NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION

Division of Environmental Remediation, Remedial Bureau C
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Transmitted Via Email Only

August 5, 2021

Donald Campbell
Project Manager
Site Investigation & Remediation
287 Maspeth Avenue
Brooklyn, NY 11211

Re: 224050 Former Equity Works Manufactured Gas Plant Site
Interim Remedial Measure Work Plan Addendum
222 Avenue Parcel

Dear Mr. Campbell,

The New York State Department of Environmental Conservation (the Department) has reviewed the Interim Remedial Measure Addendum Workplan for the 222 Maspeth Avenue Parcel of the former Equity Works Manufactured Gas Plant site dated July 26, 2021. The Department approves the workplan

If you would like to discuss the questions posed by the Department, please contact me at the above phone number or Gerald.pratt@dec.ny.gov.

Sincerely,

Gerald Pratt PG
Division of Environmental Remediation

ec: D. Eaton (NYSDEC)
J. Robinson (NYSDOH)
D. Campbell (National Grid)
W. Ryan (National Grid)
P. Cox (AECOM)
Naomi Copper, ncooper@coopertank.com

AECOM Imagine it. Delivered.

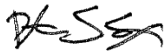
Interim Remedial Measure Work Plan Addendum

222 Maspeth Avenue Parcel
Former Equity Works MGP Site
222-254 Maspeth Avenue, Brooklyn, Kings County,
New York

NYSDEC Site No.: 224050
Order on Consent Index #: A2-0552-0606

July 26, 2021

Quality information

Prepared by	Reviewed by
	
Pete Cox, PG Project Manager	Michael Gardner, PE

Prepared for:

National Grid

Prepared by:

AECOM
250 Apollo Drive
Chelmsford, MA 01824
aecom.com

Table of Contents

Tables

Figures

Acronyms & Abreviations

AECOM	AECOM Technical Services, Inc.
BUG	The Brooklyn Union Gas Company
CAMP	Community Air Monitoring Program
DNAPL	dense non aqueous phase liquid
DER-10	NYSDEC Technical Guidance for Site Investigation and Remediation
EPA	United States Environmental Protection Agency
FSAP	Field Sampling and Analytical Plan
ft bgs	feet below ground surface
HASP	Health and Safety Plan
IRM	Interim Remedial Measures
ISS	In-situ Solidification
IDW	Investigation Derived Waste
HASP	Health and Safety Plan
MGP	manufactured gas plant
NAPL	non-aqueous phase liquid
NYSDEC	New York State Department of Environmental Conservation
PID	photoionization detector
PDI	Pre-Design Investigation
QAPP	Quality Assurance Project Plan
QHHEA	Qualitative Human Health Exposure Assessment
RI	Remedial Investigation
SI	Supplemental Site Investigation

Certification Statement

I Michael J. Gardner certify that I am currently a NYS registered professional engineer or Qualified Environmental Professional as in defined in 6 NYCRR Part 375 and that this Interim Remedial Measure Work Plan Addendum 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).

Michael Gardner P.E.

July 26, 2021 DATE

It is a violation of Article 145 of New York State Education Law for any person to alter this document in any way without the express written verification of adoption by any New York State licensed engineer in accordance with Section 7209(2), Article 145, New York State Education Law.

Executive Summary

This work plan addendum has been prepared for The Brooklyn Union Gas Company (BUG) (now d/b/a National Grid NY) by AECOM USA, Inc. (AECOM) for a site located at 222, 252, and 254 Maspeth Avenue in Brooklyn, New York. This site, known as the Former Equity Works MGP site, was operated as a Manufactured Gas Plant (MGP) by BUG, circa 1903 to 1929. The properties comprising the Former Equity Works MGP site are now owned by third parties, are zoned for heavy manufacturing use, and are bounded by industrial or commercial facilities. The 222 Maspeth Avenue parcel (the “Site”) is owned by 222 Maspeth Avenue, Inc. Cooper Tank & Welding Corp. (“Cooper Tank”), operates on the Site.

This Work Plan Addendum outlines additional sampling scope to be performed as part of the NYSDEC-approved June 2020 Interim Remedial Measure (IRM) Work Plan prepared to address subsurface NAPL impacts on the Site (The “IRM Work Plan Addendum”).

This IRM Work Plan Addendum describes 1) collection of additional In-Situ Solidification (ISS) treatability study mix design samples from two soil borings advanced within the planned ISS area at 222 Maspeth Avenue to determine the 28 and 56-day strength of the ISS mass for two mix designs, 2) collection of bulk treatability testing samples from two new soil borings to allow potential remediation contract bidder’s to evaluate their own ISS mix designs, 3) collection of four concrete samples for waste characterization testing, for analysis of lead, to evaluate the potential for re-use of the concrete debris as backfill during the IRM, and 4) pilot testing of selected intervals of deep, dense, non-aqueous phase liquid (DNAPL) recovery wells comprising a part of the approved IRM scope, to evaluate the potential for DNAPL recoverability prior to implementation of the IRM, and to propose elimination of DNAPL recovery wells from the IRM scope, if DNAPL is determined not to be recoverable.

The IRM Work Plan Addendum follows the guidelines presented in NYSDEC Technical Guidance for Investigation and Remediation (DER-10).

1. Introduction

This work plan addendum has been prepared for The Brooklyn Union Gas Company (BUG) (now d/b/a National Grid NY) by AECOM USA, Inc. (AECOM) for a site located at 222, 252, and 254 Maspeth Avenue in Brooklyn, New York. This site, known as the Former Equity Works MGP site, was operated as a Manufactured Gas Plant (MGP) by BUG, circa 1903 to 1929. The properties comprising the Former Equity Works MGP site are now owned by third parties, are zoned for heavy manufacturing use, and are bounded by industrial or commercial facilities. The 222 Maspeth Avenue parcel (the "Site") is owned by 222 Maspeth Avenue, Inc. Cooper Tank & Welding Corp. ("Cooper Tank"), operates on the Site.

This Work Plan Addendum outlines additional sampling scope to be performed as part of the NYSDEC-approved June 2020 Interim Remedial Measure (IRM) Work Plan prepared to address subsurface NAPL impacts on the Site (The "IRM Work Plan Addendum"). The IRM and this IRM Work Plan Addendum work-scope is being conducted in response to a letter from the New York State Department of Environmental Conservation (NYSDEC) dated February 1, 2019 stating that a recent change in commercial operations on the property provides an opportunity for completion of additional remedial work as an IRM to "remediate a significant quantity of MGP contaminants, thereby reducing the overall remedial timeframe for completion". The IRM work proposed in this work plan addendum will generate data to support completion of the design of the permanent remedy to remove/remediate subsurface impacts to the intermediate clay layer beneath the 222 Maspeth Avenue parcel and complete an evaluation of the DNAPL recoverability in recovery wells screened at depths beneath the intermediate clay layer under the former gas holder foundation.

This IRM Work Plan Addendum describes 1) collection of additional In-Situ Solidification (ISS) treatability study mix design samples from two soil borings advanced within the planned ISS area at 222 Maspeth Avenue to determine the 28 and 56-day strength of the ISS mass for two mix designs, 2) collection of bulk treatability testing samples from two new soil borings to allow potential remediation contract bidder's to evaluate their own ISS mix designs, 3) collection of four concrete samples for waste characterization testing, for analysis of lead, to evaluate the potential for re-use of the concrete debris as backfill during the IRM, and 4) pilot testing of selected intervals of deep, dense, non-aqueous phase liquid (DNAPL) recovery wells comprising a part of the approved IRM scope, to evaluate the potential for DNAPL recoverability, prior to implementation of the IRM, and to propose elimination of DNAPL recovery wells from the IRM scope, if DNAPL is determined not to be recoverable. The remedial approach outlined in the June 2020 NYSDEC-approved IRM Work Plan focuses on the use of excavation and in-situ solidification to address non-aqueous phase liquid (NAPL) within the parcel combined with the addition of deeper DNAPL recovery wells beneath the Former No. 1 Relief Holder. If the deep DNAPL recovery well pilot testing data indicates that DNAPL is not present at recoverable volumes within the approximate one-year period prior to IRM mobilization, a request will be made to remove those well(s) from the final IRM design.

The IRM Work Plan Addendum follows the guidelines presented in NYSDEC Technical Guidance for Investigation and Remediation (DER-10).

1.1 Background, History, and Site Setting

Detailed information on the Site background, history, and site setting is provided in the NYSDEC-approved IRM Work Plan dated June 2020 (AECOM, 2020). A full history of the Former Equity Works MGP site, its setting, and the former MGP site operations is included in the Remedial Investigation Report (AECOM, 2016).

1.2 Previous Investigations and Remedial Activities

Pursuant to a Multi-Site Order on Consent and Administrative Settlement with NYSDEC, Index #A2-0552-0606, executed on February 22, 2007 and modified on August 10, 2007, National Grid has conducted a series of site investigations to characterize the nature and extent of impacts resulting from operations at the Former Equity Works MGP site, and has implemented two IRMs pending the development and implementation of a final remedy to address subsurface impacts. Detailed information on previous investigations and remedial activities is provided in the NYSDEC-approved IRM Work Plan dated June 2020 (AECOM, 2020). Geologic cross sections summarizing

subsurface stratigraphy, zones of visual and olfactory impacts, and proposed pilot recovery well screened intervals are shown on Figures 1 though 4.

2. Scope of Work

The proposed scope of work for this IRM Work Plan Addendum includes 1) collection of additional ISS treatability study mix design samples from two soil borings advanced within the planned ISS area at 222 Maspeth Avenue to determine the 28 and 56-day strength of the ISS mass for two mix designs, 2) collection of bulk treatability testing samples from two new soil borings to allow remedial bidder's to evaluate their own ISS mix designs, 3) collection of four concrete samples for waste characterization testing, for analysis of lead, to evaluate the potential for re-use of the concrete debris as backfill during the IRM, and 4) proposed pilot testing of selected deep DNAPL recovery wells from those included in the approved IRM design, to evaluate the potential for DNAPL recoverability prior to implementation of the IRM.

2.1 Soil Borings and Additional Treatability Testing

Prior to the start of the soil boring advancement, a Dig Safely New York will be contacted and a private utility survey company will be retained to use radio frequency, M-scope electromagnetic instrument, EM-61 metal detector, and ground penetrating radar groundwater to confirm the presence of underground utilities. A utility mark-out and geophysical survey will be completed to identify subsurface utilities on the 222 Maspeth Avenue property prior to intrusive activities in the proposed work areas outlined on Figure 5. Results may be used to modify the sample locations in consultation with NYSDEC if utilities are located in the proposed sampling areas.

Two soil borings are proposed at the locations presented on Figure 5. The target completion depths for soil borings will be the top of the "intermediate clay" unit up to a maximum depth of approximately 50 feet below grade (ft bgs) based on existing data in the area of the proposed borings. Once the boring locations are cleared by soft-dig methods to a minimum of 5 ft bgs, soil borings will be advanced by sonic drilling methods. During borehole advancement, soils will be logged continuously for visual impacts and screened with a photoionization detector (PID) from ground surface to the terminus of the borehole. Composite and bulk soil samples will be collected from each boring from the anticipated zone of proposed ISS. Composite samples will be submitted to the treatability testing laboratory for the following analyses:

- Raw Samples
    - Moisture Content (ASTM D2216)
    - Bulk Density (ASTM D7263)
    - Grain Size (ASTM D422)
    - pH (United States Environmental Protection Agency [EPA] Method 9045)
- Mix Design
    - Mix 1 – Raw Sample and grout with 8% Type 1 Portland\0.5% Bentonite by total (wet) sample weight) with a 1:1 water to reagent (by weight) grout ratio.
    - Mix 2 - Raw Sample and grout with 10% Type 1 Portland\0.5% Bentonite by total (wet) sample weight) with a 1:1 water to reagent (by weight) grout ratio.
    - Create 6 molds of each mix (12 molds total).
- Mix Testing
    - Test each mix at 28 days, and 56 days cure time for:
        - Moisture Content (ASTM D2216)
        - Bulk Density (ASTM D7263)
        - pH (EPA Method 9045)
        - Unconfined Compressive Strength (ASTM D2166)
        - Hold remaining four molds (two molds for each mix) for additional testing pending the 56-day result.

The lab will send results when each of the 28 and 56-day tests are complete.

Bulk samples will also be collected for testing by prospective remedial contractor bidders, to evaluate their own ISS mix designs.

Upon completion, the soil borings will be tremie-grouted to approximately one-foot below the top of the concrete slab and completed to grade with concrete to match existing surface conditions.

A CAMP has been developed for this project and will be followed during all invasive fieldwork (soil boring advancement). The CAMP will monitor concentrations of volatile organic compounds and particulate matter less than 10 microns in size (PM-10) in accordance with NYSDEC and New York State Department of Health guidance. The CAMP will monitor these parameters at two locations around the work area, with a focus towards areas of occupied space. Included in the CAMP is a description of methods that may be used to control odors during borehole advancement if needed. The CAMP is part of the approved 2009 approved RI Work Plan for the Site.

All Investigation Derived Waste (IDW) generated during this work will be collected in properly labeled 55-gallon drums. Subsequently, the waste will be characterized by laboratory analyses and properly disposed in accordance with management of IDW procedures outlined in 2009 NYSDEC approved FSAP.

2.2 Concrete Sampling and Analysis

Cores of the existing concrete surface pad at 222 Maspeth Avenue will be collected from the two proposed soil borings and two additional locations (4 total) and submitted to the laboratory for Toxicity Characteristic Leaching Procedure lead analysis using EPA Method 6010D. Sampling is being performed to evaluate the potential for re-use of the concrete debris as backfill assuming the data show that the concrete is non-hazardous for lead. Proposed concrete sampling locations are outlined on Figure 5. Upon completion, the surface concrete core areas will be restored with high strength concrete to match existing conditions.

2.3 Pilot Testing of Deep DNAPL Recovery Wells

The current design for the IRM includes the installation of several DNAPL recovery wells designed to collect recoverable DNAPL, if present, at depths below the intermediate clay and above the regional Gardiners Clay confining unit beneath the holder foundation at 222 Maspeth Avenue. Existing data indicates the presence of DNAPL (coating or saturation), beneath the holder foundation, in intervals of varying thickness, from immediately below the holder (27 ft. bgs) to the top of the lower clay unit at approximately 83 ft bgs. Based on these findings, four DNAPL recovery wells are currently included in the IRM Work Plan and design for installation following excavation and backfilling of the holder tank contents. Figure 6 shows the proposed locations of the four recovery wells included in the 60% design documents. The current anticipated design of the recovery wells will be 6-inch diameter wells with stainless-steel, continuous v-wire wrap screens and stainless-steel sumps.

Given the potential for DNAPL to be present beneath the holder below residual saturation levels and therefore not available for collection in the proposed recovery wells, recovery wells will be installed, in a phased approach, at selected IRM Work Plan locations, as a pilot test to evaluate DNAPL recoverability prior to IRM mobilization. Based on the results of the pilot study, none, some, or all the DNAPL recovery wells included in the IRM Work Plan and design will be proposed for elimination from the IRM scope.

Initially, two of the pilot recovery wells will be installed to assess DNAPL recoverability. The initial pilot recovery wells will be installed at the location(s) and at the depth(s) that are most likely to accumulate DNAPL. Pilot recovery well construction will be consistent with that outlined in the Pre-Design Investigation Report (AECOM, 2019) and the NYSDEC-approved IRM Work Plan, including the use of high efficiency 6-inch diameter vee-wire stainless steel screens with 10-foot stainless steel sumps followed by aggressive pump and surge well development. If the initial pilot recovery-well(s) accumulate significant (greater than sump volume) quantities of DNAPL, the pilot test may end, in which case the pilot well(s) will be abandoned and the recovery wells planned in the IRM Work Plan will be installed. If the initial wells do not accumulate greater than sump volume quantities of DNAPL after 1 month, three additional pilot recovery wells will be installed in consultation with NYSDEC at more of the locations and/or intervals proposed in the IRM Work Plan and these wells will be monitored along with those previously installed. If the first and second phases of pilot recovery wells do not accumulate greater than sump volume quantities of DNAPL after one additional month, a third round of two pilot recovery wells covering the remaining screened intervals proposed in the IRM Work Plan will be installed. If at any time significant, greater than sump-volume quantities of DNAPL accumulate in one or more of the pilot test recovery wells, the pilot test may be ended early, in which case the recovery wells

described in the IRM work plan may not be proposed for elimination from the IRM scope. However, if the pilot test is completed for the full duration (~ 12 months following pilot well installation), wells that do not accumulate measurable levels of DNAPL will be proposed for removal from the IRM scope. Wells that accumulate less than sump volume quantities of NAPL will be pumped during the pilot program and if sustained NAPL recharge does not occur, those wells will also be proposed for removal from the IRM scope. Any wells that document sustained NAPL recharge will remain part of the IRM scope. Regardless of the pilot test outcome, the pilot test recovery well(s) will be abandoned before or at the start of the IRM.

Based on an evaluation of existing data with the highest potential for DNAPL accumulation, the initial pilot recovery wells are proposed for installation at the following IRM Work Plan locations as outlined on attached Table 1:

- RW-26 (SB-215) location
- RW-28S (SB-217) location. Shallower screened interval of 27-37 ft bgs with a sump from 37-47 ft bgs.

The proposed second phase of recovery wells to be installed approximately one-month after the first phase of recovery wells are outlined on attached Table 1 and include the following wells:

- RW-27 (SB-216) location, including the shallower screened interval of 49-64 ft bgs (sump from 64-74 ft bgs) and deeper screened interval of 84-94 ft bgs (sump from 94-104 ft bgs).
- RW-29 (SB-218) location. Shallower screened interval of 27-37 ft bgs with a sump from 37-47 ft bgs.

The proposed third phase of recovery wells to be installed approximately one-month after the second phase of recovery wells are outlined on attached Table 1 and include the following wells:

- RW-28 (SB-217) location, including the deeper screened interval of 80-95 ft bgs with a sump 95-105 ft bgs.
- RW-29 (SB-218) location, including the deeper screened interval of 85-95 ft bgs with a sump from 95-105 ft bgs.

Assuming all three phases of pilot recovery wells are installed starting in August 2021, the proposed timeframes listed above will allow for at least approximately 12 months of monitoring of all pilot recovery well screened intervals prior to construction mobilization to allow for NYSDEC review and/or approval of the final scope of deep recovery wells.

3. Schedule

The work presented in this Work Plan Addendum is anticipated to be completed in August based on owner access and driller availability. As outlined in Section 2.3, a second phase of pilot recovery wells may be installed based on the results of the initial two pilot recovery wells in September 2021. Pending the results of the second phase of pilot recovery wells, a third and final phase of recovery wells may be installed in October 2021 to allow for a total monitoring period of at approximately 12 months prior to the start of the IRM. A notification will be made to NYSDEC a minimum of 7 days in advance of any field work in the event NYSDEC wishes to oversee any of the proposed work.

4. References

AECOM 2016, Remedial Investigation Report, Former Equity Gas Works Site, 222-245 Maspeth Avenue, Brooklyn, Kings County, NY, NYSDEC Site No.: 224050, Order on Consent Index #: A2-0552-0606, March 2016

AECOM 2019, Supplemental Investigation Report-222 Maspeth Avenue, Former Equity Works MGP Site, Brooklyn, Kings County, NY, NYSDEC Site No.: 224050, Order on Consent Index #: A2-0552-0606, March 2019.

AECOM 2019, Pre-Design Investigation (PDI) Data Report, 222 Maspeth Avenue Property, Former Equity Works Manufactured Gas Plant (MGP) Site, Brooklyn, New York, NYSDEC Site No.: 224050, Order on Consent Index #: A2-0552-0606, October 2019.

NYSDEC 2010, Final Technical Guidance for Site Investigation and Remediation, DER-10, New York State Department of Environmental Conservation, May 2010.

Table

Table 1
Summary of Proposed Deep NAPL Pilot Recovery Wells
222 Maspeth Avenue
Former Equity Works MGP Site, Brooklyn, New York

Well ID	Deep Boring Location	Screened Interval bgs (ft)	Sump Interval bgs (ft)	Total Well Depth (ft)	Observations
RW-26	SB-215	78-83	83-93	93	Screened interval to intersect NAPL saturated zone from 80 to 83 feet bgs.
RW-27	SB-216	49-64 & 64-84	64-74 & 84-94	94	Two proposed screened intervals. Upper screen to intersect NAPL coated and saturated soils from 49 to 64 feet bgs. Lower screen to intersect NAPL coated and saturated soils from 64 to 84 feet bgs.
RW-28	SB-217	27-37 & 80-95	37-47 & 95-105	105	Two proposed screened intervals. Upper screen to intersect NAPL coated and saturated soils from 27 to 35 feet bgs. Lower screen to intersect NAPL coated and saturated soils from 80 to 95 feet bgs.
RW-29	SB-218	27-37 & 80-85	37-47 & 85-95	95	Two proposed screened intervals. Upper screen to intersect NAPL coated and saturated soils from 27 to 35 feet bgs. Lower screen to intersect NAPL saturated soils from 80 to 84.5 feet bgs.

Figures

MASPETH AVENUE

H

SB-27,33 &35
NORTH
E

B'

GPEC-SB331
NORTHEAST

60" Sanitary Sewer

12" Storm Sewer

CONCRETE SIDEWALK

GATE

B-1 SEWER DISCHARGE MANHOLE

UNPAVED

CONCRETE

SIDEWALK

A

MW-6A
MW-6B
SB-6B

SB-24/MW-10C

SB-30

AMB-1

1A1/SV1

LOCKER ROOM
1st FLOOR

OFFICES
2nd FLOOR

6K UNDERGROUND
SETTLING TANK

SB-20/MW-8A,B,C

PW-1

RAMP

SCALE

Drain

MECHANIC GARAGE AND
MAINTENANCE OFFICE

1A2/SV2

PURIFYING
HOUSE

MW-2A
MW-2B
SB-2B
SB-2*

1 STORY
STUCCO &
CONC. BLOCK

Door

Plat

254-B-5

SB-2

RW-8

SB-3B
MW-3B
MW-3A
MW-3C
SB-3C

SB-3

RW-1
SB-15

254-B-6

SB-201
SB-100
SB-200
SB-110
SB-20J

SB-221
SB-220
SB-202
SB-216/RW-27
SB-215/RW-26
SB101-RW24
SB-217/RW-28
SB-219
SB-218/RW-29
SB-222
SB102-RW25
SB-102
SB-207
SB-209
SB-205
SB-109
SB-208
SB-206
SB-210
SB-214
SB-107
SB-213
SB-108

RELIEF HOLDER
BRICK CHIMNEY
(450,000 CFH CAPACITY)

SB-8
SB-13

SB-103
DRAINAGE
COLLECTION

252-B-1

SB-29/MW-15B

SB-4

GATE

SB-203
SB-14A
SB-14B
GW-1

SB-204

SETTLING
TANK

SB-105
SB-212

EXHAUSTERS

252-B-2

252-B-3

SB-16A
SB-16B*

GENERATOR
HOUSE

254-B-4

SEPARATOR

FEDEX-EMPLOYEE
PARKING LOT

STABLE

SB-12B
SB-12

TAR
TANK

BOILER HOUSE

GAS OIL STORAGE HOUSE

No.1
No.2
No.3
OIL TANK

MW-4A
MW-4C
SB-4C
MW-4B

SB-1

SB-11

SEPARATOR

SB-19*
MW-5A
MW-5B
SB-5B
SB-19C

252-B-4

254-B2

MW-7B
SB-17
MW-7A

254-B1

254-B3

SB-7A*

SB-18

SB-7B

A'

SB-5

APPROXIMATE
LOCATION OF
MECHANICS
TRAILER/SHED

LAYDOWN AREA FOR SCRAP STEEL,
ROLL-OFFS, TRUCKS, AND TRAILERS

SB-21/MW-14B

ROOF LINE

MACHINERY AND
CONVEYOR BELT

OPEN LAYDOWN AREA
UNDER ROOF

SEPARATED
MATERIAL BAYS
1st FLOOR

SEPARATOR
PICKING LINE
2nd FLOOR

480V ELECTRIC
SERVICE LINE

ONE STORY BRICK & CONC. BLOCK BUILDING

SB-40

CONCRETE SIDEWALK

VANDERVOORT AVE.

MW-1A
MW-1C
SB-1C
MW-1B

SB-23/MW-9C

PROPOSED SS-1 WAS NOT
COLLECTED DUE TO CONCRETE

B

ONE STORY BRICK BUILDING

PAVED LOT

ONE STORY BRICK BUILDING

SB-42
SOUTHWEST

H'

SB-41

LEGEND

- MONITORING WELL
- SOIL BORING
- RECOVERY WELL
- SHALLOW SOIL BORING
- DEEP SOIL BORING

AECOM

20 0 40

GRAPHIC SCALE IN FEET

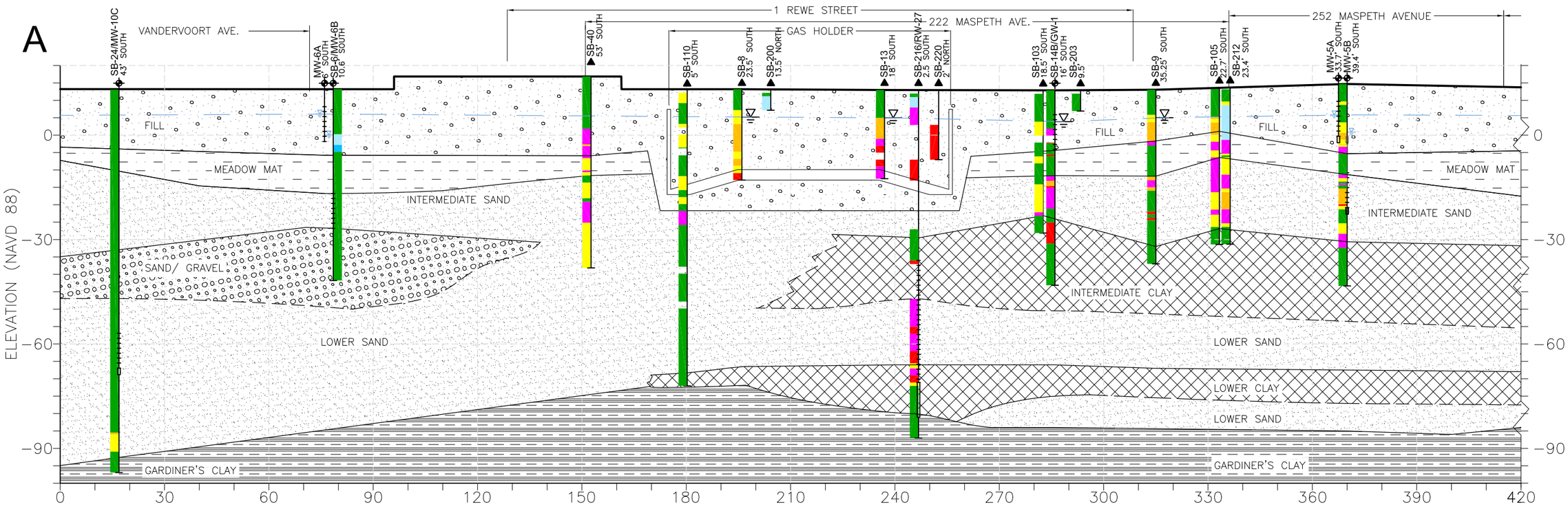
NATIONAL GRID
FORMER EQUITY WORKS MGP SITE, BROOKLYN, NY

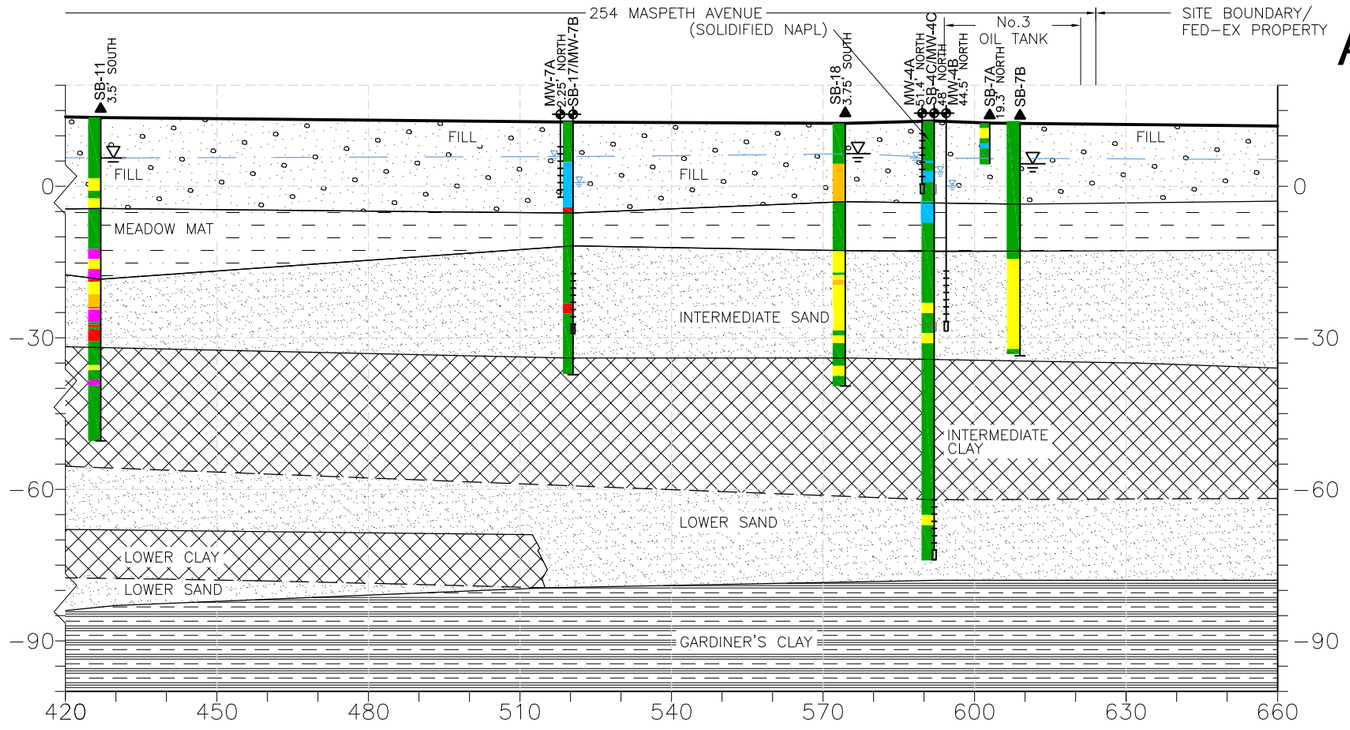
GEOLOGIC CROSS-SECTION LOCATIONS

DATE: 07/2021 | DRWN: KPB | FIGURE 1

File: C:\Users\berryk\OneDrive - AECOM Directory\Working Jobs\National Grid\222 Maspeth Avenue\X-Sect Location.dwg Layout: Fig 1 - XSECT Loc User: BerryK Plotted: Jul 15, 2021 - 2:35pm

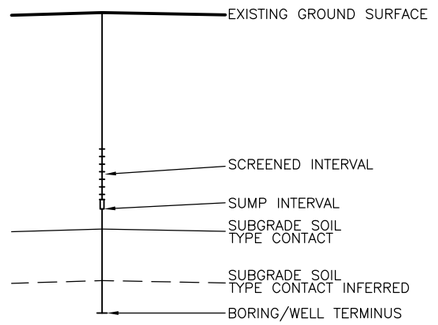
A





A'

LEGEND:



- NAPL SATURATED
- NAPL COATED MATERIAL, LENSES
- NAPL BLEBS, GLOBS, SHEENS
- STAINING ODOR
- SOLID NAPL
- INDUSTRIAL IMPACTS – (PETROLEUM OR OTHER UNNATURAL) SATURATION & SHEENS
- INDUSTRIAL IMPACTS – (PETROLEUM OR OTHER UNNATURAL) STAINING & ODORS
- NO OBSERVED IMPACTS
- NO RECOVERY

- FILL
- MEADOW MAT
- SAND/GRAVEL
- INTERBEDDED SAND, SILT AND CLAY
- GARDINERS CLAY
- INTERMEDIATE CLAY AND LOWER CLAY LENS
- MW-4A — RI MONITORING WELL
- SB-4 — RI SOIL BORING

NOTE:

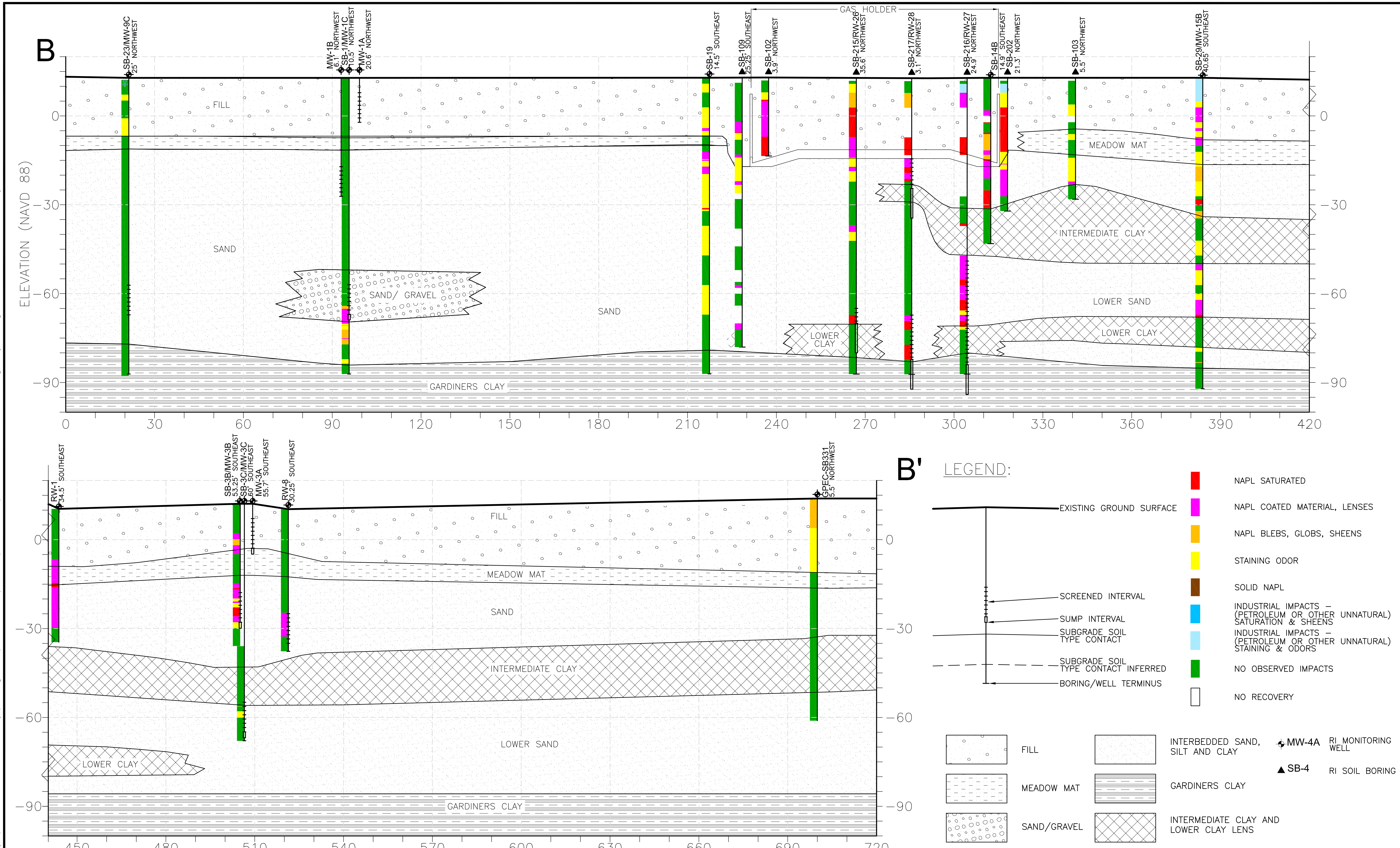
Monitoring wells MW−6A, MW−5A, MW−7A, MW−4A, and MW−4B have been added to the cross−section adjacent to the deeper well pair/triplet for comparison. These locations were graphically adjusted for clarity and do not represent field locations.

MW−4C is offset by 35' from the cross−section. Lithology from −30 to −74 feet has been projected onto the cross−section.

* Gardiners Clay at SB−6B based on stratigraphy at SB−1C.

AECOM

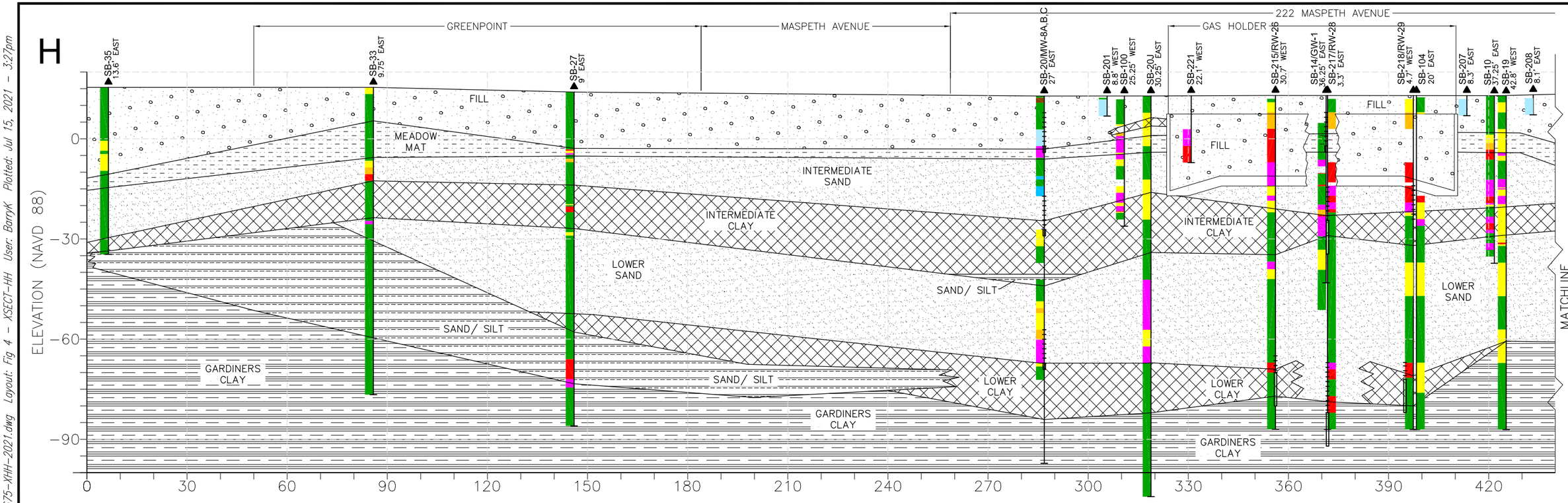
NATIONAL GRID FORMER EQUITY WORKS MGP SITE, BROOKLYN NY 60137362-675	**GEOLOGIC CROSS SECTION A-A'**
DATE: 07/2021 | DRWN: KPB	**FIGURE 2**



AECOM

NATIONAL GRID FORMER EQUITY WORKS MGP SITE, BROOKLYN NY 60137362-675	GEOLOGIC CROSS SECTION B-B'
DATE: 07/2021 DRWN: KPB	FIGURE 3

File: C:\Users\barryk\OneDrive - AECOM Directory\Working Jobs\National Grid\222 Maspeth Avenue\60137362-675-XBB-2021.dwg Layout: Fig 3 - XSECT-BB User: BarryK Plotted: Jul 26, 2021 - 8:46am



LEGEND:

- EXISTING GROUND SURFACE
- SCREENED INTERVAL
- SUMP INTERVAL
- SUBGRADE SOIL TYPE CONTACT
- SUBGRADE SOIL TYPE CONTACT INFERRED
- BORING/WELL TERMINUS

- NAPL SATURATED
- NAPL COATED MATERIAL, LENSES
- NAPL BLEBS, GLOBS, SHEENS
- STAINING ODOR
- SOLID NAPL
- INDUSTRIAL IMPACTS – (PETROLEUM OR OTHER UNNATURAL) SATURATION & SHEENS
- INDUSTRIAL IMPACTS – (PETROLEUM OR OTHER UNNATURAL) STAINING & ODORS
- NO OBSERVED IMPACTS
- NO RECOVERY

- FILL
- MEADOW MAT
- SAND/GRAVEL
- SAND/SILT
- INTERBEDDED SAND, SILT AND CLAY
- GARDINERS CLAY
- INTERMEDIATE CLAY AND LOWER CLAY LENS

- MW-4A RI MONITORING WELL
- SB-4 RI SOIL BORING

NOTE:
1. SB–14/GW–1 LOCATED OUTSIDE HOLDER WALL. SB–104 LOCATED DIRECTLY ON HOLDER WALL. REFER TO CROSS SECTION LOCATION FIGURE.

AECOM

NATIONAL GRID FORMER EQUITY WORKS MGP SITE, BROOKLYN NY 60137362-675			**GEOLOGIC CROSS SECTION H-H'**
DATE: 07/2021	DRWN: KPB		**FIGURE 4**

CONCRETE SAMPLING PLAN NOTES:
PCS DENOTES PROPOSE CONCRETE SAMPLE.

1. FIELD SAMPLE LOCATIONS WILL NOT DEVIATE BY MORE THAN 5' IN ANY DIRECTION FROM THE PROPOSED SAMPLE LOCATION.
2. CONCRETE CORES WILL BE TAKEN AT EACH LOCATION THROUGH THE FULL DEPTH OF THE SURFACE CONCRETE SLAB.
3. THE ENTIRE CORE WILL BE SENT TO THE ANALYTICAL LABORATORY FOR ANALYSES. THE LAB WILL COMPOSITE THE SAMPLE TO OBTAIN THE ALIQUOT NEEDED FOR TESTING.
4. LOCATIONS OF UTILITIES AND HISTORIC STRUCTURES SHOWN ARE NOT SURVEYED AND ARE APPROXIMATE.
5. PREVIOUS BORING LOCATIONS ARE SHOWN FOR REFERENCE.

PROPOSED SOIL BORING AND CONCRETE CORE SAMPLE LOCATION

PROPOSED CONCRETE CORE SAMPLE LOCATION

SEPARATOR PICKING LINE 2nd FLOOR

SEPARATED MATERIAL BAYS 1st FLOOR

RAMP DOWN

GATE

SB-110

480V ELECTRIC SERVICE LINE

SB-222

MACHINERY AND CONVEYOR BELT

SB-101/RW-24

SB-206 SB-205 SB-102/RW-25 SB-215

SB-109

PCS-03
N:686614.2
E:649010.9

SB-200

SB-100

SCALE

GATE

LOCKER ROOM 1st FLOOR

OFFICES 2nd FLOOR

SB-201

PCS-04
N:686557.3
E:649047.3

SB-218

SB-108

SB-208

SB-207

SB-217

SB-216

WM

SB-219

SB-104

SB-220

SB-202

HIGH CONCRETE WALL (SIZE VARIES)

ROOF LINE

SB-210

SB-209

PCS-02
N:686572.2
E:649091.4

PCS-01
N:686628.2
E:649059.3

TAR TANK

HOLDER PIRE WELL

SB-203

SB-103

SB-214

SB-213

SB-211

SB-107

SETTLING TANK

DRUM/WASTE STORAGE AREA

DRIP TANKS

DRAIN

SB-105

SB-212

SB-204

SB-106

RAMP DOWN

GATE

GATE

SEPARATOR

36" CONCRETE BLOCK WALL

D LOT

60" SANITARY SEWER

10 0 20

HORIZONTAL SCALE IN FEET

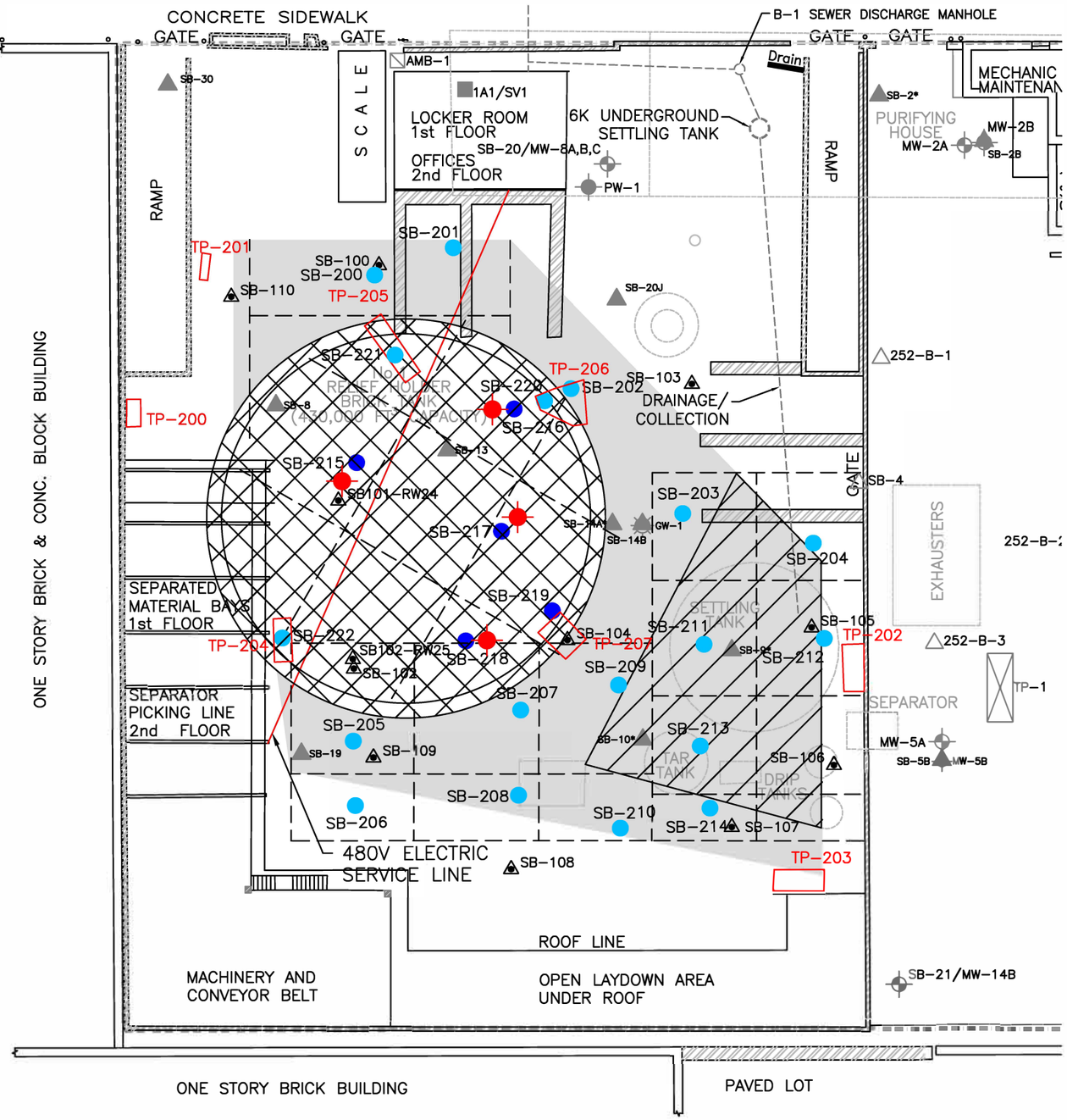
AECOM

NATIONAL GRID
EQUITY WORKS FORMER MGP SITE
BROOKLYN NY

PROPOSED SOIL BORINGS AND CONCRETE SAMPLING PLAN LOCATIONS
222 MASPETH AVENUE

DATE: 06-08-2021 | DRWN: AM | FIGURE 5

File: C:\Users\akansha.mazumder\AECOM Directory\Equity Design Team - General\910 CAD\25 SKETCHES\Concrete Slab Sampling Plan.dwg Layout: Prop. Soil Borings & Concrete Sampling Plan User: akansha.mazumder Plotted: Jun 08, 2021 - 4:39pm



NOTES:
1.) SITE FEATURES (BUILDINGS, WALLS, UTILITIES, ETC.) TAKEN MONTROSE FROM SURVEYING CO., LLC. OF RICHMOND HILL, NY. THOSE SURVEYS (MASPETH AVE 222 ON 9/21/04 AND MASPETH AVE 252 & 254 ON 3/10/08) PROVIDED BY COOPER TANK RECYCLING.
2.) LOCATIONS OF HISTORIC MGP STRUCTURES BASED ON SANBORN FIRE INSURANCE MAPS.
3.) LOCATION OF HISTORIC INVESTIGATION LOCATIONS BASED ON EEA INC., 2004 REPORT (254 MASPETH AVE) AND GANNETT FLEMING 2005 REPORT (252 MASPETH AVE).
4.) SITE CHARACTERIZATION INVESTIGATION LOCATIONS SURVEYED BY GEOD CONSULTING ON DECEMBER 11 AND 12, 2009.
5.) OFFICE BUILDING AND SCALE ON 222 MASPETH AVE. ADJUSTED FROM MONTROSE SURVEY BASED ON FIELD OBSERVATIONS.
* LOCATIONS BASED ON FIELD TIE-INS BY AECOM.

LEGEND:

- LOCATION OF PROPOSED DEEP NAPL RECOVERY WELL FOLLOWING EXCAVATION OF HOLDER CONTENTS
- SHALLOW SOIL BORINGS
- DEEP SOIL BORINGS
- TEST PITS
- PRE-CHARACTERIZATION SAMPLING GRID (BASE ON VOLUME)
- SOLIDIFY NAPL TO INTERMEDIATE CLAY (~45 FT BGS)
- EXCAVATE HOLDER CONTENTS TO 26 FT BGS
- ISS PRE-EXCAVATION TO 10 FT BGS
- SITE BOUNDARY
- ROADWAY EASEMENT
- CURB
- BUILDING WALL
- CONCRETE WALL
- FENCE
- WATER UTILITY WITH ACCESS WAY
- WATER UTILITY VALVE
- HYDRANT
- UNDERGROUND ELECTRIC UTILITY VAULT
- 60" SEWER UTILITY WITH ACCESS WAY
- 12" SEWER UTILITY WITH ACCESS WAY
- BOLLARDS
- ELECTRIC UTILITY POLE
- MW-4A RI MONITORING WELL
- SB-4 RI SOIL BORING
- TP-3 RI TEST PIT
- AMB-1 AMBIENT AIR
- 1A1/SV1 INDOOR AIR/ SOIL VAPOR
- PW-1 ON-SITE PUMPING WELL
- GW-1 TEMPORARY MONITORING WELL
- 254-B-6 PREVIOUS INVESTIGATION SAMPLE LOCATION
- HISTORIC STRUCTURE
- CURRENT FEATURE
- SB-100 SUPPLEMENTAL INVESTIGATION LOCATION

15 0 30
GRAPHIC SCALE IN FEET

AECOM

NATIONAL GRID
EQUITY FORMER MGP SITE, BROOKLYN NY
PRE-DESIGN INVESTIGATION
60137362.360

PROPOSED DEEP NAPL RECOVERY WELLS

DATE: 08/16/2019 | DRWN: JB | **FIGURE 6**

File: P:\Jobs\Rem_Eng\Project Files\National Grid\1765-076 Equity Former MGP\7.2 CADD & GIS\GIS\Presentation_20190208\MXD\Fig_Alternative_1_2_Pre_Design_Invest_Loc.dwg Layout: R6 2 PROPOSED DEEP NAPL RECOVERY WELLS User: Bourdeau Plotted: Aug 16, 2019 - 8:27am