

Prepared for:

ROPER PUMP COMPANY
3475 Old Maysville Road
Commerce, GA 30529

**VOLUNTARY REMEDIATION PROGRAM
PROGRESS REPORT #3
Roper Pump Company
Commerce, Georgia**

Prepared by:



1050 Crown Pointe Parkway, Suite 550
Atlanta, Georgia 30338
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October 2016

VOLUNTARY REMEDIATION PROGRAM PROGRESS REPORT #3

**Roper Pump Company
Commerce, Georgia**

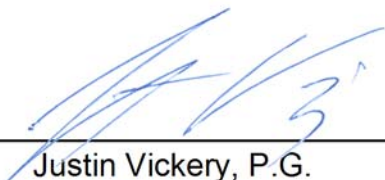
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Justin Vickery, P.G.
Associate

October 2016

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Roper Pump Company
Commerce, Georgia

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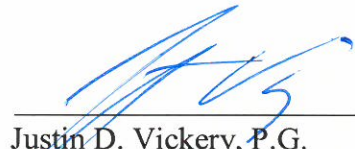
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GROUNDWATER SCIENTIST STATEMENT

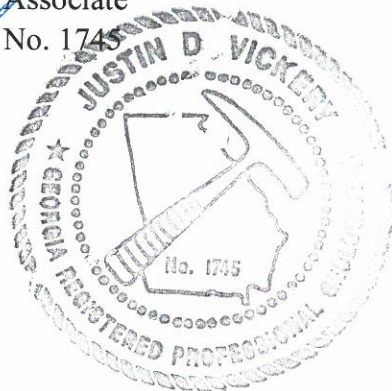
I certify that I am a qualified ground water scientist who has received a baccalaureate or post-graduate degree in the natural sciences or engineering, and have sufficient training and experience in ground water hydrology and related fields, as demonstrated by state registration and completion of accredited university courses, that enable me to make sound professional judgments regarding groundwater monitoring and contaminant fate and transport. I further certify that this Progress Report was prepared by me or by a subordinate working under my direction.

Certified by:


Justin D. Vickery, P.G.
Associate
No. 1745

Date:

10-14-16



1. INTRODUCTION

1.1 Purpose of the Report

This is the third Semi-Annual Voluntary Remediation Program (“VRP”) Progress Report, which is being submitted on behalf of Roper Pump Company (“Roper”) and is related to Roper’s manufacturing facility located at 3475 Old Maysville Road in Commerce, Georgia, more specifically Jackson County Tax Parcel 034-032 (the “Site”). The purpose of this Progress Report is to describe the activities conducted during the period of April 2016 through September 2016 (“Reporting Period”) and to discuss the activities planned for the next reporting period.

1.2 Background

In May 2009, during construction activities associated with a facility expansion, Roper discovered that soils and groundwater adjacent to an abandoned storm sewer line (see Figure 1, all figures are included in the Figures attachment) had elevated concentrations of volatile organic compounds (“VOCs”), primarily tetrachloroethene (“PCE”). Roper submitted a Release Notification to the Georgia Environmental Protection Division (“EPD”) pursuant to the Hazardous Site Response Act (“HSRA”) on July 13, 2009.

On November 23, 2009, EPD informed Roper that the Site was listed on the Georgia Hazardous Site Inventory (“HSI”), HSI #10901, designating it as a Class II cleanup priority site. On October 4, 2013, the EPD requested that a Compliance Status Report (“CSR”) or a Corrective Action Plan (“CAP”) be submitted by April 4, 2014. In a meeting on April 3, 2014, EPD agreed to delay the submittal of a CAP and that Roper should submit a data report by May 8, 2014. In May 2014, Roper submitted the Report of Site Characterization and Remedial Action (EPS, 2014a) to the EPD. In a letter dated August 22, 2014, the EPD requested that Roper submit either a VRP Application or a CSR by December 31, 2014. On December 18, 2014, Roper submitted a VRP Application (EPS, 2014b), and the EPD approved Roper’s entry into the VRP in a letter dated April 13, 2015. In latter correspondence, EPD agreed to a reporting schedule of April 15 and October 15 of each year. Finally, on August 26, 2015, EPD issued a letter amending the April 13, 2015 VRP participant acceptance letter.

2. VRP PROJECT MANAGEMENT

2.1 Professional Geologist Oversight

This Progress Report includes a certification by Justin Vickery, P.G., the Professional Geologist specified in the VRP Application. Appendix A contains a monthly summary of hours invoiced by the P.G. during the Reporting Period.

2.2 Milestone Schedule

An updated milestone schedule is included in Appendix B.

2.3 Conceptual Site Model

The VRP Application (EPS, 2014b) included a Preliminary Conceptual Site Model (“CSM”). An updated CSM was included in the second VRP Progress Report (EPS, 2016). No data was collected during the Reporting Period that alters the current CSM. The CSM will be updated as warranted by additional data.

3. ACTIVITIES COMPLETED DURING CURRENT REPORTING PERIOD

3.1 Overview

Section 3 discusses the activities conducted during the Reporting Period, including:

- On-site and off-site groundwater assessment;
- Ongoing remediation utilizing the vadose zone soil vapor extraction (“SVE”) system; and
- Continuation of biotreatability testing.

3.2 Groundwater Assessment

3.2.1 Monitoring Well Installation

In July 2016, Roper approached an off-site private property owner to request access to install a monitoring well and was subsequently denied access. Roper then contacted the City of Commerce to request approval to install the well in their right-of-way. On August 26, 2016, off-site shallow monitoring well, MW-18, was installed. The well location is shown on Figure 1, and a boring log with monitoring well construction information is included in Appendix C.

Boring MW-18 was first advanced to 45 feet below the ground surface (“ft-bgs”) using direct push macro-core sampling methods (for water depth and lithology evaluation) and then reamed with a 7.25-inch outside diameter hollow stem auger to 43 ft-bgs. The well was set at a depth of 40 feet below the ground surface. A 2-inch inside diameter, schedule 40 PVC well with 10 feet of 0.01-inch slotted screen was installed at 30-40 ft-bgs, and a filter sand pack was installed in the annulus extending from the bottom of the boring up to 2 ft above the well screen followed by a 2.5-ft bentonite seal. The bentonite was hydrated and the remainder of the annulus was filled with grout to just below the ground surface. A locking well cap was placed on the well, and the well was completed with an 8-inch diameter, flush-mounted well vault installed in a 2-ft by 2-ft concrete well pad.

On September 1, 2016, MW-18 was developed with a downhole pump by surging the pump through the screened interval and pumping until geochemical parameters stabilized. A total of 65 gallons were purged from the well.

3.2.2 Groundwater Sampling and Analytical Test Methods

On August 31, 2016, groundwater samples were collected from deep wells MW-6DS, MW-9D, MW-12D, MW-13D, and MW-15D for hexavalent chromium analysis by EPA Method 218.6. Each of the wells was purged using “tubing in screen interval” purging methods (USEPA, 2013)

prior to sample collection using a peristaltic pump. The pump intake tubing was lowered to the middle of the screen interval, and the wells were pumped at a low flow rate until pH and conductivity stabilized (± 0.3 standard pH units for pH and $\pm 10\%$ for conductivity) and turbidity decreased below 10 Nephelometric Turbidity Units (“NTUs”). Monitoring Well Sampling Forms are included in Appendix D. Once purging was complete, samples were collected for hexavalent chromium analysis by pouring the water straight from the tubing into the sample containers, consisting of unpreserved 250-milliliter (“mL”) plastic bottles.

On September 2, 2016, following well development the previous day, a groundwater sample was collected from the new off-site shallow monitoring well MW-18 for VOC analysis by EPA Method 8260B. Purging was conducted using a downhole pump until geochemical parameter stabilized as described in the paragraph above. Once purging was complete, the VOC sample was collected directly from the pump tubing. VOC samples were collected in two 40-mL glass vials preserved with hydrochloric acid, while verifying zero head space in the vials.

Groundwater samples were placed on ice in a cooler, logged under standard chain-of-custody procedures, and transported to Pace Analytical (“Pace”) laboratory in Ormond Beach, Florida. Laboratory reports are included in Appendix E.

On September 1, 2016, groundwater depths from selected monitoring wells were measured with a water level meter, which was decontaminated between wells using a phosphate-free detergent solution and a distilled water rinse. Groundwater depths and elevations are summarized on Table 1 (all tables are included in the Tables attachment), and Figure 2 is a potentiometric surface map showing the groundwater flow direction. The direction of groundwater flow is from west to east across the Roper property, with a steepened gradient evident off-site to the east.

3.2.3 Monitoring Well Sampling Results

New monitoring well MW-18 was sampled for VOCs during the current groundwater sampling event and no VOCs were detected. September 2016 sampling results for MW-18, as well as March 2016 sampling results for other Site monitoring wells, are summarized on Table 2.

Hexavalent chromium has been detected at elevated concentrations in some of the on-Site deep monitoring wells in recent sampling events. As a result, deep wells MW-6DS, MW-9D, MW-12D, MW-13D, and MW-15D were sampled for hexavalent chromium during the current sampling event. Hexavalent chromium sampling results for August 2016 are summarized in Table 3. Hexavalent chromium was detected in MW-9D at 30.6 $\mu\text{g/L}$, which is above the Non-Residential RRS of 5.7 $\mu\text{g/L}$. Hexavalent chromium was detected in each of the other wells, but at concentrations below the Non-Residential RRS. The Residential RRS for hexavalent chromium is 1.7 $\mu\text{g/L}$. The hexavalent chromium result from deep well MW-15D, located along the down-gradient property line, was 0.067 $\mu\text{g/L}$, or about two orders of magnitude below the Residential RRS. Therefore, we conclude that the hexavalent chromium is not migrating off-site at a concentration exceeding the Residential RRS and that hexavalent chromium exceeding the Non-Residential RRS is only present in a small area of the Site (MW-9D). As a result, no further hexavalent chromium sampling is needed at the Site.

3.3 Remediation

3.3.1 SVE System Operations

The SVE system has remained in operation since installation in October 2010 with more than 8,000 pounds of VOCs removed over that time. System operation is monitored on a monthly schedule using a photoionization detector (“PID”). Monitoring records for the Reporting Period are included in Appendix F.

Typical of SVE remediation, the rate of VOC removal is diminishing as reflected in the carbon change-out history shown in the table below.

Spent Carbon Shipment Date	Initial Weight of Fresh Carbon (lbs.)	Final Weight of Spent Carbon (lbs.)	VOCs Mass (lbs.)
16-Sep-13	4,000	5,418	1,418
19-Sep-12	4,000	5,734	1,734
01-Mar-12	4,000	5,930	1,930
29-Jul-11	4,000	5,407	1,407
20-Jan-11	4,000	5,870	1,870
Total			8,359

3.3.2 Groundwater Treatability Study

A groundwater treatability study was conducted during the previous reporting period to assess the feasibility of *in situ* bioremediation, and the results were inconclusive. On August 5, 2016, Bio-Trap® sampler units were redeployed in wells MW-7 and MW-9S (these monitoring wells typically exhibit the highest Site PCE concentrations). The samplers test for both bio-stimulation (*i.e.*, stimulation of native microbial population through addition of a carbon source) and bio-augmentation (*i.e.*, addition of a cultured bacterial strain). The Bio-Trap® sampler units will be retrieved on or around November 5, 2016 and shipped to the vendor for analysis. A report of *in situ* bioremediation feasibility will be provided in the next progress report.

4. PLANNED ACTIVITIES FOR NEXT REPORTING PERIOD

4.1 Planned Assessment and Sampling

4.1.1 Delineation

Down-gradient delineation is complete based on results from MW-17 (March 2016) and MW-18 (September 2016). Roper plans to install two monitoring wells to delineate the off-site portion of the plume in the cross-gradient directions (north and south). The proposed well locations are shown on Figure 3. These locations were selected to prevent the need to request site access, which has already been denied for Jackson County Tax Parcel 021-060. We hope that these wells will help us achieve final off-site horizontal groundwater delineation. The two new off-site monitoring wells, along with previously installed wells MW-17 and MW-18, will be sampled for VOC analysis.

4.1.2 Corrective Action

The Bio-Trap® sampler units will be retrieved on or around November 5, 2016 and shipped to the vendor for analysis. A corrective action plan, along with a report of *in situ* bioremediation feasibility, will be provided in the next progress report.

5. REFERENCES

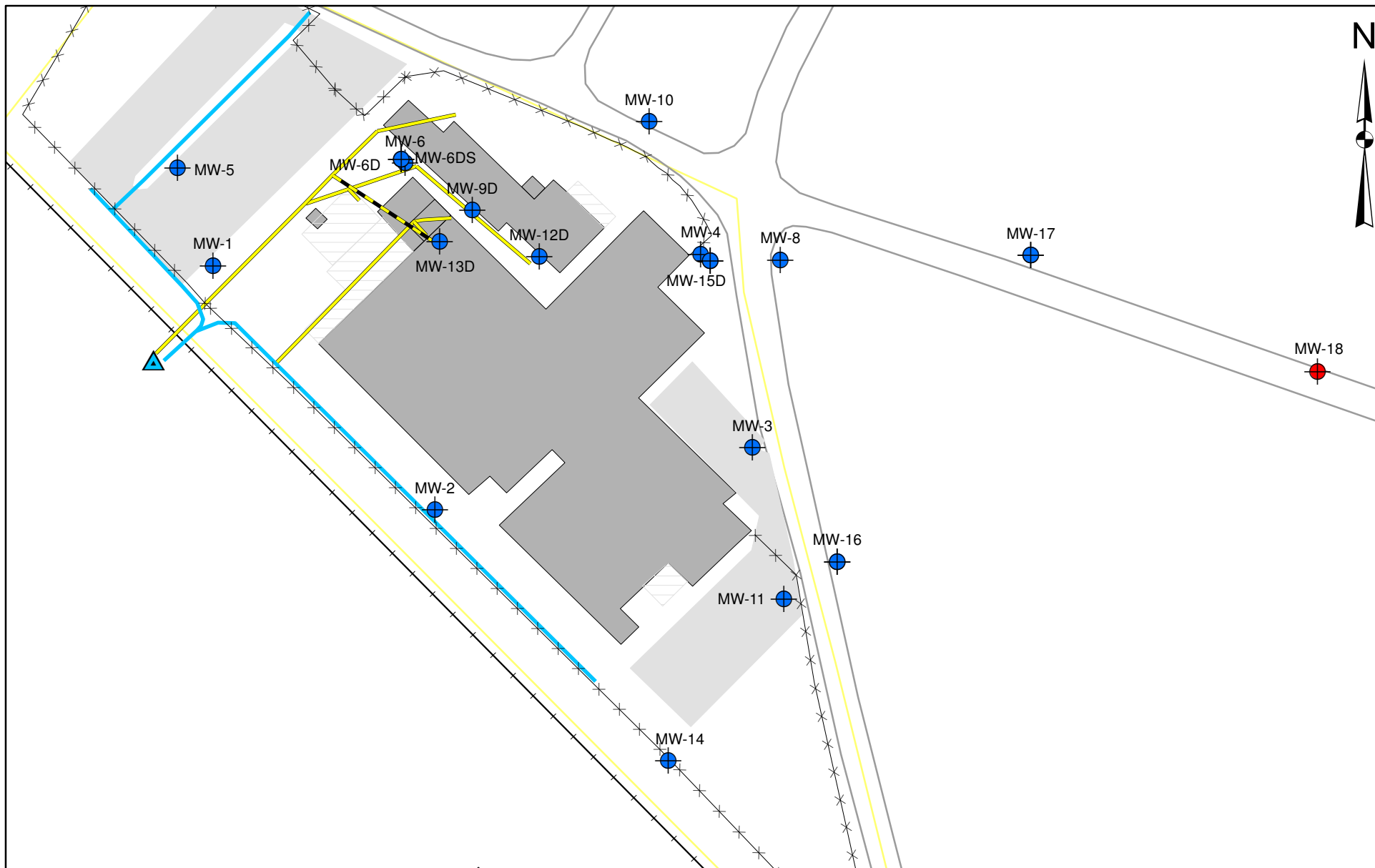
Environmental Planning Specialists, Inc. (EPS), 2014a. *Report of Site Characterization and Remedial Action*.

Environmental Planning Specialists, Inc. (EPS), 2014b. *Voluntary Remediation Program Application*

Environmental Planning Specialists, Inc. (EPS), 2016. *Voluntary Remediation Program Progress Report (April 2016)*

USEPA, 2013. *Operating Procedure: Groundwater Sampling*. US Environmental Protection Agency Science and Ecosystem Support Division, Athens, Georgia.

FIGURES



0 75 150
Feet

Legend

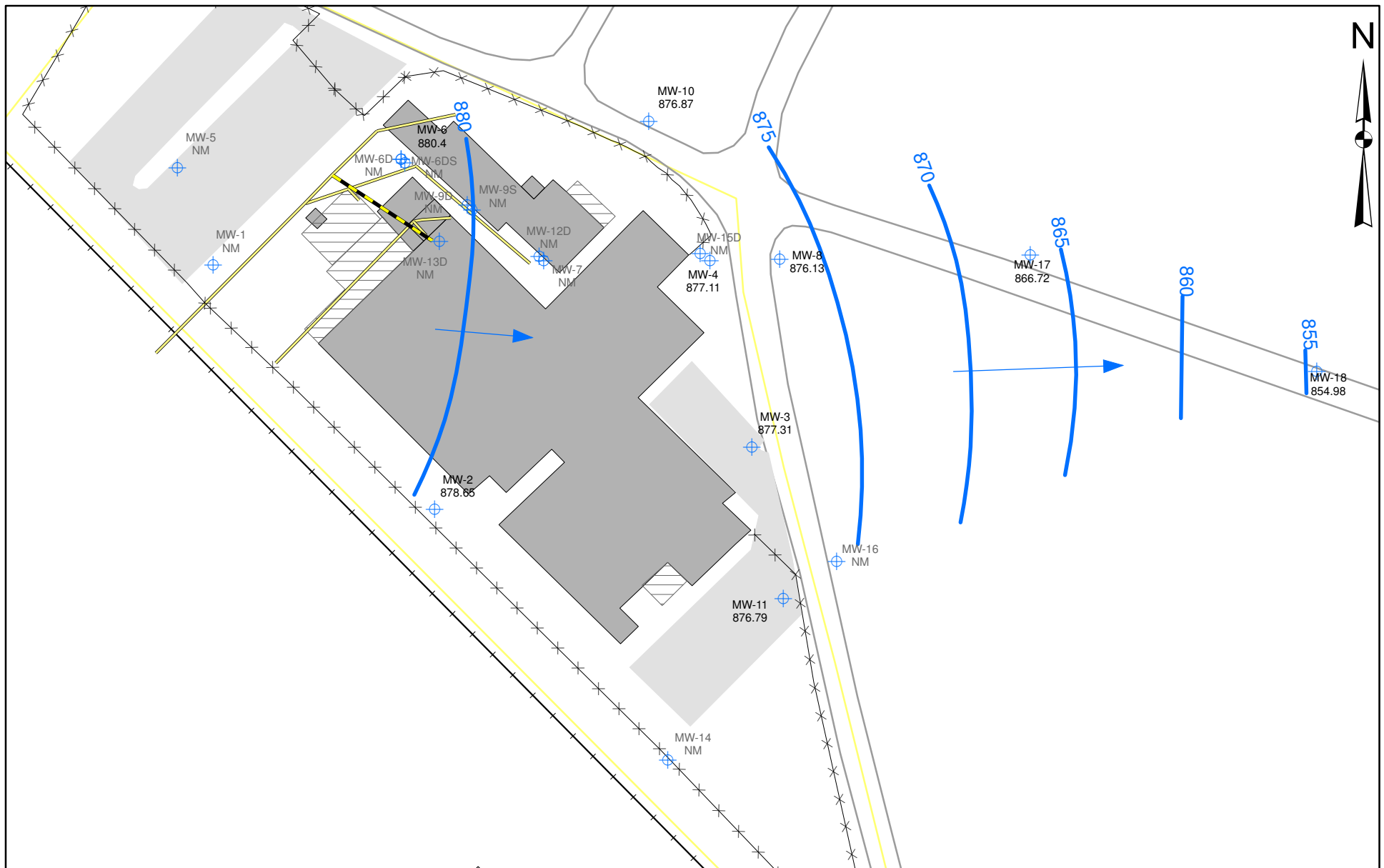
- Abandoned Storm Sewer
- Active Storm Drain
- Parking Lot
- Roads
- x x Fence
- +— Railroad
- Overhang
- Roper Property Line
- Building
- Facility Drainage Ditch
- ▲ Stormwater Outfall

Monitoring Well Network

- Monitoring Well (New)
- Monitoring Well

Roper Pump Company
Monitoring Well Network

Figure No. 1



0 75 150
Feet

Legend

- Abandoned Storm Sewer
- Storm Drain
- Parking Lot
- Roads
- x—x— Fence
- +— Railroad
- Overhang
- Roper Property Line
- Building
- + Monitoring Well Location

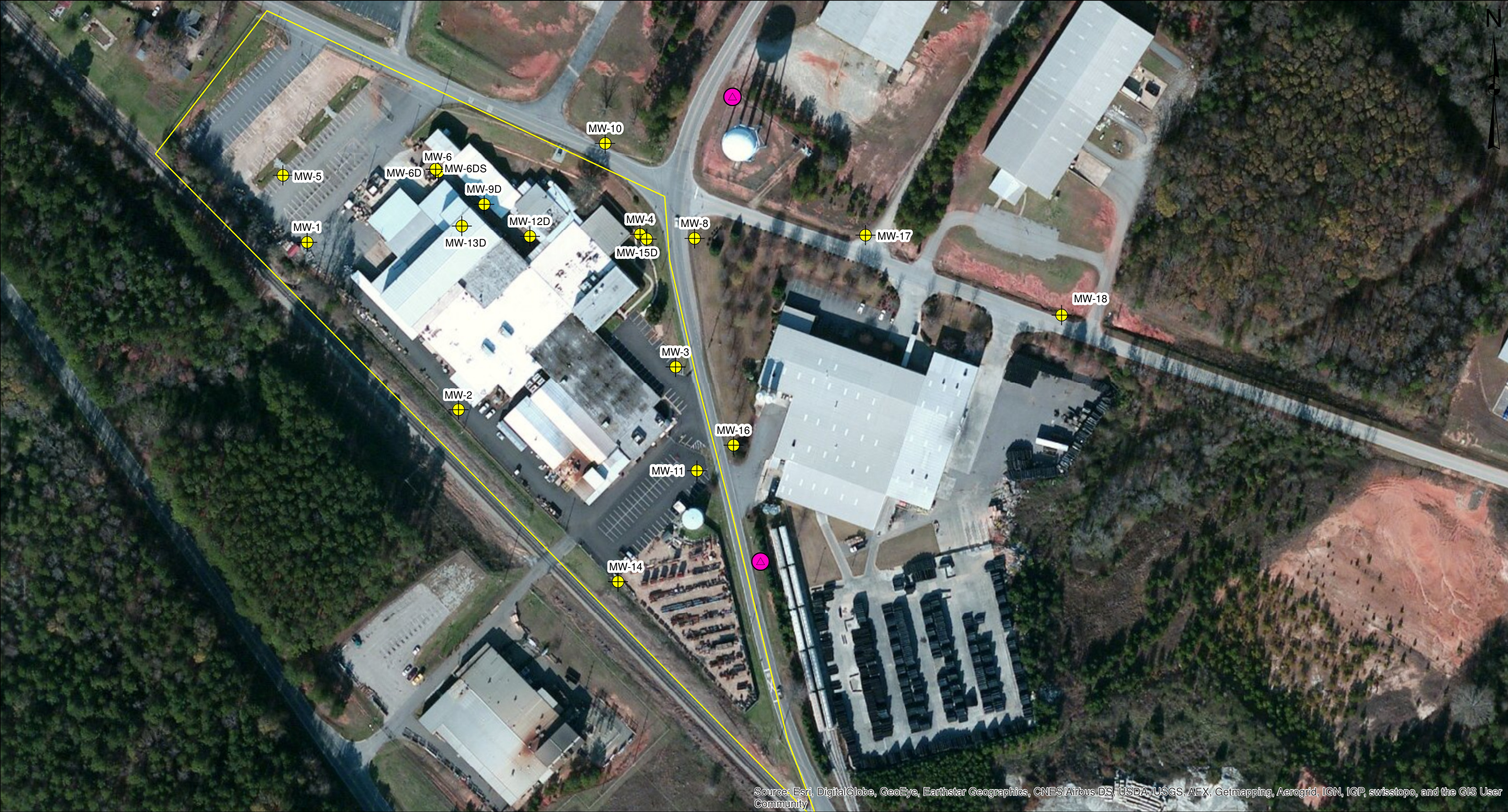
— 876 Potentiometric Surface Lines (Excludes "D" wells)

→ Groundwater Flow Direction

875.42 Groundwater Elevation at Well

Roper Pump Company
Potentiometric Surface Map (September 2016)

Figure No. 2



Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AEX, Getmapping, Aerogrid, IGN, IGP, swisstopo, and the GIS User Community

0 75 150
Feet

- Legend**
- Property Line
 - Existing Monitoring Well
 - Proposed Delineation Well

Roper Pump Company
Proposed Delineation Wells

TABLES

Table 1
Monitoring Well Construction Data and Groundwater Elevations
Roper Pump Company
Commerce, Georgia

Well ID	Well Completion Date	Water Level Measurement Date	Well Screened Interval (ft-bgs)	Well TOC Elevation (ft-NGVD)	Total Well Depth (ft-bgs)	Depth to Water (ft-BTOC)	Potentiometric Elevation (ft-NGVD)
MW-1	2/10/2014	9/1/2016	11.5 - 26.5	895.62	26.5	NM	NM
MW-2	2/10/2014	9/1/2016	9.9 - 24.9	896.57	24.9	17.92	878.65
MW-3	2/17/2014	9/1/2016	11.9 - 26.9	901.06	26.9	23.75	877.31
MW-4	2/18/2014	9/1/2016	9.7 - 24.7	899.10	24.7	21.99	877.11
MW-5	2/18/2014	9/1/2016	9.9 - 24.9	898.65	24.9	NM	NM
MW-6	2/17/2014	9/1/2016	9.2 - 24.2	898.33	24.2	17.93	880.4
MW-6D	2/14/2014	9/1/2016	33 - 43	898.31	42.85	NM	NM
MW-6DS	2/14/2014	9/1/2016	61 - 66	898.25	66.48	NM	NM
MW-7	2/18/2014	9/1/2016	9.4 - 24.4	898.12	24.4	NM	NM
MW-8	10/28/2014	9/1/2016	24.5 - 34.5	903.70	34.5	27.57	876.13
MW-9D	10/29/2014	9/1/2016	63.5 - 68.5	898.48	68.5	NM	NM
MW-9S	10/29/2014	9/1/2016	16 - 26	898.31	26	NM	NM
MW-10	10/29/2014	9/1/2016	29.5 - 39.5	906.94	39.5	30.07	876.87
MW-11	10/29/2014	9/1/2016	24 - 34	901.31	34	24.52	876.79
MW-12D	8/31/2015	9/1/2016	81.5 - 86.5	898.27	86.5	NM	NM
MW-13D	8/28/2015	9/1/2016	64 - 69	898.26	69	NM	NM
MW-14	8/27/2015	9/1/2016	25 - 35	899.1	35	NM	NM
MW-15D	2/24/2016	9/1/2016	74 - 84	898.10	84	NM	NM
MW-16	2/25/2016	9/1/2016	25 - 35	900.87	35	NM	NM
MW-17	2/25/2016	9/1/2016	30 - 40	899.92	40	33.20	866.72
MW-18	8/26/2016	9/1/2016	30 - 40	886.50	40	31.52	854.98

ft-bgs = feet below ground surface

TOC = top of casing

ft-NGVD = feet above National Geodetic Vertical Datum

ft-BTOC = feet below top of casing

NM = not measured, only selected wells were measured on 9/1/16

Table 2
Summary of VOCs in Groundwater
Roper Pump Company
Commerce, Georgia

Well ID *	Date Sampled	Benzene (µg/L)	cis-1,2-Dichloroethene (µg/L)	Tetrachloroethene (µg/L)	Trichloroethene (µg/L)
Delineation Criteria (Type 1 RRS)		5	70	5	5
Residential RRS		5.4	70	19	5
Industrial RRS		8.72	200	98	5.2
MW-1	3/2/2016	<5	<5	<5	<5
MW-2	3/2/2016	<5	<5	<5	<5
MW-3	3/2/2016	<5	<5	<5	22
MW-4	3/4/2016	<5	6.7	88.8	53.4
MW-5	3/2/2016	<5	<5	<5	<5
MW-6	3/3/2016	<5	74.2	119	23
MW-6D	3/4/2016	<5	22.7	93.4	133
MW-6DS	3/3/2016	<5	<5	5.9	32.8
MW-7	March 2016	NS	NS	NS	NS
MW-8	3/4/2016	<5	<5	46	7.1
MW-9S	March 2016	NS	NS	NS	NS
MW-9D	3/2/2016	<5	<5	<5	13.9
MW-10	3/2/2016	<5	<5	<5	<5
MW-11	3/2/2016	52.6	<5	129	64.7
MW-12D	3/3/2016	<5	<5	35.8	140
MW-13D	3/3/2016	<5	13.2	320	1200
MW-14	3/2/2016	<5	<5	<5	<5
MW-15D	3/4/2016	<5	<5	1540	89
MW-16	3/3/2016	<5	5.2	26.1	24.9
MW-17	3/4/2016	<5	15.5	553	158
MW-18	9/2/2016	<5	<5	<5	<5

Well MW-18 was the only well sampled in September 2016. Sampling data for other wells from March 2016 is shown for comparison.

µg/L = micrograms per liter

RRS = Risk Reduction Standard

NS = not sampled, MW-18 was the only well sampled for VOCs during this sampling event.

Table 3
Summary of Hexavalent Chromium in Groundwater
Roper Pump Company
Commerce, Georgia

Sample ID	Date Sampled	Hexavalent Chromium (µg/L)
Residential RRS		1.7
NonResidential RRS		5.7
MW-6DS	8/31/2016	0.62
MW-9D	8/31/2016	30.6
MW-12D	8/31/2016	4.8
MW-13D	8/31/2016	2.8
MW-15D	8/31/2016	0.067

µg/L: micrograms per liter

RRS: Risk Reduction Standard

ND: Non-Detect

Well in this table were the only wells sampled for hexavalent chromium during this sampling event.

APPENDIX A
Professional Geologist Summary of Hours

Environmental Planning Specialists, Inc.
Roper Pump PG Hours (Justin Vickery)
 April through September 2016

	<u>Apr 16</u>	<u>May 16</u>	<u>Jun 16</u>	<u>Jul 16</u>	<u>Aug 16</u>	<u>Sep 16</u>	<u>TOTAL</u>
Roper Pump Company:Site Remediation:April 2016 Progress Report							
Vickery, Justin	<u>31.50</u>	<u>0.00</u>	<u>0.00</u>	<u>0.00</u>	<u>0.00</u>	<u>0.00</u>	<u>31.50</u>
Total Roper Pump Company:Site Remediation:April 2016 Progress Report	<u>31.50</u>	<u>0.00</u>	<u>0.00</u>	<u>0.00</u>	<u>0.00</u>	<u>0.00</u>	<u>31.50</u>
Roper Pump Company:Site Remediation:General Consulting							
Vickery, Justin	<u>13.25</u>	<u>2.25</u>	<u>2.50</u>	<u>4.50</u>	<u>5.00</u>	<u>0.50</u>	<u>28.00</u>
Total Roper Pump Company:Site Remediation:General Consulting	<u>13.25</u>	<u>2.25</u>	<u>2.50</u>	<u>4.50</u>	<u>5.00</u>	<u>0.50</u>	<u>28.00</u>
Roper Pump Company:Site Remediation:GW Sampling Event							
Vickery, Justin	<u>0.50</u>	<u>0.00</u>	<u>0.00</u>	<u>0.00</u>	<u>5.25</u>	<u>3.25</u>	<u>9.00</u>
Total Roper Pump Company:Site Remediation:GW Sampling Event	<u>0.50</u>	<u>0.00</u>	<u>0.00</u>	<u>0.00</u>	<u>5.25</u>	<u>3.25</u>	<u>9.00</u>
Roper Pump Company:Site Remediation:Monitoring Well Installation							
Vickery, Justin	<u>0.00</u>	<u>0.00</u>	<u>1.25</u>	<u>0.25</u>	<u>5.75</u>	<u>0.00</u>	<u>7.25</u>
Total Roper Pump Company:Site Remediation:Monitoring Well Installation	<u>0.00</u>	<u>0.00</u>	<u>1.25</u>	<u>0.25</u>	<u>5.75</u>	<u>0.00</u>	<u>7.25</u>
Roper Pump Company:Site Remediation:October 2016 Progress Report							
Vickery, Justin	<u>0.00</u>	<u>0.00</u>	<u>0.00</u>	<u>0.00</u>	<u>0.00</u>	<u>12.50</u>	<u>12.50</u>
Total Roper Pump Company:Site Remediation:October 2016 Progress Report	<u>0.00</u>	<u>0.00</u>	<u>0.00</u>	<u>0.00</u>	<u>0.00</u>	<u>12.50</u>	<u>12.50</u>
Roper Pump Company:Site Remediation:Release Area GW Treatability Study							
Vickery, Justin	<u>1.00</u>	<u>0.00</u>	<u>0.00</u>	<u>0.00</u>	<u>0.00</u>	<u>0.00</u>	<u>1.00</u>
Total Roper Pump Company:Site Remediation:Release Area GW Treatability Study	<u>1.00</u>	<u>0.00</u>	<u>0.00</u>	<u>0.00</u>	<u>0.00</u>	<u>0.00</u>	<u>1.00</u>
TOTAL	<u>46.25</u>	<u>2.25</u>	<u>3.75</u>	<u>4.75</u>	<u>16.00</u>	<u>16.25</u>	<u>89.25</u>

APPENDIX B

Milestone Schedule

PROJECTED MILESTONE SCHEDULE

Roper Pump Company

Commerce, Georgia

Task Name	2015			2016				2017				2018				2019				2020
	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1
VRP Enrollment (approval)	X																			
On-Property Horizontal Groundwater Delineation				X																
On-Property Vertical Delineation																				
Off-Property Horizontal Groundwater Delineation																				
Semi-Annual Progress Reports			X		X		X													
Updated CSM, Final Remediation Plan, and Preliminary Cost Estimate																				
Remedial Activities																				
Compliance Status Report																				

Notes: ■ Planned Activity
■ Reporting Period Progress Complete
X Completed Activity

APPENDIX C

Boring Log and Well Construction Information



Project: Roper Pump		Log of Boring No. MW-18	
SITE LOCATION: Roper Pump		TOP OF CASING ELEVATION (ft): N/A	
DRILLING CONTRACTOR: Geo-lab		DATE STARTED: 8/26/2016	DATE FINISHED: 8/26/2016
DRILLING METHOD: Hollow Stem Auger		TOTAL DEPTH (ft.): 40	SCREEN INTERVAL (ft.): 30-40
DRILLING EQUIPMENT: Geoprobe		DEPTH TO WATER AT TIME OF BORING (ft.): ~31	CASING (ft.): 0-30
SAMPLING METHOD: Macrocore w/ Acetate Liner		LOGGED BY: Joe Terry	

DEPTH (feet)	SAMPLES	PID Reading	DESCRIPTION			WELL CONSTRUCTION DETAILS AND/OR DRILLING REMARKS
	Blows/ Foot		Ground Surface Elevation: N/A			
0				Grass, rootmass, brown top soil		
5		0		Silty sand, red, fine, dry		
10		0		Silty sand, whitish, fine, dry		
15		0		Silty sand, red and white, fine, dry		
20		0		Sand with some silt, whitish with iron staining, fine, dry		
25		0		Sand with some silt, white, fine, dry		
30		0		Sand, whitish with orange throughout, fine, dry		
35		0		Sand with some silt & clay, mix of white/brown/red, fine with some coarse material, moist to wet		
40		0		Sand with some silt, mix of brown/reddish brown, fine, moist		
45		0		Sand with some silt, reddish, fine, moist to wet		
				Saprolite, whitish, moist		Boring terminated at 40.5 ft bgs.

APPENDIX D

Monitoring Well Sampling Forms

Monitoring Well Sampling Form

EPS Project: Roper Pump		Date: 8-31-16
Well ID: MW-9D	Field Conditions: clear, 84°F	
Sampling Performed By: J. Terry, A. Testoff		
Well Construction: Flush	General Condition of Well: good	
Well Labeled: N	Well Cap: Y	Condition of surrounding area: Alleyway, improved surface
Well depth from TOC: 68.5	Well Locked: Y	Depth to Water from TOC: 19.34
Well Diameter (in): 2	Method of measure: Water Level Meter	
Height (Ht) of water in well (Well depth from TOC - Static level from TOC):	49.16	
Volume of water in well (Ht. x (.16 for 2") (.653 for 4") (1.469 for 6")):	7.9	
Purging Method: low flow/low vol	Time @ Start of Purge: 1137	Three Well Volumes (gal): 23.7
Sample Method: direct	Sample Parameters: Cr 6+	

[illegible]

Sample ID: 16244-MW-98

Time Collected: 1300

Technician Signature Joe Terry



Monitoring Well Sampling Form

EPS Project: Roper Pump

Date: 8-31-16

Well ID: MW-15D
Sampling Performed By: J. Terry, A. Testoff
Well Construction: Flush
Well Labeled: N Well Cap: Y Well Locked: Y
Well depth from TOC: 84
Well Diameter (in): 2
Height (Ht) of water in well (Well depth from TOC - Static level from TOC):
Volume of water in well (Ht. x (.16 for 2") (.653 for 4") (1.469 for 6")): 10
Purging Method: low flow/low vol
Sample Method: direct / static method

Field Conditions: clean, 75°F

General Condition of Well: clean, 75°F good
Condition of surrounding area: monitored lawn near building
Depth to Water from TOC: 22.18
Method of measure: Water Level Meter
61.82
Three Well Volumes (gal): 30
Time @ Start of Purge: 0915
Sample Parameters: C, 6

Time	Volume (gal)	Temp (°C)	pH	ORP (mV)	Cond. (mS/cm)	Turbidity (NTU)	DO (mg/L)	Depth to Water (ft)	Comments
1025	1.75	25.92	7.65	44	0.038	40.1	1.56	23.28	Tubing set at 79' BOC
1032	2.0	25.65	8.03	-17	0.037	38.6	0.15	23.29	
1039 1040	2.25	25.79	8.04	-20	0.035	38.1	0.10	23.29	
1047	2.5	25.85	8.01	-23	0.035	38.0	0.13	23.29	
1055	2.75	26.39	7.98	-25	0.035	38.2	0.08	23.31	
1102	3.0	26.71	7.93	-27	0.034	37.3	0.09	23.29	
1100	3.125	27.12	7.92	-28	0.034	36.8	0.06	23.27	
1117	3.25	27.37	7.90	-29	0.033	36.5	0.03	23.25	
1134	3.5	27.92	7.82	-25	0.032	35.3	0.06	23.20	
1145	3.625	28.06	7.77	-24	0.032	35.5	0.08	23.20	* stopped interval readings, cleaned
1155	3.875	28.68	7.74	15	0.031	32.9	0.52	23.21	Horiba after 1145 reading
1257	5.0	28.39	7.53	-3	0.030	29.1	0.17	23.26	
1310	5.25	27.90	7.53	-6	0.032	27.8	0.41	23.19	
1405	6.5	28.01	7.49	2	0.029	26.4	0.49	23.23	
* Turbidity not improving much, will start using Lamotte 2020 to measure turbidity									
1410	6.6	27.44	7.48	4	0.030	15.5	0.48	23.23	Turbidity measured w/ Lamotte 2020
1420	6.75	27.49	7.49	3	0.031	9.26	0.46	23.22	after 1405 reading

Horiba #: VRJ7FFSJ

Sample ID: 16244-MW-15D

Time Collected: 1425

Technician Signature

Alex Testoff



Monitoring Well Sampling Form

EPS Project: Roper Pump

Date: 9-2-16

Well ID: MW-18

Field Conditions: overcast, drizzle, 73°F

Sampling Performed By: J. Terry

Well Construction: Flush

General Condition of Well: good

Well Labeled: y Well Cap: y Well Locked: y

Condition of surrounding area: in ROW on Industrial Pkwy

Well depth from TOC: 40.42

Depth to Water from TOC: 31.53'

Well Diameter (in): 2

Method of measure: Water Level Meter

Height (Ht) of water in well (Well depth from TOC - Static level from TOC):

8.89

Volume of water in well (Ht. x (.16 for 2") (.653 for 4") (1.469 for 6")):

1.4

Three Well Volumes (gal): 4.2

Purging Method: low flow/low vol

Time @ Start of Purge: 0755

Sample Method: direct

Sample Parameters: VOCs

Time	Volume (gal)	Temp (°C)	pH	ORP (mV)	Cond. (mS/cm)	Turbidity (NTU)	DO (mg/L)	Depth to Water (ft)	Comments
0813	5	21.11	4.41	361	0.014	10.4	8.37	34.40	using separate turbidity
0818	6.5	21.02	4.32	369	0.014	4.8	7.98	34.40	Meter: LaMotte 2020c
0828	9.5	20.83	4.43	372	0.014	0.4	7.43	34.40	S/N: ME12953
0841	13.4	20.96	4.37	377	0.014	0	7.05	34.40	
0846	14.9	20.94	4.36	360	0.014	0	7.00	34.40	Horiba u-53
0855	17.6	20.75	4.73	359	0.014	0	7.05	34.40	S/N: VR57FF53
0900	19.1	20.82	4.56	366	0.014	0	6.84	34.40	Horiba
0905	20.6	20.81	4.64	358	0.014	0	6.81	34.40	Cal check: pH 4.04
0910	22	20.81	4.66	358	0.014	0	6.75	34.40	Cond: 4.32
									Turb: 0 NTU
									LaMotte cal check:
									10 NTU std
									Result 9.69 NTU
									Cal Soln: Lot# C3580642
									Exp. 5/2017 pH 4, 0 NTU
									4.49 mS/cm

Sample ID: 16246-MW-18

Time Collected: 0915

Technician Signature: J. Terry

APPENDIX E

Laboratory Analytical Reports

September 07, 2016

Mr. Justin Vickery
Environmental Planning Specialist, Inc.
1050 Crown Pointe Parkway
Suite 550
Atlanta, GA 30338

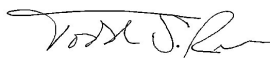
RE: Project: Roper Pump Commerce, GA
Pace Project No.: 35263054

Dear Mr. Vickery:

Enclosed are the analytical results for sample(s) received by the laboratory on September 01, 2016. The results relate only to the samples included in this report. Results reported herein conform to the most current TNI standards and the laboratory's Quality Assurance Manual, where applicable, unless otherwise noted in the body of the report.

If you have any questions concerning this report, please feel free to contact me.

Sincerely,



Todd Rea
todd.rea@pacelabs.com
Project Manager

Enclosures



REPORT OF LABORATORY ANALYSIS

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CERTIFICATIONS

Project: Roper Pump Commerce, GA

Pace Project No.: 35263054

Ormond Beach Certification IDs

8 East Tower Circle, Ormond Beach, FL 32174
Alabama Certification #: 41320
Connecticut Certification #: PH-0216
Delaware Certification: FL NELAC Reciprocity
Florida Certification #: E83079
Georgia Certification #: 955
Guam Certification: FL NELAC Reciprocity
Hawaii Certification: FL NELAC Reciprocity
Illinois Certification #: 200068
Indiana Certification: FL NELAC Reciprocity
Kansas Certification #: E-10383
Louisiana Certification #: FL NELAC Reciprocity
Louisiana Environmental Certificate #: 05007
Maryland Certification: #346
Michigan Certification #: 9911
Mississippi Certification: FL NELAC Reciprocity
Missouri Certification #: 236
Montana Certification #: Cert 0074

Nebraska Certification: NE-OS-28-14
Nevada Certification: FL NELAC Reciprocity
New York Certification #: 11608
North Carolina Environmental Certificate #: 667
North Carolina Certification #: 12710
North Dakota Certification #: R-216
Oklahoma Certification #: D9947
Pennsylvania Certification #: 68-00547
Puerto Rico Certification #: FL01264
South Carolina Certification: #96042001
Tennessee Certification #: TN02974
Texas Certification: FL NELAC Reciprocity
US Virgin Islands Certification: FL NELAC Reciprocity
Virginia Environmental Certification #: 460165
Wyoming Certification: FL NELAC Reciprocity
West Virginia Certification #: 9962C
Wisconsin Certification #: 399079670
Wyoming (EPA Region 8): FL NELAC Reciprocity

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SAMPLE SUMMARY

Project: Roper Pump Commerce, GA

Pace Project No.: 35263054

Lab ID	Sample ID	Matrix	Date Collected	Date Received
35263054001	16244-MW-13D	Water	08/31/16 11:14	09/01/16 08:20
35263054002	16244-MW-12D	Water	08/31/16 12:02	09/01/16 08:20
35263054003	16244-MW-9D	Water	08/31/16 13:02	09/01/16 08:20
35263054004	16239-TCLP	Solid	08/26/16 10:50	09/01/16 08:20
35263054006	16244-MW-6DS	Water	08/31/16 13:52	09/01/16 08:20
35263054007	16244-MW-15D	Water	08/31/16 14:27	09/01/16 08:20

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SAMPLE ANALYTE COUNT

Project: Roper Pump Commerce, GA

Pace Project No.: 35263054

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
35263054001	16244-MW-13D	EPA 218.6	AEM	1	PASI-O
35263054002	16244-MW-12D	EPA 218.6	AEM	1	PASI-O
35263054003	16244-MW-9D	EPA 218.6	AEM	1	PASI-O
35263054004	16239-TCLP	EPA 6010	CKJ	7	PASI-O
		EPA 7470	RVK	1	PASI-O
		EPA 8260 TCLP	SK1	14	PASI-O
35263054006	16244-MW-6DS	EPA 218.6	AEM	1	PASI-O
35263054007	16244-MW-15D	EPA 218.6	AEM	1	PASI-O

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ANALYTICAL RESULTS

Project: Roper Pump Commerce, GA

Pace Project No.: 35263054

Sample: 16244-MW-13D		Lab ID: 35263054001		Collected: 08/31/16 11:14		Received: 09/01/16 08:20		Matrix: Water	
Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
Hexavalent Chromium 24 Hour		Analytical Method: EPA 218.6							
Chromium, Hexavalent	2.8	ug/L	0.50	0.16	20		09/01/16 10:32	18540-29-9	

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ANALYTICAL RESULTS

Project: Roper Pump Commerce, GA

Pace Project No.: 35263054

Sample: 16244-MW-12D		Lab ID: 35263054002		Collected: 08/31/16 12:02		Received: 09/01/16 08:20		Matrix: Water	
Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
Hexavalent Chromium 24 Hour		Analytical Method: EPA 218.6							
Chromium, Hexavalent	4.8	ug/L	1.2	0.41	50		09/01/16 10:45	18540-29-9	

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ANALYTICAL RESULTS

Project: Roper Pump Commerce, GA

Pace Project No.: 35263054

Sample: 16244-MW-9D		Lab ID: 35263054003		Collected: 08/31/16 13:02		Received: 09/01/16 08:20		Matrix: Water	
Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
Hexavalent Chromium 24 Hour		Analytical Method: EPA 218.6							
Chromium, Hexavalent	30.6	ug/L	3.8	1.2	150		09/01/16 11:24	18540-29-9	

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ANALYTICAL RESULTS

Project: Roper Pump Commerce, GA

Pace Project No.: 35263054

Sample: 16239-TCLP **Lab ID: 35263054004** Collected: 08/26/16 10:50 Received: 09/01/16 08:20 Matrix: Solid

Results reported on a "wet-weight" basis

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6010 MET ICP, TCLP									
Analytical Method: EPA 6010 Preparation Method: EPA 3010									
Leachate Method/Date: EPA 1311; 09/01/16 16:33									
Arsenic	<0.10	mg/L	0.20	0.10	1	09/02/16 14:30	09/06/16 11:12	7440-38-2	
Barium	0.40	mg/L	0.20	0.10	1	09/02/16 14:30	09/06/16 11:12	7440-39-3	
Cadmium	<0.010	mg/L	0.020	0.010	1	09/02/16 14:30	09/06/16 11:12	7440-43-9	
Chromium	<0.050	mg/L	0.10	0.050	1	09/02/16 14:30	09/06/16 11:12	7440-47-3	
Lead	0.19	mg/L	0.10	0.050	1	09/02/16 14:30	09/06/16 11:12	7439-92-1	
Selenium	<0.10	mg/L	0.20	0.10	1	09/02/16 14:30	09/06/16 11:12	7782-49-2	
Silver	<0.050	mg/L	0.10	0.050	1	09/02/16 14:30	09/06/16 11:12	7440-22-4	
7470 Mercury, TCLP									
Analytical Method: EPA 7470 Preparation Method: EPA 7470									
Leachate Method/Date: EPA 1311; 09/01/16 16:33									
Mercury	<0.0010	mg/L	0.0020	0.0010	1	09/06/16 06:35	09/06/16 16:37	7439-97-6	
8260 MSV TCLP									
Analytical Method: EPA 8260 TCLP Leachate Method/Date: EPA 1311; 09/02/16 00:00									
Benzene	<0.00010	mg/L	0.0010	0.00010	1		09/06/16 19:34	71-43-2	
2-Butanone (MEK)	0.0079J	mg/L	0.010	0.0050	1		09/06/16 19:34	78-93-3	B
Carbon tetrachloride	<0.00050	mg/L	0.0010	0.00050	1		09/06/16 19:34	56-23-5	
Chlorobenzene	<0.00050	mg/L	0.0010	0.00050	1		09/06/16 19:34	108-90-7	
Chloroform	<0.00050	mg/L	0.0010	0.00050	1		09/06/16 19:34	67-66-3	
1,4-Dichlorobenzene	<0.00050	mg/L	0.0010	0.00050	1		09/06/16 19:34	106-46-7	
1,2-Dichloroethane	<0.00050	mg/L	0.0010	0.00050	1		09/06/16 19:34	107-06-2	
1,1-Dichloroethene	<0.00050	mg/L	0.0010	0.00050	1		09/06/16 19:34	75-35-4	
Tetrachloroethene	0.00068J	mg/L	0.0010	0.00050	1		09/06/16 19:34	127-18-4	M1
Trichloroethene	<0.00050	mg/L	0.0010	0.00050	1		09/06/16 19:34	79-01-6	
Vinyl chloride	<0.00050	mg/L	0.0010	0.00050	1		09/06/16 19:34	75-01-4	
Surrogates									
Toluene-d8 (S)	102	%	87-113		1		09/06/16 19:34	2037-26-5	
4-Bromofluorobenzene (S)	103	%	70-114		1		09/06/16 19:34	460-00-4	
1,2-Dichloroethane-d4 (S)	101	%	86-125		1		09/06/16 19:34	17060-07-0	

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ANALYTICAL RESULTS

Project: Roper Pump Commerce, GA

Pace Project No.: 35263054

Sample: 16244-MW-6DS		Lab ID: 35263054006		Collected: 08/31/16 13:52		Received: 09/01/16 08:20		Matrix: Water	
Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
Hexavalent Chromium 24 Hour		Analytical Method: EPA 218.6							
Chromium, Hexavalent	0.62	ug/L	0.075	0.025	3		09/01/16 11:37	18540-29-9	

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ANALYTICAL RESULTS

Project: Roper Pump Commerce, GA

Pace Project No.: 35263054

Sample: 16244-MW-15D		Lab ID: 35263054007	Collected: 08/31/16 14:27	Received: 09/01/16 08:20	Matrix: Water				
Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
Hexavalent Chromium 24 Hour		Analytical Method: EPA 218.6							
Chromium, Hexavalent	0.067	ug/L	0.025	0.0082	1		09/01/16 11:50	18540-29-9	

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QUALITY CONTROL DATA

Project: Roper Pump Commerce, GA

Pace Project No.: 35263054

QC Batch: 318996

Analysis Method: EPA 7470

QC Batch Method: EPA 7470

Analysis Description: 7470 Mercury TCLP

Associated Lab Samples: 35263054004

METHOD BLANK: 1695225

Matrix: Water

Associated Lab Samples: 35263054004

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Mercury	mg/L	<0.0010	0.0020	0.0010	09/06/16 16:22	

LABORATORY CONTROL SAMPLE: 1695226

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Mercury	mg/L	.02	0.021	106	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1695227 1695228

Parameter	Units	35262285001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Mercury	mg/L	0.0010U	.02	.02	0.021	0.022	103	107	75-125	4	20	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

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QUALITY CONTROL DATA

Project: Roper Pump Commerce, GA
Pace Project No.: 35263054

QC Batch:	318785	Analysis Method:	EPA 6010
QC Batch Method:	EPA 3010	Analysis Description:	6010 MET TCLP
Associated Lab Samples:	35263054004		

METHOD BLANK: 1693939 Matrix: Water
Associated Lab Samples: 35263054004

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Arsenic	mg/L	<0.10	0.20	0.10	09/06/16 10:40	
Barium	mg/L	<0.10	0.20	0.10	09/06/16 10:40	
Cadmium	mg/L	<0.010	0.020	0.010	09/06/16 10:40	
Chromium	mg/L	<0.050	0.10	0.050	09/06/16 10:40	
Lead	mg/L	<0.050	0.10	0.050	09/06/16 10:40	
Selenium	mg/L	<0.10	0.20	0.10	09/06/16 10:40	
Silver	mg/L	<0.050	0.10	0.050	09/06/16 10:40	

LABORATORY CONTROL SAMPLE: 1693940

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Arsenic	mg/L	2.5	2.5	100	80-120	
Barium	mg/L	2.5	2.7	109	80-120	
Cadmium	mg/L	.25	0.25	102	80-120	
Chromium	mg/L	2.5	2.6	102	80-120	
Lead	mg/L	2.5	2.6	103	80-120	
Selenium	mg/L	2.5	2.6	106	80-120	
Silver	mg/L	.25	0.25	100	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1693941 1693942

Parameter	Units	35262285001	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	Max RPD	Qual
		Result									
Arsenic	mg/L	0.10U	2.5	2.5	2.4	2.5	97	99	75-125	2	20
Barium	mg/L	0.10U	2.5	2.5	2.6	2.6	103	100	75-125	2	20
Cadmium	mg/L	0.010U	.25	.25	0.25	0.25	99	101	75-125	2	20
Chromium	mg/L	0.050U	2.5	2.5	2.5	2.5	101	102	75-125	1	20
Lead	mg/L	0.050U	2.5	2.5	2.5	2.6	102	103	75-125	2	20
Selenium	mg/L	0.10U	2.5	2.5	2.6	2.6	103	104	75-125	1	20
Silver	mg/L	0.050U	.25	.25	0.24	0.25	97	98	75-125	1	20

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QUALITY CONTROL DATA

Project: Roper Pump Commerce, GA
Pace Project No.: 35263054

QC Batch: 319168 Analysis Method: EPA 8260 TCLP
QC Batch Method: EPA 8260 TCLP Analysis Description: 8260 MSV TCLP
Associated Lab Samples: 35263054004

METHOD BLANK: 1695765 Matrix: Water
Associated Lab Samples: 35263054004

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
1,1-Dichloroethene	mg/L	<0.00050	0.0010	0.00050	09/06/16 18:15	
1,2-Dichloroethane	mg/L	<0.00050	0.0010	0.00050	09/06/16 18:15	
1,4-Dichlorobenzene	mg/L	<0.00050	0.0010	0.00050	09/06/16 18:15	
2-Butanone (MEK)	mg/L	0.0071J	0.010	0.0050	09/06/16 18:15	
Benzene	mg/L	<0.00010	0.0010	0.00010	09/06/16 18:15	
Carbon tetrachloride	mg/L	<0.00050	0.0010	0.00050	09/06/16 18:15	
Chlorobenzene	mg/L	<0.00050	0.0010	0.00050	09/06/16 18:15	
Chloroform	mg/L	<0.00050	0.0010	0.00050	09/06/16 18:15	
Tetrachloroethene	mg/L	<0.00050	0.0010	0.00050	09/06/16 18:15	
Trichloroethene	mg/L	<0.00050	0.0010	0.00050	09/06/16 18:15	
Vinyl chloride	mg/L	<0.00050	0.0010	0.00050	09/06/16 18:15	
1,2-Dichloroethane-d4 (S)	%	101	86-125		09/06/16 18:15	
4-Bromofluorobenzene (S)	%	107	70-114		09/06/16 18:15	
Toluene-d8 (S)	%	101	87-113		09/06/16 18:15	

LABORATORY CONTROL SAMPLE: 1695766

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1,1-Dichloroethene	mg/L	.02	0.018	89	70-130	
1,2-Dichloroethane	mg/L	.02	0.020	100	70-130	
1,4-Dichlorobenzene	mg/L	.02	0.022	111	70-130	
2-Butanone (MEK)	mg/L	.04	0.041	104	55-167	
Benzene	mg/L	.02	0.019	95	70-130	
Carbon tetrachloride	mg/L	.02	0.020	101	70-130	
Chlorobenzene	mg/L	.02	0.021	105	70-130	
Chloroform	mg/L	.02	0.020	99	70-130	
Tetrachloroethene	mg/L	.02	0.017	87	66-133	
Trichloroethene	mg/L	.02	0.020	98	70-130	
Vinyl chloride	mg/L	.02	0.023	113	69-140	
1,2-Dichloroethane-d4 (S)	%			98	86-125	
4-Bromofluorobenzene (S)	%			104	70-114	
Toluene-d8 (S)	%			100	87-113	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1696437 1696438

Parameter	Units	35263054004 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
1,1-Dichloroethene	mg/L	<0.00050	.02	.02	0.015	0.016	77	80	70-130	5	40	

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: Roper Pump Commerce, GA

Pace Project No.: 35263054

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1696437 1696438											
Parameter	Units	35263054004		MS		MSD		MS		MSD	
		Result	Conc.	Spike	Conc.	Spike	Conc.	Result	Conc.	Spike	Conc.
								% Rec	% Rec	Limits	Max
1,2-Dichloroethane	mg/L	<0.00050	.02	.02	.02	.02	.02	77	82	70-130	7 40
1,4-Dichlorobenzene	mg/L	<0.00050	.02	.02	.02	.02	.02	85	90	70-130	6 40
2-Butanone (MEK)	mg/L	0.0079J	.04	.04	.04	.04	.04	83	65	55-167	19 40
Benzene	mg/L	<0.00010	.02	.02	.02	.02	.02	75	77	70-130	2 40
Carbon tetrachloride	mg/L	<0.00050	.02	.02	.02	.02	.02	84	86	70-130	2 40
Chlorobenzene	mg/L	<0.00050	.02	.02	.02	.02	.02	79	83	70-130	6 40
Chloroform	mg/L	<0.00050	.02	.02	.02	.02	.02	79	82	70-130	3 40
Tetrachloroethene	mg/L	0.00068J	.02	.02	.02	.02	.02	54	55	66-133	1 40 M1
Trichloroethene	mg/L	<0.00050	.02	.02	.02	.02	.02	77	79	70-130	4 40
Vinyl chloride	mg/L	<0.00050	.02	.02	.02	.02	.02	106	118	69-140	10 40
1,2-Dichloroethane-d4 (S)	%							99	99	86-125	
4-Bromofluorobenzene (S)	%							102	103	70-114	
Toluene-d8 (S)	%							102	101	87-113	

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QUALITY CONTROL DATA

Project: Roper Pump Commerce, GA

Pace Project No.: 35263054

QC Batch: 318618 Analysis Method: EPA 218.6
QC Batch Method: EPA 218.6 Analysis Description: Chromium, Hexavalent by IC 24 Hour
Associated Lab Samples: 35263054001, 35263054002, 35263054003, 35263054006, 35263054007

METHOD BLANK: 1693110 Matrix: Water
Associated Lab Samples: 35263054001, 35263054002, 35263054003, 35263054006, 35263054007

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Chromium, Hexavalent	ug/L	<0.0082	0.025	0.0082	09/01/16 12:42	

LABORATORY CONTROL SAMPLE: 1693111

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chromium, Hexavalent	ug/L	.075	0.079	106	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1693112 1693113

Parameter	Units	35263054007 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Chromium, Hexavalent	ug/L	0.067	.075	.075	0.14	0.14	98	103	90-110	2	20	

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REPORT OF LABORATORY ANALYSIS

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QUALIFIERS

Project: Roper Pump Commerce, GA

Pace Project No.: 35263054

DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to dilution of the sample aliquot.

ND - Not Detected at or above adjusted reporting limit.

J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

MDL - Adjusted Method Detection Limit.

PQL - Practical Quantitation Limit.

RL - Reporting Limit.

S - Surrogate

1,2-Diphenylhydrazine decomposes to and cannot be separated from Azobenzene using Method 8270. The result for each analyte is a combined concentration.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

U - Indicates the compound was analyzed for, but not detected.

N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.

Pace Analytical is TNI accredited. Contact your Pace PM for the current list of accredited analytes.

TNI - The NELAC Institute.

LABORATORIES

PASI-O Pace Analytical Services - Ormond Beach

ANALYTE QUALIFIERS

B Analyte was detected in the associated method blank.

M1 Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: Roper Pump Commerce, GA

Pace Project No.: 35263054

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
35263054004	16239-TCLP	EPA 3010	318785	EPA 6010	318888
35263054004	16239-TCLP	EPA 7470	318996	EPA 7470	319083
35263054004	16239-TCLP	EPA 8260 TCLP	319168		
35263054001	16244-MW-13D	EPA 218.6	318618		
35263054002	16244-MW-12D	EPA 218.6	318618		
35263054003	16244-MW-9D	EPA 218.6	318618		
35263054006	16244-MW-6DS	EPA 218.6	318618		
35263054007	16244-MW-15D	EPA 218.6	318618		

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Page 18 of 19

	Document Name: Sample Condition Upon Receipt Form	Document Revised: August 10, 2016
	Document No.: F-FL-C-007 rev. 10	Issuing Authority: Pace Florida Quality Office

Sar **WO# : 35263054**

Project #
Project Manager: PM: TSR **Due Date:** 09/09/16
Client: CLIENT: ENVIPS

Date and Initials of person:

Examining contents:
Label: MAA
Deliver: MAA
pH: MAA

Thermometer Used: 7222 Date: 9/1/16 Time: 8:20 Initials: MAA

Samples shorted to lab (If Yes, complete) Shorted Date: 9/1/16 Shorted Time: 8:36 Qty: 5 Hex Cr

Cooler #1 Temp.°C <u>0.3</u> (Visual) <u>-0.1</u> (Correction Factor) <u>0.2</u> (Actual)	☒ Samples on ice, cooling process has begun
Cooler #2 Temp.°C _____ (Visual) _____ (Correction Factor) _____ (Actual)	☐ Samples on ice, cooling process has begun
Cooler #3 Temp.°C _____ (Visual) _____ (Correction Factor) _____ (Actual)	☐ Samples on ice, cooling process has begun
Cooler #4 Temp.°C _____ (Visual) _____ (Correction Factor) _____ (Actual)	☐ Samples on ice, cooling process has begun
Cooler #5 Temp.°C _____ (Visual) _____ (Correction Factor) _____ (Actual)	☐ Samples on ice, cooling process has begun
Cooler #6 Temp.°C _____ (Visual) _____ (Correction Factor) _____ (Actual)	☐ Samples on ice, cooling process has begun

Courier: ☒ Fed Ex ☐ UPS ☐ USPS ☐ Client ☐ Commercial ☐ Pace ☐ Other _____

Shipping Method: ☒ First Overnight ☐ Priority Overnight ☐ Standard Overnight ☐ Ground ☐ Other _____

Billing: ☐ Recipient ☒ Sender ☐ Third Party ☐ Unknown

Tracking # 0812 5098 8128

Custody Seal on Cooler/Box Present: ☐ Yes ☒ No Seals intact: ☐ Yes ☒ No Ice: Wet Blue None

Packing Material: ☐ Bubble Wrap ☐ Bubble Bags ☒ None ☐ Other _____

Comments:

Chain of Custody Present	☒ Yes ☐ No ☐ N/A	Preservation Information: Preservative: _____ Lot #/Trace #: _____ Date: _____ Time: _____ Initials: _____
Chain of Custody Filled Out	☒ Yes ☐ No ☐ N/A	
Relinquished Signature & Sampler Name COC	☒ Yes ☐ No ☐ N/A	
Samples Arrived within Hold Time	☒ Yes ☐ No ☐ N/A	
Rush TAT requested on COC	☐ Yes ☐ No ☒ N/A	
Sufficient Volume	☒ Yes ☐ No ☐ N/A	
Correct Containers Used	☒ Yes ☐ No ☐ N/A	
Containers Intact	☒ Yes ☐ No ☐ N/A	
Sample Labels match COC (sample IDs & date/time of collection)	☒ Yes ☐ No ☐ N/A	
All containers needing acid/base preservation have been checked.	☐ Yes ☐ No ☒ N/A	
All Containers needing preservation are found to be in compliance with EPA recommendation:	☐ Yes ☐ No ☒ N/A	
Exceptions: VOA, Coliform, TOC, O&G, Carbamates		
Headspace in VOA Vials? (>6mm):	☐ Yes ☐ No ☒ N/A	
Trip Blank Present:	☐ Yes ☐ No ☒ N/A	

Client Notification/ Resolution:

Person Contacted: _____ Date/Time: _____

Comments/ Resolution (use back for additional comments): _____

Project Manager Review: _____ Date: _____

September 22, 2016

Mr. Justin Vickery
Environmental Planning Specialist, Inc.
1050 Crown Pointe Parkway
Suite 550
Atlanta, GA 30338

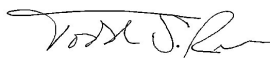
RE: Project: Roger Pump Commerce, GA
Pace Project No.: 35264002

Dear Mr. Vickery:

Enclosed are the analytical results for sample(s) received by the laboratory on September 07, 2016. The results relate only to the samples included in this report. Results reported herein conform to the most current TNI standards and the laboratory's Quality Assurance Manual, where applicable, unless otherwise noted in the body of the report.

If you have any questions concerning this report, please feel free to contact me.

Sincerely,



Todd Rea
todd.rea@pacelabs.com
Project Manager

Enclosures



REPORT OF LABORATORY ANALYSIS

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CERTIFICATIONS

Project: Roger Pump Commerce, GA

Pace Project No.: 35264002

Ormond Beach Certification IDs

8 East Tower Circle, Ormond Beach, FL 32174
Alabama Certification #: 41320
Connecticut Certification #: PH-0216
Delaware Certification: FL NELAC Reciprocity
Florida Certification #: E83079
Georgia Certification #: 955
Guam Certification: FL NELAC Reciprocity
Hawaii Certification: FL NELAC Reciprocity
Illinois Certification #: 200068
Indiana Certification: FL NELAC Reciprocity
Kansas Certification #: E-10383
Louisiana Certification #: FL NELAC Reciprocity
Louisiana Environmental Certificate #: 05007
Maryland Certification: #346
Michigan Certification #: 9911
Mississippi Certification: FL NELAC Reciprocity
Missouri Certification #: 236
Montana Certification #: Cert 0074

Nebraska Certification: NE-OS-28-14
Nevada Certification: FL NELAC Reciprocity
New York Certification #: 11608
North Carolina Environmental Certificate #: 667
North Carolina Certification #: 12710
North Dakota Certification #: R-216
Oklahoma Certification #: D9947
Pennsylvania Certification #: 68-00547
Puerto Rico Certification #: FL01264
South Carolina Certification: #96042001
Tennessee Certification #: TN02974
Texas Certification: FL NELAC Reciprocity
US Virgin Islands Certification: FL NELAC Reciprocity
Virginia Environmental Certification #: 460165
Wyoming Certification: FL NELAC Reciprocity
West Virginia Certification #: 9962C
Wisconsin Certification #: 399079670
Wyoming (EPA Region 8): FL NELAC Reciprocity

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SAMPLE ANALYTE COUNT

Project: Roger Pump Commerce, GA

Pace Project No.: 35264002

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
35264002001	16244-TCLP	EPA 6010	RVK	7	PASI-O
		EPA 7470	RVK	1	PASI-O
		EPA 8260 TCLP	SK1	14	PASI-O
35264002002	Trip Blank_20160902	EPA 8260	SK1	52	PASI-O
35264002003	16246-MW-18	EPA 8260	SK1	52	PASI-O

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: Roger Pump Commerce, GA

Pace Project No.: 35264002

Sample: 16244-TCLP		Lab ID: 35264002001		Collected: 08/31/16 17:00		Received: 09/07/16 11:50		Matrix: Water	
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual	
6010 MET ICP, TCLP		Analytical Method: EPA 6010 Preparation Method: EPA 3010 Leachate Method/Date: EPA 1311; 09/08/16 10:31							
Arsenic	<0.20	mg/L	0.20	1	09/13/16 10:03	09/14/16 11:19	7440-38-2		
Barium	<0.20	mg/L	0.20	1	09/13/16 10:03	09/14/16 11:19	7440-39-3		
Cadmium	<0.020	mg/L	0.020	1	09/13/16 10:03	09/14/16 11:19	7440-43-9		
Chromium	<0.10	mg/L	0.10	1	09/13/16 10:03	09/14/16 11:19	7440-47-3		
Lead	<0.10	mg/L	0.10	1	09/13/16 10:03	09/14/16 11:19	7439-92-1		
Selenium	<0.20	mg/L	0.20	1	09/13/16 10:03	09/14/16 11:19	7782-49-2		
Silver	<0.10	mg/L	0.10	1	09/13/16 10:03	09/14/16 11:19	7440-22-4		
7470 Mercury, TCLP		Analytical Method: EPA 7470 Preparation Method: EPA 7470 Leachate Method/Date: EPA 1311; 09/08/16 10:31							
Mercury	<0.0020	mg/L	0.0020	1	09/13/16 13:28	09/22/16 16:06	7439-97-6		
8260 MSV TCLP		Analytical Method: EPA 8260 TCLP Leachate Method/Date: EPA 1311; 09/13/16 09:39							
Benzene	<0.0010	mg/L	0.0010	1		09/14/16 14:46	71-43-2		
2-Butanone (MEK)	<0.010	mg/L	0.010	1		09/14/16 14:46	78-93-3		
Carbon tetrachloride	<0.0010	mg/L	0.0010	1		09/14/16 14:46	56-23-5		
Chlorobenzene	<0.0010	mg/L	0.0010	1		09/14/16 14:46	108-90-7		
Chloroform	<0.0010	mg/L	0.0010	1		09/14/16 14:46	67-66-3		
1,4-Dichlorobenzene	<0.0010	mg/L	0.0010	1		09/14/16 14:46	106-46-7		
1,2-Dichloroethane	<0.0010	mg/L	0.0010	1		09/14/16 14:46	107-06-2		
1,1-Dichloroethene	<0.0010	mg/L	0.0010	1		09/14/16 14:46	75-35-4		
Tetrachloroethene	0.13	mg/L	0.0010	1		09/14/16 14:46	127-18-4		
Trichloroethene	0.056	mg/L	0.0010	1		09/14/16 14:46	79-01-6		
Vinyl chloride	<0.0010	mg/L	0.0010	1		09/14/16 14:46	75-01-4		
Surrogates									
Toluene-d8 (S)	98	%	87-113	1		09/14/16 14:46	2037-26-5		
4-Bromofluorobenzene (S)	108	%	70-114	1		09/14/16 14:46	460-00-4		
1,2-Dichloroethane-d4 (S)	98	%	86-125	1		09/14/16 14:46	17060-07-0		

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ANALYTICAL RESULTS

Project: Roger Pump Commerce, GA

Pace Project No.: 35264002

Sample: Trip Blank_20160902		Lab ID: 35264002002	Collected: 08/31/16 00:00	Received: 09/07/16 11:50	Matrix: Water			
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV		Analytical Method: EPA 8260						
Acetone	<50.0	ug/L	50.0	1		09/12/16 14:30	67-64-1	
Benzene	<5.0	ug/L	5.0	1		09/12/16 14:30	71-43-2	
Bromodichloromethane	<5.0	ug/L	5.0	1		09/12/16 14:30	75-27-4	
Bromoform	<5.0	ug/L	5.0	1		09/12/16 14:30	75-25-2	
Bromomethane	<5.0	ug/L	5.0	1		09/12/16 14:30	74-83-9	
2-Butanone (MEK)	<50.0	ug/L	50.0	1		09/12/16 14:30	78-93-3	
Carbon disulfide	<10.0	ug/L	10.0	1		09/12/16 14:30	75-15-0	
Carbon tetrachloride	<5.0	ug/L	5.0	1		09/12/16 14:30	56-23-5	
Chlorobenzene	<5.0	ug/L	5.0	1		09/12/16 14:30	108-90-7	
Chloroethane	<10.0	ug/L	10.0	1		09/12/16 14:30	75-00-3	
Chloroform	<5.0	ug/L	5.0	1		09/12/16 14:30	67-66-3	
Chloromethane	<10.0	ug/L	10.0	1		09/12/16 14:30	74-87-3	
Cyclohexane	<5.0	ug/L	5.0	1		09/12/16 14:30	68411-77-8..	
1,2-Dibromo-3-chloropropane	<5.0	ug/L	5.0	1		09/12/16 14:30	96-12-8	
Dibromochloromethane	<5.0	ug/L	5.0	1		09/12/16 14:30	124-48-1	
1,2-Dibromoethane (EDB)	<5.0	ug/L	5.0	1		09/12/16 14:30	106-93-4	
1,2-Dichlorobenzene	<5.0	ug/L	5.0	1		09/12/16 14:30	95-50-1	
1,3-Dichlorobenzene	<5.0	ug/L	5.0	1		09/12/16 14:30	541-73-1	
1,4-Dichlorobenzene	<5.0	ug/L	5.0	1		09/12/16 14:30	106-46-7	
Dichlorodifluoromethane	<10.0	ug/L	10.0	1		09/12/16 14:30	75-71-8	
1,1-Dichloroethane	<5.0	ug/L	5.0	1		09/12/16 14:30	75-34-3	
1,2-Dichloroethane	<5.0	ug/L	5.0	1		09/12/16 14:30	107-06-2	
1,1-Dichloroethene	<5.0	ug/L	5.0	1		09/12/16 14:30	75-35-4	
cis-1,2-Dichloroethene	<5.0	ug/L	5.0	1		09/12/16 14:30	156-59-2	
trans-1,2-Dichloroethene	<5.0	ug/L	5.0	1		09/12/16 14:30	156-60-5	
1,2-Dichloropropane	<5.0	ug/L	5.0	1		09/12/16 14:30	78-87-5	
cis-1,3-Dichloropropene	<5.0	ug/L	5.0	1		09/12/16 14:30	10061-01-5	
trans-1,3-Dichloropropene	<5.0	ug/L	5.0	1		09/12/16 14:30	10061-02-6	
Ethylbenzene	<5.0	ug/L	5.0	1		09/12/16 14:30	100-41-4	
2-Hexanone	<10.0	ug/L	10.0	1		09/12/16 14:30	591-78-6	
Isopropylbenzene (Cumene)	<5.0	ug/L	5.0	1		09/12/16 14:30	98-82-8	
Methyl acetate	<5.0	ug/L	5.0	1		09/12/16 14:30	79-20-9	
Methylcyclohexane	<5.0	ug/L	5.0	1		09/12/16 14:30	108-87-2	
Methylene Chloride	<5.0	ug/L	5.0	1		09/12/16 14:30	75-09-2	
4-Methyl-2-pentanone (MIBK)	<10.0	ug/L	10.0	1		09/12/16 14:30	108-10-1	
Methyl-tert-butyl ether	<5.0	ug/L	5.0	1		09/12/16 14:30	1634-04-4	
Styrene	<5.0	ug/L	5.0	1		09/12/16 14:30	100-42-5	
1,1,2,2-Tetrachloroethane	<5.0	ug/L	5.0	1		09/12/16 14:30	79-34-5	
Tetrachloroethene	<5.0	ug/L	5.0	1		09/12/16 14:30	127-18-4	L3
Toluene	<5.0	ug/L	5.0	1		09/12/16 14:30	108-88-3	
1,2,4-Trichlorobenzene	<5.0	ug/L	5.0	1		09/12/16 14:30	120-82-1	
1,1,1-Trichloroethane	<5.0	ug/L	5.0	1		09/12/16 14:30	71-55-6	
1,1,2-Trichloroethane	<5.0	ug/L	5.0	1		09/12/16 14:30	79-00-5	
Trichloroethene	<5.0	ug/L	5.0	1		09/12/16 14:30	79-01-6	
Trichlorofluoromethane	<5.0	ug/L	5.0	1		09/12/16 14:30	75-69-4	
1,1,2-Trichlorotrifluoroethane	<10.0	ug/L	10.0	1		09/12/16 14:30	76-13-1	
Vinyl chloride	<2.0	ug/L	2.0	1		09/12/16 14:30	75-01-4	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: Roger Pump Commerce, GA

Pace Project No.: 35264002

Sample: Trip Blank_20160902		Lab ID: 35264002002		Collected: 08/31/16 00:00		Received: 09/07/16 11:50		Matrix: Water	
Parameters		Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV		Analytical Method: EPA 8260							
m&p-Xylene		<5.0	ug/L	5.0	1		09/12/16 14:30	179601-23-1	
o-Xylene		<5.0	ug/L	5.0	1		09/12/16 14:30	95-47-6	
Surrogates									
4-Bromofluorobenzene (S)		99	%	70-114	1		09/12/16 14:30	460-00-4	
1,2-Dichloroethane-d4 (S)		103	%	86-125	1		09/12/16 14:30	17060-07-0	
Toluene-d8 (S)		99	%	87-113	1		09/12/16 14:30	2037-26-5	

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ANALYTICAL RESULTS

Project: Roger Pump Commerce, GA

Pace Project No.: 35264002

Sample: 16246-MW-18		Lab ID: 35264002003	Collected: 09/02/16 09:17	Received: 09/07/16 11:50	Matrix: Water			
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV		Analytical Method: EPA 8260						
Acetone	<50.0	ug/L	50.0	1		09/12/16 17:09	67-64-1	
Benzene	<5.0	ug/L	5.0	1		09/12/16 17:09	71-43-2	
Bromodichloromethane	<5.0	ug/L	5.0	1		09/12/16 17:09	75-27-4	
Bromoform	<5.0	ug/L	5.0	1		09/12/16 17:09	75-25-2	
Bromomethane	<5.0	ug/L	5.0	1		09/12/16 17:09	74-83-9	
2-Butanone (MEK)	<50.0	ug/L	50.0	1		09/12/16 17:09	78-93-3	
Carbon disulfide	<10.0	ug/L	10.0	1		09/12/16 17:09	75-15-0	
Carbon tetrachloride	<5.0	ug/L	5.0	1		09/12/16 17:09	56-23-5	
Chlorobenzene	<5.0	ug/L	5.0	1		09/12/16 17:09	108-90-7	
Chloroethane	<10.0	ug/L	10.0	1		09/12/16 17:09	75-00-3	
Chloroform	<5.0	ug/L	5.0	1		09/12/16 17:09	67-66-3	
Chloromethane	<10.0	ug/L	10.0	1		09/12/16 17:09	74-87-3	
Cyclohexane	<5.0	ug/L	5.0	1		09/12/16 17:09	68411-77-8..	
1,2-Dibromo-3-chloropropane	<5.0	ug/L	5.0	1		09/12/16 17:09	96-12-8	
Dibromochloromethane	<5.0	ug/L	5.0	1		09/12/16 17:09	124-48-1	
1,2-Dibromoethane (EDB)	<5.0	ug/L	5.0	1		09/12/16 17:09	106-93-4	
1,2-Dichlorobenzene	<5.0	ug/L	5.0	1		09/12/16 17:09	95-50-1	
1,3-Dichlorobenzene	<5.0	ug/L	5.0	1		09/12/16 17:09	541-73-1	
1,4-Dichlorobenzene	<5.0	ug/L	5.0	1		09/12/16 17:09	106-46-7	
Dichlorodifluoromethane	<10.0	ug/L	10.0	1		09/12/16 17:09	75-71-8	
1,1-Dichloroethane	<5.0	ug/L	5.0	1		09/12/16 17:09	75-34-3	
1,2-Dichloroethane	<5.0	ug/L	5.0	1		09/12/16 17:09	107-06-2	
1,1-Dichloroethene	<5.0	ug/L	5.0	1		09/12/16 17:09	75-35-4	
cis-1,2-Dichloroethene	<5.0	ug/L	5.0	1		09/12/16 17:09	156-59-2	
trans-1,2-Dichloroethene	<5.0	ug/L	5.0	1		09/12/16 17:09	156-60-5	
1,2-Dichloropropane	<5.0	ug/L	5.0	1		09/12/16 17:09	78-87-5	
cis-1,3-Dichloropropene	<5.0	ug/L	5.0	1		09/12/16 17:09	10061-01-5	
trans-1,3-Dichloropropene	<5.0	ug/L	5.0	1		09/12/16 17:09	10061-02-6	
Ethylbenzene	<5.0	ug/L	5.0	1		09/12/16 17:09	100-41-4	
2-Hexanone	<10.0	ug/L	10.0	1		09/12/16 17:09	591-78-6	
Isopropylbenzene (Cumene)	<5.0	ug/L	5.0	1		09/12/16 17:09	98-82-8	
Methyl acetate	<5.0	ug/L	5.0	1		09/12/16 17:09	79-20-9	
Methylcyclohexane	<5.0	ug/L	5.0	1		09/12/16 17:09	108-87-2	
Methylene Chloride	<5.0	ug/L	5.0	1		09/12/16 17:09	75-09-2	
4-Methyl-2-pentanone (MIBK)	<10.0	ug/L	10.0	1		09/12/16 17:09	108-10-1	
Methyl-tert-butyl ether	<5.0	ug/L	5.0	1		09/12/16 17:09	1634-04-4	
Styrene	<5.0	ug/L	5.0	1		09/12/16 17:09	100-42-5	
1,1,2,2-Tetrachloroethane	<5.0	ug/L	5.0	1		09/12/16 17:09	79-34-5	
Tetrachloroethene	<5.0	ug/L	5.0	1		09/12/16 17:09	127-18-4	L3
Toluene	<5.0	ug/L	5.0	1		09/12/16 17:09	108-88-3	
1,2,4-Trichlorobenzene	<5.0	ug/L	5.0	1		09/12/16 17:09	120-82-1	
1,1,1-Trichloroethane	<5.0	ug/L	5.0	1		09/12/16 17:09	71-55-6	
1,1,2-Trichloroethane	<5.0	ug/L	5.0	1		09/12/16 17:09	79-00-5	
Trichloroethene	<5.0	ug/L	5.0	1		09/12/16 17:09	79-01-6	
Trichlorofluoromethane	<5.0	ug/L	5.0	1		09/12/16 17:09	75-69-4	
1,1,2-Trichlorotrifluoroethane	<10.0	ug/L	10.0	1		09/12/16 17:09	76-13-1	
Vinyl chloride	<2.0	ug/L	2.0	1		09/12/16 17:09	75-01-4	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: Roger Pump Commerce, GA

Pace Project No.: 35264002

Sample: 16246-MW-18		Lab ID: 35264002003		Collected: 09/02/16 09:17		Received: 09/07/16 11:50		Matrix: Water	
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual	
8260 MSV		Analytical Method: EPA 8260							
m&p-Xylene	<5.0	ug/L	5.0	1		09/12/16 17:09	179601-23-1		
o-Xylene	<5.0	ug/L	5.0	1		09/12/16 17:09	95-47-6		
Surrogates									
4-Bromofluorobenzene (S)	96	%	70-114	1		09/12/16 17:09	460-00-4		
1,2-Dichloroethane-d4 (S)	100	%	86-125	1		09/12/16 17:09	17060-07-0		
Toluene-d8 (S)	98	%	87-113	1		09/12/16 17:09	2037-26-5		

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QUALITY CONTROL DATA

Project: Roger Pump Commerce, GA

Pace Project No.: 35264002

QC Batch: 320316

Analysis Method: EPA 7470

QC Batch Method: EPA 7470

Analysis Description: 7470 Mercury TCLP

Associated Lab Samples: 35264002001

METHOD BLANK: 1703178

Matrix: Water

Associated Lab Samples: 35264002001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Mercury	mg/L	<0.0020	0.0020	09/22/16 16:01	

LABORATORY CONTROL SAMPLE: 1703179

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Mercury	mg/L	.02	0.019	97	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1703180 1703181

Parameter	Units	35264002001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Qual
Mercury	mg/L	<0.0020	.02	.02	0.019	0.020	97	99	75-125	2	

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QUALITY CONTROL DATA

Project: Roger Pump Commerce, GA
Pace Project No.: 35264002

QC Batch:	320275	Analysis Method:	EPA 6010
QC Batch Method:	EPA 3010	Analysis Description:	6010 MET TCLP
Associated Lab Samples:	35264002001		

METHOD BLANK: 1702917 Matrix: Water
Associated Lab Samples: 35264002001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Arsenic	mg/L	<0.20	0.20	09/14/16 11:03	
Barium	mg/L	<0.20	0.20	09/14/16 11:03	
Cadmium	mg/L	<0.020	0.020	09/14/16 11:03	
Chromium	mg/L	<0.10	0.10	09/14/16 11:03	
Lead	mg/L	<0.10	0.10	09/14/16 11:03	
Selenium	mg/L	<0.20	0.20	09/14/16 11:03	
Silver	mg/L	<0.10	0.10	09/14/16 11:03	

LABORATORY CONTROL SAMPLE: 1702918

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Arsenic	mg/L	2.5	2.5	101	80-120	
Barium	mg/L	2.5	2.5	98	80-120	
Cadmium	mg/L	.25	0.25	101	80-120	
Chromium	mg/L	2.5	2.6	102	80-120	
Lead	mg/L	2.5	2.5	101	80-120	
Selenium	mg/L	2.5	2.6	102	80-120	
Silver	mg/L	.25	0.25	100	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1702919 1702920

Parameter	35264002001		MS	MSD	MS		MSD	MS		MSD	% Rec		RPD	Qual
	Units	Result	Spike Conc.	Spike Conc.	Result	Result	Result	% Rec	% Rec	% Rec	Limits	Limits		
Arsenic	mg/L	<0.20	2.5	2.5	2.5	2.5	100	100	75-125	0				
Barium	mg/L	<0.20	2.5	2.5	2.5	2.5	100	99	75-125	0				
Cadmium	mg/L	<0.020	.25	.25	0.26	0.26	105	105	75-125	0				
Chromium	mg/L	<0.10	2.5	2.5	2.6	2.7	104	105	75-125	1				
Lead	mg/L	<0.10	2.5	2.5	2.7	2.7	107	108	75-125	0				
Selenium	mg/L	<0.20	2.5	2.5	2.6	2.6	102	104	75-125	2				
Silver	mg/L	<0.10	.25	.25	0.25	0.24	101	98	75-125	4				

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QUALITY CONTROL DATA

Project: Roger Pump Commerce, GA
Pace Project No.: 35264002

QC Batch:	320506	Analysis Method:	EPA 8260 TCLP
QC Batch Method:	EPA 8260 TCLP	Analysis Description:	8260 MSV TCLP
Associated Lab Samples:	35264002001		

METHOD BLANK: 1704513 Matrix: Water
Associated Lab Samples: 35264002001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
1,1-Dichloroethene	mg/L	<0.0010	0.0010	09/14/16 12:06	
1,2-Dichloroethane	mg/L	<0.0010	0.0010	09/14/16 12:06	
1,4-Dichlorobenzene	mg/L	<0.0010	0.0010	09/14/16 12:06	
2-Butanone (MEK)	mg/L	<0.010	0.010	09/14/16 12:06	
Benzene	mg/L	<0.0010	0.0010	09/14/16 12:06	
Carbon tetrachloride	mg/L	<0.0010	0.0010	09/14/16 12:06	
Chlorobenzene	mg/L	<0.0010	0.0010	09/14/16 12:06	
Chloroform	mg/L	<0.0010	0.0010	09/14/16 12:06	
Tetrachloroethene	mg/L	<0.0010	0.0010	09/14/16 12:06	
Trichloroethene	mg/L	<0.0010	0.0010	09/14/16 12:06	
Vinyl chloride	mg/L	<0.0010	0.0010	09/14/16 12:06	
1,2-Dichloroethane-d4 (S)	%	98	86-125	09/14/16 12:06	
4-Bromofluorobenzene (S)	%	105	70-114	09/14/16 12:06	
Toluene-d8 (S)	%	102	87-113	09/14/16 12:06	

LABORATORY CONTROL SAMPLE & LCSD: 1704515

Parameter	Units	1706153								Qualifiers
		Spike Conc.	LCS Result	LCSD Result	LCS % Rec	LCSD % Rec	% Rec Limits	RPD	Max RPD	
1,1-Dichloroethene	mg/L	.02	0.017	0.021	87	104	70-130	18	40	
1,2-Dichloroethane	mg/L	.02	0.020	0.021	100	103	70-130	4	40	
1,4-Dichlorobenzene	mg/L	.02	0.017	0.017	86	85	70-130	2	40	
2-Butanone (MEK)	mg/L	.04	0.027	0.031	67	78	55-167	16	40	
Benzene	mg/L	.02	0.020	0.020	99	102	70-130	3	40	
Carbon tetrachloride	mg/L	.02	0.017	0.018	87	88	70-130	1	40	
Chlorobenzene	mg/L	.02	0.018	0.018	91	91	70-130	0	40	
Chloroform	mg/L	.02	0.019	0.019	93	93	70-130	0	40	
Tetrachloroethene	mg/L	.02	0.022	0.022	108	109	66-133	2	40	
Trichloroethene	mg/L	.02	0.021	0.022	103	108	70-130	5	40	
Vinyl chloride	mg/L	.02	0.016	0.017	82	84	69-140	3	40	
1,2-Dichloroethane-d4 (S)	%				99	101	86-125			
4-Bromofluorobenzene (S)	%				108	114	70-114			
Toluene-d8 (S)	%				96	97	87-113			

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QUALITY CONTROL DATA

Project: Roger Pump Commerce, GA

Pace Project No.: 35264002

QC Batch:	320107	Analysis Method:	EPA 8260
QC Batch Method:	EPA 8260	Analysis Description:	8260 MSV
Associated Lab Samples: 35264002002, 35264002003			

METHOD BLANK: 1702131 Matrix: Water

Associated Lab Samples: 35264002002, 35264002003

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
1,1,1-Trichloroethane	ug/L	<5.0	5.0	09/12/16 14:06	
1,1,2,2-Tetrachloroethane	ug/L	<5.0	5.0	09/12/16 14:06	
1,1,2-Trichloroethane	ug/L	<5.0	5.0	09/12/16 14:06	
1,1,2-Trichlorotrifluoroethane	ug/L	<10.0	10.0	09/12/16 14:06	
1,1-Dichloroethane	ug/L	<5.0	5.0	09/12/16 14:06	
1,1-Dichloroethene	ug/L	<5.0	5.0	09/12/16 14:06	
1,2,4-Trichlorobenzene	ug/L	<5.0	5.0	09/12/16 14:06	
1,2-Dibromo-3-chloropropane	ug/L	<5.0	5.0	09/12/16 14:06	
1,2-Dibromoethane (EDB)	ug/L	<5.0	5.0	09/12/16 14:06	
1,2-Dichlorobenzene	ug/L	<5.0	5.0	09/12/16 14:06	
1,2-Dichloroethane	ug/L	<5.0	5.0	09/12/16 14:06	
1,2-Dichloropropane	ug/L	<5.0	5.0	09/12/16 14:06	
1,3-Dichlorobenzene	ug/L	<5.0	5.0	09/12/16 14:06	
1,4-Dichlorobenzene	ug/L	<5.0	5.0	09/12/16 14:06	
2-Butanone (MEK)	ug/L	<50.0	50.0	09/12/16 14:06	
2-Hexanone	ug/L	<10.0	10.0	09/12/16 14:06	
4-Methyl-2-pentanone (MIBK)	ug/L	<10.0	10.0	09/12/16 14:06	
Acetone	ug/L	<50.0	50.0	09/12/16 14:06	
Benzene	ug/L	<5.0	5.0	09/12/16 14:06	
Bromodichloromethane	ug/L	<5.0	5.0	09/12/16 14:06	
Bromoform	ug/L	<5.0	5.0	09/12/16 14:06	
Bromomethane	ug/L	<5.0	5.0	09/12/16 14:06	
Carbon disulfide	ug/L	<10.0	10.0	09/12/16 14:06	
Carbon tetrachloride	ug/L	<5.0	5.0	09/12/16 14:06	
Chlorobenzene	ug/L	<5.0	5.0	09/12/16 14:06	
Chloroethane	ug/L	<10.0	10.0	09/12/16 14:06	
Chloroform	ug/L	<5.0	5.0	09/12/16 14:06	
Chloromethane	ug/L	<10.0	10.0	09/12/16 14:06	
cis-1,2-Dichloroethene	ug/L	<5.0	5.0	09/12/16 14:06	
cis-1,3-Dichloropropene	ug/L	<5.0	5.0	09/12/16 14:06	
Cyclohexane	ug/L	<5.0	5.0	09/12/16 14:06	
Dibromochloromethane	ug/L	<5.0	5.0	09/12/16 14:06	
Dichlorodifluoromethane	ug/L	<10.0	10.0	09/12/16 14:06	
Ethylbenzene	ug/L	<5.0	5.0	09/12/16 14:06	
Isopropylbenzene (Cumene)	ug/L	<5.0	5.0	09/12/16 14:06	
m&p-Xylene	ug/L	<5.0	5.0	09/12/16 14:06	
Methyl acetate	ug/L	<5.0	5.0	09/12/16 14:06	
Methyl-tert-butyl ether	ug/L	<5.0	5.0	09/12/16 14:06	
Methylcyclohexane	ug/L	<5.0	5.0	09/12/16 14:06	
Methylene Chloride	ug/L	<5.0	5.0	09/12/16 14:06	
o-Xylene	ug/L	<5.0	5.0	09/12/16 14:06	

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QUALITY CONTROL DATA

Project: Roger Pump Commerce, GA

Pace Project No.: 35264002

METHOD BLANK: 1702131

Matrix: Water

Associated Lab Samples: 35264002002, 35264002003

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Styrene	ug/L	<5.0	5.0	09/12/16 14:06	
Tetrachloroethene	ug/L	<5.0	5.0	09/12/16 14:06	
Toluene	ug/L	<5.0	5.0	09/12/16 14:06	
trans-1,2-Dichloroethene	ug/L	<5.0	5.0	09/12/16 14:06	
trans-1,3-Dichloropropene	ug/L	<5.0	5.0	09/12/16 14:06	
Trichloroethene	ug/L	<5.0	5.0	09/12/16 14:06	
Trichlorofluoromethane	ug/L	<5.0	5.0	09/12/16 14:06	
Vinyl chloride	ug/L	<2.0	2.0	09/12/16 14:06	
1,2-Dichloroethane-d4 (S)	%	99	86-125	09/12/16 14:06	
4-Bromofluorobenzene (S)	%	100	70-114	09/12/16 14:06	
Toluene-d8 (S)	%	98	87-113	09/12/16 14:06	

LABORATORY CONTROL SAMPLE: 1702132

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1,1,1-Trichloroethane	ug/L	20	18.0	90	70-130	
1,1,2,2-Tetrachloroethane	ug/L	20	19.0	95	70-130	
1,1,2-Trichloroethane	ug/L	20	18.4	92	70-130	
1,1,2-Trichlorotrifluoroethane	ug/L	20	23.0	115	70-130	
1,1-Dichloroethane	ug/L	20	18.1	91	70-130	
1,1-Dichloroethene	ug/L	20	18.1	91	70-130	
1,2,4-Trichlorobenzene	ug/L	20	19.4	97	70-130	
1,2-Dibromo-3-chloropropane	ug/L	20	21.2	106	64-130	
1,2-Dibromoethane (EDB)	ug/L	20	19.9	99	70-130	
1,2-Dichlorobenzene	ug/L	20	21.3	106	70-130	
1,2-Dichloroethane	ug/L	20	18.1	90	70-130	
1,2-Dichloropropane	ug/L	20	17.6	88	70-130	
1,3-Dichlorobenzene	ug/L	20	20.0	100	70-130	
1,4-Dichlorobenzene	ug/L	20	19.3	97	70-130	
2-Butanone (MEK)	ug/L	40	50.3	126	55-167	
2-Hexanone	ug/L	40	36.7	92	65-130	
4-Methyl-2-pentanone (MIBK)	ug/L	40	37.3	93	70-130	
Acetone	ug/L	40	55.9	140	40-150	
Benzene	ug/L	20	18.0	90	70-130	
Bromodichloromethane	ug/L	20	18.6	93	70-130	
Bromoform	ug/L	20	17.9	89	68-130	
Bromomethane	ug/L	20	17.5	88	38-179	
Carbon disulfide	ug/L	20	26.0	130	51-155	
Carbon tetrachloride	ug/L	20	18.1	91	70-130	
Chlorobenzene	ug/L	20	19.1	95	70-130	
Chloroethane	ug/L	20	29.6	148	59-149	
Chloroform	ug/L	20	17.8	89	70-130	
Chloromethane	ug/L	20	18.0	90	68-130	
cis-1,2-Dichloroethene	ug/L	20	17.1	85	70-130	

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: Roger Pump Commerce, GA

Pace Project No.: 35264002

LABORATORY CONTROL SAMPLE: 1702132

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
cis-1,3-Dichloropropene	ug/L	20	17.4	87	70-130	
Cyclohexane	ug/L	20	21.8	109	50-150	
Dibromochloromethane	ug/L	20	18.5	92	70-130	
Dichlorodifluoromethane	ug/L	20	14.4	72	67-130	
Ethylbenzene	ug/L	20	18.0	90	70-130	
Isopropylbenzene (Cumene)	ug/L	20	19.0	95	70-130	
m&p-Xylene	ug/L	40	37.5	94	70-130	
Methyl acetate	ug/L	20	29.3	146	50-150	
Methyl-tert-butyl ether	ug/L	20	20.3	101	70-130	
Methylcyclohexane	ug/L	20	21.1	106	50-150	
Methylene Chloride	ug/L	20	16.6	83	70-130	
o-Xylene	ug/L	20	18.1	91	70-130	
Styrene	ug/L	20	19.7	98	70-130	
Tetrachloroethene	ug/L	20	28.3	141	66-133	L0
Toluene	ug/L	20	18.1	91	70-130	
trans-1,2-Dichloroethene	ug/L	20	18.5	92	70-130	
trans-1,3-Dichloropropene	ug/L	20	16.3	81	70-130	
Trichloroethene	ug/L	20	18.1	91	70-130	
Trichlorofluoromethane	ug/L	20	22.2	111	70-131	
Vinyl chloride	ug/L	20	19.7	98	69-140	
1,2-Dichloroethane-d4 (S)	%			101	86-125	
4-Bromofluorobenzene (S)	%			99	70-114	
Toluene-d8 (S)	%			100	87-113	

MATRIX SPIKE SAMPLE: 1703436

Parameter	Units	35264218003 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
1,1,1-Trichloroethane	ug/L	<0.50	20	18.0	90	70-130	
1,1,2,2-Tetrachloroethane	ug/L	<0.12	20	19.8	99	70-130	
1,1,2-Trichloroethane	ug/L	<0.50	20	18.9	94	70-130	
1,1,2-Trichlorotrifluoroethane	ug/L	<0.50	20	25.2	126	70-130	
1,1-Dichloroethane	ug/L	<0.50	20	17.5	88	70-130	
1,1-Dichloroethene	ug/L	<0.50	20	17.6	88	70-130	
1,2,4-Trichlorobenzene	ug/L	<0.50	20	17.7	88	70-130	
1,2-Dibromo-3-chloropropane	ug/L	<1.0	20	20.1	101	70-130	
1,2-Dibromoethane (EDB)	ug/L	<0.50	20	19.3	96	70-130	
1,2-Dichlorobenzene	ug/L	<0.50	20	20.0	100	70-130	
1,2-Dichloroethane	ug/L	<0.50	20	17.7	88	70-130	
1,2-Dichloropropane	ug/L	<0.50	20	18.1	91	70-130	
1,3-Dichlorobenzene	ug/L	<0.50	20	19.9	99	70-130	
1,4-Dichlorobenzene	ug/L	<0.50	20	18.9	94	70-130	
2-Butanone (MEK)	ug/L	<5.0	40	<50.0	110	70-130	
2-Hexanone	ug/L	<5.0	40	36.5	91	70-130	
4-Methyl-2-pentanone (MIBK)	ug/L	<5.0	40	35.9	90	70-130	
Acetone	ug/L	<10.0	40	<50.0	95	70-130	

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: Roger Pump Commerce, GA

Pace Project No.: 35264002

MATRIX SPIKE SAMPLE: 1703436		35264218003	Spike	MS	MS	% Rec	
Parameter	Units	Result	Conc.	Result	% Rec	Limits	Qualifiers
Benzene	ug/L	<0.10	20	17.3	86	70-130	
Bromodichloromethane	ug/L	<0.27	20	18.9	95	70-130	
Bromoform	ug/L	<0.50	20	18.1	90	70-130	
Bromomethane	ug/L	<0.50	20	9.5	48	70-130	M1
Carbon disulfide	ug/L	<5.0	20	25.5	127	70-130	
Carbon tetrachloride	ug/L	<0.50	20	18.3	91	70-130	
Chlorobenzene	ug/L	<0.50	20	19.7	99	70-130	
Chloroethane	ug/L	<0.50	20	13.6	68	70-130	M1
Chloroform	ug/L	<0.50	20	17.8	89	70-130	
Chloromethane	ug/L	<0.62	20	13.0	65	70-130	M1
cis-1,2-Dichloroethene	ug/L	<0.50	20	16.5	82	70-130	
cis-1,3-Dichloropropene	ug/L	<0.25	20	18.3	92	70-130	
Cyclohexane	ug/L	<0.50	20	22.3	111	50-150	
Dibromochloromethane	ug/L	<0.26	20	18.7	93	70-130	
Dichlorodifluoromethane	ug/L	<0.50	20	10.8	54	70-130	M1
Ethylbenzene	ug/L	<0.50	20	18.5	93	70-130	
Isopropylbenzene (Cumene)	ug/L	<0.50	20	19.6	98	70-130	
m&p-Xylene	ug/L	<1.0	40	38.6	96	70-130	
Methyl acetate	ug/L	<1.0	20	19.3	97	50-150	
Methyl-tert-butyl ether	ug/L	<0.50	20	18.8	94	70-130	
Methylcyclohexane	ug/L	<0.50	20	22.2	111	50-150	
Methylene Chloride	ug/L	<2.5	20	16.5	83	70-130	
o-Xylene	ug/L	<0.50	20	18.9	94	70-130	
Styrene	ug/L	<0.50	20	19.7	99	70-130	
Tetrachloroethene	ug/L	<0.50	20	16.2	81	70-130	
Toluene	ug/L	<0.50	20	18.0	90	70-130	
trans-1,2-Dichloroethene	ug/L	<0.50	20	16.7	83	70-130	
trans-1,3-Dichloropropene	ug/L	<0.25	20	17.1	85	70-130	
Trichloroethene	ug/L	<0.50	20	18.7	94	70-130	
Trichlorofluoromethane	ug/L	<0.50	20	18.2	91	70-130	
Vinyl chloride	ug/L	<0.50	20	13.4	67	70-130	M1
1,2-Dichloroethane-d4 (S)	%				101	86-125	
4-Bromofluorobenzene (S)	%				102	70-114	
Toluene-d8 (S)	%				98	87-113	

SAMPLE DUPLICATE: 1703435

Parameter	Units	35264218002	Dup	RPD	Qualifiers
		Result	Result		
1,1,1-Trichloroethane	ug/L	<0.50	<5.0		
1,1,2,2-Tetrachloroethane	ug/L	<0.12	<5.0		
1,1,2-Trichloroethane	ug/L	<0.50	<5.0		
1,1,2-Trichlorotrifluoroethane	ug/L	<0.50	<10.0		
1,1-Dichloroethane	ug/L	<0.50	<5.0		
1,1-Dichloroethene	ug/L	<0.50	<5.0		
1,2,4-Trichlorobenzene	ug/L	<0.50	<5.0		

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QUALITY CONTROL DATA

Project: Roger Pump Commerce, GA

Pace Project No.: 35264002

SAMPLE DUPLICATE: 1703435

Parameter	Units	35264218002 Result	Dup Result	RPD	Qualifiers
1,2-Dibromo-3-chloropropane	ug/L	<1.0	<5.0		
1,2-Dibromoethane (EDB)	ug/L	<0.50	<5.0		
1,2-Dichlorobenzene	ug/L	<0.50	<5.0		
1,2-Dichloroethane	ug/L	<0.50	<5.0		
1,2-Dichloropropane	ug/L	<0.50	<5.0		
1,3-Dichlorobenzene	ug/L	<0.50	<5.0		
1,4-Dichlorobenzene	ug/L	<0.50	<5.0		
2-Butanone (MEK)	ug/L	<5.0	<50.0		
2-Hexanone	ug/L	<5.0	<10.0		
4-Methyl-2-pentanone (MIBK)	ug/L	<5.0	<10.0		
Acetone	ug/L	<10.0	<50.0		
Benzene	ug/L	<0.10	<5.0		
Bromodichloromethane	ug/L	<0.27	<5.0		
Bromoform	ug/L	<0.50	<5.0		
Bromomethane	ug/L	<0.50	<5.0		
Carbon disulfide	ug/L	<5.0	<10.0		
Carbon tetrachloride	ug/L	<0.50	<5.0		
Chlorobenzene	ug/L	<0.50	<5.0		
Chloroethane	ug/L	<0.50	<10.0		
Chloroform	ug/L	<0.50	<5.0		
Chloromethane	ug/L	<0.62	<10.0		
cis-1,2-Dichloroethene	ug/L	<0.50	<5.0		
cis-1,3-Dichloropropene	ug/L	<0.25	<5.0		
Cyclohexane	ug/L	<0.50	<5.0		
Dibromochloromethane	ug/L	<0.26	<5.0		
Dichlorodifluoromethane	ug/L	<0.50	<10.0		
Ethylbenzene	ug/L	<0.50	<5.0		
Isopropylbenzene (Cumene)	ug/L	<0.50	<5.0		
m&p-Xylene	ug/L	<1.0	<5.0		
Methyl acetate	ug/L	<1.0	<5.0		
Methyl-tert-butyl ether	ug/L	<0.50	<5.0		
Methylcyclohexane	ug/L	<0.50	<5.0		
Methylene Chloride	ug/L	<2.5	<5.0		
o-Xylene	ug/L	<0.50	<5.0		
Styrene	ug/L	<0.50	<5.0		
Tetrachloroethene	ug/L	<0.50	<5.0		
Toluene	ug/L	<0.50	<5.0		
trans-1,2-Dichloroethene	ug/L	<0.50	<5.0		
trans-1,3-Dichloropropene	ug/L	<0.25	<5.0		
Trichloroethene	ug/L	<0.50	<5.0		
Trichlorofluoromethane	ug/L	<0.50	<5.0		
Vinyl chloride	ug/L	<0.50	<2.0		
1,2-Dichloroethane-d4 (S)	%	101	102	1	
4-Bromofluorobenzene (S)	%	102	99	3	
Toluene-d8 (S)	%	100	101	1	

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QUALIFIERS

Project: Roger Pump Commerce, GA

Pace Project No.: 35264002

DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to dilution of the sample aliquot.

ND - Not Detected at or above adjusted reporting limit.

J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

MDL - Adjusted Method Detection Limit.

PQL - Practical Quantitation Limit.

RL - Reporting Limit.

S - Surrogate

1,2-Diphenylhydrazine decomposes to and cannot be separated from Azobenzene using Method 8270. The result for each analyte is a combined concentration.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

U - Indicates the compound was analyzed for, but not detected.

N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.

Pace Analytical is TNI accredited. Contact your Pace PM for the current list of accredited analytes.

TNI - The NELAC Institute.

LABORATORIES

PASI-O Pace Analytical Services - Ormond Beach

BATCH QUALIFIERS

Batch: 320506

[M5] A matrix spike/matrix spike duplicate was not performed for this batch due to insufficient sample volume.

ANALYTE QUALIFIERS

L0 Analyte recovery in the laboratory control sample (LCS) was outside QC limits.

L3 Analyte recovery in the laboratory control sample (LCS) exceeded QC limits. Analyte presence below reporting limits in associated samples. Results unaffected by high bias.

M1 Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

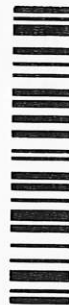
Project: Roger Pump Commerce, GA

Pace Project No.: 35264002

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
35264002001	16244-TCLP	EPA 3010	320275	EPA 6010	320410
35264002001	16244-TCLP	EPA 7470	320316	EPA 7470	320501
35264002001	16244-TCLP	EPA 8260 TCLP	320506		
35264002002	Trip Blank_20160902	EPA 8260	320107		
35264002003	16246-MW-18	EPA 8260	320107		

REPORT OF LABORATORY ANALYSIS

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35264002

Section

Required Project Information:

וועבזייטל: www.berkmancenter.org

Report To:	Mr. Justin Vickery
Copy To:	
Purchase Order #:	
Project Name:	Roper Pump Commerce, GA
Project #:	
Attention:	
Company Name:	
Address:	
Pace Quote:	
Pace Project Manager:	todd.res@pacelabs.com,
Pace Profile #:	8068

Page: 1 Of 1

Analytical Request Document

DOCUMENT. All relevant fields must be completed accurately.

[illegible]

	Document Name:	Document Revised:
	Sample Condition Upon Receipt Form	August 10, 2016
	Document No.: F-FL-C-007 rev. 10	Issuing Authority: Pace Florida Quality Office

WO#: 35264002

Project: PM: TSR Due Date: 09/14/16
Project Manager: CLIENT: ENVIPS
Client:

Date and Initials of person:

Examining contents: _____
 Label: _____
 Deliver: _____
 pH: _____

Thermometer Used: T22 Date: 9/7/16 Time: 1150 Initials: RM

Samples shorted to lab (If Yes, complete) Shorted Date: _____ Shorted Time: _____ Qty: _____

Cooler #1 Temp. °C <u>1.7</u> (Visual) <u>-0.1</u> (Correction Factor) <u>1.6</u> (Actual)	☐ Samples on ice, cooling process has begun
Cooler #2 Temp. °C _____ (Visual) _____ (Correction Factor) _____ (Actual)	☐ Samples on ice, cooling process has begun
Cooler #3 Temp. °C _____ (Visual) _____ (Correction Factor) _____ (Actual)	☐ Samples on ice, cooling process has begun
Cooler #4 Temp. °C _____ (Visual) _____ (Correction Factor) _____ (Actual)	☐ Samples on ice, cooling process has begun
Cooler #5 Temp. °C _____ (Visual) _____ (Correction Factor) _____ (Actual)	☐ Samples on ice, cooling process has begun
Cooler #6 Temp. °C _____ (Visual) _____ (Correction Factor) _____ (Actual)	☐ Samples on ice, cooling process has begun

Courier: ☒ Fed Ex ☐ UPS ☐ USPS ☐ Client ☐ Commercial ☐ Pace ☐ Other _____
 Shipping Method: ☐ First Overnight ☐ Priority Overnight ☒ Standard Overnight ☐ Ground ☐ Other _____
 Billing: ☒ Recipient ☐ Sender ☐ Third Party ☐ Unknown
 Tracking # 6812 5098 9098

Custody Seal on Cooler/Box Present: ☐ Yes ☒ No Seals intact: ☐ Yes ☐ No Ice: Wet Blue None
 Packing Material: ☐ Bubble Wrap ☒ Bubble Bags ☐ None ☐ Other _____

Comments:

Chain of Custody Present	☐ Yes ☐ No ☐ N/A	Preservation Information: Preservative: _____ Lot #/Trace #: _____ Date: _____ Time: _____ Initials: _____
Chain of Custody Filled Out	☐ Yes ☐ No ☐ N/A	
Relinquished Signature & Sampler Name COC	☐ Yes ☐ No ☐ N/A	
Samples Arrived within Hold Time	☐ Yes ☐ No ☐ N/A	
Rush TAT requested on COC	☐ Yes ☐ No ☒ N/A	
Sufficient Volume	☐ Yes ☐ No ☐ N/A	
Correct Containers Used	☐ Yes ☐ No ☐ N/A	
Containers Intact	☐ Yes ☐ No ☐ N/A	
Sample Labels match COC (sample IDs & date/time of collection)	☐ Yes ☐ No ☐ N/A	
All containers needing acid/base preservation have been checked.	☐ Yes ☐ No ☒ N/A	
All Containers needing preservation are found to be in compliance with EPA recommendation:	☐ Yes ☐ No ☒ N/A	
Exceptions: VOA, Coliform, TOC, O&G, Carbamates		
Headspace in VOA Vials? (>6mm):	☐ Yes ☐ No ☐ N/A	
Trip Blank Present:	☐ Yes ☐ No ☐ N/A	

Client Notification/ Resolution:

Person Contacted: _____ Date/Time: _____

Comments/ Resolution (use back for additional comments): _____

Project Manager Review: _____ Date: _____

APPENDIX F

Monthly SVE System Monitoring Records

SVE System Inspection Form

Roper Pump

Commerce, Georgia

Date

03-18-2016

Technician

Roy L. Amos

Exterior Manifold	Vacuum (in Hg)	PID (ppm)	Gate Valve	
			Open	Closed
Line 1-1	1.0	2.1	✓	
Line 1-2	2.5	5.2	✓	
Line 1-3	2.5	8.1	✓	
Line 1-4	1.5	1.5	✓	
Line 2-1	2.5	1.2	✓	
Line 2-2	1.0	8.4	✓	
Line 2-3	2.5	2.6	✓	
Line 2-4	1.0	30.2	✓	
Line 2-5	2.0	6.0	✓	
Line 3-1	2.0	3.8	✓	
Line 3-2	2.0	10.7	✓	
Line 3-3	1.5	1.2	✓	
Line 3-4	1.0	1.2	✓	
Line 3-5	2.0	1.0	✓	
Line 4-1	2.5	—		✓
Line 4-2	1.5	1.2	✓	
Line 4-3	1.0	1.2	✓	
Line 4-4	2.0	1.2	✓	
Line 4-5	2.0	1.4	✓	

Location	Vacuum (in H ₂ O)	PID (ppm)	Butterfly Valve (% Open)
VI & BFV-201 (interior manifold)	45	4	100%
VI & BFV-202 (interior manifold)	42	1.2	100%
VI & BFV-203 (interior manifold)	40	3.0	100%
VI & BFV-204 (interior manifold)	40	1.6	100%
VI-205 (knock-out tank)	45	1.3	
VI-206 (particulate filter)	52		
Carbon Canister 1	45	1.6	
Carbon Canister 2	52	1.8	
BFV-205 (carbon bypass)			

Control Panel Readings		
VT-201	45.5	in H ₂ O
FT-201	40	in H ₂ O

Pressure Gauge	Pressure (psi)
P-201 (blower discharge)	0
P-202 (transfer pump)	0

Temperature Gauge	°C
T-201 (blower discharge)	48°C

Routine Maintenance	
Clean Air Filter	
Previous Cleaning	2-19
Next Cleaning Due	5-20
Grease Blower	
Previous Application	2-19
Next Application Due	5-20

Magnehelic Gauge	Pressure (in H ₂ O)
Before dilution valve	40
After dilution valve	185

Comments:

4.1 kg Under
Water Water

SVE System Inspection Form

Roper Pump

Commerce, Georgia

Date 04-20-2016

Technician ROY L. AMOS

Exterior Manifold	Vacuum (in Hg)	PID (ppm)	Gate Valve	
			Open	Closed
Line 1-1	1.0	2.1	✓	
Line 1-2	2.5	5.0	✓	
Line 1-3	2.5	7.9	✓	
Line 1-4	.5	1.7	✓	
Line 2-1	2.0	1.0	✓	
Line 2-2	1.0	8.6	✓	
Line 2-3	2.5	2.5	✓	
Line 2-4	1.0	28.6	✓	
Line 2-5	2.0	6.0	✓	
Line 3-1	2.0	4.1	✓	
Line 3-2	2.0	8.7	✓	
Line 3-3	1.5	1.3	✓	
Line 3-4	1.0	1.2	✓	
Line 3-5	2.0	.8	✓	
Line 4-1	2.5	—		✓
Line 4-2	1.5	.4	✓	
Line 4-3	1.0	.5	✓	
Line 4-4	2.0	.7	✓	
Line 4-5	2.0	1.0	✓	

Location	Vacuum (in H ₂ O)	PID (ppm)	Butterfly Valve (% Open)
VI & BFV-201 (interior manifold)	43	.5	100 %
VI & BFV-202 (interior manifold)	40	1.0	100 %
VI & BFV-203 (interior manifold)	40	3.2	100 %
VI & BFV-204 (interior manifold)	40	1.8	100 %
VI-205 (knock-out tank)	45	1.5	
VI-206 (particulate filter)	54		
Carbon Canister 1	44	.7	
Carbon Canister 2	50	.8	
BFV-205 (carbon bypass)			

Routine Maintenance	
Clean Air Filter	
Previous Cleaning	02-19
Next Cleaning Due	05-20
Grease Blower	
Previous Application	02-19
Next Application Due	05-20

Magnehelic Gauge	Pressure (in H ₂ O)
Before dilution valve	.40
After dilution valve	.85

Control Panel Readings	
VT-201	45.5 in H ₂ O
FT-201	.40 in H ₂ O

Pressure Gauge	Pressure (psi)
P-201 (blower discharge)	0
P-202 (transfer pump)	0

Temperature Gauge	°C
T-201 (blower discharge)	47°C

Comments:

4-1 is Under Water

SVE System Inspection Form

Roper Pump

Commerce, Georgia

Date 05-12-2016Technician ROY L. AMOS

Exterior Manifold	Vacuum (in Hg)	PID (ppm)	Gate Valve	
			Open	Closed
Line 1-1	1.0	2.1	✓	
Line 1-2	2.5	5.0	✓	
Line 1-3	2.5	8.3	✓	
Line 1-4	.5	.5	✓	
Line 2-1	2.5	1.2	✓	
Line 2-2	1.0	9.0	✓	
Line 2-3	2.5	3.0	✓	
Line 2-4	1.0	32.0	✓	
Line 2-5	2.0	6.0	✓	
Line 3-1	2.0	4.1	✓	
Line 3-2	2.0	9.9	✓	
Line 3-3	1.5	1.3	✓	
Line 3-4	1.0	1.0	✓	
Line 3-5	2.0	.8	✓	
Line 4-1	2.5	—		✓
Line 4-2	1.5	.3	✓	
Line 4-3	1.0	.2	✓	
Line 4-4	2.0	.7	✓	
Line 4-5	2.0	1.0	✓	

Location	Vacuum (in H ₂ O)	PID (ppm)	Butterfly Valve (% Open)
VI & BFV-201 (interior manifold)	43	.5	100%
VI & BFV-202 (interior manifold)	42	1.0	100%
VI & BFV-203 (interior manifold)	41	3.2	100%
VI & BFV-204 (interior manifold)	41	1.8	100%
VI-205 (knock-out tank)	44	1.5	
VI-206 (particulate filter)	54		
Carbon Canister 1	44	.6	
Carbon Canister 2	50	.7	
BFV-205 (carbon bypass)			CLOSED

Control Panel Readings		
VT-201	45.5	in H ₂ O
FT-201	.45	in H ₂ O

Pressure Gauge	Pressure (psi)
P-201 (blower discharge)	0
P-202 (transfer pump)	0

Temperature Gauge	°C
T-201 (blower discharge)	48 °C

Routine Maintenance	
Clean Air Filter	
Previous Cleaning	11-16-15
Next Cleaning Due	02-16-18
Grease Blower	
Previous Application	11-16-15
Next Application Due	02-16-16

Magnehelic Gauge	Pressure (in H ₂ O)
Before dilution valve	.42
After dilution valve	.85

Comments:

4-1
- (completely Full of
Water)

SVE System Inspection Form

Roper Pump

Commerce, Georgia

Date 06-16-2016

Technician Roy L. Amos

Exterior Manifold	Vacuum (in Hg)	PID (ppm)	Gate Valve	
			Open	Closed
Line 1-1	1.0	2.1	✓	
Line 1-2	2.5	5.2	✓	
Line 1-3	2.5	8.1	✓	
Line 1-4	1.5	1.5	✓	
Line 2-1	2.5	1.2	✓	
Line 2-2	1.0	8.4	✓	
Line 2-3	2.5	2.6	✓	
Line 2-4	1.0	30.2	✓	
Line 2-5	2.0	6.0	✓	
Line 3-1	2.0	3.8	✓	
Line 3-2	2.0	10.7	✓	
Line 3-3	1.5	1.2	✓	
Line 3-4	1.0	1.2	✓	
Line 3-5	2.0	1.0	✓	
Line 4-1	2.5	—		✓
Line 4-2	1.5	1.2	✓	
Line 4-3	1.0	1.2	✓	
Line 4-4	2.0	1.2	✓	
Line 4-5	2.0	1.4	✓	

Location	Vacuum (in H ₂ O)	PID (ppm)	Butterfly Valve (% Open)
VI & BFV-201 (interior manifold)	45	.4	100%
VI & BFV-202 (interior manifold)	42	1.2	100%
VI & BFV-203 (interior manifold)	40	3.0	100%
VI & BFV-204 (interior manifold)	40	1.6	100%
VI-205 (knock-out tank)	45	1.3	
VI-206 (particulate filter)	52		
Carbon Canister 1	45	1.6	
Carbon Canister 2	52	1.8	
BFV-205 (carbon bypass)			

Routine Maintenance	
Clean Air Filter	
Previous Cleaning	2-19
Next Cleaning Due	5-20
Grease Blower	
Previous Application	2-19
Next Application Due	5-20

Magnehelic Gauge	Pressure (in H ₂ O)
Before dilution valve	4.0
After dilution valve	1.85

Control Panel Readings	
VT-201	45.5 in H ₂ O
FT-201	140 in H ₂ O

Pressure Gauge	Pressure (psi)
P-201 (blower discharge)	0
P-202 (transfer pump)	0

Temperature Gauge	°C
T-201 (blower discharge)	48°C

Comments:

4.1 kg Under
water water

SVE System Inspection Form

Roper Pump

Commerce, Georgia

Date

07-20-2016

Technician

Roy L. Amos

Exterior Manifold	Vacuum (in Hg)	PID (ppm)	Gate Valve	
			Open	Closed
Line 1-1	1.5	33.1		
Line 1-2	2.5	26.0		
Line 1-3	2.5	22.4		
Line 1-4	1.0	15.2		
Line 2-1	2.5	27.1		
Line 2-2	1.0	21.3		
Line 2-3	2.5	53.2		
Line 2-4	1.0	127.6		
Line 2-5	2.0	5.3		
Line 3-1	2.0	26.5		
Line 3-2	1.5	17.2		
Line 3-3	1.0	18.4		
Line 3-4	1.0	18.2		
Line 3-5	1.5	15.4		
Line 4-1	1.0			
Line 4-2	1.0	18.1		
Line 4-3	1.5	18.1		
Line 4-4	1.0	17.5		
Line 4-5	1.5	14.0		

Location	Vacuum (in H ₂ O)	PID (ppm)	Butterfly Valve (% Open)
VI & BFV-201 (interior manifold)	43	9.6	100%
VI & BFV-202 (interior manifold)	40	10.5	100%
VI & BFV-203 (interior manifold)	40	10.4	100%
VI & BFV-204 (interior manifold)	41	9.1	100%
VI-205 (knock-out tank)	48	6.4	
VI-206 (particulate filter)	52		
Carbon Canister 1	50	103	
Carbon Canister 2	46	104	
BFV-205 (carbon bypass)			

Routine Maintenance	
Clean Air Filter	
Previous Cleaning	7-20
Next Cleaning Due	10-20
Grease Blower	
Previous Application	7-20
Next Application Due	10-20

Magnehelic Gauge	Pressure (in H ₂ O)
Before dilution valve	
After dilution valve	-90

Control Panel Readings	
VT-201	45.5 in H ₂ O
FT-201	0.35 in H ₂ O

Pressure Gauge	Pressure (psi)
P-201 (blower discharge)	2.0
P-202 (transfer pump)	8.9

Temperature Gauge	Temperature (°C)
T-201 (blower discharge)	60
	10

Comments:

4.1 Re. Blower Water

SVE System Inspection Form

Roper Pump

Commerce, Georgia

Date 08-19-2016

Technician ROY L AMOS

Exterior Manifold	Vacuum (in Hg)	PID (ppm)	Gate Valve	
			Open	Closed
Line 1-1	1.5	33.1		
Line 1-2	2.5	20.0		
Line 1-3	2.5	20.0		
Line 1-4	1.0	15.6		
Line 2-1	2.5	25.2		
Line 2-2	1.0	18.3		
Line 2-3	2.5	50.1		
Line 2-4	1.0	129.0		
Line 2-5	2.0	5.0		
Line 3-1	2.0	23.4		
Line 3-2	2.5	14.0		
Line 3-3	1.0	17.4		
Line 3-4	1.0	16.8		
Line 3-5	1.5	14.6		
Line 4-1	1.0			
Line 4-2	1.0	16.7		
Line 4-3	1.5	16.3		
Line 4-4	1.0	15.2		
Line 4-5	1.5	12.0		

Location	Vacuum (in H ₂ O)	PID (ppm)	Butterfly Valve (% Open)
VI & BFV-201 (interior manifold)	43	9.3	100%
VI & BFV-202 (interior manifold)	40	10	100%
VI & BFV-203 (interior manifold)	41	10.2	100%
VI & BFV-204 (interior manifold)	41	9.0	100%
VI-205 (knock-out tank)	48	6.0	
VI-206 (particulate filter)	55		
Carbon Canister 1	50	103	
Carbon Canister 2	46	104	
BFV-205 (carbon bypass)			

Routine Maintenance	
Clean Air Filter	
Previous Cleaning	7-20
Next Cleaning Due	10-20
Grease Blower	
Previous Application	7-20
Next Application Due	10-20

Magnehelic Gauge	Pressure (in H ₂ O)
Before dilution valve	
After dilution valve	190

Control Panel Readings	
VT-201	45.5 in H ₂ O
FT-201	0.40 in H ₂ O

Pressure Gauge	Pressure (psi)
P-201 (blower discharge)	2.0
P-202 (transfer pump)	5.9

Temperature Gauge	Temperature (°C)
T-201 (blower discharge)	110

Comments:

4-1 IS STILL UNDER
WATER