

100 Crystal Run Road, Suite 101, Middletown, NY 10941
T 877.294.9070 | F 845.692.5894 | W www.cornerstoneeg.com

October 10, 2017

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 – 3rd Quarter 2017
Harriman Inactive Waste Disposal Site #336006

Dear Mr. Mason:

On behalf of the Maybrook and Harriman Environmental Trust (the Trust), this letter, inspection reports, and groundwater monitoring report (attached) provide the third quarter of 2017 project progress report for the Harriman Site, located in Harriman, New York (Harriman Site).

Site Remediation Activities Performed (July – September 2017)

- 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 third quarter of 2017, 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. As reported in the first quarter of 2016 progress report, the biosparge system sustained limited damage during the site demolition activities and 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 July 3, 2017. The interim cover remains in good condition. The cover is well vegetated, and there are no signs of erosion.
- The parking lot pavement remains generally intact and functioning as a cover. Only a few small potholes were observed in the parking lot area, and no additional maintenance is currently indicated by these observations.
- 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 July 3, 2017 inspection.

- As described in the second quarter 2016 progress report, product was not observed on the absorbent socks in wells SVE-1, SVE-3, SVE-4, and VER-2 during the December 2015 and March 2016 inspections; therefore, the absorbent socks were removed during the June 2016 inspection, with the intent of checking the wells for sheen or product without the absorbent socks present. Since removal of the absorbent socks in June 2016, the wells have been checked during each inspection for evidence of product or sheen, both visually and with an interface probe, and during the April 2017 inspection, an absorbent sock was placed in VER-2 based on an observed sheen. The absorbent sock was replaced in VER-2 during the July inspection. Wells SVE-1, SVE-3, and SVE-4 continue to not have any evidence of product or sheet and; therefore, the Trust has discontinued the use of absorbent socks in these wells. Cornerstone, on behalf of the Trust, previously sent a separate letter to the NYSDEC documenting the request to modify the use of absorbent socks.
- 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 fourth five-quarter sampling event was scheduled to occur during the second quarter of 2017. However, the NYSDEC planned a separate groundwater sampling event, unassociated with the Harriman site, and scheduled it for June 2017 within the same general time period as the routine five-quarter event. In an electronic mail message dated May 31, 2017, the NYSDEC approved the postponement of the Trust's sampling event until July 2017. The fourth five-quarter routine sampling event was then completed during the period from July 19-21, 2017. Groundwater sampling was performed by R&C Formation, Ltd. at 29 wells. Laboratory analyses were completed by TestAmerica. The July 2017 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:
 - After shutdown of the biosparging system, the data continue to demonstrate non-detectable concentrations of the site-specific compounds pyridine, alpha picoline and 2-aminopyridine at the down-gradient property boundary. In addition, the site-related VOCs (benzene, ethylbenzene, toluene, and xylene [BETX compounds]) were also not detected at the down-gradient property boundary with only two exceptions. Benzene was detected at monitoring well MW-23D at the New York State Part 703 groundwater quality standard of 1 ug/L.

Benzene was also detected at monitoring well MW-1S nominally above the groundwater quality standard at 1.7 ug/L. Because deviations from groundwater quality standards at sentinel wells have not occurred in the past, MW-1S was resampled on August 31, 2017, and the result was non-detect. These nominal detections of benzene are likely an artifact of the extensive demolition work on site and the presence of large construction equipment and associated petroleum products (e.g., lubricants and fuels) which commonly contain BETX compounds. This is supported by other monitoring data for benzene at locations MW-35S, MW-37S, MW-11S, and MW-105, all of which are closer to the former main plant area and upgradient of MW-1S, and in which benzene was not detected, or in one instance (MW-37S) was detected below the groundwater quality standard at an estimated value (i.e., "J" qualified value below the reporting limit) of 0.19 ug/L.

- The site-related constituent, mercury, was also not detected in any of the monitoring wells except MW-24S, at an estimated concentration of 0.17 ug/L (i.e., "J" qualified value below the reporting limit) below the groundwater quality standard.
- 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 wells MW-16S, MW-20S, MW-33, and MW-37S shown in the attached trend plot are collectively at low-level concentrations, well below historical levels, with the highest detected benzene concentration at 48 ug/L compared to historical levels in the mg/L range. Monitoring well OW-7 had a benzene concentration an order of magnitude lower than the result from March 2016 (220 ug/L compared to 2,400 ug/L). Monitoring well OW-6 showed an increase in benzene concentration compared to March 2016, but below historical highs and consistent with past fluctuations. 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.
- 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 third quarter of 2018.
- 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.

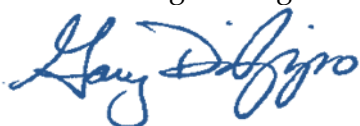
Activities for the 4th Quarter 2017 (October – December 2017)

- Perform the regularly scheduled, quarterly monitoring well and riverbank inspections.

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



Gary J. DiPippo, P.E.
Client Services Manager

Enclosures: Inspection Reports
 Groundwater Monitoring Report
 Trend Plots

cc: T. Lahr
 D. Crosby
 S. Levine
 C. Clark
 J. Jones
 K. Might
 M. Robinson

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

Date 7/3/2017

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	OK	OK	OK	Shackle lock bent	Repaired in field
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	Exercise caution: snakes in vault	

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

Date 7/3/2017

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	OK	OK	D	Outer and inner casing repaired	New lock placed on outer casing.
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. New lock placed on outer casing.
MW-20D*	4	Flushmount	OK	OK	OK	OK	OK	OK		
MW-21D	4	Stickup	OK	OK	OK	OK	OK	OK		

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

Date 7/3/2017

Monitoring Well	Diameter Inches	Finish	Collar	Lid	Plug	Lock	Tag	Casing	Comments	Action Items
MW-23D(1)*	4	Stickup	OK	OK	OK	OK	OK	OK		
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	OK	OK		
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		
MW-20 DR*	2	Flushmount	OK	OK	OK	OK	OK	OK		

Field Technician: Dan Wheeler

(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: 03-Jul-17

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 and well vegetated, no signs of erosion, no white material showing.
B. Settlement of covered area	Good	Several small potholes present in parking lot area, although pavement cover generally remains intact.
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:

7/3/2017

DTP	DTW
0	0.1
0	3.68
0	2.83
0	3.00*



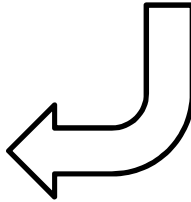
SVE-1
SVE-2
SVE-3
SVE-4



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

DTP	DTW
0	5.58
5.58	5.6
0	5.25
0	5.12

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:

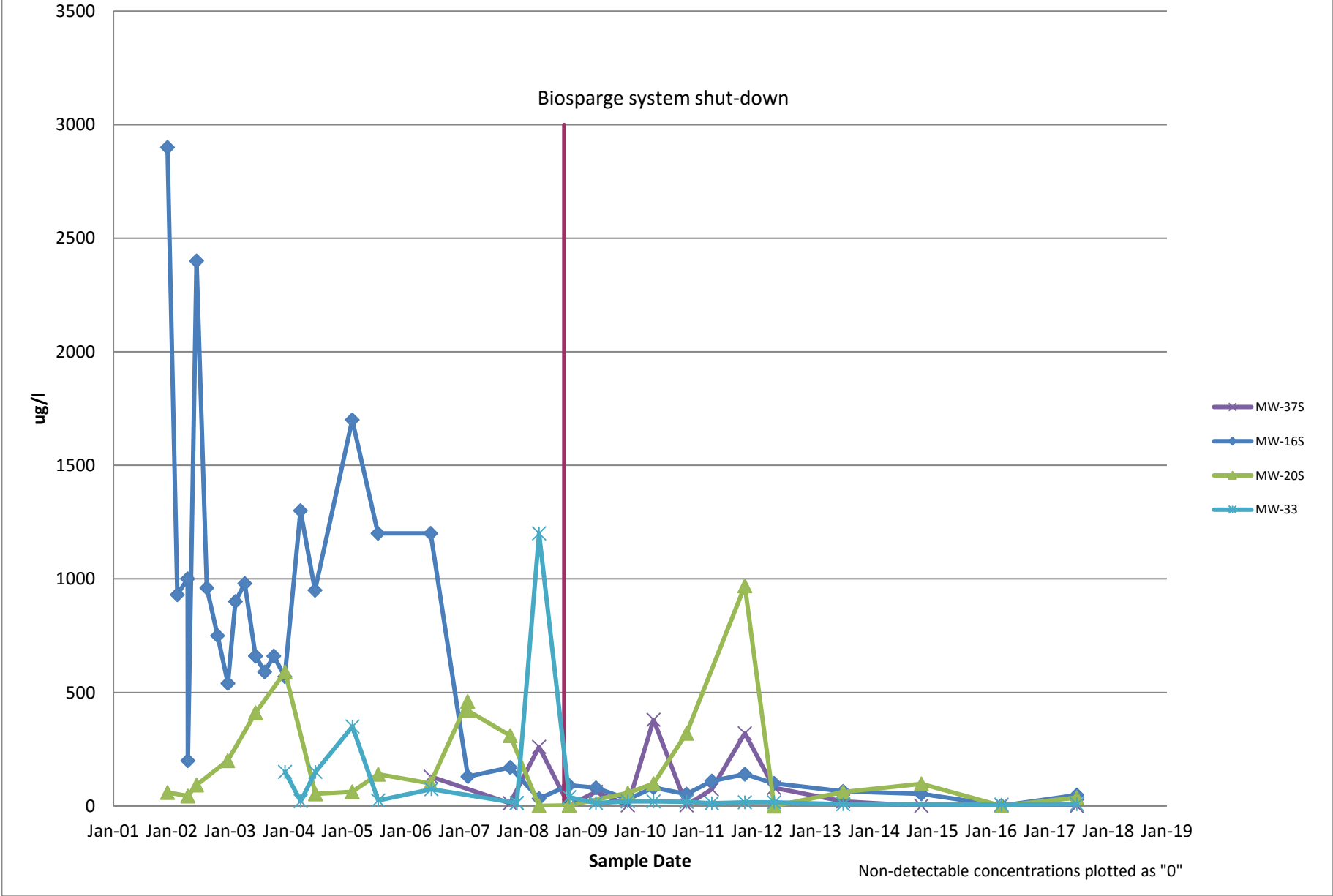
Well checked for potential presence of product after absorbent sock removed

Absorbent sock at 75% capacity, sock replaced at VER-2

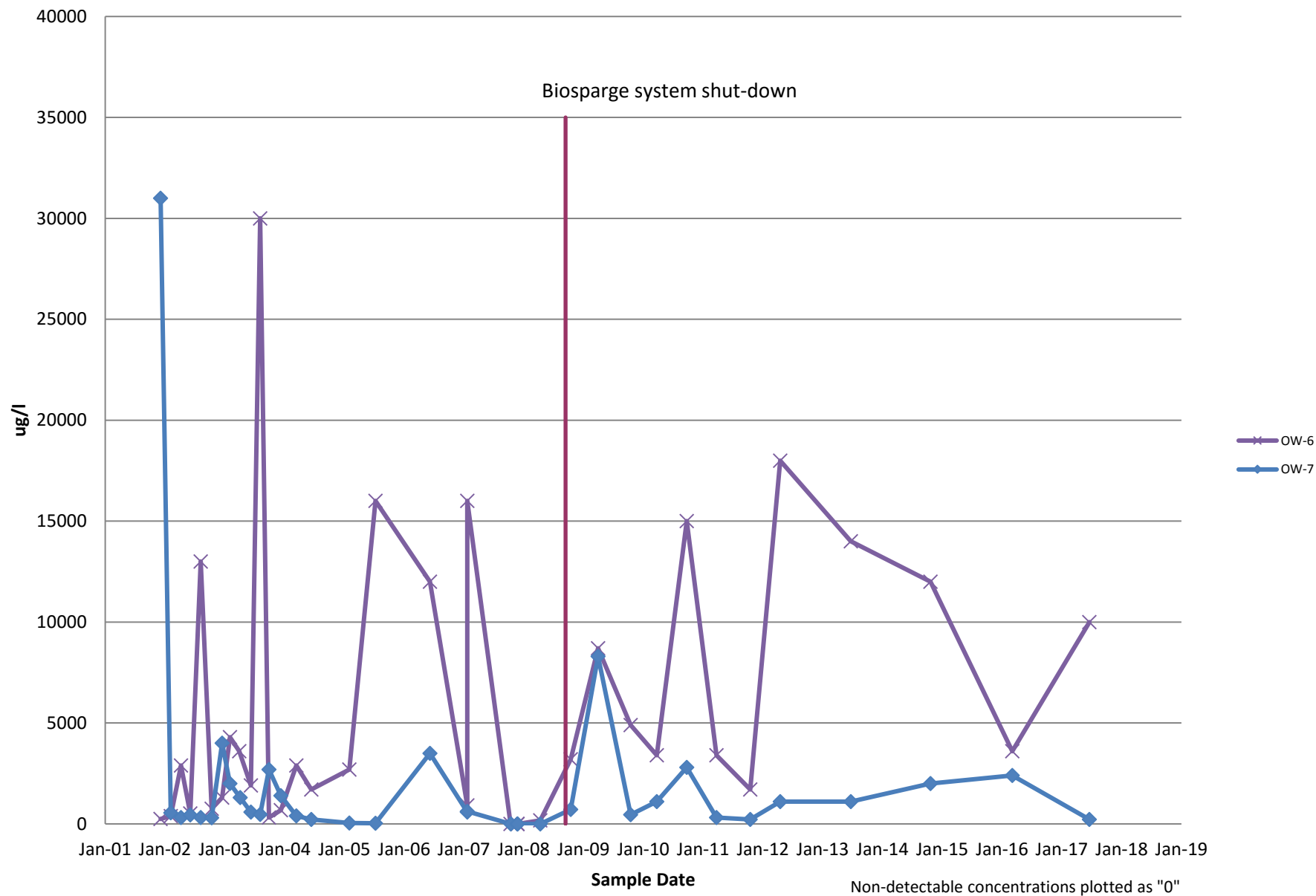
Presence of product or sheen not observed in remaining wells

* Bottom of SVE-4 partially filled in due to prior demolition work.

Benzene Concentration with Time



Benzene Concentration with Time



**Groundwater Monitoring Report
Former Nepera Plant
Harriman, New York
July, 2017**

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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- 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 July, 2017

Introduction

This report presents the results of groundwater monitoring activities performed at the Former Nepera Plant, Harriman, New York, July 19-21, 2017. Due to accessibility, several wells were sampled subsequently on August 31, 2017. The results of groundwater monitoring activities reported represent the twelfth 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 illustrated in Figure 1.



LEGEND

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

Title: Monitoring Well Location Map	
Project: Neperalnc. 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 July 19, 2017 between the hours of 0900 and 1300 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 beginning 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.

As a means 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.

Following 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 July 19, 2017

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	7.24	515.53	507.77-497.77
MW-2S	530.58	NA	NA	518.08-508.08
MW-3S	525.70	NA	NA	510.70-500.70
MW-4S	524.74	NA	NA	482.24-472.24
MW-5S	535.26	12.97	522.29	500.26-490.26
MW-7S	524.69	8.12	516.57	498.69-488.69
MW-8S	526.24	4.84	521.40	461.24-456.24
MW-9S	529.59	5.51	524.08	515.59-508.59
MW-11S	527.44	4.97	522.47	482.44-477.44
MW-12S	530.21	7.94	522.27	505.21-495.21
MW-13S	530.36	8.46	521.90	503.36-493.36
MW-16S	*	11.54	523.17	499.71-489.71
MW-20S	528.61	4.22	524.39	511.61-501.61
MW-21S	544.67	19.15	525.52	529.67-519.67
MW-24S	527.86	7.88	519.98	520.36-510.36
MW-25S	535.16	10.94	524.22	512.16-507.16
MW-27S	535.09	13.48	521.61	505.09-500.09
MW-33S	535.74	4.91	530.83	531.74-516.74
MW-35S	524.92	4.33	520.59	499.42-489.42
MW-36S	525.33	4.39	522.94	500.33-490.33
MW-37S	524.99	1.91	523.08	510.99-500.99
OW-6	534.51	9.80	524.71	514.51-504.51
OW-7	534.82	13.72	521.10	514.82-504.82
RW-1R	529.78	8.72	521.06	481.78-473.78
MW-53D	532.31	7.56	524.75	485.31-475.31
PZ-1	544.46	19.93	524.53	517.46-512.46
PZ-2	531.86	A b a n d o n e d		483.86-478.86
PZ-3	525.49	2.53	522.96	495.49-490.49
MW-101	525.94	5.80	520.14	28.00-33.00
MW-102	522.53	5.41	517.12	10.00-20.00
MW-103	533.52	11.00	522.52	50.00-60.00
MW-104	525.63	4.17	521.46	54.00-64.00
MW-105	528.22	6.51	521.71	63.50-68.50
MW-106	533.68	13.57	520.11	38.00-48.00

Notes: Measured 0800 - 1100

*Measuring point compromised

NA: Not Available (inaccessible/overgrown)

Wells MW-5S, MW-7S and OW-7 measured 8/31/17

Observations

Groundwater Sampling Logs documenting, 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 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 commencing groundwater level measuring activities

Groundwater Sampling

Prior to 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

Laboratory analytical reports in relation to each of the three daily groundwater sampling events are presented in Appendix 4. 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).

In order 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-6 (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. Furthermore, neither semi-volatile nor general chemistry parameters were detected in the aforementioned field blank. Additionally, analytical results in relation to groundwater sample OW-6 and blind duplicate sample MW-DUP are similar. Consequently, 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 July, 2017 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 October, 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 July 19-21, 2017
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	0.22 J	ND(0.25)	ND(0.30)	ND(0.28)
MW-16S	48.00	ND(0.25)	ND(0.30)	ND(0.28)
MW-20S	37.00	1.40	ND(0.30)	ND(0.28)
MW-24S	ND(0.09)	ND(0.25)	ND(0.30)	ND(0.28)
MW-25S	140.00	0.44 J	ND(0.30)	ND(0.28)
MW-33S	7.90	0.40 J	ND(0.30)	1.20 J
MW-35S	ND(0.09)	ND(0.25)	ND(0.30)	ND(0.28)
MW-37S	0.19 J	ND(0.25)	ND(0.30)	ND(0.28)
OW-6	10,000.00	ND(13.0)	ND(15.0)	ND(14.0)
OW-7	220.00	ND(0.25)	ND(0.30)	ND(0.28)
RW-1R	ND(0.09)	ND(0.25)	ND(0.30)	ND(0.28)
MW-53D	1.60	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	0.14 J	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	NA	NA	NA	NA
MW-20D	32.00	5.10	0.78 J	1.3 J
MW-23D	1.00	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	0.45 J	ND(0.25)	ND(0.30)	3.10
MW-20DR	ND(0.09)	ND(0.25)	ND(0.30)	ND(0.28)
<i>QA/QC</i>				
TB (7/19/17)	ND(0.09)	ND(0.25)	ND(0.30)	ND(0.28)
TB (7/20/17)	ND(0.09)	ND(0.25)	ND(0.30)	ND(0.28)
TB (7/21/17)	ND(0.09)	ND(0.25)	ND(0.30)	ND(0.28)
TB (8/31/17)	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	8,800.00	ND(13.00)	ND(15.00)	ND(14.00)
NYSDEC Class GA Standard	1.0	5.0	5.0	5.0

Notes:

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 (inaccessible/overgrown)

Samples from MW-5S, MW-7S and OW-7 collected 8/31/17; MW-1S resampled 8/31/17

* July 19-21 result for MW-1S was 1.7 µg/L. Resample result shown

Table 3
Summary of Analytical Results
Former Nepera Plant, Harriman, NY
Sampled July 19-21, 2017
Semi-Volatile Organic Compounds
Reported in Micrograms per Liter (µg/L)

	Pyridine	alpha-Picoline	2-Aminopyridine
<i>Overburden Aquifer Wells</i>			
MW-1S	ND(0.42)	ND(1.40)	ND(10.00)
MW-5S	ND(0.41)	ND(1.40)	ND(10.00)
MW-7S	ND(0.42)	ND(1.40)	ND(10.00)
MW-8S	ND(0.41)	ND(1.40)	ND(10.00)
MW-11S	ND(0.14)	ND(1.40)	ND(10.00)
MW-12S	ND(0.43)	ND(1.50)	ND(10.00)
MW-16S	0.67 J	ND(1.40)	ND(10.00)
MW-20S	1.7 J	4.4 J	ND(10.00)
MW-24S	ND(0.41)	ND(1.40)	ND(10.00)
MW-25S	ND(0.41)	15.0 J	ND(10.00)
MW-33S	0.59 J	ND(1.5)	ND(11.00)
MW-35S	ND(0.41)	ND(1.40)	ND(10.00)
MW-37S	ND(0.41)	ND(1.40)	ND(10.00)
OW-6	ND(41.0)	140.0 J	ND(1000.0)
OW-7	1.30 J	85.00 J	ND(10.00)
RW-1R	ND(0.41)	ND(1.40)	ND(10.00)
MW-53D	0.51 J	ND(1.40)	ND(10.00)
MW-101	ND(0.41)	ND(1.40)	ND(10.00)
MW-102	ND(0.41)	ND(1.40)	ND(10.00)
MW-103	ND(0.41)	ND(1.40)	ND(10.00)
MW-104	ND(0.41)	ND(1.40)	ND(10.00)
MW-105	ND(0.41)	ND(1.40)	ND(10.00)
MW-106	ND(0.41)	ND(1.40)	ND(10.00)
<i>Bedrock Wells</i>			
MW-6D	NA	NA	NA
MW-20D	6.0 J	19.0 J	ND(10.00)
MW-23D	ND(0.41)	ND(1.40)	ND(10.00)
MW-26D	ND(0.44)	ND(1.50)	ND(11.00)
MW-27D	ND(0.41)	ND(1.40)	ND(10.00)
MW-20DR	ND(0.41)	ND(1.40)	ND(10.00)
<i>QA/QC</i>			
FB	ND(0.41)	ND(1.40)	ND(10.00)
MW-DUP	ND(41.0)	2500.0 J	ND(1000.0)
NYSDEC Class GA Standard	NS	NS	NS

Notes:

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

NA: Not Available (inaccessible/overgrown)

Samples from MW-5S, MW-7S and OW-7 collected 8/31/17; MW-1S resampled 8/31/17

Table 4
Summary of Analytical Results
Former Nepera Plant, Harriman, NY
Sampled July 19-21, 2017
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	16,600.00	1,120.00	26.50	ND(0.10)	17.30	NA
MW-8S	19,200.00	470.00	24.50	0.023 J	6.00	NA
MW-11S	2,200.00	558.00	13.60	0.110	11.70	NA
MW-16S	11,900.00	448.00	37.70	0.019 J	11.90	NA
MW-20S	3,510.00	992.00	222.00	ND(0.10)	38.60	NA
MW-24S	NA	NA	NA	NA	NA	0.17 J
MW-25S	3,520.00	1,130.00	3.05	ND(0.010)	5.40	NA
MW-33S	438,000.00	6,730.00	108.00	0.015 J	749.00	NA
MW-35S	3,560.00	1,130.00	27.30	0.023 J	17.60	NA
MW-37S	13,200.00	1,470.00	125.00	0.010 J	26.80	NA
OW-6	26,100.00	2,760.00	57.60	0.016 J	16.80	NA
OW-7	12,000.00	7,170.00	29.70	0.021 J	13.60	NA
RW-1R	53,500.00	511.00	280.00	0.013 J	18.30	NA
MW-53D	3,680.00	290.00	1.37	2.200	30.60	NA
MW-101	2,690.00	1,420.00	293.00	ND(0.010)	10.90	NA
MW-102	8,310.00	1,050.00	46.30	0.034 J	13.90	NA
MW-103	1,770.00	326.00	21.00	0.310	0.21	NA
MW-104	3,220.00	1,240.00	20.20	0.025 J	2.20	NA
MW-105	31,500.00	1,660.00	15.10	0.037 J	2.10	NA
MW-106	1,580.00	601.00	27.80	0.013 J	5.20	NA
<i>QA/QC</i>						
FB	ND(92.1)	ND(3.1)	ND(0.13)	ND(0.010)	ND(0.072)	NA
MW-DUP	13,400.00	1,960.00	21.30	0.017 J	11.00	NA
NYSDEC Class GA Standard	300.0	300.0	250.0	10.0	2.0	0.7

Notes:

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

Samples from OW-7 collected 8/31/17; MW-1S resampled 8/31/17

APPENDIX 1

GROUNDWATER SAMPLING LOG

Nepera

Harriman, New York

Well ID:	MW-1S
Date:	7/21/17
Sampling Personnel:	JC&CN
Weather:	Sunny, 90°F

Meter Number:	511017
Notes:	

WELL INFORMATION

Well Depth (ft):	22.56
Water Level Depth (ft):	7.24
Pumping Water Depth (ft):	7.51
Well Diameter (in):	6.00
Well Condition:	Good
PID Reading (ppm):	0.00

WELL WATER INFORMATION

Length of Water Column (ft):	15.32
Volume of Water in Well (gal):	22.47
Total Volume Purged (ml):	6,250
Duration of Pumping (min):	25
Odor:	Pungent
Color:	Light Grey
Fe+ ² (mg/L):	1.0

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:	MW-5S
Date:	8/31/17
Sampling Personnel:	JC & CN
Weather:	Sunny 70°F

Meter Number:	511017
Notes:	

WELL INFORMATION

Well Depth (ft):	47.30
Water Level Depth (ft):	12.97
Pumping Water Depth (ft):	13.05
Well Diameter (in):	4.00
Well Condition:	Good
PID Reading (ppm):	0.00

WELL WATER INFORMATION

Length of Water Column (ft):	34.33
Volume of Water in Well (gal):	22.38
Total Volume Purged (ml):	8,400
Duration of Pumping (min):	24
Odor:	None
Color:	Clear
Fe+ ² (mg/L):	0.0

EVACUATION INFORMATION

Purge Method: Low-flow

Pump On: 9:20

Pump Off: 9:44

[illegible]

Purge Water Disposition: On Ground

GROUNDWATER SAMPLING LOG

Nepera

Harriman, New York

Well ID:	MW-7S
Date:	8/31/17
Sampling Personnel:	JC & CN
Weather:	Sunny 70°F

Meter Number:	511017
Notes:	

WELL INFORMATION

Well Depth (ft):	35.70
Water Level Depth (ft):	8.12
Pumping Water Depth (ft):	8.17
Well Diameter (in):	4.00
Well Condition:	Good
PID Reading (ppm):	0.00

WELL WATER INFORMATION

Length of Water Column (ft):	27.58
Volume of Water in Well (gal):	17.98
Total Volume Purged (ml):	6,000
Duration of Pumping (min):	24
Odor:	None
Color:	Clear
Fe+ ² (mg/L):	0.0

EVACUATION INFORMATION

Purge Method: Low-flow

Pump On: 9:55

Pump Off: 10:19

[illegible]

Purge Water Disposition: On Ground

GROUNDWATER SAMPLING LOG

Nepera

Harriman, New York

Well ID:	MW-8S
Date:	7/20/17
Sampling Personnel:	JC&CN
Weather:	Sunny, 90°F

Meter Number:	511017
Notes:	

WELL INFORMATION

Well Depth (ft):	68.60
Water Level Depth (ft):	4.84
Pumping Water Depth (ft):	4.90
Well Diameter (in):	4.00
Well Condition:	Good
PID Reading (ppm):	0.00

WELL WATER INFORMATION

Length of Water Column (ft):	63.76
Volume of Water in Well (gal):	41.57
Total Volume Purged (ml):	7,200
Duration of Pumping (min):	24
Odor:	None
Color:	Clear
Fe+ ² (mg/L):	0.0

EVACUATION INFORMATION

Purge Method: Low Flow

Pump On: 12:40

Pump Off: 13:04

[illegible]

Purge Water Disposition: On Ground

GROUNDWATER SAMPLING LOG

Nepera

Harriman, New York

Well ID:	MW-11S
Date:	7/20/17
Sampling Personnel:	JC&CN
Weather:	Sunny, 90°F

Meter Number:	511017
Notes:	

WELL INFORMATION

Well Depth (ft):	50.65
Water Level Depth (ft):	4.97
Pumping Water Depth (ft):	5.42
Well Diameter (in):	4.00
Well Condition:	Good
PID Reading (ppm):	0.00

WELL WATER INFORMATION

Length of Water Column (ft):	45.68
Volume of Water in Well (gal):	29.78
Total Volume Purged (L):	9,600
Duration of Pumping (min):	24
Odor:	None
Color:	Clear
Fe+ ² (mg/L):	0.0

EVACUATION INFORMATION

Purge Method: Low Flow

Pump On: 13:36

Pump Off: 14:00

[illegible]

Purge Water Disposition: On Ground

GROUNDWATER SAMPLING LOG

Nepera

Harriman, New York

Well ID:	MW-12S
Date:	7/20/17
Sampling Personnel:	JC&CN
Weather:	Sunny, 90°F

Meter Number:	511017
Notes:	

WELL INFORMATION

Well Depth (ft):	34.90
Water Level Depth (ft):	7.94
Pumping Water Depth (ft):	12.02
Well Diameter (in):	2.00
Well Condition:	Good
PID Reading (ppm):	0.00

WELL WATER INFORMATION

Length of Water Column (ft):	26.96
Volume of Water in Well (gal):	4.39
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: 15:10

Pump Off: 15:33

[illegible]

Purge Water Disposition: On Ground

GROUNDWATER SAMPLING LOG

Nepera

Harriman, New York

Well ID:	MW-16S
Date:	7/20/17
Sampling Personnel:	JC&CN
Weather:	Sunny, 90°F

Meter Number:	511017
Notes:	

WELL INFORMATION

Well Depth (ft):	46.20
Water Level Depth (ft):	11.54
Pumping Water Depth (ft):	11.60
Well Diameter (in):	4.00
Well Condition:	Good
PID Reading (ppm):	11.50

WELL WATER INFORMATION

Length of Water Column (ft):	34.66
Volume of Water in Well (gal):	22.60
Total Volume Purged (ml):	5,000
Duration of Pumping (min):	25
Odor:	None
Color:	Clear
Fe+ ² (mg/L):	0.0

*Top of casing sheared off

EVACUATION INFORMATION

Purge Method: Low Flow

Pump On: 15:35

Pump Off: 16:00

[illegible]

Purge Water Disposition: On Ground

GROUNDWATER SAMPLING LOG

Nepera

Harriman, New York

Well ID:	MW-20S
Date:	7/20/17
Sampling Personnel:	JC&CN
Weather:	Sunny, 90°F

Meter Number:	511017
Notes:	

WELL INFORMATION

Well Depth (ft):	27.51
Water Level Depth (ft):	4.22
Pumping Water Depth (ft):	6.01
Well Diameter (in):	4.00
Well Condition:	Good
PID Reading (ppm):	2.00

WELL WATER INFORMATION

Length of Water Column (ft):	23.29
Volume of Water in Well (gal):	15.19
Total Volume Purged (ml):	6,000
Duration of Pumping (min):	24
Odor:	Pungent
Color:	Clear
Fe ⁺² (mg/L):	1.1

EVACUATION INFORMATION

Purge Method: Low Flow

Pump On: 12:12

Pump Off: 12:36

[illegible]

Purge Water Disposition: On Ground

GROUNDWATER SAMPLING LOG

Nepera

Harriman, New York

Well ID:	MW-20D
Date:	7/20/17
Sampling Personnel:	JC&CN
Weather:	Sunny, 90°F

Meter Number:	511017
Notes:	

WELL INFORMATION

Well Depth (ft):	82.75
Water Level Depth (ft):	3.25
Pumping Water Depth (ft):	5.10
Well Diameter (in):	4.00
Well Condition:	Good
PID Reading (ppm):	0.00

WELL WATER INFORMATION

Length of Water Column (ft):	79.50
Volume of Water in Well (gal):	51.83
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: 11:45

Pump Off: 12:09

[illegible]

Purge Water Disposition: On Ground

GROUNDWATER SAMPLING LOG

Nepera

Harriman, New York

Well ID:	MW-20DR
Date:	7/20/17
Sampling Personnel:	JC&CN
Weather:	Sunny, 90°F

Meter Number:	511017
Notes:	

WELL INFORMATION

Well Depth (ft):	97.25
Water Level Depth (ft):	8.24
Pumping Water Depth (ft):	10.20
Well Diameter (in):	4.00
Well Condition:	Good
PID Reading (ppm):	0.00

WELL WATER INFORMATION

Length of Water Column (ft):	89.01
Volume of Water in Well (gal):	58.03
Total Volume Purged (ml):	3,900
Duration of Pumping (min):	26
Odor:	Pungent
Color:	Clear
Fe+ ² (mg/L):	0.5

EVACUATION INFORMATION

Purge Method: Low-flow

Pump On: 11:15

Pump Off: 11:41

[illegible]

Purge Water Disposition: On Ground

GROUNDWATER SAMPLING LOG

Nepera

Harriman, New York

Well ID:	MW-23D
Date:	7/21/17
Sampling Personnel:	JC&CN
Weather:	Sunny, 90°F

Meter Number:	511017
Notes:	

WELL INFORMATION

Well Depth (ft):	103.00
Water Level Depth (ft):	6.06
Pumping Water Depth (ft):	8.16
Well Diameter (in):	4.00
Well Condition:	Good
PID Reading (ppm):	0.00

WELL WATER INFORMATION

Length of Water Column (ft):	96.94
Volume of Water in Well (gal):	63.20
Total Volume Purged (ml):	6,900
Duration of Pumping (min):	23
Odor:	None
Color:	Clear
Fe+ ² (mg/L):	0.0

EVACUATION INFORMATION

Purge Method: Low Flow

Pump On: 9:15

Pump Off: 9:38

[illegible]

Purge Water Disposition: On Ground

GROUNDWATER SAMPLING LOG

Nepera

Harriman, New York

Well ID:	MW-24S
Date:	7/19/17
Sampling Personnel:	JC&CN
Weather:	Sunny, 90°F

Meter Number:	511017
Notes:	

WELL INFORMATION

Well Depth (ft):	19.70
Water Level Depth (ft):	7.88
Pumping Water Depth (ft):	8.79
Well Diameter (in):	4.00
Well Condition:	Good
PID Reading (ppm):	0.00

WELL WATER INFORMATION

Length of Water Column (ft):	11.82
Volume of Water in Well (gal):	7.71
Total Volume Purged (ml):	4,600
Duration of Pumping (min):	23
Odor:	None
Color:	Clear
Fe+ ² (mg/L):	0.5

EVACUATION INFORMATION

Purge Method: Low Flow

Pump On: 13:30

Pump Off: 13:53

[illegible]

Purge Water Disposition: On Ground

GROUNDWATER SAMPLING LOG

Nepera

Harriman, New York

Well ID:	MW-25S
Date:	7/21/17
Sampling Personnel:	JC&CN
Weather:	Sunny, 90°F

Meter Number:	511017
Notes:	

WELL INFORMATION

Well Depth (ft):	30.85
Water Level Depth (ft):	10.94
Pumping Water Depth (ft):	14.02
Well Diameter (in):	4.00
Well Condition:	Good
PID Reading (ppm):	12.50

WELL WATER INFORMATION

Length of Water Column (ft):	19.91
Volume of Water in Well (gal):	12.98
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: 8:30

Pump Off: 8:55

[illegible]

Purge Water Disposition: On Ground

GROUNDWATER SAMPLING LOG

Nepera

Harriman, New York

Well ID:	MW-26D
Date:	7/20/17
Sampling Personnel:	JC&CN
Weather:	Sunny, 90°F

Meter Number:	511017
Notes:	

WELL INFORMATION

Well Depth (ft):	141.75
Water Level Depth (ft):	11.40
Pumping Water Depth (ft):	19.81
Well Diameter (in):	2.00
Well Condition:	Good
PID Reading (ppm):	55.70

WELL WATER INFORMATION

Length of Water Column (ft):	130.35
Volume of Water in Well (gal):	21.25
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: 8:30

Pump Off: 9:05

[illegible]

Purge Water Disposition: On Ground

GROUNDWATER SAMPLING LOG

Nepera

Harriman, New York

Well ID:	MW-27D
Date:	7/21/17
Sampling Personnel:	JC&CN
Weather:	Sunny, 90°F

Meter Number:	511017
Notes:	

WELL INFORMATION

Well Depth (ft):	101.88
Water Level Depth (ft):	14.21
Pumping Water Depth (ft):	14.23
Well Diameter (in):	6.00
Well Condition:	Good
PID Reading (ppm):	0.00

WELL WATER INFORMATION

Length of Water Column (ft):	87.67
Volume of Water in Well (gal):	128.61
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: 9:50

Pump Off: 10:14

[illegible]

Purge Water Disposition: On Ground

GROUNDWATER SAMPLING LOG

Nepera

Harriman, New York

Well ID:	MW-33S
Date:	7/20/17
Sampling Personnel:	JC&CN
Weather:	Sunny, 90°F

Meter Number:	511017
Notes:	

WELL INFORMATION

Well Depth (ft):	16.40
Water Level Depth (ft):	4.91
Pumping Water Depth (ft):	11.10
Well Diameter (in):	2.00
Well Condition:	Good
PID Reading (ppm):	0.00

WELL WATER INFORMATION

Length of Water Column (ft):	11.49
Volume of Water in Well (gal):	1.87
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: 8:00

Pump Off: 8:25

[illegible]

Purge Water Disposition: NA

GROUNDWATER SAMPLING LOG

Nepera

Harriman, New York

Well ID:	MW-35S
Date:	7/19/17
Sampling Personnel:	JC&CN
Weather:	Sunny, 90°F

Meter Number:	511017
Notes:	

WELL INFORMATION

Well Depth (ft):	19.20
Water Level Depth (ft):	4.33
Pumping Water Depth (ft):	4.81
Well Diameter (in):	2.00
Well Condition:	Good
PID Reading (ppm):	0.00

WELL WATER INFORMATION

Length of Water Column (ft):	14.87
Volume of Water in Well (gal):	2.42
Total Volume Purged (ml):	7,750
Duration of Pumping (min):	31
Odor:	None
Color:	Clear
Fe+ ² (mg/L):	1.5

EVACUATION INFORMATION

Purge Method: Low Flow

Pump On: 14:50

Pump Off: 15:21

[illegible]

Purge Water Disposition: On Ground

GROUNDWATER SAMPLING LOG

Nepera

Harriman, New York

Well ID:	MW-37S
Date:	7/20/17
Sampling Personnel:	JC&CN
Weather:	Sunny, 90°F

Meter Number:	511017
Notes:	

WELL INFORMATION

Well Depth (ft):	23.35
Water Level Depth (ft):	1.91
Pumping Water Depth (ft):	2.20
Well Diameter (in):	2.00
Well Condition:	Good
PID Reading (ppm):	0.00

WELL WATER INFORMATION

Length of Water Column (ft):	21.44
Volume of Water in Well (gal):	3.49
Total Volume Purged (ml):	7,500
Duration of Pumping (min):	25
Odor:	None
Color:	Clear
Fe+ ² (mg/L):	2.0

EVACUATION INFORMATION

Purge Method: Low-Flow

Pump On: 10:30

Pump Off: 10:55

[illegible]

Purge Water Disposition: On Ground

GROUNDWATER SAMPLING LOG

Nepera

Harriman, New York

Well ID:	OW-6
Date:	7/21/17
Sampling Personnel:	JC&CN
Weather:	Sunny, 90°F

Meter Number:	511017
Notes:	

WELL INFORMATION

Well Depth (ft):	39.20
Water Level Depth (ft):	9.87
Pumping Water Depth (ft):	10.42
Well Diameter (in):	2.00
Well Condition:	Good
PID Reading (ppm):	6.20

WELL WATER INFORMATION

Length of Water Column (ft):	29.33
Volume of Water in Well (gal):	4.78
Total Volume Purged (ml):	6,500
Duration of Pumping (min):	26
Odor:	None
Color:	Light Brown
Fe+ ² (mg/L):	0.7

EVACUATION INFORMATION

Purge Method: Low Flow

Pump On: 7:30

Pump Off: 7:56

[illegible]

Purge Water Disposition: On Ground

GROUNDWATER SAMPLING LOG

Nepera

Harriman, New York

Well ID:	OW-7
Date:	7/21/17
Sampling Personnel:	JC&CN
Weather:	Sunny, 90°F

Meter Number:	511017
Notes:	

WELL INFORMATION

Well Depth (ft):	30.91
Water Level Depth (ft):	10.33
Pumping Water Depth (ft):	13.42
Well Diameter (in):	2.00
Well Condition:	Good
PID Reading (ppm):	0.00

WELL WATER INFORMATION

Length of Water Column (ft):	20.58
Volume of Water in Well (gal):	3.35
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: 8:00

Pump Off: 8:25

[illegible]

Purge Water Disposition: On Ground

GROUNDWATER SAMPLING LOG

Nepera

Harriman, New York

Well ID:	RW-1R
Date:	7/20/17
Sampling Personnel:	JC&CN
Weather:	Sunny, 90°F

Meter Number:	511017
Notes:	

WELL INFORMATION

Well Depth (ft):	56.20
Water Level Depth (ft):	8.72
Pumping Water Depth (ft):	9.50
Well Diameter (in):	6.00
Well Condition:	Good
PID Reading (ppm):	0.00

WELL WATER INFORMATION

Length of Water Column (ft):	47.48
Volume of Water in Well (gal):	69.65
Total Volume Purged (ml):	6,000
Duration of Pumping (min):	24
Odor:	None
Color:	light brown
Fe+ ² (mg/L):	0.0

EVACUATION INFORMATION

Purge Method: Low Flow

Pump On: 14:40

Pump Off: 15:04

[illegible]

Purge Water Disposition: On Ground

GROUNDWATER SAMPLING LOG

Nepera

Harriman, New York

Well ID:	MW-53D
Date:	7/20/17
Sampling Personnel:	JC&CN
Weather:	Sunny, 90°F

Meter Number:	511017
Notes:	

WELL INFORMATION

Well Depth (ft):	55.10
Water Level Depth (ft):	7.56
Pumping Water Depth (ft):	9.50
Well Diameter (in):	4.00
Well Condition:	Good
PID Reading (ppm):	2.70

WELL WATER INFORMATION

Length of Water Column (ft):	47.54
Volume of Water in Well (gal):	31.00
Total Volume Purged (ml):	6,250
Duration of Pumping (min):	25
Odor:	None
Color:	Clear
Fe+ ² (mg/L):	1.5

EVACUATION INFORMATION

Purge Method: Low Flow

Pump On: 16:10

Pump Off: 16:35

[illegible]

Purge Water Disposition: On Ground

GROUNDWATER SAMPLING LOG

Nepera

Harriman, New York

Well ID:	MW-101
Date:	7/19/17
Sampling Personnel:	JC&CN
Weather:	Sunny, 90°F

Meter Number:	511017
Notes:	

WELL INFORMATION

Well Depth (ft):	32.90
Water Level Depth (ft):	5.80
Pumping Water Depth (ft):	6.03
Well Diameter (in):	2.00
Well Condition:	Good
PID Reading (ppm):	0.00

WELL WATER INFORMATION

Length of Water Column (ft):	27.10
Volume of Water in Well (gal):	4.42
Total Volume Purged (ml):	7,800
Duration of Pumping (min):	26
Odor:	None
Color:	Grey
Fe+ ² (mg/L):	1.0

EVACUATION INFORMATION

Purge Method: Low-Flow

Pump On: 14:00

Pump Off: 14:26

[illegible]

Purge Water Disposition: On Ground

GROUNDWATER SAMPLING LOG

Nepera

Harriman, New York

Well ID:	MW-102
Date:	7/20/17
Sampling Personnel:	JC&CN
Weather:	Sunny, 90°F

Meter Number:	511017
Notes:	

WELL INFORMATION

Well Depth (ft):	22.10
Water Level Depth (ft):	5.41
Pumping Water Depth (ft):	5.92
Well Diameter (in):	2.00
Well Condition:	Good
PID Reading (ppm):	2.81

WELL WATER INFORMATION

Length of Water Column (ft):	16.69
Volume of Water in Well (gal):	2.72
Total Volume Purged (ml):	7,800
Duration of Pumping (min):	26
Odor:	None
Color:	Brown
Fe+ ² (mg/L):	1.5

EVACUATION INFORMATION

Purge Method: Low-Flow

Pump On: 9:45

Pump Off: 10:11

[illegible]

Purge Water Disposition: On Ground

GROUNDWATER SAMPLING LOG

Nepera

Harriman, New York

Well ID:	MW-103
Date:	7/20/17
Sampling Personnel:	JC&CN
Weather:	Sunny, 90°F

Meter Number:	511017
Notes:	

WELL INFORMATION

Well Depth (ft):	60.40
Water Level Depth (ft):	11.00
Pumping Water Depth (ft):	11.01
Well Diameter (in):	2.00
Well Condition:	Good
PID Reading (ppm):	5.00

WELL WATER INFORMATION

Length of Water Column (ft):	49.40
Volume of Water in Well (gal):	8.05
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: 7:30

Pump Off: 7:53

[illegible]

Purge Water Disposition: On Ground

GROUNDWATER SAMPLING LOG

Nepera

Harriman, New York

Well ID:	MW-104
Date:	7/20/17
Sampling Personnel:	JC&CN
Weather:	Sunny, 90°F

Meter Number:	511017
Notes:	

WELL INFORMATION

Well Depth (ft):	65.10
Water Level Depth (ft):	4.17
Pumping Water Depth (ft):	4.19
Well Diameter (in):	2.00
Well Condition:	Good
PID Reading (ppm):	0.00

WELL WATER INFORMATION

Length of Water Column (ft):	60.93
Volume of Water in Well (gal):	9.93
Total Volume Purged (ml):	5,000
Duration of Pumping (min):	25
Odor:	Slightly Pungent
Color:	Clear
Fe+ ² (mg/L):	1.5

EVACUATION INFORMATION

Purge Method: Low-Flow

Pump On: 14:10

Pump Off: 14:35

[illegible]

Purge Water Disposition: On Ground

GROUNDWATER SAMPLING LOG

Nepera

Harriman, New York

Well ID:	MW-105
Date:	7/20/17
Sampling Personnel:	JC&CN
Weather:	Sunny, 90°F

Meter Number:	511017
Notes:	

WELL INFORMATION

Well Depth (ft):	70.65
Water Level Depth (ft):	6.51
Pumping Water Depth (ft):	7.25
Well Diameter (in):	2.00
Well Condition:	Good
PID Reading (ppm):	0.00

WELL WATER INFORMATION

Length of Water Column (ft):	64.14
Volume of Water in Well (gal):	10.45
Total Volume Purged (ml):	4,800
Duration of Pumping (min):	24
Odor:	None
Color:	Grey
Fe+ ² (mg/L):	1.0

EVACUATION INFORMATION

Purge Method: Low-Flow

Pump On: 13:09

Pump Off: 13:33

[illegible]

Purge Water Disposition: On Ground

GROUNDWATER SAMPLING LOG

Nepera

Harriman, New York

Well ID:	MW-106
Date:	7/20/17
Sampling Personnel:	JC&CN
Weather:	Sunny, 90°F

Meter Number:	511017
Notes:	

WELL INFORMATION

Well Depth (ft):	40.90
Water Level Depth (ft):	13.57
Pumping Water Depth (ft):	14.20
Well Diameter (in):	2.00
Well Condition:	Good
PID Reading (ppm):	300.00

WELL WATER INFORMATION

Length of Water Column (ft):	27.33
Volume of Water in Well (gal):	4.45
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: 9:10

Pump Off: 9:35

[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 INN** 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 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 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 INN** 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 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 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: 460-137464-1

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.
Allison L. Bennett
Project Manager I
7/28/2017 11:38 AM

Designee for
Melissa Haas, Project Manager I
777 New Durham Road, Edison, NJ, 08817
(203)944-1310
melissa.haas@testamericainc.com
07/28/2017

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: 460-137464-1

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 black ink that reads "Allison L. Bennett". The signature is written in a cursive style with a horizontal line underneath it.

Approved for release.
Allison L. Bennett
Project Manager I
7/28/2017 11:38 AM

Designee for
Melissa Haas

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CASE NARRATIVE

Client: R & C Formation Ltd.

Project: Nepera Harriman NY

Report Number: 460-137464-1

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.

RECEIPT

The samples were received on 7/19/2017 5:40 PM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperature of the cooler at receipt was 0.6° C.

Receipt Exceptions

Per laboratory policy, the Trip Blank sample date/time was changed to reflect the latest sample date/time of the sampling event.

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 ORGANIC COMPOUNDS (GC-MS)

Samples TB (460-137464-1), MW-24S (460-137464-2), MW-101 (460-137464-3) and MW-35S (460-137464-4) were analyzed for volatile organic compounds (GC-MS) in accordance with EPA SW-846 Methods 8260C. The samples were analyzed on 07/21/2017 and 07/22/2017.

No difficulties were encountered during the volatiles analysis.

All quality control parameters were within the acceptance limits.

SEMIVOLATILE ORGANIC COMPOUNDS (GC/MS)

Samples MW-24S (460-137464-2), MW-101 (460-137464-3) and MW-35S (460-137464-4) were analyzed for semivolatile organic compounds (GC/MS) in accordance with EPA SW-846 Method 8270D. The samples were prepared on 07/24/2017 and analyzed on 07/26/2017.

Insufficient sample volume was available to perform a matrix spike/matrix spike duplicate (MS/MSD) associated with preparation batch 480-368409.

No difficulties were encountered during the semivolatiles analysis.

All quality control parameters were within the acceptance limits.

METALS

Samples MW-101 (460-137464-3) and MW-35S (460-137464-4) were analyzed for metals in accordance with EPA SW-846 Methods 6010C. The samples were prepared and analyzed on 07/23/2017.

No difficulties were encountered during the metals analysis.

All quality control parameters were within the acceptance limits.

MERCURY

Sample MW-24S (460-137464-2) was analyzed for mercury in accordance with EPA SW-846 Methods 7470A. The samples were

prepared and analyzed on 07/20/2017.

No difficulties were encountered during the Hg analysis.

All quality control parameters were within the acceptance limits.

ANIONS

Samples MW-101 (460-137464-3) and MW-35S (460-137464-4) were analyzed for anions in accordance with EPA Method 300_ORGFM_28D Anions by Ion Chromatograph. The samples were analyzed on 07/20/2017.

Sulfate failed the recovery criteria high for the MS/MSD of sample 200-39350-3 in batch 460-450810.

Sulfate failed the recovery criteria high for the MS/MSD of sample 460-137270-1 in batch 460-450810.

Refer to the QC report for details.

Samples MW-101 (460-137464-3)[20X] and MW-35S (460-137464-4)[10X] required dilution prior to analysis. The reporting limits have been adjusted accordingly.

No other difficulties were encountered during the anions analysis.

All other quality control parameters were within the acceptance limits.

AMMONIA

Samples MW-101 (460-137464-3) and MW-35S (460-137464-4) were analyzed for ammonia in accordance with EPA Method 350.1. The samples were prepared on 07/21/2017 and analyzed on 07/22/2017.

Samples MW-101 (460-137464-3)[5X] and MW-35S (460-137464-4)[5X] required dilution prior to analysis. The reporting limits have been adjusted accordingly.

No difficulties were encountered during the ammonia analysis.

All quality control parameters were within the acceptance limits.

NITROGEN-NITRATE

Samples MW-101 (460-137464-3) and MW-35S (460-137464-4) were analyzed for Nitrogen-Nitrate in accordance with SM 4500 NO3 F. The samples were analyzed on 07/20/2017.

Nitrate as N exceeded the RPD limit for the MSD of sample 460-137584-3 in batch 460-451100.

Refer to the QC report for details.

No other difficulties were encountered during the Nitrate analysis.

All other quality control parameters were within the acceptance limits.

EXECUTIVE SUMMARY - Detections

Client: R & C Formation Ltd.

Job Number: 460-137464-1

Lab Sample ID Analyte	Client Sample ID	Result	Qualifier	Reporting Limit	Units	Method
460-137464-2 Mercury	MW-24S	0.17	J	0.20	ug/L	7470A
460-137464-3 Iron	MW-101	2690		150	ug/L	6010C
Manganese		1420		15.0	ug/L	6010C
Ammonia		10.9		0.50	mg/L	350.1
Sulfate		293		12.0	mg/L	300.0
460-137464-4 Iron	MW-35S	3560		150	ug/L	6010C
Manganese		1130		15.0	ug/L	6010C
Ammonia		17.6		0.50	mg/L	350.1
Nitrate as N		0.023	J	0.10	mg/L	SM 4500 NO3 F
Sulfate		27.3		6.00	mg/L	300.0

METHOD SUMMARY

Client: R & C Formation Ltd.

Job Number: 460-137464-1

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: 460-137464-1

Method	Analyst	Analyst ID
SW846 8260C	Tupayachi, Audberto	AAT
SW846 8270D	Quirk, Patrick J	PJQ
SW846 6010C	Chang, Churn Der	CDC
SW846 7470A	Sheikh, Razia B	RBS
MCAWW 350.1	Leye, Mamadou	MAL
SM SM 4500 NO3 F	Njieha, Karianna Y	KYN
MCAWW 300.0	Mulani, Heta X	HXM

SAMPLE SUMMARY

Client: R & C Formation Ltd.

Job Number: 460-137464-1

Lab Sample ID	Client Sample ID	Client Matrix	Date/Time Sampled	Date/Time Received
460-137464-1TB	TB	Water	07/19/2017 0000	07/19/2017 1740
460-137464-2	MW-24S	Water	07/19/2017 1351	07/19/2017 1740
460-137464-3	MW-101	Water	07/19/2017 1404	07/19/2017 1740
460-137464-4	MW-35S	Water	07/19/2017 1516	07/19/2017 1740

SAMPLE RESULTS

Analytical Data

Client: R & C Formation Ltd.

Job Number: 460-137464-1

Client Sample ID: TB

Lab Sample ID: 460-137464-1TB

Client Matrix: Water

Date Sampled: 07/19/2017 0000

Date Received: 07/19/2017 1740

8260C Volatile Organic Compounds by GC/MS

Analysis Method:	8260C	Analysis Batch:	460-450907	Instrument ID:	CVOAMS1
Prep Method:	5030C	Prep Batch:	N/A	Lab File ID:	A42690.D
Dilution:	1.0			Initial Weight/Volume:	5 mL
Analysis Date:	07/21/2017 1320			Final Weight/Volume:	5 mL
Prep Date:	07/21/2017 1320				

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)	97		74 - 132
Bromofluorobenzene	103		77 - 124
Toluene-d8 (Surr)	100		80 - 120
Dibromofluoromethane (Surr)	113		72 - 131

Analytical Data

Client: R & C Formation Ltd.

Job Number: 460-137464-1

Client Sample ID: MW-24S

Lab Sample ID: 460-137464-2

Client Matrix: Water

Date Sampled: 07/19/2017 1351

Date Received: 07/19/2017 1740

8260C Volatile Organic Compounds by GC/MS

Analysis Method:	8260C	Analysis Batch:	460-451164	Instrument ID:	CVOAMS1
Prep Method:	5030C	Prep Batch:	N/A	Lab File ID:	A42735.D
Dilution:	1.0			Initial Weight/Volume:	5 mL
Analysis Date:	07/22/2017 0727			Final Weight/Volume:	5 mL
Prep Date:	07/22/2017 0727				

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		74 - 132
Bromofluorobenzene	110		77 - 124
Toluene-d8 (Surr)	100		80 - 120
Dibromofluoromethane (Surr)	121		72 - 131

Analytical Data

Client: R & C Formation Ltd.

Job Number: 460-137464-1

Client Sample ID: MW-101

Lab Sample ID: 460-137464-3

Client Matrix: Water

Date Sampled: 07/19/2017 1404

Date Received: 07/19/2017 1740

8260C Volatile Organic Compounds by GC/MS

Analysis Method:	8260C	Analysis Batch:	460-451164	Instrument ID:	CVOAMS1
Prep Method:	5030C	Prep Batch:	N/A	Lab File ID:	A42736.D
Dilution:	1.0			Initial Weight/Volume:	5 mL
Analysis Date:	07/22/2017 0750			Final Weight/Volume:	5 mL
Prep Date:	07/22/2017 0750				

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)	97		74 - 132
Bromofluorobenzene	102		77 - 124
Toluene-d8 (Surr)	97		80 - 120
Dibromofluoromethane (Surr)	115		72 - 131

Analytical Data

Client: R & C Formation Ltd.

Job Number: 460-137464-1

Client Sample ID: MW-35S

Lab Sample ID: 460-137464-4

Client Matrix: Water

Date Sampled: 07/19/2017 1516

Date Received: 07/19/2017 1740

8260C Volatile Organic Compounds by GC/MS

Analysis Method:	8260C	Analysis Batch:	460-451164	Instrument ID:	CVOAMS1
Prep Method:	5030C	Prep Batch:	N/A	Lab File ID:	A42737.D
Dilution:	1.0			Initial Weight/Volume:	5 mL
Analysis Date:	07/22/2017 0813			Final Weight/Volume:	5 mL
Prep Date:	07/22/2017 0813				

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)	99		74 - 132
Bromofluorobenzene	109		77 - 124
Toluene-d8 (Surr)	101		80 - 120
Dibromofluoromethane (Surr)	117		72 - 131

Analytical Data

Client: R & C Formation Ltd.

Job Number: 460-137464-1

Client Sample ID: MW-24S

Lab Sample ID: 460-137464-2

Client Matrix: Water

Date Sampled: 07/19/2017 1351

Date Received: 07/19/2017 1740

8270D Semivolatile Organic Compounds (GC/MS)

Analysis Method:	8270D	Analysis Batch:	480-368873	Instrument ID:	HP5973W
Prep Method:	3510C	Prep Batch:	480-368409	Lab File ID:	W9605.D
Dilution:	1.0			Initial Weight/Volume:	250 mL
Analysis Date:	07/26/2017 2253			Final Weight/Volume:	1 mL
Prep Date:	07/24/2017 1410			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	72		46 - 120
2-Fluorobiphenyl	71		48 - 120
p-Terphenyl-d14	75		59 - 136
Phenol-d5	39		22 - 120
2-Fluorophenol	55		35 - 120
2,4,6-Tribromophenol	77		41 - 120

Analytical Data

Client: R & C Formation Ltd.

Job Number: 460-137464-1

Client Sample ID: MW-24S

Lab Sample ID: 460-137464-2

Client Matrix: Water

Date Sampled: 07/19/2017 1351

Date Received: 07/19/2017 1740

8270D Semivolatile Organic Compounds (GC/MS)

Analysis Method:	8270D	Analysis Batch:	480-368873	Instrument ID:	HP5973W
Prep Method:	3510C	Prep Batch:	480-368409	Lab File ID:	W9605.D
Dilution:	1.0			Initial Weight/Volume:	250 mL
Analysis Date:	07/26/2017 2253			Final Weight/Volume:	1 mL
Prep Date:	07/24/2017 1410			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: 460-137464-1

Client Sample ID: MW-101

Lab Sample ID: 460-137464-3

Client Matrix: Water

Date Sampled: 07/19/2017 1404

Date Received: 07/19/2017 1740

8270D Semivolatile Organic Compounds (GC/MS)

Analysis Method:	8270D	Analysis Batch:	480-368873	Instrument ID:	HP5973W
Prep Method:	3510C	Prep Batch:	480-368409	Lab File ID:	W9606.D
Dilution:	1.0			Initial Weight/Volume:	250 mL
Analysis Date:	07/26/2017 2321			Final Weight/Volume:	1 mL
Prep Date:	07/24/2017 1410			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	93		46 - 120
2-Fluorobiphenyl	89		48 - 120
p-Terphenyl-d14	103		59 - 136
Phenol-d5	50		22 - 120
2-Fluorophenol	72		35 - 120
2,4,6-Tribromophenol	88		41 - 120

Analytical Data

Client: R & C Formation Ltd.

Job Number: 460-137464-1

Client Sample ID: MW-101

Lab Sample ID: 460-137464-3

Client Matrix: Water

Date Sampled: 07/19/2017 1404

Date Received: 07/19/2017 1740

8270D Semivolatile Organic Compounds (GC/MS)

Analysis Method:	8270D	Analysis Batch:	480-368873	Instrument ID:	HP5973W
Prep Method:	3510C	Prep Batch:	480-368409	Lab File ID:	W9606.D
Dilution:	1.0			Initial Weight/Volume:	250 mL
Analysis Date:	07/26/2017 2321			Final Weight/Volume:	1 mL
Prep Date:	07/24/2017 1410			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: 460-137464-1

Client Sample ID: MW-35S

Lab Sample ID: 460-137464-4

Client Matrix: Water

Date Sampled: 07/19/2017 1516

Date Received: 07/19/2017 1740

8270D Semivolatile Organic Compounds (GC/MS)

Analysis Method:	8270D	Analysis Batch:	480-368873	Instrument ID:	HP5973W
Prep Method:	3510C	Prep Batch:	480-368409	Lab File ID:	W9607.D
Dilution:	1.0			Initial Weight/Volume:	250 mL
Analysis Date:	07/26/2017 2350			Final Weight/Volume:	1 mL
Prep Date:	07/24/2017 1410			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	98		46 - 120
2-Fluorobiphenyl	91		48 - 120
p-Terphenyl-d14	98		59 - 136
Phenol-d5	54		22 - 120
2-Fluorophenol	75		35 - 120
2,4,6-Tribromophenol	95		41 - 120

Analytical Data

Client: R & C Formation Ltd.

Job Number: 460-137464-1

Client Sample ID: MW-35S

Lab Sample ID: 460-137464-4

Client Matrix: Water

Date Sampled: 07/19/2017 1516

Date Received: 07/19/2017 1740

8270D Semivolatile Organic Compounds (GC/MS)

Analysis Method:	8270D	Analysis Batch:	480-368873	Instrument ID:	HP5973W
Prep Method:	3510C	Prep Batch:	480-368409	Lab File ID:	W9607.D
Dilution:	1.0			Initial Weight/Volume:	250 mL
Analysis Date:	07/26/2017 2350			Final Weight/Volume:	1 mL
Prep Date:	07/24/2017 1410			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: 460-137464-1

Client Sample ID: MW-101

Lab Sample ID: 460-137464-3

Client Matrix: Water

Date Sampled: 07/19/2017 1404

Date Received: 07/19/2017 1740

300.0 Anions, Ion Chromatography

Analysis Method:	300.0	Analysis Batch:	460-450810	Instrument ID:	IC A
	N/A	Prep Batch:	N/A	Lab File ID:	YA 2017-07-20-18-15.0
Dilution:	20			Initial Weight/Volume:	10 mL
Analysis Date:	07/20/2017 1815	Run Type:	DL	Final Weight/Volume:	
Prep Date:	N/A			Injection Volume:	10 uL

Analyte	Result (mg/L)	Qualifier	MDL	RL
Sulfate	293		2.54	12.0

Analytical Data

Client: R & C Formation Ltd.

Job Number: 460-137464-1

Client Sample ID: MW-35S

Lab Sample ID: 460-137464-4

Date Sampled: 07/19/2017 1516

Client Matrix: Water

Date Received: 07/19/2017 1740

300.0 Anions, Ion Chromatography

Analysis Method:	300.0	Analysis Batch:	460-450810	Instrument ID:	IC A
	N/A	Prep Batch:	N/A	Lab File ID:	YA 2017-07-20-15-13.0
Dilution:	10			Initial Weight/Volume:	10 mL
Analysis Date:	07/20/2017 1513	Run Type:	DL	Final Weight/Volume:	
Prep Date:	N/A			Injection Volume:	10 uL

Analyte	Result (mg/L)	Qualifier	MDL	RL
Sulfate	27.3		1.27	6.00

Analytical Data

Client: R & C Formation Ltd.

Job Number: 460-137464-1

Client Sample ID: MW-24S

Lab Sample ID: 460-137464-2

Client Matrix: Water

Date Sampled: 07/19/2017 1351

Date Received: 07/19/2017 1740

7470A Mercury (CVAA)

Analysis Method: 7470A

Prep Method: 7470A

Dilution: 1.0

Analysis Date: 07/20/2017 1426

Prep Date: 07/20/2017 1228

Analysis Batch: 460-450816

Prep Batch: 460-450745

Instrument ID: LEEMAN6

Lab File ID: 450745hg1.CSV

Initial Weight/Volume: 30 mL

Final Weight/Volume: 30 mL

Analyte	Result (ug/L)	Qualifier	MDL	RL
Mercury	0.17	J	0.17	0.20

Analytical Data

Client: R & C Formation Ltd.

Job Number: 460-137464-1

Client Sample ID: MW-101

Lab Sample ID: 460-137464-3

Date Sampled: 07/19/2017 1404

Client Matrix: Water

Date Received: 07/19/2017 1740

6010C Metals (ICP)

Analysis Method: 6010C

Analysis Batch: 460-451343

Instrument ID: ICP5

Prep Method: 3010A

Prep Batch: 460-451277

Lab File ID: 451277D1.asc

Dilution: 1.0

Initial Weight/Volume: 50 mL

Analysis Date: 07/23/2017 1644

Final Weight/Volume: 50 mL

Prep Date: 07/23/2017 0010

Analyte	Result (ug/L)	Qualifier	MDL	RL
Iron	2690		92.1	150
Manganese	1420		3.1	15.0

Analytical Data

Client: R & C Formation Ltd.

Job Number: 460-137464-1

Client Sample ID: MW-35S

Lab Sample ID: 460-137464-4

Date Sampled: 07/19/2017 1516

Client Matrix: Water

Date Received: 07/19/2017 1740

6010C Metals (ICP)

Analysis Method: 6010C

Analysis Batch: 460-451343

Instrument ID: ICP5

Prep Method: 3010A

Prep Batch: 460-451277

Lab File ID: 451277D1.asc

Dilution: 1.0

Initial Weight/Volume: 50 mL

Analysis Date: 07/23/2017 1652

Final Weight/Volume: 50 mL

Prep Date: 07/23/2017 0010

Analyte	Result (ug/L)	Qualifier	MDL	RL
Iron	3560		92.1	150
Manganese	1130		3.1	15.0

Analytical Data

Client: R & C Formation Ltd.

Job Number: 460-137464-1

General Chemistry

Client Sample ID: MW-101

Lab Sample ID: 460-137464-3

Client Matrix: Water

Date Sampled: 07/19/2017 1404

Date Received: 07/19/2017 1740

Analyte	Result	Qual	Units	MDL	RL	Dil	Method
Ammonia	10.9		mg/L	0.36	0.50	5.0	350.1
Analysis Batch: 460-451241 Analysis Date: 07/22/2017 1137							
Prep Batch: 460-451045 Prep Date: 07/21/2017 1338							
Nitrate as N	0.10	U	mg/L	0.010	0.10	1.0	SM 4500 NO3 F
Analysis Batch: 460-450712 Analysis Date: 07/20/2017 0949							

Analytical Data

Client: R & C Formation Ltd.

Job Number: 460-137464-1

General Chemistry

Client Sample ID: MW-35S

Lab Sample ID: 460-137464-4

Client Matrix: Water

Date Sampled: 07/19/2017 1516

Date Received: 07/19/2017 1740

Analyte	Result	Qual	Units	MDL	RL	Dil	Method
Ammonia	17.6		mg/L	0.36	0.50	5.0	350.1
Analysis Batch: 460-451241 Analysis Date: 07/22/2017 1138							
Prep Batch: 460-451045 Prep Date: 07/21/2017 1338							
Nitrate as N	0.023	J	mg/L	0.010	0.10	1.0	SM 4500 NO3 F
Analysis Batch: 460-450712 Analysis Date: 07/20/2017 0955							

DATA REPORTING QUALIFIERS

Client: R & C Formation Ltd.

Job Number: 460-137464-1

Lab Section	Qualifier	Description
GC/MS VOA	U	Analyzed for but not detected.
GC/MS Semi VOA	U	Analyzed for but not detected.
HPLC/IC	U	Analyzed for but not detected.
Metals	U	Indicates analyzed for but not detected.
	J	Sample result is greater than the MDL but below the CRDL
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: 460-137464-1

QC Association Summary

Lab Sample ID	Client Sample ID	Report Basis	Client Matrix	Method	Prep Batch
GC/MS VOA					
Analysis Batch:460-450907					
LCS 460-450907/3	Lab Control Sample	T	Water	8260C	
LCSD 460-450907/4	Lab Control Sample Duplicate	T	Water	8260C	
MB 460-450907/7	Method Blank	T	Water	8260C	
460-137464-1TB	TB	T	Water	8260C	
Analysis Batch:460-451164					
LCS 460-451164/3	Lab Control Sample	T	Water	8260C	
MB 460-451164/8	Method Blank	T	Water	8260C	
460-137464-2	MW-24S	T	Water	8260C	
460-137464-2MS	Matrix Spike	T	Water	8260C	
460-137464-2MSD	Matrix Spike Duplicate	T	Water	8260C	
460-137464-3	MW-101	T	Water	8260C	
460-137464-4	MW-35S	T	Water	8260C	

Report Basis

T = Total

GC/MS Semi VOA

Prep Batch: 480-368409					
LCS 480-368409/2-A	Lab Control Sample	T	Water	3510C	
LCSD 480-368409/3-A	Lab Control Sample Duplicate	T	Water	3510C	
MB 480-368409/1-A	Method Blank	T	Water	3510C	
460-137464-2	MW-24S	T	Water	3510C	
460-137464-3	MW-101	T	Water	3510C	
460-137464-4	MW-35S	T	Water	3510C	
Analysis Batch:480-368873					
LCS 480-368409/2-A	Lab Control Sample	T	Water	8270D	480-368409
LCSD 480-368409/3-A	Lab Control Sample Duplicate	T	Water	8270D	480-368409
MB 480-368409/1-A	Method Blank	T	Water	8270D	480-368409
460-137464-2	MW-24S	T	Water	8270D	480-368409
460-137464-3	MW-101	T	Water	8270D	480-368409
460-137464-4	MW-35S	T	Water	8270D	480-368409

Report Basis

T = Total

Quality Control Results

Client: R & C Formation Ltd.

Job Number: 460-137464-1

QC Association Summary

Lab Sample ID	Client Sample ID	Report Basis	Client Matrix	Method	Prep Batch
Metals					
Prep Batch: 460-450745					
LCS 460-450745/2-A	Lab Control Sample	T	Water	7470A	
MB 460-450745/1-A	Method Blank	T	Water	7470A	
460-137464-2	MW-24S	T	Water	7470A	
Analysis Batch:460-450816					
LCS 460-450745/2-A	Lab Control Sample	T	Water	7470A	460-450745
MB 460-450745/1-A	Method Blank	T	Water	7470A	460-450745
460-137464-2	MW-24S	T	Water	7470A	460-450745
Prep Batch: 460-451277					
LCS 460-451277/2-A	Lab Control Sample	T	Water	3010A	
MB 460-451277/1-A	Method Blank	T	Water	3010A	
460-137464-3	MW-101	T	Water	3010A	
460-137464-3DU	Duplicate	T	Water	3010A	
460-137464-3MS	Matrix Spike	T	Water	3010A	
460-137464-4	MW-35S	T	Water	3010A	
Analysis Batch:460-451343					
LCS 460-451277/2-A	Lab Control Sample	T	Water	6010C	460-451277
MB 460-451277/1-A	Method Blank	T	Water	6010C	460-451277
460-137464-3	MW-101	T	Water	6010C	460-451277
460-137464-3DU	Duplicate	T	Water	6010C	460-451277
460-137464-3MS	Matrix Spike	T	Water	6010C	460-451277
460-137464-4	MW-35S	T	Water	6010C	460-451277

Report Basis

T = Total

Quality Control Results

Client: R & C Formation Ltd.

Job Number: 460-137464-1

QC Association Summary

Lab Sample ID	Client Sample ID	Report Basis	Client Matrix	Method	Prep Batch
General Chemistry					
Prep Batch: 460-450481					
LB 460-450481/1-A	TCLP SPLPE Leachate Blank	T	Water		
Analysis Batch:460-450712					
LCSSRM 460-450712/10	LCS-Certified Reference Material	T	Water	SM 4500 NO3 F	
LCSSRM 460-450712/11	LCS-Certified Reference Material	T	Water	SM 4500 NO3 F	
MB 460-450712/9	Method Blank	T	Water	SM 4500 NO3 F	
LB 460-450481/1-A	TCLP SPLPE Leachate Blank	T	Water	SM 4500 NO3 F	
460-137464-3	MW-101	T	Water	SM 4500 NO3 F	
460-137464-4	MW-35S	T	Water	SM 4500 NO3 F	
Prep Batch: 460-451045					
LCS 460-451045/2-A	Lab Control Sample	T	Water	Distill/Ammonia	
MB 460-451045/1-A	Method Blank	T	Water	Distill/Ammonia	
460-137464-3	MW-101	T	Water	Distill/Ammonia	
460-137464-4	MW-35S	T	Water	Distill/Ammonia	
Analysis Batch:460-451100					
MB 460-451100/9	Method Blank	T	Water	SM 4500 NO3 F	
Analysis Batch:460-451241					
LCS 460-451045/2-A	Lab Control Sample	T	Water	350.1	460-451045
MB 460-451045/1-A	Method Blank	T	Water	350.1	460-451045
460-137464-3	MW-101	T	Water	350.1	460-451045
460-137464-4	MW-35S	T	Water	350.1	460-451045

Report Basis

T = Total

HPLC/IC

Analysis Batch:460-450810					
LCS 460-450810/5	Lab Control Sample	T	Water	300.0	
LCSD 460-450810/6	Lab Control Sample Duplicate	T	Water	300.0	
MB 460-450810/3	Method Blank	T	Water	300.0	
460-137464-3DL	MW-101	T	Water	300.0	
460-137464-4DL	MW-35S	T	Water	300.0	

Report Basis

T = Total

TestAmerica Edison

Quality Control Results

Client: R & C Formation Ltd.

Job Number: 460-137464-1

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
460-137464-1	TB	97	103	100	113
460-137464-2	MW-24S	100	110	100	121
460-137464-3	MW-101	97	102	97	115
460-137464-4	MW-35S	99	109	101	117
MB 460-450907/7		84	100	92	104
MB 460-451164/8		96	104	100	110
LCS 460-450907/3		88	109	100	103
LCS 460-451164/3		92	108	101	110
LCSD 460-450907/4		87	111	101	107
460-137464-2 MS	MW-24S MS	80	90	87	96
460-137464-2 MSD	MW-24S MSD	97	109	103	113

Surrogate	Acceptance Limits
DCA = 1,2-Dichloroethane-d4 (Surr)	74-132
BFB = Bromofluorobenzene	77-124
TOL = Toluene-d8 (Surr)	80-120
DBFM = Dibromofluoromethane (Surr)	72-131

Client: R & C Formation Ltd.

Job Number: 460-137464-1

Surrogate Recovery Report

8270D Semivolatile Organic Compounds (GC/MS)

Client Matrix: Water

Lab Sample ID	Client Sample ID	NBZ %Rec	FBP %Rec	TPHd14 %Rec	PHL %Rec	2FP %Rec	TBP %Rec
460-137464-2	MW-24S	72	71	75	39	55	77
460-137464-3	MW-101	93	89	103	50	72	88
460-137464-4	MW-35S	98	91	98	54	75	95
MB 480-368409/1-A		93	90	100	53	78	95
LCS 480-368409/2-A		96	95	99	62	81	105
LCSD 480-368409/3-A		92	91	92	60	78	105

Surrogate	Acceptance Limits
NBZ = Nitrobenzene-d5	46-120
FBP = 2-Fluorobiphenyl	48-120
TPHd14 = p-Terphenyl-d14	59-136
PHL = Phenol-d5	22-120
2FP = 2-Fluorophenol	35-120
TBP = 2,4,6-Tribromophenol	41-120

Quality Control Results

Client: R & C Formation Ltd.

Job Number: 460-137464-1

Method Blank - Batch: 460-450907

Method: 8260C

Preparation: 5030C

Lab Sample ID:	MB 460-450907/7	Analysis Batch:	460-450907	Instrument ID:	CVOAMS1
Client Matrix:	Water	Prep Batch:	N/A	Lab File ID:	A42671.D
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	5 mL
Analysis Date:	07/21/2017 0607	Units:	ug/L	Final Weight/Volume:	5 mL
Prep Date:	07/21/2017 0607				
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)	84	74 - 132
Bromofluorobenzene	100	77 - 124
Toluene-d8 (Surr)	92	80 - 120
Dibromofluoromethane (Surr)	104	72 - 131

Lab Control Sample/

Method: 8260C

Lab Control Sample Duplicate Recovery Report - Batch: 460-450907

Preparation: 5030C

LCS Lab Sample ID:	LCS 460-450907/3	Analysis Batch:	460-450907	Instrument ID:	CVOAMS1
Client Matrix:	Water	Prep Batch:	N/A	Lab File ID:	A42667.D
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	5 mL
Analysis Date:	07/21/2017 0436	Units:	ug/L	Final Weight/Volume:	5 mL
Prep Date:	07/21/2017 0436				5 mL
Leach Date:	N/A				

LCSD Lab Sample ID:	LCSD 460-450907/4	Analysis Batch:	460-450907	Instrument ID:	CVOAMS1
Client Matrix:	Water	Prep Batch:	N/A	Lab File ID:	A42668.D
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	5 mL
Analysis Date:	07/21/2017 0459	Units:	ug/L	Final Weight/Volume:	5 mL
Prep Date:	07/21/2017 0459				5 mL
Leach Date:	N/A				

Analyte	% Rec.		Limit	RPD	RPD Limit	LCS Qual	LCSD Qual
	LCS	LCSD					
Benzene	95	102	77 - 121	8	30		
Toluene	97	102	80 - 120	5	30		
Ethylbenzene	91	99	80 - 120	8	30		
Xylenes, Total	93	102	80 - 120	9	30		

Surrogate	LCS % Rec	LCSD % Rec	Acceptance Limits
1,2-Dichloroethane-d4 (Surr)	88	87	74 - 132
Bromofluorobenzene	109	111	77 - 124
Toluene-d8 (Surr)	100	101	80 - 120
Dibromofluoromethane (Surr)	103	107	72 - 131

Quality Control Results

Client: R & C Formation Ltd.

Job Number: 460-137464-1

Method Blank - Batch: 460-451164

Method: 8260C

Preparation: 5030C

Lab Sample ID:	MB 460-451164/8	Analysis Batch:	460-451164	Instrument ID:	CVOAMS1
Client Matrix:	Water	Prep Batch:	N/A	Lab File ID:	A42733.D
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	5 mL
Analysis Date:	07/22/2017 0642	Units:	ug/L	Final Weight/Volume:	5 mL
Prep Date:	07/22/2017 0642				
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)	96	74 - 132
Bromofluorobenzene	104	77 - 124
Toluene-d8 (Surr)	100	80 - 120
Dibromofluoromethane (Surr)	110	72 - 131

Lab Control Sample - Batch: 460-451164

Method: 8260C

Preparation: 5030C

Lab Sample ID:	LCS 460-451164/3	Analysis Batch:	460-451164	Instrument ID:	CVOAMS1
Client Matrix:	Water	Prep Batch:	N/A	Lab File ID:	A42728.D
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	5 mL
Analysis Date:	07/22/2017 0448	Units:	ug/L	Final Weight/Volume:	5 mL
Prep Date:	07/22/2017 0448				
Leach Date:	N/A				

Analyte	Spike Amount	Result	% Rec.	Limit	Qual
Benzene	20.0	20.7	103	77 - 121	
Toluene	20.0	20.3	101	80 - 120	
Ethylbenzene	20.0	19.5	97	80 - 120	
Xylenes, Total	40.0	39.4	98	80 - 120	

Surrogate	% Rec	Acceptance Limits
1,2-Dichloroethane-d4 (Surr)	92	74 - 132
Bromofluorobenzene	108	77 - 124
Toluene-d8 (Surr)	101	80 - 120
Dibromofluoromethane (Surr)	110	72 - 131

Quality Control Results

Client: R & C Formation Ltd.

Job Number: 460-137464-1

Matrix Spike/ Matrix Spike Duplicate Recovery Report - Batch: 460-451164

Method: 8260C
Preparation: 5030C

MS Lab Sample ID: 460-137464-2
Client Matrix: Water
Dilution: 10
Analysis Date: 07/22/2017 1029
Prep Date: 07/22/2017 1029
Leach Date: N/A

Analysis Batch: 460-451164
Prep Batch: N/A
Leach Batch: N/A

Instrument ID: CVOAMS1
Lab File ID: A42743.D
Initial Weight/Volume: 5 mL
Final Weight/Volume: 5 mL
5 mL

MSD Lab Sample ID: 460-137464-2
Client Matrix: Water
Dilution: 10
Analysis Date: 07/22/2017 1052
Prep Date: 07/22/2017 1052
Leach Date: N/A

Analysis Batch: 460-451164
Prep Batch: N/A
Leach Batch: N/A

Instrument ID: CVOAMS1
Lab File ID: A42744.D
Initial Weight/Volume: 5 mL
Final Weight/Volume: 5 mL
5 mL

Analyte	% Rec.		Limit	RPD	RPD Limit	MS Qual	MSD Qual
	MS	MSD					
Benzene	104	107	77 - 121	3	30		
Toluene	98	103	80 - 120	5	30		
Ethylbenzene	91	97	80 - 120	6	30		
Xylenes, Total	95	99	80 - 120	5	30		
Surrogate	MS % Rec		MSD % Rec	Acceptance Limits			
1,2-Dichloroethane-d4 (Surr)	80		97	74 - 132			
Bromofluorobenzene	90		109	77 - 124			
Toluene-d8 (Surr)	87		103	80 - 120			
Dibromofluoromethane (Surr)	96		113	72 - 131			

Quality Control Results

Client: R & C Formation Ltd.

Job Number: 460-137464-1

Method Blank - Batch: 480-368409

Method: 8270D

Preparation: 3510C

Lab Sample ID:	MB 480-368409/1-A	Analysis Batch:	480-368873	Instrument ID:	HP5973W
Client Matrix:	Water	Prep Batch:	480-368409	Lab File ID:	W9602.D
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	250 mL
Analysis Date:	07/26/2017 2126	Units:	ug/L	Final Weight/Volume:	1 mL
Prep Date:	07/24/2017 1410			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	93	46 - 120
2-Fluorobiphenyl	90	48 - 120
p-Terphenyl-d14	100	59 - 136
Phenol-d5	53	22 - 120
2-Fluorophenol	78	35 - 120
2,4,6-Tribromophenol	95	41 - 120

Method Blank TICs- Batch: 480-368409

Cas Number	Analyte	RT	Est. Result (ug)	Qual
504-29-0	2-Aminopyridine TIC	6.87	10	U

Quality Control Results

Client: R & C Formation Ltd.

Job Number: 460-137464-1

Lab Control Sample/

Lab Control Sample Duplicate Recovery Report - Batch: 480-368409

Method: 8270D

Preparation: 3510C

LCS Lab Sample ID: LCS 480-368409/2-A	Analysis Batch: 480-368873	Instrument ID: HP5973W
Client Matrix: Water	Prep Batch: 480-368409	Lab File ID: W9603.D
Dilution: 1.0	Leach Batch: N/A	Initial Weight/Volume: 250 mL
Analysis Date: 07/26/2017 2155	Units: ug/L	Final Weight/Volume: 1 mL
Prep Date: 07/24/2017 1410		Injection Volume: 2 uL
Leach Date: N/A		

LCSD Lab Sample ID: LCSD 480-368409/3-A	Analysis Batch: 480-368873	Instrument ID: HP5973W
Client Matrix: Water	Prep Batch: 480-368409	Lab File ID: W9604.D
Dilution: 1.0	Leach Batch: N/A	Initial Weight/Volume: 250 mL
Analysis Date: 07/26/2017 2224	Units: ug/L	Final Weight/Volume: 1 mL
Prep Date: 07/24/2017 1410		Injection Volume: 2 uL
Leach Date: N/A		

Analyte	% Rec.		Limit	RPD	RPD Limit	LCS Qual	LCSD Qual
	LCS	LCSD					
Pyridine	41	47	10 - 120	14	49		
Surrogate	LCS % Rec		LCSD % Rec		Acceptance Limits		
Nitrobenzene-d5	96		92		46 - 120		
2-Fluorobiphenyl	95		91		48 - 120		
p-Terphenyl-d14	99		92		59 - 136		
Phenol-d5	62		60		22 - 120		
2-Fluorophenol	81		78		35 - 120		
2,4,6-Tribromophenol	105		105		41 - 120		

Quality Control Results

Client: R & C Formation Ltd.

Job Number: 460-137464-1

Method Blank - Batch: 460-450810

Method: 300.0
Preparation: N/A

Lab Sample ID:	MB 460-450810/3	Analysis Batch:	460-450810	Instrument ID:	IC A
Client Matrix:	Water	Prep Batch:	N/A	Lab File ID:	YA 2017-07-20-09-16.d
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	10 mL
Analysis Date:	07/20/2017 0916	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	0.13	0.60

Lab Control Sample/

Lab Control Sample Duplicate Recovery Report - Batch: 460-450810

Method: 300.0
Preparation: N/A

LCS Lab Sample ID:	LCS 460-450810/5	Analysis Batch:	460-450810	Instrument ID:	IC A
Client Matrix:	Water	Prep Batch:	N/A	Lab File ID:	YA 2017-07-20-09-49.d
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	10 mL
Analysis Date:	07/20/2017 0949	Units:	mg/L	Final Weight/Volume:	
Prep Date:	N/A			Injection Volume:	10 uL
Leach Date:	N/A				

LCSD Lab Sample ID:	LCSD 460-450810/6	Analysis Batch:	460-450810	Instrument ID:	IC A
Client Matrix:	Water	Prep Batch:	N/A	Lab File ID:	YA 2017-07-20-10-05.d
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	10 mL
Analysis Date:	07/20/2017 1005	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	99	96	90 - 110	3	15		

Quality Control Results

Client: R & C Formation Ltd.

Job Number: 460-137464-1

Method Blank - Batch: 460-451277

Method: 6010C
Preparation: 3010A

Lab Sample ID:	MB 460-451277/1-A	Analysis Batch:	460-451343	Instrument ID:	ICP5
Client Matrix:	Water	Prep Batch:	460-451277	Lab File ID:	451277D1.asc
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	50 mL
Analysis Date:	07/23/2017 1720	Units:	ug/L	Final Weight/Volume:	50 mL
Prep Date:	07/23/2017 0010				
Leach Date:	N/A				

Analyte	Result	Qual	MDL	RL
Iron	150	U	92.1	150
Manganese	15.0	U	3.1	15.0

Lab Control Sample - Batch: 460-451277

Method: 6010C
Preparation: 3010A

Lab Sample ID:	LCS 460-451277/2-A	Analysis Batch:	460-451343	Instrument ID:	ICP5
Client Matrix:	Water	Prep Batch:	460-451277	Lab File ID:	451277D1.asc
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	50 mL
Analysis Date:	07/23/2017 1704	Units:	ug/L	Final Weight/Volume:	50 mL
Prep Date:	07/23/2017 0010				
Leach Date:	N/A				

Analyte	Spike Amount	Result	% Rec.	Limit	Qual
Iron	1000	991.9	99	80 - 120	
Manganese	500	511.2	102	80 - 120	

Matrix Spike - Batch: 460-451277

Method: 6010C
Preparation: 3010A

Lab Sample ID:	460-137464-3	Analysis Batch:	460-451343	Instrument ID:	ICP5
Client Matrix:	Water	Prep Batch:	460-451277	Lab File ID:	451277D1.asc
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	50 mL
Analysis Date:	07/23/2017 1636	Units:	ug/L	Final Weight/Volume:	50 mL
Prep Date:	07/23/2017 0010				
Leach Date:	N/A				

Analyte	Sample Result/Qual	Spike Amount	Result	% Rec.	Limit	Qual
Iron	2690	1000	3614	92	75 - 125	
Manganese	1420	500	1937	104	75 - 125	

Quality Control Results

Client: R & C Formation Ltd.

Job Number: 460-137464-1

Duplicate - Batch: 460-451277

Method: 6010C
Preparation: 3010A

Lab Sample ID: 460-137464-3
Client Matrix: Water
Dilution: 1.0
Analysis Date: 07/23/2017 1640
Prep Date: 07/23/2017 0010
Leach Date: N/A

Analysis Batch: 460-451343
Prep Batch: 460-451277
Leach Batch: N/A
Units: ug/L

Instrument ID: ICP5
Lab File ID: 451277D1.asc
Initial Weight/Volume: 50 mL
Final Weight/Volume: 50 mL

Analyte	Sample Result/Qual	Result	RPD	Limit	Qual
Iron	2690	2773	3	20	
Manganese	1420	1462	3	20	

Quality Control Results

Client: R & C Formation Ltd.

Job Number: 460-137464-1

Method Blank - Batch: 460-450745

Method: 7470A

Preparation: 7470A

Lab Sample ID: MB 460-450745/1-A
Client Matrix: Water
Dilution: 1.0
Analysis Date: 07/20/2017 1333
Prep Date: 07/20/2017 1228
Leach Date: N/A

Analysis Batch: 460-450816
Prep Batch: 460-450745
Leach Batch: N/A
Units: ug/L

Instrument ID: LEEMAN6
Lab File ID: 450745hg1.CSV
Initial Weight/Volume: 30 mL
Final Weight/Volume: 30 mL

Analyte	Result	Qual	MDL	RL
Mercury	0.20	U	0.17	0.20

Lab Control Sample - Batch: 460-450745

Method: 7470A

Preparation: 7470A

Lab Sample ID: LCS 460-450745/2-A
Client Matrix: Water
Dilution: 1.0
Analysis Date: 07/20/2017 1335
Prep Date: 07/20/2017 1228
Leach Date: N/A

Analysis Batch: 460-450816
Prep Batch: 460-450745
Leach Batch: N/A
Units: ug/L

Instrument ID: LEEMAN6
Lab File ID: 450745hg1.CSV
Initial Weight/Volume: 30 mL
Final Weight/Volume: 30 mL

Analyte	Spike Amount	Result	% Rec.	Limit	Qual
Mercury	1.00	0.938	94	80 - 120	

Quality Control Results

Client: R & C Formation Ltd.

Job Number: 460-137464-1

Method Blank - Batch: 460-451045

Method: 350.1

Preparation: Distill/Ammonia

Lab Sample ID: MB 460-451045/1-A
Client Matrix: Water
Dilution: 1.0
Analysis Date: 07/22/2017 1056
Prep Date: 07/21/2017 1338
Leach Date: N/A

Analysis Batch: 460-451241
Prep Batch: 460-451045
Leach Batch: N/A
Units: mg/L

Instrument ID: Lachat2
Lab File ID: A170722.FDT
Initial Weight/Volume: 50.0 mL
Final Weight/Volume: 50.0 mL

Analyte	Result	Qual	MDL	RL
Ammonia	0.10	U	0.072	0.10

Lab Control Sample - Batch: 460-451045

Method: 350.1

Preparation: Distill/Ammonia

Lab Sample ID: LCS 460-451045/2-A
Client Matrix: Water
Dilution: 1.0
Analysis Date: 07/22/2017 1058
Prep Date: 07/21/2017 1338
Leach Date: N/A

Analysis Batch: 460-451241
Prep Batch: 460-451045
Leach Batch: N/A
Units: mg/L

Instrument ID: Lachat2
Lab File ID: A170722.FDT
Initial Weight/Volume: 50.0 mL
Final Weight/Volume: 50.0 mL

Analyte	Spike Amount	Result	% Rec.	Limit	Qual
Ammonia	1.00	1.02	102	87 - 114	

Quality Control Results

Client: R & C Formation Ltd.

Job Number: 460-137464-1

Method Blank - Batch: 460-450712

Method: SM 4500 NO3 F
Preparation: N/A

Lab Sample ID:	MB 460-450712/9	Analysis Batch:	460-450712	Instrument ID:	Lachat1
Client Matrix:	Water	Prep Batch:	N/A	Lab File ID:	N170720.FDT
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	
Analysis Date:	07/20/2017 0938	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	0.010	0.10

TCLP SPLPE Leachate Blank - Batch: 460-450712

Method: SM 4500 NO3 F
Preparation: N/A

Lab Sample ID:	LB 460-450481/1-A	Analysis Batch:	460-450712	Instrument ID:	Lachat1
Client Matrix:	Water	Prep Batch:	N/A	Lab File ID:	N170720.FDT
Dilution:	1.0	Leach Batch:	460-450481	Initial Weight/Volume:	
Analysis Date:	07/20/2017 0957	Units:	mg/L	Final Weight/Volume:	
Prep Date:	N/A				
Leach Date:	07/19/2017 1455				

Analyte	Result	Qual	MDL	RL
Nitrate as N	2.0	U	0.20	2.0

LCS-Certified Reference Material - Batch: 460-450712

Method: SM 4500 NO3 F
Preparation: N/A

Lab Sample ID:	LCSSRM 460-450712/10	Analysis Batch:	460-450712	Instrument ID:	Lachat1
Client Matrix:	Water	Prep Batch:	N/A	Lab File ID:	N170720.FDT
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	
Analysis Date:	07/20/2017 0939	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	1.81	1.74	96.3	87.3 - 111.0	

Quality Control Results

Client: R & C Formation Ltd.

Job Number: 460-137464-1

Method Blank - Batch: 460-451100

Method: SM 4500 NO3 F
Preparation: N/A

Lab Sample ID: MB 460-451100/9
Client Matrix: Water
Dilution: 1.0
Analysis Date: 07/21/2017 1526
Prep Date: N/A
Leach Date: N/A

Analysis Batch: 460-451100
Prep Batch: N/A
Leach Batch: N/A
Units: mg/L

Instrument ID: Lachat1
Lab File ID: N170721.FDT
Initial Weight/Volume:
Final Weight/Volume:

Analyte	Result	Qual	MDL	RL
Nitrate as N	0.10	U	0.010	0.10

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

Page 1 of 1

**SHORT
HOLD**

20

28
0.6

TAL - 0016 (0715)

13 July

8

	RAW	CORRECTED		RAW	CORRECTED		RAW	CORRECTED
Cooler #1:	0.4°C	0.4°C	Cooler #4:	°C	°C	Cooler #7:	°C	°C
Cooler #2:	°C	°C	Cooler #5:	°C	°C	Cooler #8:	°C	°C
Cooler #3:	°C	°C	Cooler #6:	°C	°C	Cooler #9:	°C	°C

	RAW	CORRECTED		RAW	CORRECTED		RAW	CORRECTED
Cooler #1:	0.4°C	0.4°C	Cooler #4:	°C	°C	Cooler #7:	°C	°C
Cooler #2:	°C	°C	Cooler #5:	°C	°C	Cooler #8:	°C	°C
Cooler #3:	°C	°C	Cooler #6:	°C	°C	Cooler #9:	°C	°C

[illegible]

Date:

Chain of Custody Record

[illegible]

Login Sample Receipt Checklist

Client: R & C Formation Ltd.

Job Number: 460-137464-1

Login Number: 137464

List Source: TestAmerica Edison

List Number: 1

Creator: Wisnewski, Kelly R

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.	True	
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	0.6°C, IR#8
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	

Login Sample Receipt Checklist

Client: R & C Formation Ltd.

Job Number: 460-137464-1

Login Number: 137464
List Number: 2
Creator: Hulbert, Michael J

List Source: TestAmerica Buffalo
List Creation: 07/21/17 03:12 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	2.1 #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.	True	
Samples requiring field filtration have been filtered in the field.	N/A	
Chlorine Residual checked.	N/A	

ANALYTICAL REPORT

Job Number: 460-137584-1

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.
Allison L. Bennett
Project Manager I
7/31/2017 9:11 AM

Designee for
Melissa Haas, Project Manager I
777 New Durham Road, Edison, NJ, 08817
(203)944-1310
melissa.haas@testamericainc.com
07/31/2017

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: 460-137584-1

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 black ink, reading "Allison L. Bennett". The signature is written in a cursive style with a horizontal line underneath.

Approved for release.
Allison L. Bennett
Project Manager I
7/31/2017 9:11 AM

Designee for
Melissa Haas

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CASE NARRATIVE

Client: R & C Formation Ltd.

Project: Nepera, Harriman, NY

Report Number: 460-137584-1

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.

RECEIPT

The samples were received on 7/20/2017 8:00 PM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperatures of the 3 coolers at receipt time were 1.9° C, 3.1° C and 4.8° C.

Receipt Exceptions

The metals container for sample -7 was received unlabeled.

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 ORGANIC COMPOUNDS (GC-MS)

Samples TB (460-137584-1), MW-103 (460-137584-2), MW-33S (460-137584-3), MW-26D (460-137584-4), MW-106 (460-137584-5), MW-102 (460-137584-6), MW-37S (460-137584-7), MW-20DR (460-137584-8), MW-20D (460-137584-9), MW-20S (460-137584-10), MW-8S (460-137584-11), MW-105 (460-137584-12), MW-11S (460-137584-13), MW-104 (460-137584-14), RW-1R (460-137584-15), MW-12S (460-137584-16), MW-16S (460-137584-17) and MW-53D (460-137584-18) were analyzed for volatile organic compounds (GC-MS) in accordance with EPA SW-846 Methods 8260C. The samples were analyzed on 07/21/2017, 07/22/2017 and 07/26/2017.

No difficulties were encountered during the volatiles analysis.

All quality control parameters were within the acceptance limits.

SEMIVOLATILE ORGANIC COMPOUNDS (GC/MS)

Samples MW-103 (460-137584-2), MW-33S (460-137584-3), MW-26D (460-137584-4), MW-106 (460-137584-5), MW-102 (460-137584-6), MW-37S (460-137584-7), MW-20DR (460-137584-8), MW-20D (460-137584-9), MW-20S (460-137584-10), MW-8S (460-137584-11), MW-105 (460-137584-12), MW-11S (460-137584-13), MW-104 (460-137584-14), RW-1R (460-137584-15), MW-12S (460-137584-16), MW-16S (460-137584-17) and MW-53D (460-137584-18) were analyzed for semivolatile organic compounds (GC/MS) in accordance with EPA SW-846 Method 8270D. The samples were prepared on 07/25/2017 and analyzed on 07/27/2017.

Insufficient sample volume was available to perform a matrix spike/matrix spike duplicate/sample duplicate (MS/MSD/DUP) associated with preparation batch 480-368492.

Six surrogates are used for this analysis. The laboratory's SOP allows one acid and one base of these surrogates to be outside acceptance criteria without performing re-extraction/re-analysis. The following sample contained an allowable number of surrogate compounds outside limits: MW-33S (460-137584-3). These results have been reported and qualified.

Surrogate recovery for the following samples was outside control limits: MW-20D (460-137584-9) and MW-20S (460-137584-10). The laboratory's SOP allows one acid and one base of these surrogates to be outside acceptance criteria without performing re-extraction/re-analysis. The samples contained an allowable number of surrogate compounds outside limits. These results have been reported and qualified. Evidence of matrix interference is present; therefore, re-extraction and/or re-analysis was not performed.

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 MW-103 (460-137584-2), MW-33S (460-137584-3), MW-106 (460-137584-5), MW-102 (460-137584-6), MW-37S (460-137584-7), MW-20S (460-137584-10), MW-8S (460-137584-11), MW-105 (460-137584-12), MW-11S (460-137584-13), MW-104 (460-137584-14), RW-1R (460-137584-15), MW-16S (460-137584-17) and MW-53D (460-137584-18) were analyzed for metals in accordance with EPA SW-846 Methods 6010C. The samples were prepared and analyzed on 07/23/2017.

Sample MW-33S (460-137584-3)[5X] required dilution prior to analysis. The reporting limits have been adjusted accordingly.

No difficulties were encountered during the metals analysis.

All quality control parameters were within the acceptance limits.

ANIONS

Samples MW-103 (460-137584-2), MW-33S (460-137584-3), MW-106 (460-137584-5), MW-102 (460-137584-6), MW-37S (460-137584-7), MW-20S (460-137584-10), MW-8S (460-137584-11), MW-105 (460-137584-12), MW-11S (460-137584-13), MW-104 (460-137584-14), RW-1R (460-137584-15), MW-16S (460-137584-17) and MW-53D (460-137584-18) were analyzed for anions in accordance with EPA Method 300_ORGFM_28D Anions by Ion Chromatograph. The samples were analyzed on 07/22/2017, 07/23/2017 and 07/26/2017.

Sulfate failed the recovery criteria high for the MS of sample RW-1RMS (460-137584-15) in batch 460-451348.

Sulfate failed the recovery criteria high for the MSD of sample RW-1RMSD (460-137584-15) in batch 460-451348.

Refer to the QC report for details.

Samples MW-103 (460-137584-2)[10X], MW-33S (460-137584-3)[10X], MW-106 (460-137584-5)[10X], MW-102 (460-137584-6)[10X], MW-37S (460-137584-7)[10X], MW-20S (460-137584-10)[10X], MW-8S (460-137584-11)[10X], MW-105 (460-137584-12)[10X], MW-11S (460-137584-13)[10X], MW-104 (460-137584-14)[10X], RW-1R (460-137584-15)[20X] and MW-16S (460-137584-17)[10X] required dilution prior to analysis. The reporting limits have been adjusted accordingly.

No other difficulties were encountered during the anions analysis.

All other quality control parameters were within the acceptance limits.

AMMONIA

Samples MW-103 (460-137584-2), MW-33S (460-137584-3), MW-106 (460-137584-5), MW-102 (460-137584-6), MW-37S (460-137584-7), MW-20S (460-137584-10), MW-8S (460-137584-11), MW-105 (460-137584-12), MW-11S (460-137584-13), MW-104 (460-137584-14), RW-1R (460-137584-15), MW-16S (460-137584-17) and MW-53D (460-137584-18) were analyzed for ammonia in accordance with EPA Method 350.1. The samples were prepared and analyzed on 07/26/2017.

Due to the matrix, the initial volumes used for the following samples deviated from the standard procedure: MW-33S (460-137584-3), MW-20S (460-137584-10) and RW-1R (460-137584-15). The reporting limits (RLs) have been adjusted proportionately.

Samples MW-33S (460-137584-3)[20X], MW-106 (460-137584-5)[2X], MW-102 (460-137584-6)[10X], MW-37S (460-137584-7)[10X], MW-20S (460-137584-10)[2X], MW-8S (460-137584-11)[2X], MW-11S (460-137584-13)[10X], MW-16S (460-137584-17)[10X] and MW-53D (460-137584-18)[10X] required dilution prior to analysis. The reporting limits have been adjusted accordingly.

No difficulties were encountered during the ammonia analysis.

All quality control parameters were within the acceptance limits.

NITROGEN-NITRATE

Samples MW-103 (460-137584-2), MW-33S (460-137584-3), MW-106 (460-137584-5), MW-102 (460-137584-6), MW-37S (460-137584-7), MW-20S (460-137584-10), MW-8S (460-137584-11), MW-105 (460-137584-12), MW-11S (460-137584-13), MW-104 (460-137584-14), RW-1R (460-137584-15), MW-16S (460-137584-17) and MW-53D (460-137584-18) were analyzed for Nitrogen-Nitrate in accordance with SM 4500 NO3 F. The samples were analyzed on 07/21/2017.

Nitrate as N exceeded the RPD limit for the MSD of sample MW-33SMSD (460-137584-3) in batch 460-451100.

Refer to the QC report for details.

Sample MW-53D (460-137584-18)[2X] required dilution prior to analysis. The reporting limits have been adjusted accordingly.

No other difficulties were encountered during the Nitrate analysis.

All other quality control parameters were within the acceptance limits.

EXECUTIVE SUMMARY - Detections

Client: R & C Formation Ltd.

Job Number: 460-137584-1

Lab Sample ID Analyte	Client Sample ID	Result	Qualifier	Reporting Limit	Units	Method
460-137584-2	MW-103					
Benzene		0.14	J	1.0	ug/L	8260C
Iron		1770		150	ug/L	6010C
Manganese		326		15.0	ug/L	6010C
Ammonia		0.21		0.10	mg/L	350.1
Nitrate as N		0.31		0.10	mg/L	SM 4500 NO3 F
Sulfate		21.0		6.00	mg/L	300.0
460-137584-3	MW-33S					
Benzene		7.9		1.0	ug/L	8260C
Toluene		0.40	J	1.0	ug/L	8260C
Xylenes, Total		1.2	J	2.0	ug/L	8260C
Pyridine		0.59	J	27	ug/L	8270D
Iron		438000		750	ug/L	6010C
Manganese		6730		75.0	ug/L	6010C
Ammonia		749		20.0	mg/L	350.1
Nitrate as N		0.015	J	0.10	mg/L	SM 4500 NO3 F
Sulfate		108		6.00	mg/L	300.0
460-137584-5	MW-106					
Iron		1580		150	ug/L	6010C
Manganese		601		15.0	ug/L	6010C
Ammonia		5.2		0.20	mg/L	350.1
Nitrate as N		0.013	J	0.10	mg/L	SM 4500 NO3 F
Sulfate		27.8		6.00	mg/L	300.0
460-137584-6	MW-102					
Iron		8310		150	ug/L	6010C
Manganese		1050		15.0	ug/L	6010C
Ammonia		13.9		1.0	mg/L	350.1
Nitrate as N		0.034	J	0.10	mg/L	SM 4500 NO3 F
Sulfate		46.3		6.00	mg/L	300.0
460-137584-7	MW-37S					
Benzene		0.19	J	1.0	ug/L	8260C
Iron		13200		150	ug/L	6010C
Manganese		1470		15.0	ug/L	6010C
Ammonia		26.8		1.0	mg/L	350.1
Nitrate as N		0.010	J	0.10	mg/L	SM 4500 NO3 F
Sulfate		125		6.00	mg/L	300.0

EXECUTIVE SUMMARY - Detections

Client: R & C Formation Ltd.

Job Number: 460-137584-1

Lab Sample ID Analyte	Client Sample ID	Result	Qualifier	Reporting Limit	Units	Method
460-137584-9	MW-20D					
Benzene		32		1.0	ug/L	8260C
Toluene		5.1		1.0	ug/L	8260C
Ethylbenzene		0.78	J	1.0	ug/L	8260C
Xylenes, Total		1.3	J	2.0	ug/L	8260C
2-Picoline		19	J	80	ug/L	8270D
Pyridine		6.0	J	25	ug/L	8270D
460-137584-10	MW-20S					
Benzene		37		1.0	ug/L	8260C
Toluene		1.4		1.0	ug/L	8260C
2-Picoline		4.4	J	80	ug/L	8270D
Pyridine		1.7	J	25	ug/L	8270D
Iron		3510		150	ug/L	6010C
Manganese		992		15.0	ug/L	6010C
Ammonia		38.6		1.0	mg/L	350.1
Sulfate		222		6.00	mg/L	300.0
460-137584-11	MW-8S					
Iron		19200		150	ug/L	6010C
Manganese		470		15.0	ug/L	6010C
Ammonia		6.0		0.20	mg/L	350.1
Nitrate as N		0.023	J	0.10	mg/L	SM 4500 NO3 F
Sulfate		24.5		6.00	mg/L	300.0
460-137584-12	MW-105					
Iron		31500		150	ug/L	6010C
Manganese		1660		15.0	ug/L	6010C
Ammonia		2.1		0.10	mg/L	350.1
Nitrate as N		0.037	J	0.10	mg/L	SM 4500 NO3 F
Sulfate		15.1		6.00	mg/L	300.0
460-137584-13	MW-11S					
Iron		2200		150	ug/L	6010C
Manganese		558		15.0	ug/L	6010C
Ammonia		11.7		1.0	mg/L	350.1
Nitrate as N		0.11		0.10	mg/L	SM 4500 NO3 F
Sulfate		13.6		6.00	mg/L	300.0

EXECUTIVE SUMMARY - Detections

Client: R & C Formation Ltd.

Job Number: 460-137584-1

Lab Sample ID Analyte	Client Sample ID	Result	Qualifier	Reporting Limit	Units	Method
460-137584-14	MW-104					
Iron		3220		150	ug/L	6010C
Manganese		1240		15.0	ug/L	6010C
Ammonia		2.2		0.10	mg/L	350.1
Nitrate as N		0.025	J	0.10	mg/L	SM 4500 NO3 F
Sulfate		20.2		6.00	mg/L	300.0
460-137584-15	RW-1R					
Iron		53500		150	ug/L	6010C
Manganese		511		15.0	ug/L	6010C
Ammonia		18.3		1.0	mg/L	350.1
Nitrate as N		0.013	J	0.10	mg/L	SM 4500 NO3 F
Sulfate		280		12.0	mg/L	300.0
460-137584-16	MW-12S					
Benzene		0.22	J	1.0	ug/L	8260C
460-137584-17	MW-16S					
Benzene		48		1.0	ug/L	8260C
Pyridine		0.67	J	25	ug/L	8270D
Iron		11900		150	ug/L	6010C
Manganese		448		15.0	ug/L	6010C
Ammonia		11.9		1.0	mg/L	350.1
Nitrate as N		0.019	J	0.10	mg/L	SM 4500 NO3 F
Sulfate		37.7		6.00	mg/L	300.0
460-137584-18	MW-53D					
Benzene		1.6		1.0	ug/L	8260C
Pyridine		0.51	J	25	ug/L	8270D
Iron		3680		150	ug/L	6010C
Manganese		290		15.0	ug/L	6010C
Ammonia		30.6		1.0	mg/L	350.1
Nitrate as N		2.2		0.20	mg/L	SM 4500 NO3 F
Sulfate		1.37		0.60	mg/L	300.0

METHOD SUMMARY

Client: R & C Formation Ltd.

Job Number: 460-137584-1

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: 460-137584-1

Method	Analyst	Analyst ID
SW846 8260C	Tupayachi, Audberto	AAT
SW846 8270D	Richards, Devon M	DMR
SW846 6010C	Chang, Churn Der	CDC
MCAWW 350.1	Leye, Mamadou	MAL
SM SM 4500 NO3 F	Njieha, Karianna Y	KYN
MCAWW 300.0	Adou, Marie J	MJA
MCAWW 300.0	Mulani, Heta X	HXM

SAMPLE SUMMARY

Client: R & C Formation Ltd.

Job Number: 460-137584-1

Lab Sample ID	Client Sample ID	Client Matrix	Date/Time Sampled	Date/Time Received
460-137584-1TB	TB	Water	07/20/2017 0000	07/20/2017 2000
460-137584-2	MW-103	Water	07/20/2017 0751	07/20/2017 2000
460-137584-3	MW-33S	Water	07/20/2017 0821	07/20/2017 2000
460-137584-4	MW-26D	Water	07/20/2017 0901	07/20/2017 2000
460-137584-5	MW-106	Water	07/20/2017 0931	07/20/2017 2000
460-137584-6	MW-102	Water	07/20/2017 1006	07/20/2017 2000
460-137584-7	MW-37S	Water	07/20/2017 1051	07/20/2017 2000
460-137584-8	MW-20DR	Water	07/20/2017 1136	07/20/2017 2000
460-137584-9	MW-20D	Water	07/20/2017 1206	07/20/2017 2000
460-137584-10	MW-20S	Water	07/20/2017 1233	07/20/2017 2000
460-137584-11	MW-8S	Water	07/20/2017 1301	07/20/2017 2000
460-137584-12	MW-105	Water	07/20/2017 1330	07/20/2017 2000
460-137584-13	MW-11S	Water	07/20/2017 1357	07/20/2017 2000
460-137584-14	MW-104	Water	07/20/2017 1431	07/20/2017 2000
460-137584-15	RW-1R	Water	07/20/2017 1501	07/20/2017 2000
460-137584-16	MW-12S	Water	07/20/2017 1531	07/20/2017 2000
460-137584-17	MW-16S	Water	07/20/2017 1556	07/20/2017 2000
460-137584-18	MW-53D	Water	07/20/2017 1631	07/20/2017 2000

SAMPLE RESULTS

Analytical Data

Client: R & C Formation Ltd.

Job Number: 460-137584-1

Client Sample ID: TB

Lab Sample ID: 460-137584-1TB

Client Matrix: Water

Date Sampled: 07/20/2017 0000

Date Received: 07/20/2017 2000

8260C Volatile Organic Compounds by GC/MS

Analysis Method:	8260C	Analysis Batch:	460-451130	Instrument ID:	CVOAMS5
Prep Method:	5030C	Prep Batch:	N/A	Lab File ID:	E74120.D
Dilution:	1.0			Initial Weight/Volume:	5 mL
Analysis Date:	07/21/2017 2257			Final Weight/Volume:	5 mL
Prep Date:	07/21/2017 2257				

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)	97		74 - 132
Bromofluorobenzene	91		77 - 124
Toluene-d8 (Surr)	98		80 - 120
Dibromofluoromethane (Surr)	96		72 - 131

Analytical Data

Client: R & C Formation Ltd.

Job Number: 460-137584-1

Client Sample ID: MW-103

Lab Sample ID: 460-137584-2

Client Matrix: Water

Date Sampled: 07/20/2017 0751

Date Received: 07/20/2017 2000

8260C Volatile Organic Compounds by GC/MS

Analysis Method:	8260C	Analysis Batch:	460-451130	Instrument ID:	CVOAMS5
Prep Method:	5030C	Prep Batch:	N/A	Lab File ID:	E74121.D
Dilution:	1.0			Initial Weight/Volume:	5 mL
Analysis Date:	07/21/2017 2323			Final Weight/Volume:	5 mL
Prep Date:	07/21/2017 2323				

Analyte	Result (ug/L)	Qualifier	MDL	RL
Benzene	0.14	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)	95		74 - 132
Bromofluorobenzene	85		77 - 124
Toluene-d8 (Surr)	98		80 - 120
Dibromofluoromethane (Surr)	94		72 - 131

Analytical Data

Client: R & C Formation Ltd.

Job Number: 460-137584-1

Client Sample ID: MW-33S

Lab Sample ID: 460-137584-3

Client Matrix: Water

Date Sampled: 07/20/2017 0821

Date Received: 07/20/2017 2000

8260C Volatile Organic Compounds by GC/MS

Analysis Method:	8260C	Analysis Batch:	460-451130	Instrument ID:	CVOAMS5
Prep Method:	5030C	Prep Batch:	N/A	Lab File ID:	E74137.D
Dilution:	1.0			Initial Weight/Volume:	5 mL
Analysis Date:	07/22/2017 0611			Final Weight/Volume:	5 mL
Prep Date:	07/22/2017 0611				

Analyte	Result (ug/L)	Qualifier	MDL	RL
Benzene	7.9		0.090	1.0
Toluene	0.40	J	0.25	1.0
Ethylbenzene	1.0	U	0.30	1.0
Xylenes, Total	1.2	J	0.28	2.0

Surrogate	%Rec	Qualifier	Acceptance Limits
1,2-Dichloroethane-d4 (Surr)	99		74 - 132
Bromofluorobenzene	88		77 - 124
Toluene-d8 (Surr)	99		80 - 120
Dibromofluoromethane (Surr)	96		72 - 131

Analytical Data

Client: R & C Formation Ltd.

Job Number: 460-137584-1

Client Sample ID: MW-26D

Lab Sample ID: 460-137584-4

Client Matrix: Water

Date Sampled: 07/20/2017 0901

Date Received: 07/20/2017 2000

8260C Volatile Organic Compounds by GC/MS

Analysis Method:	8260C	Analysis Batch:	460-451130	Instrument ID:	CVOAMS5
Prep Method:	5030C	Prep Batch:	N/A	Lab File ID:	E74122.D
Dilution:	1.0			Initial Weight/Volume:	5 mL
Analysis Date:	07/21/2017 2348			Final Weight/Volume:	5 mL
Prep Date:	07/21/2017 2348				

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)	99		74 - 132
Bromofluorobenzene	89		77 - 124
Toluene-d8 (Surr)	101		80 - 120
Dibromofluoromethane (Surr)	96		72 - 131

Analytical Data

Client: R & C Formation Ltd.

Job Number: 460-137584-1

Client Sample ID: MW-106

Lab Sample ID: 460-137584-5

Client Matrix: Water

Date Sampled: 07/20/2017 0931

Date Received: 07/20/2017 2000

8260C Volatile Organic Compounds by GC/MS

Analysis Method:	8260C	Analysis Batch:	460-451130	Instrument ID:	CVOAMS5
Prep Method:	5030C	Prep Batch:	N/A	Lab File ID:	E74123.D
Dilution:	1.0			Initial Weight/Volume:	5 mL
Analysis Date:	07/22/2017 0014			Final Weight/Volume:	5 mL
Prep Date:	07/22/2017 0014				

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)	117		74 - 132
Bromofluorobenzene	98		77 - 124
Toluene-d8 (Surr)	117		80 - 120
Dibromofluoromethane (Surr)	114		72 - 131

Analytical Data

Client: R & C Formation Ltd.

Job Number: 460-137584-1

Client Sample ID: MW-102

Lab Sample ID: 460-137584-6

Client Matrix: Water

Date Sampled: 07/20/2017 1006

Date Received: 07/20/2017 2000

8260C Volatile Organic Compounds by GC/MS

Analysis Method:	8260C	Analysis Batch:	460-451130	Instrument ID:	CVOAMS5
Prep Method:	5030C	Prep Batch:	N/A	Lab File ID:	E74124.D
Dilution:	1.0			Initial Weight/Volume:	5 mL
Analysis Date:	07/22/2017 0039			Final Weight/Volume:	5 mL
Prep Date:	07/22/2017 0039				

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)	96		74 - 132
Bromofluorobenzene	84		77 - 124
Toluene-d8 (Surr)	97		80 - 120
Dibromofluoromethane (Surr)	96		72 - 131

Analytical Data

Client: R & C Formation Ltd.

Job Number: 460-137584-1

Client Sample ID: MW-37S

Lab Sample ID: 460-137584-7

Client Matrix: Water

Date Sampled: 07/20/2017 1051

Date Received: 07/20/2017 2000

8260C Volatile Organic Compounds by GC/MS

Analysis Method:	8260C	Analysis Batch:	460-451130	Instrument ID:	CVOAMS5
Prep Method:	5030C	Prep Batch:	N/A	Lab File ID:	E74125.D
Dilution:	1.0			Initial Weight/Volume:	5 mL
Analysis Date:	07/22/2017 0105			Final Weight/Volume:	5 mL
Prep Date:	07/22/2017 0105				

Analyte	Result (ug/L)	Qualifier	MDL	RL
Benzene	0.19	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)	95		74 - 132
Bromofluorobenzene	83		77 - 124
Toluene-d8 (Surr)	97		80 - 120
Dibromofluoromethane (Surr)	94		72 - 131

Analytical Data

Client: R & C Formation Ltd.

Job Number: 460-137584-1

Client Sample ID: MW-20DR

Lab Sample ID: 460-137584-8

Client Matrix: Water

Date Sampled: 07/20/2017 1136

Date Received: 07/20/2017 2000

8260C Volatile Organic Compounds by GC/MS

Analysis Method:	8260C	Analysis Batch:	460-451130	Instrument ID:	CVOAMS5
Prep Method:	5030C	Prep Batch:	N/A	Lab File ID:	E74126.D
Dilution:	1.0			Initial Weight/Volume:	5 mL
Analysis Date:	07/22/2017 0130			Final Weight/Volume:	5 mL
Prep Date:	07/22/2017 0130				

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)	93		74 - 132
Bromofluorobenzene	86		77 - 124
Toluene-d8 (Surr)	99		80 - 120
Dibromofluoromethane (Surr)	94		72 - 131

Analytical Data

Client: R & C Formation Ltd.

Job Number: 460-137584-1

Client Sample ID: MW-20D

Lab Sample ID: 460-137584-9

Date Sampled: 07/20/2017 1206

Client Matrix: Water

Date Received: 07/20/2017 2000

8260C Volatile Organic Compounds by GC/MS

Analysis Method:	8260C	Analysis Batch:	460-451130	Instrument ID:	CVOAMS5
Prep Method:	5030C	Prep Batch:	N/A	Lab File ID:	E74127.D
Dilution:	1.0			Initial Weight/Volume:	5 mL
Analysis Date:	07/22/2017 0156			Final Weight/Volume:	5 mL
Prep Date:	07/22/2017 0156				

Analyte	Result (ug/L)	Qualifier	MDL	RL
Benzene	32		0.090	1.0
Toluene	5.1		0.25	1.0
Ethylbenzene	0.78	J	0.30	1.0
Xylenes, Total	1.3	J	0.28	2.0

Surrogate	%Rec	Qualifier	Acceptance Limits
1,2-Dichloroethane-d4 (Surr)	94		74 - 132
Bromofluorobenzene	86		77 - 124
Toluene-d8 (Surr)	98		80 - 120
Dibromofluoromethane (Surr)	95		72 - 131

Analytical Data

Client: R & C Formation Ltd.

Job Number: 460-137584-1

Client Sample ID: MW-20S

Lab Sample ID: 460-137584-10

Client Matrix: Water

Date Sampled: 07/20/2017 1233

Date Received: 07/20/2017 2000

8260C Volatile Organic Compounds by GC/MS

Analysis Method:	8260C	Analysis Batch:	460-451130	Instrument ID:	CVOAMS5
Prep Method:	5030C	Prep Batch:	N/A	Lab File ID:	E74128.D
Dilution:	1.0			Initial Weight/Volume:	5 mL
Analysis Date:	07/22/2017 0221			Final Weight/Volume:	5 mL
Prep Date:	07/22/2017 0221				

Analyte	Result (ug/L)	Qualifier	MDL	RL
Benzene	37		0.090	1.0
Toluene	1.4		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)	95		74 - 132
Bromofluorobenzene	87		77 - 124
Toluene-d8 (Surr)	99		80 - 120
Dibromofluoromethane (Surr)	93		72 - 131

Analytical Data

Client: R & C Formation Ltd.

Job Number: 460-137584-1

Client Sample ID: MW-8S

Lab Sample ID: 460-137584-11

Date Sampled: 07/20/2017 1301

Client Matrix: Water

Date Received: 07/20/2017 2000

8260C Volatile Organic Compounds by GC/MS

Analysis Method:	8260C	Analysis Batch:	460-451130	Instrument ID:	CVOAMS5
Prep Method:	5030C	Prep Batch:	N/A	Lab File ID:	E74129.D
Dilution:	1.0			Initial Weight/Volume:	5 mL
Analysis Date:	07/22/2017 0247			Final Weight/Volume:	5 mL
Prep Date:	07/22/2017 0247				

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)	97		74 - 132
Bromofluorobenzene	91		77 - 124
Toluene-d8 (Surr)	101		80 - 120
Dibromofluoromethane (Surr)	95		72 - 131

Analytical Data

Client: R & C Formation Ltd.

Job Number: 460-137584-1

Client Sample ID: MW-105

Lab Sample ID: 460-137584-12

Client Matrix: Water

Date Sampled: 07/20/2017 1330

Date Received: 07/20/2017 2000

8260C Volatile Organic Compounds by GC/MS

Analysis Method:	8260C	Analysis Batch:	460-451130	Instrument ID:	CVOAMS5
Prep Method:	5030C	Prep Batch:	N/A	Lab File ID:	E74130.D
Dilution:	1.0			Initial Weight/Volume:	5 mL
Analysis Date:	07/22/2017 0312			Final Weight/Volume:	5 mL
Prep Date:	07/22/2017 0312				

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)	102		74 - 132
Bromofluorobenzene	92		77 - 124
Toluene-d8 (Surr)	101		80 - 120
Dibromofluoromethane (Surr)	97		72 - 131

Analytical Data

Client: R & C Formation Ltd.

Job Number: 460-137584-1

Client Sample ID: MW-11S

Lab Sample ID: 460-137584-13

Client Matrix: Water

Date Sampled: 07/20/2017 1357

Date Received: 07/20/2017 2000

8260C Volatile Organic Compounds by GC/MS

Analysis Method:	8260C	Analysis Batch:	460-451130	Instrument ID:	CVOAMS5
Prep Method:	5030C	Prep Batch:	N/A	Lab File ID:	E74131.D
Dilution:	1.0			Initial Weight/Volume:	5 mL
Analysis Date:	07/22/2017 0338			Final Weight/Volume:	5 mL
Prep Date:	07/22/2017 0338				

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		74 - 132
Bromofluorobenzene	90		77 - 124
Toluene-d8 (Surr)	99		80 - 120
Dibromofluoromethane (Surr)	97		72 - 131

Analytical Data

Client: R & C Formation Ltd.

Job Number: 460-137584-1

Client Sample ID: MW-104

Lab Sample ID: 460-137584-14

Client Matrix: Water

Date Sampled: 07/20/2017 1431

Date Received: 07/20/2017 2000

8260C Volatile Organic Compounds by GC/MS

Analysis Method:	8260C	Analysis Batch:	460-451915	Instrument ID:	CVOAMS5
Prep Method:	5030C	Prep Batch:	N/A	Lab File ID:	E74326.D
Dilution:	1.0			Initial Weight/Volume:	5 mL
Analysis Date:	07/26/2017 1538			Final Weight/Volume:	5 mL
Prep Date:	07/26/2017 1538				

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		74 - 132
Bromofluorobenzene	92		77 - 124
Toluene-d8 (Surr)	101		80 - 120
Dibromofluoromethane (Surr)	102		72 - 131

Analytical Data

Client: R & C Formation Ltd.

Job Number: 460-137584-1

Client Sample ID: RW-1R

Lab Sample ID: 460-137584-15

Client Matrix: Water

Date Sampled: 07/20/2017 1501

Date Received: 07/20/2017 2000

8260C Volatile Organic Compounds by GC/MS

Analysis Method:	8260C	Analysis Batch:	460-451130	Instrument ID:	CVOAMS5
Prep Method:	5030C	Prep Batch:	N/A	Lab File ID:	E74133.D
Dilution:	1.0			Initial Weight/Volume:	5 mL
Analysis Date:	07/22/2017 0429			Final Weight/Volume:	5 mL
Prep Date:	07/22/2017 0429				

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		74 - 132
Bromofluorobenzene	86		77 - 124
Toluene-d8 (Surr)	97		80 - 120
Dibromofluoromethane (Surr)	96		72 - 131

Analytical Data

Client: R & C Formation Ltd.

Job Number: 460-137584-1

Client Sample ID: MW-12S

Lab Sample ID: 460-137584-16

Client Matrix: Water

Date Sampled: 07/20/2017 1531

Date Received: 07/20/2017 2000

8260C Volatile Organic Compounds by GC/MS

Analysis Method:	8260C	Analysis Batch:	460-451130	Instrument ID:	CVOAMS5
Prep Method:	5030C	Prep Batch:	N/A	Lab File ID:	E74134.D
Dilution:	1.0			Initial Weight/Volume:	5 mL
Analysis Date:	07/22/2017 0454			Final Weight/Volume:	5 mL
Prep Date:	07/22/2017 0454				

Analyte	Result (ug/L)	Qualifier	MDL	RL
Benzene	0.22	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)	99		74 - 132
Bromofluorobenzene	86		77 - 124
Toluene-d8 (Surr)	99		80 - 120
Dibromofluoromethane (Surr)	97		72 - 131

Analytical Data

Client: R & C Formation Ltd.

Job Number: 460-137584-1

Client Sample ID: MW-16S

Lab Sample ID: 460-137584-17

Date Sampled: 07/20/2017 1556

Client Matrix: Water

Date Received: 07/20/2017 2000

8260C Volatile Organic Compounds by GC/MS

Analysis Method:	8260C	Analysis Batch:	460-451130	Instrument ID:	CVOAMS5
Prep Method:	5030C	Prep Batch:	N/A	Lab File ID:	E74135.D
Dilution:	1.0			Initial Weight/Volume:	5 mL
Analysis Date:	07/22/2017 0520			Final Weight/Volume:	5 mL
Prep Date:	07/22/2017 0520				

Analyte	Result (ug/L)	Qualifier	MDL	RL
Benzene	48		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)	97		74 - 132
Bromofluorobenzene	87		77 - 124
Toluene-d8 (Surr)	98		80 - 120
Dibromofluoromethane (Surr)	95		72 - 131

Analytical Data

Client: R & C Formation Ltd.

Job Number: 460-137584-1

Client Sample ID: MW-53D

Lab Sample ID: 460-137584-18

Client Matrix: Water

Date Sampled: 07/20/2017 1631

Date Received: 07/20/2017 2000

8260C Volatile Organic Compounds by GC/MS

Analysis Method:	8260C	Analysis Batch:	460-451130	Instrument ID:	CVOAMS5
Prep Method:	5030C	Prep Batch:	N/A	Lab File ID:	E74136.D
Dilution:	1.0			Initial Weight/Volume:	5 mL
Analysis Date:	07/22/2017 0545			Final Weight/Volume:	5 mL
Prep Date:	07/22/2017 0545				

Analyte	Result (ug/L)	Qualifier	MDL	RL
Benzene	1.6		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)	99		74 - 132
Bromofluorobenzene	92		77 - 124
Toluene-d8 (Surr)	100		80 - 120
Dibromofluoromethane (Surr)	96		72 - 131

Analytical Data

Client: R & C Formation Ltd.

Job Number: 460-137584-1

Client Sample ID: MW-103

Lab Sample ID: 460-137584-2

Client Matrix: Water

Date Sampled: 07/20/2017 0751

Date Received: 07/20/2017 2000

8270D Semivolatile Organic Compounds (GC/MS)

Analysis Method:	8270D	Analysis Batch:	480-368899	Instrument ID:	HP5973Y
Prep Method:	3510C	Prep Batch:	480-368492	Lab File ID:	Y0134096.D
Dilution:	1.0			Initial Weight/Volume:	250 mL
Analysis Date:	07/27/2017 0705			Final Weight/Volume:	1 mL
Prep Date:	07/25/2017 0722			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	88		46 - 120
2-Fluorobiphenyl	84		48 - 120
p-Terphenyl-d14	75		59 - 136
Phenol-d5	51		22 - 120
2-Fluorophenol	66		35 - 120
2,4,6-Tribromophenol	80		41 - 120

Analytical Data

Client: R & C Formation Ltd.

Job Number: 460-137584-1

Client Sample ID: MW-103

Lab Sample ID: 460-137584-2

Client Matrix: Water

Date Sampled: 07/20/2017 0751

Date Received: 07/20/2017 2000

8270D Semivolatile Organic Compounds (GC/MS)

Analysis Method: 8270D

Analysis Batch: 480-368899

Instrument ID: HP5973Y

Prep Method: 3510C

Prep Batch: 480-368492

Lab File ID: Y0134096.D

Dilution: 1.0

Initial Weight/Volume: 250 mL

Analysis Date: 07/27/2017 0705

Final Weight/Volume: 1 mL

Prep Date: 07/25/2017 0722

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: 460-137584-1

Client Sample ID: MW-33S

Lab Sample ID: 460-137584-3

Client Matrix: Water

Date Sampled: 07/20/2017 0821

Date Received: 07/20/2017 2000

8270D Semivolatile Organic Compounds (GC/MS)

Analysis Method:	8270D	Analysis Batch:	480-368899	Instrument ID:	HP5973Y
Prep Method:	3510C	Prep Batch:	480-368492	Lab File ID:	Y0134097.D
Dilution:	1.0			Initial Weight/Volume:	230 mL
Analysis Date:	07/27/2017 0734			Final Weight/Volume:	1 mL
Prep Date:	07/25/2017 0722			Injection Volume:	2 uL

Analyte	Result (ug/L)	Qualifier	MDL	RL
2-Picoline	87	U	1.5	87
Pyridine	0.59	J	0.45	27

Surrogate	%Rec	Qualifier	Acceptance Limits
Nitrobenzene-d5	84		46 - 120
2-Fluorobiphenyl	84		48 - 120
p-Terphenyl-d14	48	*	59 - 136
Phenol-d5	52		22 - 120
2-Fluorophenol	66		35 - 120
2,4,6-Tribromophenol	97		41 - 120

Analytical Data

Client: R & C Formation Ltd.

Job Number: 460-137584-1

Client Sample ID: MW-33S

Lab Sample ID: 460-137584-3

Client Matrix: Water

Date Sampled: 07/20/2017 0821

Date Received: 07/20/2017 2000

8270D Semivolatile Organic Compounds (GC/MS)

Analysis Method:	8270D	Analysis Batch:	480-368899	Instrument ID:	HP5973Y
Prep Method:	3510C	Prep Batch:	480-368492	Lab File ID:	Y0134097.D
Dilution:	1.0			Initial Weight/Volume:	230 mL
Analysis Date:	07/27/2017 0734			Final Weight/Volume:	1 mL
Prep Date:	07/25/2017 0722			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: 460-137584-1

Client Sample ID: MW-26D

Lab Sample ID: 460-137584-4

Client Matrix: Water

Date Sampled: 07/20/2017 0901

Date Received: 07/20/2017 2000

8270D Semivolatile Organic Compounds (GC/MS)

Analysis Method:	8270D	Analysis Batch:	480-368899	Instrument ID:	HP5973Y
Prep Method:	3510C	Prep Batch:	480-368492	Lab File ID:	Y0134098.D
Dilution:	1.0			Initial Weight/Volume:	235 mL
Analysis Date:	07/27/2017 0804			Final Weight/Volume:	1 mL
Prep Date:	07/25/2017 0722			Injection Volume:	2 uL

Analyte	Result (ug/L)	Qualifier	MDL	RL
2-Picoline	85	U	1.5	85
Pyridine	27	U	0.44	27

Surrogate	%Rec	Qualifier	Acceptance Limits
Nitrobenzene-d5	88		46 - 120
2-Fluorobiphenyl	84		48 - 120
p-Terphenyl-d14	84		59 - 136
Phenol-d5	55		22 - 120
2-Fluorophenol	69		35 - 120
2,4,6-Tribromophenol	90		41 - 120

Analytical Data

Client: R & C Formation Ltd.

Job Number: 460-137584-1

Client Sample ID: MW-26D

Lab Sample ID: 460-137584-4

Client Matrix: Water

Date Sampled: 07/20/2017 0901

Date Received: 07/20/2017 2000

8270D Semivolatile Organic Compounds (GC/MS)

Analysis Method: 8270D

Analysis Batch: 480-368899

Instrument ID: HP5973Y

Prep Method: 3510C

Prep Batch: 480-368492

Lab File ID: Y0134098.D

Dilution: 1.0

Initial Weight/Volume: 235 mL

Analysis Date: 07/27/2017 0804

Final Weight/Volume: 1 mL

Prep Date: 07/25/2017 0722

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: 460-137584-1

Client Sample ID: MW-106

Lab Sample ID: 460-137584-5

Client Matrix: Water

Date Sampled: 07/20/2017 0931

Date Received: 07/20/2017 2000

8270D Semivolatile Organic Compounds (GC/MS)

Analysis Method:	8270D	Analysis Batch:	480-368899	Instrument ID:	HP5973Y
Prep Method:	3510C	Prep Batch:	480-368492	Lab File ID:	Y0134099.D
Dilution:	1.0			Initial Weight/Volume:	250 mL
Analysis Date:	07/27/2017 0833			Final Weight/Volume:	1 mL
Prep Date:	07/25/2017 0722			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	84		46 - 120
2-Fluorobiphenyl	82		48 - 120
p-Terphenyl-d14	72		59 - 136
Phenol-d5	47		22 - 120
2-Fluorophenol	59		35 - 120
2,4,6-Tribromophenol	83		41 - 120

Analytical Data

Client: R & C Formation Ltd.

Job Number: 460-137584-1

Client Sample ID: MW-106

Lab Sample ID: 460-137584-5

Client Matrix: Water

Date Sampled: 07/20/2017 0931

Date Received: 07/20/2017 2000

8270D Semivolatile Organic Compounds (GC/MS)

Analysis Method: 8270D

Analysis Batch: 480-368899

Instrument ID: HP5973Y

Prep Method: 3510C

Prep Batch: 480-368492

Lab File ID: Y0134099.D

Dilution: 1.0

Initial Weight/Volume: 250 mL

Analysis Date: 07/27/2017 0833

Final Weight/Volume: 1 mL

Prep Date: 07/25/2017 0722

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: 460-137584-1

Client Sample ID: MW-102

Lab Sample ID: 460-137584-6

Client Matrix: Water

Date Sampled: 07/20/2017 1006

Date Received: 07/20/2017 2000

8270D Semivolatile Organic Compounds (GC/MS)

Analysis Method:	8270D	Analysis Batch:	480-368899	Instrument ID:	HP5973Y
Prep Method:	3510C	Prep Batch:	480-368492	Lab File ID:	Y0134100.D
Dilution:	1.0			Initial Weight/Volume:	250 mL
Analysis Date:	07/27/2017 0902			Final Weight/Volume:	1 mL
Prep Date:	07/25/2017 0722			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	89		46 - 120
2-Fluorobiphenyl	85		48 - 120
p-Terphenyl-d14	77		59 - 136
Phenol-d5	52		22 - 120
2-Fluorophenol	67		35 - 120
2,4,6-Tribromophenol	92		41 - 120

Analytical Data

Client: R & C Formation Ltd.

Job Number: 460-137584-1

Client Sample ID: MW-102

Lab Sample ID: 460-137584-6

Client Matrix: Water

Date Sampled: 07/20/2017 1006

Date Received: 07/20/2017 2000

8270D Semivolatile Organic Compounds (GC/MS)

Analysis Method: 8270D

Analysis Batch: 480-368899

Instrument ID: HP5973Y

Prep Method: 3510C

Prep Batch: 480-368492

Lab File ID: Y0134100.D

Dilution: 1.0

Initial Weight/Volume: 250 mL

Analysis Date: 07/27/2017 0902

Final Weight/Volume: 1 mL

Prep Date: 07/25/2017 0722

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: 460-137584-1

Client Sample ID: MW-37S

Lab Sample ID: 460-137584-7

Client Matrix: Water

Date Sampled: 07/20/2017 1051

Date Received: 07/20/2017 2000

8270D Semivolatile Organic Compounds (GC/MS)

Analysis Method:	8270D	Analysis Batch:	480-369036	Instrument ID:	HP5973Y
Prep Method:	3510C	Prep Batch:	480-368492	Lab File ID:	Y0134111.D
Dilution:	1.0			Initial Weight/Volume:	250 mL
Analysis Date:	07/27/2017 1403			Final Weight/Volume:	1 mL
Prep Date:	07/25/2017 0722			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	90		46 - 120
2-Fluorobiphenyl	84		48 - 120
p-Terphenyl-d14	68		59 - 136
Phenol-d5	54		22 - 120
2-Fluorophenol	69		35 - 120
2,4,6-Tribromophenol	72		41 - 120

Analytical Data

Client: R & C Formation Ltd.

Job Number: 460-137584-1

Client Sample ID: MW-37S

Lab Sample ID: 460-137584-7

Client Matrix: Water

Date Sampled: 07/20/2017 1051

Date Received: 07/20/2017 2000

8270D Semivolatile Organic Compounds (GC/MS)

Analysis Method:	8270D	Analysis Batch:	480-369036	Instrument ID:	HP5973Y
Prep Method:	3510C	Prep Batch:	480-368492	Lab File ID:	Y0134111.D
Dilution:	1.0			Initial Weight/Volume:	250 mL
Analysis Date:	07/27/2017 1403			Final Weight/Volume:	1 mL
Prep Date:	07/25/2017 0722			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: 460-137584-1

Client Sample ID: MW-20DR

Lab Sample ID: 460-137584-8

Client Matrix: Water

Date Sampled: 07/20/2017 1136

Date Received: 07/20/2017 2000

8270D Semivolatile Organic Compounds (GC/MS)

Analysis Method:	8270D	Analysis Batch:	480-369036	Instrument ID:	HP5973Y
Prep Method:	3510C	Prep Batch:	480-368492	Lab File ID:	Y0134112.D
Dilution:	1.0			Initial Weight/Volume:	250 mL
Analysis Date:	07/27/2017 1432			Final Weight/Volume:	1 mL
Prep Date:	07/25/2017 0722			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	91		46 - 120
2-Fluorobiphenyl	87		48 - 120
p-Terphenyl-d14	59		59 - 136
Phenol-d5	54		22 - 120
2-Fluorophenol	70		35 - 120
2,4,6-Tribromophenol	96		41 - 120

Analytical Data

Client: R & C Formation Ltd.

Job Number: 460-137584-1

Client Sample ID: MW-20DR

Lab Sample ID: 460-137584-8

Client Matrix: Water

Date Sampled: 07/20/2017 1136

Date Received: 07/20/2017 2000

8270D Semivolatile Organic Compounds (GC/MS)

Analysis Method: 8270D

Analysis Batch: 480-369036

Instrument ID: HP5973Y

Prep Method: 3510C

Prep Batch: 480-368492

Lab File ID: Y0134112.D

Dilution: 1.0

Initial Weight/Volume: 250 mL

Analysis Date: 07/27/2017 1432

Final Weight/Volume: 1 mL

Prep Date: 07/25/2017 0722

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: 460-137584-1

Client Sample ID: MW-20D

Lab Sample ID: 460-137584-9

Client Matrix: Water

Date Sampled: 07/20/2017 1206

Date Received: 07/20/2017 2000

8270D Semivolatile Organic Compounds (GC/MS)

Analysis Method:	8270D	Analysis Batch:	480-369036	Instrument ID:	HP5973Y
Prep Method:	3510C	Prep Batch:	480-368492	Lab File ID:	Y0134113.D
Dilution:	1.0			Initial Weight/Volume:	250 mL
Analysis Date:	07/27/2017 1502			Final Weight/Volume:	1 mL
Prep Date:	07/25/2017 0722			Injection Volume:	2 uL

Analyte	Result (ug/L)	Qualifier	MDL	RL
2-Picoline	19	J	1.4	80
Pyridine	6.0	J	0.41	25

Surrogate	%Rec	Qualifier	Acceptance Limits
Nitrobenzene-d5	85		46 - 120
2-Fluorobiphenyl	77		48 - 120
p-Terphenyl-d14	55	*	59 - 136
Phenol-d5	42		22 - 120
2-Fluorophenol	66		35 - 120
2,4,6-Tribromophenol	96		41 - 120

Analytical Data

Client: R & C Formation Ltd.

Job Number: 460-137584-1

Client Sample ID: MW-20D

Lab Sample ID: 460-137584-9

Client Matrix: Water

Date Sampled: 07/20/2017 1206

Date Received: 07/20/2017 2000

8270D Semivolatile Organic Compounds (GC/MS)

Analysis Method: 8270D

Analysis Batch: 480-369036

Instrument ID: HP5973Y

Prep Method: 3510C

Prep Batch: 480-368492

Lab File ID: Y0134113.D

Dilution: 1.0

Initial Weight/Volume: 250 mL

Analysis Date: 07/27/2017 1502

Final Weight/Volume: 1 mL

Prep Date: 07/25/2017 0722

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: 460-137584-1

Client Sample ID: MW-20S

Lab Sample ID: 460-137584-10

Client Matrix: Water

Date Sampled: 07/20/2017 1233

Date Received: 07/20/2017 2000

8270D Semivolatile Organic Compounds (GC/MS)

Analysis Method:	8270D	Analysis Batch:	480-369036	Instrument ID:	HP5973Y
Prep Method:	3510C	Prep Batch:	480-368492	Lab File ID:	Y0134114.D
Dilution:	1.0			Initial Weight/Volume:	250 mL
Analysis Date:	07/27/2017 1531			Final Weight/Volume:	1 mL
Prep Date:	07/25/2017 0722			Injection Volume:	2 uL

Analyte	Result (ug/L)	Qualifier	MDL	RL
2-Picoline	4.4	J	1.4	80
Pyridine	1.7	J	0.41	25

Surrogate	%Rec	Qualifier	Acceptance Limits
Nitrobenzene-d5	79		46 - 120
2-Fluorobiphenyl	78		48 - 120
p-Terphenyl-d14	49	*	59 - 136
Phenol-d5	14	*	22 - 120
2-Fluorophenol	63		35 - 120
2,4,6-Tribromophenol	87		41 - 120

Analytical Data

Client: R & C Formation Ltd.

Job Number: 460-137584-1

Client Sample ID: MW-20S

Lab Sample ID: 460-137584-10

Client Matrix: Water

Date Sampled: 07/20/2017 1233

Date Received: 07/20/2017 2000

8270D Semivolatile Organic Compounds (GC/MS)

Analysis Method:	8270D	Analysis Batch:	480-369036	Instrument ID:	HP5973Y
Prep Method:	3510C	Prep Batch:	480-368492	Lab File ID:	Y0134114.D
Dilution:	1.0			Initial Weight/Volume:	250 mL
Analysis Date:	07/27/2017 1531			Final Weight/Volume:	1 mL
Prep Date:	07/25/2017 0722			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: 460-137584-1

Client Sample ID: MW-8S

Lab Sample ID: 460-137584-11

Client Matrix: Water

Date Sampled: 07/20/2017 1301

Date Received: 07/20/2017 2000

8270D Semivolatile Organic Compounds (GC/MS)

Analysis Method:	8270D	Analysis Batch:	480-369036	Instrument ID:	HP5973Y
Prep Method:	3510C	Prep Batch:	480-368492	Lab File ID:	Y0134115.D
Dilution:	1.0			Initial Weight/Volume:	250 mL
Analysis Date:	07/27/2017 1601			Final Weight/Volume:	1 mL
Prep Date:	07/25/2017 0722			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	89		46 - 120
2-Fluorobiphenyl	83		48 - 120
p-Terphenyl-d14	71		59 - 136
Phenol-d5	53		22 - 120
2-Fluorophenol	68		35 - 120
2,4,6-Tribromophenol	84		41 - 120

Analytical Data

Client: R & C Formation Ltd.

Job Number: 460-137584-1

Client Sample ID: MW-8S

Lab Sample ID: 460-137584-11

Client Matrix: Water

Date Sampled: 07/20/2017 1301

Date Received: 07/20/2017 2000

8270D Semivolatile Organic Compounds (GC/MS)

Analysis Method: 8270D

Analysis Batch: 480-369036

Instrument ID: HP5973Y

Prep Method: 3510C

Prep Batch: 480-368492

Lab File ID: Y0134115.D

Dilution: 1.0

Initial Weight/Volume: 250 mL

Analysis Date: 07/27/2017 1601

Final Weight/Volume: 1 mL

Prep Date: 07/25/2017 0722

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: 460-137584-1

Client Sample ID: MW-105

Lab Sample ID: 460-137584-12

Client Matrix: Water

Date Sampled: 07/20/2017 1330

Date Received: 07/20/2017 2000

8270D Semivolatile Organic Compounds (GC/MS)

Analysis Method:	8270D	Analysis Batch:	480-369036	Instrument ID:	HP5973Y
Prep Method:	3510C	Prep Batch:	480-368492	Lab File ID:	Y0134116.D
Dilution:	1.0			Initial Weight/Volume:	250 mL
Analysis Date:	07/27/2017 1631			Final Weight/Volume:	1 mL
Prep Date:	07/25/2017 0722			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	84		46 - 120
2-Fluorobiphenyl	80		48 - 120
p-Terphenyl-d14	71		59 - 136
Phenol-d5	49		22 - 120
2-Fluorophenol	62		35 - 120
2,4,6-Tribromophenol	78		41 - 120

Analytical Data

Client: R & C Formation Ltd.

Job Number: 460-137584-1

Client Sample ID: MW-105

Lab Sample ID: 460-137584-12

Client Matrix: Water

Date Sampled: 07/20/2017 1330

Date Received: 07/20/2017 2000

8270D Semivolatile Organic Compounds (GC/MS)

Analysis Method: 8270D

Analysis Batch: 480-369036

Instrument ID: HP5973Y

Prep Method: 3510C

Prep Batch: 480-368492

Lab File ID: Y0134116.D

Dilution: 1.0

Initial Weight/Volume: 250 mL

Analysis Date: 07/27/2017 1631

Final Weight/Volume: 1 mL

Prep Date: 07/25/2017 0722

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: 460-137584-1

Client Sample ID: MW-11S

Lab Sample ID: 460-137584-13

Client Matrix: Water

Date Sampled: 07/20/2017 1357

Date Received: 07/20/2017 2000

8270D Semivolatile Organic Compounds (GC/MS)

Analysis Method:	8270D	Analysis Batch:	480-369036	Instrument ID:	HP5973Y
Prep Method:	3510C	Prep Batch:	480-368492	Lab File ID:	Y0134117.D
Dilution:	1.0			Initial Weight/Volume:	250 mL
Analysis Date:	07/27/2017 1700			Final Weight/Volume:	1 mL
Prep Date:	07/25/2017 0722			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	86		46 - 120
2-Fluorobiphenyl	81		48 - 120
p-Terphenyl-d14	78		59 - 136
Phenol-d5	53		22 - 120
2-Fluorophenol	67		35 - 120
2,4,6-Tribromophenol	83		41 - 120

Analytical Data

Client: R & C Formation Ltd.

Job Number: 460-137584-1

Client Sample ID: MW-11S

Lab Sample ID: 460-137584-13

Client Matrix: Water

Date Sampled: 07/20/2017 1357

Date Received: 07/20/2017 2000

8270D Semivolatile Organic Compounds (GC/MS)

Analysis Method:	8270D	Analysis Batch:	480-369036	Instrument ID:	HP5973Y
Prep Method:	3510C	Prep Batch:	480-368492	Lab File ID:	Y0134117.D
Dilution:	1.0			Initial Weight/Volume:	250 mL
Analysis Date:	07/27/2017 1700			Final Weight/Volume:	1 mL
Prep Date:	07/25/2017 0722			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: 460-137584-1

Client Sample ID: MW-104

Lab Sample ID: 460-137584-14

Client Matrix: Water

Date Sampled: 07/20/2017 1431

Date Received: 07/20/2017 2000

8270D Semivolatile Organic Compounds (GC/MS)

Analysis Method:	8270D	Analysis Batch:	480-369036	Instrument ID:	HP5973Y
Prep Method:	3510C	Prep Batch:	480-368492	Lab File ID:	Y0134118.D
Dilution:	1.0			Initial Weight/Volume:	250 mL
Analysis Date:	07/27/2017 1730			Final Weight/Volume:	1 mL
Prep Date:	07/25/2017 0722			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	89		46 - 120
2-Fluorobiphenyl	86		48 - 120
p-Terphenyl-d14	73		59 - 136
Phenol-d5	54		22 - 120
2-Fluorophenol	69		35 - 120
2,4,6-Tribromophenol	82		41 - 120

Analytical Data

Client: R & C Formation Ltd.

Job Number: 460-137584-1

Client Sample ID: MW-104

Lab Sample ID: 460-137584-14

Client Matrix: Water

Date Sampled: 07/20/2017 1431

Date Received: 07/20/2017 2000

8270D Semivolatile Organic Compounds (GC/MS)

Analysis Method: 8270D

Analysis Batch: 480-369036

Instrument ID: HP5973Y

Prep Method: 3510C

Prep Batch: 480-368492

Lab File ID: Y0134118.D

Dilution: 1.0

Initial Weight/Volume: 250 mL

Analysis Date: 07/27/2017 1730

Final Weight/Volume: 1 mL

Prep Date: 07/25/2017 0722

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: 460-137584-1

Client Sample ID: RW-1R

Lab Sample ID: 460-137584-15

Client Matrix: Water

Date Sampled: 07/20/2017 1501

Date Received: 07/20/2017 2000

8270D Semivolatile Organic Compounds (GC/MS)

Analysis Method:	8270D	Analysis Batch:	480-369036	Instrument ID:	HP5973Y
Prep Method:	3510C	Prep Batch:	480-368492	Lab File ID:	Y0134119.D
Dilution:	1.0			Initial Weight/Volume:	250 mL
Analysis Date:	07/27/2017 1800			Final Weight/Volume:	1 mL
Prep Date:	07/25/2017 0722			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	90		46 - 120
2-Fluorobiphenyl	82		48 - 120
p-Terphenyl-d14	66		59 - 136
Phenol-d5	48		22 - 120
2-Fluorophenol	64		35 - 120
2,4,6-Tribromophenol	91		41 - 120

Analytical Data

Client: R & C Formation Ltd.

Job Number: 460-137584-1

Client Sample ID: RW-1R

Lab Sample ID: 460-137584-15

Client Matrix: Water

Date Sampled: 07/20/2017 1501

Date Received: 07/20/2017 2000

8270D Semivolatile Organic Compounds (GC/MS)

Analysis Method: 8270D

Analysis Batch: 480-369036

Instrument ID: HP5973Y

Prep Method: 3510C

Prep Batch: 480-368492

Lab File ID: Y0134119.D

Dilution: 1.0

Initial Weight/Volume: 250 mL

Analysis Date: 07/27/2017 1800

Final Weight/Volume: 1 mL

Prep Date: 07/25/2017 0722

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: 460-137584-1

Client Sample ID: MW-12S

Lab Sample ID: 460-137584-16

Date Sampled: 07/20/2017 1531

Client Matrix: Water

Date Received: 07/20/2017 2000

8270D Semivolatile Organic Compounds (GC/MS)

Analysis Method:	8270D	Analysis Batch:	480-369036	Instrument ID:	HP5973Y
Prep Method:	3510C	Prep Batch:	480-368492	Lab File ID:	Y0134120.D
Dilution:	1.0			Initial Weight/Volume:	240 mL
Analysis Date:	07/27/2017 1829			Final Weight/Volume:	1 mL
Prep Date:	07/25/2017 0722			Injection Volume:	2 uL

Analyte	Result (ug/L)	Qualifier	MDL	RL
2-Picoline	83	U	1.5	83
Pyridine	26	U	0.43	26

Surrogate	%Rec	Qualifier	Acceptance Limits
Nitrobenzene-d5	81		46 - 120
2-Fluorobiphenyl	80		48 - 120
p-Terphenyl-d14	73		59 - 136
Phenol-d5	49		22 - 120
2-Fluorophenol	61		35 - 120
2,4,6-Tribromophenol	84		41 - 120

Analytical Data

Client: R & C Formation Ltd.

Job Number: 460-137584-1

Client Sample ID: MW-12S

Lab Sample ID: 460-137584-16

Client Matrix: Water

Date Sampled: 07/20/2017 1531

Date Received: 07/20/2017 2000

8270D Semivolatile Organic Compounds (GC/MS)

Analysis Method: 8270D

Analysis Batch: 480-369036

Instrument ID: HP5973Y

Prep Method: 3510C

Prep Batch: 480-368492

Lab File ID: Y0134120.D

Dilution: 1.0

Initial Weight/Volume: 240 mL

Analysis Date: 07/27/2017 1829

Final Weight/Volume: 1 mL

Prep Date: 07/25/2017 0722

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: 460-137584-1

Client Sample ID: MW-16S

Lab Sample ID: 460-137584-17

Date Sampled: 07/20/2017 1556

Client Matrix: Water

Date Received: 07/20/2017 2000

8270D Semivolatile Organic Compounds (GC/MS)

Analysis Method:	8270D	Analysis Batch:	480-369036	Instrument ID:	HP5973Y
Prep Method:	3510C	Prep Batch:	480-368492	Lab File ID:	Y0134121.D
Dilution:	1.0			Initial Weight/Volume:	250 mL
Analysis Date:	07/27/2017 1859			Final Weight/Volume:	1 mL
Prep Date:	07/25/2017 0722			Injection Volume:	2 uL

Analyte	Result (ug/L)	Qualifier	MDL	RL
2-Picoline	80	U	1.4	80
Pyridine	0.67	J	0.41	25

Surrogate	%Rec	Qualifier	Acceptance Limits
Nitrobenzene-d5	90		46 - 120
2-Fluorobiphenyl	85		48 - 120
p-Terphenyl-d14	62		59 - 136
Phenol-d5	51		22 - 120
2-Fluorophenol	67		35 - 120
2,4,6-Tribromophenol	89		41 - 120

Analytical Data

Client: R & C Formation Ltd.

Job Number: 460-137584-1

Client Sample ID: MW-16S

Lab Sample ID: 460-137584-17

Client Matrix: Water

Date Sampled: 07/20/2017 1556

Date Received: 07/20/2017 2000

8270D Semivolatile Organic Compounds (GC/MS)

Analysis Method: 8270D

Analysis Batch: 480-369036

Instrument ID: HP5973Y

Prep Method: 3510C

Prep Batch: 480-368492

Lab File ID: Y0134121.D

Dilution: 1.0

Initial Weight/Volume: 250 mL

Analysis Date: 07/27/2017 1859

Final Weight/Volume: 1 mL

Prep Date: 07/25/2017 0722

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: 460-137584-1

Client Sample ID: MW-53D

Lab Sample ID: 460-137584-18

Date Sampled: 07/20/2017 1631

Client Matrix: Water

Date Received: 07/20/2017 2000

8270D Semivolatile Organic Compounds (GC/MS)

Analysis Method:	8270D	Analysis Batch:	480-369036	Instrument ID:	HP5973Y
Prep Method:	3510C	Prep Batch:	480-368492	Lab File ID:	Y0134122.D
Dilution:	1.0			Initial Weight/Volume:	250 mL
Analysis Date:	07/27/2017 1928			Final Weight/Volume:	1 mL
Prep Date:	07/25/2017 0722			Injection Volume:	2 uL

Analyte	Result (ug/L)	Qualifier	MDL	RL
2-Picoline	80	U	1.4	80
Pyridine	0.51	J	0.41	25

Surrogate	%Rec	Qualifier	Acceptance Limits
Nitrobenzene-d5	85		46 - 120
2-Fluorobiphenyl	82		48 - 120
p-Terphenyl-d14	69		59 - 136
Phenol-d5	48		22 - 120
2-Fluorophenol	63		35 - 120
2,4,6-Tribromophenol	88		41 - 120

Analytical Data

Client: R & C Formation Ltd.

Job Number: 460-137584-1

Client Sample ID: MW-53D

Lab Sample ID: 460-137584-18

Client Matrix: Water

Date Sampled: 07/20/2017 1631

Date Received: 07/20/2017 2000

8270D Semivolatile Organic Compounds (GC/MS)

Analysis Method: 8270D

Analysis Batch: 480-369036

Instrument ID: HP5973Y

Prep Method: 3510C

Prep Batch: 480-368492

Lab File ID: Y0134122.D

Dilution: 1.0

Initial Weight/Volume: 250 mL

Analysis Date: 07/27/2017 1928

Final Weight/Volume: 1 mL

Prep Date: 07/25/2017 0722

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: 460-137584-1

Client Sample ID: MW-103

Lab Sample ID: 460-137584-2

Date Sampled: 07/20/2017 0751

Client Matrix: Water

Date Received: 07/20/2017 2000

300.0 Anions, Ion Chromatography

Analysis Method:	300.0	Analysis Batch:	460-451331	Instrument ID:	IC A
	N/A	Prep Batch:	N/A	Lab File ID:	YA 2017-07-22-22-00.0
Dilution:	10			Initial Weight/Volume:	10 mL
Analysis Date:	07/22/2017 2200	Run Type:	DL	Final Weight/Volume:	
Prep Date:	N/A			Injection Volume:	10 uL

Analyte	Result (mg/L)	Qualifier	MDL	RL
Sulfate	21.0		1.27	6.00

Analytical Data

Client: R & C Formation Ltd.

Job Number: 460-137584-1

Client Sample ID: MW-33S

Lab Sample ID: 460-137584-3

Date Sampled: 07/20/2017 0821

Client Matrix: Water

Date Received: 07/20/2017 2000

300.0 Anions, Ion Chromatography

Analysis Method:	300.0	Analysis Batch:	460-451331	Instrument ID:	IC A
	N/A	Prep Batch:	N/A	Lab File ID:	YA 2017-07-22-22-16.0
Dilution:	10			Initial Weight/Volume:	10 mL
Analysis Date:	07/22/2017 2216	Run Type:	DL	Final Weight/Volume:	
Prep Date:	N/A			Injection Volume:	10 uL

Analyte	Result (mg/L)	Qualifier	MDL	RL
Sulfate	108		1.27	6.00

Analytical Data

Client: R & C Formation Ltd.

Job Number: 460-137584-1

Client Sample ID: MW-106

Lab Sample ID: 460-137584-5

Date Sampled: 07/20/2017 0931

Client Matrix: Water

Date Received: 07/20/2017 2000

300.0 Anions, Ion Chromatography

Analysis Method:	300.0	Analysis Batch:	460-451331	Instrument ID:	IC A
	N/A	Prep Batch:	N/A	Lab File ID:	YA 2017-07-22-22-32.0
Dilution:	10			Initial Weight/Volume:	10 mL
Analysis Date:	07/22/2017 2232	Run Type:	DL	Final Weight/Volume:	
Prep Date:	N/A			Injection Volume:	10 uL

Analyte	Result (mg/L)	Qualifier	MDL	RL
Sulfate	27.8		1.27	6.00

Analytical Data

Client: R & C Formation Ltd.

Job Number: 460-137584-1

Client Sample ID: MW-102

Lab Sample ID: 460-137584-6

Date Sampled: 07/20/2017 1006

Client Matrix: Water

Date Received: 07/20/2017 2000

300.0 Anions, Ion Chromatography

Analysis Method:	300.0	Analysis Batch:	460-451331	Instrument ID:	IC A
	N/A	Prep Batch:	N/A	Lab File ID:	YA 2017-07-22-22-49.0
Dilution:	10			Initial Weight/Volume:	10 mL
Analysis Date:	07/22/2017 2249	Run Type:	DL	Final Weight/Volume:	
Prep Date:	N/A			Injection Volume:	10 uL

Analyte	Result (mg/L)	Qualifier	MDL	RL
Sulfate	46.3		1.27	6.00

Analytical Data

Client: R & C Formation Ltd.

Job Number: 460-137584-1

Client Sample ID: MW-37S

Lab Sample ID: 460-137584-7

Date Sampled: 07/20/2017 1051

Client Matrix: Water

Date Received: 07/20/2017 2000

300.0 Anions, Ion Chromatography

Analysis Method:	300.0	Analysis Batch:	460-451331	Instrument ID:	IC A
	N/A	Prep Batch:	N/A	Lab File ID:	YA 2017-07-22-23-05.0
Dilution:	10			Initial Weight/Volume:	10 mL
Analysis Date:	07/22/2017 2305	Run Type:	DL	Final Weight/Volume:	
Prep Date:	N/A			Injection Volume:	10 uL

Analyte	Result (mg/L)	Qualifier	MDL	RL
Sulfate	125		1.27	6.00

Analytical Data

Client: R & C Formation Ltd.

Job Number: 460-137584-1

Client Sample ID: MW-20S

Lab Sample ID: 460-137584-10

Client Matrix: Water

Date Sampled: 07/20/2017 1233

Date Received: 07/20/2017 2000

300.0 Anions, Ion Chromatography

Analysis Method:	300.0	Analysis Batch:	460-451331	Instrument ID:	IC A
	N/A	Prep Batch:	N/A	Lab File ID:	YA 2017-07-22-23-21.0
Dilution:	10			Initial Weight/Volume:	10 mL
Analysis Date:	07/22/2017 2321	Run Type:	DL	Final Weight/Volume:	
Prep Date:	N/A			Injection Volume:	10 uL

Analyte	Result (mg/L)	Qualifier	MDL	RL
Sulfate	222		1.27	6.00

Analytical Data

Client: R & C Formation Ltd.

Job Number: 460-137584-1

Client Sample ID: MW-8S

Lab Sample ID: 460-137584-11

Client Matrix: Water

Date Sampled: 07/20/2017 1301

Date Received: 07/20/2017 2000

300.0 Anions, Ion Chromatography

Analysis Method:	300.0	Analysis Batch:	460-451331	Instrument ID:	IC A
	N/A	Prep Batch:	N/A	Lab File ID:	YA 2017-07-23-01-15.0
Dilution:	10			Initial Weight/Volume:	10 mL
Analysis Date:	07/23/2017 0115	Run Type:	DL	Final Weight/Volume:	
Prep Date:	N/A			Injection Volume:	10 uL

Analyte	Result (mg/L)	Qualifier	MDL	RL
Sulfate	24.5		1.27	6.00

Analytical Data

Client: R & C Formation Ltd.

Job Number: 460-137584-1

Client Sample ID: MW-105

Lab Sample ID: 460-137584-12

Date Sampled: 07/20/2017 1330

Client Matrix: Water

Date Received: 07/20/2017 2000

300.0 Anions, Ion Chromatography

Analysis Method:	300.0	Analysis Batch:	460-451331	Instrument ID:	IC A
	N/A	Prep Batch:	N/A	Lab File ID:	YA 2017-07-23-01-31.0
Dilution:	10			Initial Weight/Volume:	10 mL
Analysis Date:	07/23/2017 0131	Run Type:	DL	Final Weight/Volume:	
Prep Date:	N/A			Injection Volume:	10 uL

Analyte	Result (mg/L)	Qualifier	MDL	RL
Sulfate	15.1		1.27	6.00

Analytical Data

Client: R & C Formation Ltd.

Job Number: 460-137584-1

Client Sample ID: MW-11S

Lab Sample ID: 460-137584-13

Date Sampled: 07/20/2017 1357

Client Matrix: Water

Date Received: 07/20/2017 2000

300.0 Anions, Ion Chromatography

Analysis Method:	300.0	Analysis Batch:	460-451331	Instrument ID:	IC A
	N/A	Prep Batch:	N/A	Lab File ID:	YA 2017-07-23-01-47.0
Dilution:	10			Initial Weight/Volume:	10 mL
Analysis Date:	07/23/2017 0147	Run Type:	DL	Final Weight/Volume:	
Prep Date:	N/A			Injection Volume:	10 uL

Analyte	Result (mg/L)	Qualifier	MDL	RL
Sulfate	13.6		1.27	6.00

Analytical Data

Client: R & C Formation Ltd.

Job Number: 460-137584-1

Client Sample ID: MW-104

Lab Sample ID: 460-137584-14

Client Matrix: Water

Date Sampled: 07/20/2017 1431

Date Received: 07/20/2017 2000

300.0 Anions, Ion Chromatography

Analysis Method:	300.0	Analysis Batch:	460-451331	Instrument ID:	IC A
	N/A	Prep Batch:	N/A	Lab File ID:	YA 2017-07-23-02-04.1
Dilution:	10			Initial Weight/Volume:	10 mL
Analysis Date:	07/23/2017 0204	Run Type:	DL	Final Weight/Volume:	
Prep Date:	N/A			Injection Volume:	10 uL

Analyte	Result (mg/L)	Qualifier	MDL	RL
Sulfate	20.2		1.27	6.00

Analytical Data

Client: R & C Formation Ltd.

Job Number: 460-137584-1

Client Sample ID: RW-1R

Lab Sample ID: 460-137584-15

Date Sampled: 07/20/2017 1501

Client Matrix: Water

Date Received: 07/20/2017 2000

300.0 Anions, Ion Chromatography

Analysis Method:	300.0	Analysis Batch:	460-451348	Instrument ID:	IC A
	N/A	Prep Batch:	N/A	Lab File ID:	YA 2017-07-23-20-28.0
Dilution:	20			Initial Weight/Volume:	10 mL
Analysis Date:	07/23/2017 2028	Run Type:	DL	Final Weight/Volume:	
Prep Date:	N/A			Injection Volume:	10 uL

Analyte	Result (mg/L)	Qualifier	MDL	RL
Sulfate	280		2.54	12.0

Analytical Data

Client: R & C Formation Ltd.

Job Number: 460-137584-1

Client Sample ID: MW-16S

Lab Sample ID: 460-137584-17

Date Sampled: 07/20/2017 1556

Client Matrix: Water

Date Received: 07/20/2017 2000

300.0 Anions, Ion Chromatography

Analysis Method:	300.0	Analysis Batch:	460-451348	Instrument ID:	IC A
	N/A	Prep Batch:	N/A	Lab File ID:	YA 2017-07-23-19-56.0
Dilution:	10			Initial Weight/Volume:	10 mL
Analysis Date:	07/23/2017 1956	Run Type:	DL	Final Weight/Volume:	
Prep Date:	N/A			Injection Volume:	10 uL

Analyte	Result (mg/L)	Qualifier	MDL	RL
Sulfate	37.7		1.27	6.00

Analytical Data

Client: R & C Formation Ltd.

Job Number: 460-137584-1

Client Sample ID: MW-53D

Lab Sample ID: 460-137584-18

Date Sampled: 07/20/2017 1631

Client Matrix: Water

Date Received: 07/20/2017 2000

300.0 Anions, Ion Chromatography

Analysis Method: 300.0

Analysis Batch: 460-451905

Instrument ID: IC A

N/A

Prep Batch: N/A

Lab File ID: YA 2017-07-26-05-08.0

Dilution: 1.0

Initial Weight/Volume: 10 mL

Analysis Date: 07/26/2017 0508

Final Weight/Volume:

Prep Date: N/A

Injection Volume: 10 uL

Analyte	Result (mg/L)	Qualifier	MDL	RL
Sulfate	1.37		0.13	0.60

Analytical Data

Client: R & C Formation Ltd.

Job Number: 460-137584-1

Client Sample ID: MW-103

Lab Sample ID: 460-137584-2

Date Sampled: 07/20/2017 0751

Client Matrix: Water

Date Received: 07/20/2017 2000

6010C Metals (ICP)

Analysis Method: 6010C

Analysis Batch: 460-451343

Instrument ID: ICP5

Prep Method: 3010A

Prep Batch: 460-451277

Lab File ID: 451277D1.asc

Dilution: 1.0

Initial Weight/Volume: 50 mL

Analysis Date: 07/23/2017 1656

Final Weight/Volume: 50 mL

Prep Date: 07/23/2017 0010

Analyte	Result (ug/L)	Qualifier	MDL	RL
Iron	1770		92.1	150
Manganese	326		3.1	15.0

Analytical Data

Client: R & C Formation Ltd.

Job Number: 460-137584-1

Client Sample ID: MW-33S

Lab Sample ID: 460-137584-3

Date Sampled: 07/20/2017 0821

Client Matrix: Water

Date Received: 07/20/2017 2000

6010C Metals (ICP)

Analysis Method: 6010C

Analysis Batch: 460-451343

Instrument ID: ICP5

Prep Method: 3010A

Prep Batch: 460-451277

Lab File ID: 451277D1.asc

Dilution: 5.0

Initial Weight/Volume: 50 mL

Analysis Date: 07/23/2017 1700

Final Weight/Volume: 50 mL

Prep Date: 07/23/2017 0010

Analyte	Result (ug/L)	Qualifier	MDL	RL
Iron	438000		461	750
Manganese	6730		15.6	75.0

Analytical Data

Client: R & C Formation Ltd.

Job Number: 460-137584-1

Client Sample ID: MW-106

Lab Sample ID: 460-137584-5

Date Sampled: 07/20/2017 0931

Client Matrix: Water

Date Received: 07/20/2017 2000

6010C Metals (ICP)

Analysis Method: 6010C

Analysis Batch: 460-451343

Instrument ID: ICP5

Prep Method: 3010A

Prep Batch: 460-451277

Lab File ID: 451277D1.asc

Dilution: 1.0

Initial Weight/Volume: 50 mL

Analysis Date: 07/23/2017 1724

Final Weight/Volume: 50 mL

Prep Date: 07/23/2017 0010

Analyte	Result (ug/L)	Qualifier	MDL	RL
Iron	1580		92.1	150
Manganese	601		3.1	15.0

Analytical Data

Client: R & C Formation Ltd.

Job Number: 460-137584-1

Client Sample ID: MW-102

Lab Sample ID: 460-137584-6

Client Matrix: Water

Date Sampled: 07/20/2017 1006

Date Received: 07/20/2017 2000

6010C Metals (ICP)

Analysis Method: 6010C

Prep Method: 3010A

Dilution: 1.0

Analysis Date: 07/23/2017 1728

Prep Date: 07/23/2017 0010

Analysis Batch: 460-451343

Prep Batch: 460-451277

Instrument ID: ICP5

Lab File ID: 451277D1.asc

Initial Weight/Volume: 50 mL

Final Weight/Volume: 50 mL

Analyte	Result (ug/L)	Qualifier	MDL	RL
Iron	8310		92.1	150
Manganese	1050		3.1	15.0

Analytical Data

Client: R & C Formation Ltd.

Job Number: 460-137584-1

Client Sample ID: MW-37S

Lab Sample ID: 460-137584-7

Date Sampled: 07/20/2017 1051

Client Matrix: Water

Date Received: 07/20/2017 2000

6010C Metals (ICP)

Analysis Method: 6010C

Analysis Batch: 460-451343

Instrument ID: ICP5

Prep Method: 3010A

Prep Batch: 460-451277

Lab File ID: 451277D1.asc

Dilution: 1.0

Initial Weight/Volume: 50 mL

Analysis Date: 07/23/2017 1732

Final Weight/Volume: 50 mL

Prep Date: 07/23/2017 0010

Analyte	Result (ug/L)	Qualifier	MDL	RL
Iron	13200		92.1	150
Manganese	1470		3.1	15.0

Analytical Data

Client: R & C Formation Ltd.

Job Number: 460-137584-1

Client Sample ID: MW-20S

Lab Sample ID: 460-137584-10

Date Sampled: 07/20/2017 1233

Client Matrix: Water

Date Received: 07/20/2017 2000

6010C Metals (ICP)

Analysis Method: 6010C

Analysis Batch: 460-451343

Instrument ID: ICP5

Prep Method: 3010A

Prep Batch: 460-451277

Lab File ID: 451277D1.asc

Dilution: 1.0

Initial Weight/Volume: 50 mL

Analysis Date: 07/23/2017 1736

Final Weight/Volume: 50 mL

Prep Date: 07/23/2017 0010

Analyte	Result (ug/L)	Qualifier	MDL	RL
Iron	3510		92.1	150
Manganese	992		3.1	15.0

Analytical Data

Client: R & C Formation Ltd.

Job Number: 460-137584-1

Client Sample ID: MW-8S

Lab Sample ID: 460-137584-11

Date Sampled: 07/20/2017 1301

Client Matrix: Water

Date Received: 07/20/2017 2000

6010C Metals (ICP)

Analysis Method: 6010C

Analysis Batch: 460-451343

Instrument ID: ICP5

Prep Method: 3010A

Prep Batch: 460-451277

Lab File ID: 451277D1.asc

Dilution: 1.0

Initial Weight/Volume: 50 mL

Analysis Date: 07/23/2017 1740

Final Weight/Volume: 50 mL

Prep Date: 07/23/2017 0010

Analyte	Result (ug/L)	Qualifier	MDL	RL
Iron	19200		92.1	150
Manganese	470		3.1	15.0

Analytical Data

Client: R & C Formation Ltd.

Job Number: 460-137584-1

Client Sample ID: MW-105

Lab Sample ID: 460-137584-12

Date Sampled: 07/20/2017 1330

Client Matrix: Water

Date Received: 07/20/2017 2000

6010C Metals (ICP)

Analysis Method: 6010C

Analysis Batch: 460-451343

Instrument ID: ICP5

Prep Method: 3010A

Prep Batch: 460-451277

Lab File ID: 451277D1.asc

Dilution: 1.0

Initial Weight/Volume: 50 mL

Analysis Date: 07/23/2017 1744

Final Weight/Volume: 50 mL

Prep Date: 07/23/2017 0010

Analyte	Result (ug/L)	Qualifier	MDL	RL
Iron	31500		92.1	150
Manganese	1660		3.1	15.0

Analytical Data

Client: R & C Formation Ltd.

Job Number: 460-137584-1

Client Sample ID: MW-11S

Lab Sample ID: 460-137584-13

Date Sampled: 07/20/2017 1357

Client Matrix: Water

Date Received: 07/20/2017 2000

6010C Metals (ICP)

Analysis Method: 6010C

Analysis Batch: 460-451343

Instrument ID: ICP5

Prep Method: 3010A

Prep Batch: 460-451277

Lab File ID: 451277D1.asc

Dilution: 1.0

Initial Weight/Volume: 50 mL

Analysis Date: 07/23/2017 1748

Final Weight/Volume: 50 mL

Prep Date: 07/23/2017 0010

Analyte	Result (ug/L)	Qualifier	MDL	RL
Iron	2200		92.1	150
Manganese	558		3.1	15.0

Analytical Data

Client: R & C Formation Ltd.

Job Number: 460-137584-1

Client Sample ID: MW-104

Lab Sample ID: 460-137584-14

Date Sampled: 07/20/2017 1431

Client Matrix: Water

Date Received: 07/20/2017 2000

6010C Metals (ICP)

Analysis Method: 6010C

Analysis Batch: 460-451343

Instrument ID: ICP5

Prep Method: 3010A

Prep Batch: 460-451277

Lab File ID: 451277D1.asc

Dilution: 1.0

Initial Weight/Volume: 50 mL

Analysis Date: 07/23/2017 1752

Final Weight/Volume: 50 mL

Prep Date: 07/23/2017 0010

Analyte	Result (ug/L)	Qualifier	MDL	RL
Iron	3220		92.1	150
Manganese	1240		3.1	15.0

Analytical Data

Client: R & C Formation Ltd.

Job Number: 460-137584-1

Client Sample ID: RW-1R

Lab Sample ID: 460-137584-15

Date Sampled: 07/20/2017 1501

Client Matrix: Water

Date Received: 07/20/2017 2000

6010C Metals (ICP)

Analysis Method: 6010C

Analysis Batch: 460-451343

Instrument ID: ICP5

Prep Method: 3010A

Prep Batch: 460-451277

Lab File ID: 451277D1.asc

Dilution: 1.0

Initial Weight/Volume: 50 mL

Analysis Date: 07/23/2017 1756

Final Weight/Volume: 50 mL

Prep Date: 07/23/2017 0010

Analyte	Result (ug/L)	Qualifier	MDL	RL
Iron	53500		92.1	150
Manganese	511		3.1	15.0

Analytical Data

Client: R & C Formation Ltd.

Job Number: 460-137584-1

Client Sample ID: MW-16S

Lab Sample ID: 460-137584-17

Date Sampled: 07/20/2017 1556

Client Matrix: Water

Date Received: 07/20/2017 2000

6010C Metals (ICP)

Analysis Method: 6010C

Analysis Batch: 460-451343

Instrument ID: ICP5

Prep Method: 3010A

Prep Batch: 460-451277

Lab File ID: 451277D1.asc

Dilution: 1.0

Initial Weight/Volume: 50 mL

Analysis Date: 07/23/2017 1812

Final Weight/Volume: 50 mL

Prep Date: 07/23/2017 0010

Analyte	Result (ug/L)	Qualifier	MDL	RL
Iron	11900		92.1	150
Manganese	448		3.1	15.0

Analytical Data

Client: R & C Formation Ltd.

Job Number: 460-137584-1

Client Sample ID: MW-53D

Lab Sample ID: 460-137584-18

Date Sampled: 07/20/2017 1631

Client Matrix: Water

Date Received: 07/20/2017 2000

6010C Metals (ICP)

Analysis Method: 6010C

Analysis Batch: 460-451343

Instrument ID: ICP5

Prep Method: 3010A

Prep Batch: 460-451277

Lab File ID: 451277D1.asc

Dilution: 1.0

Initial Weight/Volume: 50 mL

Analysis Date: 07/23/2017 1816

Final Weight/Volume: 50 mL

Prep Date: 07/23/2017 0010

Analyte	Result (ug/L)	Qualifier	MDL	RL
Iron	3680		92.1	150
Manganese	290		3.1	15.0

Analytical Data

Client: R & C Formation Ltd.

Job Number: 460-137584-1

General Chemistry

Client Sample ID: MW-103

Lab Sample ID: 460-137584-2

Client Matrix: Water

Date Sampled: 07/20/2017 0751

Date Received: 07/20/2017 2000

Analyte	Result	Qual	Units	MDL	RL	Dil	Method
Ammonia	0.21		mg/L	0.072	0.10	1.0	350.1
Analysis Batch: 460-452055 Analysis Date: 07/26/2017 1436							
Prep Batch: 460-451937 Prep Date: 07/26/2017 0515							
Nitrate as N	0.31		mg/L	0.010	0.10	1.0	SM 4500 NO3 F
Analysis Batch: 460-451100 Analysis Date: 07/21/2017 1531							

Analytical Data

Client: R & C Formation Ltd.

Job Number: 460-137584-1

General Chemistry

Client Sample ID: MW-33S

Lab Sample ID: 460-137584-3

Client Matrix: Water

Date Sampled: 07/20/2017 0821

Date Received: 07/20/2017 2000

Analyte	Result	Qual	Units	MDL	RL	Dil	Method
Ammonia	749		mg/L	14.4	20.0	20	350.1
Analysis Batch: 460-452055 Analysis Date: 07/26/2017 1505							
Prep Batch: 460-451937 Prep Date: 07/26/2017 0515							
Nitrate as N	0.015	J	mg/L	0.010	0.10	1.0	SM 4500 NO3 F
Analysis Batch: 460-451100 Analysis Date: 07/21/2017 1532							

Analytical Data

Client: R & C Formation Ltd.

Job Number: 460-137584-1

General Chemistry

Client Sample ID: MW-106

Lab Sample ID: 460-137584-5

Client Matrix: Water

Date Sampled: 07/20/2017 0931

Date Received: 07/20/2017 2000

Analyte	Result	Qual	Units	MDL	RL	Dil	Method
Ammonia	5.2		mg/L	0.14	0.20	2.0	350.1
Analysis Batch: 460-452055 Analysis Date: 07/26/2017 1507							
Prep Batch: 460-451937 Prep Date: 07/26/2017 0515							
Nitrate as N	0.013	J	mg/L	0.010	0.10	1.0	SM 4500 NO3 F
Analysis Batch: 460-451100 Analysis Date: 07/21/2017 1533							

Analytical Data

Client: R & C Formation Ltd.

Job Number: 460-137584-1

General Chemistry

Client Sample ID: MW-102

Lab Sample ID: 460-137584-6

Client Matrix: Water

Date Sampled: 07/20/2017 1006

Date Received: 07/20/2017 2000

Analyte	Result	Qual	Units	MDL	RL	Dil	Method
Ammonia	13.9		mg/L	0.72	1.0	10	350.1
Analysis Batch: 460-452055 Analysis Date: 07/26/2017 1508							
Prep Batch: 460-451937 Prep Date: 07/26/2017 0515							
Nitrate as N	0.034	J	mg/L	0.010	0.10	1.0	SM 4500 NO3 F
Analysis Batch: 460-451100 Analysis Date: 07/21/2017 1535							

Analytical Data

Client: R & C Formation Ltd.

Job Number: 460-137584-1

General Chemistry

Client Sample ID: MW-37S

Lab Sample ID: 460-137584-7

Client Matrix: Water

Date Sampled: 07/20/2017 1051

Date Received: 07/20/2017 2000

Analyte	Result	Qual	Units	MDL	RL	Dil	Method
Ammonia	26.8		mg/L	0.72	1.0	10	350.1
Analysis Batch: 460-452055 Analysis Date: 07/26/2017 1510							
Prep Batch: 460-451937 Prep Date: 07/26/2017 0515							
Nitrate as N	0.010	J	mg/L	0.010	0.10	1.0	SM 4500 NO3 F
Analysis Batch: 460-451100 Analysis Date: 07/21/2017 1544							

Analytical Data

Client: R & C Formation Ltd.

Job Number: 460-137584-1

General Chemistry

Client Sample ID: MW-20S

Lab Sample ID: 460-137584-10

Date Sampled: 07/20/2017 1233

Client Matrix: Water

Date Received: 07/20/2017 2000

Analyte	Result	Qual	Units	MDL	RL	Dil	Method
Ammonia	38.6		mg/L	0.72	1.0	2.0	350.1
Analysis Batch: 460-452055 Analysis Date: 07/26/2017 1511							
Prep Batch: 460-451937 Prep Date: 07/26/2017 0515							
Nitrate as N	0.10	U	mg/L	0.010	0.10	1.0	SM 4500 NO3 F
Analysis Batch: 460-451100 Analysis Date: 07/21/2017 1545							

Analytical Data

Client: R & C Formation Ltd.

Job Number: 460-137584-1

General Chemistry

Client Sample ID: MW-8S

Lab Sample ID: 460-137584-11

Date Sampled: 07/20/2017 1301

Client Matrix: Water

Date Received: 07/20/2017 2000

Analyte	Result	Qual	Units	MDL	RL	Dil	Method
Ammonia	6.0		mg/L	0.14	0.20	2.0	350.1
	Analysis Batch: 460-452055		Analysis Date: 07/26/2017 1513				
	Prep Batch: 460-451937		Prep Date: 07/26/2017 0515				
Nitrate as N	0.023	J	mg/L	0.010	0.10	1.0	SM 4500 NO3 F
	Analysis Batch: 460-451100		Analysis Date: 07/21/2017 1547				

Analytical Data

Client: R & C Formation Ltd.

Job Number: 460-137584-1

General Chemistry

Client Sample ID: MW-105

Lab Sample ID: 460-137584-12

Date Sampled: 07/20/2017 1330

Client Matrix: Water

Date Received: 07/20/2017 2000

Analyte	Result	Qual	Units	MDL	RL	Dil	Method
Ammonia	2.1		mg/L	0.072	0.10	1.0	350.1
Analysis Batch: 460-452055 Analysis Date: 07/26/2017 1451							
Prep Batch: 460-451937 Prep Date: 07/26/2017 0515							
Nitrate as N	0.037	J	mg/L	0.010	0.10	1.0	SM 4500 NO3 F
Analysis Batch: 460-451100 Analysis Date: 07/21/2017 1548							

Analytical Data

Client: R & C Formation Ltd.

Job Number: 460-137584-1

General Chemistry

Client Sample ID: MW-11S

Lab Sample ID: 460-137584-13

Date Sampled: 07/20/2017 1357

Client Matrix: Water

Date Received: 07/20/2017 2000

Analyte	Result	Qual	Units	MDL	RL	Dil	Method
Ammonia	11.7		mg/L	0.72	1.0	10	350.1
Analysis Batch: 460-452055 Analysis Date: 07/26/2017 1514							
Prep Batch: 460-451937 Prep Date: 07/26/2017 0515							
Nitrate as N	0.11		mg/L	0.010	0.10	1.0	SM 4500 NO3 F
Analysis Batch: 460-451100 Analysis Date: 07/21/2017 1549							

Analytical Data

Client: R & C Formation Ltd.

Job Number: 460-137584-1

General Chemistry

Client Sample ID: MW-104

Lab Sample ID: 460-137584-14

Client Matrix: Water

Date Sampled: 07/20/2017 1431

Date Received: 07/20/2017 2000

Analyte	Result	Qual	Units	MDL	RL	Dil	Method
Ammonia	2.2		mg/L	0.072	0.10	1.0	350.1
Analysis Batch: 460-452055 Analysis Date: 07/26/2017 1454							
Prep Batch: 460-451937 Prep Date: 07/26/2017 0515							
Nitrate as N	0.025	J	mg/L	0.010	0.10	1.0	SM 4500 NO3 F
Analysis Batch: 460-451100 Analysis Date: 07/21/2017 1551							

Analytical Data

Client: R & C Formation Ltd.

Job Number: 460-137584-1

General Chemistry

Client Sample ID: RW-1R

Lab Sample ID: 460-137584-15

Date Sampled: 07/20/2017 1501

Client Matrix: Water

Date Received: 07/20/2017 2000

Analyte	Result	Qual	Units	MDL	RL	Dil	Method
Ammonia	18.3		mg/L	0.72	1.0	1.0	350.1
Analysis Batch: 460-452055 Analysis Date: 07/26/2017 1455							
Prep Batch: 460-451937 Prep Date: 07/26/2017 0515							
Nitrate as N	0.013	J	mg/L	0.010	0.10	1.0	SM 4500 NO3 F
Analysis Batch: 460-451100 Analysis Date: 07/21/2017 1552							

Analytical Data

Client: R & C Formation Ltd.

Job Number: 460-137584-1

General Chemistry

Client Sample ID: MW-16S

Lab Sample ID: 460-137584-17

Date Sampled: 07/20/2017 1556

Client Matrix: Water

Date Received: 07/20/2017 2000

Analyte	Result	Qual	Units	MDL	RL	Dil	Method
Ammonia	11.9		mg/L	0.72	1.0	10	350.1
Analysis Batch: 460-452055 Analysis Date: 07/26/2017 1516							
Prep Batch: 460-451937 Prep Date: 07/26/2017 0515							
Nitrate as N	0.019	J	mg/L	0.010	0.10	1.0	SM 4500 NO3 F
Analysis Batch: 460-451100 Analysis Date: 07/21/2017 1554							

Analytical Data

Client: R & C Formation Ltd.

Job Number: 460-137584-1

General Chemistry

Client Sample ID: MW-53D

Lab Sample ID: 460-137584-18

Date Sampled: 07/20/2017 1631

Client Matrix: Water

Date Received: 07/20/2017 2000

Analyte	Result	Qual	Units	MDL	RL	Dil	Method
Ammonia	30.6		mg/L	0.72	1.0	10	350.1
Analysis Batch: 460-452055 Analysis Date: 07/26/2017 1517							
Prep Batch: 460-451937 Prep Date: 07/26/2017 0515							
Nitrate as N	2.2		mg/L	0.020	0.20	2.0	SM 4500 NO3 F
Analysis Batch: 460-451100 Analysis Date: 07/21/2017 1605							

DATA REPORTING QUALIFIERS

Client: R & C Formation Ltd.

Job Number: 460-137584-1

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.
HPLC/IC	U	Analyzed for but not detected.
	*	MS or MSD is outside acceptance limits.
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
	N	Spiked sample recovery is not within control limits.

QUALITY CONTROL RESULTS

Quality Control Results

Client: R & C Formation Ltd.

Job Number: 460-137584-1

QC Association Summary

Lab Sample ID	Client Sample ID	Report Basis	Client Matrix	Method	Prep Batch
GC/MS VOA					
Analysis Batch:460-451130					
LCS 460-451130/4	Lab Control Sample	T	Water	8260C	
LCSD 460-451130/5	Lab Control Sample Duplicate	T	Water	8260C	
MB 460-451130/8	Method Blank	T	Water	8260C	
460-137584-1TB	TB	T	Water	8260C	
460-137584-2	MW-103	T	Water	8260C	
460-137584-3	MW-33S	T	Water	8260C	
460-137584-4	MW-26D	T	Water	8260C	
460-137584-5	MW-106	T	Water	8260C	
460-137584-6	MW-102	T	Water	8260C	
460-137584-7	MW-37S	T	Water	8260C	
460-137584-8	MW-20DR	T	Water	8260C	
460-137584-9	MW-20D	T	Water	8260C	
460-137584-10	MW-20S	T	Water	8260C	
460-137584-11	MW-8S	T	Water	8260C	
460-137584-12	MW-105	T	Water	8260C	
460-137584-13	MW-11S	T	Water	8260C	
460-137584-15	RW-1R	T	Water	8260C	
460-137584-16	MW-12S	T	Water	8260C	
460-137584-17	MW-16S	T	Water	8260C	
460-137584-18	MW-53D	T	Water	8260C	
Analysis Batch:460-451915					
LCS 460-451915/3	Lab Control Sample	T	Water	8260C	
MB 460-451915/7	Method Blank	T	Water	8260C	
460-137584-14	MW-104	T	Water	8260C	

Report Basis

T = Total

Quality Control Results

Client: R & C Formation Ltd.

Job Number: 460-137584-1

QC Association Summary

Lab Sample ID	Client Sample ID	Report Basis	Client Matrix	Method	Prep Batch
GC/MS Semi VOA					
Prep Batch: 480-368492					
LCS 480-368492/2-A	Lab Control Sample	T	Water	3510C	
LCSD 480-368492/3-A	Lab Control Sample Duplicate	T	Water	3510C	
MB 480-368492/1-A	Method Blank	T	Water	3510C	
460-137584-2	MW-103	T	Water	3510C	
460-137584-3	MW-33S	T	Water	3510C	
460-137584-4	MW-26D	T	Water	3510C	
460-137584-5	MW-106	T	Water	3510C	
460-137584-6	MW-102	T	Water	3510C	
460-137584-7	MW-37S	T	Water	3510C	
460-137584-8	MW-20DR	T	Water	3510C	
460-137584-9	MW-20D	T	Water	3510C	
460-137584-10	MW-20S	T	Water	3510C	
460-137584-11	MW-8S	T	Water	3510C	
460-137584-12	MW-105	T	Water	3510C	
460-137584-13	MW-11S	T	Water	3510C	
460-137584-14	MW-104	T	Water	3510C	
460-137584-15	RW-1R	T	Water	3510C	
460-137584-16	MW-12S	T	Water	3510C	
460-137584-17	MW-16S	T	Water	3510C	
460-137584-18	MW-53D	T	Water	3510C	
Analysis Batch:480-368899					
LCS 480-368492/2-A	Lab Control Sample	T	Water	8270D	480-368492
LCSD 480-368492/3-A	Lab Control Sample Duplicate	T	Water	8270D	480-368492
MB 480-368492/1-A	Method Blank	T	Water	8270D	480-368492
460-137584-2	MW-103	T	Water	8270D	480-368492
460-137584-3	MW-33S	T	Water	8270D	480-368492
460-137584-4	MW-26D	T	Water	8270D	480-368492
460-137584-5	MW-106	T	Water	8270D	480-368492
460-137584-6	MW-102	T	Water	8270D	480-368492
Analysis Batch:480-369036					
460-137584-7	MW-37S	T	Water	8270D	480-368492
460-137584-8	MW-20DR	T	Water	8270D	480-368492
460-137584-9	MW-20D	T	Water	8270D	480-368492
460-137584-10	MW-20S	T	Water	8270D	480-368492
460-137584-11	MW-8S	T	Water	8270D	480-368492
460-137584-12	MW-105	T	Water	8270D	480-368492
460-137584-13	MW-11S	T	Water	8270D	480-368492
460-137584-14	MW-104	T	Water	8270D	480-368492
460-137584-15	RW-1R	T	Water	8270D	480-368492
460-137584-16	MW-12S	T	Water	8270D	480-368492
460-137584-17	MW-16S	T	Water	8270D	480-368492
460-137584-18	MW-53D	T	Water	8270D	480-368492

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Quality Control Results

Client: R & C Formation Ltd.

Job Number: 460-137584-1

QC Association Summary

Lab Sample ID	Client Sample ID	Report Basis	Client Matrix	Method	Prep Batch
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Report Basis

T = Total

Metals

Prep Batch: 460-451277

LCS 460-451277/2-A	Lab Control Sample	T	Water	3010A
MB 460-451277/1-A	Method Blank	T	Water	3010A
460-137584-2	MW-103	T	Water	3010A
460-137584-3	MW-33S	T	Water	3010A
460-137584-5	MW-106	T	Water	3010A
460-137584-6	MW-102	T	Water	3010A
460-137584-7	MW-37S	T	Water	3010A
460-137584-10	MW-20S	T	Water	3010A
460-137584-11	MW-8S	T	Water	3010A
460-137584-12	MW-105	T	Water	3010A
460-137584-13	MW-11S	T	Water	3010A
460-137584-14	MW-104	T	Water	3010A
460-137584-15	RW-1R	T	Water	3010A
460-137584-17	MW-16S	T	Water	3010A
460-137584-18	MW-53D	T	Water	3010A

Analysis Batch:460-451343

LCS 460-451277/2-A	Lab Control Sample	T	Water	6010C	460-451277
MB 460-451277/1-A	Method Blank	T	Water	6010C	460-451277
460-137584-2	MW-103	T	Water	6010C	460-451277
460-137584-3	MW-33S	T	Water	6010C	460-451277
460-137584-5	MW-106	T	Water	6010C	460-451277
460-137584-6	MW-102	T	Water	6010C	460-451277
460-137584-7	MW-37S	T	Water	6010C	460-451277
460-137584-10	MW-20S	T	Water	6010C	460-451277
460-137584-11	MW-8S	T	Water	6010C	460-451277
460-137584-12	MW-105	T	Water	6010C	460-451277
460-137584-13	MW-11S	T	Water	6010C	460-451277
460-137584-14	MW-104	T	Water	6010C	460-451277
460-137584-15	RW-1R	T	Water	6010C	460-451277
460-137584-17	MW-16S	T	Water	6010C	460-451277
460-137584-18	MW-53D	T	Water	6010C	460-451277

Report Basis

T = Total

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Quality Control Results

Client: R & C Formation Ltd.

Job Number: 460-137584-1

QC Association Summary

Lab Sample ID	Client Sample ID	Report Basis	Client Matrix	Method	Prep Batch
General Chemistry					
Prep Batch: 460-450481					
LB 460-450481/1-A	TCLP SPLPE Leachate Blank	T	Water		
Analysis Batch:460-450712					
MB 460-450712/9	Method Blank	T	Water	SM 4500 NO3 F	
LB 460-450481/1-A	TCLP SPLPE Leachate Blank	T	Water	SM 4500 NO3 F	
Analysis Batch:460-451100					
LCSSRM 460-451100/10	LCS-Certified Reference Material	T	Water	SM 4500 NO3 F	
LCSSRM 460-451100/11	LCS-Certified Reference Material	T	Water	SM 4500 NO3 F	
MB 460-451100/9	Method Blank	T	Water	SM 4500 NO3 F	
460-137584-2	MW-103	T	Water	SM 4500 NO3 F	
460-137584-3	MW-33S	T	Water	SM 4500 NO3 F	
460-137584-3MS	Matrix Spike	T	Water	SM 4500 NO3 F	
460-137584-3MSD	Matrix Spike Duplicate	T	Water	SM 4500 NO3 F	
460-137584-5	MW-106	T	Water	SM 4500 NO3 F	
460-137584-6	MW-102	T	Water	SM 4500 NO3 F	
460-137584-7	MW-37S	T	Water	SM 4500 NO3 F	
460-137584-10	MW-20S	T	Water	SM 4500 NO3 F	
460-137584-11	MW-8S	T	Water	SM 4500 NO3 F	
460-137584-12	MW-105	T	Water	SM 4500 NO3 F	
460-137584-13	MW-11S	T	Water	SM 4500 NO3 F	
460-137584-14	MW-104	T	Water	SM 4500 NO3 F	
460-137584-15	RW-1R	T	Water	SM 4500 NO3 F	
460-137584-17	MW-16S	T	Water	SM 4500 NO3 F	
460-137584-18	MW-53D	T	Water	SM 4500 NO3 F	
Prep Batch: 460-451937					
LCS 460-451937/2-A	Lab Control Sample	T	Water	Distill/Ammonia	
MB 460-451937/1-A	Method Blank	T	Water	Distill/Ammonia	
460-137584-2	MW-103	T	Water	Distill/Ammonia	
460-137584-3	MW-33S	T	Water	Distill/Ammonia	
460-137584-5	MW-106	T	Water	Distill/Ammonia	
460-137584-6	MW-102	T	Water	Distill/Ammonia	
460-137584-7	MW-37S	T	Water	Distill/Ammonia	
460-137584-10	MW-20S	T	Water	Distill/Ammonia	
460-137584-11	MW-8S	T	Water	Distill/Ammonia	
460-137584-12	MW-105	T	Water	Distill/Ammonia	
460-137584-13	MW-11S	T	Water	Distill/Ammonia	
460-137584-14	MW-104	T	Water	Distill/Ammonia	
460-137584-15	RW-1R	T	Water	Distill/Ammonia	
460-137584-17	MW-16S	T	Water	Distill/Ammonia	
460-137584-18	MW-53D	T	Water	Distill/Ammonia	

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Quality Control Results

Client: R & C Formation Ltd.

Job Number: 460-137584-1

QC Association Summary

Lab Sample ID	Client Sample ID	Report Basis	Client Matrix	Method	Prep Batch
General Chemistry					
Analysis Batch:460-452055					
LCS 460-451937/2-A	Lab Control Sample	T	Water	350.1	460-451937
MB 460-451937/1-A	Method Blank	T	Water	350.1	460-451937
460-137584-2	MW-103	T	Water	350.1	460-451937
460-137584-3	MW-33S	T	Water	350.1	460-451937
460-137584-5	MW-106	T	Water	350.1	460-451937
460-137584-6	MW-102	T	Water	350.1	460-451937
460-137584-7	MW-37S	T	Water	350.1	460-451937
460-137584-10	MW-20S	T	Water	350.1	460-451937
460-137584-11	MW-8S	T	Water	350.1	460-451937
460-137584-12	MW-105	T	Water	350.1	460-451937
460-137584-13	MW-11S	T	Water	350.1	460-451937
460-137584-14	MW-104	T	Water	350.1	460-451937
460-137584-15	RW-1R	T	Water	350.1	460-451937
460-137584-17	MW-16S	T	Water	350.1	460-451937
460-137584-18	MW-53D	T	Water	350.1	460-451937

Report Basis

T = Total

Quality Control Results

Client: R & C Formation Ltd.

Job Number: 460-137584-1

QC Association Summary

Lab Sample ID	Client Sample ID	Report Basis	Client Matrix	Method	Prep Batch
HPLC/IC					
Analysis Batch:460-451331					
LCS 460-451331/5	Lab Control Sample	T	Water	300.0	
LCSD 460-451331/6	Lab Control Sample Duplicate	T	Water	300.0	
MB 460-451331/3	Method Blank	T	Water	300.0	
460-137584-2DL	MW-103	T	Water	300.0	
460-137584-3DL	MW-33S	T	Water	300.0	
460-137584-5DL	MW-106	T	Water	300.0	
460-137584-6DL	MW-102	T	Water	300.0	
460-137584-7DL	MW-37S	T	Water	300.0	
460-137584-10DL	MW-20S	T	Water	300.0	
460-137584-11DL	MW-8S	T	Water	300.0	
460-137584-12DL	MW-105	T	Water	300.0	
460-137584-13DL	MW-11S	T	Water	300.0	
460-137584-14DL	MW-104	T	Water	300.0	
460-137584-14DUDL	Duplicate	T	Water	300.0	
460-137584-14MSDL	Matrix Spike	T	Water	300.0	
460-137584-14MSDDL	Matrix Spike Duplicate	T	Water	300.0	
Analysis Batch:460-451348					
LCS 460-451348/5	Lab Control Sample	T	Water	300.0	
LCSD 460-451348/6	Lab Control Sample Duplicate	T	Water	300.0	
MB 460-451348/3	Method Blank	T	Water	300.0	
460-137584-15DL	RW-1R	T	Water	300.0	
460-137584-15DUDL	Duplicate	T	Water	300.0	
460-137584-15MSDL	Matrix Spike	T	Water	300.0	
460-137584-15MSDDL	Matrix Spike Duplicate	T	Water	300.0	
460-137584-17DL	MW-16S	T	Water	300.0	
Analysis Batch:460-451905					
LCS 460-451905/5	Lab Control Sample	T	Water	300.0	
LCSD 460-451905/6	Lab Control Sample Duplicate	T	Water	300.0	
MB 460-451905/3	Method Blank	T	Water	300.0	
460-137584-18	MW-53D	T	Water	300.0	
460-137584-18DU	Duplicate	T	Water	300.0	
460-137584-18MS	Matrix Spike	T	Water	300.0	
460-137584-18MSD	Matrix Spike Duplicate	T	Water	300.0	

Report Basis

T = Total

Quality Control Results

Client: R & C Formation Ltd.

Job Number: 460-137584-1

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
460-137584-1	TB	97	91	98	96
460-137584-2	MW-103	95	85	98	94
460-137584-3	MW-33S	99	88	99	96
460-137584-4	MW-26D	99	89	101	96
460-137584-5	MW-106	117	98	117	114
460-137584-6	MW-102	96	84	97	96
460-137584-7	MW-37S	95	83	97	94
460-137584-8	MW-20DR	93	86	99	94
460-137584-9	MW-20D	94	86	98	95
460-137584-10	MW-20S	95	87	99	93
460-137584-11	MW-8S	97	91	101	95
460-137584-12	MW-105	102	92	101	97
460-137584-13	MW-11S	100	90	99	97
460-137584-14	MW-104	106	92	101	102
460-137584-15	RW-1R	100	86	97	96
460-137584-16	MW-12S	99	86	99	97
460-137584-17	MW-16S	97	87	98	95
460-137584-18	MW-53D	99	92	100	96
MB 460-451130/8		96	88	100	95
MB 460-451915/7		111	95	104	104
LCS 460-451130/4		99	89	98	97
LCS 460-451915/3		110	101	107	101
LCSD 460-451130/5		98	88	97	94

Surrogate	Acceptance Limits
DCA = 1,2-Dichloroethane-d4 (Surr)	74-132
BFB = Bromofluorobenzene	77-124
TOL = Toluene-d8 (Surr)	80-120
DBFM = Dibromofluoromethane (Surr)	72-131

Client: R & C Formation Ltd.

Job Number: 460-137584-1

Surrogate Recovery Report**8270D Semivolatile Organic Compounds (GC/MS)****Client Matrix: Water**

Lab Sample ID	Client Sample ID	NBZ %Rec	FBP %Rec	TPHd14 %Rec	PHL %Rec	2FP %Rec	TBP %Rec
460-137584-2	MW-103	88	84	75	51	66	80
460-137584-3	MW-33S	84	84	48*	52	66	97
460-137584-4	MW-26D	88	84	84	55	69	90
460-137584-5	MW-106	84	82	72	47	59	83
460-137584-6	MW-102	89	85	77	52	67	92
460-137584-7	MW-37S	90	84	68	54	69	72
460-137584-8	MW-20DR	91	87	59	54	70	96
460-137584-9	MW-20D	85	77	55*	42	66	96
460-137584-10	MW-20S	79	78	49*	14*	63	87
460-137584-11	MW-8S	89	83	71	53	68	84
460-137584-12	MW-105	84	80	71	49	62	78
460-137584-13	MW-11S	86	81	78	53	67	83
460-137584-14	MW-104	89	86	73	54	69	82
460-137584-15	RW-1R	90	82	66	48	64	91
460-137584-16	MW-12S	81	80	73	49	61	84
460-137584-17	MW-16S	90	85	62	51	67	89
460-137584-18	MW-53D	85	82	69	48	63	88
MB 480-368492/1-A		88	85	87	55	70	82
LCS 480-368492/2-A		87	84	89	60	74	99
LCSD 480-368492/3-A		84	82	84	58	70	93

Surrogate	Acceptance Limits
NBZ = Nitrobenzene-d5	46-120
FBP = 2-Fluorobiphenyl	48-120
TPHd14 = p-Terphenyl-d14	59-136
PHL = Phenol-d5	22-120
2FP = 2-Fluorophenol	35-120
TBP = 2,4,6-Tribromophenol	41-120

Quality Control Results

Client: R & C Formation Ltd.

Job Number: 460-137584-1

Method Blank - Batch: 460-451130

Method: 8260C

Preparation: 5030C

Lab Sample ID:	MB 460-451130/8	Analysis Batch:	460-451130	Instrument ID:	CVOAMS5
Client Matrix:	Water	Prep Batch:	N/A	Lab File ID:	E74119.D
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	5 mL
Analysis Date:	07/21/2017 2232	Units:	ug/L	Final Weight/Volume:	5 mL
Prep Date:	07/21/2017 2232				
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)	96	74 - 132
Bromofluorobenzene	88	77 - 124
Toluene-d8 (Surr)	100	80 - 120
Dibromofluoromethane (Surr)	95	72 - 131

Lab Control Sample/

Method: 8260C

Lab Control Sample Duplicate Recovery Report - Batch: 460-451130

Preparation: 5030C

LCS Lab Sample ID:	LCS 460-451130/4	Analysis Batch:	460-451130	Instrument ID:	CVOAMS5
Client Matrix:	Water	Prep Batch:	N/A	Lab File ID:	E74115.D
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	5 mL
Analysis Date:	07/21/2017 2050	Units:	ug/L	Final Weight/Volume:	5 mL
Prep Date:	07/21/2017 2050				5 mL
Leach Date:	N/A				

LCSD Lab Sample ID:	LCSD 460-451130/5	Analysis Batch:	460-451130	Instrument ID:	CVOAMS5
Client Matrix:	Water	Prep Batch:	N/A	Lab File ID:	E74116.D
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	5 mL
Analysis Date:	07/21/2017 2115	Units:	ug/L	Final Weight/Volume:	5 mL
Prep Date:	07/21/2017 2115				5 mL
Leach Date:	N/A				

Analyte	% Rec.		Limit	RPD	RPD Limit	LCS Qual	LCSD Qual
	LCS	LCSD					
Benzene	106	106	77 - 121	0	30		
Toluene	105	104	80 - 120	1	30		
Ethylbenzene	103	102	80 - 120	1	30		
Xylenes, Total	101	100	80 - 120	1	30		

Surrogate	LCS % Rec	LCSD % Rec	Acceptance Limits
1,2-Dichloroethane-d4 (Surr)	99	98	74 - 132
Bromofluorobenzene	89	88	77 - 124
Toluene-d8 (Surr)	98	97	80 - 120

Quality Control Results

Client: R & C Formation Ltd.

Job Number: 460-137584-1

Method Blank - Batch: 460-451915

Method: 8260C
Preparation: 5030C

Lab Sample ID:	MB 460-451915/7	Analysis Batch:	460-451915	Instrument ID:	CVOAMS5
Client Matrix:	Water	Prep Batch:	N/A	Lab File ID:	E74309.D
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	5 mL
Analysis Date:	07/26/2017 0821	Units:	ug/L	Final Weight/Volume:	5 mL
Prep Date:	07/26/2017 0821				
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)	111	74 - 132
Bromofluorobenzene	95	77 - 124
Toluene-d8 (Surr)	104	80 - 120
Dibromofluoromethane (Surr)	104	72 - 131

Lab Control Sample - Batch: 460-451915

Method: 8260C
Preparation: 5030C

Lab Sample ID:	LCS 460-451915/3	Analysis Batch:	460-451915	Instrument ID:	CVOAMS5
Client Matrix:	Water	Prep Batch:	N/A	Lab File ID:	E74305.D
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	5 mL
Analysis Date:	07/26/2017 0639	Units:	ug/L	Final Weight/Volume:	5 mL
Prep Date:	07/26/2017 0639				
Leach Date:	N/A				

Analyte	Spike Amount	Result	% Rec.	Limit	Qual
Benzene	20.0	23.3	117	77 - 121	
Toluene	20.0	22.9	114	80 - 120	
Ethylbenzene	20.0	21.8	109	80 - 120	
Xylenes, Total	40.0	45.0	113	80 - 120	

Surrogate	% Rec	Acceptance Limits
1,2-Dichloroethane-d4 (Surr)	110	74 - 132
Bromofluorobenzene	101	77 - 124
Toluene-d8 (Surr)	107	80 - 120

Quality Control Results

Client: R & C Formation Ltd.

Job Number: 460-137584-1

Method Blank - Batch: 480-368492

Method: 8270D

Preparation: 3510C

Lab Sample ID:	MB 480-368492/1-A	Analysis Batch:	480-368899	Instrument ID:	HP5973Y
Client Matrix:	Water	Prep Batch:	480-368492	Lab File ID:	Y0134093.D
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	250 mL
Analysis Date:	07/27/2017 0537	Units:	ug/L	Final Weight/Volume:	1 mL
Prep Date:	07/25/2017 0722			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	88	46 - 120
2-Fluorobiphenyl	85	48 - 120
p-Terphenyl-d14	87	59 - 136
Phenol-d5	55	22 - 120
2-Fluorophenol	70	35 - 120
2,4,6-Tribromophenol	82	41 - 120

Method Blank TICs- Batch: 480-368492

Cas Number	Analyte	RT	Est. Result (ug)	Qual
504-29-0	2-Aminopyridine TIC	3.22	10	U

Quality Control Results

Client: R & C Formation Ltd.

Job Number: 460-137584-1

Lab Control Sample/

Lab Control Sample Duplicate Recovery Report - Batch: 480-368492

Method: 8270D

Preparation: 3510C

LCS Lab Sample ID: LCS 480-368492/2-A
 Client Matrix: Water
 Dilution: 1.0
 Analysis Date: 07/27/2017 0606
 Prep Date: 07/25/2017 0722
 Leach Date: N/A

Analysis Batch: 480-368899
 Prep Batch: 480-368492
 Leach Batch: N/A
 Units: ug/L

Instrument ID: HP5973Y
 Lab File ID: Y0134094.D
 Initial Weight/Volume: 250 mL
 Final Weight/Volume: 1 mL
 Injection Volume: 2 uL

LCSD Lab Sample ID: LCSD 480-368492/3-A
 Client Matrix: Water
 Dilution: 1.0
 Analysis Date: 07/27/2017 0636
 Prep Date: 07/25/2017 0722
 Leach Date: N/A

Analysis Batch: 480-368899
 Prep Batch: 480-368492
 Leach Batch: N/A
 Units: ug/L

Instrument ID: HP5973Y
 Lab File ID: Y0134095.D
 Initial Weight/Volume: 250 mL
 Final Weight/Volume: 1 mL
 Injection Volume: 2 uL

Analyte	% Rec.		Limit	RPD	RPD Limit	LCS Qual	LCSD Qual
	LCS	LCSD					
Pyridine	39	36	10 - 120	9	49	J	J
Surrogate	LCS % Rec		LCSD % Rec		Acceptance Limits		
Nitrobenzene-d5	87		84		46 - 120		
2-Fluorobiphenyl	84		82		48 - 120		
p-Terphenyl-d14	89		84		59 - 136		
Phenol-d5	60		58		22 - 120		
2-Fluorophenol	74		70		35 - 120		
2,4,6-Tribromophenol	99		93		41 - 120		

Quality Control Results

Client: R & C Formation Ltd.

Job Number: 460-137584-1

Method Blank - Batch: 460-451331

Method: 300.0
Preparation: N/A

Lab Sample ID:	MB 460-451331/3	Analysis Batch:	460-451331	Instrument ID:	IC A
Client Matrix:	Water	Prep Batch:	N/A	Lab File ID:	YA 2017-07-22-14-41.d
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	10 mL
Analysis Date:	07/22/2017 1441	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	0.13	0.60

Lab Control Sample/

Lab Control Sample Duplicate Recovery Report - Batch: 460-451331

Method: 300.0
Preparation: N/A

LCS Lab Sample ID:	LCS 460-451331/5	Analysis Batch:	460-451331	Instrument ID:	IC A
Client Matrix:	Water	Prep Batch:	N/A	Lab File ID:	YA 2017-07-22-15-14.d
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	10 mL
Analysis Date:	07/22/2017 1514	Units:	mg/L	Final Weight/Volume:	
Prep Date:	N/A			Injection Volume:	10 uL
Leach Date:	N/A				

LCSD Lab Sample ID:	LCSD 460-451331/6	Analysis Batch:	460-451331	Instrument ID:	IC A
Client Matrix:	Water	Prep Batch:	N/A	Lab File ID:	YA 2017-07-22-15-30.d
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	10 mL
Analysis Date:	07/22/2017 1530	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	98	95	90 - 110	2	15		

Quality Control Results

Client: R & C Formation Ltd.

Job Number: 460-137584-1

Matrix Spike/ Matrix Spike Duplicate Recovery Report - Batch: 460-451331

Method: 300.0
Preparation: N/A

MS Lab Sample ID: 460-137584-14DL	Analysis Batch: 460-451331	Instrument ID: IC A
Client Matrix: Water	Prep Batch: N/A	Lab File ID: YA 2017-07-23-02-52.d
Dilution: 10	Leach Batch: N/A	Initial Weight/Volume: 10 mL
Analysis Date: 07/23/2017 0252	Run Type: DL	Final Weight/Volume:
Prep Date: N/A		Injection Volume: 10 uL
Leach Date: N/A		

MSD Lab Sample ID: 460-137584-14DL	Analysis Batch: 460-451331	Instrument ID: IC A
Client Matrix: Water	Prep Batch: N/A	Lab File ID: YA 2017-07-23-03-09.d
Dilution: 10	Leach Batch: N/A	Initial Weight/Volume: 10 mL
Analysis Date: 07/23/2017 0309	Run Type: DL	Final Weight/Volume:
Prep Date: N/A		Injection Volume: 10 uL
Leach Date: N/A		

Analyte	% Rec.		Limit	RPD	RPD Limit	MS Qual	MSD Qual
	MS	MSD					
Sulfate	106	106	90 - 110	0	15		

Duplicate - Batch: 460-451331

Method: 300.0
Preparation: N/A

Lab Sample ID: 460-137584-14DL	Analysis Batch: 460-451331	Instrument ID: IC A
Client Matrix: Water	Prep Batch: N/A	Lab File ID: YA 2017-07-23-02-36.d
Dilution: 10	Leach Batch: N/A	Initial Weight/Volume: 10 mL
Analysis Date: 07/23/2017 0236	Units: mg/L	Final Weight/Volume:
Prep Date: N/A	Run Type: DL	Injection Volume: 10 uL
Leach Date: N/A		

Analyte	Sample Result/Qual	Result	RPD	Limit	Qual
Sulfate	20.2	20.43	1	15	

Quality Control Results

Client: R & C Formation Ltd.

Job Number: 460-137584-1

Method Blank - Batch: 460-451348

Method: 300.0
Preparation: N/A

Lab Sample ID:	MB 460-451348/3	Analysis Batch:	460-451348	Instrument ID:	IC A
Client Matrix:	Water	Prep Batch:	N/A	Lab File ID:	YA 2017-07-23-18-34.d
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	10 mL
Analysis Date:	07/23/2017 1834	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	0.13	0.60

Lab Control Sample/

Lab Control Sample Duplicate Recovery Report - Batch: 460-451348

Method: 300.0
Preparation: N/A

LCS Lab Sample ID:	LCS 460-451348/5	Analysis Batch:	460-451348	Instrument ID:	IC A
Client Matrix:	Water	Prep Batch:	N/A	Lab File ID:	YA 2017-07-23-19-07.d
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	10 mL
Analysis Date:	07/23/2017 1907	Units:	mg/L	Final Weight/Volume:	
Prep Date:	N/A			Injection Volume:	10 uL
Leach Date:	N/A				

LCSD Lab Sample ID:	LCSD 460-451348/6	Analysis Batch:	460-451348	Instrument ID:	IC A
Client Matrix:	Water	Prep Batch:	N/A	Lab File ID:	YA 2017-07-23-19-23.d
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	10 mL
Analysis Date:	07/23/2017 1923	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	98	95	90 - 110	3	15		

Quality Control Results

Client: R & C Formation Ltd.

Job Number: 460-137584-1

Matrix Spike/ Matrix Spike Duplicate Recovery Report - Batch: 460-451348

Method: 300.0
Preparation: N/A

MS Lab Sample ID: 460-137584-15DL	Analysis Batch: 460-451348	Instrument ID: IC A
Client Matrix: Water	Prep Batch: N/A	Lab File ID: YA 2017-07-23-21-01.d
Dilution: 20	Leach Batch: N/A	Initial Weight/Volume: 10 mL
Analysis Date: 07/23/2017 2101	Run Type: DL	Final Weight/Volume:
Prep Date: N/A		Injection Volume: 10 uL
Leach Date: N/A		

MSD Lab Sample ID: 460-137584-15DL	Analysis Batch: 460-451348	Instrument ID: IC A
Client Matrix: Water	Prep Batch: N/A	Lab File ID: YA 2017-07-23-21-17.d
Dilution: 20	Leach Batch: N/A	Initial Weight/Volume: 10 mL
Analysis Date: 07/23/2017 2117	Run Type: DL	Final Weight/Volume:
Prep Date: N/A		Injection Volume: 10 uL
Leach Date: N/A		

Analyte	% Rec.		Limit	RPD	RPD Limit	MS Qual	MSD Qual
	MS	MSD					
Sulfate	178	171	90 - 110	2	15	*	*

Duplicate - Batch: 460-451348

Method: 300.0
Preparation: N/A

Lab Sample ID: 460-137584-15DL	Analysis Batch: 460-451348	Instrument ID: IC A
Client Matrix: Water	Prep Batch: N/A	Lab File ID: YA 2017-07-23-20-44.d
Dilution: 20	Leach Batch: N/A	Initial Weight/Volume: 10 mL
Analysis Date: 07/23/2017 2044	Units: mg/L	Final Weight/Volume:
Prep Date: N/A	Run Type: DL	Injection Volume: 10 uL
Leach Date: N/A		

Analyte	Sample Result/Qual	Result	RPD	Limit	Qual
Sulfate	280	280.2	0	15	

Quality Control Results

Client: R & C Formation Ltd.

Job Number: 460-137584-1

Method Blank - Batch: 460-451905

Method: 300.0
Preparation: N/A

Lab Sample ID:	MB 460-451905/3	Analysis Batch:	460-451905	Instrument ID:	IC A
Client Matrix:	Water	Prep Batch:	N/A	Lab File ID:	YA 2017-07-26-03-31.d
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	10 mL
Analysis Date:	07/26/2017 0331	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	0.13	0.60

Lab Control Sample/

Lab Control Sample Duplicate Recovery Report - Batch: 460-451905

Method: 300.0
Preparation: N/A

LCS Lab Sample ID:	LCS 460-451905/5	Analysis Batch:	460-451905	Instrument ID:	IC A
Client Matrix:	Water	Prep Batch:	N/A	Lab File ID:	YA 2017-07-26-04-03.d
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	10 mL
Analysis Date:	07/26/2017 0403	Units:	mg/L	Final Weight/Volume:	
Prep Date:	N/A			Injection Volume:	10 uL
Leach Date:	N/A				

LCSD Lab Sample ID:	LCSD 460-451905/6	Analysis Batch:	460-451905	Instrument ID:	IC A
Client Matrix:	Water	Prep Batch:	N/A	Lab File ID:	YA 2017-07-26-04-19.d
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	10 mL
Analysis Date:	07/26/2017 0419	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	97	95	90 - 110	2	15		

Quality Control Results

Client: R & C Formation Ltd.

Job Number: 460-137584-1

Matrix Spike/ Matrix Spike Duplicate Recovery Report - Batch: 460-451905

Method: 300.0
Preparation: N/A

MS Lab Sample ID: 460-137584-18
Client Matrix: Water
Dilution: 1.0
Analysis Date: 07/26/2017 0751
Prep Date: N/A
Leach Date: N/A

Analysis Batch: 460-451905
Prep Batch: N/A
Leach Batch: N/A

Instrument ID: IC A
Lab File ID: YA 2017-07-26-07-51.d
Initial Weight/Volume: 10 mL
Final Weight/Volume:
Injection Volume: 10 uL

MSD Lab Sample ID: 460-137584-18
Client Matrix: Water
Dilution: 1.0
Analysis Date: 07/26/2017 0807
Prep Date: N/A
Leach Date: N/A

Analysis Batch: 460-451905
Prep Batch: N/A
Leach Batch: N/A

Instrument ID: IC A
Lab File ID: YA 2017-07-26-08-07.d
Initial Weight/Volume: 10 mL
Final Weight/Volume:
Injection Volume: 10 uL

Analyte	% Rec.		Limit	RPD	RPD Limit	MS Qual	MSD Qual
	MS	MSD					
Sulfate	109	109	90 - 110	0	15		

Duplicate - Batch: 460-451905

Method: 300.0
Preparation: N/A

Lab Sample ID: 460-137584-18
Client Matrix: Water
Dilution: 1.0
Analysis Date: 07/26/2017 0734
Prep Date: N/A
Leach Date: N/A

Analysis Batch: 460-451905
Prep Batch: N/A
Leach Batch: N/A
Units: mg/L

Instrument ID: IC A
Lab File ID: YA 2017-07-26-07-34.d
Initial Weight/Volume: 10 mL
Final Weight/Volume:
Injection Volume: 10 uL

Analyte	Sample Result/Qual	Result	RPD	Limit	Qual
Sulfate	1.37	1.354	1	15	

Quality Control Results

Client: R & C Formation Ltd.

Job Number: 460-137584-1

Method Blank - Batch: 460-451277

Method: 6010C
Preparation: 3010A

Lab Sample ID:	MB 460-451277/1-A	Analysis Batch:	460-451343	Instrument ID:	ICP5
Client Matrix:	Water	Prep Batch:	460-451277	Lab File ID:	451277D1.asc
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	50 mL
Analysis Date:	07/23/2017 1720	Units:	ug/L	Final Weight/Volume:	50 mL
Prep Date:	07/23/2017 0010				
Leach Date:	N/A				

Analyte	Result	Qual	MDL	RL
Iron	150	U	92.1	150
Manganese	15.0	U	3.1	15.0

Lab Control Sample - Batch: 460-451277

Method: 6010C
Preparation: 3010A

Lab Sample ID:	LCS 460-451277/2-A	Analysis Batch:	460-451343	Instrument ID:	ICP5
Client Matrix:	Water	Prep Batch:	460-451277	Lab File ID:	451277D1.asc
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	50 mL
Analysis Date:	07/23/2017 1704	Units:	ug/L	Final Weight/Volume:	50 mL
Prep Date:	07/23/2017 0010				
Leach Date:	N/A				

Analyte	Spike Amount	Result	% Rec.	Limit	Qual
Iron	1000	991.9	99	80 - 120	
Manganese	500	511.2	102	80 - 120	

Quality Control Results

Client: R & C Formation Ltd.

Job Number: 460-137584-1

Method Blank - Batch: 460-451937

Method: 350.1

Preparation: Distill/Ammonia

Lab Sample ID:	MB 460-451937/1-A	Analysis Batch:	460-452055	Instrument ID:	Lachat2
Client Matrix:	Water	Prep Batch:	460-451937	Lab File ID:	A170726B.FDT
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	50.0 mL
Analysis Date:	07/26/2017 1422	Units:	mg/L	Final Weight/Volume:	50.0 mL
Prep Date:	07/26/2017 0515				
Leach Date:	N/A				

Analyte	Result	Qual	MDL	RL
Ammonia	0.10	U	0.072	0.10

Lab Control Sample - Batch: 460-451937

Method: 350.1

Preparation: Distill/Ammonia

Lab Sample ID:	LCS 460-451937/2-A	Analysis Batch:	460-452055	Instrument ID:	Lachat2
Client Matrix:	Water	Prep Batch:	460-451937	Lab File ID:	A170726B.FDT
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	50.0 mL
Analysis Date:	07/26/2017 1427	Units:	mg/L	Final Weight/Volume:	50.0 mL
Prep Date:	07/26/2017 0515				
Leach Date:	N/A				

Analyte	Spike Amount	Result	% Rec.	Limit	Qual
Ammonia	1.00	1.07	107	87 - 114	

Quality Control Results

Client: R & C Formation Ltd.

Job Number: 460-137584-1

Method Blank - Batch: 460-450712

Method: SM 4500 NO3 F
Preparation: N/A

Lab Sample ID: MB 460-450712/9
Client Matrix: Water
Dilution: 1.0
Analysis Date: 07/20/2017 0938
Prep Date: N/A
Leach Date: N/A

Analysis Batch: 460-450712
Prep Batch: N/A
Leach Batch: N/A
Units: mg/L

Instrument ID: Lachat1
Lab File ID: N170720.FDT
Initial Weight/Volume:
Final Weight/Volume:

Analyte	Result	Qual	MDL	RL
Nitrate as N	0.10	U	0.010	0.10

TCLP SPLPE Leachate Blank - Batch: 460-450712

Method: SM 4500 NO3 F
Preparation: N/A

Lab Sample ID: LB 460-450481/1-A
Client Matrix: Water
Dilution: 1.0
Analysis Date: 07/20/2017 0957
Prep Date: N/A
Leach Date: 07/19/2017 1455

Analysis Batch: 460-450712
Prep Batch: N/A
Leach Batch: 460-450481
Units: mg/L

Instrument ID: Lachat1
Lab File ID: N170720.FDT
Initial Weight/Volume:
Final Weight/Volume:

Analyte	Result	Qual	MDL	RL
Nitrate as N	2.0	U	0.20	2.0

Quality Control Results

Client: R & C Formation Ltd.

Job Number: 460-137584-1

Method Blank - Batch: 460-451100

Method: SM 4500 NO3 F
Preparation: N/A

Lab Sample ID:	MB 460-451100/9	Analysis Batch:	460-451100	Instrument ID:	Lachat1
Client Matrix:	Water	Prep Batch:	N/A	Lab File ID:	N170721.FDT
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	
Analysis Date:	07/21/2017 1526	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	0.010	0.10

LCS-Certified Reference Material - Batch: 460-451100

Method: SM 4500 NO3 F
Preparation: N/A

Lab Sample ID:	LCSSRM 460-451100/10	Analysis Batch:	460-451100	Instrument ID:	Lachat1
Client Matrix:	Water	Prep Batch:	N/A	Lab File ID:	N170721.FDT
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	
Analysis Date:	07/21/2017 1528	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	1.81	1.65	91.0	87.3 - 111.0	

Matrix Spike/ Matrix Spike Duplicate Recovery Report - Batch: 460-451100

Method: SM 4500 NO3 F
Preparation: N/A

MS Lab Sample ID:	460-137584-3	Analysis Batch:	460-451100	Instrument ID:	Lachat1
Client Matrix:	Water	Prep Batch:	N/A	Lab File ID:	N170721.FDT
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	
Analysis Date:	07/21/2017 1600			Final Weight/Volume:	50 mL
Prep Date:	N/A				
Leach Date:	N/A				

MSD Lab Sample ID:	460-137584-3	Analysis Batch:	460-451100	Instrument ID:	Lachat1
Client Matrix:	Water	Prep Batch:	N/A	Lab File ID:	N170721.FDT
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	
Analysis Date:	07/21/2017 1604			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	110	94	53 - 135	15	12		N

460-137584 Chain of Custody

4

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CHAIN OF

Name (for report and invoice) Bob Casson						Samplers Name (Printed) Joe Costanza							Site/Project Identification Nepesa, Thurston NY																																																																																																		
Company R+C Formation Ltd						P.O. # 							Other: DKOP: ☐																																																																																																		
Address 171 Deer Park Ave Suite 3						Analysis Turnaround Time Standard ☒ Rush Charges Authorized For: 2 Week ☐ 1 Week ☐ Other ☐ _____							LAB USE ONLY Project No.: 137594																																																																																																		
City Babylon NY 11702																																																																																																															
Phone 631-482-9590						Fax 631-482-9593																																																																																																									
Sample Identification													Date / Time Matrix Cont.													ANALYSIS REQUESTED (ENTER X BELOW TO INDICATE REQUEST)													Sample Numbers																																																																								
TB													7bd17													— AG													BTEX													SVOCs *													Gen Chem **													-																																	
MW-103													751													q													x													x													x													-2																																	
MW-33S													8A1													q													x													x													x													-3																																	
MW-26D													901													5													x													x													x													-4																																	
MW-106													931													9													x													x													x													-5																																	
MW-102													1006													↓													x													x													x													-6																																	
MW-37S													1051													↓													x													x													x													-7																																	
MW-20DR													1136													5													x													x													x													-8																																	
MW-20ID													1206													5													x													x													x													-9																																	
MWV-20S													1233													↓													x													x													x													-10																																	
Preservation Used: 1 = ICE, 2 = HCl, 3 = H ₂ O, 4 = HNO ₃ , 5 = NaOH, 6 = Other, 7 = Other Water:																												Soil:																												Water:																												SHORT HOLD																											
Special Instructions Pyridine, alpha picoline, diamino pyridine, Fe Sulfate, ammonia, nitrate, manganese-Water/Metals Filtered (Yes/No)? NG																																																																																																															
Relinquished by Joe Costanza														Company R+C Formation Ltd														Date / Time 7bd17 1815														Received by 1) Vioray mms/msh/msg														Company Accurate Courier																																																							
Relinquished by 2) Vioray mms/msh/msg														Company Accurate Courier														Date / Time 7bd17 2000														Received by 2) Kelly														Company Accurate Courier																																																							
Relinquished by 3)														Company														Date / Time														Received by 3)														Company																																																							
Relinquished by 4)														Company														Date / Time														Received by 4)														Company																																																							

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

TAL - 0016 (0715)

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TestAmerica Edison
Receipt Temperature and pH Log

Job Number:

137584

Number of Coolers:

3

IR Gun #

8

Cooler Temperatures

	RAW		CORRECTED	
	°C	°F	°C	°F
Cooler #1:	4.8	40.6	4.8	40.6
Cooler #2:	3.1	37.6	3.1	37.6
Cooler #3:	1.9	35.4	1.9	35.4
Cooler #4:				
Cooler #5:				
Cooler #6:				
Cooler #7:				
Cooler #8:				
Cooler #9:				

TALS Sample Number	Ammonia		COD		Nitrate		Metals		Hardness		Pest		EPH or QAM		Phenols		Sulfide		TKN		TOC		Total Cyanide		Total Phos		Other		Other	
	(pH<2)	(pH<2)	(pH<2)	(pH<2)	(pH<2)	(pH<2)	(pH<2)	(pH<2)	(pH<2)	(pH<2)	(pH<2)	(pH<2)	(pH<2)	(pH<2)	(pH<2)	(pH<2)	(pH<2)	(pH<2)	(pH<2)	(pH<2)	(pH<2)	(pH<2)	(pH<2)	(pH<2)	(pH<2)	(pH<2)	(pH<2)	(pH<2)	(pH<2)	(pH<2)
2	<2				<2																									
3	<2				<2																									
4	<2				<2																									
5	<2				<2																									
6	<2				<2																									
7	<2				<2																									
10	<2				<2																									
11	<2				<2																									
12	<2				<2																									
13	<2				<2																									
14	<2				<2																									
15	<2				<2																									
17	<2				<2																									
18	<2				<2																									

If pH adjustments are required record the information below:

Sample No(s), adjusted:

NA

Preservative Name/Conc.:

NA

Volume of Preservative used (ml):

NA

Lot # of Preservative(s):

NA

Expiration Date:

NA

The appropriate Project Manager and Department Manager should be notified about the samples which were pH adjusted.

* Samples for Metal analysis which are out of compliance must be acidified at least 24 hours prior to analysis.

Initials:

KW

Date:

7/20/17

Chain of Custody Record



Client Information (Sub Contract Lab)		Sampler: Lab PM: Haas, Melissa		Carrier Tracking No(s):		COC No: 460-48944-1	
Client Contact:		Phone:		State of Origin: New York		Page: Page 1 of 2	
Shipping/Receiving		E-Mail: melissa.haas@testamericainc.com		Accreditations Required (See note): NELAP - New York		Job #: 460-137584-1	
Company: TestAmerica Laboratories, Inc.		Due Date Requested: 7/26/2017		Analysis Requested:		Preservation Codes:	
Address: 10 Hazelwood Drive,		TAT Requested (days):		8270D/3510C_LVI SYOC - Client Specific List		A - HCL M - Hexane N - None O - AsNaO2 P - Na2O4S Q - Na2SO3 R - Na2SO4 S - H2SO4 T - TSP Dodecahydrate U - Acetone V - MCAA W - pH 4.5 X - EDTA Y - EDA Z - other (specify)	
City: Amherst		PO #:		Field Filtered Sample (Yes or No)		Other:	
State, Zip: NY, 14228-2298		WC #:		Perform MS/MSD (Yes or No)		Total Number of Containers	
Phone: 716-691-2600(Tel) 716-691-7991(Fax)		Project #:		Preservation Code:		Special Instructions/Note:	
Email:		46009639		Sample Type (C=Comp, G=grab)		2-Aminopyridine is a targeted TIC.	
Project Name: Napera, Harriman, NY		SSOW#:		Sample Time		2-Aminopyridine is a targeted TIC.	
Site:				Sample Date		2-Aminopyridine is a targeted TIC.	
Sample Identification - Client ID (Lab ID)				Sample Date		2-Aminopyridine is a targeted TIC.	
MW-103 (460-137584-2)				7/20/17		2-Aminopyridine is a targeted TIC.	
MW-33S (460-137584-3)				7/20/17		2-Aminopyridine is a targeted TIC.	
MW-26D (460-137584-4)				7/20/17		2-Aminopyridine is a targeted TIC.	
MW-106 (460-137584-5)				7/20/17		2-Aminopyridine is a targeted TIC.	
MW-102 (460-137584-6)				7/20/17		2-Aminopyridine is a targeted TIC.	
MW-37S (460-137584-7)				7/20/17		2-Aminopyridine is a targeted TIC.	
MW-20DR (460-137584-8)				7/20/17		2-Aminopyridine is a targeted TIC.	
MW-20D (460-137584-9)				7/20/17		2-Aminopyridine is a targeted TIC.	
MW-20S (460-137584-10)				7/20/17		2-Aminopyridine is a targeted TIC.	

Note: Since laboratory accreditations are subject to change, TestAmerica Laboratories, Inc. places the ownership of method, analyte & accreditation compliance upon out subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/test/matrix being analyzed, the samples must be shipped back to the TestAmerica laboratory or other instructions will be provided. Any changes to accreditation status should be brought to TestAmerica Laboratories, Inc. attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to TestAmerica Laboratories, Inc.

Possible Hazard Identification		Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)	
Unconfirmed	Return To Client	Disposal By Lab	Archive For Months
Deliverable Requested: I, II, III, IV, Other (specify)		Special Instructions/QC Requirements:	
Empty Kit Relinquished by:		Method of Shipment:	
Relinquished by: CC	Date: 7/26/17	Received by: Anav Kow	Date/Time: 07/27/17 09:15
Relinquished by:	Date/Time:	Received by:	Date/Time:
Relinquished by:	Date/Time:	Received by:	Date/Time:
Custody Seals Intact: ☐ Yes ☐ No	Custody Seal No.: 4.6 #1	Cooler Temperature(s) °C and Other Remarks:	

Chain of Custody Record

Client Information (Sub Contract Lab)		Sampler:	Lab PM:	Carrier Tracking No(s):	COC No:
Client Contact:		Haas, Melissa	Haas, Melissa	460-48944-2	460-48944-2
Shipping/Receiving		Phone:	E-Mail:	State of Origin:	Page
Company:			melissa.haas@testamericainc.com	New York	Page 2 of 2
TestAmerica Laboratories, Inc.		Accreditations Required (See note):		Job #:	460-137584-1
Address:		NELAP - New York		Preservation Codes:	
City:		Due Date Requested:		A - HCL	M - Hexane
State, Zip:		TAT Requested (days):		B - NaOH	N - None
Phone:				C - Zn Acetate	O - AsNaO2
Email:				D - Nitric Acid	P - Na2O48
Project Name:				E - NaHSO4	Q - Na2SO3
Site:				F - MeOH	R - Na2S2O3
				G - Amchlor	S - H2SO4
				H - Ascorbic Acid	T - TSP Dodecahydrate
				I - Ice	U - Acetone
				J - DI Water	V - MCAA
				K - EDTA	W - pH 4-5
				L - EDA	Z - other (specify)
				Other:	

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=Water, S=solid, O=Other)	Field Filled Sample (Yes or No)	Perform MS/MSD (Yes or No)	8270D/3510C LVI SYOC - Client Specific List	Total Number of Containers	Special Instructions/Note:
MW-8S (460-137584-11)	7/20/17	13:01 Eastern	Water	Water	X	X		2	2-Aminopyridine is a targeted TIC.
MW-10S (460-137584-12)	7/20/17	13:30 Eastern	Water	Water	X	X		2	2-Aminopyridine is a targeted TIC.
MW-11S (460-137584-13)	7/20/17	13:57 Eastern	Water	Water	X	X		2	2-Aminopyridine is a targeted TIC.
MW-104 (460-137584-14)	7/20/17	14:31 Eastern	Water	Water	X	X		2	2-Aminopyridine is a targeted TIC.
RW-1R (460-137584-15)	7/20/17	15:01 Eastern	Water	Water	X	X		2	2-Aminopyridine is a targeted TIC.
MW-12S (460-137584-16)	7/20/17	15:31 Eastern	Water	Water	X	X		2	2-Aminopyridine is a targeted TIC.
MW-16S (460-137584-17)	7/20/17	15:56 Eastern	Water	Water	X	X		2	2-Aminopyridine is a targeted TIC.
MW-53D (460-137584-18)	7/20/17	16:31 Eastern	Water	Water	X	X		2	2-Aminopyridine is a targeted TIC.

Note: Since laboratory accreditations are subject to change, TestAmerica Laboratories, Inc. places the ownership of method, analyte & accreditation compliance upon out subcontract laboratories. This sample shipment is forwarded under chain-of-custody.

Possible Hazard Identification		Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)	
Unconfirmed		Return To Client ☐ Disposal By Lab ☐ Archive For ☐ Months	
Deliverable Requested: I, II, III, IV, Other (specify)		Special Instructions/QC Requirements:	
Primary Deliverable Rank: 2		Method of Shipment:	
Empty Kit Relinquished by:		Date:	
Relinquished by:		Date/Time:	
Relinquished by:		Date/Time:	
Relinquished by:		Date/Time:	
Custody Seals Intact		Custody Seal No.:	
A Yes A No		46#1	

Login Sample Receipt Checklist

Client: R & C Formation Ltd.

Job Number: 460-137584-1

Login Number: 137584

List Source: TestAmerica Edison

List Number: 1

Creator: Lysy, Susan

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	4.8, 3.1, 1.9°C IR#8
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.	False	See NCM
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: 460-137584-1

Login Number: 137584
List Number: 2
Creator: Hulbert, Michael J

List Source: TestAmerica Buffalo
List Creation: 07/24/17 01:04 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	4.6 #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.	N/A	
Chlorine Residual checked.	N/A	

ANALYTICAL REPORT

Job Number: 460-137662-1

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.
Allison L. Bennett
Project Manager I
8/2/2017 8:33 AM

Designee for
Melissa Haas, Project Manager I
777 New Durham Road, Edison, NJ, 08817
(203)944-1310
melissa.haas@testamericainc.com
08/02/2017

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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: 460-137662-1

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 black ink, reading "Allison L. Bennett". The signature is written in a cursive style with a horizontal line underneath.

Approved for release.
Allison L. Bennett
Project Manager I
8/2/2017 8:33 AM

Designee for
Melissa Haas

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CASE NARRATIVE

Client: R & C Formation Ltd.

Project: Nepera Harriman NY

Report Number: 460-137662-1

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.

RECEIPT

The samples were received on 7/21/2017 3:09 PM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperatures of the 2 coolers at receipt time were 1.7° C and 3.6° C.

Receipt Exceptions

The following sample was listed on the Chain of Custody (COC); however, sample volume was not received for analysis: OW-7 (460-137662-5).

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 ORGANIC COMPOUNDS (GC-MS)

Samples TB (460-137662-1), FB (460-137662-2), MW-Dup (460-137662-3), OW-6 (460-137662-4), MW-25S (460-137662-6), MW-23D (460-137662-7), MW-27D (460-137662-8) and MW-1S (460-137662-9) were analyzed for volatile organic compounds (GC-MS) in accordance with EPA SW-846 Methods 8260C. The samples were analyzed on 07/26/2017.

Samples MW-Dup (460-137662-3)[50X] and OW-6 (460-137662-4)[50X] required dilution prior to analysis. The reporting limits have been adjusted accordingly.

No difficulties were encountered during the volatiles analysis.

All quality control parameters were within the acceptance limits.

SEMIVOLATILE ORGANIC COMPOUNDS (GC/MS)

Samples FB (460-137662-2), MW-Dup (460-137662-3), OW-6 (460-137662-4), MW-25S (460-137662-6), MW-23D (460-137662-7), MW-27D (460-137662-8) and MW-1S (460-137662-9) were analyzed for semivolatile organic compounds (GC/MS) in accordance with EPA SW-846 Method 8270D. The samples were prepared on 07/27/2017 and analyzed on 07/29/2017 and 07/31/2017.

The following samples required a dilution due to the nature of either the sample matrix or target analytes: MW-Dup (460-137662-3) and OW-6 (460-137662-4). 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.

Insufficient sample volume was available to perform a matrix spike/matrix spike duplicate/sample duplicate (MS/MSD/DUP) associated with preparation batch 480-368953.

Refer to the QC report for details.

Samples MW-Dup (460-137662-3)[100X] and OW-6 (460-137662-4)[100X] required dilution prior to analysis. The reporting limits have been adjusted accordingly.

No other difficulties were encountered during the semivolatiles analysis.

All other quality control parameters were within the acceptance limits.

METALS

Samples FB (460-137662-2), MW-Dup (460-137662-3), OW-6 (460-137662-4), MW-25S (460-137662-6) and MW-1S (460-137662-9) were analyzed for metals in accordance with EPA SW-846 Methods 6010C. The samples were prepared and analyzed on 07/23/2017.

Sample MW-1S (460-137662-9)[25X] required dilution prior to analysis. The reporting limits have been adjusted accordingly.

No difficulties were encountered during the metals analysis.

All quality control parameters were within the acceptance limits.

ANIONS

Samples FB (460-137662-2), MW-Dup (460-137662-3), OW-6 (460-137662-4), MW-25S (460-137662-6) and MW-1S (460-137662-9) were analyzed for anions in accordance with EPA Method 300_ORGFM_28D Anions by Ion Chromatograph. The samples were analyzed on 07/23/2017, 07/24/2017 and 07/26/2017.

Sulfate failed the recovery criteria high for the MS of sample 460-137584-15 in batch 460-451348.

Sulfate failed the recovery criteria high for the MSD of sample 460-137584-15 in batch 460-451348.

Refer to the QC report for details.

Samples MW-Dup (460-137662-3)[10X], OW-6 (460-137662-4)[10X] and MW-1S (460-137662-9)[10X] required dilution prior to analysis. The reporting limits have been adjusted accordingly.

No other difficulties were encountered during the anions analysis.

All other quality control parameters were within the acceptance limits.

AMMONIA

Samples FB (460-137662-2), MW-Dup (460-137662-3), OW-6 (460-137662-4), MW-25S (460-137662-6) and MW-1S (460-137662-9) were analyzed for ammonia in accordance with EPA Method 350.1. The samples were prepared and analyzed on 07/27/2017.

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-Dup (460-137662-3)[10X], OW-6 (460-137662-4)[10X], MW-25S (460-137662-6)[5X] and MW-1S (460-137662-9)[5X] 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 FB (460-137662-2), MW-Dup (460-137662-3), OW-6 (460-137662-4), MW-25S (460-137662-6) and MW-1S (460-137662-9) were analyzed for Nitrogen-Nitrate in accordance with SM 4500 NO3 F. The samples were analyzed on 07/22/2017.

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: 460-137662-1

Lab Sample ID Analyte	Client Sample ID	Result	Qualifier	Reporting Limit	Units	Method
460-137662-3	MW-DUP					
Benzene		8800		50	ug/L	8260C
2-Picoline		2500	J	8000	ug/L	8270D
Iron		13400		150	ug/L	6010C
Manganese		1960		15.0	ug/L	6010C
Ammonia		11.0		1.0	mg/L	350.1
Nitrate as N		0.017	J	0.10	mg/L	SM 4500 NO3 F
Sulfate		21.3		6.00	mg/L	300.0
460-137662-4	OW-6					
Benzene		10000		50	ug/L	8260C
2-Picoline		2500	J	8000	ug/L	8270D
Iron		26100		150	ug/L	6010C
Manganese		2760		15.0	ug/L	6010C
Ammonia		16.8		1.0	mg/L	350.1
Nitrate as N		0.016	J	0.10	mg/L	SM 4500 NO3 F
Sulfate		57.6		6.00	mg/L	300.0
460-137662-6	MW-25S					
Benzene		140		1.0	ug/L	8260C
Toluene		0.44	J	1.0	ug/L	8260C
2-Picoline		15	J	80	ug/L	8270D
Iron		3520		150	ug/L	6010C
Manganese		1130		15.0	ug/L	6010C
Ammonia		5.4		0.50	mg/L	350.1
Sulfate		3.05		0.60	mg/L	300.0
460-137662-7	MW-23D					
Benzene		1.0		1.0	ug/L	8260C
460-137662-8	MW-27D					
Benzene		0.45	J	1.0	ug/L	8260C
Xylenes, Total		3.1		2.0	ug/L	8260C
460-137662-9	MW-1S					
Benzene		1.7		1.0	ug/L	8260C
Toluene		0.47	J	1.0	ug/L	8260C
Iron		3990000		3750	ug/L	6010C
Manganese		73600		375	ug/L	6010C
Ammonia		68.3		5.0	mg/L	350.1
Sulfate		29.5		6.00	mg/L	300.0

METHOD SUMMARY

Client: R & C Formation Ltd.

Job Number: 460-137662-1

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: 460-137662-1

Method	Analyst	Analyst ID
SW846 8260C	Moroney, Christopher J	CJM
SW846 8270D	Quirk, Patrick J	PJQ
SW846 6010C	Chang, Churn Der	CDC
MCAWW 350.1	Vu, Huan	HTV
SM SM 4500 NO3 F	Leye, Mamadou	MAL
MCAWW 300.0	Adou, Marie J	MJA

SAMPLE SUMMARY

Client: R & C Formation Ltd.

Job Number: 460-137662-1

Lab Sample ID	Client Sample ID	Client Matrix	Date/Time Sampled	Date/Time Received
460-137662-1TB	TB	Water	07/21/2017 0000	07/21/2017 1509
460-137662-2FB	FB	Water	07/21/2017 1130	07/21/2017 1509
460-137662-3	MW-Dup	Water	07/21/2017 0000	07/21/2017 1509
460-137662-4	OW-6	Water	07/21/2017 0751	07/21/2017 1509
460-137662-6	MW-25S	Water	07/21/2017 0851	07/21/2017 1509
460-137662-7	MW-23D	Water	07/21/2017 0936	07/21/2017 1509
460-137662-8	MW-27D	Water	07/21/2017 1011	07/21/2017 1509
460-137662-9	MW-1S	Water	07/21/2017 1121	07/21/2017 1509

SAMPLE RESULTS

Analytical Data

Client: R & C Formation Ltd.

Job Number: 460-137662-1

Client Sample ID: TB

Lab Sample ID: 460-137662-1TB

Client Matrix: Water

Date Sampled: 07/21/2017 0000

Date Received: 07/21/2017 1509

8260C Volatile Organic Compounds by GC/MS

Analysis Method:	8260C	Analysis Batch:	460-451924	Instrument ID:	CVOAMS2
Prep Method:	5030C	Prep Batch:	N/A	Lab File ID:	B18428.D
Dilution:	1.0			Initial Weight/Volume:	5 mL
Analysis Date:	07/26/2017 1504			Final Weight/Volume:	5 mL
Prep Date:	07/26/2017 1504				

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)	102		74 - 132
Bromofluorobenzene	103		77 - 124
Toluene-d8 (Surr)	98		80 - 120
Dibromofluoromethane (Surr)	97		72 - 131

Analytical Data

Client: R & C Formation Ltd.

Job Number: 460-137662-1

Client Sample ID: FB

Lab Sample ID: 460-137662-2FB

Client Matrix: Water

Date Sampled: 07/21/2017 1130

Date Received: 07/21/2017 1509

8260C Volatile Organic Compounds by GC/MS

Analysis Method:	8260C	Analysis Batch:	460-451924	Instrument ID:	CVOAMS2
Prep Method:	5030C	Prep Batch:	N/A	Lab File ID:	B18429.D
Dilution:	1.0			Initial Weight/Volume:	5 mL
Analysis Date:	07/26/2017 1527			Final Weight/Volume:	5 mL
Prep Date:	07/26/2017 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)	104		74 - 132
Bromofluorobenzene	99		77 - 124
Toluene-d8 (Surr)	95		80 - 120
Dibromofluoromethane (Surr)	104		72 - 131

Analytical Data

Client: R & C Formation Ltd.

Job Number: 460-137662-1

Client Sample ID: MW-Dup

Lab Sample ID: 460-137662-3

Client Matrix: Water

Date Sampled: 07/21/2017 0000

Date Received: 07/21/2017 1509

8260C Volatile Organic Compounds by GC/MS

Analysis Method:	8260C	Analysis Batch:	460-451924	Instrument ID:	CVOAMS2
Prep Method:	5030C	Prep Batch:	N/A	Lab File ID:	B18434.D
Dilution:	50			Initial Weight/Volume:	5 mL
Analysis Date:	07/26/2017 1725			Final Weight/Volume:	5 mL
Prep Date:	07/26/2017 1725				

Analyte	Result (ug/L)	Qualifier	MDL	RL
Benzene	8800		4.5	50
Toluene	50	U	13	50
Ethylbenzene	50	U	15	50
Xylenes, Total	100	U	14	100

Surrogate	%Rec	Qualifier	Acceptance Limits
1,2-Dichloroethane-d4 (Surr)	103		74 - 132
Bromofluorobenzene	100		77 - 124
Toluene-d8 (Surr)	97		80 - 120
Dibromofluoromethane (Surr)	102		72 - 131

Analytical Data

Client: R & C Formation Ltd.

Job Number: 460-137662-1

Client Sample ID: OW-6

Lab Sample ID: 460-137662-4

Client Matrix: Water

Date Sampled: 07/21/2017 0751

Date Received: 07/21/2017 1509

8260C Volatile Organic Compounds by GC/MS

Analysis Method: 8260C

Analysis Batch: 460-451924

Instrument ID: CVOAMS2

Prep Method: 5030C

Prep Batch: N/A

Lab File ID: B18435.D

Dilution: 50

Initial Weight/Volume: 5 mL

Analysis Date: 07/26/2017 1749

Final Weight/Volume: 5 mL

Prep Date: 07/26/2017 1749

Analyte	Result (ug/L)	Qualifier	MDL	RL
Benzene	10000		4.5	50
Toluene	50	U	13	50
Ethylbenzene	50	U	15	50
Xylenes, Total	100	U	14	100

Surrogate	%Rec	Qualifier	Acceptance Limits
1,2-Dichloroethane-d4 (Surr)	105		74 - 132
Bromofluorobenzene	102		77 - 124
Toluene-d8 (Surr)	99		80 - 120
Dibromofluoromethane (Surr)	103		72 - 131

Analytical Data

Client: R & C Formation Ltd.

Job Number: 460-137662-1

Client Sample ID: MW-25S

Lab Sample ID: 460-137662-6

Client Matrix: Water

Date Sampled: 07/21/2017 0851

Date Received: 07/21/2017 1509

8260C Volatile Organic Compounds by GC/MS

Analysis Method:	8260C	Analysis Batch:	460-451924	Instrument ID:	CVOAMS2
Prep Method:	5030C	Prep Batch:	N/A	Lab File ID:	B18430.D
Dilution:	1.0			Initial Weight/Volume:	5 mL
Analysis Date:	07/26/2017 1551			Final Weight/Volume:	5 mL
Prep Date:	07/26/2017 1551				

Analyte	Result (ug/L)	Qualifier	MDL	RL
Benzene	140		0.090	1.0
Toluene	0.44	J	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		74 - 132
Bromofluorobenzene	105		77 - 124
Toluene-d8 (Surr)	99		80 - 120
Dibromofluoromethane (Surr)	104		72 - 131

Analytical Data

Client: R & C Formation Ltd.

Job Number: 460-137662-1

Client Sample ID: MW-23D

Lab Sample ID: 460-137662-7

Client Matrix: Water

Date Sampled: 07/21/2017 0936

Date Received: 07/21/2017 1509

8260C Volatile Organic Compounds by GC/MS

Analysis Method:	8260C	Analysis Batch:	460-451924	Instrument ID:	CVOAMS2
Prep Method:	5030C	Prep Batch:	N/A	Lab File ID:	B18431.D
Dilution:	1.0			Initial Weight/Volume:	5 mL
Analysis Date:	07/26/2017 1614			Final Weight/Volume:	5 mL
Prep Date:	07/26/2017 1614				

Analyte	Result (ug/L)	Qualifier	MDL	RL
Benzene	1.0		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		74 - 132
Bromofluorobenzene	103		77 - 124
Toluene-d8 (Surr)	97		80 - 120
Dibromofluoromethane (Surr)	99		72 - 131

Analytical Data

Client: R & C Formation Ltd.

Job Number: 460-137662-1

Client Sample ID: MW-27D

Lab Sample ID: 460-137662-8

Client Matrix: Water

Date Sampled: 07/21/2017 1011

Date Received: 07/21/2017 1509

8260C Volatile Organic Compounds by GC/MS

Analysis Method:	8260C	Analysis Batch:	460-451924	Instrument ID:	CVOAMS2
Prep Method:	5030C	Prep Batch:	N/A	Lab File ID:	B18432.D
Dilution:	1.0			Initial Weight/Volume:	5 mL
Analysis Date:	07/26/2017 1638			Final Weight/Volume:	5 mL
Prep Date:	07/26/2017 1638				

Analyte	Result (ug/L)	Qualifier	MDL	RL
Benzene	0.45	J	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)	106		74 - 132
Bromofluorobenzene	101		77 - 124
Toluene-d8 (Surr)	97		80 - 120
Dibromofluoromethane (Surr)	105		72 - 131

Analytical Data

Client: R & C Formation Ltd.

Job Number: 460-137662-1

Client Sample ID: MW-1S

Lab Sample ID: 460-137662-9

Client Matrix: Water

Date Sampled: 07/21/2017 1121

Date Received: 07/21/2017 1509

8260C Volatile Organic Compounds by GC/MS

Analysis Method:	8260C	Analysis Batch:	460-451924	Instrument ID:	CVOAMS2
Prep Method:	5030C	Prep Batch:	N/A	Lab File ID:	B18433.D
Dilution:	1.0			Initial Weight/Volume:	5 mL
Analysis Date:	07/26/2017 1702			Final Weight/Volume:	5 mL
Prep Date:	07/26/2017 1702				

Analyte	Result (ug/L)	Qualifier	MDL	RL
Benzene	1.7		0.090	1.0
Toluene	0.47	J	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		74 - 132
Bromofluorobenzene	99		77 - 124
Toluene-d8 (Surr)	99		80 - 120
Dibromofluoromethane (Surr)	103		72 - 131

Analytical Data

Client: R & C Formation Ltd.

Job Number: 460-137662-1

Client Sample ID: FB

Lab Sample ID: 460-137662-2FB

Client Matrix: Water

Date Sampled: 07/21/2017 1130

Date Received: 07/21/2017 1509

8270D Semivolatile Organic Compounds (GC/MS)

Analysis Method:	8270D	Analysis Batch:	480-369326	Instrument ID:	HP5973W
Prep Method:	3510C	Prep Batch:	480-368953	Lab File ID:	W9683.D
Dilution:	1.0			Initial Weight/Volume:	250 mL
Analysis Date:	07/29/2017 0037			Final Weight/Volume:	1 mL
Prep Date:	07/27/2017 0738			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	98		46 - 120
2-Fluorobiphenyl	89		48 - 120
p-Terphenyl-d14	99		59 - 136
Phenol-d5	53		22 - 120
2-Fluorophenol	73		35 - 120
2,4,6-Tribromophenol	101		41 - 120

Analytical Data

Client: R & C Formation Ltd.

Job Number: 460-137662-1

Client Sample ID: FB

Lab Sample ID: 460-137662-2FB

Client Matrix: Water

Date Sampled: 07/21/2017 1130

Date Received: 07/21/2017 1509

8270D Semivolatile Organic Compounds (GC/MS)

Analysis Method:	8270D	Analysis Batch:	480-369326	Instrument ID:	HP5973W
Prep Method:	3510C	Prep Batch:	480-368953	Lab File ID:	W9683.D
Dilution:	1.0			Initial Weight/Volume:	250 mL
Analysis Date:	07/29/2017 0037			Final Weight/Volume:	1 mL
Prep Date:	07/27/2017 0738			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: 460-137662-1

Client Sample ID: MW-Dup

Lab Sample ID: 460-137662-3

Client Matrix: Water

Date Sampled: 07/21/2017 0000

Date Received: 07/21/2017 1509

8270D Semivolatile Organic Compounds (GC/MS)

Analysis Method:	8270D	Analysis Batch:	480-369614	Instrument ID:	HP5973W
Prep Method:	3510C	Prep Batch:	480-368953	Lab File ID:	W9723.D
Dilution:	100			Initial Weight/Volume:	250 mL
Analysis Date:	07/31/2017 1802			Final Weight/Volume:	1 mL
Prep Date:	07/27/2017 0738			Injection Volume:	2 uL

Analyte	Result (ug/L)	Qualifier	MDL	RL
2-Picoline	2500	J	140	8000
Pyridine	2500	U	41	2500

Surrogate	%Rec	Qualifier	Acceptance Limits
Nitrobenzene-d5	98		46 - 120
2-Fluorobiphenyl	112		48 - 120
p-Terphenyl-d14	73		59 - 136
Phenol-d5	50		22 - 120
2-Fluorophenol	81		35 - 120
2,4,6-Tribromophenol	278	*	41 - 120

Analytical Data

Client: R & C Formation Ltd.

Job Number: 460-137662-1

Client Sample ID: MW-Dup

Lab Sample ID: 460-137662-3

Client Matrix: Water

Date Sampled: 07/21/2017 0000

Date Received: 07/21/2017 1509

8270D Semivolatile Organic Compounds (GC/MS)

Analysis Method:	8270D	Analysis Batch:	480-369614	Instrument ID:	HP5973W
Prep Method:	3510C	Prep Batch:	480-368953	Lab File ID:	W9723.D
Dilution:	100			Initial Weight/Volume:	250 mL
Analysis Date:	07/31/2017 1802			Final Weight/Volume:	1 mL
Prep Date:	07/27/2017 0738			Injection Volume:	2 uL

Targeted Tentatively Identified Compounds

Cas Number	Analyte	Est. Result (ug/L)	Qualifier
504-29-0	2-Aminopyridine TIC	1000	U

Analytical Data

Client: R & C Formation Ltd.

Job Number: 460-137662-1

Client Sample ID: OW-6

Lab Sample ID: 460-137662-4

Client Matrix: Water

Date Sampled: 07/21/2017 0751

Date Received: 07/21/2017 1509

8270D Semivolatile Organic Compounds (GC/MS)

Analysis Method:	8270D	Analysis Batch:	480-369614	Instrument ID:	HP5973W
Prep Method:	3510C	Prep Batch:	480-368953	Lab File ID:	W9724.D
Dilution:	100			Initial Weight/Volume:	250 mL
Analysis Date:	07/31/2017 1831			Final Weight/Volume:	1 mL
Prep Date:	07/27/2017 0738			Injection Volume:	2 uL

Analyte	Result (ug/L)	Qualifier	MDL	RL
2-Picoline	2500	J	140	8000
Pyridine	2500	U	41	2500

Surrogate	%Rec	Qualifier	Acceptance Limits
Nitrobenzene-d5	96		46 - 120
2-Fluorobiphenyl	99		48 - 120
p-Terphenyl-d14	61		59 - 136
Phenol-d5	47		22 - 120
2-Fluorophenol	64		35 - 120
2,4,6-Tribromophenol	263	*	41 - 120

Analytical Data

Client: R & C Formation Ltd.

Job Number: 460-137662-1

Client Sample ID: OW-6

Lab Sample ID: 460-137662-4

Client Matrix: Water

Date Sampled: 07/21/2017 0751

Date Received: 07/21/2017 1509

8270D Semivolatile Organic Compounds (GC/MS)

Analysis Method:	8270D	Analysis Batch:	480-369614	Instrument ID:	HP5973W
Prep Method:	3510C	Prep Batch:	480-368953	Lab File ID:	W9724.D
Dilution:	100			Initial Weight/Volume:	250 mL
Analysis Date:	07/31/2017 1831			Final Weight/Volume:	1 mL
Prep Date:	07/27/2017 0738			Injection Volume:	2 uL

Targeted Tentatively Identified Compounds

Cas Number	Analyte	Est. Result (ug/L)	Qualifier
504-29-0	2-Aminopyridine TIC	1000	U

Analytical Data

Client: R & C Formation Ltd.

Job Number: 460-137662-1

Client Sample ID: MW-25S

Lab Sample ID: 460-137662-6

Client Matrix: Water

Date Sampled: 07/21/2017 0851

Date Received: 07/21/2017 1509

8270D Semivolatile Organic Compounds (GC/MS)

Analysis Method:	8270D	Analysis Batch:	480-369326	Instrument ID:	HP5973W
Prep Method:	3510C	Prep Batch:	480-368953	Lab File ID:	W9686.D
Dilution:	1.0			Initial Weight/Volume:	250 mL
Analysis Date:	07/29/2017 0205			Final Weight/Volume:	1 mL
Prep Date:	07/27/2017 0738			Injection Volume:	2 uL

Analyte	Result (ug/L)	Qualifier	MDL	RL
2-Picoline	15	J	1.4	80
Pyridine	25	U	0.41	25

Surrogate	%Rec	Qualifier	Acceptance Limits
Nitrobenzene-d5	90		46 - 120
2-Fluorobiphenyl	86		48 - 120
p-Terphenyl-d14	67		59 - 136
Phenol-d5	56		22 - 120
2-Fluorophenol	74		35 - 120
2,4,6-Tribromophenol	83		41 - 120

Analytical Data

Client: R & C Formation Ltd.

Job Number: 460-137662-1

Client Sample ID: MW-25S

Lab Sample ID: 460-137662-6

Client Matrix: Water

Date Sampled: 07/21/2017 0851

Date Received: 07/21/2017 1509

8270D Semivolatile Organic Compounds (GC/MS)

Analysis Method:	8270D	Analysis Batch:	480-369326	Instrument ID:	HP5973W
Prep Method:	3510C	Prep Batch:	480-368953	Lab File ID:	W9686.D
Dilution:	1.0			Initial Weight/Volume:	250 mL
Analysis Date:	07/29/2017 0205			Final Weight/Volume:	1 mL
Prep Date:	07/27/2017 0738			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: 460-137662-1

Client Sample ID: MW-23D

Lab Sample ID: 460-137662-7

Client Matrix: Water

Date Sampled: 07/21/2017 0936

Date Received: 07/21/2017 1509

8270D Semivolatile Organic Compounds (GC/MS)

Analysis Method:	8270D	Analysis Batch:	480-369326	Instrument ID:	HP5973W
Prep Method:	3510C	Prep Batch:	480-368953	Lab File ID:	W9687.D
Dilution:	1.0			Initial Weight/Volume:	250 mL
Analysis Date:	07/29/2017 0233			Final Weight/Volume:	1 mL
Prep Date:	07/27/2017 0738			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	112		46 - 120
2-Fluorobiphenyl	100		48 - 120
p-Terphenyl-d14	102		59 - 136
Phenol-d5	61		22 - 120
2-Fluorophenol	85		35 - 120
2,4,6-Tribromophenol	110		41 - 120

Analytical Data

Client: R & C Formation Ltd.

Job Number: 460-137662-1

Client Sample ID: MW-23D

Lab Sample ID: 460-137662-7

Client Matrix: Water

Date Sampled: 07/21/2017 0936

Date Received: 07/21/2017 1509

8270D Semivolatile Organic Compounds (GC/MS)

Analysis Method:	8270D	Analysis Batch:	480-369326	Instrument ID:	HP5973W
Prep Method:	3510C	Prep Batch:	480-368953	Lab File ID:	W9687.D
Dilution:	1.0			Initial Weight/Volume:	250 mL
Analysis Date:	07/29/2017 0233			Final Weight/Volume:	1 mL
Prep Date:	07/27/2017 0738			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: 460-137662-1

Client Sample ID: MW-27D

Lab Sample ID: 460-137662-8

Client Matrix: Water

Date Sampled: 07/21/2017 1011

Date Received: 07/21/2017 1509

8270D Semivolatile Organic Compounds (GC/MS)

Analysis Method:	8270D	Analysis Batch:	480-369326	Instrument ID:	HP5973W
Prep Method:	3510C	Prep Batch:	480-368953	Lab File ID:	W9688.D
Dilution:	1.0			Initial Weight/Volume:	250 mL
Analysis Date:	07/29/2017 0302			Final Weight/Volume:	1 mL
Prep Date:	07/27/2017 0738			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	94		46 - 120
2-Fluorobiphenyl	107		48 - 120
p-Terphenyl-d14	99		59 - 136
Phenol-d5	56		22 - 120
2-Fluorophenol	76		35 - 120
2,4,6-Tribromophenol	99		41 - 120

Analytical Data

Client: R & C Formation Ltd.

Job Number: 460-137662-1

Client Sample ID: MW-27D

Lab Sample ID: 460-137662-8

Client Matrix: Water

Date Sampled: 07/21/2017 1011

Date Received: 07/21/2017 1509

8270D Semivolatile Organic Compounds (GC/MS)

Analysis Method:	8270D	Analysis Batch:	480-369326	Instrument ID:	HP5973W
Prep Method:	3510C	Prep Batch:	480-368953	Lab File ID:	W9688.D
Dilution:	1.0			Initial Weight/Volume:	250 mL
Analysis Date:	07/29/2017 0302			Final Weight/Volume:	1 mL
Prep Date:	07/27/2017 0738			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: 460-137662-1

Client Sample ID: MW-1S

Lab Sample ID: 460-137662-9

Client Matrix: Water

Date Sampled: 07/21/2017 1121

Date Received: 07/21/2017 1509

8270D Semivolatile Organic Compounds (GC/MS)

Analysis Method:	8270D	Analysis Batch:	480-369326	Instrument ID:	HP5973W
Prep Method:	3510C	Prep Batch:	480-368953	Lab File ID:	W9689.D
Dilution:	1.0			Initial Weight/Volume:	250 mL
Analysis Date:	07/29/2017 0331			Final Weight/Volume:	1 mL
Prep Date:	07/27/2017 0738			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	93		46 - 120
2-Fluorobiphenyl	88		48 - 120
p-Terphenyl-d14	83		59 - 136
Phenol-d5	53		22 - 120
2-Fluorophenol	74		35 - 120
2,4,6-Tribromophenol	107		41 - 120

Analytical Data

Client: R & C Formation Ltd.

Job Number: 460-137662-1

Client Sample ID: MW-1S

Lab Sample ID: 460-137662-9

Client Matrix: Water

Date Sampled: 07/21/2017 1121

Date Received: 07/21/2017 1509

8270D Semivolatile Organic Compounds (GC/MS)

Analysis Method:	8270D	Analysis Batch:	480-369326	Instrument ID:	HP5973W
Prep Method:	3510C	Prep Batch:	480-368953	Lab File ID:	W9689.D
Dilution:	1.0			Initial Weight/Volume:	250 mL
Analysis Date:	07/29/2017 0331			Final Weight/Volume:	1 mL
Prep Date:	07/27/2017 0738			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: 460-137662-1

Client Sample ID: FB

Lab Sample ID: 460-137662-2FB

Client Matrix: Water

Date Sampled: 07/21/2017 1130

Date Received: 07/21/2017 1509

300.0 Anions, Ion Chromatography

Analysis Method: 300.0

N/A

Analysis Batch: 460-451348

Prep Batch: N/A

Instrument ID: IC A

Lab File ID: YA 2017-07-23-23-11.0

Dilution: 1.0

Initial Weight/Volume: 10 mL

Analysis Date: 07/23/2017 2311

Final Weight/Volume:

Prep Date: N/A

Injection Volume: 10 uL

Analyte	Result (mg/L)	Qualifier	MDL	RL
Sulfate	0.60	U	0.13	0.60

Analytical Data

Client: R & C Formation Ltd.

Job Number: 460-137662-1

Client Sample ID: MW-Dup

Lab Sample ID: 460-137662-3

Client Matrix: Water

Date Sampled: 07/21/2017 0000

Date Received: 07/21/2017 1509

300.0 Anions, Ion Chromatography

Analysis Method:	300.0	Analysis Batch:	460-451348	Instrument ID:	IC A
	N/A	Prep Batch:	N/A	Lab File ID:	YA 2017-07-23-23-27.0
Dilution:	10			Initial Weight/Volume:	10 mL
Analysis Date:	07/23/2017 2327	Run Type:	DL	Final Weight/Volume:	
Prep Date:	N/A			Injection Volume:	10 uL

Analyte	Result (mg/L)	Qualifier	MDL	RL
Sulfate	21.3		1.27	6.00

Analytical Data

Client: R & C Formation Ltd.

Job Number: 460-137662-1

Client Sample ID: OW-6

Lab Sample ID: 460-137662-4

Client Matrix: Water

Date Sampled: 07/21/2017 0751

Date Received: 07/21/2017 1509

300.0 Anions, Ion Chromatography

Analysis Method:	300.0	Analysis Batch:	460-451348	Instrument ID:	IC A
	N/A	Prep Batch:	N/A	Lab File ID:	YA 2017-07-23-23-43.0
Dilution:	10			Initial Weight/Volume:	10 mL
Analysis Date:	07/23/2017 2343	Run Type:	DL	Final Weight/Volume:	
Prep Date:	N/A			Injection Volume:	10 uL

Analyte	Result (mg/L)	Qualifier	MDL	RL
Sulfate	57.6		1.27	6.00

Analytical Data

Client: R & C Formation Ltd.

Job Number: 460-137662-1

Client Sample ID: MW-25S

Lab Sample ID: 460-137662-6

Date Sampled: 07/21/2017 0851

Client Matrix: Water

Date Received: 07/21/2017 1509

300.0 Anions, Ion Chromatography

Analysis Method: 300.0

Analysis Batch: 460-451905

Instrument ID: IC A

N/A

Prep Batch: N/A

Lab File ID: YA 2017-07-26-05-24.0

Dilution: 1.0

Initial Weight/Volume: 10 mL

Analysis Date: 07/26/2017 0524

Final Weight/Volume:

Prep Date: N/A

Injection Volume: 10 uL

Analyte	Result (mg/L)	Qualifier	MDL	RL
Sulfate	3.05		0.13	0.60

Analytical Data

Client: R & C Formation Ltd.

Job Number: 460-137662-1

Client Sample ID: MW-1S

Lab Sample ID: 460-137662-9

Date Sampled: 07/21/2017 1121

Client Matrix: Water

Date Received: 07/21/2017 1509

300.0 Anions, Ion Chromatography

Analysis Method:	300.0	Analysis Batch:	460-451348	Instrument ID:	IC A
	N/A	Prep Batch:	N/A	Lab File ID:	YA 2017-07-24-00-16.0
Dilution:	10			Initial Weight/Volume:	10 mL
Analysis Date:	07/24/2017 0016	Run Type:	DL	Final Weight/Volume:	
Prep Date:	N/A			Injection Volume:	10 uL

Analyte	Result (mg/L)	Qualifier	MDL	RL
Sulfate	29.5		1.27	6.00

Analytical Data

Client: R & C Formation Ltd.

Job Number: 460-137662-1

Client Sample ID: FB

Lab Sample ID: 460-137662-2FB

Client Matrix: Water

Date Sampled: 07/21/2017 1130

Date Received: 07/21/2017 1509

6010C Metals (ICP)

Analysis Method: 6010C

Prep Method: 3010A

Dilution: 1.0

Analysis Date: 07/23/2017 1820

Prep Date: 07/23/2017 0010

Analysis Batch: 460-451343

Prep Batch: 460-451277

Instrument ID: ICP5

Lab File ID: 451277D1.asc

Initial Weight/Volume: 50 mL

Final Weight/Volume: 50 mL

Analyte	Result (ug/L)	Qualifier	MDL	RL
Iron	150	U	92.1	150
Manganese	15.0	U	3.1	15.0

Analytical Data

Client: R & C Formation Ltd.

Job Number: 460-137662-1

Client Sample ID: MW-Dup

Lab Sample ID: 460-137662-3

Client Matrix: Water

Date Sampled: 07/21/2017 0000

Date Received: 07/21/2017 1509

6010C Metals (ICP)

Analysis Method: 6010C

Prep Method: 3010A

Dilution: 1.0

Analysis Date: 07/23/2017 1824

Prep Date: 07/23/2017 0010

Analysis Batch: 460-451343

Prep Batch: 460-451277

Instrument ID: ICP5

Lab File ID: 451277D1.asc

Initial Weight/Volume: 50 mL

Final Weight/Volume: 50 mL

Analyte	Result (ug/L)	Qualifier	MDL	RL
Iron	13400		92.1	150
Manganese	1960		3.1	15.0

Analytical Data

Client: R & C Formation Ltd.

Job Number: 460-137662-1

Client Sample ID: OW-6

Lab Sample ID: 460-137662-4

Client Matrix: Water

Date Sampled: 07/21/2017 0751

Date Received: 07/21/2017 1509

6010C Metals (ICP)

Analysis Method: 6010C

Prep Method: 3010A

Dilution: 1.0

Analysis Date: 07/23/2017 1828

Prep Date: 07/23/2017 0010

Analysis Batch: 460-451343

Prep Batch: 460-451277

Instrument ID: ICP5

Lab File ID: 451277D1.asc

Initial Weight/Volume: 50 mL

Final Weight/Volume: 50 mL

Analyte	Result (ug/L)	Qualifier	MDL	RL
Iron	26100		92.1	150
Manganese	2760		3.1	15.0

Analytical Data

Client: R & C Formation Ltd.

Job Number: 460-137662-1

Client Sample ID: MW-25S

Lab Sample ID: 460-137662-6

Date Sampled: 07/21/2017 0851

Client Matrix: Water

Date Received: 07/21/2017 1509

6010C Metals (ICP)

Analysis Method: 6010C

Analysis Batch: 460-451343

Instrument ID: ICP5

Prep Method: 3010A

Prep Batch: 460-451277

Lab File ID: 451277D1.asc

Dilution: 1.0

Initial Weight/Volume: 50 mL

Analysis Date: 07/23/2017 1833

Final Weight/Volume: 50 mL

Prep Date: 07/23/2017 0010

Analyte	Result (ug/L)	Qualifier	MDL	RL
Iron	3520		92.1	150
Manganese	1130		3.1	15.0

Analytical Data

Client: R & C Formation Ltd.

Job Number: 460-137662-1

Client Sample ID: MW-1S

Lab Sample ID: 460-137662-9

Date Sampled: 07/21/2017 1121

Client Matrix: Water

Date Received: 07/21/2017 1509

6010C Metals (ICP)

Analysis Method: 6010C

Analysis Batch: 460-451343

Instrument ID: ICP5

Prep Method: 3010A

Prep Batch: 460-451277

Lab File ID: 451277D1.asc

Dilution: 25

Initial Weight/Volume: 50 mL

Analysis Date: 07/23/2017 1841

Final Weight/Volume: 50 mL

Prep Date: 07/23/2017 0010

Analyte	Result (ug/L)	Qualifier	MDL	RL
Iron	3990000		2300	3750
Manganese	73600		78.0	375

Analytical Data

Client: R & C Formation Ltd.

Job Number: 460-137662-1

General Chemistry

Client Sample ID: FB

Lab Sample ID: 460-137662-2FB

Date Sampled: 07/21/2017 1130

Client Matrix: Water

Date Received: 07/21/2017 1509

Analyte	Result	Qual	Units	MDL	RL	Dil	Method
Ammonia	0.10	U	mg/L	0.072	0.10	1.0	350.1
Analysis Batch: 460-452265 Analysis Date: 07/27/2017 1119							
Prep Batch: 460-452196 Prep Date: 07/27/2017 0530							
Nitrate as N	0.10	U	mg/L	0.010	0.10	1.0	SM 4500 NO3 F
Analysis Batch: 460-451269 Analysis Date: 07/22/2017 1732							

Analytical Data

Client: R & C Formation Ltd.

Job Number: 460-137662-1

General Chemistry

Client Sample ID: MW-Dup

Lab Sample ID: 460-137662-3

Date Sampled: 07/21/2017 0000

Client Matrix: Water

Date Received: 07/21/2017 1509

Analyte	Result	Qual	Units	MDL	RL	Dil	Method
Ammonia	11.0		mg/L	0.72	1.0	10	350.1
Analysis Batch: 460-452265 Analysis Date: 07/27/2017 1151							
Prep Batch: 460-452196 Prep Date: 07/27/2017 0530							
Nitrate as N	0.017	J	mg/L	0.010	0.10	1.0	SM 4500 NO3 F
Analysis Batch: 460-451269 Analysis Date: 07/22/2017 1727							

Analytical Data

Client: R & C Formation Ltd.

Job Number: 460-137662-1

General Chemistry

Client Sample ID: OW-6

Lab Sample ID: 460-137662-4

Client Matrix: Water

Date Sampled: 07/21/2017 0751

Date Received: 07/21/2017 1509

Analyte	Result	Qual	Units	MDL	RL	Dil	Method
Ammonia	16.8		mg/L	0.72	1.0	10	350.1
Analysis Batch: 460-452265 Analysis Date: 07/27/2017 1153							
Prep Batch: 460-452196 Prep Date: 07/27/2017 0530							
Nitrate as N	0.016	J	mg/L	0.010	0.10	1.0	SM 4500 NO3 F
Analysis Batch: 460-451269 Analysis Date: 07/22/2017 1728							

Analytical Data

Client: R & C Formation Ltd.

Job Number: 460-137662-1

General Chemistry

Client Sample ID: MW-25S

Lab Sample ID: 460-137662-6

Client Matrix: Water

Date Sampled: 07/21/2017 0851

Date Received: 07/21/2017 1509

Analyte	Result	Qual	Units	MDL	RL	Dil	Method
Ammonia	5.4		mg/L	0.36	0.50	5.0	350.1
Analysis Batch: 460-452265 Analysis Date: 07/27/2017 1147							
Prep Batch: 460-452196 Prep Date: 07/27/2017 0530							
Nitrate as N	0.10	U	mg/L	0.010	0.10	1.0	SM 4500 NO3 F
Analysis Batch: 460-451269 Analysis Date: 07/22/2017 1729							

Analytical Data

Client: R & C Formation Ltd.

Job Number: 460-137662-1

General Chemistry

Client Sample ID: MW-1S

Lab Sample ID: 460-137662-9

Date Sampled: 07/21/2017 1121

Client Matrix: Water

Date Received: 07/21/2017 1509

Analyte	Result	Qual	Units	MDL	RL	Dil	Method
Ammonia	68.3		mg/L	3.6	5.0	5.0	350.1
Analysis Batch: 460-452265 Analysis Date: 07/27/2017 1154							
Prep Batch: 460-452196 Prep Date: 07/27/2017 0530							
Nitrate as N	0.10	U	mg/L	0.010	0.10	1.0	SM 4500 NO3 F
Analysis Batch: 460-451269 Analysis Date: 07/22/2017 1731							

DATA REPORTING QUALIFIERS

Client: R & C Formation Ltd.

Job Number: 460-137662-1

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.
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: 460-137662-1

QC Association Summary

Lab Sample ID	Client Sample ID	Report Basis	Client Matrix	Method	Prep Batch
GC/MS VOA					
Analysis Batch:460-451924					
LCS 460-451924/4	Lab Control Sample	T	Water	8260C	
LCSD 460-451924/5	Lab Control Sample Duplicate	T	Water	8260C	
MB 460-451924/8	Method Blank	T	Water	8260C	
460-137662-1TB	TB	T	Water	8260C	
460-137662-2FB	FB	T	Water	8260C	
460-137662-3	MW-Dup	T	Water	8260C	
460-137662-4	OW-6	T	Water	8260C	
460-137662-6	MW-25S	T	Water	8260C	
460-137662-7	MW-23D	T	Water	8260C	
460-137662-8	MW-27D	T	Water	8260C	
460-137662-9	MW-1S	T	Water	8260C	

Report Basis

T = Total

Quality Control Results

Client: R & C Formation Ltd.

Job Number: 460-137662-1

QC Association Summary

Lab Sample ID	Client Sample ID	Report Basis	Client Matrix	Method	Prep Batch
GC/MS Semi VOA					
Prep Batch: 480-368953					
LCS 480-368953/2-A	Lab Control Sample	T	Water	3510C	
LCSD 480-368953/3-A	Lab Control Sample Duplicate	T	Water	3510C	
MB 480-368953/1-A	Method Blank	T	Water	3510C	
460-137662-2FB	FB	T	Water	3510C	
460-137662-3	MW-Dup	T	Water	3510C	
460-137662-4	OW-6	T	Water	3510C	
460-137662-6	MW-25S	T	Water	3510C	
460-137662-7	MW-23D	T	Water	3510C	
460-137662-8	MW-27D	T	Water	3510C	
460-137662-9	MW-1S	T	Water	3510C	
Analysis Batch:480-369326					
LCS 480-368953/2-A	Lab Control Sample	T	Water	8270D	480-368953
LCSD 480-368953/3-A	Lab Control Sample Duplicate	T	Water	8270D	480-368953
MB 480-368953/1-A	Method Blank	T	Water	8270D	480-368953
460-137662-2FB	FB	T	Water	8270D	480-368953
460-137662-6	MW-25S	T	Water	8270D	480-368953
460-137662-7	MW-23D	T	Water	8270D	480-368953
460-137662-8	MW-27D	T	Water	8270D	480-368953
460-137662-9	MW-1S	T	Water	8270D	480-368953
Analysis Batch:480-369614					
460-137662-3	MW-Dup	T	Water	8270D	480-368953
460-137662-4	OW-6	T	Water	8270D	480-368953

Report Basis

T = Total

Quality Control Results

Client: R & C Formation Ltd.

Job Number: 460-137662-1

QC Association Summary

Lab Sample ID	Client Sample ID	Report Basis	Client Matrix	Method	Prep Batch
Metals					
Prep Batch: 460-451277					
LCS 460-451277/2-A	Lab Control Sample	T	Water	3010A	
MB 460-451277/1-A	Method Blank	T	Water	3010A	
460-137662-2FB	FB	T	Water	3010A	
460-137662-3	MW-Dup	T	Water	3010A	
460-137662-4	OW-6	T	Water	3010A	
460-137662-6	MW-25S	T	Water	3010A	
460-137662-9	MW-1S	T	Water	3010A	
Analysis Batch:460-451343					
LCS 460-451277/2-A	Lab Control Sample	T	Water	6010C	460-451277
MB 460-451277/1-A	Method Blank	T	Water	6010C	460-451277
460-137662-2FB	FB	T	Water	6010C	460-451277
460-137662-3	MW-Dup	T	Water	6010C	460-451277
460-137662-4	OW-6	T	Water	6010C	460-451277
460-137662-6	MW-25S	T	Water	6010C	460-451277
460-137662-9	MW-1S	T	Water	6010C	460-451277

Report Basis

T = Total

Quality Control Results

Client: R & C Formation Ltd.

Job Number: 460-137662-1

QC Association Summary

Lab Sample ID	Client Sample ID	Report Basis	Client Matrix	Method	Prep Batch
General Chemistry					
Analysis Batch:460-451269					
LCSSRM 460-451269/10	LCS-Certified Reference Material	T	Water	SM 4500 NO3 F	
LCSSRM 460-451269/11	LCS-Certified Reference Material	T	Water	SM 4500 NO3 F	
MB 460-451269/9	Method Blank	T	Water	SM 4500 NO3 F	
460-137662-2FB	FB	T	Water	SM 4500 NO3 F	
460-137662-3	MW-Dup	T	Water	SM 4500 NO3 F	
460-137662-3MS	Matrix Spike	T	Water	SM 4500 NO3 F	
460-137662-3MSD	Matrix Spike Duplicate	T	Water	SM 4500 NO3 F	
460-137662-4	OW-6	T	Water	SM 4500 NO3 F	
460-137662-6	MW-25S	T	Water	SM 4500 NO3 F	
460-137662-9	MW-1S	T	Water	SM 4500 NO3 F	
Prep Batch: 460-452196					
LCS 460-452196/2-A	Lab Control Sample	T	Water	Distill/Ammonia	
MB 460-452196/1-A	Method Blank	T	Water	Distill/Ammonia	
460-137662-2FB	FB	T	Water	Distill/Ammonia	
460-137662-3	MW-Dup	T	Water	Distill/Ammonia	
460-137662-4	OW-6	T	Water	Distill/Ammonia	
460-137662-6	MW-25S	T	Water	Distill/Ammonia	
460-137662-6MS	Matrix Spike	T	Water	Distill/Ammonia	
460-137662-6MSD	Matrix Spike Duplicate	T	Water	Distill/Ammonia	
460-137662-9	MW-1S	T	Water	Distill/Ammonia	
Analysis Batch:460-452265					
LCS 460-452196/2-A	Lab Control Sample	T	Water	350.1	460-452196
MB 460-452196/1-A	Method Blank	T	Water	350.1	460-452196
460-137662-2FB	FB	T	Water	350.1	460-452196
460-137662-3	MW-Dup	T	Water	350.1	460-452196
460-137662-4	OW-6	T	Water	350.1	460-452196
460-137662-6	MW-25S	T	Water	350.1	460-452196
460-137662-6MS	Matrix Spike	T	Water	350.1	460-452196
460-137662-6MSD	Matrix Spike Duplicate	T	Water	350.1	460-452196
460-137662-9	MW-1S	T	Water	350.1	460-452196

Report Basis

T = Total

Quality Control Results

Client: R & C Formation Ltd.

Job Number: 460-137662-1

QC Association Summary

Lab Sample ID	Client Sample ID	Report Basis	Client Matrix	Method	Prep Batch
HPLC/IC					
Analysis Batch:460-451348					
LCS 460-451348/5	Lab Control Sample	T	Water	300.0	
LCSD 460-451348/6	Lab Control Sample Duplicate	T	Water	300.0	
MB 460-451348/3	Method Blank	T	Water	300.0	
460-137662-2FB	FB	T	Water	300.0	
460-137662-3DL	MW-Dup	T	Water	300.0	
460-137662-4DL	OW-6	T	Water	300.0	
460-137662-9DL	MW-1S	T	Water	300.0	
Analysis Batch:460-451905					
LCS 460-451905/5	Lab Control Sample	T	Water	300.0	
LCSD 460-451905/6	Lab Control Sample Duplicate	T	Water	300.0	
MB 460-451905/3	Method Blank	T	Water	300.0	
460-137662-6	MW-25S	T	Water	300.0	

Report Basis

T = Total

Quality Control Results

Client: R & C Formation Ltd.

Job Number: 460-137662-1

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
460-137662-1	TB	102	103	98	97
460-137662-2	FB	104	99	95	104
460-137662-3	MW-Dup	103	100	97	102
460-137662-4	OW-6	105	102	99	103
460-137662-6	MW-25S	106	105	99	104
460-137662-7	MW-23D	104	103	97	99
460-137662-8	MW-27D	106	101	97	105
460-137662-9	MW-1S	104	99	99	103
MB 460-451924/8		101	99	99	101
LCS 460-451924/4		96	102	103	98
LCSD 460-451924/5		95	104	103	95

Surrogate	Acceptance Limits
DCA = 1,2-Dichloroethane-d4 (Surr)	74-132
BFB = Bromofluorobenzene	77-124
TOL = Toluene-d8 (Surr)	80-120
DBFM = Dibromofluoromethane (Surr)	72-131

Client: R & C Formation Ltd.

Job Number: 460-137662-1

Surrogate Recovery Report

8270D Semivolatile Organic Compounds (GC/MS)

Client Matrix: Water

Lab Sample ID	Client Sample ID	NBZ %Rec	FBP %Rec	TPHd14 %Rec	PHL %Rec	2FP %Rec	TBP %Rec
460-137662-2	FB	98	89	99	53	73	101
460-137662-3	MW-Dup	98	112	73	50	81	278*
460-137662-4	OW-6	96	99	61	47	64	263*
460-137662-6	MW-25S	90	86	67	56	74	83
460-137662-7	MW-23D	112	100	102	61	85	110
460-137662-8	MW-27D	94	107	99	56	76	99
460-137662-9	MW-1S	93	88	83	53	74	107
MB 480-368953/1-A		119	96	109	61	84	106
LCS 480-368953/2-A		99	94	93	62	80	113
LCSD 480-368953/3-A		89	90	95	61	89	109

Surrogate	Acceptance Limits
NBZ = Nitrobenzene-d5	46-120
FBP = 2-Fluorobiphenyl	48-120
TPHd14 = p-Terphenyl-d14	59-136
PHL = Phenol-d5	22-120
2FP = 2-Fluorophenol	35-120
TBP = 2,4,6-Tribromophenol	41-120

Quality Control Results

Client: R & C Formation Ltd.

Job Number: 460-137662-1

Method Blank - Batch: 460-451924

Method: 8260C

Preparation: 5030C

Lab Sample ID:	MB 460-451924/8	Analysis Batch:	460-451924	Instrument ID:	CVOAMS2
Client Matrix:	Water	Prep Batch:	N/A	Lab File ID:	B18418.D
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	5 mL
Analysis Date:	07/26/2017 1107	Units:	ug/L	Final Weight/Volume:	5 mL
Prep Date:	07/26/2017 1107				
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)	101	74 - 132
Bromofluorobenzene	99	77 - 124
Toluene-d8 (Surr)	99	80 - 120
Dibromofluoromethane (Surr)	101	72 - 131

Lab Control Sample/

Method: 8260C

Lab Control Sample Duplicate Recovery Report - Batch: 460-451924

Preparation: 5030C

LCS Lab Sample ID:	LCS 460-451924/4	Analysis Batch:	460-451924	Instrument ID:	CVOAMS2
Client Matrix:	Water	Prep Batch:	N/A	Lab File ID:	B18414.D
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	5 mL
Analysis Date:	07/26/2017 0926	Units:	ug/L	Final Weight/Volume:	5 mL
Prep Date:	07/26/2017 0926				5 mL
Leach Date:	N/A				

LCSD Lab Sample ID:	LCSD 460-451924/5	Analysis Batch:	460-451924	Instrument ID:	CVOAMS2
Client Matrix:	Water	Prep Batch:	N/A	Lab File ID:	B18415.D
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	5 mL
Analysis Date:	07/26/2017 0950	Units:	ug/L	Final Weight/Volume:	5 mL
Prep Date:	07/26/2017 0950				5 mL
Leach Date:	N/A				

Analyte	% Rec.		Limit	RPD	RPD Limit	LCS Qual	LCSD Qual
	LCS	LCSD					
Benzene	101	98	77 - 121	3	30		
Toluene	97	99	80 - 120	2	30		
Ethylbenzene	100	96	80 - 120	4	30		
Xylenes, Total	99	96	80 - 120	4	30		
Surrogate	LCS % Rec		LCSD % Rec		Acceptance Limits		
1,2-Dichloroethane-d4 (Surr)	96		95		74 - 132		
Bromofluorobenzene	102		104		77 - 124		
Toluene-d8 (Surr)	103		103		80 - 120		
Dibromofluoromethane (Surr)	98		95		72 - 131		

Quality Control Results

Client: R & C Formation Ltd.

Job Number: 460-137662-1

Method Blank - Batch: 480-368953

Method: 8270D

Preparation: 3510C

Lab Sample ID:	MB 480-368953/1-A	Analysis Batch:	480-369326	Instrument ID:	HP5973W
Client Matrix:	Water	Prep Batch:	480-368953	Lab File ID:	W9672.D
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	250 mL
Analysis Date:	07/28/2017 1919	Units:	ug/L	Final Weight/Volume:	1 mL
Prep Date:	07/27/2017 0738			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	119	46 - 120
2-Fluorobiphenyl	96	48 - 120
p-Terphenyl-d14	109	59 - 136
Phenol-d5	61	22 - 120
2-Fluorophenol	84	35 - 120
2,4,6-Tribromophenol	106	41 - 120

Method Blank TICs- Batch: 480-368953

Cas Number	Analyte	RT	Est. Result (ug)	Qual
504-29-0	2-Aminopyridine TIC	6.84	10	U

Quality Control Results

Client: R & C Formation Ltd.

Job Number: 460-137662-1

Lab Control Sample/

Lab Control Sample Duplicate Recovery Report - Batch: 480-368953

Method: 8270D

Preparation: 3510C

LCS Lab Sample ID: LCS 480-368953/2-A	Analysis Batch: 480-369326	Instrument ID: HP5973W
Client Matrix: Water	Prep Batch: 480-368953	Lab File ID: W9673.D
Dilution: 1.0	Leach Batch: N/A	Initial Weight/Volume: 250 mL
Analysis Date: 07/28/2017 1948	Units: ug/L	Final Weight/Volume: 1 mL
Prep Date: 07/27/2017 0738		Injection Volume: 2 uL
Leach Date: N/A		

LCSD Lab Sample ID: LCSD 480-368953/3-A	Analysis Batch: 480-369326	Instrument ID: HP5973W
Client Matrix: Water	Prep Batch: 480-368953	Lab File ID: W9674.D
Dilution: 1.0	Leach Batch: N/A	Initial Weight/Volume: 250 mL
Analysis Date: 07/28/2017 2017	Units: ug/L	Final Weight/Volume: 1 mL
Prep Date: 07/27/2017 0738		Injection Volume: 2 uL
Leach Date: N/A		

Analyte	% Rec.		Limit	RPD	RPD Limit	LCS Qual	LCSD Qual
	LCS	LCSD					
Pyridine	62	59	10 - 120	5	49		
Surrogate	LCS % Rec		LCSD % Rec		Acceptance Limits		
Nitrobenzene-d5	99		89		46 - 120		
2-Fluorobiphenyl	94		90		48 - 120		
p-Terphenyl-d14	93		95		59 - 136		
Phenol-d5	62		61		22 - 120		
2-Fluorophenol	80		89		35 - 120		
2,4,6-Tribromophenol	113		109		41 - 120		

Quality Control Results

Client: R & C Formation Ltd.

Job Number: 460-137662-1

Method Blank - Batch: 460-451348

Method: 300.0
Preparation: N/A

Lab Sample ID:	MB 460-451348/3	Analysis Batch:	460-451348	Instrument ID:	IC A
Client Matrix:	Water	Prep Batch:	N/A	Lab File ID:	YA 2017-07-23-18-34.d
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	10 mL
Analysis Date:	07/23/2017 1834	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	0.13	0.60

Lab Control Sample/

Lab Control Sample Duplicate Recovery Report - Batch: 460-451348

Method: 300.0
Preparation: N/A

LCS Lab Sample ID:	LCS 460-451348/5	Analysis Batch:	460-451348	Instrument ID:	IC A
Client Matrix:	Water	Prep Batch:	N/A	Lab File ID:	YA 2017-07-23-19-07.d
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	10 mL
Analysis Date:	07/23/2017 1907	Units:	mg/L	Final Weight/Volume:	
Prep Date:	N/A			Injection Volume:	10 uL
Leach Date:	N/A				

LCSD Lab Sample ID:	LCSD 460-451348/6	Analysis Batch:	460-451348	Instrument ID:	IC A
Client Matrix:	Water	Prep Batch:	N/A	Lab File ID:	YA 2017-07-23-19-23.d
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	10 mL
Analysis Date:	07/23/2017 1923	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	98	95	90 - 110	3	15		

Quality Control Results

Client: R & C Formation Ltd.

Job Number: 460-137662-1

Method Blank - Batch: 460-451905

Method: 300.0
Preparation: N/A

Lab Sample ID:	MB 460-451905/3	Analysis Batch:	460-451905	Instrument ID:	IC A
Client Matrix:	Water	Prep Batch:	N/A	Lab File ID:	YA 2017-07-26-03-31.d
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	10 mL
Analysis Date:	07/26/2017 0331	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	0.13	0.60

Lab Control Sample/

Lab Control Sample Duplicate Recovery Report - Batch: 460-451905

Method: 300.0
Preparation: N/A

LCS Lab Sample ID:	LCS 460-451905/5	Analysis Batch:	460-451905	Instrument ID:	IC A
Client Matrix:	Water	Prep Batch:	N/A	Lab File ID:	YA 2017-07-26-04-03.d
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	10 mL
Analysis Date:	07/26/2017 0403	Units:	mg/L	Final Weight/Volume:	
Prep Date:	N/A			Injection Volume:	10 uL
Leach Date:	N/A				

LCSD Lab Sample ID:	LCSD 460-451905/6	Analysis Batch:	460-451905	Instrument ID:	IC A
Client Matrix:	Water	Prep Batch:	N/A	Lab File ID:	YA 2017-07-26-04-19.d
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	10 mL
Analysis Date:	07/26/2017 0419	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	97	95	90 - 110	2	15		

Quality Control Results

Client: R & C Formation Ltd.

Job Number: 460-137662-1

Method Blank - Batch: 460-451277

Method: 6010C
Preparation: 3010A

Lab Sample ID:	MB 460-451277/1-A	Analysis Batch:	460-451343	Instrument ID:	ICP5
Client Matrix:	Water	Prep Batch:	460-451277	Lab File ID:	451277D1.asc
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	50 mL
Analysis Date:	07/23/2017 1720	Units:	ug/L	Final Weight/Volume:	50 mL
Prep Date:	07/23/2017 0010				
Leach Date:	N/A				

Analyte	Result	Qual	MDL	RL
Iron	150	U	92.1	150
Manganese	15.0	U	3.1	15.0

Lab Control Sample - Batch: 460-451277

Method: 6010C
Preparation: 3010A

Lab Sample ID:	LCS 460-451277/2-A	Analysis Batch:	460-451343	Instrument ID:	ICP5
Client Matrix:	Water	Prep Batch:	460-451277	Lab File ID:	451277D1.asc
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	50 mL
Analysis Date:	07/23/2017 1704	Units:	ug/L	Final Weight/Volume:	50 mL
Prep Date:	07/23/2017 0010				
Leach Date:	N/A				

Analyte	Spike Amount	Result	% Rec.	Limit	Qual
Iron	1000	991.9	99	80 - 120	
Manganese	500	511.2	102	80 - 120	

Quality Control Results

Client: R & C Formation Ltd.

Job Number: 460-137662-1

Method Blank - Batch: 460-452196

Method: 350.1

Preparation: Distill/Ammonia

Lab Sample ID: MB 460-452196/1-A
Client Matrix: Water
Dilution: 1.0
Analysis Date: 07/27/2017 1109
Prep Date: 07/27/2017 0530
Leach Date: N/A

Analysis Batch: 460-452265
Prep Batch: 460-452196
Leach Batch: N/A
Units: mg/L

Instrument ID: Lachat2
Lab File ID: A170727.FDT
Initial Weight/Volume: 50.0 mL
Final Weight/Volume: 50.0 mL

Analyte	Result	Qual	MDL	RL
Ammonia	0.10	U	0.072	0.10

Lab Control Sample - Batch: 460-452196

Method: 350.1

Preparation: Distill/Ammonia

Lab Sample ID: LCS 460-452196/2-A
Client Matrix: Water
Dilution: 1.0
Analysis Date: 07/27/2017 1110
Prep Date: 07/27/2017 0530
Leach Date: N/A

Analysis Batch: 460-452265
Prep Batch: 460-452196
Leach Batch: N/A
Units: mg/L

Instrument ID: Lachat2
Lab File ID: A170727.FDT
Initial Weight/Volume: 50.0 mL
Final Weight/Volume: 50.0 mL

Analyte	Spike Amount	Result	% Rec.	Limit	Qual
Ammonia	1.00	1.12	112	87 - 114	

Matrix Spike/

Matrix Spike Duplicate Recovery Report - Batch: 460-452196

Method: 350.1

Preparation: Distill/Ammonia

MS Lab Sample ID: 460-137662-6
Client Matrix: Water
Dilution: 5.0
Analysis Date: 07/27/2017 1148
Prep Date: 07/27/2017 0530
Leach Date: N/A

Analysis Batch: 460-452265
Prep Batch: 460-452196
Leach Batch: N/A

Instrument ID: Lachat2
Lab File ID: A170727.FDT
Initial Weight/Volume: 50.0 mL
Final Weight/Volume: 50.0 mL

MSD Lab Sample ID: 460-137662-6
Client Matrix: Water
Dilution: 5.0
Analysis Date: 07/27/2017 1150
Prep Date: 07/27/2017 0530
Leach Date: N/A

Analysis Batch: 460-452265
Prep Batch: 460-452196
Leach Batch: N/A

Instrument ID: Lachat2
Lab File ID: A170727.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	93	107	65 - 135	2	26	4	4

Quality Control Results

Client: R & C Formation Ltd.

Job Number: 460-137662-1

Method Blank - Batch: 460-451269

Method: SM 4500 NO3 F
Preparation: N/A

Lab Sample ID:	MB 460-451269/9	Analysis Batch:	460-451269	Instrument ID:	Lachat1
Client Matrix:	Water	Prep Batch:	N/A	Lab File ID:	N170722C.FDT
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	
Analysis Date:	07/22/2017 1722	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	0.010	0.10

LCS-Certified Reference Material - Batch: 460-451269

Method: SM 4500 NO3 F
Preparation: N/A

Lab Sample ID:	LCSSRM 460-451269/10	Analysis Batch:	460-451269	Instrument ID:	Lachat1
Client Matrix:	Water	Prep Batch:	N/A	Lab File ID:	N170722C.FDT
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	
Analysis Date:	07/22/2017 1724	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	1.81	1.78	98.5	87.3 - 111.0	

Matrix Spike/ Matrix Spike Duplicate Recovery Report - Batch: 460-451269

Method: SM 4500 NO3 F
Preparation: N/A

MS Lab Sample ID:	460-137662-3	Analysis Batch:	460-451269	Instrument ID:	Lachat1
Client Matrix:	Water	Prep Batch:	N/A	Lab File ID:	N170722C.FDT
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	
Analysis Date:	07/22/2017 1734			Final Weight/Volume:	40 mL
Prep Date:	N/A				
Leach Date:	N/A				

MSD Lab Sample ID:	460-137662-3	Analysis Batch:	460-451269	Instrument ID:	Lachat1
Client Matrix:	Water	Prep Batch:	N/A	Lab File ID:	N170722C.FDT
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	
Analysis Date:	07/22/2017 1735			Final Weight/Volume:	40 mL
Prep Date:	N/A				
Leach Date:	N/A				

Analyte	% Rec.		Limit	RPD	RPD Limit	MS Qual	MSD Qual
	MS	MSD					
Nitrate as N	108	108	53 - 135	0	12		

TestAmerica

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

THE LEADER IN ENVIRONMENTAL TESTING

CHAIN OF CUSTODY / A

460-137662 Chain of Custody

Page 1 of 1

Name (for report and invoice)

Bob Casson

Samplers Name (Printed)

Joe Castanza

Company

Pro Environmental Ltd

P. O. #

Vepeca Harriman NY

State (Location of site):

NJ: ☐ NY: ☒ Other: ☐

Regulatory Program:

Other: ☐

Address

171 Deer Park Ave Suite 3

Analysis Turnaround Time

Standard ☒

Rush Charges Authorized For:

2 Week ☐

1 Week ☐

Other ☐

ANALYSIS REQUESTED (ENTER X BELOW TO INDICATE REQUEST)

LAB USE ONLY
Project No:

City Babylon NY State 11702

Phone 631-482-9596 Fax 631-482-9593

Job No: 137662

Sample Identification

Date

Time

Matrix

No. of Cont.

BTX

SUOCs

Gen Chem

Sample Numbers

FB

7/21/17

1130

AQ

3

X

X

X

1

FB

1130

1

9

X

X

X

2

MW-Dup

7/21/17

751

1

X

X

X

3

GW-6

7/21/17

821

1

X

X

X

4

MW-7

7/21/17

851

1

X

X

X

5

MW-231D

7/21/17

936

5

X

X

X

7

MW-27D

7/21/17

1011

1

X

X

X

8

MW-15

7/21/17

1121

1

X

X

X

9

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

Soil:

6 = Other 7 = Other

Water:

Special Instructions: By critical analysis procedure, determine presence of Pb, Fe, sulfate, ammonia, nitrate, magnesium, Water Metals Filtered (Yes/No)? No

Relinquished by

Company

Date / Time

Received by

Company

Relinquished by

Company

Date / Time

Received by

Company

Relinquished by

Company

Date / Time

Received by

Company

Relinquished by

Company

Date / Time

Received by

Company

Relinquished by

Company

Date / Time

Received by

Company

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 (07/15)

Number of Coolers:

IR Gun #

RAW	CORRECTED
1	1
2	2
3	3
4	4
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97	97
98	98
99	99
100	100

COULET, Ph.
Unpublished manuscript

[illegible]

NA

215

NA

NA

11/18

* Samples for *Meta*analysis which are out of compliance must be acidified at least 24 hours prior to analysis.

5

7/24/77

Chain of Custody Record



Client Information (Sub Contract Lab)				Lab PM: Haas, Melissa		Carrier Tracking No(s): 460-48952-1																																																									
Client Contact: Shipping/Receiving				E-Mail: melissa.haas@testamericainc.com		State of Origin: New York																																																									
Company: TestAmerica Laboratories, Inc.				Accreditations Required (See note): NELAP - New York		Page: Page 1 of 1																																																									
Address: 10 Hazelwood Drive, Amherst State, Zip: NY, 14228-2298				Phone: 716-691-2600(Tel) 716-691-7991(Fax)		Job #: 460-137662-1																																																									
Project Name: Nepeta Harriman NY				Project #: 46009639		Preservation Codes: 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 M - Hexene N - None O - AsNaO2 P - Na2O4S Q - Na2SO3 R - Na2S2O3 S - H2SO4 T - TSP Dodecylhydrate U - Acetone V - MCAA W - pH 4-5 Z - other (specify) Other:																																																									
Analysis Requested				Special Instructions/Note:																																																											
Sample Identification - Client ID (Lab ID)				Total Number of Containers																																																											
<table border="1" style="width:100%; border-collapse: collapse;"> <thead> <tr> <th>Sample Date</th> <th>Sample Time</th> <th>Sample Type (C=Comp, G=grab)</th> <th>Matrix (W=water, S=solid, O=oil, D=dewar)</th> <th>Field Filled Sample (Yes or No)</th> <th>Perform MS/MSD (Yes or No)</th> <th>8270D/3510C_LVI SVOC - Client Specific List</th> </tr> </thead> <tbody> <tr> <td>7/21/17</td> <td>11:30 Eastern</td> <td>Water</td> <td>Water</td> <td>X</td> <td>X</td> <td>2</td> </tr> <tr> <td>7/21/17</td> <td>Eastern</td> <td>Water</td> <td>Water</td> <td>X</td> <td>X</td> <td>2</td> </tr> <tr> <td>7/21/17</td> <td>07:51 Eastern</td> <td>Water</td> <td>Water</td> <td>X</td> <td>X</td> <td>2</td> </tr> <tr> <td>7/21/17</td> <td>08:51 Eastern</td> <td>Water</td> <td>Water</td> <td>X</td> <td>X</td> <td>2</td> </tr> <tr> <td>7/21/17</td> <td>09:36 Eastern</td> <td>Water</td> <td>Water</td> <td>X</td> <td>X</td> <td>2</td> </tr> <tr> <td>7/21/17</td> <td>10:11 Eastern</td> <td>Water</td> <td>Water</td> <td>X</td> <td>X</td> <td>2</td> </tr> <tr> <td>7/21/17</td> <td>11:21 Eastern</td> <td>Water</td> <td>Water</td> <td>X</td> <td>X</td> <td>2</td> </tr> </tbody> </table>				Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=oil, D=dewar)	Field Filled Sample (Yes or No)	Perform MS/MSD (Yes or No)	8270D/3510C_LVI SVOC - Client Specific List	7/21/17	11:30 Eastern	Water	Water	X	X	2	7/21/17	Eastern	Water	Water	X	X	2	7/21/17	07:51 Eastern	Water	Water	X	X	2	7/21/17	08:51 Eastern	Water	Water	X	X	2	7/21/17	09:36 Eastern	Water	Water	X	X	2	7/21/17	10:11 Eastern	Water	Water	X	X	2	7/21/17	11:21 Eastern	Water	Water	X	X	2	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.			
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7/21/17	11:21 Eastern	Water	Water	X	X	2																																																									
Note: Since laboratory accreditations are subject to change, TestAmerica Laboratories, Inc. places the ownership of method, analyte & accreditation compliance upon our subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/test/matrix being analyzed, the samples must be shipped back to the TestAmerica laboratory or other instructions will be provided. Any changes to accreditation status should be brought to TestAmerica Laboratories, Inc. attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to TestAmerica Laboratories, Inc.																																																															
Possible Hazard Identification																																																															
Unconfirmed Deliverable Requested: I, II, III, IV, Other (specify)																																																															
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Custody Seals Intact:																																																															
Custody Seal No.:																																																															

Login Sample Receipt Checklist

Client: R & C Formation Ltd.

Job Number: 460-137662-1

Login Number: 137662
List Number: 1
Creator: Rivera, Kenneth

List Source: TestAmerica Edison

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	1.7, 3.6°C, IR #8
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.	False	See NCM
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").	False	See NCM
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: 460-137662-1

Login Number: 137662
List Number: 2
Creator: Hulbert, Michael J

List Source: TestAmerica Buffalo
List Creation: 07/25/17 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	3.7 #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.	N/A	
Chlorine Residual checked.	N/A	

ANALYTICAL REPORT

Job Number: 460-140118-1

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



Approved for release.
Thomas A Chupela
Project Management Assistant I
9/12/2017 9:35 AM

Designee for
Melissa Haas, Project Manager I
777 New Durham Road, Edison, NJ, 08817
(203)944-1310
melissa.haas@testamericainc.com
09/12/2017

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 LA000132

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: 460-140118-1

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.



Approved for release.
Thomas A. Chupela
Project Management Assistant I
9/12/2017 9:35 AM

Designee for
Melissa Haas

CASE NARRATIVE

Client: R & C Formation Ltd.

Project: Nepera Maybrook Semi-Annual Sampling

Report Number: 460-140118-1

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.

RECEIPT

The samples were received on 8/31/2017 1:05 PM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperature of the cooler at receipt was 1.4° C.

Receipt Exceptions

A trip blank was submitted for analysis with these samples; however, it was not listed on the Chain of Custody (COC).

Per client request on 9/1/17, trip blank was activated for 8260 BTEX analysis

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 ORGANIC COMPOUNDS (GC-MS)

Samples OW-7 (460-140118-1), MW-5S (460-140118-2), MW-7S (460-140118-3), MW-1S (460-140118-4) and Trip Blank (460-140118-5) were analyzed for Volatile organic compounds (GC-MS) in accordance with EPA SW-846 Methods 8260C. The samples were analyzed on 09/02/2017 and 09/03/2017.

No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

SEMIVOLATILE ORGANIC COMPOUNDS (GC/MS)

Samples OW-7 (460-140118-1), MW-5S (460-140118-2), MW-7S (460-140118-3) and MW-1S (460-140118-4) were analyzed for semivolatile organic compounds (GC/MS) in accordance with EPA SW-846 Method 8270D. The samples were prepared on 09/05/2017 and analyzed on 09/06/2017 and 09/07/2017.

The laboratory control sample (LCS) associated with preparation batch 480-375178 recovered above the acceptable limit for surrogate 2,4,6-Tribromophenol (Surr). This surrogate is not associated to the target list of compounds; therefore, the results have been reported. OW-7 (460-140118-1), MW-5S (460-140118-2), MW-7S (460-140118-3) and MW-1S (460-140118-4).

The following sample was diluted to bring the concentration of target analytes within the calibration range: OW-7 (460-140118-1). Elevated reporting limits (RLs) are provided.

Pyridine failed the recovery criteria low for the MS of sample 480-123583-1 in batch 480-375450. Pyridine failed the recovery criteria low for the MSD of sample 480-123583-1 in batch 480-375450.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

METALS

Samples OW-7 (460-140118-1) and MW-1S (460-140118-4) were analyzed for Metals in accordance with EPA SW-846 Methods 6010C. The samples were prepared on 09/06/2017 and analyzed on 09/07/2017.

No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

ANIONS

Samples OW-7 (460-140118-1) and MW-1S (460-140118-4) were analyzed for anions in accordance with EPA Method 300_ORGFM_28D Anions by Ion Chromatograph. The samples were analyzed on 09/06/2017.

The following samples was diluted to bring the concentration of target analytes within the calibration range: OW-7 (460-140118-1) and MW-1S (460-140118-4) at 10.0 and 10.0. Elevated reporting limits (RLs) are provided.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

AMMONIA

Samples OW-7 (460-140118-1) and MW-1S (460-140118-4) were analyzed for ammonia in accordance with EPA Method 350.1. The samples were prepared on 09/05/2017 and analyzed on 09/06/2017.

No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

NITROGEN-NITRATE

Samples OW-7 (460-140118-1) and MW-1S (460-140118-4) were analyzed for Nitrogen-Nitrate in accordance with SM 4500 NO3 F. The samples were analyzed on 09/01/2017.

No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

EXECUTIVE SUMMARY - Detections

Client: R & C Formation Ltd.

Job Number: 460-140118-1

Lab Sample ID Analyte	Client Sample ID	Result	Qualifier	Reporting Limit	Units	Method
460-140118-1	OW-7					
Benzene		220		1.0	ug/L	8260C
2-Picoline		85	J	400	ug/L	8270D
Pyridine		1.3	J	25	ug/L	8270D
Iron		12000		150	ug/L	6010C
Manganese		7170		15.0	ug/L	6010C
Ammonia		13.6		0.50	mg/L	350.1
Nitrate as N		0.021	J	0.10	mg/L	SM 4500 NO3 F
Sulfate		29.7		6.00	mg/L	300.0
460-140118-4	MW-1S					
Iron		16600		150	ug/L	6010C
Manganese		1120		15.0	ug/L	6010C
Ammonia		17.3		0.50	mg/L	350.1
Sulfate		26.5		6.00	mg/L	300.0

METHOD SUMMARY

Client: R & C Formation Ltd.

Job Number: 460-140118-1

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: 460-140118-1

Method	Analyst	Analyst ID
SW846 8260C	Tupayachi, Audberto	AAT
SW846 8270D	Quirk, Patrick J	PJQ
SW846 6010C	Chang, Churn Der	CDC
MCAWW 350.1	Leye, Mamadou	MAL
SM SM 4500 NO3 F	Njieha, Karianna Y	KYN
MCAWW 300.0	Mulani, Heta X	HXM

SAMPLE SUMMARY

Client: R & C Formation Ltd.

Job Number: 460-140118-1

Lab Sample ID	Client Sample ID	Client Matrix	Date/Time Sampled	Date/Time Received
460-140118-1	OW-7	Water	08/31/2017 0851	08/31/2017 1305
460-140118-2	MW-5S	Water	08/31/2017 0941	08/31/2017 1305
460-140118-3	MW-7S	Water	08/31/2017 1016	08/31/2017 1305
460-140118-4	MW-1S	Water	08/31/2017 1046	08/31/2017 1305
460-140118-5	Trip Blank	Water	08/31/2017 0000	08/31/2017 1305

SAMPLE RESULTS

Analytical Data

Client: R & C Formation Ltd.

Job Number: 460-140118-1

Client Sample ID: OW-7

Lab Sample ID: 460-140118-1

Client Matrix: Water

Date Sampled: 08/31/2017 0851

Date Received: 08/31/2017 1305

8260C Volatile Organic Compounds by GC/MS

Analysis Method:	8260C	Analysis Batch:	460-460646	Instrument ID:	CVOAMS2
Prep Method:	5030C	Prep Batch:	N/A	Lab File ID:	B20348.D
Dilution:	1.0			Initial Weight/Volume:	5 mL
Analysis Date:	09/03/2017 1203			Final Weight/Volume:	5 mL
Prep Date:	09/03/2017 1203				

Analyte	Result (ug/L)	Qualifier	MDL	RL
Benzene	220		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)	98		74 - 132
Bromofluorobenzene	96		77 - 124
Toluene-d8 (Surr)	86		80 - 120
Dibromofluoromethane (Surr)	94		72 - 131

Analytical Data

Client: R & C Formation Ltd.

Job Number: 460-140118-1

Client Sample ID: MW-5S

Lab Sample ID: 460-140118-2

Client Matrix: Water

Date Sampled: 08/31/2017 0941

Date Received: 08/31/2017 1305

8260C Volatile Organic Compounds by GC/MS

Analysis Method:	8260C	Analysis Batch:	460-460485	Instrument ID:	CVOAMS2
Prep Method:	5030C	Prep Batch:	N/A	Lab File ID:	B20322.D
Dilution:	1.0			Initial Weight/Volume:	5 mL
Analysis Date:	09/02/2017 0624			Final Weight/Volume:	5 mL
Prep Date:	09/02/2017 0624				

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)	92		74 - 132
Bromofluorobenzene	111		77 - 124
Toluene-d8 (Surr)	87		80 - 120
Dibromofluoromethane (Surr)	95		72 - 131

Analytical Data

Client: R & C Formation Ltd.

Job Number: 460-140118-1

Client Sample ID: MW-7S

Lab Sample ID: 460-140118-3

Client Matrix: Water

Date Sampled: 08/31/2017 1016

Date Received: 08/31/2017 1305

8260C Volatile Organic Compounds by GC/MS

Analysis Method:	8260C	Analysis Batch:	460-460485	Instrument ID:	CVOAMS2
Prep Method:	5030C	Prep Batch:	N/A	Lab File ID:	B20323.D
Dilution:	1.0			Initial Weight/Volume:	5 mL
Analysis Date:	09/02/2017 0648			Final Weight/Volume:	5 mL
Prep Date:	09/02/2017 0648				

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)	91		74 - 132
Bromofluorobenzene	109		77 - 124
Toluene-d8 (Surr)	84		80 - 120
Dibromofluoromethane (Surr)	93		72 - 131

Analytical Data

Client: R & C Formation Ltd.

Job Number: 460-140118-1

Client Sample ID: MW-1S

Lab Sample ID: 460-140118-4

Client Matrix: Water

Date Sampled: 08/31/2017 1046

Date Received: 08/31/2017 1305

8260C Volatile Organic Compounds by GC/MS

Analysis Method:	8260C	Analysis Batch:	460-460485	Instrument ID:	CVOAMS2
Prep Method:	5030C	Prep Batch:	N/A	Lab File ID:	B20324.D
Dilution:	1.0			Initial Weight/Volume:	5 mL
Analysis Date:	09/02/2017 0711			Final Weight/Volume:	5 mL
Prep Date:	09/02/2017 0711				

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		74 - 132
Bromofluorobenzene	113		77 - 124
Toluene-d8 (Surr)	83		80 - 120
Dibromofluoromethane (Surr)	95		72 - 131

Analytical Data

Client: R & C Formation Ltd.

Job Number: 460-140118-1

Client Sample ID: Trip Blank

Lab Sample ID: 460-140118-5

Client Matrix: Water

Date Sampled: 08/31/2017 0000

Date Received: 08/31/2017 1305

8260C Volatile Organic Compounds by GC/MS

Analysis Method: 8260C

Analysis Batch: 460-460485

Instrument ID: CVOAMS2

Prep Method: 5030C

Prep Batch: N/A

Lab File ID: B20310.D

Dilution: 1.0

Initial Weight/Volume: 5 mL

Analysis Date: 09/02/2017 0013

Final Weight/Volume: 5 mL

Prep Date: 09/02/2017 0013

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)	91		74 - 132
Bromofluorobenzene	108		77 - 124
Toluene-d8 (Surr)	86		80 - 120
Dibromofluoromethane (Surr)	92		72 - 131

Analytical Data

Client: R & C Formation Ltd.

Job Number: 460-140118-1

Client Sample ID: OW-7

Lab Sample ID: 460-140118-1

Client Matrix: Water

Date Sampled: 08/31/2017 0851

Date Received: 08/31/2017 1305

8270D Semivolatile Organic Compounds (GC/MS)

Analysis Method:	8270D	Analysis Batch:	480-375450	Instrument ID:	HP5973W
Prep Method:	3510C	Prep Batch:	480-375178	Lab File ID:	W0333.D
Dilution:	1.0			Initial Weight/Volume:	250 mL
Analysis Date:	09/06/2017 2027			Final Weight/Volume:	1 mL
Prep Date:	09/05/2017 0836			Injection Volume:	2 uL

Analyte	Result (ug/L)	Qualifier	MDL	RL
Pyridine	1.3	J	0.41	25

Surrogate	%Rec	Qualifier	Acceptance Limits
Nitrobenzene-d5	98		46 - 120
2-Fluorobiphenyl	93		48 - 120
p-Terphenyl-d14	85		59 - 136
Phenol-d5	46		22 - 120
2-Fluorophenol	64		35 - 120
2,4,6-Tribromophenol	117		41 - 120

Analytical Data

Client: R & C Formation Ltd.

Job Number: 460-140118-1

Client Sample ID: OW-7

Lab Sample ID: 460-140118-1

Client Matrix: Water

Date Sampled: 08/31/2017 0851

Date Received: 08/31/2017 1305

8270D Semivolatile Organic Compounds (GC/MS)

Analysis Method: 8270D

Analysis Batch: 480-375450

Instrument ID: HP5973W

Prep Method: 3510C

Prep Batch: 480-375178

Lab File ID: W0333.D

Dilution: 1.0

Initial Weight/Volume: 250 mL

Analysis Date: 09/06/2017 2027

Final Weight/Volume: 1 mL

Prep Date: 09/05/2017 0836

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: 460-140118-1

Client Sample ID: OW-7

Lab Sample ID: 460-140118-1

Date Sampled: 08/31/2017 0851

Client Matrix: Water

Date Received: 08/31/2017 1305

8270D Semivolatile Organic Compounds (GC/MS)

Analysis Method:	8270D	Analysis Batch:	480-375652	Instrument ID:	HP5973W
Prep Method:	3510C	Prep Batch:	480-375178	Lab File ID:	W0356.D
Dilution:	5.0			Initial Weight/Volume:	250 mL
Analysis Date:	09/07/2017 1709	Run Type:	DL	Final Weight/Volume:	1 mL
Prep Date:	09/05/2017 0836			Injection Volume:	2 uL

Analyte	Result (ug/L)	Qualifier	MDL	RL
2-Picoline	85	J	7.0	400

Surrogate	%Rec	Qualifier	Acceptance Limits
Nitrobenzene-d5	93		46 - 120
2-Fluorobiphenyl	94		48 - 120
p-Terphenyl-d14	92		59 - 136
Phenol-d5	53		22 - 120
2-Fluorophenol	66		35 - 120
2,4,6-Tribromophenol	111		41 - 120

Analytical Data

Client: R & C Formation Ltd.

Job Number: 460-140118-1

Client Sample ID: MW-5S

Lab Sample ID: 460-140118-2

Client Matrix: Water

Date Sampled: 08/31/2017 0941

Date Received: 08/31/2017 1305

8270D Semivolatile Organic Compounds (GC/MS)

Analysis Method:	8270D	Analysis Batch:	480-375450	Instrument ID:	HP5973W
Prep Method:	3510C	Prep Batch:	480-375178	Lab File ID:	W0334.D
Dilution:	1.0			Initial Weight/Volume:	250 mL
Analysis Date:	09/06/2017 2056			Final Weight/Volume:	1 mL
Prep Date:	09/05/2017 0836			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	91		46 - 120
2-Fluorobiphenyl	89		48 - 120
p-Terphenyl-d14	96		59 - 136
Phenol-d5	43		22 - 120
2-Fluorophenol	58		35 - 120
2,4,6-Tribromophenol	103		41 - 120

Analytical Data

Client: R & C Formation Ltd.

Job Number: 460-140118-1

Client Sample ID: MW-5S

Lab Sample ID: 460-140118-2

Client Matrix: Water

Date Sampled: 08/31/2017 0941

Date Received: 08/31/2017 1305

8270D Semivolatile Organic Compounds (GC/MS)

Analysis Method:	8270D	Analysis Batch:	480-375450	Instrument ID:	HP5973W
Prep Method:	3510C	Prep Batch:	480-375178	Lab File ID:	W0334.D
Dilution:	1.0			Initial Weight/Volume:	250 mL
Analysis Date:	09/06/2017 2056			Final Weight/Volume:	1 mL
Prep Date:	09/05/2017 0836			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: 460-140118-1

Client Sample ID: MW-7S

Lab Sample ID: 460-140118-3

Client Matrix: Water

Date Sampled: 08/31/2017 1016

Date Received: 08/31/2017 1305

8270D Semivolatile Organic Compounds (GC/MS)

Analysis Method:	8270D	Analysis Batch:	480-375450	Instrument ID:	HP5973W
Prep Method:	3510C	Prep Batch:	480-375178	Lab File ID:	W0335.D
Dilution:	1.0			Initial Weight/Volume:	245 mL
Analysis Date:	09/06/2017 2124			Final Weight/Volume:	1 mL
Prep Date:	09/05/2017 0836			Injection Volume:	2 uL

Analyte	Result (ug/L)	Qualifier	MDL	RL
2-Picoline	82	U	1.4	82
Pyridine	26	U	0.42	26

Surrogate	%Rec	Qualifier	Acceptance Limits
Nitrobenzene-d5	99		46 - 120
2-Fluorobiphenyl	93		48 - 120
p-Terphenyl-d14	111		59 - 136
Phenol-d5	51		22 - 120
2-Fluorophenol	65		35 - 120
2,4,6-Tribromophenol	96		41 - 120

Analytical Data

Client: R & C Formation Ltd.

Job Number: 460-140118-1

Client Sample ID: MW-7S

Lab Sample ID: 460-140118-3

Client Matrix: Water

Date Sampled: 08/31/2017 1016

Date Received: 08/31/2017 1305

8270D Semivolatile Organic Compounds (GC/MS)

Analysis Method:	8270D	Analysis Batch:	480-375450	Instrument ID:	HP5973W
Prep Method:	3510C	Prep Batch:	480-375178	Lab File ID:	W0335.D
Dilution:	1.0			Initial Weight/Volume:	245 mL
Analysis Date:	09/06/2017 2124			Final Weight/Volume:	1 mL
Prep Date:	09/05/2017 0836			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: 460-140118-1

Client Sample ID: MW-1S

Lab Sample ID: 460-140118-4

Client Matrix: Water

Date Sampled: 08/31/2017 1046

Date Received: 08/31/2017 1305

8270D Semivolatile Organic Compounds (GC/MS)

Analysis Method:	8270D	Analysis Batch:	480-375450	Instrument ID:	HP5973W
Prep Method:	3510C	Prep Batch:	480-375178	Lab File ID:	W0336.D
Dilution:	1.0			Initial Weight/Volume:	245 mL
Analysis Date:	09/06/2017 2153			Final Weight/Volume:	1 mL
Prep Date:	09/05/2017 0836			Injection Volume:	2 uL

Analyte	Result (ug/L)	Qualifier	MDL	RL
2-Picoline	82	U	1.4	82
Pyridine	26	U	0.42	26

Surrogate	%Rec	Qualifier	Acceptance Limits
Nitrobenzene-d5	97		46 - 120
2-Fluorobiphenyl	87		48 - 120
p-Terphenyl-d14	96		59 - 136
Phenol-d5	47		22 - 120
2-Fluorophenol	65		35 - 120
2,4,6-Tribromophenol	112		41 - 120

Analytical Data

Client: R & C Formation Ltd.

Job Number: 460-140118-1

Client Sample ID: MW-1S

Lab Sample ID: 460-140118-4

Client Matrix: Water

Date Sampled: 08/31/2017 1046

Date Received: 08/31/2017 1305

8270D Semivolatile Organic Compounds (GC/MS)

Analysis Method:	8270D	Analysis Batch:	480-375450	Instrument ID:	HP5973W
Prep Method:	3510C	Prep Batch:	480-375178	Lab File ID:	W0336.D
Dilution:	1.0			Initial Weight/Volume:	245 mL
Analysis Date:	09/06/2017 2153			Final Weight/Volume:	1 mL
Prep Date:	09/05/2017 0836			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: 460-140118-1

Client Sample ID: OW-7

Lab Sample ID: 460-140118-1

Client Matrix: Water

Date Sampled: 08/31/2017 0851

Date Received: 08/31/2017 1305

300.0 Anions, Ion Chromatography

Analysis Method: 300.0

N/A

Analysis Batch: 460-460889

Prep Batch: N/A

Instrument ID: IC A

Lab File ID: YA 2017-09-06-06-57.0

Dilution: 10

Initial Weight/Volume: 10 mL

Analysis Date: 09/06/2017 0657

Run Type: DL

Final Weight/Volume:

Prep Date: N/A

Injection Volume: 10 uL

Analyte	Result (mg/L)	Qualifier	MDL	RL
Sulfate	29.7		3.32	6.00

Analytical Data

Client: R & C Formation Ltd.

Job Number: 460-140118-1

Client Sample ID: MW-1S

Lab Sample ID: 460-140118-4

Date Sampled: 08/31/2017 1046

Client Matrix: Water

Date Received: 08/31/2017 1305

300.0 Anions, Ion Chromatography

Analysis Method:	300.0	Analysis Batch:	460-460889	Instrument ID:	IC A
	N/A	Prep Batch:	N/A	Lab File ID:	YA 2017-09-06-07-13.0
Dilution:	10			Initial Weight/Volume:	10 mL
Analysis Date:	09/06/2017 0713	Run Type:	DL	Final Weight/Volume:	
Prep Date:	N/A			Injection Volume:	10 uL

Analyte	Result (mg/L)	Qualifier	MDL	RL
Sulfate	26.5		3.32	6.00

Analytical Data

Client: R & C Formation Ltd.

Job Number: 460-140118-1

Client Sample ID: OW-7

Lab Sample ID: 460-140118-1

Client Matrix: Water

Date Sampled: 08/31/2017 0851

Date Received: 08/31/2017 1305

6010C Metals (ICP)

Analysis Method: 6010C

Prep Method: 3010A

Dilution: 1.0

Analysis Date: 09/07/2017 1306

Prep Date: 09/06/2017 0957

Analysis Batch: 460-461321

Prep Batch: 460-461037

Instrument ID: ICP5

Lab File ID: 461037D1.asc

Initial Weight/Volume: 50 mL

Final Weight/Volume: 50 mL

Analyte	Result (ug/L)	Qualifier	MDL	RL
Iron	12000		92.1	150
Manganese	7170		3.1	15.0

Analytical Data

Client: R & C Formation Ltd.

Job Number: 460-140118-1

Client Sample ID: MW-1S

Lab Sample ID: 460-140118-4

Date Sampled: 08/31/2017 1046

Client Matrix: Water

Date Received: 08/31/2017 1305

6010C Metals (ICP)

Analysis Method: 6010C

Analysis Batch: 460-461321

Instrument ID: ICP5

Prep Method: 3010A

Prep Batch: 460-461037

Lab File ID: 461037D1.asc

Dilution: 1.0

Initial Weight/Volume: 50 mL

Analysis Date: 09/07/2017 1310

Final Weight/Volume: 50 mL

Prep Date: 09/06/2017 0957

Analyte	Result (ug/L)	Qualifier	MDL	RL
Iron	16600		92.1	150
Manganese	1120		3.1	15.0

Analytical Data

Client: R & C Formation Ltd.

Job Number: 460-140118-1

General Chemistry

Client Sample ID: OW-7

Lab Sample ID: 460-140118-1

Date Sampled: 08/31/2017 0851

Client Matrix: Water

Date Received: 08/31/2017 1305

Analyte	Result	Qual	Units	MDL	RL	Dil	Method
Ammonia	13.6		mg/L	0.36	0.50	1.0	350.1
Analysis Batch: 460-461082 Analysis Date: 09/06/2017 1300							
Prep Batch: 460-460843 Prep Date: 09/05/2017 1415							
Nitrate as N	0.021	J	mg/L	0.010	0.10	1.0	SM 4500 NO3 F
Analysis Batch: 460-460323 Analysis Date: 09/01/2017 0424							

Analytical Data

Client: R & C Formation Ltd.

Job Number: 460-140118-1

General Chemistry

Client Sample ID: MW-1S

Lab Sample ID: 460-140118-4

Date Sampled: 08/31/2017 1046

Client Matrix: Water

Date Received: 08/31/2017 1305

Analyte	Result	Qual	Units	MDL	RL	Dil	Method
Ammonia	17.3		mg/L	0.36	0.50	1.0	350.1
Analysis Batch: 460-461082 Analysis Date: 09/06/2017 1306							
Prep Batch: 460-460843 Prep Date: 09/05/2017 1415							
Nitrate as N	0.10	U	mg/L	0.010	0.10	1.0	SM 4500 NO3 F
Analysis Batch: 460-460323 Analysis Date: 09/01/2017 0442							

DATA REPORTING QUALIFIERS

Client: R & C Formation Ltd.

Job Number: 460-140118-1

Lab Section	Qualifier	Description
GC/MS VOA	U	Analyzed for but not detected.
GC/MS Semi VOA	U	Analyzed for but not detected.
	J	Indicates an estimated value.
	*	Surrogate is outside acceptance limits.
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: 460-140118-1

QC Association Summary

Lab Sample ID	Client Sample ID	Report Basis	Client Matrix	Method	Prep Batch
GC/MS VOA					
Analysis Batch:460-460485					
LCS 460-460485/4	Lab Control Sample	T	Water	8260C	
LCSD 460-460485/5	Lab Control Sample Duplicate	T	Water	8260C	
MB 460-460485/8	Method Blank	T	Water	8260C	
460-140118-2	MW-5S	T	Water	8260C	
460-140118-3	MW-7S	T	Water	8260C	
460-140118-4	MW-1S	T	Water	8260C	
460-140118-5	Trip Blank	T	Water	8260C	
Analysis Batch:460-460646					
LCS 460-460646/3	Lab Control Sample	T	Water	8260C	
MB 460-460646/7	Method Blank	T	Water	8260C	
460-140118-1	OW-7	T	Water	8260C	

Report Basis

T = Total

GC/MS Semi VOA

Prep Batch: 480-375178					
LCS 480-375178/2-A	Lab Control Sample	T	Water	3510C	
MB 480-375178/1-A	Method Blank	T	Water	3510C	
460-140118-1	OW-7	T	Water	3510C	
460-140118-1DL	OW-7	T	Water	3510C	
460-140118-2	MW-5S	T	Water	3510C	
460-140118-3	MW-7S	T	Water	3510C	
460-140118-4	MW-1S	T	Water	3510C	
Analysis Batch:480-375450					
LCS 480-375178/2-A	Lab Control Sample	T	Water	8270D	480-375178
MB 480-375178/1-A	Method Blank	T	Water	8270D	480-375178
460-140118-1	OW-7	T	Water	8270D	480-375178
460-140118-2	MW-5S	T	Water	8270D	480-375178
460-140118-3	MW-7S	T	Water	8270D	480-375178
460-140118-4	MW-1S	T	Water	8270D	480-375178
Analysis Batch:480-375652					
460-140118-1DL	OW-7	T	Water	8270D	480-375178

Report Basis

T = Total

TestAmerica Edison

Quality Control Results

Client: R & C Formation Ltd.

Job Number: 460-140118-1

QC Association Summary

Lab Sample ID	Client Sample ID	Report Basis	Client Matrix	Method	Prep Batch
Metals					
Prep Batch: 460-461037					
LCS 460-461037/2-A	Lab Control Sample	T	Water	3010A	
MB 460-461037/1-A	Method Blank	T	Water	3010A	
460-140118-1	OW-7	T	Water	3010A	
460-140118-4	MW-1S	T	Water	3010A	
Analysis Batch:460-461321					
LCS 460-461037/2-A	Lab Control Sample	T	Water	6010C	460-461037
MB 460-461037/1-A	Method Blank	T	Water	6010C	460-461037
460-140118-1	OW-7	T	Water	6010C	460-461037
460-140118-4	MW-1S	T	Water	6010C	460-461037
Report Basis					
T = Total					
General Chemistry					
Analysis Batch:460-460323					
LCSSRM 460-460323/10	LCS-Certified Reference Material	T	Water	SM 4500 NO3 F	
LCSSRM 460-460323/11	LCS-Certified Reference Material	T	Water	SM 4500 NO3 F	
MB 460-460323/9	Method Blank	T	Water	SM 4500 NO3 F	
460-140118-1	OW-7	T	Water	SM 4500 NO3 F	
460-140118-4	MW-1S	T	Water	SM 4500 NO3 F	
Prep Batch: 460-460843					
LCS 460-460843/2-A	Lab Control Sample	T	Water	Distill/Ammonia	
MB 460-460843/1-A	Method Blank	T	Water	Distill/Ammonia	
460-140118-1	OW-7	T	Water	Distill/Ammonia	
460-140118-4	MW-1S	T	Water	Distill/Ammonia	
Analysis Batch:460-461082					
LCS 460-460843/2-A	Lab Control Sample	T	Water	350.1	460-460843
MB 460-460843/1-A	Method Blank	T	Water	350.1	460-460843
460-140118-1	OW-7	T	Water	350.1	460-460843
460-140118-4	MW-1S	T	Water	350.1	460-460843

Report Basis

T = Total

Quality Control Results

Client: R & C Formation Ltd.

Job Number: 460-140118-1

QC Association Summary

Lab Sample ID	Client Sample ID	Report Basis	Client Matrix	Method	Prep Batch
HPLC/IC					
Analysis Batch:460-460889					
LCS 460-460889/5	Lab Control Sample	T	Water	300.0	
LCS 460-460889/6	Lab Control Sample	T	Water	300.0	
MB 460-460889/3	Method Blank	T	Water	300.0	
460-140118-1DL	OW-7	T	Water	300.0	
460-140118-4DL	MW-1S	T	Water	300.0	

Report Basis

T = Total

Client: R & C Formation Ltd.

Job Number: 460-140118-1

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
460-140118-1	OW-7	98	96	86	94
460-140118-2	MW-5S	92	111	87	95
460-140118-3	MW-7S	91	109	84	93
460-140118-4	MW-1S	89	113	83	95
460-140118-5	Trip Blank	91	108	86	92
MB 460-460485/8		90	109	83	90
MB 460-460646/7		100	98	88	98
LCS 460-460485/4		84	115	93	86
LCS 460-460646/3		94	105	96	87
LCSD 460-460485/5		86	114	92	84

Surrogate	Acceptance Limits
DCA = 1,2-Dichloroethane-d4 (Surr)	74-132
BFB = Bromofluorobenzene	77-124
TOL = Toluene-d8 (Surr)	80-120
DBFM = Dibromofluoromethane (Surr)	72-131

Client: R & C Formation Ltd.

Job Number: 460-140118-1

Surrogate Recovery Report

8270D Semivolatile Organic Compounds (GC/MS)

Client Matrix: Water

Lab Sample ID	Client Sample ID	NBZ %Rec	FBP %Rec	TPHd14 %Rec	PHL %Rec	2FP %Rec	TBP %Rec
460-140118-1	OW-7	98	93	85	46	64	117
460-140118-1 DL	OW-7 DL	93	94	92	53	66	111
460-140118-2	MW-5S	91	89	96	43	58	103
460-140118-3	MW-7S	99	93	111	51	65	96
460-140118-4	MW-1S	97	87	96	47	65	112
MB 480-375178/1-A		104	92	113	53	71	108
LCS 480-375178/2-A		99	97	103	60	76	121*

Surrogate	Acceptance Limits
NBZ = Nitrobenzene-d5	46-120
FBP = 2-Fluorobiphenyl	48-120
TPHd14 = p-Terphenyl-d14	59-136
PHL = Phenol-d5	22-120
2FP = 2-Fluorophenol	35-120
TBP = 2,4,6-Tribromophenol	41-120

Quality Control Results

Client: R & C Formation Ltd.

Job Number: 460-140118-1

Method Blank - Batch: 460-460485

Method: 8260C

Preparation: 5030C

Lab Sample ID:	MB 460-460485/8	Analysis Batch:	460-460485	Instrument ID:	CVOAMS2
Client Matrix:	Water	Prep Batch:	N/A	Lab File ID:	B20307.D
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	5 mL
Analysis Date:	09/01/2017 2303	Units:	ug/L	Final Weight/Volume:	5 mL
Prep Date:	09/01/2017 2303				
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)	90	74 - 132
Bromofluorobenzene	109	77 - 124
Toluene-d8 (Surr)	83	80 - 120
Dibromofluoromethane (Surr)	90	72 - 131

Lab Control Sample/

Method: 8260C

Lab Control Sample Duplicate Recovery Report - Batch: 460-460485

Preparation: 5030C

LCS Lab Sample ID:	LCS 460-460485/4	Analysis Batch:	460-460485	Instrument ID:	CVOAMS2
Client Matrix:	Water	Prep Batch:	N/A	Lab File ID:	B20303.D
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	5 mL
Analysis Date:	09/01/2017 2129	Units:	ug/L	Final Weight/Volume:	5 mL
Prep Date:	09/01/2017 2129				5 mL
Leach Date:	N/A				

LCSD Lab Sample ID:	LCSD 460-460485/5	Analysis Batch:	460-460485	Instrument ID:	CVOAMS2
Client Matrix:	Water	Prep Batch:	N/A	Lab File ID:	B20304.D
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	5 mL
Analysis Date:	09/01/2017 2152	Units:	ug/L	Final Weight/Volume:	5 mL
Prep Date:	09/01/2017 2152				5 mL
Leach Date:	N/A				

Analyte	% Rec.		Limit	RPD	RPD Limit	LCS Qual	LCSD Qual
	LCS	LCSD					
Benzene	104	105	77 - 121	1	30		
Toluene	97	100	80 - 120	3	30		
Ethylbenzene	96	100	80 - 120	4	30		
Xylenes, Total	98	102	80 - 120	4	30		
Surrogate	LCS % Rec		LCSD % Rec		Acceptance Limits		
1,2-Dichloroethane-d4 (Surr)	84		86		74 - 132		
Bromofluorobenzene	115		114		77 - 124		
Toluene-d8 (Surr)	93		92		80 - 120		
Dibromofluoromethane (Surr)	86		84		72 - 131		

Quality Control Results

Client: R & C Formation Ltd.

Job Number: 460-140118-1

Method Blank - Batch: 460-460646

Method: 8260C

Preparation: 5030C

Lab Sample ID:	MB 460-460646/7	Analysis Batch:	460-460646	Instrument ID:	CVOAMS2
Client Matrix:	Water	Prep Batch:	N/A	Lab File ID:	B20335.D
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	5 mL
Analysis Date:	09/03/2017 0657	Units:	ug/L	Final Weight/Volume:	5 mL
Prep Date:	09/03/2017 0657				
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)	100	74 - 132
Bromofluorobenzene	98	77 - 124
Toluene-d8 (Surr)	88	80 - 120
Dibromofluoromethane (Surr)	98	72 - 131

Lab Control Sample - Batch: 460-460646

Method: 8260C

Preparation: 5030C

Lab Sample ID:	LCS 460-460646/3	Analysis Batch:	460-460646	Instrument ID:	CVOAMS2
Client Matrix:	Water	Prep Batch:	N/A	Lab File ID:	B20331.D
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	5 mL
Analysis Date:	09/03/2017 0523	Units:	ug/L	Final Weight/Volume:	5 mL
Prep Date:	09/03/2017 0523				
Leach Date:	N/A				

Analyte	Spike Amount	Result	% Rec.	Limit	Qual
Benzene	20.0	20.9	104	77 - 121	
Toluene	20.0	19.4	97	80 - 120	
Ethylbenzene	20.0	20.0	100	80 - 120	
Xylenes, Total	40.0	39.2	98	80 - 120	

Surrogate	% Rec	Acceptance Limits
1,2-Dichloroethane-d4 (Surr)	94	74 - 132
Bromofluorobenzene	105	77 - 124
Toluene-d8 (Surr)	96	80 - 120
Dibromofluoromethane (Surr)	87	72 - 131

Quality Control Results

Client: R & C Formation Ltd.

Job Number: 460-140118-1

Method Blank - Batch: 480-375178

Method: 8270D

Preparation: 3510C

Lab Sample ID:	MB 480-375178/1-A	Analysis Batch:	480-375450	Instrument ID:	HP5973W
Client Matrix:	Water	Prep Batch:	480-375178	Lab File ID:	W0329.D
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	250 mL
Analysis Date:	09/06/2017 1833	Units:	ug/L	Final Weight/Volume:	1 mL
Prep Date:	09/05/2017 0836			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	104	46 - 120
2-Fluorobiphenyl	92	48 - 120
p-Terphenyl-d14	113	59 - 136
Phenol-d5	53	22 - 120
2-Fluorophenol	71	35 - 120
2,4,6-Tribromophenol	108	41 - 120

Method Blank TICs- Batch: 480-375178

Cas Number	Analyte	RT	Est. Result (ug/	Qual
504-29-0	2-Aminopyridine TIC	5.27	10	U

Lab Control Sample - Batch: 480-375178

Method: 8270D

Preparation: 3510C

Lab Sample ID:	LCS 480-375178/2-A	Analysis Batch:	480-375450	Instrument ID:	HP5973W
Client Matrix:	Water	Prep Batch:	480-375178	Lab File ID:	W0330.D
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	250 mL
Analysis Date:	09/06/2017 1902	Units:	ug/L	Final Weight/Volume:	1 mL
Prep Date:	09/05/2017 0836			Injection Volume:	2 uL
Leach Date:	N/A				

Analyte	Spike Amount	Result	% Rec.	Limit	Qual
Pyridine	64.0	46.0	72	10 - 120	

Surrogate	% Rec	Acceptance Limits
Nitrobenzene-d5	99	46 - 120
2-Fluorobiphenyl	97	48 - 120
p-Terphenyl-d14	103	59 - 136
Phenol-d5	60	22 - 120
2-Fluorophenol	76	35 - 120
2,4,6-Tribromophenol	121	41 - 120

Quality Control Results

Client: R & C Formation Ltd.

Job Number: 460-140118-1

Method Blank - Batch: 460-460889

Method: 300.0
Preparation: N/A

Lab Sample ID:	MB 460-460889/3	Analysis Batch:	460-460889	Instrument ID:	IC A
Client Matrix:	Water	Prep Batch:	N/A	Lab File ID:	YA 2017-09-06-05-19.d
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	10 mL
Analysis Date:	09/06/2017 0519	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	0.33	0.60

Lab Control Sample - Batch: 460-460889

Method: 300.0
Preparation: N/A

Lab Sample ID:	LCS 460-460889/5	Analysis Batch:	460-460889	Instrument ID:	IC A
Client Matrix:	Water	Prep Batch:	N/A	Lab File ID:	YA 2017-09-06-05-51.d
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	10 mL
Analysis Date:	09/06/2017 0551	Units:	mg/L	Final Weight/Volume:	
Prep Date:	N/A			Injection Volume:	10 uL
Leach Date:	N/A				

Analyte	Spike Amount	Result	% Rec.	Limit	Qual
Sulfate	7.50	6.896	92	90 - 110	

Lab Control Sample - Batch: 460-460889

Method: 300.0
Preparation: N/A

Lab Sample ID:	LCS 460-460889/6	Analysis Batch:	460-460889	Instrument ID:	IC A
Client Matrix:	Water	Prep Batch:	N/A	Lab File ID:	YA 2017-09-06-06-08.d
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	10 mL
Analysis Date:	09/06/2017 0608	Units:	mg/L	Final Weight/Volume:	
Prep Date:	N/A			Injection Volume:	10 uL
Leach Date:	N/A				

Analyte	Spike Amount	Result	% Rec.	Limit	Qual
Sulfate	7.50	6.938	93	90 - 110	

Quality Control Results

Client: R & C Formation Ltd.

Job Number: 460-140118-1

Method Blank - Batch: 460-461037

Method: 6010C
Preparation: 3010A

Lab Sample ID:	MB 460-461037/1-A	Analysis Batch:	460-461321	Instrument ID:	ICP5
Client Matrix:	Water	Prep Batch:	460-461037	Lab File ID:	461037D1.asc
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	50 mL
Analysis Date:	09/07/2017 1254	Units:	ug/L	Final Weight/Volume:	50 mL
Prep Date:	09/06/2017 0957				
Leach Date:	N/A				

Analyte	Result	Qual	MDL	RL
Iron	150	U	92.1	150
Manganese	15.0	U	3.1	15.0

Lab Control Sample - Batch: 460-461037

Method: 6010C
Preparation: 3010A

Lab Sample ID:	LCS 460-461037/2-A	Analysis Batch:	460-461321	Instrument ID:	ICP5
Client Matrix:	Water	Prep Batch:	460-461037	Lab File ID:	461037D1.asc
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	50 mL
Analysis Date:	09/07/2017 1238	Units:	ug/L	Final Weight/Volume:	50 mL
Prep Date:	09/06/2017 0957				
Leach Date:	N/A				

Analyte	Spike Amount	Result	% Rec.	Limit	Qual
Iron	1000	990.2	99	80 - 120	
Manganese	500	524.1	105	80 - 120	

Quality Control Results

Client: R & C Formation Ltd.

Job Number: 460-140118-1

Method Blank - Batch: 460-460843

Method: 350.1

Preparation: Distill/Ammonia

Lab Sample ID: MB 460-460843/1-A
Client Matrix: Water
Dilution: 1.0
Analysis Date: 09/06/2017 1250
Prep Date: 09/05/2017 1415
Leach Date: N/A

Analysis Batch: 460-461082
Prep Batch: 460-460843
Leach Batch: N/A
Units: mg/L

Instrument ID: Lachat2
Lab File ID: A170906.FDT
Initial Weight/Volume: 50 mL
Final Weight/Volume: 50 mL

Analyte	Result	Qual	MDL	RL
Ammonia	0.10	U	0.072	0.10

Lab Control Sample - Batch: 460-460843

Method: 350.1

Preparation: Distill/Ammonia

Lab Sample ID: LCS 460-460843/2-A
Client Matrix: Water
Dilution: 1.0
Analysis Date: 09/06/2017 1252
Prep Date: 09/05/2017 1415
Leach Date: N/A

Analysis Batch: 460-461082
Prep Batch: 460-460843
Leach Batch: N/A
Units: mg/L

Instrument ID: Lachat2
Lab File ID: A170906.FDT
Initial Weight/Volume: 50 mL
Final Weight/Volume: 50 mL

Analyte	Spike Amount	Result	% Rec.	Limit	Qual
Ammonia	1.00	1.02	102	87 - 114	

Quality Control Results

Client: R & C Formation Ltd.

Job Number: 460-140118-1

Method Blank - Batch: 460-460323

Method: SM 4500 NO3 F
Preparation: N/A

Lab Sample ID:	MB 460-460323/9	Analysis Batch:	460-460323	Instrument ID:	Lachat1
Client Matrix:	Water	Prep Batch:	N/A	Lab File ID:	N170901.FDT
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	
Analysis Date:	09/01/2017 0407	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	0.010	0.10

LCS-Certified Reference Material - Batch: 460-460323

Method: SM 4500 NO3 F
Preparation: N/A

Lab Sample ID:	LCSSRM 460-460323/11	Analysis Batch:	460-460323	Instrument ID:	Lachat1
Client Matrix:	Water	Prep Batch:	N/A	Lab File ID:	N170901.FDT
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	
Analysis Date:	09/01/2017 0409	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	1.81	1.79	99.2	87.3 - 111.0	

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 1

Name (for report and invoice) Bob Casson		Samplers Name (Printed) De Costanza/Chris Nickl		Site/Project Identification Nepera Harrison NY	
Company Ric 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:	
City Babylon, NY		State NY		Job No: 140118	
Phone 631-482-9596		Fax 631-482-9593		Project No:	
Sample Identification		Date	Time	Matrix	No. of Cont.
OW-7	8/31/17	8:51	AG	9	1
MW-55		9:41	1	5	2
MW-75		10:16	1	5	3
MW-15		10:16	1	9	4
Preservation Used: 1 = ICE 2 = HCl 3 = H₂SO₄ 4 = HNO₃ 5 = NaOH 6 = Other _____, 7 = Other _____ Soil: _____ Water: _____					
Special Instructions: Pyridine, alpha picoline, diamine pyridine, Fe sulfate, ammonia, nitric, organic, Water Metals Filtered (Yes/No)? No					
Relinquished by De Costanza	Company Ric Formation	Date / Time 8/31/17 11:50	Received by Wiley Manganari	Company Accurate Louder	
Relinquished by Wiley Manganari	Company Accurate Louder	Date / Time 8/31/17 13:05	Received by De Costanza	Company Accurate Louder	
Relinquished by	Company	Date / Time	Received by	Company	
Relinquished by	Company	Date / Time	Received by	Company	
Relinquished by	Company	Date / Time	Received by	Company	



460-140118 Chain of Custody

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 (07/15)

140118

79

	RAW	CORRECTED		RAW	CORRECTED		RAW	CORRECTED
Cooler #1:	14 °C	14 °C	Cooler #4:	°C	°C	Cooler #7:	°C	°C
Cooler #2:	°C	°C	Cooler #5:	°C	°C	Cooler #8:	°C	°C
Cooler #3:	°C	°C	Cooler #6:	°C	°C	Cooler #9:	°C	°C

	RAW	CORRECTED		RAW	CORRECTED		RAW	CORRECTED
Cooler #1:	14 °C	14 °C	Cooler #4:	°C	°C	Cooler #7:	°C	°C
Cooler #2:	°C	°C	Cooler #5:	°C	°C	Cooler #8:	°C	°C
Cooler #3:	°C	°C	Cooler #6:	°C	°C	Cooler #9:	°C	°C

[illegible]

Page 45 of 48

Login Sample Receipt Checklist

Client: R & C Formation Ltd.

Job Number: 460-140118-1

Login Number: 140118

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	1.4 ° C IR #9
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: 460-140118-1

Login Number: 140118
List Number: 2
Creator: Hulbert, Michael J

List Source: TestAmerica Buffalo
List Creation: 09/02/17 11:08 AM

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	4.0 #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.	N/A	
Chlorine Residual checked.	N/A	

100 Crystal Run Road, Suite 101, Middletown, NY 10941
T 877.294.9070 | F 845.692.5894 | W www.cornerstoneeg.com

January 5, 2018

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 – 4th Quarter 2017
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 fourth quarter of 2017 project progress report for the Harriman Site, located in Harriman, New York (Harriman Site).

Site Remediation Activities Performed (October – December 2017)

- 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 fourth quarter of 2017, 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. As reported in the first quarter of 2016 progress report, the biosparge system sustained limited damage during the site demolition activities and 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 October 25, 2017. The interim cover remains in good condition. The cover is well vegetated, and there are no signs of erosion.
- The parking lot pavement remains generally intact and functioning as a cover. Generally small potholes were observed in the parking lot area, and additional maintenance may be advisable in the near future, pending weather conditions.
- 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 October 25, 2017 inspection.

- As described in the second quarter 2016 progress report, product was not observed on the absorbent socks in wells SVE-1, SVE-3, SVE-4, and VER-2 during the December 2015 and March 2016 inspections; therefore, the absorbent socks were removed during the June 2016 inspection, with the intent of checking the wells for sheen or product without the absorbent socks present. Since removal of the absorbent socks in June 2016, the wells have been checked during each inspection for evidence of product or sheen, both visually and with an interface probe, and during the April 2017 inspection, an absorbent sock was placed in VER-2 based on an observed sheen, and an absorbent sock remains in this well as noted in the attached inspection report. Wells SVE-1, SVE-3, and SVE-4 continue to not have any evidence of product or sheet and; therefore, the Trust has discontinued the use of absorbent socks in these wells. Cornerstone, on behalf of the Trust, previously sent a separate letter to the NYSDEC documenting the request to modify the use of absorbent socks.
- 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 fourth five-quarter routine sampling event was completed during the beginning of the third quarter of 2017 (slightly postponed to accommodate an NYSDEC PFC sampling event), and reported in the third quarter 2017 progress report. 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 third quarter of 2018.
- 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 1st Quarter 2018 (January – March 2018)

- Perform the regularly scheduled, quarterly monitoring well and riverbank inspections.

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



Gary J. DiPippo, P.E.
Client Services Manager

Enclosures: Inspection Reports

cc: T. Lahr
D. Crosby
S. Levine
C. Clark
J. Jones
K. Might
M. Robinson

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

Date 10/25/2017

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	OK	OK	OK		
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 10/25/2017

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	OK	OK	D		
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 repair 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 10/25/2017

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	OK	OK		
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		
MW-20 DR*	2	Flushmount	OK	OK	OK	OK	OK	OK		

Field Technician: Dan Wheeler

(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: 25-Oct-17

INSPECTION (Check): ANNUAL

INSPECTOR: Dan Wheeler

QUARTERLY **X**

		STATUS	COMMENTS
IRM COVER AND SILT FENCE			
A. General condition of cover material	<u>Good</u>		Riverbank cover in good condition, no signs of erosion, no white material showing. Dense vegetation on riverbank slope.
B. Settlement of covered area	<u>Adequate</u>		Generally small potholes present in parking lot area, although pavement cover generally remains intact.
C. General condition of silt fence	<u>N/A</u>		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:

10/25/2017

DTP	DTW
0	0.3
0	3.5
0	3.71
0	3.00*



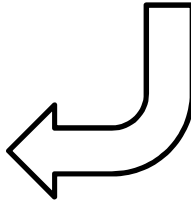
SVE-1
SVE-2
SVE-3
SVE-4



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

DTP	DTW
0	8.67
9.16	9.2
0	8.85
0	7.55

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 were in well.

Comments:

Well checked for potential presence of product after absorbent sock removed

Absorbent sock in VER-2 at 25% of capacity. No replacement necessary.

Presence of product or sheen not observed in remaining wells.

* Bottom of SVE-4 partially filled in due to prior demolition work.
