



**FOLLOW-UP
VOLATILE ORGANIC COMPOUNDS (TO-15)
INDOOR AIR SAMPLING REPORT**

Conducted for:

Glen Rock Public Schools
620 Harristown Road
Glen Rock, New Jersey 07452

Conducted at:

Glen Rock High School
400 Hamilton Avenue
Glen Rock, New Jersey 07452

Submitted by:

McCabe Environmental Services, L.L.C.
464 Valley Brook Avenue
Lyndhurst, New Jersey 07071

DATE: August 14, 2017

MES PROJECT NO.: 17-03279

Prepared by:

**Chris Slagle
Environmental Scientist**

Signed for the Company by:

**John H. Chiaviello
Vice President**

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1.0 INTRODUCTION

McCabe Environmental Services, L.L.C. (McCabe) was retained by Glen Rock Public Schools to conduct a follow-up air sampling for Volatile Organic Compounds (VOCs) at the Glen Rock High School located at 400 Hamilton Avenue, Glen Rock, New Jersey.

The project information is as follows:

Client Name: Glen Rock Public Schools

Contact Person: Ms. Sandy Marinos

Project Name: Follow-up NJDEP Low Level TO-15 Sampling

Project Location: Glen Rock High School
400 Hamilton Avenue
Glen Rock, New Jersey 07452

Date(s) of Service: June 30 – July 1, 2017 and July 13-14, 2017

McCabe Personnel: Chris Slagle

2.0 SCOPE OF WORK

Due to the results of the previous air sampling conducted by McCabe at the Glen Rock High School, follow-up air sampling was requested and therefore performed on June 30–July 1, 2017 and July 13-14, 2017. The air sampling was conducted in accordance with the NJDEP Vapor Intrusion Technical Guidance version 3.1. A total of eight (8) Low Level TO-15 air samples were collected using summa canisters provided by EMSL Analytical, Inc. in the following locations:

- Media Center (Upper Lobby)
- Nurse’s Office
- Attendance Office
- Media Center Office
- Middle School Principal’s Office
- Classroom D212
- Outside (Roof Top)
- Media Center Workroom

McCabe mobilized to the site on June 29, 2017 and on July 13, 2017 to initiate the air sampling. EMSL Analytical, Inc., a National Environmental Laboratory Accreditation Program (NELAP) approved laboratory, provided eight (8), six (6) liter summa canister with a flow rate set to approximately 3.5 milliliters per minute to achieve the lowest possible detection limit over the 24 hour sampling period. The summa canisters were placed at a height of at least 3 feet above the floor (breathing level) inside the school. The starting vacuum pressure, time, barometric pressure and temperature were recorded for all locations. After approximately 24 hours, McCabe personnel returned to the site to end the sampling period. McCabe personnel noted the ending vacuum pressure, time, barometric pressure and temperature prior to closing the valves and ceasing the sampling event.

Chain of custody documentation was prepared, and accompanied the samples during shipment to the laboratory. The summa canisters were collected by an EMSL courier at the McCabe Office located at 464 Valley Brook Avenue, Lyndhurst, NJ 07071 and transported to EMSL Analytical, Inc. in Cinnaminson, New Jersey for VOC analysis via NJDEP Low Level TO-15.

3.0 GENERAL DESCRIPTION

The High School/Middle School is located in a residential setting within the Town of Glen Rock New Jersey. The structure is a large, multi-story, multi-addition masonry building with a basement level boiler room. The surrounding properties are predominantly residential in nature. The interior of the building comprises interior classrooms, offices, a media center, gymnasium, mechanical and maintenance spaces, and bathrooms with a basement level boiler room that is only used by maintenance personnel. There is a large outdoor parking lot, a stadium and playing field located on the south side of the property. Located on the north side of the building is Harristown Road (Route 127). The High School is a multi-building structure with a centralized open courtyard.

The Media Center and Media Office is the focus of the indoor air testing and the scope of work for this project. Two additional samples were also collected in the Media Center Office and Media Center Workroom at the request of Glen Rock Public Schools. The Media Center is located on the southwest side of the facility and is a one story addition. In 2011 the roof of the Media Center was replaced and at that time staff voiced a complaint of an odor.

The other areas tested included the Nurse's Office, Attendance Office, Middle School Principal's Office and Classroom D212. The Nurse's Office is located directly adjacent to the Media Center. This location was chosen to evaluate areas near the Media Center. The Attendance Office and Middle School Principal's Office are located on opposite wings from each other and the Media Center. Additionally, Classroom D212 is located on the second floor of the building away from the Media Center. These locations were chosen to evaluate areas of the school that are not located near the Media Center.

4.0 RESULTS AND DISCUSSION

The laboratory analytical results of air samples collected at the site indicate that collectively twenty two (22) different VOCs were detected above the laboratory minimum detection limit (MDL) in the areas tested. Only nine (9) of the compounds detected in the indoor air samples were also detected in the outside sample that was placed on the roof above the Media Center. McCabe has compared the indoor air sample results to the Residential & Non Residential New Jersey Department of Environmental Protection (NJDEP) Vapor Intrusion Indoor Air Screening Levels, United States Environmental Protection Agency (USEPA) Residential & Non Residential Generic Air Screening Levels, United State Occupational Safety & Health Administration (OSHA) Permissible Exposure Limits (PELs) and the National Institute for Occupational Safety and Health (NIOSH) Recommended Exposure Limits (RELs).

NJDEP Residential & Non-Residential Standards

Ten (10) of the compounds detected from the indoor samples have established limits listed on the NJDEP Vapor Intrusion Standards. All but one (1) established compound were all well below their respective limits. The remaining nine (9) compounds detected from the indoor samples have no limit established at this time.

The one (1) established compound that exceeded the NJDEP Standard was: Ethylbenzene. This compound exceeded the NJDEP Standard in the air sample collected from the Attendance Office.

USEPA Generic Residential & Industrial Standards

Thirteen (13) of the compounds detected from the indoor samples have established limits listed on the USEPA Generic Screening Level Standards. All but four (4) established compounds were well below their respective limits. The remaining six (6) compounds detected from the indoor samples have no limit established at this time.

The four (4) established compounds that exceeded the USEPA Standard were: Ethylbenzene, Isopropanol, 1,2,4-Trimethylbenzene and Xylene(o). All four (4) of these compounds exceeded the USEPA Standard in the air samples collected from the Media Center Upper Lobby, Nurse's Office, Media Center Office, Media Center Workroom and the Principles Office. Only one (1) of these compounds was detected in the outside air sample: Isopropanol. The compounds will be further addressed below.

OSHA & NIOSH Standards

Seventeen (17) of the compounds detected from the indoor samples have established exposure limits established by OSHA and NIOSH. These seventeen (17) established compounds were all well below their respective limits. The remaining two (2) compounds detected from the indoor samples has no limit established at this time.

Uses of the Compounds with Exceedance Level

Ethylbenzene

It is reported that the most common use of this compound is in the manufacturing of styrene. This compound is present in natural products as well as manufactured products. Natural products include coal tar and petroleum while manufactured products include inks, insecticides and paints. It can also be used a solvent in fuels.

Isopropanol

This compound is found in eye glass cleaners, disinfectant wipes, and personal care products such as hand sanitizers, nail polish, nail polish remover, colognes, perfumes, rubbing alcohol and hair spray. It is also used in the making of cosmetics, pharmaceuticals, lacquers, dyes, antifreeze and cleaners.

Xylene (ortho)

It is reported that most of this compound is utilized in the manufacturing of phthalic anhydride. Phthalic anhydride is a chemical intermediate used in the production of plastics such as polyvinyl chloride resins, polyester resins, and alkyd resins. It also naturally occurs in petroleum products and is used in the printing, rubber and leather industries, paints and varnishes, as well as in automobile exhaust.

1,2,4 Trimethylbenzene (Pseudocumene)

This compound is a major component (reported as 40%) of the C9 aromatic hydrocarbon fraction compounds that are produced during the refining of petroleum. Other benzenes, including 1,3,5 trimethylbenzene, and ethyl toluene make up the majority of the remaining components generated.

It is reported that 99% of C9 fraction is used as a gasoline additive with the remaining 1% as a solvent in coatings, cleaners, pesticides, and printing inks and roofing.

5.0 CONCLUSIONS AND RECOMMENDATIONS

Based on laboratory analytical results of the seven (7) indoor air samples collected throughout the Glen Rock High School and two (2) outside ambient air samples, it appears that the measurement of total VOCs remains to be most heavily concentrated in the Media Center (330 $\mu\text{g}/\text{m}^3$), the Media Center Work Room (330 $\mu\text{g}/\text{m}^3$) and the Media Center Office (370 $\mu\text{g}/\text{m}^3$). The highest chemical concentrations were recovered from the Media Center Office. The total VOCs detected outside were significantly lower (46 $\mu\text{g}/\text{m}^3$ recovered from the June 29, 2017 sampling and 31 $\mu\text{g}/\text{m}^3$ recovered from the July 13, 2017 Sampling). Based on comparison to the previous sampling events conducted on September 16, 2016 August 18, 2016 results; the analytical data continues to reflect that Media Center areas have the highest concentrations of airborne chemical compounds.

Although five (5) compounds were detected above the USEPA's Residential Generic Air Screening Levels, it is important to take into consideration the following restrictions and limitations. These levels are applicable to residential settings where people of all ages and health conditions spend the majority of their time. Therefore, this standard is the most restrictive and protective. Since the setting of this sampling event was a public school, the USEPA's Residential Generic Air Screening Levels may not be the most applicable.

More applicable standards for protecting the staff or a public school may include The USEPA's Industrial Generic Air Screening Levels, NJDEP Industrial Vapor Intrusion Indoor Screening Levels, OSHA PELs or NIOSH RELs. The results of the testing were all below these applicable standards.

As identified in the previous sampling events, the target compound of concern 1,2,4 Trimethylbenzene can cause nose and throat irritations presumably close to or above the OSHA PEL of 120000 $\mu\text{g}/\text{m}^3$, as well as, the NIOSH REL and American Conference of Government Industrial Hygienists (ACGIH) Threshold Limit Value of 125,000 $\mu\text{g}/\text{m}^3$. Therefore since the result detected was significantly below these three standards we must conclude that the compound does not pose a hazard to students and staff at the current concentrations. In addition 1,2,4 Trimethylbenzene was not identified on any carcinogenic list as a compound of concern.

APPENDIX A

TO-15 Detected Compounds
Comparison Tables

Table 1A TO-15 Air Monitoring Results – Detected Compounds Glen Rock High School 400 Hamilton Avenue, Glen Rock, New Jersey – June 29, 2017								
Compound	Outside Roof (Canister E0356) (µg/m ³)	Media Center Upper Lobby (Canister E0478) (µg/m ³)	Nurse's Office (Canister E0479) (µg/m ³)	Media Center Office (Canister E12265) (µg/m ³)	Media Center Workroom (Canister E12273) (µg/m ³)	Principles Office (Canister E0391) (µg/m ³)	NJDEP Vapor Intrusion Indoor Screening Levels	
							Residential (µg/m ³)	Industrial (µg/m ³)
Acetone	13.0	15	15	20	15	21	32000	140000
n-Butane	1.3	2.1	2.4	2.0	U	3.9	NE	NE
Chloromethane	1.0	1.1	U	1.2	U	1.2	94	390
Dichlorodifluoromethane	U	1.1	U	1.3	U	U	100	440
Ethanol	8.7	3.9	35	24	4.4	26	NE	NE
Ethylbenzene	U	1.1	U	1.2	1.2	U	2.00	5.00
4-Ethyltoluene	U	90	19	92	90	7.1	NE	NE
n-Heptane	U	U	U	U	U	2.5	NE	NE
Isopropanol	15	3.9	25	10	10	38	NE	NE
Methylene Chloride	2.8	3.2	2.7	3.3	2.0	2.2	96	1200
Methyl Ethyl Ketone	1.5	2.0	1.8	2.3	2.3	1.7	5200	22000
Methyl Isobutyl Ketone	U	U	U	U	1.0	U	NE	NE
Tetrahydrofuran	U	0.69	U	0.78	0.70	0.82	NE	NE
Toluene	1.1	2.0	1.3	1.8	1.8	2.8	5200	22000
Trichlorofluoromethane	1.4	5.1	2.1	5.3	3.1	1.4	730	3100
1,2,4-Trimethylbenzene	U	150	34	150	150	7.3	NE	NE
1,3,5-Trimethylbenzene	U	46	10	46	46	3.2	NE	NE
Xylene (m,p)	U	4.8	U	4.8	4.9	1.8	100	440
Xylene (o)	U	13	3.6	13	13	1.4	100	440

ND- Not Detected NE- No Limit Established U – Compound was analyzed but not detected at a listed and appropriately adjusted reporting level

Table 1B TO-15 Air Monitoring Results – Detected Compounds Glen Rock High School 400 Hamilton Avenue, Glen Rock, New Jersey – July 13, 2017					
Compound	Outside Roof (Canister E15273) (µg/m ³)	Attendance Office (Canister E15321) (µg/m ³)	Room D212 (Canister E15527) (µg/m ³)	NJDEP Vapor Intrusion Indoor Screening Levels	
				Residential (µg/m ³)	Industrial (µg/m ³)
Acetone	10	25	22	32000	140000
n-Butane	1.4	4.7	3.3	NE	NE
Chloromethane	1.1	1.1	1.0	94	390
Dichlorodifluoromethane	U	1.2	U	100	440
Ethanol	7.2	14	21	NE	NE
Ethylbenzene	U	2.0	U	2.00	5.00
4-Ethyltoluene	U	24	3.4	NE	NE
Isopropanol	6.6	9.4	10	NE	NE
Methylene Chloride	0.89	1.6	1.1	96	1200
Methyl Ethyl Ketone	1.2	2.5	2.3	5200	22000
Styrene	U	1.3	U	1000	4400
Tert-butyl Alcohol	U	U	5.6	66	92
Toluene	U	2.4	1.6	5200	22000
Trichlorofluoromethane	1.5	7.0	14	730	3100
1,2,4-Trimethylbenzene	1.2	32	3.9	NE	NE
1,3,5-Trimethylbenzene	U	12	1.7	NE	NE
Xylene (m,p)	U	6.5	2.6	100	440
Xylene (o)	U	6.1	1.4	100	440

ND- Not Detected NE- No Limit Established U – Compound was analyzed but not detected at a listed and appropriately adjusted reporting level

Table 2A TO-15 Air Monitoring Results – Detected Compounds Glen Rock High School 400 Hamilton Avenue, Glen Rock, New Jersey – June 29, 2017								
Compound	Outside Roof (Canister E0356) (µg/m ³)	Media Center Upper Lobby (Canister E0478) (µg/m ³)	Nurse's Office (Canister E0479) (µg/m ³)	Media Center Office (Canister E12265) (µg/m ³)	Media Center Workroom (Canister E12273) (µg/m ³)	Principles Office (Canister E0391) (µg/m ³)	USEPA Generic Air Screening Levels	
							Residential (µg/m ³)	Industrial (µg/m ³)
Acetone	13.0	15	15	20	15	21	3200	14000
n-Butane	1.3	2.1	2.4	2.0	U	3.9	NE	NE
Chloromethane	1.0	1.1	U	1.2	U	1.2	9.40	39.0
Dichlorodifluoromethane	U	1.1	U	1.3	U	U	10.0	44.0
Ethanol	8.7	3.9	35	24	4.4	26	NE	NE
Ethylbenzene	U	1.1	U	1.2	1.2	U	1.10	4.90
4-Ethyltoluene	U	90	19	92	90	7.1	NE	NE
n-Heptane	U	U	U	U	U	2.5	NE	NE
Isopropanol	15	3.9	25	10	10	38	21.0	88.0
Methylene Chloride	2.8	3.2	2.7	3.3	2.0	2.2	63.0	260
Methyl Ethyl Ketone	1.5	2.0	1.8	2.3	2.3	1.7	520	2200
Methyl Isobutyl Ketone	U	U	U	U	1.0	U	310	1300
Tetrahydrofuran	U	0.69	U	0.78	0.70	0.82	210	880
Toluene	1.1	2.0	1.3	1.8	1.8	2.8	520	2200
Trichlorofluoromethane	1.4	5.1	2.1	5.3	3.1	1.4	NE	NE
1,2,4-Trimethylbenzene	U	150	34	150	150	7.3	0.730	3.10
1,3,5-Trimethylbenzene	U	46	10	46	46	3.2	NE	NE
Xylene (m,p)	U	4.8	U	4.8	4.9	1.8	10.0	44.0
Xylene (o)	U	13	3.6	13	13	1.4	10.0	44.0

ND- Not Detected NE- No Limit Established U – Compound was analyzed but not detected at a listed and appropriately adjusted reporting level

Table 2B TO-15 Air Monitoring Results – Detected Compounds Glen Rock High School 400 Hamilton Avenue, Glen Rock, New Jersey – July 13, 2017					
Compound	Outside Roof (Canister E15273) (µg/m ³)	Attendance Office (Canister E15321) (µg/m ³)	Room D212 (Canister E15527) (µg/m ³)	USEPA Generic Air Screening Levels	
				Residential (µg/m ³)	Residential (µg/m ³)
Acetone	10	25	22	3200	14000
n-Butane	1.4	4.7	3.3	NE	NE
Chloromethane	1.1	1.1	1.0	9.40	39.0
Dichlorodifluoromethane	U	1.2	U	10.0	44.0
Ethanol	7.2	14	21	NE	NE
Ethylbenzene	U	2.0	U	1.10	4.90
4-Ethyltoluene	U	24	3.4	NE	NE
Isopropanol	6.6	9.4	10	21.0	88.0
Methylene Chloride	0.89	1.6	1.1	63.0	260
Methyl Ethyl Ketone	1.2	2.5	2.3	520	2200
Styrene	U	1.3	U	100	440
Tert-butyl Alcohol	U	U	5.6	NE	NE
Toluene	U	2.4	1.6	520	2200
Trichlorofluoromethane	1.5	7.0	14	NE	NE
1,2,4-Trimethylbenzene	1.2	32	3.9	0.730	3.10
1,3,5-Trimethylbenzene	U	12	1.7	NE	NE
Xylene (m,p)	U	6.5	2.6	10.0	44.0
Xylene (o)	U	6.1	1.4	10.0	44.0

ND- Not Detected NE- No Limit Established U – Compound was analyzed but not detected at a listed and appropriately adjusted reporting level

Table 3A
TO-15 Air Monitoring Results – Detected Compounds
Glen Rock High School
400 Hamilton Avenue, Glen Rock, New Jersey – June 29, 2017

Compound	Outside Roof (Canister E0356) (µg/m ³)	Media Center Upper Lobby (Canister E0478) (µg/m ³)	Nurse's Office (Canister E0479) (µg/m ³)	Media Center Office (Canister E12265) (µg/m ³)	Media Center Workroom (Canister E12273) (µg/m ³)	Principles Office (Canister E0391) (µg/m ³)	Occupational Exposure Limits	
							NIOSH REL (µg/m ³)	OSHA PEL (µg/m ³)
Acetone	13.0	15	15	20	15	21	590000	2400000
n-Butane	1.3	2.1	2.4	2.0	U	3.9	1900000	1900000
Chloromethane	1.0	1.1	U	1.2	U	1.2	LFC	210000
Dichlorodifluoromethane	U	1.1	U	1.3	U	U	4900000	4900000
Ethanol	8.7	3.9	35	24	4.4	26	1900000	1900000
Ethylbenzene	U	1.1	U	1.2	1.2	U	430000	430000
4-Ethyltoluene	U	90	19	92	90	7.1	NE	NE
n-Heptane	U	U	U	U	U	2.5	350000	2000000
Isopropanol	15	3.9	25	10	10	38	980000	980000
Methylene Chloride	2.8	3.2	2.7	3.3	2.0	2.2	LFC	87000
Methyl Ethyl Ketone	1.5	2.0	1.8	2.3	2.3	1.7	590000	590000
Methyl Isobutyl Ketone	U	U	U	U	1.0	U	NE	NE
Tetrahydrofuran	U	0.69	U	0.78	0.70	0.82	590000	590000
Toluene	1.1	2.0	1.3	1.8	1.8	2.8	380000	750000
Trichlorofluoromethane	1.4	5.1	2.1	5.3	3.1	1.4	5600000	5600000
1,2,4-Trimethylbenzene	U	150	34	150	150	7.3	120000	120000
1,3,5-Trimethylbenzene	U	46	10	46	46	3.2	120000	120000
Xylene (m,p)	U	4.8	U	4.8	4.9	1.8	430000	430000
Xylene (o)	U	13	3.6	13	13	1.4	430000	430000

ND- Not Detected NE- No Limit Established U – Compound was analyzed but not detected at a listed and appropriately adjusted reporting level
 LFC- Lowest Feasible Concentration

Table 3B					
TO-15 Air Monitoring Results – Detected Compounds					
Glen Rock High School					
400 Hamilton Avenue, Glen Rock, New Jersey – July 13 ,2017					
Compound	Outside Roof (Canister E15273) (µg/m ³)	Attendance Office (Canister E15321) (µg/m ³)	Room D212 (Canister E15527) (µg/m ³)	Occupational Exposure Limits	
				NIOSH REL (µg/m ³)	OSHA PEL (µg/m ³)
Acetone	10	25	22	590000	2400000
n-Butane	1.4	4.7	3.3	1900000	1900000
Chloromethane	1.1	1.1	1.0	LFC	210000
Dichlorodifluoromethane	U	1.2	U	4900000	4900000
Ethanol	7.2	14	21	1900000	1900000
Ethylbenzene	U	2.0	U	430000	430000
4-Ethyltoluene	U	24	3.4	NE	NE
Isopropanol	6.6	9.4	10	980000	980000
Methylene Chloride	0.89	1.6	1.1	LFC	87000
Methyl Ethyl Ketone	1.2	2.5	2.3	590000	590000
Styrene	U	1.3	U	210000	430000
Tert-butyl Alcohol	U	U	5.6	300000	300000
Toluene	U	2.4	1.6	380000	750000
Trichlorofluoromethane	1.5	7.0	14	5600000	5600000
1,2,4-Trimethylbenzene	1.2	32	3.9	120000	120000
1,3,5-Trimethylbenzene	U	12	1.7	120000	120000
Xylene (m,p)	U	6.5	2.6	430000	430000
Xylene (o)	U	6.1	1.4	430000	430000
ND- Not Detected NE- No Limit Established U – Compound was analyzed but not detected at a listed and appropriately adjusted reporting level LFC- Lowest Feasible Concentration					

APPENDIX B

Laboratory Certificates of Analysis
&
Chain of Custody Forms

**EMSL Analytical**

200 Route 130 North, Cinnaminson, NJ 08077
 Phone/Fax: (856)858-4800 / (856)858-4571
<http://www.EMSL.com> to15lab@EMSL.com

EMSL Order #: **491700685**Customer ID: **MCCA77**Customer PO: **17-03279**

Attn: **Chris Slagle**
McCabe Environmental Services, LLC
464 Valley Brook Avenue
Suite 6
Lyndhurst, NJ 07071

Phone: **201-438-4839**
 Fax: **201-438-1798**

Project: **Glen Rock HS IAQ**Collected: **6/29/2017**Received: **7/3/2017****Laboratory Report- Sample Summary**

EMSL Sample ID.	Client Sample ID.	Start Sampling Date	Start Sampling Time
491700685-0001	Outside Roof	6/29/2017	9:20 AM
491700685-0002	Principals Office	6/29/2017	9:05 AM
491700685-0003	Room D212	7/13/2017	9:01 AM
491700685-0004	Media Center	6/29/2017	8:45 AM
491700685-0005	Nurse's Office	6/29/2017	8:56 AM
491700685-0006	Media Center Office	6/29/2017	8:48 AM
491700685-0007	Media Center Workroom	6/29/2017	8:52 AM
491700685-0008	Attendance Office	7/13/2017	8:55 AM
491700685-0009	Outside Roof	7/13/2017	9:15 AM

If "Preliminary Report" is displayed in the signature box; this indicates that there are samples that have not yet been analyzed, that are in a preliminary state, or that analysis is in progress but not completed at the time of report issue.

Report Date:
7/19/2017

Report Revision
R0

Revision Comments
Initial Report

Marjorie Howley, Laboratory Manager
 or other approved signatory

Test results meet all NELAP requirements unless otherwise specified.



EMSL Analytical
 200 Route 130 North, Cinnaminson, NJ 08077
 Phone/Fax: (856)858-4800 / (856)858-4571
<http://www.EMSL.com> to15lab@EMSL.com

EMSL Order #: **491700685**
 Customer ID: **MCCA77**
 Customer PO: **17-03279**

Attn: **Chris Slagle**
McCabe Environmental Services, LLC
464 Valley Brook Avenue
Suite 6
Lyndhurst, NJ 07071

Phone: **201-438-4839**
 Fax: **201-438-1798**

Project: **Glen Rock HS IAQ**

Collected: **6/29/2017**
 Received: **7/3/2017**

Laboratory Conformance/ Non-Conformance Summary

For the following Samples: 491700685-0001 491700685-0002 491700685-0003 491700685-0004 491700685-0005 491700685-0006 491700685-0007 491700685-0008 491700685-0009

Samples met criteria as listed unless otherwise noted.

Sample Pressures/ Vacuums - Samples were received within acceptable range.

Holding Times (30 days)- Samples were analyzed within holding times.

BFB Tune - Samples were analyzed within 24 hours of an acceptable instrument tuning standard.

Surrogate Recoveries - Samples met surrogate recovery criteria.

Internal Standards - Samples met internal standard area/retention time criteria.

Initial Calibration- Initial Calibration criteria met method specification.

Initial Calibration Verification Standard (ICVS)- Second Source- ICVS met method specification with 90% of compounds within the established recovery range. Individual compounds outside of the established recovery range may be listed below.

Continuing Calibration Verification Standard (CCVS)- 071717LL: CCVS/CCVSB did not meet method specification for bromoform and hexachlorobutadiene. Increased uncertainty would be associated with the reported value if found in the samples. These compounds were not present in the samples.

Ending Calibration Verification Standard (ECVS)- 071717LL:ECVS/ECVSB did not meet method specification for bromoform and hexachlorobutadiene. Increased uncertainty would be associated with the reported value if found in the samples. These compounds were not present in the samples. ECVSB also had elevated recovery of 1,2,4 -Trichlorobenzene, this compound was also not identified in the samples.

Method Blanks (MB)- Method Blank met method specification with no compounds reported.

Instrument Blanks (IB)- No Instrument Blanks were analyzed.

Reporting Limit Laboratory Control Samples (RL LCS)- RLCS met method specification with 90% of compounds within the 60-140% recovery range. Individual compounds outside of the recovery range may be listed below.

Additional Comments:

Autosampler failure caused the original "Attendance Office" sample to become contaminated with analytical standard. The client resampled this location; also "Room D212" due to low vacuum in original canister and an additional "Outside Roof" sample on 7/13/17. These resamples were added to the original project.

The following data qualifiers that may have been reported with the data.

- ND**- Non Detect. This notation would be used in the results column in lieu of a "U" qualifier.
- U**- Compound was analyzed for but not detected at a listed and appropriately adjusted reporting level.
- J**- Estimated value reported below adjusted reporting limit for target compounds or estimating a concentration for TICs where a 1:1 response is assumed.
- B**- Compound found in associated method blank as well as in the sample.
- E**- Estimated value exceeding upper calibration range of instrument. Ethanol and isopropyl alcohol are not specifically targeted to dilute within calibration range.
- D**- Compound reported from additional diluted analysis.
- N**- indicates presumptive evidence of a compound based on library search match.

Method Reference

- 1) USEPA: Compendium Method TO-15, "Determination of Volatile Organic Compounds (VOCs) in Air..." Collected in Specially-Prepared Canisters and Analyzed by Gas Chromatography/Mass Spectrometry (GC/MS), January 1999, (EPA/625/R-96/010b).
- 2) NJDEP- SRWM Low Level USEPA Method TO-15 (NJDEP-LLTO-15 -March 2007)

Scott Van Etten, CIH/Jefferson Salvador
 or other approved signatory

**EMSL Analytical**

200 Route 130 North, Cinnaminson, NJ 08077
 Phone/Fax: (856)858-4800 / (856)858-4571
<http://www.EMSL.com> to15lab@EMSL.com

EMSL Order #: **491700685**
 EMSL Sample #: **491700685-0001**
 Customer ID: **MCCA77**
 Customer PO: **17-03279**

Attn: **Chris Slagle**
McCabe Environmental Services, LLC
464 Valley Brook Avenue
Suite 6
Lyndhurst, NJ 07071

Phone: **201-438-4839**
 Fax: **201-438-1798**
 Collected: **6/29/2017**
 Received: **7/3/2017**

Project: **Glen Rock HS IAQ**

Sample ID: **Outside Roof**

Analysis	Analysis Date	Analyst Initials	Lab File ID	Canister ID	Sample Vol(ml)	Dilution Factor
Initial	07/06/2017	MTH	L0276.D	E0356	1000	1

Target Compound Results Summary

Target Compounds	CAS#	MW	Result ppbv	Q	Result ug/m3	Comments
Acetone	67-64-1	58.08	5.5		13	
Allyl chloride	107-05-1	76.53	0.20	U	0.63	
Benzene	71-43-2	78.11	0.20	U	0.64	
Bromodichloromethane	75-27-4	163.8	0.20	U	1.3	
Bromoform	75-25-2	252.8	0.20	U	2.1	
Bromomethane	74-83-9	94.94	0.20	U	0.78	
1,3-Butadiene	106-99-0	54.09	0.20	U	0.44	
n-Butane	106-97-8	58.12	0.54		1.3	
Chlorobenzene	108-90-7	112.6	0.20	U	0.92	
Chloroethane	75-00-3	64.52	0.20	U	0.53	
Chloroform	67-66-3	119.4	0.20	U	1.0	
Chloromethane	74-87-3	50.49	0.47		1.0	
Carbon disulfide	75-15-0	76.14	0.50	U	1.6	
Carbon tetrachloride	56-23-5	153.8	0.20	U	1.3	
2-Chlorotoluene	95-49-8	126.6	0.20	U	1.0	
Cyclohexane	110-82-7	84.16	0.20	U	0.69	
Dibromochloromethane	124-48-1	208.3	0.20	U	1.7	
1,2-Dibromoethane	106-93-4	187.8	0.20	U	1.5	
1,2-Dichlorobenzene	95-50-1	147	0.20	U	1.2	
1,3-Dichlorobenzene	541-73-1	147	0.20	U	1.2	
1,4-Dichlorobenzene	106-46-7	147	0.20	U	1.2	
Dichlorodifluoromethane	75-71-8	120.9	0.20	U	1.0	
1,1-Dichloroethane	75-34-3	98.96	0.20	U	0.81	
1,2-Dichloroethane	107-06-2	98.96	0.20	U	0.81	
1,1-Dichloroethene	75-35-4	96.94	0.20	U	0.79	
1,2-Dichloroethene (cis)	156-59-2	96.94	0.20	U	0.79	
1,2-Dichloroethene (trans)	156-60-5	96.94	0.20	U	0.79	
1,2-Dichloropropane	78-87-5	113	0.20	U	0.92	
1,3-Dichloropropene (cis)	10061-01-5	111	0.20	U	0.91	
1,3-Dichloropropene (trans)	10061-02-6	111	0.20	U	0.91	
1,2-Dichlorotetrafluoroethane	76-14-2	170.9	0.20	U	1.4	
1,4-Dioxane	123-91-1	88.12	0.50	U	1.8	
Ethanol	64-17-5	46.07	4.6		8.7	
Ethylbenzene	100-41-4	106.2	0.20	U	0.87	
4-Ethyltoluene	622-96-8	120.2	0.20	U	1.0	
n-Heptane	142-82-5	100.2	0.20	U	0.82	
1,3-Hexachlorobutadiene	87-68-3	260.8	0.20	U	2.1	
n-Hexane	110-54-3	86.17	0.20	U	0.70	
Isopropanol	67-63-0	60.1	6.0		15	
Methylene chloride	75-09-2	84.94	0.81		2.8	
Methyl ethyl ketone	78-93-3	72.1	0.50		1.5	
Methyl isobutyl ketone	108-10-1	100.2	0.20	U	0.82	
Methyl methacrylate	80-62-6	100.12	0.20	U	0.82	
Naphthalene	91-20-3	128.17	0.20	U	1.0	
Methyl tert-butyl ether	1634-04-4	88.15	0.20	U	0.72	

**EMSL Analytical**

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EMSL Order #: **491700685**
 EMSL Sample #: **491700685-0001**
 Customer ID: **MCCA77**
 Customer PO: **17-03279**

Attn: **Chris Slagle**
McCabe Environmental Services, LLC
464 Valley Brook Avenue
Suite 6
Lyndhurst, NJ 07071

Phone: **201-438-4839**
 Fax: **201-438-1798**
 Collected: **6/29/2017**
 Received: **7/3/2017**

Project: **Glen Rock HS IAQ**

Sample ID: **Outside Roof**

Analysis	Analysis Date	Analyst Initials	Lab File ID	Canister ID	Sample Vol(ml)	Dilution Factor
Initial	07/06/2017	MTH	L0276.D	E0356	1000	1

Target Compound Results Summary

Target Compounds	CAS#	MW	Result ppbv	Q	Result ug/m3	Comments
Styrene	100-42-5	104.1	0.20	U	0.85	
Tert-butyl alcohol	75-65-0	74.12	0.20	U	0.61	
1,1,2,2-Tetrachloroethane	79-34-5	167.9	0.20	U	1.4	
Tetrachloroethene	127-18-4	165.8	0.20	U	1.4	
Tetrahydrofuran	109-99-9	72.11	0.20	U	0.59	
Toluene	108-88-3	92.14	0.30		1.1	
1,2,4-Trichlorobenzene	120-82-1	181.5	0.20	U	1.5	
1,1,1-Trichloroethane	71-55-6	133.4	0.20	U	1.1	
1,1,2-Trichloroethane	79-00-5	133.4	0.20	U	1.1	
Trichloroethene	79-01-6	131.4	0.20	U	1.1	
Trichlorofluoromethane	75-69-4	137.4	0.24		1.4	
1,1,2-Trichloro-1,2,2-trifluoroethane	76-13-1	187.4	0.20	U	1.5	
1,2,4-Trimethylbenzene	95-63-6	120.2	0.20	U	1.0	
1,3,5-Trimethylbenzene	108-67-8	120.2	0.20	U	1.0	
2,2,4-Trimethylpentane	540-84-1	114.2	0.20	U	0.93	
Vinyl bromide	593-60-2	106.9	0.20	U	0.87	
Vinyl chloride	75-01-4	62.5	0.20	U	0.51	
Xylene (m,p)	1330-20-7	106.2	0.40	U	1.7	
Xylene (o)	95-47-6	106.2	0.20	U	0.87	
Total Target Compound Volatiles:			19		46	

Surrogate

4-Bromofluorobenzene

Result	Spike	Recovery
9.2	10	92%

Qualifier Definitions

- U- Compound was analyzed for but not detected at a listed and appropriately adjusted reporting level.
- J- Estimated value reported below adjusted reporting limit for target compounds.
- B- Compound found in associated method blank as well as in the sample.
- D- Compound reported from additional diluted analysis.
- E- Estimated concentration exceeding upper calibration range. Ethanol and isopropyl alcohol are not specifically targeted to dilute within calibration range.

Method Reference

- 1) USEPA: Compendium Method TO-15, "Determination of Volatile Organic Compounds (VOCs) in Air..." Collected in Specially-Prepared Canisters and Analyzed by Gas Chromatography/Mass Spectrometry (GC/MS), January 1999, (EPA/625/R-96/010b).
- 2) NJDEP- SRWM Low Level USEPA Method TO-15 (NJDEP-LLTO-15 -March 2007)



NJDEP Certification #: 03036

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 Phone/Fax: (856)858-4800 / (856)858-4571
<http://www.EMSL.com> to15lab@EMSL.com

EMSL Order #: **491700685**
 EMSL Sample #: **491700685-0002**
 Customer ID: **MCCA77**
 Customer PO: **17-03279**

Attn: **Chris Slagle**
McCabe Environmental Services, LLC
464 Valley Brook Avenue
Suite 6
Lyndhurst, NJ 07071

Phone: **201-438-4839**
 Fax: **201-438-1798**
 Collected: **6/29/2017**
 Received: **7/3/2017**

Project: **Glen Rock HS IAQ**

Sample ID: **Principals Office**

Analysis	Analysis Date	Analyst Initials	Lab File ID	Canister ID	Sample Vol(ml)	Dilution Factor
Initial	07/06/2017	MTH	L0277.D	E0391	800	1

Target Compound Results Summary

Target Compounds	CAS#	MW	Result ppbv	Q	Result ug/m3	Comments
Acetone	67-64-1	58.08	9.0		21	
Allyl chloride	107-05-1	76.53	0.20	U	0.63	
Benzene	71-43-2	78.11	0.20	U	0.64	
Bromodichloromethane	75-27-4	163.8	0.20	U	1.3	
Bromoform	75-25-2	252.8	0.20	U	2.1	
Bromomethane	74-83-9	94.94	0.20	U	0.78	
1,3-Butadiene	106-99-0	54.09	0.20	U	0.44	
n-Butane	106-97-8	58.12	1.6		3.9	
Chlorobenzene	108-90-7	112.6	0.20	U	0.92	
Chloroethane	75-00-3	64.52	0.20	U	0.53	
Chloroform	67-66-3	119.4	0.20	U	1.0	
Chloromethane	74-87-3	50.49	0.57		1.2	
Carbon disulfide	75-15-0	76.14	0.50	U	1.6	
Carbon tetrachloride	56-23-5	153.8	0.20	U	1.3	
2-Chlorotoluene	95-49-8	126.6	0.20	U	1.0	
Cyclohexane	110-82-7	84.16	0.20	U	0.69	
Dibromochloromethane	124-48-1	208.3	0.20	U	1.7	
1,2-Dibromoethane	106-93-4	187.8	0.20	U	1.5	
1,2-Dichlorobenzene	95-50-1	147	0.20	U	1.2	
1,3-Dichlorobenzene	541-73-1	147	0.20	U	1.2	
1,4-Dichlorobenzene	106-46-7	147	0.20	U	1.2	
Dichlorodifluoromethane	75-71-8	120.9	0.20	U	1.0	
1,1-Dichloroethane	75-34-3	98.96	0.20	U	0.81	
1,2-Dichloroethane	107-06-2	98.96	0.20	U	0.81	
1,1-Dichloroethene	75-35-4	96.94	0.20	U	0.79	
1,2-Dichloroethene (cis)	156-59-2	96.94	0.20	U	0.79	
1,2-Dichloroethene (trans)	156-60-5	96.94	0.20	U	0.79	
1,2-Dichloropropane	78-87-5	113	0.20	U	0.92	
1,3-Dichloropropene (cis)	10061-01-5	111	0.20	U	0.91	
1,3-Dichloropropene (trans)	10061-02-6	111	0.20	U	0.91	
1,2-Dichlorotetrafluoroethane	76-14-2	170.9	0.20	U	1.4	
1,4-Dioxane	123-91-1	88.12	0.50	U	1.8	
Ethanol	64-17-5	46.07	14		26	
Ethylbenzene	100-41-4	106.2	0.20	U	0.87	
4-Ethyltoluene	622-96-8	120.2	1.4		7.1	
n-Heptane	142-82-5	100.2	0.60		2.5	
1,3-Hexachlorobutadiene	87-68-3	260.8	0.20	U	2.1	
n-Hexane	110-54-3	86.17	0.20	U	0.70	
Isopropanol	67-63-0	60.1	16		38	
Methylene chloride	75-09-2	84.94	0.63		2.2	
Methyl ethyl ketone	78-93-3	72.1	0.58		1.7	
Methyl isobutyl ketone	108-10-1	100.2	0.20	U	0.82	
Methyl methacrylate	80-62-6	100.12	0.20	U	0.82	
Naphthalene	91-20-3	128.17	0.20	U	1.0	
Methyl tert-butyl ether	1634-04-4	88.15	0.20	U	0.72	

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 Phone/Fax: (856)858-4800 / (856)858-4571
<http://www.EMSL.com> to15lab@EMSL.com

EMSL Order #: **491700685**
 EMSL Sample #: **491700685-0002**
 Customer ID: **MCCA77**
 Customer PO: **17-03279**

Attn: **Chris Slagle**
McCabe Environmental Services, LLC
464 Valley Brook Avenue
Suite 6
Lyndhurst, NJ 07071

Phone: **201-438-4839**
 Fax: **201-438-1798**
 Collected: **6/29/2017**
 Received: **7/3/2017**

Project: **Glen Rock HS IAQ**

Sample ID: **Principals Office**

Analysis	Analysis Date	Analyst Initials	Lab File ID	Canister ID	Sample Vol(ml)	Dilution Factor
Initial	07/06/2017	MTH	L0277.D	E0391	800	1

Target Compound Results Summary

Target Compounds	CAS#	MW	Result ppbv	Q	Result ug/m3	Comments
Styrene	100-42-5	104.1	0.20	U	0.85	
Tert-butyl alcohol	75-65-0	74.12	0.20	U	0.61	
1,1,2,2-Tetrachloroethane	79-34-5	167.9	0.20	U	1.4	
Tetrachloroethene	127-18-4	165.8	0.20	U	1.4	
Tetrahydrofuran	109-99-9	72.11	0.28		0.82	
Toluene	108-88-3	92.14	0.73		2.8	
1,2,4-Trichlorobenzene	120-82-1	181.5	0.20	U	1.5	
1,1,1-Trichloroethane	71-55-6	133.4	0.20	U	1.1	
1,1,2-Trichloroethane	79-00-5	133.4	0.20	U	1.1	
Trichloroethene	79-01-6	131.4	0.20	U	1.1	
Trichlorofluoromethane	75-69-4	137.4	0.25		1.4	
1,1,2-Trichloro-1,2,2-trifluoroethane	76-13-1	187.4	0.20	U	1.5	
1,2,4-Trimethylbenzene	95-63-6	120.2	1.5		7.3	
1,3,5-Trimethylbenzene	108-67-8	120.2	0.66		3.2	
2,2,4-Trimethylpentane	540-84-1	114.2	0.20	U	0.93	
Vinyl bromide	593-60-2	106.9	0.20	U	0.87	
Vinyl chloride	75-01-4	62.5	0.20	U	0.51	
Xylene (m,p)	1330-20-7	106.2	0.41		1.8	
Xylene (o)	95-47-6	106.2	0.32		1.4	
Total Target Compound Volatiles:			49		120	

Surrogate

4-Bromofluorobenzene

Result	Spike	Recovery
9.3	10	93%

Qualifier Definitions

- U- Compound was analyzed for but not detected at a listed and appropriately adjusted reporting level.
- J- Estimated value reported below adjusted reporting limit for target compounds.
- B- Compound found in associated method blank as well as in the sample.
- D- Compound reported from additional diluted analysis.
- E- Estimated concentration exceeding upper calibration range. Ethanol and isopropyl alcohol are not specifically targeted to dilute within calibration range.

Method Reference

- 1) USEPA: Compendium Method TO-15, "Determination of Volatile Organic Compounds (VOCs) in Air..." Collected in Specially-Prepared Canisters and Analyzed by Gas Chromatography/Mass Spectrometry (GC/MS), January 1999, (EPA/625/R-96/010b).
- 2) NJDEP- SRWM Low Level USEPA Method TO-15 (NJDEP-LLTO-15 -March 2007)



NJDEP Certification #: 03036

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200 Route 130 North, Cinnaminson, NJ 08077
 Phone/Fax: (856)858-4800 / (856)858-4571
<http://www.EMSL.com> to15lab@EMSL.com

EMSL Order #: **491700685**
 EMSL Sample #: **491700685-0003**
 Customer ID: **MCCA77**
 Customer PO: **17-03279**

Attn: **Chris Slagle**
McCabe Environmental Services, LLC
464 Valley Brook Avenue
Suite 6
Lyndhurst, NJ 07071

Phone: **201-438-4839**
 Fax: **201-438-1798**
 Collected: **7/13/2017**
 Received: **7/17/2017**

Project: **Glen Rock HS IAQ**

Sample ID: **Room D212**

Analysis	Analysis Date	Analyst Initials	Lab File ID	Canister ID	Sample Vol(ml)	Dilution Factor
Initial	07/17/2017	MTH	L0303.D	E15527	500	1

Target Compound Results Summary

Target Compounds	CAS#	MW	Result ppbv	Q	Result ug/m3	Comments
Acetone	67-64-1	58.08	9.1		22	
Allyl chloride	107-05-1	76.53	0.20	U	0.63	
Benzene	71-43-2	78.11	0.20	U	0.64	
Bromodichloromethane	75-27-4	163.8	0.20	U	1.3	
Bromoform	75-25-2	252.8	0.20	U	2.1	
Bromomethane	74-83-9	94.94	0.20	U	0.78	
1,3-Butadiene	106-99-0	54.09	0.20	U	0.44	
n-Butane	106-97-8	58.12	1.4		3.3	
Chlorobenzene	108-90-7	112.6	0.20	U	0.92	
Chloroethane	75-00-3	64.52	0.20	U	0.53	
Chloroform	67-66-3	119.4	0.20	U	1.0	
Chloromethane	74-87-3	50.49	0.51		1.0	
Carbon disulfide	75-15-0	76.14	0.50	U	1.6	
Carbon tetrachloride	56-23-5	153.8	0.20	U	1.3	
2-Chlorotoluene	95-49-8	126.6	0.20	U	1.0	
Cyclohexane	110-82-7	84.16	0.20	U	0.69	
Dibromochloromethane	124-48-1	208.3	0.20	U	1.7	
1,2-Dibromoethane	106-93-4	187.8	0.20	U	1.5	
1,2-Dichlorobenzene	95-50-1	147	0.20	U	1.2	
1,3-Dichlorobenzene	541-73-1	147	0.20	U	1.2	
1,4-Dichlorobenzene	106-46-7	147	0.20	U	1.2	
Dichlorodifluoromethane	75-71-8	120.9	0.20	U	1.0	
1,1-Dichloroethane	75-34-3	98.96	0.20	U	0.81	
1,2-Dichloroethane	107-06-2	98.96	0.20	U	0.81	
1,1-Dichloroethene	75-35-4	96.94	0.20	U	0.79	
1,2-Dichloroethene (cis)	156-59-2	96.94	0.20	U	0.79	
1,2-Dichloroethene (trans)	156-60-5	96.94	0.20	U	0.79	
1,2-Dichloropropane	78-87-5	113	0.20	U	0.92	
1,3-Dichloropropene (cis)	10061-01-5	111	0.20	U	0.91	
1,3-Dichloropropene (trans)	10061-02-6	111	0.20	U	0.91	
1,2-Dichlorotetrafluoroethane	76-14-2	170.9	0.20	U	1.4	
1,4-Dioxane	123-91-1	88.12	0.50	U	1.8	
Ethanol	64-17-5	46.07	11		21	
Ethylbenzene	100-41-4	106.2	0.20	U	0.87	
4-Ethyltoluene	622-96-8	120.2	0.70		3.4	
n-Heptane	142-82-5	100.2	0.20	U	0.82	
1,3-Hexachlorobutadiene	87-68-3	260.8	0.20	U	2.1	
n-Hexane	110-54-3	86.17	0.20	U	0.70	
Isopropanol	67-63-0	60.1	4.1		10	
Methylene chloride	75-09-2	84.94	0.33		1.1	
Methyl ethyl ketone	78-93-3	72.1	0.78		2.3	
Methyl isobutyl ketone	108-10-1	100.2	0.20	U	0.82	
Methyl methacrylate	80-62-6	100.12	0.20	U	0.82	
Naphthalene	91-20-3	128.17	0.20	U	1.0	
Methyl tert-butyl ether	1634-04-4	88.15	0.20	U	0.72	

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EMSL Order #: **491700685**
 EMSL Sample #: **491700685-0003**
 Customer ID: **MCCA77**
 Customer PO: **17-03279**

Attn: **Chris Slagle**
McCabe Environmental Services, LLC
464 Valley Brook Avenue
Suite 6
Lyndhurst, NJ 07071

Phone: **201-438-4839**
 Fax: **201-438-1798**
 Collected: **7/13/2017**
 Received: **7/17/2017**

Project: **Glen Rock HS IAQ**

Sample ID: **Room D212**

Analysis	Analysis Date	Analyst Initials	Lab File ID	Canister ID	Sample Vol(ml)	Dilution Factor
Initial	07/17/2017	MTH	L0303.D	E15527	500	1

Target Compound Results Summary

Target Compounds	CAS#	MW	Result ppbv	Q	Result ug/m3	Comments
Styrene	100-42-5	104.1	0.20	U	0.85	
Tert-butyl alcohol	75-65-0	74.12	1.8		5.6	
1,1,2,2-Tetrachloroethane	79-34-5	167.9	0.20	U	1.4	
Tetrachloroethene	127-18-4	165.8	0.20	U	1.4	
Tetrahydrofuran	109-99-9	72.11	0.20	U	0.59	
Toluene	108-88-3	92.14	0.43		1.6	
1,2,4-Trichlorobenzene	120-82-1	181.5	0.20	U	1.5	
1,1,1-Trichloroethane	71-55-6	133.4	0.20	U	1.1	
1,1,2-Trichloroethane	79-00-5	133.4	0.20	U	1.1	
Trichloroethene	79-01-6	131.4	0.20	U	1.1	
Trichlorofluoromethane	75-69-4	137.4	2.5		14	
1,1,2-Trichloro-1,2,2-trifluoroethane	76-13-1	187.4	0.20	U	1.5	
1,2,4-Trimethylbenzene	95-63-6	120.2	0.80		3.9	
1,3,5-Trimethylbenzene	108-67-8	120.2	0.35		1.7	
2,2,4-Trimethylpentane	540-84-1	114.2	0.20	U	0.93	
Vinyl bromide	593-60-2	106.9	0.20	U	0.87	
Vinyl chloride	75-01-4	62.5	0.20	U	0.51	
Xylene (m,p)	1330-20-7	106.2	0.60		2.6	
Xylene (o)	95-47-6	106.2	0.31		1.4	
Total Target Compound Volatiles:			35		94	

Surrogate

4-Bromofluorobenzene

Result	Spike	Recovery
9.3	10	93%

Qualifier Definitions

- U- Compound was analyzed for but not detected at a listed and appropriately adjusted reporting level.
- J- Estimated value reported below adjusted reporting limit for target compounds.
- B- Compound found in associated method blank as well as in the sample.
- D- Compound reported from additional diluted analysis.
- E- Estimated concentration exceeding upper calibration range. Ethanol and isopropyl alcohol are not specifically targeted to dilute within calibration range.

Method Reference

- 1) USEPA: Compendium Method TO-15, "Determination of Volatile Organic Compounds (VOCs) in Air..." Collected in Specially-Prepared Canisters and Analyzed by Gas Chromatography/Mass Spectrometry (GC/MS), January 1999, (EPA/625/R-96/010b).
- 2) NJDEP- SRWM Low Level USEPA Method TO-15 (NJDEP-LLTO-15 -March 2007)



NJDEP Certification #: 03036

**EMSL Analytical**

200 Route 130 North, Cinnaminson, NJ 08077
 Phone/Fax: (856)858-4800 / (856)858-4571
<http://www.EMSL.com> to15lab@EMSL.com

EMSL Order #: **491700685**
 EMSL Sample #: **491700685-0004**
 Customer ID: **MCCA77**
 Customer PO: **17-03279**

Attn: **Chris Slagle**
McCabe Environmental Services, LLC
464 Valley Brook Avenue
Suite 6
Lyndhurst, NJ 07071

Phone: **201-438-4839**
 Fax: **201-438-1798**
 Collected: **6/29/2017**
 Received: **7/3/2017**

Project: **Glen Rock HS IAQ**

Sample ID: **Media Center**

Analysis	Analysis Date	Analyst Initials	Lab File ID	Canister ID	Sample Vol(ml)	Dilution Factor
Initial	07/06/2017	MTH	L0278.D	E0478	785	1

Target Compound Results Summary

Target Compounds	CAS#	MW	Result ppbv	Q	Result ug/m3	Comments
Acetone	67-64-1	58.08	6.5		15	
Allyl chloride	107-05-1	76.53	0.20	U	0.63	
Benzene	71-43-2	78.11	0.20	U	0.64	
Bromodichloromethane	75-27-4	163.8	0.20	U	1.3	
Bromoform	75-25-2	252.8	0.20	U	2.1	
Bromomethane	74-83-9	94.94	0.20	U	0.78	
1,3-Butadiene	106-99-0	54.09	0.20	U	0.44	
n-Butane	106-97-8	58.12	0.88		2.1	
Chlorobenzene	108-90-7	112.6	0.20	U	0.92	
Chloroethane	75-00-3	64.52	0.20	U	0.53	
Chloroform	67-66-3	119.4	0.20	U	1.0	
Chloromethane	74-87-3	50.49	0.55		1.1	
Carbon disulfide	75-15-0	76.14	0.50	U	1.6	
Carbon tetrachloride	56-23-5	153.8	0.20	U	1.3	
2-Chlorotoluene	95-49-8	126.6	0.20	U	1.0	
Cyclohexane	110-82-7	84.16	0.20	U	0.69	
Dibromochloromethane	124-48-1	208.3	0.20	U	1.7	
1,2-Dibromoethane	106-93-4	187.8	0.20	U	1.5	
1,2-Dichlorobenzene	95-50-1	147	0.20	U	1.2	
1,3-Dichlorobenzene	541-73-1	147	0.20	U	1.2	
1,4-Dichlorobenzene	106-46-7	147	0.20	U	1.2	
Dichlorodifluoromethane	75-71-8	120.9	0.23		1.1	
1,1-Dichloroethane	75-34-3	98.96	0.20	U	0.81	
1,2-Dichloroethane	107-06-2	98.96	0.20	U	0.81	
1,1-Dichloroethene	75-35-4	96.94	0.20	U	0.79	
1,2-Dichloroethene (cis)	156-59-2	96.94	0.20	U	0.79	
1,2-Dichloroethene (trans)	156-60-5	96.94	0.20	U	0.79	
1,2-Dichloropropane	78-87-5	113	0.20	U	0.92	
1,3-Dichloropropene (cis)	10061-01-5	111	0.20	U	0.91	
1,3-Dichloropropene (trans)	10061-02-6	111	0.20	U	0.91	
1,2-Dichlorotetrafluoroethane	76-14-2	170.9	0.20	U	1.4	
1,4-Dioxane	123-91-1	88.12	0.50	U	1.8	
Ethanol	64-17-5	46.07	2.1		3.9	
Ethylbenzene	100-41-4	106.2	0.26		1.1	
4-Ethyltoluene	622-96-8	120.2	18		90	
n-Heptane	142-82-5	100.2	0.20	U	0.82	
1,3-Hexachlorobutadiene	87-68-3	260.8	0.20	U	2.1	
n-Hexane	110-54-3	86.17	0.20	U	0.70	
Isopropanol	67-63-0	60.1	1.6		3.9	
Methylene chloride	75-09-2	84.94	0.92		3.2	
Methyl ethyl ketone	78-93-3	72.1	0.68		2.0	
Methyl isobutyl ketone	108-10-1	100.2	0.20	U	0.82	
Methyl methacrylate	80-62-6	100.12	0.20	U	0.82	
Naphthalene	91-20-3	128.17	0.20	U	1.0	
Methyl tert-butyl ether	1634-04-4	88.15	0.20	U	0.72	

**EMSL Analytical**

200 Route 130 North, Cinnaminson, NJ 08077
 Phone/Fax: (856)858-4800 / (856)858-4571
<http://www.EMSL.com> to15lab@EMSL.com

EMSL Order #: **491700685**
 EMSL Sample #: **491700685-0004**
 Customer ID: **MCCA77**
 Customer PO: **17-03279**

Attn: **Chris Slagle**
McCabe Environmental Services, LLC
464 Valley Brook Avenue
Suite 6
Lyndhurst, NJ 07071

Project: **Glen Rock HS IAQ**

Phone: **201-438-4839**
 Fax: **201-438-1798**
 Collected: **6/29/2017**
 Received: **7/3/2017**

Sample ID: **Media Center**

Analysis	Analysis Date	Analyst Initials	Lab File ID	Canister ID	Sample Vol(ml)	Dilution Factor
Initial	07/06/2017	MTH	L0278.D	E0478	785	1

Target Compound Results Summary

Target Compounds	CAS#	MW	Result ppbv	Q	Result ug/m3	Comments
Styrene	100-42-5	104.1	0.20	U	0.85	
Tert-butyl alcohol	75-65-0	74.12	0.20	U	0.61	
1,1,2,2-Tetrachloroethane	79-34-5	167.9	0.20	U	1.4	
Tetrachloroethene	127-18-4	165.8	0.20	U	1.4	
Tetrahydrofuran	109-99-9	72.11	0.24		0.69	
Toluene	108-88-3	92.14	0.54		2.0	
1,2,4-Trichlorobenzene	120-82-1	181.5	0.20	U	1.5	
1,1,1-Trichloroethane	71-55-6	133.4	0.20	U	1.1	
1,1,2-Trichloroethane	79-00-5	133.4	0.20	U	1.1	
Trichloroethene	79-01-6	131.4	0.20	U	1.1	
Trichlorofluoromethane	75-69-4	137.4	0.90		5.1	
1,1,2-Trichloro-1,2,2-trifluoroethane	76-13-1	187.4	0.20	U	1.5	
1,2,4-Trimethylbenzene	95-63-6	120.2	30		150	
1,3,5-Trimethylbenzene	108-67-8	120.2	9.4		46	
2,2,4-Trimethylpentane	540-84-1	114.2	0.20	U	0.93	
Vinyl bromide	593-60-2	106.9	0.20	U	0.87	
Vinyl chloride	75-01-4	62.5	0.20	U	0.51	
Xylene (m,p)	1330-20-7	106.2	1.1		4.8	
Xylene (o)	95-47-6	106.2	3.0		13	
Total Target Compound Volatiles:			77		330	

Surrogate

4-Bromofluorobenzene

Result	Spike	Recovery
11	10	110%

Qualifier Definitions

- U- Compound was analyzed for but not detected at a listed and appropriately adjusted reporting level.
- J- Estimated value reported below adjusted reporting limit for target compounds.
- B- Compound found in associated method blank as well as in the sample.
- D- Compound reported from additional diluted analysis.
- E- Estimated concentration exceeding upper calibration range. Ethanol and isopropyl alcohol are not specifically targeted to dilute within calibration range.

Method Reference

- 1) USEPA: Compendium Method TO-15, "Determination of Volatile Organic Compounds (VOCs) in Air..." Collected in Specially-Prepared Canisters and Analyzed by Gas Chromatography/Mass Spectrometry (GC/MS), January 1999, (EPA/625/R-96/010b).
- 2) NJDEP- SRWM Low Level USEPA Method TO-15 (NJDEP-LLTO-15 -March 2007)



NJDEP Certification #: 03036

**EMSL Analytical**

200 Route 130 North, Cinnaminson, NJ 08077
 Phone/Fax: (856)858-4800 / (856)858-4571
<http://www.EMSL.com> to15lab@EMSL.com

EMSL Order #: **491700685**
 EMSL Sample #: **491700685-0005**
 Customer ID: **MCCA77**
 Customer PO: **17-03279**

Attn: **Chris Slagle**
McCabe Environmental Services, LLC
464 Valley Brook Avenue
Suite 6
Lyndhurst, NJ 07071

Phone: **201-438-4839**
 Fax: **201-438-1798**
 Collected: **6/29/2017**
 Received: **7/3/2017**

Project: **Glen Rock HS IAQ**

Sample ID: **Nurse's Office**

Analysis	Analysis Date	Analyst Initials	Lab File ID	Canister ID	Sample Vol(ml)	Dilution Factor
Initial	07/06/2017	MTH	L0279.D	E0479	938	1

Target Compound Results Summary

Target Compounds	CAS#	MW	Result ppbv	Q	Result ug/m3	Comments
Acetone	67-64-1	58.08	6.3		15	
Allyl chloride	107-05-1	76.53	0.20	U	0.63	
Benzene	71-43-2	78.11	0.20	U	0.64	
Bromodichloromethane	75-27-4	163.8	0.20	U	1.3	
Bromoform	75-25-2	252.8	0.20	U	2.1	
Bromomethane	74-83-9	94.94	0.20	U	0.78	
1,3-Butadiene	106-99-0	54.09	0.20	U	0.44	
n-Butane	106-97-8	58.12	1.0		2.4	
Chlorobenzene	108-90-7	112.6	0.20	U	0.92	
Chloroethane	75-00-3	64.52	0.20	U	0.53	
Chloroform	67-66-3	119.4	0.20	U	1.0	
Chloromethane	74-87-3	50.49	0.20	U	0.41	
Carbon disulfide	75-15-0	76.14	0.50	U	1.6	
Carbon tetrachloride	56-23-5	153.8	0.20	U	1.3	
2-Chlorotoluene	95-49-8	126.6	0.20	U	1.0	
Cyclohexane	110-82-7	84.16	0.20	U	0.69	
Dibromochloromethane	124-48-1	208.3	0.20	U	1.7	
1,2-Dibromoethane	106-93-4	187.8	0.20	U	1.5	
1,2-Dichlorobenzene	95-50-1	147	0.20	U	1.2	
1,3-Dichlorobenzene	541-73-1	147	0.20	U	1.2	
1,4-Dichlorobenzene	106-46-7	147	0.20	U	1.2	
Dichlorodifluoromethane	75-71-8	120.9	0.20	U	1.0	
1,1-Dichloroethane	75-34-3	98.96	0.20	U	0.81	
1,2-Dichloroethane	107-06-2	98.96	0.20	U	0.81	
1,1-Dichloroethene	75-35-4	96.94	0.20	U	0.79	
1,2-Dichloroethene (cis)	156-59-2	96.94	0.20	U	0.79	
1,2-Dichloroethene (trans)	156-60-5	96.94	0.20	U	0.79	
1,2-Dichloropropane	78-87-5	113	0.20	U	0.92	
1,3-Dichloropropene (cis)	10061-01-5	111	0.20	U	0.91	
1,3-Dichloropropene (trans)	10061-02-6	111	0.20	U	0.91	
1,2-Dichlorotetrafluoroethane	76-14-2	170.9	0.20	U	1.4	
1,4-Dioxane	123-91-1	88.12	0.50	U	1.8	
Ethanol	64-17-5	46.07	19		35	
Ethylbenzene	100-41-4	106.2	0.20	U	0.87	
4-Ethyltoluene	622-96-8	120.2	3.8		19	
n-Heptane	142-82-5	100.2	0.20	U	0.82	
1,3-Hexachlorobutadiene	87-68-3	260.8	0.20	U	2.1	
n-Hexane	110-54-3	86.17	0.20	U	0.70	
Isopropanol	67-63-0	60.1	10		25	
Methylene chloride	75-09-2	84.94	0.77		2.7	
Methyl ethyl ketone	78-93-3	72.1	0.62		1.8	
Methyl isobutyl ketone	108-10-1	100.2	0.20	U	0.82	
Methyl methacrylate	80-62-6	100.12	0.20	U	0.82	
Naphthalene	91-20-3	128.17	0.20	U	1.0	
Methyl tert-butyl ether	1634-04-4	88.15	0.20	U	0.72	

**EMSL Analytical**

200 Route 130 North, Cinnaminson, NJ 08077
 Phone/Fax: (856)858-4800 / (856)858-4571
<http://www.EMSL.com> to15lab@EMSL.com

EMSL Order #: **491700685**
 EMSL Sample #: **491700685-0005**
 Customer ID: **MCCA77**
 Customer PO: **17-03279**

Attn: **Chris Slagle**
McCabe Environmental Services, LLC
464 Valley Brook Avenue
Suite 6
Lyndhurst, NJ 07071

Phone: **201-438-4839**
 Fax: **201-438-1798**
 Collected: **6/29/2017**
 Received: **7/3/2017**

Project: **Glen Rock HS IAQ**

Sample ID: **Nurse's Office**

Analysis	Analysis Date	Analyst Initials	Lab File ID	Canister ID	Sample Vol(ml)	Dilution Factor
Initial	07/06/2017	MTH	L0279.D	E0479	938	1

Target Compound Results Summary

Target Compounds	CAS#	MW	Result ppbv	Q	Result ug/m3	Comments
Styrene	100-42-5	104.1	0.20	U	0.85	
Tert-butyl alcohol	75-65-0	74.12	0.20	U	0.61	
1,1,2,2-Tetrachloroethane	79-34-5	167.9	0.20	U	1.4	
Tetrachloroethene	127-18-4	165.8	0.20	U	1.4	
Tetrahydrofuran	109-99-9	72.11	0.20	U	0.59	
Toluene	108-88-3	92.14	0.33		1.3	
1,2,4-Trichlorobenzene	120-82-1	181.5	0.20	U	1.5	
1,1,1-Trichloroethane	71-55-6	133.4	0.20	U	1.1	
1,1,2-Trichloroethane	79-00-5	133.4	0.20	U	1.1	
Trichloroethene	79-01-6	131.4	0.20	U	1.1	
Trichlorofluoromethane	75-69-4	137.4	0.38		2.1	
1,1,2-Trichloro-1,2,2-trifluoroethane	76-13-1	187.4	0.20	U	1.5	
1,2,4-Trimethylbenzene	95-63-6	120.2	7.0		34	
1,3,5-Trimethylbenzene	108-67-8	120.2	2.1		10	
2,2,4-Trimethylpentane	540-84-1	114.2	0.20	U	0.93	
Vinyl bromide	593-60-2	106.9	0.20	U	0.87	
Vinyl chloride	75-01-4	62.5	0.20	U	0.51	
Xylene (m,p)	1330-20-7	106.2	0.40	U	1.7	
Xylene (o)	95-47-6	106.2	0.82		3.6	
Total Target Compound Volatiles:			52		150	

Surrogate

4-Bromofluorobenzene

Result	Spike	Recovery
10	10	100%

Qualifier Definitions

- U- Compound was analyzed for but not detected at a listed and appropriately adjusted reporting level.
- J- Estimated value reported below adjusted reporting limit for target compounds.
- B- Compound found in associated method blank as well as in the sample.
- D- Compound reported from additional diluted analysis.
- E- Estimated concentration exceeding upper calibration range. Ethanol and isopropyl alcohol are not specifically targeted to dilute within calibration range.

Method Reference

- 1) USEPA: Compendium Method TO-15, "Determination of Volatile Organic Compounds (VOCs) in Air..." Collected in Specially-Prepared Canisters and Analyzed by Gas Chromatography/Mass Spectrometry (GC/MS), January 1999, (EPA/625/R-96/010b).
- 2) NJDEP- SRWM Low Level USEPA Method TO-15 (NJDEP-LLTO-15 -March 2007)



NJDEP Certification #: 03036

**EMSL Analytical**

200 Route 130 North, Cinnaminson, NJ 08077
 Phone/Fax: (856)858-4800 / (856)858-4571
<http://www.EMSL.com> to15lab@EMSL.com

EMSL Order #: **491700685**
 EMSL Sample #: **491700685-0006**
 Customer ID: **MCCA77**
 Customer PO: **17-03279**

Attn: **Chris Slagle**
McCabe Environmental Services, LLC
464 Valley Brook Avenue
Suite 6
Lyndhurst, NJ 07071

Phone: **201-438-4839**
 Fax: **201-438-1798**
 Collected: **6/29/2017**
 Received: **7/3/2017**
Media Center
 Office

Project: **Glen Rock HS IAQ**

Analysis	Analysis Date	Analyst Initials	Lab File ID	Canister ID	Sample Vol(ml)	Dilution Factor
Initial	07/06/2017	MTH	L0288.D	E12265	500	1

Target Compound Results Summary

Target Compounds	CAS#	MW	Result ppbv	Q	Result ug/m3	Comments
Acetone	67-64-1	58.08	8.4		20	
Allyl chloride	107-05-1	76.53	0.20	U	0.63	
Benzene	71-43-2	78.11	0.20	U	0.64	
Bromodichloromethane	75-27-4	163.8	0.20	U	1.3	
Bromoform	75-25-2	252.8	0.20	U	2.1	
Bromomethane	74-83-9	94.94	0.20	U	0.78	
1,3-Butadiene	106-99-0	54.09	0.20	U	0.44	
n-Butane	106-97-8	58.12	0.86		2.0	
Chlorobenzene	108-90-7	112.6	0.20	U	0.92	
Chloroethane	75-00-3	64.52	0.20	U	0.53	
Chloroform	67-66-3	119.4	0.20	U	1.0	
Chloromethane	74-87-3	50.49	0.57		1.2	
Carbon disulfide	75-15-0	76.14	0.50	U	1.6	
Carbon tetrachloride	56-23-5	153.8	0.20	U	1.3	
2-Chlorotoluene	95-49-8	126.6	0.20	U	1.0	
Cyclohexane	110-82-7	84.16	0.20	U	0.69	
Dibromochloromethane	124-48-1	208.3	0.20	U	1.7	
1,2-Dibromoethane	106-93-4	187.8	0.20	U	1.5	
1,2-Dichlorobenzene	95-50-1	147	0.20	U	1.2	
1,3-Dichlorobenzene	541-73-1	147	0.20	U	1.2	
1,4-Dichlorobenzene	106-46-7	147	0.20	U	1.2	
Dichlorodifluoromethane	75-71-8	120.9	0.25		1.3	
1,1-Dichloroethane	75-34-3	98.96	0.20	U	0.81	
1,2-Dichloroethane	107-06-2	98.96	0.20	U	0.81	
1,1-Dichloroethene	75-35-4	96.94	0.20	U	0.79	
1,2-Dichloroethene (cis)	156-59-2	96.94	0.20	U	0.79	
1,2-Dichloroethene (trans)	156-60-5	96.94	0.20	U	0.79	
1,2-Dichloropropane	78-87-5	113	0.20	U	0.92	
1,3-Dichloropropene (cis)	10061-01-5	111	0.20	U	0.91	
1,3-Dichloropropene (trans)	10061-02-6	111	0.20	U	0.91	
1,2-Dichlorotetrafluoroethane	76-14-2	170.9	0.20	U	1.4	
1,4-Dioxane	123-91-1	88.12	0.50	U	1.8	
Ethanol	64-17-5	46.07	13		24	
Ethylbenzene	100-41-4	106.2	0.28		1.2	
4-Ethyltoluene	622-96-8	120.2	19		92	
n-Heptane	142-82-5	100.2	0.20	U	0.82	
1,3-Hexachlorobutadiene	87-68-3	260.8	0.20	U	2.1	
n-Hexane	110-54-3	86.17	0.20	U	0.70	
Isopropanol	67-63-0	60.1	4.2		10	
Methylene chloride	75-09-2	84.94	0.94		3.3	
Methyl ethyl ketone	78-93-3	72.1	0.80		2.3	
Methyl isobutyl ketone	108-10-1	100.2	0.20	U	0.82	
Methyl methacrylate	80-62-6	100.12	0.20	U	0.82	
Naphthalene	91-20-3	128.17	0.20	U	1.0	
Methyl tert-butyl ether	1634-04-4	88.15	0.20	U	0.72	

**EMSL Analytical**

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EMSL Order #: **491700685**
 EMSL Sample #: **491700685-0006**
 Customer ID: **MCCA77**
 Customer PO: **17-03279**

Attn: **Chris Slagle**
McCabe Environmental Services, LLC
464 Valley Brook Avenue
Suite 6
Lyndhurst, NJ 07071

Project: **Glen Rock HS IAQ**

Phone: **201-438-4839**
 Fax: **201-438-1798**
 Collected: **6/29/2017**
 Received: **7/3/2017**
Media Center
 Office

Analysis	Analysis Date	Analyst Initials	Lab File ID	Canister ID	Sample Vol(ml)	Dilution Factor
Initial	07/06/2017	MTH	L0288.D	E12265	500	1

Target Compound Results Summary

Target Compounds	CAS#	MW	Result ppbv	Q	Result ug/m3	Comments
Styrene	100-42-5	104.1	0.20	U	0.85	
Tert-butyl alcohol	75-65-0	74.12	0.20	U	0.61	
1,1,2,2-Tetrachloroethane	79-34-5	167.9	0.20	U	1.4	
Tetrachloroethene	127-18-4	165.8	0.20	U	1.4	
Tetrahydrofuran	109-99-9	72.11	0.27		0.78	
Toluene	108-88-3	92.14	0.48		1.8	
1,2,4-Trichlorobenzene	120-82-1	181.5	0.20	U	1.5	
1,1,1-Trichloroethane	71-55-6	133.4	0.20	U	1.1	
1,1,2-Trichloroethane	79-00-5	133.4	0.20	U	1.1	
Trichloroethene	79-01-6	131.4	0.20	U	1.1	
Trichlorofluoromethane	75-69-4	137.4	0.94		5.3	
1,1,2-Trichloro-1,2,2-trifluoroethane	76-13-1	187.4	0.20	U	1.5	
1,2,4-Trimethylbenzene	95-63-6	120.2	31		150	
1,3,5-Trimethylbenzene	108-67-8	120.2	9.5		46	
2,2,4-Trimethylpentane	540-84-1	114.2	0.20	U	0.93	
Vinyl bromide	593-60-2	106.9	0.20	U	0.87	
Vinyl chloride	75-01-4	62.5	0.20	U	0.51	
Xylene (m,p)	1330-20-7	106.2	1.1		4.8	
Xylene (o)	95-47-6	106.2	3.0		13	
Total Target Compound Volatiles:			95		370	

Surrogate	Result	Spike	Recovery
4-Bromofluorobenzene	11	10	110%

Qualifier Definitions

- U- Compound was analyzed for but not detected at a listed and appropriately adjusted reporting level.
- J- Estimated value reported below adjusted reporting limit for target compounds.
- B- Compound found in associated method blank as well as in the sample.
- D- Compound reported from additional diluted analysis.
- E- Estimated concentration exceeding upper calibration range. Ethanol and isopropyl alcohol are not specifically targeted to dilute within calibration range.

Method Reference

- 1) USEPA: Compendium Method TO-15, "Determination of Volatile Organic Compounds (VOCs) in Air..." Collected in Specially-Prepared Canisters and Analyzed by Gas Chromatography/Mass Spectrometry (GC/MS), January 1999, (EPA/625/R-96/010b).
- 2) NJDEP- SRWM Low Level USEPA Method TO-15 (NJDEP-LLTO-15 -March 2007)



NJDEP Certification #: 03036

**EMSL Analytical**

200 Route 130 North, Cinnaminson, NJ 08077
 Phone/Fax: (856)858-4800 / (856)858-4571
<http://www.EMSL.com> to15lab@EMSL.com

EMSL Order #: **491700685**
 EMSL Sample #: **491700685-0007**
 Customer ID: **MCCA77**
 Customer PO: **17-03279**

Attn: **Chris Slagle**
McCabe Environmental Services, LLC
464 Valley Brook Avenue
Suite 6
Lyndhurst, NJ 07071

Phone: **201-438-4839**
 Fax: **201-438-1798**
 Collected: **6/29/2017**
 Received: **7/3/2017**
Media Center
 Sample ID: **Workroom**

Project: **Glen Rock HS IAQ**

Analysis	Analysis Date	Analyst Initials	Lab File ID	Canister ID	Sample Vol(ml)	Dilution Factor
Initial	07/07/2017	MTH	L0289.D	E12273	917	1

Target Compound Results Summary

Target Compounds	CAS#	MW	Result ppbv	Q	Result ug/m3	Comments
Acetone	67-64-1	58.08	6.4		15	
Allyl chloride	107-05-1	76.53	0.20	U	0.63	
Benzene	71-43-2	78.11	0.20	U	0.64	
Bromodichloromethane	75-27-4	163.8	0.20	U	1.3	
Bromoform	75-25-2	252.8	0.20	U	2.1	
Bromomethane	74-83-9	94.94	0.20	U	0.78	
1,3-Butadiene	106-99-0	54.09	0.20	U	0.44	
n-Butane	106-97-8	58.12	0.20	U	0.48	
Chlorobenzene	108-90-7	112.6	0.20	U	0.92	
Chloroethane	75-00-3	64.52	0.20	U	0.53	
Chloroform	67-66-3	119.4	0.20	U	1.0	
Chloromethane	74-87-3	50.49	0.20	U	0.41	
Carbon disulfide	75-15-0	76.14	0.50	U	1.6	
Carbon tetrachloride	56-23-5	153.8	0.20	U	1.3	
2-Chlorotoluene	95-49-8	126.6	0.20	U	1.0	
Cyclohexane	110-82-7	84.16	0.20	U	0.69	
Dibromochloromethane	124-48-1	208.3	0.20	U	1.7	
1,2-Dibromoethane	106-93-4	187.8	0.20	U	1.5	
1,2-Dichlorobenzene	95-50-1	147	0.20	U	1.2	
1,3-Dichlorobenzene	541-73-1	147	0.20	U	1.2	
1,4-Dichlorobenzene	106-46-7	147	0.20	U	1.2	
Dichlorodifluoromethane	75-71-8	120.9	0.20	U	1.0	
1,1-Dichloroethane	75-34-3	98.96	0.20	U	0.81	
1,2-Dichloroethane	107-06-2	98.96	0.20	U	0.81	
1,1-Dichloroethene	75-35-4	96.94	0.20	U	0.79	
1,2-Dichloroethene (cis)	156-59-2	96.94	0.20	U	0.79	
1,2-Dichloroethene (trans)	156-60-5	96.94	0.20	U	0.79	
1,2-Dichloropropane	78-87-5	113	0.20	U	0.92	
1,3-Dichloropropene (cis)	10061-01-5	111	0.20	U	0.91	
1,3-Dichloropropene (trans)	10061-02-6	111	0.20	U	0.91	
1,2-Dichlorotetrafluoroethane	76-14-2	170.9	0.20	U	1.4	
1,4-Dioxane	123-91-1	88.12	0.50	U	1.8	
Ethanol	64-17-5	46.07	0.74		1.4	
Ethylbenzene	100-41-4	106.2	0.28		1.2	
4-Ethyltoluene	622-96-8	120.2	18		90	
n-Heptane	142-82-5	100.2	0.20	U	0.82	
1,3-Hexachlorobutadiene	87-68-3	260.8	0.20	U	2.1	
n-Hexane	110-54-3	86.17	0.20	U	0.70	
Isopropanol	67-63-0	60.1	4.2		10	
Methylene chloride	75-09-2	84.94	0.59		2.0	
Methyl ethyl ketone	78-93-3	72.1	0.79		2.3	
Methyl isobutyl ketone	108-10-1	100.2	0.25		1.0	
Methyl methacrylate	80-62-6	100.12	0.20	U	0.82	
Naphthalene	91-20-3	128.17	0.20	U	1.0	
Methyl tert-butyl ether	1634-04-4	88.15	0.20	U	0.72	

**EMSL Analytical**

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EMSL Order #: **491700685**
 EMSL Sample #: **491700685-0007**
 Customer ID: **MCCA77**
 Customer PO: **17-03279**

Attn: **Chris Slagle**
McCabe Environmental Services, LLC
464 Valley Brook Avenue
Suite 6
Lyndhurst, NJ 07071

Phone: **201-438-4839**
 Fax: **201-438-1798**
 Collected: **6/29/2017**
 Received: **7/3/2017**
Media Center
 Sample ID: **Workroom**

Project: **Glen Rock HS IAQ**

<u>Analysis</u>	<u>Analysis Date</u>	<u>Analyst Initials</u>	<u>Lab File ID</u>	<u>Canister ID</u>	<u>Sample Vol(ml)</u>	<u>Dilution Factor</u>
Initial	07/07/2017	MTH	L0289.D	E12273	917	1

Target Compound Results Summary

Target Compounds	CAS#	MW	Result ppbv	Q	Result ug/m3	Comments
Styrene	100-42-5	104.1	0.20	U	0.85	
Tert-butyl alcohol	75-65-0	74.12	0.20	U	0.61	
1,1,2,2-Tetrachloroethane	79-34-5	167.9	0.20	U	1.4	
Tetrachloroethene	127-18-4	165.8	0.20	U	1.4	
Tetrahydrofuran	109-99-9	72.11	0.24		0.70	
Toluene	108-88-3	92.14	0.48		1.8	
1,2,4-Trichlorobenzene	120-82-1	181.5	0.20	U	1.5	
1,1,1-Trichloroethane	71-55-6	133.4	0.20	U	1.1	
1,1,2-Trichloroethane	79-00-5	133.4	0.20	U	1.1	
Trichloroethene	79-01-6	131.4	0.20	U	1.1	
Trichlorofluoromethane	75-69-4	137.4	0.56		3.1	
1,1,2-Trichloro-1,2,2-trifluoroethane	76-13-1	187.4	0.20	U	1.5	
1,2,4-Trimethylbenzene	95-63-6	120.2	30		150	
1,3,5-Trimethylbenzene	108-67-8	120.2	9.4		46	
2,2,4-Trimethylpentane	540-84-1	114.2	0.20	U	0.93	
Vinyl bromide	593-60-2	106.9	0.20	U	0.87	
Vinyl chloride	75-01-4	62.5	0.20	U	0.51	
Xylene (m,p)	1330-20-7	106.2	1.1		4.9	
Xylene (o)	95-47-6	106.2	3.1		13	
Total Target Compound Volatiles:			76		330	

Surrogate

4-Bromofluorobenzene

<u>Result</u>	<u>Spike</u>	<u>Recovery</u>
11	10	110%

Qualifier Definitions

- U- Compound was analyzed for but not detected at a listed and appropriately adjusted reporting level.
- J- Estimated value reported below adjusted reporting limit for target compounds.
- B- Compound found in associated method blank as well as in the sample.
- D- Compound reported from additional diluted analysis.
- E- Estimated concentration exceeding upper calibration range. Ethanol and isopropyl alcohol are not specifically targeted to dilute within calibration range.

Method Reference

- 1) USEPA: Compendium Method TO-15, "Determination of Volatile Organic Compounds (VOCs) in Air..." Collected in Specially-Prepared Canisters and Analyzed by Gas Chromatography/Mass Spectrometry (GC/MS), January 1999, (EPA/625/R-96/010b).
- 2) NJDEP- SRWM Low Level USEPA Method TO-15 (NJDEP-LLTO-15 -March 2007)



NJDEP Certification #: 03036

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 Phone/Fax: (856)858-4800 / (856)858-4571
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EMSL Order #: **491700685**
 EMSL Sample #: **491700685-0008**
 Customer ID: **MCCA77**
 Customer PO: **17-03279**

Attn: **Chris Slagle**
McCabe Environmental Services, LLC
464 Valley Brook Avenue
Suite 6
Lyndhurst, NJ 07071

Phone: **201-438-4839**
 Fax: **201-438-1798**
 Collected: **7/13/2017**
 Received: **7/17/2017**

Project: **Glen Rock HS IAQ**

Sample ID: **Attendance Office**

Analysis	Analysis Date	Analyst Initials	Lab File ID	Canister ID	Sample Vol(ml)	Dilution Factor
Initial	07/17/2017	MTH	L0304.D	E15321	500	1

Target Compound Results Summary

Target Compounds	CAS#	MW	Result ppbv	Q	Result ug/m3	Comments
Acetone	67-64-1	58.08	11		25	
Allyl chloride	107-05-1	76.53	0.20	U	0.63	
Benzene	71-43-2	78.11	0.20	U	0.64	
Bromodichloromethane	75-27-4	163.8	0.20	U	1.3	
Bromoform	75-25-2	252.8	0.20	U	2.1	
Bromomethane	74-83-9	94.94	0.20	U	0.78	
1,3-Butadiene	106-99-0	54.09	0.20	U	0.44	
n-Butane	106-97-8	58.12	2.0		4.7	
Chlorobenzene	108-90-7	112.6	0.20	U	0.92	
Chloroethane	75-00-3	64.52	0.20	U	0.53	
Chloroform	67-66-3	119.4	0.20	U	1.0	
Chloromethane	74-87-3	50.49	0.56		1.1	
Carbon disulfide	75-15-0	76.14	0.50	U	1.6	
Carbon tetrachloride	56-23-5	153.8	0.20	U	1.3	
2-Chlorotoluene	95-49-8	126.6	0.20	U	1.0	
Cyclohexane	110-82-7	84.16	0.20	U	0.69	
Dibromochloromethane	124-48-1	208.3	0.20	U	1.7	
1,2-Dibromoethane	106-93-4	187.8	0.20	U	1.5	
1,2-Dichlorobenzene	95-50-1	147	0.20	U	1.2	
1,3-Dichlorobenzene	541-73-1	147	0.20	U	1.2	
1,4-Dichlorobenzene	106-46-7	147	0.20	U	1.2	
Dichlorodifluoromethane	75-71-8	120.9	0.25		1.2	
1,1-Dichloroethane	75-34-3	98.96	0.20	U	0.81	
1,2-Dichloroethane	107-06-2	98.96	0.20	U	0.81	
1,1-Dichloroethene	75-35-4	96.94	0.20	U	0.79	
1,2-Dichloroethene (cis)	156-59-2	96.94	0.20	U	0.79	
1,2-Dichloroethene (trans)	156-60-5	96.94	0.20	U	0.79	
1,2-Dichloropropane	78-87-5	113	0.20	U	0.92	
1,3-Dichloropropene (cis)	10061-01-5	111	0.20	U	0.91	
1,3-Dichloropropene (trans)	10061-02-6	111	0.20	U	0.91	
1,2-Dichlorotetrafluoroethane	76-14-2	170.9	0.20	U	1.4	
1,4-Dioxane	123-91-1	88.12	0.50	U	1.8	
Ethanol	64-17-5	46.07	7.7		14	
Ethylbenzene	100-41-4	106.2	0.47		2.0	
4-Ethyltoluene	622-96-8	120.2	4.9		24	
n-Heptane	142-82-5	100.2	0.20	U	0.82	
1,3-Hexachlorobutadiene	87-68-3	260.8	0.20	U	2.1	
n-Hexane	110-54-3	86.17	0.20	U	0.70	
Isopropanol	67-63-0	60.1	3.8		9.4	
Methylene chloride	75-09-2	84.94	0.46		1.6	
Methyl ethyl ketone	78-93-3	72.1	0.85		2.5	
Methyl isobutyl ketone	108-10-1	100.2	0.20	U	0.82	
Methyl methacrylate	80-62-6	100.12	0.20	U	0.82	
Naphthalene	91-20-3	128.17	0.20	U	1.0	
Methyl tert-butyl ether	1634-04-4	88.15	0.20	U	0.72	

**EMSL Analytical**

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 Phone/Fax: (856)858-4800 / (856)858-4571
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EMSL Order #: **491700685**
 EMSL Sample #: **491700685-0008**
 Customer ID: **MCCA77**
 Customer PO: **17-03279**

Attn: **Chris Slagle**
McCabe Environmental Services, LLC
464 Valley Brook Avenue
Suite 6
Lyndhurst, NJ 07071

Phone: **201-438-4839**
 Fax: **201-438-1798**
 Collected: **7/13/2017**
 Received: **7/17/2017**

Project: **Glen Rock HS IAQ**

Sample ID: **Attendance Office**

Analysis	Analysis Date	Analyst Initials	Lab File ID	Canister ID	Sample Vol(ml)	Dilution Factor
Initial	07/17/2017	MTH	L0304.D	E15321	500	1

Target Compound Results Summary

Target Compounds	CAS#	MW	Result ppbv	Q	Result ug/m3	Comments
Styrene	100-42-5	104.1	0.31		1.3	
Tert-butyl alcohol	75-65-0	74.12	0.20	U	0.61	
1,1,2,2-Tetrachloroethane	79-34-5	167.9	0.20	U	1.4	
Tetrachloroethene	127-18-4	165.8	0.20	U	1.4	
Tetrahydrofuran	109-99-9	72.11	0.20	U	0.59	
Toluene	108-88-3	92.14	0.64		2.4	
1,2,4-Trichlorobenzene	120-82-1	181.5	0.20	U	1.5	
1,1,1-Trichloroethane	71-55-6	133.4	0.20	U	1.1	
1,1,2-Trichloroethane	79-00-5	133.4	0.20	U	1.1	
Trichloroethene	79-01-6	131.4	0.20	U	1.1	
Trichlorofluoromethane	75-69-4	137.4	1.2		7.0	
1,1,2-Trichloro-1,2,2-trifluoroethane	76-13-1	187.4	0.20	U	1.5	
1,2,4-Trimethylbenzene	95-63-6	120.2	6.6		32	
1,3,5-Trimethylbenzene	108-67-8	120.2	2.4		12	
2,2,4-Trimethylpentane	540-84-1	114.2	0.20	U	0.93	
Vinyl bromide	593-60-2	106.9	0.20	U	0.87	
Vinyl chloride	75-01-4	62.5	0.20	U	0.51	
Xylene (m,p)	1330-20-7	106.2	1.5		6.5	
Xylene (o)	95-47-6	106.2	1.4		6.1	
Total Target Compound Volatiles:			46		150	

Surrogate

4-Bromofluorobenzene

Result

9.7

Spike

10

Recovery

97%

Qualifier Definitions

- U- Compound was analyzed for but not detected at a listed and appropriately adjusted reporting level.
- J- Estimated value reported below adjusted reporting limit for target compounds.
- B- Compound found in associated method blank as well as in the sample.
- D- Compound reported from additional diluted analysis.
- E- Estimated concentration exceeding upper calibration range. Ethanol and isopropyl alcohol are not specifically targeted to dilute within calibration range.

Method Reference

- 1) USEPA: Compendium Method TO-15, "Determination of Volatile Organic Compounds (VOCs) in Air..." Collected in Specially-Prepared Canisters and Analyzed by Gas Chromatography/Mass Spectrometry (GC/MS), January 1999, (EPA/625/R-96/010b).
- 2) NJDEP- SRWM Low Level USEPA Method TO-15 (NJDEP-LLTO-15 -March 2007)



NJDEP Certification #: 03036

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200 Route 130 North, Cinnaminson, NJ 08077
 Phone/Fax: (856)858-4800 / (856)858-4571
<http://www.EMSL.com> to15lab@EMSL.com

EMSL Order #: **491700685**
 EMSL Sample #: **491700685-0009**
 Customer ID: **MCCA77**
 Customer PO: **17-03279**

Attn: **Chris Slagle**
McCabe Environmental Services, LLC
464 Valley Brook Avenue
Suite 6
Lyndhurst, NJ 07071

Phone: **201-438-4839**
 Fax: **201-438-1798**
 Collected: **7/13/2017**
 Received: **7/17/2017**

Project: **Glen Rock HS IAQ**

Sample ID: **Outside Roof**

Analysis	Analysis Date	Analyst Initials	Lab File ID	Canister ID	Sample Vol(ml)	Dilution Factor
Initial	07/17/2017	MTH	L0306.D	E15273	500	1

Target Compound Results Summary

Target Compounds	CAS#	MW	Result ppbv	Q	Result ug/m3	Comments
Acetone	67-64-1	58.08	4.2		10	
Allyl chloride	107-05-1	76.53	0.20	U	0.63	
Benzene	71-43-2	78.11	0.20	U	0.64	
Bromodichloromethane	75-27-4	163.8	0.20	U	1.3	
Bromoform	75-25-2	252.8	0.20	U	2.1	
Bromomethane	74-83-9	94.94	0.20	U	0.78	
1,3-Butadiene	106-99-0	54.09	0.20	U	0.44	
n-Butane	106-97-8	58.12	0.58		1.4	
Chlorobenzene	108-90-7	112.6	0.20	U	0.92	
Chloroethane	75-00-3	64.52	0.20	U	0.53	
Chloroform	67-66-3	119.4	0.20	U	1.0	
Chloromethane	74-87-3	50.49	0.55		1.1	
Carbon disulfide	75-15-0	76.14	0.50	U	1.6	
Carbon tetrachloride	56-23-5	153.8	0.20	U	1.3	
2-Chlorotoluene	95-49-8	126.6	0.20	U	1.0	
Cyclohexane	110-82-7	84.16	0.20	U	0.69	
Dibromochloromethane	124-48-1	208.3	0.20	U	1.7	
1,2-Dibromoethane	106-93-4	187.8	0.20	U	1.5	
1,2-Dichlorobenzene	95-50-1	147	0.20	U	1.2	
1,3-Dichlorobenzene	541-73-1	147	0.20	U	1.2	
1,4-Dichlorobenzene	106-46-7	147	0.20	U	1.2	
Dichlorodifluoromethane	75-71-8	120.9	0.20	U	1.0	
1,1-Dichloroethane	75-34-3	98.96	0.20	U	0.81	
1,2-Dichloroethane	107-06-2	98.96	0.20	U	0.81	
1,1-Dichloroethene	75-35-4	96.94	0.20	U	0.79	
1,2-Dichloroethene (cis)	156-59-2	96.94	0.20	U	0.79	
1,2-Dichloroethene (trans)	156-60-5	96.94	0.20	U	0.79	
1,2-Dichloropropane	78-87-5	113	0.20	U	0.92	
1,3-Dichloropropene (cis)	10061-01-5	111	0.20	U	0.91	
1,3-Dichloropropene (trans)	10061-02-6	111	0.20	U	0.91	
1,2-Dichlorotetrafluoroethane	76-14-2	170.9	0.20	U	1.4	
1,4-Dioxane	123-91-1	88.12	0.50	U	1.8	
Ethanol	64-17-5	46.07	3.8		7.2	
Ethylbenzene	100-41-4	106.2	0.20	U	0.87	
4-Ethyltoluene	622-96-8	120.2	0.20	U	1.0	
n-Heptane	142-82-5	100.2	0.20	U	0.82	
1,3-Hexachlorobutadiene	87-68-3	260.8	0.20	U	2.1	
n-Hexane	110-54-3	86.17	0.20	U	0.70	
Isopropanol	67-63-0	60.1	2.7		6.6	
Methylene chloride	75-09-2	84.94	0.25		0.89	
Methyl ethyl ketone	78-93-3	72.1	0.42		1.2	
Methyl isobutyl ketone	108-10-1	100.2	0.20	U	0.82	
Methyl methacrylate	80-62-6	100.12	0.20	U	0.82	
Naphthalene	91-20-3	128.17	0.20	U	1.0	
Methyl tert-butyl ether	1634-04-4	88.15	0.20	U	0.72	

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Suite 6
Lyndhurst, NJ 07071

Phone: **201-438-4839**
 Fax: **201-438-1798**
 Collected: **7/13/2017**
 Received: **7/17/2017**

Project: **Glen Rock HS IAQ**

Sample ID: **Outside Roof**

Analysis	Analysis Date	Analyst Initials	Lab File ID	Canister ID	Sample Vol(ml)	Dilution Factor
Initial	07/17/2017	MTH	L0306.D	E15273	500	1

Target Compound Results Summary

Target Compounds	CAS#	MW	Result ppbv	Q	Result ug/m3	Comments
Styrene	100-42-5	104.1	0.20	U	0.85	
Tert-butyl alcohol	75-65-0	74.12	0.20	U	0.61	
1,1,2,2-Tetrachloroethane	79-34-5	167.9	0.20	U	1.4	
Tetrachloroethene	127-18-4	165.8	0.20	U	1.4	
Tetrahydrofuran	109-99-9	72.11	0.20	U	0.59	
Toluene	108-88-3	92.14	0.20	U	0.75	
1,2,4-Trichlorobenzene	120-82-1	181.5	0.20	U	1.5	
1,1,1-Trichloroethane	71-55-6	133.4	0.20	U	1.1	
1,1,2-Trichloroethane	79-00-5	133.4	0.20	U	1.1	
Trichloroethene	79-01-6	131.4	0.20	U	1.1	
Trichlorofluoromethane	75-69-4	137.4	0.27		1.5	
1,1,2-Trichloro-1,2,2-trifluoroethane	76-13-1	187.4	0.20	U	1.5	
1,2,4-Trimethylbenzene	95-63-6	120.2	0.25		1.2	
1,3,5-Trimethylbenzene	108-67-8	120.2	0.20	U	1.0	
2,2,4-Trimethylpentane	540-84-1	114.2	0.20	U	0.93	
Vinyl bromide	593-60-2	106.9	0.20	U	0.87	
Vinyl chloride	75-01-4	62.5	0.20	U	0.51	
Xylene (m,p)	1330-20-7	106.2	0.40	U	1.7	
Xylene (o)	95-47-6	106.2	0.20	U	0.87	
Total Target Compound Volatiles:			13		31	

Surrogate

4-Bromofluorobenzene

Result

9.0

Spike

10

Recovery

90%

Qualifier Definitions

U- Compound was analyzed for but not detected at a listed and appropriately adjusted reporting level.

J- Estimated value reported below adjusted reporting limit for target compounds.

B- Compound found in associated method blank as well as in the sample.

D- Compound reported from additional diluted analysis.

E- Estimated concentration exceeding upper calibration range. Ethanol and isopropyl alcohol are not specifically targeted to dilute within calibration range.

Method Reference

1) USEPA: Compendium Method TO-15, "Determination of Volatile Organic Compounds (VOCs) in Air..." Collected in Specially-Prepared Canisters and Analyzed by Gas Chromatography/Mass Spectrometry (GC/MS), January 1999, (EPA/625/R-96/010b).

2) NJDEP- SRWM Low Level USEPA Method TO-15 (NJDEP-LLTO-15 -March 2007)



NJDEP Certification #: 03036



USEPA TO-15

EMSL Analytical, Inc.
200 Route 130 North
Cinnaminson, NJ 08077
Ph. (800) 220-3878
Fax (856) 786-0327

External Chain of Custody/ Field Test Data Sheet

EMSL Order Number (Lab Use Only): 491700685

Report To Contact Name: Chris Stagle
Company Name: McCabe Environmental
Address 1: 1464 Valley Brook Ave
Address 2: Lyndhurst, NJ 07031
Phone No.: 201-438-4834
Fax:
Email Results To: cstagle@mcabeenv.com

Sampled By (Sign): Chris Stagle
Sampled By (Name): Chris Stagle
Total # of Samples: 8
Date Shipped: 6-30-17
Sample Collection Zip Code: 08077
Purchase Order: 17-03279

Turnaround Time (in Business Days):
5 Day
4 Day
3 Day
2 Day
1 Day
Other

Reporting Format:
Full Deliverables (Surcharge may apply)
Other
Results Only (Standard Lab Report)

Field Use - All Information Required!

Table with columns: Client Field Sample Identification, Sampling Start Information, Sampling Stop Information, Canister Information, Flow Controller, Analysis, Matrix. Includes rows for Outside Roof, Principals Office, Room D212, Media Center, Nurses Office, Media Center, Media Center, and Attendance Office.

Comments:
Relinquished by:
Received by:
Date/Time:
Affixed Seal #
Lab Canister Certification
Analyst Signature (TO-15): M. Hourly

EMSL Sample Identifier
Certified Document - Ref: 1012894
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