

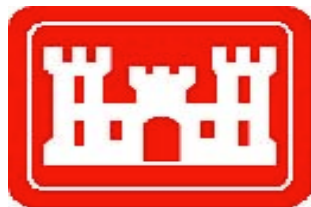
**FINAL
FRANCES C. RICHMOND MIDDLE SCHOOL
INDOOR AIR AND SUB-SLAB INVESTIGATION RESULTS
JANUARY 19 and 24, 2015 SAMPLING EVENTS**

For

OFF-SITE VAPOR INTRUSION INVESTIGATION
COLD REGIONS RESEARCH ENGINEERING LABORATORY (CRREL)
HANOVER, NEW HAMPSHIRE

Contract No.: W912WJ-11-D-0005
TASK ORDER 0004

Prepared for:



**New England District
U.S. Army Corps of Engineers
696 Virginia Road
Concord MA 01742-2751**

April 7, 2015

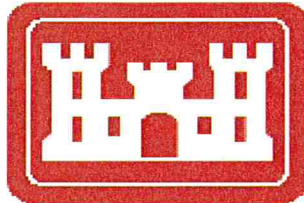
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A handwritten signature in black ink, appearing to read "Jeff Pickett".

April 7, 2015

**Jeffrey S. Pickett
Project Manager**



10/30/2017

**Glen P. Gordon, P.E.
Senior Associate Environmental
Engineer**

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ACRONYMS AND ABBREVIATION

AMEC	AMEC Environment & Infrastructure, Inc.
ADR	Automatic Data Review
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
CRREL	Cold Regions Research Engineering Laboratory
DoD	Department of Defense
DQI	Data Quality Indicators
GPR	Ground-Penetrating Radar
LOD	Limit of Detection
MDL	Method Detection Limit
ND	Not Detected
NHDES	New Hampshire Department of Environmental Services
PAL	Project Action Levels
QA/QC	Quality Assurance/Quality Control
QAPP	Quality Assurance Project Plan
RI/FS/PP	Remedial Investigation/Feasibility Study/Project Plan
RMS	Frances C. Richmond Middle School
$\mu\text{g}/\text{m}^3$	micrograms per cubic meter
USACE	U.S. Army Corps of Engineers
USEPA	U.S. Environmental Protection Agency
SAU	School Administrative Unit
SEDD	Staged Electronic Data Deliverable
Site	Cold Regions Research Engineering Laboratory in Hanover, NH
TCE	Trichloroethene
VI	Vapor Intrusion
VOC	Volatile Organic Compounds

1.0 INTRODUCTION

Summary

Under contract with the US Army Corps of Engineers, New England District (USACE-NAE), AMEC Environment & Infrastructure, Inc. (AMEC) conducted a sixth and seventh round of indoor air and sub-slab vapor sampling at the Frances C. Richmond Middle School (RMS) at 63 Lyme Road, Hanover, New Hampshire on December 30 and 31, 2014 and January 19 and 24, 2015. AMEC has prepared this data report for the USACE-NAE under contract number W912WJ-11-D-0005 Task Order 0004. Sampling was performed at 15 locations for indoor air samples, 9 locations for sub-slab samples, and 4 outdoor ambient air locations.

During the December 2014 sampling event, sampling was performed using Bottle-Vac™ sample containers with analyses performed using the Inficon Hapsite ER portable gas chromatograph with mass selective detector (GC/MS). Analysis of equipment blanks indicated the sampling equipment was contaminated from previous use and the data was rejected.

A re-sample event was performed on January 19, 2015 using summa canisters. An assessment of chemical data showed that trichloroethene (TCE) was detected in indoor air samples. TCE was detected from 0.28 micrograms per cubic meter ($\mu\text{g}/\text{m}^3$) to 2600 $\mu\text{g}/\text{m}^3$ in the indoor air. The result from the Cafeteria sample exceeded the NHDES commercial screening levels for TCE and the SAU 70 Superintendent was immediately notified on January 22nd, 2015. TCE was detected in ambient air samples from 0.35J to 58 $\mu\text{g}/\text{m}^3$. The ambient air sample located at the south end outside of the cafeteria was the location of the most elevated TCE result.

The Hapsite GC/MS was deployed to the Hanover Middle School on the evening of January 22nd and was used to evaluate indoor air conditions. The Hapsite analyses indicated that indoor air throughout Hanover Middle School did not have detectable TCE concentrations.

A confirmatory sample event was performed on January 24, 2015 using summa canisters. An assessment of chemical data showed that TCE concentrations in the indoor air ranged from ND to 0.24J $\mu\text{g}/\text{m}^3$. TCE concentrations ranged from ND to 7.5 $\mu\text{g}/\text{m}^3$ in sub-slab vapor. TCE in the ambient air samples ranged from ND to 0.44J $\mu\text{g}/\text{m}^3$.

None of the indoor air samples collected showed values approaching the interim action levels for TCE. There were no sub-slab or indoor air concentrations exceeding NHDES commercial screening levels for TCE in samples collected on January 24th.

Background

Since March 2010, the USACE-NAE has been investigating vapor intrusion (VI) at several buildings at the Cold Regions Research and Engineering Laboratory (CRREL or Site) at 72 Lyme Road in Hanover, New Hampshire (Figure 1-1). VI samples detected TCE and other contaminants in indoor air at several CRREL facility buildings. As part of characterization of

indoor air migration pathways, soil vapor investigations on the CRELL property were initiated in May 2012. Elevated concentrations of TCE were detected in deep soils at the CRREL site boundary (AMEC, 2013). Based on these findings, further characterization of indoor air in buildings adjacent to CRREL was needed.

In March 2013, USACE-NAE representatives met with administrative officials of School Administrative Unit (SAU) 70 to inform them of the presence of deep soil vapor contamination at the CRREL facility boundary. Both parties agreed that sampling of indoor air and sub-slab soil vapor was warranted at the RMS to determine if TCE is present.

Multiple rounds of sampling have been completed at the RMS. The first round of indoor air and sub-slab vapor sampling was conducted in the RMS on April 1, 2013. The results from that round of sampling were presented in a draft report to the USACE-NAE dated April 12, 2013 (AMEC, 2014a). The second round of sampling was conducted on July 31, 2013 (AMEC, 2014b). The third round of sampling was conducted on January 3, 2014 (AMEC, 2014b). Round four was collected on April 15th, 2014 (AMEC, 2014c). Round five was collected on August 12th, 2014 (AMEC, 2014d). Round six was collected on December 30th and 31st, 2014 (AMEC, 2014e). Round seven was collected on January 19th, 2015 (AMEC, 2014e). Round seven-A (7A) was collected on January 24th, 2015 (AMEC, 2014e). This report documents the results of sampling conducted in December 2014 and January 2015.

2.0 INDOOR AIR INVESTIGATION

An indoor air and sub-slab soil vapor investigation was conducted to provide an assessment of indoor air quality and sub-slab conditions at the RMS located east of the CRREL facility (Figure 1-1).

Work was completed in accordance with the Off-site Work Plan (AMEC, 2013) with the following exceptions. Round 6 sampling was conducted on December 29, 2014 utilizing the Bottle-Vac™ sample containers in place of Summa canisters. Bottle-Vac™ samples were analyzed using the Hapsite ER portable GC/MS. This equipment is presently used at the Cold Regions Research and Engineering Laboratory (CRREL) Site. Results from the Bottle-Vac™ samples collected indicated carryover contamination in the sampling media from the CRREL Site. Due to this, the data from sampling round 6 was rejected and a re-sampling effort using Summa canisters was performed.

Round 7 sampling occurred on January 19, 2015. Preliminary data provided by the analytical laboratory on January 22, indicated an elevated TCE concentration in the cafeteria with an elevated TCE result in the background sample south located outside the building envelope of the cafeteria. The Hapsite ER portable GC/MS was mobilized to the RMS on the evening/night of January 22 to perform analyses of indoor air at the school. Hapsite results from that evening were non-detectable throughout the school building. A confirmatory sampling, round 7A, was conducted on January 24, 2015 with summa canisters.

Indoor air and sub-slab vapor investigation work was evaluated in accordance with federal guidelines presented in the U.S. Environmental Protection Agency (USEPA) guidance on vapor intrusion (USEPA, 2002) and Department of Defense (DoD) guidance (DoD, 2009). NHDES Guidelines are also considered in the evaluation of Site data. Data quality objectives, procedures, and quality assurance and quality control (QA/QC) are presented in the Quality Assurance Project Plan (QAPP) (AMEC, 2012b).

The tasks for this round of indoor air sampling included:

- review of the work plan,
- meetings with RMS facility personnel,
- review of chemical inventories,
- inspection of sub-slab vapor sampling points,
- indoor air, ambient air and soil vapor sampling,
- data review and reporting.

2.1 Methods and Procedures

Indoor air and sub-slab soil vapor sampling and related field work was conducted in accordance with the Off-site Work Plan (AMEC, 2013) with the project QAPP (AMEC, 2012b) and the Accident Prevention Plan and Site Safety and Health Plan (AMEC, 2012a).

Sub-slab sampling implants were installed on March 26th, 2013. Table 2-1 provides a listing of indoor air, sub-slab vapor, and background sample locations collected during the August 12th, 2014 sampling event. The location of ambient air (background), indoor air and sub-slab vapor samples are shown on Figure 2-1. Each location was sampled in previous sampling events.

2.2 Indoor Air and Soil Vapor Data Evaluation Criteria

For the purposes of this report, TCE indoor air data are evaluated by comparison to the risk based concentration of 8.8 µg/m³ calculated by the USACE-NAE. That concentration is associated with a non-cancer hazard quotient of below 1 for an industrial/commercial setting and a cancer risk that is within the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) excess lifetime cancer risk range (10⁻⁴ – 10⁻⁶).

2.3 Data Validation and Data Usability

Indoor air and background ambient air samples were collected at the Hanover Middle School on January 19, 2015 as part of continuing investigations at the Cold Regions Research Engineering Laboratory (CRREL) Site in Hanover, New Hampshire. Samples were analyzed by Katahdin Analytical Services in Scarborough, Maine. The samples were analyzed by the following U.S. Environmental Protection Agency (USEPA) method:

Laboratory	Parameter	Analytical Method	Validation Level
Katahdin Analytical Services	Volatile Organic Compounds (VOCs)	USEPA TO-15	Tier III

A summary of samples included in this data validation report is presented in Table 1. The analytical data package was reviewed in accordance with the general specifications for remedial investigation (RI) data in the draft CRREL Quality assurance Project Plan (QAPP) [AMEC, 2013].

Data validation was completed using the Staged Electronic Data Deliverable (SEDD)/Automated Data review (ADR) process. The data were also validated manually by the AMEC Environment and Infrastructure Inc (AMEC) project chemist following the Region I USEPA-New England data Validation Functional Guidelines, Tier II procedures (USEPA, 1996). Quality control (QC) limits established in the QAPP were used during data validation. Data validation actions from the chemist review were compared to the ADR actions prior to preparing the final data set.

A summary of validated sample results is presented in Table 2. Results are reported in micrograms per cubic meter (µg/m³). A summary of data validation actions is presented in Table 3. Table 3 includes results for samples that have been qualified (data validation has resulted in revisions to the laboratory result) and any results with validation codes that have been applied by

ADR or the project chemist. Table 3 includes final results and validation qualifiers and validation reason codes that define the actions.

In accordance with general data reporting procedures in the Department of Defense (DOD) Quality Systems Manual (QSM) [DOD, 2010], the laboratory reported results using a combination of three detection limits including the limit of quantitation (LOQ), limit of detection (LOD), and the method detection limit (MDL). Results for compounds that are not detected in samples are reported as U qualified results at the LOD. The laboratory reports positive detections above the MDL. Values between the MDL and the LOQ are qualified as estimated (J) by the laboratory. The ADR validation module applies a validation reason code of RL to all results that are reported as J qualified positive detections below the LOQ. A subset of target compound detections reported in the indoor air and soil vapor samples are at low concentrations below the LOQ and have been qualified as estimated (J) values by the laboratory. Results are summarized on Table 3.

The detection limits for trichloroethene (TCE) for TO-15 are 0.54 (LOQ), 0.27 (LOD), and 0.048 (MDL) in µg/m³. The DOD QSM instructs labs to J qualify positive detections between the LOQ and MDL. All values for TCE that were detected in indoor air and ambient samples were less than 0.54 µg/m³ will have a J flag applied by the lab.

Following the detection in the cafeteria and subsequent screening with the Hapsite unit, indoor air, background ambient air, and sub-slab soil vapor samples were collected at the Hanover Middle School on January 24, 2015 as part of continuing investigations at the Cold Regions Research Engineering Laboratory (CRREL) Site in Hanover, New Hampshire. Samples were analyzed by Katahdin Analytical Services in Scarborough, Maine. The samples were analyzed by the following U.S. Environmental Protection Agency (USEPA) methods:

Laboratory	Parameter	Analytical Method	Validation Level
Katahdin Analytical Services	Volatile Organic Compounds (VOCs)	USEPA TO-15	Tier II

A summary of samples included in this data validation report is presented in Table 1. The analytical data package was reviewed in accordance with the general specifications for remedial investigation (RI) data in the draft CRREL Quality assurance Project Plan (QAPP) [AMEC, 2012].

Data validation was completed using the Staged Electronic Data Deliverable (SEDD)/Automated Data review (ADR) process. The data were also validated manually by the AMEC Environment and Infrastructure (AMEC) project chemist following the Region I USEPA-New England data Validation Functional Guidelines, Tier II procedures (USEPA, 1996). Quality control (QC) limits established in the QAPP were used during data validation. Data validation actions from the chemist review were compared to the ADR actions prior to preparing the final data set.

A summary of validated sample results is presented in Table 2. Results are reported in micrograms per cubic meter ($\mu\text{g}/\text{m}^3$). A summary of data validation actions is presented in

Table 3. Table 3 includes results for samples that have been qualified (data validation has resulted in revisions to the laboratory result) and any results with validation codes that have been applied by ADR or the project chemist. Table 3 includes final results and validation qualifiers and validation reason codes that define the actions.

In accordance with general data reporting procedures in the Department of Defense (DOD) Quality Systems Manual (QSM) [DOD, 2010], the laboratory reported results using a combination of three detection limits including the limit of quantitation (LOQ), limit of detection (LOD), and the method detection limit (MDL). Results for compounds that are not detected in samples are reported as U qualified results at the LOD. The laboratory reports positive detections above the MDL. Values between the MDL and the LOQ are qualified as estimated (J) by the laboratory. The ADR validation module applies a validation reason code of RL to all results that are reported as J qualified positive detections below the LOQ. Many target compound detections reported in the indoor air and soil vapor samples were at low concentrations below the LOQ and have been qualified as estimated (J) values by the laboratory. The trichloroethene (TCE) results in a subset of samples are qualified as estimated J because the concentrations are less than the LOQ. The detection limits for TCE for TO-15 are 0.54 (LOQ), 0.27 (LOD), and 0.048 (MDL) in $\mu\text{g}/\text{m}^3$. The DOD QSM instructs labs to J qualify positive detections between the LOQ and MDL. All values for TCE that were detected in indoor air and ambient samples were less than 0.54 $\mu\text{g}/\text{m}^3$ will have a J flag applied by the lab.

3.0 FRANCES C. RICHMOND INDOOR AIR AND SUB-SLAB SAMPLING RESULTS

The following subsections describe the results of RMS indoor air and sub-slab vapor sampling results.

3.1 Chemical Inventory

A chemical inventory survey was completed on January 19th, 2015 during the sampling activities. Chemical inventory surveys did not indicate the presence of TCE containing materials or products within the RMS.

The following is a summary the results of the chemical inventory completed at the RMS in January 2015. Note that most classrooms contain Expo[®] white board cleaner and Expo[®] dry erase markers. Hand sanitizers which contain alcohols are located throughout the school building.

Boiler Room (lower level). Products in the Boiler Room included Sid Harvey's soot remover spray.

Room 80 (Custodial Room lower level). The following products were observed in the Custodial Room: WD-40[®], Gunk[®] Chain Lube, Goof Off[®], Minwax[®] Wood Finish, Chalk Board Paint, penetrating grease, KODAK lens cleaner, graphite lubricant containing xylenes and methylene chloride, Krylon[®] paint, BETCO[®] floor cleaners, stripper, and floor sealer containing monoethanolamine, BETCO[®] glass cleaner and gum remover, chalkboard cleaner, and baseboard stripper containing acetone and petroleum distillates.

Room 804 (Science Room lower level). The following chemicals and products were stored in the Chemistry Class Room 804; 409 All Purpose Cleaner, Sharpies[®], Wite Out[®] Correction Fluid, Avery Permanent Glue Sticks Expo[®] Dry Erase Markers, Expo[®] White Board Care, Bernzomatic[®] Propane Cylinders, Camp Gaz C206 Butane Cylinders, and Staples[®] Dry Erase Board Wipes.

Room 804A (Chemical Storage and Lab Room lower level). The following chemicals and products were stored in Room 804A; Phenolphthalein Indicator, n-Hexanes, and Oops Amazing Remover.

Office (Office Area ground level). The Office contained Purell[®] Hand Sanitizer and Wite Out[®] Correction Fluid.

Custodial Closet ground level. The following products were observed in the Custodial Room: Comet, Turtle Wax[®] Bug & Tar Remover, BETCO[®] Gum Remover, BETCO[®] Steel Polish, BETCO[®] Foam Control Fiber Pro, BETCO[®] Fast Draw 10, BETCO[®] Fast Draw 11, BETCO[®] Fast Draw 20, BETCO[®] Fast Draw 28, BETCO[®] Oxyfeet G, BETCO[®] Clear Image 5, BETCO[®] One Step, Behold[®] Furniture Polish, Kleenex[®] Foam Skin Cleanser, CVS[®] Cleaning hand Soap, Windsor Red Carpet iCapsol, and Febreze[®] Professional Fabric Refresh.

Room 73 (Teachers Room ground level). The Teachers Room contained Crayola® Markers and Staples® Highlighters.

Room 707 (ground level). Room 707 contained Expo® Dry Erase Markers and Germ-x® Antibacterial Sanitizer.

Room 713 (Art Room ground level). The Art Room contained Krylon® paints, Crystal Clear, Sunnyside Specs paint thinner, Fiebings Leather Dye, Weber odorless turpenoid, Ace boiled linseed oil, printing inks, `gum solution, and Gold acrylic paints.

Room 715 (Living Arts Room ground level). The Living Arts Room contained Clorox Clean Up Bleach, Safetec Hand Sanitizer, and Expo® Dry Erase Markers.

Room 717 (Wood Shop ground level). The Wood Shop contained Bob Smith Industries (BSI) Insta-Set, BSI Maxi-Cure, and Rust-oleum® Spray Enamel.

Room 721 (Spanish Room ground level). The Spanish Room contained Seventh Generation Disinfecting Multi-Surface Cleaner, Expo® Dry Erase Markers, and Expo® White Board Care.

Room 727 (Fitness Room ground level). The Fitness Room contained Purell® hand Sanitizer and anti-bacterial wipe.

3.2 Atmospheric Conditions

January 19, 2015: The weather at the time of sampling was scattered clouds in the morning becoming overcast and light rain by noon. Temperatures ranged between 19 and 34 degrees Fahrenheit with winds intermittently gusting from the southwest. Barometric pressure fell throughout the sample period ranging from 30.07 inches of mercury down to 29.85 inches of mercury during sampling activities.

Differential pressure measurements were taken at four locations throughout the building to determine if the structure was under positive or negative pressure relative to ambient atmospheric pressure during sampling. Measurements were collected from room 721, 717, 728, and 800A. Differential pressures ranged from +0.003 to +0.015 inches of water where each reference point was located inside the building. These values indicate that the building was negatively pressurized and ambient air was entering the structure during sampling.

January 24, 2015: The weather at the time of sampling was overcast in the morning and transitioning to light snow throughout the day. Temperatures ranged between 20 and 30 degrees Fahrenheit mostly calm with light winds occasionally from the southeast. Barometric pressure fell throughout the sample period ranging from 29.74 inches of mercury down to 29.29 inches of mercury during sampling activities.

Differential pressures ranged from +0.005 to +0.025 inches of water (reference point inside the building) in the same four rooms. These values indicated the structure was negatively pressurized and ambient air was entering the building during sampling.

3.3 Air Sampling Results

During the January 19th round, 15 indoor air samples, and four (4) ambient air (background) samples were collected and analyzed. One indoor air sample (Room 717) was collected as duplicate.

Figure 3-1 shows the January 19th results for TCE for each sample location. Table 3-1 presents the January 19th TCE results in tabular format. Table 3-2 provides the January 19th “hits only” results for the full suite of compounds measured in each sample, i.e., compounds that are part of the USEPA TO-15 analyte list. (“Hits only” indicates that only compounds that were detected in a sample are listed in the table. If a TO-15 analyte/compound is not detected in any sample, then it is not included in the table.)

TCE was detected in each of the indoor air samples. With the exception of the indoor air sample collected in the Cafeteria, concentrations of TCE in indoor air ranged from 0.28J to 2.1 $\mu\text{g}/\text{m}^3$, and were below the interim action levels for TCE. The TCE result in the Cafeteria was 2,600 $\mu\text{g}/\text{m}^3$.

With the exception of the ambient air sample collected at the south end of the building, concentrations of TCE in ambient air ranged from 0.35J to 1.2 $\mu\text{g}/\text{m}^3$, and were below the interim action levels for TCE. The ambient air TCE result at the south end of the building was 58 $\mu\text{g}/\text{m}^3$.

During the January 24 round, 10 sub-slab samples, 15 indoor air samples, and four (4) ambient air (background) samples were collected and analyzed. One sub-slab vapor and one indoor air sample (Room 717) were collected as duplicates. Sub-surface pressure conditions were measured at each sub-slab vapor location using an Omniguard differential pressure recorder. Sub-surface pressure measured under the building footprint ranged from -0.006 inches of water (“H₂O”) to +0.05 “H₂O”. The average differential pressure was +0.0105 “H₂O” indicating overall conditions were conducive to support vapor intrusion.

Figure 3-2 shows the January 24th results for TCE for each sample location. Table 3-3 presents the January 24th TCE results in tabular format. Table 3-4 provides the January 24th “hits only” results for the full suite of compounds measured in each sample, i.e., compounds that are part of the USEPA TO-15 analyte list. (“Hits only” indicates that only compounds that were detected in a sample are listed in the table. If a TO-15 analyte/compound is not detected in any sample, then it is not included in the table.)

TCE was detected in 14 of the 16 indoor air samples collected at low concentrations ranging from 0.091J to 0.24J $\mu\text{g}/\text{m}^3$, and were below the interim action levels for TCE. TCE was detected in 9 of 11 sub-slab vapor samples at low concentrations ranging from 0.27J $\mu\text{g}/\text{m}^3$ to 7.5 $\mu\text{g}/\text{m}^3$. TCE was detected in 3 of 4 ambient air samples at low concentrations ranging from 0.10J $\mu\text{g}/\text{m}^3$ to 0.44J $\mu\text{g}/\text{m}^3$.

For the January 24th sampling, there was no sub-slab or indoor air concentration exceeding NHDES commercial screening levels for TCE.

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U.S. Army Corps of Engineers - New England District
Cold Regions Research and Engineering Laboratory Hanover, New Hampshire
Final Frances C. Richmond Middle School Indoor Air and Sub-Slab Sampling Results –January 2015

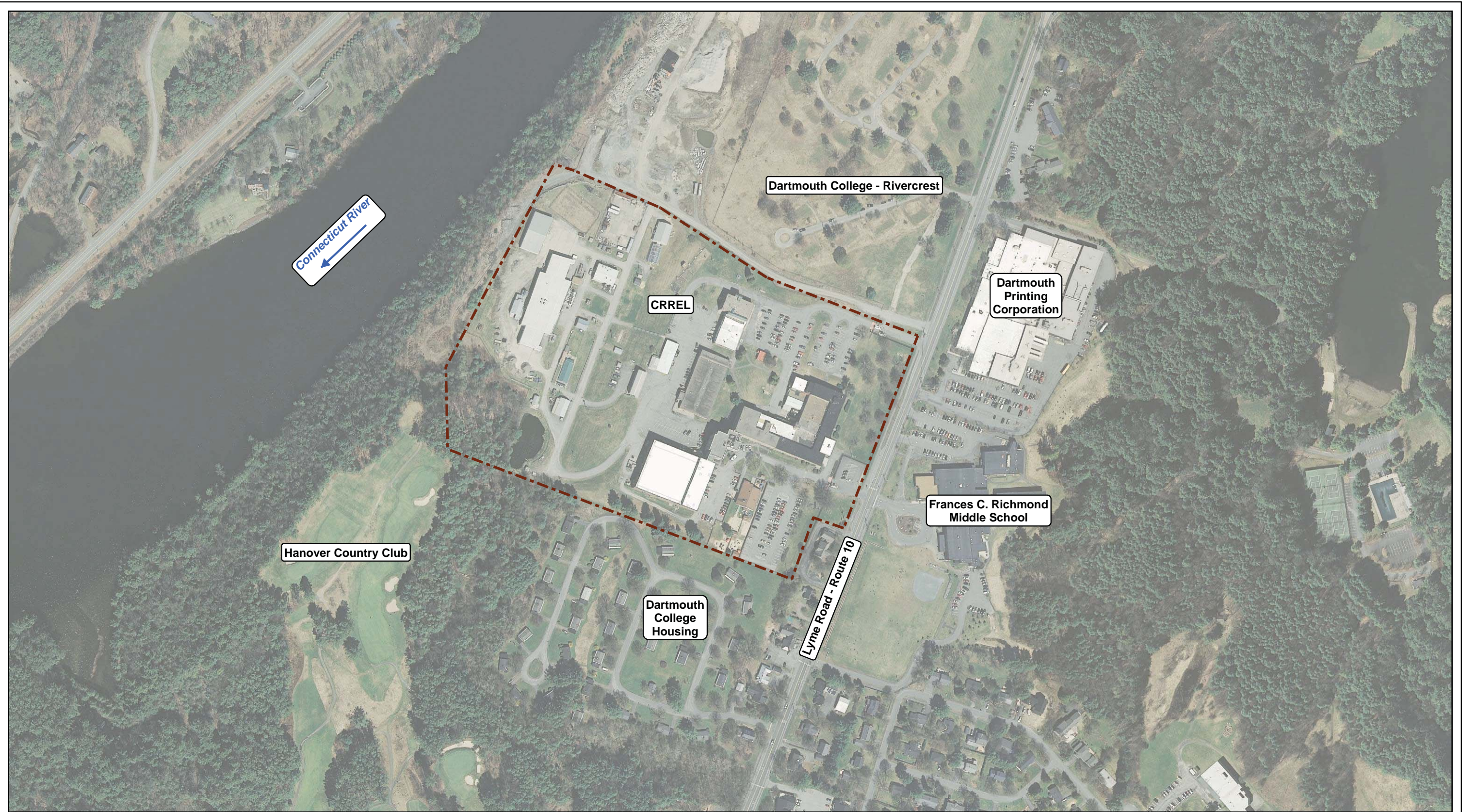
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FIGURES



Legend
 - - - CRREL Site Boundary

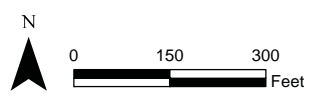
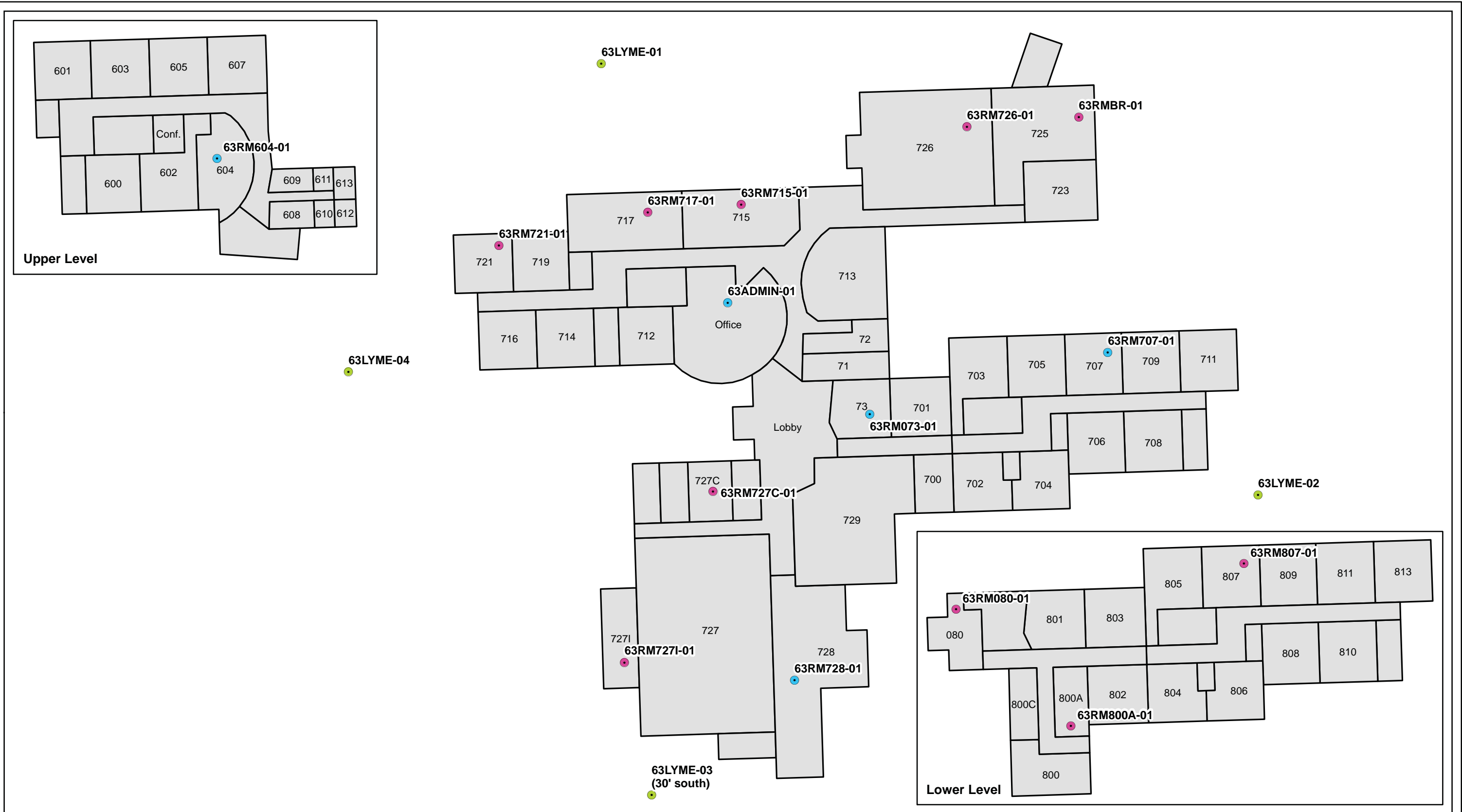


Figure 1-1
 Site Map
 Frances C. Richmond Middle School
 Indoor Air and Sub-Slab Investigation Results
 Cold Regions Research and Engineering Laboratory
 Hanover, New Hampshire





Legend

- Ambient Air Location
- Indoor Air Sample Location
- Indoor Air and Sub-Slab Vapor Sample Location

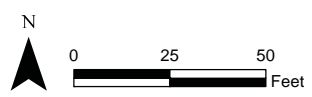
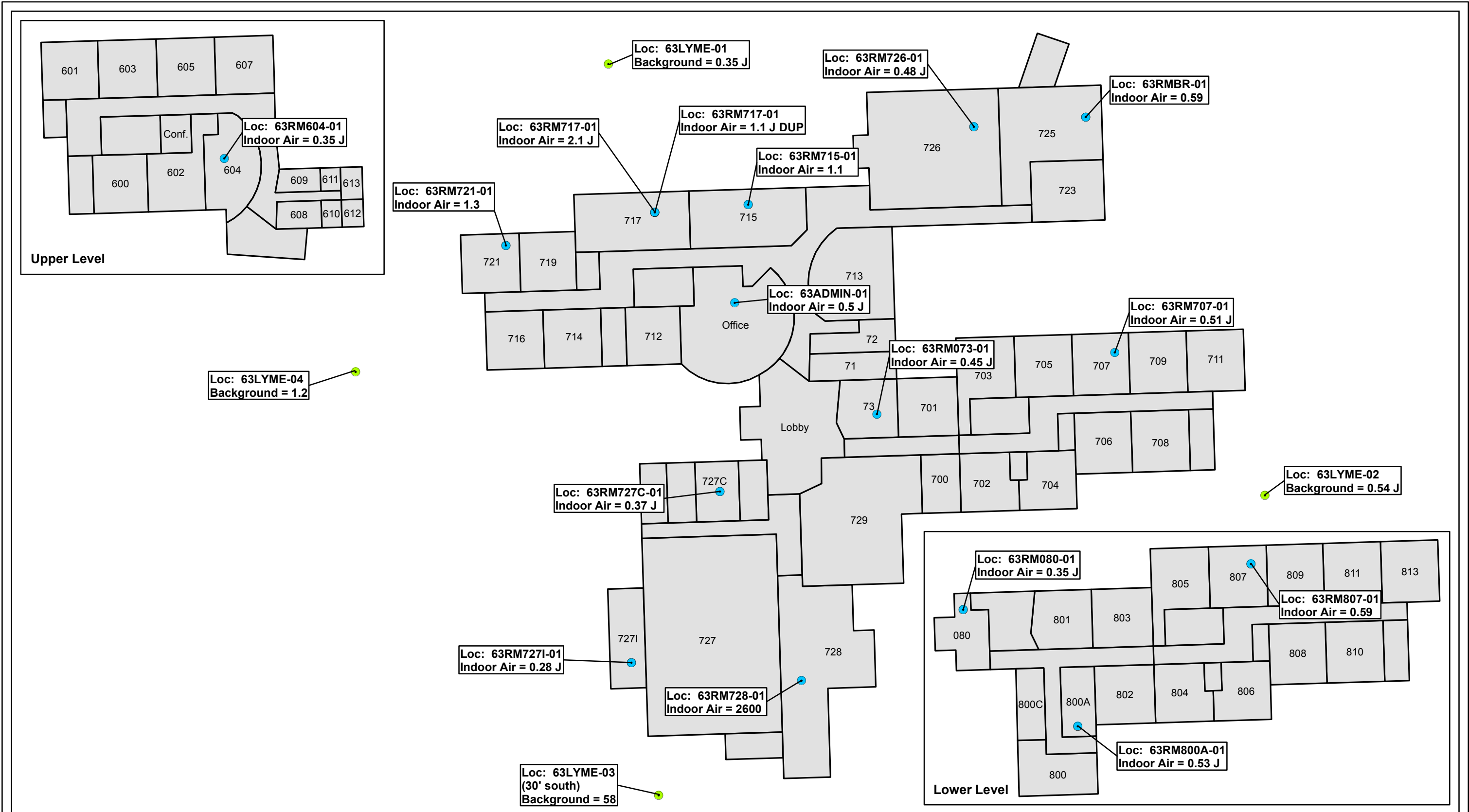


Figure 2-1
 Richmond Middle School - Sample Locations
 Frances C. Richmond Middle School
 Indoor Air and Sub-Slab Investigation Results
 Cold Regions Research and Engineering Laboratory
 Hanover, New Hampshire



Notes:
TCE results shown in µg/m³
DUP - Sample Duplicate
J - Estimated Concentration

Legend

- Ambient Air Sample Location
- Indoor Air Sample Location

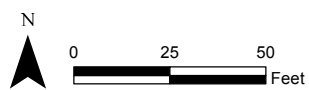
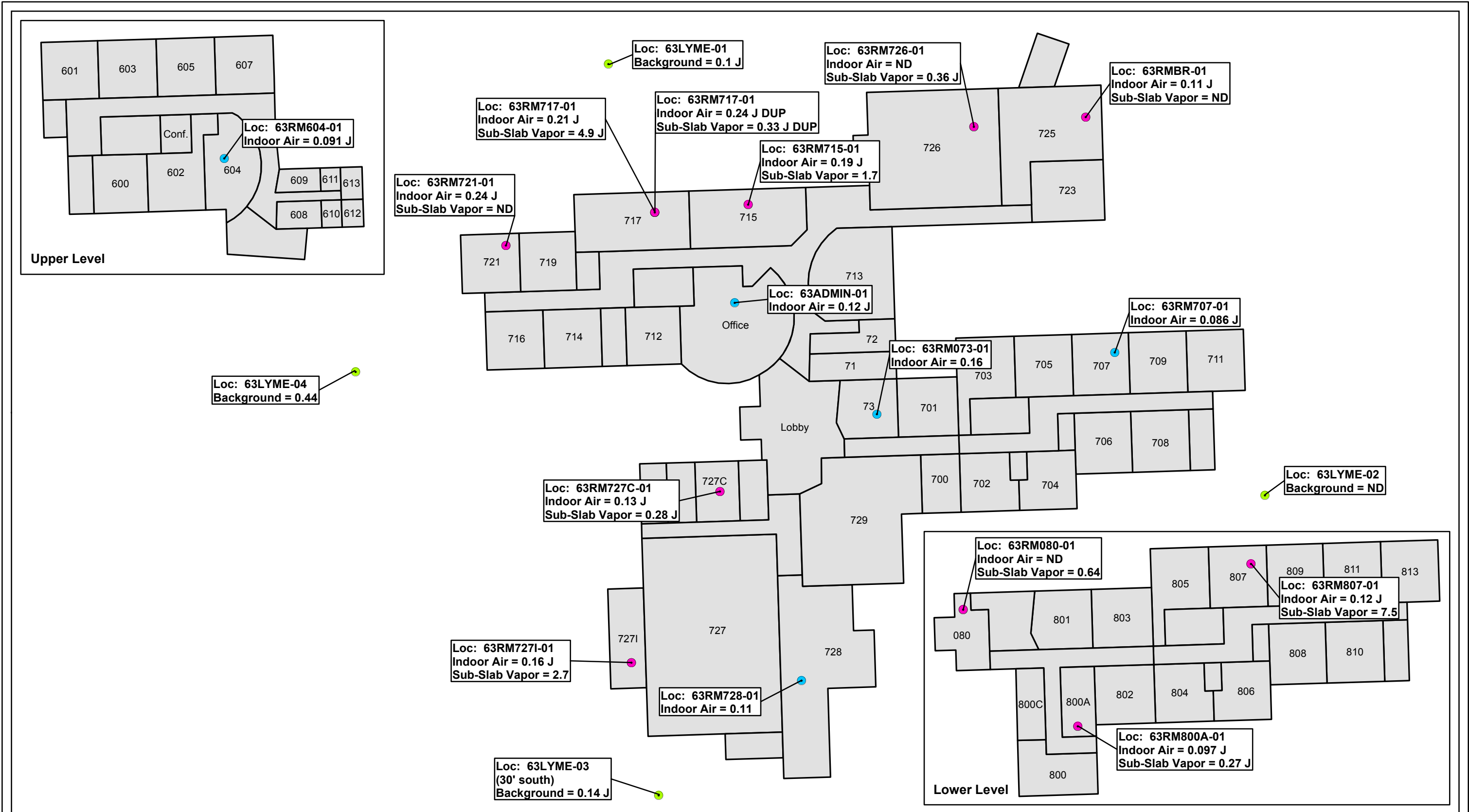


Figure 3-1
Richmond Middle School - TCE Results January 19, 2015
Frances C. Richmond Middle School
Indoor Air and Sub-Slab Investigation Results
Cold Regions Research and Engineering Laboratory
Hanover, New Hampshire



Notes:
TCE results shown in µg/m3
DUP - Sample Duplicate
J - Estimated Concentration
ND - Non-Detect

Legend

- Ambient Air Sample Location
- Indoor Air Sample Location
- Indoor Air and Sub-Slab Vapor Sample Location

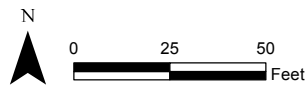


Figure 3-2
Richmond Middle School - TCE Results January 24, 2015
Frances C. Richmond Middle School
Indoor Air and Sub-Slab Investigation Results
Cold Regions Research and Engineering Laboratory
Hanover, New Hampshire

TABLES

Table 2-1
Summary of Indoor Air, Sub-Slab and Ambient Air Samples (1/19/2015)

Frances C. Richmond Middle School
Cold Regions Research and Engineering Laboratory
Hanover, New Hampshire

Property Location	Indoor Air Location ID	Sub-Slab Location ID	Ambient Air Location ID	Sample Duration	Sample Rationale	Indoor Air Sample, number	Sub-slab Vapor Sample, 6 inches below slab	Ambient Air Sample, number
63 Lyme Road, Frances Richmond Middle School	IA-63RM080-01	-	-	8-hour	Indoor Air - Janitorial and Utility Room	1	-	-
63 Lyme Road, Frances Richmond Middle School	IA-63RM715-01	-	-	8-hour	Indoor Air - Room 715 Living Arts	1	-	-
63 Lyme Road, Frances Richmond Middle School	IA-63RM717-01	-	-	8-hour	Indoor Air - Room 717 Woodworking	1 (Duplicate)	-	-
63 Lyme Road, Frances Richmond Middle School	IA-63RM721-01	-	-	8-hour	Indoor Air - Room 721 Spanish Classroom	1	-	-
63 Lyme Road, Frances Richmond Middle School	IA-63RM726-01	-	-	8-hour	Indoor Air - Auditorium	1	-	-
63 Lyme Road, Frances Richmond Middle School	IA-63RM727C-01	-	-	8-hour	Indoor Air - Room 727C PE Storage	1	-	-
63 Lyme Road, Frances Richmond Middle School	IA-63RM727I-01	-	-	8-hour	Indoor Air - Room 727 Fitness Area (Gym)	1	-	-
63 Lyme Road, Frances Richmond Middle School	IA-63RM800-01	-	-	8-hour	Indoor Air - Computer Room	1	-	-
63 Lyme Road, Frances Richmond Middle School	IA-63RMBR-01	-	-	8-hour	Indoor Air - Room 807 Cultures Room	1	-	-
63 Lyme Road, Frances Richmond Middle School	IA-63RM807-01	-	-	8-hour	Indoor Air - Boiler Room	1	-	-
63 Lyme Road, Frances Richmond Middle School	IA-63ADMIN-01	-	-	8-hour	Indoor Air - Office/Administration Area	1	-	-
63 Lyme Road, Frances Richmond Middle School	IA-63RM073-01	-	-	8-hour	Indoor Air - Staff Room	1	-	-
63 Lyme Road, Frances Richmond Middle School	IA-63RM604-01	-	-	8-hour	Indoor Air - Room 604 Upper Level	1	-	-
63 Lyme Road, Frances Richmond Middle School	IA-63RM707-01	-	-	8-hour	Indoor Air - Room 707 English	1	-	-
63 Lyme Road, Frances Richmond Middle School	IA-63RM728-01	-	-	8-hour	Indoor Air - Room 728 Cafeteria	1	-	-
*Ambient Air Outside Middle School	-	-	AA-63LYME-01	8-hour	Ambient Air on School Grounds (North)	-	-	1
*Ambient Air Outside Middle School	-	-	AA-63LYME-02	8-hour	Ambient Air on School Grounds (East)	-	-	1
*Ambient Air Outside Middle School	-	-	AA-63LYME-03	8-hour	Ambient Air on School Grounds (South)	-	-	1
*Ambient Air Outside Middle School	-	-	AA-63LYME-04	8-hour	Ambient Air on School Grounds (West)	-	-	1
Totals								
Number of Air Samples						15	-	4
Total Number of Air Samples						19	-	-
Number of QA/QC						1	-	-
Total Number of Samples Analyzed (VOCs TO-15)						20	-	-

Table 2-2
 Summary of Indoor Air, Sub-Slab and Ambient Air Samples
 (1/24/2015)

Frances C. Richmond Middle School
 Cold Regions Research and Engineering Laboratory
 Hanover, New Hampshire

Property Location	Indoor Air Location ID	Sub-Slab Location ID	Ambient Air Location ID	Sample Duration	Sample Rationale	Indoor Air Sample, number	Sub-slab Vapor Sample, 6 inches below slab	Ambient Air Sample, number
63 Lyme Road, Frances Richmond Middle School	IA-63RM080-01	SA-63RM080-01	-	8-hour	Indoor and Sub-Slab Air - Janitorial and Utility Room	1	1	-
63 Lyme Road, Frances Richmond Middle School	IA-63RM715-01	SA-63RM715-01	-	8-hour	Indoor Air - Room 715 Living Arts	1	1	-
63 Lyme Road, Frances Richmond Middle School	IA-63RM717-01	SA-63RM717-01	-	8-hour	Indoor and Sub-Slab Air - Room 717 Woodworking	1 (Duplicate)	1 (Duplicate)	-
63 Lyme Road, Frances Richmond Middle School	IA-63RM721-01	SA-63RM721-01	-	8-hour	Indoor and Sub-Slab Air - Room 721 Spanish Classroom	1	1	-
63 Lyme Road, Frances Richmond Middle School	IA-63RM726-01	SA-63RM726-01	-	8-hour	Indoor and Sub-Slab Air - Auditorium	1	1	-
63 Lyme Road, Frances Richmond Middle School	IA-63RM727C-01	SA-63RM727C-01	-	8-hour	Indoor and Sub-Slab Air - Room 727C PE Storage	1	1	-
63 Lyme Road, Frances Richmond Middle School	IA-63RM727I-01	SA-63RM727I-01	-	8-hour	Indoor and Sub-Slab Air - Room 727 Fitness Area (Gym)	1	1	-
63 Lyme Road, Frances Richmond Middle School	IA-63RM800-01	SA-63RM800A-01	-	8-hour	Indoor and Sub-Slab Air - Computer Room	1	1	-
63 Lyme Road, Frances Richmond Middle School	IA-63RMBR-01	SA-63RMBR-01	-	8-hour	Indoor Air - Room 807 Cultures Room	1	1	-
63 Lyme Road, Frances Richmond Middle School	IA-63RM807-01	SA-63RM807-01	-	8-hour	Indoor Air and Sub-Slab Air - Boiler Room	1	1	-
63 Lyme Road, Frances Richmond Middle School	IA-63ADMIN-01	-	-	8-hour	Indoor Air - Office/Administration Area	1	-	-
63 Lyme Road, Frances Richmond Middle School	IA-63RM073-01	-	-	8-hour	Indoor Air - Staff Room	1	-	-
63 Lyme Road, Frances Richmond Middle School	IA-63RM604-01	-	-	8-hour	Indoor Air - Room 604 Upper Level	1	-	-
63 Lyme Road, Frances Richmond Middle School	IA-63RM707-01	-	-	8-hour	Indoor Air - Room 707 English	1	-	-
63 Lyme Road, Frances Richmond Middle School	IA-63RM728-01	-	-	8-hour	Indoor Air - Room 728 Cafeteria	1	-	-
*Ambient Air Outside Middle School	-	-	AA-63LYME-01	8-hour	Ambient Air on School Grounds (North)	-	-	1
*Ambient Air Outside Middle School	-	-	AA-63LYME-02	8-hour	Ambient Air on School Grounds (East)	-	-	1
*Ambient Air Outside Middle School	-	-	AA-63LYME-03	8-hour	Ambient Air on School Grounds (South)	-	-	1
*Ambient Air Outside Middle School	-	-	AA-63LYME-04	8-hour	Ambient Air on School Grounds (West)	-	-	1
Totals								
Number of Air Samples						15	10	4
Total Number of Air Samples						29	-	-
Number of QA/QC						1	1	-
Total Number of Samples Analyzed (VOCs TO-15)						31	-	-

**Table 3-1
TCE Results Summary (January 19, 2015)**

**Frances C. Richmond Middle School Indoor Air and Sub-Slab Investigation Results
Cold Regions Research and Engineering Laboratory
Hanover, New Hampshire**

Soil Vapor / Indoor Air Sampling Location ID	Sample Date	Media	QC Code	Trichloroethene ($\mu\text{g}/\text{m}^3$)
63LYME-01	1/19/2015	AMBIENT AIR	FS	0.35 J
63LYME-02	1/19/2015	AMBIENT AIR	FS	0.54 J
63LYME-03	1/19/2015	AMBIENT AIR	FS	58
63LYME-04	1/19/2015	AMBIENT AIR	FS	1.2
63ADMIN-01	1/19/2015	INDOOR AIR	FS	0.5 J
63RM073-01	1/19/2015	INDOOR AIR	FS	0.45 J
63RM080-01	1/19/2015	INDOOR AIR	FS	0.35 J
63RM604-01	1/19/2015	INDOOR AIR	FS	0.35 J
63RM707-01	1/19/2015	INDOOR AIR	FS	0.51 J
63RM715-01	1/19/2015	INDOOR AIR	FS	1.1
63RM717-01	1/19/2015	INDOOR AIR	FS	2.1 J
63RM717-01	1/19/2015	INDOOR AIR	FD	1.1 J
63RM721-01	1/19/2015	INDOOR AIR	FS	1.3
63RM726-01	1/19/2015	INDOOR AIR	FS	0.48 J
63RM727C-01	1/19/2015	INDOOR AIR	FS	0.37 J
63RM727I-01	1/19/2015	INDOOR AIR	FS	0.28 J
63RM728-01	1/19/2015	INDOOR AIR	FS	2600
63RM800-01	1/19/2015	INDOOR AIR	FS	0.53 J
63RM807-01	1/19/2015	INDOOR AIR	FS	0.59
63RMBR-01	1/19/2015	INDOOR AIR	FS	0.59

Notes

$\mu\text{g}/\text{m}^3$ = micrograms per cubic meter

FS = Field Sample

FD = Field Duplicate

J = Estimated concentration between the method detection limit (MDL) and the limit of quantitation (LOQ).

U = VOC was not detected at the limit of detection (LOD).

Table 3-2
Hits Only Summary (January 19, 2015)

Frances C. Richmond Middle School Indoor Air and Sub-Slab Investigation Results
Cold Regions Research and Engineering Laboratory
Hanover, New Hampshire

Location Sample Date Media Sample ID Qc Code Units	63ADMIN-01 1/19/2015 INDOOR AIR 63ADMIN-01-IA6 FS	63LYME-01 1/19/2015 AMBIENT AIR 63LYME-01-AA6 FS	63LYME-02 1/19/2015 AMBIENT AIR 63LYME-02-AA6 FS	63LYME-03 1/19/2015 AMBIENT AIR 63LYME-03-AA6 FS	63LYME-04 1/19/2015 AMBIENT AIR 63LYME-04-AA6 FS	63RM073-01 1/19/2015 INDOOR AIR 63RM073-01-IA6 FS
Parameter						
VOCs by Method TO-15						
1,1,1-Trichloroethane	UG/M3	0.27 U	0.27 U	0.27 U	0.27 U	0.27 U
1,1,2-Trichloro-1,2,2-Trifluoroethane	UG/M3	0.55 J	0.6 J	0.56 J	0.6 J	0.57 J
1,2,4-Trimethylbenzene	UG/M3	0.36 J	0.24 U	0.21 J	0.18 J	0.15 J
1,2-Dichloroethane	UG/M3	0.85	0.2 U	0.2 U	0.2 U	0.2 U
1,4-Dichlorobenzene	UG/M3	0.3 U	0.3 U	0.18 J	0.3 U	0.3 U
2-Butanone	UG/M3	0.68 J	0.18 J	0.15 U	0.17 J	0.24 J
2-Propanol	UG/M3	38 J	0.42 J	0.49 J	0.61 J	0.44 J
4-Ethyltoluene	UG/M3	0.11 J	0.24 U	0.24 U	0.24 U	0.24 U
4-Methyl-2-pentanone	UG/M3	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
Acetone	UG/M3	24	5	3.3	4	5.9
Benzene	UG/M3	0.89	0.77	0.77	0.8	0.73
Benzyl chloride	UG/M3	0.26 U	0.26 U	0.14 J	0.26 U	0.26 U
Carbon disulfide	UG/M3	0.12 J	0.16 U	0.16 U	0.16 U	0.16 U
Carbon tetrachloride	UG/M3	0.52 J	0.51 J	0.53 J	0.69	0.54 J
Chloroform	UG/M3	0.14 J	0.088 J	0.083 J	0.088 J	0.11 J
Chloromethane	UG/M3	0.1 U	1.3 J	1.2 J	1.4 J	1.4 J
Cis-1,2-Dichloroethene	UG/M3	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
Cyclohexane	UG/M3	0.21 J	0.079 J	0.082 J	0.096 J	0.089 J
Dichlorodifluoromethane	UG/M3	2.8	2.8	2.6	2.8	2.8
Ethanol	UG/M3	310 J	2.3	2.3	3.4	2.6
Ethyl benzene	UG/M3	0.2 J	0.078 J	0.087 J	0.091 J	0.087 J
Heptane	UG/M3	2.7	0.41 J	0.18 J	0.2 J	0.45
Hexane	UG/M3	0.39 J	0.42 J	0.39 J	0.39 J	0.42 J
Methylene chloride	UG/M3	0.94	0.87 J	0.76 J	0.94	0.9
Styrene	UG/M3	0.22 J	0.21 U	0.21 U	0.21 U	0.21 U
Tetrachloroethene	UG/M3	0.34 U	0.34 U	0.34 U	0.34 U	0.34 U
Tetrahydrofuran	UG/M3	0.15 U	0.15 U	0.15 U	0.15 U	0.15 U
Toluene	UG/M3	1.8	0.68	0.64	0.72	0.64
trans-1,2-Dichloroethene	UG/M3	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
Trichloroethene	UG/M3	0.5 J	0.35 J	0.54 J	58	1.2
Trichlorofluoromethane	UG/M3	1.7	1.6	1.6	2	1.8
Xylene, o	UG/M3	0.2 J	0.1 J	0.12 J	0.12 J	0.12 J
Xylenes (m&p)	UG/M3	0.95 J	0.51 J	0.57 J	0.56 J	0.51 J

Notes:

UG/M3 = micrograms per cubic meter

QC Code:

FS = Normal Field Sample

FD = Field Duplicate Sample

J = estimated

U = non detect at the reporting limit shown

Table 3-2
Hits Only Summary (January 19, 2015)

Frances C. Richmond Middle School Indoor Air and Sub-Slab Investigation Results
Cold Regions Research and Engineering Laboratory
Hanover, New Hampshire

Location Sample Date Media Sample ID Qc Code Units	63RM080-01 1/19/2015 INDOOR AIR 63RM080-01-IA6 FS	63RM604-01 1/19/2015 INDOOR AIR 63RM604-01-IA6 FS	63RM707-01 1/19/2015 INDOOR AIR 63RM707-01-IA6 FS	63RM715-01 1/19/2015 INDOOR AIR 63RM715-01-IA6 FS	63RM717-01 1/19/2015 INDOOR AIR 63RM717-01-IA6 FS	63RM717-01 1/19/2015 INDOOR AIR 63RM717-01-IA6 DUP FD
Parameter						
VOCs by Method TO-15						
1,1,1-Trichloroethane	UG/M3	0.27 U	0.27 U	0.27 U	0.27 U	0.27 U
1,1,2-Trichloro-1,2,2-Trifluoroethane	UG/M3	0.58 J	0.55 J	0.59 J	0.6 J	1.1 J
1,2,4-Trimethylbenzene	UG/M3	0.39 J	0.28 J	0.18 J	0.22 J	0.24 U
1,2-Dichloroethane	UG/M3	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
1,4-Dichlorobenzene	UG/M3	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U
2-Butanone	UG/M3	0.74 J	0.65 J	0.5 J	0.47 J	0.77 J
2-Propanol	UG/M3	28	38 J	0.24 U	0.24 U	0.24 U
4-Ethyltoluene	UG/M3	0.079 J	0.24 U	0.24 U	0.24 U	0.24 U
4-Methyl-2-pentanone	UG/M3	0.2 U	0.86	0.2 U	0.2 J	0.2 U
Acetone	UG/M3	21	19	11	10	32 J
Benzene	UG/M3	0.86	0.89	0.83	0.83	1.7 J
Benzyl chloride	UG/M3	0.26 U	0.26 U	0.26 U	0.26 U	0.26 U
Carbon disulfide	UG/M3	0.096 J	0.14 J	0.16 U	0.075 J	0.12 J
Carbon tetrachloride	UG/M3	0.49 J	0.55 J	0.55 J	0.52 J	1 J
Chloroform	UG/M3	0.27 J	0.16 J	0.12 J	0.16 J	0.2 J
Chloromethane	UG/M3	1.7 J	0.1 U	1.4 J	0.1 U	0.1 U
Cis-1,2-Dichloroethene	UG/M3	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
Cyclohexane	UG/M3	0.17 U	0.17 U	0.17 U	0.23 J	0.25 J
Dichlorodifluoromethane	UG/M3	2.7	2.8	2.8	2.6	5.4 J
Ethanol	UG/M3	160 J	260 J	290 J	69 J	120 J
Ethyl benzene	UG/M3	0.69	0.16 J	0.11 J	0.12 J	0.36 J
Heptane	UG/M3	1.4	1.1	2.9	0.61	0.98 J
Hexane	UG/M3	0.7 J	0.46 J	0.49 J	0.42 J	0.92 J
Methylene chloride	UG/M3	1.1	1.1	1	1.1	1.9 J
Styrene	UG/M3	0.37 J	0.21 J	0.06 J	0.12 J	0.19 J
Tetrachloroethene	UG/M3	0.088 J	0.34 U	0.12 J	0.34 U	0.14 J
Tetrahydrofuran	UG/M3	0.15 U	0.15 U	0.15 U	0.15 U	0.15 U
Toluene	UG/M3	2.7	1.3	1.1	0.83	2.2 J
trans-1,2-Dichloroethene	UG/M3	0.2 U	0.2 U	0.2 U	0.2 U	0.087 J
Trichloroethene	UG/M3	0.35 J	0.35 J	0.51 J	1.1	2.1 J
Trichlorofluoromethane	UG/M3	2.2	1.6	1.6	1.6	3.1 J
Xylene, o	UG/M3	0.69	0.16 J	0.14 J	0.14 J	0.2 J
Xylenes (m&p)	UG/M3	5	0.8 J	0.71 J	0.69 J	1 J

Notes:

UG/M3 = micrograms per cubic meter

QC Code:

FS = Normal Field Sample

FD = Field Duplicate Sample

J = estimated

U = non detect at the reporting limit shown

Table 3-2
Hits Only Summary (January 19, 2015)

Frances C. Richmond Middle School Indoor Air and Sub-Slab Investigation Results
Cold Regions Research and Engineering Laboratory
Hanover, New Hampshire

Location	63RM721-01	63RM726-01	63RM727C-01	63RM727I-01	63RM728-01	63RM800-01	
Sample Date	1/19/2015	1/19/2015	1/19/2015	1/19/2015	1/19/2015	1/19/2015	
Media	INDOOR AIR	INDOOR AIR	INDOOR AIR	INDOOR AIR	INDOOR AIR	INDOOR AIR	
Sample ID	63RM721-01-IA6	63RM726-01-IA6	63RM727C-01-IA6	63RM727I-01-IA6	63RM728-01-IA6	63RM800-01-IA6	
Qc Code	FS	FS	FS	FS	FS	FS	
Units							
Parameter							
VOCs by Method TO-15							
1,1,1-Trichloroethane	UG/M3	0.27 U	0.27 U	0.27 U	0.27 U	0.15 J	0.27 U
1,1,2-Trichloro-1,2,2-Trifluoroethane	UG/M3	0.54 J	0.56 J	0.56 J	0.52 J	0.55 J	0.57 J
1,2,4-Trimethylbenzene	UG/M3	0.26 J	1.5	0.31 J	0.27 J	0.22 J	0.13 J
1,2-Dichloroethane	UG/M3	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
1,4-Dichlorobenzene	UG/M3	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U
2-Butanone	UG/M3	0.44 J	0.68 J	0.68 J	0.32 J	0.74 J	0.38 J
2-Propanol	UG/M3	8.1	0.24 U	19	0.24 U	11	5.9
4-Ethyltoluene	UG/M3	0.24 U	0.24 U	0.093 J	0.24 U	0.24 U	0.24 U
4-Methyl-2-pentanone	UG/M3	0.2 U	0.2 U	0.38 J	0.82	0.2 U	0.2 U
Acetone	UG/M3	9.5	20	26	13	19	8.1
Benzene	UG/M3	0.86	0.86	1.1	0.86	0.99	0.86
Benzyl chloride	UG/M3	0.26 U	0.26 U	0.26 U	0.26 U	0.26 U	0.26 U
Carbon disulfide	UG/M3	0.16 U	0.16 J	0.26 J	0.13 J	0.13 J	0.16 U
Carbon tetrachloride	UG/M3	0.53 J	0.53 J	0.53 J	0.52 J	8.2	0.53 J
Chloroform	UG/M3	0.12 J	0.12 J	0.28 J	0.1 J	0.54	0.12 J
Chloromethane	UG/M3	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U
Cis-1,2-Dichloroethene	UG/M3	0.2 U	0.2 U	0.2 U	0.2 U	2.4	0.2 U
Cyclohexane	UG/M3	0.17 U	0.13 J	0.17 U	0.12 J	0.18 J	0.17 U
Dichlorodifluoromethane	UG/M3	2.5	2.8	2.6	2.6	2.3	2.6
Ethanol	UG/M3	120 J	130 J	140 J	46 J	130	37 J
Ethyl benzene	UG/M3	0.12 J	0.16 J	0.31 J	0.1 J	0.42 J	0.12 J
Heptane	UG/M3	0.82	0.57	0.82	0.21 J	0.82	0.57
Hexane	UG/M3	0.46 J	0.46 J	0.63 J	0.46 J	0.6 J	0.56 J
Methylene chloride	UG/M3	1.2	1.1	1.1	0.87 J	2.1	1.3
Styrene	UG/M3	0.21 U	0.2 J	0.25 J	0.21 U	0.2 J	0.081 J
Tetrachloroethene	UG/M3	0.34 U	0.34 U	0.34 U	0.34 U	1.1	0.34 U
Tetrahydrofuran	UG/M3	0.15 U	0.15 U	0.15 U	0.15 U	0.32 J	0.15 U
Toluene	UG/M3	0.83	1.4	6	1.3	2.5	1.7
trans-1,2-Dichloroethene	UG/M3	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
Trichloroethene	UG/M3	1.3	0.48 J	0.37 J	0.28 J	2600	0.53 J
Trichlorofluoromethane	UG/M3	1.5	1.6	1.5	1.4	36	1.3
Xylene, o	UG/M3	0.15 J	0.23 J	0.32 J	0.12 J	0.52	0.12 J
Xylenes (m&p)	UG/M3	0.65 J	0.95 J	2.1	0.55 J	3.6	0.62 J

Notes:

UG/M3 = micrograms per cubic meter

QC Code:

FS = Normal Field Sample

FD = Field Duplicate Sample

J = estimated

U = non detect at the reporting limit shown

Table 3-2
Hits Only Summary (January 19, 2015)

Frances C. Richmond Middle School Indoor Air and Sub-Slab Investigation Results
Cold Regions Research and Engineering Laboratory
Hanover, New Hampshire

Parameter	Location Sample Date Media Sample ID Qc Code Units	63RM807-01 1/19/2015 INDOOR AIR 63RM807-01-IA6 FS	63RMBR-01 1/19/2015 INDOOR AIR 63RMBR-01-IA6 FS
VOCs by Method TO-15			
1,1,1-Trichloroethane	UG/M3	0.27 U	0.27 U
1,1,2-Trichloro-1,2,2-Trifluoroethane	UG/M3	0.6 J	0.57 J
1,2,4-Trimethylbenzene	UG/M3	0.21 J	1.1
1,2-Dichloroethane	UG/M3	0.2 U	0.2 U
1,4-Dichlorobenzene	UG/M3	0.3 U	0.3 U
2-Butanone	UG/M3	0.44 J	0.32 J
2-Propanol	UG/M3	0.24 U	1.7
4-Ethyltoluene	UG/M3	0.24 U	0.24 U
4-Methyl-2-pentanone	UG/M3	0.34 J	0.2 U
Acetone	UG/M3	8.1	8.3
Benzene	UG/M3	0.89	0.7
Benzyl chloride	UG/M3	0.26 U	0.26 U
Carbon disulfide	UG/M3	0.16 U	0.16 U
Carbon tetrachloride	UG/M3	0.55 J	0.53 J
Chloroform	UG/M3	0.12 J	0.13 J
Chloromethane	UG/M3	0.1 U	1.1 J
Cis-1,2-Dichloroethene	UG/M3	0.2 U	0.2 U
Cyclohexane	UG/M3	0.17 U	0.12 J
Dichlorodifluoromethane	UG/M3	2.6	2.6
Ethanol	UG/M3	26	130 J
Ethyl benzene	UG/M3	0.1 J	0.11 J
Heptane	UG/M3	0.9	0.61
Hexane	UG/M3	0.42 J	0.67 J
Methylene chloride	UG/M3	1.1	1.7
Styrene	UG/M3	0.21 U	0.14 J
Tetrachloroethene	UG/M3	0.34 U	0.34 U
Tetrahydrofuran	UG/M3	0.15 U	0.15 U
Toluene	UG/M3	0.79	0.87
trans-1,2-Dichloroethene	UG/M3	0.2 U	0.2 U
Trichloroethene	UG/M3	0.59	0.59
Trichlorofluoromethane	UG/M3	1.4	1.3
Xylene, o	UG/M3	0.12 J	0.18 J
Xylenes (m&p)	UG/M3	0.52 J	0.79 J

Notes:

UG/M3 = micrograms per cubic meter

QC Code:

FS = Normal Field Sample

FD = Field Duplicate Sample

J = estimated

U = non detect at the reporting limit shown

**Table 3-3
TCE Results Summary (January 24, 2015)**

**Frances C. Richmond Middle School Indoor Air and Sub-Slab Investigation Results
Cold Regions Research and Engineering Laboratory
Hanover, New Hampshire**

Soil Vapor / Indoor Air Sampling Location ID	Sample Date	Media	QC Code	Trichloroethene ($\mu\text{g}/\text{m}^3$)
63ADMIN-01	1/24/2015	INDOOR AIR	FS	0.12 J
63LYME-01	1/24/2015	AMBIENT AIR	FS	0.1 J
63LYME-02	1/24/2015	AMBIENT AIR	FS	0.27 U
63LYME-03	1/24/2015	AMBIENT AIR	FS	0.14 J
63LYME-04	1/24/2015	AMBIENT AIR	FS	0.44 J
63RM073-01	1/24/2015	INDOOR AIR	FS	0.16 J
63RM080-01	1/24/2015	INDOOR AIR	FS	0.27 U
63RM080-01	1/24/2015	SUB-SLAB SOILVAPOR	FS	0.64
63RM604-01	1/24/2015	INDOOR AIR	FS	0.091 J
63RM707-01	1/24/2015	INDOOR AIR	FS	0.086 J
63RM715-01	1/24/2015	INDOOR AIR	FS	0.19 J
63RM715-01	1/24/2015	SUB-SLAB SOILVAPOR	FS	1.7
63RM717-01	1/24/2015	INDOOR AIR	FS	0.21 J
63RM717-01	1/24/2015	INDOOR AIR	FD	0.24 J
63RM717-01	1/24/2015	SUB-SLAB SOILVAPOR	FS	4.9 J
63RM717-01	1/24/2015	SUB-SLAB SOILVAPOR	FD	0.33 J
63RM721-01	1/24/2015	INDOOR AIR	FS	0.24 J
63RM721-01	1/24/2015	SUB-SLAB SOILVAPOR	FS	0.27 U
63RM726-01	1/24/2015	INDOOR AIR	FS	0.27 U
63RM726-01	1/24/2015	SUB-SLAB SOILVAPOR	FS	0.36 J
63RM727C-01	1/24/2015	INDOOR AIR	FS	0.13 J
63RM727C-01	1/24/2015	SUB-SLAB SOILVAPOR	FS	0.28 J
63RM727I-01	1/24/2015	INDOOR AIR	FS	0.16 J
63RM727I-01	1/24/2015	SUB-SLAB SOILVAPOR	FS	2.7
63RM728-01	1/24/2015	INDOOR AIR	FS	0.11 J
63RM800-01	1/24/2015	INDOOR AIR	FS	0.097 J
63RM800A-01	1/24/2015	SUB-SLAB SOILVAPOR	FS	0.27 J
63RM807-01	1/24/2015	INDOOR AIR	FS	0.12 J
63RM807-01	1/24/2015	SUB-SLAB SOILVAPOR	FS	7.5
63RMBR-01	1/24/2015	INDOOR AIR	FS	0.11 J
63RMBR-01	1/24/2015	SUB-SLAB SOILVAPOR	FS	0.27 U

Notes

$\mu\text{g}/\text{m}^3$ = micrograms per cubic meter

FS = Field Sample

FD = Field Duplicate

J = Estimated concentration between the method detection limit (MDL) and the limit of quantitation (LOQ).

U = VOC was not detected at the limit of detection (LOD).

Table 3-4
Hits Only Summary (January 24, 2015)

Frances C. Richmond Middle School Indoor Air and Sub-Slab Investigation Results
Cold Regions Research and Engineering Laboratory
Hanover, New Hampshire

Location Sample Date Media Sample ID	63ADMIN-01 63ADMIN-01-IA7 01/24/15 FS	63LYME-01 63LYME-01-AA7 01/24/15 FS	63LYME-02 63LYME-02-AA7 01/24/15 FS	63LYME-03 63LYME-03-AA7 01/24/15 FS	63LYME-04 63LYME-04-AA7 01/24/15 FS
VOCs by Method TO-15					
1,1,2-Trichloro-1,2,2-Trifluoroethane	UG/M3 0.57 J	0.53 J	0.53 J	0.57 J	0.54 J
1,2,4-Trichlorobenzene	UG/M3 0.37 UJ	0.37 UJ	0.37 UJ	0.37 UJ	0.37 UJ
1,2,4-Trimethylbenzene	UG/M3 0.49 J	0.11 J	0.088 J	0.11 J	0.093 J
1,2-Dichloroethane	UG/M3 0.65	0.2 U	0.2 U	0.2 U	0.2 U
1,3,5-Trimethylbenzene	UG/M3 0.11 J	0.24 U	0.24 U	0.24 U	0.24 U
2-Butanone	UG/M3 0.62 J	0.28 J	0.29 J	0.32 J	0.32 J
2-Propanol	UG/M3 26	0.54 J	0.37 J	0.24 U	0.39 J
4-Ethyltoluene	UG/M3 0.13 J	0.24 U	0.24 U	0.24 U	0.24 U
4-Methyl-2-pentanone	UG/M3 0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
Acetone	UG/M3 17	4.7	3.8	6.4	3.8
Benzene	UG/M3 0.73	0.77	0.7	0.8	0.8
Carbon disulfide	UG/M3 0.12 J	0.16 U	0.031 J	0.037 J	0.16 U
Carbon tetrachloride	UG/M3 0.46 J	0.46 J	0.46 J	0.48 J	0.44 J
Chloroform	UG/M3 0.2 J	0.078 J	0.083 J	0.088 J	0.083 J
Chloromethane	UG/M3 0.1 U	1	0.93	1	0.99
Cyclohexane	UG/M3 0.17 J	0.17 U	0.17 U	0.065 J	0.17 U
Dichlorodifluoromethane	UG/M3 2.4	2.5	2.3	2.3	2.2
Ethanol	UG/M3 300 J	2.4	1.5	1.7	2.6
Ethyl benzene	UG/M3 0.17 J	0.065 J	0.22 U	0.056 J	0.22 U
Heptane	UG/M3 3.2	0.98	0.45	0.57	0.53
Hexane	UG/M3 0.3 J	0.24 J	0.19 J	0.25 J	0.24 J
Methylene chloride	UG/M3 0.76 J	0.73 J	0.62 J	0.66 J	0.59 J
Styrene	UG/M3 0.21 J	0.21 U	0.21 U	0.21 U	0.21 U
Tetrachloroethene	UG/M3 0.28 J	0.34 U	0.34 U	0.34 U	0.34 U
Toluene	UG/M3 2.5	0.53	0.41	0.53	0.53
Trichloroethene	UG/M3 0.12 J	0.1 J	0.27 U	0.14 J	0.44 J
Trichlorofluoromethane	UG/M3 1.3	1.3	1.2	1.2	1.2
Xylene, o	UG/M3 0.18 J	0.069 J	0.22 U	0.22 U	0.069 J
Xylenes (m&p)	UG/M3 0.82 J	0.33 J	0.87 U	0.26 J	0.34 J

Notes:

UG/M3 = micrograms per cubic meter

QC Code:

FS = Normal Field Sample

FD = Field Duplicate Sample

J = estimated

Table 3-4
Hits Only Summary (January 24, 2015)

Frances C. Richmond Middle School Indoor Air and Sub-Slab Investigation Results
Cold Regions Research and Engineering Laboratory
Hanover, New Hampshire

Location Sample Date Media Sample ID	63RM073-01 63RM073-01-IA7 01/24/15 FS	63RM080-01 63RM080-01-IA7 01/24/15 FS	63RM080-01 63RM080-01-SS7 01/24/15 FS	63RM604-01 63RM604-01-IA7 01/24/15 FS	63RM707-01 63RM707-01-IA7 01/24/15 FS
VOCs by Method TO-15					
1,1,2-Trichloro-1,2,2-Trifluoroethane	UG/M3 0.55 J	0.54 J	0.54 J	0.55 J	0.5 J
1,2,4-Trichlorobenzene	UG/M3 0.37 UJ	0.37 UJ	0.37 UJ	0.37 UJ	0.37 UJ
1,2,4-Trimethylbenzene	UG/M3 0.11 J	0.18 J	1.7	0.36 J	0.098 J
1,2-Dichloroethane	UG/M3 0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
1,3,5-Trimethylbenzene	UG/M3 0.24 U	0.24 U	0.36 J	0.24 U	0.24 U
2-Butanone	UG/M3 0.44 J	0.5 J	0.35 J	0.65 J	0.38 J
2-Propanol	UG/M3 18	17	6.9	27	9.3
4-Ethyltoluene	UG/M3 0.24 U	0.24 U	0.49 J	0.24 U	0.24 U
4-Methyl-2-pentanone	UG/M3 0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
Acetone	UG/M3 12	13	3.6	18	7.4
Benzene	UG/M3 0.77	0.77	0.25 J	0.7	0.77
Carbon disulfide	UG/M3 0.093 J	0.075 J	0.27 J	0.096 J	0.044 J
Carbon tetrachloride	UG/M3 0.52 J	0.45 J	0.34 J	0.49 J	0.48 J
Chloroform	UG/M3 0.37 J	0.58	0.14 J	0.3 J	0.1 J
Chloromethane	UG/M3 0.1 U	0.1 U	0.1 U	0.1 U	0.1 U
Cyclohexane	UG/M3 0.13 J	0.15 J	0.16 J	0.17 U	0.17 U
Dichlorodifluoromethane	UG/M3 2.4	2.5	4.9	2.4	2.5
Ethanol	UG/M3 150 J	86 J	18	270 J	200 J
Ethyl benzene	UG/M3 0.091 J	0.38 J	0.87	0.16 J	0.095 J
Heptane	UG/M3 2.6	0.9	0.45	2.2	2.3
Hexane	UG/M3 0.3 J	0.53 J	0.42 J	0.3 J	0.25 J
Methylene chloride	UG/M3 0.83 J	0.94	0.52 J	0.76 J	0.87 J
Styrene	UG/M3 0.11 J	0.2 J	0.21 U	0.18 J	0.21 U
Tetrachloroethene	UG/M3 0.34 U	0.34 U	0.14 J	0.34 U	0.34 U
Toluene	UG/M3 1.1	1.7	3.4	1.2	0.79
Trichloroethene	UG/M3 0.16 J	0.27 U	0.64	0.091 J	0.086 J
Trichlorofluoromethane	UG/M3 1.3	1.6	2.3	1.2	1.2
Xylene, o	UG/M3 0.1 J	0.38 J	1.3	0.17 J	0.091 J
Xylenes (m&p)	UG/M3 0.45 J	2.9	7.3	0.86 J	0.42 J

Notes:

UG/M3 = micrograms per cubic meter

QC Code:

FS = Normal Field Sample

FD = Field Duplicate Sample

J = estimated

Table 3-4
Hits Only Summary (January 24, 2015)

Frances C. Richmond Middle School Indoor Air and Sub-Slab Investigation Results
Cold Regions Research and Engineering Laboratory
Hanover, New Hampshire

Location Sample Date Media Sample ID	63RM715-01 63RM715-01-IA7 01/24/15 FS	63RM715-01 63RM715-01-SS7 01/24/15 FS	63RM717-01 63RM717-01-IA7 01/24/15 FS	63RM717-01 63RM717-01-IA7 DUP 01/24/15 FD	63RM717-01 63RM717-01-SS7 01/24/15 FS
VOCs by Method TO-15					
1,1,2-Trichloro-1,2,2-Trifluoroethane	UG/M3 0.55 J	UG/M3 0.51 J	UG/M3 0.54 J	UG/M3 0.59 J	UG/M3 0.5 J
1,2,4-Trichlorobenzene	UG/M3 0.37 UJ	UG/M3 0.37 UJ	UG/M3 0.37 UJ	UG/M3 0.37 UJ	UG/M3 0.37 UJ
1,2,4-Trimethylbenzene	UG/M3 0.064 J	UG/M3 1	UG/M3 0.23 J	UG/M3 0.24 U	UG/M3 0.24 U
1,2-Dichloroethane	UG/M3 0.2 U	UG/M3 0.2 U	UG/M3 0.2 U	UG/M3 0.2 U	UG/M3 0.2 U
1,3,5-Trimethylbenzene	UG/M3 0.24 U	UG/M3 0.19 J	UG/M3 0.24 U	UG/M3 0.24 U	UG/M3 0.35 J
2-Butanone	UG/M3 0.38 J	UG/M3 0.15 U	UG/M3 0.35 J	UG/M3 0.41 J	UG/M3 0.18 J
2-Propanol	UG/M3 4.2	UG/M3 24	UG/M3 5.9	UG/M3 5.9	UG/M3 0.24 U
4-Ethyltoluene	UG/M3 0.24 U	UG/M3 0.26 J	UG/M3 0.24 U	UG/M3 0.24 U	UG/M3 0.54
4-Methyl-2-pentanone	UG/M3 0.2 U	UG/M3 0.2 U	UG/M3 0.19 J	UG/M3 0.2 U	UG/M3 0.2 U
Acetone	UG/M3 8.5	UG/M3 2.6	UG/M3 11	UG/M3 12	UG/M3 3.1
Benzene	UG/M3 0.77	UG/M3 0.29 J	UG/M3 0.77	UG/M3 0.86	UG/M3 0.25 J
Carbon disulfide	UG/M3 0.062 J	UG/M3 0.4	UG/M3 0.059 J	UG/M3 0.078 J	UG/M3 0.23 J
Carbon tetrachloride	UG/M3 0.51 J	UG/M3 0.23 J	UG/M3 0.46 J	UG/M3 0.55 J	UG/M3 0.21 J
Chloroform	UG/M3 0.43 J	UG/M3 0.25 J	UG/M3 0.13 J	UG/M3 0.12 J	UG/M3 0.078 J
Chloromethane	UG/M3 0.1 U	UG/M3 0.1 U	UG/M3 0.1 U	UG/M3 0.1 U	UG/M3 0.1 U
Cyclohexane	UG/M3 0.16 J	UG/M3 0.21 J	UG/M3 0.093 J	UG/M3 0.086 J	UG/M3 0.15 J
Dichlorodifluoromethane	UG/M3 2.4	UG/M3 9.4	UG/M3 2.5	UG/M3 2.9	UG/M3 13
Ethanol	UG/M3 56 J	UG/M3 19	UG/M3 73 J	UG/M3 81 J	UG/M3 19
Ethyl benzene	UG/M3 0.069 J	UG/M3 0.52	UG/M3 0.091 J	UG/M3 0.12 J	UG/M3 0.87
Heptane	UG/M3 0.66	UG/M3 0.32 J	UG/M3 0.82	UG/M3 0.78	UG/M3 0.35 J
Hexane	UG/M3 0.24 J	UG/M3 0.46 J	UG/M3 0.24 J	UG/M3 0.26 J	UG/M3 0.34 J
Methylene chloride	UG/M3 0.56 J	UG/M3 1.2	UG/M3 0.45 J	UG/M3 0.62 J	UG/M3 0.66 J
Styrene	UG/M3 0.21 U	UG/M3 0.064 J	UG/M3 0.094 J	UG/M3 0.12 J	UG/M3 0.21 U
Tetrachloroethene	UG/M3 0.34 U	UG/M3 0.1 J	UG/M3 0.34 U	UG/M3 0.34 U	UG/M3 0.34 U
Toluene	UG/M3 0.6	UG/M3 2.4	UG/M3 0.83	UG/M3 0.94	UG/M3 3.6
Trichloroethene	UG/M3 0.19 J	UG/M3 1.7	UG/M3 0.21 J	UG/M3 0.24 J	UG/M3 4.9 J
Trichlorofluoromethane	UG/M3 1.3	UG/M3 4.4	UG/M3 1.2	UG/M3 1.4	UG/M3 5.3
Xylene, o	UG/M3 0.065 J	UG/M3 0.78	UG/M3 0.11 J	UG/M3 0.16 J	UG/M3 1.3
Xylenes (m&p)	UG/M3 0.3 J	UG/M3 4.2	UG/M3 0.44 J	UG/M3 0.57 J	UG/M3 7.7

Notes:

UG/M3 = micrograms per cubic meter

QC Code:

FS = Normal Field Sample

FD = Field Duplicate Sample

J = estimated

Table 3-4
Hits Only Summary (January 24, 2015)

Frances C. Richmond Middle School Indoor Air and Sub-Slab Investigation Results
Cold Regions Research and Engineering Laboratory
Hanover, New Hampshire

Location Sample Date Media Sample ID	63RM717-01 63RM717-01-SS7 DUP 01/24/15 FD	63RM721-01 63RM721-01-IA7 01/24/15 FS	63RM721-01 63RM721-01-SS7 01/24/15 FS	63RM726-01 63RM726-01-IA7 01/24/15 FS	63RM726-01 63RM726-01-SS7 01/24/15 FS
VOCs by Method TO-15					
1,1,2-Trichloro-1,2,2-Trifluoroethane	UG/M3 0.48 J	0.5 J	0.53 J	0.55 J	0.5 J
1,2,4-Trichlorobenzene	UG/M3 0.37 UJ	0.37 UJ	0.37 UJ	0.37 UJ	0.37 UJ
1,2,4-Trimethylbenzene	UG/M3 1.8	0.15 J	1	2.8	1.3
1,2-Dichloroethane	UG/M3 0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
1,3,5-Trimethylbenzene	UG/M3 0.38 J	0.24 U	0.24 J	0.24 U	0.28 J
2-Butanone	UG/M3 0.21 J	0.29 J	0.18 J	0.44 J	0.15 U
2-Propanol	UG/M3 0.24 U	2.4	0.24 U	0.24 U	0.24 U
4-Ethyltoluene	UG/M3 0.54	0.24 U	0.24 J	0.24 U	0.37 J
4-Methyl-2-pentanone	UG/M3 0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
Acetone	UG/M3 3.3	6.2	5.9	15	3.1
Benzene	UG/M3 0.28 J	0.83	0.19 J	0.7	0.16 J
Carbon disulfide	UG/M3 0.23 J	0.16 U	0.16 J	0.1 J	0.34
Carbon tetrachloride	UG/M3 0.2 J	0.5 J	0.15 J	0.46 J	0.3 J
Chloroform	UG/M3 0.24 U	0.098 J	0.28 J	0.15 J	0.24 U
Chloromethane	UG/M3 0.1 U	0.1 U	0.1 U	0.1 U	0.1 U
Cyclohexane	UG/M3 0.18 J	0.17 U	0.058 J	0.093 J	0.079 J
Dichlorodifluoromethane	UG/M3 13	2.3	7.4	2.7	22
Ethanol	UG/M3 20	61 J	27	110 J	18
Ethyl benzene	UG/M3 0.95	0.065 J	0.29 J	0.43 J	0.38 J
Heptane	UG/M3 0.38 J	0.57	0.7	0.57	0.18 J
Hexane	UG/M3 0.3 J	0.28 J	0.35 J	0.29 J	0.19 J
Methylene chloride	UG/M3 0.97	0.73 J	6.9	0.73 J	0.56 J
Styrene	UG/M3 0.081 J	0.21 U	0.24 J	0.19 J	0.055 J
Tetrachloroethene	UG/M3 0.34 U	0.34 U	0.14 J	0.34 U	0.28 J
Toluene	UG/M3 3.8	0.6	14	1.3	1.4
Trichloroethene	UG/M3 0.33 J	0.24 J	0.27 U	0.27 U	0.36 J
Trichlorofluoromethane	UG/M3 5.3	1.2	2.5	1.3	16
Xylene, o	UG/M3 1.4	0.074 J	0.48	0.91	0.69
Xylenes (m&p)	UG/M3 8.2	0.35 J	2.1	3.8	3.5

Notes:

UG/M3 = micrograms per cubic meter

QC Code:

FS = Normal Field Sample

FD = Field Duplicate Sample

J = estimated

Table 3-4
Hits Only Summary (January 24, 2015)

Frances C. Richmond Middle School Indoor Air and Sub-Slab Investigation Results
Cold Regions Research and Engineering Laboratory
Hanover, New Hampshire

Location Sample Date Media Sample ID		63RM727C-01 63RM727C-01-IA7 01/24/15 FS	63RM727C-01 63RM727C-01-SS7 01/24/15 FS	63RM727I-01 63RM727I-01-IA7 01/24/15 FS	63RM727I-01 63RM727I-01-SS7 01/24/15 FS	63RM728-01 63RM728-01-IA7 01/24/15 FS
VOCs by Method TO-15						
1,1,2-Trichloro-1,2,2-Trifluoroethane	UG/M3	0.52 J	0.51 J	0.57 J	0.51 J	0.54 J
1,2,4-Trichlorobenzene	UG/M3	0.18 J	0.37 UJ	0.37 UJ	0.37 UJ	0.37 UJ
1,2,4-Trimethylbenzene	UG/M3	0.36 J	0.98 J	0.24 J	1.1 J	0.15 J
1,2-Dichloroethane	UG/M3	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
1,3,5-Trimethylbenzene	UG/M3	0.24 U	0.26 J	0.24 U	0.24 J	0.24 U
2-Butanone	UG/M3	0.65 J	0.16 J	0.41 J	0.15 U	0.38 J
2-Propanol	UG/M3	24	0.24 U	0.24 U	0.24 U	11
4-Ethyltoluene	UG/M3	0.093 J	0.28 J	0.24 U	0.34 J	0.24 U
4-Methyl-2-pentanone	UG/M3	0.2 U	0.2 U	0.7	0.2 U	0.2 U
Acetone	UG/M3	28	3.3	17	2	16
Benzene	UG/M3	1.2	0.28 J	0.8	0.28 J	0.77
Carbon disulfide	UG/M3	0.31 J	0.17 J	0.17 J	0.087 J	0.13 J
Carbon tetrachloride	UG/M3	0.51 J	0.19 J	0.51 J	0.31 U	0.47 J
Chloroform	UG/M3	0.49 J	0.1 J	0.16 J	0.3 J	0.42 J
Chloromethane	UG/M3	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U
Cyclohexane	UG/M3	0.17 U	0.16 J	0.086 J	0.23 J	0.17 U
Dichlorodifluoromethane	UG/M3	2.5	7.4	2.7	24	2.4
Ethanol	UG/M3	170 J	17	62 J	15	270 J
Ethyl benzene	UG/M3	0.19 J	0.61	0.087 J	0.78	0.19 J
Heptane	UG/M3	1.6	0.29 J	0.4 J	0.41 J	0.74
Hexane	UG/M3	0.49 J	1.2	0.27 J	0.46 J	0.27 J
Methylene chloride	UG/M3	0.62 J	4.5	0.45 J	0.73 J	0.69 J
Styrene	UG/M3	0.23 J	0.21 U	0.068 J	0.21 U	0.085 J
Tetrachloroethene	UG/M3	0.34 U	0.15 J	0.34 U	0.34 U	0.34 U
Toluene	UG/M3	7.2	2.8	1.3	3.5	1.2
Trichloroethene	UG/M3	0.13 J	0.28 J	0.16 J	2.7	0.11 J
Trichlorofluoromethane	UG/M3	1.3	2.8	1.3	3.5	1.2
Xylene, o	UG/M3	0.24 J	0.87	0.11 J	1.1	0.2 J
Xylenes (m&p)	UG/M3	1.5 J	4.9	0.45 J	6.2	1.4 J

Notes:

UG/M3 = micrograms per cubic meter

QC Code:

FS = Normal Field Sample

FD = Field Duplicate Sample

J = estimated

Table 3-4
Hits Only Summary (January 24, 2015)

Frances C. Richmond Middle School Indoor Air and Sub-Slab Investigation Results
Cold Regions Research and Engineering Laboratory
Hanover, New Hampshire

Location Sample Date Media Sample ID	63RM800-01 63RM800-01-IA7 01/24/15 FS	63RM800A-01 63RM800A-01-SS7 01/24/15 FS	63RM807-01 63RM807-01-IA7 01/24/15 FS	63RM807-01 63RM807-01-SS7 01/24/15 FS	63RMBR-01 63RMBR-01-IA7 01/24/15 FS
VOCs by Method TO-15					
1,1,2-Trichloro-1,2,2-Trifluoroethane	UG/M3 0.53 J	0.57 J	0.54 J	0.48 J	0.57 J
1,2,4-Trichlorobenzene	UG/M3 0.37 UJ	0.37 UJ	0.37 UJ	0.37 UJ	0.37 UJ
1,2,4-Trimethylbenzene	UG/M3 0.15 J	1.4	0.1 J	1.1	8.8
1,2-Dichloroethane	UG/M3 0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
1,3,5-Trimethylbenzene	UG/M3 0.24 U	0.29 J	0.24 U	0.21 J	2.8
2-Butanone	UG/M3 0.38 J	0.16 J	0.32 J	0.15 J	0.56 J
2-Propanol	UG/M3 5.2	0.24 U	4.4	0.24 U	1.6
4-Ethyltoluene	UG/M3 0.24 U	0.4 J	0.24 U	0.3 J	2.9
4-Methyl-2-pentanone	UG/M3 0.2 U	0.2 U	0.23 J	0.2 U	0.2 U
Acetone	UG/M3 8.1	2	7.6	1.6	14
Benzene	UG/M3 0.8	0.16 J	0.8	0.14 J	0.83
Carbon disulfide	UG/M3 0.047 J	0.1 J	0.05 J	0.13 J	0.044 J
Carbon tetrachloride	UG/M3 0.47 J	0.11 J	0.48 J	0.31 U	0.52 J
Chloroform	UG/M3 0.12 J	0.24 U	0.093 J	0.3 J	0.098 J
Chloromethane	UG/M3 0.1 U	0.1 U	0.1 U	0.1 U	1
Cyclohexane	UG/M3 0.17 U	0.12 J	0.079 J	0.052 J	0.089 J
Dichlorodifluoromethane	UG/M3 2.5	25	2.6	2.8	2.4
Ethanol	UG/M3 30 J	13	22	9.8	280 J
Ethyl benzene	UG/M3 0.069 J	0.56	0.074 J	0.36 J	0.82
Heptane	UG/M3 0.57	0.22 J	0.7	0.2 J	0.86
Hexane	UG/M3 0.24 J	0.28 J	0.21 J	0.22 J	0.39 J
Methylene chloride	UG/M3 0.87 J	2.4	0.49 J	0.42 J	0.73 J
Styrene	UG/M3 0.064 J	0.21 U	0.21 U	0.21 U	0.34 J
Tetrachloroethene	UG/M3 0.34 U	0.67 J	0.34 U	0.61 J	0.34 U
Toluene	UG/M3 0.94	2.1	0.53	1.4	1.4
Trichloroethene	UG/M3 0.097 J	0.27 J	0.12 J	7.5	0.11 J
Trichlorofluoromethane	UG/M3 1.2	9.5	1.3	5.4	1.3
Xylene, o	UG/M3 0.074 J	0.91	0.069 J	0.65	2
Xylenes (m&p)	UG/M3 0.32 J	5.2	0.3 J	3.2	7.5

Notes:

UG/M3 = micrograms per cubic meter

QC Code:

FS = Normal Field Sample

FD = Field Duplicate Sample

J = estimated

Table 3-4
Hits Only Summary (January 24, 2015)

Frances C. Richmond Middle School Indoor Air and Sub-Slab Investigation Results
Cold Regions Research and Engineering Laboratory
Hanover, New Hampshire

Location Sample Date Media Sample ID		63RMBR-01 63RMBR-01-SS7 01/24/15 FS
VOCs by Method TO-15		
1,1,2-Trichloro-1,2,2-Trifluoroethane	UG/M3	0.49 J
1,2,4-Trichlorobenzene	UG/M3	0.37 UJ
1,2,4-Trimethylbenzene	UG/M3	1.1
1,2-Dichloroethane	UG/M3	0.2 U
1,3,5-Trimethylbenzene	UG/M3	0.26 J
2-Butanone	UG/M3	0.12 J
2-Propanol	UG/M3	0.24 U
4-Ethyltoluene	UG/M3	0.27 J
4-Methyl-2-pentanone	UG/M3	0.2 U
Acetone	UG/M3	4
Benzene	UG/M3	0.11 J
Carbon disulfide	UG/M3	0.12 J
Carbon tetrachloride	UG/M3	0.48 J
Chloroform	UG/M3	0.33 J
Chloromethane	UG/M3	0.1 U
Cyclohexane	UG/M3	0.17 U
Dichlorodifluoromethane	UG/M3	26
Ethanol	UG/M3	19
Ethyl benzene	UG/M3	0.18 J
Heptane	UG/M3	0.18 J
Hexane	UG/M3	0.13 J
Methylene chloride	UG/M3	4.2
Styrene	UG/M3	0.17 J
Tetrachloroethene	UG/M3	0.39 J
Toluene	UG/M3	7.2
Trichloroethene	UG/M3	0.27 U
Trichlorofluoromethane	UG/M3	62
Xylene, o	UG/M3	0.39 J
Xylenes (m&p)	UG/M3	1.4 J

Notes:

UG/M3 = micrograms per cubic meter

QC Code:

FS = Normal Field Sample

FD = Field Duplicate Sample

J = estimated

APPENDIX A
DATA VALIDATION REPORTS

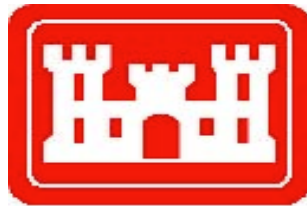
**DRAFT
DATA VALIDATION REPORT
JANUARY 19, 2015 AIR SAMPLES FRANCES C. RICHMOND
MIDDLE SCHOOL**

For

REMEDIAL INVESTIGATION AND FEASIBILITY STUDY
COLD REGIONS RESEARCH ENGINEERING LABORATORY (CRREL)
HANOVER, NEW HAMPSHIRE

Contract No.: W912WJ-11-D-0005
TASK ORDER 0004

Prepared for:



**New England District
U.S. Army Corps of Engineers
696 Virginia Road
Concord MA 01742-2751**

January 30, 2015

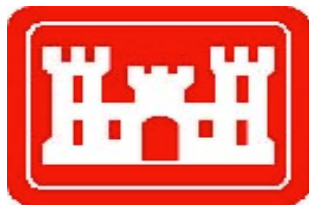
**DRAFT
DATA VALIDATION REPORT
JANUARY 24, 2015 AIR SAMPLES FRANCES C. RICHMOND
MIDDLE SCHOOL**

For

REMEDIAL INVESTIGATION AND FEASIBILITY STUDY
COLD REGIONS RESEARCH ENGINEERING LABORATORY (CRREL)
HANOVER, NEW HAMPSHIRE

Contract No.: W912WJ-11-D-0005
TASK ORDER 0004

Prepared for:



**New England District
U.S. Army Corps of Engineers
696 Virginia Road
Concord MA 01742-2751**

February 6, 2015

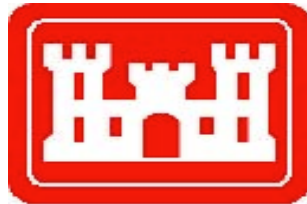
**DRAFT
DATA VALIDATION REPORT
JANUARY 24, 2015 AIR SAMPLES FRANCES C. RICHMOND
MIDDLE SCHOOL**

For

REMEDIAL INVESTIGATION AND FEASIBILITY STUDY
COLD REGIONS RESEARCH ENGINEERING LABORATORY (CRREL)
HANOVER, NEW HAMPSHIRE

Contract No.: W912WJ-11-D-0005
TASK ORDER 0004

Prepared for:



**New England District
U.S. Army Corps of Engineers
696 Virginia Road
Concord MA 01742-2751**

February 6, 2015

**Jeffrey S. Pickett
Project Manager**

**Glen P. Gordon, P.E.
Associate Engineer**

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Table 1	Sample Summary
Table 2	Validated Sample Results
Table 3	Data Validation Action Summary

ACRONYMS AND ABBREVIATION

ADR	Automated Data Review
AMEC	AMEC Environment and Infrastructure, Inc
BL1	Method Blank Qualifier
CCV%D	Continuing Calibration Qualifier
CRREL	Cold Regions Research and Engineering Laboratory
DOD	Department of Defense
E	Calibration Range Qualifier
EDD	Electronic Data Deliverable
FD	Field Duplicate Qualifier
ICVRSD	Initial Calibration Qualifier
J	estimated value
LOD	Limit of Detection
LOQ	Limit of Quantitation
LCS	Laboratory Control Sample
MDL	Method Detection Limit
$\mu\text{g}/\text{m}^3$	micrograms per cubic meter
QAPP	Quality Assurance Project Plan
QC	Quality Control
QSM	Quality Systems Manual
RI	Remedial Investigation
RL	Reporting Qualifier
RPD	Relative Percent Difference
RSD	Relative Standard Deviation
SDG	Sample Delivery Group
SEDD	Staged Electronic Data Deliverable
TCE	Trichloroethene
U	not detected
USEPA	United States Environmental Protection Agency

VOC Volatile Organic Compound

1.0 INTRODUCTION

Indoor air, background ambient air, and sub-slab soil vapor samples were collected at the Hanover Middle School on January 24, 2015 as part of continuing investigations at the Cold Regions Research Engineering Laboratory (CRREL) Site in Hanover, New Hampshire. Samples were analyzed by Katahdin Analytical Services in Scarborough, Maine. The samples were analyzed by the following U.S. Environmental Protection Agency (USEPA) methods:

Laboratory	Parameter	Analytical Method	Validation Level
Katahdin Analytical Services	Volatile Organic Compounds (VOCs)	USEPA TO-15	Tier II

A summary of samples included in this data validation report is presented in Table 1. The analytical data package was reviewed in accordance with the general specifications for remedial investigation (RI) data in the draft CRREL Quality assurance Project Plan (QAPP) [AMEC, 2012].

Data validation was completed using the Staged Electronic Data Deliverable (SEDD)/Automated Data review (ADR) process. The data were also validated manually by the AMEC Environment and Infrastructure (AMEC) project chemist following the Region I USEPA-New England data Validation Functional Guidelines, Tier II procedures (USEPA, 1996). Quality control (QC) limits established in the QAPP were used during data validation. Data validation actions from the chemist review were compared to the ADR actions prior to preparing the final data set.

A summary of validated sample results is presented in Table 2. Results are reported in micrograms per cubic meter ($\mu\text{g}/\text{m}^3$). A summary of data validation actions is presented in Table 3. Table 3 includes results for samples that have been qualified (data validation has resulted in revisions to the laboratory result) and any results with validation codes that have been applied by ADR or the project chemist. Table 3 includes final results and validation qualifiers and validation reason codes that define the actions.

In accordance with general data reporting procedures in the Department of Defense (DOD) Quality Systems Manual (QSM) [DOD, 2010], the laboratory reported results using a combination of three detection limits including the limit of quantitation (LOQ), limit of detection (LOD), and the method detection limit (MDL). Results for compounds that are not detected in samples are reported as U qualified results at the LOD. The laboratory reports positive detections above the MDL. Values between the MDL and the LOQ are qualified as estimated (J) by the laboratory. The ADR validation module applies a validation reason code of RL to all results that are reported as J qualified positive detections below the LOQ. Many target compound detections reported in the indoor air and soil vapor samples were at low concentrations below the LOQ and have been qualified as estimated (J) values by the laboratory. The trichloroethene (TCE) results in a subset of samples are qualified as estimated J

because the concentrations are less than the LOQ. The detection limits for TCE for TO-15 are 0.54 (LOQ), 0.27 (LOD), and 0.048 (MDL) in $\mu\text{g}/\text{m}^3$. The DOD QSM instructs labs to J qualify positive detections between the LOQ and MDL. All values for TCE that were detected in indoor air and ambient samples less than $0.54 \mu\text{g}/\text{m}^3$ will have a J flag applied by the lab indicating the result is estimated.

2.0 TO-15 VOCs

Samples were analyzed for VOCs by Method TO-15 (summa canisters). A description of validation actions for each laboratory data groups are presented in the following subsection. Data were evaluated based on the following parameters:

- * Data Completeness
 - * Holding Times and Preservation
Blanks
 - * Instrument Tunes
Initial Calibration
Continuing Calibration
 - * Laboratory Control Sample (LCS)
Field Duplicates
 - * Internal Standards
 - * Detection Limits
 - * Sample Result Verification/Electronic Evaluation Verification (EDD)
Calibration Range Evaluation
 - * Sample Collection
- * = indicates that criteria were met for this parameter

Except for the validation actions noted below, sample results are interpreted to be usable as reported by the laboratory. A summary of final results is presented on Table 2. A summary of data validation actions is presented on Table 3.

2.1 Blanks

Target compounds were reported in the method blank. All the compounds reported in method blank were at concentrations less than the LOD. The following target compounds were reported in the method blank:

- acetone
- hexachlorobutadiene

Validation action levels were established at five times the reported blank concentrations. Acetone is identified as a common laboratory contaminant in USEPA guidelines, and the action level for acetone was established at ten times the reported method blank concentration. During qualification of sample results, baseline action levels were adjusted for sample preparation/dilutions and compared to reported sample detections.

The following table summarizes the method blank detections and associated baseline action levels.

SDG	Lab Sample ID	Parameter Name	Result	Q	Units	Action Level
SI0533	WG157533-2	ACETONE	0.12	J	µg/m ³	1.2
SI0533	WG157533-2	HEXACHLOROBUTADIENE	0.15	J	µg/m ³	0.75

Reported detections less than the adjusted action levels were qualified non-detect (U). Qualified sample results that were less than the LOD were qualified non-detect (U) with results adjusted to the LOD.

A summary of method blank actions is presented in Table 3 with results being assigned a validation qualifier reason code of BL1.

2.2 Initial Calibration

In the initial calibration analyzed on January 20, 2015, the percent relative standard deviation (RSD) for 1,2,4-trichlorobenzene (54) exceeded the QC limit of 30. Sample results and reporting limits for 1,2,4-trichlorobenzene were qualified estimated (J/UJ).

A summary of initial calibration actions is presented in Table 3 with results being assigned a validation qualifier reason code of ICVRSD.

2.3 Continuing Calibration

In the continuing calibration analyzed on January 25, 2015, the percent difference for 1,1-dichloroethene (-28) and 1,2,4-trichlorobenzene (31) exceeded the QC limit of 25. Reporting limits for 1,2,4-trichlorobenzene were qualified previously under the initial calibration criteria. Reporting limits for 1,1-dichloroethene were qualified estimated (UJ).

In the continuing calibration analyzed on January 26, 2015, the percent difference for 1,1-dichloroethene (-26) exceeded the QC limit of 25. Reporting limits for 1,1-dichloroethene were qualified estimated (UJ).

A summary of continuing calibration actions is presented in Table 3 with results being assigned a validation qualifier reason code of CCV%D

2.4 Field Duplicates

Sample 63RM717-01-SS7 was submitted with an associated field duplicate. The relative percent difference (RPD) between the original and duplicate sample results for trichloroethene (175) exceeded the QC limit of 50. The results for trichloroethene in the 63RM717-01-SS7 pair were qualified estimated (J).

A summary of field duplicate actions is presented in Table 3 with results being assigned a validation qualifier reason code of FD.

2.5 Calibration Range Evaluation

Ethanol results for a subset of samples exceeded the calibration range. Associated sample ethanol results were qualified estimated (J). The following table summarizes the associated samples calibration range exceedence:

SDG	Field Sample ID	Parameter Name	Validation Result	Q	Laboratory Result	Q
SI0533	63ADMIN-01-IA7	Ethanol	300	J	300	E
SI0533	63RM073-01-IA7	Ethanol	150	J	150	E
SI0533	63RM080-01-IA7	Ethanol	86	J	86	E
SI0533	63RM604-01-IA7	Ethanol	270	J	270	E
SI0533	63RM707-01-IA7	Ethanol	200	J	200	E
SI0533	63RM715-01-IA7	Ethanol	56	J	56	E
SI0533	63RM717-01-IA7	Ethanol	73	J	73	E
SI0533	63RM717-01-IA7 DUP	Ethanol	81	J	81	E
SI0533	63RM721-01-IA7	Ethanol	61	J	61	E
SI0533	63RM726-01-IA7	Ethanol	110	J	110	E
SI0533	63RM727C-01-IA7	Ethanol	170	J	170	E
SI0533	63RM727I-01-IA7	Ethanol	62	J	62	E
SI0533	63RM728-01-IA7	Ethanol	270	J	270	E
SI0533	63RM800-01-IA7	Ethanol	30	J	30	E
SI0533	63RMBR-01-IA7	Ethanol	280	J	280	E

A summary of calibration range evaluation actions is presented in Table 3 with results being assigned a validation qualifier reason code of E.

REFERENCES

AMEC, 2013. "Draft CRREL Remedial Investigation/Feasibility Study/Pilot Study/Decision Document Quality Assurance Project Plan"; Revision 1; Cold Regions Research and Engineering Laboratory Site; 72 Lyme Road; Hanover, NH; May 2013.

Department of Defense (DOD), 2010. "Quality Systems Manual for Environmental Laboratories"; Department of Navy; Version 4.2; October 25, 2010.

USEPA, 1996. "Region 1 EPA-NE Data Validation Guidelines for Evaluating Environmental Analyses"; Quality Assurance Unit Staff; Office of Environmental Measurement and Evaluation; December 1996.

Data validation was completed by project chemist:

- Wolfgang Calicchio

Reviewed by:

- Bradley B. LaForest, NRCC-EAC

TABLES

Table 1 - Sample Summary
Data Validation Report
January 19, 2015 Air Samples Frances C. Richmond Middle School
Cold Regions Research and Engineering Laboratory
Hanover, New Hampshire

Sample Location	Field Sample ID	Date Sampled	Lab Sample ID	TO-15 VOCs
<i>Indoor Air / Ambient Air</i>				
63LYME-01	63LYME-01-AA6	01/19/15	SI0384-1	59
63LYME-02	63LYME-02-AA6	01/19/15	SI0384-2	59
63LYME-03	63LYME-03-AA6	01/19/15	SI0384-3	59
63LYME-04	63LYME-04-AA6	01/19/15	SI0384-4	59
63ADMIN-01	63ADMIN-01-IA6	01/19/15	SI0384-5	59
63RM073-01	63RM073-01-IA6	01/19/15	SI0384-6	59
63RM080-01	63RM080-01-IA6	01/19/15	SI0384-7	59
63RM604-01	63RM604-01-IA6	01/19/15	SI0384-8	59
63RM707-01	63RM707-01-IA6	01/19/15	SI0384-9	59
63RM715-01	63RM715-01-IA6	01/19/15	SI0384-10	59
63RM717-01	63RM717-01-IA6	01/19/15	SI0384-11	59
63RM717-01	63RM717-01-IA6 DUP	01/19/15	SI0384-12	59
63RM721-01	63RM721-01-IA6	01/19/15	SI0384-13	59
63RM726-01	63RM726-01-IA6	01/19/15	SI0384-14	59
63RM727C-01	63RM727C-01-IA6	01/19/15	SI0384-15	59
63RM727I-01	63RM727I-01-IA6	01/19/15	SI0384-16	59
63RM728-01	63RM728-01-IA6	01/19/15	SI0384-17	59
63RM800-01	63RM800-01-IA6	01/19/15	SI0384-18	59
63RM807-01	63RM807-01-IA6	01/19/15	SI0384-19	59
63RMBR-01	63RMBR-01-IA6	01/19/15	SI0384-20	59

Notes:

Number listed under method indicates the number of target analytes reported.

Prepared by / Date: WCG 01/29/15

Checked by / Date: WDC 01/30/15

Table 2 - Final Sample Results
 Data Validation Report
 January 19, 2015 Air Samples Frances C. Richmond Middle School
 Cold Regions Research and Engineering Laboratory
 Hanover, New Hampshire

Sample Delivery Group			SI0384		SI0384		SI0384		SI0384		SI03
Location			63ADMIN-01		63LYME-01		63LYME-02		63LYME-03		63LYM
Sample Date			1/19/2015		1/19/2015		1/19/2015		1/19/2015		1/19/2
Sample ID			63ADMIN-01-IA6		63LYME-01-AA6		63LYME-02-AA6		63LYME-03-AA6		63LYME-
QC Code			FS		FS		FS		FS		FS
Analysis	Parameter	Units	Result	Qualifier	Result	Qualifier	Result	Qualifier	Result	Qualifier	Result
TO-15	1,1,1-Trichloroethane	UG/M3	0.27	U	0.27	U	0.27	U	0.27	U	0.27
TO-15	1,1,2,2-Tetrachloroethane	UG/M3	0.34	U	0.34	U	0.34	U	0.34	U	0.34
TO-15	1,1,2-Trichloro-1,2,2-Trifluoroethane	UG/M3	0.55	J	0.6	J	0.56	J	0.6	J	0.57
TO-15	1,1,2-Trichloroethane	UG/M3	0.27	U	0.27	U	0.27	U	0.27	U	0.27
TO-15	1,1-Dichloroethane	UG/M3	0.2	U	0.2	U	0.2	U	0.2	U	0.2
TO-15	1,1-Dichloroethene	UG/M3	0.2	U	0.2	U	0.2	U	0.2	U	0.2
TO-15	1,2,4-Trichlorobenzene	UG/M3	0.37	UJ	0.37	UJ	0.37	UJ	0.37	UJ	0.37
TO-15	1,2,4-Trimethylbenzene	UG/M3	0.36	J	0.24	U	0.21	J	0.18	J	0.15
TO-15	1,2-Dibromoethane	UG/M3	0.38	U	0.38	U	0.38	U	0.38	U	0.38
TO-15	1,2-Dichloro-1,1,2,2-tetrafluoroethane	UG/M3	0.35	U	0.35	U	0.35	U	0.35	U	0.35
TO-15	1,2-Dichlorobenzene	UG/M3	0.3	U	0.3	U	0.3	U	0.3	U	0.3
TO-15	1,2-Dichloroethane	UG/M3	0.85		0.2	U	0.2	U	0.2	U	0.2
TO-15	1,2-Dichloropropane	UG/M3	0.23	U	0.23	U	0.23	U	0.23	U	0.23
TO-15	1,3,5-Trimethylbenzene	UG/M3	0.24	U	0.24	U	0.24	U	0.24	U	0.24
TO-15	1,3-Butadiene	UG/M3	0.11	U	0.11	U	0.11	U	0.11	U	0.11
TO-15	1,3-Dichlorobenzene	UG/M3	0.3	U	0.3	U	0.3	U	0.3	U	0.3
TO-15	1,4-Dichlorobenzene	UG/M3	0.3	U	0.3	U	0.18	J	0.3	U	0.3
TO-15	2-Butanone	UG/M3	0.68	J	0.18	J	0.15	U	0.17	J	0.24
TO-15	2-Hexanone	UG/M3	0.2	U	0.2	U	0.2	U	0.2	U	0.2
TO-15	2-Propanol	UG/M3	38	J	0.42	J	0.49	J	0.61	J	0.44
TO-15	4-Ethyltoluene	UG/M3	0.11	J	0.24	U	0.24	U	0.24	U	0.24
TO-15	4-Methyl-2-pentanone	UG/M3	0.2	U	0.2	U	0.2	U	0.2	U	0.2
TO-15	Acetone	UG/M3	24		5		3.3		4		5.9
TO-15	Benzene	UG/M3	0.89		0.77		0.77		0.8		0.73
TO-15	Benzyl chloride	UG/M3	0.26	U	0.26	U	0.14	J	0.26	U	0.26
TO-15	Bromodichloromethane	UG/M3	0.33	U	0.33	U	0.33	U	0.33	U	0.33
TO-15	Bromoform	UG/M3	0.52	U	0.52	U	0.52	U	0.52	U	0.52
TO-15	Bromomethane	UG/M3	0.19	U	0.19	U	0.19	U	0.19	U	0.19
TO-15	Carbon disulfide	UG/M3	0.12	J	0.16	U	0.16	U	0.16	U	0.16
TO-15	Carbon tetrachloride	UG/M3	0.52	J	0.51	J	0.53	J	0.69		0.54
TO-15	Chlorobenzene	UG/M3	0.23	U	0.23	U	0.23	U	0.23	U	0.23

Table 3 - Validation Actions Summary
Data Validation Report
January 19, 2015 Air Samples Frances C. Richmond Middle School
Cold Regions Research and Engineering Laboratory
Hanover, New Hampshire

SDG	Analysis Method	Lab Sample ID	Field Sample ID	Parameter Name	Lab Result	Lab Qual	Validated Result	Val Qual	Val Reason Code	Result Units
SI0384	TO-15	SI0384-13	63RM721-01-IA6	Carbon disulfide	0.047	J	0.16	U	BL1	UG/M3
SI0384	TO-15	SI0384-2	63LYME-02-AA6	1,2-Dichlorobenzene	0.17	J	0.3	U	BL1	UG/M3
SI0384	TO-15	SI0384-2	63LYME-02-AA6	1,3-Dichlorobenzene	0.16	J	0.3	U	BL1	UG/M3
SI0384	TO-15	SI0384-2	63LYME-02-AA6	Hexachlorobutadiene	0.39	J	0.53	U	BL1	UG/M3
SI0384	TO-15	SI0384-20	63RMBR-01-IA6	Carbon disulfide	0.047	J	0.16	U	BL1	UG/M3
SI0384	TO-15	SI0384-3	63LYME-03-AA6	Carbon disulfide	0.044	J	0.16	U	BL1	UG/M3
SI0384	TO-15	SI0384-2	63LYME-02-AA6	1,2,4-Trichlorobenzene	0.29	JL	0.37	UJ	BL1, ICVRSD, CCV%D	UG/M3
SI0384	TO-15	SI0384-1	63LYME-01-AA6	1,2,4-Trichlorobenzene	0.37	UL	0.37	UJ	ICVRSD, CCV%D	UG/M3
SI0384	TO-15	SI0384-10	63RM715-01-IA6	1,2,4-Trichlorobenzene	0.37	UL	0.37	UJ	ICVRSD, CCV%D	UG/M3
SI0384	TO-15	SI0384-11	63RM717-01-IA6	1,2,4-Trichlorobenzene	0.37	UL	0.37	UJ	ICVRSD, CCV%D	UG/M3
SI0384	TO-15	SI0384-12	63RM717-01-IA6 DUP	1,2,4-Trichlorobenzene	0.37	UL	0.37	UJ	ICVRSD, CCV%D	UG/M3
SI0384	TO-15	SI0384-13	63RM721-01-IA6	1,2,4-Trichlorobenzene	0.37	UL	0.37	UJ	ICVRSD, CCV%D	UG/M3
SI0384	TO-15	SI0384-14	63RM726-01-IA6	1,2,4-Trichlorobenzene	0.37	UL	0.37	UJ	ICVRSD, CCV%D	UG/M3
SI0384	TO-15	SI0384-15	63RM727C-01-IA6	1,2,4-Trichlorobenzene	0.37	UL	0.37	UJ	ICVRSD, CCV%D	UG/M3
SI0384	TO-15	SI0384-16	63RM727I-01-IA6	1,2,4-Trichlorobenzene	0.37	UL	0.37	UJ	ICVRSD, CCV%D	UG/M3
SI0384	TO-15	SI0384-17	63RM728-01-IA6	1,2,4-Trichlorobenzene	0.37	UL	0.37	UJ	ICVRSD, CCV%D	UG/M3
SI0384	TO-15	SI0384-18	63RM800-01-IA6	1,2,4-Trichlorobenzene	0.37	UL	0.37	UJ	ICVRSD, CCV%D	UG/M3
SI0384	TO-15	SI0384-19	63RM807-01-IA6	1,2,4-Trichlorobenzene	0.37	UL	0.37	UJ	ICVRSD, CCV%D	UG/M3
SI0384	TO-15	SI0384-20	63RMBR-01-IA6	1,2,4-Trichlorobenzene	0.37	UL	0.37	UJ	ICVRSD, CCV%D	UG/M3
SI0384	TO-15	SI0384-3	63LYME-03-AA6	1,2,4-Trichlorobenzene	0.37	UL	0.37	UJ	ICVRSD, CCV%D	UG/M3
SI0384	TO-15	SI0384-4	63LYME-04-AA6	1,2,4-Trichlorobenzene	0.37	UL	0.37	UJ	ICVRSD, CCV%D	UG/M3
SI0384	TO-15	SI0384-5	63ADMIN-01-IA6	1,2,4-Trichlorobenzene	0.37	UL	0.37	UJ	ICVRSD, CCV%D	UG/M3
SI0384	TO-15	SI0384-6	63RM073-01-IA6	1,2,4-Trichlorobenzene	0.37	UL	0.37	UJ	ICVRSD, CCV%D	UG/M3
SI0384	TO-15	SI0384-7	63RM080-01-IA6	1,2,4-Trichlorobenzene	0.37	UL	0.37	UJ	ICVRSD, CCV%D	UG/M3
SI0384	TO-15	SI0384-8	63RM604-01-IA6	1,2,4-Trichlorobenzene	0.37	UL	0.37	UJ	ICVRSD, CCV%D	UG/M3
SI0384	TO-15	SI0384-9	63RM707-01-IA6	1,2,4-Trichlorobenzene	0.37	UL	0.37	UJ	ICVRSD, CCV%D	UG/M3
SI0384	TO-15	SI0384-1	63LYME-01-AA6	Chloromethane	1.3	L	1.3	J	LCS-H	UG/M3
SI0384	TO-15	SI0384-2	63LYME-02-AA6	Chloromethane	1.2	L	1.2	J	LCS-H	UG/M3
SI0384	TO-15	SI0384-20	63RMBR-01-IA6	Chloromethane	1.1	L	1.1	J	LCS-H	UG/M3
SI0384	TO-15	SI0384-3	63LYME-03-AA6	Chloromethane	1.4	L	1.4	J	LCS-H	UG/M3
SI0384	TO-15	SI0384-4	63LYME-04-AA6	Chloromethane	1.4	L	1.4	J	LCS-H	UG/M3
SI0384	TO-15	SI0384-7	63RM080-01-IA6	Chloromethane	1.7	L	1.7	J	LCS-H	UG/M3
SI0384	TO-15	SI0384-9	63RM707-01-IA6	Chloromethane	1.4	L	1.4	J	LCS-H	UG/M3
SI0384	TO-15	SI0384-11	63RM717-01-IA6	Acetone	32		32	J	LCS-H, FD	UG/M3
SI0384	TO-15	SI0384-12	63RM717-01-IA6 DUP	Acetone	14		14	J	LCS-H, FD	UG/M3
SI0384	TO-15	SI0384-11	63RM717-01-IA6	Ethanol	120	E	120	J	FD, E	UG/M3
SI0384	TO-15	SI0384-12	63RM717-01-IA6 DUP	Ethanol	58	E	58	J	FD, E	UG/M3
SI0384	TO-15	SI0384-11	63RM717-01-IA6	1,1,2-Trichloro-1,2,2-Trifluoroethane	1.1		1.1	J	FD	UG/M3
SI0384	TO-15	SI0384-11	63RM717-01-IA6	2-Butanone	0.77		0.77	J	FD	UG/M3

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SDG	Analysis Method	Lab Sample ID	Field Sample ID	Parameter Name	Lab Result	Lab Qual	Validated Result	Val Qual	Val Reason Code	Result Units
SI0384	TO-15	SI0384-11	63RM717-01-IA6	Benzene	1.7		1.7	J	FD	UG/M3
SI0384	TO-15	SI0384-11	63RM717-01-IA6	Carbon tetrachloride	1		1	J	FD	UG/M3
SI0384	TO-15	SI0384-11	63RM717-01-IA6	Dichlorodifluoromethane	5.4		5.4	J	FD	UG/M3
SI0384	TO-15	SI0384-11	63RM717-01-IA6	Heptane	0.98		0.98	J	FD	UG/M3
SI0384	TO-15	SI0384-11	63RM717-01-IA6	Hexane	0.92		0.92	J	FD	UG/M3
SI0384	TO-15	SI0384-11	63RM717-01-IA6	Methylene chloride	1.9		1.9	J	FD	UG/M3
SI0384	TO-15	SI0384-11	63RM717-01-IA6	Toluene	2.2		2.2	J	FD	UG/M3
SI0384	TO-15	SI0384-11	63RM717-01-IA6	Trichloroethene	2.1		2.1	J	FD	UG/M3
SI0384	TO-15	SI0384-11	63RM717-01-IA6	Trichlorofluoromethane	3.1		3.1	J	FD	UG/M3
SI0384	TO-15	SI0384-12	63RM717-01-IA6 DUP	Benzene	0.83		0.83	J	FD	UG/M3
SI0384	TO-15	SI0384-12	63RM717-01-IA6 DUP	Dichlorodifluoromethane	2.6		2.6	J	FD	UG/M3
SI0384	TO-15	SI0384-12	63RM717-01-IA6 DUP	Heptane	0.41	J	0.41	J	FD	UG/M3
SI0384	TO-15	SI0384-12	63RM717-01-IA6 DUP	Methylene chloride	0.87	J	0.87	J	FD	UG/M3
SI0384	TO-15	SI0384-12	63RM717-01-IA6 DUP	Toluene	1		1	J	FD	UG/M3
SI0384	TO-15	SI0384-12	63RM717-01-IA6 DUP	Trichloroethene	1.1		1.1	J	FD	UG/M3
SI0384	TO-15	SI0384-12	63RM717-01-IA6 DUP	Trichlorofluoromethane	1.5		1.5	J	FD	UG/M3
SI0384	TO-15	SI0384-12	63RM717-01-IA6 DUP	1,1,2-Trichloro-1,2,2-Trifluoroethane	0.56	J	0.56	J	FD, RL	UG/M3
SI0384	TO-15	SI0384-12	63RM717-01-IA6 DUP	2-Butanone	0.38	J	0.38	J	FD, RL	UG/M3
SI0384	TO-15	SI0384-12	63RM717-01-IA6 DUP	Carbon tetrachloride	0.51	J	0.51	J	FD, RL	UG/M3
SI0384	TO-15	SI0384-12	63RM717-01-IA6 DUP	Hexane	0.39	J	0.39	J	FD, RL	UG/M3
SI0384	TO-15	SI0384-10	63RM715-01-IA6	Ethanol	69	E	69	J	E	UG/M3
SI0384	TO-15	SI0384-13	63RM721-01-IA6	Ethanol	120	E	120	J	E	UG/M3
SI0384	TO-15	SI0384-14	63RM726-01-IA6	Ethanol	130	E	130	J	E	UG/M3
SI0384	TO-15	SI0384-15	63RM727C-01-IA6	Ethanol	140	E	140	J	E	UG/M3
SI0384	TO-15	SI0384-16	63RM727I-01-IA6	Ethanol	46	E	46	J	E	UG/M3
SI0384	TO-15	SI0384-18	63RM800-01-IA6	Ethanol	37	E	37	J	E	UG/M3
SI0384	TO-15	SI0384-20	63RMBR-01-IA6	Ethanol	130	E	130	J	E	UG/M3
SI0384	TO-15	SI0384-5	63ADMIN-01-IA6	2-Propanol	38	E	38	J	E	UG/M3
SI0384	TO-15	SI0384-5	63ADMIN-01-IA6	Ethanol	310	E	310	J	E	UG/M3
SI0384	TO-15	SI0384-6	63RM073-01-IA6	Ethanol	220	E	220	J	E	UG/M3
SI0384	TO-15	SI0384-7	63RM080-01-IA6	Ethanol	160	E	160	J	E	UG/M3
SI0384	TO-15	SI0384-8	63RM604-01-IA6	2-Propanol	38	E	38	J	E	UG/M3
SI0384	TO-15	SI0384-8	63RM604-01-IA6	Ethanol	260	E	260	J	E	UG/M3
SI0384	TO-15	SI0384-9	63RM707-01-IA6	Ethanol	290	E	290	J	E	UG/M3
SI0384	TO-15	SI0384-1	63LYME-01-AA6	1,1,2-Trichloro-1,2,2-Trifluoroethane	0.6	J	0.6	J	RL	UG/M3
SI0384	TO-15	SI0384-1	63LYME-01-AA6	2-Butanone	0.18	J	0.18	J	RL	UG/M3
SI0384	TO-15	SI0384-1	63LYME-01-AA6	2-Propanol	0.42	J	0.42	J	RL	UG/M3
SI0384	TO-15	SI0384-1	63LYME-01-AA6	Carbon tetrachloride	0.51	J	0.51	J	RL	UG/M3
SI0384	TO-15	SI0384-1	63LYME-01-AA6	Chloroform	0.088	J	0.088	J	RL	UG/M3

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SDG	Analysis Method	Lab Sample ID	Field Sample ID	Parameter Name	Lab Result	Lab Qual	Validated Result	Val Qual	Val Reason Code	Result Units
SI0384	TO-15	SI0384-1	63LYME-01-AA6	Cyclohexane	0.079	J	0.079	J	RL	UG/M3
SI0384	TO-15	SI0384-1	63LYME-01-AA6	Ethyl benzene	0.078	J	0.078	J	RL	UG/M3
SI0384	TO-15	SI0384-1	63LYME-01-AA6	Hexane	0.42	J	0.42	J	RL	UG/M3
SI0384	TO-15	SI0384-1	63LYME-01-AA6	Trichloroethene	0.35	J	0.35	J	RL	UG/M3
SI0384	TO-15	SI0384-1	63LYME-01-AA6	Xylene, o	0.1	J	0.1	J	RL	UG/M3
SI0384	TO-15	SI0384-1	63LYME-01-AA6	Xylenes (m&p)	0.51	J	0.51	J	RL	UG/M3
SI0384	TO-15	SI0384-10	63RM715-01-IA6	1,1,2-Trichloro-1,2,2-Trifluoroethane	0.6	J	0.6	J	RL	UG/M3
SI0384	TO-15	SI0384-10	63RM715-01-IA6	1,2,4-Trimethylbenzene	0.22	J	0.22	J	RL	UG/M3
SI0384	TO-15	SI0384-10	63RM715-01-IA6	2-Butanone	0.47	J	0.47	J	RL	UG/M3
SI0384	TO-15	SI0384-10	63RM715-01-IA6	4-Methyl-2-pentanone	0.2	J	0.2	J	RL	UG/M3
SI0384	TO-15	SI0384-10	63RM715-01-IA6	Carbon disulfide	0.075	J	0.075	J	RL	UG/M3
SI0384	TO-15	SI0384-10	63RM715-01-IA6	Carbon tetrachloride	0.52	J	0.52	J	RL	UG/M3
SI0384	TO-15	SI0384-10	63RM715-01-IA6	Chloroform	0.16	J	0.16	J	RL	UG/M3
SI0384	TO-15	SI0384-10	63RM715-01-IA6	Cyclohexane	0.23	J	0.23	J	RL	UG/M3
SI0384	TO-15	SI0384-10	63RM715-01-IA6	Ethyl benzene	0.12	J	0.12	J	RL	UG/M3
SI0384	TO-15	SI0384-10	63RM715-01-IA6	Hexane	0.42	J	0.42	J	RL	UG/M3
SI0384	TO-15	SI0384-10	63RM715-01-IA6	Styrene	0.12	J	0.12	J	RL	UG/M3
SI0384	TO-15	SI0384-10	63RM715-01-IA6	Xylene, o	0.14	J	0.14	J	RL	UG/M3
SI0384	TO-15	SI0384-10	63RM715-01-IA6	Xylenes (m&p)	0.69	J	0.69	J	RL	UG/M3
SI0384	TO-15	SI0384-11	63RM717-01-IA6	Carbon disulfide	0.12	J	0.12	J	RL	UG/M3
SI0384	TO-15	SI0384-11	63RM717-01-IA6	Chloroform	0.2	J	0.2	J	RL	UG/M3
SI0384	TO-15	SI0384-11	63RM717-01-IA6	Cyclohexane	0.25	J	0.25	J	RL	UG/M3
SI0384	TO-15	SI0384-11	63RM717-01-IA6	Ethyl benzene	0.36	J	0.36	J	RL	UG/M3
SI0384	TO-15	SI0384-11	63RM717-01-IA6	Styrene	0.19	J	0.19	J	RL	UG/M3
SI0384	TO-15	SI0384-11	63RM717-01-IA6	Tetrachloroethene	0.14	J	0.14	J	RL	UG/M3
SI0384	TO-15	SI0384-11	63RM717-01-IA6	trans-1,2-Dichloroethene	0.087	J	0.087	J	RL	UG/M3
SI0384	TO-15	SI0384-11	63RM717-01-IA6	Xylene, o	0.2	J	0.2	J	RL	UG/M3
SI0384	TO-15	SI0384-11	63RM717-01-IA6	Xylenes (m&p)	1	J	1	J	RL	UG/M3
SI0384	TO-15	SI0384-12	63RM717-01-IA6 DUP	1,2,4-Trimethylbenzene	0.29	J	0.29	J	RL	UG/M3
SI0384	TO-15	SI0384-12	63RM717-01-IA6 DUP	Chloroform	0.1	J	0.1	J	RL	UG/M3
SI0384	TO-15	SI0384-12	63RM717-01-IA6 DUP	Cyclohexane	0.12	J	0.12	J	RL	UG/M3
SI0384	TO-15	SI0384-12	63RM717-01-IA6 DUP	Ethyl benzene	0.2	J	0.2	J	RL	UG/M3
SI0384	TO-15	SI0384-12	63RM717-01-IA6 DUP	Styrene	0.19	J	0.19	J	RL	UG/M3
SI0384	TO-15	SI0384-12	63RM717-01-IA6 DUP	Tetrachloroethene	0.095	J	0.095	J	RL	UG/M3
SI0384	TO-15	SI0384-12	63RM717-01-IA6 DUP	Xylene, o	0.16	J	0.16	J	RL	UG/M3
SI0384	TO-15	SI0384-12	63RM717-01-IA6 DUP	Xylenes (m&p)	0.69	J	0.69	J	RL	UG/M3
SI0384	TO-15	SI0384-13	63RM721-01-IA6	1,1,2-Trichloro-1,2,2-Trifluoroethane	0.54	J	0.54	J	RL	UG/M3
SI0384	TO-15	SI0384-13	63RM721-01-IA6	1,2,4-Trimethylbenzene	0.26	J	0.26	J	RL	UG/M3
SI0384	TO-15	SI0384-13	63RM721-01-IA6	2-Butanone	0.44	J	0.44	J	RL	UG/M3

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SDG	Analysis Method	Lab Sample ID	Field Sample ID	Parameter Name	Lab Result	Lab Qual	Validated Result	Val Qual	Val Reason Code	Result Units
SI0384	TO-15	SI0384-13	63RM721-01-IA6	Carbon tetrachloride	0.53	J	0.53	J	RL	UG/M3
SI0384	TO-15	SI0384-13	63RM721-01-IA6	Chloroform	0.12	J	0.12	J	RL	UG/M3
SI0384	TO-15	SI0384-13	63RM721-01-IA6	Ethyl benzene	0.12	J	0.12	J	RL	UG/M3
SI0384	TO-15	SI0384-13	63RM721-01-IA6	Hexane	0.46	J	0.46	J	RL	UG/M3
SI0384	TO-15	SI0384-13	63RM721-01-IA6	Xylene, o	0.15	J	0.15	J	RL	UG/M3
SI0384	TO-15	SI0384-13	63RM721-01-IA6	Xylenes (m&p)	0.65	J	0.65	J	RL	UG/M3
SI0384	TO-15	SI0384-14	63RM726-01-IA6	1,1,2-Trichloro-1,2,2-Trifluoroethane	0.56	J	0.56	J	RL	UG/M3
SI0384	TO-15	SI0384-14	63RM726-01-IA6	2-Butanone	0.68	J	0.68	J	RL	UG/M3
SI0384	TO-15	SI0384-14	63RM726-01-IA6	Carbon disulfide	0.16	J	0.16	J	RL	UG/M3
SI0384	TO-15	SI0384-14	63RM726-01-IA6	Carbon tetrachloride	0.53	J	0.53	J	RL	UG/M3
SI0384	TO-15	SI0384-14	63RM726-01-IA6	Chloroform	0.12	J	0.12	J	RL	UG/M3
SI0384	TO-15	SI0384-14	63RM726-01-IA6	Cyclohexane	0.13	J	0.13	J	RL	UG/M3
SI0384	TO-15	SI0384-14	63RM726-01-IA6	Ethyl benzene	0.16	J	0.16	J	RL	UG/M3
SI0384	TO-15	SI0384-14	63RM726-01-IA6	Hexane	0.46	J	0.46	J	RL	UG/M3
SI0384	TO-15	SI0384-14	63RM726-01-IA6	Styrene	0.2	J	0.2	J	RL	UG/M3
SI0384	TO-15	SI0384-14	63RM726-01-IA6	Trichloroethene	0.48	J	0.48	J	RL	UG/M3
SI0384	TO-15	SI0384-14	63RM726-01-IA6	Xylene, o	0.23	J	0.23	J	RL	UG/M3
SI0384	TO-15	SI0384-14	63RM726-01-IA6	Xylenes (m&p)	0.95	J	0.95	J	RL	UG/M3
SI0384	TO-15	SI0384-15	63RM727C-01-IA6	1,1,2-Trichloro-1,2,2-Trifluoroethane	0.56	J	0.56	J	RL	UG/M3
SI0384	TO-15	SI0384-15	63RM727C-01-IA6	1,2,4-Trimethylbenzene	0.31	J	0.31	J	RL	UG/M3
SI0384	TO-15	SI0384-15	63RM727C-01-IA6	2-Butanone	0.68	J	0.68	J	RL	UG/M3
SI0384	TO-15	SI0384-15	63RM727C-01-IA6	4-Ethyltoluene	0.093	J	0.093	J	RL	UG/M3
SI0384	TO-15	SI0384-15	63RM727C-01-IA6	4-Methyl-2-pentanone	0.38	J	0.38	J	RL	UG/M3
SI0384	TO-15	SI0384-15	63RM727C-01-IA6	Carbon disulfide	0.26	J	0.26	J	RL	UG/M3
SI0384	TO-15	SI0384-15	63RM727C-01-IA6	Carbon tetrachloride	0.53	J	0.53	J	RL	UG/M3
SI0384	TO-15	SI0384-15	63RM727C-01-IA6	Chloroform	0.28	J	0.28	J	RL	UG/M3
SI0384	TO-15	SI0384-15	63RM727C-01-IA6	Ethyl benzene	0.31	J	0.31	J	RL	UG/M3
SI0384	TO-15	SI0384-15	63RM727C-01-IA6	Hexane	0.63	J	0.63	J	RL	UG/M3
SI0384	TO-15	SI0384-15	63RM727C-01-IA6	Styrene	0.25	J	0.25	J	RL	UG/M3
SI0384	TO-15	SI0384-15	63RM727C-01-IA6	Trichloroethene	0.37	J	0.37	J	RL	UG/M3
SI0384	TO-15	SI0384-15	63RM727C-01-IA6	Xylene, o	0.32	J	0.32	J	RL	UG/M3
SI0384	TO-15	SI0384-16	63RM727I-01-IA6	1,1,2-Trichloro-1,2,2-Trifluoroethane	0.52	J	0.52	J	RL	UG/M3
SI0384	TO-15	SI0384-16	63RM727I-01-IA6	1,2,4-Trimethylbenzene	0.27	J	0.27	J	RL	UG/M3
SI0384	TO-15	SI0384-16	63RM727I-01-IA6	2-Butanone	0.32	J	0.32	J	RL	UG/M3
SI0384	TO-15	SI0384-16	63RM727I-01-IA6	Carbon disulfide	0.13	J	0.13	J	RL	UG/M3
SI0384	TO-15	SI0384-16	63RM727I-01-IA6	Carbon tetrachloride	0.52	J	0.52	J	RL	UG/M3
SI0384	TO-15	SI0384-16	63RM727I-01-IA6	Chloroform	0.1	J	0.1	J	RL	UG/M3
SI0384	TO-15	SI0384-16	63RM727I-01-IA6	Cyclohexane	0.12	J	0.12	J	RL	UG/M3
SI0384	TO-15	SI0384-16	63RM727I-01-IA6	Ethyl benzene	0.1	J	0.1	J	RL	UG/M3

Table 3 - Validation Actions Summary
 Data Validation Report
 January 19, 2015 Air Samples Frances C. Richmond Middle School
 Cold Regions Research and Engineering Laboratory
 Hanover, New Hampshire

SDG	Analysis Method	Lab Sample ID	Field Sample ID	Parameter Name	Lab Result	Lab Qual	Validated Result	Val Qual	Val Reason Code	Result Units
SI0384	TO-15	SI0384-16	63RM7271-01-IA6	Heptane	0.21	J	0.21	J	RL	UG/M3
SI0384	TO-15	SI0384-16	63RM7271-01-IA6	Hexane	0.46	J	0.46	J	RL	UG/M3
SI0384	TO-15	SI0384-16	63RM7271-01-IA6	Trichloroethene	0.28	J	0.28	J	RL	UG/M3
SI0384	TO-15	SI0384-16	63RM7271-01-IA6	Xylene, o	0.12	J	0.12	J	RL	UG/M3
SI0384	TO-15	SI0384-16	63RM7271-01-IA6	Xylenes (m&p)	0.55	J	0.55	J	RL	UG/M3
SI0384	TO-15	SI0384-17	63RM728-01-IA6	1,1,1-Trichloroethane	0.15	J	0.15	J	RL	UG/M3
SI0384	TO-15	SI0384-17	63RM728-01-IA6	1,1,2-Trichloro-1,2,2-Trifluoroethane	0.55	J	0.55	J	RL	UG/M3
SI0384	TO-15	SI0384-17	63RM728-01-IA6	1,2,4-Trimethylbenzene	0.22	J	0.22	J	RL	UG/M3
SI0384	TO-15	SI0384-17	63RM728-01-IA6	Carbon disulfide	0.13	J	0.13	J	RL	UG/M3
SI0384	TO-15	SI0384-17	63RM728-01-IA6	Cyclohexane	0.18	J	0.18	J	RL	UG/M3
SI0384	TO-15	SI0384-17	63RM728-01-IA6	Ethyl benzene	0.42	J	0.42	J	RL	UG/M3
SI0384	TO-15	SI0384-17	63RM728-01-IA6	Hexane	0.6	J	0.6	J	RL	UG/M3
SI0384	TO-15	SI0384-17	63RM728-01-IA6	Styrene	0.2	J	0.2	J	RL	UG/M3
SI0384	TO-15	SI0384-17	63RM728-01-IA6	Tetrahydrofuran	0.32	J	0.32	J	RL	UG/M3
SI0384	TO-15	SI0384-18	63RM800-01-IA6	1,1,2-Trichloro-1,2,2-Trifluoroethane	0.57	J	0.57	J	RL	UG/M3
SI0384	TO-15	SI0384-18	63RM800-01-IA6	1,2,4-Trimethylbenzene	0.13	J	0.13	J	RL	UG/M3
SI0384	TO-15	SI0384-18	63RM800-01-IA6	2-Butanone	0.38	J	0.38	J	RL	UG/M3
SI0384	TO-15	SI0384-18	63RM800-01-IA6	Carbon tetrachloride	0.53	J	0.53	J	RL	UG/M3
SI0384	TO-15	SI0384-18	63RM800-01-IA6	Chloroform	0.12	J	0.12	J	RL	UG/M3
SI0384	TO-15	SI0384-18	63RM800-01-IA6	Ethyl benzene	0.12	J	0.12	J	RL	UG/M3
SI0384	TO-15	SI0384-18	63RM800-01-IA6	Hexane	0.56	J	0.56	J	RL	UG/M3
SI0384	TO-15	SI0384-18	63RM800-01-IA6	Styrene	0.081	J	0.081	J	RL	UG/M3
SI0384	TO-15	SI0384-18	63RM800-01-IA6	Trichloroethene	0.53	J	0.53	J	RL	UG/M3
SI0384	TO-15	SI0384-18	63RM800-01-IA6	Xylene, o	0.12	J	0.12	J	RL	UG/M3
SI0384	TO-15	SI0384-18	63RM800-01-IA6	Xylenes (m&p)	0.62	J	0.62	J	RL	UG/M3
SI0384	TO-15	SI0384-19	63RM807-01-IA6	1,1,2-Trichloro-1,2,2-Trifluoroethane	0.6	J	0.6	J	RL	UG/M3
SI0384	TO-15	SI0384-19	63RM807-01-IA6	1,2,4-Trimethylbenzene	0.21	J	0.21	J	RL	UG/M3
SI0384	TO-15	SI0384-19	63RM807-01-IA6	2-Butanone	0.44	J	0.44	J	RL	UG/M3
SI0384	TO-15	SI0384-19	63RM807-01-IA6	4-Methyl-2-pentanone	0.34	J	0.34	J	RL	UG/M3
SI0384	TO-15	SI0384-19	63RM807-01-IA6	Carbon tetrachloride	0.55	J	0.55	J	RL	UG/M3
SI0384	TO-15	SI0384-19	63RM807-01-IA6	Chloroform	0.12	J	0.12	J	RL	UG/M3
SI0384	TO-15	SI0384-19	63RM807-01-IA6	Ethyl benzene	0.1	J	0.1	J	RL	UG/M3
SI0384	TO-15	SI0384-19	63RM807-01-IA6	Hexane	0.42	J	0.42	J	RL	UG/M3
SI0384	TO-15	SI0384-19	63RM807-01-IA6	Xylene, o	0.12	J	0.12	J	RL	UG/M3
SI0384	TO-15	SI0384-19	63RM807-01-IA6	Xylenes (m&p)	0.52	J	0.52	J	RL	UG/M3
SI0384	TO-15	SI0384-2	63LYME-02-AA6	1,1,2-Trichloro-1,2,2-Trifluoroethane	0.56	J	0.56	J	RL	UG/M3
SI0384	TO-15	SI0384-2	63LYME-02-AA6	1,2,4-Trimethylbenzene	0.21	J	0.21	J	RL	UG/M3
SI0384	TO-15	SI0384-2	63LYME-02-AA6	1,4-Dichlorobenzene	0.18	J	0.18	J	RL	UG/M3
SI0384	TO-15	SI0384-2	63LYME-02-AA6	2-Propanol	0.49	J	0.49	J	RL	UG/M3

Table 3 - Validation Actions Summary
Data Validation Report
January 19, 2015 Air Samples Frances C. Richmond Middle School
Cold Regions Research and Engineering Laboratory
Hanover, New Hampshire

SDG	Analysis Method	Lab Sample ID	Field Sample ID	Parameter Name	Lab Result	Lab Qual	Validated Result	Val Qual	Val Reason Code	Result Units
SI0384	TO-15	SI0384-2	63LYME-02-AA6	Benzyl chloride	0.14	J	0.14	J	RL	UG/M3
SI0384	TO-15	SI0384-2	63LYME-02-AA6	Carbon tetrachloride	0.53	J	0.53	J	RL	UG/M3
SI0384	TO-15	SI0384-2	63LYME-02-AA6	Chloroform	0.083	J	0.083	J	RL	UG/M3
SI0384	TO-15	SI0384-2	63LYME-02-AA6	Cyclohexane	0.082	J	0.082	J	RL	UG/M3
SI0384	TO-15	SI0384-2	63LYME-02-AA6	Ethyl benzene	0.087	J	0.087	J	RL	UG/M3
SI0384	TO-15	SI0384-2	63LYME-02-AA6	Heptane	0.18	J	0.18	J	RL	UG/M3
SI0384	TO-15	SI0384-2	63LYME-02-AA6	Hexane	0.39	J	0.39	J	RL	UG/M3
SI0384	TO-15	SI0384-2	63LYME-02-AA6	Methylene chloride	0.76	J	0.76	J	RL	UG/M3
SI0384	TO-15	SI0384-2	63LYME-02-AA6	Xylene, o	0.12	J	0.12	J	RL	UG/M3
SI0384	TO-15	SI0384-2	63LYME-02-AA6	Xylenes (m&p)	0.57	J	0.57	J	RL	UG/M3
SI0384	TO-15	SI0384-20	63RMBR-01-IA6	1,1,2-Trichloro-1,2,2-Trifluoroethane	0.57	J	0.57	J	RL	UG/M3
SI0384	TO-15	SI0384-20	63RMBR-01-IA6	2-Butanone	0.32	J	0.32	J	RL	UG/M3
SI0384	TO-15	SI0384-20	63RMBR-01-IA6	Carbon tetrachloride	0.53	J	0.53	J	RL	UG/M3
SI0384	TO-15	SI0384-20	63RMBR-01-IA6	Chloroform	0.13	J	0.13	J	RL	UG/M3
SI0384	TO-15	SI0384-20	63RMBR-01-IA6	Cyclohexane	0.12	J	0.12	J	RL	UG/M3
SI0384	TO-15	SI0384-20	63RMBR-01-IA6	Ethyl benzene	0.11	J	0.11	J	RL	UG/M3
SI0384	TO-15	SI0384-20	63RMBR-01-IA6	Hexane	0.67	J	0.67	J	RL	UG/M3
SI0384	TO-15	SI0384-20	63RMBR-01-IA6	Styrene	0.14	J	0.14	J	RL	UG/M3
SI0384	TO-15	SI0384-20	63RMBR-01-IA6	Xylene, o	0.18	J	0.18	J	RL	UG/M3
SI0384	TO-15	SI0384-20	63RMBR-01-IA6	Xylenes (m&p)	0.79	J	0.79	J	RL	UG/M3
SI0384	TO-15	SI0384-3	63LYME-03-AA6	1,1,2-Trichloro-1,2,2-Trifluoroethane	0.6	J	0.6	J	RL	UG/M3
SI0384	TO-15	SI0384-3	63LYME-03-AA6	1,2,4-Trimethylbenzene	0.18	J	0.18	J	RL	UG/M3
SI0384	TO-15	SI0384-3	63LYME-03-AA6	2-Butanone	0.17	J	0.17	J	RL	UG/M3
SI0384	TO-15	SI0384-3	63LYME-03-AA6	Chloroform	0.088	J	0.088	J	RL	UG/M3
SI0384	TO-15	SI0384-3	63LYME-03-AA6	Cyclohexane	0.096	J	0.096	J	RL	UG/M3
SI0384	TO-15	SI0384-3	63LYME-03-AA6	Ethyl benzene	0.091	J	0.091	J	RL	UG/M3
SI0384	TO-15	SI0384-3	63LYME-03-AA6	Heptane	0.2	J	0.2	J	RL	UG/M3
SI0384	TO-15	SI0384-3	63LYME-03-AA6	Hexane	0.39	J	0.39	J	RL	UG/M3
SI0384	TO-15	SI0384-3	63LYME-03-AA6	Xylene, o	0.12	J	0.12	J	RL	UG/M3
SI0384	TO-15	SI0384-3	63LYME-03-AA6	Xylenes (m&p)	0.56	J	0.56	J	RL	UG/M3
SI0384	TO-15	SI0384-4	63LYME-04-AA6	1,1,2-Trichloro-1,2,2-Trifluoroethane	0.57	J	0.57	J	RL	UG/M3
SI0384	TO-15	SI0384-4	63LYME-04-AA6	1,2,4-Trimethylbenzene	0.15	J	0.15	J	RL	UG/M3
SI0384	TO-15	SI0384-4	63LYME-04-AA6	2-Butanone	0.24	J	0.24	J	RL	UG/M3
SI0384	TO-15	SI0384-4	63LYME-04-AA6	2-Propanol	0.44	J	0.44	J	RL	UG/M3
SI0384	TO-15	SI0384-4	63LYME-04-AA6	Carbon tetrachloride	0.54	J	0.54	J	RL	UG/M3
SI0384	TO-15	SI0384-4	63LYME-04-AA6	Chloroform	0.11	J	0.11	J	RL	UG/M3
SI0384	TO-15	SI0384-4	63LYME-04-AA6	Cyclohexane	0.089	J	0.089	J	RL	UG/M3
SI0384	TO-15	SI0384-4	63LYME-04-AA6	Ethyl benzene	0.087	J	0.087	J	RL	UG/M3
SI0384	TO-15	SI0384-4	63LYME-04-AA6	Hexane	0.42	J	0.42	J	RL	UG/M3

Table 3 - Validation Actions Summary
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 January 19, 2015 Air Samples Frances C. Richmond Middle School
 Cold Regions Research and Engineering Laboratory
 Hanover, New Hampshire

SDG	Analysis Method	Lab Sample ID	Field Sample ID	Parameter Name	Lab Result	Lab Qual	Validated Result	Val Qual	Val Reason Code	Result Units
SI0384	TO-15	SI0384-4	63LYME-04-AA6	Xylene, o	0.12	J	0.12	J	RL	UG/M3
SI0384	TO-15	SI0384-4	63LYME-04-AA6	Xylenes (m&p)	0.51	J	0.51	J	RL	UG/M3
SI0384	TO-15	SI0384-5	63ADMIN-01-IA6	1,1,2-Trichloro-1,2,2-Trifluoroethane	0.55	J	0.55	J	RL	UG/M3
SI0384	TO-15	SI0384-5	63ADMIN-01-IA6	1,2,4-Trimethylbenzene	0.36	J	0.36	J	RL	UG/M3
SI0384	TO-15	SI0384-5	63ADMIN-01-IA6	2-Butanone	0.68	J	0.68	J	RL	UG/M3
SI0384	TO-15	SI0384-5	63ADMIN-01-IA6	4-Ethyltoluene	0.11	J	0.11	J	RL	UG/M3
SI0384	TO-15	SI0384-5	63ADMIN-01-IA6	Carbon disulfide	0.12	J	0.12	J	RL	UG/M3
SI0384	TO-15	SI0384-5	63ADMIN-01-IA6	Carbon tetrachloride	0.52	J	0.52	J	RL	UG/M3
SI0384	TO-15	SI0384-5	63ADMIN-01-IA6	Chloroform	0.14	J	0.14	J	RL	UG/M3
SI0384	TO-15	SI0384-5	63ADMIN-01-IA6	Cyclohexane	0.21	J	0.21	J	RL	UG/M3
SI0384	TO-15	SI0384-5	63ADMIN-01-IA6	Ethyl benzene	0.2	J	0.2	J	RL	UG/M3
SI0384	TO-15	SI0384-5	63ADMIN-01-IA6	Hexane	0.39	J	0.39	J	RL	UG/M3
SI0384	TO-15	SI0384-5	63ADMIN-01-IA6	Styrene	0.22	J	0.22	J	RL	UG/M3
SI0384	TO-15	SI0384-5	63ADMIN-01-IA6	Trichloroethene	0.5	J	0.5	J	RL	UG/M3
SI0384	TO-15	SI0384-5	63ADMIN-01-IA6	Xylene, o	0.2	J	0.2	J	RL	UG/M3
SI0384	TO-15	SI0384-5	63ADMIN-01-IA6	Xylenes (m&p)	0.95	J	0.95	J	RL	UG/M3
SI0384	TO-15	SI0384-6	63RM073-01-IA6	1,1,2-Trichloro-1,2,2-Trifluoroethane	0.56	J	0.56	J	RL	UG/M3
SI0384	TO-15	SI0384-6	63RM073-01-IA6	1,2,4-Trimethylbenzene	0.21	J	0.21	J	RL	UG/M3
SI0384	TO-15	SI0384-6	63RM073-01-IA6	2-Butanone	0.56	J	0.56	J	RL	UG/M3
SI0384	TO-15	SI0384-6	63RM073-01-IA6	4-Ethyltoluene	0.074	J	0.074	J	RL	UG/M3
SI0384	TO-15	SI0384-6	63RM073-01-IA6	4-Methyl-2-pentanone	0.33	J	0.33	J	RL	UG/M3
SI0384	TO-15	SI0384-6	63RM073-01-IA6	Carbon disulfide	0.087	J	0.087	J	RL	UG/M3
SI0384	TO-15	SI0384-6	63RM073-01-IA6	Carbon tetrachloride	0.52	J	0.52	J	RL	UG/M3
SI0384	TO-15	SI0384-6	63RM073-01-IA6	Chloroform	0.32	J	0.32	J	RL	UG/M3
SI0384	TO-15	SI0384-6	63RM073-01-IA6	Cyclohexane	0.16	J	0.16	J	RL	UG/M3
SI0384	TO-15	SI0384-6	63RM073-01-IA6	Ethyl benzene	0.12	J	0.12	J	RL	UG/M3
SI0384	TO-15	SI0384-6	63RM073-01-IA6	Hexane	0.39	J	0.39	J	RL	UG/M3
SI0384	TO-15	SI0384-6	63RM073-01-IA6	Methylene chloride	0.83	J	0.83	J	RL	UG/M3
SI0384	TO-15	SI0384-6	63RM073-01-IA6	Styrene	0.15	J	0.15	J	RL	UG/M3
SI0384	TO-15	SI0384-6	63RM073-01-IA6	Trichloroethene	0.45	J	0.45	J	RL	UG/M3
SI0384	TO-15	SI0384-6	63RM073-01-IA6	Xylene, o	0.17	J	0.17	J	RL	UG/M3
SI0384	TO-15	SI0384-6	63RM073-01-IA6	Xylenes (m&p)	0.72	J	0.72	J	RL	UG/M3
SI0384	TO-15	SI0384-7	63RM080-01-IA6	1,1,2-Trichloro-1,2,2-Trifluoroethane	0.58	J	0.58	J	RL	UG/M3
SI0384	TO-15	SI0384-7	63RM080-01-IA6	1,2,4-Trimethylbenzene	0.39	J	0.39	J	RL	UG/M3
SI0384	TO-15	SI0384-7	63RM080-01-IA6	4-Ethyltoluene	0.079	J	0.079	J	RL	UG/M3
SI0384	TO-15	SI0384-7	63RM080-01-IA6	Carbon disulfide	0.096	J	0.096	J	RL	UG/M3
SI0384	TO-15	SI0384-7	63RM080-01-IA6	Carbon tetrachloride	0.49	J	0.49	J	RL	UG/M3
SI0384	TO-15	SI0384-7	63RM080-01-IA6	Chloroform	0.27	J	0.27	J	RL	UG/M3
SI0384	TO-15	SI0384-7	63RM080-01-IA6	Hexane	0.7	J	0.7	J	RL	UG/M3

Table 3 - Validation Actions Summary
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 Cold Regions Research and Engineering Laboratory
 Hanover, New Hampshire

SDG	Analysis Method	Lab Sample ID	Field Sample ID	Parameter Name	Lab Result	Lab Qual	Validated Result	Val Qual	Val Reason Code	Result Units
SI0384	TO-15	SI0384-7	63RM080-01-IA6	Styrene	0.37	J	0.37	J	RL	UG/M3
SI0384	TO-15	SI0384-7	63RM080-01-IA6	Tetrachloroethene	0.088	J	0.088	J	RL	UG/M3
SI0384	TO-15	SI0384-7	63RM080-01-IA6	Trichloroethene	0.35	J	0.35	J	RL	UG/M3
SI0384	TO-15	SI0384-8	63RM604-01-IA6	1,1,2-Trichloro-1,2,2-Trifluoroethane	0.55	J	0.55	J	RL	UG/M3
SI0384	TO-15	SI0384-8	63RM604-01-IA6	1,2,4-Trimethylbenzene	0.28	J	0.28	J	RL	UG/M3
SI0384	TO-15	SI0384-8	63RM604-01-IA6	2-Butanone	0.65	J	0.65	J	RL	UG/M3
SI0384	TO-15	SI0384-8	63RM604-01-IA6	Carbon disulfide	0.14	J	0.14	J	RL	UG/M3
SI0384	TO-15	SI0384-8	63RM604-01-IA6	Carbon tetrachloride	0.55	J	0.55	J	RL	UG/M3
SI0384	TO-15	SI0384-8	63RM604-01-IA6	Chloroform	0.16	J	0.16	J	RL	UG/M3
SI0384	TO-15	SI0384-8	63RM604-01-IA6	Ethyl benzene	0.16	J	0.16	J	RL	UG/M3
SI0384	TO-15	SI0384-8	63RM604-01-IA6	Hexane	0.46	J	0.46	J	RL	UG/M3
SI0384	TO-15	SI0384-8	63RM604-01-IA6	Styrene	0.21	J	0.21	J	RL	UG/M3
SI0384	TO-15	SI0384-8	63RM604-01-IA6	Trichloroethene	0.35	J	0.35	J	RL	UG/M3
SI0384	TO-15	SI0384-8	63RM604-01-IA6	Xylene, o	0.16	J	0.16	J	RL	UG/M3
SI0384	TO-15	SI0384-8	63RM604-01-IA6	Xylenes (m&p)	0.8	J	0.8	J	RL	UG/M3
SI0384	TO-15	SI0384-9	63RM707-01-IA6	1,1,2-Trichloro-1,2,2-Trifluoroethane	0.59	J	0.59	J	RL	UG/M3
SI0384	TO-15	SI0384-9	63RM707-01-IA6	1,2,4-Trimethylbenzene	0.18	J	0.18	J	RL	UG/M3
SI0384	TO-15	SI0384-9	63RM707-01-IA6	2-Butanone	0.5	J	0.5	J	RL	UG/M3
SI0384	TO-15	SI0384-9	63RM707-01-IA6	Carbon tetrachloride	0.55	J	0.55	J	RL	UG/M3
SI0384	TO-15	SI0384-9	63RM707-01-IA6	Chloroform	0.12	J	0.12	J	RL	UG/M3
SI0384	TO-15	SI0384-9	63RM707-01-IA6	Ethyl benzene	0.11	J	0.11	J	RL	UG/M3
SI0384	TO-15	SI0384-9	63RM707-01-IA6	Hexane	0.49	J	0.49	J	RL	UG/M3
SI0384	TO-15	SI0384-9	63RM707-01-IA6	Styrene	0.06	J	0.06	J	RL	UG/M3
SI0384	TO-15	SI0384-9	63RM707-01-IA6	Tetrachloroethene	0.12	J	0.12	J	RL	UG/M3
SI0384	TO-15	SI0384-9	63RM707-01-IA6	Trichloroethene	0.51	J	0.51	J	RL	UG/M3
SI0384	TO-15	SI0384-9	63RM707-01-IA6	Xylene, o	0.14	J	0.14	J	RL	UG/M3
SI0384	TO-15	SI0384-9	63RM707-01-IA6	Xylenes (m&p)	0.71	J	0.71	J	RL	UG/M3

Units:

ug/m3 = microgram per cubic meter

Validation Qualifier:

U = not detected above the reported concentration
 UJ = not detected above the reported concentration and is estimated
 J = value is estimated

Validation Reason Codes:

BL1 = Method blank qualifier
 ICVRSD = Initial calibration RSD
 CCV%D = Continuing calibration percent difference
 LCS-H = Laboratory Control Sample recovery high
 FD = Field duplicate limit exceeded
 E = Result exceeds calibration range
 RL = Value reported above the MDL but below the laboratory reporting limit

Table 2 - Final Sample Results
 Data Validation Report
 January 19, 2015 Air Samples Frances C. Richmond Middle School
 Cold Regions Research and Engineering Laboratory
 Hanover, New Hampshire

Sample Delivery Group			SI0384		SI0384		SI0384		SI0384		SI03
Location			63ADMIN-01		63LYME-01		63LYME-02		63LYME-03		63LYM
Sample Date			1/19/2015		1/19/2015		1/19/2015		1/19/2015		1/19/2
Sample ID			63ADMIN-01-IA6		63LYME-01-AA6		63LYME-02-AA6		63LYME-03-AA6		63LYME-
QC Code			FS		FS		FS		FS		FS
Units			Result Qualifier		Result Qualifier		Result Qualifier		Result Qualifier		Result
Analysis	Parameter										
TO-15	Chlorodibromomethane	UG/M3	0.42	U	0.42	U	0.42	U	0.42	U	0.42
TO-15	Chloroethane	UG/M3	0.13	U	0.13	U	0.13	U	0.13	U	0.13
TO-15	Chloroform	UG/M3	0.14	J	0.088	J	0.083	J	0.088	J	0.11
TO-15	Chloromethane	UG/M3	0.1	U	1.3	J	1.2	J	1.4	J	1.4
TO-15	Cis-1,2-Dichloroethene	UG/M3	0.2	U	0.2	U	0.2	U	0.2	U	0.2
TO-15	Cis-1,3-Dichloropropene	UG/M3	0.23	U	0.23	U	0.23	U	0.23	U	0.23
TO-15	Cyclohexane	UG/M3	0.21	J	0.079	J	0.082	J	0.096	J	0.089
TO-15	Dichlorodifluoromethane	UG/M3	2.8		2.8		2.6		2.8		2.8
TO-15	Ethanol	UG/M3	310	J	2.3		2.3		3.4		2.6
TO-15	Ethyl benzene	UG/M3	0.2	J	0.078	J	0.087	J	0.091	J	0.087
TO-15	Heptane	UG/M3	2.7		0.41	J	0.18	J	0.2	J	0.45
TO-15	Hexachlorobutadiene	UG/M3	0.53	U	0.53	U	0.53	U	0.53	U	0.53
TO-15	Hexane	UG/M3	0.39	J	0.42	J	0.39	J	0.39	J	0.42
TO-15	Methyl Tertbutyl Ether	UG/M3	0.18	U	0.18	U	0.18	U	0.18	U	0.18
TO-15	Methylene chloride	UG/M3	0.94		0.87	J	0.76	J	0.94		0.9
TO-15	Propylene	UG/M3	0.17	U	0.17	U	0.17	U	0.17	U	0.17
TO-15	Styrene	UG/M3	0.22	J	0.21	U	0.21	U	0.21	U	0.21
TO-15	Tetrachloroethene	UG/M3	0.34	U	0.34	U	0.34	U	0.34	U	0.34
TO-15	Tetrahydrofuran	UG/M3	0.15	U	0.15	U	0.15	U	0.15	U	0.15
TO-15	Toluene	UG/M3	1.8		0.68		0.64		0.72		0.64
TO-15	trans-1,2-Dichloroethene	UG/M3	0.2	U	0.2	U	0.2	U	0.2	U	0.2
TO-15	trans-1,3-Dichloropropene	UG/M3	0.23	U	0.23	U	0.23	U	0.23	U	0.23
TO-15	Trichloroethene	UG/M3	0.5	J	0.35	J	0.54	J	58		1.2
TO-15	Trichlorofluoromethane	UG/M3	1.7		1.6		1.6		2		1.8
TO-15	Vinyl acetate	UG/M3	0.18	U	0.18	U	0.18	U	0.18	U	0.18
TO-15	Vinyl chloride	UG/M3	0.13	U	0.13	U	0.13	U	0.13	U	0.13
TO-15	Xylene, o	UG/M3	0.2	J	0.1	J	0.12	J	0.12	J	0.12
TO-15	Xylenes (m&p)	UG/M3	0.95	J	0.51	J	0.57	J	0.56	J	0.51

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Sample Delivery Group 84				SI0384		SI0384		SI0384		SI0384	
Location IE-04				63RM073-01		63RM080-01		63RM604-01		63RM707-01	
Sample Date 1/15/2015				1/19/2015		1/19/2015		1/19/2015		1/19/2015	
Sample ID 04-AA6				63RM073-01-IA6		63RM080-01-IA6		63RM604-01-IA6		63RM707-01-IA6	
QC Code 3				FS		FS		FS		FS	
Analysis	Parameter	Units	Qualifier	Result	Qualifier	Result	Qualifier	Result	Qualifier	Result	Qualifier
TO-15	1,1,1-Trichloroethane	UG/M3	U	0.27	U	0.27	U	0.27	U	0.27	U
TO-15	1,1,2,2-Tetrachloroethane	UG/M3	U	0.34	U	0.34	U	0.34	U	0.34	U
TO-15	1,1,2-Trichloro-1,2,2-Trifluoroethane	UG/M3	J	0.56	J	0.58	J	0.55	J	0.59	J
TO-15	1,1,2-Trichloroethane	UG/M3	U	0.27	U	0.27	U	0.27	U	0.27	U
TO-15	1,1-Dichloroethane	UG/M3	U	0.2	U	0.2	U	0.2	U	0.2	U
TO-15	1,1-Dichloroethene	UG/M3	U	0.2	U	0.2	U	0.2	U	0.2	U
TO-15	1,2,4-Trichlorobenzene	UG/M3	UJ	0.37	UJ	0.37	UJ	0.37	UJ	0.37	UJ
TO-15	1,2,4-Trimethylbenzene	UG/M3	J	0.21	J	0.39	J	0.28	J	0.18	J
TO-15	1,2-Dibromoethane	UG/M3	U	0.38	U	0.38	U	0.38	U	0.38	U
TO-15	1,2-Dichloro-1,1,2,2-tetrafluoroethane	UG/M3	U	0.35	U	0.35	U	0.35	U	0.35	U
TO-15	1,2-Dichlorobenzene	UG/M3	U	0.3	U	0.3	U	0.3	U	0.3	U
TO-15	1,2-Dichloroethane	UG/M3	U	0.2	U	0.2	U	0.2	U	0.2	U
TO-15	1,2-Dichloropropane	UG/M3	U	0.23	U	0.23	U	0.23	U	0.23	U
TO-15	1,3,5-Trimethylbenzene	UG/M3	U	0.24	U	0.24	U	0.24	U	0.24	U
TO-15	1,3-Butadiene	UG/M3	U	0.11	U	0.11	U	0.11	U	0.11	U
TO-15	1,3-Dichlorobenzene	UG/M3	U	0.3	U	0.3	U	0.3	U	0.3	U
TO-15	1,4-Dichlorobenzene	UG/M3	U	0.3	U	0.3	U	0.3	U	0.3	U
TO-15	2-Butanone	UG/M3	J	0.56	J	0.74	J	0.65	J	0.5	J
TO-15	2-Hexanone	UG/M3	U	0.2	U	0.2	U	0.2	U	0.2	U
TO-15	2-Propanol	UG/M3	J	33		28		38	J	0.24	U
TO-15	4-Ethyltoluene	UG/M3	U	0.074	J	0.079	J	0.24	U	0.24	U
TO-15	4-Methyl-2-pentanone	UG/M3	U	0.33	J	0.2	U	0.86		0.2	U
TO-15	Acetone	UG/M3		19		21		19		11	
TO-15	Benzene	UG/M3		0.8		0.86		0.89		0.83	
TO-15	Benzyl chloride	UG/M3	U	0.26	U	0.26	U	0.26	U	0.26	U
TO-15	Bromodichloromethane	UG/M3	U	0.33	U	0.33	U	0.33	U	0.33	U
TO-15	Bromoform	UG/M3	U	0.52	U	0.52	U	0.52	U	0.52	U
TO-15	Bromomethane	UG/M3	U	0.19	U	0.19	U	0.19	U	0.19	U
TO-15	Carbon disulfide	UG/M3	U	0.087	J	0.096	J	0.14	J	0.16	U
TO-15	Carbon tetrachloride	UG/M3	J	0.52	J	0.49	J	0.55	J	0.55	J
TO-15	Chlorobenzene	UG/M3	U	0.23	U	0.23	U	0.23	U	0.23	U

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Sample Delivery Group 84				SI0384		SI0384		SI0384		SI0384	
Location IE-04				63RM073-01		63RM080-01		63RM604-01		63RM707-01	
Sample Date 1/15/2015				1/19/2015		1/19/2015		1/19/2015		1/19/2015	
Sample ID 04-AA6				63RM073-01-IA6		63RM080-01-IA6		63RM604-01-IA6		63RM707-01-IA6	
QC Code 3				FS		FS		FS		FS	
Analysis	Parameter	Units	Qualifier	Result	Qualifier	Result	Qualifier	Result	Qualifier	Result	Qualifier
TO-15	Chlorodibromomethane	UG/M3	U	0.42	U	0.42	U	0.42	U	0.42	U
TO-15	Chloroethane	UG/M3	U	0.13	U	0.13	U	0.13	U	0.13	U
TO-15	Chloroform	UG/M3	J	0.32	J	0.27	J	0.16	J	0.12	J
TO-15	Chloromethane	UG/M3	J	0.1	U	1.7	J	0.1	U	1.4	J
TO-15	Cis-1,2-Dichloroethene	UG/M3	U	0.2	U	0.2	U	0.2	U	0.2	U
TO-15	Cis-1,3-Dichloropropene	UG/M3	U	0.23	U	0.23	U	0.23	U	0.23	U
TO-15	Cyclohexane	UG/M3	J	0.16	J	0.17	U	0.17	U	0.17	U
TO-15	Dichlorodifluoromethane	UG/M3		2.6		2.7		2.8		2.8	
TO-15	Ethanol	UG/M3		220	J	160	J	260	J	290	J
TO-15	Ethyl benzene	UG/M3	J	0.12	J	0.69		0.16	J	0.11	J
TO-15	Heptane	UG/M3		2.4		1.4		1.1		2.9	
TO-15	Hexachlorobutadiene	UG/M3	U	0.53	U	0.53	U	0.53	U	0.53	U
TO-15	Hexane	UG/M3	J	0.39	J	0.7	J	0.46	J	0.49	J
TO-15	Methyl Tertbutyl Ether	UG/M3	U	0.18	U	0.18	U	0.18	U	0.18	U
TO-15	Methylene chloride	UG/M3		0.83	J	1.1		1.1		1	
TO-15	Propylene	UG/M3	U	0.17	U	0.17	U	0.17	U	0.17	U
TO-15	Styrene	UG/M3	U	0.15	J	0.37	J	0.21	J	0.06	J
TO-15	Tetrachloroethene	UG/M3	U	0.34	U	0.088	J	0.34	U	0.12	J
TO-15	Tetrahydrofuran	UG/M3	U	0.15	U	0.15	U	0.15	U	0.15	U
TO-15	Toluene	UG/M3		1.2		2.7		1.3		1.1	
TO-15	trans-1,2-Dichloroethene	UG/M3	U	0.2	U	0.2	U	0.2	U	0.2	U
TO-15	trans-1,3-Dichloropropene	UG/M3	U	0.23	U	0.23	U	0.23	U	0.23	U
TO-15	Trichloroethene	UG/M3		0.45	J	0.35	J	0.35	J	0.51	J
TO-15	Trichlorofluoromethane	UG/M3		1.6		2.2		1.6		1.6	
TO-15	Vinyl acetate	UG/M3	U	0.18	U	0.18	U	0.18	U	0.18	U
TO-15	Vinyl chloride	UG/M3	U	0.13	U	0.13	U	0.13	U	0.13	U
TO-15	Xylene, o	UG/M3	J	0.17	J	0.69		0.16	J	0.14	J
TO-15	Xylenes (m&p)	UG/M3	J	0.72	J	5		0.8	J	0.71	J

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Sample Delivery Group			SI0384		SI0384		SI0384		SI0384		SI0384
Location			63RM715-01		63RM717-01		63RM717-01		63RM721-01		63RM721-01
Sample Date			1/19/2015		1/19/2015		1/19/2015		1/19/2015		1/19/2015
Sample ID			63RM715-01-IA6		63RM717-01-IA6		63RM717-01-IA6 DU		63RM721-01-IA6		63RM721-01-IA6
QC Code			FS		FS		FD		FS		FS
Units			Result Qualifier		Result Qualifier		Result Qualifier		Result Qualifier		Result
Analysis	Parameter	Units	Result Qualifier		Result Qualifier		Result Qualifier		Result Qualifier		Result
TO-15	1,1,1-Trichloroethane	UG/M3	0.27	U	0.27	U	0.27	U	0.27	U	0.27
TO-15	1,1,2,2-Tetrachloroethane	UG/M3	0.34	U	0.34	U	0.34	U	0.34	U	0.34
TO-15	1,1,2-Trichloro-1,2,2-Trifluoroethane	UG/M3	0.6	J	1.1	J	0.56	J	0.54	J	0.56
TO-15	1,1,2-Trichloroethane	UG/M3	0.27	U	0.27	U	0.27	U	0.27	U	0.27
TO-15	1,1-Dichloroethane	UG/M3	0.2	U	0.2	U	0.2	U	0.2	U	0.2
TO-15	1,1-Dichloroethene	UG/M3	0.2	U	0.2	U	0.2	U	0.2	U	0.2
TO-15	1,2,4-Trichlorobenzene	UG/M3	0.37	UJ	0.37	UJ	0.37	UJ	0.37	UJ	0.37
TO-15	1,2,4-Trimethylbenzene	UG/M3	0.22	J	0.24	U	0.29	J	0.26	J	1.5
TO-15	1,2-Dibromoethane	UG/M3	0.38	U	0.38	U	0.38	U	0.38	U	0.38
TO-15	1,2-Dichloro-1,1,2,2-tetrafluoroethane	UG/M3	0.35	U	0.35	U	0.35	U	0.35	U	0.35
TO-15	1,2-Dichlorobenzene	UG/M3	0.3	U	0.3	U	0.3	U	0.3	U	0.3
TO-15	1,2-Dichloroethane	UG/M3	0.2	U	0.2	U	0.2	U	0.2	U	0.2
TO-15	1,2-Dichloropropane	UG/M3	0.23	U	0.23	U	0.23	U	0.23	U	0.23
TO-15	1,3,5-Trimethylbenzene	UG/M3	0.24	U	0.24	U	0.24	U	0.24	U	0.24
TO-15	1,3-Butadiene	UG/M3	0.11	U	0.11	U	0.11	U	0.11	U	0.11
TO-15	1,3-Dichlorobenzene	UG/M3	0.3	U	0.3	U	0.3	U	0.3	U	0.3
TO-15	1,4-Dichlorobenzene	UG/M3	0.3	U	0.3	U	0.3	U	0.3	U	0.3
TO-15	2-Butanone	UG/M3	0.47	J	0.77	J	0.38	J	0.44	J	0.68
TO-15	2-Hexanone	UG/M3	0.2	U	0.2	U	0.2	U	0.2	U	0.2
TO-15	2-Propanol	UG/M3	0.24	U	0.24	U	0.24	U	8.1		0.24
TO-15	4-Ethyltoluene	UG/M3	0.24	U	0.24	U	0.24	U	0.24	U	0.24
TO-15	4-Methyl-2-pentanone	UG/M3	0.2	J	0.2	U	0.2	U	0.2	U	0.2
TO-15	Acetone	UG/M3	10		32	J	14	J	9.5		20
TO-15	Benzene	UG/M3	0.83		1.7	J	0.83	J	0.86		0.86
TO-15	Benzyl chloride	UG/M3	0.26	U	0.26	U	0.26	U	0.26	U	0.26
TO-15	Bromodichloromethane	UG/M3	0.33	U	0.33	U	0.33	U	0.33	U	0.33
TO-15	Bromoform	UG/M3	0.52	U	0.52	U	0.52	U	0.52	U	0.52
TO-15	Bromomethane	UG/M3	0.19	U	0.19	U	0.19	U	0.19	U	0.19
TO-15	Carbon disulfide	UG/M3	0.075	J	0.12	J	0.16	U	0.16	U	0.16
TO-15	Carbon tetrachloride	UG/M3	0.52	J	1	J	0.51	J	0.53	J	0.53
TO-15	Chlorobenzene	UG/M3	0.23	U	0.23	U	0.23	U	0.23	U	0.23

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Sample Delivery Group			SI0384		SI0384		SI0384		SI0384		SI0384	
Location			63RM715-01		63RM717-01		63RM717-01		63RM721-01		63RM721-01	
Sample Date			1/19/2015		1/19/2015		1/19/2015		1/19/2015		1/19/2015	
Sample ID			63RM715-01-IA6		63RM717-01-IA6		63RM717-01-IA6 DU		63RM721-01-IA6		63RM721-01-IA6	
QC Code			FS		FS		FD		FS		FS	
Units			Result Qualifier		Result Qualifier		Result Qualifier		Result Qualifier		Result	
Analysis	Parameter	Units	Result	Qualifier	Result	Qualifier	Result	Qualifier	Result	Qualifier	Result	Qualifier
TO-15	Chlorodibromomethane	UG/M3	0.42	U	0.42	U	0.42	U	0.42	U	0.42	U
TO-15	Chloroethane	UG/M3	0.13	U	0.13	U	0.13	U	0.13	U	0.13	U
TO-15	Chloroform	UG/M3	0.16	J	0.2	J	0.1	J	0.12	J	0.12	J
TO-15	Chloromethane	UG/M3	0.1	U	0.1	U	0.1	U	0.1	U	0.1	U
TO-15	Cis-1,2-Dichloroethene	UG/M3	0.2	U	0.2	U	0.2	U	0.2	U	0.2	U
TO-15	Cis-1,3-Dichloropropene	UG/M3	0.23	U	0.23	U	0.23	U	0.23	U	0.23	U
TO-15	Cyclohexane	UG/M3	0.23	J	0.25	J	0.12	J	0.17	U	0.13	J
TO-15	Dichlorodifluoromethane	UG/M3	2.6		5.4	J	2.6	J	2.5		2.8	J
TO-15	Ethanol	UG/M3	69	J	120	J	58	J	120	J	130	J
TO-15	Ethyl benzene	UG/M3	0.12	J	0.36	J	0.2	J	0.12	J	0.16	J
TO-15	Heptane	UG/M3	0.61		0.98	J	0.41	J	0.82		0.57	J
TO-15	Hexachlorobutadiene	UG/M3	0.53	U	0.53	U	0.53	U	0.53	U	0.53	U
TO-15	Hexane	UG/M3	0.42	J	0.92	J	0.39	J	0.46	J	0.46	J
TO-15	Methyl Tertbutyl Ether	UG/M3	0.18	U	0.18	U	0.18	U	0.18	U	0.18	U
TO-15	Methylene chloride	UG/M3	1.1		1.9	J	0.87	J	1.2		1.1	J
TO-15	Propylene	UG/M3	0.17	U	0.17	U	0.17	U	0.17	U	0.17	U
TO-15	Styrene	UG/M3	0.12	J	0.19	J	0.19	J	0.21	U	0.2	J
TO-15	Tetrachloroethene	UG/M3	0.34	U	0.14	J	0.095	J	0.34	U	0.34	U
TO-15	Tetrahydrofuran	UG/M3	0.15	U	0.15	U	0.15	U	0.15	U	0.15	U
TO-15	Toluene	UG/M3	0.83		2.2	J	1	J	0.83		1.4	J
TO-15	trans-1,2-Dichloroethene	UG/M3	0.2	U	0.087	J	0.2	U	0.2	U	0.2	U
TO-15	trans-1,3-Dichloropropene	UG/M3	0.23	U	0.23	U	0.23	U	0.23	U	0.23	U
TO-15	Trichloroethene	UG/M3	1.1		2.1	J	1.1	J	1.3		0.48	J
TO-15	Trichlorofluoromethane	UG/M3	1.6		3.1	J	1.5	J	1.5		1.6	J
TO-15	Vinyl acetate	UG/M3	0.18	U	0.18	U	0.18	U	0.18	U	0.18	U
TO-15	Vinyl chloride	UG/M3	0.13	U	0.13	U	0.13	U	0.13	U	0.13	U
TO-15	Xylene, o	UG/M3	0.14	J	0.2	J	0.16	J	0.15	J	0.23	J
TO-15	Xylenes (m&p)	UG/M3	0.69	J	1	J	0.69	J	0.65	J	0.95	J

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Sample Delivery Group 84				SI0384		SI0384		SI0384		SI0384	
Location 26-01				63RM727C-01		63RM727I-01		63RM728-01		63RM800-01	
Sample Date 1/19/2015				1/19/2015		1/19/2015		1/19/2015		1/19/2015	
Sample ID 26-01-IA6				63RM727C-01-IA6		63RM727I-01-IA6		63RM728-01-IA6		63RM800-01-IA6	
QC Code 1				FS		FS		FS		FS	
Analysis	Parameter	Units	Qualifier	Result	Qualifier	Result	Qualifier	Result	Qualifier	Result	Qualifier
TO-15	1,1,1-Trichloroethane	UG/M3	U	0.27	U	0.27	U	0.15	J	0.27	U
TO-15	1,1,2,2-Tetrachloroethane	UG/M3	U	0.34	U	0.34	U	0.34	U	0.34	U
TO-15	1,1,2-Trichloro-1,2,2-Trifluoroethane	UG/M3	J	0.56	J	0.52	J	0.55	J	0.57	J
TO-15	1,1,2-Trichloroethane	UG/M3	U	0.27	U	0.27	U	0.27	U	0.27	U
TO-15	1,1-Dichloroethane	UG/M3	U	0.2	U	0.2	U	0.2	U	0.2	U
TO-15	1,1-Dichloroethene	UG/M3	U	0.2	U	0.2	U	0.2	U	0.2	U
TO-15	1,2,4-Trichlorobenzene	UG/M3	UJ	0.37	UJ	0.37	UJ	0.37	UJ	0.37	UJ
TO-15	1,2,4-Trimethylbenzene	UG/M3		0.31	J	0.27	J	0.22	J	0.13	J
TO-15	1,2-Dibromoethane	UG/M3	U	0.38	U	0.38	U	0.38	U	0.38	U
TO-15	1,2-Dichloro-1,1,2,2-tetrafluoroethane	UG/M3	U	0.35	U	0.35	U	0.35	U	0.35	U
TO-15	1,2-Dichlorobenzene	UG/M3	U	0.3	U	0.3	U	0.3	U	0.3	U
TO-15	1,2-Dichloroethane	UG/M3	U	0.2	U	0.2	U	0.2	U	0.2	U
TO-15	1,2-Dichloropropane	UG/M3	U	0.23	U	0.23	U	0.23	U	0.23	U
TO-15	1,3,5-Trimethylbenzene	UG/M3	U	0.24	U	0.24	U	0.24	U	0.24	U
TO-15	1,3-Butadiene	UG/M3	U	0.11	U	0.11	U	0.11	U	0.11	U
TO-15	1,3-Dichlorobenzene	UG/M3	U	0.3	U	0.3	U	0.3	U	0.3	U
TO-15	1,4-Dichlorobenzene	UG/M3	U	0.3	U	0.3	U	0.3	U	0.3	U
TO-15	2-Butanone	UG/M3	J	0.68	J	0.32	J	0.74	J	0.38	J
TO-15	2-Hexanone	UG/M3	U	0.2	U	0.2	U	0.2	U	0.2	U
TO-15	2-Propanol	UG/M3	U	19		0.24	U	11		5.9	
TO-15	4-Ethyltoluene	UG/M3	U	0.093	J	0.24	U	0.24	U	0.24	U
TO-15	4-Methyl-2-pentanone	UG/M3	U	0.38	J	0.82		0.2	U	0.2	U
TO-15	Acetone	UG/M3		26		13		19		8.1	
TO-15	Benzene	UG/M3		1.1		0.86		0.99		0.86	
TO-15	Benzyl chloride	UG/M3	U	0.26	U	0.26	U	0.26	U	0.26	U
TO-15	Bromodichloromethane	UG/M3	U	0.33	U	0.33	U	0.33	U	0.33	U
TO-15	Bromoform	UG/M3	U	0.52	U	0.52	U	0.52	U	0.52	U
TO-15	Bromomethane	UG/M3	U	0.19	U	0.19	U	0.19	U	0.19	U
TO-15	Carbon disulfide	UG/M3	J	0.26	J	0.13	J	0.13	J	0.16	U
TO-15	Carbon tetrachloride	UG/M3	J	0.53	J	0.52	J	8.2		0.53	J
TO-15	Chlorobenzene	UG/M3	U	0.23	U	0.23	U	0.23	U	0.23	U

Table 2 - Final Sample Results
 Data Validation Report
 January 19, 2015 Air Samples Frances C. Richmond Middle School
 Cold Regions Research and Engineering Laboratory
 Hanover, New Hampshire

Sample Delivery Group 84				SI0384		SI0384		SI0384		SI0384	
Location 26-01				63RM727C-01		63RM727I-01		63RM728-01		63RM800-01	
Sample Date 1/19/2015				1/19/2015		1/19/2015		1/19/2015		1/19/2015	
Sample ID 26-01-IA6				63RM727C-01-IA6		63RM727I-01-IA6		63RM728-01-IA6		63RM800-01-IA6	
QC Code 3				FS		FS		FS		FS	
Analysis	Parameter	Units	Qualifier	Result	Qualifier	Result	Qualifier	Result	Qualifier	Result	Qualifier
TO-15	Chlorodibromomethane	UG/M3	U	0.42	U	0.42	U	0.42	U	0.42	U
TO-15	Chloroethane	UG/M3	U	0.13	U	0.13	U	0.13	U	0.13	U
TO-15	Chloroform	UG/M3	J	0.28	J	0.1	J	0.54		0.12	J
TO-15	Chloromethane	UG/M3	U	0.1	U	0.1	U	0.1	U	0.1	U
TO-15	Cis-1,2-Dichloroethene	UG/M3	U	0.2	U	0.2	U	2.4		0.2	U
TO-15	Cis-1,3-Dichloropropene	UG/M3	U	0.23	U	0.23	U	0.23	U	0.23	U
TO-15	Cyclohexane	UG/M3	J	0.17	U	0.12	J	0.18	J	0.17	U
TO-15	Dichlorodifluoromethane	UG/M3		2.6		2.6		2.3		2.6	
TO-15	Ethanol	UG/M3	J	140	J	46	J	130		37	J
TO-15	Ethyl benzene	UG/M3	J	0.31	J	0.1	J	0.42	J	0.12	J
TO-15	Heptane	UG/M3		0.82		0.21	J	0.82		0.57	
TO-15	Hexachlorobutadiene	UG/M3	U	0.53	U	0.53	U	0.53	U	0.53	U
TO-15	Hexane	UG/M3	J	0.63	J	0.46	J	0.6	J	0.56	J
TO-15	Methyl Tertbutyl Ether	UG/M3	U	0.18	U	0.18	U	0.18	U	0.18	U
TO-15	Methylene chloride	UG/M3		1.4		0.87	J	2.1		1.3	
TO-15	Propylene	UG/M3	U	0.17	U	0.17	U	0.17	U	0.17	U
TO-15	Styrene	UG/M3	J	0.25	J	0.21	U	0.2	J	0.081	J
TO-15	Tetrachloroethene	UG/M3	U	0.34	U	0.34	U	1.1		0.34	U
TO-15	Tetrahydrofuran	UG/M3	U	0.15	U	0.15	U	0.32	J	0.15	U
TO-15	Toluene	UG/M3		6		1.3		2.5		1.7	
TO-15	trans-1,2-Dichloroethene	UG/M3	U	0.2	U	0.2	U	0.2	U	0.2	U
TO-15	trans-1,3-Dichloropropene	UG/M3	U	0.23	U	0.23	U	0.23	U	0.23	U
TO-15	Trichloroethene	UG/M3	J	0.37	J	0.28	J	2600		0.53	J
TO-15	Trichlorofluoromethane	UG/M3		1.5		1.4		36		1.3	
TO-15	Vinyl acetate	UG/M3	U	0.18	U	0.18	U	0.18	U	0.18	U
TO-15	Vinyl chloride	UG/M3	U	0.13	U	0.13	U	0.13	U	0.13	U
TO-15	Xylene, o	UG/M3	J	0.32	J	0.12	J	0.52		0.12	J
TO-15	Xylenes (m&p)	UG/M3	J	2.1		0.55	J	3.6		0.62	J

Table 2 - Final Sample Results
 Data Validation Report
 January 19, 2015 Air Samples Frances C. Richmond Middle School
 Cold Regions Research and Engineering Laboratory
 Hanover, New Hampshire

Sample Delivery Group			SI0384		SI0384	
Location			63RM807-01		63RMBR-01	
Sample Date			1/19/2015		1/19/2015	
Sample ID			63RM807-01-IA6		63RMBR-01-IA6	
QC Code			FS		FS	
Analysis	Parameter	Units	Result	Qualifier	Result	Qualifier
TO-15	1,1,1-Trichloroethane	UG/M3	0.27	U	0.27	U
TO-15	1,1,2,2-Tetrachloroethane	UG/M3	0.34	U	0.34	U
TO-15	1,1,2-Trichloro-1,2,2-Trifluoroethane	UG/M3	0.6	J	0.57	J
TO-15	1,1,2-Trichloroethane	UG/M3	0.27	U	0.27	U
TO-15	1,1-Dichloroethane	UG/M3	0.2	U	0.2	U
TO-15	1,1-Dichloroethene	UG/M3	0.2	U	0.2	U
TO-15	1,2,4-Trichlorobenzene	UG/M3	0.37	UJ	0.37	UJ
TO-15	1,2,4-Trimethylbenzene	UG/M3	0.21	J	1.1	
TO-15	1,2-Dibromoethane	UG/M3	0.38	U	0.38	U
TO-15	1,2-Dichloro-1,1,2,2-tetrafluoroethane	UG/M3	0.35	U	0.35	U
TO-15	1,2-Dichlorobenzene	UG/M3	0.3	U	0.3	U
TO-15	1,2-Dichloroethane	UG/M3	0.2	U	0.2	U
TO-15	1,2-Dichloropropane	UG/M3	0.23	U	0.23	U
TO-15	1,3,5-Trimethylbenzene	UG/M3	0.24	U	0.24	U
TO-15	1,3-Butadiene	UG/M3	0.11	U	0.11	U
TO-15	1,3-Dichlorobenzene	UG/M3	0.3	U	0.3	U
TO-15	1,4-Dichlorobenzene	UG/M3	0.3	U	0.3	U
TO-15	2-Butanone	UG/M3	0.44	J	0.32	J
TO-15	2-Hexanone	UG/M3	0.2	U	0.2	U
TO-15	2-Propanol	UG/M3	0.24	U	1.7	
TO-15	4-Ethyltoluene	UG/M3	0.24	U	0.24	U
TO-15	4-Methyl-2-pentanone	UG/M3	0.34	J	0.2	U
TO-15	Acetone	UG/M3	8.1		8.3	
TO-15	Benzene	UG/M3	0.89		0.7	
TO-15	Benzyl chloride	UG/M3	0.26	U	0.26	U
TO-15	Bromodichloromethane	UG/M3	0.33	U	0.33	U
TO-15	Bromoform	UG/M3	0.52	U	0.52	U
TO-15	Bromomethane	UG/M3	0.19	U	0.19	U
TO-15	Carbon disulfide	UG/M3	0.16	U	0.16	U
TO-15	Carbon tetrachloride	UG/M3	0.55	J	0.53	J
TO-15	Chlorobenzene	UG/M3	0.23	U	0.23	U

Table 2 - Final Sample Results
 Data Validation Report
 January 19, 2015 Air Samples Frances C. Richmond Middle School
 Cold Regions Research and Engineering Laboratory
 Hanover, New Hampshire

Sample Delivery Group			SI0384		SI0384	
Location			63RM807-01		63RMBR-01	
Sample Date			1/19/2015		1/19/2015	
Sample ID			63RM807-01-IA6		63RMBR-01-IA6	
QC Code			FS		FS	
Analysis	Parameter	Units	Result	Qualifier	Result	Qualifier
TO-15	Chlorodibromomethane	UG/M3	0.42	U	0.42	U
TO-15	Chloroethane	UG/M3	0.13	U	0.13	U
TO-15	Chloroform	UG/M3	0.12	J	0.13	J
TO-15	Chloromethane	UG/M3	0.1	U	1.1	J
TO-15	Cis-1,2-Dichloroethene	UG/M3	0.2	U	0.2	U
TO-15	Cis-1,3-Dichloropropene	UG/M3	0.23	U	0.23	U
TO-15	Cyclohexane	UG/M3	0.17	U	0.12	J
TO-15	Dichlorodifluoromethane	UG/M3	2.6		2.6	
TO-15	Ethanol	UG/M3	26		130	J
TO-15	Ethyl benzene	UG/M3	0.1	J	0.11	J
TO-15	Heptane	UG/M3	0.9		0.61	
TO-15	Hexachlorobutadiene	UG/M3	0.53	U	0.53	U
TO-15	Hexane	UG/M3	0.42	J	0.67	J
TO-15	Methyl Tertbutyl Ether	UG/M3	0.18	U	0.18	U
TO-15	Methylene chloride	UG/M3	1.1		1.7	
TO-15	Propylene	UG/M3	0.17	U	0.17	U
TO-15	Styrene	UG/M3	0.21	U	0.14	J
TO-15	Tetrachloroethene	UG/M3	0.34	U	0.34	U
TO-15	Tetrahydrofuran	UG/M3	0.15	U	0.15	U
TO-15	Toluene	UG/M3	0.79		0.87	
TO-15	trans-1,2-Dichloroethene	UG/M3	0.2	U	0.2	U
TO-15	trans-1,3-Dichloropropene	UG/M3	0.23	U	0.23	U
TO-15	Trichloroethene	UG/M3	0.59		0.59	
TO-15	Trichlorofluoromethane	UG/M3	1.4		1.3	
TO-15	Vinyl acetate	UG/M3	0.18	U	0.18	U
TO-15	Vinyl chloride	UG/M3	0.13	U	0.13	U
TO-15	Xylene, o	UG/M3	0.12	J	0.18	J
TO-15	Xylenes (m&p)	UG/M3	0.52	J	0.79	J

**DRAFT
DATA VALIDATION REPORT
JANUARY 19, 2015 AIR SAMPLES FRANCES C. RICHMOND
MIDDLE SCHOOL**

For

REMEDIAL INVESTIGATION AND FEASIBILITY STUDY
COLD REGIONS RESEARCH ENGINEERING LABORATORY (CRREL)
HANOVER, NEW HAMPSHIRE

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Concord MA 01742-2751**

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**Jeffrey S. Pickett
Project Manager**

**Glen P. Gordon, P.E.
Associate Engineer**

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Table 1	Sample Summary
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Table 3	Data Validation Action Summary

ACRONYMS AND ABBREVIATION

ADR	Automated Data Review
AMEC	AMEC Environment and Infrastructure, Inc
BL1	Method Blank Qualifier
CCV%D	Continuing Calibration Qualifier
CRREL	Cold Regions Research and Engineering Laboratory
DOD	Department of Defense
E	Calibration Range Qualifier
EDD	Electronic Data Deliverable
FD	Field Duplicate Qualifier
ICVRSD	Initial Calibration Qualifier
J	estimated value
LOD	Limit of Detection
LOQ	Limit of Quantitation
LCS	Laboratory Control Sample
LCS-H	LCS Qualifier
MDL	Method Detection Limit
$\mu\text{g}/\text{m}^3$	micrograms per cubic meter
QAPP	Quality Assurance Project Plan
QC	Quality Control
QSM	Quality Systems Manual
RI	Remedial Investigation
RL	Reporting Qualifier
RPD	Relative Percent Difference
RSD	Relative Standard Deviation
SDG	Sample Delivery Group
SEDD	Staged Electronic Data Deliverable
TCE	Trichloroethene
U	not detected
USEPA	United States Environmental Protection Agency

VOC Volatile Organic Compound

1.0 INTRODUCTION

Indoor air and background ambient air samples were collected at the Hanover Middle School on January 19, 2015 as part of continuing investigations at the Cold Regions Research Engineering Laboratory (CRREL) Site in Hanover, New Hampshire. Samples were analyzed by Katahdin Analytical Services in Scarborough, Maine. The samples were analyzed by the following U.S. Environmental Protection Agency (USEPA) method:

Laboratory	Parameter	Analytical Method	Validation Level
Katahdin Analytical Services	Volatile Organic Compounds (VOCs)	USEPA TO-15	Tier III

A summary of samples included in this data validation report is presented in Table 1. The analytical data package was reviewed in accordance with the general specifications for remedial investigation (RI) data in the draft CRREL Quality assurance Project Plan (QAPP) [AMEC, 2013].

Data validation was completed using the Staged Electronic Data Deliverable (SEDD)/Automated Data review (ADR) process. The data were also validated manually by the AMEC Environment and Infrastructure Inc (AMEC) project chemist following the Region I USEPA-New England data Validation Functional Guidelines, Tier III procedures (USEPA, 1996). Quality control (QC) limits established in the QAPP were used during data validation. Data validation actions from the chemist review were compared to the ADR actions prior to preparing the final data set.

A summary of validated sample results is presented in Table 2. Results are reported in micrograms per cubic meter ($\mu\text{g}/\text{m}^3$). A summary of data validation actions is presented in Table 3. Table 3 includes results for samples that have been qualified (data validation has resulted in revisions to the laboratory result) and any results with validation codes that have been applied by ADR or the project chemist. Table 3 includes final results and validation qualifiers and validation reason codes that define the actions.

In accordance with general data reporting procedures in the Department of Defense (DOD) Quality Systems Manual (QSM) [DOD, 2010], the laboratory reported results using a combination of three detection limits including the limit of quantitation (LOQ), limit of detection (LOD), and the method detection limit (MDL). Results for compounds that are not detected in samples are reported as U qualified results at the LOD. The laboratory reports positive detections above the MDL. Values between the MDL and the LOQ are qualified as estimated (J) by the laboratory. The ADR validation module applies a validation reason code of RL to all results that are reported as J qualified positive detections below the LOQ. A subset of target compound detections reported in the indoor air and soil vapor samples are at low concentrations below the LOQ and have been qualified as estimated (J) values by the laboratory. Results are summarized on Table 3.

The detection limits for trichloroethene (TCE) for TO-15 are 0.54 (LOQ), 0.27 (LOD), and 0.048 (MDL) in $\mu\text{g}/\text{m}^3$. The DOD QSM instructs labs to J qualify positive detections between the LOQ and MDL. All values for TCE that were detected in indoor air and ambient samples less than 0.54 $\mu\text{g}/\text{m}^3$ will have a J flag applied by the lab indicating the results are estimated.

2.0 TO-15 VOCs

Samples were analyzed for VOCs by Method TO-15 (summa canisters). A description of validation actions for each laboratory data groups are presented in the following subsection. Data were evaluated based on the following parameters:

- * Data Completeness
 - * Holding Times and Preservation
Blanks
 - * Instrument Tunes
Initial Calibration
Continuing Calibration
Laboratory Control Sample (LCS)
Field Duplicates
 - * Internal Standards
 - * Detection Limits
 - * Sample Result Verification/Electronic Evaluation Verification (EDD)
Calibration Range Evaluation
 - * Sample Collection
- * = indicates that criteria were met for this parameter

Except for the validation actions noted below, sample results are interpreted to be usable as reported by the laboratory. A summary of final results is presented on Table 2. A summary of data validation actions is presented on Table 3.

2.1 Blanks

Target compounds were reported in the method blank. All the compounds reported in method blank were at concentrations less than the LOD. The following target compounds were reported in the method blank:

- acetone
- carbon disulfide
- 1,2-dichlorobenzene
- 1,3-dichlorobenzene
- 1,2,4-trichlorobenzene
- hexachlorobutadiene

Validation action levels were established at five times the reported blank concentrations. Acetone is identified as a common laboratory contaminant in USEPA guidelines, and the action level for acetone was established at ten times the reported method blank concentration. During qualification of sample results, baseline action levels were adjusted for sample preparation/dilutions and compared to reported sample detections. The following table summarizes the method blank detections and associated baseline action levels.

SDG	Lab Sample ID	Parameter Name	Result	Q	Units	Action Level
SI0384	WG157355-2	ACETONE	0.12	J	µg/m ³	1.2
SI0384	WG157355-2	CARBON DISULFIDE	0.031	J	µg/m ³	0.155
SI0384	WG157355-2	1,3-DICHLOROBENZENE	0.066	J	µg/m ³	0.33
SI0384	WG157355-2	1,2-DICHLOROBENZENE	0.096	J	µg/m ³	0.48
SI0384	WG157355-2	1,2,4-TRICHLOROBENZENE	0.18	J	µg/m ³	0.90
SI0384	WG157355-2	HEXACHLOROBUTADIENE	0.26	J	µg/m ³	1.3

Reported detections less than the adjusted action levels were qualified non-detect (U). Qualified sample results that were less than the LOD were qualified non-detect (U) with results adjusted to the LOD.

A summary of method blank actions is presented in Table 3 with results being assigned a validation qualifier reason code of BL1.

2.2 Initial Calibration

In the initial calibration analyzed on January 20, 2015, the percent relative standard deviation (RSD) for 1,2,4-trichlorobenzene (54) exceeded the QC limit of 30. Sample reporting limits for 1,2,4-trichlorobenzene were qualified estimated (UJ).

A summary of initial calibration actions is presented in Table 3 with results being assigned a validation qualifier reason code of ICVRSD.

2.3 Continuing Calibration

In the continuing calibration analyzed on January 21, 2015, the percent difference for 1,2,4-trichlorobenzene (45) exceeded the QC limit of 25. Reporting limits for 1,2,4-trichlorobenzene were qualified previously under the initial calibration criteria.

A summary of continuing calibration actions is presented in Table 3 with results being assigned a validation qualifier reason code of CCV%D

2.4 Laboratory Control Sample

The LCS percent recovery of chloroethane (136), chloromethane (134), and 1,2,4-trichlorobenzene (148) exceeded the upper QC limit of 130. Sample results for chloroethane and 1,2,4-trichlorobenzene are non detect; no action required. Sample results for chloromethane were qualified estimated (J).

A summary of LCS actions is presented in Table 3 with results being assigned a validation qualifier reason code of LCS-H.

2.5 Field Duplicates

Sample 63RM717-01-IA5 was submitted with an associated field duplicate. The relative percent difference (RPD) between the original and duplicate sample results for 1,1,2-trichloro-1,2,2-

trifluoroethane (65), 2-butanone (68), acetone (78), benzene (69), carbon tetrachloride (65), dichlorodifluoromethane (70), ethanol (70), heptane (82), hexane (81), methylene chloride (74), toluene (75), TCE (63), and trichlorofluoromethane (70) exceeded the QC limit of 50. The results for 1,1,2-trichloro-1,2,2-trifluoroethane, 2-butanone, acetone, benzene, carbon tetrachloride, dichlorodifluoromethane, ethanol, heptane, hexane, methylene chloride, toluene, TCE, and trichlorofluoromethane in the 63RM717-01-IA5 pair were qualified estimated (J).

A summary of field duplicate actions is presented in Table 3 with results being assigned a validation qualifier reason code of FD.

2.6 Calibration Range Evaluation

Ethanol and 2-propanol results for a subset of samples exceeded the calibration range. Associated sample ethanol and 2-propanol results were qualified estimated (J). The following table summarizes the associated samples calibration range exceedence:

SDG	Field Sample ID	Parameter Name	Validation Result	Q	Laboratory Result	Q
SI0384	63RM715-01-IA6	Ethanol	69	J	69	E
SI0384	63RM717-01-IA6	Ethanol	120	J	120	E
SI0384	63RM717-01-IA6 DUP	Ethanol	58	J	58	E
SI0384	63RM721-01-IA6	Ethanol	120	J	120	E
SI0384	63RM726-01-IA6	Ethanol	130	J	130	E
SI0384	63RM727C-01-IA6	Ethanol	140	J	140	E
SI0384	63RM727I-01-IA6	Ethanol	46	J	46	E
SI0384	63RM728-01-IA6	Ethanol	120	J	120	E
SI0384	63RM800-01-IA6	Ethanol	37	J	37	E
SI0384	63RMBR-01-IA6	Ethanol	130	J	130	E
SI0384	63ADMIN-01-IA6	Ethanol	310	J	310	E
SI0384	63ADMIN-01-IA6	2-Propanol	38	J	38	E
SI0384	63RM073-01-IA6	Ethanol	220	J	220	E
SI0384	63RM080-01-IA6	Ethanol	160	J	160	E
SI0384	63RM604-01-IA6	Ethanol	260	J	260	E
SI0384	63RM604-01-IA6	2-Propanol	38	J	38	E
SI0384	63RM707-01-IA6	Ethanol	290	J	290	E
SI0384	63RM715-01-IA6	Ethanol	69	J	69	E
SI0384	63RM717-01-IA6	Ethanol	120	J	120	E
SI0384	63RM717-01-IA6 DUP	Ethanol	58	J	58	E
SI0384	63RM721-01-IA6	Ethanol	120	J	120	E
SI0384	63RM726-01-IA6	Ethanol	130	J	130	E
SI0384	63RM727C-01-IA6	Ethanol	140	J	140	E
SI0384	63RM727I-01-IA6	Ethanol	46	J	46	E
SI0384	63RM728-01-IA6	Ethanol	120	J	120	E
SI0384	63RM800-01-IA6	Ethanol	37	J	37	E
SI0384	63RMBR-01-IA6	Ethanol	130	J	130	E

A summary of calibration range evaluation actions is presented in Table 3 with results being assigned a validation qualifier reason code of E.

REFERENCES

AMEC, 2013. "Draft CRREL Remedial Investigation/Feasibility Study/Pilot Study/Decision Document Quality Assurance Project Plan"; Revision 1; Cold Regions Research and Engineering Laboratory Site; 72 Lyme Road; Hanover, NH; May 2013.

Department of Defense (DOD), 2010. "Quality Systems Manual for Environmental Laboratories"; Department of Navy; Version 4.2; October 25, 2010.

USEPA, 1996. "Region 1 EPA-NE Data Validation Guidelines for Evaluating Environmental Analyses"; Quality Assurance Unit Staff; Office of Environmental Measurement and Evaluation; December 1996.

Data validation was completed by project chemist:

- Wolfgang Calicchio

Reviewed by:

- Bradley B. LaForest, NRCC-EAC

TABLES

Table 1 - Sample Summary
Data Validation Report
January 19, 2015 Air Samples Frances C. Richmond Middle School
Cold Regions Research and Engineering Laboratory
Hanover, New Hampshire

Sample Location	Field Sample ID	Date Sampled	Lab Sample ID	TO-15 VOCs
<i>Indoor Air / Ambient Air</i>				
63LYME-01	63LYME-01-AA6	01/19/15	SI0384-1	59
63LYME-02	63LYME-02-AA6	01/19/15	SI0384-2	59
63LYME-03	63LYME-03-AA6	01/19/15	SI0384-3	59
63LYME-04	63LYME-04-AA6	01/19/15	SI0384-4	59
63ADMIN-01	63ADMIN-01-IA6	01/19/15	SI0384-5	59
63RM073-01	63RM073-01-IA6	01/19/15	SI0384-6	59
63RM080-01	63RM080-01-IA6	01/19/15	SI0384-7	59
63RM604-01	63RM604-01-IA6	01/19/15	SI0384-8	59
63RM707-01	63RM707-01-IA6	01/19/15	SI0384-9	59
63RM715-01	63RM715-01-IA6	01/19/15	SI0384-10	59
63RM717-01	63RM717-01-IA6	01/19/15	SI0384-11	59
63RM717-01	63RM717-01-IA6 DUP	01/19/15	SI0384-12	59
63RM721-01	63RM721-01-IA6	01/19/15	SI0384-13	59
63RM726-01	63RM726-01-IA6	01/19/15	SI0384-14	59
63RM727C-01	63RM727C-01-IA6	01/19/15	SI0384-15	59
63RM727I-01	63RM727I-01-IA6	01/19/15	SI0384-16	59
63RM728-01	63RM728-01-IA6	01/19/15	SI0384-17	59
63RM800-01	63RM800-01-IA6	01/19/15	SI0384-18	59
63RM807-01	63RM807-01-IA6	01/19/15	SI0384-19	59
63RMBR-01	63RMBR-01-IA6	01/19/15	SI0384-20	59

Notes:

Number listed under method indicates the number of target analytes reported.

Prepared by / Date: WCG 01/29/15

Checked by / Date: WDC 01/30/15

Table 2 - Final Sample Results
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Sample Delivery Group			SI0384		SI0384		SI0384		SI0384		SI03
Location			63ADMIN-01		63LYME-01		63LYME-02		63LYME-03		63LYM
Sample Date			1/19/2015		1/19/2015		1/19/2015		1/19/2015		1/19/2
Sample ID			63ADMIN-01-IA6		63LYME-01-AA6		63LYME-02-AA6		63LYME-03-AA6		63LYME-
QC Code			FS		FS		FS		FS		FS
Analysis	Parameter	Units	Result	Qualifier	Result	Qualifier	Result	Qualifier	Result	Qualifier	Result
TO-15	1,1,1-Trichloroethane	UG/M3	0.27	U	0.27	U	0.27	U	0.27	U	0.27
TO-15	1,1,2,2-Tetrachloroethane	UG/M3	0.34	U	0.34	U	0.34	U	0.34	U	0.34
TO-15	1,1,2-Trichloro-1,2,2-Trifluoroethane	UG/M3	0.55	J	0.6	J	0.56	J	0.6	J	0.57
TO-15	1,1,2-Trichloroethane	UG/M3	0.27	U	0.27	U	0.27	U	0.27	U	0.27
TO-15	1,1-Dichloroethane	UG/M3	0.2	U	0.2	U	0.2	U	0.2	U	0.2
TO-15	1,1-Dichloroethene	UG/M3	0.2	U	0.2	U	0.2	U	0.2	U	0.2
TO-15	1,2,4-Trichlorobenzene	UG/M3	0.37	UJ	0.37	UJ	0.37	UJ	0.37	UJ	0.37
TO-15	1,2,4-Trimethylbenzene	UG/M3	0.36	J	0.24	U	0.21	J	0.18	J	0.15
TO-15	1,2-Dibromoethane	UG/M3	0.38	U	0.38	U	0.38	U	0.38	U	0.38
TO-15	1,2-Dichloro-1,1,2,2-tetrafluoroethane	UG/M3	0.35	U	0.35	U	0.35	U	0.35	U	0.35
TO-15	1,2-Dichlorobenzene	UG/M3	0.3	U	0.3	U	0.3	U	0.3	U	0.3
TO-15	1,2-Dichloroethane	UG/M3	0.85		0.2	U	0.2	U	0.2	U	0.2
TO-15	1,2-Dichloropropane	UG/M3	0.23	U	0.23	U	0.23	U	0.23	U	0.23
TO-15	1,3,5-Trimethylbenzene	UG/M3	0.24	U	0.24	U	0.24	U	0.24	U	0.24
TO-15	1,3-Butadiene	UG/M3	0.11	U	0.11	U	0.11	U	0.11	U	0.11
TO-15	1,3-Dichlorobenzene	UG/M3	0.3	U	0.3	U	0.3	U	0.3	U	0.3
TO-15	1,4-Dichlorobenzene	UG/M3	0.3	U	0.3	U	0.18	J	0.3	U	0.3
TO-15	2-Butanone	UG/M3	0.68	J	0.18	J	0.15	U	0.17	J	0.24
TO-15	2-Hexanone	UG/M3	0.2	U	0.2	U	0.2	U	0.2	U	0.2
TO-15	2-Propanol	UG/M3	38	J	0.42	J	0.49	J	0.61	J	0.44
TO-15	4-Ethyltoluene	UG/M3	0.11	J	0.24	U	0.24	U	0.24	U	0.24
TO-15	4-Methyl-2-pentanone	UG/M3	0.2	U	0.2	U	0.2	U	0.2	U	0.2
TO-15	Acetone	UG/M3	24		5		3.3		4		5.9
TO-15	Benzene	UG/M3	0.89		0.77		0.77		0.8		0.73
TO-15	Benzyl chloride	UG/M3	0.26	U	0.26	U	0.14	J	0.26	U	0.26
TO-15	Bromodichloromethane	UG/M3	0.33	U	0.33	U	0.33	U	0.33	U	0.33
TO-15	Bromoform	UG/M3	0.52	U	0.52	U	0.52	U	0.52	U	0.52
TO-15	Bromomethane	UG/M3	0.19	U	0.19	U	0.19	U	0.19	U	0.19
TO-15	Carbon disulfide	UG/M3	0.12	J	0.16	U	0.16	U	0.16	U	0.16
TO-15	Carbon tetrachloride	UG/M3	0.52	J	0.51	J	0.53	J	0.69		0.54
TO-15	Chlorobenzene	UG/M3	0.23	U	0.23	U	0.23	U	0.23	U	0.23

Table 3 - Validation Actions Summary
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SDG	Analysis Method	Lab Sample ID	Field Sample ID	Parameter Name	Lab Result	Lab Qual	Validated Result	Val Qual	Val Reason Code	Result Units
SI0384	TO-15	SI0384-13	63RM721-01-IA6	Carbon disulfide	0.047	J	0.16	U	BL1	UG/M3
SI0384	TO-15	SI0384-2	63LYME-02-AA6	1,2-Dichlorobenzene	0.17	J	0.3	U	BL1	UG/M3
SI0384	TO-15	SI0384-2	63LYME-02-AA6	1,3-Dichlorobenzene	0.16	J	0.3	U	BL1	UG/M3
SI0384	TO-15	SI0384-2	63LYME-02-AA6	Hexachlorobutadiene	0.39	J	0.53	U	BL1	UG/M3
SI0384	TO-15	SI0384-20	63RMBR-01-IA6	Carbon disulfide	0.047	J	0.16	U	BL1	UG/M3
SI0384	TO-15	SI0384-3	63LYME-03-AA6	Carbon disulfide	0.044	J	0.16	U	BL1	UG/M3
SI0384	TO-15	SI0384-2	63LYME-02-AA6	1,2,4-Trichlorobenzene	0.29	JL	0.37	UJ	BL1, ICVRSD, CCV%D	UG/M3
SI0384	TO-15	SI0384-1	63LYME-01-AA6	1,2,4-Trichlorobenzene	0.37	UL	0.37	UJ	ICVRSD, CCV%D	UG/M3
SI0384	TO-15	SI0384-10	63RM715-01-IA6	1,2,4-Trichlorobenzene	0.37	UL	0.37	UJ	ICVRSD, CCV%D	UG/M3
SI0384	TO-15	SI0384-11	63RM717-01-IA6	1,2,4-Trichlorobenzene	0.37	UL	0.37	UJ	ICVRSD, CCV%D	UG/M3
SI0384	TO-15	SI0384-12	63RM717-01-IA6 DUP	1,2,4-Trichlorobenzene	0.37	UL	0.37	UJ	ICVRSD, CCV%D	UG/M3
SI0384	TO-15	SI0384-13	63RM721-01-IA6	1,2,4-Trichlorobenzene	0.37	UL	0.37	UJ	ICVRSD, CCV%D	UG/M3
SI0384	TO-15	SI0384-14	63RM726-01-IA6	1,2,4-Trichlorobenzene	0.37	UL	0.37	UJ	ICVRSD, CCV%D	UG/M3
SI0384	TO-15	SI0384-15	63RM727C-01-IA6	1,2,4-Trichlorobenzene	0.37	UL	0.37	UJ	ICVRSD, CCV%D	UG/M3
SI0384	TO-15	SI0384-16	63RM727I-01-IA6	1,2,4-Trichlorobenzene	0.37	UL	0.37	UJ	ICVRSD, CCV%D	UG/M3
SI0384	TO-15	SI0384-17	63RM728-01-IA6	1,2,4-Trichlorobenzene	0.37	UL	0.37	UJ	ICVRSD, CCV%D	UG/M3
SI0384	TO-15	SI0384-18	63RM800-01-IA6	1,2,4-Trichlorobenzene	0.37	UL	0.37	UJ	ICVRSD, CCV%D	UG/M3
SI0384	TO-15	SI0384-19	63RM807-01-IA6	1,2,4-Trichlorobenzene	0.37	UL	0.37	UJ	ICVRSD, CCV%D	UG/M3
SI0384	TO-15	SI0384-20	63RMBR-01-IA6	1,2,4-Trichlorobenzene	0.37	UL	0.37	UJ	ICVRSD, CCV%D	UG/M3
SI0384	TO-15	SI0384-3	63LYME-03-AA6	1,2,4-Trichlorobenzene	0.37	UL	0.37	UJ	ICVRSD, CCV%D	UG/M3
SI0384	TO-15	SI0384-4	63LYME-04-AA6	1,2,4-Trichlorobenzene	0.37	UL	0.37	UJ	ICVRSD, CCV%D	UG/M3
SI0384	TO-15	SI0384-5	63ADMIN-01-IA6	1,2,4-Trichlorobenzene	0.37	UL	0.37	UJ	ICVRSD, CCV%D	UG/M3
SI0384	TO-15	SI0384-6	63RM073-01-IA6	1,2,4-Trichlorobenzene	0.37	UL	0.37	UJ	ICVRSD, CCV%D	UG/M3
SI0384	TO-15	SI0384-7	63RM080-01-IA6	1,2,4-Trichlorobenzene	0.37	UL	0.37	UJ	ICVRSD, CCV%D	UG/M3
SI0384	TO-15	SI0384-8	63RM604-01-IA6	1,2,4-Trichlorobenzene	0.37	UL	0.37	UJ	ICVRSD, CCV%D	UG/M3
SI0384	TO-15	SI0384-9	63RM707-01-IA6	1,2,4-Trichlorobenzene	0.37	UL	0.37	UJ	ICVRSD, CCV%D	UG/M3
SI0384	TO-15	SI0384-1	63LYME-01-AA6	Chloromethane	1.3	L	1.3	J	LCS-H	UG/M3
SI0384	TO-15	SI0384-2	63LYME-02-AA6	Chloromethane	1.2	L	1.2	J	LCS-H	UG/M3
SI0384	TO-15	SI0384-20	63RMBR-01-IA6	Chloromethane	1.1	L	1.1	J	LCS-H	UG/M3
SI0384	TO-15	SI0384-3	63LYME-03-AA6	Chloromethane	1.4	L	1.4	J	LCS-H	UG/M3
SI0384	TO-15	SI0384-4	63LYME-04-AA6	Chloromethane	1.4	L	1.4	J	LCS-H	UG/M3
SI0384	TO-15	SI0384-7	63RM080-01-IA6	Chloromethane	1.7	L	1.7	J	LCS-H	UG/M3
SI0384	TO-15	SI0384-9	63RM707-01-IA6	Chloromethane	1.4	L	1.4	J	LCS-H	UG/M3
SI0384	TO-15	SI0384-11	63RM717-01-IA6	Acetone	32		32	J	LCS-H, FD	UG/M3
SI0384	TO-15	SI0384-12	63RM717-01-IA6 DUP	Acetone	14		14	J	LCS-H, FD	UG/M3
SI0384	TO-15	SI0384-11	63RM717-01-IA6	Ethanol	120	E	120	J	FD, E	UG/M3
SI0384	TO-15	SI0384-12	63RM717-01-IA6 DUP	Ethanol	58	E	58	J	FD, E	UG/M3
SI0384	TO-15	SI0384-11	63RM717-01-IA6	1,1,2-Trichloro-1,2,2-Trifluoroethane	1.1		1.1	J	FD	UG/M3
SI0384	TO-15	SI0384-11	63RM717-01-IA6	2-Butanone	0.77		0.77	J	FD	UG/M3

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SI0384	TO-15	SI0384-11	63RM717-01-IA6	Benzene	1.7		1.7	J	FD	UG/M3
SI0384	TO-15	SI0384-11	63RM717-01-IA6	Carbon tetrachloride	1		1	J	FD	UG/M3
SI0384	TO-15	SI0384-11	63RM717-01-IA6	Dichlorodifluoromethane	5.4		5.4	J	FD	UG/M3
SI0384	TO-15	SI0384-11	63RM717-01-IA6	Heptane	0.98		0.98	J	FD	UG/M3
SI0384	TO-15	SI0384-11	63RM717-01-IA6	Hexane	0.92		0.92	J	FD	UG/M3
SI0384	TO-15	SI0384-11	63RM717-01-IA6	Methylene chloride	1.9		1.9	J	FD	UG/M3
SI0384	TO-15	SI0384-11	63RM717-01-IA6	Toluene	2.2		2.2	J	FD	UG/M3
SI0384	TO-15	SI0384-11	63RM717-01-IA6	Trichloroethene	2.1		2.1	J	FD	UG/M3
SI0384	TO-15	SI0384-11	63RM717-01-IA6	Trichlorofluoromethane	3.1		3.1	J	FD	UG/M3
SI0384	TO-15	SI0384-12	63RM717-01-IA6 DUP	Benzene	0.83		0.83	J	FD	UG/M3
SI0384	TO-15	SI0384-12	63RM717-01-IA6 DUP	Dichlorodifluoromethane	2.6		2.6	J	FD	UG/M3
SI0384	TO-15	SI0384-12	63RM717-01-IA6 DUP	Heptane	0.41	J	0.41	J	FD	UG/M3
SI0384	TO-15	SI0384-12	63RM717-01-IA6 DUP	Methylene chloride	0.87	J	0.87	J	FD	UG/M3
SI0384	TO-15	SI0384-12	63RM717-01-IA6 DUP	Toluene	1		1	J	FD	UG/M3
SI0384	TO-15	SI0384-12	63RM717-01-IA6 DUP	Trichloroethene	1.1		1.1	J	FD	UG/M3
SI0384	TO-15	SI0384-12	63RM717-01-IA6 DUP	Trichlorofluoromethane	1.5		1.5	J	FD	UG/M3
SI0384	TO-15	SI0384-12	63RM717-01-IA6 DUP	1,1,2-Trichloro-1,2,2-Trifluoroethane	0.56	J	0.56	J	FD, RL	UG/M3
SI0384	TO-15	SI0384-12	63RM717-01-IA6 DUP	2-Butanone	0.38	J	0.38	J	FD, RL	UG/M3
SI0384	TO-15	SI0384-12	63RM717-01-IA6 DUP	Carbon tetrachloride	0.51	J	0.51	J	FD, RL	UG/M3
SI0384	TO-15	SI0384-12	63RM717-01-IA6 DUP	Hexane	0.39	J	0.39	J	FD, RL	UG/M3
SI0384	TO-15	SI0384-10	63RM715-01-IA6	Ethanol	69	E	69	J	E	UG/M3
SI0384	TO-15	SI0384-13	63RM721-01-IA6	Ethanol	120	E	120	J	E	UG/M3
SI0384	TO-15	SI0384-14	63RM726-01-IA6	Ethanol	130	E	130	J	E	UG/M3
SI0384	TO-15	SI0384-15	63RM727C-01-IA6	Ethanol	140	E	140	J	E	UG/M3
SI0384	TO-15	SI0384-16	63RM727I-01-IA6	Ethanol	46	E	46	J	E	UG/M3
SI0384	TO-15	SI0384-18	63RM800-01-IA6	Ethanol	37	E	37	J	E	UG/M3
SI0384	TO-15	SI0384-20	63RMBR-01-IA6	Ethanol	130	E	130	J	E	UG/M3
SI0384	TO-15	SI0384-5	63ADMIN-01-IA6	2-Propanol	38	E	38	J	E	UG/M3
SI0384	TO-15	SI0384-5	63ADMIN-01-IA6	Ethanol	310	E	310	J	E	UG/M3
SI0384	TO-15	SI0384-6	63RM073-01-IA6	Ethanol	220	E	220	J	E	UG/M3
SI0384	TO-15	SI0384-7	63RM080-01-IA6	Ethanol	160	E	160	J	E	UG/M3
SI0384	TO-15	SI0384-8	63RM604-01-IA6	2-Propanol	38	E	38	J	E	UG/M3
SI0384	TO-15	SI0384-8	63RM604-01-IA6	Ethanol	260	E	260	J	E	UG/M3
SI0384	TO-15	SI0384-9	63RM707-01-IA6	Ethanol	290	E	290	J	E	UG/M3
SI0384	TO-15	SI0384-1	63LYME-01-AA6	1,1,2-Trichloro-1,2,2-Trifluoroethane	0.6	J	0.6	J	RL	UG/M3
SI0384	TO-15	SI0384-1	63LYME-01-AA6	2-Butanone	0.18	J	0.18	J	RL	UG/M3
SI0384	TO-15	SI0384-1	63LYME-01-AA6	2-Propanol	0.42	J	0.42	J	RL	UG/M3
SI0384	TO-15	SI0384-1	63LYME-01-AA6	Carbon tetrachloride	0.51	J	0.51	J	RL	UG/M3
SI0384	TO-15	SI0384-1	63LYME-01-AA6	Chloroform	0.088	J	0.088	J	RL	UG/M3

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SI0384	TO-15	SI0384-1	63LYME-01-AA6	Cyclohexane	0.079	J	0.079	J	RL	UG/M3
SI0384	TO-15	SI0384-1	63LYME-01-AA6	Ethyl benzene	0.078	J	0.078	J	RL	UG/M3
SI0384	TO-15	SI0384-1	63LYME-01-AA6	Hexane	0.42	J	0.42	J	RL	UG/M3
SI0384	TO-15	SI0384-1	63LYME-01-AA6	Trichloroethene	0.35	J	0.35	J	RL	UG/M3
SI0384	TO-15	SI0384-1	63LYME-01-AA6	Xylene, o	0.1	J	0.1	J	RL	UG/M3
SI0384	TO-15	SI0384-1	63LYME-01-AA6	Xylenes (m&p)	0.51	J	0.51	J	RL	UG/M3
SI0384	TO-15	SI0384-10	63RM715-01-IA6	1,1,2-Trichloro-1,2,2-Trifluoroethane	0.6	J	0.6	J	RL	UG/M3
SI0384	TO-15	SI0384-10	63RM715-01-IA6	1,2,4-Trimethylbenzene	0.22	J	0.22	J	RL	UG/M3
SI0384	TO-15	SI0384-10	63RM715-01-IA6	2-Butanone	0.47	J	0.47	J	RL	UG/M3
SI0384	TO-15	SI0384-10	63RM715-01-IA6	4-Methyl-2-pentanone	0.2	J	0.2	J	RL	UG/M3
SI0384	TO-15	SI0384-10	63RM715-01-IA6	Carbon disulfide	0.075	J	0.075	J	RL	UG/M3
SI0384	TO-15	SI0384-10	63RM715-01-IA6	Carbon tetrachloride	0.52	J	0.52	J	RL	UG/M3
SI0384	TO-15	SI0384-10	63RM715-01-IA6	Chloroform	0.16	J	0.16	J	RL	UG/M3
SI0384	TO-15	SI0384-10	63RM715-01-IA6	Cyclohexane	0.23	J	0.23	J	RL	UG/M3
SI0384	TO-15	SI0384-10	63RM715-01-IA6	Ethyl benzene	0.12	J	0.12	J	RL	UG/M3
SI0384	TO-15	SI0384-10	63RM715-01-IA6	Hexane	0.42	J	0.42	J	RL	UG/M3
SI0384	TO-15	SI0384-10	63RM715-01-IA6	Styrene	0.12	J	0.12	J	RL	UG/M3
SI0384	TO-15	SI0384-10	63RM715-01-IA6	Xylene, o	0.14	J	0.14	J	RL	UG/M3
SI0384	TO-15	SI0384-10	63RM715-01-IA6	Xylenes (m&p)	0.69	J	0.69	J	RL	UG/M3
SI0384	TO-15	SI0384-11	63RM717-01-IA6	Carbon disulfide	0.12	J	0.12	J	RL	UG/M3
SI0384	TO-15	SI0384-11	63RM717-01-IA6	Chloroform	0.2	J	0.2	J	RL	UG/M3
SI0384	TO-15	SI0384-11	63RM717-01-IA6	Cyclohexane	0.25	J	0.25	J	RL	UG/M3
SI0384	TO-15	SI0384-11	63RM717-01-IA6	Ethyl benzene	0.36	J	0.36	J	RL	UG/M3
SI0384	TO-15	SI0384-11	63RM717-01-IA6	Styrene	0.19	J	0.19	J	RL	UG/M3
SI0384	TO-15	SI0384-11	63RM717-01-IA6	Tetrachloroethene	0.14	J	0.14	J	RL	UG/M3
SI0384	TO-15	SI0384-11	63RM717-01-IA6	trans-1,2-Dichloroethene	0.087	J	0.087	J	RL	UG/M3
SI0384	TO-15	SI0384-11	63RM717-01-IA6	Xylene, o	0.2	J	0.2	J	RL	UG/M3
SI0384	TO-15	SI0384-11	63RM717-01-IA6	Xylenes (m&p)	1	J	1	J	RL	UG/M3
SI0384	TO-15	SI0384-12	63RM717-01-IA6 DUP	1,2,4-Trimethylbenzene	0.29	J	0.29	J	RL	UG/M3
SI0384	TO-15	SI0384-12	63RM717-01-IA6 DUP	Chloroform	0.1	J	0.1	J	RL	UG/M3
SI0384	TO-15	SI0384-12	63RM717-01-IA6 DUP	Cyclohexane	0.12	J	0.12	J	RL	UG/M3
SI0384	TO-15	SI0384-12	63RM717-01-IA6 DUP	Ethyl benzene	0.2	J	0.2	J	RL	UG/M3
SI0384	TO-15	SI0384-12	63RM717-01-IA6 DUP	Styrene	0.19	J	0.19	J	RL	UG/M3
SI0384	TO-15	SI0384-12	63RM717-01-IA6 DUP	Tetrachloroethene	0.095	J	0.095	J	RL	UG/M3
SI0384	TO-15	SI0384-12	63RM717-01-IA6 DUP	Xylene, o	0.16	J	0.16	J	RL	UG/M3
SI0384	TO-15	SI0384-12	63RM717-01-IA6 DUP	Xylenes (m&p)	0.69	J	0.69	J	RL	UG/M3
SI0384	TO-15	SI0384-13	63RM721-01-IA6	1,1,2-Trichloro-1,2,2-Trifluoroethane	0.54	J	0.54	J	RL	UG/M3
SI0384	TO-15	SI0384-13	63RM721-01-IA6	1,2,4-Trimethylbenzene	0.26	J	0.26	J	RL	UG/M3
SI0384	TO-15	SI0384-13	63RM721-01-IA6	2-Butanone	0.44	J	0.44	J	RL	UG/M3

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SDG	Analysis Method	Lab Sample ID	Field Sample ID	Parameter Name	Lab Result	Lab Qual	Validated Result	Val Qual	Val Reason Code	Result Units
SI0384	TO-15	SI0384-13	63RM721-01-IA6	Carbon tetrachloride	0.53	J	0.53	J	RL	UG/M3
SI0384	TO-15	SI0384-13	63RM721-01-IA6	Chloroform	0.12	J	0.12	J	RL	UG/M3
SI0384	TO-15	SI0384-13	63RM721-01-IA6	Ethyl benzene	0.12	J	0.12	J	RL	UG/M3
SI0384	TO-15	SI0384-13	63RM721-01-IA6	Hexane	0.46	J	0.46	J	RL	UG/M3
SI0384	TO-15	SI0384-13	63RM721-01-IA6	Xylene, o	0.15	J	0.15	J	RL	UG/M3
SI0384	TO-15	SI0384-13	63RM721-01-IA6	Xylenes (m&p)	0.65	J	0.65	J	RL	UG/M3
SI0384	TO-15	SI0384-14	63RM726-01-IA6	1,1,2-Trichloro-1,2,2-Trifluoroethane	0.56	J	0.56	J	RL	UG/M3
SI0384	TO-15	SI0384-14	63RM726-01-IA6	2-Butanone	0.68	J	0.68	J	RL	UG/M3
SI0384	TO-15	SI0384-14	63RM726-01-IA6	Carbon disulfide	0.16	J	0.16	J	RL	UG/M3
SI0384	TO-15	SI0384-14	63RM726-01-IA6	Carbon tetrachloride	0.53	J	0.53	J	RL	UG/M3
SI0384	TO-15	SI0384-14	63RM726-01-IA6	Chloroform	0.12	J	0.12	J	RL	UG/M3
SI0384	TO-15	SI0384-14	63RM726-01-IA6	Cyclohexane	0.13	J	0.13	J	RL	UG/M3
SI0384	TO-15	SI0384-14	63RM726-01-IA6	Ethyl benzene	0.16	J	0.16	J	RL	UG/M3
SI0384	TO-15	SI0384-14	63RM726-01-IA6	Hexane	0.46	J	0.46	J	RL	UG/M3
SI0384	TO-15	SI0384-14	63RM726-01-IA6	Styrene	0.2	J	0.2	J	RL	UG/M3
SI0384	TO-15	SI0384-14	63RM726-01-IA6	Trichloroethene	0.48	J	0.48	J	RL	UG/M3
SI0384	TO-15	SI0384-14	63RM726-01-IA6	Xylene, o	0.23	J	0.23	J	RL	UG/M3
SI0384	TO-15	SI0384-14	63RM726-01-IA6	Xylenes (m&p)	0.95	J	0.95	J	RL	UG/M3
SI0384	TO-15	SI0384-15	63RM727C-01-IA6	1,1,2-Trichloro-1,2,2-Trifluoroethane	0.56	J	0.56	J	RL	UG/M3
SI0384	TO-15	SI0384-15	63RM727C-01-IA6	1,2,4-Trimethylbenzene	0.31	J	0.31	J	RL	UG/M3
SI0384	TO-15	SI0384-15	63RM727C-01-IA6	2-Butanone	0.68	J	0.68	J	RL	UG/M3
SI0384	TO-15	SI0384-15	63RM727C-01-IA6	4-Ethyltoluene	0.093	J	0.093	J	RL	UG/M3
SI0384	TO-15	SI0384-15	63RM727C-01-IA6	4-Methyl-2-pentanone	0.38	J	0.38	J	RL	UG/M3
SI0384	TO-15	SI0384-15	63RM727C-01-IA6	Carbon disulfide	0.26	J	0.26	J	RL	UG/M3
SI0384	TO-15	SI0384-15	63RM727C-01-IA6	Carbon tetrachloride	0.53	J	0.53	J	RL	UG/M3
SI0384	TO-15	SI0384-15	63RM727C-01-IA6	Chloroform	0.28	J	0.28	J	RL	UG/M3
SI0384	TO-15	SI0384-15	63RM727C-01-IA6	Ethyl benzene	0.31	J	0.31	J	RL	UG/M3
SI0384	TO-15	SI0384-15	63RM727C-01-IA6	Hexane	0.63	J	0.63	J	RL	UG/M3
SI0384	TO-15	SI0384-15	63RM727C-01-IA6	Styrene	0.25	J	0.25	J	RL	UG/M3
SI0384	TO-15	SI0384-15	63RM727C-01-IA6	Trichloroethene	0.37	J	0.37	J	RL	UG/M3
SI0384	TO-15	SI0384-15	63RM727C-01-IA6	Xylene, o	0.32	J	0.32	J	RL	UG/M3
SI0384	TO-15	SI0384-16	63RM727I-01-IA6	1,1,2-Trichloro-1,2,2-Trifluoroethane	0.52	J	0.52	J	RL	UG/M3
SI0384	TO-15	SI0384-16	63RM727I-01-IA6	1,2,4-Trimethylbenzene	0.27	J	0.27	J	RL	UG/M3
SI0384	TO-15	SI0384-16	63RM727I-01-IA6	2-Butanone	0.32	J	0.32	J	RL	UG/M3
SI0384	TO-15	SI0384-16	63RM727I-01-IA6	Carbon disulfide	0.13	J	0.13	J	RL	UG/M3
SI0384	TO-15	SI0384-16	63RM727I-01-IA6	Carbon tetrachloride	0.52	J	0.52	J	RL	UG/M3
SI0384	TO-15	SI0384-16	63RM727I-01-IA6	Chloroform	0.1	J	0.1	J	RL	UG/M3
SI0384	TO-15	SI0384-16	63RM727I-01-IA6	Cyclohexane	0.12	J	0.12	J	RL	UG/M3
SI0384	TO-15	SI0384-16	63RM727I-01-IA6	Ethyl benzene	0.1	J	0.1	J	RL	UG/M3

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SDG	Analysis Method	Lab Sample ID	Field Sample ID	Parameter Name	Lab Result	Lab Qual	Validated Result	Val Qual	Val Reason Code	Result Units
SI0384	TO-15	SI0384-16	63RM7271-01-IA6	Heptane	0.21	J	0.21	J	RL	UG/M3
SI0384	TO-15	SI0384-16	63RM7271-01-IA6	Hexane	0.46	J	0.46	J	RL	UG/M3
SI0384	TO-15	SI0384-16	63RM7271-01-IA6	Trichloroethene	0.28	J	0.28	J	RL	UG/M3
SI0384	TO-15	SI0384-16	63RM7271-01-IA6	Xylene, o	0.12	J	0.12	J	RL	UG/M3
SI0384	TO-15	SI0384-16	63RM7271-01-IA6	Xylenes (m&p)	0.55	J	0.55	J	RL	UG/M3
SI0384	TO-15	SI0384-17	63RM728-01-IA6	1,1,1-Trichloroethane	0.15	J	0.15	J	RL	UG/M3
SI0384	TO-15	SI0384-17	63RM728-01-IA6	1,1,2-Trichloro-1,2,2-Trifluoroethane	0.55	J	0.55	J	RL	UG/M3
SI0384	TO-15	SI0384-17	63RM728-01-IA6	1,2,4-Trimethylbenzene	0.22	J	0.22	J	RL	UG/M3
SI0384	TO-15	SI0384-17	63RM728-01-IA6	Carbon disulfide	0.13	J	0.13	J	RL	UG/M3
SI0384	TO-15	SI0384-17	63RM728-01-IA6	Cyclohexane	0.18	J	0.18	J	RL	UG/M3
SI0384	TO-15	SI0384-17	63RM728-01-IA6	Ethyl benzene	0.42	J	0.42	J	RL	UG/M3
SI0384	TO-15	SI0384-17	63RM728-01-IA6	Hexane	0.6	J	0.6	J	RL	UG/M3
SI0384	TO-15	SI0384-17	63RM728-01-IA6	Styrene	0.2	J	0.2	J	RL	UG/M3
SI0384	TO-15	SI0384-17	63RM728-01-IA6	Tetrahydrofuran	0.32	J	0.32	J	RL	UG/M3
SI0384	TO-15	SI0384-18	63RM800-01-IA6	1,1,2-Trichloro-1,2,2-Trifluoroethane	0.57	J	0.57	J	RL	UG/M3
SI0384	TO-15	SI0384-18	63RM800-01-IA6	1,2,4-Trimethylbenzene	0.13	J	0.13	J	RL	UG/M3
SI0384	TO-15	SI0384-18	63RM800-01-IA6	2-Butanone	0.38	J	0.38	J	RL	UG/M3
SI0384	TO-15	SI0384-18	63RM800-01-IA6	Carbon tetrachloride	0.53	J	0.53	J	RL	UG/M3
SI0384	TO-15	SI0384-18	63RM800-01-IA6	Chloroform	0.12	J	0.12	J	RL	UG/M3
SI0384	TO-15	SI0384-18	63RM800-01-IA6	Ethyl benzene	0.12	J	0.12	J	RL	UG/M3
SI0384	TO-15	SI0384-18	63RM800-01-IA6	Hexane	0.56	J	0.56	J	RL	UG/M3
SI0384	TO-15	SI0384-18	63RM800-01-IA6	Styrene	0.081	J	0.081	J	RL	UG/M3
SI0384	TO-15	SI0384-18	63RM800-01-IA6	Trichloroethene	0.53	J	0.53	J	RL	UG/M3
SI0384	TO-15	SI0384-18	63RM800-01-IA6	Xylene, o	0.12	J	0.12	J	RL	UG/M3
SI0384	TO-15	SI0384-18	63RM800-01-IA6	Xylenes (m&p)	0.62	J	0.62	J	RL	UG/M3
SI0384	TO-15	SI0384-19	63RM807-01-IA6	1,1,2-Trichloro-1,2,2-Trifluoroethane	0.6	J	0.6	J	RL	UG/M3
SI0384	TO-15	SI0384-19	63RM807-01-IA6	1,2,4-Trimethylbenzene	0.21	J	0.21	J	RL	UG/M3
SI0384	TO-15	SI0384-19	63RM807-01-IA6	2-Butanone	0.44	J	0.44	J	RL	UG/M3
SI0384	TO-15	SI0384-19	63RM807-01-IA6	4-Methyl-2-pentanone	0.34	J	0.34	J	RL	UG/M3
SI0384	TO-15	SI0384-19	63RM807-01-IA6	Carbon tetrachloride	0.55	J	0.55	J	RL	UG/M3
SI0384	TO-15	SI0384-19	63RM807-01-IA6	Chloroform	0.12	J	0.12	J	RL	UG/M3
SI0384	TO-15	SI0384-19	63RM807-01-IA6	Ethyl benzene	0.1	J	0.1	J	RL	UG/M3
SI0384	TO-15	SI0384-19	63RM807-01-IA6	Hexane	0.42	J	0.42	J	RL	UG/M3
SI0384	TO-15	SI0384-19	63RM807-01-IA6	Xylene, o	0.12	J	0.12	J	RL	UG/M3
SI0384	TO-15	SI0384-19	63RM807-01-IA6	Xylenes (m&p)	0.52	J	0.52	J	RL	UG/M3
SI0384	TO-15	SI0384-2	63LYME-02-AA6	1,1,2-Trichloro-1,2,2-Trifluoroethane	0.56	J	0.56	J	RL	UG/M3
SI0384	TO-15	SI0384-2	63LYME-02-AA6	1,2,4-Trimethylbenzene	0.21	J	0.21	J	RL	UG/M3
SI0384	TO-15	SI0384-2	63LYME-02-AA6	1,4-Dichlorobenzene	0.18	J	0.18	J	RL	UG/M3
SI0384	TO-15	SI0384-2	63LYME-02-AA6	2-Propanol	0.49	J	0.49	J	RL	UG/M3

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SI0384	TO-15	SI0384-2	63LYME-02-AA6	Benzyl chloride	0.14	J	0.14	J	RL	UG/M3
SI0384	TO-15	SI0384-2	63LYME-02-AA6	Carbon tetrachloride	0.53	J	0.53	J	RL	UG/M3
SI0384	TO-15	SI0384-2	63LYME-02-AA6	Chloroform	0.083	J	0.083	J	RL	UG/M3
SI0384	TO-15	SI0384-2	63LYME-02-AA6	Cyclohexane	0.082	J	0.082	J	RL	UG/M3
SI0384	TO-15	SI0384-2	63LYME-02-AA6	Ethyl benzene	0.087	J	0.087	J	RL	UG/M3
SI0384	TO-15	SI0384-2	63LYME-02-AA6	Heptane	0.18	J	0.18	J	RL	UG/M3
SI0384	TO-15	SI0384-2	63LYME-02-AA6	Hexane	0.39	J	0.39	J	RL	UG/M3
SI0384	TO-15	SI0384-2	63LYME-02-AA6	Methylene chloride	0.76	J	0.76	J	RL	UG/M3
SI0384	TO-15	SI0384-2	63LYME-02-AA6	Xylene, o	0.12	J	0.12	J	RL	UG/M3
SI0384	TO-15	SI0384-2	63LYME-02-AA6	Xylenes (m&p)	0.57	J	0.57	J	RL	UG/M3
SI0384	TO-15	SI0384-20	63RMBR-01-IA6	1,1,2-Trichloro-1,2,2-Trifluoroethane	0.57	J	0.57	J	RL	UG/M3
SI0384	TO-15	SI0384-20	63RMBR-01-IA6	2-Butanone	0.32	J	0.32	J	RL	UG/M3
SI0384	TO-15	SI0384-20	63RMBR-01-IA6	Carbon tetrachloride	0.53	J	0.53	J	RL	UG/M3
SI0384	TO-15	SI0384-20	63RMBR-01-IA6	Chloroform	0.13	J	0.13	J	RL	UG/M3
SI0384	TO-15	SI0384-20	63RMBR-01-IA6	Cyclohexane	0.12	J	0.12	J	RL	UG/M3
SI0384	TO-15	SI0384-20	63RMBR-01-IA6	Ethyl benzene	0.11	J	0.11	J	RL	UG/M3
SI0384	TO-15	SI0384-20	63RMBR-01-IA6	Hexane	0.67	J	0.67	J	RL	UG/M3
SI0384	TO-15	SI0384-20	63RMBR-01-IA6	Styrene	0.14	J	0.14	J	RL	UG/M3
SI0384	TO-15	SI0384-20	63RMBR-01-IA6	Xylene, o	0.18	J	0.18	J	RL	UG/M3
SI0384	TO-15	SI0384-20	63RMBR-01-IA6	Xylenes (m&p)	0.79	J	0.79	J	RL	UG/M3
SI0384	TO-15	SI0384-3	63LYME-03-AA6	1,1,2-Trichloro-1,2,2-Trifluoroethane	0.6	J	0.6	J	RL	UG/M3
SI0384	TO-15	SI0384-3	63LYME-03-AA6	1,2,4-Trimethylbenzene	0.18	J	0.18	J	RL	UG/M3
SI0384	TO-15	SI0384-3	63LYME-03-AA6	2-Butanone	0.17	J	0.17	J	RL	UG/M3
SI0384	TO-15	SI0384-3	63LYME-03-AA6	Chloroform	0.088	J	0.088	J	RL	UG/M3
SI0384	TO-15	SI0384-3	63LYME-03-AA6	Cyclohexane	0.096	J	0.096	J	RL	UG/M3
SI0384	TO-15	SI0384-3	63LYME-03-AA6	Ethyl benzene	0.091	J	0.091	J	RL	UG/M3
SI0384	TO-15	SI0384-3	63LYME-03-AA6	Heptane	0.2	J	0.2	J	RL	UG/M3
SI0384	TO-15	SI0384-3	63LYME-03-AA6	Hexane	0.39	J	0.39	J	RL	UG/M3
SI0384	TO-15	SI0384-3	63LYME-03-AA6	Xylene, o	0.12	J	0.12	J	RL	UG/M3
SI0384	TO-15	SI0384-3	63LYME-03-AA6	Xylenes (m&p)	0.56	J	0.56	J	RL	UG/M3
SI0384	TO-15	SI0384-4	63LYME-04-AA6	1,1,2-Trichloro-1,2,2-Trifluoroethane	0.57	J	0.57	J	RL	UG/M3
SI0384	TO-15	SI0384-4	63LYME-04-AA6	1,2,4-Trimethylbenzene	0.15	J	0.15	J	RL	UG/M3
SI0384	TO-15	SI0384-4	63LYME-04-AA6	2-Butanone	0.24	J	0.24	J	RL	UG/M3
SI0384	TO-15	SI0384-4	63LYME-04-AA6	2-Propanol	0.44	J	0.44	J	RL	UG/M3
SI0384	TO-15	SI0384-4	63LYME-04-AA6	Carbon tetrachloride	0.54	J	0.54	J	RL	UG/M3
SI0384	TO-15	SI0384-4	63LYME-04-AA6	Chloroform	0.11	J	0.11	J	RL	UG/M3
SI0384	TO-15	SI0384-4	63LYME-04-AA6	Cyclohexane	0.089	J	0.089	J	RL	UG/M3
SI0384	TO-15	SI0384-4	63LYME-04-AA6	Ethyl benzene	0.087	J	0.087	J	RL	UG/M3
SI0384	TO-15	SI0384-4	63LYME-04-AA6	Hexane	0.42	J	0.42	J	RL	UG/M3

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SDG	Analysis Method	Lab Sample ID	Field Sample ID	Parameter Name	Lab Result	Lab Qual	Validated Result	Val Qual	Val Reason Code	Result Units
SI0384	TO-15	SI0384-4	63LYME-04-AA6	Xylene, o	0.12	J	0.12	J	RL	UG/M3
SI0384	TO-15	SI0384-4	63LYME-04-AA6	Xylenes (m&p)	0.51	J	0.51	J	RL	UG/M3
SI0384	TO-15	SI0384-5	63ADMIN-01-IA6	1,1,2-Trichloro-1,2,2-Trifluoroethane	0.55	J	0.55	J	RL	UG/M3
SI0384	TO-15	SI0384-5	63ADMIN-01-IA6	1,2,4-Trimethylbenzene	0.36	J	0.36	J	RL	UG/M3
SI0384	TO-15	SI0384-5	63ADMIN-01-IA6	2-Butanone	0.68	J	0.68	J	RL	UG/M3
SI0384	TO-15	SI0384-5	63ADMIN-01-IA6	4-Ethyltoluene	0.11	J	0.11	J	RL	UG/M3
SI0384	TO-15	SI0384-5	63ADMIN-01-IA6	Carbon disulfide	0.12	J	0.12	J	RL	UG/M3
SI0384	TO-15	SI0384-5	63ADMIN-01-IA6	Carbon tetrachloride	0.52	J	0.52	J	RL	UG/M3
SI0384	TO-15	SI0384-5	63ADMIN-01-IA6	Chloroform	0.14	J	0.14	J	RL	UG/M3
SI0384	TO-15	SI0384-5	63ADMIN-01-IA6	Cyclohexane	0.21	J	0.21	J	RL	UG/M3
SI0384	TO-15	SI0384-5	63ADMIN-01-IA6	Ethyl benzene	0.2	J	0.2	J	RL	UG/M3
SI0384	TO-15	SI0384-5	63ADMIN-01-IA6	Hexane	0.39	J	0.39	J	RL	UG/M3
SI0384	TO-15	SI0384-5	63ADMIN-01-IA6	Styrene	0.22	J	0.22	J	RL	UG/M3
SI0384	TO-15	SI0384-5	63ADMIN-01-IA6	Trichloroethene	0.5	J	0.5	J	RL	UG/M3
SI0384	TO-15	SI0384-5	63ADMIN-01-IA6	Xylene, o	0.2	J	0.2	J	RL	UG/M3
SI0384	TO-15	SI0384-5	63ADMIN-01-IA6	Xylenes (m&p)	0.95	J	0.95	J	RL	UG/M3
SI0384	TO-15	SI0384-6	63RM073-01-IA6	1,1,2-Trichloro-1,2,2-Trifluoroethane	0.56	J	0.56	J	RL	UG/M3
SI0384	TO-15	SI0384-6	63RM073-01-IA6	1,2,4-Trimethylbenzene	0.21	J	0.21	J	RL	UG/M3
SI0384	TO-15	SI0384-6	63RM073-01-IA6	2-Butanone	0.56	J	0.56	J	RL	UG/M3
SI0384	TO-15	SI0384-6	63RM073-01-IA6	4-Ethyltoluene	0.074	J	0.074	J	RL	UG/M3
SI0384	TO-15	SI0384-6	63RM073-01-IA6	4-Methyl-2-pentanone	0.33	J	0.33	J	RL	UG/M3
SI0384	TO-15	SI0384-6	63RM073-01-IA6	Carbon disulfide	0.087	J	0.087	J	RL	UG/M3
SI0384	TO-15	SI0384-6	63RM073-01-IA6	Carbon tetrachloride	0.52	J	0.52	J	RL	UG/M3
SI0384	TO-15	SI0384-6	63RM073-01-IA6	Chloroform	0.32	J	0.32	J	RL	UG/M3
SI0384	TO-15	SI0384-6	63RM073-01-IA6	Cyclohexane	0.16	J	0.16	J	RL	UG/M3
SI0384	TO-15	SI0384-6	63RM073-01-IA6	Ethyl benzene	0.12	J	0.12	J	RL	UG/M3
SI0384	TO-15	SI0384-6	63RM073-01-IA6	Hexane	0.39	J	0.39	J	RL	UG/M3
SI0384	TO-15	SI0384-6	63RM073-01-IA6	Methylene chloride	0.83	J	0.83	J	RL	UG/M3
SI0384	TO-15	SI0384-6	63RM073-01-IA6	Styrene	0.15	J	0.15	J	RL	UG/M3
SI0384	TO-15	SI0384-6	63RM073-01-IA6	Trichloroethene	0.45	J	0.45	J	RL	UG/M3
SI0384	TO-15	SI0384-6	63RM073-01-IA6	Xylene, o	0.17	J	0.17	J	RL	UG/M3
SI0384	TO-15	SI0384-6	63RM073-01-IA6	Xylenes (m&p)	0.72	J	0.72	J	RL	UG/M3
SI0384	TO-15	SI0384-7	63RM080-01-IA6	1,1,2-Trichloro-1,2,2-Trifluoroethane	0.58	J	0.58	J	RL	UG/M3
SI0384	TO-15	SI0384-7	63RM080-01-IA6	1,2,4-Trimethylbenzene	0.39	J	0.39	J	RL	UG/M3
SI0384	TO-15	SI0384-7	63RM080-01-IA6	4-Ethyltoluene	0.079	J	0.079	J	RL	UG/M3
SI0384	TO-15	SI0384-7	63RM080-01-IA6	Carbon disulfide	0.096	J	0.096	J	RL	UG/M3
SI0384	TO-15	SI0384-7	63RM080-01-IA6	Carbon tetrachloride	0.49	J	0.49	J	RL	UG/M3
SI0384	TO-15	SI0384-7	63RM080-01-IA6	Chloroform	0.27	J	0.27	J	RL	UG/M3
SI0384	TO-15	SI0384-7	63RM080-01-IA6	Hexane	0.7	J	0.7	J	RL	UG/M3

Table 3 - Validation Actions Summary
 Data Validation Report
 January 19, 2015 Air Samples Frances C. Richmond Middle School
 Cold Regions Research and Engineering Laboratory
 Hanover, New Hampshire

SDG	Analysis Method	Lab Sample ID	Field Sample ID	Parameter Name	Lab Result	Lab Qual	Validated Result	Val Qual	Val Reason Code	Result Units
SI0384	TO-15	SI0384-7	63RM080-01-IA6	Styrene	0.37	J	0.37	J	RL	UG/M3
SI0384	TO-15	SI0384-7	63RM080-01-IA6	Tetrachloroethene	0.088	J	0.088	J	RL	UG/M3
SI0384	TO-15	SI0384-7	63RM080-01-IA6	Trichloroethene	0.35	J	0.35	J	RL	UG/M3
SI0384	TO-15	SI0384-8	63RM604-01-IA6	1,1,2-Trichloro-1,2,2-Trifluoroethane	0.55	J	0.55	J	RL	UG/M3
SI0384	TO-15	SI0384-8	63RM604-01-IA6	1,2,4-Trimethylbenzene	0.28	J	0.28	J	RL	UG/M3
SI0384	TO-15	SI0384-8	63RM604-01-IA6	2-Butanone	0.65	J	0.65	J	RL	UG/M3
SI0384	TO-15	SI0384-8	63RM604-01-IA6	Carbon disulfide	0.14	J	0.14	J	RL	UG/M3
SI0384	TO-15	SI0384-8	63RM604-01-IA6	Carbon tetrachloride	0.55	J	0.55	J	RL	UG/M3
SI0384	TO-15	SI0384-8	63RM604-01-IA6	Chloroform	0.16	J	0.16	J	RL	UG/M3
SI0384	TO-15	SI0384-8	63RM604-01-IA6	Ethyl benzene	0.16	J	0.16	J	RL	UG/M3
SI0384	TO-15	SI0384-8	63RM604-01-IA6	Hexane	0.46	J	0.46	J	RL	UG/M3
SI0384	TO-15	SI0384-8	63RM604-01-IA6	Styrene	0.21	J	0.21	J	RL	UG/M3
SI0384	TO-15	SI0384-8	63RM604-01-IA6	Trichloroethene	0.35	J	0.35	J	RL	UG/M3
SI0384	TO-15	SI0384-8	63RM604-01-IA6	Xylene, o	0.16	J	0.16	J	RL	UG/M3
SI0384	TO-15	SI0384-8	63RM604-01-IA6	Xylenes (m&p)	0.8	J	0.8	J	RL	UG/M3
SI0384	TO-15	SI0384-9	63RM707-01-IA6	1,1,2-Trichloro-1,2,2-Trifluoroethane	0.59	J	0.59	J	RL	UG/M3
SI0384	TO-15	SI0384-9	63RM707-01-IA6	1,2,4-Trimethylbenzene	0.18	J	0.18	J	RL	UG/M3
SI0384	TO-15	SI0384-9	63RM707-01-IA6	2-Butanone	0.5	J	0.5	J	RL	UG/M3
SI0384	TO-15	SI0384-9	63RM707-01-IA6	Carbon tetrachloride	0.55	J	0.55	J	RL	UG/M3
SI0384	TO-15	SI0384-9	63RM707-01-IA6	Chloroform	0.12	J	0.12	J	RL	UG/M3
SI0384	TO-15	SI0384-9	63RM707-01-IA6	Ethyl benzene	0.11	J	0.11	J	RL	UG/M3
SI0384	TO-15	SI0384-9	63RM707-01-IA6	Hexane	0.49	J	0.49	J	RL	UG/M3
SI0384	TO-15	SI0384-9	63RM707-01-IA6	Styrene	0.06	J	0.06	J	RL	UG/M3
SI0384	TO-15	SI0384-9	63RM707-01-IA6	Tetrachloroethene	0.12	J	0.12	J	RL	UG/M3
SI0384	TO-15	SI0384-9	63RM707-01-IA6	Trichloroethene	0.51	J	0.51	J	RL	UG/M3
SI0384	TO-15	SI0384-9	63RM707-01-IA6	Xylene, o	0.14	J	0.14	J	RL	UG/M3
SI0384	TO-15	SI0384-9	63RM707-01-IA6	Xylenes (m&p)	0.71	J	0.71	J	RL	UG/M3

Units:

ug/m3 = microgram per cubic meter

Validation Qualifier:

U = not detected above the reported concentration
 UJ = not detected above the reported concentration and is estimated
 J = value is estimated

Validation Reason Codes:

BL1 = Method blank qualifier
 ICVRSD = Initial calibration RSD
 CCV%D = Continuing calibration percent difference
 LCS-H = Laboratory Control Sample recovery high
 FD = Field duplicate limit exceeded
 E = Result exceeds calibration range
 RL = Value reported above the MDL but below the laboratory reporting limit

Table 2 - Final Sample Results
 Data Validation Report
 January 19, 2015 Air Samples Frances C. Richmond Middle School
 Cold Regions Research and Engineering Laboratory
 Hanover, New Hampshire

Sample Delivery Group			SI0384		SI0384		SI0384		SI0384		SI03
Location			63ADMIN-01		63LYME-01		63LYME-02		63LYME-03		63LYM
Sample Date			1/19/2015		1/19/2015		1/19/2015		1/19/2015		1/19/2
Sample ID			63ADMIN-01-IA6		63LYME-01-AA6		63LYME-02-AA6		63LYME-03-AA6		63LYME-
QC Code			FS		FS		FS		FS		FS
Units			Result Qualifier		Result Qualifier		Result Qualifier		Result Qualifier		Result
Analysis	Parameter										
TO-15	Chlorodibromomethane	UG/M3	0.42	U	0.42	U	0.42	U	0.42	U	0.42
TO-15	Chloroethane	UG/M3	0.13	U	0.13	U	0.13	U	0.13	U	0.13
TO-15	Chloroform	UG/M3	0.14	J	0.088	J	0.083	J	0.088	J	0.11
TO-15	Chloromethane	UG/M3	0.1	U	1.3	J	1.2	J	1.4	J	1.4
TO-15	Cis-1,2-Dichloroethene	UG/M3	0.2	U	0.2	U	0.2	U	0.2	U	0.2
TO-15	Cis-1,3-Dichloropropene	UG/M3	0.23	U	0.23	U	0.23	U	0.23	U	0.23
TO-15	Cyclohexane	UG/M3	0.21	J	0.079	J	0.082	J	0.096	J	0.089
TO-15	Dichlorodifluoromethane	UG/M3	2.8		2.8		2.6		2.8		2.8
TO-15	Ethanol	UG/M3	310	J	2.3		2.3		3.4		2.6
TO-15	Ethyl benzene	UG/M3	0.2	J	0.078	J	0.087	J	0.091	J	0.087
TO-15	Heptane	UG/M3	2.7		0.41	J	0.18	J	0.2	J	0.45
TO-15	Hexachlorobutadiene	UG/M3	0.53	U	0.53	U	0.53	U	0.53	U	0.53
TO-15	Hexane	UG/M3	0.39	J	0.42	J	0.39	J	0.39	J	0.42
TO-15	Methyl Tertbutyl Ether	UG/M3	0.18	U	0.18	U	0.18	U	0.18	U	0.18
TO-15	Methylene chloride	UG/M3	0.94		0.87	J	0.76	J	0.94		0.9
TO-15	Propylene	UG/M3	0.17	U	0.17	U	0.17	U	0.17	U	0.17
TO-15	Styrene	UG/M3	0.22	J	0.21	U	0.21	U	0.21	U	0.21
TO-15	Tetrachloroethene	UG/M3	0.34	U	0.34	U	0.34	U	0.34	U	0.34
TO-15	Tetrahydrofuran	UG/M3	0.15	U	0.15	U	0.15	U	0.15	U	0.15
TO-15	Toluene	UG/M3	1.8		0.68		0.64		0.72		0.64
TO-15	trans-1,2-Dichloroethene	UG/M3	0.2	U	0.2	U	0.2	U	0.2	U	0.2
TO-15	trans-1,3-Dichloropropene	UG/M3	0.23	U	0.23	U	0.23	U	0.23	U	0.23
TO-15	Trichloroethene	UG/M3	0.5	J	0.35	J	0.54	J	58		1.2
TO-15	Trichlorofluoromethane	UG/M3	1.7		1.6		1.6		2		1.8
TO-15	Vinyl acetate	UG/M3	0.18	U	0.18	U	0.18	U	0.18	U	0.18
TO-15	Vinyl chloride	UG/M3	0.13	U	0.13	U	0.13	U	0.13	U	0.13
TO-15	Xylene, o	UG/M3	0.2	J	0.1	J	0.12	J	0.12	J	0.12
TO-15	Xylenes (m&p)	UG/M3	0.95	J	0.51	J	0.57	J	0.56	J	0.51

Table 2 - Final Sample Results
 Data Validation Report
 January 19, 2015 Air Samples Frances C. Richmond Middle School
 Cold Regions Research and Engineering Laboratory
 Hanover, New Hampshire

Sample Delivery Group 84				SI0384		SI0384		SI0384		SI0384	
Location IE-04				63RM073-01		63RM080-01		63RM604-01		63RM707-01	
Sample Date 1/19/2015				1/19/2015		1/19/2015		1/19/2015		1/19/2015	
Sample ID 04-AA6				63RM073-01-IA6		63RM080-01-IA6		63RM604-01-IA6		63RM707-01-IA6	
QC Code 3				FS		FS		FS		FS	
Analysis	Parameter	Units	Qualifier	Result	Qualifier	Result	Qualifier	Result	Qualifier	Result	Qualifier
TO-15	1,1,1-Trichloroethane	UG/M3	U	0.27	U	0.27	U	0.27	U	0.27	U
TO-15	1,1,2,2-Tetrachloroethane	UG/M3	U	0.34	U	0.34	U	0.34	U	0.34	U
TO-15	1,1,2-Trichloro-1,2,2-Trifluoroethane	UG/M3	J	0.56	J	0.58	J	0.55	J	0.59	J
TO-15	1,1,2-Trichloroethane	UG/M3	U	0.27	U	0.27	U	0.27	U	0.27	U
TO-15	1,1-Dichloroethane	UG/M3	U	0.2	U	0.2	U	0.2	U	0.2	U
TO-15	1,1-Dichloroethene	UG/M3	U	0.2	U	0.2	U	0.2	U	0.2	U
TO-15	1,2,4-Trichlorobenzene	UG/M3	UJ	0.37	UJ	0.37	UJ	0.37	UJ	0.37	UJ
TO-15	1,2,4-Trimethylbenzene	UG/M3	J	0.21	J	0.39	J	0.28	J	0.18	J
TO-15	1,2-Dibromoethane	UG/M3	U	0.38	U	0.38	U	0.38	U	0.38	U
TO-15	1,2-Dichloro-1,1,2,2-tetrafluoroethane	UG/M3	U	0.35	U	0.35	U	0.35	U	0.35	U
TO-15	1,2-Dichlorobenzene	UG/M3	U	0.3	U	0.3	U	0.3	U	0.3	U
TO-15	1,2-Dichloroethane	UG/M3	U	0.2	U	0.2	U	0.2	U	0.2	U
TO-15	1,2-Dichloropropane	UG/M3	U	0.23	U	0.23	U	0.23	U	0.23	U
TO-15	1,3,5-Trimethylbenzene	UG/M3	U	0.24	U	0.24	U	0.24	U	0.24	U
TO-15	1,3-Butadiene	UG/M3	U	0.11	U	0.11	U	0.11	U	0.11	U
TO-15	1,3-Dichlorobenzene	UG/M3	U	0.3	U	0.3	U	0.3	U	0.3	U
TO-15	1,4-Dichlorobenzene	UG/M3	U	0.3	U	0.3	U	0.3	U	0.3	U
TO-15	2-Butanone	UG/M3	J	0.56	J	0.74	J	0.65	J	0.5	J
TO-15	2-Hexanone	UG/M3	U	0.2	U	0.2	U	0.2	U	0.2	U
TO-15	2-Propanol	UG/M3	J	33		28		38	J	0.24	U
TO-15	4-Ethyltoluene	UG/M3	U	0.074	J	0.079	J	0.24	U	0.24	U
TO-15	4-Methyl-2-pentanone	UG/M3	U	0.33	J	0.2	U	0.86		0.2	U
TO-15	Acetone	UG/M3		19		21		19		11	
TO-15	Benzene	UG/M3		0.8		0.86		0.89		0.83	
TO-15	Benzyl chloride	UG/M3	U	0.26	U	0.26	U	0.26	U	0.26	U
TO-15	Bromodichloromethane	UG/M3	U	0.33	U	0.33	U	0.33	U	0.33	U
TO-15	Bromoform	UG/M3	U	0.52	U	0.52	U	0.52	U	0.52	U
TO-15	Bromomethane	UG/M3	U	0.19	U	0.19	U	0.19	U	0.19	U
TO-15	Carbon disulfide	UG/M3	U	0.087	J	0.096	J	0.14	J	0.16	U
TO-15	Carbon tetrachloride	UG/M3	J	0.52	J	0.49	J	0.55	J	0.55	J
TO-15	Chlorobenzene	UG/M3	U	0.23	U	0.23	U	0.23	U	0.23	U

Table 2 - Final Sample Results
 Data Validation Report
 January 19, 2015 Air Samples Frances C. Richmond Middle School
 Cold Regions Research and Engineering Laboratory
 Hanover, New Hampshire

Sample Delivery Group 84				SI0384		SI0384		SI0384		SI0384	
Location IE-04				63RM073-01		63RM080-01		63RM604-01		63RM707-01	
Sample Date 1/15/2015				1/19/2015		1/19/2015		1/19/2015		1/19/2015	
Sample ID 04-AA6				63RM073-01-IA6		63RM080-01-IA6		63RM604-01-IA6		63RM707-01-IA6	
QC Code 3				FS		FS		FS		FS	
Analysis	Parameter	Units	Qualifier	Result	Qualifier	Result	Qualifier	Result	Qualifier	Result	Qualifier
TO-15	Chlorodibromomethane	UG/M3	U	0.42	U	0.42	U	0.42	U	0.42	U
TO-15	Chloroethane	UG/M3	U	0.13	U	0.13	U	0.13	U	0.13	U
TO-15	Chloroform	UG/M3	J	0.32	J	0.27	J	0.16	J	0.12	J
TO-15	Chloromethane	UG/M3	J	0.1	U	1.7	J	0.1	U	1.4	J
TO-15	Cis-1,2-Dichloroethene	UG/M3	U	0.2	U	0.2	U	0.2	U	0.2	U
TO-15	Cis-1,3-Dichloropropene	UG/M3	U	0.23	U	0.23	U	0.23	U	0.23	U
TO-15	Cyclohexane	UG/M3	J	0.16	J	0.17	U	0.17	U	0.17	U
TO-15	Dichlorodifluoromethane	UG/M3		2.6		2.7		2.8		2.8	
TO-15	Ethanol	UG/M3		220	J	160	J	260	J	290	J
TO-15	Ethyl benzene	UG/M3	J	0.12	J	0.69		0.16	J	0.11	J
TO-15	Heptane	UG/M3		2.4		1.4		1.1		2.9	
TO-15	Hexachlorobutadiene	UG/M3	U	0.53	U	0.53	U	0.53	U	0.53	U
TO-15	Hexane	UG/M3	J	0.39	J	0.7	J	0.46	J	0.49	J
TO-15	Methyl Tertbutyl Ether	UG/M3	U	0.18	U	0.18	U	0.18	U	0.18	U
TO-15	Methylene chloride	UG/M3		0.83	J	1.1		1.1		1	
TO-15	Propylene	UG/M3	U	0.17	U	0.17	U	0.17	U	0.17	U
TO-15	Styrene	UG/M3	U	0.15	J	0.37	J	0.21	J	0.06	J
TO-15	Tetrachloroethene	UG/M3	U	0.34	U	0.088	J	0.34	U	0.12	J
TO-15	Tetrahydrofuran	UG/M3	U	0.15	U	0.15	U	0.15	U	0.15	U
TO-15	Toluene	UG/M3		1.2		2.7		1.3		1.1	
TO-15	trans-1,2-Dichloroethene	UG/M3	U	0.2	U	0.2	U	0.2	U	0.2	U
TO-15	trans-1,3-Dichloropropene	UG/M3	U	0.23	U	0.23	U	0.23	U	0.23	U
TO-15	Trichloroethene	UG/M3		0.45	J	0.35	J	0.35	J	0.51	J
TO-15	Trichlorofluoromethane	UG/M3		1.6		2.2		1.6		1.6	
TO-15	Vinyl acetate	UG/M3	U	0.18	U	0.18	U	0.18	U	0.18	U
TO-15	Vinyl chloride	UG/M3	U	0.13	U	0.13	U	0.13	U	0.13	U
TO-15	Xylene, o	UG/M3	J	0.17	J	0.69		0.16	J	0.14	J
TO-15	Xylenes (m&p)	UG/M3	J	0.72	J	5		0.8	J	0.71	J

Table 2 - Final Sample Results
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 January 19, 2015 Air Samples Frances C. Richmond Middle School
 Cold Regions Research and Engineering Laboratory
 Hanover, New Hampshire

Sample Delivery Group			SI0384		SI0384		SI0384		SI0384		SI0384
Location			63RM715-01		63RM717-01		63RM717-01		63RM721-01		63RM7
Sample Date			1/19/2015		1/19/2015		1/19/2015		1/19/2015		1/19/2
Sample ID			63RM715-01-IA6		63RM717-01-IA6		63RM717-01-IA6 DU		63RM721-01-IA6		63RM726
QC Code			FS		FS		FD		FS		FS
Units			Result Qualifier		Result Qualifier		Result Qualifier		Result Qualifier		Result
Analysis	Parameter	Units	Result	Qualifier	Result	Qualifier	Result	Qualifier	Result	Qualifier	Result
TO-15	1,1,1-Trichloroethane	UG/M3	0.27	U	0.27	U	0.27	U	0.27	U	0.27
TO-15	1,1,2,2-Tetrachloroethane	UG/M3	0.34	U	0.34	U	0.34	U	0.34	U	0.34
TO-15	1,1,2-Trichloro-1,2,2-Trifluoroethane	UG/M3	0.6	J	1.1	J	0.56	J	0.54	J	0.56
TO-15	1,1,2-Trichloroethane	UG/M3	0.27	U	0.27	U	0.27	U	0.27	U	0.27
TO-15	1,1-Dichloroethane	UG/M3	0.2	U	0.2	U	0.2	U	0.2	U	0.2
TO-15	1,1-Dichloroethene	UG/M3	0.2	U	0.2	U	0.2	U	0.2	U	0.2
TO-15	1,2,4-Trichlorobenzene	UG/M3	0.37	UJ	0.37	UJ	0.37	UJ	0.37	UJ	0.37
TO-15	1,2,4-Trimethylbenzene	UG/M3	0.22	J	0.24	U	0.29	J	0.26	J	1.5
TO-15	1,2-Dibromoethane	UG/M3	0.38	U	0.38	U	0.38	U	0.38	U	0.38
TO-15	1,2-Dichloro-1,1,2,2-tetrafluoroethane	UG/M3	0.35	U	0.35	U	0.35	U	0.35	U	0.35
TO-15	1,2-Dichlorobenzene	UG/M3	0.3	U	0.3	U	0.3	U	0.3	U	0.3
TO-15	1,2-Dichloroethane	UG/M3	0.2	U	0.2	U	0.2	U	0.2	U	0.2
TO-15	1,2-Dichloropropane	UG/M3	0.23	U	0.23	U	0.23	U	0.23	U	0.23
TO-15	1,3,5-Trimethylbenzene	UG/M3	0.24	U	0.24	U	0.24	U	0.24	U	0.24
TO-15	1,3-Butadiene	UG/M3	0.11	U	0.11	U	0.11	U	0.11	U	0.11
TO-15	1,3-Dichlorobenzene	UG/M3	0.3	U	0.3	U	0.3	U	0.3	U	0.3
TO-15	1,4-Dichlorobenzene	UG/M3	0.3	U	0.3	U	0.3	U	0.3	U	0.3
TO-15	2-Butanone	UG/M3	0.47	J	0.77	J	0.38	J	0.44	J	0.68
TO-15	2-Hexanone	UG/M3	0.2	U	0.2	U	0.2	U	0.2	U	0.2
TO-15	2-Propanol	UG/M3	0.24	U	0.24	U	0.24	U	8.1		0.24
TO-15	4-Ethyltoluene	UG/M3	0.24	U	0.24	U	0.24	U	0.24	U	0.24
TO-15	4-Methyl-2-pentanone	UG/M3	0.2	J	0.2	U	0.2	U	0.2	U	0.2
TO-15	Acetone	UG/M3	10		32	J	14	J	9.5		20
TO-15	Benzene	UG/M3	0.83		1.7	J	0.83	J	0.86		0.86
TO-15	Benzyl chloride	UG/M3	0.26	U	0.26	U	0.26	U	0.26	U	0.26
TO-15	Bromodichloromethane	UG/M3	0.33	U	0.33	U	0.33	U	0.33	U	0.33
TO-15	Bromoform	UG/M3	0.52	U	0.52	U	0.52	U	0.52	U	0.52
TO-15	Bromomethane	UG/M3	0.19	U	0.19	U	0.19	U	0.19	U	0.19
TO-15	Carbon disulfide	UG/M3	0.075	J	0.12	J	0.16	U	0.16	U	0.16
TO-15	Carbon tetrachloride	UG/M3	0.52	J	1	J	0.51	J	0.53	J	0.53
TO-15	Chlorobenzene	UG/M3	0.23	U	0.23	U	0.23	U	0.23	U	0.23

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Sample Delivery Group			SI0384		SI0384		SI0384		SI0384		SI0384	
Location			63RM715-01		63RM717-01		63RM717-01		63RM721-01		63RM721-01	
Sample Date			1/19/2015		1/19/2015		1/19/2015		1/19/2015		1/19/2015	
Sample ID			63RM715-01-IA6		63RM717-01-IA6		63RM717-01-IA6 DU		63RM721-01-IA6		63RM721-01-IA6	
QC Code			FS		FS		FD		FS		FS	
Units			Result Qualifier		Result Qualifier		Result Qualifier		Result Qualifier		Result	
Analysis	Parameter	Units	Result	Qualifier	Result	Qualifier	Result	Qualifier	Result	Qualifier	Result	Qualifier
TO-15	Chlorodibromomethane	UG/M3	0.42	U	0.42	U	0.42	U	0.42	U	0.42	U
TO-15	Chloroethane	UG/M3	0.13	U	0.13	U	0.13	U	0.13	U	0.13	U
TO-15	Chloroform	UG/M3	0.16	J	0.2	J	0.1	J	0.12	J	0.12	J
TO-15	Chloromethane	UG/M3	0.1	U	0.1	U	0.1	U	0.1	U	0.1	U
TO-15	Cis-1,2-Dichloroethene	UG/M3	0.2	U	0.2	U	0.2	U	0.2	U	0.2	U
TO-15	Cis-1,3-Dichloropropene	UG/M3	0.23	U	0.23	U	0.23	U	0.23	U	0.23	U
TO-15	Cyclohexane	UG/M3	0.23	J	0.25	J	0.12	J	0.17	U	0.13	J
TO-15	Dichlorodifluoromethane	UG/M3	2.6		5.4	J	2.6	J	2.5		2.8	J
TO-15	Ethanol	UG/M3	69	J	120	J	58	J	120	J	130	J
TO-15	Ethyl benzene	UG/M3	0.12	J	0.36	J	0.2	J	0.12	J	0.16	J
TO-15	Heptane	UG/M3	0.61		0.98	J	0.41	J	0.82		0.57	J
TO-15	Hexachlorobutadiene	UG/M3	0.53	U	0.53	U	0.53	U	0.53	U	0.53	U
TO-15	Hexane	UG/M3	0.42	J	0.92	J	0.39	J	0.46	J	0.46	J
TO-15	Methyl Tertbutyl Ether	UG/M3	0.18	U	0.18	U	0.18	U	0.18	U	0.18	U
TO-15	Methylene chloride	UG/M3	1.1		1.9	J	0.87	J	1.2		1.1	J
TO-15	Propylene	UG/M3	0.17	U	0.17	U	0.17	U	0.17	U	0.17	U
TO-15	Styrene	UG/M3	0.12	J	0.19	J	0.19	J	0.21	U	0.2	J
TO-15	Tetrachloroethene	UG/M3	0.34	U	0.14	J	0.095	J	0.34	U	0.34	U
TO-15	Tetrahydrofuran	UG/M3	0.15	U	0.15	U	0.15	U	0.15	U	0.15	U
TO-15	Toluene	UG/M3	0.83		2.2	J	1	J	0.83		1.4	J
TO-15	trans-1,2-Dichloroethene	UG/M3	0.2	U	0.087	J	0.2	U	0.2	U	0.2	U
TO-15	trans-1,3-Dichloropropene	UG/M3	0.23	U	0.23	U	0.23	U	0.23	U	0.23	U
TO-15	Trichloroethene	UG/M3	1.1		2.1	J	1.1	J	1.3		0.48	J
TO-15	Trichlorofluoromethane	UG/M3	1.6		3.1	J	1.5	J	1.5		1.6	J
TO-15	Vinyl acetate	UG/M3	0.18	U	0.18	U	0.18	U	0.18	U	0.18	U
TO-15	Vinyl chloride	UG/M3	0.13	U	0.13	U	0.13	U	0.13	U	0.13	U
TO-15	Xylene, o	UG/M3	0.14	J	0.2	J	0.16	J	0.15	J	0.23	J
TO-15	Xylenes (m&p)	UG/M3	0.69	J	1	J	0.69	J	0.65	J	0.95	J

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Sample Delivery Group 84				SI0384		SI0384		SI0384		SI0384	
Location 26-01				63RM727C-01		63RM727I-01		63RM728-01		63RM800-01	
Sample Date 1/19/2015				1/19/2015		1/19/2015		1/19/2015		1/19/2015	
Sample ID 26-01-IA6				63RM727C-01-IA6		63RM727I-01-IA6		63RM728-01-IA6		63RM800-01-IA6	
QC Code 1				FS		FS		FS		FS	
Analysis Parameter	Units	Qualifier	Result	Qualifier	Result	Qualifier	Result	Qualifier	Result	Qualifier	
TO-15	1,1,1-Trichloroethane	UG/M3	U	0.27	U	0.27	U	0.15	J	0.27	U
TO-15	1,1,2,2-Tetrachloroethane	UG/M3	U	0.34	U	0.34	U	0.34	U	0.34	U
TO-15	1,1,2-Trichloro-1,2,2-Trifluoroethane	UG/M3	J	0.56	J	0.52	J	0.55	J	0.57	J
TO-15	1,1,2-Trichloroethane	UG/M3	U	0.27	U	0.27	U	0.27	U	0.27	U
TO-15	1,1-Dichloroethane	UG/M3	U	0.2	U	0.2	U	0.2	U	0.2	U
TO-15	1,1-Dichloroethene	UG/M3	U	0.2	U	0.2	U	0.2	U	0.2	U
TO-15	1,2,4-Trichlorobenzene	UG/M3	UJ	0.37	UJ	0.37	UJ	0.37	UJ	0.37	UJ
TO-15	1,2,4-Trimethylbenzene	UG/M3		0.31	J	0.27	J	0.22	J	0.13	J
TO-15	1,2-Dibromoethane	UG/M3	U	0.38	U	0.38	U	0.38	U	0.38	U
TO-15	1,2-Dichloro-1,1,2,2-tetrafluoroethane	UG/M3	U	0.35	U	0.35	U	0.35	U	0.35	U
TO-15	1,2-Dichlorobenzene	UG/M3	U	0.3	U	0.3	U	0.3	U	0.3	U
TO-15	1,2-Dichloroethane	UG/M3	U	0.2	U	0.2	U	0.2	U	0.2	U
TO-15	1,2-Dichloropropane	UG/M3	U	0.23	U	0.23	U	0.23	U	0.23	U
TO-15	1,3,5-Trimethylbenzene	UG/M3	U	0.24	U	0.24	U	0.24	U	0.24	U
TO-15	1,3-Butadiene	UG/M3	U	0.11	U	0.11	U	0.11	U	0.11	U
TO-15	1,3-Dichlorobenzene	UG/M3	U	0.3	U	0.3	U	0.3	U	0.3	U
TO-15	1,4-Dichlorobenzene	UG/M3	U	0.3	U	0.3	U	0.3	U	0.3	U
TO-15	2-Butanone	UG/M3	J	0.68	J	0.32	J	0.74	J	0.38	J
TO-15	2-Hexanone	UG/M3	U	0.2	U	0.2	U	0.2	U	0.2	U
TO-15	2-Propanol	UG/M3	U	19		0.24	U	11		5.9	
TO-15	4-Ethyltoluene	UG/M3	U	0.093	J	0.24	U	0.24	U	0.24	U
TO-15	4-Methyl-2-pentanone	UG/M3	U	0.38	J	0.82		0.2	U	0.2	U
TO-15	Acetone	UG/M3		26		13		19		8.1	
TO-15	Benzene	UG/M3		1.1		0.86		0.99		0.86	
TO-15	Benzyl chloride	UG/M3	U	0.26	U	0.26	U	0.26	U	0.26	U
TO-15	Bromodichloromethane	UG/M3	U	0.33	U	0.33	U	0.33	U	0.33	U
TO-15	Bromoform	UG/M3	U	0.52	U	0.52	U	0.52	U	0.52	U
TO-15	Bromomethane	UG/M3	U	0.19	U	0.19	U	0.19	U	0.19	U
TO-15	Carbon disulfide	UG/M3	J	0.26	J	0.13	J	0.13	J	0.16	U
TO-15	Carbon tetrachloride	UG/M3	J	0.53	J	0.52	J	8.2		0.53	J
TO-15	Chlorobenzene	UG/M3	U	0.23	U	0.23	U	0.23	U	0.23	U

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Sample Delivery Group 84				SI0384		SI0384		SI0384		SI0384	
Location 26-01				63RM727C-01		63RM727I-01		63RM728-01		63RM800-01	
Sample Date 1/19/2015				1/19/2015		1/19/2015		1/19/2015		1/19/2015	
Sample ID 26-01-IA6				63RM727C-01-IA6		63RM727I-01-IA6		63RM728-01-IA6		63RM800-01-IA6	
QC Code 3				FS		FS		FS		FS	
Analysis	Parameter	Units	Qualifier	Result	Qualifier	Result	Qualifier	Result	Qualifier	Result	Qualifier
TO-15	Chlorodibromomethane	UG/M3	U	0.42	U	0.42	U	0.42	U	0.42	U
TO-15	Chloroethane	UG/M3	U	0.13	U	0.13	U	0.13	U	0.13	U
TO-15	Chloroform	UG/M3	J	0.28	J	0.1	J	0.54		0.12	J
TO-15	Chloromethane	UG/M3	U	0.1	U	0.1	U	0.1	U	0.1	U
TO-15	Cis-1,2-Dichloroethene	UG/M3	U	0.2	U	0.2	U	2.4		0.2	U
TO-15	Cis-1,3-Dichloropropene	UG/M3	U	0.23	U	0.23	U	0.23	U	0.23	U
TO-15	Cyclohexane	UG/M3	J	0.17	U	0.12	J	0.18	J	0.17	U
TO-15	Dichlorodifluoromethane	UG/M3		2.6		2.6		2.3		2.6	
TO-15	Ethanol	UG/M3	J	140	J	46	J	130		37	J
TO-15	Ethyl benzene	UG/M3	J	0.31	J	0.1	J	0.42	J	0.12	J
TO-15	Heptane	UG/M3		0.82		0.21	J	0.82		0.57	
TO-15	Hexachlorobutadiene	UG/M3	U	0.53	U	0.53	U	0.53	U	0.53	U
TO-15	Hexane	UG/M3	J	0.63	J	0.46	J	0.6	J	0.56	J
TO-15	Methyl Tertbutyl Ether	UG/M3	U	0.18	U	0.18	U	0.18	U	0.18	U
TO-15	Methylene chloride	UG/M3		1.4		0.87	J	2.1		1.3	
TO-15	Propylene	UG/M3	U	0.17	U	0.17	U	0.17	U	0.17	U
TO-15	Styrene	UG/M3	J	0.25	J	0.21	U	0.2	J	0.081	J
TO-15	Tetrachloroethene	UG/M3	U	0.34	U	0.34	U	1.1		0.34	U
TO-15	Tetrahydrofuran	UG/M3	U	0.15	U	0.15	U	0.32	J	0.15	U
TO-15	Toluene	UG/M3		6		1.3		2.5		1.7	
TO-15	trans-1,2-Dichloroethene	UG/M3	U	0.2	U	0.2	U	0.2	U	0.2	U
TO-15	trans-1,3-Dichloropropene	UG/M3	U	0.23	U	0.23	U	0.23	U	0.23	U
TO-15	Trichloroethene	UG/M3	J	0.37	J	0.28	J	2600		0.53	J
TO-15	Trichlorofluoromethane	UG/M3		1.5		1.4		36		1.3	
TO-15	Vinyl acetate	UG/M3	U	0.18	U	0.18	U	0.18	U	0.18	U
TO-15	Vinyl chloride	UG/M3	U	0.13	U	0.13	U	0.13	U	0.13	U
TO-15	Xylene, o	UG/M3	J	0.32	J	0.12	J	0.52		0.12	J
TO-15	Xylenes (m&p)	UG/M3	J	2.1		0.55	J	3.6		0.62	J

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Sample Delivery Group			SI0384		SI0384	
Location			63RM807-01		63RMBR-01	
Sample Date			1/19/2015		1/19/2015	
Sample ID			63RM807-01-IA6		63RMBR-01-IA6	
QC Code			FS		FS	
Analysis	Parameter	Units	Result	Qualifier	Result	Qualifier
TO-15	1,1,1-Trichloroethane	UG/M3	0.27	U	0.27	U
TO-15	1,1,2,2-Tetrachloroethane	UG/M3	0.34	U	0.34	U
TO-15	1,1,2-Trichloro-1,2,2-Trifluoroethane	UG/M3	0.6	J	0.57	J
TO-15	1,1,2-Trichloroethane	UG/M3	0.27	U	0.27	U
TO-15	1,1-Dichloroethane	UG/M3	0.2	U	0.2	U
TO-15	1,1-Dichloroethene	UG/M3	0.2	U	0.2	U
TO-15	1,2,4-Trichlorobenzene	UG/M3	0.37	UJ	0.37	UJ
TO-15	1,2,4-Trimethylbenzene	UG/M3	0.21	J	1.1	
TO-15	1,2-Dibromoethane	UG/M3	0.38	U	0.38	U
TO-15	1,2-Dichloro-1,1,2,2-tetrafluoroethane	UG/M3	0.35	U	0.35	U
TO-15	1,2-Dichlorobenzene	UG/M3	0.3	U	0.3	U
TO-15	1,2-Dichloroethane	UG/M3	0.2	U	0.2	U
TO-15	1,2-Dichloropropane	UG/M3	0.23	U	0.23	U
TO-15	1,3,5-Trimethylbenzene	UG/M3	0.24	U	0.24	U
TO-15	1,3-Butadiene	UG/M3	0.11	U	0.11	U
TO-15	1,3-Dichlorobenzene	UG/M3	0.3	U	0.3	U
TO-15	1,4-Dichlorobenzene	UG/M3	0.3	U	0.3	U
TO-15	2-Butanone	UG/M3	0.44	J	0.32	J
TO-15	2-Hexanone	UG/M3	0.2	U	0.2	U
TO-15	2-Propanol	UG/M3	0.24	U	1.7	
TO-15	4-Ethyltoluene	UG/M3	0.24	U	0.24	U
TO-15	4-Methyl-2-pentanone	UG/M3	0.34	J	0.2	U
TO-15	Acetone	UG/M3	8.1		8.3	
TO-15	Benzene	UG/M3	0.89		0.7	
TO-15	Benzyl chloride	UG/M3	0.26	U	0.26	U
TO-15	Bromodichloromethane	UG/M3	0.33	U	0.33	U
TO-15	Bromoform	UG/M3	0.52	U	0.52	U
TO-15	Bromomethane	UG/M3	0.19	U	0.19	U
TO-15	Carbon disulfide	UG/M3	0.16	U	0.16	U
TO-15	Carbon tetrachloride	UG/M3	0.55	J	0.53	J
TO-15	Chlorobenzene	UG/M3	0.23	U	0.23	U

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Sample Delivery Group			SI0384		SI0384	
Location			63RM807-01		63RMBR-01	
Sample Date			1/19/2015		1/19/2015	
Sample ID			63RM807-01-IA6		63RMBR-01-IA6	
QC Code			FS		FS	
Analysis	Parameter	Units	Result	Qualifier	Result	Qualifier
TO-15	Chlorodibromomethane	UG/M3	0.42	U	0.42	U
TO-15	Chloroethane	UG/M3	0.13	U	0.13	U
TO-15	Chloroform	UG/M3	0.12	J	0.13	J
TO-15	Chloromethane	UG/M3	0.1	U	1.1	J
TO-15	Cis-1,2-Dichloroethene	UG/M3	0.2	U	0.2	U
TO-15	Cis-1,3-Dichloropropene	UG/M3	0.23	U	0.23	U
TO-15	Cyclohexane	UG/M3	0.17	U	0.12	J
TO-15	Dichlorodifluoromethane	UG/M3	2.6		2.6	
TO-15	Ethanol	UG/M3	26		130	J
TO-15	Ethyl benzene	UG/M3	0.1	J	0.11	J
TO-15	Heptane	UG/M3	0.9		0.61	
TO-15	Hexachlorobutadiene	UG/M3	0.53	U	0.53	U
TO-15	Hexane	UG/M3	0.42	J	0.67	J
TO-15	Methyl Tertbutyl Ether	UG/M3	0.18	U	0.18	U
TO-15	Methylene chloride	UG/M3	1.1		1.7	
TO-15	Propylene	UG/M3	0.17	U	0.17	U
TO-15	Styrene	UG/M3	0.21	U	0.14	J
TO-15	Tetrachloroethene	UG/M3	0.34	U	0.34	U
TO-15	Tetrahydrofuran	UG/M3	0.15	U	0.15	U
TO-15	Toluene	UG/M3	0.79		0.87	
TO-15	trans-1,2-Dichloroethene	UG/M3	0.2	U	0.2	U
TO-15	trans-1,3-Dichloropropene	UG/M3	0.23	U	0.23	U
TO-15	Trichloroethene	UG/M3	0.59		0.59	
TO-15	Trichlorofluoromethane	UG/M3	1.4		1.3	
TO-15	Vinyl acetate	UG/M3	0.18	U	0.18	U
TO-15	Vinyl chloride	UG/M3	0.13	U	0.13	U
TO-15	Xylene, o	UG/M3	0.12	J	0.18	J
TO-15	Xylenes (m&p)	UG/M3	0.52	J	0.79	J