

July 12, 2018

Brian Cass  
One Hour Martinizing  
6737 Milwaukee Avenue  
Wauwatosa, WI 53213



**Re: Site Investigation Work Scope and Cost Estimate  
One Hour Martinizing  
6737 Milwaukee Avenue  
Wauwatosa, WI 53213  
BRRTS#: 03-41-581019**

Dear Mr. Cass:

EnviroForensics, LLC. (EnviroForensics) is pleased to provide this Site Investigation (SI) Work Scope and Cost Estimate (Work Scope) for the One Hour Martinizing (OHM) located at 6737 Milwaukee Avenue in Wauwatosa, Wisconsin (Site). The SI is being performed as requested by the Wisconsin Department of Natural Resources (WDNR) in their letter dated February 22, 2018 to determine the extent of petroleum impacts caused by past spills and/or leakage from underground petroleum storage and delivery equipment. The investigations will follow the WDNR regulations and guidance regarding such investigations.

## **BACKGROUND**

The Site is located within an area of mixed residential and commercial land use in Wauwatosa, Wisconsin. The site consists of a single parcel of approximately 0.187 acres with a single-story commercial building of approximately 1,650 square feet. The building is slab on grade and the remainder of the property is a paved asphalt/concrete driveway and parking area. The Site is bound by Milwaukee Avenue to the North, commercial buildings to the south, a residential property to the east, and 68<sup>th</sup> Street to the west. The Site layout is presented on **Figure 1**.

The Site operated as a gasoline service station from at least 1927 up to the late 1970's or early 1980's. The property was purchased as a vacant gasoline service station by OHM in 1982, with the underground gasoline storage tanks having been removed by the previous owners. An underground heating oil tank was removed from the Site in 1997 by OHM. Sub-surface impacts of petroleum compounds were discovered during investigations of subsurface impacts caused by the release of dry cleaning solvents.

## EXISTING SUBSURFACE DATA

Laboratory analyses for much of the investigation into the release of dry cleaning solvents were focused on the short list of chlorinated volatile organic compounds (CVOCs) typically associated with the release and subsurface degradation of the dry cleaning solvent tetrachloroethene. This short list of analytes excludes reporting petroleum volatile organic compounds (PVOCs). However, some of the samples collected were analyzed for the full list of volatile organic compounds (VOCs) which does include the PVOCs of interest for this investigation.

**Figure 1** shows the distribution of PVOCs detected in soil where samples were analyzed for total VOCs. The “ND” designation is where PVOCs were not detected at concentrations above laboratory detection limits. As can be seen on this figure, impacts of PVOCs in soil are limited to the very northwest corner of the Site in soil borings DP-6 and DP-7.

**Figure 2** shows detections of PVOCs in soil gas samples and sub-slab samples collected from the Site building and adjacent commercial and residential structures where samples were analyzed for total VOCs. As can be seen on this figure, there were more widespread detections of PVOCs in soil vapor; however, the concentrations are well below any established vapor risk standards.

In addition, a grab groundwater sample was collected through a temporary well set at the location of DP-15 and analyzed for total VOCs. The depth to groundwater was 57 feet and a soil sample collected just above the water table at a depth of 54 feet did not contain PVOCs above laboratory detection limits. Benzene was detected at a concentration of 0.3 micrograms per liter ( $\mu\text{g/L}$ ) and toluene at 0.27  $\mu\text{g/L}$ . Both concentrations are below the groundwater preventative action limits of 0.5 and 200  $\mu\text{g/L}$  for these compounds, respectively.

In summary, the lateral extent of PVOCs in soil have been defined to the south and east. The vertical extent of PVOOC impacts in soil appear limited to the upper 25-30 feet, and do not extend to groundwater. Soil vapor samples collected at various locations on the Site, and sub-slab vapor samples collected from the Site building and adjacent structures did not contain concentrations of PVOCs that would be expected to pose a threat of vapor intrusion.

## PHASE 01: SITE INVESTIGATION WORK SCOPE

EnviroForensics has developed this Work Scope to serve as the procedures document for the SI activities. The SI activities detailed in the following sections have been developed to achieve the following objectives:

- Determine if the petroleum impacts in soil extend into the City of Wauwatosa roadways to the north and west of detected impacts in DP-6 and DP-7.

- Determine if sanitary sewer laterals to the north and west, and the water lateral to the west have acted as preferential migration pathways for soil or vapor impacts
- Advance the Site toward case closure

### **Phase 01b: Off-Site Access Coordination**

EnviroForensics will prepare and submit a right-of-way permit to the proper agencies to facilitate installation of soil borings within the right-of-way.

### **Phase 01c: Sub-surface Investigation Activities**

#### *Utility Clearance*

In accordance with safe work practices and as required by state law, EnviroForensics will contact Digger's Hotline subsurface utility protection service at least 72 hours prior to the anticipated onset of subsurface work at the Site. As a result, subsurface utilities and structures owned or managed by member companies and municipalities will be located by an independent contractor service. EnviroForensics will also contract with a private underground utility locating service to provide additional confidence regarding the position of potential underground hazards at the Site. The private locating service will use geophysical and electromagnetic equipment to locate underground utilities across the Site. Utility information will be added to the Site plan and used to better position investigative borings and depths of samples to be collected.

#### *Soil Sampling*

To define the extent of impacts within the vadose zone soil, four (4) soil borings are proposed at locations A through D as shown on **Figure 1**. The soil borings will be advanced using direct-push methods.

Soil will be continuously logged during boring activities. Field screening at each 2-foot interval will be conducted using a photo-ionization detector (PID). Soil lithology will be described in accordance with the Unified Soil Classification System (USCS) and recorded on soil boring logs along with PID readings.

Each boring will be advanced to a depth of approximately 25 feet below ground surface (bgs). Up to three (3) soil samples will be collected from each boring location, the depths of which will be based on several criteria including: relative PID readings, visual coloration, olfactory observations, and/or soil lithology. Soil samples for laboratory analysis will be labeled, logged on a chain-of-custody form and placed into a cooler containing ice pending delivery to a state-certified laboratory. The soil samples will be submitted for analysis of total volatile organic compounds (VOCs) according to EPA Test Method 8260B.

### ***Investigation-Derived Media***

Investigation-derived media (IDM) generated during SI activities, including soil cuttings, and decontamination fluids will be placed in 55-gallon steel drum(s) and stored on Site pending characterization. Composite samples of soil and water will be collected from the drum(s) for characterization purposes, or if amenable to the waste recipient, laboratory results of samples collected will be utilized for waste characterization purposes. EnviroForensics anticipates that all IDM will be characterized as non-hazardous for disposal.

### ***Utility Corridor Soil Gas Sampling***

To assess the potential vapor migration pathway along utility corridors, soil gas samples will be collected at proposed boring locations A and B shown on **Figures 1** and **2**. Soil gas samples will be collected at the depths of the utilities (anticipated at 7-9 feet) and within 2-3 feet of the utilities.

Soil gas samples will be collected using a direct push post-run tubing (PRT) system. The PRT method uses an adapter and tubing to isolate the soil gas sample from the direct-push probe rods. In the first step of the procedure, an expendable point holder and expendable point are attached to the lead probe rod and advanced to the desired sampling depth. Teflon tubing attached to a tubing adapter are then lowered down the tool string and threaded to the expendable point holder. The probe rods will then be retracted (typically 1-foot), providing an open void for soil gas sampling. A sample pump will then be connected to the tubing and three (3) times the calculated volume of air in the tubing will be purged prior to collecting the soil gas sample into a 1-liter vacuum canister. A total of four (4) soil gas samples will be collected and submitted to a laboratory for analysis of CVOCs according to EPA Method TO-15.

### **Phase 01d: Data Evaluation and Reporting**

EnviroForensics will evaluate the data collected during the SI to identify any remaining data gaps. If additional activities are warranted, EnviroForensics will prepare a brief work scope. The data collected during this SI will be documented in a brief letter report along with data summary tables and figures to support data interpretation. A brief off-site results report will be prepared and submitted to the City of Wauwatosa within 10 days of our receiving the analytical results.

If the extent of petroleum impacts has been determined during this investigative event, then EnviroForensics will prepare a completed Site Investigation Report (SIR) with recommendations for any further remedial actions, or we may submit a closure request if remedial actions are not warranted. In either case, these reports may require additional services and a WDNR document review fee will be required.

## **Phase 01e: Project Management**

Project management tasks will include budget management and tracking; management of project execution, personnel and scheduling; and meetings and conference calls with regulators and other stakeholders.

## **SCHEDULE**

EnviroForensics will schedule the fieldwork within the next 2-3 weeks. Soil and soil gas sampling will be performed during the initial mobilization, which will be completed in one day. The IDM removal will be completed during a subsequent mobilization. EnviroForensics anticipates that a progress report can be completed within 4-6 weeks upon receiving the laboratory reports. If an SIR or closure request is warranted, then these documents will take between 60-90 days to prepare and submit.


We appreciate the opportunity to work with you on this project. If you have any questions regarding the results of this investigation, please do not hesitate to call us at (414) 982-3988.

Sincerely,

**EnviroForensics, LLC**



Wayne Fassbender, PG  
*Senior Project Manager*



Kyle Heimstead  
*Project Manager*

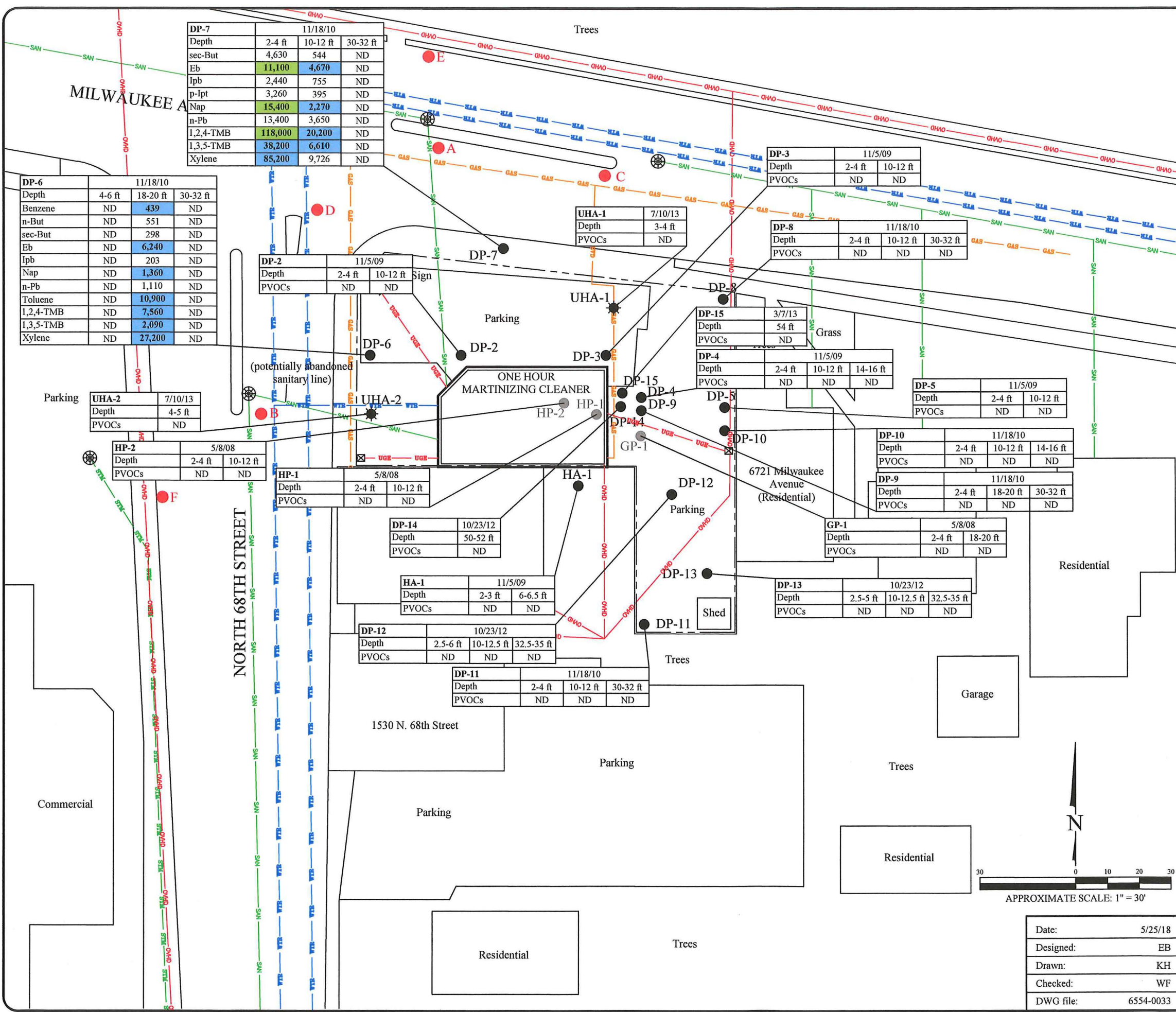
Cc:

Binyoti Amungwafor, WDNR  
Calvin Kelly, Gabbroic Management

Attachments:

Figure 1: Distribution of PVOCs in Soil and Locations of Proposed Borings

Figure 2: Detected PVOCs in Soil Gas and Sub-slab Vapor and Locations of Proposed Soil Gas Sampling



- ### Legend
- Property boundary
  - UGB Underground electric line utility
  - OVHD Overhead electric line utility
  - GAS Gas line utility
  - SAN Sanitary line utility
  - STM Sanitary line utility
  - WTR Water line utility
  - ☒ Old light location
  - A ● Proposed soil boring location
  - UHA-1 ● Utility corridor soil and soil gas sample location
  - HP-1/GP-1 ● Previous consultant boring location
  - DP-2 ● Direct push soil boring location
  - HA-1 ● Hand auger boring location

**Notes:**

- Bolded and green shaded values are above WDNR Non-Industrial Direct Contact Residual Contaminant Levels
- Bolded and blue shaded values are above WDNR Soil to Groundwater Residual Contaminant Levels
- Results reported in micrograms per kilogram (ug/kg)
- n-But = n-Butylbenzene
- sec-But = sec-Butylbenzene
- Eb = Ethylbenzene
- Ipb = Isopropylbenzene
- p-Ipt = p-Isopropyltoluene
- Nap = Naphthalene
- n-Pb = n-Propylbenzene
- 1,2,4-TMB = 1,2,4-Trimethylbenzene
- 1,3,5-TMB = 1,2,3-Trimethylbenzene
- NE = Not Established
- ND = Not Detected above laboratory detection limits
- PVOCs = Petroleum Volatile Organic Compounds

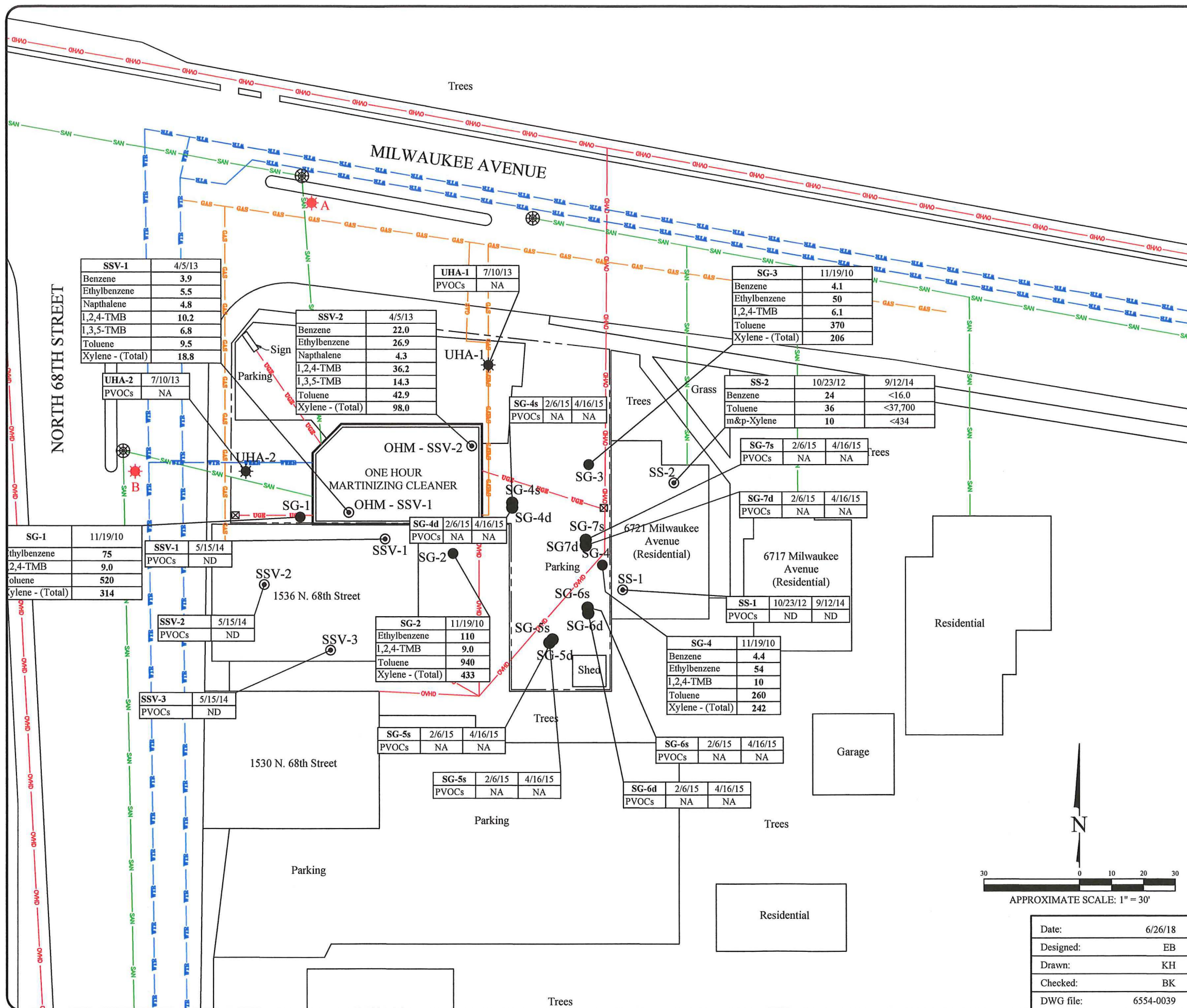
**DISTRIBUTION OF PVOCs IN SOIL AND LOCATIONS OF PROPOSED BORINGS**  
 One Hour Martinizing  
 6737 West Milwaukee Avenue  
 Wauwatosa, WI

Date:	5/25/18
Designed:	EB
Drawn:	KH
Checked:	WF
DWG file:	6554-0033

**ENVIROforensics**

825 N. Capitol Avenue • Indianapolis, IN 46204  
 EnviroForensics.com

Figure	1
Project	6554

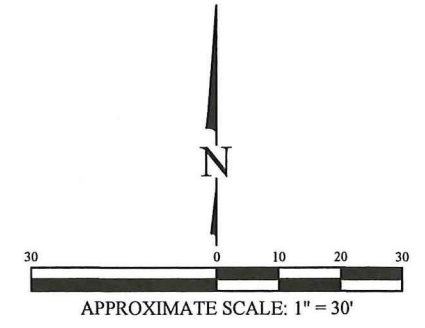


- ### Legend
- Property boundary
  - UGE Underground electric line utility
  - OVHD Overhead electric line utility
  - GAS Gas line utility
  - SAN Sanitary line utility
  - WTR Water line utility
  - ☒ Old light location
  - SG-1/SG-1s Shallow soil gas sample location
  - SG-1d Deep soil gas sample location
  - ☼ UHA-1 Utility soil gas sample location
  - ⊙ SSV/SS-1 Sub-slab sample location
  - A ☼ Proposed utility soil gas sample location

Analytes	Small Commercial Shallow Soil Gas/Sub-Slab Vapor Screening Level	Residential Soil Gas/Sub-Slab Vapor Screening Level
Benzene	530	120
Ethylbenzene	1,600	370
Napthalene	120	28
Toluene	730,000	170,000
1,2,4-TMB	8,700	2,100
1,3,5-TMB	8,700	2,100
Xylenes (Total)	15,000	3,300

Analytes	Small Commercial Deep Soil Gas Screening Level	Residential Deep Soil Gas Screening Level
Benzene	1,600	360
Ethylbenzene	4,900	1,100
Napthalene	120	83
Toluene	730,000	520,000
1,2,4-TMB	26,000	6,300
1,3,5-TMB	26,000	6,300
Xylenes (Total)	44,000	10,000

- Notes:**
1. Bold concentrations exceed laboratory reporting limits
  2. Units in micrograms per cubic meter = ug/m<sup>3</sup>
  3. NA = Not Analyzed
  4. PVOCs = Petroleum Volatile Organic Compounds
  5. 1,2,4-TMB = 1,2,4-Trimethylbenzene
  6. 1,3,5-TMB = 1,2,3-Trimethylbenzene
  7. NE = Not Established
  8. ND = Not detected above laboratory detection limits
  9. PVOCs = Petroleum Volatile Organic Compounds



**DETECTED PVOCs IN SOIL GAS AND SUB-SLAB VAPOR AND LOCATIONS OF PROPOSED SOIL GAS SAMPLING**

One Hour Martinizing  
6737 West Milwaukee Avenue  
Wauwatosa, WI

Date:	6/26/18
Designed:	EB
Drawn:	KH
Checked:	BK
DWG file:	6554-0039



Figure	2
Project	6554