



September 12, 2018

Mayor Barnett  
City of Franklin  
70 E. Monroe Street  
Franklin, Indiana 46131

City Attorney Gray  
City of Franklin  
70 E. Monroe Street  
Franklin, Indiana 46131

Re: Focused Groundwater and Soil Gas Investigation  
Glendale-Ross Neighborhood / Near-Northeast Franklin  
Franklin, Indiana

Dear Mayor Barnett and City Attorney Gray:

EnviroForensics has conducted a focused groundwater and soil gas investigation in the neighborhood south of the former Amphenol Corporation facility (EPA ID# IND 044 587 848) near the intersection of Hamilton Avenue and Forsythe Avenue, and in the Glendale Drive neighborhood. This report documents the activities conducted during the investigation and presents our findings regarding subsurface environmental conditions in the area of potential concern.

## 1.0 SCOPE OF WORK

Field work was conducted on August 29 and 30, 2018 and consisted of the advancement of seven (7) soil borings for the collection of groundwater samples and four (4) hand auger borings, which were completed to facilitate soil gas sampling within the sanitary sewer backfill. The soil boring locations (designated as DP-1 through DP-7) and soil gas sampling locations (SGU-1 through SGU-4) are depicted on **Figure 1** and **Figure 2**, respectively.

Sampling was performed in accordance with Indiana Department of Environmental Management (IDEM) and U.S. Environmental Protection Agency (EPA) protocols for environmental investigations. Prior to advancing borings, public utilities were notified in advance of sampling activities, and ground-penetrating radar (GPR) was used to verify subsurface utility locations and ensure that the subsurface was free of underground obstructions at each boring location. All work was conducted within City of Franklin (the City) right-of-ways (ROWs) in accordance with ROW Permit No. 2018-270 issued by the City prior to commencing work activities. Non-

dedicated sampling or drilling equipment was decontaminated with an Alconox solution and a tap water rinse before and following its use at each sampling location. All soil and groundwater media generated during investigation activities was stored in 55-gallon steel drums and temporarily staged on City property pending characterization and eventual transport and disposal by a licensed contractor.

### **Groundwater Sampling Methodology**

The direct push soil borings were advanced using a Geoprobe® Direct-Push Dual Tube Sampling System (Geoprobe®). Continuous soil sampling was performed to maximum depths ranging from 16 to 20 feet below ground surface (bgs). The stratigraphy of each soil sample was visually classified in general accordance with the Unified Soil Classification System and field screened for odor, staining, and the presence of volatile organic compounds (VOCs) using a photoionization detector (PID). Boring logs from direct push borings DP-1 through DP-7 are provided as **Appendix A**.

Groundwater was generally encountered at a depth of approximately 8 feet bgs to 14 feet bgs in the direct push borings. Grab groundwater samples were collected from each direct push boring through a discrete Geoprobe® sampler that was driven to depth. A four-foot stainless steel screen was then exposed within the discrete groundwater interval. Samples were collected using Teflon™-lined polyethylene tubing and a stainless-steel check valve. The check valve was decontaminated, and new nitrile gloves and single-use disposable tubing were used during the collection of each sample.

The samples were collected into laboratory supplied 40-milliliter (mL) vials containing a hydrochloric acid preservative. The samples were labeled and placed in an ice-chilled cooler under chain-of-custody control until their delivery that same day to ENVision Laboratories, Inc. in Indianapolis, Indiana. The groundwater samples were analyzed for volatile VOCs using SW-846 Method 8260.

### **Soil Gas Sampling Methodology**

The IDEM Remediation Closure Guide (RCG) considers subsurface utility corridors as preferential pathways for the migration of contaminated groundwater and vapors. Their potential to serve as a vapor migration and exposure route at nearby residential structures was evaluated by installing four (4) soil gas monitoring points within the backfill of the sanitary sewer beneath sections of Hamilton Avenue, Glendale Drive, and Forsythe Street. Sampling locations are depicted on **Figure 2**.

Prior to installing sampling points at each location, the depth of the sanitary sewer main was determined by opening a nearby manhole and measuring the depth to the top of the sewer pipe. Soil gas utility sampling points SGU-1 through SGU-4 were installed in boreholes advanced by hand-auger methods to depths ranging from 5.3 to 7.5 feet bgs, which corresponded to observed sanitary sewer depths at each respective location. Hand auger borings SGU-3 and SGU-4 were determined to have encountered backfill when increased sand and gravel was observed in hand auger soil cuttings at 7.2 and 7.5 ft bgs, respectively, which was not observed in native material logged at the same depth in nearby soil borings DP-7 and DP-6, respectively. Sand and gravel was also observed at 5.3 ft bgs at SGU-2, which indicated the presence of fill, as the native material observed at the same depth in nearby boring DP-5 was sandy clay. A direct push boring was not advanced in the area near SGU-1, however the presence of backfill was determined using the known depth of sanitary sewer and the observation of sand and gravel, like that observed in the other hand auger borings.

Each soil gas point was constructed from a 6-inch stainless steel screen implant, attached to 1/4-inch Teflon™-lined polyethylene tubing, which was extended to the surface. A sand pack consisting of #5 washed quartz sand was placed around the implant screen in the open borehole to a depth of approximately 6 inches above the steel screen implant. The remaining annular space was filled with hydrated bentonite to surface grade. Immediately after installation, the sand pack volume was calculated and three (3) sand pack air volumes were purged using a peristaltic pump to develop the sampling point. The appropriate volume of gas purged was measured by collecting the purge gas into a 1-Liter Tedlar bag.

Each location was sampled a minimum of 24 hours after development to allow for vapor equilibration. Prior to soil gas sample collection, the integrity of the sample tubing and fittings were tested by conducting a negative pressure test with a hand pump equipped with a pressure gauge. A negative pressure was induced within the sample line and observed for 60 seconds for any pressure changes. No change to the pressure was observed in any of the sampling points; therefore, the sampling trains were considered intact and sampling activities ensued. To ensure that the collected soil gas sample was representative of subsurface vapor conditions, leak testing was performed during the purging of three (3) dead air volumes of the sampling screen and attached tubing. Leak testing involved the use of a helium tracer gas and was performed at each point in accordance with methods presented in the IDEM RCG and *Standard Practice for Active Soil Gas Sampling in the Vadose Zone for Vapor Intrusion Evaluation*, ASTM Standard D7663-11.

Following purging, a batch-certified 1-Liter canister was connected to the end of the exposed tubing and a sample was collected using a recommended sampling flow rate of 200 milliliters per

minute (mL/min). Upon completion, the soil gas sample was submitted to EnvisionAir Laboratories, Inc. (EnvisionAir) located in Indianapolis, Indiana for analysis of VOCs using EPA Method TO-15.

## 2.0 INVESTIGATION RESULTS

The soils encountered in direct push boring locations consisted primarily of clay and unsaturated sand units interbedded and overlaying saturated sand units encountered ranging from 8 to 14 feet bgs. Underlying the saturated sand unit is a sandy clay unit. Borings were not advanced deeper than 20 feet bgs and a second, deeper saturated unit was not encountered at any boring location. Hand auger borings were located within utility corridors and generally consisted of mixtures of clay, gravel, and sand fill material. Direct push boring logs are provided as **Appendix A**.

The groundwater and soil gas analytical laboratory reports are provided as **Appendix B**. The groundwater and soil gas analytical results were compared to the IDEM RCG 2018 residential screening levels, designed to be protective of human health and the environment. Soil gas sample results were evaluated in accordance with the IDEM RCG and the IDEM Attenuation Factors Technical Guidance Document, dated September 29, 2016. The soil gas results were compared to the applicable Residential Soil Gas Screening Levels (SGSLs), which were derived by dividing the IDEM 2018 Residential Indoor Air Screening Levels (RIASLs) by an attenuation factor of 0.1 in accordance with the RCG.

### **Groundwater Analytical Results**

The groundwater sample collected from DP-6 contained tetrachloroethene (PCE) at a concentration of 49.6 micrograms per liter (µg/L) and trichloroethene (TCE) at a concentration of 31.5 µg/L, which exceed the IDEM RCG Ground Water Tap Screening Levels (GWSL) of 5 µg/L for each compound. In addition, the TCE concentration in the DP-6 sample exceeded the IDEM RCG Residential Vapor Intrusion Groundwater Screening Level (VIGWSL) of 9.1 µg/L. This screening level is used by IDEM per their RCG guidance to note where vapor intrusion (VI) exposure may exist due to off-gassing from groundwater. No other VOCs were detected above laboratory detection limits in the sample from DP-6.

No VOCs were detected above laboratory reporting limits in the samples collected from DP-1, DP-2, DP-3, DP-4, DP-5 and DP-7. The groundwater analytical results are summarized in **Table 1** and depicted on **Figure 1**.

### **Soil Gas Analytical Results**

Sewer backfill vapor samples collected from SGU-1 and SGU-4 contained PCE at concentrations of 2,920 micrograms per cubic meter ( $\mu\text{g}/\text{m}^3$ ) and 22,300  $\mu\text{g}/\text{m}^3$ , respectively. These concentrations exceed the IDEM Residential Soil Gas Screening Level (SGSL) of 420 micrograms per cubic meter ( $\mu\text{g}/\text{m}^3$ ). PCE was also detected at 197  $\mu\text{g}/\text{m}^3$  in the sample collected from SGU-2 along northern Glendale Drive, but this concentration is below the IDEM Residential SGSL. PCE was not detected in the soil gas sample collected from SGU-3 along southern Glendale Drive.

The sewer backfill vapor samples from SGU-1 and SGU-4 also contained TCE at concentrations of 3,120  $\mu\text{g}/\text{m}^3$  and 5,130  $\mu\text{g}/\text{m}^3$ , respectively. These concentrations exceed the IDEM SGSL of 21  $\mu\text{g}/\text{m}^3$ .

TCE was not detected in the sewer backfill vapor samples collected from Glendale Drive, SGU-2 and SGU-3.

Note that chloroform and m, p-xylene were also detected in the sewer backfill vapor sample collected from SGU-4. Chloroform was detected at a concentration of 14.6  $\mu\text{g}/\text{m}^3$ , which exceeds the IDEM Residential SGSL of 12 micrograms per cubic meter ( $\mu\text{g}/\text{m}^3$ ). Xylene was detected at a concentration of 462  $\mu\text{g}/\text{m}^3$ , which is below the IDEM Residential SGSL of 1,000  $\mu\text{g}/\text{m}^3$ . Chloroform and xylene were not detected in sewer backfill vapor samples collected from SGU-1, SGU-2, and SGU-3.

The sewer backfill vapor analytical results are summarized in **Table 2** and depicted on **Figure 2**.

### **3.0 DISCUSSION OF RESULTS AND RECOMMENDATIONS**

Groundwater and soil gas samples collected in the eastern portion of the Glendale Ross neighborhood do not indicate the presence of VOCs above actionable levels established by IDEM.

VOCs were detected in groundwater and soil gas samples above IDEM's established levels in the western portion of the Glendale Ross neighborhood. Specifically, VOCs above action levels were detected in grab groundwater sample DP-6, located along Forsythe Street and they were detected in soil gas samples (SGU-1 and SGU-4) along Hamilton Avenue and Forsythe Street, respectively. These data show that additional work is necessary to determine the extent of the groundwater and soil gas impacts south of the former Amphenol site and to determine whether indoor air and sub-slab vapor samples should be collected in residential homes farther

downgradient of already identified impacts. The data does show that certain residential homes fall within the area of interest and need to be sampled to determine whether the vapor intrusion pathway is complete and mitigation is warranted in these homes. Additional investigative work would likely include the following:

Groundwater Sampling from Existing Monitoring Wells - Groundwater wells, installed by Amphenol, exist along Forsythe Street and Ross Court. These wells were last sampled in 1996 and the water quality results and locations are presented in **Appendix C**. These wells should be rehabilitated and redeveloped and groundwater samples should be analyzed to determine the current groundwater quality in these locations and to evaluate whether concentrations would trigger potential VI exposure in the area of those wells.

Soil Gas Sample Collection Within Sanitary Sewer Backfill - The extent of soil gas contaminants within the underground sanitary sewer corridor has not been defined. The collection of additional soil gas samples within the sanitary sewer backfill to the south along Forsythe Street, to the west along Hamilton Avenue, and on Glendale Drive is warranted.

Sewer Air Sample Collection Within Sanitary Sewer Manholes - Contaminant vapors can travel through existing sewer pipes as well as through the surrounding backfill. The collection of grab sewer air samples within manholes along Forsythe Street, Hamilton Avenue, and Glendale Drive is warranted to determine if this is a potential exposure pathway.

Additional Direct Push Borings - Additional direct push borings are needed to delineate groundwater impacts observed at DP-6 and determine if and where groundwater concentrations exceed IDEM RCG VIGWSLs. Borings, along with soil and grab groundwater samples, are warranted to the west, south, and east of DP-6.

Residential VI Assessments - Based on multiple lines of evidence, there is an increased risk of completed VI pathways to occupied structures in the vicinity of our investigation areas. An immediate evaluation of residences near direct push boring DP-6 and sewer backfill soil gas samples SGU-1 and SGU-4 should be conducted to determine which structures require further VI assessment. These VI assessments should include the collection of paired indoor air, sub-slab vapor, and/or crawl space air samples, as appropriate.

EnviroForensics appreciates the opportunity to be of service in this matter. If you have questions or would like to further discuss this report, please do not hesitate to contact us.

Sincerely,

A handwritten signature in blue ink that reads "Megan Hamilton".

Megan Hamilton  
Director of Vapor Intrusion and  
Risk Assessment

A handwritten signature in blue ink that reads "Casey McFall".

Casey McFall, CHMM  
Director of Field Services

#### Attachments

Table 1	Grab Groundwater Sample Analytical Results
Table 2	Soil Gas Sample Analytical Results
Figure 1	Grab Groundwater Analytical Results
Figure 2	Soil Gas Sample Analytical Results
Appendix A	Direct Push Boring Logs
Appendix B	Laboratory Analytical Reports
Appendix C	Excerpts from <i>Report of Additional Corrective Measures Studies for the Former Amphenol Facility Franklin, Indiana</i> , November 1996

## **Tables**



**TABLE 1**  
**GRAB GROUNDWATER SAMPLE ANALYTICAL RESULTS**

Limited Groundwater and Soil Gas Investigation  
Franklin, Indiana

Boring Identification	Date Sampled	Depth Sampled (feet bgs)	Chlorinated VOCs (µg/L)				
			Tetrachloroethene	Trichloroethene	cis-1,2-Dichloroethene	trans-1,2-Dichloroethene	Vinyl Chloride
Residential Tap Ground Water Screening Levels			5	5	70	100	2
Vapor Intrusion Groundwater Screening Level - Residential			110	9.1	NL	NL	2.1
Vapor Intrusion Groundwater Screening Level - Commercial			470	38	NL	NL	35
DP-1	8/29/2018	9-13	<5	<5	<5	<5	<2
DP-2	8/29/2018	14-18	<5	<5	<5	<5	<2
DUP-1			<5	<5	<5	<5	<2
DP-3	8/29/2018	9-13	<5	<5	<5	<5	<2
DP-4	8/29/2018	7.5-11.5	<5	<5	<5	<5	<2
DP-5	8/29/2018	9-13	<5	<5	<5	<5	<2
DP-6	8/29/2018	12-16	49.6	31.5	<5	<5	<2
DP-7	8/29/2018	7-11	<5	<5	<5	<5	<2

**Notes:**

- VOCs = Volatile Organic Compounds
- bgs = below ground surface
- NL = not listed (screening level not established in IDEM RCG)
- DUP denotes duplicate sample collected from this location.
- Samples analyzed for VOCs using United States Environmental Protection Agency SW-846 Method 8260
- Screening levels are from Table A-6 of the IDEM Remediation Closure Guide (RCG), updated 2018
- Only PCE, TCE, and associated daughter products are shown. All other VOCs were not detected above laboratory reporting limits.
- Bolded** values are above laboratory reporting limits
- Bolded, blue** values are above IDEM Residential GWSLs
- Bolded, green** values are above IDEM Residential Vapor Intrusion GWSLs

**TABLE 2**  
**SUMMARY OF SOIL GAS SAMPLE ANALYTICAL RESULTS**

Limited Groundwater and Soil Gas Investigation  
Franklin, Indiana

Sample Location	Sample Identificaiton	Screen Depth (feet bgs)	Sample Date	VOCs (µg/m³)						
				Tetrachloroethene	Trichloroethene	cis-1,2-Dichloroethene	trans-1,2-Dichloroethene	Vinyl Chloride	Chloroform	m,p-Xylene
Residential Soil Gas Screening Levels				420	21	NL	NL	17	12	1,000
SGU-1	FC-SGU-1	5.3	8/30/2018	2,920	3,120	<198	<396	<12.8	<8.30	<434
SGU-2	FC-SGU-2	5.3	8/30/2018	197	<10.7	<198	<396	<12.8	<8.30	<434
SGU-3	FC-SGU-3	7.2	8/30/2018	<31.9	<10.7	<198	<396	<12.8	<8.30	<434
SGU-4	FC-SGU-4	7.5	8/30/2018	22,300	5,310	<198	<396	<12.8	14.6	462

**Notes:**

Results reported in microgragms per cubic meter (ug/m<sup>3</sup>)

NL=Screening level not listed in Table A-6 of IDEM's RCG

Utility corridor soil gas screening levels derived by dividing the 2018 Residential Indoor Air Screening Levels by an attenuation factor of 0.1 from IDEM's Remediation Closure Guide and Attenuation Factors Guidance

**Bolded** values are above laboratory reporting limits

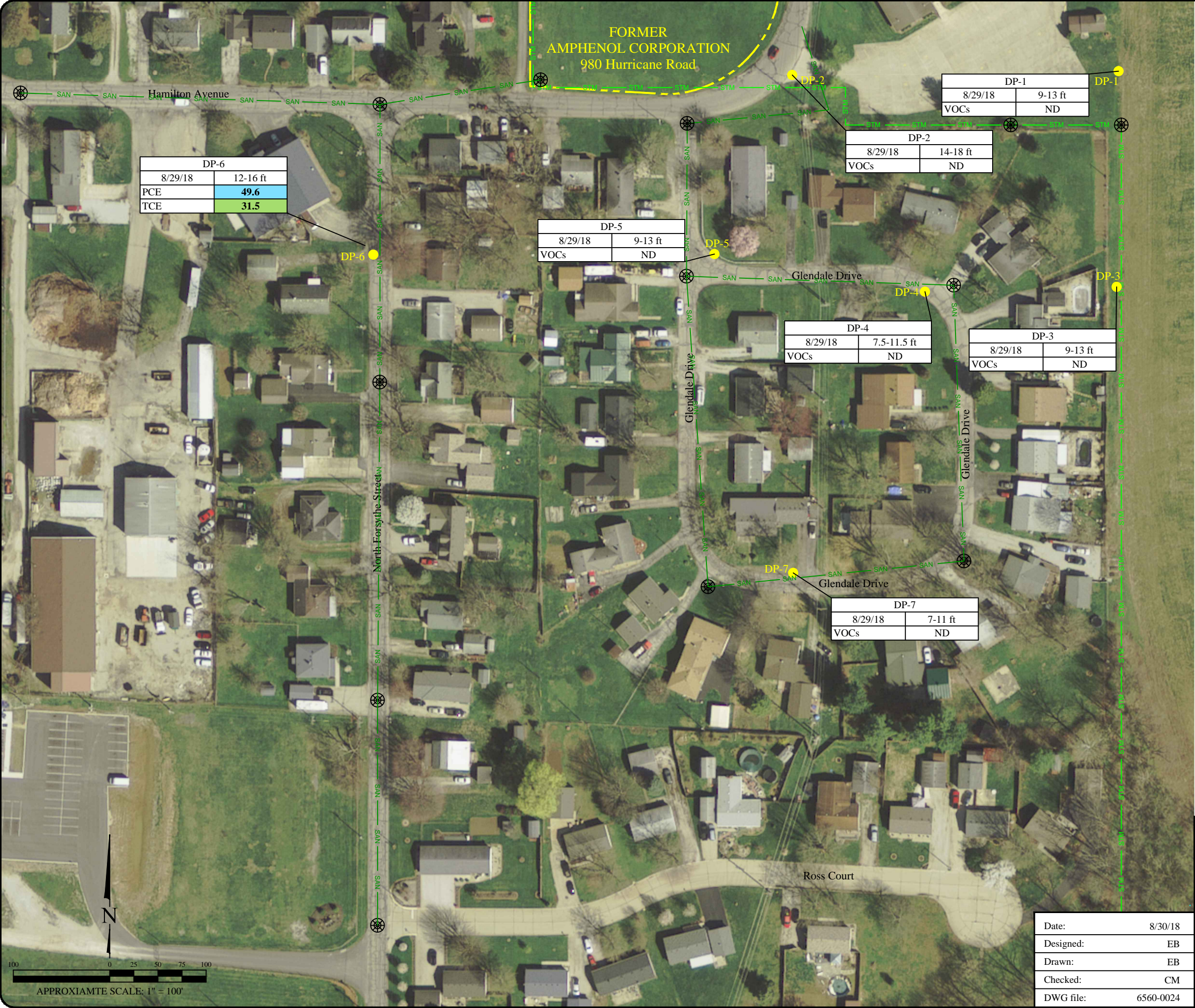
**Bolded** and blue shaded concentrations exceed the applicable residential screening level

Analysis performed by Envision Laboratories via EPA Method TO-15

Only PCE, TCE, associated daughter products, and compounds with detections are shown here. All other compounds did not have detections above laboratory reporting limits.

## **Figures**





Legend

- Property boundary
- STM Underground storm utility line
- SAN Underground sanitary utility line
- Manhole
- DP-1 Direct push soil boirng

Analytes	RCG Groundwater Screening Level	Vapor Intrusion Groundwater Screening Levels	
		Residential	Commercial
PCE	5	110	470
TCE	5	9.1	38

- Note:
- Bold shaded blue values exceed IDEM RCG Groundwater Screening Levels
  - Bold shaded blue values exceed IDEM RCG Residential Vapor Intrusion Groundwater Screening Levels
  - Bold values exceed laboratory detection limits
  - Units in micrograms per liter (µg/L)
  - PCE = Tetrachloroethene
  - TCE = Trichloroethene
  - Samples analyzed for VOCs using US EPA SW-846 Method 8260
  - VOCs = Volatile Organic Compounds
  - ND = Not detected

GRAB GROUNDWATER ANALYTICAL RESULTS

Franklin, Indiana

Date:	8/30/18
Designed:	EB
Drawn:	EB
Checked:	CM
DWG file:	6560-0024



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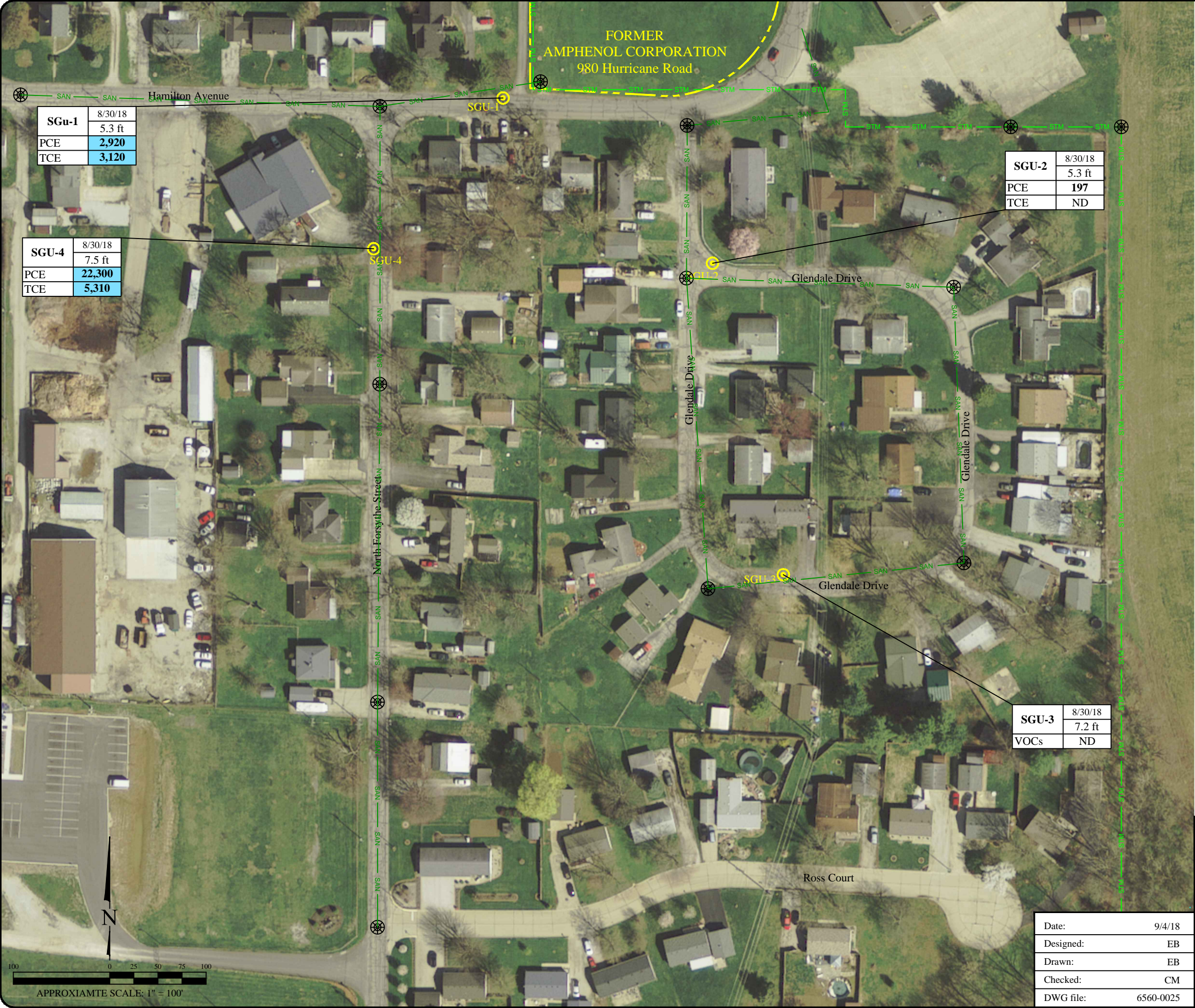
Figure

1

Project

6560





Legend

- Property boundary
- Underground storm utility line
- Underground sanitary utility line
- Manhole
- Soil Gas sample

Analytes	Residential Soil Gas Screening Level
	Shallow
PCE	420
TCE	21

- Notes:
- Bold shaded blue concentrations exceed the applicable residential screening level
  - Bold concentrations exceed laboratory reporting limits
  - Results reported in micrograms per meter cubed =  $\mu\text{g}/\text{m}^3$
  - Vapor screening levels derived using the most recent attenuation factor of 0.1 for shallow soil gas from IDEM's Remediation Closure Guide
  - PCE = Tetrachloroethene
  - TCE = Trichloroethene
  - VOCs = Volatile Organic Compounds
  - ND = Not detected

SOIL GAS SAMPLE ANALYTICAL RESULTS

Franklin, Indiana

SGU-3	8/30/18
	7.2 ft
VOCs	ND

SGU-2	8/30/18
	5.3 ft
PCE	197
TCE	ND

SGU-1	8/30/18
	5.3 ft
PCE	2,920
TCE	3,120

SGU-4	8/30/18
	7.5 ft
PCE	22,300
TCE	5,310

Date:	9/4/18
Designed:	EB
Drawn:	EB
Checked:	CM
DWG file:	6560-0025



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Figure

2

Project









































6560



**Appendix A**  
Direct Push Boring Logs

# Boring Log

Project Number: 6560		Boring No.: DP-1	
Project Name: City of Franklin		Location: Franklin, IN	
Drilling Contractor: Midway Services		Logged by: Terrell, Matt	
Drilling Method: Direct Push	Date Started: 08/29/18	Total Depth (ft bgs): 20	Depth to Water (ft bgs): 9
Borehole Dia. (in): 2.25	Date Completed: 08/29/18	Surface Elevation (ft MSL): Not Measured	
Remarks:			

Depth (ft)	Sample No.	Sample Type	% Recovery	Graphic Log	USCS Code	Material Description	Water Level	PID Reading (ppm)	Backfill
1					N/A	(0'-0.5') TOPSOIL (N/A): TOPSOIL.		5.3	
2			30			(0.5'-5') CLS (ML/SC): Brown; sandy CLAY, low plasticity; trace gravel.		7.8	
3					ML/SC			8.4	
4								6.7	
5			60			(5'-8') SW (SW): Light Brown; fine SAND, well-graded; some gravel; moist.		6.4	
6					SW			5.0	
7						Color changes to orange brown from 7' bgs to 8' bgs.			
8					GW	(8'-9') GW (GW): Light grey; fine to coarse GRAVEL; trace silt; dry.		6.4	
9			30		SW	(9'-10') SW (SW): Brown; fine to coarse SAND, well-graded; trace silt; wet.	▽	5.6	
10					CL	(10'-12') CL (CL): Grey; CLAY, low plasticity; some sand; trace silt and gravel.		9.0	
11	Water								
12					SW	(12'-13') SW (SW): Grey; fine to coarse SAND, well-graded; some gravel; wet.		7.7	
13			60			(13'-20') CL (CL): Grey; CLAY, low plasticity; some sand; trace gravel .		5.8	
14								5.3	
15						Plant roots present at 15' bgs.			
16					CL			10.3	
17			100						
18						Black streaking present from 18' bgs to 20' bgs.		8.7	
19									
20									
21									
22									
23									
24									
25									
26									
27									

# Boring Log


















Project Number: 6560		Boring No.: DP-2	
Project Name: City of Franklin		Location: Franklin, IN	
Drilling Contractor: Midway Services		Logged by: Terrell, Matt	
Drilling Method: Direct Push	Date Started: 08/29/18	Total Depth (ft bgs): 20	Depth to Water (ft bgs): 14
Borehole Dia. (in): 2.25	Date Completed: 08/29/18	Surface Elevation (ft MSL): Not Measured	
Remarks:			

Depth (ft)	Sample No.	Sample Type	% Recovery	Graphic Log	USCS Code	Material Description	Water Level	PID Reading (ppm)	Backfill
1					N/A	(0'-0.5') Asphalt (N/A): Asphalt.		2.4	
2			40		SW	(0.5'-2') SW (SW): Brown; fine to coarse SAND, well-graded; trace silt; moist.		3.0	
3						(2'-8') CLS (ML/SC): Brown; sandy CLAY, low plasticity; some silt; trace gravel.		5.0	
4									
5			5		ML/SC			5.6	
6									
7									
8					SW	(8'-9') SW (SW): Brown; fine SAND, well-graded; moist.		5.0	
9			15			(9'-13') SAND (Fill): Brown; Sand, well-graded; trace silt.		9.5	
10					SW			5.6	
11									
12									
13			30		ML/SC	(13'-14') CLS (ML/SC): Orange brown with black streaks; sandy CLAY, low plasticity; odor.		10.0	
14					SW	(14-16) SW (SW): Orange brown; fine to coarse SAND, well-graded; some clay and gravel; wet.		9.1	
15									
16	Water				SP	(16'-18') SP (SP): Grey; medium to coarse SAND, poorly-graded; Saturated.		9.2	
17			80						
18					ML/SC	(18'-20') CLS (ML/SC): Grey; sandy CLAY, low plasticity; trace gravel.		7.9	
19						Black streaking present at 19' bgs.			
20									
21									
22									
23									
24									
25									
26									
27									






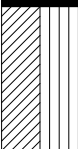

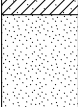
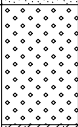


# Boring Log

Project Number: 6560		Boring No.: DP-3	
Project Name: City of Franklin		Location: Franklin, IN	
Drilling Contractor: Midway Services		Logged by: Terrell, Matt	
Drilling Method: Direct Push	Date Started: 08/29/18	Total Depth (ft bgs): 16	Depth to Water (ft bgs): 10.5
Borehole Dia. (in): 2.25	Date Completed: 08/29/18	Surface Elevation (ft MSL): Not Measured	
Remarks:			

Depth (ft)	Sample No.	Sample Type	% Recovery	Graphic Log	USCS Code	Material Description	Water Level	PID Reading (ppm)	Backfill
1					N/A	(0'-0.5') TOPSOIL (N/A): TOPSOIL; fine to medium organics.		4.9	
2			50		ML/SC	(0.5'-4') CLS (ML/SC): Brown; sandy CLAY, low plasticity.		5.6	
3								7.0	
4					SC	(4'-6') SC (SC): Brown; clayey SAND, well-graded; trace silt; moist.		7.2	
5			60		SW	(6'-8') SW (SW): Light brown; SAND, well-graded; trace gravel and silt; moist.		5.4	
6									
7					ML/SC	(8'-10.5') CLS (ML/SC): Grey; sandy CLAY, low plasticity; some silt; trace gravel.		5.2	
8			80		SW	(10.5'-11.5') SW (SW): Grey; fine to coarse SAND, well-graded; trace silt and gravel; wet.		6.5	
9									
10					CL	(11.5'-16') CL (CL): Grey; CLAY, low plasticity; some sand; trace silt and gravel.		10.1	
11			80					9.7	
12									
13									
14									
15								8.6	
16									
17									
18									
19									
20									
21									
22									
23									
24									
25									
26									
27									

# Boring Log

Project Number: 6560			Boring No.: DP-4		
Project Name: City of Franklin			Location: Franklin, IN		
Drilling Contractor: Midway Services			Logged by: Terrell, Matt		
Drilling Method: Direct Push	Date Started: 08/29/18		Total Depth (ft bgs): 16	Depth to Water (ft bgs): 8.5	
Borehole Dia. (in): 2.25	Date Completed: 08/29/18		Surface Elevation (ft MSL): Not Measured		
Remarks:					

Depth (ft)	Sample No.	Sample Type	% Recovery	Graphic Log	USCS Code	Material Description	Water Level	PID Reading (ppm)	Backfill
1	WATER		60		N/A	(0'-1') <b>Asphalt (N/A):</b> Asphalt and gravel road base.		6.7	
2					CL/ML	(1'-4') <b>CL/ML (CL/ML):</b> Orange with black and grey mottling; silty CLAY, low plasticity.		5.2	
3			50		ML/SC	(4'-6') <b>CLS (ML/SC):</b> Brown; sandy CLAY, low plasticity; trace silt.		5.5	
4					SW	(6'-8') <b>SW (SW):</b> Light brown; fine to coarse SAND, well-graded; some gravel; trace silt; moist.		7.9	
5					SP	(8'-10.5') <b>SP (SP):</b> Brown; fine to medium SAND, poorly-graded; moist. Becomes wet at 8.5' bgs.		4.9	
6					ML/SC	(10.5'-16') <b>CLS (ML/SC):</b> Grey; sandy CLAY, low plasticity; trace gravel and silt.		4.4	
7			80		ML/SC			4.6	
8								5.0	
9								5.5	
10									
11									
12									
13									
14									
15									
16									
17									
18									
19									
20									
21									
22									
23									
24									
25									
26									
27									

# Boring Log

Project Number: 6560		Boring No.: DP-5	
Project Name: City of Franklin		Location: Franklin, IN	
Drilling Contractor: Midway Services		Logged by: Terrell, Matt	
Drilling Method: Direct Push	Date Started: 08/29/18	Total Depth (ft bgs): 20	Depth to Water (ft bgs): 10
Borehole Dia. (in): 2.25	Date Completed: 08/29/18	Surface Elevation (ft MSL): Not Measured	
Remarks:			

Depth (ft)	Sample No.	Sample Type	% Recovery	Graphic Log	USCS Code	Material Description	Water Level	PID Reading (ppm)	Backfill
1					N/A	(0'-1') Asphalt (N/A): Asphalt and gravel road base.		27.6	
2			40		CL	(1'-2') CL (CL): Brown with orange and black staining; CLAY, low plasticity; some silt.		3.2	
3						(2'-6') CLS (ML/SC): Brown; sandy CLAY, low plasticity; trace silt.		2.6	
4					ML/SC				
5								2.2	
6			60			(6'-13') SW (SW): Light brown; fine to coarse SAND, well-graded; trace gravel; moist.		1.9	
7									
8								2.8	
9					SW				
10			50			Becomes saturated at 10' bgs.	▽	2.3	
11	WATER							2.9	
12						Orange staining present at 12' bgs.		1.9	
13						(13'-20') CLS (ML/SC): Grey; sandy CLAY, low plasticity; some gravel; trace silt.		2.8	
14			100					2.4	
15									
16					ML/SC			3.4	
17			100						
18									
19									
20									
21									
22									
23									
24									
25									
26									
27									

# Boring Log

Project Number: 6560		Boring No.: DP-6	
Project Name: City of Franklin		Location: Franklin, IN	
Drilling Contractor: Midway Services		Logged by: Terrell, Matt	
Drilling Method: Direct Push	Date Started: 08/29/18	Total Depth (ft bgs): 20	Depth to Water (ft bgs): 12
Borehole Dia. (in): 2.25	Date Completed: 08/29/18	Surface Elevation (ft MSL): Not Measured	
Remarks:			

Depth (ft)	Sample No.	Sample Type	% Recovery	Graphic Log	USCS Code	Material Description	Water Level	PID Reading (ppm)	Backfill
1					N/A	(0'-2') Asphalt (N/A): Asphalt and gravel road base.		58.2	
2			50		CL/ML	(2'-4') CL/ML (CL/ML): Brown; silty CLAY, low plasticity; trace sand and gravel.		3.2	
3									
4					SC	(4'-7') SC (SC): Red-brown; clayey SAND, poorly-graded; some silt; moist.		6.0	
5			70					7.1	
6									
7					SW	(7'-12') SW (SW): Light brown; fine to coarse SAND, well-graded; some silt; trace gravel; moist.		5.2	
8			60					6.3	
9									
10									
11									
12						(12'-19.5') SP (SP): Brown; fine to medium SAND, poorly-graded; some gravel; wet.		6.0	
13			50					7.0	
14					SP			5.2	
15									
16									
17			70					6.6	
18									
19									
20					ML/SC	(19.5'-20') CLS (ML/SC): Grey; sandy CLAY, low-plasticity; trace gravel.			
21									
22									
23									
24									
25									
26									
27									

WATER



# Boring Log

Project Number: 6560		Boring No.: DP-7	
Project Name: City of Franklin		Location: Franklin, IN	
Drilling Contractor: Midway Services		Logged by: Terrell, Matt	
Drilling Method: Direct Push	Date Started: 08/29/18	Total Depth (ft bgs): 16	Depth to Water (ft bgs): 8
Borehole Dia. (in): 2.25	Date Completed: 08/29/18	Surface Elevation (ft MSL): Not Measured	
Remarks:			

Depth (ft)	Sample No.	Sample Type	% Recovery	Graphic Log	USCS Code	Material Description	Water Level	PID Reading (ppm)	Backfill
1					N/A	(0'-2') Asphalt (N/A): Asphalt and gravel road base.		3.4	
2			30						
3					ML/SC	(2'-5') CL/ML (CL/ML): Brown; sandy CLAY, low plasticity; some silt trace gravel.		3.8	
4									
5			70					4.7	
6					SP	(5'-10') SP (SP): Light brown; fine to coarse SAND, poorly-graded; some silt; trace gravel, moist.		2.3	
7									
8						Becomes wet at 8' bgs.	▽		
9	WATER							2.4	
10			20						
11						(10'-16') CLS (ML/SC): Grey; sandy CLAY, low plasticity; some silt; trace gravel.		4.6	
12									
13					ML/SC			1.6	
14			80						
15								4.3	
16									
17									
18									
19									
20									
21									
22									
23									
24									
25									
26									
27									

**Appendix D**  
Laboratory Analytical Reports



**ENVision Laboratories, Inc.**  
1439 Sadlier Circle West Drive  
Indianapolis, IN 46239  
Tel: 317.351.8632  
Fax: 317.351.8639  
[www.envisionlaboratories.com](http://www.envisionlaboratories.com)

Mr. Casey McFall  
Enviroforensics  
825 N. Capitol Ave.  
Indianapolis, IN 46204

August 30, 2018

ENVision Project Number: 2018-2345  
Client Project Name: City of Franklin

Dear Mr. McFall,

Please find the attached analytical report for the samples received August 29, 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. ENVision Laboratories looks forward to working with you on your next project.

Yours Sincerely,

A handwritten signature in black ink that reads 'David Norris'.

David Norris

Client Services Manager  
ENVision Laboratories, Inc.

PA DEP Lab Code: 68-04846 NELAP Cert: 007





Analytical Report

ENVision Laboratories, Inc.  
1439 Sadlier Circle West Drive  
Indianapolis, IN 46239  
Tel: 317.351.8632  
Fax: 317.351.8639  
www.envisionlaboratories.com

Client Name: ENVIROFORENSICS

Project ID: CITY OF FRANKLIN

Client Project Manager: CASEY MCFALL

ENVision Project Number: 2018-2345

Analytical Method: EPA 8260

Prep Method: EPA 5030B

Analytical Batch: 082918VW

Client Sample ID: FC-DP-1 (9-13)

Envision Sample Number: 18-15773

Sample Matrix: water

Sample Collection Date/Time: 8/29/18 9:35

Sample Received Date/Time: 8/29/18 16:50

<u>Compounds</u>	<u>Sample Results (ug/L)</u>	<u>Reporting Limit (ug/L)</u>	<u>Flags</u>
Acetone	< 100	100	
Acrolein	< 1	1	
Acrylonitrile	< 0.45	1	1
Benzene	< 5	5	
Bromobenzene	< 5	5	
Bromochloromethane	< 5	5	
Bromodichloromethane	< 5	5	
Bromoform	< 5	5	
Bromomethane	< 5	5	
n-Butanol	< 50	50	
2-Butanone (MEK)	< 10	10	
n-Butylbenzene	< 5	5	
sec-Butylbenzene	< 5	5	
tert-Butylbenzene	< 5	5	
Carbon Disulfide	< 5	5	
Carbon Tetrachloride	< 5	5	
Chlorobenzene	< 5	5	
Chloroethane	< 5	5	
2-Chloroethylvinylether	< 50	50	
Chloroform	< 5	5	
Chloromethane	< 5	5	
2-Chlorotoluene	< 5	5	
4-Chlorotoluene	< 5	5	
1,2-Dibromo-3-chloropropane	< 1	1	
Dibromochloromethane	< 5	5	
1,2-Dibromoethane (EDB)	< 1	1	
Dibromomethane	< 5	5	
1,2-Dichlorobenzene	< 5	5	
1,3-Dichlorobenzene	< 5	5	
1,4-Dichlorobenzene	< 5	5	
trans-1,4-Dichloro-2-butene	< 1	1	
Dichlorodifluoromethane	< 5	5	





# Analytical Report

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 www.envisionlaboratories.com

## 8260 continued...

<u>Compounds</u>	<u>Sample Results (ug/L)</u>	<u>Reporting Limit (ug/L)</u>	<u>Flags</u>
1,1-Dichloroethane	< 5	5	
1,2-Dichloroethane	< 5	5	
1,1-Dichloroethene	< 5	5	
cis-1,2-Dichloroethene	< 5	5	
trans-1,2-Dichloroethene	< 5	5	
1,2-Dichloropropane	< 5	5	
1,3-Dichloropropane	< 5	5	
2,2-Dichloropropane	< 5	5	
1,1-Dichloropropene	< 5	5	
1,3-Dichloropropene	< 4.1	4.1	
Ethylbenzene	< 5	5	
Ethyl methacrylate	< 100	100	
Hexachloro-1,3-butadiene	< 2.6	2.6	
n-Hexane	< 10	10	
2-Hexanone	< 10	10	
Iodomethane	< 10	10	
Isopropylbenzene (Cumene)	< 5	5	
p-Isopropyltoluene	< 5	5	
Methylene chloride	< 5	5	
4-Methyl-2-pentanone (MIBK)	< 10	10	
Methyl-tert-butyl-ether	< 5	5	
1-Methylnaphthalene	< 5	5	N
2-Methylnaphthalene	< 5	5	N
Naphthalene	< 1.4	1.4	
n-Propylbenzene	< 5	5	
Styrene	< 5	5	
1,1,1,2-Tetrachloroethane	< 5	5	
1,1,2,2-Tetrachloroethane	< 0.66	1	1
Tetrachloroethene	< 5	5	
Toluene	< 5	5	
1,2,3-Trichlorobenzene	< 5	5	
1,2,4-Trichlorobenzene	< 5	5	
1,1,1-Trichloroethane	< 5	5	
1,1,2-Trichloroethane	< 5	5	
Trichloroethene	< 5	5	
Trichlorofluoromethane	< 5	5	
1,2,3-Trichloropropane	< 1	1	
1,2,4-Trimethylbenzene	< 5	5	
1,3,5-Trimethylbenzene	< 5	5	
Vinyl acetate	< 10	10	
Vinyl chloride	< 2	2	
Xylene, M&P	< 5	5	
Xylene, Ortho	< 5	5	
Xylene (Total)	< 10	10	
Dibromofluoromethane (surrogate)	111%		
1,2-Dichloroethane-d4 (surrogate)	111%		
Toluene-d8 (surrogate)	99%		
4-bromofluorobenzene (surrogate)	82%		
Analysis Date/Time:	08-29-18/22:31		
Analyst Initials	tjg		



# Analytical Report

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Client Name: ENVIROFORENSICS

Project ID: CITY OF FRANKLIN

Client Project Manager: CASEY MCFALL

ENVision Project Number: 2018-2345

Analytical Method: EPA 8260

Prep Method: EPA 5030B

Analytical Batch: 082918VW

Client Sample ID: FC-DP-2 (14-18)

Envision Sample Number: 18-15774

Sample Matrix: water

Sample Collection Date/Time: 8/29/18 11:10

Sample Received Date/Time: 8/29/18 16:50

<u>Compounds</u>	<u>Sample Results (ug/L)</u>	<u>Reporting Limit (ug/L)</u>	<u>Flags</u>
Acetone	< 100	100	
Acrolein	< 1	1	
Acrylonitrile	< 0.45	1	1
Benzene	< 5	5	
Bromobenzene	< 5	5	
Bromochloromethane	< 5	5	
Bromodichloromethane	< 5	5	
Bromoform	< 5	5	
Bromomethane	< 5	5	
n-Butanol	< 50	50	
2-Butanone (MEK)	< 10	10	
n-Butylbenzene	< 5	5	
sec-Butylbenzene	< 5	5	
tert-Butylbenzene	< 5	5	
Carbon Disulfide	< 5	5	
Carbon Tetrachloride	< 5	5	
Chlorobenzene	< 5	5	
Chloroethane	< 5	5	
2-Chloroethylvinylether	< 50	50	
Chloroform	< 5	5	
Chloromethane	< 5	5	
2-Chlorotoluene	< 5	5	
4-Chlorotoluene	< 5	5	
1,2-Dibromo-3-chloropropane	< 1	1	
Dibromochloromethane	< 5	5	
1,2-Dibromoethane (EDB)	< 1	1	
Dibromomethane	< 5	5	
1,2-Dichlorobenzene	< 5	5	
1,3-Dichlorobenzene	< 5	5	
1,4-Dichlorobenzene	< 5	5	
trans-1,4-Dichloro-2-butene	< 1	1	
Dichlorodifluoromethane	< 5	5	



# Analytical Report

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8260 continued...

<u>Compounds</u>	<u>Sample Results (ug/L)</u>	<u>Reporting Limit (ug/L)</u>	<u>Flags</u>
1,1-Dichloroethane	< 5	5	
1,2-Dichloroethane	< 5	5	
1,1-Dichloroethene	< 5	5	
cis-1,2-Dichloroethene	< 5	5	
trans-1,2-Dichloroethene	< 5	5	
1,2-Dichloropropane	< 5	5	
1,3-Dichloropropane	< 5	5	
2,2-Dichloropropane	< 5	5	
1,1-Dichloropropene	< 5	5	
1,3-Dichloropropene	< 4.1	4.1	
Ethylbenzene	< 5	5	
Ethyl methacrylate	< 100	100	
Hexachloro-1,3-butadiene	< 2.6	2.6	
n-Hexane	< 10	10	
2-Hexanone	< 10	10	
Iodomethane	< 10	10	
Isopropylbenzene (Cumene)	< 5	5	
p-Isopropyltoluene	< 5	5	
Methylene chloride	< 5	5	
4-Methyl-2-pentanone (MIBK)	< 10	10	
Methyl-tert-butyl-ether	< 5	5	
1-Methylnaphthalene	< 5	5	N
2-Methylnaphthalene	< 5	5	N
Naphthalene	< 1.4	1.4	
n-Propylbenzene	< 5	5	
Styrene	< 5	5	
1,1,1,2-Tetrachloroethane	< 5	5	
1,1,2,2-Tetrachloroethane	< 0.66	1	1
Tetrachloroethene	< 5	5	
Toluene	< 5	5	
1,2,3-Trichlorobenzene	< 5	5	
1,2,4-Trichlorobenzene	< 5	5	
1,1,1-Trichloroethane	< 5	5	
1,1,2-Trichloroethane	< 5	5	
Trichloroethene	< 5	5	
Trichlorofluoromethane	< 5	5	
1,2,3-Trichloropropane	< 1	1	
1,2,4-Trimethylbenzene	< 5	5	
1,3,5-Trimethylbenzene	< 5	5	
Vinyl acetate	< 10	10	
Vinyl chloride	< 2	2	
Xylene, M&P	< 5	5	
Xylene, Ortho	< 5	5	
Xylene (Total)	< 10	10	
Dibromofluoromethane (surrogate)	111%		
1,2-Dichloroethane-d4 (surrogate)	108%		
Toluene-d8 (surrogate)	95%		
4-bromofluorobenzene (surrogate)	85%		
Analysis Date/Time:	08-29-18/22:51		
Analyst Initials	tjg		



Analytical Report

ENVision Laboratories, Inc.  
1439 Sadlier Circle West Drive  
Indianapolis, IN 46239  
Tel: 317.351.8632  
Fax: 317.351.8639  
www.envisionlaboratories.com

Client Name: ENVIROFORENSICS

Project ID: CITY OF FRANKLIN

Client Project Manager: CASEY MCFALL

ENVision Project Number: 2018-2345

Analytical Method: EPA 8260

Prep Method: EPA 5030B

Analytical Batch: 082918VW

Client Sample ID: FC-DP-3 (9-13)

Envision Sample Number: 18-15775

Sample Matrix: water

Sample Collection Date/Time: 8/29/18 12:30

Sample Received Date/Time: 8/29/18 16:50

<u>Compounds</u>	<u>Sample Results (ug/L)</u>	<u>Reporting Limit (ug/L)</u>	<u>Flags</u>
Acetone	< 100	100	
Acrolein	< 1	1	
Acrylonitrile	< 0.45	1	1
Benzene	< 5	5	
Bromobenzene	< 5	5	
Bromochloromethane	< 5	5	
Bromodichloromethane	< 5	5	
Bromoform	< 5	5	
Bromomethane	< 5	5	
n-Butanol	< 50	50	
2-Butanone (MEK)	< 10	10	
n-Butylbenzene	< 5	5	
sec-Butylbenzene	< 5	5	
tert-Butylbenzene	< 5	5	
Carbon Disulfide	< 5	5	
Carbon Tetrachloride	< 5	5	
Chlorobenzene	< 5	5	
Chloroethane	< 5	5	
2-Chloroethylvinylether	< 50	50	
Chloroform	< 5	5	
Chloromethane	< 5	5	
2-Chlorotoluene	< 5	5	
4-Chlorotoluene	< 5	5	
1,2-Dibromo-3-chloropropane	< 1	1	
Dibromochloromethane	< 5	5	
1,2-Dibromoethane (EDB)	< 1	1	
Dibromomethane	< 5	5	
1,2-Dichlorobenzene	< 5	5	
1,3-Dichlorobenzene	< 5	5	
1,4-Dichlorobenzene	< 5	5	
trans-1,4-Dichloro-2-butene	< 1	1	
Dichlorodifluoromethane	< 5	5	



# Analytical Report

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 Indianapolis, IN 46239  
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8260 continued...

<u>Compounds</u>	<u>Sample Results (ug/L)</u>	<u>Reporting Limit (ug/L)</u>	<u>Flags</u>
1,1-Dichloroethane	< 5	5	
1,2-Dichloroethane	< 5	5	
1,1-Dichloroethene	< 5	5	
cis-1,2-Dichloroethene	< 5	5	
trans-1,2-Dichloroethene	< 5	5	
1,2-Dichloropropane	< 5	5	
1,3-Dichloropropane	< 5	5	
2,2-Dichloropropane	< 5	5	
1,1-Dichloropropene	< 5	5	
1,3-Dichloropropene	< 4.1	4.1	
Ethylbenzene	< 5	5	
Ethyl methacrylate	< 100	100	
Hexachloro-1,3-butadiene	< 2.6	2.6	
n-Hexane	< 10	10	
2-Hexanone	< 10	10	
Iodomethane	< 10	10	
Isopropylbenzene (Cumene)	< 5	5	
p-Isopropyltoluene	< 5	5	
Methylene chloride	< 5	5	
4-Methyl-2-pentanone (MIBK)	< 10	10	
Methyl-tert-butyl-ether	< 5	5	
1-Methylnaphthalene	< 5	5	N
2-Methylnaphthalene	< 5	5	N
Naphthalene	< 1.4	1.4	
n-Propylbenzene	< 5	5	
Styrene	< 5	5	
1,1,1,2-Tetrachloroethane	< 5	5	
1,1,2,2-Tetrachloroethane	< 0.66	1	1
Tetrachloroethene	< 5	5	
Toluene	< 5	5	
1,2,3-Trichlorobenzene	< 5	5	
1,2,4-Trichlorobenzene	< 5	5	
1,1,1-Trichloroethane	< 5	5	
1,1,2-Trichloroethane	< 5	5	
Trichloroethene	< 5	5	
Trichlorofluoromethane	< 5	5	
1,2,3-Trichloropropane	< 1	1	
1,2,4-Trimethylbenzene	< 5	5	
1,3,5-Trimethylbenzene	< 5	5	
Vinyl acetate	< 10	10	
Vinyl chloride	< 2	2	
Xylene, M&P	< 5	5	
Xylene, Ortho	< 5	5	
Xylene (Total)	< 10	10	
Dibromofluoromethane (surrogate)	111%		
1,2-Dichloroethane-d4 (surrogate)	110%		
Toluene-d8 (surrogate)	97%		
4-bromofluorobenzene (surrogate)	87%		
Analysis Date/Time:	08-30-18/01:13		
Analyst Initials	tjg		



# Analytical Report

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Indianapolis, IN 46239  
Tel: 317.351.8632  
Fax: 317.351.8639  
www.envisionlaboratories.com

Client Name: ENVIROFORENSICS

Project ID: CITY OF FRANKLIN

Client Project Manager: CASEY MCFALL

ENVision Project Number: 2018-2345

Analytical Method: EPA 8260

Prep Method: EPA 5030B

Analytical Batch: 082918VW

Client Sample ID: FC-DP-4 (7.5-11.5) Sample Collection Date/Time: 8/29/18 13:50

Envision Sample Number: 18-15776 Sample Received Date/Time: 8/29/18 16:50

Sample Matrix: water

<u>Compounds</u>	<u>Sample Results (ug/L)</u>	<u>Reporting Limit (ug/L)</u>	<u>Flags</u>
Acetone	< 100	100	
Acrolein	< 1	1	
Acrylonitrile	< 0.45	1	1
Benzene	< 5	5	
Bromobenzene	< 5	5	
Bromochloromethane	< 5	5	
Bromodichloromethane	< 5	5	
Bromoform	< 5	5	
Bromomethane	< 5	5	
n-Butanol	< 50	50	
2-Butanone (MEK)	< 10	10	
n-Butylbenzene	< 5	5	
sec-Butylbenzene	< 5	5	
tert-Butylbenzene	< 5	5	
Carbon Disulfide	< 5	5	
Carbon Tetrachloride	< 5	5	
Chlorobenzene	< 5	5	
Chloroethane	< 5	5	
2-Chloroethylvinylether	< 50	50	
Chloroform	< 5	5	
Chloromethane	< 5	5	
2-Chlorotoluene	< 5	5	
4-Chlorotoluene	< 5	5	
1,2-Dibromo-3-chloropropane	< 1	1	
Dibromochloromethane	< 5	5	
1,2-Dibromoethane (EDB)	< 1	1	
Dibromomethane	< 5	5	
1,2-Dichlorobenzene	< 5	5	
1,3-Dichlorobenzene	< 5	5	
1,4-Dichlorobenzene	< 5	5	
trans-1,4-Dichloro-2-butene	< 1	1	
Dichlorodifluoromethane	< 5	5	



# Analytical Report

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## 8260 continued...

<u>Compounds</u>	<u>Sample Results (ug/L)</u>	<u>Reporting Limit (ug/L)</u>	<u>Flags</u>
1,1-Dichloroethane	< 5	5	
1,2-Dichloroethane	< 5	5	
1,1-Dichloroethene	< 5	5	
cis-1,2-Dichloroethene	< 5	5	
trans-1,2-Dichloroethene	< 5	5	
1,2-Dichloropropane	< 5	5	
1,3-Dichloropropane	< 5	5	
2,2-Dichloropropane	< 5	5	
1,1-Dichloropropene	< 5	5	
1,3-Dichloropropene	< 4.1	4.1	
Ethylbenzene	< 5	5	
Ethyl methacrylate	< 100	100	
Hexachloro-1,3-butadiene	< 2.6	2.6	
n-Hexane	< 10	10	
2-Hexanone	< 10	10	
Iodomethane	< 10	10	
Isopropylbenzene (Cumene)	< 5	5	
p-Isopropyltoluene	< 5	5	
Methylene chloride	< 5	5	
4-Methyl-2-pentanone (MIBK)	< 10	10	
Methyl-tert-butyl-ether	< 5	5	
1-Methylnaphthalene	< 5	5	N
2-Methylnaphthalene	< 5	5	N
Naphthalene	< 1.4	1.4	
n-Propylbenzene	< 5	5	
Styrene	< 5	5	
1,1,1,2-Tetrachloroethane	< 5	5	
1,1,2,2-Tetrachloroethane	< 0.66	1	1
Tetrachloroethene	< 5	5	
Toluene	< 5	5	
1,2,3-Trichlorobenzene	< 5	5	
1,2,4-Trichlorobenzene	< 5	5	
1,1,1-Trichloroethane	< 5	5	
1,1,2-Trichloroethane	< 5	5	
Trichloroethene	< 5	5	
Trichlorofluoromethane	< 5	5	
1,2,3-Trichloropropane	< 1	1	
1,2,4-Trimethylbenzene	< 5	5	
1,3,5-Trimethylbenzene	< 5	5	
Vinyl acetate	< 10	10	
Vinyl chloride	< 2	2	
Xylene, M&P	< 5	5	
Xylene, Ortho	< 5	5	
Xylene (Total)	< 10	10	
Dibromofluoromethane (surrogate)	111%		
1,2-Dichloroethane-d4 (surrogate)	109%		
Toluene-d8 (surrogate)	96%		
4-bromofluorobenzene (surrogate)	84%		
Analysis Date/Time:	08-29-18/23:11		
Analyst Initials	tjg		



# Analytical Report

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1439 Sadlier Circle West Drive  
Indianapolis, IN 46239  
Tel: 317.351.8632  
Fax: 317.351.8639  
www.envisionlaboratories.com

Client Name: ENVIROFORENSICS

Project ID: CITY OF FRANKLIN

Client Project Manager: CASEY MCFALL

ENVision Project Number: 2018-2345

Analytical Method: EPA 8260

Prep Method: EPA 5030B

Analytical Batch: 082918VW

Client Sample ID: FC-DP-5 (9-13)

Envision Sample Number: 18-15777

Sample Matrix: water

Sample Collection Date/Time: 8/29/18 14:30

Sample Received Date/Time: 8/29/18 16:50

<u>Compounds</u>	<u>Sample Results (ug/L)</u>	<u>Reporting Limit (ug/L)</u>	<u>Flags</u>
Acetone	< 100	100	
Acrolein	< 1	1	
Acrylonitrile	< 0.45	1	1
Benzene	< 5	5	
Bromobenzene	< 5	5	
Bromochloromethane	< 5	5	
Bromodichloromethane	< 5	5	
Bromoform	< 5	5	
Bromomethane	< 5	5	
n-Butanol	< 50	50	
2-Butanone (MEK)	< 10	10	
n-Butylbenzene	< 5	5	
sec-Butylbenzene	< 5	5	
tert-Butylbenzene	< 5	5	
Carbon Disulfide	< 5	5	
Carbon Tetrachloride	< 5	5	
Chlorobenzene	< 5	5	
Chloroethane	< 5	5	
2-Chloroethylvinylether	< 50	50	
Chloroform	< 5	5	
Chloromethane	< 5	5	
2-Chlorotoluene	< 5	5	
4-Chlorotoluene	< 5	5	
1,2-Dibromo-3-chloropropane	< 1	1	
Dibromochloromethane	< 5	5	
1,2-Dibromoethane (EDB)	< 1	1	
Dibromomethane	< 5	5	
1,2-Dichlorobenzene	< 5	5	
1,3-Dichlorobenzene	< 5	5	
1,4-Dichlorobenzene	< 5	5	
trans-1,4-Dichloro-2-butene	< 1	1	
Dichlorodifluoromethane	< 5	5	





# Analytical Report

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## 8260 continued...

<u>Compounds</u>	<u>Sample Results (ug/L)</u>	<u>Reporting Limit (ug/L)</u>	<u>Flags</u>
1,1-Dichloroethane	< 5	5	
1,2-Dichloroethane	< 5	5	
1,1-Dichloroethene	< 5	5	
cis-1,2-Dichloroethene	< 5	5	
trans-1,2-Dichloroethene	< 5	5	
1,2-Dichloropropane	< 5	5	
1,3-Dichloropropane	< 5	5	
2,2-Dichloropropane	< 5	5	
1,1-Dichloropropene	< 5	5	
1,3-Dichloropropene	< 4.1	4.1	
Ethylbenzene	< 5	5	
Ethyl methacrylate	< 100	100	
Hexachloro-1,3-butadiene	< 2.6	2.6	
n-Hexane	< 10	10	
2-Hexanone	< 10	10	
Iodomethane	< 10	10	
Isopropylbenzene (Cumene)	< 5	5	
p-Isopropyltoluene	< 5	5	
Methylene chloride	< 5	5	
4-Methyl-2-pentanone (MIBK)	< 10	10	
Methyl-tert-butyl-ether	< 5	5	
1-Methylnaphthalene	< 5	5	N
2-Methylnaphthalene	< 5	5	N
Naphthalene	< 1.4	1.4	
n-Propylbenzene	< 5	5	
Styrene	< 5	5	
1,1,1,2-Tetrachloroethane	< 5	5	
1,1,2,2-Tetrachloroethane	< 0.66	1	1
Tetrachloroethene	< 5	5	
Toluene	< 5	5	
1,2,3-Trichlorobenzene	< 5	5	
1,2,4-Trichlorobenzene	< 5	5	
1,1,1-Trichloroethane	< 5	5	
1,1,2-Trichloroethane	< 5	5	
Trichloroethene	< 5	5	
Trichlorofluoromethane	< 5	5	
1,2,3-Trichloropropane	< 1	1	
1,2,4-Trimethylbenzene	< 5	5	
1,3,5-Trimethylbenzene	< 5	5	
Vinyl acetate	< 10	10	
Vinyl chloride	< 2	2	
Xylene, M&P	< 5	5	
Xylene, Ortho	< 5	5	
Xylene (Total)	< 10	10	
Dibromofluoromethane (surrogate)	107%		
1,2-Dichloroethane-d4 (surrogate)	103%		
Toluene-d8 (surrogate)	96%		
4-bromofluorobenzene (surrogate)	87%		
Analysis Date/Time:	08-29-18/23:32		
Analyst Initials	tjg		



# Analytical Report

ENVision Laboratories, Inc.  
1439 Sadlier Circle West Drive  
Indianapolis, IN 46239  
Tel: 317.351.8632  
Fax: 317.351.8639  
www.envisionlaboratories.com

Client Name: ENVIROFORENSICS

Project ID: CITY OF FRANKLIN

Client Project Manager: CASEY MCFALL

ENVision Project Number: 2018-2345

Analytical Method: EPA 8260

Prep Method: EPA 5030B

Analytical Batch: 082918VW

Client Sample ID: FC-DP-6 (12-16)

Envision Sample Number: 18-15778

Sample Matrix: water

Sample Collection Date/Time: 8/29/18 15:10

Sample Received Date/Time: 8/29/18 16:50

<u>Compounds</u>	<u>Sample Results (ug/L)</u>	<u>Reporting Limit (ug/L)</u>	<u>Flags</u>
Acetone	< 100	100	
Acrolein	< 1	1	
Acrylonitrile	< 0.45	1	1
Benzene	< 5	5	
Bromobenzene	< 5	5	
Bromochloromethane	< 5	5	
Bromodichloromethane	< 5	5	
Bromoform	< 5	5	
Bromomethane	< 5	5	
n-Butanol	< 50	50	
2-Butanone (MEK)	< 10	10	
n-Butylbenzene	< 5	5	
sec-Butylbenzene	< 5	5	
tert-Butylbenzene	< 5	5	
Carbon Disulfide	< 5	5	
Carbon Tetrachloride	< 5	5	
Chlorobenzene	< 5	5	
Chloroethane	< 5	5	
2-Chloroethylvinylether	< 50	50	
Chloroform	< 5	5	
Chloromethane	< 5	5	
2-Chlorotoluene	< 5	5	
4-Chlorotoluene	< 5	5	
1,2-Dibromo-3-chloropropane	< 1	1	
Dibromochloromethane	< 5	5	
1,2-Dibromoethane (EDB)	< 1	1	
Dibromomethane	< 5	5	
1,2-Dichlorobenzene	< 5	5	
1,3-Dichlorobenzene	< 5	5	
1,4-Dichlorobenzene	< 5	5	
trans-1,4-Dichloro-2-butene	< 1	1	
Dichlorodifluoromethane	< 5	5	



# Analytical Report

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## 8260 continued...

<u>Compounds</u>	<u>Sample Results (ug/L)</u>	<u>Reporting Limit (ug/L)</u>	<u>Flags</u>
1,1-Dichloroethane	< 5	5	
1,2-Dichloroethane	< 5	5	
1,1-Dichloroethene	< 5	5	
cis-1,2-Dichloroethene	< 5	5	
trans-1,2-Dichloroethene	< 5	5	
1,2-Dichloropropane	< 5	5	
1,3-Dichloropropane	< 5	5	
2,2-Dichloropropane	< 5	5	
1,1-Dichloropropene	< 5	5	
1,3-Dichloropropene	< 4.1	4.1	
Ethylbenzene	< 5	5	
Ethyl methacrylate	< 100	100	
Hexachloro-1,3-butadiene	< 2.6	2.6	
n-Hexane	< 10	10	
2-Hexanone	< 10	10	
Iodomethane	< 10	10	
Isopropylbenzene (Cumene)	< 5	5	
p-Isopropyltoluene	< 5	5	
Methylene chloride	< 5	5	
4-Methyl-2-pentanone (MIBK)	< 10	10	
Methyl-tert-butyl-ether	< 5	5	
1-Methylnaphthalene	< 5	5	N
2-Methylnaphthalene	< 5	5	N
Naphthalene	< 1.4	1.4	
n-Propylbenzene	< 5	5	
Styrene	< 5	5	
1,1,1,2-Tetrachloroethane	< 5	5	
1,1,2,2-Tetrachloroethane	< 0.66	1	1
Tetrachloroethene	<b>49.6</b>	5	
Toluene	< 5	5	
1,2,3-Trichlorobenzene	< 5	5	
1,2,4-Trichlorobenzene	< 5	5	
1,1,1-Trichloroethane	< 5	5	
1,1,2-Trichloroethane	< 5	5	
Trichloroethene	<b>31.5</b>	5	
Trichlorofluoromethane	< 5	5	
1,2,3-Trichloropropane	< 1	1	
1,2,4-Trimethylbenzene	< 5	5	
1,3,5-Trimethylbenzene	< 5	5	
Vinyl acetate	< 10	10	
Vinyl chloride	< 2	2	
Xylene, M&P	< 5	5	
Xylene, Ortho	< 5	5	
Xylene (Total)	< 10	10	
Dibromofluoromethane (surrogate)	114%		
1,2-Dichloroethane-d4 (surrogate)	109%		
Toluene-d8 (surrogate)	98%		
4-bromofluorobenzene (surrogate)	84%		
Analysis Date/Time:	08-29-18/23:52		
Analyst Initials	tjg		



# Analytical Report

ENVision Laboratories, Inc.  
1439 Sadlier Circle West Drive  
Indianapolis, IN 46239  
Tel: 317.351.8632  
Fax: 317.351.8639  
www.envisionlaboratories.com

Client Name: ENVIROFORENSICS

Project ID: CITY OF FRANKLIN

Client Project Manager: CASEY MCFALL

ENVision Project Number: 2018-2345

Analytical Method: EPA 8260

Prep Method: EPA 5030B

Analytical Batch: 082918VW

Client Sample ID: FC-DP-7 (7-11)

Envision Sample Number: 18-15779

Sample Matrix: water

Sample Collection Date/Time: 8/29/18 16:15

Sample Received Date/Time: 8/29/18 16:50

<u>Compounds</u>	<u>Sample Results (ug/L)</u>	<u>Reporting Limit (ug/L)</u>	<u>Flags</u>
Acetone	< 100	100	
Acrolein	< 1	1	
Acrylonitrile	< 0.45	1	1
Benzene	< 5	5	
Bromobenzene	< 5	5	
Bromochloromethane	< 5	5	
Bromodichloromethane	< 5	5	
Bromoform	< 5	5	
Bromomethane	< 5	5	
n-Butanol	< 50	50	
2-Butanone (MEK)	< 10	10	
n-Butylbenzene	< 5	5	
sec-Butylbenzene	< 5	5	
tert-Butylbenzene	< 5	5	
Carbon Disulfide	< 5	5	
Carbon Tetrachloride	< 5	5	
Chlorobenzene	< 5	5	
Chloroethane	< 5	5	
2-Chloroethylvinylether	< 50	50	
Chloroform	< 5	5	
Chloromethane	< 5	5	
2-Chlorotoluene	< 5	5	
4-Chlorotoluene	< 5	5	
1,2-Dibromo-3-chloropropane	< 1	1	
Dibromochloromethane	< 5	5	
1,2-Dibromoethane (EDB)	< 1	1	
Dibromomethane	< 5	5	
1,2-Dichlorobenzene	< 5	5	
1,3-Dichlorobenzene	< 5	5	
1,4-Dichlorobenzene	< 5	5	
trans-1,4-Dichloro-2-butene	< 1	1	
Dichlorodifluoromethane	< 5	5	



# Analytical Report

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 Indianapolis, IN 46239  
 Tel: 317.351.8632  
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## 8260 continued...

<u>Compounds</u>	<u>Sample Results (ug/L)</u>	<u>Reporting Limit (ug/L)</u>	<u>Flags</u>
1,1-Dichloroethane	< 5	5	
1,2-Dichloroethane	< 5	5	
1,1-Dichloroethene	< 5	5	
cis-1,2-Dichloroethene	< 5	5	
trans-1,2-Dichloroethene	< 5	5	
1,2-Dichloropropane	< 5	5	
1,3-Dichloropropane	< 5	5	
2,2-Dichloropropane	< 5	5	
1,1-Dichloropropene	< 5	5	
1,3-Dichloropropene	< 4.1	4.1	
Ethylbenzene	< 5	5	
Ethyl methacrylate	< 100	100	
Hexachloro-1,3-butadiene	< 2.6	2.6	
n-Hexane	< 10	10	
2-Hexanone	< 10	10	
Iodomethane	< 10	10	
Isopropylbenzene (Cumene)	< 5	5	
p-Isopropyltoluene	< 5	5	
Methylene chloride	< 5	5	
4-Methyl-2-pentanone (MIBK)	< 10	10	
Methyl-tert-butyl-ether	< 5	5	
1-Methylnaphthalene	< 5	5	N
2-Methylnaphthalene	< 5	5	N
Naphthalene	< 1.4	1.4	
n-Propylbenzene	< 5	5	
Styrene	< 5	5	
1,1,1,2-Tetrachloroethane	< 5	5	
1,1,2,2-Tetrachloroethane	< 0.66	1	1
Tetrachloroethene	< 5	5	
Toluene	< 5	5	
1,2,3-Trichlorobenzene	< 5	5	
1,2,4-Trichlorobenzene	< 5	5	
1,1,1-Trichloroethane	< 5	5	
1,1,2-Trichloroethane	< 5	5	
Trichloroethene	< 5	5	
Trichlorofluoromethane	< 5	5	
1,2,3-Trichloropropane	< 1	1	
1,2,4-Trimethylbenzene	< 5	5	
1,3,5-Trimethylbenzene	< 5	5	
Vinyl acetate	< 10	10	
Vinyl chloride	< 2	2	
Xylene, M&P	< 5	5	
Xylene, Ortho	< 5	5	
Xylene (Total)	< 10	10	
Dibromofluoromethane (surrogate)	111%		
1,2-Dichloroethane-d4 (surrogate)	108%		
Toluene-d8 (surrogate)	96%		
4-bromofluorobenzene (surrogate)	84%		
Analysis Date/Time:	08-30-18/00:12		
Analyst Initials	tjg		



# Analytical Report

ENVision Laboratories, Inc.  
1439 Sadlier Circle West Drive  
Indianapolis, IN 46239  
Tel: 317.351.8632  
Fax: 317.351.8639  
www.envisionlaboratories.com

Client Name: ENVIROFORENSICS

Project ID: CITY OF FRANKLIN

Client Project Manager: CASEY MCFALL

ENVision Project Number: 2018-2345

Analytical Method: EPA 8260

Prep Method: EPA 5030B

Analytical Batch: 082918VW

Client Sample ID: FC-DUP-1

Envision Sample Number: 18-15780

Sample Matrix: water

Sample Collection Date/Time:

Sample Received Date/Time: 8/29/18 16:50

<u>Compounds</u>	<u>Sample Results (ug/L)</u>	<u>Reporting Limit (ug/L)</u>	<u>Flags</u>
Acetone	< 100	100	
Acrolein	< 1	1	
Acrylonitrile	< 0.45	1	1
Benzene	< 5	5	
Bromobenzene	< 5	5	
Bromochloromethane	< 5	5	
Bromodichloromethane	< 5	5	
Bromoform	< 5	5	
Bromomethane	< 5	5	
n-Butanol	< 50	50	
2-Butanone (MEK)	< 10	10	
n-Butylbenzene	< 5	5	
sec-Butylbenzene	< 5	5	
tert-Butylbenzene	< 5	5	
Carbon Disulfide	< 5	5	
Carbon Tetrachloride	< 5	5	
Chlorobenzene	< 5	5	
Chloroethane	< 5	5	
2-Chloroethylvinylether	< 50	50	
Chloroform	< 5	5	
Chloromethane	< 5	5	
2-Chlorotoluene	< 5	5	
4-Chlorotoluene	< 5	5	
1,2-Dibromo-3-chloropropane	< 1	1	
Dibromochloromethane	< 5	5	
1,2-Dibromoethane (EDB)	< 1	1	
Dibromomethane	< 5	5	
1,2-Dichlorobenzene	< 5	5	
1,3-Dichlorobenzene	< 5	5	
1,4-Dichlorobenzene	< 5	5	
trans-1,4-Dichloro-2-butene	< 1	1	
Dichlorodifluoromethane	< 5	5	



# Analytical Report

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 Fax: 317.351.8639  
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8260 continued...

<u>Compounds</u>	<u>Sample Results (ug/L)</u>	<u>Reporting Limit (ug/L)</u>	<u>Flags</u>
1,1-Dichloroethane	< 5	5	
1,2-Dichloroethane	< 5	5	
1,1-Dichloroethene	< 5	5	
cis-1,2-Dichloroethene	< 5	5	
trans-1,2-Dichloroethene	< 5	5	
1,2-Dichloropropane	< 5	5	
1,3-Dichloropropane	< 5	5	
2,2-Dichloropropane	< 5	5	
1,1-Dichloropropene	< 5	5	
1,3-Dichloropropene	< 4.1	4.1	
Ethylbenzene	< 5	5	
Ethyl methacrylate	< 100	100	
Hexachloro-1,3-butadiene	< 2.6	2.6	
n-Hexane	< 10	10	
2-Hexanone	< 10	10	
Iodomethane	< 10	10	
Isopropylbenzene (Cumene)	< 5	5	
p-Isopropyltoluene	< 5	5	
Methylene chloride	< 5	5	
4-Methyl-2-pentanone (MIBK)	< 10	10	
Methyl-tert-butyl-ether	< 5	5	
1-Methylnaphthalene	< 5	5	N
2-Methylnaphthalene	< 5	5	N
Naphthalene	< 1.4	1.4	
n-Propylbenzene	< 5	5	
Styrene	< 5	5	
1,1,1,2-Tetrachloroethane	< 5	5	
1,1,2,2-Tetrachloroethane	< 0.66	1	1
Tetrachloroethene	< 5	5	
Toluene	< 5	5	
1,2,3-Trichlorobenzene	< 5	5	
1,2,4-Trichlorobenzene	< 5	5	
1,1,1-Trichloroethane	< 5	5	
1,1,2-Trichloroethane	< 5	5	
Trichloroethene	< 5	5	
Trichlorofluoromethane	< 5	5	
1,2,3-Trichloropropane	< 1	1	
1,2,4-Trimethylbenzene	< 5	5	
1,3,5-Trimethylbenzene	< 5	5	
Vinyl acetate	< 10	10	
Vinyl chloride	< 2	2	
Xylene, M&P	< 5	5	
Xylene, Ortho	< 5	5	
Xylene (Total)	< 10	10	
Dibromofluoromethane (surrogate)	105%		
1,2-Dichloroethane-d4 (surrogate)	104%		
Toluene-d8 (surrogate)	96%		
4-bromofluorobenzene (surrogate)	85%		
Analysis Date/Time:	08-30-18/00:33		
Analyst Initials	tjg		



# Analytical Report

ENVision Laboratories, Inc.  
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Indianapolis, IN 46239  
Tel: 317.351.8632  
Fax: 317.351.8639  
www.envisionlaboratories.com

Client Name: ENVIROFORENSICS

Project ID: CITY OF FRANKLIN

Client Project Manager: CASEY MCFALL

ENVision Project Number: 2018-2345

Analytical Method: EPA 8260

Prep Method: EPA 5030B

Analytical Batch: 082918VW

Client Sample ID: FC-TB-1

Envision Sample Number: 18-15781

Sample Matrix: water

Sample Collection Date/Time:

Sample Received Date/Time: 8/29/18 16:50

<u>Compounds</u>	<u>Sample Results (ug/L)</u>	<u>Reporting Limit (ug/L)</u>	<u>Flags</u>
Acetone	< 100	100	
Acrolein	< 1	1	
Acrylonitrile	< 0.45	1	1
Benzene	< 5	5	
Bromobenzene	< 5	5	
Bromochloromethane	< 5	5	
Bromodichloromethane	< 5	5	
Bromoform	< 5	5	
Bromomethane	< 5	5	
n-Butanol	< 50	50	
2-Butanone (MEK)	< 10	10	
n-Butylbenzene	< 5	5	
sec-Butylbenzene	< 5	5	
tert-Butylbenzene	< 5	5	
Carbon Disulfide	< 5	5	
Carbon Tetrachloride	< 5	5	
Chlorobenzene	< 5	5	
Chloroethane	< 5	5	
2-Chloroethylvinylether	< 50	50	
Chloroform	< 5	5	
Chloromethane	< 5	5	
2-Chlorotoluene	< 5	5	
4-Chlorotoluene	< 5	5	
1,2-Dibromo-3-chloropropane	< 1	1	
Dibromochloromethane	< 5	5	
1,2-Dibromoethane (EDB)	< 1	1	
Dibromomethane	< 5	5	
1,2-Dichlorobenzene	< 5	5	
1,3-Dichlorobenzene	< 5	5	
1,4-Dichlorobenzene	< 5	5	
trans-1,4-Dichloro-2-butene	< 1	1	
Dichlorodifluoromethane	< 5	5	





## Analytical Report

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Indianapolis, IN 46239  
Tel: 317.351.8632  
Fax: 317.351.8639  
www.envisionlaboratories.com

## 8260 continued...

<u>Compounds</u>	<u>Sample Results (ug/L)</u>	<u>Reporting Limit (ug/L)</u>	<u>Flags</u>
1,1-Dichloroethane	< 5	5	
1,2-Dichloroethane	< 5	5	
1,1-Dichloroethene	< 5	5	
cis-1,2-Dichloroethene	< 5	5	
trans-1,2-Dichloroethene	< 5	5	
1,2-Dichloropropane	< 5	5	
1,3-Dichloropropane	< 5	5	
2,2-Dichloropropane	< 5	5	
1,1-Dichloropropene	< 5	5	
1,3-Dichloropropene	< 4.1	4.1	
Ethylbenzene	< 5	5	
Ethyl methacrylate	< 100	100	
Hexachloro-1,3-butadiene	< 2.6	2.6	
n-Hexane	< 10	10	
2-Hexanone	< 10	10	
Iodomethane	< 10	10	
Isopropylbenzene (Cumene)	< 5	5	
p-Isopropyltoluene	< 5	5	
Methylene chloride	< 5	5	
4-Methyl-2-pentanone (MIBK)	< 10	10	
Methyl-tert-butyl-ether	< 5	5	
1-Methylnaphthalene	< 5	5	N
2-Methylnaphthalene	< 5	5	N
Naphthalene	< 1.4	1.4	
n-Propylbenzene	< 5	5	
Styrene	< 5	5	
1,1,1,2-Tetrachloroethane	< 5	5	
1,1,2,2-Tetrachloroethane	< 0.66	1	1
Tetrachloroethene	< 5	5	
Toluene	< 5	5	
1,2,3-Trichlorobenzene	< 5	5	
1,2,4-Trichlorobenzene	< 5	5	
1,1,1-Trichloroethane	< 5	5	
1,1,2-Trichloroethane	< 5	5	
Trichloroethene	< 5	5	
Trichlorofluoromethane	< 5	5	
1,2,3-Trichloropropane	< 1	1	
1,2,4-Trimethylbenzene	< 5	5	
1,3,5-Trimethylbenzene	< 5	5	
Vinyl acetate	< 10	10	
Vinyl chloride	< 2	2	
Xylene, M&P	< 5	5	
Xylene, Ortho	< 5	5	
Xylene (Total)	< 10	10	
Dibromofluoromethane (surrogate)	110%		
1,2-Dichloroethane-d4 (surrogate)	112%		
Toluene-d8 (surrogate)	95%		
4-bromofluorobenzene (surrogate)	86%		
Analysis Date/Time:	08-30-18/00:53		
Analyst Initials	tjg		



**ENVision Laboratories, Inc.**  
 1439 Sadler Circle West Drive  
 Indianapolis, IN 46239  
 Tel: 317.351.8632  
 Fax: 317.351.8639  
 www.envisionlaboratories.com

## EPA 8260 Quality Control Data

**ENVision Batch Number:** 082918VW

<u>Method Blank (MB):</u>	<u>MB Results (ug/L)</u>	<u>Rep Lim (ug/L)</u>	<u>Flag</u>
Acetone	< 100	100	
Acrolein	< 1	1	
Acrylonitrile	< 0.45	1	1
Benzene	< 5	5	
Bromobenzene	< 5	5	
Bromochloromethane	< 5	5	
Bromodichloromethane	< 5	5	
Bromoform	< 5	5	
Bromomethane	< 5	5	
n-Butanol	< 50	50	
2-Butanone (MEK)	< 10	10	
n-Butylbenzene	< 5	5	
sec-Butylbenzene	< 5	5	
tert-Butylbenzene	< 5	5	
Carbon Disulfide	< 5	5	
Carbon Tetrachloride	< 5	5	
Chlorobenzene	< 5	5	
Chloroethane	< 5	5	
2-Chloroethylvinylether	< 50	50	
Chloroform	< 5	5	
Chloromethane	< 5	5	
2-Chlorotoluene	< 5	5	
4-Chlorotoluene	< 5	5	
1,2-Dibromo-3-chloropropane	< 1	1	
Dibromochloromethane	< 5	5	
1,2-Dibromoethane (EDB)	< 1	1	
Dibromomethane	< 5	5	
1,2-Dichlorobenzene	< 5	5	
1,3-Dichlorobenzene	< 5	5	
1,4-Dichlorobenzene	< 5	5	
trans-1,4-Dichloro-2-butene	< 1	1	
Dichlorodifluoromethane	< 5	5	
1,1-Dichloroethane	< 5	5	
1,2-Dichloroethane	< 5	5	
1,1-Dichloroethene	< 5	5	
cis-1,2-Dichloroethene	< 5	5	
trans-1,2-Dichloroethene	< 5	5	
1,2-Dichloropropane	< 5	5	
1,3-Dichloropropane	< 5	5	
2,2-Dichloropropane	< 5	5	
1,1-Dichloropropene	< 5	5	
1,3-Dichloropropene	< 4.1	4.1	
Ethylbenzene	< 5	5	
Ethyl methacrylate	< 100	100	



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**8260 QC Continued...**

<b>Method Blank (MB):</b>	<b>MB Results (ug/L)</b>	<b>Rep Lim (ug/L)</b>	<b>Flag</b>
Hexachloro-1,3-butadiene	< 2.6	2.6	
2-Hexanone	< 10	10	
n-Hexane	< 10	10	
Iodomethane	< 10	10	
Isopropylbenzene (Cumene)	< 5	5	
p-Isopropyltoluene	< 5	5	
Methylene chloride	< 5	5	
4-Methyl-2-pentanone (MIBK)	< 10	10	
Methyl-tert-butyl-ether	< 5	5	
1-Methylnaphthalene	< 5	5	
2-Methylnaphthalene	< 5	5	
Naphthalene	< 1.4	1.4	
n-Propylbenzene	< 5	5	
Styrene	< 5	5	
1,1,1,2-Tetrachloroethane	< 5	5	
1,1,2,2-Tetrachloroethane	< 0.66	1	1
Tetrachloroethene	< 5	5	
Toluene	< 5	5	
1,2,3-Trichlorobenzene	< 5	5	
1,2,4-Trichlorobenzene	< 5	5	
1,1,1-Trichloroethane	< 5	5	
1,1,2-Trichloroethane	< 5	5	
Trichloroethene	< 5	5	
Trichlorofluoromethane	< 5	5	
1,2,3-Trichloropropane	< 1	1	
1,2,4-Trimethylbenzene	< 5	5	
1,3,5-Trimethylbenzene	< 5	5	
Vinyl acetate	< 10	10	
Vinyl chloride	< 2	2	
Xylene, M&P	< 5	5	
Xylene, Ortho	< 5	5	
Xylene (total)	< 10	10	
Dibromofluoromethane (surrogate)	107%		
1,2-Dichloroethane-d4 (surrogate)	103%		
Toluene-d8 (surrogate)	95%		
4-bromofluorobenzene (surrogate)	85%		
Analysis Date/Time:	08-29-18/22:10		
Analyst Initials	tjg		



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 Indianapolis, IN 46239  
 Tel: 317.351.8632  
 Fax: 317.351.8639  
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**8260 QC Continued...**

<u>LCS/LCSD</u>	<u>LCS Results (ug/L)</u>	<u>LCS/LCSD Conc. (ug/L)</u>	<u>LCSD Result (ug/L)</u>	<u>LCS Rec.</u>	<u>LCSD Rec.</u>	<u>% D</u>	<u>Flag</u>
Vinyl Chloride	48.1	50	48.1	96%	96%	0.0	
1,1-Dichloroethene	51.6	50	48.8	103%	98%	5.6	
trans-1,2-Dichloroethene	58.5	50	55.2	117%	110%	5.8	
Methyl-tert-butyl-ether	51.9	50	48.3	104%	97%	7.2	
1,1-Dichloroethane	51.1	50	47.8	102%	96%	6.7	
cis-1,2-Dichloroethene	55.2	50	51.1	110%	102%	7.7	
Chloroform	56.6	50	52.6	113%	105%	7.3	
1,1,1-Trichloroethane	57.2	50	53.8	114%	108%	6.1	
Benzene	53.9	50	49.8	108%	100%	7.9	
Trichloroethene	57.9	50	52.9	116%	106%	9.0	
Toluene	58.2	50	53.4	116%	107%	8.6	
1,1,1,2-Tetrachloroethane	58.3	50	54.1	117%	108%	7.5	
Chlorobenzene	54.7	50	51.8	109%	104%	5.4	
Ethylbenzene	53.5	50	50.6	107%	101%	5.6	
o-Xylene	54.8	50	52.4	110%	105%	4.5	
n-Propylbenzene	54.2	50	51.5	108%	103%	5.1	
Dibromofluoromethane (surrogate)	102%		103%				
1,2-Dichloroethane-d4 (surrogate)	101%		111%				
Toluene-d8 (surrogate)	106%		102%				
4-bromofluorobenzene (surrogate)	92%		91%				
Analysis Date/Time:	08-29-18/20:49		08-29-18/21:09				
Analyst Initials	tjg		tjg				

<u>Matrix Spike/Matrix Spike Dup:</u>	<u>Sample Results (ug/L)</u>	<u>MS Res (ug/L)</u>	<u>MSD Res (ug/L)</u>	<u>Spk Conc (ug/L)</u>	<u>MS Rec</u>	<u>MSD Rec</u>	<u>% D</u>	<u>Flag</u>
Vinyl Chloride	0.0	55.0	57.9	50	110%	116%	5.1	
1,1-Dichloroethene	0.0	47.2	48.8	50	94%	98%	3.3	
trans-1,2-Dichloroethene	0.0	54.6	56.3	50	109%	113%	3.1	
Methyl-tert-butyl-ether	0.0	44.4	48.6	50	89%	97%	9.0	
1,1-Dichloroethane	0.0	44.2	48.5	50	88%	97%	9.3	
cis-1,2-Dichloroethene	0.0	44.6	50.6	50	89%	101%	12.6	
Chloroform	0.0	50.7	53.6	50	101%	107%	5.6	
1,1,1-Trichloroethane	0.0	55.0	55.2	50	110%	110%	0.4	
Benzene	0.0	48.2	49.9	50	96%	100%	3.5	
Trichloroethene	0.0	52.3	52.8	50	105%	106%	1.0	
Toluene	0.0	52.7	54.3	50	105%	109%	3.0	
1,1,1,2-Tetrachloroethane	0.0	54.3	56.3	50	109%	113%	3.6	
Chlorobenzene	0.0	50.1	52.6	50	100%	105%	4.9	
Ethylbenzene	0.0	48.6	50.6	50	97%	101%	4.0	
o-Xylene	0.0	50.2	54.1	50	100%	108%	7.5	
n-Propylbenzene	0.0	48.5	51.1	50	97%	102%	5.2	
Dibromofluoromethane (surrogate)	111%	102%	106%					
1,2-Dichloroethane-d4 (surrogate)	110%	102%	104%					
Toluene-d8 (surrogate)	97%	103%	104%					
4-bromofluorobenzene (surrogate)	87%	91%	95%					
Analysis Date/Time:	08-30-18/01:13	08-30-18/01:34	08-30-18/01:54					
Analyst Initials	tjg	tjg	tjg					
Original Sample Number Spiked:	18-15775							



**ENVision Laboratories, Inc.**  
1439 Sadlier Circle West Drive  
Indianapolis, IN 46239  
Tel: 317.351.8632  
Fax: 317.351.8639  
[www.envisionlaboratories.com](http://www.envisionlaboratories.com)

**Flag Number**

**Comments**

N	Analyte is not included in our NELAC accreditation.
1	Reported value is below the reporting limit but above the MDL.



# CHAIN OF CUSTODY RECORD

ENVision Laboratories, Inc. | 1439 Sadlier Circle West Drive | Indianapolis, IN 46239 | Phone: (317) 351-8632 | Fax: (317) 351-8639

ENVision Proj#: 2018-2345 Page 1 of 1



Client: NFO		Invoice Address: Same		REQUESTED PARAMETERS									
Report Address: 825 N Capital Ave Indianapolis, IN		Project Name: City of Franklin		<div>Lab 8260 MS/MSD</div>									
Report To: CMcFall		Lab Contact: DNorris											
Phone: 866 888 7911		Sampled by: MT JTB											
Fax: 317 972 7825		P.O. Number:											
Desired TAT: (Please Circle One) <input checked="" type="radio"/> 24 hr <input type="radio"/> 3-6 days <input type="radio"/> Std (7 bus. days)		QA/QC Required: (Circle if applicable) <input checked="" type="radio"/> Level III <input type="radio"/> Level IV											
Sample ID	Coll. Date	Coll. Time	Comp (C) Grab (G)	Matrix	HCl	HNO <sub>3</sub>	H <sub>2</sub> SO <sub>4</sub>	NaOH	Other	None	ENVision Sample ID		
FC-DP-1 (9-13)	8/29/18	0835	G	water	X						18-15773		
FC-DP-2 (14-18)	8/29/18	1110	G	water	X						18-15774		
FC-DP-3 (9-13)	8/29/18	1230	G	water	X						18-15775		
FC-DP-4 (7.5-11.5)	8/29/18	1350	G	water	X						18-15776		
FC-DP-5 (9-13)	8/29/18	1430	G	water	X						18-15777		
FC-DP-6 (12-16)	8/29/18	1510	G	water	X						18-15778		
FC-DP-7 (7-11)	8/29/18	1615	G	water	X						18-15779		
FC-DUP-1	-	-	G	water	X						18-15780		
FC-TB-1	LAB PROVIDED	water	X								18-15781		

Comments: 24 hr - rush TAT PM will email PO# 9/4/18

Relinquished by:	Date: 8-29-18	Time: 16:16	Received by:	Date: 8-29-18	Time: 16:16
	8-29-18	16:50	JTB	8-29-18	16:50



**EnvisionAir**  
1441 Sadler Circle West Drive  
Indianapolis, IN 46239  
Ph: 317-351-0885  
Fax: 317-351-0882  
[www.envision-air.com](http://www.envision-air.com)

Mr. Casey McFall  
Enviroforensics  
825 N. Capitol Ave.  
Indianapolis, IN 46204

September 4, 2018

EnvisionAir Project Number: 2018-551  
Client Project Name: Franklin

Dear Mr. McFall,

Please find the attached analytical report for the samples received August 30, 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,

A handwritten signature in black ink that reads "Stanley A. Hunnicutt".

Stan Hunnicutt

Project Manager  
EnvisionAir, LLC



**EnvisionAir**  
1441 Sadlier Circle West Drive  
Indianapolis, IN 46239  
Ph: 317-351-0885  
Fax: 317-351-0882  
www.envision-air.com

**Client Name:** ENVIROFORENSICS  
**Project ID:** FRANKLIN  
**Client Project Manager:** CASEY MCFALL  
**EnvisionAir Project Number:** 2018-551

### Sample Summary

#### *Canister Pressure / Vacuum*

<u>Laboratory Sample Number:</u>	<u>Sample Description:</u>	<u>Matrix:</u>	<u>START</u>	<u>START</u>	<u>End Date</u>	<u>End Time</u>	<u>Date</u>	<u>Time</u>	<u>Initial Field</u>	<u>Final Field</u>	<u>Lab</u>
			<u>Collected:</u>	<u>Collected:</u>							<u>Received</u>
18-2222	FC-SGU-1	A	8/30/18	13:57	8/30/18	14:02	8/30/18	16:30	-30	-4	-4
18-2223	FC-SGU-2	A	8/30/18	13:23	8/30/18	13:27	8/30/18	16:30	-30	-4	-4
18-2224	FC-SGU-3	A	8/30/18	14:30	8/30/18	14:34	8/30/18	16:30	-29.5	-4	-4
18-2225	FC-SGU-4	A	8/30/18	15:33	8/30/18	15:37	8/30/18	16:30	-29.5	-4	-4





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**Client Name:** ENVIROFORENSICS

**Project ID:** FRANKLIN

**Client Project Manager:** CASEY MCFALL

**EnvisionAir Project Number:** 2018-551

**Analytical Method:** TO-15  
**Analytical Batch:** 083118AIR

**Client Sample ID:** FC-SGU-1

**EnvisionAir Sample Number:** 18-2222  
**Sample Matrix:** AIR

**Sample Collection START Date/Time:** 8/30/18 13:57  
**Sample Collection END Date/Time:** 8/30/18 14:02  
**Sample Received Date/Time:** 8/30/18 16:30

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



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<u>Compounds</u>	<u>Sample Results ug/m<sup>3</sup></u>	<u>Reporting Limit ug/m<sup>3</sup></u>	<u>Flag</u>
Chloroform	< 8.30	8.30	
Chloromethane	< 206	206	
cis-1,2-Dichloroethene	< 198	198	
cis-1,3-Dichloropropene	< 45.4	45.4	
Cyclohexane	< 55100	55100	
Dibromochloromethane	< 8.52	8.52	
Dichlorodifluoromethane	< 495	495	
Ethyl Acetate	< 541	541	
Ethylbenzene	< 86.8	86.8	
Hexachloro-1,3-butadiene	< 10.7	10.7	
Isooctane	< 4670	4670	
m,p-Xylene	< 434	434	
Methylene Chloride	< 417	417	
Methyl-tert-butyl ether	< 361	361	
N-Heptane	< 4100	4100	
N-Hexane	< 1760	1760	
o-Xylene	< 434	434	
Propylene	< 1720	1720	
Styrene	< 4260	4260	
Tetrachloroethene	<b>2,920</b>	128	2
Tetrahydrofuran	< 2950	2950	
Toluene	< 37700	37700	
trans-1,2-Dichloroethene	< 396	396	
trans-1,3-Dichloropropene	< 45.4	45.4	
Trichloroethene	<b>3,120</b>	43.0	2
Trichlorofluoromethane	< 5620	5620	
Vinyl Acetate	< 1760	1760	
Vinyl Bromide	< 4.37	4.37	
Vinyl Chloride	< 12.8	12.8	
4-bromofluorobenzene (surrogate)	92%		
Analysis Date/Time:	08-31-18/00:59		
Analyst Initials	tjg		



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**Client Name:** ENVIROFORENSICS

**Project ID:** FRANKLIN

**Client Project Manager:** CASEY MCFALL

**EnvisionAir Project Number:** 2018-551

**Analytical Method:** TO-15  
**Analytical Batch:** 083118AIR

**Client Sample ID:** FC-SGU-2

**EnvisionAir Sample Number:** 18-2223  
**Sample Matrix:** AIR

**Sample Collection START Date/Time:** 8/30/18 13:23  
**Sample Collection END Date/Time:** 8/30/18 13:27  
**Sample Received Date/Time:** 8/30/18 16:30

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



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<u>Compounds</u>	<u>Sample Results ug/m<sup>3</sup></u>	<u>Reporting Limit ug/m<sup>3</sup></u>	<u>Flag</u>
Chloroform	< 8.30	8.30	
Chloromethane	< 206	206	
cis-1,2-Dichloroethene	< 198	198	
cis-1,3-Dichloropropene	< 45.4	45.4	
Cyclohexane	< 55100	55100	
Dibromochloromethane	< 8.52	8.52	
Dichlorodifluoromethane	< 495	495	
Ethyl Acetate	< 541	541	
Ethylbenzene	< 86.8	86.8	
Hexachloro-1,3-butadiene	< 10.7	10.7	
Isooctane	< 4670	4670	
m,p-Xylene	< 434	434	
Methylene Chloride	< 417	417	
Methyl-tert-butyl ether	< 361	361	
N-Heptane	< 4100	4100	
N-Hexane	< 1760	1760	
o-Xylene	< 434	434	
Propylene	< 1720	1720	
Styrene	< 4260	4260	
Tetrachloroethene	<b>197</b>	31.9	
Tetrahydrofuran	< 2950	2950	
Toluene	< 37700	37700	
trans-1,2-Dichloroethene	< 396	396	
trans-1,3-Dichloropropene	< 45.4	45.4	
Trichloroethene	< 10.7	10.7	
Trichlorofluoromethane	< 5620	5620	
Vinyl Acetate	< 1760	1760	
Vinyl Bromide	< 4.37	4.37	
Vinyl Chloride	< 12.8	12.8	
4-bromofluorobenzene (surrogate)	93%		
Analysis Date/Time:	08-31-18/01:38		
Analyst Initials	tjg		



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Indianapolis, IN 46239  
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**Client Name:** ENVIROFORENSICS

**Project ID:** FRANKLIN

**Client Project Manager:** CASEY MCFALL

**EnvisionAir Project Number:** 2018-551

**Analytical Method:** TO-15  
**Analytical Batch:** 083118AIR

**Client Sample ID:** FC-SGU-3

**EnvisionAir Sample Number:** 18-2224  
**Sample Matrix:** AIR

**Sample Collection START Date/Time:** 8/30/18 14:30  
**Sample Collection END Date/Time:** 8/30/18 14:34  
**Sample Received Date/Time:** 8/30/18 16:30

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



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<b><u>Compounds</u></b>	<b><u>Sample Results ug/m<sup>3</sup></u></b>	<b><u>Reporting Limit ug/m<sup>3</sup></u></b>	<b><u>Flag</u></b>
Chloroform	< 8.30	8.30	
Chloromethane	< 206	206	
cis-1,2-Dichloroethene	< 198	198	
cis-1,3-Dichloropropene	< 45.4	45.4	
Cyclohexane	< 55100	55100	
Dibromochloromethane	< 8.52	8.52	
Dichlorodifluoromethane	< 495	495	
Ethyl Acetate	< 541	541	
Ethylbenzene	< 86.8	86.8	
Hexachloro-1,3-butadiene	< 10.7	10.7	
Isooctane	< 4670	4670	
m,p-Xylene	< 434	434	
Methylene Chloride	< 417	417	
Methyl-tert-butyl ether	< 361	361	
N-Heptane	< 4100	4100	
N-Hexane	< 1760	1760	
o-Xylene	< 434	434	
Propylene	< 1720	1720	
Styrene	< 4260	4260	
Tetrachloroethene	< 31.9	31.9	
Tetrahydrofuran	< 2950	2950	
Toluene	< 37700	37700	
trans-1,2-Dichloroethene	< 396	396	
trans-1,3-Dichloropropene	< 45.4	45.4	
Trichloroethene	< 10.7	10.7	
Trichlorofluoromethane	< 5620	5620	
Vinyl Acetate	< 1760	1760	
Vinyl Bromide	< 4.37	4.37	
Vinyl Chloride	< 12.8	12.8	
4-bromofluorobenzene (surrogate)	87%		
Analysis Date/Time:	08-31-18/02:16		
Analyst Initials	tjg		



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**Client Name:** ENVIROFORENSICS

**Project ID:** FRANKLIN

**Client Project Manager:** CASEY MCFALL

**EnvisionAir Project Number:** 2018-551

**Analytical Method:** TO-15  
**Analytical Batch:** 083118AIR

**Client Sample ID:** FC-SGU-4

**EnvisionAir Sample Number:** 18-2225  
**Sample Matrix:** AIR

**Sample Collection START Date/Time:** 8/30/18 15:33  
**Sample Collection END Date/Time:** 8/30/18 15:37  
**Sample Received Date/Time:** 8/30/18 16:30

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



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<u>Compounds</u>	<u>Sample Results ug/m<sup>3</sup></u>	<u>Reporting Limit ug/m<sup>3</sup></u>	<u>Flag</u>
Chloroform	<b>14.6</b>	8.30	
Chloromethane	< 206	206	
cis-1,2-Dichloroethene	< 198	198	
cis-1,3-Dichloropropene	< 45.4	45.4	
Cyclohexane	< 55100	55100	
Dibromochloromethane	< 8.52	8.52	
Dichlorodifluoromethane	< 495	495	
Ethyl Acetate	< 541	541	
Ethylbenzene	< 86.8	86.8	
Hexachloro-1,3-butadiene	< 10.7	10.7	
Isooctane	< 4670	4670	
m,p-Xylene	<b>462</b>	434	
Methylene Chloride	< 417	417	
Methyl-tert-butyl ether	< 361	361	
N-Heptane	< 4100	4100	
N-Hexane	< 1760	1760	
o-Xylene	< 434	434	
Propylene	< 1720	1720	
Styrene	< 4260	4260	
Tetrachloroethene	<b>22,300</b>	638	3
Tetrahydrofuran	< 2950	2950	
Toluene	< 37700	37700	
trans-1,2-Dichloroethene	< 396	396	
trans-1,3-Dichloropropene	< 45.4	45.4	
Trichloroethene	<b>5,310</b>	215	3
Trichlorofluoromethane	< 5620	5620	
Vinyl Acetate	< 1760	1760	
Vinyl Bromide	< 4.37	4.37	
Vinyl Chloride	< 12.8	12.8	
4-bromofluorobenzene (surrogate)	96%		
Analysis Date/Time:	08-31-18/02:55		
Analyst Initials	tjg		



### TO-15 Quality Control Data

EnvisionAir Batch Number: 083118AIR

<u>Method Blank (MB):</u>	<u>MB Results (ppbv)</u>	<u>Reporting Limit (ppbv)</u>	<u>Flags</u>
4-Ethyltoluene	< 100	100	
4-Methyl-2-pentanone (MIBK)	< 500	500	
1,1,1-Trichloroethane	< 100	100	
1,1,2,2-Tetrachloroethane	< 0.049	0.049	1
1,1,2-Trichloroethane	< 0.038	0.038	1
1,1-Dichloroethane	< 1	1	
1,1-Dichloroethene	< 50	50	
1,2,4-Trichlorobenzene	< 0.1	0.1	
1,2,4-Trimethylbenzene	< 1	1	
1,2-dibromoethane (EDB)	< 0.0041	0.0041	1
1,2-Dichlorobenzene	< 10	10	
1,2-Dichloroethane	< 0.1	0.1	
1,2-Dichloropropane	< 0.1	0.1	
1,3,5-Trimethylbenzene	< 1	1	
1,3-Butadiene	< 0.1	0.1	
1,3-Dichlorobenzene	< 10	10	
1,4-Dichlorobenzene	< 0.1	0.1	
1,4-Dioxane	< 0.5	0.5	
2-Butanone (MEK)	< 1000	1000	
2-Hexanone	< 5	5	
Acetone	< 1000	1000	
Benzene	< 0.5	0.5	
Benzyl Chloride	< 0.08	0.08	1
Bromodichloromethane	< 0.08	0.08	1
Bromoform	< 1	1	
Bromomethane	< 1	1	
Carbon Disulfide	< 100	100	
Carbon Tetrachloride	< 0.1	0.1	
Chlorobenzene	< 5	5	
Chloroethane	< 5	5	
Chloroform	< 0.17	0.17	
Chloromethane	< 10	10	
cis-1,2-Dichloroethene	< 5	5	
cis-1,3-Dichloropropene	< 1	1	
Cyclohexane	< 1600	1600	
Dibromochloromethane	< 0.1	0.1	
Dichlorodifluoromethane	< 10	10	
Ethyl Acetate	< 15	15	
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	

Analytical Report

<u>Method Blank (MB):</u>	<u>MB Results (ppbv)</u>	<u>Reporting Limit (ppbv)</u>	<u>Flags</u>
Toluene	< 1000	1000	
trans-1,2-Dichloroethene	< 10	10	
trans-1,3-Dichloropropene	< 1	1	
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)	85%		
Analysis Date/Time:	08-30-18/11:11		
Analyst Initials	tjg		

<u>LCS/LCSD</u>	<u>LCS Results (ppbv)</u>	<u>LCSD Results (ppbv)</u>	<u>LCS/D</u> <u>Conc(ppbv)</u>	<u>LCS</u> <u>Rec.</u>	<u>LCSD</u> <u>Rec.</u>	<u>RPD</u>	<u>Flag</u>
Propylene	10.4	10.4	10	104%	104%	0.0%	
Dichlorodifluoromethane	8.87	8.62	10	89%	86%	2.9%	
Chloromethane	9.47	9.78	10	95%	98%	3.2%	
Vinyl Chloride	11	11	10	110%	110%	0.0%	
1,3-Butadiene	11.9	11.8	10	119%	118%	0.8%	
Bromomethane	10.3	10.3	10	103%	103%	0.0%	
Chloroethane	11.6	11.5	10	116%	115%	0.9%	
Vinyl Bromide	11.3	11.3	10	113%	113%	0.0%	
Trichlorofluoromethane	9.05	9.11	10	91%	91%	0.7%	
Acetone	10.3	10.2	10	103%	102%	1.0%	
1,1-Dichloroethene	10.4	10.5	10	104%	105%	1.0%	
Methylene Chloride	9.35	9.51	10	94%	95%	1.7%	
Carbon Disulfide	10.1	10.2	10	101%	102%	1.0%	
trans-1,2-Dichloroethene	10.1	10.2	10	101%	102%	1.0%	
Methyl-tert-butyl ether	10.9	10.9	10	109%	109%	0.0%	
1,1-Dichloroethane	10.2	10.2	10	102%	102%	0.0%	
Vinyl Acetate	11.3	11	10	113%	110%	2.7%	
N-Hexane	10.1	10.1	10	101%	101%	0.0%	
2-Butanone (MEK)	11.3	10.9	10	113%	109%	3.6%	
cis-1,2-Dichloroethene	10.8	10.5	10	108%	105%	2.8%	
Ethyl Acetate	10.8	10.8	10	108%	108%	0.0%	
Chloroform	10.4	10.1	10	104%	101%	2.9%	
Tetrahydrofuran	11	10.8	10	110%	108%	1.8%	
1,2-Dichloroethane	10	10	10	100%	100%	0.0%	
1,1,1-Trichloroethane	9.84	9.95	10	98%	100%	1.1%	
Carbon Tetrachloride	9.58	9.91	10	96%	99%	3.4%	
Benzene	9.52	9.78	10	95%	98%	2.7%	
Cyclohexane	10.3	10.5	10	103%	105%	1.9%	
1,2-Dichloropropane	9.67	9.72	10	97%	97%	0.5%	
Trichloroethene	9.4	9.63	10	94%	96%	2.4%	
Bromodichloromethane	9.7	9.87	10	97%	99%	1.7%	
1,4-Dioxane	10.3	10.1	10	103%	101%	2.0%	
Isooctane	9.63	9.82	10	96%	98%	2.0%	
N-Heptane	10.4	10.5	10	104%	105%	1.0%	
cis-1,3-Dichloropropene	10.8	10.8	10	108%	108%	0.0%	
4-Methyl-2-pentanone (MIBK)	10.6	10.7	10	106%	107%	0.9%	
trans-1,3-Dichloropropene	11.2	11.4	10	112%	114%	1.8%	
1,1,2-Trichloroethane	9.47	9.72	10	95%	97%	2.6%	
Toluene	10.1	10.2	10	101%	102%	1.0%	
2-Hexanone	11.9	12.2	10	119%	122%	2.5%	
Dibromochloromethane	9.73	9.82	10	97%	98%	0.9%	
1,2-dibromoethane (EDB)	9.87	10.1	10	99%	101%	2.3%	
Tetrachloroethene	9.35	9.44	10	94%	94%	1.0%	
Chlorobenzene	9.59	9.66	10	96%	97%	0.7%	
Ethylbenzene	9.55	9.66	10	96%	97%	1.1%	
m,p-Xylene	19.7	19.7	20	99%	99%	0.0%	
Bromoform	10.1	10.3	10	101%	103%	2.0%	



Analytical Report

**EnvisionAir**  
1441 Sadlier Circle West Drive  
Indianapolis, IN 46239  
Ph: 317-351-0885  
Fax: 317-351-0882  
www.envision-air.com

<u>LCS/LCSD</u>	<u>LCS Results (ppbv)</u>	<u>LCSD Results (ppbv)</u>	<u>LCS/D</u> <u>Conc(ppbv)</u>	<u>LCS</u> <u>Rec.</u>	<u>LCSD</u> <u>Rec.</u>	<u>RPD</u>	<u>Flag</u>
Styrene	11.1	11.1	10	111%	111%	0.0%	
1,1,2,2-Tetrachloroethane	9.16	9.2	10	92%	92%	0.4%	
o-Xylene	9.81	9.95	10	98%	100%	1.4%	
4-Ethyltoluene	10.6	10.6	10	106%	106%	0.0%	
1,3,5-Trimethylbenzene	9.41	9.68	10	94%	97%	2.8%	
1,2,4-Trimethylbenzene	9.89	10.1	10	99%	101%	2.1%	
1,3-Dichlorobenzene	11.6	11.9	10	116%	119%	2.6%	
Benzyl Chloride	10.6	10.9	10	106%	109%	2.8%	
1,4-Dichlorobenzene	11.8	11.6	10	118%	116%	1.7%	
1,2-Dichlorobenzene	11.5	11.7	10	115%	117%	1.7%	
1,2,4-Trichlorobenzene	10.7	10	10	107%	100%	6.8%	
Hexachloro-1,3-butadiene	10.1	10.2	10	101%	102%	1.0%	
4-bromofluorobenzene (surrogate)	100%	100%					
Analysis Date/Time:	08-30-18/09:57	08-30-18/10:36					
Analyst Initials	tjg	tjg					



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[www.envision-air.com](http://www.envision-air.com)

<u>Flag Number</u>	<u>Comments</u>
1	Reporting limit is supported by MDL. TJG
2	Reported value is from a 40x dilution. TJG 09-04-18
3	Reported value is from a 200x dilution. TJG 09-04-18

## CHAIN OF CUSTODY RECORD

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

Client: NFO	P.O. Number: _____
Report Address: 825 N Capital Ave Indianapolis, IN	Project Name or Number: Franklin
Report To: C McFall	Sampled by: J Bostick/MT-J
Phone: 866-888-7911	QA/QC Required: (circle if applicable) Level III Level IV
Invoice Address: Same	Reporting Units needed: (circle) ug/m <sup>3</sup> mg/m <sup>3</sup> PPMV 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



**Sampling Type:**

Soil-Gas:

**Sub-Slab:**

**Indoor-Air:**

[www.envision-air.com](http://www.envision-air.com)

**Canister Pressure / Vacuum**

[illegible]

Comments:

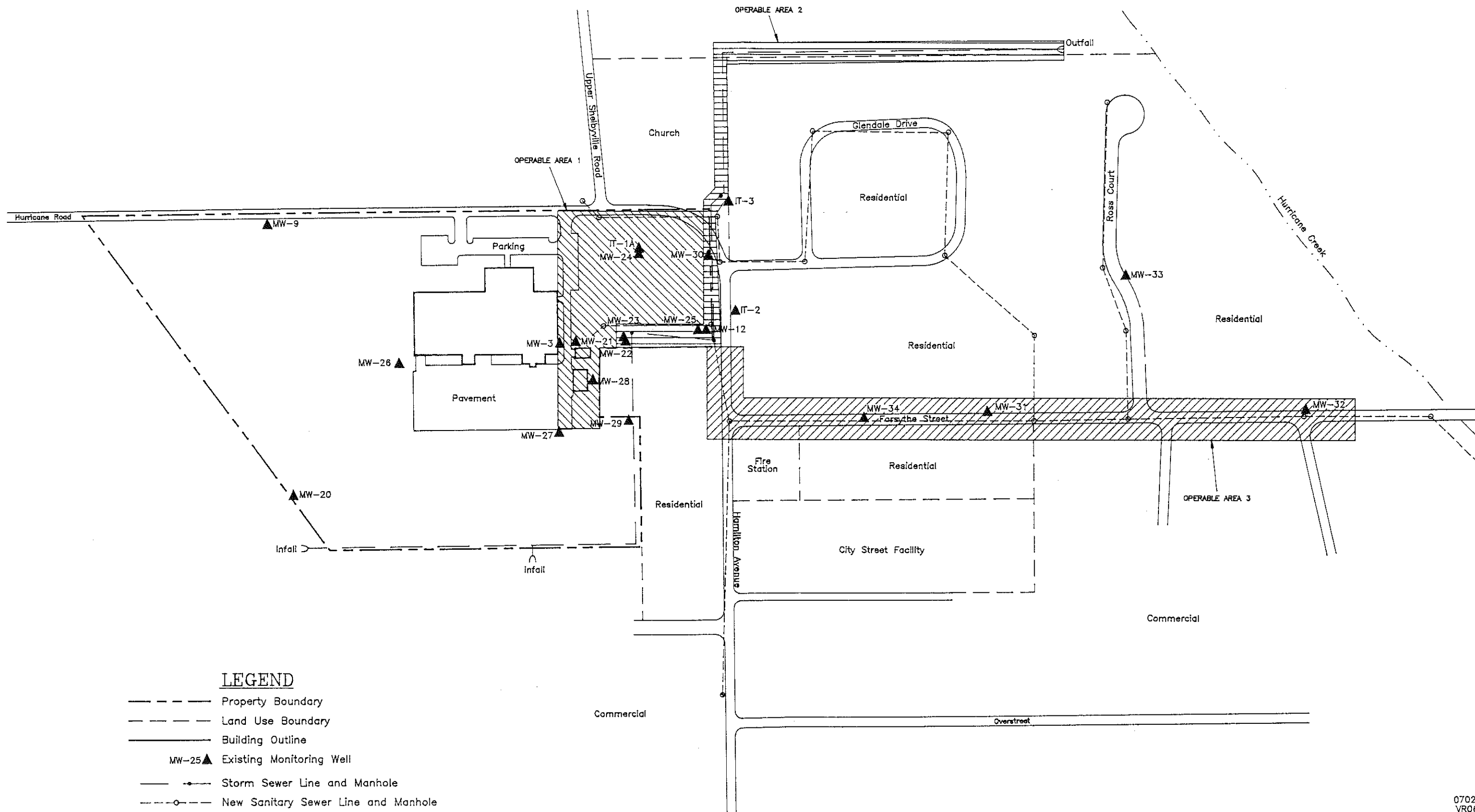
Relinquished by:	Date	Time	Received by:	Date	Time
Matthew Hall	8/30/18	1630	Sean Gunnell	8/30/18	1630

**Appendix C**

Excerpts from

*Report of Additional Corrective Measures Studies for the Former Amphenol  
Facility, Franklin, Indiana*

Prepared by Earth Tech, November 1996



**LEGEND**

- Property Boundary
- - - Land Use Boundary
- Building Outline
- MW-25▲ Existing Monitoring Well
- Storm Sewer Line and Manhole
- - -○- - New Sanitary Sewer Line and Manhole

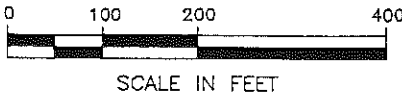
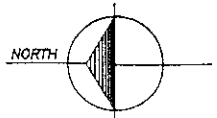


FIGURE 2.1  
**OPERABLE AREAS  
 1, 2 & 3**  
 FORMER AMPHENOL SITE  
 FRANKLIN, INDIANA

JUNE, 1996

07026.08



**Table 3.6**  
**Ground Water Analytical Data.**

Sample Number	MW-31	MW-32	MW-33	MW-34	MW-34D	MW-12
Inorganics (ug/l)						
Aluminum	219J	173J	297J	122J	198J	NA
Antimony	2.1U	2.1U	2.1U	2.1U	2.1U	NA
Arsenic	1.6UJ	1.6UJ	1.6U	1.6U	1.6U	NA
Barium	52.4	44.3	86.7	58.8	58.2	NA
Beryllium	0.30U	0.30U	0.30U	0.30U	0.30U	NA
Cadmium	0.50U	0.50U	0.50U	0.50U	0.50U	NA
Calcium	103000	85100	100000	90200	89000	NA
Chromium	0.80U	0.80U	0.80U	0.80U	0.80U	NA
Cobalt	0.90U	0.90U	0.90U	0.90U	0.90U	NA
Copper	0.60U	0.61JB	1.1JB	0.60U	0.79JB	NA
Cyanide (amenable)	10.0U	10.0U	10.0U	10.0U	10.0U	NA
Cyanide (total)	2.0U	2.0U	2.0U	2.0U	2.0U	NA
Iron	391J	343J	514J	329J	536J	NA
Lead	1.3U	1.3UJ	1.3UJ	1.8B	1.3U	NA
Magnesium	29500	25700	31600	25000	24700	NA
Manganese	30.6	11.8	108	109	117	NA
Mercury	0.10U	0.10U	0.10U	0.10U	0.10U	NA
Nickel	0.89JB	0.80U	1.9JB	1.0JB	1.4JB	NA
Potassium	2010B	730B	1230B	1790B	1740B	NA
Selenium	2.3B	3.2B	2.0U	3.8B	3.2B	NA
Silver	1.2U	1.2U	1.2U	1.2U	1.2U	NA
Sodium	23500	11900	8910	11500	10900	NA
Thallium	0.90UJ	0.90UJ	0.90U	0.90UJ	0.90UJ	NA
Vanadium	0.65U	0.52B	0.78B	0.50B	0.67B	NA
Zinc	5.3U	5.3U	5.5B	5.3U	5.3U	NA
Volatile Organics (ug/l)						
Acetone	10U	10U	10U	10U	10U	10U
2-Butanone	10U	10U	10U	10U	10U	10U
Carbon Tetrachloride	5U	5U	5U	5U	5U	5U
1,1-Dichloroethane	3J	5U	5U	2J	2J	26JD
1,1-Dichloroethylene	5U	5U	5U	5UJ	5UJ	5U
1,2-Dichloroethene (total)	5U	5U	5U	5U	5U	2J
1,2-Dichloropropane	5U	5U	5U	5U	5U	5U
Ethylbenzene	5U	5U	5U	5U	5U	5U
Methylene Chloride	5U	5U	5U	5U	5U	5U
Tetrachloroethene	15	1J	5U	11	10	1500D
Toluene	5U	5U	5U	5U	5U	5U
1,1,1-Trichloroethane	70	2J	5U	75	73	1000D
Trichloroethene	130DJ	2J	5U	120DJ	160DJ	1200D
Xylenes	5U	5U	5U	5U	5U	5U



# EARTH TECH

## Well Completion Diagram

Well No. MW-31  
 Project Curtis - Franklin  
 Time & Date: Start 4/8/96 1135  
 Completed 4/8/96 1430

Installed By A. Schrader  
 Inspected By M. Lytle

Ground Surface \_\_\_\_\_ FT. (MSL)  
 Reference Point  
 (Top of Casing) 727.72 FT. (MSL)

Note: Elevation is 0.76 feet lower than true elevation

Guard Pipe

Drilling Metho 6 1/4" HSA  
Mobile B-57

Backfill  
Bentonite

Screen:  
 Type 4" Threaded PVC  
 Slot Size 0.010  
 Top Blank 0.03  
 Bottom Blank 0.20  
 Total Screen 4.80  
 Total Length 5.03

Stand Pipe:  
 Type 4" Threaded PVC  
 Total Length 10.01

Bentonite Seal 6.00 FT.  
6.50 FT.  
 Granular Pack  
#4 Quartz  
Sand 7.84 FT.  
 Well Screen  
12.64 FT. =  
13.75 FT.

$$12.64 \text{ FT.} = \frac{15.04}{\text{Tot. Pipe}} - \frac{2.70}{\text{Cut Off}} - \frac{0.20}{\text{Bot. Blk.}} - \frac{-0.50}{\text{Stick}}$$

Well-2.xls

5010 Stone Mill Road Bloomington, IN 47408 812 /336-0972 Fax 812/336-3991

# EARTH TECH

## Well Completion Diagram

Well No. MW-32  
 Project Curtis - Franklin  
 Time & Date: Start 4/4/96 1400  
 Completed 4/4/96 1450

Installed By A. Schrader  
 Inspected By M. Lytle

Ground Surface \_\_\_\_\_ FT. (MSL)

Reference Point  
(Top of Casing) 721.44 FT. (MSL)

Note: Elevation is 0.76' lower than true elevation

Guard Pipe \_\_\_\_\_

Drilling Method 4 1/4" HSA  
Mobile B-57

Screen:  
 Type 2" Threaded PVC  
 Slot Size 0.01  
 Top Blank 0.10  
 Bottom Blank 0.15  
 Total Screen 4.70  
 Total Length 4.95

Backfill  
Bentonite chips

Stand Pipe:  
 Type 2" Threaded PVC  
 Total Length 10.00

\_\_\_\_\_ 2.00 FT.

Bentonite Seal \_\_\_\_\_ 3.20 FT.

Granular Pack \_\_\_\_\_ 4.95 FT.

#4 Quartz  
Sand

Well Screen \_\_\_\_\_

$$\begin{array}{r} 9.65 \text{ FT.} = \\ \hline \text{Tot. Pipe} \end{array} = \begin{array}{r} 14.95 \\ \hline \end{array} - \begin{array}{r} 5.75 \\ \hline \end{array} - \begin{array}{r} 0.15 \\ \hline \end{array} - \begin{array}{r} -0.60 \\ \hline \end{array}$$

Bottom of Borehole 10.50 FT.

Well-2.xls

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# EARTH TECH

## Well Completion Diagram

Well No. MW-34  
 Project Curtis - Franklin  
 Time & Date: Start 4/5/96 1245  
 Completed 4/5/96 1335

Installed By A. Schrader  
 Inspected By M. Lytle

Ground Surface \_\_\_\_\_ FT. (MSL)

Reference Point  
(Top of Casing) 728.49 FT. (MSL)

Note: Elevation is 0.76' lower than true elevation

Guard Pipe \_\_\_\_\_

Drilling Method 4 1/4" HSA  
Mobile B-57

Backfill  
Bentonite \_\_\_\_\_

Screen:  
 Type 2" Threaded PVC  
 Slot Size 0.010  
 Top Blank 0.10  
 Bottom Blank 0.15  
 Total Screen 4.77  
 Total Length 5.02

Stand Pipe:  
 Type 2" Threaded PVC  
 Total Length 10.00

\_\_\_\_\_ 5.00 FT.

Bentonite Seal \_\_\_\_\_ 8.80 FT.

Granular Pack  
#4 Quartz  
Sand \_\_\_\_\_ 10.95 FT.

Well Screen \_\_\_\_\_  
 15.72 FT. =  $\frac{15.02}{\text{Tot. Pipe}} - \frac{0.0}{\text{Cut Off}} - \frac{0.15}{\text{Bot. Blk.}} - \frac{-0.85}{\text{Stick}}$

Bottom of Borehole \_\_\_\_\_ 16.0 FT.

Well-2.xls

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# EARTH TECH

## Well Completion Diagram

Well No. MW-33  
 Project Curtis - Franklin  
 Time & Date: Start 4/4/96 1615  
 Completed 4/4/96 1650

Installed By A. Schrader  
 Inspected By M. Lytle

Ground Surface \_\_\_\_\_ FT. (MSL)

Reference Point  
(Top of Casing) 723.27 FT. (MSL)

Note: Elevation is 0.76' lower than true elevation

Guard Pipe

Drilling Method 4 1/4" HSA  
Mobile B-57

Screen:  
 Type 2" Threaded PVC  
 Slot Size 0.010  
 Top Blank 0.12  
 Bottom Blank 0.15  
 Total Screen 4.83  
 Total Length 5.10

Backfill  
Bentonite chips

Stand Pipe:  
 Type 2" Threaded PVC  
 Total Length 10.00

Bentonite Seal 3.30 FT.

4.32 FT.

Granular Pack 4.92 FT.  
#4 Quartz  
Sand

Well Screen 9.75 FT. =  $\frac{15.10}{\text{Tot. Pipe}} - \frac{5.50}{\text{Cut Off}} - \frac{0.15}{\text{Bot. Blk.}} - \frac{-0.30}{\text{Stick}}$

Bottom of Borehole 10.80 FT.

Well-2.xls

5010 Stone Mill Road Bloomington, IN 47408 812 /336-0972 Fax 812/336-3991