September 4, 2024

Ms. Claire Fredin, Environmental Manager
Indiana Department of Environmental Management
Voluntary Remediation Program
Office of Land Quality
100 North Senate Avenue
Indianapolis, IN 46204

Re: Off-Site Soil Gas Exterior (SGe) Work Plan
Former Marvel Cleaners
602 Goshen Avenue
Fort Wayne, Indiana
EnviroForensics' Project #300076
IDEM VRP # 6141103

On behalf of 602 North Goshen Properties, LLC, EnviroForensics, LLC (EnviroForensics) is pleased to provide this Off-Site Soil Gas Exterior (SGe) Work Plan to assess vapor intrusion (VI) at the off-Site adjacent commercial property located at 608 Goshen Avenue, Fort Wayne, Indiana.

Site Background

The Site is located at 602 Goshen Avenue, Fort Wayne, Indiana, and situated in an area of commercial and residential land use. The Site is bound by Goshen Avenue followed by commercial and residential properties to the west, State Boulevard and a residential area to the South, Hensch Street followed by residential properties to the east, and the parking area followed by a commercial business and a residence to the north.

The Site began operating as a dry-cleaning facility in 1968 and ceased operations in July 2016. The dry-cleaning machine (DCM) and solvents used during operations were removed from the former Site building prior to its demolition in 2020. The Site utilities and surrounding details are depicted in **Figure 1**.

The discovery of chlorinated volatile organic compounds (cVOCs) in soil gas prompted the reporting of an incident to the IDEM in September 2010. The incident was assigned IDEM Incident #2010-09-100. Additional Site investigations discovered cVOC contamination in soil and groundwater consisting of tetrachloroethene (PCE), trichloroethene (TCE), cis-1,2-dichloro-ethene (Cis-1,2-DCE), trans-1,2-dichloroethene (Trans-1,2-DCE), and vinyl chloride (VC). The Site was accepted into the IDEM Voluntary Remediation Program (VRP) and was assigned VRP

#6141103. A RWP was submitted on February 13, 2017, and subsequently approved by the IDEM on August 7, 2017. Following removal of the on-Site building structure, additional investigation was completed in areas that were previously inaccessible. This data was used to refine the remedial approach and an RWP addendum (RWPA) was submitted February 19, 2021. The RWPA presented data refining the source area soil and modifying the RWP to remove the need for soil pre-treatment (soil mixing) and to include the addition of zero-valent iron material within the backfill of the former building basement.

Off-Site Vapor Risk

There is no vapor intrusion data that indicated vapor intrusion was occurring at off-site properties before remediation was completed. Vapor intrusion data is summarized in **Table 1**. With site remediation, contaminant mass reduction, and the severing of potential utility pathways (sewer lateral), this potential is only further reduced. The residual impacts at the site do not pose a threat for future vapor intrusion. A summary of the off-site vapor intrusion investigations is provided below:

- 608 Goshen Ave.
  There was one exceedance of the PCE screening level in a 1st floor indoor air sample in 2015 (pre-remedy). Based on the low concentration of PCE in the basement air, crawlspaces air and subslab vapor samples, this exceedance was attributable to an indoor air source. Indoor air sampling before and after this 2015 sampling event (pre-remedy) showed no indoor air exceedances. This building used to share a sewer lateral with the site building. During the Site remediation, the lateral was severed, and a new lateral was installed that does not go through areas of impact. All attempts by EnviroForensics and IDEM to access this property post-remedy have been ignored by the property owner.

As discussed during the meeting with IDEM and the project team on July 11, 2024, EnviroForensics proposes to conduct Soil Gas Exterior (SGe) sampling in the Right of Way (ROW) adjacent to the 608 Goshen Avenue property to verify that vapor intrusion is not impacting the off-Site property. If applicable, EnviroForensics intends to use this data as an additional line of evidence (LOE) in support of the forthcoming Site Closure Request.

SGe Installation and Sampling Work Plan

Prior to implementing field work, EnviroForensics will coordinate and obtain the necessary ROW permits from the City of Fort Wayne, Indiana. Additionally, public and private utility locates will be performed in accordance with safe work practices and to ensure no underground obstructions (including utilities) are located within the vicinity of the SGe point.

Upon receiving ROW permit approval from the City of Fort Wayne, the following work scope will be completed within the ROW adjacent to the 608 Goshen Avenue property (**Figure 1**).

- Log lithology and screen soil with a photoionization detector (PID)
- Install and develop one (1) soil gas monitoring point approximately 5 feet below ground surface (bgs) as indicated on Figure 1.
- The boring will be advanced via hand auger.
- Collect one (1) soil gas sample in addition to one (1) duplicate sample for quality assurance/quality control (QA/QC) purposes
- Helium shroud will be used to ensure sample integrity
- Submit samples for Volatile Organic Compound (VOC) analysis via United States Environmental Protection Agency (US EPA) Method TO15.
- Evaluate laboratory analytical results compared to the Indiana Department of Environmental Management's (IDEM's) Risk-Based Closure Guide (R2) residential screening levels. The results of the sampling event will be summarized in a Site Closure Request report and submitted to IDEM.

We appreciate your assistance and consideration on this matter. Please feel free to reach us at 317-972-7870 or via email at sdeckard@enviroforensics.com.

Sincerely,

EnviroForensics, LLC

Kimberly Hunnicutt
Project Manager

Stephanie Deckard
Senior Project Manager

TABLES

TABLE 1

INDOOR AIR AND SUB-SLAB VAPOR SAMPLE ANALYTICAL RESULTS

608 Goshen Avenue

Fort Wayne, Indiana

Sample Address	Sample Identification	Sample Location	Applicable Criteria	Date Sampled	Tetrachloroethene	Trichloroethene	Benzene	1,2,4-Trimethylbenzene
INDOOR AIR SAMPLES								
Commercial Indoor Air Screening Level					**180**	**8.8**	**16**	**31**
608 Goshen Avenue	6130-608 Goshen Ave-IA-1	1st Floor	Commercial	7/29/2014	<3.19	<1.07	**1.63**	**6.54**
				2/18/2015	**307**	<1.07	**2.94**	<4.92
				3/9/2016	<3.19	<1.07	<1.60	<4.92
	6130-608 Goshen Ave-CS-1	S. Crawl Space		7/29/2014	**6.10**	<1.07	<1.60	<4.92
				2/18/2015	**14.4**	<1.07	<1.60	<4.92
				3/9/2016	<3.19	<1.07	<1.60	<4.92
	6130-608 Goshen Ave-CS-2	N. Crawl Space		3/9/2016	<3.19	<1.07	<1.60	**7.13**
	6130-608 Goshen Ave-IA-B	Basement		7/29/2014	<3.19	<1.07	**3.90**	**12.8**
				2/18/2015	**8.82**	<1.07	<1.60	<4.92
				3/9/2016	<3.19	<1.07	<1.60	**11.3**
SUB-SLAB VAPOR SAMPLES								
Commercial Sub-Slab Vapor Screening Level					**6,000**	**290**	**530**	**1,000**
608 Goshen Avenue	6130-608 Goshen Ave-SS-1	Basement	Commercial	7/29/2014	**83.4**	<10.7	<16.0	<49.2
				2/18/2015	**3,830**	**15.0**	<16.0	<49.2
				3/2/2016	**95.6**	<10.7	<16.0	<49.2
				3/9/2016	**239**	<10.7	<16.0	<49.2
OUTDOOR AIR SAMPLES								
Upwind	6130-OA-1	Outdoor	Not Applicable	7/28/2014	<3.19	<1.07	<1.60	<4.92
				2/17/2015	<3.19	<1.07	<1.60	<4.92
	6130-OA-3			3/9/2016	<3.19	<1.07	<1.60	<4.92
Downwind	6130-OA-2	Outdoor	Not Applicable	7/28/2014	<3.19	<1.07	<1.60	<4.92
				2/17/2015	<3.19	<1.07	<1.60	<4.92
				3/9/2016	<3.19	<1.07	<1.60	<4.92

Notes:

Indoor Air Screening Levels are from Table A-6 of the 2016 Indiana Department of Environmental Management (IDEM) Remediation Closure Guide (RCG)

Analysis performed by Envision Air Laboratories according to United States (U.S.) Environmental Protection Agency (EPA) Method TO-15

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

IA = Indoor Air

OA = Outdoor Air

SS = Sub-Slab

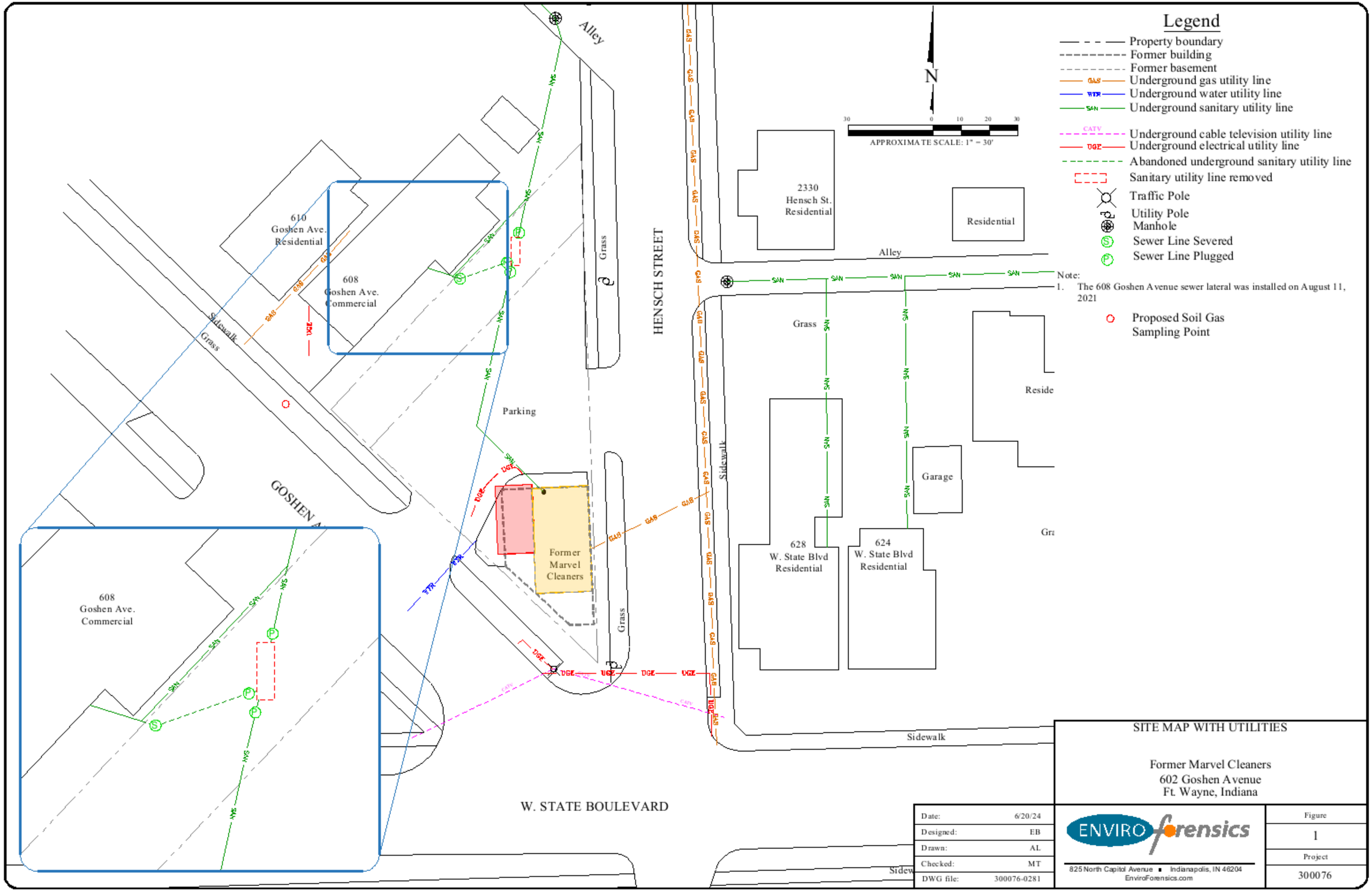
Sub-Slab Vapor Screening Levels are derived by dividing the 2016 Indoor Air Screening Levels in the IDEM RCG by an attenuation factor of 0.03 as established by the U.S. EPA and approved bythe IDEM on October 20, 2015

Bolded values exceed laboratory detection limits

Bolded and orange shaded values exceed the IDEM RCG Commercial Screening Level

Constituents not shown are below laboratory detection limits

FIGURES



SITE MAP WITH UTILITIES

Former Marvel Cleaners
602 Goshen Avenue
Ft. Wayne, Indiana

Date:	6/20/24
Designed:	EB
Drawn:	AL
Checked:	MT
DWG file:	300076-0281

ENVIROforensics
825 North Capitol Avenue ▪ Indianapolis, IN 46204
EnviroForensics.com

Figure 1

Project 300076