



January 9, 2015

REC'D JAN 12 2015

Rick & Cathy Gulick  
5231 40<sup>th</sup> Ave  
Kenosha, WI 53142

**Subject: Environmental Investigation Sampling Results**  
**BRRTS#: 02-30-552186**

Dear Mr. and Mrs. Gulick:

In accordance with the executed Agreement to Provide Access for Sampling Activities, and in accordance with Wisconsin Department of Natural Resources (WDNR) regulation NR 716.14, Environmental Forensic Investigations, Inc. (EnviroForensics) is providing the results of environmental samples collected from your property located at 5231 40<sup>th</sup> Avenue in Kenosha, Wisconsin. The samples were collected on December 9, 2014. The sampling activities are part of an environmental investigation being performed for the Martino's Master Drycleaner facility located at 3917 52<sup>nd</sup> Street in Kenosha, WI at the direction of the WDNR pursuant to the authority granted to it under State and Federal law. The chemicals of concern for the investigation are the dry cleaning solvent tetrachloroethene (PCE) and its associated breakdown products.

The Responsible Party is:

Martino's Master Drycleaners  
3917 52<sup>nd</sup> Street  
Kenosha, WI  
262-694-7545

### **Sampling Results**

Two (2) sub-slab vapor samples designated 6190-5231-SSV-1 and 6190-5231-SSV-2 were collected from the basement of your home. Indoor air samples 6190-5231-IA-1 and 6190-5231-IA-2 were collected from the basement and first floor, respectively. For quality control purposes a sample of outdoor air designated 6190-5231-OA was also collected. The sampling locations are depicted on the attached figure. The results of the vapor and air samples are summarized and compared to WDNR standards on the attached table. The laboratory report that relates to the vapor and air samples are also attached.

As shown on the attached table, the sub-slab vapor samples contained both PCE and trichloroethene (TCE), which is a breakdown product of PCE. The concentration of TCE in sub-slab vapor sample 6190-5231-SSV-2 was above the residential vapor risk screening level

*Document: 6190-0496*  
Environmental Forensic Investigations, Inc.  
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Phone: 262-290-4001 • Fax 317-972-7875

established by WDNR for use in evaluating chemical concentrations at sites such as this. Chloroform was also detected in the sub-slab vapor samples at concentrations below the vapor risk screening level.

PCE and TCE were not detected in the indoor air samples collected from your home on December 9, 2014. Two (2) other compounds unrelated to dry cleaning solvent were detected in the indoor air samples, including chloroform and 1,2-dichloroethane at concentrations just above the vapor action levels. Since chloroform and 1,2-dichloroethane are not breakdown products of PCE, the source of these compounds could be from household products that contain these compounds.

The sampling results indicate that PCE vapor is accumulating below the basement floor slab. However, since the PCE and TCE concentrations in indoor air are below the action levels, there does not appear to be an immediate risk.


We may request permission to re-sample for sub-slab and indoor vapors periodically during our investigations. If PCE and TCE are found in future sub-slab vapor samples, or if these chemicals are found in future indoor air samples, EnviroForensics may request permission to install a vapor mitigation system similar to the system installed at your neighbor's home to the south. Future remediation at the Martino's property may also eliminate the vapor risk to your home.

If you have any questions or concerns, please contact me at 414-326-4412 or by email at [bkappen@enviroforensics.com](mailto:bkappen@enviroforensics.com). The WDNR project manager, Doug Cieslak, can be reached at 262-884-2344. We greatly appreciate your help and patience with this matter.

Sincerely,  
**Environmental Forensic Investigations, Inc.**

A handwritten signature in blue ink, appearing to read "Brian Kappen".

Brian Kappen, PG  
*Project Manager*

A handwritten signature in blue ink, appearing to read "Wayne Fassbender".

Wayne Fassbender, PG, PMP  
*Senior Project Manager*

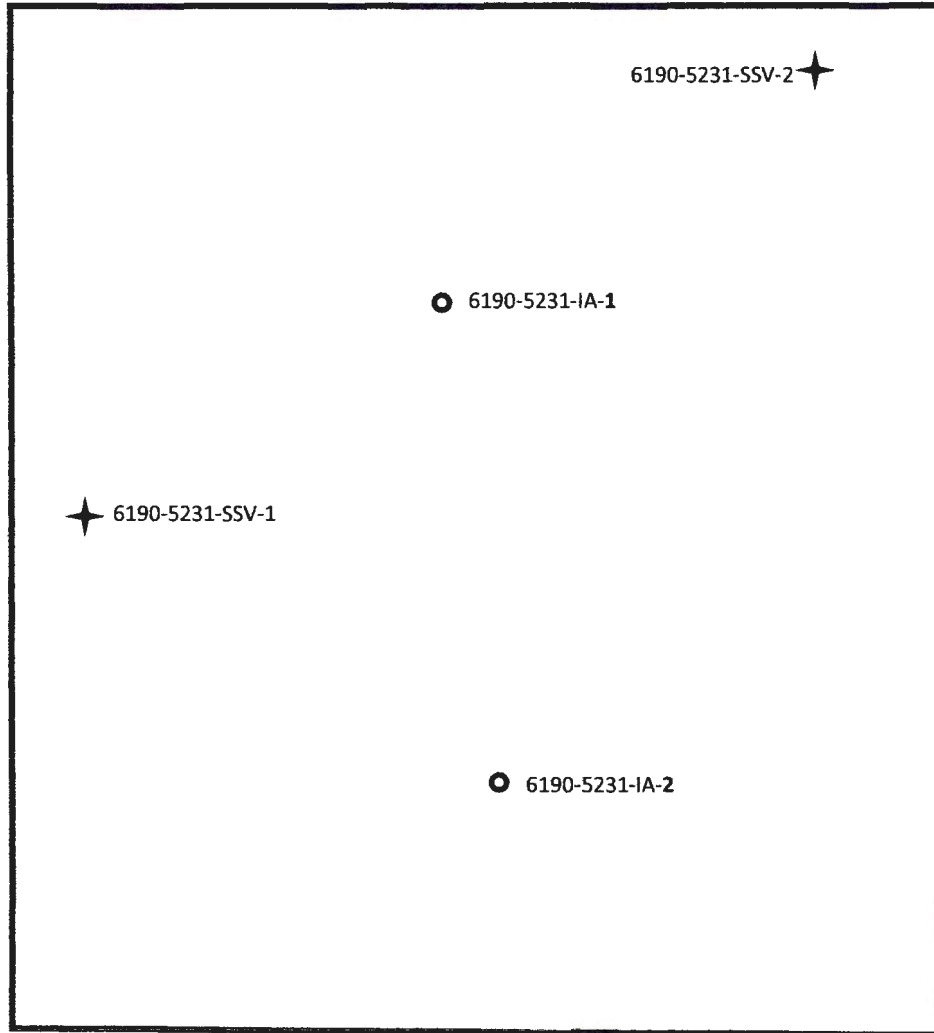
Copy: Doug Cieslak, Wisconsin Department of Natural Resources

Attachments: Sample Location Map  
Results Summary Table  
WDNR Fact Sheet - Understanding Chemical Vapor Intrusion Testing Results  
Analytical Laboratory Report

VAPOR INTRUSION SAMPLE LOCATIONS  
5231 40<sup>th</sup> Ave, Kenosha, Wisconsin

Driveway

40<sup>th</sup> Avenue



● 6190-5231-OA



**Legend**

● Indoor/Outdoor Air Sample

✦ Sub-Slab Vapor Sample

1 = Basement

2 = 1<sup>st</sup> Floor

## Summary of Vapor Intrusion Assessment Analytical Results

5231 40th Avenue

Martino's 52nd Street

Kenosha, Wisconsin

Sample Identification	Sample Location	Applicable Criteria	Sample Date	Tetrachloroethene	Trichloroethene	Benzene	1,2-Dichloroethane	Acetone	Chloroform
<b>Residential Vapor Action Level</b>				<b>42</b>	<b>2.1</b>	<b>3.6</b>	<b>1.1</b>	<b>32,000</b>	<b>1.2</b>
6190-5231-OA	Outdoor	Residential	9/9/2014	<3.19	<1.07	<1.60	<0.40	<2,380	<0.83
			12/9/2014	<3.19	<1.07	<1.60	<0.40	<2,380	<0.83
6190-5231-IA-1	Basement	Residential	9/9/2014	<b>7.05</b>	<1.07	<b>1.73</b>	<b>8.86</b>	<2,380	<b>2.59</b>
			12/9/2014	<3.19	<1.07	<1.60	<0.40	<2,380	<b>1.37</b>
6190-5231-IA-2	First Floor	Residential	9/9/2014	<b>9.16</b>	<b>1.34</b>	<b>1.63</b>	<b>8.46</b>	<b>2,560</b>	<b>2.64</b>
			12/9/2014	<3.19	<1.07	<1.60	<b>1.82</b>	<2,380	<b>1.27</b>
<b>Residential Vapor Risk Screening Level</b>				<b>420</b>	<b>21</b>	<b>36</b>	<b>11</b>	<b>320,000</b>	<b>12</b>
6190-5231-SSV-1	Basement	Residential	9/10/2014	<b>215</b>	<10.7	<16.0	<4.05	<23,800	<8.30
			12/9/2014	<b>125</b>	<b>13.4</b>	<16.0	<4.05	<23,800	<b>9.28</b>
6190-5231-SSV-2	Basement	Residential	9/10/2014	<b>461</b>	<b>40.3</b>	<16.0	<4.05	<23,800	<8.30
			12/9/2014	<b>300</b>	<b>27.4</b>	<16.0	<4.05	<23,800	<b>9.28</b>

**Notes:**

Results reported in micrograms per cubic meter ( $\mu\text{g}/\text{m}^3$ )

Analysis performed by Envision Laboratories according to EPA Method TO-15

IA = Indoor Air

OA = Outdoor air (background)

SSV = Sub-slab vapor

**Bolded** values are above detection limits

**Bolded and shaded** values exceed the applicable residential screening or action level



# Understanding Chemical Vapor Intrusion Testing Results

PUB-RR-977

Apr 2014

## From the Lab to You

Chemical vapor samples were taken from underneath your house or building and possibly indoors as well. These samples have been tested by a certified laboratory and a report was issued. The Wisconsin Department of Natural Resources (DNR) uses these test results to determine if people in the building are being exposed to chemical vapors coming from nearby contaminated soil or groundwater, and to decide what, if any, action is needed to prevent this exposure.

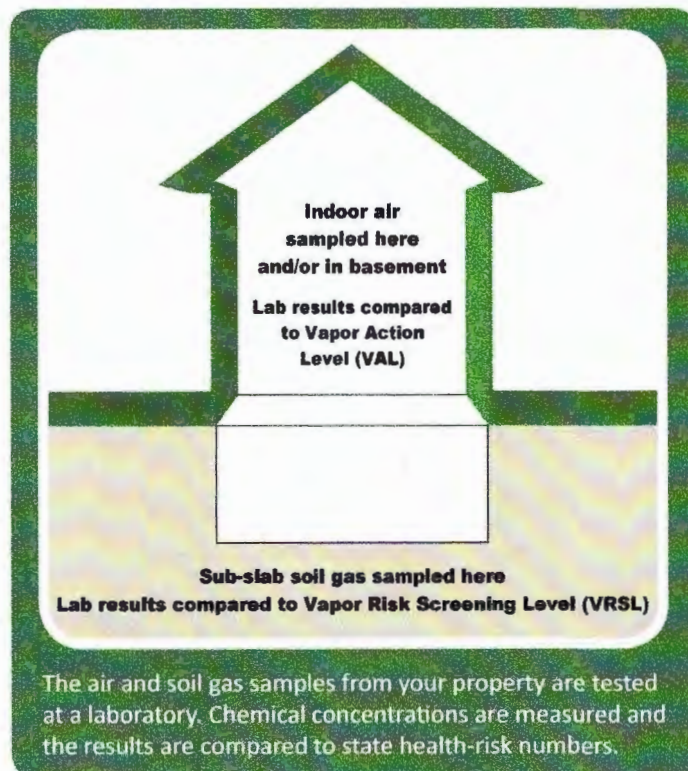
## Indoor Air Testing Results

If indoor air samples were collected in your house or building, test results from the lab will be compared to the state Vapor Action Level (VAL) for chemicals of concern. If test results show chemical concentrations in your air below the VAL then adverse health effects are not expected, even if you were to breathe the chemical at this concentration for your whole life.

Test results showing chemical concentrations in the air at or above the VAL prompt DNR to recommend that exposures to these chemical vapors be reduced. If test results show concentrations significantly above the VAL, or more than one type of chemical vapor is identified in your indoor air, the risk from exposure increases. If the concentration of any indoor chemical vapor exceeds 10 times the VAL, DNR is concerned about even short-term exposure and will typically require immediate action to address the problem.

The VAL for each chemical is set by scientific research. It is protective of all people, including those who are most susceptible to adverse health effects. For cancer-causing chemicals, no more than 1 in 100,000 people breathing indoor air with chemical concentrations below the VAL are expected to get cancer from exposure to that chemical. Concentrations above the VAL are of greater concern.

If test results identify chemicals in your air that are not present in nearby soil or groundwater contamination, it is likely that these vapors are coming from some product or activity in or near your house or building. Many everyday consumer products (e.g., cleaners, solvents, polish, adhesives, lubricants, aerosols, insect repellants, etc.); combustion processes (e.g., smoking, home heating); fuels in attached garages; dry cleaned clothing or draperies; and occupant activities (e.g., craft hobbies), also release chemical vapors into the air.



## Sub-slab Soil Gas Testing Results

Soil gas samples were collected from the ground beneath the concrete slab of your building foundation or basement. The lab measured the concentrations of various chemicals in these samples. DNR compares these measurements to the state Vapor Risk Screening Level (VRSL), which identifies the concentration of a chemical in soil gas that scientific research suggests can be a health risk if vapor enters a building. If soil gas measurements exceed the VRSL for a chemical of concern, action to reduce exposure is strongly recommended.

The VRSL is a higher number (higher chemical concentration) than the VAL because it is presumed that concrete building foundations and basement walls will prevent most soil gas from entering a building. Further, any soil gas that does enter a building through cracks, holes, sump pumps, drains, etc., will be diluted to some extent by the indoor air. So, people inside will not be breathing air that includes the full concentration of chemical vapors that exist in the ground.



Wisconsin Department of Natural Resources  
P.O. Box 7921, Madison, WI 53707  
dnr.wi.gov, search "Brownfields"





DNR generally relies on the test results of the sub-slab soil gas samples when determining what, if any, action should be taken related to chemical vapors coming from nearby soil or groundwater contamination. Indoor air quality is highly variable, and it is difficult to make a definitive decision about vapor intrusion based on indoor air sampling alone.

### Follow-Up Actions

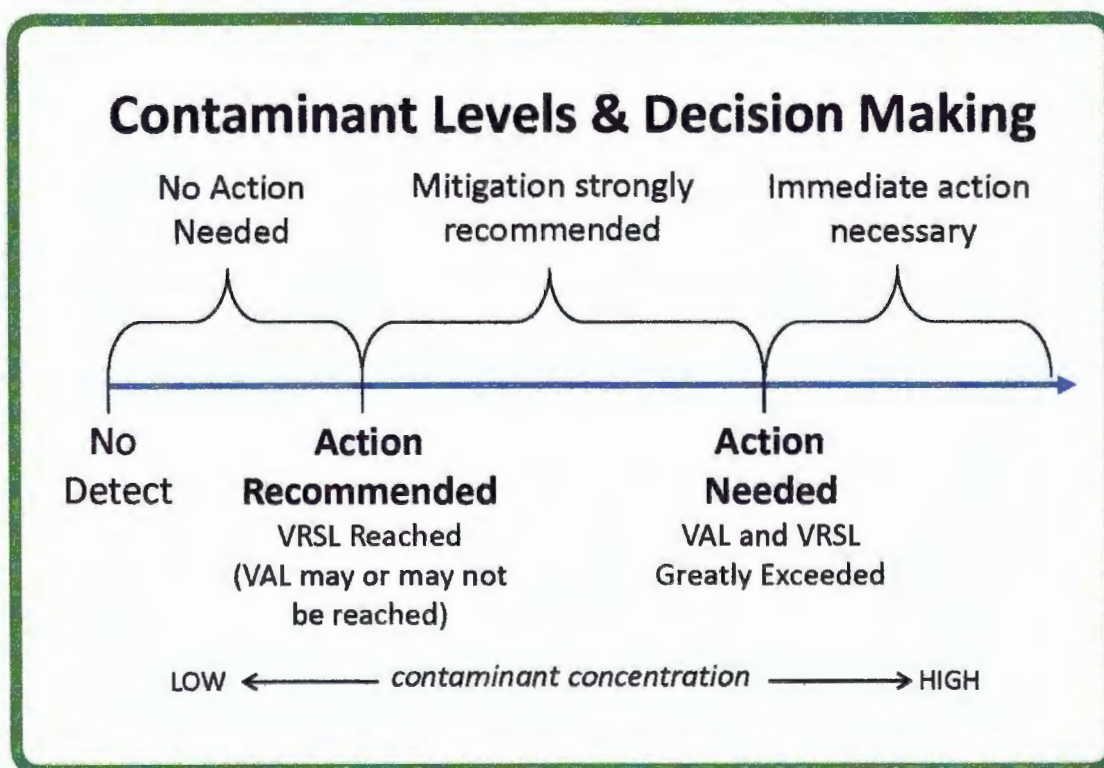
If your test results are less than a VAL for indoor air, or a VRSL for sub-slab soil gas, then the air in the house or building should not present a health concern. Follow-up sampling and testing may be necessary to confirm the results, but no other action is typically suggested.

When test results show soil gas chemical concentrations above a VRSL, both DNR and the Wisconsin Department of

Health Services recommend that owners take action to reduce potential exposure. This typically involves installing a vapor mitigation system that vents chemical vapors from beneath your home or building to the outdoors, similar to a radon mitigation system.

If indoor air concentrations exceed a VAL, but sub-slab concentrations are less than a VRSL, then the chemical vapors are most likely coming from indoor sources. Steps should be taken by the house or building owner to identify the products and practices causing the problem and implement appropriate remedies.

If soil gas mitigation is recommended, a representative of the party who is responsible for the soil or groundwater contamination will contact you to discuss your options.



**A Note about Measurement Units:** The lab report may include some unfamiliar technical language. The most important point to note is whether or not the test result for a specific chemical exceeds a VAL or VRSL, which are also sometimes referred to, generically, as "screening levels."

The concentration of gaseous pollutants in air is typically described in two different ways: 1) as units of mass per volume, where  $\mu\text{g}/\text{m}^3$  represents micrograms of gaseous pollutant per cubic meter of ambient air; and 2) as parts per billion by volume (ppbv), where the volume of a gaseous pollutant is compared to a set volume of ambient air. These are the numbers that are compared to the VAL and VRSL.

For more information, visit [dnr.wi.gov/topic/Brownfields/Vapor.html](http://dnr.wi.gov/topic/Brownfields/Vapor.html)



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Mr. Brian Kappen  
Enviroforensics  
N16 W. 23390 Stone Ridge Dr  
Suite G  
Waukesha, WI 53188

December 26, 2014

ENVision Project Number: 2014-571  
Client Project Name: 6190 Martino's Cleaners

Dear Mr. Kappen,

Please find the attached analytical report for the samples received December 12, 2014. All test methods performed were fully compliant with local, state, and federal EPA methods unless otherwise noted. The project was analyzed as requested on the enclosed chain of custody record. Please review the comments section for additional information about your results or Quality Control data.

Feel free to contact me if you have any questions or comments regarding your analytical report or service.

Thank you for your business. EnvisionAir looks forward to working with you on your next project.

Yours Sincerely,

A handwritten signature in cursive script that reads 'David Norris'.

David Norris

Client Services Manager  
EnvisionAir



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**Client Name:** ENVIROFORENSICS  
**Project ID:** 6190 MARTINO'S CLEANERS  
**Client Project Manager:** B. KAPPEN/K. HEIMSTEAD  
**EnvisionAir Project Number:** 2014-571

**Sample Summary**

<u>Laboratory Sample Number:</u>	<u>Sample Description:</u>	<u>Matrix:</u>	<i>Canister Pressure / Vacuum</i>								
			<u>START</u> <u>Date</u>	<u>START</u> <u>Time</u>	<u>End Date</u>	<u>End Time</u>	<u>Date</u>	<u>Time</u>	<u>Initial Field</u> <u>(in. Hg)</u>	<u>Final Field</u> <u>(in. Hg)</u>	<u>Lab</u> <u>Received</u> <u>(in. Hg)</u>
14-2159	6190-5231-OA	A	12/8/14	8:30	12/9/14	8:30	12/12/14	9:36	-28	-2	-2
14-2160	6190-5231-IA-1	A	12/8/14	8:40	12/9/14	8:40	12/12/14	9:36	-28	-3	-3
14-2161	6190-5231-IA-2	A	12/8/14	8:35	12/9/14	8:35	12/12/14	9:36	-28	-2	-2
14-2162	6190-5231-SSV-1	A	12/9/14	9:10	12/9/14	9:17	12/12/14	9:36	-28	-2	-2
14-2163	6190-5231-SSV-2	A	12/9/14	9:45	12/9/14	9:51	12/12/14	9:36	-28	-2	-2





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**Client Name:** ENVIROFORENSICS  
**Project ID:** 6190 MARTINO'S CLEANERS  
**Client Project Manager:** B. KAPPEN/K. HEIMSTEAD  
**EnvisionAir Project Number:** 2014-571

**Analytical Method:** TO-15  
**Analytical Batch:** 121214AIR

**Client Sample ID:** 6190-5231-OA

**Sample Collection START Date/Time:** 12/8/14 8:30

**Sample Collection END Date/Time:** 12/9/14 8:30

**Envision Sample Number:** 14-2159  
**Sample Matrix:** AIR

**Sample Received Date/Time:** 12/12/14 9:36

<u>Compounds</u>	<u>Sample Results ug/m<sup>3</sup></u>	<u>Reporting Limit ug/m<sup>3</sup></u>	<u>Flag</u>
4-Ethyltoluene	< 492	492	
4-Methyl-2-pentanone (MIBK)	< 2050	2050	
1,1,1-Trichloroethane	< 546	546	
1,1,1,2-Tetrachloroethane	< 0.34	0.34	1
1,1,2-Trichloroethane	< 0.21	0.21	1
1,1-Dichloroethane	< 4.05	4.05	
1,1-Dichloroethene	< 198	198	
1,2,4-Trichlorobenzene	< 0.74	0.74	
1,2,4-Trimethylbenzene	< 4.92	4.92	
1,2-dibromoethane (EDB)	< 0.03	0.03	1
1,2-Dichlorobenzene	< 60.1	60.1	
1,2-Dichloroethane	< 0.40	0.40	
1,2-Dichloropropane	< 0.46	0.46	
1,3,5-Trimethylbenzene	< 4.92	4.92	
1,3-Butadiene	< 0.22	0.22	
1,3-Dichlorobenzene	< 60.1	60.1	
1,4-Dichlorobenzene	< 0.60	0.60	
1,4-Dioxane	< 1.80	1.80	
2-Butanone (MEK)	< 2950	2950	
2-Hexanone	< 20.5	20.5	
Acetone	< 2380	2380	
Benzene	< 1.60	1.60	
Benzyl Chloride	< 0.41	0.41	1
Bromodichloromethane	< 0.54	0.54	1
Bromoform	< 10.3	10.3	
Bromomethane	< 3.88	3.88	
Carbon Disulfide	< 311	311	
Carbon Tetrachloride	< 0.63	0.63	
Chlorobenzene	< 23.0	23.0	
Chloroethane	< 13.2	13.2	



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<u>Compounds</u>	<u>Sample Results ug/m<sup>3</sup></u>	<u>Reporting Limit ug/m<sup>3</sup></u>	<u>Flag</u>
Chloroform	< 0.83	0.83	
Chloromethane	< 20.6	20.6	
cis-1,2-Dichloroethene	< 19.8	19.8	
cis-1,3-Dichloropropene	< 4.54	4.54	
Cyclohexane	< 5510	5510	
Dibromochloromethane	< 0.85	0.85	
Dichlorodifluoromethane	< 49.5	49.5	
Ethyl Acetate	< 1800	1800	
Ethylbenzene	< 8.68	8.68	
Hexachloro-1,3-butadiene	< 1.07	1.07	
Isooctane	< 467	467	
m,p-Xylene	< 43.4	43.4	
Methylene Chloride	< 41.7	41.7	
Methyl-tert-butyl ether	< 36.1	36.1	
N-Heptane	< 410	410	
N-Hexane	< 176	176	
o-Xylene	< 43.4	43.4	
Propylene	< 172	172	
Styrene	< 426	426	
Tetrachloroethene	< 3.19	3.19	
Tetrahydrofuran	< 295	295	
Toluene	< 3770	3770	
trans-1,2-Dichloroethene	< 39.6	39.6	
trans-1,3-Dichloropropene	< 4.54	4.54	
Trichlorethene	< 1.07	1.07	
Trichlorofluoromethane	< 562	562	
Vinyl Acetate	< 176	176	
Vinyl Bromide	< 0.44	0.44	
Vinyl Chloride	< 1.28	1.28	
4-bromofluorobenzene (surrogate)	89%		
Analysis Date/Time:	12-12-14/17:21		
Analyst Initials	tjg		



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**Client Name:** ENVIROFORENSICS  
**Project ID:** 6190 MARTINO'S CLEANERS  
**Client Project Manager:** B. KAPPEN/K. HEIMSTEAD  
**EnvisionAir Project Number:** 2014-571

**Analytical Method:** TO-15  
**Analytical Batch:** 121214AIR

**Client Sample ID:** 6190-5231-IA-1  
**Envision Sample Number:** 14-2160  
**Sample Matrix:** AIR

**Sample Collection START Date/Time:** 12/8/14 8:40  
**Sample Collection END Date/Time:** 12/9/14 8:40  
**Sample Received Date/Time:** 12/12/14 9:36

<u>Compounds</u>	<u>Sample Results ug/m<sup>3</sup></u>	<u>Reporting Limit ug/m<sup>3</sup></u>	<u>Flag</u>
4-Ethyltoluene	< 492	492	
4-Methyl-2-pentanone (MIBK)	< 2050	2050	
1,1,1-Trichloroethane	< 546	546	
1,1,1,2-Tetrachloroethane	< 0.34	0.34	1
1,1,2-Trichloroethane	< 0.21	0.21	1
1,1-Dichloroethane	< 4.05	4.05	
1,1-Dichloroethene	< 198	198	
1,2,4-Trichlorobenzene	< 0.74	0.74	
1,2,4-Trimethylbenzene	< 4.92	4.92	
1,2-dibromoethane (EDB)	< 0.03	0.03	1
1,2-Dichlorobenzene	< 60.1	60.1	
1,2-Dichloroethane	< 0.40	0.40	
1,2-Dichloropropane	< 0.46	0.46	
1,3,5-Trimethylbenzene	< 4.92	4.92	
1,3-Butadiene	< 0.22	0.22	
1,3-Dichlorobenzene	< 60.1	60.1	
1,4-Dichlorobenzene	< 0.60	0.60	
1,4-Dioxane	< 1.80	1.80	
2-Butanone (MEK)	< 2950	2950	
2-Hexanone	< 20.5	20.5	
Acetone	< 2380	2380	
Benzene	< 1.60	1.60	
Benzyl Chloride	< 0.41	0.41	1
Bromodichloromethane	< 0.54	0.54	1
Bromoform	< 10.3	10.3	
Bromomethane	< 3.88	3.88	
Carbon Disulfide	< 311	311	
Carbon Tetrachloride	< 0.63	0.63	
Chlorobenzene	< 23.0	23.0	
Chloroethane	< 13.2	13.2	



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<u>Compounds</u>	<u>Sample Results ug/m<sup>3</sup></u>	<u>Reporting Limit ug/m<sup>3</sup></u>	<u>Flag</u>
Chloroform	1.37	0.83	
Chloromethane	< 20.6	20.6	
cis-1,2-Dichloroethene	< 19.8	19.8	
cis-1,3-Dichloropropene	< 4.54	4.54	
Cyclohexane	< 5510	5510	
Dibromochloromethane	< 0.85	0.85	
Dichlorodifluoromethane	< 49.5	49.5	
Ethyl Acetate	< 1800	1800	
Ethylbenzene	< 8.68	8.68	
Hexachloro-1,3-butadiene	< 1.07	1.07	
Isooctane	< 467	467	
m,p-Xylene	< 43.4	43.4	
Methylene Chloride	< 41.7	41.7	
Methyl-tert-butyl ether	< 36.1	36.1	
N-Heptane	< 410	410	
N-Hexane	< 176	176	
o-Xylene	< 43.4	43.4	
Propylene	< 172	172	
Styrene	< 426	426	
Tetrachloroethene	< 3.19	3.19	
Tetrahydrofuran	< 295	295	
Toluene	< 3770	3770	
trans-1,2-Dichloroethene	< 39.6	39.6	
trans-1,3-Dichloropropene	< 4.54	4.54	
Trichlorethene	< 1.07	1.07	
Trichlorofluoromethane	< 562	562	
Vinyl Acetate	< 176	176	
Vinyl Bromide	< 0.44	0.44	
Vinyl Chloride	< 1.28	1.28	
4-bromofluorobenzene (surrogate)	88%		
Analysis Date/Time:	12-12-14/20:11		
Analyst Initials	tjg		





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**Client Name:** ENVIROFORENSICS  
**Project ID:** 6190 MARTINO'S CLEANERS  
**Client Project Manager:** B. KAPPEN/K. HEIMSTEAD  
**EnvisionAir Project Number:** 2014-571

**Analytical Method:** TO-15  
**Analytical Batch:** 121214AIR

**Client Sample ID:** 6190-5231-IA-2

**Sample Collection START Date/Time:** 12/8/14 8:35

**Sample Collection END Date/Time:** 12/9/14 8:35

**Envision Sample Number:** 14-2161

**Sample Received Date/Time:** 12/12/14 9:36

**Sample Matrix:** AIR

<u>Compounds</u>	<u>Sample Results ug/m<sup>3</sup></u>	<u>Reporting Limit ug/m<sup>3</sup></u>	<u>Flag</u>
4-Ethyltoluene	< 492	492	
4-Methyl-2-pentanone (MIBK)	< 2050	2050	
1,1,1-Trichloroethane	< 546	546	
1,1,2,2-Tetrachloroethane	< 0.34	0.34	1
1,1,2-Trichloroethane	< 0.21	0.21	1
1,1-Dichloroethane	< 4.05	4.05	
1,1-Dichloroethene	< 198	198	
1,2,4-Trichlorobenzene	< 0.74	0.74	
1,2,4-Trimethylbenzene	< 4.92	4.92	
1,2-dibromoethane (EDB)	< 0.03	0.03	1
1,2-Dichlorobenzene	< 60.1	60.1	
1,2-Dichloroethane	<b>1.82</b>	0.40	
1,2-Dichloropropane	< 0.46	0.46	
1,3,5-Trimethylbenzene	< 4.92	4.92	
1,3-Butadiene	< 0.22	0.22	
1,3-Dichlorobenzene	< 60.1	60.1	
1,4-Dichlorobenzene	< 0.60	0.60	
1,4-Dioxane	< 1.80	1.80	
2-Butanone (MEK)	< 2950	2950	
2-Hexanone	< 20.5	20.5	
Acetone	< 2380	2380	
Benzene	< 1.60	1.60	
Benzyl Chloride	< 0.41	0.41	1
Bromodichloromethane	< 0.54	0.54	1
Bromoform	< 10.3	10.3	
Bromomethane	< 3.88	3.88	
Carbon Disulfide	< 311	311	
Carbon Tetrachloride	< 0.63	0.63	
Chlorobenzene	< 23.0	23.0	
Chloroethane	< 13.2	13.2	



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<u>Compounds</u>	<u>Sample Results ug/m<sup>3</sup></u>	<u>Reporting Limit ug/m<sup>3</sup></u>	<u>Flag</u>
Chloroform	1.27	0.83	
Chloromethane	< 20.6	20.6	
cis-1,2-Dichloroethene	< 19.8	19.8	
cis-1,3-Dichloropropene	< 4.54	4.54	
Cyclohexane	< 5510	5510	
Dibromochloromethane	< 0.85	0.85	
Dichlorodifluoromethane	< 49.5	49.5	
Ethyl Acetate	< 1800	1800	
Ethylbenzene	< 8.68	8.68	
Hexachloro-1,3-butadiene	< 1.07	1.07	
Isooctane	< 467	467	
m,p-Xylene	< 43.4	43.4	
Methylene Chloride	< 41.7	41.7	
Methyl-tert-butyl ether	< 36.1	36.1	
N-Heptane	< 410	410	
N-Hexane	< 176	176	
o-Xylene	< 43.4	43.4	
Propylene	< 172	172	
Styrene	< 426	426	
Tetrachloroethene	< 3.19	3.19	
Tetrahydrofuran	< 295	295	
Toluene	< 3770	3770	
trans-1,2-Dichloroethene	< 39.6	39.6	
trans-1,3-Dichloropropene	< 4.54	4.54	
Trichlorethene	< 1.07	1.07	
Trichlorofluoromethane	< 562	562	
Vinyl Acetate	< 176	176	
Vinyl Bromide	< 0.44	0.44	
Vinyl Chloride	< 1.28	1.28	
4-bromofluorobenzene (surrogate)	96%		
Analysis Date/Time:	12-12-14/20:45		
Analyst Initials	tjg		



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**Client Name:** ENVIROFORENSICS  
**Project ID:** 6190 MARTINO'S CLEANERS  
**Client Project Manager:** B. KAPPEN/K. HEIMSTEAD  
**EnvisionAir Project Number:** 2014-571

**Analytical Method:** TO-15  
**Analytical Batch:** 121714AIR

**Client Sample ID:** 6190-5231-SSV-1      **Sample Collection START Date/Time:** 12/9/14      9:10  
**Envision Sample Number:** 14-2162      **Sample Collection END Date/Time:** 12/9/14      9:17  
**Sample Matrix:** AIR      **Sample Received Date/Time:** 12/12/14      9:36

<u>Compounds</u>	<u>Sample Results ug/m<sup>3</sup></u>	<u>Reporting Limit ug/m<sup>3</sup></u>	<u>Flag</u>
4-Ethyltoluene	< 4920	4920	2
4-Methyl-2-pentanone (MIBK)	< 20500	20500	2
1,1,1-Trichloroethane	< 5460	5460	2
1,1,2,2-Tetrachloroethane	< 3.36	3.36	1,2
1,1,2-Trichloroethane	< 2.10	2.10	1,2
1,1-Dichloroethane	< 40.5	40.5	2
1,1-Dichloroethene	< 1980	1980	2
1,2,4-Trichlorobenzene	< 7.42	7.42	2
1,2,4-Trimethylbenzene	< 49.2	49.2	2
1,2-dibromoethane (EDB)	< 0.32	0.32	1,2
1,2-Dichlorobenzene	< 601	601	2
1,2-Dichloroethane	< 4.05	4.05	2
1,2-Dichloropropane	< 4.62	4.62	2
1,3,5-Trimethylbenzene	< 49.2	49.2	2
1,3-Butadiene	< 2.21	2.21	2
1,3-Dichlorobenzene	< 601	601	2
1,4-Dichlorobenzene	< 6.01	6.01	2
1,4-Dioxane	< 18.0	18.0	2
2-Butanone (MEK)	< 29500	29500	2
2-Hexanone	< 205	205	2
Acetone	< 23800	23800	2
Benzene	< 16.0	16.0	2
Benzyl Chloride	< 4.14	4.14	1,2
Bromodichloromethane	< 5.36	5.36	1,2
Bromoform	< 103	103	2
Bromomethane	< 38.8	38.8	2
Carbon Disulfide	< 3110	3110	2
Carbon Tetrachloride	< 6.29	6.29	2
Chlorobenzene	< 230	230	2
Chloroethane	< 132	132	2



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<u>Compounds</u>	<u>Sample Results ug/m<sup>3</sup></u>	<u>Reporting Limit ug/m<sup>3</sup></u>	<u>Flag</u>
Chloroform	9.28	8.30	2
Chloromethane	< 206	206	2
cis-1,2-Dichloroethene	< 198	198	2
cis-1,3-Dichloropropene	< 45.4	45.4	2
Cyclohexane	< 55100	55100	2
Dibromochloromethane	< 8.52	8.52	2
Dichlorodifluoromethane	< 495	495	2
Ethyl Acetate	< 18000	18000	2
Ethylbenzene	< 86.8	86.8	2
Hexachloro-1,3-butadiene	< 10.7	10.7	2
Isooctane	< 4670	4670	2
m,p-Xylene	< 434	434	2
Methylene Chloride	< 417	417	2
Methyl-tert-butyl ether	< 361	361	2
N-Heptane	< 4100	4100	2
N-Hexane	< 1760	1760	2
o-Xylene	< 434	434	2
Propylene	< 1720	1720	2
Styrene	< 4260	4260	2
Tetrachloroethene	125	31.9	2
Tetrahydrofuran	< 2950	2950	2
Toluene	< 37700	37700	2
trans-1,2-Dichloroethene	< 396	396	2
trans-1,3-Dichloropropene	< 45.4	45.4	2
Trichlorethene	13.4	10.7	2
Trichlorofluoromethane	< 5620	5620	2
Vinyl Acetate	< 1760	1760	2
Vinyl Bromide	< 4.37	4.37	2
Vinyl Chloride	< 12.8	12.8	2
4-bromofluorobenzene (surrogate)	106%		
Analysis Date/Time:	12-18-14/20:37		
Analyst Initials	tjg		





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**Client Name:** ENVIROFORENSICS  
**Project ID:** 6190 MARTINO'S CLEANERS  
**Client Project Manager:** B. KAPPEN/K. HEIMSTEAD  
**EnvisionAir Project Number:** 2014-571

**Analytical Method:** TO-15  
**Analytical Batch:** 121714AIR

**Client Sample ID:** 6190-5231-SSV-2      **Sample Collection START Date/Time:** 12/9/14      9:45  
**Envision Sample Number:** 14-2163      **Sample Collection END Date/Time:** 12/9/14      9:51  
**Sample Matrix:** AIR      **Sample Received Date/Time:** 12/12/14      9:36

<u>Compounds</u>	<u>Sample Results ug/m<sup>3</sup></u>	<u>Reporting Limit ug/m<sup>3</sup></u>	<u>Flag</u>
4-Ethyltoluene	< 4920	4920	2
4-Methyl-2-pentanone (MIBK)	< 20500	20500	2
1,1,1-Trichloroethane	< 5460	5460	2
1,1,2,2-Tetrachloroethane	< 3.36	3.36	1,2
1,1,2-Trichloroethane	< 2.10	2.10	1,2
1,1-Dichloroethane	< 40.5	40.5	2
1,1-Dichloroethene	< 1980	1980	2
1,2,4-Trichlorobenzene	< 7.42	7.42	2
1,2,4-Trimethylbenzene	< 49.2	49.2	2
1,2-dibromoethane (EDB)	< 0.32	0.32	1,2
1,2-Dichlorobenzene	< 601	601	2
1,2-Dichloroethane	< 4.05	4.05	2
1,2-Dichloropropane	< 4.62	4.62	2
1,3,5-Trimethylbenzene	< 49.2	49.2	2
1,3-Butadiene	< 2.21	2.21	2
1,3-Dichlorobenzene	< 601	601	2
1,4-Dichlorobenzene	< 6.01	6.01	2
1,4-Dioxane	< 18.0	18.0	2
2-Butanone (MEK)	< 29500	29500	2
2-Hexanone	< 205	205	2
Acetone	< 23800	23800	2
Benzene	< 16.0	16.0	2
Benzyl Chloride	< 4.14	4.14	1,2
Bromodichloromethane	< 5.36	5.36	1,2
Bromoform	< 103	103	2
Bromomethane	< 38.8	38.8	2
Carbon Disulfide	< 3110	3110	2
Carbon Tetrachloride	< 6.29	6.29	2
Chlorobenzene	< 230	230	2
Chloroethane	< 132	132	2



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<u>Compounds</u>	<u>Sample Results ug/m<sup>3</sup></u>	<u>Reporting Limit ug/m<sup>3</sup></u>	<u>Flag</u>
Chloroform	9.28	8.30	2
Chloromethane	< 206	206	2
cis-1,2-Dichloroethene	< 198	198	2
cis-1,3-Dichloropropene	< 45.4	45.4	2
Cyclohexane	< 55100	55100	2
Dibromochloromethane	< 8.52	8.52	2
Dichlorodifluoromethane	< 495	495	2
Ethyl Acetate	< 18000	18000	2
Ethylbenzene	< 86.8	86.8	2
Hexachloro-1,3-butadiene	< 10.7	10.7	2
Isooctane	< 4670	4670	2
m,p-Xylene	< 434	434	2
Methylene Chloride	< 417	417	2
Methyl-tert-butyl ether	< 361	361	2
N-Heptane	< 4100	4100	2
N-Hexane	< 1760	1760	2
o-Xylene	< 434	434	2
Propylene	< 1720	1720	2
Styrene	< 4260	4260	2
Tetrachloroethene	300	31.9	2
Tetrahydrofuran	< 2950	2950	2
Toluene	< 37700	37700	2
trans-1,2-Dichloroethene	< 396	396	2
trans-1,3-Dichloropropene	< 45.4	45.4	2
Trichlorethene	27.4	10.7	2
Trichlorofluoromethane	< 5620	5620	2
Vinyl Acetate	< 1760	1760	2
Vinyl Bromide	< 4.37	4.37	2
Vinyl Chloride	< 12.8	12.8	2
4-bromofluorobenzene (surrogate)	108%		
Analysis Date/Time:	12-18-14/21:19		
Analyst Initials	tjg		



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Analytical Report

**TO-15 Quality Control Data**

EnvisionAir Batch Number: 121214AIR

<u>Method Blank (MB):</u>	<u>MB Results (ppbv)</u>	<u>Reporting Limit (ppbv)</u>	<u>Flags</u>
4-Ethyltoluene	< 100	100	
4-Methyl-2-pentanone (MIBK)	< 500	500	
1,1,1-Trichloroethane	< 100	100	
1,1,1,2-Tetrachloroethane	< 0.049	0.049	1
1,1,2-Trichloroethane	< 0.038	0.038	1
1,1-Dichloroethane	< 1	1	
1,1-Dichloroethene	< 50	50	
1,2,4-Trichlorobenzene	< 0.1	0.1	
1,2,4-Trimethylbenzene	< 1	1	
1,2-dibromoethane (EDB)	< 0.0041	0.0041	1
1,2-Dichlorobenzene	< 10	10	
1,2-Dichloroethane	< 0.1	0.1	
1,2-Dichloropropane	< 0.1	0.1	
1,3,5-Trimethylbenzene	< 1	1	
1,3-Butadiene	< 0.1	0.1	
1,3-Dichlorobenzene	< 10	10	
1,4-Dichlorobenzene	< 0.1	0.1	
1,4-Dioxane	< 0.5	0.5	
2-Butanone (MEK)	< 1000	1000	
2-Hexanone	< 5	5	
Acetone	< 1000	1000	
Benzene	< 0.5	0.5	
Benzyl Chloride	< 0.08	0.08	1
Bromodichloromethane	< 0.08	0.08	1
Bromoform	< 1	1	
Bromomethane	< 1	1	
Carbon Disulfide	< 100	100	
Carbon Tetrachloride	< 0.1	0.1	
Chlorobenzene	< 5	5	
Chloroethane	< 5	5	
Chloroform	< 0.17	0.17	
Chloromethane	< 10	10	
cis-1,2-Dichloroethene	< 5	5	
cis-1,3-Dichloropropene	< 1	1	
Cyclohexane	< 1600	1600	
Dibromochloromethane	< 0.1	0.1	
Dichlorodifluoromethane	< 10	10	
Ethyl Acetate	< 500	500	
Ethylbenzene	< 2	2	
Hexachloro-1,3-butadiene	< 0.1	0.1	
Isooctane	< 100	100	
m,p-Xylene	< 10	10	
Methylene Chloride	< 12	12	
Methyl-tert-butyl ether	< 10	10	
N-Heptane	< 100	100	
N-Hexane	< 50	50	
o-Xylene	< 10	10	
Propylene	< 100	100	
Styrene	< 100	100	
Tetrachloroethene	< 0.47	0.47	
Tetrahydrofuran	< 100	100	



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<u>Method Blank (MB):</u>	<u>MB Results (ppbv)</u>	<u>Reporting Limit (ppbv)</u>	<u>Flags</u>
Toluene	< 1000	1000	
trans-1,2-Dichloroethene	< 10	10	
trans-1,3-Dichloropropene	< 1	1	
Trichlorethene	< 0.2	0.2	
Trichlorofluoromethane	< 100	100	
Vinyl Acetate	< 50	50	
Vinyl Bromide	< 0.1	0.1	
Vinyl Chloride	< 0.5	0.5	
4-bromofluorobenzene (surrogate)	99%		
Analysis Date/Time:	12-12-14/16:13		
Analyst Initials	tjg		

<u>LCS/LCSD</u>	<u>LCS Results (ppbv)</u>	<u>LCSD Results (ppbv)</u>	<u>LCS/D</u> <u>Conc(ppbv)</u>	<u>LCS</u> <u>Rec.</u>	<u>LCSD</u> <u>Rec.</u>	<u>RPD</u>	<u>Flag</u>
Propylene	8.57	9.39	10	86%	94%	9.1%	
Dichlorodifluoromethane	9.54	9.68	10	95%	97%	1.5%	
Chloromethane	9.42	9.92	10	94%	99%	5.2%	
Vinyl Chloride	9.68	9.93	10	97%	99%	2.5%	
1,3-Butadiene	10.2	11.7	10	102%	117%	13.7%	
Bromomethane	8.16	8.54	10	82%	85%	4.6%	
Chloroethane	9.21	9.49	10	92%	95%	3.0%	
Vinyl Bromide	9.56	9.77	10	96%	98%	2.2%	
Trichlorofluoromethane	8.99	9.06	10	90%	91%	0.8%	
Acetone	10.2	10.4	10	102%	104%	1.9%	
1,1-Dichloroethene	9.69	9.89	10	97%	99%	2.0%	
Methylene Chloride	9.05	9.29	10	91%	93%	2.6%	
Carbon Disulfide	8.95	9.22	10	90%	92%	3.0%	
trans-1,2-Dichloroethene	10.2	10.3	10	102%	103%	1.0%	
Methyl-tert-butyl ether	8.33	8.37	10	83%	84%	0.5%	
1,1-Dichloroethane	9.36	9.52	10	94%	95%	1.7%	
Vinyl Acetate	10.9	11.2	10	109%	112%	2.7%	
N-Hexane	11	11.2	10	110%	112%	1.8%	
2-Butanone (MEK)	10.7	11.1	10	107%	111%	3.7%	
cis-1,2-Dichloroethene	10	10.2	10	100%	102%	2.0%	
Ethyl Acetate	12.3	12.4	10	123%	124%	0.8%	
Chloroform	9.43	9.45	10	94%	95%	0.2%	
Tetrahydrofuran	8.62	8.38	10	86%	84%	2.8%	
1,2-Dichloroethane	10.2	9.55	10	102%	96%	6.6%	
1,1,1-Trichloroethane	9.58	9.16	10	96%	92%	4.5%	
Carbon Tetrachloride	9.63	9.19	10	96%	92%	4.7%	
Benzene	10.8	10.2	10	108%	102%	5.7%	
Cyclohexane	10.1	9.89	10	101%	99%	2.1%	
1,2-Dichloropropane	9.94	9.64	10	99%	96%	3.1%	
Trichlorethene	10.3	9.97	10	103%	100%	3.3%	
Bromodichloromethane	10.7	10.1	10	107%	101%	5.8%	
1,4-Dioxane	10.7	9.78	10	107%	98%	9.0%	
Isooctane	11	10.4	10	110%	104%	5.6%	
N-Heptane	9.76	9.66	10	98%	97%	1.0%	
cis-1,3-Dichloropropene	10.6	9.93	10	106%	99%	6.5%	
4-Methyl-2-pentanone (MIBK)	11.4	12.6	10	114%	126%	10.0%	
trans-1,3-Dichloropropene	10.4	9.74	10	104%	97%	6.6%	
1,1,2-Trichloroethane	10.7	10.1	10	107%	101%	5.8%	
Toluene	10.1	11.5	10	101%	115%	13.0%	
2-Hexanone	10.2	9.63	10	102%	96%	5.7%	
Dibromochloromethane	9.38	9.45	10	94%	95%	0.7%	
1,2-dibromoethane (EDB)	9.91	10	10	99%	100%	0.9%	
Tetrachloroethene	9.6	9.44	10	96%	94%	1.7%	
Chlorobenzene	9.18	9.3	10	92%	93%	1.3%	
Ethylbenzene	11.3	11.4	10	113%	114%	0.9%	
m,p-Xylene	23.5	23.4	20	118%	117%	0.4%	
Bromoform	8.97	9.02	10	90%	90%	0.6%	





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Analytical Report

<u>LCS/LCSD</u>	<u>LCS Results (ppbv)</u>	<u>LCSD Results (ppbv)</u>	<u>LCS/D</u>	<u>LCS</u>	<u>LCSD</u>	<u>RPD</u>	<u>Flag</u>
			<u>Conc(ppbv)</u>	<u>Rec.</u>	<u>Rec.</u>		
Styrene	9.73	9.69	10	97%	97%	0.4%	
1,1,2,2-Tetrachloroethane	9.5	9.46	10	95%	95%	0.4%	
o-Xylene	11.1	11.2	10	111%	112%	0.9%	
4-Ethyltoluene	10.9	10.8	10	109%	108%	0.9%	
1,3,5-Trimethylbenzene	9.67	9.52	10	97%	95%	1.6%	
1,2,4-Trimethylbenzene	11.6	11.5	10	116%	115%	0.9%	
1,3-Dichlorobenzene	8.45	8.38	10	85%	84%	0.8%	
Benzyl Chloride	10.2	10	10	102%	100%	2.0%	
1,4-Dichlorobenzene	9.3	9.12	10	93%	91%	2.0%	
1,2-Dichlorobenzene	11.4	8.77	10	114%	88%	26.1%	3
1,2,4-Trichlorobenzene	8.55	7.03	10	86%	70%	19.5%	
Hexachloro-1,3-butadiene	10.6	9.73	10	106%	97%	8.6%	
4-bromofluorobenzene (surrogate)	100%	95%					
Analysis Date/Time:	12-12-14/14:29	12-12-14/15:06					
Analyst Initials	tjg	tjg					



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Analytical Report

**TO-15 Quality Control Data**

EnvisionAir Batch Number: 121714AIR

<u>Method Blank (MB):</u>	<u>MB Results (ppbv)</u>	<u>Reporting Limit (ppbv)</u>	<u>Flags</u>
4-Ethyltoluene	< 100	100	
4-Methyl-2-pentanone (MIBK)	< 500	500	
1,1,1-Trichloroethane	< 100	100	
1,1,2,2-Tetrachloroethane	< 0.049	0.049	1
1,1,2-Trichloroethane	< 0.038	0.038	1
1,1-Dichloroethane	< 1	1	
1,1-Dichloroethene	< 50	50	
1,2,4-Trichlorobenzene	< 0.1	0.1	
1,2,4-Trimethylbenzene	< 1	1	
1,2-dibromoethane (EDB)	< 0.0041	0.0041	1
1,2-Dichlorobenzene	< 10	10	
1,2-Dichloroethane	< 0.1	0.1	
1,2-Dichloropropane	< 0.1	0.1	
1,3,5-Trimethylbenzene	< 1	1	
1,3-Butadiene	< 0.1	0.1	
1,3-Dichlorobenzene	< 10	10	
1,4-Dichlorobenzene	< 0.1	0.1	
1,4-Dioxane	< 0.5	0.5	
2-Butanone (MEK)	< 1000	1000	
2-Hexanone	< 5	5	
Acetone	< 1000	1000	
Benzene	< 0.5	0.5	
Benzyl Chloride	< 0.08	0.08	1
Bromodichloromethane	< 0.08	0.08	1
Bromoform	< 1	1	
Bromomethane	< 1	1	
Carbon Disulfide	< 100	100	
Carbon Tetrachloride	< 0.1	0.1	
Chlorobenzene	< 5	5	
Chloroethane	< 5	5	
Chloroform	< 0.17	0.17	
Chloromethane	< 10	10	
cis-1,2-Dichloroethene	< 5	5	
cis-1,3-Dichloropropene	< 1	1	
Cyclohexane	< 1600	1600	
Dibromochloromethane	< 0.1	0.1	
Dichlorodifluoromethane	< 10	10	
Ethyl Acetate	< 500	500	
Ethylbenzene	< 2	2	
Hexachloro-1,3-butadiene	< 0.1	0.1	
Isooctane	< 100	100	
m,p-Xylene	< 10	10	
Methylene Chloride	< 12	12	
Methyl-tert-butyl ether	< 10	10	
N-Heptane	< 100	100	
N-Hexane	< 50	50	
o-Xylene	< 10	10	
Propylene	< 100	100	
Styrene	< 100	100	
Tetrachloroethene	< 0.47	0.47	
Tetrahydrofuran	< 100	100	



EnvisionAir  
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Analytical Report

<u>Method Blank (MB):</u>	<u>MB Results (ppbv)</u>	<u>Reporting Limit (ppbv)</u>	<u>Flags</u>			
Toluene	< 1000	1000				
trans-1,2-Dichloroethene	< 10	10				
trans-1,3-Dichloropropene	< 1	1				
Trichlorethene	< 0.2	0.2				
Trichlorofluoromethane	< 100	100				
Vinyl Acetate	< 50	50				
Vinyl Bromide	< 0.1	0.1				
Vinyl Chloride	< 0.5	0.5				
4-bromofluorobenzene (surrogate)	106%					
Analysis Date/Time:	12-18-14/11:30					
Analyst Initials	tjg					

<u>LCS/LCSD</u>	<u>LCS Results (ppbv)</u>	<u>LCSD Results (ppbv)</u>	<u>LCS/D Conc(ppbv)</u>	<u>LCS Rec.</u>	<u>LCSD Rec.</u>	<u>RPD</u>	<u>Flag</u>
Propylene	8.61	9.24	10	86%	92%	7.1%	
Dichlorodifluoromethane	8.87	8.96	10	89%	90%	1.0%	
Chloromethane	8.28	8.54	10	83%	85%	3.1%	
Vinyl Chloride	8.91	8.94	10	89%	89%	0.3%	
1,3-Butadiene	10.4	10.3	10	104%	103%	1.0%	
Bromomethane	10.9	11	10	109%	110%	0.9%	
Chloroethane	10.3	10.2	10	103%	102%	1.0%	
Vinyl Bromide	9.82	11	10	98%	110%	11.3%	
Trichlorofluoromethane	11.1	10.9	10	111%	109%	1.8%	
Acetone	8.8	8.47	10	88%	85%	3.8%	
1,1-Dichloroethene	9.71	9.44	10	97%	94%	2.8%	
Methylene Chloride	10.3	9.95	10	103%	100%	3.5%	
Carbon Disulfide	10	9.8	10	100%	98%	2.0%	
trans-1,2-Dichloroethene	11.1	11	10	111%	110%	0.9%	
Methyl-tert-butyl ether	10.8	10.6	10	108%	106%	1.9%	
1,1-Dichloroethane	9.56	9.38	10	96%	94%	1.9%	
Vinyl Acetate	9.2	8.95	10	92%	90%	2.8%	
N-Hexane	8.68	9.77	10	87%	98%	11.8%	
2-Butanone (MEK)	8.13	8.49	10	81%	85%	4.3%	
cis-1,2-Dichloroethene	9.27	9.1	10	93%	91%	1.9%	
Ethyl Acetate	8.06	7.82	10	81%	78%	3.0%	
Chloroform	10.3	10.2	10	103%	102%	1.0%	
Tetrahydrofuran	8.33	8.05	10	83%	81%	3.4%	
1,2-Dichloroethane	10.1	9.95	10	101%	100%	1.5%	
1,1,1-Trichloroethane	10.7	10.6	10	107%	106%	0.9%	
Carbon Tetrachloride	10.9	10.9	10	109%	109%	0.0%	
Benzene	10	9.84	10	100%	98%	1.6%	
Cyclohexane	10.5	8.81	10	105%	88%	17.5%	
1,2-Dichloropropane	9.1	8.9	10	91%	89%	2.2%	
Trichlorethene	10.2	10.1	10	102%	101%	1.0%	
Bromodichloromethane	10	9.95	10	100%	100%	0.5%	
1,4-Dioxane	10.2	11.7	10	102%	117%	13.7%	
Isooctane	8.66	8.64	10	87%	86%	0.2%	
N-Heptane	8.1	8.87	10	81%	89%	9.1%	
cis-1,3-Dichloropropene	9.87	9.68	10	99%	97%	1.9%	
4-Methyl-2-pentanone (MIBK)	8.96	11.2	10	90%	112%	22.2%	3
trans-1,3-Dichloropropene	10.3	10.1	10	103%	101%	2.0%	
1,1,2-Trichloroethane	9.96	9.75	10	100%	98%	2.1%	
Toluene	10	9.92	10	100%	99%	0.8%	
2-Hexanone	8.44	8.4	10	84%	84%	0.5%	
Dibromochloromethane	11.6	11.2	10	116%	112%	3.5%	
1,2-dibromoethane (EDB)	10.9	11.6	10	109%	116%	6.2%	
Tetrachloroethene	10.7	11	10	107%	110%	2.8%	
Chlorobenzene	11.3	11.9	10	113%	119%	5.2%	
Ethylbenzene	10.6	11.2	10	106%	112%	5.5%	
m,p-Xylene	20.6	21.7	20	103%	109%	5.2%	
Bromoform	11.6	10.4	10	116%	104%	10.9%	



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Analytical Report

<u>LCS/LCSD</u>	<u>LCS Results (ppbv)</u>	<u>LCSD Results (ppbv)</u>	<u>LCS/D</u> <u>Conc(ppbv)</u>	<u>LCS</u> <u>Rec.</u>	<u>LCSD</u> <u>Rec.</u>	<u>RPD</u>	<u>Flag</u>
Styrene	11.2	11.7	10	112%	117%	4.4%	
1,1,2,2-Tetrachloroethane	9.29	9.79	10	93%	98%	5.2%	
o-Xylene	11.2	11.7	10	112%	117%	4.4%	
4-Ethyltoluene	10.2	11	10	102%	110%	7.5%	
1,3,5-Trimethylbenzene	10.6	11.1	10	106%	111%	4.6%	
1,2,4-Trimethylbenzene	10.6	11.2	10	106%	112%	5.5%	
1,3-Dichlorobenzene	10.3	10.9	10	103%	109%	5.7%	
Benzyl Chloride	10.5	11.1	10	105%	111%	5.6%	
1,4-Dichlorobenzene	10.9	11.4	10	109%	114%	4.5%	
1,2-Dichlorobenzene	10.9	11.3	10	109%	113%	3.6%	
1,2,4-Trichlorobenzene	10.1	10.6	10	101%	106%	4.8%	
Hexachloro-1,3-butadiene	10	10.6	10	100%	106%	5.8%	
4-bromofluorobenzene (surrogate)	99%	105%					
Analysis Date/Time:	12-18-14/10:05	12-18-14/10:47					
Analyst Initials	tjg	tjg					



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**Flag Number**

**Comments**

- |   |  |
|---|--|
| 1 | Reporting limit is supported by MDL. TJG                               |
| 2 | Reported value is from a 10x dilution. TJG 12-23-14                    |
| 3 | RPD is biased high, but recoveries are within control.<br>TJG 12-23-14 |

BT

# CHAIN OF CUSTODY RECORD

EnvisionAir | 1441 Sadlier Circle West Drive | Indianapolis, IN 46239 | Phone: (317) 351-0885 | Fax: (317) 351-0882

Client: <u>Enviro Forensics</u>	P.O. Number:
Report #/to <u>W23390 Stone Ridge Dr</u> Address: <u>Westchester WI 53188</u>	Project Name or Number: <u>6190</u> <u>Martino's Cleaners</u>
Report To: <u>B. Kappen / K. Kinnick</u>	Sampled by: <u>J. Kinnick</u>
Phone: <u>317-972-7870</u>	QA/QC Required: (circle if applicable) Level III <u>Level IV</u>
Invoice Address:	Reporting Units needed: (circle) <u>ug/m<sup>3</sup></u> mg/m <sup>3</sup> PPBV PPMV
Desired TAT: (Please Circle One) 1 day 2 days 3 days <u>5 bus. days</u>	Media type: 1LC = 1 Liter Canister 6LC = 6 Liter Canister TB = Tediar Bag TD = Thermal Desorption Tube

**REQUESTED PARAMETERS**

TO-15 Full List

TO-15 Short List



**Sampling Type:**  
 Soil-Gas:   
 Sub-Slab:   
 Indoor-Air:

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**Canister Pressure / Vacuum**

Air Sample ID	Media Type <small>(see code above)</small>	Coll. Date <small>(Grab/Comp Start)</small>	Coll. Time <small>(Grab/Comp Start)</small>	Coll. Date <small>(Comp. End)</small>	Coll. Time <small>(Comp. End)</small>					Canister Serial #	Flow Controller Serial #	Initial Field (in. Hg)	Final Field (in. Hg)	Lab Received (in. Hg)	EnvisionAir Sample Number
6190-5231-0A	6LL	12-8-14	830	12-9-14	830	X				16017	04657	-28	-2	-2	14-2159
6190-5231-IA-1	6LL	12-8-14	840	12-9-14	840	X				91535	04648	-28	-3	-3	14-2160
6190-5231-IA-2	6LL	12-8-14	835	12-9-14	835	X				11083	07312	-28	-2	-2	14-2161
6190-5231-SSV-1	1LC	12-9-14	910	12-9-14	917	X				2096	-	-28	-2	-2	14-2162
6190-5231-SSV-2	1LC	12-9-14	945	12-9-14	957	X				2097	-	-28	-2	-2	14-2163

Comments: Level IV QA/QC needed on 6LL only.

Relinquished by:	Date	Time	Received by:	Date	Time
<u>[Signature]</u>			<u>Suzanne Visk</u>	<u>12/12/14</u>	<u>9:30</u>