2016
Periodic Review Report
Former Davis-Howland Oil Corporation Site
NYSDEC Site No. 8-28-088
City of Rochester
Monroe County, New York

January 2017

Prepared for:

NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION
DEPARTMENT OF ENVIRONMENTAL REMEDIATION
625 Broadway, 12th FLOOR
Albany, New York 12233-7013

Prepared by:

ECOLOGY AND ENVIRONMENT ENGINEERING, P.C.
368 Pleasant View Drive
Lancaster, New York 14086

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List of Abbreviations and Acronyms

ALTA	American Land Title Association
AS	air sparge
bgs	below ground surface
BTEX	benzene, toluene, ethyl benzene, and xylene
CATOX	catalytic oxidizer
cVOC	chlorinated volatile organic compound
DHOC	Former Davis-Howland Oil Corporation Site
DCA	1,1-dichloroethane
DCB	dichlorobenzene
DCE	dichloroethene
DUSR	Data Usability Summary Report
EEEPC	Ecology and Environment Engineering, P.C.
EC	Engineering Controls
EPA	(United States) Environmental Protection Agency
FS	feasibility study
ft/ft	feet per foot
IC	Institutional Controls
IDW	investigation-derived waste
µg/L	micrograms per liter
MCDES	Monroe County Department of Environmental Services – Industrial Waste Section
MS/MSD	matrix spike/matrix spike duplicate
NYSDEC	New York State Department of Environmental Conservation
O&M	operations and maintenance
OM&M	operations, maintenance, and monitoring
ORP	
PAH	polycyclic aromatic hydrocarbon

List of Abbreviations and Acronyms (cont.)

PCE	perchloroethylene or tetrachloroethene
PPE	personal protective equipment
PRR	Periodic Review Report
Popli	Design Group
QA/QC	quality assurance/quality control
RI	remedial investigation
ROD	record of decision
RSO	Remedial Site Optimization
SMP	Site Management Plan
SOW	scope of work
SVE	soil vapor extraction
SVOC	semivolatile organic compound
TCA	trichloroethane
TCE	trichloroethene
TPH	total petroleum hydrocarbon
VFD	variable frequency drive
VOC	volatile organic compound

Enclosure 1

Engineering Controls – Engineering Standby Contractor Certification Form

Former Davis-Howland Oil Corporation Site
NYSDEC Site No. 8-28-088

Enclosure 1
Engineering Controls - Standby Consultant/Contractor Certification Form

Site Details **Box 1**

Site No. 828088

Site Name Davis-Howland Oil Corporation

Site Address: 200 Anderson Avenue Zip Code: 14607
City/Town: Rochester
County: Monroe
Site Acreage: 0.2

Reporting Period: December 31, 2015 to December 31, 2016

	YES	NO
1. Is the information above correct?	☒	☐
If NO, include handwritten above or on a separate sheet.		
2. To your knowledge has some or all of the site property been sold, subdivided, merged, or undergone a tax map amendment during this Reporting Period?	☐	☒
3. To your knowledge has there been any change of use at the site during this Reporting Period (see 6NYCRR 375-1.11(d))?	☐	☒
4. To your knowledge have any federal, state, and/or local permits (e.g., building, discharge) been issued for or at the property during this Reporting Period?	☐	☒
If you answered YES to questions 2 thru 4, include documentation or evidence that documentation has been previously submitted with this certification form.		
5. To your knowledge is the site currently undergoing development?	☐	☒

Box 2

	YES	NO
6. Is the current site use consistent with the use(s) listed below? Industrial	☒	☐
7. Are all ICs/ECs in place and functioning as designed?	☒	☐

IF THE ANSWER TO EITHER QUESTION 6 OR 7 IS NO, sign and date below and contact the DEC PM regarding the development of a Corrective Measures Work Plan to address these issues.

Signature of Standby Consultant/Contractor Date

SITE NO. 828088 **Box 3**

Description of Institutional Controls

Parcel	Owner	Institutional Control
106.84-1-6	Samille, Inc., Lawrence R. Klepper	Monitoring Plan Site Management Plan O&M Plan Ground Water Use Restriction Soil Management Plan Landuse Restriction IC/EC Plan

An Environmental Notice was filed with Monroe County clerk on 8/15/2013 in Book 11290, pages 171-176 as miscellaneous record. The Controls requires:

No disturbance that threatens the integrity of the Engineering controls, no distrubance of the engineering controls, adherence to the Site Management Plan, allowance of access by the NYSDEC, land use is to be used for industrial use only, and no groundwater water is to be used for drinking water unless properly treated.

Box 4

Description of Engineering Controls

Parcel	Engineering Control
106.84-1-6	Groundwater Treatment System Air Sparging/Soil Vapor Extraction

The engineering control on this site parcel is a dual-phase groundwater system with air sparge below the watertable, shallow groundwater pumping, and soil-vapor extraction.

The sparge points AS-29, AS-30, AS-39, AS-40, AS-41, AS-42, and AS-43 inject air into saturated soil below the watertable.

Working in conjunction with the sparge points, SVEP-3, SVEP-4, SVEP-5, SVEP-6, and SVEP-7 are shallow vacuum points which remove the injected air which has passed through the water and soil.

P-3 overburden well belongs to a network of shallow groundwater pumping wells which lower the water table to enhance organic vapor stripping through the soil.

Box 5

Periodic Review Report (PRR) Certification Statements

1. I certify by checking "YES" below that:

   a) the Periodic Review report and all attachments were prepared under the direction of, and reviewed by, the party making the certification, including data and material prepared by previous contractors for the current certifying period, if any;

   b) to the best of my knowledge and belief, the work and conclusions described in this certification are in accordance with the requirements of the site remedial program, and generally accepted engineering practices; and the information presented is accurate and compete.

YES	NO
☒	☐

2. If this site has an IC/EC Plan (or equivalent as required in the Decision Document), for each Institutional or Engineering control listed in Boxes 3 and/or 4, I certify by checking "YES" below that all of the following statements are true:

   (a) the Institutional Control and/or Engineering Control(s) employed at this site is unchanged since the date that the Control was put in-place, or was last approved by the Department;

   (b) nothing has occurred that would impair the ability of such Control, to protect public health and the environment;

   (c) nothing has occurred that would constitute a failure to comply with the Site Management Plan, or equivalent if no Site Management Plan exists.

YES	NO
☒	☐

IF THE ANSWER TO QUESTION 2 IS NO, sign and date below and contact the DEC PM regarding the development of a Corrective Measures Work Plan to address these issues.

Signature of Standby Consultant/Contractor

Date

Box 6

IC/EC CERTIFICATIONS

Professional Engineer Signature

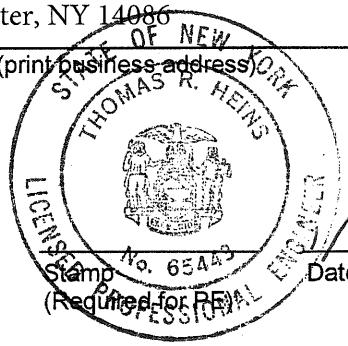
I certify that all information in Boxes 2 through 5 are true. I understand that a false statement made herein is punishable as a Class "A" misdemeanor, pursuant to Section 210.45 of the Penal Law.

I Thomas R. Heins at Ecology and Environment Engineering, P.C.
print name

368 Pleasant View Drive

Lancaster, NY 14086,
(print business address)

am certifying as a Professional Engineer.



Signature of Professional Engineer

Stamp (Required for PE)

1/27/17
Date

1 Introduction and Background

1.1 Introduction

This Periodic Review Report (PRR) provides information on the operations, maintenance, monitoring, compliance, and operating costs at the former Davis-Howland Oil Corporation (DHOC) Remediation Site (hereinafter referred to as the "Site") during calendar year 2016. This PRR also provides information concerning the institutional and engineering controls (ICs/ECs) facilitating the remedial cleanup of the Site.

This PRR was prepared by Ecology and Environment Engineering, P.C. (EEEPC) in accordance with the requirements in the *Site Management Plan, Former Davis-Howland Oil Corporation Site, NYSDEC Site No. 8-28-088* (EEEPC 2014).

1.2 Site Description

The Site was used from 1942 to 1972 to produce industrial chemicals, oils, greases, and other lubricants. From 1972 to 1994, the Site was used by DHOC to process and recycle waste oil, grease, and other lubricants. In 1994, DHOC closed and all manufacturing and product-processing operations ceased.

Between 1974 and the early 1990s, the New York State Department of Environmental Conservation (NYSDEC) received reports of releases of materials at the Site, including waste oil, mineral oil, hydrochloric acid, and sulfuric acid. However, no single incident has been identified that can account for a majority of the contamination now found at the Site. NYSDEC inspected the Site in June 1991 and found several hundred drums of oils, solvents, and other materials. Some of the drums were leaking, and several areas with stained surficial soil also were found.

In 1993, the Site was listed on the New York State Inactive Hazardous Waste Disposal Site Remedial Program Registry as a Class 2 Site. The Site was defined as a single parcel (ID No. 106.84-1-6) located at 192 through 200 Anderson Avenue in the city of Rochester, Monroe County, New York (see Figure 1-1). Documentation in NYSDEC's Environmental Site Remediation Database defines the Site as encompassing the parcels described as 190 through 220 Anderson Avenue and the portion of 176 Anderson Avenue immediately north and west of 190 through 220 Anderson Avenue.

Remedial actions have been performed and remedial systems have been installed at the Site, specifically at the parcel located at 192 through 200 Anderson Avenue, the adjacent parcels at 190 and 220 Anderson Avenue, the portion of 176 Anderson Avenue immediately north and west of 190 through 220 Anderson Avenue, a portion of the CSX Railroad right-of-way to the north of 176 Anderson Avenue, and a small area south of Anderson Avenue encompassing the northern portions of 183 through 185 Anderson Avenue and 15 through 17 Norwood Avenue.

The approximately 1.5-acre Site is located in an area that includes residences and commercial and industrial facilities. No significant surface water is located in the immediate vicinity of the Site. Figure 1-2 presents the general Site layout. Groundwater and soil vapor at the Site are treated via multiple systems. A detailed description of each process and treatment system is provided below.

1.3 Air Sparge/Soil Vapor Extraction (AS/SVE) System

The Air Sparge/Soil Vapor Extraction (AS/SVE) system is a shallow groundwater remedy that has also contributed to the cleanup of VOC contamination in the site soils. The AS/SVE system was installed in shallow soils under an asphalt cap in the area to the north of the Site buildings and also under the Site building slabs. The AS components of the system utilize a low-pressure compressor designed to operate on a continuous basis to inject air into the soil via sparge points located around the Site. Forty-seven air sparging points were installed approximately 12 feet below ground surface (bgs) inside and outside the buildings located at 200 Anderson Avenue. The SVE system extracts soil vapor under negative pressure from the air-sparging treatment zone via a network of outdoor and indoor underground collection piping. The collection piping consists of lateral collection slotdrains (primarily outdoor) or collection points (indoor). The soil vapors are collected at a central location (treatment trailer) and discharged to the atmosphere. Three pumping wells (P-1, P-2, and P-3) are also associated with this system to maintain groundwater levels at the site at 4 feet below the ground surface. These pumping wells are also part of the groundwater pump-and-treat system and pump to the air stripper, which removes VOCs from the groundwater.

1.4 Groundwater Remediation System

The groundwater treatment system consists of five pumping wells, which are capable of processing a combined flow of up to 30 gallons of water per minute on a continuous basis. Groundwater wells PW-1 and PW-2 were installed as deep bedrock groundwater pumping wells to extract groundwater from the bedrock aquifer. Overburden pumping wells P-1, P-2, and P-3 were installed to keep the shallow aquifer groundwater levels below the elevation of the SVE lines and also remove VOC contamination in the overburden groundwater. P-1 was shut down indefinitely in November 2013 following recommendations in the 2012 PRR. The remaining four active pumping wells pump groundwater to the treatment trailer for processing. All of the groundwater pumping wells cycle on and off at preset water levels within each well.

The groundwater VOC treatment system in the treatment trailer consists of influent meters; a 500-gallon equilization tank; a sequestering agent feed tank; a feed pump; a five-tray, low-profile air stripper with air blower; an effluent pump; an effluent meter; and an effluent discharge line to the main trunk sewer under Anderson Avenue.

Groundwater is pumped from the shallow and bedrock-level extraction wells to the equalization tank, where it is then pumped to the air stripper on a batch basis. Contaminated groundwater from the top of the air stripper tower drains down over a series of five stacked orifice trays in the column. A fan forces air countercurrent to the water flow and volatizes the VOCs in the groundwater. The air discharged from the air stripper is vented to the atmosphere. A sump at the bottom of the tower collects the treated groundwater, which is discharged in batches to the Monroe County combined storm and sanitary sewer system under Monroe County Sewer Use Permit No. 864.

Six piezometers (PZ-1 through PZ-6) associated with the shallow overburden groundwater pumping wells (P-1, P-2, and P-3) are used to monitor the depth to groundwater under the paved AS/SVE area on a weekly basis.

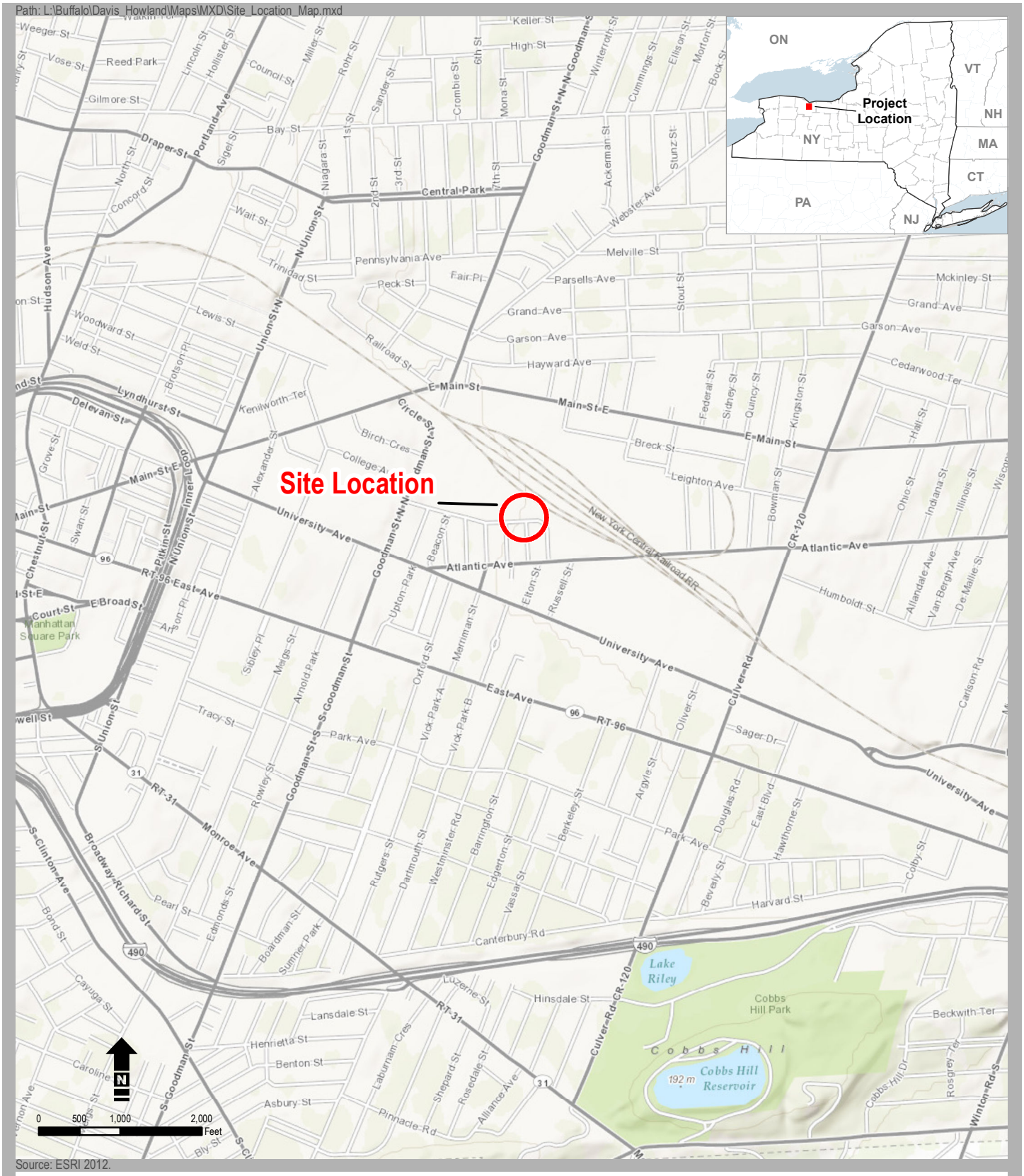


Figure 1-1
Site Location Map
Former Davis-Howland Oil Corporation
Rochester, NY

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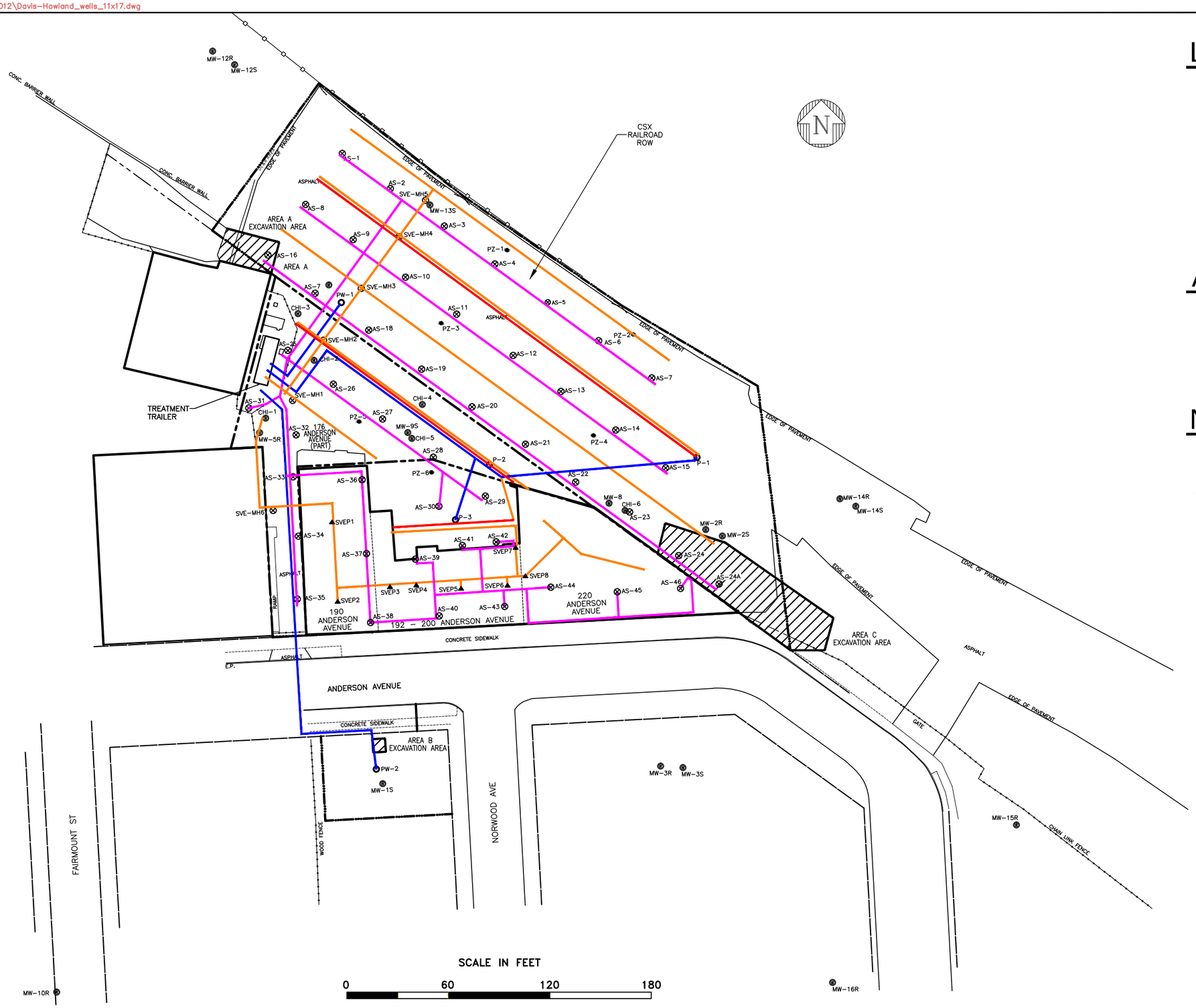


LEGEND

⊙	MONITORING WELL
●	PIEZOMETER
○	PUMPING WELL
⊗	AIR SPARGE POINT
▲	SOIL VAPOR EXTRACTION POINT
	SHALLOW GW PUMPING WELL COLLECTION TRENCH
	SOIL VAPOR EXTRACTION COLLECTION TRENCH/LINE
	PUMPING WELL LINES
	AIR SPARGE LINES

ABBREVIATIONS

AS	AIR SPARGE
CH	CLEAN HARBOR
MH	MANHOLE
MW	MONITORING WELL
PART	PARTIAL
PZ	PIEZOMETER
SVE	SOIL VAPOR EXTRACTION

NOTES

1. PIEZOMETERS, MONITORING WELLS, BUILDINGS AND PROPERTY LINES ARE BASED ON A SURVEY BY POPLI DESIGN GROUP, ARCHITECTURE AND ENGINEERING P.C. DATED DEC 7, 2012.
2. PUMPING WELL LINES, SOIL VAPOR EXTRACTION LINES AND AIR SPARGE LINES BASED ON AS-BUILT DRAWINGS BY ECOLOGY AND ENVIRONMENT P.C DATED NOVEMBER 2006.
3. STREET LOCATIONS ARE APPROXIMATE.

ecology and environment engineering p.c.

FIGURE 1-2 SITE PLAN
FORMER DAVIS HOWLAND OIL CORPORATION SITE
MONROE COUNTY, ROCHESTER, NY

2 Remedial Systems Compliance

2.1 Groundwater Treatment

Treated groundwater is discharged from the Site to the Monroe County combined storm and sanitary sewer system under Monroe County Sewer Use Permit No. 864, effective from May 29, 2016, through May 31, 2019. Table 2-1 presents the permit criteria currently in place.

Table 2-1 Effluent Discharge Criteria, Former Davis-Howland Oil Corporation Site

Parameter	Analytical Method	Permit Criterion
Effluent flow (average discharge); based on effluent meter	–	Not to exceed 28 gpm
Acetone	40 CFR 136-625	Monitor only
pH (s.u.)	MCAWW 150.1	5.0 to 12.0
Purgeable halocarbons	40 CFR 136-625	The analytical summation of this group of contaminants shall not exceed 2.13 ppm in the effluent discharge.
Purgeable aromatics		

Key:
CFR = Code of Federal Regulations
gpm = gallons per minute
MCAWW = (U.S. Environmental Protection Agency) Methods for Chemical Analysis of Water and Wastes
ppm = parts per million
s.u. = standard units

In 2016, the analytical results for effluent discharges from the groundwater treatment system were in compliance with the permit criteria. Analytical data for the treated groundwater is provided in Sections 4.3 and 4.4.

2.2 Air Sparge/Soil Vapor Extraction

In accordance with the Final Site Management Plan (SMP; EEEPC 2014), soil vapors from the AS/SVE system are monitored when requested by NYSDEC. Two rounds of air sampling events were performed in 2016, one on January 8 and 9,

and one on February 12. Section 4.5 discusses the results of the air sampling events.

3 Evaluation of Site Institutional and Engineering Controls

Institutional controls (ICs) and engineering controls (ECs) are employed on the Site to support remedial operations.

3.1 Institutional Controls

No ICs were required by the two records of decision (RODs) issued for the Site. Programmatically, the ICs that are necessary to provide for the effectiveness of this phase of the remedial action include an SMP and deed restrictions/environmental notices. The following are currently listed as ICs for the Site on Enclosure 1 – Institutional Controls – Standby Consultant/Contractor Certification Form included with this report:

- SMP
- Soils Management Plan
- Monitoring Plan
- Operations and Management (O&M) Plan
- Ground Water Use Restriction
- Land Use Restriction
- IC/EC Plan

The current SMP (EEEPC 2014) includes a soils management plan, monitoring plan, and O&M plan.

An environmental notice was filed and recorded with the Monroe County Clerk on August 15, 2013, in Book 11290, pages 171-176, as a record that informs future owners of development restrictions on the property due to environmental concerns. The ICs require that there be no disturbance that threatens the integrity of the ECs, no disturbance of the ECs, adherence to the SMP, allowance of access by NYSDEC, that land be used for industrial use only, and that no groundwater is to be used for drinking water unless properly treated. A copy of the environmental notice for the Site is provided in Appendix D of the SMP.

The ICs at the Site restrict disturbance of residual contaminated material. Current and future Site owners are required to perform soil characterization and disposal/reuse activities in accordance with NYSDEC regulations if residual contaminated soil is disturbed or excavated.

3.2 Engineering Controls

The ECs that support remedial operations at the Site are consistent with the SMP regarding operations, maintenance, and monitoring (OM&M) of the Site. The following ECs are present at the Site:

- A groundwater treatment system consisting of monitoring wells, bedrock groundwater pumping wells, and an air stripper;
- An AS/SVE system consisting of piezometers, shallow overburden groundwater pumping wells, AS points, SVE points, lines and trenches, and air-handling components of the on-site treatment plant; and
- Fencing/access control.

The water treatment component of the on-site treatment plant is a component of both the groundwater treatment system and the AS/SVE system.

The ECs for the outdoor portion of the on-site parcel consist of shallow overburden groundwater pumping wells P-2 and P-3 and two sets of AS/SVE points. The ECs for the indoor portion of the on-site parcel consists of 14 AS points and eight SVE points. The rest of the controls, which include the remaining wells, the water treatment system, and the additional AS/SVE points, are located on off-site parcels. The AS/SVE points beneath the asphalt cover on the off-site parcels have been shut down since 2004 to focus the VOC extraction process on soils beneath and near the buildings located at 190 through 220 Anderson Avenue.

Operational changes were implemented in November 2013 as a result of recommendations made in the 2012 PRR. These changes included turning off overburden pumping well P-1. The treatment systems were shut down on July 14, 2016, as a result of one of the recommendations made in the Remedial Site Optimization (RSO) Alternatives Report (EEEPC 2016a), which was approved by NYSDEC on June 10, 2016. However, the treatment systems were put back into service on December 14, 2016, for further data collection as outlined in the Sampling Work Plan and Equipment Repairs (EEEPC 2016b) before eventual decommissioning of the plant at the request of NYSDEC. Further details regarding the shutdown of the system and the additional sampling to be performed are provided in Section 7 of this report.

4 Evaluation of Remedial Treatment Operations

4.1 System Operational Uptime in 2016

The operational uptime percentages are calculated based on actual monthly hours of treatment system operations in the reporting period divided by the potential hours of operation in the reporting period. At the request of NYSDEC, the treatment system was not in operation from July 14 to December 14, 2016 as described below.

Local power outages or equipment failures affect operations of the remedial treatment systems. To limit downtime, the systems have an auto-dialer that sends an alarm to the OM&M subcontractor and EEEPC if an equipment failure occurs. In addition, the treatment facility can be called at any time at (585) 241-3431, unless phone service is down, to check on the status of the various operating equipment in the building.

Based on information from the weekly OM&M reports from the subcontractor, Popli Design Group (Popli), in 2016 the groundwater treatment system operated 4,320 hours out of a possible 5,088 hours, for an uptime operation of approximately 85%. The downtime for the treatment system was due to a blower malfunction in early June. Table 4-1 provides details on the monthly operation of the groundwater treatment system.

The AS/SVE system operated for 5,290 hours out of a possible 6,240 hours, for an uptime of approximately 85%. The downtime for the AS/SVE system was due to system shutdown in early January for air sampling and to malfunctions with the air sparge motor and variable frequency drive (VFD) in July 2016.

Table 4-1 Former Davis-Howland Oil Corporation Site Groundwater Treatment System Uptime in 2016

Reporting Period	Reporting Hours/ Maximum Hours	Operational Uptime (%)
December 29, 2015 to January 28, 2016	720/720	100%
January 28, 2016 to February 25, 2016	672/672	100%
February 25, 2016 to March 31, 2016	840/840	100%
March 31, 2016 to April 29, 2016	696/696	100%
April 29, 2016 to May 26, 2016	648/648	100%
May 26, 2016 to June 28, 2016	408/792	52%
June 28, 2016 to July 14, 2016	0/384	0%
July 14, 2016 to August 31, 2016*	0/1,152	0%
August 31, 2016 to September 30, 2016*	0/720	0%
September 30, 2016 to October 31, 2016*	0/744	0%
October 31, 2016 to December 14, 2016*	0/1,056	0%
December 14, 2016 to December 28, 2016	336/336	100%
Total Hours of Operation in 2016	**4,320/5,088**	**85%**

* System was shut down at the request of NYSDEC. These hours are not included in determining operational uptime.

Additional details are presented in the monthly OM&M reports (EEEPC 2016c through 2016j).

4.2 Groundwater Processed and Discharged through the Remedial Treatment System in 2016

The amount of groundwater processed and discharged is read directly from the effluent discharge meter located after the air-stripper unit. Readings are taken weekly at the master discharge meter and then calculated for each monthly reporting period.

Based on information obtained from the weekly monitoring reports from the OM&M subcontractor, the remedial treatment system processed and discharged 539,400 gallons of treated groundwater to the Monroe County sanitary sewer system from December 29, 2015, to December 28, 2016 (see Table 4-2). The variability in the number of gallons of groundwater treated on a monthly basis is due to several factors, including the number of weeks reported for that month (four or five), seasonal changes in groundwater elevations, system shutdowns, equipment efficiency, and maintenance requirements.

The average effluent flow rate while the system was in operation in 2016 was approximately 2.04 gallons per minute.

Table 4-2 Groundwater Processed and Discharged by the Groundwater Treatment System in 2016

Month	Actual Period	Gallons Treated
January 2016	December 29, 2015, to January 28, 2016	53,000
February 2016	January 28, 2016, to February 25, 2016	68,700
March 2016	February 25, 2016, to March 31, 2016	220,000
April 2016	March 31, 2016, to April 29, 2016	68,700
May 2016	April 29, 2016, to May 26, 2016	47,500
June 2016	May 26, 2016, to June 28, 2016	20,700
July 2016*	June 28, 2016, to July 14, 2016	0
August 2016*	July 14, 2016, to August 31, 2016	0
September 2016*	August 31, 2016, to September 30, 2016	0
October 2016*	September 30, 2016, to October 31, 2016	0
November 2016*	October 31, 2016, to December 14, 2016	0
December 2016	December 14, 2016, to December 28, 2016	60,800
	Total Gallons Treated in 2016	**539,400**

*Groundwater treatment system was off at the request of NYSDEC.

4.3 Volatile Organic Compounds Removed from Groundwater in 2016 (Air Stripping Operations)

The amount of VOCs removed from the groundwater is estimated based on the influent and effluent analytical results and the amount of groundwater processed through the treatment system. Based on calculations prepared by EEEPC on the operation of the remedial treatment unit from December 29, 2015, to December 28, 2016, approximately 2.01 pounds of VOCs were removed from the groundwater by the air stripper system in 2016 (see Table 4-3). Total VOCs removed from the Site also include 0.51 pounds of VOCs not removed from the groundwater by the air stripper that were discharged to the Monroe County sanitary sewer system. Thus, a total of approximately 2.52 pounds of VOCs were removed from the Site by the groundwater pumping and treatment system during 2016. Additional VOC results are presented in the monthly OM&M reports (EEEPC 2016c through 2016j).

Table 4-3 VOCs Removed by the Former Davis-Howland Oil Corporation Site Groundwater Treatment System in 2016

Month	Actual Period	Influent VOCs (µg/L)	Effluent VOCs (µg/L)	Removal Efficiency	VOCs Removed by Air Stripper (pounds)	VOCs Removed from Site (pounds)
January 2016	12/29/15 to 1/28/16	961	147	85%	0.36	0.43
February 2016	1/28/16 to 2/25/16	713	62	91%	0.37	0.41
March 2016	2/25/16 to 3/31/16	687	164	76%	0.96	1.26
April 2016	3/31/16 to 4/29/16	823	48	94%	0.44	0.47
May 2016	4/29/16 to 5/26/16	260	78	70%	0.10	0.07
June 2016	5/26/16 to 6/28/16	1,143	206	82%	0.16	0.20
July 2016*	6/28/16 to 7/14/16	-	-	-	-	-
August 2016*	7/14/16 to 8/31/16	-	-	-	-	-
September 2016*	8/31/16 to 9/30/16	-	-	-	-	-
October 2016*	9/30/16 to 10/31/16	-	-	-	-	-
November 2016*	10/31/16 to 12/14/16	-	-	-	-	-
December 2016	12/14/16 to 12/28/16	357	69	81%	0.15	0.18
				Total	**2.01**	**2.52**

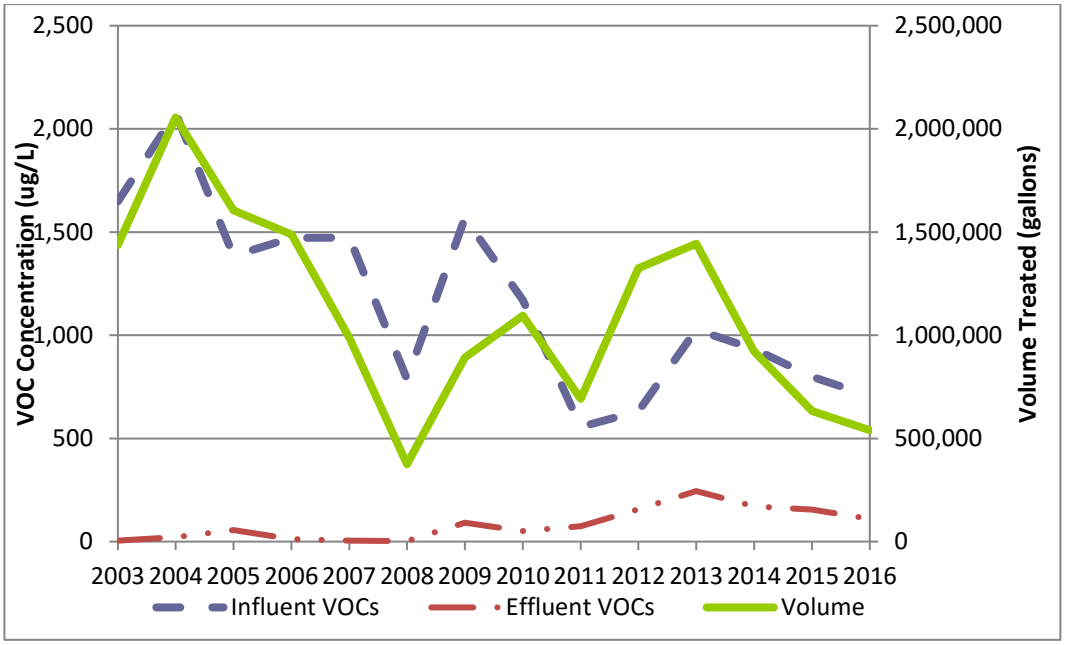
* Groundwater treatment system was off, groundwater samples were not collected, and groundwater was not discharged to the Monroe County Sewer System.

Key:
µg/L = Micrograms per liter.
VOC = Volatile organic compound.

Figure 4-1 shows the historical treatment trend for the DHOC Site from 2003 through 2016. Since 2003, the average total VOC concentration in the influent of the system has generally decreased, indicating the contaminant concentration in the extracted groundwater is decreasing. Effluent concentrations from the groundwater treatment system were increasing up to 2011 and have been decreasing since that time, and continue to remain under the sewer permit discharge limit.

The increase in flow between 2009 and 2010 was due to the pump rehabilitation/replacement effort in August 2009, which resulted in an increase in the volume of groundwater that was being processed. The decrease in flow between 2010 and 2011 was due to the decrease in production from pumping well PW-1, which developed an obstruction in the transfer line from the wellhead to the treatment system trailer. This obstruction was cleared in spring 2012, and a regular cleaning/maintenance program for this line has been implemented. The line was cleaned again in November 2013, August 2014, March 2015, October 2015, and May 2016. Pump P-1 was shut down indefinitely in November 2013 as was recommended in the 2012 PRR for the Site (EEEPC 2013). The decrease in volume in 2015 was a result of the pulsed pumping evaluation completed as part of the optimization evaluations described in the RSO Work Plan (EEEPC 2015a). All groundwater pumps were offline for a total of two months between August and

November 2015. The decrease in processed volume in 2016 was due to system shutdown from July 13 to December 15, 2016, as requested by NYSDEC, and a blower malfunction in June 2016.



Notes:

1. Deactivation of the CATOX unit occurred in March 2008, requiring the treatment system to be shut down for five months.
2. Pump rehabilitation/replacement occurred in August 2009.
3. The system was shut down in March 2011 due to damage caused by overflow of the system.
4. The system was shut down from July 14 to December 14, 2016 by NYSDEC request. Influent and effluent VOCs averages include January through June, and December.

Figure 4-1 Historical Treatment Trends, 2003-2016

4.4 Groundwater Treatment - 2016

The effluent from the remedial treatment system met the discharge permit requirements (see Appendix A) for each month of 2016. Table 4-4 presents a summary of the monthly analytical results for the treated effluent and compares them to the Monroe County discharge permit criteria.

Table 4-4 2016 Monthly Compliance Results for Treated Groundwater Effluent, Former Davis-Howland Oil Corporation Site

Month	Average Effluent (gpm)	pH (s.u.)	Purgeable Halocarbons and Purgeable Aromatics (ppm)	Permit Compliance
Discharge Permit Limits	**28**	**5.0-12.0**	**2.13**	-
January	1.23	8.19	0.15	Yes
February	1.77	7.96	0.06	Yes
March	4.37	7.75	0.16	Yes

Table 4-4 2016 Monthly Compliance Results for Treated Groundwater Effluent, Former Davis-Howland Oil Corporation Site

Month	Average Effluent (gpm)	pH (s.u.)	Purgeable Halocarbons and Purgeable Aromatics (ppm)	Permit Compliance
April	1.65	8.48	0.05	Yes
May	1.22	8.46	0.08	Yes
June	0.85	8.48	0.21	Yes
July*	-	-	-	-
August*	-	-	-	-
September*	-	-	-	-
October*	-	-	-	-
November*	-	-	-	-
December	3.02	7.75	0.07	Yes

*Groundwater treatment system was off, groundwater samples were not collected, and groundwater was not discharged to the Monroe County Sewer System.

Key:
gpm = gallons per minute
s.u. = standard units
ppm = parts per million

4.5 SVE System Performance

Two rounds of air sampling were performed to evaluate the effectiveness of the AS/SVE system and determine whether an SSDS will adequately mitigate VOCs in indoor areas of the site. One round of sampling was performed when the AS/SVE system was in operation, and the second round was performed with the system off. A review of the analytical results of the VOC concentrations in the air samples did not show any consistent difference in air quality between samples collected when the system was on versus when it was off. The concentrations of PCE and TCE in the subslab vapor were high with the system both on or off. This may indicate that decommissioning of the AS/SVE system will not increase negative impacts on the quality of the air in the buildings on site.

NYSDEC recommends implementation of a vapor mitigation system for buildings with subslab air containing PCE, 1,1,1-TCE, 1,1-DCE, or cis-1,2-dichloroethane (DCA) concentrations greater than 1,000 micrograms per cubic meter ($\mu g/m^3$) or TCE, carbon tetrachloride, or VC concentrations greater than 250 $\mu g/m^3$ (NYSDOH 2015). These quality standards were exceeded at building interior SVE points 2, 4, 5, 6, and 8, and exceedances were experienced during both sampling events. TCE was found at the highest concentration at most of the sample points. SVE-8 had the highest concentrations of TCE and 1,1,1-TCA, with average concentrations of 2,650 $\mu g/m^3$ and 2,100 $\mu g/m^3$, respectively. SVE-8 is located in the building at 220 Anderson Ave (see Figure 1-2). Additional details and recommendations regarding the AS/SVE system sampling are provided in the RSO Alternatives Report (EEEPC 2016a).

5 General Status of Remedial Treatment Equipment

In 2016, OM&M of the DHOC Site remedial treatment system was performed on a weekly basis by EEEPC's OM&M subcontractor (Popli). In the event of a major component malfunction (resulting in a component shutdown) or treatment trailer intrusion detection at the Site, an auto-dialer primary contact alarm alerts the OM&M subcontractor of the problem and a secondary alarm alerts EEEPC.

EEEPC provides NYSDEC with a monthly compliance report on the OM&M work performed on the remedial treatment system. When equipment repairs are required, the OM&M subcontractor reports the needed repairs to EEEPC, and EEEPC reports them to NYSDEC. Information regarding repairs performed on the remedial treatment system components is provided in the weekly OM&M reports submitted to EEEPC and in the monthly compliance reports provided to NYSDEC by EEEPC.

Equipment issues are handled on a case-by-case basis. The costs of minor equipment issues (e.g., electronic maintenance, repair, and replacement) are funded through the contingency task established when the project was initiated. Major equipment issues that are not identified as a component of the contingency task budget are discussed with the NYSDEC project manager, and a corrective action approach is subsequently developed. Upon acceptance by NYSDEC, the corrective action is initiated.

Analytical services for the Site are provided by ALS Environmental, Rochester, New York. The analytical testing frequency matrix is provided in Table 5-1.

Table 5-1 Analytical Frequency Matrix, Former Davis-Howland Oil Corporation Site

	Groundwater	Air	Schedule
Treatment system (influent and effluent)	X	NA	Monthly
Groundwater monitoring wells network	X	NA	Yearly
AS/SVE System	NA	X	As requested by NYSDEC

Key:
NA = Not applicable.

5.1 Remedial Treatment System Equipment Condition, Replacement, and Repairs in 2016

The main components of the remedial treatment system, including the chemical sequestering system, equalization tank, blowers, air-stripping unit, and groundwater pumping system, continue to operate at a high rate of efficiency as a result of the weekly monitoring and maintenance program.

The groundwater pumping well network remains in working condition, with the exception of P-1, which was shut down in November 2013 following recommendations in the 2012 PRR. Following shut down of P-1, all associated pumping equipment was removed from the well.

Items that have had significant maintenance requirements over the last few years have been the pumps and the flow meters/flow sensors for the groundwater pumping system, the air sparge compressor, the AS/SVE flow sensor/pressure gauge/control valve assemblies, and electronic control components. These components have been in operation for over 10 years and are subject to harsh conditions. The following non-regular maintenance activities were performed in 2016.

- The VFD on the motor for the air sparge system started to malfunction in May 2016 and continued malfunctioning into June 2016. In June 2016 an electrician checked the VFD to diagnose the problem. A new VFD was installed December 8, 2016.
- As of June 9, 2016, the air stripper blower was malfunctioning. The blower was removed at the end of June 2016 and was sent in for diagnostics. A new motor for the air stripper blower was installed December 8, 2016.
- A rain cap was installed on the effluent stack from the AS/SVE system in December 2016.
- PW-1 was operating below the normal flow rate and was cleaned in May 2016.
- New filters were installed for the SVE system on December 8, 2016.
- New water level probes for PW-1 were installed on December 22, 2016.

Other issues regarding operations include shallow groundwater depths measured by piezometers associated with pumping well P-1. Following the indefinite shutdown of pumping well P-1 on November 15, 2013, the groundwater levels measured from piezometers PZ-1 and PZ-2 in 2016 (located near the edge of pavement on the northern portion of the CSX right-of-way) continue to indicate a groundwater depth of less than 4 feet bgs. In accordance with the SMP, the depth to groundwater in areas of active air sparging and soil vapor extraction must be maintained at 4 feet bgs to prevent the groundwater from interfering with the collection of soil vapors. However, the AS/SVE portion of the remedial treatment system in the area of PZ-1 and PZ-2 has been shutdown in order to focus the VOC

vapor extraction process under the on-site buildings; therefore, it is no longer necessary to maintain a minimum groundwater depth of 4 feet bgs in this area.

5.2 Groundwater Monitoring Well Network Inspection

Between November 10 and 15, 2016, EEEPC conducted inspections of overburden and bedrock groundwater monitoring wells. The purpose of these inspections was to document the physical condition of the wells and identify maintenance actions required to keep the groundwater monitoring well network operational. Based on the inspection, it was determined that the groundwater monitoring wells were generally in good condition though some are in need of minor repairs. A summary of the monitoring well inspection findings is presented in Table 5-2.

Table 5-2 Summary of October 2016 Well Inspection, Former Davis-Howland Oil Corporation Site

Well Identification	Date Inspected	Well Casing ID (inches)	Inspection Observations
CHI-1	11/10/2016	2	Needs new bolts
CHI-6	11/10/2016	2	Needs new bolts
MW-1S	11/14/2016	2	
MW-2S	11/11/2016	2	
MW-3S	11/11/2016	2	Decommissioned
MW-9S	11/10/2016	2	
MW-12S	11/10/2016	2	Well covered by gravel/dirt stockpile
MW-13S	11/11/2016	2	
MW-14S	11/10/2016	2	Needs new bolts and screws
MW-2R	11/11/2016	4	
MW-3R	11/11/2016	2	Decommissioned
MW-5R	11/10/2016	4	
MW-8R	11/10/2016	4	
MW-10R	11/14/2016	4	
MW-12R	11/10/2016	4	Well covered by gravel/dirt stockpile
MW-14R	11/11/2016	4	
MW-15R	11/14/2016	4	Well covered by gravel/dirt stockpile
MW-16R	11/14/2016	4	Steel well cap in poor condition
PZ-1	11/15/2016	1	Needs new bolts
PZ-2	11/15/2016	1	
PZ-3	11/15/2016	1	
PZ-4	11/15/2016	1	

Key:
ID = inner diameter

6 2016 Groundwater Sampling Event Summary

This section discusses the groundwater monitoring activities performed at the Site in November 2016 and compares the results to historical data. Field activities were conducted according to the Groundwater Monitoring and Long-term Well Sampling Procedures included as Appendix J of the Final SMP (EEEPC 2014). Sampling locations are identified on Figure 1-2.

6.1 Field Activities

6.1.1 Monitoring Well Sampling

Groundwater samples were collected from 11 monitoring wells, three piezometers, and three extraction wells at the Site from November 10 through 15, 2016. Samples could not be collected from monitoring wells CHI-1 and CHI-6 because they were dry. Monitoring wells MW-12S, MW-12R, and MW-15R could not be sampled because they could not be accessed due to being covered with layers of gravel and debris. Monitoring wells MW-3S and MW-3R were decommissioned in February 2016 by Leader Professional Services, Inc., as part of property redevelopment at 10 Norwood Avenue. These monitoring wells are slated to be replaced with new wells at alternate locations in 2017. A sample could not be collected from pumping well PW-1 due to a malfunction of the extraction pump. Pumping well P-1 was shutdown indefinitely in November 2013, and all pumping components were removed from the well. This well was not sampled as part of the annual sampling event.

Prior to purging, static water levels were measured to the nearest 0.01 foot in each monitoring well using an electronic water-level indicator. The water level and total depth of each well were recorded (see Table 6-1). The suffix "R" in a monitoring well designation (for example, MW-12R) denotes a bedrock well, and the suffix "S" denotes a monitoring well that is screened in the shallow overburden groundwater zone.

Table 6-1 November 2016 Groundwater Elevations, Former Davis-Howland Oil Corporation Site

Well ID	Measurement Date	Measured Total Depth (feet TOIC)	Ground Elevation (feet amsl)	TOIC Elevation (feet amsl)	Depth to Water (feet TOIC)	Groundwater Elevation (feet amsl)
Shallow Overburden Wells						
MW-1S	11/14/2016	17.96	500.23	499.72	12.59	487.36
MW-2S	11/11/2016	14.02	496.03	497.48	5.41	492.07
MW-9S	11/10/2016	15.96	497.94	498.01	5.84	492.17
MW-13S	11/10/2016	13.74	496.24	496.95	3.21	493.74
MW-14S	11/11/2016	12.94	495.48	495.16	2.23	492.93
PZ-2	11/15/2016	12.55	497.13	496.87	4.13	492.74
PZ-3	11/15/2016	13.49	497.87	497.56	4.41	493.15
PZ-4	11/15/2016	11.47	497.76	497.22	4.35	492.87
Deep Bedrock Wells						
MW-2R	11/11/2016	26.15	496.14	497.54	14.39	483.15
MW-5R	11/10/2016	34.72	501.32	498.23	11.19	487.04
MW-8R	11/10/2016	36.63	499.63	497.64	15.29	482.35
MW-10R	11/14/2016	35.56	497.89	497.44	18.52	478.92
MW-14R	11/11/2016	33.89	495.6	495.18	5.52	489.66
MW-16R	11/15/2016	31.08	493.48	493.04	18.22	474.82

Key:
amsl = Above mean sea level.
MW = Monitoring well.
TOIC = Top of inner casing.
-- = Data not applicable or not obtained for these wells.

Monitoring well purging was completed using a submersible pump with new polyethylene tubing or disposable polyethylene bailers on new polypropylene line. For the three pumping wells that were sampled, the pumps were active at the time of sampling to purge the wells, and grab samples were collected directly from sample ports before treatment. Measurements of temperature, pH, conductivity, turbidity, and oxidation-reduction potential (ORP) were recorded throughout the well-purging process and immediately prior to sampling. The final water quality measurements are presented in Table 6-2. Except as noted, purging was continued at each well until the groundwater quality parameters were stable and/or a minimum of three well volumes of water had been purged from the well. The only exception was MW-16R, which was purged dry and sampled after sufficient recharge had occurred. Appendix B presents copies of the monitoring well purge and sample records for the November 2016 sampling event.

Non-dedicated sampling equipment was decontaminated in accordance with the Groundwater Monitoring and Long-term Well Sampling Procedures included as Appendix J of the SMP. Purge and decontamination water were handled according to procedures outlined in Section 6.1.3.

Table 6-2 Summary of Groundwater Quality Field Measurements, Former Davis-Howland Oil Corporation Site

Well ID	Sample Date	pH (s.u.)	Temperature (°C)	ORP (mV)	Conductivity (µS/cm)	Unfiltered Turbidity (NTU)
Overburden Wells						
MW-1S	11/14/206	6.86	14.6	55.4	1,510	3.60
MW-2S	11/11/2016	6.62	16.5	-102.6	1,570	3.32
MW-9S	11/10/2016	6.97	16.8	107.6	2,270	18.1
MW-13S	11/10/2016	7.30	14.1	76.4	850	8.35
MW-14S	11/11/2016	7.00	15.7	66.9	610	19.2
Bedrock Wells						
MW-2R	11/11/2016	7.21	15.8	-91.8	373	23.7
MW-5R	11/10/2016	7.15	14.6	-157.0	1,080	0.35
MW-8R	11/10/2016	7.24	14.8	-117.2	1,730	7.04
MW-10R	11/14/2016	7.34	14.2	60.6	1,060	1.39
MW-14R	11/11/2016	7.49	15.2	-50.2	960	1.91
MW-16R	11/15/2016	6.98	13.1	-132.2	1,210	11.06
PZ-2	11/15/2016	7.10	15.4	-24.9	860	18.2
PZ-3	11/15/2016	6.78	16.7	-34.0	2,140	3.53
PZ-4	11/15/2016	6.99	16.8	-93.1	1,070	72.7

Key:
°C = degrees Celsius.
mV = millivolts
µS/cm = microsiemens per centimeter.
NTU = nephelometric turbidity unit.
s.u. = standard units.

Upon collection, samples were labeled and immediately placed in a cooler maintained with ice at approximately 4°C. The samples were delivered directly to the laboratory by the EEEPC field team with chain-of-custody documents. Groundwater samples were submitted to the ALS Environmental laboratory in Rochester, New York, for VOC analysis by United States Environmental Protection Agency (EPA) Method 624, SVOCs by EPA Method 625, and petroleum product identification by Method NY310-13.

6.1.2 Quality Assurance/Quality Control Review

In addition to the normal field samples, quality assurance/quality control (QA/QC) samples were collected. Trip blanks accompanied each shipment for VOC analysis to check for the possible introduction of VOCs from the time the samples were collected to the time they were analyzed. Sample portions for VOCs collected on a single day were transported in the same cooler. One field (equipment) blank was collected. This sample consisted of laboratory deionized water poured over a decontaminated sampling pump to check the thoroughness of decontamination procedures and evaluate potential cross-contamination of samples.

To check consistency in sample collection, one duplicate sample was collected from monitoring well MW-5R. The sample consisted of aliquots of sample media

placed in separate sample containers and labeled as separate samples (MW-5R-NOV16 and MW-5R-NOV16Q). Additionally, extra volume for matrix spike/matrix spike duplicate (MS/MSD) analyses was collected from monitoring well MW-14R to simulate the background effect and interferences found in the actual samples. The calculated percent recovery of the spike is used as a measure of the accuracy of the total analytical method. Field duplicates and MS/MSD samples are typically collected at a rate of one per 20 field samples per the Master Quality Assurance Project Plan (EEEPC 2011). For this event, one duplicate sample and one MS/MSD sample were collected for 17 wells. This collection rate is considered acceptable with no impact on data usability due to the routine nature of this sampling.

QA/QC data were reviewed by an EEEPC chemist, and a Data Usability Summary Report (DUSR) was prepared (see Appendix B). Data qualifiers were applied as described in the DUSR and incorporated into the data summary tables. No significant issues were identified, and all analytical data is considered usable for its intended purpose.

6.1.3 Investigation-Derived Waste Management

Investigation-derived waste (IDW) generated during this investigation was handled according to procedures outlined in EEEPC's Groundwater Sampling Procedures. Three types of IDW were generated: purged groundwater, decontamination water, and expendable materials, including personal protective equipment (PPE). Purged and decontamination water was placed into the equalization tank of the on-site groundwater treatment system.

Expendable PPE generated during the investigation (including gloves and plastic sheeting) was bagged and removed from the site for disposal as non-hazardous solid waste.

6.2 Site Hydrogeology

The Site is situated on alluvial organic silt and sand overlaying glacial till deposits and lacustrine sand and silt of varying thickness. Bedrock beneath the Site is the Penfield Dolostone of the Middle Silurian Lockport Group and is encountered at depths of about 15 to 27 feet.

Two groundwater aquifers have been identified beneath the Site: a shallow overburden aquifer and an upper bedrock aquifer. These aquifers are not listed by the EPA as sole-source aquifers (Lawler, Matusky & Skelly Engineers, LLP, and Galson/Lozier Engineers 1996). A summary description of each water-bearing zone is provided below.

6.2.1 Overburden Aquifer

Historically, groundwater flow direction at the Site has been observed to be highly variable. In 1997, a flow divide existed near the railroad tracks, resulting in groundwater flow to the northeast, southeast, southwest, and south. In 2004, groundwater flow was observed to travel northeast across the Site, while in 2007

it was observed to travel southwest from a high area along the railroad tracks (EEEPC 2007). The overburden groundwater flow in 2009 through 2011 was observed to be primarily toward the south and west (EEEPC 2009, 2010, 2013). From 2012 through 2015, the flow was primarily to the southwest, with localized groundwater sinks in the middle of the Site, indicative of capture primarily by pumping well P-2 and, to a lesser extent, P-3 (EEEPC 2015b; EEEPC 2016k).

Overburden groundwater flow in November 2016, was once again primarily towards the southwest, with localized variation (see Figure 6-1). At the time of monitoring, the pumping wells were not active and the observed groundwater flow direction is indicative of unaltered conditions.

6.2.2 Bedrock Aquifer

Historically, the bedrock groundwater flow direction at the Site has generally been more consistent than that in the overburden. In 1997 and 2004, groundwater flow was observed to be radially outward from a mound beneath the Site, with the primary flow directions to the northeast and southeast (EEEPC 2004). In 2007, 2009, 2010, and 2011, groundwater flow in the bedrock aquifer appeared to be more variable, with radial flow from high areas on the west (near MW-5R) and east (near MW-14R/MW-15R) sides of the Site and a groundwater sink near MW-2R (EEEPC 2007, 2009, 2010, 2013). From 2012 through 2015, similar outward radial flow from MW-5R and MW-14R was observed with radial capture at pumping wells PW-1 and PW-2. Groundwater capture was enhanced beginning in 2012, likely the result of routine well maintenance producing higher flow rates (EEEPC 2015b; EEEPC 2016k).

In November 2016, the primary bedrock groundwater flow direction was to the south (see Figure 6-1). There is continued evidence of mounding (higher elevations) and outward radial flow at MW-5R and MW-14R in addition to a depression (lower elevation) in the vicinity of MW-8R, as depicted on Figure 6-1. At the time of groundwater level collection, the pumping wells were not active and the observed groundwater flow direction is indicative of unaltered conditions.

6.3 Analytical Results

This section presents the analytical results for the November 2016 groundwater samples collected at the DHOC Site and compares them to historical results. The laboratory results of detected contaminants for overburden monitoring wells and pumping wells are presented in Table 6-3, and the detected contaminants for bedrock monitoring wells and pumping wells are presented in Table 6-4. Groundwater sample results discussed below were compared to the NYSDEC Class GA groundwater standards and guidance values (NYSDEC 1998). The complete laboratory report for the sampling event is provided in Appendix B.

6.3.1 Overburden Groundwater Results

Volatile Organic Compounds

Sixteen different VOCs were detected in one or more groundwater samples collected from overburden wells. Twelve of these compounds are chlorinated aliphatic (straight-chained) VOCs (cVOCs), including tetrachloroethene (PCE), trichloroethene (TCE), 1,1,1-trichloroethane (1,1,1-TCA), and their degradation by-products. Three chlorinated aromatic VOCs (dichlorobenzene [DCB] isomers) were detected. Benzene was also present in one overburden well sample.

Eight VOCs were detected in one or more overburden monitoring or pumping wells at concentrations exceeding NYSDEC Class GA groundwater standards. These chemicals are highlighted in Table 6-3. The concentrations of cVOCs in overburden groundwater monitoring wells were highest in PZ-04; however, the highest concentrations were detected in pumping well P-3. The total concentration of chlorinated aliphatic hydrocarbons in PZ-04 was 590 µg/L in 2016. In P-3, the total cVOC concentration was approximately 3,200 µg/L in 2016. DCB isomers were detected in wells MW-9S, MW-14S, and P-3 at relatively low concentrations. The only BTEX detected in overburden wells was a low concentration of benzene in P-3 (see Table 6-3).

The November 2016 concentration isopleths of BTEX and cVOCs in the overburden groundwater samples are presented on Figure 6-2.

Semivolatile Organic Compounds

Four SVOCs were detected in the overburden groundwater samples in 2016 (see Table 6-3). The detection included diethyl phthalate in MW-14S and PZ-03 as well as three polynuclear aromatic hydrocarbons (PAHs): benzo(a)anthracene (in MW-2S), fluoranthene (in MW-2S and PZ-04), and pyrene (in MW-2S and PZ-04). The total PAH concentrations were 3.9 µg/L in MW-2S and 2.2 µg/L in PZ-04.

Petroleum Products

No petroleum products were detected in the overburden groundwater samples collected during the 2016 sampling event. In 2015, n-dodecane was present in MW-2S at 1,200 µg/L (EEEPC 2016k).

6.3.2 Bedrock Groundwater Results

Volatile Organic Compounds

Fifteen different VOCs were detected in one or more of the groundwater samples collected from bedrock monitoring and pumping wells, including cVOCs (PCE; TCE; 1,1,1-TCA; and their degradation by-products) and BTEX (benzene and ethyl benzene only). The concentrations of 11 detected VOCs exceeded NYSDEC Class GA groundwater standards in at least one well. These chemicals are highlighted in Table 6-4.

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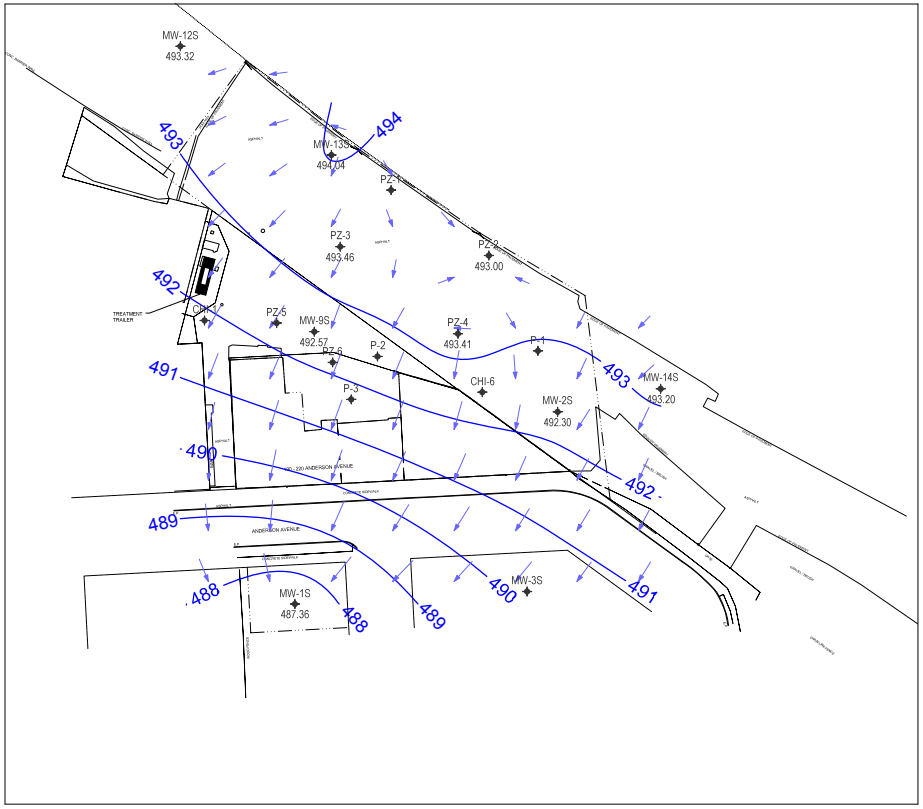
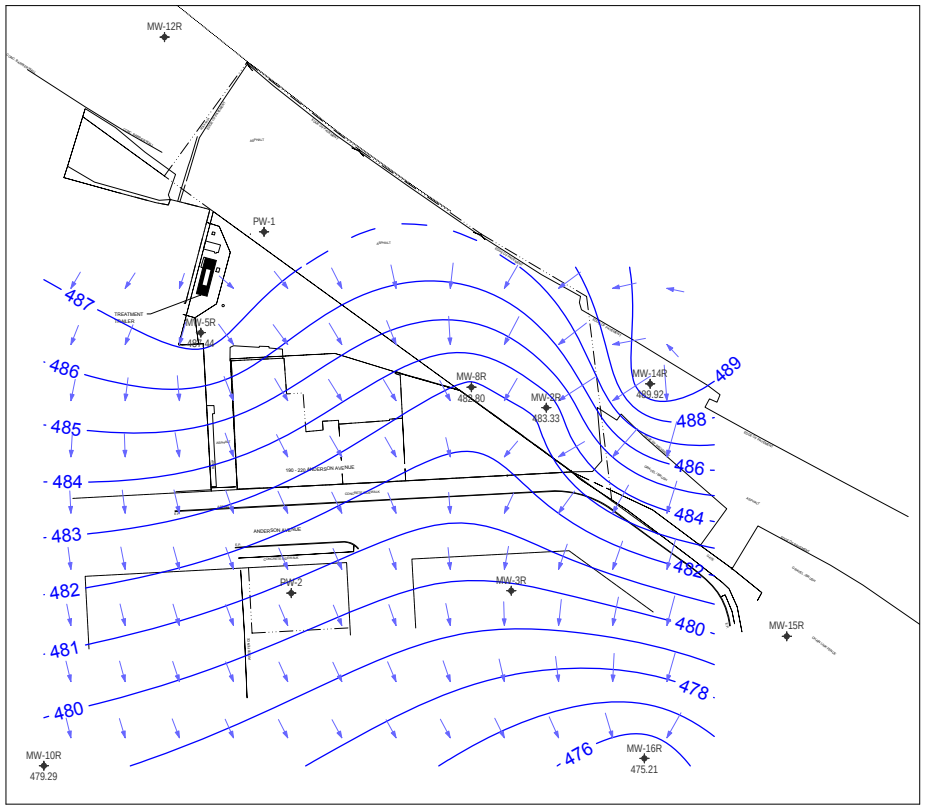
DavisHowland_GW_Elev_2016.srf - 01/12/2017

N

Groundwater Elevation Isopleths
Overburden Monitoring Wells



Groundwater Elevation Isopleths
Bedrock Monitoring Wells



Notes:
1) Groundwater elevations measured November 10 - 15, 2016; pumping wells were OFF since June 9, 2016.

Legend

- Groundwater Flow Direction and Relative Magnitude of Gradient
- Projected groundwater elevation isopleth
- Groundwater elevation isopleth

0 100 200 300
SCALE IN FEET

ecology and environment engineering, p.c.
Global Environmental Specialists

FIGURE 6-1
Groundwater Elevation Isopleths
Overburden and Bedrock Monitoring Wells
November 2016
Former Davis-Howland Oil Corporation Site
Rochester, NY

Table 6-3 Summary of Positive Analytical Results for Groundwater Samples from Overburden Monitoring Wells
Former Davis-Howland Oil Corporation Site, Rochester, NY

Analyte	Screening Criteria [1]	MW-1S 11/14/16	MW-2S 11/11/16	MW-9S 11/10/16	MW-13S 11/10/16	MW-14S 11/11/16	PZ-02 11/15/16	PZ-03 11/15/16	PZ-04 11/15/16	P-2 11/15/16	P-3 11/15/16
Volatile Organics by Method E624 (µg/L)											
1,1,1-Trichloroethane	5	**2.3**	0.20 U	**1.0**	**0.39 J**	0.20 U	**1.2**	**0.31 J**	**22**	**28**	**230**
1,1,2-Trichloroethane	1	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.40 U	0.40 U	**14**
1,1-Dichloroethane	5	**1.3**	**1.5**	**12**	**0.59 J**	0.21 U	**0.56 J**	**5.9**	**14**	**55**	**52**
1,1-Dichloroethene	5	**0.79 J**	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	**0.25 J**	**4.0**	**1.7 J**	**7.8**
1,2-Dichlorobenzene	3	0.25 U	0.25 U	**1.8**	0.25 U	0.25 U	0.25 U	0.25 U	0.50 U	0.50 U	**2.3**
1,2-Dichloroethane	0.6	**0.39 J**	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.40 U	0.40 U	0.20 U
1,3-Dichlorobenzene	3	0.22 U	0.22 U	0.22 U	0.22 U	0.22 U	0.22 U	0.22 U	0.44 U	0.44 U	**1.5**
1,4-Dichlorobenzene	3	0.20 U	0.20 U	**0.25 J**	0.20 U	**0.22 J**	0.20 U	0.20 U	0.40 U	0.40 U	**1.1**
Benzene	1	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.40 U	0.40 U	**0.56 J**
Chlorobenzene	5	**0.26 J**	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.40 U	0.40 U	0.20 U
Chloroform	7	**0.26 J**	0.20 U	**0.37 J**	0.20 U	0.20 U	0.20 U	0.20 U	0.40 U	0.40 U	**1.5**
Cis-1,2-Dichloroethylene	5	**41**	**2.2**	**26**	**5.5**	0.20 U	**1.6**	**9.4**	**310**	**240**	**1200**
Tetrachloroethylene (PCE)	5	**4.0**	0.20 U	**35**	**0.33 J**	0.20 U	**1.6**	**0.54 J**	**10**	**40**	**1400**
Trans-1,2-Dichloroethene	5	**0.23 J**	0.20 U	**2.3**	0.20 U	0.20 U	0.20 U	**0.49 J**	**3.8**	**2.1**	**2.0**
Trichloroethylene (TCE)	5	**25**	**0.25 J**	**30**	**1.0**	0.20 U	**1.9**	**2.2**	**200**	**42**	**320**
Vinyl Chloride	2	0.20 U	**0.63 J**	**0.37 J**	0.20 U	0.20 U	0.20 U	**0.93 J**	**24**	**0.84 J**	0.20 U
Semi-volatile Organics by Method E625 (µg/L)											
Benzo(a)Anthracene	0.002	1.0 U	**1.0 J**	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Diethyl Phthalate	50	1.0 U	1.0 U	1.0 U	1.0 U	**10**	1.0 U	**8.5**	1.0 U	1.0 U	1.0 U
Fluoranthene	50	1.0 U	**1.6 J**	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	**1.2 J**	1.0 U	1.0 U
Pyrene	50	1.0 U	**1.3 J**	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	**1.0 J**	1.0 U	1.0 U
Fuels by Method NY310-13 (µg/L)											
Fuel Oil #2	NA	1000 U	1000 U	1000 U	1000 U	1000 U	1000 U	1000 U	1000 U	1000 U	1000 U
Fuel Oil #4	NA	1000 U	1000 U	1000 U	1000 U	1000 U	1000 U	1000 U	1000 U	1000 U	1000 U
Fuel Oil #6	NA	1000 U	1000 U	1000 U	1000 U	1000 U	1000 U	1000 U	1000 U	1000 U	1000 U
Gasoline	NA	Absent	Absent	Absent	Absent	Absent	Absent	Absent	Absent	Absent	Absent
Kerosene	NA	1000 U	1000 U	1000 U	1000 U	1000 U	1000 U	1000 U	1000 U	1000 U	1000 U
Lube Oil	NA	Absent	Absent	Absent	Absent	Absent	Absent	Absent	Absent	Absent	Absent
N-Dodecane	NA	1000 U	1000 U	1000 U	1000 U	1000U	1000 U	1000 U	1000 U	1000 U	1000 U

Key:

Qualifiers

J = Estimated value

U = Not detected (method detection limit shown)

Other

NA = Not regulated/no available criteria

µg/L = Micrograms per liter

Notes:

1. New York State Department of Environmental Conservation, Technical and Operational Guidance Series Memorandum #1.1.1: *Ambient Water Quality Standards and Guidance Values and Groundwater Effluent Limitations*, 1998 (with updates), Class GA Groundwater Standards and Guidance Values.
2. Shaded cells exceed the screening value.
3. Bold values denote positive hits.
4. Gasoline and Lube Oil are reported only as "Absent" or "Present" based on the method.

Source: Ecology and Environment Engineering, P.C. 2015

Table 6-4 Summary of Positive Analytical Results for Groundwater Samples from Bedrock Monitoring Wells
Former Davis-Howland Oil Corporation Site, Rochester, NY

Analyte	Screening Criteria [1]	MW-2R 11/11/16	MW-5R 11/10/16	MW-5R-Q 11/10/16	MW-8R 11/10/16	MW-10R 11/14/16	MW-14R 11/11/16	MW-16R 11/15/16	PW-2 11/15/16
Volatile Organics by Method E624 (µg/L)									
1,1,1-Trichloroethane	5	1.0 U	0.40 U	0.20 U	5.0 U	2.0 U	0.20 U	0.20 U	**1.6**
1,1-Dichloroethane	5	**43**	**12**	**12**	**120**	**6.0 J**	0.21 U	**25**	**17**
1,1-Dichloroethene	5	**12**	**3.7**	**4.0**	**45**	**10**	**0.31 J**	**8.8**	0.20 U
1,2-Dichloroethane	0.6	1.0 U	0.40 U	0.20 U	5.0 U	2.0 U	0.20 U	0.20 U	**17**
1,2-Dichloropropane	1	1.0 U	0.40 U	0.20 U	5.0 U	2.0 U	0.20 U	0.20 U	**0.36 J**
Benzene	1	1.0 U	**1.6 J**	**1.7**	5.0 U	2.0 U	0.20 U	**0.31 J**	0.20 U
Chloroethane	5	1.2 U	0.48 U	**0.27 J**	6.0 U	2.4 U	0.24 U	0.24 U	0.44 U
Cis-1,2-Dichloroethylene	5	**1100**	**390**	**410**	**3600**	**28**	**9.9**	**520**	0.24 U
Ethylbenzene	5	1.0 U	0.40 U	0.20 U	5.0 U	2.0 U	0.20 U	0.20 U	**10**
Methylene Chloride	5	1.8 U	1.4 U	0.20 U	**7.0 J**	2.0 U	0.20 U	0.20 U	0.20 U
Tetrachloroethylene (PCE)	5	1.0 U	0.40 U	0.20 U	5.0 U	**4.7 J**	0.20 U	**0.21 J**	0.26 U
Trans-1,2-Dichloroethene	5	**2.7 J**	**4.1**	**3.7**	**6.0 J**	**8.1 J**	**5.3**	**2.5**	0.20 U
Trans-1,3-Dichloropropene	0.4	1.0 U	0.40 U	0.20 U	5.0 U	2.0 U	0.20 U	0.20 U	**2.5**
Trichloroethylene (TCE)	5	1.0 U	**22**	**23**	**10 J**	**850**	**43**	**0.93 J**	0.20 U
Vinyl Chloride	2	**340**	**46**	**47**	**390**	2.0 U	**0.42 J**	**160**	0.20 U
Semi-volatile Organics by Method E625 (µg/L)									
Anthracene	50	**2.1 J**	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Benzo(A)Anthracene	0.002	**7.3**	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Benzo(A)Pyrene	0	**8.8**	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Benzo(B)Fluoranthene	0.002	**10**	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Benzo(G,H,I)Perylene	NA	**7.4**	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Benzo(K)Fluoranthene	0.0020	**3.7 J**	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Bis(2-Ethylhexyl) Phthalate	5	**1.5 J**	1.2 U	1.2 U	1.2 U	1.2 U	1.2 U	1.2 U	1.2 U
Chrysene	0.0020	**8.5**	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Diethyl Phthalate	50	**34**	1.0 U	1.0 U	1.0 U	1.0 U	**16**	1.0 U	1.0 U
Fluoranthene	50	**19**	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Indeno(1,2,3-C,D)Pyrene	0.0020	**7.3**	1.2 U	1.2 U	1.2 U	1.2 U	1.2 U	1.2 U	1.2 U
Phenanthrene	50	**8.9**	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Pyrene	50	**14**	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Fuels by Method NY310-13 (µg/L)		**Fuels were non-detect in all samples**							
Fuel Oil #2	NA	1000 U	1000 UJ	1000 U	1000 U	1000 U	1000 U	1000 U	1000 U
Fuel Oil #4	NA	1000 U	1000 U	1000 U	1000 U	1000 U	1000 U	1000 U	1000 U
Fuel Oil #6	NA	1000 U	1000 U	1000 U	1000 U	1000 U	1000 U	1000 U	1000 U
Gasoline	NA	Absent	Absent	Absent	Absent	Absent	Absent	Absent	Absent
Kerosene	NA	1000 U	1000 U	1000 U	1000 U	1000 U	1000 U	1000 U	1001 U
Lube Oil	NA	Absent	Absent	Absent	Absent	Absent	Absent	Absent	Absent
N-Dodecane	NA	1000 U	1000 U	1000 U	1000 U	1000 U	1000 U	1000 U	1001 U

Key:

Qualifiers

J = Estimated value

U = Not detected (method detection limit shown)

UJ = Not detected/estimated detection limit

Other

NA = Not regulated/no available criteria

µg/L = Micrograms per liter

Notes:

1. New York State Department of Environmental Conservation, Technical and Operational Guidance Series Memorandum #1.1.1: *Ambient Water Quality Standards and Guidance Values and Groundwater Effluent Limitations*, 1998 (with updates), Class GA Groundwater Standards and Guidance Values.
2. Shaded cells exceed the screening value.
3. Bold values denote positive hits.

Source: Ecology and Environment Engineering, P.C. 2015

The maximum total cVOC concentration detected in bedrock groundwater samples from monitoring or pumping wells was approximately 4,200 µg/L in monitoring well MW-8R. The maximum total cVOC concentration has consistently been detected in MW-8R. DCB isomers were not present in any of the bedrock well samples. BTEX was detected in samples from two monitoring wells (MW-5R and MW-16R) and a pumping well (PW-2).

The November 2016 concentration isopleths of BTEX and cVOCs in the bedrock groundwater samples are presented on Figure 6-3.

Semivolatile Organic Compounds

Thirteen SVOCs were detected in bedrock well samples in 2016, including 11 PAHs and two phthalates. Phthalates were detected only in MW-2R and MW-14R. PAHs were present only in monitoring well MW-2R, at a total concentration of approximately 97 µg/L.

Petroleum Products

No petroleum products were identified in any of the bedrock groundwater samples.

6.3.3 Comparison with Historical Analytical Data

Tables 6-5 and 6-6 present historical cVOC and BTEX results, respectively. The following is a summary of the findings:

- Overall, total BTEX concentrations in the overburden groundwater have decreased significantly since 1998. BTEX was not detected in the seven overburden monitoring wells from 2009 to 2012, and in 2013 and 2014 only very low estimated concentrations (0.88 µg/L and 0.12 µg/L, respectively) were detected in MW-9S. BTEX was not detected in any of the seven overburden wells in 2015 or 2016. BTEX (benzene only) was present in pumping well P-3 at a low estimated concentration of 0.56 µg/L in 2016. In 1997 and 1998, significant concentrations of BTEX were detected in overburden wells MW-9S (1,420 µg/L and 4,700 µg/L) and MW-13S (10,600 µg/L and 9,440 µg/L).
- BTEX concentrations in the bedrock groundwater have also decreased since 1997. Total BTEX has been detected in five of the nine bedrock wells at the Site, with the highest concentrations occurring in 1997 at MW-5R (200 µg/L) and MW-8R (126 µg/L). Since 1997, BTEX concentrations have decreased to the point where only one or two wells have contained relatively low concentrations of BTEX from 2007 to 2013. In 2014, four wells had detections of BTEX at relatively low concentrations. MW-5R has consistently contained some BTEX since 1997, but the concentration had decreased to 2.3 µg/L by 2014. In 2015, BTEX was detected in only two of the nine bedrock wells (MW-5R and MW-8R) at very low concentrations (3.9 µg/L and 8.3 µg/L, respectively). In 2016, BTEX was also detected in only two monitoring wells

(MW-5R and MW-16R) at very low concentrations (1.7 µg/L and 10 µg/L, respectively). BTEX (ethylbenzene only) was present in pumping well PW-2 at a 10 µg/L in 2016.

- Overall, cVOC concentrations in the overburden wells have decreased significantly since 1997 and 1998. The highest concentrations of cVOCs were detected in 1998 (15,000 µg/L in MW-9S and 40,000 µg/L in MW-13S). Total cVOC concentrations decreased significantly between 1998 and 2004. The number of wells with detectable levels of cVOCs has ranged from three to six wells since 2007, and concentrations remained relatively stable from 2010 to 2012. In 2013, the total cVOC concentrations dropped or remained essentially the same as in 2012 in the wells, with the exception of MW-9S, where it increased from 140 to 240 µg/L. In 2014, total cVOC concentrations were similar to those in 2013 but mostly showed slight decreases. In 2015, the concentrations in MW-12S and MW-3S were non-detect, the concentrations in MW-1S and MW-12S had decreased, and the concentrations in MW-2S and MW-13S had increased slightly. Additional samples were taken in 2015 at four overburden piezometers not previously monitored (PZ-01, PZ-02, PZ-03, and PZ-04). Total cVOC concentrations in these wells ranged from 9 µg/L in PZ-02 to 430 µg/L in PZ-04. In 2016, the concentrations generally remained similar to those in 2015, with slight increases in wells MW-1S and PZ-04.
- Overall, cVOC concentrations in most bedrock wells have decreased since 1997 or 1998, when significant concentrations (>1,000 µg/L) were detected in six of the nine wells (MW-2R, MW-3R, MW-5R, MW-8R, MW-10R, and MW-16R). The cVOC concentrations generally decreased until 2010 and have remained relatively stable (all less than 2,000 µg/L except in MW-8R) since 2010. The total cVOC concentration in MW-8R increased to a maximum of approximately 14,000 µg/L in 2010 and has since decreased, but this well continues to exhibit the highest cVOC concentration (4,200 µg/L in 2016) of the wells at the Site, due primarily to cis-1,2-DCE. Increased concentrations were observed at four monitoring wells in 2016 compared to 2015: MW-2R, MW-8R, MW-14R, and MW-16R. In well MW-2R, the cVOC concentration remains lower than the historical maximum of 2,100 µg/L detected in 1997, but the concentration has continued to increase through 2016 from a low of 31 µg/L detected in 2013. In well MW-8R, the total cVOC concentration in 2016 was approximately 4,200 µg/L, which is similar to the concentrations detected since 2011. In well MW-14R, the total cVOC concentration increased slightly in 2016 but has remained relatively stable since 1997. In well MW-16R, the 2016 total cVOC concentration nearly quadrupled to 720 µg/L from 200 µg/L in 2015 and is the highest since 1998. The total cVOC concentrations in MW-2R, MW-8R, and MW-16R are primarily influenced by relatively high concentrations of cis-1,2,-DCE and vinyl chloride.

Table 6-5 Historical Total Chlorinated VOCs Results for Monitoring Wells

Well ID	Sample Date											
	2016	2015	2014	2013	2012	2011	2010	2009	2007	2004	1998	1997
Overburden Monitoring Wells												
MW-1S	**76**	**37**	**38**	**41**	**68**	**67**	NA	**45**	**98**	**410**	**120**	**19**
MW-2S	**4.6**	**7.0**	**6.3**	**2.5**	**1.7**	**1.9**	**1.3**	ND	**1.4**	ND	NA	**3.0**
MW-3S	NA	ND	**0.30**	**0.68**	ND	ND	ND	ND	**4.6**	ND	ND	ND
MW-9S	**110**	**140**	**180**	**240**	**140**	**140**	**140**	**92**	**48**	**32**	**15,000**	**6,300**
MW-12S	NA	ND	**0.30**	**0.36**	**13**	ND	ND	ND	**4.4**	ND	**6.0**	**29**
MW-13S	**7.8**	**12**	**9.9**	**12**	**33**	ND	**19**	**3.7**	**69**	**41**	**40,000**	**36,000**
MW-14S	ND	ND	ND	ND	**4.2**	ND	ND	ND	**0.36**	ND	**2.0**	**4.0**
PZ-01	NA	**11**	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
PZ-02	**6.9**	**8.6**	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
PZ-03	**20**	**29**	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
PZ-04	**590**	**430**	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Bedrock Monitoring Wells												
MW-2R	**1,500**	**1,100**	**350**	**31**	**940**	**1,200**	**240**	NA	NA	**940**	NA	**2,100**
MW-3R	NA	**1,800**	**1,700**	**1,400**	**530**	**960**	**410**	**1,600**	**3,300**	**1,200**	**4,300**	**3,200**
MW-5R	**500**	**550**	**650**	**340**	**1,200**	**160**	**1,400**	**210**	**2,700**	**1,100**	**4,200**	**5,200**
MW-8R	**4,200**	**3,400**	**5,400**	**4,600**	**5,600**	**5,700**	**14,000**	**5,800**	**4,300**	**3,800**	NA	**2,600**
MW-10R	**910**	**990**	**1,200**	**1,400**	**1,500**	**1,400**	**160**	**1,200**	**1,600**	**1,200**	**3,000**	**2,300**
MW-12R	NA	**26**	**41**	**34**	ND	**45**	**35**	**66**	**75**	**22**	NA	**270**
MW-14R	**59**	**45**	**59**	**72**	**59**	**61**	**54**	**45**	**67**	**17**	**50**	**22**
MW-15R	NA	**10**	**12**	**11**	**11**	**11**	**6.4**	**4.7**	**7.4**	**7.7**	NA	**35**
MW-16R	**720**	**200**	**230**	**180**	**210**	**220**	**48**	**320**	**250**	**260**	**2,400**	**1,100**

Notes:

Analytical results are all in micrograms per liter (µg/L).

Key:

ND = Not detected

NA = Not analyzed

Chlorinated VOCs = sum of chlorinated aliphatic hydrocarbon concentrations (does not include dichlorobenzenes)

Table 6-6 Historical Total BTEX Results for Monitoring Wells

Well ID	Sample Date										
	2016	2015	2014	2013	2012	2011	2010	2009	2007	2004	1998
Overburden Monitoring Wells											
MW-1S	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
MW-2S	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
MW-3S	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
MW-9S	ND	ND	**0.12 J**	**0.88 J**	ND	ND	ND	ND	**2.5**	**1.5**	**4,700**
MW-12S	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
MW-13S	ND	ND	ND	ND	ND	ND	ND	ND	ND	**0.34**	**9,440**
MW-14S	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Bedrock Monitoring Wells											
MW-2R	ND	ND	ND	ND	ND	**4.7**	ND	ND	NA	**1.2**	NA
MW-3R	ND	ND	ND	ND	ND	ND	ND	ND	ND	**20**	ND
MW-5R	**1.7**	**3.9**	**2.3**	**4.6**	**32**	**45**	**45**	**3.1**	**15**	**71**	**42**
MW-8R	ND	**8.3**	**12 J**	**16**	ND	ND	ND	ND	**21**	**18**	NA
MW-10R	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
MW-12R	ND	ND	**0.14 J**	ND	ND	ND	ND	ND	ND	ND	NA
MW-14R	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
MW-15R	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NA
MW-16R	**0.31**	ND	**0.11 J**	ND	ND	ND	ND	ND	ND	ND	ND

Notes:

Analytical results are all in micrograms per liter (µg/L).

Key:

BTEX = sum of benzene, toluene, ethylbenzene, and xylene concentrations

J = value is estimated

NA = not analyzed

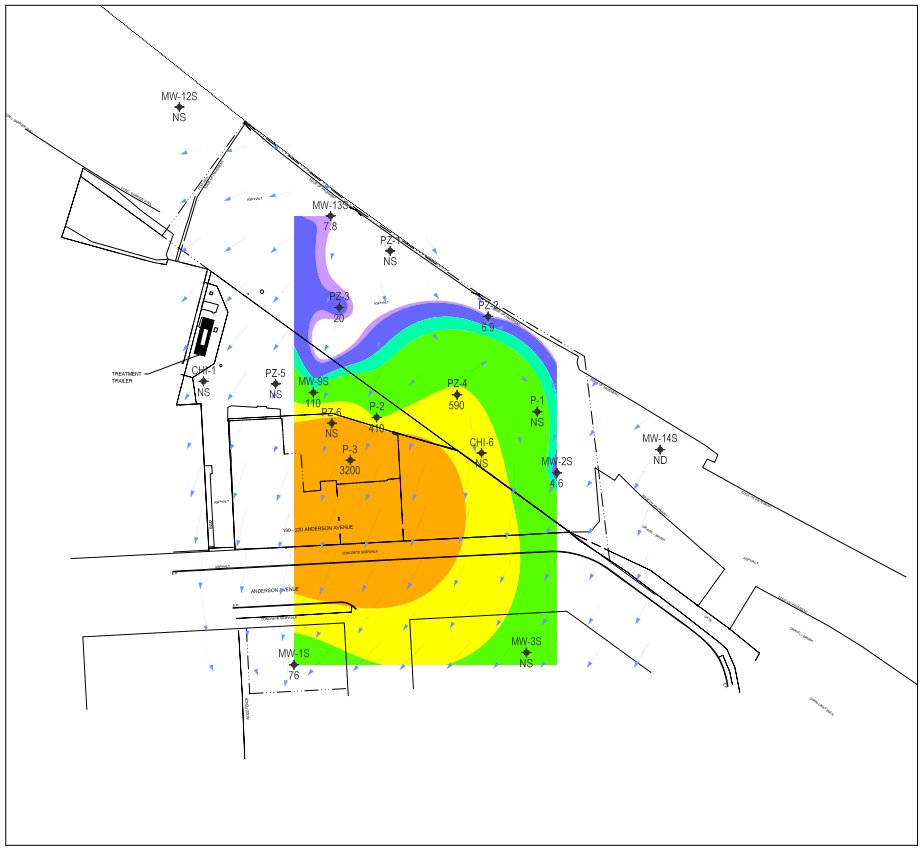
ND = Not detected

Source: Ecology and Environment Engineering, P.C. 2015

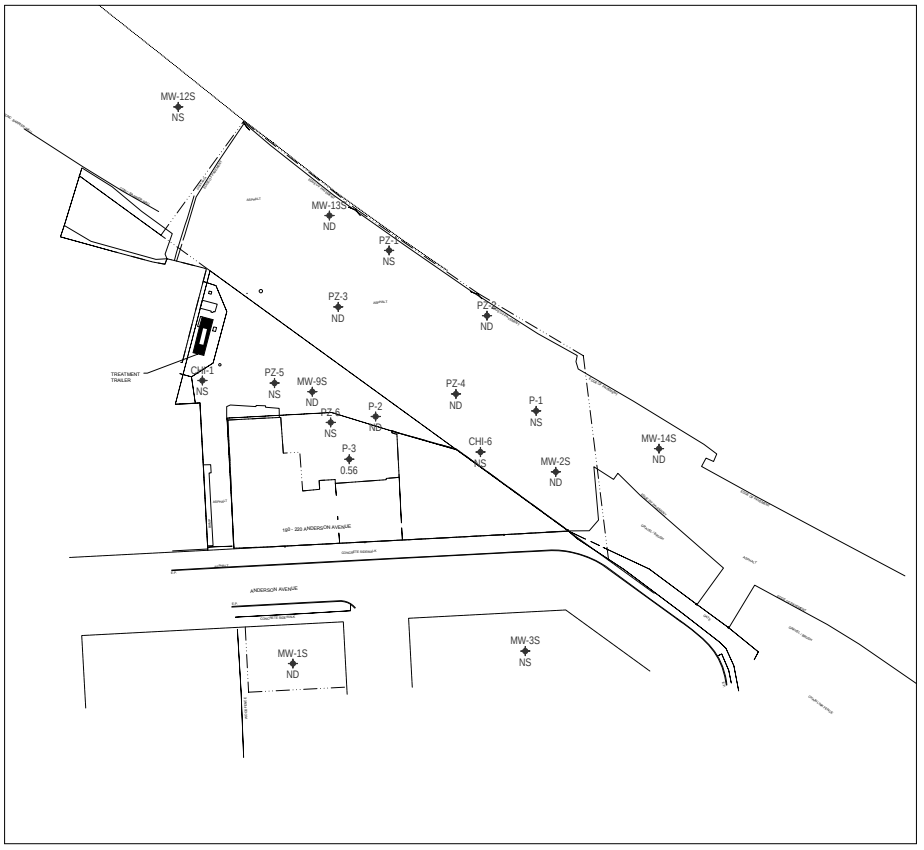
1703074.0012.09
DavisHowland_CHEMISTRY_ovr_2016.srf - 01/12/2017

N

Total Chlorinated VOC Concentrations (µg/L)



Total BTEX Concentrations (µg/L)



Notes:
1) BTEX = sum of benzene, toluene, ethylbenzene, and xylene isomers (BTEX was detected only in P-3 at 0.56 µg/L in November 2016).
2) VOC = volatile organic compound.
3) Chlorinated VOCs include all chlorinated aliphatic hydrocarbons detected. Other VOCs detected but not presented on this figure include chlorinated aromatics (i.e., dichlorobenzene isomers) in MW-9S (2.1 µg/L), MW-14S (0.22 µg/L) and P-3 (4.9 µg/L).
4) ND = not detected.
5) NS = not sampled.

0 5 10 50 100 500 1,000 5,000 10,000
CONCENTRATION IN MICROGRAMS PER LITER

0 100 200 300
SCALE IN FEET

Legend
Approximate Limit of Capture of Pumping Wells
Groundwater Flow Direction and Relative Magnitude of Gradient

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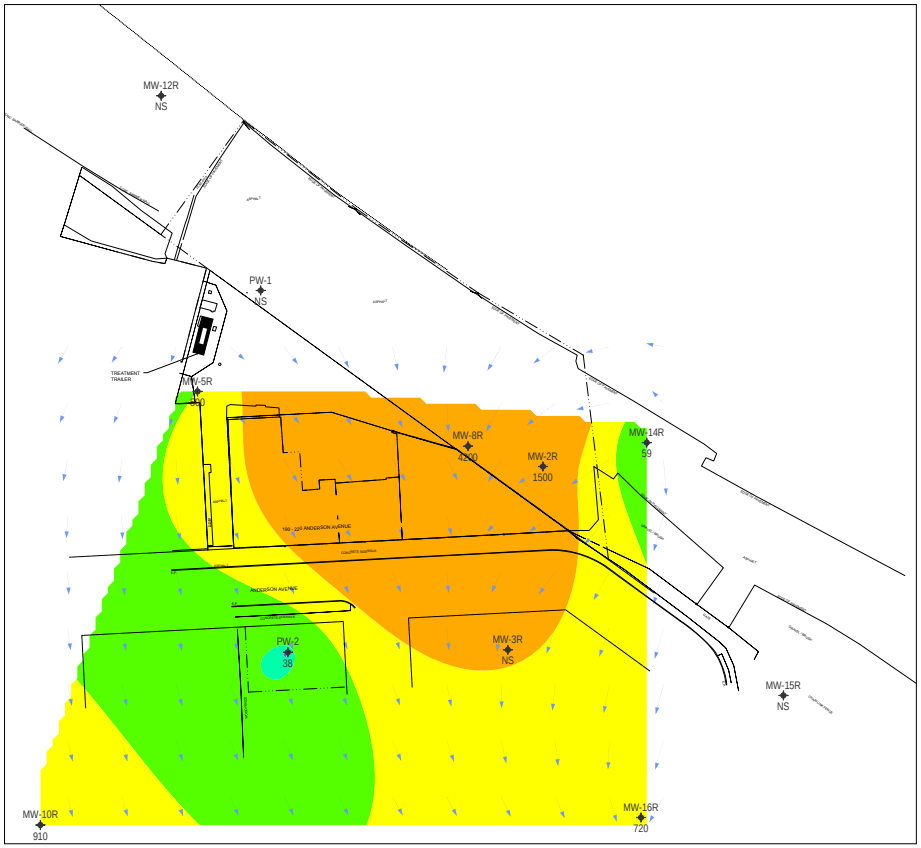
FIGURE 6-2
Total BTEX and Chlorinated VOCs in Overburden Groundwater, November 2016
Former Davis-Howland Oil Corporation Site
Rochester, New York

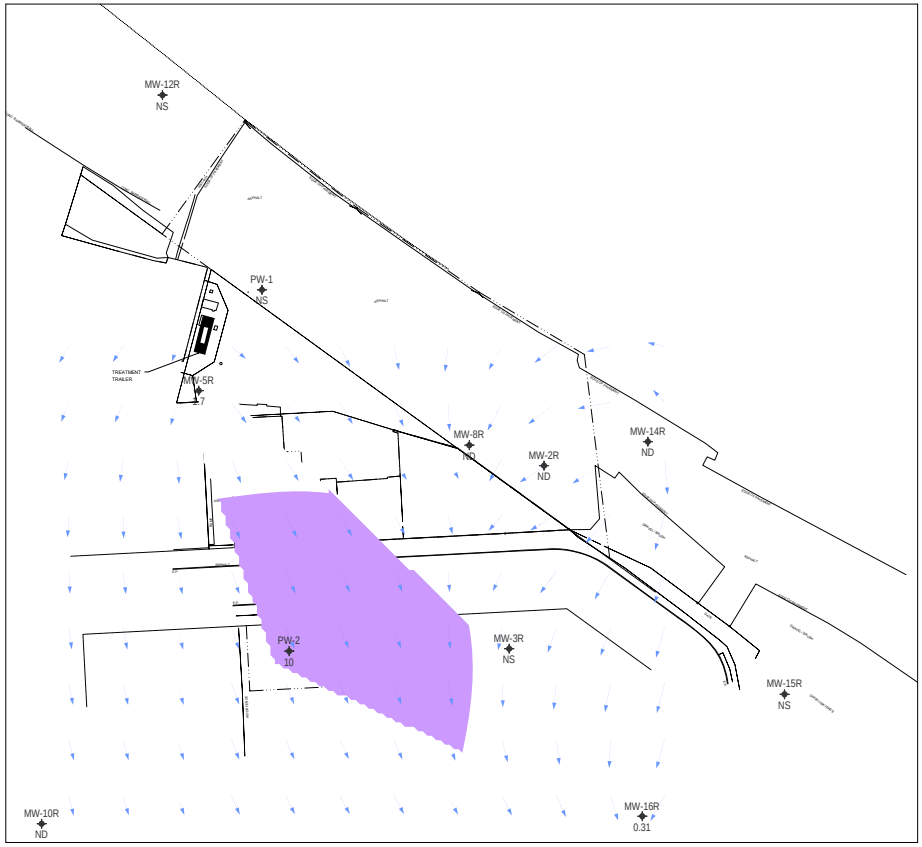
1703074.0012.09
DavisHowland_CHEMISTRY_BDRK_2016.srf - 01/12/2017

N

Total Chlorinated VOC Concentrations (µg/L)



Total BTEX Concentrations (µg/L)



Notes:
1) BTEX = sum of benzene, toluene, ethylbenzene, and xylene isomers (the only detections were benzene in MW-5R and MW-16R).
2) VOC = volatile organic compound.
3) Chlorinated VOCs include all chlorinated aliphatic hydrocarbons detected. No other VOCs, including dichlorobenzenes, were detected.
4) ND = not detected
5) NS = not sampled

0 5 10 50 100 500 1,000 5,000 10,000
CONCENTRATION IN MICROGRAMS PER LITER

0 100 200 300
SCALE IN FEET

Legend

Groundwater Flow Direction and Relative Magnitude of Gradient

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FIGURE 6-3
Total BTEX and Total Chlorinated VOCs in Bedrock Groundwater, November 2016
Former Davis-Howland Oil Corporation Site
Rochester, New York

7 Actions to Support Eventual Site Closure

The overall project goals are to (1) reduce the concentrations of VOCs in the soils beneath the capped or paved area north of the DHOC buildings on Anderson Avenue to meet the standards, criteria, and guidance values (SCGs) found in NYSDEC soil cleanup guidance Final Commissioner Policy CP-51 (October 21, 2010) and 6 NYCRR Part 375 soil cleanup objectives; and (2) reduce the concentrations of VOCs in the contaminated groundwater plume to below the groundwater standards established by NYSDEC. Attaining these goals will allow for the eventual closure of the groundwater recovery system and overall remedial treatment system.

In 2015, NYSDEC requested that EEEPC prepare an RSO plan to review alternatives for eventual site closure within a shorter timeframe and at lower cost than the current system expectation. The RSO Alternatives Report was completed in 2016. Sections 7.1 discusses the existing system at the site. Section 7.2 discusses the long-term groundwater monitoring program. Section 7.3 presents the RSO Alternatives Report and how the existing systems will be incorporated into the site optimization.

In 2016, EEEPC prepared a System Restart and Sampling Work Plan to support consideration of the pump-and-treat system shutdown. Sections 7.4 and 7.5 present the additional sampling and how the sampling supports eventual site closure.

7.1 DHOC Site Treatment System

From July 14 to December 14, 2016, the treatment system was shut down at the request of NYSDEC following submission of the RSO Alternatives Report in June 2016. From January 1 to July 13, 2016, and December 15 to December 31, 2016, the treatment system continued to collect groundwater and efficiently remove VOCs through air stripping. Based on the observed changes in the distribution of the VOC concentrations beneath the Site, the groundwater treatment system, in conjunction with natural processes, continues to reduce overall contaminant concentrations. Total VOC concentrations in all monitoring wells have decreased relative to historical maximums.

7.2 Long-Term Groundwater Monitoring

Based on a review of the reported analytical data for the long-term groundwater monitoring program from January 1997 to November 2016, VOC concentrations have decreased over time. The most recent groundwater monitoring data were compared with historical data to determine whether changes in the long-term monitoring program are warranted.

7.2.1 BTEX

BTEX concentrations in the overburden groundwater have declined significantly since 1998. BTEX compounds were not detected in the overburden groundwater in 2015 or 2016 and were detected at low concentrations below groundwater standards in 2013 and 2014. To streamline the long-term monitoring program and reduce sampling and reporting costs, it is recommended that sampling and analysis for BTEX compounds in the overburden groundwater wells be reduced to every other year for two more sampling events and then eliminated if BTEX compounds remain non-detect.

BTEX concentrations have declined significantly in the bedrock groundwater and are no longer detectable in many wells where they were previously present. In 2015, only two bedrock monitoring wells contained concentrations of BTEX compounds above NYSDEC remedial goals, and the concentrations were relatively low compared to historic maxima. In 2016, only one bedrock monitoring well contained concentrations of BTEX compounds above NYSDEC remedial goals. At this time, sampling and analysis for BTEX in the bedrock groundwater should remain as part of the long-term monitoring program.

7.2.2 cVOCs

While cVOC concentrations on-site have continued to decrease relative to historical maximums, sampling and analysis for cVOCs should continue as part of the long-term monitoring program. Based on an evaluation of the historical monitoring data, MW-12S was removed from the annual sampling event. TCE and cis-DCE were last detected above groundwater standards in this well in 2012.

7.2.3 PAHs

PAH concentrations have generally been non-detect since 2009. The exception is n-dodecane, a component found in fuel, which has been detected three times in MW-2S: in 2015 at a concentration of 1,200 µg/L, in 2014 at a concentration of 1,300 µg/L, and in 2009 at a concentration of 1,000 µg/L. PAH concentrations were non-detect at all monitoring wells sampled in 2016. Sampling and analysis for PAHs should be reduced to every other year for two more sampling events and then eliminated if PAH compounds remain non-detect.

7.3 Remedial System Optimization

In June 2016, EEEPC submitted an RSO Alternatives Report (EEEPC 2016a) to NYSDEC. This report summarized the results of the additional sampling performed at the site in 2015, including results from the extraction well pulsed-

pumping sampling and additional soil boring sample collected from the site. The report also analyzed remedial alternatives for the site and provided recommendations for various changes to the system to improve system performance and reduce the costs of system operation.

The RSO Report noted that contaminant removal by the pump-and-treat system has been declining over time. Sampling from pulsed pumping of the wells did not indicate increased removal of VOC contamination from the site. Results from the soil boring sampling completed in November 2015 indicated that the remaining contamination at the Site meets part 375 SCOs for restricted-residential use. VOC contamination in the groundwater remains above SCGs. Recommendations in the RSO indicated that there was no single alternative that would result in optimization of the system. It was recommended to install soil vapor mitigation systems in on-site buildings impacted by soil vapor intrusion and to perform a pilot bioremediation study to evaluate the effectiveness of bioengineered materials injected into the overburden aquifer. Additionally, the groundwater monitoring network would be optimized by decommissioning damaged and unneeded wells, installing new wells, and reducing the groundwater monitoring program based on historical results from annual sampling. The final recommendation was to implement a monitored natural attenuation pilot program to quantify the time frame in which attainment of the remedial action objectives is expected, and discontinue operation of the groundwater pump-and-treat system and the AS/SVE system.

Following submission of this report, NYSDEC made the determination to shut down the treatment systems on July 13, 2016, and to continue with long-term groundwater monitoring of the site. Following further review of site data and DER-10 requirements, NYSDEC requested on September 14, 2016, that the treatment systems be restarted and additional sampling of the systems be performed.

7.4 Pulsed Pumping

Operational data indicates that the DHOC remedial groundwater pumping and air stripping treatment system has reached asymptotic removal rates. In accordance with Section 6.4.b.1 of the NYSDEC's Division of Environmental Remediation (DER) *Technical Guidance for Site Investigation and Remediation DER-10*, continued operation and pulsing of the system for a period of time must confirm that asymptotic groundwater conditions have resulted from treatment (NYSDEC 2010). In a pulsed pumping system, the resting phase allows time for contaminants to diffuse from low to high permeability zones where the contaminants can then be removed through the pumping phase. This operation minimizes the volume of water to be treated while maximizing contaminant concentrations in the water.

For the pulsed pumping, all operational pumping wells (PW-1, PW-2, P-2, and P-3) will be pulsed. Regular sampling of influent and effluent of the treatment system and at the beginning and end of the pulsed pumping efforts will be used to analyze changes in the treatment system concentrations of VOCs and concentration

of VOCs at each pumping well to evaluate whether greater removal of VOCs is achievable.

The pulse-pumping plan involves turning the pumps on for one month, off for one month, on for three weeks, off for five weeks, on for two weeks, off for six weeks and so on until a minimum of 10 samples demonstrate, with 95% confidence, that asymptotic conditions have been reached. This will be determined using the Student t-test and hypothesis test on the mean.

If post-shutdown VOC removal concentrations are less than or equal to pre-shutdown concentrations while meeting target levels of VOCs then the system can be considered to no longer be removing a significant level of contaminants and to have reached asymptotic removal rates. It would then be appropriate for NYSDEC to consider the shut down and dismantling of the system.

7.5 AS/SVE System Sampling

Since decommissioning of the CATOX system in 2008, effluent air samples from the AS/SVE system have not been collected. As part of system optimization sampling, additional effluent samples will be analyzed for VOCs. Pursuant to Section 6.4 of DER-10, effluent air quality and air flow-rate data will be collected once per week over a 10-week period. If cumulative pounds of VOCs removed in the effluent air decreases or remains the same while meeting the effluent air target levels for VOCs, then the 10 sampling points have adequately validated, within 95% confidence limits, that asymptotic conditions have been reached and it is appropriate for NYSDEC to consider shut down of the AS/SVE system. If the cumulative pounds of VOCs removed in the effluent air increases, then the system is continuing to be effective in removing contaminants and it is recommended to continue air sampling once per week for four weeks and then once per month for six months until the cumulative pounds of VOCs removed in the effluent air becomes asymptotic.

8 Annual Remedial Action Costs

The 2016 costs of OM&M of the remedial treatment system at the Site, including equipment in the treatment trailer, the groundwater pumping system, long-term groundwater monitoring network, EEEPC oversight, RSO activities, subcontracted services, replacement equipment, and utilities, are presented in Table 8-1.

The total 2016 cost for operating the remedial treatment system at the Site was $151,464.

Table 8-1 2016 Remedial Action Costs for the Former Davis-Howland Oil Corporation Site

Description	WA D007617-12
EEEPC OM&M Admin, Management, and Reporting	$71,669
EEEPC RSO Evaluations and Reporting	$16,295
EEEPC Long-term Monitoring Program	$12,590
Sub – OM&M Services	$20,892
Sub – Analytical Services (O&M)	$1,090
Sub – Analytical Services (GW Monitoring)	$5,368
Sub – Analytical Services (RSO Evaluations)	$2,819
Replacement Equipment & Contractor Services	$12,730
Utilities – Electric	$7,496
Utilities – Telephone	$515
2016 Total	**$151,464**

Key:

OM&M = operations, maintenance, and monitoring

9 Department or Local Public Reporting

9.1 NYSDEC Fact Sheet

The most recent information regarding the DHOC Site can be found on the Environmental Site Remediation Database Search at:

http://www.dec.ny.gov/cfmx/extapps/derexternal/index.cfm?pageid=3.

9.2 Local Public Reporting

No local public reporting of the Site or remedial Site operations were brought to EEEPC's attention in 2016. The local reporting newspaper in Rochester, New York, is the *Democrat and Chronicle*.

10 References

Ecology and Environment Engineering, P.C. (EEEPC). 2004. *Davis-Howland Oil Corporation Site, Groundwater Sampling Draft Data Summary Report 2004, Rochester, New York.* Prepared for New York State Department of Environmental Conservation, Albany, New York.

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_____. 2009. *Former Davis-Howland Oil Corporation Site 2009 Groundwater Sampling Draft Data Summary Report, Rochester, New York.* July 2009. Prepared for New York State Department of Environmental Conservation, Albany, New York.

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_____. 2011. *Master Quality Assurance Project Plan (QAPP) for New York State Department of Environmental Conservation Projects*. Prepared for New York State Department of Environmental Conservation, Albany, New York, April 2011.

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_____. 2016b. *Sampling Work Plan and Equipment Repairs, Former Davis-Howland Oil Corporation Site, Site # 8-28-088.* November 2016

_____. 2016c. *Davis-Howland Oil Company Site, EEEPC Contract # D004442, Site # 8-28-088, January 2016 Operations, Maintenance, and Monitoring Report.*

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_____. 2016g. *Davis-Howland Oil Company Site, EEEPC Contract # D004442, Site # 8-28-088, May 2016 Operations, Maintenance, and Monitoring Report.*

_____. 2016h. *Davis-Howland Oil Company Site, EEEPC Contract # D004442, Site # 8-28-088, June 2015 Operations, Maintenance, and Monitoring Report.*

_____. 2016i. *Davis-Howland Oil Company Site, EEEPC Contract # D004442, Site # 8-28-088, July 2016 Operations, Maintenance, and Monitoring Report.*

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Lawler, Matusky Skelly Engineers, LLP and Galson/Lozier Engineers. 1996. *New York State Superfund Contract, Remedial Investigation Report, Davis-Howland Oil Corporation Remedial Investigation/Feasibility Study*. Vol. I. October 1996.

New York State Department of Environmental Conservation (NYSDEC). 1998 (with updates). Division of Water Technical and Operational Guidance Series (1.1.1): *Ambient Water Quality Standards and Guidance Values and Groundwater Effluent Limitations.* Albany, New York: Division of Water.

_____. 2010. Technical Guidance for Site Investigation and Remediation, Division of Environmental Remediation (DER) -10. May 2010.

New York State Department of Health (NYSDOH). 2015. *Guidelines for Evaluating Soil Vapor Intrusion in the State of New York.* Updated August 2015. Accessed online at: https://www.health.ny.gov/environmental/investigations/soil_gas/svi_guidance/docs/svig_final2006_complete.pdf.

A County of Monroe Discharge Permit

COUNTY OF MONROE
SEWER USE PERMIT RENEWAL

Firm Name: NYSDEC Div. of Env. Remed.
200 Anderson Avenue, Davis How

Permit Number: 864
Fee: $ 75.00
Expires: **May 31, 2019**

Mailing Addr: 625 Broadway, 12th Floor
Albany, NY 12233-7013

W/C Expire:
District No: 8575

Business Type: Groundwater Remediation

Has there been any revision to the plant sewer system or any change in industrial wastes discharged to the public sewer in the past twelve months

Yes: __ No: X If yes, please explain in a separate letter.

Average monthly consumption for the past twelve (12) months:

Water Account No.(s) NA (cu ft/gal) NA

In consideration of the granting of this renewal permit the undersigned agrees to comply with all the requirements in the Initial Permit as listed under II.

Name of person to be contacted for inspection & sampling purposes:

Type or Print: Ashlee Patnode
Ecology & Environment Phone No: 716-684-8060

YOUR PERMIT MUST BE SIGNED AS FOLLOWS:

1. For a corporation: by a responsible corporate officer. A corporate officer means:
   (a) A president, secretary, treasurer or vice - president of the corporation in charge of a principal business function, or any other person who performs similar policy - or decision - making functions for the corporation: or
   (b) The manager of one or more manufacturing, production, or operation facilities employing more than 250 persons or having gross annual sales or expenditures exceeding $25 million (in second - quarter 1980 dollars), if authority to sign documents has been assigned or delegated to the manager in accordance with corporate procedures.

2. For a partnership or sole proprietorship: by a general partner or the proprietor, respectively; or

3. By a duly authorized representative of the individual designated in items (1) or (2) above if:
   (a) The authorization is made in writing by the individual described in items (1) or (2);
   (b) The authorization specifies either an individual or a position having responsibility for the overall operation of the facility from which the Industrial Discharge originates such as the position of plant manager, superintendent, position of equivalent responsibility, or an individual or position having overall responsibility for environmental matters for the company: (A duly authorized representative may thus be either a named individual or any individual occupying named position); and
   (c) The written authorization is submitted to this Department.

Print or Type: William B. Welling Phone No: 518-402-9813

Signature: William B. Welling Date: May 24, 2016

Title: NYSDEC Project Manager

Renewal Approved by: _____ Issued this ___ day of _____ 20 ___ .

Michael J. Garland, P.E.
Director of Environmental Services-PureWaters
Monroe County

B

November 2016 Groundwater Monitoring Event Field Notes and Analytical Data

Data Usability Summary Report	Project: Davis Howland Oil Company
Date Completed: December 16, 2016	Completed by: Joanna Z. Christopher

The analytical data provided by the laboratory were reviewed for precision, accuracy, and completeness based on applicable sections of the following guidance:

- NYSDEC Division of Environmental Remediation Guidance for Data Deliverables and the Development of Data Usability Summary Reports (in DER-10, May 2010);
- EPA Region 2 Data Validation Standard Operating Procedures.

Specific criteria for QC limits were obtained from EEEPC's Master QAPP for NYSDEC projects. Compliance with the project QA program is indicated in the checklist and tables below. Any major or minor concerns affecting data usability are listed below. The checklist and tables also indicate whether data qualification is required and/or the type of qualifier assigned.

Reference:

Project ID	Lab Work Order	Laboratory
1703074.0012.08	R1612036 R1612099	ALS, Rochester, NY

Work Orders, Tests and Number of Samples included in this DUSR

Work Orders	Matrix	Test Method	Method Name	Number of Samples	Sample Type
R1612036	WQ	E624	Volatile Organic Compound by GC/MS	1	TB
R1612036	WG	E624	Volatile Organic Compound by GC/MS	1	FD
R1612036	WG	E624	Volatile Organic Compound by GC/MS	10	N
R1612036	WG	E625	Semi-volatile Organic Compounds by GC/MS	1	FD
R1612036	WG	E625	Semi-volatile Organic Compounds by GC/MS	10	N
R1612036	WG	NY310-13	Petroleum Products in Water (Hydrocarbon Scan)	1	FD
R1612036	WG	NY310-13	Petroleum Products in Water (Hydrocarbon Scan)	8	N
R1612099	WQ	E624	Volatile Organic Compound by GC/MS	1	TB
R1612099	WQ	E624	Volatile Organic Compound by GC/MS	1	EB
R1612099	WG	E624	Volatile Organic Compound by GC/MS	8	N
R1612099	WG	E625	Semi-volatile Organic Compounds by GC/MS	8	N
R1612099	WG	NY310-13	Petroleum Products in Water (Hydrocarbon Scan)	8	N

Table 1 Sample Summary Tables from Electronic Data Deliverable

Work Order	Matrix	Sample ID	Lab ID	Sample Date	Lab QC	MS/ MSD	ID Corrections
R1612036	WQ	TRIP BLANK	R1612036-010	11/10/2016			TB1110-01
R1612036	WG	MW-13S-111016	R1612036-004	11/10/2016			MW-13S-NOV16
R1612036	WG	MW-14R-111116	R1612036-005	11/10/2016	MS/MSD	MS/MSD	MW-14R-NOV16
R1612036	WG	MW-14S-111116	R1612036-009	11/10/2016			MW-14S-NOV16
R1612036	WG	MW-2R-111116	R1612036-007	11/11/2016			MW-2R-NOV16
R1612036	WG	MW-2S-111116	R1612036-006	11/11/2016			MW-2S-NOV16
R1612036	WG	MW-100-111016	R1612036-008	11/10/2016			MW-5R-NOV16Q
R1612036	WG	MW-5R-111016	R1612036-001	11/10/2016			MW-5R-NOV16
R1612036	WG	MW-8R-111016	R1612036-003	11/10/2016			MW-8R-NOV16
R1612036	WG	MW-9S-111016	R1612036-002	11/10/2016			MW-9S-NOV16
R1612099	WQ	FB-111516	R1612099-011	11/15/2016			FB1115-01
R1612099	WQ	TB111416	R1612099-001	11/14/2016			TB1114-01

Data Usability Summary Report	Project: Davis Howland Oil Company
Date Completed: December 16, 2016	Completed by: Joanna Z. Christopher

Table 1 Sample Summary Tables from Electronic Data Deliverable

Work Order	Matrix	Sample ID	Lab ID	Sample Date	Lab QC	MS/ MSD	ID Corrections
R1612099	WG	MW-10R-111416	R1612099-002	11/14/2016			MW-10R-NOV16
R1612099	WG	MW-16R-111516	R1612099-004	11/15/2016			MW-16R-NOV16
R1612099	WG	MW-1S-111416	R1612099-003	11/14/2016			MW-1S-NOV16
R1612099	WG	P-2-111516	R1612099-008	11/15/2016			P-2-NOV16
R1612099	WG	P-3-111516	R1612099-009	11/15/2016			P-3-NOV16
R1612099	WG	PW-2-111516	R1612099-007	11/15/2016			PW-2-NOV16
R1612099	WG	PZ-2-111516	R1612099-006	11/15/2016			PZ-2-NOV16
R1612099	WG	PZ-3-111516	R1612099-005	11/15/2016			PZ-3-NOV16
R1612099	WG	PZ-4-111516	R1612099-010	11/15/2016			PZ-4-NOV16

General Sample Information	
Do Samples and Analyses on COC check against Lab Sample Tracking Form?	Yes. Many of the sample names were corrected as noted in the ID Correction column to maintain consistency in nomenclature between sampling events. For SDG R1612036, the trip blank was not listed on the COC; the laboratory added a note on the COC upon receipt to add it.
Did coolers arrive at lab between 2 and 6°C and in good condition as indicated on COC and Cooler Receipt Form?	No. Four of the six coolers associated with SDG R1612036 were received at temperatures outside of the acceptance range of ≤ 6.0°C (13.7, 9.2, 8.1, and 9.7 °C) as recorded from the temperature blanks. Because the samples were received on ice by the laboratory at the end of the field day, there are no usability issues with the data. Custody seals were not present on some of the coolers; however, the coolers were directly transferred from the field technician to the laboratory; therefore, there are no custody issues with the samples.
Frequency of Field QC Samples Correct? Field Duplicate - 1/20 samples Trip Blank - Every cooler with VOCs waters only Equipment Blank - 1/ set of samples per day?	Yes. Field Duplicate collected 1/16. MS/MSD collected 1/17 for VOCs; 1/17 for SVOCs and 1/17 for Petroleum Products. Trip Blanks – 1 per each cooler with VOCs. Equipment blank collected
Case narrative present and complete?	Yes.
Any holding time violations?	No.

The following tables are presented at the end of this DUSR and provided summaries of results outside QC criteria:

- Method Blanks Results (Table 2)
- Surrogates Outside Limits (Table 3)
- MS/MSD Outside Limits (Table 4)
- LCS Outside Limits (Table 5)
- Re-analysis Results (Table 6)
- Field Duplicate Results (Table 7)

Go to Tables List

Volatile Organics and Semi-volatile Organics by GC/MS	
Description	**Notes and Qualifiers**
Any compounds present in method, trip, and field blanks (see Table 2)?	Yes. Method E624: Bromomethane was detected in method blank RQ1613947-04 below the PQL. Methylene chloride was detected in method blank RQ1614019-04 below the PQL.
For samples, if results are < 5 times the blank or < 10 times blank for common laboratory contaminants then "U" flag data. Qualification also applies to TICs.	Method E624: Sample results less than 10X the blank detection for methylene chloride were U qualified as non-detect (MW-10R-NOV16, MW-2R-NOV16, and MW-5R-NOV16). The method detection limit was elevated to the sample result. Bromomethane was not detected in any of the samples.
Surrogate for method blanks and LCS within limits?	Yes.
Surrogate for samples and MS/MSD within limits? (See Table 3). All samples should be re-analyzed for VOCs? Samples should re-analyzed if >1 BN and/or > AP for BNAs is out. Matrix effects should be established.	Yes.
Laboratory QC frequency one blank and LCS with each batch and one set of MS/MSD per 20 samples?	Yes.
MS/MSD within QC criteria (see Table 4)? If out and LCS is compliant, then J flag positive data in original sample due to matrix?	No. Method E625: Benzidine and hexachlorocyclopentadiene were recovered below laboratory criteria in the MS and MSD for sample MW-14R-NOV16. The sample results for those compounds were both non-detects; therefore, they were qualified with “UJ” as non-detect with estimated reporting limits. The laboratory narrative stated that “benzidine has been reported as zero percent recovery in the MS/MSD due to a limitation in LIMs. Benzidine was detected at 5% and 5% recovery, respectively, outside laboratory limits.”

Volatile Organics and Semi-volatile Organics by GC/MS	
Description	**Notes and Qualifiers**
LCS within QC criteria (see Table 5)? If out, and the recovery high with no positive values, then no data qualification is required.	No. Method E625: Hexachlorocyclopentadiene was recovered below criteria in all of the LCS/LCSDs. Hexachlorocyclopentadiene is a poor performing analyte in a multi-parameter spike. The associated sample results were qualified with "UJ" as non-detect with estimated reporting limits. The laboratory narratives stated that "benzidine has been reported as zero percent recovery in the LCS/LCSD due to a limitation in LIMs. Benzidine was detected within laboratory limits. The LCS/LCSD is acceptable and should not be flagged on the summary form."
Do internal standards areas and retention time meet criteria? If not was sample re-analyzed to establish matrix (see Table 6)?	Unable to assess. Category A reporting. No exceptions noted in narrative.
Is initial calibration for target compounds <10 %RSD or curve fit?	Unable to assess. Category A reporting. No exceptions noted in narrative.
Is continuing calibration for target compounds < 20.5%D.	Unable to assess. Category A reporting. The laboratory narrative states that for SDG R1612036, "Method E625, 11/17/16, 11/18/16, 11/21/16: The upper control limit was exceeded for one or more analytes in the Continuing Calibration Verification (CCV). The field samples analyzed in this sequence did not contain the analyte(s) in question above the Method Reporting Limit (MRL). Since the exceedance equates to a potential high bias, the data quality was not significantly affected and no further corrective action was taken." The results were reported without qualification.
Were any samples re-analyzed or diluted (see Table 6)? For any sample re-analysis and dilutions is only one reportable result by flagged?	Yes. Samples were diluted to bring target analytes within calibration range. Only one result is reported for each analyte per sample.
For TICs are there any system related compounds that should not be reported?	N/A
Do field duplicate results show good precision for all compounds except TICs (see Table 7)?	Yes.

General Analytical Methods (Total Petroleum Hydrocarbons)	
Description	**Notes and Qualifiers**
Any compounds present in method and field blanks as noted on Table 2?	No.
For samples, if results are <5 times the blank then "U" flag data.	Not required.
Laboratory QC frequency one blank and LCS with each batch and one set of MS/MSD per 20 samples?	Yes.
MS/MSD within QC criteria (see Table 4)? QC limits are not applicable to sample results greater than 4 times spike amount.	Yes.
LCS within QC criteria (see Table 5)? If out, and the recovery high with no positive values, then no data qualification is required.	Yes. The RPDs for LCSD samples RQ1613960-03 and RQ1614125-03 were slightly above the control limit for fuel oil #2. Fuel oil #2 was not detected in any of the field samples; therefore, the results were reported without qualification.
Do field duplicate results show good precision for all compounds (see Table 7)?	Yes.

Summary of Findings

- Bromomethane and methylene chloride were detected below the PQL in method blanks; three sample results were qualified with “U” as non-detect for methylene chloride.
- Benzidine and hexachlorocyclopentadiene were recovered below laboratory criteria in the MS and MSD; sample results for those compounds were qualified with “UJ” as non-detect with estimated reporting limits. The analytes were not detected in the samples and are not contaminants of concern.
- Hexachlorocyclopentadiene was recovered below criteria in all of the LCS/LCSDs. Hexachlorocyclopentadiene is a poor performing analyte in a multi-parameter spike. The associated sample results were qualified with “UJ” as non-detect with estimated reporting limits.

Table 2 - List of Positive Results for Blank Samples

Method	Sample ID	Sample Type	Analyte	Result	Qualifier	Units	MDL	PQL
E624	RQ1613947-04	MB	Bromomethane	0.44	J	µg/l	0.44	1.0
E624	RQ1614019-04	MB	Methylene Chloride	0.30	J	µg/l	0.20	1.0

Table 2A - List of Samples Qualified for Method Blank Contamination

Method	Method Blank	Matrix	Analyte	Blank Result	Sample Result	Lab Qualifier	PQL	Affected Samples	Sample Flag
E624	RQ1614019-04	WQ	Methylene Chloride	0.30	2.0	J	10	MW-10R-NOV16	U Flag
E624	RQ1614019-04	WQ	Methylene Chloride	0.30	1.8	J	5.0	MW-2R-NOV16	U Flag
E624	RQ1614019-04	WQ	Methylene Chloride	0.30	1.4	J	2.0	MW-5R-NOV16	U Flag

Table 2B - List of Samples Qualified for Field Blank Contamination

None

Table 3 - List of Samples with Surrogates outside Control Limits

None.

Table 4 - List MS/MSD Recoveries and RPDs outside Control Limits

Method	Sample ID	Sample Type	Analyte	Orig. Result	Spike Amount	Rec.	Dil Fac	Low Limit	High Limit	Sample Qualifier
E625	MW-14R-NOV16MS	MS	Benzidine	ND	189	5	1	10	169	UJ Flag
E625	MW-14R-NOV16MSD	MSD	Benzidine	ND	189	5	1	10	169	UJ Flag
E625	MW-14R-NOV16MS	MS	Hexachlorocyclopentadiene	ND	94.3	22	1	28	98	UJ Flag
E625	MW-14R-NOV16MSD	MSD	Hexachlorocyclopentadiene	ND	94.3	22.1	1	28	98	UJ Flag

Table 5 - List LCS Recoveries outside Control Limits

Method	Sample ID	Analyte	Rec.	Low Limit	High Limit	Sample Qualifier
E625	RQ1614001-02	Hexachlorocyclopentadiene	26	28	98	UJ Flag
E625	RQ1614074-02	Hexachlorocyclopentadiene	21	28	98	UJ Flag
E625	RQ1614074-03	Hexachlorocyclopentadiene	22	28	98	UJ Flag
E625	RQ1614209-02	Hexachlorocyclopentadiene	25	28	98	UJ Flag
E625	RQ1614209-03	Hexachlorocyclopentadiene	25	28	98	UJ Flag
E625	RQ1614274-02	Hexachlorocyclopentadiene	25	28	98	UJ Flag
E625	RQ1614274-03	Hexachlorocyclopentadiene	27	28	98	UJ Flag

Method	Sample ID	Sample Type	Analyte	RPD	RPD Limit	Sample Qual.
NY310-13	RQ1613960-03	LCSD	Fuel Oil #2	32	30	None
NY310-13	RQ1614125-03	LCSD	Fuel Oil #2	42	30	None

Table 6 –Samples that were Reanalyzed

Sample ID	Lab ID	Method	Sample Type	Action
MW-5R-NOV16QDL	R1612036-008	E624	FD	5X: Dilute to bring Cis-1,2-Dichloroethylene within calibration curve. Only Cis-1,2-Dichloroethylene reported from dilution.
MW-5R-NOV16	R1612036-001	E624	N	2X: Initial analysis performed at 2X dilution to bring target analytes within calibration curve. Elevated detection limits provided.
MW-5R-NOV16DL	R1612036-001	E624	N	2.5X: Dilute to bring Cis-1,2-Dichloroethylene within calibration curve. Only Cis-1,2-Dichloroethylene reported from dilution.
MW-2R-NOV16	R1612036-007	E624	N	5X: Initial analysis performed at 2X dilution to bring target analytes within calibration curve. Elevated detection limits provided.
MW-2R-NOV16DL	R1612036-007	E624	N	10X: Dilute to bring Cis-1,2-Dichloroethylene within calibration curve. Only Cis-1,2-Dichloroethylene reported from dilution.
MW-10R-NOV16	R1612099-002	E624	N	10X: Initial analysis performed at 10X dilution to bring target analytes within calibration curve. Elevated detection limits provided.
MW-16R-NOV16	R1612099-004	E624	N	5X: Dilute to bring Cis-1,2-Dichloroethylene within calibration curve. Only Cis-1,2-Dichloroethylene reported from dilution.
MW-8R-NOV16	R1612036-003	E624	N	25X: Initial analysis performed at 25X dilution to bring target analytes within calibration curve. Elevated detection limits provided.
P-2-NOV16	R1612099-008	E624	N	2X: Initial analysis performed at 2X dilution to bring target analytes within calibration curve. Elevated detection limits provided.

Sample ID	Lab ID	Method	Sample Type	Action
P-3-NOV16	R1612099-009	E624	N	20X: Dilute to bring 1,1,1-Trichloroethane, Tetrachloroethylene (PCE), Trichloroethylene (TCE), and Cis-1,2-Dichloroethylene within calibration curve. Only 1,1,1-Trichloroethane, Tetrachloroethylene (PCE), Trichloroethylene (TCE), and Cis-1,2-Dichloroethylene reported from dilution.
PZ-4-NOV16	R1612099-010	E624	N	2X: Initial analysis performed at 2X dilution to bring target analytes within calibration curve. Elevated detection limits provided.
MW-2R-NOV16RE	R1612036-007	E625	N	Re-extraction performed outside of hold time due to LCS recovery below control limits; not reported – results from original extraction and analysis only reported.
MW-14S-NOV16RE	R1612036-009	E625	N	Re-extraction performed outside of hold time due to LCS recovery below control limits; not reported – results from original extraction and analysis only reported.

Table 7 – Summary of Field Duplicate Results

Method	Analyte	Unit	Matrix	PQL	Anal Type	MW-5R-NOV16	MW-5R-NOV16Q	RPD	RPD Rating	Sample Qualifier
E624	1,1-Dichloroethane	µg/l	WG	2.0	TRG	12	12	0.0%	Good	None
E624	1,1-Dichloroethene	µg/l	WG	2.0	TRG	3.7	4.0	7.8%	Good	None
E624	Benzene	µg/l	WG	2.0	TRG	1.6	1.7	6.1%	Good	None
E624	Chloroethane	µg/l	WG	2.0	TRG	ND	0.27	NC	--	--
E624	Cis-1,2-Dichloroethylene	µg/l	WG	2.5	TRG	390	410	5.0%	Good	None
E624	Trans-1,2-Dichloroethene	µg/l	WG	2.0	TRG	4.1	3.7	10.3%	Good	None
E624	Trichloroethylene (TCE)	µg/l	WG	2.0	TRG	22	23	4.4%	Good	None
E624	Vinyl Chloride	µg/l	WG	2.0	TRG	46	47	2.2%	Good	None

Data Usability Summary Report	Project: Davis Howland Oil Company
Date Completed: December 16, 2016	Completed by: Joanna Z. Christopher

Acronym List and Table Key:

COC	=	chain of custody
DUSR	=	data usability summary report
EB	=	Equipment blank
FD	=	Field duplicate sample
GC/MS	=	gas chromatography / mass spectrometry
LCS	=	laboratory control sample
LCSD	=	laboratory control sample duplicate
MBLK	=	method blank
MS	=	matrix spike
MSD	=	matrix spike duplicate
N	=	Normal field sample
NC	=	not calculated
ND	=	not detected
NYSDEC	=	New York State Department of Environmental Conservation
PQL	=	practical quantitation limit
QA	=	quality assurance
QAPP	=	quality assurance project plan
QC	=	quality control
RB	=	Rinsate blank sample
RPD	=	relative percent difference
SDG	=	sample delivery group
TB	=	Trip blank sample
TRG	=	Target analyte
µg/l	=	Micrograms per liter
VOC	=	volatile organic compound
WG	=	Groundwater (matrix)

November 29, 2016 Service Request No:R1612036

Ms. Ashlee Patnode
Ecology And Environment, Incorporated
368 Pleasantview Drive
Lancaster, NY 14086

Laboratory Results for: Davis Howland Oil Company Site

Dear Ms.Patnode,

Enclosed are the results of the sample(s) submitted to our laboratory November 11, 2016
For your reference, these analyses have been assigned our service request number **R1612036.**

All analyses were performed according to our laboratory's quality assurance program. The test results meet requirements of the NELAP standards except as noted in the case narrative report. All results are intended to be considered in their entirety, and ALS Environmental is not responsible for use of less than the complete report. Results apply only to the items submitted to the laboratory for analysis and individual items (samples) analyzed, as listed in the report. The measurement uncertainty of the results included in this report is within that expected when using the prescribed method(s) for analysis of these samples, and represented by Laboratory Control Sample control limits. Any events, such as QC failures, which may add to the uncertainty are explained in the report narrative.

Please contact me if you have any questions. My extension is 7472. You may also contact me via email at Janice.Jaeger@alsglobal.com.

Respectfully submitted,

ALS Group USA, Corp. dba ALS Environmental

Janice Jaeger
Project Manager

ADDRESS 1565 Jefferson Road, Building 300, Suite 360, Rochester, NY 14623
PHONE +1 585 288 5380 | FAX +1 585 288 8475
ALS Group USA, Corp.
dba ALS Environmental

Narrative Documents

ALS Environmental—Rochester Laboratory
1565 Jefferson Road, Building 300, Suite 360, Rochester, NY 14623
Phone (585) 288-5380 Fax (585) 288-8475
www.alsglobal.com

1565 Jefferson Rd, Building 300, Rochester, NY 14623 | 585-288-5380 | www.alsglobal.com

Client: Ecology And Environment, Incorporated
Project: Davis Howland Oil Company Site/10C3074.0012.08
Sample Matrix: Water

Service Request:R1612036
Date Received:11/11/16

CASE NARRATIVE

All analyses were performed consistent with the quality assurance program of ALS Environmental. This report contains analytical results for samples designated for Tier II data deliverables, including results of QC samples analyzed from this delivery group. Analytical procedures performed by the lab are validated in accordance with NELAC standards. Any parameters that are not included in the lab's NELAC accreditation are identified on a "Non-Certified Analytes" report in the Miscellaneous Forms Section of this report. Individual analytical results requiring further explanation are flagged with qualifiers and/or discussed below. The flags are explained in the Report Qualifiers and Definitions page in the Miscellaneous Forms section of this report.

Sample Receipt

Nine water samples were received for analysis at ALS Environmental on 11/11/2016. Any discrepancies noted upon initial sample inspection are noted on the cooler receipt and preservation form included in this data package. The samples were received in good condition and consistent with the accompanying chain of custody form. Samples are refrigerated at ≤6°C upon receipt at the lab except for aqueous samples designated for metals analyses, which are stored at room temperature.

Volatile Organic Analyses:

No significant anomalies were noted with this analysis.

Semi-Volatile Organic Analyses:

Method 625, 11/17/16, 11/18/16, 11/21/16: The upper control limit was exceeded for one or more analytes in the Continuing Calibration Verification (CCV). The field samples analyzed in this sequence did not contain the analyte(s) in question above the Method Reporting Limit (MRL). Since the exceedance equates to a potential high bias, the data quality was not significantly affected and no further corrective action was taken.

Method 625, 11/17/16: The lower control limit for the spike recovery of the Laboratory Control Sample (LCS) was exceeded for one or more analyte. There were no detections of the analyte(s) in the associated field samples. The Laboratory Control Sample Duplicate (LCSD) was within limits, therefore no further action required. The analytes affected are flagged in the LCS Summary.

Benzidine has been reported as zero percent recovery in the MS/MSD due to a limitation in LIMs. Benzidine was detected at 5% and 5% recovery, respectively, outside laboratory limits. The LCS/LCSD should be flagged on the summary form.

Method 625, 11/18/16: The control limit was exceeded for one or more surrogates in the Continuing Calibration Verification (CCV). The surrogates were within acceptance limits for the associated field samples. The data quality was not significantly affected and no further corrective action was taken.

Benzidine has been reported as zero percent recovery in the LCSD due to a limitation in LIMs. Benzidine was detected at 43% recovery, respectively, within laboratory limits. The LCSD is acceptable and should not be flagged on the summary form.

Method 625, 11/18/16, 11/23/16: The lower control limit for the spike recovery of the Laboratory Control Sample (LCS) was exceeded for one or more analyte. There were no detections of the analyte(s) in the associated field samples. The discrepancy associated with reduced recovery equates to a potential low bias. Samples were re-extracted out of holding time and LCS/LCSD were still out low. Both results reported. The analytes affected are flagged in the LCS Summary.

Approved by _____ Date 11/29/2016

SAMPLE DETECTION SUMMARY

CLIENT ID: MW-5R-111016	Lab ID: R1612036-001					
Analyte	**Results**	**Flag**	**MDL**	**PQL**	**Units**	**Method**
1,1-Dichloroethane (1,1-DCA)	12		0.42	2.0	ug/L	624
1,1-Dichloroethene (1,1-DCE)	3.7		0.40	2.0	ug/L	624
Benzene	1.6	J	0.40	2.0	ug/L	624
Methylene Chloride	1.4	J	0.40	2.0	ug/L	624
Trichloroethene (TCE)	22		0.40	2.0	ug/L	624
Vinyl Chloride	46		0.40	2.0	ug/L	624
cis-1,2-Dichloroethene	410	E	0.40	2.0	ug/L	624
trans-1,2-Dichloroethene	4.1		0.40	2.0	ug/L	624
1,1-Dichloroethane (1,1-DCA)	10	D	0.53	2.5	ug/L	624
1,1-Dichloroethene (1,1-DCE)	3.0	D	0.50	2.5	ug/L	624
Benzene	1.7	DJ	0.50	2.5	ug/L	624
Trichloroethene (TCE)	19	D	0.50	2.5	ug/L	624
Vinyl Chloride	55	D	0.50	2.5	ug/L	624
cis-1,2-Dichloroethene	390	D	0.50	2.5	ug/L	624
trans-1,2-Dichloroethene	3.9	D	0.50	2.5	ug/L	624
Gasoline	Absence	U			N/A	NY 310-13
Lube Oil	Absence	U			N/A	NY 310-13

CLIENT ID: MW-9S-111016	Lab ID: R1612036-002					
Analyte	**Results**	**Flag**	**MDL**	**PQL**	**Units**	**Method**
1,1,1-Trichloroethane (TCA)	1.0		0.20	1.0	ug/L	624
1,1-Dichloroethane (1,1-DCA)	12		0.21	1.0	ug/L	624
1,2-Dichlorobenzene	1.8		0.25	1.0	ug/L	624
1,4-Dichlorobenzene	0.25	J	0.20	1.0	ug/L	624
Chloroform	0.37	J	0.20	1.0	ug/L	624
Tetrachloroethene (PCE)	35		0.20	1.0	ug/L	624
Trichloroethene (TCE)	30		0.20	1.0	ug/L	624
Vinyl Chloride	0.37	J	0.20	1.0	ug/L	624
cis-1,2-Dichloroethene	26		0.20	1.0	ug/L	624
trans-1,2-Dichloroethene	2.3		0.20	1.0	ug/L	624
Gasoline	Absence	U			N/A	NY 310-13
Lube Oil	Absence	U			N/A	NY 310-13

CLIENT ID: MW-8R-111016	Lab ID: R1612036-003					
Analyte	**Results**	**Flag**	**MDL**	**PQL**	**Units**	**Method**
1,1-Dichloroethane (1,1-DCA)	120		5.3	25	ug/L	624
1,1-Dichloroethene (1,1-DCE)	45		5.0	25	ug/L	624
Methylene Chloride	7.0	J	5.0	25	ug/L	624
Trichloroethene (TCE)	10	J	5.0	25	ug/L	624
Vinyl Chloride	390		5.0	25	ug/L	624
cis-1,2-Dichloroethene	3600		5.0	25	ug/L	624
trans-1,2-Dichloroethene	6.0	J	5.0	25	ug/L	624

SAMPLE DETECTION SUMMARY

CLIENT ID: MW-8R-111016	Lab ID: R1612036-003					
Analyte	**Results**	**Flag**	**MDL**	**PQL**	**Units**	**Method**
Gasoline	Absence	U			N/A	NY 310-13
Lube Oil	Absence	U			N/A	NY 310-13

CLIENT ID: MW-13S-111016	Lab ID: R1612036-004					
Analyte	**Results**	**Flag**	**MDL**	**PQL**	**Units**	**Method**
1,1,1-Trichloroethane (TCA)	0.39	J	0.20	1.0	ug/L	624
1,1-Dichloroethane (1,1-DCA)	0.59	J	0.21	1.0	ug/L	624
Tetrachloroethene (PCE)	0.33	J	0.20	1.0	ug/L	624
Trichloroethene (TCE)	1.0		0.20	1.0	ug/L	624
cis-1,2-Dichloroethene	5.5		0.20	1.0	ug/L	624
Gasoline	Absence	U			N/A	NY 310-13
Lube Oil	Absence	U			N/A	NY 310-13

CLIENT ID: MW-14R-111116	Lab ID: R1612036-005					
Analyte	**Results**	**Flag**	**MDL**	**PQL**	**Units**	**Method**
1,1-Dichloroethene (1,1-DCE)	0.31	J	0.20	1.0	ug/L	624
Trichloroethene (TCE)	43		0.20	1.0	ug/L	624
Vinyl Chloride	0.42	J	0.20	1.0	ug/L	624
cis-1,2-Dichloroethene	9.9		0.20	1.0	ug/L	624
trans-1,2-Dichloroethene	5.3		0.20	1.0	ug/L	624
Diethyl Phthalate	16		1.0	4.7	ug/L	625
Gasoline	Absence	U			N/A	NY 310-13
Lube Oil	Absence	U			N/A	NY 310-13

CLIENT ID: MW-2S-111116	Lab ID: R1612036-006					
Analyte	**Results**	**Flag**	**MDL**	**PQL**	**Units**	**Method**
1,1-Dichloroethane (1,1-DCA)	1.5		0.21	1.0	ug/L	624
Trichloroethene (TCE)	0.25	J	0.20	1.0	ug/L	624
Vinyl Chloride	0.63	J	0.20	1.0	ug/L	624
cis-1,2-Dichloroethene	2.2		0.20	1.0	ug/L	624
Benz(a)anthracene	1.0	J	1.0	4.7	ug/L	625
Fluoranthene	1.6	J	1.0	4.7	ug/L	625
Pyrene	1.3	J	1.0	4.7	ug/L	625
Gasoline	Absence	U			N/A	NY 310-13
Lube Oil	Absence	U			N/A	NY 310-13

CLIENT ID: MW-2R-111116	Lab ID: R1612036-007					
Analyte	**Results**	**Flag**	**MDL**	**PQL**	**Units**	**Method**
1,1-Dichloroethane (1,1-DCA)	43		1.1	5.0	ug/L	624
1,1-Dichloroethene (1,1-DCE)	12		1.0	5.0	ug/L	624
Methylene Chloride	1.8	J	1.0	5.0	ug/L	624
trans-1,2-Dichloroethene	2.7	J	1.0	5.0	ug/L	624
Vinyl Chloride	340		1.0	5.0	ug/L	624

SAMPLE DETECTION SUMMARY

CLIENT ID: MW-2R-111116	Lab ID: R1612036-007					
Analyte	**Results**	**Flag**	**MDL**	**PQL**	**Units**	**Method**
cis-1,2-Dichloroethene	1100	E	1.0	5.0	ug/L	624
Vinyl Chloride	440	D	2.0	10	ug/L	624
cis-1,2-Dichloroethene	1100	D	2.0	10	ug/L	624
1,1-Dichloroethane (1,1-DCA)	39	D	2.1	10	ug/L	624
1,1-Dichloroethene (1,1-DCE)	12	D	2.0	10	ug/L	624
trans-1,2-Dichloroethene	5.3	DJ	2.0	10	ug/L	624
Anthracene	2.1	J	1.0	4.7	ug/L	625
Benz(a)anthracene	7.3		1.0	4.7	ug/L	625
Benzo(a)pyrene	8.8		1.0	4.7	ug/L	625
3,4-Benzofluoranthene	10		1.0	4.7	ug/L	625
Benzo(g,h,i)perylene	7.4		1.0	4.7	ug/L	625
Benzo(k)fluoranthene	3.7	J	1.0	4.7	ug/L	625
Bis(2-ethylhexyl) Phthalate	1.5	J	1.2	4.7	ug/L	625
Chrysene	8.5		1.0	4.7	ug/L	625
Diethyl Phthalate	34		1.0	4.7	ug/L	625
Fluoranthene	19		1.0	4.7	ug/L	625
Indeno(1,2,3-cd)pyrene	7.3		1.2	4.7	ug/L	625
Phenanthrene	8.9		1.0	4.7	ug/L	625
Pyrene	14		1.0	4.7	ug/L	625
Benz(a)anthracene	3.4	J	1.0	4.7	ug/L	625
Benzo(a)pyrene	4.6	J	1.0	4.7	ug/L	625
3,4-Benzofluoranthene	6.2		1.0	4.7	ug/L	625
Benzo(g,h,i)perylene	4.2	J	1.0	4.7	ug/L	625
Benzo(k)fluoranthene	2.2	J	1.0	4.7	ug/L	625
Chrysene	4.5	J	1.0	4.7	ug/L	625
Diethyl Phthalate	22		1.0	4.7	ug/L	625
Fluoranthene	7.5		1.0	4.7	ug/L	625
Indeno(1,2,3-cd)pyrene	4.5	J	1.2	4.7	ug/L	625
Phenanthrene	4.0	J	1.0	4.7	ug/L	625
Pyrene	6.9		1.0	4.7	ug/L	625
Gasoline	Absence	U			N/A	NY 310-13
Lube Oil	Absence	U			N/A	NY 310-13

CLIENT ID: MW-100-111016	Lab ID: R1612036-008					
Analyte	**Results**	**Flag**	**MDL**	**PQL**	**Units**	**Method**
1,1-Dichloroethane (1,1-DCA)	12		0.21	1.0	ug/L	624
1,1-Dichloroethene (1,1-DCE)	4.0		0.20	1.0	ug/L	624
Benzene	1.7		0.20	1.0	ug/L	624
Chloroethane	0.27	J	0.24	1.0	ug/L	624
Trichloroethene (TCE)	23		0.20	1.0	ug/L	624
Vinyl Chloride	47		0.20	1.0	ug/L	624
trans-1,2-Dichloroethene	3.7		0.20	1.0	ug/L	624

SAMPLE DETECTION SUMMARY

CLIENT ID: MW-100-111016	Lab ID: R1612036-008					
Analyte	**Results**	**Flag**	**MDL**	**PQL**	**Units**	**Method**
cis-1,2-Dichloroethene	380	E	0.20	1.0	ug/L	624
cis-1,2-Dichloroethene	410	D	1.0	5.0	ug/L	624
1,1-Dichloroethane (1,1-DCA)	11	D	1.1	5.0	ug/L	624
1,1-Dichloroethene (1,1-DCE)	2.8	DJ	1.0	5.0	ug/L	624
Benzene	1.7	DJ	1.0	5.0	ug/L	624
Trichloroethene (TCE)	19	D	1.0	5.0	ug/L	624
Vinyl Chloride	57	D	1.0	5.0	ug/L	624
trans-1,2-Dichloroethene	4.6	DJ	1.0	5.0	ug/L	624
Gasoline	Absence	U			N/A	NY 310-13
Lube Oil	Absence	U			N/A	NY 310-13

CLIENT ID: MW-14S-111116	Lab ID: R1612036-009					
Analyte	**Results**	**Flag**	**MDL**	**PQL**	**Units**	**Method**
1,4-Dichlorobenzene	0.22	J	0.20	1.0	ug/L	624
Diethyl Phthalate	10		1.0	4.7	ug/L	625
Diethyl Phthalate	23		1.0	4.7	ug/L	625
Gasoline	Absence	U			N/A	NY 310-13
Lube Oil	Absence	U			N/A	NY 310-13

Sample Receipt Information

ALS Environmental—Rochester Laboratory
1565 Jefferson Road, Building 300, Suite 360, Rochester, NY 14623
Phone (585) 288-5380 Fax (585) 288-8475
www.alsglobal.com

Client: Ecology And Environment, Incorporated **Service Request:**R1612036
Project: Davis Howland Oil Company Site/10C3074.0012.08

SAMPLE CROSS-REFERENCE

SAMPLE #	CLIENT SAMPLE ID	DATE	TIME
R1612036-001	MW-5R-111016	11/10/2016	1100
R1612036-002	MW-9S-111016	11/10/2016	1335
R1612036-003	MW-8R-111016	11/10/2016	1315
R1612036-004	MW-13S-111016	11/10/2016	1130
R1612036-005	MW-14R-111116	11/11/2016	1040
R1612036-006	MW-2S-111116	11/11/2016	1135
R1612036-007	MW-2R-111116	11/11/2016	1225
R1612036-008	MW-100-111016	11/10/2016	1100
R1612036-009	MW-14S-111116	11/11/2016	1358
R1612036-010	TRIP BLANK	11/10/2016	

CHAIN OF CUSTODY/LABORATORY ANALYSIS REQUEST FORM

41766

1565 Jefferson Road, Building 300, Suite 360 • Rochester, NY 14623 | +1 585 288 5380 +1 585 288 8475 (fax) PAGE 1 OF 1

Project Name: Davis Howland	Project Number: 10(3074.0012.08
Project Manager: Ashley Patnode	Report CC:
Company/Address: 368 Pleasant View Dr, Lancaster, NY 14068	
Phone #: 716-684-8060	Email:
Sampler's Signature:	Sampler's Printed Name: Tim Dillon

ANALYSIS REQUESTED *(Include Method Number and Container Preservative)*

CLIENT SAMPLE ID	FOR OFFICE USE ONLY LAB ID	SAMPLING DATE	SAMPLING TIME	MATRIX	NUMBER OF CONTAINERS	GC/MS VOAs • 8260 • 624 • CLP	GC/MS SVOAs • 8270 • 625	GC VOAs • 8021 • 601/602	PESTICIDES • 8081 • 608	PCBs • 8082 • 608	METALS, TOTAL (List in comments below)	METALS, DISSOLVED (List in comments below)	TPH								
PRESERVATIVE													0	0					0		
MW-5R-111016		11/10/16	1100	GW	7	3	2						2								
MW-9S-111016		11/10/16	1335	GW	7	3	2						2								
MW-8R-111016		11/10/16	1315	GW	7	3	2						2								
MW-13S-111016		11/10/16	1136	GW	7	3	2						2								
MW-14R-111116		11/11/16	1040	GW	7	3	2						2								
MW-14R-111116 MS		11/11/16	1046	GW	7	3	2						2								
MW-14R-111116 MSD		11/11/16	1040	GW	7	3	2						2								
MW-2S-111116		11/11/16	1135	GW	7	3	2						2								
MW-2R-111116		11/11/16	1225	GW	7	3	2						2								
MW-100-111016		11/10/16	1106	GW	6	2	2						2								
MW-14S-111116		11/11/16	1358	GW	7	3	2						2								

Preservative Key
0. NONE
1. HCL
2. HNO_3
3. H_2SO_4
4. NaOH
5. Zn. Acetate
6. MeOH
7. $NaHSO_4$
8. Other _____

REMARKS/ ALTERNATE DESCRIPTION

SPECIAL INSTRUCTIONS/COMMENTS
Metals
trip blank added as per Lawrence Road/JMS 11/14/16

See QAPP ☐

TURNAROUND REQUIREMENTS
_____ RUSH (SURCHARGES APPLY)
_____ 1 day _____ 2 day _____ 3 day
_____ 4 day _____ 5 day
As per contract
REQUESTED REPORT DATE

REPORT REQUIREMENTS
_____ I. Results Only
_____ II. Results + QC Summaries (LCS, DUP, MS/MSD as required)
X III. Results + QC and Calibration Summaries
_____ IV. Data Validation Report with Raw Data
Edata _____Yes _____No

INVOICE INFORMATION
PO #
BILL TO:

STATE WHERE SAMPLES WERE COLLECTED

RELINQUISHED BY	RECEIVED BY	RELINQUISHED BY	RECEIVED BY	RELINQUISHED BY	RECEIVED BY
Signature: Lawrence Road	Signature:	Signature:	Signature:	Signature:	Signature:
Printed Name: Lawrence Road	Printed Name: Daniel Ward	Printed Name:	Printed Name:	Printed Name:	
Firm: E+E	Firm: ALS	Firm:	Firm:	Firm:	
Date/Time: 11/11/16 / 1525	Date/Time: 11/11/16 / 1525	Date/Time:	Date/Time:	Date/Time:	

R1612036 5
Ecology And Environment, Incorporated
Davis Howland Oil Company Site

Distribution: White - Lab Copy; Yellow - Return to Originator

R1612036 5
Ecology And Environment, Incorporated
Davis Howland Oil Company Site

Cooler Receipt and Preservation Check Form

Project/Client E+E Folder Number R1612036.

Cooler received on 11/11/16 by: DW

COURIER: ALS UPS FEDEX VELOCITY CLIENT

1	Were **Custody seals** on outside of cooler?	Y N	5a	**Perchlorate** samples have required headspace?	Y N NA
2	**Custody papers** properly completed (ink, signed)?	Y N	5b	Did VOA vials, Alk,or Sulfide have sig* **bubbles**?	Y N NA
3	Did all bottles arrive in good **condition** (unbroken)?	Y N	6	Where did the bottles originate?	ALS/ROC CLIENT
4	Circle: ~~Wet Ice~~ **Dry Ice Gel packs** present?	Y N	7	Soil VOA received as:	Bulk Encore 5035set NA

8. Temperature Readings Date: 11/11/16 Time: 1547 ID: IR#7 IR#8 From: Temp Blank Sample Bottle

Observed Temp (°C)	13.2	8.7	5.3	7.6	9.2	5.4	
Correction Factor (°C)	+0.5	+0.5	+0.5	+0.5	+0.5	+0.0	
Corrected Temp (°C)	13.7	9.2	5.8	8.1	9.7	5.4	
Within 0-6°C?	~~Y~~ N	Y ~~N~~*	Y N	Y ~~N~~*	Y ~~N~~*	Y N	Y N
If <0°C, were samples frozen?	Y N	Y N	Y N	Y N	Y N	Y N	Y N

If out of Temperature, note packing/ice condition: _____ Ice melted Poorly Packed ~~Same Day Rule~~ *

&Client Approval to Run Samples: _____ Standing Approval Client aware at drop-off Client notified by: _____

All samples held in storage location: R-002 by DW on 11/11/16 at 1547
5035 samples placed in storage location: _____ by _____ on _____ at _____

Cooler Breakdown: Date: 11-12-16 Time: 09:15 by: HZ

1. Were all bottle labels complete (*i.e.* analysis, preservation, etc.)? YES NO > No sample times on bottles.
2. Did all bottle labels and tags agree with custody papers? YES NO
3. Were correct containers used for the tests indicated? YES NO
4. Were 5035 vials acceptable (no extra labels, not leaking)? YES NO N/A
5. Air Samples: Cassettes / Tubes Intact Canisters Pressurized Tedlar® Bags Inflated N/A

Explain any discrepancies:

pH	Reagent	Yes	No	Lot Received	Exp	Sample ID	Vol. Added	Lot Added	Final pH
≥12	NaOH								
≤2	HNO_3								
≤2	H_2SO_4								
<4	$NaHSO_4$								
Residual Chlorine (-)	For CN Phenol and 522			If +, contact PM to add $Na_2S_2O_3$ (CN), ascorbic (phenol).					
	$Na_2S_2O_3$	-	-						
	ZnAcetate	-	-						
	HCl	**	**						

**Not to be tested before analysis – pH tested and recorded by VOAs on a separate worksheet

Yes=All samples OK

No=Samples were preserved at The lab as listed

PM OK to Adjust: _____

Bottle lot numbers: 082916-1BLT, 090516-1BLT, 082216-1BLT, 6-222-001
Other Comments:

CLRES	BULK
DO	FLDT
HPROD	HGFB
HTR	LL3541
PH	SUB
SO3	MARRS
ALS	REV

PC Secondary Review: _____ 11/14/16 *significant air bubbles: VOA > 5-6 mm : WC >1 in. diameter

CHAIN OF CUSTODY/LABORATORY ANALYSIS REQUEST FORM

41766

1565 Jefferson Road, Building 300, Suite 360 • Rochester, NY 14623 | +1 585 288 5380 +1 585 288 8475 (fax) PAGE 1 OF 1

Project Name: Davis Howland	Project Number: 10630741.0012.08
Project Manager: Ashley Patnode	Report CC:
Company/Address: 368 Pleasant View Dr, Lancaster, NY 14068	
Phone #: 716-684-8060	Email:
Sampler's Signature:	Sampler's Printed Name: Tim Dillon

ANALYSIS REQUESTED *(Include Method Number and Container Preservative)*

PRESERVATIVE: 0 0 0

CLIENT SAMPLE ID	FOR OFFICE USE ONLY LAB ID	SAMPLING DATE	SAMPLING TIME	MATRIX	NUMBER OF CONTAINERS	GC/MS VOAs ○ 8260 ○ 624 ○ CLP	GC/MS SVOAs ○ 8270 ○ 625	GC VOAs ○ 8021 ○ 601/602	PESTICIDES ○ 8081 ○ 608	PCBs ○ 8082 ○ 608	METALS, TOTAL (List in comments below)	METALS, DISSOLVED (List in comments below)	TPH							
MW-5R-111016		11/10/16	1100	GW	7	3	2						2							
MW-9S-111016		11/10/16	1335	GW	7	3	2						2							
MW-9R-111016		11/10/16	13:15	GW	7	3	2						2							
MW-13S-111016		11/10/16	11:36	GW	7	3	2						2							
MW-14R-111116		11/11/16	10:40	GW	7	3	2						2							
MW-14R-111116 MS		11/11/16	10:40	GW	7	3	2						2							
MW-14R-111116 MSD		11/11/16	10:40	GW	7	3	2						2							
MW-2S-111116		11/11/16	11:35	GW	7	3	2						2							
MW-2R-111116		11/11/16	12:25	GW	7	3	2						2							
MW-100-111016		11/10/16	11:06	GW	6	2	2						2							
MW-14S-111116		11/11/16	13:58	GW	7	3	2						2							

Preservative Key
0. NONE
1. HCL
2. HNO_3
3. H_2SO_4
4. NaOH
5. Zn. Acetate
6. MeOH
7. $NaHSO_4$
8. Other _____

REMARKS/ ALTERNATE DESCRIPTION

SPECIAL INSTRUCTIONS/COMMENTS
Metals
trip blank added as per Lawrence Roedel/ANS 11/14/16

See QAPP ☐

STATE WHERE SAMPLES WERE COLLECTED

TURNAROUND REQUIREMENTS
_____ RUSH (SURCHARGES APPLY)
_____ 1 day _____ 2 day _____ 3 day
_____ 4 day _____ 5 day
As per contract
REQUESTED REPORT DATE

REPORT REQUIREMENTS
_____ I. Results Only
_____ II. Results + QC Summaries (LCS, DUP, MS/MSD as required)
X III. Results + QC and Calibration Summaries
_____ IV. Data Validation Report with Raw Data
Edata _____ Yes _____ No

INVOICE INFORMATION
PO #
BILL TO:

RELINQUISHED BY	RECEIVED BY	RELINQUISHED BY	RECEIVED BY	RELINQUISHED BY	RECEIVED BY
Signature: Lawrence Roedel	Signature:	Signature:	Signature:	Signature:	Signature:
Printed Name: Lawrence Roedel	Printed Name: Daniel Wurc	Printed Name:	Printed Name:	Printed Name:	
Firm: E+E	Firm: ALS	Firm:	Firm:	Firm:	
Date/Time: 11/11/16 / 1525	Date/Time: 11/11/16/ 1525	Date/Time:	Date/Time:	Date/Time:	

R1612036 5
Ecology And Environment, Incorporated
Davis Howland Oil Company Site

Distribution: White - Lab Copy; Yellow - Return to Originator

Cooler Receipt and Preservation Check Form

Project/Client E+E Folder Number R1612036

Cooler received on 11/11/16 by: DW **COURIER:** ALS UPS FEDEX VELOCITY CLIENT

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3	Did all bottles arrive in good **condition** (unbroken)?	Y N	6	Where did the bottles originate?	ALS/ROC CLIENT
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8. Temperature Readings Date: 11/11/16 Time: 1547 ID: IR#7 IR#8 From: Temp Blank Sample Bottle

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Correction Factor (°C)	+0.5	+0.5	+0.5	+0.5	+0.5	-0.0	
Corrected Temp (°C)	13.7	9.2	5.8	8.1	9.7	5.4	
Within 0-6°C?	Y N*	Y N*	Y N	Y N*	Y N*	Y N	Y N
If <0°C, were samples frozen?	Y N	Y N	Y N	Y N	Y N	Y N	Y N

If out of Temperature, note packing/ice condition: _____ Ice melted Poorly Packed ~~Same Day Rule~~ *

&Client Approval to Run Samples: _____ Standing Approval Client aware at drop-off Client notified by: _____

All samples held in storage location: R-002 by DW on 11/11/16 at 1547
5035 samples placed in storage location: _____ by _____ on _____ at _____

Cooler Breakdown: Date: 11-12-16 Time: 08:15 by: AE

1. Were all bottle labels complete (*i.e.* analysis, preservation, etc.)? YES NO > No sample times on bottles.
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3. Were correct containers used for the tests indicated? YES NO
4. Were 5035 vials acceptable (no extra labels, not leaking)? YES NO N/A
5. Air Samples: Cassettes / Tubes Intact Canisters Pressurized Tedlar® Bags Inflated N/A

Explain any discrepancies:

pH	Reagent	Yes	No	Lot Received	Exp	Sample ID	Vol. Added	Lot Added	Final pH
≥12	NaOH								
≤2	HNO_3								
≤2	H_2SO_4								
<4	$NaHSO_4$								
Residual Chlorine (-)	For CN Phenol and 522			If +, contact PM to add $Na_2S_2O_3$ (CN), ascorbic (phenol).					
	$Na_2S_2O_3$	-	-						
	ZnAcetate	-	-						
	HCl	**	**						

**Not to be tested before analysis – pH tested and recorded by VOAs on a separate worksheet

Yes=All samples OK

No=Samples were preserved at The lab as listed

PM OK to Adjust: _____

Bottle lot numbers: 082916-1BLT, 090516-1BLT, 082216-1BLT, 6-222-001
Other Comments:

CLRES	BULK
DO	FLDT
HPROD	HGFB
HTR	LL3541
PH	SUB
SO3	MARRS
ALS	REV

PC Secondary Review: MH 11/14/16 *significant air bubbles: VOA > 5-6 mm : WC >1 in. diameter

Miscellaneous Forms

ALS Environmental—Rochester Laboratory
1565 Jefferson Road, Building 300, Suite 360, Rochester, NY 14623
Phone (585) 288-5380 Fax (585) 288-8475
www.alsglobal.com

REPORT QUALIFIERS AND DEFINITIONS

U	Analyte was analyzed for but not detected. The sample quantitation limit has been corrected for dilution and for percent moisture, unless otherwise noted in the case narrative.
J	Estimated value due to either being a Tentatively Identified Compound (TIC) or that the concentration is between the MRL and the MDL. Concentrations are not verified within the linear range of the calibration. For DoD: concentration >40% difference between two GC columns (pesticides/Arclors).
B	Analyte was also detected in the associated method blank at a concentration that may have contributed to the sample result.
E	Inorganics- Concentration is estimated due to the serial dilution was outside control limits.
E	Organics- Concentration has exceeded the calibration range for that specific analysis.
D	Concentration is a result of a dilution, typically a secondary analysis of the sample due to exceeding the calibration range or that a surrogate has been diluted out of the sample and cannot be assessed.
*	Indicates that a quality control parameter has exceeded laboratory limits. Under the ñNotesò column of the Form I, this qualifier denotes analysis was performed out of Holding Time.
H	Analysis was performed out of hold time for tests that have an ñimmediateò hold time criteria.
#	Spike was diluted out.
+	Correlation coefficient for MSA is <0.995.
N	Inorganics- Matrix spike recovery was outside laboratory limits.
N	Organics- Presumptive evidence of a compound (reported as a TIC) based on the MS library search.
S	Concentration has been determined using Method of Standard Additions (MSA).
W	Post-Digestion Spike recovery is outside control limits and the sample absorbance is <50% of the spike absorbance.
P	Concentration >40% (25% for CLP) difference between the two GC columns.
C	Confirmed by GC/MS
Q	DoD reports: indicates a pesticide/Aroclor is not confirmed (Ó100% Difference between two GC columns).
X	See Case Narrative for discussion.
MRL LOQ	Method Reporting Limit. Also known as: Limit of Quantitation (LOQ) The lowest concentration at which the method analyte may be reliably quantified under the method conditions.
MDL	Method Detection Limit. A statistical value derived from a study designed to provide the lowest concentration that will be detected 99% of the time. Values between the MDL and MRL are estimated (see J qualifier).
LOD	Limit of Detection. A value at or above the MDL which has been verified to be detectable.
ND	Non-Detect. Analyte was not detected at the concentration listed. Same as U qualifier.

Rochester Lab ID # for State Certifications[1]

Connecticut ID # PH0556	Maine ID #NY0032	New Hampshire ID # 294100 A/B
Delaware Accredited	Nebraska Accredited	
DoD ELAP #65817	New Jersey ID # NY004	Pennsylvania ID# 68-786
Florida ID # E87674	New York ID # 10145	Rhode Island ID # 158
Illinois ID #200047	North Carolina #676	Virginia #460167

[1] Analyses were performed according to our laboratoryôs NELAP-approved quality assurance program and any applicable state or agency requirements. The test results meet requirements of the current NELAP/TNI standards or state or agency requirements, where applicable, except as noted in the case narrative. Since not all analyte/method/matrix combinations are offered for state/NELAC accreditation, this report may contain results which are not accredited. For a specific list of accredited analytes, contact the laboratory or go to http://www.alsglobal.com/en/Our-Services/Life-Sciences/Environmental/Downloads/North-America-Downloads

ALS Laboratory Group

Acronyms

ASTM	American Society for Testing and Materials
A2LA	American Association for Laboratory Accreditation
CARB	California Air Resources Board
CAS Number	Chemical Abstract Service registry Number
CFC	Chlorofluorocarbon
CFU	Colony-Forming Unit
DEC	Department of Environmental Conservation
DEQ	Department of Environmental Quality
DHS	Department of Health Services
DOE	Department of Ecology
DOH	Department of Health
EPA	U. S. Environmental Protection Agency
ELAP	Environmental Laboratory Accreditation Program
GC	Gas Chromatography
GC/MS	Gas Chromatography/Mass Spectrometry
LUFT	Leaking Underground Fuel Tank
M	Modified
MCL	Maximum Contaminant Level is the highest permissible concentration of a substance allowed in drinking water as established by the USEPA.
MDL	Method Detection Limit
MPN	Most Probable Number
MRL	Method Reporting Limit
NA	Not Applicable
NC	Not Calculated
NCASI	National Council of the Paper Industry for Air and Stream Improvement
ND	Not Detected
NIOSH	National Institute for Occupational Safety and Health
PQL	Practical Quantitation Limit
RCRA	Resource Conservation and Recovery Act
SIM	Selected Ion Monitoring
TPH	Total Petroleum Hydrocarbons
tr	Trace level is the concentration of an analyte that is less than the PQL but greater than or equal to the MDL.

Client: Ecology And Environment, Incorporated **Service Request:** R1612036
Project: Davis Howland Oil Company Site/10C3074.0012.08

Sample Name: MW-5R-111016 **Date Collected:** 11/10/16
Lab Code: R1612036-001 **Date Received:** 11/11/16
Sample Matrix: Water

Analysis Method	Extracted/Digested By	Analyzed By
624		DLIPANI
625	DMURPHY	JMISIUREWICZ
NY 310-13 Modified	DMURPHY	AMOSES

Sample Name: MW-9S-111016 **Date Collected:** 11/10/16
Lab Code: R1612036-002 **Date Received:** 11/11/16
Sample Matrix: Water

Analysis Method	Extracted/Digested By	Analyzed By
624		DLIPANI
625	DMURPHY	JMISIUREWICZ
NY 310-13 Modified	DMURPHY	AMOSES

Sample Name: MW-8R-111016 **Date Collected:** 11/10/16
Lab Code: R1612036-003 **Date Received:** 11/11/16
Sample Matrix: Water

Analysis Method	Extracted/Digested By	Analyzed By
624		DLIPANI
625	DMURPHY	JMISIUREWICZ
NY 310-13 Modified	DMURPHY	AMOSES

Sample Name: MW-13S-111016 **Date Collected:** 11/10/16
Lab Code: R1612036-004 **Date Received:** 11/11/16
Sample Matrix: Water

Analysis Method	Extracted/Digested By	Analyzed By
624		DLIPANI
625	DMURPHY	JMISIUREWICZ
NY 310-13 Modified	DMURPHY	AMOSES

Client: Ecology And Environment, Incorporated **Service Request:** R1612036
Project: Davis Howland Oil Company Site/10C3074.0012.08

Sample Name: MW-14R-111116 **Date Collected:** 11/11/16
Lab Code: R1612036-005 **Date Received:** 11/11/16
Sample Matrix: Water

Analysis Method	Extracted/Digested By	Analyzed By
624		DLIPANI
625	DMURPHY	JMISIUREWICZ
NY 310-13 Modified	DMURPHY	AMOSES

Sample Name: MW-2S-111116 **Date Collected:** 11/11/16
Lab Code: R1612036-006 **Date Received:** 11/11/16
Sample Matrix: Water

Analysis Method	Extracted/Digested By	Analyzed By
624		DLIPANI
625	DMURPHY	JMISIUREWICZ
NY 310-13 Modified	DMURPHY	AMOSES

Sample Name: MW-2R-111116 **Date Collected:** 11/11/16
Lab Code: R1612036-007 **Date Received:** 11/11/16
Sample Matrix: Water

Analysis Method	Extracted/Digested By	Analyzed By
624		DLIPANI
625	DMURPHY	JMISIUREWICZ
NY 310-13 Modified	DMURPHY	AMOSES

Sample Name: MW-100-111016 **Date Collected:** 11/10/16
Lab Code: R1612036-008 **Date Received:** 11/11/16
Sample Matrix: Water

Analysis Method	Extracted/Digested By	Analyzed By
624		DLIPANI
625	DMURPHY	JMISIUREWICZ
NY 310-13 Modified	DMURPHY	AMOSES

Client:	Ecology And Environment, Incorporated	**Service Request:**	R1612036
Project:	Davis Howland Oil Company Site/10C3074.0012.08		

Sample Name:	MW-14S-111116	**Date Collected:**	11/11/16
Lab Code:	R1612036-009	**Date Received:**	11/11/16
Sample Matrix:	Water		

Analysis Method	Extracted/Digested By	Analyzed By
624		MCYMBAL
625	DMURPHY	JMISIUREWICZ
NY 310-13 Modified	DMURPHY	AMOSES

Sample Name:	TRIP BLANK	**Date Collected:**	11/10/16
Lab Code:	R1612036-010	**Date Received:**	11/11/16
Sample Matrix:	Water		

Analysis Method	Extracted/Digested By	Analyzed By
624		DLIPANI

The preparation methods associated with this report are found in these tables unless discussed in the case narrative.

Water/Liquid Matrix

Analytical Method	Preparation Method
200.7	200.2
200.8	200.2
6010C	3005A/3010A
6020A	ILM05.3
9014 Cyanide Reactivity	SW846 Ch7, 7.3.4.2
9034 Sulfide Reactivity	SW846 Ch7, 7.3.4.2
9034 Sulfide Acid Soluble	9030B
9056A Bomb (Halogens)	5050A
9066 Manual Distillation	9065
SM 4500-CN-E Residual Cyanide	SM 4500-CN-G
SM 4500-CN-E WAD Cyanide	SM 4500-CN-I

Solid/Soil/Non-Aqueous Matrix

Analytical Method	Preparation Method
6010C	3050B
6020A	3050B
6010C TCLP (1311) extract	3005A/3010A
6010 SPLP (1312) extract	3005A/3010A
7196A	3060A
7199	3060A
9056A Halogens/Halides	5050
300.0 Anions/ 350.1/ 353.2/ SM 2320B/ SM 5210B/ 9056A Anions	DI extraction

For analytical methods not listed, the preparation method is the same as the analytical method reference.

Sample Results

ALS Environmental—Rochester Laboratory
1565 Jefferson Road, Building 300, Suite 360, Rochester, NY 14623
Phone (585) 288-5380 Fax (585) 288-8475
www.alsglobal.com

Volatile Organic Compounds by GC/MS

ALS Environmental—Rochester Laboratory
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Phone (585) 288-5380 Fax (585) 288-8475
www.alsglobal.com

Analytical Report

Client:	Ecology And Environment, Incorporated	**Service Request:**	R1612036
Project:	Davis Howland Oil Company Site/10C3074.0012.08	**Date Collected:**	11/10/16 11:00
Sample Matrix:	Water	**Date Received:**	11/11/16 15:25
Sample Name:	MW-5R-111016	**Units:**	ug/L
Lab Code:	R1612036-001	**Basis:**	NA

Volatile Organic Compounds by GC/MS, Unpreserved

Analysis Method: 624

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Q
1,1,1-Trichloroethane (TCA)	2.0 U	2.0	0.40	2	11/14/16 19:10	
1,1,2,2-Tetrachloroethane	2.0 U	2.0	0.40	2	11/14/16 19:10	
1,1,2-Trichloroethane	2.0 U	2.0	0.40	2	11/14/16 19:10	
1,1-Dichloroethane (1,1-DCA)	**12**	2.0	0.42	2	11/14/16 19:10	
1,1-Dichloroethene (1,1-DCE)	**3.7**	2.0	0.40	2	11/14/16 19:10	
1,2-Dichlorobenzene	2.0 U	2.0	0.50	2	11/14/16 19:10	
1,2-Dichloroethane	2.0 U	2.0	0.40	2	11/14/16 19:10	
1,2-Dichloropropane	2.0 U	2.0	0.40	2	11/14/16 19:10	
1,3-Dichlorobenzene	2.0 U	2.0	0.44	2	11/14/16 19:10	
1,4-Dichlorobenzene	2.0 U	2.0	0.40	2	11/14/16 19:10	
2-Chloroethyl Vinyl Ether	20 U	20	1.2	2	11/14/16 19:10	
Acetone	10 U	10	5.6	2	11/14/16 19:10	
Benzene	**1.6 J**	2.0	0.40	2	11/14/16 19:10	
Bromodichloromethane	2.0 U	2.0	0.40	2	11/14/16 19:10	
Bromoform	2.0 U	2.0	0.40	2	11/14/16 19:10	
Bromomethane	2.0 U	2.0	0.88	2	11/14/16 19:10	
Carbon Tetrachloride	2.0 U	2.0	0.40	2	11/14/16 19:10	
Chlorobenzene	2.0 U	2.0	0.40	2	11/14/16 19:10	
Chloroethane	2.0 U	2.0	0.48	2	11/14/16 19:10	
Chloroform	2.0 U	2.0	0.40	2	11/14/16 19:10	
Chloromethane	2.0 U	2.0	0.40	2	11/14/16 19:10	
Dibromochloromethane	2.0 U	2.0	0.40	2	11/14/16 19:10	
Methylene Chloride	**1.4 J**	2.0	0.40	2	11/14/16 19:10	
Ethylbenzene	2.0 U	2.0	0.40	2	11/14/16 19:10	
Tetrachloroethene (PCE)	2.0 U	2.0	0.40	2	11/14/16 19:10	
Toluene	2.0 U	2.0	0.40	2	11/14/16 19:10	
Trichloroethene (TCE)	**22**	2.0	0.40	2	11/14/16 19:10	
Trichlorofluoromethane (CFC 11)	2.0 U	2.0	0.40	2	11/14/16 19:10	
Vinyl Chloride	**46**	2.0	0.40	2	11/14/16 19:10	
cis-1,2-Dichloroethene	**410 E**	2.0	0.40	2	11/14/16 19:10	
cis-1,3-Dichloropropene	2.0 U	2.0	0.40	2	11/14/16 19:10	
m,p-Xylenes	4.0 U	4.0	0.52	2	11/14/16 19:10	
o-Xylene	2.0 U	2.0	0.40	2	11/14/16 19:10	
trans-1,2-Dichloroethene	**4.1**	2.0	0.40	2	11/14/16 19:10	
trans-1,3-Dichloropropene	2.0 U	2.0	0.40	2	11/14/16 19:10	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
1,2-Dichloroethane-d4	107	81 - 127	11/14/16 19:10	
4-Bromofluorobenzene	102	79 - 123	11/14/16 19:10	
Toluene-d8	110	83 - 120	11/14/16 19:10	

Analytical Report

Client:	Ecology And Environment, Incorporated	**Service Request:**	R1612036
Project:	Davis Howland Oil Company Site/10C3074.0012.08	**Date Collected:**	11/10/16 11:00
Sample Matrix:	Water	**Date Received:**	11/11/16 15:25
Sample Name:	MW-5R-111016	**Units:**	ug/L
Lab Code:	R1612036-001	**Basis:**	NA

Volatile Organic Compounds by GC/MS, Unpreserved

Analysis Method: 624
Prep Method: EPA 5030C

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Q
1,1,1-Trichloroethane (TCA)	2.5 U	2.5	0.50	2.5	11/16/16 14:39	
1,1,2,2-Tetrachloroethane	2.5 U	2.5	0.50	2.5	11/16/16 14:39	
1,1,2-Trichloroethane	2.5 U	2.5	0.50	2.5	11/16/16 14:39	
1,1-Dichloroethane (1,1-DCA)	**10 D**	2.5	0.53	2.5	11/16/16 14:39	
1,1-Dichloroethene (1,1-DCE)	**3.0 D**	2.5	0.50	2.5	11/16/16 14:39	
1,2-Dichlorobenzene	2.5 U	2.5	0.63	2.5	11/16/16 14:39	
1,2-Dichloroethane	2.5 U	2.5	0.50	2.5	11/16/16 14:39	
1,2-Dichloropropane	2.5 U	2.5	0.50	2.5	11/16/16 14:39	
1,3-Dichlorobenzene	2.5 U	2.5	0.55	2.5	11/16/16 14:39	
1,4-Dichlorobenzene	2.5 U	2.5	0.50	2.5	11/16/16 14:39	
2-Chloroethyl Vinyl Ether	25 U	25	1.5	2.5	11/16/16 14:39	
Acetone	13 U	13	6.9	2.5	11/16/16 14:39	
Benzene	**1.7 DJ**	2.5	0.50	2.5	11/16/16 14:39	
Bromodichloromethane	2.5 U	2.5	0.50	2.5	11/16/16 14:39	
Bromoform	2.5 U	2.5	0.50	2.5	11/16/16 14:39	
Bromomethane	2.5 U	2.5	1.1	2.5	11/16/16 14:39	
Carbon Tetrachloride	2.5 U	2.5	0.50	2.5	11/16/16 14:39	
Chlorobenzene	2.5 U	2.5	0.50	2.5	11/16/16 14:39	
Chloroethane	2.5 U	2.5	0.60	2.5	11/16/16 14:39	
Chloroform	2.5 U	2.5	0.50	2.5	11/16/16 14:39	
Chloromethane	2.5 U	2.5	0.50	2.5	11/16/16 14:39	
Dibromochloromethane	2.5 U	2.5	0.50	2.5	11/16/16 14:39	
Methylene Chloride	2.5 U	2.5	0.50	2.5	11/16/16 14:39	
Ethylbenzene	2.5 U	2.5	0.50	2.5	11/16/16 14:39	
Tetrachloroethene (PCE)	2.5 U	2.5	0.50	2.5	11/16/16 14:39	
Toluene	2.5 U	2.5	0.50	2.5	11/16/16 14:39	
Trichloroethene (TCE)	**19 D**	2.5	0.50	2.5	11/16/16 14:39	
Trichlorofluoromethane (CFC 11)	2.5 U	2.5	0.50	2.5	11/16/16 14:39	
Vinyl Chloride	**55 D**	2.5	0.50	2.5	11/16/16 14:39	
cis-1,2-Dichloroethene	**390 D**	2.5	0.50	2.5	11/16/16 14:39	
cis-1,3-Dichloropropene	2.5 U	2.5	0.50	2.5	11/16/16 14:39	
m,p-Xylenes	5.0 U	5.0	0.65	2.5	11/16/16 14:39	
o-Xylene	2.5 U	2.5	0.50	2.5	11/16/16 14:39	
trans-1,2-Dichloroethene	**3.9 D**	2.5	0.50	2.5	11/16/16 14:39	
trans-1,3-Dichloropropene	2.5 U	2.5	0.50	2.5	11/16/16 14:39	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
1,2-Dichloroethane-d4	108	81 - 127	11/16/16 14:39	
4-Bromofluorobenzene	108	79 - 123	11/16/16 14:39	
Toluene-d8	109	83 - 120	11/16/16 14:39	

Analytical Report

Client:	Ecology And Environment, Incorporated	**Service Request:**	R1612036
Project:	Davis Howland Oil Company Site/10C3074.0012.08	**Date Collected:**	11/10/16 13:35
Sample Matrix:	Water	**Date Received:**	11/11/16 15:25
Sample Name:	MW-9S-111016	**Units:**	ug/L
Lab Code:	R1612036-002	**Basis:**	NA

Volatile Organic Compounds by GC/MS, Unpreserved

Analysis Method: 624

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Q
1,1,1-Trichloroethane (TCA)	**1.0**	1.0	0.20	1	11/14/16 15:09	
1,1,2,2-Tetrachloroethane	1.0 U	1.0	0.20	1	11/14/16 15:09	
1,1,2-Trichloroethane	1.0 U	1.0	0.20	1	11/14/16 15:09	
1,1-Dichloroethane (1,1-DCA)	**12**	1.0	0.21	1	11/14/16 15:09	
1,1-Dichloroethene (1,1-DCE)	1.0 U	1.0	0.20	1	11/14/16 15:09	
1,2-Dichlorobenzene	**1.8**	1.0	0.25	1	11/14/16 15:09	
1,2-Dichloroethane	1.0 U	1.0	0.20	1	11/14/16 15:09	
1,2-Dichloropropane	1.0 U	1.0	0.20	1	11/14/16 15:09	
1,3-Dichlorobenzene	1.0 U	1.0	0.22	1	11/14/16 15:09	
1,4-Dichlorobenzene	**0.25 J**	1.0	0.20	1	11/14/16 15:09	
2-Chloroethyl Vinyl Ether	10 U	10	0.60	1	11/14/16 15:09	
Acetone	5.0 U	5.0	2.8	1	11/14/16 15:09	
Benzene	1.0 U	1.0	0.20	1	11/14/16 15:09	
Bromodichloromethane	1.0 U	1.0	0.20	1	11/14/16 15:09	
Bromoform	1.0 U	1.0	0.20	1	11/14/16 15:09	
Bromomethane	1.0 U	1.0	0.44	1	11/14/16 15:09	
Carbon Tetrachloride	1.0 U	1.0	0.20	1	11/14/16 15:09	
Chlorobenzene	1.0 U	1.0	0.20	1	11/14/16 15:09	
Chloroethane	1.0 U	1.0	0.24	1	11/14/16 15:09	
Chloroform	**0.37 J**	1.0	0.20	1	11/14/16 15:09	
Chloromethane	1.0 U	1.0	0.20	1	11/14/16 15:09	
Dibromochloromethane	1.0 U	1.0	0.20	1	11/14/16 15:09	
Methylene Chloride	1.0 U	1.0	0.20	1	11/14/16 15:09	
Ethylbenzene	1.0 U	1.0	0.20	1	11/14/16 15:09	
Tetrachloroethene (PCE)	**35**	1.0	0.20	1	11/14/16 15:09	
Toluene	1.0 U	1.0	0.20	1	11/14/16 15:09	
Trichloroethene (TCE)	**30**	1.0	0.20	1	11/14/16 15:09	
Trichlorofluoromethane (CFC 11)	1.0 U	1.0	0.20	1	11/14/16 15:09	
Vinyl Chloride	**0.37 J**	1.0	0.20	1	11/14/16 15:09	
cis-1,2-Dichloroethene	**26**	1.0	0.20	1	11/14/16 15:09	
cis-1,3-Dichloropropene	1.0 U	1.0	0.20	1	11/14/16 15:09	
m,p-Xylenes	2.0 U	2.0	0.26	1	11/14/16 15:09	
o-Xylene	1.0 U	1.0	0.20	1	11/14/16 15:09	
trans-1,2-Dichloroethene	**2.3**	1.0	0.20	1	11/14/16 15:09	
trans-1,3-Dichloropropene	1.0 U	1.0	0.20	1	11/14/16 15:09	

Analytical Report

Client:	Ecology And Environment, Incorporated	**Service Request:**	R1612036
Project:	Davis Howland Oil Company Site/10C3074.0012.08	**Date Collected:**	11/10/16 13:35
Sample Matrix:	Water	**Date Received:**	11/11/16 15:25
Sample Name:	MW-9S-111016	**Units:**	ug/L
Lab Code:	R1612036-002	**Basis:**	NA

Volatile Organic Compounds by GC/MS, Unpreserved

Analysis Method: 624

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
1,2-Dichloroethane-d4	100	81 - 127	11/14/16 15:09	
4-Bromofluorobenzene	106	79 - 123	11/14/16 15:09	
Toluene-d8	107	83 - 120	11/14/16 15:09	

Analytical Report

Client:	Ecology And Environment, Incorporated	**Service Request:**	R1612036
Project:	Davis Howland Oil Company Site/10C3074.0012.08	**Date Collected:**	11/10/16 13:15
Sample Matrix:	Water	**Date Received:**	11/11/16 15:25
Sample Name:	MW-8R-111016	**Units:**	ug/L
Lab Code:	R1612036-003	**Basis:**	NA

Volatile Organic Compounds by GC/MS, Unpreserved

Analysis Method: 624

Analyte Name	Result		MRL	MDL	Dil.	Date Analyzed	Q
1,1,1-Trichloroethane (TCA)	25	U	25	5.0	25	11/14/16 19:40	
1,1,2,2-Tetrachloroethane	25	U	25	5.0	25	11/14/16 19:40	
1,1,2-Trichloroethane	25	U	25	5.0	25	11/14/16 19:40	
1,1-Dichloroethane (1,1-DCA)	**120**		25	5.3	25	11/14/16 19:40	
1,1-Dichloroethene (1,1-DCE)	**45**		25	5.0	25	11/14/16 19:40	
1,2-Dichlorobenzene	25	U	25	6.3	25	11/14/16 19:40	
1,2-Dichloroethane	25	U	25	5.0	25	11/14/16 19:40	
1,2-Dichloropropane	25	U	25	5.0	25	11/14/16 19:40	
1,3-Dichlorobenzene	25	U	25	5.5	25	11/14/16 19:40	
1,4-Dichlorobenzene	25	U	25	5.0	25	11/14/16 19:40	
2-Chloroethyl Vinyl Ether	250	U	250	15	25	11/14/16 19:40	
Acetone	130	U	130	69	25	11/14/16 19:40	
Benzene	25	U	25	5.0	25	11/14/16 19:40	
Bromodichloromethane	25	U	25	5.0	25	11/14/16 19:40	
Bromoform	25	U	25	5.0	25	11/14/16 19:40	
Bromomethane	25	U	25	11	25	11/14/16 19:40	
Carbon Tetrachloride	25	U	25	5.0	25	11/14/16 19:40	
Chlorobenzene	25	U	25	5.0	25	11/14/16 19:40	
Chloroethane	25	U	25	6.0	25	11/14/16 19:40	
Chloroform	25	U	25	5.0	25	11/14/16 19:40	
Chloromethane	25	U	25	5.0	25	11/14/16 19:40	
Dibromochloromethane	25	U	25	5.0	25	11/14/16 19:40	
Methylene Chloride	**7.0**	**J**	25	5.0	25	11/14/16 19:40	
Ethylbenzene	25	U	25	5.0	25	11/14/16 19:40	
Tetrachloroethene (PCE)	25	U	25	5.0	25	11/14/16 19:40	
Toluene	25	U	25	5.0	25	11/14/16 19:40	
Trichloroethene (TCE)	**10**	**J**	25	5.0	25	11/14/16 19:40	
Trichlorofluoromethane (CFC 11)	25	U	25	5.0	25	11/14/16 19:40	
Vinyl Chloride	**390**		25	5.0	25	11/14/16 19:40	
cis-1,2-Dichloroethene	**3600**		25	5.0	25	11/14/16 19:40	
cis-1,3-Dichloropropene	25	U	25	5.0	25	11/14/16 19:40	
m,p-Xylenes	50	U	50	6.5	25	11/14/16 19:40	
o-Xylene	25	U	25	5.0	25	11/14/16 19:40	
trans-1,2-Dichloroethene	**6.0**	**J**	25	5.0	25	11/14/16 19:40	
trans-1,3-Dichloropropene	25	U	25	5.0	25	11/14/16 19:40	

Analytical Report

Client:	Ecology And Environment, Incorporated	**Service Request:**	R1612036
Project:	Davis Howland Oil Company Site/10C3074.0012.08	**Date Collected:**	11/10/16 13:15
Sample Matrix:	Water	**Date Received:**	11/11/16 15:25
Sample Name:	MW-8R-111016	**Units:**	ug/L
Lab Code:	R1612036-003	**Basis:**	NA

Volatile Organic Compounds by GC/MS, Unpreserved

Analysis Method: 624

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
1,2-Dichloroethane-d4	104	81 - 127	11/14/16 19:40	
4-Bromofluorobenzene	100	79 - 123	11/14/16 19:40	
Toluene-d8	107	83 - 120	11/14/16 19:40	

Analytical Report

Client:	Ecology And Environment, Incorporated	**Service Request:**	R1612036
Project:	Davis Howland Oil Company Site/10C3074.0012.08	**Date Collected:**	11/10/16 11:30
Sample Matrix:	Water	**Date Received:**	11/11/16 15:25
Sample Name:	MW-13S-111016	**Units:**	ug/L
Lab Code:	R1612036-004	**Basis:**	NA

Volatile Organic Compounds by GC/MS, Unpreserved

Analysis Method: 624

Analyte Name	Result		MRL	MDL	Dil.	Date Analyzed	Q
1,1,1-Trichloroethane (TCA)	**0.39**	**J**	1.0	0.20	1	11/14/16 15:39	
1,1,2,2-Tetrachloroethane	1.0	U	1.0	0.20	1	11/14/16 15:39	
1,1,2-Trichloroethane	1.0	U	1.0	0.20	1	11/14/16 15:39	
1,1-Dichloroethane (1,1-DCA)	**0.59**	**J**	1.0	0.21	1	11/14/16 15:39	
1,1-Dichloroethene (1,1-DCE)	1.0	U	1.0	0.20	1	11/14/16 15:39	
1,2-Dichlorobenzene	1.0	U	1.0	0.25	1	11/14/16 15:39	
1,2-Dichloroethane	1.0	U	1.0	0.20	1	11/14/16 15:39	
1,2-Dichloropropane	1.0	U	1.0	0.20	1	11/14/16 15:39	
1,3-Dichlorobenzene	1.0	U	1.0	0.22	1	11/14/16 15:39	
1,4-Dichlorobenzene	1.0	U	1.0	0.20	1	11/14/16 15:39	
2-Chloroethyl Vinyl Ether	10	U	10	0.60	1	11/14/16 15:39	
Acetone	5.0	U	5.0	2.8	1	11/14/16 15:39	
Benzene	1.0	U	1.0	0.20	1	11/14/16 15:39	
Bromodichloromethane	1.0	U	1.0	0.20	1	11/14/16 15:39	
Bromoform	1.0	U	1.0	0.20	1	11/14/16 15:39	
Bromomethane	1.0	U	1.0	0.44	1	11/14/16 15:39	
Carbon Tetrachloride	1.0	U	1.0	0.20	1	11/14/16 15:39	
Chlorobenzene	1.0	U	1.0	0.20	1	11/14/16 15:39	
Chloroethane	1.0	U	1.0	0.24	1	11/14/16 15:39	
Chloroform	1.0	U	1.0	0.20	1	11/14/16 15:39	
Chloromethane	1.0	U	1.0	0.20	1	11/14/16 15:39	
Dibromochloromethane	1.0	U	1.0	0.20	1	11/14/16 15:39	
Methylene Chloride	1.0	U	1.0	0.20	1	11/14/16 15:39	
Ethylbenzene	1.0	U	1.0	0.20	1	11/14/16 15:39	
Tetrachloroethene (PCE)	**0.33**	**J**	1.0	0.20	1	11/14/16 15:39	
Toluene	1.0	U	1.0	0.20	1	11/14/16 15:39	
Trichloroethene (TCE)	**1.0**		1.0	0.20	1	11/14/16 15:39	
Trichlorofluoromethane (CFC 11)	1.0	U	1.0	0.20	1	11/14/16 15:39	
Vinyl Chloride	1.0	U	1.0	0.20	1	11/14/16 15:39	
cis-1,2-Dichloroethene	**5.5**		1.0	0.20	1	11/14/16 15:39	
cis-1,3-Dichloropropene	1.0	U	1.0	0.20	1	11/14/16 15:39	
m,p-Xylenes	2.0	U	2.0	0.26	1	11/14/16 15:39	
o-Xylene	1.0	U	1.0	0.20	1	11/14/16 15:39	
trans-1,2-Dichloroethene	1.0	U	1.0	0.20	1	11/14/16 15:39	
trans-1,3-Dichloropropene	1.0	U	1.0	0.20	1	11/14/16 15:39	

Analytical Report

Client:	Ecology And Environment, Incorporated	**Service Request:**	R1612036
Project:	Davis Howland Oil Company Site/10C3074.0012.08	**Date Collected:**	11/10/16 11:30
Sample Matrix:	Water	**Date Received:**	11/11/16 15:25
Sample Name:	MW-13S-111016	**Units:**	ug/L
Lab Code:	R1612036-004	**Basis:**	NA

Volatile Organic Compounds by GC/MS, Unpreserved

Analysis Method: 624

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
1,2-Dichloroethane-d4	105	81 - 127	11/14/16 15:39	
4-Bromofluorobenzene	104	79 - 123	11/14/16 15:39	
Toluene-d8	108	83 - 120	11/14/16 15:39	

Analytical Report

Client:	Ecology And Environment, Incorporated	**Service Request:**	R1612036
Project:	Davis Howland Oil Company Site/10C3074.0012.08	**Date Collected:**	11/11/16 10:40
Sample Matrix:	Water	**Date Received:**	11/11/16 15:25
Sample Name:	MW-14R-111116	**Units:**	ug/L
Lab Code:	R1612036-005	**Basis:**	NA

Volatile Organic Compounds by GC/MS, Unpreserved

Analysis Method: 624

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Q
1,1,1-Trichloroethane (TCA)	1.0 U	1.0	0.20	1	11/14/16 16:09	
1,1,2,2-Tetrachloroethane	1.0 U	1.0	0.20	1	11/14/16 16:09	
1,1,2-Trichloroethane	1.0 U	1.0	0.20	1	11/14/16 16:09	
1,1-Dichloroethane (1,1-DCA)	1.0 U	1.0	0.21	1	11/14/16 16:09	
1,1-Dichloroethene (1,1-DCE)	**0.31 J**	1.0	0.20	1	11/14/16 16:09	
1,2-Dichlorobenzene	1.0 U	1.0	0.25	1	11/14/16 16:09	
1,2-Dichloroethane	1.0 U	1.0	0.20	1	11/14/16 16:09	
1,2-Dichloropropane	1.0 U	1.0	0.20	1	11/14/16 16:09	
1,3-Dichlorobenzene	1.0 U	1.0	0.22	1	11/14/16 16:09	
1,4-Dichlorobenzene	1.0 U	1.0	0.20	1	11/14/16 16:09	
2-Chloroethyl Vinyl Ether	10 U	10	0.60	1	11/14/16 16:09	
Acetone	5.0 U	5.0	2.8	1	11/14/16 16:09	
Benzene	1.0 U	1.0	0.20	1	11/14/16 16:09	
Bromodichloromethane	1.0 U	1.0	0.20	1	11/14/16 16:09	
Bromoform	1.0 U	1.0	0.20	1	11/14/16 16:09	
Bromomethane	1.0 U	1.0	0.44	1	11/14/16 16:09	
Carbon Tetrachloride	1.0 U	1.0	0.20	1	11/14/16 16:09	
Chlorobenzene	1.0 U	1.0	0.20	1	11/14/16 16:09	
Chloroethane	1.0 U	1.0	0.24	1	11/14/16 16:09	
Chloroform	1.0 U	1.0	0.20	1	11/14/16 16:09	
Chloromethane	1.0 U	1.0	0.20	1	11/14/16 16:09	
Dibromochloromethane	1.0 U	1.0	0.20	1	11/14/16 16:09	
Methylene Chloride	1.0 U	1.0	0.20	1	11/14/16 16:09	
Ethylbenzene	1.0 U	1.0	0.20	1	11/14/16 16:09	
Tetrachloroethene (PCE)	1.0 U	1.0	0.20	1	11/14/16 16:09	
Toluene	1.0 U	1.0	0.20	1	11/14/16 16:09	
Trichloroethene (TCE)	**43**	1.0	0.20	1	11/14/16 16:09	
Trichlorofluoromethane (CFC 11)	1.0 U	1.0	0.20	1	11/14/16 16:09	
Vinyl Chloride	**0.42 J**	1.0	0.20	1	11/14/16 16:09	
cis-1,2-Dichloroethene	**9.9**	1.0	0.20	1	11/14/16 16:09	
cis-1,3-Dichloropropene	1.0 U	1.0	0.20	1	11/14/16 16:09	
m,p-Xylenes	2.0 U	2.0	0.26	1	11/14/16 16:09	
o-Xylene	1.0 U	1.0	0.20	1	11/14/16 16:09	
trans-1,2-Dichloroethene	**5.3**	1.0	0.20	1	11/14/16 16:09	
trans-1,3-Dichloropropene	1.0 U	1.0	0.20	1	11/14/16 16:09	

Analytical Report

Client:	Ecology And Environment, Incorporated	**Service Request:**	R1612036
Project:	Davis Howland Oil Company Site/10C3074.0012.08	**Date Collected:**	11/11/16 10:40
Sample Matrix:	Water	**Date Received:**	11/11/16 15:25
Sample Name:	MW-14R-111116	**Units:**	ug/L
Lab Code:	R1612036-005	**Basis:**	NA

Volatile Organic Compounds by GC/MS, Unpreserved

Analysis Method: 624

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
1,2-Dichloroethane-d4	106	81 - 127	11/14/16 16:09	
4-Bromofluorobenzene	102	79 - 123	11/14/16 16:09	
Toluene-d8	107	83 - 120	11/14/16 16:09	

Analytical Report

Client:	Ecology And Environment, Incorporated	**Service Request:**	R1612036
Project:	Davis Howland Oil Company Site/10C3074.0012.08	**Date Collected:**	11/11/16 11:35
Sample Matrix:	Water	**Date Received:**	11/11/16 15:25
Sample Name:	MW-2S-111116	**Units:**	ug/L
Lab Code:	R1612036-006	**Basis:**	NA

Volatile Organic Compounds by GC/MS, Unpreserved

Analysis Method: 624

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Q
1,1,1-Trichloroethane (TCA)	1.0 U	1.0	0.20	1	11/14/16 16:40	
1,1,2,2-Tetrachloroethane	1.0 U	1.0	0.20	1	11/14/16 16:40	
1,1,2-Trichloroethane	1.0 U	1.0	0.20	1	11/14/16 16:40	
1,1-Dichloroethane (1,1-DCA)	**1.5**	1.0	0.21	1	11/14/16 16:40	
1,1-Dichloroethene (1,1-DCE)	1.0 U	1.0	0.20	1	11/14/16 16:40	
1,2-Dichlorobenzene	1.0 U	1.0	0.25	1	11/14/16 16:40	
1,2-Dichloroethane	1.0 U	1.0	0.20	1	11/14/16 16:40	
1,2-Dichloropropane	1.0 U	1.0	0.20	1	11/14/16 16:40	
1,3-Dichlorobenzene	1.0 U	1.0	0.22	1	11/14/16 16:40	
1,4-Dichlorobenzene	1.0 U	1.0	0.20	1	11/14/16 16:40	
2-Chloroethyl Vinyl Ether	10 U	10	0.60	1	11/14/16 16:40	
Acetone	5.0 U	5.0	2.8	1	11/14/16 16:40	
Benzene	1.0 U	1.0	0.20	1	11/14/16 16:40	
Bromodichloromethane	1.0 U	1.0	0.20	1	11/14/16 16:40	
Bromoform	1.0 U	1.0	0.20	1	11/14/16 16:40	
Bromomethane	1.0 U	1.0	0.44	1	11/14/16 16:40	
Carbon Tetrachloride	1.0 U	1.0	0.20	1	11/14/16 16:40	
Chlorobenzene	1.0 U	1.0	0.20	1	11/14/16 16:40	
Chloroethane	1.0 U	1.0	0.24	1	11/14/16 16:40	
Chloroform	1.0 U	1.0	0.20	1	11/14/16 16:40	
Chloromethane	1.0 U	1.0	0.20	1	11/14/16 16:40	
Dibromochloromethane	1.0 U	1.0	0.20	1	11/14/16 16:40	
Methylene Chloride	1.0 U	1.0	0.20	1	11/14/16 16:40	
Ethylbenzene	1.0 U	1.0	0.20	1	11/14/16 16:40	
Tetrachloroethene (PCE)	1.0 U	1.0	0.20	1	11/14/16 16:40	
Toluene	1.0 U	1.0	0.20	1	11/14/16 16:40	
Trichloroethene (TCE)	**0.25 J**	1.0	0.20	1	11/14/16 16:40	
Trichlorofluoromethane (CFC 11)	1.0 U	1.0	0.20	1	11/14/16 16:40	
Vinyl Chloride	**0.63 J**	1.0	0.20	1	11/14/16 16:40	
cis-1,2-Dichloroethene	**2.2**	1.0	0.20	1	11/14/16 16:40	
cis-1,3-Dichloropropene	1.0 U	1.0	0.20	1	11/14/16 16:40	
m,p-Xylenes	2.0 U	2.0	0.26	1	11/14/16 16:40	
o-Xylene	1.0 U	1.0	0.20	1	11/14/16 16:40	
trans-1,2-Dichloroethene	1.0 U	1.0	0.20	1	11/14/16 16:40	
trans-1,3-Dichloropropene	1.0 U	1.0	0.20	1	11/14/16 16:40	

Analytical Report

Client:	Ecology And Environment, Incorporated	**Service Request:**	R1612036
Project:	Davis Howland Oil Company Site/10C3074.0012.08	**Date Collected:**	11/11/16 11:35
Sample Matrix:	Water	**Date Received:**	11/11/16 15:25
Sample Name:	MW-2S-111116	**Units:**	ug/L
Lab Code:	R1612036-006	**Basis:**	NA

Volatile Organic Compounds by GC/MS, Unpreserved

Analysis Method: 624

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
1,2-Dichloroethane-d4	105	81 - 127	11/14/16 16:40	
4-Bromofluorobenzene	104	79 - 123	11/14/16 16:40	
Toluene-d8	110	83 - 120	11/14/16 16:40	

Analytical Report

Client:	Ecology And Environment, Incorporated	**Service Request:**	R1612036
Project:	Davis Howland Oil Company Site/10C3074.0012.08	**Date Collected:**	11/11/16 12:25
Sample Matrix:	Water	**Date Received:**	11/11/16 15:25
Sample Name:	MW-2R-111116	**Units:**	ug/L
Lab Code:	R1612036-007	**Basis:**	NA

Volatile Organic Compounds by GC/MS, Unpreserved

Analysis Method: 624

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Q
1,1,1-Trichloroethane (TCA)	5.0 U	5.0	1.0	5	11/14/16 20:11	
1,1,2,2-Tetrachloroethane	5.0 U	5.0	1.0	5	11/14/16 20:11	
1,1,2-Trichloroethane	5.0 U	5.0	1.0	5	11/14/16 20:11	
1,1-Dichloroethane (1,1-DCA)	**43**	5.0	1.1	5	11/14/16 20:11	
1,1-Dichloroethene (1,1-DCE)	**12**	5.0	1.0	5	11/14/16 20:11	
1,2-Dichlorobenzene	5.0 U	5.0	1.3	5	11/14/16 20:11	
1,2-Dichloroethane	5.0 U	5.0	1.0	5	11/14/16 20:11	
1,2-Dichloropropane	5.0 U	5.0	1.0	5	11/14/16 20:11	
1,3-Dichlorobenzene	5.0 U	5.0	1.1	5	11/14/16 20:11	
1,4-Dichlorobenzene	5.0 U	5.0	1.0	5	11/14/16 20:11	
2-Chloroethyl Vinyl Ether	50 U	50	3.0	5	11/14/16 20:11	
Acetone	25 U	25	14	5	11/14/16 20:11	
Benzene	5.0 U	5.0	1.0	5	11/14/16 20:11	
Bromodichloromethane	5.0 U	5.0	1.0	5	11/14/16 20:11	
Bromoform	5.0 U	5.0	1.0	5	11/14/16 20:11	
Bromomethane	5.0 U	5.0	2.2	5	11/14/16 20:11	
Carbon Tetrachloride	5.0 U	5.0	1.0	5	11/14/16 20:11	
Chlorobenzene	5.0 U	5.0	1.0	5	11/14/16 20:11	
Chloroethane	5.0 U	5.0	1.2	5	11/14/16 20:11	
Chloroform	5.0 U	5.0	1.0	5	11/14/16 20:11	
Chloromethane	5.0 U	5.0	1.0	5	11/14/16 20:11	
Dibromochloromethane	5.0 U	5.0	1.0	5	11/14/16 20:11	
Methylene Chloride	**1.8 J**	5.0	1.0	5	11/14/16 20:11	
Ethylbenzene	5.0 U	5.0	1.0	5	11/14/16 20:11	
Tetrachloroethene (PCE)	5.0 U	5.0	1.0	5	11/14/16 20:11	
Toluene	5.0 U	5.0	1.0	5	11/14/16 20:11	
Trichloroethene (TCE)	5.0 U	5.0	1.0	5	11/14/16 20:11	
Trichlorofluoromethane (CFC 11)	5.0 U	5.0	1.0	5	11/14/16 20:11	
Vinyl Chloride	**340**	5.0	1.0	5	11/14/16 20:11	
cis-1,2-Dichloroethene	**1100 E**	5.0	1.0	5	11/14/16 20:11	
cis-1,3-Dichloropropene	5.0 U	5.0	1.0	5	11/14/16 20:11	
m,p-Xylenes	10 U	10	1.3	5	11/14/16 20:11	
o-Xylene	5.0 U	5.0	1.0	5	11/14/16 20:11	
trans-1,2-Dichloroethene	**2.7 J**	5.0	1.0	5	11/14/16 20:11	
trans-1,3-Dichloropropene	5.0 U	5.0	1.0	5	11/14/16 20:11	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
1,2-Dichloroethane-d4	106	81 - 127	11/14/16 20:11	
4-Bromofluorobenzene	104	79 - 123	11/14/16 20:11	
Toluene-d8	107	83 - 120	11/14/16 20:11	

Analytical Report

Client:	Ecology And Environment, Incorporated	**Service Request:**	R1612036
Project:	Davis Howland Oil Company Site/10C3074.0012.08	**Date Collected:**	11/11/16 12:25
Sample Matrix:	Water	**Date Received:**	11/11/16 15:25
Sample Name:	MW-2R-111116	**Units:**	ug/L
Lab Code:	R1612036-007	**Basis:**	NA

Volatile Organic Compounds by GC/MS, Unpreserved

Analysis Method: 624
Prep Method: EPA 5030C

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Q
1,1,1-Trichloroethane (TCA)	10 U	10	2.0	10	11/16/16 14:13	
1,1,2,2-Tetrachloroethane	10 U	10	2.0	10	11/16/16 14:13	
1,1,2-Trichloroethane	10 U	10	2.0	10	11/16/16 14:13	
1,1-Dichloroethane (1,1-DCA)	**39 D**	10	2.1	10	11/16/16 14:13	
1,1-Dichloroethene (1,1-DCE)	**12 D**	10	2.0	10	11/16/16 14:13	
1,2-Dichlorobenzene	10 U	10	2.5	10	11/16/16 14:13	
1,2-Dichloroethane	10 U	10	2.0	10	11/16/16 14:13	
1,2-Dichloropropane	10 U	10	2.0	10	11/16/16 14:13	
1,3-Dichlorobenzene	10 U	10	2.2	10	11/16/16 14:13	
1,4-Dichlorobenzene	10 U	10	2.0	10	11/16/16 14:13	
2-Chloroethyl Vinyl Ether	100 U	100	6.0	10	11/16/16 14:13	
Acetone	50 U	50	28	10	11/16/16 14:13	
Benzene	10 U	10	2.0	10	11/16/16 14:13	
Bromodichloromethane	10 U	10	2.0	10	11/16/16 14:13	
Bromoform	10 U	10	2.0	10	11/16/16 14:13	
Bromomethane	10 U	10	4.4	10	11/16/16 14:13	
Carbon Tetrachloride	10 U	10	2.0	10	11/16/16 14:13	
Chlorobenzene	10 U	10	2.0	10	11/16/16 14:13	
Chloroethane	10 U	10	2.4	10	11/16/16 14:13	
Chloroform	10 U	10	2.0	10	11/16/16 14:13	
Chloromethane	10 U	10	2.0	10	11/16/16 14:13	
Dibromochloromethane	10 U	10	2.0	10	11/16/16 14:13	
Methylene Chloride	10 U	10	2.0	10	11/16/16 14:13	
Ethylbenzene	10 U	10	2.0	10	11/16/16 14:13	
Tetrachloroethene (PCE)	10 U	10	2.0	10	11/16/16 14:13	
Toluene	10 U	10	2.0	10	11/16/16 14:13	
Trichloroethene (TCE)	10 U	10	2.0	10	11/16/16 14:13	
Trichlorofluoromethane (CFC 11)	10 U	10	2.0	10	11/16/16 14:13	
Vinyl Chloride	**440 D**	10	2.0	10	11/16/16 14:13	
cis-1,2-Dichloroethene	**1100 D**	10	2.0	10	11/16/16 14:13	
cis-1,3-Dichloropropene	10 U	10	2.0	10	11/16/16 14:13	
m,p-Xylenes	20 U	20	2.6	10	11/16/16 14:13	
o-Xylene	10 U	10	2.0	10	11/16/16 14:13	
trans-1,2-Dichloroethene	**5.3 DJ**	10	2.0	10	11/16/16 14:13	
trans-1,3-Dichloropropene	10 U	10	2.0	10	11/16/16 14:13	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
1,2-Dichloroethane-d4	112	81 - 127	11/16/16 14:13	
4-Bromofluorobenzene	110	79 - 123	11/16/16 14:13	
Toluene-d8	111	83 - 120	11/16/16 14:13	

Analytical Report

Client:	Ecology And Environment, Incorporated	**Service Request:**	R1612036
Project:	Davis Howland Oil Company Site/10C3074.0012.08	**Date Collected:**	11/10/16 11:00
Sample Matrix:	Water	**Date Received:**	11/11/16 15:25
Sample Name:	MW-100-111016	**Units:**	ug/L
Lab Code:	R1612036-008	**Basis:**	NA

Volatile Organic Compounds by GC/MS, Unpreserved

Analysis Method: 624

Analyte Name	Result		MRL	MDL	Dil.	Date Analyzed	Q
1,1,1-Trichloroethane (TCA)	1.0	U	1.0	0.20	1	11/14/16 17:10	
1,1,2,2-Tetrachloroethane	1.0	U	1.0	0.20	1	11/14/16 17:10	
1,1,2-Trichloroethane	1.0	U	1.0	0.20	1	11/14/16 17:10	
1,1-Dichloroethane (1,1-DCA)	**12**		1.0	0.21	1	11/14/16 17:10	
1,1-Dichloroethene (1,1-DCE)	**4.0**		1.0	0.20	1	11/14/16 17:10	
1,2-Dichlorobenzene	1.0	U	1.0	0.25	1	11/14/16 17:10	
1,2-Dichloroethane	1.0	U	1.0	0.20	1	11/14/16 17:10	
1,2-Dichloropropane	1.0	U	1.0	0.20	1	11/14/16 17:10	
1,3-Dichlorobenzene	1.0	U	1.0	0.22	1	11/14/16 17:10	
1,4-Dichlorobenzene	1.0	U	1.0	0.20	1	11/14/16 17:10	
2-Chloroethyl Vinyl Ether	10	U	10	0.60	1	11/14/16 17:10	
Acetone	5.0	U	5.0	2.8	1	11/14/16 17:10	
Benzene	**1.7**		1.0	0.20	1	11/14/16 17:10	
Bromodichloromethane	1.0	U	1.0	0.20	1	11/14/16 17:10	
Bromoform	1.0	U	1.0	0.20	1	11/14/16 17:10	
Bromomethane	1.0	U	1.0	0.44	1	11/14/16 17:10	
Carbon Tetrachloride	1.0	U	1.0	0.20	1	11/14/16 17:10	
Chlorobenzene	1.0	U	1.0	0.20	1	11/14/16 17:10	
Chloroethane	**0.27**	**J**	1.0	0.24	1	11/14/16 17:10	
Chloroform	1.0	U	1.0	0.20	1	11/14/16 17:10	
Chloromethane	1.0	U	1.0	0.20	1	11/14/16 17:10	
Dibromochloromethane	1.0	U	1.0	0.20	1	11/14/16 17:10	
Methylene Chloride	1.0	U	1.0	0.20	1	11/14/16 17:10	
Ethylbenzene	1.0	U	1.0	0.20	1	11/14/16 17:10	
Tetrachloroethene (PCE)	1.0	U	1.0	0.20	1	11/14/16 17:10	
Toluene	1.0	U	1.0	0.20	1	11/14/16 17:10	
Trichloroethene (TCE)	**23**		1.0	0.20	1	11/14/16 17:10	
Trichlorofluoromethane (CFC 11)	1.0	U	1.0	0.20	1	11/14/16 17:10	
Vinyl Chloride	**47**		1.0	0.20	1	11/14/16 17:10	
cis-1,2-Dichloroethene	**380**	**E**	1.0	0.20	1	11/14/16 17:10	
cis-1,3-Dichloropropene	1.0	U	1.0	0.20	1	11/14/16 17:10	
m,p-Xylenes	2.0	U	2.0	0.26	1	11/14/16 17:10	
o-Xylene	1.0	U	1.0	0.20	1	11/14/16 17:10	
trans-1,2-Dichloroethene	**3.7**		1.0	0.20	1	11/14/16 17:10	
trans-1,3-Dichloropropene	1.0	U	1.0	0.20	1	11/14/16 17:10	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
1,2-Dichloroethane-d4	107	81 - 127	11/14/16 17:10	
4-Bromofluorobenzene	106	79 - 123	11/14/16 17:10	
Toluene-d8	105	83 - 120	11/14/16 17:10	

Analytical Report

Client:	Ecology And Environment, Incorporated	**Service Request:**	R1612036
Project:	Davis Howland Oil Company Site/10C3074.0012.08	**Date Collected:**	11/10/16 11:00
Sample Matrix:	Water	**Date Received:**	11/11/16 15:25
Sample Name:	MW-100-111016	**Units:**	ug/L
Lab Code:	R1612036-008	**Basis:**	NA

Volatile Organic Compounds by GC/MS, Unpreserved

Analysis Method: 624
Prep Method: EPA 5030C

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Q
1,1,1-Trichloroethane (TCA)	5.0 U	5.0	1.0	5	11/16/16 13:48	
1,1,2,2-Tetrachloroethane	5.0 U	5.0	1.0	5	11/16/16 13:48	
1,1,2-Trichloroethane	5.0 U	5.0	1.0	5	11/16/16 13:48	
1,1-Dichloroethane (1,1-DCA)	**11 D**	5.0	1.1	5	11/16/16 13:48	
1,1-Dichloroethene (1,1-DCE)	**2.8 DJ**	5.0	1.0	5	11/16/16 13:48	
1,2-Dichlorobenzene	5.0 U	5.0	1.3	5	11/16/16 13:48	
1,2-Dichloroethane	5.0 U	5.0	1.0	5	11/16/16 13:48	
1,2-Dichloropropane	5.0 U	5.0	1.0	5	11/16/16 13:48	
1,3-Dichlorobenzene	5.0 U	5.0	1.1	5	11/16/16 13:48	
1,4-Dichlorobenzene	5.0 U	5.0	1.0	5	11/16/16 13:48	
2-Chloroethyl Vinyl Ether	50 U	50	3.0	5	11/16/16 13:48	
Acetone	25 U	25	14	5	11/16/16 13:48	
Benzene	**1.7 DJ**	5.0	1.0	5	11/16/16 13:48	
Bromodichloromethane	5.0 U	5.0	1.0	5	11/16/16 13:48	
Bromoform	5.0 U	5.0	1.0	5	11/16/16 13:48	
Bromomethane	5.0 U	5.0	2.2	5	11/16/16 13:48	
Carbon Tetrachloride	5.0 U	5.0	1.0	5	11/16/16 13:48	
Chlorobenzene	5.0 U	5.0	1.0	5	11/16/16 13:48	
Chloroethane	5.0 U	5.0	1.2	5	11/16/16 13:48	
Chloroform	5.0 U	5.0	1.0	5	11/16/16 13:48	
Chloromethane	5.0 U	5.0	1.0	5	11/16/16 13:48	
Dibromochloromethane	5.0 U	5.0	1.0	5	11/16/16 13:48	
Methylene Chloride	5.0 U	5.0	1.0	5	11/16/16 13:48	
Ethylbenzene	5.0 U	5.0	1.0	5	11/16/16 13:48	
Tetrachloroethene (PCE)	5.0 U	5.0	1.0	5	11/16/16 13:48	
Toluene	5.0 U	5.0	1.0	5	11/16/16 13:48	
Trichloroethene (TCE)	**19 D**	5.0	1.0	5	11/16/16 13:48	
Trichlorofluoromethane (CFC 11)	5.0 U	5.0	1.0	5	11/16/16 13:48	
Vinyl Chloride	**57 D**	5.0	1.0	5	11/16/16 13:48	
cis-1,2-Dichloroethene	**410 D**	5.0	1.0	5	11/16/16 13:48	
cis-1,3-Dichloropropene	5.0 U	5.0	1.0	5	11/16/16 13:48	
m,p-Xylenes	10 U	10	1.3	5	11/16/16 13:48	
o-Xylene	5.0 U	5.0	1.0	5	11/16/16 13:48	
trans-1,2-Dichloroethene	**4.6 DJ**	5.0	1.0	5	11/16/16 13:48	
trans-1,3-Dichloropropene	5.0 U	5.0	1.0	5	11/16/16 13:48	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
1,2-Dichloroethane-d4	109	81 - 127	11/16/16 13:48	
4-Bromofluorobenzene	109	79 - 123	11/16/16 13:48	
Toluene-d8	109	83 - 120	11/16/16 13:48	

Analytical Report

Client:	Ecology And Environment, Incorporated	**Service Request:**	R1612036
Project:	Davis Howland Oil Company Site/10C3074.0012.08	**Date Collected:**	11/11/16 13:58
Sample Matrix:	Water	**Date Received:**	11/11/16 15:25
Sample Name:	MW-14S-111116	**Units:**	ug/L
Lab Code:	R1612036-009	**Basis:**	NA

Volatile Organic Compounds by GC/MS, Unpreserved

Analysis Method: 624
Prep Method: EPA 5030C

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Q
1,1,1-Trichloroethane (TCA)	1.0 U	1.0	0.20	1	11/16/16 18:50	
1,1,2,2-Tetrachloroethane	1.0 U	1.0	0.20	1	11/16/16 18:50	
1,1,2-Trichloroethane	1.0 U	1.0	0.20	1	11/16/16 18:50	
1,1-Dichloroethane (1,1-DCA)	1.0 U	1.0	0.21	1	11/16/16 18:50	
1,1-Dichloroethene (1,1-DCE)	1.0 U	1.0	0.20	1	11/16/16 18:50	
1,2-Dichlorobenzene	1.0 U	1.0	0.25	1	11/16/16 18:50	
1,2-Dichloroethane	1.0 U	1.0	0.20	1	11/16/16 18:50	
1,2-Dichloropropane	1.0 U	1.0	0.20	1	11/16/16 18:50	
1,3-Dichlorobenzene	1.0 U	1.0	0.22	1	11/16/16 18:50	
1,4-Dichlorobenzene	**0.22 J**	1.0	0.20	1	11/16/16 18:50	
2-Chloroethyl Vinyl Ether	10 U	10	0.60	1	11/16/16 18:50	
Acetone	5.0 U	5.0	2.8	1	11/16/16 18:50	
Benzene	1.0 U	1.0	0.20	1	11/16/16 18:50	
Bromodichloromethane	1.0 U	1.0	0.20	1	11/16/16 18:50	
Bromoform	1.0 U	1.0	0.20	1	11/16/16 18:50	
Bromomethane	1.0 U	1.0	0.44	1	11/16/16 18:50	
Carbon Tetrachloride	1.0 U	1.0	0.20	1	11/16/16 18:50	
Chlorobenzene	1.0 U	1.0	0.20	1	11/16/16 18:50	
Chloroethane	1.0 U	1.0	0.24	1	11/16/16 18:50	
Chloroform	1.0 U	1.0	0.20	1	11/16/16 18:50	
Chloromethane	1.0 U	1.0	0.20	1	11/16/16 18:50	
Dibromochloromethane	1.0 U	1.0	0.20	1	11/16/16 18:50	
Methylene Chloride	1.0 U	1.0	0.20	1	11/16/16 18:50	
Ethylbenzene	1.0 U	1.0	0.20	1	11/16/16 18:50	
Tetrachloroethene (PCE)	1.0 U	1.0	0.20	1	11/16/16 18:50	
Toluene	1.0 U	1.0	0.20	1	11/16/16 18:50	
Trichloroethene (TCE)	1.0 U	1.0	0.20	1	11/16/16 18:50	
Trichlorofluoromethane (CFC 11)	1.0 U	1.0	0.20	1	11/16/16 18:50	
Vinyl Chloride	1.0 U	1.0	0.20	1	11/16/16 18:50	
cis-1,2-Dichloroethene	1.0 U	1.0	0.20	1	11/16/16 18:50	
cis-1,3-Dichloropropene	1.0 U	1.0	0.20	1	11/16/16 18:50	
m,p-Xylenes	2.0 U	2.0	0.26	1	11/16/16 18:50	
o-Xylene	1.0 U	1.0	0.20	1	11/16/16 18:50	
trans-1,2-Dichloroethene	1.0 U	1.0	0.20	1	11/16/16 18:50	
trans-1,3-Dichloropropene	1.0 U	1.0	0.20	1	11/16/16 18:50	

Analytical Report

Client:	Ecology And Environment, Incorporated	**Service Request:**	R1612036
Project:	Davis Howland Oil Company Site/10C3074.0012.08	**Date Collected:**	11/11/16 13:58
Sample Matrix:	Water	**Date Received:**	11/11/16 15:25
Sample Name:	MW-14S-111116	**Units:**	ug/L
Lab Code:	R1612036-009	**Basis:**	NA

Volatile Organic Compounds by GC/MS, Unpreserved

Analysis Method: 624
Prep Method: EPA 5030C

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
1,2-Dichloroethane-d4	111	81 - 127	11/16/16 18:50	
4-Bromofluorobenzene	109	79 - 123	11/16/16 18:50	
Toluene-d8	108	83 - 120	11/16/16 18:50	

Analytical Report

Client:	Ecology And Environment, Incorporated	**Service Request:**	R1612036
Project:	Davis Howland Oil Company Site/10C3074.0012.08	**Date Collected:**	11/10/16
Sample Matrix:	Water	**Date Received:**	11/11/16 15:25
Sample Name:	TRIP BLANK	**Units:**	ug/L
Lab Code:	R1612036-010	**Basis:**	NA

Volatile Organic Compounds by GC/MS, Unpreserved

Analysis Method: 624

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Q
1,1,1-Trichloroethane (TCA)	1.0 U	1.0	0.20	1	11/14/16 18:40	
1,1,2,2-Tetrachloroethane	1.0 U	1.0	0.20	1	11/14/16 18:40	
1,1,2-Trichloroethane	1.0 U	1.0	0.20	1	11/14/16 18:40	
1,1-Dichloroethane (1,1-DCA)	1.0 U	1.0	0.21	1	11/14/16 18:40	
1,1-Dichloroethene (1,1-DCE)	1.0 U	1.0	0.20	1	11/14/16 18:40	
1,2-Dichlorobenzene	1.0 U	1.0	0.25	1	11/14/16 18:40	
1,2-Dichloroethane	1.0 U	1.0	0.20	1	11/14/16 18:40	
1,2-Dichloropropane	1.0 U	1.0	0.20	1	11/14/16 18:40	
1,3-Dichlorobenzene	1.0 U	1.0	0.22	1	11/14/16 18:40	
1,4-Dichlorobenzene	1.0 U	1.0	0.20	1	11/14/16 18:40	
2-Chloroethyl Vinyl Ether	10 U	10	0.60	1	11/14/16 18:40	
Acetone	5.0 U	5.0	2.8	1	11/14/16 18:40	
Benzene	1.0 U	1.0	0.20	1	11/14/16 18:40	
Bromodichloromethane	1.0 U	1.0	0.20	1	11/14/16 18:40	
Bromoform	1.0 U	1.0	0.20	1	11/14/16 18:40	
Bromomethane	1.0 U	1.0	0.44	1	11/14/16 18:40	
Carbon Tetrachloride	1.0 U	1.0	0.20	1	11/14/16 18:40	
Chlorobenzene	1.0 U	1.0	0.20	1	11/14/16 18:40	
Chloroethane	1.0 U	1.0	0.24	1	11/14/16 18:40	
Chloroform	1.0 U	1.0	0.20	1	11/14/16 18:40	
Chloromethane	1.0 U	1.0	0.20	1	11/14/16 18:40	
Dibromochloromethane	1.0 U	1.0	0.20	1	11/14/16 18:40	
Methylene Chloride	1.0 U	1.0	0.20	1	11/14/16 18:40	
Ethylbenzene	1.0 U	1.0	0.20	1	11/14/16 18:40	
Tetrachloroethene (PCE)	1.0 U	1.0	0.20	1	11/14/16 18:40	
Toluene	1.0 U	1.0	0.20	1	11/14/16 18:40	
Trichloroethene (TCE)	1.0 U	1.0	0.20	1	11/14/16 18:40	
Trichlorofluoromethane (CFC 11)	1.0 U	1.0	0.20	1	11/14/16 18:40	
Vinyl Chloride	1.0 U	1.0	0.20	1	11/14/16 18:40	
cis-1,2-Dichloroethene	1.0 U	1.0	0.20	1	11/14/16 18:40	
cis-1,3-Dichloropropene	1.0 U	1.0	0.20	1	11/14/16 18:40	
m,p-Xylenes	2.0 U	2.0	0.26	1	11/14/16 18:40	
o-Xylene	1.0 U	1.0	0.20	1	11/14/16 18:40	
trans-1,2-Dichloroethene	1.0 U	1.0	0.20	1	11/14/16 18:40	
trans-1,3-Dichloropropene	1.0 U	1.0	0.20	1	11/14/16 18:40	

Analytical Report

Client:	Ecology And Environment, Incorporated	**Service Request:**	R1612036
Project:	Davis Howland Oil Company Site/10C3074.0012.08	**Date Collected:**	11/10/16
Sample Matrix:	Water	**Date Received:**	11/11/16 15:25
Sample Name:	TRIP BLANK	**Units:**	ug/L
Lab Code:	R1612036-010	**Basis:**	NA

Volatile Organic Compounds by GC/MS, Unpreserved

Analysis Method: 624

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
1,2-Dichloroethane-d4	106	81 - 127	11/14/16 18:40	
4-Bromofluorobenzene	103	79 - 123	11/14/16 18:40	
Toluene-d8	104	83 - 120	11/14/16 18:40	

Semivolatile Organic Compounds by GC/MS

ALS Environmental—Rochester Laboratory
1565 Jefferson Road, Building 300, Suite 360, Rochester, NY 14623
Phone (585) 288-5380 Fax (585) 288-8475
www.alsglobal.com

Analytical Report

Client:	Ecology And Environment, Incorporated	**Service Request:**	R1612036
Project:	Davis Howland Oil Company Site/10C3074.0012.08	**Date Collected:**	11/10/16 11:00
Sample Matrix:	Water	**Date Received:**	11/11/16 15:25
Sample Name:	MW-5R-111016	**Units:**	ug/L
Lab Code:	R1612036-001	**Basis:**	NA

Semivolatile Organic Compounds by GC/MS

Analysis Method: 625
Prep Method: EPA 3510C

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
1,2,4-Trichlorobenzene	4.7 U	4.7	1.0	1	11/17/16 21:42	11/16/16	
1,2-Diphenylhydrazine	4.7 U	4.7	1.0	1	11/17/16 21:42	11/16/16	
2,4,6-Trichlorophenol	4.7 U	4.7	1.4	1	11/17/16 21:42	11/16/16	
2,4-Dichlorophenol	4.7 U	4.7	1.3	1	11/17/16 21:42	11/16/16	
2,4-Dimethylphenol	4.7 U	4.7	1.5	1	11/17/16 21:42	11/16/16	
2,4-Dinitrophenol	47 U	47	20	1	11/17/16 21:42	11/16/16	
2,4-Dinitrotoluene	4.7 U	4.7	1.6	1	11/17/16 21:42	11/16/16	
2,6-Dinitrotoluene	4.7 U	4.7	1.8	1	11/17/16 21:42	11/16/16	
2-Chloronaphthalene	4.7 U	4.7	1.0	1	11/17/16 21:42	11/16/16	
2-Chlorophenol	4.7 U	4.7	1.0	1	11/17/16 21:42	11/16/16	
2-Nitrophenol	4.7 U	4.7	1.4	1	11/17/16 21:42	11/16/16	
3,3'-Dichlorobenzidine	4.7 U	4.7	4.5	1	11/17/16 21:42	11/16/16	
4,6-Dinitro-o-cresol	47 U	47	11	1	11/17/16 21:42	11/16/16	
4-Bromophenyl Phenyl Ether	4.7 U	4.7	2.2	1	11/17/16 21:42	11/16/16	
4-Chloro-m-cresol	4.7 U	4.7	1.2	1	11/17/16 21:42	11/16/16	
4-Chlorophenyl Phenyl Ether	4.7 U	4.7	1.2	1	11/17/16 21:42	11/16/16	
4-Nitrophenol	47 U	47	5.9	1	11/17/16 21:42	11/16/16	
Acenaphthene	4.7 U	4.7	1.0	1	11/17/16 21:42	11/16/16	
Acenaphthylene	4.7 U	4.7	1.0	1	11/17/16 21:42	11/16/16	
Anthracene	4.7 U	4.7	1.0	1	11/17/16 21:42	11/16/16	
Benz(a)anthracene	4.7 U	4.7	1.0	1	11/17/16 21:42	11/16/16	
Benzidine	94 U	94	90	1	11/17/16 21:42	11/16/16	
Benzo(a)pyrene	4.7 U	4.7	1.0	1	11/17/16 21:42	11/16/16	
3,4-Benzofluoranthene	4.7 U	4.7	1.0	1	11/17/16 21:42	11/16/16	
Benzo(g,h,i)perylene	4.7 U	4.7	1.0	1	11/17/16 21:42	11/16/16	
Benzo(k)fluoranthene	4.7 U	4.7	1.0	1	11/17/16 21:42	11/16/16	
Bis(1-chloroisopropyl) Ether	4.7 U	4.7	1.0	1	11/17/16 21:42	11/16/16	
Bis(2-chloroethoxy)methane	4.7 U	4.7	2.2	1	11/17/16 21:42	11/16/16	
Bis(2-chloroethyl) Ether	4.7 U	4.7	1.3	1	11/17/16 21:42	11/16/16	
Bis(2-ethylhexyl) Phthalate	4.7 U	4.7	1.2	1	11/17/16 21:42	11/16/16	
Butyl Benzyl Phthalate	4.7 U	4.7	2.4	1	11/17/16 21:42	11/16/16	
Chrysene	4.7 U	4.7	1.0	1	11/17/16 21:42	11/16/16	
Di-n-butyl Phthalate	4.7 U	4.7	1.0	1	11/17/16 21:42	11/16/16	
Di-n-octyl Phthalate	4.7 U	4.7	1.2	1	11/17/16 21:42	11/16/16	
Dibenz(a,h)anthracene	4.7 U	4.7	1.3	1	11/17/16 21:42	11/16/16	
Diethyl Phthalate	4.7 U	4.7	1.0	1	11/17/16 21:42	11/16/16	
Dimethyl Phthalate	4.7 U	4.7	1.0	1	11/17/16 21:42	11/16/16	
Fluoranthene	4.7 U	4.7	1.0	1	11/17/16 21:42	11/16/16	
Fluorene	4.7 U	4.7	1.0	1	11/17/16 21:42	11/16/16	
Hexachlorobenzene	4.7 U	4.7	1.0	1	11/17/16 21:42	11/16/16	
Hexachlorobutadiene	4.7 U	4.7	1.3	1	11/17/16 21:42	11/16/16	
Hexachlorocyclopentadiene	4.7 U	4.7	1.0	1	11/17/16 21:42	11/16/16	
Hexachloroethane	4.7 U	4.7	1.2	1	11/17/16 21:42	11/16/16	

Analytical Report

Client:	Ecology And Environment, Incorporated	**Service Request:**	R1612036
Project:	Davis Howland Oil Company Site/10C3074.0012.08	**Date Collected:**	11/10/16 11:00
Sample Matrix:	Water	**Date Received:**	11/11/16 15:25
Sample Name:	MW-5R-111016	**Units:**	ug/L
Lab Code:	R1612036-001	**Basis:**	NA

Semivolatile Organic Compounds by GC/MS

Analysis Method: 625
Prep Method: EPA 3510C

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Indeno(1,2,3-cd)pyrene	4.7 U	4.7	1.2	1	11/17/16 21:42	11/16/16	
Isophorone	4.7 U	4.7	1.0	1	11/17/16 21:42	11/16/16	
N-Nitrosodi-n-propylamine	4.7 U	4.7	1.3	1	11/17/16 21:42	11/16/16	
N-Nitrosodimethylamine	4.7 U	4.7	1.0	1	11/17/16 21:42	11/16/16	
N-Nitrosodiphenylamine	4.7 U	4.7	1.0	1	11/17/16 21:42	11/16/16	
Naphthalene	4.7 U	4.7	1.0	1	11/17/16 21:42	11/16/16	
Nitrobenzene	4.7 U	4.7	1.6	1	11/17/16 21:42	11/16/16	
Pentachlorophenol (PCP)	47 U	47	6.9	1	11/17/16 21:42	11/16/16	
Phenanthrene	4.7 U	4.7	1.0	1	11/17/16 21:42	11/16/16	
Phenol	4.7 U	4.7	1.0	1	11/17/16 21:42	11/16/16	
Pyrene	4.7 U	4.7	1.0	1	11/17/16 21:42	11/16/16	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
2,4,6-Tribromophenol	94	28 - 157	11/17/16 21:42	
2-Fluorobiphenyl	71	39 - 119	11/17/16 21:42	
2-Fluorophenol	38	10 - 105	11/17/16 21:42	
Nitrobenzene-d5	83	37 - 117	11/17/16 21:42	
Phenol-d6	30	10 - 107	11/17/16 21:42	
p-Terphenyl-d14	90	40 - 133	11/17/16 21:42	

Analytical Report

Client:	Ecology And Environment, Incorporated	**Service Request:**	R1612036
Project:	Davis Howland Oil Company Site/10C3074.0012.08	**Date Collected:**	11/10/16 13:35
Sample Matrix:	Water	**Date Received:**	11/11/16 15:25
Sample Name:	MW-9S-111016	**Units:**	ug/L
Lab Code:	R1612036-002	**Basis:**	NA

Semivolatile Organic Compounds by GC/MS

Analysis Method: 625
Prep Method: EPA 3510C

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
1,2,4-Trichlorobenzene	4.7 U	4.7	1.0	1	11/17/16 22:10	11/16/16	
1,2-Diphenylhydrazine	4.7 U	4.7	1.0	1	11/17/16 22:10	11/16/16	
2,4,6-Trichlorophenol	4.7 U	4.7	1.4	1	11/17/16 22:10	11/16/16	
2,4-Dichlorophenol	4.7 U	4.7	1.3	1	11/17/16 22:10	11/16/16	
2,4-Dimethylphenol	4.7 U	4.7	1.5	1	11/17/16 22:10	11/16/16	
2,4-Dinitrophenol	47 U	47	20	1	11/17/16 22:10	11/16/16	
2,4-Dinitrotoluene	4.7 U	4.7	1.6	1	11/17/16 22:10	11/16/16	
2,6-Dinitrotoluene	4.7 U	4.7	1.8	1	11/17/16 22:10	11/16/16	
2-Chloronaphthalene	4.7 U	4.7	1.0	1	11/17/16 22:10	11/16/16	
2-Chlorophenol	4.7 U	4.7	1.0	1	11/17/16 22:10	11/16/16	
2-Nitrophenol	4.7 U	4.7	1.4	1	11/17/16 22:10	11/16/16	
3,3'-Dichlorobenzidine	4.7 U	4.7	4.5	1	11/17/16 22:10	11/16/16	
4,6-Dinitro-o-cresol	47 U	47	11	1	11/17/16 22:10	11/16/16	
4-Bromophenyl Phenyl Ether	4.7 U	4.7	2.2	1	11/17/16 22:10	11/16/16	
4-Chloro-m-cresol	4.7 U	4.7	1.2	1	11/17/16 22:10	11/16/16	
4-Chlorophenyl Phenyl Ether	4.7 U	4.7	1.2	1	11/17/16 22:10	11/16/16	
4-Nitrophenol	47 U	47	5.9	1	11/17/16 22:10	11/16/16	
Acenaphthene	4.7 U	4.7	1.0	1	11/17/16 22:10	11/16/16	
Acenaphthylene	4.7 U	4.7	1.0	1	11/17/16 22:10	11/16/16	
Anthracene	4.7 U	4.7	1.0	1	11/17/16 22:10	11/16/16	
Benz(a)anthracene	4.7 U	4.7	1.0	1	11/17/16 22:10	11/16/16	
Benzidine	94 U	94	90	1	11/17/16 22:10	11/16/16	
Benzo(a)pyrene	4.7 U	4.7	1.0	1	11/17/16 22:10	11/16/16	
3,4-Benzofluoranthene	4.7 U	4.7	1.0	1	11/17/16 22:10	11/16/16	
Benzo(g,h,i)perylene	4.7 U	4.7	1.0	1	11/17/16 22:10	11/16/16	
Benzo(k)fluoranthene	4.7 U	4.7	1.0	1	11/17/16 22:10	11/16/16	
Bis(1-chloroisopropyl) Ether	4.7 U	4.7	1.0	1	11/17/16 22:10	11/16/16	
Bis(2-chloroethoxy)methane	4.7 U	4.7	2.2	1	11/17/16 22:10	11/16/16	
Bis(2-chloroethyl) Ether	4.7 U	4.7	1.3	1	11/17/16 22:10	11/16/16	
Bis(2-ethylhexyl) Phthalate	4.7 U	4.7	1.2	1	11/17/16 22:10	11/16/16	
Butyl Benzyl Phthalate	4.7 U	4.7	2.4	1	11/17/16 22:10	11/16/16	
Chrysene	4.7 U	4.7	1.0	1	11/17/16 22:10	11/16/16	
Di-n-butyl Phthalate	4.7 U	4.7	1.0	1	11/17/16 22:10	11/16/16	
Di-n-octyl Phthalate	4.7 U	4.7	1.2	1	11/17/16 22:10	11/16/16	
Dibenz(a,h)anthracene	4.7 U	4.7	1.3	1	11/17/16 22:10	11/16/16	
Diethyl Phthalate	4.7 U	4.7	1.0	1	11/17/16 22:10	11/16/16	
Dimethyl Phthalate	4.7 U	4.7	1.0	1	11/17/16 22:10	11/16/16	
Fluoranthene	4.7 U	4.7	1.0	1	11/17/16 22:10	11/16/16	
Fluorene	4.7 U	4.7	1.0	1	11/17/16 22:10	11/16/16	
Hexachlorobenzene	4.7 U	4.7	1.0	1	11/17/16 22:10	11/16/16	
Hexachlorobutadiene	4.7 U	4.7	1.3	1	11/17/16 22:10	11/16/16	
Hexachlorocyclopentadiene	4.7 U	4.7	1.0	1	11/17/16 22:10	11/16/16	
Hexachloroethane	4.7 U	4.7	1.2	1	11/17/16 22:10	11/16/16	

Analytical Report

Client:	Ecology And Environment, Incorporated	**Service Request:**	R1612036
Project:	Davis Howland Oil Company Site/10C3074.0012.08	**Date Collected:**	11/10/16 13:35
Sample Matrix:	Water	**Date Received:**	11/11/16 15:25
Sample Name:	MW-9S-111016	**Units:**	ug/L
Lab Code:	R1612036-002	**Basis:**	NA

Semivolatile Organic Compounds by GC/MS

Analysis Method: 625
Prep Method: EPA 3510C

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Indeno(1,2,3-cd)pyrene	4.7 U	4.7	1.2	1	11/17/16 22:10	11/16/16	
Isophorone	4.7 U	4.7	1.0	1	11/17/16 22:10	11/16/16	
N-Nitrosodi-n-propylamine	4.7 U	4.7	1.3	1	11/17/16 22:10	11/16/16	
N-Nitrosodimethylamine	4.7 U	4.7	1.0	1	11/17/16 22:10	11/16/16	
N-Nitrosodiphenylamine	4.7 U	4.7	1.0	1	11/17/16 22:10	11/16/16	
Naphthalene	4.7 U	4.7	1.0	1	11/17/16 22:10	11/16/16	
Nitrobenzene	4.7 U	4.7	1.6	1	11/17/16 22:10	11/16/16	
Pentachlorophenol (PCP)	47 U	47	6.9	1	11/17/16 22:10	11/16/16	
Phenanthrene	4.7 U	4.7	1.0	1	11/17/16 22:10	11/16/16	
Phenol	4.7 U	4.7	1.0	1	11/17/16 22:10	11/16/16	
Pyrene	4.7 U	4.7	1.0	1	11/17/16 22:10	11/16/16	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
2,4,6-Tribromophenol	98	28 - 157	11/17/16 22:10	
2-Fluorobiphenyl	78	39 - 119	11/17/16 22:10	
2-Fluorophenol	39	10 - 105	11/17/16 22:10	
Nitrobenzene-d5	89	37 - 117	11/17/16 22:10	
Phenol-d6	30	10 - 107	11/17/16 22:10	
p-Terphenyl-d14	87	40 - 133	11/17/16 22:10	

Analytical Report

Client:	Ecology And Environment, Incorporated	**Service Request:**	R1612036
Project:	Davis Howland Oil Company Site/10C3074.0012.08	**Date Collected:**	11/10/16 13:15
Sample Matrix:	Water	**Date Received:**	11/11/16 15:25
Sample Name:	MW-8R-111016	**Units:**	ug/L
Lab Code:	R1612036-003	**Basis:**	NA

Semivolatile Organic Compounds by GC/MS

Analysis Method: 625
Prep Method: EPA 3510C

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
1,2,4-Trichlorobenzene	4.7 U	4.7	1.0	1	11/17/16 22:38	11/16/16	
1,2-Diphenylhydrazine	4.7 U	4.7	1.0	1	11/17/16 22:38	11/16/16	
2,4,6-Trichlorophenol	4.7 U	4.7	1.4	1	11/17/16 22:38	11/16/16	
2,4-Dichlorophenol	4.7 U	4.7	1.3	1	11/17/16 22:38	11/16/16	
2,4-Dimethylphenol	4.7 U	4.7	1.5	1	11/17/16 22:38	11/16/16	
2,4-Dinitrophenol	47 U	47	20	1	11/17/16 22:38	11/16/16	
2,4-Dinitrotoluene	4.7 U	4.7	1.6	1	11/17/16 22:38	11/16/16	
2,6-Dinitrotoluene	4.7 U	4.7	1.8	1	11/17/16 22:38	11/16/16	
2-Chloronaphthalene	4.7 U	4.7	1.0	1	11/17/16 22:38	11/16/16	
2-Chlorophenol	4.7 U	4.7	1.0	1	11/17/16 22:38	11/16/16	
2-Nitrophenol	4.7 U	4.7	1.4	1	11/17/16 22:38	11/16/16	
3,3'-Dichlorobenzidine	4.7 U	4.7	4.5	1	11/17/16 22:38	11/16/16	
4,6-Dinitro-o-cresol	47 U	47	11	1	11/17/16 22:38	11/16/16	
4-Bromophenyl Phenyl Ether	4.7 U	4.7	2.2	1	11/17/16 22:38	11/16/16	
4-Chloro-m-cresol	4.7 U	4.7	1.2	1	11/17/16 22:38	11/16/16	
4-Chlorophenyl Phenyl Ether	4.7 U	4.7	1.2	1	11/17/16 22:38	11/16/16	
4-Nitrophenol	47 U	47	5.9	1	11/17/16 22:38	11/16/16	
Acenaphthene	4.7 U	4.7	1.0	1	11/17/16 22:38	11/16/16	
Acenaphthylene	4.7 U	4.7	1.0	1	11/17/16 22:38	11/16/16	
Anthracene	4.7 U	4.7	1.0	1	11/17/16 22:38	11/16/16	
Benz(a)anthracene	4.7 U	4.7	1.0	1	11/17/16 22:38	11/16/16	
Benzidine	94 U	94	90	1	11/17/16 22:38	11/16/16	
Benzo(a)pyrene	4.7 U	4.7	1.0	1	11/17/16 22:38	11/16/16	
3,4-Benzofluoranthene	4.7 U	4.7	1.0	1	11/17/16 22:38	11/16/16	
Benzo(g,h,i)perylene	4.7 U	4.7	1.0	1	11/17/16 22:38	11/16/16	
Benzo(k)fluoranthene	4.7 U	4.7	1.0	1	11/17/16 22:38	11/16/16	
Bis(1-chloroisopropyl) Ether	4.7 U	4.7	1.0	1	11/17/16 22:38	11/16/16	
Bis(2-chloroethoxy)methane	4.7 U	4.7	2.2	1	11/17/16 22:38	11/16/16	
Bis(2-chloroethyl) Ether	4.7 U	4.7	1.3	1	11/17/16 22:38	11/16/16	
Bis(2-ethylhexyl) Phthalate	4.7 U	4.7	1.2	1	11/17/16 22:38	11/16/16	
Butyl Benzyl Phthalate	4.7 U	4.7	2.4	1	11/17/16 22:38	11/16/16	
Chrysene	4.7 U	4.7	1.0	1	11/17/16 22:38	11/16/16	
Di-n-butyl Phthalate	4.7 U	4.7	1.0	1	11/17/16 22:38	11/16/16	
Di-n-octyl Phthalate	4.7 U	4.7	1.2	1	11/17/16 22:38	11/16/16	
Dibenz(a,h)anthracene	4.7 U	4.7	1.3	1	11/17/16 22:38	11/16/16	
Diethyl Phthalate	4.7 U	4.7	1.0	1	11/17/16 22:38	11/16/16	
Dimethyl Phthalate	4.7 U	4.7	1.0	1	11/17/16 22:38	11/16/16	
Fluoranthene	4.7 U	4.7	1.0	1	11/17/16 22:38	11/16/16	
Fluorene	4.7 U	4.7	1.0	1	11/17/16 22:38	11/16/16	
Hexachlorobenzene	4.7 U	4.7	1.0	1	11/17/16 22:38	11/16/16	
Hexachlorobutadiene	4.7 U	4.7	1.3	1	11/17/16 22:38	11/16/16	
Hexachlorocyclopentadiene	4.7 U	4.7	1.0	1	11/17/16 22:38	11/16/16	
Hexachloroethane	4.7 U	4.7	1.2	1	11/17/16 22:38	11/16/16	

Analytical Report

Client:	Ecology And Environment, Incorporated	**Service Request:**	R1612036
Project:	Davis Howland Oil Company Site/10C3074.0012.08	**Date Collected:**	11/10/16 13:15
Sample Matrix:	Water	**Date Received:**	11/11/16 15:25
Sample Name:	MW-8R-111016	**Units:**	ug/L
Lab Code:	R1612036-003	**Basis:**	NA

Semivolatile Organic Compounds by GC/MS

Analysis Method: 625
Prep Method: EPA 3510C

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Indeno(1,2,3-cd)pyrene	4.7 U	4.7	1.2	1	11/17/16 22:38	11/16/16	
Isophorone	4.7 U	4.7	1.0	1	11/17/16 22:38	11/16/16	
N-Nitrosodi-n-propylamine	4.7 U	4.7	1.3	1	11/17/16 22:38	11/16/16	
N-Nitrosodimethylamine	4.7 U	4.7	1.0	1	11/17/16 22:38	11/16/16	
N-Nitrosodiphenylamine	4.7 U	4.7	1.0	1	11/17/16 22:38	11/16/16	
Naphthalene	4.7 U	4.7	1.0	1	11/17/16 22:38	11/16/16	
Nitrobenzene	4.7 U	4.7	1.6	1	11/17/16 22:38	11/16/16	
Pentachlorophenol (PCP)	47 U	47	6.9	1	11/17/16 22:38	11/16/16	
Phenanthrene	4.7 U	4.7	1.0	1	11/17/16 22:38	11/16/16	
Phenol	4.7 U	4.7	1.0	1	11/17/16 22:38	11/16/16	
Pyrene	4.7 U	4.7	1.0	1	11/17/16 22:38	11/16/16	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
2,4,6-Tribromophenol	90	28 - 157	11/17/16 22:38	
2-Fluorobiphenyl	68	39 - 119	11/17/16 22:38	
2-Fluorophenol	34	10 - 105	11/17/16 22:38	
Nitrobenzene-d5	77	37 - 117	11/17/16 22:38	
Phenol-d6	26	10 - 107	11/17/16 22:38	
p-Terphenyl-d14	81	40 - 133	11/17/16 22:38	

Analytical Report

Client:	Ecology And Environment, Incorporated	**Service Request:**	R1612036
Project:	Davis Howland Oil Company Site/10C3074.0012.08	**Date Collected:**	11/10/16 11:30
Sample Matrix:	Water	**Date Received:**	11/11/16 15:25
Sample Name:	MW-13S-111016	**Units:**	ug/L
Lab Code:	R1612036-004	**Basis:**	NA

Semivolatile Organic Compounds by GC/MS

Analysis Method: 625
Prep Method: EPA 3510C

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
1,2,4-Trichlorobenzene	4.7 U	4.7	1.0	1	11/17/16 23:06	11/16/16	
1,2-Diphenylhydrazine	4.7 U	4.7	1.0	1	11/17/16 23:06	11/16/16	
2,4,6-Trichlorophenol	4.7 U	4.7	1.4	1	11/17/16 23:06	11/16/16	
2,4-Dichlorophenol	4.7 U	4.7	1.3	1	11/17/16 23:06	11/16/16	
2,4-Dimethylphenol	4.7 U	4.7	1.5	1	11/17/16 23:06	11/16/16	
2,4-Dinitrophenol	47 U	47	20	1	11/17/16 23:06	11/16/16	
2,4-Dinitrotoluene	4.7 U	4.7	1.6	1	11/17/16 23:06	11/16/16	
2,6-Dinitrotoluene	4.7 U	4.7	1.8	1	11/17/16 23:06	11/16/16	
2-Chloronaphthalene	4.7 U	4.7	1.0	1	11/17/16 23:06	11/16/16	
2-Chlorophenol	4.7 U	4.7	1.0	1	11/17/16 23:06	11/16/16	
2-Nitrophenol	4.7 U	4.7	1.4	1	11/17/16 23:06	11/16/16	
3,3'-Dichlorobenzidine	4.7 U	4.7	4.5	1	11/17/16 23:06	11/16/16	
4,6-Dinitro-o-cresol	47 U	47	11	1	11/17/16 23:06	11/16/16	
4-Bromophenyl Phenyl Ether	4.7 U	4.7	2.2	1	11/17/16 23:06	11/16/16	
4-Chloro-m-cresol	4.7 U	4.7	1.2	1	11/17/16 23:06	11/16/16	
4-Chlorophenyl Phenyl Ether	4.7 U	4.7	1.2	1	11/17/16 23:06	11/16/16	
4-Nitrophenol	47 U	47	5.9	1	11/17/16 23:06	11/16/16	
Acenaphthene	4.7 U	4.7	1.0	1	11/17/16 23:06	11/16/16	
Acenaphthylene	4.7 U	4.7	1.0	1	11/17/16 23:06	11/16/16	
Anthracene	4.7 U	4.7	1.0	1	11/17/16 23:06	11/16/16	
Benz(a)anthracene	4.7 U	4.7	1.0	1	11/17/16 23:06	11/16/16	
Benzidine	94 U	94	90	1	11/17/16 23:06	11/16/16	
Benzo(a)pyrene	4.7 U	4.7	1.0	1	11/17/16 23:06	11/16/16	
3,4-Benzofluoranthene	4.7 U	4.7	1.0	1	11/17/16 23:06	11/16/16	
Benzo(g,h,i)perylene	4.7 U	4.7	1.0	1	11/17/16 23:06	11/16/16	
Benzo(k)fluoranthene	4.7 U	4.7	1.0	1	11/17/16 23:06	11/16/16	
Bis(1-chloroisopropyl) Ether	4.7 U	4.7	1.0	1	11/17/16 23:06	11/16/16	
Bis(2-chloroethoxy)methane	4.7 U	4.7	2.2	1	11/17/16 23:06	11/16/16	
Bis(2-chloroethyl) Ether	4.7 U	4.7	1.3	1	11/17/16 23:06	11/16/16	
Bis(2-ethylhexyl) Phthalate	4.7 U	4.7	1.2	1	11/17/16 23:06	11/16/16	
Butyl Benzyl Phthalate	4.7 U	4.7	2.4	1	11/17/16 23:06	11/16/16	
Chrysene	4.7 U	4.7	1.0	1	11/17/16 23:06	11/16/16	
Di-n-butyl Phthalate	4.7 U	4.7	1.0	1	11/17/16 23:06	11/16/16	
Di-n-octyl Phthalate	4.7 U	4.7	1.2	1	11/17/16 23:06	11/16/16	
Dibenz(a,h)anthracene	4.7 U	4.7	1.3	1	11/17/16 23:06	11/16/16	
Diethyl Phthalate	4.7 U	4.7	1.0	1	11/17/16 23:06	11/16/16	
Dimethyl Phthalate	4.7 U	4.7	1.0	1	11/17/16 23:06	11/16/16	
Fluoranthene	4.7 U	4.7	1.0	1	11/17/16 23:06	11/16/16	
Fluorene	4.7 U	4.7	1.0	1	11/17/16 23:06	11/16/16	
Hexachlorobenzene	4.7 U	4.7	1.0	1	11/17/16 23:06	11/16/16	
Hexachlorobutadiene	4.7 U	4.7	1.3	1	11/17/16 23:06	11/16/16	
Hexachlorocyclopentadiene	4.7 U	4.7	1.0	1	11/17/16 23:06	11/16/16	
Hexachloroethane	4.7 U	4.7	1.2	1	11/17/16 23:06	11/16/16	

Analytical Report

Client:	Ecology And Environment, Incorporated	**Service Request:**	R1612036
Project:	Davis Howland Oil Company Site/10C3074.0012.08	**Date Collected:**	11/10/16 11:30
Sample Matrix:	Water	**Date Received:**	11/11/16 15:25
Sample Name:	MW-13S-111016	**Units:**	ug/L
Lab Code:	R1612036-004	**Basis:**	NA

Semivolatile Organic Compounds by GC/MS

Analysis Method: 625
Prep Method: EPA 3510C

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Indeno(1,2,3-cd)pyrene	4.7 U	4.7	1.2	1	11/17/16 23:06	11/16/16	
Isophorone	4.7 U	4.7	1.0	1	11/17/16 23:06	11/16/16	
N-Nitrosodi-n-propylamine	4.7 U	4.7	1.3	1	11/17/16 23:06	11/16/16	
N-Nitrosodimethylamine	4.7 U	4.7	1.0	1	11/17/16 23:06	11/16/16	
N-Nitrosodiphenylamine	4.7 U	4.7	1.0	1	11/17/16 23:06	11/16/16	
Naphthalene	4.7 U	4.7	1.0	1	11/17/16 23:06	11/16/16	
Nitrobenzene	4.7 U	4.7	1.6	1	11/17/16 23:06	11/16/16	
Pentachlorophenol (PCP)	47 U	47	6.9	1	11/17/16 23:06	11/16/16	
Phenanthrene	4.7 U	4.7	1.0	1	11/17/16 23:06	11/16/16	
Phenol	4.7 U	4.7	1.0	1	11/17/16 23:06	11/16/16	
Pyrene	4.7 U	4.7	1.0	1	11/17/16 23:06	11/16/16	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
2,4,6-Tribromophenol	96	28 - 157	11/17/16 23:06	
2-Fluorobiphenyl	75	39 - 119	11/17/16 23:06	
2-Fluorophenol	36	10 - 105	11/17/16 23:06	
Nitrobenzene-d5	86	37 - 117	11/17/16 23:06	
Phenol-d6	28	10 - 107	11/17/16 23:06	
p-Terphenyl-d14	82	40 - 133	11/17/16 23:06	

Client:	Ecology And Environment, Incorporated	**Service Request:**	R1612036
Project:	Davis Howland Oil Company Site/10C3074.0012.08	**Date Collected:**	11/11/16 10:40
Sample Matrix:	Water	**Date Received:**	11/11/16 15:25
Sample Name:	MW-14R-111116	**Units:**	ug/L
Lab Code:	R1612036-005	**Basis:**	NA

Semivolatile Organic Compounds by GC/MS

Analysis Method: 625
Prep Method: EPA 3510C

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
1,2,4-Trichlorobenzene	4.7 U	4.7	1.0	1	11/17/16 23:34	11/16/16	
1,2-Diphenylhydrazine	4.7 U	4.7	1.0	1	11/17/16 23:34	11/16/16	
2,4,6-Trichlorophenol	4.7 U	4.7	1.4	1	11/17/16 23:34	11/16/16	
2,4-Dichlorophenol	4.7 U	4.7	1.3	1	11/17/16 23:34	11/16/16	
2,4-Dimethylphenol	4.7 U	4.7	1.5	1	11/17/16 23:34	11/16/16	
2,4-Dinitrophenol	47 U	47	20	1	11/17/16 23:34	11/16/16	
2,4-Dinitrotoluene	4.7 U	4.7	1.6	1	11/17/16 23:34	11/16/16	
2,6-Dinitrotoluene	4.7 U	4.7	1.8	1	11/17/16 23:34	11/16/16	
2-Chloronaphthalene	4.7 U	4.7	1.0	1	11/17/16 23:34	11/16/16	
2-Chlorophenol	4.7 U	4.7	1.0	1	11/17/16 23:34	11/16/16	
2-Nitrophenol	4.7 U	4.7	1.4	1	11/17/16 23:34	11/16/16	
3,3'-Dichlorobenzidine	4.7 U	4.7	4.5	1	11/17/16 23:34	11/16/16	
4,6-Dinitro-o-cresol	47 U	47	11	1	11/17/16 23:34	11/16/16	
4-Bromophenyl Phenyl Ether	4.7 U	4.7	2.2	1	11/17/16 23:34	11/16/16	
4-Chloro-m-cresol	4.7 U	4.7	1.2	1	11/17/16 23:34	11/16/16	
4-Chlorophenyl Phenyl Ether	4.7 U	4.7	1.2	1	11/17/16 23:34	11/16/16	
4-Nitrophenol	47 U	47	5.9	1	11/17/16 23:34	11/16/16	
Acenaphthene	4.7 U	4.7	1.0	1	11/17/16 23:34	11/16/16	
Acenaphthylene	4.7 U	4.7	1.0	1	11/17/16 23:34	11/16/16	
Anthracene	4.7 U	4.7	1.0	1	11/17/16 23:34	11/16/16	
Benz(a)anthracene	4.7 U	4.7	1.0	1	11/17/16 23:34	11/16/16	
Benzidine	94 U	94	90	1	11/17/16 23:34	11/16/16	
Benzo(a)pyrene	4.7 U	4.7	1.0	1	11/17/16 23:34	11/16/16	
3,4-Benzofluoranthene	4.7 U	4.7	1.0	1	11/17/16 23:34	11/16/16	
Benzo(g,h,i)perylene	4.7 U	4.7	1.0	1	11/17/16 23:34	11/16/16	
Benzo(k)fluoranthene	4.7 U	4.7	1.0	1	11/17/16 23:34	11/16/16	
Bis(1-chloroisopropyl) Ether	4.7 U	4.7	1.0	1	11/17/16 23:34	11/16/16	
Bis(2-chloroethoxy)methane	4.7 U	4.7	2.2	1	11/17/16 23:34	11/16/16	
Bis(2-chloroethyl) Ether	4.7 U	4.7	1.3	1	11/17/16 23:34	11/16/16	
Bis(2-ethylhexyl) Phthalate	4.7 U	4.7	1.2	1	11/17/16 23:34	11/16/16	
Butyl Benzyl Phthalate	4.7 U	4.7	2.4	1	11/17/16 23:34	11/16/16	
Chrysene	4.7 U	4.7	1.0	1	11/17/16 23:34	11/16/16	
Di-n-butyl Phthalate	4.7 U	4.7	1.0	1	11/17/16 23:34	11/16/16	
Di-n-octyl Phthalate	4.7 U	4.7	1.2	1	11/17/16 23:34	11/16/16	
Dibenz(a,h)anthracene	4.7 U	4.7	1.3	1	11/17/16 23:34	11/16/16	
Diethyl Phthalate	**16**	4.7	1.0	1	11/17/16 23:34	11/16/16	
Dimethyl Phthalate	4.7 U	4.7	1.0	1	11/17/16 23:34	11/16/16	
Fluoranthene	4.7 U	4.7	1.0	1	11/17/16 23:34	11/16/16	
Fluorene	4.7 U	4.7	1.0	1	11/17/16 23:34	11/16/16	
Hexachlorobenzene	4.7 U	4.7	1.0	1	11/17/16 23:34	11/16/16	
Hexachlorobutadiene	4.7 U	4.7	1.3	1	11/17/16 23:34	11/16/16	
Hexachlorocyclopentadiene	4.7 U	4.7	1.0	1	11/17/16 23:34	11/16/16	
Hexachloroethane	4.7 U	4.7	1.2	1	11/17/16 23:34	11/16/16	

Analytical Report

Client:	Ecology And Environment, Incorporated	**Service Request:**	R1612036
Project:	Davis Howland Oil Company Site/10C3074.0012.08	**Date Collected:**	11/11/16 10:40
Sample Matrix:	Water	**Date Received:**	11/11/16 15:25
Sample Name:	MW-14R-111116	**Units:**	ug/L
Lab Code:	R1612036-005	**Basis:**	NA

Semivolatile Organic Compounds by GC/MS

Analysis Method: 625
Prep Method: EPA 3510C

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Indeno(1,2,3-cd)pyrene	4.7 U	4.7	1.2	1	11/17/16 23:34	11/16/16	
Isophorone	4.7 U	4.7	1.0	1	11/17/16 23:34	11/16/16	
N-Nitrosodi-n-propylamine	4.7 U	4.7	1.3	1	11/17/16 23:34	11/16/16	
N-Nitrosodimethylamine	4.7 U	4.7	1.0	1	11/17/16 23:34	11/16/16	
N-Nitrosodiphenylamine	4.7 U	4.7	1.0	1	11/17/16 23:34	11/16/16	
Naphthalene	4.7 U	4.7	1.0	1	11/17/16 23:34	11/16/16	
Nitrobenzene	4.7 U	4.7	1.6	1	11/17/16 23:34	11/16/16	
Pentachlorophenol (PCP)	47 U	47	6.9	1	11/17/16 23:34	11/16/16	
Phenanthrene	4.7 U	4.7	1.0	1	11/17/16 23:34	11/16/16	
Phenol	4.7 U	4.7	1.0	1	11/17/16 23:34	11/16/16	
Pyrene	4.7 U	4.7	1.0	1	11/17/16 23:34	11/16/16	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
2,4,6-Tribromophenol	98	28 - 157	11/17/16 23:34	
2-Fluorobiphenyl	75	39 - 119	11/17/16 23:34	
2-Fluorophenol	35	10 - 105	11/17/16 23:34	
Nitrobenzene-d5	82	37 - 117	11/17/16 23:34	
Phenol-d6	28	10 - 107	11/17/16 23:34	
p-Terphenyl-d14	89	40 - 133	11/17/16 23:34	

Analytical Report

Client:	Ecology And Environment, Incorporated	**Service Request:**	R1612036
Project:	Davis Howland Oil Company Site/10C3074.0012.08	**Date Collected:**	11/11/16 11:35
Sample Matrix:	Water	**Date Received:**	11/11/16 15:25
Sample Name:	MW-2S-111116	**Units:**	ug/L
Lab Code:	R1612036-006	**Basis:**	NA

Semivolatile Organic Compounds by GC/MS

Analysis Method: 625
Prep Method: EPA 3510C

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
1,2,4-Trichlorobenzene	4.7 U	4.7	1.0	1	11/18/16 00:57	11/16/16	
1,2-Diphenylhydrazine	4.7 U	4.7	1.0	1	11/18/16 00:57	11/16/16	
2,4,6-Trichlorophenol	4.7 U	4.7	1.4	1	11/18/16 00:57	11/16/16	
2,4-Dichlorophenol	4.7 U	4.7	1.3	1	11/18/16 00:57	11/16/16	
2,4-Dimethylphenol	4.7 U	4.7	1.5	1	11/18/16 00:57	11/16/16	
2,4-Dinitrophenol	47 U	47	20	1	11/18/16 00:57	11/16/16	
2,4-Dinitrotoluene	4.7 U	4.7	1.6	1	11/18/16 00:57	11/16/16	
2,6-Dinitrotoluene	4.7 U	4.7	1.8	1	11/18/16 00:57	11/16/16	
2-Chloronaphthalene	4.7 U	4.7	1.0	1	11/18/16 00:57	11/16/16	
2-Chlorophenol	4.7 U	4.7	1.0	1	11/18/16 00:57	11/16/16	
2-Nitrophenol	4.7 U	4.7	1.4	1	11/18/16 00:57	11/16/16	
3,3'-Dichlorobenzidine	4.7 U	4.7	4.5	1	11/18/16 00:57	11/16/16	
4,6-Dinitro-o-cresol	47 U	47	11	1	11/18/16 00:57	11/16/16	
4-Bromophenyl Phenyl Ether	4.7 U	4.7	2.2	1	11/18/16 00:57	11/16/16	
4-Chloro-m-cresol	4.7 U	4.7	1.2	1	11/18/16 00:57	11/16/16	
4-Chlorophenyl Phenyl Ether	4.7 U	4.7	1.2	1	11/18/16 00:57	11/16/16	
4-Nitrophenol	47 U	47	5.9	1	11/18/16 00:57	11/16/16	
Acenaphthene	4.7 U	4.7	1.0	1	11/18/16 00:57	11/16/16	
Acenaphthylene	4.7 U	4.7	1.0	1	11/18/16 00:57	11/16/16	
Anthracene	4.7 U	4.7	1.0	1	11/18/16 00:57	11/16/16	
Benz(a)anthracene	**1.0 J**	4.7	1.0	1	11/18/16 00:57	11/16/16	
Benzidine	94 U	94	90	1	11/18/16 00:57	11/16/16	
Benzo(a)pyrene	4.7 U	4.7	1.0	1	11/18/16 00:57	11/16/16	
3,4-Benzofluoranthene	4.7 U	4.7	1.0	1	11/18/16 00:57	11/16/16	
Benzo(g,h,i)perylene	4.7 U	4.7	1.0	1	11/18/16 00:57	11/16/16	
Benzo(k)fluoranthene	4.7 U	4.7	1.0	1	11/18/16 00:57	11/16/16	
Bis(1-chloroisopropyl) Ether	4.7 U	4.7	1.0	1	11/18/16 00:57	11/16/16	
Bis(2-chloroethoxy)methane	4.7 U	4.7	2.2	1	11/18/16 00:57	11/16/16	
Bis(2-chloroethyl) Ether	4.7 U	4.7	1.3	1	11/18/16 00:57	11/16/16	
Bis(2-ethylhexyl) Phthalate	4.7 U	4.7	1.2	1	11/18/16 00:57	11/16/16	
Butyl Benzyl Phthalate	4.7 U	4.7	2.4	1	11/18/16 00:57	11/16/16	
Chrysene	4.7 U	4.7	1.0	1	11/18/16 00:57	11/16/16	
Di-n-butyl Phthalate	4.7 U	4.7	1.0	1	11/18/16 00:57	11/16/16	
Di-n-octyl Phthalate	4.7 U	4.7	1.2	1	11/18/16 00:57	11/16/16	
Dibenz(a,h)anthracene	4.7 U	4.7	1.3	1	11/18/16 00:57	11/16/16	
Diethyl Phthalate	4.7 U	4.7	1.0	1	11/18/16 00:57	11/16/16	
Dimethyl Phthalate	4.7 U	4.7	1.0	1	11/18/16 00:57	11/16/16	
Fluoranthene	**1.6 J**	4.7	1.0	1	11/18/16 00:57	11/16/16	
Fluorene	4.7 U	4.7	1.0	1	11/18/16 00:57	11/16/16	
Hexachlorobenzene	4.7 U	4.7	1.0	1	11/18/16 00:57	11/16/16	
Hexachlorobutadiene	4.7 U	4.7	1.3	1	11/18/16 00:57	11/16/16	
Hexachlorocyclopentadiene	4.7 U	4.7	1.0	1	11/18/16 00:57	11/16/16	
Hexachloroethane	4.7 U	4.7	1.2	1	11/18/16 00:57	11/16/16	

Analytical Report

Client:	Ecology And Environment, Incorporated	**Service Request:**	R1612036
Project:	Davis Howland Oil Company Site/10C3074.0012.08	**Date Collected:**	11/11/16 11:35
Sample Matrix:	Water	**Date Received:**	11/11/16 15:25
Sample Name:	MW-2S-111116	**Units:**	ug/L
Lab Code:	R1612036-006	**Basis:**	NA

Semivolatile Organic Compounds by GC/MS

Analysis Method: 625
Prep Method: EPA 3510C

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Indeno(1,2,3-cd)pyrene	4.7 U	4.7	1.2	1	11/18/16 00:57	11/16/16	
Isophorone	4.7 U	4.7	1.0	1	11/18/16 00:57	11/16/16	
N-Nitrosodi-n-propylamine	4.7 U	4.7	1.3	1	11/18/16 00:57	11/16/16	
N-Nitrosodimethylamine	4.7 U	4.7	1.0	1	11/18/16 00:57	11/16/16	
N-Nitrosodiphenylamine	4.7 U	4.7	1.0	1	11/18/16 00:57	11/16/16	
Naphthalene	4.7 U	4.7	1.0	1	11/18/16 00:57	11/16/16	
Nitrobenzene	4.7 U	4.7	1.6	1	11/18/16 00:57	11/16/16	
Pentachlorophenol (PCP)	47 U	47	6.9	1	11/18/16 00:57	11/16/16	
Phenanthrene	4.7 U	4.7	1.0	1	11/18/16 00:57	11/16/16	
Phenol	4.7 U	4.7	1.0	1	11/18/16 00:57	11/16/16	
Pyrene	**1.3 J**	4.7	1.0	1	11/18/16 00:57	11/16/16	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
2,4,6-Tribromophenol	95	28 - 157	11/18/16 00:57	
2-Fluorobiphenyl	74	39 - 119	11/18/16 00:57	
2-Fluorophenol	39	10 - 105	11/18/16 00:57	
Nitrobenzene-d5	81	37 - 117	11/18/16 00:57	
Phenol-d6	30	10 - 107	11/18/16 00:57	
p-Terphenyl-d14	86	40 - 133	11/18/16 00:57	

Analytical Report

Client:	Ecology And Environment, Incorporated	**Service Request:**	R1612036
Project:	Davis Howland Oil Company Site/10C3074.0012.08	**Date Collected:**	11/11/16 12:25
Sample Matrix:	Water	**Date Received:**	11/11/16 15:25
Sample Name:	MW-2R-111116	**Units:**	ug/L
Lab Code:	R1612036-007	**Basis:**	NA

Semivolatile Organic Compounds by GC/MS

Analysis Method: 625
Prep Method: EPA 3510C

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
1,2,4-Trichlorobenzene	4.7 U	4.7	1.0	1	11/21/16 15:48	11/17/16	
1,2-Diphenylhydrazine	4.7 U	4.7	1.0	1	11/21/16 15:48	11/17/16	
2,4,6-Trichlorophenol	4.7 U	4.7	1.4	1	11/21/16 15:48	11/17/16	
2,4-Dichlorophenol	4.7 U	4.7	1.3	1	11/21/16 15:48	11/17/16	
2,4-Dimethylphenol	4.7 U	4.7	1.5	1	11/21/16 15:48	11/17/16	
2,4-Dinitrophenol	47 U	47	20	1	11/21/16 15:48	11/17/16	
2,4-Dinitrotoluene	4.7 U	4.7	1.6	1	11/21/16 15:48	11/17/16	
2,6-Dinitrotoluene	4.7 U	4.7	1.8	1	11/21/16 15:48	11/17/16	
2-Chloronaphthalene	4.7 U	4.7	1.0	1	11/21/16 15:48	11/17/16	
2-Chlorophenol	4.7 U	4.7	1.0	1	11/21/16 15:48	11/17/16	
2-Nitrophenol	4.7 U	4.7	1.4	1	11/21/16 15:48	11/17/16	
3,3'-Dichlorobenzidine	4.7 U	4.7	4.5	1	11/21/16 15:48	11/17/16	
4,6-Dinitro-o-cresol	47 U	47	11	1	11/21/16 15:48	11/17/16	
4-Bromophenyl Phenyl Ether	4.7 U	4.7	2.2	1	11/21/16 15:48	11/17/16	
4-Chloro-m-cresol	4.7 U	4.7	1.2	1	11/21/16 15:48	11/17/16	
4-Chlorophenyl Phenyl Ether	4.7 U	4.7	1.2	1	11/21/16 15:48	11/17/16	
4-Nitrophenol	47 U	47	5.9	1	11/21/16 15:48	11/17/16	
Acenaphthene	4.7 U	4.7	1.0	1	11/21/16 15:48	11/17/16	
Acenaphthylene	4.7 U	4.7	1.0	1	11/21/16 15:48	11/17/16	
Anthracene	**2.1 J**	4.7	1.0	1	11/21/16 15:48	11/17/16	
Benz(a)anthracene	**7.3**	4.7	1.0	1	11/21/16 15:48	11/17/16	
Benzidine	94 U	94	90	1	11/21/16 15:48	11/17/16	
Benzo(a)pyrene	**8.8**	4.7	1.0	1	11/21/16 15:48	11/17/16	
3,4-Benzofluoranthene	**10**	4.7	1.0	1	11/21/16 15:48	11/17/16	
Benzo(g,h,i)perylene	**7.4**	4.7	1.0	1	11/21/16 15:48	11/17/16	
Benzo(k)fluoranthene	**3.7 J**	4.7	1.0	1	11/21/16 15:48	11/17/16	
Bis(1-chloroisopropyl) Ether	4.7 U	4.7	1.0	1	11/21/16 15:48	11/17/16	
Bis(2-chloroethoxy)methane	4.7 U	4.7	2.2	1	11/21/16 15:48	11/17/16	
Bis(2-chloroethyl) Ether	4.7 U	4.7	1.3	1	11/21/16 15:48	11/17/16	
Bis(2-ethylhexyl) Phthalate	**1.5 J**	4.7	1.2	1	11/21/16 15:48	11/17/16	
Butyl Benzyl Phthalate	4.7 U	4.7	2.4	1	11/21/16 15:48	11/17/16	
Chrysene	**8.5**	4.7	1.0	1	11/21/16 15:48	11/17/16	
Di-n-butyl Phthalate	4.7 U	4.7	1.0	1	11/21/16 15:48	11/17/16	
Di-n-octyl Phthalate	4.7 U	4.7	1.2	1	11/21/16 15:48	11/17/16	
Dibenz(a,h)anthracene	4.7 U	4.7	1.3	1	11/21/16 15:48	11/17/16	
Diethyl Phthalate	**34**	4.7	1.0	1	11/21/16 15:48	11/17/16	
Dimethyl Phthalate	4.7 U	4.7	1.0	1	11/21/16 15:48	11/17/16	
Fluoranthene	**19**	4.7	1.0	1	11/21/16 15:48	11/17/16	
Fluorene	4.7 U	4.7	1.0	1	11/21/16 15:48	11/17/16	
Hexachlorobenzene	4.7 U	4.7	1.0	1	11/21/16 15:48	11/17/16	
Hexachlorobutadiene	4.7 U	4.7	1.3	1	11/21/16 15:48	11/17/16	
Hexachlorocyclopentadiene	4.7 U	4.7	1.0	1	11/21/16 15:48	11/17/16	
Hexachloroethane	4.7 U	4.7	1.2	1	11/21/16 15:48	11/17/16	

Analytical Report

Client:	Ecology And Environment, Incorporated	**Service Request:**	R1612036
Project:	Davis Howland Oil Company Site/10C3074.0012.08	**Date Collected:**	11/11/16 12:25
Sample Matrix:	Water	**Date Received:**	11/11/16 15:25
Sample Name:	MW-2R-111116	**Units:**	ug/L
Lab Code:	R1612036-007	**Basis:**	NA

Semivolatile Organic Compounds by GC/MS

Analysis Method: 625
Prep Method: EPA 3510C

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Indeno(1,2,3-cd)pyrene	**7.3**	4.7	1.2	1	11/21/16 15:48	11/17/16	
Isophorone	4.7 U	4.7	1.0	1	11/21/16 15:48	11/17/16	
N-Nitrosodi-n-propylamine	4.7 U	4.7	1.3	1	11/21/16 15:48	11/17/16	
N-Nitrosodimethylamine	4.7 U	4.7	1.0	1	11/21/16 15:48	11/17/16	
N-Nitrosodiphenylamine	4.7 U	4.7	1.0	1	11/21/16 15:48	11/17/16	
Naphthalene	4.7 U	4.7	1.0	1	11/21/16 15:48	11/17/16	
Nitrobenzene	4.7 U	4.7	1.6	1	11/21/16 15:48	11/17/16	
Pentachlorophenol (PCP)	47 U	47	6.9	1	11/21/16 15:48	11/17/16	
Phenanthrene	**8.9**	4.7	1.0	1	11/21/16 15:48	11/17/16	
Phenol	4.7 U	4.7	1.0	1	11/21/16 15:48	11/17/16	
Pyrene	**14**	4.7	1.0	1	11/21/16 15:48	11/17/16	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
2,4,6-Tribromophenol	100	28 - 157	11/21/16 15:48	
2-Fluorobiphenyl	73	39 - 119	11/21/16 15:48	
2-Fluorophenol	33	10 - 105	11/21/16 15:48	
Nitrobenzene-d5	80	37 - 117	11/21/16 15:48	
Phenol-d6	25	10 - 107	11/21/16 15:48	
p-Terphenyl-d14	66	40 - 133	11/21/16 15:48	

Analytical Report

Client:	Ecology And Environment, Incorporated	**Service Request:**	R1612036
Project:	Davis Howland Oil Company Site/10C3074.0012.08	**Date Collected:**	11/11/16 12:25
Sample Matrix:	Water	**Date Received:**	11/11/16 15:25
Sample Name:	MW-2R-111116	**Units:**	ug/L
Lab Code:	R1612036-007	**Basis:**	NA

Semivolatile Organic Compounds by GC/MS

Analysis Method: 625
Prep Method: EPA 3510C

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
1,2,4-Trichlorobenzene	4.7 U	4.7	1.0	1	11/23/16 14:37	11/22/16	*
1,2-Diphenylhydrazine	4.7 U	4.7	1.0	1	11/23/16 14:37	11/22/16	*
2,4,6-Trichlorophenol	4.7 U	4.7	1.4	1	11/23/16 14:37	11/22/16	*
2,4-Dichlorophenol	4.7 U	4.7	1.3	1	11/23/16 14:37	11/22/16	*
2,4-Dimethylphenol	4.7 U	4.7	1.5	1	11/23/16 14:37	11/22/16	*
2,4-Dinitrophenol	47 U	47	20	1	11/23/16 14:37	11/22/16	*
2,4-Dinitrotoluene	4.7 U	4.7	1.6	1	11/23/16 14:37	11/22/16	*
2,6-Dinitrotoluene	4.7 U	4.7	1.8	1	11/23/16 14:37	11/22/16	*
2-Chloronaphthalene	4.7 U	4.7	1.0	1	11/23/16 14:37	11/22/16	*
2-Chlorophenol	4.7 U	4.7	1.0	1	11/23/16 14:37	11/22/16	*
2-Nitrophenol	4.7 U	4.7	1.4	1	11/23/16 14:37	11/22/16	*
3,3'-Dichlorobenzidine	4.7 U	4.7	4.5	1	11/23/16 14:37	11/22/16	*
4,6-Dinitro-o-cresol	47 U	47	11	1	11/23/16 14:37	11/22/16	*
4-Bromophenyl Phenyl Ether	4.7 U	4.7	2.2	1	11/23/16 14:37	11/22/16	*
4-Chloro-m-cresol	4.7 U	4.7	1.2	1	11/23/16 14:37	11/22/16	*
4-Chlorophenyl Phenyl Ether	4.7 U	4.7	1.2	1	11/23/16 14:37	11/22/16	*
4-Nitrophenol	47 U	47	5.9	1	11/23/16 14:37	11/22/16	*
Acenaphthene	4.7 U	4.7	1.0	1	11/23/16 14:37	11/22/16	*
Acenaphthylene	4.7 U	4.7	1.0	1	11/23/16 14:37	11/22/16	*
Anthracene	4.7 U	4.7	1.0	1	11/23/16 14:37	11/22/16	*
Benz(a)anthracene	**3.4 J**	4.7	1.0	1	11/23/16 14:37	11/22/16	*
Benzidine	94 U	94	90	1	11/23/16 14:37	11/22/16	*
Benzo(a)pyrene	**4.6 J**	4.7	1.0	1	11/23/16 14:37	11/22/16	*
3,4-Benzofluoranthene	**6.2**	4.7	1.0	1	11/23/16 14:37	11/22/16	*
Benzo(g,h,i)perylene	**4.2 J**	4.7	1.0	1	11/23/16 14:37	11/22/16	*
Benzo(k)fluoranthene	**2.2 J**	4.7	1.0	1	11/23/16 14:37	11/22/16	*
Bis(1-chloroisopropyl) Ether	4.7 U	4.7	1.0	1	11/23/16 14:37	11/22/16	*
Bis(2-chloroethoxy)methane	4.7 U	4.7	2.2	1	11/23/16 14:37	11/22/16	*
Bis(2-chloroethyl) Ether	4.7 U	4.7	1.3	1	11/23/16 14:37	11/22/16	*
Bis(2-ethylhexyl) Phthalate	4.7 U	4.7	1.2	1	11/23/16 14:37	11/22/16	*
Butyl Benzyl Phthalate	4.7 U	4.7	2.4	1	11/23/16 14:37	11/22/16	*
Chrysene	**4.5 J**	4.7	1.0	1	11/23/16 14:37	11/22/16	*
Di-n-butyl Phthalate	4.7 U	4.7	1.0	1	11/23/16 14:37	11/22/16	*
Di-n-octyl Phthalate	4.7 U	4.7	1.2	1	11/23/16 14:37	11/22/16	*
Dibenz(a,h)anthracene	4.7 U	4.7	1.3	1	11/23/16 14:37	11/22/16	*
Diethyl Phthalate	**22**	4.7	1.0	1	11/23/16 14:37	11/22/16	*
Dimethyl Phthalate	4.7 U	4.7	1.0	1	11/23/16 14:37	11/22/16	*
Fluoranthene	**7.5**	4.7	1.0	1	11/23/16 14:37	11/22/16	*
Fluorene	4.7 U	4.7	1.0	1	11/23/16 14:37	11/22/16	*
Hexachlorobenzene	4.7 U	4.7	1.0	1	11/23/16 14:37	11/22/16	*
Hexachlorobutadiene	4.7 U	4.7	1.3	1	11/23/16 14:37	11/22/16	*
Hexachlorocyclopentadiene	4.7 U	4.7	1.0	1	11/23/16 14:37	11/22/16	*
Hexachloroethane	4.7 U	4.7	1.2	1	11/23/16 14:37	11/22/16	*

Analytical Report

Client:	Ecology And Environment, Incorporated	**Service Request:**	R1612036
Project:	Davis Howland Oil Company Site/10C3074.0012.08	**Date Collected:**	11/11/16 12:25
Sample Matrix:	Water	**Date Received:**	11/11/16 15:25
Sample Name:	MW-2R-111116	**Units:**	ug/L
Lab Code:	R1612036-007	**Basis:**	NA

Semivolatile Organic Compounds by GC/MS

Analysis Method: 625
Prep Method: EPA 3510C

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Indeno(1,2,3-cd)pyrene	**4.5 J**	4.7	1.2	1	11/23/16 14:37	11/22/16	*
Isophorone	4.7 U	4.7	1.0	1	11/23/16 14:37	11/22/16	*
N-Nitrosodi-n-propylamine	4.7 U	4.7	1.3	1	11/23/16 14:37	11/22/16	*
N-Nitrosodimethylamine	4.7 U	4.7	1.0	1	11/23/16 14:37	11/22/16	*
N-Nitrosodiphenylamine	4.7 U	4.7	1.0	1	11/23/16 14:37	11/22/16	*
Naphthalene	4.7 U	4.7	1.0	1	11/23/16 14:37	11/22/16	*
Nitrobenzene	4.7 U	4.7	1.6	1	11/23/16 14:37	11/22/16	*
Pentachlorophenol (PCP)	47 U	47	6.9	1	11/23/16 14:37	11/22/16	*
Phenanthrene	**4.0 J**	4.7	1.0	1	11/23/16 14:37	11/22/16	*
Phenol	4.7 U	4.7	1.0	1	11/23/16 14:37	11/22/16	*
Pyrene	**6.9**	4.7	1.0	1	11/23/16 14:37	11/22/16	*

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
2,4,6-Tribromophenol	85	28 - 157	11/23/16 14:37	
2-Fluorobiphenyl	76	39 - 119	11/23/16 14:37	
2-Fluorophenol	38	10 - 105	11/23/16 14:37	
Nitrobenzene-d5	70	37 - 117	11/23/16 14:37	
Phenol-d6	29	10 - 107	11/23/16 14:37	
p-Terphenyl-d14	86	40 - 133	11/23/16 14:37	

Analytical Report

Client:	Ecology And Environment, Incorporated	**Service Request:**	R1612036
Project:	Davis Howland Oil Company Site/10C3074.0012.08	**Date Collected:**	11/10/16 11:00
Sample Matrix:	Water	**Date Received:**	11/11/16 15:25
Sample Name:	MW-100-111016	**Units:**	ug/L
Lab Code:	R1612036-008	**Basis:**	NA

Semivolatile Organic Compounds by GC/MS

Analysis Method: 625
Prep Method: EPA 3510C

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
1,2,4-Trichlorobenzene	4.7 U	4.7	1.0	1	11/18/16 01:24	11/16/16	
1,2-Diphenylhydrazine	4.7 U	4.7	1.0	1	11/18/16 01:24	11/16/16	
2,4,6-Trichlorophenol	4.7 U	4.7	1.4	1	11/18/16 01:24	11/16/16	
2,4-Dichlorophenol	4.7 U	4.7	1.3	1	11/18/16 01:24	11/16/16	
2,4-Dimethylphenol	4.7 U	4.7	1.5	1	11/18/16 01:24	11/16/16	
2,4-Dinitrophenol	47 U	47	20	1	11/18/16 01:24	11/16/16	
2,4-Dinitrotoluene	4.7 U	4.7	1.6	1	11/18/16 01:24	11/16/16	
2,6-Dinitrotoluene	4.7 U	4.7	1.8	1	11/18/16 01:24	11/16/16	
2-Chloronaphthalene	4.7 U	4.7	1.0	1	11/18/16 01:24	11/16/16	
2-Chlorophenol	4.7 U	4.7	1.0	1	11/18/16 01:24	11/16/16	
2-Nitrophenol	4.7 U	4.7	1.4	1	11/18/16 01:24	11/16/16	
3,3'-Dichlorobenzidine	4.7 U	4.7	4.5	1	11/18/16 01:24	11/16/16	
4,6-Dinitro-o-cresol	47 U	47	11	1	11/18/16 01:24	11/16/16	
4-Bromophenyl Phenyl Ether	4.7 U	4.7	2.2	1	11/18/16 01:24	11/16/16	
4-Chloro-m-cresol	4.7 U	4.7	1.2	1	11/18/16 01:24	11/16/16	
4-Chlorophenyl Phenyl Ether	4.7 U	4.7	1.2	1	11/18/16 01:24	11/16/16	
4-Nitrophenol	47 U	47	5.9	1	11/18/16 01:24	11/16/16	
Acenaphthene	4.7 U	4.7	1.0	1	11/18/16 01:24	11/16/16	
Acenaphthylene	4.7 U	4.7	1.0	1	11/18/16 01:24	11/16/16	
Anthracene	4.7 U	4.7	1.0	1	11/18/16 01:24	11/16/16	
Benz(a)anthracene	4.7 U	4.7	1.0	1	11/18/16 01:24	11/16/16	
Benzidine	94 U	94	90	1	11/18/16 01:24	11/16/16	
Benzo(a)pyrene	4.7 U	4.7	1.0	1	11/18/16 01:24	11/16/16	
3,4-Benzofluoranthene	4.7 U	4.7	1.0	1	11/18/16 01:24	11/16/16	
Benzo(g,h,i)perylene	4.7 U	4.7	1.0	1	11/18/16 01:24	11/16/16	
Benzo(k)fluoranthene	4.7 U	4.7	1.0	1	11/18/16 01:24	11/16/16	
Bis(1-chloroisopropyl) Ether	4.7 U	4.7	1.0	1	11/18/16 01:24	11/16/16	
Bis(2-chloroethoxy)methane	4.7 U	4.7	2.2	1	11/18/16 01:24	11/16/16	
Bis(2-chloroethyl) Ether	4.7 U	4.7	1.3	1	11/18/16 01:24	11/16/16	
Bis(2-ethylhexyl) Phthalate	4.7 U	4.7	1.2	1	11/18/16 01:24	11/16/16	
Butyl Benzyl Phthalate	4.7 U	4.7	2.4	1	11/18/16 01:24	11/16/16	
Chrysene	4.7 U	4.7	1.0	1	11/18/16 01:24	11/16/16	
Di-n-butyl Phthalate	4.7 U	4.7	1.0	1	11/18/16 01:24	11/16/16	
Di-n-octyl Phthalate	4.7 U	4.7	1.2	1	11/18/16 01:24	11/16/16	
Dibenz(a,h)anthracene	4.7 U	4.7	1.3	1	11/18/16 01:24	11/16/16	
Diethyl Phthalate	4.7 U	4.7	1.0	1	11/18/16 01:24	11/16/16	
Dimethyl Phthalate	4.7 U	4.7	1.0	1	11/18/16 01:24	11/16/16	
Fluoranthene	4.7 U	4.7	1.0	1	11/18/16 01:24	11/16/16	
Fluorene	4.7 U	4.7	1.0	1	11/18/16 01:24	11/16/16	
Hexachlorobenzene	4.7 U	4.7	1.0	1	11/18/16 01:24	11/16/16	
Hexachlorobutadiene	4.7 U	4.7	1.3	1	11/18/16 01:24	11/16/16	
Hexachlorocyclopentadiene	4.7 U	4.7	1.0	1	11/18/16 01:24	11/16/16	
Hexachloroethane	4.7 U	4.7	1.2	1	11/18/16 01:24	11/16/16	

Analytical Report

Client:	Ecology And Environment, Incorporated	**Service Request:**	R1612036
Project:	Davis Howland Oil Company Site/10C3074.0012.08	**Date Collected:**	11/10/16 11:00
Sample Matrix:	Water	**Date Received:**	11/11/16 15:25
Sample Name:	MW-100-111016	**Units:**	ug/L
Lab Code:	R1612036-008	**Basis:**	NA

Semivolatile Organic Compounds by GC/MS

Analysis Method: 625
Prep Method: EPA 3510C

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Indeno(1,2,3-cd)pyrene	4.7 U	4.7	1.2	1	11/18/16 01:24	11/16/16	
Isophorone	4.7 U	4.7	1.0	1	11/18/16 01:24	11/16/16	
N-Nitrosodi-n-propylamine	4.7 U	4.7	1.3	1	11/18/16 01:24	11/16/16	
N-Nitrosodimethylamine	4.7 U	4.7	1.0	1	11/18/16 01:24	11/16/16	
N-Nitrosodiphenylamine	4.7 U	4.7	1.0	1	11/18/16 01:24	11/16/16	
Naphthalene	4.7 U	4.7	1.0	1	11/18/16 01:24	11/16/16	
Nitrobenzene	4.7 U	4.7	1.6	1	11/18/16 01:24	11/16/16	
Pentachlorophenol (PCP)	47 U	47	6.9	1	11/18/16 01:24	11/16/16	
Phenanthrene	4.7 U	4.7	1.0	1	11/18/16 01:24	11/16/16	
Phenol	4.7 U	4.7	1.0	1	11/18/16 01:24	11/16/16	
Pyrene	4.7 U	4.7	1.0	1	11/18/16 01:24	11/16/16	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
2,4,6-Tribromophenol	98	28 - 157	11/18/16 01:24	
2-Fluorobiphenyl	71	39 - 119	11/18/16 01:24	
2-Fluorophenol	39	10 - 105	11/18/16 01:24	
Nitrobenzene-d5	79	37 - 117	11/18/16 01:24	
Phenol-d6	30	10 - 107	11/18/16 01:24	
p-Terphenyl-d14	87	40 - 133	11/18/16 01:24	

Client:	Ecology And Environment, Incorporated	**Service Request:**	R1612036
Project:	Davis Howland Oil Company Site/10C3074.0012.08	**Date Collected:**	11/11/16 13:58
Sample Matrix:	Water	**Date Received:**	11/11/16 15:25
Sample Name:	MW-14S-111116	**Units:**	ug/L
Lab Code:	R1612036-009	**Basis:**	NA

Semivolatile Organic Compounds by GC/MS

Analysis Method: 625
Prep Method: EPA 3510C

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
1,2,4-Trichlorobenzene	4.7 U	4.7	1.0	1	11/18/16 21:07	11/17/16	
1,2-Diphenylhydrazine	4.7 U	4.7	1.0	1	11/18/16 21:07	11/17/16	
2,4,6-Trichlorophenol	4.7 U	4.7	1.4	1	11/18/16 21:07	11/17/16	
2,4-Dichlorophenol	4.7 U	4.7	1.3	1	11/18/16 21:07	11/17/16	
2,4-Dimethylphenol	4.7 U	4.7	1.5	1	11/18/16 21:07	11/17/16	
2,4-Dinitrophenol	47 U	47	20	1	11/18/16 21:07	11/17/16	
2,4-Dinitrotoluene	4.7 U	4.7	1.6	1	11/18/16 21:07	11/17/16	
2,6-Dinitrotoluene	4.7 U	4.7	1.8	1	11/18/16 21:07	11/17/16	
2-Chloronaphthalene	4.7 U	4.7	1.0	1	11/18/16 21:07	11/17/16	
2-Chlorophenol	4.7 U	4.7	1.0	1	11/18/16 21:07	11/17/16	
2-Nitrophenol	4.7 U	4.7	1.4	1	11/18/16 21:07	11/17/16	
3,3'-Dichlorobenzidine	4.7 U	4.7	4.5	1	11/18/16 21:07	11/17/16	
4,6-Dinitro-o-cresol	47 U	47	11	1	11/18/16 21:07	11/17/16	
4-Bromophenyl Phenyl Ether	4.7 U	4.7	2.2	1	11/18/16 21:07	11/17/16	
4-Chloro-m-cresol	4.7 U	4.7	1.2	1	11/18/16 21:07	11/17/16	
4-Chlorophenyl Phenyl Ether	4.7 U	4.7	1.2	1	11/18/16 21:07	11/17/16	
4-Nitrophenol	47 U	47	5.9	1	11/18/16 21:07	11/17/16	
Acenaphthene	4.7 U	4.7	1.0	1	11/18/16 21:07	11/17/16	
Acenaphthylene	4.7 U	4.7	1.0	1	11/18/16 21:07	11/17/16	
Anthracene	4.7 U	4.7	1.0	1	11/18/16 21:07	11/17/16	
Benz(a)anthracene	4.7 U	4.7	1.0	1	11/18/16 21:07	11/17/16	
Benzidine	94 U	94	90	1	11/18/16 21:07	11/17/16	
Benzo(a)pyrene	4.7 U	4.7	1.0	1	11/18/16 21:07	11/17/16	
3,4-Benzofluoranthene	4.7 U	4.7	1.0	1	11/18/16 21:07	11/17/16	
Benzo(g,h,i)perylene	4.7 U	4.7	1.0	1	11/18/16 21:07	11/17/16	
Benzo(k)fluoranthene	4.7 U	4.7	1.0	1	11/18/16 21:07	11/17/16	
Bis(1-chloroisopropyl) Ether	4.7 U	4.7	1.0	1	11/18/16 21:07	11/17/16	
Bis(2-chloroethoxy)methane	4.7 U	4.7	2.2	1	11/18/16 21:07	11/17/16	
Bis(2-chloroethyl) Ether	4.7 U	4.7	1.3	1	11/18/16 21:07	11/17/16	
Bis(2-ethylhexyl) Phthalate	4.7 U	4.7	1.2	1	11/18/16 21:07	11/17/16	
Butyl Benzyl Phthalate	4.7 U	4.7	2.4	1	11/18/16 21:07	11/17/16	
Chrysene	4.7 U	4.7	1.0	1	11/18/16 21:07	11/17/16	
Di-n-butyl Phthalate	4.7 U	4.7	1.0	1	11/18/16 21:07	11/17/16	
Di-n-octyl Phthalate	4.7 U	4.7	1.2	1	11/18/16 21:07	11/17/16	
Dibenz(a,h)anthracene	4.7 U	4.7	1.3	1	11/18/16 21:07	11/17/16	
Diethyl Phthalate	**10**	4.7	1.0	1	11/18/16 21:07	11/17/16	
Dimethyl Phthalate	4.7 U	4.7	1.0	1	11/18/16 21:07	11/17/16	
Fluoranthene	4.7 U	4.7	1.0	1	11/18/16 21:07	11/17/16	
Fluorene	4.7 U	4.7	1.0	1	11/18/16 21:07	11/17/16	
Hexachlorobenzene	4.7 U	4.7	1.0	1	11/18/16 21:07	11/17/16	
Hexachlorobutadiene	4.7 U	4.7	1.3	1	11/18/16 21:07	11/17/16	
Hexachlorocyclopentadiene	4.7 U	4.7	1.0	1	11/18/16 21:07	11/17/16	
Hexachloroethane	4.7 U	4.7	1.2	1	11/18/16 21:07	11/17/16	

Analytical Report

Client:	Ecology And Environment, Incorporated	**Service Request:**	R1612036
Project:	Davis Howland Oil Company Site/10C3074.0012.08	**Date Collected:**	11/11/16 13:58
Sample Matrix:	Water	**Date Received:**	11/11/16 15:25
Sample Name:	MW-14S-111116	**Units:**	ug/L
Lab Code:	R1612036-009	**Basis:**	NA

Semivolatile Organic Compounds by GC/MS

Analysis Method: 625
Prep Method: EPA 3510C

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Indeno(1,2,3-cd)pyrene	4.7 U	4.7	1.2	1	11/18/16 21:07	11/17/16	
Isophorone	4.7 U	4.7	1.0	1	11/18/16 21:07	11/17/16	
N-Nitrosodi-n-propylamine	4.7 U	4.7	1.3	1	11/18/16 21:07	11/17/16	
N-Nitrosodimethylamine	4.7 U	4.7	1.0	1	11/18/16 21:07	11/17/16	
N-Nitrosodiphenylamine	4.7 U	4.7	1.0	1	11/18/16 21:07	11/17/16	
Naphthalene	4.7 U	4.7	1.0	1	11/18/16 21:07	11/17/16	
Nitrobenzene	4.7 U	4.7	1.6	1	11/18/16 21:07	11/17/16	
Pentachlorophenol (PCP)	47 U	47	6.9	1	11/18/16 21:07	11/17/16	
Phenanthrene	4.7 U	4.7	1.0	1	11/18/16 21:07	11/17/16	
Phenol	4.7 U	4.7	1.0	1	11/18/16 21:07	11/17/16	
Pyrene	4.7 U	4.7	1.0	1	11/18/16 21:07	11/17/16	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
2,4,6-Tribromophenol	87	28 - 157	11/18/16 21:07	
2-Fluorobiphenyl	67	39 - 119	11/18/16 21:07	
2-Fluorophenol	34	10 - 105	11/18/16 21:07	
Nitrobenzene-d5	78	37 - 117	11/18/16 21:07	
Phenol-d6	27	10 - 107	11/18/16 21:07	
p-Terphenyl-d14	90	40 - 133	11/18/16 21:07	

Client:	Ecology And Environment, Incorporated	**Service Request:**	R1612036
Project:	Davis Howland Oil Company Site/10C3074.0012.08	**Date Collected:**	11/11/16 13:58
Sample Matrix:	Water	**Date Received:**	11/11/16 15:25
Sample Name:	MW-14S-111116	**Units:**	ug/L
Lab Code:	R1612036-009	**Basis:**	NA

Semivolatile Organic Compounds by GC/MS

Analysis Method: 625
Prep Method: EPA 3510C

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
1,2,4-Trichlorobenzene	4.7 U	4.7	1.0	1	11/23/16 15:05	11/22/16	*
1,2-Diphenylhydrazine	4.7 U	4.7	1.0	1	11/23/16 15:05	11/22/16	*
2,4,6-Trichlorophenol	4.7 U	4.7	1.4	1	11/23/16 15:05	11/22/16	*
2,4-Dichlorophenol	4.7 U	4.7	1.3	1	11/23/16 15:05	11/22/16	*
2,4-Dimethylphenol	4.7 U	4.7	1.5	1	11/23/16 15:05	11/22/16	*
2,4-Dinitrophenol	47 U	47	20	1	11/23/16 15:05	11/22/16	*
2,4-Dinitrotoluene	4.7 U	4.7	1.6	1	11/23/16 15:05	11/22/16	*
2,6-Dinitrotoluene	4.7 U	4.7	1.8	1	11/23/16 15:05	11/22/16	*
2-Chloronaphthalene	4.7 U	4.7	1.0	1	11/23/16 15:05	11/22/16	*
2-Chlorophenol	4.7 U	4.7	1.0	1	11/23/16 15:05	11/22/16	*
2-Nitrophenol	4.7 U	4.7	1.4	1	11/23/16 15:05	11/22/16	*
3,3'-Dichlorobenzidine	4.7 U	4.7	4.5	1	11/23/16 15:05	11/22/16	*
4,6-Dinitro-o-cresol	47 U	47	11	1	11/23/16 15:05	11/22/16	*
4-Bromophenyl Phenyl Ether	4.7 U	4.7	2.2	1	11/23/16 15:05	11/22/16	*
4-Chloro-m-cresol	4.7 U	4.7	1.2	1	11/23/16 15:05	11/22/16	*
4-Chlorophenyl Phenyl Ether	4.7 U	4.7	1.2	1	11/23/16 15:05	11/22/16	*
4-Nitrophenol	47 U	47	5.9	1	11/23/16 15:05	11/22/16	*
Acenaphthene	4.7 U	4.7	1.0	1	11/23/16 15:05	11/22/16	*
Acenaphthylene	4.7 U	4.7	1.0	1	11/23/16 15:05	11/22/16	*
Anthracene	4.7 U	4.7	1.0	1	11/23/16 15:05	11/22/16	*
Benz(a)anthracene	4.7 U	4.7	1.0	1	11/23/16 15:05	11/22/16	*
Benzidine	94 U	94	90	1	11/23/16 15:05	11/22/16	*
Benzo(a)pyrene	4.7 U	4.7	1.0	1	11/23/16 15:05	11/22/16	*
3,4-Benzofluoranthene	4.7 U	4.7	1.0	1	11/23/16 15:05	11/22/16	*
Benzo(g,h,i)perylene	4.7 U	4.7	1.0	1	11/23/16 15:05	11/22/16	*
Benzo(k)fluoranthene	4.7 U	4.7	1.0	1	11/23/16 15:05	11/22/16	*
Bis(1-chloroisopropyl) Ether	4.7 U	4.7	1.0	1	11/23/16 15:05	11/22/16	*
Bis(2-chloroethoxy)methane	4.7 U	4.7	2.2	1	11/23/16 15:05	11/22/16	*
Bis(2-chloroethyl) Ether	4.7 U	4.7	1.3	1	11/23/16 15:05	11/22/16	*
Bis(2-ethylhexyl) Phthalate	4.7 U	4.7	1.2	1	11/23/16 15:05	11/22/16	*
Butyl Benzyl Phthalate	4.7 U	4.7	2.4	1	11/23/16 15:05	11/22/16	*
Chrysene	4.7 U	4.7	1.0	1	11/23/16 15:05	11/22/16	*
Di-n-butyl Phthalate	4.7 U	4.7	1.0	1	11/23/16 15:05	11/22/16	*
Di-n-octyl Phthalate	4.7 U	4.7	1.2	1	11/23/16 15:05	11/22/16	*
Dibenz(a,h)anthracene	4.7 U	4.7	1.3	1	11/23/16 15:05	11/22/16	*
Diethyl Phthalate	**23**	4.7	1.0	1	11/23/16 15:05	11/22/16	*
Dimethyl Phthalate	4.7 U	4.7	1.0	1	11/23/16 15:05	11/22/16	*
Fluoranthene	4.7 U	4.7	1.0	1	11/23/16 15:05	11/22/16	*
Fluorene	4.7 U	4.7	1.0	1	11/23/16 15:05	11/22/16	*
Hexachlorobenzene	4.7 U	4.7	1.0	1	11/23/16 15:05	11/22/16	*
Hexachlorobutadiene	4.7 U	4.7	1.3	1	11/23/16 15:05	11/22/16	*
Hexachlorocyclopentadiene	4.7 U	4.7	1.0	1	11/23/16 15:05	11/22/16	*
Hexachloroethane	4.7 U	4.7	1.2	1	11/23/16 15:05	11/22/16	*

Analytical Report

Client:	Ecology And Environment, Incorporated	**Service Request:**	R1612036
Project:	Davis Howland Oil Company Site/10C3074.0012.08	**Date Collected:**	11/11/16 13:58
Sample Matrix:	Water	**Date Received:**	11/11/16 15:25
Sample Name:	MW-14S-111116	**Units:**	ug/L
Lab Code:	R1612036-009	**Basis:**	NA

Semivolatile Organic Compounds by GC/MS

Analysis Method: 625
Prep Method: EPA 3510C

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Indeno(1,2,3-cd)pyrene	4.7 U	4.7	1.2	1	11/23/16 15:05	11/22/16	*
Isophorone	4.7 U	4.7	1.0	1	11/23/16 15:05	11/22/16	*
N-Nitrosodi-n-propylamine	4.7 U	4.7	1.3	1	11/23/16 15:05	11/22/16	*
N-Nitrosodimethylamine	4.7 U	4.7	1.0	1	11/23/16 15:05	11/22/16	*
N-Nitrosodiphenylamine	4.7 U	4.7	1.0	1	11/23/16 15:05	11/22/16	*
Naphthalene	4.7 U	4.7	1.0	1	11/23/16 15:05	11/22/16	*
Nitrobenzene	4.7 U	4.7	1.6	1	11/23/16 15:05	11/22/16	*
Pentachlorophenol (PCP)	47 U	47	6.9	1	11/23/16 15:05	11/22/16	*
Phenanthrene	4.7 U	4.7	1.0	1	11/23/16 15:05	11/22/16	*
Phenol	4.7 U	4.7	1.0	1	11/23/16 15:05	11/22/16	*
Pyrene	4.7 U	4.7	1.0	1	11/23/16 15:05	11/22/16	*

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
2,4,6-Tribromophenol	85	28 - 157	11/23/16 15:05	
2-Fluorobiphenyl	79	39 - 119	11/23/16 15:05	
2-Fluorophenol	35	10 - 105	11/23/16 15:05	
Nitrobenzene-d5	70	37 - 117	11/23/16 15:05	
Phenol-d6	26	10 - 107	11/23/16 15:05	
p-Terphenyl-d14	97	40 - 133	11/23/16 15:05	

Semivolatile Organic Compounds by GC

ALS Environmental—Rochester Laboratory
1565 Jefferson Road, Building 300, Suite 360, Rochester, NY 14623
Phone (585) 288-5380 Fax (585) 288-8475
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Analytical Report

Client:	Ecology And Environment, Incorporated	**Service Request:**	R1612036
Project:	Davis Howland Oil Company Site/10C3074.0012.08	**Date Collected:**	11/10/16 11:00
Sample Matrix:	Water	**Date Received:**	11/11/16 15:25
Sample Name:	MW-5R-111016	**Units:**	ug/L
Lab Code:	R1612036-001	**Basis:**	NA

NY Hydrocarbon Scan, Modified to Combine Methods 310-13, -14, and -15, and for Matrix

Analysis Method: NY 310-13 Modified
Prep Method: Method

Analyte Name	Result		MRL	Dil.	Date Analyzed	Date Extracted	Q
Fuel Oil No. 2	1000	U	1000	1	11/22/16 22:55	11/15/16	
Fuel Oil No. 4	1000	U	1000	1	11/22/16 22:55	11/15/16	
Fuel Oil No. 6	1000	U	1000	1	11/22/16 22:55	11/15/16	
Gasoline	Absence	U	-	1	11/22/16 22:55	11/15/16	
Kerosene	1000	U	1000	1	11/22/16 22:55	11/15/16	
Lube Oil	Absence	U	-	1	11/22/16 22:55	11/15/16	
n-Dodecane	1000	U	1000	1	11/22/16 22:55	11/15/16	

Analytical Report

Client:	Ecology And Environment, Incorporated	**Service Request:**	R1612036
Project:	Davis Howland Oil Company Site/10C3074.0012.08	**Date Collected:**	11/10/16 13:35
Sample Matrix:	Water	**Date Received:**	11/11/16 15:25
Sample Name:	MW-9S-111016	**Units:**	ug/L
Lab Code:	R1612036-002	**Basis:**	NA

NY Hydrocarbon Scan, Modified to Combine Methods 310-13, -14, and -15, and for Matrix

Analysis Method: NY 310-13 Modified
Prep Method: Method

Analyte Name	Result		MRL	Dil.	Date Analyzed	Date Extracted	Q
Fuel Oil No. 2	1000	U	1000	1	11/22/16 23:17	11/15/16	
Fuel Oil No. 4	1000	U	1000	1	11/22/16 23:17	11/15/16	
Fuel Oil No. 6	1000	U	1000	1	11/22/16 23:17	11/15/16	
Gasoline	Absence	U	-	1	11/22/16 23:17	11/15/16	
Kerosene	1000	U	1000	1	11/22/16 23:17	11/15/16	
Lube Oil	Absence	U	-	1	11/22/16 23:17	11/15/16	
n-Dodecane	1000	U	1000	1	11/22/16 23:17	11/15/16	

Analytical Report

Client:	Ecology And Environment, Incorporated	**Service Request:**	R1612036
Project:	Davis Howland Oil Company Site/10C3074.0012.08	**Date Collected:**	11/10/16 13:15
Sample Matrix:	Water	**Date Received:**	11/11/16 15:25
Sample Name:	MW-8R-111016	**Units:**	ug/L
Lab Code:	R1612036-003	**Basis:**	NA

NY Hydrocarbon Scan, Modified to Combine Methods 310-13, -14, and -15, and for Matrix

Analysis Method: NY 310-13 Modified
Prep Method: Method

Analyte Name	Result		MRL	Dil.	Date Analyzed	Date Extracted	Q
Fuel Oil No. 2	1000	U	1000	1	11/22/16 23:39	11/15/16	
Fuel Oil No. 4	1000	U	1000	1	11/22/16 23:39	11/15/16	
Fuel Oil No. 6	1000	U	1000	1	11/22/16 23:39	11/15/16	
Gasoline	Absence	U	-	1	11/22/16 23:39	11/15/16	
Kerosene	1000	U	1000	1	11/22/16 23:39	11/15/16	
Lube Oil	Absence	U	-	1	11/22/16 23:39	11/15/16	
n-Dodecane	1000	U	1000	1	11/22/16 23:39	11/15/16	

Analytical Report

Client:	Ecology And Environment, Incorporated	**Service Request:**	R1612036
Project:	Davis Howland Oil Company Site/10C3074.0012.08	**Date Collected:**	11/10/16 11:30
Sample Matrix:	Water	**Date Received:**	11/11/16 15:25
Sample Name:	MW-13S-111016	**Units:**	ug/L
Lab Code:	R1612036-004	**Basis:**	NA

NY Hydrocarbon Scan, Modified to Combine Methods 310-13, -14, and -15, and for Matrix

Analysis Method: NY 310-13 Modified
Prep Method: Method

Analyte Name	Result		MRL	Dil.	Date Analyzed	Date Extracted	Q
Fuel Oil No. 2	1000	U	1000	1	11/23/16 00:02	11/15/16	
Fuel Oil No. 4	1000	U	1000	1	11/23/16 00:02	11/15/16	
Fuel Oil No. 6	1000	U	1000	1	11/23/16 00:02	11/15/16	
Gasoline	Absence	U	-	1	11/23/16 00:02	11/15/16	
Kerosene	1000	U	1000	1	11/23/16 00:02	11/15/16	
Lube Oil	Absence	U	-	1	11/23/16 00:02	11/15/16	
n-Dodecane	1000	U	1000	1	11/23/16 00:02	11/15/16	

Analytical Report

Client:	Ecology And Environment, Incorporated	**Service Request:**	R1612036
Project:	Davis Howland Oil Company Site/10C3074.0012.08	**Date Collected:**	11/11/16 10:40
Sample Matrix:	Water	**Date Received:**	11/11/16 15:25
Sample Name:	MW-14R-111116	**Units:**	ug/L
Lab Code:	R1612036-005	**Basis:**	NA

NY Hydrocarbon Scan, Modified to Combine Methods 310-13, -14, and -15, and for Matrix

Analysis Method: NY 310-13 Modified
Prep Method: Method

Analyte Name	Result		MRL	Dil.	Date Analyzed	Date Extracted	Q
Fuel Oil No. 2	1000	U	1000	1	11/23/16 00:24	11/15/16	
Fuel Oil No. 4	1000	U	1000	1	11/23/16 00:24	11/15/16	
Fuel Oil No. 6	1000	U	1000	1	11/23/16 00:24	11/15/16	
Gasoline	Absence	U	-	1	11/23/16 00:24	11/15/16	
Kerosene	1000	U	1000	1	11/23/16 00:24	11/15/16	
Lube Oil	Absence	U	-	1	11/23/16 00:24	11/15/16	
n-Dodecane	1000	U	1000	1	11/23/16 00:24	11/15/16	

Analytical Report

Client:	Ecology And Environment, Incorporated	**Service Request:**	R1612036
Project:	Davis Howland Oil Company Site/10C3074.0012.08	**Date Collected:**	11/11/16 11:35
Sample Matrix:	Water	**Date Received:**	11/11/16 15:25
Sample Name:	MW-2S-111116	**Units:**	ug/L
Lab Code:	R1612036-006	**Basis:**	NA

NY Hydrocarbon Scan, Modified to Combine Methods 310-13, -14, and -15, and for Matrix

Analysis Method: NY 310-13 Modified
Prep Method: Method

Analyte Name	Result		MRL	Dil.	Date Analyzed	Date Extracted	Q
Fuel Oil No. 2	1000	U	1000	1	11/23/16 01:52	11/15/16	
Fuel Oil No. 4	1000	U	1000	1	11/23/16 01:52	11/15/16	
Fuel Oil No. 6	1000	U	1000	1	11/23/16 01:52	11/15/16	
Gasoline	Absence	U	-	1	11/23/16 01:52	11/15/16	
Kerosene	1000	U	1000	1	11/23/16 01:52	11/15/16	
Lube Oil	Absence	U	-	1	11/23/16 01:52	11/15/16	
n-Dodecane	1000	U	1000	1	11/23/16 01:52	11/15/16	

Analytical Report

Client:	Ecology And Environment, Incorporated	**Service Request:**	R1612036
Project:	Davis Howland Oil Company Site/10C3074.0012.08	**Date Collected:**	11/11/16 12:25
Sample Matrix:	Water	**Date Received:**	11/11/16 15:25
Sample Name:	MW-2R-111116	**Units:**	ug/L
Lab Code:	R1612036-007	**Basis:**	NA

NY Hydrocarbon Scan, Modified to Combine Methods 310-13, -14, and -15, and for Matrix

Analysis Method: NY 310-13 Modified
Prep Method: Method

Analyte Name	Result		MRL	Dil.	Date Analyzed	Date Extracted	Q
Fuel Oil No. 2	1000	U	1000	1	11/23/16 02:14	11/15/16	
Fuel Oil No. 4	1000	U	1000	1	11/23/16 02:14	11/15/16	
Fuel Oil No. 6	1000	U	1000	1	11/23/16 02:14	11/15/16	
Gasoline	Absence	U	-	1	11/23/16 02:14	11/15/16	
Kerosene	1000	U	1000	1	11/23/16 02:14	11/15/16	
Lube Oil	Absence	U	-	1	11/23/16 02:14	11/15/16	
n-Dodecane	1000	U	1000	1	11/23/16 02:14	11/15/16	

Analytical Report

Client:	Ecology And Environment, Incorporated	**Service Request:**	R1612036
Project:	Davis Howland Oil Company Site/10C3074.0012.08	**Date Collected:**	11/10/16 11:00
Sample Matrix:	Water	**Date Received:**	11/11/16 15:25
Sample Name:	MW-100-111016	**Units:**	ug/L
Lab Code:	R1612036-008	**Basis:**	NA

NY Hydrocarbon Scan, Modified to Combine Methods 310-13, -14, and -15, and for Matrix

Analysis Method: NY 310-13 Modified
Prep Method: Method

Analyte Name	Result		MRL	Dil.	Date Analyzed	Date Extracted	Q
Fuel Oil No. 2	1000	U	1000	1	11/23/16 02:36	11/15/16	
Fuel Oil No. 4	1000	U	1000	1	11/23/16 02:36	11/15/16	
Fuel Oil No. 6	1000	U	1000	1	11/23/16 02:36	11/15/16	
Gasoline	Absence	U	-	1	11/23/16 02:36	11/15/16	
Kerosene	1000	U	1000	1	11/23/16 02:36	11/15/16	
Lube Oil	Absence	U	-	1	11/23/16 02:36	11/15/16	
n-Dodecane	1000	U	1000	1	11/23/16 02:36	11/15/16	

Analytical Report

Client:	Ecology And Environment, Incorporated	**Service Request:**	R1612036
Project:	Davis Howland Oil Company Site/10C3074.0012.08	**Date Collected:**	11/11/16 13:58
Sample Matrix:	Water	**Date Received:**	11/11/16 15:25
Sample Name:	MW-14S-111116	**Units:**	ug/L
Lab Code:	R1612036-009	**Basis:**	NA

NY Hydrocarbon Scan, Modified to Combine Methods 310-13, -14, and -15, and for Matrix

Analysis Method: NY 310-13 Modified
Prep Method: Method

Analyte Name	Result		MRL	Dil.	Date Analyzed	Date Extracted	Q
Fuel Oil No. 2	1000	U	1000	1	11/23/16 02:59	11/15/16	
Fuel Oil No. 4	1000	U	1000	1	11/23/16 02:59	11/15/16	
Fuel Oil No. 6	1000	U	1000	1	11/23/16 02:59	11/15/16	
Gasoline	Absence	U	-	1	11/23/16 02:59	11/15/16	
Kerosene	1000	U	1000	1	11/23/16 02:59	11/15/16	
Lube Oil	Absence	U	-	1	11/23/16 02:59	11/15/16	
n-Dodecane	1000	U	1000	1	11/23/16 02:59	11/15/16	

QC Summary Forms

ALS Environmental—Rochester Laboratory
1565 Jefferson Road, Building 300, Suite 360, Rochester, NY 14623
Phone (585) 288-5380 Fax (585) 288-8475
www.alsglobal.com

Volatile Organic Compounds by GC/MS

ALS Environmental—Rochester Laboratory
1565 Jefferson Road, Building 300, Suite 360, Rochester, NY 14623
Phone (585) 288-5380 Fax (585) 288-8475
www.alsglobal.com

Client: Ecology And Environment, Incorporated **Service Request:** R1612036

Project: Davis Howland Oil Company Site/10C3074.0012.08

Sample Matrix: Water

SURROGATE RECOVERY SUMMARY
Volatile Organic Compounds by GC/MS, Unpreserved

Analysis Method: 624

Sample Name	Lab Code	1,2-Dichloroethane-d4 81 - 127	4-Bromofluorobenzene 79 - 123	Toluene-d8 83 - 120
MW-5R-111016	R1612036-001	107	102	110
MW-5R-111016 DL	R1612036-001	108	108	109
MW-9S-111016	R1612036-002	100	106	107
MW-8R-111016	R1612036-003	104	100	107
MW-13S-111016	R1612036-004	105	104	108
MW-14R-111116	R1612036-005	106	102	107
MW-2S-111116	R1612036-006	105	104	110
MW-2R-111116	R1612036-007	106	104	107
MW-2R-111116 DL	R1612036-007	112	110	111
MW-100-111016	R1612036-008	107	106	105
MW-100-111016 DL	R1612036-008	109	109	109
MW-14S-111116	R1612036-009	111	109	108
TRIP BLANK	R1612036-010	106	103	104
Lab Control Sample	RQ1613947-03	104	106	106
Method Blank	RQ1613947-04	103	99	105
MW-14R-111116 MS	RQ1613947-05	107	106	108
MW-14R-111116 DMS	RQ1613947-06	104	106	106
Lab Control Sample	RQ1614019-03	109	109	110
Method Blank	RQ1614019-04	107	108	107

Client:	Ecology And Environment, Incorporated	**Service Request:**	R1612036
Project:	Davis Howland Oil Company Site/10C3074.0012.08	**Date Collected:**	11/11/16
Sample Matrix:	Water	**Date Received:**	11/11/16
		Date Analyzed:	11/14/16

Duplicate Matrix Spike Summary
Volatile Organic Compounds by GC/MS, Unpreserved

Sample Name:	MW-14R-111116	**Units:**	ug/L
Lab Code:	R1612036-005	**Basis:**	NA
Analysis Method:	624		

		Matrix Spike RQ1613947-05			Duplicate Matrix Spike RQ1613947-06					
Analyte Name	**Sample Result**	**Result**	**Spike Amount**	**% Rec**	**Result**	**Spike Amount**	**% Rec**	**% Rec Limits**	**RPD**	**RPD Limit**
1,1,1-Trichloroethane (TCA)	1.0 U	52.2	50.0	104	53.8	50.0	108	52-162	3	30
1,1,2,2-Tetrachloroethane	1.0 U	52.3	50.0	105	53.2	50.0	106	46-157	2	30
1,1,2-Trichloroethane	1.0 U	54.6	50.0	109	53.0	50.0	106	52-150	3	30
1,1-Dichloroethane (1,1-DCA)	1.0 U	51.7	50.0	103	52.2	50.0	104	59-155	1	30
1,1-Dichloroethene (1,1-DCE)	0.31 J	51.2	50.0	102	52.5	50.0	104	10-234	2	30
1,2-Dichlorobenzene	1.0 U	47.6	50.0	95	48.2	50.0	96	18-190	1	30
1,2-Dichloroethane	1.0 U	52.9	50.0	106	51.5	50.0	103	49-155	3	30
1,2-Dichloropropane	1.0 U	51.8	50.0	104	50.1	50.0	100	10-210	3	30
1,3-Dichlorobenzene	1.0 U	46.3	50.0	93	47.6	50.0	95	59-156	3	30
1,4-Dichlorobenzene	1.0 U	47.0	50.0	94	47.2	50.0	94	18-190	<1	30
2-Chloroethyl Vinyl Ether	10 U	53.7	50.0	107	52.2	50.0	104	10-305	3	30
Acetone	5.0 U	58.7	50.0	117	58.9	50.0	118	55-130	<1	30
Benzene	1.0 U	48.5	50.0	97	47.6	50.0	95	37-151	2	30
Bromodichloromethane	1.0 U	51.5	50.0	103	50.8	50.0	102	35-155	1	30
Bromoform	1.0 U	59.3	50.0	119	58.2	50.0	116	45-169	2	30
Bromomethane	1.0 U	53.5	50.0	107	62.6	50.0	125	10-242	16	30
Carbon Tetrachloride	1.0 U	52.3	50.0	105	51.1	50.0	102	70-140	2	30
Chlorobenzene	1.0 U	47.8	50.0	96	47.7	50.0	95	37-160	<1	30
Chloroethane	1.0 U	45.2	50.0	90	47.7	50.0	95	14-230	5	30
Chloroform	1.0 U	47.5	50.0	95	49.7	50.0	99	51-138	4	30
Chloromethane	1.0 U	40.3	50.0	81	44.1	50.0	88	10-273	9	30
Dibromochloromethane	1.0 U	52.1	50.0	104	52.7	50.0	105	53-149	1	30
Methylene Chloride	1.0 U	48.4	50.0	97	48.8	50.0	98	10-221	<1	30
Ethylbenzene	1.0 U	48.2	50.0	96	48.0	50.0	96	37-162	<1	30
Tetrachloroethene (PCE)	1.0 U	47.7	50.0	95	47.3	50.0	95	64-148	<1	30
Toluene	1.0 U	45.5	50.0	91	44.7	50.0	89	47-150	2	30
Trichloroethene (TCE)	43	98.3	50.0	110	96.0	50.0	106	71-157	2	30
Trichlorofluoromethane (CFC 11)	1.0 U	49.0	50.0	98	51.9	50.0	104	17-181	6	30
Vinyl Chloride	0.42 J	44.7	50.0	89	47.6	50.0	94	10-251	6	30
cis-1,2-Dichloroethene	9.9	62.0	50.0	104	62.5	50.0	105	72-125	<1	30
cis-1,3-Dichloropropene	1.0 U	50.5	50.0	101	49.7	50.0	99	10-227	2	30
m,p-Xylenes	2.0 U	94.1	100	94	94.7	100	95	76-131	<1	30
o-Xylene	1.0 U	49.4	50.0	99	51.9	50.0	104	78-127	5	30
trans-1,2-Dichloroethene	5.3	55.2	50.0	100	56.3	50.0	102	54-156	2	30
trans-1,3-Dichloropropene	1.0 U	49.5	50.0	99	49.3	50.0	99	17-183	<1	30

Results flagged with an asterisk (*) indicate values outside control criteria.

Results flagged with a pound (#) indicate the control criteria is not applicable.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

Analytical Report

Client:	Ecology And Environment, Incorporated	**Service Request:**	R1612036
Project:	Davis Howland Oil Company Site/10C3074.0012.08	**Date Collected:**	NA
Sample Matrix:	Water	**Date Received:**	NA
Sample Name:	Method Blank	**Units:**	ug/L
Lab Code:	RQ1613947-04	**Basis:**	NA

Volatile Organic Compounds by GC/MS, Unpreserved

Analysis Method: 624

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Q
1,1,1-Trichloroethane (TCA)	1.0 U	1.0	0.20	1	11/14/16 11:00	
1,1,2,2-Tetrachloroethane	1.0 U	1.0	0.20	1	11/14/16 11:00	
1,1,2-Trichloroethane	1.0 U	1.0	0.20	1	11/14/16 11:00	
1,1-Dichloroethane (1,1-DCA)	1.0 U	1.0	0.21	1	11/14/16 11:00	
1,1-Dichloroethene (1,1-DCE)	1.0 U	1.0	0.20	1	11/14/16 11:00	
1,2-Dichlorobenzene	1.0 U	1.0	0.25	1	11/14/16 11:00	
1,2-Dichloroethane	1.0 U	1.0	0.20	1	11/14/16 11:00	
1,2-Dichloropropane	1.0 U	1.0	0.20	1	11/14/16 11:00	
1,3-Dichlorobenzene	1.0 U	1.0	0.22	1	11/14/16 11:00	
1,4-Dichlorobenzene	1.0 U	1.0	0.20	1	11/14/16 11:00	
2-Chloroethyl Vinyl Ether	10 U	10	0.60	1	11/14/16 11:00	
Acetone	5.0 U	5.0	2.8	1	11/14/16 11:00	
Benzene	1.0 U	1.0	0.20	1	11/14/16 11:00	
Bromodichloromethane	1.0 U	1.0	0.20	1	11/14/16 11:00	
Bromoform	1.0 U	1.0	0.20	1	11/14/16 11:00	
Bromomethane	**0.44 J**	1.0	0.44	1	11/14/16 11:00	
Carbon Tetrachloride	1.0 U	1.0	0.20	1	11/14/16 11:00	
Chlorobenzene	1.0 U	1.0	0.20	1	11/14/16 11:00	
Chloroethane	1.0 U	1.0	0.24	1	11/14/16 11:00	
Chloroform	1.0 U	1.0	0.20	1	11/14/16 11:00	
Chloromethane	1.0 U	1.0	0.20	1	11/14/16 11:00	
Dibromochloromethane	1.0 U	1.0	0.20	1	11/14/16 11:00	
Methylene Chloride	1.0 U	1.0	0.20	1	11/14/16 11:00	
Ethylbenzene	1.0 U	1.0	0.20	1	11/14/16 11:00	
Tetrachloroethene (PCE)	1.0 U	1.0	0.20	1	11/14/16 11:00	
Toluene	1.0 U	1.0	0.20	1	11/14/16 11:00	
Trichloroethene (TCE)	1.0 U	1.0	0.20	1	11/14/16 11:00	
Trichlorofluoromethane (CFC 11)	1.0 U	1.0	0.20	1	11/14/16 11:00	
Vinyl Chloride	1.0 U	1.0	0.20	1	11/14/16 11:00	
cis-1,2-Dichloroethene	1.0 U	1.0	0.20	1	11/14/16 11:00	
cis-1,3-Dichloropropene	1.0 U	1.0	0.20	1	11/14/16 11:00	
m,p-Xylenes	2.0 U	2.0	0.26	1	11/14/16 11:00	
o-Xylene	1.0 U	1.0	0.20	1	11/14/16 11:00	
trans-1,2-Dichloroethene	1.0 U	1.0	0.20	1	11/14/16 11:00	
trans-1,3-Dichloropropene	1.0 U	1.0	0.20	1	11/14/16 11:00	

Analytical Report

Client:	Ecology And Environment, Incorporated	**Service Request:**	R1612036
Project:	Davis Howland Oil Company Site/10C3074.0012.08	**Date Collected:**	NA
Sample Matrix:	Water	**Date Received:**	NA
Sample Name:	Method Blank	**Units:**	ug/L
Lab Code:	RQ1613947-04	**Basis:**	NA

Volatile Organic Compounds by GC/MS, Unpreserved

Analysis Method: 624

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
1,2-Dichloroethane-d4	103	81 - 127	11/14/16 11:00	
4-Bromofluorobenzene	99	79 - 123	11/14/16 11:00	
Toluene-d8	105	83 - 120	11/14/16 11:00	

Analytical Report

Client:	Ecology And Environment, Incorporated	**Service Request:**	R1612036
Project:	Davis Howland Oil Company Site/10C3074.0012.08	**Date Collected:**	NA
Sample Matrix:	Water	**Date Received:**	NA
Sample Name:	Method Blank	**Units:**	ug/L
Lab Code:	RQ1614019-04	**Basis:**	NA

Volatile Organic Compounds by GC/MS, Unpreserved

Analysis Method: 624
Prep Method: EPA 5030C

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Q
1,1,1-Trichloroethane (TCA)	1.0 U	1.0	0.20	1	11/16/16 09:47	
1,1,2,2-Tetrachloroethane	1.0 U	1.0	0.20	1	11/16/16 09:47	
1,1,2-Trichloroethane	1.0 U	1.0	0.20	1	11/16/16 09:47	
1,1-Dichloroethane (1,1-DCA)	1.0 U	1.0	0.21	1	11/16/16 09:47	
1,1-Dichloroethene (1,1-DCE)	1.0 U	1.0	0.20	1	11/16/16 09:47	
1,2-Dichlorobenzene	1.0 U	1.0	0.25	1	11/16/16 09:47	
1,2-Dichloroethane	1.0 U	1.0	0.20	1	11/16/16 09:47	
1,2-Dichloropropane	1.0 U	1.0	0.20	1	11/16/16 09:47	
1,3-Dichlorobenzene	1.0 U	1.0	0.22	1	11/16/16 09:47	
1,4-Dichlorobenzene	1.0 U	1.0	0.20	1	11/16/16 09:47	
2-Chloroethyl Vinyl Ether	10 U	10	0.60	1	11/16/16 09:47	
Acetone	5.0 U	5.0	2.8	1	11/16/16 09:47	
Benzene	1.0 U	1.0	0.20	1	11/16/16 09:47	
Bromodichloromethane	1.0 U	1.0	0.20	1	11/16/16 09:47	
Bromoform	1.0 U	1.0	0.20	1	11/16/16 09:47	
Bromomethane	1.0 U	1.0	0.44	1	11/16/16 09:47	
Carbon Tetrachloride	1.0 U	1.0	0.20	1	11/16/16 09:47	
Chlorobenzene	1.0 U	1.0	0.20	1	11/16/16 09:47	
Chloroethane	1.0 U	1.0	0.24	1	11/16/16 09:47	
Chloroform	1.0 U	1.0	0.20	1	11/16/16 09:47	
Chloromethane	1.0 U	1.0	0.20	1	11/16/16 09:47	
Dibromochloromethane	1.0 U	1.0	0.20	1	11/16/16 09:47	
Methylene Chloride	**0.30 J**	1.0	0.20	1	11/16/16 09:47	
Ethylbenzene	1.0 U	1.0	0.20	1	11/16/16 09:47	
Tetrachloroethene (PCE)	1.0 U	1.0	0.20	1	11/16/16 09:47	
Toluene	1.0 U	1.0	0.20	1	11/16/16 09:47	
Trichloroethene (TCE)	1.0 U	1.0	0.20	1	11/16/16 09:47	
Trichlorofluoromethane (CFC 11)	1.0 U	1.0	0.20	1	11/16/16 09:47	
Vinyl Chloride	1.0 U	1.0	0.20	1	11/16/16 09:47	
cis-1,2-Dichloroethene	1.0 U	1.0	0.20	1	11/16/16 09:47	
cis-1,3-Dichloropropene	1.0 U	1.0	0.20	1	11/16/16 09:47	
m,p-Xylenes	2.0 U	2.0	0.26	1	11/16/16 09:47	
o-Xylene	1.0 U	1.0	0.20	1	11/16/16 09:47	
trans-1,2-Dichloroethene	1.0 U	1.0	0.20	1	11/16/16 09:47	
trans-1,3-Dichloropropene	1.0 U	1.0	0.20	1	11/16/16 09:47	

Analytical Report

Client:	Ecology And Environment, Incorporated	**Service Request:**	R1612036
Project:	Davis Howland Oil Company Site/10C3074.0012.08	**Date Collected:**	NA
Sample Matrix:	Water	**Date Received:**	NA
Sample Name:	Method Blank	**Units:**	ug/L
Lab Code:	RQ1614019-04	**Basis:**	NA

Volatile Organic Compounds by GC/MS, Unpreserved

Analysis Method: 624
Prep Method: EPA 5030C

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
1,2-Dichloroethane-d4	107	81 - 127	11/16/16 09:47	
4-Bromofluorobenzene	108	79 - 123	11/16/16 09:47	
Toluene-d8	107	83 - 120	11/16/16 09:47	

Client: Ecology And Environment, Incorporated
Project: Davis Howland Oil Company Site/10C3074.0012.08
Sample Matrix: Water

Service Request: R1612036
Date Analyzed: 11/14/16

Lab Control Sample Summary
Volatile Organic Compounds by GC/MS, Unpreserved

Units:ug/L
Basis:NA

Lab Control Sample
RQ1613947-03

Analyte Name	Analytical Method	Result	Spike Amount	% Rec	% Rec Limits
1,1,1-Trichloroethane (TCA)	624	20.4	20.0	102	52-162
1,1,2,2-Tetrachloroethane	624	21.2	20.0	106	46-157
1,1,2-Trichloroethane	624	20.5	20.0	102	52-150
1,1-Dichloroethane (1,1-DCA)	624	21.0	20.0	105	59-155
1,1-Dichloroethene (1,1-DCE)	624	20.3	20.0	101	10-234
1,2-Dichlorobenzene	624	19.8	20.0	99	18-190
1,2-Dichloroethane	624	21.4	20.0	107	49-155
1,2-Dichloropropane	624	20.6	20.0	103	10-210
1,3-Dichlorobenzene	624	19.7	20.0	98	59-156
1,4-Dichlorobenzene	624	19.6	20.0	98	18-190
2-Chloroethyl Vinyl Ether	624	20.1	20.0	101	10-305
Acetone	624	21.3	20.0	106	55-130
Benzene	624	19.5	20.0	98	37-151
Bromodichloromethane	624	20.0	20.0	100	35-155
Bromoform	624	23.2	20.0	116	45-169
Bromomethane	624	23.0	20.0	115	10-242
Carbon Tetrachloride	624	20.2	20.0	101	70-140
Chlorobenzene	624	20.1	20.0	100	37-160
Chloroethane	624	18.3	20.0	91	14-230
Chloroform	624	19.0	20.0	95	51-138
Chloromethane	624	16.8	20.0	84	10-273
Dibromochloromethane	624	21.8	20.0	109	53-149
Methylene Chloride	624	19.5	20.0	97	10-221
Ethylbenzene	624	19.1	20.0	96	37-162
Tetrachloroethene (PCE)	624	19.0	20.0	95	64-148
Toluene	624	18.7	20.0	93	47-150
Trichloroethene (TCE)	624	20.9	20.0	105	71-157
Trichlorofluoromethane (CFC 11)	624	20.7	20.0	103	17-181
Vinyl Chloride	624	18.6	20.0	93	10-251
cis-1,2-Dichloroethene	624	20.5	20.0	103	72-125
cis-1,3-Dichloropropene	624	20.3	20.0	101	10-227
m,p-Xylenes	624	40.0	40.0	100	76-131
o-Xylene	624	20.7	20.0	103	78-127

Client: Ecology And Environment, Incorporated
Project: Davis Howland Oil Company Site/10C3074.0012.08
Sample Matrix: Water

Service Request: R1612036
Date Analyzed: 11/14/16

Lab Control Sample Summary
Volatile Organic Compounds by GC/MS, Unpreserved

Units:ug/L
Basis:NA

Lab Control Sample
RQ1613947-03

Analyte Name	Analytical Method	Result	Spike Amount	% Rec	% Rec Limits
trans-1,2-Dichloroethene	624	19.9	20.0	100	54-156
trans-1,3-Dichloropropene	624	20.4	20.0	102	17-183

ALS Group USA, Corp.
dba ALS Environmental

QA/QC Report

Client: Ecology And Environment, Incorporated
Project: Davis Howland Oil Company Site/10C3074.0012.08
Sample Matrix: Water

Service Request: R1612036
Date Analyzed: 11/16/16

Lab Control Sample Summary
Volatile Organic Compounds by GC/MS, Unpreserved

Units:ug/L
Basis:NA

Lab Control Sample
RQ1614019-03

Analyte Name	Analytical Method	Result	Spike Amount	% Rec	% Rec Limits
1,1,1-Trichloroethane (TCA)	624	22.9	20.0	115	52-162
1,1,2,2-Tetrachloroethane	624	20.5	20.0	102	46-157
1,1,2-Trichloroethane	624	21.5	20.0	108	52-150
1,1-Dichloroethane (1,1-DCA)	624	21.2	20.0	106	59-155
1,1-Dichloroethene (1,1-DCE)	624	20.4	20.0	102	10-234
1,2-Dichlorobenzene	624	21.7	20.0	109	18-190
1,2-Dichloroethane	624	21.4	20.0	107	49-155
1,2-Dichloropropane	624	19.9	20.0	100	10-210
1,3-Dichlorobenzene	624	21.7	20.0	109	59-156
1,4-Dichlorobenzene	624	21.2	20.0	106	18-190
2-Chloroethyl Vinyl Ether	624	21.9	20.0	109	10-305
Acetone	624	21.6	20.0	108	55-130
Benzene	624	22.2	20.0	111	37-151
Bromodichloromethane	624	20.6	20.0	103	35-155
Bromoform	624	20.5	20.0	103	45-169
Bromomethane	624	18.5	20.0	92	10-242
Carbon Tetrachloride	624	21.7	20.0	109	70-140
Chlorobenzene	624	21.4	20.0	107	37-160
Chloroethane	624	19.9	20.0	100	14-230
Chloroform	624	19.7	20.0	99	51-138
Chloromethane	624	20.7	20.0	103	10-273
Dibromochloromethane	624	21.3	20.0	107	53-149
Methylene Chloride	624	19.7	20.0	99	10-221
Ethylbenzene	624	21.6	20.0	108	37-162
Tetrachloroethene (PCE)	624	20.5	20.0	103	64-148
Toluene	624	21.5	20.0	108	47-150
Trichloroethene (TCE)	624	21.3	20.0	107	71-157
Trichlorofluoromethane (CFC 11)	624	23.4	20.0	117	17-181
Vinyl Chloride	624	22.5	20.0	113	10-251
cis-1,2-Dichloroethene	624	21.3	20.0	107	72-125
cis-1,3-Dichloropropene	624	20.9	20.0	105	10-227
m,p-Xylenes	624	44.4	40.0	111	76-131
o-Xylene	624	22.5	20.0	113	78-127

Client: Ecology And Environment, Incorporated
Project: Davis Howland Oil Company Site/10C3074.0012.08
Sample Matrix: Water

Service Request: R1612036
Date Analyzed: 11/16/16

Lab Control Sample Summary
Volatile Organic Compounds by GC/MS, Unpreserved

Units:ug/L
Basis:NA

Lab Control Sample
RQ1614019-03

Analyte Name	Analytical Method	Result	Spike Amount	% Rec	% Rec Limits
trans-1,2-Dichloroethene	624	21.5	20.0	108	54-156
trans-1,3-Dichloropropene	624	20.4	20.0	102	17-183

Semivolatile Organic Compounds by GC/MS

ALS Environmental—Rochester Laboratory
1565 Jefferson Road, Building 300, Suite 360, Rochester, NY 14623
Phone (585) 288-5380 Fax (585) 288-8475
www.alsglobal.com

Client: Ecology And Environment, Incorporated **Service Request:** R1612036
Project: Davis Howland Oil Company Site/10C3074.0012.08
Sample Matrix: Water

SURROGATE RECOVERY SUMMARY
Semivolatile Organic Compounds by GC/MS

Analysis Method: 625
Extraction Method: EPA 3510C

Sample Name	Lab Code	2,4,6-Tribromophenol 28 - 157	2-Fluorobiphenyl 39 - 119	2-Fluorophenol 10 - 105
MW-5R-111016	R1612036-001	94	71	38
MW-9S-111016	R1612036-002	98	78	39
MW-8R-111016	R1612036-003	90	68	34
MW-13S-111016	R1612036-004	96	75	36
MW-14R-111116	R1612036-005	98	75	35
MW-2S-111116	R1612036-006	95	74	39
MW-2R-111116	R1612036-007	100	73	33
MW-2R-111116 RE	R1612036-007	85	76	38
MW-100-111016	R1612036-008	98	71	39
MW-14S-111116	R1612036-009	87	67	34
MW-14S-111116 RE	R1612036-009	85	79	35
Method Blank	RQ1614001-01	90	73	36
Lab Control Sample	RQ1614001-02	100	85	46
Duplicate Lab Control Sample	RQ1614001-03	105	87	45
MW-14R-111116 MS	RQ1614001-06	90	82	43
MW-14R-111116 DMS	RQ1614001-07	99	85	43
Method Blank	RQ1614074-01	86	36	30
Method Blank	RQ1614074-01	69	62	92
Lab Control Sample	RQ1614074-02	84	77	40
Duplicate Lab Control Sample	RQ1614074-03	92	77	44
Method Blank	RQ1614274-01	85	76	38
Lab Control Sample	RQ1614274-02	92	83	45
Duplicate Lab Control Sample	RQ1614274-03	95	85	43

Client: Ecology And Environment, Incorporated **Service Request:** R1612036
Project: Davis Howland Oil Company Site/10C3074.0012.08
Sample Matrix: Water

SURROGATE RECOVERY SUMMARY
Semivolatile Organic Compounds by GC/MS

Analysis Method: 625
Extraction Method: EPA 3510C

Sample Name	Lab Code	Nitrobenzene-d5 37 - 117	Phenol-d6 10 - 107	p-Terphenyl-d14 40 - 133
MW-5R-111016	R1612036-001	83	30	90
MW-9S-111016	R1612036-002	89	30	87
MW-8R-111016	R1612036-003	77	26	81
MW-13S-111016	R1612036-004	86	28	82
MW-14R-111116	R1612036-005	82	28	89
MW-2S-111116	R1612036-006	81	30	86
MW-2R-111116	R1612036-007	80	25	66
MW-2R-111116	R1612036-007	70	29	86
MW-100-111016	R1612036-008	79	30	87
MW-14S-111116	R1612036-009	78	27	90
MW-14S-111116	R1612036-009	70	26	97
Method Blank	RQ1614001-01	77	28	86
Lab Control Sample	RQ1614001-02	91	36	96
Duplicate Lab Control Sample	RQ1614001-03	88	35	101
MW-14R-111116	RQ1614001-06	90	34	92
MW-14R-111116	RQ1614001-07	90	34	94
Method Blank	RQ1614074-01	72	78	97
Method Blank	RQ1614074-01	74	36	28
Lab Control Sample	RQ1614074-02	79	33	85
Duplicate Lab Control Sample	RQ1614074-03	86	36	90
Method Blank	RQ1614274-01	69	29	98
Lab Control Sample	RQ1614274-02	78	35	98
Duplicate Lab Control Sample	RQ1614274-03	78	33	98

Client:	Ecology And Environment, Incorporated	**Service Request:**	R1612036
Project:	Davis Howland Oil Company Site/10C3074.0012.08	**Date Collected:**	11/11/16
Sample Matrix:	Water	**Date Received:**	11/11/16
		Date Analyzed:	11/18/16
		Date Extracted:	11/16/16

Duplicate Matrix Spike Summary
Semivolatile Organic Compounds by GC/MS

Sample Name:	MW-14R-111116	**Units:**	ug/L
Lab Code:	R1612036-005	**Basis:**	NA
Analysis Method:	625		
Prep Method:	EPA 3510C		

		Matrix Spike RQ1614001-06			Duplicate Matrix Spike RQ1614001-07					
Analyte Name	**Sample Result**	**Result**	**Spike Amount**	**% Rec**	**Result**	**Spike Amount**	**% Rec**	**% Rec Limits**	**RPD**	**RPD Limit**
1,2,4-Trichlorobenzene	4.7 U	64.3	94.3	68	65.7	94.3	70	29-85	2	30
1,2-Diphenylhydrazine	4.7 U	77.7	94.3	82	81.5	94.3	86	57-117	5	30
2,4,6-Trichlorophenol	4.7 U	102	94.3	108	107	94.3	113	37-144	5	30
2,4-Dichlorophenol	4.7 U	94.3	94.3	100	95.5	94.3	101	39-135	1	30
2,4-Dimethylphenol	4.7 U	92.4	94.3	98	94.1	94.3	100	32-119	2	30
2,4-Dinitrophenol	47 U	101	94.3	107	109	94.3	115	10-191	7	30
2,4-Dinitrotoluene	4.7 U	95.6	94.3	101	102	94.3	108	39-139	6	30
2,6-Dinitrotoluene	4.7 U	92.9	94.3	98	99.9	94.3	106	50-158	7	30
2-Chloronaphthalene	4.7 U	78.3	94.3	83	83.6	94.3	89	60-118	6	30
2-Chlorophenol	4.7 U	82.4	94.3	87	85.7	94.3	91	23-134	4	30
2-Nitrophenol	4.7 U	103	94.3	109	106	94.3	113	29-182	3	30
3,3'-Dichlorobenzidine	4.7 U	67.0	94.3	71	71.3	94.3	76	10-262	6	30
4,6-Dinitro-o-cresol	47 U	107	94.3	113	114	94.3	121	10-181	7	30
4-Bromophenyl Phenyl Ether	4.7 U	83.0	94.3	88	86.7	94.3	92	53-127	4	30
4-Chloro-m-cresol	4.7 U	97.3	94.3	103	102	94.3	108	22-147	5	30
4-Chlorophenyl Phenyl Ether	4.7 U	76.8	94.3	81	81.8	94.3	87	25-158	6	30
4-Nitrophenol	47 U	42.5	94.3	45	44.5 J	94.3	47	10-132	5	30
Acenaphthene	4.7 U	86.5	94.3	92	92.9	94.3	98	47-145	7	30
Acenaphthylene	4.7 U	90.7	94.3	96	99.4	94.3	105	33-145	9	30
Anthracene	4.7 U	103	94.3	109	109	94.3	115	27-133	5	30
Benz(a)anthracene	4.7 U	96.2	94.3	102	101	94.3	107	33-143	5	30
Benzidine	94 U	94	189	0 *	94 U	189	0 *	10-169	NC	30
Benzo(a)pyrene	4.7 U	106	94.3	113	114	94.3	121	17-163	7	30
3,4-Benzofluoranthene	4.7 U	90.2	94.3	96	110	94.3	116	24-159	20	30
Benzo(g,h,i)perylene	4.7 U	102	94.3	108	106	94.3	113	10-219	5	30
Benzo(k)fluoranthene	4.7 U	92.1	94.3	98	113	94.3	120	11-162	21	30
Bis(1-chloroisopropyl) Ether	4.7 U	122	94.3	129	126	94.3	133	36-166	3	30
Bis(2-chloroethoxy)methane	4.7 U	94.1	94.3	100	95.6	94.3	101	33-184	2	30
Bis(2-chloroethyl) Ether	4.7 U	81.9	94.3	87	84.4	94.3	89	12-158	3	30
Bis(2-ethylhexyl) Phthalate	4.7 U	95.6	94.3	101	98.8	94.3	105	10-158	3	30
Butyl Benzyl Phthalate	4.7 U	91.7	94.3	97	94.8	94.3	101	10-152	3	30
Chrysene	4.7 U	95.2	94.3	101	101	94.3	107	17-168	6	30
Di-n-butyl Phthalate	4.7 U	95.6	94.3	101	101	94.3	107	10-118	5	30
Di-n-octyl Phthalate	4.7 U	94.9	94.3	101	111	94.3	117	10-146	15	30
Dibenz(a,h)anthracene	4.7 U	103	94.3	109	112	94.3	118	10-227	8	30

Results flagged with an asterisk (*) indicate values outside control criteria.

Results flagged with a pound (#) indicate the control criteria is not applicable.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

Client:	Ecology And Environment, Incorporated	**Service Request:**	R1612036
Project:	Davis Howland Oil Company Site/10C3074.0012.08	**Date Collected:**	11/11/16
Sample Matrix:	Water	**Date Received:**	11/11/16
		Date Analyzed:	11/18/16
		Date Extracted:	11/16/16

Duplicate Matrix Spike Summary
Semivolatile Organic Compounds by GC/MS

Sample Name:	MW-14R-111116	**Units:**	ug/L
Lab Code:	R1612036-005	**Basis:**	NA
Analysis Method:	625		
Prep Method:	EPA 3510C		

		Matrix Spike RQ1614001-06			Duplicate Matrix Spike RQ1614001-07					
Analyte Name	**Sample Result**	**Result**	**Spike Amount**	**% Rec**	**Result**	**Spike Amount**	**% Rec**	**% Rec Limits**	**RPD**	**RPD Limit**
Diethyl Phthalate	16	108	94.3	97	113	94.3	103	10-114	4	30
Dimethyl Phthalate	4.7 U	82.7	94.3	88	86.9	94.3	92	10-112	5	30
Fluoranthene	4.7 U	106	94.3	112	109	94.3	115	26-137	3	30
Fluorene	4.7 U	81.1	94.3	86	86.6	94.3	92	59-121	7	30
Hexachlorobenzene	4.7 U	83.7	94.3	89	91.6	94.3	97	10-152	9	30
Hexachlorobutadiene	4.7 U	69.5	94.3	74	71.6	94.3	76	24-116	3	30
Hexachlorocyclopentadiene	4.7 U	20.8	94.3	22 *	22.1	94.3	23 *	28-98	6	30
Hexachloroethane	4.7 U	54.8	94.3	58	55.1	94.3	58	40-113	<1	30
Indeno(1,2,3-cd)pyrene	4.7 U	104	94.3	111	111	94.3	118	10-171	7	30
Isophorone	4.7 U	91.0	94.3	96	93.2	94.3	99	21-196	2	30
N-Nitrosodi-n-propylamine	4.7 U	74.1	94.3	79	81.5	94.3	86	10-230	9	30
N-Nitrosodimethylamine	4.7 U	45.8	94.3	49	46.8	94.3	50	33-70	2	30
N-Nitrosodiphenylamine	4.7 U	81.2	94.3	86	87.3	94.3	93	50-117	7	30
Naphthalene	4.7 U	75.2	94.3	80	78.5	94.3	83	21-133	4	30
Nitrobenzene	4.7 U	95.5	94.3	101	96.7	94.3	102	35-180	1	30
Pentachlorophenol (PCP)	47 U	93.8	94.3	99	95.6	94.3	101	14-176	2	30
Phenanthrene	4.7 U	93.6	94.3	99	98.7	94.3	105	54-120	5	30
Phenol	4.7 U	36.0	94.3	38	37.0	94.3	39	10-112	3	30
Pyrene	4.7 U	99.9	94.3	106	99.8	94.3	106	52-115	<1	30

Results flagged with an asterisk (*) indicate values outside control criteria.

Results flagged with a pound (#) indicate the control criteria is not applicable.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

Analytical Report

Client:	Ecology And Environment, Incorporated	**Service Request:**	R1612036
Project:	Davis Howland Oil Company Site/10C3074.0012.08	**Date Collected:**	NA
Sample Matrix:	Water	**Date Received:**	NA
Sample Name:	Method Blank	**Units:**	ug/L
Lab Code:	RQ1614001-01	**Basis:**	NA

Semivolatile Organic Compounds by GC/MS

Analysis Method: 625
Prep Method: EPA 3510C

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
1,2,4-Trichlorobenzene	5.0 U	5.0	1.0	1	11/17/16 13:48	11/16/16	
1,2-Diphenylhydrazine	5.0 U	5.0	1.0	1	11/17/16 13:48	11/16/16	
2,4,6-Trichlorophenol	5.0 U	5.0	1.4	1	11/17/16 13:48	11/16/16	
2,4-Dichlorophenol	5.0 U	5.0	1.3	1	11/17/16 13:48	11/16/16	
2,4-Dimethylphenol	5.0 U	5.0	1.5	1	11/17/16 13:48	11/16/16	
2,4-Dinitrophenol	50 U	50	20	1	11/17/16 13:48	11/16/16	
2,4-Dinitrotoluene	5.0 U	5.0	1.6	1	11/17/16 13:48	11/16/16	
2,6-Dinitrotoluene	5.0 U	5.0	1.8	1	11/17/16 13:48	11/16/16	
2-Chloronaphthalene	5.0 U	5.0	1.0	1	11/17/16 13:48	11/16/16	
2-Chlorophenol	5.0 U	5.0	1.0	1	11/17/16 13:48	11/16/16	
2-Nitrophenol	5.0 U	5.0	1.4	1	11/17/16 13:48	11/16/16	
3,3'-Dichlorobenzidine	5.0 U	5.0	4.5	1	11/17/16 13:48	11/16/16	
4,6-Dinitro-o-cresol	50 U	50	11	1	11/17/16 13:48	11/16/16	
4-Bromophenyl Phenyl Ether	5.0 U	5.0	2.2	1	11/17/16 13:48	11/16/16	
4-Chloro-m-cresol	5.0 U	5.0	1.2	1	11/17/16 13:48	11/16/16	
4-Chlorophenyl Phenyl Ether	5.0 U	5.0	1.2	1	11/17/16 13:48	11/16/16	
4-Nitrophenol	50 U	50	5.9	1	11/17/16 13:48	11/16/16	
Acenaphthene	5.0 U	5.0	1.0	1	11/17/16 13:48	11/16/16	
Acenaphthylene	5.0 U	5.0	1.0	1	11/17/16 13:48	11/16/16	
Anthracene	5.0 U	5.0	1.0	1	11/17/16 13:48	11/16/16	
Benz(a)anthracene	5.0 U	5.0	1.0	1	11/17/16 13:48	11/16/16	
Benzidine	100 U	100	90	1	11/17/16 13:48	11/16/16	
Benzo(a)pyrene	5.0 U	5.0	1.0	1	11/17/16 13:48	11/16/16	
3,4-Benzofluoranthene	5.0 U	5.0	1.0	1	11/17/16 13:48	11/16/16	
Benzo(g,h,i)perylene	5.0 U	5.0	1.0	1	11/17/16 13:48	11/16/16	
Benzo(k)fluoranthene	5.0 U	5.0	1.0	1	11/17/16 13:48	11/16/16	
Bis(1-chloroisopropyl) Ether	5.0 U	5.0	1.0	1	11/17/16 13:48	11/16/16	
Bis(2-chloroethoxy)methane	5.0 U	5.0	2.2	1	11/17/16 13:48	11/16/16	
Bis(2-chloroethyl) Ether	5.0 U	5.0	1.3	1	11/17/16 13:48	11/16/16	
Bis(2-ethylhexyl) Phthalate	5.0 U	5.0	1.2	1	11/17/16 13:48	11/16/16	
Butyl Benzyl Phthalate	5.0 U	5.0	2.4	1	11/17/16 13:48	11/16/16	
Chrysene	5.0 U	5.0	1.0	1	11/17/16 13:48	11/16/16	
Di-n-butyl Phthalate	5.0 U	5.0	1.0	1	11/17/16 13:48	11/16/16	
Di-n-octyl Phthalate	5.0 U	5.0	1.2	1	11/17/16 13:48	11/16/16	
Dibenz(a,h)anthracene	5.0 U	5.0	1.3	1	11/17/16 13:48	11/16/16	
Diethyl Phthalate	5.0 U	5.0	1.0	1	11/17/16 13:48	11/16/16	
Dimethyl Phthalate	5.0 U	5.0	1.0	1	11/17/16 13:48	11/16/16	
Fluoranthene	5.0 U	5.0	1.0	1	11/17/16 13:48	11/16/16	
Fluorene	5.0 U	5.0	1.0	1	11/17/16 13:48	11/16/16	
Hexachlorobenzene	5.0 U	5.0	1.0	1	11/17/16 13:48	11/16/16	
Hexachlorobutadiene	5.0 U	5.0	1.3	1	11/17/16 13:48	11/16/16	
Hexachlorocyclopentadiene	5.0 U	5.0	1.0	1	11/17/16 13:48	11/16/16	
Hexachloroethane	5.0 U	5.0	1.2	1	11/17/16 13:48	11/16/16	

Analytical Report

Client:	Ecology And Environment, Incorporated	**Service Request:**	R1612036
Project:	Davis Howland Oil Company Site/10C3074.0012.08	**Date Collected:**	NA
Sample Matrix:	Water	**Date Received:**	NA
Sample Name:	Method Blank	**Units:**	ug/L
Lab Code:	RQ1614001-01	**Basis:**	NA

Semivolatile Organic Compounds by GC/MS

Analysis Method: 625
Prep Method: EPA 3510C

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Indeno(1,2,3-cd)pyrene	5.0 U	5.0	1.2	1	11/17/16 13:48	11/16/16	
Isophorone	5.0 U	5.0	1.0	1	11/17/16 13:48	11/16/16	
N-Nitrosodi-n-propylamine	5.0 U	5.0	1.3	1	11/17/16 13:48	11/16/16	
N-Nitrosodimethylamine	5.0 U	5.0	1.0	1	11/17/16 13:48	11/16/16	
N-Nitrosodiphenylamine	5.0 U	5.0	1.0	1	11/17/16 13:48	11/16/16	
Naphthalene	5.0 U	5.0	1.0	1	11/17/16 13:48	11/16/16	
Nitrobenzene	5.0 U	5.0	1.6	1	11/17/16 13:48	11/16/16	
Pentachlorophenol (PCP)	50 U	50	6.9	1	11/17/16 13:48	11/16/16	
Phenanthrene	5.0 U	5.0	1.0	1	11/17/16 13:48	11/16/16	
Phenol	5.0 U	5.0	1.0	1	11/17/16 13:48	11/16/16	
Pyrene	5.0 U	5.0	1.0	1	11/17/16 13:48	11/16/16	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
2,4,6-Tribromophenol	90	28 - 157	11/17/16 13:48	
2-Fluorobiphenyl	73	39 - 119	11/17/16 13:48	
2-Fluorophenol	36	10 - 105	11/17/16 13:48	
Nitrobenzene-d5	77	37 - 117	11/17/16 13:48	
Phenol-d6	28	10 - 107	11/17/16 13:48	
p-Terphenyl-d14	86	40 - 133	11/17/16 13:48	

Analytical Report

Client:	Ecology And Environment, Incorporated	**Service Request:**	R1612036
Project:	Davis Howland Oil Company Site/10C3074.0012.08	**Date Collected:**	NA
Sample Matrix:	Water	**Date Received:**	NA
Sample Name:	Method Blank	**Units:**	ug/L
Lab Code:	RQ1614074-01	**Basis:**	NA

Semivolatile Organic Compounds by GC/MS

Analysis Method: 625
Prep Method: EPA 3510C

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
1,2,4-Trichlorobenzene	5.0 U	5.0	1.0	1	11/18/16 13:42	11/17/16	
1,2-Diphenylhydrazine	5.0 U	5.0	1.0	1	11/18/16 13:42	11/17/16	
2,4,6-Trichlorophenol	5.0 U	5.0	1.4	1	11/18/16 13:42	11/17/16	
2,4-Dichlorophenol	5.0 U	5.0	1.3	1	11/18/16 13:42	11/17/16	
2,4-Dimethylphenol	5.0 U	5.0	1.5	1	11/18/16 13:42	11/17/16	
2,4-Dinitrophenol	50 U	50	20	1	11/18/16 13:42	11/17/16	
2,4-Dinitrotoluene	5.0 U	5.0	1.6	1	11/18/16 13:42	11/17/16	
2,6-Dinitrotoluene	5.0 U	5.0	1.8	1	11/18/16 13:42	11/17/16	
2-Chloronaphthalene	5.0 U	5.0	1.0	1	11/18/16 13:42	11/17/16	
2-Chlorophenol	5.0 U	5.0	1.0	1	11/18/16 13:42	11/17/16	
2-Nitrophenol	5.0 U	5.0	1.4	1	11/18/16 13:42	11/17/16	
3,3'-Dichlorobenzidine	5.0 U	5.0	4.5	1	11/18/16 13:42	11/17/16	
4,6-Dinitro-o-cresol	50 U	50	11	1	11/18/16 13:42	11/17/16	
4-Bromophenyl Phenyl Ether	5.0 U	5.0	2.2	1	11/18/16 13:42	11/17/16	
4-Chloro-m-cresol	5.0 U	5.0	1.2	1	11/18/16 13:42	11/17/16	
4-Chlorophenyl Phenyl Ether	5.0 U	5.0	1.2	1	11/18/16 13:42	11/17/16	
4-Nitrophenol	50 U	50	5.9	1	11/18/16 13:42	11/17/16	
Acenaphthene	5.0 U	5.0	1.0	1	11/18/16 13:42	11/17/16	
Acenaphthylene	5.0 U	5.0	1.0	1	11/18/16 13:42	11/17/16	
Anthracene	5.0 U	5.0	1.0	1	11/18/16 13:42	11/17/16	
Benz(a)anthracene	5.0 U	5.0	1.0	1	11/18/16 13:42	11/17/16	
Benzidine	100 U	100	90	1	11/18/16 13:42	11/17/16	
Benzo(a)pyrene	5.0 U	5.0	1.0	1	11/18/16 13:42	11/17/16	
3,4-Benzofluoranthene	5.0 U	5.0	1.0	1	11/18/16 13:42	11/17/16	
Benzo(g,h,i)perylene	5.0 U	5.0	1.0	1	11/18/16 13:42	11/17/16	
Benzo(k)fluoranthene	5.0 U	5.0	1.0	1	11/18/16 13:42	11/17/16	
Bis(1-chloroisopropyl) Ether	5.0 U	5.0	1.0	1	11/18/16 13:42	11/17/16	
Bis(2-chloroethoxy)methane	5.0 U	5.0	2.2	1	11/18/16 13:42	11/17/16	
Bis(2-chloroethyl) Ether	5.0 U	5.0	1.3	1	11/18/16 13:42	11/17/16	
Bis(2-ethylhexyl) Phthalate	5.0 U	5.0	1.2	1	11/18/16 13:42	11/17/16	
Butyl Benzyl Phthalate	5.0 U	5.0	2.4	1	11/18/16 13:42	11/17/16	
Chrysene	5.0 U	5.0	1.0	1	11/18/16 13:42	11/17/16	
Di-n-butyl Phthalate	5.0 U	5.0	1.0	1	11/18/16 13:42	11/17/16	
Di-n-octyl Phthalate	5.0 U	5.0	1.2	1	11/18/16 13:42	11/17/16	
Dibenz(a,h)anthracene	5.0 U	5.0	1.3	1	11/18/16 13:42	11/17/16	
Diethyl Phthalate	5.0 U	5.0	1.0	1	11/18/16 13:42	11/17/16	
Dimethyl Phthalate	5.0 U	5.0	1.0	1	11/18/16 13:42	11/17/16	
Fluoranthene	5.0 U	5.0	1.0	1	11/18/16 13:42	11/17/16	
Fluorene	5.0 U	5.0	1.0	1	11/18/16 13:42	11/17/16	
Hexachlorobenzene	5.0 U	5.0	1.0	1	11/18/16 13:42	11/17/16	
Hexachlorobutadiene	5.0 U	5.0	1.3	1	11/18/16 13:42	11/17/16	
Hexachlorocyclopentadiene	5.0 U	5.0	1.0	1	11/18/16 13:42	11/17/16	
Hexachloroethane	5.0 U	5.0	1.2	1	11/18/16 13:42	11/17/16	

Analytical Report

Client:	Ecology And Environment, Incorporated	**Service Request:**	R1612036
Project:	Davis Howland Oil Company Site/10C3074.0012.08	**Date Collected:**	NA
Sample Matrix:	Water	**Date Received:**	NA
Sample Name:	Method Blank	**Units:**	ug/L
Lab Code:	RQ1614074-01	**Basis:**	NA

Semivolatile Organic Compounds by GC/MS

Analysis Method: 625
Prep Method: EPA 3510C

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Indeno(1,2,3-cd)pyrene	5.0 U	5.0	1.2	1	11/18/16 13:42	11/17/16	
Isophorone	5.0 U	5.0	1.0	1	11/18/16 13:42	11/17/16	
N-Nitrosodi-n-propylamine	5.0 U	5.0	1.3	1	11/18/16 13:42	11/17/16	
N-Nitrosodimethylamine	5.0 U	5.0	1.0	1	11/18/16 13:42	11/17/16	
N-Nitrosodiphenylamine	5.0 U	5.0	1.0	1	11/18/16 13:42	11/17/16	
Naphthalene	5.0 U	5.0	1.0	1	11/18/16 13:42	11/17/16	
Nitrobenzene	5.0 U	5.0	1.6	1	11/18/16 13:42	11/17/16	
Pentachlorophenol (PCP)	50 U	50	6.9	1	11/18/16 13:42	11/17/16	
Phenanthrene	5.0 U	5.0	1.0	1	11/18/16 13:42	11/17/16	
Phenol	5.0 U	5.0	1.0	1	11/18/16 13:42	11/17/16	
Pyrene	5.0 U	5.0	1.0	1	11/18/16 13:42	11/17/16	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
2,4,6-Tribromophenol	86	28 - 157	11/18/16 13:42	
2-Fluorobiphenyl	72	39 - 119	11/18/16 13:42	
2-Fluorophenol	36	10 - 105	11/18/16 13:42	
Nitrobenzene-d5	78	37 - 117	11/18/16 13:42	
Phenol-d6	30	10 - 107	11/18/16 13:42	
p-Terphenyl-d14	97	40 - 133	11/18/16 13:42	

Analytical Report

Client:	Ecology And Environment, Incorporated	**Service Request:**	R1612036
Project:	Davis Howland Oil Company Site/10C3074.0012.08	**Date Collected:**	NA
Sample Matrix:	Water	**Date Received:**	NA
Sample Name:	Method Blank	**Units:**	ug/L
Lab Code:	RQ1614074-01	**Basis:**	NA

Semivolatile Organic Compounds by GC/MS

Analysis Method: 625
Prep Method: EPA 3510C

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
1,2,4-Trichlorobenzene	5.0 U	5.0	1.0	1	11/23/16 16:01	11/17/16	
1,2-Diphenylhydrazine	5.0 U	5.0	1.0	1	11/23/16 16:01	11/17/16	
2,4,6-Trichlorophenol	5.0 U	5.0	1.4	1	11/23/16 16:01	11/17/16	
2,4-Dichlorophenol	5.0 U	5.0	1.3	1	11/23/16 16:01	11/17/16	
2,4-Dimethylphenol	5.0 U	5.0	1.5	1	11/23/16 16:01	11/17/16	
2,4-Dinitrophenol	50 U	50	20	1	11/23/16 16:01	11/17/16	
2,4-Dinitrotoluene	5.0 U	5.0	1.6	1	11/23/16 16:01	11/17/16	
2,6-Dinitrotoluene	5.0 U	5.0	1.8	1	11/23/16 16:01	11/17/16	
2-Chloronaphthalene	5.0 U	5.0	1.0	1	11/23/16 16:01	11/17/16	
2-Chlorophenol	5.0 U	5.0	1.0	1	11/23/16 16:01	11/17/16	
2-Nitrophenol	5.0 U	5.0	1.4	1	11/23/16 16:01	11/17/16	
3,3'-Dichlorobenzidine	5.0 U	5.0	4.5	1	11/23/16 16:01	11/17/16	
4,6-Dinitro-o-cresol	50 U	50	11	1	11/23/16 16:01	11/17/16	
4-Bromophenyl Phenyl Ether	5.0 U	5.0	2.2	1	11/23/16 16:01	11/17/16	
4-Chloro-m-cresol	5.0 U	5.0	1.2	1	11/23/16 16:01	11/17/16	
4-Chlorophenyl Phenyl Ether	5.0 U	5.0	1.2	1	11/23/16 16:01	11/17/16	
4-Nitrophenol	50 U	50	5.9	1	11/23/16 16:01	11/17/16	
Acenaphthene	5.0 U	5.0	1.0	1	11/23/16 16:01	11/17/16	
Acenaphthylene	5.0 U	5.0	1.0	1	11/23/16 16:01	11/17/16	
Anthracene	5.0 U	5.0	1.0	1	11/23/16 16:01	11/17/16	
Benz(a)anthracene	5.0 U	5.0	1.0	1	11/23/16 16:01	11/17/16	
Benzidine	100 U	100	90	1	11/23/16 16:01	11/17/16	
Benzo(a)pyrene	5.0 U	5.0	1.0	1	11/23/16 16:01	11/17/16	
3,4-Benzofluoranthene	5.0 U	5.0	1.0	1	11/23/16 16:01	11/17/16	
Benzo(g,h,i)perylene	5.0 U	5.0	1.0	1	11/23/16 16:01	11/17/16	
Benzo(k)fluoranthene	5.0 U	5.0	1.0	1	11/23/16 16:01	11/17/16	
Bis(1-chloroisopropyl) Ether	5.0 U	5.0	1.0	1	11/23/16 16:01	11/17/16	
Bis(2-chloroethoxy)methane	5.0 U	5.0	2.2	1	11/23/16 16:01	11/17/16	
Bis(2-chloroethyl) Ether	5.0 U	5.0	1.3	1	11/23/16 16:01	11/17/16	
Bis(2-ethylhexyl) Phthalate	5.0 U	5.0	1.2	1	11/23/16 16:01	11/17/16	
Butyl Benzyl Phthalate	5.0 U	5.0	2.4	1	11/23/16 16:01	11/17/16	
Chrysene	5.0 U	5.0	1.0	1	11/23/16 16:01	11/17/16	
Di-n-butyl Phthalate	5.0 U	5.0	1.0	1	11/23/16 16:01	11/17/16	
Di-n-octyl Phthalate	5.0 U	5.0	1.2	1	11/23/16 16:01	11/17/16	
Dibenz(a,h)anthracene	5.0 U	5.0	1.3	1	11/23/16 16:01	11/17/16	
Diethyl Phthalate	5.0 U	5.0	1.0	1	11/23/16 16:01	11/17/16	
Dimethyl Phthalate	5.0 U	5.0	1.0	1	11/23/16 16:01	11/17/16	
Fluoranthene	5.0 U	5.0	1.0	1	11/23/16 16:01	11/17/16	
Fluorene	5.0 U	5.0	1.0	1	11/23/16 16:01	11/17/16	
Hexachlorobenzene	5.0 U	5.0	1.0	1	11/23/16 16:01	11/17/16	
Hexachlorobutadiene	5.0 U	5.0	1.3	1	11/23/16 16:01	11/17/16	
Hexachlorocyclopentadiene	5.0 U	5.0	1.0	1	11/23/16 16:01	11/17/16	
Hexachloroethane	5.0 U	5.0	1.2	1	11/23/16 16:01	11/17/16	

Analytical Report

Client:	Ecology And Environment, Incorporated	**Service Request:**	R1612036
Project:	Davis Howland Oil Company Site/10C3074.0012.08	**Date Collected:**	NA
Sample Matrix:	Water	**Date Received:**	NA
Sample Name:	Method Blank	**Units:**	ug/L
Lab Code:	RQ1614074-01	**Basis:**	NA

Semivolatile Organic Compounds by GC/MS

Analysis Method: 625
Prep Method: EPA 3510C

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Indeno(1,2,3-cd)pyrene	5.0 U	5.0	1.2	1	11/23/16 16:01	11/17/16	
Isophorone	5.0 U	5.0	1.0	1	11/23/16 16:01	11/17/16	
N-Nitrosodi-n-propylamine	5.0 U	5.0	1.3	1	11/23/16 16:01	11/17/16	
N-Nitrosodimethylamine	5.0 U	5.0	1.0	1	11/23/16 16:01	11/17/16	
N-Nitrosodiphenylamine	5.0 U	5.0	1.0	1	11/23/16 16:01	11/17/16	
Naphthalene	5.0 U	5.0	1.0	1	11/23/16 16:01	11/17/16	
Nitrobenzene	5.0 U	5.0	1.6	1	11/23/16 16:01	11/17/16	
Pentachlorophenol (PCP)	50 U	50	6.9	1	11/23/16 16:01	11/17/16	
Phenanthrene	5.0 U	5.0	1.0	1	11/23/16 16:01	11/17/16	
Phenol	5.0 U	5.0	1.0	1	11/23/16 16:01	11/17/16	
Pyrene	5.0 U	5.0	1.0	1	11/23/16 16:01	11/17/16	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
2,4,6-Tribromophenol	74	28 - 157	11/23/16 16:01	
2-Fluorobiphenyl	69	39 - 119	11/23/16 16:01	
2-Fluorophenol	36	10 - 105	11/23/16 16:01	
Nitrobenzene-d5	62	37 - 117	11/23/16 16:01	
Phenol-d6	28	10 - 107	11/23/16 16:01	
p-Terphenyl-d14	92	40 - 133	11/23/16 16:01	

Analytical Report

Client:	Ecology And Environment, Incorporated	**Service Request:**	R1612036
Project:	Davis Howland Oil Company Site/10C3074.0012.08	**Date Collected:**	NA
Sample Matrix:	Water	**Date Received:**	NA
Sample Name:	Method Blank	**Units:**	ug/L
Lab Code:	RQ1614274-01	**Basis:**	NA

Semivolatile Organic Compounds by GC/MS

Analysis Method: 625
Prep Method: EPA 3510C

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
1,2,4-Trichlorobenzene	5.0 U	5.0	1.0	1	11/23/16 13:11	11/22/16	
1,2-Diphenylhydrazine	5.0 U	5.0	1.0	1	11/23/16 13:11	11/22/16	
2,4,6-Trichlorophenol	5.0 U	5.0	1.4	1	11/23/16 13:11	11/22/16	
2,4-Dichlorophenol	5.0 U	5.0	1.3	1	11/23/16 13:11	11/22/16	
2,4-Dimethylphenol	5.0 U	5.0	1.5	1	11/23/16 13:11	11/22/16	
2,4-Dinitrophenol	50 U	50	20	1	11/23/16 13:11	11/22/16	
2,4-Dinitrotoluene	5.0 U	5.0	1.6	1	11/23/16 13:11	11/22/16	
2,6-Dinitrotoluene	5.0 U	5.0	1.8	1	11/23/16 13:11	11/22/16	
2-Chloronaphthalene	5.0 U	5.0	1.0	1	11/23/16 13:11	11/22/16	
2-Chlorophenol	5.0 U	5.0	1.0	1	11/23/16 13:11	11/22/16	
2-Nitrophenol	5.0 U	5.0	1.4	1	11/23/16 13:11	11/22/16	
3,3'-Dichlorobenzidine	5.0 U	5.0	4.5	1	11/23/16 13:11	11/22/16	
4,6-Dinitro-o-cresol	50 U	50	11	1	11/23/16 13:11	11/22/16	
4-Bromophenyl Phenyl Ether	5.0 U	5.0	2.2	1	11/23/16 13:11	11/22/16	
4-Chloro-m-cresol	5.0 U	5.0	1.2	1	11/23/16 13:11	11/22/16	
4-Chlorophenyl Phenyl Ether	5.0 U	5.0	1.2	1	11/23/16 13:11	11/22/16	
4-Nitrophenol	50 U	50	5.9	1	11/23/16 13:11	11/22/16	
Acenaphthene	5.0 U	5.0	1.0	1	11/23/16 13:11	11/22/16	
Acenaphthylene	5.0 U	5.0	1.0	1	11/23/16 13:11	11/22/16	
Anthracene	5.0 U	5.0	1.0	1	11/23/16 13:11	11/22/16	
Benz(a)anthracene	5.0 U	5.0	1.0	1	11/23/16 13:11	11/22/16	
Benzidine	100 U	100	90	1	11/23/16 13:11	11/22/16	
Benzo(a)pyrene	5.0 U	5.0	1.0	1	11/23/16 13:11	11/22/16	
3,4-Benzofluoranthene	5.0 U	5.0	1.0	1	11/23/16 13:11	11/22/16	
Benzo(g,h,i)perylene	5.0 U	5.0	1.0	1	11/23/16 13:11	11/22/16	
Benzo(k)fluoranthene	5.0 U	5.0	1.0	1	11/23/16 13:11	11/22/16	
Bis(1-chloroisopropyl) Ether	5.0 U	5.0	1.0	1	11/23/16 13:11	11/22/16	
Bis(2-chloroethoxy)methane	5.0 U	5.0	2.2	1	11/23/16 13:11	11/22/16	
Bis(2-chloroethyl) Ether	5.0 U	5.0	1.3	1	11/23/16 13:11	11/22/16	
Bis(2-ethylhexyl) Phthalate	5.0 U	5.0	1.2	1	11/23/16 13:11	11/22/16	
Butyl Benzyl Phthalate	5.0 U	5.0	2.4	1	11/23/16 13:11	11/22/16	
Chrysene	5.0 U	5.0	1.0	1	11/23/16 13:11	11/22/16	
Di-n-butyl Phthalate	5.0 U	5.0	1.0	1	11/23/16 13:11	11/22/16	
Di-n-octyl Phthalate	5.0 U	5.0	1.2	1	11/23/16 13:11	11/22/16	
Dibenz(a,h)anthracene	5.0 U	5.0	1.3	1	11/23/16 13:11	11/22/16	
Diethyl Phthalate	5.0 U	5.0	1.0	1	11/23/16 13:11	11/22/16	
Dimethyl Phthalate	5.0 U	5.0	1.0	1	11/23/16 13:11	11/22/16	
Fluoranthene	5.0 U	5.0	1.0	1	11/23/16 13:11	11/22/16	
Fluorene	5.0 U	5.0	1.0	1	11/23/16 13:11	11/22/16	
Hexachlorobenzene	5.0 U	5.0	1.0	1	11/23/16 13:11	11/22/16	
Hexachlorobutadiene	5.0 U	5.0	1.3	1	11/23/16 13:11	11/22/16	
Hexachlorocyclopentadiene	5.0 U	5.0	1.0	1	11/23/16 13:11	11/22/16	
Hexachloroethane	5.0 U	5.0	1.2	1	11/23/16 13:11	11/22/16	

Analytical Report

Client:	Ecology And Environment, Incorporated	**Service Request:**	R1612036
Project:	Davis Howland Oil Company Site/10C3074.0012.08	**Date Collected:**	NA
Sample Matrix:	Water	**Date Received:**	NA
Sample Name:	Method Blank	**Units:**	ug/L
Lab Code:	RQ1614274-01	**Basis:**	NA

Semivolatile Organic Compounds by GC/MS

Analysis Method: 625
Prep Method: EPA 3510C

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Indeno(1,2,3-cd)pyrene	5.0 U	5.0	1.2	1	11/23/16 13:11	11/22/16	
Isophorone	5.0 U	5.0	1.0	1	11/23/16 13:11	11/22/16	
N-Nitrosodi-n-propylamine	5.0 U	5.0	1.3	1	11/23/16 13:11	11/22/16	
N-Nitrosodimethylamine	5.0 U	5.0	1.0	1	11/23/16 13:11	11/22/16	
N-Nitrosodiphenylamine	5.0 U	5.0	1.0	1	11/23/16 13:11	11/22/16	
Naphthalene	5.0 U	5.0	1.0	1	11/23/16 13:11	11/22/16	
Nitrobenzene	5.0 U	5.0	1.6	1	11/23/16 13:11	11/22/16	
Pentachlorophenol (PCP)	50 U	50	6.9	1	11/23/16 13:11	11/22/16	
Phenanthrene	5.0 U	5.0	1.0	1	11/23/16 13:11	11/22/16	
Phenol	5.0 U	5.0	1.0	1	11/23/16 13:11	11/22/16	
Pyrene	5.0 U	5.0	1.0	1	11/23/16 13:11	11/22/16	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
2,4,6-Tribromophenol	85	28 - 157	11/23/16 13:11	
2-Fluorobiphenyl	76	39 - 119	11/23/16 13:11	
2-Fluorophenol	38	10 - 105	11/23/16 13:11	
Nitrobenzene-d5	69	37 - 117	11/23/16 13:11	
Phenol-d6	29	10 - 107	11/23/16 13:11	
p-Terphenyl-d14	98	40 - 133	11/23/16 13:11	

Client: Ecology And Environment, Incorporated
Project: Davis Howland Oil Company Site/10C3074.0012.08
Sample Matrix: Water

Service Request: R1612036
Date Analyzed: 11/17/16

Duplicate Lab Control Sample Summary
Semivolatile Organic Compounds by GC/MS

Units:ug/L
Basis:NA

		Lab Control Sample			Duplicate Lab Control Sample					
		RQ1614001-02			RQ1614001-03					
Analyte Name	**Analytical Method**	**Result**	**Spike Amount**	**% Rec**	**Result**	**Spike Amount**	**% Rec**	**% Rec Limits**	**RPD**	**RPD Limit**
1,2,4-Trichlorobenzene	625	68.3	100	68	66.4	100	66	29-85	3	30
1,2-Diphenylhydrazine	625	81.4	100	81	84.6	100	85	57-117	4	30
2,4,6-Trichlorophenol	625	106	100	106	115	100	115	37-144	8	30
2,4-Dichlorophenol	625	103	100	103	100	100	100	39-135	2	30
2,4-Dimethylphenol	625	101	100	101	100	100	100	32-119	<1	30
2,4-Dinitrophenol	625	97.3	100	97	85.5	100	86	10-191	13	30
2,4-Dinitrotoluene	625	107	100	107	114	100	114	39-139	6	30
2,6-Dinitrotoluene	625	107	100	107	111	100	111	50-158	4	30
2-Chloronaphthalene	625	76.5	100	77	79.8	100	80	60-118	4	30
2-Chlorophenol	625	88.7	100	89	89.2	100	89	23-134	<1	30
2-Nitrophenol	625	113	100	113	114	100	114	29-182	<1	30
3,3'-Dichlorobenzidine	625	88.4	100	88	94.3	100	94	10-262	6	30
4,6-Dinitro-o-cresol	625	125	100	125	127	100	127	10-181	1	30
4-Bromophenyl Phenyl Ether	625	91.0	100	91	95.8	100	96	53-127	5	30
4-Chloro-m-cresol	625	107	100	107	103	100	103	22-147	4	30
4-Chlorophenyl Phenyl Ether	625	83.6	100	84	89.9	100	90	25-158	7	30
4-Nitrophenol	625	46.1 J	100	46	50.6	100	51	10-132	9	30
Acenaphthene	625	88.3	100	88	92.0	100	92	47-145	4	30
Acenaphthylene	625	93.7	100	94	97.2	100	97	33-145	4	30
Anthracene	625	114	100	114	116	100	116	27-133	2	30
Benz(a)anthracene	625	104	100	104	108	100	108	33-143	4	30
Benzidine	625	119	200	59	123	200	62	10-169	4	30
Benzo(a)pyrene	625	114	100	114	117	100	117	17-163	3	30
3,4-Benzofluoranthene	625	102	100	102	106	100	106	24-159	4	30
Benzo(g,h,i)perylene	625	116	100	116	119	100	119	10-219	3	30
Benzo(k)fluoranthene	625	108	100	108	106	100	106	11-162	1	30
Bis(1-chloroisopropyl) Ether	625	121	100	121	126	100	126	36-166	4	30
Bis(2-chloroethoxy)methane	625	102	100	102	99.2	100	99	33-184	3	30
Bis(2-chloroethyl) Ether	625	85.8	100	86	86.3	100	86	12-158	<1	30
Bis(2-ethylhexyl) Phthalate	625	101	100	101	107	100	107	10-158	6	30
Butyl Benzyl Phthalate	625	96.7	100	97	109	100	109	10-152	12	30
Chrysene	625	104	100	104	108	100	108	17-168	4	30
Di-n-butyl Phthalate	625	105	100	105	109	100	109	10-118	3	30

Client: Ecology And Environment, Incorporated
Project: Davis Howland Oil Company Site/10C3074.0012.08
Sample Matrix: Water

Service Request: R1612036
Date Analyzed: 11/17/16

Duplicate Lab Control Sample Summary
Semivolatile Organic Compounds by GC/MS

Units:ug/L
Basis:NA

		Lab Control Sample			Duplicate Lab Control Sample					
		RQ1614001-02			RQ1614001-03					
Analyte Name	**Analytical Method**	**Result**	**Spike Amount**	**% Rec**	**Result**	**Spike Amount**	**% Rec**	**% Rec Limits**	**RPD**	**RPD Limit**
Di-n-octyl Phthalate	625	106	100	106	110	100	110	10-146	4	30
Dibenz(a,h)anthracene	625	119	100	119	119	100	119	10-227	<1	30
Diethyl Phthalate	625	93.5	100	94	98.7	100	99	10-114	5	30
Dimethyl Phthalate	625	92.2	100	92	97.9	100	98	10-112	6	30
Fluoranthene	625	114	100	114	116	100	116	26-137	1	30
Fluorene	625	90.0	100	90	93.0	100	93	59-121	3	30
Hexachlorobenzene	625	96.9	100	97	97.2	100	97	10-152	<1	30
Hexachlorobutadiene	625	73.7	100	74	69.6	100	70	24-116	6	30
Hexachlorocyclopentadiene	625	26.3	100	26 *	30.2	100	30	28-98	14	30
Hexachloroethane	625	58.9	100	59	57.5	100	57	40-113	2	30
Indeno(1,2,3-cd)pyrene	625	118	100	118	119	100	119	10-171	<1	30
Isophorone	625	98.6	100	99	97.9	100	98	21-196	<1	30
N-Nitrosodi-n-propylamine	625	79.9	100	80	81.6	100	82	10-230	2	30
N-Nitrosodimethylamine	625	53.0	100	53	47.6	100	48	33-70	11	30
N-Nitrosodiphenylamine	625	91.4	100	91	92.6	100	93	50-117	1	30
Naphthalene	625	79.5	100	79	79.7	100	80	21-133	<1	30
Nitrobenzene	625	103	100	103	101	100	101	35-180	2	30
Pentachlorophenol (PCP)	625	96.4	100	96	90.4	100	90	14-176	7	30
Phenanthrene	625	104	100	104	105	100	105	54-120	1	30
Phenol	625	39.9	100	40	40.3	100	40	10-112	1	30
Pyrene	625	105	100	105	114	100	114	52-115	7	30

Client: Ecology And Environment, Incorporated
Project: Davis Howland Oil Company Site/10C3074.0012.08
Sample Matrix: Water

Service Request: R1612036
Date Analyzed: 11/18/16

Duplicate Lab Control Sample Summary
Semivolatile Organic Compounds by GC/MS

Units:ug/L
Basis:NA

		Lab Control Sample			Duplicate Lab Control Sample					
		RQ1614074-02			RQ1614074-03					
Analyte Name	**Analytical Method**	**Result**	**Spike Amount**	**% Rec**	**Result**	**Spike Amount**	**% Rec**	**% Rec Limits**	**RPD**	**RPD Limit**
1,2,4-Trichlorobenzene	625	57.3	100	57	62.8	100	63	29-85	9	30
1,2-Diphenylhydrazine	625	79.8	100	80	76.6	100	77	57-117	4	30
2,4,6-Trichlorophenol	625	91.5	100	91	97.8	100	98	37-144	7	30
2,4-Dichlorophenol	625	88.2	100	88	98.0	100	98	39-135	11	30
2,4-Dimethylphenol	625	90.2	100	90	99.7	100	100	32-119	10	30
2,4-Dinitrophenol	625	90.7	100	91	98.4	100	98	10-191	8	30
2,4-Dinitrotoluene	625	99.5	100	99	104	100	104	39-139	5	30
2,6-Dinitrotoluene	625	95.1	100	95	102	100	102	50-158	7	30
2-Chloronaphthalene	625	68.9	100	69	69.2	100	69	60-118	<1	30
2-Chlorophenol	625	77.0	100	77	86.2	100	86	23-134	11	30
2-Nitrophenol	625	98.4	100	98	107	100	107	29-182	8	30
3,3'-Dichlorobenzidine	625	75.4	100	75	80.0	100	80	10-262	6	30
4,6-Dinitro-o-cresol	625	116	100	116	121	100	121	10-181	5	30
4-Bromophenyl Phenyl Ether	625	85.0	100	85	85.9	100	86	53-127	1	30
4-Chloro-m-cresol	625	96.3	100	96	106	100	106	22-147	9	30
4-Chlorophenyl Phenyl Ether	625	75.3	100	75	78.0	100	78	25-158	3	30
4-Nitrophenol	625	44.9 J	100	45	44.5 J	100	45	10-132	<1	30
Acenaphthene	625	76.4	100	76	81.3	100	81	47-145	6	30
Acenaphthylene	625	80.3	100	80	86.3	100	86	33-145	7	30
Anthracene	625	103	100	103	106	100	106	27-133	3	30
Benz(a)anthracene	625	96.9	100	97	101	100	101	33-143	4	30
Benzidine	625	107	200	54	90 U	200	0 *	10-169	NC	30
Benzo(a)pyrene	625	104	100	104	111	100	111	17-163	6	30
3,4-Benzofluoranthene	625	94.8	100	95	101	100	101	24-159	6	30
Benzo(g,h,i)perylene	625	102	100	102	109	100	109	10-219	6	30
Benzo(k)fluoranthene	625	101	100	101	103	100	103	11-162	2	30
Bis(1-chloroisopropyl) Ether	625	110	100	110	111	100	111	36-166	1	30
Bis(2-chloroethoxy)methane	625	91.2	100	91	96.3	100	96	33-184	5	30
Bis(2-chloroethyl) Ether	625	77.7	100	78	82.1	100	82	12-158	5	30
Bis(2-ethylhexyl) Phthalate	625	92.9	100	93	95.7	100	96	10-158	3	30
Butyl Benzyl Phthalate	625	87.2	100	87	93.2	100	93	10-152	7	30
Chrysene	625	97.0	100	97	99.8	100	100	17-168	3	30
Di-n-butyl Phthalate	625	94.4	100	94	101	100	101	10-118	6	30

Client: Ecology And Environment, Incorporated
Project: Davis Howland Oil Company Site/10C3074.0012.08
Sample Matrix: Water

Service Request: R1612036
Date Analyzed: 11/18/16

Duplicate Lab Control Sample Summary
Semivolatile Organic Compounds by GC/MS

Units:ug/L
Basis:NA

		Lab Control Sample			Duplicate Lab Control Sample					
		RQ1614074-02			RQ1614074-03					
Analyte Name	**Analytical Method**	**Result**	**Spike Amount**	**% Rec**	**Result**	**Spike Amount**	**% Rec**	**% Rec Limits**	**RPD**	**RPD Limit**
Di-n-octyl Phthalate	625	98.6	100	99	101	100	101	10-146	3	30
Dibenz(a,h)anthracene	625	104	100	104	117	100	117	10-227	11	30
Diethyl Phthalate	625	86.5	100	87	92.2	100	92	10-114	6	30
Dimethyl Phthalate	625	82.5	100	82	88.8	100	89	10-112	7	30
Fluoranthene	625	104	100	104	111	100	111	26-137	6	30
Fluorene	625	78.3	100	78	81.2	100	81	59-121	4	30
Hexachlorobenzene	625	88.1	100	88	92.9	100	93	10-152	5	30
Hexachlorobutadiene	625	62.2	100	62	70.5	100	70	24-116	13	30
Hexachlorocyclopentadiene	625	20.7	100	21 *	21.5	100	22 *	28-98	4	30
Hexachloroethane	625	48.1	100	48	54.0	100	54	40-113	12	30
Indeno(1,2,3-cd)pyrene	625	107	100	107	114	100	114	10-171	7	30
Isophorone	625	87.3	100	87	92.6	100	93	21-196	6	30
N-Nitrosodi-n-propylamine	625	72.6	100	73	74.1	100	74	10-230	2	30
N-Nitrosodimethylamine	625	46.6	100	47	54.2	100	54	33-70	15	30
N-Nitrosodiphenylamine	625	82.5	100	83	82.8	100	83	50-117	<1	30
Naphthalene	625	68.9	100	69	74.8	100	75	21-133	8	30
Nitrobenzene	625	91.2	100	91	99.6	100	100	35-180	9	30
Pentachlorophenol (PCP)	625	79.6	100	80	88.1	100	88	14-176	10	30
Phenanthrene	625	91.8	100	92	97.5	100	97	54-120	6	30
Phenol	625	36.9	100	37	40.0	100	40	10-112	8	30
Pyrene	625	96.4	100	96	102	100	102	52-115	6	30

Client: Ecology And Environment, Incorporated
Project: Davis Howland Oil Company Site/10C3074.0012.08
Sample Matrix: Water

Service Request: R1612036
Date Analyzed: 11/23/16

Duplicate Lab Control Sample Summary
Semivolatile Organic Compounds by GC/MS

Units:ug/L
Basis:NA

		Lab Control Sample			Duplicate Lab Control Sample					
		RQ1614274-02			RQ1614274-03					
Analyte Name	**Analytical Method**	**Result**	**Spike Amount**	**% Rec**	**Result**	**Spike Amount**	**% Rec**	**% Rec Limits**	**RPD**	**RPD Limit**
1,2,4-Trichlorobenzene	625	68.5	100	68	67.5	100	67	29-85	1	30
1,2-Diphenylhydrazine	625	77.5	100	77	80.6	100	81	57-117	4	30
2,4,6-Trichlorophenol	625	91.0	100	91	95.3	100	95	37-144	5	30
2,4-Dichlorophenol	625	87.2	100	87	85.8	100	86	39-135	2	30
2,4-Dimethylphenol	625	79.0	100	79	79.3	100	79	32-119	<1	30
2,4-Dinitrophenol	625	95.7	100	96	109	100	109	10-191	13	30
2,4-Dinitrotoluene	625	97.2	100	97	99.7	100	100	39-139	3	30
2,6-Dinitrotoluene	625	96.0	100	96	98.6	100	99	50-158	3	30
2-Chloronaphthalene	625	71.7	100	72	76.2	100	76	60-118	6	30
2-Chlorophenol	625	76.7	100	77	77.0	100	77	23-134	<1	30
2-Nitrophenol	625	91.9	100	92	92.8	100	93	29-182	<1	30
3,3'-Dichlorobenzidine	625	80.2	100	80	80.0	100	80	10-262	<1	30
4,6-Dinitro-o-cresol	625	106	100	106	109	100	109	10-181	3	30
4-Bromophenyl Phenyl Ether	625	86.7	100	87	88.2	100	88	53-127	2	30
4-Chloro-m-cresol	625	82.4	100	82	81.1	100	81	22-147	2	30
4-Chlorophenyl Phenyl Ether	625	80.8	100	81	87.4	100	87	25-158	8	30
4-Nitrophenol	625	37.4 J	100	37	39.8 J	100	40	10-132	6	30
Acenaphthene	625	74.8	100	75	80.5	100	81	47-145	7	30
Acenaphthylene	625	74.5	100	75	80.5	100	80	33-145	8	30
Anthracene	625	90.6	100	91	91.0	100	91	27-133	<1	30
Benz(a)anthracene	625	93.4	100	93	95.5	100	95	33-143	2	30
Benzidine	625	116	200	58	99.0 J	200	49	10-169	16	30
Benzo(a)pyrene	625	102	100	102	103	100	103	17-163	<1	30
3,4-Benzofluoranthene	625	96.8	100	97	97.1	100	97	24-159	<1	30
Benzo(g,h,i)perylene	625	102	100	102	104	100	104	10-219	2	30
Benzo(k)fluoranthene	625	101	100	101	102	100	102	11-162	<1	30
Bis(1-chloroisopropyl) Ether	625	76.1	100	76	77.2	100	77	36-166	2	30
Bis(2-chloroethoxy)methane	625	86.6	100	87	88.5	100	89	33-184	2	30
Bis(2-chloroethyl) Ether	625	78.3	100	78	75.8	100	76	12-158	3	30
Bis(2-ethylhexyl) Phthalate	625	91.7	100	92	94.3	100	94	10-158	3	30
Butyl Benzyl Phthalate	625	95.0	100	95	96.1	100	96	10-152	1	30
Chrysene	625	93.3	100	93	95.2	100	95	17-168	2	30
Di-n-butyl Phthalate	625	96.3	100	96	96.3	100	96	10-118	<1	30

Client: Ecology And Environment, Incorporated
Project: Davis Howland Oil Company Site/10C3074.0012.08
Sample Matrix: Water

Service Request: R1612036
Date Analyzed: 11/23/16

Duplicate Lab Control Sample Summary
Semivolatile Organic Compounds by GC/MS

Units:ug/L
Basis:NA

		Lab Control Sample			Duplicate Lab Control Sample					
		RQ1614274-02			RQ1614274-03					
Analyte Name	**Analytical Method**	**Result**	**Spike Amount**	**% Rec**	**Result**	**Spike Amount**	**% Rec**	**% Rec Limits**	**RPD**	**RPD Limit**
Di-n-octyl Phthalate	625	104	100	104	104	100	104	10-146	<1	30
Dibenz(a,h)anthracene	625	104	100	104	104	100	104	10-227	<1	30
Diethyl Phthalate	625	90.1	100	90	92.2	100	92	10-114	2	30
Dimethyl Phthalate	625	86.8	100	87	90.3	100	90	10-112	4	30
Fluoranthene	625	92.8	100	93	92.7	100	93	26-137	<1	30
Fluorene	625	78.4	100	78	84.0	100	84	59-121	7	30
Hexachlorobenzene	625	88.8	100	89	91.1	100	91	10-152	3	30
Hexachlorobutadiene	625	72.0	100	72	71.7	100	72	24-116	<1	30
Hexachlorocyclopentadiene	625	25.1	100	25 *	26.8	100	27 *	28-98	7	30
Hexachloroethane	625	58.3	100	58	56.4	100	56	40-113	3	30
Indeno(1,2,3-cd)pyrene	625	105	100	105	106	100	106	10-171	1	30
Isophorone	625	77.5	100	78	78.7	100	79	21-196	1	30
N-Nitrosodi-n-propylamine	625	74.8	100	75	74.1	100	74	10-230	<1	30
N-Nitrosodimethylamine	625	47.1	100	47	43.5	100	44	33-70	8	30
N-Nitrosodiphenylamine	625	89.6	100	90	88.4	100	88	50-117	1	30
Naphthalene	625	69.7	100	70	70.2	100	70	21-133	<1	30
Nitrobenzene	625	80.3	100	80	79.8	100	80	35-180	<1	30
Pentachlorophenol (PCP)	625	97.1	100	97	100	100	100	14-176	3	30
Phenanthrene	625	89.3	100	89	91.1	100	91	54-120	2	30
Phenol	625	40.0	100	40	33.7	100	34	10-112	17	30
Pyrene	625	95.4	100	95	97.5	100	97	52-115	2	30

Semivolatile Organic Compounds by GC

ALS Environmental—Rochester Laboratory
1565 Jefferson Road, Building 300, Suite 360, Rochester, NY 14623
Phone (585) 288-5380 Fax (585) 288-8475
www.alsglobal.com

ALS Group USA, Corp.
dba ALS Environmental

QA/QC Report

Client:	Ecology And Environment, Incorporated	**Service Request:**	R1612036
Project:	Davis Howland Oil Company Site/10C3074.0012.08	**Date Collected:**	11/11/16
Sample Matrix:	Water	**Date Received:**	11/11/16
		Date Analyzed:	11/23/16
		Date Extracted:	11/15/16

Duplicate Matrix Spike Summary
NY Hydrocarbon Scan, Modified to Combine Methods 310-13, -14, and -15, and for Matrix

Sample Name:	MW-14R-111116	**Units:**	ug/L
Lab Code:	R1612036-005	**Basis:**	NA
Analysis Method:	NY 310-13 Modified		
Prep Method:	Method		

		Matrix Spike RQ1613960-04			Duplicate Matrix Spike RQ1613960-05					
Analyte Name	**Sample Result**	**Result**	**Spike Amount**	**% Rec**	**Result**	**Spike Amount**	**% Rec**	**% Rec Limits**	**RPD**	**RPD Limit**
Fuel Oil No. 2	1000 U	4130	4720	88	4310	4720	91	70-136	4	30

Results flagged with an asterisk (*) indicate values outside control criteria.

Results flagged with a pound (#) indicate the control criteria is not applicable.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

Analytical Report

Client:	Ecology And Environment, Incorporated	**Service Request:**	R1612036
Project:	Davis Howland Oil Company Site/10C3074.0012.08	**Date Collected:**	NA
Sample Matrix:	Water	**Date Received:**	NA
Sample Name:	Method Blank	**Units:**	ug/L
Lab Code:	RQ1613960-01	**Basis:**	NA

NY Hydrocarbon Scan, Modified to Combine Methods 310-13, -14, and -15, and for Matrix

Analysis Method: NY 310-13 Modified
Prep Method: Method

Analyte Name	Result		MRL	Dil.	Date Analyzed	Date Extracted	Q
Fuel Oil No. 2	1000	U	1000	1	11/22/16 21:48	11/15/16	
Fuel Oil No. 4	1000	U	1000	1	11/22/16 21:48	11/15/16	
Fuel Oil No. 6	1000	U	1000	1	11/22/16 21:48	11/15/16	
Gasoline	Absence	U	-	1	11/22/16 21:48	11/15/16	
Kerosene	1000	U	1000	1	11/22/16 21:48	11/15/16	
Lube Oil	Absence	U	-	1	11/22/16 21:48	11/15/16	
n-Dodecane	1000	U	1000	1	11/22/16 21:48	11/15/16	

ALS Group USA, Corp.
dba ALS Environmental

QA/QC Report

Client: Ecology And Environment, Incorporated
Project: Davis Howland Oil Company Site/10C3074.0012.08
Sample Matrix: Water

Service Request: R1612036
Date Analyzed: 11/22/16

Duplicate Lab Control Sample Summary
NY Hydrocarbon Scan, Modified to Combine Methods 310-13, -14, and -15, and for Matrix

Units:ug/L
Basis:NA

		Lab Control Sample			Duplicate Lab Control Sample					
		RQ1613960-02			RQ1613960-03					
Analyte Name	**Analytical Method**	**Result**	**Spike Amount**	**% Rec**	**Result**	**Spike Amount**	**% Rec**	**% Rec Limits**	**RPD**	**RPD Limit**
Fuel Oil No. 2	NY 310-13 Modified	4000	5000	80	5500	5000	110	34-138	32*	30

November 28, 2016 Service Request No:R1612099

Ms. Ashlee Patnode
Ecology And Environment, Incorporated
368 Pleasantview Drive
Lancaster, NY 14086

Laboratory Results for: Davis Howland Oil Company Site - Semiannual Water

Dear Ms.Patnode,

Enclosed are the results of the sample(s) submitted to our laboratory November 15, 2016
For your reference, these analyses have been assigned our service request number **R1612099.**

All analyses were performed according to our laboratory's quality assurance program. The test results meet requirements of the NELAP standards except as noted in the case narrative report. All results are intended to be considered in their entirety, and ALS Environmental is not responsible for use of less than the complete report. Results apply only to the items submitted to the laboratory for analysis and individual items (samples) analyzed, as listed in the report. The measurement uncertainty of the results included in this report is within that expected when using the prescribed method(s) for analysis of these samples, and represented by Laboratory Control Sample control limits. Any events, such as QC failures, which may add to the uncertainty are explained in the report narrative.

Please contact me if you have any questions. My extension is 7472. You may also contact me via email at Janice.Jaeger@alsglobal.com.

Respectfully submitted,

ALS Group USA, Corp. dba ALS Environmental

Janice Jaeger
Project Manager

ADDRESS 1565 Jefferson Road, Building 300, Suite 360, Rochester, NY 14623
PHONE +1 585 288 5380 | FAX +1 585 288 8475
ALS Group USA, Corp.
dba ALS Environmental

Narrative Documents

ALS Environmental—Rochester Laboratory
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1565 Jefferson Rd, Building 300, Rochester, NY 14623 | 585-288-5380 | www.alsglobal.com

Client: Ecology And Environment, Incorporated
Project: Davis Howland Oil Company Site - Semiannual
Sample Matrix: Water

Service Request:R1612099
Date Received:11/15/16

CASE NARRATIVE

All analyses were performed consistent with the quality assurance program of ALS Environmental. This report contains analytical results for samples designated for Tier II data deliverables, including results of QC samples analyzed from this delivery group. Analytical procedures performed by the lab are validated in accordance with NELAC standards. Any parameters that are not included in the lab's NELAC accreditation are identified on a "Non-Certified Analytes" report in the Miscellaneous Forms Section of this report. Individual analytical results requiring further explanation are flagged with qualifiers and/or discussed below. The flags are explained in the Report Qualifiers and Definitions page in the Miscellaneous Forms section of this report.

Sample Receipt

Eleven water samples were received for analysis at ALS Environmental on 11/15/2016. Any discrepancies noted upon initial sample inspection are noted on the cooler receipt and preservation form included in this data package. The samples were received in good condition and consistent with the accompanying chain of custody form. Samples are refrigerated at ≤6°C upon receipt at the lab except for aqueous samples designated for metals analyses, which are stored at room temperature.

Volatile Organic Analyses:

No significant anomalies were noted with this analysis.

Semi-Volatile Organic Analyses:

Benzidine has been reported as zero percent recovery in the LCS/LCSD due to a limitation in LIMs. Benzidine was detected at 41% and 44% recovery, respectively, within laboratory limits. The LCS/LCSD is acceptable and should not be flagged on the summary form.

Method 625, 11/23/16: The lower control limit for the spike recovery of the Laboratory Control Sample (LCS) was exceeded for Hexacyclopentadiene. There were no detections of the analyte(s) in the associated field samples. The discrepancy associated with reduced recovery equates to a potential low bias. The analytes affected are flagged in the LCS Summary.

Approved by _____ Date 11/28/2016

SAMPLE DETECTION SUMMARY

CLIENT ID: MW-10R-111416	Lab ID: R1612099-002					
Analyte	**Results**	**Flag**	**MDL**	**PQL**	**Units**	**Method**
1,1-Dichloroethane (1,1-DCA)	6.0	J	2.1	10	ug/L	624
1,1-Dichloroethene (1,1-DCE)	10		2.0	10	ug/L	624
Methylene Chloride	2.0	J	2.0	10	ug/L	624
Tetrachloroethene (PCE)	4.7	J	2.0	10	ug/L	624
Trichloroethene (TCE)	850		2.0	10	ug/L	624
cis-1,2-Dichloroethene	28		2.0	10	ug/L	624
trans-1,2-Dichloroethene	8.1	J	2.0	10	ug/L	624
Gasoline	Absence	U			N/A	NY 310-13
Lube Oil	Absence	U			N/A	NY 310-13

CLIENT ID: MW-1S-111416	Lab ID: R1612099-003					
Analyte	**Results**	**Flag**	**MDL**	**PQL**	**Units**	**Method**
1,1,1-Trichloroethane (TCA)	2.3		0.20	1.0	ug/L	624
1,1-Dichloroethane (1,1-DCA)	1.3		0.21	1.0	ug/L	624
1,1-Dichloroethene (1,1-DCE)	0.79	J	0.20	1.0	ug/L	624
1,2-Dichloroethane	0.39	J	0.20	1.0	ug/L	624
Chlorobenzene	0.26	J	0.20	1.0	ug/L	624
Chloroform	0.26	J	0.20	1.0	ug/L	624
Tetrachloroethene (PCE)	4.0		0.20	1.0	ug/L	624
Trichloroethene (TCE)	25		0.20	1.0	ug/L	624
cis-1,2-Dichloroethene	41		0.20	1.0	ug/L	624
trans-1,2-Dichloroethene	0.23	J	0.20	1.0	ug/L	624
Gasoline	Absence	U			N/A	NY 310-13
Lube Oil	Absence	U			N/A	NY 310-13

CLIENT ID: MW-16R-111516	Lab ID: R1612099-004					
Analyte	**Results**	**Flag**	**MDL**	**PQL**	**Units**	**Method**
1,1-Dichloroethane (1,1-DCA)	25		0.21	1.0	ug/L	624
1,1-Dichloroethene (1,1-DCE)	8.8		0.20	1.0	ug/L	624
Benzene	0.31	J	0.20	1.0	ug/L	624
Tetrachloroethene (PCE)	0.21	J	0.20	1.0	ug/L	624
Trichloroethene (TCE)	0.93	J	0.20	1.0	ug/L	624
Vinyl Chloride	160		0.20	1.0	ug/L	624
cis-1,2-Dichloroethene	520	D	1.0	5.0	ug/L	624
trans-1,2-Dichloroethene	2.5		0.20	1.0	ug/L	624
Gasoline	Absence	U			N/A	NY 310-13
Lube Oil	Absence	U			N/A	NY 310-13

CLIENT ID: PZ-3-111516	Lab ID: R1612099-005					
Analyte	**Results**	**Flag**	**MDL**	**PQL**	**Units**	**Method**
1,1,1-Trichloroethane (TCA)	0.31	J	0.20	1.0	ug/L	624
1,1-Dichloroethane (1,1-DCA)	5.9		0.21	1.0	ug/L	624
1,1-Dichloroethene (1,1-DCE)	0.25	J	0.20	1.0	ug/L	624

SAMPLE DETECTION SUMMARY

CLIENT ID: PZ-3-111516	Lab ID: R1612099-005					
Analyte	**Results**	**Flag**	**MDL**	**PQL**	**Units**	**Method**
Tetrachloroethene (PCE)	0.54	J	0.20	1.0	ug/L	624
Trichloroethene (TCE)	2.2		0.20	1.0	ug/L	624
Vinyl Chloride	0.93	J	0.20	1.0	ug/L	624
cis-1,2-Dichloroethene	9.4		0.20	1.0	ug/L	624
trans-1,2-Dichloroethene	0.49	J	0.20	1.0	ug/L	624
Diethyl Phthalate	8.5		1.0	4.7	ug/L	625
Gasoline	Absence	U			N/A	NY 310-13
Lube Oil	Absence	U			N/A	NY 310-13

CLIENT ID: PZ-2-111516	Lab ID: R1612099-006					
Analyte	**Results**	**Flag**	**MDL**	**PQL**	**Units**	**Method**
1,1,1-Trichloroethane (TCA)	1.2		0.20	1.0	ug/L	624
1,1-Dichloroethane (1,1-DCA)	0.56	J	0.21	1.0	ug/L	624
Tetrachloroethene (PCE)	1.6		0.20	1.0	ug/L	624
Trichloroethene (TCE)	1.9		0.20	1.0	ug/L	624
cis-1,2-Dichloroethene	1.6		0.20	1.0	ug/L	624
Gasoline	Absence	U			N/A	NY 310-13
Lube Oil	Absence	U			N/A	NY 310-13

CLIENT ID: PW2-111516	Lab ID: R1612099-007					
Analyte	**Results**	**Flag**	**MDL**	**PQL**	**Units**	**Method**
1,1,1-Trichloroethane (TCA)	1.6		0.20	1.0	ug/L	624
1,1-Dichloroethane (1,1-DCA)	17		0.21	1.0	ug/L	624
1,1-Dichloroethene (1,1-DCE)	0.36	J	0.20	1.0	ug/L	624
Tetrachloroethene (PCE)	2.5		0.20	1.0	ug/L	624
Trichloroethene (TCE)	6.7		0.20	1.0	ug/L	624
cis-1,2-Dichloroethene	10		0.20	1.0	ug/L	624
Gasoline	Absence	U			N/A	NY 310-13
Lube Oil	Absence	U			N/A	NY 310-13

CLIENT ID: P-2-111516	Lab ID: R1612099-008					
Analyte	**Results**	**Flag**	**MDL**	**PQL**	**Units**	**Method**
1,1,1-Trichloroethane (TCA)	28		0.40	2.0	ug/L	624
1,1-Dichloroethane (1,1-DCA)	55		0.42	2.0	ug/L	624
1,1-Dichloroethene (1,1-DCE)	1.7	J	0.40	2.0	ug/L	624
Tetrachloroethene (PCE)	40		0.40	2.0	ug/L	624
Trichloroethene (TCE)	42		0.40	2.0	ug/L	624
Vinyl Chloride	0.84	J	0.40	2.0	ug/L	624
cis-1,2-Dichloroethene	240		0.40	2.0	ug/L	624
trans-1,2-Dichloroethene	2.1		0.40	2.0	ug/L	624
Gasoline	Absence	U			N/A	NY 310-13
Lube Oil	Absence	U			N/A	NY 310-13

SAMPLE DETECTION SUMMARY

CLIENT ID: P-3-111516	Lab ID: R1612099-009					
Analyte	**Results**	**Flag**	**MDL**	**PQL**	**Units**	**Method**
1,1,1-Trichloroethane (TCA)	230	D	4.0	20	ug/L	624
1,1,2-Trichloroethane	14		0.20	1.0	ug/L	624
1,1-Dichloroethane (1,1-DCA)	52		0.21	1.0	ug/L	624
1,1-Dichloroethene (1,1-DCE)	7.8		0.20	1.0	ug/L	624
1,2-Dichlorobenzene	2.3		0.25	1.0	ug/L	624
1,3-Dichlorobenzene	1.5		0.22	1.0	ug/L	624
1,4-Dichlorobenzene	1.1		0.20	1.0	ug/L	624
Benzene	0.56	J	0.20	1.0	ug/L	624
Chloroform	1.5		0.20	1.0	ug/L	624
Tetrachloroethene (PCE)	1400	D	4.0	20	ug/L	624
Trichloroethene (TCE)	320	D	4.0	20	ug/L	624
cis-1,2-Dichloroethene	1200	D	4.0	20	ug/L	624
trans-1,2-Dichloroethene	2.0		0.20	1.0	ug/L	624
Gasoline	Absence	U			N/A	NY 310-13
Lube Oil	Absence	U			N/A	NY 310-13

CLIENT ID: PZ-4-111516	Lab ID: R1612099-010					
Analyte	**Results**	**Flag**	**MDL**	**PQL**	**Units**	**Method**
1,1,1-Trichloroethane (TCA)	22		0.40	2.0	ug/L	624
1,1-Dichloroethane (1,1-DCA)	14		0.42	2.0	ug/L	624
1,1-Dichloroethene (1,1-DCE)	4.0		0.40	2.0	ug/L	624
Tetrachloroethene (PCE)	10		0.40	2.0	ug/L	624
Trichloroethene (TCE)	200		0.40	2.0	ug/L	624
Vinyl Chloride	24		0.40	2.0	ug/L	624
cis-1,2-Dichloroethene	310		0.40	2.0	ug/L	624
trans-1,2-Dichloroethene	3.8		0.40	2.0	ug/L	624
Fluoranthene	1.2	J	1.0	4.7	ug/L	625
Pyrene	1.0	J	1.0	4.7	ug/L	625
Gasoline	Absence	U			N/A	NY 310-13
Lube Oil	Absence	U			N/A	NY 310-13

Sample Receipt Information

ALS Environmental—Rochester Laboratory
1565 Jefferson Road, Building 300, Suite 360, Rochester, NY 14623
Phone (585) 288-5380 Fax (585) 288-8475
www.alsglobal.com

Client: Ecology And Environment, Incorporated **Service Request:**R1612099

Project: Davis Howland Oil Company Site - Semiannual Water/10C3074.0012.08

SAMPLE CROSS-REFERENCE

R1612099-001	TB111416	11/14/2016	0800
R1612099-002	MW-10R-111416	11/14/2016	1240
R1612099-003	MW-1S-111416	11/14/2016	1445
R1612099-004	MW-16R-111516	11/15/2016	0915
R1612099-005	PZ-3-111516	11/15/2016	1348
R1612099-006	PZ-2-111516	11/15/2016	1202
R1612099-007	PW2-111516	11/15/2016	1140
R1612099-008	P-2-111516	11/15/2016	1210
R1612099-009	P-3-111516	11/15/2016	1250
R1612099-010	PZ-4-111516	11/15/2016	1100
R1612099-011	FB-111516	11/15/2016	1400

CHAIN OF CUSTODY/LABORATORY ANALYSIS REQUEST FORM

41765

1565 Jefferson Road, Building 300, Suite 360 • Rochester, NY 14623 | +1 585 288 5380 +1 585 288 8475 (fax) PAGE 1 OF 1

Project Name: Davis Howland	Project Number: 10C3074.0012.08
Project Manager: Ashley Patnode	Report CC:
Company/Address: 368 pleasant view Drive, Lancaster NY 14068	
Phone #: 716 684-8060	Email: APatnode@ENE.com
Sampler's Signature: Lawrence Roell / Tim Dillon	Sampler's Printed Name: Lawrence Roell / Tim Dillon

ANALYSIS REQUESTED *(Include Method Number and Container Preservative)*

CLIENT SAMPLE ID	FOR OFFICE USE ONLY LAB ID	SAMPLING DATE	SAMPLING TIME	MATRIX	NUMBER OF CONTAINERS	PRESERVATIVE	0	0						0							
						GC/MS VOAs ◦ 8260 ◦ 624 ◦ CLP	GC/MS SVOAs ◦ 8270 ◦ 625	GC VOAs ◦ 8021 ◦ 601/602	PESTICIDES ◦ 8081 ◦ 608	PCBs ◦ 8082 ◦ 608	METALS, TOTAL (List in comments below)	METALS, DISSOLVED (List in comments below)	TDPH								
TB111416		11/14/16	8:00	GW	3	X															
MW-10R-111416		11/14/16	12:40	GW	7	3	2						2								
MW-1S-111416		11/14/16	14:45	GW	7	3	2						2								
MW-16R-111516		11/15/16	09:15	GW	7	3	2						2								
PZ-3-111516		11/15/16	13:48	GW	7	3	2						2								
PZ-2-111516		11/15/16	12:02	GW	7	3	2						2								
PW2-111516		11/15/16	11:40	GW	7	3	2						2								
P-2-111516		11/15/16	12:10	GW	7	3	2						2								
P-3-111516		11/15/16	12:50	GW	7	3	2						2								
PZ-4-111516		11/15/16	11:00	GW	7	3	2						2								
FB-111516		11/15/16	1400	GW	2	2							2								

Preservative Key
0. NONE
1. HCL
2. HNO_3
3. H_2SO_4
4. NaOH
5. Zn. Acetate
6. MeOH
7. $NaHSO_4$
8. Other _____

REMARKS/ ALTERNATE DESCRIPTION

SPECIAL INSTRUCTIONS/COMMENTS
Metals

See QAPP ☐

STATE WHERE SAMPLES WERE COLLECTED

TURNAROUND REQUIREMENTS
_____ RUSH (SURCHARGES APPLY)
_____ 1 day _____ 2 day _____ 3 day
_____ 4 day _____ 5 day
As per Contract
REQUESTED REPORT DATE
_____

REPORT REQUIREMENTS
_____ I. Results Only
_____ II. Results + QC Summaries (LCS, DUP, MS/MSD as required)
✓ III. Results + QC and Calibration Summaries
_____ IV. Data Validation Report with Raw Data
See SOP
Edata _____Yes _____No

INVOICE INFORMATION
PO #
BILL TO:

RELINQUISHED BY	RECEIVED BY	RELINQUISHED BY	RECEIVED BY	RELINQUISHED BY	RECEIVED BY
Signature: Lawrence Roell	Signature:	Signature:	Signature:	Signature:	
Printed Name: Lawrence Roell	Printed Name: Daniel Ward	Printed Name:	Printed Name:	Printed Name:	
Firm: E cology Environment	Firm: ALS	Firm:	Firm:	Firm:	
Date/Time: 11/15/16	Date/Time: 11/15/16/1578	Date/Time:	Date/Time:	Date/Time:	Date/Time:

R1612099 5
Ecology And Environment, Incorporated
Davis Howland Oil Company Site - Semiannual Wa

Distribution: White - Lab Copy; Yellow - Return to Originator

Cooler Receipt and Preservation Check Form

R1612099 5
Ecology And Environment, Incorporated
Davis Howland Oil Company Site - Semiannual Wa

Project/Client E+E Folder Number R1612099

Cooler received on 11/15/16 by: SW/GC

COURIER: ALS UPS FEDEX VELOCITY CLIENT

1	Were **Custody seals** on outside of cooler?	Y (N)	5a	**Perchlorate** samples have required headspace?	Y N (NA)
2	**Custody papers** properly completed (ink, signed)?	(Y) N	5b	Did VOA vials, Alk,or Sulfide have sig* **bubbles**?	Y (N) NA
3	Did all bottles arrive in good **condition** (unbroken)?	(Y) N	6	Where did the bottles originate?	ALS/ROC CLIENT
4	Circle: **Wet Ice Dry Ice Gel packs** present?	(Y) N	7	Soil VOA received as:	Bulk Encore 5035set (NA)

8. Temperature Readings Date: 11/15/16 Time: 1526 ID: (IR#7) IR#8 From: ~~Temp Blank~~ Sample Bottle

Observed Temp (°C)	1.4	1.5	0.1	0.5	3.7		
Correction Factor (°C)	+0.9	+0.9	+0.9	+0.9	+0.9		
Corrected Temp (°C)	2.3	2.4	1.0	1.4	4.6		
Within 0-6°C?	(Y) N	(Y) N	(Y) N	(Y) N	(Y) N	Y N	Y N
If <0°C, were samples frozen?	Y N	Y N	Y N	Y N	Y N	Y N	Y N

If out of Temperature, note packing/ice condition: _____ Ice melted Poorly Packed Same Day Rule

&Client Approval to Run Samples: _____ Standing Approval Client aware at drop-off Client notified by: _____

All samples held in storage location: R-307 by SW/GC on 11/15/16 at 1526
5035 samples placed in storage location: _____ by _____ on _____ at _____

Cooler Breakdown: Date: 11/15/16 Time: 1902 by: SW

1. Were all bottle labels complete (*i.e.* analysis, preservation, etc.)? (YES) NO
2. Did all bottle labels and tags agree with custody papers? (YES) NO
3. Were correct containers used for the tests indicated? (YES) NO
4. Were 5035 vials acceptable (no extra labels, not leaking)? YES NO (NA)
5. Air Samples: Cassettes / Tubes Intact Canisters Pressurized Tedlar® Bags Inflated (NA)

Explain any discrepancies:

pH	Reagent	Yes	No	Lot Received	Exp	Sample ID	Vol. Added	Lot Added	Final pH
≥12	NaOH								
≤2	HNO_3								
≤2	H_2SO_4								
<4	$NaHSO_4$								
Residual Chlorine (-)	For CN Phenol and 522			If +, contact PM to add $Na_2S_2O_3$ (CN), ascorbic (phenol).					
	$Na_2S_2O_3$	-	-						
	ZnAcetate	-	-						
	HCl	**	**						

**Not to be tested before analysis – pH tested and recorded by VOAs on a separate worksheet

Yes=All samples OK

No=Samples were preserved at The lab as listed

PM OK to Adjust: _____

Bottle lot numbers: 090516-1BLT, C0-722-001

Other Comments:

CLRES	BULK
DO	FLDT
HPROD	HGFB
HTR	LL3541
PH	SUB
SO3	MARRS
ALS	REV

PC Secondary Review: JMS 11/16/16

*significant air bubbles: VOA > 5-6 mm : WC >1 in. diameter

CHAIN OF CUSTODY/LABORATORY ANALYSIS REQUEST FORM

41765

1565 Jefferson Road, Building 300, Suite 360 • Rochester, NY 14623 | +1 585 288 5380 +1 585 288 8475 (fax) PAGE 1 OF 1

Project Name: Davis Howland	Project Number: 10C3074.0012.08
Project Manager: Ashley Patnode	Report CC:
Company/Address: 368 Pleasant Views Drive, Lancaster NY 14068	
Phone #: 716 684-8060	Email: APatnode@ENE.com
Sampler's Signature: Lawrence Read / Tim Oiler	Sampler's Printed Name: Lawrence Read / Tim Oiler

ANALYSIS REQUESTED *(Include Method Number and Container Preservative)*

CLIENT SAMPLE ID	FOR OFFICE USE ONLY LAB ID	SAMPLING DATE	SAMPLING TIME	MATRIX	NUMBER OF CONTAINERS	GC/MS VOAs ○ 8260 ○ 624 ○ CLP	GC/MS SVOAs ○ 8270 ○ 625	GC VOAs ○ 8021 ○ 601/602	PESTICIDES ○ 8081 ○ 608	PCBs ○ 8082 ○ 608	METALS, TOTAL (List in comments below)	METALS, DISSOLVED (List in comments below)	TAL PH							
PRESERVATIVE						0	0							0						
TB111416		11/14/16	8:00	GW	3	X														
MW-10R-111416		11/14/16	12:40	GW	7	3	2						2							
MW-1S-111416		11/14/16	14:45	GW	7	3	2						2							
MW-16R-111516		11/15/16	09:15	GW	7	3	2						2							
PZ-3-111516		11/15/16	13:48	GW	7	3	2						2							
PZ-2-111516		11/15/16	12:02	GW	7	3	2						2							
PW2-111516		11/15/16	11:40	GW	7	3	2						2							
P-2-111516		11/15/16	12:10	GW	7	3	2						2							
P-3-111516		11/15/16	12:50	GW	7	3	2						2							
PZ-4-111516		11/15/16	11:00	GW	7	3	2						2							
FB-111516		11/15/16	1400	GW	2	2							2							

Preservative Key
0. NONE
1. HCL
2. HNO_3
3. H_2SO_4
4. NaOH
5. Zn. Acetate
6. MeOH
7. $NaHSO_4$
8. Other _____

REMARKS/ ALTERNATE DESCRIPTION

SPECIAL INSTRUCTIONS/COMMENTS
Metals

See QAPP ☐

TURNAROUND REQUIREMENTS
_____ RUSH (SURCHARGES APPLY)
_____ 1 day ____2 day ____3 day
_____ 4 day ____5 day
As per Contract
REQUESTED REPORT DATE
_____

REPORT REQUIREMENTS
____ I. Results Only
____ II. Results + QC Summaries (LCS, DUP, MS/MSD as required)
✓ III. Results + QC and Calibration Summaries
____ IV. Data Validation Report with Raw Data
see SOP
Edata ____Yes ____No

INVOICE INFORMATION
PO #
BILL TO:

STATE WHERE SAMPLES WERE COLLECTED

RELINQUISHED BY	RECEIVED BY	RELINQUISHED BY	RECEIVED BY	RELINQUISHED BY	RECEIVED BY
Signature: Lawrence Read	Signature:	Signature:	Signature:	Signature:	
Printed Name: Lawrence Read	Printed Name: Daniel Ward	Printed Name:	Printed Name:	Printed Name:	
Firm: Ecology Environment	Firm: ALS	Firm:	Firm:	Firm:	
Date/Time: 11/15/16	Date/Time: 11/15/16/1518	Date/Time:	Date/Time:	Date/Time:	Date/Time:

R1612099 5
Ecology And Environment, Incorporated
Davis Howland Oil Company Site - Semiannual Wa

Distribution: White - Lab Copy; Yellow - Return to Originator

Cooler Receipt and Preservation Check Form

R1612099 5
Ecology And Environment, Incorporated
Davis Howland Oil Company Site - Semiannual Wa

Project/Client E+E Folder Number R1612099

Cooler received on 11/15/16 by: DW/GL

COURIER: ALS UPS FEDEX VELOCITY (CLIENT)

1	Were **Custody seals** on outside of cooler?	Y (N)	5a	**Perchlorate** samples have required headspace?	Y N (NA)
2	**Custody papers** properly completed (ink, signed)?	(Y) N	5b	Did VOA vials, Alk,or Sulfide have sig* **bubbles**?	Y (N) NA
3	Did all bottles arrive in good **condition** (unbroken)?	(Y) N	6	Where did the bottles originate?	ALS/ROC CLIENT
4	Circle: **Wet Ice Dry Ice Gel packs** present?	(Y) N	7	Soil VOA received as:	Bulk Encore 5035set (NA)

8. Temperature Readings Date: 11/15/16 Time: 1526 ID: IR#7 IR#8 From: ~~Temp Blank~~ Sample Bottle

Observed Temp (°C)	1.4°	1.5°	0.1	0.5°	3.7°		
Correction Factor (°C)	+0.9°	+0.9°	+0.9	+0.9°	+0.9°		
Corrected Temp (°C)	2.3°	2.4°	1.0	1.4°	4.6°		
Within 0-6°C?	(Y) N	(Y) N	(Y) N	(Y) N	(Y) N	Y N	Y N
If<0°C, were samples frozen?	Y N	Y N	Y N	Y N	Y N	Y N	Y N

If out of Temperature, note packing/ice condition: _____ Ice melted Poorly Packed Same Day Rule

&Client Approval to Run Samples: _____ Standing Approval Client aware at drop-off Client notified by: _____

All samples held in storage location: R-007 by DW/GL on 11/15/16 at 1526
5035 samples placed in storage location: _____ by _____ on _____ at _____

Cooler Breakdown: Date: 11/15/16 Time: 1902 by: DW

1. Were all bottle labels complete (*i.e.* analysis, preservation, etc.)? (YES) NO
2. Did all bottle labels and tags agree with custody papers? (YES) NO
3. Were correct containers used for the tests indicated? (YES) NO
4. Were 5035 vials acceptable (no extra labels, not leaking)? YES NO (N/A)
5. Air Samples: Cassettes / Tubes Intact Canisters Pressurized Tedlar® Bags Inflated (N/A)

Explain any discrepancies:

pH	Reagent	Yes	No	Lot Received	Exp	Sample ID	Vol. Added	Lot Added	Final pH
≥12	NaOH								
≤2	HNO_3								
≤2	H_2SO_4								
<4	$NaHSO_4$								
Residual Chlorine (-)	For CN Phenol and 522			If +, contact PM to add $Na_2S_2O_3$ (CN), ascorbic (phenol).					
	$Na_2S_2O_3$	-	-						
	ZnAcetate	-	-						
	HCl	**	**						

**Not to be tested before analysis – pH tested and recorded by VOAs on a separate worksheet

Yes=All samples OK

No=Samples were preserved at The lab as listed

PM OK to Adjust: _____

Bottle lot numbers: 090516-1BLT, Co-722-001

Other Comments:

CLRES	BULK
DO	FLDT
HPROD	HGFB
HTR	LL3541
PH	SUB
SO3	MARRS
ALS	REV

PC Secondary Review: JMR 11/16/16

*significant air bubbles: VOA > 5-6 mm : WC >1 in. diameter

Miscellaneous Forms

ALS Environmental—Rochester Laboratory
1565 Jefferson Road, Building 300, Suite 360, Rochester, NY 14623
Phone (585) 288-5380 Fax (585) 288-8475
www.alsglobal.com

REPORT QUALIFIERS AND DEFINITIONS

U	Analyte was analyzed for but not detected. The sample quantitation limit has been corrected for dilution and for percent moisture, unless otherwise noted in the case narrative.
J	Estimated value due to either being a Tentatively Identified Compound (TIC) or that the concentration is between the MRL and the MDL. Concentrations are not verified within the linear range of the calibration. For DoD: concentration >40% difference between two GC columns (pesticides/Arclors).
B	Analyte was also detected in the associated method blank at a concentration that may have contributed to the sample result.
E	Inorganics- Concentration is estimated due to the serial dilution was outside control limits.
E	Organics- Concentration has exceeded the calibration range for that specific analysis.
D	Concentration is a result of a dilution, typically a secondary analysis of the sample due to exceeding the calibration range or that a surrogate has been diluted out of the sample and cannot be assessed.
*	Indicates that a quality control parameter has exceeded laboratory limits. Under the ñNotesò column of the Form I, this qualifier denotes analysis was performed out of Holding Time.
H	Analysis was performed out of hold time for tests that have an ñimmediateò hold time criteria.
#	Spike was diluted out.
+	Correlation coefficient for MSA is <0.995.
N	Inorganics- Matrix spike recovery was outside laboratory limits.
N	Organics- Presumptive evidence of a compound (reported as a TIC) based on the MS library search.
S	Concentration has been determined using Method of Standard Additions (MSA).
W	Post-Digestion Spike recovery is outside control limits and the sample absorbance is <50% of the spike absorbance.
P	Concentration >40% (25% for CLP) difference between the two GC columns.
C	Confirmed by GC/MS
Q	DoD reports: indicates a pesticide/Aroclor is not confirmed (Ó100% Difference between two GC columns).
X	See Case Narrative for discussion.
MRL LOQ	Method Reporting Limit. Also known as: Limit of Quantitation (LOQ) The lowest concentration at which the method analyte may be reliably quantified under the method conditions.
MDL	Method Detection Limit. A statistical value derived from a study designed to provide the lowest concentration that will be detected 99% of the time. Values between the MDL and MRL are estimated (see J qualifier).
LOD	Limit of Detection. A value at or above the MDL which has been verified to be detectable.
ND	Non-Detect. Analyte was not detected at the concentration listed. Same as U qualifier.

Rochester Lab ID # for State Certifications[1]

Connecticut ID # PH0556	Maine ID #NY0032	New Hampshire ID # 294100 A/B
Delaware Accredited	Nebraska Accredited	
DoD ELAP #65817	New Jersey ID # NY004	Pennsylvania ID# 68-786
Florida ID # E87674	New York ID # 10145	Rhode Island ID # 158
Illinois ID #200047	North Carolina #676	Virginia #460167

[1] Analyses were performed according to our laboratoryôs NELAP-approved quality assurance program and any applicable state or agency requirements. The test results meet requirements of the current NELAP/TNI standards or state or agency requirements, where applicable, except as noted in the case narrative. Since not all analyte/method/matrix combinations are offered for state/NELAC accreditation, this report may contain results which are not accredited. For a specific list of accredited analytes, contact the laboratory or go to http://www.alsglobal.com/en/Our-Services/Life-Sciences/Environmental/Downloads/North-America-Downloads

ALS Laboratory Group

Acronyms

ASTM	American Society for Testing and Materials
A2LA	American Association for Laboratory Accreditation
CARB	California Air Resources Board
CAS Number	Chemical Abstract Service registry Number
CFC	Chlorofluorocarbon
CFU	Colony-Forming Unit
DEC	Department of Environmental Conservation
DEQ	Department of Environmental Quality
DHS	Department of Health Services
DOE	Department of Ecology
DOH	Department of Health
EPA	U. S. Environmental Protection Agency
ELAP	Environmental Laboratory Accreditation Program
GC	Gas Chromatography
GC/MS	Gas Chromatography/Mass Spectrometry
LUFT	Leaking Underground Fuel Tank
M	Modified
MCL	Maximum Contaminant Level is the highest permissible concentration of a substance allowed in drinking water as established by the USEPA.
MDL	Method Detection Limit
MPN	Most Probable Number
MRL	Method Reporting Limit
NA	Not Applicable
NC	Not Calculated
NCASI	National Council of the Paper Industry for Air and Stream Improvement
ND	Not Detected
NIOSH	National Institute for Occupational Safety and Health
PQL	Practical Quantitation Limit
RCRA	Resource Conservation and Recovery Act
SIM	Selected Ion Monitoring
TPH	Total Petroleum Hydrocarbons
tr	Trace level is the concentration of an analyte that is less than the PQL but greater than or equal to the MDL.

Client: Ecology And Environment, Incorporated **Service Request:** R1612099
Project: Davis Howland Oil Company Site - Semiannual Water/10C3074.0012.08

Non-Certified Analytes

Certifying Agency: New York Department of Health

Method	Matrix	Analyte
625	Water	1,2-Diphenylhydrazine
NY 310-13 Modified	Water	Fuel Oil No. 2
NY 310-13 Modified	Water	Fuel Oil No. 4
NY 310-13 Modified	Water	Fuel Oil No. 6
NY 310-13 Modified	Water	Gasoline
NY 310-13 Modified	Water	Kerosene
NY 310-13 Modified	Water	Lube Oil
NY 310-13 Modified	Water	n-Dodecane

Client:	Ecology And Environment, Incorporated	**Service Request:**	R1612099
Project:	Davis Howland Oil Company Site - Semiannual Water/10C3074.0012.08		

Sample Name:	TB111416	**Date Collected:**	11/14/16
Lab Code:	R1612099-001	**Date Received:**	11/15/16
Sample Matrix:	Water		

Analysis Method	Extracted/Digested By	Analyzed By
624		MCYMBAL

Sample Name:	MW-10R-111416	**Date Collected:**	11/14/16
Lab Code:	R1612099-002	**Date Received:**	11/15/16
Sample Matrix:	Water		

Analysis Method	Extracted/Digested By	Analyzed By
624		MCYMBAL
625	DMURPHY	JMISIUREWICZ
NY 310-13 Modified	DMURPHY	AMOSES

Sample Name:	MW-1S-111416	**Date Collected:**	11/14/16
Lab Code:	R1612099-003	**Date Received:**	11/15/16
Sample Matrix:	Water		

Analysis Method	Extracted/Digested By	Analyzed By
624		MCYMBAL
625	DMURPHY	JMISIUREWICZ
NY 310-13 Modified	DMURPHY	AMOSES

Sample Name:	MW-16R-111516	**Date Collected:**	11/15/16
Lab Code:	R1612099-004	**Date Received:**	11/15/16
Sample Matrix:	Water		

Analysis Method	Extracted/Digested By	Analyzed By
624		MCYMBAL
625	DMURPHY	JMISIUREWICZ
NY 310-13 Modified	DMURPHY	AMOSES

Client: Ecology And Environment, Incorporated
Project: Davis Howland Oil Company Site - Semiannual Water/10C3074.0012.08
Service Request: R1612099

Sample Name: PZ-3-111516
Lab Code: R1612099-005
Sample Matrix: Water
Date Collected: 11/15/16
Date Received: 11/15/16

Analysis Method	Extracted/Digested By	Analyzed By
624		MCYMBAL
625	DMURPHY	JMISIUREWICZ
NY 310-13 Modified	DMURPHY	AMOSES

Sample Name: PZ-2-111516
Lab Code: R1612099-006
Sample Matrix: Water
Date Collected: 11/15/16
Date Received: 11/15/16

Analysis Method	Extracted/Digested By	Analyzed By
624		MCYMBAL
625	DMURPHY	JMISIUREWICZ
NY 310-13 Modified	DMURPHY	AMOSES

Sample Name: PW2-111516
Lab Code: R1612099-007
Sample Matrix: Water
Date Collected: 11/15/16
Date Received: 11/15/16

Analysis Method	Extracted/Digested By	Analyzed By
624		MCYMBAL
625	DMURPHY	JMISIUREWICZ
NY 310-13 Modified	DMURPHY	AMOSES

Sample Name: P-2-111516
Lab Code: R1612099-008
Sample Matrix: Water
Date Collected: 11/15/16
Date Received: 11/15/16

Analysis Method	Extracted/Digested By	Analyzed By
624		MCYMBAL
625	DMURPHY	JMISIUREWICZ
NY 310-13 Modified	DMURPHY	AMOSES

Client:	Ecology And Environment, Incorporated	**Service Request:**	R1612099
Project:	Davis Howland Oil Company Site - Semiannual Water/10C3074.0012.08		

Sample Name:	P-3-111516	**Date Collected:**	11/15/16
Lab Code:	R1612099-009	**Date Received:**	11/15/16
Sample Matrix:	Water		

Analysis Method	Extracted/Digested By	Analyzed By
624		MCYMBAL
625	DMURPHY	JMISIUREWICZ
NY 310-13 Modified	DMURPHY	AMOSES

Sample Name:	PZ-4-111516	**Date Collected:**	11/15/16
Lab Code:	R1612099-010	**Date Received:**	11/15/16
Sample Matrix:	Water		

Analysis Method	Extracted/Digested By	Analyzed By
624		MCYMBAL
625	DMURPHY	JMISIUREWICZ
NY 310-13 Modified	DMURPHY	AMOSES

Sample Name:	FB-111516	**Date Collected:**	11/15/16
Lab Code:	R1612099-011	**Date Received:**	11/15/16
Sample Matrix:	Water		

Analysis Method	Extracted/Digested By	Analyzed By
624		MCYMBAL

The preparation methods associated with this report are found in these tables unless discussed in the case narrative.

Water/Liquid Matrix

Analytical Method	Preparation Method
200.7	200.2
200.8	200.2
6010C	3005A/3010A
6020A	ILM05.3
9014 Cyanide Reactivity	SW846 Ch7, 7.3.4.2
9034 Sulfide Reactivity	SW846 Ch7, 7.3.4.2
9034 Sulfide Acid Soluble	9030B
9056A Bomb (Halogens)	5050A
9066 Manual Distillation	9065
SM 4500-CN-E Residual Cyanide	SM 4500-CN-G
SM 4500-CN-E WAD Cyanide	SM 4500-CN-I

Solid/Soil/Non-Aqueous Matrix

Analytical Method	Preparation Method
6010C	3050B
6020A	3050B
6010C TCLP (1311) extract	3005A/3010A
6010 SPLP (1312) extract	3005A/3010A
7196A	3060A
7199	3060A
9056A Halogens/Halides	5050
300.0 Anions/ 350.1/ 353.2/ SM 2320B/ SM 5210B/ 9056A Anions	DI extraction

For analytical methods not listed, the preparation method is the same as the analytical method reference.

Sample Results

ALS Environmental—Rochester Laboratory
1565 Jefferson Road, Building 300, Suite 360, Rochester, NY 14623
Phone (585) 288-5380 Fax (585) 288-8475
www.alsglobal.com

Volatile Organic Compounds by GC/MS

ALS Environmental—Rochester Laboratory
1565 Jefferson Road, Building 300, Suite 360, Rochester, NY 14623
Phone (585) 288-5380 Fax (585) 288-8475
www.alsglobal.com

Analytical Report

Client:	Ecology And Environment, Incorporated	**Service Request:**	R1612099
Project:	Davis Howland Oil Company Site - Semiannual Water/10C3074.0012.08	**Date Collected:**	11/14/16 08:00
Sample Matrix:	Water	**Date Received:**	11/15/16 15:18
Sample Name:	TB111416	**Units:**	ug/L
Lab Code:	R1612099-001	**Basis:**	NA

Volatile Organic Compounds by GC/MS, Unpreserved

Analysis Method: 624
Prep Method: EPA 5030C

Analyte Name	Result		MRL	MDL	Dil.	Date Analyzed	Q
1,1,1-Trichloroethane (TCA)	1.0	U	1.0	0.20	1	11/17/16 11:35	
1,1,2,2-Tetrachloroethane	1.0	U	1.0	0.20	1	11/17/16 11:35	
1,1,2-Trichloroethane	1.0	U	1.0	0.20	1	11/17/16 11:35	
1,1-Dichloroethane (1,1-DCA)	1.0	U	1.0	0.21	1	11/17/16 11:35	
1,1-Dichloroethene (1,1-DCE)	1.0	U	1.0	0.20	1	11/17/16 11:35	
1,2-Dichlorobenzene	1.0	U	1.0	0.25	1	11/17/16 11:35	
1,2-Dichloroethane	1.0	U	1.0	0.20	1	11/17/16 11:35	
1,2-Dichloropropane	1.0	U	1.0	0.20	1	11/17/16 11:35	
1,3-Dichlorobenzene	1.0	U	1.0	0.22	1	11/17/16 11:35	
1,4-Dichlorobenzene	1.0	U	1.0	0.20	1	11/17/16 11:35	
2-Chloroethyl Vinyl Ether	10	U	10	0.60	1	11/17/16 11:35	
Acetone	5.0	U	5.0	2.8	1	11/17/16 11:35	
Benzene	1.0	U	1.0	0.20	1	11/17/16 11:35	
Bromodichloromethane	1.0	U	1.0	0.20	1	11/17/16 11:35	
Bromoform	1.0	U	1.0	0.20	1	11/17/16 11:35	
Bromomethane	1.0	U	1.0	0.44	1	11/17/16 11:35	
Carbon Tetrachloride	1.0	U	1.0	0.20	1	11/17/16 11:35	
Chlorobenzene	1.0	U	1.0	0.20	1	11/17/16 11:35	
Chloroethane	1.0	U	1.0	0.24	1	11/17/16 11:35	
Chloroform	1.0	U	1.0	0.20	1	11/17/16 11:35	
Chloromethane	1.0	U	1.0	0.20	1	11/17/16 11:35	
Dibromochloromethane	1.0	U	1.0	0.20	1	11/17/16 11:35	
Methylene Chloride	1.0	U	1.0	0.20	1	11/17/16 11:35	
Ethylbenzene	1.0	U	1.0	0.20	1	11/17/16 11:35	
Tetrachloroethene (PCE)	1.0	U	1.0	0.20	1	11/17/16 11:35	
Toluene	1.0	U	1.0	0.20	1	11/17/16 11:35	
Trichloroethene (TCE)	1.0	U	1.0	0.20	1	11/17/16 11:35	
Trichlorofluoromethane (CFC 11)	1.0	U	1.0	0.20	1	11/17/16 11:35	
Vinyl Chloride	1.0	U	1.0	0.20	1	11/17/16 11:35	
cis-1,2-Dichloroethene	1.0	U	1.0	0.20	1	11/17/16 11:35	
cis-1,3-Dichloropropene	1.0	U	1.0	0.20	1	11/17/16 11:35	
m,p-Xylenes	2.0	U	2.0	0.26	1	11/17/16 11:35	
o-Xylene	1.0	U	1.0	0.20	1	11/17/16 11:35	
trans-1,2-Dichloroethene	1.0	U	1.0	0.20	1	11/17/16 11:35	
trans-1,3-Dichloropropene	1.0	U	1.0	0.20	1	11/17/16 11:35	

Analytical Report

Client:	Ecology And Environment, Incorporated	**Service Request:**	R1612099
Project:	Davis Howland Oil Company Site - Semiannual Water/10C3074.0012.08	**Date Collected:**	11/14/16 08:00
Sample Matrix:	Water	**Date Received:**	11/15/16 15:18
Sample Name:	TB111416	**Units:**	ug/L
Lab Code:	R1612099-001	**Basis:**	NA

Volatile Organic Compounds by GC/MS, Unpreserved

Analysis Method: 624
Prep Method: EPA 5030C

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
1,2-Dichloroethane-d4	111	81 - 127	11/17/16 11:35	
4-Bromofluorobenzene	111	79 - 123	11/17/16 11:35	
Toluene-d8	111	83 - 120	11/17/16 11:35	

Analytical Report

Client:	Ecology And Environment, Incorporated	**Service Request:**	R1612099
Project:	Davis Howland Oil Company Site - Semiannual Water/10C3074.0012.08	**Date Collected:**	11/14/16 12:40
Sample Matrix:	Water	**Date Received:**	11/15/16 15:18
Sample Name:	MW-10R-111416	**Units:**	ug/L
Lab Code:	R1612099-002	**Basis:**	NA

Volatile Organic Compounds by GC/MS, Unpreserved

Analysis Method: 624
Prep Method: EPA 5030C

Analyte Name	Result		MRL	MDL	Dil.	Date Analyzed	Q
1,1,1-Trichloroethane (TCA)	10	U	10	2.0	10	11/18/16 21:35	
1,1,2,2-Tetrachloroethane	10	U	10	2.0	10	11/18/16 21:35	
1,1,2-Trichloroethane	10	U	10	2.0	10	11/18/16 21:35	
1,1-Dichloroethane (1,1-DCA)	**6.0**	**J**	10	2.1	10	11/18/16 21:35	
1,1-Dichloroethene (1,1-DCE)	**10**		10	2.0	10	11/18/16 21:35	
1,2-Dichlorobenzene	10	U	10	2.5	10	11/18/16 21:35	
1,2-Dichloroethane	10	U	10	2.0	10	11/18/16 21:35	
1,2-Dichloropropane	10	U	10	2.0	10	11/18/16 21:35	
1,3-Dichlorobenzene	10	U	10	2.2	10	11/18/16 21:35	
1,4-Dichlorobenzene	10	U	10	2.0	10	11/18/16 21:35	
2-Chloroethyl Vinyl Ether	100	U	100	6.0	10	11/18/16 21:35	
Acetone	50	U	50	28	10	11/18/16 21:35	
Benzene	10	U	10	2.0	10	11/18/16 21:35	
Bromodichloromethane	10	U	10	2.0	10	11/18/16 21:35	
Bromoform	10	U	10	2.0	10	11/18/16 21:35	
Bromomethane	10	U	10	4.4	10	11/18/16 21:35	
Carbon Tetrachloride	10	U	10	2.0	10	11/18/16 21:35	
Chlorobenzene	10	U	10	2.0	10	11/18/16 21:35	
Chloroethane	10	U	10	2.4	10	11/18/16 21:35	
Chloroform	10	U	10	2.0	10	11/18/16 21:35	
Chloromethane	10	U	10	2.0	10	11/18/16 21:35	
Dibromochloromethane	10	U	10	2.0	10	11/18/16 21:35	
Methylene Chloride	**2.0**	**J**	10	2.0	10	11/18/16 21:35	
Ethylbenzene	10	U	10	2.0	10	11/18/16 21:35	
Tetrachloroethene (PCE)	**4.7**	**J**	10	2.0	10	11/18/16 21:35	
Toluene	10	U	10	2.0	10	11/18/16 21:35	
Trichloroethene (TCE)	**850**		10	2.0	10	11/18/16 21:35	
Trichlorofluoromethane (CFC 11)	10	U	10	2.0	10	11/18/16 21:35	
Vinyl Chloride	10	U	10	2.0	10	11/18/16 21:35	
cis-1,2-Dichloroethene	**28**		10	2.0	10	11/18/16 21:35	
cis-1,3-Dichloropropene	10	U	10	2.0	10	11/18/16 21:35	
m,p-Xylenes	20	U	20	2.6	10	11/18/16 21:35	
o-Xylene	10	U	10	2.0	10	11/18/16 21:35	
trans-1,2-Dichloroethene	**8.1**	**J**	10	2.0	10	11/18/16 21:35	
trans-1,3-Dichloropropene	10	U	10	2.0	10	11/18/16 21:35	

Analytical Report

Client:	Ecology And Environment, Incorporated	**Service Request:**	R1612099
Project:	Davis Howland Oil Company Site - Semiannual Water/10C3074.0012.08	**Date Collected:**	11/14/16 12:40
Sample Matrix:	Water	**Date Received:**	11/15/16 15:18
Sample Name:	MW-10R-111416	**Units:**	ug/L
Lab Code:	R1612099-002	**Basis:**	NA

Volatile Organic Compounds by GC/MS, Unpreserved

Analysis Method: 624
Prep Method: EPA 5030C

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
1,2-Dichloroethane-d4	115	81 - 127	11/18/16 21:35	
4-Bromofluorobenzene	106	79 - 123	11/18/16 21:35	
Toluene-d8	109	83 - 120	11/18/16 21:35	

Analytical Report

Client:	Ecology And Environment, Incorporated	**Service Request:**	R1612099
Project:	Davis Howland Oil Company Site - Semiannual Water/10C3074.0012.08	**Date Collected:**	11/14/16 14:45
Sample Matrix:	Water	**Date Received:**	11/15/16 15:18
Sample Name:	MW-1S-111416	**Units:**	ug/L
Lab Code:	R1612099-003	**Basis:**	NA

Volatile Organic Compounds by GC/MS, Unpreserved

Analysis Method: 624
Prep Method: EPA 5030C

Analyte Name	Result		MRL	MDL	Dil.	Date Analyzed	Q
1,1,1-Trichloroethane (TCA)	**2.3**		1.0	0.20	1	11/17/16 14:07	
1,1,2,2-Tetrachloroethane	1.0	U	1.0	0.20	1	11/17/16 14:07	
1,1,2-Trichloroethane	1.0	U	1.0	0.20	1	11/17/16 14:07	
1,1-Dichloroethane (1,1-DCA)	**1.3**		1.0	0.21	1	11/17/16 14:07	
1,1-Dichloroethene (1,1-DCE)	**0.79**	**J**	1.0	0.20	1	11/17/16 14:07	
1,2-Dichlorobenzene	1.0	U	1.0	0.25	1	11/17/16 14:07	
1,2-Dichloroethane	**0.39**	**J**	1.0	0.20	1	11/17/16 14:07	
1,2-Dichloropropane	1.0	U	1.0	0.20	1	11/17/16 14:07	
1,3-Dichlorobenzene	1.0	U	1.0	0.22	1	11/17/16 14:07	
1,4-Dichlorobenzene	1.0	U	1.0	0.20	1	11/17/16 14:07	
2-Chloroethyl Vinyl Ether	10	U	10	0.60	1	11/17/16 14:07	
Acetone	5.0	U	5.0	2.8	1	11/17/16 14:07	
Benzene	1.0	U	1.0	0.20	1	11/17/16 14:07	
Bromodichloromethane	1.0	U	1.0	0.20	1	11/17/16 14:07	
Bromoform	1.0	U	1.0	0.20	1	11/17/16 14:07	
Bromomethane	1.0	U	1.0	0.44	1	11/17/16 14:07	
Carbon Tetrachloride	1.0	U	1.0	0.20	1	11/17/16 14:07	
Chlorobenzene	**0.26**	**J**	1.0	0.20	1	11/17/16 14:07	
Chloroethane	1.0	U	1.0	0.24	1	11/17/16 14:07	
Chloroform	**0.26**	**J**	1.0	0.20	1	11/17/16 14:07	
Chloromethane	1.0	U	1.0	0.20	1	11/17/16 14:07	
Dibromochloromethane	1.0	U	1.0	0.20	1	11/17/16 14:07	
Methylene Chloride	1.0	U	1.0	0.20	1	11/17/16 14:07	
Ethylbenzene	1.0	U	1.0	0.20	1	11/17/16 14:07	
Tetrachloroethene (PCE)	**4.0**		1.0	0.20	1	11/17/16 14:07	
Toluene	1.0	U	1.0	0.20	1	11/17/16 14:07	
Trichloroethene (TCE)	**25**		1.0	0.20	1	11/17/16 14:07	
Trichlorofluoromethane (CFC 11)	1.0	U	1.0	0.20	1	11/17/16 14:07	
Vinyl Chloride	1.0	U	1.0	0.20	1	11/17/16 14:07	
cis-1,2-Dichloroethene	**41**		1.0	0.20	1	11/17/16 14:07	
cis-1,3-Dichloropropene	1.0	U	1.0	0.20	1	11/17/16 14:07	
m,p-Xylenes	2.0	U	2.0	0.26	1	11/17/16 14:07	
o-Xylene	1.0	U	1.0	0.20	1	11/17/16 14:07	
trans-1,2-Dichloroethene	**0.23**	**J**	1.0	0.20	1	11/17/16 14:07	
trans-1,3-Dichloropropene	1.0	U	1.0	0.20	1	11/17/16 14:07	

Analytical Report

Client:	Ecology And Environment, Incorporated	**Service Request:**	R1612099
Project:	Davis Howland Oil Company Site - Semiannual Water/10C3074.0012.08	**Date Collected:**	11/14/16 14:45
Sample Matrix:	Water	**Date Received:**	11/15/16 15:18
Sample Name:	MW-1S-111416	**Units:**	ug/L
Lab Code:	R1612099-003	**Basis:**	NA

Volatile Organic Compounds by GC/MS, Unpreserved

Analysis Method: 624
Prep Method: EPA 5030C

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
1,2-Dichloroethane-d4	111	81 - 127	11/17/16 14:07	
4-Bromofluorobenzene	109	79 - 123	11/17/16 14:07	
Toluene-d8	109	83 - 120	11/17/16 14:07	

Analytical Report

Client:	Ecology And Environment, Incorporated	**Service Request:**	R1612099
Project:	Davis Howland Oil Company Site - Semiannual Water/10C3074.0012.08	**Date Collected:**	11/15/16 09:15
Sample Matrix:	Water	**Date Received:**	11/15/16 15:18
Sample Name:	MW-16R-111516	**Units:**	ug/L
Lab Code:	R1612099-004	**Basis:**	NA

Volatile Organic Compounds by GC/MS, Unpreserved

Analysis Method: 624
Prep Method: EPA 5030C

Analyte Name	Result		MRL	MDL	Dil.	Date Analyzed	Q
1,1,1-Trichloroethane (TCA)	1.0	U	1.0	0.20	1	11/17/16 17:04	
1,1,2,2-Tetrachloroethane	1.0	U	1.0	0.20	1	11/17/16 17:04	
1,1,2-Trichloroethane	1.0	U	1.0	0.20	1	11/17/16 17:04	
1,1-Dichloroethane (1,1-DCA)	**25**		1.0	0.21	1	11/17/16 17:04	
1,1-Dichloroethene (1,1-DCE)	**8.8**		1.0	0.20	1	11/17/16 17:04	
1,2-Dichlorobenzene	1.0	U	1.0	0.25	1	11/17/16 17:04	
1,2-Dichloroethane	1.0	U	1.0	0.20	1	11/17/16 17:04	
1,2-Dichloropropane	1.0	U	1.0	0.20	1	11/17/16 17:04	
1,3-Dichlorobenzene	1.0	U	1.0	0.22	1	11/17/16 17:04	
1,4-Dichlorobenzene	1.0	U	1.0	0.20	1	11/17/16 17:04	
2-Chloroethyl Vinyl Ether	10	U	10	0.60	1	11/17/16 17:04	
Acetone	5.0	U	5.0	2.8	1	11/17/16 17:04	
Benzene	**0.31**	**J**	1.0	0.20	1	11/17/16 17:04	
Bromodichloromethane	1.0	U	1.0	0.20	1	11/17/16 17:04	
Bromoform	1.0	U	1.0	0.20	1	11/17/16 17:04	
Bromomethane	1.0	U	1.0	0.44	1	11/17/16 17:04	
Carbon Tetrachloride	1.0	U	1.0	0.20	1	11/17/16 17:04	
Chlorobenzene	1.0	U	1.0	0.20	1	11/17/16 17:04	
Chloroethane	1.0	U	1.0	0.24	1	11/17/16 17:04	
Chloroform	1.0	U	1.0	0.20	1	11/17/16 17:04	
Chloromethane	1.0	U	1.0	0.20	1	11/17/16 17:04	
Dibromochloromethane	1.0	U	1.0	0.20	1	11/17/16 17:04	
Methylene Chloride	1.0	U	1.0	0.20	1	11/17/16 17:04	
Ethylbenzene	1.0	U	1.0	0.20	1	11/17/16 17:04	
Tetrachloroethene (PCE)	**0.21**	**J**	1.0	0.20	1	11/17/16 17:04	
Toluene	1.0	U	1.0	0.20	1	11/17/16 17:04	
Trichloroethene (TCE)	**0.93**	**J**	1.0	0.20	1	11/17/16 17:04	
Trichlorofluoromethane (CFC 11)	1.0	U	1.0	0.20	1	11/17/16 17:04	
Vinyl Chloride	**160**		1.0	0.20	1	11/17/16 17:04	
cis-1,2-Dichloroethene	**520**	**D**	5.0	1.0	5	11/18/16 22:00	
cis-1,3-Dichloropropene	1.0	U	1.0	0.20	1	11/17/16 17:04	
m,p-Xylenes	2.0	U	2.0	0.26	1	11/17/16 17:04	
o-Xylene	1.0	U	1.0	0.20	1	11/17/16 17:04	
trans-1,2-Dichloroethene	**2.5**		1.0	0.20	1	11/17/16 17:04	
trans-1,3-Dichloropropene	1.0	U	1.0	0.20	1	11/17/16 17:04	

Analytical Report

Client:	Ecology And Environment, Incorporated	**Service Request:**	R1612099
Project:	Davis Howland Oil Company Site - Semiannual Water/10C3074.0012.08	**Date Collected:**	11/15/16 09:15
Sample Matrix:	Water	**Date Received:**	11/15/16 15:18
Sample Name:	MW-16R-111516	**Units:**	ug/L
Lab Code:	R1612099-004	**Basis:**	NA

Volatile Organic Compounds by GC/MS, Unpreserved

Analysis Method: 624
Prep Method: EPA 5030C

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
1,2-Dichloroethane-d4	109	81 - 127	11/17/16 17:04	
4-Bromofluorobenzene	109	79 - 123	11/17/16 17:04	
Toluene-d8	109	83 - 120	11/17/16 17:04	

Analytical Report

Client:	Ecology And Environment, Incorporated	**Service Request:**	R1612099
Project:	Davis Howland Oil Company Site - Semiannual Water/10C3074.0012.08	**Date Collected:**	11/15/16 13:48
Sample Matrix:	Water	**Date Received:**	11/15/16 15:18
Sample Name:	PZ-3-111516	**Units:**	ug/L
Lab Code:	R1612099-005	**Basis:**	NA

Volatile Organic Compounds by GC/MS, Unpreserved

Analysis Method: 624
Prep Method: EPA 5030C

Analyte Name	Result		MRL	MDL	Dil.	Date Analyzed	Q
1,1,1-Trichloroethane (TCA)	**0.31**	**J**	1.0	0.20	1	11/17/16 16:39	
1,1,2,2-Tetrachloroethane	1.0	U	1.0	0.20	1	11/17/16 16:39	
1,1,2-Trichloroethane	1.0	U	1.0	0.20	1	11/17/16 16:39	
1,1-Dichloroethane (1,1-DCA)	**5.9**		1.0	0.21	1	11/17/16 16:39	
1,1-Dichloroethene (1,1-DCE)	**0.25**	**J**	1.0	0.20	1	11/17/16 16:39	
1,2-Dichlorobenzene	1.0	U	1.0	0.25	1	11/17/16 16:39	
1,2-Dichloroethane	1.0	U	1.0	0.20	1	11/17/16 16:39	
1,2-Dichloropropane	1.0	U	1.0	0.20	1	11/17/16 16:39	
1,3-Dichlorobenzene	1.0	U	1.0	0.22	1	11/17/16 16:39	
1,4-Dichlorobenzene	1.0	U	1.0	0.20	1	11/17/16 16:39	
2-Chloroethyl Vinyl Ether	10	U	10	0.60	1	11/17/16 16:39	
Acetone	5.0	U	5.0	2.8	1	11/17/16 16:39	
Benzene	1.0	U	1.0	0.20	1	11/17/16 16:39	
Bromodichloromethane	1.0	U	1.0	0.20	1	11/17/16 16:39	
Bromoform	1.0	U	1.0	0.20	1	11/17/16 16:39	
Bromomethane	1.0	U	1.0	0.44	1	11/17/16 16:39	
Carbon Tetrachloride	1.0	U	1.0	0.20	1	11/17/16 16:39	
Chlorobenzene	1.0	U	1.0	0.20	1	11/17/16 16:39	
Chloroethane	1.0	U	1.0	0.24	1	11/17/16 16:39	
Chloroform	1.0	U	1.0	0.20	1	11/17/16 16:39	
Chloromethane	1.0	U	1.0	0.20	1	11/17/16 16:39	
Dibromochloromethane	1.0	U	1.0	0.20	1	11/17/16 16:39	
Methylene Chloride	1.0	U	1.0	0.20	1	11/17/16 16:39	
Ethylbenzene	1.0	U	1.0	0.20	1	11/17/16 16:39	
Tetrachloroethene (PCE)	**0.54**	**J**	1.0	0.20	1	11/17/16 16:39	
Toluene	1.0	U	1.0	0.20	1	11/17/16 16:39	
Trichloroethene (TCE)	**2.2**		1.0	0.20	1	11/17/16 16:39	
Trichlorofluoromethane (CFC 11)	1.0	U	1.0	0.20	1	11/17/16 16:39	
Vinyl Chloride	**0.93**	**J**	1.0	0.20	1	11/17/16 16:39	
cis-1,2-Dichloroethene	**9.4**		1.0	0.20	1	11/17/16 16:39	
cis-1,3-Dichloropropene	1.0	U	1.0	0.20	1	11/17/16 16:39	
m,p-Xylenes	2.0	U	2.0	0.26	1	11/17/16 16:39	
o-Xylene	1.0	U	1.0	0.20	1	11/17/16 16:39	
trans-1,2-Dichloroethene	**0.49**	**J**	1.0	0.20	1	11/17/16 16:39	
trans-1,3-Dichloropropene	1.0	U	1.0	0.20	1	11/17/16 16:39	

Analytical Report

Client:	Ecology And Environment, Incorporated	**Service Request:**	R1612099
Project:	Davis Howland Oil Company Site - Semiannual Water/10C3074.0012.08	**Date Collected:**	11/15/16 13:48
Sample Matrix:	Water	**Date Received:**	11/15/16 15:18
Sample Name:	PZ-3-111516	**Units:**	ug/L
Lab Code:	R1612099-005	**Basis:**	NA

Volatile Organic Compounds by GC/MS, Unpreserved

Analysis Method: 624
Prep Method: EPA 5030C

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
1,2-Dichloroethane-d4	111	81 - 127	11/17/16 16:39	
4-Bromofluorobenzene	112	79 - 123	11/17/16 16:39	
Toluene-d8	109	83 - 120	11/17/16 16:39	

Analytical Report

Client:	Ecology And Environment, Incorporated	**Service Request:**	R1612099
Project:	Davis Howland Oil Company Site - Semiannual Water/10C3074.0012.08	**Date Collected:**	11/15/16 12:02
Sample Matrix:	Water	**Date Received:**	11/15/16 15:18
Sample Name:	PZ-2-111516	**Units:**	ug/L
Lab Code:	R1612099-006	**Basis:**	NA

Volatile Organic Compounds by GC/MS, Unpreserved

Analysis Method: 624
Prep Method: EPA 5030C

Analyte Name	Result		MRL	MDL	Dil.	Date Analyzed	Q
1,1,1-Trichloroethane (TCA)	**1.2**		1.0	0.20	1	11/17/16 16:13	
1,1,2,2-Tetrachloroethane	1.0	U	1.0	0.20	1	11/17/16 16:13	
1,1,2-Trichloroethane	1.0	U	1.0	0.20	1	11/17/16 16:13	
1,1-Dichloroethane (1,1-DCA)	**0.56**	**J**	1.0	0.21	1	11/17/16 16:13	
1,1-Dichloroethene (1,1-DCE)	1.0	U	1.0	0.20	1	11/17/16 16:13	
1,2-Dichlorobenzene	1.0	U	1.0	0.25	1	11/17/16 16:13	
1,2-Dichloroethane	1.0	U	1.0	0.20	1	11/17/16 16:13	
1,2-Dichloropropane	1.0	U	1.0	0.20	1	11/17/16 16:13	
1,3-Dichlorobenzene	1.0	U	1.0	0.22	1	11/17/16 16:13	
1,4-Dichlorobenzene	1.0	U	1.0	0.20	1	11/17/16 16:13	
2-Chloroethyl Vinyl Ether	10	U	10	0.60	1	11/17/16 16:13	
Acetone	5.0	U	5.0	2.8	1	11/17/16 16:13	
Benzene	1.0	U	1.0	0.20	1	11/17/16 16:13	
Bromodichloromethane	1.0	U	1.0	0.20	1	11/17/16 16:13	
Bromoform	1.0	U	1.0	0.20	1	11/17/16 16:13	
Bromomethane	1.0	U	1.0	0.44	1	11/17/16 16:13	
Carbon Tetrachloride	1.0	U	1.0	0.20	1	11/17/16 16:13	
Chlorobenzene	1.0	U	1.0	0.20	1	11/17/16 16:13	
Chloroethane	1.0	U	1.0	0.24	1	11/17/16 16:13	
Chloroform	1.0	U	1.0	0.20	1	11/17/16 16:13	
Chloromethane	1.0	U	1.0	0.20	1	11/17/16 16:13	
Dibromochloromethane	1.0	U	1.0	0.20	1	11/17/16 16:13	
Methylene Chloride	1.0	U	1.0	0.20	1	11/17/16 16:13	
Ethylbenzene	1.0	U	1.0	0.20	1	11/17/16 16:13	
Tetrachloroethene (PCE)	**1.6**		1.0	0.20	1	11/17/16 16:13	
Toluene	1.0	U	1.0	0.20	1	11/17/16 16:13	
Trichloroethene (TCE)	**1.9**		1.0	0.20	1	11/17/16 16:13	
Trichlorofluoromethane (CFC 11)	1.0	U	1.0	0.20	1	11/17/16 16:13	
Vinyl Chloride	1.0	U	1.0	0.20	1	11/17/16 16:13	
cis-1,2-Dichloroethene	**1.6**		1.0	0.20	1	11/17/16 16:13	
cis-1,3-Dichloropropene	1.0	U	1.0	0.20	1	11/17/16 16:13	
m,p-Xylenes	2.0	U	2.0	0.26	1	11/17/16 16:13	
o-Xylene	1.0	U	1.0	0.20	1	11/17/16 16:13	
trans-1,2-Dichloroethene	1.0	U	1.0	0.20	1	11/17/16 16:13	
trans-1,3-Dichloropropene	1.0	U	1.0	0.20	1	11/17/16 16:13	

Analytical Report

Client:	Ecology And Environment, Incorporated	**Service Request:**	R1612099
Project:	Davis Howland Oil Company Site - Semiannual Water/10C3074.0012.08	**Date Collected:**	11/15/16 12:02
Sample Matrix:	Water	**Date Received:**	11/15/16 15:18
Sample Name:	PZ-2-111516	**Units:**	ug/L
Lab Code:	R1612099-006	**Basis:**	NA

Volatile Organic Compounds by GC/MS, Unpreserved

Analysis Method: 624
Prep Method: EPA 5030C

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
1,2-Dichloroethane-d4	111	81 - 127	11/17/16 16:13	
4-Bromofluorobenzene	109	79 - 123	11/17/16 16:13	
Toluene-d8	109	83 - 120	11/17/16 16:13	

Analytical Report

Client:	Ecology And Environment, Incorporated	**Service Request:**	R1612099
Project:	Davis Howland Oil Company Site - Semiannual Water/10C3074.0012.08	**Date Collected:**	11/15/16 11:40
Sample Matrix:	Water	**Date Received:**	11/15/16 15:18
Sample Name:	PW2-111516	**Units:**	ug/L
Lab Code:	R1612099-007	**Basis:**	NA

Volatile Organic Compounds by GC/MS, Unpreserved

Analysis Method: 624
Prep Method: EPA 5030C

Analyte Name	Result		MRL	MDL	Dil.	Date Analyzed	Q
1,1,1-Trichloroethane (TCA)	**1.6**		1.0	0.20	1	11/18/16 21:09	
1,1,2,2-Tetrachloroethane	1.0	U	1.0	0.20	1	11/18/16 21:09	
1,1,2-Trichloroethane	1.0	U	1.0	0.20	1	11/18/16 21:09	
1,1-Dichloroethane (1,1-DCA)	**17**		1.0	0.21	1	11/18/16 21:09	
1,1-Dichloroethene (1,1-DCE)	**0.36**	**J**	1.0	0.20	1	11/18/16 21:09	
1,2-Dichlorobenzene	1.0	U	1.0	0.25	1	11/18/16 21:09	
1,2-Dichloroethane	1.0	U	1.0	0.20	1	11/18/16 21:09	
1,2-Dichloropropane	1.0	U	1.0	0.20	1	11/18/16 21:09	
1,3-Dichlorobenzene	1.0	U	1.0	0.22	1	11/18/16 21:09	
1,4-Dichlorobenzene	1.0	U	1.0	0.20	1	11/18/16 21:09	
2-Chloroethyl Vinyl Ether	10	U	10	0.60	1	11/18/16 21:09	
Acetone	5.0	U	5.0	2.8	1	11/18/16 21:09	
Benzene	1.0	U	1.0	0.20	1	11/18/16 21:09	
Bromodichloromethane	1.0	U	1.0	0.20	1	11/18/16 21:09	
Bromoform	1.0	U	1.0	0.20	1	11/18/16 21:09	
Bromomethane	1.0	U	1.0	0.44	1	11/18/16 21:09	
Carbon Tetrachloride	1.0	U	1.0	0.20	1	11/18/16 21:09	
Chlorobenzene	1.0	U	1.0	0.20	1	11/18/16 21:09	
Chloroethane	1.0	U	1.0	0.24	1	11/18/16 21:09	
Chloroform	1.0	U	1.0	0.20	1	11/18/16 21:09	
Chloromethane	1.0	U	1.0	0.20	1	11/18/16 21:09	
Dibromochloromethane	1.0	U	1.0	0.20	1	11/18/16 21:09	
Methylene Chloride	1.0	U	1.0	0.20	1	11/18/16 21:09	
Ethylbenzene	1.0	U	1.0	0.20	1	11/18/16 21:09	
Tetrachloroethene (PCE)	**2.5**		1.0	0.20	1	11/18/16 21:09	
Toluene	1.0	U	1.0	0.20	1	11/18/16 21:09	
Trichloroethene (TCE)	**6.7**		1.0	0.20	1	11/18/16 21:09	
Trichlorofluoromethane (CFC 11)	1.0	U	1.0	0.20	1	11/18/16 21:09	
Vinyl Chloride	1.0	U	1.0	0.20	1	11/18/16 21:09	
cis-1,2-Dichloroethene	**10**		1.0	0.20	1	11/18/16 21:09	
cis-1,3-Dichloropropene	1.0	U	1.0	0.20	1	11/18/16 21:09	
m,p-Xylenes	2.0	U	2.0	0.26	1	11/18/16 21:09	
o-Xylene	1.0	U	1.0	0.20	1	11/18/16 21:09	
trans-1,2-Dichloroethene	1.0	U	1.0	0.20	1	11/18/16 21:09	
trans-1,3-Dichloropropene	1.0	U	1.0	0.20	1	11/18/16 21:09	

Analytical Report

Client:	Ecology And Environment, Incorporated	**Service Request:**	R1612099
Project:	Davis Howland Oil Company Site - Semiannual Water/10C3074.0012.08	**Date Collected:**	11/15/16 11:40
Sample Matrix:	Water	**Date Received:**	11/15/16 15:18
Sample Name:	PW2-111516	**Units:**	ug/L
Lab Code:	R1612099-007	**Basis:**	NA

Volatile Organic Compounds by GC/MS, Unpreserved

Analysis Method: 624
Prep Method: EPA 5030C

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
1,2-Dichloroethane-d4	114	81 - 127	11/18/16 21:09	
4-Bromofluorobenzene	106	79 - 123	11/18/16 21:09	
Toluene-d8	109	83 - 120	11/18/16 21:09	

Analytical Report

Client:	Ecology And Environment, Incorporated	**Service Request:**	R1612099
Project:	Davis Howland Oil Company Site - Semiannual Water/10C3074.0012.08	**Date Collected:**	11/15/16 12:10
Sample Matrix:	Water	**Date Received:**	11/15/16 15:18
Sample Name:	P-2-111516	**Units:**	ug/L
Lab Code:	R1612099-008	**Basis:**	NA

Volatile Organic Compounds by GC/MS, Unpreserved

Analysis Method: 624
Prep Method: EPA 5030C

Analyte Name	Result		MRL	MDL	Dil.	Date Analyzed	Q
1,1,1-Trichloroethane (TCA)	**28**		2.0	0.40	2	11/18/16 22:25	
1,1,2,2-Tetrachloroethane	2.0	U	2.0	0.40	2	11/18/16 22:25	
1,1,2-Trichloroethane	2.0	U	2.0	0.40	2	11/18/16 22:25	
1,1-Dichloroethane (1,1-DCA)	**55**		2.0	0.42	2	11/18/16 22:25	
1,1-Dichloroethene (1,1-DCE)	**1.7**	**J**	2.0	0.40	2	11/18/16 22:25	
1,2-Dichlorobenzene	2.0	U	2.0	0.50	2	11/18/16 22:25	
1,2-Dichloroethane	2.0	U	2.0	0.40	2	11/18/16 22:25	
1,2-Dichloropropane	2.0	U	2.0	0.40	2	11/18/16 22:25	
1,3-Dichlorobenzene	2.0	U	2.0	0.44	2	11/18/16 22:25	
1,4-Dichlorobenzene	2.0	U	2.0	0.40	2	11/18/16 22:25	
2-Chloroethyl Vinyl Ether	20	U	20	1.2	2	11/18/16 22:25	
Acetone	10	U	10	5.6	2	11/18/16 22:25	
Benzene	2.0	U	2.0	0.40	2	11/18/16 22:25	
Bromodichloromethane	2.0	U	2.0	0.40	2	11/18/16 22:25	
Bromoform	2.0	U	2.0	0.40	2	11/18/16 22:25	
Bromomethane	2.0	U	2.0	0.88	2	11/18/16 22:25	
Carbon Tetrachloride	2.0	U	2.0	0.40	2	11/18/16 22:25	
Chlorobenzene	2.0	U	2.0	0.40	2	11/18/16 22:25	
Chloroethane	2.0	U	2.0	0.48	2	11/18/16 22:25	
Chloroform	2.0	U	2.0	0.40	2	11/18/16 22:25	
Chloromethane	2.0	U	2.0	0.40	2	11/18/16 22:25	
Dibromochloromethane	2.0	U	2.0	0.40	2	11/18/16 22:25	
Methylene Chloride	2.0	U	2.0	0.40	2	11/18/16 22:25	
Ethylbenzene	2.0	U	2.0	0.40	2	11/18/16 22:25	
Tetrachloroethene (PCE)	**40**		2.0	0.40	2	11/18/16 22:25	
Toluene	2.0	U	2.0	0.40	2	11/18/16 22:25	
Trichloroethene (TCE)	**42**		2.0	0.40	2	11/18/16 22:25	
Trichlorofluoromethane (CFC 11)	2.0	U	2.0	0.40	2	11/18/16 22:25	
Vinyl Chloride	**0.84**	**J**	2.0	0.40	2	11/18/16 22:25	
cis-1,2-Dichloroethene	**240**		2.0	0.40	2	11/18/16 22:25	
cis-1,3-Dichloropropene	2.0	U	2.0	0.40	2	11/18/16 22:25	
m,p-Xylenes	4.0	U	4.0	0.52	2	11/18/16 22:25	
o-Xylene	2.0	U	2.0	0.40	2	11/18/16 22:25	
trans-1,2-Dichloroethene	**2.1**		2.0	0.40	2	11/18/16 22:25	
trans-1,3-Dichloropropene	2.0	U	2.0	0.40	2	11/18/16 22:25	

Analytical Report

Client:	Ecology And Environment, Incorporated	**Service Request:**	R1612099
Project:	Davis Howland Oil Company Site - Semiannual Water/10C3074.0012.08	**Date Collected:**	11/15/16 12:10
Sample Matrix:	Water	**Date Received:**	11/15/16 15:18
Sample Name:	P-2-111516	**Units:**	ug/L
Lab Code:	R1612099-008	**Basis:**	NA

Volatile Organic Compounds by GC/MS, Unpreserved

Analysis Method: 624
Prep Method: EPA 5030C

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
1,2-Dichloroethane-d4	117	81 - 127	11/18/16 22:25	
4-Bromofluorobenzene	106	79 - 123	11/18/16 22:25	
Toluene-d8	110	83 - 120	11/18/16 22:25	

Analytical Report

Client:	Ecology And Environment, Incorporated	**Service Request:**	R1612099
Project:	Davis Howland Oil Company Site - Semiannual Water/10C3074.0012.08	**Date Collected:**	11/15/16 12:50
Sample Matrix:	Water	**Date Received:**	11/15/16 15:18
Sample Name:	P-3-111516	**Units:**	ug/L
Lab Code:	R1612099-009	**Basis:**	NA

Volatile Organic Compounds by GC/MS, Unpreserved

Analysis Method: 624
Prep Method: EPA 5030C

Analyte Name	Result		MRL	MDL	Dil.	Date Analyzed	Q
1,1,1-Trichloroethane (TCA)	**230**	**D**	20	4.0	20	11/17/16 18:44	
1,1,2,2-Tetrachloroethane	1.0	U	1.0	0.20	1	11/17/16 14:32	
1,1,2-Trichloroethane	**14**		1.0	0.20	1	11/17/16 14:32	
1,1-Dichloroethane (1,1-DCA)	**52**		1.0	0.21	1	11/17/16 14:32	
1,1-Dichloroethene (1,1-DCE)	**7.8**		1.0	0.20	1	11/17/16 14:32	
1,2-Dichlorobenzene	**2.3**		1.0	0.25	1	11/17/16 14:32	
1,2-Dichloroethane	1.0	U	1.0	0.20	1	11/17/16 14:32	
1,2-Dichloropropane	1.0	U	1.0	0.20	1	11/17/16 14:32	
1,3-Dichlorobenzene	**1.5**		1.0	0.22	1	11/17/16 14:32	
1,4-Dichlorobenzene	**1.1**		1.0	0.20	1	11/17/16 14:32	
2-Chloroethyl Vinyl Ether	10	U	10	0.60	1	11/17/16 14:32	
Acetone	5.0	U	5.0	2.8	1	11/17/16 14:32	
Benzene	**0.56**	**J**	1.0	0.20	1	11/17/16 14:32	
Bromodichloromethane	1.0	U	1.0	0.20	1	11/17/16 14:32	
Bromoform	1.0	U	1.0	0.20	1	11/17/16 14:32	
Bromomethane	1.0	U	1.0	0.44	1	11/17/16 14:32	
Carbon Tetrachloride	1.0	U	1.0	0.20	1	11/17/16 14:32	
Chlorobenzene	1.0	U	1.0	0.20	1	11/17/16 14:32	
Chloroethane	1.0	U	1.0	0.24	1	11/17/16 14:32	
Chloroform	**1.5**		1.0	0.20	1	11/17/16 14:32	
Chloromethane	1.0	U	1.0	0.20	1	11/17/16 14:32	
Dibromochloromethane	1.0	U	1.0	0.20	1	11/17/16 14:32	
Methylene Chloride	1.0	U	1.0	0.20	1	11/17/16 14:32	
Ethylbenzene	1.0	U	1.0	0.20	1	11/17/16 14:32	
Tetrachloroethene (PCE)	**1400**	**D**	20	4.0	20	11/17/16 18:44	
Toluene	1.0	U	1.0	0.20	1	11/17/16 14:32	
Trichloroethene (TCE)	**320**	**D**	20	4.0	20	11/17/16 18:44	
Trichlorofluoromethane (CFC 11)	1.0	U	1.0	0.20	1	11/17/16 14:32	
Vinyl Chloride	1.0	U	1.0	0.20	1	11/17/16 14:32	
cis-1,2-Dichloroethene	**1200**	**D**	20	4.0	20	11/17/16 18:44	
cis-1,3-Dichloropropene	1.0	U	1.0	0.20	1	11/17/16 14:32	
m,p-Xylenes	2.0	U	2.0	0.26	1	11/17/16 14:32	
o-Xylene	1.0	U	1.0	0.20	1	11/17/16 14:32	
trans-1,2-Dichloroethene	**2.0**		1.0	0.20	1	11/17/16 14:32	
trans-1,3-Dichloropropene	1.0	U	1.0	0.20	1	11/17/16 14:32	

Analytical Report

Client:	Ecology And Environment, Incorporated	**Service Request:**	R1612099
Project:	Davis Howland Oil Company Site - Semiannual Water/10C3074.0012.08	**Date Collected:**	11/15/16 12:50
Sample Matrix:	Water	**Date Received:**	11/15/16 15:18
Sample Name:	P-3-111516	**Units:**	ug/L
Lab Code:	R1612099-009	**Basis:**	NA

Volatile Organic Compounds by GC/MS, Unpreserved

Analysis Method: 624
Prep Method: EPA 5030C

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
1,2-Dichloroethane-d4	109	81 - 127	11/17/16 14:32	
4-Bromofluorobenzene	110	79 - 123	11/17/16 14:32	
Toluene-d8	111	83 - 120	11/17/16 14:32	

Analytical Report

Client:	Ecology And Environment, Incorporated	**Service Request:**	R1612099
Project:	Davis Howland Oil Company Site - Semiannual Water/10C3074.0012.08	**Date Collected:**	11/15/16 11:00
Sample Matrix:	Water	**Date Received:**	11/15/16 15:18
Sample Name:	PZ-4-111516	**Units:**	ug/L
Lab Code:	R1612099-010	**Basis:**	NA

Volatile Organic Compounds by GC/MS, Unpreserved

Analysis Method: 624
Prep Method: EPA 5030C

Analyte Name	Result		MRL	MDL	Dil.	Date Analyzed	Q
1,1,1-Trichloroethane (TCA)	**22**		2.0	0.40	2	11/17/16 19:09	
1,1,2,2-Tetrachloroethane	2.0	U	2.0	0.40	2	11/17/16 19:09	
1,1,2-Trichloroethane	2.0	U	2.0	0.40	2	11/17/16 19:09	
1,1-Dichloroethane (1,1-DCA)	**14**		2.0	0.42	2	11/17/16 19:09	
1,1-Dichloroethene (1,1-DCE)	**4.0**		2.0	0.40	2	11/17/16 19:09	
1,2-Dichlorobenzene	2.0	U	2.0	0.50	2	11/17/16 19:09	
1,2-Dichloroethane	2.0	U	2.0	0.40	2	11/17/16 19:09	
1,2-Dichloropropane	2.0	U	2.0	0.40	2	11/17/16 19:09	
1,3-Dichlorobenzene	2.0	U	2.0	0.44	2	11/17/16 19:09	
1,4-Dichlorobenzene	2.0	U	2.0	0.40	2	11/17/16 19:09	
2-Chloroethyl Vinyl Ether	20	U	20	1.2	2	11/17/16 19:09	
Acetone	10	U	10	5.6	2	11/17/16 19:09	
Benzene	2.0	U	2.0	0.40	2	11/17/16 19:09	
Bromodichloromethane	2.0	U	2.0	0.40	2	11/17/16 19:09	
Bromoform	2.0	U	2.0	0.40	2	11/17/16 19:09	
Bromomethane	2.0	U	2.0	0.88	2	11/17/16 19:09	
Carbon Tetrachloride	2.0	U	2.0	0.40	2	11/17/16 19:09	
Chlorobenzene	2.0	U	2.0	0.40	2	11/17/16 19:09	
Chloroethane	2.0	U	2.0	0.48	2	11/17/16 19:09	
Chloroform	2.0	U	2.0	0.40	2	11/17/16 19:09	
Chloromethane	2.0	U	2.0	0.40	2	11/17/16 19:09	
Dibromochloromethane	2.0	U	2.0	0.40	2	11/17/16 19:09	
Methylene Chloride	2.0	U	2.0	0.40	2	11/17/16 19:09	
Ethylbenzene	2.0	U	2.0	0.40	2	11/17/16 19:09	
Tetrachloroethene (PCE)	**10**		2.0	0.40	2	11/17/16 19:09	
Toluene	2.0	U	2.0	0.40	2	11/17/16 19:09	
Trichloroethene (TCE)	**200**		2.0	0.40	2	11/17/16 19:09	
Trichlorofluoromethane (CFC 11)	2.0	U	2.0	0.40	2	11/17/16 19:09	
Vinyl Chloride	**24**		2.0	0.40	2	11/17/16 19:09	
cis-1,2-Dichloroethene	**310**		2.0	0.40	2	11/17/16 19:09	
cis-1,3-Dichloropropene	2.0	U	2.0	0.40	2	11/17/16 19:09	
m,p-Xylenes	4.0	U	4.0	0.52	2	11/17/16 19:09	
o-Xylene	2.0	U	2.0	0.40	2	11/17/16 19:09	
trans-1,2-Dichloroethene	**3.8**		2.0	0.40	2	11/17/16 19:09	
trans-1,3-Dichloropropene	2.0	U	2.0	0.40	2	11/17/16 19:09	

Analytical Report

Client:	Ecology And Environment, Incorporated	**Service Request:**	R1612099
Project:	Davis Howland Oil Company Site - Semiannual Water/10C3074.0012.08	**Date Collected:**	11/15/16 11:00
Sample Matrix:	Water	**Date Received:**	11/15/16 15:18
Sample Name:	PZ-4-111516	**Units:**	ug/L
Lab Code:	R1612099-010	**Basis:**	NA

Volatile Organic Compounds by GC/MS, Unpreserved

Analysis Method: 624
Prep Method: EPA 5030C

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
1,2-Dichloroethane-d4	110	81 - 127	11/17/16 19:09	
4-Bromofluorobenzene	108	79 - 123	11/17/16 19:09	
Toluene-d8	110	83 - 120	11/17/16 19:09	

Analytical Report

Client:	Ecology And Environment, Incorporated	**Service Request:**	R1612099
Project:	Davis Howland Oil Company Site - Semiannual Water/10C3074.0012.08	**Date Collected:**	11/15/16 14:00
Sample Matrix:	Water	**Date Received:**	11/15/16 15:18
Sample Name:	FB-111516	**Units:**	ug/L
Lab Code:	R1612099-011	**Basis:**	NA

Volatile Organic Compounds by GC/MS, Unpreserved

Analysis Method: 624
Prep Method: EPA 5030C

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Q
1,1,1-Trichloroethane (TCA)	1.0 U	1.0	0.20	1	11/17/16 12:01	
1,1,2,2-Tetrachloroethane	1.0 U	1.0	0.20	1	11/17/16 12:01	
1,1,2-Trichloroethane	1.0 U	1.0	0.20	1	11/17/16 12:01	
1,1-Dichloroethane (1,1-DCA)	1.0 U	1.0	0.21	1	11/17/16 12:01	
1,1-Dichloroethene (1,1-DCE)	1.0 U	1.0	0.20	1	11/17/16 12:01	
1,2-Dichlorobenzene	1.0 U	1.0	0.25	1	11/17/16 12:01	
1,2-Dichloroethane	1.0 U	1.0	0.20	1	11/17/16 12:01	
1,2-Dichloropropane	1.0 U	1.0	0.20	1	11/17/16 12:01	
1,3-Dichlorobenzene	1.0 U	1.0	0.22	1	11/17/16 12:01	
1,4-Dichlorobenzene	1.0 U	1.0	0.20	1	11/17/16 12:01	
2-Chloroethyl Vinyl Ether	10 U	10	0.60	1	11/17/16 12:01	
Acetone	5.0 U	5.0	2.8	1	11/17/16 12:01	
Benzene	1.0 U	1.0	0.20	1	11/17/16 12:01	
Bromodichloromethane	1.0 U	1.0	0.20	1	11/17/16 12:01	
Bromoform	1.0 U	1.0	0.20	1	11/17/16 12:01	
Bromomethane	1.0 U	1.0	0.44	1	11/17/16 12:01	
Carbon Tetrachloride	1.0 U	1.0	0.20	1	11/17/16 12:01	
Chlorobenzene	1.0 U	1.0	0.20	1	11/17/16 12:01	
Chloroethane	1.0 U	1.0	0.24	1	11/17/16 12:01	
Chloroform	1.0 U	1.0	0.20	1	11/17/16 12:01	
Chloromethane	1.0 U	1.0	0.20	1	11/17/16 12:01	
Dibromochloromethane	1.0 U	1.0	0.20	1	11/17/16 12:01	
Methylene Chloride	1.0 U	1.0	0.20	1	11/17/16 12:01	
Ethylbenzene	1.0 U	1.0	0.20	1	11/17/16 12:01	
Tetrachloroethene (PCE)	1.0 U	1.0	0.20	1	11/17/16 12:01	
Toluene	1.0 U	1.0	0.20	1	11/17/16 12:01	
Trichloroethene (TCE)	1.0 U	1.0	0.20	1	11/17/16 12:01	
Trichlorofluoromethane (CFC 11)	1.0 U	1.0	0.20	1	11/17/16 12:01	
Vinyl Chloride	1.0 U	1.0	0.20	1	11/17/16 12:01	
cis-1,2-Dichloroethene	1.0 U	1.0	0.20	1	11/17/16 12:01	
cis-1,3-Dichloropropene	1.0 U	1.0	0.20	1	11/17/16 12:01	
m,p-Xylenes	2.0 U	2.0	0.26	1	11/17/16 12:01	
o-Xylene	1.0 U	1.0	0.20	1	11/17/16 12:01	
trans-1,2-Dichloroethene	1.0 U	1.0	0.20	1	11/17/16 12:01	
trans-1,3-Dichloropropene	1.0 U	1.0	0.20	1	11/17/16 12:01	

Analytical Report

Client:	Ecology And Environment, Incorporated	**Service Request:**	R1612099
Project:	Davis Howland Oil Company Site - Semiannual Water/10C3074.0012.08	**Date Collected:**	11/15/16 14:00
Sample Matrix:	Water	**Date Received:**	11/15/16 15:18
Sample Name:	FB-111516	**Units:**	ug/L
Lab Code:	R1612099-011	**Basis:**	NA

Volatile Organic Compounds by GC/MS, Unpreserved

Analysis Method: 624
Prep Method: EPA 5030C

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
1,2-Dichloroethane-d4	108	81 - 127	11/17/16 12:01	
4-Bromofluorobenzene	111	79 - 123	11/17/16 12:01	
Toluene-d8	109	83 - 120	11/17/16 12:01	

Semivolatile Organic Compounds by GC/MS

ALS Environmental—Rochester Laboratory
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Analytical Report

Client:	Ecology And Environment, Incorporated	**Service Request:**	R1612099
Project:	Davis Howland Oil Company Site - Semiannual Water/10C3074.0012.08	**Date Collected:**	11/14/16 12:40
Sample Matrix:	Water	**Date Received:**	11/15/16 15:18
Sample Name:	MW-10R-111416	**Units:**	ug/L
Lab Code:	R1612099-002	**Basis:**	NA

Semivolatile Organic Compounds by GC/MS

Analysis Method: 625
Prep Method: EPA 3510C

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
1,2,4-Trichlorobenzene	4.7 U	4.7	1.0	1	11/23/16 16:58	11/21/16	
1,2-Diphenylhydrazine	4.7 U	4.7	1.0	1	11/23/16 16:58	11/21/16	
2,4,6-Trichlorophenol	4.7 U	4.7	1.4	1	11/23/16 16:58	11/21/16	
2,4-Dichlorophenol	4.7 U	4.7	1.3	1	11/23/16 16:58	11/21/16	
2,4-Dimethylphenol	4.7 U	4.7	1.5	1	11/23/16 16:58	11/21/16	
2,4-Dinitrophenol	47 U	47	20	1	11/23/16 16:58	11/21/16	
2,4-Dinitrotoluene	4.7 U	4.7	1.6	1	11/23/16 16:58	11/21/16	
2,6-Dinitrotoluene	4.7 U	4.7	1.8	1	11/23/16 16:58	11/21/16	
2-Chloronaphthalene	4.7 U	4.7	1.0	1	11/23/16 16:58	11/21/16	
2-Chlorophenol	4.7 U	4.7	1.0	1	11/23/16 16:58	11/21/16	
2-Nitrophenol	4.7 U	4.7	1.4	1	11/23/16 16:58	11/21/16	
3,3'-Dichlorobenzidine	4.7 U	4.7	4.5	1	11/23/16 16:58	11/21/16	
4,6-Dinitro-o-cresol	47 U	47	11	1	11/23/16 16:58	11/21/16	
4-Bromophenyl Phenyl Ether	4.7 U	4.7	2.2	1	11/23/16 16:58	11/21/16	
4-Chloro-m-cresol	4.7 U	4.7	1.2	1	11/23/16 16:58	11/21/16	
4-Chlorophenyl Phenyl Ether	4.7 U	4.7	1.2	1	11/23/16 16:58	11/21/16	
4-Nitrophenol	47 U	47	5.9	1	11/23/16 16:58	11/21/16	
Acenaphthene	4.7 U	4.7	1.0	1	11/23/16 16:58	11/21/16	
Acenaphthylene	4.7 U	4.7	1.0	1	11/23/16 16:58	11/21/16	
Anthracene	4.7 U	4.7	1.0	1	11/23/16 16:58	11/21/16	
Benz(a)anthracene	4.7 U	4.7	1.0	1	11/23/16 16:58	11/21/16	
Benzidine	94 U	94	90	1	11/23/16 16:58	11/21/16	
Benzo(a)pyrene	4.7 U	4.7	1.0	1	11/23/16 16:58	11/21/16	
3,4-Benzofluoranthene	4.7 U	4.7	1.0	1	11/23/16 16:58	11/21/16	
Benzo(g,h,i)perylene	4.7 U	4.7	1.0	1	11/23/16 16:58	11/21/16	
Benzo(k)fluoranthene	4.7 U	4.7	1.0	1	11/23/16 16:58	11/21/16	
Bis(1-chloroisopropyl) Ether	4.7 U	4.7	1.0	1	11/23/16 16:58	11/21/16	
Bis(2-chloroethoxy)methane	4.7 U	4.7	2.2	1	11/23/16 16:58	11/21/16	
Bis(2-chloroethyl) Ether	4.7 U	4.7	1.3	1	11/23/16 16:58	11/21/16	
Bis(2-ethylhexyl) Phthalate	4.7 U	4.7	1.2	1	11/23/16 16:58	11/21/16	
Butyl Benzyl Phthalate	4.7 U	4.7	2.4	1	11/23/16 16:58	11/21/16	
Chrysene	4.7 U	4.7	1.0	1	11/23/16 16:58	11/21/16	
Di-n-butyl Phthalate	4.7 U	4.7	1.0	1	11/23/16 16:58	11/21/16	
Di-n-octyl Phthalate	4.7 U	4.7	1.2	1	11/23/16 16:58	11/21/16	
Dibenz(a,h)anthracene	4.7 U	4.7	1.3	1	11/23/16 16:58	11/21/16	
Diethyl Phthalate	4.7 U	4.7	1.0	1	11/23/16 16:58	11/21/16	
Dimethyl Phthalate	4.7 U	4.7	1.0	1	11/23/16 16:58	11/21/16	
Fluoranthene	4.7 U	4.7	1.0	1	11/23/16 16:58	11/21/16	
Fluorene	4.7 U	4.7	1.0	1	11/23/16 16:58	11/21/16	
Hexachlorobenzene	4.7 U	4.7	1.0	1	11/23/16 16:58	11/21/16	
Hexachlorobutadiene	4.7 U	4.7	1.3	1	11/23/16 16:58	11/21/16	
Hexachlorocyclopentadiene	4.7 U	4.7	1.0	1	11/23/16 16:58	11/21/16	
Hexachloroethane	4.7 U	4.7	1.2	1	11/23/16 16:58	11/21/16	

Analytical Report

Client:	Ecology And Environment, Incorporated	**Service Request:**	R1612099
Project:	Davis Howland Oil Company Site - Semiannual Water/10C3074.0012.08	**Date Collected:**	11/14/16 12:40
Sample Matrix:	Water	**Date Received:**	11/15/16 15:18
Sample Name:	MW-10R-111416	**Units:**	ug/L
Lab Code:	R1612099-002	**Basis:**	NA

Semivolatile Organic Compounds by GC/MS

Analysis Method: 625
Prep Method: EPA 3510C

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Indeno(1,2,3-cd)pyrene	4.7 U	4.7	1.2	1	11/23/16 16:58	11/21/16	
Isophorone	4.7 U	4.7	1.0	1	11/23/16 16:58	11/21/16	
N-Nitrosodi-n-propylamine	4.7 U	4.7	1.3	1	11/23/16 16:58	11/21/16	
N-Nitrosodimethylamine	4.7 U	4.7	1.0	1	11/23/16 16:58	11/21/16	
N-Nitrosodiphenylamine	4.7 U	4.7	1.0	1	11/23/16 16:58	11/21/16	
Naphthalene	4.7 U	4.7	1.0	1	11/23/16 16:58	11/21/16	
Nitrobenzene	4.7 U	4.7	1.6	1	11/23/16 16:58	11/21/16	
Pentachlorophenol (PCP)	47 U	47	6.9	1	11/23/16 16:58	11/21/16	
Phenanthrene	4.7 U	4.7	1.0	1	11/23/16 16:58	11/21/16	
Phenol	4.7 U	4.7	1.0	1	11/23/16 16:58	11/21/16	
Pyrene	4.7 U	4.7	1.0	1	11/23/16 16:58	11/21/16	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
2,4,6-Tribromophenol	81	28 - 157	11/23/16 16:58	
2-Fluorobiphenyl	77	39 - 119	11/23/16 16:58	
2-Fluorophenol	38	10 - 105	11/23/16 16:58	
Nitrobenzene-d5	71	37 - 117	11/23/16 16:58	
Phenol-d6	27	10 - 107	11/23/16 16:58	
p-Terphenyl-d14	103	40 - 133	11/23/16 16:58	

Analytical Report

Client:	Ecology And Environment, Incorporated	**Service Request:**	R1612099
Project:	Davis Howland Oil Company Site - Semiannual Water/10C3074.0012.08	**Date Collected:**	11/14/16 14:45
Sample Matrix:	Water	**Date Received:**	11/15/16 15:18
Sample Name:	MW-1S-111416	**Units:**	ug/L
Lab Code:	R1612099-003	**Basis:**	NA

Semivolatile Organic Compounds by GC/MS

Analysis Method: 625
Prep Method: EPA 3510C

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
1,2,4-Trichlorobenzene	4.7 U	4.7	1.0	1	11/23/16 17:26	11/21/16	
1,2-Diphenylhydrazine	4.7 U	4.7	1.0	1	11/23/16 17:26	11/21/16	
2,4,6-Trichlorophenol	4.7 U	4.7	1.4	1	11/23/16 17:26	11/21/16	
2,4-Dichlorophenol	4.7 U	4.7	1.3	1	11/23/16 17:26	11/21/16	
2,4-Dimethylphenol	4.7 U	4.7	1.5	1	11/23/16 17:26	11/21/16	
2,4-Dinitrophenol	47 U	47	20	1	11/23/16 17:26	11/21/16	
2,4-Dinitrotoluene	4.7 U	4.7	1.6	1	11/23/16 17:26	11/21/16	
2,6-Dinitrotoluene	4.7 U	4.7	1.8	1	11/23/16 17:26	11/21/16	
2-Chloronaphthalene	4.7 U	4.7	1.0	1	11/23/16 17:26	11/21/16	
2-Chlorophenol	4.7 U	4.7	1.0	1	11/23/16 17:26	11/21/16	
2-Nitrophenol	4.7 U	4.7	1.4	1	11/23/16 17:26	11/21/16	
3,3'-Dichlorobenzidine	4.7 U	4.7	4.5	1	11/23/16 17:26	11/21/16	
4,6-Dinitro-o-cresol	47 U	47	11	1	11/23/16 17:26	11/21/16	
4-Bromophenyl Phenyl Ether	4.7 U	4.7	2.2	1	11/23/16 17:26	11/21/16	
4-Chloro-m-cresol	4.7 U	4.7	1.2	1	11/23/16 17:26	11/21/16	
4-Chlorophenyl Phenyl Ether	4.7 U	4.7	1.2	1	11/23/16 17:26	11/21/16	
4-Nitrophenol	47 U	47	5.9	1	11/23/16 17:26	11/21/16	
Acenaphthene	4.7 U	4.7	1.0	1	11/23/16 17:26	11/21/16	
Acenaphthylene	4.7 U	4.7	1.0	1	11/23/16 17:26	11/21/16	
Anthracene	4.7 U	4.7	1.0	1	11/23/16 17:26	11/21/16	
Benz(a)anthracene	4.7 U	4.7	1.0	1	11/23/16 17:26	11/21/16	
Benzidine	94 U	94	90	1	11/23/16 17:26	11/21/16	
Benzo(a)pyrene	4.7 U	4.7	1.0	1	11/23/16 17:26	11/21/16	
3,4-Benzofluoranthene	4.7 U	4.7	1.0	1	11/23/16 17:26	11/21/16	
Benzo(g,h,i)perylene	4.7 U	4.7	1.0	1	11/23/16 17:26	11/21/16	
Benzo(k)fluoranthene	4.7 U	4.7	1.0	1	11/23/16 17:26	11/21/16	
Bis(1-chloroisopropyl) Ether	4.7 U	4.7	1.0	1	11/23/16 17:26	11/21/16	
Bis(2-chloroethoxy)methane	4.7 U	4.7	2.2	1	11/23/16 17:26	11/21/16	
Bis(2-chloroethyl) Ether	4.7 U	4.7	1.3	1	11/23/16 17:26	11/21/16	
Bis(2-ethylhexyl) Phthalate	4.7 U	4.7	1.2	1	11/23/16 17:26	11/21/16	
Butyl Benzyl Phthalate	4.7 U	4.7	2.4	1	11/23/16 17:26	11/21/16	
Chrysene	4.7 U	4.7	1.0	1	11/23/16 17:26	11/21/16	
Di-n-butyl Phthalate	4.7 U	4.7	1.0	1	11/23/16 17:26	11/21/16	
Di-n-octyl Phthalate	4.7 U	4.7	1.2	1	11/23/16 17:26	11/21/16	
Dibenz(a,h)anthracene	4.7 U	4.7	1.3	1	11/23/16 17:26	11/21/16	
Diethyl Phthalate	4.7 U	4.7	1.0	1	11/23/16 17:26	11/21/16	
Dimethyl Phthalate	4.7 U	4.7	1.0	1	11/23/16 17:26	11/21/16	
Fluoranthene	4.7 U	4.7	1.0	1	11/23/16 17:26	11/21/16	
Fluorene	4.7 U	4.7	1.0	1	11/23/16 17:26	11/21/16	
Hexachlorobenzene	4.7 U	4.7	1.0	1	11/23/16 17:26	11/21/16	
Hexachlorobutadiene	4.7 U	4.7	1.3	1	11/23/16 17:26	11/21/16	
Hexachlorocyclopentadiene	4.7 U	4.7	1.0	1	11/23/16 17:26	11/21/16	
Hexachloroethane	4.7 U	4.7	1.2	1	11/23/16 17:26	11/21/16	

Analytical Report

Client:	Ecology And Environment, Incorporated	**Service Request:**	R1612099
Project:	Davis Howland Oil Company Site - Semiannual Water/10C3074.0012.08	**Date Collected:**	11/14/16 14:45
Sample Matrix:	Water	**Date Received:**	11/15/16 15:18
Sample Name:	MW-1S-111416	**Units:**	ug/L
Lab Code:	R1612099-003	**Basis:**	NA

Semivolatile Organic Compounds by GC/MS

Analysis Method: 625
Prep Method: EPA 3510C

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Indeno(1,2,3-cd)pyrene	4.7 U	4.7	1.2	1	11/23/16 17:26	11/21/16	
Isophorone	4.7 U	4.7	1.0	1	11/23/16 17:26	11/21/16	
N-Nitrosodi-n-propylamine	4.7 U	4.7	1.3	1	11/23/16 17:26	11/21/16	
N-Nitrosodimethylamine	4.7 U	4.7	1.0	1	11/23/16 17:26	11/21/16	
N-Nitrosodiphenylamine	4.7 U	4.7	1.0	1	11/23/16 17:26	11/21/16	
Naphthalene	4.7 U	4.7	1.0	1	11/23/16 17:26	11/21/16	
Nitrobenzene	4.7 U	4.7	1.6	1	11/23/16 17:26	11/21/16	
Pentachlorophenol (PCP)	47 U	47	6.9	1	11/23/16 17:26	11/21/16	
Phenanthrene	4.7 U	4.7	1.0	1	11/23/16 17:26	11/21/16	
Phenol	4.7 U	4.7	1.0	1	11/23/16 17:26	11/21/16	
Pyrene	4.7 U	4.7	1.0	1	11/23/16 17:26	11/21/16	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
2,4,6-Tribromophenol	77	28 - 157	11/23/16 17:26	
2-Fluorobiphenyl	75	39 - 119	11/23/16 17:26	
2-Fluorophenol	37	10 - 105	11/23/16 17:26	
Nitrobenzene-d5	68	37 - 117	11/23/16 17:26	
Phenol-d6	28	10 - 107	11/23/16 17:26	
p-Terphenyl-d14	91	40 - 133	11/23/16 17:26	

Analytical Report

Client:	Ecology And Environment, Incorporated	**Service Request:**	R1612099
Project:	Davis Howland Oil Company Site - Semiannual Water/10C3074.0012.08	**Date Collected:**	11/15/16 09:15
Sample Matrix:	Water	**Date Received:**	11/15/16 15:18
Sample Name:	MW-16R-111516	**Units:**	ug/L
Lab Code:	R1612099-004	**Basis:**	NA

Semivolatile Organic Compounds by GC/MS

Analysis Method: 625
Prep Method: EPA 3510C

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
1,2,4-Trichlorobenzene	4.7 U	4.7	1.0	1	11/23/16 17:55	11/21/16	
1,2-Diphenylhydrazine	4.7 U	4.7	1.0	1	11/23/16 17:55	11/21/16	
2,4,6-Trichlorophenol	4.7 U	4.7	1.4	1	11/23/16 17:55	11/21/16	
2,4-Dichlorophenol	4.7 U	4.7	1.3	1	11/23/16 17:55	11/21/16	
2,4-Dimethylphenol	4.7 U	4.7	1.5	1	11/23/16 17:55	11/21/16	
2,4-Dinitrophenol	47 U	47	20	1	11/23/16 17:55	11/21/16	
2,4-Dinitrotoluene	4.7 U	4.7	1.6	1	11/23/16 17:55	11/21/16	
2,6-Dinitrotoluene	4.7 U	4.7	1.8	1	11/23/16 17:55	11/21/16	
2-Chloronaphthalene	4.7 U	4.7	1.0	1	11/23/16 17:55	11/21/16	
2-Chlorophenol	4.7 U	4.7	1.0	1	11/23/16 17:55	11/21/16	
2-Nitrophenol	4.7 U	4.7	1.4	1	11/23/16 17:55	11/21/16	
3,3'-Dichlorobenzidine	4.7 U	4.7	4.5	1	11/23/16 17:55	11/21/16	
4,6-Dinitro-o-cresol	47 U	47	11	1	11/23/16 17:55	11/21/16	
4-Bromophenyl Phenyl Ether	4.7 U	4.7	2.2	1	11/23/16 17:55	11/21/16	
4-Chloro-m-cresol	4.7 U	4.7	1.2	1	11/23/16 17:55	11/21/16	
4-Chlorophenyl Phenyl Ether	4.7 U	4.7	1.2	1	11/23/16 17:55	11/21/16	
4-Nitrophenol	47 U	47	5.9	1	11/23/16 17:55	11/21/16	
Acenaphthene	4.7 U	4.7	1.0	1	11/23/16 17:55	11/21/16	
Acenaphthylene	4.7 U	4.7	1.0	1	11/23/16 17:55	11/21/16	
Anthracene	4.7 U	4.7	1.0	1	11/23/16 17:55	11/21/16	
Benz(a)anthracene	4.7 U	4.7	1.0	1	11/23/16 17:55	11/21/16	
Benzidine	94 U	94	90	1	11/23/16 17:55	11/21/16	
Benzo(a)pyrene	4.7 U	4.7	1.0	1	11/23/16 17:55	11/21/16	
3,4-Benzofluoranthene	4.7 U	4.7	1.0	1	11/23/16 17:55	11/21/16	
Benzo(g,h,i)perylene	4.7 U	4.7	1.0	1	11/23/16 17:55	11/21/16	
Benzo(k)fluoranthene	4.7 U	4.7	1.0	1	11/23/16 17:55	11/21/16	
Bis(1-chloroisopropyl) Ether	4.7 U	4.7	1.0	1	11/23/16 17:55	11/21/16	
Bis(2-chloroethoxy)methane	4.7 U	4.7	2.2	1	11/23/16 17:55	11/21/16	
Bis(2-chloroethyl) Ether	4.7 U	4.7	1.3	1	11/23/16 17:55	11/21/16	
Bis(2-ethylhexyl) Phthalate	4.7 U	4.7	1.2	1	11/23/16 17:55	11/21/16	
Butyl Benzyl Phthalate	4.7 U	4.7	2.4	1	11/23/16 17:55	11/21/16	
Chrysene	4.7 U	4.7	1.0	1	11/23/16 17:55	11/21/16	
Di-n-butyl Phthalate	4.7 U	4.7	1.0	1	11/23/16 17:55	11/21/16	
Di-n-octyl Phthalate	4.7 U	4.7	1.2	1	11/23/16 17:55	11/21/16	
Dibenz(a,h)anthracene	4.7 U	4.7	1.3	1	11/23/16 17:55	11/21/16	
Diethyl Phthalate	4.7 U	4.7	1.0	1	11/23/16 17:55	11/21/16	
Dimethyl Phthalate	4.7 U	4.7	1.0	1	11/23/16 17:55	11/21/16	
Fluoranthene	4.7 U	4.7	1.0	1	11/23/16 17:55	11/21/16	
Fluorene	4.7 U	4.7	1.0	1	11/23/16 17:55	11/21/16	
Hexachlorobenzene	4.7 U	4.7	1.0	1	11/23/16 17:55	11/21/16	
Hexachlorobutadiene	4.7 U	4.7	1.3	1	11/23/16 17:55	11/21/16	
Hexachlorocyclopentadiene	4.7 U	4.7	1.0	1	11/23/16 17:55	11/21/16	
Hexachloroethane	4.7 U	4.7	1.2	1	11/23/16 17:55	11/21/16	

Analytical Report

Client:	Ecology And Environment, Incorporated	**Service Request:**	R1612099
Project:	Davis Howland Oil Company Site - Semiannual Water/10C3074.0012.08	**Date Collected:**	11/15/16 09:15
Sample Matrix:	Water	**Date Received:**	11/15/16 15:18
Sample Name:	MW-16R-111516	**Units:**	ug/L
Lab Code:	R1612099-004	**Basis:**	NA

Semivolatile Organic Compounds by GC/MS

Analysis Method: 625
Prep Method: EPA 3510C

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Indeno(1,2,3-cd)pyrene	4.7 U	4.7	1.2	1	11/23/16 17:55	11/21/16	
Isophorone	4.7 U	4.7	1.0	1	11/23/16 17:55	11/21/16	
N-Nitrosodi-n-propylamine	4.7 U	4.7	1.3	1	11/23/16 17:55	11/21/16	
N-Nitrosodimethylamine	4.7 U	4.7	1.0	1	11/23/16 17:55	11/21/16	
N-Nitrosodiphenylamine	4.7 U	4.7	1.0	1	11/23/16 17:55	11/21/16	
Naphthalene	4.7 U	4.7	1.0	1	11/23/16 17:55	11/21/16	
Nitrobenzene	4.7 U	4.7	1.6	1	11/23/16 17:55	11/21/16	
Pentachlorophenol (PCP)	47 U	47	6.9	1	11/23/16 17:55	11/21/16	
Phenanthrene	4.7 U	4.7	1.0	1	11/23/16 17:55	11/21/16	
Phenol	4.7 U	4.7	1.0	1	11/23/16 17:55	11/21/16	
Pyrene	4.7 U	4.7	1.0	1	11/23/16 17:55	11/21/16	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
2,4,6-Tribromophenol	81	28 - 157	11/23/16 17:55	
2-Fluorobiphenyl	82	39 - 119	11/23/16 17:55	
2-Fluorophenol	37	10 - 105	11/23/16 17:55	
Nitrobenzene-d5	74	37 - 117	11/23/16 17:55	
Phenol-d6	28	10 - 107	11/23/16 17:55	
p-Terphenyl-d14	97	40 - 133	11/23/16 17:55	

Analytical Report

Client:	Ecology And Environment, Incorporated	**Service Request:**	R1612099
Project:	Davis Howland Oil Company Site - Semiannual Water/10C3074.0012.08	**Date Collected:**	11/15/16 13:48
Sample Matrix:	Water	**Date Received:**	11/15/16 15:18
Sample Name:	PZ-3-111516	**Units:**	ug/L
Lab Code:	R1612099-005	**Basis:**	NA

Semivolatile Organic Compounds by GC/MS

Analysis Method: 625
Prep Method: EPA 3510C

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
1,2,4-Trichlorobenzene	4.7 U	4.7	1.0	1	11/23/16 18:23	11/21/16	
1,2-Diphenylhydrazine	4.7 U	4.7	1.0	1	11/23/16 18:23	11/21/16	
2,4,6-Trichlorophenol	4.7 U	4.7	1.4	1	11/23/16 18:23	11/21/16	
2,4-Dichlorophenol	4.7 U	4.7	1.3	1	11/23/16 18:23	11/21/16	
2,4-Dimethylphenol	4.7 U	4.7	1.5	1	11/23/16 18:23	11/21/16	
2,4-Dinitrophenol	47 U	47	20	1	11/23/16 18:23	11/21/16	
2,4-Dinitrotoluene	4.7 U	4.7	1.6	1	11/23/16 18:23	11/21/16	
2,6-Dinitrotoluene	4.7 U	4.7	1.8	1	11/23/16 18:23	11/21/16	
2-Chloronaphthalene	4.7 U	4.7	1.0	1	11/23/16 18:23	11/21/16	
2-Chlorophenol	4.7 U	4.7	1.0	1	11/23/16 18:23	11/21/16	
2-Nitrophenol	4.7 U	4.7	1.4	1	11/23/16 18:23	11/21/16	
3,3'-Dichlorobenzidine	4.7 U	4.7	4.5	1	11/23/16 18:23	11/21/16	
4,6-Dinitro-o-cresol	47 U	47	11	1	11/23/16 18:23	11/21/16	
4-Bromophenyl Phenyl Ether	4.7 U	4.7	2.2	1	11/23/16 18:23	11/21/16	
4-Chloro-m-cresol	4.7 U	4.7	1.2	1	11/23/16 18:23	11/21/16	
4-Chlorophenyl Phenyl Ether	4.7 U	4.7	1.2	1	11/23/16 18:23	11/21/16	
4-Nitrophenol	47 U	47	5.9	1	11/23/16 18:23	11/21/16	
Acenaphthene	4.7 U	4.7	1.0	1	11/23/16 18:23	11/21/16	
Acenaphthylene	4.7 U	4.7	1.0	1	11/23/16 18:23	11/21/16	
Anthracene	4.7 U	4.7	1.0	1	11/23/16 18:23	11/21/16	
Benz(a)anthracene	4.7 U	4.7	1.0	1	11/23/16 18:23	11/21/16	
Benzidine	94 U	94	90	1	11/23/16 18:23	11/21/16	
Benzo(a)pyrene	4.7 U	4.7	1.0	1	11/23/16 18:23	11/21/16	
3,4-Benzofluoranthene	4.7 U	4.7	1.0	1	11/23/16 18:23	11/21/16	
Benzo(g,h,i)perylene	4.7 U	4.7	1.0	1	11/23/16 18:23	11/21/16	
Benzo(k)fluoranthene	4.7 U	4.7	1.0	1	11/23/16 18:23	11/21/16	
Bis(1-chloroisopropyl) Ether	4.7 U	4.7	1.0	1	11/23/16 18:23	11/21/16	
Bis(2-chloroethoxy)methane	4.7 U	4.7	2.2	1	11/23/16 18:23	11/21/16	
Bis(2-chloroethyl) Ether	4.7 U	4.7	1.3	1	11/23/16 18:23	11/21/16	
Bis(2-ethylhexyl) Phthalate	4.7 U	4.7	1.2	1	11/23/16 18:23	11/21/16	
Butyl Benzyl Phthalate	4.7 U	4.7	2.4	1	11/23/16 18:23	11/21/16	
Chrysene	4.7 U	4.7	1.0	1	11/23/16 18:23	11/21/16	
Di-n-butyl Phthalate	4.7 U	4.7	1.0	1	11/23/16 18:23	11/21/16	
Di-n-octyl Phthalate	4.7 U	4.7	1.2	1	11/23/16 18:23	11/21/16	
Dibenz(a,h)anthracene	4.7 U	4.7	1.3	1	11/23/16 18:23	11/21/16	
Diethyl Phthalate	**8.5**	4.7	1.0	1	11/23/16 18:23	11/21/16	
Dimethyl Phthalate	4.7 U	4.7	1.0	1	11/23/16 18:23	11/21/16	
Fluoranthene	4.7 U	4.7	1.0	1	11/23/16 18:23	11/21/16	
Fluorene	4.7 U	4.7	1.0	1	11/23/16 18:23	11/21/16	
Hexachlorobenzene	4.7 U	4.7	1.0	1	11/23/16 18:23	11/21/16	
Hexachlorobutadiene	4.7 U	4.7	1.3	1	11/23/16 18:23	11/21/16	
Hexachlorocyclopentadiene	4.7 U	4.7	1.0	1	11/23/16 18:23	11/21/16	
Hexachloroethane	4.7 U	4.7	1.2	1	11/23/16 18:23	11/21/16	

Analytical Report

Client:	Ecology And Environment, Incorporated	**Service Request:**	R1612099
Project:	Davis Howland Oil Company Site - Semiannual Water/10C3074.0012.08	**Date Collected:**	11/15/16 13:48
Sample Matrix:	Water	**Date Received:**	11/15/16 15:18
Sample Name:	PZ-3-111516	**Units:**	ug/L
Lab Code:	R1612099-005	**Basis:**	NA

Semivolatile Organic Compounds by GC/MS

Analysis Method: 625
Prep Method: EPA 3510C

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Indeno(1,2,3-cd)pyrene	4.7 U	4.7	1.2	1	11/23/16 18:23	11/21/16	
Isophorone	4.7 U	4.7	1.0	1	11/23/16 18:23	11/21/16	
N-Nitrosodi-n-propylamine	4.7 U	4.7	1.3	1	11/23/16 18:23	11/21/16	
N-Nitrosodimethylamine	4.7 U	4.7	1.0	1	11/23/16 18:23	11/21/16	
N-Nitrosodiphenylamine	4.7 U	4.7	1.0	1	11/23/16 18:23	11/21/16	
Naphthalene	4.7 U	4.7	1.0	1	11/23/16 18:23	11/21/16	
Nitrobenzene	4.7 U	4.7	1.6	1	11/23/16 18:23	11/21/16	
Pentachlorophenol (PCP)	47 U	47	6.9	1	11/23/16 18:23	11/21/16	
Phenanthrene	4.7 U	4.7	1.0	1	11/23/16 18:23	11/21/16	
Phenol	4.7 U	4.7	1.0	1	11/23/16 18:23	11/21/16	
Pyrene	4.7 U	4.7	1.0	1	11/23/16 18:23	11/21/16	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
2,4,6-Tribromophenol	80	28 - 157	11/23/16 18:23	
2-Fluorobiphenyl	76	39 - 119	11/23/16 18:23	
2-Fluorophenol	39	10 - 105	11/23/16 18:23	
Nitrobenzene-d5	69	37 - 117	11/23/16 18:23	
Phenol-d6	30	10 - 107	11/23/16 18:23	
p-Terphenyl-d14	91	40 - 133	11/23/16 18:23	

Analytical Report

Client:	Ecology And Environment, Incorporated	**Service Request:**	R1612099
Project:	Davis Howland Oil Company Site - Semiannual Water/10C3074.0012.08	**Date Collected:**	11/15/16 12:02
Sample Matrix:	Water	**Date Received:**	11/15/16 15:18
Sample Name:	PZ-2-111516	**Units:**	ug/L
Lab Code:	R1612099-006	**Basis:**	NA

Semivolatile Organic Compounds by GC/MS

Analysis Method: 625
Prep Method: EPA 3510C

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
1,2,4-Trichlorobenzene	4.7 U	4.7	1.0	1	11/23/16 18:51	11/21/16	
1,2-Diphenylhydrazine	4.7 U	4.7	1.0	1	11/23/16 18:51	11/21/16	
2,4,6-Trichlorophenol	4.7 U	4.7	1.4	1	11/23/16 18:51	11/21/16	
2,4-Dichlorophenol	4.7 U	4.7	1.3	1	11/23/16 18:51	11/21/16	
2,4-Dimethylphenol	4.7 U	4.7	1.5	1	11/23/16 18:51	11/21/16	
2,4-Dinitrophenol	47 U	47	20	1	11/23/16 18:51	11/21/16	
2,4-Dinitrotoluene	4.7 U	4.7	1.6	1	11/23/16 18:51	11/21/16	
2,6-Dinitrotoluene	4.7 U	4.7	1.8	1	11/23/16 18:51	11/21/16	
2-Chloronaphthalene	4.7 U	4.7	1.0	1	11/23/16 18:51	11/21/16	
2-Chlorophenol	4.7 U	4.7	1.0	1	11/23/16 18:51	11/21/16	
2-Nitrophenol	4.7 U	4.7	1.4	1	11/23/16 18:51	11/21/16	
3,3'-Dichlorobenzidine	4.7 U	4.7	4.5	1	11/23/16 18:51	11/21/16	
4,6-Dinitro-o-cresol	47 U	47	11	1	11/23/16 18:51	11/21/16	
4-Bromophenyl Phenyl Ether	4.7 U	4.7	2.2	1	11/23/16 18:51	11/21/16	
4-Chloro-m-cresol	4.7 U	4.7	1.2	1	11/23/16 18:51	11/21/16	
4-Chlorophenyl Phenyl Ether	4.7 U	4.7	1.2	1	11/23/16 18:51	11/21/16	
4-Nitrophenol	47 U	47	5.9	1	11/23/16 18:51	11/21/16	
Acenaphthene	4.7 U	4.7	1.0	1	11/23/16 18:51	11/21/16	
Acenaphthylene	4.7 U	4.7	1.0	1	11/23/16 18:51	11/21/16	
Anthracene	4.7 U	4.7	1.0	1	11/23/16 18:51	11/21/16	
Benz(a)anthracene	4.7 U	4.7	1.0	1	11/23/16 18:51	11/21/16	
Benzidine	94 U	94	90	1	11/23/16 18:51	11/21/16	
Benzo(a)pyrene	4.7 U	4.7	1.0	1	11/23/16 18:51	11/21/16	
3,4-Benzofluoranthene	4.7 U	4.7	1.0	1	11/23/16 18:51	11/21/16	
Benzo(g,h,i)perylene	4.7 U	4.7	1.0	1	11/23/16 18:51	11/21/16	
Benzo(k)fluoranthene	4.7 U	4.7	1.0	1	11/23/16 18:51	11/21/16	
Bis(1-chloroisopropyl) Ether	4.7 U	4.7	1.0	1	11/23/16 18:51	11/21/16	
Bis(2-chloroethoxy)methane	4.7 U	4.7	2.2	1	11/23/16 18:51	11/21/16	
Bis(2-chloroethyl) Ether	4.7 U	4.7	1.3	1	11/23/16 18:51	11/21/16	
Bis(2-ethylhexyl) Phthalate	4.7 U	4.7	1.2	1	11/23/16 18:51	11/21/16	
Butyl Benzyl Phthalate	4.7 U	4.7	2.4	1	11/23/16 18:51	11/21/16	
Chrysene	4.7 U	4.7	1.0	1	11/23/16 18:51	11/21/16	
Di-n-butyl Phthalate	4.7 U	4.7	1.0	1	11/23/16 18:51	11/21/16	
Di-n-octyl Phthalate	4.7 U	4.7	1.2	1	11/23/16 18:51	11/21/16	
Dibenz(a,h)anthracene	4.7 U	4.7	1.3	1	11/23/16 18:51	11/21/16	
Diethyl Phthalate	4.7 U	4.7	1.0	1	11/23/16 18:51	11/21/16	
Dimethyl Phthalate	4.7 U	4.7	1.0	1	11/23/16 18:51	11/21/16	
Fluoranthene	4.7 U	4.7	1.0	1	11/23/16 18:51	11/21/16	
Fluorene	4.7 U	4.7	1.0	1	11/23/16 18:51	11/21/16	
Hexachlorobenzene	4.7 U	4.7	1.0	1	11/23/16 18:51	11/21/16	
Hexachlorobutadiene	4.7 U	4.7	1.3	1	11/23/16 18:51	11/21/16	
Hexachlorocyclopentadiene	4.7 U	4.7	1.0	1	11/23/16 18:51	11/21/16	
Hexachloroethane	4.7 U	4.7	1.2	1	11/23/16 18:51	11/21/16	

Analytical Report

Client:	Ecology And Environment, Incorporated	**Service Request:**	R1612099
Project:	Davis Howland Oil Company Site - Semiannual Water/10C3074.0012.08	**Date Collected:**	11/15/16 12:02
Sample Matrix:	Water	**Date Received:**	11/15/16 15:18
Sample Name:	PZ-2-111516	**Units:**	ug/L
Lab Code:	R1612099-006	**Basis:**	NA

Semivolatile Organic Compounds by GC/MS

Analysis Method: 625
Prep Method: EPA 3510C

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Indeno(1,2,3-cd)pyrene	4.7 U	4.7	1.2	1	11/23/16 18:51	11/21/16	
Isophorone	4.7 U	4.7	1.0	1	11/23/16 18:51	11/21/16	
N-Nitrosodi-n-propylamine	4.7 U	4.7	1.3	1	11/23/16 18:51	11/21/16	
N-Nitrosodimethylamine	4.7 U	4.7	1.0	1	11/23/16 18:51	11/21/16	
N-Nitrosodiphenylamine	4.7 U	4.7	1.0	1	11/23/16 18:51	11/21/16	
Naphthalene	4.7 U	4.7	1.0	1	11/23/16 18:51	11/21/16	
Nitrobenzene	4.7 U	4.7	1.6	1	11/23/16 18:51	11/21/16	
Pentachlorophenol (PCP)	47 U	47	6.9	1	11/23/16 18:51	11/21/16	
Phenanthrene	4.7 U	4.7	1.0	1	11/23/16 18:51	11/21/16	
Phenol	4.7 U	4.7	1.0	1	11/23/16 18:51	11/21/16	
Pyrene	4.7 U	4.7	1.0	1	11/23/16 18:51	11/21/16	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
2,4,6-Tribromophenol	74	28 - 157	11/23/16 18:51	
2-Fluorobiphenyl	75	39 - 119	11/23/16 18:51	
2-Fluorophenol	38	10 - 105	11/23/16 18:51	
Nitrobenzene-d5	68	37 - 117	11/23/16 18:51	
Phenol-d6	28	10 - 107	11/23/16 18:51	
p-Terphenyl-d14	89	40 - 133	11/23/16 18:51	

Client:	Ecology And Environment, Incorporated	**Service Request:**	R1612099
Project:	Davis Howland Oil Company Site - Semiannual Water/10C3074.0012.08	**Date Collected:**	11/15/16 11:40
Sample Matrix:	Water	**Date Received:**	11/15/16 15:18
Sample Name:	PW2-111516	**Units:**	ug/L
Lab Code:	R1612099-007	**Basis:**	NA

Semivolatile Organic Compounds by GC/MS

Analysis Method: 625
Prep Method: EPA 3510C

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
1,2,4-Trichlorobenzene	4.7 U	4.7	1.0	1	11/23/16 19:19	11/21/16	
1,2-Diphenylhydrazine	4.7 U	4.7	1.0	1	11/23/16 19:19	11/21/16	
2,4,6-Trichlorophenol	4.7 U	4.7	1.4	1	11/23/16 19:19	11/21/16	
2,4-Dichlorophenol	4.7 U	4.7	1.3	1	11/23/16 19:19	11/21/16	
2,4-Dimethylphenol	4.7 U	4.7	1.5	1	11/23/16 19:19	11/21/16	
2,4-Dinitrophenol	47 U	47	20	1	11/23/16 19:19	11/21/16	
2,4-Dinitrotoluene	4.7 U	4.7	1.6	1	11/23/16 19:19	11/21/16	
2,6-Dinitrotoluene	4.7 U	4.7	1.8	1	11/23/16 19:19	11/21/16	
2-Chloronaphthalene	4.7 U	4.7	1.0	1	11/23/16 19:19	11/21/16	
2-Chlorophenol	4.7 U	4.7	1.0	1	11/23/16 19:19	11/21/16	
2-Nitrophenol	4.7 U	4.7	1.4	1	11/23/16 19:19	11/21/16	
3,3'-Dichlorobenzidine	4.7 U	4.7	4.5	1	11/23/16 19:19	11/21/16	
4,6-Dinitro-o-cresol	47 U	47	11	1	11/23/16 19:19	11/21/16	
4-Bromophenyl Phenyl Ether	4.7 U	4.7	2.2	1	11/23/16 19:19	11/21/16	
4-Chloro-m-cresol	4.7 U	4.7	1.2	1	11/23/16 19:19	11/21/16	
4-Chlorophenyl Phenyl Ether	4.7 U	4.7	1.2	1	11/23/16 19:19	11/21/16	
4-Nitrophenol	47 U	47	5.9	1	11/23/16 19:19	11/21/16	
Acenaphthene	4.7 U	4.7	1.0	1	11/23/16 19:19	11/21/16	
Acenaphthylene	4.7 U	4.7	1.0	1	11/23/16 19:19	11/21/16	
Anthracene	4.7 U	4.7	1.0	1	11/23/16 19:19	11/21/16	
Benz(a)anthracene	4.7 U	4.7	1.0	1	11/23/16 19:19	11/21/16	
Benzidine	94 U	94	90	1	11/23/16 19:19	11/21/16	
Benzo(a)pyrene	4.7 U	4.7	1.0	1	11/23/16 19:19	11/21/16	
3,4-Benzofluoranthene	4.7 U	4.7	1.0	1	11/23/16 19:19	11/21/16	
Benzo(g,h,i)perylene	4.7 U	4.7	1.0	1	11/23/16 19:19	11/21/16	
Benzo(k)fluoranthene	4.7 U	4.7	1.0	1	11/23/16 19:19	11/21/16	
Bis(1-chloroisopropyl) Ether	4.7 U	4.7	1.0	1	11/23/16 19:19	11/21/16	
Bis(2-chloroethoxy)methane	4.7 U	4.7	2.2	1	11/23/16 19:19	11/21/16	
Bis(2-chloroethyl) Ether	4.7 U	4.7	1.3	1	11/23/16 19:19	11/21/16	
Bis(2-ethylhexyl) Phthalate	4.7 U	4.7	1.2	1	11/23/16 19:19	11/21/16	
Butyl Benzyl Phthalate	4.7 U	4.7	2.4	1	11/23/16 19:19	11/21/16	
Chrysene	4.7 U	4.7	1.0	1	11/23/16 19:19	11/21/16	
Di-n-butyl Phthalate	4.7 U	4.7	1.0	1	11/23/16 19:19	11/21/16	
Di-n-octyl Phthalate	4.7 U	4.7	1.2	1	11/23/16 19:19	11/21/16	
Dibenz(a,h)anthracene	4.7 U	4.7	1.3	1	11/23/16 19:19	11/21/16	
Diethyl Phthalate	4.7 U	4.7	1.0	1	11/23/16 19:19	11/21/16	
Dimethyl Phthalate	4.7 U	4.7	1.0	1	11/23/16 19:19	11/21/16	
Fluoranthene	4.7 U	4.7	1.0	1	11/23/16 19:19	11/21/16	
Fluorene	4.7 U	4.7	1.0	1	11/23/16 19:19	11/21/16	
Hexachlorobenzene	4.7 U	4.7	1.0	1	11/23/16 19:19	11/21/16	
Hexachlorobutadiene	4.7 U	4.7	1.3	1	11/23/16 19:19	11/21/16	
Hexachlorocyclopentadiene	4.7 U	4.7	1.0	1	11/23/16 19:19	11/21/16	
Hexachloroethane	4.7 U	4.7	1.2	1	11/23/16 19:19	11/21/16	

Analytical Report

Client:	Ecology And Environment, Incorporated	**Service Request:**	R1612099
Project:	Davis Howland Oil Company Site - Semiannual Water/10C3074.0012.08	**Date Collected:**	11/15/16 11:40
Sample Matrix:	Water	**Date Received:**	11/15/16 15:18
Sample Name:	PW2-111516	**Units:**	ug/L
Lab Code:	R1612099-007	**Basis:**	NA

Semivolatile Organic Compounds by GC/MS

Analysis Method: 625
Prep Method: EPA 3510C

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Indeno(1,2,3-cd)pyrene	4.7 U	4.7	1.2	1	11/23/16 19:19	11/21/16	
Isophorone	4.7 U	4.7	1.0	1	11/23/16 19:19	11/21/16	
N-Nitrosodi-n-propylamine	4.7 U	4.7	1.3	1	11/23/16 19:19	11/21/16	
N-Nitrosodimethylamine	4.7 U	4.7	1.0	1	11/23/16 19:19	11/21/16	
N-Nitrosodiphenylamine	4.7 U	4.7	1.0	1	11/23/16 19:19	11/21/16	
Naphthalene	4.7 U	4.7	1.0	1	11/23/16 19:19	11/21/16	
Nitrobenzene	4.7 U	4.7	1.6	1	11/23/16 19:19	11/21/16	
Pentachlorophenol (PCP)	47 U	47	6.9	1	11/23/16 19:19	11/21/16	
Phenanthrene	4.7 U	4.7	1.0	1	11/23/16 19:19	11/21/16	
Phenol	4.7 U	4.7	1.0	1	11/23/16 19:19	11/21/16	
Pyrene	4.7 U	4.7	1.0	1	11/23/16 19:19	11/21/16	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
2,4,6-Tribromophenol	76	28 - 157	11/23/16 19:19	
2-Fluorobiphenyl	73	39 - 119	11/23/16 19:19	
2-Fluorophenol	37	10 - 105	11/23/16 19:19	
Nitrobenzene-d5	66	37 - 117	11/23/16 19:19	
Phenol-d6	27	10 - 107	11/23/16 19:19	
p-Terphenyl-d14	90	40 - 133	11/23/16 19:19	

Analytical Report

Client:	Ecology And Environment, Incorporated	**Service Request:**	R1612099
Project:	Davis Howland Oil Company Site - Semiannual Water/10C3074.0012.08	**Date Collected:**	11/15/16 12:10
Sample Matrix:	Water	**Date Received:**	11/15/16 15:18
Sample Name:	P-2-111516	**Units:**	ug/L
Lab Code:	R1612099-008	**Basis:**	NA

Semivolatile Organic Compounds by GC/MS

Analysis Method: 625
Prep Method: EPA 3510C

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
1,2,4-Trichlorobenzene	4.7 U	4.7	1.0	1	11/23/16 19:47	11/21/16	
1,2-Diphenylhydrazine	4.7 U	4.7	1.0	1	11/23/16 19:47	11/21/16	
2,4,6-Trichlorophenol	4.7 U	4.7	1.4	1	11/23/16 19:47	11/21/16	
2,4-Dichlorophenol	4.7 U	4.7	1.3	1	11/23/16 19:47	11/21/16	
2,4-Dimethylphenol	4.7 U	4.7	1.5	1	11/23/16 19:47	11/21/16	
2,4-Dinitrophenol	47 U	47	20	1	11/23/16 19:47	11/21/16	
2,4-Dinitrotoluene	4.7 U	4.7	1.6	1	11/23/16 19:47	11/21/16	
2,6-Dinitrotoluene	4.7 U	4.7	1.8	1	11/23/16 19:47	11/21/16	
2-Chloronaphthalene	4.7 U	4.7	1.0	1	11/23/16 19:47	11/21/16	
2-Chlorophenol	4.7 U	4.7	1.0	1	11/23/16 19:47	11/21/16	
2-Nitrophenol	4.7 U	4.7	1.4	1	11/23/16 19:47	11/21/16	
3,3'-Dichlorobenzidine	4.7 U	4.7	4.5	1	11/23/16 19:47	11/21/16	
4,6-Dinitro-o-cresol	47 U	47	11	1	11/23/16 19:47	11/21/16	
4-Bromophenyl Phenyl Ether	4.7 U	4.7	2.2	1	11/23/16 19:47	11/21/16	
4-Chloro-m-cresol	4.7 U	4.7	1.2	1	11/23/16 19:47	11/21/16	
4-Chlorophenyl Phenyl Ether	4.7 U	4.7	1.2	1	11/23/16 19:47	11/21/16	
4-Nitrophenol	47 U	47	5.9	1	11/23/16 19:47	11/21/16	
Acenaphthene	4.7 U	4.7	1.0	1	11/23/16 19:47	11/21/16	
Acenaphthylene	4.7 U	4.7	1.0	1	11/23/16 19:47	11/21/16	
Anthracene	4.7 U	4.7	1.0	1	11/23/16 19:47	11/21/16	
Benz(a)anthracene	4.7 U	4.7	1.0	1	11/23/16 19:47	11/21/16	
Benzidine	94 U	94	90	1	11/23/16 19:47	11/21/16	
Benzo(a)pyrene	4.7 U	4.7	1.0	1	11/23/16 19:47	11/21/16	
3,4-Benzofluoranthene	4.7 U	4.7	1.0	1	11/23/16 19:47	11/21/16	
Benzo(g,h,i)perylene	4.7 U	4.7	1.0	1	11/23/16 19:47	11/21/16	
Benzo(k)fluoranthene	4.7 U	4.7	1.0	1	11/23/16 19:47	11/21/16	
Bis(1-chloroisopropyl) Ether	4.7 U	4.7	1.0	1	11/23/16 19:47	11/21/16	
Bis(2-chloroethoxy)methane	4.7 U	4.7	2.2	1	11/23/16 19:47	11/21/16	
Bis(2-chloroethyl) Ether	4.7 U	4.7	1.3	1	11/23/16 19:47	11/21/16	
Bis(2-ethylhexyl) Phthalate	4.7 U	4.7	1.2	1	11/23/16 19:47	11/21/16	
Butyl Benzyl Phthalate	4.7 U	4.7	2.4	1	11/23/16 19:47	11/21/16	
Chrysene	4.7 U	4.7	1.0	1	11/23/16 19:47	11/21/16	
Di-n-butyl Phthalate	4.7 U	4.7	1.0	1	11/23/16 19:47	11/21/16	
Di-n-octyl Phthalate	4.7 U	4.7	1.2	1	11/23/16 19:47	11/21/16	
Dibenz(a,h)anthracene	4.7 U	4.7	1.3	1	11/23/16 19:47	11/21/16	
Diethyl Phthalate	4.7 U	4.7	1.0	1	11/23/16 19:47	11/21/16	
Dimethyl Phthalate	4.7 U	4.7	1.0	1	11/23/16 19:47	11/21/16	
Fluoranthene	4.7 U	4.7	1.0	1	11/23/16 19:47	11/21/16	
Fluorene	4.7 U	4.7	1.0	1	11/23/16 19:47	11/21/16	
Hexachlorobenzene	4.7 U	4.7	1.0	1	11/23/16 19:47	11/21/16	
Hexachlorobutadiene	4.7 U	4.7	1.3	1	11/23/16 19:47	11/21/16	
Hexachlorocyclopentadiene	4.7 U	4.7	1.0	1	11/23/16 19:47	11/21/16	
Hexachloroethane	4.7 U	4.7	1.2	1	11/23/16 19:47	11/21/16	

Analytical Report

Client:	Ecology And Environment, Incorporated	**Service Request:**	R1612099
Project:	Davis Howland Oil Company Site - Semiannual Water/10C3074.0012.08	**Date Collected:**	11/15/16 12:10
Sample Matrix:	Water	**Date Received:**	11/15/16 15:18
Sample Name:	P-2-111516	**Units:**	ug/L
Lab Code:	R1612099-008	**Basis:**	NA

Semivolatile Organic Compounds by GC/MS

Analysis Method: 625
Prep Method: EPA 3510C

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Indeno(1,2,3-cd)pyrene	4.7 U	4.7	1.2	1	11/23/16 19:47	11/21/16	
Isophorone	4.7 U	4.7	1.0	1	11/23/16 19:47	11/21/16	
N-Nitrosodi-n-propylamine	4.7 U	4.7	1.3	1	11/23/16 19:47	11/21/16	
N-Nitrosodimethylamine	4.7 U	4.7	1.0	1	11/23/16 19:47	11/21/16	
N-Nitrosodiphenylamine	4.7 U	4.7	1.0	1	11/23/16 19:47	11/21/16	
Naphthalene	4.7 U	4.7	1.0	1	11/23/16 19:47	11/21/16	
Nitrobenzene	4.7 U	4.7	1.6	1	11/23/16 19:47	11/21/16	
Pentachlorophenol (PCP)	47 U	47	6.9	1	11/23/16 19:47	11/21/16	
Phenanthrene	4.7 U	4.7	1.0	1	11/23/16 19:47	11/21/16	
Phenol	4.7 U	4.7	1.0	1	11/23/16 19:47	11/21/16	
Pyrene	4.7 U	4.7	1.0	1	11/23/16 19:47	11/21/16	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
2,4,6-Tribromophenol	77	28 - 157	11/23/16 19:47	
2-Fluorobiphenyl	70	39 - 119	11/23/16 19:47	
2-Fluorophenol	37	10 - 105	11/23/16 19:47	
Nitrobenzene-d5	65	37 - 117	11/23/16 19:47	
Phenol-d6	29	10 - 107	11/23/16 19:47	
p-Terphenyl-d14	84	40 - 133	11/23/16 19:47	

Analytical Report

Client:	Ecology And Environment, Incorporated	**Service Request:**	R1612099
Project:	Davis Howland Oil Company Site - Semiannual Water/10C3074.0012.08	**Date Collected:**	11/15/16 12:50
Sample Matrix:	Water	**Date Received:**	11/15/16 15:18
Sample Name:	P-3-111516	**Units:**	ug/L
Lab Code:	R1612099-009	**Basis:**	NA

Semivolatile Organic Compounds by GC/MS

Analysis Method: 625
Prep Method: EPA 3510C

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
1,2,4-Trichlorobenzene	4.7 U	4.7	1.0	1	11/23/16 20:16	11/21/16	
1,2-Diphenylhydrazine	4.7 U	4.7	1.0	1	11/23/16 20:16	11/21/16	
2,4,6-Trichlorophenol	4.7 U	4.7	1.4	1	11/23/16 20:16	11/21/16	
2,4-Dichlorophenol	4.7 U	4.7	1.3	1	11/23/16 20:16	11/21/16	
2,4-Dimethylphenol	4.7 U	4.7	1.5	1	11/23/16 20:16	11/21/16	
2,4-Dinitrophenol	47 U	47	20	1	11/23/16 20:16	11/21/16	
2,4-Dinitrotoluene	4.7 U	4.7	1.6	1	11/23/16 20:16	11/21/16	
2,6-Dinitrotoluene	4.7 U	4.7	1.8	1	11/23/16 20:16	11/21/16	
2-Chloronaphthalene	4.7 U	4.7	1.0	1	11/23/16 20:16	11/21/16	
2-Chlorophenol	4.7 U	4.7	1.0	1	11/23/16 20:16	11/21/16	
2-Nitrophenol	4.7 U	4.7	1.4	1	11/23/16 20:16	11/21/16	
3,3'-Dichlorobenzidine	4.7 U	4.7	4.5	1	11/23/16 20:16	11/21/16	
4,6-Dinitro-o-cresol	47 U	47	11	1	11/23/16 20:16	11/21/16	
4-Bromophenyl Phenyl Ether	4.7 U	4.7	2.2	1	11/23/16 20:16	11/21/16	
4-Chloro-m-cresol	4.7 U	4.7	1.2	1	11/23/16 20:16	11/21/16	
4-Chlorophenyl Phenyl Ether	4.7 U	4.7	1.2	1	11/23/16 20:16	11/21/16	
4-Nitrophenol	47 U	47	5.9	1	11/23/16 20:16	11/21/16	
Acenaphthene	4.7 U	4.7	1.0	1	11/23/16 20:16	11/21/16	
Acenaphthylene	4.7 U	4.7	1.0	1	11/23/16 20:16	11/21/16	
Anthracene	4.7 U	4.7	1.0	1	11/23/16 20:16	11/21/16	
Benz(a)anthracene	4.7 U	4.7	1.0	1	11/23/16 20:16	11/21/16	
Benzidine	94 U	94	90	1	11/23/16 20:16	11/21/16	
Benzo(a)pyrene	4.7 U	4.7	1.0	1	11/23/16 20:16	11/21/16	
3,4-Benzofluoranthene	4.7 U	4.7	1.0	1	11/23/16 20:16	11/21/16	
Benzo(g,h,i)perylene	4.7 U	4.7	1.0	1	11/23/16 20:16	11/21/16	
Benzo(k)fluoranthene	4.7 U	4.7	1.0	1	11/23/16 20:16	11/21/16	
Bis(1-chloroisopropyl) Ether	4.7 U	4.7	1.0	1	11/23/16 20:16	11/21/16	
Bis(2-chloroethoxy)methane	4.7 U	4.7	2.2	1	11/23/16 20:16	11/21/16	
Bis(2-chloroethyl) Ether	4.7 U	4.7	1.3	1	11/23/16 20:16	11/21/16	
Bis(2-ethylhexyl) Phthalate	4.7 U	4.7	1.2	1	11/23/16 20:16	11/21/16	
Butyl Benzyl Phthalate	4.7 U	4.7	2.4	1	11/23/16 20:16	11/21/16	
Chrysene	4.7 U	4.7	1.0	1	11/23/16 20:16	11/21/16	
Di-n-butyl Phthalate	4.7 U	4.7	1.0	1	11/23/16 20:16	11/21/16	
Di-n-octyl Phthalate	4.7 U	4.7	1.2	1	11/23/16 20:16	11/21/16	
Dibenz(a,h)anthracene	4.7 U	4.7	1.3	1	11/23/16 20:16	11/21/16	
Diethyl Phthalate	4.7 U	4.7	1.0	1	11/23/16 20:16	11/21/16	
Dimethyl Phthalate	4.7 U	4.7	1.0	1	11/23/16 20:16	11/21/16	
Fluoranthene	4.7 U	4.7	1.0	1	11/23/16 20:16	11/21/16	
Fluorene	4.7 U	4.7	1.0	1	11/23/16 20:16	11/21/16	
Hexachlorobenzene	4.7 U	4.7	1.0	1	11/23/16 20:16	11/21/16	
Hexachlorobutadiene	4.7 U	4.7	1.3	1	11/23/16 20:16	11/21/16	
Hexachlorocyclopentadiene	4.7 U	4.7	1.0	1	11/23/16 20:16	11/21/16	
Hexachloroethane	4.7 U	4.7	1.2	1	11/23/16 20:16	11/21/16	

Analytical Report

Client:	Ecology And Environment, Incorporated	**Service Request:**	R1612099
Project:	Davis Howland Oil Company Site - Semiannual Water/10C3074.0012.08	**Date Collected:**	11/15/16 12:50
Sample Matrix:	Water	**Date Received:**	11/15/16 15:18
Sample Name:	P-3-111516	**Units:**	ug/L
Lab Code:	R1612099-009	**Basis:**	NA

Semivolatile Organic Compounds by GC/MS

Analysis Method: 625
Prep Method: EPA 3510C

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Indeno(1,2,3-cd)pyrene	4.7 U	4.7	1.2	1	11/23/16 20:16	11/21/16	
Isophorone	4.7 U	4.7	1.0	1	11/23/16 20:16	11/21/16	
N-Nitrosodi-n-propylamine	4.7 U	4.7	1.3	1	11/23/16 20:16	11/21/16	
N-Nitrosodimethylamine	4.7 U	4.7	1.0	1	11/23/16 20:16	11/21/16	
N-Nitrosodiphenylamine	4.7 U	4.7	1.0	1	11/23/16 20:16	11/21/16	
Naphthalene	4.7 U	4.7	1.0	1	11/23/16 20:16	11/21/16	
Nitrobenzene	4.7 U	4.7	1.6	1	11/23/16 20:16	11/21/16	
Pentachlorophenol (PCP)	47 U	47	6.9	1	11/23/16 20:16	11/21/16	
Phenanthrene	4.7 U	4.7	1.0	1	11/23/16 20:16	11/21/16	
Phenol	4.7 U	4.7	1.0	1	11/23/16 20:16	11/21/16	
Pyrene	4.7 U	4.7	1.0	1	11/23/16 20:16	11/21/16	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
2,4,6-Tribromophenol	84	28 - 157	11/23/16 20:16	
2-Fluorobiphenyl	74	39 - 119	11/23/16 20:16	
2-Fluorophenol	35	10 - 105	11/23/16 20:16	
Nitrobenzene-d5	66	37 - 117	11/23/16 20:16	
Phenol-d6	27	10 - 107	11/23/16 20:16	
p-Terphenyl-d14	90	40 - 133	11/23/16 20:16	

Analytical Report

Client:	Ecology And Environment, Incorporated	**Service Request:**	R1612099
Project:	Davis Howland Oil Company Site - Semiannual Water/10C3074.0012.08	**Date Collected:**	11/15/16 11:00
Sample Matrix:	Water	**Date Received:**	11/15/16 15:18
Sample Name:	PZ-4-111516	**Units:**	ug/L
Lab Code:	R1612099-010	**Basis:**	NA

Semivolatile Organic Compounds by GC/MS

Analysis Method: 625
Prep Method: EPA 3510C

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
1,2,4-Trichlorobenzene	4.7 U	4.7	1.0	1	11/23/16 20:44	11/21/16	
1,2-Diphenylhydrazine	4.7 U	4.7	1.0	1	11/23/16 20:44	11/21/16	
2,4,6-Trichlorophenol	4.7 U	4.7	1.4	1	11/23/16 20:44	11/21/16	
2,4-Dichlorophenol	4.7 U	4.7	1.3	1	11/23/16 20:44	11/21/16	
2,4-Dimethylphenol	4.7 U	4.7	1.5	1	11/23/16 20:44	11/21/16	
2,4-Dinitrophenol	47 U	47	20	1	11/23/16 20:44	11/21/16	
2,4-Dinitrotoluene	4.7 U	4.7	1.6	1	11/23/16 20:44	11/21/16	
2,6-Dinitrotoluene	4.7 U	4.7	1.8	1	11/23/16 20:44	11/21/16	
2-Chloronaphthalene	4.7 U	4.7	1.0	1	11/23/16 20:44	11/21/16	
2-Chlorophenol	4.7 U	4.7	1.0	1	11/23/16 20:44	11/21/16	
2-Nitrophenol	4.7 U	4.7	1.4	1	11/23/16 20:44	11/21/16	
3,3'-Dichlorobenzidine	4.7 U	4.7	4.5	1	11/23/16 20:44	11/21/16	
4,6-Dinitro-o-cresol	47 U	47	11	1	11/23/16 20:44	11/21/16	
4-Bromophenyl Phenyl Ether	4.7 U	4.7	2.2	1	11/23/16 20:44	11/21/16	
4-Chloro-m-cresol	4.7 U	4.7	1.2	1	11/23/16 20:44	11/21/16	
4-Chlorophenyl Phenyl Ether	4.7 U	4.7	1.2	1	11/23/16 20:44	11/21/16	
4-Nitrophenol	47 U	47	5.9	1	11/23/16 20:44	11/21/16	
Acenaphthene	4.7 U	4.7	1.0	1	11/23/16 20:44	11/21/16	
Acenaphthylene	4.7 U	4.7	1.0	1	11/23/16 20:44	11/21/16	
Anthracene	4.7 U	4.7	1.0	1	11/23/16 20:44	11/21/16	
Benz(a)anthracene	4.7 U	4.7	1.0	1	11/23/16 20:44	11/21/16	
Benzidine	94 U	94	90	1	11/23/16 20:44	11/21/16	
Benzo(a)pyrene	4.7 U	4.7	1.0	1	11/23/16 20:44	11/21/16	
3,4-Benzofluoranthene	4.7 U	4.7	1.0	1	11/23/16 20:44	11/21/16	
Benzo(g,h,i)perylene	4.7 U	4.7	1.0	1	11/23/16 20:44	11/21/16	
Benzo(k)fluoranthene	4.7 U	4.7	1.0	1	11/23/16 20:44	11/21/16	
Bis(1-chloroisopropyl) Ether	4.7 U	4.7	1.0	1	11/23/16 20:44	11/21/16	
Bis(2-chloroethoxy)methane	4.7 U	4.7	2.2	1	11/23/16 20:44	11/21/16	
Bis(2-chloroethyl) Ether	4.7 U	4.7	1.3	1	11/23/16 20:44	11/21/16	
Bis(2-ethylhexyl) Phthalate	4.7 U	4.7	1.2	1	11/23/16 20:44	11/21/16	
Butyl Benzyl Phthalate	4.7 U	4.7	2.4	1	11/23/16 20:44	11/21/16	
Chrysene	4.7 U	4.7	1.0	1	11/23/16 20:44	11/21/16	
Di-n-butyl Phthalate	4.7 U	4.7	1.0	1	11/23/16 20:44	11/21/16	
Di-n-octyl Phthalate	4.7 U	4.7	1.2	1	11/23/16 20:44	11/21/16	
Dibenz(a,h)anthracene	4.7 U	4.7	1.3	1	11/23/16 20:44	11/21/16	
Diethyl Phthalate	4.7 U	4.7	1.0	1	11/23/16 20:44	11/21/16	
Dimethyl Phthalate	4.7 U	4.7	1.0	1	11/23/16 20:44	11/21/16	
Fluoranthene	**1.2 J**	4.7	1.0	1	11/23/16 20:44	11/21/16	
Fluorene	4.7 U	4.7	1.0	1	11/23/16 20:44	11/21/16	
Hexachlorobenzene	4.7 U	4.7	1.0	1	11/23/16 20:44	11/21/16	
Hexachlorobutadiene	4.7 U	4.7	1.3	1	11/23/16 20:44	11/21/16	
Hexachlorocyclopentadiene	4.7 U	4.7	1.0	1	11/23/16 20:44	11/21/16	
Hexachloroethane	4.7 U	4.7	1.2	1	11/23/16 20:44	11/21/16	

Analytical Report

Client:	Ecology And Environment, Incorporated	**Service Request:**	R1612099
Project:	Davis Howland Oil Company Site - Semiannual Water/10C3074.0012.08	**Date Collected:**	11/15/16 11:00
Sample Matrix:	Water	**Date Received:**	11/15/16 15:18
Sample Name:	PZ-4-111516	**Units:**	ug/L
Lab Code:	R1612099-010	**Basis:**	NA

Semivolatile Organic Compounds by GC/MS

Analysis Method: 625
Prep Method: EPA 3510C

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Indeno(1,2,3-cd)pyrene	4.7 U	4.7	1.2	1	11/23/16 20:44	11/21/16	
Isophorone	4.7 U	4.7	1.0	1	11/23/16 20:44	11/21/16	
N-Nitrosodi-n-propylamine	4.7 U	4.7	1.3	1	11/23/16 20:44	11/21/16	
N-Nitrosodimethylamine	4.7 U	4.7	1.0	1	11/23/16 20:44	11/21/16	
N-Nitrosodiphenylamine	4.7 U	4.7	1.0	1	11/23/16 20:44	11/21/16	
Naphthalene	4.7 U	4.7	1.0	1	11/23/16 20:44	11/21/16	
Nitrobenzene	4.7 U	4.7	1.6	1	11/23/16 20:44	11/21/16	
Pentachlorophenol (PCP)	47 U	47	6.9	1	11/23/16 20:44	11/21/16	
Phenanthrene	4.7 U	4.7	1.0	1	11/23/16 20:44	11/21/16	
Phenol	4.7 U	4.7	1.0	1	11/23/16 20:44	11/21/16	
Pyrene	**1.0 J**	4.7	1.0	1	11/23/16 20:44	11/21/16	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
2,4,6-Tribromophenol	84	28 - 157	11/23/16 20:44	
2-Fluorobiphenyl	72	39 - 119	11/23/16 20:44	
2-Fluorophenol	37	10 - 105	11/23/16 20:44	
Nitrobenzene-d5	68	37 - 117	11/23/16 20:44	
Phenol-d6	29	10 - 107	11/23/16 20:44	
p-Terphenyl-d14	86	40 - 133	11/23/16 20:44	

Semivolatile Organic Compounds by GC

ALS Environmental—Rochester Laboratory
1565 Jefferson Road, Building 300, Suite 360, Rochester, NY 14623
Phone (585) 288-5380 Fax (585) 288-8475
www.alsglobal.com

Analytical Report

Client:	Ecology And Environment, Incorporated	**Service Request:**	R1612099
Project:	Davis Howland Oil Company Site - Semiannual Water/10C3074.0012.08	**Date Collected:**	11/14/16 12:40
Sample Matrix:	Water	**Date Received:**	11/15/16 15:18
Sample Name:	MW-10R-111416	**Units:**	ug/L
Lab Code:	R1612099-002	**Basis:**	NA

NY Hydrocarbon Scan, Modified to Combine Methods 310-13, -14, and -15, and for Matrix

Analysis Method: NY 310-13 Modified
Prep Method: Method

Analyte Name	Result		MRL	Dil.	Date Analyzed	Date Extracted	Q
Fuel Oil No. 2	1000	U	1000	1	11/23/16 04:27	11/18/16	
Fuel Oil No. 4	1000	U	1000	1	11/23/16 04:27	11/18/16	
Fuel Oil No. 6	1000	U	1000	1	11/23/16 04:27	11/18/16	
Gasoline	Absence	U	-	1	11/23/16 04:27	11/18/16	
Kerosene	1000	U	1000	1	11/23/16 04:27	11/18/16	
Lube Oil	Absence	U	-	1	11/23/16 04:27	11/18/16	
n-Dodecane	1000	U	1000	1	11/23/16 04:27	11/18/16	

Analytical Report

Client:	Ecology And Environment, Incorporated	**Service Request:**	R1612099
Project:	Davis Howland Oil Company Site - Semiannual Water/10C3074.0012.08	**Date Collected:**	11/14/16 14:45
Sample Matrix:	Water	**Date Received:**	11/15/16 15:18
Sample Name:	MW-1S-111416	**Units:**	ug/L
Lab Code:	R1612099-003	**Basis:**	NA

NY Hydrocarbon Scan, Modified to Combine Methods 310-13, -14, and -15, and for Matrix

Analysis Method: NY 310-13 Modified
Prep Method: Method

Analyte Name	Result		MRL	Dil.	Date Analyzed	Date Extracted	Q
Fuel Oil No. 2	1000	U	1000	1	11/23/16 04:49	11/18/16	
Fuel Oil No. 4	1000	U	1000	1	11/23/16 04:49	11/18/16	
Fuel Oil No. 6	1000	U	1000	1	11/23/16 04:49	11/18/16	
Gasoline	Absence	U	-	1	11/23/16 04:49	11/18/16	
Kerosene	1000	U	1000	1	11/23/16 04:49	11/18/16	
Lube Oil	Absence	U	-	1	11/23/16 04:49	11/18/16	
n-Dodecane	1000	U	1000	1	11/23/16 04:49	11/18/16	

Analytical Report

Client:	Ecology And Environment, Incorporated	**Service Request:**	R1612099
Project:	Davis Howland Oil Company Site - Semiannual Water/10C3074.0012.08	**Date Collected:**	11/15/16 09:15
Sample Matrix:	Water	**Date Received:**	11/15/16 15:18
Sample Name:	MW-16R-111516	**Units:**	ug/L
Lab Code:	R1612099-004	**Basis:**	NA

NY Hydrocarbon Scan, Modified to Combine Methods 310-13, -14, and -15, and for Matrix

Analysis Method: NY 310-13 Modified
Prep Method: Method

Analyte Name	Result		MRL	Dil.	Date Analyzed	Date Extracted	Q
Fuel Oil No. 2	1000	U	1000	1	11/23/16 05:12	11/18/16	
Fuel Oil No. 4	1000	U	1000	1	11/23/16 05:12	11/18/16	
Fuel Oil No. 6	1000	U	1000	1	11/23/16 05:12	11/18/16	
Gasoline	Absence	U	-	1	11/23/16 05:12	11/18/16	
Kerosene	1000	U	1000	1	11/23/16 05:12	11/18/16	
Lube Oil	Absence	U	-	1	11/23/16 05:12	11/18/16	
n-Dodecane	1000	U	1000	1	11/23/16 05:12	11/18/16	

Analytical Report

Client:	Ecology And Environment, Incorporated	**Service Request:**	R1612099
Project:	Davis Howland Oil Company Site - Semiannual Water/10C3074.0012.08	**Date Collected:**	11/15/16 13:48
Sample Matrix:	Water	**Date Received:**	11/15/16 15:18
Sample Name:	PZ-3-111516	**Units:**	ug/L
Lab Code:	R1612099-005	**Basis:**	NA

NY Hydrocarbon Scan, Modified to Combine Methods 310-13, -14, and -15, and for Matrix

Analysis Method: NY 310-13 Modified
Prep Method: Method

Analyte Name	Result		MRL	Dil.	Date Analyzed	Date Extracted	Q
Fuel Oil No. 2	1000	U	1000	1	11/23/16 05:56	11/18/16	
Fuel Oil No. 4	1000	U	1000	1	11/23/16 05:56	11/18/16	
Fuel Oil No. 6	1000	U	1000	1	11/23/16 05:56	11/18/16	
Gasoline	Absence	U	-	1	11/23/16 05:56	11/18/16	
Kerosene	1000	U	1000	1	11/23/16 05:56	11/18/16	
Lube Oil	Absence	U	-	1	11/23/16 05:56	11/18/16	
n-Dodecane	1000	U	1000	1	11/23/16 05:56	11/18/16	

Analytical Report

Client:	Ecology And Environment, Incorporated	**Service Request:**	R1612099
Project:	Davis Howland Oil Company Site - Semiannual Water/10C3074.0012.08	**Date Collected:**	11/15/16 12:02
Sample Matrix:	Water	**Date Received:**	11/15/16 15:18
Sample Name:	PZ-2-111516	**Units:**	ug/L
Lab Code:	R1612099-006	**Basis:**	NA

NY Hydrocarbon Scan, Modified to Combine Methods 310-13, -14, and -15, and for Matrix

Analysis Method: NY 310-13 Modified
Prep Method: Method

Analyte Name	Result		MRL	Dil.	Date Analyzed	Date Extracted	Q
Fuel Oil No. 2	1000	U	1000	1	11/23/16 06:18	11/18/16	
Fuel Oil No. 4	1000	U	1000	1	11/23/16 06:18	11/18/16	
Fuel Oil No. 6	1000	U	1000	1	11/23/16 06:18	11/18/16	
Gasoline	Absence	U	-	1	11/23/16 06:18	11/18/16	
Kerosene	1000	U	1000	1	11/23/16 06:18	11/18/16	
Lube Oil	Absence	U	-	1	11/23/16 06:18	11/18/16	
n-Dodecane	1000	U	1000	1	11/23/16 06:18	11/18/16	

Analytical Report

Client:	Ecology And Environment, Incorporated	**Service Request:**	R1612099
Project:	Davis Howland Oil Company Site - Semiannual Water/10C3074.0012.08	**Date Collected:**	11/15/16 11:40
Sample Matrix:	Water	**Date Received:**	11/15/16 15:18
Sample Name:	PW2-111516	**Units:**	ug/L
Lab Code:	R1612099-007	**Basis:**	NA

NY Hydrocarbon Scan, Modified to Combine Methods 310-13, -14, and -15, and for Matrix

Analysis Method: NY 310-13 Modified
Prep Method: Method

Analyte Name	Result		MRL	Dil.	Date Analyzed	Date Extracted	Q
Fuel Oil No. 2	1000	U	1000	1	11/23/16 06:40	11/18/16	
Fuel Oil No. 4	1000	U	1000	1	11/23/16 06:40	11/18/16	
Fuel Oil No. 6	1000	U	1000	1	11/23/16 06:40	11/18/16	
Gasoline	Absence	U	-	1	11/23/16 06:40	11/18/16	
Kerosene	1000	U	1000	1	11/23/16 06:40	11/18/16	
Lube Oil	Absence	U	-	1	11/23/16 06:40	11/18/16	
n-Dodecane	1000	U	1000	1	11/23/16 06:40	11/18/16	

Analytical Report

Client:	Ecology And Environment, Incorporated	**Service Request:**	R1612099
Project:	Davis Howland Oil Company Site - Semiannual Water/10C3074.0012.08	**Date Collected:**	11/15/16 12:10
Sample Matrix:	Water	**Date Received:**	11/15/16 15:18
Sample Name:	P-2-111516	**Units:**	ug/L
Lab Code:	R1612099-008	**Basis:**	NA

NY Hydrocarbon Scan, Modified to Combine Methods 310-13, -14, and -15, and for Matrix

Analysis Method: NY 310-13 Modified
Prep Method: Method

Analyte Name	Result		MRL	Dil.	Date Analyzed	Date Extracted	Q
Fuel Oil No. 2	1000	U	1000	1	11/23/16 07:02	11/18/16	
Fuel Oil No. 4	1000	U	1000	1	11/23/16 07:02	11/18/16	
Fuel Oil No. 6	1000	U	1000	1	11/23/16 07:02	11/18/16	
Gasoline	Absence	U	-	1	11/23/16 07:02	11/18/16	
Kerosene	1000	U	1000	1	11/23/16 07:02	11/18/16	
Lube Oil	Absence	U	-	1	11/23/16 07:02	11/18/16	
n-Dodecane	1000	U	1000	1	11/23/16 07:02	11/18/16	

Analytical Report

Client:	Ecology And Environment, Incorporated	**Service Request:**	R1612099
Project:	Davis Howland Oil Company Site - Semiannual Water/10C3074.0012.08	**Date Collected:**	11/15/16 12:50
Sample Matrix:	Water	**Date Received:**	11/15/16 15:18
Sample Name:	P-3-111516	**Units:**	ug/L
Lab Code:	R1612099-009	**Basis:**	NA

NY Hydrocarbon Scan, Modified to Combine Methods 310-13, -14, and -15, and for Matrix

Analysis Method: NY 310-13 Modified
Prep Method: Method

Analyte Name	Result		MRL	Dil.	Date Analyzed	Date Extracted	Q
Fuel Oil No. 2	1000	U	1000	1	11/23/16 07:24	11/18/16	
Fuel Oil No. 4	1000	U	1000	1	11/23/16 07:24	11/18/16	
Fuel Oil No. 6	1000	U	1000	1	11/23/16 07:24	11/18/16	
Gasoline	Absence	U	-	1	11/23/16 07:24	11/18/16	
Kerosene	1000	U	1000	1	11/23/16 07:24	11/18/16	
Lube Oil	Absence	U	-	1	11/23/16 07:24	11/18/16	
n-Dodecane	1000	U	1000	1	11/23/16 07:24	11/18/16	

Analytical Report

Client:	Ecology And Environment, Incorporated	**Service Request:**	R1612099
Project:	Davis Howland Oil Company Site - Semiannual Water/10C3074.0012.08	**Date Collected:**	11/15/16 11:00
Sample Matrix:	Water	**Date Received:**	11/15/16 15:18
Sample Name:	PZ-4-111516	**Units:**	ug/L
Lab Code:	R1612099-010	**Basis:**	NA

NY Hydrocarbon Scan, Modified to Combine Methods 310-13, -14, and -15, and for Matrix

Analysis Method: NY 310-13 Modified
Prep Method: Method

Analyte Name	Result		MRL	Dil.	Date Analyzed	Date Extracted	Q
Fuel Oil No. 2	1000	U	1000	1	11/23/16 07:46	11/18/16	
Fuel Oil No. 4	1000	U	1000	1	11/23/16 07:46	11/18/16	
Fuel Oil No. 6	1000	U	1000	1	11/23/16 07:46	11/18/16	
Gasoline	Absence	U	-	1	11/23/16 07:46	11/18/16	
Kerosene	1000	U	1000	1	11/23/16 07:46	11/18/16	
Lube Oil	Absence	U	-	1	11/23/16 07:46	11/18/16	
n-Dodecane	1000	U	1000	1	11/23/16 07:46	11/18/16	

QC Summary Forms

ALS Environmental—Rochester Laboratory
1565 Jefferson Road, Building 300, Suite 360, Rochester, NY 14623
Phone (585) 288-5380 Fax (585) 288-8475
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Volatile Organic Compounds by GC/MS

ALS Environmental—Rochester Laboratory
1565 Jefferson Road, Building 300, Suite 360, Rochester, NY 14623
Phone (585) 288-5380 Fax (585) 288-8475
www.alsglobal.com

Client: Ecology And Environment, Incorporated **Service Request:** R1612099
Project: Davis Howland Oil Company Site - Semiannual
Sample Matrix: Water

SURROGATE RECOVERY SUMMARY
Volatile Organic Compounds by GC/MS, Unpreserved

Analysis Method: 624
Extraction Method: EPA 5030C

Sample Name	Lab Code	1,2-Dichloroethane-d4 81 - 127	4-Bromofluorobenzene 79 - 123	Toluene-d8 83 - 120
TB111416	R1612099-001	111	111	111
MW-10R-111416	R1612099-002	115	106	109
MW-1S-111416	R1612099-003	111	109	109
MW-16R-111516	R1612099-004	109	109	109
PZ-3-111516	R1612099-005	111	112	109
PZ-2-111516	R1612099-006	111	109	109
PW2-111516	R1612099-007	114	106	109
P-2-111516	R1612099-008	117	106	110
P-3-111516	R1612099-009	109	110	111
PZ-4-111516	R1612099-010	110	108	110
FB-111516	R1612099-011	108	111	109
Lab Control Sample	RQ1614083-03	107	111	110
Method Blank	RQ1614083-04	108	111	110
Lab Control Sample	RQ1614167-03	113	107	111
Method Blank	RQ1614167-04	114	106	109

Analytical Report

Client:	Ecology And Environment, Incorporated	**Service Request:**	R1612099
Project:	Davis Howland Oil Company Site - Semiannual Water/10C3074.0012.08	**Date Collected:**	NA
Sample Matrix:	Water	**Date Received:**	NA
Sample Name:	Method Blank	**Units:**	ug/L
Lab Code:	RQ1614083-04	**Basis:**	NA

Volatile Organic Compounds by GC/MS, Unpreserved

Analysis Method: 624
Prep Method: EPA 5030C

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Q
1,1,1-Trichloroethane (TCA)	1.0 U	1.0	0.20	1	11/17/16 10:57	
1,1,2,2-Tetrachloroethane	1.0 U	1.0	0.20	1	11/17/16 10:57	
1,1,2-Trichloroethane	1.0 U	1.0	0.20	1	11/17/16 10:57	
1,1-Dichloroethane (1,1-DCA)	1.0 U	1.0	0.21	1	11/17/16 10:57	
1,1-Dichloroethene (1,1-DCE)	1.0 U	1.0	0.20	1	11/17/16 10:57	
1,2-Dichlorobenzene	1.0 U	1.0	0.25	1	11/17/16 10:57	
1,2-Dichloroethane	1.0 U	1.0	0.20	1	11/17/16 10:57	
1,2-Dichloropropane	1.0 U	1.0	0.20	1	11/17/16 10:57	
1,3-Dichlorobenzene	1.0 U	1.0	0.22	1	11/17/16 10:57	
1,4-Dichlorobenzene	1.0 U	1.0	0.20	1	11/17/16 10:57	
2-Chloroethyl Vinyl Ether	10 U	10	0.60	1	11/17/16 10:57	
Acetone	5.0 U	5.0	2.8	1	11/17/16 10:57	
Benzene	1.0 U	1.0	0.20	1	11/17/16 10:57	
Bromodichloromethane	1.0 U	1.0	0.20	1	11/17/16 10:57	
Bromoform	1.0 U	1.0	0.20	1	11/17/16 10:57	
Bromomethane	1.0 U	1.0	0.44	1	11/17/16 10:57	
Carbon Tetrachloride	1.0 U	1.0	0.20	1	11/17/16 10:57	
Chlorobenzene	1.0 U	1.0	0.20	1	11/17/16 10:57	
Chloroethane	1.0 U	1.0	0.24	1	11/17/16 10:57	
Chloroform	1.0 U	1.0	0.20	1	11/17/16 10:57	
Chloromethane	1.0 U	1.0	0.20	1	11/17/16 10:57	
Dibromochloromethane	1.0 U	1.0	0.20	1	11/17/16 10:57	
Methylene Chloride	1.0 U	1.0	0.20	1	11/17/16 10:57	
Ethylbenzene	1.0 U	1.0	0.20	1	11/17/16 10:57	
Tetrachloroethene (PCE)	1.0 U	1.0	0.20	1	11/17/16 10:57	
Toluene	1.0 U	1.0	0.20	1	11/17/16 10:57	
Trichloroethene (TCE)	1.0 U	1.0	0.20	1	11/17/16 10:57	
Trichlorofluoromethane (CFC 11)	1.0 U	1.0	0.20	1	11/17/16 10:57	
Vinyl Chloride	1.0 U	1.0	0.20	1	11/17/16 10:57	
cis-1,2-Dichloroethene	1.0 U	1.0	0.20	1	11/17/16 10:57	
cis-1,3-Dichloropropene	1.0 U	1.0	0.20	1	11/17/16 10:57	
m,p-Xylenes	2.0 U	2.0	0.26	1	11/17/16 10:57	
o-Xylene	1.0 U	1.0	0.20	1	11/17/16 10:57	
trans-1,2-Dichloroethene	1.0 U	1.0	0.20	1	11/17/16 10:57	
trans-1,3-Dichloropropene	1.0 U	1.0	0.20	1	11/17/16 10:57	

Analytical Report

Client:	Ecology And Environment, Incorporated	**Service Request:**	R1612099
Project:	Davis Howland Oil Company Site - Semiannual Water/10C3074.0012.08	**Date Collected:**	NA
Sample Matrix:	Water	**Date Received:**	NA
Sample Name:	Method Blank	**Units:**	ug/L
Lab Code:	RQ1614083-04	**Basis:**	NA

Volatile Organic Compounds by GC/MS, Unpreserved

Analysis Method: 624
Prep Method: EPA 5030C

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
1,2-Dichloroethane-d4	108	81 - 127	11/17/16 10:57	
4-Bromofluorobenzene	111	79 - 123	11/17/16 10:57	
Toluene-d8	110	83 - 120	11/17/16 10:57	

Analytical Report

Client:	Ecology And Environment, Incorporated	**Service Request:**	R1612099
Project:	Davis Howland Oil Company Site - Semiannual Water/10C3074.0012.08	**Date Collected:**	NA
Sample Matrix:	Water	**Date Received:**	NA
Sample Name:	Method Blank	**Units:**	ug/L
Lab Code:	RQ1614167-04	**Basis:**	NA

Volatile Organic Compounds by GC/MS, Unpreserved

Analysis Method: 624
Prep Method: EPA 5030C

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Q
1,1,1-Trichloroethane (TCA)	1.0 U	1.0	0.20	1	11/18/16 10:38	
1,1,2,2-Tetrachloroethane	1.0 U	1.0	0.20	1	11/18/16 10:38	
1,1,2-Trichloroethane	1.0 U	1.0	0.20	1	11/18/16 10:38	
1,1-Dichloroethane (1,1-DCA)	1.0 U	1.0	0.21	1	11/18/16 10:38	
1,1-Dichloroethene (1,1-DCE)	1.0 U	1.0	0.20	1	11/18/16 10:38	
1,2-Dichlorobenzene	1.0 U	1.0	0.25	1	11/18/16 10:38	
1,2-Dichloroethane	1.0 U	1.0	0.20	1	11/18/16 10:38	
1,2-Dichloropropane	1.0 U	1.0	0.20	1	11/18/16 10:38	
1,3-Dichlorobenzene	1.0 U	1.0	0.22	1	11/18/16 10:38	
1,4-Dichlorobenzene	1.0 U	1.0	0.20	1	11/18/16 10:38	
2-Chloroethyl Vinyl Ether	10 U	10	0.60	1	11/18/16 10:38	
Acetone	5.0 U	5.0	2.8	1	11/18/16 10:38	
Benzene	1.0 U	1.0	0.20	1	11/18/16 10:38	
Bromodichloromethane	1.0 U	1.0	0.20	1	11/18/16 10:38	
Bromoform	1.0 U	1.0	0.20	1	11/18/16 10:38	
Bromomethane	1.0 U	1.0	0.44	1	11/18/16 10:38	
Carbon Tetrachloride	1.0 U	1.0	0.20	1	11/18/16 10:38	
Chlorobenzene	1.0 U	1.0	0.20	1	11/18/16 10:38	
Chloroethane	1.0 U	1.0	0.24	1	11/18/16 10:38	
Chloroform	1.0 U	1.0	0.20	1	11/18/16 10:38	
Chloromethane	1.0 U	1.0	0.20	1	11/18/16 10:38	
Dibromochloromethane	1.0 U	1.0	0.20	1	11/18/16 10:38	
Methylene Chloride	1.0 U	1.0	0.20	1	11/18/16 10:38	
Ethylbenzene	1.0 U	1.0	0.20	1	11/18/16 10:38	
Tetrachloroethene (PCE)	1.0 U	1.0	0.20	1	11/18/16 10:38	
Toluene	1.0 U	1.0	0.20	1	11/18/16 10:38	
Trichloroethene (TCE)	1.0 U	1.0	0.20	1	11/18/16 10:38	
Trichlorofluoromethane (CFC 11)	1.0 U	1.0	0.20	1	11/18/16 10:38	
Vinyl Chloride	1.0 U	1.0	0.20	1	11/18/16 10:38	
cis-1,2-Dichloroethene	1.0 U	1.0	0.20	1	11/18/16 10:38	
cis-1,3-Dichloropropene	1.0 U	1.0	0.20	1	11/18/16 10:38	
m,p-Xylenes	2.0 U	2.0	0.26	1	11/18/16 10:38	
o-Xylene	1.0 U	1.0	0.20	1	11/18/16 10:38	
trans-1,2-Dichloroethene	1.0 U	1.0	0.20	1	11/18/16 10:38	
trans-1,3-Dichloropropene	1.0 U	1.0	0.20	1	11/18/16 10:38	

Analytical Report

Client:	Ecology And Environment, Incorporated	**Service Request:**	R1612099
Project:	Davis Howland Oil Company Site - Semiannual Water/10C3074.0012.08	**Date Collected:**	NA
Sample Matrix:	Water	**Date Received:**	NA
Sample Name:	Method Blank	**Units:**	ug/L
Lab Code:	RQ1614167-04	**Basis:**	NA

Volatile Organic Compounds by GC/MS, Unpreserved

Analysis Method: 624
Prep Method: EPA 5030C

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
1,2-Dichloroethane-d4	114	81 - 127	11/18/16 10:38	
4-Bromofluorobenzene	106	79 - 123	11/18/16 10:38	
Toluene-d8	109	83 - 120	11/18/16 10:38	

Client: Ecology And Environment, Incorporated
Project: Davis Howland Oil Company Site - Semiannual Water/10C3074.0012.08
Sample Matrix: Water

Service Request: R1612099
Date Analyzed: 11/17/16

Lab Control Sample Summary
Volatile Organic Compounds by GC/MS, Unpreserved

Units:ug/L
Basis:NA

Lab Control Sample
RQ1614083-03

Analyte Name	Analytical Method	Result	Spike Amount	% Rec	% Rec Limits
1,1,1-Trichloroethane (TCA)	624	19.5	20.0	97	52-162
1,1,2,2-Tetrachloroethane	624	18.4	20.0	92	46-157
1,1,2-Trichloroethane	624	19.7	20.0	98	52-150
1,1-Dichloroethane (1,1-DCA)	624	19.4	20.0	97	59-155
1,1-Dichloroethene (1,1-DCE)	624	16.3	20.0	81	10-234
1,2-Dichlorobenzene	624	19.8	20.0	99	18-190
1,2-Dichloroethane	624	20.4	20.0	102	49-155
1,2-Dichloropropane	624	18.1	20.0	90	10-210
1,3-Dichlorobenzene	624	18.3	20.0	91	59-156
1,4-Dichlorobenzene	624	19.0	20.0	95	18-190
2-Chloroethyl Vinyl Ether	624	22.0	20.0	110	10-305
Acetone	624	18.8	20.0	94	55-130
Benzene	624	19.5	20.0	98	37-151
Bromodichloromethane	624	19.3	20.0	97	35-155
Bromoform	624	19.4	20.0	97	45-169
Bromomethane	624	17.2	20.0	86	10-242
Carbon Tetrachloride	624	18.1	20.0	90	70-140
Chlorobenzene	624	19.4	20.0	97	37-160
Chloroethane	624	19.0	20.0	95	14-230
Chloroform	624	18.4	20.0	92	51-138
Chloromethane	624	18.9	20.0	94	10-273
Dibromochloromethane	624	20.3	20.0	102	53-149
Methylene Chloride	624	19.1	20.0	95	10-221
Ethylbenzene	624	18.3	20.0	91	37-162
Tetrachloroethene (PCE)	624	16.1	20.0	81	64-148
Toluene	624	18.6	20.0	93	47-150
Trichloroethene (TCE)	624	18.4	20.0	92	71-157
Trichlorofluoromethane (CFC 11)	624	17.8	20.0	89	17-181
Vinyl Chloride	624	20.2	20.0	101	10-251
cis-1,2-Dichloroethene	624	19.5	20.0	98	72-125
cis-1,3-Dichloropropene	624	21.1	20.0	106	10-227
m,p-Xylenes	624	37.1	40.0	93	76-131

Client: Ecology And Environment, Incorporated
Project: Davis Howland Oil Company Site - Semiannual Water/10C3074.0012.08
Sample Matrix: Water

Service Request: R1612099
Date Analyzed: 11/17/16

Lab Control Sample Summary
Volatile Organic Compounds by GC/MS, Unpreserved

Units:ug/L
Basis:NA

Lab Control Sample
RQ1614083-03

Analyte Name	Analytical Method	Result	Spike Amount	% Rec	% Rec Limits
o-Xylene	624	20.3	20.0	102	78-127
trans-1,2-Dichloroethene	624	19.6	20.0	98	54-156
trans-1,3-Dichloropropene	624	19.7	20.0	99	17-183

Client: Ecology And Environment, Incorporated
Project: Davis Howland Oil Company Site - Semiannual Water/10C3074.0012.08
Sample Matrix: Water

Service Request: R1612099
Date Analyzed: 11/18/16

Lab Control Sample Summary
Volatile Organic Compounds by GC/MS, Unpreserved

Units:ug/L
Basis:NA

Lab Control Sample
RQ1614167-03

Analyte Name	Analytical Method	Result	Spike Amount	% Rec	% Rec Limits
1,1,1-Trichloroethane (TCA)	624	21.2	20.0	106	52-162
1,1,2,2-Tetrachloroethane	624	19.6	20.0	98	46-157
1,1,2-Trichloroethane	624	20.2	20.0	101	52-150
1,1-Dichloroethane (1,1-DCA)	624	20.2	20.0	101	59-155
1,1-Dichloroethene (1,1-DCE)	624	18.0	20.0	90	10-234
1,2-Dichlorobenzene	624	21.1	20.0	105	18-190
1,2-Dichloroethane	624	21.5	20.0	107	49-155
1,2-Dichloropropane	624	20.0	20.0	100	10-210
1,3-Dichlorobenzene	624	20.8	20.0	104	59-156
1,4-Dichlorobenzene	624	20.4	20.0	102	18-190
2-Chloroethyl Vinyl Ether	624	20.0	20.0	100	10-305
Acetone	624	21.4	20.0	107	55-130
Benzene	624	20.7	20.0	103	37-151
Bromodichloromethane	624	20.9	20.0	105	35-155
Bromoform	624	22.7	20.0	113	45-169
Bromomethane	624	17.1	20.0	85	10-242
Carbon Tetrachloride	624	21.0	20.0	105	70-140
Chlorobenzene	624	20.3	20.0	102	37-160
Chloroethane	624	19.7	20.0	99	14-230
Chloroform	624	19.2	20.0	96	51-138
Chloromethane	624	19.9	20.0	99	10-273
Dibromochloromethane	624	22.1	20.0	111	53-149
Methylene Chloride	624	18.3	20.0	92	10-221
Ethylbenzene	624	19.1	20.0	96	37-162
Tetrachloroethene (PCE)	624	17.7	20.0	89	64-148
Toluene	624	20.1	20.0	100	47-150
Trichloroethene (TCE)	624	18.5	20.0	93	71-157
Trichlorofluoromethane (CFC 11)	624	19.8	20.0	99	17-181
Vinyl Chloride	624	22.2	20.0	111	10-251
cis-1,2-Dichloroethene	624	18.6	20.0	93	72-125
cis-1,3-Dichloropropene	624	22.1	20.0	110	10-227
m,p-Xylenes	624	40.7	40.0	102	76-131

Client: Ecology And Environment, Incorporated
Project: Davis Howland Oil Company Site - Semiannual Water/10C3074.0012.08
Sample Matrix: Water

Service Request: R1612099
Date Analyzed: 11/18/16

Lab Control Sample Summary
Volatile Organic Compounds by GC/MS, Unpreserved

Units:ug/L
Basis:NA

Lab Control Sample
RQ1614167-03

Analyte Name	Analytical Method	Result	Spike Amount	% Rec	% Rec Limits
o-Xylene	624	21.3	20.0	106	78-127
trans-1,2-Dichloroethene	624	19.7	20.0	98	54-156
trans-1,3-Dichloropropene	624	22.9	20.0	115	17-183

Semivolatile Organic Compounds by GC/MS

ALS Environmental—Rochester Laboratory
1565 Jefferson Road, Building 300, Suite 360, Rochester, NY 14623
Phone (585) 288-5380 Fax (585) 288-8475
www.alsglobal.com

Client: Ecology And Environment, Incorporated **Service Request:** R1612099
Project: Davis Howland Oil Company Site - Semiannual
Sample Matrix: Water

SURROGATE RECOVERY SUMMARY
Semivolatile Organic Compounds by GC/MS

Analysis Method: 625
Extraction Method: EPA 3510C

Sample Name	Lab Code	2,4,6-Tribromophenol 28 - 157	2-Fluorobiphenyl 39 - 119	2-Fluorophenol 10 - 105
MW-10R-111416	R1612099-002	81	77	38
MW-1S-111416	R1612099-003	77	75	37
MW-16R-111516	R1612099-004	81	82	37
PZ-3-111516	R1612099-005	80	76	39
PZ-2-111516	R1612099-006	74	75	38
PW2-111516	R1612099-007	76	73	37
P-2-111516	R1612099-008	77	70	37
P-3-111516	R1612099-009	84	74	35
PZ-4-111516	R1612099-010	84	72	37
Method Blank	RQ1614209-01	76	86	45
Lab Control Sample	RQ1614209-02	87	87	45
Duplicate Lab Control Sample	RQ1614209-03	90	86	46

Client: Ecology And Environment, Incorporated **Service Request:** R1612099
Project: Davis Howland Oil Company Site - Semiannual
Sample Matrix: Water

SURROGATE RECOVERY SUMMARY
Semivolatile Organic Compounds by GC/MS

Analysis Method: 625
Extraction Method: EPA 3510C

Sample Name	Lab Code	Nitrobenzene-d5 37 - 117	Phenol-d6 10 - 107	p-Terphenyl-d14 40 - 133
MW-10R-111416	R1612099-002	71	27	103
MW-1S-111416	R1612099-003	68	28	91
MW-16R-111516	R1612099-004	74	28	97
PZ-3-111516	R1612099-005	69	30	91
PZ-2-111516	R1612099-006	68	28	89
PW2-111516	R1612099-007	66	27	90
P-2-111516	R1612099-008	65	29	84
P-3-111516	R1612099-009	66	27	90
PZ-4-111516	R1612099-010	68	29	86
Method Blank	RQ1614209-01	74	33	105
Lab Control Sample	RQ1614209-02	74	34	100
Duplicate Lab Control Sample	RQ1614209-03	78	35	99

Analytical Report

Client:	Ecology And Environment, Incorporated	**Service Request:**	R1612099
Project:	Davis Howland Oil Company Site - Semiannual Water/10C3074.0012.08	**Date Collected:**	NA
Sample Matrix:	Water	**Date Received:**	NA
Sample Name:	Method Blank	**Units:**	ug/L
Lab Code:	RQ1614209-01	**Basis:**	NA

Semivolatile Organic Compounds by GC/MS

Analysis Method: 625
Prep Method: EPA 3510C

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
1,2,4-Trichlorobenzene	5.0 U	5.0	1.0	1	11/23/16 10:45	11/21/16	
1,2-Diphenylhydrazine	5.0 U	5.0	1.0	1	11/23/16 10:45	11/21/16	
2,4,6-Trichlorophenol	5.0 U	5.0	1.4	1	11/23/16 10:45	11/21/16	
2,4-Dichlorophenol	5.0 U	5.0	1.3	1	11/23/16 10:45	11/21/16	
2,4-Dimethylphenol	5.0 U	5.0	1.5	1	11/23/16 10:45	11/21/16	
2,4-Dinitrophenol	50 U	50	20	1	11/23/16 10:45	11/21/16	
2,4-Dinitrotoluene	5.0 U	5.0	1.6	1	11/23/16 10:45	11/21/16	
2,6-Dinitrotoluene	5.0 U	5.0	1.8	1	11/23/16 10:45	11/21/16	
2-Chloronaphthalene	5.0 U	5.0	1.0	1	11/23/16 10:45	11/21/16	
2-Chlorophenol	5.0 U	5.0	1.0	1	11/23/16 10:45	11/21/16	
2-Nitrophenol	5.0 U	5.0	1.4	1	11/23/16 10:45	11/21/16	
3,3'-Dichlorobenzidine	5.0 U	5.0	4.5	1	11/23/16 10:45	11/21/16	
4,6-Dinitro-o-cresol	50 U	50	11	1	11/23/16 10:45	11/21/16	
4-Bromophenyl Phenyl Ether	5.0 U	5.0	2.2	1	11/23/16 10:45	11/21/16	
4-Chloro-m-cresol	5.0 U	5.0	1.2	1	11/23/16 10:45	11/21/16	
4-Chlorophenyl Phenyl Ether	5.0 U	5.0	1.2	1	11/23/16 10:45	11/21/16	
4-Nitrophenol	50 U	50	5.9	1	11/23/16 10:45	11/21/16	
Acenaphthene	5.0 U	5.0	1.0	1	11/23/16 10:45	11/21/16	
Acenaphthylene	5.0 U	5.0	1.0	1	11/23/16 10:45	11/21/16	
Anthracene	5.0 U	5.0	1.0	1	11/23/16 10:45	11/21/16	
Benz(a)anthracene	5.0 U	5.0	1.0	1	11/23/16 10:45	11/21/16	
Benzidine	100 U	100	90	1	11/23/16 10:45	11/21/16	
Benzo(a)pyrene	5.0 U	5.0	1.0	1	11/23/16 10:45	11/21/16	
3,4-Benzofluoranthene	5.0 U	5.0	1.0	1	11/23/16 10:45	11/21/16	
Benzo(g,h,i)perylene	5.0 U	5.0	1.0	1	11/23/16 10:45	11/21/16	
Benzo(k)fluoranthene	5.0 U	5.0	1.0	1	11/23/16 10:45	11/21/16	
Bis(1-chloroisopropyl) Ether	5.0 U	5.0	1.0	1	11/23/16 10:45	11/21/16	
Bis(2-chloroethoxy)methane	5.0 U	5.0	2.2	1	11/23/16 10:45	11/21/16	
Bis(2-chloroethyl) Ether	5.0 U	5.0	1.3	1	11/23/16 10:45	11/21/16	
Bis(2-ethylhexyl) Phthalate	5.0 U	5.0	1.2	1	11/23/16 10:45	11/21/16	
Butyl Benzyl Phthalate	5.0 U	5.0	2.4	1	11/23/16 10:45	11/21/16	
Chrysene	5.0 U	5.0	1.0	1	11/23/16 10:45	11/21/16	
Di-n-butyl Phthalate	5.0 U	5.0	1.0	1	11/23/16 10:45	11/21/16	
Di-n-octyl Phthalate	5.0 U	5.0	1.2	1	11/23/16 10:45	11/21/16	
Dibenz(a,h)anthracene	5.0 U	5.0	1.3	1	11/23/16 10:45	11/21/16	
Diethyl Phthalate	5.0 U	5.0	1.0	1	11/23/16 10:45	11/21/16	
Dimethyl Phthalate	5.0 U	5.0	1.0	1	11/23/16 10:45	11/21/16	
Fluoranthene	5.0 U	5.0	1.0	1	11/23/16 10:45	11/21/16	
Fluorene	5.0 U	5.0	1.0	1	11/23/16 10:45	11/21/16	
Hexachlorobenzene	5.0 U	5.0	1.0	1	11/23/16 10:45	11/21/16	
Hexachlorobutadiene	5.0 U	5.0	1.3	1	11/23/16 10:45	11/21/16	
Hexachlorocyclopentadiene	5.0 U	5.0	1.0	1	11/23/16 10:45	11/21/16	
Hexachloroethane	5.0 U	5.0	1.2	1	11/23/16 10:45	11/21/16	

Analytical Report

Client:	Ecology And Environment, Incorporated	**Service Request:**	R1612099
Project:	Davis Howland Oil Company Site - Semiannual Water/10C3074.0012.08	**Date Collected:**	NA
Sample Matrix:	Water	**Date Received:**	NA
Sample Name:	Method Blank	**Units:**	ug/L
Lab Code:	RQ1614209-01	**Basis:**	NA

Semivolatile Organic Compounds by GC/MS

Analysis Method: 625
Prep Method: EPA 3510C

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Indeno(1,2,3-cd)pyrene	5.0 U	5.0	1.2	1	11/23/16 10:45	11/21/16	
Isophorone	5.0 U	5.0	1.0	1	11/23/16 10:45	11/21/16	
N-Nitrosodi-n-propylamine	5.0 U	5.0	1.3	1	11/23/16 10:45	11/21/16	
N-Nitrosodimethylamine	5.0 U	5.0	1.0	1	11/23/16 10:45	11/21/16	
N-Nitrosodiphenylamine	5.0 U	5.0	1.0	1	11/23/16 10:45	11/21/16	
Naphthalene	5.0 U	5.0	1.0	1	11/23/16 10:45	11/21/16	
Nitrobenzene	5.0 U	5.0	1.6	1	11/23/16 10:45	11/21/16	
Pentachlorophenol (PCP)	50 U	50	6.9	1	11/23/16 10:45	11/21/16	
Phenanthrene	5.0 U	5.0	1.0	1	11/23/16 10:45	11/21/16	
Phenol	5.0 U	5.0	1.0	1	11/23/16 10:45	11/21/16	
Pyrene	5.0 U	5.0	1.0	1	11/23/16 10:45	11/21/16	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
2,4,6-Tribromophenol	76	28 - 157	11/23/16 10:45	
2-Fluorobiphenyl	86	39 - 119	11/23/16 10:45	
2-Fluorophenol	45	10 - 105	11/23/16 10:45	
Nitrobenzene-d5	74	37 - 117	11/23/16 10:45	
Phenol-d6	33	10 - 107	11/23/16 10:45	
p-Terphenyl-d14	105	40 - 133	11/23/16 10:45	

Client: Ecology And Environment, Incorporated
Project: Davis Howland Oil Company Site - Semiannual Water/10C3074.0012.08
Sample Matrix: Water

Service Request: R1612099
Date Analyzed: 11/23/16

Duplicate Lab Control Sample Summary
Semivolatile Organic Compounds by GC/MS

Units:ug/L
Basis:NA

		Lab Control Sample			Duplicate Lab Control Sample					
		RQ1614209-02			RQ1614209-03					
Analyte Name	**Analytical Method**	**Result**	**Spike Amount**	**% Rec**	**Result**	**Spike Amount**	**% Rec**	**% Rec Limits**	**RPD**	**RPD Limit**
1,2,4-Trichlorobenzene	625	66.9	100	67	65.0	100	65	29-85	3	30
1,2-Diphenylhydrazine	625	80.3	100	80	78.5	100	78	57-117	2	30
2,4,6-Trichlorophenol	625	92.2	100	92	91.9	100	92	37-144	<1	30
2,4-Dichlorophenol	625	84.9	100	85	85.2	100	85	39-135	<1	30
2,4-Dimethylphenol	625	80.2	100	80	79.1	100	79	32-119	1	30
2,4-Dinitrophenol	625	87.9	100	88	92.0	100	92	10-191	5	30
2,4-Dinitrotoluene	625	96.0	100	96	93.8	100	94	39-139	2	30
2,6-Dinitrotoluene	625	91.4	100	91	92.4	100	92	50-158	1	30
2-Chloronaphthalene	625	77.2	100	77	76.3	100	76	60-118	1	30
2-Chlorophenol	625	78.3	100	78	80.0	100	80	23-134	2	30
2-Nitrophenol	625	82.2	100	82	84.5	100	85	29-182	3	30
3,3'-Dichlorobenzidine	625	77.6	100	78	76.9	100	77	10-262	<1	30
4,6-Dinitro-o-cresol	625	94.7	100	95	98.6	100	99	10-181	4	30
4-Bromophenyl Phenyl Ether	625	87.2	100	87	87.6	100	88	53-127	<1	30
4-Chloro-m-cresol	625	80.3	100	80	81.1	100	81	22-147	1	30
4-Chlorophenyl Phenyl Ether	625	85.8	100	86	84.3	100	84	25-158	2	30
4-Nitrophenol	625	37.8 J	100	38	38.7 J	100	39	10-132	2	30
Acenaphthene	625	81.4	100	81	81.6	100	82	47-145	<1	30
Acenaphthylene	625	80.4	100	80	80.1	100	80	33-145	<1	30
Anthracene	625	91.1	100	91	90.2	100	90	27-133	1	30
Benz(a)anthracene	625	94.7	100	95	96.1	100	96	33-143	1	30
Benzidine	625	100 U	200	41	90 U	200	44	10-169	NC	30
Benzo(a)pyrene	625	105	100	105	101	100	101	17-163	4	30
3,4-Benzofluoranthene	625	98.7	100	99	95.2	100	95	24-159	4	30
Benzo(g,h,i)perylene	625	105	100	105	101	100	101	10-219	4	30
Benzo(k)fluoranthene	625	102	100	102	100	100	100	11-162	2	30
Bis(1-chloroisopropyl) Ether	625	76.9	100	77	76.8	100	77	36-166	<1	30
Bis(2-chloroethoxy)methane	625	87.2	100	87	86.7	100	87	33-184	<1	30
Bis(2-chloroethyl) Ether	625	77.9	100	78	78.6	100	79	12-158	<1	30
Bis(2-ethylhexyl) Phthalate	625	91.6	100	92	92.2	100	92	10-158	<1	30
Butyl Benzyl Phthalate	625	95.6	100	96	95.0	100	95	10-152	<1	30
Chrysene	625	96.5	100	96	95.2	100	95	17-168	1	30

Client: Ecology And Environment, Incorporated
Project: Davis Howland Oil Company Site - Semiannual Water/10C3074.0012.08
Sample Matrix: Water

Service Request: R1612099
Date Analyzed: 11/23/16

Duplicate Lab Control Sample Summary
Semivolatile Organic Compounds by GC/MS

Units:ug/L
Basis:NA

			Lab Control Sample RQ1614209-02			Duplicate Lab Control Sample RQ1614209-03				
Analyte Name	**Analytical Method**	**Result**	**Spike Amount**	**% Rec**	**Result**	**Spike Amount**	**% Rec**	**% Rec Limits**	**RPD**	**RPD Limit**
Di-n-butyl Phthalate	625	96.6	100	97	95.5	100	96	10-118	1	30
Di-n-octyl Phthalate	625	102	100	102	98.7	100	99	10-146	3	30
Dibenz(a,h)anthracene	625	108	100	108	102	100	102	10-227	6	30
Diethyl Phthalate	625	90.6	100	91	89.1	100	89	10-114	2	30
Dimethyl Phthalate	625	88.7	100	89	88.4	100	88	10-112	<1	30
Fluoranthene	625	92.8	100	93	92.2	100	92	26-137	<1	30
Fluorene	625	82.3	100	82	81.2	100	81	59-121	1	30
Hexachlorobenzene	625	89.9	100	90	87.6	100	88	10-152	3	30
Hexachlorobutadiene	625	71.5	100	72	69.4	100	69	24-116	3	30
Hexachlorocyclopentadiene	625	25.0	100	25 *	24.9	100	25 *	28-98	<1	30
Hexachloroethane	625	58.2	100	58	56.6	100	57	40-113	3	30
Indeno(1,2,3-cd)pyrene	625	106	100	106	105	100	105	10-171	<1	30
Isophorone	625	78.4	100	78	77.4	100	77	21-196	1	30
N-Nitrosodi-n-propylamine	625	75.3	100	75	74.7	100	75	10-230	<1	30
N-Nitrosodimethylamine	625	51.4	100	51	52.5	100	53	33-70	2	30
N-Nitrosodiphenylamine	625	90.5	100	91	88.8	100	89	50-117	2	30
Naphthalene	625	70.2	100	70	70.4	100	70	21-133	<1	30
Nitrobenzene	625	78.3	100	78	79.0	100	79	35-180	<1	30
Pentachlorophenol (PCP)	625	96.7	100	97	96.2	100	96	14-176	<1	30
Phenanthrene	625	90.4	100	90	88.3	100	88	54-120	2	30
Phenol	625	39.6	100	40	36.7	100	37	10-112	7	30
Pyrene	625	98.2	100	98	97.0	100	97	52-115	1	30

Semivolatile Organic Compounds by GC

ALS Environmental—Rochester Laboratory
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Analytical Report

Client:	Ecology And Environment, Incorporated	**Service Request:**	R1612099
Project:	Davis Howland Oil Company Site - Semiannual Water/10C3074.0012.08	**Date Collected:**	NA
Sample Matrix:	Water	**Date Received:**	NA
Sample Name:	Method Blank	**Units:**	ug/L
Lab Code:	RQ1614125-01	**Basis:**	NA

NY Hydrocarbon Scan, Modified to Combine Methods 310-13, -14, and -15, and for Matrix

Analysis Method: NY 310-13 Modified
Prep Method: Method

Analyte Name	Result		MRL	Dil.	Date Analyzed	Date Extracted	Q
Fuel Oil No. 2	1000	U	1000	1	11/23/16 03:21	11/18/16	
Fuel Oil No. 4	1000	U	1000	1	11/23/16 03:21	11/18/16	
Fuel Oil No. 6	1000	U	1000	1	11/23/16 03:21	11/18/16	
Gasoline	Absence	U	-	1	11/23/16 03:21	11/18/16	
Kerosene	1000	U	1000	1	11/23/16 03:21	11/18/16	
Lube Oil	Absence	U	-	1	11/23/16 03:21	11/18/16	
n-Dodecane	1000	U	1000	1	11/23/16 03:21	11/18/16	

ALS Group USA, Corp.
dba ALS Environmental

QA/QC Report

Client: Ecology And Environment, Incorporated
Project: Davis Howland Oil Company Site - Semiannual Water/10C3074.0012.08
Sample Matrix: Water

Service Request: R1612099
Date Analyzed: 11/23/16

Duplicate Lab Control Sample Summary

NY Hydrocarbon Scan, Modified to Combine Methods 310-13, -14, and -15, and for Matrix

Units:ug/L
Basis:NA

		Lab Control Sample RQ1614125-02			Duplicate Lab Control Sample RQ1614125-03					
Analyte Name	**Analytical Method**	**Result**	**Spike Amount**	**% Rec**	**Result**	**Spike Amount**	**% Rec**	**% Rec Limits**	**RPD**	**RPD Limit**
Fuel Oil No. 2	NY 310-13 Modified	2910	5000	58	4470	5000	89	34-138	42*	30

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WELL PURGE & SAMPLE RECORD

Site Name/Location: Davis Island Well ID: MW-15R

EEEPC Project No.: 10C3074.002.08 Date: 11/14/15

Initial Depth to Water: _____ feet TOIC Start Time: _____

Total Well Depth: _____ feet TOIC End Time: _____

Depth to Pump: _____ feet TOIC ☐ Bailer ☐ Pump

Initial Pump Rate: _____ Lpm / gpm Pump Type: _____

adjusted to: _____ at _____ minutes Well Diameter: _____ inches

adjusted to: _____ at _____ minutes 1x Well Volume: _____ gallons

Time	Purge Volume (gallons/liters)	pH (s.u.)	Temp. (°C/°F)	ORP (mV)	Conductivity (µS/cm mS/cm)	DO (mg/L)	Turbidity (NTU)	Water Level (feet)
	See Comments							
Final Sample Data:								

Sample ID: _____ Duplicate? ☐ Dupe Samp ID: _____

Sample Time: _____ MS/MSD? ☐

Analyses:	Methods:
☒ VOCs	☐ CLP
☒ SVOCs	☐ SW846
☐ PCBs	☐ Drink. Wtr.
☐ Metals	☑ TAL/TCL
☐ _____	☐ _____

Comments: Did not Sample Because of Gravel and dirt, Stone piles on monitoring well

Sampler(s): L. Rucci

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WELL PURGE & SAMPLE RECORD

Site Name/Location: Dewshowlam

Well ID: P-1 ~~[illegible]~~ 11/15/16

EEEPC Project No.: 1063024.0012.08

Date: 11/15/16

Initial Depth to Water: ____ feet TOIC

Start Time: ____

Total Well Depth: ____ feet TOIC

End Time: ____

Depth to Pump: ____ feet TOIC

☐ Bailer ☐ Pump

Initial Pump Rate: ____ Lpm / gpm

Pump Type: ____

adjusted to: ____ at ____ minutes

Well Diameter: ____ inches

adjusted to: ____ at ____ minutes

1x Well Volume: ____ gallons

Time	Purge Volume (gallons/liters)	pH (s.u.)	Temp. (°C/°F)	ORP (mV)	Conductivity (µS/cm mS/cm)	DO (mg/L)	Turbidity (NTU)	Water Level (feet)
	See Comments							
Final Sample Data:								

Sample ID: P-1-111516

Duplicate? ☐

Dupe Samp ID: ____

Sample Time: ____

MS/MSD? ☐

Analyses:
- ☒ VOCs
- ☒ SVOCs
- ☐ PCBs
- ☐ Metals
- ☐ ____

Methods:
- ☐ CLP
- ☐ SW846
- ☐ Drink. Wtr.
- ☒ TCL
- ☐ ____

Comments: ~~This Sample was Taken From System~~ 11/15/16 Taped off on pannel not working

Sampler(s): C Roell

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WELL PURGE & SAMPLE RECORD

Site Name/Location: Parishville(?)   Well ID: PW 1

EEEPC Project No.: 10C3014.0012.08   Date: 11/14/116

Initial Depth to Water: ______ feet TOIC   Start Time: 10:40

Total Well Depth: ______ feet TOIC   End Time: ______

Depth to Pump: ______ feet TOIC   ☐ Bailer   ☐ Pump

Initial Pump Rate: ______ Lpm / gpm   Pump Type: ______

adjusted to: ______ at ______ minutes   Well Diameter: ______ inches

adjusted to: ______ at ______ minutes   1x Well Volume: ______ gallons

Time	Purge Volume (gallons/liters)	pH (s.u.)	Temp. (°C/°F)	ORP (mV)	Conductivity (µS/cm mS/cm)	DO (mg/L)	Turbidity (NTU)	Water Level (feet)
	See Comments							
Final Sample Data:								

Sample ID: ______   Duplicate? ☐   Dupe Samp ID: ______

Sample Time: ______   MS/MSD? ☐

Analyses:	Methods:
☐ VOCs	☐ CLP
☐ SVOCs	☐ SW846
☐ PCBs	☐ Drink. Wtr.
☐ Metals	☐ ______
☐ ______	☐ ______

Comments: Did not sample, because there is a pump in the well and cannot get typhon passed all the pipe and electric lines. LR Tanner(?) pump from the control room did not work.

Sampler(s): [illegible]

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WELL PURGE & SAMPLE RECORD

Site Name/Location: Davisha Land — Well ID: MW145

EEEPC Project No.: 10C3024.0012.08 — Date: 11/11/16

Initial Depth to Water: 2.23 feet TOIC — Start Time: 12:55

Total Well Depth: 12.94 feet TOIC — End Time: 13:58

Depth to Pump: 11.94 feet TOIC — ☐ Bailer ☒ Pump

Initial Pump Rate: 1 (Lpm) / gpm — Pump Type: Typhoon

adjusted to: _____ at _____ minutes — Well Diameter: 4 inches

adjusted to: _____ at _____ minutes — 1x Well Volume: 6.9 gallons

Time	Purge Volume (gallons/liters)	pH (s.u.)	Temp. (°C/°F)	ORP (mV)	Conductivity (µS/cm/mS/cm)	DO (mg/L)	Turbidity (NTU)	Water Level (feet)
12:55	2.0 mls	7.03	15.8	-5.1	0.576	0.72	>1000	3.19
13:00	1.2 L	7.01	15.7	26.5	0.578	0.56	>1000	3.48
13:05	2.2	6.99	15.5	42.9	0.600	0.52	57.3	3.65
13:10	3.2	7.00	15.4	55.6	0.62	0.37	29.9	3.78
13:15	4.2	7.00	15.6	56.1	0.62	0.38	25.2	3.81
13:20	5.2	7.00	15.7	59.7	0.62	0.40	23.4	3.85
13:25	6.2	7.00	15.7	61.3	0.61	0.39	21.6	3.87
13:30	7.2	7.00	15.7	66.2	0.61	0.31	21.9	3.89
13:35	8.2	7.00	15.7	66.4	0.61	0.30	21.6	3.94
13:40	9.2	7.00	15.6	66.7	0.61	0.30	20.1	3.94
13:45	10.2	7.00	15.7	66.9	0.61	0.29	19.2	3.94
~~13:50~~					Luma Ready 11/16/16			
Final Sample Data:		7.00	15.7	66.9	0.61	0.29	19.2	3.94

Sample ID: MW145 111116 — Duplicate? ☐ — Dupe Samp ID: _____

Sample Time: 13:58 — MS/MSD? ☐

Analyses:	Methods:
☒ VOCs	☐ CLP
☒ SVOCs	☐ SW846
☐ PCBs	☐ Drink. Wtr.
☐ Metals	☒ TAPH
☐ _____	☐ _____

Comments: _____

Sampler(s): E. Rockwell

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WELL PURGE & SAMPLE RECORD

Site Name/Location: Davis Howland
Well ID: PW2
EEEPC Project No.: 10C3074.0012.08
Date: 11/15/16

Initial Depth to Water: N/A feet TOIC
Start Time: 11:35
Total Well Depth: ______ feet TOIC
End Time: ______
Depth to Pump: ______ feet TOIC
☐ Bailer ☐ Pump
Initial Pump Rate: ______ Lpm / gpm
Pump Type: ______
adjusted to: ______ at ______ minutes
Well Diameter: ______ inches
adjusted to: ______ at ______ minutes
1x Well Volume: ______ gallons

Time	Purge Volume (gallons/liters)	pH (s.u.)	Temp. (°C/°F)	ORP (mV)	Conductivity (µS/cm mS/cm)	DO (mg/L)	Turbidity (NTU)	Water Level (feet)
Final Sample Data:		7.21	14.8	81.5	1.95	1.90	48.3	—

Sample ID: PW2-111516
Duplicate? ☐
Dupe Samp ID: ______
Sample Time: 11:40
MS/MSD? ☐

Analyses:
- ☒ VOCs
- ☒ SVOCs
- ☐ PCBs
- ☐ Metals
- ☐ ______

Methods:
- ☐ CLP
- ☐ SW846
- ☐ Drink. Wtr.
- ☒ TPH
- ☐ ______

Comments: This was sample tat the system.
~ 5 gallons purged

Sampler(s): Lhoore

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WELL PURGE & SAMPLE RECORD

Site Name/Location: Davis Howland — Well ID: P-3

EEEPC Project No.: 10C3074.0012.08 — Date: 11/15/16

Initial Depth to Water: N/A feet TOIC — Start Time: _____

Total Well Depth: _____ feet TOIC — End Time: _____

Depth to Pump: _____ feet TOIC — ☐ Bailer ☐ Pump

Initial Pump Rate: _____ Lpm / gpm — Pump Type: _____

adjusted to: ~~4~~ at _____ minutes — Well Diameter: _____ inches

adjusted to: _____ at _____ minutes — 1x Well Volume: _____ gallons

Time	Purge Volume (gallons/liters)	pH (s.u.)	Temp. (°C/°F)	ORP (mV)	Conductivity (µS/cm mS/cm)	DO (mg/L)	Turbidity (NTU)	Water Level (feet)
							~~2.18~~	—
Final Sample Data:		7.31	14.6	89.7	2.60	4.73	2.18	—

Sample ID: P-3-111516 — Duplicate? ☐ — Dupe Samp ID: _____

Sample Time: 12:50 — MS/MSD? ☐

Analyses: / Methods:

- ☐ VOCs ☐ CLP
- ☐ SVOCs ☐ SW846
- ☐ PCBs ☐ Drink. Wtr.
- ☐ Metals ☐ _____
- ☐ _____ ☐ _____

Comments: This Sample was Taken From System pumped 5 gallons

Sampler(s): L. Rondo

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WELL PURGE & SAMPLE RECORD

Site Name/Location: Davis Howland — Well ID: P-2

EEEPC Project No.: 10E3074.0012.08 — Date: 11/15/16

Initial Depth to Water: N/A feet TOIC — Start Time: _____

Total Well Depth: _____ feet TOIC — End Time: _____

Depth to Pump: _____ feet TOIC — ☐ Bailer ☐ Pump

Initial Pump Rate: _____ Lpm / gpm — Pump Type: _____

adjusted to: _____ at _____ minutes — Well Diameter: _____ inches

adjusted to: _____ at _____ minutes — 1x Well Volume: _____ gallons

Time	Purge Volume (gallons/liters)	pH (s.u.)	Temp. (°C/°F)	ORP (mV)	Conductivity (µS/cm mS/cm)	DO (mg/L)	Turbidity (NTU)	Water Level (feet)
Final Sample Data:		7.03	14.5	56.1	2.68	1.37	3.98	—

Sample ID: ~~DUP~~ P-2-111516 — Duplicate? ☐ — Dupe Samp ID: _____

Sample Time: 12:10 — MS/MSD? ☐

Analyses:	Methods:
☒ VOCs	☐ CLP
☒ SVOCs	☐ SW846
☐ PCBs	☐ Drink. Wtr.
☐ Metals	☒ TPH
☐ _____	☐ _____

Comments: Sample through System purged ~5 gallons

Sampler(s): L. Rudd

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WELL PURGE & SAMPLE RECORD

Site Name/Location: Davisholand — Well ID: MW135

EEEPC Project No.: 10C3074.0012.08 — Date: 11/10/16

Initial Depth to Water: 3.21 feet TOIC — Start Time: 10:25

Total Well Depth: 13.74 feet TOIC — End Time: 11:23

Depth to Pump: 12.74 feet TOIC — ☐ Bailer ☒ Pump

Initial Pump Rate: 200 mls Lpm / gpm — Pump Type: Typhon

adjusted to: _____ at _____ minutes — Well Diameter: 2" inches

adjusted to: _____ at _____ minutes — 1x Well Volume: 1.7 gallons 1.3 = 3.9 gals

Time	Purge Volume (gallons/liters)	pH (s.u.)	Temp. (°C/°F)	ORP (mV)	Conductivity (µS/cm mS/cm)	DO (mg/L)	Turbidity (NTU)	Water Level (feet)
10:33	200mls	7.37	14.6	75.8	0.80	3.16	53.8	3.25
10:38	1.2	7.32	14.0	68.0	0.82	2.83	38.1	3.26
10:43	2.2	7.31	14.1	59.1	0.83	2.70	30.3	3.28
10:48	3.2	7.30	14.1	61.3	0.83	2.64	22.8	3.28
10:53	4.2	7.30	13.9	64.2	0.83	2.59	21.8	3.28
10:58	5.2	7.31	14.0	68.1	0.84	2.51	20.8	3.28
11:03	6.2	7.30	14.1	70.0	0.84	2.49	13.2	3.28
11:08	7.2	7.30	14.1	73.7	0.85	2.39	12.8	3.28
11:13	8.2	7.30	14.4	76.7	0.85	2.39	4.70	3.28
11:18	9.2	7.36	14.3	72.4	0.85	2.37	9.07	3.28
11:23	10.2	7.30	14.1	76.4	0.85	2.38	8.35	3.28
						alcohol		
Final Sample Data:		7.30	14.1	76.4	0.85	2.38	8.35	3.28

Sample ID: MW135-111016 — Duplicate? ☐ — Dupe Samp ID: _____

Sample Time: 11:30 — MS/MSD? ☐

Analyses:	Methods:
☑ VOCs	☐ CLP
☒ SVOCs	☐ SW846
☐ PCBs	☐ Drink. Wtr.
☐ Metals	☒ TAL
☐ _____	☐ _____

Comments: Pump issues.

Sampler(s): L. Roepe

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WELL PURGE & SAMPLE RECORD

Site Name/Location: Davis Haulage — Well ID: MW-95

EEEPC Project No.: 103074.0012.08 — Date: 11/10/16

Initial Depth to Water: 5.84 feet TOIC — Start Time: 1245

Total Well Depth: 15.96 feet TOIC — End Time: 1325

Depth to Pump: 13.96 feet TOIC — ☐ Bailer ☒ Pump

Initial Pump Rate: 0.15 Lpm / gpm — Pump Type: Mini Typhoon

adjusted to: ~~1.0~~ 0.10 at ~~1.0~~ 1.50 minutes — Well Diameter: 2 inches

adjusted to: 1.6 at 1300 minutes — 1x Well Volume: 1.6 gallons

Time	Purge Volume (gallons/liters)	pH (s.u.)	Temp. (°C/°F)	ORP (mV)	Conductivity (µS/cm mS/cm)	DO (mg/L)	Turbidity (NTU)	Water Level (feet)
1250		7.03	16.3	113.9	2.51	3.00	38.4	5.55
1255		6.97	16.1	115.1	2.50	2.60	36.7	5.69
1300		6.97	15.8	114.3	2.50	2.41	32.7	5.80
1305		6.96	16.6	112.2	2.46	2.30	26.8	9.50
1310		6.97	16.8	110.3	2.31	1.60	28.2	11.11
1315		6.96	16.9	108.2	2.32	1.37	21.2	13.02
1320		6.97	16.8	107.6	2.27	1.87	18.1	13.9
1325	—	DRY	—	—	—	—	—	—
Final Sample Data:		6.97	16.8	107.6	2.27	1.87	18.1	13.9

T. Dillon 11/10/16

Sample ID: MW-95-111016 — Duplicate? ☐ — Dupe Samp ID:

Sample Time: 1335 — MS/MSD? ☐

Analyses:	Methods:
☒ VOCs	☐ CLP
☒ SVOCs	☐ SW846
☐ PCBs	☐ Drink. Wtr.
☐ Metals	☐ _____
☒ TPH	☐ _____

Comments: 1300 change flow rate to pump dry; unable to stabilize water level. This well went dry in previous sampling events. - pump put at bottom 1320

Sampler(s): T. Dillon

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WELL PURGE & SAMPLE RECORD

Site Name/Location: Davis Howland
Well ID: PZ-4
EEEPC Project No.: 10C3074.0012.03
Date: 11/15/16

Initial Depth to Water: 4.35 feet TOIC
Start Time: 1027
Total Well Depth: 11.47 feet TOIC
End Time: 1055
Depth to Pump: 10.47 feet TOIC
☐ Bailer ☒ Pump
Initial Pump Rate: 0.15 (Lpm) / gpm
Pump Type: Peri-pump
adjusted to: _____ at _____ minutes
Well Diameter: 1 inches
adjusted to: _____ at _____ minutes
1x Well Volume: 0.3 gallons X3: 0.9 gals 3.4L

Time	Purge Volume (gallons/liters)	pH (s.u.)	Temp. (°C/°F)	ORP (mV)	Conductivity (µS/cm mS/cm)	DO (mg/L)	Turbidity (NTU)	Water Level (feet)
1030	0	7.06	16.4	-163.5	0.96	2.63	>1000	5.35
1035	0.75	7.09	16.5	-137.7	0.94	0.45	>1000	6.65
1040	1.5	6.98	16.5	-106.0	0.88	0.44	918	7.66
1045	2.25	6.97	16.6	-89.6	0.89	0.99	67.0	8.25
1050	3	6.95	16.5	-99.8	0.92	0.67	>1000	9.03
1055	3.75	6.99	16.8	-93.1	1.07	0.97	72.7	9.22
Final Sample Data:		6.99	16.8	-93.1	1.07	0.97	72.7	9.22

J. Nolan 11/15/16

Sample ID: PZ-4-111516
Duplicate? ☐
Dupe Samp ID: _____
Sample Time: 1100
MS/MSD? ☐

Analyses: Methods:
☒ VOCs ☐ CLP
☒ SVOCs ☐ SW846
☐ PCBs ☐ Drink. Wtr.
☐ Metals ☐ _____
☒ TPH ☐ _____

Comments: 3 well volumes purged, well sampled 1108. well went dry; waiting on recharge to finish sampling. VOCs and 1L amber collected (SVOCs) collected 3L Amber after recharge at 14:20

Sampler(s): J. Nolan

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WELL PURGE & SAMPLE RECORD

Site Name/Location: Dairyland
EEEPC Project No.: 10C3074.0612.08

Well ID: PZ-3
Date: 11/15/16

Initial Depth to Water: 4.41 feet TOIC
Total Well Depth: 13.49 feet TOIC
Depth to Pump: 12.49 feet TOIC
Initial Pump Rate: 0.15 Lpm / gpm
adjusted to: _____ at _____ minutes
adjusted to: _____ at _____ minutes

Start Time: 1315
End Time: 1345
☐ Bailer ☑ Pump
Pump Type: ~~Typhoon~~ peri-pump
Well Diameter: 2 inches
1x Well Volume: 0.4 gallons x 3 = 1.1 gal

Time	Purge Volume (gallons/liters)	pH (s.u.)	Temp. (°C/°F)	ORP (mV)	Conductivity (µS/cm, mS/cm)	DO (mg/L)	Turbidity (NTU)	Water Level (feet)
1320	0.75	6.79	16.5	36.5	2.10	0.62	14.9	5.67
1325	1.5	6.78	16.4	-8.2	2.13	0.40	7.13	5.93
1330	2.25	6.77	16.5	-18.4	2.13	0.58	3.91	6.05
1335	3	6.78	16.3	-25.1	2.13	0.21	3.40	6.08
1340	3.75	6.78	16.7	-29.7	2.14	0.15	3.31	6.14
1345	4.5	6.78	16.7	-34.0	2.14	0.09	3.53	6.19
Final Sample Data:		6.78	16.7	-34.0	2.14	0.09	3.53	6.19

4.27

11/15/16

Sample ID: PZ-3-111516
Sample Time: 1348

Duplicate? ☐
MS/MSD? ☐
Dupe Samp ID: _____

Analyses:	Methods:
☒ VOCs	☐ CLP
☒ SVOCs	☐ SW846
☐ PCBs	☐ Drink. Wtr.
☐ Metals	☐ _____
☒ TPH	☐ _____

Comments: 1345: 3x well volume

Sampler(s): T. Dillon

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WELL PURGE & SAMPLE RECORD

Site Name/Location: Dawston Land
Well ID: PZ-2
EEEPC Project No.: 103074.0012.08
Date: 11/15/16

Initial Depth to Water: 4.13 feet TOIC
Start Time: 1125
Total Well Depth: 12.55 feet TOIC
End Time: 1200
Depth to Pump: 11.55 feet TOIC
☐ Bailer ☒ Pump
Initial Pump Rate: 0.15 (Lpm / gpm)
Pump Type: peri-pump
adjusted to: _____ at _____ minutes
Well Diameter: 1 inches
adjusted to: _____ at _____ minutes
1x Well Volume: 0.35 gallons x 3 = 1.05 l 3.8 L

Time	Purge Volume (gallons/liters)	pH (s.u.)	Temp. °C °F	ORP (mV)	Conductivity (µS/cm mS/cm)	DO (mg/L)	Turbidity (NTU)	Water Level (feet)
1130	0	7.17	15.5	-46.0	0.86	0.54	673	4.49
1135	0.75	7.14	15.2	-24.6	0.86	0.55	43.1	4.64
1140	1.5	7.12	15.2	-15.3	0.86	0.38	27.0	4.63
1145	2.25	7.10	15.6	-94.6	0.86	0.07	>1000	4.53
1150	3	7.10	15.3	-51.6	0.86	0.23	5	4.54
1155	3.75	7.10	15.3	-42.5	0.86	0.11	40.3	4.82
1200	4.5	7.10	15.4	-24.9	0.86	0.11	18.2	4.93
Final Sample Data:		7.10	15.4	-24.9	0.86	0.11	18.2	4.93

PZ-2 11/15/16

Sample ID: PZ-2-111516
Duplicate? ☐
Dupe Samp ID: _____
Sample Time: 1202
MS/MSD? ☐

Analyses: / Methods:
☒ VOCs ☐ CLP
☒ SVOCs ☐ SW846
☐ PCBs ☐ Drink. Wtr.
☐ Metals ☐ _____
☒ TPH ☐ _____

Comments: 1140 moved tubing ~ 8 2' off bottom due to muck at the bottom that clogs tubing
1150: switched battery for peri pump
1202: 3x well volume purged

Sampler(s): T. Dillon

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WELL PURGE & SAMPLE RECORD

Site Name/Location: Davis Howland — Well ID: MW-25

EEEPC Project No.: 10(3074.0012.08 — Date: 11/11/16

Initial Depth to Water: 5.41 feet TOIC — Start Time: 1030

Total Well Depth: 14.02 feet TOIC — End Time: 1110

Depth to Pump: 12.02 feet TOIC — ☐ Bailer ☒ Pump

Initial Pump Rate: 0.15 (Lpm) / gpm — Pump Type: Mini Typhoon

adjusted to: 1.2 at 1045 minutes — Well Diameter: 2 inches

adjusted to: _____ at _____ minutes — 1x Well Volume: _____ gallons

Time	Purge Volume (gallons/liters)	pH (s.u.)	Temp. (°C/°F)	ORP (mV)	Conductivity (µS/cm mS/cm)	DO (mg/L)	Turbidity (NTU)	Water Level (feet)
1035		6.65	14.8	-97.1	1.57	0.21	33.0	5.90
1040		6.61	15.0	-88.5	1.56	1.70	22.5	6.19
1045		6.60	16.1	-81.0	1.56	0.45	14.1	8.58
1050		6.59	16.2	-84.8	1.59	0.15	8.44	10.14
1055		6.60	16.3	-93.4	1.60	NA	1.80	10.98
1100		6.60	16.4	-98.1	1.59	—	1.31	11.28
1105		6.62	16.5	-102.6	1.57	—	3.32	below pump
1110	—	—	DRY		—			
					11/11/16			
Final Sample Data:		6.62	16.5	-102.6	1.57	—	3.32	~~below pump~~

Sample ID: MW25-111116 — Duplicate? ☐ — Dupe Samp ID: _____

Sample Time: 11:35 — MS/MSD? ☐

Analyses:	Methods:
☒ VOCs	☐ CLP
☒ SVOCs	☐ SW846
☐ PCBs	☐ Drink. Wtr.
☐ Metals	☐ _____
☒ TPH	☐ _____

Comments: 1045 Cannot get water level to stabilized; was purged dry last event - will purge dry again
1055 DO sensor malfunction

Sampler(s): T. Dillon / C. Reed

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Tel: 716/684-8060, Fax: 716/684-0844

WELL PURGE & SAMPLE RECORD

Site Name/Location: Davis Howland — Well ID: MW-15

EEEPC Project No.: 10C3074-0012.08 — Date: 11/14/16

Initial Depth to Water: 12.59 feet TOIC — Start Time: 1405

Total Well Depth: 17.96 feet TOIC — End Time: 1440

Depth to Pump: 16.96 feet TOIC — ☐ Bailer ☒ Pump

Initial Pump Rate: 0.200 (Lpm)/ gpm — Pump Type: ~~Mini Typhoon~~ Typhoon

adjusted to: _____ at _____ minutes — Well Diameter: 2 inches

adjusted to: _____ at _____ minutes — 1x Well Volume: 0.9 gallons

Time	Purge Volume (gallons/liters)	pH (s.u.)	Temp. (°C/°F)	ORP (mV)	Conductivity (µS/cm or mS/cm)	DO (mg/L)	Turbidity (NTU)	Water Level (feet)
1410		6.93	14.4	54.9	1.54	1.03	49	12.75
1415		6.88	14.5	47.4	1.53	1.18	54.3	12.93
1420		6.85	14.6	48.4	1.52	1.16	24.7	12.95
1425		6.85	14.5	49.8	1.52	1.00	13.3	12.91
1430		6.85	14.6	51.6	1.52	0.87	9.53	12.91
1435		6.85	14.5	54.7	1.51	0.88	5.80	12.91
1440		6.86	14.6	55.4	1.51	0.86	3.60	12.91
Final Sample Data:		6.86	14.6	55.4	1.51	0.86	3.60	12.91

D. Davis 11/14/16

Sample ID: MW-15-111416 — Duplicate? ☐ — Dupe Samp ID: _____

Sample Time: 1445 — MS/MSD? ☐

Analyses:	Methods:
☒ VOCs	☐ CLP
☒ SVOCs	☐ SW846
☐ PCBs	☐ Drink. Wtr.
☐ Metals	☐ _____
☒ TPH	☐ _____

Comments: _____

Sampler(s): T.D. Lu

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WELL PURGE & SAMPLE RECORD

Site Name/Location: Davis Haviland
Well ID: MW-16R
EEEPC Project No.: 10C3074-0012.08
Date: 11/14/16 - 11/15/16

Initial Depth to Water: 18.22 feet TOIC
Total Well Depth: 31.08 feet TOIC
Depth to Pump: 29.08 feet TOIC
Initial Pump Rate: 0.200 (Lpm) / gpm
adjusted to: 0.65 at 1130 minutes
adjusted to: _____ at _____ minutes

Start Time: 1055
End Time: 1225
☐ Bailer ☒ Pump
Pump Type: Mini typhoon
Well Diameter: 4 inches
1x Well Volume: 8.4 gallons

Time	Purge Volume (gallons/liters)	pH (s.u.)	Temp. °C/°F)	ORP (mV)	Conductivity (µS/cm mS/cm)	DO (mg/L)	Turbidity (NTU)	Water Level (feet)
1100		7.09	15.0	-146.5	1.52	0.13	25.8	18.90
1105		7.12	15.3	-154.0	1.52	0.15	27.8	19.11
1110		7.13	15.4	-157.0	1.50	0.10	25.5	19.48
1115		7.12	15.2	-156.6	1.43	0.26	21.2	20.44
1125		7.12	15.4	-153.8	1.41	0.04	19.7	20.79
1130		7.13	15.4	-152.0	1.38	0.07	16.4	21.15
1135		7.13	15.2	-151.8	1.33	0.00	12.4	21.90
1140		7.14	15.2	-151.2	1.28	0.03	11.04	22.23
1145		7.20	15.2	-141.7	1.05	0.51	11.2	23.37
1150		7.27	15.3	-128.9	0.87	1.22	17.0	24.25
1155		7.33	15.4	-107.8	0.70	2.21	43.4	25.27
1200		7.30	15.4	-108.0	0.67	2.16	71.5	25.66
1205		7.25	15.3	-111.9	0.70	1.99	33	26.32
1210		7.19	15.2	-121.7	0.81	1.45	729	27.29
1220		7.19	15.2	-132.2	1.03	1.01	>1000	30.08
Final Sample Data:		6.98	13.1	3.3	~~0.88~~ 1.21	1.88	11.06	18.83

Sample ID: MW-16R-111516
Sample Time: 0915
Duplicate? ☐
MS/MSD? ☐
Dupe Samp ID: _____

Analyses: / Methods:
☒ ~~VOCs~~ ☐ CLP
☒ ~~SVOCs~~ ☐ SW846
☐ PCBs ☐ Drink. Wtr.
☐ Metals ☐ _____
☒ TPH ☐ _____

Comments: well steel cap really beat up. well (PVC) riser at about grout
1130: cannot stabilize water level therefore will purge well dry then sample
1225: DRY ~16 gals purged

Sampler(s): T. Dillon

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WELL PURGE & SAMPLE RECORD

Site Name/Location: Davis Howland
Well ID: MW14R
EEEPC Project No.: 10C3024.0012.08
Date: 12/11/16

Initial Depth to Water: 5.52 feet TOIC
Start Time: 9:02
Total Well Depth: 33.89 feet TOIC
End Time: 10:31
Depth to Pump: 32.89 feet TOIC
☐ Bailer ☒ Pump
Initial Pump Rate: 100 mls (Lpm)/ gpm
Pump Type: Typhoon
adjusted to: _____ at _____ minutes
Well Diameter: 4" inches
adjusted to: _____ at _____ minutes
1x Well Volume: 1.85 gallons

Time	Purge Volume (gallons/liters)	pH (s.u.)	Temp. (°C/°F)	ORP (mV)	Conductivity (µS/cm mS/cm)	DO (mg/L)	Turbidity (NTU)	Water Level (feet)
9:02	100mls	7.55	15.1	94.4	0.610	1.72	53.9	5.78
9:07	1.1 L	7.48	15.2	51.0	0.66	1.18	36.1	5.97
9:12	2.1 L	7.49	15.1	2.4	0.76	0.75	21.6	6.14
9:16	3.1 L	7.52	15.1	-18.0	0.83	0.57	14.4	6.14
9:21	4.1	7.53	14.9	-29.6	0.88	0.47	12.8	6.14
9:26	5.1	7.52	14.9	-30.1	0.89	0.45	11.7	6.14
9:31	6.1	7.53	14.9	-36.7	0.88	0.40	10.12	6.14
9:36	7.1	7.52	14.9	-35.2	0.91	0.38	9.78	6.14
9:41	8.1	7.51	14.9	-37.1	0.91	0.37	8.99	6.14
9:46	9.1	7.53	14.9	-38.0	0.91	0.38	8.14	6.14
9:51	10.1	7.52	15.0	-38.2	0.92	0.36	7.33	6.14
9:56	11.1	7.55	15.2	-41.2	0.93	0.34	6.69	6.14
10:01	12.1	7.51	15.3	-46.2	0.95	0.24	5.21	6.14
10:06	13.1	7.50	15.3	-46.8	0.95	0.24	4.49	6.14
10:11	14.1	7.49	15.2	-47.6	0.96	0.23	5.47	6.14
Final Sample Data:								

Sample ID: MW14R-111116
Duplicate? ☐
Dupe Samp ID: _____
Sample Time: 10:40
MS/MSD? ☒

Analyses:	Methods:
☒ VOCs	☐ CLP
☒ SVOCs	☐ SW846
☐ PCBs	☐ Drink. Wtr.
☐ Metals	☒ TAL
☐ _____	☐ _____

Comments: _____
Sampler(s): L. Rocco

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WELL PURGE & SAMPLE RECORD

Site Name/Location: Davis Farm — Well ID: MW14R

EEEPC Project No.: 10C3074.0012.18 — Date: 11/11/16

Initial Depth to Water: 5.52 feet TOIC — Start Time: 9:02

Total Well Depth: 33.89 feet TOIC — End Time: 10:31

Depth to Pump: 32.89 feet TOIC — ☐ Bailer ☑ Pump

Initial Pump Rate: 1.0 (Lpm) / gpm — Pump Type: Typhon

adjusted to: _____ at _____ minutes — Well Diameter: 4 inches

adjusted to: _____ at _____ minutes — 1x Well Volume: 18.5 gallons

Time	Purge Volume (gallons/liters)	pH (s.u.)	Temp. (°C/°F)	ORP (mV)	Conductivity (µS/cm mS/cm)	DO (mg/L)	Turbidity (NTU)	Water Level (feet)
10:16	15.1	15.2	7.49	-48.9	0.96	0.25	3.59	6.14
10:21	15.2	15.2	7.49	-50.2	0.96	0.24	3.02	6.14
10:26	15.1	15.2	7.49	-51.3	0.96	0.25	2.96	6.14
10:31	15.1	15.2	7.49	-50.2	0.96	0.24	1.91	6.14
Final Sample Data:		15.2	7.49	-50.2	0.96	0.24	1.91	6.14

Sample ID: MW14R 111116 — Duplicate? ☐ — Dupe Samp ID: _____

Sample Time: 10:40 — MS/MSD? ☒

Analyses:	Methods:
☒ VOCs	☐ CLP
☒ SVOCs	☐ SW846
☐ PCBs	☐ Drink. Wtr.
☐ Metals	☒ TAGM
☐ _____	☐ _____

Comments: _____

Sampler(s): L. Rodd

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1 OF 2

WELL PURGE & SAMPLE RECORD

Site Name/Location: Dunkirk Landfill
Well ID: MW10R
EEEPC Project No.: 10c3074.0012.08
Date: 11/14/16

Initial Depth to Water: 18.52 feet TOIC
Start Time: 10:41
Total Well Depth: 35.56 feet TOIC
End Time: 12:00
Depth to Pump: 34.56 feet TOIC
☐ Bailer ☒ Pump
Initial Pump Rate: 1 Lpm / gpm
Pump Type: Typhoon
adjusted to: _____ at _____ minutes
Well Diameter: 4 inches
adjusted to: _____ at _____ minutes
1x Well Volume: 11.1 gallons

Time	Purge Volume (gallons/liters)	pH (s.u.)	Temp. (°C/°F)	ORP (mV)	Conductivity (µS/cm mS/cm)	DO (mg/L)	Turbidity (NTU)	Water Level (feet)
10:41	200mL	7.46	13.7	111.7	1.05	1.27	6.91	18.68
10:46	1.2 L	7.47	13.8	73.1	1.07	0.45	5.97	18.91
10:51	2.2	7.48	13.8	59.8	1.07	0.37	6.22	19.08
10:56	3.2	7.42	13.9	60.7	1.05	0.41	5.17	19.19
11:01	4.2	7.44	13.9	62.6	1.05	0.55	5.02	19.20
11:06	5.2	7.45	14.0	64.2	1.07	0.59	5.08	19.22
11:11	6.2	7.45	14.1	65.4	1.04	0.63	5.72	19.26
11:16	7.2	7.45	14.1	62.7	1.04	0.34	4.45	19.26
11:21	8.2	7.44	14.1	62.6	1.04	0.33	4.26	19.26
11:26	9.2	7.41	14.1	60.8	1.03	0.33	4.18	19.26
11:31	10.2	7.41	14.2	59.7	1.08	0.20	4.00	19.26
11:36	11.2	7.40	14.2	59.8	1.07	0.20	3.45	19.26
11:41	12.2	7.39	14.2	59.9	1.03	0.19	3.04	19.26
11:46	13.2	7.38	14.2	59.8	1.03	0.18	2.47	19.26
11:51	14.2	7.39	14.0	60.0	1.03	0.17	1.46	19.26
Final Sample Data:							~~1.46~~	~~19~~ 19.26 11/14/16

Sample ID: MW10R111416
Duplicate? ☐
Dupe Samp ID: _____
Sample Time: _____
MS/MSD? ☐

Analyses:	Methods:
☒ VOCs	☐ CLP
☐ SVOCs	☐ SW846
☐ PCBs	☐ Drink. Wtr.
☐ Metals	☒ TAL
☐ _____	☐ _____

Comments: _____

Sampler(s): L.R.R.

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WELL PURGE & SAMPLE RECORD

Site Name/Location: Ravenhaland — Well ID: MW 10R

EEEPC Project No.: 10 E3074.0012.08 — Date: 11/14/16

Initial Depth to Water: 18.52 feet TOIC — Start Time: 10:20

Total Well Depth: 35.56 feet TOIC — End Time: 12:40

Depth to Pump: 34.56 feet TOIC — ☐ Bailer ☒ Pump

Initial Pump Rate: ~~1~~ Lpm / gpm — Pump Type: Typhoon

adjusted to: _____ at _____ minutes — Well Diameter: 4" inches

adjusted to: _____ at _____ minutes — 1x Well Volume: 11.1 gallons

Time	Purge Volume (gallons/liters)	pH (s.u.)	Temp. (°C/°F)	ORP (mV)	Conductivity (µS/cm mS/cm)	DO (mg/L)	Turbidity (NTU)	Water Level (feet)
11:56	15.2	7.40	14.0	59.9	1.03	0.19	1.27	19.26
12:01	16.2	7.43	14.0	57.5	1.04	0.22	1.56	19.26
12:06	17.2	7.43	14.1	55.4	1.04	0.13	1.98	19.26
12:11	18.2	7.36	14.1	60.1	1.05	0.12	2.08	19.25
12:16	19.2	7.36	14.1	59.8	1.04	0.11	2.05	19.26
12:21	20.2	7.35	14.2	59.8	1.05	0.13	1.40	19.26
12:26	21.2	7.34	14.2	60.1	1.06	0.14	1.34	19.26
12:31	22.2	7.34	14.2	60.6	1.06	0.14	1.39	19.26
Final Sample Data:		7.34	14.2	60.6	1.06	0.14	1.39	19.26

Sample ID: MW10R-111416 — Duplicate? ☐ — Dupe Samp ID: _____

Sample Time: 12:40 — MS/MSD? ☐

Analyses:	Methods:
☒ VOCs	☐ CLP
☒ SVOCs	☐ SW846
☐ PCBs	☐ Drink. Wtr.
☐ Metals	☒ TAL
☐ _____	☐ _____

Comments: _____

Sampler(s): C. Lapp

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WELL PURGE & SAMPLE RECORD

Site Name/Location: Davis Parkland — Well ID: MW8R

EEEPC Project No.: 10C 3074.0012.08 — Date: 11/10/16

Initial Depth to Water: 15.29 feet TOIC — Start Time: 12:10

Total Well Depth: 36.63 feet TOIC — End Time: 13:15

Depth to Pump: 35.63 feet TOIC — ☐ Bailer ☑ Pump

Initial Pump Rate: 200 ml/s Lpm / gpm — Pump Type: Typhoon

adjusted to: _____ at _____ minutes — Well Diameter: 4" inches

adjusted to: _____ at _____ minutes — 1x Well Volume: 3.3 gallons

Time	Purge Volume (gallons/liters)	pH (s.u.)	Temp. (°C/°F)	ORP (mV)	Conductivity (µS/cm mS/cm)	DO (mg/L)	Turbidity (NTU)	Water Level (feet)
12:10	200ml/s	7.18	14.4	-54.7	1.61	2.23	16.2	15.27
12:15	1.2	7.19	14.4	-88.4	1.72	0.61	13.3	15.28
12:20	2.2	7.20	14.8	-104.2	1.72	0.42	21.2	15.54
12:25	3.2	7.20	14.7	-106.8	1.73	0.27	17.2	15.71
12:30	4.2	7.20	14.7	-107.4	1.72	0.24	16.4	15.79
12:35	5.2	7.20	14.8	-110.9	1.73	0.20	14.5	16.09
12:40	6.2	7.19	14.8	-112.6	1.73	0.19	10.16	16.30
12:45	7.2	7.22	14.8	-114.6	1.73	0.18	9.17	16.54
12:50	8.2	7.22	14.8	-115.2	1.73	0.18	8.45	16.58
12:55	9.2	7.23	14.8	-115.6	1.73	0.16	7.99	16.68
13:00	10.2	7.24	14.8	-116.9	1.73	0.16	7.73	16.68
13:05	11.2	7.24	14.8	-117.2	1.73	0.15	7.04	16.68
					11/10/16			
Final Sample Data:		7.24	14.8	-117.2	1.73	0.15	7.04	16.68

Sample ID: MW8R111016 — Duplicate? ☐ — Dupe Samp ID: _____

Sample Time: 13:15 — MS/MSD? ☐

Analyses:	Methods:
☒ VOCs	☐ CLP
☒ SVOCs	☐ SW846
☐ PCBs	☐ Drink. Wtr.
☐ Metals	☒ TAL
☐ _____	☐ _____

Comments: _____

Sampler(s): L. Rowe

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WELL PURGE & SAMPLE RECORD

Site Name/Location: Davis Howland — Well ID: MW-5R

EEEPC Project No.: 1063074.0012.08 — Date: 11/10/16

Initial Depth to Water: 11.19 feet TOIC — Start Time: 0958

Total Well Depth: 34.72 feet TOIC — End Time: 1115

Depth to Pump: 32.72 feet TOIC — ☐ Bailer ☒ Pump

Initial Pump Rate: 0.225 (Lpm) / gpm — Pump Type: M.P. Typhoon

adjusted to: 0.150 at 1010 minutes — Well Diameter: 4 inches

adjusted to: ____ at ____ minutes — 1x Well Volume: 14.7 gallons

0.1 3% 10 3% 10%

Time	Purge Volume (gallons/liters)	pH (s.u.)	Temp. (°C/°F)	ORP (mV)	Conductivity (µS/cm mS/cm)	DO (mg/L)	Turbidity (NTU)	Water Level (feet)
1000	0.25	~~7.1~~ 7.18	14.1	-137.4	1.27	0.43	63.2	11.30
1005	1.375	7.18	14.0	-162.9	1.22	0.22	27.9	11.62
1010	2.5	7.18	14.1	-163.3	1.18	0.22	24.3	11.39
1015	3.25	7.17	14.4	-163.1	1.17	0.38	19.7	11.35
1020	4	7.17	14.3	-157.3	1.15	1.83	15.9	11.40
1025	4.75	7.15	14.4	-158.7	1.13	1.44	11.3	11.41
1030	5.	7.16	14.5	-159.3	1.12	1.14	10.33	11.40
1035		7.16	14.5	-159.3	1.11	0.92	8.71	11.40
1040		7.15	14.5	-158.6	1.10	0.76	9.89	11.40
1045		7.15	14.5	-158.0	1.09	0.50	8.90	11.42
1050		7.15	14.6	-157.4	1.09	0.44	7.62	11.41
1055		7.15	14.6	-157.0	1.08	0.35	8.12	11.40
Final Sample Data:		7.15	14.6	-157.0	1.08	0.35	8.12	11.40

Sample ID: MW-5R-111016 — Duplicate? ☒ — Dupe Samp ID: MW-100-111016

Sample Time: ~~10~~ 1100 — MS/MSD? ☐

Analyses:	Methods:
☒ VOCs	☐ CLP
☒ SVOCs	☐ SW846
☐ PCBs	☐ Drink. Wtr.
☐ Metals	☐ ____
☒ TPH	☐ ____

Comments: Controller ~~flowrate~~ fluctuates the flow, poor pump connection
~2.5 gallons purged before sampling

Sampler(s): T.D.Ilon

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WELL PURGE & SAMPLE RECORD

Site Name/Location: Davis Howland — Well ID: MW-2R

EEEPC Project No.: 102074.0012.08 — Date: 11/11/16

Initial Depth to Water: 14.39 feet TOIC — Start Time: 0910

Total Well Depth: 26.15 feet TOIC — End Time: 1000

Depth to Pump: 24.15 feet TOIC — ☐ Bailer ☒ Pump

Initial Pump Rate: 0.20 (Lpm) / gpm — Pump Type: mini typhoon

adjusted to: 1.4 at 0920 minutes — Well Diameter: 4 inches

adjusted to: _____ at _____ minutes — 1x Well Volume: 7.7 gallons

Time	Purge Volume (gallons/liters)	pH (s.u.)	Temp. (°C/°F)	ORP (mV)	Conductivity (µS/cm mS/cm)	DO (mg/L)	Turbidity (NTU)	Water Level (feet)
0915		7.21	14.5	-131.7	1.31	5.37	62.1	14.88
0920		7.28	15.1	-97.0	1.14	1.90	58.8	15.50
0925		7.29	15.1	-67.3	0.471	2.79	35.9	17.51
0930		7.27	15.2	-58.3	0.436	3.03	29.1	18.74
0935		7.24	15.3	-33.2	0.348	3.49	19.8	20.15
0940		7.23	15.2	-7.8	0.343	3.41	19.6	21.06
0945		7.19	14.7	+63.6	1.14	2.13	70.7	21.94
0950		7.22	15.6	-99.4	0.335	4.18	34.4	24.21
0955		7.21	15.8	-91.8	0.373	4.58	23.7	25.61
1000		D	RK					
					J. Dith 11/11/16			
Final Sample Data:		7.21	15.8	-91.8	0.373	4.58	23.7	25.61

Sample ID: MW-2R-111116 — Duplicate? ☐ — Dupe Samp ID: _____

Sample Time: 12:25 — MS/MSD? ☐

Analyses:	Methods:
☒ VOCs	☐ CLP
☒ SVOCs	☐ SW846
☐ PCBs	☐ Drink. Wtr.
☐ Metals	☐ _____
☒ TPH	☐ _____

Comments: Last time well was sampled it went dry and no sample was collected. Cannot stablized water level - flow rate adjusted to purge dry @ 0920
0940 moved pump to the bottom of well

Sampler(s): T. Dillon / L Rank

210 gals purged