBs	SW846 8270
PCBs are extracted from an aqueous sample at neutral pH with aliquots of dichloromethane using a modified separatory funnel technique. The extracts are analyzed by GC/MSD.			
PEST-DIAZINON-WT	Water	Miscellaneous Pesticides	SW846 8270
PHENOLS-4AAP-WT	Water	Phenol (4AAP)	EPA 9066
An automated method is used to distill the sample. The distillate is then buffered to pH 9.4 which reacts with 4AAP and potassium ferricyanide to form a red complex which is measured colorimetrically.			
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-QT97-WP	Water	Total Coliform and E.coli by MPN QT97	APHA 9223B QT97
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 97-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.			
TC,EC10-QT97-WP	Water	Total and E. coli, 1:10 dilution by QT97	APHA 9223B QT97
Analysis is carried out using procedures adapted from APHA 9223 "Enzyme Substrate Coliform Test". Total coliforms and Eschericia coli bacteria are simultaneously determined by mixing a 1:10 dilution of sample with a product containing hydrolyzable substrates and sealing in a 97-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.			
THM-SUM-CALC-WP	Water	Total Trihalomethanes (THMs)	CALCULATION
Total Trihalomethanes (THMs) represents the sum of bromodichloromethane, bromoform, chlorodibromomethane and chloroform. For the purpose of calculation, results less than the detection limit (DL) are treated as zero.			
VOC+F1-HSMS-WP	Water	VOC plus F1 by GCMS	EPA 8260C / EPA 5021A
In this method samples are analyzed using a headspace autosampler interfaced to a dual column gas chromatograph with MS and Flame Ionization detectors.			
XYLENES-SUM-CALC-WP	Water	Sum of Xylene Isomer Concentrations	CALCULATED RESULT
Total xylenes represents the sum of o-xylene and m&p-xylene.			

** 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
WT	ALS ENVIRONMENTAL - WATERLOO, ONTARIO, CANADA
VA	ALS ENVIRONMENTAL - VANCOUVER, BRITISH COLUMBIA, CANADA

Chain of Custody Numbers:

Reference Information

Test Method References:

ALS Test Code	Matrix	Test Description	Method Reference**
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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: L2346134

Report Date: 27-SEP-19

Page 1 of 20

Client: City of Winnipeg - Solid Waste Services Div (1120 Waverley)
 Solid Waste Services Division 1120 Waverley Street
 Winnipeg MB R3T 0P4

Contact: CHRIS KOZAK

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
ALK-TITR-WP		Water						
Batch	R4809090							
WG3162466-24	LCS							
Alkalinity, Total (as CaCO3)			105.8		%		85-115	13-SEP-19
WG3162466-21	MB							
Alkalinity, Total (as CaCO3)			<1.0		mg/L		1	13-SEP-19
C-DIC-HTC-WP		Water						
Batch	R4823547							
WG3166415-2	LCS							
Dissolved Inorganic Carbon			99.8		%		80-120	18-SEP-19
WG3166415-1	MB							
Dissolved Inorganic Carbon			<0.50		mg/L		0.5	18-SEP-19
C-DOC-HTC-WP		Water						
Batch	R4819352							
WG3165116-10	LCS							
Dissolved Organic Carbon			105.2		%		80-120	17-SEP-19
WG3165116-9	MB							
Dissolved Organic Carbon			<0.50		mg/L		0.5	17-SEP-19
CL-IC-N-WP		Water						
Batch	R4819249							
WG3161133-2	LCS							
Chloride (Cl)			101.6		%		90-110	13-SEP-19
WG3161133-1	MB							
Chloride (Cl)			<0.50		mg/L		0.5	13-SEP-19
CN-T-L-CFA-VA		Water						
Batch	R4848820							
WG3173747-2	LCS							
Cyanide, Total			95.2		%		80-120	26-SEP-19
WG3173747-1	MB							
Cyanide, Total			<0.0010		mg/L		0.001	26-SEP-19
CR-CR6-IC-WT		Water						
Batch	R4813730							
WG3163038-2	LCS							
Chromium, Hexavalent			93.9		%		80-120	16-SEP-19
WG3163038-1	MB							
Chromium, Hexavalent			<0.00050		mg/L		0.0005	16-SEP-19



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CR-CR6-IC-WT								
Water								
Batch	R4825900							
WG3165670-2	LCS							
Chromium, Hexavalent			98.0		%		80-120	18-SEP-19
WG3165670-1	MB							
Chromium, Hexavalent			<0.00050		mg/L		0.0005	18-SEP-19
F2-F4-FID-WP								
Water								
Batch	R4800048							
WG3160706-2	LCS							
F2 (C10-C16)			103.0		%		70-130	14-SEP-19
F3 (C16-C34)			94.5		%		70-130	14-SEP-19
F4 (C34-C50)			99.0		%		70-130	14-SEP-19
WG3160706-1	MB							
F2 (C10-C16)			<0.10		mg/L		0.1	14-SEP-19
F3 (C16-C34)			<0.25		mg/L		0.25	14-SEP-19
F4 (C34-C50)			<0.25		mg/L		0.25	14-SEP-19
Surrogate: 2-Bromobenzotrifluoride			96.9		%		60-140	14-SEP-19
Batch	R4830072							
WG3167676-2	LCS							
F2 (C10-C16)			105.4		%		70-130	20-SEP-19
F3 (C16-C34)			98.9		%		70-130	20-SEP-19
F4 (C34-C50)			98.3		%		70-130	20-SEP-19
WG3167676-1	MB							
F2 (C10-C16)			<0.10		mg/L		0.1	20-SEP-19
F3 (C16-C34)			<0.25		mg/L		0.25	20-SEP-19
F4 (C34-C50)			<0.25		mg/L		0.25	20-SEP-19
Surrogate: 2-Bromobenzotrifluoride			100.9		%		60-140	20-SEP-19
FC-QT97-WP								
Water								
Batch	R4805353							
WG3160112-2	DUP	L2346134-1						
Fecal Coliforms		<1	<1	RPD-NA	MPN/100mL	N/A	65	12-SEP-19
WG3160112-1	MB							
Fecal Coliforms			<1		MPN/100mL		1	12-SEP-19
FC10-QT97-WP								
Water								
Batch	R4805289							
WG3160103-1	MB							
Fecal Coliforms			<1		MPN/100mL		1	12-SEP-19
HERBSCR-LCMS-WT								
Water								



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Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
HERBSCR-LCMS-WT		Water						
Batch	R4809956							
WG3160703-3	DUP	L2346134-1						
Clopyralid		<0.00010	<0.00010	RPD-NA	mg/L	N/A	30	13-SEP-19
Dicamba		<0.00010	<0.00010	RPD-NA	mg/L	N/A	30	13-SEP-19
Mecoprop		<0.00010	<0.00010	RPD-NA	mg/L	N/A	30	13-SEP-19
MCPA		<0.00010	<0.00010	RPD-NA	mg/L	N/A	30	13-SEP-19
2,4-D		<0.00010	<0.00010	RPD-NA	mg/L	N/A	30	13-SEP-19
Bromoxynil		<0.00010	<0.00010	RPD-NA	mg/L	N/A	30	13-SEP-19
Triclopyr		<0.00010	<0.00010	RPD-NA	mg/L	N/A	30	13-SEP-19
2,4,5-T		<0.00010	<0.00010	RPD-NA	mg/L	N/A	30	13-SEP-19
2,4,5-TP		<0.00010	<0.00010	RPD-NA	mg/L	N/A	30	13-SEP-19
Picloram		<0.00010	<0.00010	RPD-NA	mg/L	N/A	30	13-SEP-19
2,4-DB		<0.00010	<0.00010	RPD-NA	mg/L	N/A	30	13-SEP-19
2,4-DP		<0.00010	<0.00010	RPD-NA	mg/L	N/A	30	13-SEP-19
Dinoseb		<0.00010	<0.00010	RPD-NA	mg/L	N/A	30	13-SEP-19
MCPB		<0.00010	<0.00010	RPD-NA	mg/L	N/A	30	13-SEP-19
WG3160703-2	LCS							
Clopyralid			123.0		%		50-150	13-SEP-19
Dicamba			113.0		%		65-130	13-SEP-19
Mecoprop			129.0		%		65-130	13-SEP-19
MCPA			107.0		%		65-130	13-SEP-19
2,4-D			92.5		%		65-130	13-SEP-19
Bromoxynil			117.0		%		65-130	13-SEP-19
Triclopyr			106.0		%		65-130	13-SEP-19
2,4,5-T			85.3		%		65-130	13-SEP-19
2,4,5-TP			99.0		%		65-130	13-SEP-19
Picloram			119.5		%		50-150	13-SEP-19
2,4-DB			108.0		%		65-130	13-SEP-19
2,4-DP			105.0		%		65-130	13-SEP-19
Dinoseb			78.0		%		50-150	13-SEP-19
MCPB			94.2		%		65-130	13-SEP-19
WG3160703-1	MB							
Clopyralid			<0.00010		mg/L		0.0001	13-SEP-19
Dicamba			<0.00010		mg/L		0.0001	13-SEP-19
Mecoprop			<0.00010		mg/L		0.0001	13-SEP-19
MCPA			<0.00010		mg/L		0.0001	13-SEP-19
2,4-D			<0.00010		mg/L		0.0001	13-SEP-19



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HERBSCR-LCMS-WT								
	Water							
Batch	R4809956							
WG3160703-1	MB							
Bromoxynil			<0.00010		mg/L		0.0001	13-SEP-19
Triclopyr			<0.00010		mg/L		0.0001	13-SEP-19
2,4,5-T			<0.00010		mg/L		0.0001	13-SEP-19
2,4,5-TP			<0.00010		mg/L		0.0001	13-SEP-19
Picloram			<0.00010		mg/L		0.0001	13-SEP-19
2,4-DB			<0.00010		mg/L		0.0001	13-SEP-19
2,4-DP			<0.00010		mg/L		0.0001	13-SEP-19
Dinoseb			<0.00010		mg/L		0.0001	13-SEP-19
MCPB			<0.00010		mg/L		0.0001	13-SEP-19
Surrogate: 2,4-Dichlorophenylacetic Acid			114.0		%		50-130	13-SEP-19
WG3160703-4	MS	L2346134-1						
Clopyralid			97.5		%		50-150	13-SEP-19
Dicamba			106.0		%		50-130	13-SEP-19
Mecoprop			75.9		%		50-130	13-SEP-19
MCPA			108.0		%		50-130	13-SEP-19
2,4-D			84.2		%		50-130	13-SEP-19
Bromoxynil			102.9		%		50-130	13-SEP-19
Triclopyr			79.2		%		50-130	13-SEP-19
2,4,5-T			73.9		%		50-130	13-SEP-19
2,4,5-TP			79.7		%		50-130	13-SEP-19
Picloram			98.0		%		50-150	13-SEP-19
2,4-DB			85.4		%		50-130	13-SEP-19
2,4-DP			80.0		%		50-130	13-SEP-19
Dinoseb			71.8		%		50-150	13-SEP-19
MCPB			93.2		%		50-130	13-SEP-19
HG-D-CVAA-WP								
	Water							
Batch	R4827450							
WG3167963-2	LCS							
Mercury (Hg)-Dissolved			105.0		%		80-120	19-SEP-19
WG3167963-1	MB							
Mercury (Hg)-Dissolved			<0.000005C		mg/L		0.000005	19-SEP-19
HG-T-CVAA-WP								
	Water							



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HG-T-CVAA-WP		Water						
Batch	R4827412							
WG3167921-2	LCS							
Mercury (Hg)-Total			104.0		%		80-120	19-SEP-19
WG3167921-1	MB							
Mercury (Hg)-Total			<0.000005C		mg/L		0.000005	19-SEP-19
MBOCA-WT		Water						
Batch	R4832116							
WG3165461-2	LCS							
4,4'-Methylenebis(2-chloroaniline)			88.0		%		50-150	23-SEP-19
WG3165461-1	MB							
4,4'-Methylenebis(2-chloroaniline)			<0.50		ug/L		0.5	23-SEP-19
Surrogate: p-Terphenyl d14			83.4		%		40-130	23-SEP-19
MET-D-CCMS-WP		Water						
Batch	R4831868							
WG3166929-2	LCS							
Aluminum (Al)-Dissolved			99.6		%		80-120	19-SEP-19
Antimony (Sb)-Dissolved			98.7		%		80-120	19-SEP-19
Arsenic (As)-Dissolved			101.9		%		80-120	19-SEP-19
Barium (Ba)-Dissolved			106.4		%		80-120	19-SEP-19
Beryllium (Be)-Dissolved			91.2		%		80-120	19-SEP-19
Bismuth (Bi)-Dissolved			104.7		%		80-120	19-SEP-19
Boron (B)-Dissolved			86.2		%		80-120	19-SEP-19
Cadmium (Cd)-Dissolved			106.8		%		80-120	19-SEP-19
Calcium (Ca)-Dissolved			93.1		%		80-120	19-SEP-19
Cesium (Cs)-Dissolved			98.9		%		80-120	19-SEP-19
Chromium (Cr)-Dissolved			101.2		%		80-120	19-SEP-19
Cobalt (Co)-Dissolved			98.7		%		80-120	19-SEP-19
Copper (Cu)-Dissolved			100.1		%		80-120	19-SEP-19
Iron (Fe)-Dissolved			101.7		%		80-120	19-SEP-19
Lead (Pb)-Dissolved			106.6		%		80-120	19-SEP-19
Lithium (Li)-Dissolved			91.1		%		80-120	19-SEP-19
Magnesium (Mg)-Dissolved			100.4		%		80-120	19-SEP-19
Manganese (Mn)-Dissolved			103.7		%		80-120	19-SEP-19
Molybdenum (Mo)-Dissolved			102.2		%		80-120	19-SEP-19
Nickel (Ni)-Dissolved			99.3		%		80-120	19-SEP-19
Phosphorus (P)-Dissolved			102.3		%		80-120	19-SEP-19
Potassium (K)-Dissolved			102.6		%		80-120	19-SEP-19

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Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
MET-D-CCMS-WP								
	Water							
Batch	R4831868							
WG3166929-2	LCS							
Rubidium (Rb)-Dissolved			103.4		%		80-120	19-SEP-19
Selenium (Se)-Dissolved			102.1		%		80-120	19-SEP-19
Silicon (Si)-Dissolved			96.8		%		80-120	19-SEP-19
Silver (Ag)-Dissolved			99.8		%		80-120	19-SEP-19
Sodium (Na)-Dissolved			103.0		%		80-120	19-SEP-19
Strontium (Sr)-Dissolved			95.4		%		80-120	19-SEP-19
Sulfur (S)-Dissolved			90.7		%		80-120	19-SEP-19
Tellurium (Te)-Dissolved			101.2		%		80-120	19-SEP-19
Thallium (Tl)-Dissolved			104.2		%		80-120	19-SEP-19
Thorium (Th)-Dissolved			102.5		%		80-120	19-SEP-19
Tin (Sn)-Dissolved			97.2		%		80-120	19-SEP-19
Titanium (Ti)-Dissolved			96.2		%		80-120	19-SEP-19
Tungsten (W)-Dissolved			104.0		%		80-120	19-SEP-19
Uranium (U)-Dissolved			106.4		%		80-120	19-SEP-19
Vanadium (V)-Dissolved			100.7		%		80-120	19-SEP-19
Zinc (Zn)-Dissolved			100.3		%		80-120	19-SEP-19
Zirconium (Zr)-Dissolved			94.7		%		80-120	19-SEP-19
WG3166929-1	MB							
Aluminum (Al)-Dissolved			<0.0010		mg/L		0.001	19-SEP-19
Antimony (Sb)-Dissolved			<0.00010		mg/L		0.0001	19-SEP-19
Arsenic (As)-Dissolved			<0.00010		mg/L		0.0001	19-SEP-19
Barium (Ba)-Dissolved			<0.00010		mg/L		0.0001	19-SEP-19
Beryllium (Be)-Dissolved			<0.00010		mg/L		0.0001	19-SEP-19
Bismuth (Bi)-Dissolved			<0.000050		mg/L		0.00005	19-SEP-19
Boron (B)-Dissolved			<0.010		mg/L		0.01	19-SEP-19
Cadmium (Cd)-Dissolved			<0.0000050		mg/L		0.000005	19-SEP-19
Calcium (Ca)-Dissolved			<0.050		mg/L		0.05	19-SEP-19
Cesium (Cs)-Dissolved			<0.000010		mg/L		0.00001	19-SEP-19
Chromium (Cr)-Dissolved			<0.00010		mg/L		0.0001	19-SEP-19
Cobalt (Co)-Dissolved			<0.00010		mg/L		0.0001	19-SEP-19
Copper (Cu)-Dissolved			<0.00020		mg/L		0.0002	19-SEP-19
Iron (Fe)-Dissolved			<0.010		mg/L		0.01	19-SEP-19
Lead (Pb)-Dissolved			<0.000050		mg/L		0.00005	19-SEP-19
Lithium (Li)-Dissolved			<0.0010		mg/L		0.001	19-SEP-19



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MET-D-CCMS-WP		Water						
Batch	R4831868							
WG3166929-1	MB							
Magnesium (Mg)-Dissolved			<0.0050		mg/L		0.005	19-SEP-19
Manganese (Mn)-Dissolved			<0.00010		mg/L		0.0001	19-SEP-19
Molybdenum (Mo)-Dissolved			<0.000050		mg/L		0.00005	19-SEP-19
Nickel (Ni)-Dissolved			<0.00050		mg/L		0.0005	19-SEP-19
Phosphorus (P)-Dissolved			<0.030		mg/L		0.03	19-SEP-19
Potassium (K)-Dissolved			<0.050		mg/L		0.05	19-SEP-19
Rubidium (Rb)-Dissolved			<0.00020		mg/L		0.0002	19-SEP-19
Selenium (Se)-Dissolved			<0.000050		mg/L		0.00005	19-SEP-19
Silicon (Si)-Dissolved			<0.050		mg/L		0.05	19-SEP-19
Silver (Ag)-Dissolved			<0.000010		mg/L		0.00001	19-SEP-19
Sodium (Na)-Dissolved			<0.050		mg/L		0.05	19-SEP-19
Strontium (Sr)-Dissolved			<0.00010		mg/L		0.0001	19-SEP-19
Sulfur (S)-Dissolved			<0.50		mg/L		0.5	19-SEP-19
Tellurium (Te)-Dissolved			<0.00020		mg/L		0.0002	19-SEP-19
Thallium (Tl)-Dissolved			<0.000010		mg/L		0.00001	19-SEP-19
Thorium (Th)-Dissolved			<0.00010		mg/L		0.0001	19-SEP-19
Tin (Sn)-Dissolved			<0.00010		mg/L		0.0001	19-SEP-19
Titanium (Ti)-Dissolved			<0.00030		mg/L		0.0003	19-SEP-19
Tungsten (W)-Dissolved			<0.00010		mg/L		0.0001	19-SEP-19
Uranium (U)-Dissolved			<0.000010		mg/L		0.00001	19-SEP-19
Vanadium (V)-Dissolved			<0.00050		mg/L		0.0005	19-SEP-19
Zinc (Zn)-Dissolved			<0.0010		mg/L		0.001	19-SEP-19
Zirconium (Zr)-Dissolved			<0.00020		mg/L		0.0002	19-SEP-19
MET-T-CCMS-WP		Water						
Batch	R4831868							
WG3166258-2	LCS							
Aluminum (Al)-Total			102.7		%		80-120	19-SEP-19
Antimony (Sb)-Total			102.8		%		80-120	19-SEP-19
Arsenic (As)-Total			102.1		%		80-120	19-SEP-19
Barium (Ba)-Total			104.7		%		80-120	19-SEP-19
Beryllium (Be)-Total			104.3		%		80-120	19-SEP-19
Bismuth (Bi)-Total			104.0		%		80-120	19-SEP-19
Boron (B)-Total			100.7		%		80-120	19-SEP-19
Cadmium (Cd)-Total			103.0		%		80-120	19-SEP-19



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Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
MET-T-CCMS-WP		Water						
Batch	R4831868							
WG3166258-2	LCS							
Calcium (Ca)-Total			104.1		%		80-120	19-SEP-19
Cesium (Cs)-Total			102.1		%		80-120	19-SEP-19
Chromium (Cr)-Total			100.8		%		80-120	19-SEP-19
Cobalt (Co)-Total			100.4		%		80-120	19-SEP-19
Copper (Cu)-Total			101.0		%		80-120	19-SEP-19
Iron (Fe)-Total			100.2		%		80-120	19-SEP-19
Lead (Pb)-Total			102.7		%		80-120	19-SEP-19
Lithium (Li)-Total			108.9		%		80-120	19-SEP-19
Magnesium (Mg)-Total			100.6		%		80-120	19-SEP-19
Manganese (Mn)-Total			105.5		%		80-120	19-SEP-19
Molybdenum (Mo)-Total			102.8		%		80-120	19-SEP-19
Nickel (Ni)-Total			100.7		%		80-120	19-SEP-19
Potassium (K)-Total			99.8		%		80-120	19-SEP-19
Phosphorus (P)-Total			106.4		%		80-120	19-SEP-19
Rubidium (Rb)-Total			102.5		%		80-120	19-SEP-19
Selenium (Se)-Total			99.3		%		80-120	19-SEP-19
Silicon (Si)-Total			106.1		%		80-120	19-SEP-19
Silver (Ag)-Total			102.2		%		80-120	19-SEP-19
Sodium (Na)-Total			102.8		%		80-120	19-SEP-19
Strontium (Sr)-Total			99.5		%		80-120	19-SEP-19
Sulfur (S)-Total			90.7		%		80-120	19-SEP-19
Tellurium (Te)-Total			107.1		%		80-120	19-SEP-19
Thallium (Tl)-Total			101.9		%		80-120	19-SEP-19
Thorium (Th)-Total			96.4		%		80-120	19-SEP-19
Tin (Sn)-Total			102.0		%		80-120	19-SEP-19
Titanium (Ti)-Total			98.0		%		80-120	19-SEP-19
Tungsten (W)-Total			99.3		%		80-120	19-SEP-19
Uranium (U)-Total			101.8		%		80-120	19-SEP-19
Vanadium (V)-Total			101.5		%		80-120	19-SEP-19
Zinc (Zn)-Total			98.9		%		80-120	19-SEP-19
Zirconium (Zr)-Total			99.5		%		80-120	19-SEP-19
WG3166258-1	MB							
Aluminum (Al)-Total			<0.0030		mg/L		0.003	19-SEP-19
Antimony (Sb)-Total			<0.00010		mg/L		0.0001	19-SEP-19



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Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
MET-T-CCMS-WP								
	Water							
Batch	R4831868							
WG3166258-1	MB							
Arsenic (As)-Total			<0.00010		mg/L		0.0001	19-SEP-19
Barium (Ba)-Total			<0.00010		mg/L		0.0001	19-SEP-19
Beryllium (Be)-Total			<0.00010		mg/L		0.0001	19-SEP-19
Bismuth (Bi)-Total			<0.000050		mg/L		0.00005	19-SEP-19
Boron (B)-Total			<0.010		mg/L		0.01	19-SEP-19
Cadmium (Cd)-Total			<0.0000050		mg/L		0.000005	19-SEP-19
Calcium (Ca)-Total			<0.050		mg/L		0.05	19-SEP-19
Cesium (Cs)-Total			<0.000010		mg/L		0.00001	19-SEP-19
Chromium (Cr)-Total			<0.00010		mg/L		0.0001	19-SEP-19
Cobalt (Co)-Total			<0.00010		mg/L		0.0001	19-SEP-19
Copper (Cu)-Total			<0.00050		mg/L		0.0005	19-SEP-19
Iron (Fe)-Total			<0.010		mg/L		0.01	19-SEP-19
Lead (Pb)-Total			<0.000050		mg/L		0.00005	19-SEP-19
Lithium (Li)-Total			<0.0010		mg/L		0.001	19-SEP-19
Magnesium (Mg)-Total			<0.0050		mg/L		0.005	19-SEP-19
Manganese (Mn)-Total			<0.00010		mg/L		0.0001	19-SEP-19
Molybdenum (Mo)-Total			<0.000050		mg/L		0.00005	19-SEP-19
Nickel (Ni)-Total			<0.00050		mg/L		0.0005	19-SEP-19
Potassium (K)-Total			<0.050		mg/L		0.05	19-SEP-19
Phosphorus (P)-Total			<0.030		mg/L		0.03	19-SEP-19
Rubidium (Rb)-Total			<0.00020		mg/L		0.0002	19-SEP-19
Selenium (Se)-Total			<0.000050		mg/L		0.00005	19-SEP-19
Silicon (Si)-Total			<0.10		mg/L		0.1	19-SEP-19
Silver (Ag)-Total			<0.000010		mg/L		0.00001	19-SEP-19
Sodium (Na)-Total			<0.050		mg/L		0.05	19-SEP-19
Strontium (Sr)-Total			<0.00020		mg/L		0.0002	19-SEP-19
Sulfur (S)-Total			<0.50		mg/L		0.5	19-SEP-19
Tellurium (Te)-Total			<0.00020		mg/L		0.0002	19-SEP-19
Thallium (Tl)-Total			<0.000010		mg/L		0.00001	19-SEP-19
Thorium (Th)-Total			<0.00010		mg/L		0.0001	19-SEP-19
Tin (Sn)-Total			<0.00010		mg/L		0.0001	19-SEP-19
Titanium (Ti)-Total			<0.00030		mg/L		0.0003	19-SEP-19
Tungsten (W)-Total			<0.00010		mg/L		0.0001	19-SEP-19
Uranium (U)-Total			<0.000010		mg/L		0.00001	19-SEP-19



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Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
MET-T-CCMS-WP		Water						
Batch	R4831868							
WG3166258-1	MB							
Vanadium (V)-Total			<0.00050		mg/L		0.0005	19-SEP-19
Zinc (Zn)-Total			<0.0030		mg/L		0.003	19-SEP-19
Zirconium (Zr)-Total			<0.00020		mg/L		0.0002	19-SEP-19
NH3-COL-WP		Water						
Batch	R4821389							
WG3165893-6	LCS							
Ammonia, Total (as N)			101.7		%		85-115	17-SEP-19
WG3165893-5	MB							
Ammonia, Total (as N)			<0.010		mg/L		0.01	17-SEP-19
OCP-ROUTINE-WT		Water						
Batch	R4822286							
WG3164875-2	LCS							
Aldrin			112.3		%		50-150	19-SEP-19
gamma-hexachlorocyclohexane			108.1		%		50-150	19-SEP-19
a-chlordane			115.7		%		50-150	19-SEP-19
g-chlordane			117.3		%		50-150	19-SEP-19
alpha-BHC			109.6		%		50-150	19-SEP-19
beta-BHC			94.8		%		50-150	19-SEP-19
delta-BHC			108.1		%		50-150	19-SEP-19
o,p-DDD			123.4		%		50-150	19-SEP-19
pp-DDD			126.7		%		50-150	19-SEP-19
o,p-DDE			116.4		%		50-150	19-SEP-19
pp-DDE			110.8		%		50-150	19-SEP-19
op-DDT			108.9		%		50-150	19-SEP-19
pp-DDT			108.1		%		50-150	19-SEP-19
Dieldrin			120.4		%		50-150	19-SEP-19
Endosulfan I			101.5		%		50-150	19-SEP-19
Endosulfan II			118.4		%		50-150	19-SEP-19
Endosulfan Sulfate			96.8		%		50-150	19-SEP-19
Endrin			100.1		%		50-150	19-SEP-19
Endrin Aldehyde			106.2		%		50-150	19-SEP-19
Heptachlor			87.4		%		50-150	19-SEP-19
Heptachlor Epoxide			105.3		%		50-150	19-SEP-19
Hexachlorobenzene			103.8		%		50-150	19-SEP-19
Hexachlorobutadiene			70.2		%		50-150	19-SEP-19



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Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
OCP-ROUTINE-WT		Water						
Batch	R4822286							
WG3164875-2	LCS							
Hexachloroethane			76.3		%		50-150	19-SEP-19
Methoxychlor			105.7		%		50-150	19-SEP-19
Mirex			110.1		%		50-150	19-SEP-19
Oxychlorane			111.4		%		50-150	19-SEP-19
WG3164875-1	MB							
Aldrin			<0.0080		ug/L		0.008	19-SEP-19
gamma-hexachlorocyclohexane			<0.0080		ug/L		0.008	19-SEP-19
a-chlordane			<0.0080		ug/L		0.008	19-SEP-19
g-chlordane			<0.0080		ug/L		0.008	19-SEP-19
alpha-BHC			<0.0080		ug/L		0.008	19-SEP-19
beta-BHC			<0.0080		ug/L		0.008	19-SEP-19
delta-BHC			<0.0080		ug/L		0.008	19-SEP-19
o,p-DDD			<0.0040		ug/L		0.004	19-SEP-19
pp-DDD			<0.0040		ug/L		0.004	19-SEP-19
o,p-DDE			<0.0040		ug/L		0.004	19-SEP-19
pp-DDE			<0.0040		ug/L		0.004	19-SEP-19
op-DDT			<0.0040		ug/L		0.004	19-SEP-19
pp-DDT			<0.0040		ug/L		0.004	19-SEP-19
Dieldrin			<0.0080		ug/L		0.008	19-SEP-19
Endosulfan I			<0.0070		ug/L		0.007	19-SEP-19
Endosulfan II			<0.0070		ug/L		0.007	19-SEP-19
Endosulfan Sulfate			<0.0070		ug/L		0.007	19-SEP-19
Endrin			<0.010		ug/L		0.01	19-SEP-19
Endrin Aldehyde			<0.010		ug/L		0.01	19-SEP-19
Heptachlor			<0.0080		ug/L		0.008	19-SEP-19
Heptachlor Epoxide			<0.0080		ug/L		0.008	19-SEP-19
Hexachlorobenzene			<0.0080		ug/L		0.008	19-SEP-19
Hexachlorobutadiene			<0.0080		ug/L		0.008	19-SEP-19
Hexachloroethane			<0.0080		ug/L		0.008	19-SEP-19
Methoxychlor			<0.0080		ug/L		0.008	19-SEP-19
Mirex			<0.0080		ug/L		0.008	19-SEP-19
Oxychlorane			<0.0080		ug/L		0.008	19-SEP-19
Surrogate: Decachlorobiphenyl			84.0		%		40-130	19-SEP-19
Surrogate: Tetrachloro-m-xylene			84.4		%		40-130	19-SEP-19

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Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
OG-GRAV-WP		Water						
Batch	R4832794							
WG3166130-2	LCS							
Oil and Grease			87.0		%		70-130	23-SEP-19
WG3166130-1	MB							
Oil and Grease			<5.0		mg/L		5	23-SEP-19
PAH,PANH-WP		Water						
Batch	R4822268							
WG3162777-2	LCS							
1-Methyl Naphthalene			114.7		%		60-130	17-SEP-19
2-Methyl Naphthalene			118.5		%		60-130	17-SEP-19
Acenaphthene			122.2		%		60-130	17-SEP-19
Acenaphthylene			108.1		%		60-130	17-SEP-19
Anthracene			86.3		%		60-130	17-SEP-19
Acridine			95.4		%		60-130	17-SEP-19
Benzo(a)anthracene			97.1		%		60-130	17-SEP-19
Benzo(a)pyrene			82.4		%		60-130	17-SEP-19
Benzo(b&j)fluoranthene			90.9		%		60-130	17-SEP-19
Benzo(g,h,i)perylene			109.7		%		60-130	17-SEP-19
Benzo(k)fluoranthene			113.9		%		60-130	17-SEP-19
Chrysene			107.4		%		60-130	17-SEP-19
Dibenzo(a,h)anthracene			94.8		%		60-130	17-SEP-19
Fluoranthene			123.0		%		60-130	17-SEP-19
Fluorene			113.7		%		60-130	17-SEP-19
Indeno(1,2,3-cd)pyrene			81.7		%		60-130	17-SEP-19
Naphthalene			120.1		%		50-130	17-SEP-19
Phenanthrene			118.8		%		60-130	17-SEP-19
Pyrene			121.7		%		60-130	17-SEP-19
Quinoline			112.1		%		60-130	17-SEP-19
WG3162777-1	MB							
1-Methyl Naphthalene			<0.000020		mg/L		0.00002	17-SEP-19
2-Methyl Naphthalene			<0.000020		mg/L		0.00002	17-SEP-19
Acenaphthene			<0.000020		mg/L		0.00002	17-SEP-19
Acenaphthylene			<0.000020		mg/L		0.00002	17-SEP-19
Anthracene			<0.000010		mg/L		0.00001	17-SEP-19
Acridine			<0.000020		mg/L		0.00002	17-SEP-19
Benzo(a)anthracene			<0.000010		mg/L		0.00001	17-SEP-19
Benzo(a)pyrene			<0.0000050		mg/L		0.000005	17-SEP-19



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Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
PAH,PANH-WP		Water						
Batch	R4822268							
WG3162777-1	MB							
Benzo(b&j)fluoranthene			<0.000010		mg/L		0.00001	17-SEP-19
Benzo(g,h,i)perylene			<0.000020		mg/L		0.00002	17-SEP-19
Benzo(k)fluoranthene			<0.000010		mg/L		0.00001	17-SEP-19
Chrysene			<0.000020		mg/L		0.00002	17-SEP-19
Dibenzo(a,h)anthracene			<0.0000050		mg/L		0.000005	17-SEP-19
Fluoranthene			<0.000020		mg/L		0.00002	17-SEP-19
Fluorene			<0.000020		mg/L		0.00002	17-SEP-19
Indeno(1,2,3-cd)pyrene			<0.000010		mg/L		0.00001	17-SEP-19
Naphthalene			<0.000050		mg/L		0.00005	17-SEP-19
Phenanthrene			<0.000050		mg/L		0.00005	17-SEP-19
Pyrene			<0.000010		mg/L		0.00001	17-SEP-19
Quinoline			<0.000020		mg/L		0.00002	17-SEP-19
Surrogate: Acenaphthene d10			108.2		%		60-130	17-SEP-19
Surrogate: Acridine d9			99.4		%		60-130	17-SEP-19
Surrogate: Chrysene d12			98.5		%		60-130	17-SEP-19
Surrogate: Naphthalene d8			108.2		%		50-130	17-SEP-19
Surrogate: Phenanthrene d10			105.4		%		60-130	17-SEP-19
PCB9-WT		Water						
Batch	R4823271							
WG3164875-2	LCS							
Aroclor 1242			89.5		%		65-130	19-SEP-19
Aroclor 1248			84.9		%		40-130	19-SEP-19
Aroclor 1254			89.9		%		65-135	19-SEP-19
Aroclor 1260			93.3		%		65-130	19-SEP-19
WG3164875-1	MB							
Aroclor 1016			<0.020		ug/L		0.02	19-SEP-19
Aroclor 1221			<0.020		ug/L		0.02	19-SEP-19
Aroclor 1232			<0.020		ug/L		0.02	19-SEP-19
Aroclor 1242			<0.020		ug/L		0.02	19-SEP-19
Aroclor 1248			<0.020		ug/L		0.02	19-SEP-19
Aroclor 1254			<0.020		ug/L		0.02	19-SEP-19
Aroclor 1260			<0.020		ug/L		0.02	19-SEP-19
Aroclor 1262			<0.020		ug/L		0.02	19-SEP-19
Aroclor 1268			<0.020		ug/L		0.02	19-SEP-19



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Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
PCB9-WT								
	Water							
Batch	R4823271							
WG3164875-1	MB							
Surrogate: Decachlorobiphenyl			89.7		%		50-150	19-SEP-19
Surrogate: Tetrachloro-m-xylene			77.3		%		50-150	19-SEP-19
PEST-DIAZINON-WT								
	Water							
Batch	R4833867							
WG3165461-2	LCS							
Diazinon			88.6		%		60-130	23-SEP-19
WG3165461-1	MB							
Diazinon			<0.10		ug/L		0.1	23-SEP-19
Surrogate: 2-Fluorobiphenyl			78.9		%		40-130	23-SEP-19
Surrogate: d14-Terphenyl			87.1		%		40-130	23-SEP-19
PHENOLS-4AAP-WT								
	Water							
Batch	R4814988							
WG3163704-10	LCS							
Phenols (4AAP)			99.7		%		85-115	17-SEP-19
WG3163704-9	MB							
Phenols (4AAP)			<0.0010		mg/L		0.001	17-SEP-19
SO4-IC-N-WP								
	Water							
Batch	R4819249							
WG3161133-2	LCS							
Sulfate (SO4)			103.6		%		90-110	13-SEP-19
WG3161133-1	MB							
Sulfate (SO4)			<0.30		mg/L		0.3	13-SEP-19
TC,EC-QT97-WP								
	Water							
Batch	R4805349							
WG3160113-2	DUP	L2346134-1						
Total Coliforms		<1	<1	RPD-NA	MPN/100mL	N/A	65	12-SEP-19
Escherichia Coli		<1	<1	RPD-NA	MPN/100mL	N/A	65	12-SEP-19
WG3160113-1	MB							
Total Coliforms			<1		MPN/100mL		1	12-SEP-19
Escherichia Coli			<1		MPN/100mL		1	12-SEP-19
TC,EC10-QT97-WP								
	Water							
Batch	R4805310							
WG3160109-2	DUP	L2346134-3						
Total Coliforms		>24200	>24200		MPN/100mL	0.0	65	12-SEP-19
Escherichia Coli		110	80		MPN/100mL	25	65	12-SEP-19
WG3160109-1	MB							

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Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
TC,EC10-QT97-WP		Water						
Batch	R4805310							
WG3160109-1	MB							
Total Coliforms			<1		MPN/100mL		1	12-SEP-19
Escherichia Coli			<1		MPN/100mL		1	12-SEP-19
VOC+F1-HSMS-WP		Water						
Batch	R4814109							
WG3163016-2	LCS							
Acetone			117.4		%		70-130	16-SEP-19
Benzene			106.6		%		70-130	16-SEP-19
Bromobenzene			110.4		%		70-130	16-SEP-19
Bromochloromethane			112.7		%		70-130	16-SEP-19
Bromodichloromethane			103.8		%		70-130	16-SEP-19
Bromoform			107.6		%		70-130	16-SEP-19
Bromomethane			88.2		%		60-140	16-SEP-19
n-Butylbenzene			108.0		%		70-130	16-SEP-19
sec-Butylbenzene			115.4		%		70-130	16-SEP-19
tert-Butylbenzene			114.8		%		70-130	16-SEP-19
Carbon disulfide			91.6		%		70-130	16-SEP-19
Carbon Tetrachloride			106.7		%		70-130	16-SEP-19
Chlorobenzene			109.3		%		70-130	16-SEP-19
Chloroethane			90.5		%		60-140	16-SEP-19
Chloroform			107.1		%		70-130	16-SEP-19
Chloromethane			115.8		%		60-140	16-SEP-19
2-Chlorotoluene			122.1		%		70-130	16-SEP-19
4-Chlorotoluene			115.5		%		70-130	16-SEP-19
Dibromochloromethane			108.4		%		70-130	16-SEP-19
1,2-Dibromo-3-chloropropane			109.9		%		70-130	16-SEP-19
1,2-Dibromoethane			112.2		%		70-130	16-SEP-19
Dibromomethane			108.6		%		70-130	16-SEP-19
1,2-Dichlorobenzene			106.1		%		70-130	16-SEP-19
1,3-Dichlorobenzene			107.4		%		70-130	16-SEP-19
1,4-Dichlorobenzene			107.9		%		70-130	16-SEP-19
Dichlorodifluoromethane			119.1		%		60-140	16-SEP-19
1,1-dichloroethane			102.1		%		70-130	16-SEP-19
1,2-Dichloroethane			109.6		%		70-130	16-SEP-19
1,1-dichloroethene			104.8		%		70-130	16-SEP-19

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Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
VOC+F1-HSMS-WP								
	Water							
Batch	R4814109							
WG3163016-2	LCS							
cis-1,2-Dichloroethene			108.3		%		70-130	16-SEP-19
trans-1,2-Dichloroethene			99.8		%		70-130	16-SEP-19
Dichloromethane			101.6		%		70-130	16-SEP-19
1,2-Dichloropropane			106.0		%		70-130	16-SEP-19
1,3-Dichloropropane			110.7		%		70-130	16-SEP-19
2,2-Dichloropropane			90.0		%		70-130	16-SEP-19
1,1-Dichloropropene			108.1		%		70-130	16-SEP-19
cis-1,3-Dichloropropene			97.5		%		70-130	16-SEP-19
trans-1,3-Dichloropropene			103.8		%		70-130	16-SEP-19
Ethylbenzene			116.1		%		70-130	16-SEP-19
Hexachlorobutadiene			107.3		%		70-130	16-SEP-19
Hexane			90.1		%		70-130	16-SEP-19
2-Hexanone (Methyl butyl ketone)			101.5		%		70-130	16-SEP-19
Isopropylbenzene			107.1		%		70-130	16-SEP-19
4-Isopropyltoluene			109.7		%		70-130	16-SEP-19
MEK			102.1		%		70-130	16-SEP-19
MIBK			100.1		%		70-130	16-SEP-19
MTBE			109.4		%		70-130	16-SEP-19
Styrene			101.5		%		70-130	16-SEP-19
1,1,1,2-Tetrachloroethane			110.3		%		70-130	16-SEP-19
1,1,2,2-Tetrachloroethane			100.8		%		70-130	16-SEP-19
Tetrachloroethene			108.4		%		70-130	16-SEP-19
Toluene			113.3		%		70-130	16-SEP-19
1,2,3-Trichlorobenzene			100.1		%		70-130	16-SEP-19
1,2,4-Trichlorobenzene			101.7		%		70-130	16-SEP-19
1,1,1-Trichloroethane			107.8		%		70-130	16-SEP-19
1,1,2-Trichloroethane			113.6		%		70-130	16-SEP-19
Trichloroethene			105.2		%		70-130	16-SEP-19
Trichlorofluoromethane			124.5		%		60-140	16-SEP-19
1,2,3-Trichloropropane			110.1		%		70-130	16-SEP-19
1,2,4-Trimethylbenzene			112.8		%		70-130	16-SEP-19
1,3,5-Trimethylbenzene			112.6		%		70-130	16-SEP-19
Vinyl Chloride			111.2		%		60-140	16-SEP-19
M+P-Xylenes			117.8		%		70-130	16-SEP-19

Quality Control Report

Workorder: L2346134

Report Date: 27-SEP-19

Page 17 of 20

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
VOC+F1-HSMS-WP								
	Water							
Batch	R4814109							
WG3163016-2	LCS							
o-Xylene			115.3		%		70-130	16-SEP-19
WG3163016-3	LCS							
F1			102.7		%		70-130	16-SEP-19
WG3163016-1	MB							
Acetone			<0.050		mg/L		0.05	16-SEP-19
Benzene			<0.00050		mg/L		0.0005	16-SEP-19
Bromobenzene			<0.0010		mg/L		0.001	16-SEP-19
Bromochloromethane			<0.0010		mg/L		0.001	16-SEP-19
Bromodichloromethane			<0.00050		mg/L		0.0005	16-SEP-19
Bromoform			<0.0010		mg/L		0.001	16-SEP-19
Bromomethane			<0.0010		mg/L		0.001	16-SEP-19
n-Butylbenzene			<0.0010		mg/L		0.001	16-SEP-19
sec-Butylbenzene			<0.0010		mg/L		0.001	16-SEP-19
tert-Butylbenzene			<0.0010		mg/L		0.001	16-SEP-19
Carbon disulfide			<0.0050		mg/L		0.005	16-SEP-19
Carbon Tetrachloride			<0.00050		mg/L		0.0005	16-SEP-19
Chlorobenzene			<0.0010		mg/L		0.001	16-SEP-19
Chloroethane			<0.0010		mg/L		0.001	16-SEP-19
Chloroform			<0.00050		mg/L		0.0005	16-SEP-19
Chloromethane			<0.0050		mg/L		0.005	16-SEP-19
2-Chlorotoluene			<0.020		mg/L		0.02	16-SEP-19
4-Chlorotoluene			<0.0010		mg/L		0.001	16-SEP-19
Dibromochloromethane			<0.00050		mg/L		0.0005	16-SEP-19
1,2-Dibromo-3-chloropropane			<0.0010		mg/L		0.001	16-SEP-19
1,2-Dibromoethane			<0.0010		mg/L		0.001	16-SEP-19
Dibromomethane			<0.0010		mg/L		0.001	16-SEP-19
1,2-Dichlorobenzene			<0.00050		mg/L		0.0005	16-SEP-19
1,3-Dichlorobenzene			<0.0010		mg/L		0.001	16-SEP-19
1,4-Dichlorobenzene			<0.0010		mg/L		0.001	16-SEP-19
Dichlorodifluoromethane			<0.0010		mg/L		0.001	16-SEP-19
1,1-dichloroethane			<0.00050		mg/L		0.0005	16-SEP-19
1,2-Dichloroethane			<0.00050		mg/L		0.0005	16-SEP-19
1,1-dichloroethene			<0.00050		mg/L		0.0005	16-SEP-19
cis-1,2-Dichloroethene			<0.0010		mg/L		0.001	16-SEP-19
trans-1,2-Dichloroethene			<0.0010		mg/L		0.001	16-SEP-19

Quality Control Report

Workorder: L2346134

Report Date: 27-SEP-19

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Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
VOC+F1-HSMS-WP								
	Water							
Batch	R4814109							
WG3163016-1	MB							
Dichloromethane			<0.0050		mg/L		0.005	16-SEP-19
1,2-Dichloropropane			<0.0010		mg/L		0.001	16-SEP-19
1,3-Dichloropropane			<0.0010		mg/L		0.001	16-SEP-19
2,2-Dichloropropane			<0.0010		mg/L		0.001	16-SEP-19
1,1-Dichloropropene			<0.0010		mg/L		0.001	16-SEP-19
cis-1,3-Dichloropropene			<0.0010		mg/L		0.001	16-SEP-19
trans-1,3-Dichloropropene			<0.0010		mg/L		0.001	16-SEP-19
Ethylbenzene			<0.00050		mg/L		0.0005	16-SEP-19
F1			<0.10		mg/L		0.1	16-SEP-19
Hexachlorobutadiene			<0.0010		mg/L		0.001	16-SEP-19
Hexane			<0.0010		mg/L		0.001	16-SEP-19
2-Hexanone (Methyl butyl ketone)			<0.020		mg/L		0.02	16-SEP-19
Isopropylbenzene			<0.0010		mg/L		0.001	16-SEP-19
4-Isopropyltoluene			<0.0010		mg/L		0.001	16-SEP-19
MEK			<0.020		mg/L		0.02	16-SEP-19
MIBK			<0.020		mg/L		0.02	16-SEP-19
MTBE			<0.00050		mg/L		0.0005	16-SEP-19
Styrene			<0.0010		mg/L		0.001	16-SEP-19
1,1,1,2-Tetrachloroethane			<0.00050		mg/L		0.0005	16-SEP-19
1,1,2,2-Tetrachloroethane			<0.00050		mg/L		0.0005	16-SEP-19
Tetrachloroethene			<0.00050		mg/L		0.0005	16-SEP-19
Toluene			<0.00050		mg/L		0.0005	16-SEP-19
1,2,3-Trichlorobenzene			<0.0010		mg/L		0.001	16-SEP-19
1,2,4-Trichlorobenzene			<0.0010		mg/L		0.001	16-SEP-19
1,1,1-Trichloroethane			<0.00050		mg/L		0.0005	16-SEP-19
1,1,2-Trichloroethane			<0.00050		mg/L		0.0005	16-SEP-19
Trichloroethene			<0.00050		mg/L		0.0005	16-SEP-19
Trichlorofluoromethane			<0.0010		mg/L		0.001	16-SEP-19
1,2,3-Trichloropropane			<0.0010		mg/L		0.001	16-SEP-19
1,2,4-Trimethylbenzene			<0.0010		mg/L		0.001	16-SEP-19
1,3,5-Trimethylbenzene			<0.0010		mg/L		0.001	16-SEP-19
Vinyl Chloride			<0.00050		mg/L		0.0005	16-SEP-19
M+P-Xylenes			<0.00040		mg/L		0.0004	16-SEP-19
o-Xylene			<0.00050		mg/L		0.0005	16-SEP-19



Quality Control Report

Workorder: L2346134

Report Date: 27-SEP-19

Page 19 of 20

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
VOC+F1-HSMS-WP	Water							
Batch	R4814109							
WG3163016-1	MB							
Surrogate: 4-Bromofluorobenzene (SS)			92.1		%		70-130	16-SEP-19
Surrogate: 1,4-Difluorobenzene (SS)			100.3		%		70-130	16-SEP-19

Quality Control Report

Workorder: L2346134

Report Date: 27-SEP-19

Page 20 of 20

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.

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.

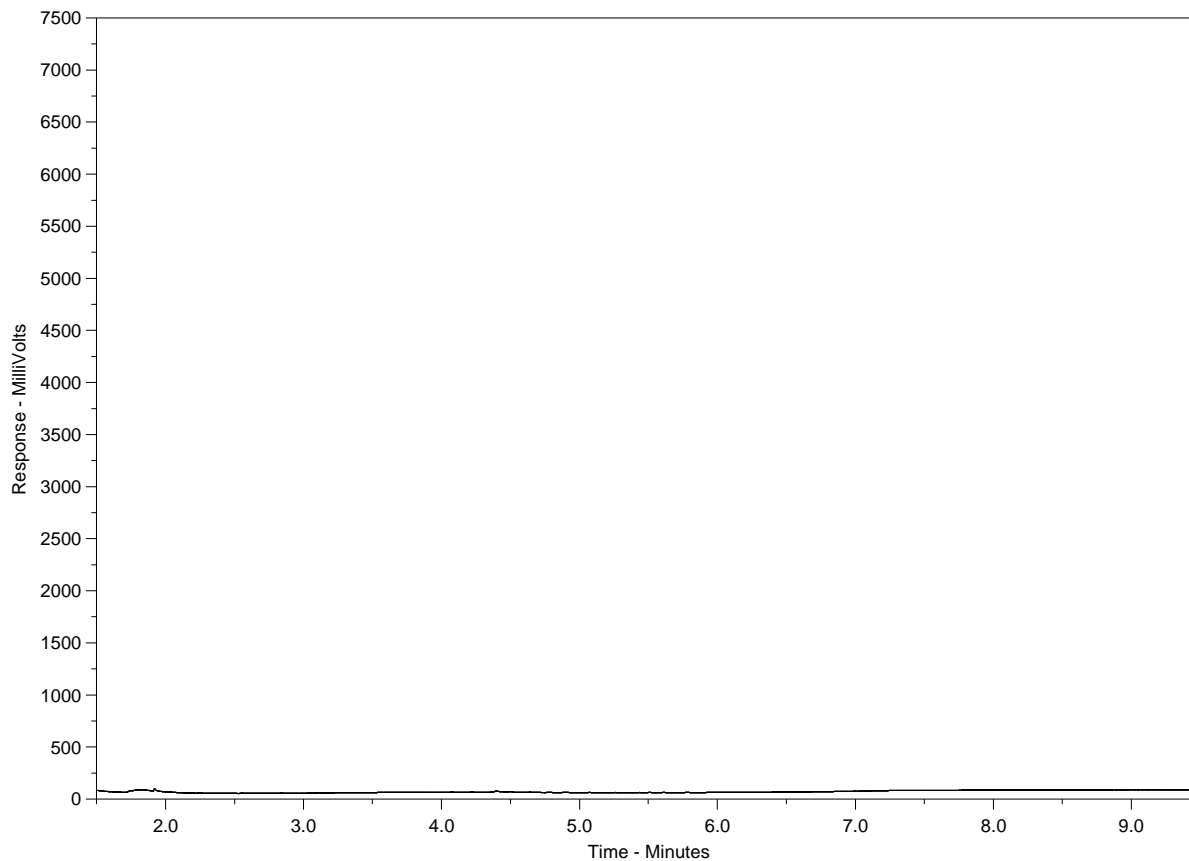
The ALS Quality Control Report is provided to ALS clients upon request. ALS includes comprehensive QC checks with every analysis to ensure our high standards of quality are met. Each QC result has a known or expected target value, which is compared against pre-determined data quality objectives to provide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

CCME F2-F4 HYDROCARBON DISTRIBUTION REPORT



ALS Sample ID: L2346134-1
 Client Sample ID: LQ25 - TRIP BLANK



← 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.

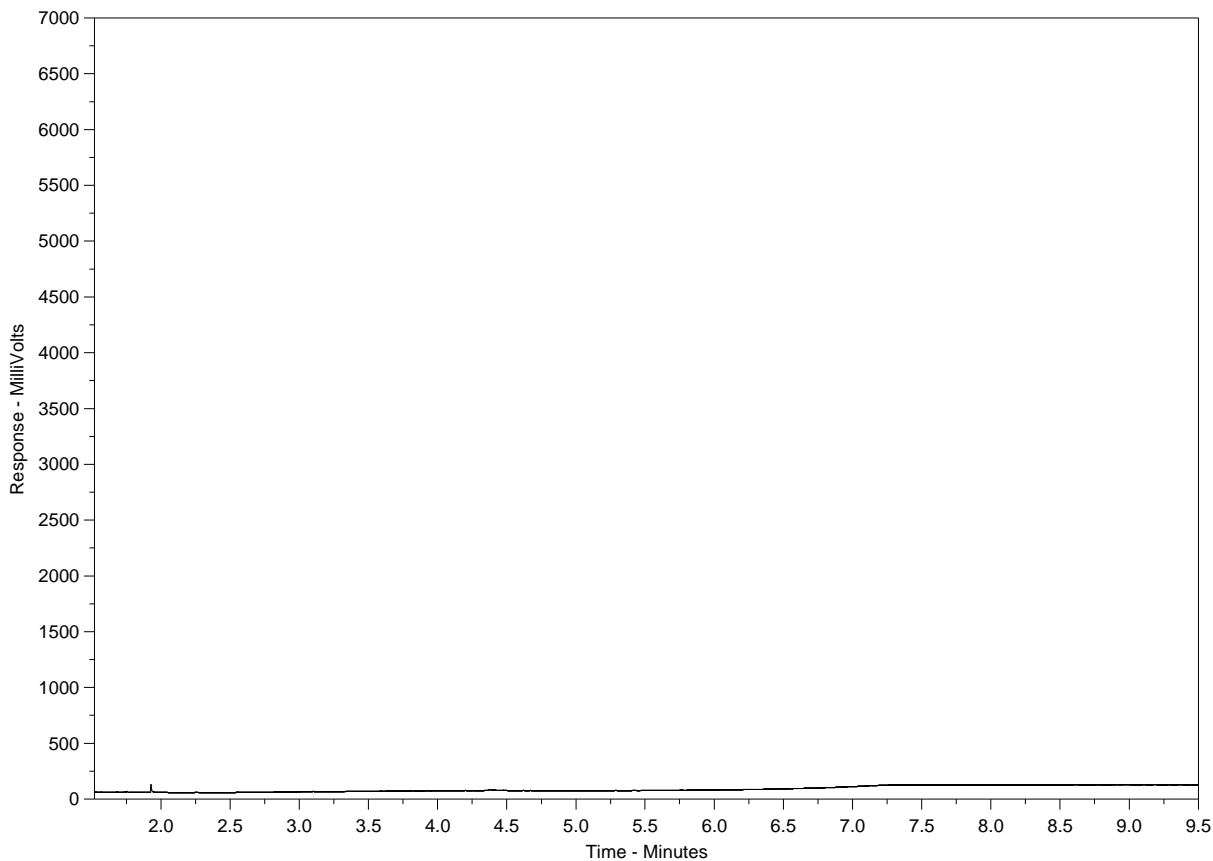
Peak heights in this report are a function of the sample concentration, the sample amount extracted, the sample dilution factor, and the scale at left.

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: L2346134-2
 Client Sample ID: LQ25 - FIELD BLANK



← 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.



L2346134-COFC

Report To		Contact and company name below will appear on the final report		Report Format / Distribution		Select service level below. All E&P TATs with your AM - surcharges will apply												
Company:	City of Winnipeg	Select Report Format:	<input checked="" type="checkbox"/> PDF <input type="checkbox"/> EXCEL <input type="checkbox"/> EDD (DIGITAL)	Regular [R] <input type="checkbox"/> Standard TAT if received by 3 pm - business days - no surcharges apply						EMERGENCY								
Contact:	Chris Kozak	Quality Control (QC) Report with Report:	<input checked="" type="checkbox"/> YES <input type="checkbox"/> NO	4 day [P4] <input type="checkbox"/>						1 Business day [E1] <input type="checkbox"/>								
Phone:	204-986-2384	<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:	1120 Waverly Street	Email 1 or Fax:	ckozak@winnipeg.ca	For tests that can not be performed according to the service level selected, you will be contacted.														
City/Province:	Winnipeg, Manitoba	Email 2:		Analysis Request														
Postal Code:	R3T 0P4	Email 3:		Indicate Filtered (F), Preserved (P) or Filtered and Preserved (F/P) below														
Invoice To	Same as Report To <input type="checkbox"/> YES <input type="checkbox"/> NO	Invoice Distribution																
	Copy of invoice with Report <input type="checkbox"/> YES <input type="checkbox"/> NO	Select Invoice Distribution:	<input type="checkbox"/> EMAIL <input checked="" type="checkbox"/> MAIL <input type="checkbox"/> FAX															
Company:		Email 1 or Fax:																
Contact:		Email 2:																
Project Information			Oil and Gas Required Fields (client use)									Number of Containers						
ALS Account # / Quote #:	W10051/Q67317	AFE/Cost Center:		FO#:														
Job #:	Section C - BRRMF LEACHATE	Major/Minor Code:		Routing Code:														
PO / AFE:		Requisitioner:																
LSD:		Location:																
ALS Lab Work Order # (lab use only)		ALS Contact:		Sampler:														
ALS Sample # (lab use only)	Sample Identification and/or Coordinates (This description will appear on the report)		Date (dd-mm-yy)	Time (hh:mm)	Sample Type	CN-T-L-CFA-VA, NH3-COL-WP	PEST-ROUTINE-WT, PEST-DIAZINON-WT	HERBSCR-LCMS-WT, PCB9-WT	TC,FC,EC-QT97-WP	CL-IC-NWP, SO4-IC-NWP, ALK-SPEC-WP	OGG-GRAB-WP	C-TDC,DIC,DOC-HTC-WP	MET-D-CCMS-WP, MET-T-CCMS-WP	HG-D-CVAF-WP, HG-T-CVAF-WP	CR-OR6-IC-WT	PHENOLS-4AAP-WT	VOC-F1-F4-WP, PAH,PAH-WP	MBOCA-WT
	LQ25 - Trip blank 238475		12-SEP-19	08:30	WATER	X	X	X	X	X	X	X	X	X	X	X	X	
	LQ25 Field blank 238476			09:30	WATER	X	X	X	X	X	X	X	X	X	X	X	X	
	LQ25 - R1 EC resample			10:15	WATER			X										1
	LQ25 - MH46 GC resample			09:05	WATER			X										1
	LQ25 - Tank EC resample			09:10	WATER			X										1
					WATER													
					WATER													
					WATER													
					WATER													
					WATER													
					WATER													
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			Resamples for EC						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 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						
									10.3									
SHIPMENT RELEASE (client use)			INITIAL SHIPMENT RECEPTION (lab use only)						FINAL SHIPMENT RECEPTION (lab use only)									
Releaser by:	Date:	Time:	Received by:	Date:	Time:	Received by:	Date:	Time:										
<i>[Signature]</i>	12-SEPT-19		<i>[Signature]</i>	Sept 12	12	<i>[Signature]</i>	SEP 12 2019											



City of Winnipeg - Solid Waste Services Div
(1120 Waverley)
ATTN: CHRIS KOZAK
Solid Waste Services Division
1120 Waverley Street
Winnipeg MB R3T 0P4

Date Received: 13-SEP-19
Report Date: 08-OCT-19 15:36 (MT)
Version: FINAL

Client Phone: 204-986-2384

Certificate of Analysis

Lab Work Order #: L2346951
Project P.O. #: NOT SUBMITTED
Job Reference: SECTION C - BRRMF LEACHATE
C of C Numbers:
Legal Site Desc:

Hua Wo
Chemistry Laboratory Manager

[This report shall not be reproduced except in full without the written authority of the Laboratory.]

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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ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2346951-1 LQ25 COMPOSITE							
Sampled By: CLIENT on 13-SEP-19 @ 10:54							
Matrix: WATER							
Dioxins and Furans HR 1613B							
2,3,7,8-TCDD	<0.0000020	[U]	0.0000020	ug/L	02-OCT-19	04-OCT-19	R4860135
1,2,3,7,8-PeCDD	<0.00000080	[U]	0.0000008	ug/L	02-OCT-19	04-OCT-19	R4860135
			0				
1,2,3,4,7,8-HxCDD	<0.00000083	[U]	0.0000008	ug/L	02-OCT-19	04-OCT-19	R4860135
			3				
1,2,3,6,7,8-HxCDD	0.00000379	M,J	0.0000008	ug/L	02-OCT-19	04-OCT-19	R4860135
			1				
1,2,3,7,8,9-HxCDD	0.00000186	[J]	0.0000008	ug/L	02-OCT-19	04-OCT-19	R4860135
			5				
1,2,3,4,6,7,8-HpCDD	0.000183		0.0000015	ug/L	02-OCT-19	04-OCT-19	R4860135
OCDD	0.00134		0.0000031	ug/L	02-OCT-19	04-OCT-19	R4860135
2,3,7,8-TCDF	<0.00000089	[U]	0.0000008	ug/L	02-OCT-19	04-OCT-19	R4860135
			9				
1,2,3,7,8-PeCDF	<0.00000056	[U]	0.0000005	ug/L	02-OCT-19	04-OCT-19	R4860135
			6				
2,3,4,7,8-PeCDF	0.00000066	M,J,R	0.0000004	ug/L	02-OCT-19	04-OCT-19	R4860135
			5				
1,2,3,4,7,8-HxCDF	0.00000106	M,J	0.0000006	ug/L	02-OCT-19	04-OCT-19	R4860135
			9				
1,2,3,6,7,8-HxCDF	0.00000132	M,J	0.0000007	ug/L	02-OCT-19	04-OCT-19	R4860135
			0				
2,3,4,6,7,8-HxCDF	0.00000097	J,R	0.0000007	ug/L	02-OCT-19	04-OCT-19	R4860135
			1				
1,2,3,7,8,9-HxCDF	0.00000110	M,J,R	0.0000008	ug/L	02-OCT-19	04-OCT-19	R4860135
			8				
1,2,3,4,6,7,8-HpCDF	0.00000946	M,J	0.0000008	ug/L	02-OCT-19	04-OCT-19	R4860135
			2				
1,2,3,4,7,8,9-HpCDF	0.00000100	M,J,R	0.0000009	ug/L	02-OCT-19	04-OCT-19	R4860135
			5				
OCDF	0.0000200	[J]	0.0000013	ug/L	02-OCT-19	04-OCT-19	R4860135
Total-TCDD	<0.0000020	[U]	0.0000020	ug/L	02-OCT-19	04-OCT-19	R4860135
Total TCDD # Homologues	0				02-OCT-19	04-OCT-19	R4860135
Total-PeCDD	0.0000386		0.0000008	ug/L	02-OCT-19	04-OCT-19	R4860135
			0				
Total PeCDD # Homologues	5				02-OCT-19	04-OCT-19	R4860135
Total-HxCDD	0.000324		0.0000008	ug/L	02-OCT-19	04-OCT-19	R4860135
			5				
Total HxCDD # Homologues	4				02-OCT-19	04-OCT-19	R4860135
Total-HpCDD	0.000569		0.0000015	ug/L	02-OCT-19	04-OCT-19	R4860135
Total HpCDD # Homologues	2				02-OCT-19	04-OCT-19	R4860135
Total-TCDF	0.00000411		0.0000008	ug/L	02-OCT-19	04-OCT-19	R4860135
			9				
Total TCDF # Homologues	2				02-OCT-19	04-OCT-19	R4860135
Total-PeCDF	<0.00000056	[U]	0.0000005	ug/L	02-OCT-19	04-OCT-19	R4860135
			6				
Total PeCDF # Homologues	0				02-OCT-19	04-OCT-19	R4860135
Total-HxCDF	0.0000114		0.0000008	ug/L	02-OCT-19	04-OCT-19	R4860135
			8				
Total HxCDF # Homologues	4				02-OCT-19	04-OCT-19	R4860135
Total-HpCDF	0.00000946		0.0000009	ug/L	02-OCT-19	04-OCT-19	R4860135
			5				
Total HpCDF # Homologues	1				02-OCT-19	04-OCT-19	R4860135
Surrogate: 13C12-2,3,7,8-TCDD	81.0		20-175	%	02-OCT-19	04-OCT-19	R4860135
Surrogate: 13C12-1,2,3,7,8-PeCDD	77.0		21-227	%	02-OCT-19	04-OCT-19	R4860135
Surrogate: 13C12-1,2,3,4,7,8-HxCDD	73.0		21-193	%	02-OCT-19	04-OCT-19	R4860135
Surrogate: 13C12-1,2,3,6,7,8-HxCDD	68.0		25-163	%	02-OCT-19	04-OCT-19	R4860135

* 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
L2346951-1 LQ25 COMPOSITE							
Sampled By: CLIENT on 13-SEP-19 @ 10:54							
Matrix: WATER							
Dioxins and Furans HR 1613B							
Surrogate: 13C12-1,2,3,4,6,7,8-HpCDD	80.0		23-166	%	02-OCT-19	04-OCT-19	R4860135
Surrogate: 13C12-OCDD	52.0		13-138	%	02-OCT-19	04-OCT-19	R4860135
Surrogate: 13C12-2,3,7,8-TCDF	65.0		22-152	%	02-OCT-19	04-OCT-19	R4860135
Surrogate: 13C12-1,2,3,7,8-PeCDF	73.0		24-185	%	02-OCT-19	04-OCT-19	R4860135
Surrogate: 13C12-2,3,4,7,8-PeCDF	73.0		21-178	%	02-OCT-19	04-OCT-19	R4860135
Surrogate: 13C12-1,2,3,4,7,8-HxCDF	68.0		26-152	%	02-OCT-19	04-OCT-19	R4860135
Surrogate: 13C12-1,2,3,6,7,8-HxCDF	64.0		21-159	%	02-OCT-19	04-OCT-19	R4860135
Surrogate: 13C12-2,3,4,6,7,8-HxCDF	66.0		17-205	%	02-OCT-19	04-OCT-19	R4860135
Surrogate: 13C12-1,2,3,7,8,9-HxCDF	70.0		28-136	%	02-OCT-19	04-OCT-19	R4860135
Surrogate: 13C12-1,2,3,4,6,7,8-HpCDF	67.0		21-158	%	02-OCT-19	04-OCT-19	R4860135
Surrogate: 13C12-1,2,3,4,7,8,9-HpCDF	83.0		20-186	%	02-OCT-19	04-OCT-19	R4860135
Surrogate: 37Cl4-2,3,7,8-TCDD (Cleanup)	80.0		31-191	%	02-OCT-19	04-OCT-19	R4860135
Lower Bound PCDD/F TEQ (WHO 2005)				ug/L	02-OCT-19	04-OCT-19	R4860135
Mid Point PCDD/F TEQ (WHO 2005)				ug/L	02-OCT-19	04-OCT-19	R4860135
Upper Bound PCDD/F TEQ (WHO 2005)				ug/L	02-OCT-19	04-OCT-19	R4860135

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

Reference Information

Sample Parameter Qualifier Key:

Qualifier	Description
J,R	The analyte was detected below the calibrated range but above the EDL, and the ion abundance ratio(s) did not meet the acceptance criteria. Value is an estimated maximum.
M,J	A peak has been manually integrated, and the analyte was detected below the calibrated range but above the EDL.
M,J,R	A peak has been manually integrated, the analyte was detected below the calibrated range but above the EDL, and the ion abundance ratio(s) did not meet the acceptance criteria. Value is an estimated maximum.
M,U	A peak has been manually integrated, and the analyte was not detected above the EDL.
[J]	The analyte was detected below the calibrated range but above the EDL.
[U]	The analyte was not detected above the EDL.

Test Method References:

ALS Test Code	Matrix	Test Description	Method Reference**
DX-1613B-HRMS-BU	Water	Dioxins and Furans HR 1613B	USEPA 1613B

Samples are filtered if required. Solids are extracted by Soxhlet using toluene. The liquid portion is extracted by liquid/liquid extraction using dichloromethane. The extracts are prepared using column chromatography, reduced in volume and analyzed by isotope-dilution GC/HRMS

** 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
BU	ALS ENVIRONMENTAL - BURLINGTON, ONTARIO, 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: L2346951

Report Date: 08-OCT-19

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Client: City of Winnipeg - Solid Waste Services Div (1120 Waverley)
 Solid Waste Services Division 1120 Waverley Street
 Winnipeg MB R3T 0P4

Contact: CHRIS KOZAK

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
DX-1613B-HRMS-BU		Water						
Batch	R4860135							
WG3169592-2 LCS								
2,3,7,8-TCDD			84.0		%		67-158	03-OCT-19
1,2,3,7,8-PeCDD			110.0		%		70-142	03-OCT-19
1,2,3,4,7,8-HxCDD			106.0		%		70-164	03-OCT-19
1,2,3,6,7,8-HxCDD			101.0		%		76-134	03-OCT-19
1,2,3,7,8,9-HxCDD			106.0		%		64-162	03-OCT-19
1,2,3,4,6,7,8-HpCDD			109.0		%		70-140	03-OCT-19
OCDD			96.0		%		78-144	03-OCT-19
2,3,7,8-TCDF			97.0		%		75-158	03-OCT-19
1,2,3,7,8-PeCDF			107.0		%		80-134	03-OCT-19
2,3,4,7,8-PeCDF			96.0		%		68-160	03-OCT-19
1,2,3,4,7,8-HxCDF			106.0		%		72-134	03-OCT-19
1,2,3,6,7,8-HxCDF			105.0		%		84-130	03-OCT-19
2,3,4,6,7,8-HxCDF			103.0		%		70-156	03-OCT-19
1,2,3,7,8,9-HxCDF			109.0		%		78-130	03-OCT-19
1,2,3,4,6,7,8-HpCDF			101.0		%		82-122	03-OCT-19
1,2,3,4,7,8,9-HpCDF			97.0		%		78-138	03-OCT-19
OCDF			114.0		%		63-170	03-OCT-19
WG3169592-1 MB								
2,3,7,8-TCDD			<1.8	[U]	pg/L		1.8	04-OCT-19
1,2,3,7,8-PeCDD			<1.3	[U]	pg/L		1.3	04-OCT-19
1,2,3,4,7,8-HxCDD			<1.7	[U]	pg/L		1.7	04-OCT-19
1,2,3,6,7,8-HxCDD			<1.7	[U]	pg/L		1.7	04-OCT-19
1,2,3,7,8,9-HxCDD			<1.8	[U]	pg/L		1.8	04-OCT-19
1,2,3,4,6,7,8-HpCDD			<1.2	[U]	pg/L		1.2	04-OCT-19
OCDD			<2.1	M,U	pg/L		2.1	04-OCT-19
2,3,7,8-TCDF			<1.3	[U]	pg/L		1.3	04-OCT-19
1,2,3,7,8-PeCDF			<1.1	[U]	pg/L		1.1	04-OCT-19
2,3,4,7,8-PeCDF			<0.92	[U]	pg/L		0.92	04-OCT-19
1,2,3,4,7,8-HxCDF			<0.69	[U]	pg/L		0.69	04-OCT-19
1,2,3,6,7,8-HxCDF			<0.65	[U]	pg/L		0.65	04-OCT-19
2,3,4,6,7,8-HxCDF			<0.66	[U]	pg/L		0.66	04-OCT-19
1,2,3,7,8,9-HxCDF			<0.86	[U]	pg/L		0.86	04-OCT-19
1,2,3,4,6,7,8-HpCDF			<0.65	[U]	pg/L		0.65	04-OCT-19
1,2,3,4,7,8,9-HpCDF			<0.69	[U]	pg/L		0.69	04-OCT-19



Quality Control Report

Workorder: L2346951

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Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
DX-1613B-HRMS-BU								
Water								
Batch	R4860135							
WG3169592-1	MB							
OCDF			<1.5	[U]	pg/L		1.5	04-OCT-19
Total-TCDD			<1.8	[U]	pg/L		1.8	04-OCT-19
Total-PeCDD			<1.3	[U]	pg/L		1.3	04-OCT-19
Total-HxCDD			<1.8	[U]	pg/L		1.8	04-OCT-19
Total-HpCDD			<1.2	[U]	pg/L		1.2	04-OCT-19
Total-TCDF			<1.3	[U]	pg/L		1.3	04-OCT-19
Total-PeCDF			<1.1	[U]	pg/L		1.1	04-OCT-19
Total-HxCDF			<0.86	[U]	pg/L		0.86	04-OCT-19
Total-HpCDF			<0.69	[U]	pg/L		0.69	04-OCT-19
Surrogate: 13C12-2,3,7,8-TCDD			98.0		%		20-175	04-OCT-19
Surrogate: 13C12-1,2,3,7,8-PeCDD			70.0		%		21-227	04-OCT-19
Surrogate: 13C12-1,2,3,4,7,8-HxCDD			94.0		%		21-193	04-OCT-19
Surrogate: 13C12-1,2,3,6,7,8-HxCDD			82.0		%		25-163	04-OCT-19
Surrogate: 13C12-1,2,3,4,6,7,8-HpCDD			104.0		%		23-166	04-OCT-19
Surrogate: 13C12-OCDD			79.0		%		13-138	04-OCT-19
Surrogate: 13C12-2,3,7,8-TCDF			81.0		%		22-152	04-OCT-19
Surrogate: 13C12-1,2,3,7,8-PeCDF			73.0		%		24-185	04-OCT-19
Surrogate: 13C12-2,3,4,7,8-PeCDF			71.0		%		21-178	04-OCT-19
Surrogate: 13C12-1,2,3,4,7,8-HxCDF			85.0		%		26-152	04-OCT-19
Surrogate: 13C12-1,2,3,6,7,8-HxCDF			80.0		%		21-159	04-OCT-19
Surrogate: 13C12-2,3,4,6,7,8-HxCDF			85.0		%		17-205	04-OCT-19
Surrogate: 13C12-1,2,3,7,8,9-HxCDF			93.0		%		28-136	04-OCT-19
Surrogate: 13C12-1,2,3,4,6,7,8-HpCDF			86.0		%		21-158	04-OCT-19
Surrogate: 13C12-1,2,3,4,7,8,9-HpCDF			114.0		%		20-186	04-OCT-19
Surrogate: 37Cl4-2,3,7,8-TCDD (Cleanup)			82.0		%		31-191	04-OCT-19

Quality Control Report

Workorder: L2346951

Report Date: 08-OCT-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
M,U	A peak has been manually integrated, and the analyte was not detected above the EDL.
[U]	The analyte was not detected above the EDL.

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.



City of Winnipeg - Solid Waste Services Div
(1120 Waverley)
ATTN: CHRIS KOZAK
Solid Waste Services Division
1120 Waverley Street
Winnipeg MB R3T 0P4

Date Received: 01-OCT-19
Report Date: 29-OCT-19 13:01 (MT)
Version: FINAL

Client Phone: 204-986-2384

Certificate of Analysis

Lab Work Order #: L2357101
Project P.O. #: NOT SUBMITTED
Job Reference: SECTION A (BRRMF SURFACE WATER)
C of C Numbers:
Legal Site Desc:

Hua Wo
Chemistry Laboratory Manager

[This report shall not be reproduced except in full without the written authority of the Laboratory.]

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
L2357101-1 SWQ 25-1							
Sampled By: CLIENT on 30-SEP-19 @ 13:43							
Matrix: WATER							
Alkalinity species as HCO3, CO3, OH							
Alkalinity, Bicarbonate							
Bicarbonate (HCO3)	497000		1200	ug/L		03-OCT-19	
Alkalinity, Carbonate							
Carbonate (CO3)	<600		600	ug/L		03-OCT-19	
Alkalinity, Hydroxide							
Hydroxide (OH)	<340		340	ug/L		03-OCT-19	
Alkalinity, Total (as CaCO3)							
Alkalinity, Total (as CaCO3)	408000		1000	ug/L		02-OCT-19	R4857668
Dissolved Carbons							
Dissolved Inorganic Carbon by Combustion							
Dissolved Inorganic Carbon	49400		500	ug/L		04-OCT-19	R4860412
Dissolved Organic Carbon by Combustion							
Dissolved Organic Carbon	13300		500	ug/L		03-OCT-19	R4859438
Total Dissolved Carbon by Calculation							
Total Dissolved Carbon	62700		1000	ug/L		07-OCT-19	
Miscellaneous Parameters							
Ammonia, Total (as N)	15		10	ug/L		08-OCT-19	R4863330
Chloride (Cl)	15100		500	ug/L		02-OCT-19	R4857803
Chromium, Hexavalent	<0.50		0.50	ug/L		04-OCT-19	R4860347
Cyanide, Total	1.1		1.0	ug/L		07-OCT-19	R4861590
Sulfate (SO4)	23000		300	ug/L		02-OCT-19	R4857803
Dissolved Metals in Water by CRC ICPMS							
Dissolved Metals Filtration Location	FIELD					07-OCT-19	R4861019
Aluminum (Al)-Dissolved	5.5		1.0	ug/L	07-OCT-19	07-OCT-19	R4865820
Antimony (Sb)-Dissolved	0.16		0.10	ug/L	07-OCT-19	07-OCT-19	R4865820
Arsenic (As)-Dissolved	2.18		0.10	ug/L	07-OCT-19	07-OCT-19	R4865820
Barium (Ba)-Dissolved	56.1		0.10	ug/L	07-OCT-19	07-OCT-19	R4865820
Beryllium (Be)-Dissolved	<0.10		0.10	ug/L	07-OCT-19	07-OCT-19	R4865820
Bismuth (Bi)-Dissolved	<0.050		0.050	ug/L	07-OCT-19	07-OCT-19	R4865820
Boron (B)-Dissolved	23		10	ug/L	07-OCT-19	07-OCT-19	R4865820
Cadmium (Cd)-Dissolved	0.0178		0.0050	ug/L	07-OCT-19	07-OCT-19	R4865820
Calcium (Ca)-Dissolved	46300		50	ug/L	07-OCT-19	07-OCT-19	R4865820
Cesium (Cs)-Dissolved	<0.010		0.010	ug/L	07-OCT-19	07-OCT-19	R4865820
Chromium (Cr)-Dissolved	0.20		0.10	ug/L	07-OCT-19	07-OCT-19	R4865820
Cobalt (Co)-Dissolved	0.34		0.10	ug/L	07-OCT-19	07-OCT-19	R4865820
Copper (Cu)-Dissolved	2.43		0.20	ug/L	07-OCT-19	07-OCT-19	R4865820
Iron (Fe)-Dissolved	44		10	ug/L	07-OCT-19	07-OCT-19	R4865820
Lead (Pb)-Dissolved	0.083		0.050	ug/L	07-OCT-19	07-OCT-19	R4865820
Lithium (Li)-Dissolved	55.8		1.0	ug/L	07-OCT-19	07-OCT-19	R4865820
Magnesium (Mg)-Dissolved	23900		5.0	ug/L	07-OCT-19	07-OCT-19	R4865820
Manganese (Mn)-Dissolved	63.9		0.10	ug/L	07-OCT-19	07-OCT-19	R4865820
Molybdenum (Mo)-Dissolved	1.18		0.050	ug/L	07-OCT-19	07-OCT-19	R4865820
Nickel (Ni)-Dissolved	4.98		0.50	ug/L	07-OCT-19	07-OCT-19	R4865820
Phosphorus (P)-Dissolved	149		30	ug/L	07-OCT-19	07-OCT-19	R4865820
Potassium (K)-Dissolved	9510		50	ug/L	07-OCT-19	07-OCT-19	R4865820
Rubidium (Rb)-Dissolved	0.85		0.20	ug/L	07-OCT-19	07-OCT-19	R4865820
Selenium (Se)-Dissolved	0.255		0.050	ug/L	07-OCT-19	07-OCT-19	R4865820
Silicon (Si)-Dissolved	10900		50	ug/L	07-OCT-19	07-OCT-19	R4865820
Silver (Ag)-Dissolved	<0.010		0.010	ug/L	07-OCT-19	07-OCT-19	R4865820
Sodium (Na)-Dissolved	12500		50	ug/L	07-OCT-19	07-OCT-19	R4865820
Strontium (Sr)-Dissolved	186		0.10	ug/L	07-OCT-19	07-OCT-19	R4865820

* 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
L2357101-1 SWQ 25-1							
Sampled By: CLIENT on 30-SEP-19 @ 13:43							
Matrix: WATER							
Dissolved Metals in Water by CRC ICPMS							
Sulfur (S)-Dissolved	7290		500	ug/L	07-OCT-19	07-OCT-19	R4865820
Tellurium (Te)-Dissolved	<0.20		0.20	ug/L	07-OCT-19	07-OCT-19	R4865820
Thallium (Tl)-Dissolved	<0.010		0.010	ug/L	07-OCT-19	07-OCT-19	R4865820
Thorium (Th)-Dissolved	<0.10		0.10	ug/L	07-OCT-19	07-OCT-19	R4865820
Tin (Sn)-Dissolved	0.14		0.10	ug/L	07-OCT-19	07-OCT-19	R4865820
Titanium (Ti)-Dissolved	0.57		0.30	ug/L	07-OCT-19	07-OCT-19	R4865820
Tungsten (W)-Dissolved	<0.10		0.10	ug/L	07-OCT-19	07-OCT-19	R4865820
Uranium (U)-Dissolved	1.96		0.010	ug/L	07-OCT-19	07-OCT-19	R4865820
Vanadium (V)-Dissolved	3.56		0.50	ug/L	07-OCT-19	07-OCT-19	R4865820
Zinc (Zn)-Dissolved	1.9		1.0	ug/L	07-OCT-19	07-OCT-19	R4865820
Zirconium (Zr)-Dissolved	0.50		0.20	ug/L	07-OCT-19	07-OCT-19	R4865820
Mercury Dissolved							
Dissolved Mercury Filtration Location	FIELD					08-OCT-19	R4870719
Mercury (Hg)-Dissolved	<0.0050		0.0050	ug/L	15-OCT-19	15-OCT-19	R4870761
Total, Fecal Coliforms, E Coli by QT97							
Fecal Coliform by MPN QT97							
Fecal Coliforms	225		1	MPN/100mL		01-OCT-19	R4854515
Total Coliform and E.coli by MPN QT97							
Total Coliforms	>2420		1	MPN/100mL		01-OCT-19	R4854509
Escherichia Coli	133		1	MPN/100mL		01-OCT-19	R4854509
L2357101-2 SWQ 25-12							
Sampled By: CLIENT on 30-SEP-19 @ 13:58							
Matrix: WATER							
Alkalinity species as HCO3, CO3, OH							
Alkalinity, Bicarbonate							
Bicarbonate (HCO3)	249000		1200	ug/L		23-OCT-19	
Alkalinity, Carbonate							
Carbonate (CO3)	<600		600	ug/L		23-OCT-19	
Alkalinity, Hydroxide							
Hydroxide (OH)	<340		340	ug/L		23-OCT-19	
Alkalinity, Total (as CaCO3)							
Alkalinity, Total (as CaCO3)	204000		1000	ug/L		03-OCT-19	R4858974
Dissolved Carbons							
Dissolved Inorganic Carbon by Combustion							
Dissolved Inorganic Carbon	40800		500	ug/L		04-OCT-19	R4860412
Dissolved Organic Carbon by Combustion							
Dissolved Organic Carbon	14200		500	ug/L		03-OCT-19	R4859438
Total Dissolved Carbon by Calculation							
Total Dissolved Carbon	55000		1000	ug/L		07-OCT-19	
Miscellaneous Parameters							
Ammonia, Total (as N)	45		10	ug/L		08-OCT-19	R4863330
Chloride (Cl)	27000		500	ug/L		02-OCT-19	R4857803
Chromium, Hexavalent	0.61		0.50	ug/L		04-OCT-19	R4860347
Cyanide, Total	1.2		1.0	ug/L		07-OCT-19	R4861590
Sulfate (SO4)	33100		300	ug/L		02-OCT-19	R4857803
Dissolved Metals in Water by CRC ICPMS							
Dissolved Metals Filtration Location	FIELD					07-OCT-19	R4861019
Aluminum (Al)-Dissolved	3.6		1.0	ug/L	07-OCT-19	07-OCT-19	R4865820
Antimony (Sb)-Dissolved	0.18		0.10	ug/L	07-OCT-19	07-OCT-19	R4865820
Arsenic (As)-Dissolved	2.84		0.10	ug/L	07-OCT-19	07-OCT-19	R4865820
Barium (Ba)-Dissolved	34.3		0.10	ug/L	07-OCT-19	07-OCT-19	R4865820

* 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
L2357101-2 SWQ 25-12							
Sampled By: CLIENT on 30-SEP-19 @ 13:58							
Matrix: WATER							
Dissolved Metals in Water by CRC ICPMS							
Beryllium (Be)-Dissolved	<0.10		0.10	ug/L	07-OCT-19	07-OCT-19	R4865820
Bismuth (Bi)-Dissolved	<0.050		0.050	ug/L	07-OCT-19	07-OCT-19	R4865820
Boron (B)-Dissolved	43		10	ug/L	07-OCT-19	07-OCT-19	R4865820
Cadmium (Cd)-Dissolved	0.0057		0.0050	ug/L	07-OCT-19	07-OCT-19	R4865820
Calcium (Ca)-Dissolved	41500		50	ug/L	07-OCT-19	07-OCT-19	R4865820
Cesium (Cs)-Dissolved	<0.010		0.010	ug/L	07-OCT-19	07-OCT-19	R4865820
Chromium (Cr)-Dissolved	0.22		0.10	ug/L	07-OCT-19	07-OCT-19	R4865820
Cobalt (Co)-Dissolved	0.39		0.10	ug/L	07-OCT-19	07-OCT-19	R4865820
Copper (Cu)-Dissolved	2.30		0.20	ug/L	07-OCT-19	07-OCT-19	R4865820
Iron (Fe)-Dissolved	207		10	ug/L	07-OCT-19	07-OCT-19	R4865820
Lead (Pb)-Dissolved	0.067		0.050	ug/L	07-OCT-19	07-OCT-19	R4865820
Lithium (Li)-Dissolved	46.3		1.0	ug/L	07-OCT-19	07-OCT-19	R4865820
Magnesium (Mg)-Dissolved	27200		5.0	ug/L	07-OCT-19	07-OCT-19	R4865820
Manganese (Mn)-Dissolved	57.0		0.10	ug/L	07-OCT-19	07-OCT-19	R4865820
Molybdenum (Mo)-Dissolved	0.953		0.050	ug/L	07-OCT-19	07-OCT-19	R4865820
Nickel (Ni)-Dissolved	2.83		0.50	ug/L	07-OCT-19	07-OCT-19	R4865820
Phosphorus (P)-Dissolved	184		30	ug/L	07-OCT-19	07-OCT-19	R4865820
Potassium (K)-Dissolved	10300		50	ug/L	07-OCT-19	07-OCT-19	R4865820
Rubidium (Rb)-Dissolved	0.72		0.20	ug/L	07-OCT-19	07-OCT-19	R4865820
Selenium (Se)-Dissolved	0.156		0.050	ug/L	07-OCT-19	07-OCT-19	R4865820
Silicon (Si)-Dissolved	7450		50	ug/L	07-OCT-19	07-OCT-19	R4865820
Silver (Ag)-Dissolved	<0.010		0.010	ug/L	07-OCT-19	07-OCT-19	R4865820
Sodium (Na)-Dissolved	24900		50	ug/L	07-OCT-19	07-OCT-19	R4865820
Strontium (Sr)-Dissolved	209		0.10	ug/L	07-OCT-19	07-OCT-19	R4865820
Sulfur (S)-Dissolved	10600		500	ug/L	07-OCT-19	07-OCT-19	R4865820
Tellurium (Te)-Dissolved	<0.20		0.20	ug/L	07-OCT-19	07-OCT-19	R4865820
Thallium (Tl)-Dissolved	<0.010		0.010	ug/L	07-OCT-19	07-OCT-19	R4865820
Thorium (Th)-Dissolved	<0.10		0.10	ug/L	07-OCT-19	07-OCT-19	R4865820
Tin (Sn)-Dissolved	<0.10		0.10	ug/L	07-OCT-19	07-OCT-19	R4865820
Titanium (Ti)-Dissolved	0.44		0.30	ug/L	07-OCT-19	07-OCT-19	R4865820
Tungsten (W)-Dissolved	<0.10		0.10	ug/L	07-OCT-19	07-OCT-19	R4865820
Uranium (U)-Dissolved	2.67		0.010	ug/L	07-OCT-19	07-OCT-19	R4865820
Vanadium (V)-Dissolved	4.33		0.50	ug/L	07-OCT-19	07-OCT-19	R4865820
Zinc (Zn)-Dissolved	4.5		1.0	ug/L	07-OCT-19	07-OCT-19	R4865820
Zirconium (Zr)-Dissolved	0.49		0.20	ug/L	07-OCT-19	07-OCT-19	R4865820
Mercury Dissolved							
Dissolved Mercury Filtration Location	FIELD					08-OCT-19	R4870719
Mercury (Hg)-Dissolved	<0.0050		0.0050	ug/L	15-OCT-19	15-OCT-19	R4870761
Total, Fecal Coliforms, E Coli by QT97							
Fecal Coliform by MPN QT97							
Fecal Coliforms	1730		1	MPN/100mL		01-OCT-19	R4854515
Total Coliform and E.coli by MPN QT97							
Total Coliforms	>2420		1	MPN/100mL		01-OCT-19	R4854509
Escherichia Coli	1050		1	MPN/100mL		01-OCT-19	R4854509
L2357101-3 SWQ 25-2							
Sampled By: CLIENT on 30-SEP-19 @ 14:41							
Matrix: WATER							
Alkalinity species as HCO3, CO3, OH							
Alkalinity, Bicarbonate							
Bicarbonate (HCO3)	332000		1200	ug/L		03-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
L2357101-3 SWQ 25-2							
Sampled By: CLIENT on 30-SEP-19 @ 14:41							
Matrix: WATER							
Alkalinity, Carbonate							
Carbonate (CO3)	<600		600	ug/L		03-OCT-19	
Alkalinity, Hydroxide							
Hydroxide (OH)	<340		340	ug/L		03-OCT-19	
Alkalinity, Total (as CaCO3)							
Alkalinity, Total (as CaCO3)	272000		1000	ug/L		02-OCT-19	R4857668
Dissolved Carbons							
Dissolved Inorganic Carbon by Combustion							
Dissolved Inorganic Carbon	56800		500	ug/L		04-OCT-19	R4860412
Dissolved Organic Carbon by Combustion							
Dissolved Organic Carbon	28600		500	ug/L		03-OCT-19	R4859438
Total Dissolved Carbon by Calculation							
Total Dissolved Carbon	85400		1000	ug/L		07-OCT-19	
Miscellaneous Parameters							
Ammonia, Total (as N)	2390		100	ug/L		08-OCT-19	R4863330
Chloride (Cl)	120000		1000	ug/L		02-OCT-19	R4857803
Chromium, Hexavalent	<0.50		0.50	ug/L		04-OCT-19	R4860347
Cyanide, Total	1.2		1.0	ug/L		07-OCT-19	R4861590
Sulfate (SO4)	126000		600	ug/L		02-OCT-19	R4857803
Dissolved Metals in Water by CRC ICPMS							
Dissolved Metals Filtration Location	FIELD					07-OCT-19	R4861022
Aluminum (Al)-Dissolved	3.1		1.0	ug/L	07-OCT-19	07-OCT-19	R4865820
Antimony (Sb)-Dissolved	0.30		0.10	ug/L	07-OCT-19	07-OCT-19	R4865820
Arsenic (As)-Dissolved	5.85		0.10	ug/L	07-OCT-19	07-OCT-19	R4865820
Barium (Ba)-Dissolved	65.6		0.10	ug/L	07-OCT-19	07-OCT-19	R4865820
Beryllium (Be)-Dissolved	<0.10		0.10	ug/L	07-OCT-19	07-OCT-19	R4865820
Bismuth (Bi)-Dissolved	<0.050		0.050	ug/L	07-OCT-19	07-OCT-19	R4865820
Boron (B)-Dissolved	272		10	ug/L	07-OCT-19	07-OCT-19	R4865820
Cadmium (Cd)-Dissolved	0.0163		0.0050	ug/L	07-OCT-19	07-OCT-19	R4865820
Calcium (Ca)-Dissolved	56200		50	ug/L	07-OCT-19	07-OCT-19	R4865820
Cesium (Cs)-Dissolved	<0.010		0.010	ug/L	07-OCT-19	07-OCT-19	R4865820
Chromium (Cr)-Dissolved	1.14		0.10	ug/L	07-OCT-19	07-OCT-19	R4865820
Cobalt (Co)-Dissolved	1.34		0.10	ug/L	07-OCT-19	07-OCT-19	R4865820
Copper (Cu)-Dissolved	2.68		0.20	ug/L	07-OCT-19	07-OCT-19	R4865820
Iron (Fe)-Dissolved	77		10	ug/L	07-OCT-19	07-OCT-19	R4865820
Lead (Pb)-Dissolved	0.060		0.050	ug/L	07-OCT-19	07-OCT-19	R4865820
Lithium (Li)-Dissolved	93.7		1.0	ug/L	07-OCT-19	07-OCT-19	R4865820
Magnesium (Mg)-Dissolved	55700		5.0	ug/L	07-OCT-19	07-OCT-19	R4865820
Manganese (Mn)-Dissolved	49.4		0.10	ug/L	07-OCT-19	07-OCT-19	R4865820
Molybdenum (Mo)-Dissolved	3.50		0.050	ug/L	07-OCT-19	07-OCT-19	R4865820
Nickel (Ni)-Dissolved	12.8		0.50	ug/L	07-OCT-19	07-OCT-19	R4865820
Phosphorus (P)-Dissolved	416		30	ug/L	07-OCT-19	07-OCT-19	R4865820
Potassium (K)-Dissolved	38400		50	ug/L	07-OCT-19	07-OCT-19	R4865820
Rubidium (Rb)-Dissolved	3.32		0.20	ug/L	07-OCT-19	07-OCT-19	R4865820
Selenium (Se)-Dissolved	0.382		0.050	ug/L	07-OCT-19	07-OCT-19	R4865820
Silicon (Si)-Dissolved	6720		50	ug/L	07-OCT-19	07-OCT-19	R4865820
Silver (Ag)-Dissolved	<0.010		0.010	ug/L	07-OCT-19	07-OCT-19	R4865820
Sodium (Na)-Dissolved	64000		50	ug/L	07-OCT-19	07-OCT-19	R4865820
Strontium (Sr)-Dissolved	341		0.10	ug/L	07-OCT-19	07-OCT-19	R4865820
Sulfur (S)-Dissolved	40700		500	ug/L	07-OCT-19	07-OCT-19	R4865820
Tellurium (Te)-Dissolved	<0.20		0.20	ug/L	07-OCT-19	07-OCT-19	R4865820
Thallium (Tl)-Dissolved	<0.010		0.010	ug/L	07-OCT-19	07-OCT-19	R4865820

* 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
L2357101-3 SWQ 25-2 Sampled By: CLIENT on 30-SEP-19 @ 14:41 Matrix: WATER							
Dissolved Metals in Water by CRC ICPMS							
Thorium (Th)-Dissolved	<0.10		0.10	ug/L	07-OCT-19	07-OCT-19	R4865820
Tin (Sn)-Dissolved	0.12		0.10	ug/L	07-OCT-19	07-OCT-19	R4865820
Titanium (Ti)-Dissolved	0.61		0.30	ug/L	07-OCT-19	07-OCT-19	R4865820
Tungsten (W)-Dissolved	<0.10		0.10	ug/L	07-OCT-19	07-OCT-19	R4865820
Uranium (U)-Dissolved	4.18		0.010	ug/L	07-OCT-19	07-OCT-19	R4865820
Vanadium (V)-Dissolved	3.80		0.50	ug/L	07-OCT-19	07-OCT-19	R4865820
Zinc (Zn)-Dissolved	3.8		1.0	ug/L	07-OCT-19	07-OCT-19	R4865820
Zirconium (Zr)-Dissolved	0.93		0.20	ug/L	07-OCT-19	07-OCT-19	R4865820
Mercury Dissolved							
Dissolved Mercury Filtration Location	FIELD					08-OCT-19	R4870719
Mercury (Hg)-Dissolved	<0.0050		0.0050	ug/L	15-OCT-19	15-OCT-19	R4870761
Total, Fecal Coliforms, E Coli by QT97							
Fecal Coliform by MPN QT97							
Fecal Coliforms	727		1	MPN/100mL		01-OCT-19	R4854515
Total Coliform and E.coli by MPN QT97							
Total Coliforms	>2420		1	MPN/100mL		01-OCT-19	R4854509
Escherichia Coli	866		1	MPN/100mL		01-OCT-19	R4854509
L2357101-4 SWQ 25-FB Sampled By: CLIENT on 30-SEP-19 @ 14:20 Matrix: WATER							
Alkalinity species as HCO3, CO3, OH							
Alkalinity, Bicarbonate							
Bicarbonate (HCO3)	1200		1200	ug/L		03-OCT-19	
Alkalinity, Carbonate							
Carbonate (CO3)	<600		600	ug/L		03-OCT-19	
Alkalinity, Hydroxide							
Hydroxide (OH)	<340		340	ug/L		03-OCT-19	
Alkalinity, Total (as CaCO3)							
Alkalinity, Total (as CaCO3)	1000		1000	ug/L		02-OCT-19	R4857668
Dissolved Carbons							
Dissolved Inorganic Carbon by Combustion							
Dissolved Inorganic Carbon	1330		500	ug/L		04-OCT-19	R4860412
Dissolved Organic Carbon by Combustion							
Dissolved Organic Carbon	<500		500	ug/L		03-OCT-19	R4859438
Total Dissolved Carbon by Calculation							
Total Dissolved Carbon	1300		1000	ug/L		08-OCT-19	
Miscellaneous Parameters							
Ammonia, Total (as N)	21		10	ug/L		08-OCT-19	R4863330
Chloride (Cl)	<500		500	ug/L		02-OCT-19	R4857803
Chromium, Hexavalent	<0.50		0.50	ug/L		04-OCT-19	R4860347
Cyanide, Total	1.8		1.0	ug/L		07-OCT-19	R4861590
Sulfate (SO4)	<300		300	ug/L		02-OCT-19	R4857803
Dissolved Metals in Water by CRC ICPMS							
Dissolved Metals Filtration Location	FIELD					07-OCT-19	R4861022
Aluminum (Al)-Dissolved	<1.0		1.0	ug/L	07-OCT-19	07-OCT-19	R4865820
Antimony (Sb)-Dissolved	<0.10		0.10	ug/L	07-OCT-19	07-OCT-19	R4865820
Arsenic (As)-Dissolved	<0.10		0.10	ug/L	07-OCT-19	07-OCT-19	R4865820
Barium (Ba)-Dissolved	0.16		0.10	ug/L	07-OCT-19	07-OCT-19	R4865820
Beryllium (Be)-Dissolved	<0.10		0.10	ug/L	07-OCT-19	07-OCT-19	R4865820
Bismuth (Bi)-Dissolved	<0.050		0.050	ug/L	07-OCT-19	07-OCT-19	R4865820
Boron (B)-Dissolved	<10		10	ug/L	07-OCT-19	07-OCT-19	R4865820

* 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
L2357101-4 SWQ 25-FB							
Sampled By: CLIENT on 30-SEP-19 @ 14:20							
Matrix: WATER							
Dissolved Metals in Water by CRC ICPMS							
Cadmium (Cd)-Dissolved	<0.0050		0.0050	ug/L	07-OCT-19	07-OCT-19	R4865820
Calcium (Ca)-Dissolved	75		50	ug/L	07-OCT-19	07-OCT-19	R4865820
Cesium (Cs)-Dissolved	<0.010		0.010	ug/L	07-OCT-19	07-OCT-19	R4865820
Chromium (Cr)-Dissolved	<0.10		0.10	ug/L	07-OCT-19	07-OCT-19	R4865820
Cobalt (Co)-Dissolved	<0.10		0.10	ug/L	07-OCT-19	07-OCT-19	R4865820
Copper (Cu)-Dissolved	<0.20		0.20	ug/L	07-OCT-19	07-OCT-19	R4865820
Iron (Fe)-Dissolved	<10		10	ug/L	07-OCT-19	07-OCT-19	R4865820
Lead (Pb)-Dissolved	<0.050		0.050	ug/L	07-OCT-19	07-OCT-19	R4865820
Lithium (Li)-Dissolved	<1.0		1.0	ug/L	07-OCT-19	07-OCT-19	R4865820
Magnesium (Mg)-Dissolved	17.3		5.0	ug/L	07-OCT-19	07-OCT-19	R4865820
Manganese (Mn)-Dissolved	<0.10		0.10	ug/L	07-OCT-19	07-OCT-19	R4865820
Molybdenum (Mo)-Dissolved	<0.050		0.050	ug/L	07-OCT-19	07-OCT-19	R4865820
Nickel (Ni)-Dissolved	<0.50		0.50	ug/L	07-OCT-19	07-OCT-19	R4865820
Phosphorus (P)-Dissolved	<30		30	ug/L	07-OCT-19	07-OCT-19	R4865820
Potassium (K)-Dissolved	<50		50	ug/L	07-OCT-19	07-OCT-19	R4865820
Rubidium (Rb)-Dissolved	<0.20		0.20	ug/L	07-OCT-19	07-OCT-19	R4865820
Selenium (Se)-Dissolved	<0.050		0.050	ug/L	07-OCT-19	07-OCT-19	R4865820
Silicon (Si)-Dissolved	<50		50	ug/L	07-OCT-19	07-OCT-19	R4865820
Silver (Ag)-Dissolved	<0.010		0.010	ug/L	07-OCT-19	07-OCT-19	R4865820
Sodium (Na)-Dissolved	65		50	ug/L	07-OCT-19	07-OCT-19	R4865820
Strontium (Sr)-Dissolved	0.45		0.10	ug/L	07-OCT-19	07-OCT-19	R4865820
Sulfur (S)-Dissolved	<500		500	ug/L	07-OCT-19	07-OCT-19	R4865820
Tellurium (Te)-Dissolved	<0.20		0.20	ug/L	07-OCT-19	07-OCT-19	R4865820
Thallium (Tl)-Dissolved	<0.010		0.010	ug/L	07-OCT-19	07-OCT-19	R4865820
Thorium (Th)-Dissolved	<0.10		0.10	ug/L	07-OCT-19	07-OCT-19	R4865820
Tin (Sn)-Dissolved	<0.10		0.10	ug/L	07-OCT-19	07-OCT-19	R4865820
Titanium (Ti)-Dissolved	<0.30		0.30	ug/L	07-OCT-19	07-OCT-19	R4865820
Tungsten (W)-Dissolved	<0.10		0.10	ug/L	07-OCT-19	07-OCT-19	R4865820
Uranium (U)-Dissolved	<0.010		0.010	ug/L	07-OCT-19	07-OCT-19	R4865820
Vanadium (V)-Dissolved	<0.50		0.50	ug/L	07-OCT-19	07-OCT-19	R4865820
Zinc (Zn)-Dissolved	<1.0		1.0	ug/L	07-OCT-19	07-OCT-19	R4865820
Zirconium (Zr)-Dissolved	<0.20		0.20	ug/L	07-OCT-19	07-OCT-19	R4865820
Mercury Dissolved							
Dissolved Mercury Filtration Location	FIELD					08-OCT-19	R4870719
Mercury (Hg)-Dissolved	<0.0050		0.0050	ug/L	15-OCT-19	15-OCT-19	R4870761
Total, Fecal Coliforms, E Coli by QT97							
Fecal Coliform by MPN QT97							
Fecal Coliforms	<1		1	MPN/100mL		01-OCT-19	R4854515
Total Coliform and E.coli by MPN QT97							
Total Coliforms	<1		1	MPN/100mL		01-OCT-19	R4854509
Escherichia Coli	<1		1	MPN/100mL		01-OCT-19	R4854509
L2357101-5 SWQ 25-TB							
Sampled By: CLIENT on 30-SEP-19 @ 09:00							
Matrix: WATER							
Alkalinity species as HCO3, CO3, OH							
Alkalinity, Bicarbonate							
Bicarbonate (HCO3)	<1200		1200	ug/L		10-OCT-19	
Alkalinity, Carbonate							
Carbonate (CO3)	<600		600	ug/L		10-OCT-19	
Alkalinity, Hydroxide							
Hydroxide (OH)	<340		340	ug/L		10-OCT-19	

* 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
L2357101-5 SWQ 25-TB							
Sampled By: CLIENT on 30-SEP-19 @ 09:00							
Matrix: WATER							
Alkalinity, Total (as CaCO3)							
Alkalinity, Total (as CaCO3)	<1000		1000	ug/L		09-OCT-19	R4865629
Dissolved Carbons							
Dissolved Inorganic Carbon by Combustion							
Dissolved Inorganic Carbon	<500		500	ug/L		08-OCT-19	R4862244
Dissolved Organic Carbon by Combustion							
Dissolved Organic Carbon	<500		500	ug/L		28-OCT-19	R4888798
Total Dissolved Carbon by Calculation							
Total Dissolved Carbon	<1000		1000	ug/L		29-OCT-19	
Miscellaneous Parameters							
Ammonia, Total (as N)	<10		10	ug/L		08-OCT-19	R4863330
Chloride (Cl)	<500		500	ug/L		09-OCT-19	R4866613
Chromium, Hexavalent	<0.50		0.50	ug/L		11-OCT-19	R4868641
Cyanide, Total	<100	DLM	100	ug/L		10-OCT-19	R4867021
Sulfate (SO4)	<300		300	ug/L		09-OCT-19	R4866613
Dissolved Metals in Water by CRC ICPMS							
Dissolved Metals Filtration Location	FIELD					09-OCT-19	R4864327
Aluminum (Al)-Dissolved	<1.0		1.0	ug/L	09-OCT-19	11-OCT-19	R4869129
Antimony (Sb)-Dissolved	<0.10		0.10	ug/L	09-OCT-19	11-OCT-19	R4869129
Arsenic (As)-Dissolved	<0.10		0.10	ug/L	09-OCT-19	11-OCT-19	R4869129
Barium (Ba)-Dissolved	<0.10		0.10	ug/L	09-OCT-19	11-OCT-19	R4869129
Beryllium (Be)-Dissolved	<0.10		0.10	ug/L	09-OCT-19	11-OCT-19	R4869129
Bismuth (Bi)-Dissolved	<0.050		0.050	ug/L	09-OCT-19	11-OCT-19	R4869129
Boron (B)-Dissolved	<10		10	ug/L	09-OCT-19	11-OCT-19	R4869129
Cadmium (Cd)-Dissolved	<0.0050		0.0050	ug/L	09-OCT-19	11-OCT-19	R4869129
Calcium (Ca)-Dissolved	<50		50	ug/L	09-OCT-19	11-OCT-19	R4869129
Cesium (Cs)-Dissolved	<0.010		0.010	ug/L	09-OCT-19	11-OCT-19	R4869129
Chromium (Cr)-Dissolved	<0.10		0.10	ug/L	09-OCT-19	11-OCT-19	R4869129
Cobalt (Co)-Dissolved	<0.10		0.10	ug/L	09-OCT-19	11-OCT-19	R4869129
Copper (Cu)-Dissolved	<0.20		0.20	ug/L	09-OCT-19	11-OCT-19	R4869129
Iron (Fe)-Dissolved	<10		10	ug/L	09-OCT-19	11-OCT-19	R4869129
Lead (Pb)-Dissolved	<0.050		0.050	ug/L	09-OCT-19	11-OCT-19	R4869129
Lithium (Li)-Dissolved	<1.0		1.0	ug/L	09-OCT-19	11-OCT-19	R4869129
Magnesium (Mg)-Dissolved	<5.0		5.0	ug/L	09-OCT-19	11-OCT-19	R4869129
Manganese (Mn)-Dissolved	<0.10		0.10	ug/L	09-OCT-19	11-OCT-19	R4869129
Molybdenum (Mo)-Dissolved	<0.050		0.050	ug/L	09-OCT-19	11-OCT-19	R4869129
Nickel (Ni)-Dissolved	<0.50		0.50	ug/L	09-OCT-19	11-OCT-19	R4869129
Phosphorus (P)-Dissolved	<30		30	ug/L	09-OCT-19	11-OCT-19	R4869129
Potassium (K)-Dissolved	<50		50	ug/L	09-OCT-19	11-OCT-19	R4869129
Rubidium (Rb)-Dissolved	<0.20		0.20	ug/L	09-OCT-19	11-OCT-19	R4869129
Selenium (Se)-Dissolved	<0.050		0.050	ug/L	09-OCT-19	11-OCT-19	R4869129
Silicon (Si)-Dissolved	<50		50	ug/L	09-OCT-19	11-OCT-19	R4869129
Silver (Ag)-Dissolved	<0.010		0.010	ug/L	09-OCT-19	11-OCT-19	R4869129
Sodium (Na)-Dissolved	<50		50	ug/L	09-OCT-19	11-OCT-19	R4869129
Strontium (Sr)-Dissolved	<0.10		0.10	ug/L	09-OCT-19	11-OCT-19	R4869129
Sulfur (S)-Dissolved	<500		500	ug/L	09-OCT-19	11-OCT-19	R4869129
Tellurium (Te)-Dissolved	<0.20		0.20	ug/L	09-OCT-19	11-OCT-19	R4869129
Thallium (Tl)-Dissolved	<0.010		0.010	ug/L	09-OCT-19	11-OCT-19	R4869129
Thorium (Th)-Dissolved	<0.10		0.10	ug/L	09-OCT-19	11-OCT-19	R4869129
Tin (Sn)-Dissolved	<0.10		0.10	ug/L	09-OCT-19	11-OCT-19	R4869129
Titanium (Ti)-Dissolved	<0.30		0.30	ug/L	09-OCT-19	11-OCT-19	R4869129
Tungsten (W)-Dissolved	<0.10		0.10	ug/L	09-OCT-19	11-OCT-19	R4869129

* 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
L2357101-5 SWQ 25-TB Sampled By: CLIENT on 30-SEP-19 @ 09:00 Matrix: WATER							
Dissolved Metals in Water by CRC ICPMS							
Uranium (U)-Dissolved	<0.010		0.010	ug/L	09-OCT-19	11-OCT-19	R4869129
Vanadium (V)-Dissolved	<0.50		0.50	ug/L	09-OCT-19	11-OCT-19	R4869129
Zinc (Zn)-Dissolved	<1.0		1.0	ug/L	09-OCT-19	11-OCT-19	R4869129
Zirconium (Zr)-Dissolved	<0.20		0.20	ug/L	09-OCT-19	11-OCT-19	R4869129
Mercury Dissolved							
Dissolved Mercury Filtration Location	FIELD					08-OCT-19	R4870719
Mercury (Hg)-Dissolved	<0.0050		0.0050	ug/L	15-OCT-19	15-OCT-19	R4870761
L2357101-6 SWQ 25-100 Sampled By: CLIENT on 30-SEP-19 @ 12:00 Matrix: WATER							
Alkalinity species as HCO3, CO3, OH							
Alkalinity, Bicarbonate							
Bicarbonate (HCO3)	300000		1200	ug/L		03-OCT-19	
Alkalinity, Carbonate							
Carbonate (CO3)	<600		600	ug/L		03-OCT-19	
Alkalinity, Hydroxide							
Hydroxide (OH)	<340		340	ug/L		03-OCT-19	
Alkalinity, Total (as CaCO3)							
Alkalinity, Total (as CaCO3)	246000		1000	ug/L		02-OCT-19	R4857668
Dissolved Carbons							
Dissolved Inorganic Carbon by Combustion							
Dissolved Inorganic Carbon	48700		500	ug/L		04-OCT-19	R4860412
Dissolved Organic Carbon by Combustion							
Dissolved Organic Carbon	16200		500	ug/L		03-OCT-19	R4859438
Total Dissolved Carbon by Calculation							
Total Dissolved Carbon	65000		1000	ug/L		08-OCT-19	
Miscellaneous Parameters							
Ammonia, Total (as N)	27		10	ug/L		08-OCT-19	R4863330
Chloride (Cl)	14200		500	ug/L		02-OCT-19	R4857803
Chromium, Hexavalent	<0.50		0.50	ug/L		04-OCT-19	R4860347
Cyanide, Total	<1.0		1.0	ug/L		04-OCT-19	R4860416
Sulfate (SO4)	22200		300	ug/L		02-OCT-19	R4857803
Dissolved Metals in Water by CRC ICPMS							
Dissolved Metals Filtration Location	FIELD					07-OCT-19	R4861022
Aluminum (Al)-Dissolved	4.1		1.0	ug/L	07-OCT-19	07-OCT-19	R4865820
Antimony (Sb)-Dissolved	0.14		0.10	ug/L	07-OCT-19	07-OCT-19	R4865820
Arsenic (As)-Dissolved	2.15		0.10	ug/L	07-OCT-19	07-OCT-19	R4865820
Barium (Ba)-Dissolved	57.1		0.10	ug/L	07-OCT-19	07-OCT-19	R4865820
Beryllium (Be)-Dissolved	<0.10		0.10	ug/L	07-OCT-19	07-OCT-19	R4865820
Bismuth (Bi)-Dissolved	<0.050		0.050	ug/L	07-OCT-19	07-OCT-19	R4865820
Boron (B)-Dissolved	24		10	ug/L	07-OCT-19	07-OCT-19	R4865820
Cadmium (Cd)-Dissolved	0.0085		0.0050	ug/L	07-OCT-19	07-OCT-19	R4865820
Calcium (Ca)-Dissolved	48500		50	ug/L	07-OCT-19	07-OCT-19	R4865820
Cesium (Cs)-Dissolved	<0.010		0.010	ug/L	07-OCT-19	07-OCT-19	R4865820
Chromium (Cr)-Dissolved	0.18		0.10	ug/L	07-OCT-19	07-OCT-19	R4865820
Cobalt (Co)-Dissolved	0.36		0.10	ug/L	07-OCT-19	07-OCT-19	R4865820
Copper (Cu)-Dissolved	2.51		0.20	ug/L	07-OCT-19	07-OCT-19	R4865820
Iron (Fe)-Dissolved	43		10	ug/L	07-OCT-19	07-OCT-19	R4865820
Lead (Pb)-Dissolved	0.079		0.050	ug/L	07-OCT-19	07-OCT-19	R4865820
Lithium (Li)-Dissolved	56.3		1.0	ug/L	07-OCT-19	07-OCT-19	R4865820
Magnesium (Mg)-Dissolved	23900		5.0	ug/L	07-OCT-19	07-OCT-19	R4865820

* 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
L2357101-6 SWQ 25-100							
Sampled By: CLIENT on 30-SEP-19 @ 12:00							
Matrix: WATER							
Dissolved Metals in Water by CRC ICPMS							
Manganese (Mn)-Dissolved	65.2		0.10	ug/L	07-OCT-19	07-OCT-19	R4865820
Molybdenum (Mo)-Dissolved	1.10		0.050	ug/L	07-OCT-19	07-OCT-19	R4865820
Nickel (Ni)-Dissolved	2.86		0.50	ug/L	07-OCT-19	07-OCT-19	R4865820
Phosphorus (P)-Dissolved	163		30	ug/L	07-OCT-19	07-OCT-19	R4865820
Potassium (K)-Dissolved	9840		50	ug/L	07-OCT-19	07-OCT-19	R4865820
Rubidium (Rb)-Dissolved	0.92		0.20	ug/L	07-OCT-19	07-OCT-19	R4865820
Selenium (Se)-Dissolved	0.169		0.050	ug/L	07-OCT-19	07-OCT-19	R4865820
Silicon (Si)-Dissolved	9220		50	ug/L	07-OCT-19	07-OCT-19	R4865820
Silver (Ag)-Dissolved	<0.010		0.010	ug/L	07-OCT-19	07-OCT-19	R4865820
Sodium (Na)-Dissolved	12100		50	ug/L	07-OCT-19	07-OCT-19	R4865820
Strontium (Sr)-Dissolved	193		0.10	ug/L	07-OCT-19	07-OCT-19	R4865820
Sulfur (S)-Dissolved	5490		500	ug/L	07-OCT-19	07-OCT-19	R4865820
Tellurium (Te)-Dissolved	<0.20		0.20	ug/L	07-OCT-19	07-OCT-19	R4865820
Thallium (Tl)-Dissolved	<0.010		0.010	ug/L	07-OCT-19	07-OCT-19	R4865820
Thorium (Th)-Dissolved	<0.10		0.10	ug/L	07-OCT-19	07-OCT-19	R4865820
Tin (Sn)-Dissolved	<0.10		0.10	ug/L	07-OCT-19	07-OCT-19	R4865820
Titanium (Ti)-Dissolved	0.40		0.30	ug/L	07-OCT-19	07-OCT-19	R4865820
Tungsten (W)-Dissolved	<0.10		0.10	ug/L	07-OCT-19	07-OCT-19	R4865820
Uranium (U)-Dissolved	2.03		0.010	ug/L	07-OCT-19	07-OCT-19	R4865820
Vanadium (V)-Dissolved	3.58		0.50	ug/L	07-OCT-19	07-OCT-19	R4865820
Zinc (Zn)-Dissolved	3.6		1.0	ug/L	07-OCT-19	07-OCT-19	R4865820
Zirconium (Zr)-Dissolved	0.51		0.20	ug/L	07-OCT-19	07-OCT-19	R4865820
Mercury Dissolved							
Dissolved Mercury Filtration Location	FIELD					08-OCT-19	R4870719
Mercury (Hg)-Dissolved	<0.0050		0.0050	ug/L	15-OCT-19	15-OCT-19	R4870761
Total, Fecal Coliforms, E Coli by QT97							
Fecal Coliform by MPN QT97							
Fecal Coliforms	108		1	MPN/100mL		01-OCT-19	R4854515
Total Coliform and E.coli by MPN QT97							
Total Coliforms	>2420		1	MPN/100mL		01-OCT-19	R4854509
Escherichia Coli	96		1	MPN/100mL		01-OCT-19	R4854509

* 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.			
C-DIC-HTC-WP	Water	Dissolved Inorganic Carbon by Combustion	APHA 5310 B-WP
Filtered (0.45 um) sample is injected into a heated reaction chamber where it is acidified, converting all inorganic carbon to CO ₂ which is then transported in the carrier gas stream and measured via a non-dispersive infrared analyzer.			
C-DOC-HTC-WP	Water	Dissolved Organic Carbon by Combustion	APHA 5310 B-WP
Filtered (0.45 um) sample is acidified and purged to remove inorganic carbon, then injected into a heated reaction chamber where organic carbon is oxidized to CO ₂ which is then transported in the carrier gas stream and measured via a non-dispersive infrared analyzer.			
C-TDC-CALC-WP	Water	Total Dissolved Carbon by Calculation	CALCULATED
Total dissolved carbon represents the sum of dissolved inorganic carbon and dissolved organic carbon. For the purpose of calculation, results less than the detection limit (DL) are treated as zero.			
CL-IC-N-WP	Water	Chloride in Water by IC	EPA 300.1 (mod)
Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.			
CN-T-L-CFA-WT	Water	Low Level Total Cyanide in water by CFA	ISO 14403-2:2002
This analysis is carried out using procedures adapted from ISO Method 14403:2002 "Determination of Total Cyanide using Flow Analysis (FIA and CFA)". Total or strong acid dissociable (SAD) cyanide is determined by in-line UV digestion along with sample distillation and final determination by colourimetric analysis. Method Limitation: This method is susceptible to interference from thiocyanate (SCN). If SCN is present in the sample, there could be a positive interference with this method, however it would be less than 1% and could be as low as zero.			
CR-CR6-IC-WT	Water	Chromium +6	EPA 7199
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.			
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).			
EC-SCREEN-WP	Water	Conductivity Screen (Internal Use Only)	APHA 2510
Qualitative analysis of conductivity where required during preparation of other test eg. IC, TDS, TSS, etc			
FC-QT97-WP	Water	Fecal Coliform by MPN QT97	APHA 9223B QT97

Reference Information

Test Method References:

ALS Test Code	Matrix	Test Description	Method Reference**
		<p>This analysis is carried out using procedures adapted from APHA Method 9223B "Enzyme Substrate Coliform Test". The sample is mixed with a mixture of hydrolyzable substrates and then sealed in a 97-well packet. The packet is incubated at 44.5 – 0.2°C for 18 hours and then the number of wells exhibiting a positive response are counted. The final result is obtained by comparing the number of positive responses to a probability table.</p>	
HG-D-CVAA-WP	Water	Mercury Dissolved	APHA 3030B/EPA 1631E (mod)
		<p>Water samples are filtered (0.45 um), preserved with hydrochloric acid, then undergo a cold-oxidation using bromine monochloride prior to reduction with stannous chloride, and analyzed by CVAAS.</p>	
MET-D-CCMS-WP	Water	Dissolved Metals in Water by CRC ICPMS	APHA 3030B/6020B (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>	
NH3-COL-WP	Water	Ammonia by colour	APHA 4500 NH3 F
		<p>Ammonia in water samples forms indophenol when reacted with hypochlorite and phenol. The intensity is amplified by the addition of sodium nitroprusside and measured colourmetrically.</p>	
SO4-IC-N-WP	Water	Sulfate in Water by IC	EPA 300.1 (mod)
		<p>Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.</p>	
TC,EC-QT97-WP	Water	Total Coliform and E.coli by MPN QT97	APHA 9223B QT97
		<p>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 97-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.</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
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: L2357101

Report Date: 29-OCT-19

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Client: City of Winnipeg - Solid Waste Services Div (1120 Waverley)
 Solid Waste Services Division 1120 Waverley Street
 Winnipeg MB R3T 0P4

Contact: CHRIS KOZAK

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
ALK-TITR-WP		Water						
Batch	R4857668							
WG3180394-14	LCS							
Alkalinity, Total (as CaCO3)			99.7		%		85-115	02-OCT-19
WG3180394-19	LCS							
Alkalinity, Total (as CaCO3)			102.0		%		85-115	02-OCT-19
WG3180394-11	MB							
Alkalinity, Total (as CaCO3)			<1.0		mg/L		1	02-OCT-19
WG3180394-16	MB							
Alkalinity, Total (as CaCO3)			<1.0		mg/L		1	02-OCT-19
Batch	R4858974							
WG3182097-4	LCS							
Alkalinity, Total (as CaCO3)			98.7		%		85-115	03-OCT-19
WG3182097-1	MB							
Alkalinity, Total (as CaCO3)			<1.0		mg/L		1	03-OCT-19
Batch	R4865629							
WG3187521-4	LCS							
Alkalinity, Total (as CaCO3)			98.7		%		85-115	09-OCT-19
WG3187521-1	MB							
Alkalinity, Total (as CaCO3)			1.0		mg/L		1	09-OCT-19
C-DIC-HTC-WP		Water						
Batch	R4860412							
WG3183686-2	LCS							
Dissolved Inorganic Carbon			103.0		%		80-120	04-OCT-19
WG3183686-1	MB							
Dissolved Inorganic Carbon			<0.50		mg/L		0.5	04-OCT-19
Batch	R4862244							
WG3186139-2	LCS							
Dissolved Inorganic Carbon			95.2		%		80-120	08-OCT-19
WG3186139-1	MB							
Dissolved Inorganic Carbon			<0.50		mg/L		0.5	08-OCT-19
C-DOC-HTC-WP		Water						
Batch	R4859438							
WG3182076-6	LCS							
Dissolved Organic Carbon			102.0		%		80-120	03-OCT-19
WG3182076-5	MB							
Dissolved Organic Carbon			<0.50		mg/L		0.5	03-OCT-19

Quality Control Report

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Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
C-DOC-HTC-WP		Water						
Batch	R4888798							
WG3204449-2	LCS							
Dissolved Organic Carbon			96.8		%		80-120	28-OCT-19
Batch	R4888798							
WG3204449-1	MB							
Dissolved Organic Carbon			<0.50		mg/L		0.5	28-OCT-19
CL-IC-N-WP		Water						
Batch	R4857803							
WG3179438-2	LCS							
Chloride (Cl)			100.9		%		90-110	02-OCT-19
Batch	R4857803							
WG3179438-1	MB							
Chloride (Cl)			<0.50		mg/L		0.5	02-OCT-19
Batch	R4866613							
WG3186567-2	LCS							
Chloride (Cl)			100.8		%		90-110	09-OCT-19
Batch	R4866613							
WG3186567-1	MB							
Chloride (Cl)			<0.50		mg/L		0.5	09-OCT-19
CN-T-L-CFA-WT		Water						
Batch	R4860416							
WG3182501-2	LCS							
Cyanide, Total			90.4		%		80-120	04-OCT-19
Batch	R4860416							
WG3182501-1	MB							
Cyanide, Total			<0.0010		mg/L		0.001	04-OCT-19
Batch	R4861590							
WG3182388-6	LCS							
Cyanide, Total			96.0		%		80-120	07-OCT-19
Batch	R4861590							
WG3182388-5	MB							
Cyanide, Total			<0.0010		mg/L		0.001	07-OCT-19
Batch	R4867021							
WG3188116-2	LCS							
Cyanide, Total			87.6		%		80-120	10-OCT-19
Batch	R4867021							
WG3188116-1	MB							
Cyanide, Total			<0.0010		mg/L		0.001	10-OCT-19
CR-CR6-IC-WT		Water						
Batch	R4860347							
WG3182364-2	LCS							
Chromium, Hexavalent			96.4		%		80-120	04-OCT-19
Batch	R4860347							
WG3182364-1	MB							
Chromium, Hexavalent			<0.00050		mg/L		0.0005	04-OCT-19

Quality Control Report

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Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
CR-CR6-IC-WT								
Batch R4868641								
WG3189235-2	LCS							
Chromium, Hexavalent			94.3		%		80-120	11-OCT-19
WG3189235-1	MB							
Chromium, Hexavalent			<0.00050		mg/L		0.0005	11-OCT-19
FC-QT97-WP								
Batch R4854515								
WG3178354-2	DUP	L2357101-2						
Fecal Coliforms		1730	1550		MPN/100mL	11	65	01-OCT-19
WG3178354-1	MB							
Fecal Coliforms			<1		MPN/100mL		1	01-OCT-19
HG-D-CVAA-WP								
Batch R4870761								
WG3191397-3	DUP	L2357101-3						
Mercury (Hg)-Dissolved		<0.0000050	<0.0000050	RPD-NA	mg/L	N/A	20	15-OCT-19
WG3191397-2	LCS							
Mercury (Hg)-Dissolved			97.0		%		80-120	15-OCT-19
WG3191397-1	MB							
Mercury (Hg)-Dissolved			<0.0000050		mg/L		0.000005	15-OCT-19
WG3191397-4	MS	L2357101-4						
Mercury (Hg)-Dissolved			101.0		%		70-130	15-OCT-19
MET-D-CCMS-WP								
Batch R4865820								
WG3184472-2	LCS							
Aluminum (Al)-Dissolved			108.3		%		80-120	07-OCT-19
Antimony (Sb)-Dissolved			101.2		%		80-120	07-OCT-19
Arsenic (As)-Dissolved			104.5		%		80-120	07-OCT-19
Barium (Ba)-Dissolved			105.0		%		80-120	07-OCT-19
Beryllium (Be)-Dissolved			102.6		%		80-120	07-OCT-19
Bismuth (Bi)-Dissolved			99.5		%		80-120	07-OCT-19
Boron (B)-Dissolved			92.5		%		80-120	07-OCT-19
Cadmium (Cd)-Dissolved			103.9		%		80-120	07-OCT-19
Calcium (Ca)-Dissolved			104.2		%		80-120	07-OCT-19
Cesium (Cs)-Dissolved			105.5		%		80-120	07-OCT-19
Chromium (Cr)-Dissolved			106.2		%		80-120	07-OCT-19
Cobalt (Co)-Dissolved			103.9		%		80-120	07-OCT-19
Copper (Cu)-Dissolved			105.1		%		80-120	07-OCT-19

Quality Control Report

Workorder: L2357101

Report Date: 29-OCT-19

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Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
MET-D-CCMS-WP								
	Water							
Batch	R4865820							
WG3184472-2	LCS							
Iron (Fe)-Dissolved			100.3		%		80-120	07-OCT-19
Lead (Pb)-Dissolved			102.2		%		80-120	07-OCT-19
Lithium (Li)-Dissolved			106.0		%		80-120	07-OCT-19
Magnesium (Mg)-Dissolved			104.7		%		80-120	07-OCT-19
Manganese (Mn)-Dissolved			105.1		%		80-120	07-OCT-19
Molybdenum (Mo)-Dissolved			105.3		%		80-120	07-OCT-19
Nickel (Ni)-Dissolved			103.3		%		80-120	07-OCT-19
Phosphorus (P)-Dissolved			107.8		%		80-120	07-OCT-19
Potassium (K)-Dissolved			105.7		%		80-120	07-OCT-19
Rubidium (Rb)-Dissolved			106.7		%		80-120	07-OCT-19
Selenium (Se)-Dissolved			102.4		%		80-120	07-OCT-19
Silicon (Si)-Dissolved			100.6		%		80-120	07-OCT-19
Silver (Ag)-Dissolved			105.3		%		80-120	07-OCT-19
Sodium (Na)-Dissolved			109.7		%		80-120	07-OCT-19
Strontium (Sr)-Dissolved			106.1		%		80-120	07-OCT-19
Sulfur (S)-Dissolved			90.2		%		80-120	07-OCT-19
Tellurium (Te)-Dissolved			106.3		%		80-120	07-OCT-19
Thallium (Tl)-Dissolved			103.7		%		80-120	07-OCT-19
Thorium (Th)-Dissolved			100.7		%		80-120	07-OCT-19
Tin (Sn)-Dissolved			102.3		%		80-120	07-OCT-19
Titanium (Ti)-Dissolved			103.1		%		80-120	07-OCT-19
Tungsten (W)-Dissolved			103.5		%		80-120	07-OCT-19
Uranium (U)-Dissolved			104.9		%		80-120	07-OCT-19
Vanadium (V)-Dissolved			105.7		%		80-120	07-OCT-19
Zinc (Zn)-Dissolved			102.6		%		80-120	07-OCT-19
Zirconium (Zr)-Dissolved			101.1		%		80-120	07-OCT-19
WG3184475-2	LCS							
Aluminum (Al)-Dissolved			104.4		%		80-120	07-OCT-19
Antimony (Sb)-Dissolved			100.7		%		80-120	07-OCT-19
Arsenic (As)-Dissolved			101.6		%		80-120	07-OCT-19
Barium (Ba)-Dissolved			99.2		%		80-120	07-OCT-19
Beryllium (Be)-Dissolved			106.3		%		80-120	07-OCT-19
Bismuth (Bi)-Dissolved			101.8		%		80-120	07-OCT-19
Boron (B)-Dissolved			88.3		%		80-120	07-OCT-19

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Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
MET-D-CCMS-WP								
	Water							
Batch	R4865820							
WG3184475-2	LCS							
Cadmium (Cd)-Dissolved			100.7		%		80-120	07-OCT-19
Calcium (Ca)-Dissolved			100.1		%		80-120	07-OCT-19
Cesium (Cs)-Dissolved			105.0		%		80-120	07-OCT-19
Chromium (Cr)-Dissolved			103.0		%		80-120	07-OCT-19
Cobalt (Co)-Dissolved			102.1		%		80-120	07-OCT-19
Copper (Cu)-Dissolved			100.9		%		80-120	07-OCT-19
Iron (Fe)-Dissolved			97.6		%		80-120	07-OCT-19
Lead (Pb)-Dissolved			102.5		%		80-120	07-OCT-19
Lithium (Li)-Dissolved			111.0		%		80-120	07-OCT-19
Magnesium (Mg)-Dissolved			104.8		%		80-120	07-OCT-19
Manganese (Mn)-Dissolved			106.1		%		80-120	07-OCT-19
Molybdenum (Mo)-Dissolved			102.9		%		80-120	07-OCT-19
Nickel (Ni)-Dissolved			99.9		%		80-120	07-OCT-19
Phosphorus (P)-Dissolved			103.6		%		80-120	07-OCT-19
Potassium (K)-Dissolved			105.2		%		80-120	07-OCT-19
Rubidium (Rb)-Dissolved			107.3		%		80-120	07-OCT-19
Selenium (Se)-Dissolved			100.1		%		80-120	07-OCT-19
Silicon (Si)-Dissolved			100.1		%		80-120	07-OCT-19
Silver (Ag)-Dissolved			102.5		%		80-120	07-OCT-19
Sodium (Na)-Dissolved			99.0		%		80-120	07-OCT-19
Strontium (Sr)-Dissolved			105.8		%		80-120	07-OCT-19
Sulfur (S)-Dissolved			105.1		%		80-120	07-OCT-19
Tellurium (Te)-Dissolved			95.4		%		80-120	07-OCT-19
Thallium (Tl)-Dissolved			104.3		%		80-120	07-OCT-19
Thorium (Th)-Dissolved			98.1		%		80-120	07-OCT-19
Tin (Sn)-Dissolved			102.0		%		80-120	07-OCT-19
Titanium (Ti)-Dissolved			101.8		%		80-120	07-OCT-19
Tungsten (W)-Dissolved			106.5		%		80-120	07-OCT-19
Uranium (U)-Dissolved			106.2		%		80-120	07-OCT-19
Vanadium (V)-Dissolved			104.4		%		80-120	07-OCT-19
Zinc (Zn)-Dissolved			102.0		%		80-120	07-OCT-19
Zirconium (Zr)-Dissolved			97.3		%		80-120	07-OCT-19
WG3184472-1	MB							
Aluminum (Al)-Dissolved			<0.0010		mg/L		0.001	07-OCT-19



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Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
MET-D-CCMS-WP								
	Water							
Batch	R4865820							
WG3184472-1	MB							
Antimony (Sb)-Dissolved			<0.00010		mg/L		0.0001	07-OCT-19
Arsenic (As)-Dissolved			<0.00010		mg/L		0.0001	07-OCT-19
Barium (Ba)-Dissolved			<0.00010		mg/L		0.0001	07-OCT-19
Beryllium (Be)-Dissolved			<0.00010		mg/L		0.0001	07-OCT-19
Bismuth (Bi)-Dissolved			<0.000050		mg/L		0.00005	07-OCT-19
Boron (B)-Dissolved			<0.010		mg/L		0.01	07-OCT-19
Cadmium (Cd)-Dissolved			<0.0000050		mg/L		0.000005	07-OCT-19
Calcium (Ca)-Dissolved			<0.050		mg/L		0.05	07-OCT-19
Cesium (Cs)-Dissolved			<0.000010		mg/L		0.00001	07-OCT-19
Chromium (Cr)-Dissolved			<0.00010		mg/L		0.0001	07-OCT-19
Cobalt (Co)-Dissolved			<0.00010		mg/L		0.0001	07-OCT-19
Copper (Cu)-Dissolved			<0.00020		mg/L		0.0002	07-OCT-19
Iron (Fe)-Dissolved			<0.010		mg/L		0.01	07-OCT-19
Lead (Pb)-Dissolved			<0.000050		mg/L		0.00005	07-OCT-19
Lithium (Li)-Dissolved			<0.0010		mg/L		0.001	07-OCT-19
Magnesium (Mg)-Dissolved			<0.0050		mg/L		0.005	07-OCT-19
Manganese (Mn)-Dissolved			<0.00010		mg/L		0.0001	07-OCT-19
Molybdenum (Mo)-Dissolved			<0.000050		mg/L		0.00005	07-OCT-19
Nickel (Ni)-Dissolved			<0.00050		mg/L		0.0005	07-OCT-19
Phosphorus (P)-Dissolved			<0.030		mg/L		0.03	07-OCT-19
Potassium (K)-Dissolved			<0.050		mg/L		0.05	07-OCT-19
Rubidium (Rb)-Dissolved			<0.00020		mg/L		0.0002	07-OCT-19
Selenium (Se)-Dissolved			<0.000050		mg/L		0.00005	07-OCT-19
Silicon (Si)-Dissolved			<0.050		mg/L		0.05	07-OCT-19
Silver (Ag)-Dissolved			<0.000010		mg/L		0.00001	07-OCT-19
Sodium (Na)-Dissolved			<0.050		mg/L		0.05	07-OCT-19
Strontium (Sr)-Dissolved			<0.00010		mg/L		0.0001	07-OCT-19
Sulfur (S)-Dissolved			<0.50		mg/L		0.5	07-OCT-19
Tellurium (Te)-Dissolved			<0.00020		mg/L		0.0002	07-OCT-19
Thallium (Tl)-Dissolved			<0.000010		mg/L		0.00001	07-OCT-19
Thorium (Th)-Dissolved			<0.00010		mg/L		0.0001	07-OCT-19
Tin (Sn)-Dissolved			<0.00010		mg/L		0.0001	07-OCT-19
Titanium (Ti)-Dissolved			<0.00030		mg/L		0.0003	07-OCT-19
Tungsten (W)-Dissolved			<0.00010		mg/L		0.0001	07-OCT-19



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Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
MET-D-CCMS-WP								
	Water							
Batch	R4865820							
WG3184472-1	MB							
Uranium (U)-Dissolved			<0.000010		mg/L		0.00001	07-OCT-19
Vanadium (V)-Dissolved			<0.00050		mg/L		0.0005	07-OCT-19
Zinc (Zn)-Dissolved			<0.0010		mg/L		0.001	07-OCT-19
Zirconium (Zr)-Dissolved			<0.00020		mg/L		0.0002	07-OCT-19
WG3184475-1	MB							
Aluminum (Al)-Dissolved			<0.0010		mg/L		0.001	07-OCT-19
Antimony (Sb)-Dissolved			<0.00010		mg/L		0.0001	07-OCT-19
Arsenic (As)-Dissolved			<0.00010		mg/L		0.0001	07-OCT-19
Barium (Ba)-Dissolved			<0.00010		mg/L		0.0001	07-OCT-19
Beryllium (Be)-Dissolved			<0.00010		mg/L		0.0001	07-OCT-19
Bismuth (Bi)-Dissolved			<0.000050		mg/L		0.00005	07-OCT-19
Boron (B)-Dissolved			<0.010		mg/L		0.01	07-OCT-19
Cadmium (Cd)-Dissolved			<0.0000050		mg/L		0.000005	07-OCT-19
Calcium (Ca)-Dissolved			<0.050		mg/L		0.05	07-OCT-19
Cesium (Cs)-Dissolved			<0.000010		mg/L		0.00001	07-OCT-19
Chromium (Cr)-Dissolved			<0.00010		mg/L		0.0001	07-OCT-19
Cobalt (Co)-Dissolved			<0.00010		mg/L		0.0001	07-OCT-19
Copper (Cu)-Dissolved			<0.00020		mg/L		0.0002	07-OCT-19
Iron (Fe)-Dissolved			<0.010		mg/L		0.01	07-OCT-19
Lead (Pb)-Dissolved			<0.000050		mg/L		0.00005	07-OCT-19
Lithium (Li)-Dissolved			<0.0010		mg/L		0.001	07-OCT-19
Magnesium (Mg)-Dissolved			<0.0050		mg/L		0.005	07-OCT-19
Manganese (Mn)-Dissolved			<0.00010		mg/L		0.0001	07-OCT-19
Molybdenum (Mo)-Dissolved			<0.000050		mg/L		0.00005	07-OCT-19
Nickel (Ni)-Dissolved			<0.00050		mg/L		0.0005	07-OCT-19
Phosphorus (P)-Dissolved			<0.030		mg/L		0.03	07-OCT-19
Potassium (K)-Dissolved			<0.050		mg/L		0.05	07-OCT-19
Rubidium (Rb)-Dissolved			<0.00020		mg/L		0.0002	07-OCT-19
Selenium (Se)-Dissolved			<0.000050		mg/L		0.00005	07-OCT-19
Silicon (Si)-Dissolved			<0.050		mg/L		0.05	07-OCT-19
Silver (Ag)-Dissolved			<0.000010		mg/L		0.00001	07-OCT-19
Sodium (Na)-Dissolved			<0.050		mg/L		0.05	07-OCT-19
Strontium (Sr)-Dissolved			<0.00010		mg/L		0.0001	07-OCT-19
Sulfur (S)-Dissolved			<0.50		mg/L		0.5	07-OCT-19



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Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
MET-D-CCMS-WP		Water						
Batch	R4865820							
WG3184475-1	MB							
Tellurium (Te)-Dissolved			<0.00020		mg/L		0.0002	07-OCT-19
Thallium (Tl)-Dissolved			<0.000010		mg/L		0.00001	07-OCT-19
Thorium (Th)-Dissolved			<0.00010		mg/L		0.0001	07-OCT-19
Tin (Sn)-Dissolved			<0.00010		mg/L		0.0001	07-OCT-19
Titanium (Ti)-Dissolved			<0.00030		mg/L		0.0003	07-OCT-19
Tungsten (W)-Dissolved			<0.00010		mg/L		0.0001	07-OCT-19
Uranium (U)-Dissolved			<0.000010		mg/L		0.00001	07-OCT-19
Vanadium (V)-Dissolved			<0.00050		mg/L		0.0005	07-OCT-19
Zinc (Zn)-Dissolved			<0.0010		mg/L		0.001	07-OCT-19
Zirconium (Zr)-Dissolved			<0.00020		mg/L		0.0002	07-OCT-19
Batch	R4869129							
WG3186999-2	LCS							
Aluminum (Al)-Dissolved			102.9		%		80-120	11-OCT-19
Antimony (Sb)-Dissolved			100.7		%		80-120	11-OCT-19
Arsenic (As)-Dissolved			103.7		%		80-120	11-OCT-19
Barium (Ba)-Dissolved			102.7		%		80-120	11-OCT-19
Beryllium (Be)-Dissolved			102.7		%		80-120	11-OCT-19
Bismuth (Bi)-Dissolved			100.4		%		80-120	11-OCT-19
Boron (B)-Dissolved			106.2		%		80-120	11-OCT-19
Cadmium (Cd)-Dissolved			103.9		%		80-120	11-OCT-19
Calcium (Ca)-Dissolved			103.7		%		80-120	11-OCT-19
Cesium (Cs)-Dissolved			105.8		%		80-120	11-OCT-19
Chromium (Cr)-Dissolved			102.8		%		80-120	11-OCT-19
Cobalt (Co)-Dissolved			103.4		%		80-120	11-OCT-19
Copper (Cu)-Dissolved			105.7		%		80-120	11-OCT-19
Iron (Fe)-Dissolved			101.5		%		80-120	11-OCT-19
Lead (Pb)-Dissolved			103.9		%		80-120	11-OCT-19
Lithium (Li)-Dissolved			106.1		%		80-120	11-OCT-19
Magnesium (Mg)-Dissolved			107.4		%		80-120	11-OCT-19
Manganese (Mn)-Dissolved			102.6		%		80-120	11-OCT-19
Molybdenum (Mo)-Dissolved			99.3		%		80-120	11-OCT-19
Nickel (Ni)-Dissolved			100.4		%		80-120	11-OCT-19
Phosphorus (P)-Dissolved			107.9		%		80-120	11-OCT-19
Potassium (K)-Dissolved			104.3		%		80-120	11-OCT-19

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Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
MET-D-CCMS-WP								
	Water							
Batch	R4869129							
WG3186999-2	LCS							
Rubidium (Rb)-Dissolved			105.2		%		80-120	11-OCT-19
Selenium (Se)-Dissolved			101.5		%		80-120	11-OCT-19
Silicon (Si)-Dissolved			100.8		%		80-120	11-OCT-19
Silver (Ag)-Dissolved			101.4		%		80-120	11-OCT-19
Sodium (Na)-Dissolved			105.0		%		80-120	11-OCT-19
Strontium (Sr)-Dissolved			107.3		%		80-120	11-OCT-19
Sulfur (S)-Dissolved			101.0		%		80-120	11-OCT-19
Tellurium (Te)-Dissolved			100.5		%		80-120	11-OCT-19
Thallium (Tl)-Dissolved			103.4		%		80-120	11-OCT-19
Thorium (Th)-Dissolved			101.2		%		80-120	11-OCT-19
Tin (Sn)-Dissolved			100.2		%		80-120	11-OCT-19
Titanium (Ti)-Dissolved			98.0		%		80-120	11-OCT-19
Tungsten (W)-Dissolved			102.4		%		80-120	11-OCT-19
Uranium (U)-Dissolved			109.1		%		80-120	11-OCT-19
Vanadium (V)-Dissolved			102.9		%		80-120	11-OCT-19
Zinc (Zn)-Dissolved			102.0		%		80-120	11-OCT-19
Zirconium (Zr)-Dissolved			99.9		%		80-120	11-OCT-19
WG3186999-1	MB							
Aluminum (Al)-Dissolved			<0.0010		mg/L		0.001	11-OCT-19
Antimony (Sb)-Dissolved			<0.00010		mg/L		0.0001	11-OCT-19
Arsenic (As)-Dissolved			<0.00010		mg/L		0.0001	11-OCT-19
Barium (Ba)-Dissolved			<0.00010		mg/L		0.0001	11-OCT-19
Beryllium (Be)-Dissolved			<0.00010		mg/L		0.0001	11-OCT-19
Bismuth (Bi)-Dissolved			<0.000050		mg/L		0.00005	11-OCT-19
Boron (B)-Dissolved			<0.010		mg/L		0.01	11-OCT-19
Cadmium (Cd)-Dissolved			<0.0000050		mg/L		0.000005	11-OCT-19
Calcium (Ca)-Dissolved			<0.050		mg/L		0.05	11-OCT-19
Cesium (Cs)-Dissolved			<0.000010		mg/L		0.00001	11-OCT-19
Chromium (Cr)-Dissolved			<0.00010		mg/L		0.0001	11-OCT-19
Cobalt (Co)-Dissolved			<0.00010		mg/L		0.0001	11-OCT-19
Copper (Cu)-Dissolved			<0.00020		mg/L		0.0002	11-OCT-19
Iron (Fe)-Dissolved			<0.010		mg/L		0.01	11-OCT-19
Lead (Pb)-Dissolved			<0.000050		mg/L		0.00005	11-OCT-19
Lithium (Li)-Dissolved			<0.0010		mg/L		0.001	11-OCT-19

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Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
MET-D-CCMS-WP		Water						
Batch	R4869129							
WG3186999-1	MB							
Magnesium (Mg)-Dissolved			<0.0050		mg/L		0.005	11-OCT-19
Manganese (Mn)-Dissolved			<0.00010		mg/L		0.0001	11-OCT-19
Molybdenum (Mo)-Dissolved			<0.000050		mg/L		0.00005	11-OCT-19
Nickel (Ni)-Dissolved			<0.00050		mg/L		0.0005	11-OCT-19
Phosphorus (P)-Dissolved			<0.030		mg/L		0.03	11-OCT-19
Potassium (K)-Dissolved			<0.050		mg/L		0.05	11-OCT-19
Rubidium (Rb)-Dissolved			<0.00020		mg/L		0.0002	11-OCT-19
Selenium (Se)-Dissolved			<0.000050		mg/L		0.00005	11-OCT-19
Silicon (Si)-Dissolved			<0.050		mg/L		0.05	11-OCT-19
Silver (Ag)-Dissolved			<0.000010		mg/L		0.00001	11-OCT-19
Sodium (Na)-Dissolved			<0.050		mg/L		0.05	11-OCT-19
Strontium (Sr)-Dissolved			<0.00010		mg/L		0.0001	11-OCT-19
Sulfur (S)-Dissolved			<0.50		mg/L		0.5	11-OCT-19
Tellurium (Te)-Dissolved			<0.00020		mg/L		0.0002	11-OCT-19
Thallium (Tl)-Dissolved			<0.000010		mg/L		0.00001	11-OCT-19
Thorium (Th)-Dissolved			<0.00010		mg/L		0.0001	11-OCT-19
Tin (Sn)-Dissolved			<0.00010		mg/L		0.0001	11-OCT-19
Titanium (Ti)-Dissolved			<0.00030		mg/L		0.0003	11-OCT-19
Tungsten (W)-Dissolved			<0.00010		mg/L		0.0001	11-OCT-19
Uranium (U)-Dissolved			<0.000010		mg/L		0.00001	11-OCT-19
Vanadium (V)-Dissolved			<0.00050		mg/L		0.0005	11-OCT-19
Zinc (Zn)-Dissolved			<0.0010		mg/L		0.001	11-OCT-19
Zirconium (Zr)-Dissolved			<0.00020		mg/L		0.0002	11-OCT-19
NH3-COL-WP		Water						
Batch	R4863330							
WG3186530-10	LCS							
Ammonia, Total (as N)			97.7		%		85-115	08-OCT-19
WG3186530-9	MB							
Ammonia, Total (as N)			<0.010		mg/L		0.01	08-OCT-19
SO4-IC-N-WP		Water						
Batch	R4857803							
WG3179438-2	LCS							
Sulfate (SO4)			101.8		%		90-110	02-OCT-19
WG3179438-1	MB							
Sulfate (SO4)			<0.30		mg/L		0.3	02-OCT-19



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Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
SO4-IC-N-WP								
	Water							
Batch	R4866613							
WG3186567-2	LCS							
Sulfate (SO4)			102.1		%		90-110	09-OCT-19
WG3186567-1	MB							
Sulfate (SO4)			<0.30		mg/L		0.3	09-OCT-19
TC,EC-QT97-WP								
	Water							
Batch	R4854509							
WG3178362-3	DUP	L2357101-1						
Total Coliforms		>2420	>2420		MPN/100mL	0.0	65	01-OCT-19
Escherichia Coli		133	126		MPN/100mL	5.7	65	01-OCT-19
WG3178362-1	MB							
Total Coliforms			<1		MPN/100mL		1	01-OCT-19
Escherichia Coli			<1		MPN/100mL		1	01-OCT-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
RPD-NA	Relative Percent Difference Not Available due to result(s) being less than detection limit.

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.



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COC Number: 15 -

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Report To Contact and company name below will appear on the final report		Report Format / Distribution			Select Service Level Below - Please confirm all E&P TATs with your AM - surcharges will apply																																																																																																																							
Company:	City of Winnipeg	Select Report Format: <input checked="" type="checkbox"/> PDF <input type="checkbox"/> EXCEL <input type="checkbox"/> EDD (DIGITAL)			Regular [R] <input type="checkbox"/> Standard TAT if received by 3 pm - business days - no surcharges apply					EMERGENCY																																																																																																																		
Contact:	Chris Kozak	Quality Control (QC) Report with Report <input checked="" type="checkbox"/> YES <input type="checkbox"/> NO			Priority (Business Days)		4 day [P4] <input type="checkbox"/>			1 Business day [E1] <input type="checkbox"/>																																																																																																																		
Phone:	204-986-2384	<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:																																																																																																																					
Street:	1120 Waverly Street	Email 1 or Fax ckozak@winnipeg.ca			For tests that can not be performed according to the service level selected, you will be contacted.																																																																																																																							
City/Province:	Winnipeg, Manitoba	Email 2			Analysis Request																																																																																																																							
Postal Code:	R3T 0P4	Email 3			Indicate Filtered (F), Preserved (P) or Filtered and Preserved (F/P) below																																																																																																																							
Invoice To	Same as Report To <input type="checkbox"/> YES <input type="checkbox"/> NO	Invoice Distribution			<table border="1" style="width:100%; border-collapse: collapse;"> <thead> <tr> <th>TC,FC,EC-Q197-WP</th> <th>CL-IC-N-WP</th> <th>SO4-IC-N-WP</th> <th>HG-D-CVAA-WP</th> <th>CR-CRE-IC-WT</th> <th>ON-T-L-CFA-VA</th> <th>ALK-SPEC-WP</th> <th>NHS-COL-WP</th> <th>C-TDC,DIC,DOC-HTC-WP</th> <th>MET-D-CCMS-WP</th> <th rowspan="10" style="writing-mode: vertical-rl; transform: rotate(180deg);">Number of Containers</th> </tr> </thead> <tbody> <tr> <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>↓</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> </tr> <tr> <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> </tr> <tr> <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> </tr> <tr> <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> </tr> </tbody> </table>										TC,FC,EC-Q197-WP	CL-IC-N-WP	SO4-IC-N-WP	HG-D-CVAA-WP	CR-CRE-IC-WT	ON-T-L-CFA-VA	ALK-SPEC-WP	NHS-COL-WP	C-TDC,DIC,DOC-HTC-WP	MET-D-CCMS-WP	Number of Containers	X	X	X	X	X	X	X	X	X	X		↓	↓	↓	↓	↓	↓	↓	↓	↓	↓		↓	↓	↓	↓	↓	↓	↓	↓	↓	↓		↓	↓	↓	↓	↓	↓	↓	↓	↓	↓		↓	↓	↓	↓	↓	↓	↓	↓	↓	↓		↓	↓	↓	↓	↓	↓	↓	↓	↓	↓		↓	↓	↓	↓	↓	↓	↓	↓	↓	↓		↓	↓	↓	↓	↓	↓	↓	↓	↓	↓		↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	
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	SWQ 25-1 245405	20-SEP-19	13:43	WATER	X	X	X	X	X	X	X	X	X	X																																																																																																														
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	SWQ 25-100 245408	↓	12:00	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓																																																																																																														
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					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 type="checkbox"/> Ice Cubes <input type="checkbox"/> Custody seal intact Yes <input type="checkbox"/> No <input type="checkbox"/>																																																																																																																							
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Released by:	Date: Oct. 1/19	Time: 11:15	Received by: CM	Date: 1-10-19	Time: 11:12	Received by:	Date: Oct 1	Time: 11:15																																																																																																																				

REFER TO BACK PAGE FOR ALS LOCATIONS AND SAMPLING INFORMATION

WHITE - LABORATORY COPY YELLOW - CLIENT COPY

Failure to complete all portions of this form may delay analysis. Please fill in this form LEGIBLY. By the use of this form the user acknowledges and agrees with the Terms and Conditions as specified on the back page of the white - report copy.

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



City of Winnipeg - Solid Waste Services Div
(1120 Waverley)
ATTN: CHRIS KOZAK
Solid Waste Services Division
1120 Waverley Street
Winnipeg MB R3T 0P4

Date Received: 30-APR-19
Report Date: 09-MAY-19 15:19 (MT)
Version: FINAL

Client Phone: 204-986-2384

Certificate of Analysis

Lab Work Order #: L2264985
Project P.O. #: NOT SUBMITTED
Job Reference: SECTION A (BRRMF SURFACE WATER)
C of C Numbers:
Legal Site Desc:

Connor Cattani
Account Manager

[This report shall not be reproduced except in full without the written authority of the Laboratory.]

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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ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2264985-1 SWQ25 - 1							
Sampled By: CLIENT on 30-APR-19 @ 09:15							
Matrix: SURFACE WATER							
Alkalinity species as HCO₃, CO₃, OH							
Alkalinity, Bicarbonate							
Bicarbonate (HCO ₃)	247000		1200	ug/L		03-MAY-19	
Alkalinity, Carbonate							
Carbonate (CO ₃)	<600		600	ug/L		03-MAY-19	
Alkalinity, Hydroxide							
Hydroxide (OH)	<340		340	ug/L		03-MAY-19	
Alkalinity, Total (as CaCO₃)							
Alkalinity, Total (as CaCO ₃)	203000		1000	ug/L		04-MAY-19	R4621968
Dissolved Carbons							
Dissolved Inorganic Carbon by Combustion							
Dissolved Inorganic Carbon	38600		500	ug/L		01-MAY-19	R4620128
Dissolved Organic Carbon by Combustion							
Dissolved Organic Carbon	20400		500	ug/L		30-APR-19	R4619457
Total Dissolved Carbon by Calculation							
Total Dissolved Carbon	58900		1000	ug/L		02-MAY-19	
Miscellaneous Parameters							
Ammonia, Total (as N)	25		10	ug/L		06-MAY-19	R4626207
Chloride (Cl)	20500		500	ug/L		30-APR-19	R4621973
Chromium, Hexavalent	0.73		0.50	ug/L		01-MAY-19	R4619976
Fecal Coliforms	40		10	MPN/100mL		30-APR-19	R4619560
Sulfate (SO ₄)	19500		300	ug/L		30-APR-19	R4621973
Cyanide, Total	<1.0		1.0	ug/L		02-MAY-19	R4623550
Total and E. coli, 1:10 dilution by QT97							
Total Coliforms	1920		10	MPN/100mL		30-APR-19	R4619580
Escherichia Coli	80		10	MPN/100mL		30-APR-19	R4619580
Dissolved Metals in Water by CRC ICPMS							
Dissolved Metals Filtration Location	FIELD					01-MAY-19	R4619558
Aluminum (Al)-Dissolved	3.8		1.0	ug/L	01-MAY-19	01-MAY-19	R4619914
Antimony (Sb)-Dissolved	0.21		0.10	ug/L	01-MAY-19	01-MAY-19	R4619914
Arsenic (As)-Dissolved	3.08		0.10	ug/L	01-MAY-19	01-MAY-19	R4619914
Barium (Ba)-Dissolved	32.7		0.10	ug/L	01-MAY-19	01-MAY-19	R4619914
Beryllium (Be)-Dissolved	<0.10		0.10	ug/L	01-MAY-19	01-MAY-19	R4619914
Bismuth (Bi)-Dissolved	<0.050		0.050	ug/L	01-MAY-19	01-MAY-19	R4619914
Boron (B)-Dissolved	25		10	ug/L	01-MAY-19	02-MAY-19	R4621868
Cadmium (Cd)-Dissolved	0.0157		0.0050	ug/L	01-MAY-19	01-MAY-19	R4619914
Calcium (Ca)-Dissolved	41600		50	ug/L	01-MAY-19	01-MAY-19	R4619914
Cesium (Cs)-Dissolved	<0.010		0.010	ug/L	01-MAY-19	02-MAY-19	R4621868
Chromium (Cr)-Dissolved	0.15		0.10	ug/L	01-MAY-19	01-MAY-19	R4619914
Cobalt (Co)-Dissolved	0.17		0.10	ug/L	01-MAY-19	01-MAY-19	R4619914
Copper (Cu)-Dissolved	1.40		0.20	ug/L	01-MAY-19	01-MAY-19	R4619914
Iron (Fe)-Dissolved	93		10	ug/L	01-MAY-19	01-MAY-19	R4619914
Lead (Pb)-Dissolved	0.097		0.050	ug/L	01-MAY-19	01-MAY-19	R4619914
Lithium (Li)-Dissolved	39.1		1.0	ug/L	01-MAY-19	01-MAY-19	R4619914
Magnesium (Mg)-Dissolved	27500		5.0	ug/L	01-MAY-19	01-MAY-19	R4619914
Manganese (Mn)-Dissolved	6.81		0.10	ug/L	01-MAY-19	01-MAY-19	R4619914
Molybdenum (Mo)-Dissolved	0.603		0.050	ug/L	01-MAY-19	02-MAY-19	R4621868
Nickel (Ni)-Dissolved	2.47		0.50	ug/L	01-MAY-19	01-MAY-19	R4619914
Phosphorus (P)-Dissolved	105		30	ug/L	01-MAY-19	01-MAY-19	R4619914
Potassium (K)-Dissolved	13900		50	ug/L	01-MAY-19	01-MAY-19	R4619914
Rubidium (Rb)-Dissolved	0.76		0.20	ug/L	01-MAY-19	02-MAY-19	R4621868
Selenium (Se)-Dissolved	0.260		0.050	ug/L	01-MAY-19	01-MAY-19	R4619914

* 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
L2264985-1 SWQ25 - 1							
Sampled By: CLIENT on 30-APR-19 @ 09:15							
Matrix: SURFACE WATER							
Dissolved Metals in Water by CRC ICPMS							
Silicon (Si)-Dissolved	6690		50	ug/L	01-MAY-19	01-MAY-19	R4619914
Silver (Ag)-Dissolved	<0.010		0.010	ug/L	01-MAY-19	01-MAY-19	R4619914
Sodium (Na)-Dissolved	16400		50	ug/L	01-MAY-19	01-MAY-19	R4619914
Strontium (Sr)-Dissolved	156		0.10	ug/L	01-MAY-19	01-MAY-19	R4619914
Sulfur (S)-Dissolved	7000		500	ug/L	01-MAY-19	01-MAY-19	R4619914
Tellurium (Te)-Dissolved	<0.20		0.20	ug/L	01-MAY-19	01-MAY-19	R4619914
Thallium (Tl)-Dissolved	<0.010		0.010	ug/L	01-MAY-19	01-MAY-19	R4619914
Thorium (Th)-Dissolved	<0.10		0.10	ug/L	01-MAY-19	01-MAY-19	R4619914
Tin (Sn)-Dissolved	0.53		0.10	ug/L	01-MAY-19	01-MAY-19	R4619914
Titanium (Ti)-Dissolved	0.38		0.30	ug/L	01-MAY-19	01-MAY-19	R4619914
Tungsten (W)-Dissolved	<0.10		0.10	ug/L	01-MAY-19	01-MAY-19	R4619914
Uranium (U)-Dissolved	1.20		0.010	ug/L	01-MAY-19	01-MAY-19	R4619914
Vanadium (V)-Dissolved	3.80		0.50	ug/L	01-MAY-19	01-MAY-19	R4619914
Zinc (Zn)-Dissolved	1.7		1.0	ug/L	01-MAY-19	01-MAY-19	R4619914
Zirconium (Zr)-Dissolved	0.616		0.060	ug/L	01-MAY-19	01-MAY-19	R4619914
Mercury Dissolved							
Dissolved Mercury Filtration Location	FIELD					01-MAY-19	R4629168
Mercury (Hg)-Dissolved	0.0070		0.0050	ug/L	01-MAY-19	08-MAY-19	R4629258
L2264985-2 SWQ25 - 12							
Sampled By: CLIENT on 30-APR-19 @ 09:31							
Matrix: SURFACE WATER							
Alkalinity species as HCO3, CO3, OH							
Alkalinity, Bicarbonate							
Bicarbonate (HCO3)	294000		1200	ug/L		03-MAY-19	
Alkalinity, Carbonate							
Carbonate (CO3)	<600		600	ug/L		03-MAY-19	
Alkalinity, Hydroxide							
Hydroxide (OH)	<340		340	ug/L		03-MAY-19	
Alkalinity, Total (as CaCO3)							
Alkalinity, Total (as CaCO3)	241000		1000	ug/L		04-MAY-19	R4621968
Dissolved Carbons							
Dissolved Inorganic Carbon by Combustion							
Dissolved Inorganic Carbon	39600		500	ug/L		01-MAY-19	R4620128
Dissolved Organic Carbon by Combustion							
Dissolved Organic Carbon	17400		500	ug/L		02-MAY-19	R4622553
Total Dissolved Carbon by Calculation							
Total Dissolved Carbon	57000		1000	ug/L		03-MAY-19	
Miscellaneous Parameters							
Ammonia, Total (as N)	27		10	ug/L		01-MAY-19	R4620126
Chloride (Cl)	25100		500	ug/L		30-APR-19	R4621973
Chromium, Hexavalent	0.69		0.50	ug/L		01-MAY-19	R4619976
Fecal Coliforms	<10	MBEF	10	MPN/100mL		30-APR-19	R4619560
Sulfate (SO4)	20800		300	ug/L		30-APR-19	R4621973
Cyanide, Total	<1.0		1.0	ug/L		02-MAY-19	R4623550
Total and E. coli, 1:10 dilution by QT97							
Total Coliforms	190		10	MPN/100mL		30-APR-19	R4619580
Escherichia Coli	30	MBEF	10	MPN/100mL		30-APR-19	R4619580
Dissolved Metals in Water by CRC ICPMS							
Dissolved Metals Filtration Location	FIELD					01-MAY-19	R4619558
Aluminum (Al)-Dissolved	5.4		1.0	ug/L	01-MAY-19	01-MAY-19	R4619914
Antimony (Sb)-Dissolved	0.17		0.10	ug/L	01-MAY-19	01-MAY-19	R4619914

* 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
L2264985-2 SWQ25 - 12							
Sampled By: CLIENT on 30-APR-19 @ 09:31							
Matrix: SURFACE WATER							
Dissolved Metals in Water by CRC ICPMS							
Arsenic (As)-Dissolved	3.08		0.10	ug/L	01-MAY-19	01-MAY-19	R4619914
Barium (Ba)-Dissolved	36.0		0.10	ug/L	01-MAY-19	01-MAY-19	R4619914
Beryllium (Be)-Dissolved	<0.10		0.10	ug/L	01-MAY-19	01-MAY-19	R4619914
Bismuth (Bi)-Dissolved	<0.050		0.050	ug/L	01-MAY-19	01-MAY-19	R4619914
Boron (B)-Dissolved	26		10	ug/L	01-MAY-19	02-MAY-19	R4621868
Cadmium (Cd)-Dissolved	0.0114		0.0050	ug/L	01-MAY-19	01-MAY-19	R4619914
Calcium (Ca)-Dissolved	44500		50	ug/L	01-MAY-19	01-MAY-19	R4619914
Cesium (Cs)-Dissolved	<0.010		0.010	ug/L	01-MAY-19	02-MAY-19	R4621868
Chromium (Cr)-Dissolved	0.18		0.10	ug/L	01-MAY-19	01-MAY-19	R4619914
Cobalt (Co)-Dissolved	0.17		0.10	ug/L	01-MAY-19	01-MAY-19	R4619914
Copper (Cu)-Dissolved	1.37		0.20	ug/L	01-MAY-19	01-MAY-19	R4619914
Iron (Fe)-Dissolved	132		10	ug/L	01-MAY-19	01-MAY-19	R4619914
Lead (Pb)-Dissolved	0.064		0.050	ug/L	01-MAY-19	01-MAY-19	R4619914
Lithium (Li)-Dissolved	39.6		1.0	ug/L	01-MAY-19	01-MAY-19	R4619914
Magnesium (Mg)-Dissolved	27700		5.0	ug/L	01-MAY-19	01-MAY-19	R4619914
Manganese (Mn)-Dissolved	9.85		0.10	ug/L	01-MAY-19	01-MAY-19	R4619914
Molybdenum (Mo)-Dissolved	0.645		0.050	ug/L	01-MAY-19	02-MAY-19	R4621868
Nickel (Ni)-Dissolved	2.70		0.50	ug/L	01-MAY-19	01-MAY-19	R4619914
Phosphorus (P)-Dissolved	165		30	ug/L	01-MAY-19	01-MAY-19	R4619914
Potassium (K)-Dissolved	12200		50	ug/L	01-MAY-19	01-MAY-19	R4619914
Rubidium (Rb)-Dissolved	0.71		0.20	ug/L	01-MAY-19	02-MAY-19	R4621868
Selenium (Se)-Dissolved	0.189		0.050	ug/L	01-MAY-19	01-MAY-19	R4619914
Silicon (Si)-Dissolved	5020		50	ug/L	01-MAY-19	01-MAY-19	R4619914
Silver (Ag)-Dissolved	<0.010		0.010	ug/L	01-MAY-19	01-MAY-19	R4619914
Sodium (Na)-Dissolved	17900		50	ug/L	01-MAY-19	01-MAY-19	R4619914
Strontium (Sr)-Dissolved	167		0.10	ug/L	01-MAY-19	01-MAY-19	R4619914
Sulfur (S)-Dissolved	7730		500	ug/L	01-MAY-19	01-MAY-19	R4619914
Tellurium (Te)-Dissolved	<0.20		0.20	ug/L	01-MAY-19	01-MAY-19	R4619914
Thallium (Tl)-Dissolved	<0.010		0.010	ug/L	01-MAY-19	01-MAY-19	R4619914
Thorium (Th)-Dissolved	<0.10		0.10	ug/L	01-MAY-19	01-MAY-19	R4619914
Tin (Sn)-Dissolved	0.97		0.10	ug/L	01-MAY-19	01-MAY-19	R4619914
Titanium (Ti)-Dissolved	0.33		0.30	ug/L	01-MAY-19	01-MAY-19	R4619914
Tungsten (W)-Dissolved	<0.10		0.10	ug/L	01-MAY-19	01-MAY-19	R4619914
Uranium (U)-Dissolved	2.00		0.010	ug/L	01-MAY-19	01-MAY-19	R4619914
Vanadium (V)-Dissolved	3.45		0.50	ug/L	01-MAY-19	01-MAY-19	R4619914
Zinc (Zn)-Dissolved	4.3		1.0	ug/L	01-MAY-19	01-MAY-19	R4619914
Zirconium (Zr)-Dissolved	0.601		0.060	ug/L	01-MAY-19	01-MAY-19	R4619914
Mercury Dissolved							
Dissolved Mercury Filtration Location	FIELD					01-MAY-19	R4629168
Mercury (Hg)-Dissolved	0.0050		0.0050	ug/L	01-MAY-19	08-MAY-19	R4629258
L2264985-3 SWQ25 - 13A							
Sampled By: CLIENT on 30-APR-19 @ 09:44							
Matrix: SURFACE WATER							
Alkalinity species as HCO3, CO3, OH							
Alkalinity, Bicarbonate							
Bicarbonate (HCO3)	296000		1200	ug/L		03-MAY-19	
Alkalinity, Carbonate							
Carbonate (CO3)	<600		600	ug/L		03-MAY-19	
Alkalinity, Hydroxide							
Hydroxide (OH)	<340		340	ug/L		03-MAY-19	
Alkalinity, Total (as CaCO3)							

* 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
L2264985-3 SWQ25 - 13A							
Sampled By: CLIENT on 30-APR-19 @ 09:44							
Matrix: SURFACE WATER							
Alkalinity, Total (as CaCO3)							
Alkalinity, Total (as CaCO3)	242000		1000	ug/L		04-MAY-19	R4621968
Dissolved Carbons							
Dissolved Inorganic Carbon by Combustion							
Dissolved Inorganic Carbon	39700		500	ug/L		01-MAY-19	R4620128
Dissolved Organic Carbon by Combustion							
Dissolved Organic Carbon	17500		500	ug/L		30-APR-19	R4619457
Total Dissolved Carbon by Calculation							
Total Dissolved Carbon	57200		1000	ug/L		02-MAY-19	
Miscellaneous Parameters							
Ammonia, Total (as N)	13		10	ug/L		01-MAY-19	R4620126
Chloride (Cl)	29600		500	ug/L		30-APR-19	R4621973
Chromium, Hexavalent	0.83		0.50	ug/L		01-MAY-19	R4619976
Fecal Coliforms	10		10	MPN/100mL		30-APR-19	R4619560
Sulfate (SO4)	24500		300	ug/L		30-APR-19	R4621973
Cyanide, Total	<1.0		1.0	ug/L		02-MAY-19	R4623550
Total and E. coli, 1:10 dilution by QT97							
Total Coliforms	160		10	MPN/100mL		30-APR-19	R4619580
Escherichia Coli	<10		10	MPN/100mL		30-APR-19	R4619580
Dissolved Metals in Water by CRC ICPMS							
Dissolved Metals Filtration Location	FIELD					01-MAY-19	R4619558
Aluminum (Al)-Dissolved	3.8		1.0	ug/L	01-MAY-19	01-MAY-19	R4619914
Antimony (Sb)-Dissolved	0.17		0.10	ug/L	01-MAY-19	01-MAY-19	R4619914
Arsenic (As)-Dissolved	3.14		0.10	ug/L	01-MAY-19	01-MAY-19	R4619914
Barium (Ba)-Dissolved	36.7		0.10	ug/L	01-MAY-19	01-MAY-19	R4619914
Beryllium (Be)-Dissolved	<0.10		0.10	ug/L	01-MAY-19	01-MAY-19	R4619914
Bismuth (Bi)-Dissolved	<0.050		0.050	ug/L	01-MAY-19	01-MAY-19	R4619914
Boron (B)-Dissolved	28		10	ug/L	01-MAY-19	02-MAY-19	R4621868
Cadmium (Cd)-Dissolved	0.0080		0.0050	ug/L	01-MAY-19	01-MAY-19	R4619914
Calcium (Ca)-Dissolved	45600		50	ug/L	01-MAY-19	01-MAY-19	R4619914
Cesium (Cs)-Dissolved	<0.010		0.010	ug/L	01-MAY-19	02-MAY-19	R4621868
Chromium (Cr)-Dissolved	0.14		0.10	ug/L	01-MAY-19	01-MAY-19	R4619914
Cobalt (Co)-Dissolved	0.16		0.10	ug/L	01-MAY-19	01-MAY-19	R4619914
Copper (Cu)-Dissolved	1.40		0.20	ug/L	01-MAY-19	01-MAY-19	R4619914
Iron (Fe)-Dissolved	124		10	ug/L	01-MAY-19	01-MAY-19	R4619914
Lead (Pb)-Dissolved	0.054		0.050	ug/L	01-MAY-19	01-MAY-19	R4619914
Lithium (Li)-Dissolved	40.2		1.0	ug/L	01-MAY-19	01-MAY-19	R4619914
Magnesium (Mg)-Dissolved	27700		5.0	ug/L	01-MAY-19	01-MAY-19	R4619914
Manganese (Mn)-Dissolved	8.20		0.10	ug/L	01-MAY-19	01-MAY-19	R4619914
Molybdenum (Mo)-Dissolved	0.675		0.050	ug/L	01-MAY-19	02-MAY-19	R4621868
Nickel (Ni)-Dissolved	2.76		0.50	ug/L	01-MAY-19	01-MAY-19	R4619914
Phosphorus (P)-Dissolved	145		30	ug/L	01-MAY-19	01-MAY-19	R4619914
Potassium (K)-Dissolved	11600		50	ug/L	01-MAY-19	01-MAY-19	R4619914
Rubidium (Rb)-Dissolved	0.74		0.20	ug/L	01-MAY-19	02-MAY-19	R4621868
Selenium (Se)-Dissolved	0.144		0.050	ug/L	01-MAY-19	01-MAY-19	R4619914
Silicon (Si)-Dissolved	4540		50	ug/L	01-MAY-19	01-MAY-19	R4619914
Silver (Ag)-Dissolved	<0.010		0.010	ug/L	01-MAY-19	01-MAY-19	R4619914
Sodium (Na)-Dissolved	18100		50	ug/L	01-MAY-19	01-MAY-19	R4619914
Strontium (Sr)-Dissolved	172		0.10	ug/L	01-MAY-19	01-MAY-19	R4619914
Sulfur (S)-Dissolved	8080		500	ug/L	01-MAY-19	01-MAY-19	R4619914
Tellurium (Te)-Dissolved	<0.20		0.20	ug/L	01-MAY-19	01-MAY-19	R4619914
Thallium (Tl)-Dissolved	<0.010		0.010	ug/L	01-MAY-19	01-MAY-19	R4619914

* 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
L2264985-3 SWQ25 - 13A Sampled By: CLIENT on 30-APR-19 @ 09:44 Matrix: SURFACE WATER							
Dissolved Metals in Water by CRC ICPMS							
Thorium (Th)-Dissolved	<0.10		0.10	ug/L	01-MAY-19	01-MAY-19	R4619914
Tin (Sn)-Dissolved	1.03		0.10	ug/L	01-MAY-19	01-MAY-19	R4619914
Titanium (Ti)-Dissolved	0.35		0.30	ug/L	01-MAY-19	01-MAY-19	R4619914
Tungsten (W)-Dissolved	<0.10		0.10	ug/L	01-MAY-19	01-MAY-19	R4619914
Uranium (U)-Dissolved	2.03		0.010	ug/L	01-MAY-19	01-MAY-19	R4619914
Vanadium (V)-Dissolved	3.49		0.50	ug/L	01-MAY-19	01-MAY-19	R4619914
Zinc (Zn)-Dissolved	3.4		1.0	ug/L	01-MAY-19	01-MAY-19	R4619914
Zirconium (Zr)-Dissolved	0.596		0.060	ug/L	01-MAY-19	01-MAY-19	R4619914
Mercury Dissolved							
Dissolved Mercury Filtration Location	FIELD					01-MAY-19	R4629168
Mercury (Hg)-Dissolved	0.0050		0.0050	ug/L	01-MAY-19	08-MAY-19	R4629258
L2264985-4 SWQ25 - 13B Sampled By: CLIENT on 30-APR-19 @ 10:05 Matrix: SURFACE WATER							
Alkalinity species as HCO3, CO3, OH							
Alkalinity, Bicarbonate							
Bicarbonate (HCO3)	281000		1200	ug/L		03-MAY-19	
Alkalinity, Carbonate							
Carbonate (CO3)	<600		600	ug/L		03-MAY-19	
Alkalinity, Hydroxide							
Hydroxide (OH)	<340		340	ug/L		03-MAY-19	
Alkalinity, Total (as CaCO3)							
Alkalinity, Total (as CaCO3)	230000		1000	ug/L		04-MAY-19	R4621968
Dissolved Carbons							
Dissolved Inorganic Carbon by Combustion							
Dissolved Inorganic Carbon	44100		500	ug/L		01-MAY-19	R4620128
Dissolved Organic Carbon by Combustion							
Dissolved Organic Carbon	17100		500	ug/L		30-APR-19	R4619457
Total Dissolved Carbon by Calculation							
Total Dissolved Carbon	61100		1000	ug/L		02-MAY-19	
Miscellaneous Parameters							
Ammonia, Total (as N)	21		10	ug/L		01-MAY-19	R4620126
Chloride (Cl)	91200		1000	ug/L		30-APR-19	R4621973
Chromium, Hexavalent	0.64		0.50	ug/L		01-MAY-19	R4619976
Fecal Coliforms	<10		10	MPN/100mL		30-APR-19	R4619560
Sulfate (SO4)	83100		600	ug/L		30-APR-19	R4621973
Cyanide, Total	<1.0		1.0	ug/L		02-MAY-19	R4623550
Total and E. coli, 1:10 dilution by QT97							
Total Coliforms	1400		10	MPN/100mL		30-APR-19	R4619580
Escherichia Coli	10		10	MPN/100mL		30-APR-19	R4619580
Dissolved Metals in Water by CRC ICPMS							
Dissolved Metals Filtration Location	FIELD					01-MAY-19	R4619558
Aluminum (Al)-Dissolved	14.8		1.0	ug/L	01-MAY-19	01-MAY-19	R4619914
Antimony (Sb)-Dissolved	0.17		0.10	ug/L	01-MAY-19	01-MAY-19	R4619914
Arsenic (As)-Dissolved	2.88		0.10	ug/L	01-MAY-19	01-MAY-19	R4619914
Barium (Ba)-Dissolved	48.6		0.10	ug/L	01-MAY-19	01-MAY-19	R4619914
Beryllium (Be)-Dissolved	<0.10		0.10	ug/L	01-MAY-19	01-MAY-19	R4619914
Bismuth (Bi)-Dissolved	<0.050		0.050	ug/L	01-MAY-19	01-MAY-19	R4619914
Boron (B)-Dissolved	59		10	ug/L	01-MAY-19	01-MAY-19	R4619914
Cadmium (Cd)-Dissolved	0.0054		0.0050	ug/L	01-MAY-19	01-MAY-19	R4619914
Calcium (Ca)-Dissolved	59300		50	ug/L	01-MAY-19	01-MAY-19	R4619914

* 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
L2264985-4 SWQ25 - 13B							
Sampled By: CLIENT on 30-APR-19 @ 10:05							
Matrix: SURFACE WATER							
Dissolved Metals in Water by CRC ICPMS							
Cesium (Cs)-Dissolved	<0.010		0.010	ug/L	01-MAY-19	02-MAY-19	R4621868
Chromium (Cr)-Dissolved	0.21		0.10	ug/L	01-MAY-19	01-MAY-19	R4619914
Cobalt (Co)-Dissolved	0.40		0.10	ug/L	01-MAY-19	01-MAY-19	R4619914
Copper (Cu)-Dissolved	1.46		0.20	ug/L	01-MAY-19	01-MAY-19	R4619914
Iron (Fe)-Dissolved	185		10	ug/L	01-MAY-19	01-MAY-19	R4619914
Lead (Pb)-Dissolved	0.111		0.050	ug/L	01-MAY-19	01-MAY-19	R4619914
Lithium (Li)-Dissolved	55.3		1.0	ug/L	01-MAY-19	01-MAY-19	R4619914
Magnesium (Mg)-Dissolved	39300		5.0	ug/L	01-MAY-19	01-MAY-19	R4619914
Manganese (Mn)-Dissolved	53.6		0.10	ug/L	01-MAY-19	01-MAY-19	R4619914
Molybdenum (Mo)-Dissolved	0.816		0.050	ug/L	01-MAY-19	02-MAY-19	R4621868
Nickel (Ni)-Dissolved	3.23		0.50	ug/L	01-MAY-19	01-MAY-19	R4619914
Phosphorus (P)-Dissolved	135		30	ug/L	01-MAY-19	01-MAY-19	R4619914
Potassium (K)-Dissolved	11500		50	ug/L	01-MAY-19	01-MAY-19	R4619914
Rubidium (Rb)-Dissolved	0.76		0.20	ug/L	01-MAY-19	02-MAY-19	R4621868
Selenium (Se)-Dissolved	0.170		0.050	ug/L	01-MAY-19	01-MAY-19	R4619914
Silicon (Si)-Dissolved	4460		50	ug/L	01-MAY-19	01-MAY-19	R4619914
Silver (Ag)-Dissolved	<0.010		0.010	ug/L	01-MAY-19	01-MAY-19	R4619914
Sodium (Na)-Dissolved	32600		50	ug/L	01-MAY-19	01-MAY-19	R4619914
Strontium (Sr)-Dissolved	241		0.10	ug/L	01-MAY-19	01-MAY-19	R4619914
Sulfur (S)-Dissolved	22000		500	ug/L	01-MAY-19	01-MAY-19	R4619914
Tellurium (Te)-Dissolved	<0.20		0.20	ug/L	01-MAY-19	01-MAY-19	R4619914
Thallium (Tl)-Dissolved	<0.010		0.010	ug/L	01-MAY-19	01-MAY-19	R4619914
Thorium (Th)-Dissolved	<0.10		0.10	ug/L	01-MAY-19	01-MAY-19	R4619914
Tin (Sn)-Dissolved	0.21		0.10	ug/L	01-MAY-19	01-MAY-19	R4619914
Titanium (Ti)-Dissolved	0.42		0.30	ug/L	01-MAY-19	01-MAY-19	R4619914
Tungsten (W)-Dissolved	<0.10		0.10	ug/L	01-MAY-19	01-MAY-19	R4619914
Uranium (U)-Dissolved	2.69		0.010	ug/L	01-MAY-19	01-MAY-19	R4619914
Vanadium (V)-Dissolved	3.34		0.50	ug/L	01-MAY-19	01-MAY-19	R4619914
Zinc (Zn)-Dissolved	92.4		1.0	ug/L	01-MAY-19	01-MAY-19	R4619914
Zirconium (Zr)-Dissolved	0.612		0.060	ug/L	01-MAY-19	01-MAY-19	R4619914
Mercury Dissolved							
Dissolved Mercury Filtration Location	FIELD					01-MAY-19	R4629168
Mercury (Hg)-Dissolved	<0.0050		0.0050	ug/L	01-MAY-19	08-MAY-19	R4629258
L2264985-5 SWQ25 - 7							
Sampled By: CLIENT on 30-APR-19 @ 10:28							
Matrix: SURFACE WATER							
Alkalinity species as HCO3, CO3, OH							
Alkalinity, Bicarbonate							
Bicarbonate (HCO3)	162000		1200	ug/L		03-MAY-19	
Alkalinity, Carbonate							
Carbonate (CO3)	39800		600	ug/L		03-MAY-19	
Alkalinity, Hydroxide							
Hydroxide (OH)	<340		340	ug/L		03-MAY-19	
Alkalinity, Total (as CaCO3)							
Alkalinity, Total (as CaCO3)	199000		1000	ug/L		04-MAY-19	R4621968
Dissolved Carbons							
Dissolved Inorganic Carbon by Combustion							
Dissolved Inorganic Carbon	30900		500	ug/L		01-MAY-19	R4620128
Dissolved Organic Carbon by Combustion							
Dissolved Organic Carbon	33900		500	ug/L		30-APR-19	R4619457
Total Dissolved Carbon by Calculation							

* 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
L2264985-5 SWQ25 - 7							
Sampled By: CLIENT on 30-APR-19 @ 10:28							
Matrix: SURFACE WATER							
Total Dissolved Carbon by Calculation							
Total Dissolved Carbon	64800		1000	ug/L		02-MAY-19	
Miscellaneous Parameters							
Ammonia, Total (as N)	84		10	ug/L		06-MAY-19	R4626207
Chloride (Cl)	203000		2500	ug/L		30-APR-19	R4621973
Chromium, Hexavalent	<0.50		0.50	ug/L		01-MAY-19	R4619976
Fecal Coliforms	10		10	MPN/100mL		30-APR-19	R4619560
Sulfate (SO4)	372000		1500	ug/L		30-APR-19	R4621973
Cyanide, Total	1.3		1.0	ug/L		02-MAY-19	R4623550
Total and E. coli, 1:10 dilution by QT97							
Total Coliforms	890		10	MPN/100mL		30-APR-19	R4619580
Escherichia Coli	<10		10	MPN/100mL		30-APR-19	R4619580
Dissolved Metals in Water by CRC ICPMS							
Dissolved Metals Filtration Location	FIELD					01-MAY-19	R4619558
Aluminum (Al)-Dissolved	4.1		1.0	ug/L	01-MAY-19	01-MAY-19	R4619914
Antimony (Sb)-Dissolved	0.46		0.10	ug/L	01-MAY-19	01-MAY-19	R4619914
Arsenic (As)-Dissolved	7.40		0.10	ug/L	01-MAY-19	01-MAY-19	R4619914
Barium (Ba)-Dissolved	34.5		0.10	ug/L	01-MAY-19	01-MAY-19	R4619914
Beryllium (Be)-Dissolved	<0.10		0.10	ug/L	01-MAY-19	01-MAY-19	R4619914
Bismuth (Bi)-Dissolved	<0.050		0.050	ug/L	01-MAY-19	01-MAY-19	R4619914
Boron (B)-Dissolved	104		10	ug/L	01-MAY-19	01-MAY-19	R4619914
Cadmium (Cd)-Dissolved	0.0086		0.0050	ug/L	01-MAY-19	01-MAY-19	R4619914
Calcium (Ca)-Dissolved	70800		50	ug/L	01-MAY-19	01-MAY-19	R4619914
Cesium (Cs)-Dissolved	<0.010		0.010	ug/L	01-MAY-19	02-MAY-19	R4621868
Chromium (Cr)-Dissolved	0.19		0.10	ug/L	01-MAY-19	01-MAY-19	R4619914
Cobalt (Co)-Dissolved	0.87		0.10	ug/L	01-MAY-19	01-MAY-19	R4619914
Copper (Cu)-Dissolved	1.15		0.20	ug/L	01-MAY-19	01-MAY-19	R4619914
Iron (Fe)-Dissolved	17		10	ug/L	01-MAY-19	01-MAY-19	R4619914
Lead (Pb)-Dissolved	<0.050		0.050	ug/L	01-MAY-19	01-MAY-19	R4619914
Lithium (Li)-Dissolved	119		1.0	ug/L	01-MAY-19	01-MAY-19	R4619914
Magnesium (Mg)-Dissolved	104000		5.0	ug/L	01-MAY-19	01-MAY-19	R4619914
Manganese (Mn)-Dissolved	15.9		0.10	ug/L	01-MAY-19	01-MAY-19	R4619914
Molybdenum (Mo)-Dissolved	3.26		0.050	ug/L	01-MAY-19	02-MAY-19	R4621868
Nickel (Ni)-Dissolved	7.43		0.50	ug/L	01-MAY-19	01-MAY-19	R4619914
Phosphorus (P)-Dissolved	150		30	ug/L	01-MAY-19	01-MAY-19	R4619914
Potassium (K)-Dissolved	35100		50	ug/L	01-MAY-19	01-MAY-19	R4619914
Rubidium (Rb)-Dissolved	1.66		0.20	ug/L	01-MAY-19	02-MAY-19	R4621868
Selenium (Se)-Dissolved	0.305		0.050	ug/L	01-MAY-19	01-MAY-19	R4619914
Silicon (Si)-Dissolved	223		50	ug/L	01-MAY-19	01-MAY-19	R4619914
Silver (Ag)-Dissolved	<0.010		0.010	ug/L	01-MAY-19	01-MAY-19	R4619914
Sodium (Na)-Dissolved	103000		50	ug/L	01-MAY-19	01-MAY-19	R4619914
Strontium (Sr)-Dissolved	509		0.10	ug/L	01-MAY-19	01-MAY-19	R4619914
Sulfur (S)-Dissolved	131000		500	ug/L	01-MAY-19	01-MAY-19	R4619914
Tellurium (Te)-Dissolved	<0.20		0.20	ug/L	01-MAY-19	01-MAY-19	R4619914
Thallium (Tl)-Dissolved	<0.010		0.010	ug/L	01-MAY-19	01-MAY-19	R4619914
Thorium (Th)-Dissolved	<0.10		0.10	ug/L	01-MAY-19	01-MAY-19	R4619914
Tin (Sn)-Dissolved	0.41		0.10	ug/L	01-MAY-19	01-MAY-19	R4619914
Titanium (Ti)-Dissolved	0.46		0.30	ug/L	01-MAY-19	01-MAY-19	R4619914
Tungsten (W)-Dissolved	<0.10		0.10	ug/L	01-MAY-19	01-MAY-19	R4619914
Uranium (U)-Dissolved	3.48		0.010	ug/L	01-MAY-19	01-MAY-19	R4619914
Vanadium (V)-Dissolved	3.34		0.50	ug/L	01-MAY-19	01-MAY-19	R4619914
Zinc (Zn)-Dissolved	<1.0		1.0	ug/L	01-MAY-19	01-MAY-19	R4619914

* 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
L2264985-5 SWQ25 - 7 Sampled By: CLIENT on 30-APR-19 @ 10:28 Matrix: SURFACE WATER							
Dissolved Metals in Water by CRC ICPMS							
Zirconium (Zr)-Dissolved	0.605		0.060	ug/L	01-MAY-19	01-MAY-19	R4619914
Mercury Dissolved							
Dissolved Mercury Filtration Location	FIELD					01-MAY-19	R4629168
Mercury (Hg)-Dissolved	<0.0050		0.0050	ug/L	01-MAY-19	08-MAY-19	R4629258
L2264985-6 SWQ25 - 14A Sampled By: CLIENT on 30-APR-19 @ 10:13 Matrix: SURFACE WATER							
Alkalinity species as HCO₃, CO₃, OH							
Alkalinity, Bicarbonate							
Bicarbonate (HCO ₃)	268000		1200	ug/L		03-MAY-19	
Alkalinity, Carbonate							
Carbonate (CO ₃)	<600		600	ug/L		03-MAY-19	
Alkalinity, Hydroxide							
Hydroxide (OH)	<340		340	ug/L		03-MAY-19	
Alkalinity, Total (as CaCO₃)							
Alkalinity, Total (as CaCO ₃)	220000		1000	ug/L		04-MAY-19	R4621968
Dissolved Carbons							
Dissolved Inorganic Carbon by Combustion							
Dissolved Inorganic Carbon	42900		500	ug/L		01-MAY-19	R4620128
Dissolved Organic Carbon by Combustion							
Dissolved Organic Carbon	15300		500	ug/L		05-MAY-19	R4623327
Total Dissolved Carbon by Calculation							
Total Dissolved Carbon	58200		1000	ug/L		06-MAY-19	
Miscellaneous Parameters							
Ammonia, Total (as N)	50		10	ug/L		06-MAY-19	R4626207
Chloride (Cl)	67400		500	ug/L		30-APR-19	R4621973
Chromium, Hexavalent	0.58		0.50	ug/L		01-MAY-19	R4619976
Fecal Coliforms	670		10	MPN/100mL		30-APR-19	R4619560
Sulfate (SO ₄)	49200		300	ug/L		30-APR-19	R4621973
Cyanide, Total	<1.0		1.0	ug/L		02-MAY-19	R4623550
Total and E. coli, 1:10 dilution by QT97							
Total Coliforms	1660		10	MPN/100mL		30-APR-19	R4619580
Escherichia Coli	720		10	MPN/100mL		30-APR-19	R4619580
Dissolved Metals in Water by CRC ICPMS							
Dissolved Metals Filtration Location	FIELD					01-MAY-19	R4619558
Aluminum (Al)-Dissolved	2.3		1.0	ug/L	01-MAY-19	01-MAY-19	R4619914
Antimony (Sb)-Dissolved	0.23		0.10	ug/L	01-MAY-19	01-MAY-19	R4619914
Arsenic (As)-Dissolved	2.63		0.10	ug/L	01-MAY-19	01-MAY-19	R4619914
Barium (Ba)-Dissolved	56.7		0.10	ug/L	01-MAY-19	01-MAY-19	R4619914
Beryllium (Be)-Dissolved	<0.10		0.10	ug/L	01-MAY-19	01-MAY-19	R4619914
Bismuth (Bi)-Dissolved	<0.050		0.050	ug/L	01-MAY-19	01-MAY-19	R4619914
Boron (B)-Dissolved	58		10	ug/L	01-MAY-19	01-MAY-19	R4619914
Cadmium (Cd)-Dissolved	<0.0050		0.0050	ug/L	01-MAY-19	01-MAY-19	R4619914
Calcium (Ca)-Dissolved	56400		50	ug/L	01-MAY-19	01-MAY-19	R4619914
Cesium (Cs)-Dissolved	<0.010		0.010	ug/L	01-MAY-19	02-MAY-19	R4621868
Chromium (Cr)-Dissolved	0.13		0.10	ug/L	01-MAY-19	01-MAY-19	R4619914
Cobalt (Co)-Dissolved	0.40		0.10	ug/L	01-MAY-19	01-MAY-19	R4619914
Copper (Cu)-Dissolved	1.99		0.20	ug/L	01-MAY-19	01-MAY-19	R4619914
Iron (Fe)-Dissolved	53		10	ug/L	01-MAY-19	01-MAY-19	R4619914
Lead (Pb)-Dissolved	0.107		0.050	ug/L	01-MAY-19	01-MAY-19	R4619914
Lithium (Li)-Dissolved	62.0		1.0	ug/L	01-MAY-19	01-MAY-19	R4619914

* 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
L2264985-6 SWQ25 - 14A Sampled By: CLIENT on 30-APR-19 @ 10:13 Matrix: SURFACE WATER							
Dissolved Metals in Water by CRC ICPMS							
Magnesium (Mg)-Dissolved	39700		5.0	ug/L	01-MAY-19	01-MAY-19	R4619914
Manganese (Mn)-Dissolved	21.4		0.10	ug/L	01-MAY-19	01-MAY-19	R4619914
Molybdenum (Mo)-Dissolved	1.29		0.050	ug/L	01-MAY-19	02-MAY-19	R4621868
Nickel (Ni)-Dissolved	4.05		0.50	ug/L	01-MAY-19	01-MAY-19	R4619914
Phosphorus (P)-Dissolved	47		30	ug/L	01-MAY-19	01-MAY-19	R4619914
Potassium (K)-Dissolved	11600		50	ug/L	01-MAY-19	01-MAY-19	R4619914
Rubidium (Rb)-Dissolved	0.71		0.20	ug/L	01-MAY-19	02-MAY-19	R4621868
Selenium (Se)-Dissolved	0.163		0.050	ug/L	01-MAY-19	01-MAY-19	R4619914
Silicon (Si)-Dissolved	2340		50	ug/L	01-MAY-19	01-MAY-19	R4619914
Silver (Ag)-Dissolved	<0.010		0.010	ug/L	01-MAY-19	01-MAY-19	R4619914
Sodium (Na)-Dissolved	28000		50	ug/L	01-MAY-19	01-MAY-19	R4619914
Strontium (Sr)-Dissolved	245		0.10	ug/L	01-MAY-19	01-MAY-19	R4619914
Sulfur (S)-Dissolved	17300		500	ug/L	01-MAY-19	01-MAY-19	R4619914
Tellurium (Te)-Dissolved	<0.20		0.20	ug/L	01-MAY-19	01-MAY-19	R4619914
Thallium (Tl)-Dissolved	<0.010		0.010	ug/L	01-MAY-19	01-MAY-19	R4619914
Thorium (Th)-Dissolved	<0.10		0.10	ug/L	01-MAY-19	01-MAY-19	R4619914
Tin (Sn)-Dissolved	<0.10		0.10	ug/L	01-MAY-19	01-MAY-19	R4619914
Titanium (Ti)-Dissolved	<0.30		0.30	ug/L	01-MAY-19	01-MAY-19	R4619914
Tungsten (W)-Dissolved	<0.10		0.10	ug/L	01-MAY-19	01-MAY-19	R4619914
Uranium (U)-Dissolved	3.34		0.010	ug/L	01-MAY-19	01-MAY-19	R4619914
Vanadium (V)-Dissolved	3.65		0.50	ug/L	01-MAY-19	01-MAY-19	R4619914
Zinc (Zn)-Dissolved	7.1		1.0	ug/L	01-MAY-19	01-MAY-19	R4619914
Zirconium (Zr)-Dissolved	0.637		0.060	ug/L	01-MAY-19	01-MAY-19	R4619914
Mercury Dissolved							
Dissolved Mercury Filtration Location	FIELD					01-MAY-19	R4629168
Mercury (Hg)-Dissolved	<0.0050		0.0050	ug/L	01-MAY-19	08-MAY-19	R4629258
L2264985-7 SWQ25 - 14B Sampled By: CLIENT on 30-APR-19 @ 11:24 Matrix: SURFACE WATER							
Alkalinity species as HCO3, CO3, OH							
Alkalinity, Bicarbonate							
Bicarbonate (HCO3)	334000		1200	ug/L		03-MAY-19	
Alkalinity, Carbonate							
Carbonate (CO3)	<600		600	ug/L		03-MAY-19	
Alkalinity, Hydroxide							
Hydroxide (OH)	<340		340	ug/L		03-MAY-19	
Alkalinity, Total (as CaCO3)							
Alkalinity, Total (as CaCO3)	274000		1000	ug/L		04-MAY-19	R4621968
Dissolved Carbons							
Dissolved Inorganic Carbon by Combustion							
Dissolved Inorganic Carbon	47100		500	ug/L		01-MAY-19	R4620128
Dissolved Organic Carbon by Combustion							
Dissolved Organic Carbon	14400		500	ug/L		30-APR-19	R4619457
Total Dissolved Carbon by Calculation							
Total Dissolved Carbon	61500		1000	ug/L		02-MAY-19	
Miscellaneous Parameters							
Ammonia, Total (as N)	4100		100	ug/L		01-MAY-19	R4620126
Chloride (Cl)	72000		500	ug/L		30-APR-19	R4621973
Chromium, Hexavalent	0.53		0.50	ug/L		01-MAY-19	R4619976
Fecal Coliforms	40		10	MPN/100mL		30-APR-19	R4619560
Sulfate (SO4)	35900		300	ug/L		30-APR-19	R4621973

* 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
L2264985-7 SWQ25 - 14B							
Sampled By: CLIENT on 30-APR-19 @ 11:24							
Matrix: SURFACE WATER							
Cyanide, Total	1.1		1.0	ug/L		02-MAY-19	R4623550
Total and E. coli, 1:10 dilution by QT97							
Total Coliforms	120		10	MPN/100mL		30-APR-19	R4619580
Escherichia Coli	<10		10	MPN/100mL		30-APR-19	R4619580
Dissolved Metals in Water by CRC ICPMS							
Dissolved Metals Filtration Location	FIELD					01-MAY-19	R4619558
Aluminum (Al)-Dissolved	22.6		1.0	ug/L	01-MAY-19	01-MAY-19	R4619914
Antimony (Sb)-Dissolved	0.22		0.10	ug/L	01-MAY-19	01-MAY-19	R4619914
Arsenic (As)-Dissolved	5.90		0.10	ug/L	01-MAY-19	01-MAY-19	R4619914
Barium (Ba)-Dissolved	56.0		0.10	ug/L	01-MAY-19	01-MAY-19	R4619914
Beryllium (Be)-Dissolved	<0.10		0.10	ug/L	01-MAY-19	01-MAY-19	R4619914
Bismuth (Bi)-Dissolved	<0.050		0.050	ug/L	01-MAY-19	01-MAY-19	R4619914
Boron (B)-Dissolved	68		10	ug/L	01-MAY-19	01-MAY-19	R4619914
Cadmium (Cd)-Dissolved	0.0068		0.0050	ug/L	01-MAY-19	01-MAY-19	R4619914
Calcium (Ca)-Dissolved	46400		50	ug/L	01-MAY-19	01-MAY-19	R4619914
Cesium (Cs)-Dissolved	<0.010		0.010	ug/L	01-MAY-19	02-MAY-19	R4621868
Chromium (Cr)-Dissolved	0.11		0.10	ug/L	01-MAY-19	01-MAY-19	R4619914
Cobalt (Co)-Dissolved	0.61		0.10	ug/L	01-MAY-19	01-MAY-19	R4619914
Copper (Cu)-Dissolved	1.51		0.20	ug/L	01-MAY-19	01-MAY-19	R4619914
Iron (Fe)-Dissolved	30		10	ug/L	01-MAY-19	01-MAY-19	R4619914
Lead (Pb)-Dissolved	0.085		0.050	ug/L	01-MAY-19	01-MAY-19	R4619914
Lithium (Li)-Dissolved	62.8		1.0	ug/L	01-MAY-19	01-MAY-19	R4619914
Magnesium (Mg)-Dissolved	41200		5.0	ug/L	01-MAY-19	01-MAY-19	R4619914
Manganese (Mn)-Dissolved	230		0.10	ug/L	01-MAY-19	01-MAY-19	R4619914
Molybdenum (Mo)-Dissolved	1.83		0.050	ug/L	01-MAY-19	02-MAY-19	R4621868
Nickel (Ni)-Dissolved	5.35		0.50	ug/L	01-MAY-19	01-MAY-19	R4619914
Phosphorus (P)-Dissolved	373		30	ug/L	01-MAY-19	01-MAY-19	R4619914
Potassium (K)-Dissolved	16700		50	ug/L	01-MAY-19	01-MAY-19	R4619914
Rubidium (Rb)-Dissolved	1.62		0.20	ug/L	01-MAY-19	01-MAY-19	R4619914
Selenium (Se)-Dissolved	0.178		0.050	ug/L	01-MAY-19	01-MAY-19	R4619914
Silicon (Si)-Dissolved	7670		50	ug/L	01-MAY-19	01-MAY-19	R4619914
Silver (Ag)-Dissolved	<0.010		0.010	ug/L	01-MAY-19	01-MAY-19	R4619914
Sodium (Na)-Dissolved	35300		50	ug/L	01-MAY-19	01-MAY-19	R4619914
Strontium (Sr)-Dissolved	268		0.10	ug/L	01-MAY-19	01-MAY-19	R4619914
Sulfur (S)-Dissolved	12300		500	ug/L	01-MAY-19	01-MAY-19	R4619914
Tellurium (Te)-Dissolved	<0.20		0.20	ug/L	01-MAY-19	01-MAY-19	R4619914
Thallium (Tl)-Dissolved	<0.010		0.010	ug/L	01-MAY-19	01-MAY-19	R4619914
Thorium (Th)-Dissolved	<0.10		0.10	ug/L	01-MAY-19	01-MAY-19	R4619914
Tin (Sn)-Dissolved	0.37		0.10	ug/L	01-MAY-19	01-MAY-19	R4619914
Titanium (Ti)-Dissolved	0.44		0.30	ug/L	01-MAY-19	01-MAY-19	R4619914
Tungsten (W)-Dissolved	<0.10		0.10	ug/L	01-MAY-19	01-MAY-19	R4619914
Uranium (U)-Dissolved	1.81		0.010	ug/L	01-MAY-19	01-MAY-19	R4619914
Vanadium (V)-Dissolved	3.68		0.50	ug/L	01-MAY-19	01-MAY-19	R4619914
Zinc (Zn)-Dissolved	2.5		1.0	ug/L	01-MAY-19	01-MAY-19	R4619914
Zirconium (Zr)-Dissolved	0.372		0.060	ug/L	01-MAY-19	01-MAY-19	R4619914
Mercury Dissolved							
Dissolved Mercury Filtration Location	FIELD					01-MAY-19	R4629168
Mercury (Hg)-Dissolved	0.0110		0.0050	ug/L	01-MAY-19	08-MAY-19	R4629258
L2264985-8 SWQ25 - 9A							
Sampled By: CLIENT on 30-APR-19 @ 10:47							
Matrix: SURFACE WATER							
Alkalinity species as HCO3, CO3, OH							

* 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
L2264985-8 SWQ25 - 9A							
Sampled By: CLIENT on 30-APR-19 @ 10:47							
Matrix: SURFACE WATER							
Alkalinity, Bicarbonate							
Bicarbonate (HCO3)	288000		1200	ug/L		03-MAY-19	
Alkalinity, Carbonate							
Carbonate (CO3)	<600		600	ug/L		03-MAY-19	
Alkalinity, Hydroxide							
Hydroxide (OH)	<340		340	ug/L		03-MAY-19	
Alkalinity, Total (as CaCO3)							
Alkalinity, Total (as CaCO3)	236000		1000	ug/L		04-MAY-19	R4621968
Dissolved Carbons							
Dissolved Inorganic Carbon by Combustion							
Dissolved Inorganic Carbon	46100		500	ug/L		01-MAY-19	R4620128
Dissolved Organic Carbon by Combustion							
Dissolved Organic Carbon	14700		500	ug/L		30-APR-19	R4619457
Total Dissolved Carbon by Calculation							
Total Dissolved Carbon	60800		1000	ug/L		02-MAY-19	
Miscellaneous Parameters							
Ammonia, Total (as N)	3100		100	ug/L		01-MAY-19	R4620126
Chloride (Cl)	86000		500	ug/L		30-APR-19	R4621973
Chromium, Hexavalent	<0.50		0.50	ug/L		01-MAY-19	R4619976
Fecal Coliforms	<10		10	MPN/100mL		30-APR-19	R4619560
Sulfate (SO4)	75900		300	ug/L		30-APR-19	R4621973
Cyanide, Total	1.3		1.0	ug/L		02-MAY-19	R4623550
Total and E. coli, 1:10 dilution by QT97							
Total Coliforms	60		10	MPN/100mL		30-APR-19	R4619580
Escherichia Coli	<10		10	MPN/100mL		30-APR-19	R4619580
Dissolved Metals in Water by CRC ICPMS							
Dissolved Metals Filtration Location	FIELD					01-MAY-19	R4619558
Aluminum (Al)-Dissolved	3.6		1.0	ug/L	01-MAY-19	01-MAY-19	R4619914
Antimony (Sb)-Dissolved	0.20		0.10	ug/L	01-MAY-19	01-MAY-19	R4619914
Arsenic (As)-Dissolved	3.92		0.10	ug/L	01-MAY-19	01-MAY-19	R4619914
Barium (Ba)-Dissolved	56.3		0.10	ug/L	01-MAY-19	01-MAY-19	R4619914
Beryllium (Be)-Dissolved	<0.10		0.10	ug/L	01-MAY-19	01-MAY-19	R4619914
Bismuth (Bi)-Dissolved	<0.050		0.050	ug/L	01-MAY-19	01-MAY-19	R4619914
Boron (B)-Dissolved	69		10	ug/L	01-MAY-19	01-MAY-19	R4619914
Cadmium (Cd)-Dissolved	0.0055		0.0050	ug/L	01-MAY-19	01-MAY-19	R4619914
Calcium (Ca)-Dissolved	55100		50	ug/L	01-MAY-19	01-MAY-19	R4619914
Cesium (Cs)-Dissolved	<0.010		0.010	ug/L	01-MAY-19	02-MAY-19	R4621868
Chromium (Cr)-Dissolved	0.11		0.10	ug/L	01-MAY-19	01-MAY-19	R4619914
Cobalt (Co)-Dissolved	0.96		0.10	ug/L	01-MAY-19	01-MAY-19	R4619914
Copper (Cu)-Dissolved	1.83		0.20	ug/L	01-MAY-19	01-MAY-19	R4619914
Iron (Fe)-Dissolved	24		10	ug/L	01-MAY-19	01-MAY-19	R4619914
Lead (Pb)-Dissolved	<0.050		0.050	ug/L	01-MAY-19	01-MAY-19	R4619914
Lithium (Li)-Dissolved	69.3		1.0	ug/L	01-MAY-19	01-MAY-19	R4619914
Magnesium (Mg)-Dissolved	47000		5.0	ug/L	01-MAY-19	01-MAY-19	R4619914
Manganese (Mn)-Dissolved	263		0.10	ug/L	01-MAY-19	01-MAY-19	R4619914
Molybdenum (Mo)-Dissolved	2.05		0.050	ug/L	01-MAY-19	02-MAY-19	R4621868
Nickel (Ni)-Dissolved	5.74		0.50	ug/L	01-MAY-19	01-MAY-19	R4619914
Phosphorus (P)-Dissolved	98		30	ug/L	01-MAY-19	01-MAY-19	R4619914
Potassium (K)-Dissolved	16500		50	ug/L	01-MAY-19	01-MAY-19	R4619914
Rubidium (Rb)-Dissolved	1.54		0.20	ug/L	01-MAY-19	01-MAY-19	R4619914
Selenium (Se)-Dissolved	0.210		0.050	ug/L	01-MAY-19	01-MAY-19	R4619914
Silicon (Si)-Dissolved	7010		50	ug/L	01-MAY-19	01-MAY-19	R4619914

* 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
L2264985-8 SWQ25 - 9A Sampled By: CLIENT on 30-APR-19 @ 10:47 Matrix: SURFACE WATER							
Dissolved Metals in Water by CRC ICPMS							
Silver (Ag)-Dissolved	<0.010		0.010	ug/L	01-MAY-19	01-MAY-19	R4619914
Sodium (Na)-Dissolved	38400		50	ug/L	01-MAY-19	01-MAY-19	R4619914
Strontium (Sr)-Dissolved	303		0.10	ug/L	01-MAY-19	01-MAY-19	R4619914
Sulfur (S)-Dissolved	25800		500	ug/L	01-MAY-19	01-MAY-19	R4619914
Tellurium (Te)-Dissolved	<0.20		0.20	ug/L	01-MAY-19	01-MAY-19	R4619914
Thallium (Tl)-Dissolved	<0.010		0.010	ug/L	01-MAY-19	01-MAY-19	R4619914
Thorium (Th)-Dissolved	<0.10		0.10	ug/L	01-MAY-19	01-MAY-19	R4619914
Tin (Sn)-Dissolved	0.66		0.10	ug/L	01-MAY-19	01-MAY-19	R4619914
Titanium (Ti)-Dissolved	0.33		0.30	ug/L	01-MAY-19	01-MAY-19	R4619914
Tungsten (W)-Dissolved	<0.10		0.10	ug/L	01-MAY-19	01-MAY-19	R4619914
Uranium (U)-Dissolved	2.11		0.010	ug/L	01-MAY-19	01-MAY-19	R4619914
Vanadium (V)-Dissolved	3.01		0.50	ug/L	01-MAY-19	01-MAY-19	R4619914
Zinc (Zn)-Dissolved	3.8		1.0	ug/L	01-MAY-19	01-MAY-19	R4619914
Zirconium (Zr)-Dissolved	0.490		0.060	ug/L	01-MAY-19	01-MAY-19	R4619914
Mercury Dissolved							
Dissolved Mercury Filtration Location	FIELD					01-MAY-19	R4629168
Mercury (Hg)-Dissolved	0.0070		0.0050	ug/L	01-MAY-19	08-MAY-19	R4629258
L2264985-9 SWQ25 - 9B Sampled By: CLIENT on 30-APR-19 @ 11:10 Matrix: SURFACE WATER							
Alkalinity species as HCO3, CO3, OH							
Alkalinity, Bicarbonate							
Bicarbonate (HCO3)	364000		1200	ug/L		03-MAY-19	
Alkalinity, Carbonate							
Carbonate (CO3)	<600		600	ug/L		03-MAY-19	
Alkalinity, Hydroxide							
Hydroxide (OH)	<340		340	ug/L		03-MAY-19	
Alkalinity, Total (as CaCO3)							
Alkalinity, Total (as CaCO3)	299000		1000	ug/L		04-MAY-19	R4621968
Dissolved Carbons							
Dissolved Inorganic Carbon by Combustion							
Dissolved Inorganic Carbon	47100		500	ug/L		03-MAY-19	R4622945
Dissolved Organic Carbon by Combustion							
Dissolved Organic Carbon	15700		500	ug/L		02-MAY-19	R4622553
Total Dissolved Carbon by Calculation							
Total Dissolved Carbon	62800		1000	ug/L		05-MAY-19	
Miscellaneous Parameters							
Ammonia, Total (as N)	4590		100	ug/L		01-MAY-19	R4620126
Chloride (Cl)	72200		500	ug/L		30-APR-19	R4621973
Chromium, Hexavalent	<0.50		0.50	ug/L		01-MAY-19	R4619976
Fecal Coliforms	10	MBEF	10	MPN/100mL		30-APR-19	R4619560
Sulfate (SO4)	37600		300	ug/L		30-APR-19	R4621973
Cyanide, Total	1.2		1.0	ug/L		02-MAY-19	R4623550
Total and E. coli, 1:10 dilution by QT97							
Total Coliforms	210		10	MPN/100mL		30-APR-19	R4619580
Escherichia Coli	30	MBEF	10	MPN/100mL		30-APR-19	R4619580
Dissolved Metals in Water by CRC ICPMS							
Dissolved Metals Filtration Location	FIELD					01-MAY-19	R4619558
Aluminum (Al)-Dissolved	3.6		1.0	ug/L	01-MAY-19	01-MAY-19	R4619914
Antimony (Sb)-Dissolved	0.22		0.10	ug/L	01-MAY-19	01-MAY-19	R4619914
Arsenic (As)-Dissolved	5.74		0.10	ug/L	01-MAY-19	01-MAY-19	R4619914

* 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
L2264985-9 SWQ25 - 9B Sampled By: CLIENT on 30-APR-19 @ 11:10 Matrix: SURFACE WATER							
Dissolved Metals in Water by CRC ICPMS							
Barium (Ba)-Dissolved	57.6		0.10	ug/L	01-MAY-19	01-MAY-19	R4619914
Beryllium (Be)-Dissolved	<0.10		0.10	ug/L	01-MAY-19	01-MAY-19	R4619914
Bismuth (Bi)-Dissolved	<0.050		0.050	ug/L	01-MAY-19	01-MAY-19	R4619914
Boron (B)-Dissolved	65		10	ug/L	01-MAY-19	01-MAY-19	R4619914
Cadmium (Cd)-Dissolved	0.0088		0.0050	ug/L	01-MAY-19	01-MAY-19	R4619914
Calcium (Ca)-Dissolved	45200		50	ug/L	01-MAY-19	01-MAY-19	R4619914
Cesium (Cs)-Dissolved	<0.010		0.010	ug/L	01-MAY-19	02-MAY-19	R4621868
Chromium (Cr)-Dissolved	<0.10		0.10	ug/L	01-MAY-19	01-MAY-19	R4619914
Cobalt (Co)-Dissolved	0.64		0.10	ug/L	01-MAY-19	01-MAY-19	R4619914
Copper (Cu)-Dissolved	1.14		0.20	ug/L	01-MAY-19	01-MAY-19	R4619914
Iron (Fe)-Dissolved	17		10	ug/L	01-MAY-19	01-MAY-19	R4619914
Lead (Pb)-Dissolved	<0.050		0.050	ug/L	01-MAY-19	01-MAY-19	R4619914
Lithium (Li)-Dissolved	62.1		1.0	ug/L	01-MAY-19	01-MAY-19	R4619914
Magnesium (Mg)-Dissolved	41800		5.0	ug/L	01-MAY-19	01-MAY-19	R4619914
Manganese (Mn)-Dissolved	244		0.10	ug/L	01-MAY-19	01-MAY-19	R4619914
Molybdenum (Mo)-Dissolved	1.87		0.050	ug/L	01-MAY-19	02-MAY-19	R4621868
Nickel (Ni)-Dissolved	5.45		0.50	ug/L	01-MAY-19	01-MAY-19	R4619914
Phosphorus (P)-Dissolved	348		30	ug/L	01-MAY-19	01-MAY-19	R4619914
Potassium (K)-Dissolved	16600		50	ug/L	01-MAY-19	01-MAY-19	R4619914
Rubidium (Rb)-Dissolved	1.67		0.20	ug/L	01-MAY-19	01-MAY-19	R4619914
Selenium (Se)-Dissolved	0.234		0.050	ug/L	01-MAY-19	01-MAY-19	R4619914
Silicon (Si)-Dissolved	7690		50	ug/L	01-MAY-19	01-MAY-19	R4619914
Silver (Ag)-Dissolved	<0.010		0.010	ug/L	01-MAY-19	01-MAY-19	R4619914
Sodium (Na)-Dissolved	35400		50	ug/L	01-MAY-19	01-MAY-19	R4619914
Strontium (Sr)-Dissolved	265		0.10	ug/L	01-MAY-19	01-MAY-19	R4619914
Sulfur (S)-Dissolved	12900		500	ug/L	01-MAY-19	01-MAY-19	R4619914
Tellurium (Te)-Dissolved	<0.20		0.20	ug/L	01-MAY-19	01-MAY-19	R4619914
Thallium (Tl)-Dissolved	<0.010		0.010	ug/L	01-MAY-19	01-MAY-19	R4619914
Thorium (Th)-Dissolved	<0.10		0.10	ug/L	01-MAY-19	01-MAY-19	R4619914
Tin (Sn)-Dissolved	0.99		0.10	ug/L	01-MAY-19	01-MAY-19	R4619914
Titanium (Ti)-Dissolved	0.40		0.30	ug/L	01-MAY-19	01-MAY-19	R4619914
Tungsten (W)-Dissolved	<0.10		0.10	ug/L	01-MAY-19	01-MAY-19	R4619914
Uranium (U)-Dissolved	1.89		0.010	ug/L	01-MAY-19	01-MAY-19	R4619914
Vanadium (V)-Dissolved	3.68		0.50	ug/L	01-MAY-19	01-MAY-19	R4619914
Zinc (Zn)-Dissolved	1.8		1.0	ug/L	01-MAY-19	01-MAY-19	R4619914
Zirconium (Zr)-Dissolved	0.366		0.060	ug/L	01-MAY-19	01-MAY-19	R4619914
Mercury Dissolved							
Dissolved Mercury Filtration Location	FIELD					01-MAY-19	R4629168
Mercury (Hg)-Dissolved	0.0050		0.0050	ug/L	01-MAY-19	08-MAY-19	R4629258
L2264985-10 SWQ25 - 100 Sampled By: CLIENT on 30-APR-19 @ 12:00 Matrix: SURFACE WATER							
Alkalinity species as HCO3, CO3, OH							
Alkalinity, Bicarbonate							
Bicarbonate (HCO3)	190000		1200	ug/L		03-MAY-19	
Alkalinity, Carbonate							
Carbonate (CO3)	40300		600	ug/L		03-MAY-19	
Alkalinity, Hydroxide							
Hydroxide (OH)	<340		340	ug/L		03-MAY-19	
Alkalinity, Total (as CaCO3)							
Alkalinity, Total (as CaCO3)	223000		1000	ug/L		04-MAY-19	R4621968

* 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
L2264985-10 SWQ25 - 100							
Sampled By: CLIENT on 30-APR-19 @ 12:00							
Matrix: SURFACE WATER							
Dissolved Carbons							
Dissolved Inorganic Carbon by Combustion							
Dissolved Inorganic Carbon	30200		500	ug/L		03-MAY-19	R4622945
Dissolved Organic Carbon by Combustion							
Dissolved Organic Carbon	34100		500	ug/L		30-APR-19	R4619457
Total Dissolved Carbon by Calculation							
Total Dissolved Carbon	64300		1000	ug/L		05-MAY-19	
Miscellaneous Parameters							
Ammonia, Total (as N)	71		10	ug/L		06-MAY-19	R4626207
Chloride (Cl)	203000		2500	ug/L		30-APR-19	R4621973
Chromium, Hexavalent	<0.50		0.50	ug/L		01-MAY-19	R4619976
Fecal Coliforms	50		10	MPN/100mL		30-APR-19	R4619560
Sulfate (SO4)	372000		1500	ug/L		30-APR-19	R4621973
Cyanide, Total	1.4		1.0	ug/L		02-MAY-19	R4623550
Total and E. coli, 1:10 dilution by QT97							
Total Coliforms	2490		10	MPN/100mL		30-APR-19	R4619580
Escherichia Coli	<10		10	MPN/100mL		30-APR-19	R4619580
Dissolved Metals in Water by CRC ICPMS							
Dissolved Metals Filtration Location	FIELD					01-MAY-19	R4619558
Aluminum (Al)-Dissolved	3.8		1.0	ug/L	01-MAY-19	01-MAY-19	R4619914
Antimony (Sb)-Dissolved	0.44		0.10	ug/L	01-MAY-19	01-MAY-19	R4619914
Arsenic (As)-Dissolved	7.45		0.10	ug/L	01-MAY-19	01-MAY-19	R4619914
Barium (Ba)-Dissolved	35.2		0.10	ug/L	01-MAY-19	01-MAY-19	R4619914
Beryllium (Be)-Dissolved	<0.10		0.10	ug/L	01-MAY-19	01-MAY-19	R4619914
Bismuth (Bi)-Dissolved	<0.050		0.050	ug/L	01-MAY-19	01-MAY-19	R4619914
Boron (B)-Dissolved	90		10	ug/L	01-MAY-19	01-MAY-19	R4619914
Cadmium (Cd)-Dissolved	0.0071		0.0050	ug/L	01-MAY-19	01-MAY-19	R4619914
Calcium (Ca)-Dissolved	72100		50	ug/L	01-MAY-19	01-MAY-19	R4619914
Cesium (Cs)-Dissolved	<0.010		0.010	ug/L	01-MAY-19	02-MAY-19	R4621868
Chromium (Cr)-Dissolved	0.24		0.10	ug/L	01-MAY-19	01-MAY-19	R4619914
Cobalt (Co)-Dissolved	0.90		0.10	ug/L	01-MAY-19	01-MAY-19	R4619914
Copper (Cu)-Dissolved	1.26		0.20	ug/L	01-MAY-19	01-MAY-19	R4619914
Iron (Fe)-Dissolved	19		10	ug/L	01-MAY-19	01-MAY-19	R4619914
Lead (Pb)-Dissolved	0.056		0.050	ug/L	01-MAY-19	01-MAY-19	R4619914
Lithium (Li)-Dissolved	119		1.0	ug/L	01-MAY-19	01-MAY-19	R4619914
Magnesium (Mg)-Dissolved	106000		5.0	ug/L	01-MAY-19	01-MAY-19	R4619914
Manganese (Mn)-Dissolved	16.6		0.10	ug/L	01-MAY-19	01-MAY-19	R4619914
Molybdenum (Mo)-Dissolved	3.50		0.050	ug/L	01-MAY-19	01-MAY-19	R4619914
Nickel (Ni)-Dissolved	7.59		0.50	ug/L	01-MAY-19	01-MAY-19	R4619914
Phosphorus (P)-Dissolved	126		30	ug/L	01-MAY-19	01-MAY-19	R4619914
Potassium (K)-Dissolved	34900		50	ug/L	01-MAY-19	01-MAY-19	R4619914
Rubidium (Rb)-Dissolved	1.94		0.20	ug/L	01-MAY-19	01-MAY-19	R4619914
Selenium (Se)-Dissolved	0.239		0.050	ug/L	01-MAY-19	01-MAY-19	R4619914
Silicon (Si)-Dissolved	223		50	ug/L	01-MAY-19	01-MAY-19	R4619914
Silver (Ag)-Dissolved	<0.010		0.010	ug/L	01-MAY-19	01-MAY-19	R4619914
Sodium (Na)-Dissolved	103000		50	ug/L	01-MAY-19	01-MAY-19	R4619914
Strontium (Sr)-Dissolved	496		0.10	ug/L	01-MAY-19	01-MAY-19	R4619914
Sulfur (S)-Dissolved	133000		500	ug/L	01-MAY-19	01-MAY-19	R4619914
Tellurium (Te)-Dissolved	<0.20		0.20	ug/L	01-MAY-19	01-MAY-19	R4619914
Thallium (Tl)-Dissolved	<0.010		0.010	ug/L	01-MAY-19	01-MAY-19	R4619914
Thorium (Th)-Dissolved	<0.10		0.10	ug/L	01-MAY-19	01-MAY-19	R4619914
Tin (Sn)-Dissolved	0.41		0.10	ug/L	01-MAY-19	01-MAY-19	R4619914

* 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
L2264985-10 SWQ25 - 100 Sampled By: CLIENT on 30-APR-19 @ 12:00 Matrix: SURFACE WATER							
Dissolved Metals in Water by CRC ICPMS							
Titanium (Ti)-Dissolved	0.55		0.30	ug/L	01-MAY-19	01-MAY-19	R4619914
Tungsten (W)-Dissolved	<0.10		0.10	ug/L	01-MAY-19	01-MAY-19	R4619914
Uranium (U)-Dissolved	3.63		0.010	ug/L	01-MAY-19	01-MAY-19	R4619914
Vanadium (V)-Dissolved	3.41		0.50	ug/L	01-MAY-19	01-MAY-19	R4619914
Zinc (Zn)-Dissolved	1.0		1.0	ug/L	01-MAY-19	01-MAY-19	R4619914
Zirconium (Zr)-Dissolved	0.608		0.060	ug/L	01-MAY-19	01-MAY-19	R4619914
Mercury Dissolved							
Dissolved Mercury Filtration Location	FIELD					01-MAY-19	R4629168
Mercury (Hg)-Dissolved	0.0070		0.0050	ug/L	01-MAY-19	08-MAY-19	R4629258
L2264985-11 SWQ25 - 16 Sampled By: CLIENT on 30-APR-19 @ 09:35 Matrix: SURFACE WATER							
Alkalinity species as HCO3, CO3, OH							
Alkalinity, Bicarbonate							
Bicarbonate (HCO3)	346000		1200	ug/L		03-MAY-19	
Alkalinity, Carbonate							
Carbonate (CO3)	<600		600	ug/L		03-MAY-19	
Alkalinity, Hydroxide							
Hydroxide (OH)	<340		340	ug/L		03-MAY-19	
Alkalinity, Total (as CaCO3)							
Alkalinity, Total (as CaCO3)	283000		1000	ug/L		04-MAY-19	R4621968
Dissolved Carbons							
Dissolved Inorganic Carbon by Combustion							
Dissolved Inorganic Carbon	52100		500	ug/L		03-MAY-19	R4622945
Dissolved Organic Carbon by Combustion							
Dissolved Organic Carbon	19500		500	ug/L		02-MAY-19	R4622553
Total Dissolved Carbon by Calculation							
Total Dissolved Carbon	71500		1000	ug/L		05-MAY-19	
Miscellaneous Parameters							
Ammonia, Total (as N)	63		10	ug/L		01-MAY-19	R4620126
Chloride (Cl)	104000		1000	ug/L		30-APR-19	R4621973
Chromium, Hexavalent	0.64		0.50	ug/L		01-MAY-19	R4619976
Fecal Coliforms	<10		10	MPN/100mL		30-APR-19	R4619560
Sulfate (SO4)	24300		600	ug/L		30-APR-19	R4621973
Cyanide, Total	1.3		1.0	ug/L		02-MAY-19	R4623550
Total and E. coli, 1:10 dilution by QT97							
Total Coliforms	90		10	MPN/100mL		30-APR-19	R4619580
Escherichia Coli	<10		10	MPN/100mL		30-APR-19	R4619580
Dissolved Metals in Water by CRC ICPMS							
Dissolved Metals Filtration Location	FIELD					01-MAY-19	R4619558
Aluminum (Al)-Dissolved	3.8		1.0	ug/L	01-MAY-19	01-MAY-19	R4619914
Antimony (Sb)-Dissolved	0.26		0.10	ug/L	01-MAY-19	01-MAY-19	R4619914
Arsenic (As)-Dissolved	3.95		0.10	ug/L	01-MAY-19	01-MAY-19	R4619914
Barium (Ba)-Dissolved	61.0		0.10	ug/L	01-MAY-19	01-MAY-19	R4619914
Beryllium (Be)-Dissolved	<0.10		0.10	ug/L	01-MAY-19	01-MAY-19	R4619914
Bismuth (Bi)-Dissolved	<0.050		0.050	ug/L	01-MAY-19	01-MAY-19	R4619914
Boron (B)-Dissolved	88		10	ug/L	01-MAY-19	01-MAY-19	R4619914
Cadmium (Cd)-Dissolved	0.0060		0.0050	ug/L	01-MAY-19	01-MAY-19	R4619914
Calcium (Ca)-Dissolved	61900		50	ug/L	01-MAY-19	01-MAY-19	R4619914
Cesium (Cs)-Dissolved	0.021		0.010	ug/L	01-MAY-19	01-MAY-19	R4619914
Chromium (Cr)-Dissolved	0.46		0.10	ug/L	01-MAY-19	01-MAY-19	R4619914

* 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
L2264985-11 SWQ25 - 16							
Sampled By: CLIENT on 30-APR-19 @ 09:35							
Matrix: SURFACE WATER							
Dissolved Metals in Water by CRC ICPMS							
Cobalt (Co)-Dissolved	0.30		0.10	ug/L	01-MAY-19	01-MAY-19	R4619914
Copper (Cu)-Dissolved	1.79		0.20	ug/L	01-MAY-19	01-MAY-19	R4619914
Iron (Fe)-Dissolved	113		10	ug/L	01-MAY-19	01-MAY-19	R4619914
Lead (Pb)-Dissolved	1.10		0.050	ug/L	01-MAY-19	01-MAY-19	R4619914
Lithium (Li)-Dissolved	47.7		1.0	ug/L	01-MAY-19	01-MAY-19	R4619914
Magnesium (Mg)-Dissolved	39900		5.0	ug/L	01-MAY-19	01-MAY-19	R4619914
Manganese (Mn)-Dissolved	32.9		0.10	ug/L	01-MAY-19	01-MAY-19	R4619914
Molybdenum (Mo)-Dissolved	1.41		0.050	ug/L	01-MAY-19	01-MAY-19	R4619914
Nickel (Ni)-Dissolved	4.72		0.50	ug/L	01-MAY-19	01-MAY-19	R4619914
Phosphorus (P)-Dissolved	91		30	ug/L	01-MAY-19	01-MAY-19	R4619914
Potassium (K)-Dissolved	17400		50	ug/L	01-MAY-19	01-MAY-19	R4619914
Rubidium (Rb)-Dissolved	1.51		0.20	ug/L	01-MAY-19	01-MAY-19	R4619914
Selenium (Se)-Dissolved	0.242		0.050	ug/L	01-MAY-19	01-MAY-19	R4619914
Silicon (Si)-Dissolved	2570		50	ug/L	01-MAY-19	01-MAY-19	R4619914
Silver (Ag)-Dissolved	<0.010		0.010	ug/L	01-MAY-19	01-MAY-19	R4619914
Sodium (Na)-Dissolved	55200		50	ug/L	01-MAY-19	01-MAY-19	R4619914
Strontium (Sr)-Dissolved	259		0.10	ug/L	01-MAY-19	01-MAY-19	R4619914
Sulfur (S)-Dissolved	8530		500	ug/L	01-MAY-19	01-MAY-19	R4619914
Tellurium (Te)-Dissolved	<0.20		0.20	ug/L	01-MAY-19	01-MAY-19	R4619914
Thallium (Tl)-Dissolved	<0.010		0.010	ug/L	01-MAY-19	01-MAY-19	R4619914
Thorium (Th)-Dissolved	<0.10		0.10	ug/L	01-MAY-19	01-MAY-19	R4619914
Tin (Sn)-Dissolved	0.98		0.10	ug/L	01-MAY-19	01-MAY-19	R4619914
Titanium (Ti)-Dissolved	<0.30		0.30	ug/L	01-MAY-19	01-MAY-19	R4619914
Tungsten (W)-Dissolved	<0.10		0.10	ug/L	01-MAY-19	01-MAY-19	R4619914
Uranium (U)-Dissolved	3.78		0.010	ug/L	01-MAY-19	01-MAY-19	R4619914
Vanadium (V)-Dissolved	2.66		0.50	ug/L	01-MAY-19	01-MAY-19	R4619914
Zinc (Zn)-Dissolved	4.6		1.0	ug/L	01-MAY-19	01-MAY-19	R4619914
Zirconium (Zr)-Dissolved	0.606		0.060	ug/L	01-MAY-19	01-MAY-19	R4619914
Mercury Dissolved							
Dissolved Mercury Filtration Location	FIELD					01-MAY-19	R4629168
Mercury (Hg)-Dissolved	0.0060		0.0050	ug/L	01-MAY-19	08-MAY-19	R4629258
L2264985-12 SWQ25 - 2							
Sampled By: CLIENT on 30-APR-19 @ 09:50							
Matrix: SURFACE WATER							
Alkalinity species as HCO3, CO3, OH							
Alkalinity, Bicarbonate							
Bicarbonate (HCO3)	285000		1200	ug/L		03-MAY-19	
Alkalinity, Carbonate							
Carbonate (CO3)	26800		600	ug/L		03-MAY-19	
Alkalinity, Hydroxide							
Hydroxide (OH)	<340		340	ug/L		03-MAY-19	
Alkalinity, Total (as CaCO3)							
Alkalinity, Total (as CaCO3)	278000		1000	ug/L		04-MAY-19	R4621968
Dissolved Carbons							
Dissolved Inorganic Carbon by Combustion							
Dissolved Inorganic Carbon	50500		500	ug/L		03-MAY-19	R4622945
Dissolved Organic Carbon by Combustion							
Dissolved Organic Carbon	21900		500	ug/L		02-MAY-19	R4622553
Total Dissolved Carbon by Calculation							
Total Dissolved Carbon	72400		1000	ug/L		05-MAY-19	
Miscellaneous Parameters							

* 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
L2264985-12 SWQ25 - 2							
Sampled By: CLIENT on 30-APR-19 @ 09:50							
Matrix: SURFACE WATER							
Ammonia, Total (as N)	44		10	ug/L		01-MAY-19	R4620126
Chloride (Cl)	119000		1000	ug/L		30-APR-19	R4621973
Chromium, Hexavalent	0.55		0.50	ug/L		01-MAY-19	R4619976
Fecal Coliforms	1090	MBFT	10	MPN/100mL		30-APR-19	R4619560
Sulfate (SO4)	69200		600	ug/L		30-APR-19	R4621973
Cyanide, Total	1.5		1.0	ug/L		02-MAY-19	R4623550
Total and E. coli, 1:10 dilution by QT97							
Total Coliforms	1010	MBFT	10	MPN/100mL		30-APR-19	R4619580
Escherichia Coli	750		10	MPN/100mL		30-APR-19	R4619580
Dissolved Metals in Water by CRC ICPMS							
Dissolved Metals Filtration Location	FIELD					01-MAY-19	R4619558
Aluminum (Al)-Dissolved	3.3		1.0	ug/L	01-MAY-19	01-MAY-19	R4619914
Antimony (Sb)-Dissolved	0.28		0.10	ug/L	01-MAY-19	01-MAY-19	R4619914
Arsenic (As)-Dissolved	5.01		0.10	ug/L	01-MAY-19	01-MAY-19	R4619914
Barium (Ba)-Dissolved	50.2		0.10	ug/L	01-MAY-19	01-MAY-19	R4619914
Beryllium (Be)-Dissolved	<0.10		0.10	ug/L	01-MAY-19	01-MAY-19	R4619914
Bismuth (Bi)-Dissolved	<0.050		0.050	ug/L	01-MAY-19	01-MAY-19	R4619914
Boron (B)-Dissolved	173		10	ug/L	01-MAY-19	01-MAY-19	R4619914
Cadmium (Cd)-Dissolved	0.0116		0.0050	ug/L	01-MAY-19	01-MAY-19	R4619914
Calcium (Ca)-Dissolved	46500		50	ug/L	01-MAY-19	01-MAY-19	R4619914
Cesium (Cs)-Dissolved	0.016		0.010	ug/L	01-MAY-19	01-MAY-19	R4619914
Chromium (Cr)-Dissolved	0.34		0.10	ug/L	01-MAY-19	01-MAY-19	R4619914
Cobalt (Co)-Dissolved	0.87		0.10	ug/L	01-MAY-19	01-MAY-19	R4619914
Copper (Cu)-Dissolved	2.57		0.20	ug/L	01-MAY-19	01-MAY-19	R4619914
Iron (Fe)-Dissolved	19		10	ug/L	01-MAY-19	01-MAY-19	R4619914
Lead (Pb)-Dissolved	0.052		0.050	ug/L	01-MAY-19	01-MAY-19	R4619914
Lithium (Li)-Dissolved	81.8		1.0	ug/L	01-MAY-19	01-MAY-19	R4619914
Magnesium (Mg)-Dissolved	56000		5.0	ug/L	01-MAY-19	01-MAY-19	R4619914
Manganese (Mn)-Dissolved	13.7		0.10	ug/L	01-MAY-19	01-MAY-19	R4619914
Molybdenum (Mo)-Dissolved	3.33		0.050	ug/L	01-MAY-19	01-MAY-19	R4619914
Nickel (Ni)-Dissolved	9.48		0.50	ug/L	01-MAY-19	01-MAY-19	R4619914
Phosphorus (P)-Dissolved	65		30	ug/L	01-MAY-19	01-MAY-19	R4619914
Potassium (K)-Dissolved	27600		50	ug/L	01-MAY-19	01-MAY-19	R4619914
Rubidium (Rb)-Dissolved	1.45		0.20	ug/L	01-MAY-19	01-MAY-19	R4619914
Selenium (Se)-Dissolved	0.287		0.050	ug/L	01-MAY-19	01-MAY-19	R4619914
Silicon (Si)-Dissolved	131		50	ug/L	01-MAY-19	01-MAY-19	R4619914
Silver (Ag)-Dissolved	<0.010		0.010	ug/L	01-MAY-19	01-MAY-19	R4619914
Sodium (Na)-Dissolved	60300		50	ug/L	01-MAY-19	01-MAY-19	R4619914
Strontium (Sr)-Dissolved	296		0.10	ug/L	01-MAY-19	01-MAY-19	R4619914
Sulfur (S)-Dissolved	23500		500	ug/L	01-MAY-19	01-MAY-19	R4619914
Tellurium (Te)-Dissolved	<0.20		0.20	ug/L	01-MAY-19	01-MAY-19	R4619914
Thallium (Tl)-Dissolved	<0.010		0.010	ug/L	01-MAY-19	01-MAY-19	R4619914
Thorium (Th)-Dissolved	<0.10		0.10	ug/L	01-MAY-19	01-MAY-19	R4619914
Tin (Sn)-Dissolved	1.21		0.10	ug/L	01-MAY-19	01-MAY-19	R4619914
Titanium (Ti)-Dissolved	0.47		0.30	ug/L	01-MAY-19	01-MAY-19	R4619914
Tungsten (W)-Dissolved	<0.10		0.10	ug/L	01-MAY-19	01-MAY-19	R4619914
Uranium (U)-Dissolved	4.02		0.010	ug/L	01-MAY-19	01-MAY-19	R4619914
Vanadium (V)-Dissolved	4.15		0.50	ug/L	01-MAY-19	01-MAY-19	R4619914
Zinc (Zn)-Dissolved	1.9		1.0	ug/L	01-MAY-19	01-MAY-19	R4619914
Zirconium (Zr)-Dissolved	0.647		0.060	ug/L	01-MAY-19	01-MAY-19	R4619914
Mercury Dissolved							
Dissolved Mercury Filtration Location	FIELD					01-MAY-19	R4629168

* 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
L2264985-12 SWQ25 - 12 Sampled By: CLIENT on 30-APR-19 @ 09:50 Matrix: SURFACE WATER Mercury Dissolved Mercury (Hg)-Dissolved	<0.0050		0.0050	ug/L	01-MAY-19	08-MAY-19	R4629258
L2264985-13 SWQ25 - 15A Sampled By: CLIENT on 30-APR-19 @ 10:59 Matrix: SURFACE WATER Alkalinity species as HCO3, CO3, OH Alkalinity, Bicarbonate Bicarbonate (HCO3)	230000		1200	ug/L		03-MAY-19	
Alkalinity, Carbonate Carbonate (CO3)	26600		600	ug/L		03-MAY-19	
Alkalinity, Hydroxide Hydroxide (OH)	<340		340	ug/L		03-MAY-19	
Alkalinity, Total (as CaCO3) Alkalinity, Total (as CaCO3)	233000		1000	ug/L		04-MAY-19	R4621968
Dissolved Carbons Dissolved Inorganic Carbon by Combustion Dissolved Inorganic Carbon	42300		500	ug/L		03-MAY-19	R4622945
Dissolved Organic Carbon by Combustion Dissolved Organic Carbon	15800		500	ug/L		02-MAY-19	R4622553
Total Dissolved Carbon by Calculation Total Dissolved Carbon	58000		1000	ug/L		05-MAY-19	
Miscellaneous Parameters Ammonia, Total (as N)	21		10	ug/L		01-MAY-19	R4620126
Chloride (Cl)	75100		500	ug/L		30-APR-19	R4621973
Chromium, Hexavalent	0.57		0.50	ug/L		01-MAY-19	R4619976
Fecal Coliforms	<10		10	MPN/100mL		30-APR-19	R4619560
Sulfate (SO4)	40200		300	ug/L		30-APR-19	R4621973
Cyanide, Total	1.1		1.0	ug/L		02-MAY-19	R4623550
Total and E. coli, 1:10 dilution by QT97 Total Coliforms	20		10	MPN/100mL		30-APR-19	R4619580
Escherichia Coli	<10		10	MPN/100mL		30-APR-19	R4619580
Dissolved Metals in Water by CRC ICPMS Dissolved Metals Filtration Location	FIELD					01-MAY-19	R4619558
Aluminum (Al)-Dissolved	14.0		1.0	ug/L	01-MAY-19	01-MAY-19	R4619914
Antimony (Sb)-Dissolved	0.19		0.10	ug/L	01-MAY-19	01-MAY-19	R4619914
Arsenic (As)-Dissolved	4.13		0.10	ug/L	01-MAY-19	01-MAY-19	R4619914
Barium (Ba)-Dissolved	42.3		0.10	ug/L	01-MAY-19	01-MAY-19	R4619914
Beryllium (Be)-Dissolved	<0.10		0.10	ug/L	01-MAY-19	01-MAY-19	R4619914
Bismuth (Bi)-Dissolved	<0.050		0.050	ug/L	01-MAY-19	01-MAY-19	R4619914
Boron (B)-Dissolved	68		10	ug/L	01-MAY-19	01-MAY-19	R4619914
Cadmium (Cd)-Dissolved	0.0122		0.0050	ug/L	01-MAY-19	01-MAY-19	R4619914
Calcium (Ca)-Dissolved	41000		50	ug/L	01-MAY-19	01-MAY-19	R4619914
Cesium (Cs)-Dissolved	0.010		0.010	ug/L	01-MAY-19	01-MAY-19	R4619914
Chromium (Cr)-Dissolved	0.16		0.10	ug/L	01-MAY-19	01-MAY-19	R4619914
Cobalt (Co)-Dissolved	0.50		0.10	ug/L	01-MAY-19	01-MAY-19	R4619914
Copper (Cu)-Dissolved	1.99		0.20	ug/L	01-MAY-19	01-MAY-19	R4619914
Iron (Fe)-Dissolved	20		10	ug/L	01-MAY-19	01-MAY-19	R4619914
Lead (Pb)-Dissolved	<0.050		0.050	ug/L	01-MAY-19	01-MAY-19	R4619914
Lithium (Li)-Dissolved	68.6		1.0	ug/L	01-MAY-19	01-MAY-19	R4619914
Magnesium (Mg)-Dissolved	46100		5.0	ug/L	01-MAY-19	01-MAY-19	R4619914
Manganese (Mn)-Dissolved	38.3		0.10	ug/L	01-MAY-19	01-MAY-19	R4619914
Molybdenum (Mo)-Dissolved	2.21		0.050	ug/L	01-MAY-19	01-MAY-19	R4619914

* 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
L2264985-13 SWQ25 - 15A							
Sampled By: CLIENT on 30-APR-19 @ 10:59							
Matrix: SURFACE WATER							
Dissolved Metals in Water by CRC ICPMS							
Nickel (Ni)-Dissolved	5.09		0.50	ug/L	01-MAY-19	01-MAY-19	R4619914
Phosphorus (P)-Dissolved	58		30	ug/L	01-MAY-19	01-MAY-19	R4619914
Potassium (K)-Dissolved	17000		50	ug/L	01-MAY-19	01-MAY-19	R4619914
Rubidium (Rb)-Dissolved	1.10		0.20	ug/L	01-MAY-19	01-MAY-19	R4619914
Selenium (Se)-Dissolved	0.219		0.050	ug/L	01-MAY-19	01-MAY-19	R4619914
Silicon (Si)-Dissolved	415		50	ug/L	01-MAY-19	01-MAY-19	R4619914
Silver (Ag)-Dissolved	<0.010		0.010	ug/L	01-MAY-19	01-MAY-19	R4619914
Sodium (Na)-Dissolved	40100		50	ug/L	01-MAY-19	01-MAY-19	R4619914
Strontium (Sr)-Dissolved	253		0.10	ug/L	01-MAY-19	01-MAY-19	R4619914
Sulfur (S)-Dissolved	14700		500	ug/L	01-MAY-19	01-MAY-19	R4619914
Tellurium (Te)-Dissolved	<0.20		0.20	ug/L	01-MAY-19	01-MAY-19	R4619914
Thallium (Tl)-Dissolved	<0.010		0.010	ug/L	01-MAY-19	01-MAY-19	R4619914
Thorium (Th)-Dissolved	<0.10		0.10	ug/L	01-MAY-19	01-MAY-19	R4619914
Tin (Sn)-Dissolved	0.30		0.10	ug/L	01-MAY-19	01-MAY-19	R4619914
Titanium (Ti)-Dissolved	0.68		0.30	ug/L	01-MAY-19	01-MAY-19	R4619914
Tungsten (W)-Dissolved	<0.10		0.10	ug/L	01-MAY-19	01-MAY-19	R4619914
Uranium (U)-Dissolved	2.80		0.010	ug/L	01-MAY-19	01-MAY-19	R4619914
Vanadium (V)-Dissolved	3.86		0.50	ug/L	01-MAY-19	01-MAY-19	R4619914
Zinc (Zn)-Dissolved	1.7		1.0	ug/L	01-MAY-19	01-MAY-19	R4619914
Zirconium (Zr)-Dissolved	0.395		0.060	ug/L	01-MAY-19	01-MAY-19	R4619914
Mercury Dissolved							
Dissolved Mercury Filtration Location	FIELD					01-MAY-19	R4629168
Mercury (Hg)-Dissolved	0.0050		0.0050	ug/L	01-MAY-19	08-MAY-19	R4629258
L2264985-14 SWQ25 - 15B							
Sampled By: CLIENT on 30-APR-19 @ 10:45							
Matrix: SURFACE WATER							
Alkalinity species as HCO3, CO3, OH							
Alkalinity, Bicarbonate							
Bicarbonate (HCO3)	323000		1200	ug/L		03-MAY-19	
Alkalinity, Carbonate							
Carbonate (CO3)	25800		600	ug/L		03-MAY-19	
Alkalinity, Hydroxide							
Hydroxide (OH)	<340		340	ug/L		03-MAY-19	
Alkalinity, Total (as CaCO3)							
Alkalinity, Total (as CaCO3)	308000		1000	ug/L		04-MAY-19	R4621968
Dissolved Carbons							
Dissolved Inorganic Carbon by Combustion							
Dissolved Inorganic Carbon	48100		500	ug/L		03-MAY-19	R4622945
Dissolved Organic Carbon by Combustion							
Dissolved Organic Carbon	20600		500	ug/L		02-MAY-19	R4622553
Total Dissolved Carbon by Calculation							
Total Dissolved Carbon	68800		1000	ug/L		05-MAY-19	
Miscellaneous Parameters							
Ammonia, Total (as N)	91		10	ug/L		01-MAY-19	R4620126
Chloride (Cl)	105000		1000	ug/L		01-MAY-19	R4622233
Chromium, Hexavalent	0.60		0.50	ug/L		01-MAY-19	R4619976
Fecal Coliforms	<10		10	MPN/100mL		30-APR-19	R4619560
Sulfate (SO4)	52900		600	ug/L		01-MAY-19	R4622233
Cyanide, Total	1.4		1.0	ug/L		02-MAY-19	R4623550
Total and E. coli, 1:10 dilution by QT97							
Total Coliforms	240		10	MPN/100mL		30-APR-19	R4619580

* 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
L2264985-14 SWQ25 - 15B Sampled By: CLIENT on 30-APR-19 @ 10:45 Matrix: SURFACE WATER Total and E. coli, 1:10 dilution by QT97 Escherichia Coli	10		10	MPN/100mL		30-APR-19	R4619580
Dissolved Metals in Water by CRC ICMS Dissolved Metals Filtration Location	FIELD					01-MAY-19	R4619558
Aluminum (Al)-Dissolved	4.8		1.0	ug/L	01-MAY-19	01-MAY-19	R4619914
Antimony (Sb)-Dissolved	0.23		0.10	ug/L	01-MAY-19	01-MAY-19	R4619914
Arsenic (As)-Dissolved	4.77		0.10	ug/L	01-MAY-19	01-MAY-19	R4619914
Barium (Ba)-Dissolved	44.1		0.10	ug/L	01-MAY-19	01-MAY-19	R4619914
Beryllium (Be)-Dissolved	<0.10		0.10	ug/L	01-MAY-19	01-MAY-19	R4619914
Bismuth (Bi)-Dissolved	<0.050		0.050	ug/L	01-MAY-19	01-MAY-19	R4619914
Boron (B)-Dissolved	149		10	ug/L	01-MAY-19	01-MAY-19	R4619914
Cadmium (Cd)-Dissolved	0.0098		0.0050	ug/L	01-MAY-19	01-MAY-19	R4619914
Calcium (Ca)-Dissolved	42100		50	ug/L	01-MAY-19	01-MAY-19	R4619914
Cesium (Cs)-Dissolved	<0.010		0.010	ug/L	01-MAY-19	01-MAY-19	R4619914
Chromium (Cr)-Dissolved	0.37		0.10	ug/L	01-MAY-19	01-MAY-19	R4619914
Cobalt (Co)-Dissolved	0.90		0.10	ug/L	01-MAY-19	01-MAY-19	R4619914
Copper (Cu)-Dissolved	2.11		0.20	ug/L	01-MAY-19	01-MAY-19	R4619914
Iron (Fe)-Dissolved	16		10	ug/L	01-MAY-19	01-MAY-19	R4619914
Lead (Pb)-Dissolved	<0.050		0.050	ug/L	01-MAY-19	01-MAY-19	R4619914
Lithium (Li)-Dissolved	77.5		1.0	ug/L	01-MAY-19	01-MAY-19	R4619914
Magnesium (Mg)-Dissolved	55300		5.0	ug/L	01-MAY-19	01-MAY-19	R4619914
Manganese (Mn)-Dissolved	8.75		0.10	ug/L	01-MAY-19	01-MAY-19	R4619914
Molybdenum (Mo)-Dissolved	2.67		0.050	ug/L	01-MAY-19	01-MAY-19	R4619914
Nickel (Ni)-Dissolved	8.73		0.50	ug/L	01-MAY-19	01-MAY-19	R4619914
Phosphorus (P)-Dissolved	59		30	ug/L	01-MAY-19	01-MAY-19	R4619914
Potassium (K)-Dissolved	24000		50	ug/L	01-MAY-19	01-MAY-19	R4619914
Rubidium (Rb)-Dissolved	1.47		0.20	ug/L	01-MAY-19	01-MAY-19	R4619914
Selenium (Se)-Dissolved	0.266		0.050	ug/L	01-MAY-19	01-MAY-19	R4619914
Silicon (Si)-Dissolved	510		50	ug/L	01-MAY-19	01-MAY-19	R4619914
Silver (Ag)-Dissolved	<0.010		0.010	ug/L	01-MAY-19	01-MAY-19	R4619914
Sodium (Na)-Dissolved	56900		50	ug/L	01-MAY-19	01-MAY-19	R4619914
Strontium (Sr)-Dissolved	276		0.10	ug/L	01-MAY-19	01-MAY-19	R4619914
Sulfur (S)-Dissolved	20300		500	ug/L	01-MAY-19	01-MAY-19	R4619914
Tellurium (Te)-Dissolved	<0.20		0.20	ug/L	01-MAY-19	01-MAY-19	R4619914
Thallium (Tl)-Dissolved	<0.010		0.010	ug/L	01-MAY-19	01-MAY-19	R4619914
Thorium (Th)-Dissolved	<0.10		0.10	ug/L	01-MAY-19	01-MAY-19	R4619914
Tin (Sn)-Dissolved	1.26		0.10	ug/L	01-MAY-19	01-MAY-19	R4619914
Titanium (Ti)-Dissolved	0.51		0.30	ug/L	01-MAY-19	01-MAY-19	R4619914
Tungsten (W)-Dissolved	<0.10		0.10	ug/L	01-MAY-19	01-MAY-19	R4619914
Uranium (U)-Dissolved	3.34		0.010	ug/L	01-MAY-19	01-MAY-19	R4619914
Vanadium (V)-Dissolved	4.26		0.50	ug/L	01-MAY-19	01-MAY-19	R4619914
Zinc (Zn)-Dissolved	1.6		1.0	ug/L	01-MAY-19	01-MAY-19	R4619914
Zirconium (Zr)-Dissolved	0.638		0.060	ug/L	01-MAY-19	01-MAY-19	R4619914
Mercury Dissolved Dissolved Mercury Filtration Location	FIELD					01-MAY-19	R4629168
Mercury (Hg)-Dissolved	0.0050		0.0050	ug/L	01-MAY-19	08-MAY-19	R4629258
L2264985-15 SWQ25 - 11A Sampled By: CLIENT on 30-APR-19 @ 11:07 Matrix: SURFACE WATER Alkalinity species as HCO3, CO3, OH Alkalinity, Bicarbonate Bicarbonate (HCO3)	757000		1200	ug/L		03-MAY-19	

* 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
L2264985-15 SWQ25 - 11A							
Sampled By: CLIENT on 30-APR-19 @ 11:07							
Matrix: SURFACE WATER							
Alkalinity, Carbonate							
Carbonate (CO3)	34400		600	ug/L		03-MAY-19	
Alkalinity, Hydroxide							
Hydroxide (OH)	<340		340	ug/L		03-MAY-19	
Alkalinity, Total (as CaCO3)							
Alkalinity, Total (as CaCO3)	678000		1000	ug/L		04-MAY-19	R4621968
Dissolved Carbons							
Dissolved Inorganic Carbon by Combustion							
Dissolved Inorganic Carbon	114000		5000	ug/L		03-MAY-19	R4622945
Dissolved Organic Carbon by Combustion							
Dissolved Organic Carbon	81000		5000	ug/L		05-MAY-19	R4623327
Total Dissolved Carbon by Calculation							
Total Dissolved Carbon	195000		7100	ug/L		06-MAY-19	
Miscellaneous Parameters							
Ammonia, Total (as N)	9000		1000	ug/L		01-MAY-19	R4620126
Chloride (Cl)	418000		10000	ug/L		01-MAY-19	R4622233
Chromium, Hexavalent	0.66		0.50	ug/L		01-MAY-19	R4619976
Fecal Coliforms	550		10	MPN/100mL		30-APR-19	R4619560
Sulfate (SO4)	205000		6000	ug/L		01-MAY-19	R4622233
Cyanide, Total	4.5		1.0	ug/L		02-MAY-19	R4623550
Total and E. coli, 1:10 dilution by QT97							
Total Coliforms	1550		10	MPN/100mL		30-APR-19	R4619580
Escherichia Coli	500		10	MPN/100mL		30-APR-19	R4619580
Dissolved Metals in Water by CRC ICPMS							
Dissolved Metals Filtration Location	FIELD					01-MAY-19	R4619558
Aluminum (Al)-Dissolved	6.1		1.0	ug/L	01-MAY-19	01-MAY-19	R4619914
Antimony (Sb)-Dissolved	0.80		0.10	ug/L	01-MAY-19	01-MAY-19	R4619914
Arsenic (As)-Dissolved	11.7		0.10	ug/L	01-MAY-19	01-MAY-19	R4619914
Barium (Ba)-Dissolved	60.6		0.10	ug/L	01-MAY-19	01-MAY-19	R4619914
Beryllium (Be)-Dissolved	<0.10		0.10	ug/L	01-MAY-19	01-MAY-19	R4619914
Bismuth (Bi)-Dissolved	<0.050		0.050	ug/L	01-MAY-19	01-MAY-19	R4619914
Boron (B)-Dissolved	1540		100	ug/L	01-MAY-19	03-MAY-19	R4623107
Cadmium (Cd)-Dissolved	0.0146		0.0050	ug/L	01-MAY-19	01-MAY-19	R4619914
Calcium (Ca)-Dissolved	53300		50	ug/L	01-MAY-19	01-MAY-19	R4619914
Cesium (Cs)-Dissolved	<0.010		0.010	ug/L	01-MAY-19	01-MAY-19	R4619914
Chromium (Cr)-Dissolved	4.32		0.10	ug/L	01-MAY-19	01-MAY-19	R4619914
Cobalt (Co)-Dissolved	8.69		0.10	ug/L	01-MAY-19	01-MAY-19	R4619914
Copper (Cu)-Dissolved	5.82		0.20	ug/L	01-MAY-19	01-MAY-19	R4619914
Iron (Fe)-Dissolved	47		10	ug/L	01-MAY-19	01-MAY-19	R4619914
Lead (Pb)-Dissolved	0.090		0.050	ug/L	01-MAY-19	01-MAY-19	R4619914
Lithium (Li)-Dissolved	190		1.0	ug/L	01-MAY-19	01-MAY-19	R4619914
Magnesium (Mg)-Dissolved	164000		5.0	ug/L	01-MAY-19	01-MAY-19	R4619914
Manganese (Mn)-Dissolved	16.3		0.10	ug/L	01-MAY-19	01-MAY-19	R4619914
Molybdenum (Mo)-Dissolved	6.72		0.050	ug/L	01-MAY-19	01-MAY-19	R4619914
Nickel (Ni)-Dissolved	61.9		0.50	ug/L	01-MAY-19	01-MAY-19	R4619914
Phosphorus (P)-Dissolved	122		30	ug/L	01-MAY-19	01-MAY-19	R4619914
Potassium (K)-Dissolved	95500		50	ug/L	01-MAY-19	01-MAY-19	R4619914
Rubidium (Rb)-Dissolved	5.76		0.20	ug/L	01-MAY-19	01-MAY-19	R4619914
Selenium (Se)-Dissolved	0.647		0.050	ug/L	01-MAY-19	01-MAY-19	R4619914
Silicon (Si)-Dissolved	4100		50	ug/L	01-MAY-19	01-MAY-19	R4619914
Silver (Ag)-Dissolved	0.018		0.010	ug/L	01-MAY-19	01-MAY-19	R4619914
Sodium (Na)-Dissolved	269000		50	ug/L	01-MAY-19	01-MAY-19	R4619914

* 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
L2264985-15 SWQ25 - 11A Sampled By: CLIENT on 30-APR-19 @ 11:07 Matrix: SURFACE WATER							
Dissolved Metals in Water by CRC ICPMS							
Strontium (Sr)-Dissolved	691		0.10	ug/L	01-MAY-19	01-MAY-19	R4619914
Sulfur (S)-Dissolved	87000		500	ug/L	01-MAY-19	01-MAY-19	R4619914
Tellurium (Te)-Dissolved	<0.20		0.20	ug/L	01-MAY-19	01-MAY-19	R4619914
Thallium (Tl)-Dissolved	<0.010		0.010	ug/L	01-MAY-19	01-MAY-19	R4619914
Thorium (Th)-Dissolved	<0.10		0.10	ug/L	01-MAY-19	01-MAY-19	R4619914
Tin (Sn)-Dissolved	0.69		0.10	ug/L	01-MAY-19	01-MAY-19	R4619914
Titanium (Ti)-Dissolved	1.45		0.30	ug/L	01-MAY-19	01-MAY-19	R4619914
Tungsten (W)-Dissolved	0.64		0.10	ug/L	01-MAY-19	01-MAY-19	R4619914
Uranium (U)-Dissolved	11.5		0.010	ug/L	01-MAY-19	01-MAY-19	R4619914
Vanadium (V)-Dissolved	10.5		0.50	ug/L	01-MAY-19	01-MAY-19	R4619914
Zinc (Zn)-Dissolved	4.8		1.0	ug/L	01-MAY-19	01-MAY-19	R4619914
Zirconium (Zr)-Dissolved	5.79		0.060	ug/L	01-MAY-19	01-MAY-19	R4619914
Mercury Dissolved							
Dissolved Mercury Filtration Location	FIELD					01-MAY-19	R4629168
Mercury (Hg)-Dissolved	0.0060		0.0050	ug/L	01-MAY-19	08-MAY-19	R4629258
L2264985-16 SWQ25 - 11B Sampled By: CLIENT on 30-APR-19 @ 11:17 Matrix: SURFACE WATER							
Alkalinity species as HCO3, CO3, OH							
Alkalinity, Bicarbonate							
Bicarbonate (HCO3)	709000		1200	ug/L		03-MAY-19	
Alkalinity, Carbonate							
Carbonate (CO3)	23400		600	ug/L		03-MAY-19	
Alkalinity, Hydroxide							
Hydroxide (OH)	<340		340	ug/L		03-MAY-19	
Alkalinity, Total (as CaCO3)							
Alkalinity, Total (as CaCO3)	620000		1000	ug/L		04-MAY-19	R4621968
Dissolved Carbons							
Dissolved Inorganic Carbon by Combustion							
Dissolved Inorganic Carbon	111000		5000	ug/L		03-MAY-19	R4622945
Dissolved Organic Carbon by Combustion							
Dissolved Organic Carbon	74800		5000	ug/L		05-MAY-19	R4623327
Total Dissolved Carbon by Calculation							
Total Dissolved Carbon	186000		7100	ug/L		06-MAY-19	
Miscellaneous Parameters							
Ammonia, Total (as N)	9000		1000	ug/L		01-MAY-19	R4620126
Chloride (Cl)	386000		10000	ug/L		01-MAY-19	R4622233
Chromium, Hexavalent	0.57		0.50	ug/L		01-MAY-19	R4619976
Fecal Coliforms	100	PEHT	10	MPN/100mL		02-MAY-19	R4622422
Sulfate (SO4)	200000		6000	ug/L		01-MAY-19	R4622233
Cyanide, Total	4.4		1.0	ug/L		02-MAY-19	R4623550
Total and E. coli, 1:10 dilution by QT97							
Total Coliforms	200	PEHT	10	MPN/100mL		02-MAY-19	R4622432
Escherichia Coli	10	PEHT	10	MPN/100mL		02-MAY-19	R4622432
Dissolved Metals in Water by CRC ICPMS							
Dissolved Metals Filtration Location	FIELD					01-MAY-19	R4619570
Aluminum (Al)-Dissolved	6.1		1.0	ug/L	01-MAY-19	01-MAY-19	R4619914
Antimony (Sb)-Dissolved	0.78		0.10	ug/L	01-MAY-19	01-MAY-19	R4619914
Arsenic (As)-Dissolved	10.4		0.10	ug/L	01-MAY-19	01-MAY-19	R4619914
Barium (Ba)-Dissolved	65.8		0.10	ug/L	01-MAY-19	01-MAY-19	R4619914
Beryllium (Be)-Dissolved	<0.10		0.10	ug/L	01-MAY-19	01-MAY-19	R4619914

* 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
L2264985-16 SWQ25 - 11B							
Sampled By: CLIENT on 30-APR-19 @ 11:17							
Matrix: SURFACE WATER							
Dissolved Metals in Water by CRC ICPMS							
Bismuth (Bi)-Dissolved	<0.050		0.050	ug/L	01-MAY-19	01-MAY-19	R4619914
Boron (B)-Dissolved	1390		100	ug/L	01-MAY-19	03-MAY-19	R4623107
Cadmium (Cd)-Dissolved	0.0170		0.0050	ug/L	01-MAY-19	01-MAY-19	R4619914
Calcium (Ca)-Dissolved	54000		50	ug/L	01-MAY-19	01-MAY-19	R4619914
Cesium (Cs)-Dissolved	<0.010		0.010	ug/L	01-MAY-19	01-MAY-19	R4619914
Chromium (Cr)-Dissolved	3.80		0.10	ug/L	01-MAY-19	01-MAY-19	R4619914
Cobalt (Co)-Dissolved	7.58		0.10	ug/L	01-MAY-19	01-MAY-19	R4619914
Copper (Cu)-Dissolved	5.57		0.20	ug/L	01-MAY-19	01-MAY-19	R4619914
Iron (Fe)-Dissolved	48		10	ug/L	01-MAY-19	01-MAY-19	R4619914
Lead (Pb)-Dissolved	0.085		0.050	ug/L	01-MAY-19	01-MAY-19	R4619914
Lithium (Li)-Dissolved	171		1.0	ug/L	01-MAY-19	01-MAY-19	R4619914
Magnesium (Mg)-Dissolved	159000		5.0	ug/L	01-MAY-19	01-MAY-19	R4619914
Manganese (Mn)-Dissolved	8.34		0.10	ug/L	01-MAY-19	01-MAY-19	R4619914
Molybdenum (Mo)-Dissolved	6.97		0.050	ug/L	01-MAY-19	01-MAY-19	R4619914
Nickel (Ni)-Dissolved	55.2		0.50	ug/L	01-MAY-19	01-MAY-19	R4619914
Phosphorus (P)-Dissolved	136		30	ug/L	01-MAY-19	01-MAY-19	R4619914
Potassium (K)-Dissolved	93800		50	ug/L	01-MAY-19	01-MAY-19	R4619914
Rubidium (Rb)-Dissolved	5.93		0.20	ug/L	01-MAY-19	01-MAY-19	R4619914
Selenium (Se)-Dissolved	0.562		0.050	ug/L	01-MAY-19	01-MAY-19	R4619914
Silicon (Si)-Dissolved	4050		50	ug/L	01-MAY-19	01-MAY-19	R4619914
Silver (Ag)-Dissolved	0.025		0.010	ug/L	01-MAY-19	01-MAY-19	R4619914
Sodium (Na)-Dissolved	251000		50	ug/L	01-MAY-19	01-MAY-19	R4619914
Strontium (Sr)-Dissolved	666		0.10	ug/L	01-MAY-19	01-MAY-19	R4619914
Sulfur (S)-Dissolved	86600		500	ug/L	01-MAY-19	01-MAY-19	R4619914
Tellurium (Te)-Dissolved	<0.20		0.20	ug/L	01-MAY-19	01-MAY-19	R4619914
Thallium (Tl)-Dissolved	<0.010		0.010	ug/L	01-MAY-19	01-MAY-19	R4619914
Thorium (Th)-Dissolved	<0.10		0.10	ug/L	01-MAY-19	01-MAY-19	R4619914
Tin (Sn)-Dissolved	1.28		0.10	ug/L	01-MAY-19	01-MAY-19	R4619914
Titanium (Ti)-Dissolved	1.82		0.30	ug/L	01-MAY-19	01-MAY-19	R4619914
Tungsten (W)-Dissolved	0.59		0.10	ug/L	01-MAY-19	01-MAY-19	R4619914
Uranium (U)-Dissolved	10.6		0.010	ug/L	01-MAY-19	01-MAY-19	R4619914
Vanadium (V)-Dissolved	8.77		0.50	ug/L	01-MAY-19	01-MAY-19	R4619914
Zinc (Zn)-Dissolved	4.7		1.0	ug/L	01-MAY-19	01-MAY-19	R4619914
Zirconium (Zr)-Dissolved	4.95		0.060	ug/L	01-MAY-19	01-MAY-19	R4619914
Mercury Dissolved							
Dissolved Mercury Filtration Location	FIELD					01-MAY-19	R4629168
Mercury (Hg)-Dissolved	0.0050		0.0050	ug/L	01-MAY-19	08-MAY-19	R4629258
L2264985-17 SWQ25 - 11C							
Sampled By: CLIENT on 30-APR-19 @ 10:40							
Matrix: SURFACE WATER							
Alkalinity species as HCO3, CO3, OH							
Alkalinity, Bicarbonate							
Bicarbonate (HCO3)	566000		1200	ug/L		03-MAY-19	
Alkalinity, Carbonate							
Carbonate (CO3)	41200		600	ug/L		03-MAY-19	
Alkalinity, Hydroxide							
Hydroxide (OH)	<340		340	ug/L		03-MAY-19	
Alkalinity, Total (as CaCO3)							
Alkalinity, Total (as CaCO3)	532000		1000	ug/L		04-MAY-19	R4621968
Dissolved Carbons							
Dissolved Inorganic Carbon by Combustion							

* 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
L2264985-17 SWQ25 - 11C							
Sampled By: CLIENT on 30-APR-19 @ 10:40							
Matrix: SURFACE WATER							
Dissolved Inorganic Carbon by Combustion							
Dissolved Inorganic Carbon	93800		5000	ug/L		03-MAY-19	R4622945
Dissolved Organic Carbon by Combustion							
Dissolved Organic Carbon	70600		5000	ug/L		05-MAY-19	R4623327
Total Dissolved Carbon by Calculation							
Total Dissolved Carbon	164000		7100	ug/L		06-MAY-19	
Miscellaneous Parameters							
Ammonia, Total (as N)	2300		100	ug/L		01-MAY-19	R4620126
Chloride (Cl)	363000		5000	ug/L		01-MAY-19	R4622233
Chromium, Hexavalent	0.59		0.50	ug/L		01-MAY-19	R4619976
Fecal Coliforms	170		10	MPN/100mL		30-APR-19	R4619560
Sulfate (SO4)	180000		3000	ug/L		01-MAY-19	R4622233
Cyanide, Total	4.1		1.0	ug/L		02-MAY-19	R4623550
Total and E. coli, 1:10 dilution by QT97							
Total Coliforms	480		10	MPN/100mL		30-APR-19	R4619580
Escherichia Coli	160		10	MPN/100mL		30-APR-19	R4619580
Dissolved Metals in Water by CRC ICPMS							
Dissolved Metals Filtration Location	FIELD					01-MAY-19	R4619570
Aluminum (Al)-Dissolved	7.4		1.0	ug/L	01-MAY-19	01-MAY-19	R4619914
Antimony (Sb)-Dissolved	0.75		0.10	ug/L	01-MAY-19	01-MAY-19	R4619914
Arsenic (As)-Dissolved	11.6		0.10	ug/L	01-MAY-19	01-MAY-19	R4619914
Barium (Ba)-Dissolved	46.3		0.10	ug/L	01-MAY-19	01-MAY-19	R4619914
Beryllium (Be)-Dissolved	<0.10		0.10	ug/L	01-MAY-19	01-MAY-19	R4619914
Bismuth (Bi)-Dissolved	<0.050		0.050	ug/L	01-MAY-19	01-MAY-19	R4619914
Boron (B)-Dissolved	1140		100	ug/L	01-MAY-19	03-MAY-19	R4623107
Cadmium (Cd)-Dissolved	0.0109		0.0050	ug/L	01-MAY-19	01-MAY-19	R4619914
Calcium (Ca)-Dissolved	42500		50	ug/L	01-MAY-19	01-MAY-19	R4619914
Cesium (Cs)-Dissolved	<0.010		0.010	ug/L	01-MAY-19	01-MAY-19	R4619914
Chromium (Cr)-Dissolved	2.68		0.10	ug/L	01-MAY-19	01-MAY-19	R4619914
Cobalt (Co)-Dissolved	6.05		0.10	ug/L	01-MAY-19	01-MAY-19	R4619914
Copper (Cu)-Dissolved	5.38		0.20	ug/L	01-MAY-19	01-MAY-19	R4619914
Iron (Fe)-Dissolved	33		10	ug/L	01-MAY-19	01-MAY-19	R4619914
Lead (Pb)-Dissolved	0.082		0.050	ug/L	01-MAY-19	01-MAY-19	R4619914
Lithium (Li)-Dissolved	164		1.0	ug/L	01-MAY-19	01-MAY-19	R4619914
Magnesium (Mg)-Dissolved	149000		5.0	ug/L	01-MAY-19	01-MAY-19	R4619914
Manganese (Mn)-Dissolved	8.66		0.10	ug/L	01-MAY-19	01-MAY-19	R4619914
Molybdenum (Mo)-Dissolved	7.16		0.050	ug/L	01-MAY-19	01-MAY-19	R4619914
Nickel (Ni)-Dissolved	46.4		0.50	ug/L	01-MAY-19	01-MAY-19	R4619914
Phosphorus (P)-Dissolved	140		30	ug/L	01-MAY-19	01-MAY-19	R4619914
Potassium (K)-Dissolved	94400		50	ug/L	01-MAY-19	01-MAY-19	R4619914
Rubidium (Rb)-Dissolved	4.68		0.20	ug/L	01-MAY-19	01-MAY-19	R4619914
Selenium (Se)-Dissolved	0.635		0.050	ug/L	01-MAY-19	01-MAY-19	R4619914
Silicon (Si)-Dissolved	4660		50	ug/L	01-MAY-19	01-MAY-19	R4619914
Silver (Ag)-Dissolved	0.012		0.010	ug/L	01-MAY-19	01-MAY-19	R4619914
Sodium (Na)-Dissolved	227000		50	ug/L	01-MAY-19	01-MAY-19	R4619914
Strontium (Sr)-Dissolved	543		0.10	ug/L	01-MAY-19	01-MAY-19	R4619914
Sulfur (S)-Dissolved	76400		500	ug/L	01-MAY-19	01-MAY-19	R4619914
Tellurium (Te)-Dissolved	<0.20		0.20	ug/L	01-MAY-19	01-MAY-19	R4619914
Thallium (Tl)-Dissolved	<0.010		0.010	ug/L	01-MAY-19	01-MAY-19	R4619914
Thorium (Th)-Dissolved	<0.10		0.10	ug/L	01-MAY-19	01-MAY-19	R4619914
Tin (Sn)-Dissolved	0.21		0.10	ug/L	01-MAY-19	01-MAY-19	R4619914
Titanium (Ti)-Dissolved	1.76		0.30	ug/L	01-MAY-19	01-MAY-19	R4619914

* 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
L2264985-17 SWQ25 - 11C Sampled By: CLIENT on 30-APR-19 @ 10:40 Matrix: SURFACE WATER							
Dissolved Metals in Water by CRC ICPMS							
Tungsten (W)-Dissolved	0.52		0.10	ug/L	01-MAY-19	01-MAY-19	R4619914
Uranium (U)-Dissolved	9.40		0.010	ug/L	01-MAY-19	01-MAY-19	R4619914
Vanadium (V)-Dissolved	9.86		0.50	ug/L	01-MAY-19	01-MAY-19	R4619914
Zinc (Zn)-Dissolved	3.1		1.0	ug/L	01-MAY-19	01-MAY-19	R4619914
Zirconium (Zr)-Dissolved	3.45		0.060	ug/L	01-MAY-19	01-MAY-19	R4619914
Mercury Dissolved							
Dissolved Mercury Filtration Location	FIELD					01-MAY-19	R4629168
Mercury (Hg)-Dissolved	0.0050		0.0050	ug/L	01-MAY-19	08-MAY-19	R4629258
L2264985-18 SWQ25 - 8 Sampled By: CLIENT on 30-APR-19 @ 11:23 Matrix: SURFACE WATER							
Alkalinity species as HCO3, CO3, OH							
Alkalinity, Bicarbonate							
Bicarbonate (HCO3)	816000		1200	ug/L		03-MAY-19	
Alkalinity, Carbonate							
Carbonate (CO3)	<600		600	ug/L		03-MAY-19	
Alkalinity, Hydroxide							
Hydroxide (OH)	<340		340	ug/L		03-MAY-19	
Alkalinity, Total (as CaCO3)							
Alkalinity, Total (as CaCO3)	669000		1000	ug/L		04-MAY-19	R4621968
Dissolved Carbons							
Dissolved Inorganic Carbon by Combustion							
Dissolved Inorganic Carbon	122000		5000	ug/L		03-MAY-19	R4622945
Dissolved Organic Carbon by Combustion							
Dissolved Organic Carbon	131000		5000	ug/L		05-MAY-19	R4623327
Total Dissolved Carbon by Calculation							
Total Dissolved Carbon	254000		7100	ug/L		06-MAY-19	
Miscellaneous Parameters							
Ammonia, Total (as N)	3660		100	ug/L		01-MAY-19	R4620126
Chloride (Cl)	432000		10000	ug/L		01-MAY-19	R4622233
Chromium, Hexavalent	0.55		0.50	ug/L		01-MAY-19	R4619976
Fecal Coliforms	180		10	MPN/100mL		30-APR-19	R4619560
Sulfate (SO4)	330000		6000	ug/L		01-MAY-19	R4622233
Cyanide, Total	7.4		1.0	ug/L		02-MAY-19	R4623550
Total and E. coli, 1:10 dilution by QT97							
Total Coliforms	250		10	MPN/100mL		30-APR-19	R4619580
Escherichia Coli	80		10	MPN/100mL		30-APR-19	R4619580
Dissolved Metals in Water by CRC ICPMS							
Dissolved Metals Filtration Location	FIELD					01-MAY-19	R4619570
Aluminum (Al)-Dissolved	7.2		1.0	ug/L	01-MAY-19	01-MAY-19	R4619914
Antimony (Sb)-Dissolved	0.59		0.10	ug/L	01-MAY-19	01-MAY-19	R4619914
Arsenic (As)-Dissolved	15.6		0.10	ug/L	01-MAY-19	01-MAY-19	R4619914
Barium (Ba)-Dissolved	87.9		0.10	ug/L	01-MAY-19	01-MAY-19	R4619914
Beryllium (Be)-Dissolved	<0.10		0.10	ug/L	01-MAY-19	01-MAY-19	R4619914
Bismuth (Bi)-Dissolved	<0.050		0.050	ug/L	01-MAY-19	01-MAY-19	R4619914
Boron (B)-Dissolved	377		10	ug/L	01-MAY-19	01-MAY-19	R4619914
Cadmium (Cd)-Dissolved	0.0175		0.0050	ug/L	01-MAY-19	01-MAY-19	R4619914
Calcium (Ca)-Dissolved	142000		50	ug/L	01-MAY-19	01-MAY-19	R4619914
Cesium (Cs)-Dissolved	<0.010		0.010	ug/L	01-MAY-19	01-MAY-19	R4619914
Chromium (Cr)-Dissolved	1.01		0.10	ug/L	01-MAY-19	01-MAY-19	R4619914
Cobalt (Co)-Dissolved	6.31		0.10	ug/L	01-MAY-19	01-MAY-19	R4619914

* 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
L2264985-18 SWQ25 - 8							
Sampled By: CLIENT on 30-APR-19 @ 11:23							
Matrix: SURFACE WATER							
Dissolved Metals in Water by CRC ICPMS							
Copper (Cu)-Dissolved	6.67		0.20	ug/L	01-MAY-19	01-MAY-19	R4619914
Iron (Fe)-Dissolved	267		10	ug/L	01-MAY-19	01-MAY-19	R4619914
Lead (Pb)-Dissolved	0.183		0.050	ug/L	01-MAY-19	01-MAY-19	R4619914
Lithium (Li)-Dissolved	226		1.0	ug/L	01-MAY-19	01-MAY-19	R4619914
Magnesium (Mg)-Dissolved	163000		5.0	ug/L	01-MAY-19	01-MAY-19	R4619914
Manganese (Mn)-Dissolved	737		0.10	ug/L	01-MAY-19	01-MAY-19	R4619914
Molybdenum (Mo)-Dissolved	7.11		0.050	ug/L	01-MAY-19	01-MAY-19	R4619914
Nickel (Ni)-Dissolved	42.7		0.50	ug/L	01-MAY-19	01-MAY-19	R4619914
Phosphorus (P)-Dissolved	3290		30	ug/L	01-MAY-19	01-MAY-19	R4619914
Potassium (K)-Dissolved	400000		500	ug/L	01-MAY-19	02-MAY-19	R4621868
Rubidium (Rb)-Dissolved	23.5		0.20	ug/L	01-MAY-19	01-MAY-19	R4619914
Selenium (Se)-Dissolved	1.04		0.050	ug/L	01-MAY-19	01-MAY-19	R4619914
Silicon (Si)-Dissolved	10400		50	ug/L	01-MAY-19	01-MAY-19	R4619914
Silver (Ag)-Dissolved	0.020		0.010	ug/L	01-MAY-19	01-MAY-19	R4619914
Sodium (Na)-Dissolved	116000		50	ug/L	01-MAY-19	01-MAY-19	R4619914
Strontium (Sr)-Dissolved	876		0.10	ug/L	01-MAY-19	01-MAY-19	R4619914
Sulfur (S)-Dissolved	142000		500	ug/L	01-MAY-19	01-MAY-19	R4619914
Tellurium (Te)-Dissolved	<0.20		0.20	ug/L	01-MAY-19	01-MAY-19	R4619914
Thallium (Tl)-Dissolved	<0.010		0.010	ug/L	01-MAY-19	01-MAY-19	R4619914
Thorium (Th)-Dissolved	<0.10		0.10	ug/L	01-MAY-19	01-MAY-19	R4619914
Tin (Sn)-Dissolved	<0.10		0.10	ug/L	01-MAY-19	01-MAY-19	R4619914
Titanium (Ti)-Dissolved	2.62		0.30	ug/L	01-MAY-19	01-MAY-19	R4619914
Tungsten (W)-Dissolved	0.27		0.10	ug/L	01-MAY-19	01-MAY-19	R4619914
Uranium (U)-Dissolved	9.05		0.010	ug/L	01-MAY-19	01-MAY-19	R4619914
Vanadium (V)-Dissolved	8.69		0.50	ug/L	01-MAY-19	01-MAY-19	R4619914
Zinc (Zn)-Dissolved	5.5		1.0	ug/L	01-MAY-19	01-MAY-19	R4619914
Zirconium (Zr)-Dissolved	4.73		0.060	ug/L	01-MAY-19	01-MAY-19	R4619914
Mercury Dissolved							
Dissolved Mercury Filtration Location	FIELD					01-MAY-19	R4629168
Mercury (Hg)-Dissolved	0.0060		0.0050	ug/L	01-MAY-19	08-MAY-19	R4629258
L2264985-19 SWQ25 - 101							
Sampled By: CLIENT on 30-APR-19 @ 10:00							
Matrix: SURFACE WATER							
Alkalinity species as HCO3, CO3, OH							
Alkalinity, Bicarbonate							
Bicarbonate (HCO3)	288000		1200	ug/L		03-MAY-19	
Alkalinity, Carbonate							
Carbonate (CO3)	26200		600	ug/L		03-MAY-19	
Alkalinity, Hydroxide							
Hydroxide (OH)	<340		340	ug/L		03-MAY-19	
Alkalinity, Total (as CaCO3)							
Alkalinity, Total (as CaCO3)	280000		1000	ug/L		04-MAY-19	R4621968
Dissolved Carbons							
Dissolved Inorganic Carbon by Combustion							
Dissolved Inorganic Carbon	49100		500	ug/L		03-MAY-19	R4622945
Dissolved Organic Carbon by Combustion							
Dissolved Organic Carbon	22100		500	ug/L		02-MAY-19	R4622553
Total Dissolved Carbon by Calculation							
Total Dissolved Carbon	71200		1000	ug/L		05-MAY-19	
Miscellaneous Parameters							
Ammonia, Total (as N)	28		10	ug/L		01-MAY-19	R4620126

* 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
L2264985-19 SWQ25 - 101							
Sampled By: CLIENT on 30-APR-19 @ 10:00							
Matrix: SURFACE WATER							
Chloride (Cl)	114000		1000	ug/L		01-MAY-19	R4622233
Chromium, Hexavalent	0.56		0.50	ug/L		01-MAY-19	R4619976
Fecal Coliforms	640		10	MPN/100mL		30-APR-19	R4619560
Sulfate (SO4)	61600		600	ug/L		01-MAY-19	R4622233
Cyanide, Total	1.8		1.0	ug/L		02-MAY-19	R4623550
Total and E. coli, 1:10 dilution by QT97							
Total Coliforms	1020		10	MPN/100mL		30-APR-19	R4619580
Escherichia Coli	650		10	MPN/100mL		30-APR-19	R4619580
Dissolved Metals in Water by CRC ICPMS							
Dissolved Metals Filtration Location	FIELD					01-MAY-19	R4619570
Aluminum (Al)-Dissolved	3.4		1.0	ug/L	01-MAY-19	01-MAY-19	R4619914
Antimony (Sb)-Dissolved	0.28		0.10	ug/L	01-MAY-19	01-MAY-19	R4619914
Arsenic (As)-Dissolved	5.09		0.10	ug/L	01-MAY-19	01-MAY-19	R4619914
Barium (Ba)-Dissolved	50.6		0.10	ug/L	01-MAY-19	01-MAY-19	R4619914
Beryllium (Be)-Dissolved	<0.10		0.10	ug/L	01-MAY-19	01-MAY-19	R4619914
Bismuth (Bi)-Dissolved	<0.050		0.050	ug/L	01-MAY-19	01-MAY-19	R4619914
Boron (B)-Dissolved	180		10	ug/L	01-MAY-19	01-MAY-19	R4619914
Cadmium (Cd)-Dissolved	0.0104		0.0050	ug/L	01-MAY-19	01-MAY-19	R4619914
Calcium (Ca)-Dissolved	44600		50	ug/L	01-MAY-19	01-MAY-19	R4619914
Cesium (Cs)-Dissolved	<0.010		0.010	ug/L	01-MAY-19	01-MAY-19	R4619914
Chromium (Cr)-Dissolved	0.35		0.10	ug/L	01-MAY-19	01-MAY-19	R4619914
Cobalt (Co)-Dissolved	0.92		0.10	ug/L	01-MAY-19	01-MAY-19	R4619914
Copper (Cu)-Dissolved	2.78		0.20	ug/L	01-MAY-19	01-MAY-19	R4619914
Iron (Fe)-Dissolved	24		10	ug/L	01-MAY-19	01-MAY-19	R4619914
Lead (Pb)-Dissolved	0.062		0.050	ug/L	01-MAY-19	01-MAY-19	R4619914
Lithium (Li)-Dissolved	79.0		1.0	ug/L	01-MAY-19	01-MAY-19	R4619914
Magnesium (Mg)-Dissolved	59400		5.0	ug/L	01-MAY-19	01-MAY-19	R4619914
Manganese (Mn)-Dissolved	32.2		0.10	ug/L	01-MAY-19	01-MAY-19	R4619914
Molybdenum (Mo)-Dissolved	3.24		0.050	ug/L	01-MAY-19	01-MAY-19	R4619914
Nickel (Ni)-Dissolved	10.0		0.50	ug/L	01-MAY-19	01-MAY-19	R4619914
Phosphorus (P)-Dissolved	90		30	ug/L	01-MAY-19	01-MAY-19	R4619914
Potassium (K)-Dissolved	28300		50	ug/L	01-MAY-19	01-MAY-19	R4619914
Rubidium (Rb)-Dissolved	1.41		0.20	ug/L	01-MAY-19	01-MAY-19	R4619914
Selenium (Se)-Dissolved	0.260		0.050	ug/L	01-MAY-19	01-MAY-19	R4619914
Silicon (Si)-Dissolved	164		50	ug/L	01-MAY-19	01-MAY-19	R4619914
Silver (Ag)-Dissolved	<0.010		0.010	ug/L	01-MAY-19	01-MAY-19	R4619914
Sodium (Na)-Dissolved	62800		50	ug/L	01-MAY-19	01-MAY-19	R4619914
Strontium (Sr)-Dissolved	296		0.10	ug/L	01-MAY-19	01-MAY-19	R4619914
Sulfur (S)-Dissolved	24400		500	ug/L	01-MAY-19	01-MAY-19	R4619914
Tellurium (Te)-Dissolved	<0.20		0.20	ug/L	01-MAY-19	01-MAY-19	R4619914
Thallium (Tl)-Dissolved	<0.010		0.010	ug/L	01-MAY-19	01-MAY-19	R4619914
Thorium (Th)-Dissolved	<0.10		0.10	ug/L	01-MAY-19	01-MAY-19	R4619914
Tin (Sn)-Dissolved	0.93		0.10	ug/L	01-MAY-19	01-MAY-19	R4619914
Titanium (Ti)-Dissolved	0.60		0.30	ug/L	01-MAY-19	01-MAY-19	R4619914
Tungsten (W)-Dissolved	<0.10		0.10	ug/L	01-MAY-19	01-MAY-19	R4619914
Uranium (U)-Dissolved	3.94		0.010	ug/L	01-MAY-19	01-MAY-19	R4619914
Vanadium (V)-Dissolved	4.20		0.50	ug/L	01-MAY-19	01-MAY-19	R4619914
Zinc (Zn)-Dissolved	1.8		1.0	ug/L	01-MAY-19	01-MAY-19	R4619914
Zirconium (Zr)-Dissolved	0.637		0.060	ug/L	01-MAY-19	01-MAY-19	R4619914
Mercury Dissolved							
Dissolved Mercury Filtration Location	FIELD					01-MAY-19	R4629168
Mercury (Hg)-Dissolved	0.0050		0.0050	ug/L	01-MAY-19	08-MAY-19	R4629258

* 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
L2264985-19 SWQ25 - 101 Sampled By: CLIENT on 30-APR-19 @ 10:00 Matrix: SURFACE WATER							
L2264985-20 SWQ25 - TRIP BLANK Sampled By: CLIENT on 30-APR-19 @ 09:00 Matrix: SURFACE WATER							
Alkalinity species as HCO3, CO3, OH							
Alkalinity, Bicarbonate							
Bicarbonate (HCO3)	<1200		1200	ug/L		03-MAY-19	
Alkalinity, Carbonate							
Carbonate (CO3)	<600		600	ug/L		03-MAY-19	
Alkalinity, Hydroxide							
Hydroxide (OH)	<340		340	ug/L		03-MAY-19	
Alkalinity, Total (as CaCO3)							
Alkalinity, Total (as CaCO3)	<1000		1000	ug/L		04-MAY-19	R4621968
Dissolved Carbons							
Dissolved Inorganic Carbon by Combustion							
Dissolved Inorganic Carbon	<500		500	ug/L		03-MAY-19	R4622945
Dissolved Organic Carbon by Combustion							
Dissolved Organic Carbon	670		500	ug/L		05-MAY-19	R4623327
Total Dissolved Carbon by Calculation							
Total Dissolved Carbon	<1000		1000	ug/L		06-MAY-19	
Miscellaneous Parameters							
Ammonia, Total (as N)	<10		10	ug/L		07-MAY-19	R4626207
Chloride (Cl)	<500		500	ug/L		01-MAY-19	R4622233
Chromium, Hexavalent	<0.50		0.50	ug/L		01-MAY-19	R4619976
Sulfate (SO4)	<300		300	ug/L		01-MAY-19	R4622233
Cyanide, Total	<1.0		1.0	ug/L		02-MAY-19	R4623550
Dissolved Metals in Water by CRC ICPMS							
Dissolved Metals Filtration Location	FIELD					01-MAY-19	R4619570
Aluminum (Al)-Dissolved	4.3		1.0	ug/L	01-MAY-19	01-MAY-19	R4619914
Antimony (Sb)-Dissolved	<0.10		0.10	ug/L	01-MAY-19	01-MAY-19	R4619914
Arsenic (As)-Dissolved	<0.10		0.10	ug/L	01-MAY-19	01-MAY-19	R4619914
Barium (Ba)-Dissolved	<0.10		0.10	ug/L	01-MAY-19	01-MAY-19	R4619914
Beryllium (Be)-Dissolved	<0.10		0.10	ug/L	01-MAY-19	01-MAY-19	R4619914
Bismuth (Bi)-Dissolved	<0.050		0.050	ug/L	01-MAY-19	01-MAY-19	R4619914
Boron (B)-Dissolved	<10		10	ug/L	01-MAY-19	01-MAY-19	R4619914
Cadmium (Cd)-Dissolved	<0.0050		0.0050	ug/L	01-MAY-19	01-MAY-19	R4619914
Calcium (Ca)-Dissolved	<50		50	ug/L	01-MAY-19	01-MAY-19	R4619914
Cesium (Cs)-Dissolved	<0.010		0.010	ug/L	01-MAY-19	01-MAY-19	R4619914
Chromium (Cr)-Dissolved	0.13		0.10	ug/L	01-MAY-19	01-MAY-19	R4619914
Cobalt (Co)-Dissolved	<0.10		0.10	ug/L	01-MAY-19	01-MAY-19	R4619914
Copper (Cu)-Dissolved	<0.20		0.20	ug/L	01-MAY-19	01-MAY-19	R4619914
Iron (Fe)-Dissolved	<10		10	ug/L	01-MAY-19	01-MAY-19	R4619914
Lead (Pb)-Dissolved	<0.050		0.050	ug/L	01-MAY-19	01-MAY-19	R4619914
Lithium (Li)-Dissolved	<1.0		1.0	ug/L	01-MAY-19	01-MAY-19	R4619914
Magnesium (Mg)-Dissolved	64.0		5.0	ug/L	01-MAY-19	01-MAY-19	R4619914
Manganese (Mn)-Dissolved	<0.10		0.10	ug/L	01-MAY-19	01-MAY-19	R4619914
Molybdenum (Mo)-Dissolved	<0.050		0.050	ug/L	01-MAY-19	01-MAY-19	R4619914
Nickel (Ni)-Dissolved	<0.50		0.50	ug/L	01-MAY-19	01-MAY-19	R4619914
Phosphorus (P)-Dissolved	<30		30	ug/L	01-MAY-19	01-MAY-19	R4619914
Potassium (K)-Dissolved	<50		50	ug/L	01-MAY-19	01-MAY-19	R4619914
Rubidium (Rb)-Dissolved	<0.20		0.20	ug/L	01-MAY-19	01-MAY-19	R4619914
Selenium (Se)-Dissolved	<0.050		0.050	ug/L	01-MAY-19	01-MAY-19	R4619914
Silicon (Si)-Dissolved	118		50	ug/L	01-MAY-19	01-MAY-19	R4619914

* 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
L2264985-20 SWQ25 - TRIP BLANK							
Sampled By: CLIENT on 30-APR-19 @ 09:00							
Matrix: SURFACE WATER							
Dissolved Metals in Water by CRC ICPMS							
Silver (Ag)-Dissolved	<0.010		0.010	ug/L	01-MAY-19	01-MAY-19	R4619914
Sodium (Na)-Dissolved	3770		50	ug/L	01-MAY-19	01-MAY-19	R4619914
Strontium (Sr)-Dissolved	0.16		0.10	ug/L	01-MAY-19	01-MAY-19	R4619914
Sulfur (S)-Dissolved	<500		500	ug/L	01-MAY-19	01-MAY-19	R4619914
Tellurium (Te)-Dissolved	<0.20		0.20	ug/L	01-MAY-19	01-MAY-19	R4619914
Thallium (Tl)-Dissolved	<0.010		0.010	ug/L	01-MAY-19	01-MAY-19	R4619914
Thorium (Th)-Dissolved	<0.10		0.10	ug/L	01-MAY-19	01-MAY-19	R4619914
Tin (Sn)-Dissolved	2.54		0.10	ug/L	01-MAY-19	01-MAY-19	R4619914
Titanium (Ti)-Dissolved	<0.30		0.30	ug/L	01-MAY-19	01-MAY-19	R4619914
Tungsten (W)-Dissolved	<0.10		0.10	ug/L	01-MAY-19	01-MAY-19	R4619914
Uranium (U)-Dissolved	<0.010		0.010	ug/L	01-MAY-19	01-MAY-19	R4619914
Vanadium (V)-Dissolved	<0.50		0.50	ug/L	01-MAY-19	01-MAY-19	R4619914
Zinc (Zn)-Dissolved	<1.0		1.0	ug/L	01-MAY-19	01-MAY-19	R4619914
Zirconium (Zr)-Dissolved	<0.060		0.060	ug/L	01-MAY-19	01-MAY-19	R4619914
Mercury Dissolved							
Dissolved Mercury Filtration Location	FIELD					01-MAY-19	R4629168
Mercury (Hg)-Dissolved	<0.0050		0.0050	ug/L	01-MAY-19	08-MAY-19	R4629258
Total, Fecal Coliforms, E Coli by QT97							
Fecal Coliform by MPN QT97							
Fecal Coliforms	<1		1	MPN/100mL		30-APR-19	R4619516
Total Coliform and E.coli by MPN QT97							
Total Coliforms	<1		1	MPN/100mL		30-APR-19	R4619504
Escherichia Coli	<1		1	MPN/100mL		30-APR-19	R4619504
L2264985-21 SWQ25 - FIELD							
Sampled By: CLIENT on 30-APR-19 @ 10:00							
Matrix: SURFACE WATER							
Alkalinity species as HCO3, CO3, OH							
Alkalinity, Bicarbonate							
Bicarbonate (HCO3)	<1200		1200	ug/L		03-MAY-19	
Alkalinity, Carbonate							
Carbonate (CO3)	<600		600	ug/L		03-MAY-19	
Alkalinity, Hydroxide							
Hydroxide (OH)	<340		340	ug/L		03-MAY-19	
Alkalinity, Total (as CaCO3)							
Alkalinity, Total (as CaCO3)	<1000		1000	ug/L		04-MAY-19	R4621968
Dissolved Carbons							
Dissolved Inorganic Carbon by Combustion							
Dissolved Inorganic Carbon	<500		500	ug/L		03-MAY-19	R4622945
Dissolved Organic Carbon by Combustion							
Dissolved Organic Carbon	690		500	ug/L		05-MAY-19	R4623327
Total Dissolved Carbon by Calculation							
Total Dissolved Carbon	<1000		1000	ug/L		06-MAY-19	
Miscellaneous Parameters							
Ammonia, Total (as N)	<10		10	ug/L		01-MAY-19	R4620126
Chloride (Cl)	<500		500	ug/L		01-MAY-19	R4622233
Chromium, Hexavalent	<0.50		0.50	ug/L		01-MAY-19	R4619976
Sulfate (SO4)	<300		300	ug/L		01-MAY-19	R4622233
Cyanide, Total	<1.0		1.0	ug/L		02-MAY-19	R4623550
Dissolved Metals in Water by CRC ICPMS							
Dissolved Metals Filtration Location	FIELD					01-MAY-19	R4619570
Aluminum (Al)-Dissolved	4.1		1.0	ug/L	01-MAY-19	01-MAY-19	R4619914

* 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
L2264985-21 SWQ25 - FIELD							
Sampled By: CLIENT on 30-APR-19 @ 10:00							
Matrix: SURFACE WATER							
Dissolved Metals in Water by CRC ICPMS							
Antimony (Sb)-Dissolved	<0.10		0.10	ug/L	01-MAY-19	01-MAY-19	R4619914
Arsenic (As)-Dissolved	<0.10		0.10	ug/L	01-MAY-19	01-MAY-19	R4619914
Barium (Ba)-Dissolved	<0.10		0.10	ug/L	01-MAY-19	01-MAY-19	R4619914
Beryllium (Be)-Dissolved	<0.10		0.10	ug/L	01-MAY-19	01-MAY-19	R4619914
Bismuth (Bi)-Dissolved	<0.050		0.050	ug/L	01-MAY-19	01-MAY-19	R4619914
Boron (B)-Dissolved	<10		10	ug/L	01-MAY-19	01-MAY-19	R4619914
Cadmium (Cd)-Dissolved	<0.0050		0.0050	ug/L	01-MAY-19	01-MAY-19	R4619914
Calcium (Ca)-Dissolved	<50		50	ug/L	01-MAY-19	01-MAY-19	R4619914
Cesium (Cs)-Dissolved	<0.010		0.010	ug/L	01-MAY-19	01-MAY-19	R4619914
Chromium (Cr)-Dissolved	<0.10		0.10	ug/L	01-MAY-19	01-MAY-19	R4619914
Cobalt (Co)-Dissolved	<0.10		0.10	ug/L	01-MAY-19	01-MAY-19	R4619914
Copper (Cu)-Dissolved	0.49		0.20	ug/L	01-MAY-19	01-MAY-19	R4619914
Iron (Fe)-Dissolved	<10		10	ug/L	01-MAY-19	01-MAY-19	R4619914
Lead (Pb)-Dissolved	<0.050		0.050	ug/L	01-MAY-19	01-MAY-19	R4619914
Lithium (Li)-Dissolved	<1.0		1.0	ug/L	01-MAY-19	01-MAY-19	R4619914
Magnesium (Mg)-Dissolved	24.3		5.0	ug/L	01-MAY-19	01-MAY-19	R4619914
Manganese (Mn)-Dissolved	0.15		0.10	ug/L	01-MAY-19	01-MAY-19	R4619914
Molybdenum (Mo)-Dissolved	<0.050		0.050	ug/L	01-MAY-19	01-MAY-19	R4619914
Nickel (Ni)-Dissolved	<0.50		0.50	ug/L	01-MAY-19	01-MAY-19	R4619914
Phosphorus (P)-Dissolved	<30		30	ug/L	01-MAY-19	01-MAY-19	R4619914
Potassium (K)-Dissolved	76		50	ug/L	01-MAY-19	01-MAY-19	R4619914
Rubidium (Rb)-Dissolved	<0.20		0.20	ug/L	01-MAY-19	01-MAY-19	R4619914
Selenium (Se)-Dissolved	<0.050		0.050	ug/L	01-MAY-19	01-MAY-19	R4619914
Silicon (Si)-Dissolved	124		50	ug/L	01-MAY-19	01-MAY-19	R4619914
Silver (Ag)-Dissolved	<0.010		0.010	ug/L	01-MAY-19	01-MAY-19	R4619914
Sodium (Na)-Dissolved	2970		50	ug/L	01-MAY-19	01-MAY-19	R4619914
Strontium (Sr)-Dissolved	<0.10		0.10	ug/L	01-MAY-19	01-MAY-19	R4619914
Sulfur (S)-Dissolved	<500		500	ug/L	01-MAY-19	01-MAY-19	R4619914
Tellurium (Te)-Dissolved	<0.20		0.20	ug/L	01-MAY-19	01-MAY-19	R4619914
Thallium (Tl)-Dissolved	<0.010		0.010	ug/L	01-MAY-19	01-MAY-19	R4619914
Thorium (Th)-Dissolved	<0.10		0.10	ug/L	01-MAY-19	01-MAY-19	R4619914
Tin (Sn)-Dissolved	3.20		0.10	ug/L	01-MAY-19	01-MAY-19	R4619914
Titanium (Ti)-Dissolved	<0.30		0.30	ug/L	01-MAY-19	01-MAY-19	R4619914
Tungsten (W)-Dissolved	<0.10		0.10	ug/L	01-MAY-19	01-MAY-19	R4619914
Uranium (U)-Dissolved	<0.010		0.010	ug/L	01-MAY-19	01-MAY-19	R4619914
Vanadium (V)-Dissolved	<0.50		0.50	ug/L	01-MAY-19	01-MAY-19	R4619914
Zinc (Zn)-Dissolved	1.1		1.0	ug/L	01-MAY-19	01-MAY-19	R4619914
Zirconium (Zr)-Dissolved	<0.060		0.060	ug/L	01-MAY-19	01-MAY-19	R4619914
Mercury Dissolved							
Dissolved Mercury Filtration Location	FIELD					02-MAY-19	R4629202
Mercury (Hg)-Dissolved	<0.0050		0.0050	ug/L	02-MAY-19	08-MAY-19	R4629258
Total, Fecal Coliforms, E Coli by QT97							
Fecal Coliform by MPN QT97							
Fecal Coliforms	<1		1	MPN/100mL		30-APR-19	R4619516
Total Coliform and E.coli by MPN QT97							
Total Coliforms	<1		1	MPN/100mL		30-APR-19	R4619504
Escherichia Coli	<1		1	MPN/100mL		30-APR-19	R4619504
L2264985-22 SWQ25 - 6							
Sampled By: CLIENT on 30-APR-19 @ 11:45							
Matrix: SURFACE WATER							
Alkalinity species as HCO3, CO3, OH							

* 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
L2264985-22 SWQ25 - 6							
Sampled By: CLIENT on 30-APR-19 @ 11:45							
Matrix: SURFACE WATER							
Alkalinity, Bicarbonate							
Bicarbonate (HCO3)	3650000		1200	ug/L		03-MAY-19	
Alkalinity, Carbonate							
Carbonate (CO3)	<600		600	ug/L		03-MAY-19	
Alkalinity, Hydroxide							
Hydroxide (OH)	<340		340	ug/L		03-MAY-19	
Alkalinity, Total (as CaCO3)							
Alkalinity, Total (as CaCO3)	2990000		1000	ug/L		04-MAY-19	R4621968
Dissolved Carbons							
Dissolved Inorganic Carbon by Combustion							
Dissolved Inorganic Carbon	337000		25000	ug/L		03-MAY-19	R4622945
Dissolved Organic Carbon by Combustion							
Dissolved Organic Carbon	1690000		50000	ug/L		05-MAY-19	R4623327
Total Dissolved Carbon by Calculation							
Total Dissolved Carbon	2030000		56000	ug/L		06-MAY-19	
Miscellaneous Parameters							
Ammonia, Total (as N)	261000		10000	ug/L		01-MAY-19	R4620126
Chloride (Cl)	926000		25000	ug/L		01-MAY-19	R4622233
Chromium, Hexavalent	1.96		0.50	ug/L		01-MAY-19	R4619976
Fecal Coliforms	1790		10	MPN/100mL		30-APR-19	R4619560
Sulfate (SO4)	54000		15000	ug/L		01-MAY-19	R4622233
Cyanide, Total	9.6		1.0	ug/L		02-MAY-19	R4623550
Total and E. coli, 1:10 dilution by QT97							
Total Coliforms	3870		10	MPN/100mL		30-APR-19	R4619580
Escherichia Coli	650		10	MPN/100mL		30-APR-19	R4619580
Dissolved Metals in Water by CRC ICPMS							
Dissolved Metals Filtration Location	Field					01-MAY-19	R4619570
Aluminum (Al)-Dissolved	149		1.0	ug/L	01-MAY-19	01-MAY-19	R4619914
Antimony (Sb)-Dissolved	3.79		0.10	ug/L	01-MAY-19	01-MAY-19	R4619914
Arsenic (As)-Dissolved	14.3		0.10	ug/L	01-MAY-19	01-MAY-19	R4619914
Barium (Ba)-Dissolved	187		0.10	ug/L	01-MAY-19	01-MAY-19	R4619914
Beryllium (Be)-Dissolved	0.15		0.10	ug/L	01-MAY-19	01-MAY-19	R4619914
Bismuth (Bi)-Dissolved	<0.050		0.050	ug/L	01-MAY-19	01-MAY-19	R4619914
Boron (B)-Dissolved	8300		1000	ug/L	01-MAY-19	03-MAY-19	R4623107
Cadmium (Cd)-Dissolved	0.0094		0.0050	ug/L	01-MAY-19	01-MAY-19	R4619914
Calcium (Ca)-Dissolved	422000		50	ug/L	01-MAY-19	01-MAY-19	R4619914
Cesium (Cs)-Dissolved	0.120		0.010	ug/L	01-MAY-19	01-MAY-19	R4619914
Chromium (Cr)-Dissolved	97.9		0.10	ug/L	01-MAY-19	01-MAY-19	R4619914
Cobalt (Co)-Dissolved	18.1		0.10	ug/L	01-MAY-19	01-MAY-19	R4619914
Copper (Cu)-Dissolved	0.58		0.20	ug/L	01-MAY-19	01-MAY-19	R4619914
Iron (Fe)-Dissolved	192		10	ug/L	01-MAY-19	01-MAY-19	R4619914
Lead (Pb)-Dissolved	0.106		0.050	ug/L	01-MAY-19	01-MAY-19	R4619914
Lithium (Li)-Dissolved	320		100	ug/L	01-MAY-19	02-MAY-19	R4621868
Magnesium (Mg)-Dissolved	321000		5.0	ug/L	01-MAY-19	01-MAY-19	R4619914
Manganese (Mn)-Dissolved	3050		10	ug/L	01-MAY-19	02-MAY-19	R4621868
Molybdenum (Mo)-Dissolved	1.80		0.050	ug/L	01-MAY-19	01-MAY-19	R4619914
Nickel (Ni)-Dissolved	191		0.50	ug/L	01-MAY-19	01-MAY-19	R4619914
Phosphorus (P)-Dissolved	17000		30	ug/L	01-MAY-19	01-MAY-19	R4619914
Potassium (K)-Dissolved	228000		5000	ug/L	01-MAY-19	02-MAY-19	R4621868
Rubidium (Rb)-Dissolved	68.6		0.20	ug/L	01-MAY-19	01-MAY-19	R4619914
Selenium (Se)-Dissolved	2.47		0.050	ug/L	01-MAY-19	01-MAY-19	R4619914
Silicon (Si)-Dissolved	19300		50	ug/L	01-MAY-19	01-MAY-19	R4619914

* 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
L2264985-22 SWQ25 - 6							
Sampled By: CLIENT on 30-APR-19 @ 11:45							
Matrix: SURFACE WATER							
Dissolved Metals in Water by CRC ICPMS							
Silver (Ag)-Dissolved	0.059		0.010	ug/L	01-MAY-19	01-MAY-19	R4619914
Sodium (Na)-Dissolved	886000		5000	ug/L	01-MAY-19	02-MAY-19	R4621868
Strontium (Sr)-Dissolved	2740		10	ug/L	01-MAY-19	02-MAY-19	R4621868
Sulfur (S)-Dissolved	56900		500	ug/L	01-MAY-19	01-MAY-19	R4619914
Tellurium (Te)-Dissolved	0.33		0.20	ug/L	01-MAY-19	01-MAY-19	R4619914
Thallium (Tl)-Dissolved	<0.010		0.010	ug/L	01-MAY-19	01-MAY-19	R4619914
Thorium (Th)-Dissolved	<0.10		0.10	ug/L	01-MAY-19	01-MAY-19	R4619914
Tin (Sn)-Dissolved	1.55		0.10	ug/L	01-MAY-19	01-MAY-19	R4619914
Titanium (Ti)-Dissolved	40.7		0.30	ug/L	01-MAY-19	01-MAY-19	R4619914
Tungsten (W)-Dissolved	2.56		0.10	ug/L	01-MAY-19	01-MAY-19	R4619914
Uranium (U)-Dissolved	4.11		0.010	ug/L	01-MAY-19	01-MAY-19	R4619914
Vanadium (V)-Dissolved	27.0		0.50	ug/L	01-MAY-19	01-MAY-19	R4619914
Zinc (Zn)-Dissolved	6.2		1.0	ug/L	01-MAY-19	01-MAY-19	R4619914
Zirconium (Zr)-Dissolved	29.1		0.060	ug/L	01-MAY-19	01-MAY-19	R4619914
Mercury Dissolved							
Dissolved Mercury Filtration Location	FIELD					02-MAY-19	R4629202
Mercury (Hg)-Dissolved	<0.025	DLM	0.025	ug/L	02-MAY-19	08-MAY-19	R4629258

* 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).
DUPM	MPN duplicate results were outside default ALS Data Quality Objective, but within 95% confidence interval for MPN reference method. Sample results are reliable.
MBEF	Microbiological test results for E. coli > Fecal Coliforms due to sample heterogeneity. Both test results are within normal variability for MPN tests.
MBFT	Microbiological test results for Fecal Coliforms > Total Coliforms due to sample heterogeneity. Both test results are within normal variability for MPN tests.
MS-B	Matrix Spike recovery could not be accurately calculated due to high analyte background in sample.
PEHT	Parameter Exceeded Recommended Holding Time Prior to Analysis

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.			
C-DIC-HTC-WP	Water	Dissolved Inorganic Carbon by Combustion	APHA 5310 B-WP
Filtered (0.45 µm) sample is injected into a heated reaction chamber where it is acidified, converting all inorganic carbon to CO ₂ which is then transported in the carrier gas stream and measured via a non-dispersive infrared analyzer.			
C-DOC-HTC-WP	Water	Dissolved Organic Carbon by Combustion	APHA 5310 B-WP
Filtered (0.45 µm) sample is acidified and purged to remove inorganic carbon, then injected into a heated reaction chamber where organic carbon is oxidized to CO ₂ which is then transported in the carrier gas stream and measured via a non-dispersive infrared analyzer.			
C-TDC-CALC-WP	Water	Total Dissolved Carbon by Calculation	CALCULATED
Total dissolved carbon represents the sum of dissolved inorganic carbon and dissolved organic carbon. For the purpose of calculation, results less than the detection limit (DL) are treated as zero.			
CL-IC-N-WP	Water	Chloride in Water by IC	EPA 300.1 (mod)
Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.			
CN-T-CFA-WP	Water	Total Cyanide in water by CFA	ISO 14403-2
This analysis is carried out using procedures adapted from ISO Method 14403-2:2012 "Determination of Total Cyanide using Flow Analysis (FIA and CFA)". Total or strong acid dissociable (SAD) cyanide is determined by in-line UV digestion along with sample distillation and final determination by colourmetric analysis.			
CR-CR6-IC-WT	Water	Chromium +6	EPA 7199
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.			
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).			
EC-SCREEN-WP	Water	Conductivity Screen (Internal Use Only)	APHA 2510
Qualitative analysis of conductivity where required during preparation of other test eg. IC, TDS, TSS, etc			

Reference Information

Test Method References:

ALS Test Code	Matrix	Test Description	Method Reference**
FC-QT97-WP	Water	Fecal Coliform by MPN QT97	APHA 9223B QT97
This analysis is carried out using procedures adapted from APHA Method 9223B "Enzyme Substrate Coliform Test". The sample is mixed with a mixture of hydrolyzable substrates and then sealed in a 97-well packet. The packet is incubated at 44.5 – 0.2°C for 18 hours and then the number of wells exhibiting a positive response are counted. The final result is obtained by comparing the number of positive responses to a probability table.			
FC10-QT97-WP	Water	Fecal coliforms, 1:10 dilution by QT97	APHA 9223B QT97
Analysis is carried out using procedures adapted from APHA 9223 "Enzyme Substrate Coliform Test". Fecal (thermotolerant) coliform bacteria are determined by mixing a 1:10 dilution of sample with a product containing hydrolyzable substrates and sealing in a 97-well packet. The packet is incubated at 44.5 – 0.2°C for 18 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.			
HG-D-CVAA-WP	Water	Mercury Dissolved	APHA 3030B/EPA 1631E (mod)
Water samples are filtered (0.45 µm), preserved with hydrochloric acid, then undergo a cold-oxidation using bromine monochloride prior to reduction with stannous chloride, and analyzed by CVAAS.			
MET-D-CCMS-WP	Water	Dissolved Metals in Water by CRC ICPMS	APHA 3030B/6020B (mod)
Water samples are filtered (0.45 µm), 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.			
NH3-COL-WP	Water	Ammonia by colour	APHA 4500 NH3 F
Ammonia in water samples forms indophenol when reacted with hypochlorite and phenol. The intensity is amplified by the addition of sodium nitroprusside and measured colourmetrically.			
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-QT97-WP	Water	Total Coliform and E.coli by MPN QT97	APHA 9223B QT97
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 97-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.			
TC,EC10-QT97-WP	Water	Total and E. coli, 1:10 dilution by QT97	APHA 9223B QT97
Analysis is carried out using procedures adapted from APHA 9223 "Enzyme Substrate Coliform Test". Total coliforms and Escherichia coli bacteria are simultaneously determined by mixing a 1:10 dilution of sample with a product containing hydrolyzable substrates and sealing in a 97-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
WT	ALS ENVIRONMENTAL - WATERLOO, ONTARIO, CANADA
WP	ALS ENVIRONMENTAL - WINNIPEG, MANITOBA, CANADA

Chain of Custody Numbers:

Reference Information

Test Method References:

ALS Test Code	Matrix	Test Description	Method Reference**
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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: L2264985

Report Date: 09-MAY-19

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Client: City of Winnipeg - Solid Waste Services Div (1120 Waverley)
 Solid Waste Services Division 1120 Waverley Street
 Winnipeg MB R3T 0P4

Contact: CHRIS KOZAK

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
ALK-TITR-WP								
	Water							
Batch	R4621968							
WG3040228-4	LCS							
Alkalinity, Total (as CaCO3)			103.2		%		85-115	04-MAY-19
WG3040228-9	LCS							
Alkalinity, Total (as CaCO3)			103.9		%		85-115	04-MAY-19
WG3040228-1	MB							
Alkalinity, Total (as CaCO3)			<1.0		mg/L		1	04-MAY-19
WG3040228-6	MB							
Alkalinity, Total (as CaCO3)			<1.0		mg/L		1	04-MAY-19
C-DIC-HTC-WP								
	Water							
Batch	R4620128							
WG3039746-3	DUP	L2264985-7						
Dissolved Inorganic Carbon		47.1	47.5		mg/L	0.9	20	01-MAY-19
WG3039746-2	LCS							
Dissolved Inorganic Carbon			90.0		%		80-120	01-MAY-19
WG3039746-1	MB							
Dissolved Inorganic Carbon			<0.50		mg/L		0.5	01-MAY-19
WG3039746-4	MS	L2264985-8						
Dissolved Inorganic Carbon			N/A	MS-B	%		-	01-MAY-19
Batch	R4622945							
WG3041966-3	DUP	L2264985-9						
Dissolved Inorganic Carbon		47.1	47.6		mg/L	1.1	20	03-MAY-19
WG3041966-2	LCS							
Dissolved Inorganic Carbon			94.2		%		80-120	03-MAY-19
WG3041966-1	MB							
Dissolved Inorganic Carbon			<0.50		mg/L		0.5	03-MAY-19
WG3041966-4	MS	L2264985-10						
Dissolved Inorganic Carbon			N/A	MS-B	%		-	03-MAY-19
C-DOC-HTC-WP								
	Water							
Batch	R4619457							
WG3038956-2	LCS							
Dissolved Organic Carbon			104.2		%		80-120	30-APR-19
WG3038956-1	MB							
Dissolved Organic Carbon			<0.50		mg/L		0.5	30-APR-19
Batch	R4622553							
WG3040901-7	DUP	L2264985-19						
Dissolved Organic Carbon		22.1	21.5		mg/L	3.1	20	02-MAY-19
WG3040901-2	LCS							
Dissolved Organic Carbon			98.3		%		80-120	02-MAY-19



Quality Control Report

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Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
C-DOC-HTC-WP								
Water								
Batch	R4622553							
WG3040901-6	LCS							
Dissolved Organic Carbon			99.5		%		80-120	02-MAY-19
WG3040901-1	MB							
Dissolved Organic Carbon			<0.50		mg/L		0.5	02-MAY-19
WG3040901-5	MB							
Dissolved Organic Carbon			<0.50		mg/L		0.5	02-MAY-19
WG3040901-8	MS	L2264985-19						
Dissolved Organic Carbon			N/A	MS-B	%		-	02-MAY-19
Batch	R4623327							
WG3042191-2	LCS							
Dissolved Organic Carbon			102.7		%		80-120	05-MAY-19
WG3042191-1	MB							
Dissolved Organic Carbon			<0.50		mg/L		0.5	05-MAY-19
CL-IC-N-WP								
Water								
Batch	R4621973							
WG3037993-14	LCS							
Chloride (Cl)			102.5		%		90-110	30-APR-19
WG3037993-13	MB							
Chloride (Cl)			<0.50		mg/L		0.5	30-APR-19
Batch	R4622233							
WG3038976-2	LCS							
Chloride (Cl)			100.3		%		90-110	01-MAY-19
WG3038976-1	MB							
Chloride (Cl)			<0.50		mg/L		0.5	01-MAY-19
CN-T-CFA-WP								
Water								
Batch	R4623550							
WG3042279-3	DUP	L2264985-1						
Cyanide, Total		<0.0010	<0.0010	RPD-NA	mg/L	N/A	20	02-MAY-19
WG3042279-8	DUP	L2264985-18						
Cyanide, Total		0.0074	0.0077		mg/L	4.6	20	02-MAY-19
WG3042279-2	LCS							
Cyanide, Total			95.3		%		80-120	02-MAY-19
WG3042279-7	LCS							
Cyanide, Total			85.7		%		80-120	02-MAY-19
WG3042279-1	MB							
Cyanide, Total			<0.0010		mg/L		0.001	02-MAY-19
WG3042279-6	MB							
Cyanide, Total			<0.0010		mg/L		0.001	02-MAY-19

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Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
HG-D-CVAA-WP								
	Water							
Batch	R4629258							
WG3045469-2	LCS							
Mercury (Hg)-Dissolved			106.0		%		80-120	08-MAY-19
WG3045495-2	LCS							
Mercury (Hg)-Dissolved			99.0		%		80-120	08-MAY-19
WG3045469-1	MB							
Mercury (Hg)-Dissolved			<0.000005C		mg/L		0.000005	08-MAY-19
WG3045495-1	MB							
Mercury (Hg)-Dissolved			<0.000005C		mg/L		0.000005	08-MAY-19
WG3045469-4	MS	L2264985-2						
Mercury (Hg)-Dissolved			94.0		%		70-130	08-MAY-19
MET-D-CCMS-WP								
	Water							
Batch	R4619914							
WG3039225-2	LCS							
Aluminum (Al)-Dissolved			103.5		%		80-120	01-MAY-19
Antimony (Sb)-Dissolved			101.1		%		80-120	01-MAY-19
Arsenic (As)-Dissolved			98.8		%		80-120	01-MAY-19
Barium (Ba)-Dissolved			100.2		%		80-120	01-MAY-19
Beryllium (Be)-Dissolved			102.7		%		80-120	01-MAY-19
Bismuth (Bi)-Dissolved			102.9		%		80-120	01-MAY-19
Boron (B)-Dissolved			110.5		%		80-120	01-MAY-19
Cadmium (Cd)-Dissolved			100.0		%		80-120	01-MAY-19
Calcium (Ca)-Dissolved			101.5		%		80-120	01-MAY-19
Cesium (Cs)-Dissolved			105.7		%		80-120	01-MAY-19
Chromium (Cr)-Dissolved			101.0		%		80-120	01-MAY-19
Cobalt (Co)-Dissolved			99.8		%		80-120	01-MAY-19
Copper (Cu)-Dissolved			99.8		%		80-120	01-MAY-19
Iron (Fe)-Dissolved			96.5		%		80-120	01-MAY-19
Lead (Pb)-Dissolved			108.5		%		80-120	01-MAY-19
Lithium (Li)-Dissolved			102.8		%		80-120	01-MAY-19
Magnesium (Mg)-Dissolved			106.4		%		80-120	01-MAY-19
Manganese (Mn)-Dissolved			100.5		%		80-120	01-MAY-19
Molybdenum (Mo)-Dissolved			102.6		%		80-120	01-MAY-19
Nickel (Ni)-Dissolved			98.5		%		80-120	01-MAY-19
Phosphorus (P)-Dissolved			102.6		%		80-120	01-MAY-19
Potassium (K)-Dissolved			97.6		%		80-120	01-MAY-19
Rubidium (Rb)-Dissolved			104.6		%		80-120	01-MAY-19

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Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
MET-D-CCMS-WP								
	Water							
Batch	R4619914							
WG3039225-2	LCS							
Selenium (Se)-Dissolved			99.9		%		80-120	01-MAY-19
Silicon (Si)-Dissolved			102.6		%		80-120	01-MAY-19
Silver (Ag)-Dissolved			102.0		%		80-120	01-MAY-19
Sodium (Na)-Dissolved			103.6		%		80-120	01-MAY-19
Strontium (Sr)-Dissolved			105.4		%		80-120	01-MAY-19
Sulfur (S)-Dissolved			99.7		%		80-120	01-MAY-19
Tellurium (Te)-Dissolved			102.3		%		80-120	01-MAY-19
Thallium (Tl)-Dissolved			99.3		%		80-120	01-MAY-19
Thorium (Th)-Dissolved			98.6		%		80-120	01-MAY-19
Tin (Sn)-Dissolved			101.8		%		80-120	01-MAY-19
Titanium (Ti)-Dissolved			100.2		%		80-120	01-MAY-19
Tungsten (W)-Dissolved			101.6		%		80-120	01-MAY-19
Uranium (U)-Dissolved			109.1		%		80-120	01-MAY-19
Vanadium (V)-Dissolved			101.8		%		80-120	01-MAY-19
Zinc (Zn)-Dissolved			101.0		%		80-120	01-MAY-19
Zirconium (Zr)-Dissolved			102.4		%		80-120	01-MAY-19
WG3039236-2	LCS							
Aluminum (Al)-Dissolved			101.1		%		80-120	01-MAY-19
Antimony (Sb)-Dissolved			102.6		%		80-120	01-MAY-19
Arsenic (As)-Dissolved			100.8		%		80-120	01-MAY-19
Barium (Ba)-Dissolved			100.8		%		80-120	01-MAY-19
Beryllium (Be)-Dissolved			103.3		%		80-120	01-MAY-19
Bismuth (Bi)-Dissolved			102.0		%		80-120	01-MAY-19
Boron (B)-Dissolved			100.8		%		80-120	01-MAY-19
Cadmium (Cd)-Dissolved			100.9		%		80-120	01-MAY-19
Calcium (Ca)-Dissolved			101.0		%		80-120	01-MAY-19
Cesium (Cs)-Dissolved			103.5		%		80-120	01-MAY-19
Chromium (Cr)-Dissolved			102.4		%		80-120	01-MAY-19
Cobalt (Co)-Dissolved			100.3		%		80-120	01-MAY-19
Copper (Cu)-Dissolved			101.3		%		80-120	01-MAY-19
Iron (Fe)-Dissolved			95.5		%		80-120	01-MAY-19
Lead (Pb)-Dissolved			103.4		%		80-120	01-MAY-19
Lithium (Li)-Dissolved			102.1		%		80-120	01-MAY-19
Magnesium (Mg)-Dissolved			105.9		%		80-120	01-MAY-19



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Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
MET-D-CCMS-WP								
	Water							
Batch	R4619914							
WG3039236-2	LCS							
Manganese (Mn)-Dissolved			101.6		%		80-120	01-MAY-19
Molybdenum (Mo)-Dissolved			104.0		%		80-120	01-MAY-19
Nickel (Ni)-Dissolved			101.0		%		80-120	01-MAY-19
Phosphorus (P)-Dissolved			108.7		%		80-120	01-MAY-19
Potassium (K)-Dissolved			97.2		%		80-120	01-MAY-19
Rubidium (Rb)-Dissolved			99.4		%		80-120	01-MAY-19
Selenium (Se)-Dissolved			101.0		%		80-120	01-MAY-19
Silicon (Si)-Dissolved			101.2		%		80-120	01-MAY-19
Silver (Ag)-Dissolved			100.4		%		80-120	01-MAY-19
Sodium (Na)-Dissolved			103.6		%		80-120	01-MAY-19
Strontium (Sr)-Dissolved			104.7		%		80-120	01-MAY-19
Sulfur (S)-Dissolved			96.1		%		80-120	01-MAY-19
Tellurium (Te)-Dissolved			103.4		%		80-120	01-MAY-19
Thallium (Tl)-Dissolved			102.2		%		80-120	01-MAY-19
Thorium (Th)-Dissolved			101.3		%		80-120	01-MAY-19
Tin (Sn)-Dissolved			100.3		%		80-120	01-MAY-19
Titanium (Ti)-Dissolved			97.7		%		80-120	01-MAY-19
Tungsten (W)-Dissolved			102.3		%		80-120	01-MAY-19
Uranium (U)-Dissolved			102.9		%		80-120	01-MAY-19
Vanadium (V)-Dissolved			101.1		%		80-120	01-MAY-19
Zinc (Zn)-Dissolved			98.8		%		80-120	01-MAY-19
Zirconium (Zr)-Dissolved			101.9		%		80-120	01-MAY-19
WG3039225-1	MB							
Aluminum (Al)-Dissolved			<0.0010		mg/L		0.001	01-MAY-19
Antimony (Sb)-Dissolved			<0.00010		mg/L		0.0001	01-MAY-19
Arsenic (As)-Dissolved			<0.00010		mg/L		0.0001	01-MAY-19
Barium (Ba)-Dissolved			<0.00010		mg/L		0.0001	01-MAY-19
Beryllium (Be)-Dissolved			<0.00010		mg/L		0.0001	01-MAY-19
Bismuth (Bi)-Dissolved			<0.000050		mg/L		0.00005	01-MAY-19
Boron (B)-Dissolved			<0.010		mg/L		0.01	01-MAY-19
Cadmium (Cd)-Dissolved			<0.0000050		mg/L		0.000005	01-MAY-19
Calcium (Ca)-Dissolved			<0.050		mg/L		0.05	01-MAY-19
Cesium (Cs)-Dissolved			<0.000010		mg/L		0.00001	01-MAY-19
Chromium (Cr)-Dissolved			<0.00010		mg/L		0.0001	01-MAY-19



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Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
MET-D-CCMS-WP		Water						
Batch	R4619914							
WG3039225-1 MB								
Cobalt (Co)-Dissolved			<0.00010		mg/L		0.0001	01-MAY-19
Copper (Cu)-Dissolved			<0.00020		mg/L		0.0002	01-MAY-19
Iron (Fe)-Dissolved			<0.010		mg/L		0.01	01-MAY-19
Lead (Pb)-Dissolved			<0.000050		mg/L		0.00005	01-MAY-19
Lithium (Li)-Dissolved			<0.0010		mg/L		0.001	01-MAY-19
Magnesium (Mg)-Dissolved			<0.0050		mg/L		0.005	01-MAY-19
Manganese (Mn)-Dissolved			<0.00010		mg/L		0.0001	01-MAY-19
Molybdenum (Mo)-Dissolved			<0.000050		mg/L		0.00005	01-MAY-19
Nickel (Ni)-Dissolved			<0.00050		mg/L		0.0005	01-MAY-19
Phosphorus (P)-Dissolved			<0.030		mg/L		0.03	01-MAY-19
Potassium (K)-Dissolved			<0.050		mg/L		0.05	01-MAY-19
Rubidium (Rb)-Dissolved			<0.00020		mg/L		0.0002	01-MAY-19
Selenium (Se)-Dissolved			<0.000050		mg/L		0.00005	01-MAY-19
Silicon (Si)-Dissolved			<0.050		mg/L		0.05	01-MAY-19
Silver (Ag)-Dissolved			<0.000010		mg/L		0.00001	01-MAY-19
Sodium (Na)-Dissolved			<0.050		mg/L		0.05	01-MAY-19
Strontium (Sr)-Dissolved			<0.00010		mg/L		0.0001	01-MAY-19
Sulfur (S)-Dissolved			<0.50		mg/L		0.5	01-MAY-19
Tellurium (Te)-Dissolved			<0.00020		mg/L		0.0002	01-MAY-19
Thallium (Tl)-Dissolved			<0.000010		mg/L		0.00001	01-MAY-19
Thorium (Th)-Dissolved			<0.00010		mg/L		0.0001	01-MAY-19
Tin (Sn)-Dissolved			<0.00010		mg/L		0.0001	01-MAY-19
Titanium (Ti)-Dissolved			<0.00030		mg/L		0.0003	01-MAY-19
Tungsten (W)-Dissolved			<0.00010		mg/L		0.0001	01-MAY-19
Uranium (U)-Dissolved			<0.000010		mg/L		0.00001	01-MAY-19
Vanadium (V)-Dissolved			<0.00050		mg/L		0.0005	01-MAY-19
Zinc (Zn)-Dissolved			<0.0010		mg/L		0.001	01-MAY-19
Zirconium (Zr)-Dissolved			<0.000060		mg/L		0.00006	01-MAY-19
WG3039236-1 MB								
Aluminum (Al)-Dissolved			<0.0010		mg/L		0.001	01-MAY-19
Antimony (Sb)-Dissolved			<0.00010		mg/L		0.0001	01-MAY-19
Arsenic (As)-Dissolved			<0.00010		mg/L		0.0001	01-MAY-19
Barium (Ba)-Dissolved			<0.00010		mg/L		0.0001	01-MAY-19
Beryllium (Be)-Dissolved			<0.00010		mg/L		0.0001	01-MAY-19



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Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
MET-D-CCMS-WP								
	Water							
Batch	R4619914							
WG3039236-1	MB							
Bismuth (Bi)-Dissolved			<0.000050		mg/L		0.00005	01-MAY-19
Boron (B)-Dissolved			<0.010		mg/L		0.01	01-MAY-19
Cadmium (Cd)-Dissolved			<0.0000050		mg/L		0.000005	01-MAY-19
Calcium (Ca)-Dissolved			<0.050		mg/L		0.05	01-MAY-19
Cesium (Cs)-Dissolved			<0.000010		mg/L		0.00001	01-MAY-19
Chromium (Cr)-Dissolved			<0.00010		mg/L		0.0001	01-MAY-19
Cobalt (Co)-Dissolved			<0.00010		mg/L		0.0001	01-MAY-19
Copper (Cu)-Dissolved			<0.00020		mg/L		0.0002	01-MAY-19
Iron (Fe)-Dissolved			<0.010		mg/L		0.01	01-MAY-19
Lead (Pb)-Dissolved			<0.000050		mg/L		0.00005	01-MAY-19
Lithium (Li)-Dissolved			<0.0010		mg/L		0.001	01-MAY-19
Magnesium (Mg)-Dissolved			<0.0050		mg/L		0.005	01-MAY-19
Manganese (Mn)-Dissolved			<0.00010		mg/L		0.0001	01-MAY-19
Molybdenum (Mo)-Dissolved			<0.000050		mg/L		0.00005	01-MAY-19
Nickel (Ni)-Dissolved			<0.00050		mg/L		0.0005	01-MAY-19
Phosphorus (P)-Dissolved			<0.030		mg/L		0.03	01-MAY-19
Potassium (K)-Dissolved			<0.050		mg/L		0.05	01-MAY-19
Rubidium (Rb)-Dissolved			<0.00020		mg/L		0.0002	01-MAY-19
Selenium (Se)-Dissolved			<0.000050		mg/L		0.00005	01-MAY-19
Silicon (Si)-Dissolved			<0.050		mg/L		0.05	01-MAY-19
Silver (Ag)-Dissolved			<0.000010		mg/L		0.00001	01-MAY-19
Sodium (Na)-Dissolved			<0.050		mg/L		0.05	01-MAY-19
Strontium (Sr)-Dissolved			<0.00010		mg/L		0.0001	01-MAY-19
Sulfur (S)-Dissolved			<0.50		mg/L		0.5	01-MAY-19
Tellurium (Te)-Dissolved			<0.00020		mg/L		0.0002	01-MAY-19
Thallium (Tl)-Dissolved			<0.000010		mg/L		0.00001	01-MAY-19
Thorium (Th)-Dissolved			<0.00010		mg/L		0.0001	01-MAY-19
Tin (Sn)-Dissolved			<0.00010		mg/L		0.0001	01-MAY-19
Titanium (Ti)-Dissolved			<0.00030		mg/L		0.0003	01-MAY-19
Tungsten (W)-Dissolved			<0.00010		mg/L		0.0001	01-MAY-19
Uranium (U)-Dissolved			<0.000010		mg/L		0.00001	01-MAY-19
Vanadium (V)-Dissolved			<0.00050		mg/L		0.0005	01-MAY-19
Zinc (Zn)-Dissolved			<0.0010		mg/L		0.001	01-MAY-19
Zirconium (Zr)-Dissolved			<0.000060		mg/L		0.00006	01-MAY-19



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Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
NH3-COL-WP								
Batch R4620126								
WG3039719-7	DUP	L2264985-19						
Ammonia, Total (as N)		0.028	0.032		mg/L	12	20	01-MAY-19
WG3039719-2	LCS							
Ammonia, Total (as N)			98.1		%		85-115	01-MAY-19
WG3039719-6	LCS							
Ammonia, Total (as N)			100.7		%		85-115	01-MAY-19
WG3039719-1	MB							
Ammonia, Total (as N)			<0.010		mg/L		0.01	01-MAY-19
WG3039719-5	MB							
Ammonia, Total (as N)			<0.010		mg/L		0.01	01-MAY-19
WG3039719-8	MS	L2264985-19						
Ammonia, Total (as N)			88.8		%		75-125	01-MAY-19
Batch R4626207								
WG3043663-2	LCS							
Ammonia, Total (as N)			99.98		%		85-115	06-MAY-19
WG3043663-1	MB							
Ammonia, Total (as N)			<0.010		mg/L		0.01	06-MAY-19
SO4-IC-N-WP								
Batch R4621973								
WG3037993-14	LCS							
Sulfate (SO4)			101.3		%		90-110	30-APR-19
WG3037993-13	MB							
Sulfate (SO4)			<0.30		mg/L		0.3	30-APR-19
Batch R4622233								
WG3038976-2	LCS							
Sulfate (SO4)			100.8		%		90-110	01-MAY-19
WG3038976-1	MB							
Sulfate (SO4)			<0.30		mg/L		0.3	01-MAY-19
TC,EC-QT97-WP								
Batch R4619504								
WG3038346-2	DUP	L2264985-20						
Total Coliforms		<1	<1	RPD-NA	MPN/100mL	N/A	65	30-APR-19
Escherichia Coli		<1	<1	RPD-NA	MPN/100mL	N/A	65	30-APR-19
WG3038346-1	MB							
Total Coliforms			<1		MPN/100mL		1	30-APR-19
Escherichia Coli			<1		MPN/100mL		1	30-APR-19
TC,EC10-QT97-WP								
Water								



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Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
TC,EC10-QT97-WP								
Batch R4619580								
WG3038378-2	DUP	L2264985-1						
Total Coliforms		1920	1550		MPN/100mL	21	65	30-APR-19
Escherichia Coli		80	30	DUPM	MPN/100mL	83	65	30-APR-19
WG3038378-1								
MB								
Total Coliforms			<1		MPN/100mL		1	30-APR-19
Escherichia Coli			<1		MPN/100mL		1	30-APR-19
Batch R4622432								
WG3040330-1	MB							
Total Coliforms			<1		MPN/100mL		1	02-MAY-19
Escherichia Coli			<1		MPN/100mL		1	02-MAY-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.
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:

ALS Product Description	Sample ID	Sampling Date	Date Processed	Rec. HT	Actual HT	Units	Qualifier
Bacteriological Tests							
Fecal coliforms, 1:10 dilution by QT97	16	30-APR-19 11:17	02-MAY-19 17:00	30	54	hours	EHT
Total and E. coli, 1:10 dilution by QT97	16	30-APR-19 11:17	02-MAY-19 17:00	30	54	hours	EHT

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*:

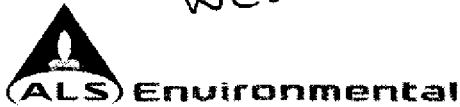
Where actual sampling date is not provided to ALS, the date (& time) of receipt is used for calculation purposes.

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 L2264985 were received on 30-APR-19 12:30.

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.

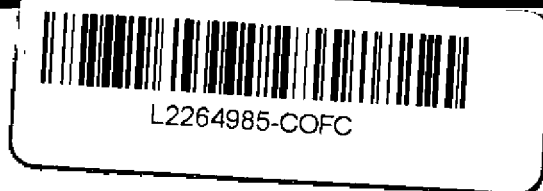


WEST

Chain of Custody (COC) / Analytical Request Form

Canada Toll Free: 1 800 668 9878

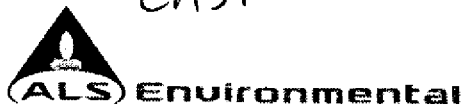
www.alsglobal.com



COC Number: 15 -

Page of

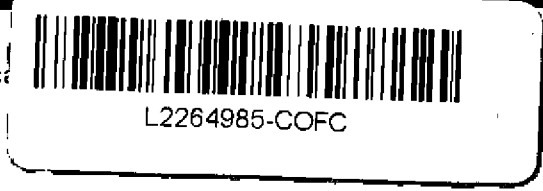
Report To Contact and company name below will appear on the final report		Report Format / Distribution			Select Service Level Below - Please confirm all E&P TATs with your AM - surcharges will apply														
Company:	City of Winnipeg	Select Report Format: <input checked="" type="checkbox"/> PDF <input 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:	Chris Kozak	Quality Control (QC) Report with Report <input checked="" type="checkbox"/> YES <input type="checkbox"/> NO			PRIORITY (Business Days)			EMERGENCY			1 Business day [E1] <input type="checkbox"/>								
Phone:	204-986-2384	<input type="checkbox"/> Compare Results to Criteria on Report - provide details below if box checked			4 day [P4] <input type="checkbox"/>			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																	
Street:	1120 Waverly Street	Email 1 or Fax ckozak@winnipeg.ca			Date and Time Required for all E&P TATs:						8:00 AM - 5:00 PM								
City/Province:	Winnipeg, Manitoba	Email 2			For tests that can not be performed according to the service level selected, you will be contacted.														
Postal Code:	R3T 0P4	Email 3			Analysis Request														
Invoice To		Invoice Distribution			Indicate Filtered (F), Preserved (P) or Filtered and Preserved (F/P) below														
Same as Report To <input type="checkbox"/> YES <input type="checkbox"/> NO		Select Invoice Distribution: <input type="checkbox"/> EMAIL <input checked="" type="checkbox"/> MAIL <input type="checkbox"/> FAX																	
Copy of Invoice with Report <input type="checkbox"/> YES <input type="checkbox"/> NO		Email 1 or Fax																	
Company:		Email 2																	
Contact:																			
Project Information				Oil and Gas Required Fields (client use)								Number of Containers							
ALS Account # / Quote #: W10051/Q67317				AFF/Coal Center:				PO#											
Job #: Section A (BRRMF Surface Water)				Major/Minor Code:				Routing Code:											
PO / AFE:				Requisitioner:															
LSD:				Location:															
ALS Lab Work Order # (lab use only)				ALS Contact:				Sampler:											
ALS Sample # (lab use only)	Sample Identification and/or Coordinates (This description will appear on the report)			Date (dd-mmm-yy)	Time (hh:mm)	Sample Type	TC,FC,EC,OT97-WP	CL-IC-N-WP	SO4-IC-N-WP	HG-D-CVAF-WP	CR-CR6-IC-WT	CN-T-CFA-WP	ALK-SPEC-WP	NH3-COL-WP	C-TDC,DIC,DOC,HTC-WP	NH3-COL-WP	MET-D-COIMS-WP		
1	SNQ25-1 199572 NEWPC			30-Apr-19	9:15 AM	SURFACE WATER	X	X	X	X	X	X	X	X	X	X			
2	SNQ25-12 199573				9:31 AM														
3	SNQ25-13a 199584				9:44 AM														
4	SNQ25-13b 199585				10:05 AM														
5	SNQ25-7 199577				10:28														
6	SNQ25-14A 199586				10:13														
7	SNQ25-14B 199587				11:24														
8	SNQ25-9A 199579				10:47														
9	SNQ25-9B 199580				11:10														
10	SNQ25-100 199590				12:00														
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								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 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: 7.8°C											
								FINAL COOLER TEMPERATURES °C:											
SHIPMENT RELEASE (client use)				INITIAL SHIPMENT RECEPTION (lab use only)				FINAL SHIPMENT RECEPTION (lab use only)											
Released by: [Signature]		Date: 30 April 2019		Time: 12:00		Received by: [Signature]		Date: APR 30 2019		Time: 12:30		Received by:		Date:		Time:			



EAST

Chain of Custody (COC) / Analytical Request Form

Canada Toll Free: 1 800 668 9878



COC Number: 15 -

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Report To Contact and company name below will appear on the final report		Report Format / Distribution			Select Service Level Below - Please confirm all E&P TATs with your AM - surcharges will apply																																																						
Company:	City of Winnipeg	Select Report Format: <input checked="" type="checkbox"/> PDF <input 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:	Chris Kozak	Quality Control (QC) Report with Report <input checked="" type="checkbox"/> YES <input type="checkbox"/> NO			PRIORITY (Business Days)		4 day [P4] <input type="checkbox"/>		EMERGENCY		1 Business day [E1] <input type="checkbox"/>																																																
Phone:	204-986-2384	<input type="checkbox"/> Compare Results to Criteria on Report - provide details below if box checked			3 day [P3] <input type="checkbox"/>		2 day [P2] <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			Date and Time Required for all E&P TATs:		dd-mmm-yy hh:mm																																																				
Street:	1120 Waverly Street	Email 1 or Fax ckozak@winnipeg.ca			For tests that can not be performed according to the service level selected, you will be contacted.																																																						
City/Province:	Winnipeg, Manitoba	Email 2			Analysis Request																																																						
Postal Code:	R3T 0P4	Email 3			Indicate Filtered (F), Preserved (P) or Filtered and Preserved (F/P) below																																																						
Invoice To	Same as Report To <input type="checkbox"/> YES <input type="checkbox"/> NO	Invoice Distribution			<table border="1"> <tr> <td>TC-FC-EC-QT97-WP</td> <td>CL-IC-N-WP</td> <td>SO4-IC-N-WP</td> <td>HG-D-CVAF-WP</td> <td>CR-CR6-IC-WT</td> <td>CN-T-CFA-WP</td> <td>ALK-SPEC-WP</td> <td>NH3-COL-WP</td> <td>C-TDC;DIC;DOC-HTC-WP</td> <td>NH3-COL-WP</td> <td>MET-D-COIMS-WP</td> <td rowspan="4">Number of Containers</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> </tr> <tr> <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> </tr> </table>										TC-FC-EC-QT97-WP	CL-IC-N-WP	SO4-IC-N-WP	HG-D-CVAF-WP	CR-CR6-IC-WT	CN-T-CFA-WP	ALK-SPEC-WP	NH3-COL-WP	C-TDC;DIC;DOC-HTC-WP	NH3-COL-WP	MET-D-COIMS-WP	Number of Containers																																	
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	Copy of Invoice with Report <input type="checkbox"/> YES <input type="checkbox"/> NO	Select Invoice Distribution: <input type="checkbox"/> EMAIL <input checked="" type="checkbox"/> MAIL <input type="checkbox"/> FAX																																																									
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ALS Sample # (lab use only)	Sample Identification and/or Coordinates (This description will appear on the report)	Date (dd-mmm-yy)	Time (hh:mm)	Sample Type																																																							
11	SWQ25-16	199575	30-APR-19	9:35	Surface Water	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓																																											
12	SWQ25-2	199574		9:50																																																							
13	SWQ25-15A	199588		10:59																																																							
14	SWQ25-15B	199589		10:45																																																							
15	SWQ25-11a	199581		11:07																																																							
16	SWQ25-11b	199582		11:17																																																							
17	SWQ25-11c	199583		10:40																																																							
18	SWQ25-8	199578		11:23																																																							
19	SWQ25-101	199591		10:00																																																							
20	SWQ25-TRIP BLANK	199592		9:00																																																							
21	SWQ25-Field	199593		10:00																																																							
22	SWQ25-6	199576		11:45																																																							
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Released by: Rebecca Swain	Date: 30 April 2019	Time: 10:20	Received by:	Date: APR 30 2019	Time: 12:30																																																						



City of Winnipeg - Solid Waste Services Div
(1120 Waverley)
ATTN: CHRIS KOZAK
Solid Waste Services Division
1120 Waverley Street
Winnipeg MB R3T 0P4

Date Received: 31-JUL-19
Report Date: 21-AUG-19 07:25 (MT)
Version: FINAL

Client Phone: 204-986-2384

Certificate of Analysis

Lab Work Order #: L2320485
Project P.O. #: NOT SUBMITTED
Job Reference: SECTION A (BRRMF SURFACE WATER)
C of C Numbers:
Legal Site Desc:

Hua Wo
Chemistry Laboratory 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
L2320485-1 SWQ25 - 16							
Sampled By: CLIENT on 31-JUL-19 @ 09:25							
Matrix: WATER							
Alkalinity species as HCO3, CO3, OH							
Alkalinity, Bicarbonate							
Bicarbonate (HCO3)	449000		1200	ug/L		02-AUG-19	
Alkalinity, Carbonate							
Carbonate (CO3)	<600		600	ug/L		02-AUG-19	
Alkalinity, Hydroxide							
Hydroxide (OH)	<340		340	ug/L		02-AUG-19	
Alkalinity, Total (as CaCO3)							
Alkalinity, Total (as CaCO3)	368000		1000	ug/L		01-AUG-19	R4738650
Dissolved Carbons							
Dissolved Inorganic Carbon by Combustion							
Dissolved Inorganic Carbon	77900		500	ug/L		08-AUG-19	R4745360
Dissolved Organic Carbon by Combustion							
Dissolved Organic Carbon	47300		500	ug/L		09-AUG-19	R4746810
Total Dissolved Carbon by Calculation							
Total Dissolved Carbon	125000		1000	ug/L		13-AUG-19	
Miscellaneous Parameters							
Ammonia, Total (as N)	121		10	ug/L		06-AUG-19	R4742697
Chloride (Cl)	251000		2500	ug/L		02-AUG-19	R4739256
Chromium, Hexavalent	<0.50		0.50	ug/L		06-AUG-19	R4741729
Fecal Coliforms	3260		10	MPN/100mL		31-JUL-19	R4734622
Cyanide, Total	1.1		1.0	ug/L		09-AUG-19	R4745471
Sulfate (SO4)	312000		1500	ug/L		02-AUG-19	R4739256
Total and E. coli, 1:10 dilution by QT97							
Total Coliforms	>24200		10	MPN/100mL		31-JUL-19	R4734628
Escherichia Coli	3650		10	MPN/100mL		31-JUL-19	R4734628
Dissolved Metals in Water by CRC ICPMS							
Dissolved Metals Filtration Location	FIELD					09-AUG-19	R4745527
Aluminum (Al)-Dissolved	3.2		1.0	ug/L	09-AUG-19	09-AUG-19	R4748713
Antimony (Sb)-Dissolved	0.51		0.10	ug/L	09-AUG-19	09-AUG-19	R4748713
Arsenic (As)-Dissolved	5.86		0.10	ug/L	09-AUG-19	09-AUG-19	R4748713
Barium (Ba)-Dissolved	141		0.10	ug/L	09-AUG-19	09-AUG-19	R4748713
Beryllium (Be)-Dissolved	<0.10		0.10	ug/L	09-AUG-19	09-AUG-19	R4748713
Bismuth (Bi)-Dissolved	<0.050		0.050	ug/L	09-AUG-19	09-AUG-19	R4748713
Boron (B)-Dissolved	541		10	ug/L	09-AUG-19	09-AUG-19	R4748713
Cadmium (Cd)-Dissolved	0.0247		0.0050	ug/L	09-AUG-19	09-AUG-19	R4748713
Calcium (Ca)-Dissolved	103000		50	ug/L	09-AUG-19	09-AUG-19	R4748713
Cesium (Cs)-Dissolved	<0.010		0.010	ug/L	09-AUG-19	09-AUG-19	R4748713
Chromium (Cr)-Dissolved	0.61		0.10	ug/L	09-AUG-19	09-AUG-19	R4748713
Cobalt (Co)-Dissolved	1.10		0.10	ug/L	09-AUG-19	09-AUG-19	R4748713
Copper (Cu)-Dissolved	1.06		0.20	ug/L	09-AUG-19	09-AUG-19	R4748713
Iron (Fe)-Dissolved	327		10	ug/L	09-AUG-19	09-AUG-19	R4748713
Lead (Pb)-Dissolved	0.126		0.050	ug/L	09-AUG-19	09-AUG-19	R4748713
Lithium (Li)-Dissolved	110		1.0	ug/L	09-AUG-19	09-AUG-19	R4748713
Magnesium (Mg)-Dissolved	100000		5.0	ug/L	09-AUG-19	09-AUG-19	R4748713
Manganese (Mn)-Dissolved	592		0.10	ug/L	09-AUG-19	09-AUG-19	R4748713
Molybdenum (Mo)-Dissolved	0.857		0.050	ug/L	09-AUG-19	09-AUG-19	R4748713
Nickel (Ni)-Dissolved	10.8		0.50	ug/L	09-AUG-19	09-AUG-19	R4748713
Phosphorus (P)-Dissolved	626		30	ug/L	09-AUG-19	09-AUG-19	R4748713
Potassium (K)-Dissolved	22500		50	ug/L	09-AUG-19	09-AUG-19	R4748713
Rubidium (Rb)-Dissolved	1.83		0.20	ug/L	09-AUG-19	09-AUG-19	R4748713
Selenium (Se)-Dissolved	0.403		0.050	ug/L	09-AUG-19	09-AUG-19	R4748713

* 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
L2320485-1 SWQ25 - 16 Sampled By: CLIENT on 31-JUL-19 @ 09:25 Matrix: WATER							
Dissolved Metals in Water by CRC ICPMS							
Silicon (Si)-Dissolved	17800		50	ug/L	09-AUG-19	09-AUG-19	R4748713
Silver (Ag)-Dissolved	<0.010		0.010	ug/L	09-AUG-19	09-AUG-19	R4748713
Sodium (Na)-Dissolved	148000		50	ug/L	09-AUG-19	09-AUG-19	R4748713
Strontium (Sr)-Dissolved	548		0.10	ug/L	09-AUG-19	09-AUG-19	R4748713
Sulfur (S)-Dissolved	95900		500	ug/L	09-AUG-19	09-AUG-19	R4748713
Tellurium (Te)-Dissolved	<0.20		0.20	ug/L	09-AUG-19	09-AUG-19	R4748713
Thallium (Tl)-Dissolved	<0.010		0.010	ug/L	09-AUG-19	09-AUG-19	R4748713
Thorium (Th)-Dissolved	<0.10		0.10	ug/L	09-AUG-19	09-AUG-19	R4748713
Tin (Sn)-Dissolved	1.24		0.10	ug/L	09-AUG-19	09-AUG-19	R4748713
Titanium (Ti)-Dissolved	0.69		0.30	ug/L	09-AUG-19	09-AUG-19	R4748713
Tungsten (W)-Dissolved	<0.10		0.10	ug/L	09-AUG-19	09-AUG-19	R4748713
Uranium (U)-Dissolved	1.89		0.010	ug/L	09-AUG-19	09-AUG-19	R4748713
Vanadium (V)-Dissolved	1.94		0.50	ug/L	09-AUG-19	09-AUG-19	R4748713
Zinc (Zn)-Dissolved	2.8		1.0	ug/L	09-AUG-19	09-AUG-19	R4748713
Zirconium (Zr)-Dissolved	0.47		0.20	ug/L	09-AUG-19	09-AUG-19	R4748713
Mercury Dissolved							
Dissolved Mercury Filtration Location	FIELD					07-AUG-19	R4746594
Mercury (Hg)-Dissolved	<0.0050		0.0050	ug/L	07-AUG-19	09-AUG-19	R4746678
L2320485-2 SWQ25 - 2 Sampled By: CLIENT on 31-JUL-19 @ 09:48 Matrix: WATER							
Alkalinity species as HCO3, CO3, OH							
Alkalinity, Bicarbonate							
Bicarbonate (HCO3)	1020000		1200	ug/L		02-AUG-19	
Alkalinity, Carbonate							
Carbonate (CO3)	<600		600	ug/L		02-AUG-19	
Alkalinity, Hydroxide							
Hydroxide (OH)	<340		340	ug/L		02-AUG-19	
Alkalinity, Total (as CaCO3)							
Alkalinity, Total (as CaCO3)	839000		1000	ug/L		01-AUG-19	R4738650
Dissolved Carbons							
Dissolved Inorganic Carbon by Combustion							
Dissolved Inorganic Carbon	188000		500	ug/L		08-AUG-19	R4745360
Dissolved Organic Carbon by Combustion							
Dissolved Organic Carbon	125000		2500	ug/L		09-AUG-19	R4746810
Total Dissolved Carbon by Calculation							
Total Dissolved Carbon	313000		2500	ug/L		13-AUG-19	
Miscellaneous Parameters							
Ammonia, Total (as N)	132		10	ug/L		02-AUG-19	R4740074
Chloride (Cl)	768000		10000	ug/L		02-AUG-19	R4739256
Chromium, Hexavalent	<0.50		0.50	ug/L		06-AUG-19	R4741729
Cyanide, Total	3.0		1.0	ug/L		09-AUG-19	R4745471
Sulfate (SO4)	263000		6000	ug/L		02-AUG-19	R4739256
Dissolved Metals in Water by CRC ICPMS							
Dissolved Metals Filtration Location	FIELD					09-AUG-19	R4745527
Aluminum (Al)-Dissolved	4.3		1.0	ug/L	09-AUG-19	09-AUG-19	R4748713
Antimony (Sb)-Dissolved	0.69		0.10	ug/L	09-AUG-19	09-AUG-19	R4748713
Arsenic (As)-Dissolved	29.2		0.10	ug/L	09-AUG-19	09-AUG-19	R4748713
Barium (Ba)-Dissolved	168		0.10	ug/L	09-AUG-19	09-AUG-19	R4748713
Beryllium (Be)-Dissolved	<0.10		0.10	ug/L	09-AUG-19	09-AUG-19	R4748713
Bismuth (Bi)-Dissolved	<0.050		0.050	ug/L	09-AUG-19	09-AUG-19	R4748713

* 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
L2320485-2 SWQ25 - 2							
Sampled By: CLIENT on 31-JUL-19 @ 09:48							
Matrix: WATER							
Dissolved Metals in Water by CRC ICPMS							
Boron (B)-Dissolved	1420		100	ug/L	09-AUG-19	20-AUG-19	R4761850
Cadmium (Cd)-Dissolved	0.0104		0.0050	ug/L	09-AUG-19	09-AUG-19	R4748713
Calcium (Ca)-Dissolved	89500		50	ug/L	09-AUG-19	09-AUG-19	R4748713
Cesium (Cs)-Dissolved	<0.010		0.010	ug/L	09-AUG-19	09-AUG-19	R4748713
Chromium (Cr)-Dissolved	1.31		0.10	ug/L	09-AUG-19	09-AUG-19	R4748713
Cobalt (Co)-Dissolved	1.87		0.10	ug/L	09-AUG-19	09-AUG-19	R4748713
Copper (Cu)-Dissolved	1.06		0.20	ug/L	09-AUG-19	09-AUG-19	R4748713
Iron (Fe)-Dissolved	89		10	ug/L	09-AUG-19	09-AUG-19	R4748713
Lead (Pb)-Dissolved	<0.050		0.050	ug/L	09-AUG-19	09-AUG-19	R4748713
Lithium (Li)-Dissolved	257		1.0	ug/L	09-AUG-19	09-AUG-19	R4748713
Magnesium (Mg)-Dissolved	251000		5.0	ug/L	09-AUG-19	09-AUG-19	R4748713
Manganese (Mn)-Dissolved	135		0.10	ug/L	09-AUG-19	09-AUG-19	R4748713
Molybdenum (Mo)-Dissolved	4.71		0.050	ug/L	09-AUG-19	09-AUG-19	R4748713
Nickel (Ni)-Dissolved	56.2		0.50	ug/L	09-AUG-19	09-AUG-19	R4748713
Phosphorus (P)-Dissolved	1600		30	ug/L	09-AUG-19	09-AUG-19	R4748713
Potassium (K)-Dissolved	153000		500	ug/L	09-AUG-19	20-AUG-19	R4761850
Rubidium (Rb)-Dissolved	5.26		0.20	ug/L	09-AUG-19	09-AUG-19	R4748713
Selenium (Se)-Dissolved	0.541		0.050	ug/L	09-AUG-19	09-AUG-19	R4748713
Silicon (Si)-Dissolved	3210		50	ug/L	09-AUG-19	09-AUG-19	R4748713
Silver (Ag)-Dissolved	0.020		0.010	ug/L	09-AUG-19	09-AUG-19	R4748713
Sodium (Na)-Dissolved	389000		50	ug/L	09-AUG-19	09-AUG-19	R4748713
Strontium (Sr)-Dissolved	940		0.10	ug/L	09-AUG-19	09-AUG-19	R4748713
Sulfur (S)-Dissolved	90700		500	ug/L	09-AUG-19	09-AUG-19	R4748713
Tellurium (Te)-Dissolved	<0.20		0.20	ug/L	09-AUG-19	09-AUG-19	R4748713
Thallium (Tl)-Dissolved	<0.010		0.010	ug/L	09-AUG-19	09-AUG-19	R4748713
Thorium (Th)-Dissolved	<0.10		0.10	ug/L	09-AUG-19	09-AUG-19	R4748713
Tin (Sn)-Dissolved	0.83		0.10	ug/L	09-AUG-19	09-AUG-19	R4748713
Titanium (Ti)-Dissolved	0.38		0.30	ug/L	09-AUG-19	09-AUG-19	R4748713
Tungsten (W)-Dissolved	0.33		0.10	ug/L	09-AUG-19	09-AUG-19	R4748713
Uranium (U)-Dissolved	5.13		0.010	ug/L	09-AUG-19	09-AUG-19	R4748713
Vanadium (V)-Dissolved	3.91		0.50	ug/L	09-AUG-19	09-AUG-19	R4748713
Zinc (Zn)-Dissolved	2.0		1.0	ug/L	09-AUG-19	09-AUG-19	R4748713
Zirconium (Zr)-Dissolved	1.32		0.20	ug/L	09-AUG-19	09-AUG-19	R4748713
Mercury Dissolved							
Dissolved Mercury Filtration Location	FIELD					07-AUG-19	R4746594
Mercury (Hg)-Dissolved	<0.0050		0.0050	ug/L	07-AUG-19	09-AUG-19	R4746678
Total, Fecal Coliforms, E Coli by QT97							
Fecal Coliform by MPN QT97							
Fecal Coliforms	1410		1	MPN/100mL		31-JUL-19	R4734600
Total Coliform and E.coli by MPN QT97							
Total Coliforms	>2420		1	MPN/100mL		31-JUL-19	R4734614
Escherichia Coli	1300		1	MPN/100mL		31-JUL-19	R4734614
L2320485-3 SWQ25 - 15A							
Sampled By: CLIENT on 31-JUL-19 @ 10:20							
Matrix: WATER							
Alkalinity species as HCO3, CO3, OH							
Alkalinity, Bicarbonate							
Bicarbonate (HCO3)	1030000		1200	ug/L		02-AUG-19	
Alkalinity, Carbonate							
Carbonate (CO3)	10800		600	ug/L		02-AUG-19	
Alkalinity, Hydroxide							

* 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
L2320485-3 SWQ25 - 15A							
Sampled By: CLIENT on 31-JUL-19 @ 10:20							
Matrix: WATER							
Alkalinity, Hydroxide							
Hydroxide (OH)	<340		340	ug/L		02-AUG-19	
Alkalinity, Total (as CaCO3)							
Alkalinity, Total (as CaCO3)	865000		1000	ug/L		01-AUG-19	R4738650
Dissolved Carbons							
Dissolved Inorganic Carbon by Combustion							
Dissolved Inorganic Carbon	189000		500	ug/L		08-AUG-19	R4745360
Dissolved Organic Carbon by Combustion							
Dissolved Organic Carbon	118000		2500	ug/L		09-AUG-19	R4746810
Total Dissolved Carbon by Calculation							
Total Dissolved Carbon	308000		2500	ug/L		13-AUG-19	
Miscellaneous Parameters							
Ammonia, Total (as N)	467		20	ug/L		02-AUG-19	R4740074
Chloride (Cl)	843000		10000	ug/L		02-AUG-19	R4739256
Chromium, Hexavalent	<0.50		0.50	ug/L		06-AUG-19	R4741729
Cyanide, Total	2.8		1.0	ug/L		10-AUG-19	R4746276
Sulfate (SO4)	327000		6000	ug/L		02-AUG-19	R4739256
Dissolved Metals in Water by CRC ICPMS							
Dissolved Metals Filtration Location	FIELD					09-AUG-19	R4745527
Aluminum (Al)-Dissolved	4.1		1.0	ug/L	09-AUG-19	09-AUG-19	R4748713
Antimony (Sb)-Dissolved	0.80		0.10	ug/L	09-AUG-19	09-AUG-19	R4748713
Arsenic (As)-Dissolved	36.3		0.10	ug/L	09-AUG-19	09-AUG-19	R4748713
Barium (Ba)-Dissolved	155		0.10	ug/L	09-AUG-19	09-AUG-19	R4748713
Beryllium (Be)-Dissolved	<0.10		0.10	ug/L	09-AUG-19	09-AUG-19	R4748713
Bismuth (Bi)-Dissolved	<0.050		0.050	ug/L	09-AUG-19	09-AUG-19	R4748713
Boron (B)-Dissolved	1620		100	ug/L	09-AUG-19	20-AUG-19	R4761850
Cadmium (Cd)-Dissolved	0.0056		0.0050	ug/L	09-AUG-19	09-AUG-19	R4748713
Calcium (Ca)-Dissolved	77100		50	ug/L	09-AUG-19	09-AUG-19	R4748713
Cesium (Cs)-Dissolved	<0.010		0.010	ug/L	09-AUG-19	09-AUG-19	R4748713
Chromium (Cr)-Dissolved	1.38		0.10	ug/L	09-AUG-19	09-AUG-19	R4748713
Cobalt (Co)-Dissolved	1.99		0.10	ug/L	09-AUG-19	09-AUG-19	R4748713
Copper (Cu)-Dissolved	1.61		0.20	ug/L	09-AUG-19	09-AUG-19	R4748713
Iron (Fe)-Dissolved	34		10	ug/L	09-AUG-19	09-AUG-19	R4748713
Lead (Pb)-Dissolved	<0.050		0.050	ug/L	09-AUG-19	09-AUG-19	R4748713
Lithium (Li)-Dissolved	262		1.0	ug/L	09-AUG-19	09-AUG-19	R4748713
Magnesium (Mg)-Dissolved	269000		5.0	ug/L	09-AUG-19	09-AUG-19	R4748713
Manganese (Mn)-Dissolved	93.8		0.10	ug/L	09-AUG-19	09-AUG-19	R4748713
Molybdenum (Mo)-Dissolved	5.38		0.050	ug/L	09-AUG-19	09-AUG-19	R4748713
Nickel (Ni)-Dissolved	57.6		0.50	ug/L	09-AUG-19	09-AUG-19	R4748713
Phosphorus (P)-Dissolved	2410		30	ug/L	09-AUG-19	09-AUG-19	R4748713
Potassium (K)-Dissolved	187000		500	ug/L	09-AUG-19	20-AUG-19	R4761850
Rubidium (Rb)-Dissolved	7.52		0.20	ug/L	09-AUG-19	09-AUG-19	R4748713
Selenium (Se)-Dissolved	0.618		0.050	ug/L	09-AUG-19	09-AUG-19	R4748713
Silicon (Si)-Dissolved	5590		50	ug/L	09-AUG-19	09-AUG-19	R4748713
Silver (Ag)-Dissolved	0.018		0.010	ug/L	09-AUG-19	09-AUG-19	R4748713
Sodium (Na)-Dissolved	415000		50	ug/L	09-AUG-19	09-AUG-19	R4748713
Strontium (Sr)-Dissolved	938		0.10	ug/L	09-AUG-19	09-AUG-19	R4748713
Sulfur (S)-Dissolved	105000		500	ug/L	09-AUG-19	09-AUG-19	R4748713
Tellurium (Te)-Dissolved	<0.20		0.20	ug/L	09-AUG-19	09-AUG-19	R4748713
Thallium (Tl)-Dissolved	<0.010		0.010	ug/L	09-AUG-19	09-AUG-19	R4748713
Thorium (Th)-Dissolved	<0.10		0.10	ug/L	09-AUG-19	09-AUG-19	R4748713
Tin (Sn)-Dissolved	1.97		0.10	ug/L	09-AUG-19	09-AUG-19	R4748713

* 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
L2320485-3 SWQ25 - 15A Sampled By: CLIENT on 31-JUL-19 @ 10:20 Matrix: WATER							
Dissolved Metals in Water by CRC ICPMS							
Titanium (Ti)-Dissolved	0.89		0.30	ug/L	09-AUG-19	09-AUG-19	R4748713
Tungsten (W)-Dissolved	0.59		0.10	ug/L	09-AUG-19	09-AUG-19	R4748713
Uranium (U)-Dissolved	4.01		0.010	ug/L	09-AUG-19	09-AUG-19	R4748713
Vanadium (V)-Dissolved	7.14		0.50	ug/L	09-AUG-19	09-AUG-19	R4748713
Zinc (Zn)-Dissolved	1.9		1.0	ug/L	09-AUG-19	09-AUG-19	R4748713
Zirconium (Zr)-Dissolved	2.38		0.20	ug/L	09-AUG-19	09-AUG-19	R4748713
Mercury Dissolved							
Dissolved Mercury Filtration Location	LAB					07-AUG-19	R4746594
Mercury (Hg)-Dissolved	<0.0050		0.0050	ug/L	07-AUG-19	09-AUG-19	R4746678
Total, Fecal Coliforms, E Coli by QT97							
Fecal Coliform by MPN QT97							
Fecal Coliforms	>2420		1	MPN/100mL		31-JUL-19	R4734600
Total Coliform and E.coli by MPN QT97							
Total Coliforms	>2420		1	MPN/100mL		31-JUL-19	R4734614
Escherichia Coli	>2420		1	MPN/100mL		31-JUL-19	R4734614
L2320485-4 SWQ25 - 15B Sampled By: CLIENT on 31-JUL-19 @ 10:29 Matrix: WATER							
Alkalinity species as HCO3, CO3, OH							
Alkalinity, Bicarbonate							
Bicarbonate (HCO3)	1310000		1200	ug/L		02-AUG-19	
Alkalinity, Carbonate							
Carbonate (CO3)	26300		600	ug/L		02-AUG-19	
Alkalinity, Hydroxide							
Hydroxide (OH)	<340		340	ug/L		02-AUG-19	
Alkalinity, Total (as CaCO3)							
Alkalinity, Total (as CaCO3)	1120000		1000	ug/L		01-AUG-19	R4738650
Dissolved Carbons							
Dissolved Inorganic Carbon by Combustion							
Dissolved Inorganic Carbon	188000		500	ug/L		08-AUG-19	R4745360
Dissolved Organic Carbon by Combustion							
Dissolved Organic Carbon	123000		2500	ug/L		09-AUG-19	R4746810
Total Dissolved Carbon by Calculation							
Total Dissolved Carbon	311000		2500	ug/L		13-AUG-19	
Miscellaneous Parameters							
Ammonia, Total (as N)	521		20	ug/L		02-AUG-19	R4740074
Chloride (Cl)	834000		10000	ug/L		02-AUG-19	R4739256
Chromium, Hexavalent	<0.50		0.50	ug/L		06-AUG-19	R4741729
Fecal Coliforms	2760		10	MPN/100mL		31-JUL-19	R4734622
Cyanide, Total	2.3		1.0	ug/L		10-AUG-19	R4746276
Sulfate (SO4)	315000		6000	ug/L		02-AUG-19	R4739256
Total and E. coli, 1:10 dilution by QT97							
Total Coliforms	>24200		10	MPN/100mL		31-JUL-19	R4734628
Escherichia Coli	1840		10	MPN/100mL		31-JUL-19	R4734628
Dissolved Metals in Water by CRC ICPMS							
Dissolved Metals Filtration Location	FIELD					09-AUG-19	R4745527
Aluminum (Al)-Dissolved	4.7		1.0	ug/L	09-AUG-19	09-AUG-19	R4748713
Antimony (Sb)-Dissolved	0.76		0.10	ug/L	09-AUG-19	09-AUG-19	R4748713
Arsenic (As)-Dissolved	35.1		0.10	ug/L	09-AUG-19	09-AUG-19	R4748713
Barium (Ba)-Dissolved	151		0.10	ug/L	09-AUG-19	09-AUG-19	R4748713
Beryllium (Be)-Dissolved	<0.10		0.10	ug/L	09-AUG-19	09-AUG-19	R4748713

* 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
L2320485-4 SWQ25 - 15B Sampled By: CLIENT on 31-JUL-19 @ 10:29 Matrix: WATER							
Dissolved Metals in Water by CRC ICPMS							
Bismuth (Bi)-Dissolved	<0.050		0.050	ug/L	09-AUG-19	09-AUG-19	R4748713
Boron (B)-Dissolved	1680		100	ug/L	09-AUG-19	20-AUG-19	R4761850
Cadmium (Cd)-Dissolved	0.0091		0.0050	ug/L	09-AUG-19	09-AUG-19	R4748713
Calcium (Ca)-Dissolved	73500		50	ug/L	09-AUG-19	09-AUG-19	R4748713
Cesium (Cs)-Dissolved	<0.010		0.010	ug/L	09-AUG-19	09-AUG-19	R4748713
Chromium (Cr)-Dissolved	1.41		0.10	ug/L	09-AUG-19	09-AUG-19	R4748713
Cobalt (Co)-Dissolved	1.67		0.10	ug/L	09-AUG-19	09-AUG-19	R4748713
Copper (Cu)-Dissolved	1.40		0.20	ug/L	09-AUG-19	09-AUG-19	R4748713
Iron (Fe)-Dissolved	44		10	ug/L	09-AUG-19	09-AUG-19	R4748713
Lead (Pb)-Dissolved	0.069		0.050	ug/L	09-AUG-19	09-AUG-19	R4748713
Lithium (Li)-Dissolved	253		1.0	ug/L	09-AUG-19	09-AUG-19	R4748713
Magnesium (Mg)-Dissolved	260000		5.0	ug/L	09-AUG-19	09-AUG-19	R4748713
Manganese (Mn)-Dissolved	111		0.10	ug/L	09-AUG-19	09-AUG-19	R4748713
Molybdenum (Mo)-Dissolved	5.02		0.050	ug/L	09-AUG-19	09-AUG-19	R4748713
Nickel (Ni)-Dissolved	54.2		0.50	ug/L	09-AUG-19	09-AUG-19	R4748713
Phosphorus (P)-Dissolved	2140		30	ug/L	09-AUG-19	09-AUG-19	R4748713
Potassium (K)-Dissolved	179000		500	ug/L	09-AUG-19	20-AUG-19	R4761850
Rubidium (Rb)-Dissolved	6.75		0.20	ug/L	09-AUG-19	09-AUG-19	R4748713
Selenium (Se)-Dissolved	0.621		0.050	ug/L	09-AUG-19	09-AUG-19	R4748713
Silicon (Si)-Dissolved	5380		50	ug/L	09-AUG-19	09-AUG-19	R4748713
Silver (Ag)-Dissolved	0.019		0.010	ug/L	09-AUG-19	09-AUG-19	R4748713
Sodium (Na)-Dissolved	400000		50	ug/L	09-AUG-19	09-AUG-19	R4748713
Strontium (Sr)-Dissolved	902		0.10	ug/L	09-AUG-19	09-AUG-19	R4748713
Sulfur (S)-Dissolved	105000		500	ug/L	09-AUG-19	09-AUG-19	R4748713
Tellurium (Te)-Dissolved	<0.20		0.20	ug/L	09-AUG-19	09-AUG-19	R4748713
Thallium (Tl)-Dissolved	<0.010		0.010	ug/L	09-AUG-19	09-AUG-19	R4748713
Thorium (Th)-Dissolved	<0.10		0.10	ug/L	09-AUG-19	09-AUG-19	R4748713
Tin (Sn)-Dissolved	0.89		0.10	ug/L	09-AUG-19	09-AUG-19	R4748713
Titanium (Ti)-Dissolved	0.78		0.30	ug/L	09-AUG-19	09-AUG-19	R4748713
Tungsten (W)-Dissolved	0.62		0.10	ug/L	09-AUG-19	09-AUG-19	R4748713
Uranium (U)-Dissolved	3.94		0.010	ug/L	09-AUG-19	09-AUG-19	R4748713
Vanadium (V)-Dissolved	7.77		0.50	ug/L	09-AUG-19	09-AUG-19	R4748713
Zinc (Zn)-Dissolved	5.6		1.0	ug/L	09-AUG-19	09-AUG-19	R4748713
Zirconium (Zr)-Dissolved	2.63		0.20	ug/L	09-AUG-19	09-AUG-19	R4748713
Mercury Dissolved							
Dissolved Mercury Filtration Location	FIELD					07-AUG-19	R4746594
Mercury (Hg)-Dissolved	<0.0050		0.0050	ug/L	07-AUG-19	09-AUG-19	R4746678
L2320485-5 SWQ25 - 11C Sampled By: CLIENT on 31-JUL-19 @ 10:39 Matrix: WATER							
Alkalinity species as HCO3, CO3, OH							
Alkalinity, Bicarbonate							
Bicarbonate (HCO3)	776000		1200	ug/L		02-AUG-19	
Alkalinity, Carbonate							
Carbonate (CO3)	143000		600	ug/L		02-AUG-19	
Alkalinity, Hydroxide							
Hydroxide (OH)	<340		340	ug/L		02-AUG-19	
Alkalinity, Total (as CaCO3)							
Alkalinity, Total (as CaCO3)	873000		1000	ug/L		01-AUG-19	R4738650
Dissolved Carbons							
Dissolved Inorganic Carbon by Combustion							

* 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
L2320485-5 SWQ25 - 11C							
Sampled By: CLIENT on 31-JUL-19 @ 10:39							
Matrix: WATER							
Dissolved Inorganic Carbon by Combustion							
Dissolved Inorganic Carbon	183000		2500	ug/L		09-AUG-19	R4750870
Dissolved Organic Carbon by Combustion							
Dissolved Organic Carbon	131000		2500	ug/L		09-AUG-19	R4746810
Total Dissolved Carbon by Calculation							
Total Dissolved Carbon	314000		3500	ug/L		13-AUG-19	
Miscellaneous Parameters							
Ammonia, Total (as N)	290		10	ug/L		02-AUG-19	R4740074
Chloride (Cl)	802000		10000	ug/L		02-AUG-19	R4739256
Chromium, Hexavalent	<0.50		0.50	ug/L		06-AUG-19	R4741729
Cyanide, Total	3.6		1.0	ug/L		10-AUG-19	R4746276
Sulfate (SO4)	321000		6000	ug/L		02-AUG-19	R4739256
Dissolved Metals in Water by CRC ICPMS							
Dissolved Metals Filtration Location	FIELD					09-AUG-19	R4745527
Aluminum (Al)-Dissolved	6.7		1.0	ug/L	09-AUG-19	09-AUG-19	R4748713
Antimony (Sb)-Dissolved	0.91		0.10	ug/L	09-AUG-19	09-AUG-19	R4748713
Arsenic (As)-Dissolved	38.5		0.10	ug/L	09-AUG-19	09-AUG-19	R4748713
Barium (Ba)-Dissolved	160		0.10	ug/L	09-AUG-19	09-AUG-19	R4748713
Beryllium (Be)-Dissolved	<0.10		0.10	ug/L	09-AUG-19	09-AUG-19	R4748713
Bismuth (Bi)-Dissolved	<0.050		0.050	ug/L	09-AUG-19	09-AUG-19	R4748713
Boron (B)-Dissolved	1610		100	ug/L	09-AUG-19	20-AUG-19	R4761850
Cadmium (Cd)-Dissolved	0.0153		0.0050	ug/L	09-AUG-19	09-AUG-19	R4748713
Calcium (Ca)-Dissolved	82600		50	ug/L	09-AUG-19	09-AUG-19	R4748713
Cesium (Cs)-Dissolved	0.017		0.010	ug/L	09-AUG-19	09-AUG-19	R4748713
Chromium (Cr)-Dissolved	1.36		0.10	ug/L	09-AUG-19	09-AUG-19	R4748713
Cobalt (Co)-Dissolved	2.88		0.10	ug/L	09-AUG-19	09-AUG-19	R4748713
Copper (Cu)-Dissolved	5.85		0.20	ug/L	09-AUG-19	09-AUG-19	R4748713
Iron (Fe)-Dissolved	13		10	ug/L	09-AUG-19	09-AUG-19	R4748713
Lead (Pb)-Dissolved	0.156		0.050	ug/L	09-AUG-19	09-AUG-19	R4748713
Lithium (Li)-Dissolved	244		1.0	ug/L	09-AUG-19	09-AUG-19	R4748713
Magnesium (Mg)-Dissolved	258000		5.0	ug/L	09-AUG-19	09-AUG-19	R4748713
Manganese (Mn)-Dissolved	30.9		0.10	ug/L	09-AUG-19	09-AUG-19	R4748713
Molybdenum (Mo)-Dissolved	6.62		0.050	ug/L	09-AUG-19	09-AUG-19	R4748713
Nickel (Ni)-Dissolved	57.4		0.50	ug/L	09-AUG-19	09-AUG-19	R4748713
Phosphorus (P)-Dissolved	2180		30	ug/L	09-AUG-19	09-AUG-19	R4748713
Potassium (K)-Dissolved	184000		500	ug/L	09-AUG-19	20-AUG-19	R4761850
Rubidium (Rb)-Dissolved	8.16		0.20	ug/L	09-AUG-19	09-AUG-19	R4748713
Selenium (Se)-Dissolved	0.675		0.050	ug/L	09-AUG-19	09-AUG-19	R4748713
Silicon (Si)-Dissolved	3210		50	ug/L	09-AUG-19	09-AUG-19	R4748713
Silver (Ag)-Dissolved	0.019		0.010	ug/L	09-AUG-19	09-AUG-19	R4748713
Sodium (Na)-Dissolved	391000		50	ug/L	09-AUG-19	09-AUG-19	R4748713
Strontium (Sr)-Dissolved	945		0.10	ug/L	09-AUG-19	09-AUG-19	R4748713
Sulfur (S)-Dissolved	107000		500	ug/L	09-AUG-19	09-AUG-19	R4748713
Tellurium (Te)-Dissolved	0.21		0.20	ug/L	09-AUG-19	09-AUG-19	R4748713
Thallium (Tl)-Dissolved	<0.010		0.010	ug/L	09-AUG-19	09-AUG-19	R4748713
Thorium (Th)-Dissolved	<0.10		0.10	ug/L	09-AUG-19	09-AUG-19	R4748713
Tin (Sn)-Dissolved	1.04		0.10	ug/L	09-AUG-19	09-AUG-19	R4748713
Titanium (Ti)-Dissolved	1.03		0.30	ug/L	09-AUG-19	09-AUG-19	R4748713
Tungsten (W)-Dissolved	0.63		0.10	ug/L	09-AUG-19	09-AUG-19	R4748713
Uranium (U)-Dissolved	4.20		0.010	ug/L	09-AUG-19	09-AUG-19	R4748713
Vanadium (V)-Dissolved	12.3		0.50	ug/L	09-AUG-19	09-AUG-19	R4748713
Zinc (Zn)-Dissolved	1.8		1.0	ug/L	09-AUG-19	09-AUG-19	R4748713

* 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
L2320485-5 SWQ25 - 11C Sampled By: CLIENT on 31-JUL-19 @ 10:39 Matrix: WATER							
Dissolved Metals in Water by CRC ICPMS							
Zirconium (Zr)-Dissolved	2.59		0.20	ug/L	09-AUG-19	09-AUG-19	R4748713
Mercury Dissolved							
Dissolved Mercury Filtration Location	FIELD					07-AUG-19	R4746594
Mercury (Hg)-Dissolved	<0.0050		0.0050	ug/L	07-AUG-19	09-AUG-19	R4746678
Total, Fecal Coliforms, E Coli by QT97							
Fecal Coliform by MPN QT97							
Fecal Coliforms	308		1	MPN/100mL		31-JUL-19	R4734600
Total Coliform and E.coli by MPN QT97							
Total Coliforms	>2420		1	MPN/100mL		31-JUL-19	R4734614
Escherichia Coli	228		1	MPN/100mL		31-JUL-19	R4734614
L2320485-6 SWQ25 - 11B Sampled By: CLIENT on 31-JUL-19 @ 11:03 Matrix: WATER							
Alkalinity species as HCO3, CO3, OH							
Alkalinity, Bicarbonate							
Bicarbonate (HCO3)	696000		1200	ug/L		02-AUG-19	
Alkalinity, Carbonate							
Carbonate (CO3)	97700		600	ug/L		02-AUG-19	
Alkalinity, Hydroxide							
Hydroxide (OH)	<340		340	ug/L		02-AUG-19	
Alkalinity, Total (as CaCO3)							
Alkalinity, Total (as CaCO3)	733000		1000	ug/L		01-AUG-19	R4738650
Dissolved Carbons							
Dissolved Inorganic Carbon by Combustion							
Dissolved Inorganic Carbon	147000		2500	ug/L		09-AUG-19	R4750870
Dissolved Organic Carbon by Combustion							
Dissolved Organic Carbon	119000		2500	ug/L		09-AUG-19	R4746810
Total Dissolved Carbon by Calculation							
Total Dissolved Carbon	267000		3500	ug/L		13-AUG-19	
Miscellaneous Parameters							
Ammonia, Total (as N)	370		10	ug/L		02-AUG-19	R4740074
Chloride (Cl)	682000		10000	ug/L		02-AUG-19	R4745006
Chromium, Hexavalent	<0.50		0.50	ug/L		06-AUG-19	R4741729
Cyanide, Total	3.9		1.0	ug/L		10-AUG-19	R4746276
Sulfate (SO4)	386000		6000	ug/L		02-AUG-19	R4745006
Dissolved Metals in Water by CRC ICPMS							
Dissolved Metals Filtration Location	FIELD					09-AUG-19	R4745527
Aluminum (Al)-Dissolved	5.2		1.0	ug/L	09-AUG-19	09-AUG-19	R4748713
Antimony (Sb)-Dissolved	0.97		0.10	ug/L	09-AUG-19	09-AUG-19	R4748713
Arsenic (As)-Dissolved	34.0		0.10	ug/L	09-AUG-19	09-AUG-19	R4748713
Barium (Ba)-Dissolved	163		0.10	ug/L	09-AUG-19	09-AUG-19	R4748713
Beryllium (Be)-Dissolved	<0.10		0.10	ug/L	09-AUG-19	09-AUG-19	R4748713
Bismuth (Bi)-Dissolved	<0.050		0.050	ug/L	09-AUG-19	09-AUG-19	R4748713
Boron (B)-Dissolved	1420		100	ug/L	09-AUG-19	20-AUG-19	R4761850
Cadmium (Cd)-Dissolved	0.0130		0.0050	ug/L	09-AUG-19	09-AUG-19	R4748713
Calcium (Ca)-Dissolved	82200		50	ug/L	09-AUG-19	09-AUG-19	R4748713
Cesium (Cs)-Dissolved	0.017		0.010	ug/L	09-AUG-19	09-AUG-19	R4748713
Chromium (Cr)-Dissolved	1.28		0.10	ug/L	09-AUG-19	09-AUG-19	R4748713
Cobalt (Co)-Dissolved	3.74		0.10	ug/L	09-AUG-19	09-AUG-19	R4748713
Copper (Cu)-Dissolved	4.27		0.20	ug/L	09-AUG-19	09-AUG-19	R4748713
Iron (Fe)-Dissolved	28		10	ug/L	09-AUG-19	09-AUG-19	R4748713

* 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
L2320485-6 SWQ25 - 11B							
Sampled By: CLIENT on 31-JUL-19 @ 11:03							
Matrix: WATER							
Dissolved Metals in Water by CRC ICPMS							
Lead (Pb)-Dissolved	0.089		0.050	ug/L	09-AUG-19	09-AUG-19	R4748713
Lithium (Li)-Dissolved	236		1.0	ug/L	09-AUG-19	09-AUG-19	R4748713
Magnesium (Mg)-Dissolved	228000		5.0	ug/L	09-AUG-19	09-AUG-19	R4748713
Manganese (Mn)-Dissolved	22.1		0.10	ug/L	09-AUG-19	09-AUG-19	R4748713
Molybdenum (Mo)-Dissolved	8.16		0.050	ug/L	09-AUG-19	09-AUG-19	R4748713
Nickel (Ni)-Dissolved	52.0		0.50	ug/L	09-AUG-19	09-AUG-19	R4748713
Phosphorus (P)-Dissolved	1430		30	ug/L	09-AUG-19	09-AUG-19	R4748713
Potassium (K)-Dissolved	208000		500	ug/L	09-AUG-19	20-AUG-19	R4761850
Rubidium (Rb)-Dissolved	10.8		0.20	ug/L	09-AUG-19	09-AUG-19	R4748713
Selenium (Se)-Dissolved	0.746		0.050	ug/L	09-AUG-19	09-AUG-19	R4748713
Silicon (Si)-Dissolved	3840		50	ug/L	09-AUG-19	09-AUG-19	R4748713
Silver (Ag)-Dissolved	0.020		0.010	ug/L	09-AUG-19	09-AUG-19	R4748713
Sodium (Na)-Dissolved	318000		50	ug/L	09-AUG-19	09-AUG-19	R4748713
Strontium (Sr)-Dissolved	879		0.10	ug/L	09-AUG-19	09-AUG-19	R4748713
Sulfur (S)-Dissolved	128000		500	ug/L	09-AUG-19	09-AUG-19	R4748713
Tellurium (Te)-Dissolved	0.20		0.20	ug/L	09-AUG-19	09-AUG-19	R4748713
Thallium (Tl)-Dissolved	<0.010		0.010	ug/L	09-AUG-19	09-AUG-19	R4748713
Thorium (Th)-Dissolved	<0.10		0.10	ug/L	09-AUG-19	09-AUG-19	R4748713
Tin (Sn)-Dissolved	1.35		0.10	ug/L	09-AUG-19	09-AUG-19	R4748713
Titanium (Ti)-Dissolved	1.04		0.30	ug/L	09-AUG-19	09-AUG-19	R4748713
Tungsten (W)-Dissolved	0.54		0.10	ug/L	09-AUG-19	09-AUG-19	R4748713
Uranium (U)-Dissolved	5.37		0.010	ug/L	09-AUG-19	09-AUG-19	R4748713
Vanadium (V)-Dissolved	14.6		0.50	ug/L	09-AUG-19	09-AUG-19	R4748713
Zinc (Zn)-Dissolved	1.7		1.0	ug/L	09-AUG-19	09-AUG-19	R4748713
Zirconium (Zr)-Dissolved	3.09		0.20	ug/L	09-AUG-19	09-AUG-19	R4748713
Mercury Dissolved							
Dissolved Mercury Filtration Location	FIELD					07-AUG-19	R4746594
Mercury (Hg)-Dissolved	<0.0050		0.0050	ug/L	07-AUG-19	09-AUG-19	R4746678
Total, Fecal Coliforms, E Coli by QT97							
Fecal Coliform by MPN QT97							
Fecal Coliforms	613		1	MPN/100mL		31-JUL-19	R4734600
Total Coliform and E.coli by MPN QT97							
Total Coliforms	>2420		1	MPN/100mL		31-JUL-19	R4734614
Escherichia Coli	345		1	MPN/100mL		31-JUL-19	R4734614
L2320485-7 SWQ25 - 11A							
Sampled By: CLIENT on 31-JUL-19 @ 11:11							
Matrix: WATER							
Alkalinity species as HCO3, CO3, OH							
Alkalinity, Bicarbonate							
Bicarbonate (HCO3)	875000		1200	ug/L		02-AUG-19	
Alkalinity, Carbonate							
Carbonate (CO3)	46100		600	ug/L		02-AUG-19	
Alkalinity, Hydroxide							
Hydroxide (OH)	<340		340	ug/L		02-AUG-19	
Alkalinity, Total (as CaCO3)							
Alkalinity, Total (as CaCO3)	794000		1000	ug/L		01-AUG-19	R4738650
Dissolved Carbons							
Dissolved Inorganic Carbon by Combustion							
Dissolved Inorganic Carbon	156000		2500	ug/L		09-AUG-19	R4750870
Dissolved Organic Carbon by Combustion							
Dissolved Organic Carbon	129000		2500	ug/L		09-AUG-19	R4746810

* 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
L2320485-7 SWQ25 - 11A							
Sampled By: CLIENT on 31-JUL-19 @ 11:11							
Matrix: WATER							
Total Dissolved Carbon by Calculation							
Total Dissolved Carbon	285000		3500	ug/L		13-AUG-19	
Miscellaneous Parameters							
Ammonia, Total (as N)	1370		50	ug/L		02-AUG-19	R4740074
Chloride (Cl)	699000		10000	ug/L		02-AUG-19	R4745006
Chromium, Hexavalent	<0.50		0.50	ug/L		06-AUG-19	R4741729
Cyanide, Total	4.4		1.0	ug/L		10-AUG-19	R4746276
Sulfate (SO4)	410000		6000	ug/L		02-AUG-19	R4745006
Dissolved Metals in Water by CRC ICPMS							
Dissolved Metals Filtration Location	FIELD					09-AUG-19	R4745527
Aluminum (Al)-Dissolved	7.4		1.0	ug/L	09-AUG-19	09-AUG-19	R4748713
Antimony (Sb)-Dissolved	1.02		0.10	ug/L	09-AUG-19	09-AUG-19	R4748713
Arsenic (As)-Dissolved	38.3		0.10	ug/L	09-AUG-19	09-AUG-19	R4748713
Barium (Ba)-Dissolved	188		0.10	ug/L	09-AUG-19	09-AUG-19	R4748713
Beryllium (Be)-Dissolved	<0.10		0.10	ug/L	09-AUG-19	09-AUG-19	R4748713
Bismuth (Bi)-Dissolved	<0.050		0.050	ug/L	09-AUG-19	09-AUG-19	R4748713
Boron (B)-Dissolved	1430		100	ug/L	09-AUG-19	20-AUG-19	R4761850
Cadmium (Cd)-Dissolved	0.0152		0.0050	ug/L	09-AUG-19	09-AUG-19	R4748713
Calcium (Ca)-Dissolved	90000		50	ug/L	09-AUG-19	09-AUG-19	R4748713
Cesium (Cs)-Dissolved	0.018		0.010	ug/L	09-AUG-19	09-AUG-19	R4748713
Chromium (Cr)-Dissolved	1.23		0.10	ug/L	09-AUG-19	09-AUG-19	R4748713
Cobalt (Co)-Dissolved	4.52		0.10	ug/L	09-AUG-19	09-AUG-19	R4748713
Copper (Cu)-Dissolved	6.37		0.20	ug/L	09-AUG-19	09-AUG-19	R4748713
Iron (Fe)-Dissolved	20		10	ug/L	09-AUG-19	09-AUG-19	R4748713
Lead (Pb)-Dissolved	0.130		0.050	ug/L	09-AUG-19	09-AUG-19	R4748713
Lithium (Li)-Dissolved	238		1.0	ug/L	09-AUG-19	09-AUG-19	R4748713
Magnesium (Mg)-Dissolved	235000		5.0	ug/L	09-AUG-19	09-AUG-19	R4748713
Manganese (Mn)-Dissolved	50.6		0.10	ug/L	09-AUG-19	09-AUG-19	R4748713
Molybdenum (Mo)-Dissolved	9.01		0.050	ug/L	09-AUG-19	09-AUG-19	R4748713
Nickel (Ni)-Dissolved	55.8		0.50	ug/L	09-AUG-19	09-AUG-19	R4748713
Phosphorus (P)-Dissolved	1680		30	ug/L	09-AUG-19	09-AUG-19	R4748713
Potassium (K)-Dissolved	228000		500	ug/L	09-AUG-19	20-AUG-19	R4761850
Rubidium (Rb)-Dissolved	10.6		0.20	ug/L	09-AUG-19	09-AUG-19	R4748713
Selenium (Se)-Dissolved	0.776		0.050	ug/L	09-AUG-19	09-AUG-19	R4748713
Silicon (Si)-Dissolved	5150		50	ug/L	09-AUG-19	09-AUG-19	R4748713
Silver (Ag)-Dissolved	0.025		0.010	ug/L	09-AUG-19	09-AUG-19	R4748713
Sodium (Na)-Dissolved	322000		50	ug/L	09-AUG-19	09-AUG-19	R4748713
Strontium (Sr)-Dissolved	937		0.10	ug/L	09-AUG-19	09-AUG-19	R4748713
Sulfur (S)-Dissolved	137000		500	ug/L	09-AUG-19	09-AUG-19	R4748713
Tellurium (Te)-Dissolved	<0.20		0.20	ug/L	09-AUG-19	09-AUG-19	R4748713
Thallium (Tl)-Dissolved	<0.010		0.010	ug/L	09-AUG-19	09-AUG-19	R4748713
Thorium (Th)-Dissolved	<0.10		0.10	ug/L	09-AUG-19	09-AUG-19	R4748713
Tin (Sn)-Dissolved	1.28		0.10	ug/L	09-AUG-19	09-AUG-19	R4748713
Titanium (Ti)-Dissolved	1.26		0.30	ug/L	09-AUG-19	09-AUG-19	R4748713
Tungsten (W)-Dissolved	0.59		0.10	ug/L	09-AUG-19	09-AUG-19	R4748713
Uranium (U)-Dissolved	5.75		0.010	ug/L	09-AUG-19	09-AUG-19	R4748713
Vanadium (V)-Dissolved	18.5		0.50	ug/L	09-AUG-19	09-AUG-19	R4748713
Zinc (Zn)-Dissolved	2.3		1.0	ug/L	09-AUG-19	09-AUG-19	R4748713
Zirconium (Zr)-Dissolved	3.44		0.20	ug/L	09-AUG-19	09-AUG-19	R4748713
Mercury Dissolved							
Dissolved Mercury Filtration Location	FIELD					07-AUG-19	R4746594
Mercury (Hg)-Dissolved	<0.0050		0.0050	ug/L	07-AUG-19	09-AUG-19	R4746678

* 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
L2320485-7 SWQ25 - 11A Sampled By: CLIENT on 31-JUL-19 @ 11:11 Matrix: WATER Total, Fecal Coliforms, E Coli by QT97 Fecal Coliform by MPN QT97 Fecal Coliforms	240		1	MPN/100mL		31-JUL-19	R4734600
Total Coliform and E.coli by MPN QT97 Total Coliforms	>2420		1	MPN/100mL		31-JUL-19	R4734614
Escherichia Coli	326		1	MPN/100mL		31-JUL-19	R4734614
L2320485-8 SWQ25 - 100 Sampled By: CLIENT on 31-JUL-19 @ 12:00 Matrix: WATER Alkalinity species as HCO3, CO3, OH Alkalinity, Bicarbonate Bicarbonate (HCO3)	1050000		1200	ug/L		02-AUG-19	
Alkalinity, Carbonate Carbonate (CO3)	<600		600	ug/L		02-AUG-19	
Alkalinity, Hydroxide Hydroxide (OH)	<340		340	ug/L		02-AUG-19	
Alkalinity, Total (as CaCO3) Alkalinity, Total (as CaCO3)	864000		1000	ug/L		01-AUG-19	R4738650
Dissolved Carbons Dissolved Inorganic Carbon by Combustion Dissolved Inorganic Carbon	177000		2500	ug/L		09-AUG-19	R4750870
Dissolved Organic Carbon by Combustion Dissolved Organic Carbon	125000		2500	ug/L		09-AUG-19	R4746810
Total Dissolved Carbon by Calculation Total Dissolved Carbon	302000		3500	ug/L		13-AUG-19	
Miscellaneous Parameters Ammonia, Total (as N)	160		10	ug/L		02-AUG-19	R4740074
Chloride (Cl)	795000		10000	ug/L		02-AUG-19	R4745006
Chromium, Hexavalent	<0.50		0.50	ug/L		06-AUG-19	R4741729
Cyanide, Total	2.8		1.0	ug/L		10-AUG-19	R4746276
Sulfate (SO4)	257000		6000	ug/L		02-AUG-19	R4745006
Dissolved Metals in Water by CRC ICPMS Dissolved Metals Filtration Location	FIELD					09-AUG-19	R4745527
Aluminum (Al)-Dissolved	3.2		1.0	ug/L	09-AUG-19	09-AUG-19	R4748713
Antimony (Sb)-Dissolved	0.66		0.10	ug/L	09-AUG-19	09-AUG-19	R4748713
Arsenic (As)-Dissolved	30.0		0.10	ug/L	09-AUG-19	09-AUG-19	R4748713
Barium (Ba)-Dissolved	165		0.10	ug/L	09-AUG-19	09-AUG-19	R4748713
Beryllium (Be)-Dissolved	<0.10		0.10	ug/L	09-AUG-19	09-AUG-19	R4748713
Bismuth (Bi)-Dissolved	<0.050		0.050	ug/L	09-AUG-19	09-AUG-19	R4748713
Boron (B)-Dissolved	1430		100	ug/L	09-AUG-19	20-AUG-19	R4761850
Cadmium (Cd)-Dissolved	0.0316		0.0050	ug/L	09-AUG-19	09-AUG-19	R4748713
Calcium (Ca)-Dissolved	90400		50	ug/L	09-AUG-19	09-AUG-19	R4748713
Cesium (Cs)-Dissolved	0.013		0.010	ug/L	09-AUG-19	09-AUG-19	R4748713
Chromium (Cr)-Dissolved	1.29		0.10	ug/L	09-AUG-19	09-AUG-19	R4748713
Cobalt (Co)-Dissolved	1.91		0.10	ug/L	09-AUG-19	09-AUG-19	R4748713
Copper (Cu)-Dissolved	1.23		0.20	ug/L	09-AUG-19	09-AUG-19	R4748713
Iron (Fe)-Dissolved	92		10	ug/L	09-AUG-19	09-AUG-19	R4748713
Lead (Pb)-Dissolved	<0.050		0.050	ug/L	09-AUG-19	09-AUG-19	R4748713
Lithium (Li)-Dissolved	246		1.0	ug/L	09-AUG-19	09-AUG-19	R4748713
Magnesium (Mg)-Dissolved	253000		5.0	ug/L	09-AUG-19	09-AUG-19	R4748713
Manganese (Mn)-Dissolved	133		0.10	ug/L	09-AUG-19	09-AUG-19	R4748713
Molybdenum (Mo)-Dissolved	4.92		0.050	ug/L	09-AUG-19	09-AUG-19	R4748713

* 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
L2320485-8 SWQ25 - 100							
Sampled By: CLIENT on 31-JUL-19 @ 12:00							
Matrix: WATER							
Dissolved Metals in Water by CRC ICPMS							
Nickel (Ni)-Dissolved	55.5		0.50	ug/L	09-AUG-19	09-AUG-19	R4748713
Phosphorus (P)-Dissolved	1630		30	ug/L	09-AUG-19	09-AUG-19	R4748713
Potassium (K)-Dissolved	157000		500	ug/L	09-AUG-19	20-AUG-19	R4761850
Rubidium (Rb)-Dissolved	5.33		0.20	ug/L	09-AUG-19	09-AUG-19	R4748713
Selenium (Se)-Dissolved	0.559		0.050	ug/L	09-AUG-19	09-AUG-19	R4748713
Silicon (Si)-Dissolved	2990		50	ug/L	09-AUG-19	09-AUG-19	R4748713
Silver (Ag)-Dissolved	0.014		0.010	ug/L	09-AUG-19	09-AUG-19	R4748713
Sodium (Na)-Dissolved	381000		50	ug/L	09-AUG-19	09-AUG-19	R4748713
Strontium (Sr)-Dissolved	958		0.10	ug/L	09-AUG-19	09-AUG-19	R4748713
Sulfur (S)-Dissolved	90800		500	ug/L	09-AUG-19	09-AUG-19	R4748713
Tellurium (Te)-Dissolved	<0.20		0.20	ug/L	09-AUG-19	09-AUG-19	R4748713
Thallium (Tl)-Dissolved	<0.010		0.010	ug/L	09-AUG-19	09-AUG-19	R4748713
Thorium (Th)-Dissolved	<0.10		0.10	ug/L	09-AUG-19	09-AUG-19	R4748713
Tin (Sn)-Dissolved	1.73		0.10	ug/L	09-AUG-19	09-AUG-19	R4748713
Titanium (Ti)-Dissolved	0.30		0.30	ug/L	09-AUG-19	09-AUG-19	R4748713
Tungsten (W)-Dissolved	0.35		0.10	ug/L	09-AUG-19	09-AUG-19	R4748713
Uranium (U)-Dissolved	5.21		0.010	ug/L	09-AUG-19	09-AUG-19	R4748713
Vanadium (V)-Dissolved	3.86		0.50	ug/L	09-AUG-19	09-AUG-19	R4748713
Zinc (Zn)-Dissolved	2.8		1.0	ug/L	09-AUG-19	09-AUG-19	R4748713
Zirconium (Zr)-Dissolved	1.35		0.20	ug/L	09-AUG-19	09-AUG-19	R4748713
Mercury Dissolved							
Dissolved Mercury Filtration Location	FIELD					07-AUG-19	R4746594
Mercury (Hg)-Dissolved	<0.0050		0.0050	ug/L	07-AUG-19	09-AUG-19	R4746678
Total, Fecal Coliforms, E Coli by QT97							
Fecal Coliform by MPN QT97							
Fecal Coliforms	792		1	MPN/100mL		31-JUL-19	R4734600
Total Coliform and E.coli by MPN QT97							
Total Coliforms	>2420		1	MPN/100mL		31-JUL-19	R4734614
Escherichia Coli	1200		1	MPN/100mL		31-JUL-19	R4734614
L2320485-9 SWQ25 - FIELD BLANK							
Sampled By: CLIENT on 31-JUL-19 @ 09:00							
Matrix: WATER							
Alkalinity species as HCO3, CO3, OH							
Alkalinity, Bicarbonate							
Bicarbonate (HCO3)	1800		1200	ug/L		02-AUG-19	
Alkalinity, Carbonate							
Carbonate (CO3)	<600		600	ug/L		02-AUG-19	
Alkalinity, Hydroxide							
Hydroxide (OH)	<340		340	ug/L		02-AUG-19	
Alkalinity, Total (as CaCO3)							
Alkalinity, Total (as CaCO3)	1500		1000	ug/L		01-AUG-19	R4738650
Dissolved Carbons							
Dissolved Inorganic Carbon by Combustion							
Dissolved Inorganic Carbon	<500		500	ug/L		08-AUG-19	R4745360
Dissolved Organic Carbon by Combustion							
Dissolved Organic Carbon	<500		500	ug/L		09-AUG-19	R4746810
Total Dissolved Carbon by Calculation							
Total Dissolved Carbon	<1000		1000	ug/L		13-AUG-19	
Miscellaneous Parameters							
Ammonia, Total (as N)	<10		10	ug/L		06-AUG-19	R4742697
Chloride (Cl)	<500		500	ug/L		02-AUG-19	R4745006

* 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
L2320485-9 SWQ25 - FIELD BLANK							
Sampled By: CLIENT on 31-JUL-19 @ 09:00							
Matrix: WATER							
Chromium, Hexavalent	<0.50		0.50	ug/L		06-AUG-19	R4741729
Cyanide, Total	<1.0		1.0	ug/L		10-AUG-19	R4746276
Sulfate (SO4)	<300		300	ug/L		02-AUG-19	R4745006
Dissolved Metals in Water by CRC ICPMS							
Dissolved Metals Filtration Location	FIELD					09-AUG-19	R4745527
Aluminum (Al)-Dissolved	<1.0		1.0	ug/L	09-AUG-19	09-AUG-19	R4748713
Antimony (Sb)-Dissolved	<0.10		0.10	ug/L	09-AUG-19	09-AUG-19	R4748713
Arsenic (As)-Dissolved	<0.10		0.10	ug/L	09-AUG-19	09-AUG-19	R4748713
Barium (Ba)-Dissolved	<0.10		0.10	ug/L	09-AUG-19	20-AUG-19	R4761850
Beryllium (Be)-Dissolved	<0.10		0.10	ug/L	09-AUG-19	09-AUG-19	R4748713
Bismuth (Bi)-Dissolved	<0.050		0.050	ug/L	09-AUG-19	09-AUG-19	R4748713
Boron (B)-Dissolved	13		10	ug/L	09-AUG-19	20-AUG-19	R4761850
Cadmium (Cd)-Dissolved	<0.0050		0.0050	ug/L	09-AUG-19	09-AUG-19	R4748713
Calcium (Ca)-Dissolved	77		50	ug/L	09-AUG-19	20-AUG-19	R4761850
Cesium (Cs)-Dissolved	<0.010		0.010	ug/L	09-AUG-19	09-AUG-19	R4748713
Chromium (Cr)-Dissolved	<0.10		0.10	ug/L	09-AUG-19	09-AUG-19	R4748713
Cobalt (Co)-Dissolved	<0.10		0.10	ug/L	09-AUG-19	09-AUG-19	R4748713
Copper (Cu)-Dissolved	0.20		0.20	ug/L	09-AUG-19	09-AUG-19	R4748713
Iron (Fe)-Dissolved	<10		10	ug/L	09-AUG-19	09-AUG-19	R4748713
Lead (Pb)-Dissolved	<0.050		0.050	ug/L	09-AUG-19	09-AUG-19	R4748713
Lithium (Li)-Dissolved	<1.0		1.0	ug/L	09-AUG-19	09-AUG-19	R4748713
Magnesium (Mg)-Dissolved	31.5		5.0	ug/L	09-AUG-19	20-AUG-19	R4761850
Manganese (Mn)-Dissolved	<0.10		0.10	ug/L	09-AUG-19	09-AUG-19	R4748713
Molybdenum (Mo)-Dissolved	<0.050		0.050	ug/L	09-AUG-19	09-AUG-19	R4748713
Nickel (Ni)-Dissolved	<0.50		0.50	ug/L	09-AUG-19	09-AUG-19	R4748713
Phosphorus (P)-Dissolved	<30		30	ug/L	09-AUG-19	09-AUG-19	R4748713
Potassium (K)-Dissolved	<50		50	ug/L	09-AUG-19	20-AUG-19	R4761850
Rubidium (Rb)-Dissolved	<0.20		0.20	ug/L	09-AUG-19	09-AUG-19	R4748713
Selenium (Se)-Dissolved	<0.050		0.050	ug/L	09-AUG-19	09-AUG-19	R4748713
Silicon (Si)-Dissolved	<50		50	ug/L	09-AUG-19	09-AUG-19	R4748713
Silver (Ag)-Dissolved	<0.010		0.010	ug/L	09-AUG-19	09-AUG-19	R4748713
Sodium (Na)-Dissolved	58		50	ug/L	09-AUG-19	20-AUG-19	R4761850
Strontium (Sr)-Dissolved	0.13		0.10	ug/L	09-AUG-19	20-AUG-19	R4761850
Sulfur (S)-Dissolved	<500		500	ug/L	09-AUG-19	09-AUG-19	R4748713
Tellurium (Te)-Dissolved	<0.20		0.20	ug/L	09-AUG-19	09-AUG-19	R4748713
Thallium (Tl)-Dissolved	<0.010		0.010	ug/L	09-AUG-19	09-AUG-19	R4748713
Thorium (Th)-Dissolved	<0.10		0.10	ug/L	09-AUG-19	09-AUG-19	R4748713
Tin (Sn)-Dissolved	3.48		0.10	ug/L	09-AUG-19	09-AUG-19	R4748713
Titanium (Ti)-Dissolved	<0.30		0.30	ug/L	09-AUG-19	09-AUG-19	R4748713
Tungsten (W)-Dissolved	<0.10		0.10	ug/L	09-AUG-19	09-AUG-19	R4748713
Uranium (U)-Dissolved	<0.010		0.010	ug/L	09-AUG-19	09-AUG-19	R4748713
Vanadium (V)-Dissolved	<0.50		0.50	ug/L	09-AUG-19	09-AUG-19	R4748713
Zinc (Zn)-Dissolved	<1.0		1.0	ug/L	09-AUG-19	09-AUG-19	R4748713
Zirconium (Zr)-Dissolved	<0.20		0.20	ug/L	09-AUG-19	09-AUG-19	R4748713
Mercury Dissolved							
Dissolved Mercury Filtration Location	FIELD					07-AUG-19	R4746594
Mercury (Hg)-Dissolved	<0.0050		0.0050	ug/L	07-AUG-19	09-AUG-19	R4746678
Total, Fecal Coliforms, E Coli by QT97							
Fecal Coliform by MPN QT97							
Fecal Coliforms	<1		1	MPN/100mL		31-JUL-19	R4734600
Total Coliform and E.coli by MPN QT97							
Total Coliforms	<1		1	MPN/100mL		31-JUL-19	R4734614

* 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
L2320485-9 SWQ25 - FIELD BLANK Sampled By: CLIENT on 31-JUL-19 @ 09:00 Matrix: WATER Total Coliform and E.coli by MPN QT97 Escherichia Coli	<1		1	MPN/100mL		31-JUL-19	R4734614
L2320485-10 SWQ25 - TRIP BLANK Sampled By: CLIENT on 31-JUL-19 @ 09:00 Matrix: WATER Alkalinity species as HCO3, CO3, OH Alkalinity, Bicarbonate Bicarbonate (HCO3)	<1200		1200	ug/L		02-AUG-19	
Alkalinity, Carbonate Carbonate (CO3)	<600		600	ug/L		02-AUG-19	
Alkalinity, Hydroxide Hydroxide (OH)	<340		340	ug/L		02-AUG-19	
Alkalinity, Total (as CaCO3) Alkalinity, Total (as CaCO3)	<1000		1000	ug/L		01-AUG-19	R4738650
Dissolved Carbons Dissolved Inorganic Carbon by Combustion Dissolved Inorganic Carbon	<500		500	ug/L		08-AUG-19	R4745360
Dissolved Organic Carbon by Combustion Dissolved Organic Carbon	<500		500	ug/L		09-AUG-19	R4746810
Total Dissolved Carbon by Calculation Total Dissolved Carbon	<1000		1000	ug/L		13-AUG-19	
Miscellaneous Parameters Ammonia, Total (as N)	<10		10	ug/L		02-AUG-19	R4740074
Chloride (Cl)	<500		500	ug/L		02-AUG-19	R4745006
Chromium, Hexavalent	<0.50		0.50	ug/L		06-AUG-19	R4741729
Cyanide, Total	<1.0		1.0	ug/L		10-AUG-19	R4746276
Sulfate (SO4)	<300		300	ug/L		02-AUG-19	R4745006
Dissolved Metals in Water by CRC ICPMS Dissolved Metals Filtration Location	FIELD					09-AUG-19	R4745527
Aluminum (Al)-Dissolved	<1.0		1.0	ug/L	09-AUG-19	09-AUG-19	R4748713
Antimony (Sb)-Dissolved	<0.10		0.10	ug/L	09-AUG-19	09-AUG-19	R4748713
Arsenic (As)-Dissolved	<0.10		0.10	ug/L	09-AUG-19	09-AUG-19	R4748713
Barium (Ba)-Dissolved	<0.10		0.10	ug/L	09-AUG-19	20-AUG-19	R4761850
Beryllium (Be)-Dissolved	<0.10		0.10	ug/L	09-AUG-19	09-AUG-19	R4748713
Bismuth (Bi)-Dissolved	<0.050		0.050	ug/L	09-AUG-19	09-AUG-19	R4748713
Boron (B)-Dissolved	13		10	ug/L	09-AUG-19	20-AUG-19	R4761850
Cadmium (Cd)-Dissolved	<0.0050		0.0050	ug/L	09-AUG-19	09-AUG-19	R4748713
Calcium (Ca)-Dissolved	<50		50	ug/L	09-AUG-19	20-AUG-19	R4761850
Cesium (Cs)-Dissolved	<0.010		0.010	ug/L	09-AUG-19	09-AUG-19	R4748713
Chromium (Cr)-Dissolved	<0.10		0.10	ug/L	09-AUG-19	09-AUG-19	R4748713
Cobalt (Co)-Dissolved	<0.10		0.10	ug/L	09-AUG-19	09-AUG-19	R4748713
Copper (Cu)-Dissolved	<0.20		0.20	ug/L	09-AUG-19	09-AUG-19	R4748713
Iron (Fe)-Dissolved	<10		10	ug/L	09-AUG-19	09-AUG-19	R4748713
Lead (Pb)-Dissolved	<0.050		0.050	ug/L	09-AUG-19	09-AUG-19	R4748713
Lithium (Li)-Dissolved	<1.0		1.0	ug/L	09-AUG-19	09-AUG-19	R4748713
Magnesium (Mg)-Dissolved	<5.0		5.0	ug/L	09-AUG-19	20-AUG-19	R4761850
Manganese (Mn)-Dissolved	<0.10		0.10	ug/L	09-AUG-19	09-AUG-19	R4748713
Molybdenum (Mo)-Dissolved	<0.050		0.050	ug/L	09-AUG-19	09-AUG-19	R4748713
Nickel (Ni)-Dissolved	<0.50		0.50	ug/L	09-AUG-19	09-AUG-19	R4748713
Phosphorus (P)-Dissolved	<30		30	ug/L	09-AUG-19	09-AUG-19	R4748713
Potassium (K)-Dissolved	<50		50	ug/L	09-AUG-19	20-AUG-19	R4761850
Rubidium (Rb)-Dissolved	<0.20		0.20	ug/L	09-AUG-19	09-AUG-19	R4748713

* 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
L2320485-10 SWQ25 - TRIP BLANK Sampled By: CLIENT on 31-JUL-19 @ 09:00 Matrix: WATER							
Dissolved Metals in Water by CRC ICPMS							
Selenium (Se)-Dissolved	<0.050		0.050	ug/L	09-AUG-19	09-AUG-19	R4748713
Silicon (Si)-Dissolved	<50		50	ug/L	09-AUG-19	09-AUG-19	R4748713
Silver (Ag)-Dissolved	<0.010		0.010	ug/L	09-AUG-19	09-AUG-19	R4748713
Sodium (Na)-Dissolved	<50		50	ug/L	09-AUG-19	20-AUG-19	R4761850
Strontium (Sr)-Dissolved	<0.10		0.10	ug/L	09-AUG-19	20-AUG-19	R4761850
Sulfur (S)-Dissolved	<500		500	ug/L	09-AUG-19	09-AUG-19	R4748713
Tellurium (Te)-Dissolved	<0.20		0.20	ug/L	09-AUG-19	09-AUG-19	R4748713
Thallium (Tl)-Dissolved	<0.010		0.010	ug/L	09-AUG-19	09-AUG-19	R4748713
Thorium (Th)-Dissolved	<0.10		0.10	ug/L	09-AUG-19	09-AUG-19	R4748713
Tin (Sn)-Dissolved	<0.10		0.10	ug/L	09-AUG-19	09-AUG-19	R4748713
Titanium (Ti)-Dissolved	<0.30		0.30	ug/L	09-AUG-19	09-AUG-19	R4748713
Tungsten (W)-Dissolved	<0.10		0.10	ug/L	09-AUG-19	09-AUG-19	R4748713
Uranium (U)-Dissolved	<0.010		0.010	ug/L	09-AUG-19	09-AUG-19	R4748713
Vanadium (V)-Dissolved	<0.50		0.50	ug/L	09-AUG-19	09-AUG-19	R4748713
Zinc (Zn)-Dissolved	<1.0		1.0	ug/L	09-AUG-19	09-AUG-19	R4748713
Zirconium (Zr)-Dissolved	<0.20		0.20	ug/L	09-AUG-19	09-AUG-19	R4748713
Mercury Dissolved							
Dissolved Mercury Filtration Location	FIELD					07-AUG-19	R4746594
Mercury (Hg)-Dissolved	<0.0050		0.0050	ug/L	07-AUG-19	09-AUG-19	R4746678
Total, Fecal Coliforms, E Coli by QT97							
Fecal Coliform by MPN QT97							
Fecal Coliforms	<1		1	MPN/100mL		31-JUL-19	R4734600
Total Coliform and E.coli by MPN QT97							
Total Coliforms	<1		1	MPN/100mL		31-JUL-19	R4734614
Escherichia Coli	<1		1	MPN/100mL		31-JUL-19	R4734614
L2320485-11 SWQ25 - 6 Sampled By: CLIENT on 31-JUL-19 @ 11:45 Matrix: WATER							
Alkalinity species as HCO3, CO3, OH							
Alkalinity, Bicarbonate							
Bicarbonate (HCO3)	3500000		1200	ug/L		02-AUG-19	
Alkalinity, Carbonate							
Carbonate (CO3)	<600		600	ug/L		02-AUG-19	
Alkalinity, Hydroxide							
Hydroxide (OH)	<340		340	ug/L		02-AUG-19	
Alkalinity, Total (as CaCO3)							
Alkalinity, Total (as CaCO3)	2870000		1000	ug/L		01-AUG-19	R4738650
Dissolved Carbons							
Dissolved Inorganic Carbon by Combustion							
Dissolved Inorganic Carbon	365000		2500	ug/L		09-AUG-19	R4750870
Dissolved Organic Carbon by Combustion							
Dissolved Organic Carbon	1460000		50000	ug/L		12-AUG-19	R4753035
Total Dissolved Carbon by Calculation							
Total Dissolved Carbon	1820000		50000	ug/L		14-AUG-19	
Miscellaneous Parameters							
Ammonia, Total (as N)	183000		5000	ug/L		02-AUG-19	R4740074
Chloride (Cl)	1690000		25000	ug/L		02-AUG-19	R4745006
Chromium, Hexavalent	2.05	SFT	0.50	ug/L		06-AUG-19	R4741729
Fecal Coliforms	6130		10	MPN/100mL		31-JUL-19	R4734622
Cyanide, Total	7.9		1.0	ug/L		10-AUG-19	R4746276
Sulfate (SO4)	<15000	DLM	15000	ug/L		02-AUG-19	R4745006

* 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
L2320485-11 SWQ25 - 6							
Sampled By: CLIENT on 31-JUL-19 @ 11:45							
Matrix: WATER							
Total and E. coli, 1:10 dilution by QT97							
Total Coliforms	>24200		10	MPN/100mL		31-JUL-19	R4734628
Escherichia Coli	5480		10	MPN/100mL		31-JUL-19	R4734628
Dissolved Metals in Water by CRC ICPMS							
Dissolved Metals Filtration Location	FIELD					09-AUG-19	R4745527
Aluminum (Al)-Dissolved	61.9		1.0	ug/L	09-AUG-19	09-AUG-19	R4748713
Antimony (Sb)-Dissolved	3.62		0.10	ug/L	09-AUG-19	09-AUG-19	R4748713
Arsenic (As)-Dissolved	28.4		0.10	ug/L	09-AUG-19	09-AUG-19	R4748713
Barium (Ba)-Dissolved	155		0.10	ug/L	09-AUG-19	09-AUG-19	R4748713
Beryllium (Be)-Dissolved	0.51		0.10	ug/L	09-AUG-19	09-AUG-19	R4748713
Bismuth (Bi)-Dissolved	<0.050		0.050	ug/L	09-AUG-19	09-AUG-19	R4748713
Boron (B)-Dissolved	9150		100	ug/L	09-AUG-19	20-AUG-19	R4761850
Cadmium (Cd)-Dissolved	0.0190		0.0050	ug/L	09-AUG-19	09-AUG-19	R4748713
Calcium (Ca)-Dissolved	117000		50	ug/L	09-AUG-19	09-AUG-19	R4748713
Cesium (Cs)-Dissolved	0.091		0.010	ug/L	09-AUG-19	09-AUG-19	R4748713
Chromium (Cr)-Dissolved	75.9		0.10	ug/L	09-AUG-19	09-AUG-19	R4748713
Cobalt (Co)-Dissolved	19.6		0.10	ug/L	09-AUG-19	09-AUG-19	R4748713
Copper (Cu)-Dissolved	0.71		0.20	ug/L	09-AUG-19	09-AUG-19	R4748713
Iron (Fe)-Dissolved	448		10	ug/L	09-AUG-19	09-AUG-19	R4748713
Lead (Pb)-Dissolved	0.496		0.050	ug/L	09-AUG-19	09-AUG-19	R4748713
Lithium (Li)-Dissolved	462		10	ug/L	09-AUG-19	20-AUG-19	R4761850
Magnesium (Mg)-Dissolved	392000		5.0	ug/L	09-AUG-19	09-AUG-19	R4748713
Manganese (Mn)-Dissolved	196		0.10	ug/L	09-AUG-19	09-AUG-19	R4748713
Molybdenum (Mo)-Dissolved	2.31		0.050	ug/L	09-AUG-19	09-AUG-19	R4748713
Nickel (Ni)-Dissolved	225		0.50	ug/L	09-AUG-19	09-AUG-19	R4748713
Phosphorus (P)-Dissolved	459		30	ug/L	09-AUG-19	09-AUG-19	R4748713
Potassium (K)-Dissolved	324000		500	ug/L	09-AUG-19	20-AUG-19	R4761850
Rubidium (Rb)-Dissolved	83.5		0.20	ug/L	09-AUG-19	09-AUG-19	R4748713
Selenium (Se)-Dissolved	2.04		0.050	ug/L	09-AUG-19	09-AUG-19	R4748713
Silicon (Si)-Dissolved	26400		50	ug/L	09-AUG-19	09-AUG-19	R4748713
Silver (Ag)-Dissolved	0.112		0.010	ug/L	09-AUG-19	09-AUG-19	R4748713
Sodium (Na)-Dissolved	1260000		500	ug/L	09-AUG-19	20-AUG-19	R4761850
Strontium (Sr)-Dissolved	1660		1.0	ug/L	09-AUG-19	20-AUG-19	R4761850
Sulfur (S)-Dissolved	24300		500	ug/L	09-AUG-19	09-AUG-19	R4748713
Tellurium (Te)-Dissolved	<0.20		0.20	ug/L	09-AUG-19	09-AUG-19	R4748713
Thallium (Tl)-Dissolved	<0.010		0.010	ug/L	09-AUG-19	09-AUG-19	R4748713
Thorium (Th)-Dissolved	<0.10		0.10	ug/L	09-AUG-19	09-AUG-19	R4748713
Tin (Sn)-Dissolved	3.04		0.10	ug/L	09-AUG-19	09-AUG-19	R4748713
Titanium (Ti)-Dissolved	39.6		0.30	ug/L	09-AUG-19	09-AUG-19	R4748713
Tungsten (W)-Dissolved	1.92		0.10	ug/L	09-AUG-19	09-AUG-19	R4748713
Uranium (U)-Dissolved	1.36		0.010	ug/L	09-AUG-19	09-AUG-19	R4748713
Vanadium (V)-Dissolved	30.1		0.50	ug/L	09-AUG-19	09-AUG-19	R4748713
Zinc (Zn)-Dissolved	2.6		1.0	ug/L	09-AUG-19	09-AUG-19	R4748713
Zirconium (Zr)-Dissolved	28.9		0.20	ug/L	09-AUG-19	09-AUG-19	R4748713
Mercury Dissolved							
Dissolved Mercury Filtration Location	FIELD					07-AUG-19	R4746594
Mercury (Hg)-Dissolved	<0.025	DLM	0.025	ug/L	07-AUG-19	09-AUG-19	R4746678
L2320485-12 SWQ25 - 8							
Sampled By: CLIENT on 31-JUL-19 @ 12:01							
Matrix: WATER							
Alkalinity species as HCO3, CO3, OH							
Alkalinity, Bicarbonate							

* 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
L2320485-12 SWQ25 - 8							
Sampled By: CLIENT on 31-JUL-19 @ 12:01							
Matrix: WATER							
Alkalinity, Bicarbonate							
Bicarbonate (HCO3)	790000		1200	ug/L		02-AUG-19	
Alkalinity, Carbonate							
Carbonate (CO3)	23400		600	ug/L		02-AUG-19	
Alkalinity, Hydroxide							
Hydroxide (OH)	<340		340	ug/L		02-AUG-19	
Alkalinity, Total (as CaCO3)							
Alkalinity, Total (as CaCO3)	686000		1000	ug/L		01-AUG-19	R4738650
Dissolved Carbons							
Dissolved Inorganic Carbon by Combustion							
Dissolved Inorganic Carbon	135000		2500	ug/L		09-AUG-19	R4750870
Dissolved Organic Carbon by Combustion							
Dissolved Organic Carbon	153000		2500	ug/L		09-AUG-19	R4746810
Total Dissolved Carbon by Calculation							
Total Dissolved Carbon	288000		3500	ug/L		13-AUG-19	
Miscellaneous Parameters							
Ammonia, Total (as N)	1060		50	ug/L		02-AUG-19	R4740074
Chloride (Cl)	478000		10000	ug/L		02-AUG-19	R4745006
Chromium, Hexavalent	<0.50		0.50	ug/L		06-AUG-19	R4741729
Fecal Coliforms	1870		10	MPN/100mL		31-JUL-19	R4734622
Cyanide, Total	6.3		1.0	ug/L		10-AUG-19	R4746276
Sulfate (SO4)	350000		6000	ug/L		02-AUG-19	R4745006
Total and E. coli, 1:10 dilution by QT97							
Total Coliforms	>24200		10	MPN/100mL		31-JUL-19	R4734628
Escherichia Coli	1470		10	MPN/100mL		31-JUL-19	R4734628
Dissolved Metals in Water by CRC ICPMS							
Dissolved Metals Filtration Location	FIELD					09-AUG-19	R4745527
Aluminum (Al)-Dissolved	5.1		1.0	ug/L	09-AUG-19	09-AUG-19	R4748713
Antimony (Sb)-Dissolved	0.79		0.10	ug/L	09-AUG-19	09-AUG-19	R4748713
Arsenic (As)-Dissolved	23.2		0.10	ug/L	09-AUG-19	09-AUG-19	R4748713
Barium (Ba)-Dissolved	85.9		0.10	ug/L	09-AUG-19	09-AUG-19	R4748713
Beryllium (Be)-Dissolved	<0.10		0.10	ug/L	09-AUG-19	09-AUG-19	R4748713
Bismuth (Bi)-Dissolved	<0.050		0.050	ug/L	09-AUG-19	09-AUG-19	R4748713
Boron (B)-Dissolved	720		100	ug/L	09-AUG-19	20-AUG-19	R4761850
Cadmium (Cd)-Dissolved	0.0224		0.0050	ug/L	09-AUG-19	09-AUG-19	R4748713
Calcium (Ca)-Dissolved	133000		50	ug/L	09-AUG-19	09-AUG-19	R4748713
Cesium (Cs)-Dissolved	0.020		0.010	ug/L	09-AUG-19	09-AUG-19	R4748713
Chromium (Cr)-Dissolved	0.97		0.10	ug/L	09-AUG-19	09-AUG-19	R4748713
Cobalt (Co)-Dissolved	4.88		0.10	ug/L	09-AUG-19	09-AUG-19	R4748713
Copper (Cu)-Dissolved	7.16		0.20	ug/L	09-AUG-19	09-AUG-19	R4748713
Iron (Fe)-Dissolved	157		10	ug/L	09-AUG-19	09-AUG-19	R4748713
Lead (Pb)-Dissolved	0.414		0.050	ug/L	09-AUG-19	09-AUG-19	R4748713
Lithium (Li)-Dissolved	205		1.0	ug/L	09-AUG-19	09-AUG-19	R4748713
Magnesium (Mg)-Dissolved	165000		5.0	ug/L	09-AUG-19	09-AUG-19	R4748713
Manganese (Mn)-Dissolved	492		0.10	ug/L	09-AUG-19	09-AUG-19	R4748713
Molybdenum (Mo)-Dissolved	7.60		0.050	ug/L	09-AUG-19	09-AUG-19	R4748713
Nickel (Ni)-Dissolved	38.8		0.50	ug/L	09-AUG-19	09-AUG-19	R4748713
Phosphorus (P)-Dissolved	3560		30	ug/L	09-AUG-19	09-AUG-19	R4748713
Potassium (K)-Dissolved	430000		500	ug/L	09-AUG-19	20-AUG-19	R4761850
Rubidium (Rb)-Dissolved	31.7		0.20	ug/L	09-AUG-19	09-AUG-19	R4748713
Selenium (Se)-Dissolved	1.13		0.050	ug/L	09-AUG-19	09-AUG-19	R4748713
Silicon (Si)-Dissolved	10000		50	ug/L	09-AUG-19	09-AUG-19	R4748713

* 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
L2320485-12 SWQ25 - 8 Sampled By: CLIENT on 31-JUL-19 @ 12:01 Matrix: WATER							
Dissolved Metals in Water by CRC ICPMS							
Silver (Ag)-Dissolved	0.026		0.010	ug/L	09-AUG-19	09-AUG-19	R4748713
Sodium (Na)-Dissolved	111000		50	ug/L	09-AUG-19	09-AUG-19	R4748713
Strontium (Sr)-Dissolved	845		0.10	ug/L	09-AUG-19	09-AUG-19	R4748713
Sulfur (S)-Dissolved	122000		500	ug/L	09-AUG-19	09-AUG-19	R4748713
Tellurium (Te)-Dissolved	<0.20		0.20	ug/L	09-AUG-19	09-AUG-19	R4748713
Thallium (Tl)-Dissolved	<0.010		0.010	ug/L	09-AUG-19	09-AUG-19	R4748713
Thorium (Th)-Dissolved	<0.10		0.10	ug/L	09-AUG-19	09-AUG-19	R4748713
Tin (Sn)-Dissolved	0.62		0.10	ug/L	09-AUG-19	09-AUG-19	R4748713
Titanium (Ti)-Dissolved	2.98		0.30	ug/L	09-AUG-19	09-AUG-19	R4748713
Tungsten (W)-Dissolved	0.29		0.10	ug/L	09-AUG-19	09-AUG-19	R4748713
Uranium (U)-Dissolved	6.68		0.010	ug/L	09-AUG-19	09-AUG-19	R4748713
Vanadium (V)-Dissolved	12.5		0.50	ug/L	09-AUG-19	09-AUG-19	R4748713
Zinc (Zn)-Dissolved	5.3		1.0	ug/L	09-AUG-19	09-AUG-19	R4748713
Zirconium (Zr)-Dissolved	5.15		0.20	ug/L	09-AUG-19	09-AUG-19	R4748713
Mercury Dissolved							
Dissolved Mercury Filtration Location	FIELD					07-AUG-19	R4746594
Mercury (Hg)-Dissolved	<0.025	DLM	0.025	ug/L	07-AUG-19	09-AUG-19	R4746678
L2320485-13 SWQ25 - 1 Sampled By: CLIENT on 31-JUL-19 @ 09:35 Matrix: WATER							
Alkalinity species as HCO3, CO3, OH							
Alkalinity, Bicarbonate							
Bicarbonate (HCO3)	407000		1200	ug/L		02-AUG-19	
Alkalinity, Carbonate							
Carbonate (CO3)	<600		600	ug/L		02-AUG-19	
Alkalinity, Hydroxide							
Hydroxide (OH)	<340		340	ug/L		02-AUG-19	
Alkalinity, Total (as CaCO3)							
Alkalinity, Total (as CaCO3)	334000		1000	ug/L		01-AUG-19	R4738650
Dissolved Carbons							
Dissolved Inorganic Carbon by Combustion							
Dissolved Inorganic Carbon	72500		2500	ug/L		09-AUG-19	R4750870
Dissolved Organic Carbon by Combustion							
Dissolved Organic Carbon	24900		2500	ug/L		09-AUG-19	R4746810
Total Dissolved Carbon by Calculation							
Total Dissolved Carbon	97300		3500	ug/L		13-AUG-19	
Miscellaneous Parameters							
Ammonia, Total (as N)	56		10	ug/L		02-AUG-19	R4740074
Chloride (Cl)	43900		500	ug/L		02-AUG-19	R4745006
Chromium, Hexavalent	<0.50		0.50	ug/L		06-AUG-19	R4741729
Cyanide, Total	<1.0		1.0	ug/L		10-AUG-19	R4746276
Sulfate (SO4)	29100		300	ug/L		02-AUG-19	R4745006
Dissolved Metals in Water by CRC ICPMS							
Dissolved Metals Filtration Location	FIELD					09-AUG-19	R4745527
Aluminum (Al)-Dissolved	3.4		1.0	ug/L	09-AUG-19	09-AUG-19	R4748713
Antimony (Sb)-Dissolved	0.30		0.10	ug/L	09-AUG-19	09-AUG-19	R4748713
Arsenic (As)-Dissolved	6.69		0.10	ug/L	09-AUG-19	09-AUG-19	R4748713
Barium (Ba)-Dissolved	61.5		0.10	ug/L	09-AUG-19	09-AUG-19	R4748713
Beryllium (Be)-Dissolved	<0.10		0.10	ug/L	09-AUG-19	09-AUG-19	R4748713
Bismuth (Bi)-Dissolved	<0.050		0.050	ug/L	09-AUG-19	09-AUG-19	R4748713
Boron (B)-Dissolved	61		10	ug/L	09-AUG-19	20-AUG-19	R4761850

* 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
L2320485-13 SWQ25 - 1 Sampled By: CLIENT on 31-JUL-19 @ 09:35 Matrix: WATER							
Dissolved Metals in Water by CRC ICPMS							
Cadmium (Cd)-Dissolved	<0.0050		0.0050	ug/L	09-AUG-19	09-AUG-19	R4748713
Calcium (Ca)-Dissolved	63300		50	ug/L	09-AUG-19	09-AUG-19	R4748713
Cesium (Cs)-Dissolved	<0.010		0.010	ug/L	09-AUG-19	09-AUG-19	R4748713
Chromium (Cr)-Dissolved	0.18		0.10	ug/L	09-AUG-19	09-AUG-19	R4748713
Cobalt (Co)-Dissolved	0.73		0.10	ug/L	09-AUG-19	09-AUG-19	R4748713
Copper (Cu)-Dissolved	0.20		0.20	ug/L	09-AUG-19	09-AUG-19	R4748713
Iron (Fe)-Dissolved	353		10	ug/L	09-AUG-19	09-AUG-19	R4748713
Lead (Pb)-Dissolved	0.051		0.050	ug/L	09-AUG-19	09-AUG-19	R4748713
Lithium (Li)-Dissolved	69.1		1.0	ug/L	09-AUG-19	09-AUG-19	R4748713
Magnesium (Mg)-Dissolved	45900		5.0	ug/L	09-AUG-19	09-AUG-19	R4748713
Manganese (Mn)-Dissolved	197		0.10	ug/L	09-AUG-19	09-AUG-19	R4748713
Molybdenum (Mo)-Dissolved	0.452		0.050	ug/L	09-AUG-19	09-AUG-19	R4748713
Nickel (Ni)-Dissolved	2.76		0.50	ug/L	09-AUG-19	09-AUG-19	R4748713
Phosphorus (P)-Dissolved	292		30	ug/L	09-AUG-19	09-AUG-19	R4748713
Potassium (K)-Dissolved	12600		50	ug/L	09-AUG-19	09-AUG-19	R4748713
Rubidium (Rb)-Dissolved	0.95		0.20	ug/L	09-AUG-19	09-AUG-19	R4748713
Selenium (Se)-Dissolved	0.171		0.050	ug/L	09-AUG-19	09-AUG-19	R4748713
Silicon (Si)-Dissolved	8250		50	ug/L	09-AUG-19	09-AUG-19	R4748713
Silver (Ag)-Dissolved	<0.010		0.010	ug/L	09-AUG-19	09-AUG-19	R4748713
Sodium (Na)-Dissolved	32500		50	ug/L	09-AUG-19	09-AUG-19	R4748713
Strontium (Sr)-Dissolved	276		0.10	ug/L	09-AUG-19	09-AUG-19	R4748713
Sulfur (S)-Dissolved	10200		500	ug/L	09-AUG-19	09-AUG-19	R4748713
Tellurium (Te)-Dissolved	<0.20		0.20	ug/L	09-AUG-19	09-AUG-19	R4748713
Thallium (Tl)-Dissolved	<0.010		0.010	ug/L	09-AUG-19	09-AUG-19	R4748713
Thorium (Th)-Dissolved	<0.10		0.10	ug/L	09-AUG-19	09-AUG-19	R4748713
Tin (Sn)-Dissolved	1.02		0.10	ug/L	09-AUG-19	09-AUG-19	R4748713
Titanium (Ti)-Dissolved	0.45		0.30	ug/L	09-AUG-19	09-AUG-19	R4748713
Tungsten (W)-Dissolved	<0.10		0.10	ug/L	09-AUG-19	09-AUG-19	R4748713
Uranium (U)-Dissolved	0.686		0.010	ug/L	09-AUG-19	09-AUG-19	R4748713
Vanadium (V)-Dissolved	2.07		0.50	ug/L	09-AUG-19	09-AUG-19	R4748713
Zinc (Zn)-Dissolved	<1.0		1.0	ug/L	09-AUG-19	09-AUG-19	R4748713
Zirconium (Zr)-Dissolved	0.56		0.20	ug/L	09-AUG-19	09-AUG-19	R4748713
Mercury Dissolved							
Dissolved Mercury Filtration Location	FIELD					07-AUG-19	R4746594
Mercury (Hg)-Dissolved	<0.0050		0.0050	ug/L	07-AUG-19	09-AUG-19	R4746678
Total, Fecal Coliforms, E Coli by QT97							
Fecal Coliform by MPN QT97							
Fecal Coliforms	88		1	MPN/100mL		31-JUL-19	R4734600
Total Coliform and E.coli by MPN QT97							
Total Coliforms	>2420		1	MPN/100mL		31-JUL-19	R4734614
Escherichia Coli	46		1	MPN/100mL		31-JUL-19	R4734614
L2320485-14 SWQ25 - 12 Sampled By: CLIENT on 31-JUL-19 @ 10:20 Matrix: WATER							
Alkalinity species as HCO3, CO3, OH							
Alkalinity, Bicarbonate							
Bicarbonate (HCO3)	520000		1200	ug/L		02-AUG-19	
Alkalinity, Carbonate							
Carbonate (CO3)	<600		600	ug/L		02-AUG-19	
Alkalinity, Hydroxide							
Hydroxide (OH)	<340		340	ug/L		02-AUG-19	

* 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
L2320485-14 SWQ25 - 12							
Sampled By: CLIENT on 31-JUL-19 @ 10:20							
Matrix: WATER							
Alkalinity, Total (as CaCO3)							
Alkalinity, Total (as CaCO3)	426000		1000	ug/L		01-AUG-19	R4738650
Dissolved Carbons							
Dissolved Inorganic Carbon by Combustion							
Dissolved Inorganic Carbon	91900		2500	ug/L		09-AUG-19	R4750870
Dissolved Organic Carbon by Combustion							
Dissolved Organic Carbon	26200		2500	ug/L		09-AUG-19	R4746810
Total Dissolved Carbon by Calculation							
Total Dissolved Carbon	118000		3500	ug/L		13-AUG-19	
Miscellaneous Parameters							
Ammonia, Total (as N)	331		10	ug/L		01-AUG-19	R4738511
Chloride (Cl)	205000		2500	ug/L		02-AUG-19	R4745006
Chromium, Hexavalent	<0.50		0.50	ug/L		06-AUG-19	R4741708
Fecal Coliforms	260		10	MPN/100mL		31-JUL-19	R4734622
Cyanide, Total	<1.0		1.0	ug/L		10-AUG-19	R4746276
Sulfate (SO4)	243000		1500	ug/L		02-AUG-19	R4745006
Total and E. coli, 1:10 dilution by QT97							
Total Coliforms	>24200		10	MPN/100mL		31-JUL-19	R4734628
Escherichia Coli	170		10	MPN/100mL		31-JUL-19	R4734628
Dissolved Metals in Water by CRC ICPMS							
Dissolved Metals Filtration Location	FIELD					09-AUG-19	R4745527
Aluminum (Al)-Dissolved	6.3		1.0	ug/L	09-AUG-19	09-AUG-19	R4748713
Antimony (Sb)-Dissolved	0.20		0.10	ug/L	09-AUG-19	09-AUG-19	R4748713
Arsenic (As)-Dissolved	3.83		0.10	ug/L	09-AUG-19	09-AUG-19	R4748713
Barium (Ba)-Dissolved	95.4		0.10	ug/L	09-AUG-19	09-AUG-19	R4748713
Beryllium (Be)-Dissolved	<0.10		0.10	ug/L	09-AUG-19	09-AUG-19	R4748713
Bismuth (Bi)-Dissolved	<0.050		0.050	ug/L	09-AUG-19	09-AUG-19	R4748713
Boron (B)-Dissolved	10		10	ug/L	09-AUG-19	20-AUG-19	R4761850
Cadmium (Cd)-Dissolved	<0.0050		0.0050	ug/L	09-AUG-19	09-AUG-19	R4748713
Calcium (Ca)-Dissolved	83500		50	ug/L	09-AUG-19	09-AUG-19	R4748713
Cesium (Cs)-Dissolved	<0.010		0.010	ug/L	09-AUG-19	09-AUG-19	R4748713
Chromium (Cr)-Dissolved	0.28		0.10	ug/L	09-AUG-19	09-AUG-19	R4748713
Cobalt (Co)-Dissolved	0.52		0.10	ug/L	09-AUG-19	09-AUG-19	R4748713
Copper (Cu)-Dissolved	<0.20		0.20	ug/L	09-AUG-19	09-AUG-19	R4748713
Iron (Fe)-Dissolved	303		10	ug/L	09-AUG-19	09-AUG-19	R4748713
Lead (Pb)-Dissolved	<0.050		0.050	ug/L	09-AUG-19	09-AUG-19	R4748713
Lithium (Li)-Dissolved	132		1.0	ug/L	09-AUG-19	09-AUG-19	R4748713
Magnesium (Mg)-Dissolved	99400		5.0	ug/L	09-AUG-19	09-AUG-19	R4748713
Manganese (Mn)-Dissolved	585		0.10	ug/L	09-AUG-19	09-AUG-19	R4748713
Molybdenum (Mo)-Dissolved	0.241		0.050	ug/L	09-AUG-19	09-AUG-19	R4748713
Nickel (Ni)-Dissolved	1.80		0.50	ug/L	09-AUG-19	09-AUG-19	R4748713
Phosphorus (P)-Dissolved	178		30	ug/L	09-AUG-19	09-AUG-19	R4748713
Potassium (K)-Dissolved	12600		50	ug/L	09-AUG-19	09-AUG-19	R4748713
Rubidium (Rb)-Dissolved	1.36		0.20	ug/L	09-AUG-19	09-AUG-19	R4748713
Selenium (Se)-Dissolved	0.202		0.050	ug/L	09-AUG-19	09-AUG-19	R4748713
Silicon (Si)-Dissolved	8320		50	ug/L	09-AUG-19	09-AUG-19	R4748713
Silver (Ag)-Dissolved	<0.010		0.010	ug/L	09-AUG-19	09-AUG-19	R4748713
Sodium (Na)-Dissolved	116000		50	ug/L	09-AUG-19	09-AUG-19	R4748713
Strontium (Sr)-Dissolved	553		0.10	ug/L	09-AUG-19	09-AUG-19	R4748713
Sulfur (S)-Dissolved	67800		500	ug/L	09-AUG-19	09-AUG-19	R4748713
Tellurium (Te)-Dissolved	<0.20		0.20	ug/L	09-AUG-19	09-AUG-19	R4748713
Thallium (Tl)-Dissolved	<0.010		0.010	ug/L	09-AUG-19	09-AUG-19	R4748713

* 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
L2320485-14 SWQ25 - 12 Sampled By: CLIENT on 31-JUL-19 @ 10:20 Matrix: WATER							
Dissolved Metals in Water by CRC ICPMS							
Thorium (Th)-Dissolved	<0.10		0.10	ug/L	09-AUG-19	09-AUG-19	R4748713
Tin (Sn)-Dissolved	0.32		0.10	ug/L	09-AUG-19	09-AUG-19	R4748713
Titanium (Ti)-Dissolved	0.61		0.30	ug/L	09-AUG-19	09-AUG-19	R4748713
Tungsten (W)-Dissolved	<0.10		0.10	ug/L	09-AUG-19	09-AUG-19	R4748713
Uranium (U)-Dissolved	2.76		0.010	ug/L	09-AUG-19	09-AUG-19	R4748713
Vanadium (V)-Dissolved	1.69		0.50	ug/L	09-AUG-19	09-AUG-19	R4748713
Zinc (Zn)-Dissolved	1.2		1.0	ug/L	09-AUG-19	09-AUG-19	R4748713
Zirconium (Zr)-Dissolved	0.71		0.20	ug/L	09-AUG-19	09-AUG-19	R4748713
Mercury Dissolved							
Dissolved Mercury Filtration Location	FIELD					07-AUG-19	R4746594
Mercury (Hg)-Dissolved	<0.0050		0.0050	ug/L	07-AUG-19	09-AUG-19	R4746678
L2320485-15 SWQ25 - 7 Sampled By: CLIENT on 31-JUL-19 @ 11:20 Matrix: WATER							
Alkalinity species as HCO3, CO3, OH							
Alkalinity, Bicarbonate							
Bicarbonate (HCO3)	301000		1200	ug/L		02-AUG-19	
Alkalinity, Carbonate							
Carbonate (CO3)	32200		600	ug/L		02-AUG-19	
Alkalinity, Hydroxide							
Hydroxide (OH)	<340		340	ug/L		02-AUG-19	
Alkalinity, Total (as CaCO3)							
Alkalinity, Total (as CaCO3)	300000		1000	ug/L		01-AUG-19	R4738650
Dissolved Carbons							
Dissolved Inorganic Carbon by Combustion							
Dissolved Inorganic Carbon	63200		2500	ug/L		09-AUG-19	R4750870
Dissolved Organic Carbon by Combustion							
Dissolved Organic Carbon	57000		2500	ug/L		09-AUG-19	R4746810
Total Dissolved Carbon by Calculation							
Total Dissolved Carbon	120000		3500	ug/L		13-AUG-19	
Miscellaneous Parameters							
Ammonia, Total (as N)	254		10	ug/L		01-AUG-19	R4738511
Chloride (Cl)	362000		5000	ug/L		02-AUG-19	R4745006
Chromium, Hexavalent	<0.50		0.50	ug/L		06-AUG-19	R4741708
Cyanide, Total	2.0		1.0	ug/L		10-AUG-19	R4746276
Sulfate (SO4)	621000		3000	ug/L		02-AUG-19	R4745006
Dissolved Metals in Water by CRC ICPMS							
Dissolved Metals Filtration Location	FIELD					09-AUG-19	R4745527
Aluminum (Al)-Dissolved	17.0		1.0	ug/L	09-AUG-19	09-AUG-19	R4748713
Antimony (Sb)-Dissolved	0.71		0.10	ug/L	09-AUG-19	09-AUG-19	R4748713
Arsenic (As)-Dissolved	13.6		0.10	ug/L	09-AUG-19	09-AUG-19	R4748713
Barium (Ba)-Dissolved	55.4		0.10	ug/L	09-AUG-19	09-AUG-19	R4748713
Beryllium (Be)-Dissolved	<0.10		0.10	ug/L	09-AUG-19	09-AUG-19	R4748713
Bismuth (Bi)-Dissolved	<0.050		0.050	ug/L	09-AUG-19	09-AUG-19	R4748713
Boron (B)-Dissolved	136		10	ug/L	09-AUG-19	20-AUG-19	R4761850
Cadmium (Cd)-Dissolved	<0.0050		0.0050	ug/L	09-AUG-19	09-AUG-19	R4748713
Calcium (Ca)-Dissolved	103000		50	ug/L	09-AUG-19	09-AUG-19	R4748713
Cesium (Cs)-Dissolved	<0.010		0.010	ug/L	09-AUG-19	09-AUG-19	R4748713
Chromium (Cr)-Dissolved	0.20		0.10	ug/L	09-AUG-19	09-AUG-19	R4748713
Cobalt (Co)-Dissolved	1.04		0.10	ug/L	09-AUG-19	09-AUG-19	R4748713
Copper (Cu)-Dissolved	1.60		0.20	ug/L	09-AUG-19	09-AUG-19	R4748713

* 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
L2320485-15 SWQ25 - 7							
Sampled By: CLIENT on 31-JUL-19 @ 11:20							
Matrix: WATER							
Dissolved Metals in Water by CRC ICPMS							
Iron (Fe)-Dissolved	37		10	ug/L	09-AUG-19	09-AUG-19	R4748713
Lead (Pb)-Dissolved	0.091		0.050	ug/L	09-AUG-19	09-AUG-19	R4748713
Lithium (Li)-Dissolved	164		1.0	ug/L	09-AUG-19	09-AUG-19	R4748713
Magnesium (Mg)-Dissolved	188000		5.0	ug/L	09-AUG-19	09-AUG-19	R4748713
Manganese (Mn)-Dissolved	75.7		0.10	ug/L	09-AUG-19	09-AUG-19	R4748713
Molybdenum (Mo)-Dissolved	5.74		0.050	ug/L	09-AUG-19	09-AUG-19	R4748713
Nickel (Ni)-Dissolved	10.2		0.50	ug/L	09-AUG-19	09-AUG-19	R4748713
Phosphorus (P)-Dissolved	627		30	ug/L	09-AUG-19	09-AUG-19	R4748713
Potassium (K)-Dissolved	61700		50	ug/L	09-AUG-19	09-AUG-19	R4748713
Rubidium (Rb)-Dissolved	4.27		0.20	ug/L	09-AUG-19	09-AUG-19	R4748713
Selenium (Se)-Dissolved	0.361		0.050	ug/L	09-AUG-19	09-AUG-19	R4748713
Silicon (Si)-Dissolved	1210		50	ug/L	09-AUG-19	09-AUG-19	R4748713
Silver (Ag)-Dissolved	<0.010		0.010	ug/L	09-AUG-19	09-AUG-19	R4748713
Sodium (Na)-Dissolved	169000		50	ug/L	09-AUG-19	09-AUG-19	R4748713
Strontium (Sr)-Dissolved	801		0.10	ug/L	09-AUG-19	09-AUG-19	R4748713
Sulfur (S)-Dissolved	201000		500	ug/L	09-AUG-19	09-AUG-19	R4748713
Tellurium (Te)-Dissolved	<0.20		0.20	ug/L	09-AUG-19	09-AUG-19	R4748713
Thallium (Tl)-Dissolved	<0.010		0.010	ug/L	09-AUG-19	09-AUG-19	R4748713
Thorium (Th)-Dissolved	<0.10		0.10	ug/L	09-AUG-19	09-AUG-19	R4748713
Tin (Sn)-Dissolved	0.37		0.10	ug/L	09-AUG-19	09-AUG-19	R4748713
Titanium (Ti)-Dissolved	1.04		0.30	ug/L	09-AUG-19	09-AUG-19	R4748713
Tungsten (W)-Dissolved	0.13		0.10	ug/L	09-AUG-19	09-AUG-19	R4748713
Uranium (U)-Dissolved	4.37		0.010	ug/L	09-AUG-19	09-AUG-19	R4748713
Vanadium (V)-Dissolved	4.10		0.50	ug/L	09-AUG-19	09-AUG-19	R4748713
Zinc (Zn)-Dissolved	1.3		1.0	ug/L	09-AUG-19	09-AUG-19	R4748713
Zirconium (Zr)-Dissolved	0.57		0.20	ug/L	09-AUG-19	09-AUG-19	R4748713
Mercury Dissolved							
Dissolved Mercury Filtration Location	FIELD					07-AUG-19	R4746594
Mercury (Hg)-Dissolved	<0.0050		0.0050	ug/L	07-AUG-19	09-AUG-19	R4746678
Total, Fecal Coliforms, E Coli by QT97							
Fecal Coliform by MPN QT97							
Fecal Coliforms	397		1	MPN/100mL		31-JUL-19	R4734600
Total Coliform and E.coli by MPN QT97							
Total Coliforms	>2420		1	MPN/100mL		31-JUL-19	R4734614
Escherichia Coli	488		1	MPN/100mL		31-JUL-19	R4734614
L2320485-16 SWQ25 - 9A							
Sampled By: CLIENT on 31-JUL-19 @ 11:00							
Matrix: WATER							
Alkalinity species as HCO3, CO3, OH							
Alkalinity, Bicarbonate							
Bicarbonate (HCO3)	251000		1200	ug/L		02-AUG-19	
Alkalinity, Carbonate							
Carbonate (CO3)	22900		600	ug/L		02-AUG-19	
Alkalinity, Hydroxide							
Hydroxide (OH)	<340		340	ug/L		02-AUG-19	
Alkalinity, Total (as CaCO3)							
Alkalinity, Total (as CaCO3)	244000		1000	ug/L		01-AUG-19	R4738650
Dissolved Carbons							
Dissolved Inorganic Carbon by Combustion							
Dissolved Inorganic Carbon	51700		2500	ug/L		09-AUG-19	R4750870
Dissolved Organic Carbon by Combustion							

* 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
L2320485-16 SWQ25 - 9A							
Sampled By: CLIENT on 31-JUL-19 @ 11:00							
Matrix: WATER							
Dissolved Organic Carbon by Combustion							
Dissolved Organic Carbon	17500		2500	ug/L		09-AUG-19	R4746810
Total Dissolved Carbon by Calculation							
Total Dissolved Carbon	69200		3500	ug/L		13-AUG-19	
Miscellaneous Parameters							
Ammonia, Total (as N)	64		10	ug/L		01-AUG-19	R4738511
Chloride (Cl)	114000		1000	ug/L		02-AUG-19	R4745006
Chromium, Hexavalent	<0.50		0.50	ug/L		06-AUG-19	R4741708
Cyanide, Total	<1.0		1.0	ug/L		10-AUG-19	R4746276
Sulfate (SO4)	72800		600	ug/L		02-AUG-19	R4745006
Dissolved Metals in Water by CRC ICPMS							
Dissolved Metals Filtration Location	FIELD					09-AUG-19	R4745538
Aluminum (Al)-Dissolved	7.9		1.0	ug/L	09-AUG-19	14-AUG-19	R4757104
Antimony (Sb)-Dissolved	0.48		0.10	ug/L	09-AUG-19	14-AUG-19	R4757104
Arsenic (As)-Dissolved	15.5		0.10	ug/L	09-AUG-19	14-AUG-19	R4757104
Barium (Ba)-Dissolved	66.6		0.10	ug/L	09-AUG-19	14-AUG-19	R4757104
Beryllium (Be)-Dissolved	<0.10		0.10	ug/L	09-AUG-19	14-AUG-19	R4757104
Bismuth (Bi)-Dissolved	0.085		0.050	ug/L	09-AUG-19	14-AUG-19	R4757104
Boron (B)-Dissolved	97		10	ug/L	09-AUG-19	14-AUG-19	R4757104
Cadmium (Cd)-Dissolved	0.0053		0.0050	ug/L	09-AUG-19	14-AUG-19	R4757104
Calcium (Ca)-Dissolved	53500		50	ug/L	09-AUG-19	14-AUG-19	R4757104
Cesium (Cs)-Dissolved	<0.010		0.010	ug/L	09-AUG-19	14-AUG-19	R4757104
Chromium (Cr)-Dissolved	<0.10		0.10	ug/L	09-AUG-19	14-AUG-19	R4757104
Cobalt (Co)-Dissolved	0.57		0.10	ug/L	09-AUG-19	14-AUG-19	R4757104
Copper (Cu)-Dissolved	1.87		0.20	ug/L	09-AUG-19	14-AUG-19	R4757104
Iron (Fe)-Dissolved	<10		10	ug/L	09-AUG-19	14-AUG-19	R4757104
Lead (Pb)-Dissolved	0.063		0.050	ug/L	09-AUG-19	14-AUG-19	R4757104
Lithium (Li)-Dissolved	89.6		1.0	ug/L	09-AUG-19	14-AUG-19	R4757104
Magnesium (Mg)-Dissolved	51400		5.0	ug/L	09-AUG-19	14-AUG-19	R4757104
Manganese (Mn)-Dissolved	1.47		0.10	ug/L	09-AUG-19	14-AUG-19	R4757104
Molybdenum (Mo)-Dissolved	3.53		0.050	ug/L	09-AUG-19	14-AUG-19	R4757104
Nickel (Ni)-Dissolved	5.07		0.50	ug/L	09-AUG-19	14-AUG-19	R4757104
Phosphorus (P)-Dissolved	413		30	ug/L	09-AUG-19	14-AUG-19	R4757104
Potassium (K)-Dissolved	17100		50	ug/L	09-AUG-19	14-AUG-19	R4757104
Rubidium (Rb)-Dissolved	1.08		0.20	ug/L	09-AUG-19	14-AUG-19	R4757104
Selenium (Se)-Dissolved	0.304		0.050	ug/L	09-AUG-19	14-AUG-19	R4757104
Silicon (Si)-Dissolved	8940		50	ug/L	09-AUG-19	14-AUG-19	R4757104
Silver (Ag)-Dissolved	<0.010		0.010	ug/L	09-AUG-19	14-AUG-19	R4757104
Sodium (Na)-Dissolved	45900		50	ug/L	09-AUG-19	14-AUG-19	R4757104
Strontium (Sr)-Dissolved	311		0.10	ug/L	09-AUG-19	14-AUG-19	R4757104
Sulfur (S)-Dissolved	24100		500	ug/L	09-AUG-19	14-AUG-19	R4757104
Tellurium (Te)-Dissolved	<0.20		0.20	ug/L	09-AUG-19	14-AUG-19	R4757104
Thallium (Tl)-Dissolved	<0.010		0.010	ug/L	09-AUG-19	20-AUG-19	R4761850
Thorium (Th)-Dissolved	<0.10		0.10	ug/L	09-AUG-19	14-AUG-19	R4757104
Tin (Sn)-Dissolved	<0.10		0.10	ug/L	09-AUG-19	14-AUG-19	R4757104
Titanium (Ti)-Dissolved	1.57		0.30	ug/L	09-AUG-19	14-AUG-19	R4757104
Tungsten (W)-Dissolved	<0.10		0.10	ug/L	09-AUG-19	14-AUG-19	R4757104
Uranium (U)-Dissolved	2.31		0.010	ug/L	09-AUG-19	14-AUG-19	R4757104
Vanadium (V)-Dissolved	6.15		0.50	ug/L	09-AUG-19	14-AUG-19	R4757104
Zinc (Zn)-Dissolved	<1.0		1.0	ug/L	09-AUG-19	14-AUG-19	R4757104
Zirconium (Zr)-Dissolved	0.25		0.20	ug/L	09-AUG-19	14-AUG-19	R4757104
Mercury Dissolved							

* 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
L2320485-16 SWQ25 - 9A Sampled By: CLIENT on 31-JUL-19 @ 11:00 Matrix: WATER							
Mercury Dissolved Dissolved Mercury Filtration Location	FIELD					07-AUG-19	R4746594
Mercury (Hg)-Dissolved	<0.0050		0.0050	ug/L	07-AUG-19	09-AUG-19	R4746678
Total, Fecal Coliforms, E Coli by QT97							
Fecal Coliform by MPN QT97 Fecal Coliforms	225		1	MPN/100mL		31-JUL-19	R4734600
Total Coliform and E.coli by MPN QT97 Total Coliforms	>2420		1	MPN/100mL		31-JUL-19	R4734614
Escherichia Coli	365		1	MPN/100mL		31-JUL-19	R4734614
L2320485-17 SWQ25 - 9B Sampled By: CLIENT on 31-JUL-19 @ 11:38 Matrix: WATER							
Alkalinity species as HCO3, CO3, OH							
Alkalinity, Bicarbonate Bicarbonate (HCO3)	245000		1200	ug/L		02-AUG-19	
Alkalinity, Carbonate Carbonate (CO3)	20500		600	ug/L		02-AUG-19	
Alkalinity, Hydroxide Hydroxide (OH)	<340		340	ug/L		02-AUG-19	
Alkalinity, Total (as CaCO3) Alkalinity, Total (as CaCO3)	235000		1000	ug/L		01-AUG-19	R4738650
Dissolved Carbons							
Dissolved Inorganic Carbon by Combustion Dissolved Inorganic Carbon	51200		2500	ug/L		09-AUG-19	R4750870
Dissolved Organic Carbon by Combustion Dissolved Organic Carbon	17900		2500	ug/L		09-AUG-19	R4746810
Total Dissolved Carbon by Calculation Total Dissolved Carbon	69000		3500	ug/L		13-AUG-19	
Miscellaneous Parameters							
Ammonia, Total (as N)	189		10	ug/L		01-AUG-19	R4738511
Chloride (Cl)	88700		500	ug/L		02-AUG-19	R4745006
Chromium, Hexavalent	<0.50		0.50	ug/L		06-AUG-19	R4741708
Cyanide, Total	<1.0		1.0	ug/L		10-AUG-19	R4746276
Sulfate (SO4)	38700		300	ug/L		02-AUG-19	R4745006
Dissolved Metals in Water by CRC ICPMS							
Dissolved Metals Filtration Location	FIELD					09-AUG-19	R4745538
Aluminum (Al)-Dissolved	38.1		1.0	ug/L	09-AUG-19	14-AUG-19	R4757104
Antimony (Sb)-Dissolved	0.40		0.10	ug/L	09-AUG-19	14-AUG-19	R4757104
Arsenic (As)-Dissolved	15.2		0.10	ug/L	09-AUG-19	14-AUG-19	R4757104
Barium (Ba)-Dissolved	70.1		0.10	ug/L	09-AUG-19	14-AUG-19	R4757104
Beryllium (Be)-Dissolved	<0.10		0.10	ug/L	09-AUG-19	14-AUG-19	R4757104
Bismuth (Bi)-Dissolved	<0.050		0.050	ug/L	09-AUG-19	14-AUG-19	R4757104
Boron (B)-Dissolved	72		10	ug/L	09-AUG-19	14-AUG-19	R4757104
Cadmium (Cd)-Dissolved	<0.0050		0.0050	ug/L	09-AUG-19	14-AUG-19	R4757104
Calcium (Ca)-Dissolved	38500		50	ug/L	09-AUG-19	14-AUG-19	R4757104
Cesium (Cs)-Dissolved	0.014		0.010	ug/L	09-AUG-19	14-AUG-19	R4757104
Chromium (Cr)-Dissolved	0.12		0.10	ug/L	09-AUG-19	14-AUG-19	R4757104
Cobalt (Co)-Dissolved	0.54		0.10	ug/L	09-AUG-19	14-AUG-19	R4757104
Copper (Cu)-Dissolved	0.74		0.20	ug/L	09-AUG-19	14-AUG-19	R4757104
Iron (Fe)-Dissolved	28		10	ug/L	09-AUG-19	14-AUG-19	R4757104
Lead (Pb)-Dissolved	0.063		0.050	ug/L	09-AUG-19	14-AUG-19	R4757104
Lithium (Li)-Dissolved	68.7		1.0	ug/L	09-AUG-19	14-AUG-19	R4757104

* 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
L2320485-17 SWQ25 - 9B							
Sampled By: CLIENT on 31-JUL-19 @ 11:38							
Matrix: WATER							
Dissolved Metals in Water by CRC ICPMS							
Magnesium (Mg)-Dissolved	44700		5.0	ug/L	09-AUG-19	14-AUG-19	R4757104
Manganese (Mn)-Dissolved	6.56		0.10	ug/L	09-AUG-19	14-AUG-19	R4757104
Molybdenum (Mo)-Dissolved	3.27		0.050	ug/L	09-AUG-19	14-AUG-19	R4757104
Nickel (Ni)-Dissolved	4.30		0.50	ug/L	09-AUG-19	14-AUG-19	R4757104
Phosphorus (P)-Dissolved	251		30	ug/L	09-AUG-19	14-AUG-19	R4757104
Potassium (K)-Dissolved	17300		50	ug/L	09-AUG-19	14-AUG-19	R4757104
Rubidium (Rb)-Dissolved	1.12		0.20	ug/L	09-AUG-19	14-AUG-19	R4757104
Selenium (Se)-Dissolved	0.202		0.050	ug/L	09-AUG-19	14-AUG-19	R4757104
Silicon (Si)-Dissolved	8920		50	ug/L	09-AUG-19	14-AUG-19	R4757104
Silver (Ag)-Dissolved	<0.010		0.010	ug/L	09-AUG-19	14-AUG-19	R4757104
Sodium (Na)-Dissolved	39500		50	ug/L	09-AUG-19	14-AUG-19	R4757104
Strontium (Sr)-Dissolved	269		0.10	ug/L	09-AUG-19	14-AUG-19	R4757104
Sulfur (S)-Dissolved	13900		500	ug/L	09-AUG-19	14-AUG-19	R4757104
Tellurium (Te)-Dissolved	<0.20		0.20	ug/L	09-AUG-19	14-AUG-19	R4757104
Thallium (Tl)-Dissolved	<0.010		0.010	ug/L	09-AUG-19	14-AUG-19	R4757104
Thorium (Th)-Dissolved	<0.10		0.10	ug/L	09-AUG-19	14-AUG-19	R4757104
Tin (Sn)-Dissolved	0.15		0.10	ug/L	09-AUG-19	14-AUG-19	R4757104
Titanium (Ti)-Dissolved	1.54		0.30	ug/L	09-AUG-19	14-AUG-19	R4757104
Tungsten (W)-Dissolved	<0.10		0.10	ug/L	09-AUG-19	14-AUG-19	R4757104
Uranium (U)-Dissolved	1.97		0.010	ug/L	09-AUG-19	14-AUG-19	R4757104
Vanadium (V)-Dissolved	6.56		0.50	ug/L	09-AUG-19	14-AUG-19	R4757104
Zinc (Zn)-Dissolved	1.1		1.0	ug/L	09-AUG-19	14-AUG-19	R4757104
Zirconium (Zr)-Dissolved	0.22		0.20	ug/L	09-AUG-19	14-AUG-19	R4757104
Mercury Dissolved							
Dissolved Mercury Filtration Location	FIELD					07-AUG-19	R4746594
Mercury (Hg)-Dissolved	<0.0050		0.0050	ug/L	07-AUG-19	09-AUG-19	R4746678
Total, Fecal Coliforms, E Coli by QT97							
Fecal Coliform by MPN QT97							
Fecal Coliforms	816		1	MPN/100mL		31-JUL-19	R4734600
Total Coliform and E.coli by MPN QT97							
Total Coliforms	>2420		1	MPN/100mL		31-JUL-19	R4734614
Escherichia Coli	921		1	MPN/100mL		31-JUL-19	R4734614
L2320485-18 SWQ25 - 101							
Sampled By: CLIENT on 31-JUL-19 @ 12:00							
Matrix: WATER							
Alkalinity species as HCO3, CO3, OH							
Alkalinity, Bicarbonate							
Bicarbonate (HCO3)	391000		1200	ug/L		02-AUG-19	
Alkalinity, Carbonate							
Carbonate (CO3)	<600		600	ug/L		02-AUG-19	
Alkalinity, Hydroxide							
Hydroxide (OH)	<340		340	ug/L		02-AUG-19	
Alkalinity, Total (as CaCO3)							
Alkalinity, Total (as CaCO3)	320000		1000	ug/L		01-AUG-19	R4738650
Dissolved Carbons							
Dissolved Inorganic Carbon by Combustion							
Dissolved Inorganic Carbon	71200		2500	ug/L		09-AUG-19	R4750870
Dissolved Organic Carbon by Combustion							
Dissolved Organic Carbon	22300		2500	ug/L		09-AUG-19	R4746810
Total Dissolved Carbon by Calculation							
Total Dissolved Carbon	93500		3500	ug/L		13-AUG-19	
Miscellaneous Parameters							

* 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
L2320485-18 SWQ25 - 101							
Sampled By: CLIENT on 31-JUL-19 @ 12:00							
Matrix: WATER							
Ammonia, Total (as N)	48		10	ug/L		01-AUG-19	R4738511
Chloride (Cl)	43700		500	ug/L		02-AUG-19	R4745006
Chromium, Hexavalent	<0.50		0.50	ug/L		06-AUG-19	R4741708
Cyanide, Total	<1.0		1.0	ug/L		10-AUG-19	R4746276
Sulfate (SO4)	29500		300	ug/L		02-AUG-19	R4745006
Dissolved Metals in Water by CRC ICPMS							
Dissolved Metals Filtration Location	FIELD					09-AUG-19	R4745538
Aluminum (Al)-Dissolved	11.1		1.0	ug/L	09-AUG-19	14-AUG-19	R4757104
Antimony (Sb)-Dissolved	0.25		0.10	ug/L	09-AUG-19	14-AUG-19	R4757104
Arsenic (As)-Dissolved	6.83		0.10	ug/L	09-AUG-19	14-AUG-19	R4757104
Barium (Ba)-Dissolved	60.6		0.10	ug/L	09-AUG-19	14-AUG-19	R4757104
Beryllium (Be)-Dissolved	<0.10		0.10	ug/L	09-AUG-19	14-AUG-19	R4757104
Bismuth (Bi)-Dissolved	<0.050		0.050	ug/L	09-AUG-19	14-AUG-19	R4757104
Boron (B)-Dissolved	64		10	ug/L	09-AUG-19	14-AUG-19	R4757104
Cadmium (Cd)-Dissolved	<0.0050		0.0050	ug/L	09-AUG-19	14-AUG-19	R4757104
Calcium (Ca)-Dissolved	66000		50	ug/L	09-AUG-19	14-AUG-19	R4757104
Cesium (Cs)-Dissolved	<0.010		0.010	ug/L	09-AUG-19	14-AUG-19	R4757104
Chromium (Cr)-Dissolved	0.18		0.10	ug/L	09-AUG-19	14-AUG-19	R4757104
Cobalt (Co)-Dissolved	0.72		0.10	ug/L	09-AUG-19	14-AUG-19	R4757104
Copper (Cu)-Dissolved	0.21		0.20	ug/L	09-AUG-19	14-AUG-19	R4757104
Iron (Fe)-Dissolved	354		10	ug/L	09-AUG-19	14-AUG-19	R4757104
Lead (Pb)-Dissolved	0.055		0.050	ug/L	09-AUG-19	14-AUG-19	R4757104
Lithium (Li)-Dissolved	74.2		1.0	ug/L	09-AUG-19	14-AUG-19	R4757104
Magnesium (Mg)-Dissolved	40400		5.0	ug/L	09-AUG-19	14-AUG-19	R4757104
Manganese (Mn)-Dissolved	195		0.10	ug/L	09-AUG-19	14-AUG-19	R4757104
Molybdenum (Mo)-Dissolved	0.398		0.050	ug/L	09-AUG-19	14-AUG-19	R4757104
Nickel (Ni)-Dissolved	3.22		0.50	ug/L	09-AUG-19	14-AUG-19	R4757104
Phosphorus (P)-Dissolved	325		30	ug/L	09-AUG-19	14-AUG-19	R4757104
Potassium (K)-Dissolved	12200		50	ug/L	09-AUG-19	14-AUG-19	R4757104
Rubidium (Rb)-Dissolved	0.89		0.20	ug/L	09-AUG-19	14-AUG-19	R4757104
Selenium (Se)-Dissolved	0.248		0.050	ug/L	09-AUG-19	14-AUG-19	R4757104
Silicon (Si)-Dissolved	10700		50	ug/L	09-AUG-19	14-AUG-19	R4757104
Silver (Ag)-Dissolved	<0.010		0.010	ug/L	09-AUG-19	14-AUG-19	R4757104
Sodium (Na)-Dissolved	32400		50	ug/L	09-AUG-19	14-AUG-19	R4757104
Strontium (Sr)-Dissolved	246		0.10	ug/L	09-AUG-19	14-AUG-19	R4757104
Sulfur (S)-Dissolved	13800		500	ug/L	09-AUG-19	14-AUG-19	R4757104
Tellurium (Te)-Dissolved	<0.20		0.20	ug/L	09-AUG-19	14-AUG-19	R4757104
Thallium (Tl)-Dissolved	<0.010		0.010	ug/L	09-AUG-19	14-AUG-19	R4757104
Thorium (Th)-Dissolved	<0.10		0.10	ug/L	09-AUG-19	14-AUG-19	R4757104
Tin (Sn)-Dissolved	0.69		0.10	ug/L	09-AUG-19	14-AUG-19	R4757104
Titanium (Ti)-Dissolved	0.73		0.30	ug/L	09-AUG-19	14-AUG-19	R4757104
Tungsten (W)-Dissolved	<0.10		0.10	ug/L	09-AUG-19	14-AUG-19	R4757104
Uranium (U)-Dissolved	0.655		0.010	ug/L	09-AUG-19	14-AUG-19	R4757104
Vanadium (V)-Dissolved	2.01		0.50	ug/L	09-AUG-19	14-AUG-19	R4757104
Zinc (Zn)-Dissolved	<1.0		1.0	ug/L	09-AUG-19	14-AUG-19	R4757104
Zirconium (Zr)-Dissolved	0.50		0.20	ug/L	09-AUG-19	14-AUG-19	R4757104
Mercury Dissolved							
Dissolved Mercury Filtration Location	FIELD					07-AUG-19	R4746594
Mercury (Hg)-Dissolved	<0.0050		0.0050	ug/L	07-AUG-19	09-AUG-19	R4746678
Total, Fecal Coliforms, E Coli by QT97							
Fecal Coliform by MPN QT97							
Fecal Coliforms	214		1	MPN/100mL		31-JUL-19	R4734600

* 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).
DUPM	MPN duplicate results were outside default ALS Data Quality Objective, but within 95% confidence interval for MPN reference method. Sample results are reliable.
MS-B	Matrix Spike recovery could not be accurately calculated due to high analyte background in sample.
SFT	Sample was filtered due to turbidity interference. Result reflects soluble analyte concentration.

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.			
C-DIC-HTC-WP	Water	Dissolved Inorganic Carbon by Combustion	APHA 5310 B-WP
Filtered (0.45 um) sample is injected into a heated reaction chamber where it is acidified, converting all inorganic carbon to CO ₂ which is then transported in the carrier gas stream and measured via a non-dispersive infrared analyzer.			
C-DOC-HTC-WP	Water	Dissolved Organic Carbon by Combustion	APHA 5310 B-WP
Filtered (0.45 um) sample is acidified and purged to remove inorganic carbon, then injected into a heated reaction chamber where organic carbon is oxidized to CO ₂ which is then transported in the carrier gas stream and measured via a non-dispersive infrared analyzer.			
C-TDC-CALC-WP	Water	Total Dissolved Carbon by Calculation	CALCULATED
Total dissolved carbon represents the sum of dissolved inorganic carbon and dissolved organic carbon. For the purpose of calculation, results less than the detection limit (DL) are treated as zero.			
CL-IC-N-WP	Water	Chloride in Water by IC	EPA 300.1 (mod)
Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.			
CN-T-L-CFA-VA	Water	Low Level Total Cyanide in water by CFA	ISO 14403:2002
This analysis is carried out using procedures adapted from ISO Method 14403:2002 "Determination of Total Cyanide using Flow Analysis (FIA and CFA)". Total or strong acid dissociable (SAD) cyanide is determined by in-line UV digestion along with sample distillation and final determination by colourimetric analysis. Method Limitation: This method is susceptible to interference from thiocyanate (SCN). If SCN is present in the sample, there could be a positive interference with this method, but it would be less than 1% and could be as low as zero.			
CR-CR6-IC-WT	Water	Chromium +6	EPA 7199
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.			
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).			
EC-SCREEN-WP	Water	Conductivity Screen (Internal Use Only)	APHA 2510
Qualitative analysis of conductivity where required during preparation of other test eg. IC, TDS, TSS, etc			
FC-QT97-WP	Water	Fecal Coliform by MPN QT97	APHA 9223B QT97
This analysis is carried out using procedures adapted from APHA Method 9223B "Enzyme Substrate Coliform Test". The sample is mixed with a mixture of hydrolyzable substrates and then sealed in a 97-well packet. The packet is incubated at 44.5 – 0.2°C for 18 hours and then the number of			

Reference Information

Test Method References:

ALS Test Code	Matrix	Test Description	Method Reference**
FC10-QT97-WP	Water	Fecal coliforms, 1:10 dilution by QT97	APHA 9223B QT97
<p>wells exhibiting a positive response are counted. The final result is obtained by comparing the number of positive responses to a probability table.</p> <p>Analysis is carried out using procedures adapted from APHA 9223 "Enzyme Substrate Coliform Test". Fecal (thermotolerant) coliform bacteria are determined by mixing a 1:10 dilution of sample with a product containing hydrolyzable substrates and sealing in a 97-well packet. The packet is incubated at 44.5 – 0.2°C for 18 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.</p>			
HG-D-CVAA-WP	Water	Mercury Dissolved	APHA 3030B/EPA 1631E (mod)
<p>Water samples are filtered (0.45 µm), preserved with hydrochloric acid, then undergo a cold-oxidation using bromine monochloride prior to reduction with stannous chloride, and analyzed by CVAAS.</p>			
MET-D-CCMS-WP	Water	Dissolved Metals in Water by CRC ICPMS	APHA 3030B/6020B (mod)
<p>Water samples are filtered (0.45 µm), 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>			
NH3-COL-WP	Water	Ammonia by colour	APHA 4500 NH3 F
<p>Ammonia in water samples forms indophenol when reacted with hypochlorite and phenol. The intensity is amplified by the addition of sodium nitroprusside and measured colourmetrically.</p>			
SO4-IC-N-WP	Water	Sulfate in Water by IC	EPA 300.1 (mod)
<p>Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.</p>			
TC,EC-QT97-WP	Water	Total Coliform and E.coli by MPN QT97	APHA 9223B QT97
<p>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 97-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.</p>			
TC,EC10-QT97-WP	Water	Total and E. coli, 1:10 dilution by QT97	APHA 9223B QT97
<p>Analysis is carried out using procedures adapted from APHA 9223 "Enzyme Substrate Coliform Test". Total coliforms and Eschericia coli bacteria are simultaneously determined by mixing a 1:10 dilution of sample with a product containing hydrolyzable substrates and sealing in a 97-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.</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
WP	ALS ENVIRONMENTAL - WINNIPEG, MANITOBA, CANADA
VA	ALS ENVIRONMENTAL - VANCOUVER, BRITISH COLUMBIA, CANADA

Chain of Custody Numbers:

Reference Information

Test Method References:

ALS Test Code	Matrix	Test Description	Method Reference**
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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: L2320485

Report Date: 21-AUG-19

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Client: City of Winnipeg - Solid Waste Services Div (1120 Waverley)
 Solid Waste Services Division 1120 Waverley Street
 Winnipeg MB R3T 0P4

Contact: CHRIS KOZAK

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
ALK-TITR-WP		Water						
Batch	R4738650							
WG3123063-9	LCS							
Alkalinity, Total (as CaCO3)			101.4		%		85-115	01-AUG-19
WG3123063-6	MB							
Alkalinity, Total (as CaCO3)			<1.0		mg/L		1	01-AUG-19
C-DIC-HTC-WP		Water						
Batch	R4745360							
WG3128344-2	LCS							
Dissolved Inorganic Carbon			106.8		%		80-120	08-AUG-19
WG3128344-1	MB							
Dissolved Inorganic Carbon			<0.50		mg/L		0.5	08-AUG-19
Batch	R4750870							
WG3130309-2	LCS							
Dissolved Inorganic Carbon			96.5		%		80-120	09-AUG-19
WG3130309-6	LCS							
Dissolved Inorganic Carbon			94.9		%		80-120	09-AUG-19
WG3130309-1	MB							
Dissolved Inorganic Carbon			<0.50		mg/L		0.5	09-AUG-19
WG3130309-5	MB							
Dissolved Inorganic Carbon			<0.50		mg/L		0.5	09-AUG-19
C-DOC-HTC-WP		Water						
Batch	R4746810							
WG3130143-2	LCS							
Dissolved Organic Carbon			105.4		%		80-120	09-AUG-19
WG3130143-6	LCS							
Dissolved Organic Carbon			106.3		%		80-120	09-AUG-19
WG3130143-1	MB							
Dissolved Organic Carbon			<0.50		mg/L		0.5	09-AUG-19
WG3130143-5	MB							
Dissolved Organic Carbon			<0.50		mg/L		0.5	09-AUG-19
Batch	R4753035							
WG3131568-2	LCS							
Dissolved Organic Carbon			96.1		%		80-120	12-AUG-19
WG3131568-1	MB							
Dissolved Organic Carbon			<0.50		mg/L		0.5	12-AUG-19
CL-IC-N-WP		Water						

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Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
CL-IC-N-WP								
Water								
Batch	R4739256							
WG3122737-10	LCS							
Chloride (Cl)			100.9		%		90-110	02-AUG-19
WG3122737-9	MB							
Chloride (Cl)			<0.50		mg/L		0.5	02-AUG-19
Batch	R4745006							
WG3122743-2	LCS							
Chloride (Cl)			101.9		%		90-110	02-AUG-19
WG3122743-1	MB							
Chloride (Cl)			<0.50		mg/L		0.5	02-AUG-19
CN-T-L-CFA-VA								
Water								
Batch	R4745471							
WG3128182-17	LCS							
Cyanide, Total			98.4		%		80-120	09-AUG-19
WG3128182-22	LCS							
Cyanide, Total			99.2		%		80-120	09-AUG-19
WG3128182-16	MB							
Cyanide, Total			<0.0010		mg/L		0.001	09-AUG-19
WG3128182-21	MB							
Cyanide, Total			<0.0010		mg/L		0.001	09-AUG-19
Batch	R4746276							
WG3129243-3	DUP	L2320485-18						
Cyanide, Total		<0.0010	<0.0010	RPD-NA	mg/L	N/A	20	10-AUG-19
WG3129243-2	LCS							
Cyanide, Total			99.1		%		80-120	10-AUG-19
WG3129243-1	MB							
Cyanide, Total			<0.0010		mg/L		0.001	10-AUG-19
WG3129243-4	MS	L2320485-18						
Cyanide, Total			96.7		%		75-125	10-AUG-19
CR-CR6-IC-WT								
Water								
Batch	R4741708							
WG3124716-2	LCS							
Chromium, Hexavalent			95.7		%		80-120	06-AUG-19
WG3124716-1	MB							
Chromium, Hexavalent			<0.00050		mg/L		0.0005	06-AUG-19
Batch	R4741729							
WG3124717-7	LCS							
Chromium, Hexavalent			95.7		%		80-120	06-AUG-19
WG3124717-6	MB							



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Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
CR-CR6-IC-WT								
Water								
Batch R4741729								
WG3124717-6 MB								
Chromium, Hexavalent								
			<0.00050		mg/L		0.0005	06-AUG-19
FC-QT97-WP								
Water								
Batch R4734600								
WG3120855-2 DUP								
Fecal Coliforms								
		L2320485-2 1410	1200		MPN/100mL	16	65	31-JUL-19
WG3120855-1 MB								
Fecal Coliforms								
			<1		MPN/100mL		1	31-JUL-19
FC10-QT97-WP								
Water								
Batch R4734622								
WG3120886-2 DUP								
Fecal Coliforms								
		L2320485-1 3260	3260		MPN/100mL	0.0	65	31-JUL-19
WG3120886-1 MB								
Fecal Coliforms								
			<1		MPN/100mL		1	31-JUL-19
HG-D-CVAA-WP								
Water								
Batch R4746678								
WG3130072-2 LCS								
Mercury (Hg)-Dissolved								
			104.0		%		80-120	09-AUG-19
WG3130072-1 MB								
Mercury (Hg)-Dissolved								
			<0.0000050		mg/L		0.000005	09-AUG-19
MET-D-CCMS-WP								
Water								
Batch R4748713								
WG3128624-2 LCS								
Aluminum (Al)-Dissolved								
			97.9		%		80-120	09-AUG-19
Antimony (Sb)-Dissolved								
			99.7		%		80-120	09-AUG-19
Arsenic (As)-Dissolved								
			97.0		%		80-120	09-AUG-19
Barium (Ba)-Dissolved								
			99.2		%		80-120	09-AUG-19
Beryllium (Be)-Dissolved								
			98.5		%		80-120	09-AUG-19
Bismuth (Bi)-Dissolved								
			94.7		%		80-120	09-AUG-19
Boron (B)-Dissolved								
			102.7		%		80-120	09-AUG-19
Cadmium (Cd)-Dissolved								
			99.9		%		80-120	09-AUG-19
Calcium (Ca)-Dissolved								
			97.5		%		80-120	09-AUG-19
Cesium (Cs)-Dissolved								
			101.2		%		80-120	09-AUG-19
Chromium (Cr)-Dissolved								
			99.1		%		80-120	09-AUG-19
Cobalt (Co)-Dissolved								
			96.7		%		80-120	09-AUG-19

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Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
MET-D-CCMS-WP								
	Water							
Batch	R4748713							
WG3128624-2	LCS							
Copper (Cu)-Dissolved			99.8		%		80-120	09-AUG-19
Iron (Fe)-Dissolved			89.2		%		80-120	09-AUG-19
Lead (Pb)-Dissolved			95.4		%		80-120	09-AUG-19
Lithium (Li)-Dissolved			95.1		%		80-120	09-AUG-19
Magnesium (Mg)-Dissolved			111.7		%		80-120	09-AUG-19
Manganese (Mn)-Dissolved			97.8		%		80-120	09-AUG-19
Molybdenum (Mo)-Dissolved			101.5		%		80-120	09-AUG-19
Nickel (Ni)-Dissolved			97.5		%		80-120	09-AUG-19
Phosphorus (P)-Dissolved			102.2		%		80-120	09-AUG-19
Potassium (K)-Dissolved			90.9		%		80-120	09-AUG-19
Rubidium (Rb)-Dissolved			95.8		%		80-120	09-AUG-19
Selenium (Se)-Dissolved			96.9		%		80-120	09-AUG-19
Silicon (Si)-Dissolved			97.2		%		80-120	09-AUG-19
Silver (Ag)-Dissolved			95.6		%		80-120	09-AUG-19
Sodium (Na)-Dissolved			97.3		%		80-120	09-AUG-19
Strontium (Sr)-Dissolved			102.1		%		80-120	09-AUG-19
Sulfur (S)-Dissolved			91.9		%		80-120	09-AUG-19
Tellurium (Te)-Dissolved			99.6		%		80-120	09-AUG-19
Thallium (Tl)-Dissolved			95.7		%		80-120	09-AUG-19
Thorium (Th)-Dissolved			93.1		%		80-120	09-AUG-19
Tin (Sn)-Dissolved			98.3		%		80-120	09-AUG-19
Titanium (Ti)-Dissolved			93.0		%		80-120	09-AUG-19
Tungsten (W)-Dissolved			95.2		%		80-120	09-AUG-19
Uranium (U)-Dissolved			102.8		%		80-120	09-AUG-19
Vanadium (V)-Dissolved			98.0		%		80-120	09-AUG-19
Zinc (Zn)-Dissolved			96.0		%		80-120	09-AUG-19
Zirconium (Zr)-Dissolved			95.6		%		80-120	09-AUG-19
WG3128624-1	MB							
Aluminum (Al)-Dissolved			<0.0010		mg/L		0.001	09-AUG-19
Antimony (Sb)-Dissolved			<0.00010		mg/L		0.0001	09-AUG-19
Arsenic (As)-Dissolved			<0.00010		mg/L		0.0001	09-AUG-19
Barium (Ba)-Dissolved			<0.00010		mg/L		0.0001	09-AUG-19
Beryllium (Be)-Dissolved			<0.00010		mg/L		0.0001	09-AUG-19
Bismuth (Bi)-Dissolved			<0.000050		mg/L		0.00005	09-AUG-19



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Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
MET-D-CCMS-WP								
	Water							
Batch	R4748713							
WG3128624-1	MB							
Boron (B)-Dissolved			<0.010		mg/L		0.01	09-AUG-19
Cadmium (Cd)-Dissolved			<0.0000050		mg/L		0.000005	09-AUG-19
Calcium (Ca)-Dissolved			<0.050		mg/L		0.05	09-AUG-19
Cesium (Cs)-Dissolved			<0.000010		mg/L		0.00001	09-AUG-19
Chromium (Cr)-Dissolved			<0.00010		mg/L		0.0001	09-AUG-19
Cobalt (Co)-Dissolved			<0.00010		mg/L		0.0001	09-AUG-19
Copper (Cu)-Dissolved			<0.00020		mg/L		0.0002	09-AUG-19
Iron (Fe)-Dissolved			<0.010		mg/L		0.01	09-AUG-19
Lead (Pb)-Dissolved			<0.000050		mg/L		0.00005	09-AUG-19
Lithium (Li)-Dissolved			<0.0010		mg/L		0.001	09-AUG-19
Magnesium (Mg)-Dissolved			<0.0050		mg/L		0.005	09-AUG-19
Manganese (Mn)-Dissolved			<0.00010		mg/L		0.0001	09-AUG-19
Molybdenum (Mo)-Dissolved			<0.000050		mg/L		0.00005	09-AUG-19
Nickel (Ni)-Dissolved			<0.00050		mg/L		0.0005	09-AUG-19
Phosphorus (P)-Dissolved			<0.030		mg/L		0.03	09-AUG-19
Potassium (K)-Dissolved			<0.050		mg/L		0.05	09-AUG-19
Rubidium (Rb)-Dissolved			<0.00020		mg/L		0.0002	09-AUG-19
Selenium (Se)-Dissolved			<0.000050		mg/L		0.00005	09-AUG-19
Silicon (Si)-Dissolved			<0.050		mg/L		0.05	09-AUG-19
Silver (Ag)-Dissolved			<0.000010		mg/L		0.00001	09-AUG-19
Sodium (Na)-Dissolved			<0.050		mg/L		0.05	09-AUG-19
Strontium (Sr)-Dissolved			<0.00010		mg/L		0.0001	09-AUG-19
Sulfur (S)-Dissolved			<0.50		mg/L		0.5	09-AUG-19
Tellurium (Te)-Dissolved			<0.00020		mg/L		0.0002	09-AUG-19
Thallium (Tl)-Dissolved			<0.000010		mg/L		0.00001	09-AUG-19
Thorium (Th)-Dissolved			<0.00010		mg/L		0.0001	09-AUG-19
Tin (Sn)-Dissolved			<0.00010		mg/L		0.0001	09-AUG-19
Titanium (Ti)-Dissolved			<0.00030		mg/L		0.0003	09-AUG-19
Tungsten (W)-Dissolved			<0.00010		mg/L		0.0001	09-AUG-19
Uranium (U)-Dissolved			<0.000010		mg/L		0.00001	09-AUG-19
Vanadium (V)-Dissolved			<0.00050		mg/L		0.0005	09-AUG-19
Zinc (Zn)-Dissolved			<0.0010		mg/L		0.001	09-AUG-19
Zirconium (Zr)-Dissolved			<0.00020		mg/L		0.0002	09-AUG-19

Quality Control Report

Workorder: L2320485

Report Date: 21-AUG-19

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Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
MET-D-CCMS-WP								
	Water							
Batch	R4757104							
WG3128627-7	LCS							
Aluminum (Al)-Dissolved			101.9		%		80-120	14-AUG-19
Antimony (Sb)-Dissolved			94.9		%		80-120	14-AUG-19
Arsenic (As)-Dissolved			98.8		%		80-120	14-AUG-19
Barium (Ba)-Dissolved			99.5		%		80-120	14-AUG-19
Beryllium (Be)-Dissolved			105.9		%		80-120	14-AUG-19
Bismuth (Bi)-Dissolved			97.4		%		80-120	14-AUG-19
Boron (B)-Dissolved			109.1		%		80-120	14-AUG-19
Cadmium (Cd)-Dissolved			99.8		%		80-120	14-AUG-19
Calcium (Ca)-Dissolved			108.8		%		80-120	14-AUG-19
Cesium (Cs)-Dissolved			97.4		%		80-120	14-AUG-19
Chromium (Cr)-Dissolved			99.9		%		80-120	14-AUG-19
Cobalt (Co)-Dissolved			96.9		%		80-120	14-AUG-19
Copper (Cu)-Dissolved			97.9		%		80-120	14-AUG-19
Iron (Fe)-Dissolved			96.8		%		80-120	14-AUG-19
Lead (Pb)-Dissolved			94.9		%		80-120	14-AUG-19
Lithium (Li)-Dissolved			102.3		%		80-120	14-AUG-19
Magnesium (Mg)-Dissolved			102.7		%		80-120	14-AUG-19
Manganese (Mn)-Dissolved			98.8		%		80-120	14-AUG-19
Molybdenum (Mo)-Dissolved			97.0		%		80-120	14-AUG-19
Nickel (Ni)-Dissolved			97.3		%		80-120	14-AUG-19
Phosphorus (P)-Dissolved			103.7		%		80-120	14-AUG-19
Potassium (K)-Dissolved			98.6		%		80-120	14-AUG-19
Rubidium (Rb)-Dissolved			97.1		%		80-120	14-AUG-19
Selenium (Se)-Dissolved			95.2		%		80-120	14-AUG-19
Silicon (Si)-Dissolved			98.7		%		80-120	14-AUG-19
Silver (Ag)-Dissolved			97.6		%		80-120	14-AUG-19
Sodium (Na)-Dissolved			98.1		%		80-120	14-AUG-19
Strontium (Sr)-Dissolved			96.3		%		80-120	14-AUG-19
Sulfur (S)-Dissolved			101.3		%		80-120	14-AUG-19
Tellurium (Te)-Dissolved			94.2		%		80-120	14-AUG-19
Thallium (Tl)-Dissolved			96.3		%		80-120	14-AUG-19
Thorium (Th)-Dissolved			95.8		%		80-120	14-AUG-19
Tin (Sn)-Dissolved			97.0		%		80-120	14-AUG-19
Titanium (Ti)-Dissolved			93.7		%		80-120	14-AUG-19



Quality Control Report

Workorder: L2320485

Report Date: 21-AUG-19

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Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
MET-D-CCMS-WP								
	Water							
Batch	R4757104							
WG3128627-7	LCS							
Tungsten (W)-Dissolved			95.6		%		80-120	14-AUG-19
Uranium (U)-Dissolved			95.5		%		80-120	14-AUG-19
Vanadium (V)-Dissolved			99.0		%		80-120	14-AUG-19
Zinc (Zn)-Dissolved			97.5		%		80-120	14-AUG-19
Zirconium (Zr)-Dissolved			95.7		%		80-120	14-AUG-19
WG3128627-6	MB							
Aluminum (Al)-Dissolved			<0.0010		mg/L		0.001	14-AUG-19
Antimony (Sb)-Dissolved			<0.00010		mg/L		0.0001	14-AUG-19
Arsenic (As)-Dissolved			<0.00010		mg/L		0.0001	14-AUG-19
Barium (Ba)-Dissolved			<0.00010		mg/L		0.0001	14-AUG-19
Beryllium (Be)-Dissolved			<0.00010		mg/L		0.0001	14-AUG-19
Bismuth (Bi)-Dissolved			<0.000050		mg/L		0.00005	14-AUG-19
Boron (B)-Dissolved			<0.010		mg/L		0.01	14-AUG-19
Cadmium (Cd)-Dissolved			<0.0000050		mg/L		0.000005	14-AUG-19
Calcium (Ca)-Dissolved			<0.050		mg/L		0.05	14-AUG-19
Cesium (Cs)-Dissolved			<0.000010		mg/L		0.00001	14-AUG-19
Chromium (Cr)-Dissolved			<0.00010		mg/L		0.0001	14-AUG-19
Cobalt (Co)-Dissolved			<0.00010		mg/L		0.0001	14-AUG-19
Copper (Cu)-Dissolved			<0.00020		mg/L		0.0002	14-AUG-19
Iron (Fe)-Dissolved			<0.010		mg/L		0.01	14-AUG-19
Lead (Pb)-Dissolved			<0.000050		mg/L		0.00005	14-AUG-19
Lithium (Li)-Dissolved			<0.0010		mg/L		0.001	14-AUG-19
Magnesium (Mg)-Dissolved			<0.0050		mg/L		0.005	14-AUG-19
Manganese (Mn)-Dissolved			<0.00010		mg/L		0.0001	14-AUG-19
Molybdenum (Mo)-Dissolved			<0.000050		mg/L		0.00005	14-AUG-19
Nickel (Ni)-Dissolved			<0.00050		mg/L		0.0005	14-AUG-19
Phosphorus (P)-Dissolved			<0.030		mg/L		0.03	14-AUG-19
Potassium (K)-Dissolved			<0.050		mg/L		0.05	14-AUG-19
Rubidium (Rb)-Dissolved			<0.00020		mg/L		0.0002	14-AUG-19
Selenium (Se)-Dissolved			<0.000050		mg/L		0.00005	14-AUG-19
Silicon (Si)-Dissolved			<0.050		mg/L		0.05	14-AUG-19
Silver (Ag)-Dissolved			<0.000010		mg/L		0.00001	14-AUG-19
Sodium (Na)-Dissolved			<0.050		mg/L		0.05	14-AUG-19
Strontium (Sr)-Dissolved			<0.00010		mg/L		0.0001	14-AUG-19

Quality Control Report

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Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
MET-D-CCMS-WP		Water						
Batch R4757104								
WG3128627-6 MB								
Sulfur (S)-Dissolved			<0.50		mg/L		0.5	14-AUG-19
Tellurium (Te)-Dissolved			<0.00020		mg/L		0.0002	14-AUG-19
Thallium (Tl)-Dissolved			<0.000010		mg/L		0.00001	14-AUG-19
Thorium (Th)-Dissolved			<0.00010		mg/L		0.0001	14-AUG-19
Tin (Sn)-Dissolved			<0.00010		mg/L		0.0001	14-AUG-19
Titanium (Ti)-Dissolved			<0.00030		mg/L		0.0003	14-AUG-19
Tungsten (W)-Dissolved			<0.00010		mg/L		0.0001	14-AUG-19
Uranium (U)-Dissolved			<0.000010		mg/L		0.00001	14-AUG-19
Vanadium (V)-Dissolved			<0.00050		mg/L		0.0005	14-AUG-19
Zinc (Zn)-Dissolved			<0.0010		mg/L		0.001	14-AUG-19
Zirconium (Zr)-Dissolved			<0.00020		mg/L		0.0002	14-AUG-19
NH3-COL-WP		Water						
Batch R4738511								
WG3123046-10 LCS								
Ammonia, Total (as N)			96.3		%		85-115	01-AUG-19
WG3123046-9 MB								
Ammonia, Total (as N)			<0.010		mg/L		0.01	01-AUG-19
Batch R4740074								
WG3124797-2 LCS								
Ammonia, Total (as N)			99.1		%		85-115	02-AUG-19
WG3124797-1 MB								
Ammonia, Total (as N)			<0.010		mg/L		0.01	02-AUG-19
Batch R4742697								
WG3125936-2 LCS								
Ammonia, Total (as N)			100.3		%		85-115	06-AUG-19
WG3125936-1 MB								
Ammonia, Total (as N)			<0.010		mg/L		0.01	06-AUG-19
SO4-IC-N-WP		Water						
Batch R4739256								
WG3122737-10 LCS								
Sulfate (SO4)			101.9		%		90-110	02-AUG-19
WG3122737-9 MB								
Sulfate (SO4)			<0.30		mg/L		0.3	02-AUG-19



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Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
SO4-IC-N-WP								
Batch	R4745006							
WG3122743-2	LCS							
Sulfate (SO4)			103.2		%		90-110	02-AUG-19
WG3122743-1	MB							
Sulfate (SO4)			<0.30		mg/L		0.3	02-AUG-19
TC,EC-QT97-WP								
Batch	R4734614							
WG3120856-2	DUP	L2320485-2						
Total Coliforms		>2420	>2420		MPN/100mL	0.0	65	31-JUL-19
Escherichia Coli		1300	1200		MPN/100mL	7.7	65	31-JUL-19
WG3120856-1	MB							
Total Coliforms			<1		MPN/100mL		1	31-JUL-19
Escherichia Coli			<1		MPN/100mL		1	31-JUL-19
TC,EC10-QT97-WP								
Batch	R4734628							
WG3120889-2	DUP	L2320485-1						
Total Coliforms		>24200	10100	DUPM	MPN/100mL	82	65	31-JUL-19
Escherichia Coli		3650	1940		MPN/100mL	62	65	31-JUL-19
WG3120889-1	MB							
Total Coliforms			<1		MPN/100mL		1	31-JUL-19
Escherichia Coli			<1		MPN/100mL		1	31-JUL-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.
RPD-NA	Relative Percent Difference Not Available due to result(s) being less than detection limit.

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.

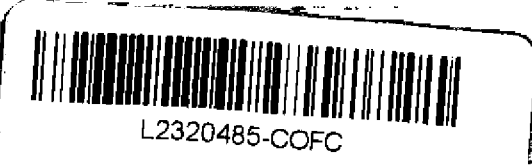
Please note that this report may contain QC results from anonymous Sample Duplicates and Matrix Spikes that do not originate from this Work Order.



Chain of Custody (COC) / Analytical Request Form

Canada Toll Free: 1 800 668 9878

www.alsglobal.com



COC Number: 15 -

Page of

Report To Contact and company name below will appear on the final report		Report Format / Distribution		all E&P TATs with your AM - surcharges will apply		
Company:	City of Winnipeg	Select Report Format:	<input checked="" type="checkbox"/> PDF <input type="checkbox"/> EXCEL <input type="checkbox"/> EDD (DIGITAL)	Regular (try) Standard TAT if received by 3 pm - business days - no surcharges apply		
Contact:	Chris Kozak	Quality Control (QC) Report with Report	<input checked="" type="checkbox"/> YES <input type="checkbox"/> NO	PRIORITY (Business Days)	EMERGENCY	
Phone:	204-986-2384	<input type="checkbox"/> Compare Results to Criteria on Report - provide details below if box checked		4 day [P4] <input type="checkbox"/>	1 Business day [E1] <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	3 day [P3] <input type="checkbox"/>	Same Day, Weekend or Statutory holiday [E0] <input type="checkbox"/>	
Street:	1120 Waverly Street	Email 1 or Fax:	ckozak@winnipeg.ca	Date and Time Required for all E&P TATs: dd-mmm-yy hh:mm		
City/Province:	Winnipeg, Manitoba	Email 2:		For tests that can not be performed according to the service level selected, you will be contacted.		
Postal Code:	R3T 0P4	Email 3:		Analysis Request		
Invoice To	Same as Report To <input type="checkbox"/> YES <input type="checkbox"/> NO	Invoice Distribution		Indicate Filtered (F), Preserved (P) or Filtered and Preserved (F/P) below		
	Copy of Invoice with Report <input type="checkbox"/> YES <input type="checkbox"/> NO	Select Invoice Distribution:	<input type="checkbox"/> EMAIL <input checked="" type="checkbox"/> MAIL <input type="checkbox"/> FAX			
Company:		Email 1 or Fax:				
Contact:		Email 2:				
Project Information		Oil and Gas Required Fields (client use)				
ALS Account # / Quote #:	W10051/Q67317	AFE/Cost Center:	PO#			
Job #:	Section A (BRRMF Surface Water)	Major/Minor Code:	Routing Code:			
PO / AFE:		Requisitioner:				
LSD:		Location:				
ALS Lab Work Order # (lab use only)		ALS Contact:				
		Sampler:				
ALS Sample # (lab use only)	Sample Identification and/or Coordinates (This description will appear on the report)	Date (dd-mmm-yy)	Time (hh:mm)	Sample Type	Number of Containers	
1	SWQ25-16	226833	31-Jul-19	09:25	Water	
2	SWQ25-2	226832		09:48		
3	SWQ25-15A	226846		10:20		
4	SWQ25-15B	226847		10:29		
5	SWQ25-11C	226841		10:39		
6	SWQ25-11B	226840		11:03		
7	SWQ25-11A	226839		11:11		
8	SWQ25-100	226848		12:00		
9	SWQ25-Field Blank	226851		09:00		
10	SWQ25-Trip Blank	226850		09:00		
11	SWQ25-6	226834		11:45		
12	SWQ25-8	226836		12:01		
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		<i>No dissolved nutrients Bottles will be brought Aug 1 2019</i>		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 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		
				20.4		
SHIPMENT RELEASE (client use)		INITIAL SHIPMENT RECEPTION (lab use only)		FINAL SHIPMENT RECEPTION (lab use only)		
Released by:	Date:	Time:	Received by:	Date:	Time:	Received by:
<i>[Signature]</i>	31-Jul-19	14:05	<i>[Signature]</i>	July 31	2:05	<i>[Signature]</i>

REFER TO BACK PAGE FOR ALS LOCATIONS AND SAMPLING INFORMATION

WHITE - LABORATORY COPY YELLOW - CLIENT COPY

Failure to complete all portions of this form may delay analysis. Please fill in this form LEGIBLY. By the use of this form the user acknowledges and agrees with the Terms and Conditions as specified on the back page of the white - report copy.

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

Refer to SIF
SLBT-Aug-19

OCTOBER 2010 FRONT



Chain of Custody (COC) / Analytical Request Form

Canada Toll Free: 1 800 668 9878

COC Number: 15 -

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L2320485-COFC

Report To Contact and company name below will appear on the final report			Report Form			firm all E&P TATs with your AM - surcharges will apply																																																																																																																																																											
Company: City of Winnipeg			Select Report Format: <input checked="" type="checkbox"/> PDF			Regular [R] <input type="checkbox"/> Standard TAT if received by 3 pm - business days - no surcharges apply						EMERGENCY																																																																																																																																																					
Contact: Chris Kozak			Quality Control (QC) Report with Report <input checked="" type="checkbox"/> YES <input type="checkbox"/> NO			4 day [P4] <input type="checkbox"/>		1 Business day [E1] <input type="checkbox"/>		Same Day, Weekend or Statutory holiday [E0] <input type="checkbox"/>																																																																																																																																																							
Phone: 204-986-2384			<input type="checkbox"/> Compare Results to Criteria on Report - provide details below if box checked			3 day [P3] <input type="checkbox"/>		2 day [P2] <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			Date and Time Required for all E&P TATs:						dd-mm-yy hh:mm																																																																																																																																																					
Street: 1120 Waverly Street			Email 1 or Fax: ckozak@winnipeg.ca			For tests that can not be performed according to the service level selected, you will be contacted.																																																																																																																																																											
City/Province: Winnipeg, Manitoba			Email 2			Analysis Request																																																																																																																																																											
Postal Code: R3T 0P4			Email 3			Indicate Filtered (F), Preserved (P) or Filtered and Preserved (F/P) below																																																																																																																																																											
Invoice To			Invoice Distribution			Number of Containers																																																																																																																																																											
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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)																																																																																																																																																											
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Date: 07/31/2019			Date: July 31			Date: 2-05		Date:																																																																																																																																																									
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