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Consolidated Edison Company of New York, Inc.

Interim Site Management Plan – Annual Indoor Air Monitoring Report

Former East 11th Street Works Manhattan, New York

July 2013

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Interim Site Management Plan – Annual Indoor Air Monitoring Report

Former East 11th Street Works Site, Manhattan, New York

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- 1 NYSDOH Indoor Air Quality Questionnaires and Building Inventory Forms (on compact disk)
- 2 Photographic Logs Building Inventories (on compact disk)
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- 4 Data Usability Summary Reports (DUSRs) (on compact disk)
- 5 Photographic Logs Indoor Air Monitoring Locations (on compact disk)

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1. Introduction

This report presents a summary of the results from the 2013 annual indoor air monitoring conducted by ARCADIS of New York, Inc. (ARCADIS) on behalf of Consolidated Edison Company of New York, Inc. (Con Edison). Indoor air monitoring was conducted in accordance with the procedures and protocols presented in the *Interim Site Management Plan for Indoor Air Monitoring* (ARCADIS 2009) (ISMP). The ISMP is a component of a comprehensive monitoring plan that is being developed to ensure that the public and the environment are protected until a final remedy for the site is implemented.

Indoor air monitoring was conducted at one property within the Former East 11th Street Works site (the site). The property included in the 2013 monitoring event was the Jacob Riis Housing Development. Access was not obtained to conduct air monitoring at the Haven Plaza North Co-Op Apartments or Saint Emeric's (Escuela Hispania Montessori Head Start School [formerly Saint Emeric's Roman Catholic School] or the Church of Saint Emeric's).

A summary of the activities performed associated with the 2013 annual indoor air monitoring is included below. Tabulated laboratory results from the indoor air monitoring, a figure showing the sampling locations, photographic logs, sampling forms, and a compact disk (CD) containing copies of the Data Usability Summary Reports (DUSRs) are included as attachments. Deviations from the scope of work presented in the ISMP are also presented.

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2. Indoor Air Monitoring

Prior to initiating field work, the site Health and Safety Plan (HASP) was reviewed to ensure that task specific monitoring activities were consistent with Con Edison's Corporate Health and Safety Procedure A32.00 (Rules We Live By). A copy of the HASP was maintained on site during all work activities; all site personnel were required to review the HASP and sign an acknowledgement form stating that they understood the contents of the HASP and agree to abide by its requirements. Tailgate meetings were conducted each morning to discuss the day's activities, critical work procedures, and safety requirements. No accidents or near misses occurred during the indoor air sampling events.

The dates that the annual indoor air sampling events were conducted are presented in Table 1.

Location	Sample Collection Date(s)
Jacob Riis Housing Development 170 Avenue D, 178 Avenue D, 1115 FDR Drive 1141 FDR Drive, 1223 FDR Drive	March 26 through 28, 2013

Table 1 Sample Collection Dates

Pre-monitoring walk through visual inspections and chemical inventories were conducted concurrent with indoor air monitoring activities at each of the sampling locations. The objectives of the walk-through inspections and chemical inventories were to visually identify conditions that may affect or interfere with the indoor air monitoring, document the physical condition of the indoor air monitoring areas, and to confirm the sampling locations. Conditions identified during the visual inspections were generally consistent with conditions identified during visual inspections conducted in 2010 and 2011. Evidence of flooding (e.g., water marks on the exterior foundation walls surrounding the sample collection areas) was evident as a result of Hurricane Sandy, which severely impacted the lower east side of Manhattan in October 2012 (approximately 5 months prior to this ISMP sampling event). During the walk-through inspections, floor construction details for each building were documented and New York State Department of Health (NYSDOH) Indoor Air Quality Questionnaires and Building Inventory Forms were completed (Attachment 1). Photographs of the areas where samples were collected to document general background conditions and the chemical products present that potentially contain volatile chemicals during the walkthrough inspections are included on a compact disk (CD) provided in Attachment 2.



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The locations selected for indoor monitoring are presented on **Figure 1**. For consistency, the selected locations for each property were consistent with the locations sampled during the 2007, 2010, and 2011 indoor air monitoring events.

As identified in the photographic logs, small quantities of containers containing paints, solvents, cleaning supplies, and/or maintenance-related chemical products were present in each of the buildings during the walk-through inspections. These conditions are also similar to the conditions identified during the walk-through inspections associated with the previous sampling events. Removal of these potential interferences prior to collection of indoor air samples was not feasible. A portable organic vapor monitor (ppbRAE) was used to measure volatile organic compounds (VOCs) liberated from these contemporary chemicals. The measured concentrations of VOCs in each area monitored in each building are summarized in **Table 2**. The highest background VOC concentrations obtained from indoor air at each of the buildings was recorded at the following location:

• 178 FDR Drive: 352 parts per billion [ppb] was detected in the ambient air of the "compactor room".

Photographic logs documenting the conditions/stored products at these locations are included on a CD as **Attachment 5**.

Air samples for laboratory testing were collected using batch-certified clean, 6-liter SUMMA canisters equipped with laboratory pre-set flow regulators for 8-hour sample collection. Indoor air samples were collected from within the ground levels of each building within the breathing zone (approximately 4 feet above the floor). The date, times (start and end times), sample identification, and other required information were recorded on sample collection logs as described in the ISMP. The sample collection logs are included on a CD included as **Attachment 3**. Outdoor, ambient air monitoring was conducted from upwind locations each day indoor air samples were collected. Ambient air sampling locations are also presented on **Figure 1**.

Air samples were sent to TestAmerica Laboratories (TestAmerica) located in Knoxville, Tennessee via overnight courier for analysis of the project compound list analytes by United States Environmental Protection Agency (USEPA) Method TO-15. The project compound list included standard TO-15 VOCs, along with n-alkanes, and branched alkanes and other "indicator" compounds reported as tentatively identified compounds (TICs). The laboratory provided ASP Category B-equivalent data packages for quality review. Laboratory data packages and associated quality control information were



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reviewed by qualified ARCADIS personnel to verify they met the project-specific criteria for data quality. Data Usability Summary Reports (DUSRs) were prepared that present the results from the data review for each sample data group; DUSRs are included on a CD included as **Attachment 4**. The DUSRs indicate that the laboratory results for each site met the data quality objectives and the data were considered usable.

The laboratory results for the Jacob Riis Housing Development are summarized in **Table 3**. Consistent with ISMP requirements, for comparison purposes, the indoor air results are compared to the NYSDOH Upper Fence (F) Criterion for indoor air background data for fuel oil heated homes and the USEPA's BASE guidance values for the 90th percentile background air levels to provide typical concentrations of VOCs in indoor air.



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3. Results and Conclusions

The results from the annual indoor air monitoring event are presented below.

3.1 Jacob Riis Housing Development

Eighteen (18) indoor air samples (labeled based on building address), 3 ambient samples (AA-032613, AA-032713, and AA-032813), and 2 duplicate samples for quality control purposes (DUP-032613 and DUP-032813) were collected for laboratory analysis. The sample collection logs are included on a CD as **Attachment 3**; photographs documenting the sample locations and equipment set-up are included on a CD as **Attachment 5**. The laboratory results are presented in **Table 3**.

The ISMP included the collection of five air samples from elevator shafts within the Jacob Riis buildings (one sample from an elevator shaft within each building sampled); however, based upon inspection with Con Edison prior to the 2010 monitoring event, the elevator shafts were unable to be accessed safely for visual inspection and sample collection without terminating elevator operation. Terminating elevator operation was not feasible; therefore, consistent with the pervious monitoring events, elevator shaft samples could not be collected.

As indicated in **Table 3**, a total of 42 analytes included in the project-specific analyte list (including TO-15 VOCs, n-alkanes, branched alkanes, and other TICs) were detected in the 18 indoor air samples collected throughout the Jacob Riis Housing Development. A summary of the detected analytes include:

- Of the 26 TO-15 VOC analytes detected in indoor air, 18 were also detected in ambient (i.e., outdoor) air (the 8 analytes detected in indoor air that were not detected in outdoor ambient air included 5 chlorinated compounds [multiple samples], styrene [5 samples], bromomethane [3 samples], and naphthalene [1 sample]).
- When compared to the concentrations detected in the ambient air samples, 15 of the 18 TO-15 VOCs were detected in indoor samples at concentrations greater than the outdoor concentrations. The TO-15 VOCs detected at higher concentrations indoors included 10 chlorinated compounds, benzene, ethylbenzene, m- & p-xylene, o-xylene, and toluene.



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- Six of the TO-15 VOC analytes detected indoor were above the NYSDOH Upper F criterion (1,1,2,2-tetrachloroethane, chloroform, cis-1,2-dichloroethene, tetrachloroethene, trichloroethene, and xylenes); three of those analytes were also present above the USEPA indoor air background level (chloroform [15 samples], cis-1,2-dichloroethene [1 sample], and tetrachloroethene [1 sample]).
- Commonly identified "gasoline indicators" (e.g., n-butane, n-pentane, n-heptane, isooctane, isopentane and 2-methylpentane) that were included in the n-alkanes and branched alkanes analyte lists were identified in all outdoor ambient air samples and indoor air samples. Each of these analytes was detected in multiple indoor air samples at concentrations higher than detected in the ambient air samples.
- Indene and thiopene were not detected in any of the samples collected; these compounds are commonly used as "Manufactured Gas Plant (MGP) indicators".
 3-Methylthiopene, an associated compound with thiopene, was detected in one indoor air sample collected from the trash compactor room in building 178 Avenue D; however, 3-methylthiopene is not an exclusive indicator of coal tar, it has also been detected in gasoline.

Based on the types of analytes detected, as well as the solvents, cleaning supplies, petroleum, oils, and maintenance-related chemical products stored within the ground-level areas/basements, and coupled with the absence of MGP indicator compounds, the data suggests that MGP-related impacts do not exist in the areas monitored at Jacob Riis Housing Development.

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4. Work Plan Deviations

The following deviations from the scope of work presented in the ISMP occurred during the field activities:

- Consistent with previous ISMP sampling events, due to the limitations of site access, the pre-monitoring walk through inspections and chemical inventories at each building were conducted concurrent with indoor air monitoring activities.
- Consistent with the previous ISMP sampling events, the elevator shafts were unable to be accessed for walk-through inspections and monitoring due to the inability to safely access the shafts without terminating elevator operation. Terminating elevator operation was not feasible; therefore the samples could not be collected.
- Haven Plaza North Co-Op Apartments and Saint Emeric's (including the Escuela Hispania Montessori Head Start School and the Church of Saint Emeric's) were not inspected and sampled due to lack of an access agreement.

No additional deviations from the scope of work presented in the ISMP were noted.



Tables

Table 2 Indoor Air Monitoring Summary

ISMP Annual Indoor Air Monitoring Report Consolidated Edison Company of New York, Inc.

Sample ID	Date	Location	Background PID Reading (ppb)
JR-170-IA-1	3/26/2013	170 Avenue D - Cabinet room	0
JR-170-IA-2	3/26/2013	170 Avenue D - Storage room	0
JR-170-IA-3	3/26/2013	170 Avenue D - Near tank room	0
JR-170-IA-4	3/26/2013	170 Avenue D - Compactor room	0
JR-178-IA-1	3/26/2013	178 Avenue D - Crawl space beneath building	0
JR-178-IA-2	3/26/2013	178 Avenue D - Meter room	0
JR-178-IA-3	3/27/2013	178 Avenue D - Compactor room	352
AA-032613	3/26/2013	Along fence between 178 Avenue D and Avenue D	0
JR-1115-IA-1	3/28/2013	1115 FDR Drive - Cabinet Room	0
JR-1115-IA-2	3/28/2013	1115 FDR Drive - Storage room outside of plaster room	0
JR-1115-IA-3	3/28/2013	1115 FDR Drive - Tank room	0
JR-1115-IA-4	3/28/2013	1115 FDR Drive - Plaster room	0
JR-1141-IA-1	3/28/2013	1141 FDR Drive - Crawl space	0
JR-1141-IA-2	3/28/2013	1141 FDR Drive - Tank room	0
JR-1141-IA-3	3/28/2013	1141 FDR Drive - Crawl space	0
AA-032813	3/28/2013	Along fence between 1141 FDR Drive and FDR Drive	0
JR-1223-IA-1	3/27/2013	1223 FDR Drive - Storage room (Southeast area of building)	0
JR-1223-IA-2	3/27/2013	1223 FDR Drive - Storage room (Near center of building)	0
JR-1223-IA-3	3/27/2013	1223 FDR Drive - Storage room (Near center corridor of building)	0
JR-1223-IA-4	3/27/2013	1223 FDR Drive - Tank room	0
AA-032713	3/27/2013	Along fence between 1223 FDR Drive and FDR Drive	0

Note:

1. Background PID readings were obtained using a portable organic vapor monitor (ppbRAE) and are reported in parts per billion (ppb).

Table 3 Indoor Air Analytical Results - Jacob Riis

ISMP Annual Indoor Air Monitoring Consolidated Edison Company of New York, Inc.

	IYSDOH Fuel Oil Heat - Indoor Air	USEPA BASE Guidance Values		AA-032613	AA-032713	AA-032813	JR-1115-IA-1	JR-1115-IA-2	JR-1115-IA-3	JR-1115-IA-4	JR-1141-IA-1	JR-1141-IA-2	JR-1141-IA-3	JR-1223-IA-1	JR-1223-IA-2	JR-1223-IA-3	JR-1223-IA-4	JR-170-IA-1	JR-170-IA-2	JR-170-IA-3	JR-170-IA-4	JR-178-IA-1	JR-178-IA-2	JR-178-IA-3
Date Collected:	Upper Fence (bold)	90th Percentile (shade)	Units	03/26/13	03/27/13	03/28/13	03/28/13	03/28/13	03/28/13	03/28/13	03/28/13	03/28/13	03/28/13	03/27/13	03/27/13	03/27/13	03/27/13	03/26/13	03/26/13	03/26/13	03/26/13	03/26/13	03/26/13	03/27/13
Volatile Organic Compounds							•					•				•		•						
1.1.1-Trichloroethane	2.5	20.6	ua/m3	0.44 U	0.44 U	0.44 U	0.44 U [0.44 U]	0.44 U	0.44 U [0.44 U]	0.44 U	0.44 U	0.44 U	0.44 U	0.44 U	0.44 U									
1.1.2.2-Tetrachloroethane	0.38		ua/m3	0.55 U	0.55 U	0.55 U	0.55 U [0.55 U]	0.55 U	0.55 U [0.55 U]	0.55 U	0.55 U	0.55 U	0.55 U	0.55 U	0.67									
1,1,2-Trichloroethane	0.38	1.5	ug/m3	0.44 U	0.44 U	0.44 U	0.44 U [0.44 U]	0.44 U	0.44 U [0.44 U]	0.44 U	0.44 U	0.44 U	0.44 U	0.44 U	0.44 U									
1,1,2-Trichlorotrifluoroethane	2.5		ug/m3	0.49 J	0.48 J	0.50 J	0.48 J [0.49 J]	0.50 J	0.46 J	0.50 J	0.48 J	0.45 J	0.51 J	0.49 J	0.48 J	0.49 J	0.49 J	0.49 J [0.53 J]	0.49 J	0.48 J	0.49 J	0.50 J	0.52 J	0.47 J
1,1-Dichloroethane	0.38	0.7	ug/m3	0.32 U	0.32 U	0.32 U	0.32 U [0.32 U]	0.32 U	0.32 U [0.32 U]	0.32 U	0.32 U	0.32 U	0.32 U	0.32 U	0.32 U									
1,1-Dichloroethene	0.4	1.4	ug/m3	0.32 U	0.32 U	0.32 U	0.32 U [0.32 U]	0.32 U	0.32 U [0.32 U]	0.32 U	0.32 U	0.32 U	0.32 U	0.32 U	0.32 U									
1,2,4-Trichlorobenzene	0.47	6.8	ug/m3	0.59 UJ	0.59 UJ	0.59 UJ	0.59 UJ [0.59 UJ]	0.59 UJ	0.59 UJ [0.59 UJ]	0.59 UJ	0.59 UJ	0.59 UJ	0.59 UJ	0.59 UJ	0.59 U									
1,2,4-Trimethylbenzene	9.8	9.5	ug/m3	0.39 U	0.18 J	0.16 J	0.17 J [0.21 J]	2.4	0.39 U	0.56	0.17 J	0.39 U	0.39 U	0.23 J	0.47	0.47	0.26 J	0.33 J [0.44]	0.24 J	0.38 J	0.35 J	0.71	0.37 J	0.39 U
1,2-Dibromoethane	0.38	1.5	ug/m3	0.61 U	0.61 U	0.61 U	0.61 U [0.61 U]	0.61 U	0.61 U [0.61 U]	0.61 U	0.61 U	0.61 U	0.61 U	0.61 U	0.61 U									
1,2-Dichloro-1,1,2,2-tetrafluoroethane	0.42		ug/m3	0.12 J	0.12 J	0.12 J	0.11 J [0.12 J]	0.11 J	0.11 J	0.13 J	0.56 U	0.12 J	0.093 J	0.12 J	0.11 J	0.11 J	0.11 J	0.12 J [0.12 J]	0.11 J	0.11 J	0.11 J	0.11 J	0.11 J	0.13 J
1,2-Dichlorobenzene	0.48	1.2	ug/m3	0.48 U	0.48 U	0.48 U	0.48 U [0.48 U]	0.48 U	0.48 U [0.48 U]	0.48 U	0.48 U	0.48 U	0.48 U	0.48 U	0.48 U									
1,2-Dichloroethane	0.37	0.9	ug/m3	0.32 U	0.32 U	0.10 J	0.081 J [0.081 J]	0.32 U	0.11 J	0.32 U	0.14 J	0.12 J	0.11 J	0.32 U	0.088 J	0.32 U	0.32 U	0.088 J [0.091 J]	0.088 J	0.097 J	0.32 U	0.093 J	0.10 J	0.086 J
1,2-Dichloropropane	0.39	1.6	ug/m3	0.37 U	0.37 U	0.37 U	0.37 U [0.37 U]	0.37 U	0.37 U [0.37 U]	0.37 U	0.37 U	0.37 U	0.37 U	0.37 U	0.37 U									
1,3,5-Trimethylbenzene	3.9	3.7	ug/m3	0.39 U	0.39 U	0.39 U	0.39 U [0.22 J]	0.97	0.39 U	0.19 J	0.39 U	0.39 U	0.39 U	0.39 U	0.13 J	0.17 J	0.39 U	0.39 U [0.16 J]	0.39 U	0.17 J	0.39 U	0.28 J	0.13 J	0.39 U
1,3-Dichlorobenzene	0.46	2.4	ug/m3	0.48 U	0.48 U	0.48 U	0.48 U [0.48 U]	0.48 U	0.48 U [0.48 U]	0.48 U	0.48 U	0.48 U	0.48 U	0.48 U	0.48 U									
1,4-Dichlorobenzene	1.2	5.5	ug/m3	0.48 U	0.48 U	0.48 U	0.48 U [0.48 U]	0.48 U	0.18 J	0.48 U	0.18 J	0.48 U	0.48 U [0.48 U]	0.48 U	0.48 U	0.17 J	0.24 J	0.17 J	0.48 U					
Benzene Bromomethane	13 0.48	9.4	ug/m3 ug/m3	0.67 0.31 U	0.75 0.31 U	0.64 0.31 U	0.59 [0.61] 0.31 U [0.31 U]	0.59 0.31 U	0.57 0.31 U	0.60 0.31 U	0.61 0.31 U	0.46 0.31 U	0.69 0.068 J	0.60 0.31 U	0.75 0.31 U	0.77 0.31 U	0.68 0.058 J	1.3 [1.4] 0.31 U [0.31 U]	0.72 0.31 U	1.3 0.31 U	0.98 0.31 U	1.7 0.31 U	1.1 0.31 U	0.62 0.055 J
Carbon Tetrachloride	0.48	1.7	ug/m3 ug/m3	0.31 0	0.310	0.51	0.52 [0.54]	0.31 0	0.31 0	0.31 0	0.31 0	0.31 0	0.068 J 0.56	0.310	0.31 0	0.310	0.058 J 0.51	0.31 0 [0.31 0]	0.310	0.31 0	0.31 0	0.31 0	0.53	0.055 J 0.51
Carbon Tetrachioride Chlorobenzene	0.41	0.9	ug/m3 ug/m3	0.37 U	0.48 0.37 U	0.51 0.37 U	0.37 U [0.37 U]	0.50 0.37 U	0.52 0.37 U	0.51 0.37 U	0.37 U	0.49 0.37 U	0.56 0.37 U	0.51 0.37 U	0.50 0.37 U	0.46 0.37 U	0.37 U	0.37 U [0.37 U]	0.43 0.37 U	0.52 0.37 U	0.53 0.37 U	0.56 0.37 U	0.53 0.37 U	0.37 U
Chloroethane	0.39	1.1	ug/m3	0.37 U 0.21 U	0.37 U 0.21 U	0.37 U	0.21 U [0.21 U]	0.37 U 0.21 U	0.37 U 0.21 U	0.37 U 0.21 U	0.37 0	0.37 U 0.14 J	0.063 J	0.37 U 0.21 U	0.37 U 0.21 U	0.37 U 0.21 U	0.37 U 0.077 J	0.069 J [0.070 J]	0.37 U 0.21 U	0.067 J	0.086 J	0.37 U 0.089 J	0.085 J	0.37 U 0.12 J
Chloroform	1.2	1.1	ug/m3	0.11 J	0.21 U	0.28 J	3.5 [3.7]	1.4	3.4	0.98	6.3	8.5	14	1.0	5.1	6.0	7.6	14 [14]	0.39 J	23	1.9	20	7.4	14
Chloromethane	4.2	3.7	ug/m3	1.0	1.0	1.0	1.1 [1.2]	1.0	1.3	0.92	3.5	1.6	1.5	1.0	1.0	1.0	1.0	1.2 [1.2]	1.2	1.2	1.3	1.5	1.2	1.4
cis-1,2-Dichloroethene	0.41	1.9	ug/m3	0.32 U	0.32 U	0.32 U	0.32 U [0.32 U]	0.32 U	0.32 U [0.32 U]	0.32 U	0.32 U	0.32 U	3.1	1.5	0.66									
cis-1,3-Dichloropropene	0.38	2.3	ug/m3	0.36 U	0.36 U	0.36 U	0.36 U [0.36 U]	0.36 U	0.36 U [0.36 U]	0.36 U	0.36 U	0.36 U	0.36 U	0.36 U	0.36 U									
Dichlorodifluoromethane	10	16.5	ug/m3	2.5	2.5	2.5	2.5 [2.5]	2.5	2.5	2.5	0.86	1.0	1.1	2.5	2.4	2.4	2.5	2.6 [2.7]	2.6	2.5	2.5	2.5	2.6	2.7
Ethylbenzene	6.4	5.7	ua/m3	0.16 J	0.21 J	0.17 J	0.16 J [0.16 J]	5.5	0.19 J	0.70	0.15 J	0.12 J	0.35 U	0.19 J	0.30 J	0.29 J	0.24 J	0.33 J [0.42]	0.31 J	0.43	0.36	0.58	0.44	1.4
Hexachlorobutadiene	0.49	6.8	ug/m3	0.85 U	0.85 U	0.85 U	0.85 U [0.85 U]	0.85 U	0.85 U [0.85 U]	0.85 U	0.85 U	0.85 U	0.85 U	0.85 U	0.85 U									
Methylene Chloride	16	10	ug/m3	1.6	1.0	1.7	0.83 [1.1]	0.70	0.99	0.71	1.1	1.4	1.1	0.73	0.96	0.76	2.6	1.9 [1.1]	0.76	1.1	1.3	1.8	3.4	1.2
m-Xylene & p-Xylene	11	22.2	ug/m3	0.39	0.62	0.56	0.49 [0.52]	15	0.55	2.6	0.47	0.29 J	0.21 J	0.62	0.93	0.91	0.64	1.1 [1.4]	0.99	1.3	1.2	2.4	1.5	2.8
Naphthalene		5.1	ug/m3	1.0 U	1.0 U	1.0 U	3.2 [4.2]	1.0 U	1.0 U [1.0 U]	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U									
o-Xylene	7.1	7.9	ug/m3	0.16 J	0.24 J	0.23 J	0.19 J [0.20 J]	4.1	0.21 J	0.83	0.18 J	0.35 U	0.35 U	0.24 J	0.37	0.36	0.23 J	0.42 [0.50]	0.33 J	0.48	0.39	0.88	0.58	0.59
Styrene	1.4	1.9	ug/m3	0.34 U	0.34 U	0.34 U	0.14 J [0.15 J]	0.34 U	0.10 J	0.34 U	0.34 U [0.34 U]	0.34 U	0.34 U	0.14 J	0.15 J	0.16 J	0.34 U							
Tetrachloroethene	2.5	15.9	ug/m3	0.58	0.81	0.51 J	3.8 J [0.51 J]	1.1	0.66	0.44 J	0.44 J	0.16 J	0.37 J	0.74	0.88	0.77	0.64	0.62 [0.84]	0.55	0.84	0.74	20	12	6.4
Toluene	57	43	ug/m3	1.1	1.1	1.0	1.1 [1.2]	1.2	1.0	1.4	0.86	0.39	0.63	0.94	1.3	1.3	0.99	2.1 [1.9]	1.4	3.4	1.7	3.6	2.8	3.0
trans-1,3-Dichloropropene	0.4	1.3	ug/m3	0.36 U	0.36 U	0.36 U	0.36 U [0.36 U]	0.36 U	0.36 U [0.36 U]	0.36 U	0.36 U	0.36 U	0.36 U	0.36 U	0.36 U									
Trichloroethene	0.46	4.2	ug/m3	0.21 U	0.21 U	0.15 J	1.6 [0.21 U]	0.084 J	0.21 U	0.21 U	0.082 J	0.21 U	0.16 J	0.21 U	0.21 U	0.21 U	0.21 U	0.081 J [0.087 J]	0.21 U	0.13 J	0.21 U	2.5	1.0	3.1
Trichlorofluoromethane	12	18.1	ug/m3	1.4	1.3	1.3	1.3 [1.3]	1.3	1.3	1.4	1.1	1.2	1.2	1.3	1.4	1.3	1.5	1.4 [1.5]	1.4	1.4	1.4	1.4	1.5	1.3
Vinyl Chloride	0.37	1.9	ug/m3	0.20 U	0.20 U	0.20 U	0.20 U [0.20 U]	0.20 U	0.20 U [0.20 U]	0.20 U	0.20 U	0.20 U	0.31	0.19 J	0.099 J									
Total BTEX			ug/m3	1.9 J	2.1 J	1.8 J	1.9 J [2.0 J]	7.3	1.8 J	2.7	1.6 J	0.97 J	1.3	1.7 J	2.4 J	2.4 J	1.9 J	3.7 J [3.7]	2.4 J	5.1	3.0	5.9	4.3	5.0
Total VOCs			ug/m3	10 J	10 J	11 J	18 J [14 J]	24 J	13 J	12 J	17 J	16 J	22 J	11 J	16 J	17 J	19 J	27 J [28 J]	11 J	37 J	14 J	63 J	38 J	38 J
n-Alkanes			6				0.470.51			100 5							1	0.4 (0.0)		5.0	07	, <u>, , , , , , , , , , , , , , , , , , </u>	0.5	
n-Butane n-Decane	 15	17.5	ug/m3 ug/m3	1.7 2.3 U	2.1 0.28 J	2.0 0.29 J	6.4 [6.5] 0.71 J [1.5 J]	44 D 7.7	5.1 0.15 J	120 D 1.6 J	20 0.38 J	14 0.17 J	14 0.14 J	1.7 0.38 J	3.4 0.96 J	3.6 0.90 J	4.4 0.55 J	6.1 [6.0] 0.49 J [0.59 J]	2.0 0.62 J	5.2 0.49 J	3.7 1.5 J	5.1 7.1	3.5 1.4 J	6.0 2.3 U
n-Decane n-Dodecane	15 9.2	17.5	ug/m3 ug/m3	0.23 U	0.28 J 2.8 U	0.29 J 2.8 U	0.71 J [1.5 J] 0.41 J [0.43 J]	7.7 1.1 J	0.15 J 2.8 U	1.6 J 2.0 J	0.38 J 2.8 U	0.17 J 2.8 U	0.14 J 2.8 U	0.38 J 0.31 J	0.96 J 0.40 J	0.90 J 0.43 J	0.55 J 2.8 U	0.49 J [0.59 J] 0.69 J [2.8 U]	0.62 J 2.8 U	0.49 J 0.34 J	1.5 J 0.35 J	7.1 0.23 J	1.4 J 2.8 U	2.3 U 2.8 U
n-Heptane	3.2 18		ug/m3	0.23 J	0.36 J	0.37 J	0.22 J [0.19 J]	0.49 J	0.26 J	0.61 J	0.24 J	0.17 J	0.20 J	0.31 J	0.31 J	0.43 J	0.28 J	0.48 J [0.50 J]	0.21 J	0.54 J	0.35 J	0.73 J	0.43 J	2.8 0
n-Hexane	14	10.2	ug/m3	0.45 J	0.56 J	0.62 J	0.32 J [0.37 J]	0.44 J	0.38 J	0.52 J	0.41 J	0.31 J	0.51 J	0.37 J	0.52 J	0.52 J	0.59 J	1.4 [0.96]	0.36 J	1.0	0.51 J	2.0	0.94	0.78
n-Octane	5.2		ug/m3	0.11 J	0.25 J	0.26 J	0.19 J [0.16 J]	0.65 J	0.16 J	0.68 J	0.17 J	0.75 U	0.071 J	0.14 J	0.27 J	0.22 J	0.19 J	0.29 J [0.33 J]	0.16 J	0.27 J	0.40 J	0.41 J	0.31 J	0.74
Nonane	7.9	7.8	ug/m3	1.0 U	0.23 J	0.22 J	0.21 J [0.24 J]	6.0	0.15 J	0.44 J	0.35 J	1.0 U	0.12 J	0.16 J	0.38 J	0.35 J	0.31 J	0.28 J [0.34 J]	0.25 J	0.26 J	0.64 J	0.34 J	0.22 J	1.0 U
n-Undecane	12	22.6	ug/m3	0.16 J	2.6 U	2.6 U	0.38 J [0.50 J]	3.6	2.6 U	2.7	2.6 U	2.6 U	2.6 U	0.31 J	0.55 J	0.66 J	0.24 J	0.49 J [0.28 J]	0.26 J	0.35 J	0.70 J	0.47 J	0.22 J	2.6 U
Pentane			ug/m3	0.59 J	0.86 J	0.86 J	0.57 J [0.58 J]	2.1	0.66 J	3.2	0.68 J	1.0 J	0.94 J	0.60 J	1.2	1.2	1.5	1.4 [1.5]	0.77 J	1.6	2.1	4.7	1.9	1.8
Branched Alkanes (Reported as TICs)			,												T .									1
2,3-Dimethylpentane	5.2		ug/m3	0.33 U	0.33 U	0.33 U	0.33 U [0.33 U]	0.33 U	0.33 U [0.33 U]	0.33 U	0.33 U	0.33 U	0.38	0.33 U	0.40									
Isopentane 2-methylpentane			ug/m3 ug/m3	1.0 0.31	1.5 0.45	1.1 0.38	0.94 [0.93] 0.28 U [0.29]	1.2 0.30	0.92 0.28 U	1.2 0.31	1.2 0.37	1.6 0.30	1.4 0.44	1.0 0.34	2.1 0.49	2.1 0.52	2.5 0.51	2.9 [2.9] 0.92 [0.94]	1.5 0.33	4.2	5.5 0.40	6.9 2.4	3.2 0.84	2.0 0.57
· · · · ·			ug/m3	0.31	0.45	0.38	0.20 0 [0.29]	0.30	U.28 U	0.31	0.37	0.30	0.44	0.34	0.49	0.52	0.51	0.92 [0.94]	0.33	1.0	0.40	2.4	U.84	0.57
Other (Reported as TICs)				0.00.11	0.00.11	0.00	0.00.1170.55.15	10	0.001	0.00.11	0.00.11	0.00.11	0.007	0.00.11	0.00	0.00.11	0.00.11	0.001170.0017	0.00.11	0.00.11	0.00.11		0.00	0.00.11
1,2,3-Trimethylbenzene 2-Ethylthiophene			ug/m3 ug/m3	0.39 U 0.37 U	0.39 U 0.37 U	0.39 U 0.37 U	0.39 U [0.39 U] 0.37 U [0.37 U]	1.2 0.37 U	0.39 U 0.37 U	0.39 U 0.37 U	0.39 U 0.37 U	0.39 U 0.37 U	0.39 U 0.37 U	0.39 U 0.37 U	0.39 U 0.37 U	0.39 U 0.37 U	0.39 U 0.37 U	0.39 U [0.39 U] 0.37 U [0.37 U]	0.39 U 0.37 U	0.39 U 0.37 U	0.39 U 0.37 U	0.39 U 0.37 U	0.39 U 0.37 U	0.39 U 0.37 U
2-Ethylthiophene			ug/m3 ug/m3	0.37 U 0.32 U	0.37 U 0.32 U	0.37 U 0.32 U	0.37 U [0.37 U] 0.32 U [0.32 U]	0.37 U 0.32 U	0.37 U [0.37 U] 0.32 U [0.32 U]	0.37 U 0.32 U	0.37 U 0.32 U	0.37 U 0.32 U	0.37 U 0.32 U	0.37 U 0.32 U	0.37 U 0.32 U									
3-Methylthiophene			ug/m3	0.32 U	0.32 U	0.32 U	0.32 U [0.32 U]	0.32 U	0.32 U [0.32 U]	0.32 U	0.32 U	0.32 U	0.32 U	0.32 U	0.32 0									
Indane			ug/m3	0.39 U	0.39 U	0.39 U	0.39 U [0.39 U]	0.39 U	0.39 U [0.39 U]	0.39 U	0.39 U	0.39 U	0.39 U	0.39 U	0.39 U									
			ug/m3	0.76 U	0.76 U	0.76 U	0.76 U [0.76 U]	0.76 U	0.76 U [0.76 U]	0.76 U	0.76 U	0.76 U	0.76 U	0.76 U	0.76 U									
Indene			uy/mo	0.700	0.700	0.700	0.70 0 [0.70 0]	0.10 0																
Indene Isoctane			ug/m3	0.10 U	0.24 J	0.20 J	0.15 J [0.15 J]	0.20 J	0.15 J	0.22 J	0.17 J	0.41 J	0.16 J	0.18 J	0.25 J	0.27 J	0.31 J	0.83 J [0.89 J]	0.20 J	0.94	0.29 J	1.0	0.43 J	9.5
																	0.31 J 0.79 U	0.83 J [0.89 J] 0.79 U [0.79 U]	0.20 J 0.79 U	0.94 0.79 U	0.29 J 0.79 U 0.28 U	1.0 0.13 J 0.28 U	0.43 J 0.79 U 0.28 U	9.5 0.79 U 0.28 U

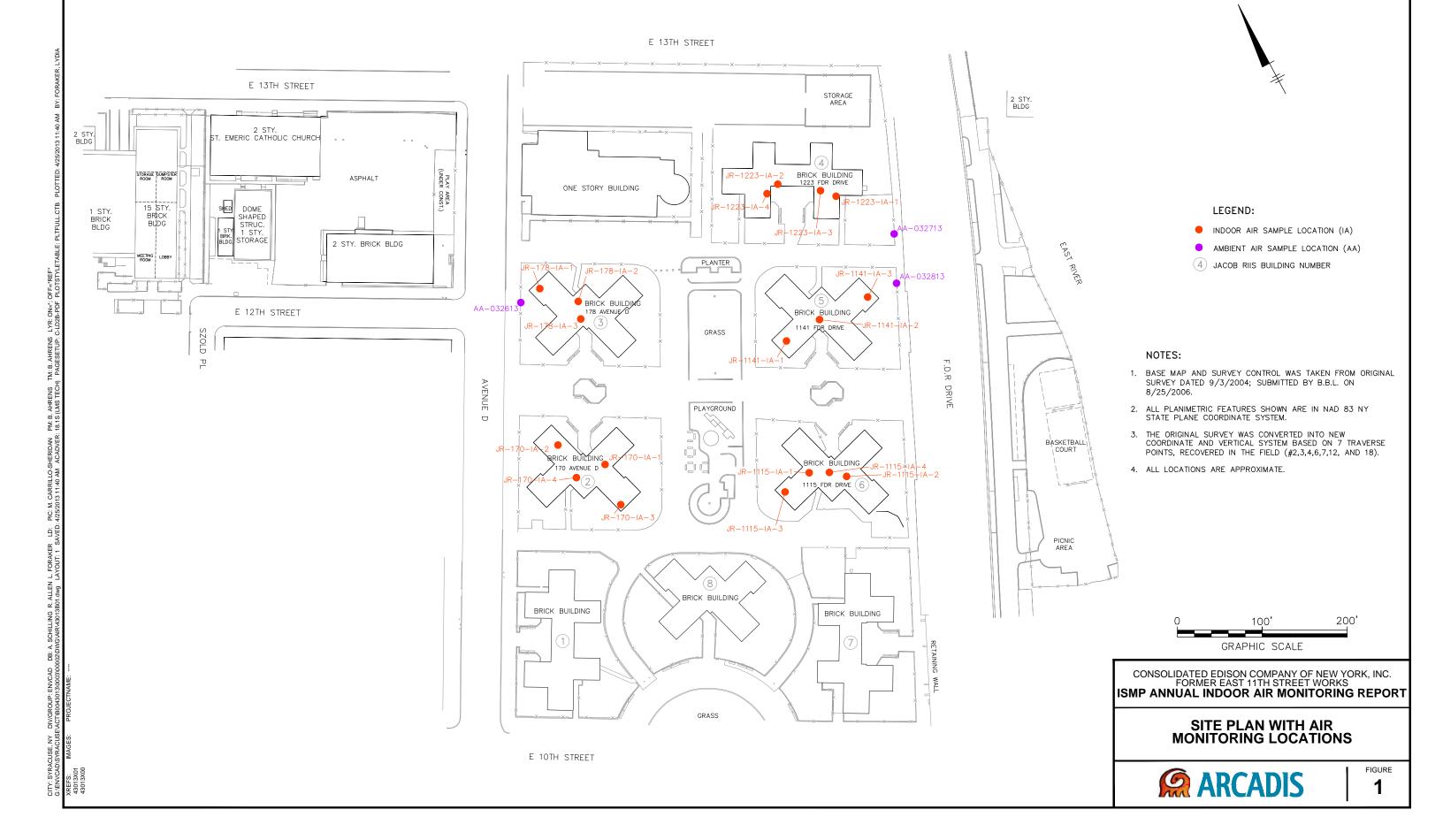
Table 3 Indoor Air Analytical Results - Jacob Riis

ISMP Annual Indoor Air Monitoring Consolidated Edison Company of New York, Inc.

Lab Qualifier	Definition
D	Sample required dilution prior to analysis.
J	Indicates an estimated value.
U	Indicates the constituent was not detected at the PQL. The value preceding the U indicates the PQL.
[]	Identifies duplicate sample collected for quality control purposes.
bold font	Indicates analyte exceeded its NYSDOH Upper Fence Criterion.
shaded	indicates analyte exceeded the USEPA's BASE Guidance Value (90th Percentile).



Figures



Attachment 1

NYSDOH Indoor Air Quality Questionnaires and Building Inventory Forms (on compact disk)

170 AVENUE D

NEW YORK STATE DEPARTMENT OF HEALTH INDOOR AIR QUALITY QUESTIONNAIRE AND BUILDING INVENTORY CENTER FOR ENVIRONMENTAL HEALTH

This form must be	completed fo	r each residence invol	ved in indoor air testing.			
Preparer's Name _	AARON	FALLHRAND	Date/Time Prepared	3 25 13	0.00	AM
Preparer's Affiliati	on ARCA	DIS	Date/Time Prepared Phone No. 585 -	880-1456		
Purpose of Investig	gation IN	DOOR AIR	SAMPLING			
1. OCCUPA	NT:					
Interviewed: Y	Ð					
Last Name:		First Nam	e:			
Address:		and the sum of the sum				
County:						
Home Phone:		Office Phone:				
Number of Occupa	nts/persons at	this location	_Age of Occupants			
2. OWNER OR L		(Check if same as occ	cupant)			
Interviewed $\widehat{\mathbf{Y}}$ / N	200	ERVISOR				
			- ANTHONY			
Address: 454	EAST	10TH STRE	407			
County: MAN HA	MAN					
Home Phone:		Office Phone:	212 - 228 - 2400			
3. BUILDING CH	ARACTERI	STICS				
Type of Building:	Circle approj	priate response)				
Residential Industrial	School Church	Commercial/N Other:	Aulti-use			

If the property is residential, type? (Circle appropriate response)

Ranch 2-Family 3-Family Raised Ranch Split Level Colonial Cape Cod Contemporary Mobile Home Duplex Apartment House Townhouses/Condos Modular Log Home Other:
If multiple units, how many? 117
If the property is commercial, type?
Business Type(s) NO BUSINESS - ALL RESIDENTIAL
Does it include residences (i.e., multi-use)? [] / N If yes, how many?
Other characteristics:
Number of floors 13 Building age 265 NRS
Is the building insulated? (N How air tight? (Tight / Average / Not Tight
4. AIRFLOW
Use air current tubes or tracer smoke to evaluate airflow patterns and qualitatively describe:
Airflow between floors NONE - NO NERTICAL AIR MOVEMENT UNLESS THROUGH GAPS IN PIPING COMPACTOR, OR ELENATOR SHAFT.
Airflow near source AIR NENTS / FANS PRESENT WITH LARGE FAN IN TANK ROOM CREATING AIR GXCHANILE, POTENTIAL AIRFLOW IN COMPACTEUR CHUTZ.
Outdoor air infiltration LARGE FAN IN TANK ROOM GREATING AID EXCHANGE
Infiltration into air ducts No ALE DUCTS PRESENT IN GROWNS LEVEL.

5. BASEMENT AND CONST	RUCTION C	HARACTERIST	TICS (Circle all	that apply)
a. Above grade construction:	wood frame	Concrete	stone	Grick
b. Basement type:	full	crawlspace	slab	other
c. Basement floor:	concrete	dirt	stone	other
d. Basement floor:	uncovered	covered	covered with _	
e. Concrete floor:	unsea	Ted sealed	sealed with	
f. Foundation walls:	poured block	stone	other	
g. Foundation walls:	unsealed	sealed sealed	with	
h. The basement is:	wet	damp	dry	moldy
i. The basement is:	finished	anfinished	partially finish	ed
j. Sump present?	Ø N	TANK	hoom	
k. Water in sump?	(Y) N / not ap	-		
Basement/Lowest level depth	below grade: _	<u>-20</u> (feet) (Sump Ray	EHLY 20' DEEP)
Identify potential soil vapor e	ntry points and	l approximate si	ze (e.g., cracks,	, utility ports, drains)
CONCRATE FLORES	FREE	OF LARGE	E CRACK	<u>S. ÉARTHEN</u> FLOR, <u>LOCATIONS</u>
SUMP, FLOOR PRA	INS POT	ENTIAL	Such VAPON	s intry Location's
6. HEATING, VENTING and				
Type of heating system(s) used	l in this buildi	ng: (circle all tha	it apply – note	primary)
Hot air circulation	Heat pump	Hot wa	ter baseboard	
1	radiation?	Radiant floor		
Electric baseboard	Wood stove	Outdoo	r wood boiler	Other
The primary type of fuel used	is:			
Natural Gas	Fuel Oil	Keroser	ne	
Electric	Propane	Solar		
Wood Coal				
Domestic hot water tank fuele	d by: <u>572</u>	AM		
Boiler/furnace located in:	Basement	Outdoors	Main Floor	Other STERM PIPED IN
Air conditioning:	Central Air	Window units	Open Windows	s None

Y N

Are there air distribution ducts present?

Describe the supply and cold air return ductwork, and its condition where visible, including whether there is a cold air return and the tightness of duct joints. Indicate the locations on the floor plan diagram.

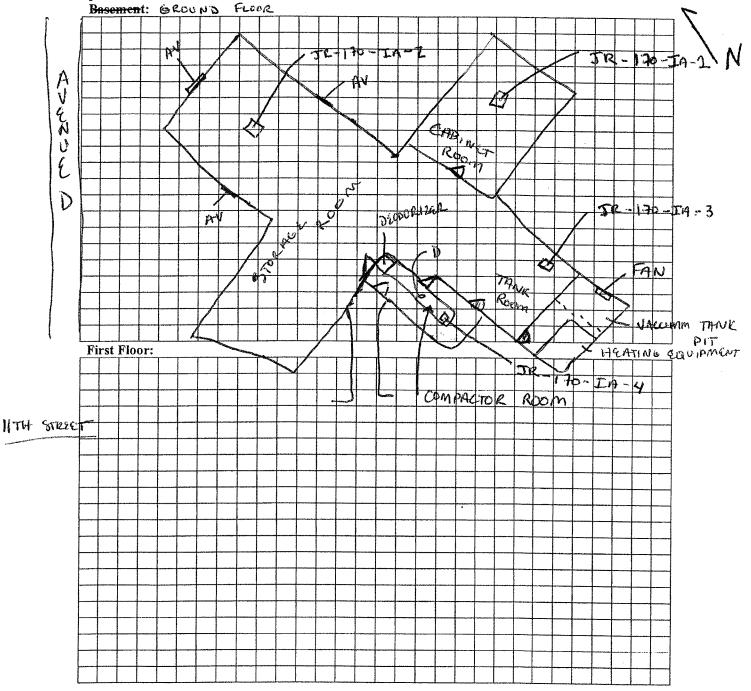
NO DUCT WORK, SMALL VEN	TILLETION VENTS
NUAR TOPS OF WALLS IN 61	ROUND LEVEL
7. OCCUPANCY	ONLY BUILDING MAINTENANCE
Is basement/lowest level occupied? Full-time	asionally Seldom Almost Never
Level General Use of Each Floor (e.g., familyroo	<u>m, bedroom, laundry, workshop, storage)</u>
Basement COMPACTOR RM, TANK R	M STORAGE, JANK RM
1st Floor RESIDENCES	
2nd Floor Residences	
3rd Floor RESIDENCES	
4th Floor - 13 RESIPENCES	
8. FACTORS THAT MAY INFLUENCE INDOOR AIR	QUALITY
a. Is there an attached garage?	Y / 🕵
b. Does the garage have a separate heating unit?	Y / N / (A)
c. Are petroleum-powered machines or vehicles stored in the garage (e.g., lawnmower, atv, car)	Y / N / NA Please specify
d. Has the building ever had a fire?	Y/NWhen? NA
e. Is a kerosene or unvented gas space heater present?	Y/DWhere? N/A
f. Is there a workshop or hobby/craft area? Y	Where & Type? NA
g. Is there smoking in the building?	Y N How frequently? BUT STILL HAPPENS
h. Have cleaning products been used recently?	When & Type? DAILY
i. Have cosmetic products been used recently?	Y/N When & Type? Nor 6 Kound Level
# HURRICANE SAMDY IMPACT 035911807 Appendix A.doc 3-4" WATER	ACROSS SITE.

Page 5	
j. Has painting/staining been done in the last 6 months? $igvee V$ / N	Where & When? Tougs UP
k. Is there new carpet, drapes or other textiles? Y / $$	Where & When?
l. Have air fresheners been used recently?	N When & Type? DALY
m. Is there a kitchen exhaust fan?	Y / If yes, where vented? N A
n. Is there a bathroom exhaust fan?	Y / N If yes, where vented? μ/μ
o. Is there a clothes dryer?	Y/N If yes, is it vented outside? Y/N N/P
p. Has there been a pesticide application?	Y / When & Type? N/A
Are there odors in the building? Q/N If yes, please describe: <u>TRASH</u> - IN COMP	Actor Reom
Do any of the building occupants use solvents at work? (e.g., chemical manufacturing or laboratory, auto mechanic or auto b boiler mechanic, pesticide application, cosmetologist	ody shop, painting, fuel oil delivery,
If yes, what types of solvents are used? House 140 2	DURINTS
If yes, are their clothes washed at work? Y/	
Do any of the building occupants regularly use or work at a dry- response)	cleaning service? (Circle appropriate
Yes, use dry-cleaning regularly (weekly) Yes, use dry-cleaning infrequently (monthly or less) Yes, work at a dry-cleaning service	
Is there a radon mitigation system for the building/structure? Y / Is the system active or passive? Active/Passive N	N Date of Installation: NA
9. WATER AND SEWAGE	
Water Supply: Public Water Drilled Well Driven Well Sewage Disposal: Public Sewer Septic Tank Lea	Dug Well Other: ch Field Dry Well Other:
10. RELOCATION INFORMATION (for oil spill residential eme	ergency)
a. Provide reasons why relocation is recommended:	
b. Residents choose to: remain in home relocate to friends/fa	mily relocate to hotel/motel
c. Responsibility for costs associated with reimbursement explain	ed? Y / N
d. Relocation package provided and explained to residents?	Y / N

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11. FLOOR PLANS

Draw a plan view sketch of the basement and first floor of the building. Indicate air sampling locations, possible indoor air pollution sources and PID meter readings. If the building does not have a basement, please note.



12. OUTDOOR PLOT

Draw a sketch of the area surrounding the building being sampled. If applicable, provide information on spill locations, potential air contamination sources (industries, gas stations, repair shops, landfills, etc.), outdoor air sampling location(s) and PID meter readings.

Also indicate compass direction, wind direction and speed during sampling, the locations of the well and septic system, if applicable, and a qualifying statement to help locate the site on a topographic map.

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13. PRODUCT INVENTORY FORM

Make & Model of field instrument used: PPB RHZ

List specific products found in the residence that have the potential to affect indoor air quality.

Location	Produc	t Description	Size (units)	Condition*	Chemical Ingredients	Field Instrument Reading (units)	Photo** <u>_Y/N</u>
٨	10 (HEMICA	is id	ENTIFI	ED		

* Describe the condition of the product containers as **Unopened (UO)**, **Used (U)**, or **Deteriorated (D)** ** Photographs of the **front and back** of product containers can replace the handwritten list of chemical ingredients. However, the photographs must be of good quality and ingredient labels must be legible.



NEW YORK STATE DEPARTMENT OF HEALTH INDOOR AIR QUALITY QUESTIONNAIRE AND BUILDING INVENTORY CENTER FOR ENVIRONMENTAL HEALTH

This form must be completed for each residence involved in indoor air testing.

Preparer's Name <u>AARON FALZAKANO</u>	Date/Time Prepared $3/2$	5/13 10:00	AM
Preparer's Affiliation ARCADIS	Phone No985 - 84	1 50-1456	
Purpose of Investigation INDOCK AIR	SAMPLING		
1. OCCUPANT:			
Interviewed: Y			
Last Name: First Name:			
Address:			
County:			
Home Phone: Office Phone:			
Number of Occupants/persons at this location Age	e of Occupants		
2. OWNER OR LANDLORD: (Check if same as occupan	.t)		
Interviewed (V/N	_		
Last Name: First Name:	ANTHONY		
Address: 454 GAST 10TH STREE			
County: MANIAATTAN			
Home Phone: Office Phone:	12- 228-2700		
3. BUILDING CHARACTERISTICS			
Type of Building: (Circle appropriate response)			
Residential School Commercial/Multi-	-use		

Residential Industrial

School Church

Commercial/Multi-use
Other:

If the property is residential, type? (Circle appropriate response)

Ranch	2-Family	3-Family
Raised	Ranch Split	Level Colonial
Cape Cod	Contemporary	Mobile Home
Duplex	Apartment House	Townhouses/Condos
Modular	Log Home	Other:

If multiple units, how many? <u>126</u> Ut 175

If the property is commercial, type?					
Business Type(s) N A					
Does it include residences (i.e., multi-use)? Y / N If yes, how many?	-				
Other characteristics:					

Number of floors <u>13</u>	Building age ~6 SYRS
Is the building insulated 🕢 N	How air tight? Tight / Kverage / Not Tight

4. AIRFLOW

Use air current tubes or tracer smoke to evaluate airflow patterns and qualitatively describe:

Airflow betw	veen floo	ors						
Nows	No	VERTK	Ar 1	fir Mou	ZMENT	UNLESS	THEOUL	1+
GAPS	ÍN	PIPES	in	FLOOR	. Comi	ACTOR	CHUTE	OR
212VA-	TOR	SHAF	7.		2 -			/

Airflow near source		â	
AIR VENTS/ FAN	13 PRESENT.	TANK REOM	CONTAINS
FAN CREATING	AIR EXCHANGE	E. COMPACTOR	TRASH
CHUTZ CREATES	, AIREON.		

Outdoor a	ir infiltration						
FAN	CREATZ	S AIR	EKCHANG:	2 IN	TANK	Room	•
OFEN	Decies	CREATE	EXCHANGE	WITH	AMBiz	NT A	TR

Infiltrati	ion into air	ducts	0	
No	Phik	DUCTS	RESENT.	

5. BASEMENT AND CONSTRUCTION CHARACTERISTICS (Circle all that apply)						
a. Above grade construction:	wood frame	Concrete	stone	Frick		
b. Basement type:	full	stawlspace	slab	other		
c. Basement floor:	Concrete	dirt	stone	other		
d. Basement floor:	uncovered	covered	covered with _			
e. Concrete floor:	unseal	ed sealed	sealed with			
f. Foundation walls:	poured block	stone	other_			
g. Foundation walls:	unsealed	sealed sealed	with <u>PAIN</u>	NT		
h. The basement is:	wet c	damp)	dry	moldy		
i. The basement is:	finished	unfinished	partially finish	ed		
j. Sump present?	$\langle \mathcal{Q} \rangle_{N}$	SUMP	IN TA	NK Room		
k. Water in sump?	⑦/N/not app					
Basement/Lowest level depth	below grade:	<u>20 (</u> feet)	SUMP 1	N TANK Room		
Identify potential soil vapor e <u>CONCRETE</u> FLOOR EARTHEN FLOOR I	is seen	1 TO P	se freq	utility ports, drains) <u>OF LARES</u> (RACKS <u>NE POTENTIAL ENTRY</u>		
6. HEATING, VENTING and				POINT.		
Type of heating system(s) use	d in this buildin	g: (circle all tha	at apply – note j	p rima ry)		
Hot air circulation Space Heaters Electric baseboard	Heat pump radiation Wood stove	Hot wa Radiant floor Outdoo	ter baseboard r wood boiler	Other		
The primary type of fuel used is:						
Natural Gas Electric Wood Coal	Fuel Oil Propane	Keroser Solar	ne			
Domestic hot water tank fuele	Domestic hot water tank fueled by: <u>STERM</u>					
Boiler/furnace located in:	Basement	Outdoors	Main Floor	Other TEAM PIPED IN		
Air conditioning:	Central Air	Window units	Open Windows	None		

YN

Are there air distribution ducts present?

Describe the supply and cold air return ductwork, and its condition where visible, including whether there is a cold air return and the tightness of duct joints. Indicate the locations on the floor plan diagram.

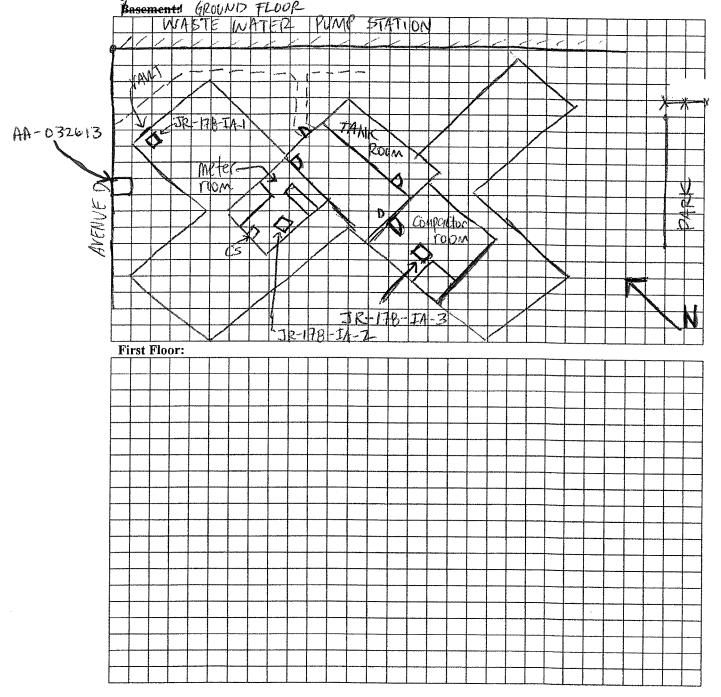
No DUCT WORK PRESENT / 5	MALL VENTS AND
FANS CREATE AIR EXCHANCE	,E
7. OCCUPANCY	WORKERS
Is basement/lowest level occupied? Full-time Occasi	
Level General Use of Each Floor (e.g., familyroom	<u>, bedroom, laundry, workshop, storage)</u>
Basement MGTER RM, COMPACTOR	RM. TANK RM.
1st Floor RESIDENCES	
2nd Floor RESIDENCES	
3rd Floor RESIDENSCES	
4th Floor RESIDENCES	
8. FACTORS THAT MAY INFLUENCE INDOOR AIR QU	JALITY
a. Is there an attached garage?	Y/N
b. Does the garage have a separate heating unit?	Y/N/XA
c. Are petroleum-powered machines or vehicles stored in the garage (e.g., lawnmower, atv, car)	Y/N/NA Please specify N/4
d. Has the building ever had a fire?	Y/ When? NA
e. Is a kerosene or unvented gas space heater present?	Y/NWhere? NA
f. Is there a workshop or hobby/craft area? Y f	Where & Type?N A
g. Is there smoking in the building?	Y/N How frequently? PEOPLE STILL D
h. Have cleaning products been used recently?	YN When & Type? DAILY
i. Have cosmetic products been used recently?	Y /N When & Type? N A-
X HURRICANE SANDY OCT 035911807 Appendix A.doc ACROSS THE SITE	2012 3-41 WATER

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Page 5	
j. Has painting/staining been done in the last 6 months? \bigcirc N	Where & When? JOUCH UPS
k. Is there new carpet, drapes or other textiles? Y/N	Where & When? NA
l. Have air fresheners been used recently?	W/N When & Type? DAILY
m. Is there a kitchen exhaust fan?	Y/N If yes, where vented? $\dot{N}A$
n. Is there a bathroom exhaust fan?	Y / \mathcal{P} If yes, where vented? N / A
o. Is there a clothes dryer?	Y/\hat{W} If yes, is it vented outside? Y/N / \hat{A}
p. Has there been a pesticide application?	Y / When & Type? N/A
Are there odors in the building? $@/N$ If yes, please describe: TRASH SMELL IN	COMPACTOR ROOM
Do any of the building occupants use solvents at work? (e.g., chemical manufacturing or laboratory, auto mechanic or auto boiler mechanic, pesticide application, cosmetologist	
If yes, what types of solvents are used?	CLEANERS
If yes, are their clothes washed at work? Y	
Do any of the building occupants regularly use or work at a dry response)	-cleaning service? (Circle appropriate
Yes, use dry-cleaning regularly (weekly) Yes, use dry-cleaning infrequently (monthly or less) Yes, work at a dry-cleaning service	
Is there a radon mitigation system for the building/structure? Y Is the system active or passive? Active/Passive h/r	$V \to 0$ N Date of Installation: \mathbb{N} / \mathbb{A}
9. WATER AND SEWAGE	
Water Supply:Public WaterDrilled WellDriven WellSewage Disposal:Public SewerSeptic TankLet	ell Dug Well Other: each Field Dry Well Other:
10. RELOCATION INFORMATION (for oil spill residential en	nergency)
a. Provide reasons why relocation is recommended:	
b. Residents choose to: remain in home relocate to friends/	family relocate to hotel/motel
c. Responsibility for costs associated with reimbursement explai	ned? Y / N
d. Relocation package provided and explained to residents?	Y / N

11. FLOOR PLANS

Draw a plan view sketch of the basement and first floor of the building. Indicate air sampling locations, possible indoor air pollution sources and PID meter readings. If the building does not have a basement, please note.



CS= confined space D= Drain

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12. OUTDOOR PLOT

Draw a sketch of the area surrounding the building being sampled. If applicable, provide information on spill locations, potential air contamination sources (industries, gas stations, repair shops, landfills, etc.), outdoor air sampling location(s) and PID meter readings.

Also indicate compass direction, wind direction and speed during sampling, the locations of the well and septic system, if applicable, and a qualifying statement to help locate the site on a topographic map.

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13. PRODUCT INVENTORY FORM

Make & Model of field instrument used: _____

List specific products found in the residence that have the potential to affect indoor air quality.

Location	Product Description	Size (units)	Condition*	Chemical Ingredients	Field Instrument Reading (units)	Photo** <u>Y/N</u>
N	O CHEMIC	JALS	IDEN-	TIFIED		
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* Describe the condition of the product containers as **Unopened (UO)**, **Used (U)**, or **Deteriorated (D)** ** Photographs of the **front and back** of product containers can replace the handwritten list of chemical ingredients. However, the photographs must be of good quality and ingredient labels must be legible.

1115 FDR DRIVE

NEW YORK STATE DEPARTMENT OF HEALTH INDOOR AIR QUALITY QUESTIONNAIRE AND BUILDING INVENTORY CENTER FOR ENVIRONMENTAL HEALTH

This form must be completed for each residence involved in indoor air testing.

Preparer's Name	ALON FAL	2 ARANO	Date/Time	Prepared 2	3/25/13	10:00	AM
)			•		
Purpose of Investigation	on						
1. OCCUPANT	:						
Interviewed: Y (N)							
Last Name:		First Name:					
Address:							
County:							
Home Phone:	- damaa da ada da ada da da da da da da da da	Office Phone:					
Number of Occupants/	persons at this	location Age	of Occupants				
2. OWNER OR LAN	DLORD: (Che	eck if same as occupant	t)				
Interviewed. YN							
Last Name: CAAST	LR	First Name:	ANTIENY	1			
Address: 454	EAST 1	D'TH STREET	-				
County: MANHAT	TAN						
Home Phone:		Office Phone: 21	2-228	2400			
3. BUILDING CHAR	ACTERISTIC	CS					
Type of Building: (Cir	cle appropriate	e response)					
Residential Industrial	School Church	Commercial/Multi-					

If the property is residential, type? (Circle appropriate response)

Ranch	2-Family	3-Family
Raised	Ranch Split	Level Colonial
Cape Cod	Contemporary	Mobile Home
Duplex	Apartment House	Townhouses/Condos
Modular	Log Home	Other:

If multiple units, how many? 126 UNITS

If	the	property	is	commercial,	type?
~~		Property.			~, P ~ · ·

Business Type(s) NA

Does it include residences (i.e., multi-use)? Y / Ω f yes, how many? N

Other characteristics:

Number of floors 13	Building age 265 YRS
Is the building insulated? Y/N	How air tight? Tight / Average / Not Tight

4. AIRFLOW

Use air current tubes or tracer smoke to evaluate airflow patterns and qualitatively describe:

Airflow between	1 floors					
NONE -	NO VE	RUCAL	AIR	MOURMENT	UNLESS	THROUGH
GAPS IN	PIPE	IN FL	COR	, COMPACTOR	CHUTE	OR ELSVATOR
SHAFT.						

Airflow near source Some Air Vents FANS, FANS IN TANK ROOM

	infiltration CREATES	Am	BIENT	AIR	Exch	NGK	IN	TANK	Room	
Open	DOOKS	ALSO	CR4	ATL	AIR	exci	4n	lο ξ.	\ 1	

Infiltration into air ducts NO AIR DUCTS IPENTIFIED ON FIRST FLOOR (GROUND LEVEL

5. BASEMENT AND CONS	TRUCTION C	HARACTERIS	FICS (Circle al	l that apply)	
a. Above grade construction	: wood frame	opticrete	stone	brick	
b. Basement type:	full	orawlspace	slab	other	
c. Basement floor:	concrete	dirt	stone	other	
d. Basement floor:	funcovered	covered	covered with		
e. Concrete floor:	msea	aled sealed	sealed with		
f. Foundation walls:	poured block	stone	other		
g. Foundation walls:	unsealed	sealed sealed	with P4	INT	
h. The basement is:	wet	damp	dry	moldy	
i. The basement is:	finished	infinished	partially finis	hed	
j. Sump present?	(y/ N				
k. Water in sump?	(Y/N / not ap	-			
Basement/Lowest level depth	n below grade:	<u>20</u> (feet)	IN SUM	P	
Identify potential soil vapor				s, utility ports, drains) CKS . ビルセロトセル	
FLOORS AND DRA	HNS POTE	INTIAL S	OIL UNPR	A ENTRY POINT	
6. HEATING, VENTING an	d AIR CONDI	FIONING (Circl	e all that apply)		
Type of heating system(s) us	ed in this buildi	ing: (circle all th	at apply – note	primary)	
Hot air circulation	Heat pump		ater baseboard		
Space Heaters Stream Electric baseboard	Wood stove	Radiant floor Outdo	or wood boiler	Other	
The primary type of fuel use	d is:				
Natural Gas	Fuel Oil	Kerose	ene		
Electric Wood Coal	Propane	Solar			
Domestic hot water tank fuel	ed by:	TEAM			
Boiler/furnace located in:	Basement	Outdoors	Main Floor	Other STEAM PIPED	> IN
Air conditioning:	Central Air	Window units	Open Window	vs None	

Are there air distribution ducts present?

Describe the supply and cold air return ductwork, and its condition where visible, including whether there is a cold air return and the tightness of duct joints. Indicate the locations on the floor plan diagram.

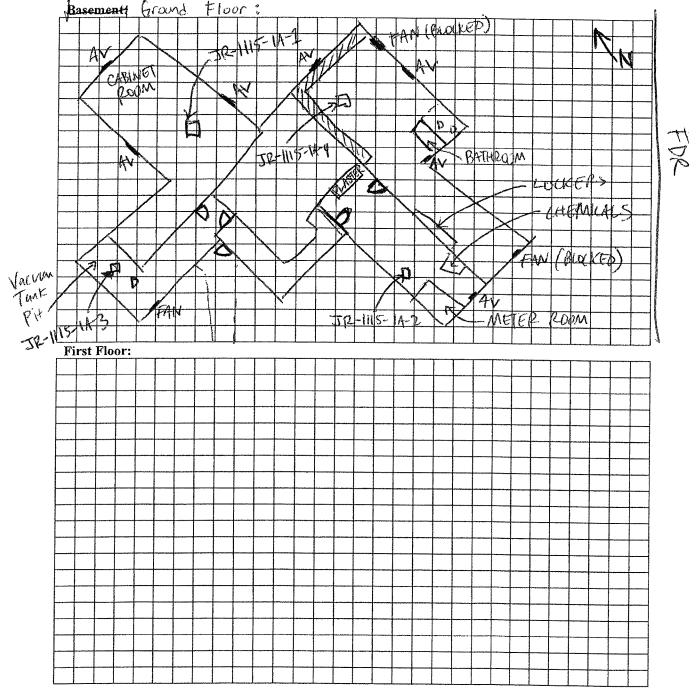
No DUCT WORK PRESENT,	VENTS AND FAMS
LOCATED IN TANK ROOM	\
7. OCCUPANCY	WORKERS
Is basement/lowest level occupied? Full-time Occasi	
Level General Use of Each Floor (e.g., familyroom.	, bedroom, laundry, workshop, storage)
Basement TANK ROOM, PLAST	2R ROOM, COMPACTOR RM STORALOE RM
1st Floor - B_RESIDENCES	STORALOE RM
2 ₁₁₃ Floor	
3 id Floor	
4 0 Floo r	
8. FACTORS THAT MAY INFLUENCE INDOOR AIR QU	JALITY
a. Is there an attached garage?	Y/
b. Does the garage have a separate heating unit?	Y/N/MA
c. Are petroleum-powered machines or vehicles stored in the garage (e.g., lawnmower, atv, car)	Y/N/NA Please specify N/A
d. Has the building ever had a fire?	Y/When?N/4
e. Is a kerosene or unvented gas space heater present?	Y / Where? N / 12
f. Is there a workshop or hobby/craft area?	Where & Type? PLASTER AREA
g. Is there smoking in the building?	Y N How frequently? STILL DO
h. Have cleaning products been used recently?	W/N When & Type? DAILY GENERAL
i. Have cosmetic products been used recently?	W/N When & Type? DAILY GANERAL Y/N When & Type? UN KNOWN
HURRICANE SANDY 3-4' OF WATER ACROSS AREA 035911807 Appendix A.doc	IF RESIDENTS DE

Page	5
j. Has painting/staining been done in the last 6 months? (YN Where & When? Touch UPS
k. Is there new carpet, drapes or other textiles?	Y/W Where & When? N/A
l. Have air fresheners been used recently?	When & Type? DAILY
m. Is there a kitchen exhaust fan?	Y / D If yes, where vented? N / H
n. Is there a bathroom exhaust fan?	Y / P If yes, where vented? $/ A$
o. Is there a clothes dryer?	Y \mathbb{N} If yes, is it vented outside? Y / N \mathbb{N} is
p. Has there been a pesticide application?	Y / When & Type? N / A
Are there odors in the building? Q/N If yes, please describe: $RHSI SMELL$	IN COMPACTOR ROOM
Do any of the building occupants use solvents at work? (e.g., chemical manufacturing or laboratory, auto mechanic or boiler mechanic, pesticide application, cosmetologist	
If yes, what types of solvents are used?	CIRANERS
If yes, are their clothes washed at work?	Y / 🕢
Do any of the building occupants regularly use or work at response)	a dry-cleaning service? (Circle appropriate
Yes, use dry-cleaning regularly (weekly) Yes, use dry-cleaning infrequently (monthly or less) Yes, work at a dry-cleaning service	- <u>No</u> nown
Is there a radon mitigation system for the building/structu Is the system active or passive? Active/Passive $N \downarrow A$	ire? Y /NDate of Installation: $N/4$
9. WATER AND SEWAGE	
Water Supply: Public Water Drilled Well Driv Sewage Disposal: Public Sewer Septic Tank	en Well Dug Well Other: Leach Field Dry Well Other:
10. RELOCATION INFORMATION (for oil spill residen	tial emergency)
a. Provide reasons why relocation is recommended:	
b. Residents choose to: remain in home relocate to fr	iends/family relocate to hotel/motel
c. Responsibility for costs associated with reimbursement	explained? Y / N
d. Relocation package provided and explained to residents	? Y / N

11. FLOOR PLANS

.

Draw a plan view sketch of the basement and first floor of the building. Indicate air sampling locations, possible indoor air pollution sources and PID meter readings. If the building does not have a basement, please note.



035911807 Appendix A.doc

D= Prain CS= confined space AV= air vent

12. OUTDOOR PLOT

Draw a sketch of the area surrounding the building being sampled. If applicable, provide information on spill locations, potential air contamination sources (industries, gas stations, repair shops, landfills, etc.), outdoor air sampling location(s) and PID meter readings.

Also indicate compass direction, wind direction and speed during sampling, the locations of the well and septic system, if applicable, and a qualifying statement to help locate the site on a topographic map.

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#### **13. PRODUCT INVENTORY FORM**

Make & Mouel of field instrument used.	Make & Model of field instrument used:	PPB	RAE
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List specific products found in the residence that have the potential to affect indoor air quality.

Location	Product Description	Size (units)	Condition*	Chemical Ingredients	Field Instrument Reading (units)	Photo** <u>Y/N</u>
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* Describe the condition of the product containers as **Unopened (UO)**, **Used (U)**, or **Deteriorated (D)** ** Photographs of the **front and back** of product containers can replace the handwritten list of chemical ingredients. However, the photographs must be of good quality and ingredient labels must be legible.



### NEW YORK STATE DEPARTMENT OF HEALTH INDOOR AIR QUALITY QUESTIONNAIRE AND BUILDING INVENTORY CENTER FOR ENVIRONMENTAL HEALTH

This form must be completed for each residence involved in indoor air testing.

Preparer's Name AARON	FALLARANO	Date/Time Prepared	3/25/13	10:00 AM
Preparer's Affiliation _ AKCA	015	Phone No		
Purpose of Investigation	DOOR ALL SA	MPLING		
1. OCCUPANT:				
Interviewed: Y /N				
Last Name:	First Name:			
Address:				
County:				
Home Phone:	Office Phone:			
Number of Occupants/persons a	t this location Ag	e of Occupants		
2. OWNER OR LANDLORD:	(Check if same as occupat	nt )		
Interviewed N Super	ERNISCE			
Last Name:	First Name:	ANTHONY		
Address: 454 EAST	- 10th STRE	er -		
County: MANHATTAN				
Home Phone:	Office Phone:	2-228-2400		
3. BUILDING CHARACTERI	STICS			
<b>Type of Building:</b> (Circle appro	priate response)			
Residential School	Commercial/Multi	i-use		

Industrial

Church

Other: _____

If the property is residential, type?	' (Circle appropriate response)
---------------------------------------	---------------------------------

Ranch 2-Family 3-Family
Raised Ranch Split Level Colonial
Cape Cod Contemporary Mobile Home
Duplex Apartment House Townhouses/Condos
Modular Log Home Other:
If multiple units, how many? 117 UNITS
If the property is commercial, type?
Business Type(s) N R
Does it include residences (i.e., multi-use)? Y / N If yes, how many? $\underline{N}$
Other characteristics:
Number of floors 13 Building age 465 YES
Is the building insulated? YN How air tight? Tight / Kverage / Not Tight
4. AIRFLOW
Use air current tubes or tracer smoke to evaluate airflow patterns and qualitatively describe:
Airflow between floors Nows No NERTICAL AND ECONDENSIONS H
Nows No VERTICAL AIR FLOW UNLESS THROUGH BAPS IN PIPING COMPACTOR ROOM TRASH CAUTS OR CLAVATOR SHAFT.
Airflow near source
Airflow near source <u>Some venuts</u> , FANS. TANK ROOM FANS CREATE AIR EXCHANGE.
Outdoor air infiltration FANS GENERATE AMBIENT AIR EXCHANGE AND OPEN
POORS LET IN AMBIENT AIR.
NO AIR DUCTS IDENTIFIED ON GROUND LEVEL.

5. BASEMENT AND CONS	TRUCTION C	HARACTERIS	<b>FICS</b> (Circle all	that apply)
a. Above grade construction:	wood frame	concrete	stone	brick
b. Basement type:	full	drawlspace	slab	other
c. Basement floor:	concrete	din	stone	other
d. Basement floor:	uncovered	covered	covered with	
e. Concrete floor:	ansea	aled sealed	sealed with	
f. Foundation walls:	poured block	stone	other	
g. Foundation walls:	unsealed	sealed) sealed	with PAir	<u>vt</u>
h. The basement is:	wet	damp	dry	moldy
i. The basement is:	finished	unfinished	partially finish	ned
j. Sump present?	(Z/N	1		
k. Water in sump?	YN / not ap	oplicable		
Basement/Lowest level depth	below grade:	(feet)	TANK	Loom SUMP
Identify potential soil vapor e	entry points an	d approximate s	ize (e.g., cracks	, utility ports, drains)
CONCLETE FLOOR ÉARTHEN FLOOR	- AND	DRAINS 7	POTEVITA	LEE CRACKS HE SOIL VAPOR POINTS.
6. HEATING, VENTING and				
Type of heating system(s) use	d in this buildi	ing: (circle all th	at apply – note	primary)
Hot air circulation	Heat pump		ater baseboard	
Space Heaters Stream Electric baseboard	Wood stove	Radiant floor Outdoo	or wood boiler	Other
The primary type of fuel used	l is:			
Natural Gas Electric Wood Coal	Fuel Oil Propane	Kerose Solar	ene	
Domestic hot water tank fuele	ed by:	STEAM	Willia a kankaning a sasa	
Boiler/furnace located in:	Basement	Outdoors	Main Floor	Other STEAM PIPED IN
Air conditioning:	Central Air	Window units	Open Window	s None

Page 4

Y /N

Are there air distribution ducts present?

Describe the supply and cold air return ductwork, and its condition where visible, including whether there is a cold air return and the tightness of duct joints. Indicate the locations on the floor plan diagram.

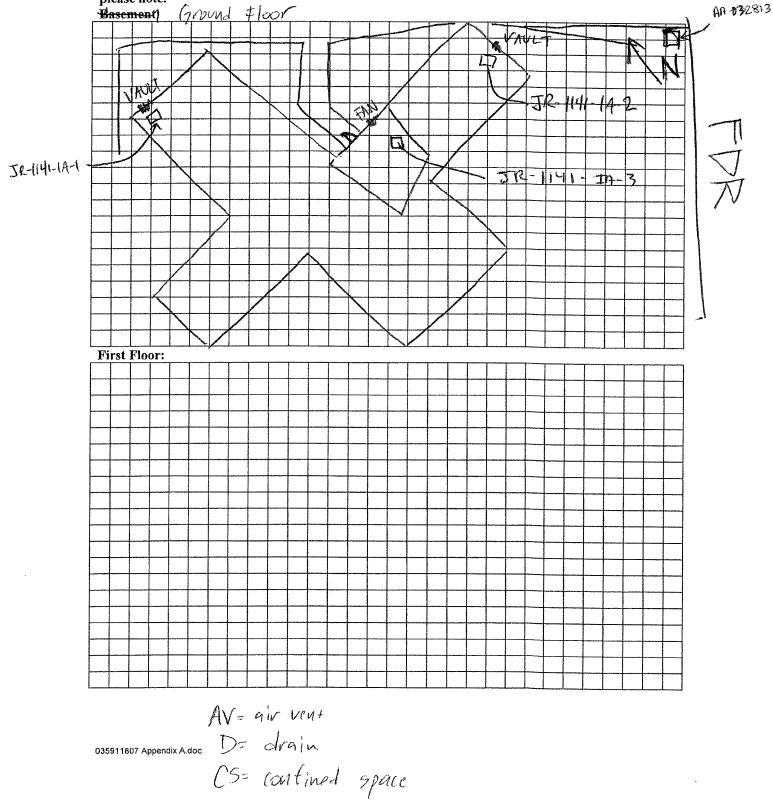
NO DUCT WORK, VENTLATION	VENTS AND FANS
LOCATED IN TANK ROOM.	
7. OCCUPANCY	WORKLERS
Is basement/lowest level occupied? Full-time	sionally Seldom Almost Never
Level General Use of Each Floor (e.g., familyroom	ı, bedroom, laundry, workshop, storage)
Basement METER Room, COMPA	CTOR ROOM, TANK ROOM
1st Floor -13 RESIDENCES	
2nd Floor	
3त्त Floor	
4th Floor	
8. FACTORS THAT MAY INFLUENCE INDOOR AIR Q	UALITY
a. Is there an attached garage?	Y 🔊
b. Does the garage have a separate heating unit?	Y/N/MA
c. Are petroleum-powered machines or vehicles stored in the garage (e.g., lawnmower, atv, car)	Y / N / 🕰 Please specify N A
d. Has the building ever had a fire?	Y / When?NA
e. Is a kerosene or unvented gas space heater present?	Y / Divhere? N/A
f. Is there a workshop or hobby/craft area? Y / 🕅	Where & Type? N A
g. Is there smoking in the building?	Y/N How frequently? STILL HAPPENS
h. Have cleaning products been used recently?	O/N When & Type? DALLY
i. Have cosmetic products been used recently? # HURELCANE SANDY OCH 2012 3-4' WATZE ACROSS SITE 035911807 Appendix A.doc	Y When & Type?

Page 5	
j. Has painting/staining been done in the last 6 months? $\textcircled{V}_{N}$	Where & When? TOUCH UPS
k. Is there new carpet, drapes or other textiles? $Y/S$	Where & When? NA
l. Have air fresheners been used recently?	Q/N When & Type? DALLY
m. Is there a kitchen exhaust fan?	$Y/ \square$ If yes, where vented? $N \square$
n. Is there a bathroom exhaust fan?	$Y/\mathcal{O}$ If yes, where vented? $N/A$
o. Is there a clothes dryer?	$Y / \bigotimes$ If yes, is it vented outside? $Y / N \sim A$
p. Has there been a pesticide application?	Y (N) When & Type? N/A
Are there odors in the building? $D/N$ If yes, please describe: TRASIH SMEL	L FROM COMPACTOR
<b>Do any of the building occupants use solvents at work?</b> (e.g., chemical manufacturing or laboratory, auto mechanic or auto boiler mechanic, pesticide application, cosmetologist	
If yes, what types of solvents are used? House House	D GREANGERS
If yes, are their clothes washed at work? Y	
Do any of the building occupants regularly use or work at a dry response)	-cleaning service? (Circle appropriate
Yes, use dry-cleaning regularly (weekly) Yes, use dry-cleaning infrequently (monthly or less) Yes, work at a dry-cleaning service	)
Is there a radon mitigation system for the building/structure? Y Is the system active or passive? Active/Passive パレム	Bate of Installation: MA
9. WATER AND SEWAGE	
Water Supply:Public WaterDrilled WellDriven WeSewage Disposal:Public SewerSeptic TankLe	ll Dug Well Other: ach Field Dry Well Other:
10. RELOCATION INFORMATION (for oil spill residential em	nergency)
a. Provide reasons why relocation is recommended:	
<b>b. Residents choose to:</b> remain in home relocate to friends/f	family relocate to hotel/motel
c. Responsibility for costs associated with reimbursement explain	ned? Y / N
d. Relocation package provided and explained to residents?	Y / N

**11. FLOOR PLANS** 

Page-6_ Bldg 1141

Draw a plan view sketch of the basement and first floor of the building. Indicate air sampling locations, possible indoor air pollution sources and PID meter readings. If the building does not have a basement, please note.



#### **12. OUTDOOR PLOT**

Draw a sketch of the area surrounding the building being sampled. If applicable, provide information on spill locations, potential air contamination sources (industries, gas stations, repair shops, landfills, etc.), outdoor air sampling location(s) and PID meter readings.

Also indicate compass direction, wind direction and speed during sampling, the locations of the well and septic system, if applicable, and a qualifying statement to help locate the site on a topographic map.

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#### **13. PRODUCT INVENTORY FORM**

Make & Model of field instrument used: ______ B RAE

List specific products found in the residence that have the potential to affect indoor air quality.

	Product Description	(units)	Condition*	Chemical Ingredients	Field Instrument Reading (units)	Photo** <u>Y/N</u>
N,	CHEMICA	fls	"DENTI	FIED		
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* Describe the condition of the product containers as **Unopened (UO)**, **Used (U)**, or **Deteriorated (D)** ** Photographs of the **front and back** of product containers can replace the handwritten list of chemical ingredients. However, the photographs must be of good quality and ingredient labels must be legible.



#### NEW YORK STATE DEPARTMENT OF HEALTH INDOOR AIR QUALITY QUESTIONNAIRE AND BUILDING INVENTORY CENTER FOR ENVIRONMENTAL HEALTH

This form must be completed for each residence involved in indoor air testing.

Preparer's Name	HARON FAL	LARANO	Date/Time	Prepared	3/25/13	10:00AM
Preparer's Affiliation	m ARCADI	S	Phone No	585-	880 - 14	56
Purpose of Investig						
1. OCCUPAN	₹ <b>T</b> :					
Interviewed: Y / 🕅	)					
Last Name:		First Name	·			
Address:						
County:						
Home Phone:		Office Phone:				
Number of Occupan	ts/persons at thi	s location	Age of Occupants			
2. OWNER OR LA	NDLORD: (C	heck if same as occu	ıpant )			
Interviewed: Y / N						
Last Name:	LTER	First Name:	Anothen	1		
Address: 454	CAST	10th Stree	et_			
County:	ATT.AN					
Home Phone:		Office Phone:	212-228	- 2400		
3. BUILDING CHA	RACTERIST	ICS				
Type of Building: (	Circle appropria	te response)				
Residential Industrial	School Church	Commercial/M Other:				

я

If the property is residential, type?	(Circle appropriate response)
the property to residential, type:	(encie appropriate response)

Ranch Raised Cape Cod Duplex Modular	2-Family Ranch Split <u>Contemporary</u> Apartment House Log Home	Mobile Home				
If multiple uni	ts, how many? <u>36</u>	_				
If the property	is commercial, type?					
Business Type(s	s) NA					
Does it include	residences (i.e., multi-us	e)? Y / N If yes, how many? $NA$				
Other characte	eristics:	,				
Number of floor	rs_6	Building age ~ 65 YRS				
Is the building insulated N How air tight? Tight / Average / Not Tight						
4. AIRFLOW						
Use air current tubes or tracer smoke to evaluate airflow patterns and qualitatively describe:						

Airflow betwe	een floors								
NONE,	VERTICAL	AIR	Moveme	NT	UNVESS	THRE	JUGH	GADS	IN
ZIPING'	, COMPACTO	~ (	CHUTE,	OR	Éliva=	TOR	5444	<u>`</u> T	

Airflow near			~			-	
Some	Air	VENTS,	FAN	IN	TANK	Room	EXCHANDIS
AIR.			•				······································
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Outdoor ai	$r \inf_{l \sim 1} r$	ion TAN	c Ro	om	ce	ZATES	An	Bigar	AIR	Excurance.	
OPEN	Por	ors	ALSO	AL	Low	FUR	AIR	Excit	LANLE	<u> </u>	

Infiltratio	n into ai	r ducts				
No	AIR	DUCTS	(DENTIFIED	ON	GROUND	FLOOR
			_			

5. BASEMENT AND CON	STRUCTION C	HARACTERIS	TICS (Circle al	ll that apply)	
a. Above grade constructio	n: wood frame	concrete	stone	brick	
b. Basement type:	full	rawlspace	slab	other	
c. Basement floor:	concrete		stone	other	
d. Basement floor:	uncovered	eovered	covered with		
e. Concrete floor:	unsea	led sealed	sealed with _		
f. Foundation walls:	poured block	stone	other		
g. Foundation walls:	unsealed	sealed sealed	l with <u>PA</u>	NT	
h. The basement is:	wet	damp	dry	moldy	
i. The basement is:	finished	unfinished	partially finis	shed	
j. Sump present?	(¥/ N				
k. Water in sump?	Ø∕N/N/not ap	-			
Basement/Lowest level dept	th below grade:	<u>20</u> (feet)	IN SUN	1 P	
Identify potential soil vapor CDN CRETE FLOR CARTHEN FLOOR	r entry points an つくろ チーのディ	d approximate : HC FREE	size (e.g., crack DF LA	s, utility ports, drains) &しら (りみもとち	
EARTHEN FLOOR	25, DRAN	S. AND	( TMDAC	TER / HITS	Promo
SOLL VAPOK EA 6. HEATING, VENTING a	NIKY HOI	INTS			- TOTER TAC
Type of heating system(s) u	sed in this buildi	ng: (circle all th	nat apply – note	e primary)	
Hot air circulation	Heat pump		vater baseboard		
Space Heaters Strea Electric baseboard	im radiation Wood stove		oor wood boiler	Other	
The primary type of fuel us	ed is:				
Natural Gas	Fuel Oil	Keros	ene		
Electric Wood Coal	Propane	Solar			
Wood Coal Domestic hot water tank fue		TEAM			
Boiler/furnace located in:	Basement	Outdoors	Main Floor	Other STEAM	PIPED IN
Air conditioning:	Central Air	Window units	Open Window	vs None	

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Y N

Are there air distribution ducts present?

Describe the supply and cold air return ductwork, and its condition where visible, including whether there is a cold air return and the tightness of duct joints. Indicate the locations on the floor plan diagram.

No DUCT WORK PRESENT, 1	JENTS AND FANS
LOCATED IN TANK ROOM	
7. OCCUPANCY	workers
Is basement/lowest level occupied? Full-time Occasi	ionally Seldom Almost Never
Level General Use of Each Floor (e.g., familyroom	<u>, bedroom, laundry, workshop, storage)</u>
	2 AND STORAGE ROOMS
1st Floor - 6TH RESIDENCES	
2n <del>a Floor</del>	
3	
4thFloor	
8. FACTORS THAT MAY INFLUENCE INDOOR AIR QU	JALITY
a. Is there an attached garage?	Y N
b. Does the garage have a separate heating unit?	Y NA
c. Are petroleum-powered machines or vehicles stored in the garage (e.g., lawnmower, atv, car)	Y/N/NA Please specify N/A
d. Has the building ever had a fire?	@/N When? 2008
e. Is a kerosene or unvented gas space heater present?	Y/(NWhere?)4
f. Is there a workshop or hobby/craft area? Y	Where & Type?NA
g. Is there smoking in the building?	Y/ D How frequently? STILL Do
h. Have cleaning products been used recently?	Q/N When & Type? DALLY
i. Have cosmetic products been used recently?	Y (W When & Type? NA
# HUCEICANE SANSY OCT 2 3-41 OF WATER ACRO	2012 DSS 3 (TE

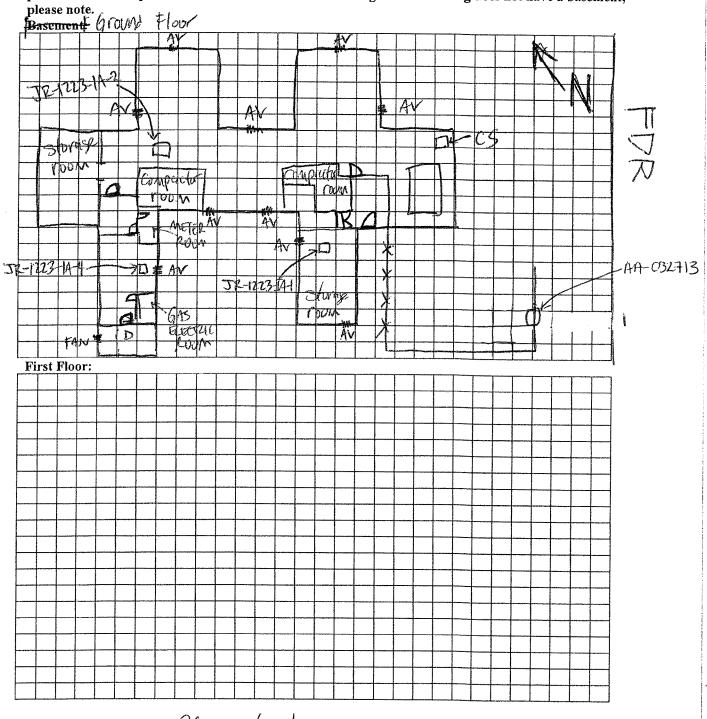
Page	5
j. Has painting/staining been done in the last 6 months?	W/N Where & When? Touch Up
k. Is there new carpet, drapes or other textiles?	Y N Where & When? U A
l. Have air fresheners been used recently?	$\mathbb{Q}_{N}$ When & Type? DAUY
m. Is there a kitchen exhaust fan?	Y/  If yes, where vented? $N/$
n. Is there a bathroom exhaust fan?	$Y/\Theta$ If yes, where vented? $N/A$
o. Is there a clothes dryer?	Y/W If yes, is it vented outside? $Y/N$ MA
p. Has there been a pesticide application?	Y/When & Type?N
Are there odors in the building? $O/N$ If yes, please describe: TRACY SM	ELL IN COMPACTOR ROOM
<b>Do any of the building occupants use solvents at work?</b> (e.g., chemical manufacturing or laboratory, auto mechanic or boiler mechanic, pesticide application, cosmetologist	
If yes, what types of solvents are used? HOUSE H	
If yes, are their clothes washed at work?	Y/
Do any of the building occupants regularly use or work at response)	a dry-cleaning service? (Circle appropriate
Yes, use dry-cleaning regularly (weekly) Yes, use dry-cleaning infrequently (monthly or less) Yes, work at a dry-cleaning service	No
Is there a radon mitigation system for the building/structu Is the system active or passive? Active/Passive	re? Y / Date of Installation: $N/A$
9. WATER AND SEWAGE	
Water Supply: Uplic Water Drilled Well Driv Sewage Disposal: Public Sewer Septic Tank	en Well Dug Well Other: Leach Field Dry Well Other:
10. RELOCATION INFORMATION (for oil spill resident	ial emergency)
a. Provide reasons why relocation is recommended:	
<b>b. Residents choose to:</b> remain in home relocate to fr	iends/family relocate to hotel/motel
c. Responsibility for costs associated with reimbursement of	explained? Y / N
d. Relocation package provided and explained to residents	? Y/N

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*

#### **11. FLOOR PLANS**

Draw a plan view sketch of the basement and first floor of the building. Indicate air sampling locations, possible indoor air pollution sources and PID meter readings. If the building does not have a basement, please note.



(S= confined space AV = air vent D= Jrain

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#### **12. OUTDOOR PLOT**

Draw a sketch of the area surrounding the building being sampled. If applicable, provide information on spill locations, potential air contamination sources (industries, gas stations, repair shops, landfills, etc.), outdoor air sampling location(s) and PID meter readings.

Also indicate compass direction, wind direction and speed during sampling, the locations of the well and septic system, if applicable, and a qualifying statement to help locate the site on a topographic map.

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#### **13. PRODUCT INVENTORY FORM**

Make & Model of field instrument used: <u>PPB</u> RAZ

List specific products found in the residence that have the potential to affect indoor air quality.

Location	Product Description	(units)	Condition*	Ingredients	Field Instrument Reading (units)	Photo** <u>Y/N</u>
No	CHEMICAL	S (T.	ENTIF	(2)		
	-					

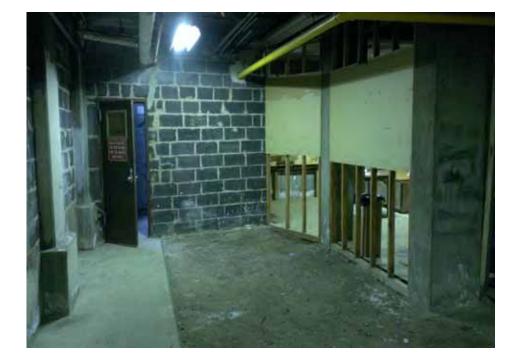
* Describe the condition of the product containers as **Unopened (UO)**, **Used (U)**, or **Deteriorated (D)** ** Photographs of the **front and back** of product containers can replace the handwritten list of chemical ingredients. However, the photographs must be of good quality and ingredient labels must be legible.

#### Attachment 2

Photographic Logs – Building Inventories (on compact disk)

### Photographic Log – Building Inventory

ISMP Annual Indoor Air Monitoring Report Former East 11th Street Works Manhattan, New York



Storage room inside 170 Avenue D containing miscellaneous building materials.



Compactor room located in 170 Avenue D containing Bio-Wash for trash compactor unit and oilcontaining unit for compactor operation.

### Photographic Log – Building Inventory

ISMP Annual Indoor Air Monitoring Report Former East 11th Street Works Manhattan, New York



Entrance to tank room area (facing east) located in 170 Avenue D.



Entrance to storage room area (facing north) located in 170 Avenue D.

### Photographic Log – Building Inventory

ISMP Annual Indoor Air Monitoring Report Former East 11th Street Works Manhattan, New York



Miscellaneous storage near tank room facing east located within 170 Avenue D.



Piping units within tank room (facing east) located within 170 Avenue D.

### Photographic Log – Building Inventory

ISMP Annual Indoor Air Monitoring Report Former East 11th Street Works Manhattan, New York



Pit with sump located in tank room (facing east) within 170 Avenue D.



Vault with crawl space (facing east) where JR-178-IA-1 was located at 178 Avenue D.

### Photographic Log – Building Inventory

ISMP Annual Indoor Air Monitoring Report Former East 11th Street Works Manhattan, New York



Meter room (facing west) located within 178 Avenue D.



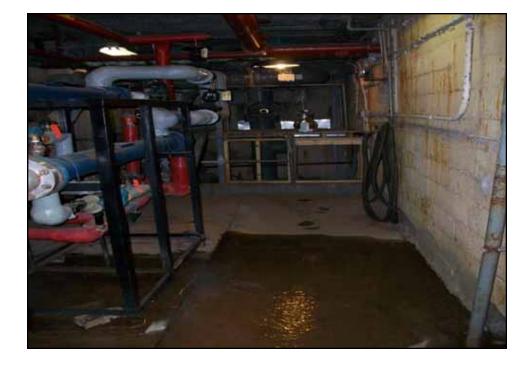
Compactor room (facing west) within 178 Avenue D.

### Photographic Log – Building Inventory

ISMP Annual Indoor Air Monitoring Report Former East 11th Street Works Manhattan, New York



Entrance to ground-level area (facing east) of 1115 FDR Drive.



Tank room (containing JR-1115-IA-3 (facing north) within 1115 FDR Drive. Two drains contained in floor with large fan and vents.

### Photographic Log – Building Inventory

ISMP Annual Indoor Air Monitoring Report Former East 11th Street Works Manhattan, New York



Pit and sump containing water located within tank room at 1115 FDR Drive.



Storage room area (facing north) located within 1115 FDR Drive.

### Photographic Log – Building Inventory

ISMP Annual Indoor Air Monitoring Report Former East 11th Street Works Manhattan, New York



Storage room area (facing east) where JR-1115-IA-1 was obtained within 1115 FDR Drive.



Outside of plaster room area facing meter room (south) located within 1115 FDR Drive.

### Photographic Log – Building Inventory

ISMP Annual Indoor Air Monitoring Report Former East 11th Street Works Manhattan, New York



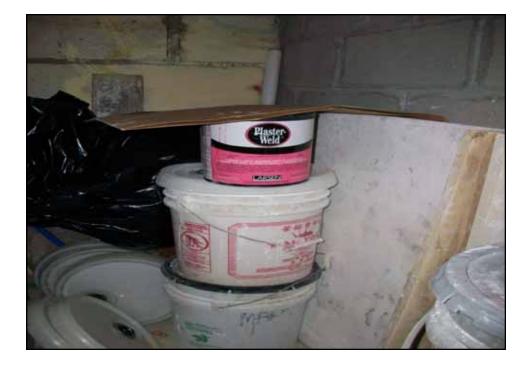
Miscellaneous plaster, tile, and adhesives located in plaster room (facing west) within 1115 FDR Drive.



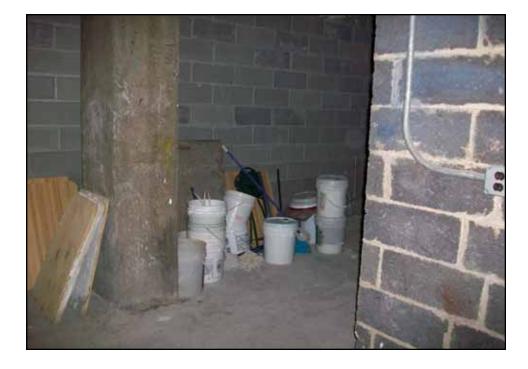
Grout mixing area plaster and adhesives located in plaster room (facing south within 1115 FDR Drive.

### Photographic Log – Building Inventory

ISMP Annual Indoor Air Monitoring Report Former East 11th Street Works Manhattan, New York



Plaster-Weld contained in plaster room (approximately half-full) within 1115 FDR Drive.



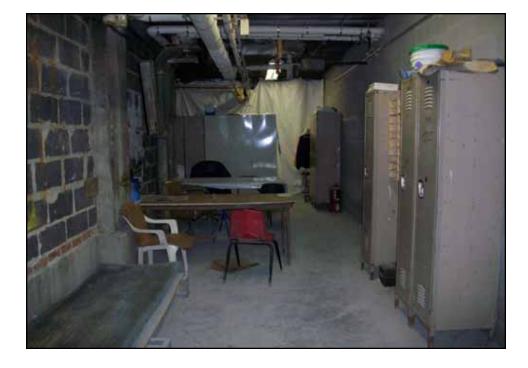
Various empty (used) cleaning buckets and cleaning solution located in plaster room within 1115 FDR Drive.

#### Photographic Log – Building Inventory

ISMP Annual Indoor Air Monitoring Report Former East 11th Street Works Manhattan, New York



Floor wax remover (used) located in plaster room within 1115 FDR Drive.



General break area (facing east) in plaster room within 1115 FDR Drive.

### Photographic Log – Building Inventory

ISMP Annual Indoor Air Monitoring Report Former East 11th Street Works Manhattan, New York



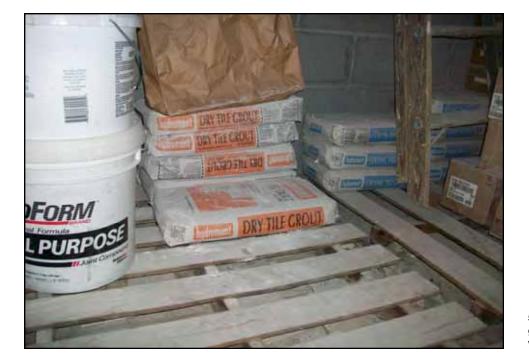
Office located behind plastic curtain in plaster room (facing east) within 1115 FDR Drive.



Various cleaning supplies and lockers (facing north) in plaster room within 1115 FDR Drive.

### Photographic Log – Building Inventory

ISMP Annual Indoor Air Monitoring Report Former East 11th Street Works Manhattan, New York



5-50 lb bags of Hydroment dry tile grout contained in plaster room within 1115 FDR Drive.



1-1 gallon (used) container of construction adhesive in plaster room within 1115 FDR Drive.

### Photographic Log – Building Inventory

ISMP Annual Indoor Air Monitoring Report Former East 11th Street Works Manhattan, New York



Bathroom contained in plaster room (facing south) within 1115 FDR Drive.



Assorted soaps and air freshener in bathroom of plaster room within 1115 FDR Drive.

#### Photographic Log – Building Inventory

ISMP Annual Indoor Air Monitoring Report Former East 11th Street Works Manhattan, New York



Approximately 200-50 lb bags of Red Top Gauging Plaster in plaster room within 1115 FDR Drive.



Approximately 25-50 lb bags of Grand Prize hydrated finish lime in plaster room within 1115 FDR Drive.

#### Photographic Log – Building Inventory

ISMP Annual Indoor Air Monitoring Report Former East 11th Street Works Manhattan, New York



1-5 gallon (used) container of Corcraft floor sealer in plaster room within 1115 FDR Drive.



Vault containing crawl space (facing south) where JR-1141-IA-1 was located at 1141 FDR Drive.

#### Photographic Log – Building Inventory

ISMP Annual Indoor Air Monitoring Report Former East 11th Street Works Manhattan, New York



Hallway (facing south) containing tank room and compactor room at 1141 FDR Drive.



Tank room (facing northeast) containing JR-1141-IA-2 within 1141 FDR Drive. Tank room contains various piping and a pit with a sump.

#### Photographic Log – Building Inventory

ISMP Annual Indoor Air Monitoring Report Former East 11th Street Works Manhattan, New York



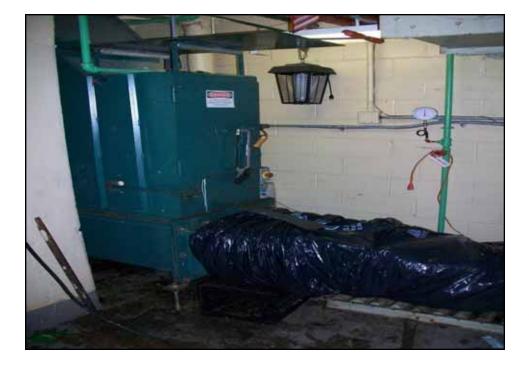
Pit and sump (with JR-1141-IA-2) within Tank Room located at 1141 FDR Drive.



Vault containing crawl space (facing northwest) where JR-1141-IA-3 was located at 1141 FDR Drive.

#### Photographic Log – Building Inventory

ISMP Annual Indoor Air Monitoring Report Former East 11th Street Works Manhattan, New York



Trash compactor room (facing north) located within 1223 FDR Drive.



1-5 gallon container of latex paint (used) located in trash compactor room within 1223 FDR Drive.

#### Photographic Log – Building Inventory

ISMP Annual Indoor Air Monitoring Report Former East 11th Street Works Manhattan, New York



Storage room (facing south) containing various furniture located in 1223 FDR Drive.



Outside of storage room (facing south) containing bags of rock salt and a mop bucket within 1223 FDR Drive.

#### Photographic Log – Building Inventory

ISMP Annual Indoor Air Monitoring Report Former East 11th Street Works Manhattan, New York



Assorted piping (facing east) contained outside of telecommunications room (on right) within 1223 FDR Drive.



Storage area (facing north) containing miscellaneous materials located within 1223 FDR Drive.

#### Photographic Log – Building Inventory

ISMP Annual Indoor Air Monitoring Report Former East 11th Street Works Manhattan, New York



Main walkway (facing east) containing various building-related materials located within 1223 FDR Drive.



Storage area (facing south) containing various bulbs within 1223 FDR Drive.

#### Photographic Log – Building Inventory

ISMP Annual Indoor Air Monitoring Report Former East 11th Street Works Manhattan, New York



Compactor room (west) located within 1223 FDR Drive.



Tank room (containing 2 drains and fans) located within 1223 FDR Drive.

#### Photographic Log – Building Inventory

ISMP Annual Indoor Air Monitoring Report Former East 11th Street Works Manhattan, New York



Pit containing sump in the tank room located within 1223 FDR Drive.

#### Attachment 3

Sample Collection Logs (on compact disk)

RARCADIS			Indoor/Ambient A Collection	
		Sample ID:		JR-170-1A-1
Client:	Consolidate	Edison	Outdoor/Indoor:	Indoor
Project:	East Nem St	reet	Sample Intake Height:	4 Ct
Location:	Jacob RUIS	Ś	Miscellaneous Equipment:	NIA
Project #:	130043012	>	Time On/Off:	8:20 / 3:45
Samplers:	AF/DM		Subcontractor:	NIA

#### Instrument Readings:

Time	Canister Pressure (inches of HG)	Temperature (F or C)	Relative Humidity (%)	Air Speed (ft/min)	Pressure Differential (inches of H20)	PID (ppm or ppb)	
8:20	-20	42				<u></u>	
9:30	- 20	43					
10:30	-35					- <del>G</del>	
11:20						0	
1:2:301	-17					X	
SUMMA Ca	- 13 anister Information	: Jime C	an Pressure	,		0	
Size (circle	one): 1 L 6 L	3:45	-10			O	
Canister ID: COIS							
Flow Controller ID: 4499							

#### General Observations/Notes:

RARCADIS			Indoor/Ambient Air Sample Collection Log			
11110011021010,	, chuioinach, saioings		Sample ID:	DUP-032613		
Client:	Consclidated	· ELikor	Outdoor/Indoor:	Indeer		
Project:	East 11th Str	ret	Sample Intake Height:	4.27		
Location:	Jacob RUS		Miscellaneous Equipment:	NA		
Project #:	BOOYBORS		Time On/Off:	8:20 1 3:45		
Samplers:	AFIDM		Subcontractor:	N/A		

#### Instrument Readings:

Time	Canister Pressure (inches of HG)	Temperature (F or C)	Relative Humidity (%)	Air Speed (ft/min)	Pressure Differential (inches of H20)	PID (ppm or ppb)
8:20	-20	43				<u></u>
9:30	-28	43				
10:30	-24	~				8
11:30	~~>1					6
12:20	- 18					$\overline{\mathbf{O}}$
SUMMA Ca	- 14 anister Information	: Time (	an Pessure	~		0
Size (circle	one): 1 L 🔏 L	3:30	- 11			0
•	e one): 1 L (ビ) ): ハイチ	5:45	-7			
Canister ID	: 1145		٠			0
Flow Contr	oller ID: ACX	267				

#### **General Observations/Notes:**

TAKENT	SAMPLE	JR-170-14-1	

RARCADIS		Indoor/Ambient Air Sample Collection Log JP-170-14-2				
			Sample ID:	THE	D TA-PER	-Inseed
Client:	Consolidate	dElison	Outdoor/Indoor:	Inde		1
Project:	Fast 11th S	street	Sample Intake Height:	4ft		-
Location:	Jacob RIIS		Miscellaneous Equipment:	NIA		-
Project #:	R0043013.0	001	Time On/Off:	8:20	13:45	
Samplers:	AF/DM		Subcontractor:	N/A	<u>                                      </u>	

#### Instrument Readings:

Time	Canister Pressure (inches of HG)	Temperature (F or C)	Relative Humidity (%)	Air Speed (ft/min)	Pressure Differential (inches of H20)	PID (ppm or ppb)
8:30	-22	43			1.1.0.100 01.1120)	
9:30	- 36	43		·····		
10:36	-39					-6-
11:30	20					Ő
12:20	-17					Ő
	anister Information	: J'30	-10	/		0
	e one): $1 L (6 L)$	3:45	-7			0
Canister ID	12874	·				0
Flow Contr	roller ID:	147				

#### **General Observations/Notes:**

RARCADIS			Indoor/Ambient / Collection	
			Sample ID:	JR-170-1A-3
Client:	Consolidated	Edison	Outdoor/Indoor:	Indoor
Project:	East 11th St		Sample Intake Height:	ZA
Location:	Jacob Ris		Miscellaneous Equipment:	N/A
Project #:	1: B0043013.0001		Time On/Off:	8:20 3:45
Samplers:	AF/DM		Subcontractor:	N/A

#### Instrument Readings:

Time	Canister Pressure (inches of HG)	Temperature (F or C)	Relative Humidity (%)	Air Speed (ft/min)	Pressure Differential (inches of H20)	PID (ppm or ppb)		
8:20	-22	42			<u> </u>	<u>() () () () () () () () () () () () () (</u>		
91,30	-29	42				0		
10:30	- 28					0		
11:30	-28							
17:30	-20					0		
SUMMA Ca	- \ 6 anister Information	: Tim C	on Pressi	sic	anna an an an an an an an an an an an an	0		
Size (circle	one): 1L 6L	2:30	FIZ			Ø		
Size (circle one): 1 L (6 L) $330$ $530$ $512$ Canister ID: $13738$ $3:45$								
Flow Contr	Flow Controller ID: A033							

#### General Observations/Notes:

<b>ARCADIS</b> Infrastructure, environment, buildings			Indoor/Ambient Air Sample Collection Log				
			Sample ID:	JR-170-JA-4			
Client:	Consolidated	Edison	Outdoor/Indoor:	Indoor			
Project:	East 11th 5	treet	Sample Intake Height:	3.5A			
Location:	Jacob Riss		Miscellaneous Equipment:	N/A			
Project #:	B0043013.C	1000	Time On/Off:	X:20 3:45			
Samplers:	AF/DM		Subcontractor:	N/A			

#### Instrument Readings:

Time	Canister Pressure (inches of HG)	Temperature (F or C)	Relative Humidity (%)	Air Speed (ft/min)	Pressure Differential (inches of H20)	PID (ppm or ppb)			
8:20	-22.	43			22	()			
9:30	-28	93				0			
10:56						0			
027 11	<u>- 21</u>								
12:30	-17					8			
SUMMA Ca	SUMMA Canister Information: Time Can Pressure O Size (circle one): 1 L 6 L 3:45 -4 O								
Size (circle	one): 1L 6L	0.45	. 91			0			
Canister ID	: 6131	っと	- Q			0			
Flow Contr	oller ID: 12	520							

#### General Observations/Notes:

RARCADIS			Indoor/Ambient Air Sample Collection Log				
			Sample ID:	JR-178-1A-1			
Client:	Consolitated	Edison	Outdoor/Indoor:	Indoor			
Project:	East 11th St	reet	Sample Intake Height:	2A			
Location:	Tacob RIIS	>	Miscellaneous Equipment:	NIA			
Project #:	R0643013.00	100	Time On/Off:	8:30 2:45			
Samplers:	AFIDM		Subcontractor:	N/H			

#### Instrument Readings:

	Time	Canister Pressure (inches of HG)	Temperature (F or C)	Relative Humidity (%)	Air Speed (ft/min)	Pressure Differential (inches of H20)	PID (ppm or ppb)
	2:30	-31		•			 
switch-	a:30						0
5650	9.50	= 26					Ö
, YON	16:36	- 25					
is ^{on} l	11:30	- 32					
	SUMMA Ca	– ۱۹ anister Information	: Time C	an Pressure			0
	Size (circle	one): 1 L 6 L	1:30	-16			0
Size (circle one): $1L(6L)$ 1:30 -16 Canister ID: $3777774973:45778$							
	Flow Contr	oller ID: AC	3- A00	3			ø

#### General Observations/Notes:

RARCADIS			Indoor/Ambient A Collection	
			Sample ID:	JR-178-1A-2
Client:	Consolidated	Edison	Outdoor/Indoor:	Indool
Project:	East 11th S!	treet	Sample Intake Height:	2572564
Location:	Sacob RUS	<u> </u>	Miscellaneous Equipment:	N/A-
Project #:	BOO 4 3013.0	$\overline{0}$	Time On/Off:	RIZS 345
Samplers:	AFIDM		Subcontractor:	N/A

#### Instrument Readings:

Time	Canister Pressure (inches of HG)	Temperature (F or C)	Relative Humidity (%)	Air Speed (ft/min)	Pressure Differential (inches of H20)	PID (ppm or		
\$ 35	-24	43			(mones of fize)	ppb)		
4:30	-27	4.				<u>v</u>		
10:300	-76					<u>©</u>		
11.30	-20					<u> </u>		
j2:30	-20							
	anister Information	: Time 2:00	Can Pressourt -14	/	Ll_	0		
Size (circle	e one): 1 L 6 L	3:45	-9			0		
Canister ID: 1364								
Flow Contr	oller ID: <u>AO</u>	07						

#### General Observations/Notes:

Appendix B -Ambient Air Sampling and Analysis

		# and T	ime Sampling du	e to slow pressure	Acrement
<b>ARCADIS</b> Infrastructure, environment, buildings		Han and a second second second second second second second second second second second second second second se	Indoor/Ambient Collection		
			Sample ID:	JR-178-14-3	
Client:	i cusclidated	Flissn	Outdoor/Indoor:	Indeex	
Project:	East-11th Str	ret	Sample Intake Height:	SEL	
Location:	Jacob Ris	•	Miscellaneous Equipment:	WA	
Project #:	ROOUZOB	100 (11)	Time On/Off:	7:26-2:76	
Samplers:	AFIDY		Subcontractor:	NA	

#### Instrument Readings:

Time	Canister Pressure (inches of HG)	Temperature (F or C)	Relative Humidity (%)	Air Speed (ft/min)	Pressure Differential (inches of H20)	PID (ppm or ppb)
7:35	-30					200
3:35	-28					352
9.30	-26					Os
10:30	-21					200
11:36	- 19					0
SUMMA Ca	anister Information		Pressure			0
Size (circle	one): 1L (6L)	2:30 -	- 10			Q
Canister ID	. 04176	5.05	1			
Flow Contr	oller ID: A	160				

#### General Observations/Notes:

#### Appendix B -Ambient Air Sampling and Analysis

RARCADIS			Indoor/Ambient A Collection	
			Sample ID:	AA-00311
Client:	Consoliv late	'd Edison	Outdoor/Indoor:	Autom
Project:	Former Fast 14	hStreet Work	Sample Intake Height:	364
Location:	Jacob Rii	5	Miscellaneous Equipment:	NA
Project #:	B0043013.00	201	Time On/Off:	8:20 3:45
Samplers:	AF/DM	ſ	Subcontractor:	N/A

#### Instrument Readings:

Time	Canister Pressure (inches of HG)	Temperature (F or C)	Relative Humidity (%)	Air Speed (ft/min)	Pressure Differential (inches of H20)	PID (ppm or ppb)
8:2F	-37	42			(mones of fizo)	
9.30	= 29					<u>U</u>
10:36	- 24					<u>Q</u>
11:30	- 24					<u>0</u>
12:20	- 21			·····		
N30 SUMMA Ca	- \8 anister Information	: Time (	ian Pressure			6
	one): 1L 6L : 6675	3:015	-14 -9			0
Flow Contr		009	•			

#### General Observations/Notes:

RARCADIS			
	,	Sam	ple ID: JR-1223-JA-1
Client:	Consolidated E	Jison Outdoor/Indoor:	Indeor
Project:	East 11th Stree	Sample Intake Height	
Location:	Tacob RIIS	Miscellaneous Equipr	nent: M/A
Project #:	B0043012.1	DO/ Time On/Off:	7:30-3:05
Samplers:	ASF/DM	Subcontractor:	NIA

#### Instrument Readings:

Time	Canister Pressure (inches of HG)	Temperature (F or C)	Relative Humidity (%)	Air Speed (ft/min)	Pressure Differential (inches of H20)	PID (ppm or ppb)
7:30	- 30				( <u> </u>	()
8.20	-26 28-					Ö
4:30	-25'				ľ	0
10:30	-21					6
M. 20	-18		~			X
SUMMA Ca	anister Information	1,00	Pressure - 11			0
Size (circle	one): 1 L 6 L	12:30 3:05	-8			0
Canister ID		3:05	- (~			6
Flow Contr	oller ID: Ke	518				

#### General Observations/Notes:

ARCADIS		Indoor/Ambient Collection	
	,	Sample ID:	JR-1933-IA-2
Client:	Consolidated	Edison Outdoor/Indoor:	Indoor
Project:	Past 11th Stre	Sample Intake Height:	3.Ft
Location:	Jacob Riis	Miscellaneous Equipment:	NIA
Project #:	B0043013.00	Time On/Off:	7:30-3:43
Samplers:	AF/DM	Subcontractor:	NIA

#### Instrument Readings:

	Time	Canister Pressure (inches of HG)	Temperature (F or C)	Relative Humidity (%)	Air Speed (ft/min)	Pressure Differential (inches of H20)	PID (ppm or ppb)
.λ	7:30	- 30				· · · · · · · · · · · · · · · · · · ·	0
charge	4:30	- 21					0
in the	Y:30	- 27					0
changed out tex	9:30	-98					0
0	10:20	<u> </u>			<u> </u>		$\square$
	SUMMA Ca	nister Information	12:30	Pressure - 10			6
	Size (circle	A	1:30 _	14			0
	·		j:30 -	11			Ø
	Canister ID	-6784	3:45	-6			${\mathcal O}$
	Flow Contro	oller ID: <u>46</u>	# K150	:			

#### **General Observations/Notes:**

RARCADIS			Indoor/Ambient A Collection	State of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the st
	) to moniment, successo		Sample ID:	JR-123-IA-3
Client:	Consolitlated ?	Edison	Outdoor/Indoor:	Indeor
Project:	East 11th St	rect	Sample Intake Height:	2Cit
Location:	Jacoh Rif	S	Miscellaneous Equipment:	NIA
Project #:	B004013.00	10	Time On/Off:	7:30-3:20
Samplers:	AF/DM		Subcontractor:	NT/A

#### Instrument Readings:

Time	Canister Pressure (inches of HG)	Temperature (F or C)	Relative Humidity (%)	Air Speed (ft/min)	Pressure Differential (inches of H20)	PID (ppm or ppb)
7.50	- 30					
8:50	- 28					0
9.50	-25					0
10:30	-3,3					0
LN-301	12					0
SUMMA Ca	- 15 anister Information	: 1:30 =	ressure -M			0
Size (circle	one): 1 L 6 L	3:30 -1	Ţ			0 ()
Canister ID	: (620		V			<b>~</b>
Flow Contr	oller ID: <u>K</u>	18				

#### **General Observations/Notes:**

RARCADIS			Indoor/Ambient A Collection	
	, chen of miletty, canonings		Sample ID:	JR-1223-IA-4
Client:	Consolidated	Edison	Outdoor/Indoor:	Indepr
Project:	East 11th Shife	et.	Sample Intake Height:	3.Ft
Location:	Jacob Rois		Miscellaneous Equipment:	N/A
Project #:	B0043013.00	01	Time On/Off:	7:30-3:04
Samplers:	AF/DM		Subcontractor:	NFA

#### Instrument Readings:

Time	Canister Pressure (inch <u>e</u> s of HG)	Temperature (F or C)	Relative Humidity (%)	Air Speed (ft/min)	Pressure Differential (inches of H20)	PID (ppm or ppb)
7:30	- 30					0
<u>x-30</u>	-28					0
9:20	-25					0
10:30	-21					0
1:30	-18					Ő
	anister Information	V-30	Pressure -10			0000
Size (circle	eone): 1L /6L	3:20	-0			
	" 6521	3:05	-6			Ø
Flow Contr	oller ID: <u>A</u> C	08				

#### General Observations/Notes:

RARCADIS			Indoor/Ambient A Collection	Air Sai Log	nple A	A-03	2713
	÷		Sample ID:	-		Pre-C	
Client:	Constidated -	Edison	Outdoor/Indoor:	Indoo	$\frac{-0}{r}$		4
Project:	East 11th Str	et	Sample Intake Height:	1nc00 41	[	······	
Location:	Jacob Rus	<u> </u>	Miscellaneous Equipment:				
Project #:	BON43013,00	0	Time On/Off:	THUS	. 3	30	_
Samplers:	AF/DM	<u> </u>	Subcontractor:	N/A	· /		-

#### Instrument Readings:

Time	Canister Pressure (inches of HG)	Temperature (F or C)	Relative Humidity (%)	Air Speed (ft/min)	Pressure Differential (inches of H20)	PID (ppm or
7:26	- 30					ppb)
× 20	-29					<u> </u>
9:30	- 260					<u>Ç</u>
10:20	x6- (					
11:30	- 20					0
12-30 SUMMA Ca	anister Information	Ime 1:30	Pressure	1994		0
Size (circle	one): $1L/6L$	9:30	-11			8
Canister ID	: 12891	3:30	-7			6
Flow Contro	oller ID: <u>AC</u>	63				

#### **General Observations/Notes:**

ARCADIS			Indoor/Ambient / Collection	and the second second second second second second second second second second second second second second second
nnastructure,	ermioninen, buiungs		Sample ID:	JR-1115-1A-粉1
Client:	Consolidates	> Edisen	Outdoor/Indoor:	Indoor
Project:	Fast 14th Str	ees	Sample Intake Height:	SEL
Location:	Jacob RUS		Miscellaneous Equipment:	N/A
Project #:	R0.043013		Time On/Off:	7.30-3:20
Samplers:	AFIDM	and a second second second second second second second second second second second second second second second	Subcontractor:	NIA
Instrument R	leadings:		and the second	g

#### **Instrument Readings:**

Time	Canister Pressure (inches of HG)	Temperature (F or C)	Relative Humidity (%)	Air Speed (ft/min)	Pressure Differential (inches of H20)	PID (ppm or ppb)
7:30	-30					<u> </u>
7:35	-29					6
<u>9:28</u>	-25					0
10:30	-22					Õ
1.30	- 19					- 6
	ー いう anister Information		- 17 - 17	and a second second second second second second second second second second second second second second second		0
	e one): 1 L 6 L	3:30 3:30	-9 -6			0
anister II	D: 6611	-	Ŭ			0
low Cont	roller ID:	200				

#### **General Observations/Notes:**

Please record current weather information including wind speed and direction, ambient temperature, barometric pressure, and relative humidity via suitable information source (e.g., weatherunderground.com).

ARCADIS			Indoor/Ambient A Collection	
in mastractar ay	ernonnen, sanonga		Sample ID:	DUP-032813
Client:	Consolidation	Elisen	Outdoor/Indoor:	Indeer
Project:	East 11+17 S	frect	Sample Intake Height:	SFF.
Location:	Jacob RUS		Miscellaneous Equipment:	NIA
Project #:	BOO'BORS		Time On/Off:	7:30-3:30
Samplers:	AF/DM "		Subcontractor:	NA

#### Instrument Readings:

Time	Canister Pressure (inches of HG)	Temperature (F or C)	Relative Humidity (%)	Air Speed (ft/min)	Pressure Differential (inches of H20)	PID (ppm or ppb)
7:30	-30					0
X:50	- 29					0
7.20	-29					Ō
10:30	-23					Ø
11:30	-19					0
Size (circle	anister Information	Time 1:30 2:30 3:30	-12 -9 -6			0 0 0
	: 12639	106				
Flow Conti		400				

#### **General Observations/Notes:**

PALENT	JR-1115-1A-1	

RARCADIS			Indoor/Ambient A Collection	
			Sample ID:	JR-1115-14-2
Client:	Consolidated	Edison	Outdoor/Indoor:	Indeor
Project:	East 11th Stre	eet	Sample Intake Height:	3.5.4
Location:	Sacob RINS	>	Miscellaneous Equipment:	N/A
Project #:	BC043C13		Time On/Off:	730-3:35
Samplers:	AF/DM		Subcontractor:	NA

#### Instrument Readings:

Time	Canister Pressure (inches of HG)	Temperature (F or C)	Relative Humidity (%)	Air Speed (ft/min)	Pressure Differential (inches of H20)	PID (ppm or ppb)
7:30	- 30					$\overline{0}$
3:30	-38					0
9:30	-24					0
16:30	-22					0
11:30	- 19					0
13:30 <u>SUMMA Ca</u>	-15 anister Information	: Time 1:30	Pressure -12			6
Size (circle	one): 1 L (6 L)	2:30 3:254235	- 9			0
Canister ID	" 35288N	3:35435	6			
Flow Contr	roller ID: <u>AC</u>	204				

#### **General Observations/Notes:**

RARCADIS			Indoor/Ambient A Collection	
	- 1		Sample ID:	JR-1115-14-3
Client:	Consolidated	Edison	Outdoor/Indoor:	Lodoar
Project:	East 11th S!	treet	Sample Intake Height:	r CL
Location:	Jacob RIIS	 >	Miscellaneous Equipment:	$12 f_{1}$
Project #:	B0043013.	.0001	Time On/Off:	7:20-3:26
Samplers:	AF/DM		Subcontractor:	NIA

#### Instrument Readings:

Time	Canister Pressure (inches of HG)	Temperature (F or C)	Relative Humidity (%)	Air Speed (ft/min)	Pressure Differential (inches of H20)	PID (ppm or
7:20	-20				(mones of tize)	ppb)
4:30	-28			······································		
9:30	- 25					Q
10:30	-93					
4.30	-19		T			<u></u>
12:30	-15	Time	PRESSUR	<.		0
SUMMA Ca	anister Information	: 1:30	-12			
Size (circle	one): 1 L 6 L	2:30	3.45			O Ø
Canister ID	: 7491	s:-79035	-7			
Flow Control	oller ID: <u> </u>	224				

### General Observations/Notes:

RARCADIS			Indoor/Ambient Air Sample Collection Log				
		Sample ID:	JR-1115-1A-4				
Client:	Consolitated Ed	Uson Outdoor/Indoor:	Indeor				
Project:	East 11th Street	Sample Intake Height:	3.44				
Location:	Jacob RILS	Miscellaneous Equipment:	NIA				
Project #:	80048013.0001	Time On/Off:	7:30-3:10				
Samplers:	AF/DM	Subcontractor:	N/A				

#### Instrument Readings:

Time	Canister Pressure (inches of HG)	Temperature (F or C)	Relative Humidity (%)	Air Speed (ft/min)	Pressure Differential (inches of H20)	PID (ppm or ppb)				
7:20	-29					$\overline{\Delta}$				
8:20	- 2-8					K				
9:30	-29					K				
10:20	-20					6				
11:20	-17					m				
	SUMMA Canister Information:TimePressure1'-30 $-10$ 0Size (circle one):1L6L $\partial$ :30 $-7$									
Size (circle	e one): 1 L $\begin{pmatrix} 6 \\ L \end{pmatrix}$	9:30	-/			$\bigotimes$				
Canister ID: 116 8/00 3:10 -5										
Flow Controller ID: <u>k476</u>										

General Observations/Notes:

<b>ARCADIS</b> Infrastructure, environment, buildings			Ambient Air Collection Lo		
in not actory	entinoriment, bananigs		Sample ID: J	R-1141-1A-1	
Client:	Consolidated 7	Dutdoor/Indo	or:	R-THEFFA-SIN	200r
Project:	East 11th St	Sample Intak	e Height: 3	Srafiet.	
Location:	Sacob RUS	Miscellaneou	s Equipment:	1/A	
Project #:	BAD43013.	Time On/Off:	.7	30-7:40	
Samplers:	AF1DM	Subcontracto	r: N	A	

#### Instrument Readings:

Time	Canister Pressure (inches of HG)	Temperature (F or C)	Relative Humidity (%)	Air Speed (ft/min)	Pressure Differential (inches of H20)	PID (ppm or ppb)				
7:30	~ 30					0				
330	-28					Ő				
9:70	- 25					0				
0C 0i	- 200 21					0				
11:30	- 19					r				
12:30 SUMMA C	12:30 - 15 Time Pressure 0 SUMMA Canister Information: 1:30 -17									
Size (circle	e one): 1 L / (6 L )	9:30	- 10			0 G				
Canister ID	: 41769		10 - 6			0				
Flow Contr	roller ID: <u><u>k4</u></u>	08								

#### **General Observations/Notes:**

ARCADIS			Indoor/Ambient Air Sample Collection Log				
,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,			Sample ID:	JR-1141-JA-2			
Client:	Consolidated	Edison	Outdoor/Indoor:	Indoor			
Project:	East 11th Stree	2+	Sample Intake Height:	31			
Location:	Jacob RUS		Miscellaneous Equipment:	N/A			
Project #:	ROD43013.1	0001	Time On/Off:	8:30-9:00			
Samplers:	AF/DM		Subcontractor:	NIA			

#### Instrument Readings:

8:30	Time	Canister Pressure (inches of HG)	Temperature (F or C)	Relative Humidity (%)	Air Speed (ft/min)	Pressure Differential (inches of H20)	PID (ppm or ppb)
200	TAXE	-30					0
920	91:00	-29					0
aria	9.20	-27					0
	10:30	- 24					- X
	11:30	-20					~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~
	17:30	-17	Time	Pressur	-		Õ
	SUMMA Ca	anister Information	1:30				$\Diamond$
	Size (circle	e one): 1 L 6 L	7:30 2:30 2:30	-12			6
	Canister ID	»: 04165	3 30 900	- 0			Q
	Flow Cont	roller ID:	321				

#### General Observations/Notes:

RARCADIS			Indoor/Ambient Air Sample Collection Log			
			Sample ID:	5R-1141-JA-3		
Client:	Consolidated	Edisson	Outdoor/Indoor:	Indoor		
Project:	East 11th S.	treet	Sample Intake Height:	ZFI		
Location:	Jacob RUS	•	Miscellaneous Equipment:	N/A		
Project #:	B0043013.0	001	Time On/Off:	7:30-3:50		
Samplers:	AF/DM		Subcontractor:	NIA		

#### Instrument Readings:

Time	Canister Pressure (inches of HG)	Temperature (F or C)	Relative Humidity (%)	Air Speed (ft/min)	Pressure Differential (inches of H20)	PID (ppm or ppb)		
7:30	- 30				-	D		
8:30	- 20					0		
9:20	-26					0		
10:30	= 23					0		
4:30	-20					$\bigcirc$		
SUMMA Canister Information:TimePressureSize (circle one):1 L $6L$ $3:30$ $-10$ $3:30$ $-10$ $0$								
Canister ID: $(372)$ Flow Controller ID: $(529)$								

#### General Observations/Notes:

Appendix B -Ambient Air Sampling and Analysis

(

<b>ARCADIS</b> Infrastructure, environment, buildings			Indoor/Ambient A Collection	Air Sample Log AA-032813
			Sample ID:	A De Still
Client:	Consolidated Ed	lison	Outdoor/Indoor:	Outdoor
Project:	East 11th st	-	Sample Intake Height:	3 FF
Location:	Jacob RAS	>	Miscellaneous Equipment:	N/A
Project #:	BO043013.1	1000	Time On/Off:	7:35-3:30
Samplers:	AF/DM		Subcontractor:	N/A

#### Instrument Readings:

Time	Canister Pressure (inches of HG)	Temperature (F or C)	Relative Humidity (%)	Air Speed (ft/min)	Pressure Differential (inches of H20)	PID (ppm or ppb)
739	- 29					0
8:30	- 2 K					0
9:30	-24					Ò
10:30	- 31					0
11:30	- 18					$\bigcirc$
SUMMA C	- 15 anister Information	1. 20	-11			0
-	e one): 1L 6L	<b>3</b> :30 7:30	-9			6
Canister ID	» 1124	~	V			
Flow Cont	roller ID:	93-5-				

#### General Observations/Notes:

#### Attachment 4

Data Usability Summary Reports (DUSRs) (on compact disk)



Imagine the result

## ConEd E. 11th Street Site

### **Data Usability Summary Report**

NEW YORK CITY, NEW YORK

Volatile Analyses

SDG# H3D010403

Analyses Performed By: Test America Knoxville, Tennessee

Report: #19084R Review Level: Tier III Project: B0043013.0003.00001

# SUMMARY

This data quality assessment summarizes the review of Sample Delivery Group (SDG) #H3D010403 for samples collected in association with the ConEd East 11th Street Site. The review was conducted as a Tier III evaluation and included review of data package completeness. Only analytical data associated with constituents of concern were reviewed for this validation. Included with this assessment are the validation annotated sample result sheets and chain of custody. Analyses were performed on the following samples:

			Sample			Analysis			
Sample ID	Lab ID	Matrix	Collection Date	Parent Sample	voc	SVOC	РСВ	MET	MISC
JR-1115-IA-1	M0HCL1AA	Air	3/28/2013		Х				
JR-1115-IA-2	M0HCM1AA	Air	3/28/2013		Х				
JR-1115-IA-3	M0HCN1AA	Air	3/28/2013		Х				
JR-1115-IA-4	M0HCP1AA	Air	3/28/2013		Х				
AA-032813	M0HCQ1AA	Air	3/28/2013		Х				
DUP-032813	M0HCR1AA	Air	3/28/2013	JR-1115-IA-1	Х				
JR-1141-IA-1	M0HCT1AA	Air	3/28/2013		Х				
JR-1141-IA-2	M0HCV1AA	Air	3/28/2013		Х				
JR-1141-IA-3	M0HCW1AA	Air	3/28/2013		Х				

# ANALYTICAL DATA PACKAGE DOCUMENTATION GENERAL INFORMATION

	Reported		Performance Acceptable		Not
Items Reviewed	No	Yes	No	Yes	Required
Sample receipt condition		Х		Х	
Requested analyses and sample results		Х		Х	
Collection Technique (grab, composite, etc.)		Х		Х	
Methods of analysis		Х		Х	
Reporting limits		Х		Х	
Sample collection date		Х		Х	
Laboratory sample received date		Х		Х	
Sample preservation verification (as applicable)		Х		Х	
Sample preparation/extraction/analysis dates		Х		Х	
Fully executed Chain-of-Custody (COC) form completed		Х		х	
Narrative summary of QA or sample problems provided		Х		х	
Data Package Completeness and Compliance		Х		Х	

QA - Quality Assurance

# INTRODUCTION

Analyses were performed according to United States Environmental Protection Agency (USEPA) Method TO-15. Data were reviewed in accordance with USEPA National Functional Guidelines of October 1999, USEPA Region II SOP HW-31- Validating Air Samples Volatile Organic Analysis of Ambient Air In Canister by Method TO-15 of October 2006, New York State DEC Analytical Method ASP 2005 TO-15 (QA/QC Criteria R9 TO-15), NYSDEC Modifications to R9 TO-15 QA/QC Criteria February 2008 and NYSDEC Proposed Change to the ASP Regarding Canister Vacuum June 26, 2009.

The data review process is an evaluation of data on a technical basis rather than a determination of contract compliance. As such, the standards against which the data are being weighed may differ from those specified in the analytical method. It is assumed that the data package represents the best efforts of the laboratory and had already been subjected to adequate and sufficient quality review prior to submission.

During the review process, laboratory qualified and unqualified data are verified against the supporting documentation. Based on this evaluation, qualifier codes may be added, deleted, or modified by the data reviewer. Results are qualified with the following codes in accordance with USEPA National Functional Guidelines:

- Concentration (C) Qualifiers
  - U The compound was analyzed for but not detected. The associated value is the compound quantitation limit.
  - B The compound has been found in the sample as well as its associated blank, its presence in the sample may be suspect.
- Quantitation (Q) Qualifiers
  - E The compound was quantitated above the calibration range.
  - D Concentration is based on a diluted sample analysis.
- Validation Qualifiers
  - J The compound was positively identified; however, the associated numerical value is an estimated concentration only.
  - UJ The compound was not detected above the reported sample quantitation limit. However, the reported limit is approximate and may or may not represent the actual limit of quantitation.
  - JN The analysis indicates the presence of a compound for which there is presumptive evidence to make a tentative identification. The associated numerical value is an estimated concentration only.
  - UB Compound considered non-detect at the listed value due to associated blank contamination.
  - N The analysis indicates the presence of a compound for which there is presumptive evidence to make a tentative identification.
  - R The sample results are rejected.

Two facts should be noted by all data users. First, the "R" flag means that the associated value is unusable. In other words, due to significant quality control (QC) problems, the analysis is invalid and provides no information as to whether the compound is present or not. "R" values should not appear on data tables because they cannot be relied upon, even as a last resort. The second fact to keep in mind is that no compound concentration, even if it has passed all QC tests, is guaranteed to be accurate. Strict QC serves to increase confidence in data but any value potentially contains error.

# **VOLATILE ORGANIC COMPOUND (VOC) ANALYSES**

# 1. Holding Times

The specified holding times for the following methods are presented in the following table.

Method	Matrix	Holding Time	Preservation	Return Canister Pressure
EPA TO-15	Air	30 days from collection to analysis	Ambient Temperature	< -1" Hg

All samples were analyzed within the specified holding time and return canister pressure criteria.

# 2. Blank Contamination

Quality assurance (QA) blanks (i.e., method and rinse blanks) are prepared to identify any contamination which may have been introduced into the samples during sample preparation or field activity. Method blanks measure laboratory contamination. Rinse blanks measure contamination of samples during field operations.

A blank action level (BAL) of five times the concentration of a detected compound in an associated blank (common laboratory contaminant compounds are calculated at ten times) is calculated for QA blanks containing concentrations greater than the reporting limit (RL). The BAL is compared to the associated sample results to determine the appropriate qualification of the sample results, if needed.

Compounds were detected in the associated QA blanks; however, the associated sample results were greater than the BAL and/or were non-detect. Therefore, sample results greater than the BAL resulted in the removal of the laboratory qualifier (B). No other qualification of the sample results was required.

# 3. Mass Spectrometer Tuning

Sample locations were compliant with the Method TO-15 requirement of analysis within a 24-hour tune clock but not compliant with the NYSDEC requirement of analysis within a 12-hour tune clock. The data were not qualified.

System performance and column resolution were acceptable.

# 4. Calibration

Satisfactory instrument calibration is established to insure that the instrument is capable of producing acceptable quantitative data. An initial calibration demonstrates that the instrument is capable of acceptable performance at the beginning of an experimental sequence. The continuing calibration verifies that the instrument daily performance is satisfactory.

# 4.1 Initial Calibration

The method specifies percent relative standard deviation (%RSD) and relative response factor (RRF) limits for select compounds only. A technical review of the data applies limits to all compounds with no exceptions.

All target compounds associated with the initial calibration standards must exhibit a %RSD less than the control limit (30%) and an RRF value greater than control limit (0.05).

# 4.2 Continuing Calibration

All target compounds associated with the continuing calibration standard must exhibit a percent difference (%D) less than the control limit (30%) and RRF value greater than control limit (0.05).

All compounds associated with the calibrations were within the specified control limits, with the exception of the compounds presented in the following table.

Sample Locations	Initial or Continuing	Compound	Criteria
ll sample locations within is SDG	CCV %D	1,2,4-Trichlorobenzene	-30.1%

The criteria used to evaluate the initial and continuing calibration are presented in the following table. In the case of a calibration deviation, the sample results are qualified.

Initial / Continuing	Criteria	Sample Result	Qualification
	RRF < 0.05	Non-detect	R
	KKF < 0.05	Detect	J
Initial and Continuing	RRF < 0.01 ¹	Non-detect	R
Calibration	RRF < 0.01	Detect	J
	RRF > 0.05 or RRF > 0.01 ¹	Non-detect	
	RRF > 0.05 of RRF > 0.01	Detect	No Action
Initial Calibration	%RSD > 30%	Non-detect	UJ
	%R3D > 30%	Detect	J
	0/D = 200/(increases in constituity)	Non-detect	No Action
Continuing Colibration	%D > 30% (increase in sensitivity)	Detect	J
Continuing Calibration	0/D > 200/ (decrease in consitivity)	Non-detect	UJ
	%D > 30% (decrease in sensitivity)	Detect	J

1 RRF of 0.01 only applies to compounds which are typically poor responding compounds (i.e., ketones, 1,4-dioxane, etc.)

Note: No sample results were qualified as rejected (R) due to the deviations listed above.

# 5. Surrogates/System Monitoring Compounds

All samples to be analyzed for organic compounds are spiked with surrogate compounds prior to sample preparation to evaluate overall laboratory performance and efficiency of the analytical technique. VOC analysis requires that all surrogates associated with the analysis exhibit recoveries within the laboratory-established acceptance limits.

All surrogate recoveries were within control limits.

# 6. Internal Standard Performance

Internal standard performance criteria insure that the GC/MS sensitivity and response are stable during every

sample analysis. The criteria requires the internal standard compounds associated with the VOC exhibit area counts that are not greater than 40% or less than 40% of the area counts of the associated continuing calibration standard.

All internal standard responses were within control limits.

# 7. Laboratory Control Sample (LCS) Analysis

The LCS analysis is used to assess the precision and accuracy of the analytical method independent of matrix interferences. The compounds associated with the LCS analysis must exhibit a percent recovery within the established acceptance limits of 70% to 130%. The relative percent difference (RPD) between the LCS recoveries must exhibit an RPD within the laboratory-established acceptance limits.

All compounds associated with the LCS analysis exhibited recoveries within the control limits.

# 8. Field Duplicate Analysis

Field duplicate analysis is used to assess the precision and accuracy of the field sampling procedures and analytical method. A control limit of 100% for air matrices is applied to the RPD between the parent sample and the field duplicate. In the instance when the parent and/or duplicate sample concentrations are less than or equal to 5 times the RL, a control limit of three times the RL is applied for air matrices.

Sample ID/ Duplicate ID	Compound	Sample Result	Duplicate Result	RPD
	1,1,2-Trichloro-1,2,2-trifluoroethane	0.48 J	0.49 J	AC
	1,2,4-Trimethylbenzene	0.17 J	0.21 J	AC
	1,2-Dichloro-1,1,2,2-tetrafluoroethane	0.11 J	0.12 J	AC
	1,2-Dichloroethane	0.081 J	0.081 J	AC
	1,3,5-Trimethylbenzene	0.39 U	0.22 J	AC
	2,2,4-Trimethylpentane	0.15 J	0.15 J	AC
	2-Methylbutane	0.94	0.93	AC
	2-Methylpentane	0.28 U	0.29	AC
	Benzene	0.59	0.61	AC
JR-1115-IA-1/ DUP-032813	Carbon tetrachloride	0.52	0.54	AC
	Chloroform	3.5	3.7	5.5 %
	Chloromethane	1.1	1.2	AC
	Dichlorodifluoromethane	2.5	2.5	0.0 %
	Ethylbenzene	0.16 J	0.16 J	AC
	Methylene chloride	0.83	1.1	AC
	m-Xylene & p-Xylene	0.49	0.52	AC
	Naphthalene	3.2	4.2	AC
	n-Butane	6.4	6.5	1.5 %
	n-Decane	0.71 J	1.5 J	AC

Results for the field duplicate samples are summarized in the following table.

Sample ID/ Duplicate ID	Compound	Sample Result	Duplicate Result	RPD
	n-Dodecane	0.41 J	0.43 J	AC
	n-Heptane	0.22 J	0.19 J	AC
	n-Hexane	0.32 J	0.37 J	AC
	n-Octane	0.19 J	0.16 J	AC
	Nonane	0.21 J	0.24 J	AC
	n-Undecane	0.38 J	0.5 J	AC
	o-Xylene	0.19 J	0.2 J	AC
	Pentane	0.57 J	0.58 J	AC
	Styrene	0.14 J	0.15 J	AC
	Tetrachloroethene	3.8	0.51 J	NC
	Toluene	1.1	1.2	AC
	Trichloroethene	1.6	0.21 U	NC
	Trichlorofluoromethane	1.3	1.3	AC

AC Acceptable

U Not detected

The compounds Tetrachloroethene and Trichloroethene associated with sample locations JR-1115-IA-1 and DUP-032813 exhibited a field duplicate RPD greater than the control limit. The associated sample results from sample locations for the listed compound were qualified as estimated.

# 9. Compound Identification

Compounds are identified on the GC/MS by using the analytes relative retention time and ion spectra.

Sample results associated with compound that exhibited a concentration greater than the linear range of the instrument calibration are summarized in the following table.

Sample ID	Compound	Original Analysis	Diluted Analysis ug/m3	Reported Analysis ug/m3
JR-1115-IA-2	n-Butane	39 E	44 D	44 D
JR-1115-IA-4	n-Butane	100 E	120 D	120 D

Note: In the instance where both the original analysis and the diluted analysis sample results exhibited a concentration greater than and/or less than the calibration linear range of the instrument; the sample result exhibiting the greatest concentration will be reported as the final result.

Sample results associated with compounds exhibiting concentrations greater than the linear range are qualified as documented in the table below when reported as the final reported sample result.

Reported Sample Results	Qualification
Diluted sample result within calibration range	D
Diluted sample result less than the calibration range	DJ

Reported Sample Results	Qualification
Diluted sample result greater than the calibration range	EDJ
Original sample result greater than the calibration range	EJ

# 10. System Performance and Overall Assessment

A method detection limit (MDL) study was not performed for the following compounds:

Indene Indane 2-Methylpentane 2,3-Dimethylpentane 2-Ethylthiophene 2-Methylthiophene 3-Methylthiophene Thiophene 1,2,3-Trimethylbenzene

No estimated results are reported below the reporting limit for these compounds.

Overall system performance was acceptable. Other than for those deviations specifically mentioned in this review, the overall data quality is within the guidelines specified in the method.

# DATA VALIDATION CHECKLIST FOR VOCs

VOCs: TO-15	Rep	orted		mance ptable	Not Required	
	No	Yes	No	Yes	Nequired	
GAS CHROMATOGRAPHY/MASS SPECTROME	TRY (GC/	′MS)				
Tier II Validation						
Canister return pressure (<-1"Hg)		Х		Х		
Holding times		Х		Х		
Reporting limits (units)		Х		Х		
Blanks			•	-		
A. Method blanks		Х	Х			
B. Equipment blanks					Х	
C. Trip blanks					Х	
Laboratory Control Sample (LCS)		Х		Х		
Laboratory Control Sample Duplicate(LCSD)					Х	
LCS/LCSD Precision (RPD)					Х	
Matrix Spike (MS)					Х	
Matrix Spike Duplicate(MSD)					Х	
MS/MSD Precision (RPD)					Х	
Field/Lab Duplicate (%D)		Х	Х			
Surrogate Spike Recoveries		Х		Х		
Dilution Factor		Х		Х		
Moisture Content					Х	
Tier III Validation	•					
System performance and column resolution		Х		Х		
Initial calibration %RSDs		Х		Х		
Continuing calibration RRFs		Х		Х		
Continuing calibration %Ds		Х	Х			
Instrument tune and performance check		Х		Х		
Ion abundance criteria for each instrument used		Х		Х		
Internal standard		Х		Х		
Compound identification and quantitation						
A.Reconstructed ion chromatograms		Х		Х		
B.Quantitation Reports		Х		Х		

VOCs: TO-15	Reported		Performance Acceptable		Not Required	
	No	Yes	No	Yes	Required	
GAS CHROMATOGRAPHY/MASS SPECTROMETRY (GC/MS)						
C.RT of sample compounds within the established RT windows		Х		Х		
D.Transcription/calculation errors present				Х		
E.Reporting limits adjusted to reflect sample dilutions		Х		х		
%RSD Percent relative difference						

%RSDPercent relative difference%RPercent recoveryRPDRelative percent difference%DPercent difference

# SAMPLE COMPLIANCE REPORT

Sample						(	Compliancy ¹			Noncompliance
Delivery Group (SDG)	Sampling Date	Protocol	Sample ID	Matrix	voc	svoc	PCB/PEST /HERB	MET	MISC	Noncompliance
H3D010403	3/28/2013	TO-15	JR-1115-IA-1	Air	No					Field Duplicate RPD, CCAL %D
H3D010403	3/28/2013	TO-15	JR-1115-IA-2	Air	No					CCAL %D
H3D010403	3/28/2013	TO-15	JR-1115-IA-3	Air	No					CCAL %D
H3D010403	3/28/2013	TO-15	JR-1115-IA-4	Air	No					CCAL %D
H3D010403	3/28/2013	TO-15	AA-032813	Air	No					CCAL %D
H3D010403	3/28/2013	TO-15	DUP-032813	Air	No					Field Duplicate RPD
H3D010403	3/28/2013	TO-15	JR-1141-IA-1	Air	No					CCAL %D
H3D010403	3/28/2013	TO-15	JR-1141-IA-2	Air	No					CCAL %D
H3D010403	3/28/2013	TO-15	JR-1141-IA-3	Air	No					CCAL %D

1 Samples which are compliant with no added validation qualifiers are listed as "yes". Samples which are non-compliant or which have added qualifiers are listed as "no". A "no" designation does not necessarily indicate that the data have been rejected or are otherwise unusable

VALIDATION PERFORMED BY: Joseph C. Houser

SIGNATURE:

Juph c. Home

DATE: April 20, 2013

PEER REVIEW BY: Dennis Capria

DATE: April 4, 2013

# CORRECTED SAMPLE ANALYSIS DATA SHEETS AND COCs

# Client Sample ID: JR-1115-IA-1

# GC/MS Volatiles

Lot-Sample #	H3D010403 - 001	Work Order #	M0HCL1AA	Matrix:	AIR
Date Sampled:	03/28/2013	Date Received:	03/30/2013		
Prep Date:	04/01/2013	Analysis Time:	04/02/2013		
Prep Batch #:	3091059	Analysis Time:	04:10		
Dilution Factor.:	1	Method:	TO-15		

PARAMETER	RESULTS (ppb(v/v))	REPORTING LIMIT (ppb(v/v))	MDL (ppb(v/v))	RESULTS (ug/m3)	REPORTING LIMIT (ug/m3)	MDL (ug/m3)
Benzene	0.18	0.080	0.023	0.59	0.26	0.073
Bromomethane	ND	0.080	0.013	ND	0.31	0.050
n-Butane	2.7	0.16	0.025	6.4	0.38	0.059
Carbon tetrachloride	0.082	0.040	0.015	0.52	0.25	0.094
Chlorobenzene	ND	0.080	0.020	ND	0.37	0.092
Chloroethane	ND	0.080	0.014	ND	0.21	0.032
Chloroform	0.73	0.080	0.015	3.5	0.39	0.073
Chloromethane	0.52	0.20 ·	0.064	1.1	0.41	0.13
n-Decane	0.12 J	0.40	0.022	0.71 J	2.3	0.13
1,2-Dibromoethane (EDB)	ND	0.080	0.018	ND	0.61	0.14
1,2-Dichlorobenzene	ND	0.080	0.028	ND	0.48	0.14
1,3-Dichlorobenzene	ND	0.080	0.026	ND	0.48	0.16
1,4-Dichlorobenzene	ND	0.080	0.026	ND	0.48	0.16
Dichlorodifluoromethane	0.51	0.080	0.027	2.5	0.40	0.13
1,1-Dichloroethane	ND	0.080	0.010	ND	0.32	0.040
1,2-Dichloroethane	0.020 J	0.080	0.019	0.081 J	0.32	0.077
cis-1,2-Dichloroethene	ND	0.080	0.024	ND	0.32	0.095
1,1-Dichloroethene	ND	0.080	0.014	ND	0.32	0.056
1,2-Dichloropropane	ND	0.080	0.021	ND	0.37	0.097
cis-1,3-Dichloropropene	ND	0.080	0.029	ND	0.36	0.13
trans-1,3-Dichloropropene	ND	0.080	0.019	ND	0.36	0.086
1,2-Dichloro-1,1,2,2-tetrafluoroethan e	0.015 J	0.080	0.013	0.11 J	0.56	0.091
Indane	ND	0.080	0.080	ND	0.39	0.39
n-Dodecane	0.058 J	0.40	0.031	0.41 J	2.8	0.22
Ethylbenzene	0.037 J	0.080	0.027	0.16 J	0.35	0.12
n-Heptane	0.054 J	0.20	0.019	0.22 J	0.82	0.078
Hexachlorobutadiene	ND	0.080	0.031	ND	0.85	0.33
n-Hexane	0.091 J	0.20	0.013	0.32 J	0.70	0.046
Indene	ND	0.16	0.16	ND	0.76	0.76
2-Methylbutane	0.32	0.20	0.012	0.94	0.59	0.035
Isopropylbenzene	ND	0.16	0.024	ND	0,79	0.12
Methylene chloride	0.24-B	0.20	0.018	0.83 B	0.69	0.063
Naphthalene	0.62	0.20	0.036	3.2	1.0	0.19
Nonane	0.041 J	0.20	0.017	0.21 J	1.0	0.089
n-Octane	0.041 J	0.16	0.014	0.19 J	0.75	0.065
Pentane	0.19 J	0.40	0.024	0.57 J	1.2	0.005
2-Methylpentane	ND	0.080	0.080	ND	0.28	0.28
Styrene	0.033 J	0.080	0.023	0.14 J	0.34	
1,1,2,2-Tetrachloroethane	ND	0.080	0.024	ND	0.55	0.098 0.16
Tetrachloroethene	0.55	0.080	0.016	3.8	0.54	
Thiophene	ND	0.080	0.080	ND J	0.28	0.11
2-Ethylthiophene	ND	0.080	0.080	ND	0.37	0.28
					0.07	0.37

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# Client Sample ID: JR-1115-IA-1

# GC/MS Volatiles

Lot-Sample # H3D010403 - 00	1	Work Order #	M0HCL1AA	Mat	rix: AR	
PARAMETER	RESULTS (ppb(v/v))	REPORTING LIMIT (ppb(v/v))	MDL (ppb(v/v))	RESULTS (ug/m3)	REPORTING LIMIT (ug/m3)	MDL (ug/m3)
2-Methylthiophene 3-Methylthiophene Toluene	ND ND 0.30	0.080 0.080 <b>0.080</b>	0.080	ND ND	0.32 0.32	0.32 0.32
1,2,4-Trichlorobenzene 1,1,1-Trichloroethane	ND ND	0.080 0,080 0.080	0.021 0.039 0.012	1.1 ND J ND	0.30 0.59	0.079 0.29
1,1,2-Trichloroethane Trichloroethene	ND 0.30	0.080 <b>0.040</b>	0.021 0.014	ND 1.6	0.44 0.44 0.21	0.065 0.11 <b>0.075</b>
Trichlorofluoromethane 1,1,2-Trichloro-1,2,2-trifluoroethane 1,2,3-Trimethylbenzene	-0.23 0.062 J ND	0.080 0.080 0.080	0.0098 0.012	1.3 0.48 J	0.45 0.61	0.055 0.092
1,2,4-Trimethylbenzene 1,3,5-Trimethylbenzene	0.036 J ND	0.080 0.080 0.080	0.080 <b>0.025</b> 0.026	ND <b>0.17 J</b> ND	0.39 0.39 0.39	0.39 0.12 0.13
2,2,4-Trimethylpentane n-Undecane Vinyl chloride	0.032 J 0.060 J	0.20 0.40	0.016 0.025	0.15 J 0.38 J	0.93 2.6	0.13 0.075 0.16
vinyi entorme m-Xylene & p-Xylene o-Xylene	ND 0.11 0.045 J	0.080 0.080 0.080	0.029 0.050 0.024	ND 0.49	0.20 0.35	0.074 0.22
2,3-Dimethylpentane	ND	0.080	0.024 0.080	0.19 J ND	0 <b>.35</b> 0.33	0.10 0.33
SIRROGATE		PERCENT		LABO	DRATORY IROL	

SURROGATE

4-Bromofluorobenzene

106

RECOVERY

LABORATORY CONTROL LIMITS (%) 60 - 140

**Oualifiers** 

B J Method blank contamination. The associated method blank contains the target analyte at a reportable level. Estimated result. Result is less than RL.

Result (ug/m3) = Result (ppb(v/v))[unrounded] * (Molecular Weight/24,45)

Reporting Limit (ug/m3) = Reporting Limit (ppb(v/v))[unrounded] * (Molecular Weight/24.45)

MDL (ug/m3) = MDL (ppb(v/v))[unrounded] * (Molecular Weight/24.45)

# Client Sample ID: JR-1115-IA-2

# GC/MS Volatiles

Lot-Sample #	H3D010403 - 002		Work Order #	M0HCM1AA	Matr	ix: AIR	
Date Sampled: Prep Date: Prep Batch #: Dilution Factor.:	03/28/2013 04/01/2013 3091059 1		Date Received: Analysis Time: Analysis Time: Method	03/30/2013 04/02/2013 06:02 TO-15			
PARAMETER		RESULTS (ppb(v/v))	REPORTING LIMIT (ppb(v/v))	MDL (ppb(v/v))	RESULTS (ug/m3)	REPORTING LIMIT (ug/m3)	MDL (ug/m3)
Benzene		0.18	0.080	0.023	0.59	0.26	0.073
Bromomethane		ND	0.080	0.013	ND	0.31	0.050
n-Butane		TRE 19D	0.16	0.025	39 E 44D	0.38	0.059
Carbon tetrachloride		0.079	0.040	0.015	0.50	0.25	0.094
Chlorobenzene		ND	0.080	0.020	ND	0.37	0.092
Chloroethane		ND	0.080	0.014	ND	0.21	0.037
Chloroform		0.28	0,080	0.015	1.4	0.39	0,073
Chloromethane		0.49	0.20	0.064	1.0	0.41	
n-Decane		1.3	0.40	0.022	7.7	2.3	0.13 0,13
1,2-Dibromoethane (EI	DB)	ND	0.080	0.018	ND	0.61	0.13
1,2-Dichlorobenzene		ND	0.080	0.028	ND	0.48	0.14
1,3-Dichlorobenzene		ND	0.080	0.026	ND	0.48	0.16
1,4-Dichlorobenzene		ND	0.080	0.026	ND	0,48	0.16
Dichlorodifluorometh	ane	0.50	0.080	0.027	2.5	0.40	0.13
1,1-Dichloroethane		ND	0.080	0.010	ND	0.32	0.040
1,2-Dichloroethane		ND	0.080	0.019	ND	0.32	0.040
cis-1,2-Dichloroethene		ND	0.080	0.024	ND	0.32	
1,1-Dichloroethene		ND	0.080	0.014	ND	0.32	0.095 0.056
1,2-Dichloropropane		ND	0.080	0.021	ND	0.37	0.038
cis-1,3-Dichloropropen	e	ND	0.080	0.029	ND	0.36	0.13
trans-1,3-Dichloroprope	ene	ND	0.080	0.019	ND	0.36	0.086
1,2-Dichloro-1,1,2,2-te e	trafluoroethan	0.016 J	0.080	0.013	0.11 J	0,56	0.091
e Indane		ND	0.080	0.080	ND	0.39	0.20
n-Dodecane		0.16 J	0.40	0.031	1.1 J	2.8	0.39
Ethylbenzene		1.3	0.080	0.027	5.5	0.35	0.22
n-Heptane		0.12 J	0.20	0.019	0.49 J	0.82	0.12
Hexachlorobutadiene		ND	0.080	0.031	ND	0.82	0.078
n-Hexane		0.13 J	0.20	0.013	0.44 J	0.70	0.33
Indene		ND	0.16	0.16	ND	0.76	0.046
2-Methylbutane		0.40	0.20	0.012	1.2	0.59	0.76
Isopropylbenzene		0.081 J	0.16	0.024	0.40 J		0.035
Methylene chloride		0.20 <del>B</del>	0.20	0.018	0.70 <del>B</del>	0.79	0.12
Naphthalene		ND	0.20	0.036	ND	0.69	0.063
Nonane		1.2	0.20	0.017	6.0	1.0	0.19
n-Octane		0.14 J	0.16	0.014		1.0	0.089
Pentane		0.73	0.40	0.014	0.65 J 2 1	0.75	0.065
2-Methylpentane		0.086	0.080	0.024	2.1	1.2	0.071
Styrene		ND	0.080	0.080	0.30	0.28	0.28
1,1,2,2-Tetrachloroethar	ne	ND	0.080	0.023	ND ND	0.34	0.098
Fetrachloroethene		0.16	0.080	0.024	ND	0.55	0.16
Thiophene		ND	0.080		1.1 ND	0.54	0.11
2-Ethylthiophene		ND	0.080	0.080	ND	0.28	0.28
		. (L)	0,000	0.080	ND	0.37	0.37

# Client Sample ID: JR-1115-IA-2

# GC/MS Volatiles

Lot-Sample # H3D010403 - 002	2	Work Order #	M0HCM1AA	Mat	rix: AIR	
PARAMETER	RESULTS (ppb(v/v))	REPORTING LIMIT (ppb(v/v))	MDL (ppb <u>(</u> v/v))	RESULTS (ug/m3)	REPORTING LIMIT (ug/m3)	MDL (ug/m3)
2-Methylthiophene	ND	0.080	0.080	ND	0.32	0.32
3-Methylthiophene	ND	0.080	0.080	ND	0.32	0.32
Toluene	0.31	0.080	0.021	1.2	0.30	0.079
1,2,4-Trichlorobenzene	L DN	0.080	0.039	ND	.0,59	0.29
1,1,1-Trichloroethane	ND	0.080	0.012	ND	0.44	0.065
1,1,2-Trichloroethane	ND	0.080	0.021	ND	0.44	0.11
Trichloroethene	0.016 J	0.040	0.014	0.084 J	0.21	0.075
Trichlorofluoromethane	0.24	0.080	0.0098	1.3	0.45	0.055
1,1,2-Trichloro-1,2,2-trifluoroethane	0.065 J	0.080	0.012	0.50 J	0.61	0.092
1,2,3-Trimethylbenzene	0.25	0.080	0.080	1.2	0.39	0.39
1,2,4-Trimethylbenzene	0.49	0.080	0.025	2.4	0.39	0.12
1,3,5-Trimethylbenzene	0.20	0.080	0.026	0.97	0.39	0.13
2,2,4-Trimethylpentane	0.043 J	0,20	0.016	0.20 J	0.93	0.075
1-Undecane	0.57	0.40	0.025	3.6	2.6	0.16
/inyl chloride	ND	0.080	0.029	ND	0.20	0.074
n-Xylene & p-Xylene	3.4	0.080	0.050	15	0.35	0.22
-Xylene	0.93	0.080	0.024	4.1	0.35	0.10
2,3-Dinethylpentane	ND	0.080	0,080	ND	0.33	0.33
URROGATE		PERCENT RECOVERY		CONT	DRATORY TROL IS (%)	
-Bromofluorobenzene		107		60 - 1	40	

**Oualifiers** 

 B
 Method blank contamination. The associated method blank contains the target analyte at a reportable level.

 E
 Estimated result. Result concentration exceeds the calibration range.

 J
 Estimated result. Result is less than RL.

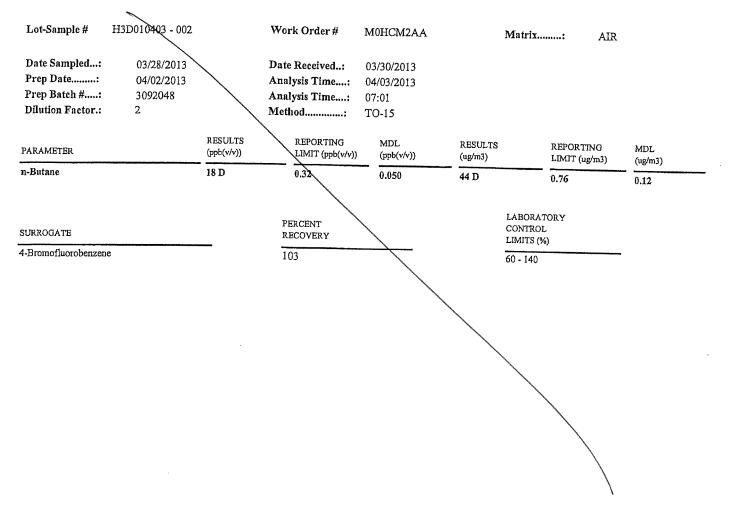
Result (ug/m3) = Result (ppb(v/v))[unrounded] * (Molecular Weight/24.45)

Reporting Limit (ug/m3) = Reporting Limit (ppb(v/v))[unrounded] * (Molecular Weight/24.45)

MDL (ug/m3) = MDL (ppb(v/v))[unrounded] * (Molecular Weight/24.45)

# Client Sample ID: JR-1115-IA-2

### **GC/MS** Volatiles



<u>Qualifiers</u>

D Result was obtained from the analysis of a dilution.

Result (ug/m3) = Result (ppb(v/v))[unrounded] * (Molecular Weight/24,45)

Reporting Limit (ug/m3) = Reporting Limit (ppb(v/v))[unrounded] * (Molecular Weight/24.45)

 $\label{eq:MDL} MDL \ (ug/m3) = MDL \ (ppb(v/v)) [unrounded] \ * \ (Molecular \ Weight/24,45)$ 

TO-14 _rev5MDL_DOD.rpt version 5.004 09/13/2011

# Client Sample ID: JR-1115-IA-3

# **GC/MS** Volatiles

Date Sampled: 03/28/2013 Date Received 03/30/2013	Lot-Sample #	H3D010403 - 003	Work Order #	M0HCN1AA	Matrix:	AIR
Prep Date:         04/01/2013         Analysis Time:         04/02/2013           Prep Batch #:         3091059         Analysis Time:         06:57           Dilution Factor.:         1         Method:         °TO-15	Prep Date: Prep Batch #:		Analysis Time:	06:57		

PARAMETER	RESULTS (ppb(v/v))	REPORTING LIMIT (ppb(v/v))	MDL (ppb(v/v))	RESULTS (ug/m3)	REPORTING LIMIT (ug/m3)	MDL (ug/m3)
Benzene	0.18	0.080	0.023	0.57	0.26	0.073
Bromomethane	ND	0.080	0.013	ND	0.31	0.050
n-Butane	2.1	0.16	0.025	5.1	0.38	0.059
Carbon tetrachloride	0.083	0.040	0.015	0.52	0.25	0.039
Chlorobenzene	ND	0.080	0.020	ND	0.37	0.094
Chloroethane	ND	0.080	0.014	ND	0.21	0.032
Chloroform	0.69	0.080	0.015	3.4	0.39	0.037
Chloromethane	0.62	0.20	0.064	1.3	0.41	0.13
n-Decane	0.026 J	0.40	0.022	0.15 J	2.3	0.13
1,2-Dibromoethane (EDB)	ND	0.080	0.018	ND	0.61	0.13
1,2-Dichlorobenzene	ND	0.080	0.028	ND	0.48	
1,3-Dichlorobenzene	ND	0.080	0.026	ND	0.48	0.17 0.16
1,4-Dichlorobenzene	ND	0.080	0.026	ND	0.48	0.16
Dichlorodifluoromethane	0.51	0.080	0.027	2.5	0.40	
1,1-Dichloroethane	ND	0.080	0.010	ND	0.32	0.13
1,2-Dichloroethane	0.028 J	0.080	0.019	0.11 J	0.32	0.040
cis-1,2-Dichloroethene	ND	0.080	0.024	ND	0.32	0.077
1,1-Dichloroethene	ND	0.080	0.014	ND	0.32	0.095
1,2-Dichloropropane	ND	0.080	0.021	ND	0.32	0.056
cis-1,3-Dichloropropene	ND	0.080	0.029	ND	0.36	0.097
trans-1,3-Dichloropropene	ND	0.080	0.019	ND	0.36	0.13
1,2-Dichloro-1,1,2,2-tetrafluoroethan	0.015 J	0.080	0.013	0.11 J	0.56	0.086 <b>0.091</b>
e Indane	ND	0.080	0.080	ND	0.39	
n-Dodecane	ND	0.40	0.031	ND		0.39
Ethylbenzene	0.043 J	0.080	0.027	0.19 J	2.8 0.35	0.22
n-Heptane	0.063 J	0.20	0.019	0.26 J		0.12
Hexachlorobutadiene	ND	0.080	0.031	ND	0.82	0.078
n-Hexane	0.11 J	0.20	0.013	0.38 J	0.85	0.33
Indene	ND	0.16	0.16	0.38 J ND	0.70	0.046
2-Methylbutane	0.31	0.20	0.012	0.92	0.76	0.76
Isopropylbenzene	ND	0.16	0.012	0.92 ND	0.59	0.035
Methylene chloride	0.29 B	0.20	0.024	0.99- <del>B</del>	0.79	0.12
Naphthalene	ND	0.20	0.018	ND	0.69	0.063
Nonane	0.028 J	0.20	0.017	0.15 J	1.0	0.19
n-Octane	0.033 J	0.16	0.017		1.0	0.089
Pentane	0.22 J	0.40	0.014	0.16 J	0.75	0.065
2-Methylpentane	ND	0.080	0.024	0.66 J	1.2	0.071
Styrene	ND	0.080	0.080	ND	0.28	0.28
1,1,2,2-Tetrachloroethane	ND	0.080	0.023	ND ND	0.34	0.098
Tetrachloroethene	0.097	0.080	0.024		0.55	0.16
Thiophene	ND	0.080	0.016	0.66	0.54	0.11
2-Ethylthiophene	ND	0.080	0.080	ND ND	0.28 0.37	0.28

# Client Sample ID: JR-1115-IA-3

# **GC/MS** Volatiles

Lot-Sample # H3D010403 - 00	)3	Work Order #	M0HCN1AA	Mat	rix AIR	
PARAMETER	RESULTS (ppb(v/v))	REPORTING LIMIT (ppb(v/v))	MDL (ppb(v/v))	RESULTS (ug/m3)	REPORTING LIMIT (ug/m3)	MDL (ug/m3)
2-Methylthiophene	ND	0.080	0.080	ND	0.32	0.32
3-Methylthiophene	ND	0.080	0.080	ND	0.32	0.32
Toluene	0.27	0.080	0.021	1.0	0.30	0.32
1,2,4-Trichlorobenzene	ND	0.080	0.039	ND	0.59	0.29
1,1,1-Trichloroethane	ND ~	0.080	0,012	ND	0.44	0.065
1,1,2-Trichloroethane	ND	0.080	0.021	ND	0.44	0.11
Trichloroethene	ND	0.040	0.014	ND	0.21	0.075
Trichlorofluoromethane	0.24	0.080	0.0098	1.3	0.45	0.055
1,1,2-Trichloro-1,2,2-trifluoroethane	0.060 J	0.080	0.012	0.46 J	0.61	0.092
1,2,3-Trimethylbenzene	ND	0.080	0,080	ND	0.39	0.39
1,2,4-Trimethylbenzene	ND	0.080	0.025	ND	0.39	0.12
1,3,5-Trimethylbenzene	ND	0.080	0.026	ND	0.39	0.12
2,2,4-Trimethylpentane	0.033 J	0.20	0.016	0.15 J	0.93	
n-Undecane	ND	0.40	0.025	ND	2,6	0.075 0.16
Vinyl chloride	ND	0.080	0.029	ND	0.20	0.074
m-Xylene & p-Xylene	0.13	0.080	0.050	0.55	0.35	
o-Xylene	0.048 J	0.080	0.024	0.21 J	0.35	0.22
2,3-Dimethylpentane	ND	0.080	0.080	ND	0.33	0.10 0.33
SURROGATE		PERCENT RECOVERY		CON	DRATORY IROL IS (%)	

4-Bromofluorobenzene

105

CONTROL LIMITS (%) 60 - 140

<u>Oualifiers</u>

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Method blank contamination. The associated method blank contains the target analyte at a reportable level. J Estimated result. Result is less than RL.

Result (ug/m3) = Result (ppb(v/v))[unrounded] * (Molecular Weight/24.45)

Reporting Limit (ug/m3) = Reporting Limit (ppb(v/v))[unrounded] * (Molecular Weight/24.45)

MDL (ng/m3) = MDL (ppb(v/v))[uurounded] * (Molecular Weight/24.45)

# Client Sample ID: JR-1115-IA-4

GC/MS Volatiles

Lot-Sample # H3D010	403 - 004	Work Order #	M0HCP1AA	Matrix	AIR	
Prep Date 04/	28/2013 01/2013 01059	Date Received: Analysis Time: Analysis Time: Method	03/30/2013 04/02/2013 07:53 TO-15			
PARAMETER	RESULTS (ppb(v/v))	REPORTING LIMIT (ppb(v/v))	MDL (ppb(v/v))	RESULTS (ug/m3)	REPORTING LIMIT (ug/m3)	MDL (ug/m3)
Benzene	0.19	0.080	0.023	0.60	0.26	0.073
Bromomethane	ND	0.080	0.013	ND	0.31	0.050
n-Butane	-44E-51D	0.16	0.025	-100E 120D	0.38	0.059
Carbon tetrachloride	0.080	0.040	0.015	0.51	0.25	0.094
Chlorobenzene	ND	0.080	0.020	ND	0.37	0.094
Chloroethane	ND	0.080	0.014	ND	0.21	0.037
Chloroform	0.20	0.080	0.015	0.98	0.39	0.073
Chloromethane	0.45	0.20	0.064	0.92	0.41	0.13
n-Decane	0.27 J	0.40	0.022	1.6 J	2.3	
1,2-Dibromoethane (EDB)	ND	0.080	0.018	ND	0.61	0.13 0.14
1,2-Dichlorobenzene	ND	0.080	0.028	ND	0.48	0.17
1,3-Dichlorobenzene	ND	0.080	0.026	ND	0.48	0.16
1,4-Dichlorobenzene	ND	0.080	0.026	ND	0.48	0.16
Dichlorodifluoromethane	0.50	0.080	0.027	2.5	0.40	0.13
1,1-Dichloroethane	ND	0.080	0.010	ND	0.32	0.040
1,2-Dichloroethane	ND	0.080	0.019	ND	0.32	0.040
cis-1,2-Dichloroethene	ND	0.080	0.024	ND	0.32	0.095
1,1-Dichloroethene	ND	0.080	0.014	ND	0.32	0.056
1,2-Dichloropropane	ND	0.080	0.021	ND	0.37	0.097
cis-1,3-Dichloropropene	ND	0.080	0.029	ND	0.36	0.13
trans-1,3-Dichloropropene	ND	0.080	0.019	ND	0.36	0.086
1,2-Dichloro-1,1,2,2-tetrafluoroe e	ethan 0.019 J	0.080	0.013	0.13 J	0.56	0.091
Indane	ND	0.080	0.080	ND	0.39	0.39
n-Dodecane	0.29 J	0.40	0.031	2.0 J	2.8	0.22
Ethylbenzene	0.16	0.080	0.027	0.70	0.35	0.12
n-Heptane	0.15 J	0.20	0.019	0.61 J	0.82	
Hexachlorobutadiene	ND	0.080	0.031	ND	0.85	0.078 0.33
n-Hexane	0.15 J	0.20	0.013	0.52 J	0.70	0.046
Indene	ND	0.16	0.16	ND	0.76	
2-Methylbutane	0.40	0.20	0.012	1.2	0.59	0.76 0.035
Isopropylbenzene	ND	0.16	0.024	ND	0.79	0.12
Methylene chloride	0.21 <del>B</del>	0,20	0.018	0.71 <del>B</del>	0.69	
Naphthalene	ND	0.20	0.036	ND	1.0	0.063 0.19
Nonane	0.084 J	0.20	0.017	0.44 J	1.0	
n-Octane	0.15 J	0.16	0.014	0.68 J	0.75	0.089
Pentane	1.1	0.40	0.024	3.2	1.2	0.065
2-Methylpentane	0.089	0.080	0.080	0.31	0.28	0.071
Styrene	ND	0.080	0.023	ND	0.28	0.28
1,1,2,2-Tetrachloroethane	ND	0.080	0.024	ND	0.55	0.098
Tetrachloroethene	0.065 J	0.080	0.016	0.44 J	0.55 0.54	0.16
Thiophene	ND	0.080	0.080	ND	0.28	0.11
2-Ethylthiophene	ND	0.080	0.080	ND	0.28	0.28
			0.000		0.57	0.37

# Client Sample ID: JR-1115-IA-4

# GC/MS Volatiles

PARAMETER	RESULTS (ppb(v/v))	REPORTING LIMIT (ppb(v/v))	MDL (ppb(v/v))	RESULTS (ug/m3)	REPORTING LIMIT (ug/m3)	MDL (ug/m3)
2-Methylthiophene	ND	0.080	0.080	ND	0.32	0.32
3-Methylthiophene	ND	0.080	0.080	ND	0.32	0.32
Toluene	0.36	0.080	0.021	1.4	0.30	0.079
1,2,4-Trichlorobenzene	L DM	0.080	0.039	ND \	0.59	0.29
1,1,1-Trichloroethane	ND	0.080	0.012	ND J	0.44	0.065
1,1,2-Trichloroethane	ND	0.080	0.021	ND	0.44	0.11
Trichloroethene	ND	0.040	0.014	ND	0.21	0.075
Trichlorofluoromethane	0.25	0.080	0.0098	1.4	0.45	0.055
1,1,2-Trichloro-1,2,2-trifluoroethane	0.066 J	0.080	0.012	0.50 J	0.61	0.092
1,2,3-Trimethylbenzene	ND	0.080	0.080	ND	0.39	0.39
1,2,4-Trimethylbenzene	0.11	0.080	0.025	0.56	0.39	0.12
1,3,5-Trimethylbenzene	0.039 J	0.080	0.026	0.19 J	0.39	0.13
2,2,4-Trimethylpentane	0.047 J	0.20	0.016	0.22 J	0.93	0.075
a-Undecane	0.43	0.40	0.025	2.7	2.6	0.16
Vinyl chloride	ND	0.080	0.029	ND	0.20	0.074
m-Xylene & p-Xylene	0.59	0.080	0.050	2.6	0.35	0.22
o-Xylene	0.19	0.080	0.024	0.83	0.35	0.10
2,3-Dimethylpentane	ND	0.080	0,080	ND	0.33	0.33
URROGATE		PERCENT RECOVERY		CON	DRATORY IROL TS (%)	

**Oualifiers** 

 B
 Method blank contamination. The associated method blank contains the target analyte at a reportable level.

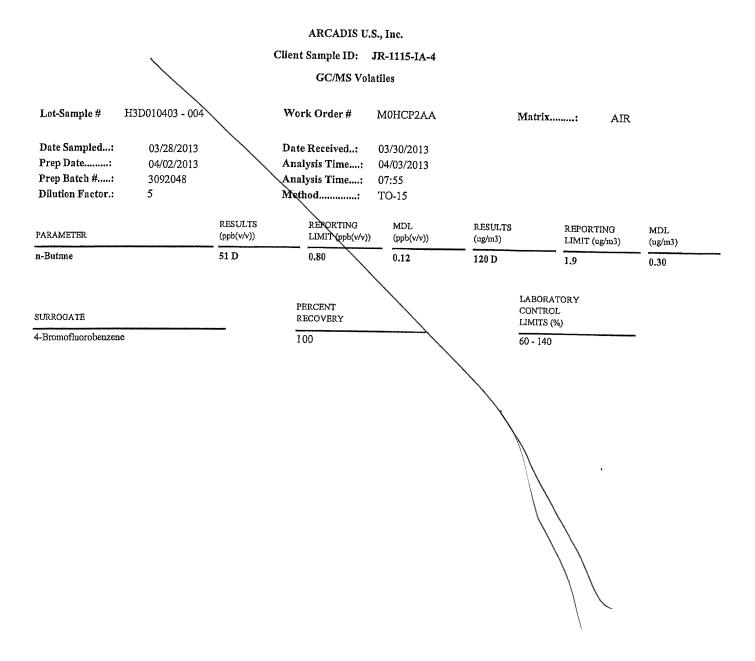
 E
 Estimated result. Result concentration exceeds the calibration range.

 J
 Estimated result. Result is less than RL.

 $\label{eq:Result} Result \ (ug/m3) \approx Result \ (ppb(v/v)) [unrounded] * (Molecular \ Weight/24.45)$ 

Reporting Limit (ug/m3) = Reporting Limit (ppb(v/v))[unrounded] * (Molecular Weight/24.45)

MDL (ug/m3) = MDL (ppb(v/v))[unrounded] * (Molecular Weight/24.45)



### **Oualiflers**

D Result was obtained from the analysis of a dilution.

Result (ug/m3) = Result (ppb(v/v))[unrounded] * (Molecular Weight/24.45)

Reporting Limit (ug/m3) = Reporting Limit (ppb(v/v))[unrounded] * (Molecular Weight/24.45)

MDL (ng/m3) = MDL (ppb(v/v))[unrounded] * (Molecular Weight/24.45)

# Client Sample ID: AA-032813

**GC/MS** Volatiles

Lot-Sample # H3D010403 -	005	Work Order #	M0HCQ1AA	Mat	trix: AIR	
Date Sampled:         03/28/20           Prep Date:         04/01/20           Prep Batch #:         3091059           Dilution Factor.:         1	13	Date Received: Analysis Time: Analysis Time: Method	03/30/2013 04/02/2013 08:49 TO-15			
PARAMETER	RESULTS (ppb(v/v))	REPORTING LIMIT (ppb(v/v))	MDL (ppb(v/v))	RESULTS (ug/m3)	REPORTING LIMIT (ug/m3)	MDL (ug/m3)
Benzene	0.20	0.080	0.023	0.64	0.26	0.073
Bromomethane	ND	0.080	0.013	ND	0.31	0.050
n-Butane	0.86	0.16	0.025	2.0	0.38	0.059
Carbon tetrachloride	0.081	0.040	0.015	0.51	0.25	0.094
Chlorobenzene	ND	0.080	0.020	ND	0.37	0.092
Chloroethane	0.026 J	0.080	0.014	0.067 J	0.21	0.037
Chloroform	0.057 J	0.080	0.015	0.28 J	0.39	0.073
Chloromethane	0.49	0.20	0.064	1.0	0.41	0.13
n-Decane	0.049 J	0.40	0.022	0.29 J	2,3	0.13
1,2-Dibromoethane (EDB)	ND	0.080	0.018	ND	0.61	0.14
1,2-Dichlorobenzene	ND	0.080	0.028	ND	0.48	0.17
1,3-Dichlorobenzene	ND	0.080	0.026	ND	0.48	0.16
1,4-Dichlorobenzene	ND	0.080	0.026	ND	0.48	0.16
Dichlorodifluoromethane	0.50	0.080	0.027	2.5	0.40	0.13
1,1-Dichloroethane	ND	0.080	0.010	ND	0.32	0.040
1,2-Dichloroethane	0.025 J	0.080	0.019	0.10 J	0.32	0.077
cis-1,2-Dichloroethene	ND	0.080	0.024	ND	0.32	0.095
1,1-Dichloroethene	ND	0.080	0.014	ND	0.32	0.056
1,2-Dichloropropane	ND	0.080	0.021	ND	0.37	0.097
cis-1,3-Dichloropropene	ND	0.080	0.029	ND	0.36	0.13
trans-1,3-Dichloropropene	ND	0.080	0.019	ND	0.36	0.086
1,2-Dichloro-1,1,2,2-tetrafluoroethan e	0.017 J	0.080	0.013	0.12 J	0.56	0.091
Indane	ND	0.080	0.080	ND	0.39	0.39
n-Dodecane	ND	0.40	0.031	ND	2.8	0.22
Ethylbenzene	0.040 J	0.080	0.027	0.17 J	0.35	0.12
n-Heptane	0.090 J	0.20	0.019	0.37 J	0.82	0.078
Hexachlorobutadiene	ND	0.080	0.031	ND	0.85	0.33
n-Hexane	0.18 J	0.20	0.013	0.62 J	0,70	0.046
Indene	ND	0.16	0.16	ND	0.76	0.76
2-Methylbutane	0.36	0.20	0.012	1.1	0.59	0.035
Isopropylbenzene	ND	0.16	0.024	ND	0.79	0.12
Methylene chloride	0.48 <b>B</b>	0.20	0.018	1,7 <del>B</del>	0.69	0.063
Naphthalene	ND	0.20	0.036	ND	1.0	0.19
Nonane	0.042 J	0.20	0.017	0.22 J	1.0	0.089
n-Octane	0.055 J	0.16	0.014	0.26 J	0.75	0.065
Pentane	0.29 J	0.40	0.024	0.86 J	1.2	0.071
2-Methylpentane	0.11	0.080	0.080	0.38	0.28	0.28
Styrene	ND	0.080	0.023	ND	0,34	0.098
1,1,2,2-Tetrachloroethane	ND	0.080	0.024	ND	0.55	0.16
Tetrachloroetliene	0.076 J	0.080	0.016	0.51 J	0.54	0.11
Thiophene	ND	0.080	0.080	ND	0.28	0.28
2-Ethylthiophene	ND	0.080	0.080	ND	037	0.27

0.080

ND

0.37

0.37

0.080

2-Ethylthiophene

# Client Sample ID: AA-032813

### GC/MS Volatiles

Lot-Sample # H3D010403 - 005	5	Work Order # ]	M0HCQ1AA	Mat	rix: AIR	
PARAMETER	RESULTS (ppb(v/v))	REPORTING LIMIT (ppb(v/v))	MDL (ppb(v/v))	RESULTS (ug/m3)	REPORTING LIMIT (ug/m3)	MDL (ug/m3)
2-Methylthiophene	ND	0.080	0.080	ND	0.32	0.32
3-Methylthiophene	ND	0.080	0.080	ND	0.32	0.32
Toluene	0.27	0.080	0.021	1.0	0.30	0.079
1,2,4-Trichlorobenzene	ND J	0.080	0.039	ND \	0.59	0.29
1,1,1-Trichloroethane	ND	0.080	0.012	ND	0.44	0.065
1,1,2-Trichloroethane	ND	0.080	0.021	ND	0.44	0.11
<b>Frichloroethene</b>	0.028 J	0.040	0.014	0.15 J	0.21	0.075
Frichlorofluoromethane	0.24	0.080	0.0098	1.3	0.45	0.055
1,1,2-Trichloro-1,2,2-trifluoroethane	0.066 J	0.080	0.012	0.50 J	0.61	0.092
,2,3-Trimethylbenzene	ND	0.080	0.080	ND	0.39	0.39
1,2,4-Trimethylbenzene	0.033 J	0.080	0.025	0.16 J	0.39	0.12
,3,5-Trimethylbenzene	ND	0.080	0.026	ND	0.39	0.12
2,2,4-Trimethylpentane	0.043 J	0.20	0.016	0.20 J	0.93	0.075
-Undecane	ND	0.40	0.025	ND	2.6	0.075
/inyl chloride	ND	0.080	0.029	ND	0.20	0.10
n-Xylene & p-Xylene	0.13	0.080	0.050	0.56	0.35	0.074
-Xylene	0.053 J	0.080	0.024	0.23 J	0.35	0.22
,3-Dimethylpentane	ND	0.080	0.080	ND	0.33	0.33

SURROGATE

4-Bromofluorobenzene

106

PERCENT

RECOVERY

LABORATORY CONTROL LIMITS (%) 60 - 140

**Oualifiers** 

В Ј Method blank contamination. The associated method blank contains the target analyte at a reportable level. Estimated result. Result is less than RL.

Result (ug/m3) = Result (ppb(v/v))[unrounded] * (Molecular Weight/24,45)

Reporting Limit (ug/m3) = Reporting Limit (ppb(v/v))[unrounded] * (Molecular Weight/24.45)

MDL (ug/m3) = MDL (ppb(v/v))[unrounded] * (Molecular Weight/24.45)

Client Sample ID: DUP-032813

# GC/MS Volatiles

Lot-Sample #	H3D010403 - 006		Work Order #	M0HCR1AA	Mat	rix:	AIR	
Date Sampled:	03/28/2013		Date Received:	03/30/2013				
Prep Date:	04/01/2013		Analysis Time:	04/02/2013				
Prep Batch #:	3091059		Analysis Time:	09:45				
Dilution Factor.:	1		Method:	TO-15				
		RESULTS	REPORTING	MDL	RESULTS	PEDORTO	10 MDT	

PARAMETER	RESULTS (ppb(v/v))	REPORTING LIMIT (ppb(v/v))	MDL (ppb(v/v))	RESULTS (ug/m3)	REPORTING LIMIT (ug/m3)	MDL (ug/m3)
Benzene	0.19	0.080	0.023	0.61	0,26	0.073
Bromomethane	ND	0.080	0.013	ND	0.31	0.050
n-Butane	2.7	0.16	0.025	6.5	0.38	0.059
Carbon tetrachloride	0.085	0.040	0.015	0.54	0.25	0.094
Chlorobenzene	ND	0.080	0.020	ND	0.37	0.092
Chloroethane	ND	0.080	0.014	ND	0.21	0.037
Chloroform	0.76	0.080	0.015	3.7	0.39	0.073
Chloromethane	0.60	0.20	0.064	1.2	0.41	0.13
n-Decane	0.25 J	0.40	0.022	1.5 J	2.3	0.13
1,2-Dibromoethane (EDB)	ND	0.080	0.018	ND	0.61	0.13
1,2-Dichlorobenzene	ND	0.080	0.028	ND	0.48	0.17
1,3-Dichlorobenzene	ND	0.080	0.026	ND	0.48	0.16
1,4-Dichlorobenzene	ND	0.080	0.026	ND	0.48	0.16
Dichlorodifluoromethane	0.50	0.080	0.027	2.5	0.40	0.13
1,1-Dichloroethane	ND	0.080	0.010	ND	0.32	0.040
1,2-Dichloroethane	0.020 J	0.080	0.019	0.081 J	0.32	0.077
cis-1,2-Dichloroethene	ND	0.080	0.024	ND	0.32	0.095
1,1-Dichloroethene	ND	0.080	0.014	ND	0.32	0.055
1,2-Dichloropropane	ND	0.080	0.021	ND	0.37	0.097
cis-1,3-Dichloropropene	ND	0.080	0.029	ND	0.36	0.13
trans-1,3-Dichloropropene	ND	0.080	0.019	ND	0.36	0.086
1,2-Dichloro-1,1,2,2-tetrafluoroethan	0.017 J	0.080	0.013	0.12 J	0.56	0.091
e					0.00	0.091
Indane	ND	0.080	0.080	ND	0.39	0.39
n-Dodecane	0.062 J	0.40	0.031	0.43 J	2.8	0.22
Ethylbenzene	0.037 J	0.080	0.027	0.16 J	0.35	0.12
n-Heptane	0.046 J	0.20	0.019	0.19 J	0.82	0.078
Hexachlorobutadiene	ND	0.080	0.031	ND	0.85	0.33
n-Hexane	0.10 J	0.20	0.013	0,37 J	0.70	0.046
Indene	ND	0.16	0.16	ND	0.76	0.76
2-Methylbutane	0.31	0.20	0.012	0.93	0.59	0.035
Isopropylbenzene	ND	0.16	0.024	ND	0.79	0.12
Methylene chloride	0.30-B	0.20	0.018	1.1 <del>B</del>	0.69	0.063
Naphthalene	0.81	0.20	0.036	4.2	1.0	0.19
Nonane	0.045 J	0.20	0.017	0.24 J	1.0	0.089
n-Octane	0.035 J	0.16	0.014	0.16 J	0.75	0.065
Pentane	0.19 J	0.40	0.024	0.58 J	1.2	0.071
2-Methylpentane	0.081	0.080	0.080	0.29	0.28	0.28
Styrene	0.035 J	0.080	0.023	0.15 J	0.34	0.098
1,1,2,2-Tetrachloroethane	ND	0.080	0.024	ND	0.55	0.16
Tetrachloroethene	0.075 J	0.080	0.016	0.51 J	0.54	0.11
Thiophene	ND	0.080	0.080	ND	0.28	0.28
2-Ethylthiophene	ND	0.080	0.080	ND	0.37	0.37

# Client Sample ID: DUP-032813

### GC/MS Volatiles

PARAMETER	RESULTS (ppb(v/v))	REPORTING LIMIT (ppb(v/v))	MDL (ppb(v/v))	RESULTS (ug/m3)	REPORTING LIMIT (ug/m3)	MDL (ug/m3)
2-Methylthiophene	ND	0.080	0.080	ND	0.32	0.32
3-Methylthiophene	ND	0.080	0.080	ND	0.32	0.32
Toluenc	0.32	0.080	0.021	1.2	0.30	0.079
1,2,4-Trichlorobenzene	DN	0.080	0.039	ND	0.59	0.29
1,1,1-Trichloroethane	ND	0.080	0.012	ND	0.44	0.065
1,1,2-Trichloroethane	ND	0.080	0.021	ND	0.44	0.11
Trichloroethene	ND	0.040	0.014	ND	0.21	0.075
Trichlorofluoromethane	0.23	0.080	0.0098	1.3	0.45	0.055
1,1,2-Trichloro-1,2,2-trifluoroethane	0.065 J	0.080	0.012	0.49 J	0.61	0.092
1,2,3-Trimethylbenzene	ND	0.080	0.080	NÐ	0.39	0.39
1,2,4-Trimethylbenzene	0.043 J	0.080	0.025	0.21 J	0,39	0.12
1,3,5-Trimethylbenzene	0.044 J	0.080	0.026	0.22 J	0.39	0.13
2,2,4-Trimethylpentane	0.031 J	0.20	0.016	0.15 J	0.93	0.075
n-Undecane	0.078 J	0.40	0.025	0.50 J	2.6	0.16
Vinyl chloride	ND	0.080	0.029	ND	0.20	0.074
m-Xylene & p-Xylene	0.12	0.080	0.050	0.52	0.35	0.22
o-Xylene	0.046 J	0.080	0.024	0.20 J	0.35	0.10
2,3-Dimethylpentane	ND	0.080	0.080	ND	0.33	0.33
SURROGATE		PERCENT RECOVERY		CONT	DRATORY IROL IS (%)	

4-Bromofluorobenzene

107

60 - 140

**Qualifiers** 

Method blank contamination. The associated method blank contains the target analyte at a reportable level. в J Estimated result. Result is less than RL.

Result (ug/m3) = Result (ppb(v/v))[unrounded] * (Molecular Weight/24.45)

Reporting Limit (ug/m3) = Reporting Limit (ppb(v/v))[unrounded] * (Molecular Weight/24.45)

MDL (ug/m3) = MDL (ppb(v/v))[unrounded] * (Molecular Weight/24.45)

# Client Sample ID: JR-1141-IA-1

# GC/MS Volatiles

Lot-Sample # H3D	010403 - 007		Work Order #	M0HCT1AA	Ma	trix: AIR	
Date Sampled: Prep Date: Prep Batch #: Dilution Factor.:	03/28/2013 04/01/2013 3091060 1		Date Received: Analysis Time: Analysis Time: Method	03/30/2013 04/02/2013 05:36 TO-15			
PARAMETER		RESULTS (ppb(v/v))	REPORTING LIMIT (ppb(v/v))	MDL (ppb(v/v))	RESULTS (ug/m3)	REPORTING LIMIT (ug/m3)	MDL (ug/m3)
Benzene		0.19	0.080	0.023	0.61	0.26	0.073
Bromomethane		ND	0.080	0.013	ND	0,31	0.050
n-Butane		8.3	0.16	0.025	20	0.38	0.059
Carbon tetrachloride		0.090	0.040	0.015	0.57	0.25	0.094
Chlorobenzene		ND	0.080	0.020	ND	0.37	0.092
Chloroethane		0.13	0.080	0.014	0.34	0.21	0.037
Chloroform		1.3	0.080	0.015	6.3	0.39	0.073
Chloromethane		1.7	0.20	0.064	3.5	0.41	0.073
n-Decane		0.066 J	0.40	0.022	0.38 J	2.3	0.13
1,2-Dibromoethane (EDB)		ND	0.080	0.018	ND	0.61	
1,2-Dichlorobenzene		ND	0.080	0.028	ND	0.48	0.14 0.17
1,3-Dichlorobenzene		ND	0.080	0.026	ND	0.48	
1,4-Dichlorobenzene		ND	0.080	0.026	ND	0.48	0.16
Dichlorodifluoromethane		0.17	0.080	0.027	0.86	0.48	0.16
1,1-Dichloroethane		ND	0.080	0.010	ND	0.32	0.13
1,2-Dichloroethane		0.035 J	0.080	0.019	0.14 J	0.32	0.040
cis-1,2-Dichloroethene		ND	0.080	0.024	ND	0.32	0.077
1,1-Dichloroethene		ND	0.080	0.014	ND	0.32	0.095
1,2-Dichloropropane		ND	0.080	0.021	ND	0.32	0.056
cis-1,3-Dichloropropene		ND	0.080	0.029	ND	0.37	0.097
trans-1,3-Dichloropropene		ND	0.080	0.019	ND	0.36	0.13
1,2-Dichloro-1,1,2,2-tetrafluo	roethane	ND	0.080	0.013	ND	0.56	0.086
Indane		ND	0.080	0.080	ND	0.39	0.091
n-Dodecane		ND	0.40	0.031	ND	2.8	0.39
Ethylbenzene		0.035 J	0.080	0.027	0.15 J	2.8 0.35	0.22
n-Heptane		0.058 J	0.20	0.019	0.24 J		0.12
Hexachlorobutadiene		ND	0.080	0.031	0.24 J ND	0.82 0.85	0.078
n-Hexane		0.12 J	0.20	0.013	0.41 J	0.85	0.33
Indene		ND	0.16	0.16	ND	0.76	0.046
2-Methylbutane		0.40	0.20	0.012	1.2		0.76
Isopropylbenzene		ND	0.16	0.012	ND	0.59	0.035
Methylene chloride		0.33-B	0.20	0.018	1.1 B	0.79	0.12
Naphthalene		ND	0.20	0.036	ND	<b>0.69</b> 1.0	0.063
Nonane		0.066 J	0.20	0.017	0.35 J		0.19
n-Octane		0.035 J	0.16	0.014	0.35 J 0.17 J	1.0	0.089
Pentane		0.23 J	0.40	0.024	0.17 J 0.68 J	0.75	0.065
2-Methylpentane		0.10	0.080	0.024	0.37	1.2	0.071
Styrene		ND	0.080	0.023	0.37 ND	0.28	0.28
1,1,2,2-Tetrachloroethane		ND	0.080	0.023	ND	0.34	.0,098
Tetrachloroethene		0.065 J	0.080	0.024	ND 0.44 J	0.55	0.16
Thiophene		ND	0.080	0.018		0.54	0.11
2-Ethylthiophene		ND	0.080	0.080	ND ND	0.28	0.28
2-Methylthiophene		ND	0.080	0.080	ND ND	0.37	.0.37

0.080

ND

0,32

0,32

0,080

2-Methylthiophene

ND

# Client Sample ID: JR-1141-IA-1

# GC/MS Volatiles

Lot-Sample # H3D010403 - 007		Work Order # ]	M0HCT1AA	Mat	ix: AIR	
PARAMETER	RESULTS (ppb(v/v))	REPORTING LIMIT (ppb(v/v))	MDL (ppb(v/v))	RESULTS (ug/in3)	REPORTING LIMIT (ug/m3)	MDL (ug/m3)
3-Methylthiophene	ND	0.080	0.080	ND	0.32	0.32
Toluene	0.23	0.080	0.021	0.86	0.30	0.079
1,2,4-Trichlorobenzene	L DN	0,080	0.039	ND \	0.59	0.29
1,1,1-Trichloroethane	ND	0.080	0.012	L _{DN}	0.44	0.065
1,1,2-Trichloroethane	ND	0.080	0.021	ND	0.44	0.11
Trichloroethene	0.015 J	0.040	0.014	0.082 J	0.21	0.075
Trichlorofluoromethane	0.19	0.080	0.0098	1.1	0.45	0.055
1,1,2-Trichloro-1,2,2-trifluoroethane	0.063 J	0.080	0.012	0.48 J	0.61	0.092
1,2,3-Trimethylbenzene	ND	0.080	0.080	ND	0.39	0.39
1,2,4-Trimethylbenzene	0.035 J	0.080	0.025	0.17 J	0.39	0.12
1,3,5-Trimethylbenzene	ND	0.080	0.026	ND	0.39	0.13
2,2,4-Trimethylpentane	0.036 J	0.20	0.016	0.17 J	0.93	0.075
n-Undecane	ND	0.40	0.025	ND	2.6	0.16
Vinyl chloride	ND	0.080	0.029	ND	0.20	0.074
m-Xyiene & p-Xylene	0.11	0.080	0.050	0.47	0.35	0.22
o-Xylene	0.041 J	0.080	0.024	0.18 J	0.35	0.10
2,3-Dimethylpentane	ND	0.080	0.080	ND	0.33	0.33

### SURROGATE

4-Bromofluorobenzene

PERCENT RECOVERY

109

LABORATORY CONTROL LIMITS (%)

60 - 140

**Qualifiers** 

B J Method blank contamination. The associated method blank contains the target analyte at a reportable level. Estimated result. Result is less than RL.

Result (ug/m3) =: Result (ppb(v/v))[unrounded] * (Molecular Weight/24.45)

Reporting Limit (ug/m3) = Reporting Limit (ppb(v/v))[unrounded] * (Molecular Weight/24,45)

MDL (ug/m3) = MDL (ppb(v/v))[unrounded] * (Molecular Weight/24,45)

Client Sample ID: JR-1141-IA-2

# GC/MS Volatiles

Lot-Sample #	H3D010403 - 008		Work Order #	M0HCV1AA	Mat	rix:	AIR	
Date Sampled: Prep Date: Prep Batch #: Dilution Factor.:	04/01/2013 3091060		Date Received: Analysis Time: Analysis Time: Method					
		RESULTS	REPORTING	MDI				

PARAMETER	RESULTS (ppb(v/v))	REPORTING LIMIT (ppb(v/v))	MDL (ppb(v/v))	RESULTS (ug/m3)	REPORTING LIMIT (ug/m3)	MDL (ug/in3)
Benzene	0.14	0,080	0.023	0.46	0.26	0.073
Bromomethane	ND	0.080	0.013	ND	0.31	0.073
n-Butane	5.8	0.16	0.025	14	0.38	0.059
Carbon tetrachloride	0.078	0.040	0.015	0.49	0.25	0.094
Chlorobenzene	ND	0.080	0.020	ND	0.37	0.094
Chloroethane	0.053 J	0.080	0.014	0.14 J	0.21	0.032
Chloroform	1.7	0.080	0.015	8.5	0.39	0.037
Chloromethane	0.76	0.20	0.064	1.6	0.41	0.075
n-Decane	0.029 J	0.40	0,022	0.17 J	2.3	
1,2-Dibromoethane (EDB)	ND	0.080	0.018	ND	0.61	0.13 0.14
1,2-Dichlorobenzene	ND	0.080	0.028	ND	0.48	
1,3-Dichlorobenzene	ND	0.080	0.026	ND	0.48	0.17
1,4-Dichlorobenzene	ND	0:080	0.026	ND	0.48	0.16
Dichlorodifluoromethane	0.21	0.080	0:027	1.0	0.40	0.16
1,1-Dichloroethane	ND	0.080	0.010	ND	0.32	0.13
1,2-Dichloroethane	0.030 J	0.080	0.019	0.12 J	0.32	0.040
cis-1,2-Dichloroethene	ND	0.080	0.024	ND	0.32	0.077
1,1-Dichloroethene	ND	0.080	0.014	ND	0.32	0.095
1,2-Dichloropropane	ND	0.080	0.021	ND	0.32	0.056
cis-1,3-Dichloropropene	ND	0.080	0.029	ND	0.36	0.097
rans-1,3-Dichloropropene	ND	0.080	0.019	ND	0.36	0.13
1,2-Dichloro-1,1,2,2-tetrafluoroethan	0.017 J	0.080	0.013	0.12 J	0.56	0.086
ndane	ND	0.000			0.50	0.091
a-Dodecane	ND	0.080	0.080	ND	0.39	0.39
Ethylbenzene	0.028 J	0.40	0.031	ND	2.8	0.22
-Heptane	0.028 J 0.042 J	0.080	0.027	0.12 J	0.35	0.12
Iexachlorobutadiene	0.042 J ND	0.20	0.019	0.17 J	0.82	0.078
-Hexane	0.088 J	0.080	0.031	ND	0.85	0.33
ndene	0.088 J ND	0.20	0.013	0.31 J	0.70	0.046
-Methylbutane		0.16	0.16	ND	0.76	0.76
sopropylbenzene	0.55 ND	0.20	0.012	1.6	0.59	0.035
fethylene chloride		0.16	0.024	ND	0.79	0.12
laphthalene	0.40 <del>B</del>	0.20	0.018	1.4 <del>B</del>	0.69	0.063
lonane	ND	0.20	0.036	ND	1.0	0,19
-Octane	ND ND	0.20	0.017	ND	1.0	0.089
entane		0.16	0.014	ND	0.75	0.065
Methylpentane	0.35 J	0.40	0.024	1,0 J	1.2	0.071
iyrene	0.086	0.080	0.080	0.30	0.28	0.28
1,2,2-Tetrachloroethane	ND	0.080	0.023	ND	0.34	0.098
etrachloroethene	ND	0.080	0.024	ND	0.55	0.16
hiophene	0.023 J	0.080	0.016	0.16 J	0.54	0.11
•	ND	0.080	0.080	ND	0.28	0.28
Ethylthiophene	ND	0.080	0.080	ND	0,37	0.37

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# Client Sample ID: JR-1141-IA-2

# GC/MS Volatiles

Lot-Sample # H3D010403 - 00	8	Work Order #	M0HCV1AA	Mat	rix: AIR	
PARAMETER	RESULTS (ppb(v/v))	REPORTING LIMIT (ppb(v/v))	MDL (ppb(v/v))	RESULTS (ug/m3)	REPORTING LIMIT (ug/m3)	MDL (ug/m3)
2-Methylthiophene	ND	0.080	0.080	ND	0.32	0.32
3-Methylthiophene	ND	0.080	0.080	ND	0.32	0.32
Toluene	0.10	0.080	0.021	0.39	0.30	0.32
1,2,4-Trichlorobenzene	ND \	0.080	0.039	ND	0.59	0.079
1,1,1-Trichloroethane	ND	0.080	0.012	-J DI	0.44	0.29
1,1,2-Trichloroethane	ND	0.080	0.021	ND	0.44	0.005
Trichloroethene	ND	0.040	0.014	ND	0.21	0.075
Trichlorofluoromethane	0.21	0.080	0.0098	1.2	0.45	0.075
1,1,2-Trichloro-1,2,2-trifluoroethane	0.058 J	0.080	0.012	0.45 J	0.61	
1,2,3-Trimethylbenzene	ND	0.080	0.080	ND	0.39	0.092 0.39
1,2,4-Trimethylbenzene	ND	0.080	0.025	ND	0.39	
1,3,5-Trimethylbenzene	ND	0.080	0.026	ND	0.39	0.12
2,2,4-Trimethylpentane	0.087 J	0,20	0.016	0.41 J	0.93	0.13
n-Undecane	ND	0.40	0.025	ND	2.6	0.075
Vinyl chloride	ND	0.080	0.029	ND	0.20	0.16
m-Xylene & p-Xylene	0.068 J	0.080	0.050	0.29 J	0.35	0.074
o-Xylene	ND	0.080	0.024	ND	0.35	0.22
2,3-Dimethylpentane	ND	0.080	0.080	ND	0.33	0.10 0.33
SIDPOCATE		PERCENT		LAB( CON	DRATORY IROL	

SURROGATE

4-Bromofluorobenzene

109

CONTROL LIMITS (%)

RECOVERY

60 - 140

**Oualifiers** 

В J

Method blank contamination. The associated method blank contains the target analyte at a reportable level. Estimated result. Result is less than RL.

Result (ug/m3) = Result (ppb(v/v))[unrounded] * (Molecular Weight/24.45)

Reporting Limit (ug/m3) = Reporting Limit (ppb(v/v))[unrounded] * (Molecular Weight/24,45)

MDL (ug/m3) = MDL (ppb(v/v))[unrounded] * (Molecular Weight/24.45)

# Client Sample ID: JR-1141-IA-3

# GC/MS Volatiles

Lot-Sample # H3D01040	3 - 009	Work Order #	M0HCW1AA	Mat	rix: AIR	
Date Sampled:         03/28           Prep Date:         04/01           Prep Batch #:         30910           Dilution Factor.:         1	/2013	Date Received: Analysis Time: Analysis Time: Method	03/30/2013 04/02/2013 07:20 TO-15			
PARAMETER	RESULTS _(ppb(v/v))	REPORTING LIMIT (ppb(v/v))	MDL (ppb(v/v))	RESULTS (ug/m3)	REPORTING LIMIT (ug/m3)	MDL (ug/m3)
Benzene	0.22	0.080	0.023	0.69	0.26	0.073
Bromomethane	0.017 J	0.080	0.013	0.068 J	0.31	0.050
n-Butane	5.9	0.16	0.025	14	0.38	0.059
Carbon tetrachloride	0.089	0.040	0.015	0.56	0.25	0.094
Chlorobenzene	ND	0.080	0.020	ND	0.37	0.092
Chloroethane	0.024 J	0.080	0.014	0.063 J	0.21	0.037
Chloroform	3.0	0.080	0.015	14	0.39	0.073
Chloromethane	0.71	0.20	0.064	1.5	0.41	0.13
n-Decane	0.023 J	0.40	0.022	0.14 J	2.3	0.13
1,2-Dibromoethane (EDB)	ND	0.080	0.018	ND	0.61	0.14
1,2-Dichlorobenzene	ND	0.080	0.028	ND	0.48	0.17
1,3-Dichlorobenzene	ND	0.080	0.026	ND	0.48	0.16
1,4-Dichlorobenzene	ND	0.080	0.026	ND	0.48	0.16
Dichlorodifluoromethane	0.22	0.080	0.027	1.1	0.40	0.13
1,1-Dichloroethane	ND	0.080	0.010	ND	0.32	0.040
1,2-Dichloroethane	0.028 J	0.080	0.019	0.11 J	0.32	0.077
cis-1,2-Dichloroethene	ND	0.080	0.024	ND	0.32	0.095
1,1-Dichloroethene	ND	0.080	0.014	ND	0.32	0.056
1,2-Dichloropropane	ND	0.080	0.021	ND	0.37	0.097
cis-1,3-Dichloropropene	ND	0.080	0.029	ND	0.36	0.13
trans-1,3-Dichloropropene	ND	0.080	0.019	ND	0.36	0.086
1,2-Dichloro-1,1,2,2-tetrafluoroeth	an 0.013 J	0.080	0.013	0.093 J	0.56	0.091
e Indane	ND	0.080	0.000			
n-Dodecane	ND	0.080	0:080	ND	0.39	0.39
Ethylbenzene	ND	0.080	0.031 0.027	ND	2.8	0.22
n-Heptane	0.050 J	0.20	0.019	ND	0.35	0.12
Hexachlorobutadiene	ND	0.080	0.019	0.20 J	0.82	0.078
n-Hexane	0.14 J	0.20	0.013	ND	0.85	0.33
Indene	ND	0.16	0.16	0.51 J	0.70	0.046
2-Methylbutane	0.48	0.20	0.012	ND	0.76	0.76
Isopropylbenzene	ND	0.16	0.012	1.4 ND	0.59	0.035
Methylene chloride	0.32 B	0.20	0.024		0.79	0.12
Naphthalene	ND	0.20	0.036	<b>1.1-B</b> ND	0.69	0.063
Nonane	0.022 J	0.20	0.017		1.0	0.19
n-Octane	0.015 J	0.16	0.017	0.12 J	1.0	0.089
Pentane	0.32 J	0.40	0.014	0.071 J 0.94 J	0.75	0.065
2-Methylpentane	0.12	0.080	0.024		1.2	0.071
Styrene	ND	0.080	0.023	0.44 ND	0.28	0.28
1,1,2,2-Tetrachloroethane	ND	0.080	0.023	ND ND	0.34	0.098
Tetrachloroethene	0.054 J	0.080	0.024		0.55	0.16
Thiophene	ND	0.080	0.010	<b>0.37 J</b> ND	0.54	0.11
2-Ethylthiophene	ND	0.080	0.080		0.28	0.28
,			0.000	ND	0.37	0.37

26

# Client Sample ID: JR-1141-IA-3

# GC/MS Volatiles

Lot-Sample # H3D010403 - 009	)	Work Order #	M0HCW1AA	Mat	rix: AIR	
PARAMETER	RESULTS (ppb(v/v))	REPORTING LIMIT (ppb(v/v))	MDL (ppb(v/v))	RESULTS (ug/m3)	REPORTING LIMIT (ug/m3)	MDL (ug/m3)
2-Methylthiophene	ND	0.080	0.080	 ND	0.32	0.32
3-Methylthiophene	ND	0.080	0.080	ND	0.32	0.32
Toluene	0.17	0.080	0.021	0.63	0.30	0.079
1,2,4-Trichlorobenzene	ND	0.080	0.039	ND \	0.59	0.29
1,1,1-Trichloroethane	ND	0.080	0.012	ND	0.44	0.065
1,1,2-Trichloroethane	ND	0.080	0.021	ND	0.44	0.005
Trichloroethene	0.030 J	0.040	0.014	0.16 J	0.21	
Trichlorofluoromethane	0.21	0.080	0.0098	1.2	0.45	0.075
1,1,2-Trichloro-1,2,2-trifluoroethane	0.066 J	0.080	0.012	0.51 J	0.43	0.055
1,2,3-Trimethylbenzene	ND	0.080	0.080	ND	0.39	0.092
1,2,4-Trimethylbenzene	ND	0.080	0.025	ND	0.39	0.39
1,3,5-Trimethylbenzene	ND	0.080	0.026	ND	0.39	0.12
2,2,4-Trimethylpentane	0.035 J	0.20	0.016	0.16 J		0.13
n-Undecane	ND	0.40	0.025	ND	0.93	0.075
Vinyl chloride	ND	0.080	0.029	ND	2.6 0.20	0.16
m-Xylene & p-Xylene	0.050 J	0.080	0.050	0.21 J		0.074
o-Xylene	ND	0.080	0.024	0.21 J ND	0.35	0.22
2,3-Dimethylpentane	ND .	0,080	0.080	ND	0.35	0.10
			0.080	ND	0.33	0.33
SURROGATE		PERCENT RECOVERY		CON	DRATORY IROL IS (%)	
4-Bromofluorobenzene		110		60 - 1		

**Oualifiers** 

в J

Method blank contamination. The associated method blank contains the target analyte at a reportable level. Estimated result. Result is less than RL.

Result (ug/m3) = Result (ppb(v/v))[unrounded] * (Molecular Weight/24.45)

Reporting Limit (ug/m3) = Reporting Limit (ppb(v/v))[unrounded] * (Molecular Weight/24.45)

 $\label{eq:MDL model} MDL \; (ug/m3) = MDL \; (ppb(v/v)) [unrounded] \; * \; (Molecular \; Weight/24.45)$ 

TAL Knoxville 5815 Middlebrook Pike	Knoxville, TN 37921	phone 865-291-3000 fax 865-584-4315
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# H3D010403 Canister Samples Chain of Custody Record

TestAmerica assumes no liability with respect to the collection and shipment of



Client Contact Information	Project Manager:		Rours	AHRINS	Ń	Samnled Bu-	APran.			Γ		ſ	·		l	
Company: Aucarbis	Phone: SSS	1 .	662 5 6	1034								J J	SOCS			
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Imagine the result

# ConEd E. 11th Street Site

# **Data Usability Summary Report**

NEW YORK CITY, NEW YORK

Volatile Analyses

SDG# H3C290430

Analyses Performed By: Test America Knoxville, Tennessee

Report: #19108R Review Level: Tier III Project: B0043013.0003.00001

#### SUMMARY

This data quality assessment summarizes the review of Sample Delivery Group (SDG) #H3C290430 for samples collected in association with the ConEd East 11th Street Site. The review was conducted as a Tier III evaluation and included review of data package completeness. Only analytical data associated with constituents of concern were reviewed for this validation. Included with this assessment are the validation annotated sample result sheets and chain of custody. Analyses were performed on the following samples:

			Sample			A	Analysi	is	
Sample ID	Lab ID	Matrix	Collection Date	Parent Sample	voc	SVOC	РСВ	MET	MISC
AA-032613	M0G901AA	Air	3/26/2013		Х				
JR-178-IA-1	M0G911AA	Air	3/26/2013		Х				
JR-178-IA-2	M0G921AA	Air	3/26/2013		Х				
JR-1223-IA-1	M0G941AA	Air	3/27/2013		Х				
JR-1223-IA-2	M0G951AA	Air	3/27/2013		Х				
JR-1223-IA-3	M0G961AA	Air	3/27/2013		Х				
JR-1223-IA-4	M0G971AA	Air	3/27/2013		Х				
AA-032713	M0G981AA	Air	3/27/2013		Х				
JR-178-IA-3 #2	M0G991AA	Air	3/27/2013		Х				
JR-170-IA-1	M0G9R1AA	Air	3/26/2013		Х				
DUP-032613	M0G9T1AA	Air	3/26/2013	JR-170-IA-1	Х				
JR-170-IA-2	M0G9V1AA	Air	3/26/2013		Х				
JR-170-IA-3	M0G9W1AA	Air	3/26/2013		Х				
JR-170-IA-4	M0G9X1AA	Air	3/26/2013		Х				

# ANALYTICAL DATA PACKAGE DOCUMENTATION GENERAL INFORMATION

	Reported		Performance Acceptable		Not
Items Reviewed	No	Yes	No	Yes	Required
Sample receipt condition		Х		Х	
Requested analyses and sample results		Х		Х	
Collection Technique (grab, composite, etc.)		Х		Х	
Methods of analysis		Х		Х	
Reporting limits		Х		Х	
Sample collection date		Х		Х	
Laboratory sample received date		Х		Х	
Sample preservation verification (as applicable)		Х		Х	
Sample preparation/extraction/analysis dates		Х		Х	
Fully executed Chain-of-Custody (COC) form completed		Х		х	
Narrative summary of QA or sample problems provided		Х		х	
Data Package Completeness and Compliance		Х		Х	

QA - Quality Assurance

# INTRODUCTION

Analyses were performed according to United States Environmental Protection Agency (USEPA) Method TO-15. Data were reviewed in accordance with USEPA National Functional Guidelines of October 1999, USEPA Region II SOP HW-31- Validating Air Samples Volatile Organic Analysis of Ambient Air In Canister by Method TO-15 of October 2006, New York State DEC Analytical Method ASP 2005 TO-15 (QA/QC Criteria R9 TO-15), NYSDEC Modifications to R9 TO-15 QA/QC Criteria February 2008 and NYSDEC Proposed Change to the ASP Regarding Canister Vacuum June 26, 2009.

The data review process is an evaluation of data on a technical basis rather than a determination of contract compliance. As such, the standards against which the data are being weighed may differ from those specified in the analytical method. It is assumed that the data package represents the best efforts of the laboratory and had already been subjected to adequate and sufficient quality review prior to submission.

During the review process, laboratory qualified and unqualified data are verified against the supporting documentation. Based on this evaluation, qualifier codes may be added, deleted, or modified by the data reviewer. Results are qualified with the following codes in accordance with USEPA National Functional Guidelines:

- Concentration (C) Qualifiers
  - U The compound was analyzed for but not detected. The associated value is the compound quantitation limit.
  - B The compound has been found in the sample as well as its associated blank, its presence in the sample may be suspect.
- Quantitation (Q) Qualifiers
  - E The compound was quantitated above the calibration range.
  - D Concentration is based on a diluted sample analysis.
- Validation Qualifiers
  - J The compound was positively identified; however, the associated numerical value is an estimated concentration only.
  - UJ The compound was not detected above the reported sample quantitation limit. However, the reported limit is approximate and may or may not represent the actual limit of quantitation.
  - JN The analysis indicates the presence of a compound for which there is presumptive evidence to make a tentative identification. The associated numerical value is an estimated concentration only.
  - UB Compound considered non-detect at the listed value due to associated blank contamination.
  - N The analysis indicates the presence of a compound for which there is presumptive evidence to make a tentative identification.
  - R The sample results are rejected.

Two facts should be noted by all data users. First, the "R" flag means that the associated value is unusable. In other words, due to significant quality control (QC) problems, the analysis is invalid and provides no information as to whether the compound is present or not. "R" values should not appear on data tables because they cannot be relied upon, even as a last resort. The second fact to keep in mind is that no compound concentration, even if it has passed all QC tests, is guaranteed to be accurate. Strict QC serves to increase confidence in data but any value potentially contains error.

# **VOLATILE ORGANIC COMPOUND (VOC) ANALYSES**

#### 1. Holding Times

The specified holding times for the following methods are presented in the following table.

Method	Matrix	Holding Time	Preservation	Return Canister Pressure
EPA TO-15	Air	30 days from collection to analysis	Ambient Temperature	< -1" Hg

All samples were analyzed within the specified holding time and return canister pressure criteria.

#### 2. Blank Contamination

Quality assurance (QA) blanks (i.e., method and rinse blanks) are prepared to identify any contamination which may have been introduced into the samples during sample preparation or field activity. Method blanks measure laboratory contamination. Rinse blanks measure contamination of samples during field operations.

A blank action level (BAL) of five times the concentration of a detected compound in an associated blank (common laboratory contaminant compounds are calculated at ten times) is calculated for QA blanks containing concentrations greater than the reporting limit (RL). The BAL is compared to the associated sample results to determine the appropriate qualification of the sample results, if needed.

Compounds were detected in the associated QA blanks; however, the associated sample results were greater than the BAL and/or were non-detect. Therefore, sample results greater than the BAL resulted in the removal of the laboratory qualifier (B). No other qualification of the sample results was required.

#### 3. Mass Spectrometer Tuning

A few sample locations were compliant with the Method TO-15 requirement of analysis within a 24-hour tune clock but not compliant with the NYSDEC requirement of analysis within a 12-hour tune clock. The data were not qualified.

System performance and column resolution were acceptable.

#### 4. Calibration

Satisfactory instrument calibration is established to insure that the instrument is capable of producing acceptable quantitative data. An initial calibration demonstrates that the instrument is capable of acceptable performance at the beginning of an experimental sequence. The continuing calibration verifies that the instrument daily performance is satisfactory.

#### 4.1 Initial Calibration

The method specifies percent relative standard deviation (%RSD) and relative response factor (RRF) limits for select compounds only. A technical review of the data applies limits to all compounds with no exceptions.

All target compounds associated with the initial calibration standards must exhibit a %RSD less than the control limit (30%) and an RRF value greater than control limit (0.05).

#### 4.2 Continuing Calibration

All target compounds associated with the continuing calibration standard must exhibit a percent difference (%D) less than the control limit (30%) and RRF value greater than control limit (0.05).

All compounds associated with the calibrations were within the specified control limits, with the exception of the compounds presented in the following table.

Sample Locations	Initial or Continuing	Compound	Criteria
AA-032613 JR-178-IA-1 JR-178-IA-2 JR-1223-IA-1 JR-1223-IA-2 JR-1223-IA-3 JR-1223-IA-4 AA-032713 JR-170-IA-1 DUP-032613 JR-170-IA-2 JR-170-IA-3 JR-170-IA-4	CCV %D	1,2,4-Trichlorobenzene	-30.1%

The criteria used to evaluate the initial and continuing calibration are presented in the following table. In the case of a calibration deviation, the sample results are qualified.

Initial / Continuing	Criteria	Sample Result	Qualification
	RRF < 0.05	Non-detect	R
	KKF < 0.05	Detect	J
Initial and Continuing Calibration	RRF < 0.01 ¹	Non-detect	R
	RRF < 0.01	Detect	J
	RRF > 0.05 or RRF > 0.01 ¹	Non-detect	No Action
	RRF > 0.05 01 RRF > 0.01	Detect	NO ACTION
Initial Calibration	%RSD > 30%	Non-detect	UJ
	%RSD > 30%	Detect	J
	% D > 20% (increases in consitivity)	Non-detect	No Action
Continuing Calibration	%D > 30% (increase in sensitivity)	Detect	J
	P(D > 20%) (decreases in consitivity)	Non-detect	UJ
	%D > 30% (decrease in sensitivity)	Detect	J

1 RRF of 0.01 only applies to compounds which are typically poor responding compounds (i.e., ketones, 1,4-dioxane, etc.)

Note: No sample results were qualified as rejected (R) due to the deviations listed above.

#### 5. Surrogates/System Monitoring Compounds

All samples to be analyzed for organic compounds are spiked with surrogate compounds prior to sample preparation to evaluate overall laboratory performance and efficiency of the analytical technique. VOC

analysis requires that all surrogates associated with the analysis exhibit recoveries within the laboratoryestablished acceptance limits.

All surrogate recoveries were within control limits.

#### 6. Internal Standard Performance

Internal standard performance criteria insure that the GC/MS sensitivity and response are stable during every sample analysis. The criteria requires the internal standard compounds associated with the VOC exhibit area counts that are not greater than 40% or less than 40% of the area counts of the associated continuing calibration standard.

All internal standard responses were within control limits.

#### 7. Laboratory Control Sample (LCS) Analysis

The LCS analysis is used to assess the precision and accuracy of the analytical method independent of matrix interferences. The compounds associated with the LCS analysis must exhibit a percent recovery within the established acceptance limits of 70% to 130%. The relative percent difference (RPD) between the LCS recoveries must exhibit an RPD within the laboratory-established acceptance limits.

All compounds associated with the LCS analysis exhibited recoveries within the control limits.

#### 8. Field Duplicate Analysis

Field duplicate analysis is used to assess the precision and accuracy of the field sampling procedures and analytical method. A control limit of 100% for air matrices is applied to the RPD between the parent sample and the field duplicate. In the instance when the parent and/or duplicate sample concentrations are less than or equal to 5 times the RL, a control limit of three times the RL is applied for air matrices.

Sample ID/ Duplicate ID	Compound	Sample Result	Duplicate Result	RPD
	1,1,2-Trichloro-1,2,2-trifluoroethane	0.49 J	0.53 J	AC
	1,2,4-Trimethylbenzene	0.33 J	0.44	AC
	1,2-Dichloro-1,1,2,2-tetrafluoroethane	0.12 J	0.12 J	AC
	1,2-Dichloroethane	0.088 J	0.091 J	AC
	1,3,5-Trimethylbenzene	0.39 U	0.16 J	AC
JR-170-IA-1/	2,2,4-Trimethylpentane	0.83 J	0.89 J	AC
DUP-032613	2-Methylbutane	2.9	2.9	AC
	2-Methylpentane	0.92	0.94	AC
	Benzene	1.3	1.4	7.4 %
	Carbon tetrachloride	0.5	0.58	AC
	Chloroethane	0.069 J	0.07 J	AC
	Chloroform	14	14	0.0 %

Results for the field duplicate samples are summarized in the following table.

Sample ID/ Duplicate ID	Compound	Sample Result	Duplicate Result	RPD
	Chloromethane	1.2	1.2	AC
	Dichlorodifluoromethane	2.6	2.7	3.7 %
	Ethylbenzene	0.33 J	0.42	AC
	Methylene chloride	1.9	1.1	AC
	m-Xylene & p-Xylene	1.1	1.4	AC
	n-Butane	6.1	6	1.6 %
	n-Decane	0.49 J	0.59 J	AC
	n-Dodecane	0.69 J	2.8 U	AC
	n-Heptane	0.48 J	0.5 J	AC
	n-Hexane	1.4	0.96	AC
	n-Octane	0.29 J	0.33 J	AC
	Nonane	0.28 J	0.34 J	AC
	n-Undecane	0.49 J	0.28 J	AC
	o-Xylene	0.42	0.5	AC
	Pentane	1.4	1.5	AC
	Tetrachloroethene	0.62	0.84	AC
	Toluene	2.1	1.9	10.0 %
	Trichloroethene	0.081 J	0.087 J	AC
	Trichlorofluoromethane	1.4	1.5	AC

AC Acceptable

U Not detected

The calculated RPDs between the parent sample and field duplicate were acceptable.

#### 9. Compound Identification

Compounds are identified on the GC/MS by using the analytes relative retention time and ion spectra.

All identified compounds met the specified criteria.

#### 10. System Performance and Overall Assessment

A method detection limit (MDL) study was not performed for the following compounds:

Indene Indane 2-Methylpentane 2,3-Dimethylpentane 2-Ethylthiophene 2-Methylthiophene 3-Methylthiophene Thiophene 1,2,3-Trimethylbenzene No estimated results are reported below the reporting limit for these compounds.

Overall system performance was acceptable. Other than for those deviations specifically mentioned in this review, the overall data quality is within the guidelines specified in the method.

# DATA VALIDATION CHECKLIST FOR VOCs

VOCs: TO-15	Rep	orted		mance ptable	Not Required	
	No	Yes	No	Yes	Nequired	
GAS CHROMATOGRAPHY/MASS SPECTROME	TRY (GC/	MS)				
Tier II Validation				1		
Canister return pressure (<-1"Hg)		Х		Х		
Holding times		Х		Х		
Reporting limits (units)		Х		Х		
Blanks		-	-	<u>.</u>		
A. Method blanks		Х	Х			
B. Equipment blanks					Х	
C. Trip blanks					Х	
Laboratory Control Sample (LCS)		Х		Х		
Laboratory Control Sample Duplicate(LCSD)					Х	
LCS/LCSD Precision (RPD)					Х	
Matrix Spike (MS)					Х	
Matrix Spike Duplicate(MSD)					Х	
MS/MSD Precision (RPD)					Х	
Field/Lab Duplicate (%D)		Х		Х		
Surrogate Spike Recoveries		Х		Х		
Dilution Factor		Х		Х		
Moisture Content					Х	
Tier III Validation	1	•				
System performance and column resolution		Х		Х		
Initial calibration %RSDs		Х		Х		
Continuing calibration RRFs		Х		Х		
Continuing calibration %Ds		Х	Х			
Instrument tune and performance check		Х		Х		
Ion abundance criteria for each instrument used		Х		Х		
Internal standard		Х		Х		
Compound identification and quantitation						
A.Reconstructed ion chromatograms		Х		Х		
B.Quantitation Reports		Х		Х		

VOCs: TO-15	Repo	orted	Perfor Accep		Not Required	
	No	Yes	No	Yes	Required	
GAS CHROMATOGRAPHY/MASS SPECTROME	TRY (GC/N	/IS)				
C.RT of sample compounds within the established RT windows		Х		Х		
D.Transcription/calculation errors present				Х		
E.Reporting limits adjusted to reflect sample dilutions		Х		х		
%RSD Percent relative difference						

%RSDPercent relative difference%RPercent recoveryRPDRelative percent difference%DPercent difference

#### SAMPLE COMPLIANCE REPORT

Sample					Compliancy ¹				Nencompliance	
Delivery Group (SDG)	Sampling Date	Protocol	Sample ID	Matrix	voc	SVOC	PCB/PEST /HERB	MET	MISC	Noncompliance
H3C290430	3/26/2013	TO-15	AA-032613	Air	No					CCAL %D
H3C290430	3/26/2013	TO-15	JR-178-IA-1	Air	No					CCAL %D
H3C290430	3/26/2013	TO-15	JR-178-IA-2	Air	No					CCAL %D
H3C290430	3/27/2013	TO-15	JR-1223-IA-1	Air	No					CCAL %D
H3C290430	3/27/2013	TO-15	JR-1223-IA-2	Air	No					CCAL %D
H3C290430	3/27/2013	TO-15	JR-1223-IA-3	Air	No					CCAL %D
H3C290430	3/27/2013	TO-15	JR-1223-IA-4	Air	No					CCAL %D
H3C290430	3/27/2013	TO-15	AA-032713	Air	No					CCAL %D
H3C290430	3/27/2013	TO-15	JR-178-IA-3 #2	Air	Yes					
H3C290430	3/26/2013	TO-15	JR-170-IA-1	Air	No					CCAL %D
H3C290430	3/26/2013	TO-15	DUP-032613	Air	No					CCAL %D
H3C290430	3/26/2013	TO-15	JR-170-IA-2	Air	No					CCAL %D
H3C290430	3/26/2013	TO-15	JR-170-IA-3	Air	No					CCAL %D
H3C290430	3/26/2013	TO-15	JR-170-IA-4	Air	No					CCAL %D

1 Samples which are compliant with no added validation qualifiers are listed as "yes". Samples which are non-compliant or which have added qualifiers are listed as "no". A "no" designation does not necessarily indicate that the data have been rejected or are otherwise unusable

VALIDATION PERFORMED BY: Joseph C. Houser

SIGNATURE:

Juph c. Home

DATE: April 20, 2013

PEER REVIEW BY: Dennis Capria

DATE: April 22, 2013

# CORRECTED SAMPLE ANALYSIS DATA SHEETS AND COCs

.

# Client Sample ID: JR-170-IA-1

Lot-Sample #	H3C290430 - 001	Work Order #	M0G9R1AA	Matrix:	AIR	
Date Sampled: Prep Date: Prep Batch #: Dilution Factor.:	03/26/2013 04/01/2013 3091059 1	Date Received: Analysis Time: Analysis Time: Method:	03/29/2013 04/01/2013 14:04 TO-15			

PARAMETER	RESULTS (ppb(v/v))	REPORTING LIMIT (ppb(v/v))	MDL (ppb(v/v))	RESULTS (ug/m3)	REPORTING LIMIT (ug/m3)	MDL (ug/in3)
Benzene	0.40	0.080	0.023	1.3	0.26	
Bromomethane	ND	0,080	0.013	ND	0.31	0.073
n-Butane	2.6	0.16	0.025	6.1	0.38	0,050
Carbon tetrachloride	0.079	0.040	0.015	0.50		0.059
Chlorobenzene	ND	0.080	0.020	ND	0.25	0.094
Chloroethane	0.026 J	0.080	0.014	0.069 J	0.37	0.092
Chloroform	2.9	0,080	0.015	14	0.21	0.037
Chloromethane	0.57	0.20	0.064	1.2	0.39	0.073
a-Decane	0.084 J	0.40	0.022	1.2 0.49 J	0.41	0.13
,2-Dibromoethane (EDB)	ND	0,080	0.018	0.49 J ND	2.3	0.13
,2-Dichlorobenzene	ND	0,080	0,028	ND	0.61	0,14
,3-Dichlorobenzene	ND	0,080	0.026	ND	0.48	0.17
,4-Dichlorobenzene	ND	0.080	0,026	ND	0.48	0,16
Dichlorodifluoromethane	0.53	0,080	0.027	2.6	0.48	0.16
,1-Dichloroethane	ND	0.080	0.010	2,0 ND	0.40	0.13
,2-Dichloroethane	0.022 J	0.080	0.010		0.32	0.040
is-1,2-Dichloroethene	ND	0,080	0.019	0.088 J	0.32	0.077
1-Dichloroethene	ND	0.080	0.024	ND	0.32	0.095
2-Dichloropropane	ND	0,080	0.014	ND	0.32	0.056
s-1,3-Dichloropropene	ND	0.080	0.021	ND	0.37	0.097
ans-1,3-Dichloropropene	ND	0.080	0.029	ND	0.36	0.13
2-Dichloro-1,1,2,2-tetrafluoroethan	0.017 J	0.080	0.013	ND	0.36	0.086
		0.000	0,013	0.12 J	0.56	0.091
dane	ND	0.080	0.080	ND	0.39	0.20
Dodecane	0.10 J	0,40	0.031	0.69 J	2.8	0.39
thylbenzene	0,076 J	0,080	0.027	0.33 J	0.35	0.22
Heptane	0.12 J	0.20	0.019	0.48 J	0.82	0.12
exachlorobutadiene	ND	0.080	0.031	ND	0.85	0.078
Hexane	0.41	0.20	0.013	1.4		0.33
dene	ND	0.16	0,16	ND	<b>0.70</b> 0.76	0.046
Methylbutane	1.0	0,20	0.012	2.9		0,76
propylbenzene	ND	0,16	0.024	ND	0, <b>59</b> 0.79	0.035
ethylene chloride	0.54-B-	0.20	0.018	1.9 <del>B</del> -		0.12
phthalene	ND	0.20	0.036	ND	0.69	0.063
nane	0.052 J	0.20	0.017	0.28 J	1.0	0.19
Octane	0.063 J	0.16	0.014	0.29 J	1.0	0.089
ntane	0.48	0.40	0.024	1.4	0.75	0.065
Methylpentane	0.26	0.080	0.080	0.92	1.2	0.071
rene	ND	0.080	0.023	0.92 ND	0.28	0.28
,2,2-Tetrachloroethane	ND	0.080	0.023	ND	0.34	0,098
trachloroethene	0.092	0.080	0.016	0.62	0.55	0.16
ophene	ND	0,080	0.080	0.62 ND	0.54	0.11
thylthiophene	ND	0,080	0.080	ND ND	0.28	0.28

# Client Sample ID: JR-170-IA-1

#### GC/MS Volatiles

PARAMETER	RESULTS (ppb(v/v))	REPORTING LIMIT (ppb(v/v))	MDL (ppb(v/v))	RESULTS (ug/m3)	REPORTING LIMIT (ug/m3)	MDL (ug/m3)
2-Methylthiophene	ND	0.080	0.080	ND	0.32	0.32
3-Methylthiophene	ND	0.080	0.080	ND	0.32	0.32
Toluene	0.55	0.080	0.021	2.1	0.30	0.079
1,2,4-Trichlorobenzene	ДИ ДИ	0.080	0,039	ND \	0,59	0.079
1,1,1-Trichloroethane	ND	0.080	0.012	ND	0.44	0.29
1,1,2-Trichloroethane	ND	0.080	0.021	ND	0.44	0.005
Trichloroethene	0.015 J	0.040	0.014	0.081 J	0.21	0.075
Trichlorofluoromethane	0.26	0.080	0.0098	1.4	0.45	0.055
1,1,2-Trichloro-1,2,2-trifluoroethane	0.065 J	0.080	0.012	0.49 J	0.61	0.092
1,2,3-Trimethylbenzene	ND	0.080	0.080	ND	0,39	0.092
1,2,4-Trimethylbenzene	0.068 J	0,080	0.025	0.33 J	0.39	0.39 0.12
1,3,5-Trimethylbenzene	ND	0.080	0.026	ND	0.39	0.12
2,2,4-Trimethylpentane	0.18 J	0,20	0.016	0.83 J	0.93	0.13
1-Undecane	0.077 J	0.40	0.025	0.49 J	2.6	
/inyl chloride	ND	0,080	0,029	ND	0.20	<b>0.16</b> 0.074
n-Xylene & p-Xylene	0.24	0.080	0.050	1.1	0.35	
-Xylene	0.097	0.080	0.024	0.42	0.35	0.22
2,3-Dimethylpentane	ND	0.080	0.080	ND	0.33	0.10 0,33
URROGATE		PERCENT RECOVERY		CON	DRATORY IROL IS (%)	

**Oualifiers** 

 B
 Method blank contamination. The associated method blank contains the target analyte at a reportable level.

 J
 Estimated result. Result is less than RL.

Result (ug/m3) = Result (ppb(v/v))[unrounded] * (Molecular Weight/24.45)

Reporting Limit (ug/m3) = Reporting Limit (ppb(v/v))[unrounded] * (Molecular Weight/24,45)

MDL (ug/m3) = MDL (ppb(v/v))[unrounded] * (Molecular Weight/24,45)

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# Client Sample ID: DUP-032613

# GC/MS Volatiles

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Lot-Sample #	H3C290430 - 002	Work Order #	M0G9T1AA	Matrix:	AIR	
Date Sampled: Prep Date Prep Batch #: Dilution Factor,:	04/01/2013 3091059	Date Received: Analysis Time: Analysis Time: Method:				

PARAMETER	RESULTS (ppb(v/v))	REPORTING LIMIT (ppb(v/v))	MDL (ppb(v/v))	RESULTS (ug/m3)	REPORTING LIMIT (ug/m3)	MDL (ug/m3)
Benzene	0.44	0.080	0.023	1.4	0.26	
Bromomethane	ND	0,080	0.013	ND	0.31	<b>0.073</b> 0.050
n-Butane	2.5	0.16	0.025	6.0	0.38	
Carbon tetrachloride	0.092	0.040	0.015	0.58	0.25	0.059
Chlorobenzene	ND	0.080	0.020	ND	0.25	0.094
Chloroethane	0,026 J	0,080	0.014	0.070 J	0.21	0.092
Chloroform	2.9	0.080	0.015	14	0.39	0.037
Chloromethane	0.56	0.20	0.064	1.2	0.41	0.073
n-Decane	0.10 J	0.40	0.022	0.59 J		0.13
1,2-Dibromoethane (EDB)	ND	0.080	0.018	0.59 J ND	2.3	0,13
1,2-Dichlorobenzene	ND	0:080	0.028	ND	0.61	0.14
,3-Dichlorobenzene	ND	0.080	0.026		0.48	0,17
,4-Dichlorobenzene	ND	0.080	0.026	ND ND	0.48	0.16
Dichlorodifluoromethane	0.56	0.080	0.028 0.027		0.48	0,16
,1-Dichloroethane	ND	0,080	0.027	2.7	0.40	0.13
,2-Dichloroethane	0.022 J	0.080	0.010	ND	0.32	0.040
is-1,2-Dichloroethene	ND	0.080	0.019	0.091 J	0.32	0.077
,1-Dichloroethene	ND	0.080	0.024	ND	0.32	0.095
,2-Dichloropropane	ND	0.080	0.014	ND	0,32	0,056
is-1,3-Dichloropropene	ND	0,080	0.021	ND	0,37	0.097
ans-1,3-Dichloropropene	ND	0.080	0.029	ND	0,36	0.13
,2-Dichloro-1,1,2,2-tetrafluoroethan	0.017 J	0.080		ND	0.36	0.086
,,,,		0,000	0.013	0.12 J	0.56	0.091
ndane	ND	0.080	0.080	ND	0.39	
-Dodecane	ND	0.40	0.031	ND	2.8	0,39
thylbenzene	0.097	0.080	0.027	0.42	0.35	0.22
-Heptane	0.12 J	0.20	0.019	0.50 J	0.82	0.12
exachlorobutadiene	ND	0.080	0.031	ND	0.85	0.078
Hexane	0.27	0.20	0.013	0.96	0.70	0.33
dene	ND	0.16	0.16	ND	0.76	0.046
Methylbutane	1.0	0.20	0.012	2.9	0.59	0.76
opropylbenzene	ND	0.16	0,024	2.9 ND	0.79	0.035
cthylene chloride	0.33 B	0.20	0.018	1.1 8		0.12
aphthalene	ND	0.20	0.036	ND	0.69	0.063
Dhane	0.065 J	0.20	0.017	0.34 J	1.0	0.19
Octane	0.070 J	0.16	0.014	0.34 J 0.33 J	1.0	0.089
entane	0.51	0.40	0.024	0.33 J 1.5	0.75	0.065
Methylpentane	0.27	0.080	0.024		1.2	0.071
yrene	ND	0.080	0.023	0.94 ND	0.28	0.28
1,2,2-Tetrachloroethane	ND	0.080	0.023	ND ND	0.34	0.098
trachloroethene	0.12	0.080	0.024		0.55	0.16
iophene	ND	0,080	0.016	0.84	0.54	0.11
Sthylthiophene	ND	0,080	0.080	ND ND	0.28	0.28

#### Client Sample ID: DUP-032613

#### **GC/MS** Volatiles

Lot-Sample # H3C290430 - 002	2	Work Order #	M0G9T1AA	Mat	rix: AIR	
PARAMETER	RESULTS (ppb(v/v))	REPORTING LIMIT (ppb(v/v))	MDL (ppb(v/v))	RESULTS (ug/m3)	REPORTING LIMIT (ug/m3)	MDL (ug/m3)
2-Methylthiophene	ND	0.080	0.080	ND	0.32	0,32
3-Methylthiophene	ND	0.080	0.080	ND	0.32	0.32
Toluene	0.52	0.080	0.021	1.9	0,30	0.079
1,2,4-Trichlorobenzene	L DM	0.080	0.039	L DN	0,59	0.29
1,1,1-Trichloroethane	ND	0.080	0.012	ND	0.44	0,065
1,1,2-Trichloroethane	ND	0.080	0.021	ND	0.44	0.11
Trichloroethene	0.016 J	0.040	0.014	0.087 J	0.21	0.075
Trichlorofluoromethane	0.26	0,080	0.0098	1.5	0.45	0.055
1,1,2-Trichloro-1,2,2-trifluoroethane	0.069 J	0.080	0,012	0.53 J	0.61	0.092
1,2,3-Trimethylbenzene	ND	0,080	0.080	ND	0.39	0.39
1,2,4-Trimethylbenzene	0.090	0.080	0.025	0.44	0.39	0.12
1,3,5-Trimethylbenzene	0.032 J	0.080	0.026	0.16 J	0.39	0.13
2,2,4-Trimethylpentane	0,19 J	0.20	0.016	0.89 J	0,93	0.075
n-Undecane	0.043 J	0,40	0.025	0.28 J	2,6	0.16
Vinyl chloride	ND	0.080	0.029	ND	0,20	0.074
m-Xylene & p-Xylene	0.33	0.080	0.050	1,4	0.35	0.22
o-Xylene	0.12	0.080	0.024	0.50	0.35	0.10
2,3-Dimethylpentane	ND	0.080	0.080	ND	0,33	0.33
SURROGATE		Percent Recovery		CON	DRATORY IROL IS.(%)	
4-Bromofluorobenzene		102		60 - 1	40	

<u>Qualifiers</u>

Method blank contamination. The associated method blank contains the target analyte at a reportable level. в J Estimated result. Result is less than RL.

Result (ug/m3) = Result (ppb(v/v))[unrounded] * (Molecular Weight/24.45)

Reporting Limit (ug/m3) = Reporting Limit (ppb(v/v))[unrounded] * (Molecular Weight/24.45)

MDL (ug/m3) = MDL (ppb(v/v))[unrounded] * (Molecular Weight/24.45)

Client Sample ID: JR-170-IA-2

Lot-Sample # H3C2	90430 - 003	Work Order #	M0G9V1AA	Mat	rix AIR	
Prep Date: Prep Batch #:	03/26/2013 04/01/2013 3091059 1	Date Received: Analysis Time: Analysis Time: Method	03/29/2013 04/01/2013 15:56 TO-15			
PARAMETER	RESULI (ppb(v/v)		MDL (ppb(v/v))	RESULTS (ug/in3)	REPORTING LIMIT (ug/m3)	MDL (ug/m3)
Benzene	0.23	0.080	0,023	0.72	0.26	0.073
Bromomethane	ND	0.080	0,013	ND	0.31	0.050
n-Butane	0.84	0.16	0.025	2.0	0.38	0.059
Carbon tetrachloride	0.069	0.040	0.015	0.43	0.25	0.094
Chlorobenzene	ND	0,080	0.020	ND	0.37	0.092
Chloroethane	ND	0,080	0.014	ND	0.21	0.037
Chloroform	0.079 J	0.080	0.015	0.39 J	0.39	0.073
Chloromethane	0.58	0.20	0.064	1.2	0.41	0.073
n-Decane	0.11 J	0.40	0.022	0.62 J	2.3	0.13
1,2-Dibromoethane (EDB)	ND	0.080	0.018	ND	0,61	0.13
,2-Dichlorobenzene	ND	0.080	0.028	ND	0.48	0.14
1,3-Dichlorobenzene	ND	0.080	0.026	ND	0.48	0.17
,4-Dichlorobenzene	ND	0.080	0,026	ND	0.48	0.16
Dichlorodifluoromethane	0.53	0.080	0.027	2.6	0.40	0.13
,1-Dichloroethane	ND	0.080	0.010	ND	0.32	0.040
,2-Dichloroethane	0.022 J	0.080	0.019	0.088 J	0.32	0.040
is-1,2-Dichloroethene	ND	0.080	0.024	ND	0.32	0.095
,1-Dichloroethene	ND	0.080	0.014	ND	0.32	0.055
,2-Dichloropropane	ND	0.080	0.021	ND	0.37	0.097
is-1,3-Dichloropropene	ND	0.080	0.029	ND	0.36	0.13
rans-1,3-Dichloropropene	ND	0,080	0,019	ND	0.36	0.086
,2-Dichloro-1,1,2,2-tetrafluo	roethan 0.016 J	0.080	0.013	0.11 J	0.56	0.091
ndane	ND	0.080	0,080	ND	0.70	0.00
-Dodecane	ND	0.40	0.031	ND	0,39 2.8	0.39
thylbenzene	0.072 J	0,080	0.027	0.31 J	0.35	0.22
-Heptane	0.050 J	0.20	0,019	0.21 J	0.82	0.12
Iexachlorobutadiene	ND	0.080	0.031	ND	0.82	0.078
-Hexane	0.10 J	0.20	0.013	0.36 J	0.83	0.33
ndene	ND	0,16	0,16	ND	0.76	<b>0.046</b> 0.76
-Methylbutane	0.50	0.20	0.012	1,5	0.59	
opropylbenzene	ND	0.16	0.024	ND	0.79	0.035
Iethylene chloride	0.22 B	0.20	0.018	0.76-B	0.69	0.12
aphthalene	ND	0.20	0,036	ND	1.0	0.063
onane	0.048 J	0.20	0.017	0.25 J	1.0	0.19
-Octane	0.033 J	0.16	0.014	0.23 J 0.16 J	0.75	0.089
entane	0.26 J	0.40	0.024	0.77 J		0.065
Methylpentane	0.095	0.080	0.024	0.33	1.2	0.071
tyrene	ND	0.080	0.023	ND	0.28	0.28
1,2,2-Tetrachloroethane	ND	0.080	0.024	ND	0.34 0.55	0.098
etrachloroethene	0.081	0.080	0.016	0.55	0.55 0.54	0.16
hiophene	ND	0.080	0.080	ND	0,54	0.11
Ethylthiophene	ND		0,000	1112	0,∠0	0.28

#### Client Sample ID: JR-170-IA-2

#### **GC/MS** Volatiles

Lot-Sample #	H3C290430 - 003		Work Order #	M0G9V1AA	Mat	rix: AIR	
PARAMETER		RESULTS (ppb(v/v))	REPORTING LIMIT (ppb(v/v))	MDL (ppb(v/v))	RESULTS (ug/m3)	REPORTING LIMIT (ug/m3)	MDL (ug/m3)
2-Methylthiophene		ND	0.080	0,080	ND	0.32	0.32
3-Methylthiophene		ND	0.080	0,080	ND	0.32	0.32
Toluene		0.38	0.080	0.021	1.4	0.30	0.079
1,2,4-Trichlorobenzene	;	ДИ DI	0.080	0.039	ND _	0,59	0.29
1,1,1-Trichloroethane		ND (	0.080	0.012	ND	0.44	0.065
1,1,2-Trichloroethane		ND	0.080	0.021	ND	0,44	0.11
Trichloroethene		ND	0.040	0.014	ND	0.21	0,075
Trichlorofluorometha	ne	0.24	0.080	0.0098	1.4	0.45	0.055
1,1,2-Trichloro-1,2,2-t		0.064 J	0,080	0.012	0.49 J	0.61	0.092
1,2,3-Trimethylbenzene	9	ND	0.080	0.080	ND	0.39	0.39
1,2,4-Trimethylbenzen	e	0.049 J	0.080	0.025	0.24 J	0.39	0,12
1,3,5-Trimethylbenzene	;	ND	0.080	0.026	ND	0.39	0,12
2,2,4-Trimethylpentan	c	0.044 J	0.20	0.016	0.20 J	0.93	0.075
n-Undecane		0.040 J	0.40	0.025	0.26 J	2,6	0.16
Vinyl chloride		ND	0.080	0.029	ND	0,20	0.074
m-Xylene & p-Xylene		0.23	0.080	0.050	0.99	0.35	0.22
o-Xylenc		0.075 J	0.080	0.024	0.33 J	0.35	
2,3-Dimethylpentane		ND	0.080	0.080	ND	0.33	<b>0.10</b> 0.33
SURROGATE			PERCENT RECOVERY		CON	DRATORY IROL IS (%)	

4-Bromofluorobenzene

104

CONTROL LIMITS (%) 60 - 140

**Ovalifiers** 

BMethod blank contamination. The associated method blank contains the target analyte at a reportable level.JEstimated result. Result is less than RL.

Result (ug/m3) = Result (ppb(v/v))[unrounded] * (Molecular Weight/24.45)

Reporting Limit (ug/m3) = Reporting Limit (ppb(v/v))[unrounded] * (Molecular Weight/24.45)

MDL (ug/m3) = MDL (ppb(v/v))[unrounded] * (Molecular Weight/24.45)

# Client Sample ID: JR-170-IA-3

Lot-Sample #	H3C290430 - 004	Work Order #	M0G9W1AA	Matrix:	AIR	
Date Sampled: Prep Date Prep Batch #: Dilution Factor.:	03/26/2013 04/01/2013 3091059 1	Date Received: Analysis Time: Analysis Time: Method:	03/29/2013 04/01/2013 16:52 TO-15			

PARAMETER	RESULTS (ppb(v/v))	REPORTING LIMIT (ppb(v/v))	MDL (ppb(v/v))	RESULTS (ug/m3)	REPORTING LIMIT (ug/m3)	MDL (ug/m3)
Benzene	0.39	0.080	0.023	1.3	0.26	0.073
Bromomethane	ND	0.080	0,013	ND	0.31	0.050
n-Butane	2,2	0.16	0.025	5,2	0.38	0.059
Carbon tetrachloride	0.083	0.040	0.015	0.52	0.25	0.094
Chlorobenzene	ND	0,080	0.020	ND	0.37	0.092
Chloroethane	0.025 J	0.080	0.014	0,067 J	0.21	0.032
Chloroform	4.7	0.080	0.015	23	0.39	0.073
Chloromethane	0.56	0,20	0.064	1.2	0.41	0.13
n-Decane	0.084 J	0.40	0,022	0.49 J	2.3	0.13
1,2-Dibromoethane (EDB)	ND	0.080	0.018	ND	0.61	0.13
1,2-Dichlorobenzene	ND	0,080	0.028	ND	0.48	0.14
1,3-Dichlorobenzene	ND	0.080	0.026	ND	0.48	0.16
1,4-Dichlorobenzene	ND	0,080	0.026	ND	0.48	0.16
Dichlorodifluoromethane	0.51	0.080	0.027	2.5	0.40	0.13
1,1-Dichloroethane	ND	0.080	0.010	ND	0.32	0,040
1,2-Dichlorocthane	0.024 J	0,080	0.019	0.097 J	0.32	
cis-1,2-Dichloroethene	ND	0.080	0.024	ND	0.32	<b>0.077</b> 0.095
1,1-Dichloroethene	ND	0.080	0,014	ND	0.32	0.056
1,2-Dichloropropane	ND	0,080	0.021	ND	0.32	0.097
cis-1,3-Dichloropropene	ND	0.080	0.029	ND	0.36	0,13
trans-1,3-Dichloropropene	ND	0.080	0.019	ND	0.36	0.086
1,2-Dichloro-1,1,2,2-tetrafluoroethan e	0.015 J	0.080	0.013	0.11 J	0.56	0.091
Indane	ND	0.080	0,080	ND	0.39	0.39
n-Dodecane	0.049 J	0.40	0.031	0.34 J	2.8	0.39
Ethylbenzenc	0.099	0,080	0.027	0.43	0.35	0.12
n-Heptanc	0,14 J	0.20	0.019	0.56 J	0.82	
Hexachlorobutadiene	ND	0.080	0.031	ND	0.85	0.078
n-Hexane	0.29	0.20	0.013	1.0	0.70	0.33
Indene	ND	0,16	0.16	ND	0.76	0.046
2-Methylbutane	1.4	0.20	0.012	4,2	0.59	0.76
Isopropylbenzene	ND	0,16	0.024	ND	0.79	0.035
Methylene chloride	0.32 B	0.20	0.018	1.1 B	0.69	0.12
Naphthalene	ND	0.20	0.036	ND	1,0	0.063 0.19
Nonane	0.049 J	0.20	0.017	0.26 J	1.0	
n-Octane	0.058 J	0.16	0.014	0.27 J	0.75	0.089
Pentane	0.55	0.40	0.024	1.6	1.2	0.065
2-Methylpentane	0.29	0.080	0.080	1.0	0.28	0.071
Styrene	ND	0.080	0.023	ND	0.34	0.28
1,1,2,2-Tetrachloroethane	ND	0.080	0.024	ND	0.34	0.098
Tetrachloroethene	0.12	0.080	0.016	0.84	0.55 0.54	0.16
Thiophene	ND	0,080	0.080	ND	0.28	0.11
2-Ethylthiophene	ND	0.080	0.080	ND	0.28	0.28
				. 124	10,01	0.37

#### Client Sample ID: JR-170-IA-3

#### **GC/MS** Volatiles

PARAMETER	RESULTS (ppb(v/v))	REPORTING LIMIT (ppb(v/v))	MDL (ppb(v/v))	RESULTS (ug/m3)	REPORTING LIMIT (ug/m3)	MDL (ug/m3)
2-Methylthiophene	ND	0.080	0.080	ND	0.32	0.32
3-Methylthiophene	ND	0.080	0.080	ND	0.32	0,32
Toluene	0.89	0.080	0.021	3,4	0.30	0.079
1,2,4-Trichlorobenzene	C dn	0.080	0.039	ND 🔪	0.59	0,29
1,1,1-Trichloroethane	ND	0,080	0,012	ND	0.44	0,065
1,1,2-Trichloroethane	ND	0.080	0.021	ND	0.44	0.11
Trichloroethene	0.025 J	0.040	0.014	0.13 J	0.21	0.075
Trichlorofluoromethane	0.25	0.080	0.0098	1.4	0.45	0.055
1,1,2-Trichloro-1,2,2-trifluoroethane	0.063 J	0.080	0.012	0.48 J	0.61	0.092
1,2,3-Trimethylbenzene	ND	0.080	0.080	ND	0.39	0.39
1,2,4-Trimethylbenzene	0.078 J	0.080	0.025	0.38 J	0.39	0.12
1,3,5-Trimethylbenzene	0.034 J	0.080	0.026	0.17 J	0.39	0.12
2,2,4-Trimethylpentane	0.20	0.20	0.016	0.94	0.93	0.075
n-Undecane	0.055 J	0.40	0.025	0.35 J	2,6	0.16
Vinyl chloride	ND	0.080	0.029	ND	0.20	0.074
m-Xylene & p-Xylene	0.31	0.080	0.050	1.3	0.35	0.22
o-Xylene	0.11	0,080	0.024	0.48	0.35	0.10
2,3-Dimethylpentane	ND	0.080	0.080	ND	0,33	0,33
URROGATE		PERCENT RECOVERY		CON	DRATORY IROL IS (%)	

**Qualifiers** 

BMethod blank contamination. The associated method blank contains the target analyte at a reportable level.JEstimated result. Result is less than RL.

Result (ug/m3) = Result (ppb(v/v))[unrounded] * (Molecular Weight/24.45)

Reporting Limit (ug/m3) = Reporting Limit (ppb(v/v))[unrounded] * (Molecular Weight/24.45)

 $\label{eq:MDL model} \textbf{MDL (ug/m3) = MDL (ppb(v/v))[unrounded] * (Molecular Weight/24.45)}$ 

Client Sample ID: JR-170-IA-4

#### GC/MS Volatiles

Lot-Sample #	H3C290430 - 005	Work Order #	M0G9X1AA	Matrix:	AIR	
Date Sampled:	03/26/2013	Date Received:	03/29/2013			
Prep Date:	04/01/2013	Analysis Time:	04/01/2013			
Prep Batch #:	3091059	Analysis Time:	17:48			
<b>Dilution Factor.:</b>	1	Method:	TO-15			

PARAMETER	RESULTS (ppb(v/v))	REPORTING LIMIT (ppb(v/v))	MDL (ppb(v/v))	RESULTS (ug/m3)	REPORTING LIMIT (ug/m3)	MDL (ug/m3)
Benzene	0.31	0.080	0.023	0.98	0.26	0.073
Bromomethane	ND	0.080	0.013	ND	0.31	0.050
n-Butane	1.6	0.16	0.025	3.7	0.38	0.059
Carbon tetrachloride	0.084	0.040	0.015	0.53	0.25	0.094
Chlorobenzene	ND	0.080	0.020	ND	0.37	0.092
Chloroethane	0.033 J	0,080	0.014	0.086 J	0.21	0.032
Chleroform	0.39	0.080	0.015	1.9	0.39	0.073
Chloromethane	0.65	0.20	0.064	1.3	0.41	0.13
n-Decane	0.26 J	0.40	0.022	1,5 J	2.3	
1,2-Dibromoethane (EDB)	ND	0.080	0,018	ND	0.61	0.13
1,2-Dichlorobenzene	ND	0.080	0.028	ND	0.48	0,14 0.17
1,3-Dichlorobenzene	ND	0.080	0.026	ND	0.48	0.17
1,4-Dichlorobenzene	0.028 J	0.080	0.026	0.17 J	0,48	
Dichlorodifluoromethane	0.50	0.080	0.027	2.5		0.16
1,1-Dichloroethane	ND	0.080	0.010	ND	0.40 0.32	0.13
1,2-Dichloroethane	ND	0,080	0.019	ND	0.32	0.040
cis-1,2-Dichloroethene	ND	0,080	0.024	ND	0.32	0,077
1,1-Dichloroethene	ND	0,080	0.014	ND	0.32	0.095
1,2-Dichloropropane	ND	0,080	0.021	ND	0.32	0.056
cis-1,3-Dichloropropene	ND	0.080	0.029	ND	0.37	0.097
trans-1,3-Dichloropropene	ND	0.080	0.019	ND	0.36	0.13 0.086
1,2-Dichloro-1,1,2,2-tetrafluoroethan e	0.016 J	0.080	0.013	0.11 J	0.56	0.088 0.091
Indane	ND	0.080	0,080	ND	0.39	0.39
n-Dodecane	0.051 J	0.40	0.031	0.35 J	2.8	0.39
Ethylbenzene	0.084	0.080	0.027	0.36	0.35	
n-Heptane	0.070 J	0.20	0.019	0.29 J	0.82	0.12
Hexachlorobutadiene	ND	0.080	0.031	ND	0.82	0.078
n-Hexane	0.14 J	0.20	0.013	0.51 J	0.70	0,33
Indene	ND	0,16	0.16	ND		0.046
2-Methylbutane	1.8	0.20	0.012	5.5	0.76	0,76
Isopropylbenzene	ND	0.16	0.024	ND	0 <b>.5</b> 9 0,79	0.035
Methylene chloride	0.39 B	0.20	0.018	1.3 <del>B</del>	0.79 0.69	0.12
Naphthalene	ND	0.20	0.036	ND	1,0	0.063
Nonane	0.1 <b>2 J</b>	0.20	0.017	0.64 J		0,19
n-Octane	0.086 J	0.16	0.014	0.40 J	1.0	0,089
Pentane	0.71	0.40	0.024	2.1	0.75	0.065
2-Methylpentane	0.11	0.080	0.024	0.40	1.2	0.071
Styrene	0.032 J	0.080	0.030		0.28	0.28
1,1,2,2-Tetrachloroethane	ND	0.080	0.023	0.14 J	0.34	0.098
Tetrachloroethene	0,11	0.080		ND	0.55	0.16
Thiophene	ND	0.080	0.016	0.74	0.54	0.11
2-Ethylthiophene	ND	0.080	0.080 0.080	ND	0.28	0.28
	110	0.000	0.080	ND	0,37	0.37

TO-14 _rev5MDL_DOD.rpt version 5.004 09/13/2011

#### Client Sample ID: JR-170-IA-4

#### **GC/MS** Volatiles

Lot-Sample # H3C290430 - 005		Work Order #	M0G9X1AA	Mat	rix: AIR	
PARAMETER	RESULTS (ppb(v/v))	REPORTING LIMIT (ppb(v/v))	MDL (ppb(v/v))	RESULTS (ug/m3)	REPORTING LIMIT (ug/m3)	MDL (ug/m3)
2-Methylthiophene	ND	0.080	0.080	ND	0.32	0.32
3-Methylthiophene	ND	0.080	0,080	ND	0.32	0.32
Tolucne	0,45	0.080	0.021	1.7	0.30	0.079
1,2,4-Trichlorobenzene	L DN	0,080	0.039	ND J	0.59	0,29
1,1,1-Trichloroethane	ND	0.080	0.012	ND	0.44	0.065
1,1,2-Trichloroethane	ND	0.080	0.021	ND	0.44	0,11
Trichloroethene	ND	0.040	0.014	ND	0.21	0.075
Trichlorofluoromethane	0.25	0.080	0.0098	1.4	0.45	0.055
1,1,2-Trichloro-1,2,2-trifluoroethane	0,064 J	0.080	0.012	0.49 J	0.61	0.092
1,2,3-Trimethylbenzene	ND	0,080	0.080	ND	0.39	0,39
1,2,4-Trimethylbenzene	0.071 J	0,080	0.025	0.35 J	0.39	0.12
1,3,5-Trimethylbenzene	ND	0.080	0.026	ND	0.39	0.12
2,2,4-Trimethylpentane	0.063 J	0.20	0.016	0.29 J	0.93	
n-Undecane	0.11 J	0.40	0.025	0.70 J	2.6	0.075
Vinyl chloride	ND	0.080	0.029	ND	0.20	0.16
m-Xylene & p-Xylene	0.29	0.080	0,050	1.2	0.35	0.074
o-Xylene	0.091	0.080	0.024	0.39		0.22
2,3-Dimethylpentane	ND	0,080	0,080	ND	0.35	0,10
			0.000		0.33	0,33
SURROGATE		PERCENT RECOVERY		LABC CONI LIMIT		

4-Bromofluorobenzene

104

60 - 140

<u>Oualifiers</u>

Method blank contamination. The associated method blank contains the target analyte at a reportable level. в J Estimated result. Result is less than RL.

Result (ug/m3) = Result (ppb(v/v))[unrounded] * (Molecular Weight/24.45)

Reporting Limit (ug/m3) = Reporting Limit (ppb(v/v))[unrounded] * (Molecular Weight/24.45)

MDL (ug/m3) = MDL (ppb(v/v))[unrounded] * (Molecular Weight/24.45)

Client Sample ID: AA-032613

Lot-Sample #	H3C290430 - 006	Work Order #	M0G901AA	Matrix:	AIR	
Date Sampled: Prep Date: Prep Batch #: Dilution Factor.:	03/26/2013 04/01/2013 3091059 I	Date Received: Analysis Time: Analysis Time: Method:	03/29/2013 04/01/2013 19:35 TO-15			

PARAMETER	RESULTS (ppb(v/v))	REPORTING LIMIT (ppb(v/v))	MDL (ppb(v/v))	RESULTS (ug/in3)	REPORTING LIMIT (ug/m3)	MDL (ug/m3)
Benzene	0.21	0,080	0.023	0.67	0.26	
Bromomethane	ND	0,080	0,013	ND	0.31	0.073
n-Butane	0.71	0.16	0.025	1.7	0.38	0.050
Carbon tetrachloride	0.081	0.040	0,015	0.51	0.25	0.059
Chlorobenzene	ND	0,080	0.020	ND	0.37	0.094
Chloroethane	ND	0.080	0.014	ND	0.21	0.092
Chloroform	0.023 J	0.080	0.015	0.11 J	0.39	0.037
Chloromethane	0.51	0,20	0.064	1.0	0.41	0.073
a-Decane	ND	0,40	0.022	ND	2,3	0.13
,2-Dibromoethane (EDB)	ND	0,080	0,018	ND	0.61	0.13
,2-Dichlorobenzene	ND	0.080	0.028	ND	0.48	0,14
,3-Dichlorobenzene	ND	0.080	0.026	ND	0.48	0.17
,4-Dichlorobenzene	ND	0.080	0.026	ND	0.48	0.16
Dichlorodifluoromethane	0.51	0,080	0.027	2,5	0.48	0.16
,1-Dichloroethane	ND	0,080	0.010	ND	0.32	0.13
,2-Dichloroethane	ND	0.080	0.019	ND	0,32	0.040
is-1,2-Dichloroethene	ND	0.080	0.024	ND	0.32	0.077
,1-Dichloroethene	ND	0.080	0.014	ND	0.32	0.095
,2-Dichloropropane	ND	0.080	0,021	ND	0.32	0.056
is-1,3-Dichloropropene	ND	0.080	0.029	ND	0.36	0,097
ans-1,3-Dichloropropene	ND	0.080	0,019	ND	0,36	0.13
2-Dichloro-1,1,2,2-tetrafluoroethan	0.018 J	0.080	0.013	0.12 J	0.56	0.086 <b>0.091</b>
Idane	ND	0.080	0,080	ND	0.20	
-Dodecane	0.033 J	0.40	0.031	0.23 J	0.39	0.39
thylbenzene	0.036 J	0.080	0.027	0.23 J 0.16 J	2.8	0.22
Heptane	0.054 J	0.20	0.019		0.35	0.12
exachlorobutadiene	ND	0,080	0.031	0.22 J ND	0.82	0.078
Hexane	0.13 J	0.20	0.013		0.85	0,33
dene	ND	0,16	0.16	0.45 J	0.70	0.046
Methylbutane	0,34	0.20	0.012	ND	0.76	0.76
ppropylbenzene	ND	0.16	0.012	1.0 ND	0.59	0,035
ethylene chloride	0.45-8	0.20	0.024		0.79	0.12
aphthalene	ND	0.20	0.018	1.6 8	0.69	0.063
Dnane	ND	0.20	0.017	ND ND	1,0	0.19
Octane	0.023 J	0.16	0.014		1.0	0,089
ntane	0.20 J	0.40	0.014	0.11 J	0.75	0.065
Methylpentane	0.089	0.080	0.024	0.59 J	1,2	0.071
/rene	ND	0.080	0.023	0.31	0.28	0.28
,2,2-Tetrachloroethane	ND	0.080	0.023	ND	0.34	0,098
trachloroethene	0.086	0.080	0.024 0.016	ND	0.55	0.16
iophene	ND	0.080	0.016	0.58	0.54	0.11
Sthylthiophene	ND	0.080	0.080	ND	0.28	0.28

#### Client Sample ID: AA-032613

#### **GC/MS** Volatiles

PARAMETER	RESULTS (ppb(v/v))	REPORTING LIMIT (ppb(v/v))	MDL (ppb(v/v))	RESULTS (ug/in3)	REPORTING LIMIT (ug/m3)	MDL (ug/m3)
2-Methylthiophene	ND	0.080	0.080	ND	0.32	0.32
3-Methylthiophene	ND	0.080	0.080	ND	0.32	0.32
Toluene	0.30	0.080	0.021	1.1	0.30	0.079
1,2,4-Trichlorobenzene	ND	0,080	0.039	ND	0.59	0,29
1,1,1-Trichloroethane	ND	0.080	0.012	ND	0.44	0,065
1,1,2-Trichloroethane	ND	0,080	0.021	ND	0.44	0.11
Trichloroethene	ND	0.040	0.014	ND	0.21	0.075
Trichlorofluoromethane	0,26	0,080	0.0098	1.4	0.45	0.055
1,1,2-Trichloro-1,2,2-trifluoroethane	0.063 J	0.080	0.012	0.49 J	0.61	0.092
1,2,3-Trimethylbenzene	ND	0.080	0.080	ND	0.39	0.39
1,2,4-Trimethylbenzene	ND	0.080	0.025	ND	0,39	0.12
1,3,5-Trimethylbenzene	ND	0,080	0.026	ND	0.39	0,13
2,2,4-Trimethylpentane	0.037 J	0.20	0.016	0.17 J	0.93	0.075
n-Undecane	0.025 J	0.40	0.025	0.16 J	2.6	0.16
Vinyl chloride	ND	0.080	0.029	ND	0.20	0.074
m-Xylene & p-Xylene	0.089	0,080	0.050	0,39	0.35	0.22
o-Xylene	0 <b>.03</b> 7 J	0.080	0.024	0.16 J	0.35	0.10
2,3-Dimethylpentane	ND	0,080	0,080	ND	0.33	0.33
SURROGATE		PERCENT RECOVERY			DRATORY TROL	

**Ounlifiers** 

BMethod blank contamination. The associated method blank contains the target analyte at a reportable level.JEstimated result. Result is less than RL,

Result (ug/m3) = Result (ppb(v/v))[unrounded] * (Molecular Weight/24.45)

Reporting Limit (ug/m3) = Reporting Limit (ppb(v/v))[unrounded] * (Molecular Weight/24,45)

MDL (ug/m3) = MDL (ppb(v/v))[unrounded] * (Molecular Weight/24,45)

# Client Sample ID: JR-178-IA-1

Lot-Sample #	H3C290430 - 007		Work Order #	M0G911AA	Matr	ix	AIR
Date Sampled: Prep Date Prep Batch #: Dilution Factor.:			Date Received: Analysis Time: Analysis Time: Method	03/29/2013 04/01/2013 20:34 TO-15			
PARAMETER		RESULTS (ppb(v/v))	REPORTING LIMIT (ppb(v/y))	MDL (ppb(v/v))	RESULTS (ug/m3)	REPORTING LIMIT (ug/m)	

PARAMETER	(ppb(v/v))	LIMIT (ppb(v/v))	(ppb(v/v))	(ug/in3)	REPORTING LIMIT (ug/m3)	MDL (ug/m3)
Benzene	0.52	0.080	0.023	1.7	0.26	0.073
Bromomethane	ND	0.080	0.013	ND	0.31	0.050
n-Butane	2.2	0.16	0.025	5.1	0.38	0.059
Carbon tetrachloride	0.089	0.040	0.015	0.56	0.25	0.094
Chlorobenzene	ND	0.080	0.020	ND	0.37	0.094
Chloroethane	0.034 J	0.080	0.014	0.089 J	0.21	0,032
Chloroform	4.1	0.080	0.015	20	0.39	0.073
Chloromethanc	0.75	0,20	0.064	1.5	0.41	0.13
n-Decane	1.2	0.40	0.022	7.1	2,3	0.13
1,2-Dibromoethane (EDB)	ND	0.080	0,018	ND	0.61	0.13
1,2-Dichlorobenzene	ND	0.080	0.028	ND	0.48	0.14
1,3-Dichlorobenzene	ND	0.080	0.026	ND	0.48	0.15
1,4-Dichlorobenzene	0.039 J	0.080	0.026	0.24 J	0.48	
Dichlorodifluoromethane	0.51	0.080	0.027	2.5	0.40	0,16
1,1-Dichloroethane	ND	0.080	0.010	ND	0.32	0.13 0.040
1,2-Dichloroethane	0.023 J	0.080	0.019	0.093 J	0.32	
cis-1,2-Dichloroethene	0.79	0.080	0.024	3.1	0.32	0.077
1,1-Dichloroethene	ND	0,080	0.014	ND	0.32	0.095
1,2-Dichloropropane	ND	0.080	0.021	ND	0.32	0.056
cis-1,3-Dichloropropene	ND	0.080	0.029	ND	0.36	0.097
rans-1,3-Dichloropropene	ND	0.080	0.019	ND	0.36	0.13
l,2-Dichloro-1,1,2,2-tetrafluoroethan	0.016 J	0.080	0.013	0.11 J	0.56	0.086
) 					0,50	0.091
ndane	ND	0,080	0.080	ND	0.39	0.39
1-Dodecane	0.033 J	0,40	0.031	0,23 J	2.8	0,22
Ethylbenzene	0.13	0.080	0.027	0.58	0.35	0.12
i-Heptane	0,18 J	0.20	0.019	0.73 J	0.82	0.078
Hexachlorobutadiene	ND	0,080	0.031	ND	0.85	0,33
-Hexane	0.57	0.20	0.013	2.0	0.70	0.046
ndene	ND	0.16	0.16	ND	0.76	0.76
-Methylbutane	2,3	0.20	0.012	6,9	0,59	0.035
sopropylbenzene	0,026 J	0.16	0.024	0.13 J	0.79	0.12
Iethylene chloride	0.51 1	0.20	0.018	1.8 B	0.69	0.063
laphthalene	ND	0.20	0.036	ND	1.0	0.19
lonane	0.064 J	0.20	0.017	0.34 J	1.0	0.089
-Octane	0.088 J	0.16	0.014	0.41 J	0.75	0.065
entane	1.6	0.40	0.024	4.7	1.2	0.003
-Methylpentane	0.68	0.080	0.080	2.4	0.28	0.28
tyrene	0.035 J	0.080	0.023	0.15 J	0.34	0.28
1,2,2-Tetrachloroethane	ND	0.080	0.024	ND	0.55	0.16
etrachloroethene	3.0	0.080	0.016	20	0.54	0.18
hiophene	ND	0.080	0.080	ND	0.28	0.11
Ethylthiophene	ND	0.080	0.080	ND	0.37	0.28

#### Client Sample ID: JR-178-IA-1

#### **GC/MS** Volatiles

Lot-Sample # H3C290430 - 007	7	Work Order #	M0G911AA	Mai	rix: AIR	
PARAMETER	RESULTS (ppb(v/v))	REPORTING LIMIT (ppb(v/v))	MDL (ppb(v/v))	RESULTS (ug/m3)	REPORTING LIMIT (ug/m3)	MDL (ug/m3)
2-Methylthiophene	ND	0.080	0.080	ND	0.32	0.32
3-Methylthiophene	ND	0.080	0.080	ND	0.32	0.32
Toluene	0.95	0.080	0.021	3.6	0.30	0.079
1,2,4-Trichlorobenzene	L DN	0.080	0.039	ND	0.59	0.079
1,1,1-Trichloroethane	ND	0.080	0.012	ND ~	0,44	0.065
1,1,2-Trichloroethane	ND	0.080	0.021	ND	0.44	0.11
Trichloroethene	0.46	0.040	0.014	2,5	0.21	0,075
Trichlorofluoromethane	0.24	0.080	0.0098	1.4	0.45	0.055
1,1,2-Trichloro-1,2,2-trifluoroethane	0.066 J	0.080	0.012	0.50 J	0.61	0.092
1,2,3-Trimethylbenzene	ND	0.080	0;080	ND	0.39	0.092
1,2,4-Trimethylbenzene	0.14	0.080	0,025	0.71	0.39	0.12
1,3,5-Trimethylbenzene	0.057 J	0.080	0.026	0.28 J	0.39	
2,2,4-Trimethylpentane	0.22	0.20	0.016	1.0	0.93	0.13
n-Undecane	0.074 J	0,40	0.025	0.47 J	2.6	0.075
Vinyl chloride	0.12	0.080	0.029	0.31	0.20	0.16
n-Xylone & p-Xylene	0.56	0.080	0.050	2.4	0.35	0.074
o-Xylene	0.20	0.080	0.024	0.88		0.22
2,3-Dimethylpentane	0,092	0.080	0.080	0.38	0.35	0.10
					0.33	0.33
SURROGATE		PERCENT RECOVERY		CON	DRATORY IROL IS (%)	

4-Bromofluorobenzene

106

60 - 140

**Qualifiers** 

Method blank contamination. The associated method blank contains the target analyte at a reportable level. в J Estimated result. Result is less than RL.

Result (ug/m3) = Result (ppb(v/v))[unrounded] * (Molecular Weight/24.45)

Reporting Limit (ug/m3) = Reporting Limit (ppb(v/v))[unrounded] * (Molecular Weight/24.45)

MDL (ug/m3) = MDL (ppb(v/v))[unrounded] * (Molecular Weight/24.45)

# Client Sample ID: JR-178-IA-2

GC/MS Volatiles

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Lot-Sample #	H3C290430 - 008	Work Order #	M0G921AA	Matrix:	AIR
Date Sampled: Prep Date: Prep Batch #: Dilution Factor.:	04/01/2013 3091059	Date Received: Analysis Time: Analysis Time: Method:	03/29/2013 04/01/2013 21:33 TO-15		

PARAMETER	RESULTS (ppb(v/v))	REPORTING LIMIT (ppb(v/v))	MDL (ppb(v/v))	RESULTS (ug/m3)	REPORTING LIMIT (ug/m3)	MDL (ug/in3)
Benzene	0.35	0.080	0.023	1.1	0.26	0.073
Bromomethane	ND	0.080	0.013	ND	0.31	0.073
n-Butane	1,5	0.16	0.025	3,5	0.38	0.059
Carbon tetrachloride	0.085	0.040	0.015	0,53	0.25	
Chlorobenzene	ND	0.080	0.020	ND	0.37	0.094 0,092
Chloroethane	0.032 J	0.080	0.014	0.085 J	0.21	
Chloroform	1.5	0.080	0.015	7.4	0.39	0.037
Chiloromethane	0.59	0,20	0.064	1,2	0.41	0.073
1-Decane	0.24 J	0.40	0.022	1.4 J	2.3	0.13
,2-Dibromoethane (EDB)	ND	0,080	0.018	ND	2.3 0.61	0.13
,2-Dichlorobenzene	ND	0,080	0.028	ND	0.48	0.14
,3-Dichlorobenzene	ND	0.080	0.026	ND	0.48	0.17
,4-Dichlorobenzene	0.028 J	0.080	0.026	0.17 J	0.48 0.48	0.16
Dichlorodifluoromethane	0.53	0.080	0.027	2.6	0.48	0.16
, 1-Dichloroethane	ND	0.080	0.010	2.0 ND	0.40	0.13
,2-Dichloroethane	0.025 J	0.080	0.019	0.100 J	0.32	0.040
is-1,2-Dichloroethenc	0.38	0.080	0.024	1.5		0.077
,1-Dichloroethene	ND	0.080	0.014	ND	0.32	0.095
,2-Dichloropropane	ND	0.080	0.021	ND	0.32	0:056
is-1,3-Dichloropropene	ND	0.080	0.029	ND	0,37 0,36	0,097
ans-1,3-Dichloropropene	ND	0,080	0.019	ND	0.36	0.13
2-Dichloro-1,1,2,2-tetrafluoroethan	0,016 J	0.080	0.013	0.11 J	0.56	0.086 <b>0.091</b>
Idane	ND	0.080	0.080	ND	0.00	
Dodecane	ND	0.40	0.031	ND	0.39	0,39
thylbenzene	0.10	0.080	0.027	0.44	2.8	0.22
Heptane	0.10 J	0.20	0.019	0.44 0.43 J	0.35	0,12
exachlorobutadiene	ND	0.080	0.031	0.43 J ND	0.82	0.078
Hexane	0.27	0.20	0.013	0.94	0.85	0.33
dene	ND	0.16	0.16	ND	0.70	0.046
Methylbutane	1.1	0.20	0.012	3,2	0.76	0.76
opropylbenzene	ND	0.16	0.012	3.2 ND	0.59	0.035
ethylene chloride	0.97 🔒	0.20	0.024	3.4 <del>B</del>	0.79	0.12
aphthalene	ND	0.20	0.036	3.4 #	0.69	0.063
опяле	0.042 J	0.20	0.017	ND 0.22 J	1.0	0.19
Octane	0.067 J	0.16	0.014	0.22 J 0.31 J	1.0	0.089
entanc	0.66	0,40	0.024	1.9	0.75	0.065
Methylpentane	0.24	0.080	0.024	0.84	1.2	0.071
yrenc	0.038 J	0.080	0.023		0.28	0.28
, 1,2,2-Tetrachloroethane	ND	0.080	0.023	0.16 J	0.34	0.098
trachloroethene	1.8	0.080	0.024	ND	0.55	0.16
iophene	ND	0.080	0.080	12 ND	0.54	0.11
Ethylthiophene	ND	0.080	0.080	ND ND	0,28 0,37	0.28

# Client Sample ID: JR-178-IA-2

#### **GC/MS** Volatiles

PARAMETER	RESULTS (ppb(v/v))	REPORTING LIMIT (ppb(v/v))	MDL (ppb(v/v))	RESULTS (ug/m3)	REPORTING LIMIT (ug/m3)	MDL (ug/m3)
2-Methylthiophene	ND	0,080	0.080	ND	0.32	0.32
3-Methylthiophene	DM	0.080	0.080	ND	0.32	0.32
Toluene	0.73	0.080	0.021	2.8	0,30	0.079
1,2,4-Trichlorobenzene	<u>с</u> ди	0.080	0.039	ND \	0,59	0.29
1,1,1-Trichloroethane	ND	0.080	0.012	ND	0.44	0.065
1,1,2-Trichloroethane	ND	0.080	0.021	ND	0.44	0.11
Trichloroethene	0.19	0.040	0.014	1.0	0.21	0.075
Trichlorofinoromethane	0.26	0.080	0.0098	1.5	0.45	0.055
1,1,2-Trichloro-1,2,2-trifluoroethane	0.068 J	0,080	0.012	0.52 J	0.61	0.092
1,2,3-Trimethylbenzene	ND	0,080	0,080	ND	0.39	0.39
1,2,4-Trimethylbenzene	0.076 J	0.080	0.025	0.37 J	0,39	0.12
1,3,5-Trimethylbenzene	0.026 J	0.080	0,026	0.13 J	0,39	0.13
2,2,4-Trimethylpentane	0.092 J	0.20	0.016	0,43 J	0.93	0.075
1-Undecane	0.035 J	0.40	0.025	0,22 J	2.6	0.16
Vinyl chloride	0,073 J	0.080	0.029	0.19 J	0,20	0.074
n-Xylene & p-Xylene	0.35	0.080	0.050	1.5	0.35	0.22
-Xylene	0.13	0.080	0.024	0.58	0.35	0.22
2,3-Dimethylpentane	ND	0.080	0.080	ND	0,33	0.33
URROGATE		PERCENT RECOVERY		CONT	DRATORY FROL FS (%)	

**Qualifiers** 

 B
 Method blank contamination. The associated method blank contains the target analyte at a reportable level.

 J
 Estimated result. Result is less than RL.

Result (ug/m3) = Result (ppb(v/v))[unrounded] * (Molecular Weight/24.45)

Reporting Limit (ug/m3) = Reporting Limit (ppb(v/v))[unrounded] * (Molecular Weight/24,45)

MDL (ug/m3) = MDL (ppb(v/v))[unrounded] * (Molecular Weight/24.45)

# Client Sample ID: JR-1223-IA-1

Lot-Sample #	H3C290430 - 010	Work Order #	M0G941AA	Matrix:	AIR
Date Sampled: Prep Date Prep Batch #: Dilution Factor.:	04/01/2013 3091059	Date Received: Analysis Time: Analysis Time: Method			

PARAMETER	RESULTS (ppb(v/v))	REPORTING LIMIT (ppb(v/v))	MDL (ppb(v/v))	RESULTS (ug/in3)	REPORTING LIMIT (ug/m3)	MDL (ug/m3)
Benzene	0.19	0,080	0.023	0.60	0.26	0.073
Bromomethane	ND	0.080	0.013	ND	0.31	0.050
n-Butane	0.70	0.16	0.025	1.7	0.38	0,059
Carbon tetrachloride	0.080	0.040	0.015	0.51	0.25	0.094
Chlorobenzene	ND	0.080	0.020	ND	0.37	0.092
Chloroethane	ND	0,080	0.014	ND	0.21	0.037
Chloroform	0.21	0.080	0.015	1.0	0.39	0.073
Chloromethane	0.50	0,20	0.064	1.0	0.41	0.13
n-Decane	0.066 J	0.40	0.022	0,38 J	2.3	0.13
1,2-Dibromoethane (EDB)	ND	0.080	0,018	ND	0.61	0.14
1,2-Dichlorobenzene	ND	0.080	0.028	ND	0.48	0.17
1,3-Dichlorobenzene	ND	0,080	0.026	ND	0.48	0,16
1,4-Dichlorobenzene	0.029 J	0.080	0.026	0.18 J	0.48	0.16
Dichlorodifluoromethane	0.50	0.080	0.027	2.5	0.40	0.13
1,1-Dichloroethane	ND	0.080	0.010	ND	0.32	0.040
1,2-Dichloroethane	ND	0.080	0.019	ND	0.32	0.077
cis-1,2-Dichloroethene	ND	0,080	0,024	ND	0.32	0.095
1,1-Dichloroethene	ND	0,080	0.014	ND	0.32	0.056
1,2-Dichloropropane	ND	0.080	0.021	ND	0.37	0.097
cis-1,3-Dichloropropene	ND	0.080	0.029	ND	0.36	0,13
trans-1,3-Dichloropropene	ND	0.080	0.019	ND	0,36	0.086
1,2-Dichloro-1,1,2,2-tetrafluoroethan e	0.017 J	0.080	0.013	0.12 J	0.56	0.091
Indane	ND	0.080	0.080	ND	0.39	0,39
n-Dodecane	0.045 J	0.40	0.031	0.31 J	2.8	0.22
Ethylbenzene	0.044 J	0.080	0.027	0.19 J	0.35	0.12
n-Heptane	0.045 J	0.20	0.019	0.18 J	0,82	0.078
Hexachlorobutadiene	ND	0,080	0.031	ND	0.85	0.33
n-Hexane	0.10 J	0.20	0.013	0.37 J	0.70	0.046
Indene	ND	0.16	0.16	ND	0.76	0,76
2-Methylbutane	0.34	0,20	0.012	1.00	0,59	0.035
Isopropylbenzene	ND	0.16	0.024	ND	0,79	0.12
Methylene chloride	0.21-B	0.20	0.018	0.73-B-	0.69	0.063
Naphthalene	ND	0,20	0,036	ND	1,0	0,19
Nonane	0.030 J	0.20	0.017	0.16 J	1.0	0.089
n-Octane	0.031 J	0,16	0.014	0.14 J	0.75	0.065
Pentane	0.20 J	0.40	0.024	0.60 J	1.2	0.071
2-Methylpentane	0,096	0.080	0,080	0.34	0.28	0.28
Styrene	ND	0,080	0.023	ND	0.34	0.098
1,1,2,2-Tetrachloroethane	ND	0.080	0.024	ND	0.55	0.16
Tetrachloroethene	0.11	0.080	0.016	0.74	0.54	0.11
Thiophene	ND	0,080	0.080	ND	0.28	0.28
2-Ethylthiophene	ND	0.080	0.080	ND	0.37	0.28

# Client Sample ID: JR-1223-IA-1

#### GC/MS Volatiles

PARAMETER	RESULTS (ppb(v/v))	REPORTING LIMIT (ppb(v/v))	MDL (ppb(v/v))	RESULTS (ug/m3)	REPORTING LIMIT (ug/m3)	MDL (ug/m3)
2-Methylthiophene	ND	0.080	0.080	ND	0.32	0.32
3-Methylthiophene	ND	0,080	0.080	ND	0.32	0.32
Toluene	0.25	0.080	0.021	0.94	0.30	0.079
1,2,4-Trichlorobenzene	L DM	0.080	0.039	ND \	0.59	0.29
1,1,1-Trichloroethane	ND	0.080	0.012	ND	0.44	0.065
1,1,2-Trichloroethane	ND	0,080	0.021	ND	0.44	0.11
Trichloroethene	ND	0.040	0.014	ND	0.21	0.075
Trichlorofluoromethane	0.24	0.080	0.0098	1.3	0.45	0.055
1,1,2-Trichloro-1,2,2-trifluoroethane	0.064 J	0.080	0.012	0.49 J	0.61	0.092
1,2,3-Trimethylbenzene	ND	0.080	0.080	ND	0.39	0.39
1,2,4-Trimethylbenzene	0,047 J	0,080	0.025	0.23 J	0.39	0.12
1,3,5-Trimethylbenzene	ND	0.080	0.026	ND	0.39	0.12
2,2,4-Trimethylpentane	0.040 J	0.20	0.016	0.18 J	0,93	0.075
n-Undecane	0.049 J	0.40	0.025	0.31 J	2.6	0.075
Vinyl chloride	ND	0.080	0.029	ND	0.20	0.16
n-Xylene & p-Xylene	0.14	0.080	0.050	0.62	0.35	0.074 0.22
o-Xylene	0.055 J	0.080	0.024	0.24 J	0.35	
2,3-Dimethylpentane	ND	0.080	0.080	ND	0.33	0,10 0.33
URROGATE		PERCENT RECOVERY		CON	DRATORY IROL IS (%)	

**Qualifiers** 

BMethod blank contamination. The associated method blank contains the target analyte at a reportable level.JEstimated result. Result is less than RL.

Result (ug/m3) = Result (ppb(v/v))[unrounded] * (Molecular Weight/24.45)

Reporting Limit (ug/m3) = Reporting Limit (ppb(v/v))[unrounded] * (Molecular Weight/24.45)

MDL (ug/m3) = MDL (ppb(v/v))[unrounded] * (Molecular Weight/24.45)

TO-14 _rev5MDL_DOD.rpt version 5.004 09/13/2011

#### Client Sample ID: JR-1223-IA-2

Lot-Sample #	H3C290430 - 011		Work Order #	M0G951AA	M	atrix:	AIR
Date Sampled:	03/27/2013		Date Received:	03/29/2013			
Prep Date:	04/01/2013		Analysis Time:	04/02/2013			
Prep Batch #:	3091059		Analysis Time:	00:24			
<b>Dilution Factor.:</b>	1		Method:	TO-15			
		RESULTS	REPORTING	MDL	RESULTS	REBORTI	

PARAMETER	RESULTS (ppb(v/v))	REPORTING LIMIT (ppb(v/v))	MDL (ppb(v/v))	RESULTS (ug/m3)	REPORTING LIMIT (ug/m3)	MDL (ug/m3)
Benzene	0,24	0.080	0.023	0.75	0.26	0.073
Bromomethane	ND	0.080	0.013	ND	0.31	0.050
n-Butane	1.4	0.16	0.025	3,4	0.38	0.059
Carbon tetrachloride	0.080	0.040	0.015	0.50	0.25	0.094
Chlorobenzene	ND	0,080	0,020	ND	0.37	0,092
Chloroethane	ND	0.080	0.014	ND	0.21	0.037
Chloroform	1.0	0.080	0.015	5,1	0.39	0.073
Chloromethane	0.48	0.20	0.064	1.00	0,41	0.13
n-Decane	0.17 J	0.40	0.022	0.96 J	2.3	0.13
1,2-Dibromoethane (EDB)	ND	0,080	0.018	ND	0.61	0.13
1,2-Dichlorobenzene	ND	0.080	0.028	ND	0.48	0.17
1,3-Dichlorobenzene	ND	0.080	0.026	ND	0.48	0.16
1,4-Dichlorobenzene	ND	0,080	0.026	ND	0.48	0.16
Dichlorodifluoromethane	0.49	0,080	0.027	2,4	0,40	0.13
1,1-Dichloroethane	ND	0.080	0.010	ND	0.32	0.040
1,2-Dichloroethane	0.022 J	0.080	0.019	0.088 J	0.32	0.077
cis-1,2-Dichloroethene	ND	0.080	0.024	ND	0.32	0.095
1,1-Dichloroethene	ND	0.080	0,014	ND	0.32	0,056
1,2-Dichloropropane	ND	0,080	0.021	ND	0.37	0,097
cis-1,3-Dichloropropene	ND	0.080	0.029	ND	0.36	0.13
trans-1,3-Dichloropropene	ND	0.080	0.019	ND	0.36	0,086
1,2-Dichloro-1,1,2,2-tetrafluoroethan	0.016 J	0,080	0.013	0.11 J	0.56	0.091
e						0.071
Indane	ND	0.080	0.080	ND	0.39	0.39
n-Dodecane	0.057 J	0.40	0.031	0.40 J	2.8	0.22
Ethylbenzene	0.068 J	0.080	0.027	0.30 J	0.35	0.12
n-Heptane	0.076 J	0.20	0.019	0,31 J	0.82	0.078
Hexachlorobutadiene	ND	0.080	0.031	ND	0.85	0,33
n-Hexane	0.15 J	0.20	0.013	0.52 J	0.70	0,046
Indene	ND	0.16	0,16	ND	0.76	0.76
2-Methylbutane	0.70	0.20	0.012	2.1	0.59	0.035
Isopropylbenzene	ND	0.16	0.024	ND	0,79	0,12
Methylene chloride	0.28 <del>B</del>	0.20	0.018	0.96 <del>B</del>	0,69	0.063
Naphthalene	ND	0.20	0.036	ND	1.0	0,19
Nonane	0.072 J	0.20	0,017	0.38 J	1.0	0.089
n-Octane	0.057 J	0.16	0.014	0.27 J	0.75	0.065
Pentane	0.42	0.40	0.024	1.2	1.2	0.071
2-Methylpentane	0.14	0,080	0.080	0.49	0.28	0.28
Styrene	ND	0.080	0.023	ND	0.34	0.098
1,1,2,2-Tetrachloroethane	ND	0.080	0.024	ND	0,55	0,16
Tetrachloroethene	0,13	0.080	0.016	0.88	0.54	0.11
Thiophene	ND	0.080	0.080	ND	0.28	0.28
2-Ethylthiophene	ND	0.080	0.080	ND	0.37	0.37

# Client Sample ID: JR-1223-IA-2

#### **GC/MS** Volatiles

PARAMETER 2-Methylthiophene	RESULTS (ppb(v/v))	REPORTING LIMIT (ppb(v/v))	MDL (ppb(v/v))	RESULTS (ug/in3)	REPORTING LIMIT (ug/m3)	MDL (ug/in3)
3-Methylthiophene	ND	0.080	0.080	ND	0.32	0,32
Toluene	ND	0.080	0.080	ND	0.32	0.32
1,2,4-Trichlorobenzene	0.36 ND	0,080	0.021	1.3	0.30	0.079
1,1,1-Trichloroethane	ב מא מא	0.080	0,039	ND	0,59	0.29
1,1,2-Trichloroethane	ND	0.080	0.012	ND D	0.44	0.065
Trichloroethene	ND	0,080 0.040	0.021	ND	0,44	0,11
Trichlorofluoromethane	0.24	0.040	0.014	ND	0.21	0.075
1,1,2-Trichloro-1,2,2-trifluoroethane	0.062 J	0.080	0.0098	1.4	0.45	0.055
1,2,3-Trimethylbenzene	ND	0.080	0.012	0.48 J	0.61	0.092
1,2,4-Trimethylbenzene	0.096	0.080	0.080	ND	0.39	0.39
1,3,5-Trimethylbenzene	0.026 J	0.080	0.025	0.47	0.39	0.12
2,2,4-Trimethylpentane	0.054 J	0.000	0.026	0.13 J	0.39	0.13
-Undecane	0.086 J	0.20	0.016	0.25 J	0.93	0.075
/inyl chloride	ND	0.080	0.025	0.55 J	2.6	0.16
n-Xylene & p-Xylene	0.21	0.080	0.029	ND	0.20	0.074
-Xylene	0.085	0.080	0.050	0.93	0.35	0.22
,3-Dimethylpentane	ND	0.080	0.024	0.37	0.35	0.10
		0.000	0.080	ND	0,33	0.33

SURROGATE	PERCENT RECOVERY	LABORATORY CONTROL		
4-Bromofluorobenzene		LIMITS (%)		
4-131011011010101010101010101010101010101	104	60 - 140		

**Oualifiers** 

 B
 Method blank contamination. The associated method blank contains the target analyte at a reportable level.

 J
 Estimated result. Result is less than RL.

Result (ug/m3) = Result (ppb(v/v))[unrounded] * (Molecular Weight/24.45)

Reporting Limit (ug/m3) = Reporting Limit (ppb(v/v))[unrounded] * (Molecular Weight/24.45)

MDL (ug/m3) = MDL (ppb(v/v))[unrounded] * (Molecular Weight/24.45)

#### Client Sample ID: JR-1223-IA-3

Lot-Sample #	H3C290430 - 012		Work Order #	M0G961AA	Matri	x:	AIR	
Date Sampled: Prep Date Prep Batch #: Dilution Factor.:			Date Reccived: Analysis Time: Analysis Time: Method:	03/29/2013 04/02/2013 01:21 TO-15				
		RESULTS	REPORTING	MDL	RESULTS	REPORTING		

PARAMETER	RESULTS (ppb(v/y))	REPORTING LIMIT (ppb(v/v))	MDL (ppb(v/v))	RESULTS (ug/m3)	REPORTING LIMIT (ug/m3)	MDL (ug/m3)
Benzene	0.24	0.080	0.023	0.77	0.26	0.073
Bromomethane	ND	0.080	0,013	ND	0,31	0.075
n-Butane	1.5	0.16	0.025	3.6	0.38	0.050
Carbon tetrachloride	0.073	0.040	0.015	0.46	0.25	
Chlorobenzene	ND	0.080	0.020	ND	0.23	0.094
Chloroethane	ND	0,080	0.014	ND	0.21	0.092 0.037
Chloroform	1.2	0.080	0.015	6.0	0.39	
Chloromethane	0.51	0.20	0.064	1.0	0.39	0.073
n-Decane	0.15 J	0.40	0.022	0.90 J	2.3	0.13
1,2-Dibromoethane (EDB)	ND	0.080	0.018	ND	0.61	0.13
1,2-Dichlorobenzene	ND	0.080	0,028	ND	0.48	0.14
1,3-Dichlorobenzene	ND	0.080	0.026	ND	0.48	0.17
1,4-Dichlorobenzene	0.029 J	0.080	0.026	0.18 J		0.16
Dichlorodifluoromethane	0,49	0.080	0.027	2.4	0.48	0.16
1,1-Dichloroethane	ND	0,080	0.010	2.4 ND	0.40	0.13
1,2-Dichloroethane	ND	0.080	0.019	ND	0.32	0.040
cis-1,2-Dichloroethene	ND	0.080	0:024	ND	0.32	0.077
1,1-Dichloroethene	ND	0.080	0.014	ND	0.32 0.32	0.095
1,2-Dichloropropane	ND	0.080	0.021	ND		0.056
cis-1,3-Dichloropropene	ND	0.080	0,029	ND	0.37 0,36	0.097
rans-1,3-Dichloropropene	ND	0,080	0.019	ND	0,36	0.13
,2-Dichloro-1,1,2,2-tetrafluoroethan	0.015 J	0.080	0.013	0.11 J		0.086
			01020	0.110	0.56	0.091
ndane	ND	0,080	0.080	ND	0.39	0.39
1-Dodecane	0.062 J	0.40	0.031	0.43 J	2.8	0.22
Ethylbenzene	0.067 J	0.080	0.027	0.29 J	0.35	0.12
-Heptane	0.068 J	0.20	0.019	0.28 J	0.82	0.078
Iexachlorobutadiene	ND	0.080	0.031	ND	0.85	0.078
-Hexane	0.15 J	0.20	0.013	0.52 J	0.70	0.035
ndene	ND	0,16	0.16	ND	0,76	0.76
-Methylbutane	0.73	0.20	0.012	2.1	0.59	0.035
sopropylbenzene	ND	0,16	0.024	ND	0.79	0.035
Acthylenc chloride	0.22 B	0.20	0.018	0.76 B	0.69	0.12
laphthalene	ND	0.20	0.036	ND	1.0	0.19
lonane	0.066 J	0.20	0.017	0.35 J	1.0	0.19
-Octane	0.047 J	0.16	0.014	0.22 J	0.75	0.089
entane	0.40	0.40	0.024	1.2	1.2	
-Methylpentane	0.15	0.080	0.080	0.52	0.28	0.071
tyrene	0.024 J	0.080	0.023	0.32 0.10 J	0.34	0.28
1,2,2-Tetrachloroethane	ND	0,080	0.024	ND	0.55	0.098
etrachloroethene	0.11	0.080	0.016	0.77		0.16
hiophene	ND	0,080	0.080	ND	0,54 0,28	0.11
-Ethylthiophene	ND	0.080	0.080	ND	0.28	0.28 0.37

# Client Sample ID: JR-1223-IA-3

#### **GC/MS** Volatiles

Lot-Sample # H3C290430 - 012		Work Order # 1	M0G961AA	Mat	rix: AIR	
PARAMETER	RESULTS (ppb(v/v))	REPORTING LIMIT (ppb(v/v))	MDL (ppb(v/v))	RESULTS (ug/m3)	REPORTING LIMIT (ug/m3)	MDL (ug/m3)
2-Methylthiophene	ND	0.080	0.080	ND	0.32	0,32
3-Methylthiophene	ND	0.080	0.080	ND	0.32	0,32
Toluene	0.34	0.080	0.021	1.3	0,30	0.079
1,2,4-Trichlorobenzene	L DN	0.080	0.039	ND \	0.59	0,29
,1,1-Trichloroethane	ND	0.080	0.012	ND 🟳	0.44	0.065
,1,2-Trichloroethane	ND	0,080	0,021	ND	0,44	0.11
Trichloroethene	ND	0.040	0.014	ND	0.21	0.075
richlorofluoromethane	0.24	0.080	0.0098	1.3	0.45	0.055
,1,2-Trichloro-1,2,2-trifluoroethane	0.064 J	0.080	0.012	0.49 J	0.61	0.092
,2,3-Trimethylbenzene	ND	0.080	0.080	ND	0.39	0,39
,2,4-Trimethylbenzene	0.096	0.080	0.025	0.47	0.39	0.12
,3,5-Trimethylbenzene	0.034 J	0.080	0.026	0.17 J	0.39	0.13
,2,4-Trimethylpentane	0.058 J	0.20	0.016	0.27 J	0.93	0.075
-Undecane	0.10 J	0.40	0.025	0.66 J	2.6	0.16
'inyl chloride	ND	0.080	0.029	ND	0.20	0,074
1-Xylene & p-Xylene	0.21	0.080	0.050	0.91	0.35	0.22
-Xylene	0.082	0.080	0.024	0.36	0.35	0.10
,3-Dimethylpentane	ND	0.080	0.080	ND	0.33	0.33
		PERCENT			DRATORY IROL	

SURROGATE

4-Bromofluorobenzene

105

RECOVERY

LABORATORY CONTROL LIMITS (%) 60 - 140

**Oualifiers** 

в

J

Method blank contamination. The associated method blank contains the target analyte at a reportable level. Estimated result. Result is less than RL.

Result (ug/m3) = Result (ppb(v/v))[unrounded] * (Molecular Weight/24.45)

Reporting Limit (ug/m3) = Reporting Limit (ppb(v/v))[unrounded] * (Molecular Weight/24.45)

MDL (ug/m3) = MDL (ppb(v/v))[unrounded] * (Molecular Weight/24.45)

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Client Sample ID: JR-1223-IA-4

#### GC/MS Volatiles

Lot-Sample #	H3C290430 - 013	Work Order #	M0G971AA	Matrix:	AIR	
Date Sampled:	03/27/2013	Date Received:	03/29/2013			
Prep Date:	04/01/2013	Analysis Time:	04/02/2013			
Prep Batch #:	3091059	Analysis Time:	02:17			
<b>Dilution Factor.:</b>	1	Method:	TO-15			

PARAMETER	RESULTS (ppb(v/v))	REPORTING LIMIT (ppb(v/v))	MDL (ppb(v/v))	RESULTS (ug/m3)	REPORTING LIMIT (ug/m3)	MDL (ug/in3)
Benzene	0.21	0.080	0.023	0.68	0.26	0.073
Bromomethane	0.015 J	0.080	0.013	0.058 J	0.31	0.050
n-Butane	1.9	0.16	0.025	4.4	0.38	0.059
Carbon tetrachloride	0.082	0.040	0.015	0.51	0.25	0,094
Chlorobenzene	ND	0.080	0.020	ND	0.37	0.092
Chloroethane	0.029 J	0.080	0.014	0.077 J	0.21	0.037
Chloroform	1,6	0.080	0.015	7.6	0.39	0.073
Chloromethane	0.49	0,20	0,064	1.0	0.41	0.13
n-Decane	0.094 J	0.40	0.022	0.55 J	2.3	0.13
1,2-Dibromoethane (EDB)	ND	0.080	0.018	ND	0.61	0.13
1,2-Dichlorobenzene	ND	0.080	0.028	ND	0.48	0.17
1,3-Dichlorobenzene	ND	0.080	0.026	ND	0.48	0.16
1,4-Dichlorobenzene	ND	0.080	0,026	ND	0.48	0.16
Dichlorodifluoromethane	0.50	0.080	0.027	2.5	0.40	0.13
1,1-Dichloroethane	ND	0,080	0.010	ND	0.32	0.040
1,2-Dichloroethane	ND	0,080	0.019	ND	0.32	0.077
cis-1,2-Dichloroethene	ND	0.080	0,024	ND	0.32	0.095
1,1-Dichloroethene	ND	0.080	0.014	ND	0.32	0.056
1,2-Dichloropropane	ND	0.080	0.021	ND	0.37	0.097
cis-1,3-Dichloropropene	ND	0.080	0.029	ND	0.36	0,13
trans-1,3-Dichloropropene	ND	0,080	0.019	ND	0.36	0,086
1,2-Dichloro-1,1,2,2-tetrafluoroethan	0.016 J	0.080	0.013	0.11 J	0.56	0.091
e						
Indane	ND	0,080	0.080	ND	0,39	0,39
n-Dodecane	ND	0.40	0.031	ND	2.8	0.22
Ethylbenzene	0.056 J	0.080	0.027	0.24 J	0.35	0.12
n-Heptane	0.068 J	0.20	0.019	0.28 J	0.82	0.078
Hexachlorobutadiene	ND	0.080	0.031	ND	0.85	0.33
1-Hexane	0.17 J	0.20	0.013	0.59 J	0.70	0.046
indene	ND	0,16	0,16	ND	0.76	0.76
2-Methylbutane	0.84	0.20	0.012	2.5	0.59	0.035
sopropylbenzene	ND	0.16	0.024	ND	0.79	0.12
Methylene chloride	0.75 B	0.20	0.018	2.6-B	0.69	0.063
Vaphthalene	ND	0.20	0.036	ND	1.0	0.19
Nonane	0.060 J	0.20	0.017	0.31 J	1.0	0,089
1-Octane	0.040 J	0.16	0.014	0.19 J	0.75	0.065
Pentane	0.50	0.40	0.024	1.5	1.2	0.071
-Methylpentane	0,14	0.080	0.080	0.51	0.28	0.28
Styrene	ND	0.080	0.023	ND	0,34	0.098
,1,2,2-Tetrachloroethane	ND	0.080	0.024	ND	0,55	0.16
letrachloroethene	0.094	0.080	0.016	0.64	0.54	0.11
Thiophene	ND	0.080	0.080	ND	0.28	0.28
-Ethylthiophene	ND	0.080	0.080	ND	0.37	0.37

# Client Sample ID: JR-1223-IA-4

**GC/MS** Volatiles

Lot-Sample # H3C290430 - 0	13	Work Order #	M0G971AA	Mat	trix: AIR	
PARAMETER	RESULTS (ppb(v/v))	REPORTING LIMIT (ppb(v/v))	MDL (ppb(v/v))	RESULTS (ug/m3)	REPORTING LIMIT (ug/m3)	MDL (ug/m3)
2-Methylthiophene	ND	0.080	0.080	ND	0.32	0.32
3-Methylthiophene	ND	0.080	0.080	ND	0.32	
Toluene	0,26	0.080	0.021	0.99	0.30	0.32
1,2,4-Trichlorobenzene		0,080	0.039	ND \	0.59	0.079
1,1,1-Trichloroethane	ND	0.080	0.012	L DN	0.44	0;29 0,065
1,1,2-Trichloroethane	ND	0.080	0.021	ND	0.44	0.065
Trichloroethene	ND	0.040	0.014	ND	0.21	0,075
Trichlorofluoromethane	0.27	0.080	0.0098	1.5	0.45	0.055
1,1,2-Trichloro-1,2,2-trifluoroethane	0.063 J	0.080	0.012	0.49 J	0.61	
1,2,3-Trimethylbenzene	ND	0.080	0.080	ND	0.39	0.092 0.39
1,2,4-Trimethylbenzene	0.052 J	0.080	0.025	0.26 J	0.39	0.12
1,3,5-Trimethylbenzene	ND	0,080	0.026	ND	0.39	0.12
2,2,4-Trimethylpentane	0.065 J	0.20	0.016	0.31 J	0.93	
n-Undecane	0.038 J	0.40	0.025	0.24 J	2.6	0.075
Vinyl chloride	ND	0,080	0.029	ND	0.20	0.16
m-Xylene & p-Xylene	0.15	0.080	0.050	0.64	0.35	0.074
o-Xylene	0.053 J	0.080	0.024	0.23 J	0.35	0.22
2,3-Dimethylpentane	ND	0.080	0.080	ND	0.33	0.10
						0,33
SURROGATE		PERCENT RECOVERY		CONT	DRATORY IROL IS (%)	

4-Bromofluorobenzene

104

60 - 140

**Oualifiers** 

Method blank contamination. The associated method blank contains the target analyte at a reportable level. в J Estimated result. Result is less than RL.

Result (ug/m3) = Result (ppb(v/v))[unrounded] * (Molecular Weight/24.45)

Reporting Limit (ug/m3) = Reporting Limit (ppb(v/v))[unrounded] * (Molecular Weight/24.45)

MDL (ug/m3) = MDL (ppb(v/v))[unrounded] * (Molecular Weight/24.45)

Client Sample ID: AA-032713

# GC/MS Volatiles

Lot-Sample #	H3C290430 - 014	Work Order #	M0G981AA	Matrix:	AIR
Date Sampled: Prep Date Prep Batch # Dilution Factor.;	04/01/2013 3091059	Date Received: Analysis Time: Analysis Time: Method	03/29/2013 04/02/2013 03:13 TO-15		

PARAMETER	RESULTS (ppb(v/v))	REPORTING LIMIT (ppb(v/v))	MDL (ppb(v/v))	RESULTS (ug/m3)	REPORTING LIMIT (ug/m3)	MDL (ug/m3)
Benzene	0.24	0.080	0.023	0,75	0.26	0.073
Bromomethane	ND	0.080	0.013	ND	0.31	0.050
n-Butane	0.88	0.16	0.025	2.1	0.38	0.059
Carbon tetrachloride	0.077	0.040	0.015	0.48	0.25	0.094
Chlorobenzene	ND	0,080	0.020	ND	0.37	0.094
Chloroethane	ND	0.080	0.014	ND	0.21	0.037
Chloroform	0.059 J	0.080	0.015	0.29 J	0.39	0.073
Chloromethane	0.50	0.20	0.064	1.0	0.41	0.13
n-Decane	0.048 J	0.40	0,022	0.28 J	2.3	0,13
1,2-Dibromoethane (EDB)	ND	0.080	0.018	ND	0,61	0.14
1,2-Dichlorobenzene	ND	0.080	0.028	ND	0,48	0,17
1,3-Dichlorobenzene	ND	0.080	0.026	ND	0,48	0,16
1,4-Dichlorobenzene	ND	0.080	0,026	ND	0.48	0.16
Dichlorodifluoromethane	0.51	0.080	0.027	2.5	0.40	0.13
1,1-Dichloroethane	ND	0,080	0.010	ND	0.32	0,040
1,2-Dichloroethane	ND	0.080	0.019	ND	0.32	0.077
cis-1,2-Dichloroethene	ND	0.080	0.024	ND	0.32	0.095
1,1-Dichloroethene	ND	0,080	0.014	ND	0.32	0.056
,2-Dichloropropane	ND	0.080	0.021	ND	0,37	0,097
cis-1,3-Dichloropropene	ND	0.080	0.029	ND	0.36	0.13
rans-1,3-Dichloropropene	ND	0,080	0.019	ND	0.36	0.086
,2-Dichloro-1,1,2,2-tetrafluoroethan	0.017 J	0.080	0.013	0.12 J	0.56	0.091
ndane	ND	0.080	0.080	ND	0.39	0,39
-Dodecane	ND	0.40	0,031	ND	2,8	0.39
Ethylbenzene	0.047 J	0.080	0.027	0.21 J	0.35	
-Heptane	0.088 J	0.20	0.019	0.36 J	0.82	0.12
Iexachlorobutadiene	ND	0.080	0.031	ND	0.85	0,078 .0.33
-Hexane	0,16 J	0.20	0.013	0.56 J	0.70	0.33
ndene	ND	0.16	0,16	ND	0.76	0.046
-Methylbutane	0.52	0.20	0.012	1.5	0.59	
sopropylbenzene	ND	0,16	0.024	ND	0.79	0,035 0.12
Iethylene chloride	0.30 B	0.20	0.018	1.0 B	0.69	0.063
aphthalene	ND	0,20	0,036	ND	1.0	0.003
onane	0.045 J	0.20	0.017	0.23 J	1.0	0.089
-Octane	0.054 J	0.16	0.014	0.25 J	0.75	
entane	0.29 J	0.40	0.024	0.86 J	1.2	0.065
Methylpentane	0,13	0.080	0.080	0.45	0.28	0.071
tyrene	ND	0.080	0.023	ND	0.34	0.28
1,2,2-Tetrachloroethane	ND	0.080	0,024	ND	0.55	0.098 0,16
etrachloroethene	0.12	0.080	0.016	0.81	0.54	
hiophene	ND	0.080	0.080	ND	0.34	0.11
Ethylthiophene	ND	0.080	0.080	ND	0.37	0.28 0.37

#### Client Sample ID: AA-032713

#### **GC/MS** Volatiles

PARAMETER	RESULTS (ppb(v/v))	REPORTING LIMIT (ppb(v/v))	MDL (ppb(v/v))	RESULTS (ug/m3)	REPORTING LIMIT (ug/m3)	MDL (ug/m3)
2-Methylthiophene	ND	0,080	0.080	ND	0.32	0.32
3-Methylthiophene	ND	0.080	0.080	ND	0.32	0,32
Toluene	0.29	0.080	0.021	1.1	0.30	0.079
1,2,4-Trichlorobenzene	ND \	0.080	0.039	ND \	0.59	0.29
1,1,1-Trichloroethane	ND	0.080	0.012	ND	0.44	0.065
1,1,2-Trichloroethane	ND	0.080	0.021	ND	0.44	0.11
Trichloroethene	ND	0,040	0.014	ND	0.21	0,075
Trichlorofluoromethane	0.24	0,080	0.0098	1.3	0.45	0.055
1,1,2-Trichloro-1,2,2-trifluoroethane	0.062 J	0.080	0.012	0.48 J	0.61	0.092
1,2,3-Trimethylbenzene	ND	0.080	0,080	ND	0.39	0.39
1,2,4-Trimethylbenzene	0.036 J	0.080	0.025	0.18 J	0.39	0.12
1,3,5-Trimethylbenzene	ND	0.080	0.026	ND	0,39	0.12
2,2,4-Trimethylpentane	0.052 J	0.20	0.016	0.24 J	0.93	0.075
n-Undecane	ND	0.40	0.025	ND	2.6	0.075
Vinyl chloride	ND	0.080	0.029	ND	0.20	0.13
m-Xylene & p-Xylene	0.14	0.080	0.050	0.62	0.35	0.074 0.22
o-Xylene	0.056 J	0,080	0.024	0.24 J	0.35	0.22
2,3-Dimethylpentane	ND	0.080	0.080	ND	0.33	0.10
URROGATE		PERCENT RECOVERY		LABC CON1	DRATORY TROL	

**Oualifiers** 

 B
 Method blank contamination. The associated method blank contains the target analyte at a reportable level.

 J
 Estimated result. Result is less than RL.

Result (ug/m3) = Result (ppb(v/v))[unrounded] * (Molecular Weight/24.45)

Reporting Limit (ug/m3) = Reporting Limit (ppb(v/v))[unrounded] * (Molecular Weight/24,45)

 $\mathbf{MDL} (ug/m3) = \mathbf{MDL} (ppb(v/v))[unrounded] * (Molecular Weight/24.45)$ 

# Client Sample ID: JR-178-IA-3 #2

# GC/MS Volatiles

Lot-Sample #	H3C290430 - 015	Work Order #	M0G991AA	Matrix:	ÁIR
Date Sampled: Prep Date: Prep Batch #: Dilution Factor.:	04/03/2013 3093049	Date Received: Analysis Time: Analysis Time: Method:	03/29/2013 04/03/2013 18:03 TO-15		

PARAMETER	RESULTS (ppb(v/v))	REPORTING LIMIT (ppb(v/v))	MDL (ppb(v/v))	RESULTS (ug/m3)	REPORTING LIMIT (ug/m3)	MDL (ug/m3)
Benzene	0.19	0.080	0.023	0.62	0.26	
Bromomethane	0.014 J	0.080	0.013	0.055 J	0.31	0.073
n-Butane	2.5	0.16	0.025	6.0	0.38	0.050
Carbon tetrachloride	0.081	0.040	0.015	0.51	0.25	0.059
Chlorobenzene	ND	0.080	0.020	ND	0.37	0.094
Chloroethane	0.044 J	0.080	0.014	0.12 J	0.21	0.092
Chloroform	2.9	0.080	0.015	14	0.39	0.037
Chloromethane	0.69	0.20	0.064	1.4	0.41	0.073
n-Decane	ND	0.40	0.022	ND	2,3	0.13
1,2-Dibromoethane (EDB)	ND	0.080	0.018	ND	0,61	0.13
1,2-Dichlorobenzene	ND	0.080	0,028	ND	0.48	0.14 0.17
1,3-Dichlorobenzene	ND	0.080	0.026	ND	0.48	0.16
1,4-Dichlorobenzene	ND	0.080	0.026	ND	0.48	0.16
Dichlorodifluoromethane	0.54	0.080	0.027	2.7	0.40	0.13
1,1-Dichloroethane	ND	0.080	0.010	ND	0.32	0.040
1,2-Dichloroethane	0.021 J	0.080	0.019	0.086 J	0.32	
cis-1,2-Dichloroethene	0.17	0.080	0.024	0.66	0.32	0.077
1,1-Dichloroethene	ND	0.080	0,014	ND	0.32	0.095
1,2-Dichloropropane	ND	0.080	0.021	ND	0.32	0.056
cis-1,3-Dichloropropene	ND	0.080	0.029	ND	0.36	0.097
trans-1,3-Dichloropropene	ND	0.080	0.019	ND	0.36	0.13
1,2-Dichloro-1,1,2,2-tetrafluoroethan	0.019 J	0.080	0.013	0.13 J	0.56	0.086 0.091
e Indane	ND	0.000			0.00	0.091
n-Dodecane	ND ND	0.080	0.080	ND	0,39	0.39
Ethylbenzene	0.33	0.40	0,031	ND	2.8	0.22
n-Heptane		0.080	0.027	1.4	0.35	0.12
Hexachlorobutadiene	0.58	0.20	0.019	2.4	0.82	0.078
n-Hexane	ND	0.080	0.031	ND	0.85	0.33
Indene	0.22	0.20	0.013	0.78	0.70	0.046
2-Methylbutane	ND	0.16	0.16	ND	0.76	0.76
Z-methylbutane Isopropylbenzene	0.68	0.20	0.012	2.0	0.59	0,035
Methylene chloride	ND	0.16	0,024	ND	0.79	0.12
Naphthalene	0.35 <del>B</del> ND	0.20	0.018	1.2 B	0.69	0.063
Nonane	ND	0.20	0.036	ND	1.0	0,19
n-Octane		0.20	0.017	ND	1,0	0.089
Pentane	0.16	0.16	0.014	0.74	0.75	0,065
	0.61	0.40	0.024	1.8	1.2	0.071
2-Methylpentane	0.16	0,080	0,080	0.57	0.28	0.28
Styrene	ND ·	0.080	0.023	ND	0.34	0.098
1,1,2,2-Tetrachloroethane	0.098	0.080	0.024	0.67	0.55	0.16
Tetrachloroethene	0.95	0.080	0.016	6.4	0.54	0.11
Thiophene	ND	0.080	0.080	ND	0.28	0.28
2-Ethylthiophene	ND	0.080	0.080	ND	0.37	0.37

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## Client Sample ID: JR-178-IA-3 #2

#### GC/MS Volatiles

Lot-Sample # H3C290430 - 015	5	Work Order #	M0G991AA	Mat	trix: AIR	
PARAMETER	RESULTS (ppb(v/v))	REPORTING LIMIT (ppb(v/v))	MDL (ppb(v/v))	RESULTS (ug/m3)	REPORTING LIMIT (ug/m3)	MDL (ug/m3)
2-Methylthiophene	ND	0.080	0.080	ND	0,32	0.32
3-Methylthiophene	0.22	0.080	0.080	0.88	0.32	
Toluene	0.80 5	0.080	0.021	3.0-8	0.30	0.32
1,2,4-Trichlorobenzene	ND	0.080	0.039	ND	0.59	0.079 0.29
1,1,1-Trichloroethane	ND	0.080	0.012	ND	0.44	0.065
1,1,2-Trichloroethane	ND	0.080	0.021	ND	0.44	0.11
Trichloroethene	0,58	0.040	0.014	3,1	0.21	0.075
Trichlorofluoromethane	0.24	0.080	0.0098	1.3	0.45	0.055
1,1,2-Trichloro-1,2,2-trifluoroethane	0.061 <b>J</b>	0.080	0.012	0.47 J	0.61	0.092
1,2,3-Trimethylbenzene	ND	0.080	0.080	ND	0.39	0.39
1,2,4-Trimethylbenzene	ND	0.080	0.025	ND	0.39	0.12
1,3,5-Trimethylbenzene	ND	0.080	.0.026	ND	0.39	0.12
2,2,4-Trimethylpentane n-Undecane	2.0	0.20	0.016	9.5	0.93	0.075
	ND	0,40	0.025	ND	2.6	0.16
Vinyl chloride	0,039 J	0.080	0.029	0.099 J	0.20	0.074
m-Xylene & p-Xylene	0.66	0,080	0,050	2.8	0.35	0.22
o-Xylene	0.14	0.080	0.024	0.59	0,35	0.10
2,3-Dimethylpentane	0.097	0,080	0.080	0,40	0.33	0.33
		PERCENT		LABC	RATORY	

PERCENT SURROGATE CONTROL RECOVERY LIMITS (%) 4-Bromofluorobenzene 1.04 60 - 140

**Oualifiers** 

В

Method blank contamination. The associated method blank contains the target analyte at a reportable level. J Estimated result. Result is less than RL.

Result (ug/m3) = Result (ppb(v/v))[unrounded] * (Molecular Weight/24.45)

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Reporting Limit (ug/m3) = Reporting Limit (ppb(v/v))[unrounded] * (Molecular Weight/24.45)

MDL (ug/m3) = MDL (ppb(v/v))[unrounded] * (Molecular Weight/24.45)

AL Knoxville	15 Middlebrook Pike	(noxville, TN 37921
TAI	5815	Knox



phone 865-291-3000 fax 865-584-4315	TestAmerica assumes no liability with respect to the collection and shipment of these samples.	th respect to the collect	iòn ànd shipment c	if these samples.	₩ <b> </b>	THE LEADER IN ENVIRONMENTAL TESTING	ADER IN ENVIRONMENTAL TESTING	VIRONI	MENTA	LTES1	IN O
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UNY/STATE/LIP JY CASCUSE NY 13214 Phone: 315 - 446-9120 FAX:		methinney					(noi):				(uoi
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phone 865-291-3000 fax 865-584-4315 5815 Middlebrook Pike Knoxville, TN 37921

# H3canH3D Canister Samples Chain of Custody Record

In Land TestAmerica



Client Contact Information		BRUCE	AHRENS	v	Sampled By:	: AECADIS	\$1 4			2	~∾ ‴	COC			
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#### Attachment 5

Photographic Logs – Indoor Air Monitoring Locations (on compact disk)



# Photographic Log –Indoor Air Monitoring Locations

ISMP Annual Air Monitoring Report Former East 11th Street Works Manhattan, New York

Sample location JR-170-IA-1 and DUP-032613. Samples collected on March 26, 2013.



Sample location JR-170-IA-2. Sample collected on March 26, 2013.

# Photographic Log –Indoor Air Sampling Locations

ISMP Annual Air Monitoring Report Former East 11th Street Works Manhattan, New York



Sample location JR-170-IA-3. Sample collected on March 26, 2013.



Sample location JR-170-IA-4. Sample collected on March 26, 2013.

## Photographic Log – Soil Vapor and Indoor Air Sampling Locations

ISMP Annual Air Monitoring Report Former East 11th Street Works Manhattan, New York



Sample location JR-178-IA-1. Sample collected on March 26, 2013.



Sample location JR-178-IA-2. Sample collected on March 26, 2013.

## Photographic Log – Soil Vapor and Indoor Air Sampling Locations

ISMP Annual Air Monitoring Report Former East 11th Street Works Manhattan, New York



Sample location JR-178-IA-3. Sample collected on March 26, 2013.



Sample location AA-032310. Sample collected on March 23, 2010.



### Photographic Log – Soil Vapor and Indoor Air Sampling Locations

ISMP Annual Air Monitoring Report Former East 11th Street Works Manhattan, New York

Sample location JR-1115-IA-1 and DUP-032813. Samples collected on March 28, 2013.



Sample location JR-1115-IA-2. Sample collected on March 28, 2013.

### Photographic Log – Soil Vapor and Indoor Air Sampling Locations

ISMP Annual Air Monitoring Report Former East 11th Street Works Manhattan, New York



Sample location JR-1115-IA-3. Sample collected on March 28, 2013.



Sample location JR-1115-IA-4. Sample collected on March 28, 2013.



## Photographic Log – Soil Vapor and Indoor Air Sampling Locations

ISMP Annual Air Monitoring Report Former East 11th Street Works Manhattan, New York

Sample location JR-1141-IA-1. Sample collected on March 28, 2013.



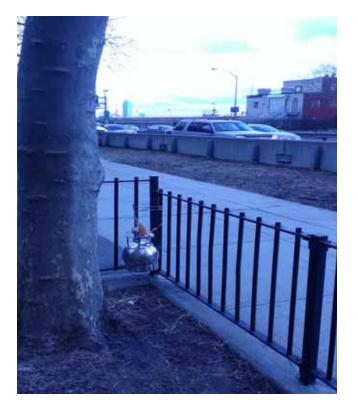
Sample location JR-1141-IA-2. Sample collected on March 28, 2013.

#### Photographic Log – Soil Vapor and Indoor Air Sampling Locations

ISMP Annual Air Monitoring Report Former East 11th Street Works Manhattan, New York



Sample location JR-1141-IA-3. Sample collected on March 28, 2013.



Sample location AA-032813. Sample collected on March 28, 2013.

## Photographic Log – Soil Vapor and Indoor Air Sampling Locations

ISMP Annual Air Monitoring Report Former East 11th Street Works Manhattan, New York



Sample location JR-1223-IA-1. Sample collected on March 27, 2013.



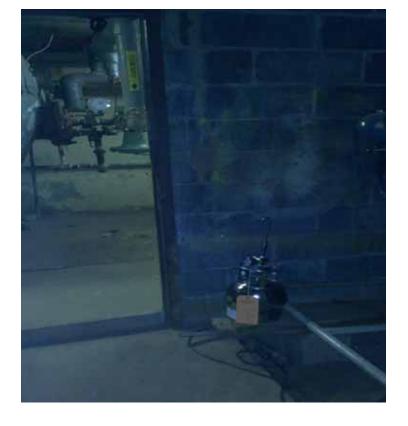
Sample location JR-1223-IA-2. Sample collected on March 27, 2013.



## Photographic Log – Soil Vapor and Indoor Air Sampling Locations

ISMP Annual Air Monitoring Report Former East 11th Street Works Manhattan, New York

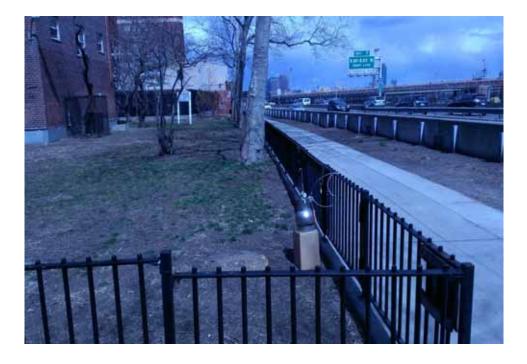
Sample location JR-1223-IA-3. Sample collected on March 27, 2013.



Sample location JR-1223-IA-4. Sample collected on March 27, 2013.

## Photographic Log – Soil Vapor and Indoor Air Sampling Locations

ISMP Annual Air Monitoring Report Former East 11th Street Works Manhattan, New York



Sample location AA-032713. Sample collected on March 27, 2013.