Waite - Heindel
Environmental Management

April 21, 2014

Mr. William Young
28 North Williams Street
Burlington, VT 05401

RE: Site Investigation
Young Residence
28 North Williams Street
Burlington, VT 05401
SMS Site #2013-4436

Dear Mr. Young:

Waite-Heindel Environmental Management (WHEM) is pleased to present the *Site Investigation* report for the residential property at 28 North Williams Street in Burlington, Vermont.

Do not hesitate to contact me if you have questions. I can be reached at (802) 860-9400 ext. 101 or by email at mwaite@waiteenv.com

Sincerely,

Miles E. Waite, Ph.D.
Senior Hydrogeologist

Cc: Hugo Martinez-Cazón, VDEC Site Manager

Enclosure

SITE INVESTIGATION REPORT
YOUNG RESIDENCE
28 NORTH WILLIAMS STREET
BURLINGTON, VERMONT

VERMONT SMS SITE #2013-4436

April 21, 2014

Prepared for:

Mr. William Young
28 North Williams Street,
Burlington, Vermont 05401

Prepared by:

Waite - Heindel
Environmental Management

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1.0 INTRODUCTION

Waite-Heindel Environmental Management (WHEM) of Burlington, Vermont conducted an Initial Site Investigation at the Young residence (SMS #2013-4436), located at 28 North Williams Street in Burlington, VT. The work described in this report was performed in response to the discovery of petroleum odors in the basement, which led to the discovery and removal of a badly damaged relict fuel oil tank on-property. This work is a follow-up to the tank pull completed by WHEM and Environmental Products and Services of Vermont (EP&S) on September 20, 2013 (tank pull report dated October 1, 2013). This work was performed by WHEM on behalf of William Young, the resident and current property owner.

Elements of this Additional Site Investigation included the following: 1) installation and sampling of three (3) monitoring wells to observe subsurface conditions and to allow for testing of soil and groundwater for contaminants of concern; 2) sampling of groundwater from the two installed sumps at the residence, which discharge into the City of Burlington's sanitary sewer; 3) removal of contaminated source area soils from beneath the home's basement crawlspace; 4) closure and removal of an unused above-ground fuel oil tank located in the home's basement; and 5) data analysis and reporting. This work was conducted in accordance with WHEM's "Revised Site Investigation Work Plan" dated December 5, 2013. WHEM's work plan was generated on behalf of Mr. Young at the request of VDEC Site Manager Hugo Martinez-Cazón. The work plan was approved via e-mail on December 11, 2013. The work performed was aimed to address requests made in the First Letter for this site, dated November 7, 2013. Specifically, the scope of this work was meant to:

- Further define the degree and extent of contamination in the soil via discrete sampling and regular PID screening, with samples collected for analysis of petroleum-related contaminants;
- Further define the degree and extent of contamination in the groundwater via the installation and sampling of a minimum of three (3) groundwater monitoring wells on-site, with samples collected via low-flow methodology for analysis by EPA Method 8260.
- Assess the potential for contaminant impact on sensitive receptors, including adjacent buildings, nearby surface water, any proximal water supply sources, wetlands, indoor and outdoor air, and so on.
- Determine the need for long-term treatment and/or monitoring that addresses groundwater contamination.
- Submit a summary report that outlines work performed, as well as provides conclusions and recommendations.

Not all elements of the WHEM's "Revised Site Investigation Work Plan" were completed at the time of this report's drafting. Additional post-source removal monitoring of the sumps needs to be conducted in order to establish the need for long-term treatment and the impact on the sanitary sewer line. WHEM has met some difficulty in gauging the amount of water pumped due to the use of two separate discharge points (one for each sump), and is engaged in ongoing coordination with Green Mountain Basement to devise a strategy before Spring thaw in order to monitor peak flow.

1.1 Property History

William and Sally Young have owned this property since 1991 and were reportedly unaware of the presence of a fuel oil UST on the property upon purchase. The heating system at the time of purchase was, and still is, natural gas. Also at the time of purchase, a 275-gallon aboveground oil tank was present in the basement but not hooked up, so it was assumed to have been formerly used for the previous oil-burning furnace. The Youngs and WHEM have provided background information (deed, purchase and sales contract, inspection report, blueprints, insurance policy) to the VT DEC as part of the 10 VSA Section 1926 provisions, and are awaiting review by the VT DEC to determine whether Petroleum Cleanup Funds (PCF) can be used for the tank closure costs

The building is located on the hill section of Burlington, north of Pearl Street (see USGS Map). Based on surrounding topography, groundwater flow under the subject property is predicted to be toward the west. According to Mr. Young, groundwater is shallow under the property; hence the need for basement dewatering using the sump pumps. Based on surficial geological mapping, the property is underlain by Pebbly Marine Sand. The bedrock Geology is mapped as Monkton Quartzite.

The presence of the UST was first suspected on September 10, 2013 after inspection by WHEM to assess the source of fuel oil odors emanating from a newly installed basement dewatering system. During early September, a basement contractor installed a French drain and two sump pumps in the basement to manage groundwater intrusion. The sump pumps, identified as Sump South and Sump North, and the French drain are shown in the attached Site Plan. During the installation of the French drain and deepening of Sump South, the contractor noted "oil residue" in the water and strong oil odors in the soil under Sump South. On September 10, 2013, WHEM alerted VT DEC of the release and began planning for the removal and remediation. WHEM returned on September 12, 2013 to collect samples from the sumps, which produced a detectable fuel oil odor. Sump South was noted as having evident sheen; analytical results from that sample reported Naphthalene (22.7 ug/L) in exceedance of VGES (20 ug/L). A preliminary work plan for tank removal, soil removal, and sensitive receptor evaluation was submitted by WHEM to VT DEC on September 17, 2013.

The UST closure was overseen by WHEM on September 20, 2013. The tank was first exposed by the excavating contractor, Environmental Products & Services (EP&S) of Vermont of Williston, Vermont using a mini-excavator. The UST was observed to be in very poor condition with significant pitting and too many holes to count. The holes were present throughout most of the body of the tank, suggesting that the entire tank was likely submerged below the seasonal high water table. A secondary excavation was conducted to maximize the removal of contaminated soils from the source area. Approximately 15.4 tons of contaminated soil was removed from the source area and, on September 25, 2013, shipped to Environmental Soils Management, Inc. (ESMI) of Loudon, NH for destruction by thermal treatment. During backfilling of the UST grave, a monitoring well, shown on the Site Plan as MW-1, was installed. This well has not yet been sampled.

A sensitive receptor survey was conducted as part of the tank pull report. Drinking water for the Young property and all surrounding properties is supplied by municipal water. There are no known nearby private or public drinking water wells. The house is also connected to municipal sewer. However, the basement of the Young residence has groundwater infiltration issues. Sump pumps have been present at the locations identified as Sump North and Sump South since they purchased the house, and these have worked to minimize water infiltration into the northeast and southeast edges of the basement. Sump North was installed with a new French drain system earlier in 2013 in an attempt to further stem basement water infiltration. Screening of the basement airspace with a PID was conducted by WHEM on September 12, revealing readings >20 ppm above the sumps, and a reading at the edge of the French drain behind a poly vapor barrier of 175 ppm, which is extremely elevated for indoor air. Therefore, the indoor air quality of the Young residence is considered to be the most important receptor for the identified fuel oil contamination.

2.0 SOIL BORINGS AND SOIL SAMPLING

2.1 Soil Boring Installation

On December 9, 2013, WHEM oversaw the drilling of borings SB-101 (MW-2) and SB-102 (MW-3) at the locations shown on the attached Site Plan. The borings were advanced using a track-mounted AMS PowerProbe 9600 by ENPRO Services of Burlington, VT. Boring logs are provided in Appendix 3. Boring locations followed the approved December 2013 work plan, in an effort to capture the vertical and horizontal extent of the contaminant plume in the soil.

WHEM used a photo ionization detector (PID[1]) to screen the soils for the presence of VOCs during the boring process. A plastic bag headspace method was used, wherein a composite soil sample from the sample interval was placed into a resealable plastic bag approximately ½ full, and was allowed to equilibrate for at least 2 minutes. After equilibration, the bag was cracked open and the PID probe inserted to obtain the measurement. PID readings are all shown in the soil boring logs in Appendix 3. VOC concentrations by PID ranged from background conditions (0.0 ppm) at SB-101 to faint detections of 0.8 ppm at SB-102. These results are all much lower than the source area (Tank Pit/MW-1), which reported up go 220 ppm by PID. There were no visual indicators of contamination present in the soil.

The soil stratigraphy was consistent across the site; A layer of dark loam of varying thickness (4" to 18" bgs) is underlain by well-graded sands which increase in density with depth. The fine sands are underlain by a restrictive fine sandy clay layer that drops sharply; the clay layer was encountered at 5 ft bgs at Tank Pit/MW-1, but was consistently encountered at about 8 ft bgs in SB-101 and SB-102. SB-101 and SB-102 extended a few feet into the restrictive layer.

2.2 Soil Sampling

During the soil boring process, the following undisturbed soil samples were collected: VOCs by EPA Method 8260B and Total Diesel-Range Petroleum Hydrocarbons (TPH-DRO) from all borings. Sample depths were generally in the smear zone of 4-8 ft bgs. Refer to the boring logs in Appendix 3 for sample intervals. Samples were collected using 1 ¾" O.D. x 48" long macrocore sampling tubes. Soil samples were kept on ice and delivered to Endyne Laboratories in Williston, VT by WHEM under chain-of-custody procedures.

2.3 Soil Sampling Results

Soil quality results are tabulated in Table 4 in Appendix 2. Full laboratory reports are included in Appendix 4. All concentrations have been compared to the EPA's Regional Screening Levels (RSLs) for residential soil and to the VT DEC Soil Screening Values (SSV) for residential soil. These results are summarized below:

- Several petroleum VOCs were reported above laboratory detection limits in Tank Pit/MW-1 (sampled during tank pull, 9/20/2013), including Ethylbenzene, Xylenes,

[1] IonScience PhoCheck 2000EX with 10.6eV bulb, calibrated to isobutylene standard on the morning of field work and then field checked to an isobutylene standard at the completion of field work.

1,2,4-Trimethylbenzene, and Naphthalene. None of these identified compounds exceeded their respective standards.

- Several petroleum VOCs were reported above laboratory detection limits in SB-102, including MTBE, Benzene, Toluene, Ethylbenzene, Xylenes, 1,2,4-Trimethylbenzene, n-Propylbenzene, and Naphthalene. None of these identified compounds exceeded their respective standards.

- Total Diesel-Range Petroleum Hydrocarbons (TPH-DRO) were detected in Tank Pit and SB-102 at 159 mg/Kg and 393 mg/Kg, respectively. Levels above 200 mg/Kg are in exceedance of VDEC's guideline value for soil.

- Only Naphthalene was detected in SB-101 at 95.7 mg/Kg, well below standards.

3.0 MONITORING WELL INSTALLATION/GROUNDWATER SAMPLING

3.1 Monitoring Well Installation

All soil borings were completed as Schedule 40 PVC monitoring wells. Tank Pit was finished as MW-1 via 2" PVC, which occurred on September 20, 2013. SB-101 and SB-102 were completed as MW-2 and MW-3, respectively, via 1" PVC on the day of drilling (December 9, 2013). For all wells, 0.010-inch slotted screen extended five feet below the top of water, which was measured prior to well installation. Coarse silica sand was poured into the annular space surrounding the screen. A pelletized bentonite seal was installed above the sandpack with a thickness of approximately one foot. All wells were finished with a 4" flush-mount box set in concrete. Each well was developed immediately following installation to effectively set the sand pack and remove sediment generated during well installation. Well construction details are provided in Table 1 of Appendix 2 and in the soil boring logs in Appendix 3.

Several days after the drilling, WHEM returned to the Site to survey the locations and elevation of the new wells so to calculate groundwater elevations for the site. The survey was performed using a Nikon NPL-32 total station.

3.2 Groundwater Sampling

On December 23, 2013, WHEM conducted a groundwater sampling event at the subject property. All three wells on-site were gauged for depth to groundwater prior to sampling. Additionally, samples were collected from both of the home's sumps.

Depth to groundwater ranged from 3.80 ft below top of casing (BTOC) in MW-1 to 7.28 ft BTOC in MW-2. Groundwater elevations, tabulated in Table 2.1 in Appendix A, ranged from a high of 96.20 ft (MW-1) to a low of 91.92 ft (MW-2). Groundwater elevations have been mapped and contoured as shown in Figure 2 in Appendix A. As the contours show, groundwater flow appears to flow northeastward across the Site toward North Williams Street. The water level in MW-2 may be influenced by the home's French drain system, which lowers the groundwater elevation immediately surrounding the house. Impacts from the system would be less noticeable at MW-1, despite its proximity to the house, because a Sump South is set much higher (in a crawlspace rather than full basement depth) than Sump North. The horizontal hydraulic gradient is calculated at 0.119 ft/ft, or 11.9% (calculated from MW-1 to MW-2).

All wells were purged and sampled via low-flow methodology. Sampling was conducted via peristaltic pump at a rate of approximately 150-200 ml/min until the following parameters reached stabilization: temperature, specific conductivity, pH, dissolved oxygen, ORP, and turbidity. Two wells, MW-1 and MW-2, went dry before all parameters could stabilize—most parameters had stabilized at MW-1, but MW-3 went dry very quickly. These wells were allowed to recharge before sampling was conducted.

Stabilized values of all field parameters are shown in Table 3. December 23 was the first round of groundwater sampling, so there is no historic field data for comparison. In general, specific conductivity was elevated across the site. ORP was both positive (MW-1 and MW-2) and negative (MW-3). The potential for surface impacts at this site is high due to the minimal depth to groundwater, so high conductivity and higher dissolved oxygen levels are anticipated. Field staff noted a septic odor from groundwater at MW-2, as well as elevated turbidity relative to the other wells, which could reflect a sewer leak near MW-2.

Samples were collected from the two sumps (Sump N and Sump S) by activating the sump pump to draw fresh groundwater into the sump. Then, when enough water was present, a fresh unpreserved 40ml glass bottle was lowered into the sump and used to collect the groundwater, which was transferred immediately to pre-preserved sampling containers (VOAs). Both sumps recharged with sufficient water within 15 minutes of purging.

Quality Assurance/Quality Control (QA/QC) samples included a duplicate and trip blank, which was prepared at WHEM the morning of sampling. Samples were collected directly from the outlet of the peristaltic pump and delivered on ice to Endyne Laboratories in Williston, VT for analysis by EPA Methods 8260B. Results of the QA/QC sampling, shown in the lab report in Appendix 4, indicate that no compounds were detected in the trip blank. The field duplicate sample was collected in correlation with the groundwater sample from MW-1. Results for all compounds reported at least twice the practical quantitation limit (PQL) were below 20% relative percent difference (RPD), indicating acceptable analytical results and sample parity.

3.3 Groundwater Sampling Results

The groundwater results are presented in Table 4 of Appendix 2. The full laboratory report is provided in Appendix 4. All concentrations have been compared to the Vermont Groundwater Enforcement Standards (VGES). These results, shown in micrograms per liter (ug/L), are summarized below:

The results are summarized below:

- Petroleum VOCs were detected in MW-1, as well as both Sump N and Sump S. Naphthalene exceeded the VGES in Sump North, as it had in September 2013. There were no other exceedances reported in December 2013.

- Several organic compounds associated with public water supply and sanitary sewage, including chloroform, were identified in MW-2, possibly due to a sewer leak near the well, which is located near the home's sanitary sewer line. Additionally, elevated concentrations of acetone were detected in MW-1 and MW-2; the source of these detections is unclear. In MW-1, it may be associated with tank removal activities, while in MW-2 it may be attributable to well's proximity to the sanitary sewer line. These data were not included in Table 3, but can be found in the complete laboratory reports (appendix 4).

- Based on the reported concentrations in groundwater, it is unlikely that the VGES is exceeded for any compounds at the downgradient property line.

4.0 SOURCE REMOVAL FROM BENEATH "SUMP SOUTH"

4.1 Sump Excavation

On January 9, 2014, WHEM oversaw the removal of contaminated source area soils from beneath the Sump South crawlspace area. Contaminated soils were hand-excavated and transported by EP&S while WHEM staff assisted and conducted air monitoring for health and safety purposes. WHEM staff also assisted in the backfilling and reinstallation of the vapor barrier. Personnel from Green Mountain Basement Solutions, LLC re-connected the sump pump on January 10, 2014. Photos of the sump excavation and AST removal have been included in Appendix 3.

VOC levels in the indoor air were measured once every five minutes using a calibrated IonSci PhoCheck+. Prior to excavation, VOC levels in the basement air were generally non-detect or background (0.0-0.1 ppm VOCs by PID). As the excavation reached the source-area soils, VOC levels climbed to a peak of 30.2 ppm. VOC concentrations remained well below the threshold necessary for halting work (100 ppm) in the sump area, and were lower than that in the general basement air space (<5.2 ppm).

Excavated soils consisted of poorly sorted sandy loam, with varying gravel content to the excavation's terminating depth. Gravel content increased at the water table, but so did silt content.

In total, six drums were filled with contaminated soils from underneath Sump South. Based on measurements taken from the sump area, approximately 1.4 cubic yards (cy) were removed from the sump area. This calculation fits well with the approximate drum capacity of 0.25 cy per drum. A composite sample was collected from each of the drums for PID screening via headspace method. The composite sample was minimally disturbed and placed into a plastic bag, then mixed. After an equilibration period of 30 seconds, VOC levels were measured by PID. VOC concentrations ranged from 79.1 ppm in drum 5 to 31.9 ppm in drum 3. The composite sample from the sixth and final drum reported a VOC concentration of 73.1 ppm. The drums of contaminated soil were transported and disposed by EP&S following the completion of excavation activities.

Following completion of the excavation, one yard of lime gravel was delivered for backfill. EP&S personnel laid down a layer of gravel followed by a new polyethylene vapor barrier, then additional gravel to original grade. The sump pit was replaced, but the pump was left detached for Green Mountain Basement Solutions personnel to reinstall. By the time the stone was set in place, VOC levels in the sump area had lowered to 3.7 ppm, while basement VOC levels were 1.8 ppm.

WHEM field staff returned to the site 24 hours later on January 10, 2014 to determine VOC reductions in the indoor air and sump space. VOC levels in the sump were reported at 0.3 ppm VOCs by PID, an order of magnitude decrease from the end of the previous day, but slightly above levels observed prior to digging. Basement air had returned to background (0.0 ppm) levels at that time.

While there was some olfactory evidence of fuel oil contamination remaining at the base of the excavation, it is WHEM's opinion that it would not have been pragmatic to remove additional soils from the sump area due to increasingly saturated conditions and the identification of restrictive soils beneath the sump area.

4.2 AST Removal

In addition to the sump excavation, WHEM also oversaw the removal of an aboveground storage tank (AST) from the basement. EP&S identified an estimated 30 gallons of remnant fuel oil in the AST, along with some sludge material at the base of the tank. By early afternoon, the AST had been fully disassembled and its contents containerized in 55-gallon drums with no spillage. In addition, all piping from the tank had been cut per Bill Young's instructions. EP&S transported and disposed of the recovered sludge and remnant fuel oil. Photographs of the AST removal have been included in Appendix 3.

Finally, the septic outlet was investigated to determine whether a leak had been formed when WHEM drilled a well proximal to the septic outlet. The purgewater from this well was noted as having a septic odor, and 8260 data revealed the presence of some decontaminating compounds common in public water supplies. No obvious signs of a leak were observed (i.e. pooling septic water), only some groundwater infiltration, which was to be expected.

5.0 EVALUATION OF SUMP TREATMENT SYSTEM

WHEM has not yet addressed the treatment evaluation for the site. As part of our Sump South excavation, we discovered that each sump pump is connected directly to the sanitary sewer line in different locations. The cost of installing two separate totalizing flow meters is considerably high and would require the assistance of Green Mountain Basement Solutions, who have not responded to WHEM's requests. Therefore, a method has been devised that eliminates the need for totalizing flow meters.

In the coming weeks, WHEM will install "Kill-A-Watt" meters. These meters track the kilowatt-hours (kW-h) spent by each of the pumps. To calibrate to volume, WHEM will fill each sump with clean water to activate the pump. WHEM will then calculate the gallons pumped per kW-h, averaged over the course of ten trials, for both pumps. This is more reliable than calculating

gallons per cycle, because as flow increases in the Spring, so too will the gallons pumped per cycle.

These meters will be installed prior to the Spring melt so to capture peak theoretical flows. WHEM will take readings from the Kill-a-Watt meters on several occasions and collect at least one more sample from the sumps. No samples have been collected since the source removal around Sump South, so it is unclear what impact that removal may have had on the intruding groundwater.

Once this data has been collected, WHEM will present a brief letter report to the SMS regarding the need for and design of a treatment system for the intruding groundwater, which is pumped into the City of Burlington's sanitary sewer system. WHEM expects to have this report prepared by early May. At this time, neither WHEM nor the Young family has alerted the city as to the sump discharge.

6.0 CONCLUSIONS AND RECOMMENDATIONS

Based on the results presented in this report, WHEM reaches the following conclusions:

1. Soil sampling during soil boring installation and a round of groundwater sampling were completed by WHEM in December 2013. Removal of source area soils from beneath the home's southern sump (Sump South) was completed in early January 2014.

2. Results of soil sampling during soil boring installation indicate the presence of petroleum VOCs downgradient of the former UST grave at SB-102, but no exceedances of EPA Regional Screening Levels (RSLs) were reported. The presence of VOCs in SB-102 at the same general magnitude as the UST grave and presence of TPH-DRO at SB-102 at a higher magnitude that the UST grave is surprising, and suggests significant petroleum migration from the UST grave to the west. However, this notion of migration is not supported by the groundwater quality data for MW-3.

3. Petroleum VOCs were not detected in groundwater sampled from MW-2 or MW-3. Petroleum VOCs were only detected in MW-1, as well as both Sump North and Sump South. Naphthalene exceeded the VGES in Sump North, as it had in September 2013. There were no other exceedances reported in December 2013..

4. Approximately 1.4 cubic yards of contaminated soil were excavated by hand from beneath and surrounding Sump South, near the tank grave. Contaminated soils were transported and disposed by EP&S of Vermont. Composite samples from each drum were screened by PID and ranged from 31.9 ppm to 73.1 ppm. While some contaminated soil remained, it was not feasible to continue digging by hand into the increasingly dense and restrictive silty layer. Based on PID screening, the home was safe for occupation within 24 hours of the excavation.

5. An unused fuel oil AST in the Young residence's basement was drained of unused oil and sludge and deconstructed on the same date as the sump excavation. All piping from the tank was cut per the homeowner's instructions, and the waste was transported and disposed by EP&S.

6. A method for measuring sump flow has been devised to determine the need for groundwater treatment at the residence prior to its discharge to the City of Burlington's sanitary sewer system. This will be implemented in April 2014 through the Spring.

Based on these conclusions, WHEM recommends the following:

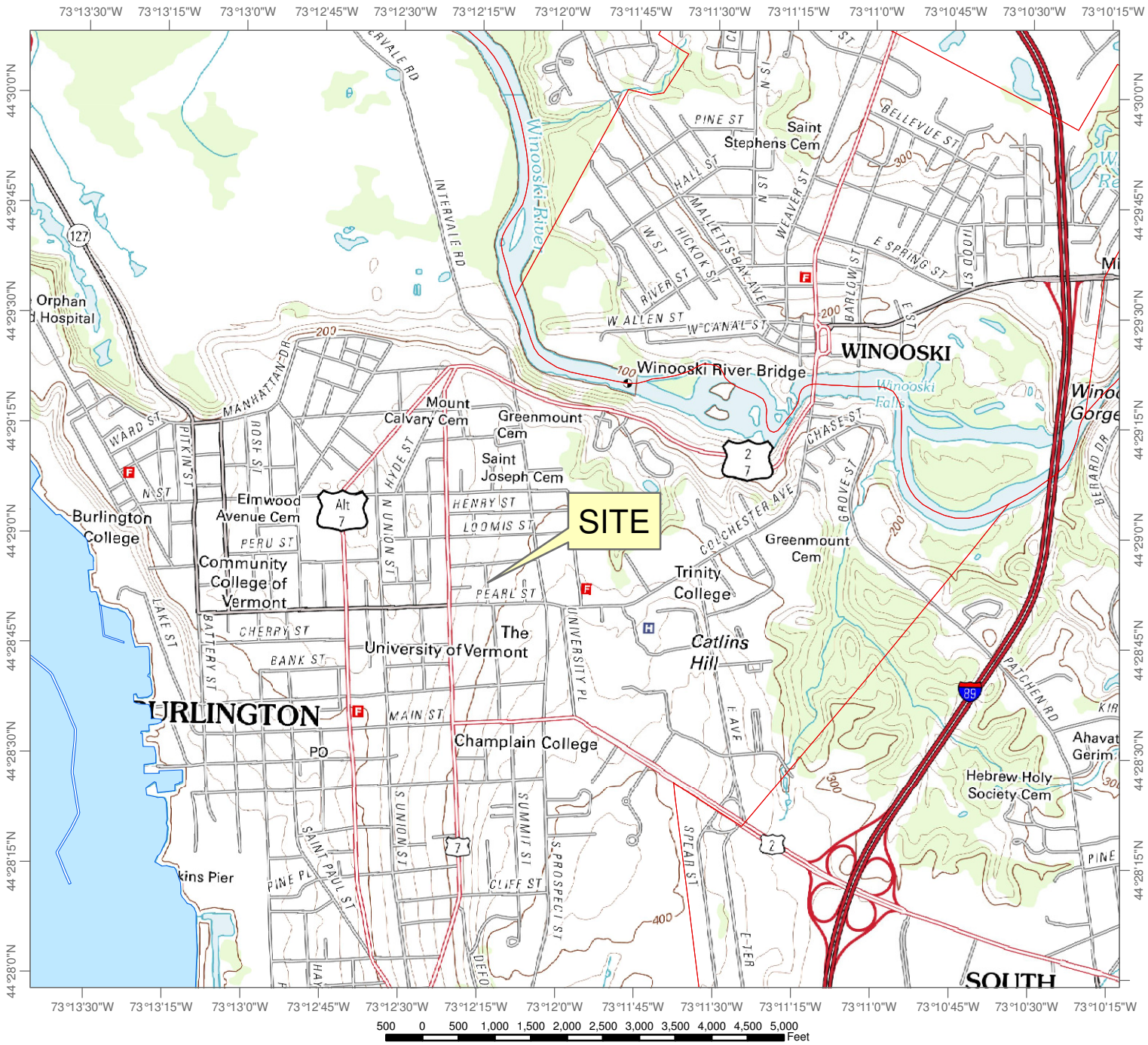
1. An additional round of groundwater monitoring during seasonal high water table conditions to determine whether the downgradient impacts to soil may influence elevated groundwater. This sampling event should be conducted in April or May 2014, and should include all wells and a round of sump sampling. This event would also determine whether additional source removal activities have had an impact on groundwater quality since their completion in January 2014. Results, conclusions and recommendations would be submitted via a letter report.

2. Completion of our sump analysis, using data from the high water table sampling event and flow data collected over the course of April 2014. The results of the sump analysis can either be included in a report under separate cover, or else be included in the groundwater report.

3. WHEM does not recommend installing any additional groundwater monitoring points at this time, as the downgradient extent of impacts to groundwater appears to be limited to the current investigation area. Additionally, WHEM does not recommend pursuing an indoor air quality investigation at this site.

APPENDIX 1

FIGURES



USGS

Young Property
28 N. Williams Street
Burlington, Vermont

October 1, 2013
Map produced by:
C:\Users\MILESW~1\AppData\Local\Temp\~DFE51841EF9C75B4E3.TMP

Subject Area
Town Boundary

Site Coordinates:
Geographic (Degrees Minutes Seconds):
Northing: 0
Easting: 0
VT State Plane Meters:

Circle Radius: 0.5 mile(s)

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References:

United States Geological Survey xxxx Vermont Quadrangle. Computer file, USGS. Distributed through Vermont Center for Geographic Information, April 2007.
Town boundary, best sources. Computer file, bndhash, Vermont Center for Geographic Information, Waterbury, VT. Distributed through Vermont Center for Geographic Information, Inc. 2007.

GARAGE

ASPHALT DRIVEWAY

ADDITION

JANUARY 2014 EXCAVATION LIMITS

SIDEWALK

RELICT U.S.T. REMOVED SEPTEMBER 2013

SEPTEMBER 2013 EXCAVATION LIMITS

MW-1

FRENCH DRAIN

SUMP SOUTH

SUMP NORTH

ASSUMED AREA OF REMAINING CONTAMINATED SOIL (HATCHED)

YOUNG RESIDENCE
28 N. WILLIAMS STREET
SITE #2013-4436

UNUSED A.S.T. REMOVED IN JANUARY 2014

HUDDLE RESIDENCE
34 N. WILLIAMS STREET
SITE #2011-4316

20 N. WILLIAMS STREET

MW-2

MW-3

WATER LINE (APPROX)

SEWER LINE (APPROX)

ASPHALT DRIVE

SIDEWALK

N. WILLIAMS STREET

LEGEND

- PROPERTY LINE FROM TAX MAP (APPROX)
- SUMP PUMP INSTALLED BY OWNER
- MW-1 MONITORING WELL INSTALLED BY WHEM

0 5 10 20

GRAPHIC SCALE: 1"=10'

NOTES:
1. BASE PLAN IS ORIGINAL BLUEPRINT OF HOUSE PROVIDED BY OWNER.
2. ALL LOCATIONS APPROXIMATE. THIS IS NOT A SURVEYED PLAN.

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1

DATE: 3/1/14
PROJECT NO.
DRAWN BY: D.W.F.
PROJ. MGR: C.P.
APPROVED: M.E.W.

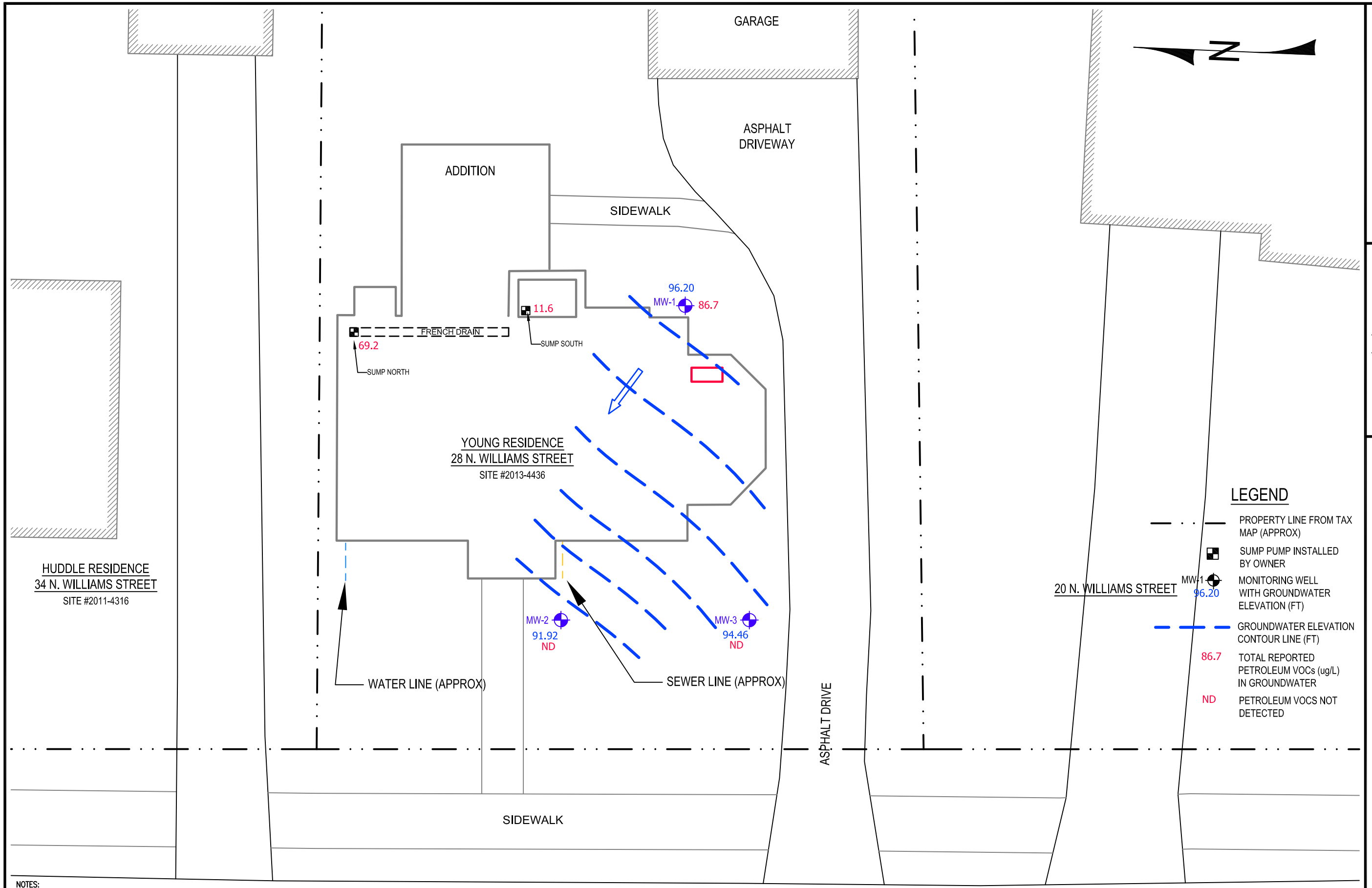
☒ DRAFT ☐ FINAL

YOUNG
28 NORTH WILLIAMS STREET
BURLINGTON, VERMONT

SITE PLAN

FILE: Young Williams Street.dwg

SCALE: 1" = 10'



NOTES:
1. GROUNDWATER ELEVATIONS ARE RELATIVE TO THE ELEVATION OF THE TOP-OF-CASING (TOC) OF WELL MW-1, ABRITRARILY SET AT 100.0 FT. SURVEY CONDUCTED BY WHEM IN DECEMBER 2013.
2. GROUNDWATER ELEVATIONS ARE FROM DECEMBER 9, 2013.
3. TOTAL PETROLEUM VOCS IS CALCULATED AS SUM OF CONCENTRATIONS OF THE COMPOUNDS BENZENE, TOLUENE, ETHYLBENZENE, XYLENES, TRIMETHYLBENZENES, NAPTHALENE, AND MTBE. SAMPLES COLLECTED ON DECEMBER 9, 2013.

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2

DATE: 3/1/14
PROJECT NO.
DRAWN BY: D.W.F.
PROJ. MGR: C.P.
APPROVED: M.E.W.

☒ DRAFT ☐ FINAL

YOUNG
28 NORTH WILLIAMS STREET
BURLINGTON, VERMONT

GROUNDWATER ELEVATION AND CONTAMINANT CONCENTRATION MAP

FILE: Young Williams Street.dwg

SCALE: 1" = 10'

APPENDIX 2

TABLES

TABLE 1
Well Construction and Detail Summary
Young Residence
28 N. Williams Street, Burlington, Vermont
Site #2013-4436

Well I.D.	Installed By	Year Installed	Diameter (in.)	Screened Interval (ft.bgs)	Depth to Bottom (ftbtoc)	Measuring Point (ft)	Measuring Point Elevation (ft)
MW-1	WHEM	2013	2.0	3.0 - 6.0	6.2	TOC PVC	100.00
MW-2	ENPRO / WHEM	2013	1.0	6.0 - 11.0	11.0	TOC PVC	99.20
MW-3	ENPRO / WHEM	2013	1.0	5.0 - 10.0	9.8	TOC PVC	98.54

Notes: Elevation data referenced to aribitrary elevation of 100.0 ft at well MW-1
in = inches; ft = feet; ft.bgs = feet below ground surface; ftbtoc = Feet below top of casing

Waite - Heindel

TABLE 2.0
Groundwater Elevation Measurements:
Young Residence

Measurement Date: 12/23/13

Location	Type	TOC	Units	Depth to Water	Groundwater Elevation
MW-1	Monitoring Well	100.00	FT	3.80	96.20
MW-2	Monitoring Well	99.20	FT	7.28	91.92
MW-3	Monitoring Well	98.54	FT	4.08	94.46

Notes:
-All elevations in feet, relative to arbitrary benchmark (MW-1 top of casing)
-"<"= less than bottom elevation of well, signifiying that the well dry during monitoring event; "NA" =not available;
blank = not sampled.

TABLE 3.0
Groundwater Geochemical Data
Young Residence
28 N. Williams Street, Burlington, Vermont

Measurement Date: 12/23/13						
Well I.D.	**Temp.** (deg C)	**Specific Cond.** (us/cm)	**DO** (mg/L)	**pH**	**ORP** (mv)	**Turbidity** (NTU)
MW-1	10.18	2221	2.02	6.78	37.1	11.80
MW-2	10.76	1829	2.35	6.67	-79.6	46.10
MW-3	7.69	2950	2.86	6.71	248.9	12.10

Notes:
1. Data from a YSI 556 calibrated to manufacturer's specifications on the morning prior to use.
2. us/cm = microsiemens per centimerter; mv=millivolts; mg/L= milligrams per liter; NTU = nephelometric turbidity units.
3. N/A = data not available.

TABLE 4
Groundwater Quality Data
Young Residence
28 N. Williams St, Burlington, Vermont

Well	Units	VGES	Sump South		Sump North		MW-1	MW-2	MW-3
Sample Date			9/12/2013	12/23/2014	9/12/2013	12/23/2014	12/23/2013	12/23/2013	12/23/2013
Depth to water (feet below top of casing)			na	na	na	na	3.80	7.28	4.08
PETROLEUM VOLATILE ORGANIC COMPOUNDS (VOCs) (EPA Method 8021B)									
MTBE	ug/L (ppb)	40	ND / < 10.0	ND / < 2.0	ND / < 2.0	ND / < 2.0	ND / < 4.0	ND / < 2.0	ND / < 2.0
Benzene	ug/L (ppb)	5.0	ND / < 5.0	ND / < 1.0	ND / < 1.0	**1.4**	**3.7**	ND / < 1.0	ND / < 1.0
Toluene	ug/L (ppb)	1,000	ND / < 5.0	ND / < 1.0	ND / < 1.0	ND / < 1.0	**5.4**	ND / < 1.0	ND / < 1.0
Ethylbenzene	ug/L (ppb)	700	ND / < 5.0	**2.5**	ND / < 1.0	**4.2**	**7.1**	ND / < 1.0	ND / < 1.0
Xylenes	ug/L (ppb)	10,000	**18.9**	**2.5**	**9.3**	**14.4**	**26.4**	ND / < 2.0	ND / < 2.0
1,3,5-Trimethylbenzene	ug/L (ppb)	350	**5.3**	ND / < 1.0	**6.3**	**8.4**	**8.9**	ND / < 1.0	ND / < 1.0
1,2,4-Trimethylbenzene	ug/L (ppb)		**8.7**	**1.7**	**8.6**	**17.5**	**19.0**	ND / < 1.0	ND / < 1.0
Naphthalene	ug/L (ppb)	20	**15.8**	**4.9**	**22.7**	**23.3**	**16.2**	ND / < 2.0	ND / < 2.0
TOTAL PETROLEM VOCS	*ug/L (ppb)*	--	***48.7***	***11.6***	***46.9***	***69.2***	***86.7***	*ND / < 5.0*	*ND / < 5.0*
Unidentified Peaks	#	--	>10	>10	>10	>10	>10	0	0
NON-PETROLEUM VOLATILE ORGANIC COMPOUNDS (VOCs) (EPA Method 8021B)									
Acetone	ug/L (ppb)	700	NA		NA	ND / < 10.0	**268**	**67.3**	ND / < 10.0
Bromodichloromethane	ug/L (ppb)	80	NA		NA	ND / < 0.5	ND / < 1.0	**1.4**	ND / < 0.5
Chloroform	ug/L (ppb)		NA		NA	ND / < 1.0	ND / < 2.0	**18.2**	ND / < 1.0
2-Butanone	ug/L (ppb)	4200	NA		NA	ND / < 10.0	**812**	ND / < 10.0	ND / < 10.0
TOTAL PETROLEUM HYDROCARBONS - DIESEL RANGE ORGANICS (EPA Method 8015B)									
TPH-DRO	mg/L (ppm)		**15.8**		**10.8**				

NOTES:
1. ND = not detected above any of the estimated reporting limits.
2. VGES = Vermont Groundwater Enforcement Standards, February 2005.
3. Results reported above the method detection limit are indicated in bold.
5. Shaded results are above guideline.
6. NA = Compound not analyzed

TABLE 5
Soil Quality Data
Young Residence
28 N. Williams St, Burlington, Vermont

Sample Location		SOIL SCREENING VALUES (SSVs)		**Soil Pile**	**Tank Pit/MW-1**	**SB-101/MW-2**	**SB-102/MW-3**
Sample Depth Interval (ft)		EPA RSL	VDH	composite	6.0	4-8	5-6
Sample Date		Resdential (5/13)	VALUE	9/20/2013	9/20/2013	12/9/2013	12/9/2013
TOTAL PETROLEUM HYDROCARBONS - DEISEL RANGE (TPH-DRO) (EPA Method 8015B)							
TPH-DRO	mg/Kg (ppm)		200	**3,780**	**159**	ND / < 3.0	**393**
VOLATILE ORGANIC COMPOUNDS (VOCs) (EPA Method 8260B)							
MTBE	ug/Kg (ppb)	43,000		NA	ND / < 56.0	ND / < 56.0	**334**
Benzene	ug/Kg (ppb)	1,100	6,240		ND / < 28.0	ND / < 28.0	**28.6**
Toluene	ug/Kg (ppb)	5,000,000			ND / < 28.0	ND / < 28.0	**169**
Ethylbenzene	ug/Kg (ppb)	5,400			**41.2**	ND / < 28.0	**61.2**
Xylenes	ug/Kg (ppb)	630,000			**147**	ND / < 56.0	**366**
1,2,4-Trimethylbenzene	ug/Kg (ppb)	62,000			**216**	ND / < 28.0	**263**
1,3,5-Trimethylbenzene	ug/Kg (ppb)	780,000			**152**	ND / < 28.0	**77.4**
n-Propylbenzene	ug/Kg (ppb)	3,400,000			ND / < 28.0	ND / < 28.0	**31.7**
Naphthalene	ug/Kg (ppb)	3,600	107,000		**643**	**95.7**	**41.7**
Unidentified Peaks (UIPs)	#				**>10**	0	**>10**

NOTES:
1. ND = not detected above any of the estimated reporting limits.
2. VT DEC Soil Screening Values (SSV) are from Appendix A of the Investigation and Remediation of Contaminated Properties Procedures (April 2012).
3. EPA Method 8260B compounds not shown were not detected.
4. Results reported above the method detection limit are indicated in bold.
5. Shaded results are above guideline.
6. NA = No 8260 Analaysis performed for this sample

APPENDIX 3

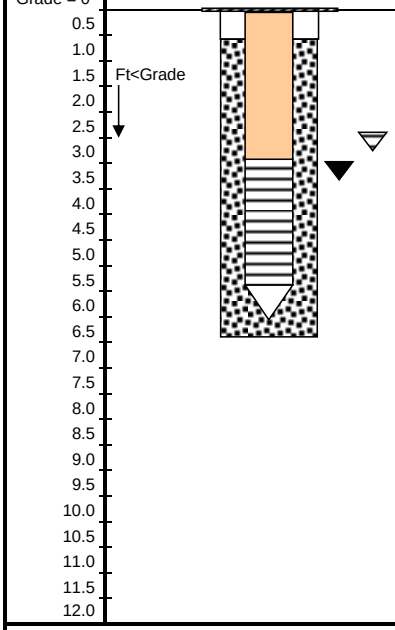
SOIL BORING LOGS

SOIL BORING LOG
WELL CONSTRUCTION RECORD
Tank Pit/MW-1

Site Name: **Young Residence**
28 North Williams Street, Burlington, VT

WEM Project # 2013-51
VT DEC Site # 2013-4436
Excavated by: EP&S of VT
Logged by: Miles Waite

Date Installed: 9/20/2013
Drilling Method: Hand -Installed in Tank Grave (not drilled)
Sampling Method:
Development Method: Peri-purge



Well Construction	Pen/Rec(')	Interval (inches)	PID (ppm)	Soil Characteristics	Letter Symbol	Graphic
		0-18"	0.0	**LOAM,** dark brown, light moist to 18"	SW	
		18-29"	9.1	**SAND, well graded**, fuel odor increasing with depth, moist at 29"		
		29-48"	163	**SAND, well graded, brown, wet**, strong fuel odor		
		48-61"	79.6	**SAND, medium**, brown, saturated, fuel odor		
		61-72"	220	**FINE SANDY CLAY,** strong odor, saturated	SC	

Legend

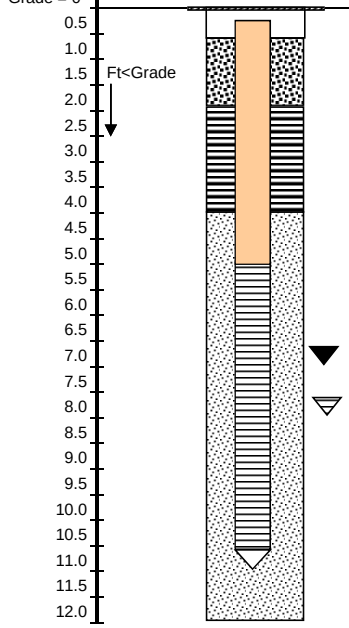
- Road Box with Bolt Down Cover, Set in Cement.
- Existing Surface.
- Bentonite Seal Placed in Annulus.
- Grade #1 Silica Sand Pack Placed in Annulus.
- Native Soil Placed in Annulus.
- Locking Plug.
- 2" ID, Schedule 40 PVC Riser.
- 2" ID, Schedule 40 PVC, 0.010"-Slotted Well Screen
- Plug Point
- Approximate Water Level During Drilling, below grade
- Approximate Water Level During Groundwater Sampling

SOIL BORING LOG
WELL CONSTRUCTION RECORD
SB-101/MW-2

Site Name: **Young Residence**
28 North Williams Street, Burlington, VT

WEM Project # 2013-51
VT DEC Site # 2013-4436
Drilled by : EnPro
Logged by: Chris Page

Date Installed: 12/9/2013
Drilling Method: GeoProbe: 1 3/4" Direct Push Probe
Sampling Method: Geoprobe: 1 3/4" x 48" clear soil liners
Development Method: Peri-purge



Well Construction	Rec (")	Interval (ft)	PID (ppm)	Soil Characteristics	Letter Symbol	Graphic
	16"	0-4	0.0	0-4": **LOAM, Dense**, dark brown, dry, no odor 4-16": **SAND, Well Graded**, medium brown, some moisture, no odor	**SW**	
	8"	4-8	0.0	0-8": **SAND, fine, well graded**, dense, faint odor, light moisture, few and prominent redoximorphic features, moist **Sample SB-101, 4-8 collected (TPH, 8260)**	**SW**	
	20"	8-12	0.0	0-20": **SANDY CLAY,** dense, saturated, faint fuel odor, moist	SC	

END OF BORING @ 12.0 FT
SET WELL TO 11.0 FT

Legend

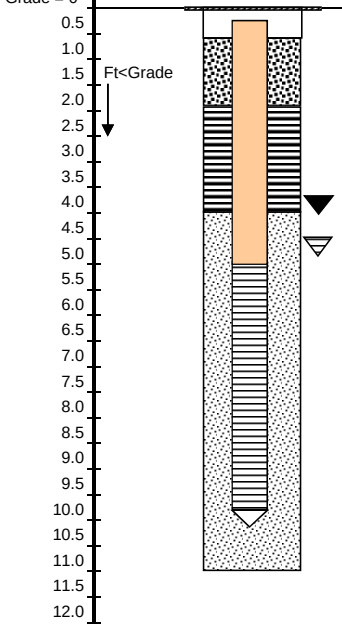
- Road Box with Bolt Down Cover, Set in Cement.
- Existing Surface.
- Bentonite Seal Placed in Annulus.
- Grade #1 Silica Sand Pack Placed in Annulus.
- Native Soil Placed in Annulus.
- Locking Plug.
- 1" ID, Schedule 40 PVC Riser.
- 1" ID, Schedule 40 PVC, 0.010"-Slotted Well Screen
- Plug Point
- Approximate Water Level During Drilling, below grade
- Approximate Water Level During Groundwater Sampling

SOIL BORING LOG
WELL CONSTRUCTION RECORD
SB-102/MW-3

Site Name: **Young Residence**
28 North Williams Street, Burlington, VT

WEM Project # 2013-51
VT DEC Site # 2013-4436
Drilled by : EnPro
Logged by: Chris Page

Date Installed: 12/9/2013
Drilling Method: GeoProbe: 1 3/4" Direct Push Probe
Sampling Method: Geoprobe: 1 3/4" x 48" clear soil liners
Development Method: Peri-purge



Well Construction	Rec (")	Interval (ft)	PID (ppm)	Soil Characteristics	Letter Symbol	Graphic
	24"	0-4	0.2	0-18": **LOAM,** dark brown, dense, faint and few redoximorphic features, no odor 18-24": **SAND, medium-fine**, well graded, orange-brown, no odor	SW	
	36"	4-8	0.8	0-20": **SAND, coarse**, light brown, becoming gray at ~5'BGS, light fuel odor, saturated 20-36": **SANDY CLAY**, red, no odor, moist **Sample SB-102, 5-6' collected (TPH, 8260)**	SW SC	
	22"	8-11	0.0	0-22": **SANDY CLAY,** very dense, red, no odor, saturated	SC	
				END OF BORING @ 11.0 FT SET WELL TO 10.0 FT		

Legend

- Road Box with Bolt Down Cover, Set in Cement.
- Existing Surface.
- Bentonite Seal Placed in Annulus.
- Grade #1 Silica Sand Pack Placed in Annulus.
- Native Soil Placed in Annulus.
- Locking Plug.
- 1" ID, Schedule 40 PVC Riser.
- 1" ID, Schedule 40 PVC, 0.010"-Slotted Well Screen
- Plug Point
- Approximate Water Level During Drilling, below grade
- Approximate Water Level During Groundwater Sampling

Photo #1: Sump pump removed, beginning of excavation

Photo #2: Bucket of contaminated soil from sump

Photo #3: EP&S personnel in sump area for excavation.

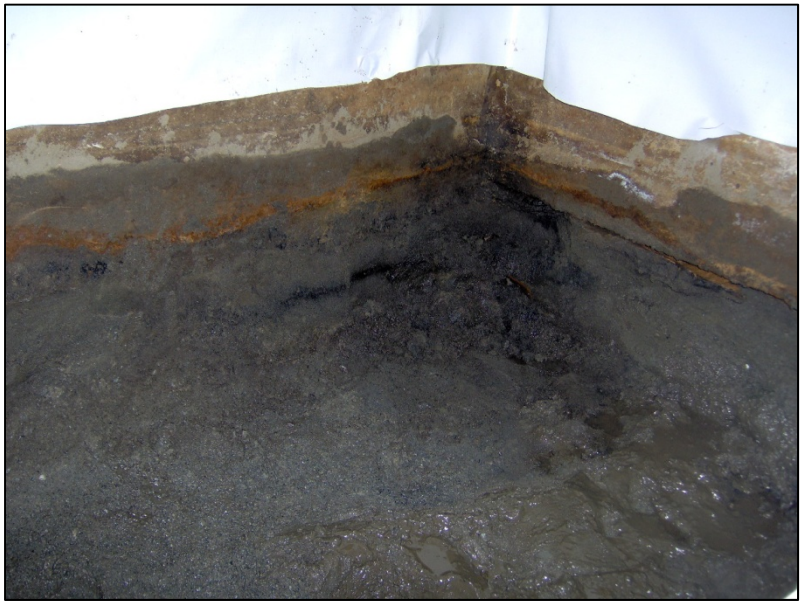


Photo #4: Dark staining against SE corner, likely related to contamination

Photo #5: Sump replaced with clean gravel backfill, vapor barrier

Photo #6: EP&S personnel cutting open AST

Photo #7: Fluid containerized, adsorbing remaining sludge

APPENDIX 4

LABORATORY REPORTS

ENDYNE Inc.
Environmental Laboratories

Laboratory Report

WaiteHeindel Environmental Mgt	100675
7 Kilburn Street	
Suite 301	
Burlington, VT 05406	
Atten: Miles Waite	

PROJECT: Williams Street
WORK ORDER: **1312-24333**
DATE RECEIVED: December 09, 2013
DATE REPORTED: December 23, 2013
SAMPLER: Chris Page

Enclosed please find the results of the analyses performed for the samples referenced on the attached chain of custody located at the end of this report.

The column labeled Lab/Tech in the accompanying report denotes the laboratory facility where the testing was performed and the technician who conducted the assay. A "W" designates the Williston, VT lab under NELAC certification ELAP 11263; "R" designates the Lebanon, NH facility under certification NH 2037 and "N" the Plattsburgh, NY lab under certification ELAP 11892. "Sub" indicates the testing was performed by a subcontracted laboratory. The accreditation status of the subcontracted lab is referenced in the corresponding NELAC and Qual fields.

This NELAC column also denotes the accreditation status of each laboratory for each reported parameter. "A" indicates the referenced laboratory is NELAC accredited for the parameter reported. "N" indicates the laboratory is not accredited. "U" indicates that NELAC does not offer accreditation for that parameter in that specific matrix. Test results denoted with an "A" meet all National Environmental Laboratory Accreditation Program requirements except where denoted by pertinent data qualifiers. Test results are representative of the samples as they were received at the laboratory.

Endyne, Inc. warrants, to the best of its knowledge and belief, the accuracy of the analytical test results contained in this report, but makes no other warranty, expressed or implied, especially no warranties of merchantability or fitness for a particular purpose.

Reviewed by:

Harry B. Locker, Ph.D.
Laboratory Director

CLIENT: WaiteHeindel Environmental Mgt
PROJECT: Williams Street
REPORT DATE: 12/23/2013

WORK ORDER: **1312-24333**
DATE RECEIVED: 12/09/2013

TEST METHOD: EPA 8015B

001 Site: SB-101 4-8 Sampled: 12/9/13 11:15 Analysis Date: 12/13/13 W FAA

Parameter	Result	Unit	Nelac	Qual	Parameter	Result	Unit	Nelac	Qual
Ultrasonic Extraction	Completed		A		C7-C10 TPH	< 3.0	mg/Kg, dry	U	
C10-C28 TPH-DRO	< 3.0	mg/Kg, dry	A		C28-C40 TPH	< 3.0	mg/Kg, dry	U	
Tot. Petroleum Hydrocarbons	< 3.0	mg/Kg, dry	U		Hydrocarbon Window	NA		U	

TEST METHOD: EPA 8260C

001 Site: SB-101 4-8 Sampled: 12/9/13 11:15 Analysis Date: 12/19/13 W MHM

Parameter	Result	Unit	Nelac	Qual	Parameter	Result	Unit	Nelac	Qual
Prep EPA 5035A High Level	Complete		A		Dichlorodifluoromethane	< 140	ug/Kg, Dry	N	
Chloromethane	< 84.0	ug/Kg, Dry	N		Vinyl chloride	< 56.0	ug/Kg, Dry	N	
Bromomethane	< 140	ug/Kg, Dry	N		Chloroethane	< 140	ug/Kg, Dry	N	
Trichlorofluoromethane	< 56.0	ug/Kg, Dry	N		Diethyl ether	< 140	ug/Kg, Dry	N	
1,1-Dichloroethene	< 28.0	ug/Kg, Dry	N		Acetone	< 280	ug/Kg, Dry	N	
Carbon disulfide	< 140	ug/Kg, Dry	N		Methylene chloride	< 140	ug/Kg, Dry	N	
t-Butanol	< 560	ug/Kg, Dry	N	QA-	Methyl-t-butyl ether (MTBE)	< 56.0	ug/Kg, Dry	N	
trans-1,2-Dichloroethene	< 28.0	ug/Kg, Dry	N		Di-isopropyl ether (DIPE)	< 56.0	ug/Kg, Dry	U	
1,1-Dichloroethane	< 28.0	ug/Kg, Dry	N		Ethyl-t-butyl ether (ETBE)	< 56.0	ug/Kg, Dry	U	
2-Butanone	< 280	ug/Kg, Dry	N		2,2-Dichloropropane	< 56.0	ug/Kg, Dry	N	
cis-1,2-Dichloroethene	< 28.0	ug/Kg, Dry	N		Bromochloromethane	< 56.0	ug/Kg, Dry	N	
Chloroform	< 28.0	ug/Kg, Dry	N		Tetrahydrofuran	< 280	ug/Kg, Dry	U	
1,1,1-Trichloroethane	< 28.0	ug/Kg, Dry	N		Carbon tetrachloride	< 28.0	ug/Kg, Dry	N	
1,1-Dichloropropene	< 28.0	ug/Kg, Dry	N		Benzene	< 28.0	ug/Kg, Dry	N	
t-Amylmethyl ether (TAME)	< 56.0	ug/Kg, Dry	U		1,2-Dichloroethane	< 28.0	ug/Kg, Dry	N	
Trichloroethene	< 28.0	ug/Kg, Dry	N		1,2-Dichloropropane	< 56.0	ug/Kg, Dry	N	
Dibromomethane	< 56.0	ug/Kg, Dry	N		Bromodichloromethane	< 28.0	ug/Kg, Dry	N	
cis-1,3-Dichloropropene	< 28.0	ug/Kg, Dry	N		4-Methyl-2-pentanone (MIBK)	< 280	ug/Kg, Dry	N	
Toluene	< 28.0	ug/Kg, Dry	N		trans-1,3-Dichloropropene	< 56.0	ug/Kg, Dry	N	
1,1,2-Trichloroethane	< 28.0	ug/Kg, Dry	N		Tetrachloroethene	< 28.0	ug/Kg, Dry	N	
1,3-Dichloropropane	< 28.0	ug/Kg, Dry	N		2-Hexanone	< 280	ug/Kg, Dry	N	
Dibromochloromethane	< 56.0	ug/Kg, Dry	N		1,2-Dibromoethane	< 28.0	ug/Kg, Dry	N	
Chlorobenzene	< 28.0	ug/Kg, Dry	N		Ethylbenzene	< 28.0	ug/Kg, Dry	N	
1,1,1,2-Tetrachloroethane	< 56.0	ug/Kg, Dry	N		Xylenes, Total	< 56.0	ug/Kg, Dry	N	
Styrene	< 28.0	ug/Kg, Dry	N		Bromoform	< 56.0	ug/Kg, Dry	N	
Isopropylbenzene	< 28.0	ug/Kg, Dry	N		1,1,2,2-Tetrachloroethane	< 56.0	ug/Kg, Dry	N	
Bromobenzene	< 28.0	ug/Kg, Dry	N		n-Propylbenzene	< 28.0	ug/Kg, Dry	N	
1,2,3-Trichloropropane	< 56.0	ug/Kg, Dry	N		2-Chlorotoluene	< 28.0	ug/Kg, Dry	N	
1,3,5-Trimethylbenzene	< 28.0	ug/Kg, Dry	N		4-Chlorotoluene	< 28.0	ug/Kg, Dry	N	
t-Butylbenzene	< 28.0	ug/Kg, Dry	N		1,2,4-Trimethylbenzene	< 28.0	ug/Kg, Dry	N	
s-Butylbenzene	< 28.0	ug/Kg, Dry	N		4-Isopropyltoluene	< 28.0	ug/Kg, Dry	N	
1,3-Dichlorobenzene	< 28.0	ug/Kg, Dry	N		1,4-Dichlorobenzene	< 28.0	ug/Kg, Dry	N	
n-Butylbenzene	< 56.0	ug/Kg, Dry	N		1,2-Dichlorobenzene	< 28.0	ug/Kg, Dry	N	
1,2-Dibromo-3-Chloropropane	< 56.0	ug/Kg, Dry	N		1,2,4-Trichlorobenzene	< 56.0	ug/Kg, Dry	N	
1,3,5-Trichlorobenzene	< 56.0	ug/Kg, Dry	U		Hexachlorobutadiene	< 28.0	ug/Kg, Dry	N	
Naphthalene	95.7	ug/Kg, Dry	N		1,2,3-Trichlorobenzene	< 56.0	ug/Kg, Dry	N	
Surr. 1 (Dibromofluoromethane)	83	%	N		Surr. 2 (Toluene d8)	98	%	N	
Surr. 3 (4-Bromofluorobenzene)	103	%	N		Unidentified Peaks	0		U	

CLIENT: WaiteHeindel Environmental Mgt
PROJECT: Williams Street
REPORT DATE: 12/23/2013

WORK ORDER: **1312-24333**
DATE RECEIVED: 12/09/2013

TEST METHOD: EPA 8015B

002 Site: SB-102 5-6 Sampled: 12/9/13 11:50 Analysis Date: 12/13/13 W FAA

Parameter	Result	Unit	Nelac	Qual	Parameter	Result	Unit	Nelac	Qual
Ultrasonic Extraction	Completed		A		C7-C10 TPH	< 30.0	mg/Kg, dry	U	
C10-C28 TPH-DRO	393	mg/Kg, dry	A		C28-C40 TPH	< 30.0	mg/Kg, dry	U	
Tot. Petroleum Hydrocarbons	393	mg/Kg, dry	U		Hydrocarbon Window	C10-C26		U	

TEST METHOD: EPA 8260C

002 Site: SB-102 5-6 Sampled: 12/9/13 11:50 Analysis Date: 12/17/13 W MHM

Parameter	Result	Unit	Nelac	Qual	Parameter	Result	Unit	Nelac	Qual
Prep EPA 5035A High Level	Complete		A		Dichlorodifluoromethane	< 85.0	ug/Kg, Dry	N	
Chloromethane	< 51.0	ug/Kg, Dry	N		Vinyl chloride	< 34.0	ug/Kg, Dry	N	
Bromomethane	< 85.0	ug/Kg, Dry	N		Chloroethane	< 85.0	ug/Kg, Dry	N	
Trichlorofluoromethane	< 34.0	ug/Kg, Dry	N		Diethyl ether	< 85.0	ug/Kg, Dry	N	
1,1-Dichloroethene	< 17.0	ug/Kg, Dry	N		Acetone	< 170	ug/Kg, Dry	N	
Carbon disulfide	< 85.0	ug/Kg, Dry	N		Methylene chloride	< 170	ug/Kg, Dry	N	
t-Butanol	< 340	ug/Kg, Dry	N	QA-	Methyl-t-butyl ether (MTBE)	334	ug/Kg, Dry	N	
trans-1,2-Dichloroethene	< 17.0	ug/Kg, Dry	N		Di-isopropyl ether (DIPE)	< 34.0	ug/Kg, Dry	U	
1,1-Dichloroethane	< 17.0	ug/Kg, Dry	N		Ethyl-t-butyl ether (ETBE)	< 34.0	ug/Kg, Dry	U	
2-Butanone	< 170	ug/Kg, Dry	N		2,2-Dichloropropane	< 34.0	ug/Kg, Dry	N	
cis-1,2-Dichloroethene	< 17.0	ug/Kg, Dry	N		Bromochloromethane	< 34.0	ug/Kg, Dry	N	
Chloroform	< 17.0	ug/Kg, Dry	N		Tetrahydrofuran	< 170	ug/Kg, Dry	U	
1,1,1-Trichloroethane	< 17.0	ug/Kg, Dry	N		Carbon tetrachloride	< 17.0	ug/Kg, Dry	N	
1,1-Dichloropropene	< 17.0	ug/Kg, Dry	N		Benzene	28.6	ug/Kg, Dry	N	
t-Amylmethyl ether (TAME)	< 51.0	ug/Kg, Dry	U		1,2-Dichloroethane	< 17.0	ug/Kg, Dry	N	
Trichloroethene	< 17.0	ug/Kg, Dry	N		1,2-Dichloropropane	< 34.0	ug/Kg, Dry	N	
Dibromomethane	< 34.0	ug/Kg, Dry	N		Bromodichloromethane	< 17.0	ug/Kg, Dry	N	
cis-1,3-Dichloropropene	< 17.0	ug/Kg, Dry	N		4-Methyl-2-pentanone (MIBK)	< 170	ug/Kg, Dry	N	
Toluene	169	ug/Kg, Dry	N		trans-1,3-Dichloropropene	< 34.0	ug/Kg, Dry	N	
1,1,2-Trichloroethane	< 17.0	ug/Kg, Dry	N		Tetrachloroethene	< 17.0	ug/Kg, Dry	N	
1,3-Dichloropropane	< 17.0	ug/Kg, Dry	N		2-Hexanone	< 170	ug/Kg, Dry	N	
Dibromochloromethane	< 34.0	ug/Kg, Dry	N		1,2-Dibromoethane	< 17.0	ug/Kg, Dry	N	
Chlorobenzene	< 17.0	ug/Kg, Dry	N		Ethylbenzene	61.2	ug/Kg, Dry	N	
1,1,1,2-Tetrachloroethane	< 34.0	ug/Kg, Dry	N		Xylenes, Total	366	ug/Kg, Dry	N	
Styrene	< 17.0	ug/Kg, Dry	N		Bromoform	< 34.0	ug/Kg, Dry	N	
Isopropylbenzene	< 17.0	ug/Kg, Dry	N		1,1,2,2-Tetrachloroethane	< 34.0	ug/Kg, Dry	N	
Bromobenzene	< 17.0	ug/Kg, Dry	N		n-Propylbenzene	31.7	ug/Kg, Dry	N	
1,2,3-Trichloropropane	< 34.0	ug/Kg, Dry	N		2-Chlorotoluene	< 17.0	ug/Kg, Dry	N	
1,3,5-Trimethylbenzene	77.4	ug/Kg, Dry	N		4-Chlorotoluene	< 17.0	ug/Kg, Dry	N	
t-Butylbenzene	< 17.0	ug/Kg, Dry	N		1,2,4-Trimethylbenzene	263	ug/Kg, Dry	N	
s-Butylbenzene	< 17.0	ug/Kg, Dry	N		4-Isopropyltoluene	< 17.0	ug/Kg, Dry	N	
1,3-Dichlorobenzene	< 17.0	ug/Kg, Dry	N		1,4-Dichlorobenzene	< 17.0	ug/Kg, Dry	N	
n-Butylbenzene	< 34.0	ug/Kg, Dry	N		1,2-Dichlorobenzene	< 17.0	ug/Kg, Dry	N	
1,2-Dibromo-3-Chloropropane	< 34.0	ug/Kg, Dry	N		1,2,4-Trichlorobenzene	< 34.0	ug/Kg, Dry	N	
1,3,5-Trichlorobenzene	< 34.0	ug/Kg, Dry	U		Hexachlorobutadiene	< 17.0	ug/Kg, Dry	N	
Naphthalene	41.7	ug/Kg, Dry	N		1,2,3-Trichlorobenzene	< 34.0	ug/Kg, Dry	N	
Surr. 1 (Dibromofluoromethane)	106	%	N		Surr. 2 (Toluene d8)	108	%	N	
Surr. 3 (4-Bromofluorobenzene)	97	%	N		Unidentified Peaks	> 10		U	

CLIENT: WaiteHeindel Environmental Mgt
PROJECT: Williams Street
REPORT DATE: 12/23/2013

WORK ORDER: **1312-24333**
DATE RECEIVED: 12/09/2013

Report Summary of Qualifiers and Notes

QA-:QA/QC associated with this analysis did not meet laboratory acceptance limits indicating the results may be biased low.

ENDYNE, INC.
160 James Brown Drive
Williston, Vermont 05495
(802) 879-4333

CHAIN-OF-CUSTODY-RECORD

Special Reporting Instructions/PO#: Young- Williams Street

№ 68833

Project Name: Williams Street	Client/Contact Name: Miles Waite	Sampler Name: C. Page
State of Origin: VT X NY __ NH __ Other __	Phone #: WHEM	Phone #: WHEM
Endyne WO # 1312-24333	Mailing Address: WHEM	Billing Address: WHEM

Sample Location	Matrix	GRAB	COMP	Date/Time Sampled	Sample Containers No.	Sample Containers Type/Size	Sample Preservation	Analysis Required	FieldResults/Remarks	Due Date
SB-101 4-8	Soil	X		12/9/13 1115	1	40 ml MeOH	MeOH, ice	24 23		
SB-102 5-6	↓	↓		↓ 1150	↓	↓	↓	↓		

Relinquished by:	Date/Time	Received by:	Date/Time	Received by:	Date/Time
Chris Fr	12/9/13 14:00			Eleen Dooney	12/9/13@ 14:00

1	pH	6	TKN	11	Total Solids	16	Sulfate	21	1664 TPH/FOG	26	8270 PAH Only
2	Chloride	7	Total P	12	TSS	17	Coliform (Specify)	22	8015 GRO	27	8081 Pest
3	Ammonia N	8	Total Diss. P	13	TDS	18	COD	23	8015 DRO	28	8082 PCB
4	Nitrite N	9	BOD	14	Turbidity	19	VT PCF	24	8260B	29	PP13 Metals
5	Nitrate N	10	Alkalinity	15	Conductivity	20	VOC Halocarbons	25	8270 B/N or Acid	30	Total RCRA8
31	Metals (Total, Diss.) Ag, Al, As, B, Ba, Be, Ca, Cd, Co, Cr, Cu, Fe, Hg, K, Mg, Mn, Mo, Na, Ni, Pb, Sb, Se, Sn, Tl, U, V, Zn										
32	TCLP (volatiles, semi-volatiles, metals, pesticides, herbicides)					33	Other				
34	Corrosivity	35	Ignitability	36	Reactivity	37	Other				
38	Other										

LAB USE ONLY
Delivery: Client
Temp: 1.0
Comment:

(White - Laboratory / Yellow - Client)

ENDYNE Inc.
Environmental Laboratories

Laboratory Report

WaiteHeindel Environmental Mgt	100675
7 Kilburn Street	
Suite 301	
Burlington, VT 05406	
Atten: Miles Waite	

PROJECT: Young
WORK ORDER: **1312-25324**
DATE RECEIVED: December 23, 2013
DATE REPORTED: January 07, 2014
SAMPLER: Chris Page

Enclosed please find the results of the analyses performed for the samples referenced on the attached chain of custody. All required method quality control elements including instrument calibration were performed in accordance with method requirements and determined to be acceptable unless otherwise noted.

The column labeled Lab/Tech in the accompanying report denotes the laboratory facility where the testing was performed and the technician who conducted the assay. A "W" designates the Williston, VT lab under NELAC certification ELAP 11263; "R" designates the Lebanon, NH facility under certification NH 2037 and "N" the Plattsburgh, NY lab under certification ELAP 11892. "Sub" indicates the testing was performed by a subcontracted laboratory. The accreditation status of the subcontracted lab is referenced in the corresponding NELAC and Qual fields.

The NELAC column also denotes the accreditation status of each laboratory for each reported parameter. "A" indicates the referenced laboratory is NELAC accredited for the parameter reported. "N" indicates the laboratory is not accredited. "U" indicates that NELAC does not offer accreditation for that parameter in that specific matrix. Test results denoted with an "A" meet all National Environmental Laboratory Accreditation Program requirements except where denoted by pertinent data qualifiers. Test results are representative of the samples as they were received at the laboratory

Endyne, Inc. warrants, to the best of its knowledge and belief, the accuracy of the analytical test results contained in this report, but makes no other warranty, expressed or implied, especially no warranties of merchantability or fitness for a particular purpose.

Reviewed by:

Harry B. Locker, Ph.D.
Laboratory Director

CLIENT: WaiteHeindel Environmental Mgt
PROJECT: Young
REPORT DATE: 1/7/2014

WORK ORDER: **1312-25324**
DATE RECEIVED: 12/23/2013

TEST METHOD: EPA 8260C

001 Site: Trip Blank Date Sampled: 12/18/13 12:45 Analysis Date: 1/3/14 W MHM

Parameter	Result	Unit	Nelac	Qual	Parameter	Result	Unit	Nelac	Qual
Dichlorodifluoromethane	< 5.0	ug/L	A		Chloromethane	< 3.0	ug/L	N	
Vinyl chloride	< 2.0	ug/L	A		Bromomethane	< 5.0	ug/L	A	
Chloroethane	< 5.0	ug/L	A		Trichlorofluoromethane	< 2.0	ug/L	A	
Diethyl ether	< 5.0	ug/L	N		1,1-Dichloroethene	< 1.0	ug/L	A	
Acetone	< 10.0	ug/L	A		Carbon disulfide	< 5.0	ug/L	A	
Methylene chloride	< 5.0	ug/L	A		t-Butanol	< 20.0	ug/L	N	
Methyl-t-butyl ether (MTBE)	< 2.0	ug/L	A		trans-1,2-Dichloroethene	< 1.0	ug/L	A	
Di-isopropyl ether (DIPE)	< 2.0	ug/L	N		1,1-Dichloroethane	< 1.0	ug/L	A	
Ethyl-t-butyl ether (ETBE)	< 2.0	ug/L	N		2-Butanone	< 10.0	ug/L	A	
2,2-Dichloropropane	< 2.0	ug/L	N		cis-1,2-Dichloroethene	< 1.0	ug/L	N	
Bromochloromethane	< 2.0	ug/L	N		Chloroform	< 1.0	ug/L	A	
Tetrahydrofuran	< 10.0	ug/L	U		1,1,1-Trichloroethane	< 1.0	ug/L	A	
Carbon tetrachloride	< 1.0	ug/L	A		1,1-Dichloropropene	< 1.0	ug/L	N	
Benzene	< 1.0	ug/L	A		t-Amylmethyl ether (TAME)	< 2.0	ug/L	N	
1,2-Dichloroethane	< 1.0	ug/L	A		Trichloroethene	< 1.0	ug/L	A	
1,2-Dichloropropane	< 2.0	ug/L	A		Dibromomethane	< 2.0	ug/L	N	
Bromodichloromethane	< 0.5	ug/L	A		cis-1,3-Dichloropropene	< 1.0	ug/L	A	
4-Methyl-2-pentanone (MIBK)	< 10.0	ug/L	N		Toluene	< 1.0	ug/L	A	
trans-1,3-Dichloropropene	< 2.0	ug/L	A		1,1,2-Trichloroethane	< 1.0	ug/L	A	
Tetrachloroethene	< 1.0	ug/L	A		1,3-Dichloropropane	< 1.0	ug/L	N	
2-Hexanone	< 10.0	ug/L	N		Dibromochloromethane	< 2.0	ug/L	A	
1,2-Dibromoethane	< 1.0	ug/L	A		Chlorobenzene	< 1.0	ug/L	A	
Ethylbenzene	< 1.0	ug/L	A		1,1,1,2-Tetrachloroethane	< 2.0	ug/L	A	
Xylenes, Total	< 2.0	ug/L	A		Styrene	< 1.0	ug/L	N	
Bromoform	< 2.0	ug/L	A		Isopropylbenzene	< 1.0	ug/L	A	
1,1,2,2-Tetrachloroethane	< 2.0	ug/L	N		Bromobenzene	< 1.0	ug/L	N	
n-Propylbenzene	< 1.0	ug/L	A		1,2,3-Trichloropropane	< 2.0	ug/L	N	
2-Chlorotoluene	< 1.0	ug/L	N		1,3,5-Trimethylbenzene	< 1.0	ug/L	A	
4-Chlorotoluene	< 1.0	ug/L	N		t-Butylbenzene	< 1.0	ug/L	A	
1,2,4-Trimethylbenzene	< 1.0	ug/L	A		s-Butylbenzene	< 1.0	ug/L	N	
4-Isopropyltoluene	< 1.0	ug/L	A		1,3-Dichlorobenzene	< 1.0	ug/L	A	
1,4-Dichlorobenzene	< 1.0	ug/L	A		n-Butylbenzene	< 2.0	ug/L	A	
1,2-Dichlorobenzene	< 1.0	ug/L	A		1,2-Dibromo-3-Chloropropane	< 2.0	ug/L	A	
1,2,4-Trichlorobenzene	< 2.0	ug/L	A		1,3,5-Trichlorobenzene	< 2.0	ug/L	U	
Hexachlorobutadiene	< 0.5	ug/L	N		Naphthalene	< 2.0	ug/L	A	
1,2,3-Trichlorobenzene	< 2.0	ug/L	N		Surr. 1 (Dibromofluoromethane)	90	%	N	
Surr. 2 (Toluene d8)	99	%	N		Surr. 3 (4-Bromofluorobenzene)	104	%	N	
Unidentified Peaks	0		U						

CLIENT: WaiteHeindel Environmental Mgt
PROJECT: Young
REPORT DATE: 1/7/2014

WORK ORDER: **1312-25324**
DATE RECEIVED: 12/23/2013

TEST METHOD: EPA 8260C

002 Site: MW-2 Date Sampled: 12/23/13 11:15 Analysis Date: 1/2/14 W MHM

Parameter	Result	Unit	Nelac	Qual	Parameter	Result	Unit	Nelac	Qual
Dichlorodifluoromethane	< 5.0	ug/L	A		Chloromethane	< 3.0	ug/L	N	
Vinyl chloride	< 2.0	ug/L	A		Bromomethane	< 5.0	ug/L	A	
Chloroethane	< 5.0	ug/L	A		Trichlorofluoromethane	< 2.0	ug/L	A	
Diethyl ether	< 5.0	ug/L	N		1,1-Dichloroethene	< 1.0	ug/L	A	
Acetone	67.3	ug/L	A		Carbon disulfide	< 5.0	ug/L	A	
Methylene chloride	< 10.0	ug/L	A		t-Butanol	< 20.0	ug/L	N	
Methyl-t-butyl ether (MTBE)	< 2.0	ug/L	A		trans-1,2-Dichloroethene	< 1.0	ug/L	A	
Di-isopropyl ether (DIPE)	< 2.0	ug/L	N		1,1-Dichloroethane	< 1.0	ug/L	A	
Ethyl-t-butyl ether (ETBE)	< 2.0	ug/L	N		2-Butanone	< 10.0	ug/L	A	
2,2-Dichloropropane	< 2.0	ug/L	N		cis-1,2-Dichloroethene	< 1.0	ug/L	N	
Bromochloromethane	< 2.0	ug/L	N		Chloroform	18.2	ug/L	A	
Tetrahydrofuran	< 10.0	ug/L	U		1,1,1-Trichloroethane	< 1.0	ug/L	A	
Carbon tetrachloride	< 1.0	ug/L	A		1,1-Dichloropropene	< 1.0	ug/L	N	
Benzene	< 1.0	ug/L	A		t-Amylmethyl ether (TAME)	< 2.0	ug/L	N	
1,2-Dichloroethane	< 1.0	ug/L	A		Trichloroethene	< 1.0	ug/L	A	
1,2-Dichloropropane	< 2.0	ug/L	A		Dibromomethane	< 2.0	ug/L	N	
Bromodichloromethane	1.4	ug/L	A		cis-1,3-Dichloropropene	< 1.0	ug/L	A	
4-Methyl-2-pentanone (MIBK)	< 10.0	ug/L	N		Toluene	< 1.0	ug/L	A	
trans-1,3-Dichloropropene	< 2.0	ug/L	A		1,1,2-Trichloroethane	< 1.0	ug/L	A	
Tetrachloroethene	< 1.0	ug/L	A		1,3-Dichloropropane	< 1.0	ug/L	N	
2-Hexanone	< 10.0	ug/L	N		Dibromochloromethane	< 2.0	ug/L	A	
1,2-Dibromoethane	< 1.0	ug/L	A		Chlorobenzene	< 1.0	ug/L	A	
Ethylbenzene	< 1.0	ug/L	A		1,1,1,2-Tetrachloroethane	< 2.0	ug/L	A	
Xylenes, Total	< 2.0	ug/L	A		Styrene	< 1.0	ug/L	N	
Bromoform	< 2.0	ug/L	A		Isopropylbenzene	< 1.0	ug/L	A	
1,1,2,2-Tetrachloroethane	< 2.0	ug/L	N		Bromobenzene	< 1.0	ug/L	N	
n-Propylbenzene	< 1.0	ug/L	A		1,2,3-Trichloropropane	< 2.0	ug/L	N	
2-Chlorotoluene	< 1.0	ug/L	N		1,3,5-Trimethylbenzene	< 1.0	ug/L	A	
4-Chlorotoluene	< 1.0	ug/L	N		t-Butylbenzene	< 1.0	ug/L	A	
1,2,4-Trimethylbenzene	< 1.0	ug/L	A		s-Butylbenzene	< 1.0	ug/L	N	
4-Isopropyltoluene	< 1.0	ug/L	A		1,3-Dichlorobenzene	< 1.0	ug/L	A	
1,4-Dichlorobenzene	< 1.0	ug/L	A		n-Butylbenzene	< 2.0	ug/L	A	
1,2-Dichlorobenzene	< 1.0	ug/L	A		1,2-Dibromo-3-Chloropropane	< 2.0	ug/L	A	
1,2,4-Trichlorobenzene	< 2.0	ug/L	A		1,3,5-Trichlorobenzene	< 2.0	ug/L	U	
Hexachlorobutadiene	< 0.5	ug/L	N		Naphthalene	< 2.0	ug/L	A	
1,2,3-Trichlorobenzene	< 2.0	ug/L	N		Surr. 1 (Dibromofluoromethane)	94	%	N	
Surr. 2 (Toluene d8)	98	%	N		Surr. 3 (4-Bromofluorobenzene)	103	%	N	
Unidentified Peaks	0		U						

CLIENT: WaiteHeindel Environmental Mgt
PROJECT: Young
REPORT DATE: 1/7/2014

WORK ORDER: **1312-25324**
DATE RECEIVED: 12/23/2013

TEST METHOD: EPA 8260C

003 Site: MW-3 Date Sampled: 12/23/13 11:50 Analysis Date: 12/24/13 W MHM

Parameter	Result	Unit	Nelac	Qual	Parameter	Result	Unit	Nelac	Qual
Dichlorodifluoromethane	< 5.0	ug/L	A		Chloromethane	< 3.0	ug/L	N	
Vinyl chloride	< 2.0	ug/L	A		Bromomethane	< 5.0	ug/L	A	
Chloroethane	< 5.0	ug/L	A		Trichlorofluoromethane	< 2.0	ug/L	A	
Diethyl ether	< 5.0	ug/L	N		1,1-Dichloroethene	< 1.0	ug/L	A	
Acetone	< 10.0	ug/L	A	M-	Carbon disulfide	< 5.0	ug/L	A	
Methylene chloride	< 5.0	ug/L	A		t-Butanol	< 20.0	ug/L	N	QA-
Methyl-t-butyl ether (MTBE)	< 2.0	ug/L	A		trans-1,2-Dichloroethene	< 1.0	ug/L	A	
Di-isopropyl ether (DIPE)	< 2.0	ug/L	N		1,1-Dichloroethane	< 1.0	ug/L	A	
Ethyl-t-butyl ether (ETBE)	< 2.0	ug/L	N		2-Butanone	< 10.0	ug/L	A	
2,2-Dichloropropane	< 2.0	ug/L	N		cis-1,2-Dichloroethene	< 1.0	ug/L	N	
Bromochloromethane	< 2.0	ug/L	N		Chloroform	< 1.0	ug/L	A	
Tetrahydrofuran	< 10.0	ug/L	U		1,1,1-Trichloroethane	< 1.0	ug/L	A	
Carbon tetrachloride	< 1.0	ug/L	A		1,1-Dichloropropene	< 1.0	ug/L	N	
Benzene	< 1.0	ug/L	A		t-Amylmethyl ether (TAME)	< 2.0	ug/L	N	
1,2-Dichloroethane	< 1.0	ug/L	A		Trichloroethene	< 1.0	ug/L	A	
1,2-Dichloropropane	< 2.0	ug/L	A		Dibromomethane	< 2.0	ug/L	N	
Bromodichloromethane	< 0.5	ug/L	A		cis-1,3-Dichloropropene	< 1.0	ug/L	A	
4-Methyl-2-pentanone (MIBK)	< 10.0	ug/L	N		Toluene	< 1.0	ug/L	A	
trans-1,3-Dichloropropene	< 2.0	ug/L	A		1,1,2-Trichloroethane	< 1.0	ug/L	A	
Tetrachloroethene	< 1.0	ug/L	A		1,3-Dichloropropane	< 1.0	ug/L	N	
2-Hexanone	< 10.0	ug/L	N		Dibromochloromethane	< 2.0	ug/L	A	
1,2-Dibromoethane	< 1.0	ug/L	A		Chlorobenzene	< 1.0	ug/L	A	
Ethylbenzene	< 1.0	ug/L	A		1,1,1,2-Tetrachloroethane	< 2.0	ug/L	A	
Xylenes, Total	< 2.0	ug/L	A		Styrene	< 1.0	ug/L	N	
Bromoform	< 2.0	ug/L	A		Isopropylbenzene	< 1.0	ug/L	A	
1,1,2,2-Tetrachloroethane	< 2.0	ug/L	N		Bromobenzene	< 1.0	ug/L	N	
n-Propylbenzene	< 1.0	ug/L	A		1,2,3-Trichloropropane	< 2.0	ug/L	N	
2-Chlorotoluene	< 1.0	ug/L	N		1,3,5-Trimethylbenzene	< 1.0	ug/L	A	
4-Chlorotoluene	< 1.0	ug/L	N		t-Butylbenzene	< 1.0	ug/L	A	
1,2,4-Trimethylbenzene	< 1.0	ug/L	A		s-Butylbenzene	< 1.0	ug/L	N	
4-Isopropyltoluene	< 1.0	ug/L	A		1,3-Dichlorobenzene	< 1.0	ug/L	A	
1,4-Dichlorobenzene	< 1.0	ug/L	A		n-Butylbenzene	< 2.0	ug/L	A	
1,2-Dichlorobenzene	< 1.0	ug/L	A		1,2-Dibromo-3-Chloropropane	< 2.0	ug/L	A	
1,2,4-Trichlorobenzene	< 2.0	ug/L	A		1,3,5-Trichlorobenzene	< 2.0	ug/L	U	
Hexachlorobutadiene	< 0.5	ug/L	N		Naphthalene	< 2.0	ug/L	A	
1,2,3-Trichlorobenzene	< 2.0	ug/L	N		Surr. 1 (Dibromofluoromethane)	94	%	N	
Surr. 2 (Toluene d8)	100	%	N		Surr. 3 (4-Bromofluorobenzene)	101	%	N	
Unidentified Peaks	0		U						

CLIENT: WaiteHeindel Environmental Mgt
PROJECT: Young
REPORT DATE: 1/7/2014

WORK ORDER: **1312-25324**
DATE RECEIVED: 12/23/2013

TEST METHOD: EPA 8260C

004 Site: MW-1 Date Sampled: 12/23/13 12:42 Analysis Date: 1/3/14 W SJM

Parameter	Result	Unit	Nelac	Qual	Parameter	Result	Unit	Nelac	Qual
Dichlorodifluoromethane	< 10.0	ug/L	A		Chloromethane	< 6.0	ug/L	N	
Vinyl chloride	< 4.0	ug/L	A		Bromomethane	< 10.0	ug/L	A	
Chloroethane	< 10.0	ug/L	A		Trichlorofluoromethane	< 4.0	ug/L	A	
Diethyl ether	< 10.0	ug/L	N		1,1-Dichloroethene	< 2.0	ug/L	A	
Acetone	268	ug/L	A		Carbon disulfide	< 10.0	ug/L	A	
Methylene chloride	< 10.0	ug/L	A		t-Butanol	< 40.0	ug/L	N	
Methyl-t-butyl ether (MTBE)	< 4.0	ug/L	A		trans-1,2-Dichloroethene	< 2.0	ug/L	A	
Di-isopropyl ether (DIPE)	< 4.0	ug/L	N		1,1-Dichloroethane	< 2.0	ug/L	A	
Ethyl-t-butyl ether (ETBE)	< 4.0	ug/L	N		2-Butanone	812	ug/L	A	
2,2-Dichloropropane	< 4.0	ug/L	N		cis-1,2-Dichloroethene	< 2.0	ug/L	N	
Bromochloromethane	< 4.0	ug/L	N		Chloroform	< 2.0	ug/L	A	
Tetrahydrofuran	< 20.0	ug/L	U		1,1,1-Trichloroethane	< 2.0	ug/L	A	
Carbon tetrachloride	< 2.0	ug/L	A		1,1-Dichloropropene	< 2.0	ug/L	N	
Benzene	3.7	ug/L	A		t-Amylmethyl ether (TAME)	< 4.0	ug/L	N	
1,2-Dichloroethane	< 2.0	ug/L	A		Trichloroethene	< 2.0	ug/L	A	
1,2-Dichloropropane	< 4.0	ug/L	A		Dibromomethane	< 4.0	ug/L	N	
Bromodichloromethane	< 1.0	ug/L	A		cis-1,3-Dichloropropene	< 2.0	ug/L	A	
4-Methyl-2-pentanone (MIBK)	< 20.0	ug/L	N		Toluene	5.4	ug/L	A	
trans-1,3-Dichloropropene	< 2.0	ug/L	A		1,1,2-Trichloroethane	< 2.0	ug/L	A	
Tetrachloroethene	< 2.0	ug/L	A		1,3-Dichloropropane	< 2.0	ug/L	N	
2-Hexanone	< 20.0	ug/L	N		Dibromochloromethane	< 4.0	ug/L	A	
1,2-Dibromoethane	< 2.0	ug/L	A		Chlorobenzene	< 2.0	ug/L	A	
Ethylbenzene	7.1	ug/L	A		1,1,1,2-Tetrachloroethane	< 4.0	ug/L	A	
Xylenes, Total	26.4	ug/L	A		Styrene	< 2.0	ug/L	N	
Bromoform	< 4.0	ug/L	A		Isopropylbenzene	< 2.0	ug/L	A	
1,1,2,2-Tetrachloroethane	< 4.0	ug/L	N		Bromobenzene	< 2.0	ug/L	N	
n-Propylbenzene	< 2.0	ug/L	A		1,2,3-Trichloropropane	< 4.0	ug/L	N	
2-Chlorotoluene	< 2.0	ug/L	N		1,3,5-Trimethylbenzene	8.9	ug/L	A	
4-Chlorotoluene	< 2.0	ug/L	N		t-Butylbenzene	< 2.0	ug/L	A	
1,2,4-Trimethylbenzene	19.0	ug/L	A		s-Butylbenzene	< 2.0	ug/L	N	
4-Isopropyltoluene	< 2.0	ug/L	A		1,3-Dichlorobenzene	< 2.0	ug/L	A	
1,4-Dichlorobenzene	< 2.0	ug/L	A		n-Butylbenzene	< 4.0	ug/L	A	
1,2-Dichlorobenzene	< 2.0	ug/L	A		1,2-Dibromo-3-Chloropropane	< 4.0	ug/L	A	
1,2,4-Trichlorobenzene	< 4.0	ug/L	A		1,3,5-Trichlorobenzene	< 4.0	ug/L	U	
Hexachlorobutadiene	< 1.0	ug/L	N		Naphthalene	16.2	ug/L	A	
1,2,3-Trichlorobenzene	< 4.0	ug/L	N		Surr. 1 (Dibromofluoromethane)	96	%	N	
Surr. 2 (Toluene d8)	97	%	N		Surr. 3 (4-Bromofluorobenzene)	99	%	N	
Unidentified Peaks	>10		U						

CLIENT: WaiteHeindel Environmental Mgt
PROJECT: Young
REPORT DATE: 1/7/2014

WORK ORDER: **1312-25324**
DATE RECEIVED: 12/23/2013

TEST METHOD: EPA 8260C

005 Site: Sump N Date Sampled: 12/23/13 10:00 Analysis Date: 1/3/14 W SJM

Parameter	Result	Unit	Nelac	Qual	Parameter	Result	Unit	Nelac	Qual
Dichlorodifluoromethane	< 5.0	ug/L	A		Chloromethane	< 3.0	ug/L	N	
Vinyl chloride	< 2.0	ug/L	A		Bromomethane	< 5.0	ug/L	A	
Chloroethane	< 5.0	ug/L	A		Trichlorofluoromethane	< 2.0	ug/L	A	
Diethyl ether	< 5.0	ug/L	N		1,1-Dichloroethene	< 1.0	ug/L	A	
Acetone	< 10.0	ug/L	A		Carbon disulfide	< 5.0	ug/L	A	
Methylene chloride	< 5.0	ug/L	A		t-Butanol	< 20.0	ug/L	N	
Methyl-t-butyl ether (MTBE)	< 2.0	ug/L	A		trans-1,2-Dichloroethene	< 1.0	ug/L	A	
Di-isopropyl ether (DIPE)	< 2.0	ug/L	N		1,1-Dichloroethane	< 1.0	ug/L	A	
Ethyl-t-butyl ether (ETBE)	< 2.0	ug/L	N		2-Butanone	< 10.0	ug/L	A	
2,2-Dichloropropane	< 2.0	ug/L	N		cis-1,2-Dichloroethene	< 1.0	ug/L	N	
Bromochloromethane	< 2.0	ug/L	N		Chloroform	< 1.0	ug/L	A	
Tetrahydrofuran	< 10.0	ug/L	U		1,1,1-Trichloroethane	< 1.0	ug/L	A	
Carbon tetrachloride	< 1.0	ug/L	A		1,1-Dichloropropene	< 1.0	ug/L	N	
Benzene	1.4	ug/L	A		t-Amylmethyl ether (TAME)	< 2.0	ug/L	N	
1,2-Dichloroethane	< 1.0	ug/L	A		Trichloroethene	< 1.0	ug/L	A	
1,2-Dichloropropane	< 2.0	ug/L	A		Dibromomethane	< 2.0	ug/L	N	
Bromodichloromethane	< 0.5	ug/L	A		cis-1,3-Dichloropropene	< 1.0	ug/L	A	
4-Methyl-2-pentanone (MIBK)	< 10.0	ug/L	N		Toluene	< 1.0	ug/L	A	
trans-1,3-Dichloropropene	< 1.0	ug/L	A		1,1,2-Trichloroethane	< 1.0	ug/L	A	
Tetrachloroethene	< 1.0	ug/L	A		1,3-Dichloropropane	< 1.0	ug/L	N	
2-Hexanone	< 10.0	ug/L	N		Dibromochloromethane	< 2.0	ug/L	A	
1,2-Dibromoethane	< 1.0	ug/L	A		Chlorobenzene	< 1.0	ug/L	A	
Ethylbenzene	4.2	ug/L	A		1,1,1,2-Tetrachloroethane	< 2.0	ug/L	A	
Xylenes, Total	14.4	ug/L	A		Styrene	< 1.0	ug/L	N	
Bromoform	< 2.0	ug/L	A		Isopropylbenzene	1.7	ug/L	A	
1,1,2,2-Tetrachloroethane	< 2.0	ug/L	N		Bromobenzene	< 1.0	ug/L	N	
n-Propylbenzene	1.2	ug/L	A		1,2,3-Trichloropropane	< 2.0	ug/L	N	
2-Chlorotoluene	< 1.0	ug/L	N		1,3,5-Trimethylbenzene	8.4	ug/L	A	
4-Chlorotoluene	< 1.0	ug/L	N		t-Butylbenzene	< 1.0	ug/L	A	
1,2,4-Trimethylbenzene	17.5	ug/L	A		s-Butylbenzene	1.3	ug/L	N	
4-Isopropyltoluene	1.3	ug/L	A		1,3-Dichlorobenzene	< 1.0	ug/L	A	
1,4-Dichlorobenzene	< 1.0	ug/L	A		n-Butylbenzene	< 2.0	ug/L	A	
1,2-Dichlorobenzene	< 1.0	ug/L	A		1,2-Dibromo-3-Chloropropane	< 2.0	ug/L	A	
1,2,4-Trichlorobenzene	< 2.0	ug/L	A		1,3,5-Trichlorobenzene	< 2.0	ug/L	U	
Hexachlorobutadiene	< 0.5	ug/L	N		Naphthalene	23.3	ug/L	A	
1,2,3-Trichlorobenzene	< 2.0	ug/L	N		Surr. 1 (Dibromofluoromethane)	94	%	N	
Surr. 2 (Toluene d8)	102	%	N		Surr. 3 (4-Bromofluorobenzene)	96	%	N	
Unidentified Peaks	>10		U						

CLIENT: WaiteHeindel Environmental Mgt
PROJECT: Young
REPORT DATE: 1/7/2014

WORK ORDER: **1312-25324**
DATE RECEIVED: 12/23/2013

TEST METHOD: EPA 8260C

006 Site: Sump S Date Sampled: 12/23/13 10:13 Analysis Date: 1/3/14 W SJM

Parameter	Result	Unit	Nelac	Qual	Parameter	Result	Unit	Nelac	Qual
Dichlorodifluoromethane	< 5.0	ug/L	A		Chloromethane	< 3.0	ug/L	N	
Vinyl chloride	< 2.0	ug/L	A		Bromomethane	< 5.0	ug/L	A	
Chloroethane	< 5.0	ug/L	A		Trichlorofluoromethane	< 2.0	ug/L	A	
Diethyl ether	< 5.0	ug/L	N		1,1-Dichloroethene	< 1.0	ug/L	A	
Acetone	< 10.0	ug/L	A		Carbon disulfide	< 5.0	ug/L	A	
Methylene chloride	< 5.0	ug/L	A		t-Butanol	< 20.0	ug/L	N	
Methyl-t-butyl ether (MTBE)	< 2.0	ug/L	A		trans-1,2-Dichloroethene	< 1.0	ug/L	A	
Di-isopropyl ether (DIPE)	< 2.0	ug/L	N		1,1-Dichloroethane	< 1.0	ug/L	A	
Ethyl-t-butyl ether (ETBE)	< 2.0	ug/L	N		2-Butanone	< 10.0	ug/L	A	
2,2-Dichloropropane	< 2.0	ug/L	N		cis-1,2-Dichloroethene	< 1.0	ug/L	N	
Bromochloromethane	< 2.0	ug/L	N		Chloroform	< 1.0	ug/L	A	
Tetrahydrofuran	< 10.0	ug/L	U		1,1,1-Trichloroethane	< 1.0	ug/L	A	
Carbon tetrachloride	< 1.0	ug/L	A		1,1-Dichloropropene	< 1.0	ug/L	N	
Benzene	< 1.0	ug/L	A		t-Amylmethyl ether (TAME)	< 2.0	ug/L	N	
1,2-Dichloroethane	< 1.0	ug/L	A		Trichloroethene	< 1.0	ug/L	A	
1,2-Dichloropropane	< 2.0	ug/L	A		Dibromomethane	< 2.0	ug/L	N	
Bromodichloromethane	< 0.5	ug/L	A		cis-1,3-Dichloropropene	< 1.0	ug/L	A	
4-Methyl-2-pentanone (MIBK)	< 10.0	ug/L	N		Toluene	< 1.0	ug/L	A	
trans-1,3-Dichloropropene	< 1.0	ug/L	A		1,1,2-Trichloroethane	< 1.0	ug/L	A	
Tetrachloroethene	< 1.0	ug/L	A		1,3-Dichloropropane	< 1.0	ug/L	N	
2-Hexanone	< 10.0	ug/L	N		Dibromochloromethane	< 2.0	ug/L	A	
1,2-Dibromoethane	< 1.0	ug/L	A		Chlorobenzene	< 1.0	ug/L	A	
Ethylbenzene	2.5	ug/L	A		1,1,1,2-Tetrachloroethane	< 2.0	ug/L	A	
Xylenes, Total	2.5	ug/L	A		Styrene	< 1.0	ug/L	N	
Bromoform	< 2.0	ug/L	A		Isopropylbenzene	1.0	ug/L	A	
1,1,2,2-Tetrachloroethane	< 2.0	ug/L	N		Bromobenzene	< 1.0	ug/L	N	
n-Propylbenzene	< 1.0	ug/L	A		1,2,3-Trichloropropane	< 2.0	ug/L	N	
2-Chlorotoluene	< 1.0	ug/L	N		1,3,5-Trimethylbenzene	< 1.0	ug/L	A	
4-Chlorotoluene	< 1.0	ug/L	N		t-Butylbenzene	< 1.0	ug/L	A	
1,2,4-Trimethylbenzene	1.7	ug/L	A		s-Butylbenzene	< 1.0	ug/L	N	
4-Isopropyltoluene	< 1.0	ug/L	A		1,3-Dichlorobenzene	< 1.0	ug/L	A	
1,4-Dichlorobenzene	< 1.0	ug/L	A		n-Butylbenzene	< 2.0	ug/L	A	
1,2-Dichlorobenzene	< 1.0	ug/L	A		1,2-Dibromo-3-Chloropropane	< 2.0	ug/L	A	
1,2,4-Trichlorobenzene	< 2.0	ug/L	A		1,3,5-Trichlorobenzene	< 2.0	ug/L	U	
Hexachlorobutadiene	< 0.5	ug/L	N		Naphthalene	4.9	ug/L	A	
1,2,3-Trichlorobenzene	< 2.0	ug/L	N		Surr. 1 (Dibromofluoromethane)	93	%	N	
Surr. 2 (Toluene d8)	98	%	N		Surr. 3 (4-Bromofluorobenzene)	95	%	N	
Unidentified Peaks	>10		U						

CLIENT: WaiteHeindel Environmental Mgt
PROJECT: Young
REPORT DATE: 1/7/2014

WORK ORDER: **1312-25324**
DATE RECEIVED: 12/23/2013

TEST METHOD: EPA 8260C

007 Site: Dup Date Sampled: 12/23/13 11:15 Analysis Date: 1/3/14 W SJM

Parameter	Result	Unit	Nelac	Qual	Parameter	Result	Unit	Nelac	Qual
Dichlorodifluoromethane	< 10.0	ug/L	A		Chloromethane	< 6.0	ug/L	N	
Vinyl chloride	< 4.0	ug/L	A		Bromomethane	< 10.0	ug/L	A	
Chloroethane	< 10.0	ug/L	A		Trichlorofluoromethane	< 4.0	ug/L	A	
Diethyl ether	< 10.0	ug/L	N		1,1-Dichloroethene	< 2.0	ug/L	A	
Acetone	236	ug/L	A		Carbon disulfide	< 10.0	ug/L	A	
Methylene chloride	< 10.0	ug/L	A		t-Butanol	< 40.0	ug/L	N	
Methyl-t-butyl ether (MTBE)	< 4.0	ug/L	A		trans-1,2-Dichloroethene	< 2.0	ug/L	A	
Di-isopropyl ether (DIPE)	< 4.0	ug/L	N		1,1-Dichloroethane	< 2.0	ug/L	A	
Ethyl-t-butyl ether (ETBE)	< 4.0	ug/L	N		2-Butanone	738	ug/L	A	
2,2-Dichloropropane	< 4.0	ug/L	N		cis-1,2-Dichloroethene	< 2.0	ug/L	N	
Bromochloromethane	< 4.0	ug/L	N		Chloroform	< 2.0	ug/L	A	
Tetrahydrofuran	< 20.0	ug/L	U		1,1,1-Trichloroethane	< 2.0	ug/L	A	
Carbon tetrachloride	< 2.0	ug/L	A		1,1-Dichloropropene	< 2.0	ug/L	N	
Benzene	4.0	ug/L	A		t-Amylmethyl ether (TAME)	< 4.0	ug/L	N	
1,2-Dichloroethane	< 2.0	ug/L	A		Trichloroethene	< 2.0	ug/L	A	
1,2-Dichloropropane	< 4.0	ug/L	A		Dibromomethane	< 4.0	ug/L	N	
Bromodichloromethane	< 1.0	ug/L	A		cis-1,3-Dichloropropene	< 2.0	ug/L	A	
4-Methyl-2-pentanone (MIBK)	< 20.0	ug/L	N		Toluene	5.0	ug/L	A	
trans-1,3-Dichloropropene	< 2.0	ug/L	A		1,1,2-Trichloroethane	< 2.0	ug/L	A	
Tetrachloroethene	< 2.0	ug/L	A		1,3-Dichloropropane	< 2.0	ug/L	N	
2-Hexanone	< 20.0	ug/L	N		Dibromochloromethane	< 4.0	ug/L	A	
1,2-Dibromoethane	< 2.0	ug/L	A		Chlorobenzene	< 2.0	ug/L	A	
Ethylbenzene	7.9	ug/L	A		1,1,1,2-Tetrachloroethane	< 4.0	ug/L	A	
Xylenes, Total	28.9	ug/L	A		Styrene	< 2.0	ug/L	N	
Bromoform	< 4.0	ug/L	A		Isopropylbenzene	< 2.0	ug/L	A	
1,1,2,2-Tetrachloroethane	< 4.0	ug/L	N		Bromobenzene	< 2.0	ug/L	N	
n-Propylbenzene	< 2.0	ug/L	A		1,2,3-Trichloropropane	< 4.0	ug/L	N	
2-Chlorotoluene	< 2.0	ug/L	N		1,3,5-Trimethylbenzene	9.5	ug/L	A	
4-Chlorotoluene	< 2.0	ug/L	N		t-Butylbenzene	< 2.0	ug/L	A	
1,2,4-Trimethylbenzene	20.6	ug/L	A		s-Butylbenzene	< 2.0	ug/L	N	
4-Isopropyltoluene	2.2	ug/L	A		1,3-Dichlorobenzene	< 2.0	ug/L	A	
1,4-Dichlorobenzene	< 2.0	ug/L	A		n-Butylbenzene	< 4.0	ug/L	A	
1,2-Dichlorobenzene	< 2.0	ug/L	A		1,2-Dibromo-3-Chloropropane	< 4.0	ug/L	A	
1,2,4-Trichlorobenzene	< 4.0	ug/L	A		1,3,5-Trichlorobenzene	< 4.0	ug/L	U	
Hexachlorobutadiene	< 1.0	ug/L	N		Naphthalene	16.4	ug/L	A	
1,2,3-Trichlorobenzene	< 4.0	ug/L	N		Surr. 1 (Dibromofluoromethane)	95	%	N	
Surr. 2 (Toluene d8)	98	%	N		Surr. 3 (4-Bromofluorobenzene)	96	%	N	
Unidentified Peaks	>10		U						

Report Summary of Qualifiers and Notes

M - : The laboratory fortified matrix (LFM) analysis indicates a potential negative bias in the reported value.
QA-: QA/QC associated with this analysis did not meet laboratory acceptance limits indicating the results may be biased low.

ENDYNE, INC.
160 James Brown Drive
Williston, Vermont 05495
(802) 879-4333

CHAIN-OF-CUSTODY-RECORD

№ 68748

Special Reporting Instructions/PO#: Young

Project Name: Young	Client/Contact Name: Miles Waite	Sampler Name: Chris Pope
State of Origin: VT X NY __ NH __ Other __	Phone #: WHEM	Phone #: WHEM
Endyne WO # B12-25324	Mailing Address: WHEM	Billing Address: WHEM

Sample Location	Matrix	GRAB	COMP	Date/Time Sampled	Sample Containers No.	Sample Containers Type/Size	Sample Preservation	Analysis Required	FieldResults/Remarks	Due Date
Trip Blank	H2O	X		~~12/19/13~~ ~~12/23/13~~ 1245	2	40 ml	HCl	24		
MW-2				12/23/13 1115						
MW-3				1150						
MW-1				1242						
Sump N				1000						
Sump S				1013						
Dup				—						

Relinquished by:	Date/Time	Received by:	Date/Time	Received by:	Date/Time
Chris Pope	12/23/13 1350			Ellen Mooney	12/23/13 1:50

1	pH	6	TKN	11	Total Solids	16	Sulfate	21	1664 TPH/FOG	26	8270 PAH Only
2	Chloride	7	Total P	12	TSS	17	Coliform (Specify)	22	8015 GRO	27	8081 Pest
3	Ammonia N	8	Total Diss. P	13	TDS	18	COD	23	8015 DRO	28	8082 PCB
4	Nitrite N	9	BOD	14	Turbidity	(19)	VT PCF	(24)	8260B	29	PP13 Metals
5	Nitrate N	10	Alkalinity	15	Conductivity	20	VOC Halocarbons	25	8270 B/N or Acid	30	Total RCRA8
31	Metals (Total, Diss.) Ag, Al, As, B, Ba, Be, Ca, Cd, Co, Cr, Cu, Fe, Hg, K, Mg, Mn, Mo, Na, Ni, Pb, Sb, Se, Sn, Tl, U, V, Zn										
32	TCLP (volatiles, semi-volatiles, metals, pesticides, herbicides)					33	Other				
34	Corrosivity	35	Ignitability	36	Reactivity	37	Other				
38	Other										

LAB USE ONLY
Delivery: Client
Temp: 2.6
Comment:

(White - Laboratory / Yellow - Client)

Page ____ of ____