



**TTI ENVIRONMENTAL, INC.**  
Consulting & Contracting

1253 North Church Street, Moorestown, NJ 08057  
www.ttienv.com o 856-840-8800 f 856-840-8815

January 12, 2018

Dr. Cheryl Stevenson, Ed.D.  
Acting Superintendent  
Pinelands Regional School District  
520 Nugentown Road  
Little Egg Harbor, NJ 08087

Re: Indoor Air Quality Testing  
Pinelands Regional High School  
TTI Project 17-1224

Dear Dr. Stevenson:

TTI Environmental, Inc. is pleased to present this summary and results from the latest indoor air quality monitoring performed at Pinelands Regional High School.

As part of the re-occupancy plan TTI performed a building flush out which consisted of the installation of temporary air movers, operating the current mechanicals, and maintaining interior conditions. The building flush out began following the completion of the construction work which ended on December 19, 2017. It is estimated that approximately 180 total air exchanges occurred during the flushing process. After completion of the flush out TTI allowed the building to re-stabilize prior to the collection of the indoor air quality samples. Seven (7) volatile organic air samples were collected throughout the school building. The samples were collected in the following rooms/areas: 164, 167, 147, 106, 205, Upper Media and 306. In addition to the collection of the volatile organic TTI also collected CO, CO<sub>2</sub>, Humidity, Temperature and Volatile Organics via direct reading handheld instruments.

The table below summarizes the detectable results from the seven samples collected along with various health criteria. In addition, none of the direct reading instruments revealed any elevation or concern.



Results	CAS	ppm	OSHA PEL ppm	NIOSH REL ppm	ACGIH TLV ppm
Ethanol	64175	0.0088	1000	1000	1000
Isopropyl alcohol(2-Propanol)	67630	0.0056	400	400	200
Acetone	67641	0.0023	1000	250	250
Benzene	71432	ND	1	0.1	10
Chloromethane	74873	0.0006	25	-	50
Freon 11(Trichlorofluoromethane)	75694	ND	1000	1000	1000
Freon 12(Dichlorodifluoromethane)	75718	0.0006	1000	1000	1000
2-Butanone	78933	0.0008	200	200	200
Naphthalene	91203	ND	10	10	10
Xylene (Ortho)	95476	ND	100	100	100
1,2,4-Trimethylbenzene	95636	0.0006	-	25	25
1,2-Dichlorobenzene	95501	0.0008	50	50	25
Isopropylbenzene (cumene)	98828	ND	50	50	50
Ethylbenzene	100414	ND	-	-	-
Styrene	100425	ND	100	50	20
n-Butane	106978	0.0007	-	1000	800
1,3,5-Trimethylbenzene	108678	ND	-	25	25
Toluene	108883	0.0010	200	100	20
n-Hexane	110543	ND	500	50	50
Cyclohexane	110827	ND	300	300	300
Propylene	115071	ND	-	-	-
n-Heptane	142825	ND	500	85	400
Ethyl acetate	141786	0.0010	400	400	400
2,2,4-Trimethylpentane(Isooctane)	540841	ND	300	75	300
4-Ethyltoluene	622968	0.0005	-	-	-
1,4-Dichlorobenzene	106467	ND	75	75	
Xylene (p,m)	1330207	0.0011	-	150	150

OSHA PEL Occupational Health & Safety Administration Permissible Exposure Limit  
 NIOSH REL National Institute of Occupational Safety & Health Recommended Exposure Limit  
 ACGIH TLV American Conference of Governmental Industrial Hygienists Threshold Limit Values

TTI has evaluated the results and can confirm that none of the target compounds exceeded limits for health consideration set by OSHA, NIOSH, and the ACGIH. TTI recommends that the building can be re-occupied.

We appreciate the opportunity to assist with your IAQ concerns. If you should have any questions or require additional information, please feel free to contact me directly.

Sincerely,

**TTI ENVIRONMENTAL, INC.**

Timothy Popp  
 Vice President of Consulting

Attachment: Analytical Results



**ATTACHMENT: ANALYTICAL RESULTS**

**EMSL Analytical**

200 Route 130 North, Cinnaminson, NJ 08077

Phone/Fax: (856)858-4800 / (856)858-4571

<http://www.EMSL.com> [to15lab@EMSL.com](mailto:to15lab@EMSL.com)EMSL Order #: **491800016**Customer ID: **TTIE54**Customer PO: **24258**Attn: **Jim Guilardi**  
**TTI Environmental Inc.**  
**1253 North Church Street**  
**Moorestown, NJ 08057**Phone: **856-840-8800**Fax: **856-840-8815**Project: **17-1224 / Pinelands Regional**Date Collected: **1/7/2018**Date Received: **1/8/2018****Laboratory Report- Sample Summary**

EMSL Sample ID.	Client Sample ID.	Start Sampling Date	Start Sampling Time
491800016-0001	Room 164	1/7/2018	11:26 AM
491800016-0002	Room 167	1/7/2018	11:36 AM
491800016-0003	Room 147	1/7/2018	11:45 AM
491800016-0004	Room 106	1/7/2018	11:52 AM
491800016-0005	Room 205	1/7/2018	12:04 PM
491800016-0006	Uppper Media	1/7/2018	12:11 PM
491800016-0007	Room 306	1/7/2018	12:20 PM
491800016-0008	Outside	1/7/2018	12:40 PM

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:  
**1/10/2018**Report Revision  
R0Revision Comments  
Initial Report**Marjorie Howley, Laboratory Manager**  
or other approved signatory**Test results meet all NELAP requirements unless otherwise specified.**

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EMSL Order #: **491800016**  
 EMSL Sample #: **491800016-1**  
 Customer ID: **TTIE54**  
 Customer PO: **24258**

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**1253 North Church Street**  
**Moorestown, NJ 08057**

Phone: **856-840-8800**  
 Fax: **856-840-8815**  
 Date Collected: **1/7/2018**  
 Date Received: **1/8/2018**

Project: **17-1224 / Pinelands Regional**Sample ID: **Room 164**

<u>Analysis</u>	<u>Analysis Date</u>	<u>Analyst Init.</u>	<u>Lab File ID</u>	<u>Canister ID</u>	<u>Sample Vol.</u>	<u>Dil. Factor</u>
Initial	01/09/2018	TP	P1938.D	E0307	250 cc	1

**Target Compound Results Summary**

Target Compounds	CAS#	MW	Result ppbv	RL ppbv	Q	Result ug/m3	RL ug/m3	Comments
Propylene	115-07-1	42.08	ND	1.0		ND	1.7	
Freon 12(Dichlorodifluoromethane)	75-71-8	120.9	ND	0.50		ND	2.5	
Freon 114(1,2-Dichlorotetrafluoroethan	76-14-2	170.9	ND	0.50		ND	3.5	
Chloromethane	74-87-3	50.49	0.51	0.50		1.1	1.0	
n-Butane	106-97-8	58.12	0.67	0.50		1.6	1.2	
Vinyl chloride	75-01-4	62.50	ND	0.50		ND	1.3	
1,3-Butadiene	106-99-0	54.09	ND	0.50		ND	1.1	
Bromomethane	74-83-9	94.94	ND	0.50		ND	1.9	
Chloroethane	75-00-3	64.52	ND	0.50		ND	1.3	
Ethanol	64-17-5	46.07	8.8	0.50		17	0.94	
Bromoethene(Vinyl bromide)	593-60-2	106.9	ND	0.50		ND	2.2	
Freon 11(Trichlorofluoromethane)	75-69-4	137.4	ND	0.50		ND	2.8	
Isopropyl alcohol(2-Propanol)	67-63-0	60.10	1.9	0.50		4.8	1.2	
Freon 113(1,1,2-Trichlorotrifluoroethan	76-13-1	187.4	ND	0.50		ND	3.8	
Acetone	67-64-1	58.08	2.3	0.50		5.3	1.2	
1,1-Dichloroethene	75-35-4	96.94	ND	0.50		ND	2.0	
Acetonitrile	75-05-8	41.00	ND	0.50		ND	0.84	
Tertiary butyl alcohol(TBA)	75-65-0	74.12	ND	0.50		ND	1.5	
Bromoethane(Ethyl bromide)	74-96-4	108.0	ND	0.50		ND	2.2	
3-Chloropropene(Allyl chloride)	107-05-1	76.53	ND	0.50		ND	1.6	
Carbon disulfide	75-15-0	76.14	ND	0.50		ND	1.6	
Methylene chloride	75-09-2	84.94	ND	0.50		ND	1.7	
Acrylonitrile	107-13-1	53.00	ND	0.50		ND	1.1	
Methyl-tert-butyl ether(MTBE)	1634-04-4	88.15	ND	0.50		ND	1.8	
trans-1,2-Dichloroethene	156-60-5	96.94	ND	0.50		ND	2.0	
n-Hexane	110-54-3	86.17	ND	0.50		ND	1.8	
1,1-Dichloroethane	75-34-3	98.96	ND	0.50		ND	2.0	
Vinyl acetate	108-05-4	86.00	ND	0.50		ND	1.8	
2-Butanone(MEK)	78-93-3	72.10	0.76	0.50		2.2	1.5	
cis-1,2-Dichloroethene	156-59-2	96.94	ND	0.50		ND	2.0	
Ethyl acetate	141-78-6	88.10	ND	0.50		ND	1.8	
Chloroform	67-66-3	119.4	ND	0.50		ND	2.4	
Tetrahydrofuran	109-99-9	72.11	ND	0.50		ND	1.5	
1,1,1-Trichloroethane	71-55-6	133.4	ND	0.50		ND	2.7	
Cyclohexane	110-82-7	84.16	ND	0.50		ND	1.7	
2,2,4-Trimethylpentane(Isooctane)	540-84-1	114.2	ND	0.50		ND	2.3	
Carbon tetrachloride	56-23-5	153.8	ND	0.50		ND	3.1	
n-Heptane	142-82-5	100.2	ND	0.50		ND	2.0	
1,2-Dichloroethane	107-06-2	98.96	ND	0.50		ND	2.0	
Benzene	71-43-2	78.11	ND	0.50		ND	1.6	
Trichloroethene	79-01-6	131.4	ND	0.50		ND	2.7	
1,2-Dichloropropane	78-87-5	113.0	ND	0.50		ND	2.3	
Methyl Methacrylate	80-62-6	100.12	ND	0.50		ND	2.0	
Bromodichloromethane	75-27-4	163.8	ND	0.50		ND	3.3	
1,4-Dioxane	123-91-1	88.12	ND	0.50		ND	1.8	
4-Methyl-2-pentanone(MIBK)	108-10-1	100.2	ND	0.50		ND	2.0	

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EMSL Order #: **491800016**  
 EMSL Sample #: **491800016-1**  
 Customer ID: **TTIE54**  
 Customer PO: **24258**

Attn: **Jim Guilardi**  
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**1253 North Church Street**  
**Moorestown, NJ 08057**

Phone: **856-840-8800**  
 Fax: **856-840-8815**  
 Date Collected: **1/7/2018**  
 Date Received: **1/8/2018**

Project: **17-1224 / Pinelands Regional**

Sample ID: **Room 164**

Analysis	Analysis Date	Analyst Init.	Lab File ID	Canister ID	Sample Vol.	Dil. Factor
Initial	01/09/2018	TP	P1938.D	E0307	250 cc	1

**Target Compound Results Summary**

Target Compounds	CAS#	MW	Result ppbv	RL ppbv	Q	Result ug/m3	RL ug/m3	Comments
cis-1,3-Dichloropropene	10061-01-5	111.0	ND	0.50		ND	2.3	
Toluene	108-88-3	92.14	0.90	0.50		3.4	1.9	
trans-1,3-Dichloropropene	10061-02-6	111.0	ND	0.50		ND	2.3	
1,1,2-Trichloroethane	79-00-5	133.4	ND	0.50		ND	2.7	
2-Hexanone(MBK)	591-78-6	100.1	ND	0.50		ND	2.0	
Tetrachloroethene	127-18-4	165.8	ND	0.50		ND	3.4	
Dibromochloromethane	124-48-1	208.3	ND	0.50		ND	4.3	
1,2-Dibromoethane	106-93-4	187.8	ND	0.50		ND	3.8	
Chlorobenzene	108-90-7	112.6	ND	0.50		ND	2.3	
Ethylbenzene	100-41-4	106.2	ND	0.50		ND	2.2	
Xylene (p,m)	1330-20-7	106.2	1.1	1.0		4.7	4.3	
Xylene (Ortho)	95-47-6	106.2	ND	0.50		ND	2.2	
Styrene	100-42-5	104.1	ND	0.50		ND	2.1	
Isopropylbenzene (cumene)	98-82-8	120.19	ND	0.50		ND	2.5	
Bromoform	75-25-2	252.8	ND	0.50		ND	5.2	
1,1,2,2-Tetrachloroethane	79-34-5	167.9	ND	0.50		ND	3.4	
4-Ethyltoluene	622-96-8	120.2	0.52	0.50		2.5	2.5	
1,3,5-Trimethylbenzene	108-67-8	120.2	ND	0.50		ND	2.5	
2-Chlorotoluene	95-49-8	126.6	ND	0.50		ND	2.6	
1,2,4-Trimethylbenzene	95-63-6	120.2	0.59	0.50		2.9	2.5	
1,3-Dichlorobenzene	541-73-1	147.0	ND	0.50		ND	3.0	
1,4-Dichlorobenzene	106-46-7	147.0	ND	0.50		ND	3.0	
Benzyl chloride	100-44-7	126.0	ND	0.50		ND	2.6	
1,2-Dichlorobenzene	95-50-1	147.0	ND	0.50		ND	3.0	
1,2,4-Trichlorobenzene	120-82-1	181.5	ND	0.50		ND	3.7	
Hexachloro-1,3-butadiene	87-68-3	260.8	ND	0.50		ND	5.3	
Naphthalene	91-20-3	128.17	ND	0.50		ND	2.6	
<b>Total Target Compound Concentrations:</b>			<b>18</b>	<b>ppbv</b>		<b>46</b>	<b>ug/m3</b>	

**Surrogate**

4-Bromofluorobenzene

Result

9.7

Spike

10

Recovery

97%

**Qualifier Definitions**

**ND = Non Detect**

B = Compound also found in method blank.

E= Estimated concentration exceeding upper calibration range.

D= Result reported from diluted analysis.

**Method Reference**

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).

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EMSL Order #: **491800016**  
 EMSL Sample #: **491800016-2**  
 Customer ID: **TTIE54**  
 Customer PO: **24258**

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**Moorestown, NJ 08057**

Phone: **856-840-8800**  
 Fax: **856-840-8815**  
 Date Collected: **1/7/2018**  
 Date Received: **1/8/2018**

Project: **17-1224 / Pinelands Regional**

Sample ID: **Room 167**

Analysis	Analysis Date	Analyst Init.	Lab File ID	Canister ID	Sample Vol.	Dil. Factor
Initial	01/09/2018	TP	P1939.D	E0393	250 cc	1

**Target Compound Results Summary**

Target Compounds	CAS#	MW	Result ppbv	RL ppbv	Q	Result ug/m3	RL ug/m3	Comments
Propylene	115-07-1	42.08	ND	1.0		ND	1.7	
Freon 12(Dichlorodifluoromethane)	75-71-8	120.9	ND	0.50		ND	2.5	
Freon 114(1,2-Dichlorotetrafluoroethan	76-14-2	170.9	ND	0.50		ND	3.5	
Chloromethane	74-87-3	50.49	0.55	0.50		1.1	1.0	
n-Butane	106-97-8	58.12	0.71	0.50		1.7	1.2	
Vinyl chloride	75-01-4	62.50	ND	0.50		ND	1.3	
1,3-Butadiene	106-99-0	54.09	ND	0.50		ND	1.1	
Bromomethane	74-83-9	94.94	ND	0.50		ND	1.9	
Chloroethane	75-00-3	64.52	ND	0.50		ND	1.3	
Ethanol	64-17-5	46.07	8.3	0.50		16	0.94	
Bromoethene(Vinyl bromide)	593-60-2	106.9	ND	0.50		ND	2.2	
Freon 11(Trichlorofluoromethane)	75-69-4	137.4	ND	0.50		ND	2.8	
Isopropyl alcohol(2-Propanol)	67-63-0	60.10	1.9	0.50		4.7	1.2	
Freon 113(1,1,2-Trichlorotrifluoroethan	76-13-1	187.4	ND	0.50		ND	3.8	
Acetone	67-64-1	58.08	2.3	0.50		5.4	1.2	
1,1-Dichloroethene	75-35-4	96.94	ND	0.50		ND	2.0	
Acetonitrile	75-05-8	41.00	ND	0.50		ND	0.84	
Tertiary butyl alcohol(TBA)	75-65-0	74.12	ND	0.50		ND	1.5	
Bromoethane(Ethyl bromide)	74-96-4	108.0	ND	0.50		ND	2.2	
3-Chloropropene(Allyl chloride)	107-05-1	76.53	ND	0.50		ND	1.6	
Carbon disulfide	75-15-0	76.14	ND	0.50		ND	1.6	
Methylene chloride	75-09-2	84.94	ND	0.50		ND	1.7	
Acrylonitrile	107-13-1	53.00	ND	0.50		ND	1.1	
Methyl-tert-butyl ether(MTBE)	1634-04-4	88.15	ND	0.50		ND	1.8	
trans-1,2-Dichloroethene	156-60-5	96.94	ND	0.50		ND	2.0	
n-Hexane	110-54-3	86.17	ND	0.50		ND	1.8	
1,1-Dichloroethane	75-34-3	98.96	ND	0.50		ND	2.0	
Vinyl acetate	108-05-4	86.00	ND	0.50		ND	1.8	
2-Butanone(MEK)	78-93-3	72.10	ND	0.50		ND	1.5	
cis-1,2-Dichloroethene	156-59-2	96.94	ND	0.50		ND	2.0	
Ethyl acetate	141-78-6	88.10	ND	0.50		ND	1.8	
Chloroform	67-66-3	119.4	ND	0.50		ND	2.4	
Tetrahydrofuran	109-99-9	72.11	ND	0.50		ND	1.5	
1,1,1-Trichloroethane	71-55-6	133.4	ND	0.50		ND	2.7	
Cyclohexane	110-82-7	84.16	ND	0.50		ND	1.7	
2,2,4-Trimethylpentane(Isooctane)	540-84-1	114.2	ND	0.50		ND	2.3	
Carbon tetrachloride	56-23-5	153.8	ND	0.50		ND	3.1	
n-Heptane	142-82-5	100.2	ND	0.50		ND	2.0	
1,2-Dichloroethane	107-06-2	98.96	ND	0.50		ND	2.0	
Benzene	71-43-2	78.11	ND	0.50		ND	1.6	
Trichloroethene	79-01-6	131.4	ND	0.50		ND	2.7	
1,2-Dichloropropane	78-87-5	113.0	ND	0.50		ND	2.3	
Methyl Methacrylate	80-62-6	100.12	ND	0.50		ND	2.0	
Bromodichloromethane	75-27-4	163.8	ND	0.50		ND	3.3	
1,4-Dioxane	123-91-1	88.12	ND	0.50		ND	1.8	
4-Methyl-2-pentanone(MIBK)	108-10-1	100.2	ND	0.50		ND	2.0	

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Project: **17-1224 / Pinelands Regional**

Sample ID: **Room 167**

Analysis	Analysis Date	Analyst Init.	Lab File ID	Canister ID	Sample Vol.	Dil. Factor
Initial	01/09/2018	TP	P1939.D	E0393	250 cc	1

**Target Compound Results Summary**

Target Compounds	CAS#	MW	Result ppbv	RL ppbv	Q	Result ug/m3	RL ug/m3	Comments
cis-1,3-Dichloropropene	10061-01-5	111.0	ND	0.50		ND	2.3	
Toluene	108-88-3	92.14	0.97	0.50		3.7	1.9	
trans-1,3-Dichloropropene	10061-02-6	111.0	ND	0.50		ND	2.3	
1,1,2-Trichloroethane	79-00-5	133.4	ND	0.50		ND	2.7	
2-Hexanone(MBK)	591-78-6	100.1	ND	0.50		ND	2.0	
Tetrachloroethene	127-18-4	165.8	ND	0.50		ND	3.4	
Dibromochloromethane	124-48-1	208.3	ND	0.50		ND	4.3	
1,2-Dibromoethane	106-93-4	187.8	ND	0.50		ND	3.8	
Chlorobenzene	108-90-7	112.6	ND	0.50		ND	2.3	
Ethylbenzene	100-41-4	106.2	ND	0.50		ND	2.2	
Xylene (p,m)	1330-20-7	106.2	1.1	1.0		4.6	4.3	
Xylene (Ortho)	95-47-6	106.2	ND	0.50		ND	2.2	
Styrene	100-42-5	104.1	ND	0.50		ND	2.1	
Isopropylbenzene (cumene)	98-82-8	120.19	ND	0.50		ND	2.5	
Bromoform	75-25-2	252.8	ND	0.50		ND	5.2	
1,1,2,2-Tetrachloroethane	79-34-5	167.9	ND	0.50		ND	3.4	
4-Ethyltoluene	622-96-8	120.2	ND	0.50		ND	2.5	
1,3,5-Trimethylbenzene	108-67-8	120.2	ND	0.50		ND	2.5	
2-Chlorotoluene	95-49-8	126.6	ND	0.50		ND	2.6	
1,2,4-Trimethylbenzene	95-63-6	120.2	ND	0.50		ND	2.5	
1,3-Dichlorobenzene	541-73-1	147.0	ND	0.50		ND	3.0	
1,4-Dichlorobenzene	106-46-7	147.0	ND	0.50		ND	3.0	
Benzyl chloride	100-44-7	126.0	ND	0.50		ND	2.6	
1,2-Dichlorobenzene	95-50-1	147.0	ND	0.50		ND	3.0	
1,2,4-Trichlorobenzene	120-82-1	181.5	ND	0.50		ND	3.7	
Hexachloro-1,3-butadiene	87-68-3	260.8	ND	0.50		ND	5.3	
Naphthalene	91-20-3	128.17	ND	0.50		ND	2.6	
<b>Total Target Compound Concentrations:</b>			<b>16</b>	<b>ppbv</b>		<b>37</b>	<b>ug/m3</b>	

**Surrogate**

4-Bromofluorobenzene

Result

10

Spike

10

Recovery

100%

**Qualifier Definitions**

**ND = Non Detect**

B = Compound also found in method blank.

E= Estimated concentration exceeding upper calibration range.

D= Result reported from diluted analysis.

**Method Reference**

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).



**EMSL Analytical**

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

EMSL Order #: **491800016**  
 EMSL Sample #: **491800016-3**  
 Customer ID: **TTIE54**  
 Customer PO: **24258**

Attn: **Jim Guilardi**  
**TTI Environmental Inc.**  
**1253 North Church Street**  
**Moorestown, NJ 08057**

Phone: **856-840-8800**  
 Fax: **856-840-8815**  
 Date Collected: **1/7/2018**  
 Date Received: **1/8/2018**

Project: **17-1224 / Pinelands Regional**

Sample ID: **Room 147**

Analysis	Analysis Date	Analyst Init.	Lab File ID	Canister ID	Sample Vol.	Dil. Factor
Initial	01/09/2018	TP	P1940.D	E0474	250 cc	1

**Target Compound Results Summary**

Target Compounds	CAS#	MW	Result ppbv	RL ppbv	Q	Result ug/m3	RL ug/m3	Comments
Propylene	115-07-1	42.08	ND	1.0		ND	1.7	
Freon 12(Dichlorodifluoromethane)	75-71-8	120.9	0.52	0.50		2.6	2.5	
Freon 114(1,2-Dichlorotetrafluoroethan	76-14-2	170.9	ND	0.50		ND	3.5	
Chloromethane	74-87-3	50.49	0.50	0.50		1.0	1.0	
n-Butane	106-97-8	58.12	0.55	0.50		1.3	1.2	
Vinyl chloride	75-01-4	62.50	ND	0.50		ND	1.3	
1,3-Butadiene	106-99-0	54.09	ND	0.50		ND	1.1	
Bromomethane	74-83-9	94.94	ND	0.50		ND	1.9	
Chloroethane	75-00-3	64.52	ND	0.50		ND	1.3	
Ethanol	64-17-5	46.07	4.0	0.50		7.5	0.94	
Bromoethene(Vinyl bromide)	593-60-2	106.9	ND	0.50		ND	2.2	
Freon 11(Trichlorofluoromethane)	75-69-4	137.4	ND	0.50		ND	2.8	
Isopropyl alcohol(2-Propanol)	67-63-0	60.10	2.5	0.50		6.2	1.2	
Freon 113(1,1,2-Trichlorotrifluoroethan	76-13-1	187.4	ND	0.50		ND	3.8	
Acetone	67-64-1	58.08	1.9	0.50		4.6	1.2	
1,1-Dichloroethene	75-35-4	96.94	ND	0.50		ND	2.0	
Acetonitrile	75-05-8	41.00	ND	0.50		ND	0.84	
Tertiary butyl alcohol(TBA)	75-65-0	74.12	ND	0.50		ND	1.5	
Bromoethane(Ethyl bromide)	74-96-4	108.0	ND	0.50		ND	2.2	
3-Chloropropene(Allyl chloride)	107-05-1	76.53	ND	0.50		ND	1.6	
Carbon disulfide	75-15-0	76.14	ND	0.50		ND	1.6	
Methylene chloride	75-09-2	84.94	ND	0.50		ND	1.7	
Acrylonitrile	107-13-1	53.00	ND	0.50		ND	1.1	
Methyl-tert-butyl ether(MTBE)	1634-04-4	88.15	ND	0.50		ND	1.8	
trans-1,2-Dichloroethene	156-60-5	96.94	ND	0.50		ND	2.0	
n-Hexane	110-54-3	86.17	ND	0.50		ND	1.8	
1,1-Dichloroethane	75-34-3	98.96	ND	0.50		ND	2.0	
Vinyl acetate	108-05-4	86.00	ND	0.50		ND	1.8	
2-Butanone(MEK)	78-93-3	72.10	ND	0.50		ND	1.5	
cis-1,2-Dichloroethene	156-59-2	96.94	ND	0.50		ND	2.0	
Ethyl acetate	141-78-6	88.10	ND	0.50		ND	1.8	
Chloroform	67-66-3	119.4	ND	0.50		ND	2.4	
Tetrahydrofuran	109-99-9	72.11	ND	0.50		ND	1.5	
1,1,1-Trichloroethane	71-55-6	133.4	ND	0.50		ND	2.7	
Cyclohexane	110-82-7	84.16	ND	0.50		ND	1.7	
2,2,4-Trimethylpentane(Isooctane)	540-84-1	114.2	ND	0.50		ND	2.3	
Carbon tetrachloride	56-23-5	153.8	ND	0.50		ND	3.1	
n-Heptane	142-82-5	100.2	ND	0.50		ND	2.0	
1,2-Dichloroethane	107-06-2	98.96	ND	0.50		ND	2.0	
Benzene	71-43-2	78.11	ND	0.50		ND	1.6	
Trichloroethene	79-01-6	131.4	ND	0.50		ND	2.7	
1,2-Dichloropropane	78-87-5	113.0	ND	0.50		ND	2.3	
Methyl Methacrylate	80-62-6	100.12	ND	0.50		ND	2.0	
Bromodichloromethane	75-27-4	163.8	ND	0.50		ND	3.3	
1,4-Dioxane	123-91-1	88.12	ND	0.50		ND	1.8	
4-Methyl-2-pentanone(MIBK)	108-10-1	100.2	ND	0.50		ND	2.0	

**EMSL Analytical**

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

EMSL Order #: **491800016**  
 EMSL Sample #: **491800016-3**  
 Customer ID: **TTIE54**  
 Customer PO: **24258**

Attn: **Jim Guilardi**  
**TTI Environmental Inc.**  
**1253 North Church Street**  
**Moorestown, NJ 08057**

Phone: **856-840-8800**  
 Fax: **856-840-8815**  
 Date Collected: **1/7/2018**  
 Date Received: **1/8/2018**

Project: **17-1224 / Pinelands Regional**

Sample ID: **Room 147**

<u>Analysis</u>	<u>Analysis Date</u>	<u>Analyst Init.</u>	<u>Lab File ID</u>	<u>Canister ID</u>	<u>Sample Vol.</u>	<u>Dil. Factor</u>
Initial	01/09/2018	TP	P1940.D	E0474	250 cc	1

**Target Compound Results Summary**

Target Compounds	CAS#	MW	Result ppbv	RL ppbv	Q	Result ug/m3	RL ug/m3	Comments
cis-1,3-Dichloropropene	10061-01-5	111.0	ND	0.50		ND	2.3	
Toluene	108-88-3	92.14	ND	0.50		ND	1.9	
trans-1,3-Dichloropropene	10061-02-6	111.0	ND	0.50		ND	2.3	
1,1,2-Trichloroethane	79-00-5	133.4	ND	0.50		ND	2.7	
2-Hexanone(MBK)	591-78-6	100.1	ND	0.50		ND	2.0	
Tetrachloroethene	127-18-4	165.8	ND	0.50		ND	3.4	
Dibromochloromethane	124-48-1	208.3	ND	0.50		ND	4.3	
1,2-Dibromoethane	106-93-4	187.8	ND	0.50		ND	3.8	
Chlorobenzene	108-90-7	112.6	ND	0.50		ND	2.3	
Ethylbenzene	100-41-4	106.2	ND	0.50		ND	2.2	
Xylene (p,m)	1330-20-7	106.2	ND	1.0		ND	4.3	
Xylene (Ortho)	95-47-6	106.2	ND	0.50		ND	2.2	
Styrene	100-42-5	104.1	ND	0.50		ND	2.1	
Isopropylbenzene (cumene)	98-82-8	120.19	ND	0.50		ND	2.5	
Bromoform	75-25-2	252.8	ND	0.50		ND	5.2	
1,1,2,2-Tetrachloroethane	79-34-5	167.9	ND	0.50		ND	3.4	
4-Ethyltoluene	622-96-8	120.2	ND	0.50		ND	2.5	
1,3,5-Trimethylbenzene	108-67-8	120.2	ND	0.50		ND	2.5	
2-Chlorotoluene	95-49-8	126.6	ND	0.50		ND	2.6	
1,2,4-Trimethylbenzene	95-63-6	120.2	ND	0.50		ND	2.5	
1,3-Dichlorobenzene	541-73-1	147.0	ND	0.50		ND	3.0	
1,4-Dichlorobenzene	106-46-7	147.0	ND	0.50		ND	3.0	
Benzyl chloride	100-44-7	126.0	ND	0.50		ND	2.6	
1,2-Dichlorobenzene	95-50-1	147.0	ND	0.50		ND	3.0	
1,2,4-Trichlorobenzene	120-82-1	181.5	ND	0.50		ND	3.7	
Hexachloro-1,3-butadiene	87-68-3	260.8	ND	0.50		ND	5.3	
Naphthalene	91-20-3	128.17	ND	0.50		ND	2.6	
<b>Total Target Compound Concentrations:</b>			<b>10</b>	<b>ppbv</b>		<b>23</b>	<b>ug/m3</b>	

**Surrogate**

4-Bromofluorobenzene

Result

9.8

Spike

10

Recovery

98%

**Qualifier Definitions**

**ND = Non Detect**

B = Compound also found in method blank.

E= Estimated concentration exceeding upper calibration range.

D= Result reported from diluted analysis.

**Method Reference**

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).

**EMSL Analytical**

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<http://www.EMSL.com> [to15lab@EMSL.com](mailto:to15lab@EMSL.com)

EMSL Order #: **491800016**  
 EMSL Sample #: **491800016-4**  
 Customer ID: **TTIE54**  
 Customer PO: **24258**

Attn: **Jim Guilardi**  
**TTI Environmental Inc.**  
**1253 North Church Street**  
**Moorestown, NJ 08057**

Phone: **856-840-8800**  
 Fax: **856-840-8815**  
 Date Collected: **1/7/2018**  
 Date Received: **1/8/2018**

Project: **17-1224 / Pinelands Regional**

Sample ID: **Room 106**

Analysis	Analysis Date	Analyst Init.	Lab File ID	Canister ID	Sample Vol.	Dil. Factor
Initial	01/09/2018	TP	P1941.D	E0491	250 cc	1

**Target Compound Results Summary**

Target Compounds	CAS#	MW	Result ppbv	RL ppbv	Q	Result ug/m3	RL ug/m3	Comments
Propylene	115-07-1	42.08	ND	1.0		ND	1.7	
Freon 12(Dichlorodifluoromethane)	75-71-8	120.9	0.51	0.50		2.5	2.5	
Freon 114(1,2-Dichlorotetrafluoroethan	76-14-2	170.9	ND	0.50		ND	3.5	
Chloromethane	74-87-3	50.49	0.60	0.50		1.2	1.0	
n-Butane	106-97-8	58.12	0.61	0.50		1.5	1.2	
Vinyl chloride	75-01-4	62.50	ND	0.50		ND	1.3	
1,3-Butadiene	106-99-0	54.09	ND	0.50		ND	1.1	
Bromomethane	74-83-9	94.94	ND	0.50		ND	1.9	
Chloroethane	75-00-3	64.52	ND	0.50		ND	1.3	
Ethanol	64-17-5	46.07	9.4	0.50		18	0.94	
Bromoethene(Vinyl bromide)	593-60-2	106.9	ND	0.50		ND	2.2	
Freon 11(Trichlorofluoromethane)	75-69-4	137.4	ND	0.50		ND	2.8	
Isopropyl alcohol(2-Propanol)	67-63-0	60.10	5.6	0.50		14	1.2	
Freon 113(1,1,2-Trichlorotrifluoroethan	76-13-1	187.4	ND	0.50		ND	3.8	
Acetone	67-64-1	58.08	1.7	0.50		4.0	1.2	
1,1-Dichloroethene	75-35-4	96.94	ND	0.50		ND	2.0	
Acetonitrile	75-05-8	41.00	ND	0.50		ND	0.84	
Tertiary butyl alcohol(TBA)	75-65-0	74.12	ND	0.50		ND	1.5	
Bromoethane(Ethyl bromide)	74-96-4	108.0	ND	0.50		ND	2.2	
3-Chloropropene(Allyl chloride)	107-05-1	76.53	ND	0.50		ND	1.6	
Carbon disulfide	75-15-0	76.14	ND	0.50		ND	1.6	
Methylene chloride	75-09-2	84.94	ND	0.50		ND	1.7	
Acrylonitrile	107-13-1	53.00	ND	0.50		ND	1.1	
Methyl-tert-butyl ether(MTBE)	1634-04-4	88.15	ND	0.50		ND	1.8	
trans-1,2-Dichloroethene	156-60-5	96.94	ND	0.50		ND	2.0	
n-Hexane	110-54-3	86.17	ND	0.50		ND	1.8	
1,1-Dichloroethane	75-34-3	98.96	ND	0.50		ND	2.0	
Vinyl acetate	108-05-4	86.00	ND	0.50		ND	1.8	
2-Butanone(MEK)	78-93-3	72.10	ND	0.50		ND	1.5	
cis-1,2-Dichloroethene	156-59-2	96.94	ND	0.50		ND	2.0	
Ethyl acetate	141-78-6	88.10	0.66	0.50		2.4	1.8	
Chloroform	67-66-3	119.4	ND	0.50		ND	2.4	
Tetrahydrofuran	109-99-9	72.11	ND	0.50		ND	1.5	
1,1,1-Trichloroethane	71-55-6	133.4	ND	0.50		ND	2.7	
Cyclohexane	110-82-7	84.16	ND	0.50		ND	1.7	
2,2,4-Trimethylpentane(Isooctane)	540-84-1	114.2	ND	0.50		ND	2.3	
Carbon tetrachloride	56-23-5	153.8	ND	0.50		ND	3.1	
n-Heptane	142-82-5	100.2	ND	0.50		ND	2.0	
1,2-Dichloroethane	107-06-2	98.96	ND	0.50		ND	2.0	
Benzene	71-43-2	78.11	ND	0.50		ND	1.6	
Trichloroethene	79-01-6	131.4	ND	0.50		ND	2.7	
1,2-Dichloropropane	78-87-5	113.0	ND	0.50		ND	2.3	
Methyl Methacrylate	80-62-6	100.12	ND	0.50		ND	2.0	
Bromodichloromethane	75-27-4	163.8	ND	0.50		ND	3.3	
1,4-Dioxane	123-91-1	88.12	ND	0.50		ND	1.8	
4-Methyl-2-pentanone(MIBK)	108-10-1	100.2	ND	0.50		ND	2.0	

**EMSL Analytical**

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<http://www.EMSL.com> [to15lab@EMSL.com](mailto:to15lab@EMSL.com)

EMSL Order #: **491800016**  
 EMSL Sample #: **491800016-4**  
 Customer ID: **TTIE54**  
 Customer PO: **24258**

Attn: **Jim Guilardi**  
**TTI Environmental Inc.**  
**1253 North Church Street**  
**Moorestown, NJ 08057**

Phone: **856-840-8800**  
 Fax: **856-840-8815**  
 Date Collected: **1/7/2018**  
 Date Received: **1/8/2018**

Project: **17-1224 / Pinelands Regional**

Sample ID: **Room 106**

Analysis	Analysis Date	Analyst Init.	Lab File ID	Canister ID	Sample Vol.	Dil. Factor
Initial	01/09/2018	TP	P1941.D	E0491	250 cc	1

**Target Compound Results Summary**

Target Compounds	CAS#	MW	Result ppbv	RL ppbv	Q	Result ug/m3	RL ug/m3	Comments
cis-1,3-Dichloropropene	10061-01-5	111.0	ND	0.50		ND	2.3	
Toluene	108-88-3	92.14	ND	0.50		ND	1.9	
trans-1,3-Dichloropropene	10061-02-6	111.0	ND	0.50		ND	2.3	
1,1,2-Trichloroethane	79-00-5	133.4	ND	0.50		ND	2.7	
2-Hexanone(MBK)	591-78-6	100.1	ND	0.50		ND	2.0	
Tetrachloroethene	127-18-4	165.8	ND	0.50		ND	3.4	
Dibromochloromethane	124-48-1	208.3	ND	0.50		ND	4.3	
1,2-Dibromoethane	106-93-4	187.8	ND	0.50		ND	3.8	
Chlorobenzene	108-90-7	112.6	ND	0.50		ND	2.3	
Ethylbenzene	100-41-4	106.2	ND	0.50		ND	2.2	
Xylene (p,m)	1330-20-7	106.2	ND	1.0		ND	4.3	
Xylene (Ortho)	95-47-6	106.2	ND	0.50		ND	2.2	
Styrene	100-42-5	104.1	ND	0.50		ND	2.1	
Isopropylbenzene (cumene)	98-82-8	120.19	ND	0.50		ND	2.5	
Bromoform	75-25-2	252.8	ND	0.50		ND	5.2	
1,1,2,2-Tetrachloroethane	79-34-5	167.9	ND	0.50		ND	3.4	
4-Ethyltoluene	622-96-8	120.2	ND	0.50		ND	2.5	
1,3,5-Trimethylbenzene	108-67-8	120.2	ND	0.50		ND	2.5	
2-Chlorotoluene	95-49-8	126.6	ND	0.50		ND	2.6	
1,2,4-Trimethylbenzene	95-63-6	120.2	ND	0.50		ND	2.5	
1,3-Dichlorobenzene	541-73-1	147.0	ND	0.50		ND	3.0	
1,4-Dichlorobenzene	106-46-7	147.0	ND	0.50		ND	3.0	
Benzyl chloride	100-44-7	126.0	ND	0.50		ND	2.6	
1,2-Dichlorobenzene	95-50-1	147.0	0.52	0.50		3.1	3.0	
1,2,4-Trichlorobenzene	120-82-1	181.5	ND	0.50		ND	3.7	
Hexachloro-1,3-butadiene	87-68-3	260.8	ND	0.50		ND	5.3	
Naphthalene	91-20-3	128.17	ND	0.50		ND	2.6	
<b>Total Target Compound Concentrations:</b>			<b>20</b>	<b>ppbv</b>		<b>47</b>	<b>ug/m3</b>	

**Surrogate**

4-Bromofluorobenzene

Result  
9.8

Spike  
10

Recovery  
98%

**Qualifier Definitions**

**ND = Non Detect**

B = Compound also found in method blank.

E= Estimated concentration exceeding upper calibration range.

D= Result reported from diluted analysis.

**Method Reference**

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).

**EMSL Analytical**

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<http://www.EMSL.com> [to15lab@EMSL.com](mailto:to15lab@EMSL.com)

EMSL Order #: **491800016**  
 EMSL Sample #: **491800016-5**  
 Customer ID: **TTIE54**  
 Customer PO: **24258**

Attn: **Jim Guilardi**  
**TTI Environmental Inc.**  
**1253 North Church Street**  
**Moorestown, NJ 08057**

Phone: **856-840-8800**  
 Fax: **856-840-8815**  
 Date Collected: **1/7/2018**  
 Date Received: **1/8/2018**

Project: **17-1224 / Pinelands Regional**

Sample ID: **Room 205**

Analysis	Analysis Date	Analyst Init.	Lab File ID	Canister ID	Sample Vol.	Dil. Factor
Initial	01/09/2018	TP	P1942.D	E0507	250 cc	1

**Target Compound Results Summary**

Target Compounds	CAS#	MW	Result ppbv	RL ppbv	Q	Result ug/m3	RL ug/m3	Comments
Propylene	115-07-1	42.08	ND	1.0		ND	1.7	
Freon 12(Dichlorodifluoromethane)	75-71-8	120.9	0.52	0.50		2.6	2.5	
Freon 114(1,2-Dichlorotetrafluoroethan	76-14-2	170.9	ND	0.50		ND	3.5	
Chloromethane	74-87-3	50.49	0.54	0.50		1.1	1.0	
n-Butane	106-97-8	58.12	0.55	0.50		1.3	1.2	
Vinyl chloride	75-01-4	62.50	ND	0.50		ND	1.3	
1,3-Butadiene	106-99-0	54.09	ND	0.50		ND	1.1	
Bromomethane	74-83-9	94.94	ND	0.50		ND	1.9	
Chloroethane	75-00-3	64.52	ND	0.50		ND	1.3	
Ethanol	64-17-5	46.07	4.8	0.50		9.0	0.94	
Bromoethene(Vinyl bromide)	593-60-2	106.9	ND	0.50		ND	2.2	
Freon 11(Trichlorofluoromethane)	75-69-4	137.4	ND	0.50		ND	2.8	
Isopropyl alcohol(2-Propanol)	67-63-0	60.10	2.3	0.50		5.6	1.2	
Freon 113(1,1,2-Trichlorotrifluoroethan	76-13-1	187.4	ND	0.50		ND	3.8	
Acetone	67-64-1	58.08	1.8	0.50		4.2	1.2	
1,1-Dichloroethene	75-35-4	96.94	ND	0.50		ND	2.0	
Acetonitrile	75-05-8	41.00	ND	0.50		ND	0.84	
Tertiary butyl alcohol(TBA)	75-65-0	74.12	ND	0.50		ND	1.5	
Bromoethane(Ethyl bromide)	74-96-4	108.0	ND	0.50		ND	2.2	
3-Chloropropene(Allyl chloride)	107-05-1	76.53	ND	0.50		ND	1.6	
Carbon disulfide	75-15-0	76.14	ND	0.50		ND	1.6	
Methylene chloride	75-09-2	84.94	ND	0.50		ND	1.7	
Acrylonitrile	107-13-1	53.00	ND	0.50		ND	1.1	
Methyl-tert-butyl ether(MTBE)	1634-04-4	88.15	ND	0.50		ND	1.8	
trans-1,2-Dichloroethene	156-60-5	96.94	ND	0.50		ND	2.0	
n-Hexane	110-54-3	86.17	ND	0.50		ND	1.8	
1,1-Dichloroethane	75-34-3	98.96	ND	0.50		ND	2.0	
Vinyl acetate	108-05-4	86.00	ND	0.50		ND	1.8	
2-Butanone(MEK)	78-93-3	72.10	ND	0.50		ND	1.5	
cis-1,2-Dichloroethene	156-59-2	96.94	ND	0.50		ND	2.0	
Ethyl acetate	141-78-6	88.10	1.0	0.50		3.6	1.8	
Chloroform	67-66-3	119.4	ND	0.50		ND	2.4	
Tetrahydrofuran	109-99-9	72.11	ND	0.50		ND	1.5	
1,1,1-Trichloroethane	71-55-6	133.4	ND	0.50		ND	2.7	
Cyclohexane	110-82-7	84.16	ND	0.50		ND	1.7	
2,2,4-Trimethylpentane(Isooctane)	540-84-1	114.2	ND	0.50		ND	2.3	
Carbon tetrachloride	56-23-5	153.8	ND	0.50		ND	3.1	
n-Heptane	142-82-5	100.2	ND	0.50		ND	2.0	
1,2-Dichloroethane	107-06-2	98.96	ND	0.50		ND	2.0	
Benzene	71-43-2	78.11	ND	0.50		ND	1.6	
Trichloroethene	79-01-6	131.4	ND	0.50		ND	2.7	
1,2-Dichloropropane	78-87-5	113.0	ND	0.50		ND	2.3	
Methyl Methacrylate	80-62-6	100.12	ND	0.50		ND	2.0	
Bromodichloromethane	75-27-4	163.8	ND	0.50		ND	3.3	
1,4-Dioxane	123-91-1	88.12	ND	0.50		ND	1.8	
4-Methyl-2-pentanone(MIBK)	108-10-1	100.2	ND	0.50		ND	2.0	

**EMSL Analytical**

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

EMSL Order #: **491800016**  
 EMSL Sample #: **491800016-5**  
 Customer ID: **TTIE54**  
 Customer PO: **24258**

Attn: **Jim Guilardi**  
**TTI Environmental Inc.**  
**1253 North Church Street**  
**Moorestown, NJ 08057**

Phone: **856-840-8800**  
 Fax: **856-840-8815**  
 Date Collected: **1/7/2018**  
 Date Received: **1/8/2018**

Project: **17-1224 / Pinelands Regional**

Sample ID: **Room 205**

<u>Analysis</u>	<u>Analysis Date</u>	<u>Analyst Init.</u>	<u>Lab File ID</u>	<u>Canister ID</u>	<u>Sample Vol.</u>	<u>Dil. Factor</u>
Initial	01/09/2018	TP	P1942.D	E0507	250 cc	1

**Target Compound Results Summary**

Target Compounds	CAS#	MW	Result ppbv	RL ppbv	Q	Result ug/m3	RL ug/m3	Comments
cis-1,3-Dichloropropene	10061-01-5	111.0	ND	0.50		ND	2.3	
Toluene	108-88-3	92.14	ND	0.50		ND	1.9	
trans-1,3-Dichloropropene	10061-02-6	111.0	ND	0.50		ND	2.3	
1,1,2-Trichloroethane	79-00-5	133.4	ND	0.50		ND	2.7	
2-Hexanone(MBK)	591-78-6	100.1	ND	0.50		ND	2.0	
Tetrachloroethene	127-18-4	165.8	ND	0.50		ND	3.4	
Dibromochloromethane	124-48-1	208.3	ND	0.50		ND	4.3	
1,2-Dibromoethane	106-93-4	187.8	ND	0.50		ND	3.8	
Chlorobenzene	108-90-7	112.6	ND	0.50		ND	2.3	
Ethylbenzene	100-41-4	106.2	ND	0.50		ND	2.2	
Xylene (p,m)	1330-20-7	106.2	ND	1.0		ND	4.3	
Xylene (Ortho)	95-47-6	106.2	ND	0.50		ND	2.2	
Styrene	100-42-5	104.1	ND	0.50		ND	2.1	
Isopropylbenzene (cumene)	98-82-8	120.19	ND	0.50		ND	2.5	
Bromoform	75-25-2	252.8	ND	0.50		ND	5.2	
1,1,2,2-Tetrachloroethane	79-34-5	167.9	ND	0.50		ND	3.4	
4-Ethyltoluene	622-96-8	120.2	ND	0.50		ND	2.5	
1,3,5-Trimethylbenzene	108-67-8	120.2	ND	0.50		ND	2.5	
2-Chlorotoluene	95-49-8	126.6	ND	0.50		ND	2.6	
1,2,4-Trimethylbenzene	95-63-6	120.2	ND	0.50		ND	2.5	
1,3-Dichlorobenzene	541-73-1	147.0	ND	0.50		ND	3.0	
1,4-Dichlorobenzene	106-46-7	147.0	ND	0.50		ND	3.0	
Benzyl chloride	100-44-7	126.0	ND	0.50		ND	2.6	
1,2-Dichlorobenzene	95-50-1	147.0	<b>0.76</b>	0.50		<b>4.6</b>	3.0	
1,2,4-Trichlorobenzene	120-82-1	181.5	ND	0.50		ND	3.7	
Hexachloro-1,3-butadiene	87-68-3	260.8	ND	0.50		ND	5.3	
Naphthalene	91-20-3	128.17	ND	0.50		ND	2.6	
<b>Total Target Compound Concentrations:</b>			<b>12</b>	<b>ppbv</b>		<b>32</b>	<b>ug/m3</b>	

**Surrogate**

4-Bromofluorobenzene

Result  
9.9

Spike  
10

Recovery  
99%

**Qualifier Definitions**

**ND = Non Detect**

B = Compound also found in method blank.

E= Estimated concentration exceeding upper calibration range.

D= Result reported from diluted analysis.

**Method Reference**

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).

**EMSL Analytical**

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

EMSL Order #: **491800016**  
 EMSL Sample #: **491800016-6**  
 Customer ID: **TTIE54**  
 Customer PO: **24258**

Attn: **Jim Guilardi**  
**TTI Environmental Inc.**  
**1253 North Church Street**  
**Moorestown, NJ 08057**

Phone: **856-840-8800**  
 Fax: **856-840-8815**  
 Date Collected: **1/7/2018**  
 Date Received: **1/8/2018**

Project: **17-1224 / Pinelands Regional**

Sample ID: **Uppper Media**

Analysis	Analysis Date	Analyst Init.	Lab File ID	Canister ID	Sample Vol.	Dil. Factor
Initial	01/09/2018	TP	P1943.D	E0597	250 cc	1

**Target Compound Results Summary**

Target Compounds	CAS#	MW	Result ppbv	RL ppbv	Q	Result ug/m3	RL ug/m3	Comments
Propylene	115-07-1	42.08	ND	1.0		ND	1.7	
Freon 12(Dichlorodifluoromethane)	75-71-8	120.9	0.62	0.50		3.1	2.5	
Freon 114(1,2-Dichlorotetrafluoroethan	76-14-2	170.9	ND	0.50		ND	3.5	
Chloromethane	74-87-3	50.49	0.55	0.50		1.1	1.0	
n-Butane	106-97-8	58.12	0.63	0.50		1.5	1.2	
Vinyl chloride	75-01-4	62.50	ND	0.50		ND	1.3	
1,3-Butadiene	106-99-0	54.09	ND	0.50		ND	1.1	
Bromomethane	74-83-9	94.94	ND	0.50		ND	1.9	
Chloroethane	75-00-3	64.52	ND	0.50		ND	1.3	
Ethanol	64-17-5	46.07	6.5	0.50		12	0.94	
Bromoethene(Vinyl bromide)	593-60-2	106.9	ND	0.50		ND	2.2	
Freon 11(Trichlorofluoromethane)	75-69-4	137.4	ND	0.50		ND	2.8	
Isopropyl alcohol(2-Propanol)	67-63-0	60.10	3.5	0.50		8.6	1.2	
Freon 113(1,1,2-Trichlorotrifluoroethan	76-13-1	187.4	ND	0.50		ND	3.8	
Acetone	67-64-1	58.08	2.3	0.50		5.4	1.2	
1,1-Dichloroethene	75-35-4	96.94	ND	0.50		ND	2.0	
Acetonitrile	75-05-8	41.00	ND	0.50		ND	0.84	
Tertiary butyl alcohol(TBA)	75-65-0	74.12	ND	0.50		ND	1.5	
Bromoethane(Ethyl bromide)	74-96-4	108.0	ND	0.50		ND	2.2	
3-Chloropropene(Allyl chloride)	107-05-1	76.53	ND	0.50		ND	1.6	
Carbon disulfide	75-15-0	76.14	ND	0.50		ND	1.6	
Methylene chloride	75-09-2	84.94	ND	0.50		ND	1.7	
Acrylonitrile	107-13-1	53.00	ND	0.50		ND	1.1	
Methyl-tert-butyl ether(MTBE)	1634-04-4	88.15	ND	0.50		ND	1.8	
trans-1,2-Dichloroethene	156-60-5	96.94	ND	0.50		ND	2.0	
n-Hexane	110-54-3	86.17	ND	0.50		ND	1.8	
1,1-Dichloroethane	75-34-3	98.96	ND	0.50		ND	2.0	
Vinyl acetate	108-05-4	86.00	ND	0.50		ND	1.8	
2-Butanone(MEK)	78-93-3	72.10	ND	0.50		ND	1.5	
cis-1,2-Dichloroethene	156-59-2	96.94	ND	0.50		ND	2.0	
Ethyl acetate	141-78-6	88.10	0.59	0.50		2.1	1.8	
Chloroform	67-66-3	119.4	ND	0.50		ND	2.4	
Tetrahydrofuran	109-99-9	72.11	ND	0.50		ND	1.5	
1,1,1-Trichloroethane	71-55-6	133.4	ND	0.50		ND	2.7	
Cyclohexane	110-82-7	84.16	ND	0.50		ND	1.7	
2,2,4-Trimethylpentane(Isooctane)	540-84-1	114.2	ND	0.50		ND	2.3	
Carbon tetrachloride	56-23-5	153.8	ND	0.50		ND	3.1	
n-Heptane	142-82-5	100.2	ND	0.50		ND	2.0	
1,2-Dichloroethane	107-06-2	98.96	ND	0.50		ND	2.0	
Benzene	71-43-2	78.11	ND	0.50		ND	1.6	
Trichloroethene	79-01-6	131.4	ND	0.50		ND	2.7	
1,2-Dichloropropane	78-87-5	113.0	ND	0.50		ND	2.3	
Methyl Methacrylate	80-62-6	100.12	ND	0.50		ND	2.0	
Bromodichloromethane	75-27-4	163.8	ND	0.50		ND	3.3	
1,4-Dioxane	123-91-1	88.12	ND	0.50		ND	1.8	
4-Methyl-2-pentanone(MIBK)	108-10-1	100.2	ND	0.50		ND	2.0	



**EMSL Analytical**

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<http://www.EMSL.com> [to15lab@EMSL.com](mailto:to15lab@EMSL.com)

EMSL Order #: **491800016**  
 EMSL Sample #: **491800016-6**  
 Customer ID: **TTIE54**  
 Customer PO: **24258**

Attn: **Jim Guilardi**  
**TTI Environmental Inc.**  
**1253 North Church Street**  
**Moorestown, NJ 08057**

Phone: **856-840-8800**  
 Fax: **856-840-8815**  
 Date Collected: **1/7/2018**  
 Date Received: **1/8/2018**

Project: **17-1224 / Pinelands Regional**

Sample ID: **Uppper Media**

<u>Analysis</u>	<u>Analysis Date</u>	<u>Analyst Init.</u>	<u>Lab File ID</u>	<u>Canister ID</u>	<u>Sample Vol.</u>	<u>Dil. Factor</u>
Initial	01/09/2018	TP	P1943.D	E0597	250 cc	1

**Target Compound Results Summary**

Target Compounds	CAS#	MW	Result ppbv	RL ppbv	Q	Result ug/m3	RL ug/m3	Comments
cis-1,3-Dichloropropene	10061-01-5	111.0	ND	0.50		ND	2.3	
Toluene	108-88-3	92.14	ND	0.50		ND	1.9	
trans-1,3-Dichloropropene	10061-02-6	111.0	ND	0.50		ND	2.3	
1,1,2-Trichloroethane	79-00-5	133.4	ND	0.50		ND	2.7	
2-Hexanone(MBK)	591-78-6	100.1	ND	0.50		ND	2.0	
Tetrachloroethene	127-18-4	165.8	ND	0.50		ND	3.4	
Dibromochloromethane	124-48-1	208.3	ND	0.50		ND	4.3	
1,2-Dibromoethane	106-93-4	187.8	ND	0.50		ND	3.8	
Chlorobenzene	108-90-7	112.6	ND	0.50		ND	2.3	
Ethylbenzene	100-41-4	106.2	ND	0.50		ND	2.2	
Xylene (p,m)	1330-20-7	106.2	ND	1.0		ND	4.3	
Xylene (Ortho)	95-47-6	106.2	ND	0.50		ND	2.2	
Styrene	100-42-5	104.1	ND	0.50		ND	2.1	
Isopropylbenzene (cumene)	98-82-8	120.19	ND	0.50		ND	2.5	
Bromoform	75-25-2	252.8	ND	0.50		ND	5.2	
1,1,2,2-Tetrachloroethane	79-34-5	167.9	ND	0.50		ND	3.4	
4-Ethyltoluene	622-96-8	120.2	ND	0.50		ND	2.5	
1,3,5-Trimethylbenzene	108-67-8	120.2	ND	0.50		ND	2.5	
2-Chlorotoluene	95-49-8	126.6	ND	0.50		ND	2.6	
1,2,4-Trimethylbenzene	95-63-6	120.2	ND	0.50		ND	2.5	
1,3-Dichlorobenzene	541-73-1	147.0	ND	0.50		ND	3.0	
1,4-Dichlorobenzene	106-46-7	147.0	ND	0.50		ND	3.0	
Benzyl chloride	100-44-7	126.0	ND	0.50		ND	2.6	
1,2-Dichlorobenzene	95-50-1	147.0	ND	0.50		ND	3.0	
1,2,4-Trichlorobenzene	120-82-1	181.5	ND	0.50		ND	3.7	
Hexachloro-1,3-butadiene	87-68-3	260.8	ND	0.50		ND	5.3	
Naphthalene	91-20-3	128.17	ND	0.50		ND	2.6	

**Total Target Compound Concentrations:**

**15**      **ppbv**      **34**      **ug/m3**

**Surrogate**

4-Bromofluorobenzene

Result

9.8

Spike

10

Recovery

98%

**Qualifier Definitions**

**ND = Non Detect**

B = Compound also found in method blank.

E= Estimated concentration exceeding upper calibration range.

D= Result reported from diluted analysis.

**Method Reference**

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).



**EMSL Analytical**

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<http://www.EMSL.com> [to15lab@EMSL.com](mailto:to15lab@EMSL.com)

EMSL Order #: **491800016**  
 EMSL Sample #: **491800016-7**  
 Customer ID: **TTIE54**  
 Customer PO: **24258**

Attn: **Jim Guilardi**  
**TTI Environmental Inc.**  
**1253 North Church Street**  
**Moorestown, NJ 08057**

Phone: **856-840-8800**  
 Fax: **856-840-8815**  
 Date Collected: **1/7/2018**  
 Date Received: **1/8/2018**

Project: **17-1224 / Pinelands Regional**

Sample ID: **Room 306**

<u>Analysis</u>	<u>Analysis Date</u>	<u>Analyst Init.</u>	<u>Lab File ID</u>	<u>Canister ID</u>	<u>Sample Vol.</u>	<u>Dil. Factor</u>
Initial	01/09/2018	TP	P1944.D	E12272	250 cc	1

**Target Compound Results Summary**

Target Compounds	CAS#	MW	Result ppbv	RL ppbv	Q	Result ug/m3	RL ug/m3	Comments
Propylene	115-07-1	42.08	ND	1.0		ND	1.7	
Freon 12(Dichlorodifluoromethane)	75-71-8	120.9	0.52	0.50		2.6	2.5	
Freon 114(1,2-Dichlorotetrafluoroethan	76-14-2	170.9	ND	0.50		ND	3.5	
Chloromethane	74-87-3	50.49	0.52	0.50		1.1	1.0	
n-Butane	106-97-8	58.12	0.59	0.50		1.4	1.2	
Vinyl chloride	75-01-4	62.50	ND	0.50		ND	1.3	
1,3-Butadiene	106-99-0	54.09	ND	0.50		ND	1.1	
Bromomethane	74-83-9	94.94	ND	0.50		ND	1.9	
Chloroethane	75-00-3	64.52	ND	0.50		ND	1.3	
Ethanol	64-17-5	46.07	4.2	0.50		8.0	0.94	
Bromoethene(Vinyl bromide)	593-60-2	106.9	ND	0.50		ND	2.2	
Freon 11(Trichlorofluoromethane)	75-69-4	137.4	ND	0.50		ND	2.8	
Isopropyl alcohol(2-Propanol)	67-63-0	60.10	2.2	0.50		5.5	1.2	
Freon 113(1,1,2-Trichlorotrifluoroethan	76-13-1	187.4	ND	0.50		ND	3.8	
Acetone	67-64-1	58.08	1.2	0.50		2.9	1.2	
1,1-Dichloroethene	75-35-4	96.94	ND	0.50		ND	2.0	
Acetonitrile	75-05-8	41.00	ND	0.50		ND	0.84	
Tertiary butyl alcohol(TBA)	75-65-0	74.12	ND	0.50		ND	1.5	
Bromoethane(Ethyl bromide)	74-96-4	108.0	ND	0.50		ND	2.2	
3-Chloropropene(Allyl chloride)	107-05-1	76.53	ND	0.50		ND	1.6	
Carbon disulfide	75-15-0	76.14	ND	0.50		ND	1.6	
Methylene chloride	75-09-2	84.94	ND	0.50		ND	1.7	
Acrylonitrile	107-13-1	53.00	ND	0.50		ND	1.1	
Methyl-tert-butyl ether(MTBE)	1634-04-4	88.15	ND	0.50		ND	1.8	
trans-1,2-Dichloroethene	156-60-5	96.94	ND	0.50		ND	2.0	
n-Hexane	110-54-3	86.17	ND	0.50		ND	1.8	
1,1-Dichloroethane	75-34-3	98.96	ND	0.50		ND	2.0	
Vinyl acetate	108-05-4	86.00	ND	0.50		ND	1.8	
2-Butanone(MEK)	78-93-3	72.10	ND	0.50		ND	1.5	
cis-1,2-Dichloroethene	156-59-2	96.94	ND	0.50		ND	2.0	
Ethyl acetate	141-78-6	88.10	ND	0.50		ND	1.8	
Chloroform	67-66-3	119.4	ND	0.50		ND	2.4	
Tetrahydrofuran	109-99-9	72.11	ND	0.50		ND	1.5	
1,1,1-Trichloroethane	71-55-6	133.4	ND	0.50		ND	2.7	
Cyclohexane	110-82-7	84.16	ND	0.50		ND	1.7	
2,2,4-Trimethylpentane(Isooctane)	540-84-1	114.2	ND	0.50		ND	2.3	
Carbon tetrachloride	56-23-5	153.8	ND	0.50		ND	3.1	
n-Heptane	142-82-5	100.2	ND	0.50		ND	2.0	
1,2-Dichloroethane	107-06-2	98.96	ND	0.50		ND	2.0	
Benzene	71-43-2	78.11	ND	0.50		ND	1.6	
Trichloroethene	79-01-6	131.4	ND	0.50		ND	2.7	
1,2-Dichloropropane	78-87-5	113.0	ND	0.50		ND	2.3	
Methyl Methacrylate	80-62-6	100.12	ND	0.50		ND	2.0	
Bromodichloromethane	75-27-4	163.8	ND	0.50		ND	3.3	
1,4-Dioxane	123-91-1	88.12	ND	0.50		ND	1.8	
4-Methyl-2-pentanone(MIBK)	108-10-1	100.2	ND	0.50		ND	2.0	



**EMSL Analytical**  
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<http://www.EMSL.com> [to15lab@EMSL.com](mailto:to15lab@EMSL.com)

EMSL Order #: **491800016**  
 EMSL Sample #: **491800016-7**  
 Customer ID: **TTIE54**  
 Customer PO: **24258**

Attn: **Jim Guilardi**  
**TTI Environmental Inc.**  
**1253 North Church Street**  
**Moorestown, NJ 08057**

Phone: **856-840-8800**  
 Fax: **856-840-8815**  
 Date Collected: **1/7/2018**  
 Date Received: **1/8/2018**

Project: **17-1224 / Pinelands Regional**

Sample ID: **Room 306**

<u>Analysis</u>	<u>Analysis Date</u>	<u>Analyst Init.</u>	<u>Lab File ID</u>	<u>Canister ID</u>	<u>Sample Vol.</u>	<u>Dil. Factor</u>
Initial	01/09/2018	TP	P1944.D	E12272	250 cc	1

### Target Compound Results Summary

Target Compounds	CAS#	MW	Result ppbv	RL ppbv	Q	Result ug/m3	RL ug/m3	Comments
cis-1,3-Dichloropropene	10061-01-5	111.0	ND	0.50		ND	2.3	
Toluene	108-88-3	92.14	ND	0.50		ND	1.9	
trans-1,3-Dichloropropene	10061-02-6	111.0	ND	0.50		ND	2.3	
1,1,2-Trichloroethane	79-00-5	133.4	ND	0.50		ND	2.7	
2-Hexanone(MBK)	591-78-6	100.1	ND	0.50		ND	2.0	
Tetrachloroethene	127-18-4	165.8	ND	0.50		ND	3.4	
Dibromochloromethane	124-48-1	208.3	ND	0.50		ND	4.3	
1,2-Dibromoethane	106-93-4	187.8	ND	0.50		ND	3.8	
Chlorobenzene	108-90-7	112.6	ND	0.50		ND	2.3	
Ethylbenzene	100-41-4	106.2	ND	0.50		ND	2.2	
Xylene (p,m)	1330-20-7	106.2	ND	1.0		ND	4.3	
Xylene (Ortho)	95-47-6	106.2	ND	0.50		ND	2.2	
Styrene	100-42-5	104.1	ND	0.50		ND	2.1	
Isopropylbenzene (cumene)	98-82-8	120.19	ND	0.50		ND	2.5	
Bromoform	75-25-2	252.8	ND	0.50		ND	5.2	
1,1,2,2-Tetrachloroethane	79-34-5	167.9	ND	0.50		ND	3.4	
4-Ethyltoluene	622-96-8	120.2	ND	0.50		ND	2.5	
1,3,5-Trimethylbenzene	108-67-8	120.2	ND	0.50		ND	2.5	
2-Chlorotoluene	95-49-8	126.6	ND	0.50		ND	2.6	
1,2,4-Trimethylbenzene	95-63-6	120.2	ND	0.50		ND	2.5	
1,3-Dichlorobenzene	541-73-1	147.0	ND	0.50		ND	3.0	
1,4-Dichlorobenzene	106-46-7	147.0	ND	0.50		ND	3.0	
Benzyl chloride	100-44-7	126.0	ND	0.50		ND	2.6	
1,2-Dichlorobenzene	95-50-1	147.0	ND	0.50		ND	3.0	
1,2,4-Trichlorobenzene	120-82-1	181.5	ND	0.50		ND	3.7	
Hexachloro-1,3-butadiene	87-68-3	260.8	ND	0.50		ND	5.3	
Naphthalene	91-20-3	128.17	ND	0.50		ND	2.6	
<b>Total Target Compound Concentrations:</b>			<b>9.2</b>	<b>ppbv</b>		<b>22</b>	<b>ug/m3</b>	

#### Surrogate

4-Bromofluorobenzene

Result

9.8

Spike

10

Recovery

98%

#### Qualifier Definitions

**ND = Non Detect**

B = Compound also found in method blank.

E= Estimated concentration exceeding upper calibration range.

D= Result reported from diluted analysis.

#### Method Reference

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).

**EMSL Analytical**

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

EMSL Order #: **491800016**  
 EMSL Sample #: **491800016-8**  
 Customer ID: **TTIE54**  
 Customer PO: **24258**

Attn: **Jim Guilardi**  
**TTI Environmental Inc.**  
**1253 North Church Street**  
**Moorestown, NJ 08057**

Phone: **856-840-8800**  
 Fax: **856-840-8815**  
 Date Collected: **1/7/2018**  
 Date Received: **1/8/2018**

Project: **17-1224 / Pinelands Regional**

Sample ID: **Outside**

Analysis	Analysis Date	Analyst Init.	Lab File ID	Canister ID	Sample Vol.	Dil. Factor
Initial	01/09/2018	TP	P1945.D	E15538	250 cc	1

**Target Compound Results Summary**

Target Compounds	CAS#	MW	Result ppbv	RL ppbv	Q	Result ug/m3	RL ug/m3	Comments
Propylene	115-07-1	42.08	ND	1.0		ND	1.7	
Freon 12(Dichlorodifluoromethane)	75-71-8	120.9	0.50	0.50		2.5	2.5	
Freon 114(1,2-Dichlorotetrafluoroethan	76-14-2	170.9	ND	0.50		ND	3.5	
Chloromethane	74-87-3	50.49	0.55	0.50		1.1	1.0	
n-Butane	106-97-8	58.12	0.56	0.50		1.3	1.2	
Vinyl chloride	75-01-4	62.50	ND	0.50		ND	1.3	
1,3-Butadiene	106-99-0	54.09	ND	0.50		ND	1.1	
Bromomethane	74-83-9	94.94	ND	0.50		ND	1.9	
Chloroethane	75-00-3	64.52	ND	0.50		ND	1.3	
Ethanol	64-17-5	46.07	3.1	0.50		5.8	0.94	
Bromoethene(Vinyl bromide)	593-60-2	106.9	ND	0.50		ND	2.2	
Freon 11(Trichlorofluoromethane)	75-69-4	137.4	ND	0.50		ND	2.8	
Isopropyl alcohol(2-Propanol)	67-63-0	60.10	1.6	0.50		4.0	1.2	
Freon 113(1,1,2-Trichlorotrifluoroethan	76-13-1	187.4	ND	0.50		ND	3.8	
Acetone	67-64-1	58.08	1.1	0.50		2.5	1.2	
1,1-Dichloroethene	75-35-4	96.94	ND	0.50		ND	2.0	
Acetonitrile	75-05-8	41.00	ND	0.50		ND	0.84	
Tertiary butyl alcohol(TBA)	75-65-0	74.12	ND	0.50		ND	1.5	
Bromoethane(Ethyl bromide)	74-96-4	108.0	ND	0.50		ND	2.2	
3-Chloropropene(Allyl chloride)	107-05-1	76.53	ND	0.50		ND	1.6	
Carbon disulfide	75-15-0	76.14	ND	0.50		ND	1.6	
Methylene chloride	75-09-2	84.94	ND	0.50		ND	1.7	
Acrylonitrile	107-13-1	53.00	ND	0.50		ND	1.1	
Methyl-tert-butyl ether(MTBE)	1634-04-4	88.15	ND	0.50		ND	1.8	
trans-1,2-Dichloroethene	156-60-5	96.94	ND	0.50		ND	2.0	
n-Hexane	110-54-3	86.17	ND	0.50		ND	1.8	
1,1-Dichloroethane	75-34-3	98.96	ND	0.50		ND	2.0	
Vinyl acetate	108-05-4	86.00	ND	0.50		ND	1.8	
2-Butanone(MEK)	78-93-3	72.10	ND	0.50		ND	1.5	
cis-1,2-Dichloroethene	156-59-2	96.94	ND	0.50		ND	2.0	
Ethyl acetate	141-78-6	88.10	ND	0.50		ND	1.8	
Chloroform	67-66-3	119.4	ND	0.50		ND	2.4	
Tetrahydrofuran	109-99-9	72.11	ND	0.50		ND	1.5	
1,1,1-Trichloroethane	71-55-6	133.4	ND	0.50		ND	2.7	
Cyclohexane	110-82-7	84.16	ND	0.50		ND	1.7	
2,2,4-Trimethylpentane(Isooctane)	540-84-1	114.2	ND	0.50		ND	2.3	
Carbon tetrachloride	56-23-5	153.8	ND	0.50		ND	3.1	
n-Heptane	142-82-5	100.2	ND	0.50		ND	2.0	
1,2-Dichloroethane	107-06-2	98.96	ND	0.50		ND	2.0	
Benzene	71-43-2	78.11	ND	0.50		ND	1.6	
Trichloroethene	79-01-6	131.4	ND	0.50		ND	2.7	
1,2-Dichloropropane	78-87-5	113.0	ND	0.50		ND	2.3	
Methyl Methacrylate	80-62-6	100.12	ND	0.50		ND	2.0	
Bromodichloromethane	75-27-4	163.8	ND	0.50		ND	3.3	
1,4-Dioxane	123-91-1	88.12	ND	0.50		ND	1.8	
4-Methyl-2-pentanone(MIBK)	108-10-1	100.2	ND	0.50		ND	2.0	

**EMSL Analytical**

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

EMSL Order #: **491800016**  
 EMSL Sample #: **491800016-8**  
 Customer ID: **TTIE54**  
 Customer PO: **24258**

Attn: **Jim Guilardi**  
**TTI Environmental Inc.**  
**1253 North Church Street**  
**Moorestown, NJ 08057**

Phone: **856-840-8800**  
 Fax: **856-840-8815**  
 Date Collected: **1/7/2018**  
 Date Received: **1/8/2018**

Project: **17-1224 / Pinelands Regional**

Sample ID: **Outside**

<u>Analysis</u>	<u>Analysis Date</u>	<u>Analyst Init.</u>	<u>Lab File ID</u>	<u>Canister ID</u>	<u>Sample Vol.</u>	<u>Dil. Factor</u>
Initial	01/09/2018	TP	P1945.D	E15538	250 cc	1

**Target Compound Results Summary**

Target Compounds	CAS#	MW	Result ppbv	RL ppbv	Q	Result ug/m3	RL ug/m3	Comments
cis-1,3-Dichloropropene	10061-01-5	111.0	ND	0.50		ND	2.3	
Toluene	108-88-3	92.14	ND	0.50		ND	1.9	
trans-1,3-Dichloropropene	10061-02-6	111.0	ND	0.50		ND	2.3	
1,1,2-Trichloroethane	79-00-5	133.4	ND	0.50		ND	2.7	
2-Hexanone(MBK)	591-78-6	100.1	ND	0.50		ND	2.0	
Tetrachloroethene	127-18-4	165.8	ND	0.50		ND	3.4	
Dibromochloromethane	124-48-1	208.3	ND	0.50		ND	4.3	
1,2-Dibromoethane	106-93-4	187.8	ND	0.50		ND	3.8	
Chlorobenzene	108-90-7	112.6	ND	0.50		ND	2.3	
Ethylbenzene	100-41-4	106.2	ND	0.50		ND	2.2	
Xylene (p,m)	1330-20-7	106.2	ND	1.0		ND	4.3	
Xylene (Ortho)	95-47-6	106.2	ND	0.50		ND	2.2	
Styrene	100-42-5	104.1	ND	0.50		ND	2.1	
Isopropylbenzene (cumene)	98-82-8	120.19	ND	0.50		ND	2.5	
Bromoform	75-25-2	252.8	ND	0.50		ND	5.2	
1,1,2,2-Tetrachloroethane	79-34-5	167.9	ND	0.50		ND	3.4	
4-Ethyltoluene	622-96-8	120.2	ND	0.50		ND	2.5	
1,3,5-Trimethylbenzene	108-67-8	120.2	ND	0.50		ND	2.5	
2-Chlorotoluene	95-49-8	126.6	ND	0.50		ND	2.6	
1,2,4-Trimethylbenzene	95-63-6	120.2	ND	0.50		ND	2.5	
1,3-Dichlorobenzene	541-73-1	147.0	ND	0.50		ND	3.0	
1,4-Dichlorobenzene	106-46-7	147.0	ND	0.50		ND	3.0	
Benzyl chloride	100-44-7	126.0	ND	0.50		ND	2.6	
1,2-Dichlorobenzene	95-50-1	147.0	ND	0.50		ND	3.0	
1,2,4-Trichlorobenzene	120-82-1	181.5	ND	0.50		ND	3.7	
Hexachloro-1,3-butadiene	87-68-3	260.8	ND	0.50		ND	5.3	
Naphthalene	91-20-3	128.17	ND	0.50		ND	2.6	

**Total Target Compound Concentrations:**

**7.4 ppbv**      **17 ug/m3**

**Surrogate**

4-Bromofluorobenzene

Result

10

Spike

10

Recovery

100%

**Qualifier Definitions**

**ND = Non Detect**

B = Compound also found in method blank.

E= Estimated concentration exceeding upper calibration range.

D= Result reported from diluted analysis.

**Method Reference**

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).



# USEPA TO-15

## External Chain of Custody/ Field Test Data Sheet

EMSL Analytical, Inc.  
200 Route 130 North  
Cinnaminson, NJ 08077  
Ph. (800) 220-3676  
Fax (856) 786-0327

EMSL ANALYTICAL, INC.

EMSL Order Number (Lab Use Only):

4918 00016

Report To Contact Name: <i>Jim Guilardi</i>	Bill To Company: <i>SAME</i>	Sampled By (Sign): <i>[Signature]</i>
Company Name: <i>TTI Environmental, Inc.</i>	Attention To:	Sampled By (Name): <i>Adam Culliton</i>
Address 1: <i>1253 N. Church St.</i>	Address 1:	Total # of Samples: <i>8</i>
Address 2: <i>Moorestown, NJ 08057</i>	Address 2:	Date Shipped:
Phone No.: <i>856-840-8800</i> Fax:	Phone No.:	Sample Collection Zip Code: <i>08087</i>
Email Results To: <i>JimG@TTIENV.com</i>	Project Name: <i>17-1224 / Pinelands Regional</i>	Purchase Order: <i>024258</i>

Turnaround Time (In Business Days):  10 Day Standard  
 5 Day  4 Day  3 Day  
 2 Day  1 Day  Other

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

Analysis			Matrix			
USEPA TO-15	NIDEP LLTO-15	LIBRARY SEARCH	Other (Specify)	Indoor/Ambient Air	Soil Gas	Landfill Vent
X	X					
X	X					
X	X					
X	X					
X	X					
X	X					
X	X					
X	X					

EMSL Sample Identifier

Client Field Sample Identification	Field Use - All Information Required!								Lab Use Only						
	Sampling Start Information				Sampling Stop Information				Canister Information				Flow Controller		
	Start Date	Time (24 hr clock)	Canister Pressure (Psi)	Interior Temp. (F)	Stop Date	Time (24 hr clock)	Canister Pressure (Psi)	Interior Temp. (F)	Canister ID	Size (L)	Can Cert Batch ID	Outgoing Pressure (Psi)	Incoming Pressure (Psi)	Rtg. ID	Cal Flow (ml/min)
1 Rm 164	1-7-18	11:26	-29.5	68.3	1-8-18	8:25	6.9	71.9	E 0307	6	C3545	-24.0	-7.8	3505	3.5
2 Rm 167	1-7-18	11:30	-29.9	69.4	1-8-18	8:45	-11.5	73.1	0393				-6.8	3738	
3 Rm 147	1-7-18	11:45	-30.1	71.4	1-8-18	9:00	-7.3	74.4	0474				7.2	6839	
4 Rm 106	1-7-18	11:52	-30.1	71.5	1-8-18	9:15	-7.1	73.5	0491			-28.0	-6.6	7878	
5 Rm 205	1-7-18	12:04	-30.1	71.3	1-8-18	9:25	-6.7	71.7	0507			-29.0	-7.0	7942	
6 Upper Media	1-7-18	12:11	-30.1	75.5	1-8-18	9:35	-7.7	77.1	0597				-8.2	8058	
7 Rm 306	1-7-18	12:20	-30.1	70.3	1-8-18	9:50	-5.2	72.1	12272				-7.2	8065	
8 outside	1-7-18	12:40	-30.9	20.7	1-8-18	10:10	-5.9	31.2	15538				-4.6	8066	

Comments:

Lab Canister Certification  
Analyst Signature (TO-15):

Relinquished by:	Date/Time	Received by:	Date/Time	Seal #/Intact	Reason for Exchange (circle appropriate)
<i>Andrew Jones</i>	<i>1/4/18 1455</i>	<i>Jim Guilardi</i>	<i>1-5-18 2:00 PM</i>		Shipping <input type="checkbox"/> Courier <input type="checkbox"/> Receiving <input type="checkbox"/> Sampling <input checked="" type="checkbox"/> Other: <i>AKU</i>
<i>Jim Guilardi</i>	<i>1-5-18 4:00 PM</i>	<i>Adam Culliton</i>	<i>1-5-18 7:30 PM</i>		Shipping <input type="checkbox"/> Courier <input type="checkbox"/> Receiving <input checked="" type="checkbox"/> Sampling <input type="checkbox"/> Other:
<i>Adam Culliton</i>	<i>1-8-18 2:30</i>	<i>[Signature]</i>	<i>1/8/18 2:20 PM</i>		Shipping <input type="checkbox"/> Courier <input type="checkbox"/> Receiving <input type="checkbox"/> Sampling <input type="checkbox"/> Other:
<i>[Signature]</i>	<i>1/8/18 2:20 PM</i>	<i>[Signature]</i>	<i>1/08/18/1620</i>		Shipping <input type="checkbox"/> Courier <input type="checkbox"/> Receiving <input type="checkbox"/> Sampling <input checked="" type="checkbox"/> Other: <i>AT</i>
					Shipping <input type="checkbox"/> Courier <input type="checkbox"/> Receiving <input type="checkbox"/> Sampling <input type="checkbox"/> Other:

18 of 19

RECEIVED

4918 06016

RECEIVED  
EMSL  
CINNAMINSON, N.J.

### TO-15 Sample Information

Please fill out this worksheet in addition to the Chain of Custody form. This information helps us to best analyze your samples, achieve requested TAT and provide you with helpful interpretation information.

NOV 11 - 8 P 2 19

Company: TTI Environmental, Inc.

Contact Person:

Name: Jim Guilardi

E-mail: Jim.G@TTIENV.com

Additional E-mails: N/A

Telephone #: 856-840-8800

Library Search requested:  YES  NO

A library search (aka *Tentatively Identified Compounds*) will identify up to 20 of the largest, non-target peaks that are not part of the standard TO-15 list of 74 compounds. If you are performing an Indoor Air Quality or odor investigation, the library search is recommended to provide you with all available information for your sample.

Sample Type:

- Indoor Air Quality (Home/Office)  Soil Gas/Sub Slab
- IAQ (Industrial)
- Other: ① Room 164 ② Room 147 ③ Room 205 ④ Room 306
- Sample Description: ⑤ Room 167 ⑥ Room 106 ⑦ Upper Media ⑧ Outside

PLEASE NOTE: The result forms that we provide will not indicate whether your results have exceeded any Exposure Limit criteria established by any regulatory agency. If you would like that information, please check off below which regulatory comparison forms you would like to receive.

- |   |  |
|---|--|
| <input type="checkbox"/> OSHA PELs/NIOSH RELs <i>combined form</i>                      | <input type="checkbox"/> Potential Sources of Compounds found in your IAQ sample |
| <input type="checkbox"/> EPA RSLs - 5/2016 Blended for THQ=1.0 and THQ=0.1              | <input type="checkbox"/> TVOC (Library Search Required for this format)          |
| <input type="checkbox"/> NJ DEP 1/2013 - Circle one: Indoor Air    Soil Gas             | <input type="checkbox"/> Ohio 4/2013 - Circle one: Residential    Commercial     |
| <input type="checkbox"/> NC DENR 4/2014 - Circle one: Residential    Non-residential    | <input type="checkbox"/> Indiana Dept Env Mgmt Screening Levels 3/2016           |
| <input type="checkbox"/> PA DEP - 11/2016                                    Indoor Air | <input type="checkbox"/> Vermont DEP IROCP 4/2012 (soil gas only)                |
| <input type="checkbox"/> PA DEP - 11/2016: Sub Slab Soil Gas OR Near Source Soil Gas    | <input type="checkbox"/> California OEHHA 2/2012                                 |
| <input type="checkbox"/> CA HHSL 11/2004 - Circle on Indoor Air    Soil Gas             | <input type="checkbox"/> Other, These are the compounds I want reported:         |

Additional analyses that can be performed from your canister. Please note: there is an additional charge for any of the tests below.

- |  |   |
|--|---|
| US EPA TO-3 via GC/FID (choose one below):                           | ASTM-D5504 via GC/SCD (choose one below): *                                   |
| <input type="checkbox"/> C <sub>1</sub> -C <sub>6</sub> hydrocarbons | <input type="checkbox"/> Sulfur Scan (H <sub>2</sub> S, COS, MeSH, EtSH, DMS) |
| <input type="checkbox"/> Methane only                                | <input type="checkbox"/> H <sub>2</sub> S only                                |

**\*Note:** Hold time for sulfur gases is 1 day from collection. Please schedule your sample collection so that samples are received in the lab prior to noon on Friday. Analysis performed out of hold time will have a notation in the report.

We can provide the following CMS tests from your canisters. Please note that these tests are to be used for IAQ/Screening purposes ONLY. EMSL recommends alternate field sampling techniques for these parameters (with the exception of water vapor); please contact your sales rep for the proper media. Please note: there is an additional charge for any of the tests

- Draeger CMS Analyzer:
- CO     CO<sub>2</sub>     NH<sub>3</sub>     O<sub>2</sub>     Water Vapor

**Sample Retention Policy:** All canisters are guaranteed to be retained for one day after results are reported. Please review your results promptly to ensure that your project scope is fully addressed. Cans may be retained for a longer period of time but arrangements to hold your cans must be made through your customer account representative quickly. Thank you.