VRAP Investigation Completion Report

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1. INTRODUCTION

1.1 BACKGROUND

Woodard & Curran has prepared this Voluntary Response Action Program (VRAP) Investigation Completion Report (Report) to summarize the investigation and results from the follow up actions recommended in a Maine Department of Environmental Protection (MEDEP) No Action Assurance Letter (NAAL) dated February 1, 2016.

The purpose of the work was to address the remaining data gaps identified for the Site to the satisfaction of MEDEP and obtain a No Further Action Assurance Letter regarding known environmental conditions at the Site. The following report presents a description of the Site location and background, a discussion of investigation methods and results, conclusions indicated by the data, and proposed recommendations based on the findings from the investigation.

1.2 SITE LOCATION AND DESCRIPTION

The Site is located at 9 Oak Street in Guilford, Piscataquis County, Maine. A Site location plan is provided as Figure 1. The Site consists of 8 lots, is approximately 13.38 acres, and has historically been used as a textile mill on the northern side of the Piscataquis River since the late 1800s, and on the south side of the River since the early 1900s. The Site is currently occupied by True Textiles and is developed with four main buildings (totaling approximately 420,000 square feet), and two additional buildings. True Textiles operations include on-site weaving, dyeing, finishing, and warehouse storage. The future use of the Site will be continued operations as a textile mill.

The adjacent properties were historically developed with residential and commercial properties since the late 1800s. Water Street abuts the Site to the north, a park, wooded land, and residential and commercial properties abut the Site to the east, Hudson Avenue abuts the site to the south, and commercial properties border the Site to the west. Municipal water and sewer are supplied to the Site from the Guilford-Sangerville Water/Sanitary District.

2. SUMMARY OF PREVIOUS INVESTIGATIONS

2.1 FINDINGS OF PREVIOUS REPORTS

The following reports and documents summarize the findings of previous environmental investigations, and were included in Woodard & Curran's January 6, 2016, VRAP Application to the MEDEP:

1. Site Assessment for Removal of Two 10,000-Gallon #5 Fuel Oil Tanks, Acheron, Inc. (Acheron); October 1997
2. Phase I Environmental Site Assessment (ESA), EBI Consulting (EBI); November 3, 2011
3. Phase I ESA, Hart & Hickman, PC (H&H); August 11, 2015
4. Subslab Vapor Assessment, Sevee & Maher Engineers, Inc. (SME); September 29, 2015
5. Indoor Air Assessment, SME; October 9, 2015

Based on the findings of the 2015 Phase I ESA, the following Recognized Environmental Conditions (RECs) and Potential Vapor Intrusion Condition (PVIC) were identified for the Site:

REC-1: Historical Use as Textile Manufacturing/Dye Processing

The Site has been used for textile manufacturing/dye processing since the late 1800s. Chemical usage and waste management practices are unknown for the duration of historical use, but likely included the usage of petroleum products and solvents. Pipes, floor drains, underground storage tanks, and chemical storage containers were noted at the Site during the 2015 Phase I ESA.

REC-2: Observed Floor Drains

Floor drains were observed throughout the Site buildings during the 2015 Phase I ESA. The drains are reportedly utilized to collect wastewater from the dye houses, chemical mixing areas, maintenance shops, and throughout general process areas of the Site. The wastewater is collected into a centralized equalization tank where it is pre-treated before discharging to the Guilford-Sangerville Sanitary District. Historical staining was observed in the vicinity of these drains during the Phase I ESA. In addition, several old discharge pipes were observed along the bank of the Piscataquis River. The floor drains connected to these discharge pipes were reportedly sealed off in the 1980s. The Site contacts were not aware if the structural integrity of the drains has ever been tested.

REC-3: Releases from No. 5 Fuel Oil Underground Storage Tanks (USTs)

Two 10,000-gallon No. 5 fuel oil storage tanks were installed at the Site in 1983, and were reportedly the third set of tanks installed at this location. The two prior sets of tanks contained No. 6 fuel oil and each set of tanks were replaced due to age. During the removals of the two prior sets, soil staining was reportedly observed in the excavation and impacted soil was removed during the 1983 replacement project. Written documentation regarding the tank removal and subsequent soil was not available since the replacement occurred prior to the requirement of a site assessment at the time of a facility closure.

Information provided in the 1997 Site Assessment and 2015 Phase I ESA noted that releases had occurred from the No. 5 fuel oil USTs. Details of the release history at the Site as provided in the MEDEP spill reports are summarized below:

- B-94-1987: On April 1, 1987, the Piscataquis River had flooded, resulting in the displacement of No. 5 fuel oil from a UST on the north side of the Site. As a result of the flooding, the majority of the release traveled

downstream into a brook east/northeast of the Site. Cleanup was completed intermittently until April 18, 1987, and contaminated brush/debris was properly disposed of.

- B-346-1997: On July 3, 1997, Guilford personnel discovered a release of oil on the northern bank of the Piscataquis River downgradient of the location of the two USTs. Guilford immediately reported the finding to MEDEP, and MEDEP conducted a site visit on the same day the spill was reported. Absorbent booms were placed along the edge of the river and an oil-water separator water was later installed at the location of the release. The source of the heavy oil was determined to be two 10,000-gallon No. 5 fuel oil USTs used on an as needed basis, and MEDEP requested that the two tanks be taken out of service. Oil was removed from the two tanks, and on July 7, 1997, the tanks were cleaned. No cracks or holes were observed from the interior of the tanks during cleaning.

  The tanks and associated piping were removed on August 27 and 28, 1997. Staining of sand backfill was observed, and MEDEP established a Baseline-1 Cleanup Goal for the Site, which required removal of soils, which are saturated and/or contain free product. On August 29, 1997, the impacted excavated soil (approximately 34 yards) from outside and below the east side of the concrete slab was removed from the excavation for disposal. Confirmation samples could not be collected from beneath the tank due to the concrete slab, from the north wall due to the retaining wall, or from the west end of the tank area. Although impacted soil remained outside the concrete slab, further excavation was terminated in cooperation with the MEDEP as continuing the excavation would have jeopardized the structural integrity of building walls and utilities adjacent to the excavation. There was reportedly visual evidence of oil-contaminated soil remaining beneath the concrete slab and surrounding the utilities on the east side of the tanks. There was no visual evidence of oil-contaminated soil anywhere else in the excavation (north side, west side, south side). Further excavation of oil-contaminated soil from the area of the former underground tanks was not recommended.

  Upon removal, it was noted by Site personnel that a considerable amount of oil was present beneath the subgrade concrete slab the USTs rested on and it was anticipated the residual oil might leach into the river for a much longer time than first expected. Site personnel requested guidance from MEDEP for ideas on how to stop the release, and another type of oil boom was installed in 1998. In a separate letter, dated August 17, 1999, Site personnel reported a sheen in the same location as the release in 1997 and believed the sheen was associated with the former USTs.

- Two follow-up release reports, B-525-2001 (reported on September 26, 2001) and B-596-2006 (reported on September 20, 2006) indicate a sheen returning to the same area as the release in 1997. Sorbent booms were placed in the river at the time of these recurring releases to collect any residual oil.

In addition to the two 10,000-gallon No. 5 fuel oil USTs, one former 1,000-gallon No. 2 heating oil UST was identified in the 2011 Phase I ESA. This 1,000-gallon No. 2 fuel oil UST was reportedly formerly located beneath a facility building (Section 4) and was removed on August 18, 1987. No tank removal documentation was included in the 2011 Phase I ESA. As the potential environmental concerns associated with this additional UST are similar to those related to the two former 10,000-gallon No. 5 fuel oil USTs, this additional 1,000-gallon tank is included in REC-3.

REC-4: Hydraulic Elevators

Two active hydraulic elevators were observed on the Site during the 2015 Phase I ESA. Staining that appeared to consist of hydraulic fluid was observed within the elevator shaft.

PVIC-1: Vapor Intrusion

Because of the Site's long history as a textile mill and the historical uses of various volatile organic compounds (VOCs), vapor intrusion within the Site buildings was identified as a REC in the 2015 Phase I ESA.

2.2 PREVIOUS SUB-SLAB VAPOR ASSESSMENT

SME conducted a sub-slab vapor assessment at the Site on September 14, 2015. Sub-slab vapor samples were collected and analyzed for air-phase petroleum hydrocarbons (APH) and/or VOCs. Results of these analyses were provided to Woodard & Curran in tabular form but no original laboratory data or interpretation of the results were included.

In order to determine if the vapor assessment results were indicative of an obvious vapor intrusion concern, Woodard & Curran considered the available data in accordance with the June 2015 United States Environmental Protection Agency (USEPA) Office of Solid Waste and Emergency Response (OSWER) Technical Guide for Assessing and Mitigating the Vapor Intrusion Pathway from Subsurface Vapor Sources to Indoor Air (USEPA Technical Guide). Per the USEPA Technical Guide, the maximum detected concentration for each analyte was converted to indoor air concentrations and then compared to the default target risk ratio of 1:100,000 using the USEPA SGC-IAC calculator. The converted indoor air concentrations did not exceed the Vapor Intrusion (VI) Hazard and/or VI Carcinogenic Risk values for all target compounds except for dichlorofluoromethane and trichloroethene (TCE).

In addition, per the USEPA Technical Guide, the maximum detected result for each analyte was converted to indoor air concentrations using an attenuation factor of 0.03 and then compared to the May 8, 2013 MEDEP Remedial Action Guidelines (RAGs) for the commercial exposure scenario. Based on this comparison, TCE was the only compound that was detected above the RAG. The calculated indoor air concentration was 69.9 ug/m^3, and the RAG for the commercial exposure scenario is 8.8 ug/m^3.

Tables that summarize the available results and risk calculations are included in **Appendix A**.

2.3 INDOOR AIR ASSESSMENT

On October 3 and 4, 2015, SME conducted indoor air sampling at the Site. Two samples were reportedly collected in the vicinity of the elevated subslab soil vapor sample results and analyzed for VOCs by EPA Method TO-15. Several VOCs were detected above laboratory reporting limits in each sample of indoor air; however, no VOCs were detected above the RAGs for indoor air in residential or commercial buildings.

A table that summarizes the indoor air results is included in **Appendix B**.

2.4 INITIAL CONCEPTUAL SITE MODEL SUMMARY

Based on the findings of the Phase I ESA completed by H&H in August 2015, Woodard & Curran developed the following initial Conceptual Site Model (CSM) to describe potential sources, release mechanisms, contaminants of concern (COCs), impacted media, and receptors. Consistent with Woodard & Curran's understanding of Site operations, the following rationale was used to develop the list of COCs:

- Petroleum product and solvent usage during Site operations: VOCs, extractible petroleum hydrocarbons (EPH), and RCRA 8 metals.
- Floor drains reportedly utilized to collect wastewater from the dye houses, chemical mixing areas, maintenance shops, and throughout general process areas of the Site: VOCs, EPH, and RCRA 8 metals.
- Releases from the two former 10,000-gallon No. 5 fuel oil USTs: EPH.
- Potential releases from the two active hydraulic elevators: Polychlorinated biphenyls (PCBs) and EPH.
- Detected concentrations of contaminants in soil vapor: VOC and APH.

A tabulated summary of the Initial Conceptual Site Model including potential sources, release mechanisms, COCs, potentially impacted media, and potential receptors is presented in **Table 1** below.

Table 1: Initial Conceptual Site Model Summary

Source	Potential Release Mechanism(s)	COC(s)	Potentially Impacted Media	Potential Receptors
REC-1: Historical and Current Textile Manufacturing/Dye Processing	Spills and leaks	EPH, VOC, RCRA 8 Metals	Surficial Soil, Subsurface Soil, Groundwater, and Soil Vapor	Residents, Visitors, Commercial Workers, Construction Workers
REC-2: Observed Floor Drains	Leaks from older infrastructure; historical discharges to sediment and surface water	EPH, VOC, RCRA 8 Metals	Surficial Soil, Subsurface Soil, Surface Water, Sediment, Groundwater, and Soil Vapor	Residents, Visitors, Commercial Workers, Construction Workers, Aquatic Biota
REC-3: Release from No. 5 Fuel Oil USTs	Leaks from former USTs	EPH	Subsurface Soil, Surface Water, Sediment, and Groundwater	Construction Workers, Aquatic Biota
REC-4: Hydraulic Elevators	Spills and leaks to soil	PCBs, EPH	Subsurface Soil	Construction Workers
PVIC-1: Detected Concentrations in Subslab Soil Vapor	Discharges associated with historical operations	APH, VOC	Groundwater, Soil Vapor	Commercial Workers

2.5 OUTCOME OF THE CONCEPTUAL SITE MODEL RELATIVE TO PLANNED FUTURE SITE USE

Woodard & Curran has considered the ramifications from the results of previous investigations with respect to the intended future use. Based on this analysis, the most impactful issues include:

1. Potential indication of vapor phase contamination and/or impacted groundwater as evidenced by subslab soil vapor results (indoor air does not appear to be a concern at this time); and
2. Potential future releases to the Piscataquis River from residual subsurface No. 5 fuel oil contamination. There has been no readily available record of a sheen in the Piscataquis River since 2006. In addition, indoor air analysis conducted by SME has identified no pathway between identified soil vapor concentrations and indoor air conditions at the Site.

2.6 NO ACTION ASSURANCE LETTER

In response to the remaining potential environmental concerns described in the January 6, 2016, VRAP Application, MEDEP prepared a NAAL dated February 1, 2016. As documented in this NAAL, the following activities were required by MEDEP in order to further investigate potential environmental conditions and ultimately receive the liability protection afforded by participation in the VRAP program:

1. An Investigation Work Plan will be prepared to address potential remaining free product and/or oil saturated soils in the area of the former No. 5 fuel oil USTs in order to prevent further discharges to the Piscataquis River. This Plan will also include an assessment of the possible VOC-impacted groundwater plume that may exist at the Site;
2. A Declaration of Environmental Covenants, in accordance with the Maine Uniform Environmental Covenants Act as defined in 38 M.R.S.A, 3001 et seq., incorporating conditions of approval contained in any future VRAP Certificate of Completion ("COC"), and that is subject to Department review and approval, must be executed for the Site and must be recorded at the Piscataquis County Registry of Deeds. A copy of the recorded Declaration of Environmental Covenants must be supplied to the Department's VRAP within thirty (30) days of being recorded. Provided that the actions proposed above are completed to the satisfaction of the Department, the DEC is may include:
    a. A restriction on the extraction of groundwater at the Site without the express written permission of the Department;
    b. A requirement that any new or future buildings constructed at the Site include a sub-slab vapor and/or sub-slab ventilation system and that such system be operated effectively. As an alternative to the installation of a vapor mitigation system, a vapor intrusion assessment may be completed and submitted to the Department for approval, which may conclude or demonstrate that vapor intrusion would not be a risk to occupants of the new or future buildings.

The following sections document the activities that were completed by Woodard & Curran to fulfill the requirements of the February 1, 2016 NAAL.

3. SUPPLEMENTAL SUBSURFACE INVESTIGATION

Consistent with the requirements of the NAAL, Woodard & Curran prepared a VRAP Investigation Work Plan dated April 29, 2016. This plan was reviewed and approved by Tracy W. Kelly of the MEDEP on April 29, 2016.

3.1 INVESTIGATION OBJECTIVES

The purpose of the work proposed in this plan was to address the remaining data gaps identified for the Site to the satisfaction of MEDEP, and to obtain a No Further Action Assurance Letter (NFAAL) and liability release regarding known environmental conditions at the Site. These data gaps are consistent with the CSM and include the following:

Data Gap 1: potential VOC-impacted groundwater plume that may be discharging to surface water.

Proposed Investigation: As described in the VRAP Investigation Work Plan referenced above, three borings (WCB-1, WCB-2 and WCB-3) were proposed for installation at locations where TCE was detected in sub slab vapor samples collected during the 2015 SME investigation at concentrations that exceeded a direct comparison to commercial indoor air targets. Monitoring wells were proposed at the boring locations to groundwater collect samples for VOC analysis to assess impacts to groundwater, which could ultimately potentially affect the nearby Piscataquis River.

Data Gap 2: potential remaining free product and/or oil saturated soils in the area of the former No. 5 fuel oil USTs.

Proposed Investigation: One boring and associated monitoring well, WC-4, was proposed in the vicinity of the two former 10,000 gallon No. 5 fuel oil USTs to investigate for the presence of light non-aqueous phase liquid (LNAPL).

The following subsections present a summary of the methods that were used during the investigation to evaluate subsurface environmental conditions at the Site, and the results from the analyses of environmental samples collected from the Site.

3.2 INVESTIGATION METHODS

3.2.1 Soil Borings

On May 11 and 12, 2016, a tracked, low clearance drill rig that utilized hollow stem augers was mobilized at the Site to complete the borings. All borings were located inside of different buildings of the Site as indicated in **Figure 2**. The augers were advanced to the target depth and split spoons were driven at 2-foot intervals to the groundwater table or to refusal, whichever came first. The material collected in each of the split spoons was visually screened for staining or other signs of historical environmental impacts, geologically characterized, and field screened for total VOCs using a properly calibrated photoionization detector (PID) in accordance with MEDEP Standard Operating Procedure (SOP) No. DR#011. Split spoons were decontaminated using a brush, distilled water, and Liquinox® soap between intervals.

Large rocks, concrete, pieces of brick, and dense glacial till present in the overburden slowed progress in advancing the augers to the water table. Based on the composition of the soils encountered at almost all of the borings, the material was characterized to be likely representative of fill that was brought in during the construction of the facility located at the Site. Due to the difficulty in advancing the borings using the hollow stem augers, the method was modified to include drive and wash techniques. Using drive and wash, steel casing was driven to the target depth to maintain an open borehole. Split spoon samplers were driven ahead of the casing in order to collect soil samples. Potable water was then used to wash soil cuttings out of the hole and continue boring advancement.

The investigation results are summarized below by boring location. The boring logs for each location are provided in **Appendix C** of this report.

WCB-1

The boring WCB-1 was installed on May 11, 2016, inside Building 4E at the Site, approximately 3.5 feet from the southern exterior wall and adjacent to the Piscataquis River. The floor of the building is elevated approximately 25 feet above the river below. A jackhammer and power drill were used to penetrate the concrete floor. The concrete core that was taken out of the floor was measured to be 0.73 feet thick. The boring was advanced to a total depth of 13 feet below ground surface (bgs) without encountering the water table. The soil for each of the 2 foot intervals was generally characterized as loose and dry, brown, silty fine to coarse sand with some gravel and small rocks. Detectable PID readings ranged from 0.2 parts per million by volume (ppm_v) at the 1 to 3-foot bgs interval to 2.4 ppm_v at the 9 to 11-foot bgs interval. At the 10-foot bgs interval, the augers were unable to advance further, and the decision was made to abandon the boring. A review of facility plans indicated a 6-foot wide concrete footing that extended out from the wall adjacent to the location for WCB-1. The presence of this footing prevented further progress to the groundwater table and the position of permanently fixed equipment prohibited the advancement of an additional boring in the vicinity of the target location.

No groundwater was observed at the maximum achieved depth of this boring (10 feet bgs). Therefore, a groundwater monitoring well was not installed at this location.

WCB-2

Boring WCB-2 is located inside of Building 12 on the south side of the Piscataquis River. Hollow stem augers were used to advance the boring to a depth of 9.2 feet bgs on May 12, 2016. The material obtained in split spoon samples down to this depth consisted primarily of brown, silty, fine to medium/coarse grade sand with gravel and numerous small rocks. For the intervals down to 8 feet bgs, PID readings were all below 1 ppm_v; however, for the 8 to 9.2-foot bgs interval a maximum PID reading of 38 ppm_v was observed, with sustained readings at 16.8 ppm_v. Drive and wash was used to advance the boring to a maximum depth of approximately 18 feet bgs. Pieces of fine-grained, black rock resembling shale, very similar in appearance to the rocks lining the banks of that side of the river, were collected from the 16.4 to 18.4-foot bgs interval. A core measuring 0.84 feet long was recovered from this interval, indicating that the bottom of the boring was terminated at bedrock. Groundwater was measured at approximately 11 feet bgs within the borehole. Therefore, a 1-inch well (WCMW-2) was constructed and set in the borehole as described in Section 3.2.2.

No detectible concentrations of VOCs were recorded during screening of the headspace above purge water collected from this well during development, though it should be noted that the drive and wash method necessitated the addition of potable water into the subsurface in order to advance the boring.

WCB-3

Due to time constraints and the proposed location of WCB-3 away from the Piscataquis River, this soil boring was not completed during the investigation conducted at the Site on May 11 and 12, 2016.

WCB-4

In order to assess potential impacts from two former No. 5 fuel oil USTs outside the maintenance shop on the north side of the Site, boring WCB-4 was completed on May 12, 2016, just south and downgradient (assumed) from the former location of these tanks. After removing a 0.5-foot thick concrete core from the floor, the boring for WCB-4 was started using hollow stem augers to a depth of 16 feet bgs. As with the borings for the other locations, the soil consisted primarily of brown silty fine to coarse sand down to a depth of 6 feet bgs; however, unlike the other locations, there was a transition below this layer to gray silty, fine sandy clay. With refusal at 14 feet bgs, the drilling method was changed to drive and wash. The boring was terminated at the 14 to 16-foot bgs interval with the recovery of a 1.1-foot thick core of concrete at the bottom of the boring. Detectible PID readings ranged from 0.2 ppm_v at the 12 to 14-foot

bgs interval to 1.6 ppm_v at the 4 to 6-foot bgs interval. There was no indication of staining or free product in any of the soil samples obtained at this location.

No groundwater was observed at the maximum achieved depth of this boring (16 feet bgs). Therefore, a monitoring well was not installed at this location.

3.2.2 Monitoring Well Installation and Groundwater Sample Collection

The only boring location where installation of a monitoring well was possible was at WCB-2, and the well installed at this location was identified as WCMW-2. Remaining soil borings encountered refusal due to subsurface conditions (e.g., boulders, debris, concrete, dense till, bedrock) prior to reaching the overburden groundwater table.

Monitoring well WCMW-2 was installed in accordance with MEDEP SOP No. DR#009 and consisted of a 1-inch well with a screened interval of 10 feet that extends from 5.44 feet bgs to 15.44 feet bgs. WCMW-2 was developed immediately after installation to remove settled solids from the bottom of the well and to clear the screen of material that could impede water flow into the well. Details related to well construction are provided with the boring log for WCB-2 in **Appendix C**.

Following the installation and development of WCMW-2 on May 12, 2016 and an appropriate stabilization period, Woodard & Curran returned to the Site on May 19, 2016, to collect groundwater samples in accordance with MEDEP SOP No. DR#002. Two samples were collected from this well, included a primary sample and a duplicate sample for quality assurance and quality control purposes.

Sample collection was performed after purging the well using low flow sampling techniques. Using low flow techniques, stagnant water is purged from the well and replaced with fresh groundwater from the surrounding formation. A water level indicator was used to monitor the depth to water from ground surface to ensure that the water table was not depressed as groundwater was pumped from the well. A peristaltic pump was used to purge water from the well at a rate of approximately 260 milliliters per minute. The quality of the water was monitored for pH, temperature, dissolved oxygen, conductivity, turbidity and oxygen-reduction potential. When three consecutive readings within ten percent were obtained for all parameters (indicating stabilization), a sample was collected. A total of 9.1 liters or 2.4 gallons were purged from the well prior to sample collection. The readings for all parameters were recorded on a field sheet which is provided in **Appendix D**. The groundwater sample was kept in a cooler on ice and properly preserved for subsequent analysis as described below.

3.3 ANALYTICAL METHODS

The groundwater sample analyses were conducted by Con-test Laboratories of East Longmeadow, MA. The groundwater sample collected from WCMW-2 and its associated duplicate, DUP-1, were analyzed for VOCs using EPA Method 8260C. This method uses gas chromatography/mass spectrophotometry(GCMS) to accurately identify the compounds present in the samples and the magnitude at which they were detected. A review of quality control results was also conducted to assess the quality of the data and suitability for characterizing groundwater quality in the vicinity of the well where the sample was collected. A summary of the quality control results is provided in Section 3.5.

3.4 ANALYTICAL RESULTS

Only one compound, trichloroethene (TCE), was detected in both the sample WCMW-2 and associated duplicate, WCMW-2 DUP, at concentrations of 26 micrograms per liter (µg/L) and 39 µg/L, respectively. The analytical data package as received from the laboratory is presented in **Appendix E**.

3.5 ANALYTICAL QUALITY CONTROL RESULTS

An assessment of associated quality control results was conducted to evaluate the quality of the data associated with the sub-slab soil vapor samples and usability with respect to characterization of groundwater conditions at the Site. More specifically, the goal of the assessment was to identify potential low or high bias to sample concentrations, interferences resulting from laboratory activities and/or analytical conditions that could impact accuracy. The field duplicate sample collected from WCMW-2 was used to evaluate analytical precision.

The groundwater samples were analyzed prior to the expiration of the holding time limit of 14 days. Sample collection took place on May 19, 2016 and sample analyses were completed on May 28, 2016.

A trip blank was provided by the laboratory to assess the potential for cross contamination between samples during shipping and handling. There were no target VOCs detected in the trip blank indicating that contamination between samples did not likely occur during the shipping and handling process. Method blank results were reviewed to identify detections of analytes related to laboratory processing and handling. Compounds that were detected in blanks that were also detected in samples could potentially be representative of false positive results related to laboratory activities rather than groundwater quality. Since there were no analytes detected in the associated method blank, introductions of these compounds at the laboratory do not appear to be likely.

Laboratory control samples (LCS) were analyzed to evaluate analytical accuracy and, recoveries of all VOCs were within established control limits. Based on the LCS results, potential high or low bias is not indicated for any of the target compounds included in the analysis.

A field duplicate sample, WCMW-2 DUP, was collected from WCMW-2 to measure analytical precision and consistency. The results were compared by taking the difference of the two concentrations and dividing by the average to obtain a relative percent difference (RPD). An RPD of 30% or less is used by USEPA Region I as the criterion by which to evaluate analytical precision for aqueous samples. RPDs between sample and duplicate samples that are below 30% compare well and demonstrate acceptable precision. With the exception of TCE, VOCs were not detected in either the sample or associated duplicate, therefore the RPD between these results is 0%. TCE was detected in the sample WCMW-2 at 26 µg/L and at 39 µg/L. The calculated RPD between the results is 40%. Since the RPD exceeds the EPA limit of 30%, the field duplicate results show a non-compliant level of analytical precision. The TCE results for both WCMW-2 and WCMW-2 DUP should be considered estimated based on this finding.

Although the RPD between field duplicate results exceeded the EPA criterion of 30%, all other quality control parameters included in this evaluation were compliant with established control limits. The trip blank and method blanks did not have any detections of target VOCs indicating that outside interferences that could potentially affect sample concentrations were not likely. Laboratory control samples were also within the associated method specified limits, indicating an acceptable level of analytical accuracy. The data for the groundwater samples collected at the Piscataquis Woolen Mill are of satisfactory quality and acceptable for use in assessing groundwater conditions at the Site.

4. DATA EVALUATION

This data evaluation covers results from the subsurface investigation, which included the completion of three soil boring explorations and analysis of groundwater samples collected from one monitoring well installed in one of the borings. The goal of the investigation was to address the two data gaps identified by MEDEP in its NAAL, as discussed in Section 3.1. The following subsections describe how the data from the investigation addresses these gaps.

4.1 DATA GAP 1 – VOC IMPACTED GROUNDWATER DISCHARGING TO PISCATAQUIS RIVER

As described in Section 3.4, TCE was detected in groundwater sample WCMW-2 and the associated duplicate sample (WCMW-2 DUP) at concentrations of 26 µg/L and 39 µg/L, respectively. Woodard & Curran then considered these results consistent with the methods proposed in the VRAP Investigation Work Plan.

Since the groundwater represented by WCMW-2 is expected to discharge to the Piscataquis River, TCE concentrations in the river were estimated and then compared to surface water benchmarks and criteria protective of both aquatic life and human health, respectively. Surface water concentrations were estimated by use of an attenuation factor that represents both the dilution resulting from the large differential between the relatively small volume of groundwater discharge and the large volume of river flow, as well as the attenuating effects of biodegradation as the groundwater passes through the biologically active zone of the sediment. These factors can reduce the concentration of chlorinated organics by a factor of many hundreds (Conant, 2000). This differential cannot be quantified with existing site data, so for evaluation purposes a conservative attenuation factor of 10 was used to estimate the extent to which groundwater constituents would be reduced by dilution and degradation when entering the water column in the river. Because of the volume of river water moving past the site, this factor is likely to significantly over-estimate actual surface water concentrations.

Table 2 shows a comparison of estimated surface water concentrations of TCE to both ecological benchmarks and promulgated human health-based water quality criteria.

Table 2: Estimated Surface Water Concentrations Compared to Water Quality Criteria and Benchmarks

Well	Detected TCE Conc. in Groundwater	Estimated TCE Conc. in Surface Water[1]	Ecological Benchmark[2]	Maine Water Quality Criteria[3]		
				Aquatic Life Criteria	Human Health-Water and Organism	Human Health-Water Only
WCMW-2	26	2.6	47	none	2.37	16.2
WC-DUP	39	3.9	47	none	2.37	16.2

All concentrations in ug/l

1. Attenuation factor of 10 applied to groundwater concentrations
2. Suter, G.W. and C.L. Tsao, 1996. Toxicological Benchmarks for Screening Potential Contaminants of Concern for Effects on Aquatic Biota: 1996 Revision. Oak Ridge National Laboratory, Tennessee.
3. Maine Department of Environmental Protection, Chapter 584, Surface Water Quality Criteria for Toxic Pollutants. July 29, 2012.

These comparisons to aquatic life and human health criteria are discussed in more detail below:

Aquatic Life: Since no promulgated aquatic life water quality criteria exist for TCE, estimated surface water concentrations were evaluated by comparing site data to media-specific ecological benchmarks. Ecological benchmarks are generic and conservative values derived from large data sets from other sites, and were developed to serve as no-effect screening values that identify constituents with negligible potential for risk. For this evaluation, TCE values were compared to benchmarks from Suter and Tsao, 1996; these were developed by Oak Ridge National Laboratory and are widely used for the evaluation of ecological effects to aquatic life.

As shown in **Table 2**, the benchmark for TCE from this source is 47 ug/l. Both maximum concentrations of TCE in groundwater (39 ug/l) and estimated in surface water (3.9 ug/l) are well below this value. This indicates that effects to aquatic life from the discharge of TCE in site groundwater are expected to be negligible.

Human Health: Promulgated water quality criteria exist for two exposure scenarios: exposure to water only, and exposure to both water and organisms, which reflects the consumption of fish. As indicated in **Table 2**, estimated concentrations of TCE in river water (3.9 ug/l or less) are well below the water-only criteria of 16.2 ug/l, indicating that risks from this route is negligible. Estimated concentrations of TCE in both the primary and duplicate sample, 2.6 and 3.9 ug/l respectively, both slightly exceed the water-and-organism criteria of 2.37 ug/l. However, these exceedances are well within the margins of error and conservatism introduced by the use of the low attenuation factor of 10, so likely over-represent actual conditions in the field. Because of this, these exceedances are not expected to reflect a potential risk.

4.2 DATA GAP 2 – POTENTIAL FREE PRODUCT NEAR FORMER FUEL OIL UST

In 1997, fuel oil leaked into the Piscataquis River from two nearby 10,000 gallon USTs, which were located outside of Building 2. The USTs were removed and the fuel-impacted soil was removed shortly after this discovery was made. To further evaluate potential impacts from this historical spill, a boring was completed inside Building 2, immediately adjacent to the former site where the USTs were located. As indicated in Section 3.2, advancement of boring WCB-4 continued to refusal which occurred at a depth of 16 feet bgs. The boring terminated with a 1.1 foot thick piece of concrete.

Soil from split spoons taken at every 2 foot interval was inspected for stains, odors and other evidence of residual fuel oil originating from the leaks. A PID was also used to screen for fuel-related vapors in all soils that were collected. There was no evidence of residual fuel in any of the samples collected from this boring. None of the soils had a visible sheen or stains that would be indicative of remaining fuel. None of the PID readings were elevated and ranged from 0.2 ppm to 1.6 ppm. Based on observations of the soil samples and screening results using the PID, there was no evidence of separate phase petroleum product that may be associated with the former USTs. Therefore, the risk that such separate phase petroleum product may migrate and impact the Piscataquis River is low.

4.3 DEVIATIONS FROM VRAP INVESTIGATION WORK PLAN

The methods used for completion of the soil borings and sample collection and analysis of the groundwater samples at the Site generally followed the specifications contained in the MEDEP approved VRAP Investigation Work Plan. Due difficult subsurface conditions and time limitations, installation of monitoring wells was not possible at all of the proposed locations. However, no obviously elevated PID concentrations or other indicators of significant VOC impact were identified in soil samples collected from the borings that could not be completed as wells.

Consistent with these conditions, and the results of a conference call between MEDEP and Woodard & Curran on May 18, 2016, MEDEP agreed that the installation of all of the initially proposed borings was not necessary in order for the VRAP process to move ahead. As such, MEDEP provided approval for Woodard & Curran to proceed with the review of the available groundwater analytical data from WCMW-2 and make conclusions regarding potential risk to surface water based on these results.

Following the review of this data, Woodard & Curran attended a conference call with Tracy Kelly of the MEDEP on August 29, 2016, to discuss the results of the groundwater sample. Consistent with an email from MEDEP to Woodard & Curran dated August 31, 2016, MEDEP agreed that, though the groundwater results were slightly above the water-and-organism surface water criteria using an attenuation factor of 10, the human health risk for exposure to contaminated groundwater that may migrate to surface water is limited. Therefore, no additional investigation was necessary.

5. GROUNDWATER WELL CLOSURE

In accordance with the Investigation Work Plan, True Textiles personnel oversaw the closure of a fieldstone-lined overburden dug well that was sealed below a masonry slab and manhole cover located in an asphalt-paved parking area at the Site. This well was 18.5 feet deep and the associated pump station sump was 6 feet deep. Approximately 16 cubic yards of imported fill was used to fill both features to a level consistent with adjacent grades. The cast iron covers over both features were removed and the area of the well (within the parking lot) was paved. The area of the sump, which is on a lawn area, was loamed and seeded. A photograph documenting the completed activities are presented below:

Photograph 1: Conditions following the backfilling and closure of the fieldstone-lined overburden dug well on September 9, 2016.

6. REVISED CONCEPTUAL SITE MODEL

Based on the findings of this investigation, Woodard & Curran has revised the initial CSM described in Section 2.4 to reflect currently known potential sources, release mechanisms, COCs, impacted media, and receptors.

A tabulated summary of the Revised Conceptual Site Model including potential sources, release mechanisms, COCs, potentially impacted media, and potential receptors is presented in **Table 3** below.

Table 3: Revised Conceptual Site Model Summary

Source	Potential Release Mechanism(s)	COC(s)	Potentially Impacted Media	Potential Receptors
REC-1: Historical and Current Textile Manufacturing/Dye Processing	Spills and leaks	EPH, VOC, RCRA 8 Metals	Surficial Soil, Subsurface Soil, Groundwater, and Soil Vapor. No significant impact to surface water is anticipated.	No significant exposure to construction workers, commercial workers, or visitors is anticipated under current and foreseeable future usage. No significant offsite migration identified in area of investigation so no impact to residential receptors or biota is anticipated.
REC-2: Observed Floor Drains	Leaks from older infrastructure; historical discharges.	EPH, VOC, RCRA 8 Metals		
REC-3: Release from No. 5 Fuel Oil USTs	Leaks from former USTs	EPH	No significant remaining impact identified in area of investigation.	None anticipated under current and foreseeable future usage.
REC-4: Hydraulic Elevators	Spills and leaks to soil	PCBs, EPH	Subsurface Soil	None anticipated under current and foreseeable future usage.
PVIC-1: Detected Concentrations in Subslab Soil Vapor	Discharges associated with historical operations	APH, VOC	Groundwater, Soil Vapor	None anticipated under current and foreseeable future usage. Existing conditions managed by a sub-slab depressurization system (SSDS)[1].

1. This system was reportedly designed and installed by SME. Woodard & Curran observed the presence of this system during the Site investigation but did not assess the SSDS further.

6.1 OUTCOME OF THE REVISED CONCEPTUAL SITE MODEL

Consistent with the details presented in **Table 3**, there are currently no known or reasonably anticipated pathways to receptors at or in the area of the Site.

7. CONCLUSIONS

The results from the May 2016, subsurface investigation addressed the two remaining known data gaps.:

1. TCE concentrations in groundwater modeled to surface water using an attenuation factor of 10 were below ecological benchmarks, indicating that the potential for effects on aquatic life from the discharge of Site groundwater is low. TCE concentrations in Site groundwater were also below human health water-only criteria and only slightly exceeded water-and-organism criteria, even under the conservative attenuation factor of 10. However, this exceedance was well within the margin of error of the attenuation factor, which likely over-represents actual conditions in the field. As such, concentrations of TCE in groundwater at the Site are not expected to represent a significant risk to human health or ecological receptors via the surface water exposure pathway.

2. No separate phase product was encountered during exploration activities conducted in the area of the two former 10,000-gallon No. 5 fuel oil USTs.

In addition, the groundwater well located at the Site was closed through backfilling with imported materials, and the surface above this feature was paved. As such, this potential exposure pathway to Site groundwater via ingestion was eliminated.

Based on these results, no further investigation at the Site is warranted and the conditions for issuance of the NFAAL by MEDEP have been met.

8. REFERENCES

Conant, B. Jr. 2000. Groundwater plume behavior near the groundwater/surface water interface of a river. Proc. of the Groundwater/Surface Water Interactions Workshop, USEPA EPA/542/R-00/007.

Hart & Hickman, PC. Phase I Environmental Site Assessment, True Textiles Mill, 9 Oak Street, Guilford, Maine. August 11, 2015.

MEDEP VRAP. Letter from MEDEP to Duval Acquisitions (US), Inc. Re: Piscataquis Woolen Company, Guilford, Maine, No Action Assurance Letter – VRAP. February 1, 2016.

Sevee & Maher Engineers, Inc. Sampling and Analysis Summary, Subslab Vapor Assessment, True Textile Mills – Newport and Guilford, Maine. September 29, 2015.

Sevee & Maher Engineers, Inc. Sampling and Analysis Summary, Indoor Air Assessment, True Textile Mills - Guilford, Maine. October 9, 2015.

Suter, G.W. and C.L. Tsao, 1996. Toxicological Benchmarks for Screening Potential Contaminants of Concern for Effects on Aquatic Biota: 1996 Revision. Oak Ridge National Laboratory, Tennessee.

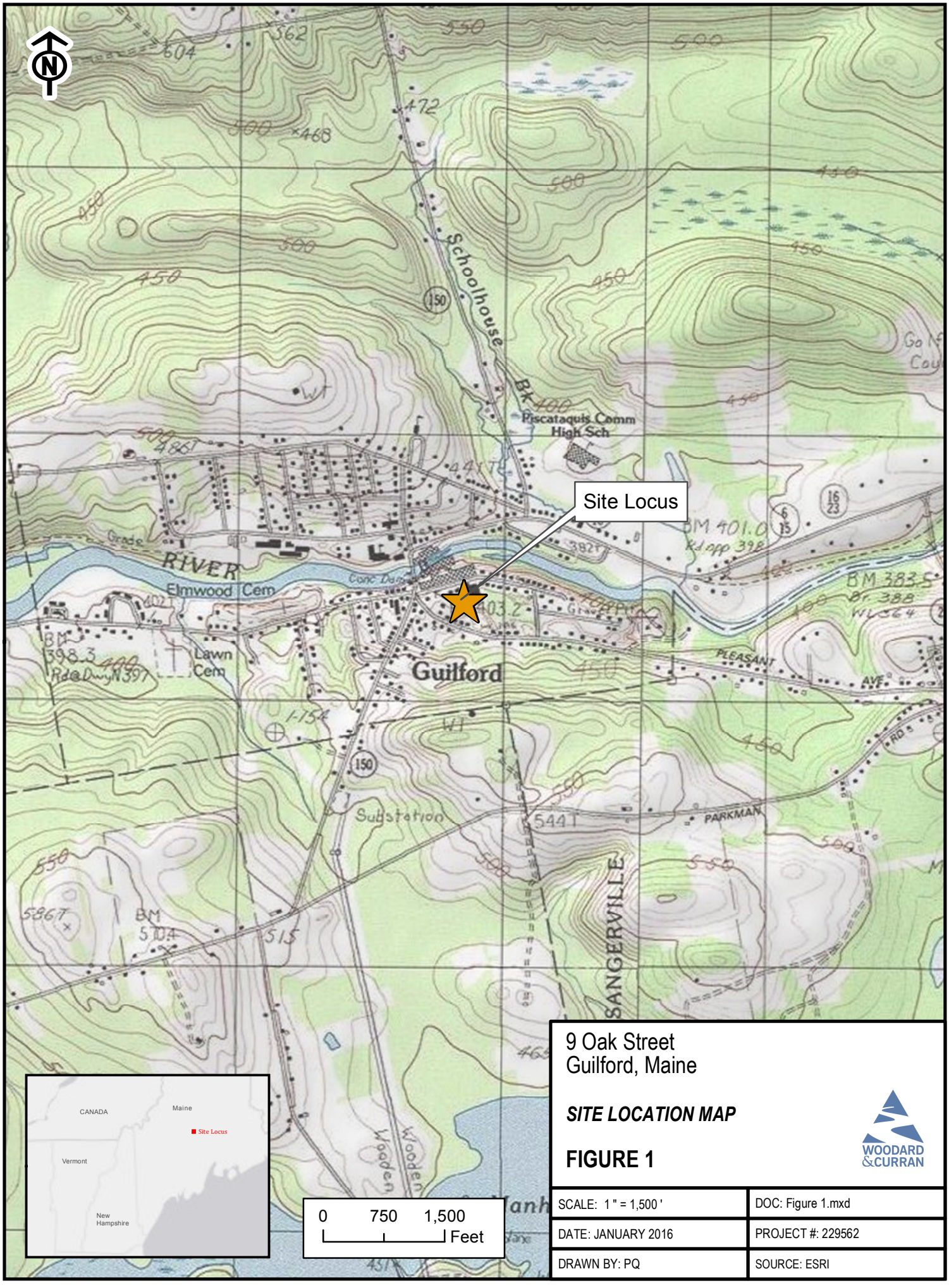
Woodard & Curran. Letter from Woodard & Curran to MEDEP Re: VRAP Application and Supporting Materials, 32 Mill Street and 44 Spring Street, Newport, Maine. January 6, 2016.

Woodard & Curran. VRAP Investigation Work Plan, 32 Mill Street and 44 Spring Street, Newport, Maine. April 29, 2016.

FIGURES

Figure 1: Site Location Map

Figure 2: Site Plan



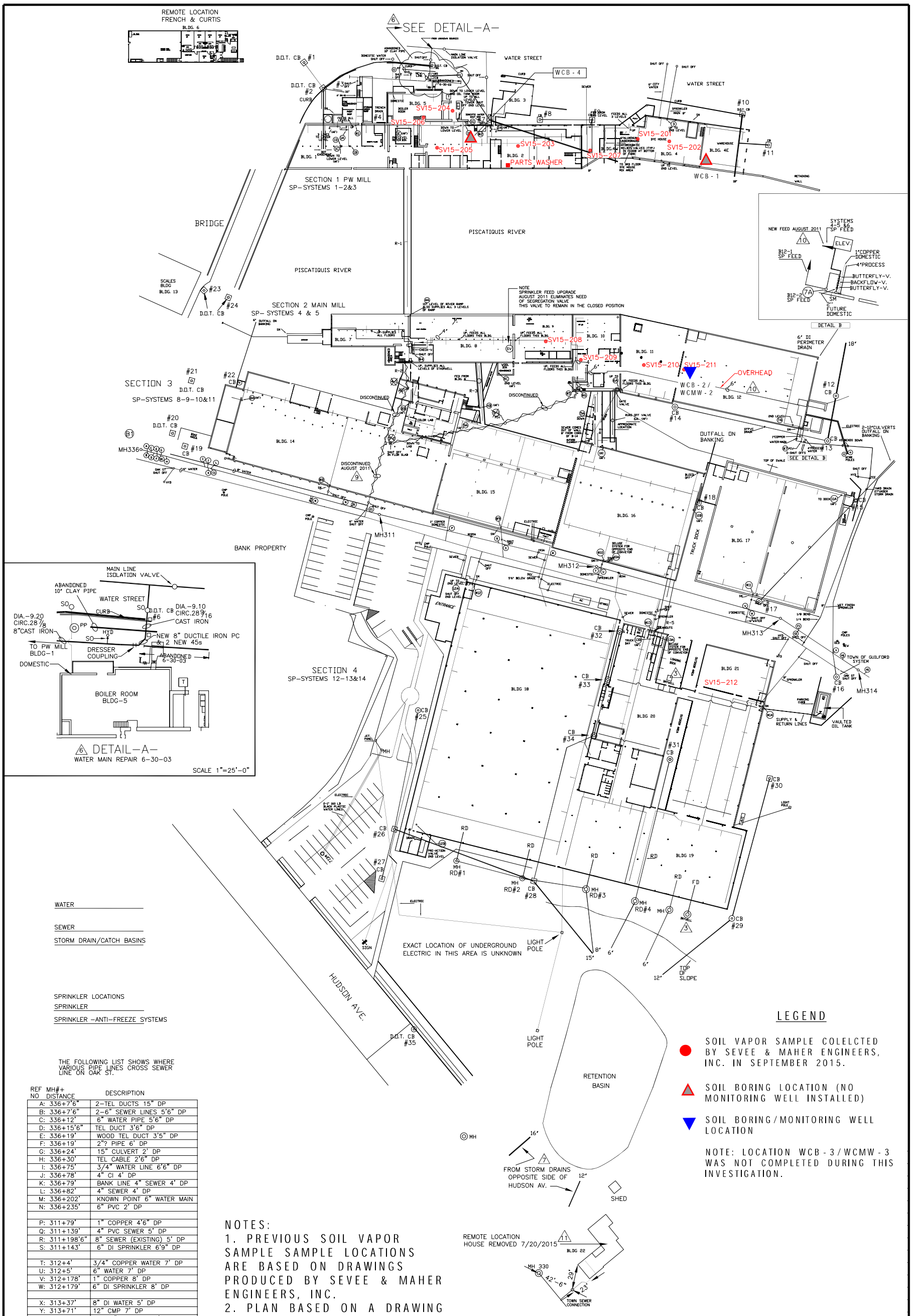
9 Oak Street
Guilford, Maine

SITE LOCATION MAP

FIGURE 1

WOODARD &CURRAN

SCALE: 1 " = 1,500 '	DOC: Figure 1.mxd
DATE: JANUARY 2016	PROJECT #: 229562
DRAWN BY: PQ	SOURCE: ESRI



WATER

SEWER

STORM DRAIN/CATCH BASINS

SPRINKLER LOCATIONS

SPRINKLER

SPRINKLER -ANTI-FREEZE SYSTEMS

THE FOLLOWING LIST SHOWS WHERE VARIOUS PIPE LINES CROSS SEWER LINE ON OAK ST.

REF NO	MH#+ DISTANCE	DESCRIPTION
A:	336+7'6"	2-TEL DUCTS 15" DP
B:	336+7'6"	2-6" SEWER LINES 5'6" DP
C:	336+12'	6" WATER PIPE 5'6" DP
D:	336+15'6"	TEL DUCT 3'6" DP
E:	336+19'	WOOD TEL DUCT 3'5" DP
F:	336+19'	2"? PIPE 6' DP
G:	336+24'	15" CULVERT 2' DP
H:	336+30'	TEL CABLE 2'6" DP
I:	336+75'	3/4" WATER LINE 6'6" DP
J:	336+78'	4" CI 4' DP
K:	336+79'	BANK LINE 4" SEWER 4' DP
L:	336+82'	4" SEWER 4' DP
M:	336+202'	KNOWN POINT 6" WATER MAIN
N:	336+235'	6" PVC 2' DP
P:	311+79'	1" COPPER 4'6" DP
Q:	311+139'	4" PVC SEWER 5' DP
R:	311+198'6"	8" SEWER (EXISTING) 5' DP
S:	311+143'	6" DI SPRINKLER 6'9" DP
T:	312+4'	3/4" COPPER WATER 7' DP
U:	312+5'	6" WATER 7' DP
V:	312+178'	1" COPPER 8' DP
W:	312+179'	6" DI SPRINKLER 8' DP
X:	313+37'	8" DI WATER 5' DP
Y:	313+71'	12" CMP 7' DP
Z:	313 TO 314	NEW 8" PVC LINE 6' DP
A1:	314+8'	3/4 COPPER 6'2" DP
B1:	336+22'	12" CMP 4' DP
C1:	336+82'	6" CI 5' DP
D1:	336+245'	? WATER LINE 6' DP
E1:	336+265'	? WATER LINE 6' DP
F1:	313+25'	4" VCP 3'6" DP
G1:	313+25'	4" CI 4' DP
H1:	313+85'	12"CMP 3' DP

NOTES:
1. PREVIOUS SOIL VAPOR SAMPLE SAMPLE LOCATIONS ARE BASED ON DRAWINGS PRODUCED BY SEVEE & MAHER ENGINEERS, INC.
2. PLAN BASED ON A DRAWING TITLED UNDERGROUND UTILITIES BY TRUE TEXTILES, INC. DATED 5/26/98.

NOT TO SCALE

NOTE:
THIS INFORMATION WAS GATHERED FROM SEVERAL SOURCES AND IS AS ACCURATE AS WE CAN DETERMINE. LOCATIONS MAY VARY FROM LOCATIONS SHOWN CAUTION SHOULD BE USED WHEN DOING ANY EXCAVATION

LEGEND

- SOIL VAPOR SAMPLE COLELCTED BY SEVEE & MAHER ENGINEERS, INC. IN SEPTEMBER 2015.
- SOIL BORING LOCATION (NO MONITORING WELL INSTALLED)
- SOIL BORING/MONITORING WELL LOCATION

NOTE: LOCATION WCB-3/WCMW-3 WAS NOT COMPLETED DURING THIS INVESTIGATION.

FIGURE 2: SITE PLAN

9 OAK STREET, GUILFORD, MAINE

APPENDIX A: SME SUB-SLAB VAPOR RESULTS AND SGC-IAC RISK CALCULATOR RESULTS

SUMMARY OF SUBSLAB VAPOR ANALYSES
SEPTEMBER 2015
GUILFORD, MAINE

PARAMETER	Background (GILBKG)	SV15-201	SV15-202	SV15-203	SV15-204	SV15-205	SV15-205R	SV15-206	SV15-207	SV15-208	SV15-209	SV15-210	SV15-211	SV15-212	SV15-Dep (212)	Maximum Subslab Detected Result	Calculated Indoor Air Concentration (attenuation factor 0.03)	IAT(2sd) Commercial (ug/m3) 2012
MADEP APH:																		
BENZENE	0.6 U	12 U	41 U	0.6 U	0.76	0.6 U	0.6 U	0.6 U	2 U							0.76	0.0228	16
C5-C8 ALIPHATICS, ADJUSTED	71	240 U	830 U	74	220	160	140	260	99							260	7.8	2600
C9-C10 AROMATICS TOTAL	10	200 U	690 U	14	80	530	540	17	33 U							540	16.2	220
C9-C12 ALIPHATICS, ADJUSTED	380	370	970 U	470	1000	2600	2600	640	540							2600	78	880
ETHYLBENZENE	0.9 U	18 U	62 U	1.2	3.6	1.3	1.2	1.1	3 U							3.6	0.108	49
NAPHTHALENE	1.1 U	22 U	76 U	1.1 U	1.1 U	1.5	1.5	2.5	3.6 U							2.5	0.075	3.6
O-XYLENE	0.9 U	18 U	62 U	1.7	5.9	1.5	1.6	1.7	3 U							5.9	0.177	440
P/M-XYLENE	1.8	18 U	62 U	4.4	14	4.4	4.4	4	4.2							14	0.42	440
TOLUENE	1.6	48	66	7.2	200	9.8	10	57	29							200	6	22000
TO-15:																		
1,1,1-TRICHLOROETHANE	1.09 U	22 U	75.8 U	1.09 U	1.09 U				3.64 U	22.3	4.9	6.66	10.9 U	5.46 U	5.46 U	22.3	0.669	22000
1,2,4-TRIMETHYLBENZENE	1.67	19.8 U	68.3 U	1.76	10.1				3.28 U	4.01	4.73	4.92 U	9.83 U	15.4	8.6	15.4	0.462	--
1,3,5-TRIMETHYLBENZENE	0.983 U	19.8 U	68.3 U	0.983 U	4.84				3.28 U	1.08	1.78	4.92 U	9.83 U	4.92 U	4.92 U	4.84	0.1452	--
1,3-DICHLOROBENZENE	1.39	24.2 U	83.6 U	1.63	1.27				4.01 U	1.43	1.7	6.01 U	12 U	6.01 U	6.01 U	1.70	0.051	--
1,4-DIOXANE	0.721 U	14.5 U	50.1 U	0.721 U	0.721 U				2.4 U	0.721 U	2.89	3.6 U	7.21 U	3.6 U	3.6 U	2.9	0.0867	13000
2-BUTANONE	1.47 U	29.8 U	102 U	1.47 U	9.29				4.93 U	8.52	10.6	7.37 U	14.7 U	30.7	13.2	30.7	0.921	--
2-HEXANONE	0.82 U	16.5 U	57 U	0.82 U	1.43				2.73 U	0.82 U	0.82 U	4.1 U	8.2 U	5.2	4.1 U	5.2	0.156	--
4-ETHYLTOLUENE	0.983 U	19.8 U	68.3 U	0.983 U	2.28				3.28 U	0.983 U	1.6	4.92 U	9.83 U	4.92 U	4.92 U	2.28	0.0684	--
4-METHYL-2-PENTANONE	2.05 U	41.4 U	142 U	2.05 U	2.05				6.84 U	2.05 U	2.05 U	10.2 U	20.5 U	10.2 U	10.2 U	2.1	0.0615	13000
ACETONE	6.25	72.7	165 U	3.21	60.3				43	73.9	83.9	54.2	43.5	226	124	226	6.78	140000
BENZENE	0.639 U	12.9 U	44.4 U	0.639 U	0.869				2.13 U	0.639 U	1.43	3.19 U	6.39 U	5.75	3.19 U	5.75	0.1725	16
CARBON DISULFIDE	0.623 U	12.5 U	43.3 U	0.623 U	0.729				3.61	0.623 U	3.15	3.11 U	6.23 U	3.11 U	3.11 U	3.61	0.1083	3100
CHLOROBENZENE	0.921 U	18.6 U	64 U	0.921 U	0.921 U				3.07 U	0.921 U	1.76	4.61 U	9.21 U	4.61 U	4.61 U	1.76	0.0528	4400
CHLOROFORM	0.977 U	19.7 U	67.9 U	0.977 U	0.977 U				3.26 U	0.977 U	0.977 U	4.88 U	10.7	4.88 U	4.88 U	10.70	0.321	5.3
CHLOROMETHANE	0.964	8.32 U	28.7 U	0.413 U	1.77				1.38 U	0.413 U	0.413 U	2.07 U	4.13 U	2.07 U	2.07 U	1.77	0.0531	390
CYCLOHEXANE	0.688 U	13.9 U	47.8 U	0.688 U	1.62				2.3 U	0.723	0.819	8.36	6.88 U	3.44 U	3.44 U	8.36	0.2508	--
DICHLORODIFLUOROMETHANE	1.41	5140	19500	0.989 U	3.83				964	5.54	49.3	51.9	294	134	179	19500	585	880
ETHYL ACETATE	1.8 U	36.4 U	125 U	1.8 U	1.92				6.02 U	1.8 U	1.8 U	9.01 U	18 U	9.01 U	9.01 U	1.92	0.0576	--
ETHYL ALCOHOL	254	226	328 U	245	134				54.6	41.5	43.9	54.3	47.1 U	50.5	55	254	7.62	--
ETHYLBENZENE	0.869 U	17.5 U	60.4 U	0.869 U	2.95				2.9 U	2.51	3.08	4.34 U	8.69 U	9.82	4.78	9.82	0.2946	49
HEPTANE	0.82 U	16.5 U	57 U	0.82 U	4.18				2.73 U	2.3	2.32	4.1 U	8.2 U	7.79	4.1 U	7.79	0.2337	--
ISOPROPYL ALCOHOL	1.23 U	24.8 U	85.3 U	2.65	5.36				32.7	4.77	6.37	10.5	12.3 U	31.5	24	32.7	0.981	--
N-HEXANE	0.705 U	14.2 U	49 U	0.705 U	3.67				2.35 U	1.89	2	3.52 U	7.05 U	5.15	3.52 U	5.15	0.1545	--
O-XYLENE	0.869 U	17.5 U	60.4 U	1.16	5.13				2.9 U	3.99	4.73	4.34 U	8.69 U	15.2	6.78	15.20	0.456	440
P/M-XYLENE	1.76	35.1 U	121 U	3.18	12.4				5.78 U	9.77	11.1	8.69 U	17.4 U	37.6	17.9	37.6	1.128	440
PROPYLENE	0.861 U	17.4 U	59.7 U	0.861 U	6.09				2.87 U	0.861 U	0.861 U	4.3 U	8.61 U	4.3 U	4.3 U	6.09	0.1827	--
TETRACHLOROETHENE	1.36 U	27.3 U	202	297	6.46				20.2	27.9	59.8	56.8	327	6.78 U	6.78 U	327	9.81	180
TOLUENE	1.56	47.1	52.4 U	5.13	170				20.5	193	123	34.6	66.3	644	276	644	19.32	22000
TRICHLOROETHENE	1.07 U	21.7 U	74.7 U	4.9	1.07 U				3.58 U	135	230	1060	2330	989	1130	2330	**69.9**	8.8
TRICHLOROFLUOROMETHANE	1.12 U	22.6 U	78.1 U	1.12 U	1.79				3.75 U	1.94	3.11	10.8	63.5	11	11.1	63.5	1.905	3100

Notes:

1.Concentrations in µg/m3

2.U: Parameter not detected above the Reporting Limits, which is shown.

3.Parameters not listed had no concentrations detected above reporting limits in any sample analyzed.

4.Red shading indicates exceedance of Commercial Indoor Air Target.

OSWER VAPOR INTRUSION ASSESSMENT

Sub-slab or Exterior Soil Gas Concentration to Indoor Air Concentration (SGC-IAC) Calculator Version 3.4, June 2015 RSLs

Parameter	Symbol	Value	Instructions
Exposure Scenario	Scenario	Commercial	Select residential or commercial scenario from pull down list
Target Risk for Carcinogens	TCR_SG	1.00E-06	Enter target risk for carcinogens (for comparison to the calculated VI carcinogenic risk in column F)
Target Hazard Quotient for Non-Carcinogens	THQ_SG	1	Enter target hazard quotient for non-carcinogens (for comparison to the calculated VI hazard in column G)

CAS	Chemical Name	Site Sub-slab or Exterior Soil Gas Concentration Csg (ug/m^3)	Calculated Indoor Air Concentration Cia (ug/m^3)	VI Carcinogenic Risk CR	VI Hazard HQ	Inhalation Unit Risk IUR ($ug/m^3)^{-1}$	IUR Source*	Reference Concentration RfC (mg/m^3)	RFC Source*	Mutagenic Indicator i
75-07-0	Acetaldehyde		--	--	--	2.20E-06	I	9.00E-03	I	
67-64-1	Acetone	2.3E+02	6.78E+00	No IUR	5.0E-05			3.10E+01	A	
75-05-8	Acetonitrile		--	--	--			6.00E-02	I	
107-02-8	Acrolein		--	--	--			2.00E-05	I	
79-10-7	Acrylic Acid		--	--	--			1.00E-03	I	
107-13-1	Acrylonitrile		--	--	--	6.80E-05	I	2.00E-03	I	
309-00-2	Aldrin		--	--	--	4.90E-03	I			
107-18-6	Allyl Alcohol		--	--	--			1.00E-04	X	
107-05-1	Allyl Chloride		--	--	--	6.00E-06	CA	1.00E-03	I	
7664-41-7	Ammonia		--	--	--			1.00E-01	I	
75-85-4	Amyl Alcohol, tert-		--	--	--			3.00E-03	X	
12674-11-2	Aroclor 1016		--	--	--	2.00E-05	S			
11104-28-2	Aroclor 1221		--	--	--	5.70E-04	S			
11141-16-5	Aroclor 1232		--	--	--	5.70E-04	S			
53469-21-9	Aroclor 1242		--	--	--	5.70E-04	S			
12672-29-6	Aroclor 1248		--	--	--	5.70E-04	S			
11097-69-1	Aroclor 1254		--	--	--	5.70E-04	S			
11096-82-5	Aroclor 1260		--	--	--	5.70E-04	S			
103-33-3	Azobenzene		--	--	--	3.10E-05	I			
56-55-3	Benz[a]anthracene		--	--	--	1.10E-04	CA			Mut
71-43-2	Benzene	5.8E+00	1.73E-01	1.1E-07	1.3E-03	7.80E-06	I	3.00E-02	I	
100-44-7	Benzyl Chloride		--	--	--	4.90E-05	CA	1.00E-03	P	
92-52-4	Biphenyl, 1,1'-		--	--	--			4.00E-04	X	
111-44-4	Bis(2-chloroethyl)ether		--	--	--	3.30E-04	I			
542-88-1	Bis(chloromethyl)ether		--	--	--	6.20E-02	I			
10294-34-5	Boron Trichloride		--	--	--			2.00E-02	P	
7637-07-2	Boron Trifluoride		--	--	--			1.30E-02	CA	
107-04-0	Bromo-2-chloroethane, 1-		--	--	--	6.00E-04	X			
108-86-1	Bromobenzene		--	--	--			6.00E-02	I	
74-97-5	Bromochloromethane		--	--	--			4.00E-02	X	
75-27-4	Bromodichloromethane		--	--	--	3.70E-05	CA			
75-25-2	Bromoform		--	--	--	1.10E-06	I			
74-83-9	Bromomethane		--	--	--			5.00E-03	I	
106-99-0	Butadiene, 1,3-		--	--	--	3.00E-05	I	2.00E-03	I	
78-92-2	Butyl alcohol, sec-		--	--	--			3.00E+01	P	
75-15-0	Carbon Disulfide	3.6E+00	1.08E-01	No IUR	3.5E-05			7.00E-01	I	
56-23-5	Carbon Tetrachloride		--	--	--	6.00E-06	I	1.00E-01	I	
463-58-1	Carbonyl Sulfide		--	--	--			1.00E-01	P	
12789-03-6	Chlordane		--	--	--	1.00E-04	I	7.00E-04	I	
7782-50-5	Chlorine		--	--	--			1.50E-04	A	
10049-04-4	Chlorine Dioxide		--	--	--			2.00E-04	I	
75-68-3	Chloro-1,1-difluoroethane, 1-		--	--	--			5.00E+01	I	
126-99-8	Chloro-1,3-butadiene, 2-		--	--	--	3.00E-04	I	2.00E-02	I	
108-90-7	Chlorobenzene	1.8E+00	5.28E-02	No IUR	2.4E-04			5.00E-02	P	
98-56-6	Chlorobenzotrifluoride, 4-		--	--	--			3.00E-01	P	
75-45-6	Chlorodifluoromethane		--	--	--			5.00E+01	I	
67-66-3	Chloroform	1.1E+01	3.21E-01	6.0E-07	7.5E-04	2.30E-05	I	9.80E-02	A	
74-87-3	Chloromethane	1.8E+00	5.31E-02	No IUR	1.3E-04			9.00E-02	I	
107-30-2	Chloromethyl Methyl Ether		--	--	--	6.90E-04	CA			
76-06-2	Chloropicrin		--	--	--			4.00E-04	CA	
8007-45-2	Coke Oven Emissions		--	--	--	6.20E-04	I			Mut
98-82-8	Cumene		--	--	--			4.00E-01	I	
57-12-5	Cyanide (CN-)		--	--	--			8.00E-04	S	
110-82-7	Cyclohexane	8.4E+00	2.51E-01	No IUR	9.5E-06			6.00E+00	I	
108-94-1	Cyclohexanone		--	--	--			7.00E-01	P	
110-83-8	Cyclohexene		--	--	--			1.00E+00	X	
72-55-9	DDE, p,p'-		--	--	--	9.70E-05	CA			

OSWER VAPOR INTRUSION ASSESSMENT

Sub-slab or Exterior Soil Gas Concentration to Indoor Air Concentration (SGC-IAC) Calculator Version 3.4, June 2015 RSLs

Parameter	Symbol	Value	Instructions
Exposure Scenario	Scenario	Commercial	Select residential or commercial scenario from pull down list
Target Risk for Carcinogens	TCR_SG	1.00E-06	Enter target risk for carcinogens (for comparison to the calculated VI carcinogenic risk in column F)
Target Hazard Quotient for Non-Carcinogens	THQ_SG	1	Enter target hazard quotient for non-carcinogens (for comparison to the calculated VI hazard in column G)

CAS	Chemical Name	Site Sub-slab or Exterior Soil Gas Concentration Csg (ug/m^3)	Calculated Indoor Air Concentration Cia (ug/m^3)	VI Carcinogenic Risk CR	VI Hazard HQ	Inhalation Unit Risk IUR ($(ug/m^3)^{-1}$)	IUR Source*	Reference Concentration RfC (mg/m^3)	RFC Source*	Mutagenic Indicator i
96-12-8	Dibromo-3-chloropropane, 1,2-		--	--	--	6.00E-03	P	2.00E-04	I	Mut
106-93-4	Dibromoethane, 1,2-		--	--	--	6.00E-04	I	9.00E-03	I	
74-95-3	Dibromomethane (Methylene Bromide)		--	--	--			4.00E-03	X	
764-41-0	Dichloro-2-butene, 1,4-		--	--	--	4.20E-03	P			
1476-11-5	Dichloro-2-butene, cis-1,4-		--	--	--	4.20E-03	P			
110-57-6	Dichloro-2-butene, trans-1,4-		--	--	--	4.20E-03	P			
95-50-1	Dichlorobenzene, 1,2-		--	--	--			2.00E-01	H	
106-46-7	Dichlorobenzene, 1,4-		--	--	--	1.10E-05	CA	8.00E-01	I	
75-71-8	Dichlorodifluoromethane	2.0E+04	5.85E+02	No IUR	**1.3E+00**			1.00E-01	X	
75-34-3	Dichloroethane, 1,1-		--	--	--	1.60E-06	CA			
107-06-2	Dichloroethane, 1,2-		--	--	--	2.60E-05	I	7.00E-03	P	
75-35-4	Dichloroethylene, 1,1-		--	--	--			2.00E-01	I	
78-87-5	Dichloropropane, 1,2-		--	--	--	1.00E-05	CA	4.00E-03	I	
542-75-6	Dichloropropene, 1,3-		--	--	--	4.00E-06	I	2.00E-02	I	
77-73-6	Dicyclopentadiene		--	--	--			3.00E-04	X	
75-37-6	Difluoroethane, 1,1-		--	--	--			4.00E+01	I	
94-58-6	Dihydrosafrole		--	--	--	1.30E-05	CA			
108-20-3	Diisopropyl Ether		--	--	--			7.00E-01	P	
68-12-2	Dimethylformamide		--	--	--			3.00E-02	I	
57-14-7	Dimethylhydrazine, 1,1-		--	--	--			2.00E-06	X	
540-73-8	Dimethylhydrazine, 1,2-		--	--	--	1.60E-01	CA			
513-37-1	Dimethylvinylchloride		--	--	--	1.30E-05	CA			
123-91-1	Dioxane, 1,4-	2.9E+00	8.67E-02	3.5E-08	6.6E-04	5.00E-06	I	3.00E-02	I	
106-89-8	Epichlorohydrin		--	--	--	1.20E-06	I	1.00E-03	I	
106-88-7	Epoxybutane, 1,2-		--	--	--			2.00E-02	I	
111-15-9	Ethoxyethanol Acetate, 2-		--	--	--			6.00E-02	P	
110-80-5	Ethoxyethanol, 2-		--	--	--			2.00E-01	I	
141-78-6	Ethyl Acetate	1.9E+00	5.76E-02	No IUR	1.9E-04			7.00E-02	P	
140-88-5	Ethyl Acrylate		--	--	--			8.00E-03	P	
75-00-3	Ethyl Chloride (Chloroethane)		--	--	--			1.00E+01	I	
97-63-2	Ethyl Methacrylate		--	--	--			3.00E-01	P	
100-41-4	Ethylbenzene	9.8E+00	2.95E-01	6.0E-08	6.7E-05	2.50E-06	CA	1.00E+00	I	
75-21-8	Ethylene Oxide		--	--	--	8.80E-05	CA	3.00E-02	CA	
151-56-4	Ethyleneimine		--	--	--	1.90E-02	CA			
50-00-0	Formaldehyde		--	--	--	1.30E-05	I	9.80E-03	A	
64-18-6	Formic Acid		--	--	--			3.00E-04	X	
98-01-1	Furfural		--	--	--			5.00E-02	H	
765-34-4	Glycidyl		--	--	--			1.00E-03	H	
76-44-8	Heptachlor		--	--	--	1.30E-03	I			
1024-57-3	Heptachlor Epoxide		--	--	--	2.60E-03	I			
39635-31-9	Heptachlorobiphenyl, 2,3,3',4,4',5,5'- (PCB 189)		--	--	--	1.10E-03	E	1.30E-03	E	
118-74-1	Hexachlorobenzene		--	--	--	4.60E-04	I			
38380-08-4	Hexachlorobiphenyl, 2,3,3',4,4',5- (PCB 156)		--	--	--	1.10E-03	E	1.30E-03	E	
69782-90-7	Hexachlorobiphenyl, 2,3,3',4,4',5'- (PCB 157)		--	--	--	1.10E-03	E	1.30E-03	E	
52663-72-6	Hexachlorobiphenyl, 2,3',4,4',5,5'- (PCB 167)		--	--	--	1.10E-03	E	1.30E-03	E	
32774-16-6	Hexachlorobiphenyl, 3,3',4,4',5,5'- (PCB 169)		--	--	--	1.10E+00	E	1.30E-06	E	
87-68-3	Hexachlorobutadiene		--	--	--	2.20E-05	I			
77-47-4	Hexachlorocyclopentadiene		--	--	--			2.00E-04	I	
67-72-1	Hexachloroethane		--	--	--	1.10E-05	CA	3.00E-02	I	
822-06-0	Hexamethylene Diisocyanate, 1,6-		--	--	--			1.00E-05	I	
110-54-3	Hexane, N-	5.2E+00	1.55E-01	No IUR	5.0E-05			7.00E-01	I	
591-78-6	Hexanone, 2-	5.2E+00	1.56E-01	No IUR	1.2E-03			3.00E-02	I	
302-01-2	Hydrazine		--	--	--	4.90E-03	I	3.00E-05	P	
7647-01-0	Hydrogen Chloride		--	--	--			2.00E-02	I	
74-90-8	Hydrogen Cyanide		--	--	--			8.00E-04	I	
7664-39-3	Hydrogen Fluoride		--	--	--			1.40E-02	CA	
7783-06-4	Hydrogen Sulfide		--	--	--			2.00E-03	I	

OSWER VAPOR INTRUSION ASSESSMENT

Sub-slab or Exterior Soil Gas Concentration to Indoor Air Concentration (SGC-IAC) Calculator Version 3.4, June 2015 RSLs

Parameter	Symbol	Value	Instructions
Exposure Scenario	Scenario	Commercial	Select residential or commercial scenario from pull down list
Target Risk for Carcinogens	TCR_SG	1.00E-06	Enter target risk for carcinogens (for comparison to the calculated VI carcinogenic risk in column F)
Target Hazard Quotient for Non-Carcinogens	THQ_SG	1	Enter target hazard quotient for non-carcinogens (for comparison to the calculated VI hazard in column G)

CAS	Chemical Name	Site Sub-slab or Exterior Soil Gas Concentration Csg (ug/m^3)	Calculated Indoor Air Concentration Cia (ug/m^3)	VI Carcinogenic Risk CR	VI Hazard HQ	Inhalation Unit Risk IUR ($(ug/m^3)^{-1}$)	IUR Source*	Reference Concentration RfC (mg/m^3)	RFC Source*	Mutagenic Indicator i
67-63-0	Isopropanol	3.3E+01	9.81E-01	No IUR	1.1E-03			2.00E-01	P	
7439-97-6	Mercury (elemental)		--	--	--			3.00E-04	I	
126-98-7	Methacrylonitrile		--	--	--			3.00E-02	P	
67-56-1	Methanol		--	--	--			2.00E+01	I	
110-49-6	Methoxyethanol Acetate, 2-		--	--	--			1.00E-03	P	
109-86-4	Methoxyethanol, 2-		--	--	--			2.00E-02	I	
96-33-3	Methyl Acrylate		--	--	--			2.00E-02	P	
78-93-3	Methyl Ethyl Ketone (2-Butanone)		--	--	--			5.00E+00	I	
60-34-4	Methyl Hydrazine		--	--	--	1.00E-03	X	2.00E-05	X	
108-10-1	Methyl Isobutyl Ketone (4-methyl-2-pentanone)	2.1E+00	6.15E-02	No IUR	4.7E-06			3.00E+00	I	
624-83-9	Methyl Isocyanate		--	--	--			1.00E-03	CA	
80-62-6	Methyl Methacrylate		--	--	--			7.00E-01	I	
25013-15-4	Methyl Styrene (Mixed Isomers)		--	--	--			4.00E-02	H	
1634-04-4	Methyl tert-Butyl Ether (MTBE)		--	--	--	2.60E-07	CA	3.00E+00	I	
75-09-2	Methylene Chloride		--	--	--	1.00E-08	I	6.00E-01	I	Mut
2385-85-5	Mirex		--	--	--	5.10E-03	CA			
64742-95-6	Naphtha, High Flash Aromatic (HFAN)		--	--	--			1.00E-01	P	
91-20-3	Naphthalene	2.5E+00	7.50E-02	2.1E-07	5.7E-03	3.40E-05	CA	3.00E-03	I	
13463-39-3	Nickel Carbonyl		--	--	--	2.60E-04	CA	1.40E-05	CA	
98-95-3	Nitrobenzene		--	--	--	4.00E-05	I	9.00E-03	I	
75-52-5	Nitromethane		--	--	--	8.80E-06	P	5.00E-03	P	
79-46-9	Nitropropane, 2-		--	--	--	2.70E-03	H	2.00E-02	I	
62-75-9	Nitrosodimethylamine, N-		--	--	--	1.40E-02	I	4.00E-05	X	Mut
924-16-3	Nitroso-di-N-butylamine, N-		--	--	--	1.60E-03	I			
10595-95-6	Nitrosomethylethylamine, N-		--	--	--	6.30E-03	CA			
111-84-2	Nonane, n-		--	--	--			2.00E-02	P	
32598-14-4	Pentachlorobiphenyl, 2,3,3',4,4'- (PCB 105)		--	--	--	1.10E-03	E	1.30E-03	E	
74472-37-0	Pentachlorobiphenyl, 2,3,4,4',5- (PCB 114)		--	--	--	1.10E-03	E	1.30E-03	E	
31508-00-6	Pentachlorobiphenyl, 2,3',4,4',5- (PCB 118)		--	--	--	1.10E-03	E	1.30E-03	E	
65510-44-3	Pentachlorobiphenyl, 2',3,4,4',5- (PCB 123)		--	--	--	1.10E-03	E	1.30E-03	E	
57465-28-8	Pentachlorobiphenyl, 3,3',4,4',5- (PCB 126)		--	--	--	3.80E+00	E	4.00E-07	E	
109-66-0	Pentane, n-		--	--	--			1.00E+00	P	
75-44-5	Phosgene		--	--	--			3.00E-04	I	
7803-51-2	Phosphine		--	--	--			3.00E-04	I	
123-38-6	Propionaldehyde		--	--	--			8.00E-03	I	
103-65-1	Propyl benzene		--	--	--			1.00E+00	X	
115-07-1	Propylene	6.1E+00	1.83E-01	No IUR	1.4E-05			3.00E+00	CA	
107-98-2	Propylene Glycol Monomethyl Ether		--	--	--			2.00E+00	I	
75-56-9	Propylene Oxide		--	--	--	3.70E-06	I	3.00E-02	I	
100-42-5	Styrene		--	--	--			1.00E+00	I	
7446-11-9	Sulfur Trioxide		--	--	--			1.00E-03	CA	
1746-01-6	TCDD, 2,3,7,8-		--	--	--	3.80E+01	CA	4.00E-08	CA	
70362-50-4	Tetrachlorobiphenyl, 3,4,4',5- (PCB 81)		--	--	--	1.10E-02	E	1.30E-04	E	
630-20-6	Tetrachloroethane, 1,1,1,2-		--	--	--	7.40E-06	I			
79-34-5	Tetrachloroethane, 1,1,2,2-		--	--	--	5.80E-05	CA			
127-18-4	Tetrachloroethylene	3.3E+02	9.81E+00	2.1E-07	5.6E-02	2.60E-07	I	4.00E-02	I	
811-97-2	Tetrafluoroethane, 1,1,1,2-		--	--	--			8.00E+01	I	
109-99-9	Tetrahydrofuran		--	--	--			2.00E+00	I	
7550-45-0	Titanium Tetrachloride		--	--	--			1.00E-04	A	
108-88-3	Toluene	6.4E+02	1.93E+01	No IUR	8.8E-04			5.00E+00	I	
76-13-1	Trichloro-1,2,2-trifluoroethane, 1,1,2-		--	--	--			3.00E+01	H	
120-82-1	Trichlorobenzene, 1,2,4-		--	--	--			2.00E-03	P	
71-55-6	Trichloroethane, 1,1,1-	2.2E+01	6.69E-01	No IUR	3.1E-05			5.00E+00	I	
79-00-5	Trichloroethane, 1,1,2-		--	--	--	1.60E-05	I	2.00E-04	X	
79-01-6	Trichloroethylene	2.3E+03	6.99E+01	**2.3E-05**	**8.0E+00**	4.10E-06	I	2.00E-03	I	Mut
96-18-4	Trichloropropane, 1,2,3-		--	--	--			3.00E-04	I	TCE
96-19-5	Trichloropropene, 1,2,3-		--	--	--			3.00E-04	P	

OSWER VAPOR INTRUSION ASSESSMENT

Sub-slab or Exterior Soil Gas Concentration to Indoor Air Concentration (SGC-IAC) Calculator Version 3.4, June 2015 RSLs

Parameter	Symbol	Value	Instructions
Exposure Scenario	Scenario	Commercial	Select residential or commercial scenario from pull down list
Target Risk for Carcinogens	TCR_SG	1.00E-06	Enter target risk for carcinogens (for comparison to the calculated VI carcinogenic risk in column F)
Target Hazard Quotient for Non-Carcinogens	THQ_SG	1	Enter target hazard quotient for non-carcinogens (for comparison to the calculated VI hazard in column G)

CAS	Chemical Name	Site Sub-slab or Exterior Soil Gas Concentration Csg (ug/m^3)	Calculated Indoor Air Concentration Cia (ug/m^3)	VI Carcinogenic Risk CR	VI Hazard HQ	Inhalation Unit Risk IUR (ug/m^3)$^{-1}$	IUR Source*	Reference Concentration RfC (mg/m^3)	RFC Source*	Mutagenic Indicator i
121-44-8	Triethylamine		--	--	--			7.00E-03	I	
420-46-2	Trifluoroethane, 1,1,1-		--	--	--			2.00E+01	P	
526-73-8	Trimethylbenzene, 1,2,3-		--	--	--			5.00E-03	P	
95-63-6	Trimethylbenzene, 1,2,4-	1.5E+01	4.62E-01	No IUR	1.5E-02			7.00E-03	P	
126-72-7	Tris(2,3-dibromopropyl)phosphate		--	--	--	6.60E-04	CA			
108-05-4	Vinyl Acetate		--	--	--			2.00E-01	I	
593-60-2	Vinyl Bromide		--	--	--	3.20E-05	H	3.00E-03	I	
75-01-4	Vinyl Chloride		--	--	--	4.40E-06	I	1.00E-01	I	Mut
108-38-3	Xylene, m-	3.8E+01	1.13E+00	No IUR	2.6E-03			1.00E-01	S	
95-47-6	Xylene, o-	1.5E+01	4.56E-01	No IUR	1.0E-03			1.00E-01	S	
106-42-3	Xylene, P-	3.8E+01	1.13E+00	No IUR	2.6E-03			1.00E-01	S	
1330-20-7	Xylenes		--	--	--			1.00E-01	I	

Notes:

(1) **Inhalation Pathway Exposure Parameters (RME):**

Exposure Scenario	Units	Residential Symbol	Residential Value	Commercial Symbol	Commercial Value	Selected (based on scenario) Symbol	Selected (based on scenario) Value
Averaging time for carcinogens	(yrs)	ATc_R_SG	70	ATc_C_SG	70	ATc_SG	70
Averaging time for non-carcinogens	(yrs)	ATnc_R_SG	26	ATnc_C_SG	25	ATnc_SG	25
Exposure duration	(yrs)	ED_R_SG	26	ED_C_SG	25	ED_SG	25
Exposure frequency	(days/yr)	EF_R_SG	350	EF_C_SG	250	EF_SG	250
Exposure time	(hr/day)	ET_R_SG	24	ET_C_SG	8	ET_SG	8

(2) **Generic Attenuation Factors:**

Source Medium of Vapors	Residential Symbol	Residential Value	Commercial Symbol	Commercial Value	Selected (based on scenario) Symbol	Selected (based on scenario) Value
Groundwater (-)	AFgw_R_SG	0.001	AFgw_C_SG	0.001	AFgw_SG	0.001
Sub-Slab and Exterior Soil Gas (-)	AFss_R_SG	0.03	AFss_C_SG	0.03	AFss_SG	0.03

(3) **Formulas**

Cia, target = MIN(Cia,c; Cia,nc)

Cia,c (ug/m3) = TCR x ATc x (365 days/yr) x (24 hrs/day) / (ED x EF x ET x IUR)

Cia,nc (ug/m3) = THQ x ATnc x (365 days/yr) x (24 hrs/day) x RfC x (1000 ug/mg) / (ED x EF x ET)

(4) **Special Case Chemicals**

Trichloroethylene	Residential Symbol	Residential Value	Commercial Symbol	Commercial Value	Selected (based on scenario) Symbol	Selected (based on scenario) Value
	mIURTCE_R_SG	1.00E-06	nIURTCE_C_SG	0.00E+00	mIURTCE_SG	0.00E+00
	IURTCE_R_SG	3.10E-06	IURTCE_C_SG	4.10E-06	IURTCE_SG	4.10E-06

Mutagenic Chemicals — The exposure durations and age-dependent adjustment factors for mutagenic-mode-of-action are listed in the table below:

Note: This section applies to trichloroethylene and other mutagenic chemicals, but not to vinyl chloride.

Age Cohort	Exposure Duration	Age-dependent adjustment factor
0 - 2 years	2	10
2 - 6 years	4	3
6 - 16 years	10	3
16 - 26 years	10	1

Mutagenic-mode-of-action (MMOA) adjustment factor 25 This factor is used in the equations for mutagenic chemicals.

Vinyl Chloride — See the Navigation Guide equation for Cia,c for vinyl chloride.

Notation:

I = IRIS: EPA Integrated Risk Information System (IRIS). Available online at: http://www.epa.gov/iris/subst/index.html

OSWER VAPOR INTRUSION ASSESSMENT

Sub-slab or Exterior Soil Gas Concentration to Indoor Air Concentration (SGC-IAC) Calculator Version 3.4, June 2015 RSLs

Parameter	Symbol	Value	Instructions
Exposure Scenario	Scenario	Commercial	Select residential or commercial scenario from pull down list
Target Risk for Carcinogens	TCR_SG	1.00E-06	Enter target risk for carcinogens (for comparison to the calculated VI carcinogenic risk in column F)
Target Hazard Quotient for Non-Carcinogens	THQ_SG	1	Enter target hazard quotient for non-carcinogens (for comparison to the calculated VI hazard in column G)

CAS	Chemical Name	Site Sub-slab or Exterior Soil Gas Concentration	Calculated Indoor Air Concentration	VI Carcinogenic Risk	VI Hazard	Inhalation Unit Risk	IUR Source*	Reference Concentration	RFC Source*	Mutagenic Indicator
		Csg	Cia	CR	HQ	IUR		RfC		
		(ug/m^3)	(ug/m^3)			(ug/m^3)$^{-1}$		(mg/m^3)		i

P = PPRTV. EPA Provisional Peer Reviewed Toxicity Values (PPRTVs). Available online at: http://hhpprtv.ornl.gov/pprtv.shtml

A = Agency for Toxic Substances and Disease Registry (ATSDR) Minimum Risk Levels (MRLs). Available online at: http://www.atsdr.cdc.gov/mrls/index.html

CA = California Environmental Protection Agency/Office of Environmental Health Hazard Assessment assessments. Available online at: http://www.oehha.ca.gov/risk/ChemicalDB/index.asp

H = HEAST. EPA Superfund Health Effects Assessment Summary Tables (HEAST) database. Available online at: http://epa-heast.ornl.gov/heast.shtml

S = See RSL User Guide, Section 5

X = PPRTV Appendix

Mut = Chemical acts according to the mutagenic-mode-of-action, special exposure parameters apply (see footnote (4) above).

VC = Special exposure equation for vinyl chloride applies (see Navigation Guide for equation).

TCE = Special mutagenic and non-mutagenic IURs for trichloroethylene apply (see footnote (4) above).

Yellow highlighting indicates site-specific parameters that may be edited by the user.

Blue highlighting indicates exposure factors that are based on Risk Assessment Guidance for Superfund (RAGS) or EPA vapor intrusion guidance, which generally should not be changed.

Pink highlighting indicates VI carcinogenic risk greater than the target risk for carcinogens (TCR) or VI Hazard greater than or equal to the target hazard quotient for non-carcinogens (THQ).

APPENDIX B: SME INDOOR AIR RESULTS

TABLE 1
SUMMARY OF INDOOR AIR ANALYSIS
GUILFORD, MAINE

Parameter	C.A.S. Number	MEDEP RAG Indoor Air		AA-211A		AA-202	
		Commercial	Residential				
Dichlorodifluoromethane	75-71-8	880	210	2.97		7.71	
Chloromethane	74-87-3	390	94	0.814		0.774	
Trichlorofluoromethane	75-69-4	3,100	730	3.84		8.04	
1,1,2-Trichloro-1,2,2-Trifluoroethane	76-13-1			0.514		0.506	
Chloroform	67-66-3	5.3	1.1	0.098		0.098	U
Benzene	71-43-2	16	3.1	0.319	U	0.505	
Carbon tetrachloride	56-23-5	20	4.1	0.44		0.415	
Trichloroethene	79-01-6	8.8	2.1	0.43		0.107	U
Toluene	108-88-3	22,000	5,200	0.275		0.396	
p/m-Xylene	179601-23-1	440	100	0.174	U	0.239	
o-Xylene	95-47-6	440	100	0.087	U	0.096	

Notes:
1. Concentrations in micrograms per cubic meter ($\mu g/m^3$).
2. Sample containers deployed by SME on October 3 and collected on October 4.
3. Samples analyzed by Alpha Laboratories of Mansfield, Massachusetts by USEPA Method TO-15 and TO-15 Selected Ion Monitoring (SIM).
4. Only parameters with one or more detected concentrations above laboratory reporting limits are listed.

APPENDIX C: BORING LOGS/WELL CONSTRUCTION DIAGRAM

Woodard & Curran
41 Hutchins Drive
Portland, ME 04102
Telephone: 207-774-2112

BORING NUMBER WCB-1

CLIENT Duval Acquisitions (USA), Inc.
PROJECT NAME Guilford Piscataquis Woolen Co
PROJECT NUMBER 229562.00
PROJECT LOCATION Guilford, ME
DATE STARTED 5/11/16 **COMPLETED** 5/11/16
GROUND ELEVATION _____ **HOLE SIZE** 2.5
DRILLING CONTRACTOR New England Boring Contractors
GROUND WATER LEVELS:
DRILLING METHOD Hollow Stem Auger
AT TIME OF DRILLING ---
LOGGED BY Dave Dinsmore **CHECKED BY** _____
AT END OF DRILLING ---
NOTES Building 4E
AFTER DRILLING ---

DEPTH (ft)	SAMPLE TYPE NUMBER	RECOVERY %	BLOW COUNTS (N VALUE)	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION	PID (ppm)
0							
		35	14-14-22-22 (36)	SM		(SM) Brown silty fine to coarse, loose, dry SAND, rocks up to 0.15' diameter	
3.0							
		80	20-18-23-25 (41)	SM		(SM) Brown silty fine to coarse, loose, dry SAND, gravel and rocks up to 0.13' diameter	0.2
5							
5.0							
		18	6-11-11-16 (22)	SM		(SM) Brown silty fine SAND, angular rocks up to 0.081' diameter	0.4
7.0							
		65	18-14-10-10 (24)	SM		(SM) Brown silty fine, loose, dry SAND, small angular rocks to 0.07' diameter	0.3
9.0							
10		45	13-13-12-9 (25)	SM		(SM) Dark brown silty fine SAND, some gravel and small rocks to 0.12' diameter	0.5
11.0							
		25	12-11-9-9 (20)	SM		(SM) Dark brown silty fine SAND, rocks up to 0.21' diameter	2.4
13.0							0.6

Refusal at 13.0 feet.
Bottom of borehole at 13.0 feet.

Woodard & Curran
41 Hutchins Drive
Portland, ME 04102
Telephone: 207-774-2112

WELL NUMBER WCB-2

CLIENT Duval Acquisitions (USA), Inc.
PROJECT NAME Guilford Piscataquis Woolen Co
PROJECT NUMBER 229562.00
PROJECT LOCATION Guilford, ME
DATE STARTED 5/12/16 **COMPLETED** 5/12/16
GROUND ELEVATION _____ **HOLE SIZE** 2.5
DRILLING CONTRACTOR New England Boring Contractors
GROUND WATER LEVELS:
DRILLING METHOD Hollow Stem Auger and Drive and Wash
▽ **AT TIME OF DRILLING** 8.60 ft
LOGGED BY Dave Dinsmore **CHECKED BY** _____
▼ **AT END OF DRILLING** 11.03 ft
NOTES Building 12
AFTER DRILLING ---

DEPTH (ft)	SAMPLE TYPE NUMBER	RECOVERY %	BLOW COUNTS (N VALUE)	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION	PID (ppm)	WELL DIAGRAM
0								
		17	6-4-3-3 (7)	SM		(SM) Brown silty fine to medium, loose, dry SAND with gravel and small rocks		concrete
						2.0	0.2	bentonite chips
		38	7-9-9-9 (18)	SM		(SM) Brown silty fine to medium, loose, dry SAND with pieces of brick		
						4.0	0.6	
5		20	9-6-5-4 (11)	SM		(SM) Brown silty fine SAND with pieces of brick		
						6.0	0.2	
		70	5-4-3-4 (7)	SM		(SM) Brown silty very fine, moist, compact SAND with pieces of brick		
						8.0	0.3	
		34	5-4-35 (39)	SM		▽ (SM) Brown silty very fine SAND with pieces of brick and small rocks and gravel		
						9.2	38	Holliston 00 Filter Sand
10						Competent ROCK (shale-like)		1" Screen
						▼		
						12.7		
						13.1 Dark brown/black ROCK (shale-like) with small amount brown silty SAND		
15								

Refusal at 18.4 feet.
Bottom of borehole at 18.4 feet.

Woodard & Curran
41 Hutchins Drive
Portland, ME 04102
Telephone: 207-774-2112

BORING NUMBER WCB-4

CLIENT Duval Acquisitions (USA), Inc.
PROJECT NAME Guilford Piscataquis Woolen Co
PROJECT NUMBER 229562.00
PROJECT LOCATION Guilford, ME
DATE STARTED 5/12/16 **COMPLETED** 5/12/16
GROUND ELEVATION _____ **HOLE SIZE** 2.5
DRILLING CONTRACTOR New England Boring Contractors
GROUND WATER LEVELS:
DRILLING METHOD Hollow Stem Auger and Drive and Wash
AT TIME OF DRILLING ---
LOGGED BY Dave Dinsmore **CHECKED BY** _____
AT END OF DRILLING ---
NOTES Maintenance
AFTER DRILLING ---

DEPTH (ft)	SAMPLE TYPE NUMBER	RECOVERY %	BLOW COUNTS (N VALUE)	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION	PID (ppm)
0							
		40	3-8-12 (20)	SM		(SM) Dark brown silty fine to coarse loose SAND with gravel and small rocks	
						2.0	
		34	9-6-8 (14)	SM		(SM) Brown silty fine to coarse loose SAND with gravel and small rocks	0.4
						4.0	
5		50	10-6-4-5 (10)	SM		(SM) Brown silty fine to coarse loose SAND with gravel and small rocks underlain by brown silty sandy CLAY	1.5
						6.0	
		0	3-50			No recovery	1.6
						7.0	
				CL-ML		(CL-ML) Brown silty fine sandy CLAY	
						8.0	
		60	4-4-4-5 (8)	CL-ML		(CL-ML) Gray silty fine sandy firm CLAY, dry, compact	
10						10.0	
		63	8-8-10-13 (18)	CL-ML		(CL-ML) Gray brown silty sandy CLAY with fine sand and some small rocks	0.2
						12.0	
		17	17-12-11-6 (23)	CL-ML		(CL-ML) Gray silty sandy wet CLAY with brick	1
						14.0	
15		50				Concrete	0.2
						16.2	

Refusal at 16.2 feet.
Bottom of borehole at 16.2 feet.

APPENDIX D: GROUNDWATER FIELD SHEET

Field Data Monitoring Sheet - Groundwater

Project Name: True Textiles - Guilford, Maine | Job #: 229562 | Page: 1 of 1

Sample Location: WCMW-2 | Location Activity: Start 1025, End 1100 | Date: 5/19/16

Field Dup. ID: WCMW-2Dup

WATER LEVEL/WELL DATA

					Yes	No	N/A
Well Depth	14.82 ft	☑ Measured		Well Integrity	☑	☐	☐
Depth to Screen Top	ft	☐ Historical		Prot. Casing Secure	☐	☐	☑
Depth to Water	10.41 ft	☑ Top of Riser		Concrete Collar Intact	☐	☐	☑
		☐ Top of Casing		Well Locked	☐	☑	☐
Ht of Water Column	ft	☐		Other:	☐	☐	☐
Length of Screen	ft	☐ 0.60 L/Ft (2 in)					
		☐ 2.46 L/Ft (4 in)	L/Purge Vol		Allowable Drawdown	ft	
Protective Casing Stick-up from ground	ft	☐ 5.60 L/Ft (6 in)	L/Total Purged		Max. Allowed Depth to Water	ft	
		☐ __ L/Ft (__in)			Sample Depth	ft	
Prot. Casing/Well Diff (Ground)	-0.62 ft	Well Material: ☑ PVC ☐ SS ☐			Well Diameter: ☐ 2 inch ☐ 4 inch ☐ 6 inch ☑ 1 inch		

PURGE DATA

Purge Rate 260 ml/min | Pump Setting _____ | Historical Purge Rate _____ ml/min | Historical Pump Setting _____

Time	Purge Vol.	Depth to H_2O	Temp.	Sp. Cond. +/- 10%	pH +/- 0.5	Turbidity +/- 10%	DO +/- 10%	ORP
(minutes)	(Liters)	(feet)	(°C)	(µS/cm)	(units)	(NTU)	(mg/L)	(mV)
5	1.3	10.48	20.3	274	7.45	36	6.98	109
10	2.6	10.48	20.3	265	7.45	10	6.80	116
15	3.9	10.48	20.3	265	7.43	4.6	6.77	140
20	5.2	10.48	20.2	259	7.42	2.6	6.80	153
25	6.5	10.48	20.2	255	7.41	1.4	6.68	161
30	7.8	10.48	20.3	256	7.41	1.2	6.76	168
35	9.1	10.48	20.3	256	7.41	1.1	6.80	170

Sample Observations:
☐ Clear ☐ Colored ☐ Cloudy ☐ Turbid ☐ Odor ☐ Other

EQUIPMENT DOCUMENTATION

Decon Fluids Used
☐ Liqui-nox ☐ Deionized Water ☐ HNO_3/DI Water ☐ Potable Water ☐ TSP
☑ None ☐ Methanol Solution ☐ _____

Purging	Sampling		Purging	Sampling	
☐	☐	Peristaltic Pump	☐	☐	Enclosed Flow Cell
☐	☐	Bladder	☐	☐	YSI 600 XL _____
☐	☐	Bailer	☐	☐	Turbidimeter
☐	☐	PVC/Silicon Tubing	☐	☐	In-line Filter
☐	☐	Teflon/Silicon Tubing		☐	Press/VAC Filter
☐	☐	Airlift	☐	☐	_____

Water Level Equipment Used
☐ Electric Cond. Probe ☐ Float Activated ☐ Interface Probe ☐ Other

Number of Filters Used _____

ANALYTICAL PARAMETERS	Method #	Filtered?	Preservation Method	Volume Required	Sample Collected ID
☑ VOC	8260	No	HCl	3 x 40 mL	☑
☐					☐
☐					☐
☐					☐

NOTES

Purged ~ 3 to 3.5 gals. From well then grabbed sample plus duplicate.

Signature: David Dunn

APPENDIX E: COPIES OF LABORATORY ANALYTICAL RESULTS

con-test® ANALYTICAL LABORATORY
39 Spruce Street * East Longmeadow, MA 01028 * FAX 413/525-6405 * TEL. 413/525-2332

May 31, 2016

Jedd Steinglass
Woodard & Curran - Portland, ME
41 Hutchins Drive
Portland, ME 04102

Project Location: True Textiles, Guilford, ME
Client Job Number:
Project Number: 229562
Laboratory Work Order Number: 16E1050

Enclosed are results of analyses for samples received by the laboratory on May 24, 2016. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Meghan E. Kelley
Project Manager

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39 Spruce Street * East Longmeadow, MA 01028 * FAX 413/525-6405 * TEL. 413/525-2332

Woodard & Curran - Portland, ME
41 Hutchins Drive
Portland, ME 04102
ATTN: Jedd Steinglass

REPORT DATE: 5/31/2016

PURCHASE ORDER NUMBER:

PROJECT NUMBER: 229562

ANALYTICAL SUMMARY

WORK ORDER NUMBER: 16E1050

The results of analyses performed on the following samples submitted to the CON-TEST Analytical Laboratory are found in this report.

PROJECT LOCATION: True Textiles, Guilford, ME

FIELD SAMPLE #	LAB ID:	MATRIX	SAMPLE DESCRIPTION	TEST	SUB LAB
Trip Blank	16E1050-01	Trip Blank Water		SW-846 8260C	
WCMW-2	16E1050-02	Ground Water		SW-846 8260C	
WCMW-2 DUP	16E1050-03	Ground Water		SW-846 8260C	

con-test® ANALYTICAL LABORATORY

39 Spruce Street * East Longmeadow, MA 01028 * FAX 413/525-6405 * TEL. 413/525-2332

CASE NARRATIVE SUMMARY

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

SW-846 8260C

Qualifications:

R-05

Laboratory fortified blank duplicate RPD is outside of control limits. Reduced precision is anticipated for any reported value for this compound.

Analyte & Samples(s) Qualified:

Tetrahydrofuran

16E1050-01[Trip Blank], 16E1050-02[WCMW-2], 16E1050-03[WCMW-2 DUP], B150182-BLK1, B150182-BS1, B150182-BSD1

V-20

Continuing calibration did not meet method specifications and was biased on the high side. Data validation is not affected since sample result was "not detected" for this compound.

Analyte & Samples(s) Qualified:

1,4-Dioxane

B150182-BS1, B150182-BSD1

tert-Butyl Alcohol (TBA)

B150182-BS1, B150182-BSD1

The results of analyses reported only relate to samples submitted to the Con-Test Analytical Laboratory for testing.
I certify that the analyses listed above, unless specifically listed as subcontracted, if any, were performed under my direction according to the approved methodologies listed in this document, and that based upon my inquiry of those individuals immediately responsible for obtaining the information, the material contained in this report is, to the best of my knowledge and belief, accurate and complete.

Lisa A. Worthington
Project Manager

con-test® ANALYTICAL LABORATORY
39 Spruce Street * East Longmeadow, MA 01028 * FAX 413/525-6405 * TEL. 413/525-2332

Project Location: True Textiles, Guilford, ME | Sample Description: | Work Order: 16E1050

Date Received: 5/24/2016

Field Sample #: Trip Blank | Sampled: 5/19/2016 00:00

Sample ID: 16E1050-01

Sample Matrix: Trip Blank Water

Volatile Organic Compounds by GC/MS

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Acetone	ND	50	µg/L	1		SW-846 8260C	5/26/16	5/28/16 1:45	EEH
Acrylonitrile	ND	5.0	µg/L	1		SW-846 8260C	5/26/16	5/28/16 1:45	EEH
tert-Amyl Methyl Ether (TAME)	ND	0.50	µg/L	1		SW-846 8260C	5/26/16	5/28/16 1:45	EEH
Benzene	ND	1.0	µg/L	1		SW-846 8260C	5/26/16	5/28/16 1:45	EEH
Bromobenzene	ND	1.0	µg/L	1		SW-846 8260C	5/26/16	5/28/16 1:45	EEH
Bromochloromethane	ND	1.0	µg/L	1		SW-846 8260C	5/26/16	5/28/16 1:45	EEH
Bromodichloromethane	ND	0.50	µg/L	1		SW-846 8260C	5/26/16	5/28/16 1:45	EEH
Bromoform	ND	1.0	µg/L	1		SW-846 8260C	5/26/16	5/28/16 1:45	EEH
Bromomethane	ND	2.0	µg/L	1		SW-846 8260C	5/26/16	5/28/16 1:45	EEH
2-Butanone (MEK)	ND	20	µg/L	1		SW-846 8260C	5/26/16	5/28/16 1:45	EEH
tert-Butyl Alcohol (TBA)	ND	20	µg/L	1		SW-846 8260C	5/26/16	5/28/16 1:45	EEH
n-Butylbenzene	ND	1.0	µg/L	1		SW-846 8260C	5/26/16	5/28/16 1:45	EEH
sec-Butylbenzene	ND	1.0	µg/L	1		SW-846 8260C	5/26/16	5/28/16 1:45	EEH
tert-Butylbenzene	ND	1.0	µg/L	1		SW-846 8260C	5/26/16	5/28/16 1:45	EEH
tert-Butyl Ethyl Ether (TBEE)	ND	0.50	µg/L	1		SW-846 8260C	5/26/16	5/28/16 1:45	EEH
Carbon Disulfide	ND	4.0	µg/L	1		SW-846 8260C	5/26/16	5/28/16 1:45	EEH
Carbon Tetrachloride	ND	5.0	µg/L	1		SW-846 8260C	5/26/16	5/28/16 1:45	EEH
Chlorobenzene	ND	1.0	µg/L	1		SW-846 8260C	5/26/16	5/28/16 1:45	EEH
Chlorodibromomethane	ND	0.50	µg/L	1		SW-846 8260C	5/26/16	5/28/16 1:45	EEH
Chloroethane	ND	2.0	µg/L	1		SW-846 8260C	5/26/16	5/28/16 1:45	EEH
Chloroform	ND	2.0	µg/L	1		SW-846 8260C	5/26/16	5/28/16 1:45	EEH
Chloromethane	ND	2.0	µg/L	1		SW-846 8260C	5/26/16	5/28/16 1:45	EEH
2-Chlorotoluene	ND	1.0	µg/L	1		SW-846 8260C	5/26/16	5/28/16 1:45	EEH
4-Chlorotoluene	ND	1.0	µg/L	1		SW-846 8260C	5/26/16	5/28/16 1:45	EEH
1,2-Dibromo-3-chloropropane (DBCP)	ND	5.0	µg/L	1		SW-846 8260C	5/26/16	5/28/16 1:45	EEH
1,2-Dibromoethane (EDB)	ND	0.50	µg/L	1		SW-846 8260C	5/26/16	5/28/16 1:45	EEH
Dibromomethane	ND	1.0	µg/L	1		SW-846 8260C	5/26/16	5/28/16 1:45	EEH
1,2-Dichlorobenzene	ND	1.0	µg/L	1		SW-846 8260C	5/26/16	5/28/16 1:45	EEH
1,3-Dichlorobenzene	ND	1.0	µg/L	1		SW-846 8260C	5/26/16	5/28/16 1:45	EEH
1,4-Dichlorobenzene	ND	1.0	µg/L	1		SW-846 8260C	5/26/16	5/28/16 1:45	EEH
trans-1,4-Dichloro-2-butene	ND	5.0	µg/L	1		SW-846 8260C	5/26/16	5/28/16 1:45	EEH
Dichlorodifluoromethane (Freon 12)	ND	2.0	µg/L	1		SW-846 8260C	5/26/16	5/28/16 1:45	EEH
1,1-Dichloroethane	ND	1.0	µg/L	1		SW-846 8260C	5/26/16	5/28/16 1:45	EEH
1,2-Dichloroethane	ND	1.0	µg/L	1		SW-846 8260C	5/26/16	5/28/16 1:45	EEH
1,1-Dichloroethylene	ND	1.0	µg/L	1		SW-846 8260C	5/26/16	5/28/16 1:45	EEH
cis-1,2-Dichloroethylene	ND	1.0	µg/L	1		SW-846 8260C	5/26/16	5/28/16 1:45	EEH
trans-1,2-Dichloroethylene	ND	1.0	µg/L	1		SW-846 8260C	5/26/16	5/28/16 1:45	EEH
1,2-Dichloropropane	ND	1.0	µg/L	1		SW-846 8260C	5/26/16	5/28/16 1:45	EEH
1,3-Dichloropropane	ND	0.50	µg/L	1		SW-846 8260C	5/26/16	5/28/16 1:45	EEH
2,2-Dichloropropane	ND	1.0	µg/L	1		SW-846 8260C	5/26/16	5/28/16 1:45	EEH
1,1-Dichloropropene	ND	2.0	µg/L	1		SW-846 8260C	5/26/16	5/28/16 1:45	EEH
cis-1,3-Dichloropropene	ND	0.50	µg/L	1		SW-846 8260C	5/26/16	5/28/16 1:45	EEH
trans-1,3-Dichloropropene	ND	0.50	µg/L	1		SW-846 8260C	5/26/16	5/28/16 1:45	EEH
Diethyl Ether	ND	2.0	µg/L	1		SW-846 8260C	5/26/16	5/28/16 1:45	EEH

con-test® ANALYTICAL LABORATORY
39 Spruce Street * East Longmeadow, MA 01028 * FAX 413/525-6405 * TEL. 413/525-2332

Project Location: True Textiles, Guilford, ME | Sample Description: | Work Order: 16E1050

Date Received: 5/24/2016

Field Sample #: Trip Blank | Sampled: 5/19/2016 00:00

Sample ID: 16E1050-01

Sample Matrix: Trip Blank Water

Volatile Organic Compounds by GC/MS

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Diisopropyl Ether (DIPE)	ND	0.50	µg/L	1		SW-846 8260C	5/26/16	5/28/16 1:45	EEH
1,4-Dioxane	ND	100	µg/L	1		SW-846 8260C	5/26/16	5/28/16 1:45	EEH
Ethylbenzene	ND	1.0	µg/L	1		SW-846 8260C	5/26/16	5/28/16 1:45	EEH
Hexachlorobutadiene	ND	0.50	µg/L	1		SW-846 8260C	5/26/16	5/28/16 1:45	EEH
2-Hexanone (MBK)	ND	10	µg/L	1		SW-846 8260C	5/26/16	5/28/16 1:45	EEH
Isopropylbenzene (Cumene)	ND	1.0	µg/L	1		SW-846 8260C	5/26/16	5/28/16 1:45	EEH
p-Isopropyltoluene (p-Cymene)	ND	1.0	µg/L	1		SW-846 8260C	5/26/16	5/28/16 1:45	EEH
Methyl Acetate	ND	1.0	µg/L	1		SW-846 8260C	5/26/16	5/28/16 1:45	EEH
Methyl tert-Butyl Ether (MTBE)	ND	1.0	µg/L	1		SW-846 8260C	5/26/16	5/28/16 1:45	EEH
Methyl Cyclohexane	ND	1.0	µg/L	1		SW-846 8260C	5/26/16	5/28/16 1:45	EEH
Methylene Chloride	ND	5.0	µg/L	1		SW-846 8260C	5/26/16	5/28/16 1:45	EEH
4-Methyl-2-pentanone (MIBK)	ND	10	µg/L	1		SW-846 8260C	5/26/16	5/28/16 1:45	EEH
Naphthalene	ND	2.0	µg/L	1		SW-846 8260C	5/26/16	5/28/16 1:45	EEH
n-Propylbenzene	ND	1.0	µg/L	1		SW-846 8260C	5/26/16	5/28/16 1:45	EEH
Styrene	ND	1.0	µg/L	1		SW-846 8260C	5/26/16	5/28/16 1:45	EEH
1,1,1,2-Tetrachloroethane	ND	1.0	µg/L	1		SW-846 8260C	5/26/16	5/28/16 1:45	EEH
1,1,2,2-Tetrachloroethane	ND	0.50	µg/L	1		SW-846 8260C	5/26/16	5/28/16 1:45	EEH
Tetrachloroethylene	ND	1.0	µg/L	1		SW-846 8260C	5/26/16	5/28/16 1:45	EEH
Tetrahydrofuran	ND	10	µg/L	1	R-05	SW-846 8260C	5/26/16	5/28/16 1:45	EEH
Toluene	ND	1.0	µg/L	1		SW-846 8260C	5/26/16	5/28/16 1:45	EEH
1,2,3-Trichlorobenzene	ND	5.0	µg/L	1		SW-846 8260C	5/26/16	5/28/16 1:45	EEH
1,2,4-Trichlorobenzene	ND	1.0	µg/L	1		SW-846 8260C	5/26/16	5/28/16 1:45	EEH
1,3,5-Trichlorobenzene	ND	1.0	µg/L	1		SW-846 8260C	5/26/16	5/28/16 1:45	EEH
1,1,1-Trichloroethane	ND	1.0	µg/L	1		SW-846 8260C	5/26/16	5/28/16 1:45	EEH
1,1,2-Trichloroethane	ND	1.0	µg/L	1		SW-846 8260C	5/26/16	5/28/16 1:45	EEH
Trichloroethylene	ND	1.0	µg/L	1		SW-846 8260C	5/26/16	5/28/16 1:45	EEH
Trichlorofluoromethane (Freon 11)	ND	2.0	µg/L	1		SW-846 8260C	5/26/16	5/28/16 1:45	EEH
1,2,3-Trichloropropane	ND	2.0	µg/L	1		SW-846 8260C	5/26/16	5/28/16 1:45	EEH
1,1,2-Trichloro-1,2,2-trifluoroethane (Freon 113)	ND	1.0	µg/L	1		SW-846 8260C	5/26/16	5/28/16 1:45	EEH
1,2,4-Trimethylbenzene	ND	1.0	µg/L	1		SW-846 8260C	5/26/16	5/28/16 1:45	EEH
1,3,5-Trimethylbenzene	ND	1.0	µg/L	1		SW-846 8260C	5/26/16	5/28/16 1:45	EEH
Vinyl Chloride	ND	2.0	µg/L	1		SW-846 8260C	5/26/16	5/28/16 1:45	EEH
m+p Xylene	ND	2.0	µg/L	1		SW-846 8260C	5/26/16	5/28/16 1:45	EEH
o-Xylene	ND	1.0	µg/L	1		SW-846 8260C	5/26/16	5/28/16 1:45	EEH

Surrogates	% Recovery	Recovery Limits	Flag/Qual	
1,2-Dichloroethane-d4	110	70-130		5/28/16 1:45
Toluene-d8	98.2	70-130		5/28/16 1:45
4-Bromofluorobenzene	100	70-130		5/28/16 1:45

con-test® ANALYTICAL LABORATORY
39 Spruce Street * East Longmeadow, MA 01028 * FAX 413/525-6405 * TEL. 413/525-2332

Project Location: True Textiles, Guilford, ME | Sample Description: | Work Order: 16E1050

Date Received: 5/24/2016

Field Sample #: WCMW-2 | Sampled: 5/19/2016 11:00

Sample ID: 16E1050-02

Sample Matrix: Ground Water

Volatile Organic Compounds by GC/MS

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Acetone	ND	50	µg/L	1		SW-846 8260C	5/26/16	5/28/16 2:39	EEH
Acrylonitrile	ND	5.0	µg/L	1		SW-846 8260C	5/26/16	5/28/16 2:39	EEH
tert-Amyl Methyl Ether (TAME)	ND	0.50	µg/L	1		SW-846 8260C	5/26/16	5/28/16 2:39	EEH
Benzene	ND	1.0	µg/L	1		SW-846 8260C	5/26/16	5/28/16 2:39	EEH
Bromobenzene	ND	1.0	µg/L	1		SW-846 8260C	5/26/16	5/28/16 2:39	EEH
Bromochloromethane	ND	1.0	µg/L	1		SW-846 8260C	5/26/16	5/28/16 2:39	EEH
Bromodichloromethane	ND	0.50	µg/L	1		SW-846 8260C	5/26/16	5/28/16 2:39	EEH
Bromoform	ND	1.0	µg/L	1		SW-846 8260C	5/26/16	5/28/16 2:39	EEH
Bromomethane	ND	2.0	µg/L	1		SW-846 8260C	5/26/16	5/28/16 2:39	EEH
2-Butanone (MEK)	ND	20	µg/L	1		SW-846 8260C	5/26/16	5/28/16 2:39	EEH
tert-Butyl Alcohol (TBA)	ND	20	µg/L	1		SW-846 8260C	5/26/16	5/28/16 2:39	EEH
n-Butylbenzene	ND	1.0	µg/L	1		SW-846 8260C	5/26/16	5/28/16 2:39	EEH
sec-Butylbenzene	ND	1.0	µg/L	1		SW-846 8260C	5/26/16	5/28/16 2:39	EEH
tert-Butylbenzene	ND	1.0	µg/L	1		SW-846 8260C	5/26/16	5/28/16 2:39	EEH
tert-Butyl Ethyl Ether (TBEE)	ND	0.50	µg/L	1		SW-846 8260C	5/26/16	5/28/16 2:39	EEH
Carbon Disulfide	ND	4.0	µg/L	1		SW-846 8260C	5/26/16	5/28/16 2:39	EEH
Carbon Tetrachloride	ND	5.0	µg/L	1		SW-846 8260C	5/26/16	5/28/16 2:39	EEH
Chlorobenzene	ND	1.0	µg/L	1		SW-846 8260C	5/26/16	5/28/16 2:39	EEH
Chlorodibromomethane	ND	0.50	µg/L	1		SW-846 8260C	5/26/16	5/28/16 2:39	EEH
Chloroethane	ND	2.0	µg/L	1		SW-846 8260C	5/26/16	5/28/16 2:39	EEH
Chloroform	ND	2.0	µg/L	1		SW-846 8260C	5/26/16	5/28/16 2:39	EEH
Chloromethane	ND	2.0	µg/L	1		SW-846 8260C	5/26/16	5/28/16 2:39	EEH
2-Chlorotoluene	ND	1.0	µg/L	1		SW-846 8260C	5/26/16	5/28/16 2:39	EEH
4-Chlorotoluene	ND	1.0	µg/L	1		SW-846 8260C	5/26/16	5/28/16 2:39	EEH
1,2-Dibromo-3-chloropropane (DBCP)	ND	5.0	µg/L	1		SW-846 8260C	5/26/16	5/28/16 2:39	EEH
1,2-Dibromoethane (EDB)	ND	0.50	µg/L	1		SW-846 8260C	5/26/16	5/28/16 2:39	EEH
Dibromomethane	ND	1.0	µg/L	1		SW-846 8260C	5/26/16	5/28/16 2:39	EEH
1,2-Dichlorobenzene	ND	1.0	µg/L	1		SW-846 8260C	5/26/16	5/28/16 2:39	EEH
1,3-Dichlorobenzene	ND	1.0	µg/L	1		SW-846 8260C	5/26/16	5/28/16 2:39	EEH
1,4-Dichlorobenzene	ND	1.0	µg/L	1		SW-846 8260C	5/26/16	5/28/16 2:39	EEH
trans-1,4-Dichloro-2-butene	ND	5.0	µg/L	1		SW-846 8260C	5/26/16	5/28/16 2:39	EEH
Dichlorodifluoromethane (Freon 12)	ND	2.0	µg/L	1		SW-846 8260C	5/26/16	5/28/16 2:39	EEH
1,1-Dichloroethane	ND	1.0	µg/L	1		SW-846 8260C	5/26/16	5/28/16 2:39	EEH
1,2-Dichloroethane	ND	1.0	µg/L	1		SW-846 8260C	5/26/16	5/28/16 2:39	EEH
1,1-Dichloroethylene	ND	1.0	µg/L	1		SW-846 8260C	5/26/16	5/28/16 2:39	EEH
cis-1,2-Dichloroethylene	ND	1.0	µg/L	1		SW-846 8260C	5/26/16	5/28/16 2:39	EEH
trans-1,2-Dichloroethylene	ND	1.0	µg/L	1		SW-846 8260C	5/26/16	5/28/16 2:39	EEH
1,2-Dichloropropane	ND	1.0	µg/L	1		SW-846 8260C	5/26/16	5/28/16 2:39	EEH
1,3-Dichloropropane	ND	0.50	µg/L	1		SW-846 8260C	5/26/16	5/28/16 2:39	EEH
2,2-Dichloropropane	ND	1.0	µg/L	1		SW-846 8260C	5/26/16	5/28/16 2:39	EEH
1,1-Dichloropropene	ND	2.0	µg/L	1		SW-846 8260C	5/26/16	5/28/16 2:39	EEH
cis-1,3-Dichloropropene	ND	0.50	µg/L	1		SW-846 8260C	5/26/16	5/28/16 2:39	EEH
trans-1,3-Dichloropropene	ND	0.50	µg/L	1		SW-846 8260C	5/26/16	5/28/16 2:39	EEH
Diethyl Ether	ND	2.0	µg/L	1		SW-846 8260C	5/26/16	5/28/16 2:39	EEH

con-test® ANALYTICAL LABORATORY
39 Spruce Street * East Longmeadow, MA 01028 * FAX 413/525-6405 * TEL. 413/525-2332

Project Location: True Textiles, Guilford, ME | Sample Description: | Work Order: 16E1050

Date Received: 5/24/2016

Field Sample #: WCMW-2 | Sampled: 5/19/2016 11:00

Sample ID: 16E1050-02

Sample Matrix: Ground Water

Volatile Organic Compounds by GC/MS

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Diisopropyl Ether (DIPE)	ND	0.50	µg/L	1		SW-846 8260C	5/26/16	5/28/16 2:39	EEH
1,4-Dioxane	ND	100	µg/L	1		SW-846 8260C	5/26/16	5/28/16 2:39	EEH
Ethylbenzene	ND	1.0	µg/L	1		SW-846 8260C	5/26/16	5/28/16 2:39	EEH
Hexachlorobutadiene	ND	0.50	µg/L	1		SW-846 8260C	5/26/16	5/28/16 2:39	EEH
2-Hexanone (MBK)	ND	10	µg/L	1		SW-846 8260C	5/26/16	5/28/16 2:39	EEH
Isopropylbenzene (Cumene)	ND	1.0	µg/L	1		SW-846 8260C	5/26/16	5/28/16 2:39	EEH
p-Isopropyltoluene (p-Cymene)	ND	1.0	µg/L	1		SW-846 8260C	5/26/16	5/28/16 2:39	EEH
Methyl Acetate	ND	1.0	µg/L	1		SW-846 8260C	5/26/16	5/28/16 2:39	EEH
Methyl tert-Butyl Ether (MTBE)	ND	1.0	µg/L	1		SW-846 8260C	5/26/16	5/28/16 2:39	EEH
Methyl Cyclohexane	ND	1.0	µg/L	1		SW-846 8260C	5/26/16	5/28/16 2:39	EEH
Methylene Chloride	ND	5.0	µg/L	1		SW-846 8260C	5/26/16	5/28/16 2:39	EEH
4-Methyl-2-pentanone (MIBK)	ND	10	µg/L	1		SW-846 8260C	5/26/16	5/28/16 2:39	EEH
Naphthalene	ND	2.0	µg/L	1		SW-846 8260C	5/26/16	5/28/16 2:39	EEH
n-Propylbenzene	ND	1.0	µg/L	1		SW-846 8260C	5/26/16	5/28/16 2:39	EEH
Styrene	ND	1.0	µg/L	1		SW-846 8260C	5/26/16	5/28/16 2:39	EEH
1,1,1,2-Tetrachloroethane	ND	1.0	µg/L	1		SW-846 8260C	5/26/16	5/28/16 2:39	EEH
1,1,2,2-Tetrachloroethane	ND	0.50	µg/L	1		SW-846 8260C	5/26/16	5/28/16 2:39	EEH
Tetrachloroethylene	ND	1.0	µg/L	1		SW-846 8260C	5/26/16	5/28/16 2:39	EEH
Tetrahydrofuran	ND	10	µg/L	1	R-05	SW-846 8260C	5/26/16	5/28/16 2:39	EEH
Toluene	ND	1.0	µg/L	1		SW-846 8260C	5/26/16	5/28/16 2:39	EEH
1,2,3-Trichlorobenzene	ND	5.0	µg/L	1		SW-846 8260C	5/26/16	5/28/16 2:39	EEH
1,2,4-Trichlorobenzene	ND	1.0	µg/L	1		SW-846 8260C	5/26/16	5/28/16 2:39	EEH
1,3,5-Trichlorobenzene	ND	1.0	µg/L	1		SW-846 8260C	5/26/16	5/28/16 2:39	EEH
1,1,1-Trichloroethane	ND	1.0	µg/L	1		SW-846 8260C	5/26/16	5/28/16 2:39	EEH
1,1,2-Trichloroethane	ND	1.0	µg/L	1		SW-846 8260C	5/26/16	5/28/16 2:39	EEH
Trichloroethylene	26	1.0	µg/L	1		SW-846 8260C	5/26/16	5/28/16 2:39	EEH
Trichlorofluoromethane (Freon 11)	ND	2.0	µg/L	1		SW-846 8260C	5/26/16	5/28/16 2:39	EEH
1,2,3-Trichloropropane	ND	2.0	µg/L	1		SW-846 8260C	5/26/16	5/28/16 2:39	EEH
1,1,2-Trichloro-1,2,2-trifluoroethane (Freon 113)	ND	1.0	µg/L	1		SW-846 8260C	5/26/16	5/28/16 2:39	EEH
1,2,4-Trimethylbenzene	ND	1.0	µg/L	1		SW-846 8260C	5/26/16	5/28/16 2:39	EEH
1,3,5-Trimethylbenzene	ND	1.0	µg/L	1		SW-846 8260C	5/26/16	5/28/16 2:39	EEH
Vinyl Chloride	ND	2.0	µg/L	1		SW-846 8260C	5/26/16	5/28/16 2:39	EEH
m+p Xylene	ND	2.0	µg/L	1		SW-846 8260C	5/26/16	5/28/16 2:39	EEH
o-Xylene	ND	1.0	µg/L	1		SW-846 8260C	5/26/16	5/28/16 2:39	EEH

Surrogates	% Recovery	Recovery Limits	Flag/Qual	
1,2-Dichloroethane-d4	114	70-130		5/28/16 2:39
Toluene-d8	98.2	70-130		5/28/16 2:39
4-Bromofluorobenzene	100	70-130		5/28/16 2:39

con-test® ANALYTICAL LABORATORY
39 Spruce Street * East Longmeadow, MA 01028 * FAX 413/525-6405 * TEL. 413/525-2332

Project Location: True Textiles, Guilford, ME | Sample Description: | Work Order: 16E1050

Date Received: 5/24/2016

Field Sample #: WCMW-2 DUP | Sampled: 5/19/2016 11:00

Sample ID: 16E1050-03

Sample Matrix: Ground Water

Volatile Organic Compounds by GC/MS

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Acetone	ND	50	µg/L	1		SW-846 8260C	5/26/16	5/28/16 3:05	EEH
Acrylonitrile	ND	5.0	µg/L	1		SW-846 8260C	5/26/16	5/28/16 3:05	EEH
tert-Amyl Methyl Ether (TAME)	ND	0.50	µg/L	1		SW-846 8260C	5/26/16	5/28/16 3:05	EEH
Benzene	ND	1.0	µg/L	1		SW-846 8260C	5/26/16	5/28/16 3:05	EEH
Bromobenzene	ND	1.0	µg/L	1		SW-846 8260C	5/26/16	5/28/16 3:05	EEH
Bromochloromethane	ND	1.0	µg/L	1		SW-846 8260C	5/26/16	5/28/16 3:05	EEH
Bromodichloromethane	ND	0.50	µg/L	1		SW-846 8260C	5/26/16	5/28/16 3:05	EEH
Bromoform	ND	1.0	µg/L	1		SW-846 8260C	5/26/16	5/28/16 3:05	EEH
Bromomethane	ND	2.0	µg/L	1		SW-846 8260C	5/26/16	5/28/16 3:05	EEH
2-Butanone (MEK)	ND	20	µg/L	1		SW-846 8260C	5/26/16	5/28/16 3:05	EEH
tert-Butyl Alcohol (TBA)	ND	20	µg/L	1		SW-846 8260C	5/26/16	5/28/16 3:05	EEH
n-Butylbenzene	ND	1.0	µg/L	1		SW-846 8260C	5/26/16	5/28/16 3:05	EEH
sec-Butylbenzene	ND	1.0	µg/L	1		SW-846 8260C	5/26/16	5/28/16 3:05	EEH
tert-Butylbenzene	ND	1.0	µg/L	1		SW-846 8260C	5/26/16	5/28/16 3:05	EEH
tert-Butyl Ethyl Ether (TBEE)	ND	0.50	µg/L	1		SW-846 8260C	5/26/16	5/28/16 3:05	EEH
Carbon Disulfide	ND	4.0	µg/L	1		SW-846 8260C	5/26/16	5/28/16 3:05	EEH
Carbon Tetrachloride	ND	5.0	µg/L	1		SW-846 8260C	5/26/16	5/28/16 3:05	EEH
Chlorobenzene	ND	1.0	µg/L	1		SW-846 8260C	5/26/16	5/28/16 3:05	EEH
Chlorodibromomethane	ND	0.50	µg/L	1		SW-846 8260C	5/26/16	5/28/16 3:05	EEH
Chloroethane	ND	2.0	µg/L	1		SW-846 8260C	5/26/16	5/28/16 3:05	EEH
Chloroform	ND	2.0	µg/L	1		SW-846 8260C	5/26/16	5/28/16 3:05	EEH
Chloromethane	ND	2.0	µg/L	1		SW-846 8260C	5/26/16	5/28/16 3:05	EEH
2-Chlorotoluene	ND	1.0	µg/L	1		SW-846 8260C	5/26/16	5/28/16 3:05	EEH
4-Chlorotoluene	ND	1.0	µg/L	1		SW-846 8260C	5/26/16	5/28/16 3:05	EEH
1,2-Dibromo-3-chloropropane (DBCP)	ND	5.0	µg/L	1		SW-846 8260C	5/26/16	5/28/16 3:05	EEH
1,2-Dibromoethane (EDB)	ND	0.50	µg/L	1		SW-846 8260C	5/26/16	5/28/16 3:05	EEH
Dibromomethane	ND	1.0	µg/L	1		SW-846 8260C	5/26/16	5/28/16 3:05	EEH
1,2-Dichlorobenzene	ND	1.0	µg/L	1		SW-846 8260C	5/26/16	5/28/16 3:05	EEH
1,3-Dichlorobenzene	ND	1.0	µg/L	1		SW-846 8260C	5/26/16	5/28/16 3:05	EEH
1,4-Dichlorobenzene	ND	1.0	µg/L	1		SW-846 8260C	5/26/16	5/28/16 3:05	EEH
trans-1,4-Dichloro-2-butene	ND	5.0	µg/L	1		SW-846 8260C	5/26/16	5/28/16 3:05	EEH
Dichlorodifluoromethane (Freon 12)	ND	2.0	µg/L	1		SW-846 8260C	5/26/16	5/28/16 3:05	EEH
1,1-Dichloroethane	ND	1.0	µg/L	1		SW-846 8260C	5/26/16	5/28/16 3:05	EEH
1,2-Dichloroethane	ND	1.0	µg/L	1		SW-846 8260C	5/26/16	5/28/16 3:05	EEH
1,1-Dichloroethylene	ND	1.0	µg/L	1		SW-846 8260C	5/26/16	5/28/16 3:05	EEH
cis-1,2-Dichloroethylene	ND	1.0	µg/L	1		SW-846 8260C	5/26/16	5/28/16 3:05	EEH
trans-1,2-Dichloroethylene	ND	1.0	µg/L	1		SW-846 8260C	5/26/16	5/28/16 3:05	EEH
1,2-Dichloropropane	ND	1.0	µg/L	1		SW-846 8260C	5/26/16	5/28/16 3:05	EEH
1,3-Dichloropropane	ND	0.50	µg/L	1		SW-846 8260C	5/26/16	5/28/16 3:05	EEH
2,2-Dichloropropane	ND	1.0	µg/L	1		SW-846 8260C	5/26/16	5/28/16 3:05	EEH
1,1-Dichloropropene	ND	2.0	µg/L	1		SW-846 8260C	5/26/16	5/28/16 3:05	EEH
cis-1,3-Dichloropropene	ND	0.50	µg/L	1		SW-846 8260C	5/26/16	5/28/16 3:05	EEH
trans-1,3-Dichloropropene	ND	0.50	µg/L	1		SW-846 8260C	5/26/16	5/28/16 3:05	EEH
Diethyl Ether	ND	2.0	µg/L	1		SW-846 8260C	5/26/16	5/28/16 3:05	EEH

con-test® ANALYTICAL LABORATORY
39 Spruce Street * East Longmeadow, MA 01028 * FAX 413/525-6405 * TEL. 413/525-2332

Project Location: True Textiles, Guilford, ME | Sample Description: | Work Order: 16E1050

Date Received: 5/24/2016

Field Sample #: WCMW-2 DUP | Sampled: 5/19/2016 11:00

Sample ID: 16E1050-03

Sample Matrix: Ground Water

Volatile Organic Compounds by GC/MS

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Diisopropyl Ether (DIPE)	ND	0.50	µg/L	1		SW-846 8260C	5/26/16	5/28/16 3:05	EEH
1,4-Dioxane	ND	100	µg/L	1		SW-846 8260C	5/26/16	5/28/16 3:05	EEH
Ethylbenzene	ND	1.0	µg/L	1		SW-846 8260C	5/26/16	5/28/16 3:05	EEH
Hexachlorobutadiene	ND	0.50	µg/L	1		SW-846 8260C	5/26/16	5/28/16 3:05	EEH
2-Hexanone (MBK)	ND	10	µg/L	1		SW-846 8260C	5/26/16	5/28/16 3:05	EEH
Isopropylbenzene (Cumene)	ND	1.0	µg/L	1		SW-846 8260C	5/26/16	5/28/16 3:05	EEH
p-Isopropyltoluene (p-Cymene)	ND	1.0	µg/L	1		SW-846 8260C	5/26/16	5/28/16 3:05	EEH
Methyl Acetate	ND	1.0	µg/L	1		SW-846 8260C	5/26/16	5/28/16 3:05	EEH
Methyl tert-Butyl Ether (MTBE)	ND	1.0	µg/L	1		SW-846 8260C	5/26/16	5/28/16 3:05	EEH
Methyl Cyclohexane	ND	1.0	µg/L	1		SW-846 8260C	5/26/16	5/28/16 3:05	EEH
Methylene Chloride	ND	5.0	µg/L	1		SW-846 8260C	5/26/16	5/28/16 3:05	EEH
4-Methyl-2-pentanone (MIBK)	ND	10	µg/L	1		SW-846 8260C	5/26/16	5/28/16 3:05	EEH
Naphthalene	ND	2.0	µg/L	1		SW-846 8260C	5/26/16	5/28/16 3:05	EEH
n-Propylbenzene	ND	1.0	µg/L	1		SW-846 8260C	5/26/16	5/28/16 3:05	EEH
Styrene	ND	1.0	µg/L	1		SW-846 8260C	5/26/16	5/28/16 3:05	EEH
1,1,1,2-Tetrachloroethane	ND	1.0	µg/L	1		SW-846 8260C	5/26/16	5/28/16 3:05	EEH
1,1,2,2-Tetrachloroethane	ND	0.50	µg/L	1		SW-846 8260C	5/26/16	5/28/16 3:05	EEH
Tetrachloroethylene	ND	1.0	µg/L	1		SW-846 8260C	5/26/16	5/28/16 3:05	EEH
Tetrahydrofuran	ND	10	µg/L	1	R-05	SW-846 8260C	5/26/16	5/28/16 3:05	EEH
Toluene	ND	1.0	µg/L	1		SW-846 8260C	5/26/16	5/28/16 3:05	EEH
1,2,3-Trichlorobenzene	ND	5.0	µg/L	1		SW-846 8260C	5/26/16	5/28/16 3:05	EEH
1,2,4-Trichlorobenzene	ND	1.0	µg/L	1		SW-846 8260C	5/26/16	5/28/16 3:05	EEH
1,3,5-Trichlorobenzene	ND	1.0	µg/L	1		SW-846 8260C	5/26/16	5/28/16 3:05	EEH
1,1,1-Trichloroethane	ND	1.0	µg/L	1		SW-846 8260C	5/26/16	5/28/16 3:05	EEH
1,1,2-Trichloroethane	ND	1.0	µg/L	1		SW-846 8260C	5/26/16	5/28/16 3:05	EEH
Trichloroethylene	39	1.0	µg/L	1		SW-846 8260C	5/26/16	5/28/16 3:05	EEH
Trichlorofluoromethane (Freon 11)	ND	2.0	µg/L	1		SW-846 8260C	5/26/16	5/28/16 3:05	EEH
1,2,3-Trichloropropane	ND	2.0	µg/L	1		SW-846 8260C	5/26/16	5/28/16 3:05	EEH
1,1,2-Trichloro-1,2,2-trifluoroethane (Freon 113)	ND	1.0	µg/L	1		SW-846 8260C	5/26/16	5/28/16 3:05	EEH
1,2,4-Trimethylbenzene	ND	1.0	µg/L	1		SW-846 8260C	5/26/16	5/28/16 3:05	EEH
1,3,5-Trimethylbenzene	ND	1.0	µg/L	1		SW-846 8260C	5/26/16	5/28/16 3:05	EEH
Vinyl Chloride	ND	2.0	µg/L	1		SW-846 8260C	5/26/16	5/28/16 3:05	EEH
m+p Xylene	ND	2.0	µg/L	1		SW-846 8260C	5/26/16	5/28/16 3:05	EEH
o-Xylene	ND	1.0	µg/L	1		SW-846 8260C	5/26/16	5/28/16 3:05	EEH

Surrogates	% Recovery	Recovery Limits	Flag/Qual		
1,2-Dichloroethane-d4	113	70-130		5/28/16	3:05
Toluene-d8	97.2	70-130		5/28/16	3:05
4-Bromofluorobenzene	98.9	70-130		5/28/16	3:05

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Sample Extraction Data

Prep Method: SW-846 5030B-SW-846 8260C

Lab Number [Field ID]	Batch	Initial [mL]	Final [mL]	Date
16E1050-01 [Trip Blank]	B150182	5	5.00	05/26/16
16E1050-02 [WCMW-2]	B150182	5	5.00	05/26/16
16E1050-03 [WCMW-2 DUP]	B150182	5	5.00	05/26/16

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QUALITY CONTROL

Volatile Organic Compounds by GC/MS - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B150182 - SW-846 5030B										
Blank (B150182-BLK1)				Prepared: 05/26/16 Analyzed: 05/28/16						
Acetone	ND	50	µg/L							
Acrylonitrile	ND	5.0	µg/L							
tert-Amyl Methyl Ether (TAME)	ND	0.50	µg/L							
Benzene	ND	1.0	µg/L							
Bromobenzene	ND	1.0	µg/L							
Bromochloromethane	ND	1.0	µg/L							
Bromodichloromethane	ND	0.50	µg/L							
Bromoform	ND	1.0	µg/L							
Bromomethane	ND	2.0	µg/L							
2-Butanone (MEK)	ND	20	µg/L							
tert-Butyl Alcohol (TBA)	ND	20	µg/L							
n-Butylbenzene	ND	1.0	µg/L							
sec-Butylbenzene	ND	1.0	µg/L							
tert-Butylbenzene	ND	1.0	µg/L							
tert-Butyl Ethyl Ether (TBEE)	ND	0.50	µg/L							
Carbon Disulfide	ND	4.0	µg/L							
Carbon Tetrachloride	ND	5.0	µg/L							
Chlorobenzene	ND	1.0	µg/L							
Chlorodibromomethane	ND	0.50	µg/L							
Chloroethane	ND	2.0	µg/L							
Chloroform	ND	2.0	µg/L							
Chloromethane	ND	2.0	µg/L							
2-Chlorotoluene	ND	1.0	µg/L							
4-Chlorotoluene	ND	1.0	µg/L							
1,2-Dibromo-3-chloropropane (DBCP)	ND	5.0	µg/L							
1,2-Dibromoethane (EDB)	ND	0.50	µg/L							
Dibromomethane	ND	1.0	µg/L							
1,2-Dichlorobenzene	ND	1.0	µg/L							
1,3-Dichlorobenzene	ND	1.0	µg/L							
1,4-Dichlorobenzene	ND	1.0	µg/L							
trans-1,4-Dichloro-2-butene	ND	5.0	µg/L							
Dichlorodifluoromethane (Freon 12)	ND	2.0	µg/L							
1,1-Dichloroethane	ND	1.0	µg/L							
1,2-Dichloroethane	ND	1.0	µg/L							
1,1-Dichloroethylene	ND	1.0	µg/L							
cis-1,2-Dichloroethylene	ND	1.0	µg/L							
trans-1,2-Dichloroethylene	ND	1.0	µg/L							
1,2-Dichloropropane	ND	1.0	µg/L							
1,3-Dichloropropane	ND	0.50	µg/L							
2,2-Dichloropropane	ND	1.0	µg/L							
1,1-Dichloropropene	ND	2.0	µg/L							
cis-1,3-Dichloropropene	ND	0.50	µg/L							
trans-1,3-Dichloropropene	ND	0.50	µg/L							
Diethyl Ether	ND	2.0	µg/L							
Diisopropyl Ether (DIPE)	ND	0.50	µg/L							
1,4-Dioxane	ND	100	µg/L							
Ethylbenzene	ND	1.0	µg/L							
Hexachlorobutadiene	ND	0.50	µg/L							
2-Hexanone (MBK)	ND	10	µg/L							
Isopropylbenzene (Cumene)	ND	1.0	µg/L							
p-Isopropyltoluene (p-Cymene)	ND	1.0	µg/L							
Methyl Acetate	ND	1.0	µg/L							

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QUALITY CONTROL

Volatile Organic Compounds by GC/MS - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes	
Batch B150182 - SW-846 5030B											
Blank (B150182-BLK1)				Prepared: 05/26/16 Analyzed: 05/28/16							
Methyl tert-Butyl Ether (MTBE)	ND	1.0	µg/L								
Methyl Cyclohexane	ND	1.0	µg/L								
Methylene Chloride	ND	5.0	µg/L								
4-Methyl-2-pentanone (MIBK)	ND	10	µg/L								
Naphthalene	ND	2.0	µg/L								
n-Propylbenzene	ND	1.0	µg/L								
Styrene	ND	1.0	µg/L								
1,1,1,2-Tetrachloroethane	ND	1.0	µg/L								
1,1,2,2-Tetrachloroethane	ND	0.50	µg/L								
Tetrachloroethylene	ND	1.0	µg/L								
Tetrahydrofuran	ND	10	µg/L							R-05	
Toluene	ND	1.0	µg/L								
1,2,3-Trichlorobenzene	ND	5.0	µg/L								
1,2,4-Trichlorobenzene	ND	1.0	µg/L								
1,3,5-Trichlorobenzene	ND	1.0	µg/L								
1,1,1-Trichloroethane	ND	1.0	µg/L								
1,1,2-Trichloroethane	ND	1.0	µg/L								
Trichloroethylene	ND	1.0	µg/L								
Trichlorofluoromethane (Freon 11)	ND	2.0	µg/L								
1,2,3-Trichloropropane	ND	2.0	µg/L								
1,1,2-Trichloro-1,2,2-trifluoroethane (Freon 113)	ND	1.0	µg/L								
1,2,4-Trimethylbenzene	ND	1.0	µg/L								
1,3,5-Trimethylbenzene	ND	1.0	µg/L								
Vinyl Chloride	ND	2.0	µg/L								
m+p Xylene	ND	2.0	µg/L								
o-Xylene	ND	1.0	µg/L								
Surrogate: 1,2-Dichloroethane-d4	*28.3*		µg/L	25.0		113	70-130				
Surrogate: Toluene-d8	*24.7*		µg/L	25.0		98.7	70-130				
Surrogate: 4-Bromofluorobenzene	*25.1*		µg/L	25.0		100	70-130				
LCS (B150182-BS1)				Prepared: 05/26/16 Analyzed: 05/27/16							
Acetone	111	50	µg/L	100		111	70-160				†
Acrylonitrile	11.3	5.0	µg/L	10.0		113	70-130				
tert-Amyl Methyl Ether (TAME)	10.2	0.50	µg/L	10.0		102	70-130				
Benzene	8.43	1.0	µg/L	10.0		84.3	70-130				
Bromobenzene	9.73	1.0	µg/L	10.0		97.3	70-130				
Bromochloromethane	10.2	1.0	µg/L	10.0		102	70-130				
Bromodichloromethane	9.58	0.50	µg/L	10.0		95.8	70-130				
Bromoform	10.5	1.0	µg/L	10.0		105	70-130				
Bromomethane	6.52	2.0	µg/L	10.0		65.2	40-160				†
2-Butanone (MEK)	110	20	µg/L	100		110	40-160				†
tert-Butyl Alcohol (TBA)	136	20	µg/L	100		136	40-160			V-20	†
n-Butylbenzene	10.0	1.0	µg/L	10.0		100	70-130				
sec-Butylbenzene	9.50	1.0	µg/L	10.0		95.0	70-130				
tert-Butylbenzene	9.60	1.0	µg/L	10.0		96.0	70-130				
tert-Butyl Ethyl Ether (TBEE)	10.6	0.50	µg/L	10.0		106	70-130				
Carbon Disulfide	9.67	4.0	µg/L	10.0		96.7	70-130				
Carbon Tetrachloride	10.5	5.0	µg/L	10.0		105	70-130				
Chlorobenzene	8.78	1.0	µg/L	10.0		87.8	70-130				
Chlorodibromomethane	9.89	0.50	µg/L	10.0		98.9	70-130				
Chloroethane	10.6	2.0	µg/L	10.0		106	70-130				
Chloroform	9.34	2.0	µg/L	10.0		93.4	70-130				

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QUALITY CONTROL

Volatile Organic Compounds by GC/MS - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes	
Batch B150182 - SW-846 5030B											
LCS (B150182-BS1)				Prepared: 05/26/16 Analyzed: 05/27/16							
Chloromethane	9.63	2.0	µg/L	10.0		96.3	40-160				†
2-Chlorotoluene	9.28	1.0	µg/L	10.0		92.8	70-130				
4-Chlorotoluene	9.39	1.0	µg/L	10.0		93.9	70-130				
1,2-Dibromo-3-chloropropane (DBCP)	11.6	5.0	µg/L	10.0		116	70-130				
1,2-Dibromoethane (EDB)	9.52	0.50	µg/L	10.0		95.2	70-130				
Dibromomethane	9.59	1.0	µg/L	10.0		95.9	70-130				
1,2-Dichlorobenzene	9.42	1.0	µg/L	10.0		94.2	70-130				
1,3-Dichlorobenzene	9.53	1.0	µg/L	10.0		95.3	70-130				
1,4-Dichlorobenzene	8.87	1.0	µg/L	10.0		88.7	70-130				
trans-1,4-Dichloro-2-butene	11.5	5.0	µg/L	10.0		115	70-130				
Dichlorodifluoromethane (Freon 12)	5.13	2.0	µg/L	10.0		51.3	40-160				†
1,1-Dichloroethane	9.29	1.0	µg/L	10.0		92.9	70-130				
1,2-Dichloroethane	9.70	1.0	µg/L	10.0		97.0	70-130				
1,1-Dichloroethylene	9.97	1.0	µg/L	10.0		99.7	70-130				
cis-1,2-Dichloroethylene	8.97	1.0	µg/L	10.0		89.7	70-130				
trans-1,2-Dichloroethylene	8.99	1.0	µg/L	10.0		89.9	70-130				
1,2-Dichloropropane	9.05	1.0	µg/L	10.0		90.5	70-130				
1,3-Dichloropropane	9.03	0.50	µg/L	10.0		90.3	70-130				
2,2-Dichloropropane	8.61	1.0	µg/L	10.0		86.1	40-130				†
1,1-Dichloropropene	9.31	2.0	µg/L	10.0		93.1	70-130				
cis-1,3-Dichloropropene	8.56	0.50	µg/L	10.0		85.6	70-130				
trans-1,3-Dichloropropene	9.40	0.50	µg/L	10.0		94.0	70-130				
Diethyl Ether	9.57	2.0	µg/L	10.0		95.7	70-130				
Diisopropyl Ether (DIPE)	9.38	0.50	µg/L	10.0		93.8	70-130				
1,4-Dioxane	126	100	µg/L	100		126	40-130			V-20	†
Ethylbenzene	9.31	1.0	µg/L	10.0		93.1	70-130				
Hexachlorobutadiene	11.2	0.50	µg/L	10.0		112	70-130				
2-Hexanone (MBK)	119	10	µg/L	100		119	70-160				†
Isopropylbenzene (Cumene)	9.39	1.0	µg/L	10.0		93.9	70-130				
p-Isopropyltoluene (p-Cymene)	10.2	1.0	µg/L	10.0		102	70-130				
Methyl Acetate	8.30	1.0	µg/L	10.0		83.0	70-130				
Methyl tert-Butyl Ether (MTBE)	9.43	1.0	µg/L	10.0		94.3	70-130				
Methyl Cyclohexane	9.76	1.0	µg/L	10.0		97.6	70-130				
Methylene Chloride	11.2	5.0	µg/L	10.0		112	70-130				
4-Methyl-2-pentanone (MIBK)	120	10	µg/L	100		120	70-160				†
Naphthalene	9.58	2.0	µg/L	10.0		95.8	40-130				†
n-Propylbenzene	9.42	1.0	µg/L	10.0		94.2	70-130				
Styrene	9.19	1.0	µg/L	10.0		91.9	70-130				
1,1,1,2-Tetrachloroethane	10.2	1.0	µg/L	10.0		102	70-130				
1,1,2,2-Tetrachloroethane	9.63	0.50	µg/L	10.0		96.3	70-130				
Tetrachloroethylene	9.83	1.0	µg/L	10.0		98.3	70-130				
Tetrahydrofuran	9.58	10	µg/L	10.0		95.8	70-130			R-05	
Toluene	8.77	1.0	µg/L	10.0		87.7	70-130				
1,2,3-Trichlorobenzene	9.56	5.0	µg/L	10.0		95.6	70-130				
1,2,4-Trichlorobenzene	9.98	1.0	µg/L	10.0		99.8	70-130				
1,3,5-Trichlorobenzene	10.0	1.0	µg/L	10.0		100	70-130				
1,1,1-Trichloroethane	10.1	1.0	µg/L	10.0		101	70-130				
1,1,2-Trichloroethane	9.26	1.0	µg/L	10.0		92.6	70-130				
Trichloroethylene	9.44	1.0	µg/L	10.0		94.4	70-130				
Trichlorofluoromethane (Freon 11)	10.5	2.0	µg/L	10.0		105	70-130				
1,2,3-Trichloropropane	9.88	2.0	µg/L	10.0		98.8	70-130				

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QUALITY CONTROL

Volatile Organic Compounds by GC/MS - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes	
Batch B150182 - SW-846 5030B											
LCS (B150182-BS1)				Prepared: 05/26/16 Analyzed: 05/27/16							
1,1,2-Trichloro-1,2,2-trifluoroethane (Freon 113)	10.3	1.0	µg/L	10.0		103	70-130				
1,2,4-Trimethylbenzene	9.48	1.0	µg/L	10.0		94.8	70-130				
1,3,5-Trimethylbenzene	9.78	1.0	µg/L	10.0		97.8	70-130				
Vinyl Chloride	8.67	2.0	µg/L	10.0		86.7	40-160				†
m+p Xylene	18.6	2.0	µg/L	20.0		93.2	70-130				
o-Xylene	9.28	1.0	µg/L	10.0		92.8	70-130				
Surrogate: 1,2-Dichloroethane-d4	*27.6*		µg/L	25.0		111	70-130				
Surrogate: Toluene-d8	*24.6*		µg/L	25.0		98.2	70-130				
Surrogate: 4-Bromofluorobenzene	*24.8*		µg/L	25.0		99.1	70-130				
LCS Dup (B150182-BSD1)				Prepared: 05/26/16 Analyzed: 05/28/16							
Acetone	113	50	µg/L	100		113	70-160	1.76	25		†
Acrylonitrile	11.5	5.0	µg/L	10.0		115	70-130	2.19	25		
tert-Amyl Methyl Ether (TAME)	10.3	0.50	µg/L	10.0		103	70-130	0.979	25		
Benzene	8.64	1.0	µg/L	10.0		86.4	70-130	2.46	25		
Bromobenzene	9.79	1.0	µg/L	10.0		97.9	70-130	0.615	25		
Bromochloromethane	10.7	1.0	µg/L	10.0		107	70-130	4.48	25		
Bromodichloromethane	9.96	0.50	µg/L	10.0		99.6	70-130	3.89	25		
Bromoform	10.7	1.0	µg/L	10.0		107	70-130	1.80	25		
Bromomethane	7.48	2.0	µg/L	10.0		74.8	40-160	13.7	25		†
2-Butanone (MEK)	114	20	µg/L	100		114	40-160	2.83	25		†
tert-Butyl Alcohol (TBA)	141	20	µg/L	100		141	40-160	3.31	25	V-20	†
n-Butylbenzene	9.94	1.0	µg/L	10.0		99.4	70-130	1.10	25		
sec-Butylbenzene	9.46	1.0	µg/L	10.0		94.6	70-130	0.422	25		
tert-Butylbenzene	9.59	1.0	µg/L	10.0		95.9	70-130	0.104	25		
tert-Butyl Ethyl Ether (TBEE)	10.8	0.50	µg/L	10.0		108	70-130	1.86	25		
Carbon Disulfide	9.46	4.0	µg/L	10.0		94.6	70-130	2.20	25		
Carbon Tetrachloride	10.6	5.0	µg/L	10.0		106	70-130	0.663	25		
Chlorobenzene	8.75	1.0	µg/L	10.0		87.5	70-130	0.342	25		
Chlorodibromomethane	10.0	0.50	µg/L	10.0		100	70-130	1.41	25		
Chloroethane	11.7	2.0	µg/L	10.0		117	70-130	9.32	25		
Chloroform	9.49	2.0	µg/L	10.0		94.9	70-130	1.59	25		
Chloromethane	10.2	2.0	µg/L	10.0		102	40-160	6.24	25		†
2-Chlorotoluene	9.65	1.0	µg/L	10.0		96.5	70-130	3.91	25		
4-Chlorotoluene	9.26	1.0	µg/L	10.0		92.6	70-130	1.39	25		
1,2-Dibromo-3-chloropropane (DBCP)	11.4	5.0	µg/L	10.0		114	70-130	1.22	25		
1,2-Dibromoethane (EDB)	9.91	0.50	µg/L	10.0		99.1	70-130	4.01	25		
Dibromomethane	9.90	1.0	µg/L	10.0		99.0	70-130	3.18	25		
1,2-Dichlorobenzene	9.49	1.0	µg/L	10.0		94.9	70-130	0.740	25		
1,3-Dichlorobenzene	9.45	1.0	µg/L	10.0		94.5	70-130	0.843	25		
1,4-Dichlorobenzene	9.13	1.0	µg/L	10.0		91.3	70-130	2.89	25		
trans-1,4-Dichloro-2-butene	11.4	5.0	µg/L	10.0		114	70-130	0.611	25		
Dichlorodifluoromethane (Freon 12)	5.31	2.0	µg/L	10.0		53.1	40-160	3.45	25		†
1,1-Dichloroethane	9.86	1.0	µg/L	10.0		98.6	70-130	5.95	25		
1,2-Dichloroethane	10.2	1.0	µg/L	10.0		102	70-130	5.42	25		
1,1-Dichloroethylene	9.81	1.0	µg/L	10.0		98.1	70-130	1.62	25		
cis-1,2-Dichloroethylene	9.22	1.0	µg/L	10.0		92.2	70-130	2.75	25		
trans-1,2-Dichloroethylene	9.26	1.0	µg/L	10.0		92.6	70-130	2.96	25		
1,2-Dichloropropane	9.05	1.0	µg/L	10.0		90.5	70-130	0.00	25		
1,3-Dichloropropane	9.22	0.50	µg/L	10.0		92.2	70-130	2.08	25		
2,2-Dichloropropane	8.68	1.0	µg/L	10.0		86.8	40-130	0.810	25		†
1,1-Dichloropropene	9.44	2.0	µg/L	10.0		94.4	70-130	1.39	25		

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QUALITY CONTROL

Volatile Organic Compounds by GC/MS - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes	
Batch B150182 - SW-846 5030B											
LCS Dup (B150182-BSD1)				Prepared: 05/26/16 Analyzed: 05/28/16							
cis-1,3-Dichloropropene	8.71	0.50	µg/L	10.0		87.1	70-130	1.74	25		
trans-1,3-Dichloropropene	9.35	0.50	µg/L	10.0		93.5	70-130	0.533	25		
Diethyl Ether	9.84	2.0	µg/L	10.0		98.4	70-130	2.78	25		
Diisopropyl Ether (DIPE)	9.66	0.50	µg/L	10.0		96.6	70-130	2.94	25		
1,4-Dioxane	128	100	µg/L	100		128	40-130	1.67	50	V-20	† ‡
Ethylbenzene	9.07	1.0	µg/L	10.0		90.7	70-130	2.61	25		
Hexachlorobutadiene	11.1	0.50	µg/L	10.0		111	70-130	1.52	25		
2-Hexanone (MBK)	122	10	µg/L	100		122	70-160	3.00	25		†
Isopropylbenzene (Cumene)	9.36	1.0	µg/L	10.0		93.6	70-130	0.320	25		
p-Isopropyltoluene (p-Cymene)	9.98	1.0	µg/L	10.0		99.8	70-130	1.79	25		
Methyl Acetate	8.78	1.0	µg/L	10.0		87.8	70-130	5.62	25		
Methyl tert-Butyl Ether (MTBE)	9.83	1.0	µg/L	10.0		98.3	70-130	4.15	25		
Methyl Cyclohexane	9.47	1.0	µg/L	10.0		94.7	70-130	3.02	25		
Methylene Chloride	11.8	5.0	µg/L	10.0		118	70-130	5.41	25		
4-Methyl-2-pentanone (MIBK)	124	10	µg/L	100		124	70-160	3.29	25		†
Naphthalene	9.70	2.0	µg/L	10.0		97.0	40-130	1.24	25		†
n-Propylbenzene	9.04	1.0	µg/L	10.0		90.4	70-130	4.12	25		
Styrene	9.31	1.0	µg/L	10.0		93.1	70-130	1.30	25		
1,1,1,2-Tetrachloroethane	10.3	1.0	µg/L	10.0		103	70-130	0.585	25		
1,1,2,2-Tetrachloroethane	9.94	0.50	µg/L	10.0		99.4	70-130	3.17	25		
Tetrachloroethylene	9.97	1.0	µg/L	10.0		99.7	70-130	1.41	25		
Tetrahydrofuran	12.7	10	µg/L	10.0		127	70-130	**28.2** *	25	R-05	
Toluene	9.06	1.0	µg/L	10.0		90.6	70-130	3.25	25		
1,2,3-Trichlorobenzene	9.40	5.0	µg/L	10.0		94.0	70-130	1.69	25		
1,2,4-Trichlorobenzene	9.91	1.0	µg/L	10.0		99.1	70-130	0.704	25		
1,3,5-Trichlorobenzene	10.2	1.0	µg/L	10.0		102	70-130	2.37	25		
1,1,1-Trichloroethane	10.3	1.0	µg/L	10.0		103	70-130	2.55	25		
1,1,2-Trichloroethane	9.65	1.0	µg/L	10.0		96.5	70-130	4.12	25		
Trichloroethylene	9.53	1.0	µg/L	10.0		95.3	70-130	0.949	25		
Trichlorofluoromethane (Freon 11)	10.4	2.0	µg/L	10.0		104	70-130	0.670	25		
1,2,3-Trichloropropane	9.85	2.0	µg/L	10.0		98.5	70-130	0.304	25		
1,1,2-Trichloro-1,2,2-trifluoroethane (Freon 113)	10.5	1.0	µg/L	10.0		105	70-130	1.93	25		
1,2,4-Trimethylbenzene	9.43	1.0	µg/L	10.0		94.3	70-130	0.529	25		
1,3,5-Trimethylbenzene	9.81	1.0	µg/L	10.0		98.1	70-130	0.306	25		
Vinyl Chloride	8.66	2.0	µg/L	10.0		86.6	40-160	0.115	25		†
m+p Xylene	18.7	2.0	µg/L	20.0		93.4	70-130	0.107	25		
o-Xylene	9.16	1.0	µg/L	10.0		91.6	70-130	1.30	25		
Surrogate: 1,2-Dichloroethane-d4	*28.4*		µg/L	25.0		113	70-130				
Surrogate: Toluene-d8	*24.5*		µg/L	25.0		97.9	70-130				
Surrogate: 4-Bromofluorobenzene	*24.8*		µg/L	25.0		99.2	70-130				

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FLAG/QUALIFIER SUMMARY

*	QC result is outside of established limits.
†	Wide recovery limits established for difficult compound.
‡	Wide RPD limits established for difficult compound.
#	Data exceeded client recommended or regulatory level
ND	Not Detected
RL	Reporting Limit
DL	Method Detection Limit
MCL	Maximum Contaminant Level
	Percent recoveries and relative percent differences (RPDs) are determined by the software using values in the calculation which have not been rounded.
	No results have been blank subtracted unless specified in the case narrative section.
R-05	Laboratory fortified blank duplicate RPD is outside of control limits. Reduced precision is anticipated for any reported value for this compound.
V-20	Continuing calibration did not meet method specifications and was biased on the high side. Data validation is not affected since sample result was "not detected" for this compound.

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CERTIFICATIONS

Certified Analyses included in this Report

Analyte	Certifications
SW-846 8260C in Water	
Acetone	CT,NY,ME,NH,VA
Acrylonitrile	CT,NY,ME,NH,VA
tert-Amyl Methyl Ether (TAME)	NY,ME,NH,VA
Benzene	CT,NY,ME,NH,VA
Bromochloromethane	NY,ME,NH,VA
Bromodichloromethane	CT,NY,ME,NH,VA
Bromoform	CT,NY,ME,NH,VA
Bromomethane	CT,NY,ME,NH,VA
2-Butanone (MEK)	CT,NY,ME,NH,VA
tert-Butyl Alcohol (TBA)	NY,ME,NH,VA
n-Butylbenzene	NY,ME,VA
sec-Butylbenzene	NY,ME,VA
tert-Butylbenzene	NY,ME,VA
tert-Butyl Ethyl Ether (TBEE)	NY,ME,NH,VA
Carbon Disulfide	CT,NY,ME,NH,VA
Carbon Tetrachloride	CT,NY,ME,NH,VA
Chlorobenzene	CT,NY,ME,NH,VA
Chlorodibromomethane	CT,NY,ME,NH,VA
Chloroethane	CT,NY,ME,NH,VA
Chloroform	CT,NY,ME,NH,VA
Chloromethane	CT,NY,ME,NH,VA
2-Chlorotoluene	NY,ME,NH,VA
4-Chlorotoluene	NY,ME,NH,VA
Dibromomethane	NY,ME,NH,VA
1,2-Dichlorobenzene	CT,NY,ME,NH,VA
1,3-Dichlorobenzene	CT,NY,ME,NH,VA
1,4-Dichlorobenzene	CT,NY,ME,NH,VA
trans-1,4-Dichloro-2-butene	NY,ME,NH,VA
Dichlorodifluoromethane (Freon 12)	NY,ME,NH,VA
1,1-Dichloroethane	CT,NY,ME,NH,VA
1,2-Dichloroethane	CT,NY,ME,NH,VA
1,1-Dichloroethylene	CT,NY,ME,NH,VA
cis-1,2-Dichloroethylene	NY,ME
trans-1,2-Dichloroethylene	CT,NY,ME,NH,VA
1,2-Dichloropropane	CT,NY,ME,NH,VA
1,3-Dichloropropane	NY,ME,VA
2,2-Dichloropropane	NY,ME,NH,VA
1,1-Dichloropropene	NY,ME,NH,VA
cis-1,3-Dichloropropene	CT,NY,ME,NH,VA
trans-1,3-Dichloropropene	CT,NY,ME,NH,VA
Diisopropyl Ether (DIPE)	NY,ME,NH,VA
Ethylbenzene	CT,NY,ME,NH,VA
Hexachlorobutadiene	CT,NY,ME,NH,VA
2-Hexanone (MBK)	CT,NY,ME,NH,VA
Isopropylbenzene (Cumene)	NY,ME,VA
p-Isopropyltoluene (p-Cymene)	CT,NY,ME,NH,VA
Methyl tert-Butyl Ether (MTBE)	CT,NY,ME,NH,VA

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CERTIFICATIONS

Certified Analyses included in this Report

Analyte	Certifications
SW-846 8260C in Water	
Methylene Chloride	CT,NY,ME,NH,VA
4-Methyl-2-pentanone (MIBK)	CT,NY,ME,NH,VA
Naphthalene	NY,ME,NH,VA
n-Propylbenzene	CT,NY,ME,NH,VA
Styrene	CT,NY,ME,NH,VA
1,1,1,2-Tetrachloroethane	CT,NY,ME,NH,VA
1,1,2,2-Tetrachloroethane	CT,NY,ME,NH,VA
Tetrachloroethylene	CT,NY,ME,NH,VA
Toluene	CT,NY,ME,NH,VA
1,2,3-Trichlorobenzene	NY,ME,NH,VA
1,2,4-Trichlorobenzene	CT,NY,ME,NH,VA
1,3,5-Trichlorobenzene	ME
1,1,1-Trichloroethane	CT,NY,ME,NH,VA
1,1,2-Trichloroethane	CT,NY,ME,NH,VA
Trichloroethylene	CT,NY,ME,NH,VA
Trichlorofluoromethane (Freon 11)	CT,NY,ME,NH,VA
1,2,3-Trichloropropane	NY,ME,NH,VA
1,1,2-Trichloro-1,2,2-trifluoroethane (Freon 113)	NY,VA
1,2,4-Trimethylbenzene	NY,ME,VA
1,3,5-Trimethylbenzene	NY,ME,VA
Vinyl Chloride	CT,NY,ME,NH,VA
m+p Xylene	CT,NY,ME,NH,VA
o-Xylene	CT,NY,ME,NH,VA

The CON-TEST Environmental Laboratory operates under the following certifications and accreditations:

Code	Description	Number	Expires
AIHA	AIHA-LAP, LLC	100033	02/1/2018
MA	Massachusetts DEP	M-MA100	06/30/2016
CT	Connecticut Department of Publilc Health	PH-0567	09/30/2017
NY	New York State Department of Health	10899 NELAP	04/1/2017
NH-S	New Hampshire Environmental Lab	2516 NELAP	02/5/2017
RI	Rhode Island Department of Health	LAO00112	12/30/2016
NC	North Carolina Div. of Water Quality	652	12/31/2016
NJ	New Jersey DEP	MA007 NELAP	06/30/2016
FL	Florida Department of Health	E871027 NELAP	06/30/2016
VT	Vermont Department of Health Lead Laboratory	LL015036	07/30/2016
ME	State of Maine	2011028	06/9/2017
VA	Commonwealth of Virginia	460217	12/14/2016
NH-P	New Hampshire Environmental Lab	2557 NELAP	09/6/2016

CHAIN OF CUSTODY RECORD

16E1050
Rev. 04.05.12

con-test® ANALYTICAL LABORATORY
Phone: 413-525-2332
Fax: 413-525-6405
Email: info@contestlabs.com
www.contestlabs.com
39 Spruce Street
East longmeadow, MA 01028

Page 1 of 1

Company Name: Woodard & Curran
Address: 41 Hutchins Dr. Portland, ME
Attention: JEDD STEINGLASS
Project Location: True Textiles, Guilford, ME
Sampled By: David Dinsmore

Telephone: (207) 756-2319
Project #: 229562
Client PO#:

Project Proposal Provided? (for billing purposes)
○ yes _____ proposal date

DATA DELIVERY (check all that apply)
○ FAX ☒ EMAIL ○ WEBSITE
Fax #:
Email: JSTEINGLASS@WOODARDCURRAN.COM
Format: ☒ PDF ☒ EXCEL ○ GIS ☒ OTHER ME EQUIS
○ "Enhanced Data Package"

Con-Test Lab ID (laboratory use only)	Client Sample ID / Description	Collection Beginning Date/Time	Collection Ending Date/Time	Composite	Grab	*Matrix Code	Conc Code	3	H	V	VOCs
01	TRIP BLANK	~~5/19~~			X	Aqueous	U				
02	WCMW-2	5/19/16	1100		X	GW	U				X
03	WCMW-2 DUP	5/19/16	1100		X	GW	U				X

Run trip blank per Jedd S - MEK 5/25/2016

Comments: Based on PID readings probably low Concen.

ANALYSIS REQUESTED

# of Containers
** Preservation
***Container Code

Dissolved Metals
○ Field Filtered
○ Lab to Filter

***Cont. Code:**
A=amber glass
G=glass
P=plastic
ST=sterile
V= vial
S=summa can
T=tedlar bag
O=Other

**Preservation
I = Iced
H = HCL
M = Methanol
N = Nitric Acid
S = Sulfuric Acid
B = Sodium bisulfate
X = Na hydroxide
T = Na thiosulfate
O = Other _____

*Matrix Code:
GW= groundwater
WW= wastewater
DW= drinking water
A = air
S = soil/solid
SL = sludge
O = other _____

Please use the following codes to let Con-Test know if a specific sample may be high in concentration in Matrix/Conc. Code Box:
H - High; M - Medium; L - Low; C - Clean; U - Unknown

Relinquished by: (signature)	Date/Time:
David Dinsmore	5/20/16 0715
Received by: (signature)	Date/Time:
COLD STORAGE / FEDEX	5/20/16 0715
Relinquished by: (signature)	Date/Time:
FEDEX	5/23/16 1800
Received by: (signature)	Date/Time:
MRKeoRane 5.9°	

Turnaround ††
☐ 7-Day
☐ 10-Day
☒ Other 5-DAY RUSH †
☐ †24-Hr ☐ †48-Hr
☐ †72-Hr ☐ †4-Day
† Require lab approval

Detection Limit Requirements
Massachusetts:
Connecticut:
Other:

Is your project MCP or RCP ?
○ MCP Form Required
○ RCP Form Required
○ MA State DW Form Required PWSID # _____

NELAC & AIHA-LAP, LLC Accredited
WBE/DBE Certifie

†† TURNAROUND TIME STARTS AT 9:00 A.M. THE DAY AFTER SAMPLE RECEIPT UNLESS THERE ARE QUESTIONS ON YOUR CHAIN. IF THIS FORM IS NOT FILLED OUT COMPLETELY OR INCORRECT, TURNAROUND TIME WILL NOT START UNTIL ALL QUESTIONS ARE ANSWERED BY OUR CLIENT.

PLEASE BE CAREFUL NOT TO CONTAMINATE THIS DOCUMENT

Table of Contents

39 Spruce St.
East Longmeadow, MA. 01028
P: 413-525-2332
F: 413-525-6405
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con-test® ANALYTICAL LABORATORY

Sample Receipt Checklist

CLIENT NAME: Woodard RECEIVED BY: RM DATE: 5/24/16

1) **Was the chain(s) of custody relinquished and signed?** Yes ✓ No ____ No COC Incl.

2) **Does the chain agree with the samples?** Yes ✓ No ____
If not, explain:

3) **Are all the samples in good condition?** Yes ✓ No ____
If not, explain:

4) **How were the samples received:**
On Ice ✓ Direct from Sampling ____ Ambient ____ In Cooler(s) ✓

Were the samples received in Temperature Compliance of (2-6°C)? Yes ✓ No ____ N/A ____

Temperature °C by Temp blank ____ Temperature °C by Temp gun 5.9° C

5) **Are there Dissolved samples for the lab to filter?** Yes ____ No ✓
Who was notified ____ Date ____ Time ____

6) **Are there any RUSH or SHORT HOLDING TIME samples?** Yes ____ No ✓
Who was notified ____ Date ____ Time ____

7) **Location where samples are stored:** log in

Permission to subcontract samples? Yes No
(Walk-in clients only) if not already approved
Client Signature: ____

8) **Do all samples have the proper Acid pH:** Yes ____ No ____ N/A ____

9) **Do all samples have the proper Base pH:** Yes ____ No ____ N/A ____

10) **Was the PC notified of any discrepancies with the CoC vs the samples:** Yes ____ N/A ____

Containers received at Con-Test

	# of containers		# of containers
1 Liter Amber		16 oz amber	
500 mL Amber		8 oz amber/clear jar	
250 mL Amber (8oz amber)		4 oz amber/clear jar	
1 Liter Plastic		2 oz amber/clear jar	
500 mL Plastic		Plastic Bag / Ziploc	
250 mL plastic		SOC Kit	
40 mL Vial - type listed below	7	Perchlorate Kit	
Colisure / bacteria bottle		Flashpoint bottle	
Dissolved Oxygen bottle		Other glass jar	
Encore		Other	

40 mL vials: # HCl 7 # Methanol ____ **Time and Date Frozen:**
Bisulfate ____ # DI Water ____
Thiosulfate ____ Unpreserved ____

Login Sample Receipt Checklist

(Rejection Criteria Listing - Using Sample Acceptance Policy)

Any False statement will be brought to the attention of Client

Question	Answer (True/False) T/F/NA	Comment
1) The cooler's custody seal, if present, is intact.	T	
2) The cooler or samples do not appear to have been compromised or tampered with.	T	
3) Samples were received on ice.	T	
4) Cooler Temperature is acceptable.	T	
5) Cooler Temperature is recorded.	T	
6) COC is filled out in ink and legible.	T	
7) COC is filled out with all pertinent information.	T	
8) Field Sampler's name present on COC.	T	
9) There are no discrepancies between the sample IDs on the container and the COC.	T	
10) Samples are received within Holding Time.	T	
11) Sample containers have legible labels.	T	
12) Containers are not broken or leaking.	T	
13) Air Cassettes are not broken/open.	NA	
14) Sample collection date/times are provided.	T	
15) Appropriate sample containers are used.	T	
16) Proper collection media used.	T	
17) No headspace sample bottles are completely filled.	T	
18) There is sufficient volume for all requsted analyses, including any requested MS/MSDs.	T	
19) Trip blanks provided if applicable.	T	
20) VOA sample vials do not have head space or bubble is <6mm (1/4") in diameter.	T	
21) Samples do not require splitting or compositing.	T	

Who notified of False statements? **Date/Time:**

Doc #277 Rev. 4 August 2013 **Log-In Technician Initials:** KRM 5/24/16 **Date/Time:**

WOODARD &CURRAN

woodardcurran.com

COMMITMENT & INTEGRITY DRIVE RESULTS