27 February 2023

Shaun Bollers
Project Manager, Division of Environmental Remediation, Section 2
New York State Department of Environmental Conservation
47-40 21st Street
Long Island City, NY 11101

Re: Grossly Contaminated Material Investigation Work Plan
175-225 3rd Street
Brooklyn, New York 11215
NYSDEC BCP Site ID No. C224209
Langan Project No.: 170311302

Dear Mr. Bollers,

Langan Engineering, Environmental, Surveying, Landscape Architecture and Geology, D.P.C. (Langan) prepared this Grossly Contaminated Material (GCM) Investigation Work Plan on behalf of Gowanus Owner LLC (the Volunteer), in response to the New York State Department of Environmental Conservation (NYSDEC) 13 January 2023 request to submit a GCM Investigation Work Plan for 175-225 3rd Street (Brownfield Cleanup Program [BCP] Site No. C224209) (the "site").

The site is in the remediation phase and a revised draft Remedial Action Work Plan (RAWP) for the site was submitted to NYSDEC on 21 December 2022. The Remedial Investigation Report (RIR) for the site was approved by the NYSDEC in December 2019. The remedial investigation (RI) was completed between 27 September 2016 and 25 January 2017, with supplemental sub-slab vapor and indoor air investigations completed on 27 March and 20 May 2018, and an emerging contaminant groundwater sampling event completed on 14 December 2018. An Interim Remedial Measures Work Plan (IRMWP) to support shoreline stabilization activities and prevent contaminant migration along the site's Gowanus Canal frontage was approved by NYSDEC on 29 October 2019. The Volunteer implemented the bulkhead IRMWP between 26 June 2020 and 9 February 2021. Langan submitted the Construction Completion Report (CCR) for the bulkhead IRMWP to NYSDEC on 9 June 2021, and NYSDEC approved the CCR on 16 June 2021. NYSDEC approved a 2nd IRMWP to address soil vapor intrusion (SVI) mitigation in the office space of the building located on former Lot 58 on 27 January 2020. The Volunteer implemented the SVI IRMWP between 12 December 2020 and 28 February 2021. Langan submitted the CCR for the SVI IRMWP to NYSDEC on 13 October 2021, and NYSDEC approved the CCR on 14 October 2021.

SITE BACKGROUND

Site Location

The about 140,000-square-foot site is located at 175-225 3rd Street in the Gowanus neighborhood of Brooklyn, New York (Block 972, Lot 58). The rectangular-shaped site is occupied by a Verizon service center and an approximately 13,000-square-foot bulkhead cutoff wall work area that comprises former Lot 1 and the western portion of former Lot 58. The bulkhead cutoff wall construction was completed in December 2020 and the area is capped with a gravel cover, does not contain above-grade structures, and is fenced off at its three landward boundaries to restrict access to pedestrians and vehicles. The remaining portion of former Lot 58 contains asphalt-paved parking areas and an about 8,300-square-foot single-story brick building. Former Lot 43 is the easternmost lot and contains asphalt-paved parking areas and an about 7,100-square-foot, single-story, pre-fabricated building with sheet metal walls. Both buildings are used for offices and storage to support Verizon's operations. Former Lots 1, 43, and 58 were merged into new Lot 58 on 27 April 2022 for the proposed redevelopment. The site is bound to the north by a closed section of 2nd Street, to the east by 3rd Avenue, to the south by 3rd Street, and to the west by the Gowanus Canal. An easement exists along the northern site boundary for the closed section of 2nd Street, which will be reconstructed as part of redevelopment.

According to a 7 March 2022 survey by Gallas Surveying Group, site grade ranges from about elevation[1] (el) 16.8 on the southeastern portion of the site to el 4.3 on the western side of the site. The surrounding local topography generally slopes west toward the Gowanus Canal. Properties southeast of the site are generally at a higher elevation (up-gradient).

The waterfront consists of an approximately 220-foot-long vertical cutoff wall constructed of steel sheet piles advanced along the Gowanus Canal during implementation of the NYSDEC-approved, 29 October 2019 IRMWP.

A site location map is provided as Figure 1.

Historical Off-site GCM Sources

According to the USEPA's Record of Decision (ROD), "bank-stored tar" along the eastern perimeter of the Gowanus Canal was documented at the same elevation as tar in the canal, suggesting that it migrated from upland former Manufactured Gas Plants (MGP) source areas along the canal and re-infiltrated into the banks. Potential MGP impacts were observed during the following investigations:

August 2014 Geotechnical Investigation

Petroleum-like odors were observed at approximately 55 feet below grade surface (bgs) in soil boring SB-1 located in the northwestern corner of the site.

[1] Elevations presented herein are in feet and referenced to the North American Vertical Datum of 1988 (NAVD88)

August 2017 Waterfront Investigation

Petroleum-like odors were observed from approximately 45 feet bgs to 62 feet bgs in soil boring LB-2 located in the western part of the site.

February 2017 Remedial Investigation

Petroleum-like odors were observed from approximately 6 feet bgs to 13 feet bgs, and from 40 feet bgs to 60 feet bgs in soil boring SB/MW-16 in the northwestern corner of the site. A maximum photoionization detector (PID) reading of 3864 parts per million (ppm) was observed at approximately 8 feet bgs.

Dense non-aqueous phase liquid (DNAPL) (coal tar globules) was identified in the drilling wash water during the installation of MW-16 at approximately 35 feet bgs. MW-16 was gauged with an oil/water interface probe on 27 February and 20 March 2017. DNAPL was observed on the interface probe and tape; however, a measurable thickness was not established. A weighted bailer was lowered to the bottom of MW-16 (about 48 feet bgs) and a detectable amount DNAPL was observed in the groundwater recovered with the bailer.

Historical and proposed soil borings are presented in Figure 2.

INVESTIGATION METHODOLOGY

Soil Investigation

To investigate the vertical and horizontal extent of GCM potentially encroaching from the Gowanus Canal and former MGP source areas, Langan will install six soil borings to a minimum depth of 70 feet bgs. If GCM is observed but the presence of non-aqueous phase liquid (NAPL) cannot be readily determined, a shake test will be performed per the "Field Descriptions of Samples for Former Manufactured Gas Plant (MGP) Sites" (MGP Guidance). If the shake test is positive, NAPL must be documented in the boring log.

Final soil boring depths will be determined based on field observations of GCM/NAPL using the MGP Guidance. If GCM/NAPL is not observed in the bottom 10 feet of the soil boring and the minimum required depth is achieved, no further advancement of the boring is required. If GCM/NAPL is observed, the boring will be advanced until vertical delineation of GCM/NAPL has been completed, which is a minimum of 10 feet of material without evidence of GCM/NAPL.

Final vertical delineation can only be determined if soil borings have a minimum recovery of 50%. If GCM/NAPL is identified in either of the newly installed soil borings, additional investigation must be completed to delineate the full areal extent of GCM/NAPL. Up to seven, contingent soil borings will be advanced to the east and south in the horizontal direction from the soil boring(s) where GCM/NAPL was observed.

To document vertical delineation of GCM/NAPL, the contingent borings will be advanced to a minimum depth at which GCM/NAPL was observed in the parent boring. Final soil boring depths will be determined based on field observations of GCM/NAPL using the MGP Guidance. If GCM/NAPL is not observed in the final 10 feet of the soil boring and the minimum required depth

is achieved, no further advancement of the boring is required. If GCM/NAPL is observed, the boring will be advanced until vertical delineation of GCM/NAPL has been determined, which is a minimum of 10 feet of material without evidence of GCM/NAPL.

For soil borings where GCM/NAPL is observed, soil samples will be collected at, and immediately below, each distinct interval of GCM/NAPL. The site has been subject to multiple investigations and the nature of impacts is fully understood. Therefore, consistent with the Division of Environmental Remediation (DER)-10 2.1(a)-2, "Samples from an area of concern or a site may be analyzed for a limited contaminant list as approved by DER once the nature of the contamination is fully characterized," soil samples will be analyzed for coal tar-related containments of concern (i.e., Part 375 list/TCL VOCs and SVOCs). Preliminary analytical results and draft soil boring logs will be submitted to NYSDEC to facilitate review of delineation. Delineation will only be deemed complete upon receipt of NYSDEC concurrence and approval.

If no GCM impacts are identified, no soil samples will be collected.

Six soil borings will be advanced along the Gowanus Canal frontage.

- SB/MW01_CT will be advanced collocated with previously-advanced SB/MW-16
- SB02_CT will be advanced collocated with previously-advanced LB-2
- SB03_CT will be advanced south of SB02_CT, halfway between where GCM impacts were observed in LB-1, and where they were not observed in previously-advanced SB-2
- SB04_CT will be advanced east of where GCM impacts were observed in SB-1
- SB05_CT will be advanced east of SB02_CT
- SB06_CT will be advanced east of SB03_CT

Seven contingent borings (SB07_CT through SB13_CT) will be advanced on a case-by-case basis if GCM impacts are observed in adjacent borings. Proposed GCM investigation boring locations are shown on Figure 2.

Groundwater Investigation and NAPL Mobility Evaluation

To delineate groundwater contamination associated with GCM/NAPL, soil boring SB/MW01_CT will be converted into multilevel groundwater monitoring wells based on observation of GCM/NAPL at MW-16 during the February 2017 Remedial Investigation as follows:

- MW01_CT_S will be screened across the groundwater interface (1-11 feet bgs)
- MW01_CT_D will be screened across the interval where the GCM/NAPL impacts were observed in MW-16 (30-40 feet bgs)
- MW01_CT_DD will be screened below the deepest observation of GCM/NAPL

The multilevel monitoring wells will consist of 2-inch diameter polyvinyl chloride (PVC) riser pipe attached to ten-foot-long 0.02-inch slotted screens. Wells will have minimum annular space of two inches around the entire monitoring well circumference, have a sand pack a minimum of 2-

foot above the top of the monitoring well screen, and have a bentonite seal a minimum of 2-foot thick. A minimum of a 5-foot sump will be installed below the screened intervals. Monitoring wells will be installed in accordance with the "NYSDEC Guidelines on Installation of Overburden Wells (Monitoring Wells) for Environmental Investigations" guidance.

Any observations of odors, or of sheen, blebs, NAPL, staining or coating of the sampling equipment made during installation of monitoring wells or groundwater sampling are to be included in the groundwater sample collection log. If NAPL is observed in the well at the time of sampling, NAPL thickness will be documented in sampling logs and a NAPL sample will be collected for Petroleum Hydrocarbon Identification (PHI) analysis. Groundwater samples will be analyzed for Target Analyte List (TAL)/Part 375 VOCs and SVOCs per the DER-10 2.4(d)13.2.

A synoptic groundwater elevation gauging event will be performed following the installation and development of groundwater monitoring wells. Monitoring well locations will be surveyed by a licensed surveyor and referenced to NAVD88 datum. Monitoring well construction data, groundwater elevation, and surveyed locations/elevations will be submitted electronically to the NYSDEC EQuIS™ database. Preliminary analytical results and draft groundwater sampling logs will be submitted to NYSDEC once available to facilitate review of delineation. Delineation will only be deemed complete upon receipt of NYSDEC approval.

If NAPL is identified in a soil boring as denoted by the presence of GCM/NAPL, NAPL mobility will be assessed. To assess NAPL mobility, 2-inch PVC wells will be installed and screened across the impacted interval. The screen must be slotted 0.020-inches. Wells will have minimum annular space of two inches around the entire monitoring well circumference, have a sand pack a minimum of 2-foot above the top of the monitoring well screen, and have a bentonite seal a minimum of 2-foot thick. A minimum of a 5-foot sump will be installed below the screened interval.

Wells will be monitored for NAPL no sooner than 7 days after development. Any observations of odors, or of sheen, blebs, NAPL, staining or coating of the sampling equipment, odor, etc. that are made during groundwater monitoring will be included in a log. Monitoring well locations will be surveyed by a licensed surveyor and tied into the NAVD88 datum. Monitoring well construction data, and surveyed locations in NAVD88 will be submitted to the NYSDEC EQuIS database. NAPL mobility observations will be submitted to NYSDEC in draft to facilitate review of assessment.

In areas where significant amounts of fill will be placed to raise the grade and/or for building construction that may result in significant loading and/or vibration to the subsurface, NAPL monitoring (and provisions for NAPL collection and removal) must be implemented throughout and beyond development to ensure NAPL isn't mobilized, nor migrates off-site. The mobility assessment will only be deemed complete upon receipt of NYSDEC concurrence and approval.

The GCM Investigation Work Plan will be implemented in accordance with the Construction Health and Safety Plan (CHASP), Community Air Monitoring Program (CAMP), and Quality

Assurance Project Plan (QAPP), included in the 175-225 3rd Street December 2022 Draft RAWP as Appendices D, E and G, respectively.

Proposed GCM investigation monitoring well locations are shown on Figure 2.

REPORTING

Documentation of the GCM investigation will be provided in a GCM Investigation Report. The report will describe investigation activities and present the field results. If any soil or groundwater samples are collected, analytical results will be presented in summary tables and soil and/or groundwater sample locations will be shown on a site plan.

At a minimum, the GCM investigation report will include:

- Field observations
- An evaluation of the results and findings
- Conclusions and recommendations

Daily reports will be submitted to NYSDEC and New York State Department of Health (NYSDOH) Project Managers by the end of each day following the reporting period and will include:

- An update of progress made during the reporting day
- Description and locations of work completed during the reporting day
- A summary of any and all complaints with relevant details (names, phone numbers)
- A summary of CAMP findings, including exceedances
- An explanation of notable site conditions, including the location of elevated PID readings, if observed

Daily reports are not intended to be the mode of communication for notification to the NYSDEC of emergencies (accident, spill), requests for changes to the GCM investigation or other sensitive or time critical information. However, such conditions must also be included in the daily reports. Emergency conditions and changes to the GCM investigation will be addressed directly to NYSDEC Project Manager via personal communication.

Daily Reports will include a description of daily activities and a map that identifies work areas. These reports will include a summary of CAMP results, odor and dust problems and corrective actions, PID readings, and all complaints received from the public.

The NYSDEC-assigned project number will appear on all reports.

SCHEDULE

Access to the site will be coordinated with the Volunteer, and the mobilization to implement the GCM Investigation Work Plan is expected following vacancy of the site by the current tenant in Q2/Q3 2023.

CERTIFICATIONS

I, Ryan Manderbach, certify that I am currently a Qualified Environmental Professional as defined in 6 New York Codes, Rules, and Regulations (NYCRR) Part 375 and that this Remedial Investigation Work Plan (RIWP) was prepared in accordance with all applicable statutes and regulations and in substantial conformance with the New York State Department of Environmental Conservation (NYSDEC) Division of Environmental Remediation (DER)-10 Technical Guidance for Site Investigation and Remediation.

DRAFT

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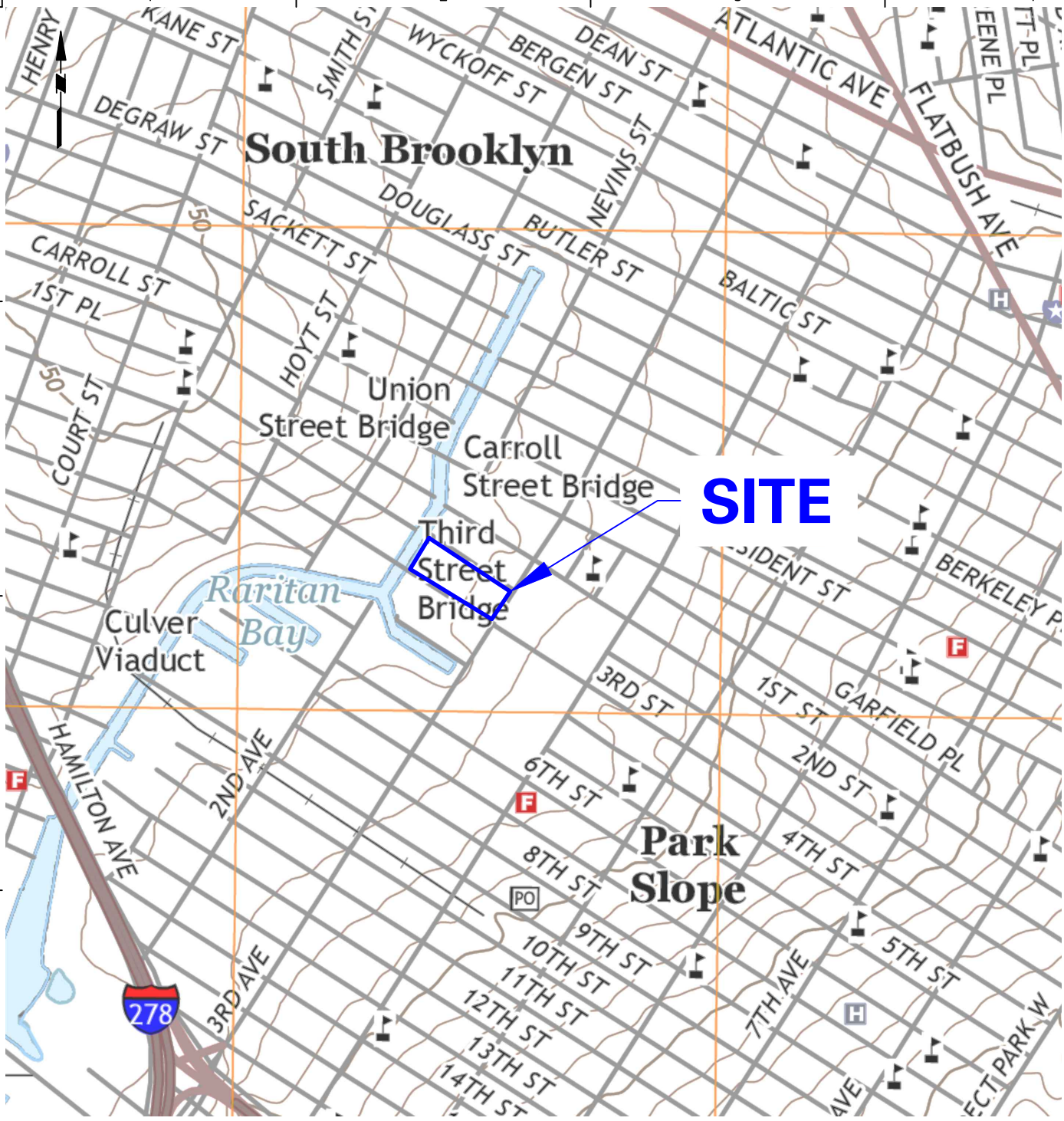
Ryan Manderbach, CHMM
Associate Principal/Vice President

Enclosure(s): Figure 1 – Site Location Map
Figure 2 – Proposed Soil Boring/Monitoring Well Location Plan



NOTES:

1. BASE MAP IS REFERENCED FROM UNITED STATES GEOLOGICAL SURVEY (USGS) 7.5-MINUTE SERIES TOPOGRAPHICAL MAPS, BROOKLYN, NY QUADRANGLE, DATED 2016.

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SCALE IN FEET

LANGAN

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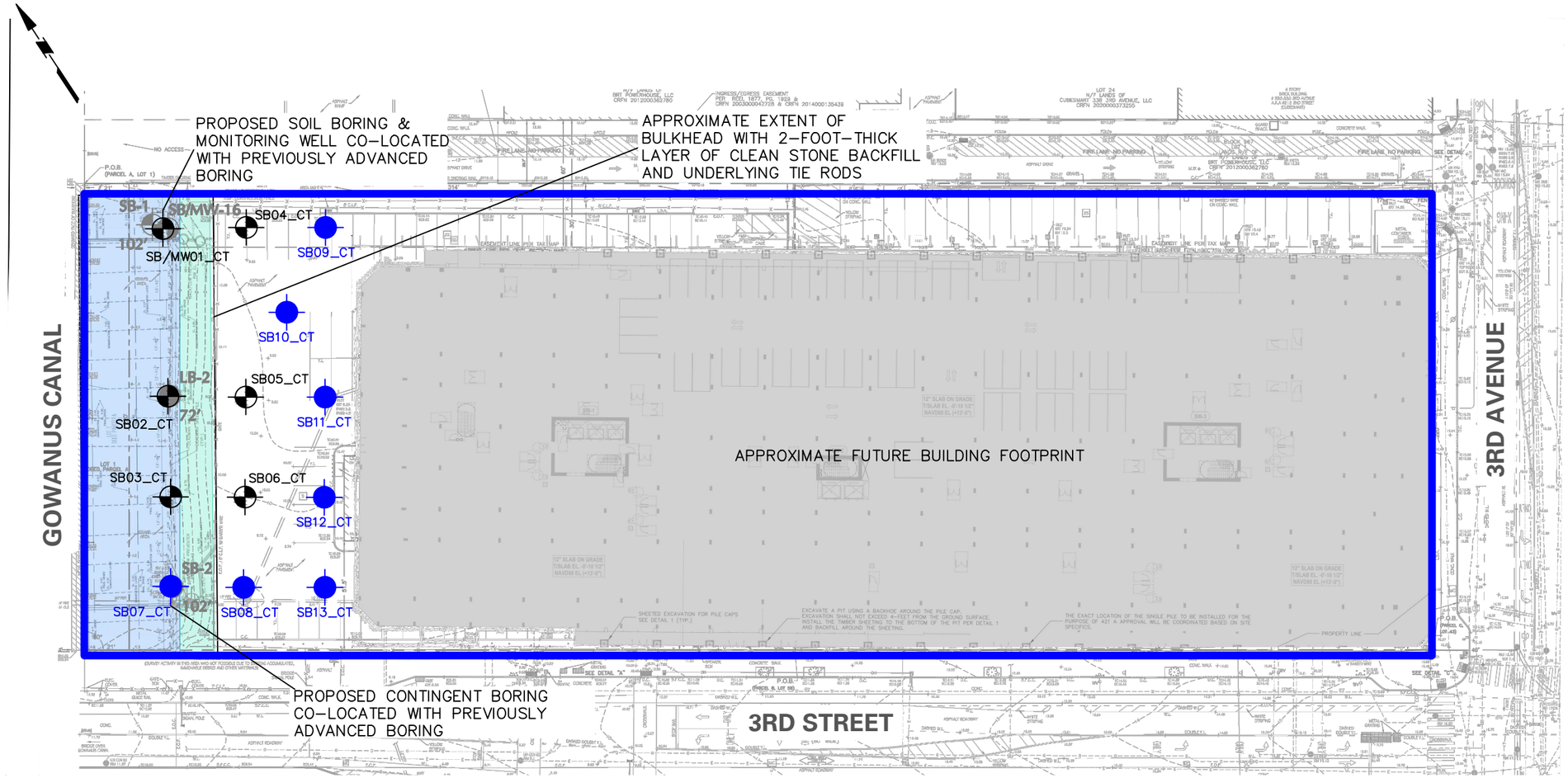
Langan Engineering, Environmental, Surveying, Landscape Architecture and Geology, D.P.C.
Langan Engineering and Environmental Services, Inc.
Langan International LLC
Collectively known as Langan

Project	175-225 3RD STREET BLOCK No. 972, LOT No. 58 BROOKLYN KINGS NEW YORK
Figure Title	SITE LOCATION MAP
Project No.	170311302
Figure No.	1
Date	2/13/2019
Scale	1" = 1000'
Drawn By	VDP
Checked By	PM
Submission Date	
Sheet	1 of 2

Filename: \\langan.com\data\NYC\data3\170311301\Cadd Data - 170311301\2D-DesignFiles\Coal Tar\Figure 1 - Site Location Map.dwg Date: 1/26/2023 Time: 16:05 User: bkoontz Style Table: Langan.stb Layout: Site Location Map



LEGEND:

- SITE BOUNDARY
- LB–1 — PREVIOUSLY-ADVANCED SOIL BORING LOCATION
- SB/MW01_CT — PROPOSED SOIL BORING/MONITORING WELL LOCATION
- SB02_CT — PROPOSED SOIL BORING LOCATION
- SB07_CT — PROPOSED CONTINGENT SOIL BORING LOCATION

NOTES:

1. PREVIOUS SB SERIES BORINGS WERE DRILLED BY CRAIG TEST BORING INC., BETWEEN 31 JULY AND 07 AUGUST 2014, UNDER THE FULL-TIME SPECIAL INSPECTION OF A LANGAN ENGINEER.
2. PREVIOUS LB SERIES BORINGS WERE DRILLED BY WARREN GEORGE INC., BETWEEN 7 DECEMBER AND 14 DECEMBER 2017, UNDER THE FULL-TIME SPECIAL INSPECTION OF A LANGAN ENGINEER.
3. PREVIOUS BORING/MONITORING WELL SB/MW-16 WAS DRILLED BY AACRO ENVIRONMENTAL SERVICES INC., BETWEEN 23 JANUARY AND 25 JANUARY 2017 UNDER THE FULL-TIME SPECIAL INSPECTION OF A LANGAN ENGINEER.
4. BASE MAP ADAPTED FROM 7 MARCH 2022 BOUNDARY AND TOPOGRAPHIC SURVEY BY GALLAS SURVEYING GROUP.
5. ELEVATIONS ARE IN FEET AND REFERENCED TO THE NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD88).
6. FORMER TAX LOTS 1, 43, AND 58 WERE MERGED INTO NEW LOT 58 ON APRIL 27, 2022.
7. BORING LOCATIONS ARE APPROXIMATE.

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Project	175-225 3RD STREET BLOCK No. 972, LOT No. 58 BROOKLYN KINGS NEW YORK
Figure Title	PROPOSED SOIL BORING/MONITORING WELL LOCATION PLAN
Project No.	170311302
Date	1/26/2023
Scale	1" = 60'
Drawn By / Checked By	BK / VDP
Figure No.	2
Sheet	2 of 2

Filename: \\langan.com\data\NYC\data3\170311301\Cadd Data - 170311301\2D-DesignFiles\Coal Tar\Figure 2 - Boring Location Plan.dwg Date: 2/27/2023 Time: 11:35 User: acaelwaerts Style Table: Langan.stb Layout: ANSIB-BL (1)