

Sub-Slab Depressurization System Progress Report for the Former Holley Automotive/ Coltec Industries Facility Water Valley, Mississippi



Bernard T. Delaney, Ph.D., P.E., BCEE

April 23, 2018

Prepared for: EnPro Industries, Inc.
1020 Highland Colony Parkway, Suite 1400
Ridgeland, MS 39157

Prepared by: First Environment, Inc.
91 Fulton Street
Boonton, New Jersey 07005



CERTIFICATION STATEMENT

I, Bernard T. Delaney, Ph.D., P.E., BCEE, certify that I am currently a registered professional engineer in the State of Mississippi and had primary direct responsibility for the implementation of the subject interim remedial measure activities. I certify that this Sub-Slab Depressurization System Progress Report was completed in conformance with the laws and regulations of the State of Mississippi. I certify that all information and statements in this certification form are true.

11041

04/23/2018

Mississippi Professional
Engineer No.

Date



B. Tod Delaney, Ph.D., P.E., BCEE

TABLE OF CONTENTS

1.0	Introduction	1
2.0	Indoor Air Monitoring – April 6-7, 2018.....	1
2.1	Instrumentation	1
2.2	Methodology	1
2.3	Results.....	2
3.0	Summary of Indoor Air Sampling	5

TABLES

Table 1 – Indoor Air Sampling Results – April 6-7, 2018

Table 2 – Indoor Air Sampling Results Comparison – January 2017 through April 2018

FIGURES

Figure 1 – Indoor Air Sampling Results

APPENDICES

Appendix A – Analytical Report

1.0 Introduction

This Sub-Slab Depressurization System (“SSDS”) Progress Report has been prepared by First Environment, Inc. (“First Environment”) on behalf of EnPro Industries, Inc. (“EnPro”) with respect to the former Holley Automotive/Coltec Industries Facility (hereinafter referred to as the “Plant”). The Plant is located at 600 State Highway 32 in Water Valley, Yalobusha County, Mississippi.

On June 19, 2017, First Environment submitted a VI Investigation and Mitigation Report (the “Initial SSDS Report”), which included a description of the SSDS and indoor air sampling data through June 7, 2017. On July 3, 2017, First Environment submitted an SSDS Progress Report on the June 19-20, 2017 ambient and indoor air sampling results and the installation of extraction point (“EP”) No. 3. First Environment submitted SSDS Progress Reports on subsequent rounds of ambient and indoor air sampling on July 17, August 7, August 21, September 11, October 2, October 9, October 17, November 1, November 15, November 29, and December 13, 2017, and January 8, January 12, January 30, February 14, February 23, March 8, March 22, and April 16, 2018.

On April 6-7, 2018, First Environment collected a round of ambient and indoor air samples from the four interior rooms at the Plant—the Training Room, ATS Room, Maintenance Room, and Cafeteria.

2.0 Indoor Air Monitoring – April 6-7, 2018

2.1 Instrumentation

First Environment collected ambient and indoor air samples by placing laboratory provided 6-liter capacity 24-hour Summa® canisters equipped with flow regulators calibrated to 24 hours.

2.2 Methodology

On April 6-7, 2018, First Environment collected four indoor air samples at the four interior rooms of the Plant and one ambient air sample outside the Plant. Standard chain-of-custody procedures were implemented for the sampling, including signing the sample lot in and out from the facility to the laboratory on a chain-of-custody sheet and dating the start and end dates/times of sample collection. First Environment also followed standard indoor air sampling techniques to collect the indoor air samples at the locations depicted in Figure 1. Wherever possible, First Environment mounted the Summa® canisters on columns or secured them in an

area above the floor at or near the “breathing space.” The vacuum measurements in Summa® canisters were noted before and after sampling to ensure that the flow regulator at each canister was working properly.

The sampling required the Summa® canisters to be left in place for 24 hours and they are monitored by Plant security for that period of time. First Environment personnel, Borg Warner representatives, and Plant employees had access to the Summa® canisters during the 24-hour sampling period.

First Environment submitted the samples to ESC Lab Sciences for USEPA TO-15 SIM analysis. The laboratory was responsible for the decontamination of the Summa® canisters and for setting the internal vacuum and calibrating the regulators prior to sample collection.

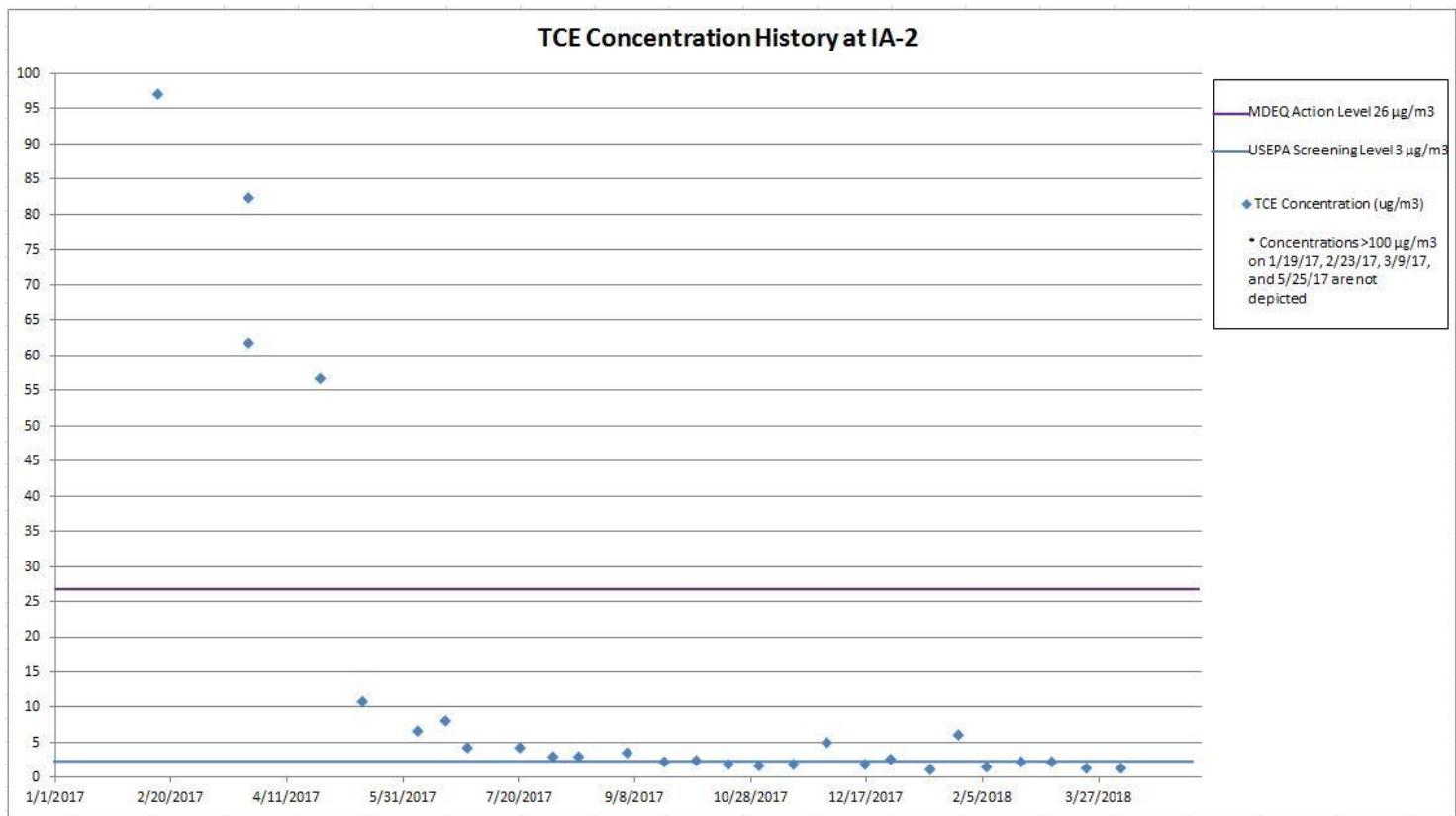
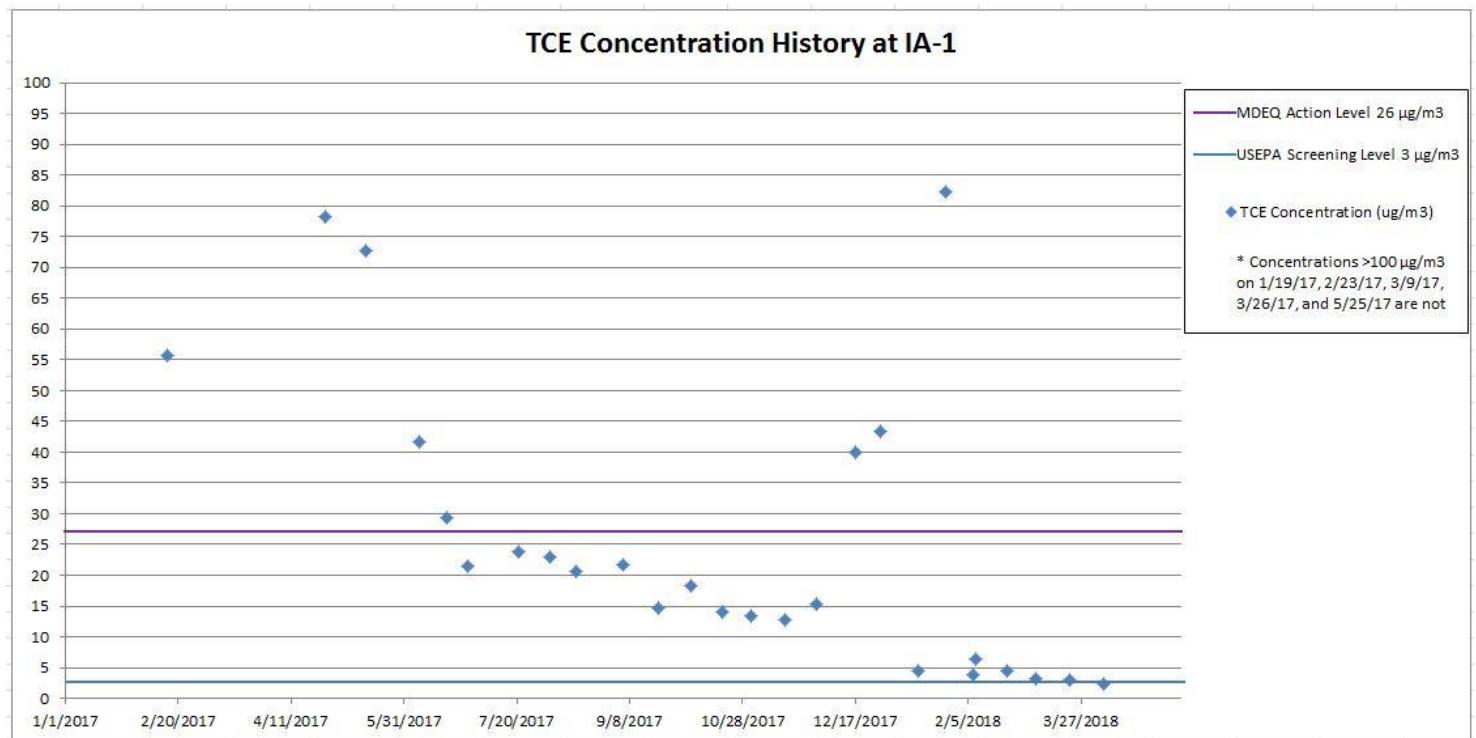
As reported in the January 8, 2018 SSDS Progress Report, First Environment sealed the void spaces in the block wall between the sump and the Maintenance Room on December 29, 2017. On January 15, 2018, the sump adjacent to the Maintenance Room was decommissioned. On January 18, 2018, First Environment installed two depressurization points in the block wall between the sump and the Maintenance Room and one depressurization point in the block wall between the sump and the Training Room.

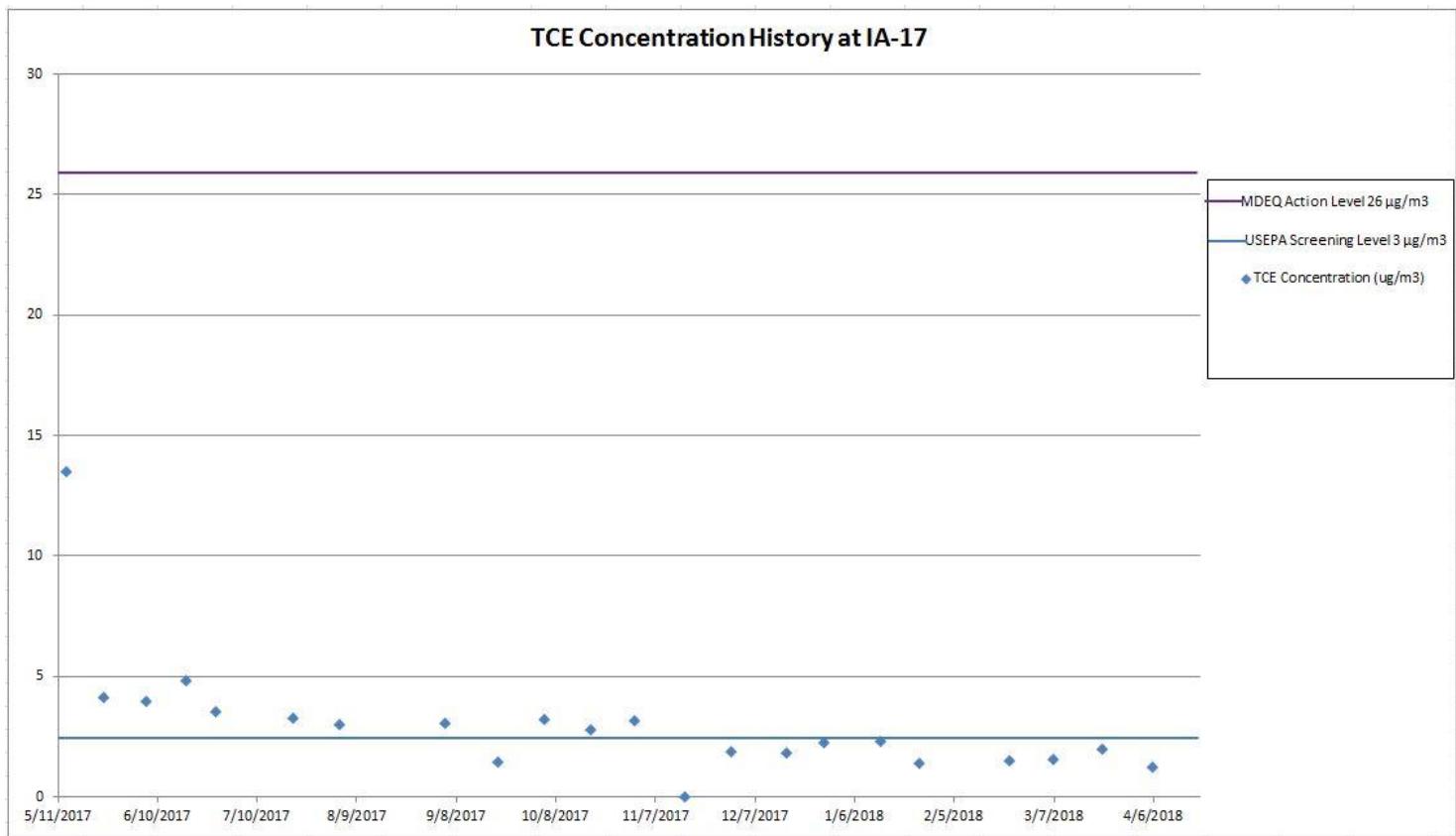
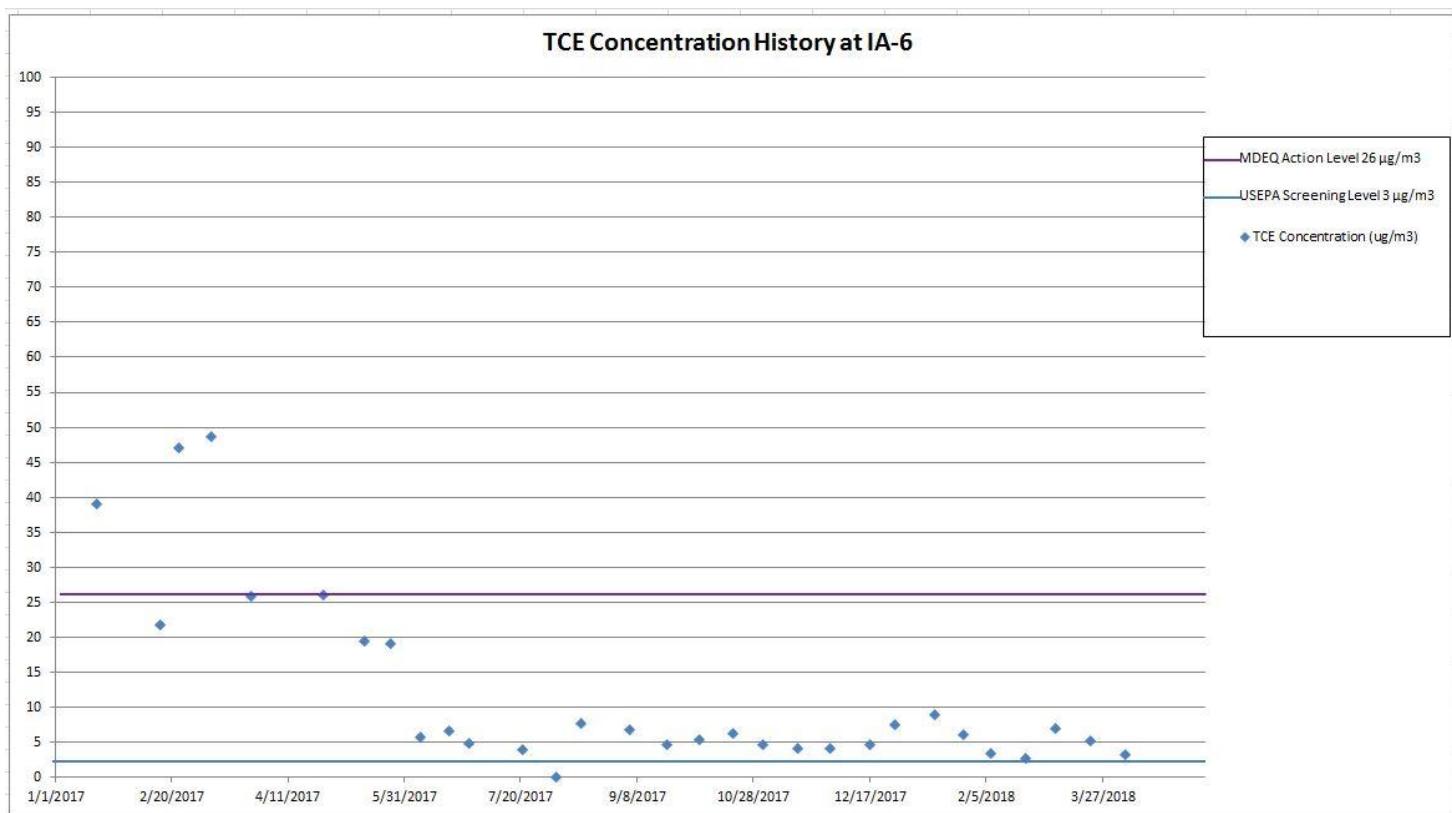
2.3 Results

Table 1 presents the ambient and indoor air sampling results for all TO-15 analytes for the April 6-7, 2018 sampling event. Table 2 presents the results of TCE, cis-DCE, and VC in comparison to all previous rounds of sampling. A copy of the laboratory reports, including the chain-of-custody forms, is attached in Appendix A. As discussed in more detail below, all indoor air sampling results for TCE were below the MDEQ action level of 26 µg/m³.

The sample results in the ATS Room, Cafeteria, and Maintenance Room were below USEPA’s Vapor Intrusion Screening Level (“VISL”) for TCE of 3 µg/m³. The sample results in the Training Room (3.28 µg/m³) were slightly above USEPA’s VISL but well below the MDEQ action level of 26 µg/m³.

The following figures show the TCE concentration history in the interior rooms.





3.0 Summary of Indoor Air Sampling

Since June 2017, the sample results in the ATS Room (IA-2), Training Room (IA-6), and Cafeteria (IA-17) have been below the MDEQ action level of 26 $\mu\text{g}/\text{m}^3$ for TCE. Since February 2018, sample results for the Maintenance Room were also below the MDEQ action level of 26 $\mu\text{g}/\text{m}^3$. Further, during the April 6-7, 2018 sampling event, TCE was below 3 $\mu\text{g}/\text{m}^3$ in the ATS Room, Cafeteria, and Maintenance Room.

TABLES

TABLE 1
INDOOR AIR SAMPLING RESULTS
APRIL 6, 2018
FORMER HOLLEY AUTOMOTIVE/COLTEC INDUSTRIES FACILITY
WATER VALLEY, MS

SAMPLE LOCATION: SAMPING DATE: LABORATORY ID:	IA-1 04/06/2018 L984164-01	IA-2 04/06/2018 L984164-02	IA-6 04/06/2018 L984164-03	IA-17 04/06/2018 L984164-04	AA-2 6-Apr-18 L984164-05
Analyte	µg/m³	µg/m³	µg/m³	µg/m³	µg/m³
ACETONE	111	130	111	155	6.93
ALLYL CHLORIDE	<0.626	<0.626	<0.626	<0.626	<0.626
BENZENE	0.91	0.884	0.781	0.935	<0.639
BENZYL CHLORIDE	<1.04	<1.04	<1.04	<1.04	<1.04
BROMODICHLOROMETHANE	<1.34	<1.34	<1.34	<1.34	<1.34
BROMOFORM	<6.21	<6.21	<6.21	<6.21	<6.21
BROMOMETHANE	<0.776	<0.776	<0.776	<0.776	<0.776
1,3-BUTADIENE	<4.43	<4.43	<4.43	<4.43	<4.43
CARBON DISULFIDE	<0.622	<0.622	<0.622	<0.622	<0.622
CARBON TETRACHLORIDE	<1.26	<1.26	<1.26	<1.26	<1.26
CHLOROBENZENE	<0.924	<0.924	<0.924	<0.924	<0.924
CHLOROETHANE	<0.528	<0.528	<0.528	<0.528	<0.528
CHLOROFORM	<0.973	<0.973	<0.973	<0.973	<0.973
CHLOROMETHANE	1.16	1.05	1.17	1.12	1.1
2-CHLOROTOLUENE	<1.03	<1.03	<1.03	<1.03	<1.03
CYCLOHEXANE	1.18	<0.689	<0.689	<0.689	<0.689
CHLORODIBROMOMETHANE	<1.7	<1.7	<1.7	<1.7	<1.7
1,2-DIBROMOETHANE	<1.54	<1.54	<1.54	<1.54	<1.54
1,2-DICHLOROBENZENE	<1.2	<1.2	<1.2	<1.2	<1.2
1,3-DICHLOROBENZENE	<1.2	<1.2	<1.2	<1.2	<1.2
1,4-DICHLOROBENZENE	<1.2	<1.2	<1.2	<1.2	<1.2
1,2-DICHLOROETHANE	<0.81	<0.81	<0.81	<0.81	<0.81
1,1-DICHLOROETHANE	<0.802	<0.802	<0.802	<0.802	<0.802

TABLE 1
INDOOR AIR SAMPLING RESULTS
APRIL 6, 2018
FORMER HOLLEY AUTOMOTIVE/COLTEC INDUSTRIES FACILITY
WATER VALLEY, MS

SAMPLE LOCATION: SAMPING DATE: LABORATORY ID:	IA-1 04/06/2018 L984164-01	IA-2 04/06/2018 L984164-02	IA-6 04/06/2018 L984164-03	IA-17 04/06/2018 L984164-04	AA-2 6-Apr-18 L984164-05
Analyte	µg/m³	µg/m³	µg/m³	µg/m³	µg/m³
1,1-DICHLOROETHENE	<0.793	<0.793	<0.793	<0.793	<0.793
CIS-1,2-DICHLOROETHENE	<0.793	<0.793	1.89	1.24	<0.793
TRANS-1,2-DICHLOROETHENE	<0.793	<0.793	<0.793	<0.793	<0.793
1,2-DICHLOROPROPANE	<0.924	<0.924	<0.924	<0.924	<0.924
CIS-1,3-DICHLOROPROPENE	<0.908	<0.908	<0.908	<0.908	<0.908
TRANS-1,3-DICHLOROPROPENE	<0.908	<0.908	<0.908	<0.908	<0.908
1,4-DIOXANE	<0.721	<0.721	<0.721	<0.721	<0.721
ETHANOL	5,810 (E)	6,700 (E)	4,570 (E)	7,310 (E)	30.4
ETHYLBENZENE	1.53	1.71	1.62	1.59	<0.867
4-ETHYLtolUENE	<0.982	<0.982	<0.982	<0.982	<0.982
TRICHLOROFUOROMETHANE	1.24	1.2	1.22	1.22	1.21
DICHLORODIFLUOROMETHANE	1.56	1.31	1.45	1.73	1.87
1,1,2-TRICHLOROTRIFLUOROETHANE	<1.53	<1.53	<1.53	<1.53	<1.53
1,2-DICHLOROTETRAFLUOROETHANE	<1.4	<1.4	<1.4	<1.4	<1.4
HEPTANE	44.9	46.8	36.5	44.7	<0.818
HEXAChLORO-1,3-BUTADIENE	<6.73 (J3 J4)	<6.73 (J3 J4)	<6.73 (J3 J4)	<6.73 (J3 J4)	<6.73 (J3 J4)
N-HEXANE	0.901	0.856	<0.705	<0.705	<0.705
ISOPROPYLBENZENE	<0.983	<0.983	<0.983	<0.983	<0.983
METHYLENE CHLORIDE	<0.694	<0.694	<0.694	<0.694	<0.694
METHYL BUTYL KETONE	<5.11	<5.11	<5.11	<5.11	<5.11
2-BUTANONE (MEK)	359	438	320	458	<3.69
4-METHYL-2-PENTANONE (MIBK)	<5.12	<5.12	<5.12	<5.12	<5.12
METHYL METHACRYLATE	<0.819	<0.819	<0.819	<0.819	<0.819
METHYL TERT-BUTYL ETHER	<0.721	<0.721	<0.721	<0.721	<0.721
NAPHTHALENE	<3.3 (J3)	<3.3 (J3)	<3.3 (J3)	<3.3 (J3)	<3.3 (J3)
2-PROPANOL	3,840 (E)	4,560 (E)	3020	4,510 (E)	10.3

TABLE 1
INDOOR AIR SAMPLING RESULTS
APRIL 6, 2018
FORMER HOLLEY AUTOMOTIVE/COLTEC INDUSTRIES FACILITY
WATER VALLEY, MS

SAMPLE LOCATION: SAMPING DATE: LABORATORY ID:	IA-1 04/06/2018 L984164-01	IA-2 04/06/2018 L984164-02	IA-6 04/06/2018 L984164-03	IA-17 04/06/2018 L984164-04	AA-2 6-Apr-18 L984164-05
Analyte	µg/m³	µg/m³	µg/m³	µg/m³	µg/m³
PROPENE	<0.689	<0.689	<0.689	<0.689	<0.689
STYRENE	<0.851	<0.851	<0.851	<0.851	<0.851
1,1,2,2-TETRACHLOROETHANE	<1.37	<1.37	<1.37	<1.37	<1.37
TETRACHLOROETHENE	<1.36	<1.36	<1.36	<1.36	<1.36
TETRAHYDROFURAN	<0.59	<0.59	<0.59	<0.59	<0.59
TOLUENE	9.45	9.73	7.74	10.2	<0.753
1,2,4-TRICHLOROBENZENE	<4.66 (J3)	<4.66 (J3)	<4.66 (J3)	<4.66 (J3)	<4.66 (J3)
1,1,1-TRICHLOROETHANE	<1.09	<1.09	<1.09	<1.09	<1.09
1,1,2-TRICHLOROETHANE	<1.09	<1.09	<1.09	<1.09	<1.09
TRICHLOROETHENE	2.34	1.38	3.28	1.26	<1.07
1,2,4-TRIMETHYLBENZENE	2.68	3.02	<0.982	1.3	<0.982
1,3,5-TRIMETHYLBENZENE	<0.982	<0.982	<0.982	<0.982	<0.982
2,2,4-TRIMETHYL PENTANE	<0.934	<0.934	<0.934	<0.934	<0.934
VINYL CHLORIDE	<0.511	<0.511	<0.511	<0.511	<0.511
VINYL BROMIDE	<0.875	<0.875	<0.875	<0.875	<0.875
VINYL ACETATE	<0.704	<0.704	<0.704	<0.704	<0.704
M&P-XYLENE	5.41	6.06	6.13	5.5	<1.73
O-XYLENE	1.78	1.97	1.8	1.85	<0.867
1,4-BROMOFLUOROBENZENE	103 96.1	94.5 108	76.4 96.1	107 94.8	100

E: The analyte concentration exceeds the upper limit of the calibration range of the instrument established by the instrument manufacturer.

TABLE 2
INDOOR AIR SAMPLING RESULTS COMPARISON
JANUARY 2017 THROUGH APRIL 2018
FORMER HOLLEY AUTOMOTIVE/COLTEC INDUSTRIES FACILITY
WATER VALLEY, MS

SAMPLE ID	SAMPLING DATE	LABORATORY ID	CoC Concentrations ($\mu\text{g}/\text{m}^3$)				
			Trichloroethene	cis-1,2-Dichloroethene	Vinyl chloride		
USEPA Vapor Intrusion Screening Level (VISL):							
3							
IA-1 (Door Open) (Door Closed)	19-Jan-17	L1702183-01	268(D)	63.8	<0.051		
	15-Feb-17	L890396-01	55.8	<0.793	2.51		
	23-Feb-17	L892423-01	150	82.1	1.68		
	9-Mar-17	L895061-01	425	97.9	2.47		
	26-Mar-17	L898762-01	103	11.4	0.604		
	26-Apr-17	L905292-01	78.3	<0.793	0.712		
	14-May-17	L909544-01	72.7	14	<0.511		
	25-May-17	L912423-03	219	<0.793	0.526		
	7-Jun-17	L914832-13	41.7	<0.793	<0.511		
	19-Jun-17	L917924-13	29.4	3.68	<0.511		
	28-Jun-17	L920054-12	21.4	<0.793	<0.511		
	21-Jul-17	L924410-01	23.8	<0.793	<0.511		
	4-Aug-17	L927407-01	22.9	2.85	<0.511		
	15-Aug-17	L930026-01	20.6	<0.793	<0.511		
	5-Sep-17	L934535-01	21.8	3.17	<0.511		
	21-Sep-17	L938896-01	14.7	<0.793	<0.511		
	5-Oct-17	L942068-01	18.2	<0.793	<0.511		
	19-Oct-17	L945503-01	14.1	<0.793	<0.511		
	1-Nov-17	L948263-01	13.5	1.83	<0.511		
	16-Nov-17	L952200-01	12.7	<0.793	<0.511		
	30-Nov-17	L954578-01	15.3	<0.793	<0.511		
	17-Dec-17	L958416-01	40	<0.793	<0.511		
	28-Dec-17	L960558-01	43.4	4.77	<0.511		
	14-Jan-18	L963421-01	4.5	<0.793	<0.511		
	25-Jan-18	L966088-01	82.3	<0.793	<0.511		
	7-Feb-18	L969021-01	3.89	<0.793	<0.511		
	8-Feb-18	L969370-01	6.39	1.26	<0.511		
	22-Feb-18	L972729-01	4.47	1.35	<0.511		
	7-Mar-18	L976176-01	3.23	<0.793	<0.511		
	23-Mar-18	L980227-01	2.93	<0.793	<0.511		
	6-Apr-18	L984164-01	2.34	<0.793	<0.511		
IA-2 IA-2 (2ND CANISTER) IA-2 (DUPLICATE)	19-Jan-17	L1702183-02	187	43.2	<0.051		
	15-Feb-17	L890396-02	97.1	<0.793	2.27		
	23-Feb-17	L892423-02	157	79.4	1.57		
	9-Mar-17	L895061-02	426	86.7	1.18		
	9-Mar-17	L895061-04	438	88.7	1.68		
	26-Mar-17	L898762-02	61.8	<0.793	<0.511		
	26-Mar-17	L898762-04	82.3	<0.793	<0.511		
	26-Apr-17	L905292-02	56.6	10.8	<0.511		
	14-May-17	L909544-02	10.8	<0.793	<0.511		
	25-May-17	L912423-08	160	<0.793	<0.511		
	7-Jun-17	L914832-12	6.58	<0.793	<0.511		
	19-Jun-17	L917924-12	8.16	1.88	<0.511		
	28-Jun-17	L920054-13	4.21	<0.793	<0.511		
	21-Jul-17	L924410-02	4.3	<0.793	<0.511		
	4-Aug-17	L927407-02	2.94	<0.793	<0.511		
	15-Aug-17	L930026-02	2.91	<0.793	<0.511		
	5-Sep-17	L934535-02	3.52	0.967	<0.511		
	21-Sep-17	L938896-02	2.22	<0.793	<0.511		
	5-Oct-17	L942068-02	2.46	<0.793	<0.511		
	19-Oct-17	L945503-02	1.87	<0.793	<0.511		
	1-Nov-17	L948263-02	1.7	<0.793	<0.511		
	16-Nov-17	L952200-02	1.82	<0.793	<0.511		
	30-Nov-17	L954578-02	5.01	<0.793	<0.511		
	17-Dec-17	L958416-02	1.98	<0.793	<0.511		
	28-Dec-17	L960558-02	2.58	0.823	<0.511		
	14-Jan-18	L963421-02	1.21	<0.793	<0.511		
	25-Jan-18	L966088-02	6.09	<0.793	<0.511		
	7-Feb-18	L969030-01	1.6	<0.793	<0.511		
	22-Feb-18	L972729-02	2.31	<0.793	<0.511		
	7-Mar-18	L976176-02	2.35	<0.793	<0.511		
	23-Mar-18	L980227-02	1.39	<0.793	<0.511		
	6-Apr-18	L984164-02	1.38	<0.793	<0.511		

TABLE 2
INDOOR AIR SAMPLING RESULTS COMPARISON
JANUARY 2017 THROUGH APRIL 2018
FORMER HOLLEY AUTOMOTIVE/COLTEC INDUSTRIES FACILITY
WATER VALLEY, MS

SAMPLE ID	SAMPLING DATE	LABORATORY ID	CoC Concentrations ($\mu\text{g}/\text{m}^3$)		
			Trichloroethene	cis-1,2-Dichloroethene	Vinyl chloride
USEPA Vapor Intrusion Screening Level (VISL):			3	NA	2.8
IA-6	19-Jan-17	L1702183-06	39	12.8	0.585
	15-Feb-17	L890396-03	21.7	<0.793	0.57
	23-Feb-17	L892423-03	47.1	14.2	<0.511
	9-Mar-17	L895061-03	48.6	12.3	0.511
	26-Mar-17	L898762-03	25.8	<0.793	<0.511
	26-Apr-17	L905292-03	26	9.12	<0.511
	14-May-17	L909544-03	19.5	<0.793	<0.511
	25-May-17	L912423-01	19.1	<0.793	<0.511
	7-Jun-17	L914832-11	5.75	<0.793	<0.511
	19-Jun-17	L917924-11	6.67	4.14	<0.511
	28-Jun-17	L920054-11	4.84	<0.793	<0.511
	21-Jul-17	L924410-03	4	<0.793	<0.511
	4-Aug-17	L927407-03	<1.07	<0.793	<0.511
	15-Aug-17	L930026-03	7.61	<0.793	<0.511
	5-Sep-17	L934535-03	6.85	5.17	<0.511
	21-Sep-17	L938896-03	4.65	<0.793	<0.511
	5-Oct-17	L942068-03	5.37	<0.793	<0.511
	19-Oct-17	L945503-03	6.31	<0.793	<0.511
	1-Nov-17	L948263-03	4.67	2.89	<0.511
	16-Nov-17	L952200-03	4.19	<0.793	<0.511
	30-Nov-17	L954578-03	4.06	3	<0.511
	17-Dec-17	L958416-03	4.69	<0.793	<0.511
	28-Dec-17	L960558-03	7.53	4.41	<0.511
	14-Jan-18	L963421-03	8.95	<0.793	<0.511
	25-Jan-18	L966088-03	6.12	<0.793	<0.511
	7-Feb-18	L969030-02	3.45	2.18	<0.511
	22-Feb-18	L972729-03	2.76	1.69	<0.511
	7-Mar-18	L976176-03	6.95	2.74	<0.511
	23-Mar-18	L980227-03	5.26	2.02	<0.511
	6-Apr-18	L984164-03	3.28	1.89	<0.511
IA-14	19-Jan-17	L1702183-14	3.07	0.928	<0.051
	23-Feb-17	L892423-04	3.32	<0.793	<0.511
IA-17	14-May-17	L909544-05	13.5	<0.793	<0.511
	25-May-17	L912423-02	4.15	<0.793	<0.511
	7-Jun-17	L914832-10	3.96	<0.793	<0.511
	19-Jun-17	L917924-10	4.82	4.48	<0.511
	28-Jun-17	L920054-10	3.56	<0.793	<0.511
	21-Jul-17	L924410-04	3.27	<0.793	<0.511
	4-Aug-17	L927407-04	3.02	<0.793	<0.511
	15-Aug-17	L930026-04	<5.36	<3.96	<2.56
	5-Sep-17	L934535-04	3.04	5.6	<0.511
	21-Sep-17	L938896-04	1.46	<0.793	<0.511
	5-Oct-17	L942068-04	3.2	<0.793	<0.511
	19-Oct-17	L945503-04	2.79	<0.793	<0.511
	1-Nov-17	L948263-04	3.15	2.33	<0.511
	16-Nov-17	L952200-04	<1.07	<0.793	<0.511
	30-Nov-17	L954578-04	1.89	<0.793	<0.511
	17-Dec-17	L958416-04	1.86	<0.793	<0.511
	28-Dec-17	L960558-04	2.28	2.57	<0.511
	14-Jan-18	L963421-04	2.34	<0.793	<0.511
	25-Jan-18	L966088-04	1.42	<0.793	<0.511
	7-Feb-18	L969030-03	<4.29	<3.17	<2.04
	22-Feb-18	L972729-04	1.5	1.68	<0.511
	7-Mar-18	L976176-04	1.57	<0.793	<0.511
	23-Mar-18	L980227-04	1.98	1.7	<0.511
	6-Apr-18	L984164-04	1.26	1.24	<0.511

TABLE 2
INDOOR AIR SAMPLING RESULTS COMPARISON
JANUARY 2017 THROUGH APRIL 2018
FORMER HOLLEY AUTOMOTIVE/COLTEC INDUSTRIES FACILITY
WATER VALLEY, MS

SAMPLE ID	SAMPLING DATE	LABORATORY ID	CoC Concentrations ($\mu\text{g}/\text{m}^3$)		
			Trichloroethene	cis-1,2-Dichloroethene	Vinyl chloride
	USEPA Vapor Intrusion Screening Level (VISL):		3	NA	2.8
IA-B12	26-Apr-17	L905292-04	6.54	1.77	<0.511
	25-May-17	L912423-05	3.08	<0.793	<0.511
	7-Jun-17	L914832-07	1.64	<0.793	<0.511
	19-Jun-17	L917924-09	1.66	<0.793	<0.511
	28-Jun-17	L920054-08	<1.07	<0.793	<0.511
	21-Jul-17	L924410-05	1.08	<0.793	<0.511
	4-Aug-17	L927407-05	<1.07	<0.793	<0.511
	15-Aug-17	L930026-05	<1.07	<0.793	<0.511
	5-Sep-17	L934535-05	<1.07	<0.793	<0.511
IA-C16	26-Apr-17	L905292-05	6.48	1.82	<0.511
	25-May-17	L912423-06	3.88	<0.793	<0.511
	7-Jun-17	L914832-08	1.55	<0.793	<0.511
	19-Jun-17	L917924-07	2	<0.793	<0.511
	28-Jun-17	L920054-07	1.22	<0.793	<0.511
	21-Jul-17	L924410-06	1.08	<0.793	<0.511
	4-Aug-17	L927407-06	1.25	<0.793	<0.511
	15-Aug-17	L930026-06	<1.07	<0.793	<0.511
	5-Sep-17	L934535-06	<1.07	<0.793	<0.511
	30-Nov-17	L954578-05	<1.07	<0.793	<0.511
	7-Mar-18	L976176-06	<1.07	<0.793	<0.511
IA-D5	25-May-17	L912423-12	<1.07	<0.793	<0.511
	7-Jun-17	L914832-03	1.47	<0.793	<0.511
	19-Jun-17	L917924-03	1.66	<0.793	<0.511
	28-Jun-17	L920054-03	<1.07	<0.793	<0.511
	21-Jul-17	L924410-08	<1.07	<0.793	<0.511
	4-Aug-17	L927407-10	<1.07	<0.793	<0.511
	15-Aug-17	L930026-10	<1.07	<0.793	<0.511
	5-Sep-17	L934535-10	1.3	<0.793	<0.511
IA-G4	25-May-17	L912423-11	<1.07	<0.793	<0.511
	7-Jun-17	L914832-02	3.31	<0.793	<0.511
	19-Jun-17	L917924-02	1.35	<0.793	<0.511
	28-Jun-17	L920054-02	<1.07	<0.793	<0.511
	21-Jul-17	L924410-09	<1.07	<0.793	<0.511
	4-Aug-17	L927407-11	<1.07	<0.793	<0.511
	15-Aug-17	L930026-11	<1.07	<0.793	<0.511
	5-Sep-17	L934535-11	1.17	<0.793	<0.511
	30-Nov-17	L954578-07	<1.07	<0.793	<0.511
	7-Mar-18	L976176-08	<1.07	<0.793	<0.511
IA-G13	26-Apr-17	L905292-06	8.98	<0.793	<0.511
	14-May-17	L909544-04	4.65	<0.793	<0.511
	25-May-17	L912423-06	3.88	<0.793	<0.511
	7-Jun-17	L914832-06	2.54	<0.793	<0.511
	19-Jun-17	L917924-06	2.46	<0.793	<0.511
	28-Jun-17	L920054-06	1.41	<0.793	<0.511
	21-Jul-17	L924410-07	1.6	<0.793	<0.511
	4-Aug-17	L927407-07	1.76	<0.793	<0.511
	15-Aug-17	L930026-07	1.25	<0.793	<0.511
	5-Sep-17	L934535-07	1.78	<0.793	<0.511
IA-K8	25-May-17	L912423-10	1.47	<0.793	<0.511
	7-Jun-17	L914832-01	7.86	<0.793	<0.511
	19-Jun-17	L917924-01	1.31	<0.793	<0.511
	28-Jun-17	L920054-01	<1.07	<0.793	<0.511
	21-Jul-17	L924410-10	<1.07	<0.793	<0.511
	4-Aug-17	L927407-12	<1.07	<0.793	<0.511
	15-Aug-17	L930026-12	<1.07	<0.793	<0.511
	5-Sep-17	L934535-12	<1.07	<0.793	<0.511

TABLE 2
INDOOR AIR SAMPLING RESULTS COMPARISON
JANUARY 2017 THROUGH APRIL 2018
FORMER HOLLEY AUTOMOTIVE/COLTEC INDUSTRIES FACILITY
WATER VALLEY, MS

SAMPLE ID	SAMPLING DATE	LABORATORY ID	CoC Concentrations ($\mu\text{g}/\text{m}^3$)		
			Trichloroethene	cis-1,2-Dichloroethene	Vinyl chloride
		USEPA Vapor Intrusion Screening Level (VISL):	3	NA	2.8
IA-K13	26-Apr-17 25-May-17 7-Jun-17 19-Jun-17 28-Jun-17 21-Jul-17 4-Aug-17 15-Aug-17 5-Sep-17 30-Nov-17 7-Mar-18	L905292-07 L912423-04 L914832-05 L917924-05 L920054-05 L924410-12 L927407-08 L930026-08 L934535-08 L954578-06 L976176-07	6.53 5.28 1.59 2.2 1.33 1.34 <1.07 <1.07 1.67 <1.07 <1.07	<0.793 <0.793 <0.793 <0.793 <0.793 <0.793 <0.793 <0.793 <0.793 <0.793	<0.511 <0.511 <0.511 <0.511 <0.511 <0.511 <0.511 <0.511 <0.511 <0.511
IA-L16	26-Apr-17 7-Jun-17 25-May-17 19-Jun-17 28-Jun-17 21-Jul-17 4-Aug-17 15-Aug-17 5-Sep-17	L905292-08 L914832-04 L912423-09 L917924-04 L920054-04 L924410-11 L927407-09 L930026-09 L934535-09	5.77 2.09 1.36 2.81 1.32 1.18 <1.07 1.13 1.14	1.75 <0.793 <0.793 <0.793 <0.793 <0.793 <0.793 <0.793 <0.793	<0.511 <0.511 <0.511 <0.511 <0.511 <0.511 <0.511 <0.511 <0.511
EP-1	14-May-17	L909544-06	1420000	361000	46300
EP-2	14-May-17	L909544-07	2820000	560000	13200
IA-SUMP-DUP	25-May-17	L912423-15	83.1	<0.793	<0.511
IA-SUMP	19-Jun-17 28-Jun-17	L917924-14 L920054-14	5.33 3.75	1.19 <0.793	<0.511 <0.511
AA-1	19-Jan-17	L1702183-17	<0.107	<0.079	<0.051
AA-2	19-Jan-17 26-Apr-17 25-May-17 7-Jun-17 19-Jun-17 28-Jun-17 21-Jul-17 4-Aug-17 15-Aug-17 5-Sep-17 21-Sep-17 5-Oct-17 19-Oct-17 1-Nov-17 16-Nov-17 30-Nov-17 17-Dec-17 28-Dec-17 14-Jan-18 25-Jan-18 7-Feb-18 22-Feb-18 7-Mar-18 23-Mar-18 6-Apr-18	L1702183-18 L905292-09 L912423-13 L914832-09 L917924-08 L920054-09 L924410-13 L927407-13 L930026-13 L934535-13 L938896-05 L942068-05 L945503-05 L948263-05 L952200-05 L954578-10 L958416-05 L960558-05 L963421-05 L966088-05 L969030-04 L972729-05 L976176-05 L980227-05 L984164-05	0.129 <0.107 <1.07 <1.07 <1.07 16.7 <1.07 <1.07 <1.07 <1.07 <1.07 <1.07 <1.07 <1.07 <1.07 <1.07 <1.07 <1.07 <1.07 <1.07 <1.07 <1.07 <1.07 <1.07 <1.07 <1.07 <1.07 <1.07 <1.07	<0.079 <0.793 <0.793 <0.793 <0.793 <0.793 <0.793 <0.793 <0.793 <0.793 <0.793 <0.793 <0.793 <0.793 <0.793 <0.793 <0.793 <0.793 <0.793 <0.793 <0.793 <0.793 <0.793 <0.793 <0.793 <0.793 <0.793	<0.051 <0.051 <0.511 <0.511 <0.511 <0.511 <0.511 <0.511 <0.511 <0.511 <0.511 <0.511 <0.511 <0.511 <0.511 <0.511 <0.511 <0.511 <0.511 <0.511 <0.511 <0.511 <0.511 <0.511 <0.511 <0.511 <0.511
IA-ATS-2ND F	15-Aug-17	L930026-14	1.86	<0.793	<0.511
IA-OFFICE 2ND F	15-Aug-17	L930026-15	<1.07	<0.793	<0.511

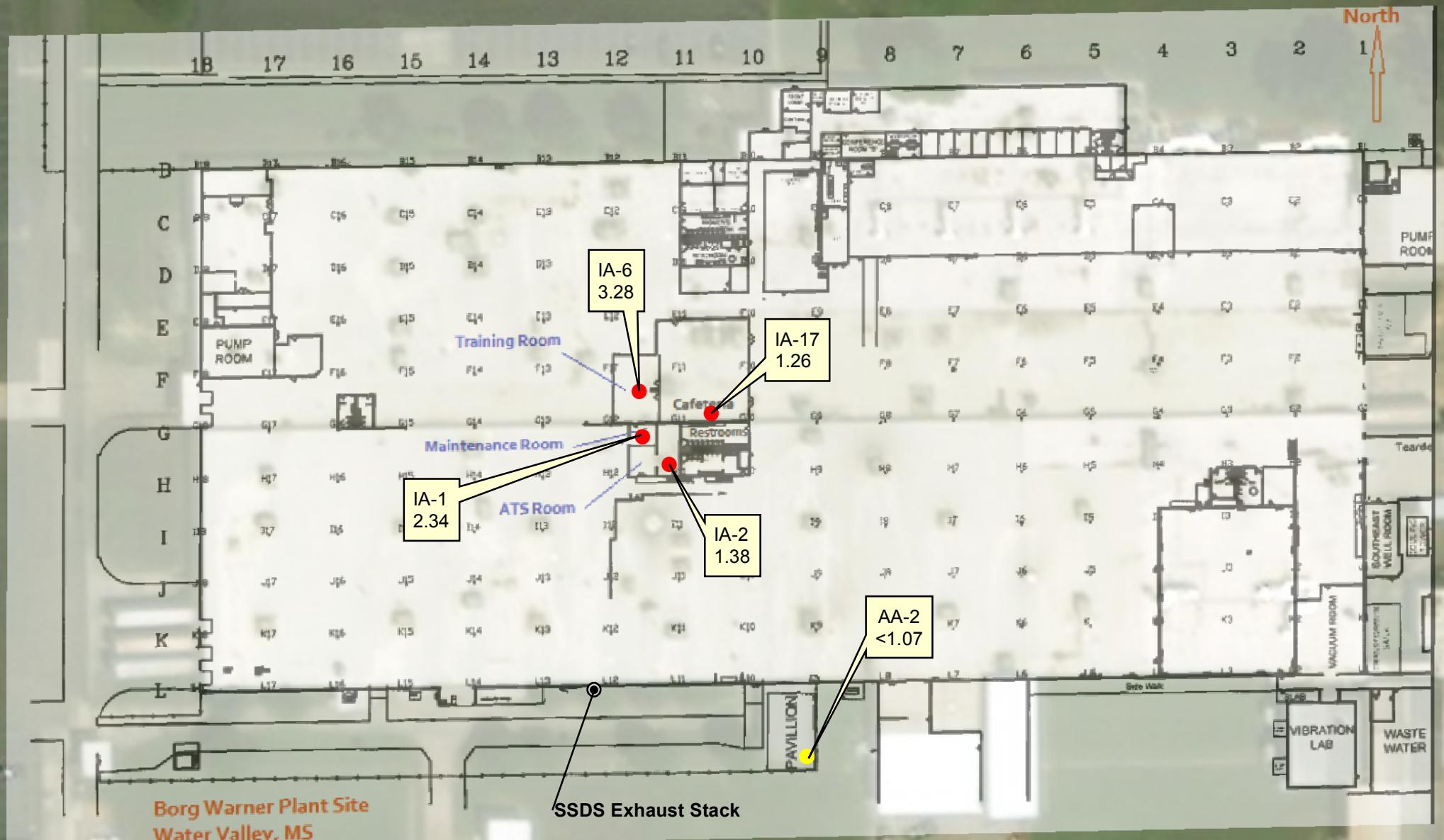
D: Concentration of analyte was quantified from diluted analysis. Flag only applies to field samples that have detectable concentrations of the analyte

VISL: Calculated based on USEPA's OSWER Vapor Intrusion Assessment VISL Calculator Version 3.4, November 2015 RSLs for Target Indoor Air Concentration @ TCR=1E-6 or THQ=1

TCR: Target Carcinogen Risk

THQ: Target Hazard Quotient for Non-Carcinogens

FIGURE



Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community

Legend

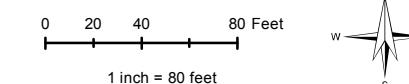
- IA-1: Indoor Air Concentrations in ug/m³
- AA-1: Ambient Air Concentrations in ug/m³
- SSDS Exhaust Stack

USEPA Screening Level for TCE: 3 ug/m³

MDEQ Action Level for TCE: 26 ug/m³

 TCE Level Exceeding the MDEQ Action Level

ND Concentration not detected above laboratory reported limits



**FIRST
ENVIRONMENT**

BORG WARNER FACILITY
600 Highway 32E, Water Valley, MS

FIGURE 1
INDOOR AIR SAMPLING RESULTS
APRIL 6, 2018

91 Fulton Street Boonton, New Jersey 07005	Revised LS	Drawn NMT	Checked NMT	Approved NMT	Date 4/18/2018
---	---------------	--------------	----------------	-----------------	-------------------

APPENDIX A

April 13, 2018

First Environment, Inc.

Sample Delivery Group: L984164
Samples Received: 04/09/2018
Project Number: ENPRO002D-VM
Description: Butler Snow LLP
Site: WATER VALLEY, MS
Report To:
Michael T. Slack
91 Fulton Street
Boonton, NJ 07005

Entire Report Reviewed By:



John Hawkins
Technical Service Representative

Results relate only to the items tested or calibrated and are reported as rounded values. This test report shall not be reproduced, except in full, without written approval of the laboratory. Where applicable, sampling conducted by ESC is performed per guidance provided in laboratory standard operating procedures: 060302, 060303, and 060304.



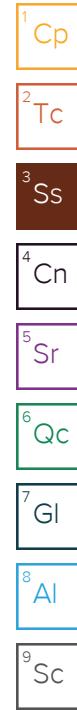
Cp: Cover Page	1	
Tc: Table of Contents	2	
Ss: Sample Summary	3	
Cn: Case Narrative	4	
Sr: Sample Results	5	
IA-1 L984164-01	5	
IA-2 L984164-02	7	
IA-6 L984164-03	9	
IA-17 L984164-04	11	
AA-2 L984164-05	13	
Qc: Quality Control Summary	15	
Volatile Organic Compounds (MS) by Method TO-15	15	
Gl: Glossary of Terms	20	
Al: Accreditations & Locations	21	
Sc: Sample Chain of Custody	22	

SAMPLE SUMMARY

ONE LAB. NATIONWIDE.



				Collected by Michael T. Slack	Collected date/time 04/06/18 11:45	Received date/time 04/09/18 09:30
Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	
Volatile Organic Compounds (MS) by Method TO-15	WG1095895	1	04/10/18 11:15	04/10/18 11:15	AMC	
Volatile Organic Compounds (MS) by Method TO-15	WG1096554	25	04/11/18 14:58	04/11/18 14:58	AMC	
IA-2 L984164-02 Air				Collected by Michael T. Slack	Collected date/time 04/06/18 11:47	
Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	
Volatile Organic Compounds (MS) by Method TO-15	WG1095895	1	04/10/18 12:02	04/10/18 12:02	AMC	
Volatile Organic Compounds (MS) by Method TO-15	WG1096554	25	04/11/18 15:40	04/11/18 15:40	AMC	
IA-6 L984164-03 Air				Collected by Michael T. Slack	Collected date/time 04/06/18 11:49	
Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	
Volatile Organic Compounds (MS) by Method TO-15	WG1095895	1	04/10/18 12:53	04/10/18 12:53	AMC	
Volatile Organic Compounds (MS) by Method TO-15	WG1096554	25	04/11/18 16:22	04/11/18 16:22	AMC	
IA-17 L984164-04 Air				Collected by Michael T. Slack	Collected date/time 04/06/18 11:50	
Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	
Volatile Organic Compounds (MS) by Method TO-15	WG1095895	1	04/10/18 13:39	04/10/18 13:39	AMC	
Volatile Organic Compounds (MS) by Method TO-15	WG1096554	25	04/11/18 17:03	04/11/18 17:03	AMC	
AA-2 L984164-05 Air				Collected by Michael T. Slack	Collected date/time 04/06/18 11:43	
Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	
Volatile Organic Compounds (MS) by Method TO-15	WG1095895	1	04/10/18 14:25	04/10/18 14:25	AMC	





All sample aliquots were received at the correct temperature, in the proper containers, with the appropriate preservatives, and within method specified holding times, unless qualified or notated within the report. Where applicable, all MDL (LOD) and RDL (LOQ) values reported for environmental samples have been corrected for the dilution factor used in the analysis. All radiochemical sample results for solids are reported on a dry weight basis with the exception of tritium, carbon-14 and radon, unless wet weight was requested by the client. All Method and Batch Quality Control are within established criteria except where addressed in this case narrative, a non-conformance form or properly qualified within the sample results. By my digital signature below, I affirm to the best of my knowledge, all problems/anomalies observed by the laboratory as having the potential to affect the quality of the data have been identified by the laboratory, and no information or data have been knowingly withheld that would affect the quality of the data.

John Hawkins
Technical Service Representative

- ¹ Cp
- ² Tc
- ³ Ss
- ⁴ Cn
- ⁵ Sr
- ⁶ Qc
- ⁷ GI
- ⁸ AI
- ⁹ SC



Volatile Organic Compounds (MS) by Method TO-15

Analyte	CAS #	Mol. Wt.	RDL1	RDL2	Result	Result	<u>Qualifier</u>	Dilution	<u>Batch</u>	1 Cp
			ppbv	ug/m3	ppbv	ug/m3				
1,1,1-Trichloroethane	71-55-6	133	0.200	1.09	ND	ND		1	WG1095895	2 Tc
1,1,2-Trichloroethane	79-00-5	133	0.200	1.09	ND	ND		1	WG1095895	3 Ss
Trichloroethylene	79-01-6	131	0.200	1.07	0.437	2.34		1	WG1095895	4 Cn
1,2,4-Trimethylbenzene	95-63-6	120	0.200	0.982	0.546	2.68		1	WG1095895	5 Sr
1,3,5-Trimethylbenzene	108-67-8	120	0.200	0.982	ND	ND		1	WG1095895	6 Qc
2,2,4-Trimethylpentane	540-84-1	114.22	0.200	0.934	ND	ND		1	WG1095895	7 GI
Vinyl chloride	75-01-4	62.50	0.200	0.511	ND	ND		1	WG1095895	8 Al
Vinyl Bromide	593-60-2	106.95	0.200	0.875	ND	ND		1	WG1095895	9 Sc
Vinyl acetate	108-05-4	86.10	0.200	0.704	ND	ND		1	WG1095895	
m&p-Xylene	1330-20-7	106	0.400	1.73	1.25	5.41		1	WG1095895	
o-Xylene	95-47-6	106	0.200	0.867	0.411	1.78		1	WG1095895	
(S) 1,4-Bromofluorobenzene	460-00-4	175	60.0-140		103				WG1095895	
(S) 1,4-Bromofluorobenzene	460-00-4	175	60.0-140		96.1				WG1096554	



Volatile Organic Compounds (MS) by Method TO-15

Analyte	CAS #	Mol. Wt.	RDL1	RDL2	Result	Result	<u>Qualifier</u>	Dilution	<u>Batch</u>
			ppbv	ug/m3	ppbv	ug/m3			
1,1,1-Trichloroethane	71-55-6	133	0.200	1.09	ND	ND		1	WG1095895
1,1,2-Trichloroethane	79-00-5	133	0.200	1.09	ND	ND		1	WG1095895
Trichloroethylene	79-01-6	131	0.200	1.07	0.257	1.38		1	WG1095895
1,2,4-Trimethylbenzene	95-63-6	120	0.200	0.982	0.615	3.02		1	WG1095895
1,3,5-Trimethylbenzene	108-67-8	120	0.200	0.982	ND	ND		1	WG1095895
2,2,4-Trimethylpentane	540-84-1	114.22	0.200	0.934	ND	ND		1	WG1095895
Vinyl chloride	75-01-4	62.50	0.200	0.511	ND	ND		1	WG1095895
Vinyl Bromide	593-60-2	106.95	0.200	0.875	ND	ND		1	WG1095895
Vinyl acetate	108-05-4	86.10	0.200	0.704	ND	ND		1	WG1095895
m&p-Xylene	1330-20-7	106	0.400	1.73	1.40	6.06		1	WG1095895
o-Xylene	95-47-6	106	0.200	0.867	0.455	1.97		1	WG1095895
(S) 1,4-Bromofluorobenzene	460-00-4	175	60.0-140		108				WG1095895
(S) 1,4-Bromofluorobenzene	460-00-4	175	60.0-140		94.5				WG1096554

¹ Cp² Tc³ Ss⁴ Cn⁵ Sr⁶ Qc⁷ GI⁸ Al⁹ Sc



Volatile Organic Compounds (MS) by Method TO-15

Analyte	CAS #	Mol. Wt.	RDL1	RDL2	Result	Result	<u>Qualifier</u>	Dilution	<u>Batch</u>
			ppbv	ug/m3	ppbv	ug/m3			
1,1,1-Trichloroethane	71-55-6	133	0.200	1.09	ND	ND		1	WG1095895
1,1,2-Trichloroethane	79-00-5	133	0.200	1.09	ND	ND		1	WG1095895
Trichloroethylene	79-01-6	131	0.200	1.07	0.612	3.28		1	WG1095895
1,2,4-Trimethylbenzene	95-63-6	120	0.200	0.982	ND	ND		1	WG1095895
1,3,5-Trimethylbenzene	108-67-8	120	0.200	0.982	ND	ND		1	WG1095895
2,2,4-Trimethylpentane	540-84-1	114.22	0.200	0.934	ND	ND		1	WG1095895
Vinyl chloride	75-01-4	62.50	0.200	0.511	ND	ND		1	WG1095895
Vinyl Bromide	593-60-2	106.95	0.200	0.875	ND	ND		1	WG1095895
Vinyl acetate	108-05-4	86.10	0.200	0.704	ND	ND		1	WG1095895
m&p-Xylene	1330-20-7	106	0.400	1.73	1.41	6.13		1	WG1095895
o-Xylene	95-47-6	106	0.200	0.867	0.416	1.80		1	WG1095895
(S) 1,4-Bromofluorobenzene	460-00-4	175	60.0-140		76.4				WG1095895
(S) 1,4-Bromofluorobenzene	460-00-4	175	60.0-140		96.1				WG1096554

¹ Cp² Tc³ Ss⁴ Cn⁵ Sr⁶ Qc⁷ GI⁸ Al⁹ Sc



Volatile Organic Compounds (MS) by Method TO-15

Analyte	CAS #	Mol. Wt.	RDL1	RDL2	Result	Result	<u>Qualifier</u>	Dilution	<u>Batch</u>
			ppbv	ug/m3	ppbv	ug/m3			
1,1,1-Trichloroethane	71-55-6	133	0.200	1.09	ND	ND		1	WG1095895
1,1,2-Trichloroethane	79-00-5	133	0.200	1.09	ND	ND		1	WG1095895
Trichloroethylene	79-01-6	131	0.200	1.07	0.235	1.26		1	WG1095895
1,2,4-Trimethylbenzene	95-63-6	120	0.200	0.982	0.264	1.30		1	WG1095895
1,3,5-Trimethylbenzene	108-67-8	120	0.200	0.982	ND	ND		1	WG1095895
2,2,4-Trimethylpentane	540-84-1	114.22	0.200	0.934	ND	ND		1	WG1095895
Vinyl chloride	75-01-4	62.50	0.200	0.511	ND	ND		1	WG1095895
Vinyl Bromide	593-60-2	106.95	0.200	0.875	ND	ND		1	WG1095895
Vinyl acetate	108-05-4	86.10	0.200	0.704	ND	ND		1	WG1095895
m&p-Xylene	1330-20-7	106	0.400	1.73	1.27	5.50		1	WG1095895
o-Xylene	95-47-6	106	0.200	0.867	0.428	1.85		1	WG1095895
(S) 1,4-Bromofluorobenzene	460-00-4	175	60.0-140		107				WG1095895
(S) 1,4-Bromofluorobenzene	460-00-4	175	60.0-140		94.8				WG1096554

¹ Cp² Tc³ Ss⁴ Cn⁵ Sr⁶ Qc⁷ GI⁸ Al⁹ Sc

AA-2

Collected date/time: 04/06/18 11:43

SAMPLE RESULTS - 05

L984164

ONE LAB. NATIONWIDE.



Volatile Organic Compounds (MS) by Method TO-15

Analyte	CAS #	Mol. Wt.	RDL1	RDL2	Result	Result	<u>Qualifier</u>	Dilution	<u>Batch</u>
			ppbv	ug/m3	ppbv	ug/m3			
1,1,1-Trichloroethane	71-55-6	133	0.200	1.09	ND	ND		1	WG1095895
1,1,2-Trichloroethane	79-00-5	133	0.200	1.09	ND	ND		1	WG1095895
Trichloroethylene	79-01-6	131	0.200	1.07	ND	ND		1	WG1095895
1,2,4-Trimethylbenzene	95-63-6	120	0.200	0.982	ND	ND		1	WG1095895
1,3,5-Trimethylbenzene	108-67-8	120	0.200	0.982	ND	ND		1	WG1095895
2,2,4-Trimethylpentane	540-84-1	114.22	0.200	0.934	ND	ND		1	WG1095895
Vinyl chloride	75-01-4	62.50	0.200	0.511	ND	ND		1	WG1095895
Vinyl Bromide	593-60-2	106.95	0.200	0.875	ND	ND		1	WG1095895
Vinyl acetate	108-05-4	86.10	0.200	0.704	ND	ND		1	WG1095895
m&p-Xylene	1330-20-7	106	0.400	1.73	ND	ND		1	WG1095895
o-Xylene	95-47-6	106	0.200	0.867	ND	ND		1	WG1095895
(S) 1,4-Bromofluorobenzene	460-00-4	175	60.0-140		100				WG1095895

¹ Cp² Tc³ Ss⁴ Cn⁵ Sr⁶ Qc⁷ GI⁸ Al⁹ Sc



L984164-01,02,03,04,05

Method Blank (MB)

(MB) R3300721-3 04/10/18 10:00

Analyte	MB Result ppbv	MB Qualifier	MB MDL ppbv	MB RDL ppbv	
Acetone	U		0.0569	1.25	¹ Cp
Allyl Chloride	U		0.0546	0.200	² Tc
Benzene	U		0.0460	0.200	³ Ss
Benzyl Chloride	U		0.0598	0.200	⁴ Cn
Bromodichloromethane	U		0.0436	0.200	⁵ Sr
Bromoform	U		0.0786	0.600	⁶ Qc
Bromomethane	U		0.0609	0.200	⁷ Gl
1,3-Butadiene	U		0.0563	2.00	⁸ Al
Carbon disulfide	U		0.0544	0.200	⁹ Sc
Carbon tetrachloride	U		0.0585	0.200	
Chlorobenzene	U		0.0601	0.200	
Chloroethane	U		0.0489	0.200	
Chloroform	U		0.0574	0.200	
Chloromethane	U		0.0544	0.200	
2-Chlorotoluene	U		0.0605	0.200	
Cyclohexane	U		0.0534	0.200	
Dibromochloromethane	U		0.0494	0.200	
1,2-Dibromoethane	U		0.0185	0.200	
1,2-Dichlorobenzene	U		0.0603	0.200	
1,3-Dichlorobenzene	U		0.0597	0.200	
1,4-Dichlorobenzene	U		0.0557	0.200	
1,2-Dichloroethane	U		0.0616	0.200	
1,1-Dichloroethane	U		0.0514	0.200	
1,1-Dichloroethene	U		0.0490	0.200	
cis-1,2-Dichloroethene	U		0.0389	0.200	
trans-1,2-Dichloroethene	U		0.0464	0.200	
1,2-Dichloropropane	U		0.0599	0.200	
cis-1,3-Dichloropropene	U		0.0588	0.200	
trans-1,3-Dichloropropene	U		0.0435	0.200	
1,4-Dioxane	U		0.0554	0.200	
Ethylbenzene	U		0.0506	0.200	
4-Ethyltoluene	U		0.0666	0.200	
Trichlorofluoromethane	U		0.0673	0.200	
Dichlorodifluoromethane	U		0.0601	0.200	
1,1,2-Trichlorotrifluoroethane	U		0.0687	0.200	
1,2-Dichlorotetrafluoroethane	U		0.0458	0.200	
Heptane	U		0.0626	0.200	
Hexachloro-1,3-butadiene	U		0.0656	0.630	
n-Hexane	U		0.0457	0.200	
Isopropylbenzene	U		0.0563	0.200	



L984164-01,02,03,04,05

Method Blank (MB)

(MB) R3300721-3 04/10/18 10:00

Analyte	MB Result ppbv	<u>MB Qualifier</u>	MB MDL ppbv	MB RDL ppbv						
Methylene Chloride	U		0.0465	0.200						¹ Cp
Methyl Butyl Ketone	U		0.0682	1.25						² Tc
2-Butanone (MEK)	U		0.0493	1.25						³ Ss
4-Methyl-2-pentanone (MIBK)	U		0.0650	1.25						⁴ Cn
Methyl Methacrylate	U		0.0773	0.200						⁵ Sr
MTBE	U		0.0505	0.200						⁶ Qc
Naphthalene	U		0.154	0.630						⁷ Gl
2-Propanol	U		0.0882	1.25						⁸ Al
Propene	0.168	J	0.0932	0.400						⁹ Sc
Styrene	U		0.0465	0.200						
1,1,2,2-Tetrachloroethane	U		0.0576	0.200						
Tetrachloroethylene	U		0.0497	0.200						
Tetrahydrofuran	U		0.0508	0.200						
Toluene	U		0.0499	0.200						
1,2,4-Trichlorobenzene	U		0.148	0.630						
1,1,1-Trichloroethane	U		0.0665	0.200						
1,1,2-Trichloroethane	U		0.0287	0.200						
Trichloroethylene	U		0.0545	0.200						
1,2,4-Trimethylbenzene	U		0.0483	0.200						
1,3,5-Trimethylbenzene	U		0.0631	0.200						
2,2,4-Trimethylpentane	U		0.0456	0.200						
Vinyl chloride	U		0.0457	0.200						
Vinyl Bromide	U		0.0727	0.200						
Vinyl acetate	U		0.0639	0.200						
m&p-Xylene	U		0.0946	0.400						
o-Xylene	U		0.0633	0.200						
Ethanol	U		0.0832	0.630						
(S) 1,4-Bromofluorobenzene	93.0			60.0-140						

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) R3300721-1 04/10/18 08:31 • (LCSD) R3300721-2 04/10/18 09:15

Analyte	Spike Amount ppbv	LCS Result ppbv	LCSD Result ppbv	LCS Rec. %	LCSD Rec. %	Rec. Limits %	<u>LCS Qualifier</u>	<u>LCSD Qualifier</u>	RPD %	RPD Limits %
Ethanol	3.75	2.93	3.60	78.0	95.9	52.0-158			20.6	25
Propene	3.75	3.90	3.13	104	83.5	54.0-155			21.8	25
Dichlorodifluoromethane	3.75	3.50	3.21	93.4	85.5	69.0-143			8.77	25
1,2-Dichlorotetrafluoroethane	3.75	3.77	3.66	101	97.6	70.0-130			2.95	25
Chloromethane	3.75	3.71	3.62	98.9	96.5	70.0-130			2.50	25



Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) R3300721-1 04/10/18 08:31 • (LCSD) R3300721-2 04/10/18 09:15

Analyte	Spike Amount ppbv	LCS Result ppbv	LCSD Result ppbv	LCS Rec. %	LCSD Rec. %	Rec. Limits %	<u>LCS Qualifier</u>	<u>LCSD Qualifier</u>	RPD %	RPD Limits %
m&p-Xylene	7.50	7.86	7.92	105	106	70.0-130			0.809	25
o-Xylene	3.75	3.87	3.91	103	104	70.0-130			1.05	25
Styrene	3.75	4.00	4.07	107	109	70.0-130			1.86	25
Bromoform	3.75	4.07	4.12	109	110	70.0-130			1.27	25
1,1,2,2-Tetrachloroethane	3.75	3.84	3.94	102	105	70.0-130			2.47	25
4-Ethyltoluene	3.75	4.00	4.04	107	108	70.0-130			0.810	25
1,3,5-Trimethylbenzene	3.75	3.91	3.85	104	103	70.0-130			1.38	25
1,2,4-Trimethylbenzene	3.75	3.92	3.95	104	105	70.0-130			0.811	25
1,3-Dichlorobenzene	3.75	4.09	4.04	109	108	70.0-130			1.02	25
1,4-Dichlorobenzene	3.75	4.05	4.17	108	111	70.0-130			2.98	25
Benzyl Chloride	3.75	4.29	4.26	115	114	70.0-144			0.769	25
1,2-Dichlorobenzene	3.75	4.04	3.93	108	105	70.0-130			2.64	25
1,2,4-Trichlorobenzene	3.75	2.99	4.86	79.7	130	70.0-155	J3		47.7	25
Hexachloro-1,3-butadiene	3.75	2.29	4.01	61.2	107	70.0-145	J4	J3	54.4	25
Naphthalene	3.75	2.92	4.63	77.9	123	70.0-155		J3	45.3	25
Allyl Chloride	3.75	3.79	3.71	101	99.0	70.0-130			2.05	25
2-Chlorotoluene	3.75	3.88	3.84	103	103	70.0-130			0.924	25
Methyl Methacrylate	3.75	4.01	3.98	107	106	70.0-130			0.767	25
Tetrahydrofuran	3.75	3.88	3.84	103	102	70.0-140			1.04	25
2,2,4-Trimethylpentane	3.75	3.81	3.74	102	99.7	70.0-130			2.04	25
Vinyl Bromide	3.75	3.69	3.75	98.4	100	70.0-130			1.57	25
Isopropylbenzene	3.75	3.92	3.90	104	104	70.0-130			0.529	25
(S) 1,4-Bromofluorobenzene			98.6	101	60.0-140					

¹Cp²Tc³Ss⁴Cn⁵Sr⁶Qc⁷Gl⁸Al⁹Sc



L984164-01,02,03,04

Method Blank (MB)

(MB) R3301090-3 04/11/18 11:07

Analyte	MB Result ppbv	MB Qualifier	MB MDL ppbv	MB RDL ppbv
Acetone	U		0.0569	1.25
2-Butanone (MEK)	U		0.0493	1.25
2-Propanol	0.193	J	0.0882	1.25
Ethanol	U		0.0832	0.630
(S) 1,4-Bromofluorobenzene	94.5			60.0-140

¹Cp²Tc³Ss⁴Cn⁵Sr

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) R3301090-1 04/11/18 09:38 • (LCSD) R3301090-2 04/11/18 10:22

Analyte	Spike Amount ppbv	LCS Result ppbv	LCSD Result ppbv	LCS Rec. %	LCSD Rec. %	Rec. Limits %	LCS Qualifier	LCSD Qualifier	RPD %	RPD Limits %
Ethanol	3.75	3.31	3.44	88.2	91.6	52.0-158			3.80	25
Acetone	3.75	4.01	4.05	107	108	70.0-130			0.792	25
2-Propanol	3.75	4.24	4.21	113	112	66.0-150			0.576	25
Methyl Ethyl Ketone	3.75	3.97	4.00	106	107	70.0-130			0.571	25
(S) 1,4-Bromofluorobenzene			99.3	103		60.0-140				

⁶Qc⁷Gl⁸Al⁹Sc



Guide to Reading and Understanding Your Laboratory Report

The information below is designed to better explain the various terms used in your report of analytical results from the Laboratory. This is not intended as a comprehensive explanation, and if you have additional questions please contact your project representative.

Abbreviations and Definitions

MDL	Method Detection Limit.	¹ Cp
ND	Not detected at the Reporting Limit (or MDL where applicable).	² Tc
RDL	Reported Detection Limit.	³ Ss
Rec.	Recovery.	⁴ Cn
RPD	Relative Percent Difference.	⁵ Sr
SDG	Sample Delivery Group.	⁶ Qc
(S)	Surrogate (Surrogate Standard) - Analytes added to every blank, sample, Laboratory Control Sample/Duplicate and Matrix Spike/Duplicate; used to evaluate analytical efficiency by measuring recovery. Surrogates are not expected to be detected in all environmental media.	⁷ GI
U	Not detected at the Reporting Limit (or MDL where applicable).	⁸ AI
Analyte	The name of the particular compound or analysis performed. Some Analyses and Methods will have multiple analytes reported.	⁹ SC
Dilution	If the sample matrix contains an interfering material, or if concentrations of analytes in the sample are higher than the highest limit of concentration that the laboratory can accurately report, the sample may be diluted for analysis. If a value different than 1 is used in this field, the result reported has already been corrected for this factor.	
Limits	These are the target % recovery ranges or % difference value that the laboratory has historically determined as normal for the method and analyte being reported. Successful QC Sample analysis will target all analytes recovered or duplicated within these ranges.	
Qualifier	This column provides a letter and/or number designation that corresponds to additional information concerning the result reported. If a Qualifier is present, a definition per Qualifier is provided within the Glossary and Definitions page and potentially a discussion of possible implications of the Qualifier in the Case Narrative if applicable.	
Result	The actual analytical final result (corrected for any sample specific characteristics) reported for your sample. If there was no measurable result returned for a specific analyte, the result in this column may state "ND" (Not Detected) or "BDL" (Below Detectable Levels). The information in the results column should always be accompanied by either an MDL (Method Detection Limit) or RDL (Reporting Detection Limit) that defines the lowest value that the laboratory could detect or report for this analyte.	
Case Narrative (Cn)	A brief discussion about the included sample results, including a discussion of any non-conformances to protocol observed either at sample receipt by the laboratory from the field or during the analytical process. If present, there will be a section in the Case Narrative to discuss the meaning of any data qualifiers used in the report.	
Quality Control Summary (Qc)	This section of the report includes the results of the laboratory quality control analyses required by procedure or analytical methods to assist in evaluating the validity of the results reported for your samples. These analyses are not being performed on your samples typically, but on laboratory generated material.	
Sample Chain of Custody (Sc)	This is the document created in the field when your samples were initially collected. This is used to verify the time and date of collection, the person collecting the samples, and the analyses that the laboratory is requested to perform. This chain of custody also documents all persons (excluding commercial shippers) that have had control or possession of the samples from the time of collection until delivery to the laboratory for analysis.	
Sample Results (Sr)	This section of your report will provide the results of all testing performed on your samples. These results are provided by sample ID and are separated by the analyses performed on each sample. The header line of each analysis section for each sample will provide the name and method number for the analysis reported.	
Sample Summary (Ss)	This section of the Analytical Report defines the specific analyses performed for each sample ID, including the dates and times of preparation and/or analysis.	

Qualifier Description

E	The analyte concentration exceeds the upper limit of the calibration range of the instrument established by the initial calibration (ICAL).
J	The identification of the analyte is acceptable; the reported value is an estimate.
J3	The associated batch QC was outside the established quality control range for precision.
J4	The associated batch QC was outside the established quality control range for accuracy.



ESC Lab Sciences is the only environmental laboratory accredited/certified to support your work nationwide from one location. One phone call, one point of contact, one laboratory. No other lab is as accessible or prepared to handle your needs throughout the country. Our capacity and capability from our single location laboratory is comparable to the collective totals of the network laboratories in our industry. The most significant benefit to our one location design is the design of our laboratory campus. The model is conducive to accelerated productivity, decreasing turn-around time, and preventing cross contamination, thus protecting sample integrity. Our focus on premium quality and prompt service allows us to be YOUR LAB OF CHOICE.

* Not all certifications held by the laboratory are applicable to the results reported in the attached report.

* Accreditation is only applicable to the test methods specified on each scope of accreditation held by ESC Lab Sciences.

State Accreditations

Alabama	40660
Alaska	17-026
Arizona	AZ0612
Arkansas	88-0469
California	2932
Colorado	TN00003
Connecticut	PH-0197
Florida	E87487
Georgia	NELAP
Georgia ¹	923
Idaho	TN00003
Illinois	200008
Indiana	C-TN-01
Iowa	364
Kansas	E-10277
Kentucky ¹⁶	90010
Kentucky ²	16
Louisiana	AI30792
Louisiana ¹	LA180010
Maine	TN0002
Maryland	324
Massachusetts	M-TN003
Michigan	9958
Minnesota	047-999-395
Mississippi	TN00003
Missouri	340
Montana	CERT0086

Nebraska	NE-OS-15-05
Nevada	TN-03-2002-34
New Hampshire	2975
New Jersey-NELAP	TN002
New Mexico ¹	n/a
New York	11742
North Carolina	Env375
North Carolina ¹	DW21704
North Carolina ³	41
North Dakota	R-140
Ohio-VAP	CL0069
Oklahoma	9915
Oregon	TN200002
Pennsylvania	68-02979
Rhode Island	LA000356
South Carolina	84004
South Dakota	n/a
Tennessee ¹⁴	2006
Texas	T 104704245-17-14
Texas ⁵	LAB0152
Utah	TN00003
Vermont	VT2006
Virginia	460132
Washington	C847
West Virginia	233
Wisconsin	9980939910
Wyoming	A2LA

Third Party Federal Accreditations

A2LA – ISO 17025	1461.01
A2LA – ISO 17025 ⁵	1461.02
Canada	1461.01
EPA-Crypto	TN00003

AIHA-LAP,LLC EMLAP	100789
DOD	1461.01
USDA	P330-15-00234

¹ Drinking Water ² Underground Storage Tanks ³ Aquatic Toxicity ⁴ Chemical/Microbiological ⁵ Mold ⁶ Wastewater n/a Accreditation not applicable

Our Locations

ESC Lab Sciences has sixty-four client support centers that provide sample pickup and/or the delivery of sampling supplies. If you would like assistance from one of our support offices, please contact our main office. ESC Lab Sciences performs all testing at our central laboratory.



- ¹ Cp
- ² Tc
- ³ Ss
- ⁴ Cn
- ⁵ Sr
- ⁶ Qc
- ⁷ Gl
- ⁸ Al
- ⁹ Sc

Company Name/Address: First Environment, Inc. 91 Fulton St. Boonton, NJ 07005		Billing Information: First Environment, Inc. 91 Fulton St. Boonton NJ 07005 Attn: Justin Picolo JPicolo@firstenvironment.com		Analysis		Chain of Custody	Page ____ of ____
Report to: Michael T. Slack - First Environment		Email To: MSlack@firstenvironment.com				 L-A-B S-C-I-E-N-C-E-S a subsidiary of <i>Environmental</i>	
Project Description: EnPro: Bi-Weekly 24-hr Indoor Air Sampling		City/State Collected: Water Valley, MS (Borg Warner Plant Site)				12065 Lebanon Rd. Mount Juliet, TN 37122 Phone: 615-758-5858 Phone: 800-767-5859 Fax: 615-758-5859	
Phone: 973-334-0003 Fax: 973-334-0928	Client Project # EnPro002D-VM	Lab Project # FIREN VBNJ-OxfordMS				L# 98416-1	
Collected by (print): Michael T. Slack	Site/Facility ID # Borg Warner Plant Site	P.O. # -----				Table #	
Collected by (signature): <i>MTS</i>	Rush? (Lab MUST Be Notified) Same Day 200% Next Day 100% Two Day 50% Three Day 25%	Date Results Needed Standard Turnaround Email? No <input checked="" type="checkbox"/> Yes FAX? <input checked="" type="checkbox"/> No Yes		Canister Pressure/Vacuum		Acctnum:	Template:
Sample ID	Sample Description	Can #	Date	Time	Initial	Final	Prelogin:
IA-1	Maintenance Room	6279	4/6/18	11:45	29	11	TSR:
IA-2	ATS Room	5060	4/6/18	11:47	30	5	PB:
IA-6	Training Room	7956	4/6/18	11:49	30	10	Shipped Via:
IA-17	Cafeteria	5609	4/6/18	11:50	30	2	Rem./Contaminant
AA-2	Ambient Air - Pavilion	6092	4/6/18	11:43	26	2	Sample # (lab only)
49616929 3684 / 3695 / 9719							
Remarks: Additional Information is depicted in Sample Collection Table; Dates and Times depicted on COC are "start" times							
Relinquished by : (Signature) <i>MTS</i>	Date: 4/7/18	Time: 15:00	Received by: (Signature)	Samples returned via: <input type="checkbox"/> UPS <input checked="" type="checkbox"/> FedEx <input type="checkbox"/> Courier <input type="checkbox"/>	Hold #		
Relinquished by : (Signature)	Date:	Time:	Received by: (Signature)	Temp: AAB °C Bottles Received: 5 + 5 Empty	Condition: (lab use only) ll		
Relinquished by : (Signature)	Date:	Time:	Received for lab by: (Signature) <i>May Janel</i>	Date: 4/9/18 Time: 0930	COC Seal Intact: Y N NA		
pH Checked: NCF:							

Indoor Air Monitoring (Bi-Weekly Sampling)
Borg Warner Facility
Water Valley, Yalobusha Co., MS
April 6-7, 2018
Indoor Air (IA) and Ambient Air (AA) - Sampling Event

Sample ID	Sample Location	Flow Controller ID	Canister ID	Canister Size (liters)	Initial Date/time	Vacuum ("Hg")	Final Date/time	Vacuum ("Hg")	Sampler
IA-1	Maintenance Room	5889	6279	6	4/6/18 11:45	29	4/7/18 11:45	11	M. Slack
IA-2	ATS Room	6357	5060	6	4/6/18 11:47	30	4/7/18 11:47	5	M. Slack
IA-6	Training Room	7772	7956	6	4/6/18 11:49	30	4/7/18 11:49	10	M. Slack
IA-17	Cafeteria	5510	5609	6	4/6/18 11:50	30	4/7/18 11:50	2	M. Slack
IA-C16	I-Beam C16	NS							M. Slack
IA-K13	I-Beam K13	NS							M. Slack
IA-G4	I-Beam G4	NS							M. Slack
Inv# : FIRENVBNJ-0XFOR Date : 02Apr18 Customer : P647297 Weight : 10 LBS Shipping : 0.00 Phone : (615)758-5858 COD : Special : 0.00 SAT Del : N DV : Handling : 0.00 0.00 Total : 0.00 Svc: STANDARD OVERNIGHT TRCK: 4361 6929 3684					Inv# : FIRENVBNJ-0XFOR Date : 02Apr18 Customer : P647297 Weight : 10 LBS Shipping : 0.00 Phone : (615)758-5858 COD : Special : 0.00 SAT Del : N DV : Handling : 0.00 0.00 Total : 0.00 Svc: STANDARD OVERNIGHT TRCK: 4361 6929 3695				
AA-2	Pavilion	6359	6092	6	4/6/18 11:43	26	4/7/18 11:20	2	M. Slack

Weather Conditions (@ time of canister placement): OVERCAST; RAIN - MID-SD⁵F - WINDS-LIGHT Michael T. Slack (First Environment)

Weather Conditions during 24-hr sampling period: OVERCAST; RAIN; STRONG NORTH WINDS 10-20 mph (NORTH)
 NS - Not Sampled
ASSOCIATED WITH COLD FRONT (TEMP: 40°F) - COLD

Invoice:	Date :	05Apr18	Shipping :	0.00	
Customer :	P642797	Weight :	10 LBS	Special :	0.00
Phone :	(615)758-5858 COD :		Handling :	0.00	
SAT Del :	N DV :		Total :	0.00	

Svc: STANDARD OVERNIGHT
 TRCK: 4361 6929 9719

M.T. Slack (FE) 4/7/18
 BI-WEEKLY SAMPLING

ESC LAB SCIENCES
Cooler Receipt Form

Client:	<i>FIRENWBNS</i>	SDG#	984164
Cooler Received/Opened On:	4/ 9 /18	Temperature:	<i>AnB</i>
Received By:	Matt Shacklock		
Signature:	<i>Matt J. Shacklock</i>		

Receipt Check List	NP	Yes	No
COC Seal Present / Intact?			
COC Signed / Accurate?			
Bottles arrive intact?			
Correct bottles used?			
Sufficient volume sent?			
If Applicable			
VOA Zero headspace?			
Preservation Correct / Checked?			