February 7, 2025

Ms. Marlen Salazar
New York State Department of Environmental Conservation
Division of Environmental Remediation
47-40 21st Street
Long Island City, NY, 11101

Re: Soil Vapor Investigation Work Plan
1107 Dekalb Avenue
Brooklyn, New York
NYSDEC BCP Site No. C224176

Dear Ms. Salazar:

Tyll Engineering and Consulting PC (TEC) and GZA GeoEnvironmental of New York (GZA) are pleased to provide this Soil Vapor Intrusion Work Plan (SVIWP) for the above-referenced property (Site). The SVIWP was prepared in general accordance with the NYSDOH Final Guidance for Evaluating Soil Vapor Intrusion in the State of New York (SVI Guidance), dated October 2006, as amended May 2017 and February 2024.

1.0 INTRODUCTION

ABC NY (the Client) retained TEC and GZA to prepare a Soil Vapor Intrusion Work Plan (SVIWP) at 1107 Dekalb Avenue, Brooklyn, NY (Site). This SVIWP has been prepared in accordance with the NYSDOH Final Guidance for Evaluating Soil Vapor Intrusion in the State of New York (SVI Guidance), dated October 2006, as amended May 2017 and February 2024. The Site is currently enrolled in the New York State Department of Environmental Conservation (NYSDEC) Brownfield Cleanup Program (BCP), NYSDEC Site No. C224176 and the Site was remediated in accordance with the Brownfield Cleanup Agreement (BCA) No. C224176-05-13. The Site is currently in the site management phase of the project and implementing the approved Site Management Plan (SMP), dated December 2019, prepared by AMC Engineering PLLC (AMC). The proposed scope of work discussed in this SVIWP will be conducted in accordance with the SMP prepared by AMC, and the results of the SVI investigation, proposed herein, will evaluate if the existing Soil Vapor Extraction (SVE) system can be shut down.

1.1 SITE LOCATION AND CURRENT USE

The Site is approximately 0.22-acres (9,530-square feet [s.f.]) in size and is identified on the Brookyln County Tax Map as Block 1600 – Lot 7521. The Site is located on the northeast corner of DeKalb Avenue and Malcolm X Boulevard. A Site Location Map is included as **Figure 1**. The Site is currently improved with an 8-story mixed-use building with a partial below grade cellar that includes storage, mechanical rooms, and retail/commercial space. A Site Plan is included as **Figure 2**.

1.2 SITE REMEDIAL HISTORY

Engineering controls installed at the Site pertinent to this SVIWP are as follows.

Onsite SVE System

According to the SMP, the onsite SVE system was installed in December 2017 to remediate the petroleum contaminated soil in the unsaturated zone from a depth of 15-feet to the groundwater table. The layout of the SVE system is shown in **Figure 3**.

The SVE system effluent, both before and after treatment, is sampled on a quarterly basis. Initial concentrations in the influent air stream reported a total PVOC concentration of 162,139.11 micrograms per cubic meter (µg/m3), a total CVOC concentration of 3,592.66 µg/m3 and a total VOC concentration of 165,731.77 µg/m3. A significant and steady decrease of total VOC concentrations have continued over time. The January, June, and September 2024 influent analytical results reported total PVOC concentrations ranging from 3.56 µg/m3 – 8.00 ug/m3, total CVOC concentrations ranging from 53.19 µg/m3 – 2,539.80 µg/m3, and total VOC concentrations ranging from 126.55 µg/m3- 2,948.76 µg/m3. These results demonstrate a 98.81% reduction in total VOCs and BTEX compounds in the SVE system influent since December 2017. A corresponding reduction in VOCs in soil vapor as well as in soil within the unsaturated zone is expected. The results of the quarterly sampling are summarized in the Site's Periodic Review Reports (PRRs).

Onsite SSDS

Piping associated with the Sub-Slab Depressurization System (SSDS) was installed beneath the cellar slab of the current building, in the event that an SSDS system was required. The SSDS consists of three loops which are outfitted with a collection point and riser, which extends to the roof. During the recent reporting period, it was determined that the three SSDS effluent pipes were outfitted with blowers and supplied with power. According to the latest PRR, dated March 2024, it appears that the SSDS was unintentionally left running by EBC and has been running to date after a repair of the SVE blower in 2021.

After discussion with the NYSDEC, it was decided that the SSDS will be left on, and an SVI evaluation will be conducted to determine if any mitigation measures are necessary to eliminate potential exposures to vapors in the structure. Based on the results of the SVI investigation and pre-carbon/influent SVE system soil vapor data, GZA will evaluate the results to see if the SVE can be shut down, leaving the SSDS as the sole form of vapor mitigation.

2.0 SOIL VAPOR INTRUSION INVESTIGATION

2.1 OBJECTIVES

The objectives of the evaluation are to:

1. Evaluate the soil vapor/indoor air at the Site; and,

2. Obtain the necessary information to determine if further mitigation is warranted or if the SVE system can be turned off.

2.2 INDOOR AIR AND AMBIENT AIR SAMPLING

The SVI Investigation will be completed during the 2024-2025 heating season which is from November 15, 2024 to March 31, 2025. Prior to sample collection, the onsite SVE system will be shut down for 30 days.

The SVE system was shut off on February 5, 2025 and. A Product Inventory Survey will be completed of all chemicals readily observed and identified in the building prior to sampling.

GZA proposes to collect three indoor air samples within the onsite building basement. In addition, one ambient air sample will be collected in an upwind portion of the Site, outside of the onsite building. Indoor air and ambient air samples will be collected concurrently at three to five feet above the ground in order to represent the breathing zone. The SUMMA canister regulators for indoor air and outdoor air samples will be set to restrict the sample collection not to exceed 0.2 liters per minute; flow rate will be consistent across the entire duration of the sampling event; over a 24-hour time period. The SUMMA canisters will be submitted to a NYSDOH-certified laboratory for analysis of VOCs via EPA Method TO-15 with a request for low-level reporting limits under chain-of-custody documentation. The proposed indoor air and ambient air sampling locations are depicted on **Figure 4**. The actual location may vary based on field conditions.

2.3 SAMPLING QA/QC PROTOCOL

During this round of sampling, the following samples will be collected for QA/QC purposes:

- One duplicate sample

The samples will be analyzed for Category B deliverables and reviewed by a third party to generate a Data Usability Report (DUSR).

A sample log sheet will be completed for each sample summarizing the following:

- Sample identification;
- Date and time of the sample collection;
- Sampling height;
- Identity of samplers;
- Sampling method and devices;
- If canisters used, the vacuum before and after samples collected;
- Apparent moisture content (dry, moist, saturated, etc.) of the sampling zone;
- Local condition(s) that occurred during the sampling that may influence interpretation of the results (i.e., weather), and
- Chain of custody protocols and records used to track samples from sampling point to analysis.

Field notes including observations of sample location conditions, weather, other pertinent observations, and diagrams (if appropriate) will be maintained, and appropriate photographs will be taken. A record of each sample, including any pertinent observations about the samples will be kept in a field notebook and/or appropriate logs and copies will be included in the Soil Vapor Intrusion Investigation Report.

2.4 PRESSURE FIELD TESTING

As requested by the NYSDEC and NYSDOH, pressure field testing will be included as part of the investigation to evaluate if the existing SSDS is maintaining a pressure field beneath the concrete slab and vapor barrier. In order to prevent penetrating the existing vapor barrier, GZA will document the pressure readings from the existing manometers (Dwyer Magnehelic Series 200 Pressure Gauge or similar) at each of the three riser locations. The documented readings will be provided in the SVI Investigation Report.

3.0 REPORTING

3.1 INVESTIGATION REPORTING

Following the completion of the SVIWP and receipt of analytical data, an SVI Investigation Report will be prepared. The report will include the following:

- A summary of the Site history and previous investigations
- A description of Site conditions
- Sampling methodology and field observations
- An evaluation of the results and findings
- Conclusions and recommendations for any further assessment (if warranted).

The report will include sampling logs, tabulated analytical results, figures, and laboratory data packages. The tabulated analytical results will be organized in table format and include sample location, media sampled, sample height, field/laboratory identification numbers, analytical results and the applicable Standards, Criteria, and Guidance (SCGs) pertaining to the Site and contaminants of concern for comparison. The report will include scaled figures showing the locations of indoor and outdoor ambient air sampling points, riser and manometer locations, and sample concentrations above SCGs.

4.0 INVESTIGATION HASP

An OSHA compliant Health and Safety Plan that meets the pertinent OSHA HAZWOPER requirements will be implemented during the site work to protect worker safety. The Site Safety Coordinator will ensure full compliance of the HASP in accordance with applicable health and safety laws, and regulations. All field personnel involved in investigation activities will have completed training required under OSHA HAZWOPER 29 CFR 1910.120, including 40-hour hazardous waste operator training and annual 8-hour refresher training. Emergency telephone numbers will be posted at the site location before any work begins. A safety meeting will be conducted before each shift begins. Topics to be discussed include task hazards and protective measures (physical, chemical, environmental); emergency procedures; PPE levels and other relevant safety topics including a highlighted route map to the nearest hospital/emergency room. Meetings will be documented in a logbook or specific form. Information fact sheets and/or summary tables for each contaminant group are included in the HASP. A copy of this HASP will be on-site during each sampling event. The HASP is included as **Appendix A**.

5.0 SCHEDULE

The following Schedule is provided for this work:

Event	Schedule
Soil Vapor Intrusion Investigation	March 2025
Soil Vapor Intrusion Investigation Report	Two weeks from receipt of analytical data

Should you have any questions about our proposal, please contact Karen Tyll at (631) 629-5373 or karen@tyllengineering.com or Mark Hutson at (646) 929-8955 or Mark.Hutson@gza.com.

Very truly yours,

TYLL ENGINEERING AND CONSULTING, PC

Karen G. Tyll, P.E.
President

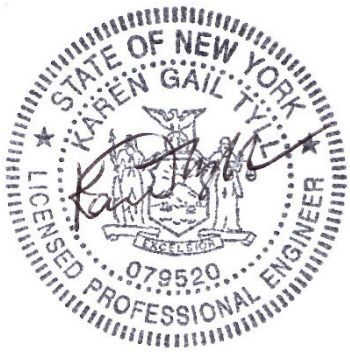
GZA GEOENVIRONMENTAL OF NEW YORK

Mark Hutson, P.G.
Senior Project Manager

ATTACHMENTS

Figure 1 – Site Location Map
Figure 2 – Site Plan
Figure 3 – SVE Layout
Figure 4 – Sample Location Map

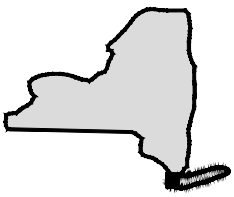
I _Karen Tyll, PE___certify that I am currently a NYS registered professional engineer as defined in 6 NYCRR Part 375] and that this Report, "Soil Vapor Investigation Work Plan," was prepared in accordance with all applicable statutes and regulations and in substantial conformance with the DER Technical Guidance for Site Investigation and Remediation (DER-10).



February 7, 2025

FIGURES

NEW YORK



QUADRANGLE LOCATION

SOURCE:

USGS TOPOGRAPHIC MAPS: NY (2023). CONTOUR INTERVAL 10FT., NAVD-1988, ORIGINAL SCALE 1:24,000 (1IN.=2,000FT.).

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11-07 DEKALB AVENUE, BROOKLYN, NY

PREPARED BY:
GZA GeoEnvironmental of NY
Engineers and Scientists
www.gza.com

PREPARED FOR:
ABC NY

SITE LOCATION MAP

PROJ MGR: MH	REVIEWED BY: MH	CHECKED BY: VW	FIGURE 1
DESIGNED BY: SG	DRAWN BY: SG	SCALE: N.T.S	
DATE: OCTOBER, 2024	PROJECT NO. 41.0163281.10	REVISION NO. -	SHEET NO. 1 OF 1

© 2022 – GZA GeoEnvironmental of NY.
GZA–J:\Active 163200 to 163299\163281.10 – 1107 Dekalb – Well Installation and SVI\Drawings\GZA CAD\163281.10.dwg [FIG 1 8.5x11 (2)] October 14, 2024 – 2:34pm Selia.Gupta

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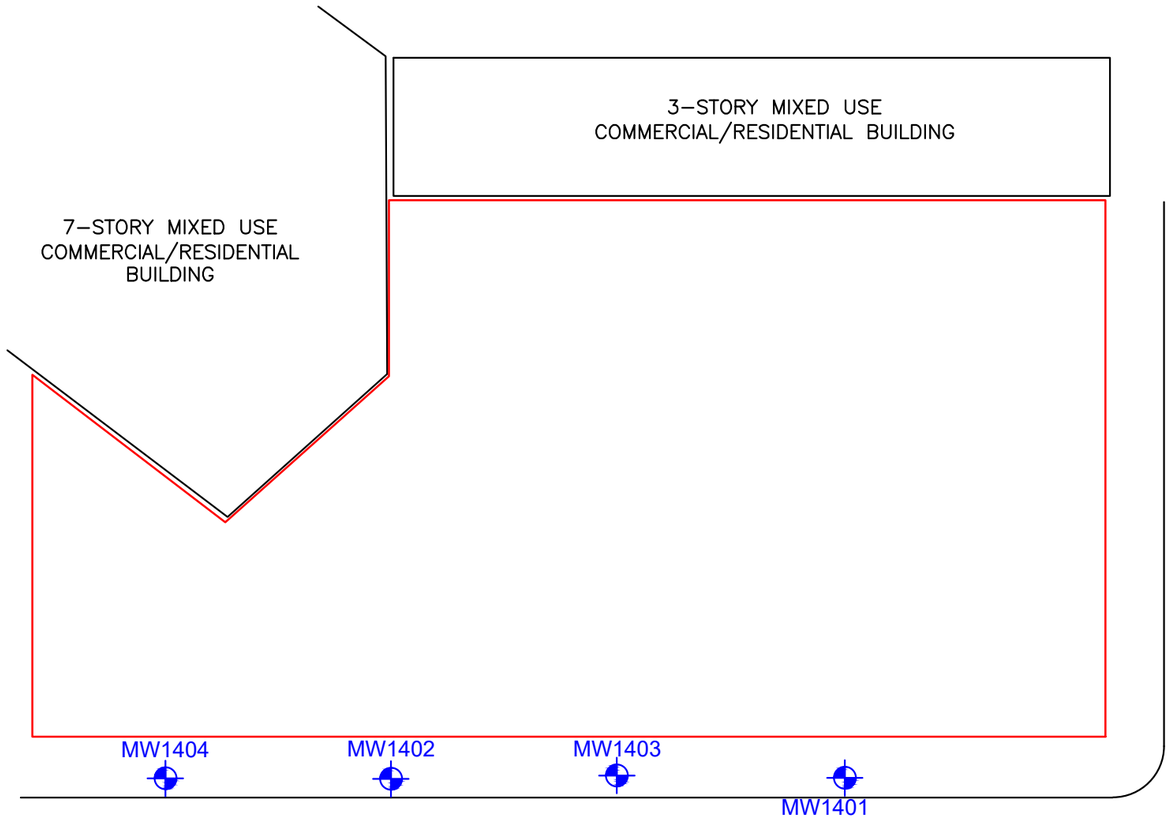
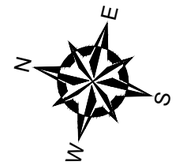
GZA–J:\Active 163200 to 163299\163281.00 – 1107 Dekalb GWS and Periodic Review Report\Drawings\GZA CAD\163281.00 Site Plan.dwg [Fig 4 – MW] February 06, 2025 – 4:11pm Jazlyn.Natalie





GENERAL NOTES

1. BASE MAP DEVELOPED FROM DRAWING TITLED "ENGINEERING CONTROLS – SVE SYSTEM" PREPARED BY "AMC ENGINEERING, PLLC", ORIGINAL SCALE 1" = 25', DATED OCTOBER 17, 2019.
2. EXPLORATION LOCATIONS SHOWN ARE BASED ON TAPE MEASUREMENTS FROM TOPOGRAPHICAL FEATURES. THE LOCATIONS SHOULD BE CONSIDERED ACCURATE ONLY TO THE DEGREE IMPLIED BY THE METHOD USED.

LEGEND

APPROXIMATE SITE BOUNDARY

MW1400 APPROXIMATE MONITORING WELL LOCATION

0 10 20 40
SCALE IN FEET

NO.	ISSUE/DESCRIPTION	BY	DATE

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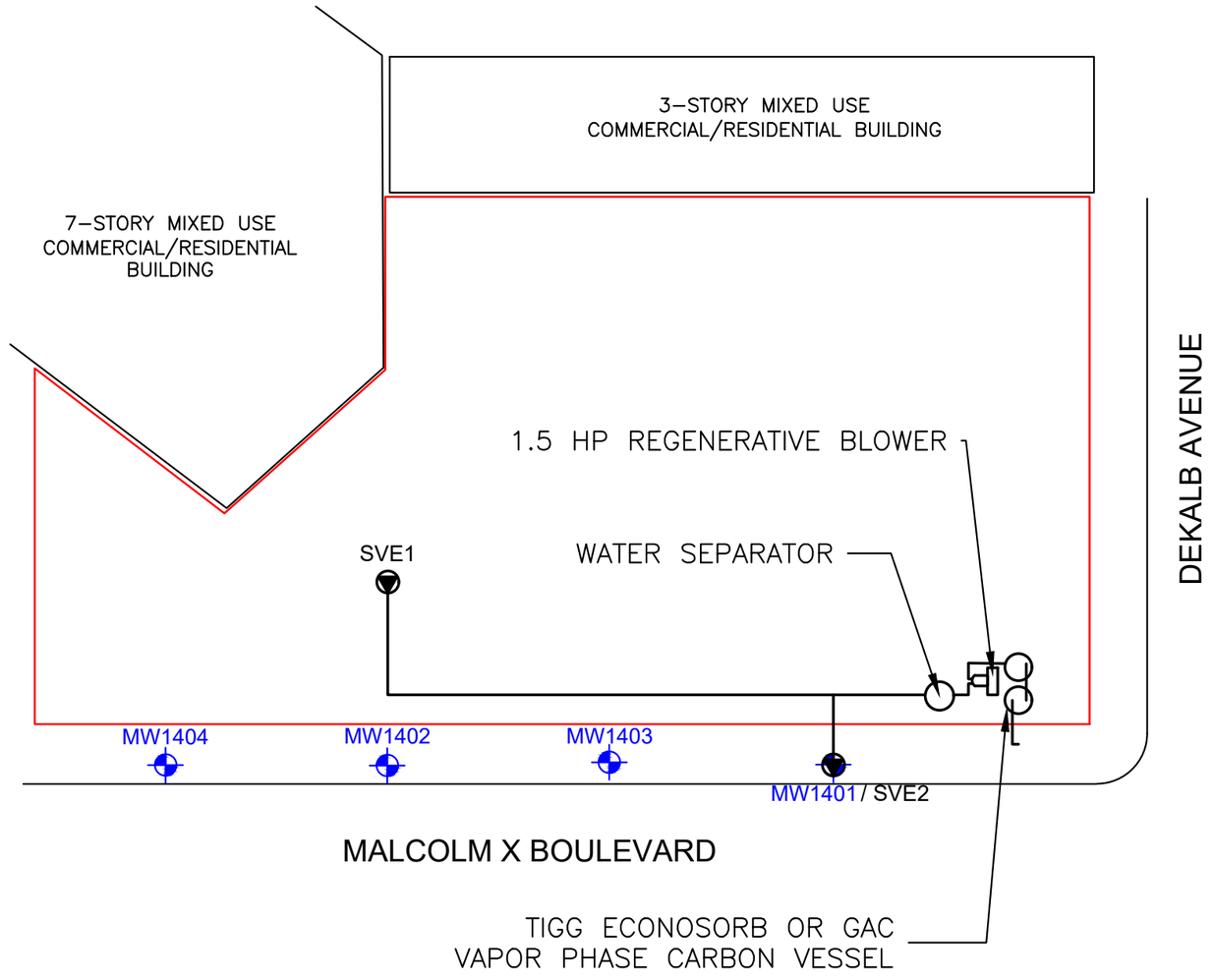
11-07 DEKALB AVENUE, BROOKLYN, NY

SITE PLAN

PREPARED BY:
GZA GeoEnvironmental of NY
Engineers and Scientists
www.gza.com

PREPARED FOR:
ABC NY

PROJ MGR: MH	REVIEWED BY: MH	CHECKED BY: VW	FIGURE 2
DESIGNED BY: SG	DRAWN BY: SG	SCALE: 1" = 20'	
DATE: FEBRUARY 2025	PROJECT NO. 41.0163281.10	REVISION NO. -	SHEET NO. 1 OF 1



N E S W

GENERAL NOTES

1. BASE MAP DEVELOPED FROM DRAWING TITLED "ENGINEERING CONTROLS – SVE SYSTEM" PREPARED BY "AMC ENGINEERING, PLLC", ORIGINAL SCALE 1" = 25', DATED OCTOBER 17, 2019.
2. EXPLORATION LOCATIONS SHOWN ARE BASED ON TAPE MEASUREMENTS FROM TOPOGRAPHICAL FEATURES. THE LOCATIONS SHOULD BE CONSIDERED ACCURATE ONLY TO THE DEGREE IMPLIED BY THE METHOD USED.
3. ELEVATIONS ARE REFERENCED TO THE NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD88).

LEGEND

- APPROXIMATE SITE BOUNDARY
- MW1400 — APPROXIMATE MONITORING WELL LOCATION
- SVE1 — APPROXIMATE VAPOR EXTRACTION WELL

0 10 20 40
SCALE IN FEET

NO.	ISSUE/DESCRIPTION	BY	DATE

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11-07 DEKALB AVENUE, BROOKLYN, NY

SOIL VAPOR EXTRACTION LAYOUT

PREPARED BY:	PREPARED FOR:		
GZA GeoEnvironmental of NY Engineers and Scientists www.gza.com	ABC NY		
PROJ MGR: MH	REVIEWED BY: MH	CHECKED BY: VW	FIGURE 3
DESIGNED BY: SG	DRAWN BY: SG	SCALE: 1" = 20'	
DATE: DECEMBER 2024	PROJECT NO. 41.0163281.00	REVISION NO. -	SHEET NO. 1 OF 1

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GZA–J:\Active 163200 to 163299\163281.00 – 1107 Dekalb GWS and Periodic Review Report\Drawings\GZA CAD\163281.00.dwg [Fig 3 – SVE] December 09, 2024 – 11:37am Selia.Gupta

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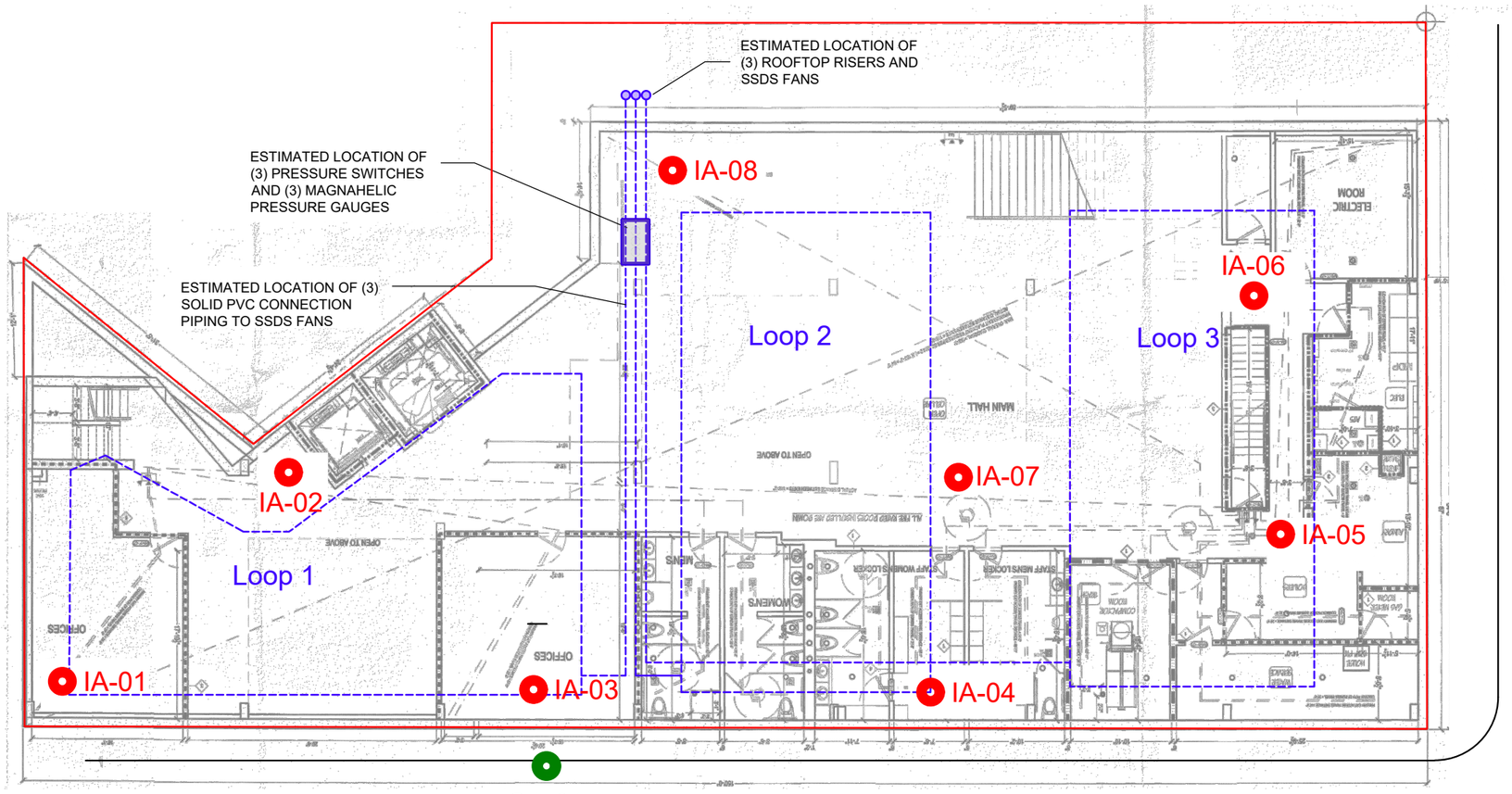
GZA–J:\Active 163200 to 163299\163281.10 – 1107 Dekalb – Well Installation and SV\Drawings\GZA CAD\41.0163281.10 Sample Location–jn.dwg [FIG 2 – Sample Location] February 05, 2025 – 3:03pm Jazlyn.Natalie



0 7.5 15 30

SCALE IN FEET

GENERAL NOTES

1. BASE MAP DEVELOPED FROM DRAWING TITLED "SSDS LAYOUT 11–07 DEKALB AVENUE BROOKLYN, NY", PREPARED BY "TYLL ENGINEERING & CONSULTING PC", ORIGINAL SCALE 1" = 25', DATED MARCH 7, 2024.
2. EXPLORATION LOCATIONS SHOWN ARE BASED ON TAPE MEASUREMENTS FROM TOPOGRAPHICAL FEATURES. THE LOCATIONS SHOULD BE CONSIDERED ACCURATE ONLY TO THE DEGREE IMPLIED BY THE METHOD USED.
3. ELEVATIONS ARE REFERENCED TO THE NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD88).

LEGEND

- APPROXIMATE SITE BOUNDARY
- APPROXIMATE LOCATION OF 4" PERFORATED PVC PIPING
- APPROXIMATE RISER LOCATIONS
- IA-01 APPROXIMATE INDOOR AIR SAMPLING LOCATION
- OA-01 APPROXIMATE OUTOODR AMBIENT AIR SAMPLING LOCATION

NO.	ISSUE/DESCRIPTION	BY	DATE

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11-07 DEKALB AVENUE, BROOKLYN, NY

SAMPLE LOCATION MAP

PREPARED BY: GZA GeoEnvironmental of NY Engineers and Scientists www.gza.com		PREPARED FOR: ABC NY	
PROJ MGR: MH	REVIEWED BY: MH	CHECKED BY: VW	FIGURE 4
DESIGNED BY: SG	DRAWN BY: SG	SCALE: 1" = 15'	
DATE: FEBRUARY 2025	PROJECT NO. 41.0163281.10	REVISION NO. -	SHEET NO. 1 OF 1

APPENDICES

APPENDIX A - HASP

GZA SITE-SPECIFIC HEALTH, SAFETY & ACCIDENT PREVENTION STANDARD-PLAN

1. CLIENT/SITE/PROJECT INFORMATION		
Client: ABC NY		
Site Address: 1107 Dekalb Avenue, Brooklyn, NY		
Site Description (be sure to list pertinent site features, chemicals used at the facility, and other potential hazard sources: The Site is 9,529-square feet (SF) in area and is identified on the Brooklyn County tax map as Block 1600, Lot 7501. The Site is bordered by Malcolm X Boulevard to the west, Dekalb Avenue to the south, a 7-story mixed-use building to the north, and a 2-story and 3-story mixed-use building to the east. The Site is currently developed with an 8-story mixed-use building with a partial below grade basement. The Site is currently in the Site Management phase of the BCP.		
Work Environment (active manufacturing, office, vacant site, undeveloped property, etc.): The Site is an 8-story mixed-use building. Monitoring wells at the Site are located on the sidewalk along Malcolm X Boulevard.		
Job/Project #: 41.0163281.10	Estimated Start Date: TBD	Estimated Finish Date: TBD
Site is Covered by the Following Regulations:	OSHA HAZWOPER Standard ☒	Mine Safety and Health Administration ☐
	OSHA Construction Regulations ☐	OSHA General Industry Regulations ☐

2. EMERGENCY INFORMATION		
Hospital Name: NYC Health + Hospitals/Woodhull		Hospital Phone: 718-963-8000
Hospital Address: 760 Broadway, Brooklyn, NY 11206		Directions and Street Map Attached: ☒ Yes
Local Fire #: 911	Local Ambulance #: 911	Local Police #: 911
WorkCare Incident Intervention Services:	**For non-emergencies, if an employee becomes hurt or sick call 888-449-7787**	
Other Emergency Contact(s): Mark Hutson	Phone #'s: 646-929-8955	

Site-Specific Emergency Preparedness/Response Procedures/Concerns:

Review emergency contact information, locations of emergency equipment (e.g. first aid kits, fire extinguishers, evacuation routes), review of emergency procedures, and current location and access to hospital. Ensure that cell phone is charged daily and have vehicle phone chargers on hand.

Possible emergencies on site include physical injuries, chemical exposure, potential for heart attacks, fire, and heat/cold related injuries. Personnel on site will have current first aid and will be able to respond to minor injuries while emergency response personnel are contacted for assistance.

Personal Injury: For minor injuries, such as cuts, burns, exhaustion, heat cramps, insect stings, etc., the affected employee will be removed to an uncontaminated area for administration of appropriate first aid. If the injury warrants additional medical attention, the affected employee will be properly decontaminated, as necessary and appropriate to the situation, and transported to the nearest hospital or emergency medical facility.

For more serious injuries the Field Safety Officer (FSO) or designee will summon emergency assistance to the project site. No attempt will be made by GZA personnel to move the victim, unless in imminent danger, without the aid and/or instructions of qualified emergency response personnel.

owning ZERO
accidents – injuries - illnesses

- All EHS Events must be reported immediately to the Project Manager and to the GZA People-Based Safety mobile app.
- In the event of a chemical release greater than 5 gallons, site personnel will evacuate the affected area and relocate to an upwind location. The GZA Field Safety Officer and client site representative shall be contacted immediately.
- Site work shall not be conducted during severe weather, including high winds and lightning. In the event of severe weather, stop work, lower any equipment (drill rigs), and evacuate the affected area.

3. SCOPE OF WORK	
General project description, and phase(s) or work to which this H&S Plan applies[1].	SVI Investigation
Specific Tasks Performed by GZA:	• Collect indoor air samples within the building basement and an ambient air sample outside of the building.
Concurrent Tasks to be Performed by GZA-hired Subcontractors (List Subcontractors by Name):	N/A
Concurrent Tasks to be Performed by Others:	N/A

Any OSHA PERMIT-REQUIRED CONFINED SPACE entry? ☐ YES ☒ NO IF YES, ADD CONFINED SPACE ENTRY PERMIT FOR THAT PORTION OF THE WORK	Any INDOOR fieldwork? ☒ YES ☐ NO IF YES, EXPLAIN: indoor air sampling within the building basement

4. SUB-SURFACE WORK, UNDERGROUND UTILITY LOCATION			
Will subsurface explorations be conducted for this work (drilling, excavation, test pits)?	☐ Yes	☒ No	
Have GZA project-related files been searched for existing private utility drawings?	☐ Yes	☐ No	☒ N/A
Has GZA requested utility drawings from our Client, property owner, and others?	☐ Yes	☐ No	☒ N/A

[1] Copy from or reference proposal or applicable design plan as appropriate.

Have existing drawings been reviewed for possible conflicts with planned work?	☐ Yes ☐ No ☒ N/A
Will GZA personnel be required to use a hand-auger as part of this work?	☐ Yes ☐ No ☒ N/A
Site property ownership where underground explorations will be conducted on:	Public Access Property ☐ Yes ☒ No Private Property ☒ Yes ☐ No
Have Necessary Underground Utility Notifications for Subsurface Work Been Made? N/A	☐ Yes ☐ Yet to be conducted
Specify Clearance Date & Time, Dig Safe Clearance I.D. #, And Other Relevant Information: N/A	

IMPORTANT! For subsurface work, prior to the initiation of ground penetrating activities, GZA personnel to assess whether the underground utility clearance (UUC) process has been completed in an manner that appears acceptable, based on participation/ confirmation by other responsible parties (utility companies, subcontractor, client, owner, etc.), for the following:

Electric:	☐ Yes	☐ No	☒ NA	☒ Other_____
Fuel (gas, petroleum, steam):	☐ Yes	☐ No	☒ NA	☒ Other_____
Communication:	☐ Yes	☐ No	☒ NA	☒ Other_____
Water:	☐ Yes	☐ No	☒ NA	☒ Other_____
Sewer:	☐ Yes	☐ No	☒ NA	☒ Other_____
Other:_____	☐ Yes	☐ No	☐ NA	☐ Other_____

Comments: NA

5. HAZARD ASSESSMENT (CHECK ALL THAT APPLY AND ADDRESS EACH HAZARD IN SECTION 6)

A. GENERAL FIELDWORK HAZARDS

☐ Confined Space Entry (Add Confined Space Entry Permit)	☐ Overhead Hazards (i.e. falling objects, overhead power lines)
☐ Abandoned or vacant building/Enclosed Spaces	☒ Portable Hand Tools or Power Tools
☒ Significant Slip/Trip/Fall Hazards	☒ Significant Lifting or Ergonomic Hazards
☐ Unsanitary/Infectious Hazards	☐ Electrical Hazards (i.e. Equipment 120 Volts or Greater, Work Inside Electrical Panels, or Maintenance of Electrical Equipment)
☐ Poisonous Plants	☐ Other Stored energy Hazards (i.e. Equipment with High Pressure or Stored Chemicals)
☐ Biting/Stinging Insects	☐ Fire and/or Explosion Hazard
☐ Feral Animal Hazards	☐ Elevated Noise Levels
☐ Water/Wetlands Hazards	☐ Subsurface Work (Drilling/Excavations/Test Pits)
☐ Remote Locations/Navigation/Orientation hazards	☐ Explosives or Unexploded Ordinance/MEC
☒ Heavy Traffic or Work Alongside a Roadway	☐ Long Distance or Overnight Travel
☒ Weather-Related Hazards	☐ Personal Security or High Crime Area Hazards
☐ Motor vehicle operation Hazards	☐ Working Alone
☐ Heavy Equipment Hazards	☐ Ionizing Radiation or Non-Ionizing Radiation
☐ Structural Hazards (i.e. unsafe floors/stairways/roof)	☒ Chemical/Exposure Hazards (See Part B for Details)
☐ Demolition/Renovation	☐ Other:
☒ Presence of Pedestrians or the General Public	

B. CHEMICAL/EXPOSURE HAZARDS (CONTAMINANTS ARE CONTAINED IN SOIL, WATER, X GROUNDWATER)

☐ No chemical hazards anticipated	☐ Methane
☐ Hydrogen Sulfide (H2S)	☐ Chemicals Subject to OSHA Hazard Communication (attach Safety Data Sheet for each chemical GZA brings to the site)
☐ Cyanides, Hydrogen Cyanide (HCN)	☐ Containerized Waste, Chemicals in Piping & Process Equipment
☐ Carbon Monoxide	☐ Emissions from Gasoline-, Diesel-, Propane-fired Engine, Heater, Similar Equipment
☐ Herbicides, Pesticide, Fungicide, Animal Poisons	☐ General Work Site Airborne Dust Hazards
☐ Metals, Metal Compounds:	☒ Volatile Organic Compounds (VOCs), BTEX
☐ Corrosives, Acids, Caustics, Strong Irritants	☐ Chlorinated Organic Compounds
☐ Polychlorinated Biphenyls (PCBs)	☐ Fuel Oil, Gasoline, Petroleum Products, Waste Oil
☐ Polycyclic Aromatic Hydrocarbons (PAHs)	☐ Asbestos
☐ Compressed Gases	☐ Oxygen Deficiency, Asphyxiation Hazards
☐ Flammable/Combustible Liquids	☐ Other:
☐ Radiation Hazards (i.e. radioactive sealed/open source, x-rays, ultra violet, infrared, radio-frequency, etc.)	

6. SITE-SPECIFIC OVERVIEW OF H&S HAZARDS/MITIGATIONS (NOTE: Based on Hazard Assessment, Section 5)	
Describe the major hazards expected to be present at the jobsite, and describe the safety measures to be implemented for worker protection (refer to items checked in Section 5 above). Use brief abstract statements or more detailed narrative as may be appropriate.	
ON-SITE HAZARDS:	**HAZARD MITIGATIONS:**
Task Hazard Analyses	JHA 21.01 General Outdoor Field Work JHA 4.1 Drilling Ob- Monitoring Well Inst-Observations-Soil Sampling - Instrumentation Installation and Monitoring JHA 20.11 Field Sampling See additional Task Hazard Analyses on **Attachment G**.
Owning Zero	Ensure all GZA personnel on-site have downloaded the People Based Safety app to their mobile phones and are familiar with using it to report safety events. Prior to work each day, review Owning Zero rules with all onsite personnel during morning safety meeting.
Weather-Related Hazards	Weather conditions will be assessed prior to on-site work and forecast examined for anticipated period of work. If weather permits fieldwork, then workers will dress appropriately. Should inclement weather be encountered, the project scope may be reduced or rescheduled. Breaks will be taken to reduce exposure to the elements. If conditions change and lightning or thunder is observed, work will be suspended immediately, and workers will seek shelter. Work may resume if thunder and/or lightning cease for 30 minutes. In the case of cold weather, proper warm gear should be worn to minimize cold exposure. Hand warmers (e.g. "Hot Hands") should be used when appropriate to keep extremities warm and multiple breaks within a warm area (vehicle with heat) should be taken. Review the signs of heat stress, hypothermia, and dehydration before the start of fieldwork. Water, sunscreen, hardhat, tinted safety sunglasses, rain gear (if necessary) and periodic breaks should all be planned for. Be sure to consume plenty of liquids on hot summer days and stay out of direct sunlight for extended periods of time to the extent possible. Use protective ointments such as sunscreen and chap stick, and consult the OSHA Heat Safety App daily to determine risk of heat related illnesses for the day. Maintain extra clothing, blankets, etc. in the work vehicle for a change of clothing if necessary Wear ice cleats if ground conditions are slippery.
Volatile Organic Compounds (VOCs), BTEX	"VOC contaminated groundwater can produce odors, fumes, and present ingestion, inhalation, and skin contact hazards. Compounds associated with gasoline and waste oils include benzene, xylene, toluene, gasoline, and various oils (hydrocarbons). These materials can cause eye, skin and respiratory tract irritation, liver and kidney damage, headaches, blurred vision, nausea, and dizziness. 1,4-dioxane. 1,4-Dioxane is readily adsorbed through the lungs and gastrointestinal tract. Some 1,4-dioxane may also pass through the skin, but studies indicate that much of it will evaporate before it is absorbed. Distribution is rapid and uniform in the lung, liver, kidney, spleen, colon and skeletal muscle tissue. Short-term exposure to high levels of 1,4-dioxane may result in nausea, drowsiness, headache, and irritation of the eyes, nose and throat. Exposure to the vapors of benzene, ethyl benzene, toluene and xylenes above their respective permissible exposure limits (PELs), as defined by the Occupational Safety and Health Administration (OSHA), may produce irritation of the mucous membranes of the upper respiratory tract, nose and mouth. Overexposure may also result in the depression of the central nervous system. Symptoms of such exposure include drowsiness, headache, fatigue and drunken-like behavior. Benzene has been determined to be carcinogenic, targeting blood-forming organs and bone marrow. The primary route of exposure to VOCs is through inhalation and therefore air monitoring and respiratory protection is the primary control against exposure to VOCs. Air monitoring will be completed as specified below to

	minimize airborne exposures. Exposure through direct contact is possible and will be minimized through the use of PPE as prescribed herein. Stop work and evacuate area if readings persist above OSHA permissible exposure limits in the breathing zone. Some common VOCs and their OSHA PELs are as follows: Benzene (1.0 ppm - 8 hr TWA), Toluene (200 ppm 8 hr -TWA), Ethylbenzene (100 ppm - 8hr TWA), Xylene (100 ppm - 8 hr TWA), Naphthalene (10 ppm - 8 hr TWA). Diesel (100 ppm 8-hr TWA _ ACGIH TLV as total hydrocarbons), Gasoline (300 ppm - 8 hr TWA_ACGIH TLV), Hydrogen Cyanide (10 ppm – OSHA 8 hr TWA). Exposure to the vapors of benzene, ethyl benzene, toluene and xylenes above their respective permissible exposure limits (PELs), as defined by the Occupational Safety and Health Administration (OSHA), may produce irritation of the mucous membranes of the upper respiratory tract, nose and mouth. Overexposure may also result in the depression of the central nervous system. Symptoms of such exposure include drowsiness, headache, fatigue and drunken-like behavior. Benzene has been determined to be carcinogenic, targeting blood-forming organs and bone marrow. The primary route of exposure to VOCs is through inhalation and therefore air monitoring and respiratory protection is the primary control against exposure to VOCs. Air monitoring will be completed as specified below to minimize airborne exposures. Exposure through direct contact is possible and will be minimized through the use of PPE as prescribed herein. BTEX Compounds. Exposure to the vapors of benzene, ethyl benzene, toluene and xylenes above their respective permissible exposure limits (PELs), as defined by the Occupational Safety and Health Administration (OSHA), may produce irritation of the mucous membranes of the upper respiratory tract, nose and mouth. Overexposure may also result in the depression of the central nervous system. Symptoms of such exposure include drowsiness, headache, fatigue and drunken-like behavior. Benzene has been determined to be carcinogenic, targeting blood-forming organs and bone marrow. The odor threshold for benzene is higher than the PEL and employees may be overexposed to benzene without sensing its presence, therefore, detector tubes must be utilized to evaluate airborne concentrations.
Presence of Pedestrians or the General Public	Establish warning signs and cones to delineate work area and warn pedestrians of work ahead. Maintain site control, do not allow access to unauthorized persons. Wear high visibility vest or clothing at all times when working in the roadway or near a sidewalk. Always be aware of pedestrians walking near the exclusion zone. If a pedestrian approaches the job site, work will cease until the pedestrian leaves the area.
Significant Slip/Trip/Fall Hazards	Inspect work area prior to starting work. Mark out or remove any potential hazards. Inspect area for uneven or sloped terrain, or around test pits. Wear sturdy shoes with ankle support and good tread. In winter weather, wear boot grips for more traction when walking. Look for potential natural depressions/holes/animal burrows, downed trees/limbs and other obstructions in the area of work and travel. Maintain one free hand to break falls. Watch for equipment on ground and slippery surfaces. Keep work area clean, no running, be mindful of changing weather conditions that may change footing conditions. Maintain safe distance from open borings. Be aware of surroundings. Ensure that borings are well marked (if left uncovered) or are appropriately filled to reduce trip/fall hazards. Do not leave borings or test pits open at the end of the work shift. Cover with metal plate if hole cannot be backfilled and label.
Remediation Systems O&M	The treatment system includes high voltage pumps and components. Caution shall be used when working with equipment. Ensure electrical components are de-

	energized prior to performing maintenance. A qualified subcontractor should be completing electrical/mechanical work.
Portable Hand Tools or Power Tools	Lift and transport hand tools using proper lifting techniques and keep a clean and orderly workspace. Be familiar with tool's operating instructions and specific hazards before beginning work; wear leather gloves when appropriate. Use grounded or double insulated power hand tools. Use GFCI plugs. Check extension cords and power cords keep all cords organized to avoid tripping hazards. Check cords for sign of fraying, or damage. Do not use portable tools that shows signs of damage. Observe proper electrical safety practices. Wear proper PPE. Store and carry tools correctly. Use the correct tool for the job. Know first aid response procedures to address potential injuries. 1. Wear safety glasses and other appropriate PPE. 2. Keep vents clear to maintain adequate ventilation. 3. Use sharp drill bits, blades or other cutting surfaces. 4. Use GFCI plugs and keep all cords clear of the cutting area during use. 5. Inspect for frays or damage before each use. 6. Disconnect power supply before changing or adjusting the equipment.
Heavy Traffic or Work Alongside a Roadway	The work proposed is being performed adjacent to existing roadways. At a minimum, set up cones and signs to delineate the work area. No vehicles or equipment shall be working or parked in the roadway or shoulder unless traffic control is in place that complies with the MUTCD. Consider the applicability of the MUTCD to the situation, and arrange for flaggers, warning signs and cones to delineate work area and warn vehicles of work ahead, if required. Maintain site control, do not allow access to unauthorized persons. Maintain safe distance from travel area and work outside the main traffic flow area whenever possible. Wear high visibility/reflective vest (Class III) at all times you are on and adjacent to roadway. Utilize flashing amber light on vehicle when vehicle is in or near traffic corridor and to access/egress the lane closure. Do not cross the road without approval from traffic control. Always face flow of traffic to maintain awareness. Access vehicle from opposite side of traffic.
Significant Lifting or Ergonomic Hazards	Proper lifting techniques (lifting with the legs, carrying the load at a reasonable height to allow for proper posture during the carry, and avoiding twisting while carrying loads) should be followed at all times. Caution should be used when lifting equipment. Be aware of hand position during all stages of the lift, transport and placement of equipment. Review equipment to be moved prior to lifting to prevent moving parts from crushing fingers or otherwise pinching skin. Do not stack items prior to carrying, but rather transport one item at a time to prevent shifting during carrying.

7. AIR MONITORING ACTION LEVELS – Make sure air monitoring instruments are in working order, calibrated before use, and 'bump-checked' periodically throughout the day and/or over multiple days of use

Is air monitoring to be performed for this project? Yes ☐ No ☒

ACTION LEVELS FOR OXYGEN DEFICIENCY AND EXPLOSIVE ATMOSPHERIC HAZARDS (Action levels apply to occupied work space in general work area)

☐ Applicable, See Below. ☐ Not Applicable

Parameter	Response Actions for Elevated Airborne Hazards
Oxygen	At 19.5% or below – Exit area, provide adequate ventilation, or proceed to Level B, or discontinue activities Verify presence of adequate oxygen (approx. 12% or more) before taking readings with LEL meter. Note: If oxygen levels are below 12%, LEL meter readings are not valid.
LEL	Less than 10% LEL – Continue working, continue to monitor LEL levels Greater than or Equal to 10% LEL – Discontinue work operations and immediately withdraw from area. Resume work activities ONLY after LEL readings have been reduced to less than 10% through passive dissipation, or through active vapor control measures.

ACTION LEVELS FOR INHALATION OF TOXIC/HAZARDOUS SUBSTANCES (Action levels are for sustained breathing zone concentrations)

☐ Applicable, See Below. ☐ Not Applicable

Air Quality Parameters (Check all that apply)	Remain in Level D or Modified D	Response Actions for Elevated Airborne Hazards
☐ VOCs	0 to ppm	From ppm to ppm: Proceed to Level C, or Ventilate, or Discontinue Activities If greater than ppm: Discontinue Activities and consult EHS Team
☐ Carbon Monoxide	0 to 35 ppm	At greater than 35 ppm, exit area, provide adequate ventilation, proceed to Level B, or discontinue activities.
☐ Hydrogen Sulfide	0 to 10 ppm	At greater than 10 ppm, exit area, provide adequate ventilation, proceed to Level B, or discontinue activities
☐ Dust	0 to mg/m^3	
☐	0 to	

SPECIAL INSTRUCTIONS/COMMENTS REGARDING AIR MONITORING (IF APPLICABLE)

8. HEALTH AND SAFETY EQUIPMENT AND CONTROLS

AIR MONITORING INSTRUMENTS

- ☒ PID Type: MiniRAE 3000+ or equivalent Lamp Energy: 10.6 eV
- ☐ FID Type:
- ☐ Carbon Monoxide Meter
- ☐ Hydrogen Sulfide Meter
- ☐ O_2/LEL Meter
- ☐ Particulate (Dust) Meter
- ☐ Calibration Gas Type
- ☐ Others:

OTHER H&S EQUIPMENT & GEAR

- ☐ Fire Extinguisher
- ☐ Caution Tape
- ☒ Traffic Cones or Stanchions
- ☐ Warning Signs or Placards
- ☐ Decon Buckets, Brushes, etc.
- ☐ Portable Ground Fault Interrupter (GFI)
- ☐ Lockout/Tagout Equipment
- ☐ Ventilation Equipment
- ☒ Others: first aid kit, cell phone, soap, water

PERSONAL PROTECTIVE EQUIPMENT

- ☐ Respirator – Type
- ☐ Respirator - Cartridge Type:
- ☒ Hardhat
- ☒ Outer Gloves Type: Nitrile
- ☐ Inner Gloves Type:
- ☒ Steel-toed boots/shoes
- ☐ Coveralls – Type
- ☐ Outer Boots – Type
- ☒ Eye Protection with side shields
- ☐ Face Shield
- ☒ Traffic Vest
- ☐ Personal Flotation Device (PFD)
- ☐ Fire Retardant Clothing
- ☐ EH (Electrical Hazard) Rated Boots, Gloves, etc.
- ☒ Noise/Hearing Protection
- ☐ Others:

Discuss/Clarify, as Appropriate:

9. H&S TRAINING/QUALIFICATIONS FOR FIELD PERSONNEL	
☒ Project-Specific H&S Orientation (Required for All Projects/Staff)	☐ Lockout/Tagout Training
☒ OSHA 40-Hour HAZWOPER/8 Hour Refreshers	☐ Electrical Safety Training
☐ Hazard Communication (for project-specific chemical products)	☐ Bloodborne Pathogen Training
☒ First Aid/CPR (required for HAZWOPER for at least one individual on site)	☐
☒ Current Medical Clearance Letter (required for HAZWOPER)	☐
☐ OSHA 10-hour Construction Safety Training	☐
☐ Fall Protection Training	☐
☐ Trenching & Excavation	☐
Discuss/Clarify, as needed:	

10. PERSONNEL AND EQUIPMENT DECONTAMINATION (SECTION ONLY REQUIRED FOR HAZWOPER SITES)	
Describe personnel decontamination procedures for the project site, including "dry decon" (simple removal of PPE)	Dry decon. Wash hands and exposed skin with soap and water prior to taking breaks or leaving the site. Change PPE before leaving the site.

11. PROJECT PERSONNEL - ROLES AND RESPONSIBILITIES

GZA ON-SITE PERSONNEL:

Name(s)	Project Title/Assigned Role	Telephone Numbers
Yunmee Han	Site Supervisor	Work: 646-929-8941 Cell: 317-999-8432
Yunmee Han	Field Safety Officer	Work: 646-929-8941 Cell: 317-999-8432
Yunmee Han	First Aid Personnel	Work: 646-929-8941 Cell: 317-999-8432
Yunmee Han	GZA Project Team Members	Work: 646-929-8941 Cell: 317-999-8432

Site Supervisors and Project Managers (SS/PM): Responsibility for compliance with GZA Health and Safety programs, policies, procedures and applicable laws and regulations is shared by all GZA management and supervisory personnel. This includes the need for effective oversight and supervision of project staff necessary to control the Health and Safety aspects of GZA on-site activities.

Field Safety Officer (FSO): The FSO is responsible for implementation of the Site Specific Health and Safety Plan.

First Aid Personnel: At least one individual designated by GZA who has current training and certification in basic first aid and cardiopulmonary resuscitation (CPR) must be present during on-site activities involving multiple GZA personnel at HAZWOPER sites.

GZA Project Team: Follow instructions relayed by the HASP and GZA manager on-site.

OTHER PROJECT PERSONNEL:

Name	Project Title/Assigned Role	Telephone Numbers
Victoria Whelan	Principal-in-Charge	Work: 631-847-1606 Cell: 631-847-1606
Mark Hutson	Project Manager	Work: 646-929-8955 Cell: 332-208-2260
Mark Hutson	Office Safety Coordinator	Work: 646-929-8955 Cell: 332-208-2260
Richard Ecord	GZA EHS Director	Work: 781-278-3809 Cell: 404-234-2834

Principal-in-Charge: Responsible of overall project oversight, including responsibility for Health and Safety.

Project Manager: Responsible for day-to-day project management, including Health and Safety.

Health and Safety Coordinator: General Health and Safety guidance and assistance.

GZA EHS Director: H &S technical and regulatory guidance, assistance regarding GZA H&S policies and procedures.

12. PLAN ACKNOWLEDGEMENT AND APPROVALS		
GZA Project Site Worker Plan Acknowledgement		
I have read, understood, and agree to abide by the information set forth in this Safety and Accident Prevention Plan. I will follow guidance in this plan and in the GZA Health and Safety Program Manual. I understand the training and medical monitoring requirements covered by the work outlined in this plan and have met those requirements.		
GZA Employee Name	GZA Employee Signature	Date
Yunmee Han		**1/30/2025**
Subcontractor Site Worker Plan Acknowledgement		
GZA has prepared this plan solely for the purpose of protecting the health and safety of GZA employees. Subcontractors, visitors, and others at the site must refer to their organization's health and safety program or site-specific HASP for their protection. Subcontractor employees may use this plan for general informational purposes only. Subcontractor firms are obligated to comply with safety regulations applicable to their work, and understand this plan covers GZA activities only.		
Subcontractor Employee Name	Subcontractor Employee Signatures	Date