



October 18, 2017

Mr. Stephen J. Brennan, MBA, CPA
 Business Administrator/Board Secretary
 Pinelands Regional Board of Education
 520 Nugentown Road
 Little Egg Harbor, NJ 08087

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

Dear Mr. Brennan,

TTI Environmental, Inc. is pleased to present this report containing results of indoor air monitoring performed at Pinelands Regional Junior High School on 10.10.2017. A list of compounds detected inside the building is summarized below.

Results	CAS	10.05.2017 ug/m3	10.05.2017 ppm	10.10.2017 ug/m3	10.10.2017 ppm	OSHA PEL ppm	OSHA PEL mg/m ³	NIOSH REL ppm	ACGIH TLV ppm
Unknown Hydrocarbons		ND	ND	12.0	0.0031	-	-	-	-
Unknown Substituted Cyclohexane		ND	ND	3.8	0.0011	-	-	-	-
Ethanol	64175	34.0	0.0480	420.0	0.2200	1000	1900	1000	1000
Isopropyl alcohol(2-Propanol)	67630	3.7	0.0015	18.0	0.0071	400	980	400	200
Acetone	67641	14.0	0.0060	20.0	0.0083	1000	2400	250	250
Benzene	71432	8.9	0.0028	ND	ND	1		0.1	10
Chloromethane	74873	1.6	0.0008	1.7	0.0008	25	-	-	50
Methylene chloride	75092	ND	ND	4.3	0.0012	25	-	-	50
1,1-difluoroethane	75376	ND	ND	23.0	0.0084	-	-	-	-
Isobutane	75285	ND	ND	26.0	0.0110	-	-	800	1000
Freon 11(Trichlorofluoromethane)	75694	5.5	0.0010	70.0	0.0130	1000	5600	1000	1000
Freon 12(Dichlorodifluoromethane)	75718	2.5	0.0005	3.5	0.0007	1000	4950	1000	1000
2-methylbutane	78784	ND	ND	55.0	0.0190	-	-	-	600
2-butanone	78933	ND	ND	2.3	0.0008	200	590	200	200
.alpha.-Pinene	80568	ND	ND	7.2	0.0013	-	-	-	20
Naphthalene	91203	11.0	0.0021	ND	ND	10	50	10	10
Xylene (Ortho)	95476	3.5	0.0008	3.6	0.0008	100	435	100	100
1,2,4-Trimethylbenzene	95636	15.0	0.0030	12.0	0.0024	-	-	25	25
Isopropylbenzene (cumene)	98828	19.0	0.0039	ND	ND	50	245	50	50
Ethylbenzene	100414	2.7	0.0006	ND	ND	-	-	-	-
n-Butane	106978	4.1	0.0017	40.0	0.0170	-	-	1000	800
1,3,5-Trimethylbenzene	108678	85.0	0.0170	5.3	0.0011	-	-	25	25
Toluene	108883	3.8	0.0010	2.4	0.0006	200	750	100	20
Pentane	109660	ND	ND	100.0	0.0340	1000	2950	120	600
n-Hexane	110543	28.0	0.0081	ND	ND	500	1800	50	50
Cyclohexane	110827	10.0	0.0029	ND	ND	300	1015	300	300
Nonane	111842	ND	ND	31.0	0.0059	-	-	200	200
Propylene	115071	3.5	0.0020	ND	ND	-	-	-	-
Decane	124185	ND	ND	28.0	0.0048	-	-	-	-
Ethyl acetate	141786	ND	ND	20.0	0.0054	400	1,400	400	400
n-Heptane	142825	35.0	0.0087	ND	ND	500	2000	85	400
2,2,4-Trimethylpentane(Isooctane)	540841	31.0	0.0067	ND	ND	300	-	75	300
4-Ethyltoluene	622968	150.0	0.0310	10.0	0.0020	-	-	-	-
Undecane	1120214	ND	ND	17.0	0.0026	-	-	-	-
Xylene (p,m)	1330207	9.0	0.0021	5.6	0.0013	-	-	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
 NJ-IRRAL NJDEP RESIDENTIAL VAPOR INTRUSION SCREENING LEVELS, March 2013
 NJ-IRRAL NJDEP NON-RESIDENTIAL VAPOR INTRUSION SCREENING LEVELS, March 2013



The table includes the previous results for the High School along with current detectable levels at the Junior High School for comparison. TTI has evaluated the results and can confirm that none of the detected compounds exceeded limits set by OSHA, NIOSH or ACGIH for health considerations.

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.

A handwritten signature in black ink that reads "Patricia B Stock".

Patricia B Stock
Senior EHS Consultant

**EMSL Analytical**

200 Route 130 North, Cinnaminson, NJ 08077

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

<http://www.EMSL.com> to15lab@EMSL.comEMSL Order #: **491701023**Customer ID: **TTIE54**Customer PO: **23716**Attn: **Jim Guilardi**
TTI Environmental Inc.
1253 North Church Street
Moorestown, NJ 08057Phone: **856-840-8800**Fax: **856-840-8815**Project: **17-1224 / Pinelands Regional Jr. High**Date Collected: **10/10/2017**Date Received: **10/12/2017****Laboratory Report- Sample Summary**

EMSL Sample ID.	Client Sample ID.	Start Sampling Date	Start Sampling Time
491701023-0001	Outside	10/10/2017	5:17 PM
491701023-0002	Main Office	10/10/2017	4:50 PM
491701023-0003	Faculty / Cafe	10/10/2017	4:47 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:
10/17/2017Report 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 #: **491701023**
 EMSL Sample #: **491701023-1**
 Customer ID: **TTIE54**
 Customer PO: **23716**

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

Phone: **856-840-8800**
 Fax: **856-840-8815**
 Date Collected: **10/10/2017**
 Date Received: **10/12/2017**

Project: **17-1224 / Pinelands Regional Jr. High**

Sample ID: **Outside**

Analysis	Analysis Date	Analyst Init.	Lab File ID	Canister ID	Sample Vol.	Dil. Factor
Initial	10/16/2017	TP	J2329.D	E0376	307.5 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	1.0	0.50		2.1	1.0	
n-Butane	106-97-8	58.12	ND	0.50		ND	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	2.8	0.50		5.3	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	1.4	0.50		3.5	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	2.4	0.50		5.7	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	2.9	0.50		10	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

EMSL Order #: **491701023**
 EMSL Sample #: **491701023-1**
 Customer ID: **TTIE54**
 Customer PO: **23716**

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

Phone: **856-840-8800**
 Fax: **856-840-8815**
 Date Collected: **10/10/2017**
 Date Received: **10/12/2017**

Project: **17-1224 / Pinelands Regional Jr. High**

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	10/16/2017	TP	J2329.D	E0376	307.5 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:

11	ppbv	29	ug/m3
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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).



NJDEP Certification #: 03036

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EMSL Order #:	491701023
EMSL Sample #:	491701023-1
Customer ID:	TTIE54
Customer PO:	23716

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

Phone: **856-840-8800**
 Fax: **856-840-8815**
 Date Collected: **10/10/2017**
 Date Received: **10/12/2017**

Project: **17-1224 / Pinelands Regional Jr. High**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	10/16/2017	TP	J2329.D	E0376	307.5 cc	1

Total Volatile Organic Compounds (TVOC) Summary

Target Compounds	CAS#	MW	Result ppbv	RL ppbv	Q	Result ug/m3	RL ug/m3	Comments
Freon 12(Dichlorodifluoromethane)	75-71-8	120.90	0.52	0.50		2.6	2.5	
Chloromethane	74-87-3	50.49	1.0	0.50		2.1	1.0	
Ethanol	64-17-5	46.07	2.8	0.50		5.3	0.94	
Isopropyl alcohol(2-Propanol)	67-63-0	60.10	1.4	0.50		3.5	1.2	
Acetone	67-64-1	58.08	2.4	0.50		5.7	1.2	
Ethyl acetate	141-78-6	88.10	2.9	0.50		10	1.8	
Total Target Compound Concentrations:			11	ppbv		29	ug/m3	

Qualifier Definitions

B = Compound also found in method blank.

E= Estimated concentration exceeding upper calibration range.

D= Result reported from diluted analysis.

Tentatively Identified Compounds	CAS#	MW(1)	Result ppbv	Q	Result ug/m3	Retention Time	Comments
Total TIC Concentrations:			0.0	ppbv	0.0	ug/m3	

Qualifier Definitions

(1) = If unknown, MW is assigned as equivalent Toluene (92) for ug/m3 conversion purposes.

B = Compound also found in method blank.

J= Estimated value based on a 1:1 response to internal standard.

N= Presumptive evidence of compound based on library match.

Total Volatile Organic Compounds (TVOCs): **11 ppbv** **29 ug/m3**



NJDEP Certification #: 03036

**EMSL Analytical**

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EMSL Order #: **491701023**
 EMSL Sample #: **491701023-2**
 Customer ID: **TTIE54**
 Customer PO: **23716**

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

Phone: **856-840-8800**
 Fax: **856-840-8815**
 Date Collected: **10/10/2017**
 Date Received: **10/12/2017**

Project: **17-1224 / Pinelands Regional Jr. High**

Sample ID: **Main Office**

Analysis	Analysis Date	Analyst Init.	Lab File ID	Canister ID	Sample Vol.	Dil. Factor
Initial	10/16/2017	TP	J2331.D	E0412	302.5 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	0.57	0.50		2.8	2.5	
Freon 114(1,2-Dichlorotetrafluoroethan	76-14-2	170.9	ND	0.50		ND	3.5	
Chloromethane	74-87-3	50.49	0.84	0.50		1.7	1.0	
n-Butane	106-97-8	58.12	17	0.50		40	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	220	0.50	E	420	0.94	
Bromoethene(Vinyl bromide)	593-60-2	106.9	ND	0.50		ND	2.2	
Freon 11(Trichlorofluoromethane)	75-69-4	137.4	13	0.50		70	2.8	
Isopropyl alcohol(2-Propanol)	67-63-0	60.10	7.1	0.50		18	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	8.3	0.50		20	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	1.2	0.50		4.3	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	0.78	0.50		2.3	1.5	
cis-1,2-Dichloroethene	156-59-2	96.94	ND	0.50		ND	2.0	
Ethyl acetate	141-78-6	88.10	5.4	0.50		20	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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1253 North Church Street
Moorestown, NJ 08057

Phone: **856-840-8800**
 Fax: **856-840-8815**
 Date Collected: **10/10/2017**
 Date Received: **10/12/2017**

Project: **17-1224 / Pinelands Regional Jr. High**

Sample ID: **Main Office**

Analysis	Analysis Date	Analyst Init.	Lab File ID	Canister ID	Sample Vol.	Dil. Factor
Initial	10/16/2017	TP	J2331.D	E0412	302.5 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	0.63	0.50		2.4	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	1.3	1.0		5.6	4.3	
Xylene (Ortho)	95-47-6	106.2	0.82	0.50		3.6	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	2.0	0.50		10	2.5	
1,3,5-Trimethylbenzene	108-67-8	120.2	1.1	0.50		5.3	2.5	
2-Chlorotoluene	95-49-8	126.6	ND	0.50		ND	2.6	
1,2,4-Trimethylbenzene	95-63-6	120.2	2.4	0.50		12	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:			280	ppbv		640	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).



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 #:	491701023
EMSL Sample #:	491701023-2
Customer ID:	TTIE54
Customer PO:	23716

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

Phone: **856-840-8800**
 Fax: **856-840-8815**
 Date Collected: **10/10/2017**
 Date Received: **10/12/2017**

Project: **17-1224 / Pinelands Regional Jr. High**Sample ID: **Main Office**

<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	10/16/2017	TP	J2331.D	E0412	302.5 cc	1

Total Volatile Organic Compounds (TVOC) Summary

Target Compounds	CAS#	MW	Result ppbv	RL ppbv	Q	Result ug/m3	RL ug/m3	Comments
Freon 12(Dichlorodifluoromethane)	75-71-8	120.90	0.57	0.50		2.8	2.5	
Chloromethane	74-87-3	50.49	0.84	0.50		1.7	1.0	
n-Butane	106-97-8	58.12	17	0.50		40	1.2	
Ethanol	64-17-5	46.07	220	0.50	E	420	0.94	
Freon 11(Trichlorofluoromethane)	75-69-4	137.40	13	0.50		70	2.8	
Isopropyl alcohol(2-Propanol)	67-63-0	60.10	7.1	0.50		18	1.2	
Acetone	67-64-1	58.08	8.3	0.50		20	1.2	
Methylene chloride	75-09-2	84.94	1.2	0.50		4.3	1.7	
2-Butanone(MEK)	78-93-3	72.10	0.78	0.50		2.3	1.5	
Ethyl acetate	141-78-6	88.10	5.4	0.50		20	1.8	
Toluene	108-88-3	92.14	0.63	0.50		2.4	1.9	
Xylene (p,m)	1330-20-7	106.20	1.3	1.0		5.6	4.3	
Xylene (Ortho)	95-47-6	106.20	0.82	0.50		3.6	2.2	
4-Ethyltoluene	622-96-8	120.2	2.0	0.50		10	2.5	
1,3,5-Trimethylbenzene	108-67-8	120.2	1.1	0.50		5.3	2.5	
1,2,4-Trimethylbenzene	95-63-6	120.20	2.4	0.50		12	2.5	
Total Target Compound Concentrations:			280	ppbv		640	ug/m3	

Qualifier Definitions

B = Compound also found in method blank.

E= Estimated concentration exceeding upper calibration range.

D= Result reported from diluted analysis.

Tentatively Identified Compounds	CAS#	MW(1)	Result ppbv	Q	Result ug/m3	Retention Time	Comments
Ethane, 1,1-difluoro-	000075-37-6	66	8.4	JN	23	6.47	
Isobutane	000075-28-5	58	11	JN	26	7.06	
Butane, 2-methyl-	000078-78-4	72	19	JN	55	9.27	
Pentane	000109-66-0	72	34	JN	100	10.09	
unknown hydrocarbon		92	2.5	JN	9.6	22.86	
unknown hydrocarbon		92	1.1	JN	4.2	23.14	
Nonane	000111-84-2	128	5.9	JN	31	23.91	
unknown hydrocarbon		92	1.1	JN	4.3	24.79	
Unknown Substituted Cyclohexane		92	1.1	JN	4.0	25.02	
Unknown Substituted Cyclohexane		92	1.0	JN	3.8	25.64	
unknown hydrocarbon		92	1.9	JN	7.0	25.82	
.alpha.-Pinene	000080-56-8	136	1.3	JN	7.2	25.99	
Decane	000124-18-5	142	4.2	JN	24	26.51	
unknown hydrocarbon		92	3.1	JN	12	26.97	
Unknown Substituted Cyclohexane		92	1.9	JN	7.0	28.23	
Total TIC Concentrations:			100	ppbv	320	ug/m3	

Qualifier Definitions

(1) = If unknown, MW is assigned as equivalent Toluene (92) for ug/m3 conversion purposes.

**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 #: **491701023**
 EMSL Sample #: **491701023-2**
 Customer ID: **TTIE54**
 Customer PO: **23716**

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

Phone: **856-840-8800**
 Fax: **856-840-8815**
 Date Collected: **10/10/2017**
 Date Received: **10/12/2017**

Project: **17-1224 / Pinelands Regional Jr. High**

Sample ID: **Main Office**

<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	10/16/2017	TP	J2331.D	E0412	302.5 cc	1

Total Volatile Organic Compounds (TVOC) Summary

B = Compound also found in method blank.

J= Estimated value based on a 1:1 response to internal standard.

N= Presumptive evidence of compound based on library match.

Total Volatile Organic Compounds (TVOCs): 380 ppbv 1000 ug/m3



NJDEP Certification #: 03036

**EMSL Analytical**

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 Phone/Fax: (856)858-4800 / (856)858-4571
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EMSL Order #: **491701023**
 EMSL Sample #: **491701023-3**
 Customer ID: **TTIE54**
 Customer PO: **23716**

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

Phone: **856-840-8800**
 Fax: **856-840-8815**
 Date Collected: **10/10/2017**
 Date Received: **10/12/2017**

Project: **17-1224 / Pinelands Regional Jr. High**

Sample ID: **Faculty / Cafe**

Analysis	Analysis Date	Analyst Init.	Lab File ID	Canister ID	Sample Vol.	Dil. Factor
Initial	10/17/2017	TP	J2333.D	E0570	302.5 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	0.71	0.50		3.5	2.5	
Freon 114(1,2-Dichlorotetrafluoroethan	76-14-2	170.9	ND	0.50		ND	3.5	
Chloromethane	74-87-3	50.49	0.82	0.50		1.7	1.0	
n-Butane	106-97-8	58.12	4.5	0.50		11	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	45	0.50	E	85	0.94	
Bromoethene(Vinyl bromide)	593-60-2	106.9	ND	0.50		ND	2.2	
Freon 11(Trichlorofluoromethane)	75-69-4	137.4	2.1	0.50		12	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	4.3	0.50		10	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	4.9	0.50		18	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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EMSL Order #: **491701023**
 EMSL Sample #: **491701023-3**
 Customer ID: **TTIE54**
 Customer PO: **23716**

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

Phone: **856-840-8800**
 Fax: **856-840-8815**
 Date Collected: **10/10/2017**
 Date Received: **10/12/2017**

Project: **17-1224 / Pinelands Regional Jr. High**

Sample ID: **Faculty / Cafe**

Analysis	Analysis Date	Analyst Init.	Lab File ID	Canister ID	Sample Vol.	Dil. Factor
Initial	10/17/2017	TP	J2333.D	E0570	302.5 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	0.81	0.50		4.0	2.5	
1,3,5-Trimethylbenzene	108-67-8	120.2	0.57	0.50		2.8	2.5	
2-Chlorotoluene	95-49-8	126.6	ND	0.50		ND	2.6	
1,2,4-Trimethylbenzene	95-63-6	120.2	1.4	0.50		6.8	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:			67	ppbv		160	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).



NJDEP Certification #: 03036

**EMSL Analytical**

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 Customer ID: **TTIE54**
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Attn: **Jim Guilardi**
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Phone: **856-840-8800**
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 Date Collected: **10/10/2017**
 Date Received: **10/12/2017**

Project: **17-1224 / Pinelands Regional Jr. High**

Sample ID: **Faculty / Cafe**

Analysis	Analysis Date	Analyst Init.	Lab File ID	Canister ID	Sample Vol.	Dil. Factor
Initial	10/17/2017	TP	J2333.D	E0570	302.5 cc	1

Total Volatile Organic Compounds (TVOC) Summary

Target Compounds	CAS#	MW	Result ppbv	RL ppbv	Q	Result ug/m3	RL ug/m3	Comments
Freon 12(Dichlorodifluoromethane)	75-71-8	120.90	0.71	0.50		3.5	2.5	
Chloromethane	74-87-3	50.49	0.82	0.50		1.7	1.0	
n-Butane	106-97-8	58.12	4.5	0.50		11	1.2	
Ethanol	64-17-5	46.07	45	0.50	E	85	0.94	
Freon 11(Trichlorofluoromethane)	75-69-4	137.40	2.1	0.50		12	2.8	
Isopropyl alcohol(2-Propanol)	67-63-0	60.10	2.2	0.50		5.5	1.2	
Acetone	67-64-1	58.08	4.3	0.50		10	1.2	
Ethyl acetate	141-78-6	88.10	4.9	0.50		18	1.8	
4-Ethyltoluene	622-96-8	120.2	0.81	0.50		4.0	2.5	
1,3,5-Trimethylbenzene	108-67-8	120.2	0.57	0.50		2.8	2.5	
1,2,4-Trimethylbenzene	95-63-6	120.20	1.4	0.50		6.8	2.5	
Total Target Compound Concentrations:			67	ppbv		160	ug/m3	

Qualifier Definitions

B = Compound also found in method blank.

E = Estimated concentration exceeding upper calibration range.

D = Result reported from diluted analysis.

Tentatively Identified Compounds	CAS#	MW(1)	Result ppbv	Q	Result ug/m3	Retention Time	Comments
Ethane, 1,1-difluoro-	000075-37-6	66	3.1	JN	8.4	6.49	
Isobutane	000075-28-5	58	4.5	JN	11	7.08	
Butane, 2-methyl-	000078-78-4	72	5.9	JN	17	9.29	
Pentane	000109-66-0	72	6.8	JN	20	10.11	
Nonane	000111-84-2	128	2.8	JN	15	23.89	
unknown hydrocarbon		92	3.0	JN	11	25.54	
Decane	000124-18-5	142	4.8	JN	28	26.52	
unknown hydrocarbon		92	1.7	JN	6.4	26.97	
unknown hydrocarbon		92	1.8	JN	6.8	28.22	
Undecane	001120-21-4	156	2.6	JN	17	28.88	
Total TIC Concentrations:			37	ppbv	140	ug/m3	

Qualifier Definitions

(1) = If unknown, MW is assigned as equivalent Toluene (92) for ug/m3 conversion purposes.

B = Compound also found in method blank.

J = Estimated value based on a 1:1 response to internal standard.

N = Presumptive evidence of compound based on library match.

Total Volatile Organic Compounds (TVOCs): **100 ppbv**

300 ug/m3



NJDEP Certification #: 03036

491701023

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.

Company: TTI Environmental

Contact Person:

Name: Jim Guillard

E-mail: JimG@TTIENV.com

Additional E-mails:

Telephone #: 856-840-8802

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:

Sample Description: Outside, Main Office, Faculty/Cafe

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.

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

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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):
- C₁-C₆ hydrocarbons
- Methane only
- ASTM-D5504 via GC/SCD (choose one below): *
- Sulfur Scan (H₂S, COS, MeSH, EtSH, DMS)
- H₂S 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 [] CO₂ [] NH₃ [] O₂ [] 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.