April 13, 2018

Gary Nelson
766 E. Hiawatha Dr.
Wisconsin Dells, WI 53965

**Subject:** **Vapor Intrusion Sampling Results – 610/612 Oak Street, Baraboo, Wisconsin**
**BRRTS: 02-57-548538**

Dear Mr. Nelson:

In accordance with Wisconsin Department of Natural Resources (WDNR) regulation NR 716.14, EnviroForensics, LLC. (EnviroForensics) is providing the results of environmental samples collected from your property located at 610/612 Oak Street in Baraboo, Wisconsin. The samples were collected on March 15-16, 2018. The sampling activities are part of an environmental investigation being performed for the Badger Cleaners facility located at 616 Oak Street in Baraboo at the direction of the WDNR pursuant to the authority granted to it under State and Federal law. The chemicals of concern (COCs) for the investigation are the dry cleaning solvent tetrachloroethene (PCE) and its associated breakdown products.

The Responsible Party is:

Badger Cleaners
616 Oak Street
Baraboo, WI

**Sampling Results**

Four indoor air samples were collected from within your building and two (2) sub-slab vapor samples were collected from beneath the concrete slab at your building. For quality control purposes a sample of outdoor ambient air was also collected. The sampling locations are depicted on the attached **Figure 1**. The results of the indoor air and sub-slab vapor samples are summarized and compared to WDNR standards on the attached **Table 1**. A copy of the laboratory report that relates to the indoor air and sub-slab vapor samples is also attached.

PCE was detected in indoor all four indoor air samples, however, the concentrations detected were *below* the vapor action level for PCE detected within small commercial buildings. No other COCs were detected in the indoor air samples. PCE was detected in both sub-slab vapor samples, however, the concentrations detected were *below* its respective vapor risk screening Levels. TCE was detected in one (1) sub-slab vapor however, the concentration detected was *below* its respective


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vapor risk screening Level. No other COCs were detected in the sub-slab vapor samples.

At this time, there does not appear to be a vapor intrusion risk to your building. EnviroForensics recommends a second sampling event to verify the sampling results. We will contact you to schedule the second event. If you have any questions or concerns, please contact us at 262-510-0612 or by email at rhoverman@enviroforensics.com. The WDNR project manager, Trevor Bannister, can be reached at 608-275-3490. We greatly appreciate your help and patience with this matter.

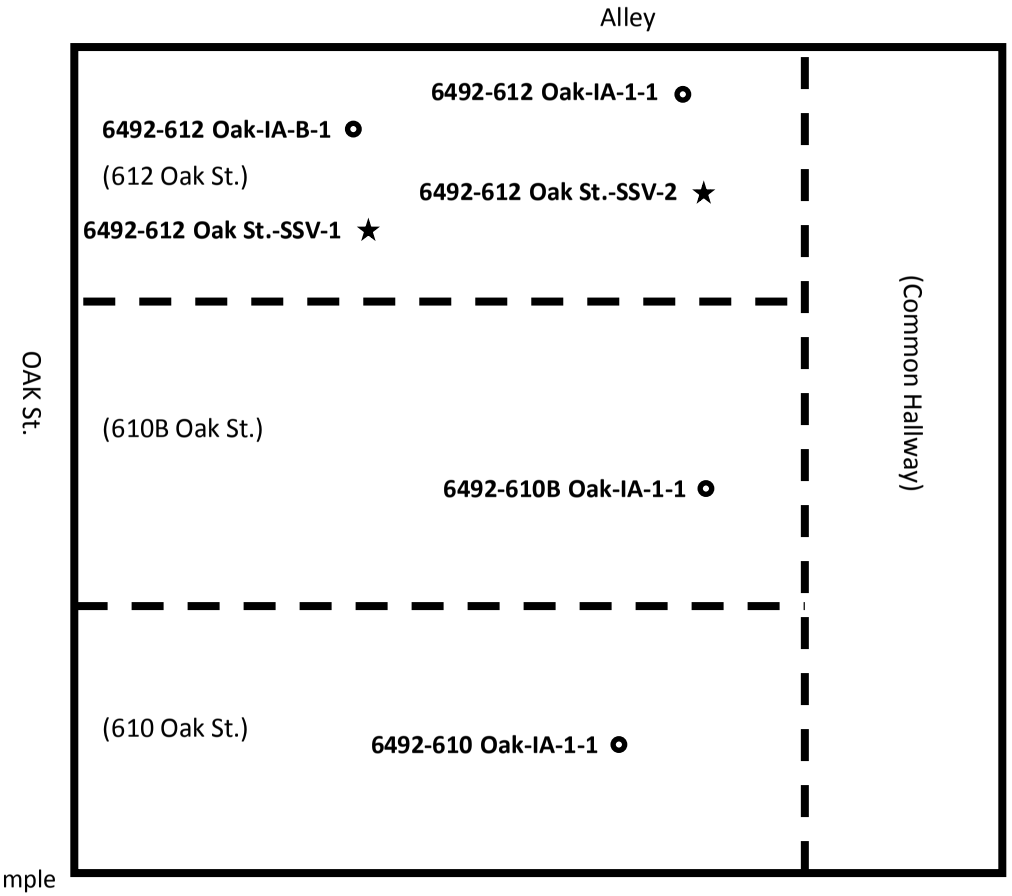
Sincerely,
**EnviroForensics, LLC**

Rob Hoverman, LPG
*Senior Project Manager*

Attachments: Figure 1 – Vapor Intrusion Sampling Locations
Table 1 – Vapor Intrusion Assessment Results Summary
Laboratory Analytical Report

Copy: Trevor Bannister, Wisconsin Department of Natural Resources

**FIGURE 1**
**VAPOR INTRUSION SAMPLE LOCATIONS**
**610/612 Oak Street, Baraboo Wisconsin**




ENVIRO forensics

# TABLE 1

## VAPOR INTRUSION ANALYTICAL RESULTS SUMMARY - 610/612 OAK STREET

Badger Cleaners

616 Oak Street, Baraboo, WI 53913

| Sample Identification | Sample Location | Date Sampled | Mitigation | Tetrachloroethene | Trichloroethene |
|---|---|---|---|---|---|
| **INDOOR/ OUTDOOR AIR** | | | | | |
| **Small Commercial Vapor Action Level** | | | | **180** | **8.8** |
| 6492-610 Oak-IA-1-1 | 610/612 Oak Street | 03/16/18 | No | **13.8** | <1.07 |
| 6492-610B Oak-IA-1-1 | | 03/16/18 | No | **15.5** | <1.07 |
| 6492-612 Oak-IA-B-1 | | 03/16/18 | No | **17.2** | <1.07 |
| 6492-612 Oak-IA-1-1 | | 03/16/18 | No | **15.9** | <1.07 |
| 6492-OA-1 | | 03/16/18 | No | <3.19 | <1.07 |
| **SUB-SLAB VAPOR** | | | | | |
| **Small Commercial Vapor Risk Screening Level** | | | | **6,000** | **290** |
| 6492-612 Oak ST-SSV-1 | 612 Oak Street | 03/16/18 | No | **84.8** | **4.94** |
| 6492-612 Oak ST-SSV-1 | | 03/16/18 | No | **31.6** | 610 |

**Notes:**

Results reported in microgragms per cubic meter ($\mu g/m^3$)

Samples analyzed according to EPA Method TO-15

The Vapor Risk Screeing/Action Levels are calculated in accordance with WDNR Publication RR-800 and subsequent guidance documents.

IA = Indoor Air

OA = Outdoor Air

SSV= Sub-slab vapor

**Bolded** values are above detection limits

**EnvisionAir**
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Mr. Rob Hoverman
Enviroforensics
N16 W. 23390 Stone Ridge Dr
Suite G
Waukesha, WI 53188

April 5, 2018

EnvisionAir Project Number: 2018-212
Client Project Name: 6492

Dear Mr. Hoverman,

Please find the attached analytical report for the samples received March 21, 2018. 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,

Stanley A Hunnicutt

Project Manager
EnvisionAir, LLC

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**Client Name:** ENVIROFORENSICS

**Project ID:** 6492

**Client Project Manager:** ROB HOVERMAN

**EnvisionAir Project Number:** 2018-212

## Sample Summary

*Canister Pressure / Vacuum*

| Laboratory Sample Number: | Sample Description: | Matrix: | START Date Collected: | START Time Collected: | End Date Collected: | End Time Collected: | Date Received: | Time Received | Initial Field (in. Hg) | Final Field (in. Hg) | Lab Received (in. Hg) |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 18-905 | 6492-610 OAK-IA-1-1 | A | 3/15/18 | 11:50 | 3/16/18 | 11:57 | 3/21/18 | 11:00 | -28 | -5 | -5 |
| 18-906 | 6492-610B OAK-IA-1-1 | A | 3/15/18 | 11:55 | 3/16/18 | 11:58 | 3/21/18 | 11:00 | -28 | -2 | -2 |
| 18-907 | 6492-612 OAK-IA-B-1 | A | 3/15/18 | 12:00 | 3/16/18 | 12:04 | 3/21/18 | 11:00 | -30 | -4 | -4 |
| 18-908 | 6492-612 OAK-IA-1-1 | A | 3/15/18 | 12:10 | 3/16/18 | 12:15 | 3/21/18 | 11:00 | -30 | 0 | 0 |
| 18-909 | 6492-OA-1 | A | 3/15/18 | 12:18 | 3/16/18 | 12:16 | 3/21/18 | 11:00 | -28 | 0 | 0 |
| 18-910 | 6492-612 OAK-SSV-1 | A | 3/16/18 | 12:33 | 3/16/18 | 12:38 | 3/21/18 | 11:00 | -27 | -3 | -3 |
| 18-911 | 6492-612 OAK-SSV-2 | A | 3/16/18 | 12:40 | 3/16/18 | 12:45 | 3/21/18 | 11:00 | -29 | -3 | -3 |

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**Client Name:** ENVIROFORENSICS

**Project ID:** 6492

**Client Project Manager:** ROB HOVERMAN

**EnvisionAir Project Number:** 2018-212

**Analytical Method:** TO-15
**Analytical Batch:** 032918AIR

**Client Sample ID:** 6492-610 OAK-IA-1-1

**EnvisionAir Sample Number:** 18-905
**Sample Matrix:** AIR

**Sample Collection START Date/Time:** 3/15/18 11:50
**Sample Collection END Date/Time:** 3/16/18 11:57
**Sample Received Date/Time:** 3/21/18 11:00

| Compounds | Sample Results ug/m³ | Reporting Limit ug/m³ | Flag |
|---|---|---|---|
| 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 | < 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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| Compounds | Sample Results ug/m³ | Reporting Limit ug/m³ | Flag |
|---|---|---|---|
| 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 | **13.8** | 3.19 | |
| Tetrahydrofuran | < 295 | 295 | |
| Toluene | < 3770 | 3770 | |
| trans-1,2-Dichloroethene | < 39.6 | 39.6 | |
| trans-1,3-Dichloropropene | < 4.54 | 4.54 | |
| Trichloroethene | < 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) | 103% | | |
| Analysis Date/Time: | 3-29-18/23:49 | | |
| Analyst Initials | tjg | | |

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**Client Name:** ENVIROFORENSICS

**Project ID:** 6492

**Client Project Manager:** ROB HOVERMAN

**EnvisionAir Project Number:** 2018-212

**Analytical Method:** TO-15
**Analytical Batch:** 032918AIR

**Client Sample ID:** 6492-610B OAK-IA-1-1

**EnvisionAir Sample Number:** 18-906
**Sample Matrix:** AIR

**Sample Collection START Date/Time:** 3/15/18 11:55
**Sample Collection END Date/Time:** 3/16/18 11:58
**Sample Received Date/Time:** 3/21/18 11:00

| Compounds | Sample Results ug/m³ | Reporting Limit ug/m³ | Flag |
|---|---|---|---|
| 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 | < 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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| Compounds | Sample Results ug/m³ | Reporting Limit ug/m³ | Flag |
|---|---|---|---|
| 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 | **15.5** | 3.19 | |
| Tetrahydrofuran | < 295 | 295 | |
| Toluene | < 3770 | 3770 | |
| trans-1,2-Dichloroethene | < 39.6 | 39.6 | |
| trans-1,3-Dichloropropene | < 4.54 | 4.54 | |
| Trichloroethene | < 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) | 98% | | |
| Analysis Date/Time: | 3-30-18/00:27 | | |
| Analyst Initials | tjg | | |

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**Client Name:** ENVIROFORENSICS

**Project ID:** 6492

**Client Project Manager:** ROB HOVERMAN

**EnvisionAir Project Number:** 2018-212

**Analytical Method:** TO-15
**Analytical Batch:** 032918AIR

**Client Sample ID:** 6492-612 OAK-IA-B-1

**EnvisionAir Sample Number:** 18-907
**Sample Matrix:** AIR

**Sample Collection START Date/Time:** 3/15/18 12:00
**Sample Collection END Date/Time:** 3/16/18 12:04
**Sample Received Date/Time:** 3/21/18 11:00

| Compounds | Sample Results ug/m³ | Reporting Limit ug/m³ | Flag |
|---|---|---|---|
| 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 | < 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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| Compounds | Sample Results ug/m³ | Reporting Limit ug/m³ | Flag |
|---|---|---|---|
| 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 | **17.2** | 3.19 | |
| Tetrahydrofuran | < 295 | 295 | |
| Toluene | < 3770 | 3770 | |
| trans-1,2-Dichloroethene | < 39.6 | 39.6 | |
| trans-1,3-Dichloropropene | < 4.54 | 4.54 | |
| Trichloroethene | < 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) | 99% | | |
| Analysis Date/Time: | 3-30-18/01:05 | | |
| Analyst Initials | tjg | | |

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**Client Name:** ENVIROFORENSICS

**Project ID:** 6492

**Client Project Manager:** ROB HOVERMAN

**EnvisionAir Project Number:** 2018-212

**Analytical Method:** TO-15
**Analytical Batch:** 032918AIR

**Client Sample ID:** 6492-612 OAK-IA-1-1

**EnvisionAir Sample Number:** 18-908
**Sample Matrix:** AIR

**Sample Collection START Date/Time:** 3/15/18 12:10
**Sample Collection END Date/Time:** 3/16/18 12:15
**Sample Received Date/Time:** 3/21/18 11:00

| Compounds | Sample Results ug/m³ | Reporting Limit ug/m³ | Flag |
|---|---|---|---|
| 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 | < 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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| Compounds | Sample Results ug/m³ | Reporting Limit ug/m³ | Flag |
|---|---|---|---|
| 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 | **15.9** | 3.19 | |
| Tetrahydrofuran | < 295 | 295 | |
| Toluene | < 3770 | 3770 | |
| trans-1,2-Dichloroethene | < 39.6 | 39.6 | |
| trans-1,3-Dichloropropene | < 4.54 | 4.54 | |
| Trichloroethene | < 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) | 99% | | |
| Analysis Date/Time: | 3-30-18/01:44 | | |
| Analyst Initials | tjg | | |

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**Client Name:** ENVIROFORENSICS

**Project ID:** 6492

**Client Project Manager:** ROB HOVERMAN

**EnvisionAir Project Number:** 2018-212

**Analytical Method:** TO-15
**Analytical Batch:** 032918AIR

**Client Sample ID:** 6492-OA-1

**EnvisionAir Sample Number:** 18-909
**Sample Matrix:** AIR

**Sample Collection START Date/Time:** 3/15/18 12:18
**Sample Collection END Date/Time:** 3/16/18 12:16
**Sample Received Date/Time:** 3/21/18 11:00

| Compounds | Sample Results ug/m³ | Reporting Limit ug/m³ | Flag |
|---|---|---|---|
| 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 | < 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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| Compounds | Sample Results ug/m³ | Reporting Limit ug/m³ | Flag |
|---|---|---|---|
| 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 | |
| Trichloroethene | < 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: | 3-29-18/21:49 | | |
| Analyst Initials | tjg | | |

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**Client Name:** ENVIROFORENSICS

**Project ID:** 6492

**Client Project Manager:** ROB HOVERMAN

**EnvisionAir Project Number:** 2018-212

**Analytical Method:** TO-15
**Analytical Batch:** 040218AIR

**Client Sample ID:** 6492-612 OAK-SSV-1

**EnvisionAir Sample Number:** 18-910
**Sample Matrix:** AIR

**Sample Collection START Date/Time:** 3/16/18 12:33
**Sample Collection END Date/Time:** 3/16/18 12:38
**Sample Received Date/Time:** 3/21/18 11:00

| Compounds | Sample Results ug/m³ | Reporting Limit ug/m³ | Flag |
|---|---|---|---|
| 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 | < 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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| Compounds | Sample Results ug/m³ | Reporting Limit ug/m³ | Flag |
|---|---|---|---|
| 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 | **84.8** | 3.19 | |
| Tetrahydrofuran | < 295 | 295 | |
| Toluene | < 3770 | 3770 | |
| trans-1,2-Dichloroethene | < 39.6 | 39.6 | |
| trans-1,3-Dichloropropene | < 4.54 | 4.54 | |
| Trichloroethene | **4.94** | 1.07 | |
| Trichlorofluoromethane | < 562 | 562 | |
| Vinyl Acetate | < 176 | 176 | |
| Vinyl Bromide | < 0.44 | 0.44 | |
| Vinyl Chloride | < 1.28 | 1.28 | |
| 4-bromofluorobenzene (surrogate) | 101% | | |
| Analysis Date/Time: | 4-4-18/12:20 | | |
| Analyst Initials | tjg | | |

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**Client Name:** ENVIROFORENSICS

**Project ID:** 6492

**Client Project Manager:** ROB HOVERMAN

**EnvisionAir Project Number:** 2018-212

**Analytical Method:** TO-15
**Analytical Batch:** 040218AIR

**Client Sample ID:** 6492-612 OAK-SSV-2

**EnvisionAir Sample Number:** 18-911
**Sample Matrix:** AIR

**Sample Collection START Date/Time:** 3/16/18 12:40
**Sample Collection END Date/Time:** 3/16/18 12:45
**Sample Received Date/Time:** 3/21/18 11:00

| Compounds | Sample Results ug/m³ | Reporting Limit ug/m³ | Flag |
|---|---|---|---|
| 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 | < 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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| Compounds | Sample Results ug/m³ | Reporting Limit ug/m³ | Flag |
|---|---|---|---|
| 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 | **31.6** | 3.19 | |
| Tetrahydrofuran | < 295 | 295 | |
| Toluene | < 3770 | 3770 | |
| trans-1,2-Dichloroethene | < 39.6 | 39.6 | |
| trans-1,3-Dichloropropene | < 4.54 | 4.54 | |
| Trichloroethene | < 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) | 99% | | |
| Analysis Date/Time: | 4-4-18/12:58 | | |
| Analyst Initials | tjg | | |

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*Analytical Report*

## TO-15 Quality Control Data

**EnvisionAir Batch Number:** 032918AIR

| Method Blank (MB): | MB Results (ppbv) | Reporting Limit (ppbv) | Flags |
|---|---|---|---|
| 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 | |

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*Analytical Report*

| Method Blank (MB): | MB Results (ppbv) | Reporting Limit (ppbv) | Flags |
|---|---|---|---|
| Toluene | < 1000 | 1000 | |
| trans-1,2-Dichloroethene | < 10 | 10 | |
| trans-1,3-Dichloropropene | < 1 | 1 | |
| Trichloroethene | < 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) | 83% | | |
| Analysis Date/Time: | 3-29-18/19:56 | | |
| Analyst Initials | tjg | | |

| LCS/LCSD | LCS Results (ppbv) | LCSD Results (ppbv) | LCS/D Conc(ppbv) | LCS Rec. | LCSD Rec. | RPD | Flag |
|---|---|---|---|---|---|---|---|
| Propylene | 9.22 | 10.4 | 10 | 92% | 104% | 12.0% | |
| Dichlorodifluoromethane | 9.77 | 10.5 | 10 | 98% | 105% | 7.2% | |
| Chloromethane | 9.54 | 10.6 | 10 | 95% | 106% | 10.5% | |
| Vinyl Chloride | 8.88 | 9.91 | 10 | 89% | 99% | 11.0% | |
| 1,3-Butadiene | 9.39 | 9.74 | 10 | 94% | 97% | 3.7% | |
| Bromomethane | 10 | 10.7 | 10 | 100% | 107% | 6.8% | |
| Chloroethane | 9.97 | 10.6 | 10 | 100% | 106% | 6.1% | |
| Vinyl Bromide | 9.3 | 10.2 | 10 | 93% | 102% | 9.2% | |
| Trichlorofluoromethane | 9.47 | 10.1 | 10 | 95% | 101% | 6.4% | |
| Acetone | 8.64 | 8.88 | 10 | 86% | 89% | 2.7% | |
| 1,1-Dichloroethene | 9.42 | 9.9 | 10 | 94% | 99% | 5.0% | |
| Methylene Chloride | 9.46 | 9.91 | 10 | 95% | 99% | 4.6% | |
| Carbon Disulfide | 9.55 | 9.98 | 10 | 96% | 100% | 4.4% | |
| trans-1,2-Dichloroethene | 9.59 | 9.94 | 10 | 96% | 99% | 3.6% | |
| Methyl-tert-butyl ether | 9.68 | 9.35 | 10 | 97% | 94% | 3.5% | |
| 1,1-Dichloroethane | 9.37 | 9.68 | 10 | 94% | 97% | 3.3% | |
| Vinyl Acetate | 9.27 | 9.55 | 10 | 93% | 96% | 3.0% | |
| N-Hexane | 9.27 | 9.53 | 10 | 93% | 95% | 2.8% | |
| 2-Butanone (MEK) | 9.47 | 9.65 | 10 | 95% | 97% | 1.9% | |
| cis-1,2-Dichloroethene | 9.08 | 9.5 | 10 | 91% | 95% | 4.5% | |
| Ethyl Acetate | 8.38 | 8.7 | 10 | 84% | 87% | 3.7% | |
| Chloroform | 9.61 | 10 | 10 | 96% | 100% | 4.0% | |
| Tetrahydrofuran | 8.78 | 9.18 | 10 | 88% | 92% | 4.5% | |
| 1,2-Dichloroethane | 8.93 | 9.43 | 10 | 89% | 94% | 5.4% | |
| 1,1,1-Trichloroethane | 9.29 | 9.63 | 10 | 93% | 96% | 3.6% | |
| Carbon Tetrachloride | 9.38 | 9.75 | 10 | 94% | 98% | 3.9% | |
| Benzene | 9.3 | 9.75 | 10 | 93% | 98% | 4.7% | |
| Cyclohexane | 9.72 | 10.2 | 10 | 97% | 102% | 4.8% | |
| 1,2-Dichloropropane | 8.86 | 9.45 | 10 | 89% | 95% | 6.4% | |
| Trichloroethene | 9.17 | 9.68 | 10 | 92% | 97% | 5.4% | |
| Bromodichloromethane | 9.05 | 9.42 | 10 | 91% | 94% | 4.0% | |
| 1,4-Dioxane | 9.45 | 8.75 | 10 | 95% | 88% | 7.7% | |
| Isooctane | 9.09 | 9.93 | 10 | 91% | 99% | 8.8% | |
| N-Heptane | 8.95 | 9.61 | 10 | 90% | 96% | 7.1% | |
| cis-1,3-Dichloropropene | 9.44 | 9.65 | 10 | 94% | 97% | 2.2% | |
| 4-Methyl-2-pentanone (MIBK) | 8.87 | 9.76 | 10 | 89% | 98% | 9.6% | |
| trans-1,3-Dichloropropene | 9.15 | 9.36 | 10 | 92% | 94% | 2.3% | |
| 1,1,2-Trichloroethane | 9.63 | 9.94 | 10 | 96% | 99% | 3.2% | |
| Toluene | 9.68 | 10 | 10 | 97% | 100% | 3.3% | |
| 2-Hexanone | 9.63 | 10.1 | 10 | 96% | 101% | 4.8% | |
| Dibromochloromethane | 10.4 | 11.2 | 10 | 104% | 112% | 7.4% | |
| 1,2-dibromoethane (EDB) | 9.05 | 9.66 | 10 | 91% | 97% | 6.5% | |
| Tetrachloroethene | 10.3 | 11 | 10 | 103% | 110% | 6.6% | |
| Chlorobenzene | 9.71 | 10.2 | 10 | 97% | 102% | 4.9% | |
| Ethylbenzene | 9.51 | 10.5 | 10 | 95% | 105% | 9.9% | |
| m,p-Xylene | 19.8 | 20.9 | 20 | 99% | 105% | 5.4% | |
| Bromoform | 10.4 | 11.2 | 10 | 104% | 112% | 7.4% | |

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*Analytical Report*

| LCS/LCSD | LCS Results (ppbv) | LCSD Results (ppbv) | LCS/D Conc(ppbv) | LCS Rec. | LCSD Rec. | RPD | Flag |
|---|---|---|---|---|---|---|---|
| Styrene | 10.1 | 10.6 | 10 | 101% | 106% | 4.8% | |
| 1,1,2,2-Tetrachloroethane | 9.4 | 10.4 | 10 | 94% | 104% | 10.1% | |
| o-Xylene | 10.9 | 11.6 | 10 | 109% | 116% | 6.2% | |
| 4-Ethyltoluene | 10.5 | 11.3 | 10 | 105% | 113% | 7.3% | |
| 1,3,5-Trimethylbenzene | 10.4 | 10.9 | 10 | 104% | 109% | 4.7% | |
| 1,2,4-Trimethylbenzene | 10.7 | 11.2 | 10 | 107% | 112% | 4.6% | |
| 1,3-Dichlorobenzene | 9.35 | 9.8 | 10 | 94% | 98% | 4.7% | |
| Benzyl Chloride | 8.05 | 9.27 | 10 | 81% | 93% | 14.1% | |
| 1,4-Dichlorobenzene | 10.4 | 10.2 | 10 | 104% | 102% | 1.9% | |
| 1,2-Dichlorobenzene | 10.5 | 10.8 | 10 | 105% | 108% | 2.8% | |
| 1,2,4-Trichlorobenzene | 9.1 | 8.17 | 10 | 91% | 82% | 10.8% | |
| Hexachloro-1,3-butadiene | 9.31 | 9.01 | 10 | 93% | 90% | 3.3% | |
| 4-bromofluorobenzene (surrogate) | 107% | 108% | | | | | |
| Analysis Date/Time: | 3-29-18/18:41 | 3-30-18/03:02 | | | | | |
| Analyst Initials | tjg | tjg | | | | | |

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*Analytical Report*

## TO-15 Quality Control Data

**EnvisionAir Batch Number:** 040218AIR

| Method Blank (MB): | MB Results (ppbv) | Reporting Limit (ppbv) | Flags |
|---|---|---|---|
| 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 | |

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*Analytical Report*

| Method Blank (MB): | MB Results (ppbv) | Reporting Limit (ppbv) | Flags |
|---|---|---|---|
| Toluene | < 1000 | 1000 | |
| trans-1,2-Dichloroethene | < 10 | 10 | |
| trans-1,3-Dichloropropene | < 1 | 1 | |
| Trichloroethene | < 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: | 4-3-18/16:36 | | |
| Analyst Initials | tjg | | |

| LCS/LCSD | LCS Results (ppbv) | LCSD Results (ppbv) | LCS/D Conc(ppbv) | LCS Rec. | LCSD Rec. | RPD | Flag |
|---|---|---|---|---|---|---|---|
| Propylene | 9.21 | 9.62 | 10 | 92% | 96% | 4.4% | |
| Dichlorodifluoromethane | 8.59 | 8.84 | 10 | 86% | 88% | 2.9% | |
| Chloromethane | 9.57 | 10.1 | 10 | 96% | 101% | 5.4% | |
| Vinyl Chloride | 9.09 | 9.47 | 10 | 91% | 95% | 4.1% | |
| 1,3-Butadiene | 8.96 | 9.58 | 10 | 90% | 96% | 6.7% | |
| Bromomethane | 10.5 | 11.4 | 10 | 105% | 114% | 8.2% | |
| Chloroethane | 10.9 | 11.6 | 10 | 109% | 116% | 6.2% | |
| Vinyl Bromide | 10 | 10.6 | 10 | 100% | 106% | 5.8% | |
| Trichlorofluoromethane | 9.91 | 10.5 | 10 | 99% | 105% | 5.8% | |
| Acetone | 10.1 | 10.9 | 10 | 101% | 109% | 7.6% | |
| 1,1-Dichloroethene | 9.61 | 10.1 | 10 | 96% | 101% | 5.0% | |
| Methylene Chloride | 11.9 | 10.9 | 10 | 119% | 109% | 8.8% | |
| Carbon Disulfide | 10 | 10.4 | 10 | 100% | 104% | 3.9% | |
| trans-1,2-Dichloroethene | 10.3 | 10.6 | 10 | 103% | 106% | 2.9% | |
| Methyl-tert-butyl ether | 9.39 | 9.61 | 10 | 94% | 96% | 2.3% | |
| 1,1-Dichloroethane | 9.49 | 9.92 | 10 | 95% | 99% | 4.4% | |
| Vinyl Acetate | 9.88 | 10.1 | 10 | 99% | 101% | 2.2% | |
| N-Hexane | 9.73 | 9.95 | 10 | 97% | 100% | 2.2% | |
| 2-Butanone (MEK) | 9.94 | 10.1 | 10 | 99% | 101% | 1.6% | |
| cis-1,2-Dichloroethene | 9.51 | 9.73 | 10 | 95% | 97% | 2.3% | |
| Ethyl Acetate | 9.01 | 9.27 | 10 | 90% | 93% | 2.8% | |
| Chloroform | 9.87 | 10.2 | 10 | 99% | 102% | 3.3% | |
| Tetrahydrofuran | 9.12 | 9.4 | 10 | 91% | 94% | 3.0% | |
| 1,2-Dichloroethane | 9.32 | 9.49 | 10 | 93% | 95% | 1.8% | |
| 1,1,1-Trichloroethane | 9.66 | 9.78 | 10 | 97% | 98% | 1.2% | |
| Carbon Tetrachloride | 9.84 | 10 | 10 | 98% | 100% | 1.6% | |
| Benzene | 10 | 10.1 | 10 | 100% | 101% | 1.0% | |
| Cyclohexane | 10.1 | 10.4 | 10 | 101% | 104% | 2.9% | |
| 1,2-Dichloropropane | 9.47 | 9.61 | 10 | 95% | 96% | 1.5% | |
| Trichloroethene | 9.7 | 9.88 | 10 | 97% | 99% | 1.8% | |
| Bromodichloromethane | 9.59 | 9.61 | 10 | 96% | 96% | 0.2% | |
| 1,4-Dioxane | 10.2 | 9.72 | 10 | 102% | 97% | 4.8% | |
| Isooctane | 9.96 | 10 | 10 | 100% | 100% | 0.4% | |
| N-Heptane | 9.55 | 9.52 | 10 | 96% | 95% | 0.3% | |
| cis-1,3-Dichloropropene | 10.3 | 10.4 | 10 | 103% | 104% | 1.0% | |
| 4-Methyl-2-pentanone (MIBK) | 9.45 | 9.74 | 10 | 95% | 97% | 3.0% | |
| trans-1,3-Dichloropropene | 10.5 | 10.7 | 10 | 105% | 107% | 1.9% | |
| 1,1,2-Trichloroethane | 10.2 | 10.4 | 10 | 102% | 104% | 1.9% | |
| Toluene | 10.7 | 10.7 | 10 | 107% | 107% | 0.0% | |
| 2-Hexanone | 10.6 | 10.8 | 10 | 106% | 108% | 1.9% | |
| Dibromochloromethane | 11.1 | 11.1 | 10 | 111% | 111% | 0.0% | |
| 1,2-dibromoethane (EDB) | 9.92 | 9.93 | 10 | 99% | 99% | 0.1% | |
| Tetrachloroethene | 11.3 | 11.5 | 10 | 113% | 115% | 1.8% | |
| Chlorobenzene | 10.7 | 10.6 | 10 | 107% | 106% | 0.9% | |
| Ethylbenzene | 10.6 | 10.6 | 10 | 106% | 106% | 0.0% | |
| m,p-Xylene | 21.2 | 21.1 | 20 | 106% | 106% | 0.5% | |
| Bromoform | 11.7 | 11.7 | 10 | 117% | 117% | 0.0% | |

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*Analytical Report*

| LCS/LCSD | LCS Results (ppbv) | LCSD Results (ppbv) | LCS/D Conc(ppbv) | LCS Rec. | LCSD Rec. | RPD | Flag |
|---|---|---|---|---|---|---|---|
| Styrene | 11.3 | 11.4 | 10 | 113% | 114% | 0.9% | |
| 1,1,2,2-Tetrachloroethane | 10.3 | 10.1 | 10 | 103% | 101% | 2.0% | |
| o-Xylene | 11.5 | 11.4 | 10 | 115% | 114% | 0.9% | |
| 4-Ethyltoluene | 11.7 | 11.7 | 10 | 117% | 117% | 0.0% | |
| 1,3,5-Trimethylbenzene | 11.1 | 11 | 10 | 111% | 110% | 0.9% | |
| 1,2,4-Trimethylbenzene | 11.5 | 11.6 | 10 | 115% | 116% | 0.9% | |
| 1,3-Dichlorobenzene | 11.4 | 11 | 10 | 114% | 110% | 3.6% | |
| Benzyl Chloride | 11.6 | 11.6 | 10 | 116% | 116% | 0.0% | |
| 1,4-Dichlorobenzene | 10.9 | 11.3 | 10 | 109% | 113% | 3.6% | |
| 1,2-Dichlorobenzene | 11.9 | 11.3 | 10 | 119% | 113% | 5.2% | |
| 1,2,4-Trichlorobenzene | 10.3 | 10.8 | 10 | 103% | 108% | 4.7% | |
| Hexachloro-1,3-butadiene | 9.2 | 9.34 | 10 | 92% | 93% | 1.5% | |
| 4-bromofluorobenzene (surrogate) | 115% | 114% | | | | | |
| Analysis Date/Time: | 4-3-18/15:26 | 4-3-18/16:02 | | | | | |
| Analyst Initials | tjg | tjg | | | | | |

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| Flag Number | Comments |
|---|---|
| 1 | Reporting limit is supported by MDL. TJG |

EnvisionAir Proj#: 2018-212 Page 1 of 1

# CHAIN OF CUSTODY RECORD

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

| | |
|---|---|
| Client: | P.O. Number: |
| Report Address: | Project Name or Number: 6492 |
| Report To: R. Haverman | Sampled by: R. Haverman |
| Phone: 262.510.0612 | QA/QC Required: (circle if applicable) **Level III** **Level IV** |
| Invoice Address: | Reporting Units needed: (circle) **ug/m³** **mg/m³** **PPBV** **PPMV** |
| Desired TAT: (Please Circle One) **1 day** **2 days** **3 days** **Std (5 bus. days)** | Media type: 1LC = 1 Liter Canister, 6LC = 6 Liter Canister, TB = Tedlar Bag, TD = Thermal Desorption Tube |

**REQUESTED PARAMETERS**

TO-15 Full List / TO-15 Short List

ENVISIONAIR

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

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*Canister Pressure / Vacuum*

| Air Sample ID | Media Type (see code above) | Coll. Date (Grab/Comp Start) | Coll. Time (Grab/Comp Start) | Coll. Date (Comp. End) | Coll. Time (Comp. End) | TO-15 Full List | TO-15 Short List | | | Canister Serial # | Flow Controller Serial # | Initial Field (in. Hg) | Final Field (in. Hg) | Lab Received (in. Hg) | EnvisionAir Sample Number |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 6492-610 Oak-1A-1-1 | 6LC | 3/15/18 | 1150 | 3/16/18 | 1157 | X | | | | 11084 | 07300 | -28 | -5 | -5 | 18-905 |
| 6492-610B Oak-1A-1-1 | 6LC | 3/15/18 | 1155 | 3/16/18 | 1158 | X | | | | 16016 | 02916 | -28 | -2 | -2 | 18-906 |
| 6492-612 Oak-1A-B1 | 6LC | 3/15/18 | 1200 | 3/16/18 | 1204 | X | | | | 11080 | 02095 | -30 | -4 | -4 | 18-907 |
| 6492-612 Oak-1A-1-1 | 6LC | 3/15/18 | 1210 | 3/16/18 | 1215 | X | | | | 11090 | 05307 | -30 | -0 | Ø | 18-908 |
| 6492-QA-1 | 6LC | 3/15/18 | 1218 | 3/16/18 | 1216 | X | | | | 91538 | 04654 | -28 | 0 | Ø | 18-909 |
| 6492-612 Oak-SSV-1 | 1LC | 3/16/18 | 1233 | 3/16/18 | 1238 | X | | | | 83725 | — | -27 | -3 | -3 | 18-910 |
| 6492-612 Oak-SSV-2 | 1LC | 3/16/18 | 1240 | 3/16/18 | 1245 | X | | | | 2534 | — | -29 | -3 | -3 | 18-911 |
| | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | |

Comments:

| Relinquished by: | Date | Time | Received by: | Date | Time |
|---|---|---|---|---|---|
| | 3/18/18 | 1200 | FedEx | | |
| | | | Stan Hunnicutt | 3/21/18 | 1100 |