



100 Crystal Run Road, Suite 101, Middletown, NY, 10941
T 845.695.0200 | F 845.692.5894 | W www.cornerstoneeg.com

VIA ELECTRONIC MAIL

July 14, 2016

Michael Mason, P.E.
Bureau of Construction Services
Division of Environmental Remediation
New York State Department of Environmental Conservation
625 Broadway, 12th Floor
Albany, New York 12233-7013

Re: Quarterly Progress Report – 2nd Quarter 2016
Harriman Inactive Waste Disposal Site #336006

Dear Mr. Mason:

On behalf of the Maybrook and Harriman Environmental Trust (the Trust), this letter and inspection reports (attached) provide the second quarter of 2016 project progress report for the Harriman Site, located in Harriman, New York (Harriman Site).

Site Remediation Activities Performed (April - June 2016)

- The biosparging system was shut down on September 10, 2008 in accordance with the Supplemental Remedial Action Work Plan approved by the New York State Department of Environmental Conservation (NYSDEC) on June 18, 2008, and remained off line through the second quarter of 2016, per recommendations in prior quarterly reports to the NYSDEC. Because the system was off line, no routine operation and maintenance was necessary during the reporting period. The building housing the biosparge system remains locked and in a generally good state of repair. During the first quarter of 2016, ELT Harriman, LLC completed demolition activities at the site that were per the request of the NYSDEC. Following completion of the demolition activities, Cornerstone, on behalf of the Trust performed site reconnaissance and exploratory work on March 14-16, 2016 to assess the condition of the biosparge system, and reported on the system condition in the first quarter of 2016 progress report. An evaluation of the observed biosparge system damage indicates that with some repairs operation of the system could be restored in the future, if there were a need for the system to be brought back on line.

- Interim cover along the West Branch of the Ramapo River was evaluated as a part of a site inspection performed on June 20, 2016. The interim cover remains in good condition. The cover is well vegetated, and there were no signs of erosion.
- The parking lot is in a generally good state of repair. Potholes were generally filled with asphalt and only four minor open potholes were observed.
- The quarterly well inspection report is also attached for reference. The monitoring well network in the routine five-quarter monitoring program remains in a good state of repair and functional as noted in the attached summary tabulation from the June 20 inspection. As described in the first quarter of 2016 progress report, wells damaged during the demolition work performed at the site have been repaired or abandoned if not part of the monitoring program.
- During a prior December 1, 2015 well inspection, wells SVE-1, SVE-3, SVE-4, and VER-2 were inspected and secured with new surface completions where necessary, and with new absorbent socks. Because product had not been observed in these wells for some time, the intent was to secure the wells and perform inspections on clean absorbent socks for two consecutive quarters. Clean absorbent socks were placed in these wells in December 2015 and March 2016, and inspections following each absorbent sock replacement have not indicated the presence of product. As described in the first quarter of 2016 progress report, if product was absent during the two consecutive quarterly inspections, Cornerstone would remove the absorbent socks for one quarter, so that during the third quarter of 2016 it would be possible to check for the presence of product in the wells (e.g., evidence of sheen or response on an interface probe). During the June 20, 2016 inspection, the absorbent socks were removed. Depending on the results of observations during the third quarter of 2016, it may be appropriate to discontinue the inspections and use of absorbent socks in these wells.
- In the first quarter of 2012 progress report, the Trust requested that following the April 2012 groundwater sampling event the sampling program be modified to an annual frequency, based on the consistency of the groundwater monitoring data since 2008 when the biosparge system was shut down. Following this request in the April 2012 quarterly progress report, the NYSDEC approved modifying the groundwater monitoring frequency to every five quarters. This approval was provided in an electronic mail message from the NYSDEC to Cornerstone dated May 10, 2012. The NYSDEC approved the frequency of every five quarters, in lieu of annually, so that the groundwater monitoring would occur at different times throughout the year. The list of monitoring wells to be sampled and analytical parameters remain unchanged. The third of the five quarter sampling events was completed on March 8-10, 2016. Groundwater sampling was performed by R&C Formation, Ltd. at 29 wells. Laboratory analyses were completed by TestAmerica. The March 2016 groundwater sampling and analysis report prepared by R&C Formation, Ltd. is attached for reference. The data provided in the attached groundwater monitoring report indicates consistency with prior results and may be summarized as follows:

- o After shutdown of the biosparging system, the data continue to demonstrate non-detectable concentrations of site VOCs/SVOCs at the down-gradient property boundary. The only exception is pyridine that was detected in four of the down-gradient wells at estimated (“J” qualified), trace concentrations; however, these results are associated with a laboratory artifact since pyridine was found in the laboratory blank sample.
- o At monitoring well MW-24S, mercury was detected at a concentration (0.76 ppb), similar to the November 2014 sampling results, and slightly above the groundwater quality standard (0.7 ppb). Mercury was detected twice before in this well above the groundwater quality standard at concentrations of 0.73 and 1.1 ppb, but generally has been below the groundwater quality standard. This concentration slightly above the groundwater quality standard is likely attributable to fluctuations in recharge and groundwater levels, but could also be associated with laboratory analytical variability at such a nominal level above the standard.
- o Benzene concentrations in groundwater within the main plant area, as illustrated in the attached time series graphs, continue to indicate that conditions are at equilibrium since shutdown of the biosparging system. Overall the benzene trend data show fluctuations typical of past results, and declining concentrations. For instance, monitoring well MW-16S is showing a consistent declining concentration with the March 2016 result at the lowest concentration recorded during the period of record (since 2001) and just nominally above the Class GA groundwater quality standard (1.3 ppb v. the standard of 1 ppb). MW- 20S and MW-37S have also generally been showing declining concentrations, and remain at these lower levels. Monitoring well OW-6 has been indicating a declining trend for the past three sampling events. Monitoring well OW-7 showed a slight increase in benzene concentration, but below historical highs. These observations are consistent with the beneficial effects of the past remediation activities, and where fluctuations in concentrations are observed they are consistent with fluctuations exhibited during operation of the biosparge system and are attributable to changes in precipitation and groundwater levels over time. Ongoing fluctuations in both groundwater levels and constituent concentrations are anticipated and are consistent with the site conceptual model.
- o The data continue to demonstrate that since shut down of the biosparging system, there is no evidence of an expansion of the plume or exceedance of groundwater quality standards at the down-gradient perimeter. Therefore, groundwater monitoring in accordance with the current program is anticipated to continue, and the next sampling event will be scheduled during the second quarter of 2017.
- The IRM groundwater extraction system components remain off-line on standby per the NYSDEC’s approval pending the completion of the Supplemental Remedial Action Work Plan, including continued groundwater monitoring, and evaluation of the appropriateness of an ESD. Because of the ELT Harriman, LLC demolition work, the

groundwater extraction system components have been dismantled, but the system can be restored, if necessary.

Parking Lot and Other

As of May 14, 2010, the Trust had concluded all work and information transfer requested by the NYSDEC in connection with sampling and delineation of the calcium sulfate material in the Area B parking lot. The Trust, in conjunction with ELT Harriman, LLC submitted a *Site-Wide Characterization Summary Report* on March 7, 2011. The Trust in coordination with ELT has conducted both quarterly parking lot and riverbank inspections.

Separately, Nepera, Inc. and Warner-Lambert Company entered into a Stipulation and Order with the NYSDEC for a supplemental remedial investigation and feasibility study for portions of the Harriman Site, which was filed with the Court on December 17, 2013 and so-ordered by the Court on January 24, 2014.

Activities for the 3rd Quarter 2016 (July - September 2016)

Perform the regularly scheduled, quarterly monitoring well, SVE/VER well, and riverbank inspections.

Assess the continued need for absorbent socks in wells SVE-1, SVE-3, SVE-4, and VER-2, and provide a recommendation in the third quarter 2016 progress report.

Please do not hesitate to contact us should you have questions or comments on any aspect of this progress report.

Sincerely,

CORNERSTONE ENGINEERING AND LAND SURVEYING, PLLC

A handwritten signature in black ink, appearing to read "Gary DiPippo", written in a cursive style.

Gary J. DiPippo, P.E.
Region Vice President

Attachments: Inspection Reports

cc: P. Patel
D. Crosby
S. Levine
C. Clark
J. Jones
K. Might
M. Robinson

Former Nepera Plant - Harriman, NY: Quarterly Well Inspection Report

Date 6/20/2016

Monitoring Well	Diameter Inches	Finish	Collar	Lid	Plug	Lock	Tag	Casing	Comments	Action Items
MW-1S*	6	Stickup	OK	OK	OK	OK	OK	OK		
MW-2S	4	Stickup	OK	OK	OK	OK	OK	D	Casing is sheared off a few feet below top of ground.	No repair planned, well not in use, possible future abandonment
MW-3S	4	Stickup	OK	OK	OK	OK	OK	OK		
MW-4S	4	Stickup	OK	OK	OK	OK	OK	OK		
MW-5S*	4	Stickup	OK	OK	OK	OK	OK	OK		
MW-7S*	4	Stickup	OK	OK	OK	OK	OK	OK	Well is behind chain link fence that leads up to the river bank.	
MW-8S*	4	Stickup	OK	OK	OK	OK	OK	OK		
MW-9S	4	Stickup	OK	OK	OK	OK	OK	OK		
MW-11S*	4	Stickup	OK	OK	OK	OK	OK	OK		
MW-12S*	2	Flushmount	OK	OK	OK	OK	OK	OK		
MW-13S	2	Flushmount	OK	OK	OK	OK	OK	OK		
MW-16S*	4	Stickup	OK	OK	OK	X	OK	OK	Missing lock	Replace next inspection
MW-20S*	4	Flushmount	OK	OK	OK	OK	OK	OK		
MW-21S	4	Stickup	OK	OK	OK	OK	OK	OK		
MW-24S*	4	Stickup	OK	OK	OK	OK	OK	OK		
MW-25S*	4	Stickup	OK	OK	OK	OK	OK	OK		
MW-27S	4	Stickup	OK	OK	OK	OK	OK	OK		
MW-33S*	2	Flushmount	OK	OK	OK	OK	OK	OK		
MW-35S*	2	Flushmount	OK	OK	OK	OK	OK	OK		
MW-36S	2	Flushmount	OK	OK	OK	OK	OK	OK		
MW-37S*	2	Flushmount	OK	OK	OK	OK	OK	OK		
OW-6*	2	Stickup	OK	OK	OK	OK	OK	OK		
OW-7*	2	Stickup	OK	OK	OK	OK	OK	D	PVC inside well casing is detached.	Exercise care when removing plug for sampling so as not to detach casing.
R-1	6		NI	NI	NI	NI	NI	NI	Well no longer exists	
RW-1**	6	Vault	NI	NI	NI	NI	NI	NI		
RW-1R*	6	Vault	OK	OK	OK	OK	OK	OK		

Former Nepera Plant - Harriman, NY: Quarterly Well Inspection Report

Date 6/20/2016

Monitoring Well	Diameter Inches	Finish	Collar	Lid	Plug	Lock	Tag	Casing	Comments	Action Items
MW-53D*	4	Flushmount	OK	OK	OK	OK	OK	OK		
PZ-1	2	Stickup	OK	OK	OK	OK	OK	OK		
PZ-2	2	Flushmount	OK	OK	OK	OK	OK	OK	Well abandoned	
PZ-3	2	Flushmount	D	OK	OK	OK	OK	OK	Only one bolt holds, other tapping for bolt is broken off collar.	Collar still secure
MW-15S	4	Stickup	OK	OK	OK	OK	OK	OK	Well abandoned	
MW-17S	4	Stickup	OK	OK	OK	X	OK	D	Outer and inner casing repaired, well needs new lock	Replace next inspection
MW-19S	4	Stickup	OK	OK	OK	OK	OK	D	Well abandoned	
MW-22S(1)	4	Stickup	OK	OK	OK	OK	OK	OK		
MW-23S(1)	4	Stickup	OK	OK	OK	OK	OK	OK		
MW-26S	4	Stickup	OK	OK	OK	OK	OK	OK		
MW-28S(2)	2	Stickup	OK	OK	OK	OK	OK	OK		
MW-29S(2)	2	Stickup	OK	OK	OK	OK	OK	OK		
MW-34	2	Flushmount	OK	OK	OK	OK	OK	OK	Can not access well due to placement of new faceplate.	Well not in use, no repiar planned
MW-35AQ	2	Flushmount	OK	OK	OK	OK	OK	OK		
MW-36AQ	2	Flushmount	OK	OK	OK	OK	OK	OK		
MW-37AQ	2	Flushmount	OK	OK	OK	OK	OK	OK		
MW-53S	4	Flushmount	OK	OK	OK	OK	OK	OK		
PZ-4	2	Stickup	OK	OK	OK	OK	OK	OK		
MW-6D*	4	Stickup	OK	OK	OK	OK	OK	OK	Well is behind a chain link fence that leads upto the river bank.	
MW-10D	6	Stickup	OK	OK	X	OK	OK	OK	No plug, tubing is tied off inside of well, Inner casing too far down to plug.	
MW-18D	6	Stickup	OK	OK	X	OK	OK	OK	Inner casing too far down to plug.	No repair planned, well not in use, possible future abandonment
MW-20D*	4	Flushmount	OK	OK	OK	OK	OK	OK		
MW-21D	4	Stickup	OK	OK	OK	OK	OK	OK		
MW-23D(1)*	4	Stickup	OK	OK	OK	OK	OK	OK		

Former Nepera Plant - Harriman, NY: Quarterly Well Inspection Report

Date 6/20/2016

Monitoring Well	Diameter Inches	Finish	Collar	Lid	Plug	Lock	Tag	Casing	Comments	Action Items
MW-25D	4	Stickup	OK	OK	OK	OK	OK	OK		
MW-26D*	2	Stickup	OK	OK	OK	OK	OK	OK		
MW-27D*	6	Stickup	OK	OK	OK	OK	OK	OK		
R-2D	10	Stickup	NI	NI	NI	NI	NI	NI	Shed removed	Well not in use
R-3D	10	Stickup	OK	OK	X	X	OK	OK	Large metal plate covering well	
MW-101*	2	Flushmount	OK	OK	OK	OK	OK	OK		
MW-102*	2	Stickup	OK	OK	OK	OK	OK	OK		
MW-103*	2	Flushmount	OK	OK	OK	OK	X	OK	Tag missing	Well labeled
MW-104*	2	Flushmount	OK	OK	OK	OK	OK	OK		
MW-105*	2	Stickup	OK	OK	OK	OK	OK	OK		
MW-106*	2	Stickup	OK	OK	OK	OK	OK	OK		
20 DR*	2	Flushmount	OK	OK	OK	OK	OK	OK		

Field Technician:

D. Crim

(1) Off-Site Wells.

(2) Erosion Evaluation Wells

** RW-1 was replaced by RW-1R

X = Item Missing

B = Bolts Missing

NI = NOT INSPECTED

D = Damaged

OK = Acceptable Condition

*Part of Monitoring Program

**RIVERBANK INSPECTION FORM
WEST BRANCH OF THE RAMAPO RIVER
MAYBROOK AND HARRIMAN TRUST
HARRIMAN, NEW YORK**

DATE: 20-Jun-16

INSPECTION (Check): ANNUAL

INSPECTOR: Dan Wheeler

QUARTERLY **X**

ADEQUATE

COMMENTS

IRM COVER AND SILT FENCE

A. General condition of cover material Good

Riverbank cover in good condition, no signs of erosion, no white material showing.

B. Settlement of covered area Good

Four minor potholes noted in parking lot.

C. General condition of silt fence N/A

Silt fence has been removed from stream bank per NYSDEC approval on January 12, 2016.

SVE/VER Product Measurement Checklist

Recorded By:

Dan Wheeler

Date:

6/20/2016

DTP	DTW
0	0.3
0	3.9
0	3.52
0	3.22



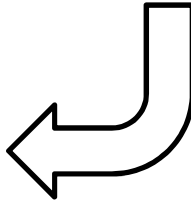
SVE-1
SVE-2
SVE-3
SVE-4



VER-1
VER-2
VER-3
VER-4

DTP	DTW
0	5.87
0	5.92
0	5.62
0	5.3

To Entrance/Exit



NOTE: SVE wells are closer to the side of the road.

VER-1 and SVE-1 are both 4" wells. All others are 2" diameter.



Indicates absorbent sock in well.

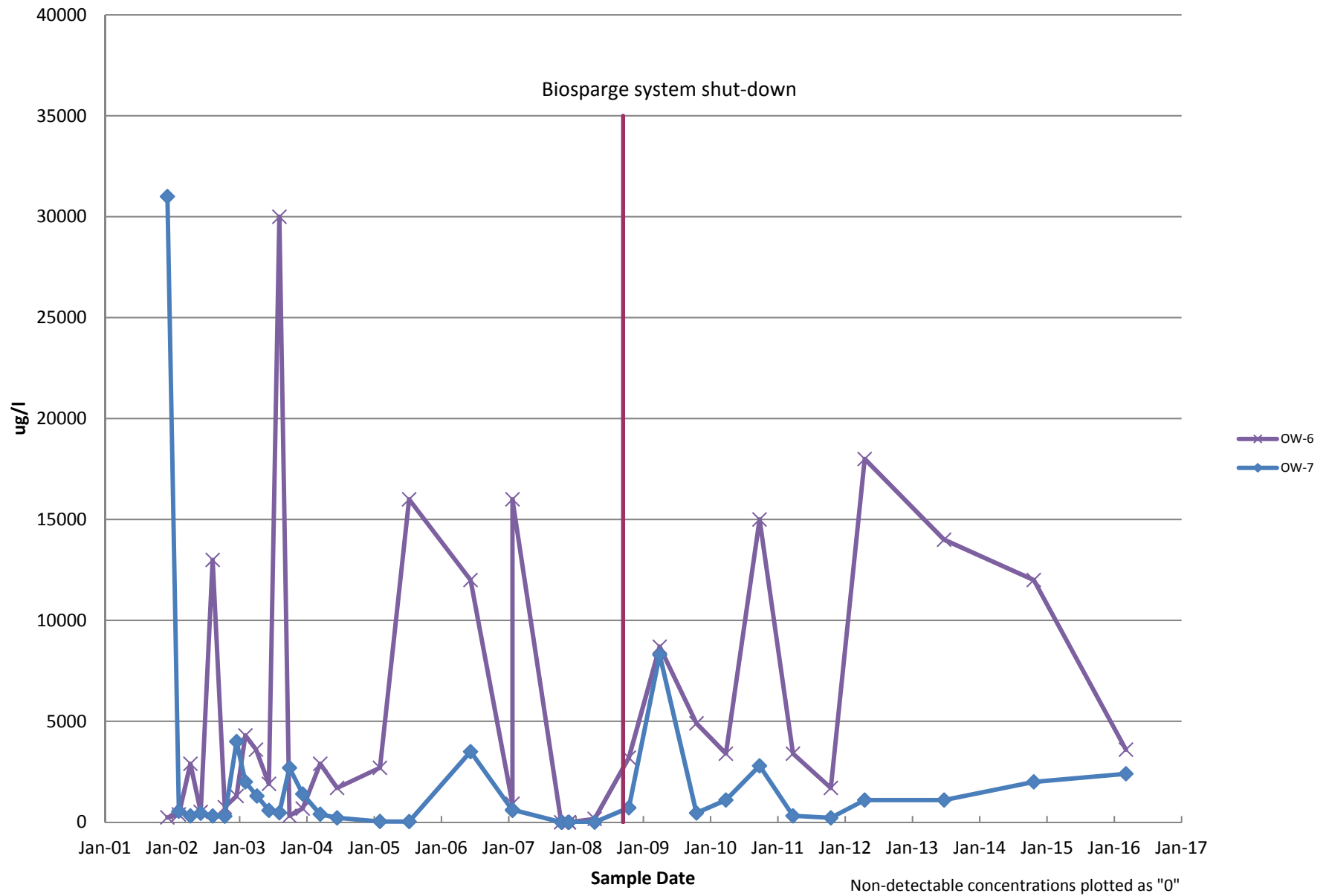
Comments:

Absorbent socks removed from monitoring wells

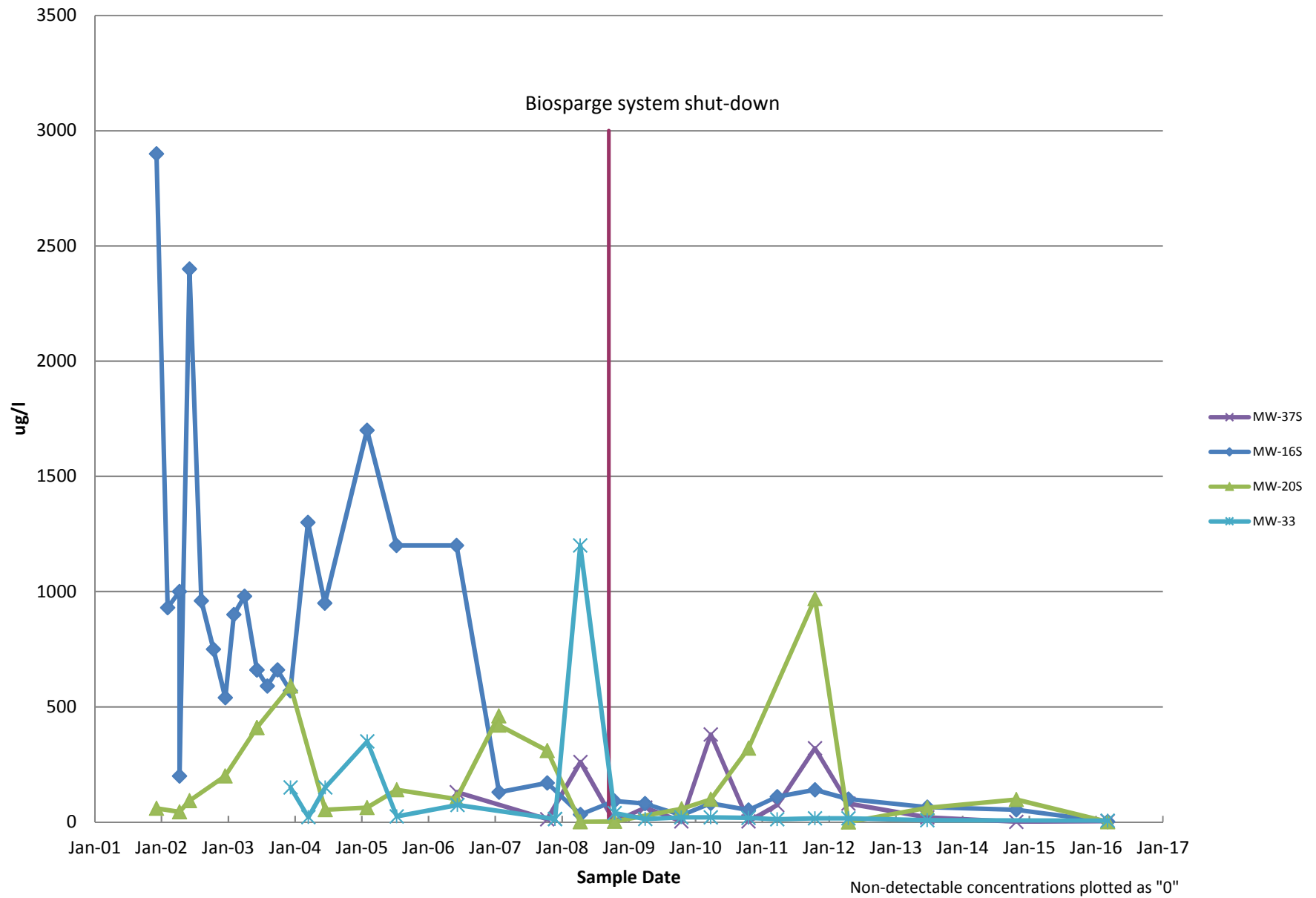
No response on interface probe, no observation of sheen

Some slight staining on absorbent socks, but no evidence of product

Benzene Concentration with Time



Benzene Concentration with Time



**Groundwater Monitoring Report
Former Nepera Plant
Harriman, New York
March, 2016**

Prepared for:

**Maybrook and Harriman Trust
c/o Mr. George Hollerbach, Trust Representative
Quantum Management Group, Inc.
1187 Main Avenue, Suite 2B
Clifton, NJ 07011**

Prepared by:

**R & C Formation, Ltd.
171 Deer Park Ave. Suite 3
Babylon, New York 11702**

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Appendices

- Appendix 1. Groundwater Sampling Logs
- Appendix 2. Electronic Water Level Indicator Calibration Procedures
- Appendix 3. Statement of Procedures for the Calibration of Multi-Parameter Water Quality Monitoring System, Horiba U-22XD
- Appendix 4. Laboratory Analytical Data

Groundwater Monitoring Report Former Nepera Plant Harriman, New York March, 2016

Introduction

This report presents the results of groundwater monitoring activities performed at the Former Nepera Plant, Harriman, New York, March 8-10, 2016. The results of groundwater monitoring activities reported represent the eleventh event completed following the shut-down of the onsite biosparge system, as approved by NYSDEC, pursuant to the *Conceptual Site Model and Supplemental Remedial Action Work Plan* (HydroQual, May, 2008). The scope-of-work performed, per an agreement with the Maybrook and Harriman Environmental Trust, is presented below. A description of monitoring procedures, quality assurance/quality control protocols and a summary of analytical results follows.

Scope of Work

The scope-of-work performed includes the following items:

- 1) Measurement of groundwater levels in 34 select Overburden Aquifer wells.
- 2) Collection of groundwater samples from 29 monitoring wells installed within 2 hydrogeologic units identified beneath the Former Nepera Plant: *Overburden Aquifer* (MW-1S, MW-5S, MW-7S, MW-8S, MW-11S, MW-12S, MW-16S, MW-20S, MW-24S, MW-25S, MW-33S, MW-35S, MW-37S, OW-6, OW-7, RW-1R, MW-53D, MW-101, MW-102, MW-103, MW-104, MW-105 & MW-106); *Bedrock Aquifer* (MW-6D, MW-20D, MW-23D, MW-26D, MW-27D & MW-20DR).
- 3) Analysis of all collected groundwater samples for *volatile organic compounds* (benzene, toluene, ethylbenzene and xylenes) and *semi-volatile organic compounds* (pyridine, alpha-picoline and 2-aminopyridine); and select ground water samples for *general chemistry* parameters (iron, manganese, sulfate, nitrate, ammonia and mercury).

Monitoring well locations are depicted in Figure 1.



LEGEND

- MONITORING WELL IN OVERBURDEN
AQUIFER (SAND/GRAVEL)
- MONITORING WELL IN BEDROCK AQUIFER

Title: Monitoring Well Location Map	
Project: Nepera Inc. Harriman, New York	Date: 11/05/08
	Figure: 1
R & C Formation, Ltd. Professional Groundwater and Environmental Services 171 Deer Park Ave Suite 3 Babylon, New York 11702	Scale As Shown
	Drawing No.: NI1008-01
	Prepared By: MAC Appr. By: RNC

Monitoring Procedures

Groundwater Level Measurements

The depth-to-water in 34 select Overburden Aquifer monitoring wells was measured March 8, 2016 between the hours of 0900 and 1115 utilizing an electronic water level indicator accurate to within 0.01 feet. Table 1 presents measurements recorded and correlated to mean sea level (via existing reported measuring point elevations).

Groundwater Sampling

Prior to commencing groundwater sampling activities, the concentration of volatile organic compounds within the head-space of on-site monitoring wells, if any, was measured using a photoionization detector (PID) capable of detecting a vapor-phase concentration to within 1 part per million (ppm).

Groundwater sampling methodology includes low-flow purging and the subsequent collection of samples upon the stabilization of measured and recorded field parameters: oxidation-reduction potential, pH, conductivity, temperature, dissolved oxygen and turbidity. A submersible centrifugal pump (Grundfos Redi-Flo2), placed at well-screen (or open borehole) depth with per-well dedicated tubing, was used for both purging and sample collection. Field parameters were measured using a Horiba U-22XD multi-parameter water quality monitoring system and flow-through cell. In addition, all collected samples were field-analyzed for iron+2 via a Hach 1R-18C Test Kit.

In order to negate the potential for cross-well contamination, the Grundfos Redi-Flo2 was cleaned internally and externally with an Alconox and water solution, followed by a fresh water rinse, between monitoring locations. Furthermore, groundwater samples were collected in the following progression: 1) downgradient (with respect to groundwater flow) perimeter monitoring wells; 2) monitoring wells associated with historically non-detect groundwater analyses; and 3) monitoring wells associated with the historically most impacted groundwater analyses.

Upon the completion of each daily sampling event, collected samples were submitted under chain-of-custody control to New York State Certified TestAmerica Analytical Laboratories.

Table 1
Basic Hydrologic Data
Nepera Harriman Site, Harriman, NY
Measured March 8, 2016

Well Number	Measuring Point (feet above MSL)	Depth to Water (feet)	Water Level (feet above MSL)	Screen Interval (feet above and below MSL)
MW-1S	522.77	6.80	515.97	507.77-497.77
MW-2S	530.58	2.15	528.43	518.08-508.08
MW-3S	525.70	1.95	523.75	510.70-500.70
MW-4S	524.74	1.40	523.34	482.24-472.24
MW-5S	535.26	10.66	524.60	500.26-490.26
MW-7S	524.69	4.85	519.84	498.69-488.69
MW-8S	526.24	1.62	524.62	461.24-456.24
MW-9S	529.59	3.70	525.89	515.59-508.59
MW-11S	527.44	2.45	524.99	482.44-477.44
MW-12S	530.21	4.98	525.23	505.21-495.21
MW-13S	530.36	5.27	525.09	503.36-493.36
MW-16S	*	8.30	NA	499.71-489.71
MW-20S	528.61	1.40	527.21	511.61-501.61
MW-21S	544.67	14.11	530.56	529.67-519.67
MW-24S	527.86	7.70	520.16	520.36-510.36
MW-25S	535.16	6.00	529.16	512.16-507.16
MW-27S	535.09	10.45	524.64	505.09-500.09
MW-33S	535.74	4.05	531.69	531.74-516.74
MW-35S	524.92	3.80	521.12	499.42-489.42
MW-36S	525.33	NA	NA	500.33-490.33
MW-37S	524.99	1.60	523.39	510.99-500.99
OW-6	534.51	4.80	529.71	514.51-504.51
OW-7	534.82	5.39	529.43	514.82-504.82
RW-1R	529.78	5.60	524.18	481.78-473.78
MW-53D	532.31	4.80	527.51	485.31-475.31
PZ-1	544.46	13.00	531.46	517.46-512.46
PZ-2	531.86	NA	NA	483.86-478.86
PZ-3	525.49	4.10	521.39	495.49-490.49
MW-101	525.94	5.15	520.79	28.00-33.00
MW-102	522.53	4.35	518.18	10.00-20.00
MW-103	533.52	7.08	526.44	50.00-60.00
MW-104	525.63	0.98	524.65	54.00-64.00
MW-105	528.22	3.61	524.61	63.50-68.50
MW-106	533.68	11.26	522.42	38.00-48.00

Note: Measured 0800 - 1100

* Measuring point compromised (top of casing sheared off)

NA: Not Available (not located)

Observations

Volatile organic compounds, if any, detected within the head-space of on-site monitoring wells, field parameters measured during well-purging activities and the physical characteristics (e.g., color, odor) of sampled groundwater are documented in Groundwater Sampling Logs presented in Appendix 1,

Quality Assurance/Quality Control

Groundwater Level Measurements

The electronic water level indicator utilized was calibrated as shown in: *Electronic Water Level Indicator Calibration Procedures* (see Appendix 2) prior to beginning groundwater level measuring activities

Groundwater Sampling

Preceding each daily sampling event, the Horiba U-22XD multi-parameter water quality monitoring system utilized during groundwater sampling activities was calibrated as described in: *Statement of Procedures for the Calibration of Multi-Parameter Water Quality Monitoring System, Horiba U-22XD*, presented in Appendix 3. In addition, a field blank (FB) was collected to assure the integrity of sampling equipment and procedures.

Groundwater Analysis

Appendix 4 presents laboratory analytical reports in relation to each of the three daily groundwater sampling events. Included in the reports are Case Narratives (conformance/nonconformance summary) of QA/QC procedures practiced by TestAmerica Analytical Laboratories. These procedures include instrument calibrations, analyses of method blanks, matrix spike blanks, and the percent-recovery of surrogates (system monitoring compounds).

As a means to assess potential sources of contamination in sample container preparation, method blank water and sample transport, trip blanks (TB) - representative of each daily sampling event - were analyzed for volatile organic compounds. The accuracy of reported analytical results was also evaluated via the analysis of a blind duplicate collected from monitoring well OW-7 (MW-DUP).

Summary of Analytical Results

QA/QC Samples

Volatile organic compounds were not detected in the field blank or any of the three daily trip blanks. The semi-volatile organic compound pyridine was tentatively detected in the collected field blank as well as the associated laboratory method blank. The general chemistry parameter sulfate was also detected in the field blank. Analytical results in relation to groundwater sample OW-7 and blind duplicate sample MW-DUP are similar. Consequently, with the exception of low level detections of pyridine and sulfate, the results of groundwater analyses summarized below are considered valid.

Volatile Organic Compounds

Analytical results for volatile organic compounds - including comparisons with New York State Department of Environmental Conservation (NYSDEC) Class GA Groundwater Standards - are presented on Table 2.

Semi-Volatile Organic Compounds

Analytical results for semi-volatile organic compounds (NYSDEC Class GA Groundwater Standards not established) are presented in Table 3.

General Chemistry

Analytical results for general chemistry parameters - including comparisons with NYSDEC Class GA Groundwater Standards - are presented on Table 4.

Conclusions

The results of March, 2016 groundwater monitoring activities summarized above are similar with those of recent events. Groundwater beneath the central portion of the Former Nepera Plant continues to be impacted, however, the contaminants of concern (e.g., volatile organic compounds), remain confined to the former manufacturing areas and are either not detected, or detected below groundwater standards in groundwater sampled from perimeter wells.

The next sampling event is scheduled for July, 2018. Analytical parameters will consist of BTEX compounds, select SVOC's and general chemistry parameters consistent with those reported herein.

Table 2
Summary of Analytical Results
Former Nepera Plant, Harriman, NY
Sampled March 8-10, 2016
Volatile Organic Compounds
Reported in Micrograms per Liter (µg/L)

	Benzene	Toluene	Ethylbenzene	Xylenes, (Total)
<i>Overburden Aquifer Wells</i>				
MW-1S	ND(0.09)	ND(0.25)	ND(0.30)	ND(0.28)
MW-5S	ND(0.09)	ND(0.25)	ND(0.30)	ND(0.28)
MW-7S	ND(0.09)	ND(0.25)	ND(0.30)	ND(0.28)
MW-8S	ND(0.09)	ND(0.25)	ND(0.30)	ND(0.28)
MW-11S	ND(0.09)	ND(0.25)	ND(0.30)	ND(0.28)
MW-12S	0.17 J	ND(0.25)	ND(0.30)	ND(0.28)
MW-16S	1.30	ND(0.25)	ND(0.30)	ND(0.28)
MW-20S	0.55 J	ND(0.25)	ND(0.30)	ND(0.28)
MW-24S	ND(0.09)	ND(0.25)	ND(0.30)	ND(0.28)
MW-25S	44.00	ND(0.25)	ND(0.30)	ND(0.28)
MW-33S	6.30	0.35 J	0.50 J	2.90
MW-35S	ND(0.09)	ND(0.25)	ND(0.30)	ND(0.28)
MW-37S	3.50	ND(0.25)	ND(0.30)	ND(0.28)
OW-6	3,600.00	ND(5.00)	ND(6.00)	ND(5.60)
OW-7	2,400.00	ND(1.30)	ND(1.50)	ND(1.40)
RW-1R	ND(0.09)	ND(0.25)	ND(0.30)	ND(0.28)
MW-53D	4.10	ND(0.25)	ND(0.30)	ND(0.28)
MW-101	ND(0.09)	ND(0.25)	ND(0.30)	ND(0.28)
MW-102	ND(0.09)	ND(0.25)	ND(0.30)	ND(0.28)
MW-103	ND(0.09)	ND(0.25)	ND(0.30)	ND(0.28)
MW-104	ND(0.09)	ND(0.25)	ND(0.30)	ND(0.28)
MW-105	ND(0.09)	ND(0.25)	ND(0.30)	ND(0.28)
MW-106	ND(0.09)	ND(0.25)	ND(0.30)	ND(0.28)
<i>Bedrock Wells</i>				
MW-6D	ND(0.09)	ND(0.25)	ND(0.30)	ND(0.28)
MW-20D	60.00	6.90	2.30	3.00
MW-23D	ND(0.09)	ND(0.25)	ND(0.30)	ND(0.28)
MW-26D	ND(0.09)	ND(0.25)	ND(0.30)	ND(0.28)
MW-27D	ND(0.09)	ND(0.25)	ND(0.30)	3.10
MW-20DR	0.096 J	ND(0.25)	ND(0.30)	ND(0.28)
<i>QA/QC</i>				
TB (3/8/16)	ND(0.09)	ND(0.25)	ND(0.30)	ND(0.28)
TB (3/9/16)	ND(0.09)	ND(0.25)	ND(0.30)	ND(0.28)
TB (3/10/16)	ND(0.09)	ND(0.25)	ND(0.30)	ND(0.28)
FB	ND(0.09)	ND(0.25)	ND(0.30)	ND(0.28)
MW-DUP	2,400.00	ND(1.30)	ND(1.50)	ND(1.40)
NYSDEC Class GA Standard	1.0	5.0	5.0	5.0

Note:

ND(): Compound not detected at the method detection limit

J: Indicates an estimated value

NYSDEC Class GA Standards: New York State Department of Environmental Conservation

Ambient Water Quality Standards for Source of Drinking Water Title 6 Part 703 (per August 1999 Amendment)

NA: Not Available (no water column)

Table 3
Summary of Analytical Results
Former Nepera Plant, Harriman, NY
Sampled March 8-10, 2016
Semi-Volatile Organic Compounds
Reported in Micrograms per Liter (µg/L)

	Pyridine	alpha-Picoline	2-Aminopyridine
<i>Overburden Aquifer Wells</i>			
MW-1S	ND(0.39)	ND(1.30)	ND(9.50)
MW-5S	ND(0.40)	ND(1.40)	ND(9.60)
MW-7S	0.52 JB	ND(1.40)	ND(10.0)
MW-8S	ND(0.42)	ND(1.50)	ND(10.0)
MW-11S	ND(0.38)	ND(1.30)	ND(9.40)
MW-12S	0.53 JB	ND(1.30)	ND(9.50)
MW-16S	ND(4.20)	ND(14.0)	ND(100.0)
MW-20S	ND(0.42)	ND(1.40)	ND(10.0)
MW-24S	0.46 JB	ND(1.40)	ND(9.70)
MW-25S	0.47 JB	120.0 J	ND(9.60)
MW-33S	0.68 JB	4.2 J	ND(9.70)
MW-35S	0.44 JB	ND(1.40)	ND(10.0)
MW-37S	0.71 JB	ND(1.30)	ND(9.50)
OW-6	ND(8.30)	290.0 J	ND(200.0)
OW-7	0.66 JB	100.0 J	ND(10.00)
RW-1R	ND(0.41)	ND(1.40)	ND(10.0)
MW-53D	0.49 JB	ND(1.30)	ND(9.60)
MW-101	0.43 JB	ND(1.40)	ND(9.90)
MW-102	0.54 JB	ND(1.40)	ND(9.90)
MW-103	ND(0.40)	ND(1.40)	ND(9.80)
MW-104	ND(0.44)	ND(1.50)	ND(11.0)
MW-105	ND(0.38)	ND(1.30)	ND(9.30)
MW-106	ND(0.41)	ND(1.40)	ND(9.90)
<i>Bedrock Wells</i>			
MW-6D	0.49 JB	ND(1.40)	ND(10.0)
MW-20D	6.3 JB	18.0 J	ND(9.20)
MW-23D	ND(0.39)	ND(1.30)	ND(9.50)
MW-26D	ND(0.39)	ND(1.30)	ND(9.50)
MW-27D	ND(0.38)	ND(1.30)	ND(9.40)
MW-20DR	ND(2.00)	ND(6.80)	ND(48.00)
<i>QA/QC</i>			
FB	0.81 JB	ND(1.40)	ND(10.0)
MW-DUP	ND(4.6)	99.0 J	ND(110.0)
NYSDEC Class GA Standard	NS	NS	NS

Note:

ND(): Compound not detected at the method detection limit

J: Indicates an estimated value

NYSDEC Class GA Standards: New York State Department of Environmental Conservation

Ambient Water Quality Standards for Source of Drinking Water Title 6 Part 703 (per August 1999 Amendment)

NS: No NYSDEC Standard Established

B: The analyte was found in an associated blank

Table 4
Summary of Analytical Results
Former Nepera Plant, Harriman, NY
Sampled March 8-10, 2016
General Chemistry

	Iron (µg/L)	Manganese (µg/L)	Sulfate (mg/L)	Nitrate (mg/L)	Ammonia (mg/L)	Mercury (µg/L)
<i>Overburden Aquifer Wells</i>						
MW-1S	13,000.00	828.00	7,400.00	0.440	15.00	na
MW-8S	5,820.00	482.00	23.60	ND(0.026)	8.10	na
MW-11S	1,380.00	557.00	13.50	ND(0.026)	19.80	na
MW-16S	3,520.00	257.00	119.00	0.180	2.70	na
MW-20S	4,030.00	292.00	399.00	0.054 J	2.50	na
MW-24S	na	na	na	na	na	0.76
MW-25S	3,450.00	960.00	11.20	ND(0.026)	4.50	na
MW-33S	286,000.00	4,740.00	333.00	ND(0.026)	313.00	na
MW-35S	8,710.00	6,010.00	10,100.00	ND(0.026)	5.40	na
MW-37S	10,900.00	1,280.00	139.00	ND(0.026)	15.60	na
OW-6	40,800.00	3,890.00	63.10	ND(0.026)	10.70	na
OW-7	9,460.00	10,500.00	8.30	ND(0.026)	6.40	na
RW-1R	71,700.00	577.00	83.10	ND(0.026)	8.80	na
MW-53D	3,820.00	330.00	8.74	0.057 J	27.30	na
MW-101	9,650.00	1,570.00	4,950.00	ND(0.026)	11.50	na
MW-102	39,100.00	1,230.00	98.40	ND(0.026)	11.80	na
MW-103	654.00	190.00	22.40	0.770	0.031 J	na
MW-104	2,150.00	1,290.00	24.00	ND(0.026)	1.50	na
MW-105	5,150.00	883.00	22.60	ND(0.026)	3.00	na
MW-106	713.00	658.00	27.40	ND(0.026)	2.80	na
<i>QA/QC</i>						
FB	ND(65.40)	ND(4.90)	0.720	ND(0.026)	ND(0.023)	na
MW-DUP	9,710.00	10,400.00	8.50	ND(0.026)	6.40	na
NYSDEC Class GA Standard	<i>300.0</i>	<i>300.0</i>	<i>250.0</i>	<i>10.0</i>	<i>2.0</i>	<i>0.7</i>

Note:

ND(): Compound not detected at the method detection limit

J: Indicates an estimated value

NYSDEC Class GA Standards: New York State Department of Environmental Conservation

Ambient Water Quality Standards for Source of Drinking Water Title 6 Part 703 (per August 1999

Amendment)

NS: No NYSDEC Standard Established

na: Not Applicable

APPENDIX 1

GROUNDWATER SAMPLING LOG

Nepera

Harriman, New York

Well ID:	MW-1S
Date:	3/8/16
Sampling Personnel:	AJS & MY
Weather:	Cloudy - 60°F

Meter Number: 511017

Notes:

WELL INFORMATION

Well Depth (ft):	22.56
Water Level Depth (ft):	6.80
Pumping Water Depth (ft):	7.11
Well Diameter (in):	6.00
Well Condition:	Good
PID Reading (ppm):	0.00

WELL WATER INFORMATION

Length of Water Column (ft):	15.76
Volume of Water in Well (gal):	23.12
Total Volume Purged (ml):	7,500
Duration of Pumping (min):	30
Odor:	Pungent
Color:	Light Brown
Fe+ ² (mg/L):	1.0

EVACUATION INFORMATION

Purge Method: Low-flow

Pump On: 12:10

Pump Off: 12:40

[illegible]

Purge Water Disposition: On Ground

GROUNDWATER SAMPLING LOG

Nepera

Harriman, New York

Well ID:	MW-5S
Date:	3/9/16
Sampling Personnel:	AJS & MY
Weather:	Sunny - 70°F

Meter Number:	511017
Notes:	

WELL INFORMATION

Well Depth (ft):	47.30
Water Level Depth (ft):	10.66
Pumping Water Depth (ft):	10.68
Well Diameter (in):	4.00
Well Condition:	Good
PID Reading (ppm):	11.75

WELL WATER INFORMATION

Length of Water Column (ft):	36.64
Volume of Water in Well (gal):	23.89
Total Volume Purged (ml):	9,300
Duration of Pumping (min):	31
Odor:	None
Color:	Clear
Fe ⁺² (mg/L):	0.4

EVACUATION INFORMATION

Purge Method: Low Flow

Pump On: 12:35

Pump Off: 13:06

[illegible]

Purge Water Disposition: On Ground

GROUNDWATER SAMPLING LOG

Nepera

Harriman, New York

Well ID:	MW-6D
Date:	3/8/16
Sampling Personnel:	AJS & MY
Weather:	Cloudy - 60°F

Meter Number:	511017
Notes:	

WELL INFORMATION

Well Depth (ft):	182.00
Water Level Depth (ft):	6.32
Pumping Water Depth (ft):	6.71
Well Diameter (in):	4.00
Well Condition:	Good
PID Reading (ppm):	0.00

WELL WATER INFORMATION

Length of Water Column (ft):	175.68
Volume of Water in Well (gal):	114.54
Total Volume Purged (ml):	2,300
Duration of Pumping (min):	23
Odor:	None
Color:	Clear
Fe ⁺² (mg/L):	1.0

EVACUATION INFORMATION

Purge Method: Low Flow

Pump On: 13:56

Pump Off: 14:19

[illegible]

Purge Water Disposition: On Ground

GROUNDWATER SAMPLING LOG

Nepera

Harriman, New York

Well ID:	MW-7S
Date:	3/8/16
Sampling Personnel:	AJS & MY
Weather:	Cloudy - 60°F

Meter Number: 511017

Notes:

WELL INFORMATION

Well Depth (ft):	35.70
Water Level Depth (ft):	4.85
Pumping Water Depth (ft):	4.93
Well Diameter (in):	4.00
Well Condition:	Good
PID Reading (ppm):	69.50

WELL WATER INFORMATION

Length of Water Column (ft):	30.85
Volume of Water in Well (gal):	20.11
Total Volume Purged (ml):	4,600
Duration of Pumping (min):	23
Odor:	None
Color:	Clear
Fe+ ² (mg/L):	0.0

EVACUATION INFORMATION

Purge Method: Low Flow

Pump On: 13:32

Pump Off: 13:55

[illegible]

Purge Water Disposition: On Ground

GROUNDWATER SAMPLING LOG

Nepera

Harriman, New York

Well ID:	MW-8S
Date:	3/9/16
Sampling Personnel:	AJS & MY
Weather:	Sunny - 70°F

Meter Number: 511017

Notes:

WELL INFORMATION

Well Depth (ft):	68.60
Water Level Depth (ft):	1.73
Pumping Water Depth (ft):	1.79
Well Diameter (in):	4.00
Well Condition:	Good
PID Reading (ppm):	0.00

WELL WATER INFORMATION

Length of Water Column (ft):	66.87
Volume of Water in Well (gal):	43.60
Total Volume Purged (ml):	7,800
Duration of Pumping (min):	26
Odor:	None
Color:	Clear
Fe+ ² (mg/L):	0.0

EVACUATION INFORMATION

Purge Method: Low Flow

Pump On: 10:12

Pump Off: 10:38

[illegible]

Purge Water Disposition: On Ground

GROUNDWATER SAMPLING LOG

Nepera

Harriman, New York

Well ID:	MW-11S
Date:	3/9/16
Sampling Personnel:	AJS & MY
Weather:	Sunny - 70°F

Meter Number:	511017
Notes:	

WELL INFORMATION

Well Depth (ft):	50.65
Water Level Depth (ft):	2.45
Pumping Water Depth (ft):	2.91
Well Diameter (in):	4.00
Well Condition:	Good
PID Reading (ppm):	0.00

WELL WATER INFORMATION

Length of Water Column (ft):	48.20
Volume of Water in Well (gal):	31.43
Total Volume Purged (L):	12,000
Duration of Pumping (min):	30
Odor:	None
Color:	Clear
Fe ⁺² (mg/L):	0.0

EVACUATION INFORMATION

Purge Method: Low Flow

Pump On: 8:00

Pump Off: 8:30

[illegible]

Purge Water Disposition: On Ground

GROUNDWATER SAMPLING LOG

Nepera

Harriman, New York

Well ID:	MW-12S
Date:	3/10/16
Sampling Personnel:	AJS & MY
Weather:	Cloudy - 70°F

Meter Number: 511017

Notes:

WELL INFORMATION

Well Depth (ft):	34.90
Water Level Depth (ft):	4.98
Pumping Water Depth (ft):	8.83
Well Diameter (in):	2.00
Well Condition:	Good
PID Reading (ppm):	0.00

WELL WATER INFORMATION

Length of Water Column (ft):	29.92
Volume of Water in Well (gal):	4.88
Total Volume Purged (ml):	3,450
Duration of Pumping (min):	23
Odor:	None
Color:	clear
Fe+ ² (mg/L):	1.0

EVACUATION INFORMATION

Purge Method: Low Flow

Pump On: 08:32

Pump Off: 08:55

[illegible]

Purge Water Disposition: On Ground

GROUNDWATER SAMPLING LOG

Nepera

Harriman, New York

Well ID:	MW-16S
Date:	3/10/16
Sampling Personnel:	AJS & MY
Weather:	Cloudy - 70°F

Meter Number:	511017
Notes:	obstruction about 16' down

WELL INFORMATION

Well Depth (ft):	46.20
Water Level Depth (ft):	8.39
Pumping Water Depth (ft):	8.50
Well Diameter (in):	4.00
Well Condition:	Damaged*
PID Reading (ppm):	8.10

*Top of casing sheared off

WELL WATER INFORMATION

Length of Water Column (ft):	37.81
Volume of Water in Well (gal):	24.65
Total Volume Purged (ml):	5,000
Duration of Pumping (min):	25
Odor:	None
Color:	Clear
Fe+ ² (mg/L):	0.0

EVACUATION INFORMATION

Purge Method: Low Flow

Pump On: 10:27

Pump Off: 10:53

[illegible]

Purge Water Disposition: On Ground

GROUNDWATER SAMPLING LOG

Nepera

Harriman, New York

Well ID:	MW-20S
Date:	3/9/16
Sampling Personnel:	AJS & MY
Weather:	Sunny - 70°F

Meter Number:	511017
Notes:	

WELL INFORMATION

Well Depth (ft):	27.51
Water Level Depth (ft):	1.65
Pumping Water Depth (ft):	3.11
Well Diameter (in):	4.00
Well Condition:	Good
PID Reading (ppm):	1.70

WELL WATER INFORMATION

Length of Water Column (ft):	25.86
Volume of Water in Well (gal):	16.86
Total Volume Purged (ml):	6,250
Duration of Pumping (min):	25
Odor:	Pungent
Color:	Clear
Fe+2 (mg/L):	1.0

EVACUATION INFORMATION

Purge Method: Low Flow

Pump On: 9:05

Pump Off: 9:30

[illegible]

Purge Water Disposition: On Ground

GROUNDWATER SAMPLING LOG

Nepera

Harriman, New York

Well ID:	MW-20D
Date:	3/10/16
Sampling Personnel:	AJS & MY
Weather:	Cloudy - 70°F

Meter Number:	511017
Notes:	

WELL INFORMATION

Well Depth (ft):	82.75
Water Level Depth (ft):	0.00
Pumping Water Depth (ft):	2.55
Well Diameter (in):	4.00
Well Condition:	Good
PID Reading (ppm):	0.00

WELL WATER INFORMATION

Length of Water Column (ft):	82.75
Volume of Water in Well (gal):	53.95
Total Volume Purged (ml):	3,600
Duration of Pumping (min):	24
Odor:	None
Color:	Clear
Fe+ ² (mg/L):	0.0

EVACUATION INFORMATION

Purge Method: Low Flow

Pump On: 09:29

Pump Off: 09:53

[illegible]

Purge Water Disposition: On Ground

GROUNDWATER SAMPLING LOG

Nepera

Harriman, New York

Well ID:	MW-20DR
Date:	3/9/16
Sampling Personnel:	AJS & MY
Weather:	Sunny- 70°F

Meter Number:	511017
Notes:	

WELL INFORMATION

Well Depth (ft):	97.25
Water Level Depth (ft):	6.45
Pumping Water Depth (ft):	8.37
Well Diameter (in):	2.00
Well Condition:	Good
PID Reading (ppm):	0.00

WELL WATER INFORMATION

Length of Water Column (ft):	90.80
Volume of Water in Well (gal):	14.80
Total Volume Purged (ml):	3,900
Duration of Pumping (min):	26
Odor:	Pungent
Color:	Clear
Fe+2 (mg/L):	0.3

EVACUATION INFORMATION

Purge Method: Low-flow

Pump On: 8:36

Pump Off: 9:02

[illegible]

Purge Water Disposition: On Ground

GROUNDWATER SAMPLING LOG

Nepera

Harriman, New York

Well ID:	MW-23D
Date:	3/8/16
Sampling Personnel:	AJS & MY
Weather:	Cloudy - 60°F

Meter Number: 511017

Notes:

WELL INFORMATION

Well Depth (ft):	103.00
Water Level Depth (ft):	3.30
Pumping Water Depth (ft):	5.81
Well Diameter (in):	4.00
Well Condition:	Good
PID Reading (ppm):	0.00

WELL WATER INFORMATION

Length of Water Column (ft):	99.70
Volume of Water in Well (gal):	65.00
Total Volume Purged (ml):	9,000
Duration of Pumping (min):	30
Odor:	None
Color:	Clear
Fe+ ² (mg/L):	0.0

EVACUATION INFORMATION

Purge Method: Low Flow

Pump On: 15:25

Pump Off: 15:55

[illegible]

Purge Water Disposition: On Ground

GROUNDWATER SAMPLING LOG

Nepera

Harriman, New York

Well ID:	MW-24S
Date:	3/8/16
Sampling Personnel:	AJS & MY
Weather:	Cloudy - 60°F

Meter Number: 504026

Notes:

WELL INFORMATION

Well Depth (ft):	19.70
Water Level Depth (ft):	7.70
Pumping Water Depth (ft):	8.63
Well Diameter (in):	4.00
Well Condition:	Good
PID Reading (ppm):	0.00

WELL WATER INFORMATION

Length of Water Column (ft):	12.00
Volume of Water in Well (gal):	7.82
Total Volume Purged (ml):	4,600
Duration of Pumping (min):	23
Odor:	None
Color:	Clear
Fe+2 (mg/L):	0.8

EVACUATION INFORMATION

Purge Method: Low Flow

Pump On: 11:07

Pump Off: 11:30

[illegible]

Purge Water Disposition: On Ground

GROUNDWATER SAMPLING LOG

Nepera

Harriman, New York

Well ID:	MW-25S
Date:	3/10/16
Sampling Personnel:	AJS & MY
Weather:	Cloudy - 70°F

Meter Number:	511017
Notes:	

WELL INFORMATION

Well Depth (ft):	30.85
Water Level Depth (ft):	6.00
Pumping Water Depth (ft):	8.34
Well Diameter (in):	4.00
Well Condition:	Good
PID Reading (ppm):	10.80

WELL WATER INFORMATION

Length of Water Column (ft):	24.85
Volume of Water in Well (gal):	16.20
Total Volume Purged (ml):	10,000
Duration of Pumping (min):	25
Odor:	None
Color:	Clear
Fe+ ² (mg/L):	1.0

EVACUATION INFORMATION

Purge Method: Low Flow

Pump On: 11:28

Pump Off: 11:53

[illegible]

Purge Water Disposition: On Ground

GROUNDWATER SAMPLING LOG

Nepera

Harriman, New York

Well ID:	MW-26D
Date:	3/9/16
Sampling Personnel:	AJS & MY
Weather:	Sunnyy - 70°F

Meter Number: 511017

Notes:

WELL INFORMATION

Well Depth (ft):	141.75
Water Level Depth (ft):	5.92
Pumping Water Depth (ft):	14.21
Well Diameter (in):	2.00
Well Condition:	Good
PID Reading (ppm):	40.50

WELL WATER INFORMATION

Length of Water Column (ft):	135.83
Volume of Water in Well (gal):	22.14
Total Volume Purged (ml):	7,000
Duration of Pumping (min):	35
Odor:	None
Color:	Clear
Fe+ ² (mg/L):	0.0

EVACUATION INFORMATION

Purge Method: Low Flow

Pump On: 14:09

Pump Off: 14:44

[illegible]

Purge Water Disposition: On Ground

GROUNDWATER SAMPLING LOG

Nepera

Harriman, New York

Well ID:	MW-27D
Date:	3/9/16
Sampling Personnel:	AJS & MY
Weather:	Sunny - 70°F

Meter Number: 511017

Notes:

WELL INFORMATION

Well Depth (ft):	101.88
Water Level Depth (ft):	10.99
Pumping Water Depth (ft):	11.00
Well Diameter (in):	6.00
Well Condition:	Good
PID Reading (ppm):	0.00

WELL WATER INFORMATION

Length of Water Column (ft):	90.89
Volume of Water in Well (gal):	133.34
Total Volume Purged (ml):	3,750
Duration of Pumping (min):	25
Odor:	None
Color:	Clear
Fe+ ² (mg/L):	0.0

EVACUATION INFORMATION

Purge Method: Low Flow

Pump On: 13:20

Pump Off: 13:45

[illegible]

Purge Water Disposition: On Ground

GROUNDWATER SAMPLING LOG

Nepera

Harriman, New York

Well ID:	MW-33S
Date:	3/10/16
Sampling Personnel:	AJS & MY
Weather:	Cloudy - 70°F

Meter Number: 511017

Notes:

WELL INFORMATION

Well Depth (ft):	16.40
Water Level Depth (ft):	4.01
Pumping Water Depth (ft):	10.04
Well Diameter (in):	2.00
Well Condition:	Good
PID Reading (ppm):	0.00

WELL WATER INFORMATION

Length of Water Column (ft):	12.39
Volume of Water in Well (gal):	2.02
Total Volume Purged (ml):	2,600
Duration of Pumping (min):	26
Odor:	Pungent
Color:	Grey
Fe+ ² (mg/L):	0.0

EVACUATION INFORMATION

Purge Method: None

Pump On: 09:00

Pump Off: 09:26

[illegible]

Purge Water Disposition: NA

GROUNDWATER SAMPLING LOG

Nepera

Harriman, New York

Well ID:	MW-35S
Date:	3/8/16
Sampling Personnel:	AJS & MY
Weather:	Cloudy - 60°F

Meter Number: 511017

Notes:

WELL INFORMATION

Well Depth (ft):	19.20
Water Level Depth (ft):	3.80
Pumping Water Depth (ft):	4.29
Well Diameter (in):	2.00
Well Condition:	Good
PID Reading (ppm):	0.00

WELL WATER INFORMATION

Length of Water Column (ft):	15.40
Volume of Water in Well (gal):	2.51
Total Volume Purged (ml):	7,750
Duration of Pumping (min):	31
Odor:	None
Color:	Clear
Fe+ ² (mg/L):	1.4

EVACUATION INFORMATION

Purge Method: Low Flow

Pump On: 14:32

Pump Off: 15:03

[illegible]

Purge Water Disposition: On Ground

GROUNDWATER SAMPLING LOG

Nepera

Harriman, New York

Well ID:	MW-37S
Date:	3/10/16
Sampling Personnel:	AJS & MY
Weather:	Cloudy - 70°F

Meter Number: 511017

Notes:

WELL INFORMATION

Well Depth (ft):	23.35
Water Level Depth (ft):	1.60
Pumping Water Depth (ft):	2.15
Well Diameter (in):	2.00
Well Condition:	Good
PID Reading (ppm):	0.00

WELL WATER INFORMATION

Length of Water Column (ft):	21.75
Volume of Water in Well (gal):	3.55
Total Volume Purged (ml):	7,500
Duration of Pumping (min):	25
Odor:	None
Color:	Clear
Fe+ ² (mg/L):	1.8

EVACUATION INFORMATION

Purge Method: Low-Flow

Pump On: 11:00

Pump Off: 11:25

[illegible]

Purge Water Disposition: On Ground

GROUNDWATER SAMPLING LOG

Nepera

Harriman, New York

Well ID:	OW-6
Date:	3/10/16
Sampling Personnel:	AJS & MY
Weather:	Cloudy - 70°F

Meter Number: 511017

Notes:

WELL INFORMATION

Well Depth (ft):	39.20
Water Level Depth (ft):	5.02
Pumping Water Depth (ft):	5.50
Well Diameter (in):	2.00
Well Condition:	Good
PID Reading (ppm):	5.50

WELL WATER INFORMATION

Length of Water Column (ft):	34.18
Volume of Water in Well (gal):	5.57
Total Volume Purged (ml):	6,500
Duration of Pumping (min):	26
Odor:	None
Color:	Clear
Fe+ ² (mg/L):	0.8

EVACUATION INFORMATION

Purge Method: Low Flow

Pump On: 12:00

Pump Off: 12:26

[illegible]

Purge Water Disposition: On Ground

GROUNDWATER SAMPLING LOG

Nepera

Harriman, New York

Well ID:	OW-7
Date:	3/10/16
Sampling Personnel:	AJS & MY
Weather:	Cloudy - 70°F

Meter Number:	511017
Notes:	

WELL INFORMATION

Well Depth (ft):	30.91
Water Level Depth (ft):	5.39
Pumping Water Depth (ft):	8.02
Well Diameter (in):	2.00
Well Condition:	Good
PID Reading (ppm):	0.00

WELL WATER INFORMATION

Length of Water Column (ft):	25.52
Volume of Water in Well (gal):	4.16
Total Volume Purged (ml):	3,750
Duration of Pumping (min):	25
Odor:	None
Color:	Clear
Fe ⁺² (mg/L):	1.0

EVACUATION INFORMATION

Purge Method: Low Flow

Pump On: 11:44

Pump Off: 12:09

[illegible]

Purge Water Disposition: On Ground

GROUNDWATER SAMPLING LOG

Nepera

Harriman, New York

Well ID:	RW-1R
Date:	3/9/16
Sampling Personnel:	AJS & MY
Weather:	Sunny - 70°F

Meter Number:	511017
Notes:	

WELL INFORMATION

Well Depth (ft):	56.20
Water Level Depth (ft):	5.60
Pumping Water Depth (ft):	6.40
Well Diameter (in):	6.00
Well Condition:	Good
PID Reading (ppm):	0.00

WELL WATER INFORMATION

Length of Water Column (ft):	50.60
Volume of Water in Well (gal):	74.23
Total Volume Purged (ml):	8,000
Duration of Pumping (min):	32
Odor:	None
Color:	light brown
Fe ⁺² (mg/L):	0.0

EVACUATION INFORMATION

Purge Method: Low Flow

Pump On: 11:23

Pump Off: 11:55

[illegible]

Purge Water Disposition: On Ground

GROUNDWATER SAMPLING LOG

Nepera

Harriman, New York

Well ID:	MW-53D
Date:	3/10/16
Sampling Personnel:	AJS & MY
Weather:	Cloudy - 70°F

Meter Number: 511017

Notes:

WELL INFORMATION

Well Depth (ft):	55.10
Water Level Depth (ft):	4.80
Pumping Water Depth (ft):	6.04
Well Diameter (in):	4.00
Well Condition:	Good
PID Reading (ppm):	2.50

WELL WATER INFORMATION

Length of Water Column (ft):	50.30
Volume of Water in Well (gal):	32.80
Total Volume Purged (ml):	6,250
Duration of Pumping (min):	25
Odor:	None
Color:	Clear
Fe+ ² (mg/L):	1.4

EVACUATION INFORMATION

Purge Method: Low Flow

Pump On: 09:58

Pump Off: 10:23

[illegible]

Purge Water Disposition: On Ground

GROUNDWATER SAMPLING LOG

Nepera

Harriman, New York

Well ID:	MW-101
Date:	3/8/16
Sampling Personnel:	AJS & MY
Weather:	Cloudy - 60°F

Meter Number:	511017
Notes:	

WELL INFORMATION

Well Depth (ft):	32.90
Water Level Depth (ft):	5.15
Pumping Water Depth (ft):	5.29
Well Diameter (in):	2.00
Well Condition:	Good
PID Reading (ppm):	0.00

WELL WATER INFORMATION

Length of Water Column (ft):	27.75
Volume of Water in Well (gal):	4.52
Total Volume Purged (ml):	7,800
Duration of Pumping (min):	26
Odor:	None
Color:	Grey
Fe+ ² (mg/L):	1.4

EVACUATION INFORMATION

Purge Method: Low-Flow

Pump On: 11:37

Pump Off: 12:03

[illegible]

Purge Water Disposition: On Ground

GROUNDWATER SAMPLING LOG

Nepera

Harriman, New York

Well ID:	MW-102
Date:	3/8/16
Sampling Personnel:	AJS & MY
Weather:	Cloudy - 60°F

Meter Number: 511017

Notes:

WELL INFORMATION

Well Depth (ft):	22.10
Water Level Depth (ft):	4.35
Pumping Water Depth (ft):	4.81
Well Diameter (in):	2.00
Well Condition:	Good
PID Reading (ppm):	1.30

WELL WATER INFORMATION

Length of Water Column (ft):	17.75
Volume of Water in Well (gal):	2.89
Total Volume Purged (ml):	10,800
Duration of Pumping (min):	36
Odor:	None
Color:	Light Brown
Fe+ ² (mg/L):	1.2

EVACUATION INFORMATION

Purge Method: Low-Flow

Pump On: 12:46

Pump Off: 13:12

[illegible]

Purge Water Disposition: On Ground

GROUNDWATER SAMPLING LOG

Nepera

Harriman, New York

Well ID:	MW-103
Date:	3/9/16
Sampling Personnel:	AJS & MY
Weather:	Sunny - 70°F

Meter Number: 511017

Notes:

WELL INFORMATION

Well Depth (ft):	60.40
Water Level Depth (ft):	7.10
Pumping Water Depth (ft):	7.11
Well Diameter (in):	2.00
Well Condition:	Good
PID Reading (ppm):	4.10

WELL WATER INFORMATION

Length of Water Column (ft):	53.30
Volume of Water in Well (gal):	8.69
Total Volume Purged (ml):	5,750
Duration of Pumping (min):	23
Odor:	None
Color:	Clear
Fe+ ² (mg/L):	0.0

EVACUATION INFORMATION

Purge Method: Low-Flow

Pump On: 15:23

Pump Off: 15:46

[illegible]

Purge Water Disposition: On Ground

GROUNDWATER SAMPLING LOG

Nepera

Harriman, New York

Well ID:	MW-104
Date:	3/9/16
Sampling Personnel:	AJS & MY
Weather:	Sunny - 70°F

Meter Number: 511017

Notes:

WELL INFORMATION

Well Depth (ft):	65.10
Water Level Depth (ft):	0.98
Pumping Water Depth (ft):	0.99
Well Diameter (in):	2.00
Well Condition:	Good
PID Reading (ppm):	0.00

WELL WATER INFORMATION

Length of Water Column (ft):	64.12
Volume of Water in Well (gal):	10.45
Total Volume Purged (ml):	5,000
Duration of Pumping (min):	25
Odor:	Slightly Pungent
Color:	Clear
Fe ⁺² (mg/L):	1.4

EVACUATION INFORMATION

Purge Method: Low-Flow

Pump On: 10:45

Pump Off: 11:10

[illegible]

Purge Water Disposition: On Ground

GROUNDWATER SAMPLING LOG

Nepera

Harriman, New York

Well ID:	MW-105
Date:	3/9/16
Sampling Personnel:	AJS & MY
Weather:	Sunny - 70°F

Meter Number: 511017

Notes:

WELL INFORMATION

Well Depth (ft):	70.65
Water Level Depth (ft):	3.61
Pumping Water Depth (ft):	4.22
Well Diameter (in):	4.00
Well Condition:	Good
PID Reading (ppm):	0.00

WELL WATER INFORMATION

Length of Water Column (ft):	67.04
Volume of Water in Well (gal):	43.71
Total Volume Purged (ml):	5,200
Duration of Pumping (min):	26
Odor:	None
Color:	Clear
Fe+ ² (mg/L):	1.0

EVACUATION INFORMATION

Purge Method: Low-Flow

Pump On: 9:41

Pump Off: 10:07

[illegible]

Purge Water Disposition: On Ground

GROUNDWATER SAMPLING LOG

Nepera

Harriman, New York

Well ID:	MW-106
Date:	3/9/16
Sampling Personnel:	AJS & MY
Weather:	Sunny - 70°F

Meter Number:	511017
Notes:	

WELL INFORMATION

Well Depth (ft):	40.90
Water Level Depth (ft):	11.26
Pumping Water Depth (ft):	11.97
Well Diameter (in):	2.00
Well Condition:	Good
PID Reading (ppm):	320.00

WELL WATER INFORMATION

Length of Water Column (ft):	29.64
Volume of Water in Well (gal):	4.83
Total Volume Purged (ml):	12,500
Duration of Pumping (min):	25
Odor:	None
Color:	Clear
Fe ⁺² (mg/L):	0.8

EVACUATION INFORMATION

Purge Method: Low-Flow

Pump On: 14:51

Pump Off: 15:16

[illegible]

Purge Water Disposition: On Ground

APPENDIX 2

Electronic Water Level Indicator Calibration Procedures

If using an electronic water level indicator, the device must be calibrated prior to each water level monitoring event and a calibration sticker with date of calibration attached. Electronic water level indicators with stretched electric lines (in whole or in part) spliced, or generally in poor condition shall not be used. A battery check must be performed before use.

1. Calibration is accomplished by comparing the marked intervals of the electronic sounding device with an engineer's tape marked in 0.01 foot intervals. The lower 30 feet of the electronic water level wire, which is most subject to stretching, is to be examined. If any five-foot interval of the wire is stretched more than 0.01 feet, the wire shall be replaced.
2. Calibration/inspection procedures must be documented in a calibration logbook or electronic spreadsheet file (in addition to the calibration date noted on a calibration sticker and affixed to the instrument).
3. When multiple water level devices are used to collect synoptic water levels, verification of instrument calibration and measurement techniques shall be checked by having each field technician measure the depth-to-water in a single designated well. All measurements must be within 0.05 feet of each other. If one or more measurements fall outside of this range, determine whether the discrepancy is due to instrumentation or measurement technique problems and make appropriate repairs, substitutions or corrections.

APPENDIX 3

Statement of Procedures for the Calibration of Multi-Parameter Water Quality Monitoring System, Horiba U-22XD

Purpose and Scope

This Statement of Procedures (SOP) presents detailed methodology for the measurement of field parameters including *temperature, conductivity, pH, dissolved oxygen, ORP* and *turbidity*. The purpose of this SOP is to ensure the accurate measurement of these water quality parameters through routine checks and periodic calibration of the Horiba U-22XD by sampling personnel.

Responsibilities

It is the responsibility of assigned sampling personnel to calibrate monitoring equipment at the beginning of each month prior to use, or upon completion of all instrument repairs (Span Calibration). Sampling personnel will also perform a daily instrument check (Zero Calibration). Documentation of calibrations, performance checks, inspection/acceptance and maintenance is the responsibility of field personnel. Periodic (e.g., yearly) factory calibration certificates shall be available for review. Any parameters out of calibration are to be documented and all records generated shall be maintained.

Precautions

Handling of Sensor Probe

Do not shock sensor probe. Sensor will be damaged.

Do not remove protective cover from sensor probe.

Slowly lower sensor probe into sample.

Do not immerse sensor probe to a depth in excess of 300 feet. Excessive hydraulic pressure will cause damage.

Replacement of Batteries and Sensors

Do not replace sensor probe batteries or sensors in atmosphere of high temperature or humidity.

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The sensor probe's battery cover is kept waterproof by use of an O-ring. After confirming that there are no foreign bodies adhering to the O-ring, tighten to indicated position. Do not tighten with O-ring twisted or warped.

Handling of Cable

Do not store cable with connector excessively tensed or bent.

When storing, wipe area around connector dry and cover with rubber cap.

Handling of Control Unit

Do not shock control unit. The control unit will be damaged.

Do not expose control unit to ultraviolet rays for long periods. Ultraviolet rays can damage control unit's LCD display.

Do not use a hair dryer to dry control unit. If control unit becomes wet, dry with soft cloth.

Handling of DO Sensor

In the event of breakage of the DO sensor diaphragm, replace whole DO sensor and diaphragm.

Do not touch caustic internal solution.

When removing DO sensor from sensor probe, attach included short socket.

Handling of Cond/Turb Sensor Unit

When cleaning Cond/Turb sensor unit, use a cotton swab to avoid damage.

Handling pH Sensor

The pH sensor is made of very thin glass. Handle carefully to avoid breakage.

Handling during Transportation

Always store Horiba U-22XD in carrying case to prevent damage.

Calibration

The Horiba U-22XD includes an auto calibration mode (see Operations Manual). However, in order to achieve the highest instrument performance and measurement accuracy, manual calibration techniques described below are recommended. Note: In the event the instruments calibration readings do not come within 10% of standard values, a supervisor must be notified. The instrument is not to be used until repairs are made. Designate instrument with a “**DO NOT USE, OUT OF CALIBRATION**” sticker.

Manual pH Calibration

Zero Calibration

1. Wash sensor using distilled water; pour pH standard solution into calibration beaker; immerse sensor.
2. Press **CAL** key twice in the pH measurement mode. When the instrument enters the manual zero calibration mode, **MAN**, **ZERO** and **CAL** light up (measured temperature is displayed).
3. Use the **UP/DOWN** keys to input value of the pH 7 standard solution at the measured temperature (see reference data, page 100 of Operation Manual).
4. Press **ENT** key. The manual zero calibration starts. The measured value is displayed during calibration and **DATA IN** blinks until the indicated value stabilizes. When the indicated value has stabilized, **DATA IN** lights up and the calibration finishes. Note: When **DATA IN** is blinking, press **CAL** key to cancel calibration or **ENT** key to fix calibration.

Span Calibration

1. Wash sensor using distilled water; pour pH 4 or pH 9 standard solution into calibration beaker; immerse sensor.
2. On the zero calibration of the pH sensor, press **CAL** key to ensure that the control unit is in the manual span calibration mode. **MAN**, **SPAN** and **CAL** light up.
3. Use the **UP/Down** keys to set the value for the pH 4 or pH 9 standard solution at the measured temperature (see reference data, page 100 of Operation Manual).
4. Press the **ENT** key. The manual span calibration starts. The measured value is displayed during calibration and **DATA IN** blinks until the indicated value stabilizes. When the indicated value has stabilized, **DATA IN** lights up and the calibration finishes. Note: When **DATA IN** is blinking, press **CAL** key to cancel calibration or **ENT** key to fix calibration.
5. Press **MEAS** key to return to the measurement mode.

Manual Conductivity Calibration

Zero Calibration

1. Wash sensor using distilled water. Completely remove the water on the sensor and calibrate the instrument in the atmosphere
2. Press **Cal** key twice in the conductivity measurement mode. When the instrument enters the manual zero calibration mode, **MAN**, **ZERO** and **CAL** light up.
3. Use the **UP/DOWN** key to set the value to 0.0.
4. Press the **ENT** key. The manual zero calibration starts. The measured value is displayed during calibration and **DATA IN** blinks until the indicated value stabilizes. When the indicated value has stabilized, **DATA IN** lights up and the calibration finishes. Note: When **DATA IN** is blinking, press **CAL** key to cancel calibration or **ENT** key to fix calibration.

Span Calibration

1. Wash sensor using distilled water; pour standard solution into calibration beaker; immerse sensor,
2. On the zero calibration of the conductivity sensor, press the **CAL** key to ensure that the instrument is in the manual span calibration mode. **MAN**, **SPAN** and **CAL** light up.
3. Use the **UP/Down** keys to set the standard solution value. Note: The sensor automatically identifies the calibration solution and the relevant calibration range (0.90 S/m to 9.99 S/m, 0.090 S/m to 0.999 S/m, 0.0 mS/m to 99.9 mS/m) is displayed via **1**, **2** or **3**.
4. Press the **ENT** key. The manual span calibration starts. The measured value is displayed during calibration and **DATA IN** blinks until the indicated value stabilizes. When the indicated value has stabilized, **DATA IN** lights up and the calibration finishes. Note: When **DATA IN** is blinking, press **CAL** key to cancel calibration or **ENT** key to fix calibration.
5. Press **MEAS** key to return to the measurement mode.

Manual Turbidity Calibration

Zero Calibration

1. Wash sensor using distilled water; pour distilled water into calibration beaker; immerse sensor,
2. Press **Cal** key twice in the turbidity measurement mode. When the instrument enters the manual zero calibration mode, **MAN**, **ZERO** and **CAL** light up.
3. Use the **UP/DOWN** key to set the value to 0.0.

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4. Press the **ENT** key. The manual span calibration starts. The measured value is displayed during calibration and **DATA IN** blinks until the indicated value stabilizes. When the indicated value has stabilized, **DATA IN** lights up and the calibration finishes. Note: When **DATA INN** is blinking, press **CAL** key to cancel calibration or **ENT** key to fix calibration.

Span Calibration

1. Wash sensor using distilled water; pour 100 NTU (or other) solution into calibration beaker; immerse sensor.
2. On the zero calibration of the turbidity sensor, press the **CAL** key to ensure that the instrument is in the manual span calibration mode. **MAN**, **SPAN** and **CAL** light up.
3. Use the **UP/Down** keys to set the value to 100 NTU.
4. Press the **ENT** key. The manual span calibration starts. The measured value is displayed during calibration and **DATA IN** blinks until the indicated value stabilizes. When the indicated value has stabilized, **DATA IN** lights up and the calibration finishes. Note: When **DATA INN** is blinking, press **CAL** key to cancel calibration or **ENT** key to fix calibration.
5. Press **MEAS** key to return to the measurement mode.

Manual Dissolved Oxygen Calibration

Zero Calibration

1. Wash sensor using distilled water; pour 0.0 oxygen solution into calibration beaker; immerse sensor.
2. Press **Cal** key twice in the dissolved oxygen measurement mode. When the instrument enters the manual zero calibration mode, **MAN**, **ZERO** and **CAL** light up.
3. After the display has stabilized, use the **UP/DOWN** keys to set the value to 0.0.
4. Press the **ENT** key. The manual span calibration starts. The measured value is displayed during calibration and **DATA IN** blinks until the indicated value stabilizes. When the indicated value has stabilized, **DATA IN** lights up and the calibration finishes. Note: When **DATA INN** is blinking, press **CAL** key to cancel calibration or **ENT** key to fix calibration.
5. After zero calibration, clean sensor with tap water.

Span Calibration

1. Pour 1 – 2 liters of tap water into suitable flask. Using an air pump, feed air into the water and aerate solution.

2. Wash sensor using distilled water and immerse DO sensor completely into span calibration liquid.
3. On the zero calibration of the DO sensor, press the **CAL** key to ensure that the instrument is in the manual span calibration mode. **MAN**, **SPAN** and **CAL** light up.
4. After the display has stabilized, use the **UP/DOWN** keys to set the amount of saturated dissolved oxygen in water at its water temperature (see reference data, page 56 of Operation Manual for DO value at corresponding temperature).
5. Press the **ENT** key. The manual span calibration starts. The measured value is displayed during calibration and **DATA IN** blinks until the indicated value stabilizes. When the indicated value has stabilized, **DATA IN** lights up and the calibration finishes. Note: When **DATA INN** is blinking, press **CAL** key to cancel calibration or **ENT** key to fix calibration.
6. Press **MEAS** key to return to the measurement mode.

Manual Temperature Calibration

1. Press **CAL** key in the temperature measurement mode. Select the manual calibration mode.
2. Immerse sensor in water with known temperature (i.e., measured with Nation Institute of Technology approved thermometer).
3. Use the **UP/Down** keys to set the temperature value to that of NIT thermometer.
4. Press the **ENT** key. The manual span calibration starts. The measured value is displayed during calibration and **DATA IN** blinks until the indicated value stabilizes. When the indicated value has stabilized, **DATA IN** lights up and the calibration finishes. Note: When **DATA INN** is blinking, press **CAL** key to cancel calibration or **ENT** key to fix calibration.
5. Press **MEAS** key to return to the measurement mode.

Manual ORP Calibration

1. Add 250 ml pure (ion exchange) water to one packet of standard solution.
2. Immerse wash and dried ORP electrode in the ORP standard solution and measure mV value
3. If electrode and meter are working correctly, numerical values within 15 mV or less of those listed in Table 1 of Operation Manual are obtained.
4. If measurements within 15 mV of Table 1 values are not obtained, reference electrode is faulty. Replace.

Implementation and Training

Sampling personnel shall implement this procedure for the calibration and daily performance checks of field monitoring equipment. Staff responsible for implementing this procedure shall be thoroughly familiar with its contents and requirements. It shall be documented by each staff member that they have read and understand the procedure.

APPENDIX 4

ANALYTICAL REPORT

Job Number: 460-110107-1

Job Description: Nepera Harriman NY

For:

R & C Formation Ltd.

171 Deer Park Ave.,

Suite 3

Babylon, NY 11702

Attention: Mr. Robert Casson



Approved for release.
Melissa Haas
Project Manager I
3/30/2016 11:04 AM

Melissa Haas, Project Manager I
777 New Durham Road, Edison, NJ, 08817
(203)944-1310
melissa.haas@testamericainc.com
03/30/2016
Revision: 1

The test results in this report meet all NELAP requirements unless specified within the case narrative. Pursuant to NELAP, this report may not be reproduced, except in full, without the written approval of the laboratory. All questions regarding this report should be directed to the TestAmerica Edison Project Manager.

TestAmerica Edison Certifications and Approvals: Connecticut: CTDOH #PH-0200, New Jersey: NJDEP (NELAP) #12028, New York: NYDOH (NELAP) #11452, NYDOH (ELAP) #11452, Pennsylvania: PADEP (NELAP) 68-00522 and Rhode Island: RIDOH LAO00132

Job Number: 460-110107-1

Job Description: Nepera Harriman NY

I certify that this data package is in compliance with the terms and conditions of the contract, both technically and for completeness, for other than the conditions detailed within the body of this report. Release of the data contained in this sample data package and in the electronic data deliverable has been authorized by the Laboratory Manager or his/her designee, as verified by the following signature.

A handwritten signature in cursive script that reads "Melissa Haas". The signature is written in black ink and is positioned above a horizontal line.

Approved for release.
Melissa Haas
Project Manager I
3/30/2016 11:04 AM

Melissa Haas

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CASE NARRATIVE

Client: R & C Formation Ltd.

Project: Nepera Harriman NY

Report Number: 460-110107-1

Revision #1

This case narrative is in the form of an exception report, where only the anomalies related to this report, method specific performance and/or QA/QC issues are discussed. If there are no issues to report, this narrative will include a statement that documents that there are no relevant data issues.

It should be noted that samples with elevated Reporting Limits (RLs) as a result of a dilution may not be able to satisfy customer reporting limits in some cases. Such increases in the RLs are unavoidable but acceptable consequence of sample dilution that enables quantification of target analytes or interferences which exceed the calibration range of the instrument.

Calculations are performed before rounding to avoid round-off errors in calculated results.

All holding times were met and proper preservation noted for the methods performed on these samples, unless otherwise detailed in the individual sections below.

REVISION #1

The following report required a revision: 460-110107-1. Details are as follows: Per client request, iron was added to the metals list. This compound was not originally requested on the COC.

RECEIPT

The samples were received on 3/8/2016 5:28 PM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperature of the cooler at receipt was 1.9° C.

Note: All samples which require thermal preservation are considered acceptable if the arrival temperature is within 2C of the required temperature or method specified range. For samples with a specified temperature of 4C, samples with a temperature ranging from just above freezing temperature of water to 6C shall be acceptable. Samples that are hand delivered immediately following collection may not meet these criteria, however they will be deemed acceptable according to NELAC standards, if there is evidence that the chilling process has begun, such as arrival on ice, etc.

VOLATILE ORGANICS

Samples TB (460-110107-1), FB (460-110107-2), MW-24S (460-110107-3), MW-101 (460-110107-4), MW-1S (460-110107-5), MW-102 (460-110107-6), MW-7S (460-110107-7), MW-6D (460-110107-8), MW-35S (460-110107-9) and MW-23D (460-110107-10) were analyzed for Volatile organics in accordance with EPA SW-846 Methods 8260C. The samples were analyzed on 03/12/2016 and 03/14/2016.

The laboratory control sample duplicate (LCSD) for batch analytical batch 460-355690 recovered outside control limits for the following analyte: Benzene. This analyte was biased high in the LCSD and was not detected in the associated samples; therefore, the data have been reported.

Benzene failed the recovery criteria high for LCSD 460-355690/4.

Refer to the QC report for details.

No other difficulties were encountered during the Volatile organics analysis.

All other quality control parameters were within the acceptance limits.

SEMIVOLATILE ORGANIC COMPOUNDS (GC/MS)

Samples FB (460-110107-2), MW-24S (460-110107-3), MW-101 (460-110107-4), MW-1S (460-110107-5), MW-102 (460-110107-6), MW-7S (460-110107-7), MW-6D (460-110107-8), MW-35S (460-110107-9) and MW-23D (460-110107-10) were analyzed for semivolatile organic compounds (GC/MS) in accordance with EPA SW-846 Method 8270D. The samples were prepared on 03/14/2016 and analyzed on 03/21/2016.

Pyridine was detected in method blank MB 480-290946/1-A at a level that was above the method detection limit but below the reporting limit. The value should be considered an estimate, and has been flagged. If the associated sample reported a result above the MDL and/or RL, the result has been flagged. Refer to the QC report for details.

No other difficulties were encountered during the semivolatiles analysis.

All other quality control parameters were within the acceptance limits.

METALS

Samples FB (460-110107-2), MW-101 (460-110107-4), MW-1S (460-110107-5), MW-102 (460-110107-6) and MW-35S (460-110107-9) were analyzed for Metals in accordance with EPA SW-846 Methods 6010C. The samples were prepared on 03/14/2016 and 03/17/2016 and analyzed on 03/15/2016 and 03/17/2016.

No difficulties were encountered during the Metals analysis.

All quality control parameters were within the acceptance limits.

TOTAL MERCURY

Sample MW-24S (460-110107-3) was analyzed for total mercury in accordance with EPA SW-846 Methods 7470A. The samples were prepared and analyzed on 03/15/2016.

No difficulties were encountered during the Hg analysis.

All quality control parameters were within the acceptance limits.

ANIONS

Samples FB (460-110107-2), MW-101 (460-110107-4), MW-1S (460-110107-5), MW-102 (460-110107-6) and MW-35S (460-110107-9) were analyzed for anions in accordance with EPA Method 300_ORGFM_28D Anions by Ion Chromatograph. The samples were analyzed on 03/17/2016.

Sulfate failed the recovery criteria low for the MS/MSD of sample 460-110103-6 in batch 460-356473.

Refer to the QC report for details.

Samples MW-101 (460-110107-4)[1000X], MW-1S (460-110107-5)[10000X], MW-102 (460-110107-6)[10X] and MW-35S (460-110107-9)[1000X] required dilution prior to analysis. The reporting limits have been adjusted accordingly.

The following samples was diluted to bring the concentration of target analytes within the calibration range: MW-101 (460-110107-4), MW-1S (460-110107-5), MW-102 (460-110107-6) and MW-35S (460-110107-9). Elevated reporting limits (RLs) are provided.

The following samples was diluted to bring the concentration of target analytes within the calibration range: MW-101 (460-110107-4), MW-1S (460-110107-5) and MW-35S (460-110107-9). Elevated reporting limits (RLs) are provided.

The following sample was diluted to bring the concentration of target analytes within the calibration range: (460-110103-E-6) at 100.0. Elevated reporting limits (RLs) are provided.

No other difficulties were encountered during the anions analysis.

All other quality control parameters were within the acceptance limits.

AMMONIA

Samples FB (460-110107-2), MW-101 (460-110107-4), MW-1S (460-110107-5), MW-102 (460-110107-6) and MW-35S (460-110107-9) were analyzed for ammonia in accordance with EPA Method 350.1. The samples were prepared and analyzed on 03/23/2016.

Samples MW-101 (460-110107-4)[10X], MW-1S (460-110107-5)[10X], MW-102 (460-110107-6)[10X] and MW-35S (460-110107-9)[5X] required dilution prior to analysis. The reporting limits have been adjusted accordingly.

No other difficulties were encountered during the ammonia analysis.

All quality control parameters were within the acceptance limits.

NITROGEN-NITRATE

Samples FB (460-110107-2), MW-101 (460-110107-4), MW-1S (460-110107-5), MW-102 (460-110107-6) and MW-35S (460-110107-9) were analyzed for Nitrogen-Nitrate in accordance with SM 4500 NO3 F. The samples were analyzed on 03/09/2016.

No difficulties were encountered during the Nitrate analysis.

All quality control parameters were within the acceptance limits.

EXECUTIVE SUMMARY - Detections

Client: R & C Formation Ltd.

Job Number: 460-110107-1

Lab Sample ID Analyte	Client Sample ID	Result	Qualifier	Reporting Limit	Units	Method
460-110107-2FB	FB					
Pyridine		0.81	J B	25	ug/L	8270D
Sulfate		0.72		0.60	mg/L	300.0
460-110107-3	MW-24S					
Pyridine		0.46	J B	24	ug/L	8270D
Mercury		0.76		0.20	ug/L	7470A
460-110107-4	MW-101					
Pyridine		0.43	J B	25	ug/L	8270D
Iron		9650		150	ug/L	6010C
Manganese		1570		15.0	ug/L	6010C
Ammonia		11.5		1.0	mg/L	350.1
Sulfate		4950		600	mg/L	300.0
460-110107-5	MW-1S					
Iron		13000		150	ug/L	6010C
Manganese		828		15.0	ug/L	6010C
Ammonia		15.0		1.0	mg/L	350.1
Nitrate as N		0.44		0.10	mg/L	SM 4500 NO3 F
Sulfate		7400		6000	mg/L	300.0
460-110107-6	MW-102					
Pyridine		0.54	J B	25	ug/L	8270D
Iron		39100		150	ug/L	6010C
Manganese		1230		15.0	ug/L	6010C
Ammonia		11.8		1.0	mg/L	350.1
Sulfate		98.4		6.00	mg/L	300.0
460-110107-7	MW-7S					
Pyridine		0.52	J B	25	ug/L	8270D
460-110107-8	MW-6D					
Pyridine		0.49	J B	25	ug/L	8270D

EXECUTIVE SUMMARY - Detections

Client: R & C Formation Ltd.

Job Number: 460-110107-1

Lab Sample ID	Client Sample ID	Result	Qualifier	Reporting Limit	Units	Method
460-110107-9	MW-35S					
Pyridine		0.44	J B	25	ug/L	8270D
Iron		8710		150	ug/L	6010C
Manganese		6010		15.0	ug/L	6010C
Ammonia		5.4		0.50	mg/L	350.1
Sulfate		10100		600	mg/L	300.0

METHOD SUMMARY

Client: R & C Formation Ltd.

Job Number: 460-110107-1

Description	Lab Location	Method	Preparation Method
Matrix: Water			
Volatile Organic Compounds by GC/MS	TAL EDI	SW846 8260C	
Purge and Trap	TAL EDI		SW846 5030C
Anions, Ion Chromatography	TAL EDI	MCAWW 300.0	
Metals (ICP)	TAL EDI	SW846 6010C	
Preparation, Total Metals	TAL EDI		SW846 3010A
Mercury (CVAA)	TAL EDI	SW846 7470A	
Preparation, Mercury	TAL EDI		SW846 7470A
Nitrogen, Ammonia	TAL EDI	MCAWW 350.1	
Distillation, Ammonia	TAL EDI		Distill/Ammonia
Nitrogen, Nitrate	TAL EDI	SM SM 4500 NO3 F	
Semivolatile Organic Compounds (GC/MS)	TAL BUF	SW846 8270D	
Liquid-Liquid Extraction (Separatory Funnel)	TAL BUF		SW846 3510C

Lab References:

TAL BUF = TestAmerica Buffalo

TAL EDI = TestAmerica Edison

Method References:

MCAWW = "Methods For Chemical Analysis Of Water And Wastes", EPA-600/4-79-020, March 1983 And Subsequent Revisions.

SM = "Standard Methods For The Examination Of Water And Wastewater"

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

METHOD / ANALYST SUMMARY

Client: R & C Formation Ltd.

Job Number: 460-110107-1

Method	Analyst	Analyst ID
SW846 8260C	Starzec, Margaret	MZS
SW846 8270D	Richards, Devon M	DMR
SW846 6010C	Chang, Churn Der	CDC
SW846 6010C	Huang, Yixin	YZH
SW846 7470A	Staib, Thomas	TJS
MCAWW 350.1	Vu, Huan	HTV
SM SM 4500 NO3 F	Kamenetskaya, Raisa	RAK
MCAWW 300.0	Boykin, Carol B	CBB

SAMPLE SUMMARY

Client: R & C Formation Ltd.

Job Number: 460-110107-1

Lab Sample ID	Client Sample ID	Client Matrix	Date/Time Sampled	Date/Time Received
460-110107-1TB	TB	Water	03/08/2016 0000	03/08/2016 1728
460-110107-2FB	FB	Water	03/08/2016 1540	03/08/2016 1728
460-110107-3	MW-24S	Water	03/08/2016 1128	03/08/2016 1728
460-110107-4	MW-101	Water	03/08/2016 1158	03/08/2016 1728
460-110107-5	MW-1S	Water	03/08/2016 1236	03/08/2016 1728
460-110107-6	MW-102	Water	03/08/2016 1307	03/08/2016 1728
460-110107-7	MW-7S	Water	03/08/2016 1353	03/08/2016 1728
460-110107-8	MW-6D	Water	03/08/2016 1417	03/08/2016 1728
460-110107-9	MW-35S	Water	03/08/2016 1458	03/08/2016 1728
460-110107-10	MW-23D	Water	03/08/2016 1551	03/08/2016 1728

SAMPLE RESULTS

Analytical Data

Client: R & C Formation Ltd.

Job Number: 460-110107-1

Client Sample ID: TB

Lab Sample ID: 460-110107-1TB

Client Matrix: Water

Date Sampled: 03/08/2016 0000

Date Received: 03/08/2016 1728

8260C Volatile Organic Compounds by GC/MS

Analysis Method:	8260C	Analysis Batch:	460-355690	Instrument ID:	CVOAMS13
Prep Method:	5030C	Prep Batch:	N/A	Lab File ID:	P09889.D
Dilution:	1.0			Initial Weight/Volume:	5 mL
Analysis Date:	03/12/2016 1326			Final Weight/Volume:	5 mL
Prep Date:	03/12/2016 1326				

Analyte	Result (ug/L)	Qualifier	MDL	RL
Benzene	1.0	U *	0.090	1.0
Toluene	1.0	U	0.25	1.0
Ethylbenzene	1.0	U	0.30	1.0
Xylenes, Total	2.0	U	0.28	2.0

Surrogate	%Rec	Qualifier	Acceptance Limits
1,2-Dichloroethane-d4 (Surr)	109		70 - 137
Bromofluorobenzene	72		70 - 131
Toluene-d8 (Surr)	106		74 - 120
Dibromofluoromethane (Surr)	81		72 - 136

Analytical Data

Client: R & C Formation Ltd.

Job Number: 460-110107-1

Client Sample ID: FB

Lab Sample ID: 460-110107-2FB

Client Matrix: Water

Date Sampled: 03/08/2016 1540

Date Received: 03/08/2016 1728

8260C Volatile Organic Compounds by GC/MS

Analysis Method:	8260C	Analysis Batch:	460-355690	Instrument ID:	CVOAMS13
Prep Method:	5030C	Prep Batch:	N/A	Lab File ID:	P09890.D
Dilution:	1.0			Initial Weight/Volume:	5 mL
Analysis Date:	03/12/2016 1350			Final Weight/Volume:	5 mL
Prep Date:	03/12/2016 1350				

Analyte	Result (ug/L)	Qualifier	MDL	RL
Benzene	1.0	U *	0.090	1.0
Toluene	1.0	U	0.25	1.0
Ethylbenzene	1.0	U	0.30	1.0
Xylenes, Total	2.0	U	0.28	2.0

Surrogate	%Rec	Qualifier	Acceptance Limits
1,2-Dichloroethane-d4 (Surr)	104		70 - 137
Bromofluorobenzene	75		70 - 131
Toluene-d8 (Surr)	106		74 - 120
Dibromofluoromethane (Surr)	79		72 - 136

Analytical Data

Client: R & C Formation Ltd.

Job Number: 460-110107-1

Client Sample ID: MW-24S

Lab Sample ID: 460-110107-3

Client Matrix: Water

Date Sampled: 03/08/2016 1128

Date Received: 03/08/2016 1728

8260C Volatile Organic Compounds by GC/MS

Analysis Method:	8260C	Analysis Batch:	460-355690	Instrument ID:	CVOAMS13
Prep Method:	5030C	Prep Batch:	N/A	Lab File ID:	P09893.D
Dilution:	1.0			Initial Weight/Volume:	5 mL
Analysis Date:	03/12/2016 1503			Final Weight/Volume:	5 mL
Prep Date:	03/12/2016 1503				

Analyte	Result (ug/L)	Qualifier	MDL	RL
Benzene	1.0	U *	0.090	1.0
Toluene	1.0	U	0.25	1.0
Ethylbenzene	1.0	U	0.30	1.0
Xylenes, Total	2.0	U	0.28	2.0

Surrogate	%Rec	Qualifier	Acceptance Limits
1,2-Dichloroethane-d4 (Surr)	107		70 - 137
Bromofluorobenzene	74		70 - 131
Toluene-d8 (Surr)	104		74 - 120
Dibromofluoromethane (Surr)	83		72 - 136

Analytical Data

Client: R & C Formation Ltd.

Job Number: 460-110107-1

Client Sample ID: MW-101

Lab Sample ID: 460-110107-4

Client Matrix: Water

Date Sampled: 03/08/2016 1158

Date Received: 03/08/2016 1728

8260C Volatile Organic Compounds by GC/MS

Analysis Method:	8260C	Analysis Batch:	460-355690	Instrument ID:	CVOAMS13
Prep Method:	5030C	Prep Batch:	N/A	Lab File ID:	P09894.D
Dilution:	1.0			Initial Weight/Volume:	5 mL
Analysis Date:	03/12/2016 1527			Final Weight/Volume:	5 mL
Prep Date:	03/12/2016 1527				

Analyte	Result (ug/L)	Qualifier	MDL	RL
Benzene	1.0	U *	0.090	1.0
Toluene	1.0	U	0.25	1.0
Ethylbenzene	1.0	U	0.30	1.0
Xylenes, Total	2.0	U	0.28	2.0

Surrogate	%Rec	Qualifier	Acceptance Limits
1,2-Dichloroethane-d4 (Surr)	108		70 - 137
Bromofluorobenzene	74		70 - 131
Toluene-d8 (Surr)	111		74 - 120
Dibromofluoromethane (Surr)	83		72 - 136

Analytical Data

Client: R & C Formation Ltd.

Job Number: 460-110107-1

Client Sample ID: MW-1S

Lab Sample ID: 460-110107-5

Client Matrix: Water

Date Sampled: 03/08/2016 1236

Date Received: 03/08/2016 1728

8260C Volatile Organic Compounds by GC/MS

Analysis Method:	8260C	Analysis Batch:	460-355959	Instrument ID:	CVOAMS13
Prep Method:	5030C	Prep Batch:	N/A	Lab File ID:	P09954.D
Dilution:	1.0			Initial Weight/Volume:	5 mL
Analysis Date:	03/14/2016 1632			Final Weight/Volume:	5 mL
Prep Date:	03/14/2016 1632				

Analyte	Result (ug/L)	Qualifier	MDL	RL
Benzene	1.0	U	0.090	1.0
Toluene	1.0	U	0.25	1.0
Ethylbenzene	1.0	U	0.30	1.0
Xylenes, Total	2.0	U	0.28	2.0

Surrogate	%Rec	Qualifier	Acceptance Limits
1,2-Dichloroethane-d4 (Surr)	80		70 - 137
Bromofluorobenzene	102		70 - 131
Toluene-d8 (Surr)	83		74 - 120
Dibromofluoromethane (Surr)	85		72 - 136

Analytical Data

Client: R & C Formation Ltd.

Job Number: 460-110107-1

Client Sample ID: MW-102

Lab Sample ID: 460-110107-6

Client Matrix: Water

Date Sampled: 03/08/2016 1307

Date Received: 03/08/2016 1728

8260C Volatile Organic Compounds by GC/MS

Analysis Method:	8260C	Analysis Batch:	460-355690	Instrument ID:	CVOAMS13
Prep Method:	5030C	Prep Batch:	N/A	Lab File ID:	P09896.D
Dilution:	1.0			Initial Weight/Volume:	5 mL
Analysis Date:	03/12/2016 1616			Final Weight/Volume:	5 mL
Prep Date:	03/12/2016 1616				

Analyte	Result (ug/L)	Qualifier	MDL	RL
Benzene	1.0	U *	0.090	1.0
Toluene	1.0	U	0.25	1.0
Ethylbenzene	1.0	U	0.30	1.0
Xylenes, Total	2.0	U	0.28	2.0

Surrogate	%Rec	Qualifier	Acceptance Limits
1,2-Dichloroethane-d4 (Surr)	108		70 - 137
Bromofluorobenzene	74		70 - 131
Toluene-d8 (Surr)	108		74 - 120
Dibromofluoromethane (Surr)	84		72 - 136

Analytical Data

Client: R & C Formation Ltd.

Job Number: 460-110107-1

Client Sample ID: MW-7S

Lab Sample ID: 460-110107-7

Client Matrix: Water

Date Sampled: 03/08/2016 1353

Date Received: 03/08/2016 1728

8260C Volatile Organic Compounds by GC/MS

Analysis Method:	8260C	Analysis Batch:	460-355690	Instrument ID:	CVOAMS13
Prep Method:	5030C	Prep Batch:	N/A	Lab File ID:	P09897.D
Dilution:	1.0			Initial Weight/Volume:	5 mL
Analysis Date:	03/12/2016 1640			Final Weight/Volume:	5 mL
Prep Date:	03/12/2016 1640				

Analyte	Result (ug/L)	Qualifier	MDL	RL
Benzene	1.0	U *	0.090	1.0
Toluene	1.0	U	0.25	1.0
Ethylbenzene	1.0	U	0.30	1.0
Xylenes, Total	2.0	U	0.28	2.0

Surrogate	%Rec	Qualifier	Acceptance Limits
1,2-Dichloroethane-d4 (Surr)	106		70 - 137
Bromofluorobenzene	75		70 - 131
Toluene-d8 (Surr)	110		74 - 120
Dibromofluoromethane (Surr)	81		72 - 136

Analytical Data

Client: R & C Formation Ltd.

Job Number: 460-110107-1

Client Sample ID: MW-6D

Lab Sample ID: 460-110107-8

Client Matrix: Water

Date Sampled: 03/08/2016 1417

Date Received: 03/08/2016 1728

8260C Volatile Organic Compounds by GC/MS

Analysis Method:	8260C	Analysis Batch:	460-355959	Instrument ID:	CVOAMS13
Prep Method:	5030C	Prep Batch:	N/A	Lab File ID:	P09955.D
Dilution:	1.0			Initial Weight/Volume:	5 mL
Analysis Date:	03/14/2016 1656			Final Weight/Volume:	5 mL
Prep Date:	03/14/2016 1656				

Analyte	Result (ug/L)	Qualifier	MDL	RL
Benzene	1.0	U	0.090	1.0
Toluene	1.0	U	0.25	1.0
Ethylbenzene	1.0	U	0.30	1.0
Xylenes, Total	2.0	U	0.28	2.0

Surrogate	%Rec	Qualifier	Acceptance Limits
1,2-Dichloroethane-d4 (Surr)	82		70 - 137
Bromofluorobenzene	103		70 - 131
Toluene-d8 (Surr)	85		74 - 120
Dibromofluoromethane (Surr)	87		72 - 136

Analytical Data

Client: R & C Formation Ltd.

Job Number: 460-110107-1

Client Sample ID: MW-35S

Lab Sample ID: 460-110107-9

Client Matrix: Water

Date Sampled: 03/08/2016 1458

Date Received: 03/08/2016 1728

8260C Volatile Organic Compounds by GC/MS

Analysis Method:	8260C	Analysis Batch:	460-355959	Instrument ID:	CVOAMS13
Prep Method:	5030C	Prep Batch:	N/A	Lab File ID:	P09956.D
Dilution:	1.0			Initial Weight/Volume:	5 mL
Analysis Date:	03/14/2016 1721			Final Weight/Volume:	5 mL
Prep Date:	03/14/2016 1721				

Analyte	Result (ug/L)	Qualifier	MDL	RL
Benzene	1.0	U	0.090	1.0
Toluene	1.0	U	0.25	1.0
Ethylbenzene	1.0	U	0.30	1.0
Xylenes, Total	2.0	U	0.28	2.0

Surrogate	%Rec	Qualifier	Acceptance Limits
1,2-Dichloroethane-d4 (Surr)	83		70 - 137
Bromofluorobenzene	105		70 - 131
Toluene-d8 (Surr)	84		74 - 120
Dibromofluoromethane (Surr)	87		72 - 136

Analytical Data

Client: R & C Formation Ltd.

Job Number: 460-110107-1

Client Sample ID: MW-23D

Lab Sample ID: 460-110107-10

Client Matrix: Water

Date Sampled: 03/08/2016 1551

Date Received: 03/08/2016 1728

8260C Volatile Organic Compounds by GC/MS

Analysis Method:	8260C	Analysis Batch:	460-355690	Instrument ID:	CVOAMS13
Prep Method:	5030C	Prep Batch:	N/A	Lab File ID:	P09900.D
Dilution:	1.0			Initial Weight/Volume:	5 mL
Analysis Date:	03/12/2016 1752			Final Weight/Volume:	5 mL
Prep Date:	03/12/2016 1752				

Analyte	Result (ug/L)	Qualifier	MDL	RL
Benzene	1.0	U *	0.090	1.0
Toluene	1.0	U	0.25	1.0
Ethylbenzene	1.0	U	0.30	1.0
Xylenes, Total	2.0	U	0.28	2.0

Surrogate	%Rec	Qualifier	Acceptance Limits
1,2-Dichloroethane-d4 (Surr)	115		70 - 137
Bromofluorobenzene	71		70 - 131
Toluene-d8 (Surr)	113		74 - 120
Dibromofluoromethane (Surr)	83		72 - 136

Analytical Data

Client: R & C Formation Ltd.

Job Number: 460-110107-1

Client Sample ID: FB

Lab Sample ID: 460-110107-2FB

Client Matrix: Water

Date Sampled: 03/08/2016 1540

Date Received: 03/08/2016 1728

8270D Semivolatile Organic Compounds (GC/MS)

Analysis Method:	8270D	Analysis Batch:	480-291896	Instrument ID:	HP5973W
Prep Method:	3510C	Prep Batch:	480-290946	Lab File ID:	W0235.D
Dilution:	1.0			Initial Weight/Volume:	246 mL
Analysis Date:	03/21/2016 0337			Final Weight/Volume:	1 mL
Prep Date:	03/14/2016 1427			Injection Volume:	2 uL

Analyte	Result (ug/L)	Qualifier	MDL	RL
2-Picoline	81	U	1.4	81
Pyridine	0.81	J B	0.42	25

Surrogate	%Rec	Qualifier	Acceptance Limits
Nitrobenzene-d5	97		46 - 120
2-Fluorobiphenyl	91		48 - 120
p-Terphenyl-d14	103		67 - 150
Phenol-d5	52		16 - 120
2-Fluorophenol	65		20 - 120
2,4,6-Tribromophenol	107		52 - 132

Analytical Data

Client: R & C Formation Ltd.

Job Number: 460-110107-1

Client Sample ID: FB

Lab Sample ID: 460-110107-2FB

Client Matrix: Water

Date Sampled: 03/08/2016 1540

Date Received: 03/08/2016 1728

8270D Semivolatile Organic Compounds (GC/MS)

Analysis Method:	8270D	Analysis Batch:	480-291896	Instrument ID:	HP5973W
Prep Method:	3510C	Prep Batch:	480-290946	Lab File ID:	W0235.D
Dilution:	1.0			Initial Weight/Volume:	246 mL
Analysis Date:	03/21/2016 0337			Final Weight/Volume:	1 mL
Prep Date:	03/14/2016 1427			Injection Volume:	2 uL

Targeted Tentatively Identified Compounds

Cas Number	Analyte	Est. Result (ug/L)	Qualifier
504-29-0	2-Aminopyridine TIC	10	U

Analytical Data

Client: R & C Formation Ltd.

Job Number: 460-110107-1

Client Sample ID: MW-24S

Lab Sample ID: 460-110107-3

Client Matrix: Water

Date Sampled: 03/08/2016 1128

Date Received: 03/08/2016 1728

8270D Semivolatile Organic Compounds (GC/MS)

Analysis Method:	8270D	Analysis Batch:	480-291896	Instrument ID:	HP5973W
Prep Method:	3510C	Prep Batch:	480-290946	Lab File ID:	W0236.D
Dilution:	1.0			Initial Weight/Volume:	256.6 mL
Analysis Date:	03/21/2016 0405			Final Weight/Volume:	1 mL
Prep Date:	03/14/2016 1427			Injection Volume:	2 uL

Analyte	Result (ug/L)	Qualifier	MDL	RL
2-Picoline	78	U	1.4	78
Pyridine	0.46	J B	0.40	24

Surrogate	%Rec	Qualifier	Acceptance Limits
Nitrobenzene-d5	89		46 - 120
2-Fluorobiphenyl	87		48 - 120
p-Terphenyl-d14	89		67 - 150
Phenol-d5	39		16 - 120
2-Fluorophenol	61		20 - 120
2,4,6-Tribromophenol	111		52 - 132

Analytical Data

Client: R & C Formation Ltd.

Job Number: 460-110107-1

Client Sample ID: MW-24S

Lab Sample ID: 460-110107-3

Client Matrix: Water

Date Sampled: 03/08/2016 1128

Date Received: 03/08/2016 1728

8270D Semivolatile Organic Compounds (GC/MS)

Analysis Method:	8270D	Analysis Batch:	480-291896	Instrument ID:	HP5973W
Prep Method:	3510C	Prep Batch:	480-290946	Lab File ID:	W0236.D
Dilution:	1.0			Initial Weight/Volume:	256.6 mL
Analysis Date:	03/21/2016 0405			Final Weight/Volume:	1 mL
Prep Date:	03/14/2016 1427			Injection Volume:	2 uL

Targeted Tentatively Identified Compounds

Cas Number	Analyte	Est. Result (ug/L)	Qualifier
504-29-0	2-Aminopyridine TIC	9.7	U

Analytical Data

Client: R & C Formation Ltd.

Job Number: 460-110107-1

Client Sample ID: MW-101

Lab Sample ID: 460-110107-4

Client Matrix: Water

Date Sampled: 03/08/2016 1158

Date Received: 03/08/2016 1728

8270D Semivolatile Organic Compounds (GC/MS)

Analysis Method:	8270D	Analysis Batch:	480-291896	Instrument ID:	HP5973W
Prep Method:	3510C	Prep Batch:	480-290946	Lab File ID:	W0237.D
Dilution:	1.0			Initial Weight/Volume:	253.5 mL
Analysis Date:	03/21/2016 0434			Final Weight/Volume:	1 mL
Prep Date:	03/14/2016 1427			Injection Volume:	2 uL

Analyte	Result (ug/L)	Qualifier	MDL	RL
2-Picoline	79	U	1.4	79
Pyridine	0.43	J B	0.40	25

Surrogate	%Rec	Qualifier	Acceptance Limits
Nitrobenzene-d5	102		46 - 120
2-Fluorobiphenyl	98		48 - 120
p-Terphenyl-d14	99		67 - 150
Phenol-d5	47		16 - 120
2-Fluorophenol	74		20 - 120
2,4,6-Tribromophenol	122		52 - 132

Analytical Data

Client: R & C Formation Ltd.

Job Number: 460-110107-1

Client Sample ID: MW-101

Lab Sample ID: 460-110107-4

Client Matrix: Water

Date Sampled: 03/08/2016 1158

Date Received: 03/08/2016 1728

8270D Semivolatile Organic Compounds (GC/MS)

Analysis Method:	8270D	Analysis Batch:	480-291896	Instrument ID:	HP5973W
Prep Method:	3510C	Prep Batch:	480-290946	Lab File ID:	W0237.D
Dilution:	1.0			Initial Weight/Volume:	253.5 mL
Analysis Date:	03/21/2016 0434			Final Weight/Volume:	1 mL
Prep Date:	03/14/2016 1427			Injection Volume:	2 uL

Targeted Tentatively Identified Compounds

Cas Number	Analyte	Est. Result (ug/L)	Qualifier
504-29-0	2-Aminopyridine TIC	9.9	U

Analytical Data

Client: R & C Formation Ltd.

Job Number: 460-110107-1

Client Sample ID: MW-1S

Lab Sample ID: 460-110107-5

Client Matrix: Water

Date Sampled: 03/08/2016 1236

Date Received: 03/08/2016 1728

8270D Semivolatile Organic Compounds (GC/MS)

Analysis Method:	8270D	Analysis Batch:	480-291896	Instrument ID:	HP5973W
Prep Method:	3510C	Prep Batch:	480-290946	Lab File ID:	W0238.D
Dilution:	1.0			Initial Weight/Volume:	262.5 mL
Analysis Date:	03/21/2016 0502			Final Weight/Volume:	1 mL
Prep Date:	03/14/2016 1427			Injection Volume:	2 uL

Analyte	Result (ug/L)	Qualifier	MDL	RL
2-Picoline	76	U	1.3	76
Pyridine	24	U	0.39	24

Surrogate	%Rec	Qualifier	Acceptance Limits
Nitrobenzene-d5	93		46 - 120
2-Fluorobiphenyl	91		48 - 120
p-Terphenyl-d14	94		67 - 150
Phenol-d5	41		16 - 120
2-Fluorophenol	65		20 - 120
2,4,6-Tribromophenol	111		52 - 132

Analytical Data

Client: R & C Formation Ltd.

Job Number: 460-110107-1

Client Sample ID: MW-1S

Lab Sample ID: 460-110107-5

Client Matrix: Water

Date Sampled: 03/08/2016 1236

Date Received: 03/08/2016 1728

8270D Semivolatile Organic Compounds (GC/MS)

Analysis Method:	8270D	Analysis Batch:	480-291896	Instrument ID:	HP5973W
Prep Method:	3510C	Prep Batch:	480-290946	Lab File ID:	W0238.D
Dilution:	1.0			Initial Weight/Volume:	262.5 mL
Analysis Date:	03/21/2016 0502			Final Weight/Volume:	1 mL
Prep Date:	03/14/2016 1427			Injection Volume:	2 uL

Targeted Tentatively Identified Compounds

Cas Number	Analyte	Est. Result (ug/L)	Qualifier
504-29-0	2-Aminopyridine TIC	9.5	U

Analytical Data

Client: R & C Formation Ltd.

Job Number: 460-110107-1

Client Sample ID: MW-102

Lab Sample ID: 460-110107-6

Client Matrix: Water

Date Sampled: 03/08/2016 1307

Date Received: 03/08/2016 1728

8270D Semivolatile Organic Compounds (GC/MS)

Analysis Method:	8270D	Analysis Batch:	480-291896	Instrument ID:	HP5973W
Prep Method:	3510C	Prep Batch:	480-290946	Lab File ID:	W0239.D
Dilution:	1.0			Initial Weight/Volume:	253.5 mL
Analysis Date:	03/21/2016 0531			Final Weight/Volume:	1 mL
Prep Date:	03/14/2016 1427			Injection Volume:	2 uL

Analyte	Result (ug/L)	Qualifier	MDL	RL
2-Picoline	79	U	1.4	79
Pyridine	0.54	J B	0.40	25

Surrogate	%Rec	Qualifier	Acceptance Limits
Nitrobenzene-d5	101		46 - 120
2-Fluorobiphenyl	94		48 - 120
p-Terphenyl-d14	92		67 - 150
Phenol-d5	45		16 - 120
2-Fluorophenol	70		20 - 120
2,4,6-Tribromophenol	119		52 - 132

Analytical Data

Client: R & C Formation Ltd.

Job Number: 460-110107-1

Client Sample ID: MW-102

Lab Sample ID: 460-110107-6

Client Matrix: Water

Date Sampled: 03/08/2016 1307

Date Received: 03/08/2016 1728

8270D Semivolatile Organic Compounds (GC/MS)

Analysis Method:	8270D	Analysis Batch:	480-291896	Instrument ID:	HP5973W
Prep Method:	3510C	Prep Batch:	480-290946	Lab File ID:	W0239.D
Dilution:	1.0			Initial Weight/Volume:	253.5 mL
Analysis Date:	03/21/2016 0531			Final Weight/Volume:	1 mL
Prep Date:	03/14/2016 1427			Injection Volume:	2 uL

Targeted Tentatively Identified Compounds

Cas Number	Analyte	Est. Result (ug/L)	Qualifier
504-29-0	2-Aminopyridine TIC	9.9	U

Analytical Data

Client: R & C Formation Ltd.

Job Number: 460-110107-1

Client Sample ID: MW-7S

Lab Sample ID: 460-110107-7

Client Matrix: Water

Date Sampled: 03/08/2016 1353

Date Received: 03/08/2016 1728

8270D Semivolatile Organic Compounds (GC/MS)

Analysis Method:	8270D	Analysis Batch:	480-291896	Instrument ID:	HP5973W
Prep Method:	3510C	Prep Batch:	480-290946	Lab File ID:	W0240.D
Dilution:	1.0			Initial Weight/Volume:	250.8 mL
Analysis Date:	03/21/2016 0600			Final Weight/Volume:	1 mL
Prep Date:	03/14/2016 1427			Injection Volume:	2 uL

Analyte	Result (ug/L)	Qualifier	MDL	RL
2-Picoline	80	U	1.4	80
Pyridine	0.52	J B	0.41	25

Surrogate	%Rec	Qualifier	Acceptance Limits
Nitrobenzene-d5	96		46 - 120
2-Fluorobiphenyl	95		48 - 120
p-Terphenyl-d14	100		67 - 150
Phenol-d5	40		16 - 120
2-Fluorophenol	64		20 - 120
2,4,6-Tribromophenol	102		52 - 132

Analytical Data

Client: R & C Formation Ltd.

Job Number: 460-110107-1

Client Sample ID: MW-7S

Lab Sample ID: 460-110107-7

Client Matrix: Water

Date Sampled: 03/08/2016 1353

Date Received: 03/08/2016 1728

8270D Semivolatile Organic Compounds (GC/MS)

Analysis Method:	8270D	Analysis Batch:	480-291896	Instrument ID:	HP5973W
Prep Method:	3510C	Prep Batch:	480-290946	Lab File ID:	W0240.D
Dilution:	1.0			Initial Weight/Volume:	250.8 mL
Analysis Date:	03/21/2016 0600			Final Weight/Volume:	1 mL
Prep Date:	03/14/2016 1427			Injection Volume:	2 uL

Targeted Tentatively Identified Compounds

Cas Number	Analyte	Est. Result (ug/L)	Qualifier
504-29-0	2-Aminopyridine TIC	10	U

Analytical Data

Client: R & C Formation Ltd.

Job Number: 460-110107-1

Client Sample ID: MW-6D

Lab Sample ID: 460-110107-8

Client Matrix: Water

Date Sampled: 03/08/2016 1417

Date Received: 03/08/2016 1728

8270D Semivolatile Organic Compounds (GC/MS)

Analysis Method:	8270D	Analysis Batch:	480-291896	Instrument ID:	HP5973W
Prep Method:	3510C	Prep Batch:	480-290946	Lab File ID:	W0241.D
Dilution:	1.0			Initial Weight/Volume:	250.1 mL
Analysis Date:	03/21/2016 0629			Final Weight/Volume:	1 mL
Prep Date:	03/14/2016 1427			Injection Volume:	2 uL

Analyte	Result (ug/L)	Qualifier	MDL	RL
2-Picoline	80	U	1.4	80
Pyridine	0.49	J B	0.41	25

Surrogate	%Rec	Qualifier	Acceptance Limits
Nitrobenzene-d5	91		46 - 120
2-Fluorobiphenyl	89		48 - 120
p-Terphenyl-d14	101		67 - 150
Phenol-d5	41		16 - 120
2-Fluorophenol	61		20 - 120
2,4,6-Tribromophenol	105		52 - 132

Analytical Data

Client: R & C Formation Ltd.

Job Number: 460-110107-1

Client Sample ID: MW-6D

Lab Sample ID: 460-110107-8

Client Matrix: Water

Date Sampled: 03/08/2016 1417

Date Received: 03/08/2016 1728

8270D Semivolatile Organic Compounds (GC/MS)

Analysis Method:	8270D	Analysis Batch:	480-291896	Instrument ID:	HP5973W
Prep Method:	3510C	Prep Batch:	480-290946	Lab File ID:	W0241.D
Dilution:	1.0			Initial Weight/Volume:	250.1 mL
Analysis Date:	03/21/2016 0629			Final Weight/Volume:	1 mL
Prep Date:	03/14/2016 1427			Injection Volume:	2 uL

Targeted Tentatively Identified Compounds

Cas Number	Analyte	Est. Result (ug/L)	Qualifier
504-29-0	2-Aminopyridine TIC	10	U

Analytical Data

Client: R & C Formation Ltd.

Job Number: 460-110107-1

Client Sample ID: MW-35S

Lab Sample ID: 460-110107-9

Client Matrix: Water

Date Sampled: 03/08/2016 1458

Date Received: 03/08/2016 1728

8270D Semivolatile Organic Compounds (GC/MS)

Analysis Method:	8270D	Analysis Batch:	480-291896	Instrument ID:	HP5973W
Prep Method:	3510C	Prep Batch:	480-290946	Lab File ID:	W0242.D
Dilution:	1.0			Initial Weight/Volume:	250.6 mL
Analysis Date:	03/21/2016 0658			Final Weight/Volume:	1 mL
Prep Date:	03/14/2016 1427			Injection Volume:	2 uL

Analyte	Result (ug/L)	Qualifier	MDL	RL
2-Picoline	80	U	1.4	80
Pyridine	0.44	J B	0.41	25

Surrogate	%Rec	Qualifier	Acceptance Limits
Nitrobenzene-d5	86		46 - 120
2-Fluorobiphenyl	85		48 - 120
p-Terphenyl-d14	90		67 - 150
Phenol-d5	41		16 - 120
2-Fluorophenol	65		20 - 120
2,4,6-Tribromophenol	108		52 - 132

Analytical Data

Client: R & C Formation Ltd.

Job Number: 460-110107-1

Client Sample ID: MW-35S

Lab Sample ID: 460-110107-9

Client Matrix: Water

Date Sampled: 03/08/2016 1458

Date Received: 03/08/2016 1728

8270D Semivolatile Organic Compounds (GC/MS)

Analysis Method:	8270D	Analysis Batch:	480-291896	Instrument ID:	HP5973W
Prep Method:	3510C	Prep Batch:	480-290946	Lab File ID:	W0242.D
Dilution:	1.0			Initial Weight/Volume:	250.6 mL
Analysis Date:	03/21/2016 0658			Final Weight/Volume:	1 mL
Prep Date:	03/14/2016 1427			Injection Volume:	2 uL

Targeted Tentatively Identified Compounds

Cas Number	Analyte	Est. Result (ug/L)	Qualifier
504-29-0	2-Aminopyridine TIC	10	U

Analytical Data

Client: R & C Formation Ltd.

Job Number: 460-110107-1

Client Sample ID: MW-23D

Lab Sample ID: 460-110107-10

Client Matrix: Water

Date Sampled: 03/08/2016 1551

Date Received: 03/08/2016 1728

8270D Semivolatile Organic Compounds (GC/MS)

Analysis Method:	8270D	Analysis Batch:	480-291896	Instrument ID:	HP5973W
Prep Method:	3510C	Prep Batch:	480-290946	Lab File ID:	W0243.D
Dilution:	1.0			Initial Weight/Volume:	262.9 mL
Analysis Date:	03/21/2016 0727			Final Weight/Volume:	1 mL
Prep Date:	03/14/2016 1427			Injection Volume:	2 uL

Analyte	Result (ug/L)	Qualifier	MDL	RL
2-Picoline	76	U	1.3	76
Pyridine	24	U	0.39	24

Surrogate	%Rec	Qualifier	Acceptance Limits
Nitrobenzene-d5	92		46 - 120
2-Fluorobiphenyl	89		48 - 120
p-Terphenyl-d14	106		67 - 150
Phenol-d5	40		16 - 120
2-Fluorophenol	60		20 - 120
2,4,6-Tribromophenol	103		52 - 132

Analytical Data

Client: R & C Formation Ltd.

Job Number: 460-110107-1

Client Sample ID: MW-23D

Lab Sample ID: 460-110107-10

Client Matrix: Water

Date Sampled: 03/08/2016 1551

Date Received: 03/08/2016 1728

8270D Semivolatile Organic Compounds (GC/MS)

Analysis Method:	8270D	Analysis Batch:	480-291896	Instrument ID:	HP5973W
Prep Method:	3510C	Prep Batch:	480-290946	Lab File ID:	W0243.D
Dilution:	1.0			Initial Weight/Volume:	262.9 mL
Analysis Date:	03/21/2016 0727			Final Weight/Volume:	1 mL
Prep Date:	03/14/2016 1427			Injection Volume:	2 uL

Targeted Tentatively Identified Compounds

Cas Number	Analyte	Est. Result (ug/L)	Qualifier
504-29-0	2-Aminopyridine TIC	9.5	U

Analytical Data

Client: R & C Formation Ltd.

Job Number: 460-110107-1

Client Sample ID: FB

Lab Sample ID: 460-110107-2FB

Client Matrix: Water

Date Sampled: 03/08/2016 1540

Date Received: 03/08/2016 1728

300.0 Anions, Ion Chromatography

Analysis Method: 300.0

N/A

Analysis Batch: 460-356473

Prep Batch: N/A

Instrument ID: IC A

Lab File ID: YA2016-03-17-12-19.c

Dilution: 1.0

Analysis Date: 03/17/2016 1219

Prep Date: N/A

Initial Weight/Volume: 10 mL

Final Weight/Volume:

Injection Volume: 10 uL

Analyte

Result (mg/L)

Qualifier

MDL

RL

Sulfate

0.72

0.11

0.60

Analytical Data

Client: R & C Formation Ltd.

Job Number: 460-110107-1

Client Sample ID: MW-101

Lab Sample ID: 460-110107-4

Client Matrix: Water

Date Sampled: 03/08/2016 1158

Date Received: 03/08/2016 1728

300.0 Anions, Ion Chromatography

Analysis Method: 300.0

N/A

Analysis Batch: 460-356473

Prep Batch: N/A

Instrument ID: IC A

Lab File ID: YA2016-03-17-18-28.c

Dilution: 1000

Analysis Date: 03/17/2016 1828

Prep Date: N/A

Run Type: DL2

Initial Weight/Volume: 10 mL

Final Weight/Volume:

Injection Volume: 10 uL

Analyte

Result (mg/L)

Qualifier

MDL

RL

Sulfate

4950

105

600

Analytical Data

Client: R & C Formation Ltd.

Job Number: 460-110107-1

Client Sample ID: MW-1S

Lab Sample ID: 460-110107-5

Client Matrix: Water

Date Sampled: 03/08/2016 1236

Date Received: 03/08/2016 1728

300.0 Anions, Ion Chromatography

Analysis Method: 300.0

N/A

Analysis Batch: 460-356473

Prep Batch: N/A

Instrument ID: IC A

Lab File ID: YA2016-03-17-18-48.c

Dilution: 10000

Analysis Date: 03/17/2016 1848

Prep Date: N/A

Run Type: DL2

Initial Weight/Volume: 10 mL

Final Weight/Volume: 1.0 mL

Injection Volume: 10 uL

Analyte	Result (mg/L)	Qualifier	MDL	RL
Sulfate	7400		1050	6000

Analytical Data

Client: R & C Formation Ltd.

Job Number: 460-110107-1

Client Sample ID: MW-102

Lab Sample ID: 460-110107-6

Client Matrix: Water

Date Sampled: 03/08/2016 1307

Date Received: 03/08/2016 1728

300.0 Anions, Ion Chromatography

Analysis Method: 300.0

N/A

Analysis Batch: 460-356473

Prep Batch: N/A

Instrument ID: IC A

Lab File ID: YA2016-03-17-15-01.c

Dilution: 10

Analysis Date: 03/17/2016 1501

Prep Date: N/A

Run Type: DL

Initial Weight/Volume: 10 mL

Final Weight/Volume:

Injection Volume: 10 uL

Analyte

Result (mg/L)

Qualifier

MDL

RL

Sulfate

98.4

1.05

6.00

Analytical Data

Client: R & C Formation Ltd.

Job Number: 460-110107-1

Client Sample ID: MW-35S

Lab Sample ID: 460-110107-9

Client Matrix: Water

Date Sampled: 03/08/2016 1458

Date Received: 03/08/2016 1728

300.0 Anions, Ion Chromatography

Analysis Method: 300.0

N/A

Analysis Batch: 460-356473

Prep Batch: N/A

Instrument ID: IC A

Lab File ID: YA2016-03-17-19-08.c

Dilution: 1000

Analysis Date: 03/17/2016 1908

Prep Date: N/A

Run Type: DL2

Initial Weight/Volume: 10 mL

Final Weight/Volume:

Injection Volume: 10 uL

Analyte

Result (mg/L)

Qualifier

MDL

RL

Sulfate

10100

105

600

Analytical Data

Client: R & C Formation Ltd.

Job Number: 460-110107-1

Client Sample ID: FB

Lab Sample ID: 460-110107-2FB

Client Matrix: Water

Date Sampled: 03/08/2016 1540

Date Received: 03/08/2016 1728

6010C Metals (ICP)

Analysis Method: 6010C

Analysis Batch: 460-356246

Instrument ID: ICP4

Prep Method: 3010A

Prep Batch: 460-355970

Lab File ID: 355970.asc

Dilution: 1.0

Initial Weight/Volume: 50 mL

Analysis Date: 03/15/2016 0123

Final Weight/Volume: 50 mL

Prep Date: 03/14/2016 0842

Analyte	Result (ug/L)	Qualifier	MDL	RL
Iron	150	U	65.4	150
Manganese	15.0	U	4.9	15.0

Analytical Data

Client: R & C Formation Ltd.

Job Number: 460-110107-1

Client Sample ID: MW-24S

Lab Sample ID: 460-110107-3

Date Sampled: 03/08/2016 1128

Client Matrix: Water

Date Received: 03/08/2016 1728

7470A Mercury (CVAA)

Analysis Method: 7470A

Analysis Batch: 460-356322

Instrument ID: LEEMAN5

Prep Method: 7470A

Prep Batch: 460-356208

Lab File ID: 356208HG1.PRN

Dilution: 1.0

Initial Weight/Volume: 30 mL

Analysis Date: 03/15/2016 0820

Final Weight/Volume: 30 mL

Prep Date: 03/15/2016 0420

Analyte	Result (ug/L)	Qualifier	MDL	RL
Mercury	0.76		0.14	0.20

Analytical Data

Client: R & C Formation Ltd.

Job Number: 460-110107-1

Client Sample ID: MW-101

Lab Sample ID: 460-110107-4

Client Matrix: Water

Date Sampled: 03/08/2016 1158

Date Received: 03/08/2016 1728

6010C Metals (ICP)

Analysis Method: 6010C

Prep Method: 3010A

Dilution: 1.0

Analysis Date: 03/15/2016 0127

Prep Date: 03/14/2016 0842

Analysis Batch: 460-356246

Prep Batch: 460-355970

Instrument ID: ICP4

Lab File ID: 355970.asc

Initial Weight/Volume: 50 mL

Final Weight/Volume: 50 mL

Analyte	Result (ug/L)	Qualifier	MDL	RL
Iron	9650		65.4	150
Manganese	1570		4.9	15.0

Analytical Data

Client: R & C Formation Ltd.

Job Number: 460-110107-1

Client Sample ID: MW-1S

Lab Sample ID: 460-110107-5

Client Matrix: Water

Date Sampled: 03/08/2016 1236

Date Received: 03/08/2016 1728

6010C Metals (ICP)

Analysis Method: 6010C

Prep Method: 3010A

Dilution: 1.0

Analysis Date: 03/15/2016 0131

Prep Date: 03/14/2016 0842

Analysis Batch: 460-356246

Prep Batch: 460-355970

Instrument ID: ICP4

Lab File ID: 355970.asc

Initial Weight/Volume: 50 mL

Final Weight/Volume: 50 mL

Analyte	Result (ug/L)	Qualifier	MDL	RL
Iron	13000		65.4	150
Manganese	828		4.9	15.0

Analytical Data

Client: R & C Formation Ltd.

Job Number: 460-110107-1

Client Sample ID: MW-102

Lab Sample ID: 460-110107-6

Client Matrix: Water

Date Sampled: 03/08/2016 1307

Date Received: 03/08/2016 1728

6010C Metals (ICP)

Analysis Method: 6010C

Prep Method: 3010A

Dilution: 1.0

Analysis Date: 03/15/2016 0135

Prep Date: 03/14/2016 0842

Analysis Batch: 460-356246

Prep Batch: 460-355970

Instrument ID: ICP4

Lab File ID: 355970.asc

Initial Weight/Volume: 50 mL

Final Weight/Volume: 50 mL

Analyte	Result (ug/L)	Qualifier	MDL	RL
Iron	39100		65.4	150
Manganese	1230		4.9	15.0

Analytical Data

Client: R & C Formation Ltd.

Job Number: 460-110107-1

Client Sample ID: MW-35S

Lab Sample ID: 460-110107-9

Client Matrix: Water

Date Sampled: 03/08/2016 1458

Date Received: 03/08/2016 1728

6010C Metals (ICP)

Analysis Method: 6010C

Prep Method: 3010A

Dilution: 1.0

Analysis Date: 03/17/2016 2126

Prep Date: 03/17/2016 0945

Analysis Batch: 460-356945

Prep Batch: 460-356835

Instrument ID: ICP5

Lab File ID: 03172016A.asc

Initial Weight/Volume: 50 mL

Final Weight/Volume: 50 mL

Analyte	Result (ug/L)	Qualifier	MDL	RL
Iron	8710		65.4	150
Manganese	6010		4.9	15.0

Analytical Data

Client: R & C Formation Ltd.

Job Number: 460-110107-1

General Chemistry

Client Sample ID: FB

Lab Sample ID: 460-110107-2FB

Client Matrix: Water

Date Sampled: 03/08/2016 1540

Date Received: 03/08/2016 1728

Analyte	Result	Qual	Units	MDL	RL	Dil	Method
Ammonia	0.10	U	mg/L	0.023	0.10	1.0	350.1
Analysis Batch: 460-358185 Analysis Date: 03/23/2016 1325							
Prep Batch: 460-358073 Prep Date: 03/23/2016 0530							
Nitrate as N	0.10	U	mg/L	0.026	0.10	1.0	SM 4500 NO3 F
Analysis Batch: 460-354966 Analysis Date: 03/09/2016 1120							

Analytical Data

Client: R & C Formation Ltd.

Job Number: 460-110107-1

General Chemistry

Client Sample ID: MW-101

Lab Sample ID: 460-110107-4

Client Matrix: Water

Date Sampled: 03/08/2016 1158

Date Received: 03/08/2016 1728

Analyte	Result	Qual	Units	MDL	RL	Dil	Method
Ammonia	11.5		mg/L	0.23	1.0	10	350.1
	Analysis Batch: 460-358185		Analysis Date: 03/23/2016 1422				
	Prep Batch: 460-358073		Prep Date: 03/23/2016 0530				
Nitrate as N	0.10	U	mg/L	0.026	0.10	1.0	SM 4500 NO3 F
	Analysis Batch: 460-354966		Analysis Date: 03/09/2016 1109				

Analytical Data

Client: R & C Formation Ltd.

Job Number: 460-110107-1

General Chemistry

Client Sample ID: MW-1S

Lab Sample ID: 460-110107-5

Date Sampled: 03/08/2016 1236

Client Matrix: Water

Date Received: 03/08/2016 1728

Analyte	Result	Qual	Units	MDL	RL	Dil	Method
Ammonia	15.0		mg/L	0.23	1.0	10	350.1
	Analysis Batch: 460-358185		Analysis Date: 03/23/2016 1423				
	Prep Batch: 460-358073		Prep Date: 03/23/2016 0530				
Nitrate as N	0.44		mg/L	0.026	0.10	1.0	SM 4500 NO3 F
	Analysis Batch: 460-354966		Analysis Date: 03/09/2016 1111				

Analytical Data

Client: R & C Formation Ltd.

Job Number: 460-110107-1

General Chemistry

Client Sample ID: MW-102

Lab Sample ID: 460-110107-6

Client Matrix: Water

Date Sampled: 03/08/2016 1307

Date Received: 03/08/2016 1728

Analyte	Result	Qual	Units	MDL	RL	Dil	Method
Ammonia	11.8		mg/L	0.23	1.0	10	350.1
	Analysis Batch: 460-358185		Analysis Date: 03/23/2016 1425				
	Prep Batch: 460-358073		Prep Date: 03/23/2016 0530				
Nitrate as N	0.10	U	mg/L	0.026	0.10	1.0	SM 4500 NO3 F
	Analysis Batch: 460-354966		Analysis Date: 03/09/2016 1112				

Analytical Data

Client: R & C Formation Ltd.

Job Number: 460-110107-1

General Chemistry

Client Sample ID: MW-35S

Lab Sample ID: 460-110107-9

Client Matrix: Water

Date Sampled: 03/08/2016 1458

Date Received: 03/08/2016 1728

Analyte	Result	Qual	Units	MDL	RL	Dil	Method
Ammonia	5.4		mg/L	0.12	0.50	5.0	350.1
	Analysis Batch: 460-358185		Analysis Date: 03/23/2016 1426				
	Prep Batch: 460-358073		Prep Date: 03/23/2016 0530				
Nitrate as N	0.10	U	mg/L	0.026	0.10	1.0	SM 4500 NO3 F
	Analysis Batch: 460-354966		Analysis Date: 03/09/2016 1121				

DATA REPORTING QUALIFIERS

Client: R & C Formation Ltd.

Job Number: 460-110107-1

Lab Section	Qualifier	Description
GC/MS VOA	U	Analyzed for but not detected.
	*	LCS or LCSD is outside acceptance limits.
GC/MS Semi VOA	U	Analyzed for but not detected.
	J	Indicates an estimated value.
	B	The analyte was found in an associated blank, as well as in the sample.
HPLC/IC	U	Analyzed for but not detected.
Metals	U	Indicates analyzed for but not detected.
General Chemistry	U	Indicates analyzed for but not detected.

QUALITY CONTROL RESULTS

Quality Control Results

Client: R & C Formation Ltd.

Job Number: 460-110107-1

QC Association Summary

Lab Sample ID	Client Sample ID	Report Basis	Client Matrix	Method	Prep Batch
GC/MS VOA					
Analysis Batch:460-355690					
LCS 460-355690/3	Lab Control Sample	T	Water	8260C	
LCSD 460-355690/4	Lab Control Sample Duplicate	T	Water	8260C	
MB 460-355690/5	Method Blank	T	Water	8260C	
460-110107-1TB	TB	T	Water	8260C	
460-110107-2FB	FB	T	Water	8260C	
460-110107-3	MW-24S	T	Water	8260C	
460-110107-4	MW-101	T	Water	8260C	
460-110107-6	MW-102	T	Water	8260C	
460-110107-7	MW-7S	T	Water	8260C	
460-110107-10	MW-23D	T	Water	8260C	
Analysis Batch:460-355959					
LCS 460-355959/4	Lab Control Sample	T	Water	8260C	
LCSD 460-355959/5	Lab Control Sample Duplicate	T	Water	8260C	
MB 460-355959/8	Method Blank	T	Water	8260C	
460-110107-5	MW-1S	T	Water	8260C	
460-110107-8	MW-6D	T	Water	8260C	
460-110107-9	MW-35S	T	Water	8260C	

Report Basis

T = Total

Quality Control Results

Client: R & C Formation Ltd.

Job Number: 460-110107-1

QC Association Summary

Lab Sample ID	Client Sample ID	Report Basis	Client Matrix	Method	Prep Batch
GC/MS Semi VOA					
Prep Batch: 480-290946					
LCS 480-290946/2-A	Lab Control Sample	T	Water	3510C	
MB 480-290946/1-A	Method Blank	T	Water	3510C	
460-110107-2FB	FB	T	Water	3510C	
460-110107-3	MW-24S	T	Water	3510C	
460-110107-4	MW-101	T	Water	3510C	
460-110107-5	MW-1S	T	Water	3510C	
460-110107-6	MW-102	T	Water	3510C	
460-110107-7	MW-7S	T	Water	3510C	
460-110107-8	MW-6D	T	Water	3510C	
460-110107-9	MW-35S	T	Water	3510C	
460-110107-10	MW-23D	T	Water	3510C	
Analysis Batch:480-291896					
LCS 480-290946/2-A	Lab Control Sample	T	Water	8270D	480-290946
MB 480-290946/1-A	Method Blank	T	Water	8270D	480-290946
460-110107-2FB	FB	T	Water	8270D	480-290946
460-110107-3	MW-24S	T	Water	8270D	480-290946
460-110107-4	MW-101	T	Water	8270D	480-290946
460-110107-5	MW-1S	T	Water	8270D	480-290946
460-110107-6	MW-102	T	Water	8270D	480-290946
460-110107-7	MW-7S	T	Water	8270D	480-290946
460-110107-8	MW-6D	T	Water	8270D	480-290946
460-110107-9	MW-35S	T	Water	8270D	480-290946
460-110107-10	MW-23D	T	Water	8270D	480-290946

Report Basis

T = Total

Quality Control Results

Client: R & C Formation Ltd.

Job Number: 460-110107-1

QC Association Summary

Lab Sample ID	Client Sample ID	Report Basis	Client Matrix	Method	Prep Batch
Metals					
Prep Batch: 460-355970					
LCS 460-355970/2-A	Lab Control Sample	T	Water	3010A	
MB 460-355970/1-A	Method Blank	T	Water	3010A	
460-110107-2FB	FB	T	Water	3010A	
460-110107-4	MW-101	T	Water	3010A	
460-110107-5	MW-1S	T	Water	3010A	
460-110107-6	MW-102	T	Water	3010A	
Prep Batch: 460-356208					
LCS 460-356208/13-A	Lab Control Sample	T	Water	7470A	
MB 460-356208/12-A	Method Blank	T	Water	7470A	
460-110107-3	MW-24S	T	Water	7470A	
Analysis Batch:460-356246					
LCS 460-355970/2-A	Lab Control Sample	T	Water	6010C	460-355970
MB 460-355970/1-A	Method Blank	T	Water	6010C	460-355970
460-110107-2FB	FB	T	Water	6010C	460-355970
460-110107-4	MW-101	T	Water	6010C	460-355970
460-110107-5	MW-1S	T	Water	6010C	460-355970
460-110107-6	MW-102	T	Water	6010C	460-355970
Analysis Batch:460-356322					
LCS 460-356208/13-A	Lab Control Sample	T	Water	7470A	460-356208
MB 460-356208/12-A	Method Blank	T	Water	7470A	460-356208
460-110107-3	MW-24S	T	Water	7470A	460-356208
Prep Batch: 460-356835					
LCS 460-356835/2-A	Lab Control Sample	T	Water	3010A	
MB 460-356835/1-A	Method Blank	T	Water	3010A	
460-110107-9	MW-35S	T	Water	3010A	
Analysis Batch:460-356945					
LCS 460-356835/2-A	Lab Control Sample	T	Water	6010C	460-356835
MB 460-356835/1-A	Method Blank	T	Water	6010C	460-356835
460-110107-9	MW-35S	T	Water	6010C	460-356835

Report Basis

T = Total

Quality Control Results

Client: R & C Formation Ltd.

Job Number: 460-110107-1

QC Association Summary

Lab Sample ID	Client Sample ID	Report Basis	Client Matrix	Method	Prep Batch
General Chemistry					
Analysis Batch:460-354966					
LCSSRM 460-354966/10	LCS-Certified Reference Material	T	Water	SM 4500 NO3 F	
LCSSRM 460-354966/11	LCS-Certified Reference Material	T	Water	SM 4500 NO3 F	
MB 460-354966/9	Method Blank	T	Water	SM 4500 NO3 F	
460-110107-2FB	FB	T	Water	SM 4500 NO3 F	
460-110107-4	MW-101	T	Water	SM 4500 NO3 F	
460-110107-4MS	Matrix Spike	T	Water	SM 4500 NO3 F	
460-110107-4MSD	Matrix Spike Duplicate	T	Water	SM 4500 NO3 F	
460-110107-5	MW-1S	T	Water	SM 4500 NO3 F	
460-110107-6	MW-102	T	Water	SM 4500 NO3 F	
460-110107-9	MW-35S	T	Water	SM 4500 NO3 F	
Prep Batch: 460-358073					
LCS 460-358073/2-A	Lab Control Sample	T	Water	Distill/Ammonia	
MB 460-358073/1-A	Method Blank	T	Water	Distill/Ammonia	
460-110107-2FB	FB	T	Water	Distill/Ammonia	
460-110107-4	MW-101	T	Water	Distill/Ammonia	
460-110107-5	MW-1S	T	Water	Distill/Ammonia	
460-110107-6	MW-102	T	Water	Distill/Ammonia	
460-110107-9	MW-35S	T	Water	Distill/Ammonia	
Analysis Batch:460-358185					
LCS 460-358073/2-A	Lab Control Sample	T	Water	350.1	460-358073
MB 460-358073/1-A	Method Blank	T	Water	350.1	460-358073
460-110107-2FB	FB	T	Water	350.1	460-358073
460-110107-4	MW-101	T	Water	350.1	460-358073
460-110107-5	MW-1S	T	Water	350.1	460-358073
460-110107-6	MW-102	T	Water	350.1	460-358073
460-110107-9	MW-35S	T	Water	350.1	460-358073

Report Basis

T = Total

Quality Control Results

Client: R & C Formation Ltd.

Job Number: 460-110107-1

QC Association Summary

Lab Sample ID	Client Sample ID	Report Basis	Client Matrix	Method	Prep Batch
HPLC/IC					
Analysis Batch:460-356473					
LCS 460-356473/5	Lab Control Sample	T	Water	300.0	
LCSD 460-356473/6	Lab Control Sample Duplicate	T	Water	300.0	
MB 460-356473/4	Method Blank	T	Water	300.0	
460-110107-2FB	FB	T	Water	300.0	
460-110107-4DL	MW-101	T	Water	300.0	
460-110107-4DL2	MW-101	T	Water	300.0	
460-110107-5DL	MW-1S	T	Water	300.0	
460-110107-5DL2	MW-1S	T	Water	300.0	
460-110107-6DL	MW-102	T	Water	300.0	
460-110107-9DL	MW-35S	T	Water	300.0	
460-110107-9DL2	MW-35S	T	Water	300.0	

Report Basis

T = Total

Quality Control Results

Client: R & C Formation Ltd.

Job Number: 460-110107-1

Surrogate Recovery Report

8260C Volatile Organic Compounds by GC/MS

Client Matrix: Water

Lab Sample ID	Client Sample ID	DCA %Rec	BFB %Rec	TOL %Rec	DBFM %Rec
460-110107-1	TB	109	72	106	81
460-110107-2	FB	104	75	106	79
460-110107-3	MW-24S	107	74	104	83
460-110107-4	MW-101	108	74	111	83
460-110107-5	MW-1S	80	102	83	85
460-110107-6	MW-102	108	74	108	84
460-110107-7	MW-7S	106	75	110	81
460-110107-8	MW-6D	82	103	85	87
460-110107-9	MW-35S	83	105	84	87
460-110107-10	MW-23D	115	71	113	83
MB 460-355690/5		108	77	108	82
MB 460-355959/8		86	109	89	91
LCS 460-355690/3		105	80	108	85
LCS 460-355959/4		84	107	88	89
LCSD 460-355690/4		116	87	116	93
LCSD 460-355959/5		85	108	86	92

Surrogate	Acceptance Limits
DCA = 1,2-Dichloroethane-d4 (Surr)	70-137
BFB = Bromofluorobenzene	70-131
TOL = Toluene-d8 (Surr)	74-120
DBFM = Dibromofluoromethane (Surr)	72-136

Client: R & C Formation Ltd.

Job Number: 460-110107-1

Surrogate Recovery Report

8270D Semivolatile Organic Compounds (GC/MS)

Client Matrix: Water

Lab Sample ID	Client Sample ID	NBZ %Rec	FBP %Rec	TPH %Rec	PHL %Rec	2FP %Rec	TBP %Rec
460-110107-2	FB	97	91	103	52	65	107
460-110107-3	MW-24S	89	87	89	39	61	111
460-110107-4	MW-101	102	98	99	47	74	122
460-110107-5	MW-1S	93	91	94	41	65	111
460-110107-6	MW-102	101	94	92	45	70	119
460-110107-7	MW-7S	96	95	100	40	64	102
460-110107-8	MW-6D	91	89	101	41	61	105
460-110107-9	MW-35S	86	85	90	41	65	108
460-110107-10	MW-23D	92	89	106	40	60	103
MB 480-290946/1-A		92	92	108	42	64	100
LCS 480-290946/2-A		94	91	102	50	72	115

Surrogate	Acceptance Limits
NBZ = Nitrobenzene-d5	46-120
FBP = 2-Fluorobiphenyl	48-120
TPH = p-Terphenyl-d14	67-150
PHL = Phenol-d5	16-120
2FP = 2-Fluorophenol	20-120
TBP = 2,4,6-Tribromophenol	52-132

Quality Control Results

Client: R & C Formation Ltd.

Job Number: 460-110107-1

Method Blank - Batch: 460-355690

Method: 8260C

Preparation: 5030C

Lab Sample ID:	MB 460-355690/5	Analysis Batch:	460-355690	Instrument ID:	CVOAMS13
Client Matrix:	Water	Prep Batch:	N/A	Lab File ID:	P09887.D
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	5 mL
Analysis Date:	03/12/2016 1237	Units:	ug/L	Final Weight/Volume:	5 mL
Prep Date:	03/12/2016 1237				
Leach Date:	N/A				

Analyte	Result	Qual	MDL	RL
Benzene	1.0	U	0.090	1.0
Toluene	1.0	U	0.25	1.0
Ethylbenzene	1.0	U	0.30	1.0
Xylenes, Total	2.0	U	0.28	2.0

Surrogate	% Rec	Acceptance Limits
1,2-Dichloroethane-d4 (Surr)	108	70 - 137
Bromofluorobenzene	77	70 - 131
Toluene-d8 (Surr)	108	74 - 120
Dibromofluoromethane (Surr)	82	72 - 136

Lab Control Sample/

Method: 8260C

Lab Control Sample Duplicate Recovery Report - Batch: 460-355690

Preparation: 5030C

LCS Lab Sample ID:	LCS 460-355690/3	Analysis Batch:	460-355690	Instrument ID:	CVOAMS13
Client Matrix:	Water	Prep Batch:	N/A	Lab File ID:	P09885.D
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	5 mL
Analysis Date:	03/12/2016 1143	Units:	ug/L	Final Weight/Volume:	5 mL
Prep Date:	03/12/2016 1143				5 mL
Leach Date:	N/A				

LCSD Lab Sample ID:	LCSD 460-355690/4	Analysis Batch:	460-355690	Instrument ID:	CVOAMS13
Client Matrix:	Water	Prep Batch:	N/A	Lab File ID:	P09886.D
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	5 mL
Analysis Date:	03/12/2016 1210	Units:	ug/L	Final Weight/Volume:	5 mL
Prep Date:	03/12/2016 1210				5 mL
Leach Date:	N/A				

Analyte	% Rec		Limit	RPD	RPD Limit	LCS Qual	LCSD Qual
	LCS	LCSD					
Benzene	121	127	76 - 125	5	30		*
Toluene	112	115	80 - 120	2	30		
Ethylbenzene	105	108	80 - 120	3	30		
Xylenes, Total	103	110	80 - 120	6	30		

Surrogate	LCS % Rec	LCSD % Rec	Acceptance Limits
1,2-Dichloroethane-d4 (Surr)	105	116	70 - 137
Bromofluorobenzene	80	87	70 - 131
Toluene-d8 (Surr)	108	116	74 - 120

Quality Control Results

Client: R & C Formation Ltd.

Job Number: 460-110107-1

Method Blank - Batch: 460-355959

Method: 8260C

Preparation: 5030C

Lab Sample ID: MB 460-355959/8
Client Matrix: Water
Dilution: 1.0
Analysis Date: 03/14/2016 1107
Prep Date: 03/14/2016 1107
Leach Date: N/A

Analysis Batch: 460-355959
Prep Batch: N/A
Leach Batch: N/A
Units: ug/L

Instrument ID: CVOAMS13
Lab File ID: P09944.D
Initial Weight/Volume: 5 mL
Final Weight/Volume: 5 mL

Analyte	Result	Qual	MDL	RL
Benzene	1.0	U	0.090	1.0
Toluene	1.0	U	0.25	1.0
Ethylbenzene	1.0	U	0.30	1.0
Xylenes, Total	2.0	U	0.28	2.0

Surrogate	% Rec	Acceptance Limits
1,2-Dichloroethane-d4 (Surr)	86	70 - 137
Bromofluorobenzene	109	70 - 131
Toluene-d8 (Surr)	89	74 - 120
Dibromofluoromethane (Surr)	91	72 - 136

Lab Control Sample/

Method: 8260C

Lab Control Sample Duplicate Recovery Report - Batch: 460-355959

Preparation: 5030C

LCS Lab Sample ID: LCS 460-355959/4
Client Matrix: Water
Dilution: 1.0
Analysis Date: 03/14/2016 0847
Prep Date: 03/14/2016 0847
Leach Date: N/A

Analysis Batch: 460-355959
Prep Batch: N/A
Leach Batch: N/A
Units: ug/L

Instrument ID: CVOAMS13
Lab File ID: P09940.D
Initial Weight/Volume: 5 mL
Final Weight/Volume: 5 mL
5 mL

LCSD Lab Sample ID: LCSD 460-355959/5
Client Matrix: Water
Dilution: 1.0
Analysis Date: 03/14/2016 0911
Prep Date: 03/14/2016 0911
Leach Date: N/A

Analysis Batch: 460-355959
Prep Batch: N/A
Leach Batch: N/A
Units: ug/L

Instrument ID: CVOAMS13
Lab File ID: P09941.D
Initial Weight/Volume: 5 mL
Final Weight/Volume: 5 mL
5 mL

Analyte	% Rec		Limit	RPD	RPD Limit	LCS Qual	LCSD Qual
	LCS	LCSD					
Benzene	94	96	76 - 125	2	30		
Toluene	91	93	80 - 120	2	30		
Ethylbenzene	92	95	80 - 120	3	30		
Xylenes, Total	91	93	80 - 120	2	30		

Surrogate	LCS % Rec	LCSD % Rec	Acceptance Limits
1,2-Dichloroethane-d4 (Surr)	84	85	70 - 137
Bromofluorobenzene	107	108	70 - 131
Toluene-d8 (Surr)	88	86	74 - 120

Quality Control Results

Client: R & C Formation Ltd.

Job Number: 460-110107-1

Method Blank - Batch: 480-290946

Method: 8270D

Preparation: 3510C

Lab Sample ID:	MB 480-290946/1-A	Analysis Batch:	480-291896	Instrument ID:	HP5973W
Client Matrix:	Water	Prep Batch:	480-290946	Lab File ID:	W0230.D
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	250 mL
Analysis Date:	03/21/2016 0114	Units:	ug/L	Final Weight/Volume:	1 mL
Prep Date:	03/14/2016 1427			Injection Volume:	2 uL
Leach Date:	N/A				

Analyte	Result	Qual	MDL	RL
2-Picoline	80	U	1.4	80
Pyridine	0.528	J	0.41	25

Surrogate	% Rec	Acceptance Limits
Nitrobenzene-d5	92	46 - 120
2-Fluorobiphenyl	92	48 - 120
p-Terphenyl-d14	108	67 - 150
Phenol-d5	42	16 - 120
2-Fluorophenol	64	20 - 120
2,4,6-Tribromophenol	100	52 - 132

Method Blank TICs- Batch: 480-290946

Cas Number	Analyte	RT	Est. Result (ug)	Qual
504-29-0	2-Aminopyridine TIC	7.25	10	U

Lab Control Sample - Batch: 480-290946

Method: 8270D

Preparation: 3510C

Lab Sample ID:	LCS 480-290946/2-A	Analysis Batch:	480-291896	Instrument ID:	HP5973W
Client Matrix:	Water	Prep Batch:	480-290946	Lab File ID:	W0231.D
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	250 mL
Analysis Date:	03/21/2016 0142	Units:	ug/L	Final Weight/Volume:	1 mL
Prep Date:	03/14/2016 1427			Injection Volume:	2 uL
Leach Date:	N/A				

Analyte	Spike Amount	Result	% Rec.	Limit	Qual
Pyridine	16.0	2.34	15	10 - 120	J

Surrogate	% Rec	Acceptance Limits
Nitrobenzene-d5	94	46 - 120
2-Fluorobiphenyl	91	48 - 120
p-Terphenyl-d14	102	67 - 150
Phenol-d5	50	16 - 120
2-Fluorophenol	72	20 - 120
2,4,6-Tribromophenol	115	52 - 132

Quality Control Results

Client: R & C Formation Ltd.

Job Number: 460-110107-1

Method Blank - Batch: 460-356473

Method: 300.0
Preparation: N/A

Lab Sample ID:	MB 460-356473/4	Analysis Batch:	460-356473	Instrument ID:	IC A
Client Matrix:	Water	Prep Batch:	N/A	Lab File ID:	YA2016-03-17-10-06.d
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	10 mL
Analysis Date:	03/17/2016 1006	Units:	mg/L	Final Weight/Volume:	1.0 mL
Prep Date:	N/A			Injection Volume:	10 uL
Leach Date:	N/A				

Analyte	Result	Qual	MDL	RL
Sulfate	0.60	U	0.11	0.60

Lab Control Sample/ Lab Control Sample Duplicate Recovery Report - Batch: 460-356473

Method: 300.0
Preparation: N/A

LCS Lab Sample ID:	LCS 460-356473/5	Analysis Batch:	460-356473	Instrument ID:	IC A
Client Matrix:	Water	Prep Batch:	N/A	Lab File ID:	YA2016-03-17-10-26.d
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	10 mL
Analysis Date:	03/17/2016 1026	Units:	mg/L	Final Weight/Volume:	1.0 mL
Prep Date:	N/A			Injection Volume:	10 uL
Leach Date:	N/A				

LCSD Lab Sample ID:	LCSD 460-356473/6	Analysis Batch:	460-356473	Instrument ID:	IC A
Client Matrix:	Water	Prep Batch:	N/A	Lab File ID:	YA2016-03-17-10-46.d
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	10 mL
Analysis Date:	03/17/2016 1046	Units:	mg/L	Final Weight/Volume:	1.0 mL
Prep Date:	N/A			Injection Volume:	10 uL
Leach Date:	N/A				

Analyte	% Rec.		Limit	RPD	RPD Limit	LCS Qual	LCSD Qual
	LCS	LCSD					
Sulfate	96	96	90 - 110	0	15		

Quality Control Results

Client: R & C Formation Ltd.

Job Number: 460-110107-1

Method Blank - Batch: 460-355970

Method: 6010C
Preparation: 3010A

Lab Sample ID:	MB 460-355970/1-A	Analysis Batch:	460-356246	Instrument ID:	ICP4
Client Matrix:	Water	Prep Batch:	460-355970	Lab File ID:	355970.asc
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	50 mL
Analysis Date:	03/15/2016 0025	Units:	ug/L	Final Weight/Volume:	50 mL
Prep Date:	03/14/2016 0842				
Leach Date:	N/A				

Analyte	Result	Qual	MDL	RL
Iron	150	U	65.4	150
Manganese	15.0	U	4.9	15.0

Lab Control Sample - Batch: 460-355970

Method: 6010C
Preparation: 3010A

Lab Sample ID:	LCS 460-355970/2-A	Analysis Batch:	460-356246	Instrument ID:	ICP4
Client Matrix:	Water	Prep Batch:	460-355970	Lab File ID:	355970.asc
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	50 mL
Analysis Date:	03/15/2016 0029	Units:	ug/L	Final Weight/Volume:	50 mL
Prep Date:	03/14/2016 0842				
Leach Date:	N/A				

Analyte	Spike Amount	Result	% Rec.	Limit	Qual
Iron	1000	956.3	96	80 - 120	
Manganese	500	490.2	98	80 - 120	

Quality Control Results

Client: R & C Formation Ltd.

Job Number: 460-110107-1

Method Blank - Batch: 460-356835

Method: 6010C
Preparation: 3010A

Lab Sample ID:	MB 460-356835/1-A	Analysis Batch:	460-356945	Instrument ID:	ICP5
Client Matrix:	Water	Prep Batch:	460-356835	Lab File ID:	03172016A.asc
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	50 mL
Analysis Date:	03/17/2016 2118	Units:	ug/L	Final Weight/Volume:	50 mL
Prep Date:	03/17/2016 0945				
Leach Date:	N/A				

Analyte	Result	Qual	MDL	RL
Iron	150	U	65.4	150
Manganese	15.0	U	4.9	15.0

Lab Control Sample - Batch: 460-356835

Method: 6010C
Preparation: 3010A

Lab Sample ID:	LCS 460-356835/2-A	Analysis Batch:	460-356945	Instrument ID:	ICP5
Client Matrix:	Water	Prep Batch:	460-356835	Lab File ID:	03172016A.asc
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	50 mL
Analysis Date:	03/17/2016 2122	Units:	ug/L	Final Weight/Volume:	50 mL
Prep Date:	03/17/2016 0945				
Leach Date:	N/A				

Analyte	Spike Amount	Result	% Rec.	Limit	Qual
Iron	1000	1060	106	80 - 120	
Manganese	500	517.7	104	80 - 120	

Quality Control Results

Client: R & C Formation Ltd.

Job Number: 460-110107-1

Method Blank - Batch: 460-356208

Method: 7470A
Preparation: 7470A

Lab Sample ID:	MB 460-356208/12-A	Analysis Batch:	460-356322	Instrument ID:	LEEMAN5
Client Matrix:	Water	Prep Batch:	460-356208	Lab File ID:	356208HG1.PRN
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	30 mL
Analysis Date:	03/15/2016 0804	Units:	ug/L	Final Weight/Volume:	30 mL
Prep Date:	03/15/2016 0420				
Leach Date:	N/A				

Analyte	Result	Qual	MDL	RL
Mercury	0.20	U	0.14	0.20

Lab Control Sample - Batch: 460-356208

Method: 7470A
Preparation: 7470A

Lab Sample ID:	LCS 460-356208/13-A	Analysis Batch:	460-356322	Instrument ID:	LEEMAN5
Client Matrix:	Water	Prep Batch:	460-356208	Lab File ID:	356208HG1.PRN
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	30 mL
Analysis Date:	03/15/2016 0806	Units:	ug/L	Final Weight/Volume:	30 mL
Prep Date:	03/15/2016 0420				
Leach Date:	N/A				

Analyte	Spike Amount	Result	% Rec.	Limit	Qual
Mercury	1.00	0.995	100	80 - 120	

Quality Control Results

Client: R & C Formation Ltd.

Job Number: 460-110107-1

Method Blank - Batch: 460-358073

Method: 350.1

Preparation: Distill/Ammonia

Lab Sample ID: MB 460-358073/1-A
Client Matrix: Water
Dilution: 1.0
Analysis Date: 03/23/2016 1306
Prep Date: 03/23/2016 0530
Leach Date: N/A

Analysis Batch: 460-358185
Prep Batch: 460-358073
Leach Batch: N/A
Units: mg/L

Instrument ID: Lachat2
Lab File ID: A160323.FDT
Initial Weight/Volume: 50.0 mL
Final Weight/Volume: 50.0 mL

Analyte	Result	Qual	MDL	RL
Ammonia	0.10	U	0.023	0.10

Lab Control Sample - Batch: 460-358073

Method: 350.1

Preparation: Distill/Ammonia

Lab Sample ID: LCS 460-358073/2-A
Client Matrix: Water
Dilution: 1.0
Analysis Date: 03/23/2016 1308
Prep Date: 03/23/2016 0530
Leach Date: N/A

Analysis Batch: 460-358185
Prep Batch: 460-358073
Leach Batch: N/A
Units: mg/L

Instrument ID: Lachat2
Lab File ID: A160323.FDT
Initial Weight/Volume: 50.0 mL
Final Weight/Volume: 50.0 mL

Analyte	Spike Amount	Result	% Rec.	Limit	Qual
Ammonia	1.00	0.918	92	87 - 114	

Quality Control Results

Client: R & C Formation Ltd.

Job Number: 460-110107-1

Method Blank - Batch: 460-354966

Method: SM 4500 NO3 F
Preparation: N/A

Lab Sample ID:	MB 460-354966/9	Analysis Batch:	460-354966	Instrument ID:	Lachat1
Client Matrix:	Water	Prep Batch:	N/A	Lab File ID:	N160309A.FDT
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	
Analysis Date:	03/09/2016 1100	Units:	mg/L	Final Weight/Volume:	
Prep Date:	N/A				
Leach Date:	N/A				

Analyte	Result	Qual	MDL	RL
Nitrate as N	0.10	U	0.026	0.10

LCS-Certified Reference Material - Batch: 460-354966

Method: SM 4500 NO3 F
Preparation: N/A

Lab Sample ID:	LCSSRM 460-354966/11	Analysis Batch:	460-354966	Instrument ID:	Lachat1
Client Matrix:	Water	Prep Batch:	N/A	Lab File ID:	N160309A.FDT
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	
Analysis Date:	03/09/2016 1103	Units:	mg/L	Final Weight/Volume:	10 mL
Prep Date:	N/A				
Leach Date:	N/A				

Analyte	Spike Amount	Result	% Rec.	Limit	Qual
Nitrate as N	1.40	1.46	104.2	85.9 - 112.0	

Matrix Spike/ Matrix Spike Duplicate Recovery Report - Batch: 460-354966

Method: SM 4500 NO3 F
Preparation: N/A

MS Lab Sample ID:	460-110107-4	Analysis Batch:	460-354966	Instrument ID:	Lachat1
Client Matrix:	Water	Prep Batch:	N/A	Lab File ID:	N160309A.FDT
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	
Analysis Date:	03/09/2016 1124			Final Weight/Volume:	50 mL
Prep Date:	N/A				
Leach Date:	N/A				

MSD Lab Sample ID:	460-110107-4	Analysis Batch:	460-354966	Instrument ID:	Lachat1
Client Matrix:	Water	Prep Batch:	N/A	Lab File ID:	N160309A.FDT
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	
Analysis Date:	03/09/2016 1125			Final Weight/Volume:	50 mL
Prep Date:	N/A				
Leach Date:	N/A				

Analyte	% Rec.		Limit	RPD	RPD Limit	MS Qual	MSD Qual
	MS	MSD					
Nitrate as N	102	104	53 - 135	1	12		

TestAmerica

New Durham Road
20, New Jersey 08817
Tel: (732) 549-3900 Fax: (732) 549-3679

THE LEADER IN ENVIRONMENTAL TESTING

CHAIN OF CUSTODY / 1

460-110107 Chain of Custody

Page 1 of 1

Name (for report and invoice)
Bob Casson

Sample Name (Printed)
A1 schiff

Site/Project Identification
Nepere Harriman NY

Company
R+C Formation Ltd

P.O. #

State (Location of site): NJ: ☐ NY: ☒ Other: ☐

Regulatory Program:

DKAP: ☐

Address
171 Deer Park Ave. Suite 3

Analysis Turnaround Time
Standard ☒ Rush Charges Authorized For:

ANALYSIS REQUESTED (ENTER % BELOW TO INDICATE REQUEST)

LAB USE ONLY
Project No:

City
Babylon NY State
11702

2 Week ☐ 1 Week ☐ Other ☐

Job No:
110107

Phone
631-483-9590 Fax
631-483-9593

Sample Identification

Sample Numbers

Sample Identification	Date	Time	Matrix	No. of Cont.	BTEX	SVOC*	Gen Chem**	Mercury	Sample Numbers
TB	3/8/16	1540	AG	2	X	X	X		1
FB					X	X	X		2
MW-245		1158		6	X	X	X		3
MW-101		1158		9	X	X	X		4
MW-15		1307		9	X	X	X		5
MW-102		1353		5	X	X	X		6
MW-78		1417		5	X	X	X		7
MW-10D		1458		9	X	X	X		8
MW-355		1551		5	X	X	X		9
MW-23D					X	X	X		10

Preservation Used: 1 = ICE, 2 = HCl, 3 = H₂SO₄, 4 = HNO₃, 5 = NaOH
6 = Other _____, 7 = Other _____

Soil: ☐ Water: ☐

Special Instructions: * Pyridine; Alpha-Picoline; 2-Amino-Pyridine; ** Sulfate; Ammonia; Nitrate; Manganese
Relinquished by **R+C Formation Ltd** Date/Time **3/8/16 1605** Received by **Mary Kavela** Company **RECURVE CORP**

Relinquished by **R+C Formation Ltd** Date/Time **3/8/16 1728** Received by **MA. 3/8.** Company **MA. 3/8.**

Relinquished by **R+C Formation Ltd** Date/Time **3/8/16 1728** Received by **MA. 3/8.** Company **MA. 3/8.**

Relinquished by **R+C Formation Ltd** Date/Time **3/8/16 1728** Received by **MA. 3/8.** Company **MA. 3/8.**

Relinquished by **R+C Formation Ltd** Date/Time **3/8/16 1728** Received by **MA. 3/8.** Company **MA. 3/8.**

Relinquished by **R+C Formation Ltd** Date/Time **3/8/16 1728** Received by **MA. 3/8.** Company **MA. 3/8.**

Relinquished by **R+C Formation Ltd** Date/Time **3/8/16 1728** Received by **MA. 3/8.** Company **MA. 3/8.**

Laboratory Certifications: New Jersey (12028), New York (11452), Pennsylvania (68-522), Connecticut (PH-0200), Rhode Island (132)

Massachusetts (M-NJ312), North Carolina (No. 578)

0.3/1.92#6 00C/9

110107



RAW		CORRECTED		RAW		CORRECTED	
Cooler #1:	0.9 °C	1.9 °C			Cooler #7:	°C	°C
Cooler #2:	°C	°C			Cooler #8:	°C	°C
Cooler #3:	°C	°C			Cooler #9:	°C	°C
Cooler #4:	°C	°C					
Cooler #5:	°C	°C					
Cooler #6:	°C	°C					

RAW		CORRECTED		RAW		CORRECTED	
Cooler #1:	0.9 °C	1.9 °C					
Cooler #2:	°C	°C					
Cooler #3:	°C	°C					
Cooler #4:		°C					
Cooler #5:		°C					
Cooler #6:		°C					
Cooler #7:		°C					
Cooler #8:		°C					
Cooler #9:		°C					

[illegible]

3/8/16

Chain of Custody Record



Client Information (Sub Contract Lab)		Sampler:		Lab PM:		Carrier Tracking No(s):		COC No:	
Client Contact: Shipping/Receiving		Phone:		Haas, Melissa				460-44859.1	
Company:		E-Mail:		melissa.haas@testamericainc.com		Page:		Page 1 of 1	
TestAmerica Laboratories, Inc.		Due Date Requested:		3/18/2016		Job #:		460-110107-1	
Address:		City:		Amherst		Preservation Codes:		M - Hexane N - None O - AsNaO2 P - Na2O4S Q - Na2SO3 R - Na2S2O3 S - H2SO4 T - TSP Dodecahydrate U - Acetone V - MCAA W - pH 4-5 X - EDTA Y - other (specify)	
State, Zip:		PO #:		NY, 14228-2298		WO #:			
Phone:		Project #:		716-691-2600(Tel) 716-691-7991(Fax)		SSOW#:			
Email:		Project Name:		Nepera Harriman NY		Special Instructions/Note:			
Site:		Sample Date		Sample Time		Sample Type (C-Comp, G-grab)		Matrix (W-water, S-solid, O-waste/oi, BT-Tissue, A-Air)	
Sample Identification - Client ID (Lab ID)		Sample Date		Sample Time		Sample Type (C-Comp, G-grab)		Matrix (W-water, S-solid, O-waste/oi, BT-Tissue, A-Air)	
FB (460-110107-2)		3/8/16		15:40 Eastern		Water		2-Aminopyridine is a targeted TIC.	
MW-24S (460-110107-3)		3/8/16		11:28 Eastern		Water		2-Aminopyridine is a targeted TIC.	
MW-101 (460-110107-4)		3/8/16		11:58 Eastern		Water		2-Aminopyridine is a targeted TIC.	
MW-1S (460-110107-5)		3/8/16		12:36 Eastern		Water		2-Aminopyridine is a targeted TIC.	
MW-102 (460-110107-6)		3/8/16		13:07 Eastern		Water		2-Aminopyridine is a targeted TIC.	
MW-7S (460-110107-7)		3/8/16		13:53 Eastern		Water		2-Aminopyridine is a targeted TIC.	
MW-6D (460-110107-8)		3/8/16		14:17 Eastern		Water		2-Aminopyridine is a targeted TIC.	
MW-35S (460-110107-9)		3/8/16		14:58 Eastern		Water		2-Aminopyridine is a targeted TIC.	
MW-23D (460-110107-10)		3/8/16		15:51 Eastern		Water		2-Aminopyridine is a targeted TIC.	
Possible Hazard Identification		Date:		Time:		Method of Shipment:			
Unconfirmed		Date/Time:		Date/Time:		Date/Time:			
Deliverable Requested: I, II, III, IV, Other (specify)		Date/Time:		Date/Time:		Date/Time:			
Empty Kit Relinquished by:		Date:		Time:		Method of Shipment:			
Relinquished by:		Date/Time:		Date/Time:		Date/Time:			
Relinquished by:		Date/Time:		Date/Time:		Date/Time:			
Relinquished by:		Date/Time:		Date/Time:		Date/Time:			
Custody Seals Intact:		Custody Seal No.:		Cooler Temperature(s) °C and Other Remarks:		3.1			
Δ Yes Δ No									

Login Sample Receipt Checklist

Client: R & C Formation Ltd.

Job Number: 460-110107-1

Login Number: 110107

List Source: TestAmerica Edison

List Number: 1

Creator: Hall, Alonzo

Question	Answer	Comment
Radioactivity wasn't checked or is $\leq$ background as measured by a survey meter.	N/A	
The cooler's custody seal, if present, is intact.	N/A	Not present
Sample custody seals, if present, are intact.	N/A	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	1.9° C IR #6
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is $<6\text{mm}$ (1/4").	True	
Multiphasic samples are not present.	N/A	
Samples do not require splitting or compositing.	N/A	
Residual Chlorine Checked.	N/A	No analysis requiring residual chlorine check assigned.

Login Sample Receipt Checklist

Client: R & C Formation Ltd.

Job Number: 460-110107-1

Login Number: 110107

List Number: 2

Creator: Hulbert, Michael J

List Source: TestAmerica Buffalo

List Creation: 03/14/16 01:05 PM

Question	Answer	Comment
Radioactivity either was not measured or, if measured, is at or below background	True	
The cooler's custody seal, if present, is intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	3.1 #1
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the sample IDs on the containers and the COC.	True	
Samples are received within Holding Time (Excluding tests with immediate HTs)..	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
VOA sample vials do not have headspace or bubble is <6mm (1/4") in diameter.	N/A	
If necessary, staff have been informed of any short hold time or quick TAT needs	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Sampling Company provided.	True	
Samples received within 48 hours of sampling.	False	
Samples requiring field filtration have been filtered in the field.	True	
Chlorine Residual checked.	N/A	

ANALYTICAL REPORT

Job Number: 460-110137-1

Job Description: Nepera Harriman NY

For:

R & C Formation Ltd.

171 Deer Park Ave.,

Suite 3

Babylon, NY 11702

Attention: Mr. Robert Casson



Approved for release.
Melissa Haas
Project Manager I
4/5/2016 1:35 PM

Melissa Haas, Project Manager I
777 New Durham Road, Edison, NJ, 08817
(203)944-1310
melissa.haas@testamericainc.com
04/05/2016
Revision: 1

The test results in this report meet all NELAP requirements unless specified within the case narrative. Pursuant to NELAP, this report may not be reproduced, except in full, without the written approval of the laboratory. All questions regarding this report should be directed to the TestAmerica Edison Project Manager.

TestAmerica Edison Certifications and Approvals: Connecticut: CTDOH #PH-0200, New Jersey: NJDEP (NELAP) #12028, New York: NYDOH (NELAP) #11452, NYDOH (ELAP) #11452, Pennsylvania: PADEP (NELAP) 68-00522 and Rhode Island: RIDOH LAO00132

Job Number: 460-110137-1

Job Description: Nepera Harriman NY

I certify that this data package is in compliance with the terms and conditions of the contract, both technically and for completeness, for other than the conditions detailed within the body of this report. Release of the data contained in this sample data package and in the electronic data deliverable has been authorized by the Laboratory Manager or his/her designee, as verified by the following signature.

A handwritten signature in cursive script that reads "Melissa Haas". The signature is written in black ink and is positioned above a horizontal line.

Approved for release.
Melissa Haas
Project Manager I
4/5/2016 1:35 PM

Melissa Haas

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CASE NARRATIVE

Client: R & C Formation Ltd.

Project: Nepera Harriman NY

Report Number: 460-110137-1
Revised Report #1

This case narrative is in the form of an exception report, where only the anomalies related to this report, method specific performance and/or QA/QC issues are discussed. If there are no issues to report, this narrative will include a statement that documents that there are no relevant data issues.

It should be noted that samples with elevated Reporting Limits (RLs) as a result of a dilution may not be able to satisfy customer reporting limits in some cases. Such increases in the RLs are unavoidable but acceptable consequence of sample dilution that enables quantification of target analytes or interferences which exceed the calibration range of the instrument.

Calculations are performed before rounding to avoid round-off errors in calculated results.

All holding times were met and proper preservation noted for the methods performed on these samples, unless otherwise detailed in the individual sections below.

REVISION #1

The following report required a revision: 460-110137-1. Details are as follows: The client requested that iron be added to the metals list - only manganese was listed on COC.

RECEIPT

The samples were received on 3/9/2016 5:05 PM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperatures of the 2 coolers at receipt time were 3.2° C and 3.3° C.

Note: All samples which require thermal preservation are considered acceptable if the arrival temperature is within 2C of the required temperature or method specified range. For samples with a specified temperature of 4C, samples with a temperature ranging from just above freezing temperature of water to 6C shall be acceptable. Samples that are hand delivered immediately following collection may not meet these criteria, however they will be deemed acceptable according to NELAC standards, if there is evidence that the chilling process has begun, such as arrival on ice, etc.

VOLATILE ORGANICS

Samples TB (460-110137-1), MW-11S (460-110137-2), MW-20DR (460-110137-3), MW-20S (460-110137-4), MW-105 (460-110137-5), MW-8S (460-110137-6), MW-104 (460-110137-7), RW-1R (460-110137-8), MW-5S (460-110137-9), MW-27D (460-110137-10), MW-26D (460-110137-11), MW-106 (460-110137-12) and MW-103 (460-110137-13) were analyzed for Volatile organics in accordance with EPA SW-846 Methods 8260C. The samples were analyzed on 03/12/2016 and 03/14/2016.

The laboratory control sample duplicate (LCSD) for batch analytical batch 460-355690 recovered outside control limits for the following analyte: Benzene. This analyte was biased high in the LCSD and was not detected in the associated samples; therefore, the data have been reported.

Refer to the QC report for details.

No other difficulties were encountered during the Volatile organics analysis.

All other quality control parameters were within the acceptance limits.

SEMIVOLATILE ORGANIC COMPOUNDS (GC/MS)

Samples MW-11S (460-110137-2), MW-20DR (460-110137-3), MW-20S (460-110137-4), MW-105 (460-110137-5), MW-8S (460-110137-6), MW-104 (460-110137-7), RW-1R (460-110137-8), MW-5S (460-110137-9), MW-27D (460-110137-10), MW-26D (460-110137-11), MW-106 (460-110137-12) and MW-103 (460-110137-13) were analyzed for semivolatile organic compounds (GC/MS) in accordance with EPA SW-846 Method 8270D. The samples were prepared on 03/14/2016 and analyzed on 03/16/2016, 03/17/2016 and 03/18/2016.

The presence of the '4' qualifier in the data indicates analytes where the concentration in the unspiked sample exceeded four times the spiking amount.

Refer to the QC report for details.

Sample MW-20DR (460-110137-3)[5X] required dilution prior to analysis. The reporting limits have been adjusted accordingly.

The following sample was diluted due to the nature of the sample matrix: MW-20DR (460-110137-3). Elevated reporting limits (RLs) are provided.

No other difficulties were encountered during the semivolatiles analysis.

All other quality control parameters were within the acceptance limits.

METALS

Samples MW-11S (460-110137-2), MW-20S (460-110137-4), MW-105 (460-110137-5), MW-8S (460-110137-6), MW-104 (460-110137-7), RW-1R (460-110137-8), MW-106 (460-110137-12) and MW-103 (460-110137-13) were analyzed for Metals in accordance with EPA SW-846 Methods 6010C. The samples were prepared on 03/17/2016 and analyzed on 03/19/2016.

No difficulties were encountered during the Metals analysis.

All quality control parameters were within the acceptance limits.

ANIONS

Samples MW-11S (460-110137-2), MW-20S (460-110137-4), MW-105 (460-110137-5), MW-8S (460-110137-6), MW-104 (460-110137-7), RW-1R (460-110137-8), MW-106 (460-110137-12) and MW-103 (460-110137-13) were analyzed for anions in accordance with EPA Method 300_ORGFM_28D Anions by Ion Chromatograph. The samples were analyzed on 03/19/2016 and 03/20/2016.

Sulfate failed the recovery criteria low for the MS of sample 460-110123-4 in batch 460-357305.

Refer to the QC report for details.

Samples MW-11S (460-110137-2)[10X], MW-20S (460-110137-4)[20X], MW-105 (460-110137-5)[10X], MW-8S (460-110137-6)[10X], MW-104 (460-110137-7)[10X], RW-1R (460-110137-8)[10X], MW-106 (460-110137-12)[10X] and MW-103 (460-110137-13)[10X] required dilution prior to analysis. The reporting limits have been adjusted accordingly.

The following samples was diluted to bring the concentration of target analytes within the calibration range: MW-11S (460-110137-2), MW-20S (460-110137-4), MW-105 (460-110137-5), MW-8S (460-110137-6), MW-104 (460-110137-7), RW-1R (460-110137-8), MW-106 (460-110137-12) and MW-103 (460-110137-13). Elevated reporting limits (RLs) are provided.

The following samples was diluted to bring the concentration of target analytes within the calibration range: (460-110123-A-4), (460-110123-A-4 DU), (460-110123-A-4 MS) and (460-110123-A-4 MSD). Elevated reporting limits (RLs) are provided.

The following sample was diluted to bring the concentration of target analytes within the calibration range: MW-20S (460-110137-4). Elevated reporting limits (RLs) are provided.

No other difficulties were encountered during the anions analysis.

All other quality control parameters were within the acceptance limits.

AMMONIA

Samples MW-11S (460-110137-2), MW-20S (460-110137-4), MW-105 (460-110137-5), MW-8S (460-110137-6), MW-104 (460-110137-7), RW-1R (460-110137-8), MW-106 (460-110137-12) and MW-103 (460-110137-13) were analyzed for ammonia in accordance with EPA Method 350.1. The samples were prepared and analyzed on 03/23/2016.

Samples MW-11S (460-110137-2)[10X], MW-8S (460-110137-6)[10X] and RW-1R (460-110137-8)[10X] required dilution prior to analysis. The reporting limits have been adjusted accordingly.

No other difficulties were encountered during the ammonia analysis.

All quality control parameters were within the acceptance limits.

NITROGEN-NITRATE

Samples MW-11S (460-110137-2), MW-20S (460-110137-4), MW-105 (460-110137-5), MW-8S (460-110137-6), MW-104 (460-110137-7), RW-1R (460-110137-8), MW-106 (460-110137-12) and MW-103 (460-110137-13) were analyzed for Nitrogen-Nitrate in accordance with SM 4500 NO3 F. The samples were analyzed on 03/10/2016.

No difficulties were encountered during the Nitrate analysis.

All quality control parameters were within the acceptance limits.

EXECUTIVE SUMMARY - Detections

Client: R & C Formation Ltd.

Job Number: 460-110137-1

Lab Sample ID Analyte	Client Sample ID	Result	Qualifier	Reporting Limit	Units	Method
460-110137-2	MW-11S					
Iron		1380		150	ug/L	6010C
Manganese		557		15.0	ug/L	6010C
Ammonia		19.8		1.0	mg/L	350.1
Sulfate		13.5		6.00	mg/L	300.0
460-110137-3	MW-20DR					
Benzene		0.096	J	1.0	ug/L	8260C
460-110137-4	MW-20S					
Benzene		0.55	J	1.0	ug/L	8260C
Iron		4030		150	ug/L	6010C
Manganese		292		15.0	ug/L	6010C
Ammonia		2.5		0.10	mg/L	350.1
Nitrate as N		0.054	J	0.10	mg/L	SM 4500 NO3 F
Sulfate		399		12.0	mg/L	300.0
460-110137-5	MW-105					
Iron		5150		150	ug/L	6010C
Manganese		883		15.0	ug/L	6010C
Ammonia		3.0		0.10	mg/L	350.1
Sulfate		22.6		6.00	mg/L	300.0
460-110137-6	MW-8S					
Iron		5820		150	ug/L	6010C
Manganese		482		15.0	ug/L	6010C
Ammonia		8.1		1.0	mg/L	350.1
Sulfate		23.6		6.00	mg/L	300.0
460-110137-7	MW-104					
Iron		2150		150	ug/L	6010C
Manganese		1290		15.0	ug/L	6010C
Ammonia		1.5		0.10	mg/L	350.1
Sulfate		24.0		6.00	mg/L	300.0
460-110137-8	RW-1R					
Iron		71700		150	ug/L	6010C
Manganese		577		15.0	ug/L	6010C
Ammonia		8.8		1.0	mg/L	350.1
Sulfate		83.1		6.00	mg/L	300.0

EXECUTIVE SUMMARY - Detections

Client: R & C Formation Ltd.

Job Number: 460-110137-1

Lab Sample ID Analyte	Client Sample ID	Result	Qualifier	Reporting Limit	Units	Method
460-110137-10 Xylenes, Total	MW-27D	3.1		2.0	ug/L	8260C
460-110137-12 Iron	MW-106	713		150	ug/L	6010C
Manganese		658		15.0	ug/L	6010C
Ammonia		2.8		0.10	mg/L	350.1
Sulfate		27.4		6.00	mg/L	300.0
460-110137-13 Iron	MW-103	654		150	ug/L	6010C
Manganese		190		15.0	ug/L	6010C
Ammonia		0.031	J	0.10	mg/L	350.1
Nitrate as N		0.77		0.10	mg/L	SM 4500 NO3 F
Sulfate		22.4		6.00	mg/L	300.0

METHOD SUMMARY

Client: R & C Formation Ltd.

Job Number: 460-110137-1

Description	Lab Location	Method	Preparation Method
Matrix: Water			
Volatile Organic Compounds by GC/MS	TAL EDI	SW846 8260C	
Purge and Trap	TAL EDI		SW846 5030C
Anions, Ion Chromatography	TAL EDI	MCAWW 300.0	
Metals (ICP)	TAL EDI	SW846 6010C	
Preparation, Total Metals	TAL EDI		SW846 3010A
Nitrogen, Ammonia	TAL EDI	MCAWW 350.1	
Distillation, Ammonia	TAL EDI		Distill/Ammonia
Nitrogen, Nitrate	TAL EDI	SM SM 4500 NO3 F	
Semivolatile Organic Compounds (GC/MS)	TAL BUF	SW846 8270D	
Liquid-Liquid Extraction (Separatory Funnel)	TAL BUF		SW846 3510C

Lab References:

TAL BUF = TestAmerica Buffalo

TAL EDI = TestAmerica Edison

Method References:

MCAWW = "Methods For Chemical Analysis Of Water And Wastes", EPA-600/4-79-020, March 1983 And Subsequent Revisions.

SM = "Standard Methods For The Examination Of Water And Wastewater"

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

METHOD / ANALYST SUMMARY

Client: R & C Formation Ltd.

Job Number: 460-110137-1

Method	Analyst	Analyst ID
SW846 8260C	Martinez, Eddie	EMM
SW846 8260C	Starzec, Margaret	MZS
SW846 8270D	Quirk, Patrick J	PJQ
SW846 6010C	Chang, Churn Der	CDC
MCAWW 350.1	Vu, Huan	HTV
SM SM 4500 NO3 F	Kamenetskaya, Raisa	RAK
MCAWW 300.0	Boykin, Carol B	CBB

SAMPLE SUMMARY

Client: R & C Formation Ltd.

Job Number: 460-110137-1

Lab Sample ID	Client Sample ID	Client Matrix	Date/Time Sampled	Date/Time Received
460-110137-1TB	TB	Water	03/09/2016 0000	03/09/2016 1705
460-110137-2	MW-11S	Water	03/09/2016 0826	03/09/2016 1705
460-110137-3	MW-20DR	Water	03/09/2016 0857	03/09/2016 1705
460-110137-4	MW-20S	Water	03/09/2016 0926	03/09/2016 1705
460-110137-5	MW-105	Water	03/09/2016 1002	03/09/2016 1705
460-110137-6	MW-8S	Water	03/09/2016 1033	03/09/2016 1705
460-110137-7	MW-104	Water	03/09/2016 1106	03/09/2016 1705
460-110137-8	RW-1R	Water	03/09/2016 1149	03/09/2016 1705
460-110137-9	MW-5S	Water	03/09/2016 1301	03/09/2016 1705
460-110137-10	MW-27D	Water	03/09/2016 1341	03/09/2016 1705
460-110137-11	MW-26D	Water	03/09/2016 1440	03/09/2016 1705
460-110137-12	MW-106	Water	03/09/2016 1512	03/09/2016 1705
460-110137-13	MW-103	Water	03/09/2016 1544	03/09/2016 1705

SAMPLE RESULTS

Analytical Data

Client: R & C Formation Ltd.

Job Number: 460-110137-1

Client Sample ID: TB

Lab Sample ID: 460-110137-1TB

Client Matrix: Water

Date Sampled: 03/09/2016 0000

Date Received: 03/09/2016 1705

8260C Volatile Organic Compounds by GC/MS

Analysis Method:	8260C	Analysis Batch:	460-355690	Instrument ID:	CVOAMS13
Prep Method:	5030C	Prep Batch:	N/A	Lab File ID:	P09891.D
Dilution:	1.0			Initial Weight/Volume:	5 mL
Analysis Date:	03/12/2016 1414			Final Weight/Volume:	5 mL
Prep Date:	03/12/2016 1414				

Analyte	Result (ug/L)	Qualifier	MDL	RL
Benzene	1.0	U *	0.090	1.0
Toluene	1.0	U	0.25	1.0
Ethylbenzene	1.0	U	0.30	1.0
Xylenes, Total	2.0	U	0.28	2.0

Surrogate	%Rec	Qualifier	Acceptance Limits
1,2-Dichloroethane-d4 (Surr)	104		70 - 137
Bromofluorobenzene	77		70 - 131
Toluene-d8 (Surr)	105		74 - 120
Dibromofluoromethane (Surr)	82		72 - 136

Analytical Data

Client: R & C Formation Ltd.

Job Number: 460-110137-1

Client Sample ID: MW-11S

Lab Sample ID: 460-110137-2

Client Matrix: Water

Date Sampled: 03/09/2016 0826

Date Received: 03/09/2016 1705

8260C Volatile Organic Compounds by GC/MS

Analysis Method:	8260C	Analysis Batch:	460-355690	Instrument ID:	CVOAMS13
Prep Method:	5030C	Prep Batch:	N/A	Lab File ID:	P09892.D
Dilution:	1.0			Initial Weight/Volume:	5 mL
Analysis Date:	03/12/2016 1439			Final Weight/Volume:	5 mL
Prep Date:	03/12/2016 1439				

Analyte	Result (ug/L)	Qualifier	MDL	RL
Benzene	1.0	U *	0.090	1.0
Toluene	1.0	U	0.25	1.0
Ethylbenzene	1.0	U	0.30	1.0
Xylenes, Total	2.0	U	0.28	2.0

Surrogate	%Rec	Qualifier	Acceptance Limits
1,2-Dichloroethane-d4 (Surr)	104		70 - 137
Bromofluorobenzene	74		70 - 131
Toluene-d8 (Surr)	103		74 - 120
Dibromofluoromethane (Surr)	81		72 - 136

Analytical Data

Client: R & C Formation Ltd.

Job Number: 460-110137-1

Client Sample ID: MW-20DR

Lab Sample ID: 460-110137-3

Client Matrix: Water

Date Sampled: 03/09/2016 0857

Date Received: 03/09/2016 1705

8260C Volatile Organic Compounds by GC/MS

Analysis Method:	8260C	Analysis Batch:	460-355959	Instrument ID:	CVOAMS13
Prep Method:	5030C	Prep Batch:	N/A	Lab File ID:	P09949.D
Dilution:	1.0			Initial Weight/Volume:	5 mL
Analysis Date:	03/14/2016 1432			Final Weight/Volume:	5 mL
Prep Date:	03/14/2016 1432				

Analyte	Result (ug/L)	Qualifier	MDL	RL
Benzene	0.096	J	0.090	1.0
Toluene	1.0	U	0.25	1.0
Ethylbenzene	1.0	U	0.30	1.0
Xylenes, Total	2.0	U	0.28	2.0

Surrogate	%Rec	Qualifier	Acceptance Limits
1,2-Dichloroethane-d4 (Surr)	81		70 - 137
Bromofluorobenzene	103		70 - 131
Toluene-d8 (Surr)	83		74 - 120
Dibromofluoromethane (Surr)	88		72 - 136

Analytical Data

Client: R & C Formation Ltd.

Job Number: 460-110137-1

Client Sample ID: MW-20S

Lab Sample ID: 460-110137-4

Client Matrix: Water

Date Sampled: 03/09/2016 0926

Date Received: 03/09/2016 1705

8260C Volatile Organic Compounds by GC/MS

Analysis Method:	8260C	Analysis Batch:	460-355959	Instrument ID:	CVOAMS13
Prep Method:	5030C	Prep Batch:	N/A	Lab File ID:	P09950.D
Dilution:	1.0			Initial Weight/Volume:	5 mL
Analysis Date:	03/14/2016 1456			Final Weight/Volume:	5 mL
Prep Date:	03/14/2016 1456				

Analyte	Result (ug/L)	Qualifier	MDL	RL
Benzene	0.55	J	0.090	1.0
Toluene	1.0	U	0.25	1.0
Ethylbenzene	1.0	U	0.30	1.0
Xylenes, Total	2.0	U	0.28	2.0

Surrogate	%Rec	Qualifier	Acceptance Limits
1,2-Dichloroethane-d4 (Surr)	82		70 - 137
Bromofluorobenzene	107		70 - 131
Toluene-d8 (Surr)	87		74 - 120
Dibromofluoromethane (Surr)	89		72 - 136

Analytical Data

Client: R & C Formation Ltd.

Job Number: 460-110137-1

Client Sample ID: MW-105

Lab Sample ID: 460-110137-5

Client Matrix: Water

Date Sampled: 03/09/2016 1002

Date Received: 03/09/2016 1705

8260C Volatile Organic Compounds by GC/MS

Analysis Method:	8260C	Analysis Batch:	460-355690	Instrument ID:	CVOAMS13
Prep Method:	5030C	Prep Batch:	N/A	Lab File ID:	P09903.D
Dilution:	1.0			Initial Weight/Volume:	5 mL
Analysis Date:	03/12/2016 1905			Final Weight/Volume:	5 mL
Prep Date:	03/12/2016 1905				

Analyte	Result (ug/L)	Qualifier	MDL	RL
Benzene	1.0	U *	0.090	1.0
Toluene	1.0	U	0.25	1.0
Ethylbenzene	1.0	U	0.30	1.0
Xylenes, Total	2.0	U	0.28	2.0

Surrogate	%Rec	Qualifier	Acceptance Limits
1,2-Dichloroethane-d4 (Surr)	114		70 - 137
Bromofluorobenzene	70		70 - 131
Toluene-d8 (Surr)	114		74 - 120
Dibromofluoromethane (Surr)	85		72 - 136

Analytical Data

Client: R & C Formation Ltd.

Job Number: 460-110137-1

Client Sample ID: MW-8S

Lab Sample ID: 460-110137-6

Client Matrix: Water

Date Sampled: 03/09/2016 1033

Date Received: 03/09/2016 1705

8260C Volatile Organic Compounds by GC/MS

Analysis Method:	8260C	Analysis Batch:	460-355959	Instrument ID:	CVOAMS13
Prep Method:	5030C	Prep Batch:	N/A	Lab File ID:	P09951.D
Dilution:	1.0			Initial Weight/Volume:	5 mL
Analysis Date:	03/14/2016 1520			Final Weight/Volume:	5 mL
Prep Date:	03/14/2016 1520				

Analyte	Result (ug/L)	Qualifier	MDL	RL
Benzene	1.0	U	0.090	1.0
Toluene	1.0	U	0.25	1.0
Ethylbenzene	1.0	U	0.30	1.0
Xylenes, Total	2.0	U	0.28	2.0

Surrogate	%Rec	Qualifier	Acceptance Limits
1,2-Dichloroethane-d4 (Surr)	82		70 - 137
Bromofluorobenzene	105		70 - 131
Toluene-d8 (Surr)	85		74 - 120
Dibromofluoromethane (Surr)	87		72 - 136

Analytical Data

Client: R & C Formation Ltd.

Job Number: 460-110137-1

Client Sample ID: MW-104

Lab Sample ID: 460-110137-7

Client Matrix: Water

Date Sampled: 03/09/2016 1106

Date Received: 03/09/2016 1705

8260C Volatile Organic Compounds by GC/MS

Analysis Method:	8260C	Analysis Batch:	460-355690	Instrument ID:	CVOAMS13
Prep Method:	5030C	Prep Batch:	N/A	Lab File ID:	P09905.D
Dilution:	1.0			Initial Weight/Volume:	5 mL
Analysis Date:	03/12/2016 1954			Final Weight/Volume:	5 mL
Prep Date:	03/12/2016 1954				

Analyte	Result (ug/L)	Qualifier	MDL	RL
Benzene	1.0	U *	0.090	1.0
Toluene	1.0	U	0.25	1.0
Ethylbenzene	1.0	U	0.30	1.0
Xylenes, Total	2.0	U	0.28	2.0

Surrogate	%Rec	Qualifier	Acceptance Limits
1,2-Dichloroethane-d4 (Surr)	114		70 - 137
Bromofluorobenzene	72		70 - 131
Toluene-d8 (Surr)	112		74 - 120
Dibromofluoromethane (Surr)	85		72 - 136

Analytical Data

Client: R & C Formation Ltd.

Job Number: 460-110137-1

Client Sample ID: RW-1R

Lab Sample ID: 460-110137-8

Client Matrix: Water

Date Sampled: 03/09/2016 1149

Date Received: 03/09/2016 1705

8260C Volatile Organic Compounds by GC/MS

Analysis Method:	8260C	Analysis Batch:	460-355690	Instrument ID:	CVOAMS13
Prep Method:	5030C	Prep Batch:	N/A	Lab File ID:	P09906.D
Dilution:	1.0			Initial Weight/Volume:	5 mL
Analysis Date:	03/12/2016 2018			Final Weight/Volume:	5 mL
Prep Date:	03/12/2016 2018				

Analyte	Result (ug/L)	Qualifier	MDL	RL
Benzene	1.0	U *	0.090	1.0
Toluene	1.0	U	0.25	1.0
Ethylbenzene	1.0	U	0.30	1.0
Xylenes, Total	2.0	U	0.28	2.0

Surrogate	%Rec	Qualifier	Acceptance Limits
1,2-Dichloroethane-d4 (Surr)	119		70 - 137
Bromofluorobenzene	77		70 - 131
Toluene-d8 (Surr)	119		74 - 120
Dibromofluoromethane (Surr)	88		72 - 136

Analytical Data

Client: R & C Formation Ltd.

Job Number: 460-110137-1

Client Sample ID: MW-5S

Lab Sample ID: 460-110137-9

Client Matrix: Water

Date Sampled: 03/09/2016 1301

Date Received: 03/09/2016 1705

8260C Volatile Organic Compounds by GC/MS

Analysis Method:	8260C	Analysis Batch:	460-355959	Instrument ID:	CVOAMS13
Prep Method:	5030C	Prep Batch:	N/A	Lab File ID:	P09952.D
Dilution:	1.0			Initial Weight/Volume:	5 mL
Analysis Date:	03/14/2016 1544			Final Weight/Volume:	5 mL
Prep Date:	03/14/2016 1544				

Analyte	Result (ug/L)	Qualifier	MDL	RL
Benzene	1.0	U	0.090	1.0
Toluene	1.0	U	0.25	1.0
Ethylbenzene	1.0	U	0.30	1.0
Xylenes, Total	2.0	U	0.28	2.0

Surrogate	%Rec	Qualifier	Acceptance Limits
1,2-Dichloroethane-d4 (Surr)	80		70 - 137
Bromofluorobenzene	104		70 - 131
Toluene-d8 (Surr)	83		74 - 120
Dibromofluoromethane (Surr)	86		72 - 136

Analytical Data

Client: R & C Formation Ltd.

Job Number: 460-110137-1

Client Sample ID: MW-27D

Lab Sample ID: 460-110137-10

Client Matrix: Water

Date Sampled: 03/09/2016 1341

Date Received: 03/09/2016 1705

8260C Volatile Organic Compounds by GC/MS

Analysis Method:	8260C	Analysis Batch:	460-355959	Instrument ID:	CVOAMS13
Prep Method:	5030C	Prep Batch:	N/A	Lab File ID:	P09953.D
Dilution:	1.0			Initial Weight/Volume:	5 mL
Analysis Date:	03/14/2016 1608			Final Weight/Volume:	5 mL
Prep Date:	03/14/2016 1608				

Analyte	Result (ug/L)	Qualifier	MDL	RL
Benzene	1.0	U	0.090	1.0
Toluene	1.0	U	0.25	1.0
Ethylbenzene	1.0	U	0.30	1.0
Xylenes, Total	3.1		0.28	2.0

Surrogate	%Rec	Qualifier	Acceptance Limits
1,2-Dichloroethane-d4 (Surr)	84		70 - 137
Bromofluorobenzene	108		70 - 131
Toluene-d8 (Surr)	87		74 - 120
Dibromofluoromethane (Surr)	90		72 - 136

Analytical Data

Client: R & C Formation Ltd.

Job Number: 460-110137-1

Client Sample ID: MW-26D

Lab Sample ID: 460-110137-11

Date Sampled: 03/09/2016 1440

Client Matrix: Water

Date Received: 03/09/2016 1705

8260C Volatile Organic Compounds by GC/MS

Analysis Method:	8260C	Analysis Batch:	460-355877	Instrument ID:	CVOAMS13
Prep Method:	5030C	Prep Batch:	N/A	Lab File ID:	P09934.D
Dilution:	1.0			Initial Weight/Volume:	5 mL
Analysis Date:	03/14/2016 0400			Final Weight/Volume:	5 mL
Prep Date:	03/14/2016 0400				

Analyte	Result (ug/L)	Qualifier	MDL	RL
Benzene	1.0	U	0.090	1.0
Toluene	1.0	U	0.25	1.0
Ethylbenzene	1.0	U	0.30	1.0
Xylenes, Total	2.0	U	0.28	2.0

Surrogate	%Rec	Qualifier	Acceptance Limits
1,2-Dichloroethane-d4 (Surr)	88		70 - 137
Bromofluorobenzene	108		70 - 131
Toluene-d8 (Surr)	89		74 - 120
Dibromofluoromethane (Surr)	92		72 - 136

Analytical Data

Client: R & C Formation Ltd.

Job Number: 460-110137-1

Client Sample ID: MW-106

Lab Sample ID: 460-110137-12

Client Matrix: Water

Date Sampled: 03/09/2016 1512

Date Received: 03/09/2016 1705

8260C Volatile Organic Compounds by GC/MS

Analysis Method:	8260C	Analysis Batch:	460-355877	Instrument ID:	CVOAMS13
Prep Method:	5030C	Prep Batch:	N/A	Lab File ID:	P09935.D
Dilution:	1.0			Initial Weight/Volume:	5 mL
Analysis Date:	03/14/2016 0424			Final Weight/Volume:	5 mL
Prep Date:	03/14/2016 0424				

Analyte	Result (ug/L)	Qualifier	MDL	RL
Benzene	1.0	U	0.090	1.0
Toluene	1.0	U	0.25	1.0
Ethylbenzene	1.0	U	0.30	1.0
Xylenes, Total	2.0	U	0.28	2.0

Surrogate	%Rec	Qualifier	Acceptance Limits
1,2-Dichloroethane-d4 (Surr)	89		70 - 137
Bromofluorobenzene	111		70 - 131
Toluene-d8 (Surr)	90		74 - 120
Dibromofluoromethane (Surr)	94		72 - 136

Analytical Data

Client: R & C Formation Ltd.

Job Number: 460-110137-1

Client Sample ID: MW-103

Lab Sample ID: 460-110137-13

Client Matrix: Water

Date Sampled: 03/09/2016 1544

Date Received: 03/09/2016 1705

8260C Volatile Organic Compounds by GC/MS

Analysis Method:	8260C	Analysis Batch:	460-355877	Instrument ID:	CVOAMS13
Prep Method:	5030C	Prep Batch:	N/A	Lab File ID:	P09936.D
Dilution:	1.0			Initial Weight/Volume:	5 mL
Analysis Date:	03/14/2016 0448			Final Weight/Volume:	5 mL
Prep Date:	03/14/2016 0448				

Analyte	Result (ug/L)	Qualifier	MDL	RL
Benzene	1.0	U	0.090	1.0
Toluene	1.0	U	0.25	1.0
Ethylbenzene	1.0	U	0.30	1.0
Xylenes, Total	2.0	U	0.28	2.0

Surrogate	%Rec	Qualifier	Acceptance Limits
1,2-Dichloroethane-d4 (Surr)	88		70 - 137
Bromofluorobenzene	108		70 - 131
Toluene-d8 (Surr)	89		74 - 120
Dibromofluoromethane (Surr)	94		72 - 136

Analytical Data

Client: R & C Formation Ltd.

Job Number: 460-110137-1

Client Sample ID: MW-11S

Lab Sample ID: 460-110137-2

Client Matrix: Water

Date Sampled: 03/09/2016 0826

Date Received: 03/09/2016 1705

8270D Semivolatile Organic Compounds (GC/MS)

Analysis Method:	8270D	Analysis Batch:	480-291293	Instrument ID:	HP5973Y
Prep Method:	3510C	Prep Batch:	480-290947	Lab File ID:	Y0124658.D
Dilution:	1.0			Initial Weight/Volume:	266.7 mL
Analysis Date:	03/16/2016 1925			Final Weight/Volume:	1 mL
Prep Date:	03/14/2016 1431			Injection Volume:	2 uL

Analyte	Result (ug/L)	Qualifier	MDL	RL
2-Picoline	75	U	1.3	75
Pyridine	23	U	0.38	23

Surrogate	%Rec	Qualifier	Acceptance Limits
Nitrobenzene-d5	94		46 - 120
2-Fluorobiphenyl	78		48 - 120
p-Terphenyl-d14	100		67 - 150
Phenol-d5	43		16 - 120
2-Fluorophenol	62		20 - 120
2,4,6-Tribromophenol	87		52 - 132

Analytical Data

Client: R & C Formation Ltd.

Job Number: 460-110137-1

Client Sample ID: MW-11S

Lab Sample ID: 460-110137-2

Client Matrix: Water

Date Sampled: 03/09/2016 0826

Date Received: 03/09/2016 1705

8270D Semivolatile Organic Compounds (GC/MS)

Analysis Method: 8270D

Analysis Batch: 480-291293

Instrument ID: HP5973Y

Prep Method: 3510C

Prep Batch: 480-290947

Lab File ID: Y0124658.D

Dilution: 1.0

Initial Weight/Volume: 266.7 mL

Analysis Date: 03/16/2016 1925

Final Weight/Volume: 1 mL

Prep Date: 03/14/2016 1431

Injection Volume: 2 uL

Targeted Tentatively Identified Compounds

Cas Number	Analyte	Est. Result (ug/L)	Qualifier
504-29-0	2-Aminopyridine TIC	9.4	U

Analytical Data

Client: R & C Formation Ltd.

Job Number: 460-110137-1

Client Sample ID: MW-20DR

Lab Sample ID: 460-110137-3

Client Matrix: Water

Date Sampled: 03/09/2016 0857

Date Received: 03/09/2016 1705

8270D Semivolatile Organic Compounds (GC/MS)

Analysis Method:	8270D	Analysis Batch:	480-291293	Instrument ID:	HP5973Y
Prep Method:	3510C	Prep Batch:	480-290947	Lab File ID:	Y0124659.D
Dilution:	5.0			Initial Weight/Volume:	258.5 mL
Analysis Date:	03/16/2016 1955			Final Weight/Volume:	1 mL
Prep Date:	03/14/2016 1431			Injection Volume:	2 uL

Analyte	Result (ug/L)	Qualifier	MDL	RL
2-Picoline	390	U	6.8	390
Pyridine	120	U	2.0	120

Surrogate	%Rec	Qualifier	Acceptance Limits
Nitrobenzene-d5	84		46 - 120
2-Fluorobiphenyl	83		48 - 120
p-Terphenyl-d14	95		67 - 150
Phenol-d5	41		16 - 120
2-Fluorophenol	57		20 - 120
2,4,6-Tribromophenol	94		52 - 132

Analytical Data

Client: R & C Formation Ltd.

Job Number: 460-110137-1

Client Sample ID: MW-20DR

Lab Sample ID: 460-110137-3

Client Matrix: Water

Date Sampled: 03/09/2016 0857

Date Received: 03/09/2016 1705

8270D Semivolatile Organic Compounds (GC/MS)

Analysis Method:	8270D	Analysis Batch:	480-291293	Instrument ID:	HP5973Y
Prep Method:	3510C	Prep Batch:	480-290947	Lab File ID:	Y0124659.D
Dilution:	5.0			Initial Weight/Volume:	258.5 mL
Analysis Date:	03/16/2016 1955			Final Weight/Volume:	1 mL
Prep Date:	03/14/2016 1431			Injection Volume:	2 uL

Targeted Tentatively Identified Compounds

Cas Number	Analyte	Est. Result (ug/L)	Qualifier
504-29-0	2-Aminopyridine TIC	48	U

Analytical Data

Client: R & C Formation Ltd.

Job Number: 460-110137-1

Client Sample ID: MW-20S

Lab Sample ID: 460-110137-4

Client Matrix: Water

Date Sampled: 03/09/2016 0926

Date Received: 03/09/2016 1705

8270D Semivolatile Organic Compounds (GC/MS)

Analysis Method:	8270D	Analysis Batch:	480-291293	Instrument ID:	HP5973Y
Prep Method:	3510C	Prep Batch:	480-290947	Lab File ID:	Y0124660.D
Dilution:	1.0			Initial Weight/Volume:	245.2 mL
Analysis Date:	03/16/2016 2025			Final Weight/Volume:	1 mL
Prep Date:	03/14/2016 1431			Injection Volume:	2 uL

Analyte	Result (ug/L)	Qualifier	MDL	RL
2-Picoline	82	U	1.4	82
Pyridine	25	U	0.42	25

Surrogate	%Rec	Qualifier	Acceptance Limits
Nitrobenzene-d5	99		46 - 120
2-Fluorobiphenyl	91		48 - 120
p-Terphenyl-d14	99		67 - 150
Phenol-d5	42		16 - 120
2-Fluorophenol	62		20 - 120
2,4,6-Tribromophenol	102		52 - 132

Analytical Data

Client: R & C Formation Ltd.

Job Number: 460-110137-1

Client Sample ID: MW-20S

Lab Sample ID: 460-110137-4

Client Matrix: Water

Date Sampled: 03/09/2016 0926

Date Received: 03/09/2016 1705

8270D Semivolatile Organic Compounds (GC/MS)

Analysis Method: 8270D

Analysis Batch: 480-291293

Instrument ID: HP5973Y

Prep Method: 3510C

Prep Batch: 480-290947

Lab File ID: Y0124660.D

Dilution: 1.0

Initial Weight/Volume: 245.2 mL

Analysis Date: 03/16/2016 2025

Final Weight/Volume: 1 mL

Prep Date: 03/14/2016 1431

Injection Volume: 2 uL

Targeted Tentatively Identified Compounds

Cas Number	Analyte	Est. Result (ug/L)	Qualifier
504-29-0	2-Aminopyridine TIC	10	U

Analytical Data

Client: R & C Formation Ltd.

Job Number: 460-110137-1

Client Sample ID: MW-105

Lab Sample ID: 460-110137-5

Client Matrix: Water

Date Sampled: 03/09/2016 1002

Date Received: 03/09/2016 1705

8270D Semivolatile Organic Compounds (GC/MS)

Analysis Method:	8270D	Analysis Batch:	480-291293	Instrument ID:	HP5973Y
Prep Method:	3510C	Prep Batch:	480-290947	Lab File ID:	Y0124661.D
Dilution:	1.0			Initial Weight/Volume:	269 mL
Analysis Date:	03/16/2016 2055			Final Weight/Volume:	1 mL
Prep Date:	03/14/2016 1431			Injection Volume:	2 uL

Analyte	Result (ug/L)	Qualifier	MDL	RL
2-Picoline	74	U	1.3	74
Pyridine	23	U	0.38	23

Surrogate	%Rec	Qualifier	Acceptance Limits
Nitrobenzene-d5	93		46 - 120
2-Fluorobiphenyl	81		48 - 120
p-Terphenyl-d14	97		67 - 150
Phenol-d5	40		16 - 120
2-Fluorophenol	58		20 - 120
2,4,6-Tribromophenol	92		52 - 132

Analytical Data

Client: R & C Formation Ltd.

Job Number: 460-110137-1

Client Sample ID: MW-105

Lab Sample ID: 460-110137-5

Client Matrix: Water

Date Sampled: 03/09/2016 1002

Date Received: 03/09/2016 1705

8270D Semivolatile Organic Compounds (GC/MS)

Analysis Method: 8270D

Analysis Batch: 480-291293

Instrument ID: HP5973Y

Prep Method: 3510C

Prep Batch: 480-290947

Lab File ID: Y0124661.D

Dilution: 1.0

Initial Weight/Volume: 269 mL

Analysis Date: 03/16/2016 2055

Final Weight/Volume: 1 mL

Prep Date: 03/14/2016 1431

Injection Volume: 2 uL

Targeted Tentatively Identified Compounds

Cas Number	Analyte	Est. Result (ug/L)	Qualifier
504-29-0	2-Aminopyridine TIC	9.3	U

Analytical Data

Client: R & C Formation Ltd.

Job Number: 460-110137-1

Client Sample ID: MW-8S

Lab Sample ID: 460-110137-6

Client Matrix: Water

Date Sampled: 03/09/2016 1033

Date Received: 03/09/2016 1705

8270D Semivolatile Organic Compounds (GC/MS)

Analysis Method:	8270D	Analysis Batch:	480-291293	Instrument ID:	HP5973Y
Prep Method:	3510C	Prep Batch:	480-290947	Lab File ID:	Y0124662.D
Dilution:	1.0			Initial Weight/Volume:	241.3 mL
Analysis Date:	03/16/2016 2125			Final Weight/Volume:	1 mL
Prep Date:	03/14/2016 1431			Injection Volume:	2 uL

Analyte	Result (ug/L)	Qualifier	MDL	RL
2-Picoline	83	U	1.5	83
Pyridine	26	U	0.42	26

Surrogate	%Rec	Qualifier	Acceptance Limits
Nitrobenzene-d5	93		46 - 120
2-Fluorobiphenyl	83		48 - 120
p-Terphenyl-d14	95		67 - 150
Phenol-d5	43		16 - 120
2-Fluorophenol	60		20 - 120
2,4,6-Tribromophenol	98		52 - 132

Analytical Data

Client: R & C Formation Ltd.

Job Number: 460-110137-1

Client Sample ID: MW-8S

Lab Sample ID: 460-110137-6

Client Matrix: Water

Date Sampled: 03/09/2016 1033

Date Received: 03/09/2016 1705

8270D Semivolatile Organic Compounds (GC/MS)

Analysis Method: 8270D

Analysis Batch: 480-291293

Instrument ID: HP5973Y

Prep Method: 3510C

Prep Batch: 480-290947

Lab File ID: Y0124662.D

Dilution: 1.0

Initial Weight/Volume: 241.3 mL

Analysis Date: 03/16/2016 2125

Final Weight/Volume: 1 mL

Prep Date: 03/14/2016 1431

Injection Volume: 2 uL

Targeted Tentatively Identified Compounds

Cas Number	Analyte	Est. Result (ug/L)	Qualifier
504-29-0	2-Aminopyridine TIC	10	U

Analytical Data

Client: R & C Formation Ltd.

Job Number: 460-110137-1

Client Sample ID: MW-104

Lab Sample ID: 460-110137-7

Client Matrix: Water

Date Sampled: 03/09/2016 1106

Date Received: 03/09/2016 1705

8270D Semivolatile Organic Compounds (GC/MS)

Analysis Method:	8270D	Analysis Batch:	480-291293	Instrument ID:	HP5973Y
Prep Method:	3510C	Prep Batch:	480-290947	Lab File ID:	Y0124663.D
Dilution:	1.0			Initial Weight/Volume:	232.4 mL
Analysis Date:	03/16/2016 2155			Final Weight/Volume:	1 mL
Prep Date:	03/14/2016 1431			Injection Volume:	2 uL

Analyte	Result (ug/L)	Qualifier	MDL	RL
2-Picoline	86	U	1.5	86
Pyridine	27	U	0.44	27

Surrogate	%Rec	Qualifier	Acceptance Limits
Nitrobenzene-d5	87		46 - 120
2-Fluorobiphenyl	83		48 - 120
p-Terphenyl-d14	95		67 - 150
Phenol-d5	41		16 - 120
2-Fluorophenol	59		20 - 120
2,4,6-Tribromophenol	95		52 - 132

Analytical Data

Client: R & C Formation Ltd.

Job Number: 460-110137-1

Client Sample ID: MW-104

Lab Sample ID: 460-110137-7

Client Matrix: Water

Date Sampled: 03/09/2016 1106

Date Received: 03/09/2016 1705

8270D Semivolatile Organic Compounds (GC/MS)

Analysis Method: 8270D

Analysis Batch: 480-291293

Instrument ID: HP5973Y

Prep Method: 3510C

Prep Batch: 480-290947

Lab File ID: Y0124663.D

Dilution: 1.0

Initial Weight/Volume: 232.4 mL

Analysis Date: 03/16/2016 2155

Final Weight/Volume: 1 mL

Prep Date: 03/14/2016 1431

Injection Volume: 2 uL

Targeted Tentatively Identified Compounds

Cas Number	Analyte	Est. Result (ug/L)	Qualifier
504-29-0	2-Aminopyridine TIC	11	U

Analytical Data

Client: R & C Formation Ltd.

Job Number: 460-110137-1

Client Sample ID: RW-1R

Lab Sample ID: 460-110137-8

Client Matrix: Water

Date Sampled: 03/09/2016 1149

Date Received: 03/09/2016 1705

8270D Semivolatile Organic Compounds (GC/MS)

Analysis Method:	8270D	Analysis Batch:	480-291293	Instrument ID:	HP5973Y
Prep Method:	3510C	Prep Batch:	480-290947	Lab File ID:	Y0124664.D
Dilution:	1.0			Initial Weight/Volume:	250.8 mL
Analysis Date:	03/16/2016 2225			Final Weight/Volume:	1 mL
Prep Date:	03/14/2016 1431			Injection Volume:	2 uL

Analyte	Result (ug/L)	Qualifier	MDL	RL
2-Picoline	80	U	1.4	80
Pyridine	25	U	0.41	25

Surrogate	%Rec	Qualifier	Acceptance Limits
Nitrobenzene-d5	70		46 - 120
2-Fluorobiphenyl	64		48 - 120
p-Terphenyl-d14	79		67 - 150
Phenol-d5	32		16 - 120
2-Fluorophenol	44		20 - 120
2,4,6-Tribromophenol	70		52 - 132

Analytical Data

Client: R & C Formation Ltd.

Job Number: 460-110137-1

Client Sample ID: RW-1R

Lab Sample ID: 460-110137-8

Client Matrix: Water

Date Sampled: 03/09/2016 1149

Date Received: 03/09/2016 1705

8270D Semivolatile Organic Compounds (GC/MS)

Analysis Method:	8270D	Analysis Batch:	480-291293	Instrument ID:	HP5973Y
Prep Method:	3510C	Prep Batch:	480-290947	Lab File ID:	Y0124664.D
Dilution:	1.0			Initial Weight/Volume:	250.8 mL
Analysis Date:	03/16/2016 2225			Final Weight/Volume:	1 mL
Prep Date:	03/14/2016 1431			Injection Volume:	2 uL

Targeted Tentatively Identified Compounds

Cas Number	Analyte	Est. Result (ug/L)	Qualifier
504-29-0	2-Aminopyridine TIC	10	U

Analytical Data

Client: R & C Formation Ltd.

Job Number: 460-110137-1

Client Sample ID: MW-5S

Lab Sample ID: 460-110137-9

Client Matrix: Water

Date Sampled: 03/09/2016 1301

Date Received: 03/09/2016 1705

8270D Semivolatile Organic Compounds (GC/MS)

Analysis Method:	8270D	Analysis Batch:	480-291293	Instrument ID:	HP5973Y
Prep Method:	3510C	Prep Batch:	480-290947	Lab File ID:	Y0124665.D
Dilution:	1.0			Initial Weight/Volume:	259.1 mL
Analysis Date:	03/16/2016 2255			Final Weight/Volume:	1 mL
Prep Date:	03/14/2016 1431			Injection Volume:	2 uL

Analyte	Result (ug/L)	Qualifier	MDL	RL
2-Picoline	77	U	1.4	77
Pyridine	24	U	0.40	24

Surrogate	%Rec	Qualifier	Acceptance Limits
Nitrobenzene-d5	80		46 - 120
2-Fluorobiphenyl	70		48 - 120
p-Terphenyl-d14	85		67 - 150
Phenol-d5	36		16 - 120
2-Fluorophenol	53		20 - 120
2,4,6-Tribromophenol	77		52 - 132

Analytical Data

Client: R & C Formation Ltd.

Job Number: 460-110137-1

Client Sample ID: MW-5S

Lab Sample ID: 460-110137-9

Client Matrix: Water

Date Sampled: 03/09/2016 1301

Date Received: 03/09/2016 1705

8270D Semivolatile Organic Compounds (GC/MS)

Analysis Method: 8270D

Analysis Batch: 480-291293

Instrument ID: HP5973Y

Prep Method: 3510C

Prep Batch: 480-290947

Lab File ID: Y0124665.D

Dilution: 1.0

Initial Weight/Volume: 259.1 mL

Analysis Date: 03/16/2016 2255

Final Weight/Volume: 1 mL

Prep Date: 03/14/2016 1431

Injection Volume: 2 uL

Targeted Tentatively Identified Compounds

Cas Number	Analyte	Est. Result (ug/L)	Qualifier
504-29-0	2-Aminopyridine TIC	9.6	U

Analytical Data

Client: R & C Formation Ltd.

Job Number: 460-110137-1

Client Sample ID: MW-27D

Lab Sample ID: 460-110137-10

Client Matrix: Water

Date Sampled: 03/09/2016 1341

Date Received: 03/09/2016 1705

8270D Semivolatile Organic Compounds (GC/MS)

Analysis Method:	8270D	Analysis Batch:	480-291293	Instrument ID:	HP5973Y
Prep Method:	3510C	Prep Batch:	480-290947	Lab File ID:	Y0124666.D
Dilution:	1.0			Initial Weight/Volume:	267.1 mL
Analysis Date:	03/16/2016 2324			Final Weight/Volume:	1 mL
Prep Date:	03/14/2016 1431			Injection Volume:	2 uL

Analyte	Result (ug/L)	Qualifier	MDL	RL
2-Picoline	75	U	1.3	75
Pyridine	23	U	0.38	23

Surrogate	%Rec	Qualifier	Acceptance Limits
Nitrobenzene-d5	82		46 - 120
2-Fluorobiphenyl	78		48 - 120
p-Terphenyl-d14	97		67 - 150
Phenol-d5	59		16 - 120
2-Fluorophenol	70		20 - 120
2,4,6-Tribromophenol	92		52 - 132

Analytical Data

Client: R & C Formation Ltd.

Job Number: 460-110137-1

Client Sample ID: MW-27D

Lab Sample ID: 460-110137-10

Client Matrix: Water

Date Sampled: 03/09/2016 1341

Date Received: 03/09/2016 1705

8270D Semivolatile Organic Compounds (GC/MS)

Analysis Method: 8270D

Analysis Batch: 480-291293

Instrument ID: HP5973Y

Prep Method: 3510C

Prep Batch: 480-290947

Lab File ID: Y0124666.D

Dilution: 1.0

Initial Weight/Volume: 267.1 mL

Analysis Date: 03/16/2016 2324

Final Weight/Volume: 1 mL

Prep Date: 03/14/2016 1431

Injection Volume: 2 uL

Targeted Tentatively Identified Compounds

Cas Number	Analyte	Est. Result (ug/L)	Qualifier
504-29-0	2-Aminopyridine TIC	9.4	U

Analytical Data

Client: R & C Formation Ltd.

Job Number: 460-110137-1

Client Sample ID: MW-26D

Lab Sample ID: 460-110137-11

Date Sampled: 03/09/2016 1440

Client Matrix: Water

Date Received: 03/09/2016 1705

8270D Semivolatile Organic Compounds (GC/MS)

Analysis Method:	8270D	Analysis Batch:	480-291293	Instrument ID:	HP5973Y
Prep Method:	3510C	Prep Batch:	480-290947	Lab File ID:	Y0124667.D
Dilution:	1.0			Initial Weight/Volume:	263.5 mL
Analysis Date:	03/16/2016 2354			Final Weight/Volume:	1 mL
Prep Date:	03/14/2016 1431			Injection Volume:	2 uL

Analyte	Result (ug/L)	Qualifier	MDL	RL
2-Picoline	76	U	1.3	76
Pyridine	24	U	0.39	24

Surrogate	%Rec	Qualifier	Acceptance Limits
Nitrobenzene-d5	70		46 - 120
2-Fluorobiphenyl	71		48 - 120
p-Terphenyl-d14	97		67 - 150
Phenol-d5	34		16 - 120
2-Fluorophenol	48		20 - 120
2,4,6-Tribromophenol	96		52 - 132

Analytical Data

Client: R & C Formation Ltd.

Job Number: 460-110137-1

Client Sample ID: MW-26D

Lab Sample ID: 460-110137-11

Client Matrix: Water

Date Sampled: 03/09/2016 1440

Date Received: 03/09/2016 1705

8270D Semivolatile Organic Compounds (GC/MS)

Analysis Method: 8270D

Analysis Batch: 480-291293

Instrument ID: HP5973Y

Prep Method: 3510C

Prep Batch: 480-290947

Lab File ID: Y0124667.D

Dilution: 1.0

Initial Weight/Volume: 263.5 mL

Analysis Date: 03/16/2016 2354

Final Weight/Volume: 1 mL

Prep Date: 03/14/2016 1431

Injection Volume: 2 uL

Targeted Tentatively Identified Compounds

Cas Number	Analyte	Est. Result (ug/L)	Qualifier
504-29-0	2-Aminopyridine TIC	9.5	U

Analytical Data

Client: R & C Formation Ltd.

Job Number: 460-110137-1

Client Sample ID: MW-106

Lab Sample ID: 460-110137-12

Client Matrix: Water

Date Sampled: 03/09/2016 1512

Date Received: 03/09/2016 1705

8270D Semivolatile Organic Compounds (GC/MS)

Analysis Method:	8270D	Analysis Batch:	480-291293	Instrument ID:	HP5973Y
Prep Method:	3510C	Prep Batch:	480-290947	Lab File ID:	Y0124668.D
Dilution:	1.0			Initial Weight/Volume:	252.9 mL
Analysis Date:	03/17/2016 0024			Final Weight/Volume:	1 mL
Prep Date:	03/14/2016 1431			Injection Volume:	2 uL

Analyte	Result (ug/L)	Qualifier	MDL	RL
2-Picoline	79	U	1.4	79
Pyridine	25	U	0.41	25

Surrogate	%Rec	Qualifier	Acceptance Limits
Nitrobenzene-d5	85		46 - 120
2-Fluorobiphenyl	80		48 - 120
p-Terphenyl-d14	102		67 - 150
Phenol-d5	42		16 - 120
2-Fluorophenol	56		20 - 120
2,4,6-Tribromophenol	91		52 - 132

Analytical Data

Client: R & C Formation Ltd.

Job Number: 460-110137-1

Client Sample ID: MW-106

Lab Sample ID: 460-110137-12

Client Matrix: Water

Date Sampled: 03/09/2016 1512

Date Received: 03/09/2016 1705

8270D Semivolatile Organic Compounds (GC/MS)

Analysis Method:	8270D	Analysis Batch:	480-291293	Instrument ID:	HP5973Y
Prep Method:	3510C	Prep Batch:	480-290947	Lab File ID:	Y0124668.D
Dilution:	1.0			Initial Weight/Volume:	252.9 mL
Analysis Date:	03/17/2016 0024			Final Weight/Volume:	1 mL
Prep Date:	03/14/2016 1431			Injection Volume:	2 uL

Targeted Tentatively Identified Compounds

Cas Number	Analyte	Est. Result (ug/L)	Qualifier
504-29-0	2-Aminopyridine TIC	9.9	U

Analytical Data

Client: R & C Formation Ltd.

Job Number: 460-110137-1

Client Sample ID: MW-103

Lab Sample ID: 460-110137-13

Client Matrix: Water

Date Sampled: 03/09/2016 1544

Date Received: 03/09/2016 1705

8270D Semivolatile Organic Compounds (GC/MS)

Analysis Method:	8270D	Analysis Batch:	480-291542	Instrument ID:	HP5973Y
Prep Method:	3510C	Prep Batch:	480-290947	Lab File ID:	Y0124710.D
Dilution:	1.0			Initial Weight/Volume:	255 mL
Analysis Date:	03/18/2016 0041			Final Weight/Volume:	1 mL
Prep Date:	03/14/2016 1431			Injection Volume:	2 uL

Analyte	Result (ug/L)	Qualifier	MDL	RL
2-Picoline	78	U	1.4	78
Pyridine	25	U	0.40	25

Surrogate	%Rec	Qualifier	Acceptance Limits
Nitrobenzene-d5	85		46 - 120
2-Fluorobiphenyl	79		48 - 120
p-Terphenyl-d14	99		67 - 150
Phenol-d5	37		16 - 120
2-Fluorophenol	54		20 - 120
2,4,6-Tribromophenol	92		52 - 132

Analytical Data

Client: R & C Formation Ltd.

Job Number: 460-110137-1

Client Sample ID: MW-103

Lab Sample ID: 460-110137-13

Client Matrix: Water

Date Sampled: 03/09/2016 1544

Date Received: 03/09/2016 1705

8270D Semivolatile Organic Compounds (GC/MS)

Analysis Method: 8270D

Analysis Batch: 480-291542

Instrument ID: HP5973Y

Prep Method: 3510C

Prep Batch: 480-290947

Lab File ID: Y0124710.D

Dilution: 1.0

Initial Weight/Volume: 255 mL

Analysis Date: 03/18/2016 0041

Final Weight/Volume: 1 mL

Prep Date: 03/14/2016 1431

Injection Volume: 2 uL

Targeted Tentatively Identified Compounds

Cas Number	Analyte	Est. Result (ug/L)	Qualifier
504-29-0	2-Aminopyridine TIC	9.8	U

Analytical Data

Client: R & C Formation Ltd.

Job Number: 460-110137-1

Client Sample ID: MW-11S

Lab Sample ID: 460-110137-2

Client Matrix: Water

Date Sampled: 03/09/2016 0826

Date Received: 03/09/2016 1705

300.0 Anions, Ion Chromatography

Analysis Method: 300.0

N/A

Analysis Batch: 460-357305

Prep Batch: N/A

Instrument ID: IC A

Lab File ID: ya2016-03-19-10-38.d

Dilution: 10

Analysis Date: 03/19/2016 1038

Prep Date: N/A

Run Type: DL

Initial Weight/Volume: 10 mL

Final Weight/Volume:

Injection Volume: 10 uL

Analyte

Result (mg/L)

Qualifier

MDL

RL

Sulfate

13.5

1.05

6.00

Analytical Data

Client: R & C Formation Ltd.

Job Number: 460-110137-1

Client Sample ID: MW-20S

Lab Sample ID: 460-110137-4

Client Matrix: Water

Date Sampled: 03/09/2016 0926

Date Received: 03/09/2016 1705

300.0 Anions, Ion Chromatography

Analysis Method: 300.0

N/A

Analysis Batch: 460-357305

Prep Batch: N/A

Instrument ID: IC A

Lab File ID: YA2016-03-20-06-52.c

Dilution: 20

Analysis Date: 03/20/2016 0652

Prep Date: N/A

Run Type: DL2

Initial Weight/Volume: 10 mL

Final Weight/Volume:

Injection Volume: 10 uL

Analyte

Result (mg/L)

Qualifier

MDL

RL

Sulfate

399

2.10

12.0

Analytical Data

Client: R & C Formation Ltd.

Job Number: 460-110137-1

Client Sample ID: MW-105

Lab Sample ID: 460-110137-5

Client Matrix: Water

Date Sampled: 03/09/2016 1002

Date Received: 03/09/2016 1705

300.0 Anions, Ion Chromatography

Analysis Method: 300.0

N/A

Analysis Batch: 460-357305

Prep Batch: N/A

Instrument ID: IC A

Lab File ID: ya2016-03-19-11-18.d

Dilution: 10

Analysis Date: 03/19/2016 1118

Prep Date: N/A

Run Type: DL

Initial Weight/Volume: 10 mL

Final Weight/Volume:

Injection Volume: 10 uL

Analyte

Result (mg/L)

Qualifier

MDL

RL

Sulfate

22.6

1.05

6.00

Analytical Data

Client: R & C Formation Ltd.

Job Number: 460-110137-1

Client Sample ID: MW-8S

Lab Sample ID: 460-110137-6

Client Matrix: Water

Date Sampled: 03/09/2016 1033

Date Received: 03/09/2016 1705

300.0 Anions, Ion Chromatography

Analysis Method: 300.0

N/A

Analysis Batch: 460-357305

Prep Batch: N/A

Instrument ID: IC A

Lab File ID: ya2016-03-19-11-39.d

Dilution: 10

Analysis Date: 03/19/2016 1139

Prep Date: N/A

Run Type: DL

Initial Weight/Volume: 10 mL

Final Weight/Volume:

Injection Volume: 10 uL

Analyte

Result (mg/L)

Qualifier

MDL

RL

Sulfate

23.6

1.05

6.00

Analytical Data

Client: R & C Formation Ltd.

Job Number: 460-110137-1

Client Sample ID: MW-104

Lab Sample ID: 460-110137-7

Client Matrix: Water

Date Sampled: 03/09/2016 1106

Date Received: 03/09/2016 1705

300.0 Anions, Ion Chromatography

Analysis Method: 300.0

N/A

Analysis Batch: 460-357305

Prep Batch: N/A

Instrument ID: IC A

Lab File ID: ya2016-03-19-11-59.d

Dilution: 10

Analysis Date: 03/19/2016 1159

Prep Date: N/A

Run Type: DL

Initial Weight/Volume: 10 mL

Final Weight/Volume:

Injection Volume: 10 uL

Analyte	Result (mg/L)	Qualifier	MDL	RL
Sulfate	24.0		1.05	6.00

Analytical Data

Client: R & C Formation Ltd.

Job Number: 460-110137-1

Client Sample ID: RW-1R

Lab Sample ID: 460-110137-8

Client Matrix: Water

Date Sampled: 03/09/2016 1149

Date Received: 03/09/2016 1705

300.0 Anions, Ion Chromatography

Analysis Method: 300.0

N/A

Analysis Batch: 460-357305

Prep Batch: N/A

Instrument ID: IC A

Lab File ID: ya2016-03-19-12-19.d

Dilution: 10

Analysis Date: 03/19/2016 1219

Prep Date: N/A

Run Type: DL

Initial Weight/Volume: 10 mL

Final Weight/Volume:

Injection Volume: 10 uL

Analyte

Result (mg/L)

Qualifier

MDL

RL

Sulfate

83.1

1.05

6.00

Analytical Data

Client: R & C Formation Ltd.

Job Number: 460-110137-1

Client Sample ID: MW-106

Lab Sample ID: 460-110137-12

Client Matrix: Water

Date Sampled: 03/09/2016 1512

Date Received: 03/09/2016 1705

300.0 Anions, Ion Chromatography

Analysis Method: 300.0

N/A

Analysis Batch: 460-357305

Prep Batch: N/A

Instrument ID: IC A

Lab File ID: ya2016-03-19-12-40.d

Dilution: 10

Analysis Date: 03/19/2016 1240

Prep Date: N/A

Run Type: DL

Initial Weight/Volume: 10 mL

Final Weight/Volume:

Injection Volume: 10 uL

Analyte

Result (mg/L)

Qualifier

MDL

RL

Sulfate

27.4

1.05

6.00

Analytical Data

Client: R & C Formation Ltd.

Job Number: 460-110137-1

Client Sample ID: MW-103

Lab Sample ID: 460-110137-13

Client Matrix: Water

Date Sampled: 03/09/2016 1544

Date Received: 03/09/2016 1705

300.0 Anions, Ion Chromatography

Analysis Method: 300.0

N/A

Analysis Batch: 460-357305

Prep Batch: N/A

Instrument ID: IC A

Lab File ID: ya2016-03-19-13-00.d

Dilution: 10

Analysis Date: 03/19/2016 1300

Prep Date: N/A

Run Type: DL

Initial Weight/Volume: 10 mL

Final Weight/Volume:

Injection Volume: 10 uL

Analyte

Result (mg/L)

Qualifier

MDL

RL

Sulfate

22.4

1.05

6.00

Analytical Data

Client: R & C Formation Ltd.

Job Number: 460-110137-1

Client Sample ID: MW-11S

Lab Sample ID: 460-110137-2

Client Matrix: Water

Date Sampled: 03/09/2016 0826

Date Received: 03/09/2016 1705

6010C Metals (ICP)

Analysis Method: 6010C

Prep Method: 3010A

Dilution: 1.0

Analysis Date: 03/19/2016 0414

Prep Date: 03/17/2016 2200

Analysis Batch: 460-357336

Prep Batch: 460-356995

Instrument ID: ICP5

Lab File ID: 03182016A.asc

Initial Weight/Volume: 50 mL

Final Weight/Volume: 50 mL

Analyte	Result (ug/L)	Qualifier	MDL	RL
Iron	1380		65.4	150
Manganese	557		4.9	15.0

Analytical Data

Client: R & C Formation Ltd.

Job Number: 460-110137-1

Client Sample ID: MW-20S

Lab Sample ID: 460-110137-4

Client Matrix: Water

Date Sampled: 03/09/2016 0926

Date Received: 03/09/2016 1705

6010C Metals (ICP)

Analysis Method: 6010C

Prep Method: 3010A

Dilution: 1.0

Analysis Date: 03/19/2016 0417

Prep Date: 03/17/2016 2200

Analysis Batch: 460-357336

Prep Batch: 460-356995

Instrument ID: ICP5

Lab File ID: 03182016A.asc

Initial Weight/Volume: 50 mL

Final Weight/Volume: 50 mL

Analyte	Result (ug/L)	Qualifier	MDL	RL
Iron	4030		65.4	150
Manganese	292		4.9	15.0

Analytical Data

Client: R & C Formation Ltd.

Job Number: 460-110137-1

Client Sample ID: MW-105

Lab Sample ID: 460-110137-5

Client Matrix: Water

Date Sampled: 03/09/2016 1002

Date Received: 03/09/2016 1705

6010C Metals (ICP)

Analysis Method: 6010C

Prep Method: 3010A

Dilution: 1.0

Analysis Date: 03/19/2016 0421

Prep Date: 03/17/2016 2200

Analysis Batch: 460-357336

Prep Batch: 460-356995

Instrument ID: ICP5

Lab File ID: 03182016A.asc

Initial Weight/Volume: 50 mL

Final Weight/Volume: 50 mL

Analyte	Result (ug/L)	Qualifier	MDL	RL
Iron	5150		65.4	150
Manganese	883		4.9	15.0

Analytical Data

Client: R & C Formation Ltd.

Job Number: 460-110137-1

Client Sample ID: MW-8S

Lab Sample ID: 460-110137-6

Client Matrix: Water

Date Sampled: 03/09/2016 1033

Date Received: 03/09/2016 1705

6010C Metals (ICP)

Analysis Method: 6010C

Prep Method: 3010A

Dilution: 1.0

Analysis Date: 03/19/2016 0425

Prep Date: 03/17/2016 2200

Analysis Batch: 460-357336

Prep Batch: 460-356995

Instrument ID: ICP5

Lab File ID: 03182016A.asc

Initial Weight/Volume: 50 mL

Final Weight/Volume: 50 mL

Analyte	Result (ug/L)	Qualifier	MDL	RL
Iron	5820		65.4	150
Manganese	482		4.9	15.0

Analytical Data

Client: R & C Formation Ltd.

Job Number: 460-110137-1

Client Sample ID: MW-104

Lab Sample ID: 460-110137-7

Client Matrix: Water

Date Sampled: 03/09/2016 1106

Date Received: 03/09/2016 1705

6010C Metals (ICP)

Analysis Method: 6010C

Prep Method: 3010A

Dilution: 1.0

Analysis Date: 03/19/2016 0429

Prep Date: 03/17/2016 2200

Analysis Batch: 460-357336

Prep Batch: 460-356995

Instrument ID: ICP5

Lab File ID: 03182016A.asc

Initial Weight/Volume: 50 mL

Final Weight/Volume: 50 mL

Analyte	Result (ug/L)	Qualifier	MDL	RL
Iron	2150		65.4	150
Manganese	1290		4.9	15.0

Analytical Data

Client: R & C Formation Ltd.

Job Number: 460-110137-1

Client Sample ID: RW-1R

Lab Sample ID: 460-110137-8

Client Matrix: Water

Date Sampled: 03/09/2016 1149

Date Received: 03/09/2016 1705

6010C Metals (ICP)

Analysis Method: 6010C

Prep Method: 3010A

Dilution: 1.0

Analysis Date: 03/19/2016 0432

Prep Date: 03/17/2016 2200

Analysis Batch: 460-357336

Prep Batch: 460-356995

Instrument ID: ICP5

Lab File ID: 03182016A.asc

Initial Weight/Volume: 50 mL

Final Weight/Volume: 50 mL

Analyte	Result (ug/L)	Qualifier	MDL	RL
Iron	71700		65.4	150
Manganese	577		4.9	15.0

Analytical Data

Client: R & C Formation Ltd.

Job Number: 460-110137-1

Client Sample ID: MW-106

Lab Sample ID: 460-110137-12

Client Matrix: Water

Date Sampled: 03/09/2016 1512

Date Received: 03/09/2016 1705

6010C Metals (ICP)

Analysis Method: 6010C

Prep Method: 3010A

Dilution: 1.0

Analysis Date: 03/19/2016 0447

Prep Date: 03/17/2016 2200

Analysis Batch: 460-357336

Prep Batch: 460-356995

Instrument ID: ICP5

Lab File ID: 03182016A.asc

Initial Weight/Volume: 50 mL

Final Weight/Volume: 50 mL

Analyte	Result (ug/L)	Qualifier	MDL	RL
Iron	713		65.4	150
Manganese	658		4.9	15.0

Analytical Data

Client: R & C Formation Ltd.

Job Number: 460-110137-1

Client Sample ID: MW-103

Lab Sample ID: 460-110137-13

Client Matrix: Water

Date Sampled: 03/09/2016 1544

Date Received: 03/09/2016 1705

6010C Metals (ICP)

Analysis Method: 6010C

Prep Method: 3010A

Dilution: 1.0

Analysis Date: 03/19/2016 0451

Prep Date: 03/17/2016 2200

Analysis Batch: 460-357336

Prep Batch: 460-356995

Instrument ID: ICP5

Lab File ID: 03182016A.asc

Initial Weight/Volume: 50 mL

Final Weight/Volume: 50 mL

Analyte	Result (ug/L)	Qualifier	MDL	RL
Iron	654		65.4	150
Manganese	190		4.9	15.0

Analytical Data

Client: R & C Formation Ltd.

Job Number: 460-110137-1

General Chemistry

Client Sample ID: MW-11S

Lab Sample ID: 460-110137-2

Client Matrix: Water

Date Sampled: 03/09/2016 0826

Date Received: 03/09/2016 1705

Analyte	Result	Qual	Units	MDL	RL	Dil	Method
Ammonia	19.8		mg/L	0.23	1.0	10	350.1
	Analysis Batch: 460-358185		Analysis Date: 03/23/2016 1429				
	Prep Batch: 460-358097		Prep Date: 03/23/2016 0830				
Nitrate as N	0.10	U	mg/L	0.026	0.10	1.0	SM 4500 NO3 F
	Analysis Batch: 460-355343		Analysis Date: 03/10/2016 1643				

Analytical Data

Client: R & C Formation Ltd.

Job Number: 460-110137-1

General Chemistry

Client Sample ID: MW-20S

Lab Sample ID: 460-110137-4

Date Sampled: 03/09/2016 0926

Client Matrix: Water

Date Received: 03/09/2016 1705

Analyte	Result	Qual	Units	MDL	RL	Dil	Method
Ammonia	2.5		mg/L	0.023	0.10	1.0	350.1
	Analysis Batch: 460-358185		Analysis Date: 03/23/2016 1353				
	Prep Batch: 460-358097		Prep Date: 03/23/2016 0830				
Nitrate as N	0.054	J	mg/L	0.026	0.10	1.0	SM 4500 NO3 F
	Analysis Batch: 460-355343		Analysis Date: 03/10/2016 1644				

Analytical Data

Client: R & C Formation Ltd.

Job Number: 460-110137-1

General Chemistry

Client Sample ID: MW-105

Lab Sample ID: 460-110137-5

Client Matrix: Water

Date Sampled: 03/09/2016 1002

Date Received: 03/09/2016 1705

Analyte	Result	Qual	Units	MDL	RL	Dil	Method
Ammonia	3.0		mg/L	0.023	0.10	1.0	350.1
	Analysis Batch: 460-358185		Analysis Date: 03/23/2016 1347				
	Prep Batch: 460-358097		Prep Date: 03/23/2016 0830				
Nitrate as N	0.10	U	mg/L	0.026	0.10	1.0	SM 4500 NO3 F
	Analysis Batch: 460-355343		Analysis Date: 03/10/2016 1646				

Analytical Data

Client: R & C Formation Ltd.

Job Number: 460-110137-1

General Chemistry

Client Sample ID: MW-8S

Lab Sample ID: 460-110137-6

Date Sampled: 03/09/2016 1033

Client Matrix: Water

Date Received: 03/09/2016 1705

Analyte	Result	Qual	Units	MDL	RL	Dil	Method
Ammonia	8.1		mg/L	0.23	1.0	10	350.1
	Analysis Batch: 460-358185		Analysis Date: 03/23/2016 1431				
	Prep Batch: 460-358097		Prep Date: 03/23/2016 0830				
Nitrate as N	0.10	U	mg/L	0.026	0.10	1.0	SM 4500 NO3 F
	Analysis Batch: 460-355343		Analysis Date: 03/10/2016 1647				

Analytical Data

Client: R & C Formation Ltd.

Job Number: 460-110137-1

General Chemistry

Client Sample ID: MW-104

Lab Sample ID: 460-110137-7

Client Matrix: Water

Date Sampled: 03/09/2016 1106

Date Received: 03/09/2016 1705

Analyte	Result	Qual	Units	MDL	RL	Dil	Method
Ammonia	1.5		mg/L	0.023	0.10	1.0	350.1
	Analysis Batch: 460-358185		Analysis Date: 03/23/2016 1400				
	Prep Batch: 460-358097		Prep Date: 03/23/2016 0830				
Nitrate as N	0.10	U	mg/L	0.026	0.10	1.0	SM 4500 NO3 F
	Analysis Batch: 460-355343		Analysis Date: 03/10/2016 1648				

Analytical Data

Client: R & C Formation Ltd.

Job Number: 460-110137-1

General Chemistry

Client Sample ID: RW-1R

Lab Sample ID: 460-110137-8

Date Sampled: 03/09/2016 1149

Client Matrix: Water

Date Received: 03/09/2016 1705

Analyte	Result	Qual	Units	MDL	RL	Dil	Method
Ammonia	8.8		mg/L	0.23	1.0	10	350.1
	Analysis Batch: 460-358185		Analysis Date: 03/23/2016 1432				
	Prep Batch: 460-358097		Prep Date: 03/23/2016 0830				
Nitrate as N	0.10	U	mg/L	0.026	0.10	1.0	SM 4500 NO3 F
	Analysis Batch: 460-355343		Analysis Date: 03/10/2016 1650				

Analytical Data

Client: R & C Formation Ltd.

Job Number: 460-110137-1

General Chemistry

Client Sample ID: MW-106

Lab Sample ID: 460-110137-12

Client Matrix: Water

Date Sampled: 03/09/2016 1512

Date Received: 03/09/2016 1705

Analyte	Result	Qual	Units	MDL	RL	Dil	Method
Ammonia	2.8		mg/L	0.023	0.10	1.0	350.1
	Analysis Batch: 460-358185		Analysis Date: 03/23/2016 1403				
	Prep Batch: 460-358097		Prep Date: 03/23/2016 0830				
Nitrate as N	0.10	U	mg/L	0.026	0.10	1.0	SM 4500 NO3 F
	Analysis Batch: 460-355343		Analysis Date: 03/10/2016 1654				

Analytical Data

Client: R & C Formation Ltd.

Job Number: 460-110137-1

General Chemistry

Client Sample ID: MW-103

Lab Sample ID: 460-110137-13

Date Sampled: 03/09/2016 1544

Client Matrix: Water

Date Received: 03/09/2016 1705

Analyte	Result	Qual	Units	MDL	RL	Dil	Method
Ammonia	0.031	J	mg/L	0.023	0.10	1.0	350.1
Analysis Batch: 460-358185 Analysis Date: 03/23/2016 1404							
Prep Batch: 460-358097 Prep Date: 03/23/2016 0830							
Nitrate as N	0.77		mg/L	0.026	0.10	1.0	SM 4500 NO3 F
Analysis Batch: 460-355343 Analysis Date: 03/10/2016 1656							

DATA REPORTING QUALIFIERS

Client: R & C Formation Ltd.

Job Number: 460-110137-1

Lab Section	Qualifier	Description
GC/MS VOA	U	Analyzed for but not detected.
	J	Indicates an estimated value.
	*	LCS or LCSD is outside acceptance limits.
GC/MS Semi VOA	U	Analyzed for but not detected.
	J	Indicates an estimated value.
HPLC/IC	U	Analyzed for but not detected.
Metals	U	Indicates analyzed for but not detected.
General Chemistry	U	Indicates analyzed for but not detected.
	J	Sample result is greater than the MDL but below the CRDL

QUALITY CONTROL RESULTS

Quality Control Results

Client: R & C Formation Ltd.

Job Number: 460-110137-1

QC Association Summary

Lab Sample ID	Client Sample ID	Report Basis	Client Matrix	Method	Prep Batch
GC/MS VOA					
Analysis Batch:460-355690					
LCS 460-355690/3	Lab Control Sample	T	Water	8260C	
LCSD 460-355690/4	Lab Control Sample Duplicate	T	Water	8260C	
MB 460-355690/5	Method Blank	T	Water	8260C	
460-110137-1TB	TB	T	Water	8260C	
460-110137-2	MW-11S	T	Water	8260C	
460-110137-5	MW-105	T	Water	8260C	
460-110137-7	MW-104	T	Water	8260C	
460-110137-8	RW-1R	T	Water	8260C	
Analysis Batch:460-355877					
LCS 460-355877/4	Lab Control Sample	T	Water	8260C	
LCSD 460-355877/5	Lab Control Sample Duplicate	T	Water	8260C	
MB 460-355877/8	Method Blank	T	Water	8260C	
460-110137-11	MW-26D	T	Water	8260C	
460-110137-12	MW-106	T	Water	8260C	
460-110137-13	MW-103	T	Water	8260C	
Analysis Batch:460-355959					
LCS 460-355959/4	Lab Control Sample	T	Water	8260C	
LCSD 460-355959/5	Lab Control Sample Duplicate	T	Water	8260C	
MB 460-355959/8	Method Blank	T	Water	8260C	
460-110137-3	MW-20DR	T	Water	8260C	
460-110137-4	MW-20S	T	Water	8260C	
460-110137-6	MW-8S	T	Water	8260C	
460-110137-9	MW-5S	T	Water	8260C	
460-110137-10	MW-27D	T	Water	8260C	

Report Basis

T = Total

Quality Control Results

Client: R & C Formation Ltd.

Job Number: 460-110137-1

QC Association Summary

Lab Sample ID	Client Sample ID	Report Basis	Client Matrix	Method	Prep Batch
GC/MS Semi VOA					
Prep Batch: 480-290947					
LCS 480-290947/2-A	Lab Control Sample	T	Water	3510C	
MB 480-290947/1-A	Method Blank	T	Water	3510C	
460-110137-2	MW-11S	T	Water	3510C	
460-110137-2MS	Matrix Spike	T	Water	3510C	
460-110137-2MSD	Matrix Spike Duplicate	T	Water	3510C	
460-110137-3	MW-20DR	T	Water	3510C	
460-110137-4	MW-20S	T	Water	3510C	
460-110137-5	MW-105	T	Water	3510C	
460-110137-6	MW-8S	T	Water	3510C	
460-110137-7	MW-104	T	Water	3510C	
460-110137-8	RW-1R	T	Water	3510C	
460-110137-9	MW-5S	T	Water	3510C	
460-110137-10	MW-27D	T	Water	3510C	
460-110137-11	MW-26D	T	Water	3510C	
460-110137-12	MW-106	T	Water	3510C	
460-110137-13	MW-103	T	Water	3510C	
Analysis Batch:480-291293					
LCS 480-290947/2-A	Lab Control Sample	T	Water	8270D	480-290947
MB 480-290947/1-A	Method Blank	T	Water	8270D	480-290947
460-110137-2	MW-11S	T	Water	8270D	480-290947
460-110137-2MS	Matrix Spike	T	Water	8270D	480-290947
460-110137-2MSD	Matrix Spike Duplicate	T	Water	8270D	480-290947
460-110137-3	MW-20DR	T	Water	8270D	480-290947
460-110137-4	MW-20S	T	Water	8270D	480-290947
460-110137-5	MW-105	T	Water	8270D	480-290947
460-110137-6	MW-8S	T	Water	8270D	480-290947
460-110137-7	MW-104	T	Water	8270D	480-290947
460-110137-8	RW-1R	T	Water	8270D	480-290947
460-110137-9	MW-5S	T	Water	8270D	480-290947
460-110137-10	MW-27D	T	Water	8270D	480-290947
460-110137-11	MW-26D	T	Water	8270D	480-290947
460-110137-12	MW-106	T	Water	8270D	480-290947
Analysis Batch:480-291542					
460-110137-13	MW-103	T	Water	8270D	480-290947

Report Basis

T = Total

Quality Control Results

Client: R & C Formation Ltd.

Job Number: 460-110137-1

QC Association Summary

Lab Sample ID	Client Sample ID	Report Basis	Client Matrix	Method	Prep Batch
Metals					
Prep Batch: 460-356995					
LCS 460-356995/2-A	Lab Control Sample	T	Water	3010A	
MB 460-356995/1-A	Method Blank	T	Water	3010A	
460-110137-2	MW-11S	T	Water	3010A	
460-110137-4	MW-20S	T	Water	3010A	
460-110137-5	MW-105	T	Water	3010A	
460-110137-6	MW-8S	T	Water	3010A	
460-110137-7	MW-104	T	Water	3010A	
460-110137-8	RW-1R	T	Water	3010A	
460-110137-12	MW-106	T	Water	3010A	
460-110137-13	MW-103	T	Water	3010A	
Analysis Batch:460-357336					
LCS 460-356995/2-A	Lab Control Sample	T	Water	6010C	460-356995
MB 460-356995/1-A	Method Blank	T	Water	6010C	460-356995
460-110137-2	MW-11S	T	Water	6010C	460-356995
460-110137-4	MW-20S	T	Water	6010C	460-356995
460-110137-5	MW-105	T	Water	6010C	460-356995
460-110137-6	MW-8S	T	Water	6010C	460-356995
460-110137-7	MW-104	T	Water	6010C	460-356995
460-110137-8	RW-1R	T	Water	6010C	460-356995
460-110137-12	MW-106	T	Water	6010C	460-356995
460-110137-13	MW-103	T	Water	6010C	460-356995
Analysis Batch:460-360429					
LCS 460-356995/2-A	Lab Control Sample	T	Water	6010C	460-356995

Report Basis

T = Total

Quality Control Results

Client: R & C Formation Ltd.

Job Number: 460-110137-1

QC Association Summary

Lab Sample ID	Client Sample ID	Report Basis	Client Matrix	Method	Prep Batch
General Chemistry					
Analysis Batch:460-355343					
LCSSRM 460-355343/10	LCS-Certified Reference Material	T	Water	SM 4500 NO3 F	
LCSSRM 460-355343/11	LCS-Certified Reference Material	T	Water	SM 4500 NO3 F	
MB 460-355343/9	Method Blank	T	Water	SM 4500 NO3 F	
460-110137-2	MW-11S	T	Water	SM 4500 NO3 F	
460-110137-4	MW-20S	T	Water	SM 4500 NO3 F	
460-110137-5	MW-105	T	Water	SM 4500 NO3 F	
460-110137-6	MW-8S	T	Water	SM 4500 NO3 F	
460-110137-7	MW-104	T	Water	SM 4500 NO3 F	
460-110137-8	RW-1R	T	Water	SM 4500 NO3 F	
460-110137-12	MW-106	T	Water	SM 4500 NO3 F	
460-110137-13	MW-103	T	Water	SM 4500 NO3 F	
Prep Batch: 460-358097					
LCS 460-358097/2-A	Lab Control Sample	T	Water	Distill/Ammonia	
MB 460-358097/1-A	Method Blank	T	Water	Distill/Ammonia	
460-110137-2	MW-11S	T	Water	Distill/Ammonia	
460-110137-4	MW-20S	T	Water	Distill/Ammonia	
460-110137-5	MW-105	T	Water	Distill/Ammonia	
460-110137-5MS	Matrix Spike	T	Water	Distill/Ammonia	
460-110137-5MSD	Matrix Spike Duplicate	T	Water	Distill/Ammonia	
460-110137-6	MW-8S	T	Water	Distill/Ammonia	
460-110137-7	MW-104	T	Water	Distill/Ammonia	
460-110137-8	RW-1R	T	Water	Distill/Ammonia	
460-110137-12	MW-106	T	Water	Distill/Ammonia	
460-110137-13	MW-103	T	Water	Distill/Ammonia	
Analysis Batch:460-358185					
LCS 460-358097/2-A	Lab Control Sample	T	Water	350.1	460-358097
MB 460-358097/1-A	Method Blank	T	Water	350.1	460-358097
460-110137-2	MW-11S	T	Water	350.1	460-358097
460-110137-4	MW-20S	T	Water	350.1	460-358097
460-110137-5	MW-105	T	Water	350.1	460-358097
460-110137-5MS	Matrix Spike	T	Water	350.1	460-358097
460-110137-5MSD	Matrix Spike Duplicate	T	Water	350.1	460-358097
460-110137-6	MW-8S	T	Water	350.1	460-358097
460-110137-7	MW-104	T	Water	350.1	460-358097
460-110137-8	RW-1R	T	Water	350.1	460-358097
460-110137-12	MW-106	T	Water	350.1	460-358097
460-110137-13	MW-103	T	Water	350.1	460-358097

Report Basis

T = Total

Quality Control Results

Client: R & C Formation Ltd.

Job Number: 460-110137-1

QC Association Summary

Lab Sample ID	Client Sample ID	Report Basis	Client Matrix	Method	Prep Batch
HPLC/IC					
Analysis Batch:460-357305					
LCS 460-357305/5	Lab Control Sample	T	Water	300.0	
LCSD 460-357305/6	Lab Control Sample Duplicate	T	Water	300.0	
MB 460-357305/4	Method Blank	T	Water	300.0	
460-110137-2DL	MW-11S	T	Water	300.0	
460-110137-4DL	MW-20S	T	Water	300.0	
460-110137-4DL2	MW-20S	T	Water	300.0	
460-110137-5DL	MW-10S	T	Water	300.0	
460-110137-6DL	MW-8S	T	Water	300.0	
460-110137-7DL	MW-104	T	Water	300.0	
460-110137-8DL	RW-1R	T	Water	300.0	
460-110137-12DL	MW-106	T	Water	300.0	
460-110137-13DL	MW-103	T	Water	300.0	

Report Basis

T = Total

Client: R & C Formation Ltd.

Job Number: 460-110137-1

Surrogate Recovery Report

8260C Volatile Organic Compounds by GC/MS

Client Matrix: Water

Lab Sample ID	Client Sample ID	DCA %Rec	BFB %Rec	TOL %Rec	DBFM %Rec
460-110137-1	TB	104	77	105	82
460-110137-2	MW-11S	104	74	103	81
460-110137-3	MW-20DR	81	103	83	88
460-110137-4	MW-20S	82	107	87	89
460-110137-5	MW-105	114	70	114	85
460-110137-6	MW-8S	82	105	85	87
460-110137-7	MW-104	114	72	112	85
460-110137-8	RW-1R	119	77	119	88
460-110137-9	MW-5S	80	104	83	86
460-110137-10	MW-27D	84	108	87	90
460-110137-11	MW-26D	88	108	89	92
460-110137-12	MW-106	89	111	90	94
460-110137-13	MW-103	88	108	89	94
MB 460-355690/5		108	77	108	82
MB 460-355877/8		88	113	92	95
MB 460-355959/8		86	109	89	91
LCS 460-355690/3		105	80	108	85
LCS 460-355877/4		88	114	89	96
LCS 460-355959/4		84	107	88	89
LCSD 460-355690/4		116	87	116	93
LCSD 460-355877/5		88	114	89	96
LCSD 460-355959/5		85	108	86	92

Surrogate	Acceptance Limits
DCA = 1,2-Dichloroethane-d4 (Surr)	70-137
BFB = Bromofluorobenzene	70-131
TOL = Toluene-d8 (Surr)	74-120
DBFM = Dibromofluoromethane (Surr)	72-136

Quality Control Results

Client: R & C Formation Ltd.

Job Number: 460-110137-1

Surrogate Recovery Report

8270D Semivolatile Organic Compounds (GC/MS)

Client Matrix: Water

Lab Sample ID	Client Sample ID	NBZ %Rec	FBP %Rec	TPH %Rec	PHL %Rec	2FP %Rec	TBP %Rec
460-110137-2	MW-11S	94	78	100	43	62	87
460-110137-3	MW-20DR	84	83	95	41	57	94
460-110137-4	MW-20S	99	91	99	42	62	102
460-110137-5	MW-10S	93	81	97	40	58	92
460-110137-6	MW-8S	93	83	95	43	60	98
460-110137-7	MW-104	87	83	95	41	59	95
460-110137-8	RW-1R	70	64	79	32	44	70
460-110137-9	MW-5S	80	70	85	36	53	77
460-110137-10	MW-27D	82	78	97	59	70	92
460-110137-11	MW-26D	70	71	97	34	48	96
460-110137-12	MW-106	85	80	102	42	56	91
460-110137-13	MW-103	85	79	99	37	54	92
MB 480-290947/1-A		90	84	97	43	59	84
LCS 480-290947/2-A		93	84	97	51	68	101
460-110137-2 MS	MW-11S MS	93	80	96	69	78	100
460-110137-2 MSD	MW-11S MSD	85	71	90	47	46	57

Surrogate	Acceptance Limits
NBZ = Nitrobenzene-d5	46-120
FBP = 2-Fluorobiphenyl	48-120
TPH = p-Terphenyl-d14	67-150
PHL = Phenol-d5	16-120
2FP = 2-Fluorophenol	20-120
TBP = 2,4,6-Tribromophenol	52-132

Quality Control Results

Client: R & C Formation Ltd.

Job Number: 460-110137-1

Method Blank - Batch: 460-355690

Method: 8260C

Preparation: 5030C

Lab Sample ID: MB 460-355690/5
Client Matrix: Water
Dilution: 1.0
Analysis Date: 03/12/2016 1237
Prep Date: 03/12/2016 1237
Leach Date: N/A

Analysis Batch: 460-355690
Prep Batch: N/A
Leach Batch: N/A
Units: ug/L

Instrument ID: CVOAMS13
Lab File ID: P09887.D
Initial Weight/Volume: 5 mL
Final Weight/Volume: 5 mL

Analyte	Result	Qual	MDL	RL
Benzene	1.0	U	0.090	1.0
Toluene	1.0	U	0.25	1.0
Ethylbenzene	1.0	U	0.30	1.0
Xylenes, Total	2.0	U	0.28	2.0

Surrogate	% Rec	Acceptance Limits
1,2-Dichloroethane-d4 (Surr)	108	70 - 137
Bromofluorobenzene	77	70 - 131
Toluene-d8 (Surr)	108	74 - 120
Dibromofluoromethane (Surr)	82	72 - 136

Lab Control Sample/

Method: 8260C

Lab Control Sample Duplicate Recovery Report - Batch: 460-355690

Preparation: 5030C

LCS Lab Sample ID: LCS 460-355690/3
Client Matrix: Water
Dilution: 1.0
Analysis Date: 03/12/2016 1143
Prep Date: 03/12/2016 1143
Leach Date: N/A

Analysis Batch: 460-355690
Prep Batch: N/A
Leach Batch: N/A
Units: ug/L

Instrument ID: CVOAMS13
Lab File ID: P09885.D
Initial Weight/Volume: 5 mL
Final Weight/Volume: 5 mL
5 mL

LCSD Lab Sample ID: LCSD 460-355690/4
Client Matrix: Water
Dilution: 1.0
Analysis Date: 03/12/2016 1210
Prep Date: 03/12/2016 1210
Leach Date: N/A

Analysis Batch: 460-355690
Prep Batch: N/A
Leach Batch: N/A
Units: ug/L

Instrument ID: CVOAMS13
Lab File ID: P09886.D
Initial Weight/Volume: 5 mL
Final Weight/Volume: 5 mL
5 mL

Analyte	% Rec		Limit	RPD	RPD Limit	LCS Qual	LCSD Qual
	LCS	LCSD					
Benzene	121	127	76 - 125	5	30		*
Toluene	112	115	80 - 120	2	30		
Ethylbenzene	105	108	80 - 120	3	30		
Xylenes, Total	103	110	80 - 120	6	30		

Surrogate	LCS % Rec	LCSD % Rec	Acceptance Limits
1,2-Dichloroethane-d4 (Surr)	105	116	70 - 137
Bromofluorobenzene	80	87	70 - 131
Toluene-d8 (Surr)	108	116	74 - 120

Quality Control Results

Client: R & C Formation Ltd.

Job Number: 460-110137-1

Method Blank - Batch: 460-355877

Method: 8260C

Preparation: 5030C

Lab Sample ID: MB 460-355877/8
Client Matrix: Water
Dilution: 1.0
Analysis Date: 03/13/2016 2108
Prep Date: 03/13/2016 2108
Leach Date: N/A

Analysis Batch: 460-355877
Prep Batch: N/A
Leach Batch: N/A
Units: ug/L

Instrument ID: CVOAMS13
Lab File ID: P09917.D
Initial Weight/Volume: 5 mL
Final Weight/Volume: 5 mL

Analyte	Result	Qual	MDL	RL
Benzene	1.0	U	0.090	1.0
Toluene	1.0	U	0.25	1.0
Ethylbenzene	1.0	U	0.30	1.0
Xylenes, Total	2.0	U	0.28	2.0

Surrogate	% Rec	Acceptance Limits
1,2-Dichloroethane-d4 (Surr)	88	70 - 137
Bromofluorobenzene	113	70 - 131
Toluene-d8 (Surr)	92	74 - 120
Dibromofluoromethane (Surr)	95	72 - 136

Lab Control Sample/

Method: 8260C

Lab Control Sample Duplicate Recovery Report - Batch: 460-355877

Preparation: 5030C

LCS Lab Sample ID: LCS 460-355877/4
Client Matrix: Water
Dilution: 1.0
Analysis Date: 03/13/2016 1931
Prep Date: 03/13/2016 1931
Leach Date: N/A

Analysis Batch: 460-355877
Prep Batch: N/A
Leach Batch: N/A
Units: ug/L

Instrument ID: CVOAMS13
Lab File ID: P09913.D
Initial Weight/Volume: 5 mL
Final Weight/Volume: 5 mL
5 mL

LCSD Lab Sample ID: LCSD 460-355877/5
Client Matrix: Water
Dilution: 1.0
Analysis Date: 03/13/2016 1955
Prep Date: 03/13/2016 1955
Leach Date: N/A

Analysis Batch: 460-355877
Prep Batch: N/A
Leach Batch: N/A
Units: ug/L

Instrument ID: CVOAMS13
Lab File ID: P09914.D
Initial Weight/Volume: 5 mL
Final Weight/Volume: 5 mL
5 mL

Analyte	% Rec		Limit	RPD	RPD Limit	LCS Qual	LCSD Qual
	LCS	LCSD					
Benzene	94	88	76 - 125	6	30		
Toluene	91	87	80 - 120	4	30		
Ethylbenzene	97	90	80 - 120	8	30		
Xylenes, Total	94	89	80 - 120	5	30		

Surrogate	LCS % Rec	LCSD % Rec	Acceptance Limits
1,2-Dichloroethane-d4 (Surr)	88	88	70 - 137
Bromofluorobenzene	114	114	70 - 131
Toluene-d8 (Surr)	89	89	74 - 120

Quality Control Results

Client: R & C Formation Ltd.

Job Number: 460-110137-1

Method Blank - Batch: 460-355959

Method: 8260C
Preparation: 5030C

Lab Sample ID: MB 460-355959/8
Client Matrix: Water
Dilution: 1.0
Analysis Date: 03/14/2016 1107
Prep Date: 03/14/2016 1107
Leach Date: N/A

Analysis Batch: 460-355959
Prep Batch: N/A
Leach Batch: N/A
Units: ug/L

Instrument ID: CVOAMS13
Lab File ID: P09944.D
Initial Weight/Volume: 5 mL
Final Weight/Volume: 5 mL

Analyte	Result	Qual	MDL	RL
Benzene	1.0	U	0.090	1.0
Toluene	1.0	U	0.25	1.0
Ethylbenzene	1.0	U	0.30	1.0
Xylenes, Total	2.0	U	0.28	2.0

Surrogate	% Rec	Acceptance Limits
1,2-Dichloroethane-d4 (Surr)	86	70 - 137
Bromofluorobenzene	109	70 - 131
Toluene-d8 (Surr)	89	74 - 120
Dibromofluoromethane (Surr)	91	72 - 136

Lab Control Sample/

Method: 8260C

Lab Control Sample Duplicate Recovery Report - Batch: 460-355959

Preparation: 5030C

LCS Lab Sample ID: LCS 460-355959/4
Client Matrix: Water
Dilution: 1.0
Analysis Date: 03/14/2016 0847
Prep Date: 03/14/2016 0847
Leach Date: N/A

Analysis Batch: 460-355959
Prep Batch: N/A
Leach Batch: N/A
Units: ug/L

Instrument ID: CVOAMS13
Lab File ID: P09940.D
Initial Weight/Volume: 5 mL
Final Weight/Volume: 5 mL
5 mL

LCSD Lab Sample ID: LCSD 460-355959/5
Client Matrix: Water
Dilution: 1.0
Analysis Date: 03/14/2016 0911
Prep Date: 03/14/2016 0911
Leach Date: N/A

Analysis Batch: 460-355959
Prep Batch: N/A
Leach Batch: N/A
Units: ug/L

Instrument ID: CVOAMS13
Lab File ID: P09941.D
Initial Weight/Volume: 5 mL
Final Weight/Volume: 5 mL
5 mL

Analyte	% Rec		Limit	RPD	RPD Limit	LCS Qual	LCSD Qual
	LCS	LCSD					
Benzene	94	96	76 - 125	2	30		
Toluene	91	93	80 - 120	2	30		
Ethylbenzene	92	95	80 - 120	3	30		
Xylenes, Total	91	93	80 - 120	2	30		

Surrogate	LCS % Rec	LCSD % Rec	Acceptance Limits
1,2-Dichloroethane-d4 (Surr)	84	85	70 - 137
Bromofluorobenzene	107	108	70 - 131
Toluene-d8 (Surr)	88	86	74 - 120

Quality Control Results

Client: R & C Formation Ltd.

Job Number: 460-110137-1

Method Blank - Batch: 480-290947

Method: 8270D

Preparation: 3510C

Lab Sample ID:	MB 480-290947/1-A	Analysis Batch:	480-291293	Instrument ID:	HP5973Y
Client Matrix:	Water	Prep Batch:	480-290947	Lab File ID:	Y0124650.D
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	250 mL
Analysis Date:	03/16/2016 1525	Units:	ug/L	Final Weight/Volume:	1 mL
Prep Date:	03/14/2016 1431			Injection Volume:	2 uL
Leach Date:	N/A				

Analyte	Result	Qual	MDL	RL
2-Picoline	80	U	1.4	80
Pyridine	25	U	0.41	25

Surrogate	% Rec	Acceptance Limits
Nitrobenzene-d5	90	46 - 120
2-Fluorobiphenyl	84	48 - 120
p-Terphenyl-d14	97	67 - 150
Phenol-d5	43	16 - 120
2-Fluorophenol	59	20 - 120
2,4,6-Tribromophenol	84	52 - 132

Method Blank TICs- Batch: 480-290947

Cas Number	Analyte	RT	Est. Result (ug)	Qual
504-29-0	2-Aminopyridine TIC	0.00	10	U

Lab Control Sample - Batch: 480-290947

Method: 8270D

Preparation: 3510C

Lab Sample ID:	LCS 480-290947/2-A	Analysis Batch:	480-291293	Instrument ID:	HP5973Y
Client Matrix:	Water	Prep Batch:	480-290947	Lab File ID:	Y0124651.D
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	250 mL
Analysis Date:	03/16/2016 1555	Units:	ug/L	Final Weight/Volume:	1 mL
Prep Date:	03/14/2016 1431			Injection Volume:	2 uL
Leach Date:	N/A				

Analyte	Spike Amount	Result	% Rec.	Limit	Qual
Pyridine	16.0	7.40	46	10 - 120	J

Surrogate	% Rec	Acceptance Limits
Nitrobenzene-d5	93	46 - 120
2-Fluorobiphenyl	84	48 - 120
p-Terphenyl-d14	97	67 - 150
Phenol-d5	51	16 - 120
2-Fluorophenol	68	20 - 120
2,4,6-Tribromophenol	101	52 - 132

Quality Control Results

Client: R & C Formation Ltd.

Job Number: 460-110137-1

**Matrix Spike/
Matrix Spike Duplicate Recovery Report - Batch: 480-290947**

**Method: 8270D
Preparation: 3510C**

MS Lab Sample ID: 460-110137-2
Client Matrix: Water
Dilution: 1.0
Analysis Date: 03/16/2016 1826
Prep Date: 03/14/2016 1431
Leach Date: N/A

Analysis Batch: 480-291293
Prep Batch: 480-290947
Leach Batch: N/A

Instrument ID: HP5973Y
Lab File ID: Y0124656.D
Initial Weight/Volume: 125 mL
Final Weight/Volume: 1 mL
Injection Volume: 2 uL

MSD Lab Sample ID: 460-110137-2
Client Matrix: Water
Dilution: 1.0
Analysis Date: 03/16/2016 1855
Prep Date: 03/14/2016 1431
Leach Date: N/A

Analysis Batch: 480-291293
Prep Batch: 480-290947
Leach Batch: N/A

Instrument ID: HP5973Y
Lab File ID: Y0124657.D
Initial Weight/Volume: 125 mL
Final Weight/Volume: 1 mL
Injection Volume: 2 uL

Analyte	<u>% Rec.</u>		Limit	RPD	RPD Limit	MS Qual	MSD Qual
	MS	MSD					
Pyridine	46	55	10 - 120	17	49	J	J
Surrogate	MS % Rec		MSD % Rec	Acceptance Limits			
Nitrobenzene-d5	93		85	46 - 120			
2-Fluorobiphenyl	80		71	48 - 120			
p-Terphenyl-d14	96		90	67 - 150			
Phenol-d5	69		47	16 - 120			
2-Fluorophenol	78		46	20 - 120			
2,4,6-Tribromophenol	100		57	52 - 132			

Quality Control Results

Client: R & C Formation Ltd.

Job Number: 460-110137-1

Method Blank - Batch: 460-357305

Method: 300.0
Preparation: N/A

Lab Sample ID:	MB 460-357305/4	Analysis Batch:	460-357305	Instrument ID:	IC A
Client Matrix:	Water	Prep Batch:	N/A	Lab File ID:	ya2016-03-19-03-37.d
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	10 mL
Analysis Date:	03/19/2016 0337	Units:	mg/L	Final Weight/Volume:	
Prep Date:	N/A			Injection Volume:	10 uL
Leach Date:	N/A				

Analyte	Result	Qual	MDL	RL
Sulfate	0.60	U	0.11	0.60

Lab Control Sample/ Lab Control Sample Duplicate Recovery Report - Batch: 460-357305

Method: 300.0
Preparation: N/A

LCS Lab Sample ID:	LCS 460-357305/5	Analysis Batch:	460-357305	Instrument ID:	IC A
Client Matrix:	Water	Prep Batch:	N/A	Lab File ID:	ya2016-03-19-03-58.d
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	10 mL
Analysis Date:	03/19/2016 0358	Units:	mg/L	Final Weight/Volume:	
Prep Date:	N/A			Injection Volume:	10 uL
Leach Date:	N/A				

LCSD Lab Sample ID:	LCSD 460-357305/6	Analysis Batch:	460-357305	Instrument ID:	IC A
Client Matrix:	Water	Prep Batch:	N/A	Lab File ID:	ya2016-03-19-04-18.d
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	10 mL
Analysis Date:	03/19/2016 0418	Units:	mg/L	Final Weight/Volume:	
Prep Date:	N/A			Injection Volume:	10 uL
Leach Date:	N/A				

Analyte	% Rec.		Limit	RPD	RPD Limit	LCS Qual	LCSD Qual
	LCS	LCSD					
Sulfate	92	91	90 - 110	1	15		

Quality Control Results

Client: R & C Formation Ltd.

Job Number: 460-110137-1

Method Blank - Batch: 460-356995

Method: 6010C
Preparation: 3010A

Lab Sample ID:	MB 460-356995/1-A	Analysis Batch:	460-357336	Instrument ID:	ICP5
Client Matrix:	Water	Prep Batch:	460-356995	Lab File ID:	03182016A.asc
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	50 mL
Analysis Date:	03/19/2016 0358	Units:	ug/L	Final Weight/Volume:	50 mL
Prep Date:	03/17/2016 2200				
Leach Date:	N/A				

Analyte	Result	Qual	MDL	RL
Iron	150	U	65.4	150
Manganese	15.0	U	4.9	15.0

Lab Control Sample - Batch: 460-356995

Method: 6010C
Preparation: 3010A

Lab Sample ID:	LCS 460-356995/2-A	Analysis Batch:	460-357336	Instrument ID:	ICP5
Client Matrix:	Water	Prep Batch:	460-356995	Lab File ID:	03182016A.asc
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	50 mL
Analysis Date:	03/19/2016 0344	Units:	ug/L	Final Weight/Volume:	50 mL
Prep Date:	03/17/2016 2200				
Leach Date:	N/A				

Analyte	Spike Amount	Result	% Rec.	Limit	Qual
Manganese	500	525.8	105	80 - 120	

Lab Control Sample - Batch: 460-356995

Method: 6010C
Preparation: 3010A

Lab Sample ID:	LCS 460-356995/2-A	Analysis Batch:	460-360429	Instrument ID:	ICP5
Client Matrix:	Water	Prep Batch:	460-356995	Lab File ID:	04032016.asc
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	50 mL
Analysis Date:	04/03/2016 2257	Units:	ug/L	Final Weight/Volume:	50 mL
Prep Date:	03/17/2016 2200				
Leach Date:	N/A				

Analyte	Spike Amount	Result	% Rec.	Limit	Qual
Iron	1000	1097	110	80 - 120	

Quality Control Results

Client: R & C Formation Ltd.

Job Number: 460-110137-1

Method Blank - Batch: 460-358097

Method: 350.1

Preparation: Distill/Ammonia

Lab Sample ID: MB 460-358097/1-A
Client Matrix: Water
Dilution: 1.0
Analysis Date: 03/23/2016 1344
Prep Date: 03/23/2016 0830
Leach Date: N/A

Analysis Batch: 460-358185
Prep Batch: 460-358097
Leach Batch: N/A
Units: mg/L

Instrument ID: Lachat2
Lab File ID: A160323.FDT
Initial Weight/Volume: 50.0 mL
Final Weight/Volume: 50.0 mL

Analyte	Result	Qual	MDL	RL
Ammonia	0.10	U	0.023	0.10

Lab Control Sample - Batch: 460-358097

Method: 350.1

Preparation: Distill/Ammonia

Lab Sample ID: LCS 460-358097/2-A
Client Matrix: Water
Dilution: 1.0
Analysis Date: 03/23/2016 1345
Prep Date: 03/23/2016 0830
Leach Date: N/A

Analysis Batch: 460-358185
Prep Batch: 460-358097
Leach Batch: N/A
Units: mg/L

Instrument ID: Lachat2
Lab File ID: A160323.FDT
Initial Weight/Volume: 50.0 mL
Final Weight/Volume: 50.0 mL

Analyte	Spike Amount	Result	% Rec.	Limit	Qual
Ammonia	1.00	0.901	90	87 - 114	

Matrix Spike/

Matrix Spike Duplicate Recovery Report - Batch: 460-358097

Method: 350.1

Preparation: Distill/Ammonia

MS Lab Sample ID: 460-110137-5
Client Matrix: Water
Dilution: 1.0
Analysis Date: 03/23/2016 1348
Prep Date: 03/23/2016 0830
Leach Date: N/A

Analysis Batch: 460-358185
Prep Batch: 460-358097
Leach Batch: N/A

Instrument ID: Lachat2
Lab File ID: A160323.FDT
Initial Weight/Volume: 50.0 mL
Final Weight/Volume: 50.0 mL

MSD Lab Sample ID: 460-110137-5
Client Matrix: Water
Dilution: 1.0
Analysis Date: 03/23/2016 1350
Prep Date: 03/23/2016 0830
Leach Date: N/A

Analysis Batch: 460-358185
Prep Batch: 460-358097
Leach Batch: N/A

Instrument ID: Lachat2
Lab File ID: A160323.FDT
Initial Weight/Volume: 50.0 mL
Final Weight/Volume: 50.0 mL

Analyte	% Rec.		Limit	RPD	RPD Limit	MS Qual	MSD Qual
	MS	MSD					
Ammonia	71	72	65 - 135	1	26		

Quality Control Results

Client: R & C Formation Ltd.

Job Number: 460-110137-1

Method Blank - Batch: 460-355343

Method: SM 4500 NO3 F
Preparation: N/A

Lab Sample ID:	MB 460-355343/9	Analysis Batch:	460-355343	Instrument ID:	Lachat1
Client Matrix:	Water	Prep Batch:	N/A	Lab File ID:	N160310A.FDT
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	
Analysis Date:	03/10/2016 1619	Units:	mg/L	Final Weight/Volume:	
Prep Date:	N/A				
Leach Date:	N/A				

Analyte	Result	Qual	MDL	RL
Nitrate as N	0.10	U	0.026	0.10

LCS-Certified Reference Material - Batch: 460-355343

Method: SM 4500 NO3 F
Preparation: N/A

Lab Sample ID:	LCSSRM 460-355343/11	Analysis Batch:	460-355343	Instrument ID:	Lachat1
Client Matrix:	Water	Prep Batch:	N/A	Lab File ID:	N160310A.FDT
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	
Analysis Date:	03/10/2016 1622	Units:	mg/L	Final Weight/Volume:	10 mL
Prep Date:	N/A				
Leach Date:	N/A				

Analyte	Spike Amount	Result	% Rec.	Limit	Qual
Nitrate as N	1.40	1.41	100.7	85.9 - 112.0	

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING



460-110137 Chain of Custody

777 New Durham Road
Edison, New Jersey 08817
Phone: (732) 549-3900 Fax: (732) 549-3679

YSIS REQUEST

Page 1 of 2

Name (for report and invoice)

Bob Casson

Sample Name (Printed)

Aschaff

Site/Project Identification

Nedera Harmon NY

Company

E+C Formation Ltd.

P.O. #

Regulatory Program:

Address

171 Deer Park Ave Suite 3

Analysis Turnaround Time

Standard ☒

Rush Charges Authorized For:

2 Week ☐

1 Week ☐

Other ☐

ANALYSIS REQUESTED (ENTER % BELOW TO INDICATE REQUEST)

LAB USE ONLY

Project No:

City

Babylon NY 11702

State

Phone 631-488-9590 Fax 631-488-9593

Sample Identification

Date

Time

Matrix

No. of Cont.

BTex

SVOCs*

GenChem*

Job No:

Sample Numbers

110135

Preservation Used: 1 = ICE 2 = HCl 3 = H₂SO₄ 4 = HNO₃ 5 = NaOH 6 = Other 7 = Other

Soil:

Water:

Special Instructions: ~~Find~~ after pipeline; 20mg dry residue; sulfate; ammonia; nitrate; manganese; Water Metals Filtered (Yes/No)? NO

Relinquished by

Company

E+C Formation

Date / Time

3/9/16

Received by

Company

Edison

Date / Time

3/9/16

Received by

Company

Edison

Relinquished by

Company

E+C Formation

Date / Time

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3/9/16

Received by

Company

Edison

Relinquished by

Company

E+C Formation

Date / Time

3/9/16

Received by

Company

Edison

Date / Time

3/9/16

Received by

Company

Edison

Laboratory Certifications: N

HOLD

28, New York (11452), Pennsylvania (68-522), Connecticut (PH-0200), Rhode Island (132).

MA-0016 (07/15)

Massachusetts (M-NJ312), North Carolina (No. 578)

TestAmerica

777 New Durham Road
Edison, New Jersey 08817
Phone: (732) 549-3900 Fax: (732) 549-3679

THE LEADER IN ENVIRONMENTAL TESTING

CHAIN OF CUSTODY / ANALYSIS REQUEST

Page 2 of 2

Name (for report and invoice) Bob Casson		Sample Name (Printed) A Schmitt		Site/Project Identification Nepera Harriman NY	
Company PAC Formation Ltd.		P.O. #		State (Location of site): NJ: ☐ NY: ☒ Other: ☐	
Address 171 Deer Park Ave Suite 3		Analysis Turnaround Time Standard ☒ Rush Charges Authorized For: 2 Week ☐ 1 Week ☐ Other ☐		Regulatory Program: ☐ DKAP: ☐	
City Babylon NY 11702		Phone 631-482-9590		Fax 631-482-9593	
Sample Identification	Date	Time	Matrix	No. of Cont.	LAB USE ONLY Project No: Job No: Sample Numbers
MM-26D	3/9/16	1440	AQ	5	41
MM-106	1	1512	1	9	42
MM-103	1	1344	1	9	43
Preservation Used: 1 = ICE, 2 = HCl, 3 = H ₂ SO ₄ , 4 = HNO ₃ , 5 = NaOH 6 = Other, 7 = Other Soil: ☐ Water: ☐					
Special Instructions: Hydride, alpha-picoline, Zinnco pyridine, sulfate, ammonia, nitrate, manganese, Water Metals Filtered (Yes/No)? NO					
Relinquished by	Company	Date / Time	Received by	Company	
[Signature]	PAC Formation	3/9/16 1600	[Signature]	Accurate Labs	
Relinquished by	Company	Date / Time	Received by	Company	
[Signature]	PAC Formation	3/9/16 1705	[Signature]	Edison	
Relinquished by	Company	Date / Time	Received by	Company	
[Signature]	PAC Formation	3/9/16	[Signature]	Edison	
Relinquished by	Company	Date / Time	Received by	Company	
[Signature]	PAC Formation	3/9/16	[Signature]	Edison	

Laboratory Certifications: New Jersey (12028), New York (11452), Pennsylvania (68-522), Connecticut (PH-0200), Rhode Island (132).

Massachusetts (M-NJ312), North Carolina (No. 578)

TAL-0016 (0715)

116137

[illegible]

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Chain of Custody Record



Client Information (Sub Contract Lab)				Lab PM:		Carrier Tracking No(s):		COC No:	
Shipping/Receiving				Haas, Melissa				460-44859.1	
Company:				E-Mail:		Page:		Page 1 of 2	
TestAmerica Laboratories, Inc.				melissa.haas@testamericainc.com		Job #:		460-110137-1	
Address:				Due Date Requested:		Analysis Requested		Preservation Codes:	
10 Hazelwood Drive,				3/21/2016				A - HCL B - NaOH C - Zn Acetate D - Nitric Acid E - NaHSO4 F - MeOH G - Amchlor H - Ascorbic Acid I - Ice J - DI Water K - EDTA L - EDA Other:	
City:				TAT Requested (days):				M - Hexane N - Ncne O - AshNaO2 P - Na2O4S Q - Na2SO3 R - Na2S2O3 S - H2SO4 T - TSP Dodecylhydrate U - Acetone V - MCAA W - pt 4-5 Z - other (specify)	
State, Zip:									
NY, 14228-2298									
Phone:				PO #:					
716-691-2600(Tel) 716-691-7991(Fax)									
Email:				WO #:					
Project Name:				Project #:					
Nepera Harriman NY				46009639					
Site:				SSOW#:					
Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=water/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perforated MS/MSD (Yes or No)	8270D/3510C LVI Client Specific List	Total Number of Containers	Special Instructions/Note:
MW-11S (460-110137-2)	3/9/16	08:25 Eastern	Water	Water			X	2	2-Aminopyridine is a targeted TIC.
MW-20DR (460-110137-3)	3/9/16	08:57 Eastern	Water	Water			X	2	2-Aminopyridine is a targeted TIC.
MW-20S (460-110137-4)	3/9/16	09:25 Eastern	Water	Water			X	2	2-Aminopyridine is a targeted TIC.
MW-10S (460-110137-5)	3/9/16	10:02 Eastern	Water	Water			X	2	2-Aminopyridine is a targeted TIC.
MW-8S (460-110137-6)	3/9/16	10:33 Eastern	Water	Water			X	2	2-Aminopyridine is a targeted TIC.
MW-104 (460-110137-7)	3/9/16	11:05 Eastern	Water	Water			X	2	2-Aminopyridine is a targeted TIC.
RW-1R (460-110137-8)	3/9/16	11:49 Eastern	Water	Water			X	2	2-Aminopyridine is a targeted TIC.
MW-5S (460-110137-9)	3/9/16	13:01 Eastern	Water	Water			X	2	2-Aminopyridine is a targeted TIC.
MW-27D (460-110137-10)	3/9/16	13:41 Eastern	Water	Water			X	2	2-Aminopyridine is a targeted TIC.
MW-26D (460-110137-11)	3/9/16	14:40 Eastern	Water	Water			X	2	2-Aminopyridine is a targeted TIC.
MW-106 (460-110137-12)	3/9/16	15:12 Eastern	Water	Water			X	2	2-Aminopyridine is a targeted TIC.
Possible Hazard Identification Unconfirmed Deliverable Requested: I, II, III, IV, Other (specify)									
Sample Disposal (A fee may be assessed if samples are retained longer than 1 month) ☐ Return To Client ☐ Disposal By Lab ☐ Archive For _____ Months									
Special Instructions/QC Requirements:									
Empty Kit Relinquished by:									
Relinquished by:									
Relinquished by:									
Relinquished by:									
Custody Seals Intact: ☐ Yes ☐ No									
Custody Seal No.:									
Cooler Temperature(s) °C and Other Remarks:									
3.1 #1									

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Login Sample Receipt Checklist

Client: R & C Formation Ltd.

Job Number: 460-110137-1

Login Number: 110137

List Source: TestAmerica Edison

List Number: 1

Creator: Rivera, Kenneth

Question	Answer	Comment
Radioactivity wasn't checked or is <= background as measured by a survey meter.	N/A	
The cooler's custody seal, if present, is intact.	N/A	Not present
Sample custody seals, if present, are intact.	N/A	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	3.3°C, 3.2°C, IR #6
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	No analysis requiring residual chlorine check assigned.

Login Sample Receipt Checklist

Client: R & C Formation Ltd.

Job Number: 460-110137-1

Login Number: 110137

List Number: 2

Creator: Hulbert, Michael J

List Source: TestAmerica Buffalo

List Creation: 03/14/16 01:28 PM

Question	Answer	Comment
Radioactivity either was not measured or, if measured, is at or below background	True	
The cooler's custody seal, if present, is intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	3.1 #1
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the sample IDs on the containers and the COC.	True	
Samples are received within Holding Time (Excluding tests with immediate HTs)..	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
VOA sample vials do not have headspace or bubble is <6mm (1/4") in diameter.	N/A	
If necessary, staff have been informed of any short hold time or quick TAT needs	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Sampling Company provided.	True	
Samples received within 48 hours of sampling.	False	
Samples requiring field filtration have been filtered in the field.	True	
Chlorine Residual checked.	N/A	

ANALYTICAL REPORT

Job Number: 460-110178-1

Job Description: Nepera Maybrook Semi-Annual Sampling

For:
R & C Formation Ltd.
171 Deer Park Ave.,
Suite 3
Babylon, NY 11702
Attention: Mr. Robert Casson

Melissa Haas

Approved for release.
Melissa Haas
Project Manager I
3/30/2016 4:04 PM

Melissa Haas, Project Manager I
777 New Durham Road, Edison, NJ, 08817
(203)944-1310
melissa.haas@testamericainc.com
03/30/2016
Revision: 1

The test results in this report meet all NELAP requirements unless specified within the case narrative. Pursuant to NELAP, this report may not be reproduced, except in full, without the written approval of the laboratory. All questions regarding this report should be directed to the TestAmerica Edison Project Manager.

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TestAmerica Laboratories, Inc.

TestAmerica Edison 777 New Durham Road, Edison, NJ 08817
Tel (732) 549-3900 Fax (732) 549-3679 www.testamericainc.com

Job Number: 460-110178-1

Job Description: Nepera Maybrook Semi-Annual Sampling

I certify that this data package is in compliance with the terms and conditions of the contract, both technically and for completeness, for other than the conditions detailed within the body of this report. Release of the data contained in this sample data package and in the electronic data deliverable has been authorized by the Laboratory Manager or his/her designee, as verified by the following signature.

A handwritten signature in black ink that reads "Melissa Haas". The signature is written in a cursive, flowing style. Below the signature is a solid black horizontal line.

Approved for release.
Melissa Haas
Project Manager I
3/30/2016 4:04 PM

Melissa Haas

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CASE NARRATIVE

Client: R & C Formation Ltd.

Project: Nepera Maybrook Semi-Annual Sampling

Report Number: 460-110178-1

Revision #1

This case narrative is in the form of an exception report, where only the anomalies related to this report, method specific performance and/or QA/QC issues are discussed. If there are no issues to report, this narrative will include a statement that documents that there are no relevant data issues.

It should be noted that samples with elevated Reporting Limits (RLs) as a result of a dilution may not be able to satisfy customer reporting limits in some cases. Such increases in the RLs are unavoidable but acceptable consequence of sample dilution that enables quantification of target analytes or interferences which exceed the calibration range of the instrument.

Calculations are performed before rounding to avoid round-off errors in calculated results.

All holding times were met and proper preservation noted for the methods performed on these samples, unless otherwise detailed in the individual sections below.

REVISION #1

The following report required a revision: 460-110178-1. Details are as follows: The client added iron to the metals list - only manganese was listed on COC.

RECEIPT

The samples were received on 3/10/2016 2:00 PM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperatures of the 2 coolers at receipt time were 2.4° C and 3.6° C.

Note: All samples which require thermal preservation are considered acceptable if the arrival temperature is within 2C of the required temperature or method specified range. For samples with a specified temperature of 4C, samples with a temperature ranging from just above freezing temperature of water to 6C shall be acceptable. Samples that are hand delivered immediately following collection may not meet these criteria, however they will be deemed acceptable according to NELAC standards, if there is evidence that the chilling process has begun, such as arrival on ice, etc.

VOLATILE ORGANICS

Samples TB (460-110178-1), MW-12S (460-110178-2), MW-33S (460-110178-3), MW-20D (460-110178-4), MW-53D (460-110178-5), MW-16S (460-110178-6), MW-37S (460-110178-7), MW-25S (460-110178-8), OW-7 (460-110178-9), MW-DUP (460-110178-10) and OW-6 (460-110178-11) were analyzed for Volatile organics in accordance with EPA SW-846 Methods 8260C. The samples were analyzed on 03/16/2016 and 03/17/2016.

Samples OW-7 (460-110178-9)[5X], MW-DUP (460-110178-10)[5X] and OW-6 (460-110178-11)[20X] required dilution prior to analysis. The reporting limits have been adjusted accordingly.

The following samples were diluted to bring the concentration of target analytes within the calibration range: OW-7 (460-110178-9) and OW-6 (460-110178-11). Elevated reporting limits (RLs) are provided.

The following sample was diluted to bring the concentration of target analytes within the calibration range: MW-DUP (460-110178-10). Elevated reporting limits (RLs) are provided.

No other ulties were encountered during the Volatile organics analysis.

All quality control parameters were within the acceptance limits.

SEMIVOLATILE ORGANIC COMPOUNDS (GC/MS)

Samples MW-12S (460-110178-2), MW-33S (460-110178-3), MW-20D (460-110178-4), MW-53D (460-110178-5), MW-16S (460-110178-6), MW-37S (460-110178-7), MW-25S (460-110178-8), OW-7 (460-110178-9), MW-DUP (460-110178-10) and OW-6 (460-110178-11) were analyzed for semivolatile organic compounds (GC/MS) in accordance with EPA SW-846 Method 8270D. The samples were prepared on 03/14/2016 and analyzed on 03/21/2016 and 03/22/2016.

The recovery of surrogate Phenol-d5 was below 10% for the following sample: MW-33S (460-110178-3). This acid surrogate does not correspond to the target list of analytes; therefore, the data have been qualified and reported.

Pyridine was detected in method blank MB 480-290946/1-A at a level that was above the method detection limit but below the reporting

limit. The value should be considered an estimate, and has been flagged. If the associated sample reported a result above the MDL and/or RL, the result has been flagged. .

Phenol-d5 failed the surrogate recovery criteria low for MW-33S (460-110178-3).

Refer to the QC report for details.

Samples MW-16S (460-110178-6)[10X], MW-25S (460-110178-8)[20X], OW-7 (460-110178-9)[10X], MW-DUP (460-110178-10)[10X] and OW-6 (460-110178-11)[20X] required dilution prior to analysis. The reporting limits have been adjusted accordingly.

The following sample was diluted due to color: MW-16S (460-110178-6). Elevated reporting limits (RL) are provided.

The following samples were diluted to bring the concentration of target analytes within the calibration range: MW-25S (460-110178-8), OW-7 (460-110178-9), MW-DUP (460-110178-10) and OW-6 (460-110178-11). Elevated reporting limits (RLs) are provided.

The following samples required a dilution due to the nature of the sample matrix: MW-25S (460-110178-8), OW-7 (460-110178-9), MW-DUP (460-110178-10) and OW-6 (460-110178-11). Because of this dilution, the surrogate spike concentration in the sample was reduced to a level where the recovery calculation does not provide useful information.

No other difficulties were encountered during the semivolatiles analysis.

All other quality control parameters were within the acceptance limits.

METALS

Samples MW-33S (460-110178-3), MW-53D (460-110178-5), MW-16S (460-110178-6), MW-37S (460-110178-7), MW-25S (460-110178-8), OW-7 (460-110178-9), MW-DUP (460-110178-10) and OW-6 (460-110178-11) were analyzed for Metals in accordance with EPA SW-846 Methods 6010C. The samples were prepared on 03/16/2016 and 03/18/2016 and analyzed on 03/16/2016, 03/19/2016 and 03/20/2016.

Manganese failed the recovery criteria low for the MS of sample 460-110276-7 in batch 460-356666.

Refer to the QC report for details.

Samples MW-33S (460-110178-3)[5X], OW-7 (460-110178-9)[2X] and MW-DUP (460-110178-10)[2X] required dilution prior to analysis. The reporting limits have been adjusted accordingly.

No other difficulties were encountered during the Metals analysis.

All other quality control parameters were within the acceptance limits.

ANIONS

Samples MW-33S (460-110178-3), MW-53D (460-110178-5), MW-16S (460-110178-6), MW-37S (460-110178-7), MW-25S (460-110178-8), OW-7 (460-110178-9), MW-DUP (460-110178-10) and OW-6 (460-110178-11) were analyzed for anions in accordance with EPA Method 300_ORGFM_28D Anions by Ion Chromatograph. The samples were analyzed on 03/21/2016.

Sulfate failed the recovery criteria low for the MS/MSD of sample 460-110104-3 in batch 460-357567.

Refer to the QC report for details.

Samples MW-33S (460-110178-3)[20X], MW-53D (460-110178-5)[10X], MW-16S (460-110178-6)[10X], MW-37S (460-110178-7)[10X], MW-25S (460-110178-8)[10X], OW-7 (460-110178-9)[10X], MW-DUP (460-110178-10)[10X] and OW-6 (460-110178-11)[10X] required dilution prior to analysis. The reporting limits have been adjusted accordingly.

The following samples was diluted to bring the concentration of target analytes within the calibration range: MW-33S (460-110178-3), MW-53D (460-110178-5), MW-16S (460-110178-6), MW-37S (460-110178-7), MW-25S (460-110178-8), OW-7 (460-110178-9), MW-DUP (460-110178-10) and OW-6 (460-110178-11). Elevated reporting limits (RLs) are provided.

The following sample was diluted to bring the concentration of target analytes within the calibration range: MW-33S (460-110178-3). Elevated reporting limits (RLs) are provided.

No other difficulties were encountered during the anions analysis.

All other quality control parameters were within the acceptance limits.

AMMONIA

Samples MW-33S (460-110178-3), MW-53D (460-110178-5), MW-16S (460-110178-6), MW-37S (460-110178-7), MW-25S (460-110178-8), OW-7 (460-110178-9), MW-DUP (460-110178-10) and OW-6 (460-110178-11) were analyzed for ammonia in accordance with EPA Method 350.1. The samples were prepared and analyzed on 03/24/2016.

Ammonia failed the recovery criteria low for the MS/MSD of sample MW-53DMS (460-110178-5) in batch 460-358434.

The presence of the '4' qualifier in the data indicates analytes where the concentration in the unspiked sample exceeded four times the spiking amount.

Refer to the QC report for details.

Samples MW-33S (460-110178-3)[100X], MW-53D (460-110178-5)[10X], MW-37S (460-110178-7)[10X], MW-25S (460-110178-8)[2X], OW-7 (460-110178-9)[5X], MW-DUP (460-110178-10)[5X] and OW-6 (460-110178-11)[10X] required dilution prior to analysis. The reporting limits have been adjusted accordingly.

No other difficulties were encountered during the ammonia analysis.

All other quality control parameters were within the acceptance limits.

NITROGEN-NITRATE

Samples MW-33S (460-110178-3), MW-53D (460-110178-5), MW-16S (460-110178-6), MW-37S (460-110178-7), MW-25S (460-110178-8), OW-7 (460-110178-9), MW-DUP (460-110178-10) and OW-6 (460-110178-11) were analyzed for Nitrogen-Nitrate in accordance with SM 4500 NO3 F. The samples were analyzed on 03/11/2016.

No difficulties were encountered during the Nitrate analysis.

All quality control parameters were within the acceptance limits.

EXECUTIVE SUMMARY - Detections

Client: R & C Formation Ltd.

Job Number: 460-110178-1

Lab Sample ID Analyte	Client Sample ID	Result	Qualifier	Reporting Limit	Units	Method
460-110178-2	MW-12S					
Benzene		0.17	J	1.0	ug/L	8260C
Pyridine		0.53	J B	24	ug/L	8270D
460-110178-3	MW-33S					
Benzene		6.3		1.0	ug/L	8260C
Toluene		0.35	J	1.0	ug/L	8260C
Ethylbenzene		0.50	J	1.0	ug/L	8260C
Xylenes, Total		2.9		2.0	ug/L	8260C
2-Picoline		4.2	J	78	ug/L	8270D
Pyridine		0.68	J B	24	ug/L	8270D
Iron		286000		750	ug/L	6010C
Manganese		4740		75.0	ug/L	6010C
Ammonia		313		10.0	mg/L	350.1
Sulfate		333		12.0	mg/L	300.0
460-110178-4	MW-20D					
Benzene		60		1.0	ug/L	8260C
Toluene		6.9		1.0	ug/L	8260C
Ethylbenzene		2.3		1.0	ug/L	8260C
Xylenes, Total		3.0		2.0	ug/L	8260C
2-Picoline		18	J	74	ug/L	8270D
Pyridine		6.3	J B	23	ug/L	8270D
460-110178-5	MW-53D					
Benzene		4.1		1.0	ug/L	8260C
Pyridine		0.49	J B	24	ug/L	8270D
Iron		3820		150	ug/L	6010C
Manganese		330		15.0	ug/L	6010C
Ammonia		27.3		1.0	mg/L	350.1
Nitrate as N		0.057	J	0.10	mg/L	SM 4500 NO3 F
Sulfate		8.74		6.00	mg/L	300.0
460-110178-6	MW-16S					
Benzene		1.3		1.0	ug/L	8260C
Iron		3520		150	ug/L	6010C
Manganese		257		15.0	ug/L	6010C
Ammonia		2.7		0.10	mg/L	350.1
Nitrate as N		0.18		0.10	mg/L	SM 4500 NO3 F
Sulfate		119		6.00	mg/L	300.0

EXECUTIVE SUMMARY - Detections

Client: R & C Formation Ltd.

Job Number: 460-110178-1

Lab Sample ID Analyte	Client Sample ID	Result	Qualifier	Reporting Limit	Units	Method
460-110178-7	MW-37S					
Benzene		3.5		1.0	ug/L	8260C
Pyridine		0.71	J B	24	ug/L	8270D
Iron		10900		150	ug/L	6010C
Manganese		1280		15.0	ug/L	6010C
Ammonia		15.6		1.0	mg/L	350.1
Sulfate		139		6.00	mg/L	300.0
460-110178-8	MW-25S					
Benzene		44		1.0	ug/L	8260C
2-Picoline		120	J	1500	ug/L	8270D
Pyridine		0.47	J B	24	ug/L	8270D
Iron		3450		150	ug/L	6010C
Manganese		960		15.0	ug/L	6010C
Ammonia		4.5		0.20	mg/L	350.1
Sulfate		11.2		6.00	mg/L	300.0
460-110178-9	OW-7					
Benzene		2400		5.0	ug/L	8260C
2-Picoline		100	J	800	ug/L	8270D
Pyridine		0.66	J B	25	ug/L	8270D
Iron		9460		150	ug/L	6010C
Manganese		10500		30.0	ug/L	6010C
Ammonia		6.4		0.50	mg/L	350.1
Sulfate		8.30		6.00	mg/L	300.0
460-110178-10	MW-DUP					
Benzene		2400		5.0	ug/L	8260C
2-Picoline		99	J	900	ug/L	8270D
Iron		9710		300	ug/L	6010C
Manganese		10400		30.0	ug/L	6010C
Ammonia		6.4		0.50	mg/L	350.1
Sulfate		8.50		6.00	mg/L	300.0
460-110178-11	OW-6					
Benzene		3600		20	ug/L	8260C
2-Picoline		290	J	1600	ug/L	8270D
Iron		40800		150	ug/L	6010C
Manganese		3890		15.0	ug/L	6010C
Ammonia		10.7		1.0	mg/L	350.1
Sulfate		63.1		6.00	mg/L	300.0

METHOD SUMMARY

Client: R & C Formation Ltd.

Job Number: 460-110178-1

Description	Lab Location	Method	Preparation Method
Matrix: Water			
Volatile Organic Compounds by GC/MS	TAL EDI	SW846 8260C	
Purge and Trap	TAL EDI		SW846 5030C
Anions, Ion Chromatography	TAL EDI	MCAWW 300.0	
Metals (ICP)	TAL EDI	SW846 6010C	
Preparation, Total Metals	TAL EDI		SW846 3010A
Nitrogen, Ammonia	TAL EDI	MCAWW 350.1	
Distillation, Ammonia	TAL EDI		Distill/Ammonia
Nitrogen, Nitrate	TAL EDI	SM SM 4500 NO3 F	
Semivolatile Organic Compounds (GC/MS)	TAL BUF	SW846 8270D	
Liquid-Liquid Extraction (Separatory Funnel)	TAL BUF		SW846 3510C

Lab References:

TAL BUF = TestAmerica Buffalo

TAL EDI = TestAmerica Edison

Method References:

MCAWW = "Methods For Chemical Analysis Of Water And Wastes", EPA-600/4-79-020, March 1983 And Subsequent Revisions.

SM = "Standard Methods For The Examination Of Water And Wastewater"

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

METHOD / ANALYST SUMMARY

Client: R & C Formation Ltd.

Job Number: 460-110178-1

Method	Analyst	Analyst ID
SW846 8260C	Martinez, Eddie	EMM
SW846 8270D	Quirk, Patrick J	PJQ
SW846 8270D	Richards, Devon M	DMR
SW846 6010C	Chang, Churn Der	CDC
MCAWW 350.1	Vu, Huan	HTV
SM SM 4500 NO3 F	Leye, Mamadou	MAL
MCAWW 300.0	Boykin, Carol B	CBB

SAMPLE SUMMARY

Client: R & C Formation Ltd.

Job Number: 460-110178-1

Lab Sample ID	Client Sample ID	Client Matrix	Date/Time Sampled	Date/Time Received
460-110178-1TB	TB	Water	03/10/2016 0000	03/10/2016 1400
460-110178-2	MW-12S	Water	03/10/2016 0853	03/10/2016 1400
460-110178-3	MW-33S	Water	03/10/2016 0921	03/10/2016 1400
460-110178-4	MW-20D	Water	03/10/2016 0950	03/10/2016 1400
460-110178-5	MW-53D	Water	03/10/2016 1019	03/10/2016 1400
460-110178-6	MW-16S	Water	03/10/2016 1048	03/10/2016 1400
460-110178-7	MW-37S	Water	03/10/2016 1121	03/10/2016 1400
460-110178-8	MW-25S	Water	03/10/2016 1149	03/10/2016 1400
460-110178-9	OW-7	Water	03/10/2016 1205	03/10/2016 1400
460-110178-10	MW-DUP	Water	03/10/2016 0000	03/10/2016 1400
460-110178-11	OW-6	Water	03/10/2016 1221	03/10/2016 1400

SAMPLE RESULTS

Analytical Data

Client: R & C Formation Ltd.

Job Number: 460-110178-1

Client Sample ID: TB

Lab Sample ID: 460-110178-1TB

Client Matrix: Water

Date Sampled: 03/10/2016 0000

Date Received: 03/10/2016 1400

8260C Volatile Organic Compounds by GC/MS

Analysis Method:	8260C	Analysis Batch:	460-356404	Instrument ID:	CVOAMS10
Prep Method:	5030C	Prep Batch:	N/A	Lab File ID:	R32048.D
Dilution:	1.0			Initial Weight/Volume:	5 mL
Analysis Date:	03/16/2016 0212			Final Weight/Volume:	5 mL
Prep Date:	03/16/2016 0212				

Analyte	Result (ug/L)	Qualifier	MDL	RL
Benzene	1.0	U	0.090	1.0
Toluene	1.0	U	0.25	1.0
Ethylbenzene	1.0	U	0.30	1.0
Xylenes, Total	2.0	U	0.28	2.0

Surrogate	%Rec	Qualifier	Acceptance Limits
1,2-Dichloroethane-d4 (Surr)	100		70 - 137
Bromofluorobenzene	104		70 - 131
Toluene-d8 (Surr)	102		74 - 120
Dibromofluoromethane (Surr)	99		72 - 136

Analytical Data

Client: R & C Formation Ltd.

Job Number: 460-110178-1

Client Sample ID: MW-12S

Lab Sample ID: 460-110178-2

Client Matrix: Water

Date Sampled: 03/10/2016 0853

Date Received: 03/10/2016 1400

8260C Volatile Organic Compounds by GC/MS

Analysis Method:	8260C	Analysis Batch:	460-356404	Instrument ID:	CVOAMS10
Prep Method:	5030C	Prep Batch:	N/A	Lab File ID:	R32052.D
Dilution:	1.0			Initial Weight/Volume:	5 mL
Analysis Date:	03/16/2016 0345			Final Weight/Volume:	5 mL
Prep Date:	03/16/2016 0345				

Analyte	Result (ug/L)	Qualifier	MDL	RL
Benzene	0.17	J	0.090	1.0
Toluene	1.0	U	0.25	1.0
Ethylbenzene	1.0	U	0.30	1.0
Xylenes, Total	2.0	U	0.28	2.0

Surrogate	%Rec	Qualifier	Acceptance Limits
1,2-Dichloroethane-d4 (Surr)	101		70 - 137
Bromofluorobenzene	103		70 - 131
Toluene-d8 (Surr)	101		74 - 120
Dibromofluoromethane (Surr)	100		72 - 136

Analytical Data

Client: R & C Formation Ltd.

Job Number: 460-110178-1

Client Sample ID: MW-33S

Lab Sample ID: 460-110178-3

Client Matrix: Water

Date Sampled: 03/10/2016 0921

Date Received: 03/10/2016 1400

8260C Volatile Organic Compounds by GC/MS

Analysis Method:	8260C	Analysis Batch:	460-356404	Instrument ID:	CVOAMS10
Prep Method:	5030C	Prep Batch:	N/A	Lab File ID:	R32053.D
Dilution:	1.0			Initial Weight/Volume:	5 mL
Analysis Date:	03/16/2016 0409			Final Weight/Volume:	5 mL
Prep Date:	03/16/2016 0409				

Analyte	Result (ug/L)	Qualifier	MDL	RL
Benzene	6.3		0.090	1.0
Toluene	0.35	J	0.25	1.0
Ethylbenzene	0.50	J	0.30	1.0
Xylenes, Total	2.9		0.28	2.0

Surrogate	%Rec	Qualifier	Acceptance Limits
1,2-Dichloroethane-d4 (Surr)	100		70 - 137
Bromofluorobenzene	103		70 - 131
Toluene-d8 (Surr)	102		74 - 120
Dibromofluoromethane (Surr)	99		72 - 136

Analytical Data

Client: R & C Formation Ltd.

Job Number: 460-110178-1

Client Sample ID: MW-20D

Lab Sample ID: 460-110178-4

Client Matrix: Water

Date Sampled: 03/10/2016 0950

Date Received: 03/10/2016 1400

8260C Volatile Organic Compounds by GC/MS

Analysis Method:	8260C	Analysis Batch:	460-356404	Instrument ID:	CVOAMS10
Prep Method:	5030C	Prep Batch:	N/A	Lab File ID:	R32054.D
Dilution:	1.0			Initial Weight/Volume:	5 mL
Analysis Date:	03/16/2016 0432			Final Weight/Volume:	5 mL
Prep Date:	03/16/2016 0432				

Analyte	Result (ug/L)	Qualifier	MDL	RL
Benzene	60		0.090	1.0
Toluene	6.9		0.25	1.0
Ethylbenzene	2.3		0.30	1.0
Xylenes, Total	3.0		0.28	2.0

Surrogate	%Rec	Qualifier	Acceptance Limits
1,2-Dichloroethane-d4 (Surr)	101		70 - 137
Bromofluorobenzene	105		70 - 131
Toluene-d8 (Surr)	101		74 - 120
Dibromofluoromethane (Surr)	96		72 - 136

Analytical Data

Client: R & C Formation Ltd.

Job Number: 460-110178-1

Client Sample ID: MW-53D

Lab Sample ID: 460-110178-5

Client Matrix: Water

Date Sampled: 03/10/2016 1019

Date Received: 03/10/2016 1400

8260C Volatile Organic Compounds by GC/MS

Analysis Method:	8260C	Analysis Batch:	460-356404	Instrument ID:	CVOAMS10
Prep Method:	5030C	Prep Batch:	N/A	Lab File ID:	R32055.D
Dilution:	1.0			Initial Weight/Volume:	5 mL
Analysis Date:	03/16/2016 0456			Final Weight/Volume:	5 mL
Prep Date:	03/16/2016 0456				

Analyte	Result (ug/L)	Qualifier	MDL	RL
Benzene	4.1		0.090	1.0
Toluene	1.0	U	0.25	1.0
Ethylbenzene	1.0	U	0.30	1.0
Xylenes, Total	2.0	U	0.28	2.0

Surrogate	%Rec	Qualifier	Acceptance Limits
1,2-Dichloroethane-d4 (Surr)	100		70 - 137
Bromofluorobenzene	104		70 - 131
Toluene-d8 (Surr)	100		74 - 120
Dibromofluoromethane (Surr)	99		72 - 136

Analytical Data

Client: R & C Formation Ltd.

Job Number: 460-110178-1

Client Sample ID: MW-16S

Lab Sample ID: 460-110178-6

Client Matrix: Water

Date Sampled: 03/10/2016 1048

Date Received: 03/10/2016 1400

8260C Volatile Organic Compounds by GC/MS

Analysis Method:	8260C	Analysis Batch:	460-356404	Instrument ID:	CVOAMS10
Prep Method:	5030C	Prep Batch:	N/A	Lab File ID:	R32056.D
Dilution:	1.0			Initial Weight/Volume:	5 mL
Analysis Date:	03/16/2016 0519			Final Weight/Volume:	5 mL
Prep Date:	03/16/2016 0519				

Analyte	Result (ug/L)	Qualifier	MDL	RL
Benzene	1.3		0.090	1.0
Toluene	1.0	U	0.25	1.0
Ethylbenzene	1.0	U	0.30	1.0
Xylenes, Total	2.0	U	0.28	2.0

Surrogate	%Rec	Qualifier	Acceptance Limits
1,2-Dichloroethane-d4 (Surr)	101		70 - 137
Bromofluorobenzene	102		70 - 131
Toluene-d8 (Surr)	101		74 - 120
Dibromofluoromethane (Surr)	98		72 - 136

Analytical Data

Client: R & C Formation Ltd.

Job Number: 460-110178-1

Client Sample ID: MW-37S

Lab Sample ID: 460-110178-7

Client Matrix: Water

Date Sampled: 03/10/2016 1121

Date Received: 03/10/2016 1400

8260C Volatile Organic Compounds by GC/MS

Analysis Method:	8260C	Analysis Batch:	460-356404	Instrument ID:	CVOAMS10
Prep Method:	5030C	Prep Batch:	N/A	Lab File ID:	R32057.D
Dilution:	1.0			Initial Weight/Volume:	5 mL
Analysis Date:	03/16/2016 0542			Final Weight/Volume:	5 mL
Prep Date:	03/16/2016 0542				

Analyte	Result (ug/L)	Qualifier	MDL	RL
Benzene	3.5		0.090	1.0
Toluene	1.0	U	0.25	1.0
Ethylbenzene	1.0	U	0.30	1.0
Xylenes, Total	2.0	U	0.28	2.0

Surrogate	%Rec	Qualifier	Acceptance Limits
1,2-Dichloroethane-d4 (Surr)	102		70 - 137
Bromofluorobenzene	102		70 - 131
Toluene-d8 (Surr)	100		74 - 120
Dibromofluoromethane (Surr)	99		72 - 136

Analytical Data

Client: R & C Formation Ltd.

Job Number: 460-110178-1

Client Sample ID: MW-25S

Lab Sample ID: 460-110178-8

Client Matrix: Water

Date Sampled: 03/10/2016 1149

Date Received: 03/10/2016 1400

8260C Volatile Organic Compounds by GC/MS

Analysis Method:	8260C	Analysis Batch:	460-356404	Instrument ID:	CVOAMS10
Prep Method:	5030C	Prep Batch:	N/A	Lab File ID:	R32058.D
Dilution:	1.0			Initial Weight/Volume:	5 mL
Analysis Date:	03/16/2016 0606			Final Weight/Volume:	5 mL
Prep Date:	03/16/2016 0606				

Analyte	Result (ug/L)	Qualifier	MDL	RL
Benzene	44		0.090	1.0
Toluene	1.0	U	0.25	1.0
Ethylbenzene	1.0	U	0.30	1.0
Xylenes, Total	2.0	U	0.28	2.0

Surrogate	%Rec	Qualifier	Acceptance Limits
1,2-Dichloroethane-d4 (Surr)	102		70 - 137
Bromofluorobenzene	102		70 - 131
Toluene-d8 (Surr)	101		74 - 120
Dibromofluoromethane (Surr)	96		72 - 136

Analytical Data

Client: R & C Formation Ltd.

Job Number: 460-110178-1

Client Sample ID: OW-7

Lab Sample ID: 460-110178-9

Client Matrix: Water

Date Sampled: 03/10/2016 1205

Date Received: 03/10/2016 1400

8260C Volatile Organic Compounds by GC/MS

Analysis Method:	8260C	Analysis Batch:	460-356529	Instrument ID:	CVOAMS10
Prep Method:	5030C	Prep Batch:	N/A	Lab File ID:	R32074.D
Dilution:	5.0			Initial Weight/Volume:	5 mL
Analysis Date:	03/16/2016 1307			Final Weight/Volume:	5 mL
Prep Date:	03/16/2016 1307				

Analyte	Result (ug/L)	Qualifier	MDL	RL
Benzene	2400		0.45	5.0
Toluene	5.0	U	1.3	5.0
Ethylbenzene	5.0	U	1.5	5.0
Xylenes, Total	10	U	1.4	10

Surrogate	%Rec	Qualifier	Acceptance Limits
1,2-Dichloroethane-d4 (Surr)	101		70 - 137
Bromofluorobenzene	101		70 - 131
Toluene-d8 (Surr)	101		74 - 120
Dibromofluoromethane (Surr)	96		72 - 136

Analytical Data

Client: R & C Formation Ltd.

Job Number: 460-110178-1

Client Sample ID: MW-DUP

Lab Sample ID: 460-110178-10

Client Matrix: Water

Date Sampled: 03/10/2016 0000

Date Received: 03/10/2016 1400

8260C Volatile Organic Compounds by GC/MS

Analysis Method:	8260C	Analysis Batch:	460-356690	Instrument ID:	CVOAMS10
Prep Method:	5030C	Prep Batch:	N/A	Lab File ID:	R32116.D
Dilution:	5.0			Initial Weight/Volume:	5 mL
Analysis Date:	03/17/2016 0726			Final Weight/Volume:	5 mL
Prep Date:	03/17/2016 0726				

Analyte	Result (ug/L)	Qualifier	MDL	RL
Benzene	2400		0.45	5.0
Toluene	5.0	U	1.3	5.0
Ethylbenzene	5.0	U	1.5	5.0
Xylenes, Total	10	U	1.4	10

Surrogate	%Rec	Qualifier	Acceptance Limits
1,2-Dichloroethane-d4 (Surr)	93		70 - 137
Bromofluorobenzene	101		70 - 131
Toluene-d8 (Surr)	100		74 - 120
Dibromofluoromethane (Surr)	96		72 - 136

Analytical Data

Client: R & C Formation Ltd.

Job Number: 460-110178-1

Client Sample ID: OW-6

Lab Sample ID: 460-110178-11

Client Matrix: Water

Date Sampled: 03/10/2016 1221

Date Received: 03/10/2016 1400

8260C Volatile Organic Compounds by GC/MS

Analysis Method:	8260C	Analysis Batch:	460-356529	Instrument ID:	CVOAMS10
Prep Method:	5030C	Prep Batch:	N/A	Lab File ID:	R32076.D
Dilution:	20			Initial Weight/Volume:	5 mL
Analysis Date:	03/16/2016 1353			Final Weight/Volume:	5 mL
Prep Date:	03/16/2016 1353				

Analyte	Result (ug/L)	Qualifier	MDL	RL
Benzene	3600		1.8	20
Toluene	20	U	5.0	20
Ethylbenzene	20	U	6.0	20
Xylenes, Total	40	U	5.6	40

Surrogate	%Rec	Qualifier	Acceptance Limits
1,2-Dichloroethane-d4 (Surr)	100		70 - 137
Bromofluorobenzene	101		70 - 131
Toluene-d8 (Surr)	101		74 - 120
Dibromofluoromethane (Surr)	97		72 - 136

Analytical Data

Client: R & C Formation Ltd.

Job Number: 460-110178-1

Client Sample ID: MW-12S

Lab Sample ID: 460-110178-2

Client Matrix: Water

Date Sampled: 03/10/2016 0853

Date Received: 03/10/2016 1400

8270D Semivolatile Organic Compounds (GC/MS)

Analysis Method:	8270D	Analysis Batch:	480-291896	Instrument ID:	HP5973W
Prep Method:	3510C	Prep Batch:	480-290946	Lab File ID:	W0244.D
Dilution:	1.0			Initial Weight/Volume:	262.3 mL
Analysis Date:	03/21/2016 0755			Final Weight/Volume:	1 mL
Prep Date:	03/14/2016 1427			Injection Volume:	2 uL

Analyte	Result (ug/L)	Qualifier	MDL	RL
2-Picoline	76	U	1.3	76
Pyridine	0.53	J B	0.39	24

Surrogate	%Rec	Qualifier	Acceptance Limits
Nitrobenzene-d5	95		46 - 120
2-Fluorobiphenyl	93		48 - 120
p-Terphenyl-d14	102		67 - 150
Phenol-d5	43		16 - 120
2-Fluorophenol	66		20 - 120
2,4,6-Tribromophenol	113		52 - 132

Analytical Data

Client: R & C Formation Ltd.

Job Number: 460-110178-1

Client Sample ID: MW-12S

Lab Sample ID: 460-110178-2

Client Matrix: Water

Date Sampled: 03/10/2016 0853

Date Received: 03/10/2016 1400

8270D Semivolatile Organic Compounds (GC/MS)

Analysis Method:	8270D	Analysis Batch:	480-291896	Instrument ID:	HP5973W
Prep Method:	3510C	Prep Batch:	480-290946	Lab File ID:	W0244.D
Dilution:	1.0			Initial Weight/Volume:	262.3 mL
Analysis Date:	03/21/2016 0755			Final Weight/Volume:	1 mL
Prep Date:	03/14/2016 1427			Injection Volume:	2 uL

Targeted Tentatively Identified Compounds

Cas Number	Analyte	Est. Result (ug/L)	Qualifier
504-29-0	2-Aminopyridine TIC	9.5	U

Analytical Data

Client: R & C Formation Ltd.

Job Number: 460-110178-1

Client Sample ID: MW-33S

Lab Sample ID: 460-110178-3

Client Matrix: Water

Date Sampled: 03/10/2016 0921

Date Received: 03/10/2016 1400

8270D Semivolatile Organic Compounds (GC/MS)

Analysis Method:	8270D	Analysis Batch:	480-291896	Instrument ID:	HP5973W
Prep Method:	3510C	Prep Batch:	480-290946	Lab File ID:	W0245.D
Dilution:	1.0			Initial Weight/Volume:	256.5 mL
Analysis Date:	03/21/2016 0824			Final Weight/Volume:	1 mL
Prep Date:	03/14/2016 1427			Injection Volume:	2 uL

Analyte	Result (ug/L)	Qualifier	MDL	RL
2-Picoline	4.2	J	1.4	78
Pyridine	0.68	J B	0.40	24

Surrogate	%Rec	Qualifier	Acceptance Limits
Nitrobenzene-d5	103		46 - 120
2-Fluorobiphenyl	96		48 - 120
p-Terphenyl-d14	79		67 - 150
Phenol-d5	7	*	16 - 120
2-Fluorophenol	67		20 - 120
2,4,6-Tribromophenol	124		52 - 132

Analytical Data

Client: R & C Formation Ltd.

Job Number: 460-110178-1

Client Sample ID: MW-33S

Lab Sample ID: 460-110178-3

Client Matrix: Water

Date Sampled: 03/10/2016 0921

Date Received: 03/10/2016 1400

8270D Semivolatile Organic Compounds (GC/MS)

Analysis Method:	8270D	Analysis Batch:	480-291896	Instrument ID:	HP5973W
Prep Method:	3510C	Prep Batch:	480-290946	Lab File ID:	W0245.D
Dilution:	1.0			Initial Weight/Volume:	256.5 mL
Analysis Date:	03/21/2016 0824			Final Weight/Volume:	1 mL
Prep Date:	03/14/2016 1427			Injection Volume:	2 uL

Targeted Tentatively Identified Compounds

Cas Number	Analyte	Est. Result (ug/L)	Qualifier
504-29-0	2-Aminopyridine TIC	9.7	U

Analytical Data

Client: R & C Formation Ltd.

Job Number: 460-110178-1

Client Sample ID: MW-20D

Lab Sample ID: 460-110178-4

Client Matrix: Water

Date Sampled: 03/10/2016 0950

Date Received: 03/10/2016 1400

8270D Semivolatile Organic Compounds (GC/MS)

Analysis Method:	8270D	Analysis Batch:	480-291896	Instrument ID:	HP5973W
Prep Method:	3510C	Prep Batch:	480-290946	Lab File ID:	W0246.D
Dilution:	1.0			Initial Weight/Volume:	271.3 mL
Analysis Date:	03/21/2016 0853			Final Weight/Volume:	1 mL
Prep Date:	03/14/2016 1427			Injection Volume:	2 uL

Analyte	Result (ug/L)	Qualifier	MDL	RL
2-Picoline	18	J	1.3	74
Pyridine	6.3	J B	0.38	23

Surrogate	%Rec	Qualifier	Acceptance Limits
Nitrobenzene-d5	111		46 - 120
2-Fluorobiphenyl	96		48 - 120
p-Terphenyl-d14	93		67 - 150
Phenol-d5	40		16 - 120
2-Fluorophenol	69		20 - 120
2,4,6-Tribromophenol	117		52 - 132

Analytical Data

Client: R & C Formation Ltd.

Job Number: 460-110178-1

Client Sample ID: MW-20D

Lab Sample ID: 460-110178-4

Client Matrix: Water

Date Sampled: 03/10/2016 0950

Date Received: 03/10/2016 1400

8270D Semivolatile Organic Compounds (GC/MS)

Analysis Method:	8270D	Analysis Batch:	480-291896	Instrument ID:	HP5973W
Prep Method:	3510C	Prep Batch:	480-290946	Lab File ID:	W0246.D
Dilution:	1.0			Initial Weight/Volume:	271.3 mL
Analysis Date:	03/21/2016 0853			Final Weight/Volume:	1 mL
Prep Date:	03/14/2016 1427			Injection Volume:	2 uL

Targeted Tentatively Identified Compounds

Cas Number	Analyte	Est. Result (ug/L)	Qualifier
504-29-0	2-Aminopyridine TIC	9.2	U

Analytical Data

Client: R & C Formation Ltd.

Job Number: 460-110178-1

Client Sample ID: MW-53D

Lab Sample ID: 460-110178-5

Client Matrix: Water

Date Sampled: 03/10/2016 1019

Date Received: 03/10/2016 1400

8270D Semivolatile Organic Compounds (GC/MS)

Analysis Method:	8270D	Analysis Batch:	480-291896	Instrument ID:	HP5973W
Prep Method:	3510C	Prep Batch:	480-290946	Lab File ID:	W0247.D
Dilution:	1.0			Initial Weight/Volume:	261.1 mL
Analysis Date:	03/21/2016 0922			Final Weight/Volume:	1 mL
Prep Date:	03/14/2016 1427			Injection Volume:	2 uL

Analyte	Result (ug/L)	Qualifier	MDL	RL
2-Picoline	77	U	1.3	77
Pyridine	0.49	J B	0.39	24

Surrogate	%Rec	Qualifier	Acceptance Limits
Nitrobenzene-d5	103		46 - 120
2-Fluorobiphenyl	98		48 - 120
p-Terphenyl-d14	101		67 - 150
Phenol-d5	47		16 - 120
2-Fluorophenol	71		20 - 120
2,4,6-Tribromophenol	118		52 - 132

Analytical Data

Client: R & C Formation Ltd.

Job Number: 460-110178-1

Client Sample ID: MW-53D

Lab Sample ID: 460-110178-5

Client Matrix: Water

Date Sampled: 03/10/2016 1019

Date Received: 03/10/2016 1400

8270D Semivolatile Organic Compounds (GC/MS)

Analysis Method:	8270D	Analysis Batch:	480-291896	Instrument ID:	HP5973W
Prep Method:	3510C	Prep Batch:	480-290946	Lab File ID:	W0247.D
Dilution:	1.0			Initial Weight/Volume:	261.1 mL
Analysis Date:	03/21/2016 0922			Final Weight/Volume:	1 mL
Prep Date:	03/14/2016 1427			Injection Volume:	2 uL

Targeted Tentatively Identified Compounds

Cas Number	Analyte	Est. Result (ug/L)	Qualifier
504-29-0	2-Aminopyridine TIC	9.6	U

Analytical Data

Client: R & C Formation Ltd.

Job Number: 460-110178-1

Client Sample ID: MW-16S

Lab Sample ID: 460-110178-6

Client Matrix: Water

Date Sampled: 03/10/2016 1048

Date Received: 03/10/2016 1400

8270D Semivolatile Organic Compounds (GC/MS)

Analysis Method:	8270D	Analysis Batch:	480-291896	Instrument ID:	HP5973W
Prep Method:	3510C	Prep Batch:	480-290946	Lab File ID:	W0248.D
Dilution:	10			Initial Weight/Volume:	243.6 mL
Analysis Date:	03/21/2016 0951			Final Weight/Volume:	1 mL
Prep Date:	03/14/2016 1427			Injection Volume:	2 uL

Analyte	Result (ug/L)	Qualifier	MDL	RL
2-Picoline	820	U	14	820
Pyridine	260	U	4.2	260

Surrogate	%Rec	Qualifier	Acceptance Limits
Nitrobenzene-d5	73		46 - 120
2-Fluorobiphenyl	74		48 - 120
p-Terphenyl-d14	76		67 - 150
Phenol-d5	35		16 - 120
2-Fluorophenol	51		20 - 120
2,4,6-Tribromophenol	88		52 - 132

Analytical Data

Client: R & C Formation Ltd.

Job Number: 460-110178-1

Client Sample ID: MW-16S

Lab Sample ID: 460-110178-6

Client Matrix: Water

Date Sampled: 03/10/2016 1048

Date Received: 03/10/2016 1400

8270D Semivolatile Organic Compounds (GC/MS)

Analysis Method:	8270D	Analysis Batch:	480-291896	Instrument ID:	HP5973W
Prep Method:	3510C	Prep Batch:	480-290946	Lab File ID:	W0248.D
Dilution:	10			Initial Weight/Volume:	243.6 mL
Analysis Date:	03/21/2016 0951			Final Weight/Volume:	1 mL
Prep Date:	03/14/2016 1427			Injection Volume:	2 uL

Targeted Tentatively Identified Compounds

Cas Number	Analyte	Est. Result (ug/L)	Qualifier
504-29-0	2-Aminopyridine TIC	100	U

Analytical Data

Client: R & C Formation Ltd.

Job Number: 460-110178-1

Client Sample ID: MW-37S

Lab Sample ID: 460-110178-7

Client Matrix: Water

Date Sampled: 03/10/2016 1121

Date Received: 03/10/2016 1400

8270D Semivolatile Organic Compounds (GC/MS)

Analysis Method:	8270D	Analysis Batch:	480-291896	Instrument ID:	HP5973W
Prep Method:	3510C	Prep Batch:	480-290946	Lab File ID:	W0249.D
Dilution:	1.0			Initial Weight/Volume:	264.5 mL
Analysis Date:	03/21/2016 1020			Final Weight/Volume:	1 mL
Prep Date:	03/14/2016 1427			Injection Volume:	2 uL

Analyte	Result (ug/L)	Qualifier	MDL	RL
2-Picoline	76	U	1.3	76
Pyridine	0.71	J B	0.39	24

Surrogate	%Rec	Qualifier	Acceptance Limits
Nitrobenzene-d5	89		46 - 120
2-Fluorobiphenyl	86		48 - 120
p-Terphenyl-d14	87		67 - 150
Phenol-d5	40		16 - 120
2-Fluorophenol	64		20 - 120
2,4,6-Tribromophenol	104		52 - 132

Analytical Data

Client: R & C Formation Ltd.

Job Number: 460-110178-1

Client Sample ID: MW-37S

Lab Sample ID: 460-110178-7

Client Matrix: Water

Date Sampled: 03/10/2016 1121

Date Received: 03/10/2016 1400

8270D Semivolatile Organic Compounds (GC/MS)

Analysis Method:	8270D	Analysis Batch:	480-291896	Instrument ID:	HP5973W
Prep Method:	3510C	Prep Batch:	480-290946	Lab File ID:	W0249.D
Dilution:	1.0			Initial Weight/Volume:	264.5 mL
Analysis Date:	03/21/2016 1020			Final Weight/Volume:	1 mL
Prep Date:	03/14/2016 1427			Injection Volume:	2 uL

Targeted Tentatively Identified Compounds

Cas Number	Analyte	Est. Result (ug/L)	Qualifier
504-29-0	2-Aminopyridine TIC	9.5	U

Analytical Data

Client: R & C Formation Ltd.

Job Number: 460-110178-1

Client Sample ID: MW-25S

Lab Sample ID: 460-110178-8

Client Matrix: Water

Date Sampled: 03/10/2016 1149

Date Received: 03/10/2016 1400

8270D Semivolatile Organic Compounds (GC/MS)

Analysis Method:	8270D	Analysis Batch:	480-291896	Instrument ID:	HP5973W
Prep Method:	3510C	Prep Batch:	480-290946	Lab File ID:	W0250.D
Dilution:	1.0			Initial Weight/Volume:	261.1 mL
Analysis Date:	03/21/2016 1049			Final Weight/Volume:	1 mL
Prep Date:	03/14/2016 1427			Injection Volume:	2 uL

Analyte	Result (ug/L)	Qualifier	MDL	RL
Pyridine	0.47	J B	0.39	24

Surrogate	%Rec	Qualifier	Acceptance Limits
Nitrobenzene-d5	99		46 - 120
2-Fluorobiphenyl	110		48 - 120
p-Terphenyl-d14	82		67 - 150
Phenol-d5	45		16 - 120
2-Fluorophenol	69		20 - 120
2,4,6-Tribromophenol	100		52 - 132

Analytical Data

Client: R & C Formation Ltd.

Job Number: 460-110178-1

Client Sample ID: MW-25S

Lab Sample ID: 460-110178-8

Client Matrix: Water

Date Sampled: 03/10/2016 1149

Date Received: 03/10/2016 1400

8270D Semivolatile Organic Compounds (GC/MS)

Analysis Method:	8270D	Analysis Batch:	480-291896	Instrument ID:	HP5973W
Prep Method:	3510C	Prep Batch:	480-290946	Lab File ID:	W0250.D
Dilution:	1.0			Initial Weight/Volume:	261.1 mL
Analysis Date:	03/21/2016 1049			Final Weight/Volume:	1 mL
Prep Date:	03/14/2016 1427			Injection Volume:	2 uL

Targeted Tentatively Identified Compounds

Cas Number	Analyte	Est. Result (ug/L)	Qualifier
504-29-0	2-Aminopyridine TIC	9.6	U

Analytical Data

Client: R & C Formation Ltd.

Job Number: 460-110178-1

Client Sample ID: MW-25S

Lab Sample ID: 460-110178-8

Client Matrix: Water

Date Sampled: 03/10/2016 1149

Date Received: 03/10/2016 1400

8270D Semivolatile Organic Compounds (GC/MS)

Analysis Method:	8270D	Analysis Batch:	480-292162	Instrument ID:	HP5973W
Prep Method:	3510C	Prep Batch:	480-290946	Lab File ID:	W0290.D
Dilution:	20			Initial Weight/Volume:	261.1 mL
Analysis Date:	03/22/2016 1738	Run Type:	DL	Final Weight/Volume:	1 mL
Prep Date:	03/14/2016 1427			Injection Volume:	2 uL

Analyte	Result (ug/L)	Qualifier	MDL	RL
2-Picoline	120	J	27	1500

Surrogate	%Rec	Qualifier	Acceptance Limits
Nitrobenzene-d5	83		46 - 120
2-Fluorobiphenyl	93		48 - 120
p-Terphenyl-d14	70		67 - 150
Phenol-d5	41		16 - 120
2-Fluorophenol	62		20 - 120
2,4,6-Tribromophenol	80		52 - 132

Analytical Data

Client: R & C Formation Ltd.

Job Number: 460-110178-1

Client Sample ID: OW-7

Lab Sample ID: 460-110178-9

Client Matrix: Water

Date Sampled: 03/10/2016 1205

Date Received: 03/10/2016 1400

8270D Semivolatile Organic Compounds (GC/MS)

Analysis Method:	8270D	Analysis Batch:	480-291896	Instrument ID:	HP5973W
Prep Method:	3510C	Prep Batch:	480-290946	Lab File ID:	W0251.D
Dilution:	1.0			Initial Weight/Volume:	250.8 mL
Analysis Date:	03/21/2016 1118			Final Weight/Volume:	1 mL
Prep Date:	03/14/2016 1427			Injection Volume:	2 uL

Analyte	Result (ug/L)	Qualifier	MDL	RL
Pyridine	0.66	J B	0.41	25

Surrogate	%Rec	Qualifier	Acceptance Limits
Nitrobenzene-d5	105		46 - 120
2-Fluorobiphenyl	111		48 - 120
p-Terphenyl-d14	90		67 - 150
Phenol-d5	49		16 - 120
2-Fluorophenol	77		20 - 120
2,4,6-Tribromophenol	117		52 - 132

Analytical Data

Client: R & C Formation Ltd.

Job Number: 460-110178-1

Client Sample ID: OW-7

Lab Sample ID: 460-110178-9

Client Matrix: Water

Date Sampled: 03/10/2016 1205

Date Received: 03/10/2016 1400

8270D Semivolatile Organic Compounds (GC/MS)

Analysis Method:	8270D	Analysis Batch:	480-291896	Instrument ID:	HP5973W
Prep Method:	3510C	Prep Batch:	480-290946	Lab File ID:	W0251.D
Dilution:	1.0			Initial Weight/Volume:	250.8 mL
Analysis Date:	03/21/2016 1118			Final Weight/Volume:	1 mL
Prep Date:	03/14/2016 1427			Injection Volume:	2 uL

Targeted Tentatively Identified Compounds

Cas Number	Analyte	Est. Result (ug/L)	Qualifier
504-29-0	2-Aminopyridine TIC	10	U

Analytical Data

Client: R & C Formation Ltd.

Job Number: 460-110178-1

Client Sample ID: OW-7

Lab Sample ID: 460-110178-9

Client Matrix: Water

Date Sampled: 03/10/2016 1205

Date Received: 03/10/2016 1400

8270D Semivolatile Organic Compounds (GC/MS)

Analysis Method:	8270D	Analysis Batch:	480-292162	Instrument ID:	HP5973W
Prep Method:	3510C	Prep Batch:	480-290946	Lab File ID:	W0291.D
Dilution:	10			Initial Weight/Volume:	250.8 mL
Analysis Date:	03/22/2016 1808	Run Type:	DL	Final Weight/Volume:	1 mL
Prep Date:	03/14/2016 1427			Injection Volume:	2 uL

Analyte	Result (ug/L)	Qualifier	MDL	RL
2-Picoline	100	J	14	800

Surrogate	%Rec	Qualifier	Acceptance Limits
Nitrobenzene-d5	96		46 - 120
2-Fluorobiphenyl	98		48 - 120
p-Terphenyl-d14	87		67 - 150
Phenol-d5	45		16 - 120
2-Fluorophenol	69		20 - 120
2,4,6-Tribromophenol	99		52 - 132

Analytical Data

Client: R & C Formation Ltd.

Job Number: 460-110178-1

Client Sample ID: MW-DUP

Lab Sample ID: 460-110178-10

Date Sampled: 03/10/2016 0000

Client Matrix: Water

Date Received: 03/10/2016 1400

8270D Semivolatile Organic Compounds (GC/MS)

Analysis Method:	8270D	Analysis Batch:	480-292162	Instrument ID:	HP5973W
Prep Method:	3510C	Prep Batch:	480-290946	Lab File ID:	W0292.D
Dilution:	10			Initial Weight/Volume:	222 mL
Analysis Date:	03/22/2016 1837			Final Weight/Volume:	1 mL
Prep Date:	03/14/2016 1427			Injection Volume:	2 uL

Analyte	Result (ug/L)	Qualifier	MDL	RL
2-Picoline	99	J	16	900
Pyridine	280	U	4.6	280

Surrogate	%Rec	Qualifier	Acceptance Limits
Nitrobenzene-d5	85		46 - 120
2-Fluorobiphenyl	88		48 - 120
p-Terphenyl-d14	78		67 - 150
Phenol-d5	43		16 - 120
2-Fluorophenol	67		20 - 120
2,4,6-Tribromophenol	88		52 - 132

Analytical Data

Client: R & C Formation Ltd.

Job Number: 460-110178-1

Client Sample ID: MW-DUP

Lab Sample ID: 460-110178-10

Client Matrix: Water

Date Sampled: 03/10/2016 0000

Date Received: 03/10/2016 1400

8270D Semivolatile Organic Compounds (GC/MS)

Analysis Method:	8270D	Analysis Batch:	480-292162	Instrument ID:	HP5973W
Prep Method:	3510C	Prep Batch:	480-290946	Lab File ID:	W0292.D
Dilution:	10			Initial Weight/Volume:	222 mL
Analysis Date:	03/22/2016 1837			Final Weight/Volume:	1 mL
Prep Date:	03/14/2016 1427			Injection Volume:	2 uL

Targeted Tentatively Identified Compounds

Cas Number	Analyte	Est. Result (ug/L)	Qualifier
504-29-0	2-Aminopyridine TIC	110	U

Analytical Data

Client: R & C Formation Ltd.

Job Number: 460-110178-1

Client Sample ID: OW-6

Lab Sample ID: 460-110178-11

Date Sampled: 03/10/2016 1221

Client Matrix: Water

Date Received: 03/10/2016 1400

8270D Semivolatile Organic Compounds (GC/MS)

Analysis Method:	8270D	Analysis Batch:	480-292162	Instrument ID:	HP5973W
Prep Method:	3510C	Prep Batch:	480-290946	Lab File ID:	W0293.D
Dilution:	20			Initial Weight/Volume:	247.5 mL
Analysis Date:	03/22/2016 1906			Final Weight/Volume:	1 mL
Prep Date:	03/14/2016 1427			Injection Volume:	2 uL

Analyte	Result (ug/L)	Qualifier	MDL	RL
2-Picoline	290	J	28	1600
Pyridine	510	U	8.3	510

Surrogate	%Rec	Qualifier	Acceptance Limits
Nitrobenzene-d5	89		46 - 120
2-Fluorobiphenyl	95		48 - 120
p-Terphenyl-d14	73		67 - 150
Phenol-d5	40		16 - 120
2-Fluorophenol	60		20 - 120
2,4,6-Tribromophenol	87		52 - 132

Analytical Data

Client: R & C Formation Ltd.

Job Number: 460-110178-1

Client Sample ID: OW-6

Lab Sample ID: 460-110178-11

Client Matrix: Water

Date Sampled: 03/10/2016 1221

Date Received: 03/10/2016 1400

8270D Semivolatile Organic Compounds (GC/MS)

Analysis Method:	8270D	Analysis Batch:	480-292162	Instrument ID:	HP5973W
Prep Method:	3510C	Prep Batch:	480-290946	Lab File ID:	W0293.D
Dilution:	20			Initial Weight/Volume:	247.5 mL
Analysis Date:	03/22/2016 1906			Final Weight/Volume:	1 mL
Prep Date:	03/14/2016 1427			Injection Volume:	2 uL

Targeted Tentatively Identified Compounds

Cas Number	Analyte	Est. Result (ug/L)	Qualifier
504-29-0	2-Aminopyridine TIC	200	U

Analytical Data

Client: R & C Formation Ltd.

Job Number: 460-110178-1

Client Sample ID: MW-33S

Lab Sample ID: 460-110178-3

Client Matrix: Water

Date Sampled: 03/10/2016 0921

Date Received: 03/10/2016 1400

300.0 Anions, Ion Chromatography

Analysis Method: 300.0

N/A

Analysis Batch: 460-357567

Prep Batch: N/A

Instrument ID: IC A

Lab File ID: ya2016-03-21-23-21.d

Dilution: 20

Analysis Date: 03/21/2016 2321

Prep Date: N/A

Run Type: DL2

Initial Weight/Volume: 10 mL

Final Weight/Volume:

Injection Volume: 10 uL

Analyte	Result (mg/L)	Qualifier	MDL	RL
Sulfate	333		2.10	12.0

Analytical Data

Client: R & C Formation Ltd.

Job Number: 460-110178-1

Client Sample ID: MW-53D

Lab Sample ID: 460-110178-5

Client Matrix: Water

Date Sampled: 03/10/2016 1019

Date Received: 03/10/2016 1400

300.0 Anions, Ion Chromatography

Analysis Method: 300.0

N/A

Analysis Batch: 460-357567

Prep Batch: N/A

Instrument ID: IC A

Lab File ID: ya2016-03-21-09-06.d

Dilution: 10

Analysis Date: 03/21/2016 0906

Prep Date: N/A

Run Type: DL

Initial Weight/Volume: 10 mL

Final Weight/Volume:

Injection Volume: 10 uL

Analyte	Result (mg/L)	Qualifier	MDL	RL
Sulfate	8.74		1.05	6.00

Analytical Data

Client: R & C Formation Ltd.

Job Number: 460-110178-1

Client Sample ID: MW-16S

Lab Sample ID: 460-110178-6

Client Matrix: Water

Date Sampled: 03/10/2016 1048

Date Received: 03/10/2016 1400

300.0 Anions, Ion Chromatography

Analysis Method: 300.0

N/A

Analysis Batch: 460-357567

Prep Batch: N/A

Instrument ID: IC A

Lab File ID: ya2016-03-21-09-26.d

Dilution: 10

Analysis Date: 03/21/2016 0926

Prep Date: N/A

Run Type: DL

Initial Weight/Volume: 10 mL

Final Weight/Volume:

Injection Volume: 10 uL

Analyte

Result (mg/L)

Qualifier

MDL

RL

Sulfate

119

1.05

6.00

Analytical Data

Client: R & C Formation Ltd.

Job Number: 460-110178-1

Client Sample ID: MW-37S

Lab Sample ID: 460-110178-7

Client Matrix: Water

Date Sampled: 03/10/2016 1121

Date Received: 03/10/2016 1400

300.0 Anions, Ion Chromatography

Analysis Method: 300.0

N/A

Analysis Batch: 460-357567

Prep Batch: N/A

Instrument ID: IC A

Lab File ID: ya2016-03-21-09-45.d

Dilution: 10

Analysis Date: 03/21/2016 0945

Prep Date: N/A

Run Type: DL

Initial Weight/Volume: 10 mL

Final Weight/Volume:

Injection Volume: 10 uL

Analyte	Result (mg/L)	Qualifier	MDL	RL
Sulfate	139		1.05	6.00

Analytical Data

Client: R & C Formation Ltd.

Job Number: 460-110178-1

Client Sample ID: MW-25S

Lab Sample ID: 460-110178-8

Client Matrix: Water

Date Sampled: 03/10/2016 1149

Date Received: 03/10/2016 1400

300.0 Anions, Ion Chromatography

Analysis Method: 300.0

N/A

Analysis Batch: 460-357567

Prep Batch: N/A

Instrument ID: IC A

Lab File ID: ya2016-03-21-10-04.d

Dilution: 10

Analysis Date: 03/21/2016 1004

Prep Date: N/A

Run Type: DL

Initial Weight/Volume: 10 mL

Final Weight/Volume:

Injection Volume: 10 uL

Analyte

Result (mg/L)

Qualifier

MDL

RL

Sulfate

11.2

1.05

6.00

Analytical Data

Client: R & C Formation Ltd.

Job Number: 460-110178-1

Client Sample ID: OW-7

Lab Sample ID: 460-110178-9

Client Matrix: Water

Date Sampled: 03/10/2016 1205

Date Received: 03/10/2016 1400

300.0 Anions, Ion Chromatography

Analysis Method: 300.0

N/A

Analysis Batch: 460-357567

Prep Batch: N/A

Instrument ID: IC A

Lab File ID: ya2016-03-21-10-24.d

Dilution: 10

Analysis Date: 03/21/2016 1024

Prep Date: N/A

Run Type: DL

Initial Weight/Volume: 10 mL

Final Weight/Volume:

Injection Volume: 10 uL

Analyte

Result (mg/L)

Qualifier

MDL

RL

Sulfate

8.30

1.05

6.00

Analytical Data

Client: R & C Formation Ltd.

Job Number: 460-110178-1

Client Sample ID: MW-DUP

Lab Sample ID: 460-110178-10

Client Matrix: Water

Date Sampled: 03/10/2016 0000

Date Received: 03/10/2016 1400

300.0 Anions, Ion Chromatography

Analysis Method: 300.0

N/A

Analysis Batch: 460-357567

Prep Batch: N/A

Instrument ID: IC A

Lab File ID: ya2016-03-21-10-43.d

Dilution: 10

Analysis Date: 03/21/2016 1043

Prep Date: N/A

Run Type: DL

Initial Weight/Volume: 10 mL

Final Weight/Volume:

Injection Volume: 10 uL

Analyte	Result (mg/L)	Qualifier	MDL	RL
Sulfate	8.50		1.05	6.00

Analytical Data

Client: R & C Formation Ltd.

Job Number: 460-110178-1

Client Sample ID: OW-6

Lab Sample ID: 460-110178-11

Client Matrix: Water

Date Sampled: 03/10/2016 1221

Date Received: 03/10/2016 1400

300.0 Anions, Ion Chromatography

Analysis Method: 300.0

N/A

Analysis Batch: 460-357567

Prep Batch: N/A

Instrument ID: IC A

Lab File ID: ya2016-03-21-11-02.d

Dilution: 10

Analysis Date: 03/21/2016 1102

Prep Date: N/A

Run Type: DL

Initial Weight/Volume: 10 mL

Final Weight/Volume:

Injection Volume: 10 uL

Analyte

Result (mg/L)

Qualifier

MDL

RL

Sulfate

63.1

1.05

6.00

Analytical Data

Client: R & C Formation Ltd.

Job Number: 460-110178-1

Client Sample ID: MW-33S

Lab Sample ID: 460-110178-3

Client Matrix: Water

Date Sampled: 03/10/2016 0921

Date Received: 03/10/2016 1400

6010C Metals (ICP)

Analysis Method: 6010C

Prep Method: 3010A

Dilution: 5.0

Analysis Date: 03/19/2016 2004

Prep Date: 03/18/2016 0813

Analysis Batch: 460-357450

Prep Batch: 460-357099

Instrument ID: ICP5

Lab File ID: 03192016.asc

Initial Weight/Volume: 50 mL

Final Weight/Volume: 50 mL

Analyte	Result (ug/L)	Qualifier	MDL	RL
Iron	286000		327	750
Manganese	4740		24.4	75.0

Analytical Data

Client: R & C Formation Ltd.

Job Number: 460-110178-1

Client Sample ID: MW-53D

Lab Sample ID: 460-110178-5

Client Matrix: Water

Date Sampled: 03/10/2016 1019

Date Received: 03/10/2016 1400

6010C Metals (ICP)

Analysis Method: 6010C

Analysis Batch: 460-357450

Instrument ID: ICP5

Prep Method: 3010A

Prep Batch: 460-357099

Lab File ID: 03192016.asc

Dilution: 1.0

Initial Weight/Volume: 50 mL

Analysis Date: 03/19/2016 2008

Final Weight/Volume: 50 mL

Prep Date: 03/18/2016 0813

Analyte	Result (ug/L)	Qualifier	MDL	RL
Iron	3820		65.4	150
Manganese	330		4.9	15.0

Analytical Data

Client: R & C Formation Ltd.

Job Number: 460-110178-1

Client Sample ID: MW-16S

Lab Sample ID: 460-110178-6

Client Matrix: Water

Date Sampled: 03/10/2016 1048

Date Received: 03/10/2016 1400

6010C Metals (ICP)

Analysis Method: 6010C

Prep Method: 3010A

Dilution: 1.0

Analysis Date: 03/19/2016 2012

Prep Date: 03/18/2016 0813

Analysis Batch: 460-357450

Prep Batch: 460-357099

Instrument ID: ICP5

Lab File ID: 03192016.asc

Initial Weight/Volume: 50 mL

Final Weight/Volume: 50 mL

Analyte	Result (ug/L)	Qualifier	MDL	RL
Iron	3520		65.4	150
Manganese	257		4.9	15.0

Analytical Data

Client: R & C Formation Ltd.

Job Number: 460-110178-1

Client Sample ID: MW-37S

Lab Sample ID: 460-110178-7

Client Matrix: Water

Date Sampled: 03/10/2016 1121

Date Received: 03/10/2016 1400

6010C Metals (ICP)

Analysis Method: 6010C

Analysis Batch: 460-357450

Instrument ID: ICP5

Prep Method: 3010A

Prep Batch: 460-357099

Lab File ID: 03192016.asc

Dilution: 1.0

Initial Weight/Volume: 50 mL

Analysis Date: 03/19/2016 2015

Final Weight/Volume: 50 mL

Prep Date: 03/18/2016 0813

Analyte	Result (ug/L)	Qualifier	MDL	RL
Iron	10900		65.4	150
Manganese	1280		4.9	15.0

Analytical Data

Client: R & C Formation Ltd.

Job Number: 460-110178-1

Client Sample ID: MW-25S

Lab Sample ID: 460-110178-8

Client Matrix: Water

Date Sampled: 03/10/2016 1149

Date Received: 03/10/2016 1400

6010C Metals (ICP)

Analysis Method: 6010C

Analysis Batch: 460-357450

Instrument ID: ICP5

Prep Method: 3010A

Prep Batch: 460-357099

Lab File ID: 03192016.asc

Dilution: 1.0

Initial Weight/Volume: 50 mL

Analysis Date: 03/19/2016 1550

Final Weight/Volume: 50 mL

Prep Date: 03/18/2016 0813

Analyte	Result (ug/L)	Qualifier	MDL	RL
Iron	3450		65.4	150
Manganese	960		4.9	15.0

Analytical Data

Client: R & C Formation Ltd.

Job Number: 460-110178-1

Client Sample ID: OW-7

Lab Sample ID: 460-110178-9

Client Matrix: Water

Date Sampled: 03/10/2016 1205

Date Received: 03/10/2016 1400

6010C Metals (ICP)

Analysis Method:	6010C	Analysis Batch:	460-357450	Instrument ID:	ICP5
Prep Method:	3010A	Prep Batch:	460-357099	Lab File ID:	03192016.asc
Dilution:	1.0			Initial Weight/Volume:	50 mL
Analysis Date:	03/19/2016 2019			Final Weight/Volume:	50 mL
Prep Date:	03/18/2016 0813				

Analyte	Result (ug/L)	Qualifier	MDL	RL
Iron	9460		65.4	150

Analysis Method:	6010C	Analysis Batch:	460-357503	Instrument ID:	ICP5
Prep Method:	3010A	Prep Batch:	460-357099	Lab File ID:	03202016.asc
Dilution:	2.0			Initial Weight/Volume:	50 mL
Analysis Date:	03/20/2016 1116			Final Weight/Volume:	50 mL
Prep Date:	03/18/2016 0813				

Analyte	Result (ug/L)	Qualifier	MDL	RL
Manganese	10500		9.8	30.0

Analytical Data

Client: R & C Formation Ltd.

Job Number: 460-110178-1

Client Sample ID: MW-DUP

Lab Sample ID: 460-110178-10

Client Matrix: Water

Date Sampled: 03/10/2016 0000

Date Received: 03/10/2016 1400

6010C Metals (ICP)

Analysis Method: 6010C

Prep Method: 3010A

Dilution: 2.0

Analysis Date: 03/16/2016 2005

Prep Date: 03/16/2016 0751

Analysis Batch: 460-356666

Prep Batch: 460-356500

Instrument ID: ICP5

Lab File ID: 03162016.asc

Initial Weight/Volume: 50 mL

Final Weight/Volume: 50 mL

Analyte	Result (ug/L)	Qualifier	MDL	RL
Iron	9710		131	300
Manganese	10400		9.8	30.0

Analytical Data

Client: R & C Formation Ltd.

Job Number: 460-110178-1

Client Sample ID: OW-6

Lab Sample ID: 460-110178-11

Client Matrix: Water

Date Sampled: 03/10/2016 1221

Date Received: 03/10/2016 1400

6010C Metals (ICP)

Analysis Method: 6010C

Prep Method: 3010A

Dilution: 1.0

Analysis Date: 03/16/2016 1913

Prep Date: 03/16/2016 0751

Analysis Batch: 460-356666

Prep Batch: 460-356500

Instrument ID: ICP5

Lab File ID: 03162016.asc

Initial Weight/Volume: 50 mL

Final Weight/Volume: 50 mL

Analyte	Result (ug/L)	Qualifier	MDL	RL
Iron	40800		65.4	150
Manganese	3890		4.9	15.0

Analytical Data

Client: R & C Formation Ltd.

Job Number: 460-110178-1

General Chemistry

Client Sample ID: MW-33S

Lab Sample ID: 460-110178-3

Client Matrix: Water

Date Sampled: 03/10/2016 0921

Date Received: 03/10/2016 1400

Analyte	Result	Qual	Units	MDL	RL	Dil	Method
Ammonia	313		mg/L	2.3	10.0	100	350.1
	Analysis Batch: 460-358434		Analysis Date: 03/24/2016 1305				
	Prep Batch: 460-358329		Prep Date: 03/24/2016 0530				
Nitrate as N	0.10	U	mg/L	0.026	0.10	1.0	SM 4500 NO3 F
	Analysis Batch: 460-355626		Analysis Date: 03/11/2016 1839				

Analytical Data

Client: R & C Formation Ltd.

Job Number: 460-110178-1

General Chemistry

Client Sample ID: MW-53D

Lab Sample ID: 460-110178-5

Date Sampled: 03/10/2016 1019

Client Matrix: Water

Date Received: 03/10/2016 1400

Analyte	Result	Qual	Units	MDL	RL	Dil	Method
Ammonia	27.3		mg/L	0.23	1.0	10	350.1
	Analysis Batch: 460-358434		Analysis Date: 03/24/2016 1300				
	Prep Batch: 460-358368		Prep Date: 03/24/2016 0900				
Nitrate as N	0.057	J	mg/L	0.026	0.10	1.0	SM 4500 NO3 F
	Analysis Batch: 460-355626		Analysis Date: 03/11/2016 1841				

Analytical Data

Client: R & C Formation Ltd.

Job Number: 460-110178-1

General Chemistry

Client Sample ID: MW-16S

Lab Sample ID: 460-110178-6

Client Matrix: Water

Date Sampled: 03/10/2016 1048

Date Received: 03/10/2016 1400

Analyte	Result	Qual	Units	MDL	RL	Dil	Method
Ammonia	2.7		mg/L	0.023	0.10	1.0	350.1
Analysis Batch: 460-358434 Analysis Date: 03/24/2016 1224							
Prep Batch: 460-358368 Prep Date: 03/24/2016 0900							
Nitrate as N	0.18		mg/L	0.026	0.10	1.0	SM 4500 NO3 F
Analysis Batch: 460-355626 Analysis Date: 03/11/2016 1842							

Analytical Data

Client: R & C Formation Ltd.

Job Number: 460-110178-1

General Chemistry

Client Sample ID: MW-37S

Lab Sample ID: 460-110178-7

Client Matrix: Water

Date Sampled: 03/10/2016 1121

Date Received: 03/10/2016 1400

Analyte	Result	Qual	Units	MDL	RL	Dil	Method
Ammonia	15.6		mg/L	0.23	1.0	10	350.1
	Analysis Batch: 460-358434		Analysis Date: 03/24/2016 1317				
	Prep Batch: 460-358368		Prep Date: 03/24/2016 0900				
Nitrate as N	0.10	U	mg/L	0.026	0.10	1.0	SM 4500 NO3 F
	Analysis Batch: 460-355626		Analysis Date: 03/11/2016 1851				

Analytical Data

Client: R & C Formation Ltd.

Job Number: 460-110178-1

General Chemistry

Client Sample ID: MW-25S

Lab Sample ID: 460-110178-8

Date Sampled: 03/10/2016 1149

Client Matrix: Water

Date Received: 03/10/2016 1400

Analyte	Result	Qual	Units	MDL	RL	Dil	Method
Ammonia	4.5		mg/L	0.046	0.20	2.0	350.1
Analysis Batch: 460-358434 Analysis Date: 03/24/2016 1311							
Prep Batch: 460-358368 Prep Date: 03/24/2016 0900							
Nitrate as N	0.10	U	mg/L	0.026	0.10	1.0	SM 4500 NO3 F
Analysis Batch: 460-355626 Analysis Date: 03/11/2016 1852							

Analytical Data

Client: R & C Formation Ltd.

Job Number: 460-110178-1

General Chemistry

Client Sample ID: OW-7

Lab Sample ID: 460-110178-9

Date Sampled: 03/10/2016 1205

Client Matrix: Water

Date Received: 03/10/2016 1400

Analyte	Result	Qual	Units	MDL	RL	Dil	Method
Ammonia	6.4		mg/L	0.12	0.50	5.0	350.1
Analysis Batch: 460-358434 Analysis Date: 03/24/2016 1312							
Prep Batch: 460-358368 Prep Date: 03/24/2016 0900							
Nitrate as N	0.10	U	mg/L	0.026	0.10	1.0	SM 4500 NO3 F
Analysis Batch: 460-355626 Analysis Date: 03/11/2016 1854							

Analytical Data

Client: R & C Formation Ltd.

Job Number: 460-110178-1

General Chemistry

Client Sample ID: MW-DUP

Lab Sample ID: 460-110178-10

Date Sampled: 03/10/2016 0000

Client Matrix: Water

Date Received: 03/10/2016 1400

Analyte	Result	Qual	Units	MDL	RL	Dil	Method
Ammonia	6.4		mg/L	0.12	0.50	5.0	350.1
Analysis Batch: 460-358434 Analysis Date: 03/24/2016 1314							
Prep Batch: 460-358368 Prep Date: 03/24/2016 0900							
Nitrate as N	0.10	U	mg/L	0.026	0.10	1.0	SM 4500 NO3 F
Analysis Batch: 460-355626 Analysis Date: 03/11/2016 1855							

Analytical Data

Client: R & C Formation Ltd.

Job Number: 460-110178-1

General Chemistry

Client Sample ID: OW-6

Lab Sample ID: 460-110178-11

Client Matrix: Water

Date Sampled: 03/10/2016 1221

Date Received: 03/10/2016 1400

Analyte	Result	Qual	Units	MDL	RL	Dil	Method
Ammonia	10.7		mg/L	0.23	1.0	10	350.1
Analysis Batch: 460-358434 Analysis Date: 03/24/2016 1315							
Prep Batch: 460-358368 Prep Date: 03/24/2016 0900							
Nitrate as N	0.10	U	mg/L	0.026	0.10	1.0	SM 4500 NO3 F
Analysis Batch: 460-355626 Analysis Date: 03/11/2016 1857							

DATA REPORTING QUALIFIERS

Client: R & C Formation Ltd.

Job Number: 460-110178-1

Lab Section	Qualifier	Description
GC/MS VOA	U	Analyzed for but not detected.
	J	Indicates an estimated value.
GC/MS Semi VOA	U	Analyzed for but not detected.
	J	Indicates an estimated value.
	*	Surrogate is outside acceptance limits.
	B	The analyte was found in an associated blank, as well as in the sample.
HPLC/IC	U	Analyzed for but not detected.
Metals	U	Indicates analyzed for but not detected.
General Chemistry	U	Indicates analyzed for but not detected.
	4	MS, MSD: The analyte present in the original sample is greater than 4 times the matrix spike concentration; therefore, control limits are not applicable.
	J	Sample result is greater than the MDL but below the CRDL

QUALITY CONTROL RESULTS

Quality Control Results

Client: R & C Formation Ltd.

Job Number: 460-110178-1

QC Association Summary

Lab Sample ID	Client Sample ID	Report Basis	Client Matrix	Method	Prep Batch
GC/MS VOA					
Analysis Batch:460-356404					
LCS 460-356404/3	Lab Control Sample	T	Water	8260C	
LCSD 460-356404/4	Lab Control Sample Duplicate	T	Water	8260C	
MB 460-356404/6	Method Blank	T	Water	8260C	
460-110178-1TB	TB	T	Water	8260C	
460-110178-2	MW-12S	T	Water	8260C	
460-110178-3	MW-33S	T	Water	8260C	
460-110178-4	MW-20D	T	Water	8260C	
460-110178-5	MW-53D	T	Water	8260C	
460-110178-6	MW-16S	T	Water	8260C	
460-110178-7	MW-37S	T	Water	8260C	
460-110178-8	MW-25S	T	Water	8260C	
Analysis Batch:460-356529					
LCS 460-356529/3	Lab Control Sample	T	Water	8260C	
LCSD 460-356529/4	Lab Control Sample Duplicate	T	Water	8260C	
MB 460-356529/6	Method Blank	T	Water	8260C	
460-110178-9	OW-7	T	Water	8260C	
460-110178-11	OW-6	T	Water	8260C	
Analysis Batch:460-356690					
LCS 460-356690/3	Lab Control Sample	T	Water	8260C	
LCSD 460-356690/4	Lab Control Sample Duplicate	T	Water	8260C	
MB 460-356690/7	Method Blank	T	Water	8260C	
460-110178-10	MW-DUP	T	Water	8260C	

Report Basis

T = Total

Quality Control Results

Client: R & C Formation Ltd.

Job Number: 460-110178-1

QC Association Summary

Lab Sample ID	Client Sample ID	Report Basis	Client Matrix	Method	Prep Batch
GC/MS Semi VOA					
Prep Batch: 480-290946					
LCS 480-290946/2-A	Lab Control Sample	T	Water	3510C	
MB 480-290946/1-A	Method Blank	T	Water	3510C	
460-110178-2	MW-12S	T	Water	3510C	
460-110178-3	MW-33S	T	Water	3510C	
460-110178-4	MW-20D	T	Water	3510C	
460-110178-5	MW-53D	T	Water	3510C	
460-110178-6	MW-16S	T	Water	3510C	
460-110178-7	MW-37S	T	Water	3510C	
460-110178-8	MW-25S	T	Water	3510C	
460-110178-8DL	MW-25S	T	Water	3510C	
460-110178-9	OW-7	T	Water	3510C	
460-110178-9DL	OW-7	T	Water	3510C	
460-110178-10	MW-DUP	T	Water	3510C	
460-110178-11	OW-6	T	Water	3510C	
Analysis Batch:480-291896					
LCS 480-290946/2-A	Lab Control Sample	T	Water	8270D	480-290946
MB 480-290946/1-A	Method Blank	T	Water	8270D	480-290946
460-110178-2	MW-12S	T	Water	8270D	480-290946
460-110178-3	MW-33S	T	Water	8270D	480-290946
460-110178-4	MW-20D	T	Water	8270D	480-290946
460-110178-5	MW-53D	T	Water	8270D	480-290946
460-110178-6	MW-16S	T	Water	8270D	480-290946
460-110178-7	MW-37S	T	Water	8270D	480-290946
460-110178-8	MW-25S	T	Water	8270D	480-290946
460-110178-9	OW-7	T	Water	8270D	480-290946
Analysis Batch:480-292162					
460-110178-8DL	MW-25S	T	Water	8270D	480-290946
460-110178-9DL	OW-7	T	Water	8270D	480-290946
460-110178-10	MW-DUP	T	Water	8270D	480-290946
460-110178-11	OW-6	T	Water	8270D	480-290946

Report Basis

T = Total

Quality Control Results

Client: R & C Formation Ltd.

Job Number: 460-110178-1

QC Association Summary

Lab Sample ID	Client Sample ID	Report Basis	Client Matrix	Method	Prep Batch
Metals					
Prep Batch: 460-356500					
LCS 460-356500/2-A	Lab Control Sample	T	Water	3010A	
MB 460-356500/1-A	Method Blank	T	Water	3010A	
460-110178-10	MW-DUP	T	Water	3010A	
460-110178-11	OW-6	T	Water	3010A	
Analysis Batch:460-356666					
LCS 460-356500/2-A	Lab Control Sample	T	Water	6010C	460-356500
MB 460-356500/1-A	Method Blank	T	Water	6010C	460-356500
460-110178-10	MW-DUP	T	Water	6010C	460-356500
460-110178-11	OW-6	T	Water	6010C	460-356500
Prep Batch: 460-357099					
LCS 460-357099/2-A	Lab Control Sample	T	Water	3010A	
MB 460-357099/1-A	Method Blank	T	Water	3010A	
460-110178-3	MW-33S	T	Water	3010A	
460-110178-5	MW-53D	T	Water	3010A	
460-110178-6	MW-16S	T	Water	3010A	
460-110178-7	MW-37S	T	Water	3010A	
460-110178-8	MW-25S	T	Water	3010A	
460-110178-8DU	Duplicate	T	Water	3010A	
460-110178-8MS	Matrix Spike	T	Water	3010A	
460-110178-9	OW-7	T	Water	3010A	
Analysis Batch:460-357450					
LCS 460-357099/2-A	Lab Control Sample	T	Water	6010C	460-357099
MB 460-357099/1-A	Method Blank	T	Water	6010C	460-357099
460-110178-3	MW-33S	T	Water	6010C	460-357099
460-110178-5	MW-53D	T	Water	6010C	460-357099
460-110178-6	MW-16S	T	Water	6010C	460-357099
460-110178-7	MW-37S	T	Water	6010C	460-357099
460-110178-8	MW-25S	T	Water	6010C	460-357099
460-110178-8DU	Duplicate	T	Water	6010C	460-357099
460-110178-8MS	Matrix Spike	T	Water	6010C	460-357099
460-110178-9	OW-7	T	Water	6010C	460-357099
Analysis Batch:460-357503					
460-110178-9	OW-7	T	Water	6010C	460-357099

Report Basis

T = Total

Quality Control Results

Client: R & C Formation Ltd.

Job Number: 460-110178-1

QC Association Summary

Lab Sample ID	Client Sample ID	Report Basis	Client Matrix	Method	Prep Batch
General Chemistry					
Analysis Batch: 460-355626					
LCSSRM 460-355626/10	LCS-Certified Reference Material	T	Water	SM 4500 NO3 F	
LCSSRM 460-355626/11	LCS-Certified Reference Material	T	Water	SM 4500 NO3 F	
LCSSRM 460-355626/35	LCS-Certified Reference Material	T	Water	SM 4500 NO3 F	
MB 460-355626/33	Method Blank	T	Water	SM 4500 NO3 F	
MB 460-355626/9	Method Blank	T	Water	SM 4500 NO3 F	
460-110178-3	MW-33S	T	Water	SM 4500 NO3 F	
460-110178-5	MW-53D	T	Water	SM 4500 NO3 F	
460-110178-6	MW-16S	T	Water	SM 4500 NO3 F	
460-110178-7	MW-37S	T	Water	SM 4500 NO3 F	
460-110178-8	MW-25S	T	Water	SM 4500 NO3 F	
460-110178-9	OW-7	T	Water	SM 4500 NO3 F	
460-110178-10	MW-DUP	T	Water	SM 4500 NO3 F	
460-110178-11	OW-6	T	Water	SM 4500 NO3 F	
Prep Batch: 460-358329					
LCS 460-358329/2-A	Lab Control Sample	T	Water	Distill/Ammonia	
MB 460-358329/1-A	Method Blank	T	Water	Distill/Ammonia	
460-110178-3	MW-33S	T	Water	Distill/Ammonia	
Prep Batch: 460-358368					
LCS 460-358368/2-A	Lab Control Sample	T	Water	Distill/Ammonia	
MB 460-358368/1-A	Method Blank	T	Water	Distill/Ammonia	
460-110178-5	MW-53D	T	Water	Distill/Ammonia	
460-110178-5MS	Matrix Spike	T	Water	Distill/Ammonia	
460-110178-5MSD	Matrix Spike Duplicate	T	Water	Distill/Ammonia	
460-110178-6	MW-16S	T	Water	Distill/Ammonia	
460-110178-7	MW-37S	T	Water	Distill/Ammonia	
460-110178-8	MW-25S	T	Water	Distill/Ammonia	
460-110178-9	OW-7	T	Water	Distill/Ammonia	
460-110178-10	MW-DUP	T	Water	Distill/Ammonia	
460-110178-11	OW-6	T	Water	Distill/Ammonia	

Quality Control Results

Client: R & C Formation Ltd.

Job Number: 460-110178-1

QC Association Summary

Lab Sample ID	Client Sample ID	Report Basis	Client Matrix	Method	Prep Batch
General Chemistry					
Analysis Batch:460-358434					
LCS 460-358329/2-A	Lab Control Sample	T	Water	350.1	460-358329
MB 460-358329/1-A	Method Blank	T	Water	350.1	460-358329
LCS 460-358368/2-A	Lab Control Sample	T	Water	350.1	460-358368
MB 460-358368/1-A	Method Blank	T	Water	350.1	460-358368
460-110178-3	MW-33S	T	Water	350.1	460-358329
460-110178-5	MW-53D	T	Water	350.1	460-358368
460-110178-5MS	Matrix Spike	T	Water	350.1	460-358368
460-110178-5MSD	Matrix Spike Duplicate	T	Water	350.1	460-358368
460-110178-6	MW-16S	T	Water	350.1	460-358368
460-110178-7	MW-37S	T	Water	350.1	460-358368
460-110178-8	MW-25S	T	Water	350.1	460-358368
460-110178-9	OW-7	T	Water	350.1	460-358368
460-110178-10	MW-DUP	T	Water	350.1	460-358368
460-110178-11	OW-6	T	Water	350.1	460-358368

Report Basis

T = Total

HPLC/IC

Analysis Batch:460-357567					
LCS 460-357567/15	Lab Control Sample	T	Water	300.0	
LCSD 460-357567/16	Lab Control Sample Duplicate	T	Water	300.0	
MB 460-357567/14	Method Blank	T	Water	300.0	
460-110178-3DL	MW-33S	T	Water	300.0	
460-110178-3DL2	MW-33S	T	Water	300.0	
460-110178-5DL	MW-53D	T	Water	300.0	
460-110178-6DL	MW-16S	T	Water	300.0	
460-110178-7DL	MW-37S	T	Water	300.0	
460-110178-8DL	MW-25S	T	Water	300.0	
460-110178-9DL	OW-7	T	Water	300.0	
460-110178-10DL	MW-DUP	T	Water	300.0	
460-110178-11DL	OW-6	T	Water	300.0	

Report Basis

T = Total

Quality Control Results

Client: R & C Formation Ltd.

Job Number: 460-110178-1

Surrogate Recovery Report

8260C Volatile Organic Compounds by GC/MS

Client Matrix: Water

Lab Sample ID	Client Sample ID	DCA %Rec	BFB %Rec	TOL %Rec	DBFM %Rec
460-110178-1	TB	100	104	102	99
460-110178-2	MW-12S	101	103	101	100
460-110178-3	MW-33S	100	103	102	99
460-110178-4	MW-20D	101	105	101	96
460-110178-5	MW-53D	100	104	100	99
460-110178-6	MW-16S	101	102	101	98
460-110178-7	MW-37S	102	102	100	99
460-110178-8	MW-25S	102	102	101	96
460-110178-9	OW-7	101	101	101	96
460-110178-10	MW-DUP	93	101	100	96
460-110178-11	OW-6	100	101	101	97
MB 460-356404/6		98	102	101	99
MB 460-356529/6		101	101	100	99
MB 460-356690/7		93	101	100	98
LCS 460-356404/3		103	103	101	102
LCS 460-356529/3		103	105	101	101
LCS 460-356690/3		93	101	99	99
LCSD 460-356404/4		101	104	101	100
LCSD 460-356529/4		102	103	101	100
LCSD 460-356690/4		94	102	100	99

Surrogate	Acceptance Limits
DCA = 1,2-Dichloroethane-d4 (Surr)	70-137
BFB = Bromofluorobenzene	70-131
TOL = Toluene-d8 (Surr)	74-120
DBFM = Dibromofluoromethane (Surr)	72-136

Quality Control Results

Client: R & C Formation Ltd.

Job Number: 460-110178-1

Surrogate Recovery Report

8270D Semivolatile Organic Compounds (GC/MS)

Client Matrix: Water

Lab Sample ID	Client Sample ID	NBZ %Rec	FBP %Rec	TPH %Rec	PHL %Rec	2FP %Rec	TBP %Rec
460-110178-2	MW-12S	95	93	102	43	66	113
460-110178-3	MW-33S	103	96	79	7*	67	124
460-110178-4	MW-20D	111	96	93	40	69	117
460-110178-5	MW-53D	103	98	101	47	71	118
460-110178-6	MW-16S	73	74	76	35	51	88
460-110178-7	MW-37S	89	86	87	40	64	104
460-110178-8	MW-25S	99	110	82	45	69	100
460-110178-8 DL	MW-25S DL	83	93	70	41	62	80
460-110178-9	OW-7	105	111	90	49	77	117
460-110178-9 DL	OW-7 DL	96	98	87	45	69	99
460-110178-10	MW-DUP	85	88	78	43	67	88
460-110178-11	OW-6	89	95	73	40	60	87
MB 480-290946/1-A		92	92	108	42	64	100
LCS 480-290946/2-A		94	91	102	50	72	115

Surrogate	Acceptance Limits
NBZ = Nitrobenzene-d5	46-120
FBP = 2-Fluorobiphenyl	48-120
TPH = p-Terphenyl-d14	67-150
PHL = Phenol-d5	16-120
2FP = 2-Fluorophenol	20-120
TBP = 2,4,6-Tribromophenol	52-132

Quality Control Results

Client: R & C Formation Ltd.

Job Number: 460-110178-1

Method Blank - Batch: 460-356404

Method: 8260C

Preparation: 5030C

Lab Sample ID: MB 460-356404/6
Client Matrix: Water
Dilution: 1.0
Analysis Date: 03/16/2016 0102
Prep Date: 03/16/2016 0102
Leach Date: N/A

Analysis Batch: 460-356404
Prep Batch: N/A
Leach Batch: N/A
Units: ug/L

Instrument ID: CVOAMS10
Lab File ID: R32045.D
Initial Weight/Volume: 5 mL
Final Weight/Volume: 5 mL

Analyte	Result	Qual	MDL	RL
Benzene	1.0	U	0.090	1.0
Toluene	1.0	U	0.25	1.0
Ethylbenzene	1.0	U	0.30	1.0
Xylenes, Total	2.0	U	0.28	2.0

Surrogate	% Rec	Acceptance Limits
1,2-Dichloroethane-d4 (Surr)	98	70 - 137
Bromofluorobenzene	102	70 - 131
Toluene-d8 (Surr)	101	74 - 120
Dibromofluoromethane (Surr)	99	72 - 136

Lab Control Sample/

Method: 8260C

Lab Control Sample Duplicate Recovery Report - Batch: 460-356404

Preparation: 5030C

LCS Lab Sample ID: LCS 460-356404/3
Client Matrix: Water
Dilution: 1.0
Analysis Date: 03/15/2016 2352
Prep Date: 03/15/2016 2352
Leach Date: N/A

Analysis Batch: 460-356404
Prep Batch: N/A
Leach Batch: N/A
Units: ug/L

Instrument ID: CVOAMS10
Lab File ID: R32042.D
Initial Weight/Volume: 5 mL
Final Weight/Volume: 5 mL
5 mL

LCSD Lab Sample ID: LCSD 460-356404/4
Client Matrix: Water
Dilution: 1.0
Analysis Date: 03/16/2016 0015
Prep Date: 03/16/2016 0015
Leach Date: N/A

Analysis Batch: 460-356404
Prep Batch: N/A
Leach Batch: N/A
Units: ug/L

Instrument ID: CVOAMS10
Lab File ID: R32043.D
Initial Weight/Volume: 5 mL
Final Weight/Volume: 5 mL
5 mL

Analyte	% Rec		Limit	RPD	RPD Limit	LCS Qual	LCSD Qual
	LCS	LCSD					
Benzene	99	106	76 - 125	6	30		
Toluene	102	109	80 - 120	6	30		
Ethylbenzene	103	111	80 - 120	8	30		
Xylenes, Total	104	110	80 - 120	6	30		

Surrogate	LCS % Rec	LCSD % Rec	Acceptance Limits
1,2-Dichloroethane-d4 (Surr)	103	101	70 - 137
Bromofluorobenzene	103	104	70 - 131
Toluene-d8 (Surr)	101	101	74 - 120
Dibromofluoromethane (Surr)	102	100	72 - 136

Quality Control Results

Client: R & C Formation Ltd.

Job Number: 460-110178-1

Method Blank - Batch: 460-356529

Method: 8260C

Preparation: 5030C

Lab Sample ID: MB 460-356529/6
Client Matrix: Water
Dilution: 1.0
Analysis Date: 03/16/2016 1211
Prep Date: 03/16/2016 1211
Leach Date: N/A

Analysis Batch: 460-356529
Prep Batch: N/A
Leach Batch: N/A
Units: ug/L

Instrument ID: CVOAMS10
Lab File ID: R32072.D
Initial Weight/Volume: 5 mL
Final Weight/Volume: 5 mL

Analyte	Result	Qual	MDL	RL
Benzene	1.0	U	0.090	1.0
Toluene	1.0	U	0.25	1.0
Ethylbenzene	1.0	U	0.30	1.0
Xylenes, Total	2.0	U	0.28	2.0

Surrogate	% Rec	Acceptance Limits
1,2-Dichloroethane-d4 (Surr)	101	70 - 137
Bromofluorobenzene	101	70 - 131
Toluene-d8 (Surr)	100	74 - 120
Dibromofluoromethane (Surr)	99	72 - 136

Lab Control Sample/

Method: 8260C

Lab Control Sample Duplicate Recovery Report - Batch: 460-356529

Preparation: 5030C

LCS Lab Sample ID: LCS 460-356529/3
Client Matrix: Water
Dilution: 1.0
Analysis Date: 03/16/2016 1045
Prep Date: 03/16/2016 1045
Leach Date: N/A

Analysis Batch: 460-356529
Prep Batch: N/A
Leach Batch: N/A
Units: ug/L

Instrument ID: CVOAMS10
Lab File ID: R32069.D
Initial Weight/Volume: 5 mL
Final Weight/Volume: 5 mL
5 mL

LCSD Lab Sample ID: LCSD 460-356529/4
Client Matrix: Water
Dilution: 1.0
Analysis Date: 03/16/2016 1108
Prep Date: 03/16/2016 1108
Leach Date: N/A

Analysis Batch: 460-356529
Prep Batch: N/A
Leach Batch: N/A
Units: ug/L

Instrument ID: CVOAMS10
Lab File ID: R32070.D
Initial Weight/Volume: 5 mL
Final Weight/Volume: 5 mL
5 mL

Analyte	% Rec		Limit	RPD	RPD Limit	LCS Qual	LCSD Qual
	LCS	LCSD					
Benzene	99	100	76 - 125	1	30		
Toluene	100	101	80 - 120	1	30		
Ethylbenzene	102	102	80 - 120	0	30		
Xylenes, Total	103	103	80 - 120	0	30		

Surrogate	LCS % Rec	LCSD % Rec	Acceptance Limits
1,2-Dichloroethane-d4 (Surr)	103	102	70 - 137
Bromofluorobenzene	105	103	70 - 131
Toluene-d8 (Surr)	101	101	74 - 120
Dibromofluoromethane (Surr)	101	100	72 - 136

Quality Control Results

Client: R & C Formation Ltd.

Job Number: 460-110178-1

Method Blank - Batch: 460-356690

Method: 8260C

Preparation: 5030C

Lab Sample ID:	MB 460-356690/7	Analysis Batch:	460-356690	Instrument ID:	CVOAMS10
Client Matrix:	Water	Prep Batch:	N/A	Lab File ID:	R32099.D
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	5 mL
Analysis Date:	03/17/2016 0048	Units:	ug/L	Final Weight/Volume:	5 mL
Prep Date:	03/17/2016 0048				
Leach Date:	N/A				

Analyte	Result	Qual	MDL	RL
Benzene	1.0	U	0.090	1.0
Toluene	1.0	U	0.25	1.0
Ethylbenzene	1.0	U	0.30	1.0
Xylenes, Total	2.0	U	0.28	2.0

Surrogate	% Rec	Acceptance Limits
1,2-Dichloroethane-d4 (Surr)	93	70 - 137
Bromofluorobenzene	101	70 - 131
Toluene-d8 (Surr)	100	74 - 120
Dibromofluoromethane (Surr)	98	72 - 136

Lab Control Sample/

Method: 8260C

Lab Control Sample Duplicate Recovery Report - Batch: 460-356690

Preparation: 5030C

LCS Lab Sample ID:	LCS 460-356690/3	Analysis Batch:	460-356690	Instrument ID:	CVOAMS10
Client Matrix:	Water	Prep Batch:	N/A	Lab File ID:	R32095.D
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	5 mL
Analysis Date:	03/16/2016 2314	Units:	ug/L	Final Weight/Volume:	5 mL
Prep Date:	03/16/2016 2314				5 mL
Leach Date:	N/A				

LCSD Lab Sample ID:	LCSD 460-356690/4	Analysis Batch:	460-356690	Instrument ID:	CVOAMS10
Client Matrix:	Water	Prep Batch:	N/A	Lab File ID:	R32096.D
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	5 mL
Analysis Date:	03/16/2016 2338	Units:	ug/L	Final Weight/Volume:	5 mL
Prep Date:	03/16/2016 2338				5 mL
Leach Date:	N/A				

Analyte	% Rec		Limit	RPD	RPD Limit	LCS Qual	LCSD Qual
	LCS	LCSD					
Benzene	101	100	76 - 125	1	30		
Toluene	103	102	80 - 120	1	30		
Ethylbenzene	105	103	80 - 120	2	30		
Xylenes, Total	103	104	80 - 120	0	30		

Surrogate	LCS % Rec	LCSD % Rec	Acceptance Limits
1,2-Dichloroethane-d4 (Surr)	93	94	70 - 137
Bromofluorobenzene	101	102	70 - 131
Toluene-d8 (Surr)	99	100	74 - 120
Dibromofluoromethane (Surr)	99	99	72 - 136

Quality Control Results

Client: R & C Formation Ltd.

Job Number: 460-110178-1

Method Blank - Batch: 480-290946

Method: 8270D

Preparation: 3510C

Lab Sample ID:	MB 480-290946/1-A	Analysis Batch:	480-291896	Instrument ID:	HP5973W
Client Matrix:	Water	Prep Batch:	480-290946	Lab File ID:	W0230.D
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	250 mL
Analysis Date:	03/21/2016 0114	Units:	ug/L	Final Weight/Volume:	1 mL
Prep Date:	03/14/2016 1427			Injection Volume:	2 uL
Leach Date:	N/A				

Analyte	Result	Qual	MDL	RL
2-Picoline	80	U	1.4	80
Pyridine	0.528	J	0.41	25

Surrogate	% Rec	Acceptance Limits
Nitrobenzene-d5	92	46 - 120
2-Fluorobiphenyl	92	48 - 120
p-Terphenyl-d14	108	67 - 150
Phenol-d5	42	16 - 120
2-Fluorophenol	64	20 - 120
2,4,6-Tribromophenol	100	52 - 132

Method Blank TICs- Batch: 480-290946

Cas Number	Analyte	RT	Est. Result (ug)	Qual
504-29-0	2-Aminopyridine TIC	7.25	10	U

Lab Control Sample - Batch: 480-290946

Method: 8270D

Preparation: 3510C

Lab Sample ID:	LCS 480-290946/2-A	Analysis Batch:	480-291896	Instrument ID:	HP5973W
Client Matrix:	Water	Prep Batch:	480-290946	Lab File ID:	W0231.D
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	250 mL
Analysis Date:	03/21/2016 0142	Units:	ug/L	Final Weight/Volume:	1 mL
Prep Date:	03/14/2016 1427			Injection Volume:	2 uL
Leach Date:	N/A				

Analyte	Spike Amount	Result	% Rec.	Limit	Qual
Pyridine	16.0	2.34	15	10 - 120	J

Surrogate	% Rec	Acceptance Limits
Nitrobenzene-d5	94	46 - 120
2-Fluorobiphenyl	91	48 - 120
p-Terphenyl-d14	102	67 - 150
Phenol-d5	50	16 - 120
2-Fluorophenol	72	20 - 120
2,4,6-Tribromophenol	115	52 - 132

Quality Control Results

Client: R & C Formation Ltd.

Job Number: 460-110178-1

Method Blank - Batch: 460-357567

Method: 300.0
Preparation: N/A

Lab Sample ID:	MB 460-357567/14	Analysis Batch:	460-357567	Instrument ID:	IC A
Client Matrix:	Water	Prep Batch:	N/A	Lab File ID:	YA2016-03-20-23-41.d
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	10 mL
Analysis Date:	03/20/2016 2341	Units:	mg/L	Final Weight/Volume:	
Prep Date:	N/A			Injection Volume:	10 uL
Leach Date:	N/A				

Analyte	Result	Qual	MDL	RL
Sulfate	0.60	U	0.11	0.60

Lab Control Sample/ Lab Control Sample Duplicate Recovery Report - Batch: 460-357567

Method: 300.0
Preparation: N/A

LCS Lab Sample ID:	LCS 460-357567/15	Analysis Batch:	460-357567	Instrument ID:	IC A
Client Matrix:	Water	Prep Batch:	N/A	Lab File ID:	YA2016-03-21-00-00.d
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	10 mL
Analysis Date:	03/21/2016 0000	Units:	mg/L	Final Weight/Volume:	
Prep Date:	N/A			Injection Volume:	10 uL
Leach Date:	N/A				

LCSD Lab Sample ID:	LCSD 460-357567/16	Analysis Batch:	460-357567	Instrument ID:	IC A
Client Matrix:	Water	Prep Batch:	N/A	Lab File ID:	YA2016-03-21-00-19.d
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	10 mL
Analysis Date:	03/21/2016 0019	Units:	mg/L	Final Weight/Volume:	
Prep Date:	N/A			Injection Volume:	10 uL
Leach Date:	N/A				

Analyte	% Rec.		Limit	RPD	RPD Limit	LCS Qual	LCSD Qual
	LCS	LCSD					
Sulfate	94	93	90 - 110	1	15		

Quality Control Results

Client: R & C Formation Ltd.

Job Number: 460-110178-1

Method Blank - Batch: 460-356500

Method: 6010C
Preparation: 3010A

Lab Sample ID:	MB 460-356500/1-A	Analysis Batch:	460-356666	Instrument ID:	ICP5
Client Matrix:	Water	Prep Batch:	460-356500	Lab File ID:	03162016.asc
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	50 mL
Analysis Date:	03/16/2016 1759	Units:	ug/L	Final Weight/Volume:	50 mL
Prep Date:	03/16/2016 0751				
Leach Date:	N/A				

Analyte	Result	Qual	MDL	RL
Iron	150	U	65.4	150
Manganese	15.0	U	4.9	15.0

Lab Control Sample - Batch: 460-356500

Method: 6010C
Preparation: 3010A

Lab Sample ID:	LCS 460-356500/2-A	Analysis Batch:	460-356666	Instrument ID:	ICP5
Client Matrix:	Water	Prep Batch:	460-356500	Lab File ID:	03162016.asc
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	50 mL
Analysis Date:	03/16/2016 1803	Units:	ug/L	Final Weight/Volume:	50 mL
Prep Date:	03/16/2016 0751				
Leach Date:	N/A				

Analyte	Spike Amount	Result	% Rec.	Limit	Qual
Iron	1000	1047	105	80 - 120	
Manganese	500	508.4	102	80 - 120	

Quality Control Results

Client: R & C Formation Ltd.

Job Number: 460-110178-1

Method Blank - Batch: 460-357099

Method: 6010C
Preparation: 3010A

Lab Sample ID:	MB 460-357099/1-A	Analysis Batch:	460-357450	Instrument ID:	ICP5
Client Matrix:	Water	Prep Batch:	460-357099	Lab File ID:	03192016.asc
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	50 mL
Analysis Date:	03/19/2016 1536	Units:	ug/L	Final Weight/Volume:	50 mL
Prep Date:	03/18/2016 0813				
Leach Date:	N/A				

Analyte	Result	Qual	MDL	RL
Iron	150	U	65.4	150
Manganese	15.0	U	4.9	15.0

Lab Control Sample - Batch: 460-357099

Method: 6010C
Preparation: 3010A

Lab Sample ID:	LCS 460-357099/2-A	Analysis Batch:	460-357450	Instrument ID:	ICP5
Client Matrix:	Water	Prep Batch:	460-357099	Lab File ID:	03192016.asc
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	50 mL
Analysis Date:	03/19/2016 1521	Units:	ug/L	Final Weight/Volume:	50 mL
Prep Date:	03/18/2016 0813				
Leach Date:	N/A				

Analyte	Spike Amount	Result	% Rec.	Limit	Qual
Iron	1000	1070	107	80 - 120	
Manganese	500	528.7	106	80 - 120	

Matrix Spike - Batch: 460-357099

Method: 6010C
Preparation: 3010A

Lab Sample ID:	460-110178-8	Analysis Batch:	460-357450	Instrument ID:	ICP5
Client Matrix:	Water	Prep Batch:	460-357099	Lab File ID:	03192016.asc
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	50 mL
Analysis Date:	03/19/2016 1543	Units:	ug/L	Final Weight/Volume:	50 mL
Prep Date:	03/18/2016 0813				
Leach Date:	N/A				

Analyte	Sample Result/Qual	Spike Amount	Result	% Rec.	Limit	Qual
Iron	3450	1000	4271	82	75 - 125	
Manganese	960	500	1442	96	75 - 125	

Quality Control Results

Client: R & C Formation Ltd.

Job Number: 460-110178-1

Duplicate - Batch: 460-357099

Method: 6010C
Preparation: 3010A

Lab Sample ID:	460-110178-8	Analysis Batch:	460-357450	Instrument ID:	ICP5
Client Matrix:	Water	Prep Batch:	460-357099	Lab File ID:	03192016.asc
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	50 mL
Analysis Date:	03/19/2016 1547	Units:	ug/L	Final Weight/Volume:	50 mL
Prep Date:	03/18/2016 0813				
Leach Date:	N/A				

Analyte	Sample Result/Qual	Result	RPD	Limit	Qual
Iron	3450	3488	1	20	
Manganese	960	954.5	0.6	20	

Quality Control Results

Client: R & C Formation Ltd.

Job Number: 460-110178-1

Method Blank - Batch: 460-358329

Method: 350.1

Preparation: Distill/Ammonia

Lab Sample ID: MB 460-358329/1-A
Client Matrix: Water
Dilution: 1.0
Analysis Date: 03/24/2016 1139
Prep Date: 03/24/2016 0530
Leach Date: N/A

Analysis Batch: 460-358434
Prep Batch: 460-358329
Leach Batch: N/A
Units: mg/L

Instrument ID: Lachat2
Lab File ID: A160324.FDT
Initial Weight/Volume: 50.0 mL
Final Weight/Volume: 50.0 mL

Analyte	Result	Qual	MDL	RL
Ammonia	0.10	U	0.023	0.10

Lab Control Sample - Batch: 460-358329

Method: 350.1

Preparation: Distill/Ammonia

Lab Sample ID: LCS 460-358329/2-A
Client Matrix: Water
Dilution: 1.0
Analysis Date: 03/24/2016 1140
Prep Date: 03/24/2016 0530
Leach Date: N/A

Analysis Batch: 460-358434
Prep Batch: 460-358329
Leach Batch: N/A
Units: mg/L

Instrument ID: Lachat2
Lab File ID: A160324.FDT
Initial Weight/Volume: 50.0 mL
Final Weight/Volume: 50.0 mL

Analyte	Spike Amount	Result	% Rec.	Limit	Qual
Ammonia	1.00	0.931	93	87 - 114	

Quality Control Results

Client: R & C Formation Ltd.

Job Number: 460-110178-1

Method Blank - Batch: 460-358368

Method: 350.1

Preparation: Distill/Ammonia

Lab Sample ID: MB 460-358368/1-A
Client Matrix: Water
Dilution: 1.0
Analysis Date: 03/24/2016 1217
Prep Date: 03/24/2016 0900
Leach Date: N/A

Analysis Batch: 460-358434
Prep Batch: 460-358368
Leach Batch: N/A
Units: mg/L

Instrument ID: Lachat2
Lab File ID: A160324.FDT
Initial Weight/Volume: 50.0 mL
Final Weight/Volume: 50.0 mL

Analyte	Result	Qual	MDL	RL
Ammonia	0.10	U	0.023	0.10

Lab Control Sample - Batch: 460-358368

Method: 350.1

Preparation: Distill/Ammonia

Lab Sample ID: LCS 460-358368/2-A
Client Matrix: Water
Dilution: 1.0
Analysis Date: 03/24/2016 1218
Prep Date: 03/24/2016 0900
Leach Date: N/A

Analysis Batch: 460-358434
Prep Batch: 460-358368
Leach Batch: N/A
Units: mg/L

Instrument ID: Lachat2
Lab File ID: A160324.FDT
Initial Weight/Volume: 50.0 mL
Final Weight/Volume: 50.0 mL

Analyte	Spike Amount	Result	% Rec.	Limit	Qual
Ammonia	1.00	0.942	94	87 - 114	

Matrix Spike/

Matrix Spike Duplicate Recovery Report - Batch: 460-358368

Method: 350.1

Preparation: Distill/Ammonia

MS Lab Sample ID: 460-110178-5
Client Matrix: Water
Dilution: 10
Analysis Date: 03/24/2016 1302
Prep Date: 03/24/2016 0900
Leach Date: N/A

Analysis Batch: 460-358434
Prep Batch: 460-358368
Leach Batch: N/A

Instrument ID: Lachat2
Lab File ID: A160324.FDT
Initial Weight/Volume: 50.0 mL
Final Weight/Volume: 50.0 mL

MSD Lab Sample ID: 460-110178-5
Client Matrix: Water
Dilution: 10
Analysis Date: 03/24/2016 1303
Prep Date: 03/24/2016 0900
Leach Date: N/A

Analysis Batch: 460-358434
Prep Batch: 460-358368
Leach Batch: N/A

Instrument ID: Lachat2
Lab File ID: A160324.FDT
Initial Weight/Volume: 50.0 mL
Final Weight/Volume: 50.0 mL

Analyte	% Rec.		Limit	RPD	RPD Limit	MS Qual	MSD Qual
	MS	MSD					
Ammonia	63	38	65 - 135	1	26	4	4

Quality Control Results

Client: R & C Formation Ltd.

Job Number: 460-110178-1

Method Blank - Batch: 460-355626

Method: SM 4500 NO3 F
Preparation: N/A

Lab Sample ID: MB 460-355626/9
Client Matrix: Water
Dilution: 1.0
Analysis Date: 03/11/2016 1811
Prep Date: N/A
Leach Date: N/A

Analysis Batch: 460-355626
Prep Batch: N/A
Leach Batch: N/A
Units: mg/L

Instrument ID: Lachat1
Lab File ID: N160311.FDT
Initial Weight/Volume:
Final Weight/Volume:

Analyte	Result	Qual	MDL	RL
Nitrate as N	0.10	U	0.026	0.10

Method Blank - Batch: 460-355626

Method: SM 4500 NO3 F
Preparation: N/A

Lab Sample ID: MB 460-355626/33
Client Matrix: Water
Dilution: 1.0
Analysis Date: 03/11/2016 1846
Prep Date: N/A
Leach Date: N/A

Analysis Batch: 460-355626
Prep Batch: N/A
Leach Batch: N/A
Units: mg/L

Instrument ID: Lachat1
Lab File ID: N160311.FDT
Initial Weight/Volume:
Final Weight/Volume:

Analyte	Result	Qual	MDL	RL
Nitrate as N	0.10	U	0.026	0.10

Quality Control Results

Client: R & C Formation Ltd.

Job Number: 460-110178-1

LCS-Certified Reference Material - Batch: 460-355626

Method: SM 4500 NO3 F
Preparation: N/A

Lab Sample ID: LCSSRM 460-355626/11 Analysis Batch: 460-355626
Client Matrix: Water Prep Batch: N/A
Dilution: 1.0 Leach Batch: N/A
Analysis Date: 03/11/2016 1814 Units: mg/L
Prep Date: N/A
Leach Date: N/A

Instrument ID: Lachat1
Lab File ID: N160311.FDT
Initial Weight/Volume:
Final Weight/Volume: 10 mL

Analyte	Spike Amount	Result	% Rec.	Limit	Qual
Nitrate as N	1.40	1.46	103.7	85.9 - 112.0	

LCS-Certified Reference Material - Batch: 460-355626

Method: SM 4500 NO3 F
Preparation: N/A

Lab Sample ID: LCSSRM 460-355626/35 Analysis Batch: 460-355626
Client Matrix: Water Prep Batch: N/A
Dilution: 1.0 Leach Batch: N/A
Analysis Date: 03/11/2016 1849 Units: mg/L
Prep Date: N/A
Leach Date: N/A

Instrument ID: Lachat1
Lab File ID: N160311.FDT
Initial Weight/Volume:
Final Weight/Volume: 10 mL

Analyte	Spike Amount	Result	% Rec.	Limit	Qual
Nitrate as N	1.40	1.46	103.7	85.9 - 112.0	

TestAmerica

777 New Durham Road
Edison, New Jersey 08817
Phone: (732) 549-3900 Fax: (732) 549-3679

THE LEADER IN ENVIRONMENTAL TESTING

CHAIN OF CUSTODY / ANALYSIS REQUEST

Page 1 of 2

Name (for report and invoice) Bob Casson		Samplers Name (Print) AJ Scheff		Site/Project Identification Nepera, Harriman NY	
Company BTC Formation Ltd.		P.O. #		State (Location of site): NY NY: ☒ Other: ☐	
Address 176 Deer Park Ave Suite 3		Analysis Turnaround Time Standard ☒ Rush Charges Authorized For: 2 Week ☐ 1 Week ☐ Other ☐		Regulatory Program: ☐ DKAP: ☐	
City Babylon NY 11702		Phone 631 4829590		Fax 631 4829593	
Sample Identification	Date	Time	Matrix	No. of Cont.	LAB USE ONLY Job No: 110178 Project No:
TB	3/10/16	—	AQ	2	
MW-125		0853		5	
MW-335		0921		5	
MW-20D		0930		5	
MW-53D		1019		9	
MW-110S		1048		9	
MW-375		1121		9	
MW-255		1144		9	
OW-7		1205		9	
MW-DUP				9	
Preservation Used: ☒ H ₂ O ☒ H ₂ SO ₄ ☒ HNO ₃ ☐ NaOH		Soil:		Water:	
6 = Other ☐ 7 = Other ☐					

Special Instructions: **Prudent, alpha, gamma, beta, and neutron radiation; 2 amino pyridine; 2-sulfate, ammonium nitrate, manganese; Water Metals Filtered (Yes/No)? NO**

Relinquished by	Company	Date / Time	Received by	Company
	BTC Formation Ltd.	7/10/16 1250		Harriman NY
Relinquished by	Company	Date / Time	Received by	Company
	BTC Formation Ltd.	3/10/16 1550		Harriman NY
Relinquished by	Company	Date / Time	Received by	Company
Relinquished by	Company	Date / Time	Received by	Company

Barcode: 460-110178 Chain of Custody

2, Pennsylvania (68-522), Connecticut (PH-0200), Rhode Island (132).

2.6/3.6 1.4/2.4 2.6/6 70C/15

SHORT HOLD

777 New Durham Road
Edison, New Jersey 08817
Phone: (781) 540-2000 Fax: (781) 540-2670

CHAIN OF CUSTODY / ANALYSIS REQUEST

20

Laboratory Certifications: New Jersey (12028), New York (11452), Pennsylvania (68-522), Connecticut (PH-0200), Rhode Island (132).

110178

CONNECTED		RAW	
Cooler #1:	22.6 °C	Cooler #4:	°C
Cooler #2:	19.6 °C	Cooler #5:	°C
Cooler #3:	°C	Cooler #6:	°C
		Cooler #7:	°C
		Cooler #8:	°C
		Cooler #9:	°C

CONNECTED		RAW	
Cooler #1:	22.6 °C	Cooler #4:	°C
Cooler #2:	19.6 °C	Cooler #5:	°C
Cooler #3:	°C	Cooler #6:	°C
		Cooler #7:	°C
		Cooler #8:	°C
		Cooler #9:	°C

[illegible]

Sample No(s). adjusted: _____

Volume of Preservative used (ml): _____

Expiration Date: _____

* Samples for Metal analysis which are out of compliance must be acidified at least 24 hours prior to analysis.

Date: 8/14/66

Chain of Custody Record

Client Information (Sub Contract Lab) Client Contact: Shipping/Receiving Company: TestAmerica Laboratories, Inc. Address: 10 Hazelwood Drive, City: Amherst State, Zip: NY, 14228-2298 Phone: 716-691-2600 (Tel) 716-691-7991 (Fax) Email: Project Name: Nepera Maybrook Semi-Annual Sampling Site:		Lab PIV: Haas, Melissa E-Mail: melissa.haas@testamericainc.com Sampler: Phone:		COG No: 460-44867.1 Page: Page 1 of 1 Job #: 460-110178-1		Carrier Tracking No(s):	
Analysis Requested				Preservation Codes: A - HCL B - NaOH C - Zn Acetate D - Nitric Acid E - NaHSO4 F - MeOH G - Anchlor H - Ascorbic Acid I - Ice J - DI Water K - EDTA L - EDA Other: M - Hexane N - None O - AsNaO2 P - Na2O4S Q - Na2SO3 R - Na2S2SO3 S - H2SO4 T - TSP Dodecalhydrate U - Acetone V - MCAA W - ph 4-5 Z - other (specify):			
Due Date Requested: 3/22/2016 TAT Requested (days):		PO #: WO #: Project #: 46009639 SSOW#:		Total Number of Containers			
Sample Date		Sample Time		Sample Type (C=Comp, G=grab)		Matrix (W=water, S=solid, O=overstool, BT=Tissue, A=Air)	
Sample ID (Lab ID)		Preservation Code		Field Filtered Sample (Yes or No)		8270D/3510C_LVI Client Specific List	
MW-12S (460-110178-2)		3/10/16		08:53 Eastern		Water	
MW-33S (460-110178-3)		3/10/16		09:21 Eastern		Water	
MW-20D (460-110178-4)		3/10/16		09:50 Eastern		Water	
MW-53D (460-110178-5)		3/10/16		10:19 Eastern		Water	
MW-16S (460-110178-6)		3/10/16		10:48 Eastern		Water	
MW-37S (460-110178-7)		3/10/16		11:21 Eastern		Water	
MW-25S (460-110178-8)		3/10/16		11:49 Eastern		Water	
OW-7 (460-110178-9)		3/10/16		12:05 Eastern		Water	
MW-DUP (460-110178-10)		3/10/16		Eastern		Water	
OW-6 (460-110178-11)		3/10/16		12:21 Eastern		Water	
Special Instructions/Note: 2-Aminopyridine is a targeted TIC. 2-Aminopyridine is a targeted TIC. 2-Aminopyridine is a targeted TIC. 2-Aminopyridine is a targeted TIC. 2-Aminopyridine is a targeted TIC. 2-Aminopyridine is a targeted TIC. 2-Aminopyridine is a targeted TIC. 2-Aminopyridine is a targeted TIC. 2-Aminopyridine is a targeted TIC. 2-Aminopyridine is a targeted TIC.							
Possible Hazard Identification Unconfirmed Deliverable Requested: I, II, III, IV, Other (specify)							
Sample Disposal (A fee may be assessed if samples are retained longer than 1 month) ☐ Return To Client ☐ Disposal By Lab ☐ Archive For _____ Months							
Special Instructions/QC Requirements:							
Method of Shipment:							
Relinquished by:		Date/Time:		Company:		Date/Time:	
Relinquished by:		Date/Time:		Company:		Date/Time:	
Relinquished by:		Date/Time:		Company:		Date/Time:	
Relinquished by:		Date/Time:		Company:		Date/Time:	
Custody Seals Intact:		Custody Seal No.:		Cooler Temperature(s) °C and Other Remarks:		3.4 #1	

Login Sample Receipt Checklist

Client: R & C Formation Ltd.

Job Number: 460-110178-1

Login Number: 110178

List Source: TestAmerica Edison

List Number: 1

Creator: Meyers, Gary

Question	Answer	Comment
Radioactivity wasn't checked or is $\leq$ background as measured by a survey meter.	N/A	
The cooler's custody seal, if present, is intact.	N/A	Not present
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	3.6/2.4 ° C IR #6
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is $<6\text{mm}$ (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	No analysis requiring residual chlorine check assigned.

Login Sample Receipt Checklist

Client: R & C Formation Ltd.

Job Number: 460-110178-1

Login Number: 110178

List Number: 2

Creator: Hulbert, Michael J

List Source: TestAmerica Buffalo

List Creation: 03/14/16 01:16 PM

Question	Answer	Comment
Radioactivity either was not measured or, if measured, is at or below background	True	
The cooler's custody seal, if present, is intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	3.4 #1
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the sample IDs on the containers and the COC.	True	
Samples are received within Holding Time (Excluding tests with immediate HTs)..	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
VOA sample vials do not have headspace or bubble is <6mm (1/4") in diameter.	N/A	
If necessary, staff have been informed of any short hold time or quick TAT needs	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Sampling Company provided.	True	
Samples received within 48 hours of sampling.	True	
Samples requiring field filtration have been filtered in the field.	True	
Chlorine Residual checked.	N/A	