

**Emergency Discharges / Spills should be reported via the 24-Hour Hotline: 1-800-943-0003**

**Notice: Hazardous substance discharges must be reported immediately** according to s. 292.11 Wis. Stats. Non-emergency hazardous substance discharges may be reported by telefaxing or e-mailing a completed report to the Department, or calling or visiting a Department office in person. If you choose to notify the Department by telefax or by email, you should use this form to be sure that all necessary information is included. However, use of this form is not mandatory. Under s. 292.99, Wis. Stats., the penalty for violating the reporting requirements of ch. 292 Wis. Stats., shall be no less than \$10 nor more than \$5000 for each violation. Each day of continued violation is a separate offense. It is not the Department's intention to use any personally identifiable information from this form for any purpose other than program administration. However, information submitted on this form may also be made available to requesters under Wisconsin's Open Records Law (ss. 19.31 – 19.39, Wis. Stats.).

Confirmatory laboratory data should be included with this form, to assist the DNR in processing this Hazardous Substance Release Notification.

Complete this form. **TYPE or PRINT LEGIBLY.** NOTIFY appropriate DNR region (see next page) **IMMEDIATELY** upon discovery of a potential release from (**check one**):

- Underground Petroleum Storage Tank System (additional information may be required for Item 6 below)
- Aboveground Petroleum Storage Tank System
- Dry Cleaner Facility
- Other - Describe: \_\_\_\_\_

ATTN DNR: **R & R Program Associate** Date DNR Notified: **02/26/2020**

1. Discharge Reported By		
Name <b>KYLE HENNING</b>	Firm <b>UNITED ENGINEERING CONSULTANT</b>	Phone Number (include area code) <b>(262) 785-1447</b>
Mailing Address <b>2938 S. 166TH STREET, NEW BERLIN, WI 53151</b>	Email <b>KHUEC@SBCGLOBAL.NET</b>	

2. Site Information	
Name of site at which discharge occurred. Include local name of site/business, not responsible party name, unless a residence/vacant property. <b>CALUMET VILLAGE</b>	
Location: Include street address, <u>not PO Box</u> . If no street address, describe as precisely as possible, i.e., 1/4 mile NW of CTHs 60 & 123 on E side of CTH 60. <b>1717 E. CALUMET STREET</b>	
Municipality: (City, Village, Township) Specify municipality in which the site is located, not mailing address/city. <b>APPLETON, WI 54911</b>	
County <b>Calumet</b>	Legal Description: <b>NW ¼ of NW ¼ Section 5, Town 20 N, Range 18 <input checked="" type="radio"/> E <input type="radio"/> W</b>
WTM: <b>X 649433 Y 420221</b>	

3. Responsible Party (RP) and/or RP Representative	
Responsible Party Name: Business or owner name that is responsible for cleanup. If more than one, list all. Attach additional pages as necessary. <b>BRIDGEVIEW ASSOCIATES LLP</b>	

A local governmental unit claiming an exemption from state Spill Law and Solid Waste Management responsibilities for the discharge being reported, per Wis. Stat. §§ 292.11(9)(e) and 292.23, should: 1) check this box; 2) review [DNR publication RR-055](#); and 3) provide documentation to DNR that demonstrates compliance with the statutory requirements of the liability exemptions. Local governmental units may also request a fee-based liability clarification letter from DNR by using [DNR Form 4400-237](#).

Contact Person Name (if different) <b>STEVE WINTER</b>	Phone Number <b>(920) 733-3214</b>	Email <b>SWINTER@ROLLIEWINTER.COM</b>		
Mailing Address <b>3305 NORTH BALLARD ROAD, SUITE C</b>	City <b>APPLETON</b>	State <b>WI</b>	ZIP Code <b>54911</b>	

Responsible Party Name: Business or owner name that is responsible for cleanup. If more than one, list all. Attach additional pages as necessary.

Contact Person Name (if different)	Phone Number	Email		
Mailing Address	City	State	ZIP Code	

(continued)

## Notification For Hazardous Substance Discharge (Non-Emergency Only)

### 4. Hazardous Substance Information

Identify hazardous substance discharged (check all that apply):

- |  |  |   |
|--|--|---|
| <input checked="" type="checkbox"/> VOCs<br><input checked="" type="checkbox"/> PCE<br><input checked="" type="checkbox"/> TCE<br><input type="checkbox"/> Other Chlorinated<br><input type="checkbox"/> Diesel<br><input type="checkbox"/> Fuel Oil<br><input type="checkbox"/> Gasoline<br><input type="checkbox"/> Hydraulic Oil<br><input type="checkbox"/> Jet Fuel | <i>(VOCs continued)</i><br><input type="checkbox"/> Mineral Oil<br><input type="checkbox"/> Waste Oil<br><input type="checkbox"/> Petroleum-Unknown Type<br><input type="checkbox"/> PAHs<br><input type="checkbox"/> PCBs<br><input type="checkbox"/> Cyanide<br><input type="checkbox"/> Leachate<br><input type="checkbox"/> Manure | <input type="checkbox"/> Metals<br><input type="checkbox"/> Arsenic<br><input type="checkbox"/> Chromium<br><input type="checkbox"/> Lead<br><input type="checkbox"/> Other: _____<br><input type="checkbox"/> Pesticides: _____<br><input type="checkbox"/> Fertilizer: _____<br><input type="checkbox"/> RCRA Hazardous Waste: _____<br><input type="checkbox"/> Other: _____<br><input type="checkbox"/> Unknown |
|--|--|---|

### 5. Impacts to the Environment Information

Enter "K" for known/confirmed or "P" for potential for all that apply.

- |  |   |  |
|--|---|--|
| <input type="checkbox"/> Air Contamination                       | <input type="checkbox"/> Fire Explosion Threat                | <input type="checkbox"/> Soil Contamination            |
| <input type="checkbox"/> Co-mingled (Petroleum & Non-Petroleum)  | <input type="checkbox"/> Free Product                         | <input type="checkbox"/> Soil Gas Contamination        |
| <input type="checkbox"/> Contamination in Fractured Bedrock      | <input checked="" type="checkbox"/> Groundwater Contamination | <input type="checkbox"/> Sub-slab Vapor Contamination  |
| <input type="checkbox"/> Contamination Within 1 Meter of Bedrock | <input checked="" type="checkbox"/> Off-Site Contamination    | <input type="checkbox"/> Surface Water Contamination   |
| <input type="checkbox"/> Contaminated Private Well               | <input type="checkbox"/> Sanitary Sewer Contamination         | <input type="checkbox"/> Within 100 ft of Private Well |
| <input type="checkbox"/> Contaminated Public Well                | <input type="checkbox"/> Storm Sewer Contamination            | <input type="checkbox"/> Within 1000 ft of Public Well |
| <input type="checkbox"/> Contamination in Right of Way           | <input type="checkbox"/> Sediment Contamination               |  |
|  | Other (specify): _____  |  |

Contamination was discovered as a result of:

- |  |   |  |
|--|---|--|
| <input type="checkbox"/> Tank closure assessment | <input checked="" type="checkbox"/> Site assessment | <input type="checkbox"/> Other - Describe: _____ |
| Date <input type="text"/>                        | Date <input type="text" value="11/21/2019"/>        | Date <input type="text"/>                        |

Lab results:  Lab results will be faxed upon receipt  Lab results are attached

Additional Comments: Include a brief description of immediate actions taken to halt the release and contain or cleanup hazardous substances that have been discharged.

### 6. Federal Energy Act Requirements (Section 9002(d) of the Solid Waste Disposal Act (SWDA))

	Source	Cause
For all confirmed releases from USTs occurring after 9/30/2007 please provide the following information:  <input checked="" type="checkbox"/> Does not apply.	<input type="checkbox"/> Tank <input type="checkbox"/> Piping <input type="checkbox"/> Dispenser <input type="checkbox"/> Submersible Turbine Pump <input type="checkbox"/> Delivery Problem  <input type="checkbox"/> Other (specify): _____	<input type="checkbox"/> Spill <input type="checkbox"/> Overfill <input type="checkbox"/> Corrosion <input type="checkbox"/> Physical or Mechanical Damage <input type="checkbox"/> Installation Problem <input type="checkbox"/> Other (does not fit any of above) <input type="checkbox"/> Unknown

Contact information to report non-emergency releases in DNR's five regions are as follows:

- Northeast Region (FAX: 920-662-5413); Attention -- R&R Program Associate:** DNRRRNER@wisconsin.gov  
 Brown, Calumet, Door, Fond du Lac (**except City of Waupun - see South Central Region**), Green Lake, Kewaunee, Manitowoc, Marinette, Marquette, Menominee, Oconto, Outagamie, Shawano, Sheboygan, Waupaca, Waushara, Winnebago counties
- Northern Region (FAX: 715-623-6773); Attention -- R&R Program Associate:** DNRRRNOR@wisconsin.gov  
 Ashland, Barron, Bayfield, Burnett, Douglas, Forest, Florence, Iron, Langlade, Lincoln, Oneida, Polk, Price, Rusk, Sawyer, Taylor, Vilas, Washburn counties
- South Central Region (FAX: 608-273-5610); Attention -- R&R Program Associate:** DNRRRSCR@wisconsin.gov  
 Columbia, Dane, Dodge, Fond du Lac (**City of Waupun only**), Grant, Green, Iowa, Jefferson, Lafayette, Richland, Rock, Sauk, Walworth counties
- Southeast Region (FAX: 414-263-8550); Attention -- R&R Program Associate:** DNRRRSER@wisconsin.gov  
 Kenosha, Milwaukee, Ozaukee, Racine, Washington, Waukesha counties

## Notification For Hazardous Substance Discharge (Non-Emergency Only)

KYLE HENNING UNITED ENGINEERING CONSULTANT

Form 4400-225 (R 06/17)

Page 3 of 3

**West Central Region (FAX: 715-839-6076); Attention -- R&R Program Associate: [DNRRRWCR@wisconsin.gov](mailto:DNRRRWCR@wisconsin.gov)**

Adams, Buffalo, Chippewa, Clark, Crawford, Dunn, Eau Claire, Jackson, Juneau, LaCrosse, Marathon, Monroe, Pepin, Pierce, Portage, St. Croix, Trempealeau, Vernon, Wood counties



January 13, 2020

Mr. Steve Winter  
Bridgeview Associates  
c/o American Management Group Inc.  
3305 North Ballard Road #C  
Appleton, Wisconsin 54911

Subject: Phase II Environmental Site Assessment (ESA)  
Calumet Village  
1717 E. Calumet Street  
Appleton, Wisconsin 54915  
UEC Project # 19044

Dear Mr. Winter:

United Engineering Consultants, Inc. (United) is pleased to submit this Phase II Environmental Site Assessment (ESA) Report for the above referenced property. Should you have any questions regarding the information contained in this report, or if we may be of additional assistance on this or future projects, please contact us at 262-785-1447.

Sincerely,  
United Engineering Consultants, Inc.

A handwritten signature in black ink that reads "Kyle Henning". The signature is written in a cursive, flowing style.

Kyle Henning, E.I.T.  
Staff Engineer

A handwritten signature in black ink that reads "Timothy J. Anderson". The signature is written in a cursive, flowing style.

Timothy J. Anderson, P.E.  
Principal

**PHASE II ENVIRONMENTAL SITE ASSESSMENT**

**PERFORMED FOR:**

**MR. STEVE WINTER  
BRIDGEVIEW ASSOCIATES  
C/O AMERICAN MANAGEMENT GROUP INC.  
3305 NORTH BALLARD ROAD #C  
APPLETON, WISCONSIN 54911**

**PERFORMED AT:**

**CALUMET VILLAGE  
1717 E. CALUMET STREET  
APPLETON, WISCONSIN 54915  
UEC PROJECT NO. 19044**

**JANUARY 13, 2020**

**PREPARED BY:**

**UNITED ENGINEERING CONSULTANTS, INC.  
16237 W. RYERSON ROAD  
NEW BERLIN, WISCONSIN 53151**

## TABLE OF CONTENTS

<b>SECTION I – INTRODUCTION</b> .....	<b>1</b>
GENERAL .....	1
SCOPE.....	1
<b>SECTION II – SITE AND PROJECT DESCRIPTION</b> .....	<b>1</b>
FACILITY DESCRIPTION .....	1
PROJECT BACKGROUND .....	2
<b>SECTION III – SITE INVESTIGATION</b> .....	<b>3</b>
GENERAL .....	3
SOIL SAMPLING AND TESTING .....	3
GROUNDWATER SAMPLING AND TESTING.....	4
SUB-SLAB VAPOR SAMPLING AND TESTING .....	4
<b>SECTION IV – SITE CHARACTERIZATION</b> .....	<b>4</b>
GENERAL .....	4
SOIL CONDITIONS.....	4
GROUNDWATER OBSERVATIONS .....	4
<b>SECTION V – CONTAMINATION ASSESSMENT</b> .....	<b>5</b>
SOIL CONTAMINATION .....	5
SOIL QUALITY STANDARDS .....	5
SOIL ANALYTICAL RESULTS .....	5
GROUNDWATER CONTAMINATION.....	5
GROUNDWATER QUALITY STANDARDS .....	5
GROUNDWATER ANALYTICAL RESULTS .....	5
VAPOR CONTAMINATION.....	6
VAPOR QUALITY STANDARDS.....	6
VAPOR ANALYTICAL RESULTS.....	6
<b>SECTION VI – CONCLUSIONS AND RECOMMENDATIONS</b> .....	<b>6</b>

## **TABLES**

Table 1 – VOC Analytical Results – Soil  
Table 2 – VOC Analytical Results – Groundwater  
Table 3 – VOC Analytical Results – Vapor

## **FIGURES**

Figure 1: Site Location Map  
Figure 2: Site Plan Map  
Figure 3: Soil Boring, Temporary Well and Vapor Point Location Map

## **APPENDIX**

Soil Boring Logs  
Borehole Abandonment Forms 3300-005  
Soil Analytical Results and Chain-of-Custody Form – November 14, 2019  
Groundwater Analytical Results and Chain-of-Custody Form – November 21, 2019  
Vapor Analytical Results and Chain-of-Custody Form – November 21, 2019

## **SECTION I – INTRODUCTION**

### **GENERAL**

This report presents the findings and conclusions of a Phase II Environmental Site Assessment (ESA) performed at the Calumet Village property located at 1717 E. Calumet Street in Appleton, Wisconsin. This investigation was conducted by United Engineering Consultants, Inc. (United) at the request of Mr. Steve Winter, a representative of the current property owner, Bridgeview Associates c/o American Management Group Inc.

### **PURPOSE**

The purpose of the investigation was to determine if the former utilization of Unit B of the site building for dry cleaner operations from 1987 to 2007 has resulted in a chlorinated solvent release(s) to the subsurface impacting the soil and groundwater adjacent to the structure and/or the sub-slab vapor beneath Unit B.

### **SCOPE**

The scope of services included the advancement of two (2) soil borings, the installation of two (2) temporary groundwater monitoring wells and a vapor point, the collection and subsequent laboratory analysis of four (4) soil samples, two (2) groundwater samples and a sub-slab vapor sample and an evaluation of the information obtained. The investigation was structured specifically to address the presence of Volatile Organic Compounds (VOCs). It is not intended to be, nor should it be construed as, an all-inclusive search for hazardous substances.

## **SECTION II – SITE AND PROJECT DESCRIPTION**

### **FACILITY DESCRIPTION**

The subject property is located within the Northwest  $\frac{1}{4}$  of the Northwest  $\frac{1}{4}$  of Section 5, Township 20 North, Range 18 East of Calumet County. Specifically, the site is located at 1717 East Calumet Street in Appleton, Wisconsin (See Figure 1: Site Location Map).

The subject property is approximately 0.94 acres in size and is currently developed with a six (6) unit single story commercial building, without a basement, approximately eight thousand four hundred (8,400) square feet in plan dimension. A dumpster corral is located at the southwest corner of the parcel. The remainder of the site is covered with asphaltic concrete with the exception of landscaped areas which include a few deciduous trees located along the property lines. The structure is currently leased by High Lites, American Family Mutual Insurance Co., Edward D. Jones & Co LLP, Pizza King of Appleton and Bayside Home Medical (See Figure 2: Site Plan Map).



Underground utilities consisting of natural gas and potable water service enter the western elevation of the site building from laterals connected to mains in the East Calumet Street right-of-way. The sanitary sewer service enters the northeast corner of the structure from a lateral connected to a main in the East Calumet Street right-of-way. Overhead electric and telephone service also enter the western elevation of the structure from a utility pole located adjacent to the western property line.

The site is bordered to the west by residences followed by the South Telulah Avenue right-of-way, to the south by the Coolidge Court right-of-way followed by an undeveloped property and an apartment complex, to the east by a multi-tenant commercial building (Ace Hardware, The Reel Shot and Ye Old Goat - 1919 E. Calumet Street) and associated asphaltic parking lot followed by a bank/insurance agency (Huntington Insurance – 1935 E. Calumet Street) and to the north by the East Calumet Street right-of-way followed by residences.

## **PROJECT BACKGROUND**

A Phase I Environmental Site Assessment performed by Cedar Corporation (Cedar) of Green Bay, Wisconsin dated June 5, 2019 indicated dry cleaning operations were performed at the subject property from 1987 until 2007. A representative of the current owner stated that the dry cleaner operated in Unit B which is located immediately north of the approximate center of the building. This unit is currently occupied by High Lites Salon. Cedar stated that the former performance of dry cleaning operations at the subject property is a Recognized Environmental Condition (REC). Based on this REC, Cedar recommended the performance of a Phase II ESA.

Therefore, United recommended that two (2) borings be advanced immediately east and west of Unit B to an approximate depth of twelve (12) to (16) feet to determine if the soils have been impacted by chlorinated solvents. The borings would be converted to temporary monitoring wells to evaluate the groundwater quality. In addition, it was recommended that two (2) sub-slab vapor samples be collected in the interior of Unit B of the site building in the immediate areas of the former dry cleaning machine(s) and floor drain. The collected soil, groundwater and vapor samples would be analyzed for the presence of VOCs by a State of Wisconsin certified laboratory.

## SECTION III – SITE INVESTIGATION

### GENERAL

The purpose of the investigation was to determine if the previous performance of dry cleaning operations at the subject property has resulted in chlorinated solvent impacts to the soil and groundwater adjacent to the site building and to the sub-slab vapor beneath Unit B of the structure. These goals were achieved by advancing soil borings, installing temporary groundwater monitoring wells and a vapor point and analyzing collected soil, groundwater and vapor samples for the presence of VOCs and interpreting the analytical test results. Descriptions of the procedures employed during this investigation are included in this section.

### SOIL SAMPLING AND TESTING

On November 14, 2019, two (2) boreholes were advanced to an approximate depth of twenty (20) feet below the existing ground surface in the asphaltic concrete immediately east and west of Unit B of the site building. The borings were advanced by Probe Technologies, Inc. of West Bend, Wisconsin using direct push methods. Soil boring locations were selected by United personnel and are indicated on the attached Figure 3: Soil Boring, Temporary Well and Vapor Point Location Map.

Based on the visual classification of the soils in the field, a boring log for each test borehole was prepared. The boring logs indicate borehole and sample identification numbers, boring and sampling methods, depth of sample and an indication of soil type and groundwater observations. Subsequent to groundwater sample collection, each borehole was backfilled with bentonite chips and brought to grade with an asphaltic concrete surface patch in general accordance with NR 141.25 (See Appendix – Soil Boring Logs and Borehole Abandonment Forms 3300-005).

Two (2) samples were collected from each boring location at the approximate depths ranging from two (2) to three (3) feet and ten (10) to eleven (11) below the ground surface (bgs). The soil samples were analyzed for the presence of VOCs utilizing methods SW-846 8260B and WDNR: PUBL-FW-140.

The soil for the VOC analysis was collected with a calibrated plastic tube and approximately five (5) grams of soil was placed into a glass container containing a pre-measured amount of laboratory grade methanol. In addition, total solids analysis required a four (4) ounce glass container filled with soil for each sample.

All of the samples were transported, on ice, to the laboratory using standard Chain of Custody procedures. The soil samples were analyzed by Environmental Monitoring and Technologies, Inc. (EMT) of Morton Grove, Illinois (WDNR Cert. 999888890).

## **GROUNDWATER SAMPLING AND TESTING**

Due to the absence of groundwater upon completion of the soil borings, the temporary monitoring wells were not sampled on November 14, 2019. TW-1 and TW-2 were subsequently sampled on November 21, 2019 utilizing a peristaltic pump. The collected samples were analyzed for the presence of VOCs by EPA method SW-846 8260B and WDNR: PUBL-FW-140.

## **SUB-SLAB VAPOR SAMPLING AND TESTING**

One (1) sub-slab vapor point was installed in the utility closet in Unit B adjacent to a floor drain and as near the former dry cleaning machine as feasible due to the presence of an overlying laminate floor for the majority of the unit. The sub-slab vapor sample was collected by connecting a one-quarter (1/4) inch outside diameter rigid wall, nylon tubing with a small portion of flexible, one-quarter (1/4) inch outside diameter silicone tubing from the vapor pin to a six (6) liter Summa Canister regulated at a collection rate of approximately one hundred (100) mL/min. The sub-slab vapor sample was submitted to Pace Analytical Services, Inc. for analysis for the presence of VOCs by EPA method TO-15.

## **SECTION IV – SITE CHARACTERIZATION**

### **GENERAL**

A description of the subsurface conditions encountered at each test borehole is provided on the soil boring logs in the Appendix. The lines of demarcation indicated on the logs represent an approximate boundary between the various soil classifications, however, the transition is likely to be more gradual. It should be recognized, the soil descriptions are considered representative for the specific test borehole location and variations may occur between and beyond the sampling intervals and boring locations. A summary of the major soil profiles is described in the following paragraph.

### **SOIL CONDITIONS**

The surface at GP-1 and GP-2 is covered with approximately six (6) inches of asphaltic concrete underlain by about twelve (12) inches of granular base course. The base course is underlain by brown clayey silt with some sand and trace gravel to an approximate depth of twelve (12) feet. The upper cohesive soils are underlain by gray clayey silt, trace sand to at least the termination depth of the borings.

### **GROUNDWATER OBSERVATIONS**

Groundwater was not encountered during the advancement of the probe throughout the approximate twenty (20) foot depth of the boreholes. During delayed sampling of the temporary wells, groundwater levels were measured between three (3) and six (6) feet bgs. Based on documented water table elevations recorded during groundwater investigations at immediately adjacent properties, groundwater on the subject property is estimated to be between four (4) to twelve (12) feet below the ground surface (bgs).

## SECTION V – CONTAMINATION ASSESSMENT

### SOIL CONTAMINATION

#### SOIL QUALITY STANDARDS

The Wisconsin Department of Natural Resources (WDNR) has established Residual Contaminant Levels (RCLs) for several VOCs. The RCLs include an Industrial and Non-Industrial Direct Contact and Groundwater Pathway for impacted soil. When any of these RCLs are exceeded, placement on the WDNR soil database is typically required subsequent to an investigation to delineate the lateral and vertical extent of the contamination. In addition, the placement and/or maintenance of a direct contact or impermeable barrier may be required by the WDNR as a continuing obligation of site closure if Direct Contact or Groundwater Pathway RCLs are exceeded, respectively.

#### SOIL ANALYTICAL RESULTS

The results of the VOC analysis did not indicate the presence of any compounds at concentrations at or above their respective method detection limits at any of the sample locations (See Table 1 – VOC Analytical Results - Soil and the Appendix – Soil Analytical Results and Chain-of-Custody Form – November 14, 2019).

### GROUNDWATER CONTAMINATION

#### GROUNDWATER QUALITY STANDARDS

The WDNR has established Groundwater Quality Standards in Section NR 140.10 of the WAC. An Enforcement Standard (ES) and Preventive Action Limit (PAL) have been established for compounds of concern to the public health as determined by the WDNR. If the ES or PAL for a given compound in groundwater is exceeded, the WDNR is authorized to enforce action to restore groundwater quality to a level below the ES or PAL.

#### GROUNDWATER ANALYTICAL RESULTS

The results of the VOC analysis indicate the presence of tetrachloroethene at TW-2 at a concentration of 63.5 µg/L, which is in exceedance of both its PAL of 0.5 µg/L and the ES of 5.0 µg/L. It should be noted that the laboratory “flagged” the result with a Q which indicates one (1) or more quality control results were outside the acceptable limits. In addition, the result was “flagged” with an S1 which indicates the percent recovery is above the limits, however, the analyte was not detected in the sample and therefore the data is acceptable.

Trichloroethene was also detected at TW-2 at a concentration of 14.9 µg/L, which is in exceedance of its PAL and ES concentrations of 0.5 and 5.0 µg/L respectively. In addition, cis-1,2-dichloroethene (2.25 µg/L) and trans-1,2-dichloroethene (0.460 µg/L) were detected at TW-2, however, both concentrations are below their respective PAL and ES concentrations.

Acetone is present at TW-1 and TW-2 at concentrations of 14.3 and 9.55 µg/L respectively. Neither concentration is in exceedance of its PAL of 1800 µg/L or ES of 9000 µg/L. It should be noted that these concentrations are “J” flagged by the laboratory due to their presence between its LOD and LOQ. No other compounds are present at TW-1 or TW-2 at concentrations in exceedance of their respective detection limits (See Table 2 – VOC Analytical Results - Groundwater and the Appendix – Groundwater Analytical Results and Chain-of-Custody Form – November 21, 2019).

## VAPOR CONTAMINATION

### VAPOR QUALITY STANDARDS

The WDNR has established sub-slab Vapor Risk Screening Levels (VRSL) for various VOCs for residential, commercial and industrial structures. If these levels are exceeded, additional sub-slab vapor sampling and possibly indoor and ambient air analysis may be required. In addition, the WDNR is authorized to enforce action to restore the indoor air quality to concentrations below the vapor action levels.

### VAPOR ANALYTICAL RESULTS

The results of the VOC analysis indicate the presence of acetone and tetrachloroethene in the sub-slab vapor at concentration of 176 µg/m<sup>3</sup> and 1.1 µg/m<sup>3</sup> which are significantly below their residential and small commercial VRSL. Several other compounds are present at SS-1, however, none were in exceedance of either their residential or small commercial VRSLs (See Table 3 – VOC Analytical Results - Vapor and the Appendix – Vapor Analytical Results and Chain-of-Custody Form – November 21, 2019).

## SECTION VI – CONCLUSIONS AND RECOMMENDATIONS

The Phase II ESA analytical results did not indicate the presence of any VOCs in the soil at concentrations in exceedance of their respective detection limits. However, tetrachloroethene and trichloroethene are present in the groundwater immediately west of the site building in exceedance of their respective PAL and ES. Based on these exceedances, a release of tetrachloroethene and trichloroethene to the groundwater has occurred and WDNR notification on Form 4400-225 Notification for Hazardous Substance Discharge is required per section Chapter 292.11(a) of the Wisconsin Statutes.

The WDNR will issue a Responsible Party (RP) letter upon receipt of Form 4400-225. The RP letter will request the selection of an environmental consultant and the submittal of a Site Investigation Work Plan (SIWP) prior to proceeding with additional investigative activities. The WDNR will require that the lateral and vertical extent of the chlorinated solvent contamination be delineated as a requirement of a complete NR 716 Site Investigation (SI) which will also be outlined in the RP letter. Subsequent to the WDNR approval of a complete SI, a Remedial Action Options Report (RAOR) or a case closure request may be submitted.

Based on the PAL and ES exceedances in the groundwater, it is recommended that the additional site investigation activities initially include the installation of a minimum of three (3) NR 141 compliant groundwater monitoring wells to further evaluate the groundwater quality at the site and to determine the groundwater flow direction. It is recommended that two (2) of the monitoring wells be installed at the locations of TW-1 and TW-2. The location of the third groundwater monitoring well is recommended down gradient of TW-2. Additional soil sampling and analysis is recommended at the location of the third NR141 compliant well. The collection of additional sub-slab vapor samples may be required by the WDNR to confirm the absence of tetrachloroethene and trichloroethene in the sub-slab vapor beneath Unit B as well as the adjacent Units A and C.

If the additional sampling confirms ES and/or PAL exceedances in the groundwater, further site investigation activities would be necessary to determine the lateral and vertical extent of the tetrachloroethene and/or trichloroethene contaminant plume(s) and/or to document that the plume(s) is receding or, at a minimum, stable. The placement of the site on the WDNR groundwater database for the tetrachloroethene and trichloroethene PAL and ES exceedances in the groundwater would be a condition of case closure. In addition, maintenance of the existing building floor slab and pavement as an impermeable cap would be required as a continuing obligation subsequent to case closure.

Although not anticipated, if the results of the additional groundwater analysis of samples collected from the NR 141 complaint wells do not indicate the presence of tetrachloroethene and trichloroethene in exceedance of their respective PAL during two (2) consecutive sampling events and the additional proposed soil and sub-slab vapor sampling and analysis do not document any RCL or VRSL exceedances, a No Further Action (NFA) designation by the WDNR for the release would be requested.

## **TABLES**

Table 1 - VOC Analytical Results - Soil  
 Calumet Village  
 1717 E. Calumet Street  
 Appleton, WI 54915

Sample Date	November 14, 2019				RCL		
Sample Identification	GP-1	GP-1	GP-2	GP-2	GWP	NIDC	IDC
Sample Depth	2'-3'	10'-11'	2'-3'	10'-11'			
<b>Volatile Organic Compounds (VOC) (Method: SW-846 8260B/PUBL-FW-140)</b>							
Acetone	<0.00448	<0.000713	<0.00416	<0.00405	3.6766	63400	100000
Acrylonitrile	<0.00129	<0.000205	<0.00120	<0.00117	-	<0.338	1.5
Benzene	<0.000264	<0.000042	<0.000245	<0.000239	0.0051	1.6	7.07
Bromodichloromethane	<0.000394	<0.0000627	<0.000366	<0.000356	0.0003	0.39	1.96
Bromoform	<0.000429	<0.0000683	<0.000398	<0.000388	0.0023	23.6	115
2-Butanone	<0.00261	<0.000416	<0.00243	<0.00236	-	28400	28400
Carbon disulfide	<0.00321	<0.0000511	<0.000298	<0.000290	0.5919	738	738
Carbon tetrachloride	<0.000277	<0.0000441	<0.000258	<0.000251	0.0039	0.854	4.25
Chlorobenzene	<0.000305	<0.0000486	<0.000284	<0.000276	-	392	761
Chloroform	<0.00057	<0.0000908	<0.000530	<0.000516	0.0033	0.423	2.13
1,2-Dibromo-3-chloropropane	<0.0010	<0.00016	<0.000934	<0.000909	0.0002	0.008	0.092
1,2-Dibromoethane	<0.000307	<0.0000489	<0.000286	<0.000278	0.0000282	0.05	0.221
Dibromochloromethane	<0.000499	<0.0000794	<0.000464	<0.000451	0.032	8.28	38.9
1,1-Dichloroethane	<0.000918	<0.000146	<0.000853	<0.000830	0.4834	4.72	23.7
1,2-Dichloroethane	<0.000223	<0.0000354	<0.000286	<0.000278	0.0028	0.608	2.87
1,1-Dichloroethene	<0.000718	<0.000114	<0.000667	<0.000649	0.005	342	1190
cis-1,2-Dichloroethene	<0.000629	<0.000100	<0.000584	<0.000569	0.0412	156	2040
trans-1,2-Dichloroethene	<0.000866	<0.000138	<0.000804	<0.000783	0.0626	1560	1850
1,2-Dichloroethene, Total	<0.00149	<0.000238	<0.00139	<0.00135	-	-	-
1,2-Dichloropropane	<0.000412	<0.0000656	<0.000383	<0.000373	0.0033	3.4	15
Ethylbenzene	<0.000392	<0.0000625	<0.000365	<0.000355	1.57	8.02	35.4
2-Hexanone	<0.0018	<0.000287	<0.00168	<0.000415	-	237	1760
Methyl tert-butyl ether	<0.000458	<0.0000729	<0.000426	<0.000415	0.027	63.8	282
Methylene chloride	<0.00107	<0.000171	<0.000997	<0.000971	0.0026	60.7	1150
4-Methyl-2-pentanone	<0.00121	<0.000193	<0.00113	<0.00110	0.2252	3360	3360
Styrene	<0.000392	<0.0000624	<0.000364	<0.000355	0.22	867	867
1,1,2,2-Tetrachloroethane	<0.00059	<0.0000939	<0.000548	<0.000534	0.0002	0.753	3.69
Tetrachloroethene	<0.000475	<0.000757	<0.000442	<0.000430	0.0045	33	145
Toluene	<0.000356	<0.0000567	<0.000331	<0.000323	1.1072	818	818
1,1,1-Trichloroethane	<0.000611	<0.0000972	<0.000567	<0.000552	0.1402	640	640
1,1,2-Trichloroethane	<0.000606	<0.0000956	<0.000563	<0.000549	0.0032	1.48	7.01
Trichloroethene	<0.000317	<0.0000504	<0.000294	<0.000286	0.0036	1.26	8.41
1,2,4-Trimethylbenzene	<0.000354	<0.0000564	<0.000329	<0.000321	-	219	219
1,3,5-Trimethylbenzene	<0.000347	<0.0000552	<0.000322	<0.000314	-	182	182
Vinyl Acetate	<0.000703	<0.000112	<0.000653	<0.000636	-	1300	2750
Vinyl Chloride	<0.000434	<0.0000690	<0.000403	<0.000392	0.0001	0.067	2.03
m,p-Xylene	<0.00195	<0.000310	<0.00181	<0.00176	-	388	388
o-Xylene	<0.000271	<0.0000432	<0.000252	<0.000245	-	434	434
Xylenes, Total	<0.00222	<0.000354	<0.00206	<0.00201	3.96	260	260

- Notes: All samples collected from the unsaturated zone  
 All results expressed as mg/kg
- RCL Residual Contaminant Level (December 2018 RCL Spreadsheet Update)
- GWP Groundwater Pathway RCL (Exceedances in underline)
- NIDC Non-Industrial Direct Contact Pathway RCL (Exceedances in **bold**)
- IDC Industrial Direct Contact Pathway RCL (Exceedances in **bold** and shaded)
- RCL not established for this compound
- < Compound not detected at or above LOD



Table 2 - VOC Analytical Results - Groundwater  
 Calumet Village  
 1717 E. Calumet Street  
 Appleton, WI 54915

Analyte	TW-1	TW-2	ES	PAL
	11/21/19	11/21/19		
<b>Volatile Organic Compounds (VOC) (Method: SW-846 8260B/PUBL-FW-140)</b>				
Acetone	14.3J	9.55J	9000	1800
Acrylonitrile	<0.742Q,S1	<0.742Q,S1	-	-
Benzene	<0.370	<0.370	5	0.5
Bromodichloromethane	<0.310	<0.310	0.6	0.06
Bromoform	<0.254	<0.254	4.4	0.44
Bromomethane	<3.30Q,S1	<3.30Q,S1	10	1
1-Butanol	<6.69	<6.69	-	-
2-Butanone	<1.38Q,S1	<1.38Q,S1	-	-
Carbon disulfide	<0.259Q,S1	<0.259Q,S1	1000	200
Carbon tetrachloride	<0.390Q,S1	<0.390Q,S1	5	0.5
Chlorobenzene	<0.358	<0.358	-	-
Chloroethane	<0.906Q	<0.906Q	400	80
Chloroform	<0.397	<0.397	6	0.6
Chloromethane	<2.23Q	<2.23Q	30	3
1,2-Dibromo-3-chloropropane	<0.488	<0.488	0.2	0.02
1,2-Dibromoethane (EDB)	<0.320	<0.320	0.05	0.005
1,1-Dichloroethane	<1.94	<1.94	850	85
1,2-Dichloroethane	<0.274	<0.274	5	0.5
1,1-Dichloroethene	<1.02	<1.02	7	0.7
cis-1,2-Dichloroethene	<0.421	2.25	70	7
trans-1,2-Dichloroethene	<0.433	0.460J	100	20
1,2-Dichloropropane	<1.11	<1.11	5	0.5
Dibromochloromethane	<0.492	<0.492	700	140
1,3-Dichloropropene, Total	<0.278	<0.592	0.4	0.04
Ethylbenzene	<0.431	<0.431	700	140
2-Hexanone	<1.04	<1.04	-	-
4-Methyl-2-pentanone	<0.660	<0.660	-	-
Methyl tert-Butyl ether	<0.322	<0.322	60	12
Methylene chloride	<0.358	<0.358	5	0.5
Styrene	<0.534Q,S1	<0.534Q,S1	100	10
1,1,2,2-Tetrachloroethane	<0.291	<0.291	0.2	0.02
Tetrachloroethene	<0.400Q,S1	<b>63.5Q,S1</b>	5	0.5
1,2,4-Trimethylbenzene	<0.338Q,S1	<0.338Q,S1	480	96
1,3,5-Trimethylbenzene	<0.310Q,S1	<0.310Q,S1		
Toluene	<0.299	<0.299	800	160
1,1,1-Trichloroethane	<0.349	<0.349	200	40
1,1,2-Trichloroethane	<0.264	<0.264	5	0.5
Trichloroethene	<0.439	<b>14.9</b>	5	0.5
Vinyl acetate	<1.01	<1.01	-	-
Vinyl chloride	<0.316Q	<0.316Q	0.2	0.02
m,p-Xylene	<0.310	<0.310	-	-
o-Xylene	<0.349	<0.349	-	-
Xylenes, Total	<0.660	<0.660	2000	400

Notes: All results expressed as µg/L (parts per billion)  
 ES NR140 Enforcement Standard (Exceedances in **bold**)  
 PAL NR140 Preventive Action Limit (Exceedances in underline)  
 - ES/PAL not established for this compound  
 J Analyte detected above limit of detection (LOD) and below limit of quantitation (LOQ)  
 </ND Compound not detected at or above the LOD  
 Q One or more quality control results were outside of the acceptable limits  
 S1 The percent recovery is above the limits, but the analyte was not detected in the sample. Data is acceptable

Table 2 - VOC Analytical Results - Groundwater  
 Calumet Village  
 1717 E. Calumet Street  
 Appleton, WI 54915

Analyte	Trip Blank	ES	PAL
	11/21/19		
<b>Volatile Organic Compounds (VOC) (Method: SW-846 8260B/PUBL-FW-140)</b>			
Acetone	<0.375	9000	1800
Acrylonitrile	<0.742	-	-
Benzene	<0.370	5	0.5
Bromodichloromethane	<0.310	0.6	0.06
Bromoform	<0.254	4.4	0.44
Bromomethane	<3.30	10	1
1-Butanol	<6.69	-	-
2-Butanone	<1.38	-	-
Carbon disulfide	<0.259	1000	200
Carbon tetrachloride	<0.390	5	0.5
Chlorobenzene	<0.358	-	-
Chloroethane	<0.906	400	80
Chloroform	<0.397	6	0.6
Chloromethane	<2.23	30	3
1,2-Dibromo-3-chloropropane	<0.488	0.2	0.02
1,2-Dibromoethane (EDB)	<0.320	0.05	0.005
1,1-Dichloroethane	<1.94	850	85
1,2-Dichloroethane	<0.274	5	0.5
1,1-Dichloroethene	<1.02	7	0.7
cis-1,2-Dichloroethene	<0.421	70	7
trans-1,2-Dichloroethene	<0.433	100	20
1,2-Dichloropropane	<1.11	5	0.5
Dibromochloromethane	<0.492	700	140
1,3-Dichloropropene, Total	<0.278	0.4	0.04
Ethylbenzene	<0.431	700	140
2-Hexanone	<1.04	-	-
4-Methyl-2-pentanone	<0.660	-	-
Methyl tert-Butyl ether	<0.322	60	12
Methylene chloride	<0.358	5	0.5
Styrene	<0.534	100	10
1,1,2,2-Tetrachloroethane	<0.291	0.2	0.02
Tetrachloroethene	<0.400	5	0.5
1,2,4-Trimethylbenzene	<0.338	480	96
1,3,5-Trimethylbenzene	<0.310		
Toluene	<0.299	800	160
1,1,1-Trichloroethane	<0.349	200	40
1,1,2-Trichloroethane	<0.264	5	0.5
Trichloroethene	<0.439	5	0.5
Vinyl acetate	<1.01	-	-
Vinyl chloride	<0.316	0.2	0.02
m,p-Xylene	<0.310	-	-
o-Xylene	<0.349	-	-
Xylenes, Total	<0.660	2000	400

Notes: All results expressed as µg/L (parts per billion)  
 ES NR140 Enforcement Standard (Exceedances in **bold**)  
 PAL NR140 Preventive Action Limit (Exceedances in underline)  
 - ES/PAL not established for this compound  
 J Analyte detected above limit of detection (LOD) and below limit of quantitation (LOQ)  
 </ND Compound not detected at or above the LOD  
 Q One or more quality control results were outside of the acceptance limits  
 S1 The percent recovery is above the limits, but the analyte was detected in the sample. Data is acceptable

Table 3 - VOC Analytical Results - Vapor  
 Calumet Village  
 1717 E. Calumet Street  
 Appleton, WI 54915

Sample Identification	SS-1	Residential	Small Commercial
Sample Type	SS	Sub-Slab VRSL	Sub-Slab VRSL
Sample Date	11/21/2019		
Sample Duration (Hours)	0.5		
<b>Volatile Organic Compounds (VOC) (Method: TO-15)</b>			
Acetone	176	1066667	4666667
Benzene	0.71	120	530
Benzyl Chloride	<2.1	19	83
Bromodichloromethane	<0.66	25	110
Bromoform	<2.5	867	3667
Bromomethane	<0.41	17	733
1,3-Butadiene	<0.23	31	137
2-Butanone	5.3J	173333	733333
Carbon Disulfide	<0.39	24333	103333
Carbon tetrachloride	<0.77	160	670
Chlorobenzene	<0.49	1733	7333
Chloroethane	<0.47	-	-
Chloroform	<0.35	40	180
Chloromethane	<0.28	3100	13000
Cyclohexane	1.3J	210000	866667
Dibromochloromethane	<1.3	-	-
1,2-Dibromoethane	<0.66	2	7
1,2-Dichlorobenzene	<0.89	7000	29333
1,3-Dichlorobenzene	<1.0	-	-
1,4-Dichlorobenzene	<1.8	87	367
Dichlorodifluoromethane	<0.52	3300	15000
1,1-Dichloroethane	<0.40	600	2600
1,2-Dichloroethane	<0.27	37	160
1,1-Dichloroethene	<0.49	7000	29000
cis-1,2-Dichloroethene	<0.39	-	-
trans-1,2-Dichloroethene	<0.51	-	-
1,2-Dichloropropane	<0.41	25	110
cis-1,3-Dichloropropene	<0.54	-	-
trans-1,3-Dichloropropene	<0.79	-	-
Dichlorotetrafluoroethane	<0.78	-	-
Ethanol	9390	-	-
Ethyl acetate	3.1	2433	10333

Notes: All results expressed as µg/m<sup>3</sup>  
 VRSL Vapor Risk Screening Level (November 2017 Version)  
 Residential Sub-slab VRSL exceedances in underline (AF=0.03)  
 Small Commercial Sub-slab VRSL exceedances in bold (AF=0.03)  
 Large Commercial Sub-slab VRSL exceedances in bold and shaded (AF=0.01)  
 - Sub-slab VRSL not established for this compound  
 J Analyte detected below limit of quantitation  
 E Analyte concentration exceeded the calibration range. The reported result is estimated.

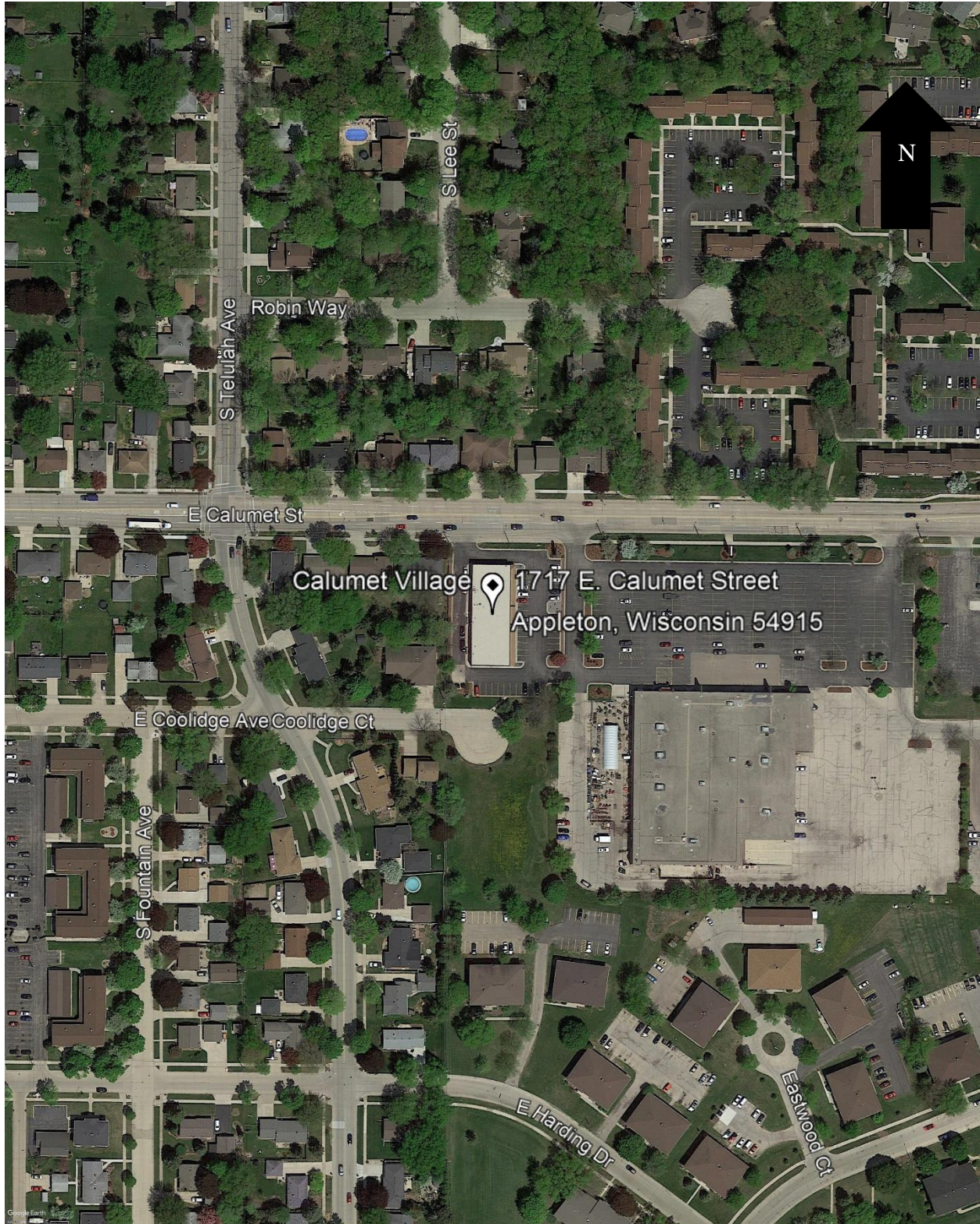
Table 3 - VOC Analytical Results - Vapor  
 Calumet Village  
 1717 E. Calumet Street  
 Appleton, WI 54915

Sample Identification	SS-1	Residential	Small Commercial
Sample Type	SS	Sub-Slab VRSL	Sub-Slab VRSL
Sample Date	11/21/2019		
Sample Duration (Hours)	0.5		
<b>Volatile Organic Compounds (VOC) (Method: TO-15)</b>			
Ethylbenzene	1.3J	370	1600
4-Ethyltoluene	<1.0	-	-
N-Heptane	4.6	14000	60000
Hexachloro-1,3-butadiene	<3.5	-	-
N-Hexane	2.5	24333	103333
2-Hexanone	2.6J	1033	4333
Methylene chloride	2.9J	21000	87000
4-Methyl-2-pentanone	<0.93	103333	433333
Methyl tert-butyl ether	<1.2	3700	16000
Naphthalene	<2.3	28	120
2-Propanol	612	-	-
Propylene	<0.25	103333	433333
Styrene	<0.62	33333	146667
1,1,2,2-Tetrachloroethane	<0.55	16	70
Tetrachloroethene	1.1J	1400	6000
Tetrahydrofuran	<0.47	-	-
Toluene	2.7	173333	733333
1,2,4-Trichlorobenzene	<6.7	70	293
1,1,1-Trichloroethane	<0.55	170000	730000
1,1,2-Trichloroethane	<0.43	7	29
Trichloroethene	<0.45	70	290
Trichlorofluoromethane	17.1	-	-
1,1,2-Trichlorotrifluoroethane	<1.0	-	-
1,2,4 -Trimethylbenzene	3.2	2100	8700
1,3,5 -Trimethylbenzene	1.7J	2100	8700
Vinyl Acetate	<0.48	7000	29333
Vinyl Chloride	<0.23	57	930
m&p-Xylene	2.0J	3300	15000
o-Xylene	1.2J	3300	15000

Notes: All results expressed as µg/m<sup>3</sup>  
 VRSL Vapor Risk Screening Level (November 2017 Version)  
 Residential Sub-slab VRSL exceedances in underline (AF=0.03)  
 Small Commercial Sub-slab VRSL exceedances in bold (AF=0.03)  
 Large Commercial Sub-slab VRSL exceedances in bold and shaded (AF=0.01)  
 - Sub-slab VRSL not established for this compound  
 J Analyte detected below limit of quantitation  
 E Analyte concentration exceeded the calibration range. The reported result is estimated.

## **FIGURES**

**FIGURE 1  
SITE LOCATION MAP**



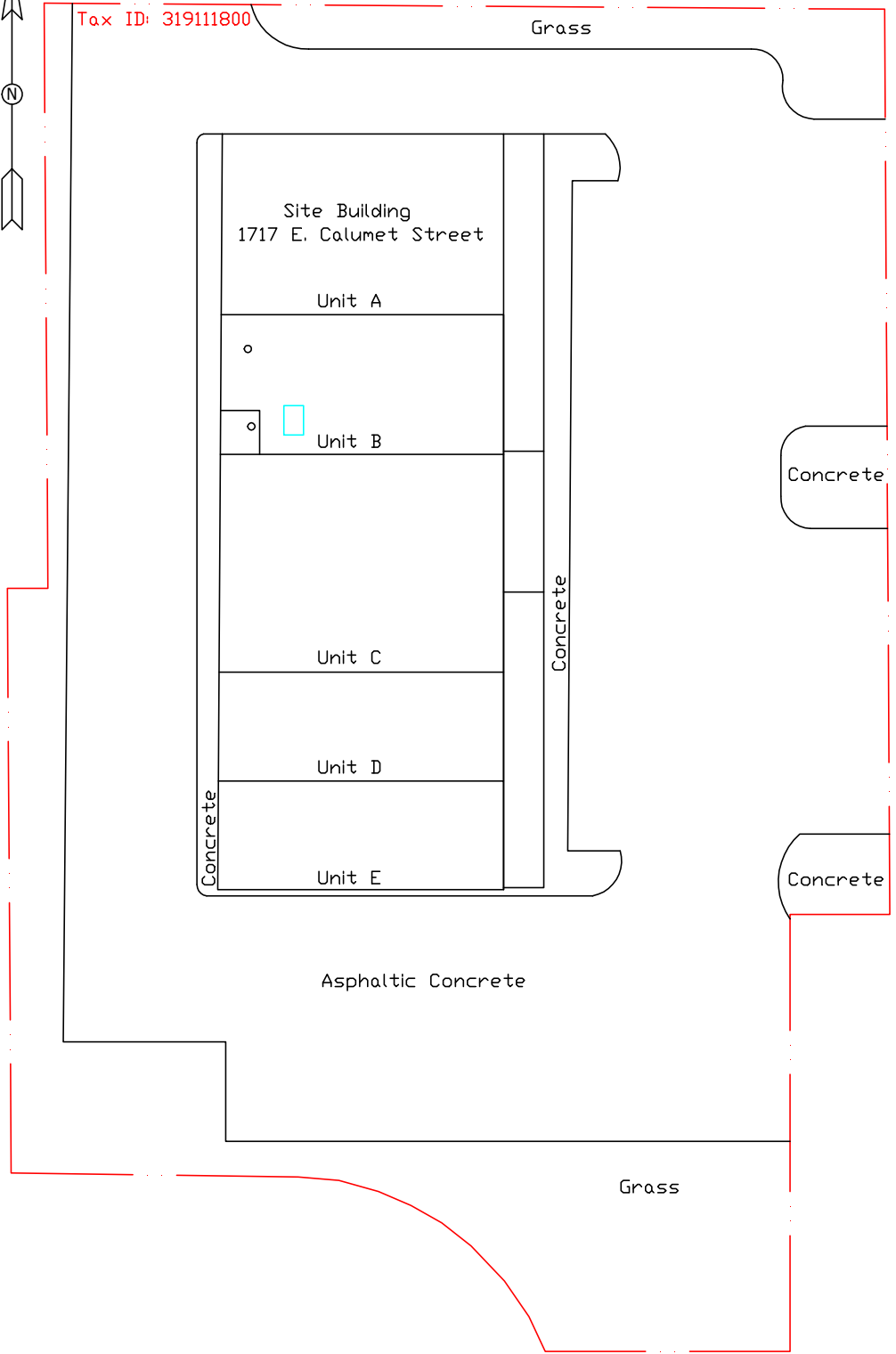
**Legend**

- Property Line
- Former Location of Dry Cleaning Machine
- Floor Drain

ALL LOCATIONS ARE APPROXIMATE



SCALE: 1"=35'



**Figure 2: Site Plan Map**

**United Engineering  
Consultants, Inc.**

16237 W. Ryerson Road  
New Berlin, WI 53151

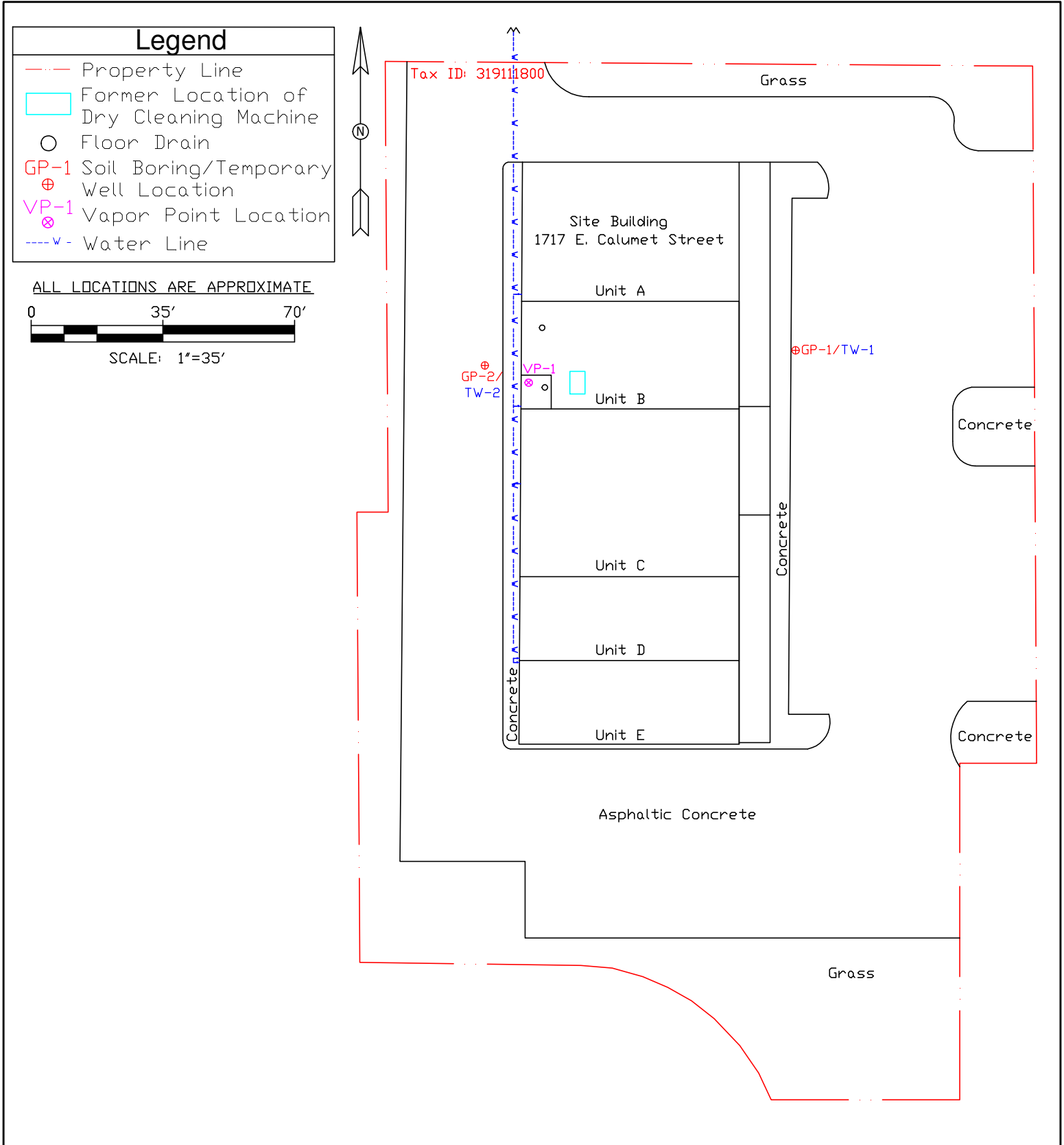
Tel. (262) 785-1447  
Fax (262) 706-4400

#19044

DRAWN BY: KRH

DATE: 12/04/2019

**Phase II Environmental Site Assessment  
Calumet Village  
1717 E. Calumet Street  
Appleton, WI 54915**



**Figure 3: Soil Boring, Temporary Well and Vapor Point Location Map**

**United Engineering  
Consultants, Inc.**

16237 W. Ryerson Road  
New Berlin, WI 53151  
Tel. (262) 785-1447  
Fax (262) 706-4400

#19044

DRAWN BY: KRH

DATE: 12/04/2019

**Phase II Environmental Site Assessment  
Calumet Village  
1717 E. Calumet Street  
Appleton, WI 54915**



## **APPENDIX**

## SOIL BORING LOG

Project: Phase II Environmental Site Assessment  
 Calumet Village  
 1717 E. Calumet Street  
 Appleton, Wisconsin 54915

Borehole Identification: GP-1  
 Project No.: 19044  
 Date of Boring: 11/14/2019  
 Field Representative: KH

	VISUAL SOIL CLASSIFICATION Ground Surface Elevation:	DEPTH (feet)	SAMPLE No.	N	Qp (tsf)	Qu (tsf)	MC %	Qs (tsf)	REMARKS
5	Note A Brown Clayey SILT, some Sand, trace Gravel Gray Clayey SILT, trace Sand	5	1-GP	-	-	-	-	-	
10		10	2-GP	-	-	-	-	-	
15		15	3-GP	-	-	-	-	-	
20		20	4-GP	-	-	-	-	-	
25		25	5-GP	-	-	-	-	-	
30	<b>TERMINATION DEPTH OF BORING: 20'</b> Boring dry during advancement of the probes and upon completion	30							
35	Note A: 0"-6" +/- Asphaltic Concrete 6"-18" +/- Granular Base Course	35							
40		40							

Lines of Demarcation represent an **approximate** boundary between soil types. Variations may occur between sampling intervals and between boring locations, and the transition may be gradual. Dashed lines are indicative of potentially erratic or unknown changes, such as fill-to-natural soil zone transitions.

## SOIL BORING LOG

Project: Phase II Environmental Site Assessment  
 Calumet Village  
 1717 E. Calumet Street  
 Appleton, Wisconsin 54915

Borehole Identification: GP-2  
 Project No.: 19044  
 Date of Boring: 11/14/2019  
 Field Representative: KH

VISUAL SOIL CLASSIFICATION Ground Surface Elevation:	DEPTH (feet)	SAMPLE No.	N	Qp (tsf)	Qu (tsf)	MC %	Qs (tsf)	REMARKS
Note A								
Brown Clayey SILT, some Sand, trace Gravel	5	1-GP	-	-	-	-	-	
		2-GP	-	-	-	-	-	
	10	3-GP	-	-	-	-	-	
Gray Clayey SILT, trace Sand	15	4-GP	-	-	-	-	-	
	20	5-GP	-	-	-	-	-	
<b>TERMINATION DEPTH OF BORING: 20'</b> Boring dry during advancement of the probes and upon completion								
Note A: 0"-6" +/- Asphaltic Concrete 6"-18" +/- Granular Base Course	25							
	30							
	35							
	40							

Lines of Demarcation represent an **approximate** boundary between soil types. Variations may occur between sampling intervals and between boring locations, and the transition may be gradual. Dashed lines are indicative of potentially erratic or unknown changes, such as fill-to-natural soil zone transitions.

**Notice:** Completion of this report is required by chs. 160, 281, 283, 289, 291-293, 295, and 299, Wis. Stats., and chs. NR 141 and 812, Wis. Adm. Code. In accordance with chs. 281, 289, 291-293, 295, and 299, Wis. Stats., failure to file this form may result in a forfeiture of between \$10-25,000, or imprisonment for up to one year, depending on the program and conduct involved. Personally identifiable information on this form is not intended to be used for any other purpose. Return form to the appropriate DNR office and bureau. See instructions on reverse for more information.

**Verification Only of Fill and Seal**

**Route to DNR Bureau:**

Drinking Water       Watershed/Wastewater       Remediation/Redevelopment

Waste Management       Other: \_\_\_\_\_

**1. Well Location Information**      **2. Facility / Owner Information**

County <b>CALUMET</b>		WI Unique Well # of Removed Well		Hicap #		Facility Name	
Latitude / Longitude (see instructions) <b>44° 24' 369"</b> N <b>88° 37' 879"</b> W		Format Code <input type="checkbox"/> DD <input type="checkbox"/> DDM		Method Code <input type="checkbox"/> GPS008 <input type="checkbox"/> SCR002 <input type="checkbox"/> OTH001		Facility ID (FID or PWS)	
¼ / ¼ <b>Nw</b> ¼ <b>NW</b> or Gov't Lot #		Section <b>S</b>		Township <b>20 N</b>		Range <b>18</b> <input type="checkbox"/> E <input type="checkbox"/> W	
Well Street Address <b>1717 E. CALUMET STREET</b>				Original Well Owner <b>STEVE WINTER</b>			
Well City, Village or Town <b>APPLETON</b>				Well ZIP Code <b>54915</b>			
Subdivision Name				Lot #		Mailing Address of Present Owner <b>3305 N. BALLARD ROAD #C</b>	
Reason for Removal from Service				WI Unique Well # of Replacement Well		City of Present Owner <b>APPLETON</b>	
						State <b>WI</b>	
						ZIP Code <b>54911</b>	

**3. Filled & Sealed Well / Drillhole / Borehole Information**      **4. Pump, Liner, Screen, Casing & Sealing Material**

<input type="checkbox"/> Monitoring Well		Original Construction Date (mm/dd/yyyy) <b>11/14/2019</b>	
<input type="checkbox"/> Water Well <b>GP-1</b>		If a Well Construction Report is available, please attach.	
<input checked="" type="checkbox"/> Borehole / Drillhole			
Construction Type:			
<input type="checkbox"/> Drilled		<input type="checkbox"/> Driven (Sandpoint)	
<input checked="" type="checkbox"/> Other (specify): <b>DIRECT PUSH</b>		<input type="checkbox"/> Dug	
Formation Type:			
<input checked="" type="checkbox"/> Unconsolidated Formation		<input type="checkbox"/> Bedrock	
Total Well Depth From Ground Surface (ft.) <b>19.5'</b>		Casing Diameter (in.)	
Lower Drillhole Diameter (in.) <b>2.125</b>		Casing Depth (ft.)	
Was well annular space grouted? <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Unknown			
If yes, to what depth (feet)?		Depth to Water (feet)	

Pump and piping removed? <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A			
Liner(s) removed? <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A			
Liner(s) perforated? <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A			
Screen removed? <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A			
Casing left in place? <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A			
Was casing cut off below surface? <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A			
Did sealing material rise to surface? <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A			
Did material settle after 24 hours? <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A			
If yes, was hole retopped? <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A			
If bentonite chips were used, were they hydrated with water from a known safe source? <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A			
Required Method of Placing Sealing Material			
<input type="checkbox"/> Conductor Pipe-Gravity		<input type="checkbox"/> Conductor Pipe-Pumped	
<input checked="" type="checkbox"/> Screened & Poured (Bentonite Chips)		<input type="checkbox"/> Other (Explain): _____	
Sealing Materials			
<input type="checkbox"/> Neat Cement Grout		<input type="checkbox"/> Concrete	
<input type="checkbox"/> Sand-Cement (Concrete) Grout		<input checked="" type="checkbox"/> Bentonite Chips	
For Monitoring Wells and Monitoring Well Boreholes Only:			
<input type="checkbox"/> Bentonite Chips		<input type="checkbox"/> Bentonite - Cement Grout	
<input type="checkbox"/> Granular Bentonite		<input type="checkbox"/> Bentonite - Sand Slurry	

<b>5. Material Used to Fill Well / Drillhole</b>					
<b>3/8" BENTONITE CHIPS</b>		From (ft.) Surface	To (ft.) <b>19.5</b>	No. Yards, Sacks Sealant or Volume (circle one) <b>1/2 BAG</b>	Mix Ratio or Mud Weight

**6. Comments**

<b>7. Supervision of Work</b>				<b>DNR Use Only</b>	
Name of Person or Firm Doing Filling & Sealing <b>UNITED ENGINEERING CONSULTANTS, INC</b>		License #	Date of Filling & Sealing or Verification (mm/dd/yyyy) <b>11/21/2019</b>	Date Received	Noted By
Street or Route <b>16237 W. RYERSON ROAD</b>			Telephone Number <b>(262) 785-1447</b>	Comments	
City <b>NEW BERLIN</b>	State <b>WI</b>	ZIP Code <b>53151</b>	Signature of Person Doing Work 	Date Signed <b>11/21/2019</b>	

**Notice:** Completion of this report is required by chs. 160, 281, 283, 289, 291-293, 295, and 299, Wis. Stats., and chs. NR 141 and 812, Wis. Adm. Code. In accordance with chs. 281, 289, 291-293, 295, and 299, Wis. Stats., failure to file this form may result in a forfeiture of between \$10-25,000, or imprisonment for up to one year, depending on the program and conduct involved. Personally identifiable information on this form is not intended to be used for any other purpose. Return form to the appropriate DNR office and bureau. See instructions on reverse for more information.

<input type="checkbox"/> Verification Only of Fill and Seal	<b>Route to DNR Bureau:</b>		
	<input type="checkbox"/> Drinking Water	<input type="checkbox"/> Watershed/Wastewater	<input type="checkbox"/> Remediation/Redevelopment
	<input type="checkbox"/> Waste Management	<input type="checkbox"/> Other: _____	

**1. Well Location Information** **2. Facility / Owner Information**

County <b>CALUMET</b>		WI Unique Well # of Removed Well	Hicap #	Facility Name	
Latitude / Longitude (see instructions) <b>44° 24' 369" N</b> <b>88° 37' 879" W</b>		Format Code <input type="checkbox"/> DD <input type="checkbox"/> DDM	Method Code <input type="checkbox"/> GPS008 <input type="checkbox"/> SCR002 <input type="checkbox"/> OTH001	Facility ID (FID or PWS)	
1/4 1/4 <b>Nw</b>	1/4 <b>NW</b>	Section <b>5</b>	Township <b>20 N</b>	Range <b>18</b>	Original Well Owner <b>STEVE WINTER</b>
Well Street Address <b>1717 E. CALUMET STREET</b>		Well ZIP Code <b>54915</b>		Present Well Owner	
Well City, Village or Town <b>APPLETON</b>		Well ZIP Code <b>54915</b>		Mailing Address of Present Owner <b>3305 N. BALLARD ROAD #C</b>	
Subdivision Name		Lot #		City of Present Owner <b>APPLETON</b>	State <b>WI</b>
				ZIP Code <b>54911</b>	

**3. Filled & Sealed Well / Drillhole / Borehole Information** **4. Pump, Liner, Screen, Casing & Sealing Material**

Reason for Removal from Service	WI Unique Well # of Replacement Well	<input type="checkbox"/> Pump and piping removed? Yes <input type="checkbox"/> No <input type="checkbox"/> N/A <input type="checkbox"/> Liner(s) removed? Yes <input type="checkbox"/> No <input type="checkbox"/> N/A <input type="checkbox"/> Liner(s) perforated? Yes <input type="checkbox"/> No <input type="checkbox"/> N/A <input type="checkbox"/> Screen removed? Yes <input type="checkbox"/> No <input type="checkbox"/> N/A <input type="checkbox"/> Casing left in place? Yes <input type="checkbox"/> No <input type="checkbox"/> N/A <input type="checkbox"/> Was casing cut off below surface? Yes <input type="checkbox"/> No <input type="checkbox"/> N/A <input type="checkbox"/> Did sealing material rise to surface? Yes <input type="checkbox"/> No <input type="checkbox"/> N/A <input type="checkbox"/> Did material settle after 24 hours? Yes <input type="checkbox"/> No <input type="checkbox"/> N/A If yes, was hole retopped? Yes <input type="checkbox"/> No <input type="checkbox"/> N/A If bentonite chips were used, were they hydrated with water from a known safe source? Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	
<input type="checkbox"/> Monitoring Well <input type="checkbox"/> Water Well <b>GP-2</b> <input checked="" type="checkbox"/> Borehole / Drillhole		Original Construction Date (mm/dd/yyyy) <b>11/14/2019</b> If a Well Construction Report is available, please attach.	
Construction Type: <input type="checkbox"/> Drilled <input type="checkbox"/> Driven (Sandpoint) <input type="checkbox"/> Dug <input checked="" type="checkbox"/> Other (specify): <b>DIRECT PUSH</b>		Required Method of Placing Sealing Material <input type="checkbox"/> Conductor Pipe-Gravity <input type="checkbox"/> Conductor Pipe-Pumped <input checked="" type="checkbox"/> Screened & Poured (Bentonite Chips) <input type="checkbox"/> Other (Explain):	
Formation Type: <input checked="" type="checkbox"/> Unconsolidated Formation <input type="checkbox"/> Bedrock		Sealing Materials <input type="checkbox"/> Neat Cement Grout <input type="checkbox"/> Sand-Cement (Concrete) Grout <input type="checkbox"/> Concrete <input checked="" type="checkbox"/> Bentonite Chips	
Total Well Depth From Ground Surface (ft.) <b>19.5'</b>	Casing Diameter (in.)	For Monitoring Wells and Monitoring Well Boreholes Only: <input type="checkbox"/> Bentonite Chips <input type="checkbox"/> Bentonite - Cement Grout <input type="checkbox"/> Granular Bentonite <input type="checkbox"/> Bentonite - Sand Slurry	
Lower Drillhole Diameter (in.) <b>2.125</b>	Casing Depth (ft.)		
Was well annular space grouted? <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Unknown	Depth to Water (feet)		

<b>5. Material Used to Fill Well / Drillhole</b>			
<b>3/8" BENTONITE CHIPS</b>	From (ft.) Surface	To (ft.) <b>19.5</b>	No. Yards, Sacks Sealant or Volume (circle one) <b>1/2 BAG</b>
			Mix Ratio or Mud Weight

**6. Comments**

<b>7. Supervision of Work</b>			<b>DNR Use Only</b>	
Name of Person or Firm Doing Filling & Sealing <b>UNITED ENGINEERING CONSULTANTS, INC</b>	License #	Date of Filling & Sealing or Verification (mm/dd/yyyy) <b>11/21/2019</b>	Date Received	Noted By
Street or Route <b>16237 W. RYERSON ROAD</b>		Telephone Number <b>(262) 785-1447</b>	Comments	
City <b>NEW BERLIN</b>	State <b>WI</b>	ZIP Code <b>53151</b>	Signature of Person Doing Work <i>[Signature]</i>	Date Signed <b>11/21/2019</b>

## Analytical Report

Timothy J. Anderson  
United Engineering Consultants, Inc.  
16237 W. Ryerson Road  
New Berlin, WI 53151

December 03, 2019

Work Order: 19K0774

RE: UEC Analysis  
19044

Dear Timothy J. Anderson:

Enclosed are the analytical reports for the EMT Work Order listed. Also included with this analytical report is a copy of the chain of custody associated with these samples. If you have any questions, please contact me.

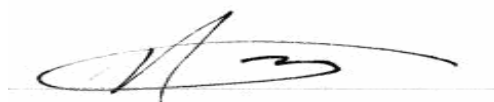
This is a revised report, that supersedes all previous reports. Please see case narrative for an explanation of revision.

Sincerely,

Approved by,



Jacoby Jackson  
Project Manager  
847.967.6666  
jjackson@emt.com  
Approved for release: 12/3/2019 11:48:13AM



Nathan Fey  
Laboratory Operations Manager

The contents of this report apply to the sample(s) analyzed. No duplication is allowed except in its entirety. Detection and Reporting limits are adjusted for sample size used, dilutions and moisture content, if applicable.

State of Wisconsin Dept of Natural Resources, Cert No. 999888890

## *Table of Contents*

<i>Cover Letter</i>	<i>1</i>
<i>Sample Summary</i>	<i>3</i>
<i>Case Narrative</i>	<i>4</i>
<i>Client Sample Results</i>	<i>5</i>
<i>Dates Report</i>	<i>13</i>
<i>Quality Control</i>	<i>14</i>
<i>Certified Analyses</i>	<i>19</i>
<i>List of Certifications</i>	<i>20</i>
<i>Qualifiers and Definitions</i>	<i>21</i>
<i>Chain of Custody</i>	<i>22</i>

### Sample Summary

<u>Sample ID</u>	<u>Laboratory ID</u>	<u>Matrix</u>	<u>Date Sampled</u>	<u>Date Received</u>
GP-1 2'-3'	19K0774-01	Soil	11/14/19 10:00	11/20/19 12:20
GP-1 10'-11'	19K0774-02	Soil	11/14/19 10:30	11/20/19 12:20
GP-2 2'-3'	19K0774-03	Soil	11/14/19 11:30	11/20/19 12:20
GP-2 10'-11'	19K0774-04	Soil	11/14/19 12:00	11/20/19 12:20



## Case Narrative

**Client:** United Engineering Consultants, Inc.

**Date:** 12/03/2019

**Project:** UEC Analysis  
19044

**Work Order:** 19K0774

---

All reported results are within defined laboratory quality control objectives unless listed below or otherwise qualified in this report.

Sample results only relate to the sample(s) received at the laboratory and analytes of interest tested.

**Work Order: 19K0774**

The samples were received on 11/20/19 12:20. The samples arrived in good condition and properly preserved. The temperature of the cooler at receipt was:

<u>Cooler</u>	<u>Temp C°</u>
Default Cooler	1.2

Refer to Qualifiers and Definitions for quality and analytical clarifications or deviations.

Revision 1).

Project Number changed from "19046" to "19044".

### Client Sample Results

**Client:** United Engineering Consultants, Inc.  
**Project:** UEC Analysis  
 19044  
**Work Order:** 19K0774

**Client Sample ID:** GP-1 2'-3'  
**Report Date:** 12/03/2019  
**Collection Date:** 11/14/2019 10:00  
**Matrix:** Soil  
**Lab ID:** 19K0774-01

Analyses	Result	EMT Reporting		Units	MDL	Date/Time Analyzed	Batch	Analyst	DF	
		Limit	Qual							
<b>Wet Chemistry</b>										
Method: SM2540G										
Total Solids	82.8	0.100		% (Percent)	0.00500	11/21/19 06:35	B9K0713	MKP	1	
<b>Volatile Organic Compounds by GC/MS</b>										
Method: SW-846 8260B/WDNR: PUBL-FW-140										
1,1,1-Trichloroethane	< 0.611	25.0		ug/Kg dry	0.611	11/27/19 20:47	B9K0987	GEP	1	
1,1,2,2-Tetrachloroethane	< 0.590	25.0		ug/Kg dry	0.590	11/27/19 20:47	B9K0987	GEP	1	
1,1,2-Trichloroethane	< 0.606	25.0		ug/Kg dry	0.606	11/27/19 20:47	B9K0987	GEP	1	
1,1-Dichloroethane	< 0.918	25.0		ug/Kg dry	0.918	11/27/19 20:47	B9K0987	GEP	1	
1,1-Dichloroethene	< 0.718	25.0		ug/Kg dry	0.718	11/27/19 20:47	B9K0987	GEP	1	
1,2,4-Trimethylbenzene	< 0.354	25.0		ug/Kg dry	0.354	11/27/19 20:47	B9K0987	GEP	1	
1,2-Dibromo-3-chloropropane	< 1.00	25.0		ug/Kg dry	1.00	11/27/19 20:47	B9K0987	GEP	1	
1,2-Dibromoethane	< 0.307	25.0		ug/Kg dry	0.307	11/27/19 20:47	B9K0987	GEP	1	
1,2-Dichloroethane	< 0.223	25.0		ug/Kg dry	0.223	11/27/19 20:47	B9K0987	GEP	1	
1,2-Dichloropropane	< 0.412	25.0		ug/Kg dry	0.412	11/27/19 20:47	B9K0987	GEP	1	
1,3,5-Trimethylbenzene	< 0.347	25.0		ug/Kg dry	0.347	11/27/19 20:47	B9K0987	GEP	1	
1-Butanol	< 10.5	25.0		ug/Kg dry	10.5	11/27/19 20:47	B9K0987	GEP	1	
2-Butanone	< 2.61	25.0		ug/Kg dry	2.61	11/27/19 20:47	B9K0987	GEP	1	
2-Hexanone	< 1.80	25.0		ug/Kg dry	1.80	11/27/19 20:47	B9K0987	GEP	1	
4-Methyl-2-pentanone	< 1.21	25.0		ug/Kg dry	1.21	11/27/19 20:47	B9K0987	GEP	1	
Acetone	< 4.48	25.0		ug/Kg dry	4.48	11/27/19 20:47	B9K0987	GEP	1	
Acrylonitrile	< 1.29	25.0		ug/Kg dry	1.29	11/27/19 20:47	B9K0987	GEP	1	
Benzene	< 0.264	25.0		ug/Kg dry	0.264	11/27/19 20:47	B9K0987	GEP	1	
Bromodichloromethane	< 0.394	25.0		ug/Kg dry	0.394	11/27/19 20:47	B9K0987	GEP	1	
Bromoform	< 0.429	25.0		ug/Kg dry	0.429	11/27/19 20:47	B9K0987	GEP	1	
Carbon disulfide	< 0.321	25.0		ug/Kg dry	0.321	11/27/19 20:47	B9K0987	GEP	1	
Carbon tetrachloride	< 0.277	25.0		ug/Kg dry	0.277	11/27/19 20:47	B9K0987	GEP	1	
Chlorobenzene	< 0.305	25.0		ug/Kg dry	0.305	11/27/19 20:47	B9K0987	GEP	1	
Chloroform	< 0.570	25.0		ug/Kg dry	0.570	11/27/19 20:47	B9K0987	GEP	1	
cis-1,2-Dichloroethene	< 0.629	25.0		ug/Kg dry	0.629	11/27/19 20:47	B9K0987	GEP	1	
Dibromochloromethane	< 0.499	25.0		ug/Kg dry	0.499	11/27/19 20:47	B9K0987	GEP	1	
Ethylbenzene	< 0.392	25.0		ug/Kg dry	0.392	11/27/19 20:47	B9K0987	GEP	1	
m,p-Xylene	< 1.95	25.0		ug/Kg dry	1.95	11/27/19 20:47	B9K0987	GEP	1	
Methyl tert-butyl ether	< 0.458	25.0		ug/Kg dry	0.458	11/27/19 20:47	B9K0987	GEP	1	
Methylene chloride	< 1.07	25.0		ug/Kg dry	1.07	11/27/19 20:47	B9K0987	GEP	1	
o-Xylene	< 0.271	25.0		ug/Kg dry	0.271	11/27/19 20:47	B9K0987	GEP	1	
Styrene	< 0.392	25.0		ug/Kg dry	0.392	11/27/19 20:47	B9K0987	GEP	1	
Tetrachloroethene	< 0.475	25.0		ug/Kg dry	0.475	11/27/19 20:47	B9K0987	GEP	1	
Toluene	< 0.356	25.0		ug/Kg dry	0.356	11/27/19 20:47	B9K0987	GEP	1	
trans-1,2-Dichloroethene	< 0.866	25.0		ug/Kg dry	0.866	11/27/19 20:47	B9K0987	GEP	1	
Trichloroethene	< 0.317	25.0		ug/Kg dry	0.317	11/27/19 20:47	B9K0987	GEP	1	
Vinyl acetate	< 0.703	25.0		ug/Kg dry	0.703	11/27/19 20:47	B9K0987	GEP	1	
Vinyl chloride	< 0.434	25.0		ug/Kg dry	0.434	11/27/19 20:47	B9K0987	GEP	1	
Xylenes, Total	< 2.22	25.0		ug/Kg dry	2.22	11/27/19 20:47	B9K0987	GEP	1	

### Client Sample Results

(Continued)

**Client:** United Engineering Consultants, Inc.  
**Project:** UEC Analysis  
 19044  
**Work Order:** 19K0774

**Client Sample ID:** GP-1 2'-3'  
**Report Date:** 12/03/2019  
**Collection Date:** 11/14/2019 10:00  
**Matrix:** Soil  
**Lab ID:** 19K0774-01 (Continued)

Analyses	Result	EMT Reporting		MDL	Date/Time Analyzed	Batch	Analyst	DF
		Limit	Qual Units					
<b>Volatile Organic Compounds by GC/MS (Continued)</b>								
Method: SW-846 8260B/WDNR: PUBL-FW-140 (Continued)								
1,2-Dichloroethene, Total	< 1.49	25.0	ug/Kg dry	1.49	11/27/19 20:47	B9K0987	GEP	1
Surrogate: Dibromofluoromethane			Recovery: 98%	Limits: 78-137	11/27/19 20:47	B9K0987	GEP	1
Surrogate: 1,2-Dichloroethane-d4			Recovery: 98%	Limits: 86-137	11/27/19 20:47	B9K0987	GEP	1
Surrogate: Fluorobenzene			Recovery: 97%	Limits: 80-120	11/27/19 20:47	B9K0987	GEP	1
Surrogate: Toluene-d8			Recovery: 96%	Limits: 73-112	11/27/19 20:47	B9K0987	GEP	1
Surrogate: 4-Bromofluorobenzene			Recovery: 114%	Limits: 85-120	11/27/19 20:47	B9K0987	GEP	1
Surrogate: 1,2-Dichlorobenzene-d4			Recovery: 106%	Limits: 85-128	11/27/19 20:47	B9K0987	GEP	1

**Client Sample Results**

(Continued)

**Client:** United Engineering Consultants, Inc.  
**Project:** UEC Analysis  
 19044  
**Work Order:** 19K0774

**Client Sample ID:** GP-1 10'-11'  
**Report Date:** 12/03/2019  
**Collection Date:** 11/14/2019 10:30  
**Matrix:** Soil  
**Lab ID:** 19K0774-02

Analyses	Result	EMT Reporting		Units	MDL	Date/Time Analyzed	Batch	Analyst	DF	
		Limit	Qual							
<b>Wet Chemistry</b>										
Method: SM2540G										
Total Solids	82.4	0.100		% (Percent)	0.00500	11/21/19 06:37	B9K0713	MKP	1	
<b>Volatile Organic Compounds by GC/MS</b>										
Method: SW-846 8260B/WDNR: PUBL-FW-140										
1,1,1-Trichloroethane	< 0.0972	25.0		ug/Kg dry	0.0972	11/27/19 21:12	B9K0987	GEP	1	
1,1,2,2-Tetrachloroethane	< 0.0939	25.0		ug/Kg dry	0.0939	11/27/19 21:12	B9K0987	GEP	1	
1,1,2-Trichloroethane	< 0.0965	25.0		ug/Kg dry	0.0965	11/27/19 21:12	B9K0987	GEP	1	
1,1-Dichloroethane	< 0.146	25.0		ug/Kg dry	0.146	11/27/19 21:12	B9K0987	GEP	1	
1,1-Dichloroethene	< 0.114	25.0		ug/Kg dry	0.114	11/27/19 21:12	B9K0987	GEP	1	
1,2,4-Trimethylbenzene	< 0.0564	25.0		ug/Kg dry	0.0564	11/27/19 21:12	B9K0987	GEP	1	
1,2-Dibromo-3-chloropropane	< 0.160	25.0		ug/Kg dry	0.160	11/27/19 21:12	B9K0987	GEP	1	
1,2-Dibromoethane	< 0.0489	25.0		ug/Kg dry	0.0489	11/27/19 21:12	B9K0987	GEP	1	
1,2-Dichloroethane	< 0.0354	25.0		ug/Kg dry	0.0354	11/27/19 21:12	B9K0987	GEP	1	
1,2-Dichloropropane	< 0.0656	25.0		ug/Kg dry	0.0656	11/27/19 21:12	B9K0987	GEP	1	
1,3,5-Trimethylbenzene	< 0.0552	25.0		ug/Kg dry	0.0552	11/27/19 21:12	B9K0987	GEP	1	
1-Butanol	< 1.67	25.0		ug/Kg dry	1.67	11/27/19 21:12	B9K0987	GEP	1	
2-Butanone	< 0.416	25.0		ug/Kg dry	0.416	11/27/19 21:12	B9K0987	GEP	1	
2-Hexanone	< 0.287	25.0		ug/Kg dry	0.287	11/27/19 21:12	B9K0987	GEP	1	
4-Methyl-2-pentanone	< 0.193	25.0		ug/Kg dry	0.193	11/27/19 21:12	B9K0987	GEP	1	
Acetone	< 0.713	25.0		ug/Kg dry	0.713	11/27/19 21:12	B9K0987	GEP	1	
Acrylonitrile	< 0.205	25.0		ug/Kg dry	0.205	11/27/19 21:12	B9K0987	GEP	1	
Benzene	< 0.0420	25.0		ug/Kg dry	0.0420	11/27/19 21:12	B9K0987	GEP	1	
Bromodichloromethane	< 0.0627	25.0		ug/Kg dry	0.0627	11/27/19 21:12	B9K0987	GEP	1	
Bromoform	< 0.0683	25.0		ug/Kg dry	0.0683	11/27/19 21:12	B9K0987	GEP	1	
Carbon disulfide	< 0.0511	25.0		ug/Kg dry	0.0511	11/27/19 21:12	B9K0987	GEP	1	
Carbon tetrachloride	< 0.0441	25.0		ug/Kg dry	0.0441	11/27/19 21:12	B9K0987	GEP	1	
Chlorobenzene	< 0.0486	25.0		ug/Kg dry	0.0486	11/27/19 21:12	B9K0987	GEP	1	
Chloroform	< 0.0908	25.0		ug/Kg dry	0.0908	11/27/19 21:12	B9K0987	GEP	1	
cis-1,2-Dichloroethene	< 0.100	25.0		ug/Kg dry	0.100	11/27/19 21:12	B9K0987	GEP	1	
Dibromochloromethane	< 0.0794	25.0		ug/Kg dry	0.0794	11/27/19 21:12	B9K0987	GEP	1	
Ethylbenzene	< 0.0625	25.0		ug/Kg dry	0.0625	11/27/19 21:12	B9K0987	GEP	1	
m,p-Xylene	< 0.310	25.0		ug/Kg dry	0.310	11/27/19 21:12	B9K0987	GEP	1	
Methyl tert-butyl ether	< 0.0729	25.0		ug/Kg dry	0.0729	11/27/19 21:12	B9K0987	GEP	1	
Methylene chloride	< 0.171	25.0		ug/Kg dry	0.171	11/27/19 21:12	B9K0987	GEP	1	
o-Xylene	< 0.0432	25.0		ug/Kg dry	0.0432	11/27/19 21:12	B9K0987	GEP	1	
Styrene	< 0.0624	25.0		ug/Kg dry	0.0624	11/27/19 21:12	B9K0987	GEP	1	
Tetrachloroethene	< 0.0757	25.0		ug/Kg dry	0.0757	11/27/19 21:12	B9K0987	GEP	1	
Toluene	< 0.0567	25.0		ug/Kg dry	0.0567	11/27/19 21:12	B9K0987	GEP	1	
trans-1,2-Dichloroethene	< 0.138	25.0		ug/Kg dry	0.138	11/27/19 21:12	B9K0987	GEP	1	
Trichloroethene	< 0.0504	25.0		ug/Kg dry	0.0504	11/27/19 21:12	B9K0987	GEP	1	
Vinyl acetate	< 0.112	25.0		ug/Kg dry	0.112	11/27/19 21:12	B9K0987	GEP	1	
Vinyl chloride	< 0.0690	25.0		ug/Kg dry	0.0690	11/27/19 21:12	B9K0987	GEP	1	
Xylenes, Total	< 0.354	25.0		ug/Kg dry	0.354	11/27/19 21:12	B9K0987	GEP	1	

## Client Sample Results

(Continued)

**Client:** United Engineering Consultants, Inc.  
**Project:** UEC Analysis  
 19044  
**Work Order:** 19K0774

**Client Sample ID:** GP-1 10'-11'  
**Report Date:** 12/03/2019  
**Collection Date:** 11/14/2019 10:30  
**Matrix:** Soil  
**Lab ID:** 19K0774-02 (Continued)

Analyses	Result	EMT Reporting		Qual Units	MDL	Date/Time Analyzed	Batch	Analyst	DF	
		Limit								
<b>Volatile Organic Compounds by GC/MS (Continued)</b>										
Method: SW-846 8260B/WDNR: PUBL-FW-140 (Continued)										
1,2-Dichloroethene, Total	< 0.238	25.0		ug/Kg dry	0.238	11/27/19 21:12	B9K0987	GEP	1	
Surrogate: Dibromofluoromethane				Recovery: 100%	Limits: 78-137	11/27/19 21:12	B9K0987	GEP	1	
Surrogate: 1,2-Dichloroethane-d4				Recovery: 96%	Limits: 86-137	11/27/19 21:12	B9K0987	GEP	1	
Surrogate: Fluorobenzene				Recovery: 96%	Limits: 80-120	11/27/19 21:12	B9K0987	GEP	1	
Surrogate: Toluene-d8				Recovery: 95%	Limits: 73-112	11/27/19 21:12	B9K0987	GEP	1	
Surrogate: 4-Bromofluorobenzene				Recovery: 117%	Limits: 85-120	11/27/19 21:12	B9K0987	GEP	1	
Surrogate: 1,2-Dichlorobenzene-d4				Recovery: 103%	Limits: 85-128	11/27/19 21:12	B9K0987	GEP	1	

**Client Sample Results**

(Continued)

**Client:** United Engineering Consultants, Inc.  
**Project:** UEC Analysis  
 19044  
**Work Order:** 19K0774

**Client Sample ID:** GP-2 2'-3'  
**Report Date:** 12/03/2019  
**Collection Date:** 11/14/2019 11:30  
**Matrix:** Soil  
**Lab ID:** 19K0774-03

Analyses	Result	EMT Reporting		Units	MDL	Date/Time Analyzed	Batch	Analyst	DF	
		Limit	Qual							
<b>Wet Chemistry</b>										
Method: SM2540G										
Total Solids	80.2	0.100		% (Percent)	0.00500	11/21/19 06:39	B9K0713	MKP	1	
<b>Volatile Organic Compounds by GC/MS</b>										
Method: SW-846 8260B/WDNR: PUBL-FW-140										
1,1,1-Trichloroethane	< 0.567	25.0		ug/Kg dry	0.567	11/27/19 21:37	B9K0987	GEP	1	
1,1,2,2-Tetrachloroethane	< 0.548	25.0		ug/Kg dry	0.548	11/27/19 21:37	B9K0987	GEP	1	
1,1,2-Trichloroethane	< 0.563	25.0		ug/Kg dry	0.563	11/27/19 21:37	B9K0987	GEP	1	
1,1-Dichloroethane	< 0.853	25.0		ug/Kg dry	0.853	11/27/19 21:37	B9K0987	GEP	1	
1,1-Dichloroethene	< 0.667	25.0		ug/Kg dry	0.667	11/27/19 21:37	B9K0987	GEP	1	
1,2,4-Trimethylbenzene	< 0.329	25.0		ug/Kg dry	0.329	11/27/19 21:37	B9K0987	GEP	1	
1,2-Dibromo-3-chloropropane	< 0.934	25.0		ug/Kg dry	0.934	11/27/19 21:37	B9K0987	GEP	1	
1,2-Dibromoethane	< 0.286	25.0		ug/Kg dry	0.286	11/27/19 21:37	B9K0987	GEP	1	
1,2-Dichloroethane	< 0.207	25.0		ug/Kg dry	0.207	11/27/19 21:37	B9K0987	GEP	1	
1,2-Dichloropropane	< 0.383	25.0		ug/Kg dry	0.383	11/27/19 21:37	B9K0987	GEP	1	
1,3,5-Trimethylbenzene	< 0.322	25.0		ug/Kg dry	0.322	11/27/19 21:37	B9K0987	GEP	1	
1-Butanol	< 9.76	25.0		ug/Kg dry	9.76	11/27/19 21:37	B9K0987	GEP	1	
2-Butanone	< 2.43	25.0		ug/Kg dry	2.43	11/27/19 21:37	B9K0987	GEP	1	
2-Hexanone	< 1.68	25.0		ug/Kg dry	1.68	11/27/19 21:37	B9K0987	GEP	1	
4-Methyl-2-pentanone	< 1.13	25.0		ug/Kg dry	1.13	11/27/19 21:37	B9K0987	GEP	1	
Acetone	< 4.16	25.0		ug/Kg dry	4.16	11/27/19 21:37	B9K0987	GEP	1	
Acrylonitrile	< 1.20	25.0		ug/Kg dry	1.20	11/27/19 21:37	B9K0987	GEP	1	
Benzene	< 0.245	25.0		ug/Kg dry	0.245	11/27/19 21:37	B9K0987	GEP	1	
Bromodichloromethane	< 0.366	25.0		ug/Kg dry	0.366	11/27/19 21:37	B9K0987	GEP	1	
Bromoform	< 0.398	25.0		ug/Kg dry	0.398	11/27/19 21:37	B9K0987	GEP	1	
Carbon disulfide	< 0.298	25.0		ug/Kg dry	0.298	11/27/19 21:37	B9K0987	GEP	1	
Carbon tetrachloride	< 0.258	25.0		ug/Kg dry	0.258	11/27/19 21:37	B9K0987	GEP	1	
Chlorobenzene	< 0.284	25.0		ug/Kg dry	0.284	11/27/19 21:37	B9K0987	GEP	1	
Chloroform	< 0.530	25.0		ug/Kg dry	0.530	11/27/19 21:37	B9K0987	GEP	1	
cis-1,2-Dichloroethene	< 0.584	25.0		ug/Kg dry	0.584	11/27/19 21:37	B9K0987	GEP	1	
Dibromochloromethane	< 0.464	25.0		ug/Kg dry	0.464	11/27/19 21:37	B9K0987	GEP	1	
Ethylbenzene	< 0.365	25.0		ug/Kg dry	0.365	11/27/19 21:37	B9K0987	GEP	1	
m,p-Xylene	< 1.81	25.0		ug/Kg dry	1.81	11/27/19 21:37	B9K0987	GEP	1	
Methyl tert-butyl ether	< 0.426	25.0		ug/Kg dry	0.426	11/27/19 21:37	B9K0987	GEP	1	
Methylene chloride	< 0.997	25.0		ug/Kg dry	0.997	11/27/19 21:37	B9K0987	GEP	1	
o-Xylene	< 0.252	25.0		ug/Kg dry	0.252	11/27/19 21:37	B9K0987	GEP	1	
Styrene	< 0.364	25.0		ug/Kg dry	0.364	11/27/19 21:37	B9K0987	GEP	1	
Tetrachloroethene	< 0.442	25.0		ug/Kg dry	0.442	11/27/19 21:37	B9K0987	GEP	1	
Toluene	< 0.331	25.0		ug/Kg dry	0.331	11/27/19 21:37	B9K0987	GEP	1	
trans-1,2-Dichloroethene	< 0.804	25.0		ug/Kg dry	0.804	11/27/19 21:37	B9K0987	GEP	1	
Trichloroethene	< 0.294	25.0		ug/Kg dry	0.294	11/27/19 21:37	B9K0987	GEP	1	
Vinyl acetate	< 0.653	25.0		ug/Kg dry	0.653	11/27/19 21:37	B9K0987	GEP	1	
Vinyl chloride	< 0.403	25.0		ug/Kg dry	0.403	11/27/19 21:37	B9K0987	GEP	1	
Xylenes, Total	< 2.06	25.0		ug/Kg dry	2.06	11/27/19 21:37	B9K0987	GEP	1	

### Client Sample Results

(Continued)

**Client:** United Engineering Consultants, Inc.  
**Project:** UEC Analysis  
 19044  
**Work Order:** 19K0774

**Client Sample ID:** GP-2 2'-3'  
**Report Date:** 12/03/2019  
**Collection Date:** 11/14/2019 11:30  
**Matrix:** Soil  
**Lab ID:** 19K0774-03 (Continued)

Analyses	Result	EMT Reporting		Qual	Units	MDL	Date/Time Analyzed	Batch	Analyst	DF
		Limit	Limit							
<b>Volatile Organic Compounds by GC/MS (Continued)</b>										
Method: SW-846 8260B/WDNR: PUBL-FW-140 (Continued)										
1,2-Dichloroethene, Total	< 1.39	25.0			ug/Kg dry	1.39	11/27/19 21:37	B9K0987	GEP	1
Surrogate: Dibromofluoromethane					Recovery: 101%	Limits: 78-137	11/27/19 21:37	B9K0987	GEP	1
Surrogate: 1,2-Dichloroethane-d4					Recovery: 98%	Limits: 86-137	11/27/19 21:37	B9K0987	GEP	1
Surrogate: Fluorobenzene					Recovery: 97%	Limits: 80-120	11/27/19 21:37	B9K0987	GEP	1
Surrogate: Toluene-d8					Recovery: 99%	Limits: 73-112	11/27/19 21:37	B9K0987	GEP	1
Surrogate: 4-Bromofluorobenzene					Recovery: 108%	Limits: 85-120	11/27/19 21:37	B9K0987	GEP	1
Surrogate: 1,2-Dichlorobenzene-d4					Recovery: 104%	Limits: 85-128	11/27/19 21:37	B9K0987	GEP	1

**Client Sample Results**

(Continued)

**Client:** United Engineering Consultants, Inc.  
**Project:** UEC Analysis  
 19044  
**Work Order:** 19K0774

**Client Sample ID:** GP-2 10'-11'  
**Report Date:** 12/03/2019  
**Collection Date:** 11/14/2019 12:00  
**Matrix:** Soil  
**Lab ID:** 19K0774-04

Analyses	Result	EMT Reporting		Units	MDL	Date/Time Analyzed	Batch	Analyst	DF	
		Limit	Qual							
<b>Wet Chemistry</b>										
Method: SM2540G										
Total Solids	83.7	0.100		% (Percent)	0.00500	11/21/19 06:41	B9K0713	MKP	1	
<b>Volatile Organic Compounds by GC/MS</b>										
Method: SW-846 8260B/WDNR: PUBL-FW-140										
1,1,1-Trichloroethane	< 0.552	25.0		ug/Kg dry	0.552	11/27/19 22:02	B9K0987	GEP	1	
1,1,2,2-Tetrachloroethane	< 0.534	25.0		ug/Kg dry	0.534	11/27/19 22:02	B9K0987	GEP	1	
1,1,2-Trichloroethane	< 0.549	25.0		ug/Kg dry	0.549	11/27/19 22:02	B9K0987	GEP	1	
1,1-Dichloroethane	< 0.830	25.0		ug/Kg dry	0.830	11/27/19 22:02	B9K0987	GEP	1	
1,1-Dichloroethene	< 0.649	25.0		ug/Kg dry	0.649	11/27/19 22:02	B9K0987	GEP	1	
1,2,4-Trimethylbenzene	< 0.321	25.0		ug/Kg dry	0.321	11/27/19 22:02	B9K0987	GEP	1	
1,2-Dibromo-3-chloropropane	< 0.909	25.0		ug/Kg dry	0.909	11/27/19 22:02	B9K0987	GEP	1	
1,2-Dibromoethane	< 0.278	25.0		ug/Kg dry	0.278	11/27/19 22:02	B9K0987	GEP	1	
1,2-Dichloroethane	< 0.201	25.0		ug/Kg dry	0.201	11/27/19 22:02	B9K0987	GEP	1	
1,2-Dichloropropane	< 0.373	25.0		ug/Kg dry	0.373	11/27/19 22:02	B9K0987	GEP	1	
1,3,5-Trimethylbenzene	< 0.314	25.0		ug/Kg dry	0.314	11/27/19 22:02	B9K0987	GEP	1	
1-Butanol	< 9.51	25.0		ug/Kg dry	9.51	11/27/19 22:02	B9K0987	GEP	1	
2-Butanone	< 2.36	25.0		ug/Kg dry	2.36	11/27/19 22:02	B9K0987	GEP	1	
2-Hexanone	< 1.63	25.0		ug/Kg dry	1.63	11/27/19 22:02	B9K0987	GEP	1	
4-Methyl-2-pentanone	< 1.10	25.0		ug/Kg dry	1.10	11/27/19 22:02	B9K0987	GEP	1	
Acetone	< 4.05	25.0		ug/Kg dry	4.05	11/27/19 22:02	B9K0987	GEP	1	
Acrylonitrile	< 1.17	25.0		ug/Kg dry	1.17	11/27/19 22:02	B9K0987	GEP	1	
Benzene	< 0.239	25.0		ug/Kg dry	0.239	11/27/19 22:02	B9K0987	GEP	1	
Bromodichloromethane	< 0.356	25.0		ug/Kg dry	0.356	11/27/19 22:02	B9K0987	GEP	1	
Bromoform	< 0.388	25.0		ug/Kg dry	0.388	11/27/19 22:02	B9K0987	GEP	1	
Carbon disulfide	< 0.290	25.0		ug/Kg dry	0.290	11/27/19 22:02	B9K0987	GEP	1	
Carbon tetrachloride	< 0.251	25.0		ug/Kg dry	0.251	11/27/19 22:02	B9K0987	GEP	1	
Chlorobenzene	< 0.276	25.0		ug/Kg dry	0.276	11/27/19 22:02	B9K0987	GEP	1	
Chloroform	< 0.516	25.0		ug/Kg dry	0.516	11/27/19 22:02	B9K0987	GEP	1	
cis-1,2-Dichloroethene	< 0.569	25.0		ug/Kg dry	0.569	11/27/19 22:02	B9K0987	GEP	1	
Dibromochloromethane	< 0.451	25.0		ug/Kg dry	0.451	11/27/19 22:02	B9K0987	GEP	1	
Ethylbenzene	< 0.355	25.0		ug/Kg dry	0.355	11/27/19 22:02	B9K0987	GEP	1	
m,p-Xylene	< 1.76	25.0		ug/Kg dry	1.76	11/27/19 22:02	B9K0987	GEP	1	
Methyl tert-butyl ether	< 0.415	25.0		ug/Kg dry	0.415	11/27/19 22:02	B9K0987	GEP	1	
Methylene chloride	< 0.971	25.0		ug/Kg dry	0.971	11/27/19 22:02	B9K0987	GEP	1	
o-Xylene	< 0.245	25.0		ug/Kg dry	0.245	11/27/19 22:02	B9K0987	GEP	1	
Styrene	< 0.355	25.0		ug/Kg dry	0.355	11/27/19 22:02	B9K0987	GEP	1	
Tetrachloroethene	< 0.430	25.0		ug/Kg dry	0.430	11/27/19 22:02	B9K0987	GEP	1	
Toluene	< 0.323	25.0		ug/Kg dry	0.323	11/27/19 22:02	B9K0987	GEP	1	
trans-1,2-Dichloroethene	< 0.783	25.0		ug/Kg dry	0.783	11/27/19 22:02	B9K0987	GEP	1	
Trichloroethene	< 0.286	25.0		ug/Kg dry	0.286	11/27/19 22:02	B9K0987	GEP	1	
Vinyl acetate	< 0.636	25.0		ug/Kg dry	0.636	11/27/19 22:02	B9K0987	GEP	1	
Vinyl chloride	< 0.392	25.0		ug/Kg dry	0.392	11/27/19 22:02	B9K0987	GEP	1	
Xylenes, Total	< 2.01	25.0		ug/Kg dry	2.01	11/27/19 22:02	B9K0987	GEP	1	



### Client Sample Results

(Continued)

**Client:** United Engineering Consultants, Inc.  
**Project:** UEC Analysis  
 19044  
**Work Order:** 19K0774

**Client Sample ID:** GP-2 10'-11'  
**Report Date:** 12/03/2019  
**Collection Date:** 11/14/2019 12:00  
**Matrix:** Soil  
**Lab ID:** 19K0774-04 (Continued)

Analyses	Result	EMT Reporting		MDL	Date/Time Analyzed	Batch	Analyst	DF
		Limit	Qual Units					
<b>Volatile Organic Compounds by GC/MS (Continued)</b>								
Method: SW-846 8260B/WDNR: PUBL-FW-140 (Continued)								
1,2-Dichloroethene, Total	< 1.35	25.0	ug/Kg dry	1.35	11/27/19 22:02	B9K0987	GEP	1
Surrogate: Dibromofluoromethane			Recovery: 95%	Limits: 78-137	11/27/19 22:02	B9K0987	GEP	1
Surrogate: 1,2-Dichloroethane-d4			Recovery: 100%	Limits: 86-137	11/27/19 22:02	B9K0987	GEP	1
Surrogate: Fluorobenzene			Recovery: 96%	Limits: 80-120	11/27/19 22:02	B9K0987	GEP	1
Surrogate: Toluene-d8			Recovery: 101%	Limits: 73-112	11/27/19 22:02	B9K0987	GEP	1
Surrogate: 4-Bromofluorobenzene			Recovery: 104%	Limits: 85-120	11/27/19 22:02	B9K0987	GEP	1
Surrogate: 1,2-Dichlorobenzene-d4			Recovery: 108%	Limits: 85-128	11/27/19 22:02	B9K0987	GEP	1

## Dates Report

**Client:** United Engineering Consultants, Inc.

**Report Date:** 12/03/2019

**Project:** UEC Analysis  
19044

**Work Order:** 19K0774

Sample ID	Client Sample ID	Collection	Matrix	Test Name	Leached Prep Date	Prep Date	Analysis Date	Batch ID	Sequence
19K0774-01	GP-1 2'-3'	11/14/19	Soil	Total Solids / Percent Moisture		11/21/19 06:12	11/21/19 06:35	B9K0713	
				Volatile Organic Compounds (WDNR) by GC/MS		11/27/19 10:00	11/27/19 20:47	B9K0987	S9K0482
19K0774-02	GP-1 10'-11'	11/14/19		Total Solids / Percent Moisture		11/21/19 06:12	11/21/19 06:37	B9K0713	
				Volatile Organic Compounds (WDNR) by GC/MS		11/27/19 10:00	11/27/19 21:12	B9K0987	S9K0482
19K0774-03	GP-2 2'-3'	11/14/19		Total Solids / Percent Moisture		11/21/19 06:12	11/21/19 06:39	B9K0713	
				Volatile Organic Compounds (WDNR) by GC/MS		11/27/19 10:00	11/27/19 21:37	B9K0987	S9K0482
19K0774-04	GP-2 10'-11'	11/14/19		Total Solids / Percent Moisture		11/21/19 06:12	11/21/19 06:41	B9K0713	
				Volatile Organic Compounds (WDNR) by GC/MS		11/27/19 10:00	11/27/19 22:02	B9K0987	S9K0482

### Quality Control

**Client:** United Engineering Consultants, Inc.  
**Project:** UEC Analysis  
 19044  
**Work Order:** 19K0774

**Report Date:** 12/03/2019  
**Matrix:** Solid

### Wet Chemistry

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qual	DF
---------	--------	--------------------	-------	----------------	------------------	------	----------------	-----	--------------	------	----

#### Batch: B9K0713

##### Blank (B9K0713-BLK1)

Prepared: 11/21/2019 06:12 Analyzed: 11/21/2019 07:15

Total Solids	< 0.100	0.100	%								1
--------------	---------	-------	---	--	--	--	--	--	--	--	---

##### LCS (B9K0713-BS1)

Prepared: 11/21/2019 06:12 Analyzed: 11/21/2019 07:17

Total Solids	0.188	0.100	%	0.2012		93.5	86.3-105				1
--------------	-------	-------	---	--------	--	------	----------	--	--	--	---

##### Duplicate (B9K0713-DUP1)

Source: 19K0776-04

Prepared: 11/21/2019 06:12 Analyzed: 11/21/2019 07:19

Total Solids	83.5	0.100	%		84.4			1.13	5		1
--------------	------	-------	---	--	------	--	--	------	---	--	---

##### Duplicate (B9K0713-DUP2)

Source: 19K0794-01

Prepared: 11/21/2019 06:12 Analyzed: 11/21/2019 07:21

Total Solids	95.7	0.100	%		94.4			1.37	5		1
--------------	------	-------	---	--	------	--	--	------	---	--	---

**Quality Control**

(Continued)

**Client:** United Engineering Consultants, Inc.**Report Date:** 12/03/2019**Project:** UEC Analysis  
19044**Matrix:** Solid**Work Order:** 19K0774**Volatile Organic Compounds by GC/MS**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qual	DF
---------	--------	--------------------	-------	----------------	------------------	------	----------------	-----	--------------	------	----

**Batch: B9K0987****Blank (B9K0987-BLK1)**

Prepared: 11/27/2019 10:00 Analyzed: 11/27/2019 14:07

1,1,1-Trichloroethane	< 0.532	4.00	ug/Kg wet								1
1,1,2,2-Tetrachloroethane	< 0.514	4.00	ug/Kg wet								1
1,1,2-Trichloroethane	< 0.528	4.00	ug/Kg wet								1
1,1-Dichloroethane	< 0.799	4.00	ug/Kg wet								1
1,1-Dichloroethene	< 0.625	4.00	ug/Kg wet								1
1,2,4-Trimethylbenzene	< 0.308	2.00	ug/Kg wet								1
1,2-Dibromo-3-chloropropane	< 0.875	4.00	ug/Kg wet								1
1,2-Dibromoethane	< 0.268	2.00	ug/Kg wet								1
1,2-Dichloroethane	< 0.194	1.00	ug/Kg wet								1
1,2-Dichloropropane	< 0.359	2.00	ug/Kg wet								1
1,3,5-Trimethylbenzene	< 0.302	2.00	ug/Kg wet								1
1-Butanol	< 9.15	72.0	ug/Kg wet								1
2-Butanone	< 2.27	14.0	ug/Kg wet								1
2-Hexanone	< 1.57	7.00	ug/Kg wet								1
4-Methyl-2-pentanone	< 1.06	7.00	ug/Kg wet								1
Acetone	< 3.90	35.0	ug/Kg wet								1
Acrylonitrile	< 1.12	8.00	ug/Kg wet								1
Benzene	< 0.230	2.00	ug/Kg wet								1
Bromodichloromethane	< 0.343	2.00	ug/Kg wet								1
Bromoform	< 0.373	2.00	ug/Kg wet								1
Carbon disulfide	< 0.279	2.00	ug/Kg wet								1
Carbon tetrachloride	< 0.242	2.00	ug/Kg wet								1
Chlorobenzene	< 0.266	2.00	ug/Kg wet								1
Chloroform	< 0.496	2.00	ug/Kg wet								1
cis-1,2-Dichloroethene	< 0.548	4.00	ug/Kg wet								1
Dibromochloromethane	< 0.434	4.00	ug/Kg wet								1
Ethylbenzene	< 0.342	2.00	ug/Kg wet								1
m,p-Xylene	< 1.70	8.00	ug/Kg wet								1
Methyl tert-butyl ether	< 0.399	2.00	ug/Kg wet								1
Methylene chloride	5.50	4.00	ug/Kg wet								1
o-Xylene	< 0.236	2.00	ug/Kg wet								1
Styrene	< 0.341	2.00	ug/Kg wet								1
Tetrachloroethene	< 0.414	2.00	ug/Kg wet								1
Toluene	< 0.310	2.00	ug/Kg wet								1
trans-1,2-Dichloroethene	< 0.754	4.00	ug/Kg wet								1
Trichloroethene	< 0.276	2.00	ug/Kg wet								1
Vinyl acetate	< 0.612	4.00	ug/Kg wet								1
Vinyl chloride	< 0.378	2.00	ug/Kg wet								1
Xylenes, Total	< 1.93	10.0	ug/Kg wet								1
1,2-Dichloroethene, Total	< 1.30	8.00	ug/Kg wet								1
<hr/>											
Surrogate: Dibromofluoromethane	20.3		ug/Kg	20.00		102	78-137				1
Surrogate: 1,2-Dichloroethane-d4	18.7		ug/Kg	20.00		94	86-137				1

**Quality Control**

(Continued)

**Client:** United Engineering Consultants, Inc.**Report Date:** 12/03/2019**Project:** UEC Analysis  
19044**Matrix:** Solid**Work Order:** 19K0774**Volatile Organic Compounds by GC/MS**

(Continued)

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qual	DF
---------	--------	-----------------	-------	-------------	---------------	------	-------------	-----	-----------	------	----

**Batch: B9K0987 (Continued)****Blank (B9K0987-BLK1) (Continued)**

Prepared: 11/27/2019 10:00 Analyzed: 11/27/2019 14:07

Surrogate: Fluorobenzene	20.2		ug/Kg	20.00		101	80-120				1
Surrogate: Toluene-d8	19.7		ug/Kg	20.00		99	73-112				1
Surrogate: 4-Bromofluorobenzene	11.1		ug/Kg	10.00		111	85-120				1
Surrogate: 1,2-Dichlorobenzene-d4	20.9		ug/Kg	20.00		105	85-128				1

**LCS (B9K0987-BS1)**

Prepared: 11/27/2019 10:00 Analyzed: 11/27/2019 12:52

1,1,1-Trichloroethane	38.4	4.00	ug/Kg wet	40.00		96	55-145				1
1,1,2,2-Tetrachloroethane	44.7	4.00	ug/Kg wet	40.00		112	40-145				1
1,1,2-Trichloroethane	41.1	4.00	ug/Kg wet	40.00		103	50-140				1
1,1-Dichloroethane	41.5	4.00	ug/Kg wet	40.00		104	65-135				1
1,1-Dichloroethene	46.2	4.00	ug/Kg wet	40.00		116	55-150				1
1,2,4-Trimethylbenzene	42.9	2.00	ug/Kg wet	40.00		107	55-145				1
1,2-Dibromo-3-chloropropane	45.4	4.00	ug/Kg wet	40.00		113	25-150				1
1,2-Dibromoethane	37.3	2.00	ug/Kg wet	40.00		93	60-135				1
1,2-Dichloroethane	36.0	1.00	ug/Kg wet	40.00		90	60-145				1
1,2-Dichloropropane	40.2	2.00	ug/Kg wet	40.00		100	65-125				1
1,3,5-Trimethylbenzene	43.2	2.00	ug/Kg wet	40.00		108	55-145				1
1-Butanol	438	72.0	ug/Kg wet	400.0		110	70-130				1
2-Butanone	148	14.0	ug/Kg wet	140.0		106	10-180				1
2-Hexanone	153	7.00	ug/Kg wet	140.0		109	30-160				1
4-Methyl-2-pentanone	151	7.00	ug/Kg wet	140.0		108	30-165				1
Acetone	157	35.0	ug/Kg wet	140.0		112	10-180				1
Acrylonitrile	35.3	8.00	ug/Kg wet	40.00		88	70-130				1
Benzene	38.8	2.00	ug/Kg wet	40.00		97	65-135				1
Bromodichloromethane	36.8	2.00	ug/Kg wet	40.00		92	60-135				1
Bromoform	37.5	2.00	ug/Kg wet	40.00		94	45-150				1
Carbon disulfide	43.4	2.00	ug/Kg wet	40.00		108	30-180				1
Carbon tetrachloride	38.2	2.00	ug/Kg wet	40.00		96	55-145				1
Chlorobenzene	38.6	2.00	ug/Kg wet	40.00		97	65-130				1
Chloroform	37.6	2.00	ug/Kg wet	40.00		94	65-135				1
cis-1,2-Dichloroethene	39.4	4.00	ug/Kg wet	40.00		98	55-135				1
Dibromochloromethane	39.1	4.00	ug/Kg wet	40.00		98	55-140				1
Ethylbenzene	41.4	2.00	ug/Kg wet	40.00		104	65-135				1
m,p-Xylene	79.7	8.00	ug/Kg wet	80.00		100	70-135				1
Methyl tert-butyl ether	39.7	2.00	ug/Kg wet	40.00		99	70-130				1
Methylene chloride	42.4	4.00	ug/Kg wet	40.00		106	40-155			B	1
o-Xylene	43.6	2.00	ug/Kg wet	40.00		109	70-135				1
Styrene	41.3	2.00	ug/Kg wet	40.00		103	65-135				1
Tetrachloroethene	40.6	2.00	ug/Kg wet	40.00		101	55-150				1
Toluene	39.6	2.00	ug/Kg wet	40.00		99	60-135				1
trans-1,2-Dichloroethene	40.4	4.00	ug/Kg wet	40.00		101	55-145				1
Trichloroethene	38.8	2.00	ug/Kg wet	40.00		97	70-130				1

**Quality Control**

(Continued)

**Client:** United Engineering Consultants, Inc.**Report Date:** 12/03/2019**Project:** UEC Analysis  
19044**Matrix:** Solid**Work Order:** 19K0774**Volatile Organic Compounds by GC/MS**

(Continued)

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qual	DF
---------	--------	-----------------	-------	-------------	---------------	------	-------------	-----	-----------	------	----

**Batch: B9K0987 (Continued)****LCS (B9K0987-BS1) (Continued)**

Prepared: 11/27/2019 10:00 Analyzed: 11/27/2019 12:52

Vinyl acetate	41.8	4.00	ug/Kg wet	40.00		104	50-150				1
Vinyl chloride	85.7	2.00	ug/Kg wet	80.00		107	45-140				1
Xylenes, Total	123	10.0	ug/Kg wet	120.0		103	70-135				1
1,2-Dichloroethene, Total	79.8	8.00	ug/Kg wet	80.00		100	55-135				1
<i>Surrogate: Dibromofluoromethane</i>	19.6		ug/Kg	20.00		98	78-137				1
<i>Surrogate: 1,2-Dichloroethane-d4</i>	18.8		ug/Kg	20.00		94	86-137				1
<i>Surrogate: Fluorobenzene</i>	20.0		ug/Kg	20.00		100	80-120				1
<i>Surrogate: Toluene-d8</i>	19.7		ug/Kg	20.00		98	73-112				1
<i>Surrogate: 4-Bromofluorobenzene</i>	10.9		ug/Kg	10.00		109	85-120				1
<i>Surrogate: 1,2-Dichlorobenzene-d4</i>	20.4		ug/Kg	20.00		102	85-128				1

**LCS Dup (B9K0987-BSD1)**

Prepared: 11/27/2019 10:00 Analyzed: 11/27/2019 13:17

1,1,1-Trichloroethane	36.2	4.00	ug/Kg wet	40.00		90	55-145	6	20		1
1,1,2,2-Tetrachloroethane	42.8	4.00	ug/Kg wet	40.00		107	40-145	4	20		1
1,1,2-Trichloroethane	36.8	4.00	ug/Kg wet	40.00		92	50-140	11	20		1
1,1-Dichloroethane	38.9	4.00	ug/Kg wet	40.00		97	65-135	6	20		1
1,1-Dichloroethene	43.4	4.00	ug/Kg wet	40.00		108	55-150	6	20		1
1,2,4-Trimethylbenzene	38.7	2.00	ug/Kg wet	40.00		97	55-145	10	20		1
1,2-Dibromo-3-chloropropane	40.7	4.00	ug/Kg wet	40.00		102	25-150	11	20		1
1,2-Dibromoethane	37.7	2.00	ug/Kg wet	40.00		94	60-135	1	20		1
1,2-Dichloroethane	36.0	1.00	ug/Kg wet	40.00		90	60-145	0.1	20		1
1,2-Dichloropropane	37.4	2.00	ug/Kg wet	40.00		94	65-125	7	20		1
1,3,5-Trimethylbenzene	38.9	2.00	ug/Kg wet	40.00		97	55-145	10	20		1
1-Butanol	408	72.0	ug/Kg wet	400.0		102	70-130	7	20		1
2-Butanone	145	14.0	ug/Kg wet	140.0		103	10-180	3	20		1
2-Hexanone	145	7.00	ug/Kg wet	140.0		104	30-160	5	20		1
4-Methyl-2-pentanone	147	7.00	ug/Kg wet	140.0		105	30-165	3	20		1
Acetone	154	35.0	ug/Kg wet	140.0		110	10-180	2	20		1
Acrylonitrile	38.9	8.00	ug/Kg wet	40.00		97	70-130	10	20		1
Benzene	36.0	2.00	ug/Kg wet	40.00		90	65-135	8	20		1
Bromodichloromethane	35.1	2.00	ug/Kg wet	40.00		88	60-135	5	20		1
Bromoform	35.9	2.00	ug/Kg wet	40.00		90	45-150	4	20		1
Carbon disulfide	40.9	2.00	ug/Kg wet	40.00		102	30-180	6	20		1
Carbon tetrachloride	35.3	2.00	ug/Kg wet	40.00		88	55-145	8	20		1
Chlorobenzene	37.2	2.00	ug/Kg wet	40.00		93	65-130	4	20		1
Chloroform	36.6	2.00	ug/Kg wet	40.00		92	65-135	3	20		1
cis-1,2-Dichloroethene	36.4	4.00	ug/Kg wet	40.00		91	55-135	8	20		1
Dibromochloromethane	36.3	4.00	ug/Kg wet	40.00		91	55-140	7	20		1
Ethylbenzene	38.5	2.00	ug/Kg wet	40.00		96	65-135	7	20		1
m,p-Xylene	73.9	8.00	ug/Kg wet	80.00		92	70-135	8	20		1
Methyl tert-butyl ether	39.2	2.00	ug/Kg wet	40.00		98	70-130	1	20		1
Methylene chloride	41.7	4.00	ug/Kg wet	40.00		104	40-155	2	20	B	1

**Quality Control**

(Continued)

**Client:** United Engineering Consultants, Inc.**Report Date:** 12/03/2019**Project:** UEC Analysis  
19044**Matrix:** Solid**Work Order:** 19K0774**Volatile Organic Compounds by GC/MS**

(Continued)

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qual	DF
---------	--------	--------------------	-------	----------------	------------------	------	----------------	-----	--------------	------	----

**Batch: B9K0987** (Continued)**LCS Dup (B9K0987-BSD1)** (Continued)

Prepared: 11/27/2019 10:00 Analyzed: 11/27/2019 13:17

o-Xylene	39.6	2.00	ug/Kg wet	40.00		99	70-135	10	20		1
Styrene	38.8	2.00	ug/Kg wet	40.00		97	65-135	6	20		1
Tetrachloroethene	37.2	2.00	ug/Kg wet	40.00		93	55-150	9	20		1
Toluene	35.7	2.00	ug/Kg wet	40.00		89	60-135	10	20		1
trans-1,2-Dichloroethene	38.0	4.00	ug/Kg wet	40.00		95	55-145	6	20		1
Trichloroethene	36.6	2.00	ug/Kg wet	40.00		91	70-130	6	20		1
Vinyl acetate	40.9	4.00	ug/Kg wet	40.00		102	50-150	2	20		1
Vinyl chloride	81.2	2.00	ug/Kg wet	80.00		102	45-140	5	20		1
Xylenes, Total	114	10.0	ug/Kg wet	120.0		95	70-135	8	20		1
1,2-Dichloroethene, Total	74.4	8.00	ug/Kg wet	80.00		93	55-135	7	20		1
<hr/>											
Surrogate: Dibromofluoromethane	20.5		ug/Kg	20.00		102	78-137				1
Surrogate: 1,2-Dichloroethane-d4	19.8		ug/Kg	20.00		99	86-137				1
Surrogate: Fluorobenzene	19.5		ug/Kg	20.00		98	80-120				1
Surrogate: Toluene-d8	20.0		ug/Kg	20.00		100	73-112				1
Surrogate: 4-Bromofluorobenzene	10.4		ug/Kg	10.00		104	85-120				1
Surrogate: 1,2-Dichlorobenzene-d4	20.4		ug/Kg	20.00		102	85-128				1

## Certified Analyses included in this Report

Analyte	CAS #	Certifications
<b>SM2540G in Solid</b>		
Total Solids	Moist	WDNR,DoD
<b>SW-846 8260B/WDNR: PUBL-FW-140 in Solid</b>		
1,1,1-Trichloroethane	71-55-6	WDNR
1,1,2,2-Tetrachloroethane	79-34-5	WDNR
1,1,2-Trichloroethane	79-00-5	WDNR
1,1-Dichloroethane	75-34-3	WDNR
1,1-Dichloroethene	75-35-4	WDNR
1,2,4-Trimethylbenzene	95-63-6	WDNR
1,2-Dibromo-3-chloropropane	96-12-8	WDNR
1,2-Dibromoethane	106-93-4	WDNR
1,2-Dichloroethane	107-06-2	WDNR
1,2-Dichloropropane	78-87-5	WDNR
1,3,5-Trimethylbenzene	108-67-8	WDNR
1-Butanol	71-36-3	WDNR
2-Butanone	78-93-3	WDNR
2-Hexanone	591-78-6	WDNR
4-Methyl-2-pentanone	108-10-1	WDNR
Acetone	67-64-1	WDNR
Acrylonitrile	107-13-1	WDNR
Benzene	71-43-2	WDNR
Bromodichloromethane	75-27-4	WDNR
Bromoform	75-25-2	WDNR
Carbon disulfide	75-15-0	WDNR
Carbon tetrachloride	56-23-5	WDNR
Chlorobenzene	108-90-7	WDNR
Chloroform	67-66-3	WDNR
cis-1,2-Dichloroethene	156-59-2	WDNR
Dibromochloromethane	124-48-1	WDNR
Ethylbenzene	100-41-4	WDNR
m,p-Xylene	179601-23-1	WDNR
Methyl tert-butyl ether	1634-04-4	WDNR
Methylene chloride	75-09-2	WDNR
o-Xylene	95-47-6	WDNR
Styrene	100-42-5	WDNR
Tetrachloroethene	127-18-4	WDNR
Toluene	108-88-3	WDNR
trans-1,2-Dichloroethene	156-60-5	WDNR
Trichloroethene	79-01-6	WDNR
Vinyl acetate	108-05-4	WDNR
Vinyl chloride	75-01-4	WDNR



**Certified Analyses included in this Report (Continued)**

Analyte	CAS #	Certifications
<b>SW-846 8260B/WDNR: PUBL-FW-140 in Solid (Continued)</b>		
Xylenes, Total	1330-20-7	WDNR
1,2-Dichloroethene, Total	540-59-0	WDNR

**List of Certifications**

Code	Description	Number	Expires
AKDEC	State of Alaska, Dept. Environmental Conservation	17-011	04/30/2020
CPSC	US Consumer Product Safety Commission, Accredited by PJLA Lab No. 1050	L18-184-R1	04/30/2020
DoD	Department of Defense, Accredited by PJLA	L18-183-R3	04/30/2020
ILEPA	State of Illinois, NELAP Accredited Lab No. 100256	004524	01/31/2020
ISO	ISO/IEC 17025, Accredited by PJLA	L18-184-R1	04/30/2020
WDNR	State of Wisconsin Dept of Natural Resources	999888890	08/31/2020

### Qualifiers and Definitions

Item	Description
B	Analyte was present in the method blank.
%Rec	Percent Recovery
MDL	In the state of Wisconsin MDL is equivalent to LOD; in all other applications MDL is equivalent to MDL. In the state of Wisconsin the Reporting Limit is equivalent to LOQ.



# ENVIRONMENTAL MONITORING TECHNOLOGIES

509 N. 3rd Avenue  
Des Plaines, IL 60016



19K0774  
PM: Jacoby Jackson  
United Engineering Consultants, Inc.  
UEC Analysis

## Chain of Custody Record

867-6666  
847-967-6735  
www.emt.com

Due Date: \_\_\_\_\_ COC #: **230507**

TURNAROUND TIME:  
 RUSH  
 \_\_\_\_\_ day turnaround  
 ROUTINE

Company: UNITED ENGINEERING CONSULTANTS, INC.  
 Address: 16237 W. RYERSW ROAD  
NEW BERLIN, WI 53151  
 Phone #: (262) 785-1447 Fax #: \_\_\_\_\_  
 P.O. #: \_\_\_\_\_ Proj. #: \_\_\_\_\_  
 Client Contact: TIM ANDERSON  
 Project ID / Location: 19044

**Sample Type:**  
 1. Waste Water 4. Sludge 7. Groundwater (filtered)  
 2. Drinking Water 5. Oil 8. Other  
 3. Soil 6. Groundwater \_\_\_\_\_

**Container Type:**  
 P - Plastic V - VOC Vial O - Other  
 G - Glass B - Tedlar Bag \_\_\_\_\_

**Preservative:**  
 1. None 4. NaOH 7. Zn Ace  
 2. H<sub>2</sub>SO<sub>4</sub> 5. HCl 8. Other  
 3. HNO<sub>3</sub> 6. MeOH \_\_\_\_\_

**Analyses**

*VOC*

EMT USE ONLY

EMT WORKORDER # \_\_\_\_\_

Sample I.D.	Sample Type	Container			Sampling						Preservation	
		Size	Type	No.	By	Date	Time	pH	Temp.	Field	Lab	
GP-1 2'-3'	3	40ml/4oz	G	1/1	KH	11/14/19	10:00	-	-	6	-	✓
GP-1 10'-11'	↓	↓	↓	↓	↓	↓	10:30	-	-	↓	-	✓
GP-2 2'-3'	↓	↓	↓	↓	↓	↓	11:30	-	-	↓	-	✓
GP-2 10'-11'	↓	↓	↓	↓	↓	↓	12:00	-	-	↓	-	✓

Relinquished By: <u>[Signature]</u>	Date: <u>11-20-19</u> Time: <u>08:46</u>	Received By: <u>[Signature]</u>	Date: <u>11-20-19</u> Time: <u>0846</u>
Relinquished By: <u>[Signature]</u>	Date: <u>11-20-19</u> Time: <u>12:20</u>	Received By: _____	Date: _____ Time: _____
Relinquished By: _____	Date: _____ Time: _____	Received For Lab By: <u>[Signature]</u>	Date: <u>11-20-19</u> Time: <u>12:20</u>

EMT USE ONLY

SAMPLE RECEIVED ON ICE  
 TEMPERATURE

Client Code: \_\_\_\_\_  
 EMT Project I.D. \_\_\_\_\_  
 Jar Lot No. \_\_\_\_\_

1.2

**EMT SAMPLE RETURN POLICY ON BACK**

**SPECIAL INSTRUCTIONS:**

## Sample Receipt Checklist

Work Order: 19K0774

Printed: 11/20/2019 1:39:27PM

Client: United Engineering Consultants, Inc.  
Project: UEC Analysis

Date Due: 11/27/19 17:00 (5 day TAT)

Received By: Agnieszka B. Zabawa  
Logged In By: Agnieszka B. Zabawa

Date Received: 11/20/19 12:20  
Date Logged In: 11/20/19 13:36

Samples Received at:	1.2°C
How were samples received?	EMT
Custody Seals Present	No
Custody Seals Intact	NA
Sample Cont/Cooler Intact	Yes
COC Present/Complete	Yes
COC/Labels Agree	Yes
Proper Cont/Preservation checked	Yes
Sufficient Sample Volume	Yes
Samples Within Holdtime	Yes
Cooler Temp Within Limits	Yes
VOA Water Vials Received	No
VOA Water Vials/Zero Headspace	NA
PM or Client Contacted	No

### COMMENTS

ABZ

11/20/19

## Analytical Report

Timothy J. Anderson  
United Engineering Consultants, Inc.  
16237 W. Ryerson Road  
New Berlin, WI 53151

December 05, 2019

Work Order: 19K0862

RE: UEC Analysis  
19044

Dear Timothy J. Anderson:

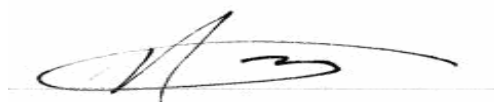
Enclosed are the analytical reports for the EMT Work Order listed. Also included with this analytical report is a copy of the chain of custody associated with these samples. If you have any questions, please contact me.

Sincerely,



Jacoby Jackson  
Project Manager  
847.967.6666  
jjackson@emt.com  
Approved for release: 12/5/2019 11:38:47AM

Approved by,



Nathan Fey  
Laboratory Operations Manager

The contents of this report apply to the sample(s) analyzed. No duplication is allowed except in its entirety. Detection and Reporting limits are adjusted for sample size used, dilutions and moisture content, if applicable.

State of Wisconsin Dept of Natural Resources, Cert No. 999888890

## *Table of Contents*

<i>Cover Letter</i>	<i>1</i>
<i>Sample Summary</i>	<i>3</i>
<i>Case Narrative</i>	<i>4</i>
<i>Client Sample Results</i>	<i>5</i>
<i>Dates Report</i>	<i>9</i>
<i>Quality Control</i>	<i>10</i>
<i>Certified Analyses</i>	<i>14</i>
<i>List of Certifications</i>	<i>15</i>
<i>Qualifiers and Definitions</i>	<i>16</i>
<i>Chain of Custody</i>	<i>17</i>

**Sample Summary**

<b>Sample ID</b>	<b>Laboratory ID</b>	<b>Matrix</b>	<b>Date Sampled</b>	<b>Date Received</b>
TW-1	19K0862-01	Water	11/21/19 11:30	11/22/19 14:10
TW-2	19K0862-02	Water	11/21/19 12:00	11/22/19 14:10

## Case Narrative

**Client:** United Engineering Consultants, Inc.

**Date:** 12/05/2019

**Project:** UEC Analysis  
19044

**Work Order:** 19K0862

---

All reported results are within defined laboratory quality control objectives unless listed below or otherwise qualified in this report.

Sample results only relate to the sample(s) received at the laboratory and analytes of interest tested.

**Work Order: 19K0862**

The samples were received on 11/22/19 14:10. The samples arrived in good condition and properly preserved. The temperature of the cooler at receipt was:

<u>Cooler</u>	<u>Temp C°</u>
Default Cooler	2.6

Samples 01C and 02BC have smaller than pea size bubbles.

Refer to Qualifiers and Definitions for quality and analytical clarifications or deviations.



### Client Sample Results

**Client:** United Engineering Consultants, Inc.  
**Project:** UEC Analysis  
 19044  
**Work Order:** 19K0862

**Client Sample ID:** TW-1  
**Report Date:** 12/05/2019  
**Collection Date:** 11/21/2019 11:30  
**Matrix:** Water  
**Lab ID:** 19K0862-01

Analyses	Result	EMT Reporting		Units	MDL	Date/Time Analyzed	Batch	Analyst	DF	
		Limit	Qual							
<b>Volatile Organic Compounds by GC/MS</b>										
Method: SW-846 8260B/WDNR: PUBL-FW-140 / SW5030										
1,1,1-Trichloroethane	< 0.349	2.00		ug/L	0.349	12/02/19 18:46	B9L0021	GEP	1	
1,1,2,2-Tetrachloroethane	< 0.291	2.00		ug/L	0.291	12/02/19 18:46	B9L0021	GEP	1	
1,1,2-Trichloroethane	< 0.264	2.00		ug/L	0.264	12/02/19 18:46	B9L0021	GEP	1	
1,1-Dichloroethane	< 1.94	8.00		ug/L	1.94	12/02/19 18:46	B9L0021	GEP	1	
1,1-Dichloroethene	< 1.02	4.00		ug/L	1.02	12/02/19 18:46	B9L0021	GEP	1	
1,2,4-Trimethylbenzene	< 0.338	2.00	Q, S1	ug/L	0.338	12/02/19 18:46	B9L0021	GEP	1	
1,2-Dibromo-3-chloropropane	< 0.488	2.00		ug/L	0.488	12/02/19 18:46	B9L0021	GEP	1	
1,2-Dibromoethane	< 0.320	2.00		ug/L	0.320	12/02/19 18:46	B9L0021	GEP	1	
1,2-Dichloroethane	< 0.274	2.00		ug/L	0.274	12/02/19 18:46	B9L0021	GEP	1	
1,2-Dichloropropane	< 1.11	4.00		ug/L	1.11	12/02/19 18:46	B9L0021	GEP	1	
1,3,5-Trimethylbenzene	< 0.310	2.00	Q, S1	ug/L	0.310	12/02/19 18:46	B9L0021	GEP	1	
1-Butanol	< 6.69	90.0		ug/L	6.69	12/02/19 18:46	B9L0021	GEP	1	
2-Butanone	< 1.38	8.00	Q, S1	ug/L	1.38	12/02/19 18:46	B9L0021	GEP	1	
2-Hexanone	< 1.04	8.00		ug/L	1.04	12/02/19 18:46	B9L0021	GEP	1	
4-Methyl-2-pentanone	< 0.660	28.0		ug/L	0.660	12/02/19 18:46	B9L0021	GEP	1	
<b>Acetone</b>	<b>14.3</b>	28.0	J	ug/L	3.75	12/02/19 18:46	B9L0021	GEP	1	
Acrolein	< 6.63	20.0	Q, S1	ug/L	6.63	12/02/19 18:46	B9L0021	GEP	1	
Acrylonitrile	< 0.742	4.00	Q, S1	ug/L	0.742	12/02/19 18:46	B9L0021	GEP	1	
Benzene	< 0.370	2.00		ug/L	0.370	12/02/19 18:46	B9L0021	GEP	1	
Bromodichloromethane	< 0.310	2.00		ug/L	0.310	12/02/19 18:46	B9L0021	GEP	1	
Bromoform	< 0.254	2.00		ug/L	0.254	12/02/19 18:46	B9L0021	GEP	1	
Bromomethane	< 3.30	20.0	Q, S1	ug/L	3.30	12/02/19 18:46	B9L0021	GEP	1	
Carbon disulfide	< 0.259	2.00	Q, S1	ug/L	0.259	12/02/19 18:46	B9L0021	GEP	1	
Carbon tetrachloride	< 0.390	2.00	Q, S1	ug/L	0.390	12/02/19 18:46	B9L0021	GEP	1	
Chlorobenzene	< 0.358	2.00		ug/L	0.358	12/02/19 18:46	B9L0021	GEP	1	
Chloroethane	< 0.906	4.00	Q	ug/L	0.906	12/02/19 18:46	B9L0021	GEP	1	
Chloroform	< 0.397	2.00		ug/L	0.397	12/02/19 18:46	B9L0021	GEP	1	
Chloromethane	< 2.23	8.00	Q	ug/L	2.23	12/02/19 18:46	B9L0021	GEP	1	
cis-1,2-Dichloroethene	< 0.421	2.00		ug/L	0.421	12/02/19 18:46	B9L0021	GEP	1	
cis-1,3-Dichloropropene	< 0.278	2.00		ug/L	0.278	12/02/19 18:46	B9L0021	GEP	1	
Dibromochloromethane	< 0.492	2.00		ug/L	0.492	12/02/19 18:46	B9L0021	GEP	1	
Ethylbenzene	< 0.431	2.00		ug/L	0.431	12/02/19 18:46	B9L0021	GEP	1	
m,p-Xylene	< 0.310	4.00		ug/L	0.310	12/02/19 18:46	B9L0021	GEP	1	
Methyl tert-butyl ether	< 0.322	2.00		ug/L	0.322	12/02/19 18:46	B9L0021	GEP	1	
Methylene chloride	< 0.358	2.00		ug/L	0.358	12/02/19 18:46	B9L0021	GEP	1	
o-Xylene	< 0.349	2.00		ug/L	0.349	12/02/19 18:46	B9L0021	GEP	1	
Styrene	< 0.534	4.00	Q, S1	ug/L	0.534	12/02/19 18:46	B9L0021	GEP	1	
Tetrachloroethene	< 0.400	2.00	Q, S1	ug/L	0.400	12/02/19 18:46	B9L0021	GEP	1	
Toluene	< 0.299	2.00		ug/L	0.299	12/02/19 18:46	B9L0021	GEP	1	
trans-1,2-Dichloroethene	< 0.433	2.00		ug/L	0.433	12/02/19 18:46	B9L0021	GEP	1	
trans-1,3-Dichloropropene	< 0.314	2.00		ug/L	0.314	12/02/19 18:46	B9L0021	GEP	1	
Trichloroethene	< 0.439	2.00		ug/L	0.439	12/02/19 18:46	B9L0021	GEP	1	
Vinyl acetate	< 1.01	8.00		ug/L	1.01	12/02/19 18:46	B9L0021	GEP	1	

**Client Sample Results**

(Continued)

**Client:** United Engineering Consultants, Inc.  
**Project:** UEC Analysis  
 19044  
**Work Order:** 19K0862

**Client Sample ID:** TW-1  
**Report Date:** 12/05/2019  
**Collection Date:** 11/21/2019 11:30  
**Matrix:** Water  
**Lab ID:** 19K0862-01 (Continued)

Analyses	EMT Reporting			MDL	Date/Time Analyzed	Batch	Analyst	DF
	Result	Limit	Qual Units					
<b>Volatile Organic Compounds by GC/MS (Continued)</b>								
Method: SW-846 8260B/WDNR: PUBL-FW-140 / SW5030 (Continued)								
Vinyl chloride	< 0.316	2.00	Q ug/L	0.316	12/02/19 18:46	B9L0021	GEP	1
Xylenes, Total	< 0.660	6.00	ug/L	0.660	12/02/19 18:46	B9L0021	GEP	1
1,3-Dichloropropene, Total	< 0.592	4.00	ug/L	0.592	12/02/19 18:46	B9L0021	GEP	1
Surrogate: Dibromofluoromethane			Recovery: 93%	Limits: 80-135	12/02/19 18:46	B9L0021	GEP	1
Surrogate: 1,2-Dichloroethane-d4			Recovery: 101%	Limits: 86-132	12/02/19 18:46	B9L0021	GEP	1
Surrogate: Fluorobenzene			Recovery: 98%	Limits: 80-116	12/02/19 18:46	B9L0021	GEP	1
Surrogate: Toluene-d8			Recovery: 100%	Limits: 73-120	12/02/19 18:46	B9L0021	GEP	1
Surrogate: 4-Bromofluorobenzene			Recovery: 98%	Limits: 85-114	12/02/19 18:46	B9L0021	GEP	1
Surrogate: 1,2-Dichlorobenzene-d4			Recovery: 102%	Limits: 88-136	12/02/19 18:46	B9L0021	GEP	1

**Client Sample Results**

(Continued)

**Client:** United Engineering Consultants, Inc.  
**Project:** UEC Analysis  
 19044  
**Work Order:** 19K0862

**Client Sample ID:** TW-2  
**Report Date:** 12/05/2019  
**Collection Date:** 11/21/2019 12:00  
**Matrix:** Water  
**Lab ID:** 19K0862-02

Analyses	Result	EMT		MDL	Date/Time Analyzed	Batch	Analyst	DF
		Reporting Limit	Qual Units					
<b>Volatile Organic Compounds by GC/MS</b>								
Method: SW-846 8260B/WDNR: PUBL-FW-140 / SW5030								
1,1,1-Trichloroethane	< 0.349	2.00	ug/L	0.349	12/02/19 19:11	B9L0021	GEP	1
1,1,2,2-Tetrachloroethane	< 0.291	2.00	ug/L	0.291	12/02/19 19:11	B9L0021	GEP	1
1,1,2-Trichloroethane	< 0.264	2.00	ug/L	0.264	12/02/19 19:11	B9L0021	GEP	1
1,1-Dichloroethane	< 1.94	8.00	ug/L	1.94	12/02/19 19:11	B9L0021	GEP	1
1,1-Dichloroethene	< 1.02	4.00	ug/L	1.02	12/02/19 19:11	B9L0021	GEP	1
1,2,4-Trimethylbenzene	< 0.338	2.00	Q, S1 ug/L	0.338	12/02/19 19:11	B9L0021	GEP	1
1,2-Dibromo-3-chloropropane	< 0.488	2.00	ug/L	0.488	12/02/19 19:11	B9L0021	GEP	1
1,2-Dibromoethane	< 0.320	2.00	ug/L	0.320	12/02/19 19:11	B9L0021	GEP	1
1,2-Dichloroethane	< 0.274	2.00	ug/L	0.274	12/02/19 19:11	B9L0021	GEP	1
1,2-Dichloropropane	< 1.11	4.00	ug/L	1.11	12/02/19 19:11	B9L0021	GEP	1
1,3,5-Trimethylbenzene	< 0.310	2.00	Q, S1 ug/L	0.310	12/02/19 19:11	B9L0021	GEP	1
1-Butanol	< 6.69	90.0	ug/L	6.69	12/02/19 19:11	B9L0021	GEP	1
2-Butanone	< 1.38	8.00	Q, S1 ug/L	1.38	12/02/19 19:11	B9L0021	GEP	1
2-Hexanone	< 1.04	8.00	ug/L	1.04	12/02/19 19:11	B9L0021	GEP	1
4-Methyl-2-pentanone	< 0.660	28.0	ug/L	0.660	12/02/19 19:11	B9L0021	GEP	1
<b>Acetone</b>	<b>9.55</b>	28.0	J ug/L	3.75	12/02/19 19:11	B9L0021	GEP	1
Acrolein	< 6.63	20.0	Q, S1 ug/L	6.63	12/02/19 19:11	B9L0021	GEP	1
Acrylonitrile	< 0.742	4.00	Q, S1 ug/L	0.742	12/02/19 19:11	B9L0021	GEP	1
Benzene	< 0.370	2.00	ug/L	0.370	12/02/19 19:11	B9L0021	GEP	1
Bromodichloromethane	< 0.310	2.00	ug/L	0.310	12/02/19 19:11	B9L0021	GEP	1
Bromoform	< 0.254	2.00	ug/L	0.254	12/02/19 19:11	B9L0021	GEP	1
Bromomethane	< 3.30	20.0	Q, S1 ug/L	3.30	12/02/19 19:11	B9L0021	GEP	1
Carbon disulfide	< 0.259	2.00	Q, S1 ug/L	0.259	12/02/19 19:11	B9L0021	GEP	1
Carbon tetrachloride	< 0.390	2.00	Q, S1 ug/L	0.390	12/02/19 19:11	B9L0021	GEP	1
Chlorobenzene	< 0.358	2.00	ug/L	0.358	12/02/19 19:11	B9L0021	GEP	1
Chloroethane	< 0.906	4.00	Q ug/L	0.906	12/02/19 19:11	B9L0021	GEP	1
Chloroform	< 0.397	2.00	ug/L	0.397	12/02/19 19:11	B9L0021	GEP	1
Chloromethane	< 2.23	8.00	Q ug/L	2.23	12/02/19 19:11	B9L0021	GEP	1
<b>cis-1,2-Dichloroethene</b>	<b>2.25</b>	2.00	ug/L	0.421	12/02/19 19:11	B9L0021	GEP	1
cis-1,3-Dichloropropene	< 0.278	2.00	ug/L	0.278	12/02/19 19:11	B9L0021	GEP	1
Dibromochloromethane	< 0.492	2.00	ug/L	0.492	12/02/19 19:11	B9L0021	GEP	1
Ethylbenzene	< 0.431	2.00	ug/L	0.431	12/02/19 19:11	B9L0021	GEP	1
m,p-Xylene	< 0.310	4.00	ug/L	0.310	12/02/19 19:11	B9L0021	GEP	1
Methyl tert-butyl ether	< 0.322	2.00	ug/L	0.322	12/02/19 19:11	B9L0021	GEP	1
Methylene chloride	< 0.358	2.00	ug/L	0.358	12/02/19 19:11	B9L0021	GEP	1
o-Xylene	< 0.349	2.00	ug/L	0.349	12/02/19 19:11	B9L0021	GEP	1
Styrene	< 0.534	4.00	Q, S1 ug/L	0.534	12/02/19 19:11	B9L0021	GEP	1
<b>Tetrachloroethene</b>	<b>63.5</b>	2.00	Q, S1 ug/L	0.400	12/02/19 19:11	B9L0021	GEP	1
Toluene	< 0.299	2.00	ug/L	0.299	12/02/19 19:11	B9L0021	GEP	1
<b>trans-1,2-Dichloroethene</b>	<b>0.460</b>	2.00	J ug/L	0.433	12/02/19 19:11	B9L0021	GEP	1
trans-1,3-Dichloropropene	< 0.314	2.00	ug/L	0.314	12/02/19 19:11	B9L0021	GEP	1
<b>Trichloroethene</b>	<b>14.9</b>	2.00	ug/L	0.439	12/02/19 19:11	B9L0021	GEP	1
Vinyl acetate	< 1.01	8.00	ug/L	1.01	12/02/19 19:11	B9L0021	GEP	1

### Client Sample Results

(Continued)

**Client:** United Engineering Consultants, Inc.  
**Project:** UEC Analysis  
 19044  
**Work Order:** 19K0862

**Client Sample ID:** TW-2  
**Report Date:** 12/05/2019  
**Collection Date:** 11/21/2019 12:00  
**Matrix:** Water  
**Lab ID:** 19K0862-02 (Continued)

Analyses	Result	EMT Reporting		Qual	Units	MDL	Date/Time Analyzed	Batch	Analyst	DF
		Limit								
<b>Volatile Organic Compounds by GC/MS (Continued)</b>										
Method: SW-846 8260B/WDNR: PUBL-FW-140 / SW5030 (Continued)										
Vinyl chloride	< 0.316	2.00	Q		ug/L	0.316	12/02/19 19:11	B9L0021	GEP	1
Xylenes, Total	< 0.660	6.00			ug/L	0.660	12/02/19 19:11	B9L0021	GEP	1
1,3-Dichloropropene, Total	< 0.592	4.00			ug/L	0.592	12/02/19 19:11	B9L0021	GEP	1
-----										
Surrogate: Dibromofluoromethane						Recovery: 102% Limits: 80-135	12/02/19 19:11	B9L0021	GEP	1
Surrogate: 1,2-Dichloroethane-d4						Recovery: 102% Limits: 86-132	12/02/19 19:11	B9L0021	GEP	1
Surrogate: Fluorobenzene						Recovery: 99% Limits: 80-116	12/02/19 19:11	B9L0021	GEP	1
Surrogate: Toluene-d8						Recovery: 100% Limits: 73-120	12/02/19 19:11	B9L0021	GEP	1
Surrogate: 4-Bromofluorobenzene						Recovery: 102% Limits: 85-114	12/02/19 19:11	B9L0021	GEP	1
Surrogate: 1,2-Dichlorobenzene-d4						Recovery: 100% Limits: 88-136	12/02/19 19:11	B9L0021	GEP	1

## Dates Report

**Client:** United Engineering Consultants, Inc.

**Report Date:** 12/05/2019

**Project:** UEC Analysis  
19044

**Work Order:** 19K0862

Sample ID	Client Sample ID	Collection	Matrix	Test Name	Leached Prep Date	Prep Date	Analysis Date	Batch ID	Sequence
19K0862-01	TW-1	11/21/19	Water	Volatile Organic Compounds (WDNR) by GC/MS		12/02/19 11:50	12/02/19 18:46	B9L0021	S9L0024
19K0862-02	TW-2	11/21/19		Volatile Organic Compounds (WDNR) by GC/MS		12/02/19 11:50	12/02/19 19:11		

## Quality Control

Client: United Engineering Consultants, Inc.

Report Date: 12/05/2019

Project: UEC Analysis  
19044

Matrix: Water

Work Order: 19K0862

### Volatile Organic Compounds by GC/MS

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qual	DF
---------	--------	-----------------	-------	-------------	---------------	------	-------------	-----	-----------	------	----

**Batch: B9L0021 - SW5030**
**Blank (B9L0021-BLK1)**

Prepared: 12/02/2019 11:50 Analyzed: 12/02/2019 15:48

1,1,1-Trichloroethane	< 0.349	2.00	ug/L								1
1,1,2,2-Tetrachloroethane	< 0.291	2.00	ug/L								1
1,1,2-Trichloroethane	< 0.264	2.00	ug/L								1
1,1-Dichloroethane	< 1.94	8.00	ug/L								1
1,1-Dichloroethene	< 1.02	4.00	ug/L								1
1,2,4-Trimethylbenzene	< 0.338	2.00	ug/L								1
1,2-Dibromo-3-chloropropane	< 0.488	2.00	ug/L								1
1,2-Dibromoethane	< 0.320	2.00	ug/L								1
1,2-Dichloroethane	< 0.274	2.00	ug/L								1
1,2-Dichloropropane	< 1.11	4.00	ug/L								1
1,3,5-Trimethylbenzene	< 0.310	2.00	ug/L								1
1-Butanol	< 6.69	90.0	ug/L								1
2-Butanone	< 1.38	8.00	ug/L								1
2-Hexanone	< 1.04	8.00	ug/L								1
4-Methyl-2-pentanone	< 0.660	28.0	ug/L								1
Acetone	< 3.75	28.0	ug/L								1
Acrolein	< 6.63	20.0	ug/L								1
Acrylonitrile	< 0.742	4.00	ug/L								1
Benzene	< 0.370	2.00	ug/L								1
Bromodichloromethane	< 0.310	2.00	ug/L								1
Bromoform	< 0.254	2.00	ug/L								1
Bromomethane	< 3.30	20.0	ug/L								1
Carbon disulfide	< 0.259	2.00	ug/L								1
Carbon tetrachloride	< 0.390	2.00	ug/L								1
Chlorobenzene	< 0.358	2.00	ug/L								1
Chloroethane	< 0.906	4.00	ug/L								1
Chloroform	< 0.397	2.00	ug/L								1
Chloromethane	< 2.23	8.00	ug/L								1
cis-1,2-Dichloroethene	< 0.421	2.00	ug/L								1
cis-1,3-Dichloropropene	< 0.278	2.00	ug/L								1
Dibromochloromethane	< 0.492	2.00	ug/L								1
Ethylbenzene	< 0.431	2.00	ug/L								1
m,p-Xylene	< 0.310	4.00	ug/L								1
Methyl tert-butyl ether	< 0.322	2.00	ug/L								1
Methylene chloride	< 0.358	2.00	ug/L								1
o-Xylene	< 0.349	2.00	ug/L								1
Styrene	< 0.534	4.00	ug/L								1
Tetrachloroethene	< 0.400	2.00	ug/L								1
Toluene	< 0.299	2.00	ug/L								1
trans-1,2-Dichloroethene	< 0.433	2.00	ug/L								1
trans-1,3-Dichloropropene	< 0.314	2.00	ug/L								1
Trichloroethene	< 0.439	2.00	ug/L								1

**Quality Control**

(Continued)

**Client:** United Engineering Consultants, Inc.**Report Date:** 12/05/2019**Project:** UEC Analysis  
19044**Matrix:** Water**Work Order:** 19K0862**Volatile Organic Compounds by GC/MS**

(Continued)

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qual	DF
---------	--------	-----------------	-------	-------------	---------------	------	-------------	-----	-----------	------	----

**Batch: B9L0021 - SW5030 (Continued)****Blank (B9L0021-BLK1) (Continued)**

Prepared: 12/02/2019 11:50 Analyzed: 12/02/2019 15:48

Vinyl acetate	< 1.01	8.00	ug/L								1
Vinyl chloride	< 0.316	2.00	ug/L								1
Xylenes, Total	< 0.660	6.00	ug/L								1
1,3-Dichloropropene, Total	< 0.592	4.00	ug/L								1
Surrogate: Dibromofluoromethane	20.8		ug/L	20.00		104	80-135				1
Surrogate: 1,2-Dichloroethane-d4	21.1		ug/L	20.00		106	86-132				1
Surrogate: Fluorobenzene	19.6		ug/L	20.00		98	80-116				1
Surrogate: Toluene-d8	20.0		ug/L	20.00		100	73-120				1
Surrogate: 4-Bromofluorobenzene	10.2		ug/L	10.00		102	85-114				1
Surrogate: 1,2-Dichlorobenzene-d4	20.7		ug/L	20.00		103	88-136				1

**LCS (B9L0021-BS1)**

Prepared: 12/02/2019 11:50 Analyzed: 12/02/2019 13:17

1,1,1-Trichloroethane	46.1	2.00	ug/L	50.00		92	74-131				1
1,1,2,2-Tetrachloroethane	49.2	2.00	ug/L	50.00		98	71-121				1
1,1,2-Trichloroethane	47.2	2.00	ug/L	50.00		94	80-119				1
1,1-Dichloroethane	43.8	8.00	ug/L	50.00		88	77-125				1
1,1-Dichloroethene	50.6	4.00	ug/L	50.00		101	71-131				1
1,2,4-Trimethylbenzene	50.4	2.00	ug/L	50.00		101	76-124				1
1,2-Dibromo-3-chloropropane	47.4	2.00	ug/L	50.00		95	62-128				1
1,2-Dibromoethane	48.0	2.00	ug/L	50.00		96	77-121				1
1,2-Dichloroethane	43.3	2.00	ug/L	50.00		87	73-128				1
1,2-Dichloropropane	47.2	4.00	ug/L	50.00		94	78-122				1
1,3,5-Trimethylbenzene	50.0	2.00	ug/L	50.00		100	75-124				1
1-Butanol	496	90.0	ug/L	500.0		99	70-130				1
2-Butanone	224	8.00	ug/L	175.0		128	56-143				1
2-Hexanone	196	8.00	ug/L	175.0		112	57-139				1
4-Methyl-2-pentanone	196	28.0	ug/L	175.0		112	67-130				1
Acetone	123	28.0	ug/L	175.0		71	39-160				1
Acrolein	124	20.0	ug/L	125.0		99	39-155				1
Acrylonitrile	43.2	4.00	ug/L	50.00		86	63-135				1
Benzene	46.3	2.00	ug/L	50.00		93	79-120				1
Bromodichloromethane	48.8	2.00	ug/L	50.00		98	79-125				1
Bromoform	52.0	2.00	ug/L	50.00		104	66-130				1
Bromomethane	53.4	20.0	ug/L	100.0		53	53-141				1
Carbon disulfide	50.1	2.00	ug/L	50.00		100	64-133				1
Carbon tetrachloride	50.1	2.00	ug/L	50.00		100	72-136				1
Chlorobenzene	49.0	2.00	ug/L	50.00		98	82-118				1
Chloroethane	35.7	4.00	ug/L	100.0		36	60-138			S	1
Chloroform	42.2	2.00	ug/L	50.00		84	79-124				1
Chloromethane	38.8	8.00	ug/L	100.0		39	50-139			S	1
cis-1,2-Dichloroethene	46.0	2.00	ug/L	50.00		92	78-123				1
cis-1,3-Dichloropropene	49.3	2.00	ug/L	50.00		99	75-124				1

**Quality Control**

(Continued)

**Client:** United Engineering Consultants, Inc.**Report Date:** 12/05/2019**Project:** UEC Analysis  
19044**Matrix:** Water**Work Order:** 19K0862**Volatile Organic Compounds by GC/MS**

(Continued)

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qual	DF
---------	--------	-----------------	-------	-------------	---------------	------	-------------	-----	-----------	------	----

**Batch: B9L0021 - SW5030 (Continued)****LCS (B9L0021-BS1) (Continued)**

Prepared: 12/02/2019 11:50 Analyzed: 12/02/2019 13:17

Dibromochloromethane	50.9	2.00	ug/L	50.00		102	74-126				1
Ethylbenzene	50.1	2.00	ug/L	50.00		100	79-121				1
m,p-Xylene	97.4	4.00	ug/L	100.0		97	80-136				1
Methyl tert-butyl ether	47.4	2.00	ug/L	50.00		95	71-124				1
Methylene chloride	47.8	2.00	ug/L	50.00		96	74-124				1
o-Xylene	46.2	2.00	ug/L	50.00		92	78-122				1
Styrene	50.7	4.00	ug/L	50.00		101	78-123				1
Tetrachloroethene	51.5	2.00	ug/L	50.00		103	74-129				1
Toluene	45.8	2.00	ug/L	50.00		92	80-133				1
trans-1,2-Dichloroethene	45.3	2.00	ug/L	50.00		91	75-124				1
trans-1,3-Dichloropropene	50.4	2.00	ug/L	50.00		101	73-127				1
Trichloroethene	46.5	2.00	ug/L	50.00		93	79-123				1
Vinyl acetate	51.8	8.00	ug/L	50.00		104	54-146				1
Vinyl chloride	40.1	2.00	ug/L	100.0		40	58-137			S	1
Xylenes, Total	144	6.00	ug/L	150.0		96	79-121				1
1,3-Dichloropropene, Total	99.8	4.00	ug/L	100.0		100	77-123				1
<hr/>											
Surrogate: Dibromofluoromethane	18.1		ug/L	20.00		90	80-135				1
Surrogate: 1,2-Dichloroethane-d4	19.5		ug/L	20.00		97	86-132				1
Surrogate: Fluorobenzene	20.0		ug/L	20.00		100	80-116				1
Surrogate: Toluene-d8	20.7		ug/L	20.00		103	73-120				1
Surrogate: 4-Bromofluorobenzene	9.87		ug/L	10.00		99	85-114				1
Surrogate: 1,2-Dichlorobenzene-d4	20.1		ug/L	20.00		101	88-136				1

**LCS Dup (B9L0021-BSD1)**

Prepared: 12/02/2019 11:50 Analyzed: 12/02/2019 13:43

1,1,1-Trichloroethane	47.3	2.00	ug/L	50.00		95	74-131	3	20		1
1,1,2,2-Tetrachloroethane	47.8	2.00	ug/L	50.00		96	71-121	3	20		1
1,1,2-Trichloroethane	49.0	2.00	ug/L	50.00		98	80-119	4	20		1
1,1-Dichloroethane	48.2	8.00	ug/L	50.00		96	77-125	10	20		1
1,1-Dichloroethene	52.3	4.00	ug/L	50.00		105	71-131	3	20		1
1,2,4-Trimethylbenzene	52.0	2.00	ug/L	50.00		104	76-124	3	20		1
1,2-Dibromo-3-chloropropane	45.9	2.00	ug/L	50.00		92	62-128	3	20		1
1,2-Dibromoethane	46.9	2.00	ug/L	50.00		94	77-121	2	20		1
1,2-Dichloroethane	44.8	2.00	ug/L	50.00		90	73-128	3	20		1
1,2-Dichloropropane	47.4	4.00	ug/L	50.00		95	78-122	0.4	20		1
1,3,5-Trimethylbenzene	52.2	2.00	ug/L	50.00		104	75-124	4	20		1
1-Butanol	502	90.0	ug/L	500.0		100	70-130	1	20		1
2-Butanone	162	8.00	ug/L	175.0		93	56-143	32	20	P	1
2-Hexanone	182	8.00	ug/L	175.0		104	57-139	7	20		1
4-Methyl-2-pentanone	184	28.0	ug/L	175.0		105	67-130	7	20		1
Acetone	136	28.0	ug/L	175.0		78	39-160	10	20		1
Acrolein	142	20.0	ug/L	125.0		114	39-155	14	20		1
Acrylonitrile	47.2	4.00	ug/L	50.00		94	63-135	9	20		1



**Quality Control**

(Continued)

**Client:** United Engineering Consultants, Inc.**Report Date:** 12/05/2019**Project:** UEC Analysis  
19044**Matrix:** Water**Work Order:** 19K0862**Volatile Organic Compounds by GC/MS**

(Continued)

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qual	DF
---------	--------	-----------------	-------	-------------	---------------	------	-------------	-----	-----------	------	----

**Batch: B9L0021 - SW5030 (Continued)****LCS Dup (B9L0021-BSD1) (Continued)**

Prepared: 12/02/2019 11:50 Analyzed: 12/02/2019 13:43

Benzene	47.7	2.00	ug/L	50.00		95	79-120	3	20		1
Bromodichloromethane	50.6	2.00	ug/L	50.00		101	79-125	4	20		1
Bromoform	50.3	2.00	ug/L	50.00		101	66-130	3	20		1
Bromomethane	55.3	20.0	ug/L	100.0		55	53-141	3	20		1
Carbon disulfide	53.3	2.00	ug/L	50.00		107	64-133	6	20		1
Carbon tetrachloride	54.6	2.00	ug/L	50.00		109	72-136	9	20		1
Chlorobenzene	49.5	2.00	ug/L	50.00		99	82-118	1	20		1
Chloroethane	40.8	4.00	ug/L	100.0		41	60-138	13	20	S	1
Chloroform	43.9	2.00	ug/L	50.00		88	79-124	4	20		1
Chloromethane	40.8	8.00	ug/L	100.0		41	50-139	5	20	S	1
cis-1,2-Dichloroethene	46.5	2.00	ug/L	50.00		93	78-123	1	20		1
cis-1,3-Dichloropropene	49.8	2.00	ug/L	50.00		100	75-124	0.9	20		1
Dibromochloromethane	50.9	2.00	ug/L	50.00		102	74-126	0.04	20		1
Ethylbenzene	50.4	2.00	ug/L	50.00		101	79-121	0.7	20		1
m,p-Xylene	98.3	4.00	ug/L	100.0		98	80-136	0.9	20		1
Methyl tert-butyl ether	50.8	2.00	ug/L	50.00		102	71-124	7	20		1
Methylene chloride	50.9	2.00	ug/L	50.00		102	74-124	6	20		1
o-Xylene	47.6	2.00	ug/L	50.00		95	78-122	3	20		1
Styrene	52.2	4.00	ug/L	50.00		104	78-123	3	20		1
Tetrachloroethene	50.9	2.00	ug/L	50.00		102	74-129	1	20		1
Toluene	46.2	2.00	ug/L	50.00		92	80-133	0.8	20		1
trans-1,2-Dichloroethene	47.1	2.00	ug/L	50.00		94	75-124	4	20		1
trans-1,3-Dichloropropene	49.6	2.00	ug/L	50.00		99	73-127	2	20		1
Trichloroethene	47.1	2.00	ug/L	50.00		94	79-123	1	20		1
Vinyl acetate	52.3	8.00	ug/L	50.00		105	54-146	0.9	20		1
Vinyl chloride	43.6	2.00	ug/L	100.0		44	58-137	8	20	S	1
Xylenes, Total	146	6.00	ug/L	150.0		97	79-121	2	20		1
1,3-Dichloropropene, Total	99.4	4.00	ug/L	100.0		99	77-123	0.3	20		1
<hr/>											
Surrogate: Dibromofluoromethane	19.7		ug/L	20.00		99	80-135				1
Surrogate: 1,2-Dichloroethane-d4	19.3		ug/L	20.00		96	86-132				1
Surrogate: Fluorobenzene	21.0		ug/L	20.00		105	80-116				1
Surrogate: Toluene-d8	20.1		ug/L	20.00		100	73-120				1
Surrogate: 4-Bromofluorobenzene	9.99		ug/L	10.00		100	85-114				1
Surrogate: 1,2-Dichlorobenzene-d4	20.8		ug/L	20.00		104	88-136				1

## Certified Analyses included in this Report

Analyte	CAS #	Certifications
<b><i>SW-846 8260B/WDNR: PUBL-FW-140 in Water</i></b>		
1,1,1-Trichloroethane	71-55-6	WDNR
1,1,2,2-Tetrachloroethane	79-34-5	WDNR
1,1,2-Trichloroethane	79-00-5	WDNR
1,1-Dichloroethane	75-34-3	WDNR
1,1-Dichloroethene	75-35-4	WDNR
1,2,4-Trimethylbenzene	95-63-6	WDNR
1,2-Dibromo-3-chloropropane	96-12-8	WDNR
1,2-Dibromoethane	106-93-4	WDNR
1,2-Dichloroethane	107-06-2	WDNR
1,2-Dichloropropane	78-87-5	WDNR
1,3,5-Trimethylbenzene	108-67-8	WDNR
1-Butanol	71-36-3	WDNR
2-Butanone	78-93-3	WDNR
2-Hexanone	591-78-6	WDNR
4-Methyl-2-pentanone	108-10-1	WDNR
Acetone	67-64-1	WDNR
Acrolein	107-02-8	WDNR
Acrylonitrile	107-13-1	WDNR
Benzene	71-43-2	WDNR
Bromodichloromethane	75-27-4	WDNR
Bromoform	75-25-2	WDNR
Bromomethane	74-83-9	WDNR
Carbon disulfide	75-15-0	WDNR
Carbon tetrachloride	56-23-5	WDNR
Chlorobenzene	108-90-7	WDNR
Chloroethane	75-00-3	WDNR
Chloroform	67-66-3	WDNR
Chloromethane	74-87-3	WDNR
cis-1,2-Dichloroethene	156-59-2	WDNR
cis-1,3-Dichloropropene	10061-01-5	WDNR
Dibromochloromethane	124-48-1	WDNR
Ethylbenzene	100-41-4	WDNR
m,p-Xylene	179601-23-1	WDNR
Methyl tert-butyl ether	1634-04-4	WDNR
Methylene chloride	75-09-2	WDNR
o-Xylene	95-47-6	WDNR
Styrene	100-42-5	WDNR
Tetrachloroethene	127-18-4	WDNR
Toluene	108-88-3	WDNR
trans-1,2-Dichloroethene	156-60-5	WDNR
trans-1,3-Dichloropropene	10061-02-6	WDNR

**Certified Analyses included in this Report (Continued)**

Analyte	CAS #	Certifications
<b><i>SW-846 8260B/WDNR: PUBL-FW-140 in Water (Continued)</i></b>		
Trichloroethene	79-01-6	WDNR
Vinyl acetate	108-05-4	WDNR
Vinyl chloride	75-01-4	WDNR
Xylenes, Total	1330-20-7	WDNR
1,3-Dichloropropene, Total	542-75-6	WDNR

**List of Certifications**

Code	Description	Number	Expires
AKDEC	State of Alaska, Dept. Environmental Conservation	17-011	04/30/2020
CPSC	US Consumer Product Safety Commission, Accredited by PJLA Lab No. 1050	L18-184-R1	04/30/2020
DoD	Department of Defense, Accredited by PJLA	L18-183-R3	04/30/2020
ILEPA	State of Illinois, NELAP Accredited Lab No. 100256	004524	01/31/2020
ISO	ISO/IEC 17025, Accredited by PJLA	L18-184-R1	04/30/2020
WDNR	State of Wisconsin Dept of Natural Resources	999888890	08/31/2020

### Qualifiers and Definitions

Item	Description
J	The reported result is an estimated value.
P	The quality control sample %RPD is above the laboratory control limit.
Q	One or more quality control results were outside of the acceptance limits (e.g. LCS recovery, surrogate spike recovery, or CCV recovery).
S	The quality control sample recovery is outside of the laboratory control limits.
S1	The percent recovery is above the limits (e.g. LCS recovery, surrogate spike recovery, or CCV recovery), but the analyte was not detected in the sample. Data is acceptable.
%Rec	Percent Recovery
MDL	In the state of Wisconsin MDL is equivalent to LOD; in all other applications MDL is equivalent to MDL. In the state of Wisconsin the Reporting Limit is equivalent to LOQ.



# ENVIRONMENTAL MONITORING AND TECHNOLOGIES, INC.

509 N. 3rd Avenue  
Des Plaines, IL 60016



19K0862  
PM: Jacoby Jackson  
United Engineering Consultants, Inc.  
UEC Analysis

Record

TURNAROUND TIME:  
 RUSH  
 \_\_\_\_\_ day turnaround  
 ROUTINE

847-967-6666  
FAX: 847-967-6735  
www.emt.com

Due Date: \_\_\_\_\_ COC #: **230073**

Company: UNITED ENGINEERING CONSULTANTS, INC  
 Address: 16237 W. RYERSON ROAD  
NEW BERLIN, WI 53151  
 Phone #: (262) 785-1447 Fax #: ( ) \_\_\_\_\_  
 P.O. #: \_\_\_\_\_ Proj. #: \_\_\_\_\_  
 Client Contact: TIM ANDERSON  
 Project ID / Location: 19044

**Sample Type:**  
 1. Waste Water 4. Sludge 7. Groundwater (filtered)  
 2. Drinking Water 5. Oil 8. Other  
 3. Soil 6. Groundwater \_\_\_\_\_

**Container Type:**  
 P - Plastic V - VOC Vial O - Other  
 G - Glass B - Tedlar Bag \_\_\_\_\_

**Preservative:**  
 1. None 4. NaOH 7. Zn Ace  
 2. H<sub>2</sub>SO<sub>4</sub> 5. HCl 8. Other  
 3. HNO<sub>3</sub> 6. MeOH \_\_\_\_\_

**Analyses**

VOC

**EMT USE ONLY**  
**EMT WORKORDER**  
#19K0862

Sample I.D.	Sample Type	Container			Sampling					Preservation		Field	Lab	Notes	
		Size	Type	No.	By	Date	Time	pH	Temp.	Field	Lab				
TW-1	6	40mL	G	3	NA	11:30	11/21/19	-	-	5					01A-C
TW-2	6	↓	↓	↓	↓	12:00	↓	-	-	↓					02A-C
Trip Blank	↓	↓	↓	1	↓	-	-	-	-	-					

Relinquished By: <i>[Signature]</i>	Date: 11-22-19 Time: 8:36	Received By: <i>[Signature]</i>	Date: 11-22-19 Time: 08:36	EMT USE ONLY	<input checked="" type="checkbox"/> SAMPLE RECEIVED ON ICE
Relinquished By: <i>[Signature]</i>	Date: 11-22-19 Time: 1410	Received By:	Date: - - Time: :	Client Code:	<input type="checkbox"/> TEMPERATURE
Relinquished By:	Date: - - Time: :	Received For Lab By: <i>[Signature]</i>	Date: 11-22-19 Time: 14:10	EMT Project I.D.:	2.6
SPECIAL INSTRUCTIONS:				Jar Lot No.:	<b>EMT SAMPLE RETURN POLICY ON BACK</b>

**SPECIAL INSTRUCTIONS:**  
 In baggie

## Sample Receipt Checklist

**Work Order: 19K0862**

Printed: 11/22/2019 4:45:33PM

Client: **United Engineering Consultants, Inc.**  
Project: **UEC Analysis**

Date Due: **12/03/19 17:00 (5 day TAT)**

Received By: **Keith Wesseling**  
Logged In By: **Keith Wesseling**

Date Received: **11/22/19 14:10**  
Date Logged In: **11/22/19 15:49**

Samples Received at:	2.6°C
How were samples received?	EMT
Custody Seals Present	No
Custody Seals Intact	NA
Sample Cont/Cooler Intact	Yes
CQC Present/Complete	Yes
COC/Labels Agree	Yes
Proper Cont/Preservation checked	Yes
Sufficient Sample Volume	Yes
Samples Within Holdtime	Yes
Cooler Temp Within Limits	Yes
VOA Water Vials Received	Yes
VOA Water Vials/Zero Headspace	Yes
PM or Client Contacted	No

### COMMENTS

Samples 01C and 02BC have smaller than pea size bubbles.

KW  
11/22/19

December 04, 2019

Mr. Timothy Anderson  
United Engineering  
16237 W. Ryerson Rd.  
New Berlin, WI 53151

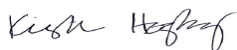
RE: Project: 10016/19044  
Pace Project No.: 10500733

Dear Mr. Anderson:

Enclosed are the analytical results for sample(s) received by the laboratory on November 25, 2019. The results relate only to the samples included in this report. Results reported herein conform to the most current, applicable TNI/NELAC 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,



Kirsten Hogberg  
kirsten.hogberg@pacelabs.com  
(612)607-1700  
Project Manager

Enclosures



## REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,  
without the written consent of Pace Analytical Services, LLC.

## CERTIFICATIONS

Project: 10016/19044  
Pace Project No.: 10500733

---

### **Pace Analytical Services Minneapolis**

A2LA Certification #: 2926.01	Minnesota Dept of Ag Certification #: via MN 027-053-137
Alabama Certification #: 40770	Minnesota Petrofund Certification #: 1240
Alaska Contaminated Sites Certification #: 17-009	Mississippi Certification #: MN00064
Alaska DW Certification #: MN00064	Missouri Certification #: 10100
Arizona Certification #: AZ0014	Montana Certification #: CERT0092
Arkansas DW Certification #: MN00064	Nebraska Certification #: NE-OS-18-06
Arkansas WW Certification #: 88-0680	Nevada Certification #: MN00064
California Certification #: 2929	New Hampshire Certification #: 2081
CNMI Saipan Certification #: MP0003	New Jersey Certification #: MN002
Colorado Certification #: MN00064	New York Certification #: 11647
Connecticut Certification #: PH-0256	North Carolina DW Certification #: 27700
EPA Region 8+Wyoming DW Certification #: via MN 027-053-137	North Carolina WW Certification #: 530
Florida Certification #: E87605	North Dakota Certification #: R-036
Georgia Certification #: 959	Ohio DW Certification #: 41244
Guam EPA Certification #: MN00064	Ohio VAP Certification #: CL101
Hawaii Certification #: MN00064	Oklahoma Certification #: 9507
Idaho Certification #: MN00064	Oregon Primary Certification #: MN300001
Illinois Certification #: 200011	Oregon Secondary Certification #: MN200001
Indiana Certification #: C-MN-01	Pennsylvania Certification #: 68-00563
Iowa Certification #: 368	Puerto Rico Certification #: MN00064
Kansas Certification #: E-10167	South Carolina Certification #: 74003001
Kentucky DW Certification #: 90062	Tennessee Certification #: TN02818
Kentucky WW Certification #: 90062	Texas Certification #: T104704192
Louisiana DEQ Certification #: 03086	Utah Certification #: MN00064
Louisiana DW Certification #: MN00064	Vermont Certification #: VT-027053137
Maine Certification #: MN00064	Virginia Certification #: 460163
Maryland Certification #: 322	Washington Certification #: C486
Massachusetts Certification #: M-MN064	West Virginia DEP Certification #: 382
Massachusetts DWP Certification #: via MN 027-053-137	West Virginia DW Certification #: 9952 C
Michigan Certification #: 9909	Wisconsin Certification #: 999407970
Minnesota Certification #: 027-053-137	Wyoming UST Certification #: via A2LA 2926.01

---

## REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,  
without the written consent of Pace Analytical Services, LLC.



## SAMPLE SUMMARY

Project: 10016/19044

Pace Project No.: 10500733

---

Lab ID	Sample ID	Matrix	Date Collected	Date Received
10500733001	SS-1	Air	11/21/19 11:00	11/25/19 12:00
10500733002	Unused #0949	Air	11/21/19 00:00	11/25/19 12:00

## REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,  
without the written consent of Pace Analytical Services, LLC.

### SAMPLE ANALYTE COUNT

Project: 10016/19044

Pace Project No.: 10500733

---

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
10500733001	SS-1	TO-15	NCK	61	PASI-M

### REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,  
without the written consent of Pace Analytical Services, LLC.

## ANALYTICAL RESULTS

Project: 10016/19044

Pace Project No.: 10500733

**Sample: SS-1**      **Lab ID: 10500733001**      Collected: 11/21/19 11:00      Received: 11/25/19 12:00      Matrix: Air

Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
<b>TO15 MSV AIR</b>		Analytical Method: TO-15							
Acetone	176	ug/m3	4.3	2.2	1.79		12/02/19 23:41	67-64-1	
Benzene	0.71	ug/m3	0.58	0.27	1.79		12/02/19 23:41	71-43-2	
Benzyl chloride	<2.1	ug/m3	4.7	2.1	1.79		12/02/19 23:41	100-44-7	
Bromodichloromethane	<0.66	ug/m3	2.4	0.66	1.79		12/02/19 23:41	75-27-4	
Bromoform	<2.5	ug/m3	9.4	2.5	1.79		12/02/19 23:41	75-25-2	
Bromomethane	<0.41	ug/m3	1.4	0.41	1.79		12/02/19 23:41	74-83-9	
1,3-Butadiene	<0.23	ug/m3	0.81	0.23	1.79		12/02/19 23:41	106-99-0	
2-Butanone (MEK)	5.3J	ug/m3	5.4	0.66	1.79		12/02/19 23:41	78-93-3	
Carbon disulfide	<0.39	ug/m3	1.1	0.39	1.79		12/02/19 23:41	75-15-0	
Carbon tetrachloride	<0.77	ug/m3	2.3	0.77	1.79		12/02/19 23:41	56-23-5	
Chlorobenzene	<0.49	ug/m3	1.7	0.49	1.79		12/02/19 23:41	108-90-7	
Chloroethane	<0.47	ug/m3	0.96	0.47	1.79		12/02/19 23:41	75-00-3	
Chloroform	<0.35	ug/m3	0.89	0.35	1.79		12/02/19 23:41	67-66-3	
Chloromethane	<0.28	ug/m3	0.75	0.28	1.79		12/02/19 23:41	74-87-3	
Cyclohexane	1.3J	ug/m3	3.1	0.63	1.79		12/02/19 23:41	110-82-7	
Dibromochloromethane	<1.3	ug/m3	3.1	1.3	1.79		12/02/19 23:41	124-48-1	
1,2-Dibromoethane (EDB)	<0.66	ug/m3	1.4	0.66	1.79		12/02/19 23:41	106-93-4	
1,2-Dichlorobenzene	<0.89	ug/m3	2.2	0.89	1.79		12/02/19 23:41	95-50-1	
1,3-Dichlorobenzene	<1.0	ug/m3	2.2	1.0	1.79		12/02/19 23:41	541-73-1	
1,4-Dichlorobenzene	<1.8	ug/m3	5.5	1.8	1.79		12/02/19 23:41	106-46-7	
Dichlorodifluoromethane	<0.52	ug/m3	1.8	0.52	1.79		12/02/19 23:41	75-71-8	
1,1-Dichloroethane	<0.40	ug/m3	1.5	0.40	1.79		12/02/19 23:41	75-34-3	
1,2-Dichloroethane	<0.27	ug/m3	0.74	0.27	1.79		12/02/19 23:41	107-06-2	
1,1-Dichloroethene	<0.49	ug/m3	1.4	0.49	1.79		12/02/19 23:41	75-35-4	
cis-1,2-Dichloroethene	<0.39	ug/m3	1.4	0.39	1.79		12/02/19 23:41	156-59-2	
trans-1,2-Dichloroethene	<0.51	ug/m3	1.4	0.51	1.79		12/02/19 23:41	156-60-5	
1,2-Dichloropropane	<0.41	ug/m3	1.7	0.41	1.79		12/02/19 23:41	78-87-5	
cis-1,3-Dichloropropene	<0.54	ug/m3	1.7	0.54	1.79		12/02/19 23:41	10061-01-5	
trans-1,3-Dichloropropene	<0.79	ug/m3	1.7	0.79	1.79		12/02/19 23:41	10061-02-6	
Dichlorotetrafluoroethane	<0.78	ug/m3	2.5	0.78	1.79		12/02/19 23:41	76-14-2	
Ethanol	9390	ug/m3	103	43.6	53.7		12/03/19 11:52	64-17-5	
Ethyl acetate	3.1	ug/m3	1.3	0.34	1.79		12/02/19 23:41	141-78-6	
Ethylbenzene	1.3J	ug/m3	1.6	0.55	1.79		12/02/19 23:41	100-41-4	
4-Ethyltoluene	<1.0	ug/m3	4.5	1.0	1.79		12/02/19 23:41	622-96-8	
n-Heptane	4.6	ug/m3	1.5	0.68	1.79		12/02/19 23:41	142-82-5	
Hexachloro-1,3-butadiene	<3.5	ug/m3	9.7	3.5	1.79		12/02/19 23:41	87-68-3	
n-Hexane	2.5	ug/m3	1.3	0.56	1.79		12/02/19 23:41	110-54-3	
2-Hexanone	2.6J	ug/m3	7.4	1.3	1.79		12/02/19 23:41	591-78-6	
Methylene Chloride	2.9J	ug/m3	6.3	2.2	1.79		12/02/19 23:41	75-09-2	
4-Methyl-2-pentanone (MIBK)	<0.93	ug/m3	7.4	0.93	1.79		12/02/19 23:41	108-10-1	
Methyl-tert-butyl ether	<1.2	ug/m3	6.6	1.2	1.79		12/02/19 23:41	1634-04-4	
Naphthalene	<2.3	ug/m3	4.8	2.3	1.79		12/02/19 23:41	91-20-3	
2-Propanol	612	ug/m3	4.5	1.2	1.79		12/02/19 23:41	67-63-0	
Propylene	<0.25	ug/m3	0.63	0.25	1.79		12/02/19 23:41	115-07-1	
Styrene	<0.62	ug/m3	1.6	0.62	1.79		12/02/19 23:41	100-42-5	
1,1,2,2-Tetrachloroethane	<0.55	ug/m3	1.2	0.55	1.79		12/02/19 23:41	79-34-5	

### REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,  
without the written consent of Pace Analytical Services, LLC.

### ANALYTICAL RESULTS

Project: 10016/19044

Pace Project No.: 10500733

**Sample: SS-1**      **Lab ID: 10500733001**      Collected: 11/21/19 11:00      Received: 11/25/19 12:00      Matrix: Air

Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
<b>TO15 MSV AIR</b>									
Analytical Method: TO-15									
Tetrachloroethene	<b>1.1J</b>	ug/m3	1.2	0.56	1.79		12/02/19 23:41	127-18-4	
Tetrahydrofuran	<b>&lt;0.47</b>	ug/m3	1.1	0.47	1.79		12/02/19 23:41	109-99-9	
Toluene	<b>2.7</b>	ug/m3	1.4	0.63	1.79		12/02/19 23:41	108-88-3	
1,2,4-Trichlorobenzene	<b>&lt;6.7</b>	ug/m3	13.5	6.7	1.79		12/02/19 23:41	120-82-1	
1,1,1-Trichloroethane	<b>&lt;0.55</b>	ug/m3	2.0	0.55	1.79		12/02/19 23:41	71-55-6	
1,1,2-Trichloroethane	<b>&lt;0.43</b>	ug/m3	0.99	0.43	1.79		12/02/19 23:41	79-00-5	
Trichloroethene	<b>&lt;0.45</b>	ug/m3	0.98	0.45	1.79		12/02/19 23:41	79-01-6	
Trichlorofluoromethane	<b>17.1</b>	ug/m3	2.0	0.66	1.79		12/02/19 23:41	75-69-4	
1,1,2-Trichlorotrifluoroethane	<b>&lt;1.0</b>	ug/m3	2.8	1.0	1.79		12/02/19 23:41	76-13-1	
1,2,4-Trimethylbenzene	<b>3.2</b>	ug/m3	1.8	0.81	1.79		12/02/19 23:41	95-63-6	
1,3,5-Trimethylbenzene	<b>1.7J</b>	ug/m3	1.8	0.71	1.79		12/02/19 23:41	108-67-8	
Vinyl acetate	<b>&lt;0.48</b>	ug/m3	1.3	0.48	1.79		12/02/19 23:41	108-05-4	
Vinyl chloride	<b>&lt;0.23</b>	ug/m3	0.47	0.23	1.79		12/02/19 23:41	75-01-4	
m&p-Xylene	<b>2.0J</b>	ug/m3	3.2	1.3	1.79		12/02/19 23:41	179601-23-1	
o-Xylene	<b>1.2J</b>	ug/m3	1.6	0.62	1.79		12/02/19 23:41	95-47-6	

### REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,  
without the written consent of Pace Analytical Services, LLC.

### QUALITY CONTROL DATA

Project: 10016/19044

Pace Project No.: 10500733

QC Batch: 647697

Analysis Method: TO-15

QC Batch Method: TO-15

Analysis Description: TO15 MSV AIR Low Level

Associated Lab Samples: 10500733001

METHOD BLANK: 3484912

Matrix: Air

Associated Lab Samples: 10500733001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
1,1,1-Trichloroethane	ug/m3	<0.31	1.1	12/02/19 17:57	
1,1,2,2-Tetrachloroethane	ug/m3	<0.31	0.70	12/02/19 17:57	
1,1,2-Trichloroethane	ug/m3	<0.24	0.56	12/02/19 17:57	
1,1,2-Trichlorotrifluoroethane	ug/m3	<0.56	1.6	12/02/19 17:57	
1,1-Dichloroethane	ug/m3	<0.22	0.82	12/02/19 17:57	
1,1-Dichloroethene	ug/m3	<0.27	0.81	12/02/19 17:57	
1,2,4-Trichlorobenzene	ug/m3	<3.7	7.5	12/02/19 17:57	
1,2,4-Trimethylbenzene	ug/m3	<0.45	1.0	12/02/19 17:57	
1,2-Dibromoethane (EDB)	ug/m3	<0.37	0.78	12/02/19 17:57	
1,2-Dichlorobenzene	ug/m3	<0.50	1.2	12/02/19 17:57	
1,2-Dichloroethane	ug/m3	<0.15	0.41	12/02/19 17:57	
1,2-Dichloropropane	ug/m3	<0.23	0.94	12/02/19 17:57	
1,3,5-Trimethylbenzene	ug/m3	<0.40	1.0	12/02/19 17:57	
1,3-Butadiene	ug/m3	<0.13	0.45	12/02/19 17:57	
1,3-Dichlorobenzene	ug/m3	<0.58	1.2	12/02/19 17:57	
1,4-Dichlorobenzene	ug/m3	<1.0	3.1	12/02/19 17:57	
2-Butanone (MEK)	ug/m3	<0.37	3.0	12/02/19 17:57	
2-Hexanone	ug/m3	<0.74	4.2	12/02/19 17:57	
2-Propanol	ug/m3	<0.70	2.5	12/02/19 17:57	
4-Ethyltoluene	ug/m3	<0.57	2.5	12/02/19 17:57	
4-Methyl-2-pentanone (MIBK)	ug/m3	<0.52	4.2	12/02/19 17:57	
Acetone	ug/m3	<1.2	2.4	12/02/19 17:57	
Benzene	ug/m3	<0.15	0.32	12/02/19 17:57	
Benzyl chloride	ug/m3	<1.2	2.6	12/02/19 17:57	
Bromodichloromethane	ug/m3	<0.37	1.4	12/02/19 17:57	
Bromoform	ug/m3	<1.4	5.2	12/02/19 17:57	
Bromomethane	ug/m3	<0.23	0.79	12/02/19 17:57	
Carbon disulfide	ug/m3	<0.22	0.63	12/02/19 17:57	
Carbon tetrachloride	ug/m3	<0.43	1.3	12/02/19 17:57	
Chlorobenzene	ug/m3	<0.28	0.94	12/02/19 17:57	
Chloroethane	ug/m3	<0.26	0.54	12/02/19 17:57	
Chloroform	ug/m3	<0.20	0.50	12/02/19 17:57	
Chloromethane	ug/m3	<0.16	0.42	12/02/19 17:57	
cis-1,2-Dichloroethene	ug/m3	<0.22	0.81	12/02/19 17:57	
cis-1,3-Dichloropropene	ug/m3	<0.30	0.92	12/02/19 17:57	
Cyclohexane	ug/m3	<0.35	1.8	12/02/19 17:57	
Dibromochloromethane	ug/m3	<0.72	1.7	12/02/19 17:57	
Dichlorodifluoromethane	ug/m3	<0.29	1.0	12/02/19 17:57	
Dichlorotetrafluoroethane	ug/m3	<0.44	1.4	12/02/19 17:57	
Ethanol	ug/m3	<0.81	1.9	12/02/19 17:57	
Ethyl acetate	ug/m3	<0.19	0.73	12/02/19 17:57	

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.

### REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,  
without the written consent of Pace Analytical Services, LLC.

### QUALITY CONTROL DATA

Project: 10016/19044  
Pace Project No.: 10500733

METHOD BLANK: 3484912  
Associated Lab Samples: 10500733001

Matrix: Air

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Ethylbenzene	ug/m3	<0.30	0.88	12/02/19 17:57	
Hexachloro-1,3-butadiene	ug/m3	<2.0	5.4	12/02/19 17:57	
m&p-Xylene	ug/m3	<0.70	1.8	12/02/19 17:57	
Methyl-tert-butyl ether	ug/m3	<0.66	3.7	12/02/19 17:57	
Methylene Chloride	ug/m3	<1.2	3.5	12/02/19 17:57	
n-Heptane	ug/m3	<0.38	0.83	12/02/19 17:57	
n-Hexane	ug/m3	<0.31	0.72	12/02/19 17:57	
Naphthalene	ug/m3	<1.3	2.7	12/02/19 17:57	
o-Xylene	ug/m3	<0.34	0.88	12/02/19 17:57	
Propylene	ug/m3	0.17J	0.35	12/02/19 17:57	
Styrene	ug/m3	<0.34	0.87	12/02/19 17:57	
Tetrachloroethene	ug/m3	<0.31	0.69	12/02/19 17:57	
Tetrahydrofuran	ug/m3	<0.26	0.60	12/02/19 17:57	
Toluene	ug/m3	<0.35	0.77	12/02/19 17:57	
trans-1,2-Dichloroethene	ug/m3	<0.28	0.81	12/02/19 17:57	
trans-1,3-Dichloropropene	ug/m3	<0.44	0.92	12/02/19 17:57	
Trichloroethene	ug/m3	<0.25	0.55	12/02/19 17:57	
Trichlorofluoromethane	ug/m3	<0.37	1.1	12/02/19 17:57	
Vinyl acetate	ug/m3	<0.27	0.72	12/02/19 17:57	
Vinyl chloride	ug/m3	<0.13	0.26	12/02/19 17:57	

LABORATORY CONTROL SAMPLE: 3484913

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1,1,1-Trichloroethane	ug/m3	56.6	56.2	99	70-130	
1,1,2,2-Tetrachloroethane	ug/m3	69.8	82.8	119	70-132	
1,1,2-Trichloroethane	ug/m3	58.2	64.2	110	70-130	
1,1,2-Trichlorotrifluoroethane	ug/m3	84.9	78.8	93	70-130	
1,1-Dichloroethane	ug/m3	42.4	40.9	97	70-130	
1,1-Dichloroethene	ug/m3	43.5	39.4	90	70-130	
1,2,4-Trichlorobenzene	ug/m3	74.7	81.3	109	56-130	
1,2,4-Trimethylbenzene	ug/m3	53	50.4	95	70-134	
1,2-Dibromoethane (EDB)	ug/m3	83.6	82.3	98	70-130	
1,2-Dichlorobenzene	ug/m3	59.9	62.9	105	70-132	
1,2-Dichloroethane	ug/m3	42.8	40.9	96	70-130	
1,2-Dichloropropane	ug/m3	48.4	53.2	110	70-130	
1,3,5-Trimethylbenzene	ug/m3	53.5	49.9	93	70-132	
1,3-Butadiene	ug/m3	22.5	24.4	109	65-130	
1,3-Dichlorobenzene	ug/m3	65.4	58.7	90	70-137	
1,4-Dichlorobenzene	ug/m3	65.4	55.2	84	70-134	
2-Butanone (MEK)	ug/m3	32.4	25.6	79	70-130	
2-Hexanone	ug/m3	42.9	39.2	91	70-135	
2-Propanol	ug/m3	26.5	22.1	83	68-130	
4-Ethyltoluene	ug/m3	52	52.3	101	70-138	

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.

### REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,  
without the written consent of Pace Analytical Services, LLC.

### QUALITY CONTROL DATA

Project: 10016/19044

Pace Project No.: 10500733

LABORATORY CONTROL SAMPLE: 3484913

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
4-Methyl-2-pentanone (MIBK)	ug/m3	42	49.9	119	70-131	
Acetone	ug/m3	26.6	27.5	104	67-130	
Benzene	ug/m3	34.4	33.1	96	70-130	
Benzyl chloride	ug/m3	56.3	46.9	83	70-130	
Bromodichloromethane	ug/m3	69.5	80.5	116	70-130	
Bromoform	ug/m3	97.7	110	113	70-132	
Bromomethane	ug/m3	40.6	42.5	105	69-130	
Carbon disulfide	ug/m3	32.9	32.1	98	56-137	
Carbon tetrachloride	ug/m3	65.9	67.5	102	66-131	
Chlorobenzene	ug/m3	49.6	47.6	96	70-130	
Chloroethane	ug/m3	26.8	26.0	97	70-130	
Chloroform	ug/m3	52.6	48.5	92	70-130	
Chloromethane	ug/m3	22.2	21.6	97	66-130	
cis-1,2-Dichloroethene	ug/m3	41.9	41.2	98	70-130	
cis-1,3-Dichloropropene	ug/m3	48	53.6	112	70-133	
Cyclohexane	ug/m3	35.3	36.2	102	68-132	
Dibromochloromethane	ug/m3	90	92.0	102	70-130	
Dichlorodifluoromethane	ug/m3	52.8	54.3	103	70-130	
Dichlorotetrafluoroethane	ug/m3	74.6	73.3	98	70-130	
Ethanol	ug/m3	21.1	19.0	90	68-133	
Ethyl acetate	ug/m3	38.8	36.7	95	69-130	
Ethylbenzene	ug/m3	45.5	47.1	104	67-131	
Hexachloro-1,3-butadiene	ug/m3	108	115	106	66-137	
m&p-Xylene	ug/m3	45.9	55.1	120	70-132	
Methyl-tert-butyl ether	ug/m3	37.4	39.6	106	70-130	
Methylene Chloride	ug/m3	38.1	38.4	101	65-130	
n-Heptane	ug/m3	43.7	46.6	107	65-130	
n-Hexane	ug/m3	37.6	33.6	89	66-130	
Naphthalene	ug/m3	52.7	52.7	100	56-130	
o-Xylene	ug/m3	44.1	44.4	101	70-130	
Propylene	ug/m3	19.2	18.4	96	67-130	
Styrene	ug/m3	44.2	44.9	102	69-136	
Tetrachloroethene	ug/m3	70.3	69.1	98	70-130	
Tetrahydrofuran	ug/m3	30.3	32.2	106	68-131	
Toluene	ug/m3	39.4	43.7	111	70-130	
trans-1,2-Dichloroethene	ug/m3	41.5	42.4	102	70-130	
trans-1,3-Dichloropropene	ug/m3	44.8	51.2	114	70-134	
Trichloroethene	ug/m3	56.3	57.3	102	70-130	
Trichlorofluoromethane	ug/m3	58.8	56.3	96	65-130	
Vinyl acetate	ug/m3	35.1	81.7	233	61-133 L3,SS	
Vinyl chloride	ug/m3	28.1	27.9	100	70-130	

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.

### REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,  
without the written consent of Pace Analytical Services, LLC.

### QUALITY CONTROL DATA

Project: 10016/19044

Pace Project No.: 10500733

SAMPLE DUPLICATE: 3485225

Parameter	Units	10500686001 Result	Dup Result	RPD	Max RPD	Qualifiers
1,1,1-Trichloroethane	ug/m3	<0.46	<0.46			25
1,1,2,2-Tetrachloroethane	ug/m3	<0.46	<0.46			25
1,1,2-Trichloroethane	ug/m3	<0.36	<0.36			25
1,1,2-Trichlorotrifluoroethane	ug/m3	<0.84	<0.84			25
1,1-Dichloroethane	ug/m3	<0.34	<0.34			25
1,1-Dichloroethene	ug/m3	<0.41	<0.41			25
1,2,4-Trichlorobenzene	ug/m3	<5.5	<5.5			25
1,2,4-Trimethylbenzene	ug/m3	1.8	1.7	3		25
1,2-Dibromoethane (EDB)	ug/m3	<0.55	<0.55			25
1,2-Dichlorobenzene	ug/m3	<0.74	<0.74			25
1,2-Dichloroethane	ug/m3	<0.22	<0.22			25
1,2-Dichloropropane	ug/m3	<0.34	<0.34			25
1,3,5-Trimethylbenzene	ug/m3	<0.59	<0.59			25
1,3-Butadiene	ug/m3	<0.19	<0.19			25
1,3-Dichlorobenzene	ug/m3	<0.87	<0.87			25
1,4-Dichlorobenzene	ug/m3	<1.5	<1.5			25
2-Butanone (MEK)	ug/m3	1.9J	1.9J			25
2-Hexanone	ug/m3	<1.1	2.2J			25
2-Propanol	ug/m3	109	112	2		25
4-Ethyltoluene	ug/m3	1.2J	1.3J			25
4-Methyl-2-pentanone (MIBK)	ug/m3	<0.77	<0.77			25
Acetone	ug/m3	78.0	79.8	2		25
Benzene	ug/m3	2.3	2.2	4		25
Benzyl chloride	ug/m3	<1.8	<1.8			25
Bromodichloromethane	ug/m3	<0.55	<0.55			25
Bromoform	ug/m3	<2.1	<2.1			25
Bromomethane	ug/m3	<0.34	<0.34			25
Carbon disulfide	ug/m3	0.35J	0.34J			25
Carbon tetrachloride	ug/m3	<0.64	<0.64			25
Chlorobenzene	ug/m3	<0.41	<0.41			25
Chloroethane	ug/m3	<0.39	<0.39			25
Chloroform	ug/m3	<0.29	<0.29			25
Chloromethane	ug/m3	<0.23	<0.23			25
cis-1,2-Dichloroethene	ug/m3	<0.33	<0.33			25
cis-1,3-Dichloropropene	ug/m3	<0.45	<0.45			25
Cyclohexane	ug/m3	3.3	3.3	2		25
Dibromochloromethane	ug/m3	<1.1	<1.1			25
Dichlorodifluoromethane	ug/m3	3.8	3.6	5		25
Dichlorotetrafluoroethane	ug/m3	<0.65	<0.65			25
Ethanol	ug/m3	417	426	2		25
Ethyl acetate	ug/m3	<0.28	0.93J			25
Ethylbenzene	ug/m3	16.4	16.5	1		25
Hexachloro-1,3-butadiene	ug/m3	<2.9	<2.9			25
m&p-Xylene	ug/m3	5.4	5.5	3		25
Methyl-tert-butyl ether	ug/m3	<0.99	<0.99			25
Methylene Chloride	ug/m3	5.3	5.5	3		25
n-Heptane	ug/m3	1.7	1.8	6		25

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.

### REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,  
without the written consent of Pace Analytical Services, LLC.



### QUALITY CONTROL DATA

Project: 10016/19044

Pace Project No.: 10500733

SAMPLE DUPLICATE: 3485225

Parameter	Units	10500686001 Result	Dup Result	RPD	Max RPD	Qualifiers
n-Hexane	ug/m3	6.4	6.5	1	25	
Naphthalene	ug/m3	<2.0	<2.0		25	
o-Xylene	ug/m3	1.9	1.9	1	25	
Propylene	ug/m3	<0.21	<0.21		25	
Styrene	ug/m3	<0.51	<0.51		25	
Tetrachloroethene	ug/m3	<0.47	<0.47		25	
Tetrahydrofuran	ug/m3	<0.39	<0.39		25	
Toluene	ug/m3	5.9	6.0	2	25	
trans-1,2-Dichloroethene	ug/m3	<0.42	<0.42		25	
trans-1,3-Dichloropropene	ug/m3	<0.66	<0.66		25	
Trichloroethene	ug/m3	<0.38	<0.38		25	
Trichlorofluoromethane	ug/m3	4.2	4.4	3	25	
Vinyl acetate	ug/m3	<0.40	<0.40		25	
Vinyl chloride	ug/m3	<0.19	<0.19		25	

SAMPLE DUPLICATE: 3485226

Parameter	Units	10500733001 Result	Dup Result	RPD	Max RPD	Qualifiers
1,1,1-Trichloroethane	ug/m3	<0.55	<0.55		25	
1,1,2,2-Tetrachloroethane	ug/m3	<0.55	<0.55		25	
1,1,2-Trichloroethane	ug/m3	<0.43	<0.43		25	
1,1,2-Trichlorotrifluoroethane	ug/m3	<1.0	<1.0		25	
1,1-Dichloroethane	ug/m3	<0.40	<0.40		25	
1,1-Dichloroethene	ug/m3	<0.49	<0.49		25	
1,2,4-Trichlorobenzene	ug/m3	<6.7	<6.7		25	
1,2,4-Trimethylbenzene	ug/m3	3.2	3.4	4	25	
1,2-Dibromoethane (EDB)	ug/m3	<0.66	<0.66		25	
1,2-Dichlorobenzene	ug/m3	<0.89	<0.89		25	
1,2-Dichloroethane	ug/m3	<0.27	<0.27		25	
1,2-Dichloropropane	ug/m3	<0.41	<0.41		25	
1,3,5-Trimethylbenzene	ug/m3	1.7J	1.8J		25	
1,3-Butadiene	ug/m3	<0.23	<0.23		25	
1,3-Dichlorobenzene	ug/m3	<1.0	<1.0		25	
1,4-Dichlorobenzene	ug/m3	<1.8	<1.8		25	
2-Butanone (MEK)	ug/m3	5.3J	5.8		25	
2-Hexanone	ug/m3	2.6J	2.5J		25	
2-Propanol	ug/m3	612	630	3	25	
4-Ethyltoluene	ug/m3	<1.0	1.2J		25	
4-Methyl-2-pentanone (MIBK)	ug/m3	<0.93	<0.93		25	
Acetone	ug/m3	176	185	5	25	
Benzene	ug/m3	0.71	0.75	5	25	
Benzyl chloride	ug/m3	<2.1	<2.1		25	
Bromodichloromethane	ug/m3	<0.66	<0.66		25	
Bromoform	ug/m3	<2.5	<2.5		25	
Bromomethane	ug/m3	<0.41	<0.41		25	

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.

### REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,  
without the written consent of Pace Analytical Services, LLC.

### QUALITY CONTROL DATA

Project: 10016/19044

Pace Project No.: 10500733

SAMPLE DUPLICATE: 3485226

Parameter	Units	10500733001 Result	Dup Result	RPD	Max RPD	Qualifiers
Carbon disulfide	ug/m3	<0.39	<0.39		25	
Carbon tetrachloride	ug/m3	<0.77	<0.77		25	
Chlorobenzene	ug/m3	<0.49	<0.49		25	
Chloroethane	ug/m3	<0.47	<0.47		25	
Chloroform	ug/m3	<0.35	<0.35		25	
Chloromethane	ug/m3	<0.28	<0.28		25	
cis-1,2-Dichloroethene	ug/m3	<0.39	<0.39		25	
cis-1,3-Dichloropropene	ug/m3	<0.54	<0.54		25	
Cyclohexane	ug/m3	1.3J	1.2J		25	
Dibromochloromethane	ug/m3	<1.3	<1.3		25	
Dichlorodifluoromethane	ug/m3	<0.52	<0.52		25	
Dichlorotetrafluoroethane	ug/m3	<0.78	<0.78		25	
Ethanol	ug/m3	9390	9780	4	25	
Ethyl acetate	ug/m3	3.1	3.2	2	25	
Ethylbenzene	ug/m3	1.3J	1.2J		25	
Hexachloro-1,3-butadiene	ug/m3	<3.5	<3.5		25	
m&p-Xylene	ug/m3	2.0J	2.0J		25	
Methyl-tert-butyl ether	ug/m3	<1.2	<1.2		25	
Methylene Chloride	ug/m3	2.9J	2.9J		25	
n-Heptane	ug/m3	4.6	4.7	1	25	
n-Hexane	ug/m3	2.5	2.6	2	25	
Naphthalene	ug/m3	<2.3	<2.3		25	
o-Xylene	ug/m3	1.2J	1.2J		25	
Propylene	ug/m3	<0.25	<0.25		25	
Styrene	ug/m3	<0.62	<0.62		25	
Tetrachloroethene	ug/m3	1.1J	1.0J		25	
Tetrahydrofuran	ug/m3	<0.47	<0.47		25	
Toluene	ug/m3	2.7	2.7	1	25	
trans-1,2-Dichloroethene	ug/m3	<0.51	<0.51		25	
trans-1,3-Dichloropropene	ug/m3	<0.79	<0.79		25	
Trichloroethene	ug/m3	<0.45	<0.45		25	
Trichlorofluoromethane	ug/m3	17.1	17.8	4	25	
Vinyl acetate	ug/m3	<0.48	<0.48		25	
Vinyl chloride	ug/m3	<0.23	<0.23		25	

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.

### REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,  
without the written consent of Pace Analytical Services, LLC.

## QUALIFIERS

Project: 10016/19044

Pace Project No.: 10500733

---

### 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 LOD.

J - Estimated concentration at or above the LOD and below the LOQ.

LOD - Limit of Detection adjusted for dilution factor, percent moisture, initial weight and final volume.

LOQ - Limit of Quantitation adjusted for dilution factor, percent moisture, initial weight and final volume.

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 at or above the adjusted LOD.

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-M Pace Analytical Services - Minneapolis

### ANALYTE QUALIFIERS

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

SS This analyte did not meet the secondary source verification criteria for the initial calibration. The reported result should be considered an estimated value.

## REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,  
without the written consent of Pace Analytical Services, LLC.

### QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: 10016/19044

Pace Project No.: 10500733

---

<b>Lab ID</b>	<b>Sample ID</b>	<b>QC Batch Method</b>	<b>QC Batch</b>	<b>Analytical Method</b>	<b>Analytical Batch</b>
10500733001	SS-1	TO-15	647697		

---

### REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,  
without the written consent of Pace Analytical Services, LLC.



**AIR: CHAIN-OF-CUSTODY**  
The Chain-of-Custody is a LEGAL DOCUMENT.

WO#: 10500733



47895

Page: 1 of 1

<b>Section A</b> Required Client Information:		<b>Section B</b> Required Project Information:		<b>Section C</b> Invoice Information:		Program	
Company: <b>VEC, INC.</b>		Report To: <b>TIM ANDERSON</b>		Attention: <b>SAME</b>		<input type="checkbox"/> UST <input type="checkbox"/> Superfund <input type="checkbox"/> Emissions <input type="checkbox"/> Clean Air Act <input type="checkbox"/> Voluntary Clean Up <input type="checkbox"/> Dry Clean <input type="checkbox"/> RCRA <input type="checkbox"/> Other	
Address: <b>16237 W. RYERSON ROAD NEW BERLIN, WI 53151</b>		Copy To:		Company Name:		Location of Sampling by State: <b>WI</b>	
Email To: <b>TWEC@SECELABS.NET</b>		Purchase Order No.:		Address:		Reporting Units <input checked="" type="checkbox"/> ug/m <sup>3</sup> <input type="checkbox"/> mg/m <sup>3</sup> <input type="checkbox"/> PPEV <input type="checkbox"/> PPMV <input type="checkbox"/> Other	
Phone: <b>262-785-1440</b> Fax: <b>262-706-4400</b>		Project Name: <b>10016/19044</b>		Pace Project Manager/Sales Rep.:		Report Level: <input type="checkbox"/> II <input type="checkbox"/> III <input type="checkbox"/> IV <input type="checkbox"/> Other	
Requested Due Date/TAT: <b>-</b>		Project Number:		Pace Profile #: <b>22085</b>			

ITEM #	'Section D Required Client Information <b>AIR SAMPLE ID</b> Sample IDs MUST BE UNIQUE	Valid Media Codes MEDIA CODE	MEDIA CODE	PID Reading (Client only)	COLLECTED				Canister Pressure (Initial Field - in Hg)	Canister Pressure (Final Field - in Hg)	Summa Can Number	Flow Control Number	Method:	<input type="checkbox"/> PM10 <input type="checkbox"/> 3c - Fixed Gas (%) <input type="checkbox"/> TO-3 BTEX <input type="checkbox"/> TO-3M (Methane) <input type="checkbox"/> TO-14 <input checked="" type="checkbox"/> TO-15 Full List VOCs <input checked="" type="checkbox"/> TO-15 Short List BTEX <input checked="" type="checkbox"/> TO-15 Short List Chlorinated	<input type="checkbox"/> Other	Pace Lab ID  001
					COMPOSITE START		COMPOSITE - END/GRAB									
					DATE	TIME	DATE	TIME								
1	VP-1	6LC	-	11/20/19	11:22	11/20/19	11:52	30	10	2808						
2	VP-2	6LC	-	11/20/19	11:14	11/20/19	11:44	29	9	2189						
3	SS-1	6LC	-	11/21/19	10:36	11/21/19	11:06	28	8	3317						
4																
5																
6																
7																
8																
9																
10																
11																
12																

Comments :	RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME	SAMPLE CONDITIONS				
PLEASE REPORT VP-1/VP-2 (19044) and SS-1 (19044) separately	VEC, INC.	11/22/19	1:25	PTL Paul	11/25/19	12:00	-	<input checked="" type="checkbox"/> Y/N	<input checked="" type="checkbox"/> Y/N	<input checked="" type="checkbox"/> Y/N	<input checked="" type="checkbox"/> Y/N
								<input type="checkbox"/> Y/N	<input type="checkbox"/> Y/N	<input type="checkbox"/> Y/N	<input type="checkbox"/> Y/N
								<input type="checkbox"/> Y/N	<input type="checkbox"/> Y/N	<input type="checkbox"/> Y/N	<input type="checkbox"/> Y/N
								<input type="checkbox"/> Y/N	<input type="checkbox"/> Y/N	<input type="checkbox"/> Y/N	<input type="checkbox"/> Y/N

SAMPLER NAME AND SIGNATURE		Temp in °C	Received on Ice	Custody Sealed Cooler	Samples Intact
PRINT Name of SAMPLER: <b>NICHOLAS ANDERSON</b>					
SIGNATURE of SAMPLER: <i>Nicholas Anderson</i> DATE Signed (MM/DD/YY) <b>11/22/19</b>					

ORIGINAL

**Air Sample Condition Upon Receipt**    **Client Name:** United Eng.    **Project #:** **WO# : 10500733**

**Courier:**  Fed Ex     UPS     USPS     Client  
 Pace     Speedee     Commercial     See Exception

**PM:** KNH    **Due Date:** 12/11/19  
**CLIENT:** United Eng

**Tracking Number:** 16830282-0330

**Custody Seal on Cooler/Box Present?**  Yes     No    **Seals Intact?**  Yes     No

**Packing Material:**  Bubble Wrap     Bubble Bags     Foam     None     Tin Can     Other: \_\_\_\_\_    **Temp Blank rec:**  Yes     No

**Temp. (TO17 and TO13 samples only) (°C):** \_\_\_\_\_    **Corrected Temp (°C):** \_\_\_\_\_    **Thermometer Used:**  G87A9170600254  
 G87A9155100842

**Temp should be above freezing to 6°C**    **Correction Factor:** \_\_\_\_\_    **Date & Initials of Person Examining Contents:** EM 11/25/19

**Type of ice Received**  Blue     Wet     None

**Comments:**

Chain of Custody Present?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	1.
Chain of Custody Filled Out?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	2.
Chain of Custody Relinquished?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	3.
Sampler Name and/or Signature on COC?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	4.
Samples Arrived within Hold Time?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	5.
Short Hold Time Analysis (<72 hr)?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	6.
Rush Turn Around Time Requested?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	7.
Sufficient Volume?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	8.
Correct Containers Used?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	9.
Pace Containers Used?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	
Containers Intact?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	10.
Media: <u>Air Can</u> Airbag    Filter    TDT    Passive		11. Individually Certified Cans    Y <u>N</u> (list which samples)
Is sufficient information available to reconcile samples to the COC?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	12.
Do cans need to be pressurized? ( <b>DO NOT PRESSURIZE 3C or ASTM 1946!!!</b> )	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	13.

**Gauge #**     10AIR26     10AIR34     10AIR35     4097

Canisters					Canisters				
Sample Number	Can ID	Flow Controller	Initial Pressure	Final Pressure	Sample Number	Can ID	Flow Controller	Initial Pressure	Final Pressure
<del>VP-1</del>	<del>2808</del>	<del>0921</del>	<del>-7</del>	<del>+5</del>	11/26/19 CMY				
<del>-2</del>	<del>2189</del>	<del>1138</del>	<del>-7</del>	<del>+5</del>					
SS-1	3317	0942	-7.5	+5					
Unused	0949	0976	-29	-					

**CLIENT NOTIFICATION/RESOLUTION**    **Field Data Required?**  Yes     No

**Person Contacted:** \_\_\_\_\_    **Date/Time:** \_\_\_\_\_

**Comments/Resolution:** \_\_\_\_\_

**Project Manager Review:** Kirsten Hopper    **Date:** 11/26/2019

Note: Whenever there is a discrepancy affecting North Carolina compliance samples, a copy of this form will be sent to the North Carolina DEHNR Certification Office ( i.e out of hold, incorrect preservative, out of temp, incorrect containers)