



Known for excellence.
Built on trust.



**REMEDIAL ACTION WORK PLAN
SPILL NO. 1608924
PBS NO. 3-601177**

**34 EAST POST ROAD
WHITE PLAINS, NY 10601**

**JANUARY 2019
File No. 05.0046113.01**



PREPARED FOR:
Papitto Construction Co., Inc.
867 Fair Street
Carmel, NY 10512

PREPARED BY:
GZA GeoEnvironmental of New York
104 West 29th Street, 10th Floor | New York, NY 10001
212-594-8140

31 Offices Nationwide
www.gza.com



Known for excellence.
Built on trust.

GEOTECHNICAL
ENVIRONMENTAL
ECOLOGICAL
WATER
CONSTRUCTION
MANAGEMENT

GZA GeoEnvironmental of
New York
104 West 29th Street
10th Floor
New York, NY 10001
T: 212.594.8140
F: 212.279.8180
www.gza.com

January 18, 2019
File No. 05.0046113.01

New York State Department of Environmental Conservation
Division of Environmental Remediation, Region 3
34 South Putt Corners Road
New Paltz, New York 12561

Attn.: Daniel Bendell, P.E.

Re: Remedial Action Work Plan
Spill No. 1608924
PBS No. 3-601177
34 East Post Road
White Plains, NY 10601

Dear Mr. Bendell:

GZA GeoEnvironmental of New York (GZA) is pleased to provide this *Remedial Action Work Plan* (RAWP) on behalf of our client, Papitto Construction Co. Inc. (referred to herein as “Remedial Contractor”). This RAWP was designed to meet the requirements provided by the New York State Department of Environmental Conservation (NYSDEC) in connection with Spill Case No. 1608924 establish for the 34 East Post Road, White Plains, NY (Site). A Site Locus is provided in **Figure 1**.

OBJECTIVES

This RAWP is intended to satisfy the requirements of the NYSDEC and has been prepared in substantial conformance with the NYSDEC Technical Guidance for Site Investigation and Remediation dated May 2010 (DER-10) and CP-51 Soil Cleanup Guidance dated October 2010 (CP-51).

SITE DESCRIPTION

As shown on **Figure 1**, the Site is located at approximately elevation (el.) 207 feet above mean sea level on the North American Vertical Datum of 1988 (NAVD88). The area near the Site is heavily developed with urban, commercial and residential properties. In general, topography near the Site slopes downward to the north towards the Bronx River.

For decades, the Site was an active gasoline station and was most recently occupied by an independently owned BP station. Operations at the gasoline station ceased in mid-2018, but underground storage tanks (USTs) for dispensing three grades of gasoline remain. Before its recent closure, the gasoline station operated three pump islands with six dispensers total. The layout of the Site is shown on Figure 2.



SPILL BACKGROUND

The Site has been assigned NYSDEC Spill No. 1608924 and Petroleum Bulk Storage (PBS) No. 3-601177, both which are currently open. In January 2017, a Remedial Investigation of Spill No. 1608924 was completed by HydroEnvironmental Solutions, Inc. (HES) by order of the NYSDEC Region 3 Office as outlined in a letter dated December 21, 2016.

From our review of the HES Remedial Investigation Report dated February 2017, GZA understands that HES observed free-phase petroleum on the groundwater and in soil at multiple sampling locations during its January 2017 remedial investigation. Correspondingly, elevated levels of BTEX (benzene, toluene, ethylbenzene and xylenes) compounds were documented via laboratory analyses in both soil and groundwater samples (specifically at GB-1, GB-2, GB-3 and GB-7).

As part of the scope of work for this RAWP, GZA will identify groundwater flow direction and document groundwater concentrations at, or close to, the downgradient property boundary. If necessary, an Addendum to this RAWP to delineate off-site conditions will be submitted for NYSDEC approval.

CONCEPTUAL SITE MODEL

A possible release mechanism for the Site consists of typically minor spills directly to the ground surface associated with dispensing gasoline, or filling the USTs, with potential subsequent migration through the concrete and asphalt surfaces via cracks and/or joints. A secondary release mechanism consists of potential leaks directly to the subsurface soils from failure of gasoline station equipment (e.g., USTs, dispensers, and associated piping).

Given the relatively permeable surficial materials beneath the Site, releases would have the potential to migrate through subsurface soils to groundwater which was measured by HES during their remedial investigation at a depth ranging from 8-12 fbg. Soil and groundwater sampling and analysis performed at the Site by HES in 2017 indicated soil and groundwater beneath the Site was impacted with petroleum, including free-phase product. Therefore, we propose to remediate the spill by removing the accessible petroleum-contaminated material (soil and groundwater) that is encountered to the extent practical. However, the excavation of contaminated soil will be limited to avoid undermining the on-Site building. As part of the remedial action, the USTs, fuel lines and pump islands will be removed, which will permanently remediate a potential petroleum source.

WORK PLAN

To close NYSDEC Spill Case No. 1608924, a Remedial Action (RA) is proposed to excavate petroleum-contaminated soil observed beneath the Site and document the potential for adjacent, off-Site impacts. GZA proposes a RA that will remove contaminated soil and groundwater previously identified at the Site to the extent practical without endangering the structural stability of the site building. The RA scope of work provided in this RAWP may require a second remedial phase to address remaining on-site and/or off-Site petroleum impacts. We have organized this RAWP into the following sections:



- Task 1** – Remediation Oversight
- Task 2** – Monitoring Well Installation
- Task 3** – Groundwater Sampling
- Task 4** – Remedial Action Report
- Task 5** – Groundwater Monitoring Report

TASK 1: SOIL REMEDIATION

Initial mobilization activities will include public utility clearance (to be completed by the Remedial Contractor) and coordination with Site personnel for access. In addition, GZA will prepare a Site-specific Health & Safety Plan (HASP) to comply with the Occupational Safety and Health Administration (OSHA) 29 CFR 1910.120(b)(4) for protection of GZA workers prior to commencement of field activities. The HASP establishes procedures and assigns responsibilities to protect the project personnel from hazards posed by the excavation of potentially contaminated material at the Site.

Prior to the start of excavation and periodically as the excavation progresses, meetings will be held to orient field team members with the Site and to familiarize GZA personnel and the Remedial Contractor's personnel with site background, scope of work, potential dangers, health and safety requirements, emergency contingencies and other field procedures. The NYSDEC and the Westchester County Department of Health (WCDOH) will be invited to attend these meetings.

Removal of Soil and Groundwater

During the remedial excavations, GZA will provide qualified environmental staff to observe and document the soil and groundwater remediation (excavation and removal) at the Site.

Following the Remedial Contractor's removal of the gasoline dispensers, dispensing islands, fuel lines, island dispensing pad and canopy (if necessary), they will excavate and expose the USTs, which are located in the south-central portion of the Site between East Post Road and the dispensing islands. GZA will observe the removal of product from the USTs, record the volume of product removed and document the proper transportation and off-Site disposal of the liquid. The soil surrounding the USTs will be excavated to expose the USTs, and then the USTs will be removed and staged on-Site for inspection. If the USTs can be removed intact, then GZA will photo-document the UST condition in order to assess whether their structure was compromised in a way that may have resulted in a petroleum release. Following UST removal, petroleum-contaminated materials will be excavated, segregated and temporarily stockpiled for transportation and off-Site disposal. Using a photoionization detector (PID) for field screening of soil, GZA personnel will assist in the segregation of non-impacted material (overburden) from petroleum-contaminated soil. Because of space constraints, GZA does not anticipate that the stockpiled material will remain on-Site for more than a few days at a time. Therefore, GZA recommends "live-loading" excavated soil as much as possible into tri-axle dump trucks or dump trailers for immediate transportation and disposal to a disposal facility permitted to accept petroleum-impacted soils. No soil stockpiles will be staged on site for more than 30 days from generation. Soil stockpiles will be



placed on poly sheeting and will be covered at the end of each day by poly sheeting weighed down by sand bags. The proposed limits of the excavation are shown on Figure 2.

GZA will implement a community air monitoring program (CAMP) during the remedial excavation and well installation programs in accordance with the provisions of DER-10 Appendix 1A. GZA personnel will perform community air monitoring for volatile organic compounds (VOCs) and air-borne dust particulates. Real-time monitoring will be performed utilizing a portable direct-reading photoionization detector (PID) such as a RAE MiniRAE™ 3000 (or equivalent) and a portable particulate meter such as a Thermo Scientific Personal DataRAM™ PDR-1500 (or equivalent). The designated air monitor will perform the monitoring by moving with the portable monitoring equipment along the perimeter of the excavations/borings and moving to designated upwind and downwind monitoring locations throughout the Site. Based on the results of the air monitoring, GZA will direct the Remedial Contractor to initiate dust or odor control measures. The CAMP measurements will be data logged and downloaded daily and recorded in a dedicated field book.

GZA anticipates that groundwater will be encountered during on-Site soil excavation activities. GZA recommends that the groundwater be managed in the excavation and removed, as needed, using a vacuum truck operated by a properly licensed transporter capable of evacuating and properly disposing of petroleum impacted groundwater under a manifest at a treatment facility permitted to take petroleum-impacted groundwater.

Endpoint Soil Sampling and Laboratory Analyses

GZA personnel will observe and document the excavation and evaluate environmental field conditions as the excavation proceeds using visual/olfactory observations of environmental impact (staining, odors, etc.) and a PID. Once excavation limits are achieved based on visual observations, field screening results, or physical constraints (such as structures or public roadways), GZA will collect an estimated 35 soil confirmation samples from the excavation side-walls and bottom (at the minimum collection frequencies defined in NYSDEC's DER-10) and submit the samples to a New York State certified laboratory for analysis. The proposed sample locations are shown on Figure 2.

Soil samples for laboratory analyses will be collected in accordance with EPA Method 5035 and analyzed using EPA Methods 8260 (for CP-51 list of petroleum constituents, including MTBE). The samples collected will be placed in laboratory-supplied glass jars with a screw top lid. The top of the jar will be labeled with the job name, date of collection, sample number, and sample depth. Collection and analysis of soil samples for waste characterization purposes will be the responsibility of the Remedial Contractor but will be documented in the remedial action report by GZA.

Once the sample containers are filled, they will be immediately placed in the cooler with ice (in sealed plastic bags to prevent leaking) or synthetic ice packs to maintain the samples at 4°C. The field sampler will indicate the sample designation/location number in the space provided on the chain-of-custody form for each sample. The chain of custody forms will be signed and placed in a sealed plastic bag in the cooler. The completed shipping container will be closed for transport with nylon strapping, or a similar shipping tape, and two paper custody



seals will be affixed to the lid. The seals must be broken to open the cooler, and the seals will indicate whether tampering occurred before receipt by the laboratory. The cooler of samples will be picked up directly by a courier and sent to a New York State Department of Health Environmental Laboratory Approval Program (ELAP)-certified laboratory.

Demarcation and Backfilling

GZA, in consultation with the NYSDEC, will document the vertical and horizontal extents of the petroleum impacted soil excavation. After completion of remedial excavation and any other invasive remedial activities, and prior to backfilling, the top of the residual soil/fill will be defined by placement of a demarcation layer. The demarcation layer will consist of or geosynthetic fencing (orange snow fence or similar) or equivalent material to be placed on the surface of residual soil/fill to provide an observable demarcation layer. A description or map of the approximate depth of the demarcation layer will be reported to the NYSDEC. After, the demarcation layer has been documented, the Remedial Contractor will import clean fill to backfill the excavation.

TASK 2: MONITORING WELL INSTALLATION

GZA will install up to six groundwater monitoring wells within and around the remediation areas of the Site. The monitoring well locations will be selected in the field by GZA based on field conditions, utility location and other site-specific conditions agreeable with the NYSDEC Case Manager. The wells will be installed using the hollow-stem auger drilling method by a New York State licensed driller. The wells will be constructed using a minimum of 2-inch diameter schedule 40 PVC 20-slot well screen set to extend approximately 5 feet above the seasonal-high water table, as determined in the field. Based on the 2017 remedial investigation, static groundwater levels are approximately 8 to 12 feet below grade. Therefore, GZA estimates a completion depth of approximately 15 to 17 feet below grade for each monitoring well. Solid PVC casing, a sand pack using No. 2 silica filter sand and a bentonite seal will be installed prior to finishing the wells in locking flush-mount manholes. Well construction and depths may vary depending on field conditions; however, well screen will be installed 5 to 10 feet into the saturated zone and a minimum of 5 feet above the water table through the vadose zone. The sand pack will extend a minimum of 2 feet above the screen and a 2-foot thick bentonite seal will be installed. Provided no obvious indications of impact (PID readings, odors, etc.) are observed by GZA, the borehole will then be backfilled with drill cuttings. In the event that impacted soil is encountered during drilling activities, it will be placed in DOT-approved steel drums for proper off-site disposal. A locking well cap and flush mount manhole cover will be installed upon completion of each well. Each well will be developed for a minimum of five well volumes and the development water placed in 55-gallon drums pending off-site disposal. Any additional off-Site remediation or monitoring and reporting required will be addressed in the aforementioned RAWP Addendum.

GZA will also perform a relative elevation survey of the locations and elevations of all monitoring wells in order to assess groundwater flow direction.



TASK 3: GROUNDWATER SAMPLING

Approximately 2 weeks after well development, GZA will collect a groundwater sample from each monitoring well. Prior to collection of groundwater samples, a full round of depth to water and depth to floating product (if any) readings will be conducted on all existing monitoring wells using an oil/water interface probe. This information will be used to generate groundwater contour maps from which GZA will infer the groundwater flow direction for the Site.

GZA will then collect groundwater samples from the six monitoring wells using low flow sampling techniques. To assess the dissolve contaminant constituents, GZA will submit the samples for analysis for volatile organic compounds (VOCs) and for CP-51-list VOCs (i.e., Table 2 - gasoline list parameters). GZA will also collect a field duplicate sample from one well and trip blank as QA/QC samples. The samples will be placed in a cooler, kept on ice, and shipped under chain of custody procedures to the ELAP-certified laboratory.

For the investigation derived wastes (IDW), we have assumed that the purge water from the sampling will be drummed and stored on-site pending disposal. GZA will arrange for off-site drum disposal at a permitted facility.

TASK 4: REMEDIAL ACTION REPORT

GZA will prepare a Remedial Action Report (RAR) following the on-Site soil remediation activities and installation and initial sampling of the groundwater monitoring wells and will present a summary of the contaminated soil removal activities, including a drawing depicting the sampling locations. The RAR will summarize field-sampling methodology and laboratory results of endpoint samples collected and will provide a drawing of the sampling locations. The RAR will include manifesting documentation for scrapped fuel lines and USTs and soil that are removed for transport and disposal to approved facilities. Additional reporting/forms required for formal closure of PBS No. 3-601177 will be submitted to the Westchester County Department of Health and the NYSDEC Region 3 Office by the Remedial Contractor related to the on-Site USTs. Any additional off-Site remediation and reporting that's required will be addressed in the aforementioned RAWP Addendum.

TASK 5: GROUNDWATER MONITORING REPORT

Following installation of the groundwater monitor wells, GZA will prepare Groundwater Monitoring Reports (GMR) on a quarterly basis for submission to the NYSDEC Region 3 Office approximately 30 days from the time of sample collection. The GMR will summarize the results of the field activities, sampling activities and laboratory results, and provide our conclusions and recommendations. The reports will compare the groundwater laboratory analytical results from the monitoring well sampling to the NYSDEC Ambient Water Quality Standards (AWQS) in accordance with the Technical and Operational Guidance Series (TOGS) 1.1.1.

If groundwater concentrations indicate compliance, then GZA will request the closure of Spill Case No. 1608924 by the NYSDEC in the fourth GMR. GZA will provide the Remedial Contractor with electronic copies of our reports. Any additional off-Site remediation or monitoring and reporting beyond that described herein will be addressed in the aforementioned RAWP Addendum.



We trust that this RAWP satisfies your present needs. If you need additional information, please contact the undersigned at (212) 594-8140.

Very truly yours,
GZA GEOENVIRONMENTAL OF NEW YORK

A handwritten signature in blue ink, appearing to read 'Timothy J. Bishop'.

Timothy J. Bishop, CEP
Project Manager

A handwritten signature in blue ink, appearing to read 'Stephen M. Kline'.

Stephen M. Kline, P.E.
Associate Principal

A handwritten signature in blue ink, appearing to read 'Adam T. Henry'.

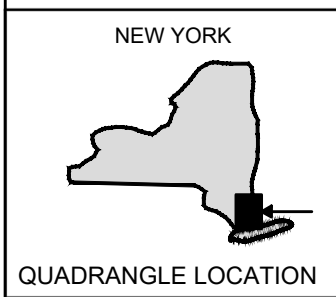
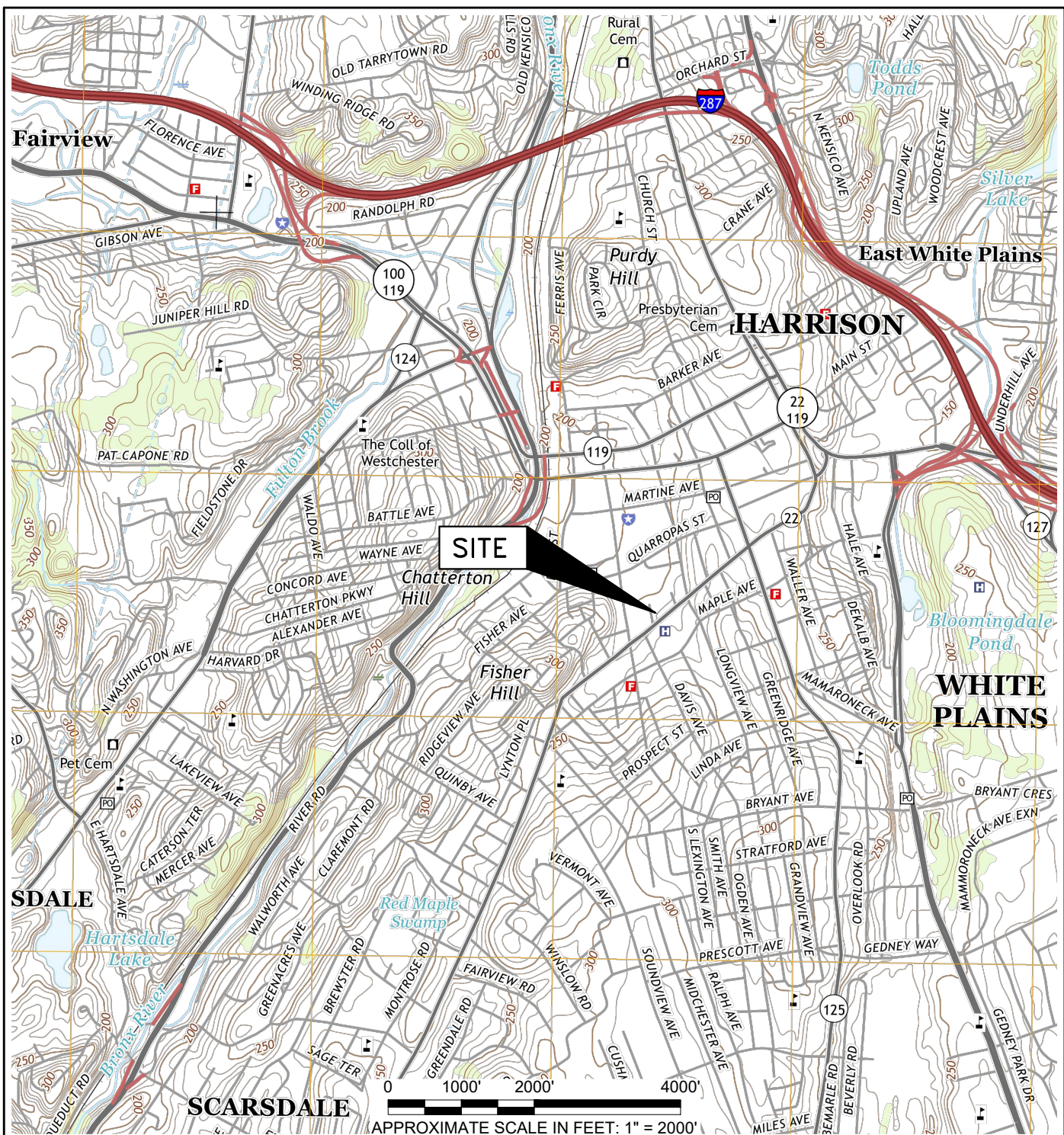
Adam T. Henry, PG
Consultant/Reviewer

cc: Mr. Jeff Papitto – Papitto Construction Co. Inc.
Phil DeCaro, Esq.

ATTACHMENTS:

- Figure 1: Site Location Map
- Figure 2: Remedial Action Workplan Site Location Plan

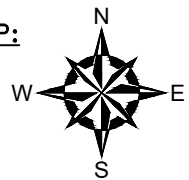
© 2019 - GZA GeoEnvironmental, Inc. GZA-\\GZAGlestonebury\Jobs_46,000-46,499\46113.n13 Papitto Construction\46113-01.dwg\CAD\Figures\Locus and Soil Sample Location.dwg [LOCUS MAP] January 18, 2019 - 10:45am alexander.perez



SOURCE:
BASE MAP FROM THE FOLLOWING USGS QUADRANGLE MAP:
WHITE PLAINS, NY (2016)
 DIGITAL TOPOGRAPHIC MAPS PROVIDED BY USGSSTORE.GOV.

CONTOUR ELEVATIONS REFERENCE NAVD 88,
 CONTOURS ARE SHOWN IN FEET AT 10 INTERVALS

UNLESS SPECIFICALLY STATED BY WRITTEN AGREEMENT, THIS DRAWING IS THE SOLE PROPERTY OF GZA GEOENVIRONMENTAL, INC. (GZA). THE INFORMATION SHOWN ON THE DRAWING IS SOLELY FOR USE BY GZA'S CLIENT OR THE CLIENT'S DESIGNATED REPRESENTATIVE FOR THE SPECIFIC PROJECT AND LOCATION IDENTIFIED ON THE DRAWING. THE DRAWING SHALL NOT BE TRANSFERRED, REUSED, COPIED, OR ALTERED IN ANY MANNER FOR USE AT ANY OTHER LOCATION OR FOR ANY OTHER PURPOSE WITHOUT THE PRIOR WRITTEN CONSENT OF GZA. ANY TRANSFER, REUSE, OR MODIFICATION TO THE DRAWING BY THE CLIENT OR OTHERS, WITHOUT THE PRIOR WRITTEN EXPRESS CONSENT OF GZA, WILL BE AT THE USER'S SOLE RISK AND WITHOUT ANY RISK OR LIABILITY TO GZA.



34 EAST POST ROAD
 WHITE PLAINS, NEW YORK

SITE LOCUS

PREPARED BY:
GZA GeoEnvironmental, Inc.
 Engineers and Scientists
 www.gza.com

PROJ MGR: TJB
 DESIGNED BY: AJP
 DATE: JANUARY, 2019

REVIEWED BY: ATH
 DRAWN BY: AJP
 PROJECT NO. 05.0046113.01

PREPARED FOR:
 PAPIPITO CONSTRUCTION CO., INC.
 867 FAIR STREET
 CARMEL, NEW YORK

CHECKED BY: TJB
 SCALE: 1" = 2000'
 REVISION NO.

FIGURE 1
 SHEET NO.

©2019 - GZA GeoEnvironmental, Inc.
 GZA-\\GZAGlasstonbury\Jobs_46,000-46,499\46113.h13 Papitto Construction\46113-01.ath\CAD\Figures\Locus and Soil Sample Location.dwg [EXPLORATION LOCATION PLAN] January 18, 2019 - 1:14pm alexander.perez

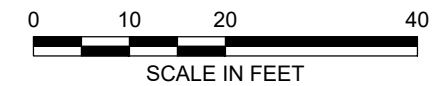
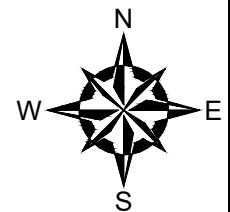


GENERAL NOTES

1. BASE MAP DEVELOPED FROM A GOOGLE PROFESSIONAL ELECTRONIC IMAGE FILE. DIGITAL AERIAL ORTHOPHOTOGRAPHY WAS COLLECTED BY GZA IN JANUARY 2019.
2. THE PROPOSED SAMPLING AND MONITORING WELL LOCATIONS WILL BE APPROXIMATELY DETERMINED BY TAPE MEASUREMENTS FROM EXISTING TOPOGRAPHIC AND MAN-MADE FEATURES. THE DATA SHOULD BE CONSIDERED ACCURATE ONLY TO THE DEGREE IMPLIED BY THE METHOD USED.

LEGEND

- ⊙ PROPOSED CONFIRMATION SOIL SAMPLE LOCATION
- ⊕ PROPOSED MONITORING WELL LOCATION



NO.	ISSUE/DESCRIPTION	BY	DATE

UNLESS SPECIFICALLY STATED BY WRITTEN AGREEMENT, THIS DRAWING IS THE SOLE PROPERTY OF GZA GEORENIRONMENTAL, INC. (GZA). THE INFORMATION SHOWN ON THE DRAWING IS SOLELY FOR USE BY GZA'S CLIENT OR THE CLIENT'S DESIGNATED REPRESENTATIVE FOR THE SPECIFIC PROJECT AND LOCATION IDENTIFIED ON THE DRAWING. THE DRAWING SHALL NOT BE TRANSFERRED, REUSED, COPIED, OR ALTERED IN ANY MANNER FOR USE AT ANY OTHER LOCATION OR FOR ANY OTHER PURPOSE WITHOUT THE PRIOR WRITTEN CONSENT OF GZA. ANY TRANSFER, REUSE, OR MODIFICATION TO THE DRAWING BY THE CLIENT OR OTHERS, WITHOUT THE PRIOR WRITTEN EXPRESS CONSENT OF GZA, WILL BE AT THE USER'S SOLE RISK AND WITHOUT ANY RISK OR LIABILITY TO GZA.

34 EAST POST ROAD
 WHITE PLAINS, NEW YORK

**REMEDIAL ACTION WORKPLAN
 SITE LOCATION PLAN**

PREPARED BY: GZA GeoEnvironmental, Inc. Engineers and Scientists www.gza.com		PREPARED FOR: PAPIITTO CONSTRUCTION CO., INC. 867 FAIR STREET CARMEL, NEW YORK	
PROJ MGR: TJB	REVIEWED BY: ATH	CHECKED BY: TJB	FIGURE 2 SHEET NO.
DESIGNED BY: AJP	DRAWN BY: AJP	SCALE: AS SHOWN	
DATE: JANUARY, 2019	PROJECT NO: 05.0046113.01	REVISION NO.	



GZA GeoEnvironmental of New York