Approved
4/30/2010

Final

Soil Vapor Investigation

Buildings 1, 2, 3, 4, and the Tank Storage Area Sampling Event

Former Hampshire Chemical Corp Facility
Waterloo, New York

Prepared for

The Dow Chemical Company

February 2010

CH2MHILL

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STATE OF NEW YORK
DEPARTMENT OF HEALTH

Western Region Rochester Office Triangle Building 335 East Main Street Rochester, New York 14604-2127

Richard F. Daines, M.D.
Commissioner

James W. Clyne, Jr.
Executive Deputy Commissioner

May 18, 2010

Mr. Larry Rosenmann
Division of Solid and Hazardous Materials
NYS Department of Environmental Conservation
625 Broadway, 9th Floor
Albany, NY 12233-7258

Re: Soil Vapor Investigation Buildings 1,2,3,4 and the Tank Storage Area Sampling Event
Hampshire Chemical Company
Site# 850001A
Waterloo (V), Seneca County

Dr. Mr. Rosenmann:

I have reviewed the February 2010 Soil Vapor Investigation Buildings 1,2,3,4 and the Tank Storage Area Sampling Event for the Hampshire Chemical site located in Waterloo, Seneca County. Based on that review, I have the following comment:

This report evaluates soil vapor analytical results based on the basis of regional screening levels, attenuation factors and risk-based screening levels recommended by the U.S. Environmental Protection Agency. The New York State Health Department does not evaluate soil vapor data based on these techniques, therefore it is recommended to adhere to the Guidance for Evaluating Soil Vapor Intrusion in New York State (The Guidance). When evaluated against the Guidance, recommended actions for the elevated detections of carbon tetrachloride are to take reasonable and practical actions to identify sources and reduce exposures. It is understood that carbon tetrachloride is a compound being actively used in select buildings of the Hampshire Chemical Company, therefore, our recommendation is to try to reduce levels of carbon tetrachloride in indoor air to as close to background levels as practical.

If you have any questions, please feel free to contact me at (585) 423-8156.

Sincerely,

Katherine Comerford

Katherine Comerford
Public Health Specialist
Environmental Exposure Investigation

Cc: G. Litwin/G. Laccetti
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Alexander B. Grannis
Commissioner

Memorandum

To: Larry Rosenmann, Engineering Geology Section

From: John A. Miller, Chemistry and Laboratory Services Section

Subject: Hampshire Chemical, Soil Vapor Investigation Report, February 8, 2010, Data Review

Date: February 17, 2010

The analytical results from the Hampshire Chemical, Soil Vapor Investigation Report, dated February 8, 2010, have been reviewed for quality. The laboratory correctly flagged some results as estimated concentrations but did not qualify other results that had QC sample result exceedences. These exceedences are noted in the sections below and the qualifications are listed in the following table.

Sample ID	Matrix	Target/Method	Date Collected	Date Analyzed	Data Qualifications Based On QC Findings
WAT-SG-1-110408	Soil Gas	VOCs/TO-15	11/04/2008	11/12/2008	Lab Qualifications – OK
WAT-SG-2-110408	Soil Gas	VOCs/TO-15	11/04/2008	11/12/2008	Lab Qualifications – OK
WAT-SG-DUP-110408	Soil Gas	VOCs/TO-15	11/04/2008	11/12/2008	Lab Qualifications – OK
WAT-SG-3a-110408	Soil Gas	VOCs/TO-15	11/04/2008	11/12/2008	Lab Qualifications – OK Chloromethane – J
WAT-SG-3-110408	Soil Gas	VOCs/TO-15	11/04/2008	11/12/2008	Lab Qualifications – OK Chloromethane – J
WAT-SG-4-110408	Soil Gas	VOCs/TO-15	11/04/2008	11/12/2008	Lab Qualifications – OK Chloromethane – J
WAT-IA-1-110408	Indoor Air	VOCs/TO-15	11/04/2008	11/12/2008	Lab Qualifications – OK Chloromethane – J
WAT-IA-2-110408	Indoor Air	VOCs/TO-15	11/04/2008	11/13/2008	Lab Qualifications – OK Chloromethane – J
WAT-IA-3-110408	Indoor Air	VOCs/TO-15	11/04/2008	11/13/2008	Lab Qualifications – OK Chloromethane – J
WAT-IA-4-110408	Indoor Air	VOCs/TO-15	11/05/2008	11/13/2008	Lab Qualifications – OK Chloromethane – J
WAT-SG-B2-110408	Soil Gas	VOCs/TO-15	11/04/2008	11/13/2008	Lab Qualifications – OK Chloromethane – J
WAT-SG-FB-110408	Soil Gas	VOCs/TO-15	11/04/2008	11/14/2008	Lab Qualifications – OK
WAT-IA-5-110408	Indoor Air	VOCs/TO-15	11/05/2008	11/13/2008	Lab Qualifications – OK Chloromethane – J

Sample ID	Matrix	Target/Method	Date Collected	Date Analyzed	Data Qualifications Based On QC Findings
WAT-IA-6-110408	Indoor Air	VOCs/TO-15	11/05/2008	11/13/2008	Lab Qualifications – OK Chloromethane – J
WAT-IA-7-110408	Indoor Air	VOCs/TO-15	11/05/2008	11/13/2008	Lab Qualifications – OK Chloromethane – J
WAT-SG-B4-110408	Soil Gas	VOCs/TO-15	11/05/2008	11/14/2008	Lab Qualifications – OK Chloromethane – J
WAT-SG-5a-110408	Soil Gas	VOCs/TO-15	11/05/2008	11/13,14/2008	Lab Qualifications – OK
WAT-SG-5-110408	Soil Gas	VOCs/TO-15	11/05/2008	11/14/2008	Lab Qualifications – OK Chloromethane – J
WAT-SG-6-110408	Soil Gas	VOCs/TO-15	11/05/2008	11/14/2008	Lab Qualifications – OK Chloromethane – J Tetrachloroethene – J
WAT-SG-7a-110408	Soil Gas	VOCs/TO-15	11/05/2008	11/13,14/2008	Lab Qualifications – OK
WAT-SG-8-110408	Soil Gas	VOCs/TO-15	11/05/2008	11/14/2008	Lab Qualifications – OK
WAT-SG-9-110408	Soil Gas	VOCs/TO-15	11/05/2008	11/14/2008	Lab Qualifications – OK 1,1,2-trichloroethane – J

Sample Preservation and Analytical Holding Time
All sample preservation requirements were met and all analytical holding times were met.

Blank Sample Results
All method blanks had results that were non-detect indicating the absence of any system contamination which can bias data towards the positive.

Surrogate Spike Recoveries
The following three VOCs were used as system monitoring compounds (surrogates) and their recoveries indicate how well the trapping efficiency is for the sample analyses: 1,2-dichloroethane-d4, toluene-d8, and 4-bromofluorobenzene. All recoveries fell within the 100 ± 30% control limits. The recoveries of 1,2-dichloroethane-d4 ranged from 101% to 110% and the recoveries of toluene-d8 ranged from 89% to 105% and those for 4-bromofluorobenzene ranged from 93% to 112%.

Laboratory Control Sample Recoveries
Three LCSs were analyzed and all LCS recoveries fell within their respective control limits indicating that the lab was capable of performing these analyses as per method specifications at low concentrations using a clean matrix. The actual LCS concentrations were not provided nor could they be determined. What was provided were the absolute amounts of the target compounds such as benzene @ 26.8 ng in a 6-liter canister.

Laboratory Duplicate Relative Percent Differences
The following two samples were run in duplicate by the lab: WAT-SG-6-110508 and WAT-SG-9-110508. The former sample had the relative percent difference between the original and duplicate sample result for tetrachloroethene fall above the 25% control limit maximum at 30% indicating some uncertainty in the sample result. As a result, the tetrachloroethene result should be regarded as not sufficiently precise and flagged with the "J" qualifier.

The latter sample, WAT-SG-9-110508, had the methylene chloride (55%), 1,1,2-trichloroethane (30%) and o-xylene (30%) RPD fall above the 25% control limit maximum with the methylene chloride and o-xylene results falling below their respective reporting levels. The lab flagged these sample results with a "D" qualifier but we

will use the "J" qualifier as shown in the table above. Positive sample results that fall below its respective reporting level are "J" flagged as well.

Initial and Continuing Calibration Verification
With the exception of chloromethane (30.1%) and tert-butanol (42.2%), all percent relative standard deviations (%RSD) for the relative response factors (RRF) across the calibration range fell below the 30% control limit maximum indicating the calibrations curves were sufficiently linear across the calibration range. In regards to the two aforementioned outliers, tert-butanol results were not reported so it is assumed that this wasn't a target compound. Chloromethane was reported, however, so all corresponding positive sample results were flagged in the table above with the "J" qualifier.

With the exception of trans-1,3-dichloropropane (33%) , all percent differences (%D) between the average ICal RRF and the corresponding CCal RRF fell below the 30% control limit maximum indicating sufficient sample data accuracy and precision providing that all other QC criteria are met. However, since there were no positive trans-1,3-dichloropropane sample results, no positive data needed to be qualified.

Internal Standard Area Count and Retention Time Summery
All internal standard area counts and retention times fell within their respective control limits indicating that the analyses were performed as per method specifications across all samples.

All questions regarding this review can be addressed to the following:

John A. Miller

Environmental Chemist 2
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625 Broadway, Albany, NY 12233-7015
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Peter M. Iwanowicz
Acting Commissioner

Mr. Jerome E. Cibrik
Remediation Leader
Union Carbide Chemical
A Subsidiary of the Dow Chemical Corporation
P.O. Box 8361
South Charleston, West Virginia 25303

Dear Mr. Cibrik:

Re: Soil Vapor Investigation Buildings 1,2,3,4 and the Tank Storage Area Sampling Event, Former Hampshire Chemical Corp. Waterloo, NY, February 2010

At our October 18 meeting Dakon Brodmerkel requested the Department's concurrence with the conclusions and next steps in the February 2010 Soil Vapor Investigation report for Buildings 1, 2, 3, 4 and the Tank Storage area. As stated in our June 19, 2010 approval letter, the New York State Departments of Environmental Conservation and Health (the Departments) make decisions on indoor air impacts based on the matrices and other information found in New York State Department of Health Guidance for Evaluating Soil Vapor Intrusion in New York State" (the Guidance).

Using this guidance, the Departments have reviewed the conclusions and next steps and have the following comments and recommendations:

1. Carbon Tetrachloride

When the data from this report is evaluated against the Guidance, recommended actions for the elevated detections of carbon tetrachloride are to take reasonable and practical actions to identify sources and reduce exposures. Because carbon tetrachloride is a compound being actively used in select buildings of the facility, our recommendation is for Hampshire to work with Evans Chemetics to reduce levels of carbon tetrachloride in indoor air throughout the plant to as close to background levels as practical. Hampshire may wish to include other contaminants, like chloroform, in this effort.

2. Tank Storage Area

a. The proposed re-sampling in the Tank Storage Area will provide useful information. The sampling program should also include an ambient air sample for comparison. The Department recommends that this area be periodically re-sampled to ensure that problems don't arise in the future.

b. Mitigation is the recommended action in Matrix 1 for the sub-slab level of Trichloroethene (482 ug/m^3) found in this area. In this case, the Department recommends that Hampshire evaluate possible mitigation strategies after the upcoming proposed additional groundwater investigation for this area is completed.

c. Because levels of TCE were also detected in indoor air, Hampshire should also evaluate the condition of the floor and take appropriate steps to eliminate any potential migration pathways that may exist.

If you have any questions on these recommendations please contact me at 518-402-9622 larosenm@gw.dec.state.ny.us or Katherine Fish of DOH at (585) 423-8156 kjc05@health.state.ny.us.

Sincerely,

Larry A. Rosenmann
Engineering Geologist 2
Engineering Geology Section
Bureau of Solid & Hazardous Materials

ecc. D. Evans
P. Hoffmire
S. Rodabaugh
F. Ricotta
K. Fish (NYSDOH)

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Acronyms and Abbreviations

µg/L	micrograms per liter
µg/m³	microgram per cubic meter
AF	attenuation factor
AOC	area of concern
COPC	chemical of potential concern
CSM	conceptual site model
DCA	dichloroethane
DCE	dichloroethene
DQE	data quality evaluation
ELCR	excess lifetime cancer risk
HCC	Hampshire Chemical Corp
HI	hazard index
HQ	hazard quotient
MEK	methyl ethyl ketone
MIBK	methyl isobutyl ketone
MPA	mercaptopropionic acid
NaOH	sodium hydroxide
NaSH	sodium hydrosulfide
NELAP	NYSDOH Environmental Laboratory Approval Program
NFA	no further action
NYCRR	New York Codes Rules and Regulations
NYSDEC	New York State Department of Environmental Conservation
NYSDOH	New York State Department of Health
Pa	Pascal
PCE	tetrachloroethene
QA	quality assurance
QC	quality control

RCRA	Resource Conservation and Recovery Act
RfD	reference dose
RFI	Resource Conservation and Recovery Act facility investigation
RSL	regional screening level
SOP	standard operating procedure
SVI	soil vapor investigation
SWMU	solid waste management unit
T-acid	thioglycolic acid
TAGM	Technical and Administrative Guidance Memorandum
TCE	trichloroethene
USEPA	United States Environmental Protection Agency
VOC	volatile organic compound

SECTION 1

Introduction

On November 4 and 5, 2008, CH2M HILL conducted a subslab and indoor air sampling event in support of evaluating the vapor intrusion pathway in Buildings 1, 2 (2-A and 2-B), 3, 4 (11-A), and the Tank Storage Area at the former Hampshire Chemical Corp (HCC) in Waterloo, New York. The purpose of the subslab and indoor air sampling in Buildings 1 through 4 and the Tank Storage Area was to collect data to evaluate potential vapor intrusion pathways into the buildings located either above or in close proximity to volatile organic compounds (VOCs) identified in subsurface soil and/or groundwater. During this sampling event, subslab and indoor samples were collected from Buildings 1, 2, 3, 4, and the Tank Storage Area. In addition, two outdoor ambient air samples were collected within the facility property.

Sampling activities were conducted at the request of the New York State Department of Environmental Conservation (NYSDEC) in correspondence dated November 8, 2006, that requested a soil vapor investigation (SVI) work plan to address potential vapor intrusion pathways at the facility. That work plan was submitted to NYSDEC on February 26, 2007, and conditionally approved by NYSDEC in a letter dated April 25, 2007. The work plan was revised in June 2007 (CH2M HILL 2007) and samples were collected according to the revised work plan. The sampling and evaluation was consistent with the *Guidance for Evaluating Soil Vapor Intrusion in the State of New York* (New York State Department of Health [NYSDOH] 2006).

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SECTION 2

Site Background

The former HCC facility is located at 228 East Main Street in the Village of Waterloo, Seneca County, New York (Figure 1). The facility is bordered to the north by East Main Street, the east by Gorham Street, the west by East Water Street, and the south by the Seneca-Cayuga Canal.

The facility is regulated under 6 New York Codes Rules and Regulations (NYCRR) Part 373 and Resource Conservation and Recovery Act (RCRA) with NYSDEC as the lead agency. HCC has retained environmental liabilities for the facility, in accordance with the terms described in the purchase agreement between HCC and Bruno Bock, the current property owner.

RCRA facility investigation (RFI) efforts have been performed at the facility since 1993 to determine the nature and extent of releases to the environment. The solid waste management units (SWMUs) and areas of concern (AOCs) that have been identified for further investigation and/or corrective measures are represented on Figure 2. The RFI data have been compared to the applicable NYSDEC screening levels current at the time the report was prepared for each medium (groundwater, soil, sediment), and various reports summarizing the data have been submitted to NYSDEC, including the RFI report (CH2M HILL, May 2006). Comments were provided by NYSDEC and NYSDOH in a letter dated November 8, 2006. In that letter, NYSDEC requested that a SVI work plan be submitted to address potential vapor intrusion pathways at the facility. That work plan was submitted to NYSDEC on February 26, 2007. During a site visit conducted on March 12, 2007, clarifications were obtained regarding the approach to the SVI evaluation, and a revised work plan was submitted to the NYSDEC in June 2007 (CH2M HILL 2007).

Buildings evaluated in this report where there is a potential for vapor intrusion are described in detail in the following sections and comprise:

- Buildings 2-A and 2-B, which are located in the northeast corner of the facility. AOC E is located to the north of these buildings (Figure 3).
- Building 2 is located south of Buildings 2-A and 2-B, and includes the Mercaptopropionic Acid (MPA) Process Area. AOC C, "Gorham Street," is located adjacent to the MPA Process Area (Figure 4).
- Building 1 is located adjacent to and south of Building 2/MPA Process Area (Figure 5).
- Building 3 is located west of Building 1 along the Cayuga and Seneca Canal. AOC D is adjacent to and southwest of Building 3 (Figure 6).
- Building 4 is adjacent to and northwest of Building 3. AOC B underlies Building 4 and is the former Building 4 pit, a below-grade sump that collected wastewater from Building 4 (Figure 7).
- The Tank Storage Area is northwest of Building 4 (Figure 8).

Building surveys were completed during site walkthroughs in April 2006 and January 2007. The results of the building surveys are documented in Section 2.3 of the SVI revised work plan (CH2M HILL 2007).

The first phase of the revised SVI work plan to collect subslab soil vapor samples was executed in April 2008. Subslab soil vapor concentrations exceeded the applicable generic U.S. Environmental Protection Agency (USEPA) screening levels, and it was concluded that a round of subslab soil vapor samples be collected concurrent with indoor air samples.

In April 2008, because of the thickness of the concrete slab in several of the buildings, the locations of select vapor probes were moved from 1 to 3 feet away from the proposed locations to areas where the probe installation could be completed, with the exception of two locations (SG-5 and SG-5a), which were moved 5 to 10 feet away from the proposed locations. The locations that were moved 1 to 3 feet comprised: SG-2, SG-3, SG-5, SG-5a, SG-6, SG-7, and SG-8. The final locations of the samples collected are presented on Figures 3 through 8. During installation of the vapor probe at location SG-5, an unknown liquid was observed on the drill bit and an odor was noted during one of several attempts to install the vapor probe. Once the subslab probe at SG-5 was installed, the openings made by the unsuccessful attempts were filled with concrete. Prior to sampling, the field team noted activities in or near the sampling area (such as chemical use or storage and operation of forklifts or other vehicles) that may influence the subslab soil vapor. A list of chemicals in each building was also recorded during the April 2008 site visit.

2.1 Buildings 1 and 2

Buildings 2, 2-A, and 2-B are located in the northeast corner of the site; Building 2-B is adjacent to AOC E (Figure 3). Buildings 2-A and 2-B contain the process for manufacturing thiodipropionate esters and 2-sulfoethyl methacrylate. Building 2 contains the process for manufacture of 3-MPA and low-volume specialty chemicals produced on a campaign basis. A small research and development laboratory and storage areas for intermediate process chemicals are located in Building 2. Building 1, the site boiler room, is located in the southeast area of the facility, south of Building 2.

Historically, a release of sodium hydrosulfide (NaSH) was reported in September 1995 from a vent located on the roof of Building 2, located within the property boundary of the HCC facility. The release of less than 100 pounds of NaSH-contaminated site soil that was later excavated (CH2M HILL 2006).

AOC C is a small area east of the MPA Process Area (Figure 2). AOC C is the former NaSH spill area. Contaminated soil adjacent to Building 2 in AOC C was excavated in 1999. Soil samples collected at the time of the excavation reported detected concentrations of acetone, benzene, methyl isobutyl ketone (4-methyl-2-pentanone or MIBK), and methylene chloride above associated NYSDEC Technical and Administrative Guidance Memorandum (TAGM) 4046 screening levels (CH2M HILL 2006). Soil samples were collected from AOC C in August 2007 as part of the RFI addendum field activities. No VOCs were detected in these samples.

The groundwater data associated with AOC C were collected from monitoring wells MW-7 and MW-8 (Figure 9); MW-8 had a detected concentration of chloroform at 1.08 micrograms per liter (µg/L) in 2005. No other VOCs were detected in these wells.

AOC E, which historically exhibited elevated levels of toluene in groundwater, is located to the north of Building 2-B (Figure 2). Several VOCs have been detected in soil at AOC E: MIBK, acetone, 2-hexanone, methyl ethyl ketone (MEK or 2-butanone).

The groundwater data associated with AOC E were collected from monitoring well MW-10 and temporary piezometers installed around MW-10 during previous investigations at the site. Monitoring well MW-10 is located at the northern end of Gorham Street in the northeast area of the facility; five VOCs have been detected in groundwater from this area: MIBK, acetone, benzene, carbon disulfide, and toluene.

The groundwater data collected from this area are summarized in the RFI addendum report, which was submitted to the NYSDEC in November 2008 (CH2M HILL 2008).

The primary vapor intrusion pathway for the MPA Process Area of Building 2 and Building 1 is VOCs migrating from the soil at AOC C through the soil vadose zone and into the subslab vapor space. The primary vapor intrusion pathway for Buildings 2-A/2-B may include VOCs migrating from the soil or groundwater at AOC E through the soil vadose zone and into the subslab vapor space.

According to the building survey conducted in January 2007, air movement in the building was considerable because of the operation of compressors and fans, and flows from outdoors when doors were opened. Testing with the micromanometer indicated that the indoor air pressure was neutral relative to outdoors (-1 to +1 Pascal [Pa]), with the doors closed; the indoor space was slightly depressurized (-5 Pa) when the doors were cracked open. Testing of floor drains using air current tubes indicated that the indoor space was neutrally pressured relative to floor drains in this contiguous air space. Beyond the floor drains, penetrations or cracks through the slab were not observed in Building 2. As with Building 2, the potential for vapor intrusion in the MPA Process Area is likely weak because of the slightly negative pressurization of the building air space, and limited or absent preferential pathways (Section 2.3.1, CH2M HILL 2007).

According to the April 2008 site visit, MIBK, MPA, NaSH, sodium hydroxide (NaOH), sulfuric acid, potassium iodate, phenolphthalem, and other products were identified.

2.2 Building 3

Building 3 is located directly west of Building 1 (Figure 6). Building 3 contains the process for manufacture of thioglycolic acid (T-acid). T-acid manufacturing processes occupy half of the ground and first floors of the building. The remainder of the ground floor is used for raw material storage and in-process chemical storage. The remainder of the first floor is maintenance storage area, including the maintenance stockroom.

AOC D, which exhibits elevated pH levels, is a small area to the southwest of Building 3 (Figure 6). MEK was detected in soil at AOC D in 2004. No other VOCs have been detected in soil at AOC D.

The groundwater data associated with AOC D were collected from monitoring wells MW-11S, MW-21, MW-23, and MW-24 (Figure 9). Eight VOCs have been detected in groundwater in these wells: MIBK, acetone, benzene, carbon disulfide, chloromethane, ethylbenzene, toluene, xylenes (total).

The groundwater data collected from this area are summarized in the RFI addendum report, which was submitted to the NYSDEC in November 2008 (CH2M HILL 2008).

Building 3 represents a contiguous air space with Building 4, and the building survey results are discussed below. The primary vapor intrusion pathway for Building 3 is likely to be VOCs migrating into the building from AOC D. A vapor intrusion pathway may exist through the Building 3 control room floor drains (Section 2.3.2, CH2M HILL 2007).

According to the April 2008 site visit, NaSH, ethanolamine solutions, glycerol thioglycolate, and other products were identified.

2.3 Building 4

Building 4/4A is located adjacent to, and northwest of, Building 3 (Figure 7). Building 4/4A contains the process for purification of T-acid and the manufacture of thioglycolates.

AOC B, the former Building 4 pit, was a below-grade sump located along the southern end of Building 4, extending from the west wall nearly the length of the building. The sump was a collection point for wash water in Building 4. Liquids that collected in the sump were pumped to the facility wastewater treatment plant for treatment and discharge to the canal via a permitted outfall.

In July 1994, discolored soil was encountered in the foundation excavation for a new T-acid tower in Building 4. The discolored soil triggered an investigation of the area that found the source of impacts to be the below-grade sump later designated as AOC B.

VOCs MIBK, acetone, carbon disulfide, chloroform, toluene, xylenes (total) have been detected in soil in AOC B.

The groundwater data associated with AOC B were collected from monitoring wells, piezometers, and a sampling port: MW-01, MW-02, MW-03, MW-22, MW-23, PZ-1, PZ-4, PZ-5, PZ-6, PZ-7, BLDG4-FD, BLDG4-PW, BLDG4-PIT-SSP (Figure 9). VOCs have been detected in groundwater in these wells: 1,1-dichloroethane (1,1-DCA); 1,2-dichloropropane; MEK; MIBK; acetone; benzene; carbon disulfide; chlorobenzene; chloroform; cis-1,2-dichloroethene (cis-1,2-DCE); ethylbenzene; methylene chloride; toluene; trans-1,2-DCE; trichloroethene (TCE); vinyl chloride; and xylenes (total).

The soil and groundwater data collected from this area are summarized in the RFI addendum report, which was submitted to the NYSDEC in November 2008 (CH2M HILL 2008).

A building survey conducted in January 2007 found that Building 4 shares airspace with more than 10 other buildings at the site (including Builds 5, 9, 10, 11/11A and the Tank Storage Area). Building 4 is constructed as slab-on-grade partly below the surrounding grade. Along with the Tank Storage Area, Building 4 is negatively pressurized (-5 to -20 Pa)

relative to outdoor air. The primary potential vapor intrusion pathway for Building 4 includes VOCs potentially migrating from groundwater and soil at AOC B through the soil vadose zone and into the subslab vapor space. A potential vapor intrusion pathway exists due to proximity of the former source to the buildings and the depressurized conditions indoors (Section 2.3.3, CH2M HILL 2007).

According to the April 2008 site visit, T-acid, sulfuric acid, potassium iodate, and other products were identified.

2.4 The Tank Storage Area

The Tank Storage Area is located northwest of Building 4 (Figure 8) and to the west and below the relative grade of Building 9. Sodium hydrosulfide, glycerin, glycerol monothioglycolate, and ammonium thioglycolate tanks are located within this area. In addition, the Tank Storage Area is adjacent to monitoring well MW-01.

AOC B is located southeast of the Tank Storage Area. VOCs detected in soil and groundwater at AOC B are discussed in Section 2.3.

As part of the RFI addendum field activities, PZ-3 was installed inside the Tank Storage Area. In December 2007, six VOCs were detected in groundwater from PZ-3: 1,2-DCA; 1,2-dichloropropane; MIBK; acetone; carbon disulfide; and toluene (CH2M HILL 2008).

The groundwater data collected from this area are summarized in the RFI addendum report, which was submitted to the NYSDEC in November 2008 (CH2M HILL 2008).

As mentioned in Section 2.3, the Tank Storage Area is negatively pressurized relative to outdoor air according to the building survey conducted in January 2007. A potential vapor intrusion pathway exists because of the negative pressurization of the Tank Storage Area relative to the outside air (Section 2.3.4, CH2M HILL 2007).

According to the April 2008 site visit, NaSH, glycerin, glycerol monothioglycolate, and other products were identified.

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SECTION 3

Vapor Intrusion Conceptual Site Model

A conceptual site model (CSM) for the facility is presented on Figure 10. This figure depicts potential sources of chemicals that may contribute to exposure through the vapor intrusion pathway.

Potential indoor air exposures in the buildings may result from VOCs in subsurface soil and/or shallow groundwater volatilizing, migrating vertically (and horizontally to a limited extent) through the soil column and entering the buildings through cracks. The VOCs may then be inhaled by building occupants. Sources of chemicals potentially contributing to vapor intrusion comprise the VOCs detected in soils and in groundwater underneath or in close proximity to the buildings that were discussed in Section 2.

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SECTION 4

Sampling Procedures and Methods

On November 4 and 5, 2008, eleven subslab, seven indoor air, and two ambient air samples were collected in accordance with the *Guidance for Evaluating Soil Vapor Intrusion in the State of New York* (NYSDOH 2006) and the *RFI Soil Vapor Investigation Work Plan*, revised June 2007 (CH2M HILL 2007). The sample locations within each building/area are shown on Figures 3 through 8. The rationale for placement of these subslab probes were adjusted and agreed upon by the NYSDEC during the March 2007 site visit and as presented for each building in the *RFI Soil Vapor Investigation Work Plan* (CH2M HILL 2007). Two ambient air samples were collected within the property boundary and the locations are shown on Figures 3 through 8. The field sampling log sheets are provided as Appendix A.

4.1 Subslab Vapor Sampling

Eleven subslab samples (SG-1 through SG-6, SG-8, SG-9, SG-3A, SG-5A, and SG-7A) were collected over an 8-hour period from inside Buildings 1 through 4 and the Tank Storage Area as described in the standard operating procedure (SOP) (CH2M HILL 2007).

The final locations of the subslab vapor probes were based on site conditions and operations and are identified in Figures 3 through 8. Helium was used as a tracer gas to verify the soil vapor sample was not impacted by indoor air. Tracer gas readings were collected before and after sample collection.

4.2 Outdoor Air and Indoor Air Sampling

Two outdoor (ambient) air samples (SG-B2 and SG-B4) were collected over an 8-hour period during daytime working hours. The ambient air samples were collected concurrently with the subslab soil vapor samples (Tables 1 through 6). Sample SG-B2 was collected outside Building 2 on the west side; sample SG-B4 was collected outside Building 11 on the east side. The locations of samples SG-B2 and SG-B4 are shown on Figures 3 through 8.

SG-B2 was collected downwind of Buildings 2, 2-A, and 2-B, and upwind of Building 1. SG-B4 was collected upwind of Buildings 3, 4 and the Tank Storage Area.

Seven indoor air samples (IA-1 through IA-7) were collected at the site.

4.3 Quality Assurance/Quality Control

Quality assurance (QA)/quality control (QC) samples for this sampling event included a co-located sample (field duplicate). The tubing from the field duplicate was connected to the parent canister utilizing a "T" fixture, so the samples drew the same air from the subslab probe once the valves were opened simultaneously. One field blank was collected by placing two canisters side by side and not opening one of the valves.

4.4 Laboratory Analysis and Validation

Columbia Analytical Services of Simi Valley, California (NYSDOH Environmental Laboratory Approval Program [NELAP], New York Laboratory Identification Number 11221) supplied certified clean SUMMA™ canisters with individual tracking numbers and calibrated flow regulators. Air samples (subslab and outdoor air) were collected using evacuated stainless steel SUMMA™ canisters and analyzed in accordance with *Compendium Method TO-15: Determination of VOCs in Air Collected in Specially Prepared Canisters and Analyzed by GC/MS* (USEPA 1999).

The data were validated using applicable quality criteria in the *National Functional Guidelines for Organic Data Review* (USEPA 1994) and USEPA Region 2 data validation procedures (USEPA 2007). Appendix C contains the laboratory data package and the data quality evaluation (DQE) report for the samples collected during this investigation.

4.5 Field Observations

No subslab air samples were collected at sample location SG-7 during the November 2008 sampling event because of the unsuccessful attempts to purge the probe. Water was not noted during purging and sample collection at sample location SG-8; however, droplets of water were present in tubing upon breaking down the canister.

SECTION 5

Production-Related Compounds

The primary chemicals manufactured at the facility are T-acid, thiodipropionate esters, and MPA. Most of the chemicals are produced using batch operations.

The manufacturing processes typically involve hydrolysis, esterification, and substitution reactions. Unit processes include spray drying, refluxing, phase separation, fractionation, filtration, extraction, distillation, and carbon absorption for color and impurity removal. Chemical raw materials used in the production processes at the site include acetone, acrylonitrile, benzene, butanol, chloroform, isopropyl alcohol, MIBK, methylene chloride, toluene, acids, alcohols, alkalis, ammonia, metals (iron and zinc), and other chemicals. As a result, elevated concentrations of these chemicals may be detected in the indoor air samples. The data evaluation and analytical results are discussed in Section 6. A list of chemicals used in the production processes and analytical laboratory areas at the site is summarized in Appendix D, as recorded by the CH2M HILL field personnel during the April 2008 site visit.

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SECTION 6

Data Evaluation and Analytical Results

The subslab and indoor air sample results from each building were evaluated for the detected chemicals, and are presented in Tables 1 through 6. Indoor air samples were used to assess current exposures to volatile chemicals in air. As stated in NYSDOH guidance (2006), the detection of volatile chemicals in indoor air samples does not necessarily indicate soil vapor intrusion is occurring or actions should be taken to address exposures. The following lines of evidence were evaluated in this report to determine the potential significance of the vapor intrusion pathways in the various buildings.

- Comparison between types of sampling results – subslab vapor, indoor air, and ambient outdoor air.
- Comparison of the sampling results to background levels of volatile chemicals in indoor air – 90th percentile indoor air background levels from NYSDOH (2006).
- Comparison of the sampling results to the NYSDOH air guideline values.
- Use of the NYSDOH's decision matrices to determine actions.
- Comparison of sampling results to the USEPA regional screening levels (RSLs) (April 2009) to estimate potential human health risks (cancer and noncancer health effects) associated with exposure to the volatile chemicals in air.
- Estimation of a site-specific attenuation factor (AF, the ratio of indoor air to subslab vapor concentrations).

The concentration levels of the chemicals were compared to the criteria described in Section 6.1. The site-specific AF calculation is described in Section 6.2. The results are summarized in Section 6.3.

6.1 Criteria Used for Comparison

6.1.1 Site-Specific Ambient Outdoor Air Concentrations

As stated in NYSDOH Guidance (2006), "New York State currently does not have any standards, criteria or guidance values for concentrations of compounds measured in subslab soil vapor samples. Additionally, there are currently no databases available of background levels of volatile chemicals in soil vapor." NYSDOH (2006) guidance suggests that a comparison of subslab soil vapor results with background outdoor air concentrations will provide some perspective on the need for additional investigations. Therefore, as a first step, indoor air and subslab vapor sample results from the buildings/areas were compared with the site-specific ambient air concentrations. Ambient air sample SG-B2 was collected near Buildings 2-B, 2-A, 2, and 1, and thus represents outdoor air conditions for these buildings; sample SG-B4 was collected near Buildings 3, 4, and the Tank Storage Area and thus represents outdoor air conditions for these buildings. The site-specific ambient air

analytical results are shown in Tables 1 through 6. Indoor air/subslab vapor data were compared to site-specific ambient air data to provide one line of evidence to determine if vapor intrusion is a potential concern.

6.1.2 90th Percentile Indoor Air Background Levels (NYSDOH)

The 90th percentile indoor air background levels are provided in NYSDOH (2006) Appendix C. Note that background indoor air concentrations are not risk-based and an exceedance only indicates if the subslab soil vapor concentration or indoor air concentration is different from background aboveground indoor air concentrations, which provides one line of evidence in determining if the vapor detections are potentially site-related and/or if additional investigations are needed to further assess the soil vapor intrusion pathway. Additionally, some of the detected chemicals do not have background indoor air concentrations listed in the NYSDOH guidance document (2006).

6.1.3 Air Guideline Values (NYSDOH)

NYSDOH (2006) provides air guideline values for five chemicals (methylene chloride, polychlorinated biphenyls, tetrachlorodibenzo-*p*-dioxin equivalents, tetrachloroethene [PCE], and TCE). Methylene chloride, PCE, and TCE were detected at the site. Detected concentrations were compared against the available NYSDOH air guideline values.

6.1.4 Decision Matrices (NYSDOH)

NYSDOH (2006) has developed two matrices (Matrix 1 and Matrix 2, Appendix E) to use as risk management tools in making decisions when soil vapor may be entering buildings. Each matrix provides three to four criteria ranges for indoor air (columns) and subslab vapor (rows). Matrix 1 was originally developed for TCE with lower criteria ranges (from less than 0.25 microgram per cubic meter [$\mu g/m^3$] to greater than or equal to 5.0 $\mu g/m^3$ for indoor air, and from less than 5 $\mu g/m^3$ to greater than or equal to 250 $\mu g/m^3$ for subslab). Matrix 2 was originally developed for PCE with higher criteria ranges (from less than 3 $\mu g/m^3$ to greater than or equal to 100 $\mu g/m^3$ for indoor air, and from less than 100 $\mu g/m^3$ to greater than or equal to 1,000 $\mu g/m^3$ for subslab).

Because the matrices are risk management tools, NYSDOH intends to assign chemicals to one of these two matrices, if possible (NYSDOH 2006). Seven chemicals have been assigned to the two matrices to date, as summarized in the following table and provided via email dated March 9, 2009 from NYSDOH (Appendix E). The assignments are based on various factors, including, but not limited to, the following (NYSDOH 2006):

- Human health risks, including such factors as a chemical's ability to cause cancer, reproductive, developmental, liver, kidney, nervous system, immune system or other effects, in animals and humans and the doses that may cause those effects
- The data gaps in its toxicological database
- Background concentrations of volatile chemicals in indoor air
- Analytical capabilities currently available

Volatile Chemical	Soil Vapor/Indoor Air Matrix
Carbon tetrachloride	Matrix 1
Trichloroethene	Matrix 1
Vinyl chloride	Matrix 1
1,1-Dichloroethene	Matrix 2
Cis-1,2-dichloroethene	Matrix 2
Tetrachloroethene	Matrix 2
1,1,1-Trichloroethane	Matrix 2

The matrices provide recommended actions based on both indoor air and subslab vapor concentrations. Based on the relationship between subslab vapor concentrations and corresponding indoor air concentrations, the types of recommended actions include the following:

- No further action (NFA)
- Take reasonable and practical actions to identify source(s) and reduce exposures
- Monitor
- Mitigate

6.1.5 Regional Screening Levels for Chemical Contaminants at Superfund Sites (USEPA 2009)

All detected concentrations from the indoor air were compared against the USEPA RSLs for chemical contaminants at Superfund sites for industrial air (USEPA, April 2009). All detected concentrations from the subslab vapor samples were compared against shallow soil gas screening levels (based on the indoor air screening levels adjusted using the site-specific AF of 0.001). The calculation of the site-specific AF is described in Section 6.2.

6.2 Site-Specific Attenuation Factor Calculation

In order to calculate the site-specific AF, 10 pairs of the highest subslab vapor concentrations with their associated indoor air concentrations were selected. These samples indicate that subsurface sources may be influencing soil vapor; therefore, these areas are most likely to have a potential vapor intrusion concern. The sample locations, indoor air concentrations, subslab vapor concentrations, and the ratios of indoor air concentration to subslab vapor concentration are listed in the following table.

	Indoor Air (µg/m^3)	Subslab (µg/m^3)	Ratio of Concentrations:
Building 2	IA-2	SG-2	Indoor Air/Subslab
Chloroform	0.29	250	1.2E-03
Building 3	IA-4	SG-5	Indoor Air/Subslab
Chloroform	0.16	690	2.3E-04
	IA-4	SG-5A	Indoor Air/Subslab
Chloroform	0.16	270	5.9E-04
	IA-4	SG-6	Indoor Air/Subslab
Carbon disulfide	1.8	1200	1.5E-03
Building 4	IA-5	SG-7A	Indoor Air/Subslab
Chloroform	0.15	1300	1.2E-04
Carbon disulfide	2.2	1600	1.4E-03
Toluene	1.8	280	6.4E-03
m,p-xylene	1.5	310	4.8E-03
The Tank Storage Area	IA-7	SG-9	Indoor Air/Subslab
Chloroform	0.42	390	1.1E-03
TCE	0.095	482	2.0E-04
		Site-Specific Attenuation Factor	**1E-03**

The average site-specific AF is approximately 1E-03. Therefore, in this report, the data evaluation and human health risk assessment for subslab data are based on the site-specific AF of 1.E-03.

6.3 Analytical Results

One field blank was collected by placing two canisters side by side and not opening one of the valves. Low levels of acetone (1.6 µg/m^3), 2-butanone (MEK; 0.25 µg/m^3), toluene (2.7 µg/m^3), m,p-xylenes (0.091 µg/m^3), and n-pentane (3 µg/m^3) were detected in the field blank. Appendix B contains the QA/QC results table.

Two outdoor ambient air samples (SG-B2 and SG-B4) were collected at the site. Sample SG-B2 was collected near Buildings 2-A, 2-B, 2, and 1. Sample SG-B4 was collected near Buildings 3, 4, and the Tank Storage Area. As mentioned in Section 6.1.1, indoor air/ subslab vapor data were compared to site-specific outdoor ambient air data to provide one line of evidence to determine if vapor intrusion is a potential concern. The outdoor ambient air results are presented in Tables 1 through 6.

Eleven subslab and seven indoor samples were collected at the site. The subslab vapor and indoor air results are presented in Tables 1 through 6. The indoor air and subslab vapor

laboratory data were compared with the criteria described in Section 6.1, and the comparison results of the exceedances for each building are summarized in the following sections.

6.3.1 Building 2-A/2-B

One subslab vapor sample (SG-1) and one indoor air sample (IA-1) were collected in Building 2-A/2-B. The sample locations and analytical results are presented in Table 1 and Figure 3. The analytical results are summarized below.

In the subslab sample, chloroform and MIBK exceeded the NYSDOH background concentrations. No VOCs exceeded the NYSDOH air guideline values. No VOCs exceeded shallow soil gas screening levels based on the USEPA RSLs for industrial air and an AF of 0.001.

In the indoor air sample, three VOCs exceeded the NYSDOH background concentrations. No VOCs exceeded the NYSDOH air guideline values. Acrylonitrile exceeded the USEPA (2009) RSL for industrial air, but as discussed in Section 8.1, acrylonitrile is related to the site production processes. Acrylonitrile in indoor air sample was more than 10 times greater than the outdoor ambient air and subslab concentrations. No NYSDOH background concentration or air guideline value is available for comparison.

The NYSDOH matrix analysis results in a recommendation to identify the source and reduce exposure for carbon tetrachloride. However, concentrations of carbon tetrachloride in both subslab and indoor air samples did not exceed the NYSDOH background concentration. BACK

6.3.2 Building 2

One subslab vapor sample (SG-2) and one indoor air sample (IA-2) were collected in Building 2. A duplicate sample (SG-DUP) was collected for the same duration, and was a split sample of SG-2. The sample locations and analytical results are presented in Table 2 and Figure 4. The analytical results are summarized below.

In the subslab sample, 11 VOCs exceeded the NYSDOH background concentrations. No VOCs exceeded the NYSDOH air guideline values. No VOCs exceeded the shallow soil gas screening levels based on the USEPA RSLs and an AF of 0.001.

In the indoor air sample, MIBK and toluene exceeded the NYSDOH background concentrations. No VOCs exceeded the NYSDOH air guideline values. Acrylonitrile exceeded the USEPA RSL, but as discussed in Section 8.1, acrylonitrile is related to the site production processes. Acrylonitrile in the indoor air sample was approximately three times greater than the outdoor ambient air and subslab concentrations. No NYSDOH background concentration or air guideline value is available for comparison.

According to the NYSDOH matrix analyses, NFA was recommended for TCE, PCE, and 1,1-DCE. It was recommended to identify the source and reduce exposure for carbon tetrachloride. Carbon tetrachloride in the subslab sample was approximately four times greater than the indoor and outdoor ambient air concentrations. Carbon tetrachloride in the indoor air sample did not exceed the NYSDOH background concentration or the USEPA RSL.

MPA Process Area

Two subslab vapor samples (SG-3 and SG-3A) were collected in the MPA Process Area. No indoor air samples were collected in the MPA Process Area. The sample locations and analytical results are presented in Table 2 and Figure 4. The analytical results are summarized below.

In the subslab samples, seven VOCs exceeded the NYSDOH background concentrations. No VOCs exceeded the NYSDOH air guideline values. No VOCs exceeded the shallow soil gas screening levels based on the USEPA RSLs and an AF of 0.001.

Carbon tetrachloride in subslab sample SG-3A was approximately two times greater than the outdoor ambient and indoor air concentrations in Building 2 (adjacent to the MPA Process Area).

6.3.3 Building 1

One subslab vapor sample (SG-4) and one indoor air sample (IA-3) were collected in Building 1. The sample locations and analytical results are presented in Table 3 and Figure 5. The analytical results are summarized below.

In the subslab sample, seven VOCs exceeded the NYSDOH background concentrations. TCE exceeded the NYSDOH air guideline value. Chloroform exceeded the shallow soil gas screening level based on the USEPA RSL and an AF of 0.001.

In the indoor air sample, chloroform and MIBK exceeded the NYSDOH background concentrations. No VOCs exceeded the NYSDOH air guideline values. Acrylonitrile and chloroform exceeded the USEPA RSLs, but as discussed in Section 8.1, acrylonitrile and chloroform are related to the site production processes. Acrylonitrile in the indoor air sample did not exceed the corresponding site-specific outdoor ambient air concentration, and acrylonitrile was not detected in the subslab sample. No NYSDOH background concentration or air guideline value is available for comparison.

According to the NYSDOH matrix analyses, NFA was recommended for TCE and PCE. It was recommended to identify the source and reduce exposure for carbon tetrachloride. However, both subslab and indoor air samples did not exceed the NYSDOH background concentration for carbon tetrachloride.

6.3.4 Building 3

Three subslab vapor samples (SG-5, SG-5A, and SG-6) and one indoor air sample (IA-4) were collected in Building 3. The sample locations and analytical results are presented in Table 4 and Figure 6. The analytical results are summarized below.

In the subslab samples, five VOCs exceeded the NYSDOH background concentrations. No VOCs exceeded the NYSDOH air guideline values. Chloroform exceeded the shallow soil gas screening level based on the USEPA RSL and an AF of 0.001.

In the indoor air sample, MIBK exceeded the NYSDOH background concentrations. No VOCs exceeded the NYSDOH air guideline values. Acrylonitrile exceeded the USEPA RSL, but as discussed in Section 8.1, acrylonitrile is related to the site production processes. Acrylonitrile in the indoor air sample did not exceed the corresponding site-specific outdoor

ambient air concentration, and acrylonitirle was not detected in the three subslab samples. No NYSDOH background concentration or air guideline value is available for comparison.

According to the NYSDOH matrix analysis, NFA was recommended for TCE. It was recommended to identify the source and reduce exposure for carbon tetrachloride. However, for both subslab and indoor air samples, carbon tetrachloride concentrations did not exceed the NYSDOH background concentration.

6.3.5 Buildings 4/11-A

Two subslab vapor samples (SG-7A, and SG-8) and one indoor air sample (IA-5) were collected in Building 4. One indoor air sample (IA-6) was collected in Building 11-A which shares the same air space. The sample locations and analytical results are presented in Table 5 and Figure 7. The analytical results are summarized below.

In the subslab samples, 16 VOCs exceeded the NYSDOH background concentrations. No VOCs exceeded the NYSDOH air guideline values. Chloroform exceeded the shallow soil gas screening level based on the USEPA RSL and an AF of 0.001.

In the indoor air samples, MIBK exceeded the NYSDOH background concentrations. No VOCs exceeded the NYSDOH air guideline values. Acrylonitrile exceeded the USEPA RSL, but as discussed in Section 8.1, acrylonitrile is related to the site production processes. Acrylonitrile concentration in indoor air sample IA-6 was slightly greater than the outdoor ambient air concentration. No NYSDOH background concentration or air guideline value is available for comparison.

According to the NYSDOH matrix analyses, NFA was recommended for TCE and PCE. It was recommended to identify the source and reduce exposure for carbon tetrachloride. Carbon tetrachloride in the subslab sample SG-7A was approximately five times greater than the indoor and outdoor ambient air concentrations. Carbon tetrachloride in the indoor air samples did not exceed the NYSDOH background concentration or the USEPA RSL.

6.3.6 The Tank Storage Area

One subslab vapor sample (SG-9) and one indoor air sample (IA-7) were collected in the Tank Storage Area. The sample locations and analytical results are presented in Table 6 and Figure 8. The analytical results are summarized below.

In the subslab sample, seven VOCs exceeded the NYSDOH background concentrations. TCE exceeded the NYSDOH air guideline values. No VOCs exceeded the shallow soil gas screening levels based on the USEPA RSLs and an AF of 0.001.

In the indoor air sample, MIBK exceeded the NYSDOH background concentrations. No VOCs exceeded the NYSDOH air guideline values. Acrylonitrile exceeded the USEPA RSL, but as discussed in Section 8.1, acrylonitrile is related to the site production processes. Acrylonitrile in the indoor air sample did not exceed the corresponding site-specific outdoor ambient air concentration, and acrylonitirle was not detected in the subslab sample.

According to the NYSDOH matrix analysis, NFA was recommended for PCE. Mitigation was recommended for TCE due to the elevated subslab concentration of 482 $\mu g/m^3$. TCE in the indoor air sample (0.095 $\mu g/m^3$) was more than three orders of magnitude lower than in

the subslab sample, and did not exceed the NYSDOH background concentration or the USEPA RSL. It was recommended to identify the source and reduce exposure for carbon tetrachloride. However, both subslab and indoor air samples did not exceed the NYSDOH background concentration for carbon tetrachloride.

SECTION 7

Human Health Risk Assessment

Estimated human health risks have been calculated for the industrial scenario for the indoor air pathway using subslab vapor and indoor air data at individual sampling locations. Excess lifetime cancer risk (ELCR) and noncancer hazards indices (HIs) were calculated for each location using detected VOC results. The estimated health risks and noncancer hazards for subslab vapor and indoor air are presented in Tables 7 and 8, respectively. Chemicals that are the largest contributors to total ELCRs and noncarcinogenic hazards have been identified and presented along with risk results.

Although this risk assessment produces numerical estimates of risk, it should be recognized that these numbers might not predict actual health outcomes because they are based largely on hypothetical assumptions. Their purpose is to provide a frame of reference for risk management decision making. Any actual risks are likely to be lower than these estimates, and may even be zero. Interpretation of the risk estimates provided should consider the nature and weight of evidence supporting these estimates, as well as the magnitude of uncertainty surrounding them.

Potential ELCRs and noncancer health hazards are summarized in this section in the context of USEPA's risk management range (that is, 1E-06 [1:1,000,000] to 1E-04 [1:10,000] cancer risk and an HI of 1).

For the purposes of this evaluation, the potential for unacceptable human health risk is identified using the following risk thresholds:

- ELCR values are compared to the risk-management range of 1E-06 to 1E-04. ELCR values exceeding 1E-06 involve a risk management decision that includes evaluating site-specific characteristics and exposure scenario factors to assess whether remedial action is warranted.
- An HI (the ratio of chemical intake to the reference dose [RfD]) greater than 1 indicates there is some potential for adverse noncancer health effects associated with exposure to the chemicals of potential concern (COPCs).

Cancer Risk Estimation Method

The potential for cancer effects is evaluated by estimating ELCRs. This risk is the incremental increase in the probability of developing cancer during one's lifetime in addition to the background probability of developing cancer (that is, if no exposure to the COPCs occurs). For example, a 2E-06 ELCR means that, for every 1 million people exposed to the carcinogen throughout their lifetimes, the average incidence of cancer might increase by two additional cases of cancer.

ELCRs were estimated by using the following formula:

$$Risk = \frac{Conc.}{SL} \times 1E-06$$

where:

Risk	=	ELCR (unitless probability)
Conc.	=	Measured soil gas or indoor air concentration ($\mu g/m^3$)
SL	=	Carcinogenic screening level ($\mu g/m^3$)

Although synergistic or antagonistic interactions might occur between cancer-causing chemicals and other chemicals, information is generally lacking in the toxicological literature to predict quantitatively the effects of these potential interactions. Therefore, cancer risks for individual chemicals are treated as additive (that is, were summed) for each sample location in this assessment. This is consistent with USEPA guidelines on chemical mixtures (USEPA 1986). For estimating the cancer risks from exposure to multiple carcinogens from a single sample location, the following equation is used:

$$Risk_T = \sum_1^N Risk_i$$

where:

$Risk_T$	=	Total cancer risk from sample location
$Risk_i$	=	Cancer risk for the i^{th} chemical
N	=	Number of chemicals

Noncancer Risk Estimation Method

For noncancer effects, the likelihood that a receptor will develop an adverse effect is estimated by comparing the predicted level of exposure for a particular chemical with the highest level of exposure that is considered protective (that is, the screening level). The ratio of the measured soil gas or indoor air concentration divided by the screening level is termed the hazard quotient (HQ):

$$HQ = Conc./SL$$

When the HQ for a chemical exceeds 1 (that is, concentration exceeds the screening level), there is a concern for potential noncancer health effects. To assess the potential for noncancer effects posed by exposure to multiple chemicals, an HI approach was used according to USEPA guidance (USEPA 1989). This approach assumes that the noncancer hazard associated with exposure to more than one chemical is additive; therefore, synergistic or antagonistic interactions between chemicals are not quantitatively addressed. The HI may exceed 1 even if the individual HQs are less than 1. In this case, the chemicals may be segregated by similar mechanisms of toxicity and toxicological effects. Separate HIs may then be derived based on mechanism and effect.

The HI is calculated as follows:

$$HI = \sum_{1}^{N} Conc_i / SL_i$$

where:

HI	=	Hazard index
$Conc_i$	=	Measured soil gas or indoor air concentration for the i^{th} chemical ($\mu g/m^3$)
SL_i	=	Screening level for the i^{th} chemical ($\mu g/m^3$)
N	=	Number of chemicals

7.1 Subslab Vapor Risk Evaluation

The estimated indoor air cumulative cancer risk and noncancer HI estimates for each subslab vapor sample point were calculated using a risk ratio approach (ratio of measured subslab vapor concentration to subslab vapor screening levels). The subslab data indicate potential future conditions of VOCs in the subsurface that may enter a structure. The screening levels used were USEPA RSLs for industrial air (USEPA, April 2009) with the site-specific AF of 0.001 (see Section 6.2) for subslab vapor to indoor air applied. The ELCR and noncancer HI estimates for each building are described below.

7.1.1 Building 2-A/2-B

The ELCR for Building 2-A/2-B was 2E-08, which is below USEPA's risk management range of 1E-06 to 1E-04. The major contributor to the ELCR was chloroform. The estimated cumulative noncancer HI was less than 1, which is below USEPA's threshold of 1. The major contributor to the estimated cumulative noncancer HI was aniline (tentatively identified compound [TIC] with no associated NYSDOH background level).

7.1.2 Building 2

The ELCR results were both 5E-07 in subslab vapor sample SG-DUP and in subslab vapor sample SG-2, which are below USEPA's risk management range of 1E-06 to 1E-04. The major contributors to the ELCR were chloroform, PCE, and naphthalene (TIC with no associated NYSDOH background level) in both samples SG-2 and SG-DUP. The estimated cumulative noncancer HIs were less than 1, which is below USEPA's threshold of 1. The major contributors to the estimated cumulative noncancer HIs were naphthalene and chloroform.

In the MPA Process Area (adjacent to Building 2), the ELCR results ranged from 8E-09 in subslab vapor sample (SG-3A) to 5E-08 in subslab vapor sample (SG-3), which are below USEPA's risk management range of 1E-06 to 1E-04. The major contributors to the ELCR were chloroform in sample SG-3 and acrylonitrile in sample SG-3A. The estimated cumulative noncancer HIs were less than 1, which is below USEPA's threshold of 1. The major contributor to the estimated cumulative noncancer HIs was acrylonitrile.

7.1.3 Building 1

The ELCR for Building 1 was 2E-06, which is within USEPA's risk management range of 1E-06 to 1E-04. The major contributors to the ELCR were chloroform and PCE. The estimated cumulative noncancer HI was less than 1, which is below USEPA's threshold of 1. The major contributor to the estimated cumulative noncancer HI was chloroform.

7.1.4 Building 3

The ELCR results ranged from 1E-07 in subslab vapor sample SG-6 to 1E-06 in subslab vapor sample SG-5. The major contributor to the ELCR was chloroform in all three samples. The estimated cumulative noncancer HIs were all less than 1, which is below USEPA's threshold of 1. The major contributors to the estimated cumulative noncancer HIs were chloroform in samples SG-5 and SG-5A, and carbon disulfide (no associated NYSDOH background level) and chloroform in sample SG-6.

7.1.5 Building 4

The ELCR results ranged from 4E-08 in subslab vapor sample SG-8 to 2E-06 in subslab vapor sample SG-7A. The major contributors are chloroform in both samples SG-7A and SG-8, and acrylonitrile in sample SG-8. The estimated cumulative noncancer HIs were less than 1, which is below USEPA's threshold of 1. The major contributor to the estimated cumulative noncancer HIs were chloroform in sample SG-7A and acrylonitrile in sample SG-8.

7.1.6 The Tank Storage Area

The ELCR for the Tank Storage Area was 8E-07 in subslab vapor sample SG-9, which is below USEPA's risk management range of 1E-06 to 1E-04. The major contributors to the ELCR were chloroform, TCE, and 1,2-dichloropropane. The estimated cumulative noncancer HI was less than 1, which is below USEPA's threshold of 1. The major contributor to the estimated cumulative noncancer HI was 1,2-dichloropropane.

7.2 Indoor Air Risk Evaluation

The estimated indoor air cumulative cancer risk and noncancer HI estimates for each indoor air sample point were calculated using a risk ratio approach (ratio of measured indoor air concentration to indoor air screening levels). The indoor air screening levels used were USEPA RSLs for industrial air. Carcinogenic RSLs were based on a target risk of 1E-06 and adjusted noncarcinogenic RSLs were based on an HI of 1. The ELCR and noncancer HI estimates for each building are described below.

7.2.1 Building 2-A/2-B

The ELCR for Building 2-A/2-B was 5E-05, which is within USEPA's risk management range of 1E-06 to 1E-04. The major contributor to the ELCR was acrylonitrile. The estimated cumulative noncancer HI was less than 1, which is below USEPA's threshold of 1. The major contributor to the estimated cumulative noncancer HI was acrylonitrile.

7.2.2 Building 2

The ELCR for Building 2 was 1E-05, which is within USEPA's risk management range of 1E-06 to 1E-04. The major contributor to the ELCR was acrylonitrile. The estimated cumulative noncancer HI was less than 1, which is below USEPA's threshold of 1. The major contributor to the estimated cumulative noncancer HI was acrylonitrile.

7.2.3 Building 1

The ELCR for Building 1 was 2E-05, which is within USEPA's risk management range of 1E-06 to 1E-04. The major contributors to the ELCR were acrylonitrile and chloroform. The estimated cumulative noncancer HI was less than 1, which is below USEPA's threshold of 1. The major contributor to the estimated cumulative noncancer HI was MIBK.

7.2.4 Building 3

The ELCR for Building 3 was 3E-06, which is within USEPA's risk management range of 1E-06 to 1E-04. The major contributor to the ELCR was acrylonitrile. The estimated cumulative noncancer HI was less than 1, which is below USEPA's threshold of 1. The major contributor to the estimated cumulative noncancer HI was acrylonitrile.

7.2.5 Building 4/11-A

The ELCR for Building 4/11-A range from 2E-06 to 5E-06, both of which are within USEPA's risk management range of 1E-06 to 1E-04. The major contributor to the ELCR was acrylonitrile. The estimated cumulative noncancer HI was less than 1, which is below USEPA's threshold of 1. The major contributor to the estimated cumulative noncancer HI was acrylonitrile for IA-5, and 1,2,4-trimethylbenzene (TIC with no associated NYSDOH background level) in IA-6.

7.2.6 The Tank Storage Area

The ELCR for the Tank Storage Area was 3E-06, which is within USEPA's risk management range of 1E-06 to 1E-04. The major contributor to the ELCR was acrylonitrile. The estimated cumulative noncancer HI was less than 1, which is below USEPA's threshold of 1. The major contributor to the estimated cumulative noncancer HI was 1,2,4-trimethylbenzene (TIC with no associated NYSDOH background level).

7.3 Uncertainty Associated with Human Health Assessment

A number of uncertainties are inherent in the estimates of potential cancer risks and noncancer health hazards presented in this risk assessment. These uncertainties are generally associated with: (1) the sampling and analysis or (2) the assumptions and models that make up the risk assessment process. The potential effect of the uncertainties on risk estimates (overestimation or underestimation) varies from readily predicted to difficult to assess. Thus, it is important to specify the assumptions and uncertainties inherent in the risk assessment to place the risk estimates in proper perspective (USEPA 1989).

The general assumptions used in selecting subslab vapor and indoor air constituents to evaluate quantitatively were conservative to ensure that true constituents of concern were

not eliminated from the quantitative risk assessment. All detected subslab vapor and indoor air constituents were quantitatively evaluated in this risk assessment. Detection of constituents in subslab vapor and indoor air is not necessarily indicative of subsurface vapor intrusion into buildings; therefore, including all detected constituents in subslab vapor and indoor air likely overstates the ELCRs and noncancer HIs associated with vapor intrusion.

The shallow soil gas screening levels used for the subslab data were based on USEPA RSLs for industrial air with the site-specific AF of 0.001 for subslab vapor to indoor air applied. The site-specific AF was calculated based on ten pairs of the highest subslab vapor concentrations and their associated indoor air concentrations. This may underestimate or overestimate the ELCRs and noncancer HIs for subslab vapor.

Elevated reporting limits were reported in one or more samples. This may underestimate the ELCRs and noncancer HIs for those samples because VOCs may actually be present at levels less than the elevated reporting limits but they were eliminated from the risk/hazard calculations because they were flagged as nondetects.

The uncertainties identified in each component of risk assessment ultimately contribute to uncertainty in risk characterization. The addition of risks and HIs across constituents contributes to uncertainty based on the interaction of constituents such as additivity, synergism, potentiation, and susceptibility of exposed receptors. The simple assumption of additivity used for this facility may or may not be accurate and may over- or underestimate risk; however, this approach follows USEPA guidance and a better alternative is not available at this time.

SECTION 8

Conclusions

8.1 Summary

Chemicals with indoor air concentrations exceeding the USEPA RSL, or with subslab vapor concentrations exceeding the USEPA RSL at an AF of 0.001 (that is, cancer risk greater than 1E-06), as well as the results from the NYSDOH matrix analysis are summarized in the following sections.

Building 2-A/2-B

- Acrylonitrile
  - The indoor air concentration in Sample IA-1 (8.1 µg/m³) exceeded the USEPA (2009) RSL of 0.18 µg/m³.
  - The subslab soil vapor concentration in Sample SG-1 (0.64 µg/m³) did not exceed the shallow soil gas screening level of 180 µg/m³.
  - The outdoor ambient air concentration in Sample SG-B2 was 0.71 µg/m³.
  - The subslab vapor concentration is more than an order of magnitude less than indoor air and slightly less than the outdoor ambient air concentration.
  - Acrylonitrile is related to the site production processes. Therefore, the elevated acrylonitrile indoor air concentration of 8.1 µg/m³ is likely contributed from the chemical used onsite rather than soil vapor intrusion given the concentrations detected in the subslab vapor samples.
- Carbon tetrachloride
  - This chemical was assigned to Matrix 1. Recommended action from the matrix: Take reasonable and practical actions to identify source(s) and reduce exposures, in accordance with NYSDOH guidellines. However, both indoor and subslab concentrations did not exceed risk-based screening levels or NYSDOH background concentration.
- The subslab vapor cumulative ELCR for Building 2-A/2-B was 2E-08. The estimated cumulative noncancer HI was less than 1.
- The indoor air ELCR for Building 2-A/2-B was 5E-05 with the main contributor being acrylonitrile, which is likely related to production processes rather than soil vapor intrusion. The estimated cumulative noncancer HI was less than 1.

Based on these results, vapor intrusion does not appear to be contributing to indoor air concentrations above background levels in Building 2-A/2-B, and no further evaluation is proposed.

Building 2

- Acrylonitrile
  - The indoor air concentration in Sample IA-2 (1.9 µg/m³) exceeded the USEPA (2009) RSL of 0.18 µg/m³.
  - The subslab soil vapor concentrations in Samples SG-2, SG-DUP, SG-3, and SG-3A (0.68 µg/m³, 0.71 µg/m³, 0.93 µg/m³, and 0.61 µg/m³, respectively) did not exceed the shallow soil gas screening level of 180 µg/m³ and these concentrations were less than the indoor air concentration in Sample IA-2.
  - The outdoor ambient air concentration in Sample SG-B2 was 0.71 µg/m³.
  - The subslab vapor concentration is approximately two times less than the indoor air concentration, and generally consistent with the outdoor ambient air concentration.
  - Acrylonitrile is related to the site production processes. Therefore, the elevated acrylonitrile indoor air concentration of 1.9 µg/m³ is likely contributed from the chemical used onsite rather than soil vapor intrusion given the concentrations detected in the subslab vapor samples.
- PCE
  - This chemical was assigned to Matrix 2. Recommended action: NFA.
- TCE
  - This chemical was assigned to Matrix 1. Recommended action: NFA.
- Carbon tetrachloride
  - This chemical was assigned to Matrix 1. Recommended action from the matrix: Take reasonable and practical actions to identify source(s) and reduce exposures, in accordance with NYSDOH guidelines. However, both indoor and subslab concentrations did not exceed risk-based screening levels.
- The subslab vapor cumulative ELCR results are 5E-07 in both subslab vapor samples SG-2 and SG-DUP. The estimated cumulative noncancer HIs were less than 1.
- The indoor air ELCR for Building 2 was 1E-05 with the main contributor being acrylonitrile, which is likely related to production processes rather than soil vapor intrusion. The estimated cumulative noncancer HI was less than 1.

Based on these results, vapor intrusion does not appear to be contributing to indoor air levels above risk-based concentrations in Building 2, and no further evaluation is proposed.

MPA Process Area

In the MPA Process Area (located adjacent to Building 2, sharing airspace with Building 2):

- The subslab vapor cumulative ELCR results ranged from 8E-09 in subslab vapor sample (SG-3A) to 5E-08 in subslab vapor sample (SG-3). The estimated cumulative noncancer HIs were less than 1.

Based on these results, the vapor intrusion pathway does not appear to be significant for the MPA Process Area (that is, ELCR is less than 1E-06 and HI is less than 1), and no further evaluation is proposed.

Building 1

- Acrylonitrile
  - The indoor air concentration in Sample IA-3 (0.42 µg/m³) exceeded the USEPA RSL of 0.18 µg/m³, but was less than outdoor ambient air concentration.
  - Acrylonitrile was not detected in the subslab sample SG-4 in Building 1, however, the detection limit was elevated (0.52 U µg/m³).
  - The outdoor ambient air concentration in Sample SG-B2 was 0.71 µg/m³.
  - The indoor air concentration and the detection limit for the subslab vapor were both lower than the outdoor ambient air concentration.
  - Acrylonitrile is related to the site production processes. Therefore, the elevated acrylonitrile indoor air concentration of 0.42 µg/m³ is likely contributed from the chemical used onsite rather than soil vapor intrusion given the concentrations detected in the subslab vapor samples.
- Chloroform
  - The indoor air concentration in Sample IA-3 (7 µg/m³) exceeded the USEPA RSL of 0.53 µg/m³.
  - The subslab soil vapor concentration Sample SG-4 (1,000 µg/m³) exceeded the shallow soil gas screening level of 530 µg/m³.
  - The outdoor ambient air concentration in Sample SG-B2 was detected at 0.12 µg/m³.
  - Although chloroform is related to production in Building 1, the subslab vapor concentration is two orders of magnitude higher than the indoor air concentration. Therefore, chloroform in subslab vapor could be contributing to the indoor air concentrations .
- PCE
  - This chemical was assigned to Matrix 2. Recommended action: NFA.
- Carbon tetrachloride
  - This chemical was assigned to Matrix 1. Recommended action: Take reasonable and practical actions to identify source(s) and reduce exposures, in accordance with NYSDOH guidelines. However, both indoor and subslab concentrations did not exceed risk-based screening levels.
- The subslab vapor cumulative ELCR for Building 1 was 2E-06 with the main contributor being chloroform. The estimated cumulative noncancer HI was less than 1.

- The indoor air ELCR for Building 1 was 2E-05 with the main contributor being chloroform. The estimated cumulative noncancer HI was less than 1.

Based on the chloroform results mentioned above, the presence of chloroform in indoor air in Building 1 may be related to vapor intrusion. However, the cumulative ELCR is within USEPA's risk management range and the HI is less than 1 for the indoor air results. Therefore, one round of indoor air/subslab vapor sampling in Building 1 is proposed to confirm the site-specific AF and that cumulative risks are within USEPA's risk management range.

Building 3

- Acrylonitrile
  - The indoor air concentration in Sample IA-4 (0.34 µg/m³) exceeded the USEPA RSL of 0.18 µg/m³, but was lower than the outdoor ambient air concentration.
  - Acrylonitrile was not detected in the subslab vapor samples in Building 3. The detection limit in Sample SG-5 was elevated (2.4 U µg/m³), but did not exceed the shallow soil gas screening level of 180 µg/m³.
  - The outdoor ambient air concentration in Sample SG-B4 was 0.51 µg/m³.
  - Acrylonitrile is related to the site production processes. Therefore, the elevated acrylonitrile indoor air concentration of 0.34 µg/m³ is likely contributed from the chemical used onsite rather than soil vapor intrusion given the concentrations detected in the subslab vapor samples.
- Chloroform
  - The subslab soil vapor concentration in Sample SG-5 (690 µg/m³) exceeded the USEPA RSL of 530 µg/m³.
  - The indoor air concentration in Sample IA-4 (0.16 µg/m³) did not exceed the USEPA RSL of 0.53 µg/m³.
  - The outdoor ambient air concentration in Sample SG-B4 was 0.088 µg/m³.
  - The indoor concentration was approximately two times the outdoor concentration but significantly lower than the subslab concentrations. The results indicate that vapor intrusion is not significant.
  - Chloroform is related to the site production processes.
- TCE
  - This chemical was assigned to Matrix 1. Recommended action: NFA.
- Carbon tetrachloride
  - This chemical was assigned to Matrix 1. Recommended action: Take reasonable and practical actions to identify source(s) and reduce exposures, in accordance with

NYSDOH guideliens. However, both indoor and subslab concentrations did not exceed risk-based screening levels.

- The subslab vapor cumulative ELCR results ranged from 1E-07 in subslab vapor sample SG-6 to 1E-06 in subslab vapor sample SG-5. The estimated cumulative noncancer HIs were all less than 1.
- The indoor air cumulative ELCR for Building 3 was 3E-06 with the main contributor being acrylonitrile, which is likely related to production processes rather than soil vapor intrusion. The estimated cumulative noncancer HI was less than 1.

Based on these results, vapor intrusion does not appear to be contributing to indoor air levels above risk-based concentrations in Building 3, and no further evaluation is proposed.

Building 4/11-A

- Acrylonitrile
  - The indoor air concentration in Sample IA-6 (0.55 $\mu g/m^3$) exceeded the USEPA RSL of 0.18 $\mu g/m^3$, but was similar to the outdoor ambient air concentration 0.51 $\mu g/m^3$.
  - No subslab samples were collected in Building 11-A.
  - The outdoor ambient concentration in Sample SG-B4 was 0.51 $\mu g/m^3$.
  - The indoor air concentration is consistent with the outdoor ambient air concentration.
  - Acrylonitrile is related to the site production processes. Therefore, the elevated acrylonitrile indoor air concentration of 0.55 $\mu g/m^3$ is likely contributed from the chemical used onsite rather than soil vapor intrusion given the concentrations detected in the subslab vapor samples.
- Chloroform
  - The subslab soil vapor concentration in Sample SG-7A (1,300 $\mu g/m^3$) exceeded the USEPA RSL of 530 $\mu g/m^3$.
  - The indoor air concentrations in Samples IA-5 and IA-6 (0.15 $\mu g/m^3$ and 0.43 $\mu g/m^3$, respectively) did not exceed the USEPA RSL of 0.53 $\mu g/m^3$.
  - The outdoor ambient air concentration in Sample SG-B4 was 0.088 $\mu g/m^3$.
  - The indoor air concentrations were approximately two to five times greater than the outdoor ambient air concentration and significantly lower than the subslab concentrations. The results indicate that the vapor intrusion is not currently significant.
  - Chloroform is related to the site production processes.
- PCE
  - This chemical was assigned to Matrix 2. Recommended action: NFA.

- Carbon tetrachloride
  - This chemical was assigned to Matrix 1. Recommended action: Take reasonable and practical actions to identify source(s) and reduce exposures, in accordance with NYSDOH guidelines. However, both indoor and subslab concentrations did not exceed risk-based screening levels.
- The subslab vapor cumulative ELCR results ranged from 4E-08 in subslab vapor sample SG-8 to 2E-06 in subslab vapor sample SG-7A. The estimated cumulative noncancer HIs were less than 1.
- The indoor air ELCR for Building 4/11-A ranged from 2E-06 to 5E-06 with the main contributor being acrylonitrile. The estimated cumulative noncancer HIs were less than 1.

Based on the chloroform results mentioned above, the presence of chloroform in indoor air in Building 4/11-A may be related to vapor intrusion because of the elevated levels of chloroform in one subslab sample. However, vapor intrusion does not appear to be contributing to indoor air levels above risk-based concentrations in Building 4/11-A. Therefore, one round of indoor air/subslab sampling in Building 4/11-A is proposed to confirm that cumulative risks are within USEPA's risk management range and to confirm the site-specific attenuation factor used in the data evaluation.

The Tank Storage Area

- Acrylonitrile
  - The indoor air concentration in Sample IA-7 (0.19 µg/m³) exceeded the USEPA RSL of 0.18 µg/m³.
  - Acrylonitrile was not detected in the subslab vapor sample in the Tank Storage Area.
  - The outdoor ambient air concentration in Sample SG-B4 was 0.51 µg/m³.
  - The indoor air concentration is approximately three times less than the outdoor air concentration.
  - Acrylonitrile is related to the site production processes. Therefore, the elevated acrylonitrile indoor air concentration of 0.19 µg/m³ is likely contributed from the chemical used onsite rather than soil vapor intrusion given the concentrations detected in the subslab vapor samples.
- PCE
  - This chemical was assigned to Matrix 2. Recommended action: NFA.
- TCE
  - This chemical was assigned to Matrix 1. The matrix recommended mitigation for TCE because of the elevated subslab concentration of 482 µg/m³. TCE in the indoor air sample (0.095 µg/m³) was more than three orders of magnitude lower than in the subslab sample, and did not exceed the NYSDOH background concentration of 0.5 µg/m³ or the USEPA RSL of 6.1 µg/m³. The data indicate that the current vapor

intrusion is not significant (that is, does not result in indoor air concentrations above background or the risk-based screening level).

- Carbon tetrachloride
  - This chemical was assigned to Matrix 1. Recommended action: Take reasonable and practical actions to identify source(s) and reduce exposures, in accordance with NYSDOH guidelines. However, both indoor and subslab concentrations did not exceed risk-based screening levels.
- The subslab vapor cumulative ELCR for the Tank Storage Area was 8E-07 in subslab vapor sample SG-9. The estimated cumulative noncancer HI was less than 1.
- The indoor air cumulative ELCR for the Tank Storage Area was 3E-06 with the main contributor being acrylonitrile, which is likely related to production processes rather than soil vapor intrusion. The estimated cumulative noncancer HI was less than 1.

There is some evidence that there is the potential for vapor intrusion in the Tank Storage Area from TCE because of elevated levels of TCE in the subslab. However, vapor intrusion does not appear to be contributing to indoor air levels above risk-based concentrations in the Tank Storage Area. Therefore, one round of indoor air/subslab sampling in the Tank Storage Area is proposed to confirm that cumulative risks are within USEPA's risk management range and to confirm the site-specific attenuation factor used in the data evaluation.

I would do this to compare w/ matrix useful info for GW study

8.2 Proposed Path Forward

Based on the evaluation of the subslab and indoor air sampling data obtained during the November 2008 SVI, no further evaluation is proposed at Buildings 2-A/2-B, 2, and 3 because vapor intrusion does not appear to be contributing to indoor air levels above risk-based concentrations and because of other factors as presented in Section 8.1.

Based on the presence of chloroform in subslab soil vapor and indoor air in Buildings 1 and 4/11-A, one indoor air/subslab vapor sampling event at Building 1 and Building 4/11-A is recommended to confirm the site-specific AF, and that cumulative risks are within the USEPA's risk management range. If the results of this additional sampling event indicate that cumulative risks are still within the USEPA's risk management range, then NFA will be required.

Based on the presence of TCE in subslab soil vapor and indoor air in the Tank Storage Area, one indoor air/subslab vapor sampling event in the Tank Storage Area is recommended to confirm the site-specific AF, and that cumulative risks are within the USEPA's risk management range. If the results of this additional sampling event indicate that cumulative risks are still within the USEPA's risk management range, then NFA will be required.

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SECTION 9

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Tables

TABLE 1

Ambient Air, Indoor Air, and Subslab Vapor Results - Building 2-A/2-B

Former Hampshire Chemical Corp Facility, Waterloo, New York

Location ID				(AF=0.001)		(AF=0.001)	WAT-SGB2	WAT-IA-1	WAT-SG01
Location Group			Carcinogenic	Carcinogenic			Ambient Air	Indoor Air	Subslab Vapor
Field Sample ID		NYSDOH 2003	Target Risk	Target Risk	Noncancer	Noncancer	WAT-SG-B2-110408	WAT-IA-1-110408	WAT-SG-1-110408
Sample Date		Study of VOCs	(TR) = 1E-06	(TR) = 1E-06	Hazard Index	Hazard Index	11/4/2008	11/4/2008	11/4/2008
Sample Type		90th Percentile	Inhalation	Inhalation	(HI) = 1 Inhalation	(HI) = 1 Inhalation	Normal	Normal	Normal
Matrix		(µg/m3)	(µg/m3)	(µg/m3)	(µg/m3)	(µg/m3)	Vapor	Air	Vapor
	CAS #	a	b	b'	c	c'			
Volatile Organics, by Method TO15 (µg/m3)									
1,1,1-Trichloroethane	71-55-6	3.1	–	–	2.2E+04	2.2E+07	0.15 U	0.16 U	0.15 U
1,1,2,2-Tetrachloroethane	79-34-5	<0.25	2.1E-01	2.1E+02	–	–	0.15 U	0.16 U	0.15 U
1,1,2-Trichloroethane	79-00-5	<0.25	7.7E-01	7.7E+02	–	–	0.15 U	0.16 U	0.15 U
1,1-Dichloroethane	75-34-3	<0.25	7.7E+00	7.7E+03	–	–	0.15 U	0.16 U	**0.13 J**
1,1-Dichloroethene	75-35-4	<0.25	–	–	8.8E+02	8.8E+05	0.15 U	0.16 U	0.15 U
1,2-Dichloroethane	107-06-2	<0.25	4.7E-01	4.7E+02	1.1E+04	1.1E+07	0.15 U	0.16 U	0.15 U
1,2-Dichloropropane	78-87-5	<0.25	1.2E+00	1.2E+03	1.8E+01	1.8E+04	0.15 U	0.16 U	0.15 U
2-Butanone	78-93-3	16	–	–	2.2E+04	2.2E+07	2 U	3.1 U	1.9 U
Acetone	67-64-1	110	–	–	1.4E+05	1.4E+08	12 U	**140[a]**	5.8 U
Acrylonitrile	107-13-1	–	1.8E-01	1.8E+02	8.8E+00	8.8E+03	**0.71 J[b]**	**8.1[b]**	**0.64 J**
Benzene	71-43-2	15	1.6E+00	1.6E+03	1.3E+02	1.3E+05	**0.62**	**0.78**	**0.14 J**
Bromodichloromethane	75-27-4	–	3.3E-01	3.3E+02	–	–	0.15 U	0.16 U	0.15 U
Bromoform	75-25-2	–	1.1E+01	1.1E+04	–	–	0.74 U	0.81 U	0.73 U
Bromomethane	74-83-9	–	–	–	2.2E+01	2.2E+04	0.15 U	0.16 U	0.15 U
Carbon disulfide	75-15-0	–	–	–	3.1E+03	3.1E+06	0.74 U	**1**	**11**
Carbon tetrachloride	56-23-5	0.8	8.2E-01	8.2E+02	8.3E+02	8.3E+05	**0.67**	**0.64**	**0.31**
Chlorobenzene	108-90-7	<0.25	–	–	2.2E+02	2.2E+05	0.15 U	**0.11 J**	**0.076 J**
Chloroethane	75-00-3	<0.25	–	–	4.4E+04	4.4E+07	0.15 U	0.16 U	0.15 U
Chloroform	67-66-3	1.4	5.3E-01	5.3E+02	4.3E+02	4.3E+05	**0.12 J**	**0.37**	**6.9[a]**
Chloromethane	74-87-3	3.3	–	–	3.9E+02	3.9E+05	**0.42**	**0.45**	0.15 U
cis-1,2-Dichloroethylene	156-59-2	<0.25	–	–	–	–	0.15 U	0.16 U	0.15 U
cis-1,3-Dichloropropene	10061-01-5	<0.25	–	–	–	–	0.74 U	0.81 U	0.73 U
Dibromochloromethane	124-48-1	–	4.5E-01	4.5E+02	–	–	0.15 U	0.16 U	0.15 U
Ethylbenzene	100-41-4	7.3	4.9E+00	4.9E+03	4.4E+03	4.4E+06	**0.38 J**	**1.5**	**0.56 J**
Methyl Isobutyl Ketone (4-Methyl-2-Pentanone)	108-10-1	2.2	–	–	1.3E+04	1.3E+07	**300[a]**	**300[a]**	**4.7[a]**
Methylene chloride	75-09-2	22	2.6E+01	2.6E+04	4.6E+03	4.6E+06	**0.54 J**	**0.42 J**	**0.092 J**
Styrene	100-42-5	1.3	–	–	4.4E+03	4.4E+06	**0.46 J**	**1**	**1**
Tetrachloroethene	127-18-4	2.9	2.1E+00	2.1E+03	1.2E+03	1.2E+06	**0.14 J**	**0.18**	**0.77**
Toluene	108-88-3	58	–	–	2.2E+04	2.2E+07	17 U	**150[a]**	**38**
Trans-1,2-Dichloroethene	156-60-5	–	–	–	2.6E+02	2.6E+05	0.15 U	0.16 U	0.15 U
trans-1,3-Dichloropropene	10061-02-6	<0.25	–	–	–	–	0.74 U	0.81 U	0.73 U
Trichloroethene	79-01-6	0.5	6.1E+00	6.1E+03	–	–	0.15 U	0.16 U	0.15 U
Vinyl chloride	75-01-4	<0.25	2.8E+00	2.8E+03	4.4E+02	4.4E+05	0.15 U	0.16 U	0.15 U
m,p-xylene	108-38-3/1	12	–	–	3.1E+03	3.1E+06	**0.81**	**4.7**	**1.1**
o-xylene	95-47-6	7.6	–	–	3.1E+03	3.1E+06	**0.28 J**	**1.1**	**0.39 J**
Epichlorohydrin	106-89-8	–	1.0E+01	1.0E+04	4.4E+00	4.4E+03	NF	NF	NF

TABLE 1
Ambient Air, Indoor Air, and Subslab Vapor Results - Building 2-A/2-B
Former Hampshire Chemical Corp Facility, Waterloo, New York

Location ID				(AF=0.001)		(AF=0.001)	WAT-SGB2	WAT-IA-1	WAT-SG01
Location Group			**Carcinogenic**	**Carcinogenic**			Ambient Air	Indoor Air	Subslab Vapor
Field Sample ID		**NYSDOH 2003**	**Target Risk**	**Target Risk**	**Noncancer**	**Noncancer**	WAT-SG-B2-110408	WAT-IA-1-110408	WAT-SG-1-110408
Sample Date		**Study of VOCs**	**(TR) = 1E-06**	**(TR) = 1E-06**	**Hazard Index**	**Hazard Index**	11/4/2008	11/4/2008	11/4/2008
Sample Type		**90th Percentile**	**Inhalation**	**Inhalation**	**(HI) = 1 Inhalation**	**(HI) = 1 Inhalation**	Normal	Normal	Normal
Matrix		**(µg/m3)**	**(µg/m3)**	**(µg/m3)**	**(µg/m3)**	**(µg/m3)**	Vapor	Air	Vapor
	CAS #	**a**	**b**	**b'**	**c**	**c'**			
Tentatively Identified Compounds (µg/m3)									
1,2,3-Trichloropropane	96-18-4	–	–	–	–	–	NF	NF	NF
2-ethyl-1-hexanol	104-76-7	–	–	–	–	–	NF	NF	NF
2-Methylnaphthalene	91-57-6	–	–	–	–	–	NF	NF	NF
3-methyl-1-butene	563-45-1	–	–	–	–	–	NF	NF	NF
3-methylhexane	589-34-4	–	–	–	–	–	NF	NF	NF
4-Methyl-1-pentene	691-37-2	–	–	–	–	–	NF	NF	NF
Aniline	62-53-3	–	7.7E+00	7.7E+03	4.4E+00	4.4E+03	NF	NF	**4 T**
Benzaldehyde	100-52-7	–	–	–	–	–	NF	**10 T**	NF
Butane	106-97-8	–	–	–	–	–	NF	**90 T**	NF
Dimethyl Sulfide	75-18-3	–	–	–	–	–	NF	NF	NF
Dimethyl trisulfide	3658-80-8	–	–	–	–	–	NF	NF	NF
Ethyl acetate	141-78-6	–	–	–	–	–	NF	NF	**5 T**
Hexamethylcyclotrisiloxane	541-05-9	–	–	–	–	–	NF	NF	**10 T**
Isobutane	75-28-5	–	–	–	–	–	NF	**100 T**	NF
Isopentane	78-78-4	–	–	–	–	–	NF	NF	NF
Isopropyl alcohol	67-63-0	–	–	–	–	–	NF	NF	NF
Methyl disulfide	624-92-0	–	–	–	–	–	NF	NF	NF
Naphthalene	91-20-3	–	3.6E-01	3.6E+02	1.3E+01	1.3E+04	NF	NF	NF
n-Butanol	71-36-3	–	–	–	–	–	NF	**20 T**	NF
n-Nonanal	124-19-6	–	–	–	–	–	NF	NF	**4 T**
n-Pentane	109-66-0	–	–	–	–	–	NF	NF	NF
Propane	74-98-6	–	–	–	–	–	NF	**100 T**	NF
1,2,4-Trimethylbenzene	95-63-6	–	–	–	3.1E+01	3.1E+04	NF	NF	NF
Ethanol	64-17-5	–	–	–	–	–	NF	NF	NF
n-Decane	124-18-5	–	–	–	–	–	NF	NF	NF
n-Undecane	1120-21-4	–	–	–	–	–	NF	NF	NF
Propene	115-07-1	–	–	–	–	–	NF	NF	NF

Notes:
a = Exceedance of New York State Department of Health (NYSDOH) 2003: Study of volatile organic chemicals in air of fuel oil heated homes 90th Percentile
b = Exceedance of USEPA cancer risk-based screening level
b' = Exceedance of USEPA cancer risk-based screening level at attenuation factor of 0.001
c = Exceedance of USEPA non-cancer hazard index screening level
c' = Exceedance of USEPA non-cancer hazard index screening level at attenuation factor of 0.001
All compounds and criteria are in µg/m3
Analysis Method is TO15
– indicates no criteria established
J = estimated value
U = compound not detect at or above method detection limit
Bold font indicates the constituent detected
Shading in gray indicates that the constituent was detected above criteria
NF = Not found by laboratory library search

TABLE 2
Ambient Air, Indoor Air, and Subslab Vapor Results - Building 2
Former Hampshire Chemical Corp Facility, Waterloo, New York

Location ID				(AF=0.001)		(AF=0.001)	WAT-SGB2	WAT-IA-2	WAT-SG02	WAT-SG02	WAT-SG03	WAT-SG03A
Location Group			Carcinogenic	Carcinogenic			Ambient Air	Indoor Air	Subslab Vapor	Subslab Vapor	Subslab Vapor	Subslab Vapor
Field Sample ID		NYSDOH 2003	Target Risk	Target Risk	Noncancer	Noncancer	WAT-SG-B2-110408	WAT-IA-2-110408	WAT-SG-2-110408	WAT-SG-DUP-110408	WAT-SG-3-110408	WAT-SG-3a-110408
Sample Date		Study of VOCs	(TR) = 1E-06	(TR) = 1E-06	Hazard Index	Hazard Index	11/4/2008	11/4/2008	11/4/2008	11/4/2008	11/4/2008	11/4/2008
Sample Type		90th Percentile	Inhalation	Inhalation	(HI) = 1 Inhalation	(HI) = 1 Inhalation	Normal	Normal	Normal	Duplicate	Normal	Normal
Matrix		(µg/m3)	(µg/m3)	(µg/m3)	(µg/m3)	(µg/m3)	Vapor	Air	Vapor	Vapor	Vapor	Vapor
	CAS #	a	b	b'	c	c'						
Volatile Organics, by Method TO15 (µg/m3)												
1,1,1-Trichloroethane	71-55-6	3.1	–	–	2.2E+04	2.2E+07	0.15 U	0.18 U	**0.13 J**	**0.11 J**	0.15 U	**0.07 J**
1,1,2,2-Tetrachloroethane	79-34-5	<0.25	2.1E-01	2.1E+02	–	–	0.15 U	0.18 U	0.14 U	0.15 U	0.15 U	0.14 U
1,1,2-Trichloroethane	79-00-5	<0.25	7.7E-01	7.7E+02	–	–	0.15 U	0.18 U	**0.27[a]**	**0.24**	0.15 U	0.14 U
1,1-Dichloroethane	75-34-3	<0.25	7.7E+00	7.7E+03	–	–	0.15 U	0.18 U	0.14 U	0.15 U	0.15 U	0.14 U
1,1-Dichloroethene	75-35-4	<0.25	–	–	8.8E+02	8.8E+05	0.15 U	0.18 U	**3.6[a]**	**3.7[a]**	0.15 U	0.14 U
1,2-Dichloroethane	107-06-2	<0.25	4.7E-01	4.7E+02	1.1E+04	1.1E+07	0.15 U	0.18 U	**2.3[a]**	**2[a]**	**0.25**	**0.15**
1,2-Dichloropropane	78-87-5	<0.25	1.2E+00	1.2E+03	1.8E+01	1.8E+04	0.15 U	0.18 U	**3.7[a]**	**4.1[a]**	**0.24**	0.14 U
2-Butanone	78-93-3	16	–	–	2.2E+04	2.2E+07	2 U	2.7 U	2.6 U	0.74 U	3 U	**9.5**
Acetone	67-64-1	110	–	–	1.4E+05	1.4E+08	12 U	**100**	6 U	7.4 U	22 U	9.8 U
Acrylonitrile	107-13-1	–	1.8E-01	1.8E+02	8.8E+00	8.8E+03	**0.71 J[b]**	**1.9[b]**	**0.68 J**	**0.71 J**	**0.93**	**0.61 J**
Benzene	71-43-2	15	1.6E+00	1.6E+03	1.3E+02	1.3E+05	**0.62**	**0.63**	**0.15**	0.15 U	**0.75**	**1.6**
Bromodichloromethane	75-27-4	–	3.3E-01	3.3E+02	–	–	0.15 U	0.18 U	**0.16**	**0.25**	0.15 U	0.14 U
Bromoform	75-25-2	–	1.1E+01	1.1E+04	–	–	0.74 U	0.88 U	0.71 U	0.74 U	0.73 U	0.7 U
Bromomethane	74-83-9	–	–	–	2.2E+01	2.2E+04	0.15 U	0.18 U	0.14 U	0.15 U	0.15 U	0.14 U
Carbon disulfide	75-15-0	–	–	–	3.1E+03	3.1E+06	0.74 U	0.88 U	**11**	**10**	**36**	**4.8**
Carbon tetrachloride	56-23-5	0.8	8.2E-01	8.2E+02	8.3E+02	8.3E+05	**0.67**	**0.66**	**2.9[a]**	**2.9[a]**	**0.65**	**1.1[a]**
Chlorobenzene	108-90-7	<0.25	–	–	2.2E+02	2.2E+05	0.15 U	0.18 U	**0.098 J**	**0.11 J**	**0.14 J**	**0.23**
Chloroethane	75-00-3	<0.25	–	–	4.4E+04	4.4E+07	0.15 U	0.18 U	**0.27[a]**	0.15 U	0.15 U	**0.32[a]**
Chloroform	67-66-3	1.4	5.3E-01	5.3E+02	4.3E+02	4.3E+05	**0.12 J**	**0.29**	**250[a]**	**220[a]**	**20[a]**	**0.43**
Chloromethane	74-87-3	3.3	–	–	3.9E+02	3.9E+05	**0.42**	**0.45**	0.14 U	0.15 U	**0.31**	**0.16**
cis-1,2-Dichloroethylene	156-59-2	<0.25	–	–	–	–	0.15 U	0.18 U	**0.088 J**	**0.146 J**	0.15 U	**0.2**
cis-1,3-Dichloropropene	10061-01-5	<0.25	–	–	–	–	0.74 U	0.88 U	0.71 U	0.74 U	0.73 U	0.7 U
Dibromochloromethane	124-48-1	–	4.5E-01	4.5E+02	–	–	0.15 U	0.18 U	0.14 U	0.15 U	0.15 U	0.14 U
Ethylbenzene	100-41-4	7.3	4.9E+00	4.9E+03	4.4E+03	4.4E+06	**0.38 J**	**2**	**0.66 J**	**0.9**	**0.85**	**1.6**
Methyl Isobutyl Ketone (4-Methyl-2-Pentanone)	108-10-1	2.2	–	–	1.3E+04	1.3E+07	**300[a]**	**320[a]**	**10 J[a]**	**7.1 J[a]**	**140[a]**	**9.6[a]**
Methylene chloride	75-09-2	22	2.6E+01	2.6E+04	4.6E+03	4.6E+06	**0.54 J**	**2.3**	**0.95**	**0.9**	**0.85**	**1.6**
Styrene	100-42-5	1.3	–	–	4.4E+03	4.4E+06	**0.46 J**	0.47 J	1	[redacted]	[redacted]	[redacted]
Tetrachloroethene	127-18-4	2.9	2.1E+00	2.1E+03	1.2E+03	1.2E+06	**0.14 J**	0.21	[redacted]	[redacted]	[redacted]	1
Toluene	108-88-3	58	–	–	2.2E+04	2.2E+07	17 U	[redacted]	45 J	28 J	50	160 U
Trans-1,2-Dichloroethene	156-60-5	–	–	–	2.6E+02	2.6E+05	0.15 U	0.18 U	0.14 U	**0.1 J**	0.15 U	0.14 U
trans-1,3-Dichloropropene	10061-02-6	<0.25	–	–	–	–	0.74 U	0.88 U	0.71 U	0.74 U	0.73 U	0.7 U
Trichloroethene	79-01-6	0.5	6.1E+00	6.1E+03	–	–	0.15 U	0.18 U	**4.5[a]**	**4.5[a]**	**1.2[a]**	**0.85[a]**
Vinyl chloride	75-01-4	<0.25	2.8E+00	2.8E+03	4.4E+02	4.4E+05	0.15 U	0.18 U	0.14 U	0.15 U	0.15 U	0.14 U
m,p-xylene	108-38-3/1	12	–	–	3.1E+03	3.1E+06	**0.81**	**6**	**1.4**	**2.2**	**1.7**	**3.1**
o-xylene	95-47-6	7.6	–	–	3.1E+03	3.1E+06	**0.28 J**	**1.3**	**0.47 J**	**0.9**	**0.66 J**	**1.1**
Epichlorohydrin	106-89-8	–	1.0E+01	1.0E+04	4.4E+00	4.4E+03	NF	NF	NF	NF	NF	NF

TABLE 2
Ambient Air, Indoor Air, and Subslab Vapor Results - Building 2
Former Hampshire Chemical Corp Facility, Waterloo, New York

Location ID				(AF=0.001)		(AF=0.001)	WAT-SGB2	WAT-IA-2	WAT-SG02	WAT-SG02	WAT-SG03	WAT-SG03A
Location Group			Carcinogenic	Carcinogenic			Ambient Air	Indoor Air	Subslab Vapor	Subslab Vapor	Subslab Vapor	Subslab Vapor
Field Sample ID		NYSDOH 2003	Target Risk	Target Risk	Noncancer	Noncancer	WAT-SG-B2-110408	WAT-IA-2-110408	WAT-SG-2-110408	WAT-SG-DUP-110408	WAT-SG-3-110408	WAT-SG-3a-110408
Sample Date		Study of VOCs	(TR) = 1E-06	(TR) = 1E-06	Hazard Index	Hazard Index	11/4/2008	11/4/2008	11/4/2008	11/4/2008	11/4/2008	11/4/2008
Sample Type		90th Percentile	Inhalation	Inhalation	(HI) = 1 Inhalation	(HI) = 1 Inhalation	Normal	Normal	Normal	Duplicate	Normal	Normal
Matrix		(µg/m3)	(µg/m3)	(µg/m3)	(µg/m3)	(µg/m3)	Vapor	Air	Vapor	Vapor	Vapor	Vapor
	CAS #	a	b	b'	c	c'						
Tentatively Identified Compounds (µg/m3)												
1,2,3-Trichloropropane	96-18-4	--	--	--	--	--	NF	NF	NF	**7 T**	NF	NF
2-ethyl-1-hexanol	104-76-7	--	--	--	--	--	NF	NF	NF	NF	NF	NF
2-Methylnaphthalene	91-57-6	--	--	--	--	--	NF	NF	**10 T**	NF	NF	NF
3-methyl-1-butene	563-45-1	--	--	--	--	--	NF	NF	NF	NF	NF	NF
3-methylhexane	589-34-4	--	--	--	--	--	NF	NF	NF	NF	NF	**30 T**
4-Methyl-1-pentene	691-37-2	--	--	--	--	--	NF	NF	NF	NF	NF	NF
Aniline	62-53-3	--	7.7E+00	7.7E+03	4.4E+00	4.4E+03	NF	NF	NF	NF	NF	NF
Benzaldehyde	100-52-7	--	--	--	--	--	NF	NF	NF	NF	NF	NF
Butane	106-97-8	--	--	--	--	--	NF	**70 T**	NF	NF	**10 T**	NF
Dimethyl Sulfide	75-18-3	--	--	--	--	--	NF	NF	NF	NF	NF	NF
Dimethyl trisulfide	3658-80-8	--	--	--	--	--	NF	NF	NF	NF	NF	NF
Ethyl acetate	141-78-6	--	--	--	--	--	NF	NF	NF	NF	NF	**40 T**
Hexamethylcyclotrisiloxane	541-05-9	--	--	--	--	--	NF	NF	**10 T**	NF	**7 T**	NF
Isobutane	75-28-5	--	--	--	--	--	NF	NF	NF	NF	NF	NF
Isopentane	78-78-4	--	--	--	--	--	NF	NF	NF	NF	**8 T**	**40 T**
Isopropyl alcohol	67-63-0	--	--	--	--	--	NF	NF	NF	NF	**6 T**	**50 T**
Methyl disulfide	624-92-0	--	--	--	--	--	NF	NF	NF	NF	NF	NF
Naphthalene	91-20-3	--	3.6E-01	3.6E+02	1.3E+01	1.3E+04	NF	NF	**10 T**	**10 T**	NF	NF
n-Butanol	71-36-3	--	--	--	--	--	NF	NF	**20 T**	**20 T**	NF	NF
n-Nonanal	124-19-6	--	--	--	--	--	NF	NF	NF	NF	NF	NF
n-Pentane	109-66-0	--	--	--	--	--	NF	NF	NF	NF	NF	**100 T**
Propane	74-98-6	--	--	--	--	--	NF	**70 T**	NF	NF	NF	NF
1,2,4-Trimethylbenzene	95-63-6	--			3.1E+01	3.1E+04	NF	NF	NF	NF	NF	NF
Ethanol	64-17-5	--	--	--	--	--	NF	NF	NF	NF	NF	NF
n-Decane	124-18-5	--	--	--	--	--	NF	**7 T**	NF	NF	NF	NF
n-Undecane	1120-21-4	--	--	--	--	--	NF	**4 T**	NF	NF	NF	NF
Propene	115-07-1	--	--	--	--	--	NF	NF	NF	NF	NF	NF

Notes:
a = Exceedance of New York State Department of Health (NYSDOH) 2003: Study of volatile organic chemicals in air of fuel oil heated homes 90th Percentile
b = Exceedance of USEPA cancer risk-based screening level
b' = Exceedance of USEPA cancer risk-based screening level at attenuation factor of 0.001
c = Exceedance of USEPA non-cancer hazard index screening level
c' = Exceedance of USEPA non-cancer hazard index screening level at attenuation factor of 0.001
All compounds and criteria are in µg/m3
Analysis Method is TO15
-- indicates no criteria established
J = estimated value
U = compound not detect at or above method detection limit
Bold font indicates the constituent detected
Shading in gray indicates that the constituent was detected above criteria
NF = Not found by laboratory library search

TABLE 3
Ambient Air, Indoor Air, and Subslab Vapor Results - Building 1
Former Hampshire Chemical Corp Facility, Waterloo, New York

Location ID				(AF=0.001)		(AF=0.001)	WAT-SGB2	WAT-IA-3	WAT-SG4
Location Group			Carcinogenic	Carcinogenic			Ambient Air	Indoor Air	Subslab Vapor
Field Sample ID		NYSDOH 2003	Target Risk	Target Risk	Noncancer	Noncancer	WAT-SG-B2-110408	WAT-IA-3-110408	WAT-SG-4-110408
Sample Date		Study of VOCs	(TR) = 1E-06	(TR) = 1E-06	Hazard Index	Hazard Index	11/4/2008	11/4/2008	11/4/2008
Sample Type		90th Percentile	Inhalation	Inhalation	(HI) = 1 Inhalation	(HI) = 1 Inhalation	Normal	Normal	Normal
Matrix		(µg/m3)	(µg/m3)	(µg/m3)	(µg/m3)	(µg/m3)	Vapor	Air	Vapor
	CAS #	a	b	b'	c	c'			
Volatile Organics, by Method TO15 (µg/m3)									
[redacted]	71-55-6	3.1	–	–	2.2E+04	2.2E+07	0.15 U	0.55 U	[redacted]
1,1,2,2-Tetrachloroethane	79-34-5	<0.25	2.1E-01	2.1E+02	–	–	0.15 U	0.55 U	1 U
1,1,2-Trichloroethane	79-00-5	<0.25	7.7E-01	7.7E+02	–	–	0.15 U	0.55 U	1 U
1,1-Dichloroethane	75-34-3	<0.25	7.7E+00	7.7E+03	–	–	0.15 U	0.55 U	**5.1**[a]
1,1-Dichloroethene	75-35-4	<0.25	–	–	8.8E+02	8.8E+05	0.15 U	0.55 U	1 U
1,2-Dichloroethane	107-06-2	<0.25	4.7E-01	4.7E+02	1.1E+04	1.1E+07	0.15 U	0.55 U	1 U
1,2-Dichloropropane	78-87-5	<0.25	1.2E+00	1.2E+03	1.8E+01	1.8E+04	0.15 U	0.55 U	**8.4**[a]
2-Butanone	78-93-3	16	–	–	2.2E+04	2.2E+07	2 U	3.9 U	3.9 U
Acetone	67-64-1	110	–	–	1.4E+05	1.4E+08	12 U	45 U	11 U
Acrylonitrile	107-13-1	–	1.8E-01	1.8E+02	8.8E+00	8.8E+03	**0.71 J**[b]	**0.42 J**[b]	5.2 U
Benzene	71-43-2	15	1.6E+00	1.6E+03	1.3E+02	1.3E+05	**0.62**	**0.79**	1 U
Bromodichloromethane	75-27-4	–	3.3E-01	3.3E+02	–	–	0.15 U	0.55 U	1 U
Bromoform	75-25-2	–	1.1E+01	1.1E+04	–	–	0.74 U	2.7 U	5.2 U
Bromomethane	74-83-9	–	–	–	2.2E+01	2.2E+04	0.15 U	0.55 U	1 U
Carbon disulfide	75-15-0	–	–	–	3.1E+03	3.1E+06	0.74 U	2.7 U	**20**
Carbon tetrachloride	56-23-5	0.8	8.2E-01	8.2E+02	8.3E+02	8.3E+05	**0.67**	**0.45 J**	1 U
Chlorobenzene	108-90-7	<0.25	–	–	2.2E+02	2.2E+05	0.15 U	0.55 U	1 U
Chloroethane	75-00-3	<0.25	–	–	4.4E+04	4.4E+07	0.15 U	0.55 U	1 U
Chloroform	67-66-3	1.4	5.3E-01	5.3E+02	4.3E+02	4.3E+05	**0.12 J**	**7**[ab]	**1,000**[ab]
Chloromethane	74-87-3	3.3	–	–	3.9E+02	3.9E+05	**0.42**	**1.1**	**1.1**
cis-1,2-Dichloroethylene	156-59-2	<0.25	–	–	–	–	0.15 U	0.55 U	1 U
cis-1,3-Dichloropropene	10061-01-5	<0.25	–	–	–	–	0.74 U	2.7 U	5.2 U
Dibromochloromethane	124-48-1	–	4.5E-01	4.5E+02	–	–	0.15 U	0.55 U	1 U
Ethylbenzene	100-41-4	7.3	4.9E+00	4.9E+03	4.4E+03	4.4E+06	**0.38 J**	**0.93 J**	**0.67 J**
[redacted]	108-10-1	2.2	–	–	1.3E+04	1.3E+07	**300**[a]	**770**[a]	**18**[a]
Methylene chloride	75-09-2	22	2.6E+01	2.6E+04	4.6E+03	4.6E+06	**0.54 J**	2.7 U	**0.83 J**
Styrene	100-42-5	1.3			4.4E+03	4.4E+06	**0.46 J**	**0.72 J**	**1.3 J**
Tetrachloroethene	127-18-4	2.9	2.1E+00	2.1E+03	1.2E+03	1.2E+06	**0.14 J**	0.55 U	**38**[a]
Toluene	108-88-3	58	–	–	2.2E+04	2.2E+07	17 U	45 U	48 U
Trans-1,2-Dichloroethene	156-60-5	–	–	–	2.6E+02	2.6E+05	0.15 U	0.55 U	1 U
trans-1,3-Dichloropropene	10061-02-6	<0.25	–	–	–	–	0.74 U	2.7 U	5.2 U
Tri[redacted]	79-01-6	0.5	6.1E+00	6.1E+03	–	–	0.15 U	0.55 U	**5.1**[a]
Vinyl chloride	75-01-4	<0.25	2.8E+00	2.8E+03	4.4E+02	4.4E+05	0.15 U	0.55 U	1 U
m,p-xylene	108-38-3/1	12	–	–	3.1E+03	3.1E+06	**0.81**	**2.5 J**	1.4 U
o-xylene	95-47-6	7.6	–	–	3.1E+03	3.1E+06	**0.28 J**	**0.61 J**	**0.65 J**
Epichlorohydrin	106-89-8	–	1.0E+01	1.0E+04	4.4E+00	4.4E+03	NF	NF	NF

TABLE 3
Ambient Air, Indoor Air, and Subslab Vapor Results - Building 1
Former Hampshire Chemical Corp Facility, Waterloo, New York

Location ID				(AF=0.001)		(AF=0.001)	WAT-SGB2	WAT-IA-3	WAT-SG04
Location Group			Carcinogenic	Carcinogenic			Ambient Air	Indoor Air	Subslab Vapor
Field Sample ID		NYSDOH 2003	Target Risk	Target Risk	Noncancer	Noncancer	WAT-SG-B2-110408	WAT-IA-3-110408	WAT-SG-4-110408
Sample Date		Study of VOCs	(TR) = 1E-06	(TR) = 1E-06	Hazard Index	Hazard Index	11/4/2008	11/4/2008	11/4/2008
Sample Type		90th Percentile	Inhalation	Inhalation	(HI) = 1 Inhalation	(HI) = 1 Inhalation	Normal	Normal	Normal
Matrix		(µg/m3)	(µg/m3)	(µg/m3)	(µg/m3)	(µg/m3)	Vapor	Air	Vapor
	CAS #	a	b	b'	c	c'			
Tentatively Identified Compounds (µg/m3)									
1,2,3-Trichloropropane	96-18-4	--	--	--	--	--	NF	NF	NF
2-ethyl-1-hexanol	104-76-7	--	--	--	--	--	NF	NF	NF
2-Methylnaphthalene	91-57-6	--	--	--	--	--	NF	NF	NF
3-methyl-1-butene	563-45-1	--	--	--	--	--	NF	NF	NF
3-methylhexane	589-34-4	--	--	--	--	--	NF	NF	NF
4-Methyl-1-pentene	691-37-2	--	--	--	--	--	NF	NF	NF
Aniline	62-53-3	--	7.7E+00	7.7E+03	4.4E+00	4.4E+03	NF	NF	NF
Benzaldehyde	100-52-7	--	--	--	--	--	NF	NF	NF
Butane	106-97-8	--	--	--	--	--	NF	**40 T**	NF
Dimethyl Sulfide	75-18-3	--	--	--	--	--	NF	NF	NF
Dimethyl trisulfide	3658-80-8	--	--	--	--	--	NF	NF	NF
Ethyl acetate	141-78-6	--	--	--	--	--	NF	NF	NF
Hexamethylcyclotrisiloxane	541-05-9	--	--	--	--	--	NF	NF	**600 T**
Isobutane	75-28-5	--	--	--	--	--	NF	NF	**40 T**
Isopentane	78-78-4	--	--	--	--	--	NF	NF	NF
Isopropyl alcohol	67-63-0	--	--	--	--	--	NF	NF	NF
Methyl disulfide	624-92-0	--	--	--	--	--	NF	NF	NF
Naphthalene	91-20-3	--	3.6E-01	3.6E+02	1.3E+01	1.3E+04	NF	NF	NF
n-Butanol	71-36-3	--	--	--	--	--	NF	NF	NF
n-Nonanal	124-19-6	--	--	--	--	--	NF	NF	NF
n-Pentane	109-66-0	--	--	--	--	--	NF	NF	NF
Propane	74-98-6	--	--	--	--	--	NF	**30 T**	NF
1,2,4-Trimethylbenzene	95-63-6	--	--	--	3.1E+01	3.1E+04	NF	NF	NF
Ethanol	64-17-5	--	--	--	--	--	NF	NF	NF
n-Decane	124-18-5	--	--	--	--	--	NF	NF	NF
n-Undecane	1120-21-4	--	--	--	--	--	NF	NF	NF
Propene	115-07-1	--	--	--	--	--	NF	NF	NF

Notes:
a = Exceedance of New York State Department of Health (NYSDOH) 2003: Study of volatile organic chemicals in air of fuel oil heated homes 90th Percentile
b = Exceedance of USEPA cancer risk-based screening level
b' = Exceedance of USEPA cancer risk-based screening level at attenuation factor of 0.001
c = Exceedance of USEPA non-cancer hazard index screening level
c' = Exceedance of USEPA non-cancer hazard index screening level at attenuation factor of 0.001
All compounds and criteria are in µg/m3
Analysis Method is TO15
-- indicates no criteria established
J = estimated value
U = compound not detect at or above method detection limit
Bold font indicates the constituent detected
Shading in gray indicates that the constituent was detected above criteria
NF = Not found by laboratory library search

TABLE 4
Ambient Air, Indoor Air, and Subslab Vapor Results - Building 3
Former Hampshire Chemical Corp Facility, Waterloo, New York

Location ID				(AF=0.001)		(AF=0.001)	WAT-SGB4	WAT-IA-4	WAT-SG05	WAT-SG05A	WAT-SG06
Location Group			Carcinogenic	Carcinogenic			Ambient Air	Indoor Air	Subslab Vapor	Subslab Vapor	Subslab Vapor
Field Sample ID		NYSDOH 2003	Target Risk	Target Risk	Noncancer	Noncancer	WAT-SG-B4-110508	WAT-IA-4-110508	WAT-SG-5-110508	WAT-SG-5a-110508	WAT-SG-6-110508
Sample Date		Study of VOCs	(TR) = 1E-06	(TR) = 1E-06	Hazard Index	Hazard Index	11/5/2008	11/5/2008	11/5/2008	11/5/2008	11/5/2008
Sample Type		90th Percentile	Inhalation	Inhalation	(HI) = 1 Inhalation	(HI) = 1 Inhalation	Normal	Normal	Normal	Normal	Normal
Matrix		(µg/m3)	(µg/m3)	(µg/m3)	(µg/m3)	(µg/m3)	Vapor	Air	Vapor	Vapor	Vapor
	CAS #	a	b	b'	c	c'					
Volatile Organics, by Method TO15 (µg/m3)		a	b	b	c	c					
1,1,1-Trichloroethane	71-55-6	3.1	–	–	2.2E+04	2.2E+07	0.13 U	0.16 U	0.47 U	0.15 U	0.14 U
1,1,2,2-Tetrachloroethane	79-34-5	<0.25	2.1E-01	2.1E+02	–	–	0.13 U	0.16 U	0.47 U	0.15 U	0.14 U
1,1,2-Trichloroethane	79-00-5	<0.25	7.7E-01	7.7E+02	–	–	0.13 U	0.16 U	0.47 U	0.15 U	0.14 U
1,1-Dichloroethane	75-34-3	<0.25	7.7E+00	7.7E+03	–	–	0.13 U	0.16 U	**0.83[a]**	**0.17**	**0.085 J**
1,1-Dichloroethene	75-35-4	<0.25	–	–	8.8E+02	8.8E+05	0.13 U	0.16 U	0.47 U	0.15 U	0.14 U
1,2-Dichloroethane	107-06-2	<0.25	4.7E-01	4.7E+02	1.1E+04	1.1E+07	0.13 U	0.16 U	0.47 U	0.15 U	0.14 U
1,2-Dichloropropane	78-87-5	<0.25	1.2E+00	1.2E+03	1.8E+01	1.8E+04	0.13 U	0.16 U	0.47 U	0.15 U	0.14 U
2-Butanone	78-93-3	16	–	–	2.2E+04	2.2E+07	**1.6**	**1.1**	**1.2 J**	**1.5**	**1.8**
Acetone	67-64-1	110	–	–	1.4E+05	1.4E+08	**14**	**9.5**	**7.3 J**	**7.7**	**8**
Acrylonitrile	107-13-1	–	1.8E-01	1.8E+02	8.8E+00	8.8E+03	**0.51 J[b]**	**0.34 J[b]**	2.4 U	0.73 U	0.69 U
Benzene	71-43-2	15	1.6E+00	1.6E+03	1.3E+02	1.3E+05	**0.57**	**0.48**	0.47 U	0.15 U	**0.4**
Bromodichloromethane	75-27-4	–	3.3E-01	3.3E+02	–	–	0.13 U	0.16 U	0.47 U	**0.56**	**0.75**
Bromoform	75-25-2	–	1.1E+01	1.1E+04	–	–	0.67 U	0.78 U	2.4 U	0.73 U	0.69 U
Bromomethane	74-83-9	–	–	–	2.2E+01	2.2E+04	0.13 U	0.16 U	0.47 U	0.15 U	0.14 U
Carbon disulfide	75-15-0	–	–	–	3.1E+03	3.1E+06	**0.3 J**	**1.8**	**3.3**	**3**	**1,200**
Carbon tetrachloride	56-23-5	0.8	8.2E-01	8.2E+02	8.3E+02	8.3E+05	**0.59**	**0.49**	**0.58**	**0.71**	**0.48**
Chlorobenzene	108-90-7	<0.25	–	–	2.2E+02	2.2E+05	0.13 U	0.16 U	0.47 U	0.15 U	0.14 U
Chloroethane	75-00-3	<0.25	–	–	4.4E+04	4.4E+07	0.13 U	0.16 U	0.47 U	0.15 U	**0.34[a]**
Chloroform	67-66-3	1.4	5.3E-01	5.3E+02	4.3E+02	4.3E+05	**0.088 J**	**0.16**	**690[ab]**	**270[a]**	**53[a]**
Chloromethane	74-87-3	3.3	–	–	3.9E+02	3.9E+05	**0.35**	**0.39**	**0.44 J**	0.15 U	**0.17**
cis-1,2-Dichloroethylene	156-59-2	<0.25	–	–	–	–	0.13 U	0.16 U	0.47 U	0.15 U	0.14 U
cis-1,3-Dichloropropene	10061-01-5	<0.25	–	–	–	–	0.67 U	0.78 U	2.4 U	0.73 U	0.69 U
Dibromochloromethane	124-48-1	–	4.5E-01	4.5E+02	–	–	0.13 U	0.16 U	0.47 U	**0.08 J**	**0.31**
Ethylbenzene	100-41-4	7.3	4.9E+00	4.9E+03	4.4E+03	4.4E+06	**4.9**	**0.16 J**	2.4 U	**0.15 J**	**0.27 J**
Methyl Isobutyl Ketone (4-Methyl-2-Pentanone)	108-10-1	2.2	–	–	1.3E+04	1.3E+07	**110[a]**	**10[a]**	**0.64 J**	**1.3**	**24[a]**
Methylene chloride	75-09-2	22	2.6E+01	2.6E+04	4.6E+03	4.6E+06	**0.38 J**	**0.36 J**	**0.81 J**	**0.12 J**	**6.6**
Styrene	100-42-5	1.3	–	–	4.4E+03	4.4E+06	0.67 U	0.78 U	2.4 U	0.73 U	**0.11 J**
Tetrachloroethene	127-18-4	2.9	2.1E+00	2.1E+03	1.2E+03	1.2E+06	0.13 U	**0.18**	**1.3**	**1.4**	**0.42**
Toluene	108-88-3	58	–	–	2.2E+04	2.2E+07	**18**	**1.5**	**2.2 J**	**1.8**	**2.4**
Trans-1,2-Dichloroethene	156-60-5	–	–	–	2.6E+02	2.6E+05	0.13 U	0.16 U	0.47 U	0.15 U	0.14 U
trans-1,3-Dichloropropene	10061-02-6	<0.25	–	–	–	–	0.67 U	0.78 U	2.4 U	0.73 U	0.69 U
Trichloroethene	79-01-6	0.5	6.1E+00	6.1E+03	–	–	0.13 U	0.16 U	**1.6[a]**	**1.7[a]**	**0.5**
Vinyl chloride	75-01-4	<0.25	2.8E+00	2.8E+03	4.4E+02	4.4E+05	0.13 U	0.16 U	0.47 U	0.15 U	0.14 U
	108-38-3/1	12	–	–	3.1E+03	3.1E+06	**16[a]**	**0.53 J**	**0.52 J**	**0.39 J**	**1.2**
o-xylene	95-47-6	7.6	–	–	3.1E+03	3.1E+06	**3.9**	**0.16 J**	2.4 U	**0.15 J**	**0.37 J**
Epichlorohydrin	106-89-8	–	1.0E+01	1.0E+04	4.4E+00	4.4E+03	NF	NF	NF	NF	NF

TABLE 4
Ambient Air, Indoor Air, and Subslab Vapor Results - Building 3
Former Hampshire Chemical Corp Facility, Waterloo, New York

Location ID				(AF=0.001)		(AF=0.001)	WAT-SGB4	WAT-IA-4	WAT-SG05	WAT-SG05A	WAT-SG06
Location Group			Carcinogenic	Carcinogenic			Ambient Air	Indoor Air	Subslab Vapor	Subslab Vapor	Subslab Vapor
Field Sample ID		NYSDOH 2003	Target Risk	Target Risk	Noncancer	Noncancer	WAT-SG-B4-110508	WAT-IA-4-110508	WAT-SG-5-110508	WAT-SG-5a-110508	WAT-SG-6-110508
Sample Date		Study of VOCs	(TR) = 1E-06	(TR) = 1E-06	Hazard Index	Hazard Index	11/5/2008	11/5/2008	11/5/2008	11/5/2008	11/5/2008
Sample Type		90th Percentile	Inhalation	Inhalation	(HI) = 1 Inhalation	(HI) = 1 Inhalation	Normal	Normal	Normal	Normal	Normal
Matrix		(µg/m3)	(µg/m3)	(µg/m3)	(µg/m3)	(µg/m3)	Vapor	Air	Vapor	Vapor	Vapor
	CAS #	**a**	**b**	**b'**	**c**	**c'**					
Tentatively Identified Compounds (µg/m3)											
1,2,3-Trichloropropane	96-18-4	--	--	--	--	--	NF	NF	NF	NF	NF
2-ethyl-1-hexanol	104-76-7	--	--	--	--	--	NF	NF	NF	NF	NF
2-Methylnaphthalene	91-57-6	--	--	--	--	--	NF	NF	NF	NF	NF
3-methyl-1-butene	563-45-1	--	--	--	--	--	NF	NF	NF	NF	NF
3-methylhexane	589-34-4	--	--	--	--	--	NF	NF	NF	NF	NF
4-Methyl-1-pentene	691-37-2	--	--	--	--	--	NF	NF	NF	NF	NF
Aniline	62-53-3	--	7.7E+00	7.7E+03	4.4E+00	4.4E+03	NF	NF	NF	NF	NF
Benzaldehyde	100-52-7	--	--	--	--	--	**6 T**	**10 T**	NF	NF	NF
Butane	106-97-8	--	--	--	--	--	NF	NF	NF	NF	NF
Dimethyl Sulfide	75-18-3	--	--	--	--	--	NF	NF	NF	NF	**20 T**
Dimethyl trisulfide	3658-80-8	--	--	--	--	--	NF	NF	NF	NF	**20 T**
Ethyl acetate	141-78-6	--	--	--	--	--	NF	NF	NF	**4 T**	NF
Hexamethylcyclotrisiloxane	541-05-9	--	--	--	--	--	NF	NF	NF	**6 T**	**6 T**
Isobutane	75-28-5	--	--	--	--	--	NF	NF	NF	**8 T**	NF
Isopentane	78-78-4	--	--	--	--	--	NF	NF	NF	NF	NF
Isopropyl alcohol	67-63-0	--	--	--	--	--	NF	**70 T**	NF	NF	NF
Methyl disulfide	624-92-0	--	--	--	--	--	NF	NF	NF	NF	**600 T**
Naphthalene	91-20-3	--	3.6E-01	3.6E+02	1.3E+01	1.3E+04	NF	NF	NF	NF	NF
n-Butanol	71-36-3	--	--	--	--	--	NF	NF	NF	NF	NF
n-Nonanal	124-19-6	--	--	--	--	--	NF	NF	NF	NF	NF
n-Pentane	109-66-0	--	--	--	--	--	NF	NF	NF	NF	NF
Propane	74-98-6	--	--	--	--	--	**30 T**	NF	NF	NF	NF
1,2,4-Trimethylbenzene	95-63-6	--	--	--	3.1E+01	3.1E+04	NF	NF	NF	NF	NF
Ethanol	64-17-5	--	--	--	--	--	NF	**5 T**	NF	NF	NF
n-Decane	124-18-5	--	--	--	--	--	NF	NF	NF	NF	NF
n-Undecane	1120-21-4	--	--	--	--	--	NF	NF	NF	NF	NF
Propene	115-07-1	--	--	--	--	--	NF	**10 T**	NF	NF	NF

Notes:
a = Exceedance of New York State Department of Health (NYSDOH) 2003: Study of volatile organic chemicals in air of fuel oil heated homes 90th Percentile
b = Exceedance of USEPA cancer risk-based screening level
b' = Exceedance of USEPA cancer risk-based screening level at attenuation factor of 0.001
c = Exceedance of USEPA non-cancer hazard index screening level
c' = Exceedance of USEPA non-cancer hazard index screening level at attenuation factor of 0.001
All compounds and criteria are in µg/m3
Analysis Method is TO15
-- indicates no criteria established
J = estimated value
U = compound not detect at or above method detection limit
Bold font indicates the constituent detected
Shading in gray indicates that the constituent was detected above criteria
NF = Not found by laboratory library search

TABLE 5
Ambient Air, Indoor Air, and Subslab Vapor Results - Building 4
Former Hampshire Chemical Corp Facility, Waterloo, New York

Location ID				(AF=0.001)		(AF=0.001)	WAT-SGB4	WAT-IA-5	WAT-IA-6	WAT-SG07A	WAT-SG08
Location Group				Carcinogenic			Ambient Air	Indoor Air	Indoor Air	Subslab Vapor	Subslab Vapor
Field Sample ID		NYSDOH 2003	Carcinogenic	Target Risk	Noncancer	Noncancer	WAT-SG-B4-110508	WAT-IA-5-110508	WAT-IA-6-110508	WAT-SG-7a-110508	WAT-SG-8-110508
Sample Date		Study of VOCs	Target Risk	(TR) = 1E-06	Hazard Index	Hazard Index	11/5/2008	11/5/2008	11/5/2008	11/5/2008	11/5/2008
Sample Type		90th Percentile	(TR) = 1E-06	Inhalation	(HI) = 1 Inhalation	(HI) = 1 Inhalation	Normal	Normal	Normal	Normal	Normal
Matrix		(µg/m3)	Inhalation	(µg/m3)	(µg/m3)	(µg/m3)	Vapor	Air	Air	Vapor	Vapor
	CAS #	a	(µg/m3) b	b'	c	c'					
Volatile Organics, by Method TO15 (µg/m3)											
1,1,1-Trichloroethane	71-55-6	3.1	--	--	2.2E+04	2.2E+07	0.13 U	0.15 U	0.15 U	0.73 U	0.34 U
1,1,2,2-Tetrachloroethane	79-34-5	<0.25	2.1E-01	2.1E+02	--	--	0.13 U	0.15 U	0.15 U	0.73 U	0.34 U
1,1,2-Trichloroethane	79-00-5	<0.25	7.7E-01	7.7E+02	--	--	0.13 U	0.15 U	0.15 U	0.73 U	0.34 U
1,1-Dichloroethane	75-34-3	<0.25	7.7E+00	7.7E+03	--	--	0.13 U	0.15 U	0.15 U	**23**[a]	0.34 U
1,1-Dichloroethene	75-35-4	<0.25	--	--	8.8E+02	8.8E+05	0.13 U	0.15 U	0.15 U	0.73 U	0.34 U
1,2-Dichloroethane	107-06-2	<0.25	4.7E-01	4.7E+02	1.1E+04	1.1E+07	0.13 U	0.15 U	0.15 U	0.73 U	0.34 U
1,2-Dichloropropane	78-87-5	<0.25	1.2E+00	1.2E+03	1.8E+01	1.8E+04	0.13 U	0.15 U	0.15 U	**9.1**[a]	**0.33 J**[a]
2-Butanone	78-93-3	16	--	--	2.2E+04	2.2E+07	**1.6**	**1.9**	**2.2**	**18**[a]	**7.2**
Acetone	67-64-1	110	--	--	1.4E+05	1.4E+08	**14**	**9.4**	**13**	**86**	**43**
Acrylonitrile	107-13-1	--	1.8E-01	1.8E+02	8.8E+00	8.8E+03	**0.51 J**[b]	**0.16 J**	**0.55 J**[b]	3.7 U	**4.1**
Benzene	71-43-2	15	1.6E+00	1.6E+03	1.3E+02	1.3E+05	**0.57**	**0.5**	**0.57**	**0.39 J**	**1.2**
Bromodichloromethane	75-27-4	--	3.3E-01	3.3E+02	--	--	0.13 U	0.15 U	0.15 U	0.73 U	0.34 U
Bromoform	75-25-2	--	1.1E+01	1.1E+04	--	--	0.67 U	0.75 U	0.76 U	3.7 U	1.7 U
Bromomethane	74-83-9	--	--	--	2.2E+01	2.2E+04	0.13 U	0.15 U	0.15 U	0.73 U	0.34 U
Carbon disulfide	75-15-0	--	--	--	3.1E+03	3.1E+06	**0.3 J**	**2.2**	**4.1**	**1,600**	**70**
Carbon tetrachloride	56-23-5	0.8	8.2E-01	8.2E+02	8.3E+02	8.3E+05	**0.59**	**0.56**	**0.61**	**3**[a]	**0.54**
Chlorobenzene	108-90-7	<0.25	--	--	2.2E+02	2.2E+05	0.13 U	0.15 U	0.15 U	0.73 U	**0.65**[a]
Chloroethane	75-00-3	<0.25	--	--	4.4E+04	4.4E+07	0.13 U	0.15 U	0.15 U	0.73 U	0.34 U
Chloroform	67-66-3	1.4	5.3E-01	5.3E+02	4.3E+02	4.3E+05	**0.088 J**	**0.15**	**0.43**	[illegible]	[illegible]
Chloromethane	74-87-3	3.3	--	--	3.9E+02	3.9E+05	**0.35**	**0.41**	**0.33**	0.73 U	0.34 U
cis-1,2-Dichloroethene	156-59-2	<0.25	--	--	--	--	0.13 U	0.15 U	0.15 U	**5**[a]	**0.58**[a]
cis-1,3-Dichloropropene	10061-01-5	<0.25	--	--	--	--	0.67 U	0.75 U	0.76 U	3.7 U	1.7 U
Dibromochloromethane	124-48-1	--	4.5E-01	4.5E+02	--	--	0.13 U	0.15 U	0.15 U	0.73 U	0.34 U
Ethylbenzene	100-41-4	7.3	4.9E+00	4.9E+03	4.4E+03	4.4E+06	**4.9**	**0.47 J**	**0.97**	**22**[a]	**0.94 J**
Methyl Isobutyl Ketone (4-Methyl-2-Pentanone)	108-10-1	2.2	--	--	1.3E+04	1.3E+07	**110**[a]	**40**[a]	**54**[a]	**2,100**[a]	**31**[a]
Methylene chloride	75-09-2	22	2.6E+01	2.6E+04	4.6E+03	4.6E+06	**0.38 J**	**0.31 J**	**0.39 J**	**32**[a]	**0.46 J**
Styrene	100-42-5	1.3	--	--	4.4E+03	4.4E+06	0.67 U	**0.19 J**	**0.17 J**	**3.1 J**[a]	**0.62 J**
Tetrachloroethene	127-18-4	2.9	2.1E+00	2.1E+03	1.2E+03	1.2E+06	0.13 U	0.15 U	**0.076 J**	**5.4**[a]	**0.19 J**
Toluene	108-88-3	58	--	--	2.2E+04	2.2E+07	**18**	**1.8**	**4.5**	**280**[a]	**30**
Trans-1,2-Dichloroethene	156-60-5	--	--	--	2.6E+02	2.6E+05	0.13 U	0.15 U	0.15 U	**0.9**	0.34 U
trans-1,3-Dichloropropene	10061-02-6	<0.25	--	--	--	--	0.67 U	0.75 U	0.76 U	3.7 U	1.7 U
Trichloroethene	79-01-6	0.5	6.1E+00	6.1E+03	--	--	0.13 U	0.15 U	0.15 U	**2.3**[a]	**1.1**[a]
Vinyl chloride	75-01-4	<0.25	2.8E+00	2.8E+03	4.4E+02	4.4E+05	0.13 U	0.15 U	0.15 U	0.73 U	0.34 U
m,p-xylene	108-38-3/1	12	--	--	3.1E+03	3.1E+06	**16**[a]	**1.5**	**3.2**	**310**[a]	**3.1**
o-xylene	95-47-6	7.6	--	--	3.1E+03	3.1E+06	**3.9**	**0.39 J**	**0.83**	**89**[a]	**0.9 J**
Epichlorohydrin	106-89-8	--	1.0E+01	1.0E+04	4.4E+00	4.4E+03	NF	NF	NF	NF	NF

TABLE 5
Ambient Air, Indoor Air, and Subslab Vapor Results - Building 4
Former Hampshire Chemical Corp Facility, Waterloo, New York

Location ID				**(AF=0.001)**		**(AF=0.001)**	WAT-SGB4	WAT-IA-5	WAT-IA-6	WAT-SG07A	WAT-SG08
Location Group			**Carcinogenic**	**Carcinogenic**			Ambient Air	Indoor Air	Indoor Air	Subslab Vapor	Subslab Vapor
Field Sample ID		**NYSDOH 2003**	**Target Risk**	**Target Risk**	**Noncancer**	**Noncancer**	WAT-SG-B4-110508	WAT-IA-5-110508	WAT-IA-6-110508	WAT-SG-7a-110508	WAT-SG-8-110508
Sample Date		**Study of VOCs**	**(TR) = 1E-06**	**(TR) = 1E-06**	**Hazard Index**	**Hazard Index**	11/5/2008	11/5/2008	11/5/2008	11/5/2008	11/5/2008
Sample Type		**90th Percentile**	**Inhalation**	**Inhalation**	**(HI) = 1 Inhalation**	**(HI) = 1 Inhalation**	Normal	Normal	Normal	Normal	Normal
Matrix		**(µg/m3)**	**(µg/m3)**	**(µg/m3)**	**(µg/m3)**	**(µg/m3)**	Vapor	Air	Air	Vapor	Vapor
	CAS #	**a**	**b**	**b'**	**c**	**c'**					
Tentatively Identified Compounds (µg/m3)											
1,2,3-Trichloropropane	96-18-4	--	--	--	--	--	NF	NF	NF	NF	NF
2-ethyl-1-hexanol	104-76-7	--	--	--	--	--	NF	NF	7 T	NF	40 T
2-Methylnaphthalene	91-57-6	--	--	--	--	--	NF	NF	NF	NF	NF
3-methyl-1-butene	563-45-1	--	--	--	--	--	NF	NF	NF	2000 T	NF
3-methylhexane	589-34-4	--	--	--	--	--	NF	NF	NF	NF	NF
4-Methyl-1-pentene	691-37-2	--	--	--	--	--	NF	NF	NF	800 T	NF
Aniline	62-53-3	--	7.7E+00	7.7E+03	4.4E+00	4.4E+03	NF	NF	NF	NF	NF
Benzaldehyde	100-52-7	--	--	--	--	--	6 T	10 T	5 T	NF	NF
Butane	106-97-8	--	--	--	--	--	NF	NF	NF	NF	NF
Dimethyl Sulfide	75-18-3	--	--	--	--	--	NF	NF	NF	NF	NF
Dimethyl trisulfide	3658-80-8	--	--	--	--	--	NF	NF	NF	NF	NF
Ethyl acetate	141-78-6	--	--	--	--	--	NF	NF	NF	NF	20 T
Hexamethylcyclotrisiloxane	541-05-9	--	--	--	--	--	NF	NF	NF	NF	NF
Isobutane	75-28-5	--	--	--	--	--	NF	4 T	NF	NF	NF
Isopentane	78-78-4	--	--	--	--	--	NF	NF	NF	NF	NF
Isopropyl alcohol	67-63-0	--	--	--	--	--	NF	NF	NF	NF	NF
Methyl disulfide	624-92-0	--	--	--	--	--	NF	NF	NF	NF	NF
Naphthalene	91-20-3	--	3.6E-01	3.6E+02	1.3E+01	1.3E+04	NF	NF	NF	NF	NF
n-Butanol	71-36-3	--	--	--	--	--	NF	NF	NF	NF	NF
n-Nonanal	124-19-6	--	--	--	--	--	NF	NF	NF	NF	NF
n-Pentane	109-66-0	--	--	--	--	--	NF	NF	NF	NF	NF
Propane	74-98-6	--	--	--	--	--	30 T	80 T	60 T	NF	70 T
1,2,4-Trimethylbenzene	95-63-6	--	--	--	3.1E+01	3.1E+04	NF	NF	5 T	NF	NF
Ethanol	64-17-5	--	--	--	--	--	NF	NF	NF	NF	NF
n-Decane	124-18-5	--	--	--	--	--	NF	NF	NF	NF	NF
n-Undecane	1120-21-4	--	--	--	--	--	NF	NF	NF	NF	NF
Propene	115-07-1	--	--	--	--	--	NF	NF	NF	NF	NF

Notes:
a = Exceedance of New York State Department of Health (NYSDOH) 2003: Study of volatile organic chemicals in air of fuel oil heated homes 90th Percentile
b = Exceedance of USEPA cancer risk-based screening level
b' = Exceedance of USEPA cancer risk-based screening level at attenuation factor of 0.001
c = Exceedance of USEPA non-cancer hazard index screening level
c' = Exceedance of USEPA non-cancer hazard index screening level at attenuation factor of 0.001
All compounds and criteria are in µg/m3
Analysis Method is TO15
-- indicates no criteria established
J = estimated value
U = compound not detect at or above method detection limit
Bold font indicates the constituent detected
Shading in gray indicates that the constituent was detected above criteria
NF = Not found by laboratory library search

TABLE 6

Ambient Air, Indoor Air, and Subslab Vapor Results - Tank Storage Area

Former Hampshire Chemical Corp Facility, Waterloo, New York

Location ID				(AF=0.001)		(AF=0.001)	WAT-SGB4	WAT-IA-7	WAT-SG09
Field Sample ID		NYSDOH 2003	Carcinogenic Target Risk	Carcinogenic Target Risk	Noncancer	Noncancer	Ambient Air	Indoor Air	Subslab Vapor
Sample Date		Study of VOCs	(TR) = 1E-06	(TR) = 1E-06	Hazard Index	Hazard Index	WAT-SG-B4-110508	WAT-IA-7-110508	WAT-SG-9-110508
Sample Type		90th Percentile	Inhalation	Inhalation	(HI) = 1 Inhalation	(HI) = 1 Inhalation	11/5/2008	11/5/2008	11/5/2008
Matrix		(µg/m3)	(µg/m3)	(µg/m3)	(µg/m3)	(µg/m3)	Normal	Normal	Normal
	CAS #	a	b	b'	c	c'	Vapor	Air	Vapor
Volatile Organics, by Method TO15 (µg/m3)									
1,1,1-Trichloroethane	71-55-6	3.1	–	–	2.2E+04	2.2E+07	0.13 U	0.16 U	0.29 U
1,1,2,2-Tetrachloroethane	79-34-5	<0.25	2.1E-01	2.1E+02	–	–	0.13 U	0.16 U	0.29 U
1,1,2-Trichloroethane	79-00-5	<0.25	7.7E-01	7.7E+02	–	–	0.13 U	0.16 U	**0.86**[a]
1,1-Dichloroethane	75-34-3	<0.25	7.7E+00	7.7E+03	–	–	0.13 U	0.16 U	**0.21 J**
1,1-Dichloroethene	75-35-4	<0.25	–	–	8.8E+02	8.8E+05	0.13 U	0.16 U	0.29 U
1,2-Dichloroethane	107-06-2	<0.25	4.7E-01	4.7E+02	1.1E+04	1.1E+07	0.13 U	0.16 U	**0.73**[a]
1,2-Dichloropropane	78-87-5	<0.25	1.2E+00	1.2E+03	1.8E+01	1.8E+04	0.13 U	0.16 U	**20**[a]
2-Butanone	78-93-3	16	–	–	2.2E+04	2.2E+07	**1.6**	**3.9**	**2.6**
Acetone	67-64-1	110	–	–	1.4E+05	1.4E+08	**14**	**18**	**11 J**
Acrylonitrile	107-13-1	–	1.8E-01	1.8E+02	8.8E+00	8.8E+03	**0.51 J**[b]	**0.19 J**[b]	1.4 U
Benzene	71-43-2	15	1.6E+00	1.6E+03	1.3E+02	1.3E+05	**0.57**	**0.57**	**0.43**
Bromodichloromethane	75-27-4	–	3.3E-01	3.3E+02	–	–	0.13 U	0.16 U	0.29 U
Bromoform	75-25-2	–	1.1E+01	1.1E+04	–	–	0.67 U	0.81 U	1.4 U
Bromomethane	74-83-9	–	–	–	2.2E+01	2.2E+04	0.13 U	0.16 U	0.29 U
Carbon disulfide	75-15-0	–	–	–	3.1E+03	3.1E+06	**0.3 J**	**9.4**	**3.8**
Carbon tetrachloride	56-23-5	0.8	8.2E-01	8.2E+02	8.3E+02	8.3E+05	**0.59**	**0.57**	**0.67**
Chlorobenzene	108-90-7	<0.25	–	–	2.2E+02	2.2E+05	0.13 U	0.16 U	0.45[a]
Chloroethane	75-00-3	<0.25	–	–	4.4E+04	4.4E+07	0.13 U	0.16 U	0.29 U
Chloroform	67-66-3	1.4	5.3E-01	5.3E+02	4.3E+02	4.3E+05	**0.088 J**	**0.42**	**390**[a]
Chloromethane	74-87-3	3.3	–	–	3.9E+02	3.9E+05	**0.35**	**0.4**	0.29 U
cis-1,2-Dichloroethylene	156-59-2	<0.25	–	–	–	–	0.13 U	0.16 U	0.29 U
cis-1,3-Dichloropropene	10061-01-5	<0.25	–	–	–	–	0.67 U	0.81 U	1.4 U
Dibromochloromethane	124-48-1	–	4.5E-01	4.5E+02	–	–	0.13 U	0.16 U	0.29 U
Ethylbenzene	100-41-4	7.3	4.9E+00	4.9E+03	4.4E+03	4.4E+06	**4.9**	**0.88**	**0.16 J**
Methyl Isobutyl Ketone (4-Methyl-2-Pentanone)	108-10-1	2.2	–	–	1.3E+04	1.3E+07	**110**[a]	**47**[a]	**2**
Methylene chloride	75-09-2	22	2.6E+01	2.6E+04	4.6E+03	4.6E+06	**0.38 J**	**0.52 J**	**0.28 J**
Styrene	100-42-5	1.3	–	–	4.4E+03	4.4E+06	0.67 U	**0.22 J**	1.4 U
Tetrachloroethene	127-18-4	2.9	2.1E+00	2.1E+03	1.2E+03	1.2E+06	0.13 U	**0.1 J**	**5**[a]
Toluene	108-88-3	58	–	–	2.2E+04	2.2E+07	**18**	**5.6**	**2.6**
Trans-1,2-Dichloroethene	156-60-5	–	–	–	2.6E+02	2.6E+05	0.13 U	0.16 U	0.29 U
trans-1,3-Dichloropropene	10061-02-6	<0.25	–	–	–	–	0.67 U	0.81 U	1.4 U
Trichloroethene	79-01-6	0.5	6.1E+00	6.1E+03	–	–	0.13 U	**0.095 J**	**482**[a]
Vinyl chloride	75-01-4	<0.25	2.8E+00	2.8E+03	4.4E+02	4.4E+05	0.13 U	0.16 U	0.29 U
m,p-xylene	108-38-3/1	12	–	–	3.1E+03	3.1E+06	**16**[a]	**2.7**	**0.49 J**
o-xylene	95-47-6	7.6	–	–	3.1E+03	3.1E+06	**3.9**	**0.71 J**	**0.15 J**
Epichlorohydrin	106-89-8	–	1.0E+01	1.0E+04	4.4E+00	4.4E+03	NF	NF	NF

TABLE 6
Ambient Air, Indoor Air, and Subslab Vapor Results - Tank Storage Area
Former Hampshire Chemical Corp Facility, Waterloo, New York

Location ID				(AF=0.001)		(AF=0.001)	WAT-SGB4	WAT-IA-7	WAT-SG09
			Carcinogenic	Carcinogenic			Ambient Air	Indoor Air	Subslab Vapor
Field Sample ID		NYSDOH 2003	Target Risk	Target Risk	Noncancer	Noncancer	WAT-SG-B4-110508	WAT-IA-7-110508	WAT-SG-9-110508
Sample Date		Study of VOCs	(TR) = 1E-06	(TR) = 1E-06	Hazard Index	Hazard Index	11/5/2008	11/5/2008	11/5/2008
Sample Type		90th Percentile	Inhalation	Inhalation	(HI) = 1 Inhalation	(HI) = 1 Inhalation	Normal	Normal	Normal
Matrix		(µg/m3)	(µg/m3)	(µg/m3)	(µg/m3)	(µg/m3)	Vapor	Air	Vapor
	CAS #	a	b	b'	c	c'			
Tentatively Identified Compounds (µg/m3)									
1,2,3-Trichloropropane	96-18-4	--					NF	NF	NF
2-ethyl-1-hexanol	104-76-7	--	--	--	--	--	NF	NF	NF
2-Methylnaphthalene	91-57-6	--	--	--	--	--	NF	NF	NF
3-methyl-1-butene	563-45-1	--	--	--	--	--	NF	NF	NF
3-methylhexane	589-34-4	--	--	--	--	--	NF	NF	NF
4-Methyl-1-pentene	691-37-2	--	--	--	--	--	NF	NF	NF
Aniline	62-53-3	--	7.7E+00	7.7E+03	4.4E+00	4.4E+03	NF	NF	NF
Benzaldehyde	100-52-7	--	--	--	--	--	**6 T**	**20** T	NF
Butane	106-97-8	--	--	--	--	--	NF	NF	NF
Dimethyl Sulfide	75-18-3	--	--	--	--	--	NF	NF	NF
Dimethyl trisulfide	3658-80-8	--	--	--	--	--	NF	NF	NF
Ethyl acetate	141-78-6	--	--	--	--	--	NF	NF	**10 T**
Hexamethylcyclotrisiloxane	541-05-9	--	--	--	--	--	NF	NF	NF
Isobutane	75-28-5	--	--	--	--	--	NF	**6 T**	**10 T**
Isopentane	78-78-4	--	--	--	--	--	NF	NF	NF
Isopropyl alcohol	67-63-0	--	--	--	--	--	NF	NF	NF
Methyl disulfide	624-92-0	--	--	--	--	--	NF	NF	NF
Naphthalene	91-20-3	--	3.6E-01	3.6E+02	1.3E+01	1.3E+04	NF	NF	NF
n-Butanol	71-36-3	--	--	--	--	--	NF	NF	NF
n-Nonanal	124-19-6	--	--	--	--	--	NF	NF	NF
n-Pentane	109-66-0	--	--	--	--	--	NF	NF	NF
Propane	74-98-6	--	--	--	--	--	**30 T**	**70 T**	NF
1,2,4-Trimethylbenzene	95-63-6	--	--	--	3.1E+01	3.1E+04	NF	**5 T**	NF
Ethanol	64-17-5	--	--	--	--	--	NF	NF	NF
n-Decane	124-18-5	--	--	--	--	--	NF	NF	NF
n-Undecane	1120-21-4	--	--	--	--	--	NF	**4 T**	NF
Propene	115-07-1	--	--	--	--	--	NF	NF	NF

Notes:
a = Exceedance of New York State Department of Health (NYSDOH) 2003: Study of volatile organic chemicals in air of fuel oil heated homes 90th Percentile
b = Exceedance of USEPA cancer risk-based screening level
b' = Exceedance of USEPA cancer risk-based screening level at attenuation factor of 0.001
c = Exceedance of USEPA non-cancer hazard index screening level
c' = Exceedance of USEPA non-cancer hazard index screening level at attenuation factor of 0.001
All compounds and criteria are in µg/m3
Analysis Method is TO15
-- indicates no criteria established
J = estimated value
U = compound not detect at or above method detection limit
Bold font indicates the constituent detected
Shading in gray indicates that the constituent was detected above criteria
NF = Not found by laboratory library search

TABLE 7
Carcinogenic Risk and Non-Carcinogenic Hazard Index - Subslab Soil Vapor
Former Hampshire Chemical Corp Facility, Waterloo, New York

Location	Sample ID	Sample Date	Analyte	CAS #	Sample Concentration (ug/m3)		Industrial Soil Vapor Cancer RSL[1] (ug/m3)	Industrial Sub-slab Soil Vapor (AF=0.001) Cancer RBSL (ug/m3)	Cancer Risk	% Contribution	Industrial Soil Vapor Non-Cancer RSL[1] (ug/m3)	Industrial Sub-slab Soil Vapor (AF=0.001) Non-Cancer RBSL (ug/m3)	Non-Cancer Hazard Quotient	% Contribution
Building 2-A/2-B	WAT-SG-1-110408	11/4/2008	1,1-Dichloroethane	75-34-3	0.13	J	7.7	7700	1.7E-11	0.1	–	–	–	–
			Acrylonitrile	107-13-1	0.64	J	0.18	180	3.6E-09	19.7	8.8	8800	7.27E-05	7.2
			Benzene	71-43-2	0.14	J	1.6	1600	8.8E-11	0.5	130	130000	1.08E-06	0.1
			Carbon disulfide	75-15-0	11		–	–	–	–	3100	3100000	3.55E-06	0.4
			Carbon tetrachloride	56-23-5	0.31		0.82	820	3.8E-10	2.1	830	830000	3.73E-07	0.0
			Chlorobenzene	108-90-7	0.076	J	–	–	–	–	220	220000	3.45E-07	0.0
			Chloroform	67-66-3	[redacted]		0.53	530	1.3E-08	72.1	430	430000	1.60E-05	1.6
			Ethylbenzene	100-41-4	0.56	J	4.9	4900	1.1E-10	0.6	4400	4400000	1.27E-07	0.0
			Methyl Isobutyl Ketone (4-Methyl-2-Pentanone)	108-10-1	4.7	a	–	–	–	–	13000	13000000	3.62E-07	0.0
			Methylene chloride	75-09-2	0.092	J	26	26000	3.5E-12	0.0	4600	4600000	2.00E-08	0.0
			Styrene	100-42-5	1		–	–	–	–	4400	4400000	2.27E-07	0.0
			Tetrachloroethene	127-18-4	0.77		2.1	2100	3.7E-10	2.0	1200	1200000	6.42E-07	0.1
			Toluene	108-88-3	38		–	–	–	–	22000	22000000	1.73E-06	0.2
			m,p-xylene	108-38-3/1	1.1		–	–	–	–	3100	3100000	3.55E-07	0.0
			o-xylene	95-47-6	0.39	J	–	–	–	–	3100	3100000	1.26E-07	0.0
			Aniline	62-53-3	4	T	7.7	7700	5.2E-10	–	4.4	4400	9.09E-04	90.3
			Ethyl acetate	141-78-6	5	T	–	–	–	–	–	–	–	–
			Hexamethylcyclotrisiloxane	541-05-9	10	T	–	–	–	–	–	–	–	–
			n-Nonanal	124-19-6	4	T	–	–	–	–	–	–	–	–
								Total Risk	2E-08			Hazard Index	1.0E-03	
Building 2	WAT-SG-2-110408	11/4/2008	1,1,1-Trichloroethane	71-55-6	0.13	J	–	–	–	–	22000	22000000	5.91E-09	0.0
			1,1,2-Trichloroethane	79-00-5	0.27	a	0.77	770	3.5E-10	0.1	–	–	–	
			1,1-Dichloroethene	75-35-4	3.6	a	–	–	–	–	880	880000	4.09E-06	0.2
			1,2-Dichloroethane	107-06-2	2.3	a	0.47	470	4.9E-09	0.9	11000	11000000	2.09E-07	0.0
			1,2-Dichloropropane	78-87-5	3.7	a	1.2	1200	3.1E-09	0.6	18	18000	2.06E-04	12.3
			Acrylonitrile	107-13-1	0.68	J	0.18	180	3.8E-09	0.7	8.8	8800	7.73E-05	4.6
			Benzene	71-43-2	0.15		1.6	1600	9.4E-11	0.0	130	130000	1.15E-06	0.1
			Bromodichloromethane	75-27-4	0.16		0.33	330	4.8E-10	0.1	–	–	–	–
			Carbon disulfide	75-15-0	11		–	–	–	–	3100	3100000	3.55E-06	0.2
			Carbon tetrachloride	56-23-5	2.9	a	0.82	820	3.5E-09	0.7	830	830000	3.49E-06	0.2
			Chlorobenzene	108-90-7	0.098	J	–	–	–	–	220	220000	4.45E-07	0.0
			Chloroethane	75-00-3	0.27	a	–	–	–	–	44000	44000000	6.14E-09	0.0
			Chloroform	67-66-3	250	a	0.53	530	4.7E-07	88.9	430	430000	5.81E-04	34.7
			cis-1,2-Dichloroethylene	156-59-2	0.088	J[a]	–	–	–	–	–	–	–	–
			Ethylbenzene	100-41-4	0.66	J	4.9	4900	1.3E-10	0.0	4400	4400000	1.50E-07	0.0
			Methyl Isobutyl Ketone (4-Methyl-2-Pentanone)	108-10-1	10	J[a]	–	–	–	–	13000	13000000	7.69E-07	0.0
			Methylene chloride	75-09-2	0.95		26	26000	3.7E-11	0.0	4600	4600000	2.07E-07	0.0
			Styrene	100-42-5	1		–	–	–	–	4400	4400000	2.27E-07	0.0
			Tetrachloroethene	127-18-4	29	a	2.1	2100	1.4E-08	2.6	1200	1200000	2.42E-05	1.4
			Toluene	108-88-3	45	J	–	–	–	–	22000	22000000	2.05E-06	0.1
			Trichloroethene	79-01-6	4.5	a	6.1	6100	7.4E-10	0.1	–	–	–	–
			m,p-xylene	108-38-3/1	1.4		–	–	–	–	3100	3100000	4.52E-07	0.0
			o-xylene	95-47-6	0.47	J	–	–	–	–	3100	3100000	1.52E-07	0.0
			2-Methylnaphthalene	91-57-6	10	T	–	–	–	–	–	–	–	–
			Hexamethylcyclotrisiloxane	541-05-9	10	T	–	–	–	–	–	–	–	–
			Naphthalene	91-20-3	10	T	0.36	360	2.8E-08	5.2	13	13000	7.69E-04	45.9
			n-Butanol	71-36-3	20	T	–	–	–	–	–	–	–	–
								Total Risk	5E-07			Hazard Index	1.7E-03	
Building 2	WAT-SG-DUP-110408	11/4/2008	1,1,1-Trichloroethane	71-55-6	0.11	J	–	–	–	–	22000	22000000	5.00E-09	0.0
			1,1,2-Trichloroethane	79-00-5	0.24		0.77	770	3.1E-10	0.1	–	–	–	
			1,1-Dichloroethene	75-35-4	3.7	a	–	–	–	–	880	880000	4.20E-06	0.3
			1,2-Dichloroethane	107-06-2	2	a	0.47	470	4.3E-09	0.9	11000	11000000	1.82E-07	0.0
			1,2-Dichloropropane	78-87-5	4.1	a	1.2	1200	3.4E-09	0.7	18	18000	2.28E-04	14.0
			Acrylonitrile	107-13-1	0.71	J	0.18	180	3.9E-09	0.8	8.8	8800	8.07E-05	5.0
			Bromodichloromethane	75-27-4	0.25		0.33	330	7.6E-10	0.2	–	–	–	–
			Carbon disulfide	75-15-0	10		–	–	–	–	3100	3100000	3.23E-06	0.2
			Carbon tetrachloride	56-23-5	2.9	a	0.82	820	3.5E-09	0.7	830	830000	3.49E-06	0.2
			Chlorobenzene	108-90-7	0.11	J	–	–	–	–	220	220000	5.00E-07	0.0
			Chloroform	67-66-3	220	a	0.53	530	4.2E-07	87.5	430	430000	5.12E-04	31.4

TABLE 7
Carcinogenic Risk and Non-Carcinogenic Hazard Index - Subslab Soil Vapor
Former Hampshire Chemical Corp Facility, Waterloo, New York

Location	Sample ID	Sample Date	Analyte	CAS #	Sample Concentration (ug/m3)		Industrial Soil Vapor Cancer RSL[1] (ug/m3)	Industrial Sub-slab Soil Vapor (AF=0.001) Cancer RBSL (ug/m3)	Cancer Risk	% Contribution	Industrial Soil Vapor Non-Cancer RSL[1] (ug/m3)	Industrial Sub-slab Soil Vapor (AF=0.001) Non-Cancer RBSL (ug/m3)	Non-Cancer Hazard Quotient	% Contribution
			cis-1,2-Dichloroethylene	156-59-2	0.146	J	--	--	--	--	--	--	--	--
			Ethylbenzene	100-41-4	0.9		4.9	4900	1.8E-10	0.0	4400	4400000	2.05E-07	0.0
			Methyl Isobutyl Ketone (4-Methyl-2-Pentanone)	108-10-1	7.1	J[a]	--	--	--	--	13000	13000000	5.46E-07	0.0
			Methylene chloride	75-09-2	0.9		26	26000	3.5E-11	0.0	4600	4600000	1.96E-07	0.0
			Styrene	100-42-5	2.6	[a]	--	--	--	--	4400	4400000	5.91E-07	0.0
			Tetrachloroethene	127-18-4	30	[a]	2.1	2100	1.4E-08	3.0	1200	1200000	2.50E-05	1.5
			Toluene	108-88-3	28	J	--	--	--	--	22000	22000000	1.27E-06	0.1
			Trans-1,2-Dichloroethene	156-60-5	0.1	J	--	--	--	--	--	--	--	--
			Trichloroethene	79-01-6	4.5	[a]	6.1	6100	7.4E-10	0.2	--	--	--	--
			m,p-xylene	108-38-3/1	2.2		--	--	--	--	3100	3100000	7.10E-07	0.0
			o-xylene	95-47-6	0.9		--	--	--	--	3100	3100000	2.90E-07	0.0
			1,2,3-Trichloropropane	96-18-4	7	T	--	--	--	--	--	--	--	--
			Naphthalene	91-20-3	10	T	0.36	360	2.8E-08	5.9	13	13000	7.69E-04	47.2
			n-Butanol	71-36-3	20	T	--	--	--	--	--	--	--	--
								Total Risk	5E-07			Hazard Index	1.6E-03	
Building 2	WAT-SG-3-110408	11/4/2008	1,2-Dichloroethane	107-06-2	0.25		0.47	470	5.3E-10	1.1	11000	11000000	2.27E-08	0.0
MPA Process Area			1,2-Dichloropropane	78-87-5	0.24		1.2	1200	2.0E-10	0.4	18	18000	1.33E-05	6.5
			Acrylonitrile	107-13-1	0.93		0.18	180	5.2E-09	10.9	8.8	8800	1.06E-04	51.9
			Benzene	71-43-2	0.75		1.6	1600	4.7E-10	1.0	130	130000	5.77E-06	2.8
			Carbon disulfide	75-15-0	36		--	--	--	--	3100	3100000	1.16E-05	5.7
			Carbon tetrachloride	56-23-5	0.65		0.82	820	7.9E-10	1.7	830	830000	7.83E-07	0.4
			Chlorobenzene	108-90-7	0.14	J	--	--	--	--	220	220000	6.36E-07	0.3
			Chloroform	67-66-3	20	[a]	0.53	530	3.8E-08	79.3	430	430000	4.65E-05	22.8
			Chloromethane	74-87-3	0.31		--	--	--	--	390	390000	7.95E-07	0.4
			Ethylbenzene	100-41-4	0.85		4.9	4900	1.7E-10	0.4	4400	4400000	1.93E-07	0.1
			Methyl Isobutyl Ketone (4-Methyl-2-Pentanone)	108-10-1	140	[a]	--	--	--	--	13000	13000000	1.08E-05	5.3
			Methylene chloride	75-09-2	0.85		26	26000	3.3E-11	0.1	4600	4600000	1.85E-07	0.1
			Styrene	100-42-5	1.7	[a]	--	--	--	--	4400	4400000	3.86E-07	0.2
			Tetrachloroethene	127-18-4	4.8	[a]	2.1	2100	2.3E-09	4.8	1200	1200000	4.00E-06	2.0
			Toluene	108-88-3	50		--	--	--	--	22000	22000000	2.27E-06	1.1
			Trichloroethene	79-01-6	1.2	[a]	6.1	6100	2.0E-10	0.4	--	--	--	--
			m,p-xylene	108-38-3/1	1.7		--	--	--	--	3100	3100000	5.48E-07	0.3
			o-xylene	95-47-6	0.66	J	--	--	--	--	3100	3100000	2.13E-07	0.1
			Butane	106-97-8	10	T	--	--	--	--	--	--	--	--
			Hexamethylcyclotrisiloxane	541-05-9	7	T	--	--	--	--	--	--	--	--
			Isopentane	78-78-4	8	T	--	--	--	--	--	--	--	--
			Isopropyl alcohol	67-63-0	6	T	--	--	--	--	--	--	--	--
								Total Risk	5E-08			Hazard Index	2.0E-04	
Building 2	WAT-SG-3a-110408	11/4/2008	1,1,1-Trichloroethane	71-55-6	0.07	J	--	--	--	--	22000	22000000	3.18E-09	0.0
MPA Process Area			1,2-Dichloroethane	107-06-2	0.15		0.47	470	3.2E-10	4.1	11000	11000000	1.36E-08	0.0
			2-Butanone	78-93-3	9.6		--	--	--	--	22000	22000000	4.32E-07	0.5
			Acrylonitrile	107-13-1	0.61	J	0.18	180	3.4E-09	43.1	8.8	8800	6.93E-05	75.6
			Benzene	71-43-2	1.6		1.6	1600	1.0E-09	12.7	130	130000	1.23E-05	13.4
			Carbon disulfide	75-15-0	4.8		--	--	--	--	3100	3100000	1.55E-06	1.7
			Carbon tetrachloride	56-23-5	1.1	[a]	0.82	820	1.3E-09	17.1	830	830000	1.33E-06	1.4
			Chlorobenzene	108-90-7	0.23		--	--	--	--	220	220000	1.05E-06	1.1
			Chloroethane	75-00-3	0.32	[a]	--	--	--	--	44000	44000000	7.27E-09	0.0
			Chloroform	67-66-3	0.43		0.53	530	8.1E-10	10.3	430	430000	1.00E-06	1.1
			Chloromethane	74-87-3	0.16		--	--	--	--	390	390000	4.10E-07	0.4
			cis-1,2-Dichloroethylene	156-59-2	0.2		--	--	--	--	--	--	--	--
			Ethylbenzene	100-41-4	1.6		4.9	4900	3.3E-10	4.2	4400	4400000	3.64E-07	0.4
			Methyl Isobutyl Ketone (4-Methyl-2-Pentanone)	108-10-1	9.6	[a]	--	--	--	--	13000	13000000	7.38E-07	0.8
			Methylene chloride	75-09-2	1.6		26	26000	6.2E-11	0.8	4600	4600000	3.48E-07	0.4
			Styrene	100-42-5	2.6	[a]	--	--	--	--	4400	4400000	5.91E-07	0.6
			Tetrachloroethene	127-18-4	1		2.1	2100	4.8E-10	6.1	1200	1200000	8.33E-07	0.9
			Trichloroethene	79-01-6	0.85	[a]	6.1	6100	1.4E-10	1.8	--	--	--	--
			m,p-xylene	108-38-3/1	3.1		--	--	--	--	3100	3100000	1.00E-06	1.1
			o-xylene	95-47-6	1.1		--	--	--	--	3100	3100000	3.55E-07	0.4
			3-methylhexane	589-34-4	30	T	--	--	--	--	--	--	--	--

TABLE 7
Carcinogenic Risk and Non-Carcinogenic Hazard Index - Subslab Soil Vapor
Former Hampshire Chemical Corp Facility, Waterloo, New York

Location	Sample ID	Sample Date	Analyte	CAS #	Sample Concentration (ug/m3)		Industrial Soil Vapor Cancer RSL[1] (ug/m3)	Industrial Sub-slab Soil Vapor (AF=0.001) Cancer RBSL (ug/m3)	Cancer Risk	% Contribution	Industrial Soil Vapor Non-Cancer RSL[1] (ug/m3)	Industrial Sub-slab Soil Vapor (AF=0.001) Non-Cancer RBSL (ug/m3)	Non-Cancer Hazard Quotient	% Contribution
			Ethyl acetate	141-78-6	40	T	--	--	--	--	--	--	--	--
			Isopentane	78-78-4	40	T	--	--	--	--	--	--	--	--
			Isopropyl alcohol	67-63-0	50	T	--	--	--	--	--	--	--	--
			n-Pentane	109-66-0	100	T	--	--	--	--	--	--	--	--
								Total Risk	8E-09			Hazard Index	9.2E-05	
Building 1	WAT-SG-4-110408	11/4/2008	1,1,1-Trichloroethane	71-55-6	[redacted]		--	--	--	--	22000	22000000	1.32E-06	0.0
			1,1-Dichloroethane	75-34-3	5.1	a	7.7	7700	6.6E-10	0.0	--	--	--	--
			1,2-Dichloropropane	78-87-5	8.4	a	1.2	1200	7.0E-09	0.4	18	18000	4.67E-04	16.5
			Carbon disulfide	75-15-0	20		--	--	--	--	3100	3100000	6.45E-06	0.2
			[redacted]	67-66-3	1,[redacted]0	ab	0.53	530	1.9E-06	98.6	430	430000	2.33E-03	82.0
			Chloromethane	74-87-3	1.1		--	--	--	--	390	390000	2.82E-06	0.1
			Ethylbenzene	100-41-4	0.67	J	4.9	4900	1.4E-10	0.0	4400	4400000	1.52E-07	0.0
			Methyl Isobutyl Ketone (4-Methyl-2-Pentanone)	108-10-1	18	a	--	--	--	--	13000	13000000	1.38E-06	0.0
			Methylene chloride	75-09-2	0.83	J	26	26000	3.2E-11	0.0	4600	4600000	1.80E-07	0.0
			Styrene	100-42-5	1.3	J	--	--	--	--	4400	4400000	2.95E-07	0.0
			Tetrachloroethene	127-18-4	38	a	2.1	2100	1.8E-08	0.9	1200	1200000	3.17E-05	1.1
			Trichloroethene	79-01-6	5.1	a	6.1	6100	8.4E-10	0.0	--	--	--	--
			o-xylene	95-47-6	0.65	J	--	--	--	--	3100	3100000	2.10E-07	0.0
			Hexamethylcyclotrisiloxane	541-05-9	600	T	--	--	--	--	--	--	--	--
			Isobutane	75-28-5	40	T	--	--	--	--	--	--	--	--
								Total Risk	2E-06			Hazard Index	2.8E-03	
Building 3	WAT-SG-5-110508	11/5/2008	1,1-Dichloroethane	75-34-3	[redacted]		7.7	7700	1.1E-10	0.0	--	--	--	--
			2-Butanone	78-93-3	1.2	J	--	--	--	--	22000	22000000	5.45E-08	0.0
			Acetone	67-64-1	7.3	J	--	--	--	--	140000	140000000	5.21E-08	0.0
			Carbon disulfide	75-15-0	3.3		--	--	--	--	3100	3100000	1.06E-06	0.1
			Carbon tetrachloride	56-23-5	0.58		0.82	820	7.1E-10	0.1	830	830000	6.99E-07	0.0
			Ch[redacted]	67-66-3	690	ab	0.53	530	1.3E-06	99.9	430	430000	1.60E-03	99.7
			Chloromethane	74-87-3	0.44	J	--	--	--	--	390	390000	1.13E-06	0.1
			Methyl Isobutyl Ketone (4-Methyl-2-Pentanone)	108-10-1	0.64	J	--	--	--	--	13000	13000000	4.92E-08	0.0
			Methylene chloride	75-09-2	0.81	J	26	26000	3.1E-11	0.0	4600	4600000	1.76E-07	0.0
			Tetrachloroethene	127-18-4	1.3		2.1	2100	6.2E-10	0.0	1200	1200000	1.08E-06	0.1
			Toluene	108-88-3	2.2	J	--	--	--	--	22000	22000000	1.00E-07	0.0
			Trichloroethene	79-01-6	1.6	a	6.1	6100	2.6E-10	0.0	--	--	--	--
			m,p-xylene	108-38-3/1	0.52	J	--	--	--	--	3100	3100000	1.68E-07	0.0
								Total Risk	1E-06			Hazard Index	1.6E-03	
Building 3	WAT-SG-5a-110508	11/5/2008	1,1-Dichloroethane	75-34-3	0.17		7.7	7700	2.2E-11	0.0	--	--	--	--
			2-Butanone	78-93-3	1.5		--	--	--	--	22000	22000000	6.82E-08	0.0
			Acetone	67-64-1	7.7		--	--	--	--	140000	140000000	5.50E-08	0.0
			Bromodichloromethane	75-27-4	0.56		0.33	330	1.7E-09	0.3	--	--	--	--
			Carbon disulfide	75-15-0	3		--	--	--	--	3100	3100000	9.68E-07	0.2
			Carbon tetrachloride	56-23-5	0.71		0.82	820	8.7E-10	0.2	830	830000	8.55E-07	0.1
			Chloroform	67-66-3	270	a	0.53	530	5.1E-07	99.3	430	430000	6.28E-04	99.4
			Dibromochloromethane	124-48-1	0.08	J	0.45	450	1.8E-10	0.0	--	--	--	--
			Ethylbenzene	100-41-4	0.15	J	4.9	4900	3.1E-11	0.0	4400	4400000	3.41E-08	0.0
			Methyl Isobutyl Ketone (4-Methyl-2-Pentanone)	108-10-1	1.3		--	--	--	--	13000	13000000	1.00E-07	0.0
			Methylene chloride	75-09-2	0.12	J	26	26000	4.6E-12	0.0	4600	4600000	2.61E-08	0.0
			Tetrachloroethene	127-18-4	1.4		2.1	2100	6.7E-10	0.1	1200	1200000	1.17E-06	0.2
			Toluene	108-88-3	1.8		--	--	--	--	22000	22000000	8.18E-08	0.0
			Trichloroethene	79-01-6	1.7	a	6.1	6100	2.8E-10	0.1	--	--	--	--
			m,p-xylene	108-38-3/1	0.39	J	--	--	--	--	3100	3100000	1.26E-07	0.0
			o-xylene	95-47-6	0.15	J	--	--	--	--	3100	3100000	4.84E-08	0.0
			Ethyl acetate	141-78-6	4	T	--	--	--	--	--	--	--	--
			Hexamethylcyclotrisiloxane	541-05-9	6	T	--	--	--	--	--	--	--	--
			Isobutane	75-28-5	8	T	--	--	--	--	--	--	--	--
								Total Risk	5E-07			Hazard Index	6.3E-04	
Building 3	WAT-SG-6-110508	11/5/2008	1,1-Dichloroethane	75-34-3	0.085	J	7.7	7700	1.1E-11	0.0	--	--	--	--
			2-Butanone	78-93-3	1.8		--	--	--	--	22000	22000000	8.18E-08	0.0
			Acetone	67-64-1	8		--	--	--	--	140000	140000000	5.71E-08	0.0
			Benzene	71-43-2	0.4		1.6	1600	2.5E-10	0.2	130	130000	3.08E-06	0.6

TABLE 7
Carcinogenic Risk and Non-Carcinogenic Hazard Index - Subslab Soil Vapor
Former Hampshire Chemical Corp Facility, Waterloo, New York

Location	Sample ID	Sample Date	Analyte	CAS #	Sample Concentration (ug/m3)		Industrial Soil Vapor Cancer RSL[1] (ug/m3)	Industrial Sub-slab Soil Vapor (AF=0.001) Cancer RBSL (ug/m3)	Cancer Risk	% Contribution	Industrial Soil Vapor Non-Cancer RSL[1] (ug/m3)	Industrial Sub-slab Soil Vapor (AF=0.001) Non-Cancer RBSL (ug/m3)	Non-Cancer Hazard Quotient	% Contribution
			Bromodichloromethane	75-27-4	0.75		0.33	330	2.3E-09	2.2	–	–	–	–
			Carbon disulfide	75-15-0	1,200		–	–	–	–	3100	3100000	3.87E-04	74.6
			Carbon tetrachloride	56-23-5	0.48		0.82	820	5.9E-10	0.6	830	830000	5.78E-07	0.1
			Chloroethane	75-00-3	0.34	a	–	–	–	–	44000	44000000	7.73E-09	0.0
			Chloroform	67-66-3	53	a	0.53	530	1.0E-07	95.8	430	430000	1.23E-04	23.8
			Chloromethane	74-87-3	0.17		–	–	–	–	390	390000	4.36E-07	0.1
			Dibromochloromethane	124-48-1	0.31		0.45	450	6.9E-10	0.7	–	–	–	–
			Ethylbenzene	100-41-4	0.27	J	4.9	4900	5.5E-11	0.1	4400	4400000	6.14E-08	0.0
			Methyl Isobutyl Ketone (4-Methyl-2-Pentanone)	108-10-1	24	a	–	–	–	–	13000	13000000	1.85E-06	0.4
			Methylene chloride	75-09-2	6.6		26	26000	2.5E-10	0.2	4600	4600000	1.43E-06	0.3
			Styrene	100-42-5	0.11	J	–	–	–	–	4400	4400000	2.50E-08	0.0
			Tetrachloroethene	127-18-4	0.42		2.1	2100	2.0E-10	0.2	1200	1200000	3.50E-07	0.1
			Toluene	108-88-3	2.4		–	–	–	–	22000	22000000	1.09E-07	0.0
			Trichloroethene	79-01-6	0.5		6.1	6100	8.2E-11	0.1	–	–	–	–
			m,p-xylene	108-38-3/1	1.2		–	–	–	–	3100	3100000	3.87E-07	0.1
			o-xylene	95-47-6	0.37	J	–	–	–	–	3100	3100000	1.19E-07	0.0
			Dimethyl Sulfide	75-18-3	20	T	–	–	–	–	–	–	–	–
			Dimethyl trisulfide	3658-80-8	20	T	–	–	–	–	–	–	–	–
			Hexamethylcyclotrisiloxane	541-05-9	6	T	–	–	–	–	–	–	–	–
			Methyl disulfide	624-92-0	600	T	–	–	–	–	–	–	–	–
								Total Risk	1E-07			Hazard Index	5.2E-04	
Building 4	WAT-SG-7a-110508	11/5/2008	1,1-Dichloroethane	75-34-3	23	a	7.7	7700	3.0E-09	0.1	–	–	–	–
			1,2-Dichloropropane	78-87-5	9.1	a	1.2	1200	7.6E-09	0.3	18	18000	5.06E-04	11.6
			2-Butanone	78-93-3	18	a	–	–	–	–	22000	22000000	8.18E-07	0.0
			Acetone	67-64-1	86		–	–	–	–	140000	140000000	6.14E-07	0.0
			Benzene	71-43-2	0.39	J	1.6	1600	2.4E-10	0.0	130	130000	3.00E-06	0.1
			Carbon disulfide	75-15-0	1,600		–	–	–	–	3100	3100000	5.16E-04	11.8
			Carbon tetrachloride	56-23-5	3	a	0.82	820	3.7E-09	0.1	830	830000	3.61E-06	0.1
			Chloroform	67-66-3	1,300	ab	0.53	530	2.5E-06	99.1	430	430000	3.02E-03	69.1
			cis-1,2-Dichloroethylene	156-59-2	5	a	–	–	–	–	–	–	–	–
			Ethylbenzene	100-41-4	22	a	4.9	4900	4.5E-09	0.2	4400	4400000	5.00E-06	0.1
			Methyl Isobutyl Ketone (4-Methyl-2-Pentanone)	108-10-1	2,100	a	–	–	–	–	13000	13000000	1.62E-04	3.7
			Methylene chloride	75-09-2	32	a	26	26000	1.2E-09	0.0	4600	4600000	6.96E-06	0.2
			Styrene	100-42-5	3.1	J[a]	–	–	–	–	4400	4400000	7.05E-07	0.0
			Tetrachloroethene	127-18-4	5.4	a	2.1	2100	2.6E-09	0.1	1200	1200000	4.50E-06	0.1
			Toluene	108-88-3	280	a	–	–	–	–	22000	22000000	1.27E-05	0.3
			Trans-1,2-Dichloroethene	156-60-5	0.9		–	–	–	–	260	260000	3.46E-06	0.1
			Trichloroethene	79-01-6	2.3	a	6.1	6100	3.8E-10	0.0	–	–	–	–
			m,p-xylene	108-38-3/1	310	a	–	–	–	–	3100	3100000	1.00E-04	2.3
			o-xylene	95-47-6	89	a	–	–	–	–	3100	3100000	2.87E-05	0.7
			3-methyl-1-butene	563-45-1	2000	T	–	–	–	–	–	–	–	–
			4-Methyl-1-pentene	691-37-2	800	T	–	–	–	–	–	–	–	–
								Total Risk	2E-06			Hazard Index	4.4E-03	
Building 4	WAT-SG-8-110508	11/5/2008	1,2-Dichloropropane	78-87-5	[redacted]	a	1.2	1200	2.8E-10	0.6	18	18000	1.83E-05	3.3
			2-Butanone	78-93-3	7.2		–	–	–	–	22000	22000000	3.27E-07	0.1
			Acetone	67-64-1	43		–	–	–	–	140000	140000000	3.07E-07	0.1
			Acrylonitrile	107-13-1	4.1		0.18	180	2.3E-08	53.6	8.8	8800	4.66E-04	85.1
			Benzene	71-43-2	1.2		1.6	1600	7.5E-10	1.8	130	130000	9.23E-06	1.7
			Carbon disulfide	75-15-0	70		–	–	–	–	3100	3100000	2.26E-05	4.1
			Carbon tetrachloride	56-23-5	0.54		0.82	820	6.6E-10	1.5	830	830000	6.51E-07	0.1
			Chlorobenzene	108-90-7	0.65	a	–	–	–	–	220	220000	2.95E-06	0.5
			Chloroform	67-66-3	9.3	a	0.53	530	1.8E-08	41.3	430	430000	2.16E-05	3.9
			cis-1,2-Dichloroethylene	156-59-2	0.58	a	–	–	–	–	–	–	–	–
			Ethylbenzene	100-41-4	0.94	J	4.9	4900	1.9E-10	0.5	4400	4400000	2.14E-07	0.0
			Methyl Isobutyl Ketone (4-Methyl-2-Pentanone)	108-10-1	31	a	–	–	–	–	13000	13000000	2.38E-06	0.4
			Methylene chloride	75-09-2	0.46	J	26	26000	1.8E-11	0.0	4600	4600000	1.00E-07	0.0
			Styrene	100-42-5	0.62	J	–	–	–	–	4400	4400000	1.41E-07	0.0
			Tetrachloroethene	127-18-4	0.19	J	2.1	2100	9.0E-11	0.2	1200	1200000	1.58E-07	0.0

TABLE 7
Carcinogenic Risk and Non-Carcinogenic Hazard Index - Subslab Soil Vapor
Former Hampshire Chemical Corp Facility, Waterloo, New York

Location	Sample ID	Sample Date	Analyte	CAS #	Sample Concentration (ug/m3)		Industrial Soil Vapor Cancer RSL[1] (ug/m3)	Industrial Sub-slab Soil Vapor (AF=0.001) Cancer RBSL (ug/m3)	Cancer Risk	% Contribution	Industrial Soil Vapor Non-Cancer RSL[1] (ug/m3)	Industrial Sub-slab Soil Vapor (AF=0.001) Non-Cancer RBSL (ug/m3)	Non-Cancer Hazard Quotient	% Contribution
			Toluene	108-88-3	30		--	--	--	--	22000	22000000	1.36E-06	0.2
			Trichloroethene	79-01-6	1.1	a	6.1	6100	1.8E-10	0.4	--	--	--	--
			m,p-xylene	108-38-3/1	3.1		--	--	--	--	3100	3100000	1.00E-06	0.2
			o-xylene	95-47-6	0.9	J	--	--	--	--	3100	3100000	2.90E-07	0.1
			2-ethyl-1-hexanol	104-76-7	40	T	--	--	--	--	--	--	--	--
			Ethyl acetate	141-78-6	20	T	--	--	--	--	--	--	--	--
			Propane	74-98-6	70	T	--	--	--	--	--	--	--	--
								Total Risk	4E-08			Hazard Index	5.5E-04	
Tank Storage Area	WAT-SG-9-110508	11/5/2008	1,1,2-Trichloroethane	79-00-5	0.86	a	0.77	770	1.1E-09	0.1	--	--	--	
			1,1-Dichloroethane	75-34-3	0.21	J	7.7	7700	2.7E-11	0.0	--	--	--	--
			1,2-Dichloroethane	107-06-2	0.73	a	0.47	470	1.6E-09	0.2	11000	11000000	6.64E-08	0.0
			1,2-Dichloropropane	78-87-5	20	a	1.2	1200	1.7E-08	2.0	18	18000	1.11E-03	54.7
			2-Butanone	78-93-3	2.6		--	--	--	--	22000	22000000	1.18E-07	0.0
			Acetone	67-64-1	11	J	--	--	--	--	140000	140000000	7.86E-08	0.0
			Benzene	71-43-2	0.43		1.6	1600	2.7E-10	0.0	130	130000	3.31E-06	0.2
			Carbon disulfide	75-15-0	3.8		--	--	--	--	3100	3100000	1.23E-06	0.1
			Carbon tetrachloride	56-23-5	0.67		0.82	820	8.2E-10	0.1	830	830000	8.07E-07	0.0
			Chlorobenzene	108-90-7	0.45	a	--	--	--	--	220	220000	2.05E-06	0.1
			Chloroform	67-66-3	390	a	0.53	530	7.4E-07	87.8	430	430000	9.07E-04	44.7
			Ethylbenzene	100-41-4	0.16	J	4.9	4900	3.3E-11	0.0	4400	4400000	3.64E-08	0.0
			Methyl Isobutyl Ketone (4-Methyl-2-Pentanone)	108-10-1	2		--	--	--	--	13000	13000000	1.54E-07	0.0
			Methylene chloride	75-09-2	0.28	J	26	26000	1.1E-11	0.0	4600	4600000	6.09E-08	0.0
			Tetrachloroethene	127-18-4			2.1	2100	2.4E-09	0.3	1200	1200000	4.17E-06	0.2
			Toluene	108-88-3	2.6		--	--	--	--	22000	22000000	1.18E-07	0.0
			Trichloroethene	79-01-6	482	a	6.1	6100	7.9E-08	9.4	--	--	--	--
			m,p-xylene	108-38-3/1	0.49	J	--	--	--	--	3100	3100000	1.58E-07	0.0
			o-xylene	95-47-6	0.15	J	--	--	--	--	3100	3100000	4.84E-08	0.0
			Ethyl acetate	141-78-6	10	T	--	--	--	--	--	--	--	--
			Isobutane	75-28-5	10	T	--	--	--	--	--	--	--	--
								Total Risk	8E-07			Hazard Index	2.0E-03	

Note:

	Compound with cancer risk>10^-6 and/or HI>1
	Compound detected above criteria
1	U.S. Environmental Protection Agency (USEPA). 2009. Regional Screening Levels (RSL) for Chemical Contaminants at Superfund Sites. April.
J	Estimated value
T	Analyte is a tentatively identified compound, result is estimated.
a	Exceedance of New York State Department of Health (NYSDOH) 2003: Study of volatile organic chemicals in air of fuel oil heated homes 90th Percentile
b'	Exceedance of USEPA cancer risk-based screening level at attenuation factor of 0.001
AF	Attenuation factor
RBSL	Risk-based Screening Level = RSL/AF.

TABLE 8
Carcinogenic Risk and Non-Carcinogenic Hazard Index - Indoor Air
Former Hampshire Chemical Corp Facility, Waterloo, New York

Location	Sample ID	Sample Date	Analyte	CAS #	Sample Concentration (ug/m3)		Industrial Indoor Air Cancer RSL[1] (ug/m3)	Cancer Risk	% Contribution	Industrial Indoor Air Non-Cancer RSL[1] (ug/m3)	Non-Cancer Hazard Quotient	% Contribution
Building 2-A/2-B	WAT-IA-1-110408	11/4/2008	Acetone	67-64-1	[redacted]		–	–	–	140000	1.00E-03	0.1
			Acrylonitrile	107-13-1	3.1		0.18	[redacted]	95.0	8.8	9.20E-01	95.5
			Benzene	71-43-2	0.78		1.6	4.9E-07	1.0	130	6.00E-03	0.6
			Carbon disulfide	75-15-0	1		–	–	–	3100	3.23E-04	0.0
			Carbon tetrachloride	56-23-5	0.64		0.82	7.8E-07	1.6	830	7.71E-04	0.1
			Chlorobenzene	108-90-7	0.11	J	–	–	–	220	5.00E-04	0.1
			Chloroform	67-66-3	0.37		0.53	7.0E-07	1.5	430	8.60E-04	0.1
			Chloromethane	74-87-3	0.45		–	–	–	390	1.15E-03	0.1
			Ethylbenzene	100-41-4	1.5		4.9	3.1E-07	0.6	4400	3.41E-04	0.0
			Methyl Isobutyl Ketone (4-Methyl-2-Pentanone)	108-10-1	300	a	–	–	–	13000	2.31E-02	2.4
			Methylene chloride	75-09-2	0.42	J	26	1.6E-08	0.0	4600	9.13E-05	0.0
			Styrene	100-42-5	1		–	–	–	4400	2.27E-04	0.0
			Tetrachloroethene	127-18-4	0.18		2.1	8.6E-08	0.2	1200	1.50E-04	0.0
			Toluene	108-88-3	150	a	–	–	–	22000	6.82E-03	0.7
			m,p-xylene	108-38-3/1	4.7		–	–	–	3100	1.52E-03	0.2
			o-xylene	95-47-6	1.1		–	–	–	3100	3.55E-04	0.0
			Benzaldehyde	100-52-7	10	T	–	–	–	–	–	–
			Butane	106-97-8	90	T	–	–	–	–	–	–
			Isobutane	75-28-5	100	T	–	–	–	–	–	–
			n-Butanol	71-36-3	20	T	–	–	–	–	–	–
			Propane	74-98-6	100	T	–	–	–	–	–	–
							Total Risk:	5E-05		Hazard Index	9.6E-01	
Building 2	WAT-IA-2-110408	11/4/2008	Acetone	67-64-1	100		–	–		140000	7.14E-04	0.3
			Acrylonitrile	107-13-1	1.9	b	0.18	1.1E-05	81.8	8.8	2.16E-01	83.9
			Benzene	71-43-2	0.63		1.6	3.9E-07	3.1	130	4.85E-03	1.9
			Carbon tetrachloride	56-23-5	0.66		0.82	8.0E-07	6.2	830	7.95E-04	0.3
			Chloroform	67-66-3	0.29		0.53	5.5E-07	4.2	430	6.74E-04	0.3
			Chloromethane	74-87-3	0.45		–	–	–	390	1.15E-03	0.4
			Ethylbenzene	100-41-4	2		4.9	4.1E-07	3.2	4400	4.55E-04	0.2
			Methyl Isobutyl Ketone (4-Methyl-2-Pentanone)	108-10-1	320	a	–	–	–	13000	2.46E-02	9.6
			Methylene chloride	75-09-2	2.3		26	8.8E-08	0.7	4600	5.00E-04	0.2
			Styrene	100-42-5	0.47	J	–	–	–	4400	1.07E-04	0.0
			Tetrachloroethene	127-18-4	0.21		2.1	1.0E-07	0.8	1200	1.75E-04	0.1
			Toluene	108-88-3	110	a	–	–	–	22000	5.00E-03	1.9
			m,p-xylene	108-38-3/1	6		–	–	–	3100	1.94E-03	0.8
			o-xylene	95-47-6	1.3		–	–	–	3100	4.19E-04	0.2
			Butane	106-97-8	70	T	–	–	–	–	–	–
			n-Decane	124-18-5	7	T	–	–	–	–	–	–
			n-Undecane	1120-21-4	4	T	–	–	–	–	–	–
			Propane	74-98-6	70	T	–	–	–	–	–	–
							Total Risk:	1E-05		Hazard Index	2.6E-01	
Building 1	WAT-IA-3-110408	11/4/2008	[redacted]	107-13-1	[redacted]		0.18	[redacted]	13.9	8.8	4.77E-02	35.6
			Benzene	71-43-2	0.79		1.6	4.9E-07	2.9	130	6.08E-03	4.5
			Carbon tetrachloride	56-23-5	0.45	J	0.82	5.5E-07	3.3	830	5.42E-04	0.4
			[redacted]	67-66-3	7	ab	0.53	[redacted]	78.7	430	1.63E-02	12.1
			Chloromethane	74-87-3	1.1		–	–	–	390	2.82E-03	2.1
			Ethylbenzene	100-41-4	0.93	J	4.9	1.9E-07	1.1	4400	2.11E-04	0.2
			Methyl Isobutyl Ketone (4-Methyl-2-Pentanone)	108-10-1	770	a	–	–	–	13000	5.92E-02	44.2
			Styrene	100-42-5	0.72	J	–	–	–	4400	1.64E-04	0.1
			m,p-xylene	108-38-3/1	2.5	J	–	–	–	3100	8.06E-04	0.6
			o-xylene	95-47-6	0.61	J	–	–	–	3100	1.97E-04	0.1
			Butane	106-97-8	40	T	–	–	–	–	–	–
			Propane	74-98-6	30	T	–	–	–	–	–	–
							Total Risk:	2E-05		Hazard Index	1.3E-01	

TABLE 8
Carcinogenic Risk and Non-Carcinogenic Hazard Index - Indoor Air
Former Hampshire Chemical Corp Facility, Waterloo, New York

Location	Sample ID	Sample Date	Analyte	CAS #	Sample Concentration (ug/m3)		Industrial Indoor Air Cancer RSL[1] (ug/m3)	Cancer Risk	% Contribution	Industrial Indoor Air Non-Cancer RSL[1] (ug/m3)	Non-Cancer Hazard Quotient	% Contribution
Building 3	WAT-IA-4-110508	11/5/2008	2-Butanone	78-93-3	1.1		--	--	--	22000	5.00E-05	0.1
			Acetone	67-64-1	9.5		--	--	--	140000	6.79E-05	0.1
			Acrylonitrile	107-13-1	0.34	J[b]	0.18	1.9E-06	58.7	8.8	3.86E-02	83.5
			Benzene	71-43-2	0.48		1.6	3.0E-07	9.3	130	3.69E-03	8.0
			Carbon disulfide	75-15-0	1.8		--	--	--	3100	5.81E-04	1.3
			Carbon tetrachloride	56-23-5	0.49		0.82	6.0E-07	18.6	830	5.90E-04	1.3
			Chloroform	67-66-3	0.16		0.53	3.0E-07	9.4	430	3.72E-04	0.8
			Chloromethane	74-87-3	0.39		--	--	--	390	1.00E-03	2.2
			Ethylbenzene	100-41-4	0.16	J	4.9	3.3E-08	1.0	4400	3.64E-05	0.1
			Methyl Isobutyl Ketone (4-Methyl-2-Pentanone)	108-10-1	10	*	--	--	--	13000	7.69E-04	1.7
			Methylene chloride	75-09-2	0.36	J	26	1.4E-08	0.4	4600	7.83E-05	0.2
			Tetrachloroethene	127-18-4	0.18		2.1	8.6E-08	2.7	1200	1.50E-04	0.3
			Toluene	108-88-3	1.5		--	--	--	22000	6.82E-05	0.1
			m,p-xylene	108-38-3/1	0.53	J	--	--	--	3100	1.71E-04	0.4
			o-xylene	95-47-6	0.16	J	--	--	--	3100	5.16E-05	0.1
			Benzaldehyde	100-52-7	10	T	--	--	--	--	--	--
			Ethanol	64-17-5	5	T	--	--	--	--	--	--
			Isopropyl alcohol	67-63-0	70	T	--	--	--	--	--	--
			Propene	115-07-1	10	T	--	--	--	--	--	--
							Total Risk:	3E-06		Hazard Index	4.6E-02	
Building 4	WAT-IA-5-110508	11/5/2008	2-Butanone	78-93-3	1.9		--	--	--	22000	8.64E-05	0.3
			Acetone	67-64-1	9.4		--	--	--	140000	6.71E-05	0.2
			Acrylonitrile	107-13-1	0.16	J	0.18	8.9E-07	39.1	8.8	1.82E-02	62.8
			Benzene	71-43-2	0.5		1.6	3.1E-07	13.7	130	3.85E-03	13.3
			Carbon disulfide	75-15-0	2.2		--	--	--	3100	7.10E-04	2.5
			Carbon tetrachloride	56-23-5	0.56		0.82	6.8E-07	30.0	830	6.75E-04	2.3
			Chloroform	67-66-3	0.15		0.53	2.8E-07	12.4	430	3.49E-04	1.2
			Chloromethane	74-87-3	0.41		--	--	--	390	1.05E-03	3.6
			Ethylbenzene	100-41-4	0.47	J	4.9	9.6E-08	4.2	4400	1.07E-04	0.4
			Methyl Isobutyl Ketone (4-Methyl-2-Pentanone)	108-10-1	40	*	--	--	--	13000	3.08E-03	10.6
			Methylene chloride	75-09-2	0.31	J	26	1.2E-08	0.5	4600	6.74E-05	0.2
			Styrene	100-42-5	0.19	J	--	--	--	4400	4.32E-05	0.1
			Toluene	108-88-3	1.8		--	--	--	22000	8.18E-05	0.3
			m,p-xylene	108-38-3/1	1.5		--	--	--	3100	4.84E-04	1.7
			o-xylene	95-47-6	0.39	J	--	--	--	3100	1.26E-04	0.4
			Benzaldehyde	100-52-7	10	T	--	--	--	--	--	--
			Isobutane	75-28-5	4	T	--	--	--	--	--	--
			Propane	74-98-6	80	T	--	--	--	--	--	--
							Total Risk:	2E-06		Hazard Index	2.9E-02	
Building 4	WAT-IA-6-110508	11/5/2008	2-Butanone	78-93-3	2.2		--	--	--	22000	1.00E-04	0.0
			Acetone	67-64-1	13		--	--	--	140000	9.29E-05	0.0
			Acrylonitrile	107-13-1	0.55	J[b]	0.18	3.1E-06	58.6	8.8	6.25E-02	26.2
			Benzene	71-43-2	0.57		1.6	3.6E-07	6.8	130	4.38E-03	1.8
			Carbon disulfide	75-15-0	4.1		--	--	--	3100	1.32E-03	0.6
			Carbon tetrachloride	56-23-5	0.61		0.82	7.4E-07	14.3	830	7.35E-04	0.3
			Chloroform	67-66-3	0.43		0.53	8.1E-07	15.6	430	1.00E-03	0.4
			Chloromethane	74-87-3	0.33		--	--	--	390	8.46E-04	0.4
			Ethylbenzene	100-41-4	0.97		4.9	2.0E-07	3.8	4400	2.20E-04	0.1
			Methyl Isobutyl Ketone (4-Methyl-2-Pentanone)	108-10-1	54	*	--	--	--	13000	4.15E-03	1.7
			Methylene chloride	75-09-2	0.39	J	26	1.5E-08	0.3	4600	8.48E-05	0.0
			Styrene	100-42-5	0.17	J	--	--	--	4400	3.86E-05	0.0
			Tetrachloroethene	127-18-4	0.076	J	2.1	3.6E-08	0.7	1200	6.33E-05	0.0
			Toluene	108-88-3	4.5		--	--	--	22000	2.05E-04	0.1
			m,p-xylene	108-38-3/1	3.2		--	--	--	3100	1.03E-03	0.4
			o-xylene	95-47-6	0.83		--	--	--	3100	2.68E-04	0.1
			1,2,4-Trimethylbenzene	95-63-6	5	T	--	--	--	31	1.61E-01	67.7
			2-ethyl-1-hexanol	104-76-7	7	T	--	--	--	--	--	--
			Benzaldehyde	100-52-7	5	T	--	--	--	--	--	--
			Propane	74-98-6	60	T	--	--	--	--	--	--
							Total Risk:	5E-06		Hazard Index	2.4E-01	

TABLE 8
Carcinogenic Risk and Non-Carcinogenic Hazard Index - Indoor Air
Former Hampshire Chemical Corp Facility, Waterloo, New York

Location	Sample ID	Sample Date	Analyte	CAS #	Sample Concentration (ug/m3)		Industrial Indoor Air Cancer RSL[1] (ug/m3)	Cancer Risk	% Contribution	Industrial Indoor Air Non-Cancer RSL[1] (ug/m3)	Non-Cancer Hazard Quotient	% Contribution
Tank Storage Area	WAT-IA-7-110508	11/5/2008	2-Butanone	78-93-3	3.9		–	–	–	22000	1.77E-04	0.1
			Acetone	67-64-1	18		–	–	–	140000	1.29E-04	0.1
			[redacted]	107-13-1	0.19	J[a]	0.18	1.1E-06	33.4	8.8	2.16E-02	10.9
			Benzene	71-43-2	0.57		1.6	3.6E-07	11.3	130	4.38E-03	2.2
			Carbon disulfide	75-15-0	9.4		–	–	–	3100	3.03E-03	1.5
			Carbon tetrachloride	56-23-5	0.57		0.82	7.0E-07	22.0	830	6.87E-04	0.3
			Chloroform	67-66-3	0.42		0.53	7.9E-07	25.1	430	9.77E-04	0.5
			Chloromethane	74-87-3	0.4		–	–	–	390	1.03E-03	0.5
			Ethylbenzene	100-41-4	0.88		4.9	1.8E-07	5.7	4400	2.00E-04	0.1
			Methyl Isobutyl Ketone (4-Methyl-2-Pentanone)	108-10-1	47	a	–	–	–	13000	3.62E-03	1.8
			Methylene chloride	75-09-2	0.52	J	26	2.0E-08	0.6	4600	1.13E-04	0.1
			Styrene	100-42-5	0.22	J	–	–	–	4400	5.00E-05	0.0
			Tetrachloroethene	127-18-4	0.1	J	2.1	4.8E-08	1.5	1200	8.33E-05	0.0
			Toluene	108-88-3	5.6		–	–	–	22000	2.55E-04	0.1
			Trichloroethene	79-01-6	0.095	J	6.1	1.6E-08	0.5	–	–	–
			m,p-xylene	108-38-3/1	2.7		–	–	–	3100	8.71E-04	0.4
			o-xylene	95-47-6	0.71	J	–	–	–	3100	2.29E-04	0.1
			1,2,4-Trimethylbenzene	95-63-6	5	T	–	–	–	31	1.61E-01	81.2
			Benzaldehyde	100-52-7	20	T	–	–	–	–	–	–
			Isobutane	75-28-5	6	T	–	–	–	–	–	–
			n-Undecane	1120-21-4	4	T	–	–	–	–	–	–
			Propane	74-98-6	70	T	–	–	–	–	–	–
							Total Risk:	3E-06		Hazard Index	2.0E-01	

Note:

[redacted]	Compound with cancer risk>10^-6 and/or HI>1
[redacted]	Compound detected above criteria
1	U.S. Environmental Protection Agency (USEPA). 2000. Regional Screening Levels (RSL) for Chemical Contaminants at Superfund Sites. April.
J	Estimated value
T	Analyte is a tentatively identified compound, result is estimated.
a	Exceedance of New York State Department of Health (NYSDOH) 2003: Study of volatile organic chemicals in air of fuel oil heated homes 90th Percentile
b	Exceedance of USEPA cancer risk-based screening level

Figures

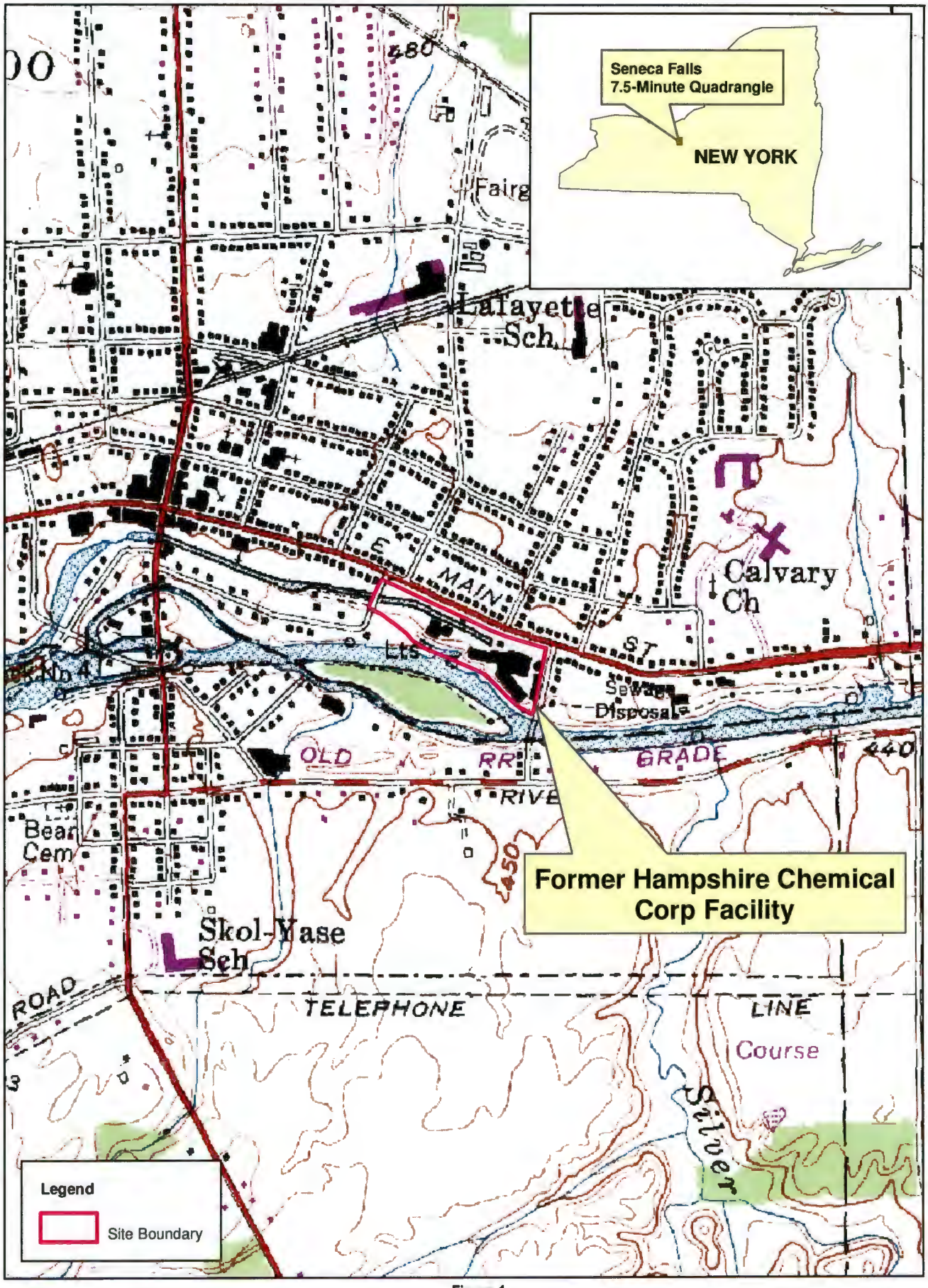

Figure 1
Facility Location Map
Soil Vapor Investigation Report, Buildings 1, 2, 3, 4, and Tank Storage Area
Former Hampshire Chemical Corp Facility
Waterloo, New York

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Figure 2
SWMU and AOC Locations
Soil Vapor Investigation Report, Buildings 1, 2, 3, 4, and Tank Storage Area
Former Hampshire Chemical Corp Facility
Waterloo, New York

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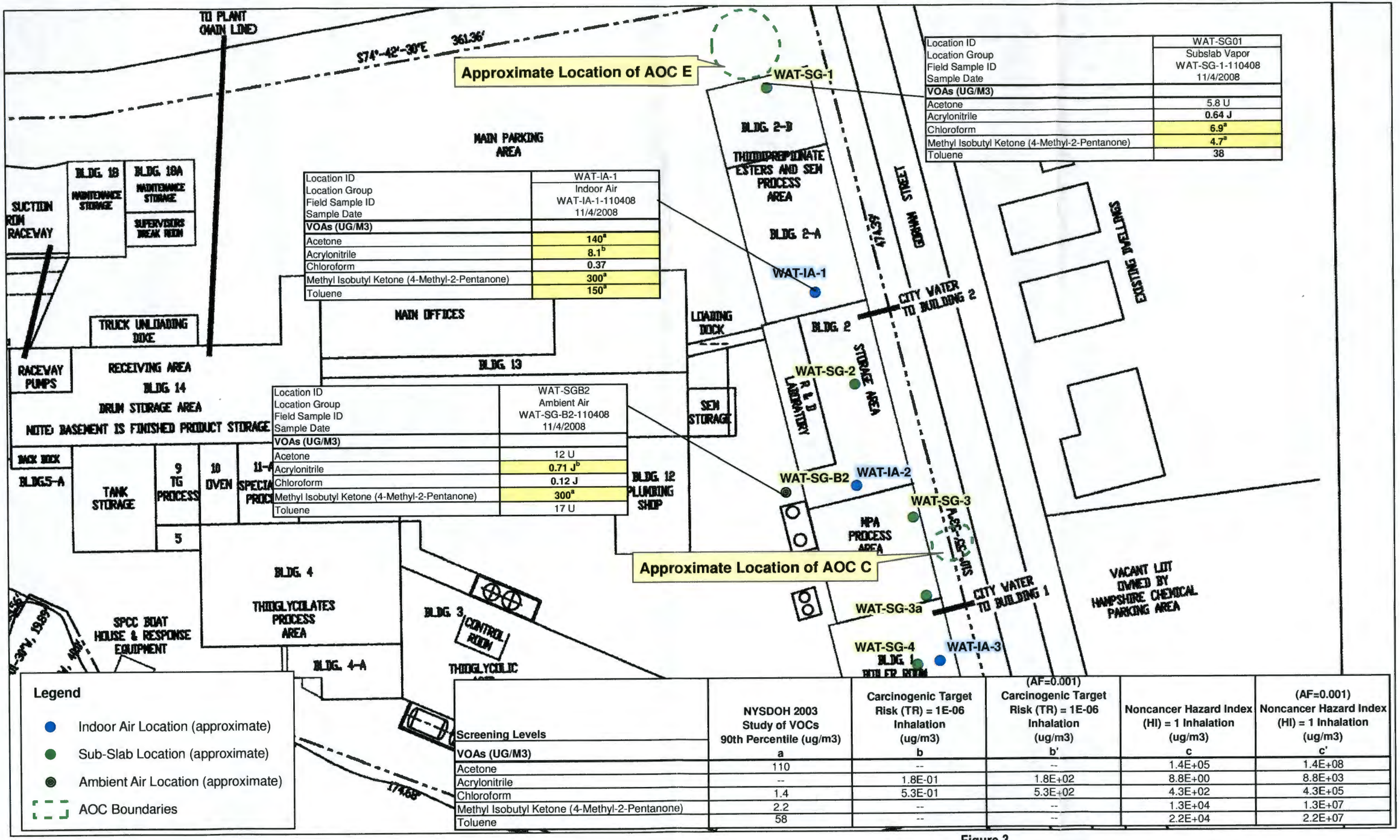

Location ID	WAT-IA-1
Location Group	Indoor Air
Field Sample ID	WAT-IA-1-110408
Sample Date	11/4/2008
VOAs (UG/M3)	
Acetone	140[a]
Acrylonitrile	8.1[b]
Chloroform	0.37
Methyl Isobutyl Ketone (4-Methyl-2-Pentanone)	300[a]
Toluene	150[a]

Location ID	WAT-SGB2
Location Group	Ambient Air
Field Sample ID	WAT-SG-B2-110408
Sample Date	11/4/2008
VOAs (UG/M3)	
Acetone	12 U
Acrylonitrile	0.71 J[b]
Chloroform	0.12 J
Methyl Isobutyl Ketone (4-Methyl-2-Pentanone)	300[a]
Toluene	17 U

Location ID	WAT-SG01
Location Group	Subslab Vapor
Field Sample ID	WAT-SG-1-110408
Sample Date	11/4/2008
VOAs (UG/M3)	
Acetone	5.8 U
Acrylonitrile	0.64 J
Chloroform	6.9[a]
Methyl Isobutyl Ketone (4-Methyl-2-Pentanone)	4.7[a]
Toluene	38

Screening Levels VOAs (UG/M3)	NYSDOH 2003 Study of VOCs 90th Percentile (ug/m3) a	Carcinogenic Target Risk (TR) = 1E-06 Inhalation (ug/m3) b	(AF=0.001) Carcinogenic Target Risk (TR) = 1E-06 Inhalation (ug/m3) b'	Noncancer Hazard Index (HI) = 1 Inhalation (ug/m3) c	(AF=0.001) Noncancer Hazard Index (HI) = 1 Inhalation (ug/m3) c'
Acetone	110	--	--	1.4E+05	1.4E+08
Acrylonitrile	--	1.8E-01	1.8E+02	8.8E+00	8.8E+03
Chloroform	1.4	5.3E-01	5.3E+02	4.3E+02	4.3E+05
Methyl Isobutyl Ketone (4-Methyl-2-Pentanone)	2.2	--	--	1.3E+04	1.3E+07
Toluene	58	--	--	2.2E+04	2.2E+07

UG/M3 = micrograms per cubic meter
AF = attenuation factor

Figure 3
Ambient Air, Indoor Air, and Subslab Vapor Results - Building 2A/2B
Soil Vapor Investigation Report, Buildings 1, 2, 3, 4, and Tank Storage Area
Former Hampshire Chemical Corp Facility
Waterloo, New York

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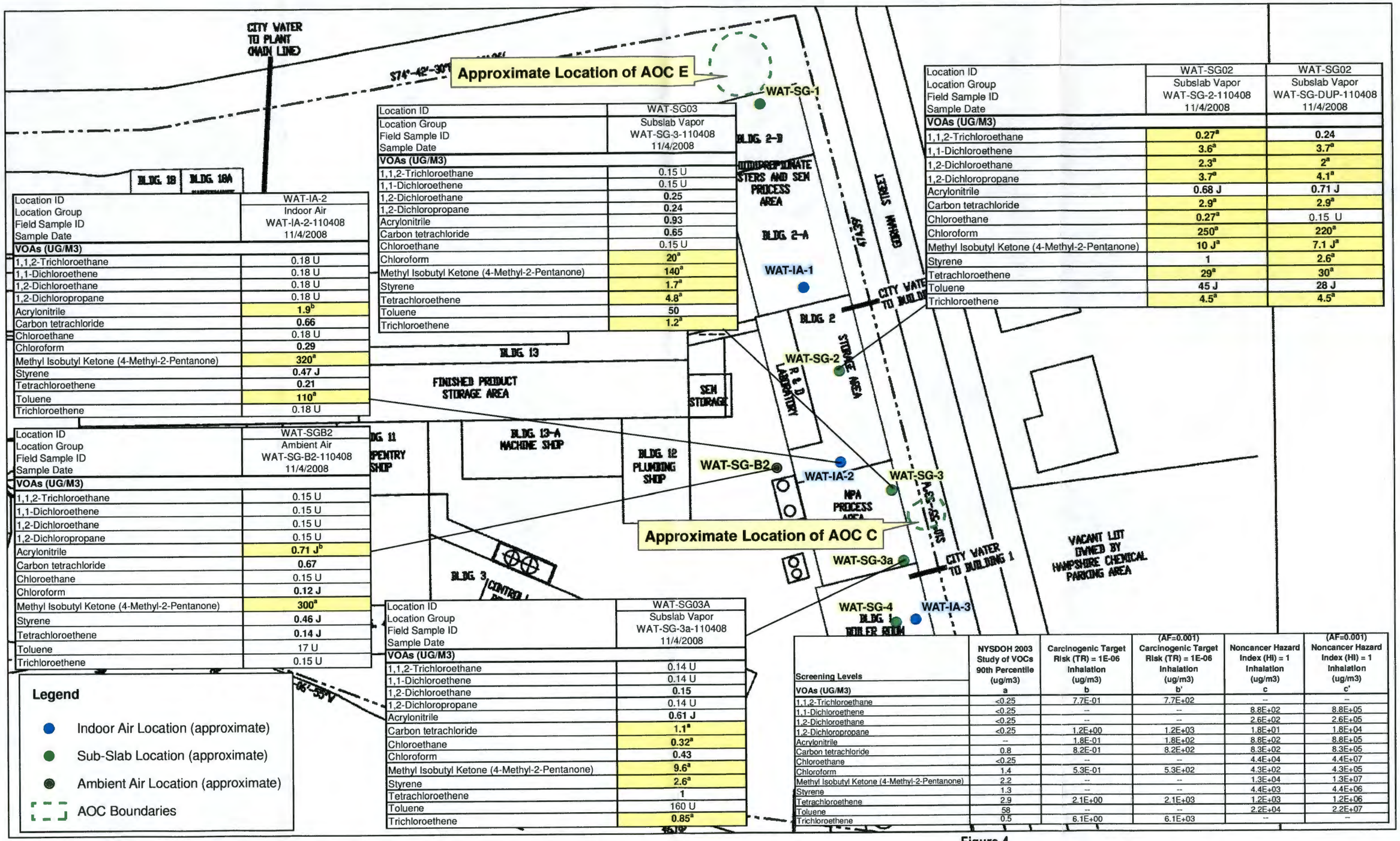
\\APHRODITE\PROJ\DOW\WATERLOO\MAPPLOTS\SOIL VAPOR INVESTIGATION REPORT\FIGURE3_BLDG2A_2B.MXD MUNWIN 6/17/09



Location ID	WAT-IA-2
Location Group	Indoor Air
Field Sample ID	WAT-IA-2-110408
Sample Date	11/4/2008
VOAs (UG/M3)	
1,1,2-Trichloroethane	0.18 U
1,1-Dichloroethene	0.18 U
1,2-Dichloroethane	0.18 U
1,2-Dichloropropane	0.18 U
Acrylonitrile	**1.9[b]**
Carbon tetrachloride	**0.66**
Chloroethane	0.18 U
Chloroform	**0.29**
Methyl Isobutyl Ketone (4-Methyl-2-Pentanone)	**320[a]**
Styrene	**0.47 J**
Tetrachloroethene	**0.21**
Toluene	**110[a]**
Trichloroethene	0.18 U

Location ID	WAT-SGB2
Location Group	Ambient Air
Field Sample ID	WAT-SG-B2-110408
Sample Date	11/4/2008
VOAs (UG/M3)	
1,1,2-Trichloroethane	0.15 U
1,1-Dichloroethene	0.15 U
1,2-Dichloroethane	0.15 U
1,2-Dichloropropane	0.15 U
Acrylonitrile	**0.71 J[b]**
Carbon tetrachloride	**0.67**
Chloroethane	0.15 U
Chloroform	**0.12 J**
Methyl Isobutyl Ketone (4-Methyl-2-Pentanone)	**300[a]**
Styrene	**0.46 J**
Tetrachloroethene	**0.14 J**
Toluene	17 U
Trichloroethene	0.15 U

Location ID	WAT-SG03
Location Group	Subslab Vapor
Field Sample ID	WAT-SG-3-110408
Sample Date	11/4/2008
VOAs (UG/M3)	
1,1,2-Trichloroethane	0.15 U
1,1-Dichloroethene	0.15 U
1,2-Dichloroethane	**0.25**
1,2-Dichloropropane	**0.24**
Acrylonitrile	**0.93**
Carbon tetrachloride	**0.65**
Chloroethane	0.15 U
Chloroform	**20[a]**
Methyl Isobutyl Ketone (4-Methyl-2-Pentanone)	**140[a]**
Styrene	**1.7[a]**
Tetrachloroethene	**4.8[a]**
Toluene	**50**
Trichloroethene	**1.2[a]**

Location ID	WAT-SG03A
Location Group	Subslab Vapor
Field Sample ID	WAT-SG-3a-110408
Sample Date	11/4/2008
VOAs (UG/M3)	
1,1,2-Trichloroethane	0.14 U
1,1-Dichloroethene	0.14 U
1,2-Dichloroethane	**0.15**
1,2-Dichloropropane	0.14 U
Acrylonitrile	**0.61 J**
Carbon tetrachloride	**1.1[a]**
Chloroethane	**0.32[a]**
Chloroform	**0.43**
Methyl Isobutyl Ketone (4-Methyl-2-Pentanone)	**9.6[a]**
Styrene	**2.6[a]**
Tetrachloroethene	**1**
Toluene	160 U
Trichloroethene	**0.85[a]**

Location ID	WAT-SG02	WAT-SG02
Location Group	Subslab Vapor	Subslab Vapor
Field Sample ID	WAT-SG-2-110408	WAT-SG-DUP-110408
Sample Date	11/4/2008	11/4/2008
VOAs (UG/M3)		
1,1,2-Trichloroethane	**0.27[a]**	**0.24**
1,1-Dichloroethene	**3.6[a]**	**3.7[a]**
1,2-Dichloroethane	**2.3[a]**	**2[a]**
1,2-Dichloropropane	**3.7[a]**	**4.1[a]**
Acrylonitrile	**0.68 J**	**0.71 J**
Carbon tetrachloride	**2.9[a]**	**2.9[a]**
Chloroethane	**0.27[a]**	0.15 U
Chloroform	**250[a]**	**220[a]**
Methyl Isobutyl Ketone (4-Methyl-2-Pentanone)	**10 J[a]**	**7.1 J[a]**
Styrene	**1**	**2.6[a]**
Tetrachloroethene	**29[a]**	**30[a]**
Toluene	**45 J**	**28 J**
Trichloroethene	**4.5[a]**	**4.5[a]**

Screening Levels VOAs (UG/M3)	NYSDOH 2003 Study of VOCs 90th Percentile (ug/m3) a	Carcinogenic Target Risk (TR) = 1E-06 Inhalation (ug/m3) b	(AF=0.001) Carcinogenic Target Risk (TR) = 1E-06 Inhalation (ug/m3) b'	Noncancer Hazard Index (HI) = 1 Inhalation (ug/m3) c	(AF=0.001) Noncancer Hazard Index (HI) = 1 Inhalation (ug/m3) c'
1,1,2-Trichloroethane	<0.25	7.7E-01	7.7E+02	--	--
1,1-Dichloroethene	<0.25	--	--	8.8E+02	8.8E+05
1,2-Dichloroethane	<0.25	--	--	2.6E+02	2.6E+05
1,2-Dichloropropane	<0.25	1.2E+00	1.2E+03	1.8E+01	1.8E+04
Acrylonitrile	--	1.8E-01	1.8E+02	8.8E+02	8.8E+05
Carbon tetrachloride	0.8	8.2E-01	8.2E+02	8.3E+02	8.3E+05
Chloroethane	<0.25	--	--	4.4E+04	4.4E+07
Chloroform	1.4	5.3E-01	5.3E+02	4.3E+02	4.3E+05
Methyl Isobutyl Ketone (4-Methyl-2-Pentanone)	2.2	--	--	1.3E+04	1.3E+07
Styrene	1.3	--	--	4.4E+03	4.4E+06
Tetrachloroethene	2.9	2.1E+00	2.1E+03	1.2E+03	1.2E+06
Toluene	58	--	--	2.2E+04	2.2E+07
Trichloroethene	0.5	6.1E+00	6.1E+03	--	--

UG/M3 = micrograms per cubic meter
AF = attenuation factor

Figure 4
Ambient Air, Indoor Air, and Subslab Vapor Results - Building 2
Soil Vapor Investigation Report, Buildings 1, 2, 3, 4, and Tank Storage Area
Former Hampshire Chemical Corp Facility
Waterloo, New York

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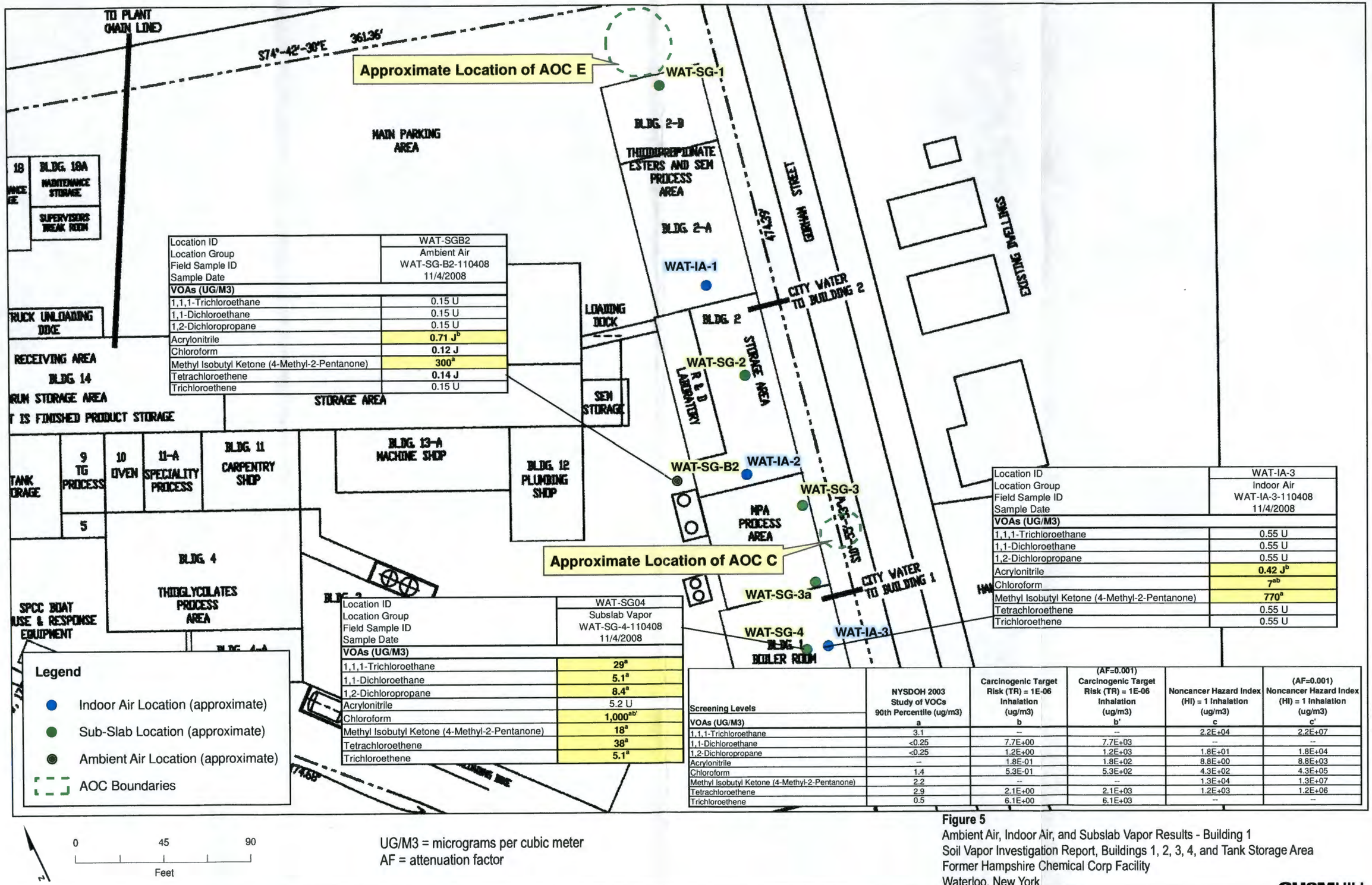
\\APHRODITE\PROJ\DOW\WATERLOO\MAPDOCS\SOIL VAPOR INVESTIGATION REPORT\FIGURE4_BLDG2.MXD MUNWIN 6/30/2009 09:40:35



Location ID	WAT-SGB2
Location Group	Ambient Air
Field Sample ID	WAT-SG-B2-110408
Sample Date	11/4/2008
VOAs (UG/M3)	
1,1,1-Trichloroethane	0.15 U
1,1-Dichloroethane	0.15 U
1,2-Dichloropropane	0.15 U
Acrylonitrile	0.71 J[b]
Chloroform	0.12 J
Methyl Isobutyl Ketone (4-Methyl-2-Pentanone)	300[a]
Tetrachloroethene	0.14 J
Trichloroethene	0.15 U

Location ID	WAT-SG04
Location Group	Subslab Vapor
Field Sample ID	WAT-SG-4-110408
Sample Date	11/4/2008
VOAs (UG/M3)	
1,1,1-Trichloroethane	29[a]
1,1-Dichloroethane	5.1[a]
1,2-Dichloropropane	8.4[a]
Acrylonitrile	5.2 U
Chloroform	1,000[ab']
Methyl Isobutyl Ketone (4-Methyl-2-Pentanone)	18[a]
Tetrachloroethene	38[a]
Trichloroethene	5.1[a]

Location ID	WAT-IA-3
Location Group	Indoor Air
Field Sample ID	WAT-IA-3-110408
Sample Date	11/4/2008
VOAs (UG/M3)	
1,1,1-Trichloroethane	0.55 U
1,1-Dichloroethane	0.55 U
1,2-Dichloropropane	0.55 U
Acrylonitrile	0.42 J[b]
Chloroform	7[ab]
Methyl Isobutyl Ketone (4-Methyl-2-Pentanone)	770[a]
Tetrachloroethene	0.55 U
Trichloroethene	0.55 U

Screening Levels VOAs (UG/M3)	NYSDOH 2003 Study of VOCs 90th Percentile (ug/m3) a	Carcinogenic Target Risk (TR) = 1E-06 Inhalation (ug/m3) b	(AF=0.001) Carcinogenic Target Risk (TR) = 1E-06 Inhalation (ug/m3) b'	Noncancer Hazard Index (HI) = 1 Inhalation (ug/m3) c	(AF=0.001) Noncancer Hazard Index (HI) = 1 Inhalation (ug/m3) c'
1,1,1-Trichloroethane	3.1	--	--	2.2E+04	2.2E+07
1,1-Dichloroethane	<0.25	7.7E+00	7.7E+03	--	--
1,2-Dichloropropane	<0.25	1.2E+00	1.2E+03	1.8E+01	1.8E+04
Acrylonitrile	--	1.8E-01	1.8E+02	8.8E+00	8.8E+03
Chloroform	1.4	5.3E-01	5.3E+02	4.3E+02	4.3E+05
Methyl Isobutyl Ketone (4-Methyl-2-Pentanone)	2.2	--	--	1.3E+04	1.3E+07
Tetrachloroethene	2.9	2.1E+00	2.1E+03	1.2E+03	1.2E+06
Trichloroethene	0.5	6.1E+00	6.1E+03	--	--

UG/M3 = micrograms per cubic meter
AF = attenuation factor

Figure 5
Ambient Air, Indoor Air, and Subslab Vapor Results - Building 1
Soil Vapor Investigation Report, Buildings 1, 2, 3, 4, and Tank Storage Area
Former Hampshire Chemical Corp Facility
Waterloo, New York

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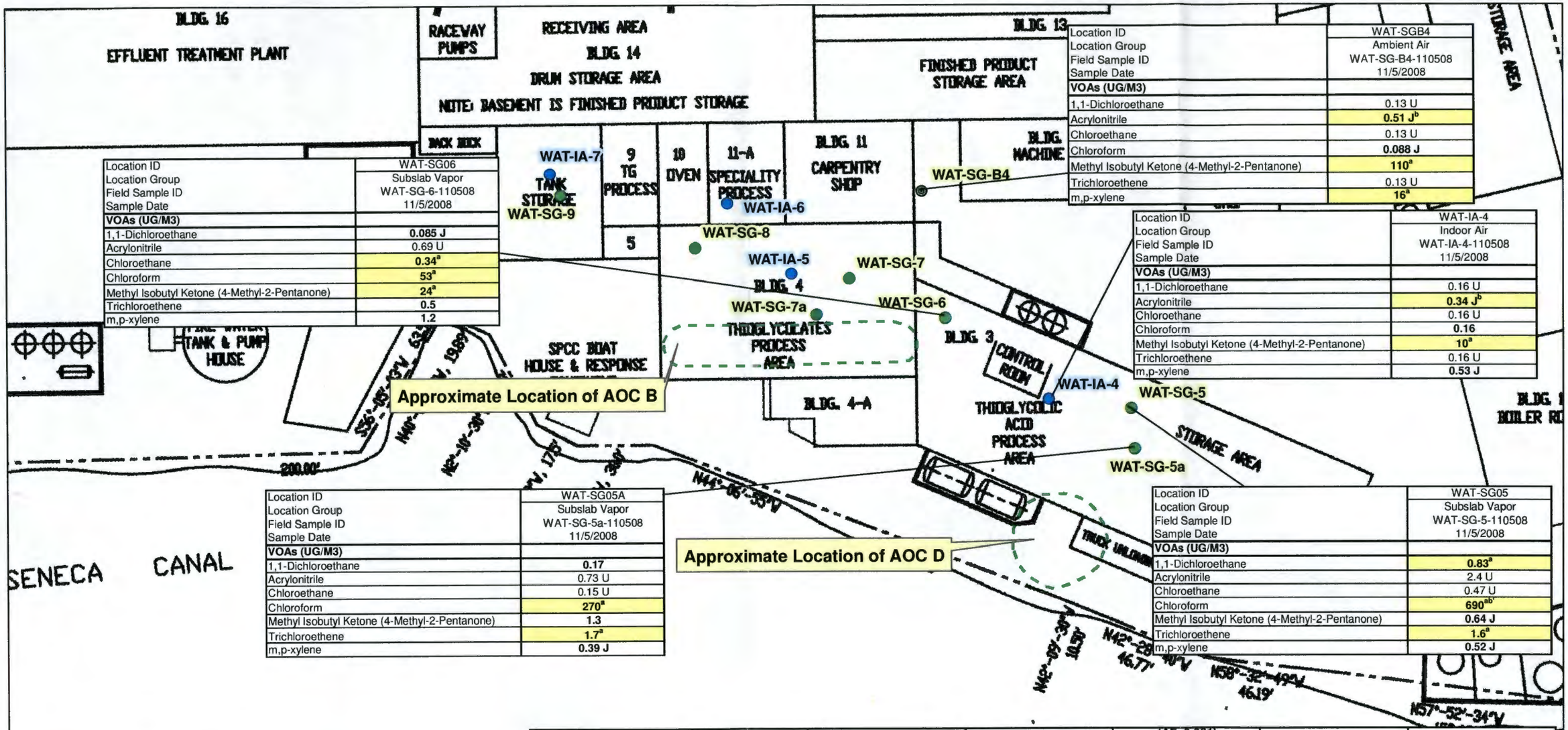
\\APHRODITE\PROJ\DOW\WATERLOO\MAPDOCS\SOIL VAPOR INVESTIGATION REPORT\FIGURE5_BLDG1.MXD MUNWIN 6/17/09



Location ID	WAT-SG06
Location Group	Subslab Vapor
Field Sample ID	WAT-SG-6-110508
Sample Date	11/5/2008
VOAs (UG/M3)	
1,1-Dichloroethane	**0.085 J**
Acrylonitrile	0.69 U
Chloroethane	**0.34[a]**
Chloroform	**53[a]**
Methyl Isobutyl Ketone (4-Methyl-2-Pentanone)	**24[a]**
Trichloroethene	**0.5**
m,p-xylene	**1.2**

Location ID	WAT-SGB4
Location Group	Ambient Air
Field Sample ID	WAT-SG-B4-110508
Sample Date	11/5/2008
VOAs (UG/M3)	
1,1-Dichloroethane	0.13 U
Acrylonitrile	**0.51 J[b]**
Chloroethane	0.13 U
Chloroform	**0.088 J**
Methyl Isobutyl Ketone (4-Methyl-2-Pentanone)	**110[a]**
Trichloroethene	0.13 U
m,p-xylene	**16[a]**

Location ID	WAT-IA-4
Location Group	Indoor Air
Field Sample ID	WAT-IA-4-110508
Sample Date	11/5/2008
VOAs (UG/M3)	
1,1-Dichloroethane	0.16 U
Acrylonitrile	**0.34 J[b]**
Chloroethane	0.16 U
Chloroform	**0.16**
Methyl Isobutyl Ketone (4-Methyl-2-Pentanone)	**10[a]**
Trichloroethene	0.16 U
m,p-xylene	**0.53 J**

Location ID	WAT-SG05A
Location Group	Subslab Vapor
Field Sample ID	WAT-SG-5a-110508
Sample Date	11/5/2008
VOAs (UG/M3)	
1,1-Dichloroethane	**0.17**
Acrylonitrile	0.73 U
Chloroethane	0.15 U
Chloroform	**270[a]**
Methyl Isobutyl Ketone (4-Methyl-2-Pentanone)	**1.3**
Trichloroethene	**1.7[a]**
m,p-xylene	**0.39 J**

Location ID	WAT-SG05
Location Group	Subslab Vapor
Field Sample ID	WAT-SG-5-110508
Sample Date	11/5/2008
VOAs (UG/M3)	
1,1-Dichloroethane	**0.83[a]**
Acrylonitrile	2.4 U
Chloroethane	0.47 U
Chloroform	**690[ab']**
Methyl Isobutyl Ketone (4-Methyl-2-Pentanone)	**0.64 J**
Trichloroethene	**1.6[a]**
m,p-xylene	**0.52 J**

Legend

- Indoor Air Location (approximate)
- Sub-Slab Location (approximate)
- Ambient Air Location (approximate)
- AOC Boundaries

Screening Levels VOAs (UG/M3)	NYSDOH 2003 Study of VOCs 90th Percentile (ug/m3) a	Carcinogenic Target Risk (TR) = 1E-06 Inhalation (ug/m3) b	(AF=0.001) Carcinogenic Target Risk (TR) = 1E-06 Inhalation (ug/m3) b'	Noncancer Hazard Index (HI) = 1 Inhalation (ug/m3) c	(AF=0.001) Noncancer Hazard Index (HI) = 1 Inhalation (ug/m3) c'
1,1-Dichloroethane	<0.25	7.7E+00	7.7E+03	--	--
Acrylonitrile	--	1.8E-01	1.8E+02	8.8E+00	8.8E+03
Chloroethane	<0.25	--	--	4.4E+04	4.4E+07
Chloroform	1.4	5.3E-01	5.3E+02	4.3E+02	4.3E+05
Methyl Isobutyl Ketone (4-Methyl-2-Pentanone)	2.2	--	--	1.3E+04	1.3E+07
Trichloroethene	0.5	6.1E+00	6.1E+03	--	--
m,p-xylene	12	--	--	3.1E+03	3.1E+06

0 40 80
Feet

UG/M3 = micrograms per cubic meter
AF = attenuation factor

Figure 6
Ambient Air, Indoor Air, and Subslab Vapor Results - Building 3
Soil Vapor Investigation Report, Buildings 1, 2, 3, 4, and Tank Storage Area
Former Hampshire Chemical Corp Facility
Waterloo, New York

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\\APHRODITE\PROJ\DOW\WATERLOO\MAPDOCS\SOIL VAPOR INVESTIGATION REPORT\FIGURE6_BLDG3.MXD MUNWIN 6/17/09

Location ID	WAT-IA-6
Location Group	Indoor Air
Field Sample ID	WAT-IA-6-110508
Sample Date	11/5/2008
VOAs (UG/M3)	
1,1-Dichloroethane	0.15 U
1,2-Dichloropropane	0.15 U
2-Butanone	2.2
Acrylonitrile	0.55 J[b]
Carbon tetrachloride	0.61
Chlorobenzene	0.15 U
Chloroform	0.43
cis-1,2-Dichloroethylene	0.15 U
Ethylbenzene	0.97
Methyl Isobutyl Ketone (4-Methyl-2-Pentanone)	54[a]
Methylene chloride	0.39 J
Styrene	0.17 J
Tetrachloroethene	0.076 J
Toluene	4.5
Trichloroethene	0.15 U
m,p-xylene	3.2
o-xylene	0.83

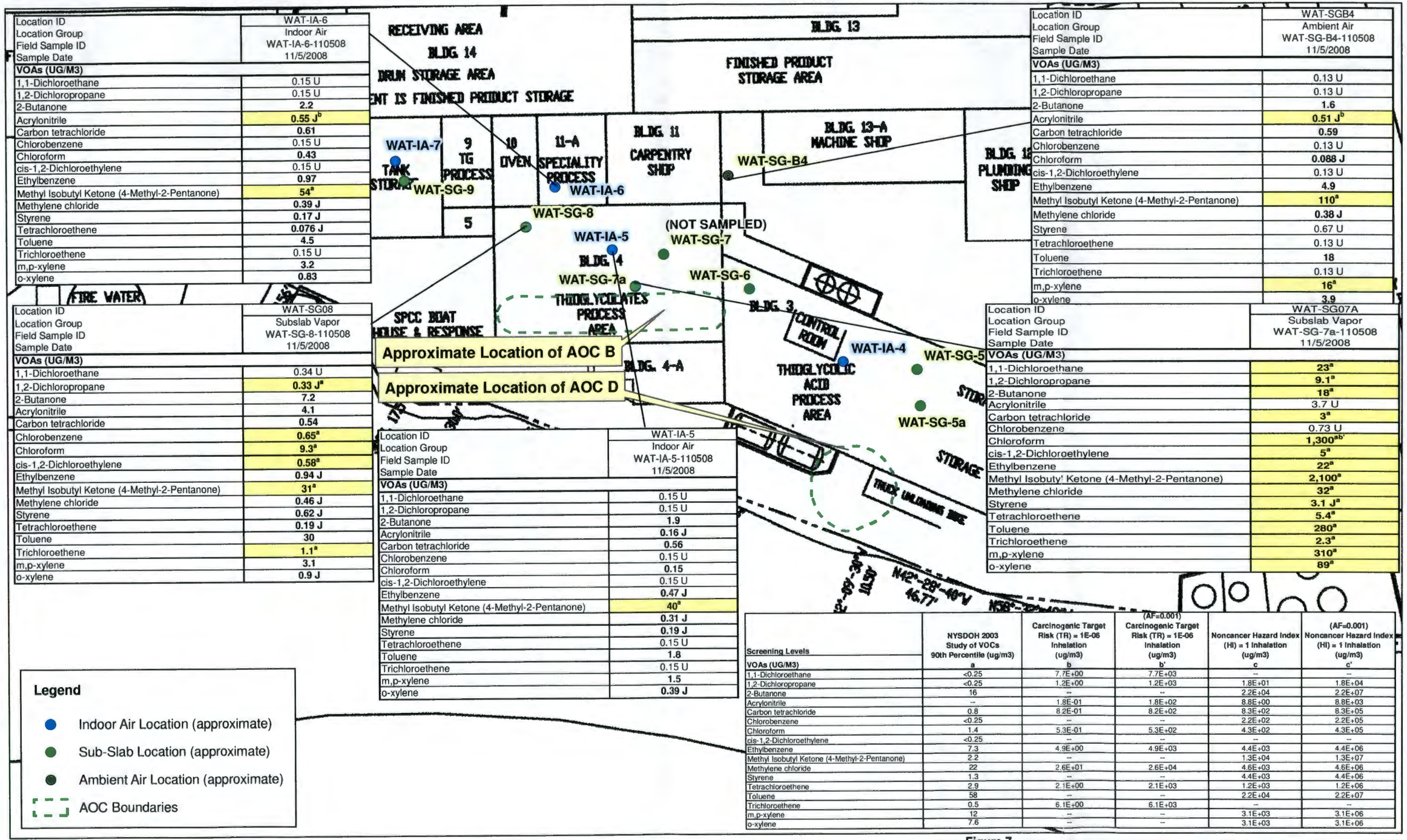
Location ID	WAT-SG08
Location Group	Subslab Vapor
Field Sample ID	WAT-SG-8-110508
Sample Date	11/5/2008
VOAs (UG/M3)	
1,1-Dichloroethane	0.34 U
1,2-Dichloropropane	0.33 J[a]
2-Butanone	7.2
Acrylonitrile	4.1
Carbon tetrachloride	0.54
Chlorobenzene	0.65[a]
Chloroform	9.3[a]
cis-1,2-Dichloroethylene	0.58[a]
Ethylbenzene	0.94 J
Methyl Isobutyl Ketone (4-Methyl-2-Pentanone)	31[a]
Methylene chloride	0.46 J
Styrene	0.62 J
Tetrachloroethene	0.19 J
Toluene	30
Trichloroethene	1.1[a]
m,p-xylene	3.1
o-xylene	0.9 J

Location ID	WAT-IA-5
Location Group	Indoor Air
Field Sample ID	WAT-IA-5-110508
Sample Date	11/5/2008
VOAs (UG/M3)	
1,1-Dichloroethane	0.15 U
1,2-Dichloropropane	0.15 U
2-Butanone	1.9
Acrylonitrile	0.16 J
Carbon tetrachloride	0.56
Chlorobenzene	0.15 U
Chloroform	0.15
cis-1,2-Dichloroethylene	0.15 U
Ethylbenzene	0.47 J
Methyl Isobutyl Ketone (4-Methyl-2-Pentanone)	40[a]
Methylene chloride	0.31 J
Styrene	0.19 J
Tetrachloroethene	0.15 U
Toluene	1.8
Trichloroethene	0.15 U
m,p-xylene	1.5
o-xylene	0.39 J

Location ID	WAT-SGB4
Location Group	Ambient Air
Field Sample ID	WAT-SG-B4-110508
Sample Date	11/5/2008
VOAs (UG/M3)	
1,1-Dichloroethane	0.13 U
1,2-Dichloropropane	0.13 U
2-Butanone	1.6
Acrylonitrile	0.51 J[b]
Carbon tetrachloride	0.59
Chlorobenzene	0.13 U
Chloroform	0.088 J
cis-1,2-Dichloroethylene	0.13 U
Ethylbenzene	4.9
Methyl Isobutyl Ketone (4-Methyl-2-Pentanone)	110[a]
Methylene chloride	0.38 J
Styrene	0.67 U
Tetrachloroethene	0.13 U
Toluene	18
Trichloroethene	0.13 U
m,p-xylene	16[a]
o-xylene	3.9

Location ID	WAT-SG07A
Location Group	Subslab Vapor
Field Sample ID	WAT-SG-7a-110508
Sample Date	11/5/2008
VOAs (UG/M3)	
1,1-Dichloroethane	23[a]
1,2-Dichloropropane	9.1[a]
2-Butanone	18[a]
Acrylonitrile	3.7 U
Carbon tetrachloride	3[a]
Chlorobenzene	0.73 U
Chloroform	1,300[ab]
cis-1,2-Dichloroethylene	5[a]
Ethylbenzene	22[a]
Methyl Isobuty' Ketone (4-Methyl-2-Pentanone)	2,100[a]
Methylene chloride	32[a]
Styrene	3.1 J[a]
Tetrachloroethene	5.4[a]
Toluene	280[a]
Trichloroethene	2.3[a]
m,p-xylene	310[a]
o-xylene	89[a]

Screening Levels	NYSDOH 2003 Study of VOCs 90th Percentile (ug/m3)	Carcinogenic Target Risk (TR) = 1E-06 Inhalation (ug/m3)	(AF=0.001) Carcinogenic Target Risk (TR) = 1E-06 Inhalation (ug/m3)	Noncancer Hazard Index (HI) = 1 Inhalation (ug/m3)	(AF=0.001) Noncancer Hazard Index (HI) = 1 Inhalation (ug/m3)
VOAs (UG/M3)	a	b	b'	c	c'
1,1-Dichloroethane	<0.25	7.7E+00	7.7E+03	--	--
1,2-Dichloropropane	<0.25	1.2E+00	1.2E+03	1.8E+01	1.8E+04
2-Butanone	16	--	--	2.2E+04	2.2E+07
Acrylonitrile	--	1.8E-01	1.8E+02	8.8E+00	8.8E+03
Carbon tetrachloride	0.8	8.2E-01	8.2E+02	8.3E+02	8.3E+05
Chlorobenzene	<0.25	--	--	2.2E+02	2.2E+05
Chloroform	1.4	5.3E-01	5.3E+02	4.3E+02	4.3E+05
cis-1,2-Dichloroethylene	<0.25	--	--	--	--
Ethylbenzene	7.3	4.9E+00	4.9E+03	4.4E+03	4.4E+06
Methyl Isobutyl Ketone (4-Methyl-2-Pentanone)	2.2	--	--	1.3E+04	1.3E+07
Methylene chloride	22	2.6E+01	2.6E+04	4.6E+03	4.6E+06
Styrene	1.3	--	--	4.4E+03	4.4E+06
Tetrachloroethene	2.9	2.1E+00	2.1E+03	1.2E+03	1.2E+06
Toluene	58	--	--	2.2E+04	2.2E+07
Trichloroethene	0.5	6.1E+00	6.1E+03	--	--
m,p-xylene	12	--	--	3.1E+03	3.1E+06
o-xylene	7.6	--	--	3.1E+03	3.1E+06



UG/M3 = micrograms per cubic meter
AF = attenuation factor

Figure 7
Ambient Air, Indoor Air, and Subslab Vapor Results - Building 4
Soil Vapor Investigation Report, Buildings 1, 2, 3, 4, and Tank Storage Area
Former Hampshire Chemical Corp Facility
Waterloo, New York

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\\APHRODITE\PROJ\DOW\WATERLOO\MAPDOCS\SOIL VAPOR INVESTIGATION REPORT\FIGURE7_BLDG4.MXD MUNWIN 6/17/09

Location ID	WAT-IA-7
Location Group	Indoor Air
Field Sample ID	WAT-IA-7-110508
Sample Date	11/5/2008
VOAs (UG/M3)	
1,1,2-Trichloroethane	0.16 U
1,2-Dichloroethane	0.16 U
1,2-Dichloropropane	0.16 U
Acrylonitrile	0.19 J[b]
Chlorobenzene	0.16 U
Chloroform	0.42
Methyl Isobutyl Ketone (4-Methyl-2-Pentanone)	47[a]
Tetrachloroethene	0.1 J
Trichloroethene	0.095 J
m,p-xylene	2.7

Location ID	WAT-SG09
Location Group	Subslab Vapor
Field Sample ID	WAT-SG-9-110508
Sample Date	11/5/2008
VOAs (UG/M3)	
1,1,2-Trichloroethane	0.86[a]
1,2-Dichloroethane	0.73[a]
1,2-Dichloropropane	20[a]
Acrylonitrile	1.4 U
Chlorobenzene	0.45[a]
Chloroform	390[a]
Methyl Isobutyl Ketone (4-Methyl-2-Pentanone)	2
Tetrachloroethene	5[a]
Trichloroethene	482[a]
m,p-xylene	0.49 J

Location ID	WAT-SGB4
Location Group	Ambient Air
Field Sample ID	WAT-SG-B4-110508
Sample Date	11/5/2008
VOAs (UG/M3)	
1,1,2-Trichloroethane	0.13 U
1,2-Dichloroethane	0.13 U
1,2-Dichloropropane	0.13 U
Acrylonitrile	0.51 J[b]
Chlorobenzene	0.13 U
Chloroform	0.088 J
Methyl Isobutyl Ketone (4-Methyl-2-Pentanone)	110[a]
Tetrachloroethene	0.13 U
Trichloroethene	0.13 U
m,p-xylene	16[a]

BLDG. 16
RECEIVING AREA
BLDG. 14
DRUM STORAGE AREA
NT IS FINISHED PRODUCT STORAGE
BLDG. 13
FINISHED PRODUCT STORAGE AREA
WAT-IA-7
TANK
WAT-SG-9
9 TG PROCESS
10 OVEN
11-A SPECIALITY PROCESS
WAT-IA-6
BLDG. 11 CARPENTRY SHOP
WAT-SG-B4
BLDG. 13-A MACHINE SHOP
BLDG. PLUMBI SHOP
5
WAT-SG-8
WAT-IA-5
WAT-SG-7
BLDG. 4
WAT-SG-7a
THIOGLYCOLATES PROCESS AREA
WAT-SG-6
BLDG. 3
CONTROL ROOM
WAT-IA-4
WAT-SG-5
THIOGLYCOLIC ACID PROCESS AREA
WAT-SG-5a
SPCC BOAT HOUSE & RESPONSE
Approximate Location of AOC B
Approximate Location of AOC D
BLDG. 4-A
STORAGE AREA
STORAGE AREA
TRUCK UNLOADING AREA
PROCESS AREA
BLDG. 1 BOILER ROOM
WATER WELL
CITY TO
CANAL
N44°-06'-55"W
174.68'
N42°-09'-34"W
10.59'
N42°-28'-40"W
46.77'
N38°-32'-49"W

Screening Levels VOAs (UG/M3)	NYSDOH 2003 Study of VOCs 90th Percentile (ug/m3) a	Carcinogenic Target Risk (TR) = 1E-06 Inhalation (ug/m3) b	(AF=0.001) Carcinogenic Target Risk (TR) = 1E-06 Inhalation (ug/m3) b'	Noncancer Hazard Index (HI) = 1 Inhalation (ug/m3) c	(AF=0.001) Noncancer Hazard Index (HI) = 1 Inhalation (ug/m3) c'
1,1,2-Trichloroethane	<0.25	7.7E-01	7.7E+02	--	--
1,2-Dichloroethane	<0.25	4.7E-01	4.7E+02	1.1E+04	1.1E+07
1,2-Dichloropropane	<0.25	1.2E+00	1.2E+03	1.8E+01	1.8E+04
Acrylonitrile	--	1.8E-01	1.8E+02	8.8E+00	8.8E+03
Chlorobenzene	<0.25	--	--	2.2E+02	2.2E+05
Chloroform	1.4	5.3E-01	5.3E+02	4.3E+02	4.3E+05
Methyl Isobutyl Ketone (4-Methyl-2-Pentanone)	2.2	--	--	1.3E+04	1.3E+07
Tetrachloroethene	2.9	2.1E+00	2.1E+03	1.2E+03	1.2E+06
Trichloroethene	0.5	6.1E+00	6.1E+03	--	--
m,p-xylene	12	--	--	3.1E+03	3.1E+06

Legend
- Indoor Air Location (approximate)
- Sub-Slab Location (approximate)
- Ambient Air Location (approximate)
- AOC Boundaries

0 40 80
Feet

UG/M3 = micrograms per cubic meter
AF = attenuation factor

Figure 8
Ambient Air, Indoor Air, and Subslab Vapor Results - Tank Storage Area
Soil Vapor Investigation Report, Buildings 1, 2, 3, 4, and Tank Storage Area
Former Hampshire Chemical Corp Facility
Waterloo, New York

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\\APHRODITE\PROJ\DOW\WATERLOO\MAPDOCS\SOIL VAPOR INVESTIGATION REPORT\FIGURE8_TANKSTORAGE.MXD MUNWIN 6/17/09

FIGURE 9
Groundwater and Surface Water Monitoring Locations
Former Hampshire Chemical Corp Facility
Waterloo, New York

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\\NORTHEND\PROJ\DOW\WATERLOO\MAPDOCS\RFI ADDENDUM\FIGURE9_GW_SW_SAMPLING.MXD MUNWIN 2/8/2010 15:51:36

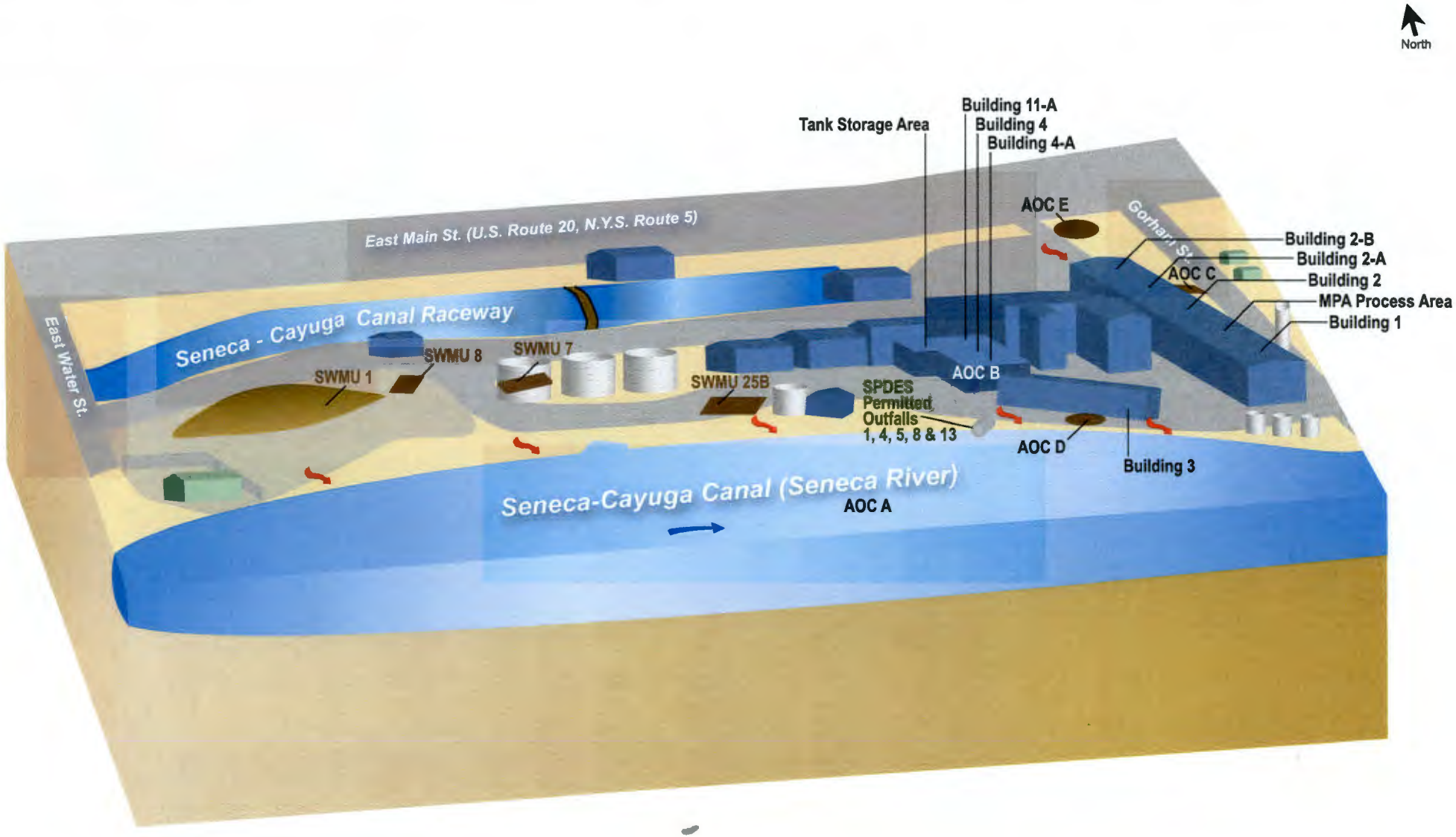

FIGURE 10
Conceptual Site Model Diagram
Soil Vapor Investigation Report,
Buildings 1, 2, 3, 4, and Tank Storage Area
Former Hampshire Chemical Corp Facility
Waterloo, New York

Appendix A
Field Sampling Log Sheets

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Indoor Vapor Intrusion Assessment
Sub Slab Vapor Sampling Field Log

Project Info

Project Name: Former Hampshire Chemical Corp Facility, Waterloo, NY **Project # :** 369548

By: Lisa LaFortune/NJO; Leslie Baechler/PHL **Date:** 11/04/08

Structure

Identification: Building 2

Address:

Sample Location type:

- [x] concrete slab on grade
- [ ] concrete footing w/crawl space
- [ ] basement
- [ ] Yard or Driveway
- [ ] other (describe)

Soil Vapor Sampling System

Probe type (describe): Stainless steel tubing, finished as a flushmount

Probe to sample interface system (describe): Stainless steel swagelok fittings and poly-teflon lined tubing

Sample collection type: [ ] Syringe [ ] Tedlar bag [x] Summa canister

Other info (describe other aspects)

Soil Vapor Probe Purging & Sampling Log

Sample location (show in diagram)	1	2	Dup*	3
Sample Identification (field ID)	WAT-SG-1-110408	WAT-SG-2-110408	WAT-SG-DUP-110408	WAT-SG-3-110408
Date Installed*	4/23/2008	4/23/2008	4/23/2008	4/23/2008
Depth of installed probe (inches bgs)	8.75	10.0	10.0	9.25
Leak check (probe/sampling interface)	ok (pass/0 ppm)	pass	pass	pass
Calculated dead volume (1 purge volume), ml	17	17	17	17
Purge rate, ml/min.	200	200	200	200
Purge duration, min. (3 volumes)				
Purge vacuum, " Hg	0	0	0	0
Max PID Reading, ppmv (optional)	1.7	2.7	-	2.1
Purge completed (time of day)	8:47	9:29	9:29	10:19
Sampling period started (time of day)	8:50	9:35	9:35	10:25
Sampling rate, ml/min				
Sampling vacuum, " Hg (initial/end)	-29/-6	-28/-6	-28/-6	-30/-5
Sampling period ended (time of day)	16:50	17:35	17:35	18:25

Observations and Comments: *WAT-SG-DUP-110408 is a duplicate sample of WAT-SG-2-110408.

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Indoor Vapor Intrusion Assessment
Sub Slab Vapor Sampling Field Log

Project Info

Project Name: Former Hampshire Chemical Corp Facility, Waterloo, NY **Project # :** 369548

By: Lisa LaFortune/NJO; Leslie Baechler/PHL **Date:** 11/4/2008

Structure

Identification: Building 2

Address:

Sample Location type:

- [x] concrete slab on grade
- [ ] concrete footing w/crawl space
- [ ] basement
- [ ] Yard or Driveway
- [ ] other (describe)

Soil Vapor Sampling System

Probe type (describe): Stainless steel tubing, finished as a flushmount

Probe to sample interface system (describe): Stainless steel swagelok fittings and poly-teflon lined tubing

Sample collection type: [ ] Syringe [ ] Tedlar bag [x] Summa canister

Other info (describe other aspects)

Soil Vapor Probe Purging & Sampling Log

Sample location (show in diagram)	3a	4		
Sample Identification (field ID)	WAT-SG-3a-110408	WAT-SG-4-110408		
Date Installed*	4/23/2008	4/23/2008		
Depth of installed probe (feet bgs)	10.0	9.5		
Leak check (probe/sampling interface)	pass	pass		
Calculated dead volume (1 purge volume), ml	17	17		
Purge rate, ml/min.	200	200		
Purge duration, min. (3 volumes)				
Purge vacuum, " Hg	0	0		
Max PID Reading, ppmv (optional)	2.0	1.8		
Purge completed (time of day)	9:58	10:43		
Sampling period started (time of day)	10:05	10:47		
Sampling rate, ml/min				
Sampling vacuum, " Hg (initial/end)	-30/-5	-30/0		
Sampling period ended (time of day)	18:11	17:20		

Observations and Comments:

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Indoor Vapor Intrusion Assessment
Sub Slab Vapor Sampling Field Log

Project Info

Project Name: Former Hampshire Chemical Corp Facility, Waterloo, NY **Project # :** 369548

By: Lisa LaFortune/NJO; Leslie Baechler/PHL **Date:** 11/05/08

Structure

Identification: Building 4

Address:

Sample Location type:

- [x] concrete slab on grade
- [ ] concrete footing w/crawl space
- [ ] basement
- [ ] Yard or Driveway
- [ ] other (describe)

Soil Vapor Sampling System

Probe type (describe): Stainless steel tubing, finished as a flushmount

Probe to sample interface system (describe): Stainless steel swagelok fittings and poly-teflon lined tubing

Sample collection type: [ ] Syringe [ ] Tedlar bag [x] Summa canister

Other info (describe other aspects)

Soil Vapor Probe Purging & Sampling Log

Sample location (show in diagram)	5	5a	6	7*[1]
Sample Identification (field ID)	WAT-SG-5-110508	WAT-SG-5a-110508	WAT-SG-6-110508	WAT-SG-7-110508
Date Installed*	4/24/2008	4/24/2008	4/24/2008	4/24/2008
Depth of installed probe (inches bgs)	7.0	8.5	10.0	13.5
Leak check (probe/sampling interface)	pass	pass	pass/0 ppm	pass/0 ppm
Calculated dead volume (1 purge volume), ml	16	17	17	18
Purge rate, ml/min.	100	100	100	100*[1]
Purge duration, min. (3 volumes)				
Purge vacuum, " Hg	0	0	0	-25
Max PID Reading, ppmv (optional)	0.4	1.3	0.8	
Purge completed (time of day)			9:31	
Sampling period started (time of day)	9:08	8:53	9:35	
Sampling rate, ml/min				
Sampling vacuum, " Hg (initial/end)	-30/-6	-29/-5	-30/-2.5	
Sampling period ended (time of day)	17:14	16:57	17:32	

Observations and Comments: *[1] Could not purge; did not collect sample.

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Indoor Vapor Intrusion Assessment
Sub Slab Vapor Sampling Field Log

Project Info

Project Name: Former Hampshire Chemical Corp Facility, Waterloo, NY **Project # :** 369548

By: Lisa LaFortune/NJO; Leslie Baechler/PHL **Date:** 11/05/08

Structure

Identification: Building 4

Address:

Sample Location type:

- [x] concrete slab on grade
- [ ] concrete footing w/crawl space
- [ ] basement
- [ ] Yard or Driveway
- [ ] other (describe)

Soil Vapor Sampling System

Probe type (describe): Stainless steel tubing, finished as a flushmount

Probe to sample interface system (describe): Stainless steel swagelok fittings and poly-teflon lined tubing

Sample collection type: [ ] Syringe [ ] Tedlar bag [x] Summa canister

Other info (describe other aspects)

Soil Vapor Probe Purging & Sampling Log

Sample location (show in diagram)	7a	8*2	9	
Sample Identification (field ID)	WAT-SG-7a-110508	WAT-SG-8-110508	WAT-SG-9-110508	
Date Installed*	4/24/2008	4/24/2008	4/24/2008	
Depth of installed probe (inches bgs)	15.00	16.75	8.00	
Leak check (probe/sampling interface)	pass/0 ppm	pass/0 ppm	pass/0 ppm	
Calculated dead volume (1 purge volume), ml	19	20	16	
Purge rate, ml/min.	100	100	100	
Purge duration, min. (3 volumes)				
Purge vacuum, " Hg	0	0	0	
Max PID Reading, ppmv (optional)	16:48	3.0	2.7	
Purge completed (time of day)	10:04	11:05	11:27	
Sampling period started (time of day)	10:08	11:10	11:31	
Sampling rate, ml/min				
Sampling vacuum, " Hg (initial/end)	-30/-6.5	-30/-21	-30/-5.5	
Sampling period ended (time of day)	18:14	19:17	19:38	

Observations and Comments:

*2 Water was not noted during purging and sample collection, however was present in tubing upon breaking down canister.

Appendix B

Quality Assurance/Quality Control Results Table

Appendix B
Quality Analysis / Quality Control Results Table
Former Hampshire Chemical Corp Facility, Waterloo, New York

Location ID							WAT-SG02	WAT-SG02	FIELD QC
Location Group			Carcinogenic	(AF=0.001) Carcinogenic		(AF=0.001)	Subslab Vapor	Subslab Vapor	Blank
Field Sample ID		NYSDOH 2003	Target Risk	Target Risk	Noncancer	Noncancer	WAT-SG-2-110408	WAT-SG-DUP-110408	WAT-SG-FB-110408
Sample Date		Study of VOCs	(TR) = 1E-06	(TR) = 1E-06	Hazard Index	Hazard Index	11/4/2008	11/4/2008	11/4/2008
Sample Type		90th Percentile	Inhalation	Inhalation	(HI) = 1 Inhalation	(HI) = 1 Inhalation	Normal	Duplicate	Equipment Blank
Matrix		(ug/m3)	(ug/m3)	(ug/m3)	(ug/m3)	(ug/m3)	Vapor	Vapor	Air
	CAS #	a	b	b'	c	c'			
Volatile Organics, by Method TO15 (UG/M3)									
1,1,1-Trichloroethane	71-55-6	3.1	–	–	2.2E+04	2.2E+07	**0.13 J**	**0.11 J**	0.1 U
1,1,2,2-Tetrachloroethane	79-34-5	<0.25	2.1E-01	2.1E+02	–	–	0.14 U	0.15 U	0.1 U
1,1,2-Trichloroethane	79-00-5	<0.25	7.7E-01	7.7E+02	–	–	**0.27[a]**	**0.24**	0.1 U
1,1-Dichloroethane	75-34-3	<0.25	7.7E+00	7.7E+03	–	–	0.14 U	0.15 U	0.1 U
1,1-Dichloroethene	75-35-4	<0.25	–	–	8.8E+02	8.8E+05	**3.6[a]**	**3.7[a]**	0.1 U
1,2-Dichloroethane	107-06-2	<0.25	4.7E-01	4.7E+02	1.1E+04	1.1E+07	**2.3[a]**	**2[a]**	0.1 U
1,2-Dichloropropane	78-87-5	<0.25	1.2E+00	1.2E+03	1.8E+01	1.8E+04	**3.7[a]**	**4.1[a]**	0.1 U
2-Butanone	78-93-3	16	–	–	2.2E+04	2.2E+07	2.6 U	0.74 U	**0.25 J**
Acetone	67-64-1	110	–	–	1.4E+05	1.4E+08	6 U	7.4 U	**1.6 J**
Acrylonitrile	107-13-1	–	1.8E-01	1.8E+02	8.8E+00	8.8E+03	**0.68 J**	**0.71 J**	0.5 U
Benzene	71-43-2	15	1.6E+00	1.6E+03	1.3E+02	1.3E+05	**0.15**	0.15 U	0.1 U
Bromodichloromethane	75-27-4	–	3.3E-01	3.3E+02	–	–	**0.16**	**0.25**	0.1 U
Bromoform	75-25-2	–	1.1E+01	1.1E+04	–	–	0.71 U	0.74 U	0.5 U
Bromomethane	74-83-9	–	–	–	2.2E+01	2.2E+04	0.14 U	0.15 U	0.1 U
Carbon disulfide	75-15-0	–	–	–	3.1E+03	3.1E+06	**11**	**10**	0.5 U
Carbon tetrachloride	56-23-5	0.8	8.2E-01	8.2E+02	8.3E+02	8.3E+05	**2.9[a]**	**2.9[a]**	0.1 U
Chlorobenzene	108-90-7	<0.25	–	–	2.2E+02	2.2E+05	**0.098 J**	**0.11 J**	0.1 U
Chloroethane	75-00-3	<0.25	–	–	4.4E+04	4.4E+07	**0.27[a]**	0.15 U	0.1 U
Chloroform	67-66-3	1.4	5.3E-01	5.3E+02	4.3E+02	4.3E+05	**250[a]**	**220[a]**	0.1 U
Chloromethane	74-87-3	3.3			3.9E+02	3.9E+05	0.14 U	0.15 U	0.1 U
cis-1,2-Dichloroethylene	156-59-2	<0.25	–	–	–	–	**0.088 J**	**0.146 J**	0.1 U
cis-1,3-Dichloropropene	10061-01-5	<0.25	–	–	–	–	0.71 U	0.74 U	0.5 U
Dibromochloromethane	124-48-4	–	4.5E-01	4.5E+02	–	–	0.14 U	0.15 U	0.1 U
Ethylbenzene	100-41-4	7.3	4.9E+00	4.9E+03	4.4E+03	4.4E+06	**0.66 J**	**0.9**	0.5 U
Methyl Isobutyl Ketone (4-Methyl-2-Pentanone)	108-10-1	2.2	–	–	1.3E+04	1.3E+07	**10 J[a]**	**7.1 J[a]**	0.5 U
Methylene chloride	75-09-2	22	2.6E+01	2.6E+04	4.6E+03	4.6E+06	**0.95**	**0.9**	0.5 U
Styrene	100-42-5	1.3	–	–	4.4E+03	4.4E+06	**1**	**2.6[a]**	0.5 U
Tetrachloroethene	127-18-4	2.9	2.1E+00	2.1E+03	1.2E+03	1.2E+06	**29[a]**	**30[a]**	0.1 U
Toluene	108-88-3	58	–	–	2.2E+04	2.2E+07	**45 J**	**28 J**	**2.7**
Trans-1,2-Dichloroethene	156-60-5	–	–	–	2.6E+02	2.6E+05	0.14 U	**0.1 J**	0.1 U
trans-1,3-Dichloropropene	10061-02-6	<0.25	–	–	–	–	0.71 U	0.74 U	0.5 U
Trichloroethene	79-01-6	0.5	6.1E+00	6.1E+03	–	–	**4.5[a]**	**4.5[a]**	0.1 U
Vinyl chloride	75-01-4	<0.25	2.8E+00	2.8E+03	4.4E+02	4.4E+05	0.14 U	0.15 U	0.1 U
m,p-xylene	108-38-3/1	12	–	–	3.1E+03	3.1E+06	**1.4**	**2.2**	**0.091 J**
o-xylene	95-47-6	7.6	–	–	3.1E+03	3.1E+06	**0.47 J**	**0.9**	0.5 U
Epichlorohydrin	106-89-8	–	1.0E+01	1.0E+04	4.4E+00	4.4E+03	NF	NF	NF

Appendix B
Quality Analysis / Quality Control Results Table
Former Hampshire Chemical Corp Facility, Waterloo, New York

Location ID				(AF=0.001)		(AF=0.001)	WAT-SG02	WAT-SG02	FIELD QC
Location Group			Carcinogenic	Carcinogenic			Subslab Vapor	Subslab Vapor	Blank
Field Sample ID		NYSDOH 2003	Target Risk	Target Risk	Noncancer	Noncancer	WAT-SG-2-110408	WAT-SG-DUP-110408	WAT-SG-FB-110408
Sample Date		Study of VOCs	(TR) = 1E-06	(TR) = 1E-06	Hazard Index	Hazard Index	11/4/2008	11/4/2008	11/4/2008
Sample Type		90th Percentile	Inhalation	Inhalation	(HI) = 1 Inhalation	(HI) = 1 Inhalation	Normal	Duplicate	Equipment Blank
Matrix		(ug/m3)	(ug/m3)	(ug/m3)	(ug/m3)	(ug/m3)	Vapor	Vapor	Air
	CAS #	a	b	b'	c	c'			
Tentatively Identified Compounds (UG/M3)									
1,2,3-Trichloropropane	96-18-4	--	--	--	--	--	NF	**7 T**	NF
2-ethyl-1-hexanol	104-76-7	--	--	--	--	--	NF	NF	NF
2-Methylnaphthalene	91-57-6	--	--	--	--	--	**10 T**	NF	NF
3-methyl-1-butene	563-45-1	--	--	--	--	--	NF	NF	NF
3-methylhexane	589-34-4	--	--	--	--	--	NF	NF	NF
4-Methyl-1-pentene	691-37-2	--	--	--	--	--	NF	NF	NF
Aniline	62-53-3	--	7.7E+00	7.7E+03	4.4E+00	4.4E+03	NF	NF	NF
Benzaldehyde	100-52-7	--	--	--	--	--	NF	NF	NF
Butane	106-97-8	--	--	--	--	--	NF	NF	NF
Dimethyl Sulfide	75-18-3	--	--	--	--	--	NF	NF	NF
Dimethyl trisulfide	3658-80-8	--	--	--	--	--	NF	NF	NF
Ethyl acetate	141-78-6	--	--	--	--	--	NF	NF	NF
Hexamethylcyclotrisiloxane	541-05-9	--	--	--	--	--	**10 T**	NF	NF
Isobutane	75-28-5	--	--	--	--	--	NF	NF	NF
Isopentane	78-78-4	--	--	--	--	--	NF	NF	NF
Isopropyl alcohol	67-63-0	--	--	--	--	--	NF	NF	NF
Methyl disulfide	624-92-0	--	--	--	--	--	NF	NF	NF
Naphthalene	91-20-3	--	3.6E-01	3.6E+02	1.3E+01	1.3E+04	**10 T**	**10 T**	NF
n-Butanol	71-36-3	--	--	--	--	--	**20 T**	**20 T**	NF
n-Nonanal	124-19-6	--	--	--	--	--	NF	NF	NF
n-Pentane	109-66-0	--	--	--	--	--	NF	NF	**3 T**
Propane	74-98-6	--	--	--	--	--	NF	NF	NF
1,2,4-Trimethylbenzene	95-63-6	--			3.1E+01	3.1E+04	NF	NF	NF
Ethanol	64-17-5	--	--	--	--	--	NF	NF	NF
n-Decane	124-18-5	--	--	--	--	--	NF	NF	NF
n-Undecane	1120-21-4	--	--	--	--	--	NF	NF	NF
Propene	115-07-1	--	--	--	--	--	NF	NF	NF
Tridecafluorohexane	TIC	--	--	--	--	--	**30 J**	NF	NF

Notes:
a = Exceedance of New York State Department of Health (NYSDOH) 2003: Study of volatile organic chemicals in air of fuel oil heated homes 90th Percentile
b = Exceedance of USEPA cancer risk-based screening level
b' = Exceedance of USEPA cancer risk-based screening level at attenuation factor of 0.001
c = Exceedance of USEPA non-cancer hazard index screening level
c' = Exceedance of USEPA non-cancer hazard index screening level at attenuation factor of 0.001
All compounds and criteria are in ug/m3
Analysis Method is TO15
-- indicates no criteria established
J = estimated value
U = compound not detect at or above method detection limit
Bold font indicates the constituent detected
Shading in gray indicates that the constituent was detected above criteria
NF = Not found by laboratory library search

Appendix C
Validated Laboratory Data Package

2655 Park Center Drive, Suite A Simi Valley, California 93065 (805) 526-7161 (805) 526-7270 fax

Columbia Analytical Services INC.
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LABORATORY REPORT

December 1, 2008

Lisa La Fortune
CH2M Hill
119 Cherry Hill Road, Suite 300
Parsippany, NJ 07054

RE: DOW - Waterloo, NY / 369548.02.B3.FI

Dear Lisa:

Enclosed are the results of the samples submitted to our laboratory on November 7, 2008. For your reference, these analyses have been assigned our service request number P0803732.

All Analyses were performed according to our laboratory's NELAP-approved quality assurance program. The test results meet requirements of the current NELAP standards, where applicable, and except as noted in the laboratory case narrative provided. For a specific list of NELAP-accredited analytes, refer to the certifications section at www.caslab.com. Results are intended to be considered in their entirety and apply only to the samples analyzed and reported herein. Your report contains 117 pages.

Columbia Analytical Services, Inc. is certified by the California Department of Health Services, NELAP Laboratory Certificate No. 02115CA; Arizona Department of Health Services, Certificate No. AZ0694; Florida Department of Health, NELAP Certification E871020; New Jersey Department of Environmental Protection, NELAP Laboratory Certification ID #CA009; New York State Department of Health, NELAP NY Lab ID No: 11221; Oregon Environmental Laboratory Accreditation Program, NELAP ID: CA20007; The American Industrial Hygiene Association, Laboratory #101661; Department of the Navy (NFESC); Pennsylvania Registration No. 68-03307; TX Commission of Environmental Quality, NELAP ID T104704413-08-TX. Each of the certifications listed above have an explicit Scope of Accreditation that applies to specific matrices/methods/analytes; therefore, please contact me for information corresponding to a particular certification.

If you have any questions, please call me at (805) 526-7161.

Respectfully submitted,

Columbia Analytical Services, Inc.

Sue Anderson FOR

Kate Aguilera
Project Manager

2655 Park Center Drive, Suite A Simi Valley, California 93065 (805) 526-7161 (805) 526-7270 fax

Columbia Analytical Services INC.
An Employee - Owned Company

Client:	CH2M Hill	CAS Project No:	P0803732
Project:	DOW - Waterloo, NY / 369548.02.B3.FI	NJ Certification ID:	CA009

CASE NARRATIVE

The samples were received intact under chain of custody on November 7, 2008 and were stored in accordance with the analytical method requirements. Please refer to the sample acceptance check form for additional information. The results reported herein are applicable only to the condition of the samples at the time of sample receipt.

Volatile Organic Compound Analysis

The samples were analyzed for selected volatile organic compounds and tentatively identified compounds in accordance with EPA Method TO-15 from the Compendium of Methods for the Determination of Toxic Organic Compounds in Ambient Air, Second Edition (EPA/625/R-96/010b), January, 1999. The analytical system was comprised of a gas chromatograph / mass spectrometer (GC/MS) interfaced to a whole-air preconcentrator.

The percent difference for trans-1,3-dichloropropene was outside the continuing calibration verification (CCV) method requirements. The method reporting limit (MRL) was not affected because the response factor was biased high and the analyte was not detected in the samples.

Any result below the method reporting limit is considered estimated and may be biased high if the value is below the Summa canister cleaning quality control (QC) requirement of 0.2 ppbv (without the sample dilution factor) for a given analyte.

The results of analyses are given in the attached laboratory report. All results are intended to be considered in their entirety, and Columbia Analytical Services, Inc. (CAS) is not responsible for utilization of less than the complete report.

Client: CH2M Hill

Project: DOW - Waterloo, NY 369548.02.B3.FI

Folder: P0803732

Detailed Sample Information

CAS Sample ID	Client Sample ID	Container Type	Pi1 (Hg)	Pi1 (psig)	Pf1	Pi2 (Hg)	Pi2 (psig)	Pf2	Cont ID	Order #	FC ID	Bottle Order #
P0803732-001.01	WAT-SG-1-110408	6.0 L-Summa Canister Source	-4.4	-2.2	3.5				SC00689	**10827**	OA01338	**10827**
P0803732-002.01	WAT-SG-2-110408	6.0 L-Summa Canister Source	-3.8	-1.9	3.5				SC00631	**10827**	OA01328	**10827**
P0803732-003.01	WAT-SG-DUP-110408	6.0 L-Summa Canister Source	-4.7	-2.3	3.5				SC00827	**10827**	OA01331	**10827**
P0803732-004.01	WAT-SG-3a-110408	6.0 L-Summa Canister Source	-3.5	-1.7	3.5				SC00695	**10827**	OA00616	**10827**
P0803732-005.01	WAT-SG-3-110408	6.0 L-Summa Canister Source	-3.4	-1.7	4.2				SC00947	**10827**		
P0803732-006.01	WAT-SG-4-110408	6.0 L-Summa Canister Source	0.0	0.0	3.5				SC00102	**10827**	OA01332	**10827**
P0803732-007.01	WAT-IA-1-110408	6.0 L-Summa Canister Ambient	-7.0	-3.4	3.5				AC00551	**10827**	FC00147	**10827**
P0803732-008.01	WAT-IA-2-110408	6.0 L-Summa Canister Ambient	-8.8	-4.3	3.5				AC00803	**10827**	FC00344	**10827**
P0803732-009.01	WAT-IA-3-110408	6.0 L-Summa Canister Ambient	-7.3	-3.6	3.5				AC00886	**10827**	FC00540	**10827**
P0803732-010.01	WAT-IA-4-110508	6.0 L-Summa Canister Ambient	-6.2	-3.0	3.5				AC00122	**10827**	FC00418	**10827**
P0803732-011.01	WAT-SG-B2-110408	6.0 L-Summa Canister Ambient	-4.6	-2.3	3.5				AC01140	**10827**	FC00282	**10827**
P0803732-012.01	WAT-SG-FB-110408	6.0 L-Summa Canister Ambient	-28.9	-14.2	3.5				AC00781	**10827**	FC00302	**10827**
P0803732-013.01	WAT-IA-5-110508	6.0 L-Summa Canister Ambient	-5.1	-2.5	3.6				AC00521	**10827**	FC00462	**10827**
P0803732-014.01	WAT-IA-6-110508	6.0 L-Summa Canister Ambient	-5.5	-2.7	3.5				AC01381	**10827**	FC00276	**10827**
P0803732-015.01	WAT-IA-7-110508	6.0 L-Summa Canister Ambient	-6.9	-3.4	3.5				AC01489	**10827**	FC00224	**10827**
P0803732-016.01	WAT-SG-B4-110508	6.0 L-Summa Canister Ambient	-1.9	-0.9	3.7				AC00865	**10827**	FC00658	**10827**
P0803732-017.01	WAT-SG-5a-110508	6.0 L-Summa Canister Ambient	-4.5	-2.2	3.5				AC00821	**10827**	OA01337	**10827**
P0803732-018.01	WAT-SG-5-110508	6.0 L-Summa Canister Ambient	-3.7	-1.8	3.5				AC01336	**10827**	OA01334	**10827**
P0803732-019.01	WAT-SG-6-110508	6.0 L-Summa Canister Ambient	-2.6	-1.3	3.6				AC00939	**10827**	OA01393	**10827**
P0803732-020.01	WAT-SG-7a-110508	6.0 L-Summa Canister Ambient	-4.5	-2.2	3.5				AC01371	**10827**	OA00597	**10827**
P0803732-021.01	WAT-SG-8-110508	6.0 L-Summa Canister Ambient	-18.7	-9.2	3.9				AC01010	**10827**	OA01339	**10827**
P0803732-022.01	WAT-SG-9-110508	6.0 L-Summa Canister Ambient	-4.2	-2.1	3.5				AC01425	**10827**	OA01342	**10827**
P0803732-023.01	AC00450	6.0 L-Summa Canister Ambient	-29.0	-14.2					AC00450	**10827**		
P0803732-024.01	AC01454	6.0 L-Summa Canister Ambient	-29.0	-14.2					AC01454	**10827**		
P0803732-025.01	AC00898	6.0 L-Summa Canister Ambient	-29.0	-14.2					AC00898	**10827**		
P0803732-026.01	AC01086	6.0 L-Summa Canister Ambient	-28.9	-14.2					AC01086	**10827**		

Detailed Sample Information

CAS Sample ID	Client Sample ID	Container Type	Pi1 (Hg)	Pi1 (psig)	Pf1	Pi2 (Hg)	Pi2 (psig)	Pf2	Cont ID	Order #	FC ID	Bottle Order #

Miscellaneous Items - received

FC00248
AVG00513
AVG00184
AVG00885
AVG00535
AVG00829
AVG00456
AVG00314
AVG01002
AVG00320
OA01412
AVG00707
AVG00778
AVG00046
AVG00641
AVG00935
AVG00288
AVG00660
AVG01075
AVG00062
AVG00785
OA01374
AVG00497
AVG00571
AVG00806
OA01330
AVG00567
AVG00918

Detailed Sample Information

CAS Sample ID	Client Sample ID	Container Type	Pi1 (Hg)	Pi1 (psig)	Pf1	Pi2 (Hg)	Pi2 (psig)	Pf2	Cont ID	Order #	FC ID	Bottle Order #

Air - Chain of Custody Record & Analytical Service Request

Columbia Analytical Services INC.
An Employee - Owned Company

2655 Park Center Drive, Suite A
Simi Valley, California 93065
Phone (805) 526-7161
Fax (805) 526-7270

Requested Turnaround Time in Business Days (Surcharges) please circle
1 Day (100%) 2 Day (75%) 3 Day (50%) 4 Day (35%) 5 Day (25%) (10 Day - Standard)

CAS Project No. P0803732

Company Name & Address (Reporting Information)
CH2M HILL
119 CHERRY HILL RD, STE 300
PARSIPPANY, NJ 07054

Project Name: DOW - WATERLOO, NY

Project Number: 369548.02.B3.FI

CAS Contact: KATE AGUILERA

Project Manager: STACEY FELTS-BOCK

P.O. # / Billing Information: 931180

Phone: 973-316-9300 Fax: 973-334-5847

Email Address for Result Reporting: Rachel.Kopec@CH2M.com

Sampler (Print & Sign): LISA LA FORTUNE

Client Sample ID	Laboratory ID Number	Date Collected	Time Collected	Sample Type (Air/Tube/Solid)	Canister ID (Bar Code # - AC, SC, etc.)	Flow Controller (Bar Code - FC #)	Sample Volume	Analysis Method and/or Analytes: TO-15 + EMichlorethane + 5 TICs (see purchase order)				Comments e.g. Actual Preservative or specific instructions
WAT-SG-1-110408	(1)-4.4	11/04/08	8:50	Air	SC00689	OH01338	6L	X				
WAT-SG-2-110408	(2)-3.8		9:35		SC00631	OH01328		X				
WAT-SG-DUP-110408	(3)-4.7		—		SC00827	OH01331		X				
WAT-SG-3a-110408	(4)-3.5		10:05		SC00695	OH00616		X				
WAT-SG-3-110408	(5)-3.4		10:25		SC00947	OH01329		X				
WAT-SG-4-110408	(6)-0.0		10:47		SC00102	OH01332		X				
WAT-IA-1-110408	(7)-7.0		11:13		AC00551	FC00147		X				
WAT-IA-2-110408	(8)-8.8		11:14		AC00803	FC00344		X				
WAT-IA-3-110408	(9)-7.3	↓	11:15		AC00886	FC00540		X				
WAT-IA-4-110508	(10)-6.2	11/05/08	8:10	LLF	~~AC01140~~ AC00122	FC00418		X				
WAT-SG-B2-110408	(11)-4.0	11/04/08	11:10		AC01140	FC00282		X				
WAT-SG-FB-110408	(12)-28.9	↓	11:10		AC00781	FC00302		X				
WAT-IA-5-110508	(13)-5.1	11/05/08	8:13		AC00521	FC00462		X				
WAT-IA-6-110508	(14)-5.5	↓	8:15		AC01381	FC00276		X				
WAT-IA-7-110508	(15)-6.4	↓	8:48	↓	AC01481	FC00224	↓	X				

Report Tier Levels - please select
Tier I - (Results/Default if not specified) ____
Tier II - (Results + QC) ____
Tier III - (Data Validation Package) 10% Surcharge ____
Tier V - (client specified) X

EDD required (Yes / No)
Type: LabSpec 7
EDD Units: ug/m3

Project Requirements (MRLs, QAPP)

Relinquished by: (Signature) Lisa La Fortune	Date: 11/6/08	Time: 10:00	Received by: (Signature) FEDEX	Date:	Time:		
Relinquished by: (Signature) Fedex	Date:	Time:	Received by: (Signature) Warwick	Date: 11/7/08	Time: 0830	Cooler / Blank	
Relinquished by: (Signature)	Date:	Time:	Received by: (Signature)	Date:	Time:	Temperature °C	

Air - Chain of Custody Record & Analytical Service Request

Columbia Analytical Services INC.
An Employee - Owned Company

2655 Park Center Drive, Suite A
Simi Valley, California 93065
Phone (805) 526-7161
Fax (805) 526-7270

Requested Turnaround Time in Business Days (Surcharges) please circle
1 Day (100%) 2 Day (75%) 3 Day (50%) 4 Day (35%) 5 Day (25%) 10 Day - Standard

CAS Project No. P0803732

Company Name & Address (Reporting Information)	CH2M HILL 119 CHERRY HILL RD, STE 300 PARSIPPANY, NJ, 07054
Project Name	DOW WATERLOO, NY
Project Number	369548.02.B3.FI
Project Manager	STACEY FELTS-BOCK
P.O. # / Billing Information	93180
Phone	973-316-9300
Fax	973-334-5847
Email Address for Result Reporting	Rachel.koper@ch2m.com
Sampler (Print & Sign)	Lisa La Fortune
CAS Contact	Kate Aguilera

Analysis Method and/or Analytes

Client Sample ID	Laboratory ID Number	Date Collected	Time Collected	Sample Type (Air/Tube/ Solid)	Canister ID (Bar Code # - AC, SC, etc.)	Flow Controller (Bar Code - FC #)	Sample Volume	TO-15 + Epichlorohydrin + 5 TICs (see purchase order)	Comments e.g. Actual Preservative or specific instructions
WAT-SG-B4-110508	16-19	11/05/08	8:05	AIR	AC00865	FC00658	6L	X	
WAT-SG-5a-110508	17-45		8:53		AC00821	OA01337		X	
WAT-SG-5-110508	18-37		09:08		AC01336	OA01334		X	
WAT-SG-6-110508	19-2.6		09:35		AC00939	OA01393		X	
WAT-SG-7a-110508	20-4.5		10:08		AC01371	OA00597		X	
WAT-SG-8-110508	21-18.7		11:10		AC01010	OA01339		X	
WAT-SG-9-110508	22-4.2		11:31		AC01425	OA01342		X	

Report Tier Levels - please select
Tier I - (Results/Default if not specified) ____
Tier II - (Results + QC) ____
Tier III - (Data Validation Package) 10% Surcharge ____
Tier V - (client specified) X

EDD required Yes / No
EDD Type: Lab Spec 7
EDD Units: ug/m3

Project Requirements (MRLs, QAPP)

Relinquished by: (Signature)	Lisa La Fortune	Date: 11/6/08	Time: 10:00	Received by: (Signature)	FEDEX	Date:	Time:
Relinquished by: (Signature)	Fedex	Date: /	Time:	Received by: (Signature)	Whitaker	Date: 11/7/08	Time: 0930
Relinquished by: (Signature)		Date:	Time:	Received by: (Signature)		Date:	Time:

Cooler / Blank
Temperature °C

Columbia Analytical Services, Inc.
Sample Acceptance Check Form

Client: CH2M Hill Work order: P0803732

Project: DOW Waterloo, NY / 369548.02.B3.FI

Sample(s) received on: 11/07/08 Date opened: 11/07/08 by: MZAMORA

Note: This form is used for all samples received by CAS. The use of this form for custody seals is strictly meant to indicate presence/absence and not as an indication of compliance or nonconformity. Thermal preservation and pH will only be evaluated either at the request of the client and/or as required by the method/SOP.

		Yes	No	N/A
1	Were **sample containers** properly marked with client sample ID?	☒	☐	☐
2	Container(s) **supplied by CAS**?	☒	☐	☐
3	Did **sample containers** arrive in good condition?	☒	☐	☐
4	Were **chain-of-custody** papers used and filled out?	☒	☐	☐
5	Did **sample container labels** and/or tags agree with custody papers?	☒	☐	☐
6	Was **sample volume** received adequate for analysis?	☒	☐	☐
7	Are samples within specified holding times?	☒	☐	☐
8	Was proper **temperature** (thermal preservation) of cooler at receipt adhered to?	☐	☐	☒
	Cooler Temperature _____ °C Blank Temperature _____ °C			
9	Was a **trip blank** received?	☐	☒	☐
	Trip blank supplied by CAS: Serial # _____ -TB _____			
10	Were **custody seals** on outside of cooler/Box?	☐	☒	☐
	Location of seal(s)? _____ Sealing Lid?	☐	☐	☒
	Were signature and date included?	☐	☐	☒
	Were seals intact?	☐	☐	☒
	Were custody seals on outside of sample container?	☐	☒	☐
	Location of seal(s)? _____ Sealing Lid?	☐	☐	☒
	Were signature and date included?	☐	☐	☒
	Were seals intact?	☐	☐	☒
11	Do containers have appropriate **preservation**, according to method/SOP or Client specified information?	☐	☐	☒
	Is there a client indication that the submitted samples are **pH** preserved?	☐	☐	☒
	Were **VOA vials** checked for presence/absence of air bubbles?	☐	☐	☒
	Does the client/method/SOP require that the analyst check the sample pH and if necessary alter it?	☐	☐	☒
12	**Tubes:** Are the tubes capped and intact?	☐	☐	☒
	Do they contain moisture?	☐	☐	☒
13	**Badges:** Are the badges properly capped and intact?	☐	☐	☒
	Are dual bed badges separated and individually capped and intact?	☐	☐	☒

Lab Sample ID	Container Description	Required pH *	Received pH	Adjusted pH	VOA Headspace (Presence/Absence)	Receipt / Preservation Comments
P0803732-001.01	6.0 L Source Can					
P0803732-002.01	6.0 L Source Can					
P0803732-003.01	6.0 L Source Can					
P0803732-004.01	6.0 L Source Can					
P0803732-005.01	6.0 L Source Can					
P0803732-006.01	6.0 L Source Can					
P0803732-007.01	6.0 L Ambient Can					

Explain any discrepancies: (include lab sample ID numbers):

Sample -005 COA was not received.

*Required pH: Phenols/COD/NH3/TOC/TOX/NO3+NO2/TKN/T.PHOS, H2SO4 (pH<2); Metals, HNO3 (pH<2); CN (NaOH or NaOH/Asc Acid) (pH>12); Diss. Sulfide, NaOH (pH>12); T. Sulfide, NaOH/ZnAc (pH>12) RSK - MEEPP, HCL (pH<2); RSK - CO2, (pH 5-8); Sulfur (pH>4)

Columbia Analytical Services, Inc.
Sample Acceptance Check Form

Client: CH2M Hill Work order: P0803732

Project: DOW Waterloo, NY / 369548.02.B3.FI

Sample(s) received on: 11/07/08 Date opened: 11/07/08 by: MZAMORA

Lab Sample ID	Container Description	Required pH *	Received pH	Adjusted pH	VOA Headspace (Presence/Absence)	Receipt / Preservation Comments
P0803732-008.01	6.0 L Ambient Can					
P0803732-009.01	6.0 L Ambient Can					
P0803732-010.01	6.0 L Ambient Can					
P0803732-011.01	6.0 L Ambient Can					
P0803732-012.01	6.0 L Ambient Can					
P0803732-013.01	6.0 L Ambient Can					
P0803732-014.01	6.0 L Ambient Can					
P0803732-015.01	6.0 L Ambient Can					
P0803732-016.01	6.0 L Ambient Can					
P0803732-017.01	6.0 L Ambient Can					
P0803732-018.01	6.0 L Ambient Can					
P0803732-019.01	6.0 L Ambient Can					
P0803732-020.01	6.0 L Ambient Can					
P0803732-021.01	6.0 L Ambient Can					
P0803732-022.01	6.0 L Ambient Can					
P0803732-023.01	6.0 L Ambient Can					
P0803732-024.01	6.0 L Ambient Can					
P0803732-025.01	6.0 L Ambient Can					
P0803732-026.01	6.0 L Ambient Can					

Explain any discrepancies: (include lab sample ID numbers):

*Required pH: Phenols/COD/NH3/TOC/TOX/NO3+NO2/TKN/T.PHOS, H2SO4 (pH<2); Metals, HNO3 (pH<2); CN (NaOH or NaOH/Asc Acid) (pH>12); Diss. Sulfide, NaOH (pH>12); T. Sulfide, NaOH/ZnAc (pH>12) RSK - MEEPP, HCL (pH<2); RSK - CO2, (pH 5-8); Sulfur (pH>4)

COLUMBIA ANALYTICAL SERVICES, INC.

RESULTS OF ANALYSIS

Client: **CH2M Hill**
Client Sample ID: **WAT-SG-1-110408**
Client Project ID: **DOW - Waterloo, NY / 369548.02.B3.FI**

CAS Project ID: P0803732
CAS Sample ID: P0803732-001

Test Code: EPA TO-15
Instrument ID: Tekmar AUTOCAN/Agilent 5975Cinert/6890N/MS16
Analyst: Wida Ang
Sampling Media: 6.0 L Summa Canister
Test Notes:
Container ID: SC00689

Date Collected: 11/4/08
Date Received: 11/7/08
Date Analyzed: 11/12/08
Volume(s) Analyzed: 1.00 Liter(s)

Initial Pressure (psig): -2.2 Final Pressure (psig): 3.5

Canister Dilution Factor: 1.46

CAS #	Compound	Result µg/m³	MRL µg/m³	MDL µg/m³	Result ppbV	MRL ppbV	MDL ppbV	Data Qualifier
74-87-3	Chloromethane	0.15	0.15	0.073	0.071	0.071	0.035	U
75-01-4	Vinyl Chloride	0.15	0.15	0.073	0.057	0.057	0.029	U
74-83-9	Bromomethane	0.15	0.15	0.073	0.038	0.038	0.019	U
75-00-3	Chloroethane	0.15	0.15	0.11	0.055	0.055	0.040	U
67-64-1	**Acetone**	**5.8**	7.3	0.20	**2.4**	3.1	0.086	J
107-13-1	**Acrylonitrile**	**0.64**	0.73	0.073	**0.29**	0.34	0.034	J
75-35-4	1,1-Dichloroethene	0.15	0.15	0.082	0.037	0.037	0.021	U
75-09-2	**Methylene Chloride**	**0.092**	0.73	0.080	**0.026**	0.21	0.023	J
75-15-0	**Carbon Disulfide**	**11**	0.73	0.073	**3.6**	0.23	0.023	
156-60-5	trans-1,2-Dichloroethene	0.15	0.15	0.073	0.037	0.037	0.018	U
75-34-3	**1,1-Dichloroethane**	**0.13**	0.15	0.073	**0.032**	0.036	0.018	J
78-93-3	**2-Butanone (MEK)**	**1.9**	0.73	0.14	**0.66**	0.25	0.048	
156-59-2	cis-1,2-Dichloroethene	0.15	0.15	0.073	0.037	0.037	0.018	U
67-66-3	**Chloroform**	**6.9**	0.15	0.073	**1.4**	0.030	0.015	
107-06-2	1,2-Dichloroethane	0.15	0.15	0.073	0.036	0.036	0.018	U
71-55-6	1,1,1-Trichloroethane	0.15	0.15	0.073	0.027	0.027	0.013	U
71-43-2	**Benzene**	**0.14**	0.15	0.073	**0.045**	0.046	0.023	J
56-23-5	**Carbon Tetrachloride**	**0.31**	0.15	0.073	**0.049**	0.023	0.012	

U = Compound was analyzed for, but not detected above the laboratory detection limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.
J = The analyte was positively identified below the method reporting limit; the associated numerical value is considered estimated.

Verified By: Rc Date: 11/21/08

COLUMBIA ANALYTICAL SERVICES, INC.

RESULTS OF ANALYSIS

Client: **CH2M Hill**
Client Sample ID: **WAT-SG-1-110408**
Client Project ID: **DOW - Waterloo, NY / 369548.02.B3.FI**

CAS Project ID: P0803732
CAS Sample ID: P0803732-001

Test Code: EPA TO-15
Instrument ID: Tekmar AUTOCAN/Agilent 5975Cinert/6890N/MS16
Analyst: Wida Ang
Sampling Media: 6.0 L Summa Canister
Test Notes:
Container ID: SC00689

Date Collected: 11/4/08
Date Received: 11/7/08
Date Analyzed: 11/12/08
Volume(s) Analyzed: 1.00 Liter(s)

Initial Pressure (psig): -2.2 Final Pressure (psig): 3.5

Canister Dilution Factor: 1.46

CAS #	Compound	Result µg/m³	MRL µg/m³	MDL µg/m³	Result ppbV	MRL ppbV	MDL ppbV	Data Qualifier
78-87-5	1,2-Dichloropropane	0.15	0.15	0.073	0.032	0.032	0.016	U
75-27-4	Bromodichloromethane	0.15	0.15	0.073	0.022	0.022	0.011	U
79-01-6	Trichloroethene	0.15	0.15	0.073	0.027	0.027	0.014	U
10061-01-5	cis-1,3-Dichloropropene	0.73	0.73	0.073	0.16	0.16	0.016	U
108-10-1	**4-Methyl-2-pentanone**	**4.7**	0.73	0.073	**1.2**	0.18	0.018	
10061-02-6	trans-1,3-Dichloropropene	0.73	0.73	0.073	0.16	0.16	0.016	U
79-00-5	1,1,2-Trichloroethane	0.15	0.15	0.073	0.027	0.027	0.013	U
108-88-3	**Toluene**	**38**	0.73	0.073	**10**	0.19	0.019	
124-48-1	Dibromochloromethane	0.15	0.15	0.073	0.017	0.017	0.0086	U
127-18-4	**Tetrachloroethene**	**0.77**	0.15	0.073	**0.11**	0.022	0.011	
108-90-7	**Chlorobenzene**	**0.076**	0.15	0.073	**0.016**	0.032	0.016	J
100-41-4	**Ethylbenzene**	**0.56**	0.73	0.073	**0.13**	0.17	0.017	J
179601-23-1	**m,p-Xylenes**	**1.1**	0.73	0.077	**0.26**	0.17	0.018	
75-25-2	Bromoform	0.73	0.73	0.077	0.071	0.071	0.0075	U
100-42-5	**Styrene**	**1.0**	0.73	0.073	**0.24**	0.17	0.017	
95-47-6	**o-Xylene**	**0.39**	0.73	0.073	**0.089**	0.17	0.017	J
79-34-5	1,1,2,2-Tetrachloroethane	0.15	0.15	0.073	0.021	0.021	0.011	U

U = Compound was analyzed for, but not detected above the laboratory detection limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.
J = The analyte was positively identified below the method reporting limit; the associated numerical value is considered estimated.

Verified By: Rc Date: 11/24/08

Client: **CH2M Hill**
Client Sample ID: **WAT-SG-1-110408** CAS Project ID: P0803732
Client Project ID: **DOW - Waterloo, NY / 369548.02.B3.FI** CAS Sample ID: P0803732-001

Tentatively Identified Compounds

Test Code: EPA TO-15 Date Collected: 11/4/08
Instrument ID: Tekmar AUTOCAN/Agilent 5975Cinert/6890N/MS16 Date Received: 11/7/08
Analyst: Wida Ang Date Analyzed: 11/12/08
Sampling Media: 6.0 L Summa Canister Volume(s) Analyzed: 1.00 Liter(s)
Test Notes: **T**
Container ID: SC00689

Initial Pressure (psig): -2.2 Final Pressure (psig): 3.5

Canister Dilution Factor: 1.46

GC/MS Retention Time	**Compound Identification**	**Concentration µg/m³**	**Data Qualifier**
12.40	Ethyl Acetate	**5**	
20.64	Hexamethylcyclotrisiloxane	**10**	
21.07	Tridecafluorohexane	**40**	
23.97	Aniline	**4**	
26.15	n-Nonanal	**4**	
	Epichlorohydrin	NF	

T = Analyte is a tentatively identified compound, result is estimated.
NF = Compound was searched for, but not found.

COLUMBIA ANALYTICAL SERVICES, INC.

RESULTS OF ANALYSIS

Client: **CH2M Hill**
Client Sample ID: **WAT-SG-2-110408**
Client Project ID: **DOW - Waterloo, NY / 369548.02.B3.FI**

CAS Project ID: P0803732
CAS Sample ID: P0803732-002

Test Code: EPA TO-15
Instrument ID: Tekmar AUTOCAN/Agilent 5975Cinert/6890N/MS16
Analyst: Wida Ang
Sampling Media: 6.0 L Summa Canister
Test Notes:
Container ID: SC00631

Date Collected: 11/4/08
Date Received: 11/7/08
Date Analyzed: 11/12/08
Volume(s) Analyzed: 1.00 Liter(s)
0.10 Liter(s)

Initial Pressure (psig): -1.9 Final Pressure (psig): 3.5

Canister Dilution Factor: 1.42

CAS #	Compound	Result µg/m³	MRL µg/m³	MDL µg/m³	Result ppbV	MRL ppbV	MDL ppbV	Data Qualifier
74-87-3	Chloromethane	0.14	0.14	0.071	0.069	0.069	0.034	U
75-01-4	Vinyl Chloride	0.14	0.14	0.071	0.056	0.056	0.028	U
74-83-9	Bromomethane	0.14	0.14	0.071	0.037	0.037	0.018	U
75-00-3	**Chloroethane**	**0.27**	0.14	0.10	**0.10**	0.054	0.039	
67-64-1	**Acetone**	**6.0**	7.1	0.20	**2.5**	3.0	0.084	J
107-13-1	**Acrylonitrile**	**0.68**	0.71	0.071	**0.32**	0.33	0.033	J
75-35-4	**1,1-Dichloroethene**	**3.6**	0.14	0.080	**0.90**	0.036	0.020	
75-09-2	**Methylene Chloride**	**0.95**	0.71	0.078	**0.27**	0.20	0.022	
75-15-0	**Carbon Disulfide**	**11**	0.71	0.071	**3.4**	0.23	0.023	
156-60-5	trans-1,2-Dichloroethene	0.14	0.14	0.071	0.036	0.036	0.018	U
75-34-3	1,1-Dichloroethane	0.14	0.14	0.071	0.035	0.035	0.018	U
78-93-3	**2-Butanone (MEK)**	**2.6**	0.71	0.14	**0.90**	0.24	0.046	
156-59-2	**cis-1,2-Dichloroethene**	**0.088**	0.14	0.071	**0.022**	0.036	0.018	J
67-66-3	**Chloroform**	**250**	0.14	0.071	**51**	0.029	0.015	
107-06-2	**1,2-Dichloroethane**	**2.3**	0.14	0.071	**0.56**	0.035	0.018	
71-55-6	**1,1,1-Trichloroethane**	**0.13**	0.14	0.071	**0.024**	0.026	0.013	J
71-43-2	**Benzene**	**0.15**	0.14	0.071	**0.046**	0.044	0.022	
56-23-5	**Carbon Tetrachloride**	**2.9**	0.14	0.071	**0.45**	0.023	0.011	

U = Compound was analyzed for, but not detected above the laboratory detection limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.
J = The analyte was positively identified below the method reporting limit; the associated numerical value is considered estimated.

Verified By: RC Date: 11/21/08

COLUMBIA ANALYTICAL SERVICES, INC.

RESULTS OF ANALYSIS

Client: **CH2M Hill**
Client Sample ID: **WAT-SG-2-110408**
Client Project ID: **DOW - Waterloo, NY / 369548.02.B3.FI**

CAS Project ID: P0803732
CAS Sample ID: P0803732-002

Test Code: EPA TO-15
Instrument ID: Tekmar AUTOCAN/Agilent 5975Cinert/6890N/MS16
Analyst: Wida Ang
Sampling Media: 6.0 L Summa Canister
Test Notes:
Container ID: SC00631

Date Collected: 11/4/08
Date Received: 11/7/08
Date Analyzed: 11/12/08
Volume(s) Analyzed: 1.00 Liter(s)
0.10 Liter(s)

Initial Pressure (psig): -1.9 Final Pressure (psig): 3.5

Canister Dilution Factor: 1.42

CAS #	Compound	Result µg/m³	MRL µg/m³	MDL µg/m³	Result ppbV	MRL ppbV	MDL ppbV	Data Qualifier
78-87-5	**1,2-Dichloropropane**	**3.7**	0.14	0.071	**0.80**	0.031	0.015	
75-27-4	**Bromodichloromethane**	**0.16**	0.14	0.071	**0.025**	0.021	0.011	
79-01-6	**Trichloroethene**	**4.5**	0.14	0.071	**0.83**	0.026	0.013	
10061-01-5	cis-1,3-Dichloropropene	0.71	0.71	0.071	0.16	0.16	0.016	**U**
108-10-1	**4-Methyl-2-pentanone**	**10**	0.71	0.071	**2.5**	0.17	0.017	
10061-02-6	trans-1,3-Dichloropropene	0.71	0.71	0.071	0.16	0.16	0.016	**U**
79-00-5	**1,1,2-Trichloroethane**	**0.27**	0.14	0.071	**0.049**	0.026	0.013	
108-88-3	**Toluene**	**45**	0.71	0.071	**12**	0.19	0.019	
124-48-1	Dibromochloromethane	0.14	0.14	0.071	0.017	0.017	0.0083	**U**
127-18-4	**Tetrachloroethene**	**29**	0.14	0.071	**4.3**	0.021	0.010	
108-90-7	**Chlorobenzene**	**0.098**	0.14	0.071	**0.021**	0.031	0.015	**J**
100-41-4	**Ethylbenzene**	**0.66**	0.71	0.071	**0.15**	0.16	0.016	**J**
179601-23-1	**m,p-Xylenes**	**1.4**	0.71	0.075	**0.32**	0.16	0.017	
75-25-2	Bromoform	0.71	0.71	0.075	0.069	0.069	0.0073	**U**
100-42-5	**Styrene**	**1.0**	0.71	0.071	**0.24**	0.17	0.017	
95-47-6	**o-Xylene**	**0.47**	0.71	0.071	**0.11**	0.16	0.016	**J**
79-34-5	1,1,2,2-Tetrachloroethane	0.14	0.14	0.071	0.021	0.021	0.010	**U**

U = Compound was analyzed for, but not detected above the laboratory detection limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.
J = The analyte was positively identified below the method reporting limit; the associated numerical value is considered estimated.

Verified By: Re Date: 11/21/08

Client: **CH2M Hill**
Client Sample ID: **WAT-SG-2-110408** CAS Project ID: P0803732
Client Project ID: **DOW - Waterloo, NY / 369548.02.B3.FI** CAS Sample ID: P0803732-002

Tentatively Identified Compounds

Test Code:	EPA TO-15	Date Collected:	11/4/08
Instrument ID:	Tekmar AUTOCAN/Agilent 5975Cinert/6890N/MS16	Date Received:	11/7/08
Analyst:	Wida Ang	Date Analyzed:	11/12/08
Sampling Media:	6.0 L Summa Canister	Volume(s) Analyzed:	1.00 Liter(s)
Test Notes:	**T**		0.10 Liter(s)
Container ID:	SC00631		

Initial Pressure (psig): -1.9 Final Pressure (psig): 3.5

Canister Dilution Factor: 1.42

GC/MS Retention Time	**Compound Identification**	**Concentration µg/m³**	**Data Qualifier**
14.56	1-Butanol	**20**	
20.64	Hexamethylcyclotrisiloxane	**10**	
21.07	Tridecafluorohexane	**30**	
27.57	Naphthalene	**10**	
28.91	2-Methylnaphthalene	**10**	
	Epichlorohydrin	NF	

T = Analyte is a tentatively identified compound, result is estimated.
NF = Compound was searched for, but not found.

COLUMBIA ANALYTICAL SERVICES, INC.

RESULTS OF ANALYSIS

Client: **CH2M Hill**
Client Sample ID: **WAT-SG-DUP-110408** CAS Project ID: P0803732
Client Project ID: **DOW - Waterloo, NY / 369548.02.B3.FI** CAS Sample ID: P0803732-003

Test Code: EPA TO-15 Date Collected: 11/4/08
Instrument ID: Tekmar AUTOCAN/Agilent 5975Cinert/6890N/MS16 Date Received: 11/7/08
Analyst: Wida Ang Date Analyzed: 11/12 - 11/13/08
Sampling Media: 6.0 L Summa Canister Volume(s) Analyzed: 1.00 Liter(s)
Test Notes: 0.10 Liter(s)
Container ID: SC00827

Initial Pressure (psig): -2.3 Final Pressure (psig): 3.5

Canister Dilution Factor: 1.47

CAS #	Compound	Result µg/m³	MRL µg/m³	MDL µg/m³	Result ppbV	MRL ppbV	MDL ppbV	Data Qualifier
74-87-3	Chloromethane	0.15	0.15	0.074	0.071	0.071	0.036	U
75-01-4	Vinyl Chloride	0.15	0.15	0.074	0.058	0.058	0.029	U
74-83-9	Bromomethane	0.15	0.15	0.074	0.038	0.038	0.019	U
75-00-3	Chloroethane	0.15	0.15	0.11	0.056	0.056	0.040	U
67-64-1	**Acetone**	**11**	7.4	0.21	**4.6**	3.1	0.087	
107-13-1	**Acrylonitrile**	**0.71**	0.74	0.074	**0.33**	0.34	0.034	J
75-35-4	**1,1-Dichloroethene**	**3.7**	0.15	0.082	**0.93**	0.037	0.021	
75-09-2	**Methylene Chloride**	**0.90**	0.74	0.081	**0.26**	0.21	0.023	
75-15-0	**Carbon Disulfide**	**10**	0.74	0.074	**3.3**	0.24	0.024	
156-60-5	**trans-1,2-Dichloroethene**	**0.10**	0.15	0.074	**0.026**	0.037	0.019	J
75-34-3	1,1-Dichloroethane	0.15	0.15	0.074	0.036	0.036	0.018	U
78-93-3	**2-Butanone (MEK)**	**2.7**	0.74	0.14	**0.90**	0.25	0.048	
156-59-2	**cis-1,2-Dichloroethene**	**0.15**	0.15	0.074	**0.037**	0.037	0.019	J
67-66-3	**Chloroform**	**220**	0.15	0.074	**46**	0.030	0.015	
107-06-2	**1,2-Dichloroethane**	**2.0**	0.15	0.074	**0.50**	0.036	0.018	
71-55-6	**1,1,1-Trichloroethane**	**0.11**	0.15	0.074	**0.020**	0.027	0.013	J
71-43-2	Benzene	0.15	0.15	0.074	0.046	0.046	0.023	U
56-23-5	**Carbon Tetrachloride**	**2.9**	0.15	0.074	**0.46**	0.023	0.012	

U = Compound was analyzed for, but not detected above the laboratory detection limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.
J = The analyte was positively identified below the method reporting limit; the associated numerical value is considered estimated.

Verified By: Re Date: 11/26/08

COLUMBIA ANALYTICAL SERVICES, INC.

RESULTS OF ANALYSIS

Client: **CH2M Hill**
Client Sample ID: **WAT-SG-DUP-110408**
Client Project ID: **DOW - Waterloo, NY / 369548.02.B3.FI**

CAS Project ID: P0803732
CAS Sample ID: P0803732-003

Test Code: EPA TO-15
Instrument ID: Tekmar AUTOCAN/Agilent 5975Cinert/6890N/MS16
Analyst: Wida Ang
Sampling Media: 6.0 L Summa Canister
Test Notes:
Container ID: SC00827

Date Collected: 11/4/08
Date Received: 11/7/08
Date Analyzed: 11/12 - 11/13/08
Volume(s) Analyzed: 1.00 Liter(s)
0.10 Liter(s)

Initial Pressure (psig): -2.3 Final Pressure (psig): 3.5

Canister Dilution Factor: 1.47

CAS #	Compound	Result µg/m³	MRL µg/m³	MDL µg/m³	Result ppbV	MRL ppbV	MDL ppbV	Data Qualifier
78-87-5	**1,2-Dichloropropane**	**4.1**	0.15	0.074	**0.90**	0.032	0.016	
75-27-4	**Bromodichloromethane**	**0.25**	0.15	0.074	**0.037**	0.022	0.011	
79-01-6	**Trichloroethene**	**4.5**	0.15	0.074	**0.83**	0.027	0.014	
10061-01-5	cis-1,3-Dichloropropene	0.74	0.74	0.074	0.16	0.16	0.016	U
108-10-1	**4-Methyl-2-pentanone**	**7.1**	0.74	0.074	**1.7**	0.18	0.018	
10061-02-6	trans-1,3-Dichloropropene	0.74	0.74	0.074	0.16	0.16	0.016	U
79-00-5	**1,1,2-Trichloroethane**	**0.24**	0.15	0.074	**0.045**	0.027	0.013	
108-88-3	**Toluene**	**28**	0.74	0.074	**7.3**	0.20	0.020	
124-48-1	Dibromochloromethane	0.15	0.15	0.074	0.017	0.017	0.0086	U
127-18-4	**Tetrachloroethene**	**30**	0.15	0.074	**4.4**	0.022	0.011	
108-90-7	**Chlorobenzene**	**0.11**	0.15	0.074	**0.025**	0.032	0.016	J
100-41-4	**Ethylbenzene**	**0.90**	0.74	0.074	**0.21**	0.17	0.017	
179601-23-1	**m,p-Xylenes**	**2.2**	0.74	0.078	**0.52**	0.17	0.018	
75-25-2	Bromoform	0.74	0.74	0.078	0.071	0.071	0.0075	U
100-42-5	**Styrene**	**2.6**	0.74	0.074	**0.61**	0.17	0.017	
95-47-6	**o-Xylene**	**0.90**	0.74	0.074	**0.21**	0.17	0.017	
79-34-5	1,1,2,2-Tetrachloroethane	0.15	0.15	0.074	0.021	0.021	0.011	U

U = Compound was analyzed for, but not detected above the laboratory detection limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.
J = The analyte was positively identified below the method reporting limit; the associated numerical value is considered estimated.

Verified By: Rc Date: 11/21/08

Client: **CH2M Hill**
Client Sample ID: **WAT-SG-DUP-110408** CAS Project ID: P0803732
Client Project ID: **DOW - Waterloo, NY / 369548.02.B3.FI** CAS Sample ID: P0803732-003

Tentatively Identified Compounds

Test Code:	EPA TO-15	Date Collected:	11/4/08
Instrument ID:	Tekmar AUTOCAN/Agilent 5975Cinert/6890N/MS16	Date Received:	11/7/08
Analyst:	Wida Ang	Date Analyzed:	11/12 - 11/13/08
Sampling Media:	6.0 L Summa Canister	Volume(s) Analyzed:	1.00 Liter(s)
Test Notes:	**T**		0.10 Liter(s)
Container ID:	SC00827		

Initial Pressure (psig): -2.3 Final Pressure (psig): 3.5

Canister Dilution Factor: 1.47

GC/MS Retention Time	**Compound Identification**	**Concentration µg/m³**	**Data Qualifier**
14.54	1-Butanol	**20**	
21.07	Tridecafluorohexane	**30**	
22.62	1,2,3-Trichloropropane	**7**	
26.96	Unidentified Siloxane	**7**	
27.57	Naphthalene	**10**	
	Epichlorohydrin	NF	

T = Analyte is a tentatively identified compound, result is estimated.
NF = Compound was searched for, but not found.

Verified By: Re Date: 11/24/08

COLUMBIA ANALYTICAL SERVICES, INC.

RESULTS OF ANALYSIS

Client: **CH2M Hill**
Client Sample ID: **WAT-SG-3a-110408**
Client Project ID: **DOW - Waterloo, NY / 369548.02.B3.FI**

CAS Project ID: P0803732
CAS Sample ID: P0803732-004

Test Code: EPA TO-15
Instrument ID: Tekmar AUTOCAN/Agilent 5975Cinert/6890N/MS16
Analyst: Wida Ang
Sampling Media: 6.0 L Summa Canister
Test Notes:
Container ID: SC00695

Date Collected: 11/4/08
Date Received: 11/7/08
Date Analyzed: 11/12/08
Volume(s) Analyzed: 1.00 Liter(s)
0.10 Liter(s)

Initial Pressure (psig): -1.7 Final Pressure (psig): 3.5

Canister Dilution Factor: 1.40

CAS #	Compound	Result µg/m³	MRL µg/m³	MDL µg/m³	Result ppbV	MRL ppbV	MDL ppbV	Data Qualifier
74-87-3	**Chloromethane**	**0.16**	0.14	0.070	**0.077**	0.068	0.034	
75-01-4	Vinyl Chloride	0.14	0.14	0.070	0.055	0.055	0.027	**U**
74-83-9	Bromomethane	0.14	0.14	0.070	0.036	0.036	0.018	**U**
75-00-3	**Chloroethane**	**0.32**	0.14	0.10	**0.12**	0.053	0.038	
67-64-1	**Acetone**	**9.8**	7.0	0.20	**4.1**	2.9	0.083	
107-13-1	**Acrylonitrile**	**0.61**	0.70	0.070	**0.28**	0.32	0.032	**J**
75-35-4	1,1-Dichloroethene	0.14	0.14	0.078	0.035	0.035	0.020	**U**
75-09-2	**Methylene Chloride**	**1.6**	0.70	0.077	**0.47**	0.20	0.022	
75-15-0	**Carbon Disulfide**	**4.8**	0.70	0.070	**1.5**	0.22	0.022	
156-60-5	trans-1,2-Dichloroethene	0.14	0.14	0.070	0.035	0.035	0.018	**U**
75-34-3	1,1-Dichloroethane	0.14	0.14	0.070	0.035	0.035	0.017	**U**
78-93-3	**2-Butanone (MEK)**	**9.5**	0.70	0.13	**3.2**	0.24	0.046	
156-59-2	**cis-1,2-Dichloroethene**	**0.20**	0.14	0.070	**0.052**	0.035	0.018	
67-66-3	**Chloroform**	**0.43**	0.14	0.070	**0.087**	0.029	0.014	
107-06-2	**1,2-Dichloroethane**	**0.15**	0.14	0.070	**0.037**	0.035	0.017	
71-55-6	**1,1,1-Trichloroethane**	**0.070**	0.14	0.070	**0.013**	0.026	0.013	**J**
71-43-2	**Benzene**	**1.6**	0.14	0.070	**0.51**	0.044	0.022	
56-23-5	**Carbon Tetrachloride**	**1.1**	0.14	0.070	**0.17**	0.022	0.011	

U = Compound was analyzed for, but not detected above the laboratory detection limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.
J = The analyte was positively identified below the method reporting limit; the associated numerical value is considered estimated.

Verified By: Re Date: 11/24/08

COLUMBIA ANALYTICAL SERVICES, INC.

RESULTS OF ANALYSIS

Client: **CH2M Hill**
Client Sample ID: **WAT-SG-3a-110408**
Client Project ID: **DOW - Waterloo, NY / 369548.02.B3.FI**

CAS Project ID: P0803732
CAS Sample ID: P0803732-004

Test Code: EPA TO-15
Instrument ID: Tekmar AUTOCAN/Agilent 5975Cinert/6890N/MS16
Analyst: Wida Ang
Sampling Media: 6.0 L Summa Canister
Test Notes:
Container ID: SC00695

Date Collected: 11/4/08
Date Received: 11/7/08
Date Analyzed: 11/12/08
Volume(s) Analyzed: 1.00 Liter(s)
0.10 Liter(s)

Initial Pressure (psig): -1.7 Final Pressure (psig): 3.5

Canister Dilution Factor: 1.40

CAS #	Compound	Result µg/m³	MRL µg/m³	MDL µg/m³	Result ppbV	MRL ppbV	MDL ppbV	Data Qualifier
78-87-5	1,2-Dichloropropane	0.14	0.14	0.070	0.030	0.030	0.015	U
75-27-4	Bromodichloromethane	0.14	0.14	0.070	0.021	0.021	0.010	U
79-01-6	**Trichloroethene**	**0.85**	0.14	0.070	**0.16**	0.026	0.013	
10061-01-5	cis-1,3-Dichloropropene	0.70	0.70	0.070	0.15	0.15	0.015	U
108-10-1	**4-Methyl-2-pentanone**	**9.6**	0.70	0.070	**2.3**	0.17	0.017	
10061-02-6	trans-1,3-Dichloropropene	0.70	0.70	0.070	0.15	0.15	0.015	U
79-00-5	1,1,2-Trichloroethane	0.14	0.14	0.070	0.026	0.026	0.013	U
108-88-3	**Toluene**	**160**	0.70	0.070	**42**	0.19	0.019	
124-48-1	Dibromochloromethane	0.14	0.14	0.070	0.016	0.016	0.0082	U
127-18-4	**Tetrachloroethene**	**1.0**	0.14	0.070	**0.15**	0.021	0.010	
108-90-7	**Chlorobenzene**	**0.23**	0.14	0.070	**0.049**	0.030	0.015	
100-41-4	**Ethylbenzene**	**1.6**	0.70	0.070	**0.37**	0.16	0.016	
179601-23-1	**m,p-Xylenes**	**3.1**	0.70	0.074	**0.71**	0.16	0.017	
75-25-2	Bromoform	0.70	0.70	0.074	0.068	0.068	0.0072	U
100-42-5	**Styrene**	**2.6**	0.70	0.070	**0.60**	0.16	0.016	
95-47-6	**o-Xylene**	**1.1**	0.70	0.070	**0.24**	0.16	0.016	
79-34-5	1,1,2,2-Tetrachloroethane	0.14	0.14	0.070	0.020	0.020	0.010	U

U = Compound was analyzed for, but not detected above the laboratory detection limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

Verified By: Rcs Date: 11/21/08

Client: **CH2M Hill**
Client Sample ID: **WAT-SG-3a-110408** CAS Project ID: P0803732
Client Project ID: **DOW - Waterloo, NY / 369548.02.B3.FI** CAS Sample ID: P0803732-004

Tentatively Identified Compounds

Test Code:	EPA TO-15	Date Collected:	11/4/08
Instrument ID:	Tekmar AUTOCAN/Agilent 5975Cinert/6890N/MS16	Date Received:	11/7/08
Analyst:	Wida Ang	Date Analyzed:	11/12/08
Sampling Media:	6.0 L Summa Canister	Volume(s) Analyzed:	1.00 Liter(s)
Test Notes:	**T**		0.10 Liter(s)
Container ID:	SC00695		

Initial Pressure (psig): -1.7 Final Pressure (psig): 3.5

Canister Dilution Factor: 1.40

GC/MS Retention Time	Compound Identification	Concentration µg/m³	Data Qualifier
7.66	Isopentane	**40**	
8.07	Isopropyl Alcohol	**50**	
8.47	n-Pentane	**100**	
12.40	Ethyl Acetate	**40**	
15.75	3-Methylhexane	**30**	
	Epichlorohydrin	NF	

T = Analyte is a tentatively identified compound, result is estimated.
NF = Compound was searched for, but not found.

COLUMBIA ANALYTICAL SERVICES, INC.

RESULTS OF ANALYSIS

Client: **CH2M Hill**
Client Sample ID: **WAT-SG-3-110408**
Client Project ID: **DOW - Waterloo, NY / 369548.02.B3.FI**

CAS Project ID: P0803732
CAS Sample ID: P0803732-005

Test Code: EPA TO-15
Instrument ID: Tekmar AUTOCAN/Agilent 5975Cinert/6890N/MS16
Analyst: Wida Ang
Sampling Media: 6.0 L Summa Canister
Test Notes:
Container ID: SC00947

Date Collected: 11/4/08
Date Received: 11/7/08
Date Analyzed: 11/12/08
Volume(s) Analyzed: 1.00 Liter(s)

Initial Pressure (psig): -1.7 Final Pressure (psig): 4.2

Canister Dilution Factor: 1.45

CAS #	Compound	Result µg/m³	MRL µg/m³	MDL µg/m³	Result ppbV	MRL ppbV	MDL ppbV	Data Qualifier
74-87-3	**Chloromethane**	**0.31**	0.15	0.073	**0.15**	0.070	0.035	
75-01-4	Vinyl Chloride	0.15	0.15	0.073	0.057	0.057	0.028	**U**
74-83-9	Bromomethane	0.15	0.15	0.073	0.037	0.037	0.019	**U**
75-00-3	Chloroethane	0.15	0.15	0.10	0.055	0.055	0.040	**U**
67-64-1	**Acetone**	**22**	7.3	0.20	**9.3**	3.1	0.085	
107-13-1	**Acrylonitrile**	**0.93**	0.73	0.073	**0.43**	0.33	0.033	
75-35-4	1,1-Dichloroethene	0.15	0.15	0.081	0.037	0.037	0.020	**U**
75-09-2	**Methylene Chloride**	**0.85**	0.73	0.080	**0.25**	0.21	0.023	
75-15-0	**Carbon Disulfide**	**36**	0.73	0.073	**11**	0.23	0.023	
156-60-5	trans-1,2-Dichloroethene	0.15	0.15	0.073	0.037	0.037	0.018	**U**
75-34-3	1,1-Dichloroethane	0.15	0.15	0.073	0.036	0.036	0.018	**U**
78-93-3	**2-Butanone (MEK)**	**3.0**	0.73	0.14	**1.0**	0.25	0.047	
156-59-2	cis-1,2-Dichloroethene	0.15	0.15	0.073	0.037	0.037	0.018	**U**
67-66-3	**Chloroform**	**20**	0.15	0.073	**4.1**	0.030	0.015	
107-06-2	**1,2-Dichloroethane**	**0.25**	0.15	0.073	**0.062**	0.036	0.018	
71-55-6	1,1,1-Trichloroethane	0.15	0.15	0.073	0.027	0.027	0.013	**U**
71-43-2	**Benzene**	**0.75**	0.15	0.073	**0.24**	0.045	0.023	
56-23-5	**Carbon Tetrachloride**	**0.65**	0.15	0.073	**0.10**	0.023	0.012	

U = Compound was analyzed for, but not detected above the laboratory detection limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

Verified By: Rc Date: 11/21/08

COLUMBIA ANALYTICAL SERVICES, INC.

RESULTS OF ANALYSIS

Client: **CH2M Hill**
Client Sample ID: **WAT-SG-3-110408**
Client Project ID: **DOW - Waterloo, NY / 369548.02.B3.FI**

CAS Project ID: P0803732
CAS Sample ID: P0803732-005

Test Code: EPA TO-15
Instrument ID: Tekmar AUTOCAN/Agilent 5975Cinert/6890N/MS16
Analyst: Wida Ang
Sampling Media: 6.0 L Summa Canister
Test Notes:
Container ID: SC00947

Date Collected: 11/4/08
Date Received: 11/7/08
Date Analyzed: 11/12/08
Volume(s) Analyzed: 1.00 Liter(s)

Initial Pressure (psig): -1.7 Final Pressure (psig): 4.2

Canister Dilution Factor: 1.45

CAS #	Compound	Result µg/m³		MRL µg/m³	MDL µg/m³	Result ppbV		MRL ppbV	MDL ppbV	Data Qualifier
78-87-5	**1,2-Dichloropropane**	**0.24**		0.15	0.073	**0.052**		0.031	0.016	
75-27-4	Bromodichloromethane		0.15	0.15	0.073		0.022	0.022	0.011	**U**
79-01-6	**Trichloroethene**	**1.2**		0.15	0.073	**0.23**		0.027	0.013	
10061-01-5	cis-1,3-Dichloropropene		0.73	0.73	0.073		0.16	0.16	0.016	**U**
108-10-1	**4-Methyl-2-pentanone**	**140**		0.73	0.073	**35**		0.18	0.018	
10061-02-6	trans-1,3-Dichloropropene		0.73	0.73	0.073		0.16	0.16	0.016	**U**
79-00-5	1,1,2-Trichloroethane		0.15	0.15	0.073		0.027	0.027	0.013	**U**
108-88-3	**Toluene**	**50**		0.73	0.073	**13**		0.19	0.019	
124-48-1	Dibromochloromethane		0.15	0.15	0.073		0.017	0.017	0.0085	**U**
127-18-4	**Tetrachloroethene**	**4.8**		0.15	0.073	**0.71**		0.021	0.011	
108-90-7	**Chlorobenzene**	**0.14**		0.15	0.073	**0.031**		0.031	0.016	**J**
100-41-4	**Ethylbenzene**	**0.85**		0.73	0.073	**0.20**		0.17	0.017	
179601-23-1	**m,p-Xylenes**	**1.7**		0.73	0.077	**0.40**		0.17	0.018	
75-25-2	Bromoform		0.73	0.73	0.077		0.070	0.070	0.0074	**U**
100-42-5	**Styrene**	**1.7**		0.73	0.073	**0.39**		0.17	0.017	
95-47-6	**o-Xylene**	**0.66**		0.73	0.073	**0.15**		0.17	0.017	**J**
79-34-5	1,1,2,2-Tetrachloroethane		0.15	0.15	0.073		0.021	0.021	0.011	**U**

U = Compound was analyzed for, but not detected above the laboratory detection limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.
J = The analyte was positively identified below the method reporting limit; the associated numerical value is considered estimated.

Verified By: Rc Date: 11/24/08

Client: **CH2M Hill**
Client Sample ID: **WAT-SG-3-110408** CAS Project ID: P0803732
Client Project ID: **DOW - Waterloo, NY / 369548.02.B3.FI** CAS Sample ID: P0803732-005

Tentatively Identified Compounds

Test Code:	EPA TO-15	Date Collected:	11/4/08
Instrument ID:	Tekmar AUTOCAN/Agilent 5975Cinert/6890N/MS16	Date Received:	11/7/08
Analyst:	Wida Ang	Date Analyzed:	11/12/08
Sampling Media:	6.0 L Summa Canister	Volume(s) Analyzed:	1.00 Liter(s)
Test Notes:	**T**		
Container ID:	SC00947		

Initial Pressure (psig): -1.7 Final Pressure (psig): 4.2

Canister Dilution Factor: 1.45

GC/MS Retention Time	**Compound Identification**	**Concentration µg/m³**	**Data Qualifier**
5.86	n-Butane	**10**	
7.65	Isopentane	**8**	
8.05	Isopropyl Alcohol	**6**	
20.63	Hexamethylcyclotrisiloxane	**7**	
21.07	Tridecafluorohexane	**30**	
	Epichlorohydrin	NF	

T = Analyte is a tentatively identified compound, result is estimated.
NF = Compound was searched for, but not found.

Verified By: Rc Date: 11/24/08

COLUMBIA ANALYTICAL SERVICES, INC.

RESULTS OF ANALYSIS

Client: **CH2M Hill**
Client Sample ID: **WAT-SG-4-110408**
Client Project ID: **DOW - Waterloo, NY / 369548.02.B3.FI**

CAS Project ID: P0803732
CAS Sample ID: P0803732-006

Test Code: EPA TO-15
Instrument ID: Tekmar AUTOCAN/Agilent 5975Cinert/6890N/MS16
Analyst: Wida Ang
Sampling Media: 6.0 L Summa Canister
Test Notes:
Container ID: SC00102

Date Collected: 11/4/08
Date Received: 11/7/08
Date Analyzed: 11/12/08
Volume(s) Analyzed: 0.12 Liter(s)

Initial Pressure (psig): 0.0 Final Pressure (psig): 3.5

Canister Dilution Factor: 1.24

CAS #	Compound	Result µg/m³	MRL µg/m³	MDL µg/m³	Result ppbV	MRL ppbV	MDL ppbV	Data Qualifier
74-87-3	**Chloromethane**	**1.1**	1.0	0.52	**0.51**	0.50	0.25	
75-01-4	Vinyl Chloride	1.0	1.0	0.52	0.40	0.40	0.20	**U**
74-83-9	Bromomethane	1.0	1.0	0.52	0.27	0.27	0.13	**U**
75-00-3	Chloroethane	1.0	1.0	0.74	0.39	0.39	0.28	**U**
67-64-1	**Acetone**	**11**	52	1.4	**4.5**	22	0.61	**J**
107-13-1	Acrylonitrile	5.2	5.2	0.52	2.4	2.4	0.24	**U**
75-35-4	1,1-Dichloroethene	1.0	1.0	0.58	0.26	0.26	0.15	**U**
75-09-2	**Methylene Chloride**	**0.83**	5.2	0.57	**0.24**	1.5	0.16	**J**
75-15-0	**Carbon Disulfide**	**20**	5.2	0.52	**6.3**	1.7	0.17	
156-60-5	trans-1,2-Dichloroethene	1.0	1.0	0.52	0.26	0.26	0.13	**U**
75-34-3	**1,1-Dichloroethane**	**5.1**	1.0	0.52	**1.3**	0.26	0.13	
78-93-3	**2-Butanone (MEK)**	**3.9**	5.2	0.99	**1.3**	1.8	0.34	**J**
156-59-2	cis-1,2-Dichloroethene	1.0	1.0	0.52	0.26	0.26	0.13	**U**
67-66-3	**Chloroform**	**1,000**	1.0	0.52	**210**	0.21	0.11	
107-06-2	1,2-Dichloroethane	1.0	1.0	0.52	0.26	0.26	0.13	**U**
71-55-6	**1,1,1-Trichloroethane**	**29**	1.0	0.52	**5.4**	0.19	0.095	
71-43-2	Benzene	1.0	1.0	0.52	0.32	0.32	0.16	**U**
56-23-5	Carbon Tetrachloride	1.0	1.0	0.52	0.16	0.16	0.082	**U**

U = Compound was analyzed for, but not detected above the laboratory detection limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.
J = The analyte was positively identified below the method reporting limit; the associated numerical value is considered estimated.

Verified By: RG Date: 11/21/08

COLUMBIA ANALYTICAL SERVICES, INC.

RESULTS OF ANALYSIS

Client: **CH2M Hill**
Client Sample ID: **WAT-SG-4-110408**
Client Project ID: **DOW - Waterloo, NY / 369548.02.B3.FI**

CAS Project ID: P0803732
CAS Sample ID: P0803732-006

Test Code: EPA TO-15
Instrument ID: Tekmar AUTOCAN/Agilent 5975Cinert/6890N/MS16
Analyst: Wida Ang
Sampling Media: 6.0 L Summa Canister
Test Notes:
Container ID: SC00102

Date Collected: 11/4/08
Date Received: 11/7/08
Date Analyzed: 11/12/08
Volume(s) Analyzed: 0.12 Liter(s)

Initial Pressure (psig): 0.0 Final Pressure (psig): 3.5

Canister Dilution Factor: 1.24

CAS #	Compound	Result µg/m³	MRL µg/m³	MDL µg/m³	Result ppbV	MRL ppbV	MDL ppbV	Data Qualifier
78-87-5	**1,2-Dichloropropane**	**8.4**	1.0	0.52	**1.8**	0.22	0.11	
75-27-4	Bromodichloromethane	1.0	1.0	0.52	0.15	0.15	0.077	U
79-01-6	**Trichloroethene**	**5.1**	1.0	0.52	**0.94**	0.19	0.096	
10061-01-5	cis-1,3-Dichloropropene	5.2	5.2	0.52	1.1	1.1	0.11	U
108-10-1	**4-Methyl-2-pentanone**	**18**	5.2	0.52	**4.4**	1.3	0.13	
10061-02-6	trans-1,3-Dichloropropene	5.2	5.2	0.52	1.1	1.1	0.11	U
79-00-5	1,1,2-Trichloroethane	1.0	1.0	0.52	0.19	0.19	0.095	U
108-88-3	**Toluene**	**48**	5.2	0.52	**13**	1.4	0.14	
124-48-1	Dibromochloromethane	1.0	1.0	0.52	0.12	0.12	0.061	U
127-18-4	**Tetrachloroethene**	**38**	1.0	0.52	**5.6**	0.15	0.076	
108-90-7	Chlorobenzene	1.0	1.0	0.52	0.22	0.22	0.11	U
100-41-4	**Ethylbenzene**	**0.67**	5.2	0.52	**0.15**	1.2	0.12	J
179601-23-1	**m,p-Xylenes**	**1.4**	5.2	0.55	**0.33**	1.2	0.13	J
75-25-2	Bromoform	5.2	5.2	0.55	0.50	0.50	0.053	U
100-42-5	**Styrene**	**1.3**	5.2	0.52	**0.31**	1.2	0.12	J
95-47-6	**o-Xylene**	**0.65**	5.2	0.52	**0.15**	1.2	0.12	J
79-34-5	1,1,2,2-Tetrachloroethane	1.0	1.0	0.52	0.15	0.15	0.075	U

U = Compound was analyzed for, but not detected above the laboratory detection limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.
J = The analyte was positively identified below the method reporting limit; the associated numerical value is considered estimated.

Verified By: RG Date: 11/21/08

Client: **CH2M Hill**
Client Sample ID: **WAT-SG-4-110408** CAS Project ID: P0803732
Client Project ID: **DOW - Waterloo, NY / 369548.02.B3.FI** CAS Sample ID: P0803732-006

Tentatively Identified Compounds

Test Code:	EPA TO-15	Date Collected:	11/4/08
Instrument ID:	Tekmar AUTOCAN/Agilent 5975Cinert/6890N/MS16	Date Received:	11/7/08
Analyst:	Wida Ang	Date Analyzed:	11/12/08
Sampling Media:	6.0 L Summa Canister	Volume(s) Analyzed:	0.12 Liter(s)
Test Notes:	**T**		
Container ID:	SC00102		

Initial Pressure (psig): 0.0 Final Pressure (psig): 3.5

Canister Dilution Factor: 1.24

GC/MS Retention Time	**Compound Identification**	**Concentration µg/m³**	**Data Qualifier**
5.32	Isobutane	**40**	
20.64	Hexamethylcyclotrisiloxane	**600**	
24.59	Unidentified Compound	**100**	
26.95	Unidentified Siloxane	**40**	
	Epichlorohydrin	NF	

T = Analyte is a tentatively identified compound, result is estimated.
NF = Compound was searched for, but not found.

Verified By: Rer Date: 11/24/08

COLUMBIA ANALYTICAL SERVICES, INC.

RESULTS OF ANALYSIS

Client: **CH2M Hill**
Client Sample ID: **WAT-IA-1-110408**
Client Project ID: **DOW - Waterloo, NY / 369548.02.B3.FI**

CAS Project ID: P0803732
CAS Sample ID: P0803732-007

Test Code: EPA TO-15
Instrument ID: Tekmar AUTOCAN/Agilent 5975Cinert/6890N/MS16
Analyst: Wida Ang
Sampling Media: 6.0 L Summa Canister
Test Notes:
Container ID: AC00551

Date Collected: 11/4/08
Date Received: 11/7/08
Date Analyzed: 11/12 - 11/13/08
Volume(s) Analyzed: 1.00 Liter(s)
0.10 Liter(s)

Initial Pressure (psig): -3.4 Final Pressure (psig): 3.5

Canister Dilution Factor: 1.61

CAS #	Compound	Result µg/m³	MRL µg/m³	MDL µg/m³	Result ppbV	MRL ppbV	MDL ppbV	Data Qualifier
74-87-3	**Chloromethane**	**0.45**	0.16	0.081	**0.22**	0.078	0.039	
75-01-4	Vinyl Chloride	0.16	0.16	0.081	0.063	0.063	0.032	**U**
74-83-9	Bromomethane	0.16	0.16	0.081	0.041	0.041	0.021	**U**
75-00-3	Chloroethane	0.16	0.16	0.12	0.061	0.061	0.044	**U**
67-64-1	**Acetone**	**140**	8.1	0.23	**58**	3.4	0.095	
107-13-1	**Acrylonitrile**	**8.1**	0.81	0.081	**3.7**	0.37	0.037	
75-35-4	1,1-Dichloroethene	0.16	0.16	0.090	0.041	0.041	0.023	**U**
75-09-2	**Methylene Chloride**	**0.42**	0.81	0.089	**0.12**	0.23	0.025	**J**
75-15-0	**Carbon Disulfide**	**1.0**	0.81	0.081	**0.32**	0.26	0.026	
156-60-5	trans-1,2-Dichloroethene	0.16	0.16	0.081	0.041	0.041	0.020	**U**
75-34-3	1,1-Dichloroethane	0.16	0.16	0.081	0.040	0.040	0.020	**U**
78-93-3	**2-Butanone (MEK)**	**3.1**	0.81	0.15	**1.1**	0.27	0.052	
156-59-2	cis-1,2-Dichloroethene	0.16	0.16	0.081	0.041	0.041	0.020	**U**
67-66-3	**Chloroform**	**0.37**	0.16	0.081	**0.075**	0.033	0.016	
107-06-2	1,2-Dichloroethane	0.16	0.16	0.081	0.040	0.040	0.020	**U**
71-55-6	1,1,1-Trichloroethane	0.16	0.16	0.081	0.030	0.030	0.015	**U**
71-43-2	**Benzene**	**0.78**	0.16	0.081	**0.24**	0.050	0.025	
56-23-5	**Carbon Tetrachloride**	**0.64**	0.16	0.081	**0.10**	0.026	0.013	

U = Compound was analyzed for, but not detected above the laboratory detection limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.
J = The analyte was positively identified below the method reporting limit; the associated numerical value is considered estimated.

Verified By: Re Date: 11/21/08

COLUMBIA ANALYTICAL SERVICES, INC.

RESULTS OF ANALYSIS

Client: **CH2M Hill**
Client Sample ID: **WAT-IA-1-110408**
Client Project ID: **DOW - Waterloo, NY / 369548.02.B3.FI**

CAS Project ID: P0803732
CAS Sample ID: P0803732-007

Test Code: EPA TO-15
Instrument ID: Tekmar AUTOCAN/Agilent 5975Cinert/6890N/MS16
Analyst: Wida Ang
Sampling Media: 6.0 L Summa Canister
Test Notes:
Container ID: AC00551

Date Collected: 11/4/08
Date Received: 11/7/08
Date Analyzed: 11/12 - 11/13/08
Volume(s) Analyzed: 1.00 Liter(s)
0.10 Liter(s)

Initial Pressure (psig): -3.4 Final Pressure (psig): 3.5

Canister Dilution Factor: 1.61

CAS #	Compound	Result µg/m³	MRL µg/m³	MDL µg/m³	Result ppbV	MRL ppbV	MDL ppbV	Data Qualifier
78-87-5	1,2-Dichloropropane	0.16	0.16	0.081	0.035	0.035	0.017	U
75-27-4	Bromodichloromethane	0.16	0.16	0.081	0.024	0.024	0.012	U
79-01-6	Trichloroethene	0.16	0.16	0.081	0.030	0.030	0.015	U
10061-01-5	cis-1,3-Dichloropropene	0.81	0.81	0.081	0.18	0.18	0.018	U
108-10-1	**4-Methyl-2-pentanone**	**300**	0.81	0.081	**73**	0.20	0.020	
10061-02-6	trans-1,3-Dichloropropene	0.81	0.81	0.081	0.18	0.18	0.018	U
79-00-5	1,1,2-Trichloroethane	0.16	0.16	0.081	0.030	0.030	0.015	U
108-88-3	**Toluene**	**150**	0.81	0.081	**39**	0.21	0.021	
124-48-1	Dibromochloromethane	0.16	0.16	0.081	0.019	0.019	0.0095	U
127-18-4	**Tetrachloroethene**	**0.18**	0.16	0.081	**0.027**	0.024	0.012	
108-90-7	**Chlorobenzene**	**0.11**	0.16	0.081	**0.023**	0.035	0.017	J
100-41-4	**Ethylbenzene**	**1.5**	0.81	0.081	**0.35**	0.19	0.019	
179601-23-1	**m,p-Xylenes**	**4.7**	0.81	0.085	**1.1**	0.19	0.020	
75-25-2	Bromoform	0.81	0.81	0.085	0.078	0.078	0.0083	U
100-42-5	**Styrene**	**1.0**	0.81	0.081	**0.25**	0.19	0.019	
95-47-6	**o-Xylene**	**1.1**	0.81	0.081	**0.25**	0.19	0.019	
79-34-5	1,1,2,2-Tetrachloroethane	0.16	0.16	0.081	0.023	0.023	0.012	U

U = Compound was analyzed for, but not detected above the laboratory detection limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.
J = The analyte was positively identified below the method reporting limit; the associated numerical value is considered estimated.

Verified By: Rc Date: 11/21/08

Client: **CH2M Hill**
Client Sample ID: **WAT-IA-1-110408** CAS Project ID: P0803732
Client Project ID: **DOW - Waterloo, NY / 369548.02.B3.FI** CAS Sample ID: P0803732-007

Tentatively Identified Compounds

Test Code:	EPA TO-15	Date Collected:	11/4/08
Instrument ID:	Tekmar AUTOCAN/Agilent 5975Cinert/6890N/MS16	Date Received:	11/7/08
Analyst:	Wida Ang	Date Analyzed:	11/12 - 11/13/08
Sampling Media:	6.0 L Summa Canister	Volume(s) Analyzed:	1.00 Liter(s)
Test Notes:	**T**		0.10 Liter(s)
Container ID:	AC00551		

Initial Pressure (psig): -3.4 Final Pressure (psig): 3.5

Canister Dilution Factor: 1.61

GC/MS Retention Time	**Compound Identification**	**Concentration µg/m³**	**Data Qualifier**
4.63	Propane	**100**	
5.32	Isobutane	**100**	
5.87	n-Butane	**90**	
14.55	1-Butanol	**20**	
23.67	Benzaldehyde	**10**	
	Epichlorohydrin	NF	

T = Analyte is a tentatively identified compound, result is estimated.
NF = Compound was searched for, but not found.

Verified By: RC Date: 11/24/08

COLUMBIA ANALYTICAL SERVICES, INC.

RESULTS OF ANALYSIS

Client: **CH2M Hill**
Client Sample ID: **WAT-IA-2-110408**
Client Project ID: **DOW - Waterloo, NY / 369548.02.B3.FI**

CAS Project ID: P0803732
CAS Sample ID: P0803732-008

Test Code: EPA TO-15
Instrument ID: Tekmar AUTOCAN/Agilent 5975Cinert/6890N/MS16
Analyst: Wida Ang
Sampling Media: 6.0 L Summa Canister
Test Notes:
Container ID: AC00803

Date Collected: 11/4/08
Date Received: 11/7/08
Date Analyzed: 11/13/08
Volume(s) Analyzed: 1.00 Liter(s)
0.10 Liter(s)

Initial Pressure (psig): -4.3 Final Pressure (psig): 3.5

Canister Dilution Factor: 1.75

CAS #	Compound	Result µg/m³	MRL µg/m³	MDL µg/m³	Result ppbV	MRL ppbV	MDL ppbV	Data Qualifier
74-87-3	**Chloromethane**	**0.45**	0.18	0.088	**0.22**	0.085	0.042	
75-01-4	Vinyl Chloride	0.18	0.18	0.088	0.068	0.068	0.034	**U**
74-83-9	Bromomethane	0.18	0.18	0.088	0.045	0.045	0.023	**U**
75-00-3	Chloroethane	0.18	0.18	0.13	0.066	0.066	0.048	**U**
67-64-1	**Acetone**	**100**	8.8	0.25	**44**	3.7	0.10	
107-13-1	**Acrylonitrile**	**1.9**	0.88	0.088	**0.86**	0.40	0.040	
75-35-4	1,1-Dichloroethene	0.18	0.18	0.098	0.044	0.044	0.025	**U**
75-09-2	**Methylene Chloride**	**2.3**	0.88	0.096	**0.65**	0.25	0.028	
75-15-0	Carbon Disulfide	0.88	0.88	0.088	0.28	0.28	0.028	**U**
156-60-5	trans-1,2-Dichloroethene	0.18	0.18	0.088	0.044	0.044	0.022	**U**
75-34-3	1,1-Dichloroethane	0.18	0.18	0.088	0.043	0.043	0.022	**U**
78-93-3	**2-Butanone (MEK)**	**2.7**	0.88	0.17	**0.91**	0.30	0.057	
156-59-2	cis-1,2-Dichloroethene	0.18	0.18	0.088	0.044	0.044	0.022	**U**
67-66-3	**Chloroform**	**0.29**	0.18	0.088	**0.059**	0.036	0.018	
107-06-2	1,2-Dichloroethane	0.18	0.18	0.088	0.043	0.043	0.022	**U**
71-55-6	1,1,1-Trichloroethane	0.18	0.18	0.088	0.032	0.032	0.016	**U**
71-43-2	**Benzene**	**0.63**	0.18	0.088	**0.20**	0.055	0.027	
56-23-5	**Carbon Tetrachloride**	**0.66**	0.18	0.088	**0.10**	0.028	0.014	

U = Compound was analyzed for, but not detected above the laboratory detection limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

Verified By: Rev Date: 11/24/08

COLUMBIA ANALYTICAL SERVICES, INC.

RESULTS OF ANALYSIS

Client: **CH2M Hill**
Client Sample ID: **WAT-IA-2-110408**
Client Project ID: **DOW - Waterloo, NY / 369548.02.B3.FI**

CAS Project ID: P0803732
CAS Sample ID: P0803732-008

Test Code: EPA TO-15
Instrument ID: Tekmar AUTOCAN/Agilent 5975Cinert/6890N/MS16
Analyst: Wida Ang
Sampling Media: 6.0 L Summa Canister
Test Notes:
Container ID: AC00803

Date Collected: 11/4/08
Date Received: 11/7/08
Date Analyzed: 11/13/08
Volume(s) Analyzed: 1.00 Liter(s)
0.10 Liter(s)

Initial Pressure (psig): -4.3 Final Pressure (psig): 3.5

Canister Dilution Factor: 1.75

CAS #	Compound	Result µg/m³	MRL µg/m³	MDL µg/m³	Result ppbV	MRL ppbV	MDL ppbV	Data Qualifier
78-87-5	1,2-Dichloropropane	0.18	0.18	0.088	0.038	0.038	0.019	U
75-27-4	Bromodichloromethane	0.18	0.18	0.088	0.026	0.026	0.013	U
79-01-6	Trichloroethene	0.18	0.18	0.088	0.033	0.033	0.016	U
10061-01-5	cis-1,3-Dichloropropene	0.88	0.88	0.088	0.19	0.19	0.019	U
108-10-1	**4-Methyl-2-pentanone**	**320**	0.88	0.088	**79**	0.21	0.021	
10061-02-6	trans-1,3-Dichloropropene	0.88	0.88	0.088	0.19	0.19	0.019	U
79-00-5	1,1,2-Trichloroethane	0.18	0.18	0.088	0.032	0.032	0.016	U
108-88-3	**Toluene**	**110**	0.88	0.088	**29**	0.23	0.023	
124-48-1	Dibromochloromethane	0.18	0.18	0.088	0.021	0.021	0.010	U
127-18-4	**Tetrachloroethene**	**0.21**	0.18	0.088	**0.030**	0.026	0.013	
108-90-7	Chlorobenzene	0.18	0.18	0.088	0.038	0.038	0.019	U
100-41-4	**Ethylbenzene**	**2.0**	0.88	0.088	**0.47**	0.20	0.020	
179601-23-1	**m,p-Xylenes**	**6.0**	0.88	0.093	**1.4**	0.20	0.021	
75-25-2	Bromoform	0.88	0.88	0.093	0.085	0.085	0.0090	U
100-42-5	**Styrene**	**0.47**	0.88	0.088	**0.11**	0.21	0.021	J
95-47-6	**o-Xylene**	**1.3**	0.88	0.088	**0.31**	0.20	0.020	
79-34-5	1,1,2,2-Tetrachloroethane	0.18	0.18	0.088	0.025	0.025	0.013	U

U = Compound was analyzed for, but not detected above the laboratory detection limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.
J = The analyte was positively identified below the method reporting limit; the associated numerical value is considered estimated.

Verified By: RC Date: 11/21/08

Client: **CH2M Hill**
Client Sample ID: **WAT-IA-2-110408** CAS Project ID: P0803732
Client Project ID: **DOW - Waterloo, NY / 369548.02.B3.FI** CAS Sample ID: P0803732-008

Tentatively Identified Compounds

Test Code:	EPA TO-15	Date Collected:	11/4/08
Instrument ID:	Tekmar AUTOCAN/Agilent 5975Cinert/6890N/MS16	Date Received:	11/7/08
Analyst:	Wida Ang	Date Analyzed:	11/13/08
Sampling Media:	6.0 L Summa Canister	Volume(s) Analyzed:	1.00 Liter(s)
Test Notes:	**T**		0.10 Liter(s)
Container ID:	AC00803		

Initial Pressure (psig): -4.3 Final Pressure (psig): 3.5

Canister Dilution Factor: 1.75

GC/MS Retention Time	**Compound Identification**	**Concentration µg/m³**	**Data Qualifier**
4.63	Propane	**70**	
5.86	n-Butane	**70**	
24.79	n-Decane	**7**	
26.32	n-Undecane	**4**	
	Epichlorohydrin	NF	

T = Analyte is a tentatively identified compound, result is estimated.
NF = Compound was searched for, but not found.

Verified By: RC Date: 11/21/08

COLUMBIA ANALYTICAL SERVICES, INC.

RESULTS OF ANALYSIS

Client: **CH2M Hill**
Client Sample ID: **WAT-IA-3-110408**
Client Project ID: **DOW - Waterloo, NY / 369548.02.B3.FI**

CAS Project ID: P0803732
CAS Sample ID: P0803732-009

Test Code: EPA TO-15
Instrument ID: Tekmar AUTOCAN/Agilent 5975Cinert/6890N/MS16
Analyst: Wida Ang
Sampling Media: 6.0 L Summa Canister
Test Notes:
Container ID: AC00886

Date Collected: 11/4/08
Date Received: 11/7/08
Date Analyzed: 11/13/08
Volume(s) Analyzed: 0.30 Liter(s)
0.050 Liter(s)

Initial Pressure (psig): -3.6 Final Pressure (psig): 3.5

Canister Dilution Factor: 1.64

CAS #	Compound	Result µg/m³	MRL µg/m³	MDL µg/m³	Result ppbV	MRL ppbV	MDL ppbV	Data Qualifier
74-87-3	**Chloromethane**	**1.1**	0.55	0.27	**0.53**	0.26	0.13	
75-01-4	Vinyl Chloride	0.55	0.55	0.27	0.21	0.21	0.11	**U**
74-83-9	Bromomethane	0.55	0.55	0.27	0.14	0.14	0.070	**U**
75-00-3	Chloroethane	0.55	0.55	0.39	0.21	0.21	0.15	**U**
67-64-1	**Acetone**	**45**	27	0.77	**19**	12	0.32	
107-13-1	**Acrylonitrile**	**0.42**	2.7	0.27	**0.19**	1.3	0.13	**J**
75-35-4	1,1-Dichloroethene	0.55	0.55	0.31	0.14	0.14	0.077	**U**
75-09-2	Methylene Chloride	2.7	2.7	0.30	0.79	0.79	0.087	**U**
75-15-0	Carbon Disulfide	2.7	2.7	0.27	0.88	0.88	0.088	**U**
156-60-5	trans-1,2-Dichloroethene	0.55	0.55	0.27	0.14	0.14	0.069	**U**
75-34-3	1,1-Dichloroethane	0.55	0.55	0.27	0.14	0.14	0.068	**U**
78-93-3	**2-Butanone (MEK)**	**3.9**	2.7	0.52	**1.3**	0.93	0.18	
156-59-2	cis-1,2-Dichloroethene	0.55	0.55	0.27	0.14	0.14	0.069	**U**
67-66-3	**Chloroform**	**7.0**	0.55	0.27	**1.4**	0.11	0.056	
107-06-2	1,2-Dichloroethane	0.55	0.55	0.27	0.14	0.14	0.068	**U**
71-55-6	1,1,1-Trichloroethane	0.55	0.55	0.27	0.10	0.10	0.050	**U**
71-43-2	**Benzene**	**0.79**	0.55	0.27	**0.25**	0.17	0.086	
56-23-5	**Carbon Tetrachloride**	**0.45**	0.55	0.27	**0.071**	0.087	0.043	**J**

U = Compound was analyzed for, but not detected above the laboratory detection limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.
J = The analyte was positively identified below the method reporting limit; the associated numerical value is considered estimated.

Verified By: RC Date: 11/21/08

COLUMBIA ANALYTICAL SERVICES, INC.

RESULTS OF ANALYSIS

Client: **CH2M Hill**
Client Sample ID: **WAT-IA-3-110408**
Client Project ID: **DOW - Waterloo, NY / 369548.02.B3.FI**

CAS Project ID: P0803732
CAS Sample ID: P0803732-009

Test Code: EPA TO-15
Instrument ID: Tekmar AUTOCAN/Agilent 5975Cinert/6890N/MS16
Analyst: Wida Ang
Sampling Media: 6.0 L Summa Canister
Test Notes:
Container ID: AC00886

Date Collected: 11/4/08
Date Received: 11/7/08
Date Analyzed: 11/13/08
Volume(s) Analyzed: 0.30 Liter(s)
0.050 Liter(s)

Initial Pressure (psig): -3.6 Final Pressure (psig): 3.5

Canister Dilution Factor: 1.64

CAS #	Compound	Result µg/m³	MRL µg/m³	MDL µg/m³	Result ppbV	MRL ppbV	MDL ppbV	Data Qualifier
78-87-5	1,2-Dichloropropane	0.55	0.55	0.27	0.12	0.12	0.059	U
75-27-4	Bromodichloromethane	0.55	0.55	0.27	0.082	0.082	0.041	U
79-01-6	Trichloroethene	0.55	0.55	0.27	0.10	0.10	0.051	U
10061-01-5	cis-1,3-Dichloropropene	2.7	2.7	0.27	0.60	0.60	0.060	U
108-10-1	**4-Methyl-2-pentanone**	**770**	2.7	0.27	**190**	0.67	0.067	
10061-02-6	trans-1,3-Dichloropropene	2.7	2.7	0.27	0.60	0.60	0.060	U
79-00-5	1,1,2-Trichloroethane	0.55	0.55	0.27	0.10	0.10	0.050	U
108-88-3	**Toluene**	**45**	2.7	0.27	**12**	0.73	0.073	
124-48-1	Dibromochloromethane	0.55	0.55	0.27	0.064	0.064	0.032	U
127-18-4	Tetrachloroethene	0.55	0.55	0.27	0.081	0.081	0.040	U
108-90-7	Chlorobenzene	0.55	0.55	0.27	0.12	0.12	0.059	U
100-41-4	**Ethylbenzene**	**0.93**	2.7	0.27	**0.21**	0.63	0.063	J
179601-23-1	**m,p-Xylenes**	**2.5**	2.7	0.29	**0.57**	0.63	0.067	J
75-25-2	Bromoform	2.7	2.7	0.29	0.26	0.26	0.028	U
100-42-5	**Styrene**	**0.72**	2.7	0.27	**0.17**	0.64	0.064	J
95-47-6	**o-Xylene**	**0.61**	2.7	0.27	**0.14**	0.63	0.063	J
79-34-5	1,1,2,2-Tetrachloroethane	0.55	0.55	0.27	0.080	0.080	0.040	U

U = Compound was analyzed for, but not detected above the laboratory detection limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.
J = The analyte was positively identified below the method reporting limit; the associated numerical value is considered estimated.

Verified By: RG Date: 11/21/08

Client: **CH2M Hill**
Client Sample ID: **WAT-IA-3-110408** CAS Project ID: P0803732
Client Project ID: **DOW - Waterloo, NY / 369548.02.B3.FI** CAS Sample ID: P0803732-009

Tentatively Identified Compounds

Test Code:	EPA TO-15	Date Collected:	11/4/08
Instrument ID:	Tekmar AUTOCAN/Agilent 5975Cinert/6890N/MS16	Date Received:	11/7/08
Analyst:	Wida Ang	Date Analyzed:	11/13/08
Sampling Media:	6.0 L Summa Canister	Volume(s) Analyzed:	0.30 Liter(s)
Test Notes:	**T**		0.050 Liter(s)
Container ID:	AC00886		

Initial Pressure (psig): -3.6 Final Pressure (psig): 3.5

Canister Dilution Factor: 1.64

GC/MS Retention Time	**Compound Identification**	**Concentration µg/m³**	**Data Qualifier**
4.63	Propane	**30**	
5.87	n-Butane	**40**	
	Epichlorohydrin	NF	

T = Analyte is a tentatively identified compound, result is estimated.
NF = Compound was searched for, but not found.

Verified By: RC Date: 11/21/08

COLUMBIA ANALYTICAL SERVICES, INC.

RESULTS OF ANALYSIS

Client: **CH2M Hill**
Client Sample ID: **WAT-IA-4-110508**
Client Project ID: **DOW - Waterloo, NY / 369548.02.B3.FI**

CAS Project ID: P0803732
CAS Sample ID: P0803732-010

Test Code: EPA TO-15
Instrument ID: Tekmar AUTOCAN/Agilent 5975Cinert/6890N/MS16
Analyst: Wida Ang
Sampling Media: 6.0 L Summa Canister
Test Notes:
Container ID: AC00122

Date Collected: 11/5/08
Date Received: 11/7/08
Date Analyzed: 11/13/08
Volume(s) Analyzed: 1.00 Liter(s)

Initial Pressure (psig): -3.0 Final Pressure (psig): 3.5

Canister Dilution Factor: 1.56

CAS #	Compound	Result µg/m³	MRL µg/m³	MDL µg/m³	Result ppbV	MRL ppbV	MDL ppbV	Data Qualifier
74-87-3	**Chloromethane**	**0.39**	0.16	0.078	**0.19**	0.076	0.038	
75-01-4	Vinyl Chloride	0.16	0.16	0.078	0.061	0.061	0.031	U
74-83-9	Bromomethane	0.16	0.16	0.078	0.040	0.040	0.020	U
75-00-3	Chloroethane	0.16	0.16	0.11	0.059	0.059	0.043	U
67-64-1	**Acetone**	**9.5**	7.8	0.22	**4.0**	3.3	0.092	
107-13-1	**Acrylonitrile**	**0.34**	0.78	0.078	**0.16**	0.36	0.036	J
75-35-4	1,1-Dichloroethene	0.16	0.16	0.087	0.039	0.039	0.022	U
75-09-2	**Methylene Chloride**	**0.36**	0.78	0.086	**0.10**	0.22	0.025	J
75-15-0	**Carbon Disulfide**	**1.8**	0.78	0.078	**0.57**	0.25	0.025	
156-60-5	trans-1,2-Dichloroethene	0.16	0.16	0.078	0.039	0.039	0.020	U
75-34-3	1,1-Dichloroethane	0.16	0.16	0.078	0.039	0.039	0.019	U
78-93-3	**2-Butanone (MEK)**	**1.1**	0.78	0.15	**0.37**	0.26	0.051	
156-59-2	cis-1,2-Dichloroethene	0.16	0.16	0.078	0.039	0.039	0.020	U
67-66-3	**Chloroform**	**0.16**	0.16	0.078	**0.033**	0.032	0.016	
107-06-2	1,2-Dichloroethane	0.16	0.16	0.078	0.039	0.039	0.019	U
71-55-6	1,1,1-Trichloroethane	0.16	0.16	0.078	0.029	0.029	0.014	U
71-43-2	**Benzene**	**0.48**	0.16	0.078	**0.15**	0.049	0.024	
56-23-5	**Carbon Tetrachloride**	**0.49**	0.16	0.078	**0.078**	0.025	0.012	

U = Compound was analyzed for, but not detected above the laboratory detection limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.
J = The analyte was positively identified below the method reporting limit; the associated numerical value is considered estimated.

Verified By: Rc Date: 11/21/08

Client: **CH2M Hill**
Client Sample ID: **WAT-IA-4-110508**
Client Project ID: **DOW - Waterloo, NY / 369548.02.B3.FI**

CAS Project ID: P0803732
CAS Sample ID: P0803732-010

Test Code: EPA TO-15
Instrument ID: Tekmar AUTOCAN/Agilent 5975Cinert/6890N/MS16
Analyst: Wida Ang
Sampling Media: 6.0 L Summa Canister
Test Notes:
Container ID: AC00122

Date Collected: 11/5/08
Date Received: 11/7/08
Date Analyzed: 11/13/08
Volume(s) Analyzed: 1.00 Liter(s)

Initial Pressure (psig): -3.0 Final Pressure (psig): 3.5

Canister Dilution Factor: 1.56

CAS #	Compound	Result µg/m³	MRL µg/m³	MDL µg/m³	Result ppbV	MRL ppbV	MDL ppbV	Data Qualifier
78-87-5	1,2-Dichloropropane	0.16	0.16	0.078	0.034	0.034	0.017	U
75-27-4	Bromodichloromethane	0.16	0.16	0.078	0.023	0.023	0.012	U
79-01-6	Trichloroethene	0.16	0.16	0.078	0.029	0.029	0.015	U
10061-01-5	cis-1,3-Dichloropropene	0.78	0.78	0.078	0.17	0.17	0.017	U
108-10-1	**4-Methyl-2-pentanone**	**10**	0.78	0.078	**2.5**	0.19	0.019	
10061-02-6	trans-1,3-Dichloropropene	0.78	0.78	0.078	0.17	0.17	0.017	U
79-00-5	1,1,2-Trichloroethane	0.16	0.16	0.078	0.029	0.029	0.014	U
108-88-3	**Toluene**	**1.5**	0.78	0.078	**0.41**	0.21	0.021	
124-48-1	Dibromochloromethane	0.16	0.16	0.078	0.018	0.018	0.0092	U
127-18-4	**Tetrachloroethene**	**0.18**	0.16	0.078	**0.026**	0.023	0.012	
108-90-7	Chlorobenzene	0.16	0.16	0.078	0.034	0.034	0.017	U
100-41-4	**Ethylbenzene**	**0.16**	0.78	0.078	**0.037**	0.18	0.018	J
179601-23-1	**m,p-Xylenes**	**0.53**	0.78	0.083	**0.12**	0.18	0.019	J
75-25-2	Bromoform	0.78	0.78	0.083	0.075	0.075	0.0080	U
100-42-5	Styrene	0.78	0.78	0.078	0.18	0.18	0.018	U
95-47-6	**o-Xylene**	**0.16**	0.78	0.078	**0.037**	0.18	0.018	J
79-34-5	1,1,2,2-Tetrachloroethane	0.16	0.16	0.078	0.023	0.023	0.011	U

U = Compound was analyzed for, but not detected above the laboratory detection limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.
J = The analyte was positively identified below the method reporting limit; the associated numerical value is considered estimated.

Verified By: RG Date: 11/21/08

Client: **CH2M Hill**
Client Sample ID: **WAT-IA-4-110508** CAS Project ID: P0803732
Client Project ID: **DOW - Waterloo, NY / 369548.02.B3.FI** CAS Sample ID: P0803732-010

Tentatively Identified Compounds

Test Code: EPA TO-15 Date Collected: 11/5/08
Instrument ID: Tekmar AUTOCAN/Agilent 5975Cinert/6890N/MS16 Date Received: 11/7/08
Analyst: Wida Ang Date Analyzed: 11/13/08
Sampling Media: 6.0 L Summa Canister Volume(s) Analyzed: 1.00 Liter(s)
Test Notes: **T**
Container ID: AC00122

Initial Pressure (psig): -3.0 Final Pressure (psig): 3.5

Canister Dilution Factor: 1.56

GC/MS Retention Time	**Compound Identification**	**Concentration µg/m³**	**Data Qualifier**
4.58	Propene	**10**	
6.89	Ethanol	**5**	
8.06	Isopropyl Alcohol	**70**	
23.67	Benzaldehyde	**10**	
	Epichlorohydrin	NF	

T = Analyte is a tentatively identified compound, result is estimated.
NF = Compound was searched for, but not found.

Verified By: _____ Date: 11/21/08

COLUMBIA ANALYTICAL SERVICES, INC.

RESULTS OF ANALYSIS

Client: **CH2M Hill**
Client Sample ID: **WAT-SG-B2-110408**
Client Project ID: **DOW - Waterloo, NY / 369548.02.B3.FI**

CAS Project ID: P0803732
CAS Sample ID: P0803732-011

Test Code: EPA TO-15
Instrument ID: Tekmar AUTOCAN/Agilent 5975Cinert/6890N/MS16
Analyst: Wida Ang
Sampling Media: 6.0 L Summa Canister
Test Notes:
Container ID: AC01140

Date Collected: 11/4/08
Date Received: 11/7/08
Date Analyzed: 11/13 - 11/14/08
Volume(s) Analyzed: 1.00 Liter(s)
0.10 Liter(s)

Initial Pressure (psig): -2.3 Final Pressure (psig): 3.5

Canister Dilution Factor: 1.47

CAS #	Compound	Result µg/m³	MRL µg/m³	MDL µg/m³	Result ppbV	MRL ppbV	MDL ppbV	Data Qualifier
74-87-3	**Chloromethane**	**0.42**	0.15	0.074	**0.20**	0.071	0.036	
75-01-4	Vinyl Chloride	0.15	0.15	0.074	0.058	0.058	0.029	U
74-83-9	Bromomethane	0.15	0.15	0.074	0.038	0.038	0.019	U
75-00-3	Chloroethane	0.15	0.15	0.11	0.056	0.056	0.040	U
67-64-1	**Acetone**	**12**	7.4	0.21	**5.0**	3.1	0.087	
107-13-1	**Acrylonitrile**	**0.71**	0.74	0.074	**0.33**	0.34	0.034	J
75-35-4	1,1-Dichloroethene	0.15	0.15	0.082	0.037	0.037	0.021	U
75-09-2	**Methylene Chloride**	**0.54**	0.74	0.081	**0.15**	0.21	0.023	J
75-15-0	Carbon Disulfide	0.74	0.74	0.074	0.24	0.24	0.024	U
156-60-5	trans-1,2-Dichloroethene	0.15	0.15	0.074	0.037	0.037	0.019	U
75-34-3	1,1-Dichloroethane	0.15	0.15	0.074	0.036	0.036	0.018	U
78-93-3	**2-Butanone (MEK)**	**2.0**	0.74	0.14	**0.69**	0.25	0.048	
156-59-2	cis-1,2-Dichloroethene	0.15	0.15	0.074	0.037	0.037	0.019	U
67-66-3	**Chloroform**	**0.12**	0.15	0.074	**0.025**	0.030	0.015	J
107-06-2	1,2-Dichloroethane	0.15	0.15	0.074	0.036	0.036	0.018	U
71-55-6	1,1,1-Trichloroethane	0.15	0.15	0.074	0.027	0.027	0.013	U
71-43-2	**Benzene**	**0.62**	0.15	0.074	**0.19**	0.046	0.023	
56-23-5	**Carbon Tetrachloride**	**0.67**	0.15	0.074	**0.11**	0.023	0.012	

U = Compound was analyzed for, but not detected above the laboratory detection limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.
J = The analyte was positively identified below the method reporting limit; the associated numerical value is considered estimated.

Verified By: Rec Date: 11/24/08

COLUMBIA ANALYTICAL SERVICES, INC.

RESULTS OF ANALYSIS

Client: **CH2M Hill**
Client Sample ID: **WAT-SG-B2-110408**
Client Project ID: **DOW - Waterloo, NY / 369548.02.B3.FI**

CAS Project ID: P0803732
CAS Sample ID: P0803732-011

Test Code: EPA TO-15
Instrument ID: Tekmar AUTOCAN/Agilent 5975Cinert/6890N/MS16
Analyst: Wida Ang
Sampling Media: 6.0 L Summa Canister
Test Notes:
Container ID: AC01140

Date Collected: 11/4/08
Date Received: 11/7/08
Date Analyzed: 11/13 - 11/14/08
Volume(s) Analyzed: 1.00 Liter(s)
0.10 Liter(s)

Initial Pressure (psig): -2.3 Final Pressure (psig): 3.5

Canister Dilution Factor: 1.47

CAS #	Compound	Result µg/m³	MRL µg/m³	MDL µg/m³	Result ppbV	MRL ppbV	MDL ppbV	Data Qualifier
78-87-5	1,2-Dichloropropane	0.15	0.15	0.074	0.032	0.032	0.016	U
75-27-4	Bromodichloromethane	0.15	0.15	0.074	0.022	0.022	0.011	U
79-01-6	Trichloroethene	0.15	0.15	0.074	0.027	0.027	0.014	U
10061-01-5	cis-1,3-Dichloropropene	0.74	0.74	0.074	0.16	0.16	0.016	U
108-10-1	**4-Methyl-2-pentanone**	**300**	0.74	0.074	**73**	0.18	0.018	
10061-02-6	trans-1,3-Dichloropropene	0.74	0.74	0.074	0.16	0.16	0.016	U
79-00-5	1,1,2-Trichloroethane	0.15	0.15	0.074	0.027	0.027	0.013	U
108-88-3	**Toluene**	**17**	0.74	0.074	**4.6**	0.20	0.020	
124-48-1	Dibromochloromethane	0.15	0.15	0.074	0.017	0.017	0.0086	U
127-18-4	**Tetrachloroethene**	**0.14**	0.15	0.074	**0.021**	0.022	0.011	J
108-90-7	Chlorobenzene	0.15	0.15	0.074	0.032	0.032	0.016	U
100-41-4	**Ethylbenzene**	**0.38**	0.74	0.074	**0.087**	0.17	0.017	J
179601-23-1	**m,p-Xylenes**	**0.81**	0.74	0.078	**0.19**	0.17	0.018	
75-25-2	Bromoform	0.74	0.74	0.078	0.071	0.071	0.0075	U
100-42-5	**Styrene**	**0.46**	0.74	0.074	**0.11**	0.17	0.017	J
95-47-6	**o-Xylene**	**0.28**	0.74	0.074	**0.064**	0.17	0.017	J
79-34-5	1,1,2,2-Tetrachloroethane	0.15	0.15	0.074	0.021	0.021	0.011	U

U = Compound was analyzed for, but not detected above the laboratory detection limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.
J = The analyte was positively identified below the method reporting limit; the associated numerical value is considered estimated.

Verified By: _____ Date: 11/24/08

COLUMBIA ANALYTICAL SERVICES, INC.

RESULTS OF ANALYSIS

Client: **CH2M Hill**
Client Sample ID: **WAT-SG-B2-110408**
Client Project ID: **DOW - Waterloo, NY / 369548.02.B3.FI**

CAS Project ID: P0803732
CAS Sample ID: P0803732-011

Tentatively Identified Compounds

Test Code:	EPA TO-15	Date Collected:	11/4/08
Instrument ID:	Tekmar AUTOCAN/Agilent 5975Cinert/6890N/MS16	Date Received:	11/7/08
Analyst:	Wida Ang	Date Analyzed:	11/13 - 11/14/08
Sampling Media:	6.0 L Summa Canister	Volume(s) Analyzed:	1.00 Liter(s)
Test Notes:	**T**		0.10 Liter(s)
Container ID:	AC01140		

Initial Pressure (psig): -2.3 Final Pressure (psig): 3.5

Canister Dilution Factor: 1.47

GC/MS Retention Time	**Compound Identification**	**Concentration µg/m³**	**Data Qualifier**
24.59	Unidentified Compound	**10**	
	Epichlorohydrin	NF	

T = Analyte is a tentatively identified compound, result is estimated.
NF = Compound was searched for, but not found.

Verified By: _____ Date: 11/21/08

COLUMBIA ANALYTICAL SERVICES, INC.

RESULTS OF ANALYSIS

Client: **CH2M Hill**
Client Sample ID: **WAT-SG-FB-110408**
Client Project ID: **DOW - Waterloo, NY / 369548.02.B3.FI**

CAS Project ID: P0803732
CAS Sample ID: P0803732-012

Test Code: EPA TO-15
Instrument ID: Tekmar AUTOCAN/Agilent 5975Cinert/6890N/MS16
Analyst: Wida Ang
Sampling Media: 6.0 L Summa Canister
Test Notes:
Container ID: AC00781

Date Collected: 11/4/08
Date Received: 11/7/08
Date Analyzed: 11/14/08
Volume(s) Analyzed: 1.00 Liter(s)

Canister Dilution Factor: 1.00

CAS #	Compound	Result µg/m³	MRL µg/m³	MDL µg/m³	Result ppbV	MRL ppbV	MDL ppbV	Data Qualifier
74-87-3	Chloromethane	0.10	0.10	0.050	0.048	0.048	0.024	U
75-01-4	Vinyl Chloride	0.10	0.10	0.050	0.039	0.039	0.020	U
74-83-9	Bromomethane	0.10	0.10	0.050	0.026	0.026	0.013	U
75-00-3	Chloroethane	0.10	0.10	0.072	0.038	0.038	0.027	U
67-64-1	**Acetone**	**1.6**	5.0	0.14	**0.66**	2.1	0.059	J
107-13-1	Acrylonitrile	0.50	0.50	0.050	0.23	0.23	0.023	U
75-35-4	1,1-Dichloroethene	0.10	0.10	0.056	0.025	0.025	0.014	U
75-09-2	Methylene Chloride	0.50	0.50	0.055	0.14	0.14	0.016	U
75-15-0	Carbon Disulfide	0.50	0.50	0.050	0.16	0.16	0.016	U
156-60-5	trans-1,2-Dichloroethene	0.10	0.10	0.050	0.025	0.025	0.013	U
75-34-3	1,1-Dichloroethane	0.10	0.10	0.050	0.025	0.025	0.012	U
78-93-3	**2-Butanone (MEK)**	**0.25**	0.50	0.096	**0.086**	0.17	0.033	J
156-59-2	cis-1,2-Dichloroethene	0.10	0.10	0.050	0.025	0.025	0.013	U
67-66-3	Chloroform	0.10	0.10	0.050	0.020	0.020	0.010	U
107-06-2	1,2-Dichloroethane	0.10	0.10	0.050	0.025	0.025	0.012	U
71-55-6	1,1,1-Trichloroethane	0.10	0.10	0.050	0.018	0.018	0.0092	U
71-43-2	Benzene	0.10	0.10	0.050	0.031	0.031	0.016	U
56-23-5	Carbon Tetrachloride	0.10	0.10	0.050	0.016	0.016	0.0080	U

U = Compound was analyzed for, but not detected above the laboratory detection limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.
J = The analyte was positively identified below the method reporting limit; the associated numerical value is considered estimated.

Verified By: Re Date: 11/24/08

Client: **CH2M Hill**
Client Sample ID: **WAT-SG-FB-110408**
Client Project ID: **DOW - Waterloo, NY / 369548.02.B3.FI**

CAS Project ID: P0803732
CAS Sample ID: P0803732-012

Test Code: EPA TO-15
Instrument ID: Tekmar AUTOCAN/Agilent 5975Cinert/6890N/MS16
Analyst: Wida Ang
Sampling Media: 6.0 L Summa Canister
Test Notes:
Container ID: AC00781

Date Collected: 11/4/08
Date Received: 11/7/08
Date Analyzed: 11/14/08
Volume(s) Analyzed: 1.00 Liter(s)

Canister Dilution Factor: 1.00

CAS #	Compound	Result µg/m³	MRL µg/m³	MDL µg/m³	Result ppbV	MRL ppbV	MDL ppbV	Data Qualifier
78-87-5	1,2-Dichloropropane	0.10	0.10	0.050	0.022	0.022	0.011	U
75-27-4	Bromodichloromethane	0.10	0.10	0.050	0.015	0.015	0.0075	U
79-01-6	Trichloroethene	0.10	0.10	0.050	0.019	0.019	0.0093	U
10061-01-5	cis-1,3-Dichloropropene	0.50	0.50	0.050	0.11	0.11	0.011	U
108-10-1	4-Methyl-2-pentanone	0.50	0.50	0.050	0.12	0.12	0.012	U
10061-02-6	trans-1,3-Dichloropropene	0.50	0.50	0.050	0.11	0.11	0.011	U
79-00-5	1,1,2-Trichloroethane	0.10	0.10	0.050	0.018	0.018	0.0092	U
108-88-3	**Toluene**	**2.7**	0.50	0.050	**0.71**	0.13	0.013	
124-48-1	Dibromochloromethane	0.10	0.10	0.050	0.012	0.012	0.0059	U
127-18-4	Tetrachloroethene	0.10	0.10	0.050	0.015	0.015	0.0074	U
108-90-7	Chlorobenzene	0.10	0.10	0.050	0.022	0.022	0.011	U
100-41-4	Ethylbenzene	0.50	0.50	0.050	0.12	0.12	0.012	U
179601-23-1	**m,p-Xylenes**	**0.091**	0.50	0.053	**0.021**	0.12	0.012	J
75-25-2	Bromoform	0.50	0.50	0.053	0.048	0.048	0.0051	U
100-42-5	Styrene	0.50	0.50	0.050	0.12	0.12	0.012	U
95-47-6	o-Xylene	0.50	0.50	0.050	0.12	0.12	0.012	U
79-34-5	1,1,2,2-Tetrachloroethane	0.10	0.10	0.050	0.015	0.015	0.0073	U

U = Compound was analyzed for, but not detected above the laboratory detection limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.
J = The analyte was positively identified below the method reporting limit; the associated numerical value is considered estimated.

Client: **CH2M Hill**
Client Sample ID: **WAT-SG-FB-110408** CAS Project ID: P0803732
Client Project ID: **DOW - Waterloo, NY / 369548.02.B3.FI** CAS Sample ID: P0803732-012

Tentatively Identified Compounds

Test Code:	EPA TO-15	Date Collected:	11/4/08
Instrument ID:	Tekmar AUTOCAN/Agilent 5975Cinert/6890N/MS16	Date Received:	11/7/08
Analyst:	Wida Ang	Date Analyzed:	11/14/08
Sampling Media:	6.0 L Summa Canister	Volume(s) Analyzed:	1.00 Liter(s)
Test Notes:	**T**		
Container ID:	AC00781		

Canister Dilution Factor: 1.00

GC/MS Retention Time	**Compound Identification**	**Concentration µg/m³**	**Data Qualifier**
8.47	n-Pentane	3	
	Epichlorohydrin	NF	

T = Analyte is a tentatively identified compound, result is estimated.
NF = Compound was searched for, but not found.

COLUMBIA ANALYTICAL SERVICES, INC.

RESULTS OF ANALYSIS

Client: **CH2M Hill**
Client Sample ID: **WAT-IA-5-110508**
Client Project ID: **DOW - Waterloo, NY / 369548.02.B3.FI**

CAS Project ID: P0803732
CAS Sample ID: P0803732-013

Test Code: EPA TO-15
Instrument ID: Tekmar AUTOCAN/Agilent 5975Cinert/6890N/MS16
Analyst: Wida Ang
Sampling Media: 6.0 L Summa Canister
Test Notes:
Container ID: AC00521

Date Collected: 11/5/08
Date Received: 11/7/08
Date Analyzed: 11/13/08
Volume(s) Analyzed: 1.00 Liter(s)

Initial Pressure (psig): -2.5 Final Pressure (psig): 3.6

Canister Dilution Factor: 1.50

CAS #	Compound	Result µg/m³	MRL µg/m³	MDL µg/m³	Result ppbV	MRL ppbV	MDL ppbV	Data Qualifier
74-87-3	**Chloromethane**	**0.41**	0.15	0.075	**0.20**	0.073	0.036	
75-01-4	Vinyl Chloride	0.15	0.15	0.075	0.059	0.059	0.029	**U**
74-83-9	Bromomethane	0.15	0.15	0.075	0.039	0.039	0.019	**U**
75-00-3	Chloroethane	0.15	0.15	0.11	0.057	0.057	0.041	**U**
67-64-1	**Acetone**	**9.4**	7.5	0.21	**3.9**	3.2	0.088	
107-13-1	**Acrylonitrile**	**0.16**	0.75	0.075	**0.073**	0.35	0.035	**J**
75-35-4	1,1-Dichloroethene	0.15	0.15	0.084	0.038	0.038	0.021	**U**
75-09-2	**Methylene Chloride**	**0.31**	0.75	0.083	**0.088**	0.22	0.024	**J**
75-15-0	**Carbon Disulfide**	**2.2**	0.75	0.075	**0.72**	0.24	0.024	
156-60-5	trans-1,2-Dichloroethene	0.15	0.15	0.075	0.038	0.038	0.019	**U**
75-34-3	1,1-Dichloroethane	0.15	0.15	0.075	0.037	0.037	0.019	**U**
78-93-3	**2-Butanone (MEK)**	**1.9**	0.75	0.14	**0.66**	0.25	0.049	
156-59-2	cis-1,2-Dichloroethene	0.15	0.15	0.075	0.038	0.038	0.019	**U**
67-66-3	**Chloroform**	**0.15**	0.15	0.075	**0.031**	0.031	0.015	
107-06-2	1,2-Dichloroethane	0.15	0.15	0.075	0.037	0.037	0.019	**U**
71-55-6	1,1,1-Trichloroethane	0.15	0.15	0.075	0.028	0.028	0.014	**U**
71-43-2	**Benzene**	**0.50**	0.15	0.075	**0.16**	0.047	0.023	
56-23-5	**Carbon Tetrachloride**	**0.56**	0.15	0.075	**0.089**	0.024	0.012	

U = Compound was analyzed for, but not detected above the laboratory detection limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.
J = The analyte was positively identified below the method reporting limit; the associated numerical value is considered estimated.

Verified By: Re Date: 11/24/08

COLUMBIA ANALYTICAL SERVICES, INC.

RESULTS OF ANALYSIS

Client: **CH2M Hill**
Client Sample ID: **WAT-IA-5-110508**
Client Project ID: **DOW - Waterloo, NY / 369548.02.B3.FI**

CAS Project ID: P0803732
CAS Sample ID: P0803732-013

Test Code: EPA TO-15
Instrument ID: Tekmar AUTOCAN/Agilent 5975Cinert/6890N/MS16
Analyst: Wida Ang
Sampling Media: 6.0 L Summa Canister
Test Notes:
Container ID: AC00521

Date Collected: 11/5/08
Date Received: 11/7/08
Date Analyzed: 11/13/08
Volume(s) Analyzed: 1.00 Liter(s)

Initial Pressure (psig): -2.5 Final Pressure (psig): 3.6

Canister Dilution Factor: 1.50

CAS #	Compound	Result µg/m³	MRL µg/m³	MDL µg/m³	Result ppbV	MRL ppbV	MDL ppbV	Data Qualifier
78-87-5	1,2-Dichloropropane	0.15	0.15	0.075	0.032	0.032	0.016	U
75-27-4	Bromodichloromethane	0.15	0.15	0.075	0.022	0.022	0.011	U
79-01-6	Trichloroethene	0.15	0.15	0.075	0.028	0.028	0.014	U
10061-01-5	cis-1,3-Dichloropropene	0.75	0.75	0.075	0.17	0.17	0.017	U
108-10-1	**4-Methyl-2-pentanone**	**40**	0.75	0.075	**9.9**	0.18	0.018	
10061-02-6	trans-1,3-Dichloropropene	0.75	0.75	0.075	0.17	0.17	0.017	U
79-00-5	1,1,2-Trichloroethane	0.15	0.15	0.075	0.028	0.028	0.014	U
108-88-3	**Toluene**	**1.8**	0.75	0.075	**0.48**	0.20	0.020	
124-48-1	Dibromochloromethane	0.15	0.15	0.075	0.018	0.018	0.0088	U
127-18-4	Tetrachloroethene	0.15	0.15	0.075	0.022	0.022	0.011	U
108-90-7	Chlorobenzene	0.15	0.15	0.075	0.033	0.033	0.016	U
100-41-4	**Ethylbenzene**	**0.47**	0.75	0.075	**0.11**	0.17	0.017	J
179601-23-1	**m,p-Xylenes**	**1.5**	0.75	0.080	**0.35**	0.17	0.018	
75-25-2	Bromoform	0.75	0.75	0.080	0.073	0.073	0.0077	U
100-42-5	**Styrene**	**0.19**	0.75	0.075	**0.045**	0.18	0.018	J
95-47-6	**o-Xylene**	**0.39**	0.75	0.075	**0.089**	0.17	0.017	J
79-34-5	1,1,2,2-Tetrachloroethane	0.15	0.15	0.075	0.022	0.022	0.011	U

U = Compound was analyzed for, but not detected above the laboratory detection limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.
J = The analyte was positively identified below the method reporting limit; the associated numerical value is considered estimated.

Verified By: RG Date: 11/21/08

Client: **CH2M Hill**
Client Sample ID: **WAT-IA-5-110508** CAS Project ID: P0803732
Client Project ID: **DOW - Waterloo, NY / 369548.02.B3.FI** CAS Sample ID: P0803732-013

Tentatively Identified Compounds

Test Code:	EPA TO-15	Date Collected:	11/5/08
Instrument ID:	Tekmar AUTOCAN/Agilent 5975Cinert/6890N/MS16	Date Received:	11/7/08
Analyst:	Wida Ang	Date Analyzed:	11/13/08
Sampling Media:	6.0 L Summa Canister	Volume(s) Analyzed:	1.00 Liter(s)
Test Notes:	**T**		
Container ID:	AC00521		

Initial Pressure (psig): -2.5 Final Pressure (psig): 3.6

Canister Dilution Factor: 1.50

GC/MS Retention Time	**Compound Identification**	**Concentration µg/m³**	**Data Qualifier**
4.64	Propane	**80**	
5.32	Isobutane	**4**	
23.67	Benzaldehyde	**10**	
	Epichlorohydrin	NF	

T = Analyte is a tentatively identified compound, result is estimated.
NF = Compound was searched for, but not found.

Verified By: Re Date: 11/21/08

COLUMBIA ANALYTICAL SERVICES, INC.

RESULTS OF ANALYSIS

Client: **CH2M Hill**
Client Sample ID: **WAT-IA-6-110508**
Client Project ID: **DOW - Waterloo, NY / 369548.02.B3.FI**

CAS Project ID: P0803732
CAS Sample ID: P0803732-014

Test Code: EPA TO-15
Instrument ID: Tekmar AUTOCAN/Agilent 5975Cinert/6890N/MS16
Analyst: Wida Ang
Sampling Media: 6.0 L Summa Canister
Test Notes:
Container ID: AC01381

Date Collected: 11/5/08
Date Received: 11/7/08
Date Analyzed: 11/13/08
Volume(s) Analyzed: 1.00 Liter(s)

Initial Pressure (psig): -2.7 Final Pressure (psig): 3.5

Canister Dilution Factor: 1.52

CAS #	Compound	Result µg/m³	MRL µg/m³	MDL µg/m³	Result ppbV	MRL ppbV	MDL ppbV	Data Qualifier
74-87-3	**Chloromethane**	**0.33**	0.15	0.076	**0.16**	0.074	0.037	
75-01-4	Vinyl Chloride	0.15	0.15	0.076	0.059	0.059	0.030	**U**
74-83-9	Bromomethane	0.15	0.15	0.076	0.039	0.039	0.020	**U**
75-00-3	Chloroethane	0.15	0.15	0.11	0.058	0.058	0.041	**U**
67-64-1	**Acetone**	**13**	7.6	0.21	**5.3**	3.2	0.090	
107-13-1	**Acrylonitrile**	**0.55**	0.76	0.076	**0.26**	0.35	0.035	**J**
75-35-4	1,1-Dichloroethene	0.15	0.15	0.085	0.038	0.038	0.021	**U**
75-09-2	**Methylene Chloride**	**0.39**	0.76	0.084	**0.11**	0.22	0.024	**J**
75-15-0	**Carbon Disulfide**	**4.1**	0.76	0.076	**1.3**	0.24	0.024	
156-60-5	trans-1,2-Dichloroethene	0.15	0.15	0.076	0.038	0.038	0.019	**U**
75-34-3	1,1-Dichloroethane	0.15	0.15	0.076	0.038	0.038	0.019	**U**
78-93-3	**2-Butanone (MEK)**	**2.2**	0.76	0.15	**0.75**	0.26	0.049	
156-59-2	cis-1,2-Dichloroethene	0.15	0.15	0.076	0.038	0.038	0.019	**U**
67-66-3	**Chloroform**	**0.43**	0.15	0.076	**0.089**	0.031	0.016	
107-06-2	1,2-Dichloroethane	0.15	0.15	0.076	0.038	0.038	0.019	**U**
71-55-6	1,1,1-Trichloroethane	0.15	0.15	0.076	0.028	0.028	0.014	**U**
71-43-2	**Benzene**	**0.57**	0.15	0.076	**0.18**	0.048	0.024	
56-23-5	**Carbon Tetrachloride**	**0.61**	0.15	0.076	**0.096**	0.024	0.012	

U = Compound was analyzed for, but not detected above the laboratory detection limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.
J = The analyte was positively identified below the method reporting limit; the associated numerical value is considered estimated.

Verified By: Re Date: 11/21/08

Client: **CH2M Hill**
Client Sample ID: **WAT-IA-6-110508**
Client Project ID: **DOW - Waterloo, NY / 369548.02.B3.FI**

CAS Project ID: P0803732
CAS Sample ID: P0803732-014

Test Code: EPA TO-15
Instrument ID: Tekmar AUTOCAN/Agilent 5975Cinert/6890N/MS16
Analyst: Wida Ang
Sampling Media: 6.0 L Summa Canister
Test Notes:
Container ID: AC01381

Date Collected: 11/5/08
Date Received: 11/7/08
Date Analyzed: 11/13/08
Volume(s) Analyzed: 1.00 Liter(s)

Initial Pressure (psig): -2.7 Final Pressure (psig): 3.5

Canister Dilution Factor: 1.52

CAS #	Compound	Result µg/m³	MRL µg/m³	MDL µg/m³	Result ppbV	MRL ppbV	MDL ppbV	Data Qualifier
78-87-5	1,2-Dichloropropane	0.15	0.15	0.076	0.033	0.033	0.016	U
75-27-4	Bromodichloromethane	0.15	0.15	0.076	0.023	0.023	0.011	U
79-01-6	Trichloroethene	0.15	0.15	0.076	0.028	0.028	0.014	U
10061-01-5	cis-1,3-Dichloropropene	0.76	0.76	0.076	0.17	0.17	0.017	U
108-10-1	**4-Methyl-2-pentanone**	**54**	0.76	0.076	**13**	0.19	0.019	
10061-02-6	trans-1,3-Dichloropropene	0.76	0.76	0.076	0.17	0.17	0.017	U
79-00-5	1,1,2-Trichloroethane	0.15	0.15	0.076	0.028	0.028	0.014	U
108-88-3	**Toluene**	**4.5**	0.76	0.076	**1.2**	0.20	0.020	
124-48-1	Dibromochloromethane	0.15	0.15	0.076	0.018	0.018	0.0089	U
127-18-4	**Tetrachloroethene**	**0.076**	0.15	0.076	**0.011**	0.022	0.011	J
108-90-7	Chlorobenzene	0.15	0.15	0.076	0.033	0.033	0.017	U
100-41-4	**Ethylbenzene**	**0.97**	0.76	0.076	**0.22**	0.18	0.018	
179601-23-1	**m,p-Xylenes**	**3.2**	0.76	0.081	**0.75**	0.18	0.019	
75-25-2	Bromoform	0.76	0.76	0.081	0.074	0.074	0.0078	U
100-42-5	**Styrene**	**0.17**	0.76	0.076	**0.040**	0.18	0.018	J
95-47-6	**o-Xylene**	**0.83**	0.76	0.076	**0.19**	0.18	0.018	
79-34-5	1,1,2,2-Tetrachloroethane	0.15	0.15	0.076	0.022	0.022	0.011	U

U = Compound was analyzed for, but not detected above the laboratory detection limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.
J = The analyte was positively identified below the method reporting limit; the associated numerical value is considered estimated.

COLUMBIA ANALYTICAL SERVICES, INC.

RESULTS OF ANALYSIS

Client: **CH2M Hill**
Client Sample ID: **WAT-IA-6-110508** CAS Project ID: P0803732
Client Project ID: **DOW - Waterloo, NY / 369548.02.B3.FI** CAS Sample ID: P0803732-014

Tentatively Identified Compounds

Test Code: EPA TO-15 Date Collected: 11/5/08
Instrument ID: Tekmar AUTOCAN/Agilent 5975Cinert/6890N/MS16 Date Received: 11/7/08
Analyst: Wida Ang Date Analyzed: 11/13/08
Sampling Media: 6.0 L Summa Canister Volume(s) Analyzed: 1.00 Liter(s)
Test Notes: **T**
Container ID: AC01381

Initial Pressure (psig): -2.7 Final Pressure (psig): 3.5

Canister Dilution Factor: 1.52

GC/MS Retention Time	Compound Identification	Concentration µg/m³	Data Qualifier
4.63	Propane	**60**	
23.67	Benzaldehyde	**5**	
24.59	Unidentified Compound	**6**	
24.67	1,2,4-Trimethylbenzene	**5**	
25.02	2-Ethyl-1-hexanol	**7**	
	Epichlorohydrin	NF	

T = Analyte is a tentatively identified compound, result is estimated.
NF = Compound was searched for, but not found.

Verified By: Rc Date: 11/21/08

COLUMBIA ANALYTICAL SERVICES, INC.

RESULTS OF ANALYSIS

Client: **CH2M Hill**
Client Sample ID: **WAT-IA-7-110508**
Client Project ID: **DOW - Waterloo, NY / 369548.02.B3.FI**

CAS Project ID: P0803732
CAS Sample ID: P0803732-015

Test Code: EPA TO-15
Instrument ID: Tekmar AUTOCAN/Agilent 5975Cinert/6890N/MS16
Analyst: Wida Ang
Sampling Media: 6.0 L Summa Canister
Test Notes:
Container ID: AC01489

Date Collected: 11/5/08
Date Received: 11/7/08
Date Analyzed: 11/13/08
Volume(s) Analyzed: 1.00 Liter(s)

Initial Pressure (psig): -3.4 Final Pressure (psig): 3.5

Canister Dilution Factor: 1.61

CAS #	Compound	Result µg/m³	MRL µg/m³	MDL µg/m³	Result ppbV	MRL ppbV	MDL ppbV	Data Qualifier
74-87-3	**Chloromethane**	**0.40**	0.16	0.081	**0.19**	0.078	0.039	
75-01-4	Vinyl Chloride	0.16	0.16	0.081	0.063	0.063	0.032	U
74-83-9	Bromomethane	0.16	0.16	0.081	0.041	0.041	0.021	U
75-00-3	Chloroethane	0.16	0.16	0.12	0.061	0.061	0.044	U
67-64-1	**Acetone**	**18**	8.1	0.23	**7.5**	3.4	0.095	
107-13-1	**Acrylonitrile**	**0.19**	0.81	0.081	**0.087**	0.37	0.037	J
75-35-4	1,1-Dichloroethene	0.16	0.16	0.090	0.041	0.041	0.023	U
75-09-2	**Methylene Chloride**	**0.52**	0.81	0.089	**0.15**	0.23	0.025	J
75-15-0	**Carbon Disulfide**	**9.4**	0.81	0.081	**3.0**	0.26	0.026	
156-60-5	trans-1,2-Dichloroethene	0.16	0.16	0.081	0.041	0.041	0.020	U
75-34-3	1,1-Dichloroethane	0.16	0.16	0.081	0.040	0.040	0.020	U
78-93-3	**2-Butanone (MEK)**	**3.9**	0.81	0.15	**1.3**	0.27	0.052	
156-59-2	cis-1,2-Dichloroethene	0.16	0.16	0.081	0.041	0.041	0.020	U
67-66-3	**Chloroform**	**0.42**	0.16	0.081	**0.085**	0.033	0.016	
107-06-2	1,2-Dichloroethane	0.16	0.16	0.081	0.040	0.040	0.020	U
71-55-6	1,1,1-Trichloroethane	0.16	0.16	0.081	0.030	0.030	0.015	U
71-43-2	**Benzene**	**0.57**	0.16	0.081	**0.18**	0.050	0.025	
56-23-5	**Carbon Tetrachloride**	**0.57**	0.16	0.081	**0.090**	0.026	0.013	

U = Compound was analyzed for, but not detected above the laboratory detection limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.
J = The analyte was positively identified below the method reporting limit; the associated numerical value is considered estimated.

Verified By: RC Date: 11/21/08

COLUMBIA ANALYTICAL SERVICES, INC.

RESULTS OF ANALYSIS

Client: **CH2M Hill**
Client Sample ID: **WAT-IA-7-110508**
Client Project ID: **DOW - Waterloo, NY / 369548.02.B3.FI**

CAS Project ID: P0803732
CAS Sample ID: P0803732-015

Test Code: EPA TO-15
Instrument ID: Tekmar AUTOCAN/Agilent 5975Cinert/6890N/MS16
Analyst: Wida Ang
Sampling Media: 6.0 L Summa Canister
Test Notes:
Container ID: AC01489

Date Collected: 11/5/08
Date Received: 11/7/08
Date Analyzed: 11/13/08
Volume(s) Analyzed: 1.00 Liter(s)

Initial Pressure (psig): -3.4 Final Pressure (psig): 3.5

Canister Dilution Factor: 1.61

CAS #	Compound	Result µg/m³	MRL µg/m³	MDL µg/m³	Result ppbV	MRL ppbV	MDL ppbV	Data Qualifier
78-87-5	1,2-Dichloropropane	0.16	0.16	0.081	0.035	0.035	0.017	U
75-27-4	Bromodichloromethane	0.16	0.16	0.081	0.024	0.024	0.012	U
79-01-6	**Trichloroethene**	**0.095**	0.16	0.081	**0.018**	0.030	0.015	J
10061-01-5	cis-1,3-Dichloropropene	0.81	0.81	0.081	0.18	0.18	0.018	U
108-10-1	**4-Methyl-2-pentanone**	**47**	0.81	0.081	**12**	0.20	0.020	
10061-02-6	trans-1,3-Dichloropropene	0.81	0.81	0.081	0.18	0.18	0.018	U
79-00-5	1,1,2-Trichloroethane	0.16	0.16	0.081	0.030	0.030	0.015	U
108-88-3	**Toluene**	**5.6**	0.81	0.081	**1.5**	0.21	0.021	
124-48-1	Dibromochloromethane	0.16	0.16	0.081	0.019	0.019	0.0095	U
127-18-4	**Tetrachloroethene**	**0.10**	0.16	0.081	**0.015**	0.024	0.012	J
108-90-7	Chlorobenzene	0.16	0.16	0.081	0.035	0.035	0.017	U
100-41-4	**Ethylbenzene**	**0.88**	0.81	0.081	**0.20**	0.19	0.019	
179601-23-1	**m,p-Xylenes**	**2.7**	0.81	0.085	**0.63**	0.19	0.020	
75-25-2	Bromoform	0.81	0.81	0.085	0.078	0.078	0.0083	U
100-42-5	**Styrene**	**0.22**	0.81	0.081	**0.051**	0.19	0.019	J
95-47-6	**o-Xylene**	**0.71**	0.81	0.081	**0.16**	0.19	0.019	J
79-34-5	1,1,2,2-Tetrachloroethane	0.16	0.16	0.081	0.023	0.023	0.012	U

U = Compound was analyzed for, but not detected above the laboratory detection limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.
J = The analyte was positively identified below the method reporting limit; the associated numerical value is considered estimated.

Verified By: RC Date: 11/21/08

COLUMBIA ANALYTICAL SERVICES, INC.

RESULTS OF ANALYSIS

Client: **CH2M Hill**
Client Sample ID: **WAT-IA-7-110508** CAS Project ID: P0803732
Client Project ID: **DOW - Waterloo, NY / 369548.02.B3.FI** CAS Sample ID: P0803732-015

Tentatively Identified Compounds

Test Code: EPA TO-15 Date Collected: 11/5/08
Instrument ID: Tekmar AUTOCAN/Agilent 5975Cinert/6890N/MS16 Date Received: 11/7/08
Analyst: Wida Ang Date Analyzed: 11/13/08
Sampling Media: 6.0 L Summa Canister Volume(s) Analyzed: 1.00 Liter(s)
Test Notes: **T**
Container ID: AC01489

Initial Pressure (psig): -3.4 Final Pressure (psig): 3.5

Canister Dilution Factor: 1.61

GC/MS Retention Time	Compound Identification	Concentration µg/m³	Data Qualifier
4.64	Propane	**70**	
5.32	Isobutane	**6**	
23.67	Benzaldehyde	**20**	
24.67	1,2,4-Trimethylbenzene	**5**	
26.31	n-Undecane	**4**	
	Epichlorohydrin	NF	

T = Analyte is a tentatively identified compound, result is estimated.
NF = Compound was searched for, but not found.

Verified By: RC Date: 11/21/08

COLUMBIA ANALYTICAL SERVICES, INC.

RESULTS OF ANALYSIS

Client: **CH2M Hill**
Client Sample ID: **WAT-SG-B4-110508**
Client Project ID: **DOW - Waterloo, NY / 369548.02.B3.FI**

CAS Project ID: P0803732
CAS Sample ID: P0803732-016

Test Code: EPA TO-15
Instrument ID: Tekmar AUTOCAN/Agilent 5975Cinert/6890N/MS16
Analyst: Wida Ang
Sampling Media: 6.0 L Summa Canister
Test Notes:
Container ID: AC00865

Date Collected: 11/5/08
Date Received: 11/7/08
Date Analyzed: 11/14/08
Volume(s) Analyzed: 1.00 Liter(s)

Initial Pressure (psig): -0.9 Final Pressure (psig): 3.7

Canister Dilution Factor: 1.33

CAS #	Compound	Result µg/m³	MRL µg/m³	MDL µg/m³	Result ppbV	MRL ppbV	MDL ppbV	Data Qualifier
74-87-3	**Chloromethane**	**0.35**	0.13	0.067	**0.17**	0.064	0.032	
75-01-4	Vinyl Chloride	0.13	0.13	0.067	0.052	0.052	0.026	**U**
74-83-9	Bromomethane	0.13	0.13	0.067	0.034	0.034	0.017	**U**
75-00-3	Chloroethane	0.13	0.13	0.096	0.050	0.050	0.036	**U**
67-64-1	**Acetone**	**14**	6.7	0.19	**5.9**	2.8	0.078	
107-13-1	**Acrylonitrile**	**0.51**	0.67	0.067	**0.23**	0.31	0.031	**J**
75-35-4	1,1-Dichloroethene	0.13	0.13	0.074	0.034	0.034	0.019	**U**
75-09-2	**Methylene Chloride**	**0.38**	0.67	0.073	**0.11**	0.19	0.021	**J**
75-15-0	**Carbon Disulfide**	**0.30**	0.67	0.067	**0.095**	0.21	0.021	**J**
156-60-5	trans-1,2-Dichloroethene	0.13	0.13	0.067	0.034	0.034	0.017	**U**
75-34-3	1,1-Dichloroethane	0.13	0.13	0.067	0.033	0.033	0.016	**U**
78-93-3	**2-Butanone (MEK)**	**1.6**	0.67	0.13	**0.55**	0.23	0.043	
156-59-2	cis-1,2-Dichloroethene	0.13	0.13	0.067	0.034	0.034	0.017	**U**
67-66-3	**Chloroform**	**0.088**	0.13	0.067	**0.018**	0.027	0.014	**J**
107-06-2	1,2-Dichloroethane	0.13	0.13	0.067	0.033	0.033	0.016	**U**
71-55-6	1,1,1-Trichloroethane	0.13	0.13	0.067	0.024	0.024	0.012	**U**
71-43-2	**Benzene**	**0.57**	0.13	0.067	**0.18**	0.042	0.021	
56-23-5	**Carbon Tetrachloride**	**0.59**	0.13	0.067	**0.095**	0.021	0.011	

U = Compound was analyzed for, but not detected above the laboratory detection limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.
J = The analyte was positively identified below the method reporting limit; the associated numerical value is considered estimated.

Verified By: RC Date: 11/21/08

Client: **CH2M Hill**
Client Sample ID: **WAT-SG-B4-110508**
Client Project ID: **DOW - Waterloo, NY / 369548.02.B3.FI**

CAS Project ID: P0803732
CAS Sample ID: P0803732-016

Test Code: EPA TO-15
Instrument ID: Tekmar AUTOCAN/Agilent 5975Cinert/6890N/MS16
Analyst: Wida Ang
Sampling Media: 6.0 L Summa Canister
Test Notes:
Container ID: AC00865

Date Collected: 11/5/08
Date Received: 11/7/08
Date Analyzed: 11/14/08
Volume(s) Analyzed: 1.00 Liter(s)

Initial Pressure (psig): -0.9 Final Pressure (psig): 3.7

Canister Dilution Factor: 1.33

CAS #	Compound	Result µg/m³	MRL µg/m³	MDL µg/m³	Result ppbV	MRL ppbV	MDL ppbV	Data Qualifier
78-87-5	1,2-Dichloropropane	0.13	0.13	0.067	0.029	0.029	0.014	U
75-27-4	Bromodichloromethane	0.13	0.13	0.067	0.020	0.020	0.0099	U
79-01-6	Trichloroethene	0.13	0.13	0.067	0.025	0.025	0.012	U
10061-01-5	cis-1,3-Dichloropropene	0.67	0.67	0.067	0.15	0.15	0.015	U
108-10-1	**4-Methyl-2-pentanone**	**110**	0.67	0.067	**26**	0.16	0.016	
10061-02-6	trans-1,3-Dichloropropene	0.67	0.67	0.067	0.15	0.15	0.015	U
79-00-5	1,1,2-Trichloroethane	0.13	0.13	0.067	0.024	0.024	0.012	U
108-88-3	**Toluene**	**18**	0.67	0.067	**4.9**	0.18	0.018	
124-48-1	Dibromochloromethane	0.13	0.13	0.067	0.016	0.016	0.0078	U
127-18-4	Tetrachloroethene	0.13	0.13	0.067	0.020	0.020	0.0098	U
108-90-7	Chlorobenzene	0.13	0.13	0.067	0.029	0.029	0.014	U
100-41-4	**Ethylbenzene**	**4.9**	0.67	0.067	**1.1**	0.15	0.015	
179601-23-1	**m,p-Xylenes**	**16**	0.67	0.070	**3.6**	0.15	0.016	
75-25-2	Bromoform	0.67	0.67	0.070	0.064	0.064	0.0068	U
100-42-5	Styrene	0.67	0.67	0.067	0.16	0.16	0.016	U
95-47-6	**o-Xylene**	**3.9**	0.67	0.067	**0.89**	0.15	0.015	
79-34-5	1,1,2,2-Tetrachloroethane	0.13	0.13	0.067	0.019	0.019	0.0097	U

U = Compound was analyzed for, but not detected above the laboratory detection limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

Verified By: RC Date: 11/21/08

Client: **CH2M Hill**
Client Sample ID: **WAT-SG-B4-110508** CAS Project ID: P0803732
Client Project ID: **DOW - Waterloo, NY / 369548.02.B3.FI** CAS Sample ID: P0803732-016

Tentatively Identified Compounds

Test Code:	EPA TO-15	Date Collected:	11/5/08
Instrument ID:	Tekmar AUTOCAN/Agilent 5975Cinert/6890N/MS16	Date Received:	11/7/08
Analyst:	Wida Ang	Date Analyzed:	11/14/08
Sampling Media:	6.0 L Summa Canister	Volume(s) Analyzed:	1.00 Liter(s)
Test Notes:	**T**		
Container ID:	AC00865		

Initial Pressure (psig): -0.9 Final Pressure (psig): 3.7

Canister Dilution Factor: 1.33

GC/MS Retention Time	**Compound Identification**	**Concentration µg/m³**	**Data Qualifier**
4.63	Propane	**30**	
23.67	Benzaldehyde	**6**	
28.25	Cinnamaldehyde	**5**	
	Epichlorohydrin	NF	

T = Analyte is a tentatively identified compound, result is estimated.
NF = Compound was searched for, but not found.

COLUMBIA ANALYTICAL SERVICES, INC.

RESULTS OF ANALYSIS

Client: **CH2M Hill**
Client Sample ID: **WAT-SG-5a-110508**
Client Project ID: **DOW - Waterloo, NY / 369548.02.B3.FI**

CAS Project ID: P0803732
CAS Sample ID: P0803732-017

Test Code: EPA TO-15
Instrument ID: Tekmar AUTOCAN/Agilent 5975Cinert/6890N/MS16
Analyst: Wida Ang
Sampling Media: 6.0 L Summa Canister
Test Notes:
Container ID: AC00821

Date Collected: 11/5/08
Date Received: 11/7/08
Date Analyzed: 11/13 - 11/14/08
Volume(s) Analyzed: 1.00 Liter(s)
0.10 Liter(s)

Initial Pressure (psig): -2.2 Final Pressure (psig): 3.5

Canister Dilution Factor: 1.46

CAS #	Compound	Result µg/m³	MRL µg/m³	MDL µg/m³	Result ppbV	MRL ppbV	MDL ppbV	Data Qualifier
74-87-3	Chloromethane	0.15	0.15	0.073	0.071	0.071	0.035	U
75-01-4	Vinyl Chloride	0.15	0.15	0.073	0.057	0.057	0.029	U
74-83-9	Bromomethane	0.15	0.15	0.073	0.038	0.038	0.019	U
75-00-3	Chloroethane	0.15	0.15	0.11	0.055	0.055	0.040	U
67-64-1	**Acetone**	**7.7**	7.3	0.20	**3.2**	3.1	0.086	
107-13-1	Acrylonitrile	0.73	0.73	0.073	0.34	0.34	0.034	U
75-35-4	1,1-Dichloroethene	0.15	0.15	0.082	0.037	0.037	0.021	U
75-09-2	**Methylene Chloride**	**0.12**	0.73	0.080	**0.033**	0.21	0.023	J
75-15-0	**Carbon Disulfide**	**3.0**	0.73	0.073	**0.96**	0.23	0.023	
156-60-5	trans-1,2-Dichloroethene	0.15	0.15	0.073	0.037	0.037	0.018	U
75-34-3	**1,1-Dichloroethane**	**0.17**	0.15	0.073	**0.043**	0.036	0.018	
78-93-3	**2-Butanone (MEK)**	**1.5**	0.73	0.14	**0.50**	0.25	0.048	
156-59-2	cis-1,2-Dichloroethene	0.15	0.15	0.073	0.037	0.037	0.018	U
67-66-3	**Chloroform**	**270**	0.15	0.073	**55**	0.030	0.015	
107-06-2	1,2-Dichloroethane	0.15	0.15	0.073	0.036	0.036	0.018	U
71-55-6	1,1,1-Trichloroethane	0.15	0.15	0.073	0.027	0.027	0.013	U
71-43-2	Benzene	0.15	0.15	0.073	0.046	0.046	0.023	U
56-23-5	**Carbon Tetrachloride**	**0.71**	0.15	0.073	**0.11**	0.023	0.012	

U = Compound was analyzed for, but not detected above the laboratory detection limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.
J = The analyte was positively identified below the method reporting limit; the associated numerical value is considered estimated.

Verified By: Rec Date: 11/21/08

COLUMBIA ANALYTICAL SERVICES, INC.

RESULTS OF ANALYSIS

Client: **CH2M Hill**
Client Sample ID: **WAT-SG-5a-110508**
Client Project ID: **DOW - Waterloo, NY / 369548.02.B3.FI**

CAS Project ID: P0803732
CAS Sample ID: P0803732-017

Test Code: EPA TO-15
Instrument ID: Tekmar AUTOCAN/Agilent 5975Cinert/6890N/MS16
Analyst: Wida Ang
Sampling Media: 6.0 L Summa Canister
Test Notes:
Container ID: AC00821

Date Collected: 11/5/08
Date Received: 11/7/08
Date Analyzed: 11/13 - 11/14/08
Volume(s) Analyzed: 1.00 Liter(s)
0.10 Liter(s)

Initial Pressure (psig): -2.2 Final Pressure (psig): 3.5

Canister Dilution Factor: 1.46

CAS #	Compound	Result µg/m³	MRL µg/m³	MDL µg/m³	Result ppbV	MRL ppbV	MDL ppbV	Data Qualifier
78-87-5	1,2-Dichloropropane	0.15	0.15	0.073	0.032	0.032	0.016	U
75-27-4	**Bromodichloromethane**	**0.56**	0.15	0.073	**0.083**	0.022	0.011	
79-01-6	**Trichloroethene**	**1.7**	0.15	0.073	**0.31**	0.027	0.014	
10061-01-5	cis-1,3-Dichloropropene	0.73	0.73	0.073	0.16	0.16	0.016	U
108-10-1	**4-Methyl-2-pentanone**	**1.3**	0.73	0.073	**0.31**	0.18	0.018	
10061-02-6	trans-1,3-Dichloropropene	0.73	0.73	0.073	0.16	0.16	0.016	U
79-00-5	1,1,2-Trichloroethane	0.15	0.15	0.073	0.027	0.027	0.013	U
108-88-3	**Toluene**	**1.8**	0.73	0.073	**0.48**	0.19	0.019	
124-48-1	**Dibromochloromethane**	**0.080**	0.15	0.073	**0.0094**	0.017	0.0086	J
127-18-4	**Tetrachloroethene**	**1.4**	0.15	0.073	**0.21**	0.022	0.011	
108-90-7	Chlorobenzene	0.15	0.15	0.073	0.032	0.032	0.016	U
100-41-4	**Ethylbenzene**	**0.15**	0.73	0.073	**0.035**	0.17	0.017	J
179601-23-1	**m,p-Xylenes**	**0.39**	0.73	0.077	**0.091**	0.17	0.018	J
75-25-2	Bromoform	0.73	0.73	0.077	0.071	0.071	0.0075	U
100-42-5	Styrene	0.73	0.73	0.073	0.17	0.17	0.017	U
95-47-6	**o-Xylene**	**0.15**	0.73	0.073	**0.035**	0.17	0.017	J
79-34-5	1,1,2,2-Tetrachloroethane	0.15	0.15	0.073	0.021	0.021	0.011	U

U = Compound was analyzed for, but not detected above the laboratory detection limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.
J = The analyte was positively identified below the method reporting limit; the associated numerical value is considered estimated.

Verified By: Re Date: 11/24/08

COLUMBIA ANALYTICAL SERVICES, INC.

RESULTS OF ANALYSIS

Client: **CH2M Hill**
Client Sample ID: **WAT-SG-5a-110508** CAS Project ID: P0803732
Client Project ID: **DOW - Waterloo, NY / 369548.02.B3.FI** CAS Sample ID: P0803732-017

Tentatively Identified Compounds

Test Code:	EPA TO-15	Date Collected:	11/5/08
Instrument ID:	Tekmar AUTOCAN/Agilent 5975Cinert/6890N/MS16	Date Received:	11/7/08
Analyst:	Wida Ang	Date Analyzed:	11/13 - 11/14/08
Sampling Media:	6.0 L Summa Canister	Volume(s) Analyzed:	1.00 Liter(s)
Test Notes:	**T**		0.10 Liter(s)
Container ID:	AC00821		

Initial Pressure (psig): -2.2 Final Pressure (psig): 3.5

Canister Dilution Factor: 1.46

GC/MS Retention Time	**Compound Identification**	**Concentration µg/m³**	**Data Qualifier**
5.31	Isobutane	**8**	
12.40	Ethyl Acetate	**4**	
20.63	Hexamethylcyclotrisiloxane	**6**	
29.69	Tetradecene Isomers	**4**	
	Epichlorohydrin	NF	

T = Analyte is a tentatively identified compound, result is estimated.
NF = Compound was searched for, but not found.

COLUMBIA ANALYTICAL SERVICES, INC.

RESULTS OF ANALYSIS

Client: **CH2M Hill**
Client Sample ID: **WAT-SG-5-110508**
Client Project ID: **DOW - Waterloo, NY / 369548.02.B3.FI**

CAS Project ID: P0803732
CAS Sample ID: P0803732-018

Test Code: EPA TO-15
Instrument ID: Tekmar AUTOCAN/Agilent 5975Cinert/6890N/MS16
Analyst: Wida Ang
Sampling Media: 6.0 L Summa Canister
Test Notes:
Container ID: AC01336

Date Collected: 11/5/08
Date Received: 11/7/08
Date Analyzed: 11/14/08
Volume(s) Analyzed: 0.30 Liter(s)
0.10 Liter(s)

Initial Pressure (psig): -1.8 Final Pressure (psig): 3.5

Canister Dilution Factor: 1.41

CAS #	Compound	Result µg/m³	MRL µg/m³	MDL µg/m³	Result ppbV	MRL ppbV	MDL ppbV	Data Qualifier
74-87-3	**Chloromethane**	**0.44**	0.47	0.24	**0.21**	0.23	0.11	**J**
75-01-4	Vinyl Chloride	0.47	0.47	0.24	0.18	0.18	0.092	**U**
74-83-9	Bromomethane	0.47	0.47	0.24	0.12	0.12	0.061	**U**
75-00-3	Chloroethane	0.47	0.47	0.34	0.18	0.18	0.13	**U**
67-64-1	**Acetone**	**7.3**	24	0.66	**3.1**	9.9	0.28	**J**
107-13-1	Acrylonitrile	2.4	2.4	0.24	1.1	1.1	0.11	**U**
75-35-4	1,1-Dichloroethene	0.47	0.47	0.26	0.12	0.12	0.066	**U**
75-09-2	**Methylene Chloride**	**0.81**	2.4	0.26	**0.23**	0.68	0.074	**J**
75-15-0	**Carbon Disulfide**	**3.3**	2.4	0.24	**1.0**	0.75	0.075	
156-60-5	trans-1,2-Dichloroethene	0.47	0.47	0.24	0.12	0.12	0.059	**U**
75-34-3	**1,1-Dichloroethane**	**0.83**	0.47	0.24	**0.21**	0.12	0.058	
78-93-3	**2-Butanone (MEK)**	**1.2**	2.4	0.45	**0.41**	0.80	0.15	**J**
156-59-2	cis-1,2-Dichloroethene	0.47	0.47	0.24	0.12	0.12	0.059	**U**
67-66-3	**Chloroform**	**690**	0.47	0.24	**140**	0.096	0.048	
107-06-2	1,2-Dichloroethane	0.47	0.47	0.24	0.12	0.12	0.058	**U**
71-55-6	1,1,1-Trichloroethane	0.47	0.47	0.24	0.086	0.086	0.043	**U**
71-43-2	Benzene	0.47	0.47	0.24	0.15	0.15	0.074	**U**
56-23-5	**Carbon Tetrachloride**	**0.58**	0.47	0.24	**0.093**	0.075	0.037	

U = Compound was analyzed for, but not detected above the laboratory detection limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.
J = The analyte was positively identified below the method reporting limit; the associated numerical value is considered estimated.

Verified By: Rc Date: 11/21/08

COLUMBIA ANALYTICAL SERVICES, INC.

RESULTS OF ANALYSIS

Client: **CH2M Hill**
Client Sample ID: **WAT-SG-5-110508**
Client Project ID: **DOW - Waterloo, NY / 369548.02.B3.FI**

CAS Project ID: P0803732
CAS Sample ID: P0803732-018

Test Code: EPA TO-15
Instrument ID: Tekmar AUTOCAN/Agilent 5975Cinert/6890N/MS16
Analyst: Wida Ang
Sampling Media: 6.0 L Summa Canister
Test Notes:
Container ID: AC01336

Date Collected: 11/5/08
Date Received: 11/7/08
Date Analyzed: 11/14/08
Volume(s) Analyzed: 0.30 Liter(s)
0.10 Liter(s)

Initial Pressure (psig): -1.8 Final Pressure (psig): 3.5

Canister Dilution Factor: 1.41

CAS #	Compound	Result µg/m³	MRL µg/m³	MDL µg/m³	Result ppbV	MRL ppbV	MDL ppbV	Data Qualifier
78-87-5	1,2-Dichloropropane	0.47	0.47	0.24	0.10	0.10	0.051	U
75-27-4	Bromodichloromethane	0.47	0.47	0.24	0.070	0.070	0.035	U
79-01-6	**Trichloroethene**	**1.6**	0.47	0.24	**0.30**	0.087	0.044	
10061-01-5	cis-1,3-Dichloropropene	2.4	2.4	0.24	0.52	0.52	0.052	U
108-10-1	**4-Methyl-2-pentanone**	**0.64**	2.4	0.24	**0.16**	0.57	0.057	J
10061-02-6	trans-1,3-Dichloropropene	2.4	2.4	0.24	0.52	0.52	0.052	U
79-00-5	1,1,2-Trichloroethane	0.47	0.47	0.24	0.086	0.086	0.043	U
108-88-3	**Toluene**	**2.2**	2.4	0.24	**0.57**	0.62	0.062	J
124-48-1	Dibromochloromethane	0.47	0.47	0.24	0.055	0.055	0.028	U
127-18-4	**Tetrachloroethene**	**1.3**	0.47	0.24	**0.18**	0.069	0.035	
108-90-7	Chlorobenzene	0.47	0.47	0.24	0.10	0.10	0.051	U
100-41-4	Ethylbenzene	2.4	2.4	0.24	0.54	0.54	0.054	U
179601-23-1	**m,p-Xylenes**	**0.52**	2.4	0.25	**0.12**	0.54	0.057	J
75-25-2	Bromoform	2.4	2.4	0.25	0.23	0.23	0.024	U
100-42-5	Styrene	2.4	2.4	0.24	0.55	0.55	0.055	U
95-47-6	o-Xylene	2.4	2.4	0.24	0.54	0.54	0.054	U
79-34-5	1,1,2,2-Tetrachloroethane	0.47	0.47	0.24	0.068	0.068	0.034	U

U = Compound was analyzed for, but not detected above the laboratory detection limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.
J = The analyte was positively identified below the method reporting limit; the associated numerical value is considered estimated.

Verified By: RG Date: 11/21/08

Client: **CH2M Hill**
Client Sample ID: **WAT-SG-5-110508**
Client Project ID: **DOW - Waterloo, NY / 369548.02.B3.FI**

CAS Project ID: P0803732
CAS Sample ID: P0803732-018

Tentatively Identified Compounds

Test Code:	EPA TO-15	Date Collected:	11/5/08
Instrument ID:	Tekmar AUTOCAN/Agilent 5975Cinert/6890N/MS16	Date Received:	11/7/08
Analyst:	Wida Ang	Date Analyzed:	11/14/08
Sampling Media:	6.0 L Summa Canister	Volume(s) Analyzed:	0.30 Liter(s)
Test Notes:			0.10 Liter(s)
Container ID:	AC01336		

Initial Pressure (psig): -1.8 Final Pressure (psig): 3.5

Canister Dilution Factor: 1.41

GC/MS Retention Time	**Compound Identification**	**Concentration µg/m³**	**Data Qualifier**
	Epichlorohydrin	NF	

NF = Compound was searched for, but not found.

Verified By: RC Date: 11/21/08

COLUMBIA ANALYTICAL SERVICES, INC.

RESULTS OF ANALYSIS

Client: **CH2M Hill**
Client Sample ID: **WAT-SG-6-110508**
Client Project ID: **DOW - Waterloo, NY / 369548.02.B3.FI**

CAS Project ID: P0803732
CAS Sample ID: P0803732-019

Test Code: EPA TO-15
Instrument ID: Tekmar AUTOCAN/Agilent 5975Cinert/6890N/MS16
Analyst: Wida Ang
Sampling Media: 6.0 L Summa Canister
Test Notes:
Container ID: AC00939

Date Collected: 11/5/08
Date Received: 11/7/08
Date Analyzed: 11/14/08
Volume(s) Analyzed: 1.00 Liter(s)
0.050 Liter(s)

Initial Pressure (psig): -1.3 Final Pressure (psig): 3.6

Canister Dilution Factor: 1.37

CAS #	Compound	Result µg/m³	MRL µg/m³	MDL µg/m³	Result ppbV	MRL ppbV	MDL ppbV	Data Qualifier
74-87-3	**Chloromethane**	**0.17**	0.14	0.069	**0.081**	0.066	0.033	
75-01-4	Vinyl Chloride	0.14	0.14	0.069	0.054	0.054	0.027	**U**
74-83-9	Bromomethane	0.14	0.14	0.069	0.035	0.035	0.018	**U**
75-00-3	**Chloroethane**	**0.34**	0.14	0.099	**0.13**	0.052	0.037	
67-64-1	**Acetone**	**8.0**	6.9	0.19	**3.4**	2.9	0.081	
107-13-1	Acrylonitrile	0.69	0.69	0.069	0.32	0.32	0.032	**U**
75-35-4	1,1-Dichloroethene	0.14	0.14	0.077	0.035	0.035	0.019	**U**
75-09-2	**Methylene Chloride**	**6.6**	0.69	0.075	**1.9**	0.20	0.022	
75-15-0	**Carbon Disulfide**	**1,200**	0.69	0.069	**370**	0.22	0.022	
156-60-5	trans-1,2-Dichloroethene	0.14	0.14	0.069	0.035	0.035	0.017	**U**
75-34-3	**1,1-Dichloroethane**	**0.085**	0.14	0.069	**0.021**	0.034	0.017	**J**
78-93-3	**2-Butanone (MEK)**	**1.8**	0.69	0.13	**0.61**	0.23	0.045	
156-59-2	cis-1,2-Dichloroethene	0.14	0.14	0.069	0.035	0.035	0.017	**U**
67-66-3	**Chloroform**	**53**	0.14	0.069	**11**	0.028	0.014	
107-06-2	1,2-Dichloroethane	0.14	0.14	0.069	0.034	0.034	0.017	**U**
71-55-6	1,1,1-Trichloroethane	0.14	0.14	0.069	0.025	0.025	0.013	**U**
71-43-2	**Benzene**	**0.40**	0.14	0.069	**0.13**	0.043	0.021	
56-23-5	**Carbon Tetrachloride**	**0.48**	0.14	0.069	**0.076**	0.022	0.011	

U = Compound was analyzed for, but not detected above the laboratory detection limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.
J = The analyte was positively identified below the method reporting limit; the associated numerical value is considered estimated.

Verified By: RC Date: 11/21/08

Client: **CH2M Hill**
Client Sample ID: **WAT-SG-6-110508**
Client Project ID: **DOW - Waterloo, NY / 369548.02.B3.FI**

CAS Project ID: P0803732
CAS Sample ID: P0803732-019

Test Code: EPA TO-15
Instrument ID: Tekmar AUTOCAN/Agilent 5975Cinert/6890N/MS16
Analyst: Wida Ang
Sampling Media: 6.0 L Summa Canister
Test Notes:
Container ID: AC00939

Date Collected: 11/5/08
Date Received: 11/7/08
Date Analyzed: 11/14/08
Volume(s) Analyzed: 1.00 Liter(s)
0.050 Liter(s)

Initial Pressure (psig): -1.3 Final Pressure (psig): 3.6

Canister Dilution Factor: 1.37

CAS #	Compound	Result µg/m³	MRL µg/m³	MDL µg/m³	Result ppbV	MRL ppbV	MDL ppbV	Data Qualifier
78-87-5	1,2-Dichloropropane	0.14	0.14	0.069	0.030	0.030	0.015	U
75-27-4	**Bromodichloromethane**	**0.75**	0.14	0.069	**0.11**	0.020	0.010	
79-01-6	**Trichloroethene**	**0.50**	0.14	0.069	**0.093**	0.026	0.013	
10061-01-5	cis-1,3-Dichloropropene	0.69	0.69	0.069	0.15	0.15	0.015	U
108-10-1	**4-Methyl-2-pentanone**	**24**	0.69	0.069	**5.9**	0.17	0.017	
10061-02-6	trans-1,3-Dichloropropene	0.69	0.69	0.069	0.15	0.15	0.015	U
79-00-5	1,1,2-Trichloroethane	0.14	0.14	0.069	0.025	0.025	0.013	U
108-88-3	**Toluene**	**2.4**	0.69	0.069	**0.63**	0.18	0.018	
124-48-1	**Dibromochloromethane**	**0.31**	0.14	0.069	**0.036**	0.016	0.0080	
127-18-4	**Tetrachloroethene**	**0.42**	0.14	0.069	**0.062**	0.020	0.010	
108-90-7	Chlorobenzene	0.14	0.14	0.069	0.030	0.030	0.015	U
100-41-4	**Ethylbenzene**	**0.27**	0.69	0.069	**0.063**	0.16	0.016	J
179601-23-1	**m,p-Xylenes**	**1.2**	0.69	0.073	**0.28**	0.16	0.017	
75-25-2	Bromoform	0.69	0.69	0.073	0.066	0.066	0.0070	U
100-42-5	**Styrene**	**0.11**	0.69	0.069	**0.026**	0.16	0.016	J
95-47-6	**o-Xylene**	**0.37**	0.69	0.069	**0.084**	0.16	0.016	J
79-34-5	1,1,2,2-Tetrachloroethane	0.14	0.14	0.069	0.020	0.020	0.010	U

U = Compound was analyzed for, but not detected above the laboratory detection limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.
J = The analyte was positively identified below the method reporting limit; the associated numerical value is considered estimated.

COLUMBIA ANALYTICAL SERVICES, INC.

RESULTS OF ANALYSIS

Client: **CH2M Hill**
Client Sample ID: **WAT-SG-6-110508** CAS Project ID: P0803732
Client Project ID: **DOW - Waterloo, NY / 369548.02.B3.FI** CAS Sample ID: P0803732-019

Tentatively Identified Compounds

Test Code:	EPA TO-15	Date Collected:	11/5/08
Instrument ID:	Tekmar AUTOCAN/Agilent 5975Cinert/6890N/MS16	Date Received:	11/7/08
Analyst:	Wida Ang	Date Analyzed:	11/14/08
Sampling Media:	6.0 L Summa Canister	Volume(s) Analyzed:	1.00 Liter(s)
Test Notes:	**T**		0.050 Liter(s)
Container ID:	AC00939		

Initial Pressure (psig): -1.3 Final Pressure (psig): 3.6

Canister Dilution Factor: 1.37

GC/MS Retention Time	**Compound Identification**	**Concentration µg/m³**	**Data Qualifier**
8.81	Dimethyl Sulfide	**20**	
17.84	Dimethyl Disulfide	**600**	
20.63	Hexamethylcyclotrisiloxane	**6**	
21.07	Tridecafluorohexane	**90**	
24.13	Dimethyl Trisulfide	**20**	
	Epichlorohydrin	NF	

T = Analyte is a tentatively identified compound, result is estimated.
NF = Compound was searched for, but not found.

Verified By: Rc Date: 11/21/08

COLUMBIA ANALYTICAL SERVICES, INC.

RESULTS OF ANALYSIS

Client: **CH2M Hill**
Client Sample ID: **WAT-SG-7a-110508**
Client Project ID: **DOW - Waterloo, NY / 369548.02.B3.FI**

CAS Project ID: P0803732
CAS Sample ID: P0803732-020

Test Code: EPA TO-15
Instrument ID: Tekmar AUTOCAN/Agilent 5975Cinert/6890N/MS16
Analyst: Wida Ang
Sampling Media: 6.0 L Summa Canister
Test Notes:
Container ID: AC01371

Date Collected: 11/5/08
Date Received: 11/7/08
Date Analyzed: 11/13 - 11/14/08
Volume(s) Analyzed: 0.20 Liter(s)
0.020 Liter(s)

Initial Pressure (psig): -2.2 Final Pressure (psig): 3.5

Canister Dilution Factor: 1.46

CAS #	Compound	Result µg/m³	MRL µg/m³	MDL µg/m³	Result ppbV	MRL ppbV	MDL ppbV	Data Qualifier
74-87-3	Chloromethane	0.73	0.73	0.37	0.35	0.35	0.18	U
75-01-4	Vinyl Chloride	0.73	0.73	0.37	0.29	0.29	0.14	U
74-83-9	Bromomethane	0.73	0.73	0.37	0.19	0.19	0.094	U
75-00-3	Chloroethane	0.73	0.73	0.53	0.28	0.28	0.20	U
67-64-1	**Acetone**	**86**	37	1.0	**36**	15	0.43	
107-13-1	Acrylonitrile	3.7	3.7	0.37	1.7	1.7	0.17	U
75-35-4	1,1-Dichloroethene	0.73	0.73	0.41	0.18	0.18	0.10	U
75-09-2	**Methylene Chloride**	**32**	3.7	0.40	**9.3**	1.1	0.12	
75-15-0	**Carbon Disulfide**	**1,600**	3.7	0.37	**510**	1.2	0.12	
156-60-5	**trans-1,2-Dichloroethene**	**0.90**	0.73	0.37	**0.23**	0.18	0.092	
75-34-3	**1,1-Dichloroethane**	**23**	0.73	0.37	**5.6**	0.18	0.090	
78-93-3	**2-Butanone (MEK)**	**18**	3.7	0.70	**6.3**	1.2	0.24	
156-59-2	**cis-1,2-Dichloroethene**	**5.0**	0.73	0.37	**1.3**	0.18	0.092	
67-66-3	**Chloroform**	**1,300**	0.73	0.37	**260**	0.15	0.075	
107-06-2	1,2-Dichloroethane	0.73	0.73	0.37	0.18	0.18	0.090	U
71-55-6	1,1,1-Trichloroethane	0.73	0.73	0.37	0.13	0.13	0.067	U
71-43-2	**Benzene**	**0.39**	0.73	0.37	**0.12**	0.23	0.11	J
56-23-5	**Carbon Tetrachloride**	**3.0**	0.73	0.37	**0.48**	0.12	0.058	

U = Compound was analyzed for, but not detected above the laboratory detection limit.
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Verified By: Rc Date: 11/21/08

COLUMBIA ANALYTICAL SERVICES, INC.

RESULTS OF ANALYSIS

Client: **CH2M Hill**
Client Sample ID: **WAT-SG-7a-110508**
Client Project ID: **DOW - Waterloo, NY / 369548.02.B3.FI**

CAS Project ID: P0803732
CAS Sample ID: P0803732-020

Test Code: EPA TO-15
Instrument ID: Tekmar AUTOCAN/Agilent 5975Cinert/6890N/MS16
Analyst: Wida Ang
Sampling Media: 6.0 L Summa Canister
Test Notes:
Container ID: AC01371

Date Collected: 11/5/08
Date Received: 11/7/08
Date Analyzed: 11/13 - 11/14/08
Volume(s) Analyzed: 0.20 Liter(s)
0.020 Liter(s)

Initial Pressure (psig): -2.2 Final Pressure (psig): 3.5

Canister Dilution Factor: 1.46

CAS #	Compound	Result µg/m³	MRL µg/m³	MDL µg/m³	Result ppbV	MRL ppbV	MDL ppbV	Data Qualifier
78-87-5	**1,2-Dichloropropane**	**9.1**	0.73	0.37	**2.0**	0.16	0.079	
75-27-4	Bromodichloromethane	0.73	0.73	0.37	0.11	0.11	0.055	**U**
79-01-6	**Trichloroethene**	**2.3**	0.73	0.37	**0.42**	0.14	0.068	
10061-01-5	cis-1,3-Dichloropropene	3.7	3.7	0.37	0.80	0.80	0.080	**U**
108-10-1	**4-Methyl-2-pentanone**	**2,100**	3.7	0.37	**500**	0.89	0.089	
10061-02-6	trans-1,3-Dichloropropene	3.7	3.7	0.37	0.80	0.80	0.080	**U**
79-00-5	1,1,2-Trichloroethane	0.73	0.73	0.37	0.13	0.13	0.067	**U**
108-88-3	**Toluene**	**280**	3.7	0.37	**73**	0.97	0.097	
124-48-1	Dibromochloromethane	0.73	0.73	0.37	0.086	0.086	0.043	**U**
127-18-4	**Tetrachloroethene**	**5.4**	0.73	0.37	**0.80**	0.11	0.054	
108-90-7	Chlorobenzene	0.73	0.73	0.37	0.16	0.16	0.079	**U**
100-41-4	**Ethylbenzene**	**22**	3.7	0.37	**5.0**	0.84	0.084	
179601-23-1	**m,p-Xylenes**	**310**	3.7	0.39	**71**	0.84	0.089	
75-25-2	Bromoform	3.7	3.7	0.39	0.35	0.35	0.037	**U**
100-42-5	**Styrene**	**3.1**	3.7	0.37	**0.74**	0.86	0.086	**J**
95-47-6	**o-Xylene**	**89**	3.7	0.37	**20**	0.84	0.084	
79-34-5	1,1,2,2-Tetrachloroethane	0.73	0.73	0.37	0.11	0.11	0.053	**U**

U = Compound was analyzed for, but not detected above the laboratory detection limit.
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J = The analyte was positively identified below the method reporting limit; the associated numerical value is considered estimated.

Verified By: RC Date: 11/21/08

COLUMBIA ANALYTICAL SERVICES, INC.

RESULTS OF ANALYSIS

Client: **CH2M Hill**
Client Sample ID: **WAT-SG-7a-110508** CAS Project ID: P0803732
Client Project ID: **DOW - Waterloo, NY / 369548.02.B3.FI** CAS Sample ID: P0803732-020

Tentatively Identified Compounds

Test Code:	EPA TO-15	Date Collected:	11/5/08
Instrument ID:	Tekmar AUTOCAN/Agilent 5975Cinert/6890N/MS16	Date Received:	11/7/08
Analyst:	Wida Ang	Date Analyzed:	11/13 - 11/14/08
Sampling Media:	6.0 L Summa Canister	Volume(s) Analyzed:	0.20 Liter(s)
Test Notes:	**T**		0.020 Liter(s)
Container ID:	AC01371		

Initial Pressure (psig): -2.2 Final Pressure (psig): 3.5

Canister Dilution Factor: 1.46

GC/MS Retention Time	**Compound Identification**	**Concentration µg/m³**	**Data Qualifier**
4.60	Propane + Propene	**2,000**	
9.19	3-Methyl-1-butene	**2,000**	
10.58	4-Methyl-1-pentene	**800**	
25.04	Unidentified Compound	**200**	
25.12	Bis(1-methylethyl)Disulfide + Unidentified Compound	**300**	
	Epichlorohydrin	NF	

T = Analyte is a tentatively identified compound, result is estimated.
NF = Compound was searched for, but not found.

Verified By: RC Date: 11/21/08

COLUMBIA ANALYTICAL SERVICES, INC.

RESULTS OF ANALYSIS

Client: **CH2M Hill**
Client Sample ID: **WAT-SG-8-110508**
Client Project ID: **DOW - Waterloo, NY / 369548.02.B3.FI**

CAS Project ID: P0803732
CAS Sample ID: P0803732-021

Test Code: EPA TO-15
Instrument ID: Tekmar AUTOCAN/Agilent 5975Cinert/6890N/MS16
Analyst: Wida Ang
Sampling Media: 6.0 L Summa Canister
Test Notes:
Container ID: AC01010

Date Collected: 11/5/08
Date Received: 11/7/08
Date Analyzed: 11/14/08
Volume(s) Analyzed: 1.00 Liter(s)

Initial Pressure (psig): -9.2 Final Pressure (psig): 3.9

Canister Dilution Factor: 3.38

CAS #	Compound	Result µg/m³	MRL µg/m³	MDL µg/m³	Result ppbV	MRL ppbV	MDL ppbV	Data Qualifier
74-87-3	Chloromethane	0.34	0.34	0.17	0.16	0.16	0.082	U
75-01-4	Vinyl Chloride	0.34	0.34	0.17	0.13	0.13	0.066	U
74-83-9	Bromomethane	0.34	0.34	0.17	0.087	0.087	0.044	U
75-00-3	Chloroethane	0.34	0.34	0.24	0.13	0.13	0.092	U
67-64-1	**Acetone**	**43**	17	0.47	**18**	7.1	0.20	
107-13-1	**Acrylonitrile**	**4.1**	1.7	0.17	**1.9**	0.78	0.078	
75-35-4	1,1-Dichloroethene	0.34	0.34	0.19	0.085	0.085	0.048	U
75-09-2	**Methylene Chloride**	**0.46**	1.7	0.19	**0.13**	0.49	0.054	J
75-15-0	**Carbon Disulfide**	**70**	1.7	0.17	**22**	0.54	0.054	
156-60-5	trans-1,2-Dichloroethene	0.34	0.34	0.17	0.085	0.085	0.043	U
75-34-3	1,1-Dichloroethane	0.34	0.34	0.17	0.084	0.084	0.042	U
78-93-3	**2-Butanone (MEK)**	**7.2**	1.7	0.32	**2.4**	0.57	0.11	
156-59-2	**cis-1,2-Dichloroethene**	**0.58**	0.34	0.17	**0.15**	0.085	0.043	
67-66-3	**Chloroform**	**9.3**	0.34	0.17	**1.9**	0.069	0.035	
107-06-2	1,2-Dichloroethane	0.34	0.34	0.17	0.084	0.084	0.042	U
71-55-6	1,1,1-Trichloroethane	0.34	0.34	0.17	0.062	0.062	0.031	U
71-43-2	**Benzene**	**1.2**	0.34	0.17	**0.38**	0.11	0.053	
56-23-5	**Carbon Tetrachloride**	**0.54**	0.34	0.17	**0.086**	0.054	0.027	

U = Compound was analyzed for, but not detected above the laboratory detection limit.
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J = The analyte was positively identified below the method reporting limit; the associated numerical value is considered estimated.

Verified By: Re Date: 11/21/08

COLUMBIA ANALYTICAL SERVICES, INC.

RESULTS OF ANALYSIS

Client: **CH2M Hill**
Client Sample ID: **WAT-SG-8-110508**
Client Project ID: **DOW - Waterloo, NY / 369548.02.B3.FI**

CAS Project ID: P0803732
CAS Sample ID: P0803732-021

Test Code: EPA TO-15
Instrument ID: Tekmar AUTOCAN/Agilent 5975Cinert/6890N/MS16
Analyst: Wida Ang
Sampling Media: 6.0 L Summa Canister
Test Notes:
Container ID: AC01010

Date Collected: 11/5/08
Date Received: 11/7/08
Date Analyzed: 11/14/08
Volume(s) Analyzed: 1.00 Liter(s)

Initial Pressure (psig): -9.2 Final Pressure (psig): 3.9

Canister Dilution Factor: 3.38

CAS #	Compound	Result µg/m³	MRL µg/m³	MDL µg/m³	Result ppbV	MRL ppbV	MDL ppbV	Data Qualifier
78-87-5	**1,2-Dichloropropane**	**0.33**	0.34	0.17	**0.072**	0.073	0.037	**J**
75-27-4	Bromodichloromethane	0.34	0.34	0.17	0.050	0.050	0.025	**U**
79-01-6	**Trichloroethene**	**1.1**	0.34	0.17	**0.20**	0.063	0.031	
10061-01-5	cis-1,3-Dichloropropene	1.7	1.7	0.17	0.37	0.37	0.037	**U**
108-10-1	**4-Methyl-2-pentanone**	**31**	1.7	0.17	**7.6**	0.41	0.041	
10061-02-6	trans-1,3-Dichloropropene	1.7	1.7	0.17	0.37	0.37	0.037	**U**
79-00-5	1,1,2-Trichloroethane	0.34	0.34	0.17	0.062	0.062	0.031	**U**
108-88-3	**Toluene**	**30**	1.7	0.17	**8.0**	0.45	0.045	
124-48-1	Dibromochloromethane	0.34	0.34	0.17	0.040	0.040	0.020	**U**
127-18-4	**Tetrachloroethene**	**0.19**	0.34	0.17	**0.027**	0.050	0.025	**J**
108-90-7	**Chlorobenzene**	**0.65**	0.34	0.17	**0.14**	0.073	0.037	
100-41-4	**Ethylbenzene**	**0.94**	1.7	0.17	**0.22**	0.39	0.039	**J**
179601-23-1	**m,p-Xylenes**	**3.1**	1.7	0.18	**0.70**	0.39	0.041	
75-25-2	Bromoform	1.7	1.7	0.18	0.16	0.16	0.017	**U**
100-42-5	**Styrene**	**0.62**	1.7	0.17	**0.15**	0.40	0.040	**J**
95-47-6	**o-Xylene**	**0.90**	1.7	0.17	**0.21**	0.39	0.039	**J**
79-34-5	1,1,2,2-Tetrachloroethane	0.34	0.34	0.17	0.049	0.049	0.025	**U**

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J = The analyte was positively identified below the method reporting limit; the associated numerical value is considered estimated.

Verified By: Rc Date: 11/21/08

COLUMBIA ANALYTICAL SERVICES, INC.

RESULTS OF ANALYSIS

Client: **CH2M Hill**
Client Sample ID: **WAT-SG-8-110508** CAS Project ID: P0803732
Client Project ID: **DOW - Waterloo, NY / 369548.02.B3.FI** CAS Sample ID: P0803732-021

Tentatively Identified Compounds

Test Code: EPA TO-15 Date Collected: 11/5/08
Instrument ID: Tekmar AUTOCAN/Agilent 5975Cinert/6890N/MS16 Date Received: 11/7/08
Analyst: Wida Ang Date Analyzed: 11/14/08
Sampling Media: 6.0 L Summa Canister Volume(s) Analyzed: 1.00 Liter(s)
Test Notes: **T**
Container ID: AC01010

Initial Pressure (psig): -9.2 Final Pressure (psig): 3.9

Canister Dilution Factor: 3.38

GC/MS Retention Time	Compound Identification	Concentration µg/m³	Data Qualifier
4.63	Propane	**70**	
12.40	Ethyl Acetate	**20**	
24.37	Isooctanol	**20**	
25.02	2-Ethyl-1-hexanol	**40**	
25.11	Unidentified Compound	**30**	
	Epichlorohydrin	NF	

T = Analyte is a tentatively identified compound, result is estimated.
NF = Compound was searched for, but not found.

Verified By: RG Date: 11/21/08

COLUMBIA ANALYTICAL SERVICES, INC.

RESULTS OF ANALYSIS

Client: **CH2M Hill**
Client Sample ID: **WAT-SG-9-110508**
Client Project ID: **DOW - Waterloo, NY / 369548.02.B3.FI**

CAS Project ID: P0803732
CAS Sample ID: P0803732-022

Test Code: EPA TO-15
Instrument ID: Tekmar AUTOCAN/Agilent 5975Cinert/6890N/MS16
Analyst: Wida Ang
Sampling Media: 6.0 L Summa Canister
Test Notes:
Container ID: AC01425

Date Collected: 11/5/08
Date Received: 11/7/08
Date Analyzed: 11/14/08
Volume(s) Analyzed: 0.50 Liter(s)
0.10 Liter(s)

Initial Pressure (psig): -2.1 Final Pressure (psig): 3.5

Canister Dilution Factor: 1.44

CAS #	Compound	Result µg/m³	MRL µg/m³	MDL µg/m³	Result ppbV	MRL ppbV	MDL ppbV	Data Qualifier
74-87-3	Chloromethane	0.29	0.29	0.14	0.14	0.14	0.070	U
75-01-4	Vinyl Chloride	0.29	0.29	0.14	0.11	0.11	0.056	U
74-83-9	Bromomethane	0.29	0.29	0.14	0.074	0.074	0.037	U
75-00-3	Chloroethane	0.29	0.29	0.21	0.11	0.11	0.079	U
67-64-1	**Acetone**	**11**	14	0.40	**4.8**	6.1	0.17	J
107-13-1	Acrylonitrile	1.4	1.4	0.14	0.66	0.66	0.066	U
75-35-4	1,1-Dichloroethene	0.29	0.29	0.16	0.073	0.073	0.041	U
75-09-2	**Methylene Chloride**	**0.28**	1.4	0.16	**0.080**	0.41	0.046	J
75-15-0	**Carbon Disulfide**	**3.8**	1.4	0.14	**1.2**	0.46	0.046	
156-60-5	trans-1,2-Dichloroethene	0.29	0.29	0.14	0.073	0.073	0.036	U
75-34-3	**1,1-Dichloroethane**	**0.21**	0.29	0.14	**0.052**	0.071	0.036	J
78-93-3	**2-Butanone (MEK)**	**2.6**	1.4	0.28	**0.89**	0.49	0.094	
156-59-2	cis-1,2-Dichloroethene	0.29	0.29	0.14	0.073	0.073	0.036	U
67-66-3	**Chloroform**	**390**	0.29	0.14	**81**	0.059	0.029	
107-06-2	**1,2-Dichloroethane**	**0.73**	0.29	0.14	**0.18**	0.071	0.036	
71-55-6	1,1,1-Trichloroethane	0.29	0.29	0.14	0.053	0.053	0.026	U
71-43-2	**Benzene**	**0.43**	0.29	0.14	**0.13**	0.090	0.045	
56-23-5	**Carbon Tetrachloride**	**0.67**	0.29	0.14	**0.11**	0.046	0.023	

U = Compound was analyzed for, but not detected above the laboratory detection limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.
J = The analyte was positively identified below the method reporting limit; the associated numerical value is considered estimated.

Verified By: RC Date: 11/21/08

COLUMBIA ANALYTICAL SERVICES, INC.

RESULTS OF ANALYSIS

Client: **CH2M Hill**
Client Sample ID: **WAT-SG-9-110508**
Client Project ID: **DOW - Waterloo, NY / 369548.02.B3.FI**

CAS Project ID: P0803732
CAS Sample ID: P0803732-022

Test Code: EPA TO-15
Instrument ID: Tekmar AUTOCAN/Agilent 5975Cinert/6890N/MS16
Analyst: Wida Ang
Sampling Media: 6.0 L Summa Canister
Test Notes:
Container ID: AC01425

Date Collected: 11/5/08
Date Received: 11/7/08
Date Analyzed: 11/14/08
Volume(s) Analyzed: 0.50 Liter(s)
0.10 Liter(s)

Initial Pressure (psig): -2.1 Final Pressure (psig): 3.5

Canister Dilution Factor: 1.44

CAS #	Compound	Result µg/m³	MRL µg/m³	MDL µg/m³	Result ppbV	MRL ppbV	MDL ppbV	Data Qualifier
78-87-5	**1,2-Dichloropropane**	**20**	0.29	0.14	**4.4**	0.062	0.031	
75-27-4	Bromodichloromethane	0.29	0.29	0.14	0.043	0.043	0.022	**U**
79-01-6	**Trichloroethene**	**480**	0.29	0.14	**90**	0.054	0.027	
10061-01-5	cis-1,3-Dichloropropene	1.4	1.4	0.14	0.32	0.32	0.032	**U**
108-10-1	**4-Methyl-2-pentanone**	**2.0**	1.4	0.14	**0.48**	0.35	0.035	
10061-02-6	trans-1,3-Dichloropropene	1.4	1.4	0.14	0.32	0.32	0.032	**U**
79-00-5	**1,1,2-Trichloroethane**	**0.86**	0.29	0.14	**0.16**	0.053	0.026	
108-88-3	**Toluene**	**2.6**	1.4	0.14	**0.70**	0.38	0.038	
124-48-1	Dibromochloromethane	0.29	0.29	0.14	0.034	0.034	0.017	**U**
127-18-4	**Tetrachloroethene**	**5.0**	0.29	0.14	**0.74**	0.042	0.021	
108-90-7	**Chlorobenzene**	**0.45**	0.29	0.14	**0.098**	0.063	0.031	
100-41-4	**Ethylbenzene**	**0.16**	1.4	0.14	**0.036**	0.33	0.033	**J**
179601-23-1	**m,p-Xylenes**	**0.49**	1.4	0.15	**0.11**	0.33	0.035	**J**
75-25-2	Bromoform	1.4	1.4	0.15	0.14	0.14	0.015	**U**
100-42-5	Styrene	1.4	1.4	0.14	0.34	0.34	0.034	**U**
95-47-6	**o-Xylene**	**0.15**	1.4	0.14	**0.034**	0.33	0.033	**J**
79-34-5	1,1,2,2-Tetrachloroethane	0.29	0.29	0.14	0.042	0.042	0.021	**U**

U = Compound was analyzed for, but not detected above the laboratory detection limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.
J = The analyte was positively identified below the method reporting limit; the associated numerical value is considered estimated.

Verified By: RC Date: 11/21/08

COLUMBIA ANALYTICAL SERVICES, INC.

RESULTS OF ANALYSIS

Client: **CH2M Hill**
Client Sample ID: **WAT-SG-9-110508** CAS Project ID: P0803732
Client Project ID: **DOW - Waterloo, NY / 369548.02.B3.FI** CAS Sample ID: P0803732-022

Tentatively Identified Compounds

Test Code:	EPA TO-15	Date Collected:	11/5/08
Instrument ID:	Tekmar AUTOCAN/Agilent 5975Cinert/6890N/MS16	Date Received:	11/7/08
Analyst:	Wida Ang	Date Analyzed:	11/14/08
Sampling Media:	6.0 L Summa Canister	Volume(s) Analyzed:	0.50 Liter(s)
Test Notes:	**T**		0.10 Liter(s)
Container ID:	AC01425		

Initial Pressure (psig): -2.1 Final Pressure (psig): 3.5

Canister Dilution Factor: 1.44

GC/MS Retention Time	**Compound Identification**	**Concentration µg/m³**	**Data Qualifier**
5.32	Isobutane	**10**	
12.41	Ethyl Acetate	**10**	
19.81	1,3-Dichloro-1-propene + 1,2,2-Trichloropropane	**10**	
21.07	Tridecafluorohexane	**200**	
29.69	Tetradecene Isomers	**10**	
	Epichlorohydrin	NF	

T = Analyte is a tentatively identified compound, result is estimated.
NF = Compound was searched for, but not found.

Verified By: Rs Date: 11/24/08

COLUMBIA ANALYTICAL SERVICES, INC.

RESULTS OF ANALYSIS

Client: **CH2M Hill**
Client Sample ID: **Method Blank**
Client Project ID: **DOW - Waterloo, NY / 369548.02.B3.FI**

CAS Project ID: P0803732
CAS Sample ID: P081112-MB

Test Code: EPA TO-15
Instrument ID: Tekmar AUTOCAN/Agilent 5975Cinert/6890N/MS16
Analyst: Wida Ang
Sampling Media: 6.0 L Summa Canister
Test Notes:

Date Collected: NA
Date Received: NA
Date Analyzed: 11/12/08
Volume(s) Analyzed: 1.00 Liter(s)

Canister Dilution Factor: 1.00

CAS #	Compound	Result µg/m³	MRL µg/m³	MDL µg/m³	Result ppbV	MRL ppbV	MDL ppbV	Data Qualifier
74-87-3	Chloromethane	0.10	0.10	0.050	0.048	0.048	0.024	U
75-01-4	Vinyl Chloride	0.10	0.10	0.050	0.039	0.039	0.020	U
74-83-9	Bromomethane	0.10	0.10	0.050	0.026	0.026	0.013	U
75-00-3	Chloroethane	0.10	0.10	0.072	0.038	0.038	0.027	U
67-64-1	Acetone	5.0	5.0	0.14	2.1	2.1	0.059	U
107-13-1	Acrylonitrile	0.50	0.50	0.050	0.23	0.23	0.023	U
75-35-4	1,1-Dichloroethene	0.10	0.10	0.056	0.025	0.025	0.014	U
75-09-2	Methylene Chloride	0.50	0.50	0.055	0.14	0.14	0.016	U
75-15-0	Carbon Disulfide	0.50	0.50	0.050	0.16	0.16	0.016	U
156-60-5	trans-1,2-Dichloroethene	0.10	0.10	0.050	0.025	0.025	0.013	U
75-34-3	1,1-Dichloroethane	0.10	0.10	0.050	0.025	0.025	0.012	U
78-93-3	2-Butanone (MEK)	0.50	0.50	0.096	0.17	0.17	0.033	U
156-59-2	cis-1,2-Dichloroethene	0.10	0.10	0.050	0.025	0.025	0.013	U
67-66-3	Chloroform	0.10	0.10	0.050	0.020	0.020	0.010	U
107-06-2	1,2-Dichloroethane	0.10	0.10	0.050	0.025	0.025	0.012	U
71-55-6	1,1,1-Trichloroethane	0.10	0.10	0.050	0.018	0.018	0.0092	U
71-43-2	Benzene	0.10	0.10	0.050	0.031	0.031	0.016	U
56-23-5	Carbon Tetrachloride	0.10	0.10	0.050	0.016	0.016	0.0080	U

U = Compound was analyzed for, but not detected above the laboratory detection limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

Verified By: Re Date: 11/21/08

Client: **CH2M Hill**
Client Sample ID: **Method Blank**
Client Project ID: **DOW - Waterloo, NY / 369548.02.B3.FI**

CAS Project ID: P0803732
CAS Sample ID: P081112-MB

Test Code: EPA TO-15
Instrument ID: Tekmar AUTOCAN/Agilent 5975Cinert/6890N/MS16
Analyst: Wida Ang
Sampling Media: 6.0 L Summa Canister
Test Notes:

Date Collected: NA
Date Received: NA
Date Analyzed: 11/12/08
Volume(s) Analyzed: 1.00 Liter(s)

Canister Dilution Factor: 1.00

CAS #	Compound	Result µg/m³	MRL µg/m³	MDL µg/m³	Result ppbV	MRL ppbV	MDL ppbV	Data Qualifier
78-87-5	1,2-Dichloropropane	0.10	0.10	0.050	0.022	0.022	0.011	U
75-27-4	Bromodichloromethane	0.10	0.10	0.050	0.015	0.015	0.0075	U
79-01-6	Trichloroethene	0.10	0.10	0.050	0.019	0.019	0.0093	U
10061-01-5	cis-1,3-Dichloropropene	0.50	0.50	0.050	0.11	0.11	0.011	U
108-10-1	4-Methyl-2-pentanone	0.50	0.50	0.050	0.12	0.12	0.012	U
10061-02-6	trans-1,3-Dichloropropene	0.50	0.50	0.050	0.11	0.11	0.011	U
79-00-5	1,1,2-Trichloroethane	0.10	0.10	0.050	0.018	0.018	0.0092	U
108-88-3	Toluene	0.50	0.50	0.050	0.13	0.13	0.013	U
124-48-1	Dibromochloromethane	0.10	0.10	0.050	0.012	0.012	0.0059	U
127-18-4	Tetrachloroethene	0.10	0.10	0.050	0.015	0.015	0.0074	U
108-90-7	Chlorobenzene	0.10	0.10	0.050	0.022	0.022	0.011	U
100-41-4	Ethylbenzene	0.50	0.50	0.050	0.12	0.12	0.012	U
179601-23-1	m,p-Xylenes	0.50	0.50	0.053	0.12	0.12	0.012	U
75-25-2	Bromoform	0.50	0.50	0.053	0.048	0.048	0.0051	U
100-42-5	Styrene	0.50	0.50	0.050	0.12	0.12	0.012	U
95-47-6	o-Xylene	0.50	0.50	0.050	0.12	0.12	0.012	U
79-34-5	1,1,2,2-Tetrachloroethane	0.10	0.10	0.050	0.015	0.015	0.0073	U

U = Compound was analyzed for, but not detected above the laboratory detection limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

Verified By: RC Date: 11/20/08

Client: **CH2M Hill**
Client Sample ID: **Method Blank** CAS Project ID: P0803732
Client Project ID: **DOW - Waterloo, NY / 369548.02.B3.FI** CAS Sample ID: P081112-MB

Tentatively Identified Compounds

Test Code: EPA TO-15 Date Collected: NA
Instrument ID: Tekmar AUTOCAN/Agilent 5975Cinert/6890N/MS16 Date Received: NA
Analyst: Wida Ang Date Analyzed: 11/12/08
Sampling Media: 6.0 L Summa Canister Volume(s) Analyzed: 1.00 Liter(s)
Test Notes:

Canister Dilution Factor: 1.00

GC/MS Retention Time	Compound Identification	Concentration µg/m³	Data Qualifier
	No Compounds Detected		

Verified By: RC Date: 11/21/08

COLUMBIA ANALYTICAL SERVICES, INC.

RESULTS OF ANALYSIS

Client: **CH2M Hill**
Client Sample ID: **Method Blank**
Client Project ID: **DOW - Waterloo, NY / 369548.02.B3.FI**

CAS Project ID: P0803732
CAS Sample ID: P081113-MB

Test Code: EPA TO-15
Instrument ID: Tekmar AUTOCAN/Agilent 5975Cinert/6890N/MS16
Analyst: Wida Ang
Sampling Media: 6.0 L Summa Canister
Test Notes:

Date Collected: NA
Date Received: NA
Date Analyzed: 11/13/08
Volume(s) Analyzed: 1.00 Liter(s)

Canister Dilution Factor: 1.00

CAS #	Compound	Result µg/m³	MRL µg/m³	MDL µg/m³	Result ppbV	MRL ppbV	MDL ppbV	Data Qualifier
74-87-3	Chloromethane	0.10	0.10	0.050	0.048	0.048	0.024	U
75-01-4	Vinyl Chloride	0.10	0.10	0.050	0.039	0.039	0.020	U
74-83-9	Bromomethane	0.10	0.10	0.050	0.026	0.026	0.013	U
75-00-3	Chloroethane	0.10	0.10	0.072	0.038	0.038	0.027	U
67-64-1	Acetone	5.0	5.0	0.14	2.1	2.1	0.059	U
107-13-1	Acrylonitrile	0.50	0.50	0.050	0.23	0.23	0.023	U
75-35-4	1,1-Dichloroethene	0.10	0.10	0.056	0.025	0.025	0.014	U
75-09-2	Methylene Chloride	0.50	0.50	0.055	0.14	0.14	0.016	U
75-15-0	Carbon Disulfide	0.50	0.50	0.050	0.16	0.16	0.016	U
156-60-5	trans-1,2-Dichloroethene	0.10	0.10	0.050	0.025	0.025	0.013	U
75-34-3	1,1-Dichloroethane	0.10	0.10	0.050	0.025	0.025	0.012	U
78-93-3	2-Butanone (MEK)	0.50	0.50	0.096	0.17	0.17	0.033	U
156-59-2	cis-1,2-Dichloroethene	0.10	0.10	0.050	0.025	0.025	0.013	U
67-66-3	Chloroform	0.10	0.10	0.050	0.020	0.020	0.010	U
107-06-2	1,2-Dichloroethane	0.10	0.10	0.050	0.025	0.025	0.012	U
71-55-6	1,1,1-Trichloroethane	0.10	0.10	0.050	0.018	0.018	0.0092	U
71-43-2	Benzene	0.10	0.10	0.050	0.031	0.031	0.016	U
56-23-5	Carbon Tetrachloride	0.10	0.10	0.050	0.016	0.016	0.0080	U

U = Compound was analyzed for, but not detected above the laboratory detection limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

Verified By: Re Date: 11/21/08

COLUMBIA ANALYTICAL SERVICES, INC.

RESULTS OF ANALYSIS

Client: **CH2M Hill**
Client Sample ID: **Method Blank** CAS Project ID: P0803732
Client Project ID: **DOW - Waterloo, NY / 369548.02.B3.FI** CAS Sample ID: P081113-MB

Test Code: EPA TO-15 Date Collected: NA
Instrument ID: Tekmar AUTOCAN/Agilent 5975Cinert/6890N/MS16 Date Received: NA
Analyst: Wida Ang Date Analyzed: 11/13/08
Sampling Media: 6.0 L Summa Canister Volume(s) Analyzed: 1.00 Liter(s)
Test Notes:

Canister Dilution Factor: 1.00

CAS #	Compound	Result µg/m³	MRL µg/m³	MDL µg/m³	Result ppbV	MRL ppbV	MDL ppbV	Data Qualifier
78-87-5	1,2-Dichloropropane	0.10	0.10	0.050	0.022	0.022	0.011	U
75-27-4	Bromodichloromethane	0.10	0.10	0.050	0.015	0.015	0.0075	U
79-01-6	Trichloroethene	0.10	0.10	0.050	0.019	0.019	0.0093	U
10061-01-5	cis-1,3-Dichloropropene	0.50	0.50	0.050	0.11	0.11	0.011	U
108-10-1	4-Methyl-2-pentanone	0.50	0.50	0.050	0.12	0.12	0.012	U
10061-02-6	trans-1,3-Dichloropropene	0.50	0.50	0.050	0.11	0.11	0.011	U
79-00-5	1,1,2-Trichloroethane	0.10	0.10	0.050	0.018	0.018	0.0092	U
108-88-3	Toluene	0.50	0.50	0.050	0.13	0.13	0.013	U
124-48-1	Dibromochloromethane	0.10	0.10	0.050	0.012	0.012	0.0059	U
127-18-4	Tetrachloroethene	0.10	0.10	0.050	0.015	0.015	0.0074	U
108-90-7	Chlorobenzene	0.10	0.10	0.050	0.022	0.022	0.011	U
100-41-4	Ethylbenzene	0.50	0.50	0.050	0.12	0.12	0.012	U
179601-23-1	m,p-Xylenes	0.50	0.50	0.053	0.12	0.12	0.012	U
75-25-2	Bromoform	0.50	0.50	0.053	0.048	0.048	0.0051	U
100-42-5	Styrene	0.50	0.50	0.050	0.12	0.12	0.012	U
95-47-6	o-Xylene	0.50	0.50	0.050	0.12	0.12	0.012	U
79-34-5	1,1,2,2-Tetrachloroethane	0.10	0.10	0.050	0.015	0.015	0.0073	U

U = Compound was analyzed for, but not detected above the laboratory detection limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

Verified By: Rc Date: 11/22/08

Client: **CH2M Hill**
Client Sample ID: **Method Blank** CAS Project ID: P0803732
Client Project ID: **DOW - Waterloo, NY / 369548.02.B3.FI** CAS Sample ID: P081113-MB

Tentatively Identified Compounds

Test Code: EPA TO-15 Date Collected: NA
Instrument ID: Tekmar AUTOCAN/Agilent 5975Cinert/6890N/MS16 Date Received: NA
Analyst: Wida Ang Date Analyzed: 11/13/08
Sampling Media: 6.0 L Summa Canister Volume(s) Analyzed: 1.00 Liter(s)
Test Notes:

Canister Dilution Factor: 1.00

GC/MS Retention Time	Compound Identification	Concentration µg/m³	Data Qualifier
	No Compounds Detected		

COLUMBIA ANALYTICAL SERVICES, INC.

RESULTS OF ANALYSIS

Client: **CH2M Hill**
Client Sample ID: **Method Blank**
Client Project ID: **DOW - Waterloo, NY / 369548.02.B3.FI**

CAS Project ID: P0803732
CAS Sample ID: P081114-MB

Test Code: EPA TO-15
Instrument ID: Tekmar AUTOCAN/Agilent 5975Cinert/6890N/MS16
Analyst: Wida Ang
Sampling Media: 6.0 L Summa Canister
Test Notes:

Date Collected: NA
Date Received: NA
Date Analyzed: 11/14/08
Volume(s) Analyzed: 1.00 Liter(s)

Canister Dilution Factor: 1.00

CAS #	Compound	Result µg/m³	MRL µg/m³	MDL µg/m³	Result ppbV	MRL ppbV	MDL ppbV	Data Qualifier
74-87-3	Chloromethane	0.10	0.10	0.050	0.048	0.048	0.024	U
75-01-4	Vinyl Chloride	0.10	0.10	0.050	0.039	0.039	0.020	U
74-83-9	Bromomethane	0.10	0.10	0.050	0.026	0.026	0.013	U
75-00-3	Chloroethane	0.10	0.10	0.072	0.038	0.038	0.027	U
67-64-1	Acetone	5.0	5.0	0.14	2.1	2.1	0.059	U
107-13-1	Acrylonitrile	0.50	0.50	0.050	0.23	0.23	0.023	U
75-35-4	1,1-Dichloroethene	0.10	0.10	0.056	0.025	0.025	0.014	U
75-09-2	Methylene Chloride	0.50	0.50	0.055	0.14	0.14	0.016	U
75-15-0	Carbon Disulfide	0.50	0.50	0.050	0.16	0.16	0.016	U
156-60-5	trans-1,2-Dichloroethene	0.10	0.10	0.050	0.025	0.025	0.013	U
75-34-3	1,1-Dichloroethane	0.10	0.10	0.050	0.025	0.025	0.012	U
78-93-3	2-Butanone (MEK)	0.50	0.50	0.096	0.17	0.17	0.033	U
156-59-2	cis-1,2-Dichloroethene	0.10	0.10	0.050	0.025	0.025	0.013	U
67-66-3	Chloroform	0.10	0.10	0.050	0.020	0.020	0.010	U
107-06-2	1,2-Dichloroethane	0.10	0.10	0.050	0.025	0.025	0.012	U
71-55-6	1,1,1-Trichloroethane	0.10	0.10	0.050	0.018	0.018	0.0092	U
71-43-2	Benzene	0.10	0.10	0.050	0.031	0.031	0.016	U
56-23-5	Carbon Tetrachloride	0.10	0.10	0.050	0.016	0.016	0.0080	U

U = Compound was analyzed for, but not detected above the laboratory detection limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

Verified By: Re Date: 11/21/08

Client: **CH2M Hill**
Client Sample ID: **Method Blank**
Client Project ID: **DOW - Waterloo, NY / 369548.02.B3.FI**

CAS Project ID: P0803732
CAS Sample ID: P081114-MB

Test Code: EPA TO-15
Instrument ID: Tekmar AUTOCAN/Agilent 5975Cinert/6890N/MS16
Analyst: Wida Ang
Sampling Media: 6.0 L Summa Canister
Test Notes:

Date Collected: NA
Date Received: NA
Date Analyzed: 11/14/08
Volume(s) Analyzed: 1.00 Liter(s)

Canister Dilution Factor: 1.00

CAS #	Compound	Result µg/m³	MRL µg/m³	MDL µg/m³	Result ppbV	MRL ppbV	MDL ppbV	Data Qualifier
78-87-5	1,2-Dichloropropane	0.10	0.10	0.050	0.022	0.022	0.011	U
75-27-4	Bromodichloromethane	0.10	0.10	0.050	0.015	0.015	0.0075	U
79-01-6	Trichloroethene	0.10	0.10	0.050	0.019	0.019	0.0093	U
10061-01-5	cis-1,3-Dichloropropene	0.50	0.50	0.050	0.11	0.11	0.011	U
108-10-1	4-Methyl-2-pentanone	0.50	0.50	0.050	0.12	0.12	0.012	U
10061-02-6	trans-1,3-Dichloropropene	0.50	0.50	0.050	0.11	0.11	0.011	U
79-00-5	1,1,2-Trichloroethane	0.10	0.10	0.050	0.018	0.018	0.0092	U
108-88-3	Toluene	0.50	0.50	0.050	0.13	0.13	0.013	U
124-48-1	Dibromochloromethane	0.10	0.10	0.050	0.012	0.012	0.0059	U
127-18-4	Tetrachloroethene	0.10	0.10	0.050	0.015	0.015	0.0074	U
108-90-7	Chlorobenzene	0.10	0.10	0.050	0.022	0.022	0.011	U
100-41-4	Ethylbenzene	0.50	0.50	0.050	0.12	0.12	0.012	U
179601-23-1	m,p-Xylenes	0.50	0.50	0.053	0.12	0.12	0.012	U
75-25-2	Bromoform	0.50	0.50	0.053	0.048	0.048	0.0051	U
100-42-5	Styrene	0.50	0.50	0.050	0.12	0.12	0.012	U
95-47-6	o-Xylene	0.50	0.50	0.050	0.12	0.12	0.012	U
79-34-5	1,1,2,2-Tetrachloroethane	0.10	0.10	0.050	0.015	0.015	0.0073	U

U = Compound was analyzed for, but not detected above the laboratory detection limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

Verified By: Rc Date: 11/24/08

Client: **CH2M Hill**
Client Sample ID: **Method Blank** CAS Project ID: P0803732
Client Project ID: **DOW - Waterloo, NY / 369548.02.B3.FI** CAS Sample ID: P081114-MB

Tentatively Identified Compounds

Test Code: EPA TO-15 Date Collected: NA
Instrument ID: Tekmar AUTOCAN/Agilent 5975Cinert/6890N/MS16 Date Received: NA
Analyst: Wida Ang Date Analyzed: 11/14/08
Sampling Media: 6.0 L Summa Canister Volume(s) Analyzed: 1.00 Liter(s)
Test Notes:

Canister Dilution Factor: 1.00

GC/MS Retention Time	**Compound Identification**	**Concentration µg/m³**	**Data Qualifier**
	No Compounds Detected		

Verified By: Rc Date: 11/21/08

COLUMBIA ANALYTICAL SERVICES, INC.

SURROGATE SPIKE RECOVERY RESULTS

Client: **CH2M Hill**
Client Project ID: **DOW - Waterloo, NY / 369548.02.B3.FI** CAS Project ID: P0803732

Test Code: EPA TO-15
Instrument ID: Tekmar AUTOCAN/Agilent 5975Cinert/6890N/MS16
Analyst: Wida Ang
Sampling Media: 6.0 L Summa Canister(s)
Test Notes:

Date(s) Collected: 11/4 - 11/5/08
Date(s) Received: 11/7/08
Date(s) Analyzed: 11/12 - 11/14/08

Client Sample ID	CAS Sample ID	1,2-Dichloroethane-d4		Toluene-d8		Bromofluorobenzene		Data Qualifier
		% Recovered	Acceptance Limits	% Recovered	Acceptance Limits	% Recovered	Acceptance Limits	
Method Blank	P081112-MB	**104**	70-130	**96**	70-130	**109**	70-130	
Method Blank	P081113-MB	**104**	70-130	**104**	70-130	**101**	70-130	
Method Blank	P081114-MB	**105**	70-130	**102**	70-130	**106**	70-130	
Lab Control Sample	P081112-LCS	**104**	70-130	**96**	70-130	**110**	70-130	
Lab Control Sample	P081113-LCS	**102**	70-130	**104**	70-130	**105**	70-130	
Lab Control Sample	P081114-LCS	**107**	70-130	**102**	70-130	**109**	70-130	
WAT-SG-1-110408	P0803732-001	**108**	70-130	**92**	70-130	**110**	70-130	
WAT-SG-2-110408	P0803732-002	**104**	70-130	**91**	70-130	**108**	70-130	
WAT-SG-DUP-110408	P0803732-003	**106**	70-130	**91**	70-130	**106**	70-130	
WAT-SG-3a-110408	P0803732-004	**106**	70-130	**95**	70-130	**111**	70-130	
WAT-SG-3-110408	P0803732-005	**105**	70-130	**91**	70-130	**109**	70-130	
WAT-SG-4-110408	P0803732-006	**108**	70-130	**95**	70-130	**110**	70-130	
WAT-IA-1-110408	P0803732-007	**103**	70-130	**96**	70-130	**111**	70-130	
WAT-IA-2-110408	P0803732-008	**101**	70-130	**95**	70-130	**111**	70-130	
WAT-IA-3-110408	P0803732-009	**102**	70-130	**96**	70-130	**112**	70-130	
WAT-IA-4-110508	P0803732-010	**108**	70-130	**102**	70-130	**104**	70-130	
WAT-SG-B2-110408	P0803732-011	**103**	70-130	**95**	70-130	**113**	70-130	
WAT-SG-FB-110408	P0803732-012	**106**	70-130	**100**	70-130	**107**	70-130	
WAT-IA-5-110508	P0803732-013	**109**	70-130	**101**	70-130	**108**	70-130	
WAT-IA-6-110508	P0803732-014	**107**	70-130	**100**	70-130	**104**	70-130	
WAT-IA-6-110508	P0803732-014DUP	**105**	70-130	**105**	70-130	**107**	70-130	
WAT-IA-7-110508	P0803732-015	**105**	70-130	**99**	70-130	**106**	70-130	
WAT-SG-B4-110508	P0803732-016	**108**	70-130	**99**	70-130	**105**	70-130	
WAT-SG-5a-110508	P0803732-017	**105**	70-130	**95**	70-130	**100**	70-130	
WAT-SG-5-110508	P0803732-018	**110**	70-130	**100**	70-130	**105**	70-130	
WAT-SG-6-110508	P0803732-019	**105**	70-130	**91**	70-130	**95**	70-130	
WAT-SG-7a-110508	P0803732-020	**105**	70-130	**99**	70-130	**104**	70-130	
WAT-SG-8-110508	P0803732-021	**107**	70-130	**99**	70-130	**108**	70-130	
WAT-SG-9-110508	P0803732-022	**106**	70-130	**89**	70-130	**93**	70-130	
WAT-SG-9-110508	P0803732-022DUP	**101**	70-130	**90**	70-130	**95**	70-130	

Verified By: Rc Date: 11/21/08

COLUMBIA ANALYTICAL SERVICES, INC.

LABORATORY CONTROL SAMPLE SUMMARY

Client: **CH2M Hill**
Client Sample ID: **Lab Control Sample** CAS Project ID: P0803732
Client Project ID: **DOW - Waterloo, NY / 369548.02.B3.FI** CAS Sample ID: P081112-LCS

Test Code: EPA TO-15 Date Collected: NA
Instrument ID: Tekmar AUTOCAN/Agilent 5975Cinert/6890N/MS16 Date Received: NA
Analyst: Wida Ang Date Analyzed: 11/12/08
Sampling Media: 6.0 L Summa Canister Volume(s) Analyzed: NA Liter(s)
Test Notes:

CAS #	Compound	Spike Amount ng	Result ng	% Recovery	CAS Acceptance Limits	Data Qualifier
74-87-3	Chloromethane	25.3	**22.7**	**90**	46-132	
75-01-4	Vinyl Chloride	25.5	**25.3**	**99**	57-132	
74-83-9	Bromomethane	25.8	**28.8**	**112**	67-130	
75-00-3	Chloroethane	25.8	**27.2**	**105**	68-123	
67-64-1	Acetone	137	**133**	**97**	59-121	
107-13-1	Acrylonitrile	26.8	**27.8**	**104**	65-134	
75-35-4	1,1-Dichloroethene	27.5	**30.4**	**111**	70-123	
75-09-2	Methylene Chloride	26.5	**27.9**	**105**	66-121	
75-15-0	Carbon Disulfide	26.8	**28.9**	**108**	66-115	
156-60-5	trans-1,2-Dichloroethene	26.8	**30.0**	**112**	69-125	
75-34-3	1,1-Dichloroethane	26.8	**29.4**	**110**	72-130	
78-93-3	2-Butanone (MEK)	27.5	**33.0**	**120**	68-126	
156-59-2	cis-1,2-Dichloroethene	27.5	**30.0**	**109**	69-124	
67-66-3	Chloroform	26.8	**29.9**	**112**	68-126	
107-06-2	1,2-Dichloroethane	26.8	**30.7**	**115**	61-129	
71-55-6	1,1,1-Trichloroethane	26.5	**28.7**	**108**	69-127	
71-43-2	Benzene	26.8	**27.7**	**103**	68-122	
56-23-5	Carbon Tetrachloride	27.0	**29.9**	**111**	68-137	

Verified By: Re Date: 11/21/08

COLUMBIA ANALYTICAL SERVICES, INC.

LABORATORY CONTROL SAMPLE SUMMARY

Client: **CH2M Hill**
Client Sample ID: **Lab Control Sample** CAS Project ID: P0803732
Client Project ID: **DOW - Waterloo, NY / 369548.02.B3.FI** CAS Sample ID: P081112-LCS

Test Code: EPA TO-15 Date Collected: NA
Instrument ID: Tekmar AUTOCAN/Agilent 5975Cinert/6890N/MS16 Date Received: NA
Analyst: Wida Ang Date Analyzed: 11/12/08
Sampling Media: 6.0 L Summa Canister Volume(s) Analyzed: NA Liter(s)
Test Notes:

CAS #	Compound	Spike Amount ng	Result ng	% Recovery	CAS Acceptance Limits	Data Qualifier
78-87-5	1,2-Dichloropropane	26.5	**26.7**	**101**	69-128	
75-27-4	Bromodichloromethane	27.3	**31.7**	**116**	71-131	
79-01-6	Trichloroethene	26.5	**28.6**	**108**	72-122	
10061-01-5	cis-1,3-Dichloropropene	25.0	**28.0**	**112**	73-122	
108-10-1	4-Methyl-2-pentanone	27.5	**29.6**	**108**	67-122	
10061-02-6	trans-1,3-Dichloropropene	27.5	**33.2**	**121**	75-131	
79-00-5	1,1,2-Trichloroethane	26.3	**28.9**	**110**	76-125	
108-88-3	Toluene	27.0	**29.0**	**107**	74-119	
124-48-1	Dibromochloromethane	28.8	**31.9**	**111**	79-129	
127-18-4	Tetrachloroethene	25.8	**28.5**	**110**	72-125	
108-90-7	Chlorobenzene	26.8	**28.7**	**107**	74-121	
100-41-4	Ethylbenzene	26.5	**28.1**	**106**	76-120	
179601-23-1	m,p-Xylenes	52.5	**56.0**	**107**	75-120	
75-25-2	Bromoform	26.0	**29.7**	**114**	76-143	
100-42-5	Styrene	27.0	**30.3**	**112**	78-124	
95-47-6	o-Xylene	26.5	**28.5**	**108**	76-121	
79-34-5	1,1,2,2-Tetrachloroethane	27.0	**29.8**	**110**	77-126	

Verified By: Rec Date: 11/21/08

COLUMBIA ANALYTICAL SERVICES, INC.

LABORATORY CONTROL SAMPLE SUMMARY

Client: **CH2M Hill**
Client Sample ID: **Lab Control Sample** CAS Project ID: P0803732
Client Project ID: **DOW - Waterloo, NY / 369548.02.B3.FI** CAS Sample ID: P081113-LCS

Test Code: EPA TO-15 Date Collected: NA
Instrument ID: Tekmar AUTOCAN/Agilent 5975Cinert/6890N/MS16 Date Received: NA
Analyst: Wida Ang Date Analyzed: 11/13/08
Sampling Media: 6.0 L Summa Canister Volume(s) Analyzed: NA Liter(s)
Test Notes:

CAS #	Compound	Spike Amount ng	Result ng	% Recovery	CAS Acceptance Limits	Data Qualifier
74-87-3	Chloromethane	25.3	**19.8**	**78**	46-132	
75-01-4	Vinyl Chloride	25.5	**22.2**	**87**	57-132	
74-83-9	Bromomethane	25.8	**24.8**	**96**	67-130	
75-00-3	Chloroethane	25.8	**24.7**	**96**	68-123	
67-64-1	Acetone	137	**114**	**83**	59-121	
107-13-1	Acrylonitrile	26.8	**23.6**	**88**	65-134	
75-35-4	1,1-Dichloroethene	27.5	**26.5**	**96**	70-123	
75-09-2	Methylene Chloride	26.5	**24.7**	**93**	66-121	
75-15-0	Carbon Disulfide	26.8	**25.2**	**94**	66-115	
156-60-5	trans-1,2-Dichloroethene	26.8	**25.8**	**96**	69-125	
75-34-3	1,1-Dichloroethane	26.8	**25.6**	**96**	72-130	
78-93-3	2-Butanone (MEK)	27.5	**30.0**	**109**	68-126	
156-59-2	cis-1,2-Dichloroethene	27.5	**26.5**	**96**	69-124	
67-66-3	Chloroform	26.8	**26.7**	**100**	68-126	
107-06-2	1,2-Dichloroethane	26.8	**26.9**	**100**	61-129	
71-55-6	1,1,1-Trichloroethane	26.5	**25.6**	**97**	69-127	
71-43-2	Benzene	26.8	**25.1**	**94**	68-122	
56-23-5	Carbon Tetrachloride	27.0	**26.7**	**99**	68-137	

Verified By: RC Date: 11/21/08

COLUMBIA ANALYTICAL SERVICES, INC.

LABORATORY CONTROL SAMPLE SUMMARY

Client: **CH2M Hill**
Client Sample ID: **Lab Control Sample** CAS Project ID: P0803732
Client Project ID: **DOW - Waterloo, NY / 369548.02.B3.FI** CAS Sample ID: P081113-LCS

Test Code: EPA TO-15 Date Collected: NA
Instrument ID: Tekmar AUTOCAN/Agilent 5975Cinert/6890N/MS16 Date Received: NA
Analyst: Wida Ang Date Analyzed: 11/13/08
Sampling Media: 6.0 L Summa Canister Volume(s) Analyzed: NA Liter(s)
Test Notes:

CAS #	Compound	Spike Amount ng	Result ng	% Recovery	CAS Acceptance Limits	Data Qualifier
78-87-5	1,2-Dichloropropane	26.5	**23.8**	**90**	69-128	
75-27-4	Bromodichloromethane	27.3	**28.1**	**103**	71-131	
79-01-6	Trichloroethene	26.5	**25.6**	**97**	72-122	
10061-01-5	cis-1,3-Dichloropropene	25.0	**25.9**	**104**	73-122	
108-10-1	4-Methyl-2-pentanone	27.5	**26.3**	**96**	67-122	
10061-02-6	trans-1,3-Dichloropropene	27.5	**30.2**	**110**	75-131	
79-00-5	1,1,2-Trichloroethane	26.3	**26.0**	**99**	76-125	
108-88-3	Toluene	27.0	**28.7**	**106**	74-119	
124-48-1	Dibromochloromethane	28.8	**30.8**	**107**	79-129	
127-18-4	Tetrachloroethene	25.8	**28.6**	**111**	72-125	
108-90-7	Chlorobenzene	26.8	**27.6**	**103**	74-121	
100-41-4	Ethylbenzene	26.5	**27.7**	**105**	76-120	
179601-23-1	m,p-Xylenes	52.5	**54.1**	**103**	75-120	
75-25-2	Bromoform	26.0	**29.5**	**113**	76-143	
100-42-5	Styrene	27.0	**29.5**	**109**	78-124	
95-47-6	o-Xylene	26.5	**27.5**	**104**	76-121	
79-34-5	1,1,2,2-Tetrachloroethane	27.0	**29.0**	**107**	77-126	

Verified By: R Date: 11/21/08

COLUMBIA ANALYTICAL SERVICES, INC.

LABORATORY CONTROL SAMPLE SUMMARY

Client: **CH2M Hill**
Client Sample ID: **Lab Control Sample** CAS Project ID: P0803732
Client Project ID: **DOW - Waterloo, NY / 369548.02.B3.FI** CAS Sample ID: P081114-LCS

Test Code: EPA TO-15 Date Collected: NA
Instrument ID: Tekmar AUTOCAN/Agilent 5975Cinert/6890N/MS16 Date Received: NA
Analyst: Wida Ang Date Analyzed: 11/14/08
Sampling Media: 6.0 L Summa Canister Volume(s) Analyzed: NA Liter(s)
Test Notes:

CAS #	Compound	Spike Amount ng	Result ng	% Recovery	CAS Acceptance Limits	Data Qualifier
74-87-3	Chloromethane	25.3	**19.4**	**77**	46-132	
75-01-4	Vinyl Chloride	25.5	**21.6**	**85**	57-132	
74-83-9	Bromomethane	25.8	**25.3**	**98**	67-130	
75-00-3	Chloroethane	25.8	**24.5**	**95**	68-123	
67-64-1	Acetone	137	**112**	**82**	59-121	
107-13-1	Acrylonitrile	26.8	**23.6**	**88**	65-134	
75-35-4	1,1-Dichloroethene	27.5	**26.5**	**96**	70-123	
75-09-2	Methylene Chloride	26.5	**24.8**	**94**	66-121	
75-15-0	Carbon Disulfide	26.8	**25.7**	**96**	66-115	
156-60-5	trans-1,2-Dichloroethene	26.8	**26.5**	**99**	69-125	
75-34-3	1,1-Dichloroethane	26.8	**25.4**	**95**	72-130	
78-93-3	2-Butanone (MEK)	27.5	**29.0**	**105**	68-126	
156-59-2	cis-1,2-Dichloroethene	27.5	**26.6**	**97**	69-124	
67-66-3	Chloroform	26.8	**27.0**	**101**	68-126	
107-06-2	1,2-Dichloroethane	26.8	**28.3**	**106**	61-129	
71-55-6	1,1,1-Trichloroethane	26.5	**26.6**	**100**	69-127	
71-43-2	Benzene	26.8	**24.5**	**91**	68-122	
56-23-5	Carbon Tetrachloride	27.0	**27.2**	**101**	68-137	

Verified By: RC Date: 11/21/08

COLUMBIA ANALYTICAL SERVICES, INC.

LABORATORY CONTROL SAMPLE SUMMARY

Client: **CH2M Hill**
Client Sample ID: **Lab Control Sample** CAS Project ID: P0803732
Client Project ID: **DOW - Waterloo, NY / 369548.02.B3.FI** CAS Sample ID: P081114-LCS

Test Code: EPA TO-15 Date Collected: NA
Instrument ID: Tekmar AUTOCAN/Agilent 5975Cinert/6890N/MS16 Date Received: NA
Analyst: Wida Ang Date Analyzed: 11/14/08
Sampling Media: 6.0 L Summa Canister Volume(s) Analyzed: NA Liter(s)
Test Notes:

CAS #	Compound	Spike Amount ng	Result ng	% Recovery	CAS Acceptance Limits	Data Qualifier
78-87-5	1,2-Dichloropropane	26.5	**23.1**	**87**	69-128	
75-27-4	Bromodichloromethane	27.3	**28.0**	**103**	71-131	
79-01-6	Trichloroethene	26.5	**26.1**	**98**	72-122	
10061-01-5	cis-1,3-Dichloropropene	25.0	**24.4**	**98**	73-122	
108-10-1	4-Methyl-2-pentanone	27.5	**26.2**	**95**	67-122	
10061-02-6	trans-1,3-Dichloropropene	27.5	**29.6**	**108**	75-131	
79-00-5	1,1,2-Trichloroethane	26.3	**26.3**	**100**	76-125	
108-88-3	Toluene	27.0	**26.9**	**100**	74-119	
124-48-1	Dibromochloromethane	28.8	**30.9**	**107**	79-129	
127-18-4	Tetrachloroethene	25.8	**27.0**	**105**	72-125	
108-90-7	Chlorobenzene	26.8	**26.7**	**100**	74-121	
100-41-4	Ethylbenzene	26.5	**26.5**	**100**	76-120	
179601-23-1	m,p-Xylenes	52.5	**52.4**	**100**	75-120	
75-25-2	Bromoform	26.0	**29.0**	**112**	76-143	
100-42-5	Styrene	27.0	**28.4**	**105**	78-124	
95-47-6	o-Xylene	26.5	**26.2**	**99**	76-121	
79-34-5	1,1,2,2-Tetrachloroethane	27.0	**26.9**	**100**	77-126	

COLUMBIA ANALYTICAL SERVICES, INC.

LABORATORY DUPLICATE SUMMARY RESULTS

Client: **CH2M Hill**
Client Sample ID: **WAT-IA-6-110508**
Client Project ID: **DOW - Waterloo, NY / 369548.02.B3.FI**

CAS Project ID: P0803732
CAS Sample ID: P0803732-014DUP

Test Code: EPA TO-15
Instrument ID: Tekmar AUTOCAN/Agilent 5975Cinert/6890N/MS16
Analyst: Wida Ang
Sampling Media: 6.0 L Summa Canister
Test Notes:
Container ID: AC01381

Date Collected: 11/5/08
Date Received: 11/7/08
Date Analyzed: 11/13/08
Volume(s) Analyzed: 1.00 Liter(s)

Initial Pressure (psig): -2.7 Final Pressure (psig): 3.5

Canister Dilution Factor: 1.52

Compound	Sample Result µg/m³	Sample Result ppbV	Duplicate Sample Result µg/m³	Duplicate Sample Result ppbV	Average µg/m³	% RPD	RPD Limit	Data Qualifier
Chloromethane	0.331	0.161	0.264	0.128	0.2975	**23**	25	
Vinyl Chloride	ND	ND	ND	ND	-	-	25	
Bromomethane	ND	ND	ND	ND	-	-	25	
Chloroethane	ND	ND	ND	ND	-	-	25	
Acetone	12.5	5.27	11.8	4.96	12.15	**6**	25	
Acrylonitrile	0.555	0.256	0.534	0.246	0.5445	**4**	25	**J**
1,1-Dichloroethene	ND	ND	ND	ND	-	-	25	
Methylene Chloride	0.388	0.112	0.398	0.115	0.393	**3**	25	**J**
Carbon Disulfide	4.11	1.32	3.70	1.19	3.905	**10**	25	
trans-1,2-Dichloroethene	ND	ND	ND	ND	-	-	25	
1,1-Dichloroethane	ND	ND	ND	ND	-	-	25	
2-Butanone (MEK)	2.21	0.750	2.15	0.731	2.18	**3**	25	
cis-1,2-Dichloroethene	ND	ND	ND	ND	-	-	25	
Chloroform	0.433	0.0887	0.407	0.0835	0.42	**6**	25	
1,2-Dichloroethane	ND	ND	ND	ND	-	-	25	
1,1,1-Trichloroethane	ND	ND	ND	ND	-	-	25	
Benzene	0.572	0.179	0.524	0.164	0.548	**9**	25	
Carbon Tetrachloride	0.606	0.0965	0.584	0.0928	0.595	**4**	25	

ND = Compound was analyzed for, but not detected above the laboratory detection limit.
J = The analyte was positively identified below the method reporting limit; the associated numerical value is considered estimated.

Verified By: Rc Date: 11/24/08

COLUMBIA ANALYTICAL SERVICES, INC.

LABORATORY DUPLICATE SUMMARY RESULTS

Client: **CH2M Hill**
Client Sample ID: **WAT-IA-6-110508**
Client Project ID: **DOW - Waterloo, NY / 369548.02.B3.FI**

CAS Project ID: P0803732
CAS Sample ID: P0803732-014DUP

Test Code: EPA TO-15
Instrument ID: Tekmar AUTOCAN/Agilent 5975Cinert/6890N/MS16
Analyst: Wida Ang
Sampling Media: 6.0 L Summa Canister
Test Notes:
Container ID: AC01381

Date Collected: 11/5/08
Date Received: 11/7/08
Date Analyzed: 11/13/08
Volume(s) Analyzed: 1.00 Liter(s)

Initial Pressure (psig): -2.7 Final Pressure (psig): 3.5

Canister Dilution Factor: 1.52

Compound	Sample Result µg/m³	Sample Result ppbV	Duplicate Sample Result µg/m³	Duplicate Sample Result ppbV	Average µg/m³	% RPD	RPD Limit	Data Qualifier
1,2-Dichloropropane	ND	ND	ND	ND	-	-	25	
Bromodichloromethane	ND	ND	ND	ND	-	-	25	
Trichloroethene	ND	ND	ND	ND	-	-	25	
cis-1,3-Dichloropropene	ND	ND	ND	ND	-	-	25	
4-Methyl-2-pentanone	53.6	13.1	53.2	13.0	53.4	**0.7**	25	
trans-1,3-Dichloropropene	ND	ND	ND	ND	-	-	25	
1,1,2-Trichloroethane	ND	ND	ND	ND	-	-	25	
Toluene	4.49	1.19	4.61	1.22	4.55	**3**	25	
Dibromochloromethane	ND	ND	ND	ND	-	-	25	
Tetrachloroethene	0.0760	0.0112	0.103	0.0152	0.0895	**30**	25	**J, D**
Chlorobenzene	ND	ND	ND	ND	-	-	25	
Ethylbenzene	0.965	0.222	1.06	0.243	1.0125	**9**	25	
m,p-Xylenes	3.25	0.748	3.13	0.720	3.19	**4**	25	
Bromoform	ND	ND	ND	ND	-	-	25	
Styrene	0.169	0.0396	0.211	0.0496	0.19	**22**	25	**J**
o-Xylene	0.825	0.190	0.912	0.210	0.8685	**10**	25	
1,1,2,2-Tetrachloroethane	ND	ND	ND	ND	-	-	25	

ND = Compound was analyzed for, but not detected above the laboratory detection limit.
D = Duplicate precision not within the specified limits; however, the results are below the method reporting limit and estimated as specified.
J = The analyte was positively identified below the method reporting limit; the associated numerical value is considered estimated.

Verified By: Re Date: 11/20/08

COLUMBIA ANALYTICAL SERVICES, INC.

LABORATORY DUPLICATE SUMMARY RESULTS

Client: **CH2M Hill**
Client Sample ID: **WAT-SG-9-110508**
Client Project ID: **DOW - Waterloo, NY / 369548.02.B3.FI**

CAS Project ID: P0803732
CAS Sample ID: P0803732-022DUP

Test Code: EPA TO-15
Instrument ID: Tekmar AUTOCAN/Agilent 5975Cinert/6890N/MS16
Analyst: Wida Ang
Sampling Media: 6.0 L Summa Canister
Test Notes:
Container ID: AC01425

Date Collected: 11/5/08
Date Received: 11/7/08
Date Analyzed: 11/14/08
Volume(s) Analyzed: 0.50 Liter(s)
0.10 Liter(s)

Initial Pressure (psig): -2.1 Final Pressure (psig): 3.5

Canister Dilution Factor: 1.44

Compound	Sample Result µg/m³	Sample Result ppbV	Duplicate Sample Result µg/m³	Duplicate Sample Result ppbV	Average µg/m³	% RPD	RPD Limit	Data Qualifier
Chloromethane	ND	ND	ND	ND	-	-	25	
Vinyl Chloride	ND	ND	ND	ND	-	-	25	
Bromomethane	ND	ND	ND	ND	-	-	25	
Chloroethane	ND	ND	ND	ND	-	-	25	
Acetone	11.4	4.81	12.1	5.10	11.75	**6**	25	**J**
Acrylonitrile	ND	ND	ND	ND	-	-	25	
1,1-Dichloroethene	ND	ND	ND	ND	-	-	25	
Methylene Chloride	0.279	0.0804	0.158	0.0456	0.2185	**55**	25	**J, D**
Carbon Disulfide	3.79	1.22	3.44	1.10	3.615	**10**	25	
trans-1,2-Dichloroethene	ND	ND	ND	ND	-	-	25	
1,1-Dichloroethane	0.210	0.0520	0.190	0.0470	0.2	**10**	25	**J**
2-Butanone (MEK)	2.62	0.890	2.62	0.887	2.62	**0**	25	
cis-1,2-Dichloroethene	ND	ND	ND	ND	-	-	25	
Chloroform	393	80.6	376	77.0	384.5	**4**	25	
1,2-Dichloroethane	0.734	0.182	0.602	0.149	0.668	**20**	25	
1,1,1-Trichloroethane	ND	ND	ND	ND	-	-	25	
Benzene	0.429	0.134	0.441	0.138	0.435	**3**	25	
Carbon Tetrachloride	0.674	0.107	0.576	0.0916	0.625	**16**	25	

ND = Compound was analyzed for, but not detected above the laboratory detection limit.
D = Duplicate precision not within the specified limits; however, the results are below the method reporting limit and estimated as specified.
J = The analyte was positively identified below the method reporting limit; the associated numerical value is considered estimated.

Verified By: Rc Date: 11/24/08

COLUMBIA ANALYTICAL SERVICES, INC.

LABORATORY DUPLICATE SUMMARY RESULTS

Client: **CH2M Hill**
Client Sample ID: **WAT-SG-9-110508**
Client Project ID: **DOW - Waterloo, NY / 369548.02.B3.FI**

CAS Project ID: P0803732
CAS Sample ID: P0803732-022DUP

Test Code: EPA TO-15
Instrument ID: Tekmar AUTOCAN/Agilent 5975Cinert/6890N/MS16
Analyst: Wida Ang
Sampling Media: 6.0 L Summa Canister
Test Notes:
Container ID: AC01425

Date Collected: 11/5/08
Date Received: 11/7/08
Date Analyzed: 11/14/08
Volume(s) Analyzed: 0.50 Liter(s)
0.10 Liter(s)

Initial Pressure (psig): -2.1 Final Pressure (psig): 3.5

Canister Dilution Factor: 1.44

Compound	Sample Result µg/m³	Sample Result ppbV	Duplicate Sample Result µg/m³	Duplicate Sample Result ppbV	Average µg/m³	% RPD	RPD Limit	Data Qualifier
1,2-Dichloropropane	20.4	4.40	20.4	4.41	20.4	**0**	25	
Bromodichloromethane	ND	ND	ND	ND	-	-	25	
Trichloroethene	484	90.1	482	89.7	483	**0.4**	25	
cis-1,3-Dichloropropene	ND	ND	ND	ND	-	-	25	
4-Methyl-2-pentanone	1.98	0.482	2.09	0.509	2.035	**5**	25	
trans-1,3-Dichloropropene	ND	ND	ND	ND	-	-	25	
1,1,2-Trichloroethane	0.858	0.157	0.636	0.117	0.747	**30**	25	**D**
Toluene	2.65	0.703	2.66	0.707	2.655	**0.4**	25	
Dibromochloromethane	ND	ND	ND	ND	-	-	25	
Tetrachloroethene	5.05	0.745	5.61	0.828	5.33	**11**	25	
Chlorobenzene	0.452	0.0982	0.518	0.113	0.485	**14**	25	
Ethylbenzene	0.156	0.0358	0.161	0.0371	0.1585	**3**	25	**J**
m,p-Xylenes	0.487	0.112	0.518	0.119	0.5025	**6**	25	**J**
Bromoform	ND	ND	ND	ND	-	-	25	
Styrene	ND	ND	ND	ND	-	-	25	
o-Xylene	0.147	0.0338	0.199	0.0458	0.173	**30**	25	**J, D**
1,1,2,2-Tetrachloroethane	ND	ND	ND	ND	-	-	25	

ND = Compound was analyzed for, but not detected above the laboratory detection limit.
D = Duplicate precision not within the specified limits; however, the results are below the method reporting limit and estimated as specified.
J = The analyte was positively identified below the method reporting limit; the associated numerical value is considered estimated.

Verified By: RG Date: 11/24/08

COLUMBIA ANALYTICAL SERVICES, INC.

RESULTS OF ANALYSIS

Client: **CH2M Hill** CAS Project ID: P0803732
Client Project ID: **DOW - Waterloo, NY / 369548.02.B3.FI**

Method Blank Summary

Test Code: EPA TO-15
Instrument ID: Tekmar AUTOCAN/Agilent 5975Cinert/6890N/MS16 Lab File ID: 11120803.D
Analyst: Wida Ang Date Analyzed: 11/12/08
Sampling Media: 6.0 L Summa Canister(s) Time Analyzed: 08:29
Test Notes:

Client Sample ID	CAS Sample ID	Lab File ID	Time Analyzed
Lab Control Sample	P081112-LCS	11120804.D	09:09
WAT-SG-2-110408 (Dilution)	P0803732-002	11120814.D	16:29
WAT-SG-3a-110408 (Dilution)	P0803732-004	11120815.D	17:29
WAT-SG-4-110408	P0803732-006	11120816.D	18:10
WAT-SG-1-110408	P0803732-001	11120818.D	19:34
WAT-SG-2-110408	P0803732-002	11120819.D	20:16
WAT-SG-DUP-110408	P0803732-003	11120820.D	20:59
WAT-SG-3a-110408	P0803732-004	11120821.D	21:42
WAT-SG-3-110408	P0803732-005	11120822.D	22:25
WAT-IA-1-110408	P0803732-007	11120823.D	23:07
WAT-IA-2-110408	P0803732-008	11120825.D	00:31
WAT-IA-3-110408	P0803732-009	11120826.D	01:12
WAT-SG-B2-110408	P0803732-011	11120828.D	02:36

COLUMBIA ANALYTICAL SERVICES, INC.

RESULTS OF ANALYSIS

Client: **CH2M Hill** CAS Project ID: P0803732
Client Project ID: **DOW - Waterloo, NY / 369548.02.B3.FI**

Method Blank Summary

Test Code: EPA TO-15
Instrument ID: Tekmar AUTOCAN/Agilent 5975Cinert/6890N/MS16 Lab File ID: 11130807.D
Analyst: Wida Ang Date Analyzed: 11/13/08
Sampling Media: 6.0 L Summa Canister(s) Time Analyzed: 10:07
Test Notes:

Client Sample ID	CAS Sample ID	Lab File ID	Time Analyzed
Lab Control Sample	P081113-LCS	11130808.D	10:50
WAT-SG-DUP-110408 (Dilution)	P0803732-003	11130811.D	13:03
WAT-IA-1-110408 (Dilution)	P0803732-007	11130812.D	13:44
WAT-IA-2-110408 (Dilution)	P0803732-008	11130813.D	14:25
WAT-SG-7a-110508 (Dilution)	P0803732-020	11130814.D	15:06
WAT-IA-5-110508	P0803732-013	11130815.D	16:12
WAT-IA-6-110508	P0803732-014	11130816.D	16:55
WAT-IA-6-110508 (Lab Duplicate)	P0803732-014DUP	11130817.D	17:49
WAT-IA-3-110408 (Dilution)	P0803732-009	11130818.D	18:30
WAT-IA-4-110508	P0803732-010	11130820.D	19:54
WAT-IA-7-110508	P0803732-015	11130822.D	21:19
WAT-SG-5a-110508 (Dilution)	P0803732-017	11130824.D	22:41

COLUMBIA ANALYTICAL SERVICES, INC.

RESULTS OF ANALYSIS

Client: **CH2M Hill** CAS Project ID: P0803732
Client Project ID: **DOW - Waterloo, NY / 369548.02.B3.FI**

Method Blank Summary

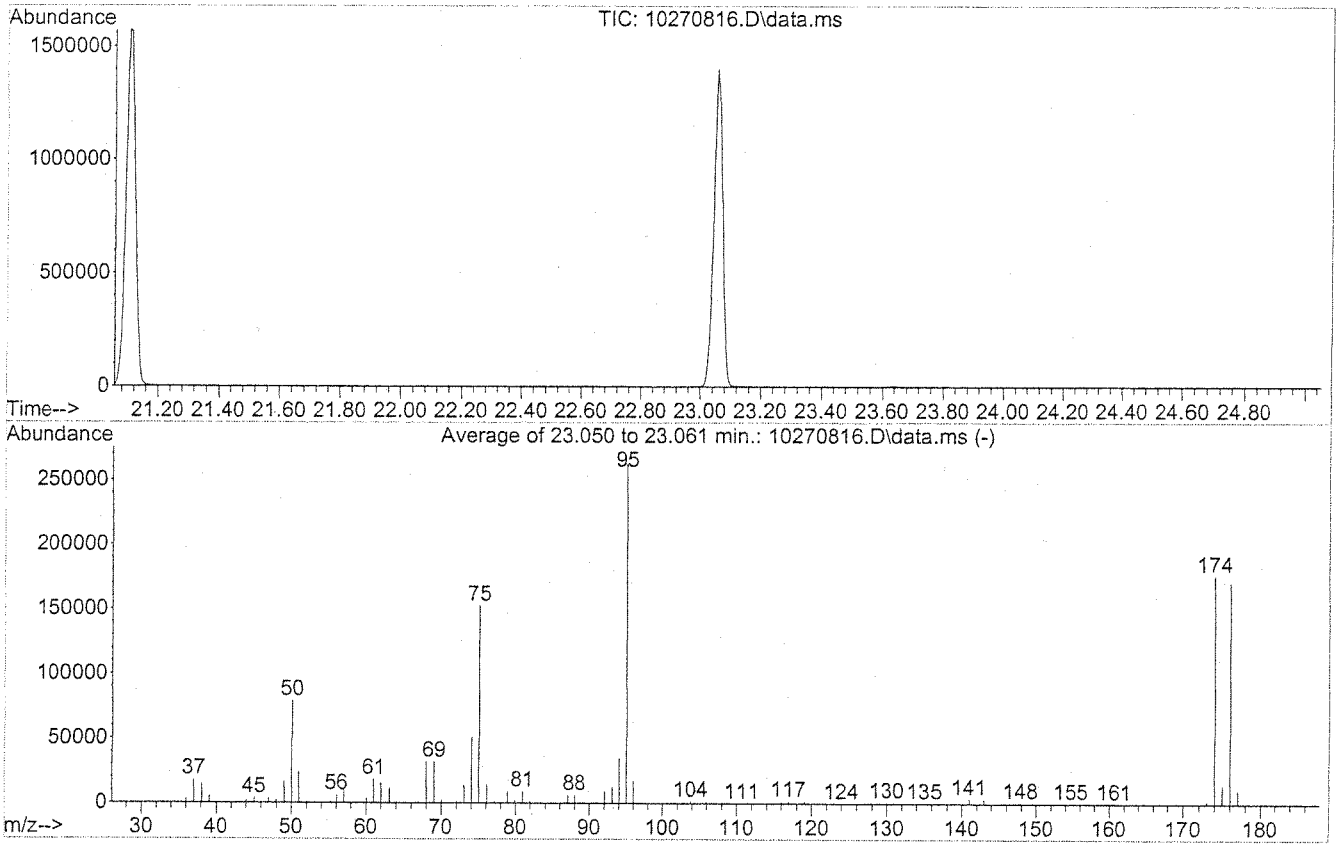
Test Code: EPA TO-15
Instrument ID: Tekmar AUTOCAN/Agilent 5975Cinert/6890N/MS16 Lab File ID: 11140803.D
Analyst: Wida Ang Date Analyzed: 11/14/08
Sampling Media: 6.0 L Summa Canister(s) Time Analyzed: 06:30
Test Notes:

Client Sample ID	CAS Sample ID	Lab File ID	Time Analyzed
Lab Control Sample	P081114-LCS	11140804.D	07:11
WAT-SG-B2-110408 (Dilution)	P0803732-011	11140805.D	08:05
WAT-SG-B4-110508	P0803732-016	11140806.D	08:47
WAT-SG-5a-110508	P0803732-017	11140807.D	09:30
WAT-SG-5-110508	P0803732-018	11140808.D	10:17
WAT-SG-6-110508	P0803732-019	11140809.D	11:10
WAT-SG-5-110508 (Dilution)	P0803732-018	11140812.D	13:15
WAT-SG-6-110508 (Dilution)	P0803732-019	11140813.D	13:56
WAT-SG-FB-110408	P0803732-012	11140814.D	14:50
WAT-SG-7a-110508	P0803732-020	11140818.D	17:55
WAT-SG-9-110508	P0803732-022	11140819.D	18:36
WAT-SG-9-110508 (Lab Duplicate)	P0803732-022DUP	11140820.D	19:17
WAT-SG-8-110508	P0803732-021	11140821.D	20:00
WAT-SG-9-110508 (Dilution)	P0803732-022	11140822.D	20:41
WAT-SG-9-110508 (Lab Duplicate - Dilution)	P0803732-022DUP	11140823.D	21:22

Data Path : J:\MS16\DATA\2008_10\27\
Data File : 10270816.D
Acq On : 27 Oct 2008 17:52
Operator : WA
Sample : 25ng BFB STD
Misc : S20-10210802
ALS Vial : 9 Sample Multiplier: 1

Integration File: RTEINT.P

Method : J:\MS16\METHODS\R16102708.M
Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
Last Update : Sat Oct 25 20:07:52 2008



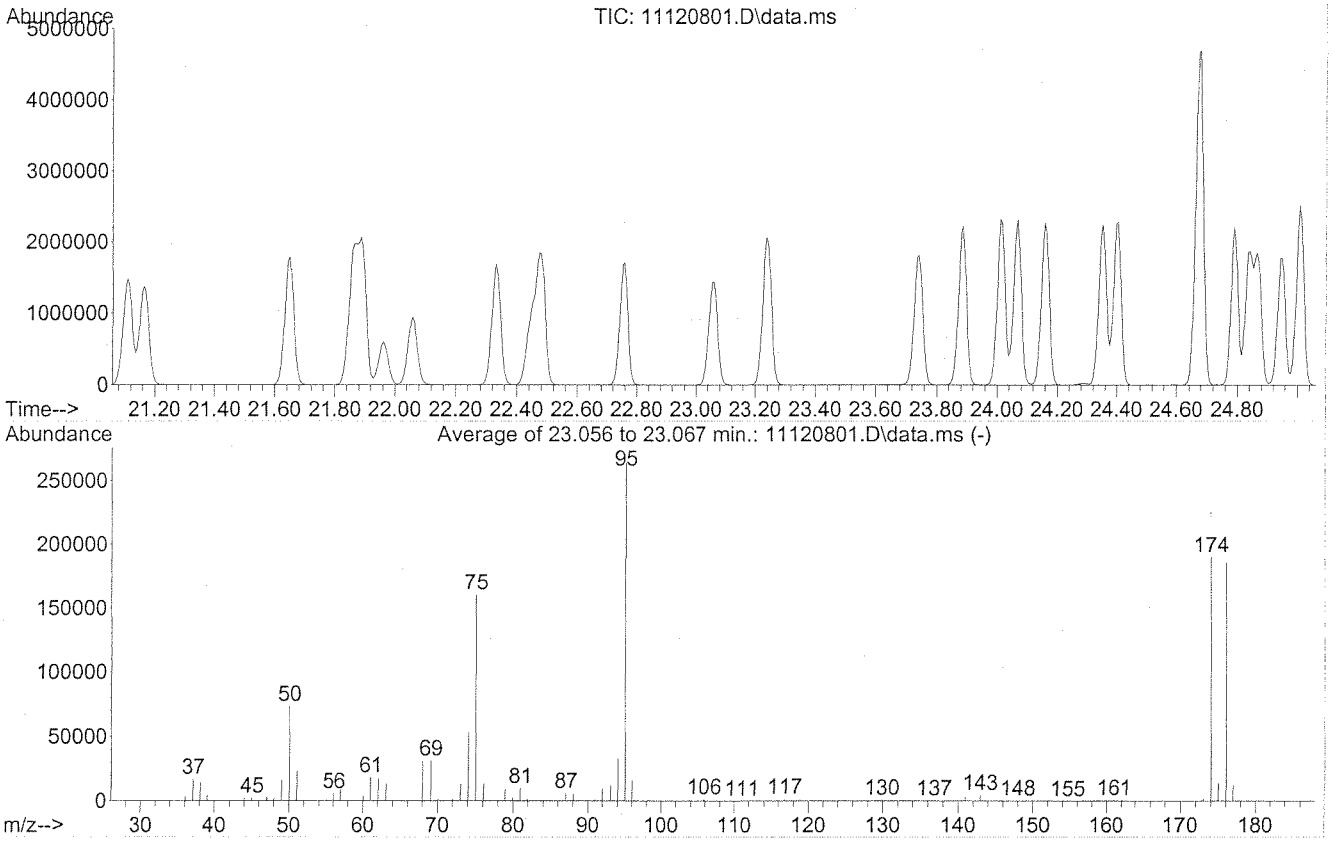
AutoFind: Scans 3420, 3421, 3422; Background Corrected with Scan 3409

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50	95	8	40	30.1	78960	PASS
75	95	30	66	58.1	152427	PASS
95	95	100	100	100.0	262165	PASS
96	95	5	9	6.5	17026	PASS
173	174	0.00	2	0.9	1643	PASS
174	95	50	120	67.2	176107	PASS
175	174	4	9	8.1	14252	PASS
176	174	93	101	97.0	170859	PASS
177	176	5	9	5.9	10125	PASS

Data Path : J:\MS16\DATA\2008_11\12\
Data File : 11120801.D
Acq On : 12 Nov 2008 7:05 am
Operator : WA
Sample : 25ng TO-15 CCV STD
Misc : S20-10210802/S20-11040802
ALS Vial : 9 Sample Multiplier: 1

Integration File: RTEINT.P

Method : J:\MS16\METHODS\R16102708.M
Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
Last Update : Tue Oct 28 12:03:08 2008



AutoFind: Scans 3421, 3422, 3423; Background Corrected with Scan 3410

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50	95	8	40	27.9	73611	PASS
75	95	30	66	61.0	160917	PASS
95	95	100	100	100.0	263680	PASS
96	95	5	9	6.1	16075	PASS
173	174	0.00	2	0.9	1733	PASS
174	95	50	120	72.3	190677	PASS
175	174	4	9	7.3	13887	PASS
176	174	93	101	97.6	186048	PASS
177	176	5	9	6.5	12136	PASS

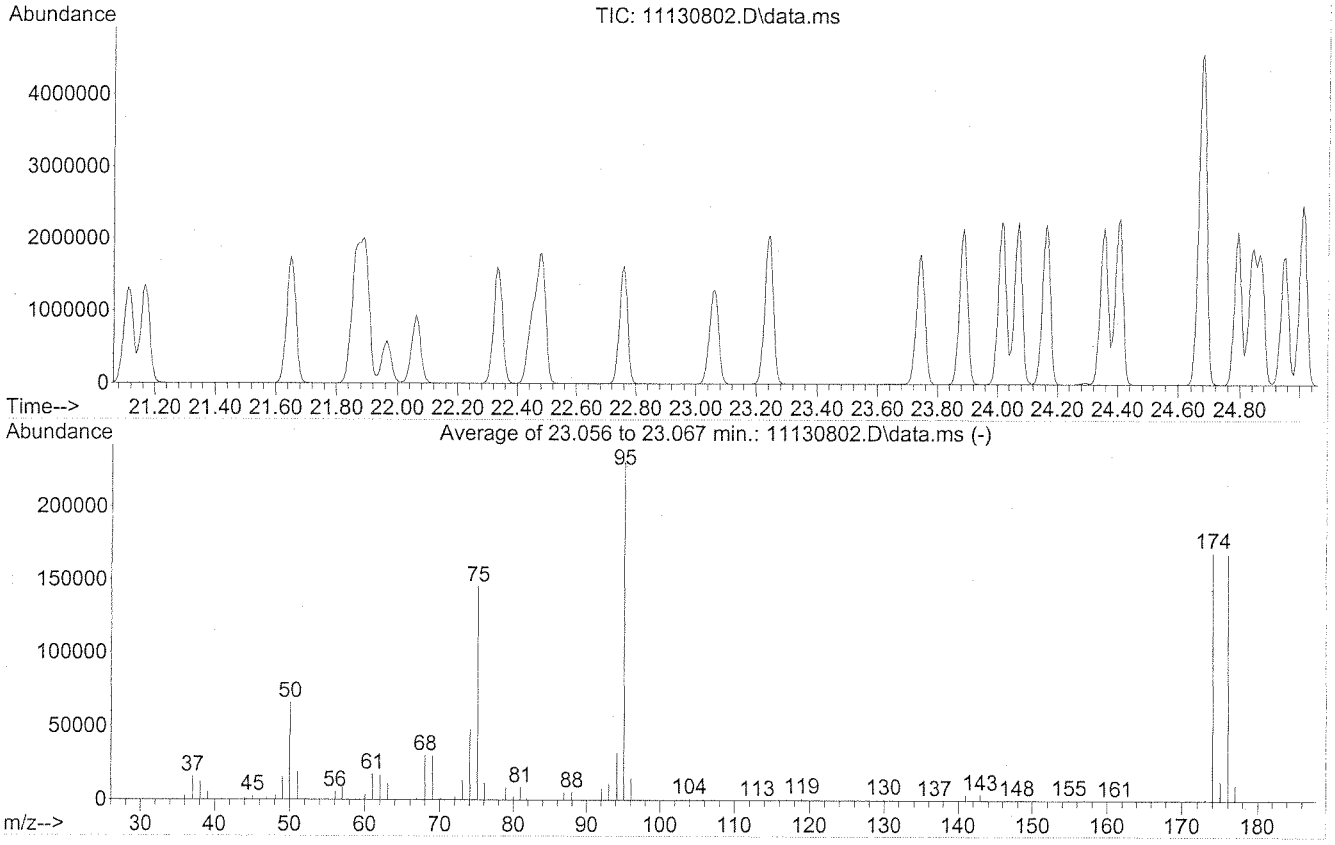
11/13/08

11/12/08

Data Path : J:\MS16\DATA\2008_11\13\
Data File : 11130802.D
Acq On : 13 Nov 2008 5:28 am
Operator : WA
Sample : 25ng TO-15 CCV STD
Misc : S20-10210802/S20-11040802
ALS Vial : 1 Sample Multiplier: 1

Integration File: RTEINT.P

Method : J:\MS16\METHODS\R16102708.M
Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
Last Update : Tue Oct 28 12:03:08 2008



AutoFind: Scans 3421, 3422, 3423; Background Corrected with Scan 3411

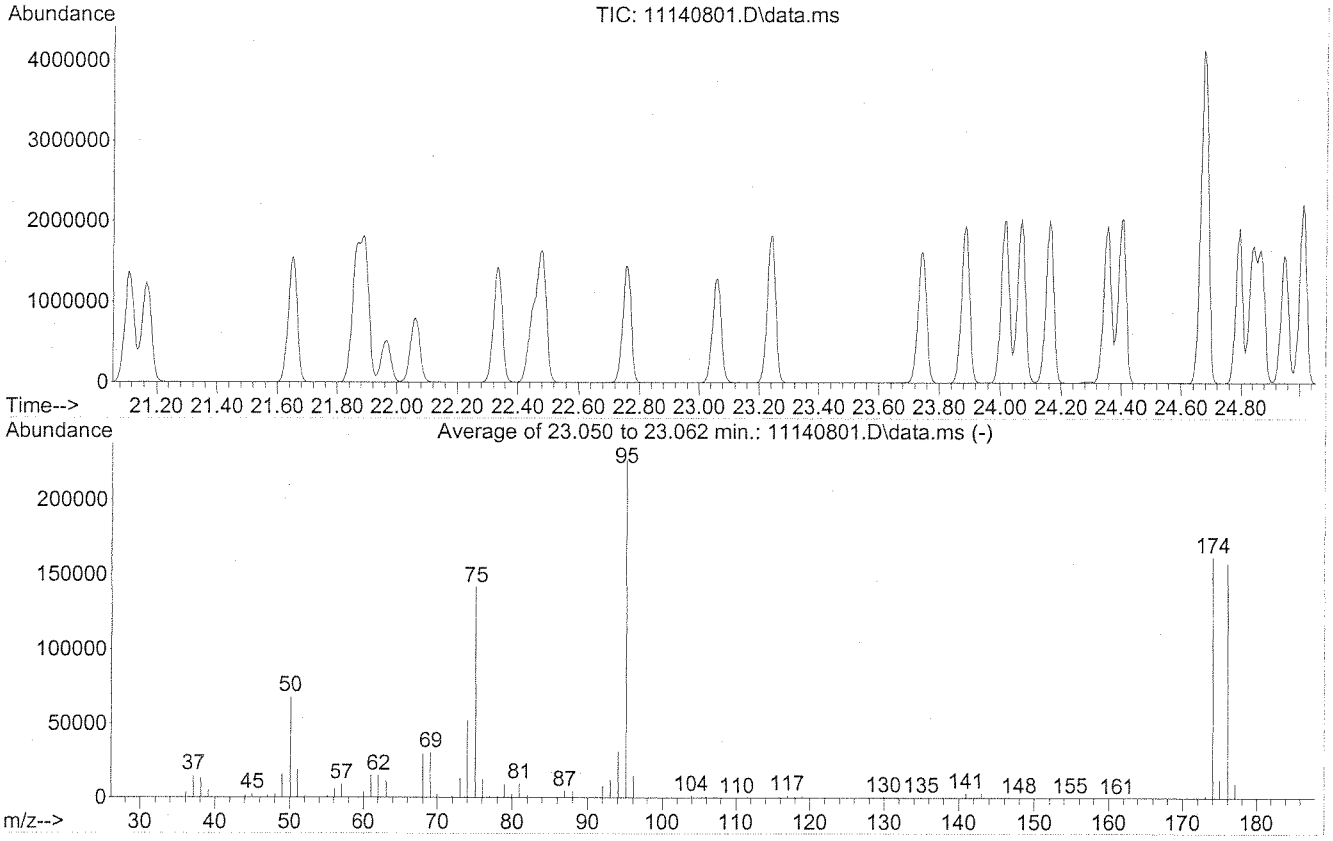
Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50	95	8	40	28.7	66157	PASS
75	95	30	66	63.2	145792	PASS
95	95	100	100	100.0	230507	PASS
96	95	5	9	6.4	14671	PASS
173	174	0.00	2	0.9	1461	PASS
174	95	50	120	73.7	169941	PASS
175	174	4	9	7.8	13270	PASS
176	174	93	101	99.3	168768	PASS
177	176	5	9	6.5	10895	PASS

11/14/08 11/14/08

Data Path : J:\MS16\DATA\2008_11\14\
Data File : 11140801.D
Acq On : 14 Nov 2008 5:07
Operator : WA/LH
Sample : 25ng TO-15 CCV STD
Misc : S20-11130801/S20-11040802
ALS Vial : 1 Sample Multiplier: 1

Integration File: RTEINT.P

Method : J:\MS16\METHODS\R16102708.M
Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
Last Update : Tue Oct 28 12:03:08 2008



AutoFind: Scans 3420, 3421, 3422; Background Corrected with Scan 3411

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50	95	8	40	30.1	68293	PASS
75	95	30	66	62.5	141851	PASS
95	95	100	100	100.0	226880	PASS
96	95	5	9	6.6	14956	PASS
173	174	0.00	2	0.9	1451	PASS
174	95	50	120	71.5	162304	PASS
175	174	4	9	7.8	12625	PASS
176	174	93	101	97.3	157995	PASS
177	176	5	9	6.3	9889	PASS

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11/18/08 11/14/08

Method Path : J:\MS16\METHODS\
Method File : R16102708.M
Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
Last Update : Tue Oct 28 12:03:08 2008
Response Via : Initial Calibration

Calibration Files
0.1 =10270817.D 0.5 =10270818.D 1.0 =10270819.D 5.0 =10270820.D 25 =10270821.D 50 =10270822.D
100 =10270823.D

		Compound	0.1	0.5	1.0	5.0	25	50	100	Avg	%RSD
1)	IR	Bromochloromethane...	----------	----------	ISTD	----------	----------	----------	----------		
2)	T	Propene	1.792	1.649	1.532	1.854	1.878	1.751	1.644	1.729	7.26
3)	T	Dichlorodifluo...	3.884	4.091	3.755	3.559	3.534	3.365	3.178	3.624	8.59
4)	T	Chloromethane	3.387	2.561	2.530	1.740	1.634	1.895	1.612	2.194	30.10
5)	T	Freon 114	1.809	1.589	1.547	1.413	1.345	1.341	1.285	1.475	12.52
6)	T	Vinyl Chloride	2.823	2.289	2.105	1.876	1.909	1.875	1.852	2.104	16.89
7)	T	1,3-Butadiene	1.995	1.934	1.890	1.687	1.697	1.720	1.709	1.805	7.22
8)	T	Bromomethane	1.108	1.225	1.021	0.906	0.897	0.946	0.963	1.009	11.87
9)	T	Chloroethane	0.733	1.033	0.873	0.799	0.790	0.809	0.810	0.835	11.53
10)	T	Ethanol	1.309	1.274	1.147	1.060	0.931	0.925	0.928	1.082	15.28
11)	T	Acetonitrile	2.372	2.533	2.190	2.299	2.156	2.192	2.213	2.279	5.91
12)	T	Acrolein	0.657	0.887	0.854	0.843	0.810	0.818	0.831	0.814	9.06
13)	T	Acetone	1.461	1.240	1.085	0.995	0.971	0.988	1.001	1.106	16.51
14)	T	Trichlorofluor...	3.906	3.927	3.609	3.358	3.317	3.215	3.142	3.496	9.21
15)	T	Isopropanol	5.659	5.422	4.994	3.015	3.058	3.222	3.401	4.110	28.96
16)	T	Acrylonitrile	1.576	1.911	2.078	1.958	2.086	2.064	2.104	1.968	9.54
17)	T	1,1-Dichloroet...	1.153	1.325	1.123	1.010	1.044	1.036	1.035	1.104	10.02
18)	T	tert-Butanol		5.662	5.291	4.399	2.136	2.253		3.948	42.20
19)	T	Methylene Chlo...	1.501	1.247	1.120	1.035	1.039	1.029	1.032	1.143	15.48
20)	T	Allyl Chloride	2.021	2.206	2.109	2.049	2.158	2.171	2.200	2.131	3.44
21)	T	Trichlorotrifl...	1.145	1.345	1.149	1.045	1.029	1.022	1.011	1.106	10.83
22)	T	Carbon Disulfide	5.112	4.019	3.745	3.474	3.604	3.619	3.708	3.897	14.41
23)	T	trans-1,2-Dich...	2.373	2.452	2.353	2.261	2.353	2.338	2.349	2.354	2.38
24)	T	1,1-Dichloroet...	2.854	2.949	2.482	2.444	2.505	2.496	2.506	2.605	7.88
25)	T	Methyl tert-Bu...	5.797	4.648	4.652	4.242	4.295	4.260	4.286	4.597	12.15
26)	T	Vinyl Acetate		0.195	0.189	0.229	0.258	0.269	0.278	0.236	16.04
27)	T	2-Butanone		0.726	0.682	0.635	0.632	0.617	0.552	0.641	9.27
28)	T	cis-1,2-Dichlo...	2.248	2.566	2.287	2.141	2.249	2.206	2.192	2.270	6.12
29)	T	Diisopropyl Ether	0.856	1.110	0.939	0.954	0.947	0.949	0.984	0.963	7.90
30)	T	Ethyl Acetate		0.459	0.435	0.445	0.460	0.460	0.481	0.457	3.41
31)	T	n-Hexane	3.408	2.883	2.561	2.446	2.506	2.523	2.597	2.703	12.61

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Method Path : J:\MS16\METHODS\
Method File : R16102708.M
Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)

32)	T	Chloroform	2.943	3.120	2.731	2.508	2.471	2.412	2.400	2.655	10.70
33)	S	1,2-Dichloroet...	3.054	3.065	3.102	3.082	3.015	2.954	2.916	3.027	2.29
34)	T	Tetrahydrofuran		0.722	0.660	0.595	0.593	0.599	0.617	0.631	8.10
35)	T	Ethyl tert-But...	1.985	1.844	1.750	1.632	1.677	1.667	1.679	1.748	7.21
36)	T	1,2-Dichloroet...	3.614	3.661	3.369	3.062	3.053	2.921	2.844	3.218	10.28
37)	IR	1,4-Difluorobenzen...	----------ISTD----------								
38)	T	1,1,1-Trichlor...	0.874	0.814	0.771	0.684	0.688	0.661	0.634	0.732	12.14
39)	T	Isopropyl Acetate	0.207	0.220	0.204	0.182	0.194	0.193	0.194	0.199	6.22
40)	T	1-Butanol		0.324	0.369	0.368	0.347	0.347	0.338	0.349	4.99
41)	T	Benzene	1.285	1.138	1.031	0.983	0.998	0.989	0.999	1.060	10.61
42)	T	Carbon Tetrach...	0.715	0.747	0.648	0.642	0.650	0.619	0.589	0.659	8.29
43)	T	Cyclohexane	0.433	0.423	0.402	0.375	0.378	0.380	0.389	0.397	5.81
44)	T	tert-Amyl Meth...	0.993	1.018	0.952	0.909	0.930	0.914	0.906	0.946	4.67
45)	T	1,2-Dichloropr...	0.327	0.332	0.292	0.271	0.282	0.281	0.279	0.295	8.32
46)	T	Bromodichlorom...	0.524	0.546	0.530	0.500	0.503	0.494	0.479	0.511	4.58
47)	T	Trichloroethene	0.316	0.365	0.332	0.304	0.301	0.303	0.296	0.317	7.78
48)	T	1,4-Dioxane		0.247	0.214	0.208	0.211	0.205	0.205	0.215	7.52
49)	T	Isooctane	1.731	1.706	1.461	1.451	1.473	1.469	1.468	1.537	8.10
50)	T	Methyl Methacr...	0.129	0.130	0.119	0.113	0.120	0.119	0.120	0.121	4.99
51)	T	n-Heptane	0.313	0.299	0.269	0.237	0.245	0.249	0.252	0.266	10.89
52)	T	cis-1,3-Dichlo...	0.544	0.507	0.482	0.475	0.485	0.487	0.486	0.495	4.81
53)	T	4-Methyl-2-pen...	0.229	0.335	0.331	0.320	0.333	0.323	0.328	0.314	12.08
54)	T	trans-1,3-Dich...	0.453	0.505	0.500	0.518	0.551	0.544	0.537	0.515	6.53
55)	T	1,1,2-Trichlor...	0.246	0.290	0.260	0.257	0.270	0.262	0.263	0.264	5.13
56)	I	Chlorobenzene-d5 (...	----------ISTD----------								
57)	S	Toluene-d8 (SS2)	1.939	1.940	1.922	1.915	1.901	1.895	1.922	1.919	0.90
58)	T	Toluene	2.012	2.059	1.840	1.715	1.772	1.757	1.812	1.853	7.11
59)	T	2-Hexanone	1.521	1.666	1.506	1.450	1.460	1.437	1.422	1.495	5.59
60)	T	Dibromochlorom...	0.688	0.676	0.618	0.587	0.602	0.584	0.588	0.620	7.06
61)	T	1,2-Dibromoethane	0.695	0.552	0.516	0.508	0.535	0.514	0.521	0.549	12.09
62)	T	Butyl Acetate	1.906	1.774	1.664	1.556	1.641	1.658	1.715	1.702	6.59
63)		n-Octane	0.641	0.631	0.499	0.500	0.516	0.520	0.524	0.547	11.23
64)	T	Tetrachloroethene	0.656	0.531	0.485	0.495	0.488	0.485	0.489	0.518	12.08
65)	T	Chlorobenzene	1.404	1.483	1.248	1.155	1.193	1.182	1.200	1.266	9.96
66)	T	Ethylbenzene	2.582	2.648	2.432	2.250	2.336	2.291	2.367	2.415	6.18
67)	T	m- & p-Xylene	2.172	2.193	2.084	1.922	1.977	1.962	2.012	2.046	5.18
68)	T	Bromoform	0.639	0.545	0.508	0.487	0.485	0.477	0.479	0.517	11.39
69)	T	Styrene	1.295	1.413	1.309	1.264	1.309	1.304	1.336	1.318	3.57
70)	T	o-Xylene	2.120	2.279	2.110	1.957	2.026	1.975	2.017	2.069	5.38

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Method Path : J:\MS16\METHODS\
Method File : R16102708.M
Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)

71)	T	n-Nonane	1.382	1.427	1.323	1.227	1.271	1.239	1.237	1.301	6.04
72)	T	1,1,2,2-Tetrac...	0.662	0.732	0.675	0.662	0.676	0.678	0.696	0.683	3.57
73)	S	Bromofluoroben...	0.654	0.641	0.647	0.661	0.665	0.668	0.681	0.659	2.04
74)	T	Cumene	2.496	2.841	2.541	2.422	2.494	2.482	2.528	2.544	5.38
75)	T	alpha-Pinene	1.098	1.293	1.087	1.060	1.107	1.103	1.127	1.125	6.82
76)	T	n-Propylbenzene	3.153	3.260	3.082	2.870	2.991	2.969	3.058	3.054	4.19
77)	T	3-Ethyltoluene	2.600	2.436	2.383	2.318	2.344	2.335	2.395	2.402	4.01
78)	T	4-Ethyltoluene	2.184	2.622	2.276	2.167	2.291	2.258	2.325	2.303	6.59
79)	T	1,3,5-Trimethy...	2.345	2.308	2.180	2.068	2.126	2.084	2.139	2.178	4.95
80)	T	alpha-Methylst...	1.160	1.019	0.986	0.989	1.007	1.000	1.026	1.027	5.89
81)	T	2-Ethyltoluene	2.618	2.738	2.362	2.339	2.371	2.363	2.398	2.456	6.40
82)	T	1,2,4-Trimethy...	2.115	2.404	2.180	2.174	2.234	2.223	2.273	2.229	4.14
83)	T	n-Decane	1.221	1.452	1.266	1.263	1.268	1.267	1.301	1.291	5.79
84)	T	Benzyl Chloride	1.439	1.828	1.729	1.793	1.906	1.920	1.986	1.800	10.05
85)	T	1,3-Dichlorobe...	1.040	1.191	1.029	0.989	1.017	0.997	1.018	1.040	6.62
86)	T	1,4-Dichlorobe...	1.159	1.247	1.131	1.011	1.035	1.022	1.049	1.093	8.07
87)	T	sec-Butylbenzene	2.570	3.056	2.628	2.579	2.655	2.628	2.710	2.690	6.26
88)	T	p-Isopropyltol...	2.760	2.786	2.615	2.571	2.632	2.665	2.733	2.680	3.01
89)	T	1,2,3-Trimethy...	2.165	2.411	2.289	2.179	2.240	2.243	2.273	2.257	3.61
90)	T	1,2-Dichlorobe...	0.853	1.117	0.982	0.943	0.946	0.953	0.973	0.967	8.13
91)	T	d-Limonene	0.740	0.748	0.664	0.674	0.703	0.720	0.757	0.715	5.11
92)	T	1,2-Dibromo-3-...	0.318	0.366	0.384	0.357	0.348	0.345	0.343	0.352	5.82
93)	T	n-Undecane	1.430	1.399	1.422	1.353	1.365	1.363	1.386	1.388	2.17
94)	T	1,2,4-Trichlor...	0.183	0.221	0.225	0.211	0.191	0.193	0.196	0.203	8.01
95)	T	Naphthalene	3.016	3.088	2.750	2.706	2.427	2.441	2.531	2.709	9.79
96)	T	n-Dodecane	1.568	1.732	1.604	1.578	1.579	1.602	1.647	1.616	3.56
97)	T	Hexachloro-1,3...	0.609	0.569	0.511	0.518	0.482	0.466	0.467	0.518	10.43

(#) = Out of Range

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Evaluate Continuing Calibration Report

Data Path : J:\MS16\DATA\2008_11\12\
Data File : 11120801.D
Acq On : 12 Nov 2008 7:05 am
Operator : WA
Sample : 25ng TO-15 CCV STD
Misc : S20-10210802/S20-11040802
ALS Vial : 9 Sample Multiplier: 1

Quant Time: Nov 12 10:28:49 2008
Quant Method : J:\MS16\METHODS\R16102708.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Tue Oct 28 12:03:08 2008
Response via : Initial Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.33min
Max. RRF Dev : 30% Max. Rel. Area : 200%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
1	IR	Bromochloromethane (IS1)	1.000	1.000	0.0	91	-0.03
2	T	Propene	1.729	1.571	9.1	76	-0.01
3	T	Dichlorodifluoromethane	3.624	4.093	-12.9	105	-0.01
4	T	Chloromethane	2.194	2.201	-0.3	122	-0.01
5	T	Freon 114	1.475	1.651	-11.9	111	-0.02
6	T	Vinyl Chloride	2.104	2.081	1.1	99	-0.02
7	T	1,3-Butadiene	1.805	1.806	-0.1	96	-0.02
8	T	Bromomethane	1.009	1.146	-13.6	116	-0.02
9	T	Chloroethane	0.835	0.901	-7.9	103	-0.01
10	T	Ethanol	1.082	1.027	5.1	100	-0.09
11	T	Acetonitrile	2.279	2.198	3.6	92	-0.05
12	T	Acrolein	0.814	0.816	-0.2	91	-0.03
13	T	Acetone	1.106	1.033	6.6	96	-0.05
14	T	Trichlorofluoromethane	3.496	3.923	-12.2	107	-0.02
15	T	Isopropanol	4.110	3.683	10.4	109	-0.06
16	T	Acrylonitrile	1.968	2.069	-5.1	90	-0.03
17	T	1,1-Dichloroethene	1.104	1.187	-7.5	103	-0.02
18	T	tert-Butanol	3.948	4.983	-26.2	211#	-0.04
19	T	Methylene Chloride	1.143	1.190	-4.1	104	-0.02
20	T	Allyl Chloride	2.131	2.151	-0.9	90	-0.03
21	T	Trichlorotrifluoroethane	1.106	1.243	-12.4	109	-0.01
22	T	Carbon Disulfide	3.897	4.278	-9.8	108	-0.02
23	T	trans-1,2-Dichloroethene	2.354	2.579	-9.6	99	-0.02
24	T	1,1-Dichloroethane	2.605	2.800	-7.5	101	-0.02
25	T	Methyl tert-Butyl Ether	4.597	5.038	-9.6	106	-0.01
26	T	Vinyl Acetate	0.236	0.303	-28.4	106	-0.05
27	T	2-Butanone	0.641	0.761	-18.7	109	-0.03
28	T	cis-1,2-Dichloroethene	2.270	2.471	-8.9	100	-0.02
29	T	Diisopropyl Ether	0.963	1.114	-15.7	107	-0.02
30	T	Ethyl Acetate	0.457	0.486	-6.3	96	-0.03
31	T	n-Hexane	2.703	2.523	6.7	91	-0.01
32	T	Chloroform	2.655	2.876	-8.3	105	-0.03
33	S	1,2-Dichloroethane-d4(SS1)	3.027	3.169	-4.7	95	-0.02
34	T	Tetrahydrofuran	0.631	0.724	-14.7	111	-0.02
35	T	Ethyl tert-Butyl Ether	1.748	1.936	-10.8	105	-0.01
36	T	1,2-Dichloroethane	3.218	3.619	-12.5	107	-0.02
37	IR	1,4-Difluorobenzene (IS2)	1.000	1.000	0.0	94	-0.01
38	T	1,1,1-Trichloroethane	0.732	0.770	-5.2	106	-0.02

11/13/08

Data Path : J:\MS16\DATA\2008_11\12\
Data File : 11120801.D
Acq On : 12 Nov 2008 7:05 am
Operator : WA
Sample : 25ng TO-15 CCV STD
Misc : S20-10210802/S20-11040802
ALS Vial : 9 Sample Multiplier: 1

Quant Time: Nov 12 10:28:49 2008
Quant Method : J:\MS16\METHODS\R16102708.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Tue Oct 28 12:03:08 2008
Response via : Initial Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.33min
Max. RRF Dev : 30% Max. Rel. Area : 200%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
39	T	Isopropyl Acetate	0.199	0.200	-0.5	97	-0.02
40	T	1-Butanol	0.349	0.356	-2.0	97	-0.06
41	T	Benzene	1.060	1.114	-5.1	105	-0.02
42	T	Carbon Tetrachloride	0.659	0.733	-11.2	106	-0.02
43	T	Cyclohexane	0.397	0.429	-8.1	107	-0.02
44	T	tert-Amyl Methyl Ether	0.946	1.030	-8.9	104	-0.02
45	T	1,2-Dichloropropane	0.295	0.293	0.7	98	-0.02
46	T	Bromodichloromethane	0.511	0.574	-12.3	108	-0.02
47	T	Trichloroethene	0.317	0.339	-6.9	106	-0.02
48	T	1,4-Dioxane	0.215	0.239	-11.2	107	-0.01
49	T	Isooctane	1.537	1.460	5.0	93	-0.02
50	T	Methyl Methacrylate	0.121	0.136	-12.4	107	-0.03
51	T	n-Heptane	0.266	0.277	-4.1	107	-0.01
52	T	cis-1,3-Dichloropropene	0.495	0.548	-10.7	107	0.00
53	T	4-Methyl-2-pentanone	0.314	0.321	-2.2	91	-0.02
54	T	trans-1,3-Dichloropropene	0.515	0.604	-17.3	103	-0.01
55	T	1,1,2-Trichloroethane	0.264	0.294	-11.4	102	-0.01
56	I	Chlorobenzene-d5 (IS3)	1.000	1.000	0.0	96	0.00
57	S	Toluene-d8 (SS2)	1.919	1.855	3.3	93	0.00
58	T	Toluene	1.853	1.926	-3.9	104	-0.02
59	T	2-Hexanone	1.495	1.356	9.3	89	-0.02
60	T	Dibromochloromethane	0.620	0.646	-4.2	103	-0.01
61	T	1,2-Dibromoethane	0.549	0.553	-0.7	99	-0.01
62	T	Butyl Acetate	1.702	1.525	10.4	89	-0.02
63		n-Octane	0.547	0.502	8.2	93	-0.02
64	T	Tetrachloroethene	0.518	0.553	-6.8	109	0.00
65	T	Chlorobenzene	1.266	1.323	-4.5	106	-0.01
66	T	Ethylbenzene	2.415	2.502	-3.6	103	0.00
67	T	m- & p-Xylene	2.046	2.116	-3.4	103	-0.01
68	T	Bromoform	0.517	0.549	-6.2	108	-0.01
69	T	Styrene	1.318	1.409	-6.9	103	-0.01
70	T	o-Xylene	2.069	2.139	-3.4	101	-0.01
71	T	n-Nonane	1.301	1.117	14.1	84	0.00
72	T	1,1,2,2-Tetrachloroethane	0.683	0.720	-5.4	102	-0.02
73	S	Bromofluorobenzene (SS3)	0.659	0.735	-11.5	106	0.00
74	T	Cumene	2.544	2.666	-4.8	102	-0.01
75	T	alpha-Pinene	1.125	1.201	-6.8	104	0.00
76	T	n-Propylbenzene	3.054	3.171	-3.8	102	0.00

11/13/08

Data Path : J:\MS16\DATA\2008_11\12\
Data File : 11120801.D
Acq On : 12 Nov 2008 7:05 am
Operator : WA
Sample : 25ng TO-15 CCV STD
Misc : S20-10210802/S20-11040802
ALS Vial : 9 Sample Multiplier: 1

Quant Time: Nov 12 10:28:49 2008
Quant Method : J:\MS16\METHODS\R16102708.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Tue Oct 28 12:03:08 2008
Response via : Initial Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.33min
Max. RRF Dev : 30% Max. Rel. Area : 200%

	Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
77 T	3-Ethyltoluene	2.402	2.513	-4.6	103	-0.01
78 T	4-Ethyltoluene	2.303	2.454	-6.6	103	-0.01
79 T	1,3,5-Trimethylbenzene	2.178	2.234	-2.6	101	-0.01
80 T	alpha-Methylstyrene	1.027	1.098	-6.9	105	-0.01
81 T	2-Ethyltoluene	2.456	2.507	-2.1	101	-0.01
82 T	1,2,4-Trimethylbenzene	2.229	2.382	-6.9	102	-0.01
83 T	n-Decane	1.291	1.208	6.4	91	-0.01
84 T	Benzyl Chloride	1.800	2.091	-16.2	105	-0.02
85 T	1,3-Dichlorobenzene	1.040	1.115	-7.2	105	-0.02
86 T	1,4-Dichlorobenzene	1.093	1.155	-5.7	107	-0.01
87 T	sec-Butylbenzene	2.690	2.801	-4.1	101	-0.01
88 T	p-Isopropyltoluene	2.680	2.836	-5.8	103	-0.01
89 T	1,2,3-Trimethylbenzene	2.257	2.397	-6.2	102	-0.01
90 T	1,2-Dichlorobenzene	0.967	1.071	-10.8	108	-0.01
91 T	d-Limonene	0.715	0.744	-4.1	101	0.00
92 T	1,2-Dibromo-3-Chloropropane	0.352	0.398	-13.1	110	-0.01
93 T	n-Undecane	1.388	1.296	6.6	91	0.00
94 T	1,2,4-Trichlorobenzene	0.203	0.249	-22.7	125	0.00
95 T	Naphthalene	2.709	3.098	-14.4	122	0.00
96 T	n-Dodecane	1.616	1.547	4.3	94	0.00
97 T	Hexachloro-1,3-butadiene	0.518	0.580	-12.0	115	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0

DA 11/13/08 LW 11/12/08

Evaluate Continuing Calibration Report

Data Path : J:\MS16\DATA\2008_11\13\
Data File : 11130802.D
Acq On : 13 Nov 2008 5:28 am
Operator : WA
Sample : 25ng TO-15 CCV STD
Misc : S20-10210802/S20-11040802
ALS Vial : 1 Sample Multiplier: 1

Quant Time: Nov 14 08:58:38 2008
Quant Method : J:\MS16\METHODS\R16102708.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Tue Oct 28 12:03:08 2008
Response via : Initial Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.33min
Max. RRF Dev : 30% Max. Rel. Area : 200%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)	
1	IR	Bromochloromethane (IS1)	1.000	1.000	0.0	81	-0.02	
2	T	Propene	1.729	1.608	7.0	69	0.00	
3	T	Dichlorodifluoromethane	3.624	4.485	-23.8	102	0.00	
4	T	Chloromethane	2.194	2.343	-6.8	116	-0.01	
5	T	Freon 114	1.475	1.666	-12.9	100	-0.01	
6	T	Vinyl Chloride	2.104	2.187	-3.9	92	-0.01	
7	T	1,3-Butadiene	1.805	1.847	-2.3	88	-0.02	
8	T	Bromomethane	1.009	1.187	-17.6	107	-0.01	
9	T	Chloroethane	0.835	0.935	-12.0	95	0.00	
10	T	Ethanol	1.082	1.058	2.2	92	-0.08	
11	T	Acetonitrile	2.279	2.289	-0.4	86	-0.03	
12	T	Acrolein	0.814	0.898	-10.3	89	-0.03	
13	T	Acetone	1.106	1.119	-1.2	93	-0.04	
14	T	Trichlorofluoromethane	3.496	4.323	-23.7	105	-0.01	
15	T	Isopropanol	4.110	4.111	-0.0	108	-0.05	
16	T	Acrylonitrile	1.968	2.156	-9.6	83	-0.03	
17	T	1,1-Dichloroethene	1.104	1.276	-15.6	98	-0.02	
18	T	tert-Butanol	3.948	5.453	-38.1#	206#	-0.04	NT
19	T	Methylene Chloride	1.143	1.260	-10.2	98	-0.02	
20	T	Allyl Chloride	2.131	2.279	-6.9	85	-0.03	
21	T	Trichlorotrifluoroethane	1.106	1.342	-21.3	105	-0.02	
22	T	Carbon Disulfide	3.897	4.450	-14.2	100	-0.01	
23	T	trans-1,2-Dichloroethene	2.354	2.799	-18.9	96	-0.02	
24	T	1,1-Dichloroethane	2.605	2.972	-14.1	96	-0.02	
25	T	Methyl tert-Butyl Ether	4.597	5.633	-22.5	106	-0.01	
26	T	Vinyl Acetate	0.236	0.333	-41.1#	104	-0.04	
27	T	2-Butanone	0.641	0.807	-25.9	103	-0.03	
28	T	cis-1,2-Dichloroethene	2.270	2.681	-18.1	96	-0.02	
29	T	Diisopropyl Ether	0.963	1.207	-25.3	103	0.00	
30	T	Ethyl Acetate	0.457	0.504	-10.3	88	-0.03	
31	T	n-Hexane	2.703	2.708	-0.2	87	0.00	
32	T	Chloroform	2.655	3.094	-16.5	101	-0.03	
33	S	1,2-Dichloroethane-d4(SS1)	3.027	3.100	-2.4	83	-0.02	
34	T	Tetrahydrofuran	0.631	0.772	-22.3	105	-0.01	
35	T	Ethyl tert-Butyl Ether	1.748	2.073	-18.6	100	-0.01	
36	T	1,2-Dichloroethane	3.218	3.865	-20.1	102	-0.02	
37	IR	1,4-Difluorobenzene (IS2)	1.000	1.000	0.0	79	-0.01	
38	T	1,1,1-Trichloroethane	0.732	0.914	-24.9	105	-0.01	

11/14/08 11/14/08

Data Path : J:\MS16\DATA\2008_11\13\
Data File : 11130802.D
Acq On : 13 Nov 2008 5:28 am
Operator : WA
Sample : 25ng TO-15 CCV STD
Misc : S20-10210802/S20-11040802
ALS Vial : 1 Sample Multiplier: 1

Quant Time: Nov 14 08:58:38 2008
Quant Method : J:\MS16\METHODS\R16102708.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Tue Oct 28 12:03:08 2008
Response via : Initial Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.33min
Max. RRF Dev : 30% Max. Rel. Area : 200%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)	
39	T	Isopropyl Acetate	0.199	0.221	-11.1	90	-0.02	
40	T	1-Butanol	0.349	0.415	-18.9	95	-0.05	
41	T	Benzene	1.060	1.271	-19.9	101	-0.02	
42	T	Carbon Tetrachloride	0.659	0.839	-27.3	102	-0.01	
43	T	Cyclohexane	0.397	0.490	-23.4	103	-0.02	
44	T	tert-Amyl Methyl Ether	0.946	1.167	-23.4	99	-0.02	
45	T	1,2-Dichloropropane	0.295	0.332	-12.5	93	-0.02	
46	T	Bromodichloromethane	0.511	0.652	-27.6	103	-0.01	
47	T	Trichloroethene	0.317	0.387	-22.1	102	-0.01	
48	T	1,4-Dioxane	0.215	0.272	-26.5	102	-0.01	
49	T	Isooctane	1.537	1.664	-8.3	90	-0.01	
50	T	Methyl Methacrylate	0.121	0.162	-33.9#	107	-0.02	NT
51	T	n-Heptane	0.266	0.308	-15.8	100	-0.01	
52	T	cis-1,3-Dichloropropene	0.495	0.631	-27.5	103	-0.01	
53	T	4-Methyl-2-pentanone	0.314	0.372	-18.5	89	-0.02	
54	T	trans-1,3-Dichloropropene	0.515	0.685	-33.0#	98	-0.01	
55	T	1,1,2-Trichloroethane	0.264	0.334	-26.5	98	-0.01	
56	I	Chlorobenzene-d5 (IS3)	1.000	1.000	0.0	84	0.00	
57	S	Toluene-d8 (SS2)	1.919	1.837	4.3	81	0.00	
58	T	Toluene	1.853	2.136	-15.3	101	-0.01	
59	T	2-Hexanone	1.495	1.499	-0.3	86	-0.02	
60	T	Dibromochloromethane	0.620	0.725	-16.9	101	0.00	
61	T	1,2-Dibromoethane	0.549	0.615	-12.0	96	0.00	
62	T	Butyl Acetate	1.702	1.661	2.4	85	-0.02	
63		n-Octane	0.547	0.557	-1.8	90	-0.01	
64	T	Tetrachloroethene	0.518	0.622	-20.1	107	0.00	
65	T	Chlorobenzene	1.266	1.454	-14.8	102	-0.01	
66	T	Ethylbenzene	2.415	2.794	-15.7	100	0.00	
67	T	m- & p-Xylene	2.046	2.365	-15.6	100	-0.02	
68	T	Bromoform	0.517	0.609	-17.8	105	-0.01	
69	T	Styrene	1.318	1.603	-21.6	103	0.00	
70	T	o-Xylene	2.069	2.361	-14.1	98	-0.01	
71	T	n-Nonane	1.301	1.238	4.8	82	-0.01	
72	T	1,1,2,2-Tetrachloroethane	0.683	0.797	-16.7	99	-0.02	
73	S	Bromofluorobenzene (SS3)	0.659	0.748	-13.5	94	0.00	
74	T	Cumene	2.544	2.983	-17.3	100	0.00	
75	T	alpha-Pinene	1.125	1.330	-18.2	101	0.00	
76	T	n-Propylbenzene	3.054	3.569	-16.9	100	0.00	

RM 11/14/08 LM 11/14/08

Data Path : J:\MS16\DATA\2008_11\13\
Data File : 11130802.D
Acq On : 13 Nov 2008 5:28 am
Operator : WA
Sample : 25ng TO-15 CCV STD
Misc : S20-10210802/S20-11040802
ALS Vial : 1 Sample Multiplier: 1

Quant Time: Nov 14 08:58:38 2008
Quant Method : J:\MS16\METHODS\R16102708.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Tue Oct 28 12:03:08 2008
Response via : Initial Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.33min
Max. RRF Dev : 30% Max. Rel. Area : 200%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)	
77	T	3-Ethyltoluene	2.402	2.784	-15.9	99	0.00	
78	T	4-Ethyltoluene	2.303	2.691	-16.8	98	-0.01	
79	T	1,3,5-Trimethylbenzene	2.178	2.493	-14.5	98	-0.01	
80	T	alpha-Methylstyrene	1.027	1.229	-19.7	102	-0.01	
81	T	2-Ethyltoluene	2.456	2.819	-14.8	100	-0.01	
82	T	1,2,4-Trimethylbenzene	2.229	2.659	-19.3	100	-0.01	
83	T	n-Decane	1.291	1.321	-2.3	87	-0.01	
84	T	Benzyl Chloride	1.800	2.349	-30.5#	103	-0.01	NT
85	T	1,3-Dichlorobenzene	1.040	1.238	-19.0	102	-0.01	
86	T	1,4-Dichlorobenzene	1.093	1.293	-18.3	105	-0.01	
87	T	sec-Butylbenzene	2.690	3.143	-16.8	99	-0.01	
88	T	p-Isopropyltoluene	2.680	3.160	-17.9	100	-0.01	
89	T	1,2,3-Trimethylbenzene	2.257	2.653	-17.5	99	-0.01	
90	T	1,2-Dichlorobenzene	0.967	1.171	-21.1	104	-0.01	
91	T	d-Limonene	0.715	0.817	-14.3	97	0.00	
92	T	1,2-Dibromo-3-Chloropropane	0.352	0.455	-29.3	109	-0.01	
93	T	n-Undecane	1.388	1.432	-3.2	88	0.00	
94	T	1,2,4-Trichlorobenzene	0.203	0.281	-38.4#	123	0.00	NT
95	T	Naphthalene	2.709	3.460	-27.7	119	0.00	
96	T	n-Dodecane	1.616	1.712	-5.9	91	0.00	
97	T	Hexachloro-1,3-butadiene	0.518	0.661	-27.6	115	0.00	

(#) = Out of Range SPCC's out = 0 CCC's out = 0

11/14/08 11/14/08

Evaluate Continuing Calibration Report

Data Path : J:\MS16\DATA\2008_11\14\
Data File : 11140801.D
Acq On : 14 Nov 2008 5:07
Operator : WA/LH
Sample : 25ng TO-15 CCV STD
Misc : S20-11130801/S20-11040802
ALS Vial : 1 Sample Multiplier: 1

Quant Time: Nov 14 15:28:34 2008
Quant Method : J:\MS16\METHODS\R16102708.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Tue Oct 28 12:03:08 2008
Response via : Initial Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.33min
Max. RRF Dev : 30% Max. Rel. Area : 200%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
1	IR	Bromochloromethane (IS1)	1.000	1.000	0.0	91	-0.02
2	T	Propene	1.729	1.222	29.3	59	-0.01
3	T	Dichlorodifluoromethane	3.624	3.580	1.2	92	-0.01
4	T	Chloromethane	2.194	1.800	18.0	100	-0.02
5	T	Freon 114	1.475	1.379	6.5	93	-0.02
6	T	Vinyl Chloride	2.104	1.667	20.8	80	-0.02
7	T	1,3-Butadiene	1.805	1.452	19.6	78	-0.02
8	T	Bromomethane	1.009	0.944	6.4	96	-0.02
9	T	Chloroethane	0.835	0.741	11.3	85	-0.02
10	T	Ethanol	1.082	0.851	21.3	83	-0.09
11	T	Acetonitrile	2.279	1.766	22.5	75	-0.04
12	T	Acrolein	0.814	0.698	14.3	79	-0.02
13	T	Acetone	1.106	0.858	22.4	80	-0.05
14	T	Trichlorofluoromethane	3.496	3.536	-1.1	97	-0.02
15	T	Isopropanol	4.110	3.295	19.8	98	-0.06
16	T	Acrylonitrile	1.968	1.682	14.5	73	-0.04
17	T	1,1-Dichloroethene	1.104	1.028	6.9	90	-0.02
18	T	tert-Butanol	3.948	4.525	-14.6	193	-0.04
19	T	Methylene Chloride	1.143	1.009	11.7	89	-0.02
20	T	Allyl Chloride	2.131	1.829	14.2	77	-0.03
21	T	Trichlorotrifluoroethane	1.106	1.064	3.8	94	-0.02
22	T	Carbon Disulfide	3.897	3.559	8.7	90	-0.02
23	T	trans-1,2-Dichloroethene	2.354	2.214	5.9	86	-0.02
24	T	1,1-Dichloroethane	2.605	2.357	9.5	86	-0.02
25	T	Methyl tert-Butyl Ether	4.597	4.348	5.4	92	-0.02
26	T	Vinyl Acetate	0.236	0.265	-12.3	93	-0.05
27	T	2-Butanone	0.641	0.613	4.4	88	-0.03
28	T	cis-1,2-Dichloroethene	2.270	2.140	5.7	87	-0.02
29	T	Diisopropyl Ether	0.963	0.949	1.5	91	-0.01
30	T	Ethyl Acetate	0.457	0.423	7.4	84	-0.03
31	T	n-Hexane	2.703	2.146	20.6	78	-0.01
32	T	Chloroform	2.655	2.479	6.6	91	-0.03
33	S	1,2-Dichloroethane-d4(SS1)	3.027	3.130	-3.4	95	-0.02
34	T	Tetrahydrofuran	0.631	0.600	4.9	92	-0.01
35	T	Ethyl tert-Butyl Ether	1.748	1.644	5.9	89	-0.01
36	T	1,2-Dichloroethane	3.218	3.247	-0.9	97	-0.02
37	IR	1,4-Difluorobenzene (IS2)	1.000	1.000	0.0	90	-0.01
38	T	1,1,1-Trichloroethane	0.732	0.723	1.2	95	-0.02

11/18/08 11/14/08

Data Path : J:\MS16\DATA\2008_11\14\
Data File : 11140801.D
Acq On : 14 Nov 2008 5:07
Operator : WA/LH
Sample : 25ng TO-15 CCV STD
Misc : S20-11130801/S20-11040802
ALS Vial : 1 Sample Multiplier: 1

Quant Time: Nov 14 15:28:34 2008
Quant Method : J:\MS16\METHODS\R16102708.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Tue Oct 28 12:03:08 2008
Response via : Initial Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.33min
Max. RRF Dev : 30% Max. Rel. Area : 200%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
39	T	Isopropyl Acetate	0.199	0.173	13.1	81	-0.02
40	T	1-Butanol	0.349	0.314	10.0	82	-0.05
41	T	Benzene	1.060	0.988	6.8	89	-0.02
42	T	Carbon Tetrachloride	0.659	0.686	-4.1	95	-0.01
43	T	Cyclohexane	0.397	0.384	3.3	92	-0.02
44	T	tert-Amyl Methyl Ether	0.946	0.924	2.3	90	-0.02
45	T	1,2-Dichloropropane	0.295	0.262	11.2	84	-0.01
46	T	Bromodichloromethane	0.511	0.524	-2.5	94	-0.02
47	T	Trichloroethene	0.317	0.306	3.5	92	-0.02
48	T	1,4-Dioxane	0.215	0.215	0.0	92	-0.02
49	T	Isooctane	1.537	1.312	14.6	80	-0.01
50	T	Methyl Methacrylate	0.121	0.121	0.0	91	-0.02
51	T	n-Heptane	0.266	0.241	9.4	89	-0.01
52	T	cis-1,3-Dichloropropene	0.495	0.493	0.4	92	0.00
53	T	4-Methyl-2-pentanone	0.314	0.285	9.2	77	-0.02
54	T	trans-1,3-Dichloropropene	0.515	0.558	-8.3	91	-0.01
55	T	1,1,2-Trichloroethane	0.264	0.256	3.0	86	-0.01
56	I	Chlorobenzene-d5 (IS3)	1.000	1.000	0.0	87	0.00
57	S	Toluene-d8 (SS2)	1.919	1.913	0.3	88	0.00
58	T	Toluene	1.853	1.833	1.1	90	-0.01
59	T	2-Hexanone	1.495	1.259	15.8	75	-0.02
60	T	Dibromochloromethane	0.620	0.632	-1.9	92	-0.01
61	T	1,2-Dibromoethane	0.549	0.525	4.4	86	0.00
62	T	Butyl Acetate	1.702	1.405	17.5	75	-0.02
63		n-Octane	0.547	0.462	15.5	78	-0.01
64	T	Tetrachloroethene	0.518	0.537	-3.7	96	0.00
65	T	Chlorobenzene	1.266	1.235	2.4	90	-0.01
66	T	Ethylbenzene	2.415	2.392	1.0	89	0.00
67	T	m- & p-Xylene	2.046	2.024	1.1	89	-0.01
68	T	Bromoform	0.517	0.535	-3.5	96	-0.01
69	T	Styrene	1.318	1.358	-3.0	91	-0.01
70	T	o-Xylene	2.069	2.079	-0.5	90	-0.01
71	T	n-Nonane	1.301	1.054	19.0	72	-0.01
72	T	1,1,2,2-Tetrachloroethane	0.683	0.682	0.1	88	-0.02
73	S	Bromofluorobenzene (SS3)	0.659	0.709	-7.6	93	0.00
74	T	Cumene	2.544	2.598	-2.1	91	0.00
75	T	alpha-Pinene	1.125	1.145	-1.8	90	0.00
76	T	n-Propylbenzene	3.054	3.077	-0.8	90	0.00

11/18/08 11/14/08

Data Path : J:\MS16\DATA\2008_11\14\
Data File : 11140801.D
Acq On : 14 Nov 2008 5:07
Operator : WA/LH
Sample : 25ng TO-15 CCV STD
Misc : S20-11130801/S20-11040802
ALS Vial : 1 Sample Multiplier: 1

Quant Time: Nov 14 15:28:34 2008
Quant Method : J:\MS16\METHODS\R16102708.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Tue Oct 28 12:03:08 2008
Response via : Initial Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.33min
Max. RRF Dev : 30% Max. Rel. Area : 200%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
77	T	3-Ethyltoluene	2.402	2.382	0.8	89	0.00
78	T	4-Ethyltoluene	2.303	2.359	-2.4	90	-0.01
79	T	1,3,5-Trimethylbenzene	2.178	2.162	0.7	89	-0.01
80	T	alpha-Methylstyrene	1.027	1.071	-4.3	93	-0.01
81	T	2-Ethyltoluene	2.456	2.430	1.1	89	-0.01
82	T	1,2,4-Trimethylbenzene	2.229	2.284	-2.5	89	-0.01
83	T	n-Decane	1.291	1.131	12.4	78	-0.01
84	T	Benzyl Chloride	1.800	2.034	-13.0	93	-0.02
85	T	1,3-Dichlorobenzene	1.040	1.093	-5.1	94	-0.01
86	T	1,4-Dichlorobenzene	1.093	1.124	-2.8	95	-0.01
87	T	sec-Butylbenzene	2.690	2.724	-1.3	89	-0.01
88	T	p-Isopropyltoluene	2.680	2.753	-2.7	91	-0.01
89	T	1,2,3-Trimethylbenzene	2.257	2.293	-1.6	89	-0.01
90	T	1,2-Dichlorobenzene	0.967	1.044	-8.0	96	-0.01
91	T	d-Limonene	0.715	0.701	2.0	87	0.00
92	T	1,2-Dibromo-3-Chloropropane	0.352	0.386	-9.7	97	-0.01
93	T	n-Undecane	1.388	1.229	11.5	79	0.00
94	T	1,2,4-Trichlorobenzene	0.203	0.253	-24.6	115	0.00
95	T	Naphthalene	2.709	3.005	-10.9	108	0.00
96	T	n-Dodecane	1.616	1.468	9.2	81	0.00
97	T	Hexachloro-1,3-butadiene	0.518	0.575	-11.0	104	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0

PDA 11/18/08 WA 11/14/08

COLUMBIA ANALYTICAL SERVICES, INC.

RESULTS OF ANALYSIS

Client: **CH2M Hill** CAS Project ID: P0803732
Client Project ID: **DOW - Waterloo, NY / 369548.02.B3.FI**

Internal Standard Area and RT Summary

Test Code: EPA TO-15
Instrument ID: Tekmar AUTOCAN/Agilent 5975Cinert/6890N/MS16 Lab File ID: 11120801.D
Analyst: Wida Ang Date Analyzed: 11/12/08
Sampling Media: 6.0 L Summa Canister(s) Time Analyzed: 07:05
Test Notes:

	IS1 (BCM)		IS2 (DFB)		IS3 (CBZ)	
	AREA #	RT #	AREA #	RT #	AREA #	RT #
24 Hour Standard	205013	12.30	894371	15.23	569330	21.11
Upper Limit	287018	12.63	1252119	15.56	797062	21.44
Lower Limit	123008	11.97	536623	14.90	341598	20.78

	Client Sample ID						
01	Method Blank	193192	12.28	825903	15.21	537922	21.10
02	Lab Control Sample	196017	12.31	855976	15.24	538266	21.11
03	WAT-SG-2-110408 (Dilution)	184426	12.28	818220	15.22	525871	21.10
04	WAT-SG-3a-110408 (Dilution)	186270	12.28	801450	15.21	524915	21.10
05	WAT-SG-4-110408	173442	12.28	764378	15.22	501046	21.11
06	WAT-SG-1-110408	172653	12.28	760896	15.22	504120	21.10
07	WAT-SG-2-110408	175707	12.28	764808	15.22	523010	21.10
08	WAT-SG-DUP-110408	176491	12.29	768944	15.22	521285	21.10
09	WAT-SG-3a-110408	176049	12.29	783135	15.23	503902	21.11
10	WAT-SG-3-110408	180956	12.29	783766	15.22	533297	21.11
11	WAT-IA-1-110408	182900	12.29	777365	15.22	509592	21.11
12	WAT-IA-2-110408	180401	12.28	771183	15.22	500873	21.11
13	WAT-IA-3-110408	175849	12.28	755428	15.22	484126	21.11
14	WAT-SG-B2-110408	171694	12.28	736200	15.22	476055	21.10
15							
16							
17							
18							
19							
20							

IS1 (BCM) = Bromochloromethane
IS2 (DFB) = 1,4-Difluorobenzene
IS3 (CBZ) = Chlorobenzene-d5

AREA UPPER LIMIT = 140% of internal standard area
AREA LOWER LIMIT = 60% of internal standard area
RT UPPER LIMIT = 0.33 minutes of internal standard RT
RT LOWER LIMIT = 0.33 minutes of internal standard RT

Column used to flag values outside QC limits with an asterisk.
* Values outside of QC limits.

Verified By: Rc Date: 11/24/08

COLUMBIA ANALYTICAL SERVICES, INC.

RESULTS OF ANALYSIS

Client: **CH2M Hill** CAS Project ID: P0803732
Client Project ID: **DOW - Waterloo, NY / 369548.02.B3.FI**

Internal Standard Area and RT Summary

Test Code: EPA TO-15
Instrument ID: Tekmar AUTOCAN/Agilent 5975Cinert/6890N/MS16 Lab File ID: 11130802.D
Analyst: Wida Ang Date Analyzed: 11/13/08
Sampling Media: 6.0 L Summa Canister(s) Time Analyzed: 05:28
Test Notes:

		IS1 (BCM)		IS2 (DFB)		IS3 (CBZ)	
		AREA #	RT #	AREA #	RT #	AREA #	RT #
	24 Hour Standard	182461	12.31	751600	15.23	497546	21.11
	Upper Limit	255445	12.64	1052240	15.56	696564	21.44
	Lower Limit	109477	11.98	450960	14.90	298528	20.78
	Client Sample ID						
01	Method Blank	211149	12.28	927560	15.21	533533	21.10
02	Lab Control Sample	221020	12.31	940035	15.23	544677	21.11
03	WAT-SG-DUP-110408 (Dilution)	201100	12.28	905312	15.22	529282	21.11
04	WAT-IA-1-110408 (Dilution)	206277	12.28	883291	15.22	516323	21.11
05	WAT-IA-2-110408 (Dilution)	194569	12.28	865786	15.21	522278	21.10
06	WAT-SG-7a-110508 (Dilution)	198011	12.28	869240	15.22	516279	21.11
07	WAT-IA-5-110508	195197	12.28	872673	15.21	515574	21.11
08	WAT-IA-6-110508	197002	12.29	858609	15.22	511901	21.10
09	WAT-IA-6-110508 (Lab Duplicate)	205278	12.29	880245	15.21	508918	21.11
10	WAT-IA-3-110408 (Dilution)	205305	12.28	884690	15.21	519008	21.11
11	WAT-IA-4-110508	194428	12.28	854574	15.21	507741	21.10
12	WAT-IA-7-110508	198186	12.28	841448	15.22	513605	21.10
13	WAT-SG-5a-110508 (Dilution)	188404	12.28	841377	15.22	507142	21.11
14							
15							
16							
17							
18							
19							
20							

IS1 (BCM) = Bromochloromethane
IS2 (DFB) = 1,4-Difluorobenzene
IS3 (CBZ) = Chlorobenzene-d5

AREA UPPER LIMIT = 140% of internal standard area
AREA LOWER LIMIT = 60% of internal standard area
RT UPPER LIMIT = 0.33 minutes of internal standard RT
RT LOWER LIMIT = 0.33 minutes of internal standard RT

Column used to flag values outside QC limits with an asterisk.
* Values outside of QC limits.

Verified By: RC Date: 11/21/08

COLUMBIA ANALYTICAL SERVICES, INC.

RESULTS OF ANALYSIS

Client: **CH2M Hill** CAS Project ID: P0803732
Client Project ID: **DOW - Waterloo, NY / 369548.02.B3.FI**

Internal Standard Area and RT Summary

Test Code: EPA TO-15
Instrument ID: Tekmar AUTOCAN/Agilent 5975Cinert/6890N/MS16 Lab File ID: 11140801.D
Analyst: Wida Ang Date Analyzed: 11/14/08
Sampling Media: 6.0 L Summa Canister(s) Time Analyzed: 05:07
Test Notes:

		IS1 (BCM)		IS2 (DFB)		IS3 (CBZ)	
		AREA #	RT #	AREA #	RT #	AREA #	RT #
	24 Hour Standard	206214	12.31	856590	15.23	518620	21.11
	Upper Limit	288700	12.64	1199226	15.56	726068	21.44
	Lower Limit	123728	11.98	513954	14.90	311172	20.78
	Client Sample ID						
01	Method Blank	195553	12.28	835410	15.22	496814	21.10
02	Lab Control Sample	195612	12.31	849683	15.23	511033	21.11
03	WAT-SG-B2-110408 (Dilution)	201687	12.28	856982	15.21	520637	21.10
04	WAT-SG-B4-110508	191880	12.28	835687	15.22	512334	21.11
05	WAT-SG-5a-110508	197912	12.28	843940	15.22	540632	21.10
06	WAT-SG-5-110508	192457	12.29	856384	15.22	535556	21.10
07	WAT-SG-6-110508	204685	12.29	869600	15.23	589716	21.11
08	WAT-SG-5-110508 (Dilution)	198638	12.28	867352	15.22	533003	21.10
09	WAT-SG-6-110508 (Dilution)	200093	12.28	858699	15.22	520350	21.10
10	WAT-SG-FB-110408	198023	12.28	841437	15.21	515421	21.10
11	WAT-SG-7a-110508	197403	12.29	835967	15.22	528043	21.11
12	WAT-SG-9-110508	198501	12.29	866852	15.22	592220	21.10
13	WAT-SG-9-110508 (Lab Duplicate)	208205	12.28	870106	15.22	588386	21.11
14	WAT-SG-8-110508	198586	12.28	861195	15.22	534736	21.10
15	WAT-SG-9-110508 (Dilution)	196234	12.28	889235	15.22	541486	21.10
16	WAT-SG-9-110508 (Lab Duplicate - Dilution)	202830	12.28	879020	15.22	546652	21.10
17							
18							
19							
20							

IS1 (BCM) = Bromochloromethane
IS2 (DFB) = 1,4-Difluorobenzene
IS3 (CBZ) = Chlorobenzene-d5

AREA UPPER LIMIT = 140% of internal standard area
AREA LOWER LIMIT = 60% of internal standard area
RT UPPER LIMIT = 0.33 minutes of internal standard RT
RT LOWER LIMIT = 0.33 minutes of internal standard RT

Column used to flag values outside QC limits with an asterisk.
* Values outside of QC limits.

Verified By: Re Date: 11/21/08

Data Quality Evaluation for the November 2008 Soil Vapor Investigation, Dow Waterloo

PREPARED BY: Berney Kidd/CH2M HILL

DATE: June 30, 2009

Introduction

The objective of this data quality evaluation (DQE) report is to assess the data quality of analytical results for soil vapor samples collected from Dow Waterloo November 4 and November 5, 2008. Guidance for this DQE report came from the *Quality Assurance Project Plan, RCRA Facility Assessment Sampling Visit, Hampshire Chemical Corporation Facility, Waterloo, New York* (October 2001) (Waterloo QAPP); *U.S. Environmental Protection Agency (USEPA) Contract Laboratory National Functional Guidelines (NFG) for Organic Data Review, October 1999;* individual method requirements; and, historical laboratory quality control limits. This report is intended as a general data quality assessment designed to summarize data issues.

Analytical Data

This DQE report covers 20 normal samples, one field duplicate (FD), and one equipment blank (EB). The samples were reported as one sample delivery group, P0803732. Samples were collected and delivered to Columbia Analytical Laboratory (CAS) in Simi Valley, California. The samples were analyzed for by the method listed in Table 1.

TABLE 1
Analytical Parameters
Soil Vapor Investigation, Dow Waterloo

Parameter	Method	Laboratory
Volatile Organic Compounds	TO-15	CAS

The sample delivery groups were assessed by reviewing the following: (1) the chain-of-custody documentation; (2) holding-time compliance; (3) initial and continuing calibration criteria; (4) method blanks; (5) laboratory control sample (LCS) recoveries; (6) surrogate spike recoveries; (7) internal standard recoveries; (8) laboratory duplicate precision (9) FD precision; and (10) the required quality control (QC) samples at the specified frequencies.

Data flags were assigned according to the NFG. Multiple flags are routinely applied to specific sample method/matrix/analyte combinations, but there will only be one final flag. A final flag is applied to the data and is the most conservative of the applied validation flags. The final flag also includes matrix and blank sample impacts.

The data flags are those listed in the NFG and are defined below:

- J = The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample.
- R = The sample result was rejected due to serious deficiencies in the ability to analyze the sample and meet the QC criteria. The presence or absence of the analyte could not be verified.
- U = The analyte was analyzed for but was not detected above the reported sample quantitation limit.
- UJ = The analyte was not detected above the reported sample quantitation limit; however, the reported quantitation limit is approximate and may or may not represent the actual limit of quantitation necessary to accurately and precisely measure the analyte in the sample.

Findings

The overall summaries of the data validation are contained in the following sections and Table 2.

Holding Time and Preservation

All acceptance criteria were met.

Calibration

All acceptance criteria were met.

Method Blanks

Method blanks were analyzed at the required frequency and were free of contamination.

Field Blanks

One EB was collected and was free of contamination with the following exceptions:

- Acetone, 2-butanone and m,p-xylene were detected below the reporting limit (RL) in the EB. Eighteen associated results were detected less than five times (10 times for acetone and 2-butanone) the blank concentrations. The data were qualified as not detected and flagged "U".
- Toluene was detected above the RL in the EB. Four associated results were detected less than five times the blank concentration. The data were qualified as not detected and flagged "U".

Laboratory Control Samples

LCSs were analyzed as required and all accuracy and precision criteria were met.

Internal Standards

Internal standard recoveries met acceptance criteria.

Surrogates

All surrogate recoveries met acceptance criteria.

Field Duplicates

A FD was collected and analyzed as required. All precision criteria were met with the following exceptions:

- The FD relative percent differences (RPDs) of toluene and 4-methyl-2-pentanone were above the acceptance criterion. The associated detected results in the normal and duplicate were qualified as estimated and flagged "J".

Laboratory Duplicates

Laboratory duplicates were analyzed as required and all precision criteria were met.

Chain-of-Custody

Required procedures were followed and were free of errors.

Overall Assessment

The goal of this assessment is to demonstrate that a sufficient number of representative samples were collected and the resulting analytical data can be used to support the decision making process. The procedures for assessing the precision, accuracy, representativeness, comparability, and completeness (PARCC) were modeled after the Waterloo QAPP and the USEPA Contract Laboratory NFG for Organic Data Review, October 1999. The following summary highlights the PARCC findings for the above-defined events:

- Precision of the data was verified through the review of the field and laboratory data quality indicators that include FD and laboratory duplicate RPDs. Precision was generally acceptable with a couple of analytes being qualified as estimated because of FD RPD issues. Data users should consider the impact to any result that is qualified as estimated as it may contain a bias, which could affect the decisionmaking process.
- Accuracy of the data was verified through the review of the calibration data, LCS, internal standard, and surrogate recoveries. Accuracy was acceptable.
- Representativeness of the data was verified through the sample's collection, storage and preservation procedures, verification of holding time compliance, and evaluation of method/field blank data. All data were reported from analyses within the USEPA-recommended holding time. The method/field blank samples were generally free of contamination with a few compounds being qualified as nondetected results because of low level detections in the EB.
- Comparability of the data was ensured using standard USEPA analytical procedures and standard units for reporting. Results obtained are comparable to industry standards

in that the collection and analytical techniques followed approved, documented procedures.

- Completeness is a measure of the number of valid measurements obtained in relation to the total number of measurements planned. Completeness is expressed as the percentage of valid or usable measurements compared to planned measurements. Valid data are defined as all data that are not rejected for project use. All data are considered valid. The completeness goal of 95 percent was met for all analytes.

TABLE 2
Qualified Data
Soil Vapor Investigation, Dow Waterloo

Sample ID	Method	Analyte	Final Result	Units	Final Flag	Reason
WAT-IA-1-110408	TO15	2-BUTANONE	3.1	µg/m^3	U	EB<RL
WAT-IA-2-110408	TO15	2-BUTANONE	2.7	µg/m^3	U	EB<RL
WAT-IA-3-110408	TO15	ACETONE	45	µg/m^3	U	EB<RL
WAT-IA-3-110408	TO15	2-BUTANONE	3.9	µg/m^3	U	EB<RL
WAT-IA-3-110408	TO15	TOLUENE	45	µg/m^3	U	EB>RL
WAT-SG-1-110408	TO15	ACETONE	5.8	µg/m^3	U	EB<RL
WAT-SG-1-110408	TO15	2-BUTANONE	1.9	µg/m^3	U	EB<RL
WAT-SG-2-110408	TO15	ACETONE	6	µg/m^3	U	EB<RL
WAT-SG-2-110408	TO15	2-BUTANONE	2.6	µg/m^3	U	EB<RL
WAT-SG-2-110408	TO15	4-METHYL-2-PENTANONE	10	µg/m^3	J	FD>RPD
WAT-SG-2-110408	TO15	TOLUENE	45	µg/m^3	J	FD>RPD
WAT-SG-3-110408	TO15	ACETONE	22	µg/m^3	U	EB<RL
WAT-SG-3-110408	TO15	2-BUTANONE	3	µg/m^3	U	EB<RL
WAT-SG-3a-110408	TO15	ACETONE	9.8	µg/m^3	U	EB<RL
WAT-SG-3a-110408	TO15	TOLUENE	160	µg/m^3	U	EB>RL
WAT-SG-4-110408	TO15	ACETONE	11	µg/m^3	U	EB<RL
WAT-SG-4-110408	TO15	m,p-XYLENE	1.4	µg/m^3	U	EB<RL
WAT-SG-4-110408	TO15	2-BUTANONE	3.9	µg/m^3	U	EB<RL
WAT-SG-4-110408	TO15	TOLUENE	48	µg/m^3	U	EB>RL
WAT-SG-B2-110408	TO15	ACETONE	12	µg/m^3	U	EB<RL
WAT-SG-B2-110408	TO15	2-BUTANONE	2	µg/m^3	U	EB<RL
WAT-SG-B2-110408	TO15	TOLUENE	17	µg/m^3	U	EB>RL
WAT-SG-DUP-110408	TO15	ACETONE	11	µg/m^3	U	EB<RL
WAT-SG-DUP-110408	TO15	2-BUTANONE	2.7	µg/m^3	U	EB<RL
WAT-SG-DUP-110408	TO15	4-METHYL-2-PENTANON	7.1	µg/m^3	J	FD>RPD
WAT-SG-DUP-110408	TO15	TOLUENE	28	µg/m^3	J	FD>RPD

EB<RL Equipment blank concentration less than the reporting limit.
EB>RL Equipment blank concentration greater than the reporting limit.
FD>RPD Field duplicate relative percent difference greater than acceptance criterion.

Appendix D
List of Chemicals in Buildings Evaluated

Appendix D
List of Chemicals in Building Evaluated - Building 1 - April 2008
Soil Vapor Investigation - Buildings 1, 2, 3, 4, and Tank Storage Area
Former Hampshire Chemical Corp Facility, Waterloo, New York

Building 1 - Boiler Room

Quantity	ID	Units	Product Description
37	NA	50 lb bags	Solar salt for water softeners
1	NA	1 pint	Bostik - Never Seez Anti - seize & lubricating compound
1	NA	1 pint	Reactor seal pipe thread sealant
1	NA	16 oz	Top free excel cutting fluid by Winbro
1	NA	8 oz	WD - 40
2	NA	16 oz	Locite thread sealant with teflon
1	NA	18 oz can	ITW Dyman penetrating Oil & Moisture Remover
1	NA	NA	Nalco 1720 Oxygen scavenger
1	I-MT-102	NA	Brine tank
1	NA	NA	Nalco Tri - ACT ® 1820 Corrosion Inhibitor
1	NA	NA	Nex Guard 22310 Boiler water internal treatment

Aboveground Storage Tanks South of Building 1

Quantity	ID	Units	Product Description
1	16 - HT - 104 - 01	NA	Epichlorohydrin
1	1 - HT - 97 - 01	NA	HCl
1	NA	NA	Acrylonitrile

Aboveground Storage Tanks West of Buildings 1 and 2

Quantity	ID	Units	Product Description
1	2 - T - 534	NA	Ammonium bisulfate
1	2 - HT -11	Working Capacity - 1,800 gal	MIBK

Notes:
NA - Not available

Appendix D
List of Chemicals in Building Evaluated - MPA Process Area - April 2008
Soil Vapor Investigation - Buildings 1, 2, 3, 4, and Tank Storage Area
Former Hampshire Chemical Corp Facility, Waterloo, New York

Dept 69 - MPA Process Area

Quantity	ID	Units	Product Description
1	2 - AST - 6		Tank
1	AST - 30, 35		Line labeled Thiomalic acid *
2	2A - PT-47	Gross 3900 lbs Tare 477 lbs	3-mercaptopropionic acid (99%)
5	NA	2,600 lbs	MPA Vac Dist
1	NA	NA	MIBK / MPA Water container
1	2 - HT - 78	NA	MPA crude
1	NA		Line near MIBK/MPA container labeled MIBK (from tote to acidification reactor)
1	NA	55 gal plastic drum	80% MPA
1	2-AT - 8	NA	MPA Blend Tank AST
1	2 - AST - 35	NA	MPA and Solvent MIBK
1	2-AST-30	NA	MPA and Solvent MIBK
1	2 - AST - 23	NA	MPA and Solvent MIBK
2	NA	2,600 lbs	MPA Cruel
1	NA	NA	Line labeled Sulfuric acid

Notes:
NA - Not available
* Thiomalic Acid (TMA) has not been produced since the late 1990s to early 2000s.

Appendix D
List of Chemicals in Building Evaluated - Building 2 - April 2008
Soil Vapor Investigation - Buildings 1, 2, 3, 4, and Tank Storage Area
Former Hampshire Chemical Corp Facility, Waterloo, New York

Building 2 - Storage Area

Quantity	ID	Units	Product Description
1	NA	NA	Recycled HCl tank
1	2-T-44	NA	NaMPA Storage tank
1	2-AST-57	NA	Nitrile reactor
1	2-AST-55	NA	Hydro reactor
1	2-T-043	NA	Ammonia Scrubber
1	2-T-045	NA	Caustic Mix Tank
1	2-T-054	NA	Washed MIBK Tank
1	2-T-046	NA	Raffinate Tank
10	NA	20 kg bags	De - icing salt (Kwick melt safety salt, Sel Antiglance)
32	NA	2,600 lbs	VAC Dist MPA
1	2-HT-18	NA	Boiler Tank
1	NA	NA	Buffer solutions; 1.68 buffer; 4.0 buffer; 1.0 buffer

Lab Area

Quantity	ID	Units	Product Description
1	NA	5 gal container	NaSH + H2O container
1	NA	5 gal box container	0.1000 Normal NaOH by Anachemia
2	NA	6 gal box container	Sulfuric acid solution by GFS Chemicals Item # 1201
1	NA	4 Liters	Potassium iodate - iodide Item # 2269 by GFS Chemical
1	NA	1 gal glass container	10% H2SO4
1	NA	NA	DI water
1	NA	500 ml	Phenolphthalem
1	NA	NA	Potassium iodide KIO3 crystals

Notes:
NA - Not available

Appendix D

List of Chemicals in Building Evaluated - Building 2-A - April 2008

Soil Vapor Investigation - Buildings 1, 2, 3, 4, and Tank Storage Area

Former Hampshire Chemical Corp Facility, Waterloo, New York

Building 2-A - Dept. 69 Thiodipropionate & MPA Derivative Production Unit

Quantity	ID	Units	Product Description
1	2A-HT-74	15,000 gal	Ditridecyl Thiodipropionate AST
1	2A-AST-40	NA	These are reactors that can contain any of the raw materials in the building
1	2A-AST-41	NA	These are reactors that can contain any of the raw materials in the building
1	2A-AST-42	NA	These are reactors that can contain any of the raw materials in the building
1	NA	3,500 gal	Exxal ® 8, Product #769724
27	NA	50lb bags	Pike Creek all purpose granulated salt
1	NA		Ammonium bisulfate AST
1	2A-AST-45		AST
1	2A-AST-46		AST
1	NA	55 gal drum	E-Pure MSA
1	NA	55 gal drum	DTBSP Filter drain
1	NA	55 gal drum	DTBSP Pan and Filter
1	HT 133	NA	Tank
1	A-HT-111	NA	Dilite ITA AST
1	2A-R-38	NA	Conc ITA
1	NA	NA	Line labeled Metacrylic acid
1	2A-R-42	NA	Sulfoethyl methyacrylate (SEM) AST
1	NA	55 gal drum	DPPD Inhibitor
1	2A - H - 44	NA	Small tank
1	2A - H - 47	NA	Small tank
1	2A - HT - 109		
1	2A - HT - 110		
1	2A - HT - 22		Ammonium bisulfate
1	NA	NA	Raceway water line

Notes:

NA - Not available

Appendix D
List of Chemicals in Building Evaluated - Building 2-B - April 2008
Soil Vapor Investigation - Buildings 1, 2, 3, 4, and Tank Storage Area
Former Hampshire Chemical Corp Facility, Waterloo, New York

Building 2-B - Thiodipropionate Esters and SEM Process Area

Quantity	ID	Units	Product Description
1	2B HT 99	NA	Fatty Alcohol AST ALFOL - 18 Code 8098
1	2B WT - 1	NA	Fatty Alcohol AST ALFOL - 18
1	2B - T - 22	NA	S-19 Scrubber AST
1	2B - WT - 3	NA	TDPN Weight Tank AST
1	NA	10,500 lbs	Melt Tank AST
1	2B - T1	NA	Fatty Alcohol - Lauryl Alcohol - AST
1	2B - T2	Total Capacity - 7600 gal Working Capacity - 7300 gal	Tridecyl Alcohol Storage Tank
1	NA	55 gal	E-Pure MSA plastic drum
1	2B - T4	NA	TDPN AST (medium)
1	NA	NA	ALFOL 12 Code 2098 - Hook up connection outside building where trucks unload

Notes:
NA - Not available

Appendix D

List of Chemicals in Building Evaluated - Building 3 - April 2008

Soil Vapor Investigation - Buildings 1, 2, 3, 4, and Tank Storage Area

Former Hampshire Chemical Corp Facility, Waterloo, New York

Building 3 - OPWP Team Dept 68 Area

Quantity	ID	Units	Product Description
1	3-HT-106	Total Capacity 1,500 gal	Sodium hydrosulfide
1	3-HT-106A	Total Capacity 1,000 gal	Sodium hydrosulfide
1	3-HT-66	Total Capacity 5,700 gal	Sodium hydrosulfide
1	3-HT 63	Total Capacity 5,700 gal	Sodium hydrosulfide
1	NA	NA	Line labeled alkali waste to ETP
1	NA	NA	Area next to Former Tank Area called Hazardous Waste Scrubber Solution. Lines say caustic Feed to ETP (Flow out). Flow in Caustic Feed to Dept 68. Line labeled NaSH filter 1B, NaSH Fill # 7A
4	NA	2600 lb totes	Ethanolamine solutions (UN2491), Monoethanolamine CI/Fe free
1	3-HT-122	NA	AST tank labeled Corrosive toxic
11	NA	2,600 lb totes	Ammonium thioglycolate 71%
1	NA	2,600 lb totes	Glycerol thioglycolate 7010
6	NA	2,600 lb totes	Glycerol thioglycolate 80%
2	NA	2,600 lb totes	Diammonium Dithioglycolate 48% and DAD totes 40%
4	NA	2,600 lb totes	Glyceryl thioglycolate - NK
8	NA	2,600 lb totes	MEAT totes
2	NA	2,600 lb totes	Glyceryl thioglycolate - 75%
1	NA	2,600 lb totes	60% ATG
1	NA	2,600 lb totes	90% TG - Blend
1	NA	2,600 lb totes	98% TG - Blend
1	NA	2000 lbs tote	Thioset - M
1	3-HT-113	Total Capacity 12,480 gal	Monochloroacidic acid
1	3-HT-59	Total Capacity 4,590 gal	Sodium hydrosulfide
1	3-AV-11	NA	NaSH dilution tank
1	3-AV-12	NA	NaSH holding tank
1	3-T-35	NA	Scrubber
1	3-AST-48	NA	H2S Generator

Lab Area

Quantity	ID	Units	Product Description
1	NA	NA	Buffer solutions: 1.68, 4.0, 7.0, 1.0
1	NA	500 ml bottle	Sulfite Form Liquid by Nalco
1	NA	1 liter	Titrating solution by Nalco
1	NA	1 liter	Hardness buffer by Nalco

Near Location #6

Quantity	ID	Units	Product Description
1	NA	1 gal	Clorox bleach
1	NA	NA	Phenolphthalien
1	NA	18 oz	State Fix "Terg-o-Cide in a can"
1	NA	12 oz	Krylon Industrial Touch Coat Acylic Enamel Aerosol
2	NA	21 oz	Trouble shooter by 3M
1	NA	1 gal	Sherwin Williams Industrial Enamel HS Industrial Marine Coatings in yellow

Outside Building 3 near Canal

Quantity	ID	Units	Product Description
1	3 -HT- 50	Total Capacity 10,000 gal	Sulfuric acid
1	3-HT-13-1	Total Capacity 10,000 gal	Sulfuric acid

Outside Building 3 between Bldg 3 and Machine Shop

Quantity	ID	Units	Product Description
1	3 -HT- 136	Total Capacity 9,290 gal	Sodium Hydroxide

Notes:

NA - Not available

Appendix D

List of Chemicals in Building Evaluated - Building 4-A - April 2008

Soil Vapor Investigation - Buildings 1, 2, 3, 4, and Tank Storage Area

Former Hampshire Chemical Corp Facility, Waterloo, New York

Buildings 4A and 4B

Quantity	ID	Units	Product Description
1	4-HT-941	Total Capacity 5,200	Crude Thoglycolic Acid (TGA)
1	4-HT-951	Total Capacity 5,200	Crude TGA
1	NA	2,600 lb tote	1st Pass TGA Residue
1	AV - 11	NA	T-Acid Residue Holding Tank
1	AV - 8	NA	Could not see label; related to AV - 1

Building 4 - Dept 68 T-Acid & Derivative Production Unit

Quantity	ID	Units	Product Description
1	4-V-6	NA	Recycled MIBK AST
1	4-V-7	NA	Washed MIBK
5	NA	2,000 lb tote	Thioglycolic acid (TGA) 96-99% totes
4	NA	2,600 lb tote	DAD
9	NA	55 gal drums	Vac Dist TG (blue plastic drums)
9	NA	55 gal drums	TG concentrate
1	4-HT-7	NA	Regular T-Acid Extract
1	NA	5 gal container	Sulfuric acid
1	NA	55 gal drum	TG -Forerun
1	NA	5 gal container	TG NF
2	NA	330 gal	Ammonium hydroxide 26 BE
1	NA	2,600 lb tote	Glyceryl Thioglycolate
1	4-AST-7	NA	TGA 16 - 99% AST
1	HT-121	NA	T-Acid Extract Residue

Lab Area

Quantity	ID	Units	Product Description
1	NA	NA	Buffer solutions 1.68, 4.0, 1.0
1	NA	5 gal container	Potassium iodate - Iodide by GFS Chemicals
1	NA	NA	Potassium iodide (KI)
1	NA	NA	10% sulfuric acid solution

Outside Building 4 near Canal

Quantity	ID	Units	Product Description
2	NA	NA	Compressed nitrogen cylinders by Jackson Welding Supply Co.

Notes:
NA - Not available

Appendix D
List of Chemicals in Building Evaluated - Tank Storage Area - April 2008
Soil Vapor Investigation - Buildings 1, 2, 3, 4, and Tank Storage Area
Former Hampshire Chemical Corp Facility, Waterloo, New York

Tank Storage Area

Quantity	ID	Units	Product Description
1	7-HT-105	Total Capacity 15,000 gal	Sodium hydrosulfide
28	NA	55 gal drums	Hydrogen peroxide
1	7-HT-128	Total Capacity 6,000 gal	Glycerin
1	7-HT-127	Total Capacity 6,000 gal	Glycerol monothioglycolate
1	7-HT-4	Total Capacity 5,000 gal	Ammonium thioglycolate
1	7-HT-5	Total Capacity 2,600 gal	I-MCH AST
4	NA	55 gal drums	Thioglycerol (TGNF)
4	NA	NA	Compressed Nitrogen cylinders by Jackson Welding Supply Co.

Outside Tank Storage Area

Quantity	ID	Units	Product Description
NA	NA	NA	MPA Fill Hopper Storage Area

Notes:
NA - Not available

Appendix E
NYSDOH E-Mail

From: Justin H Deming [jhd01@health.state.ny.us]
Sent: Monday, March 09, 2009 12:02 PM
To: Lai, Shawntine Hsuan-Ting/NJO
Subject: NYS Matrices

Shante,

Below are the compounds which have been assigned to one of the NYS vapor intrusion matrices:

Volatile Chemical	Soil Vapor/Indoor Air Matrix
carbon tetrachloride	Matrix 1
1,1-dichloroethene	Matrix 2
cis- 1,2-dichloroethene	Matrix 2
tetrachloroethene	Matrix 2
1,1,1-trichloroethane	Matrix 2
trichloroethene	Matrix 1
vinyl chloride	Matrix 1

Also, we are not currently developing any additional air guidelines for table 3.1 on the guidance document. Please feel free to call if you have any additional questions.

Regards,
Justin

Justin Deming
Public Health Specialist
Bureau of Environmental Exposure Investigation New York State Department of Health
Phone 518.402.7870 - Fax 518.402.7859