

Mr. Patrick Van Rossem
National Grid
175 East Old Country Road
Hicksville, New York 11801

Date: August 12, 2022
Our Ref: 30004014
Subject: Supplemental Off-Site Investigation Work Plan
Former Citizens Gas Works Manufactured Gas Plant Site
Borough of Brooklyn, Kings County, New York
NYSDEC Site No. 224012

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Dear Mr. Van Rossem,

This letter has been prepared by Arcadis of New York, Inc. (Arcadis), on behalf of The Brooklyn Union Gas Company d/b/a National Grid NY ("National Grid"), to present the proposed scope of supplemental off-Site investigation work for the former Citizens Gas Works manufactured gas plant (MGP) site (hereinafter, the "Site") in Brooklyn, New York (Figure 1). The supplemental off-Site investigation is being conducted in response to the New York State Department of Environmental Conservation's (NYSDEC's) request for additional soil borings and additional groundwater monitoring wells screened within the intermediate and deep zones¹ to further delineate potential MGP-related impacts in the following off-Site areas:

- 4th Street right-of-way northeast of the Site between Hoyt Street and Bond Street;
- Luquer Street and Nelson Street rights-of-way west of the Site between Court Street and Smith Street;
- Huntington Street right-of-way south of the Site between Smith Street and the Gowanus Canal; and
- 469 Smith Street property, which is located southwest of the Site between the 240 Huntington Street site (NYSDEC Site No. C224314) and 9th Street.

The remainder of this letter presents the proposed scope, anticipated report contents, and sequence/schedule for the supplemental off-Site investigation.

Proposed Field Activities

As described below, the field activities will include the: (1) drilling, soil sampling, and installation of several new off-Site monitoring wells in the 4th Street, Luquer Street, Nelson Street, and Huntington Street rights-of-way and at the 469 Smith Street property; and (2) collection and analysis of groundwater samples from the new off-Site

¹ As described in the *Final Remedial Investigation Report* (GEI Consultants, Inc. 2005), the intermediate zone generally extends from the bottom of the discontinuous alluvial/marsh deposits (approximately elevation -10.0 feet to approximately elevation -24.0 feet below the North American Vertical Datum of 1988 [NAVD88]) to the bottom of the discontinuous glacial silt and glacial clay layers (approximately elevation -90.0 feet NAVD88) and the deep zone generally extends from the bottom of the discontinuous glacial silt and glacial clay layers (approximately elevation -90.0 feet NAVD88) to the vertical extent of subsurface exploration at the Site (approximately elevation -135 feet NAVD88).

monitoring wells. The off-Site investigation locations are shown on Figure 2 and Table 1 summarizes the location, boring depth, and objective of each proposed soil boring and monitoring well. The existing and proposed monitoring well locations (both on-Site and off-Site) are shown on Figure 3 and the well construction details are summarized in Table 2. Borings/wells may be relocated in the field and construction details may be modified based on accessibility, obstructions (refusal), observed conditions, and related factors. As appropriate, the field activities described herein will be conducted in accordance with the NYSDEC-approved Quality Assurance Project Plan and Field Sampling Plan for the Site.

Drilling, Soil Sampling, and Monitoring Well Installation

As indicated in Table 1, soil borings CGSB-358 through CGSB-363 will be drilled to facilitate the installation of new off-Site monitoring wells and, in the cases of soil borings CGSB-358 and CGSB-363, to delineate the off-Site extent of visible MGP-related impacts in soil south of the 459 Smith Street site (NYSDEC Site No. C224012B; formerly, Parcel III of the Site) and the 240 Huntington Street site (NYSDEC Site No. C224314), respectively. Prior to mobilization, the New York City one-call service (New York 811) will be contacted and, where applicable, street opening and building operations permits will be obtained from the New York City Department of Transportation for work within public rights-of-way.

Soil borings will be drilled using sonic drilling methods. Before initiating drilling activities, each location will be hand-cleared to a depth of approximately 7 feet below ground surface to facilitate the identification of potential near-surface utilities and shallow obstructions. Thereafter, soil samples will be collected in continuous intervals from approximately 7 feet below ground surface to the bottom of the boring. Each sample will be screened for volatile organic compound vapors (VOCs) with a photoionization detector (PID) and will be visually examined and logged. In general, the following information will be recorded for each soil sample:

- Depth interval;
- Length of recovered sample;
- PID headspace;
- Soil type/composition (principal and minor components);
- Moisture content;
- Consistency/density;
- Color;
- Odors, if any; and
- Visual impacts, if any, in the form of staining, sheens, non-aqueous phase liquid (NAPL) blebs/globs, NAPL coatings, and/or NAPL-saturated materials.

As indicated in Table 2, new monitoring wells will be constructed of nominal 2-inch diameter flush-threaded Schedule 40 polyvinyl chloride riser and 0.010-inch slotted screen. The new intermediate and deep monitoring wells at each location will be installed as nested pairs within a single borehole. Figure 4 shows the typical construction details for a standard (single) monitoring well and a nested monitoring well pair.

In conjunction with these activities, existing off-Site monitoring well CGMW-24 (Figure 2), which appears to have been installed/screened shallower than the water table, will be decommissioned and a new shallow zone groundwater monitoring well (CGMW-63) will be installed within the adjacent sidewalk with a deeper well screen set within the upper approximately 10 feet of saturated soil. The decommissioning activities for existing monitoring well CGMW-24 will be conducted in accordance with NYSDEC's *Groundwater Monitoring Well Decommissioning Policy* (NYSDEC 2009).

Following installation, each new monitoring well will be developed and surveyed to record its actual ground surface elevation, measuring point elevation, and horizontal location, referenced to Site datum. Soil cuttings, well purge water, and other investigation-derived waste generated during the off-Site drilling, soil sampling, and monitoring well installation activities will be stored in properly-labeled 55-gallon drums and transported off-Site for disposal in accordance with applicable laws and regulations.

Real-time community air monitoring for total VOCs and respirable dust (particulate matter less than 10 micrometers in diameter [PM₁₀]) will be performed during work hours on a daily basis during the off-Site drilling, soil sampling, and well installation activities. Portable air monitoring stations will be deployed at the start of each work day before any ground-intrusive or dust-generating activities are initiated. In general, one upwind monitoring location and one downwind monitoring location will be selected based on the predominant wind direction. Security, accessibility, and the proximity of the work area to potential receptors will also be considered in selecting monitoring locations each day. Each air monitoring station will include a data-logging PID for measuring the airborne concentration of total VOCs and a data-logging aerosol photometer for measuring the airborne concentration of PM₁₀. The monitoring equipment will be housed in portable, weather-tight enclosures, which will be mounted on surveying tripods at a height of approximately 4.5 to 5.5 feet (breathing zone height). Community air monitoring procedures and action levels for total VOCs and PM₁₀ will comply with the New York State Department of Health (NYSDOH) *Generic Community Air Monitoring Plan* (NYSDOH 2009).

Groundwater Sample Collection and Analysis

New off-Site monitoring wells will be sampled using low-flow purging and sampling techniques. Samples will not be collected from monitoring wells where NAPL is observed. Each groundwater sample will be analyzed for the following Site-related constituents of concern:

- Benzene, toluene, ethylbenzene, xylenes in accordance with United States Environmental Protection Agency (USEPA) SW-846 Method 8260;
- Polycyclic aromatic hydrocarbons, consisting of acenaphthene, acenaphthylene, anthracene, benzo(a)anthracene, benzo(a)pyrene, benzo(b)fluoranthene, benzo(g,h,i)perylene, benzo(k)fluoranthene, chrysene, dibenzo(a,h)anthracene, fluoranthene, fluorene, indeno(1,2,3-cd)pyrene, 2-methylnaphthalene, naphthalene, phenanthrene, and pyrene, in accordance with USEPA SW-846 Method 8270; and
- Total cyanide in accordance with USEPA SW-846 Method 9012.

Quality assurance/quality control samples, including trip blanks, rinse blanks, field duplicates, matrix spikes, and matrix spike duplicates, will also be collected and analyzed in accordance with the Quality Assurance Project Plan.

Reporting

The results of the field activities described herein will be presented in a Supplemental Off-Site Investigation Report. The contents of the report are anticipated to include, at a minimum, the following:

- Brief narrative describing the scope and results of the investigation;
- Recommendations, if any, regarding the need for additional off-Site delineation soil borings or monitoring wells;

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- Table(s) summarizing the visual impacts, if any, observed in the off-Site soil borings, well construction details, and validated groundwater sample data;
- Figure showing the off-Site investigation locations, including the new off-Site soil borings and monitoring wells;
- Boring and well construction logs for the new off-Site monitoring wells;
- Community air monitoring data and summary of results;
- Groundwater sampling logs; and
- NYSDEC Analytical Services Protocol Category B laboratory deliverable and data usability summary report for the groundwater sample data.

The Supplemental Off-Site Investigation Report will be submitted to NYSDEC within approximately 60 days after the completion of the field activities described herein and receipt of all laboratory data. As appropriate, the information presented in the Supplemental Off-Site Investigation Report will also be incorporated into the Interim Site Management Plans and the report for the fall 2022 semi-annual groundwater monitoring event.

Schedule and Sequencing

Arcadis will schedule the field activities described herein upon receipt of NYSDEC's approval of this work plan and upon securing access to the 469 Smith Street property. Given the uncertainty regarding the timing for securing such access, the approved field work may be completed in two separate phases. The first phase of the field work would likely include the: (1) decommissioning of existing off-Site monitoring well CGMW-24; (2) drilling and installation of the off-Site soil borings and monitoring wells located within the 4th Street, Luquer Street, Nelson Street, and Huntington Street rights-of-way (CGSB-358/CGMW-61I/CGMW-61D, CGSB-359/CGMW-62I/CGMW-62D, CGSB-360/CGMW-63, CGSB-361/CGMW-64I/CGMW-64D, and CGSB-362/CGMW-12I/CGMW-12D); and (3) collection and analysis of groundwater samples from new off-Site monitoring wells CGMW-12I, CGMW-12D, CGMW-61I, CGMW-61D, CGMW-62I, CGMW-62D, CGMW-63, CGMW-64I, and CGMW-64D (Figure 2). If schedule allows, these groundwater sampling activities would be conducted in conjunction with the next semi-annual groundwater monitoring event, which is scheduled to occur in fall 2022 in accordance with the *Baseline Groundwater Monitoring Report* (Arcadis 2022).

The second phase of the field work would occur once access is secured to the 469 Smith Street property and include the: (1) drilling of off-Site soil boring CGSB-363 and installation of off-Site monitoring wells CGMW-65S, CGMW-65I, and CGMW-65D; and (2) collection and analysis of groundwater samples from new off-Site monitoring wells CGMW-65S, CGMW-65I, and CGMW-65D (Figure 2).

Please let me know if you have any questions regarding the information presented herein.

Sincerely,
Arcadis of New York, Inc.



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August 12, 2022

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Tables:

Table 1. Summary of Proposed Off-Site Investigation Locations

Table 2. Piezometer and Monitoring Well Construction Summary

Figures:

Figure 1. Site Location Map

Figure 2. Off-Site Investigation Plan

Figure 3. Piezometer and Monitoring Well Plan

Figure 4. Typical Monitoring Well Construction Details

References:

Arcadis. 2022. *Baseline Groundwater Monitoring Report*. Former Citizens Gas Works MGP Site, Carroll Gardens/Public Place, Brooklyn, New York. Prepared for National Grid. May 27.

GEI Consultants, Inc. 2005. *Final Remedial Investigation Report*. Former Citizens Gas Works MGP Site, Carroll Gardens/Public Place, Brooklyn, New York. Prepared for KeySpan Corporation. October.

NYSDEC. 2009. *Groundwater Monitoring Well Decommissioning Policy*. Commissioner Policy CP-43. Division of Environmental Remediation. November 3.

NYSDOH. 2009. *Generic Community Air Monitoring Plan*. Center for Environmental Health, Bureau of Environmental Exposure Investigation. December.

Tables

Table 1
Summary of Proposed Off-Site Investigation Locations
Supplemental Off-Site Investigation Work Plan

National Grid
Former Citizens Gas Works Manufactured Gas Plant Site
Borough of Brooklyn, Kings County, New York
NYSDEC Site No. 224012

Location ID	Property or General Location	Easting (feet NAD83)	Northing (feet NAD83)	Estimated Ground Surface Elevation (feet NAVD88)	Proposed Depth of Boring (feet bgs)	Objective
CGSB-358/CGMW-61I/CGMW-61D	Huntington Street ROW	631742.44	671244.25	13.36	130.00	CGSB-358: Delineate off-Site extent of visible MGP-related impacts in soil along Huntington Street west of soil boring CGSB-26 between Parcel III (the 459 Smith Street site) and the 240 Huntington Street site and facilitate installation of new off-Site monitoring wells CGMW-61I and CGMW-61D. CGMW-61I: Characterize existing conditions with respect to dissolved-phase concentrations of Site-related constituents of concern in off-Site intermediate zone groundwater along Huntington Street between Parcel III (the 459 Smith Street site) and the 240 Huntington Street site. CGMW-61D: Characterize existing conditions with respect to dissolved-phase concentrations of Site-related constituents of concern in off-Site deep zone groundwater along Huntington Street between Parcel III (the 459 Smith Street site) and the 240 Huntington Street site.
CGSB-359/CGMW-62I/CGMW-62D	Nelson Street ROW	631325.26	671693.86	28.42	145.00	CGSB-359: Facilitate installation of new off-Site monitoring wells CGMW-62I and CGMW-62D. CGMW-62I: Delineate off-Site extent of impacted groundwater in the intermediate zone west of existing off-Site monitoring well CGMW-17 CH4. CGMW-62D: Delineate off-Site extent of impacted groundwater in the deep zone west of existing off-Site monitoring well CGMW-17 CH6.
CGSB-360/CGMW-63	Luquer Street ROW	631500.91	671858.13	29.29	40.00	CGSB-360: Facilitate installation of new off-Site monitoring well CGMW-63. CGMW-63: Establish new, more accessible off-Site shallow zone groundwater monitoring well in the area of existing off-Site monitoring well CGMW-24 with screen set within the upper approximately 10 feet of saturated soil.
CGSB-361/CGMW-64I/CGMW-64D	Luquer Street ROW	631350.50	671911.53	35.06	150.00	CGMW-64I: Facilitate installation of new off-Site monitoring wells CGMW-64I and CGMW-64D. CGMW-64I: Delineate off-Site extent of impacted groundwater in the intermediate zone west of existing on-Site monitoring well CGMW-01I and existing off-Site monitoring well CGMW-17 CH4. CGMW-64D: Delineate off-Site extent of impacted groundwater in the deep zone west of existing off-Site monitoring well CGMW-17 CH6.
CGSB-362/CGMW-12I/CGMW-12D	4th Street ROW	632691.02	671814.90	9.63	130.00	CGSB-362: Facilitate installation of new off-Site monitoring wells CGMW-12I and CGMW-12D. CGMW-12I: Delineate off-Site extent of impacted groundwater in the intermediate zone east of existing off-Site monitoring well CGMW-18 CH6 and northeast of existing on-Site monitoring well CGMW-55I. CGMW-12D: Characterize existing conditions with respect to dissolved-phase concentrations of Site-related constituents of concern in off-Site deep zone groundwater along 4th Street to the northeast of Parcel II.
CGSB-363/CGMW-65S/CGMW-65I/CGMW-65D	469 Smith Street	631741.46	671009.61	11.00	130.00	CGSB-363: Delineate off-Site extent of visible MGP-related impacts in soil southwest of the 240 Huntington Street site and facilitate installation of new off-Site monitoring wells CGMW-65S, CGMW-65I, and CGMW-65D. CGMW-65S: Characterize existing conditions with respect to dissolved-phase concentrations of Site-related constituents of concern in off-Site shallow zone groundwater southwest of the 240 Huntington Street site. CGMW-65I: Characterize existing conditions with respect to dissolved-phase concentrations of Site-related constituents of concern in off-Site intermediate zone groundwater southwest of the 240 Huntington Street site. CGMW-65D: Characterize existing conditions with respect to dissolved-phase concentrations of Site-related constituents of concern in off-Site deep zone groundwater southwest of the 240 Huntington Street site.

Notes:

1. Horizontal reference datum is the North American Datum of 1983 (NAD83), New York State Plane East Zone.
2. Vertical reference datum is the North American Vertical Datum of 1988 (NAVD88).
3. bgs: below ground surface.

Table 2
Piezometer and Monitoring Well Construction Summary
Supplemental Off-Site Investigation Work Plan

National Grid
Former Citizens Gas Works Manufactured Gas Plant Site
Borough of Brooklyn, Kings County, New York
NYSDEC Site No. 224012

Location ID	Date Completed	Property or General Location	Easting (feet NAD83)	Northing (feet NAD83)	Ground Surface Elevation (feet NAVD88)	Measuring Point Elevation (feet NAVD88)	Casing Type	Screen Type	Nominal Diameter (inches)	Screen Slot Size (inches)	Screen Length (feet)	Screened Zone ³	Screened Interval				Sump Length (feet)	Total Depth (feet bgs)		
													Depth (feet bgs)		Elevation (feet NAVD88)					
Piezometers																				
CGPZ-07	1/3/2022	Parcel II	632640.98	671637.46	7.96	7.12	Sch. 40 PVC	Sch. 40 PVC	2.00	0.010	13.00	Shallow	2.70	-	15.70	5.26	-	-7.74	0.00	15.70
CGPZ-08	1/5/2022	Parcel II	632460.59	671632.20	8.49	8.06	Sch. 40 PVC	Sch. 40 PVC	2.00	0.010	13.00	Shallow	2.00	-	15.00	6.49	-	-6.51	0.00	15.00
CGPZ-09	2/10/2022	Parcel II	632296.88	671583.22	11.22	10.77	Sch. 40 PVC	Sch. 40 PVC	2.00	0.010	13.00	Shallow	2.20	-	15.20	9.02	-	-3.98	0.00	15.20
CGPZ-10	2/16/2022	Parcel II	632191.75	671522.28	12.11	11.86	Sch. 40 PVC	Sch. 40 PVC	2.00	0.010	13.00	Shallow	2.30	-	15.30	9.81	-	-3.19	0.00	15.30
CGPZ-11	11/17/2021	Parcel III	632056.85	671379.40	9.91	9.34	Sch. 40 PVC	Sch. 40 PVC	2.00	0.010	13.00	Shallow	2.00	-	15.00	7.91	-	-5.09	0.00	15.00
CGPZ-12	11/17/2021	Parcel III	631944.06	671216.52	9.05	9.55	Sch. 40 PVC	Sch. 40 PVC	2.00	0.010	13.00	Shallow	2.00	-	15.00	7.05	-	-5.95	0.00	15.00
CGPZ-42S	12/16/2009	Parcel III	631946.55	671524.58	16.28	18.18	Sch. 40 PVC	Sch. 40 PVC	1.00	0.010	10.00	Shallow	13.92	-	23.92	2.36	-	-7.64	0.00	23.92
Monitoring Wells																				
Existing Monitoring Wells ⁴																				
CGMW-01S	NA	Parcel I	631802.20	672022.94	29.82	29.35	Sch. 40 PVC	Sch. 40 PVC	2.00	0.010	10.00	Shallow	28.21	-	38.21	1.61	-	-8.39	2.00	40.21
CGMW-01I	NA	Parcel I	631796.71	672020.77	30.02	29.64	Sch. 40 PVC	Sch. 40 PVC	2.00	0.010	10.00	Intermediate	74.35	-	84.35	-44.33	-	-54.33	2.00	86.35
CGMW-01D	5/12/2003	Parcel I	631798.85	672027.57	30.06	29.72	Sch. 40 PVC	Sch. 40 PVC	2.00	0.010	10.00	Deep	126.47	-	136.47	-96.41	-	-106.41	2.00	138.47
CGMW-05S	NA	Parcel IV	632221.50	672046.60	26.10	25.68	Sch. 40 PVC	Sch. 40 PVC	2.00	0.010	10.00	Shallow	25.00	-	35.00	1.10	-	-8.90	2.00	37.00
CGMW-05I	4/2/2003	Parcel IV	632216.53	672051.80	26.40	26.14	Sch. 40 PVC	Sch. 40 PVC	2.00	0.010	10.00	Intermediate	54.00	-	64.00	-27.60	-	-37.60	2.00	66.00
CGMW-12	12/16/2004	4th Street ROW	632686.50	671816.94	9.71	9.49	Sch. 40 PVC	Sch. 40 PVC	2.00	0.010	10.00	Shallow	8.40	-	18.40	1.31	-	-8.69	2.00	20.40
CGMW-15 CH1	1/10/2005	Parcel III	631554.08	671371.53	17.50	17.38	PE CMT	SS Mesh	0.44	NA	0.25	Shallow	22.20	-	22.45	-4.70	-	-4.95	0.00	22.45
CGMW-15 CH2	1/10/2005	Parcel III	631554.08	671371.53	17.50	17.38	PE CMT	SS Mesh	0.44	NA	0.25	--	NA	-	NA	NA	-	NA	0.00	NA
CGMW-15 CH3	1/10/2005	Parcel III	631554.08	671371.53	17.50	17.38	PE CMT	SS Mesh	0.44	NA	0.25	Intermediate	34.90	-	35.15	-17.40	-	-17.65	0.00	35.15
CGMW-15 CH4	1/10/2005	Parcel III	631554.08	671371.53	17.50	17.38	PE CMT	SS Mesh	0.44	NA	0.25	Intermediate	59.03	-	59.28	-41.53	-	-41.78	0.00	59.28
CGMW-15 CH5	1/10/2005	Parcel III	631554.08	671371.53	17.50	17.38	PE CMT	SS Mesh	0.44	NA	0.25	Intermediate	69.03	-	69.28	-51.53	-	-51.78	0.00	69.28
CGMW-15 CH6	1/10/2005	Parcel III	631554.08	671371.53	17.50	17.38	PE CMT	SS Mesh	0.44	NA	0.25	Deep	131.24	-	131.49	-113.74	-	-113.99	0.00	131.49
CGMW-15 CH7	1/10/2005	Parcel III	631554.08	671371.53	17.50	17.38	PE CMT	SS Mesh	0.38	NA	0.25	Deep	147.14	-	147.39	-129.64	-	-129.89	0.00	147.39
CGMW-16 CH1	1/24/2005	65 6th Street	632494.23	671280.76	7.25	7.20	PE CMT	SS Mesh	0.44	NA	0.25	Shallow	12.04	-	12.29	-4.79	-	-5.04	0.00	12.29
CGMW-16 CH2	1/24/2005	65 6th Street	632494.23	671280.76	7.25	7.20	PE CMT	SS Mesh	0.44	NA	0.25	Shallow	18.04	-	18.29	-10.79	-	-11.04	0.00	18.29
CGMW-16 CH3	1/24/2005	65 6th Street	632494.23	671280.76	7.25	7.20	PE CMT	SS Mesh	0.44	NA	0.25	Intermediate	29.08	-	29.33	-21.83	-	-22.08	0.00	29.33
CGMW-16 CH4	1/24/2005	65 6th Street	632494.23	671280.76	7.25	7.20	PE CMT	SS Mesh	0.44	NA	0.25	Intermediate	48.16	-	48.41	-40.91	-	-41.16	0.00	48.41
CGMW-16 CH5	1/24/2005	65 6th Street	632494.23	671280.76	7.25	7.20	PE CMT	SS Mesh	0.44	NA	0.25	Intermediate	68.93	-	69.18	-61.68	-	-61.93	0.00	69.18
CGMW-16 CH6	1/24/2005	65 6th Street	632494.23	671280.76	7.25	7.20	PE CMT	SS Mesh	0.44	NA	0.25	Deep	122.16	-	122.41	-114.91	-	-115.16	0.00	122.41
CGMW-16 CH7	1/24/2005	65 6th Street	632494.23	671280.76	7.25	7.20	PE CMT	SS Mesh	0.38	NA	0.25	Deep	140.06	-	140.31	-132.81	-	-133.06	0.00	140.31
CGMW-17 CH1	1/28/2005	Smith Street ROW	631626.77	671710.89	22.50	22.22	PE CMT	SS Mesh	0.44	NA	0.25	Shallow	16.73	-	16.98	5.77	-	5.52	0.00	16.98
CGMW-17 CH2	1/28/2005	Smith Street ROW	631626.77	671710.89	22.50	22.22	PE CMT	SS Mesh	0.44	NA	0.25	Shallow	27.14	-	27.39	-4.64	-	-4.89	0.00	27.39
CGMW-17 CH3	1/28/2005	Smith Street ROW	631626.77	671710.89	22.50	22.22	PE CMT	SS Mesh	0.44	NA	0.25	Intermediate	34.22	-	34.47	-11.72	-	-11.97	0.00	34.47
CGMW-17 CH4	1/28/2005	Smith Street ROW	631626.77	671710.89	22.50	22.22	PE CMT	SS Mesh	0.44	NA	0.25	Intermediate	74.34	-	74.59	-51.84	-	-52.09	0.00	74.59
CGMW-17 CH5	1/28/2005	Smith Street ROW	631626.77	671710.89	22.50	22.22	PE CMT	SS Mesh	0.44	NA	0.25	Intermediate	84.14	-	84.39	-61.64	-	-61.89	0.00	84.39
CGMW-17 CH6	1/28/2005	Smith Street ROW	631626.77	671710.89	22.50	22.22	PE CMT	SS Mesh	0.44	NA	0.25	Deep	124.34	-	124.59	-101.84	-	-102.09	0.00	124.59
CGMW-17 CH7	1/28/2005	Smith Street ROW	631626.77	671710.89	22.50	22.22	PE CMT	SS Mesh	0.38	NA	0.25	Deep	137.34	-	137.59	-114.84	-	-115.09	0.00	137.59
CGMW-18 CH1	2/3/2005	Hoyt Street ROW	632393.48	671912.07	14.63	14.35	PE CMT	SS Mesh	0.44	NA	0.25	Shallow	13.40	-	13.65	1.23	-	0.98	0.00	13.65
CGMW-18 CH2	2/3/2005	Hoyt Street ROW	632393.48	671912.07	14.63	14.35	PE CMT	SS Mesh	0.44	NA	0.25	Shallow	22.40	-	22.65	-7.77	-	-8.02	0.00	22.65
CGMW-18 CH3	2/3/2005	Hoyt Street ROW	632393.48	671912.07	14.63	14.35	PE CMT	SS Mesh	0.44	NA	0.25	Intermediate	30.41	-	30.66	-15.78	-	-16.03	0.00	30.66
CGMW-18 CH4	2/3/2005	Hoyt Street ROW	632393.48	671912.07	14.63	14.35	PE CMT	SS Mesh	0.44	NA	0.25	Shallow	13.40	-	13.65	1.23	-	0.98	0.00	13.65
CGMW-18 CH5	2/3/2005	Hoyt Street ROW	632393.48	671912.07	14.63	14.35	PE CMT	SS Mesh	0.44	NA	0.25	Intermediate	55.41	-	55.66	-40.78	-	-41.03	0.00	55.66
CGMW-18 CH6	2/3/2005	Hoyt Street ROW	632393.48	671912.07	14.63	14.35	PE CMT	SS Mesh	0.44	NA	0.25	Intermediate	70.56	-	70.81	-55.93	-	-56.18	0.00	70.81
CGMW-18 CH7	2/3/2005	Hoyt Street ROW	632393.48	671912.07	14.63	14.35	PE CMT	SS Mesh	0.38	NA	0.25	Intermediate	77.41	-	77.66	-62.78	-	-63.03	0.00	77.66

Table 2
Piezometer and Monitoring Well Construction Summary
Supplemental Off-Site Investigation Work Plan

National Grid
Former Citizens Gas Works Manufactured Gas Plant Site
Borough of Brooklyn, Kings County, New York
NYSDEC Site No. 224012

Location ID	Date Completed	Property or General Location	Easting (feet NAD83)	Northing (feet NAD83)	Ground Surface Elevation (feet NAVD88)	Measuring Point Elevation (feet NAVD88)	Casing Type	Screen Type	Nominal Diameter (inches)	Screen Slot Size (inches)	Screen Length (feet)	Screened Zone ³	Screened Interval		Sump Length (feet)	Total Depth (feet bgs)		
													Depth (feet bgs)	Elevation (feet NAVD88)				
Monitoring Wells (continued)																		
Existing Monitoring Wells* (continued)																		
CGMW-19 CH1	2/7/2005	56 2nd Avenue	632365.50	670895.90	8.50	8.25	PE CMT	SS Mesh	0.44	NA	0.25	Shallow	10.60	- 10.85	-2.10	- -2.35	0.00	10.85
CGMW-19 CH2	2/7/2005	56 2nd Avenue	632365.50	670895.90	8.50	8.25	PE CMT	SS Mesh	0.44	NA	0.25	Intermediate	23.59	- 23.84	-15.09	- -15.34	0.00	23.84
CGMW-19 CH3	2/7/2005	56 2nd Avenue	632365.50	670895.90	8.50	8.25	PE CMT	SS Mesh	0.44	NA	0.25	Intermediate	30.65	- 30.90	-22.15	- -22.40	0.00	30.90
CGMW-19 CH4	2/7/2005	56 2nd Avenue	632365.50	670895.90	8.50	8.25	PE CMT	SS Mesh	0.44	NA	0.25	Intermediate	74.60	- 74.85	-66.10	- -66.35	0.00	74.85
CGMW-19 CH5	2/7/2005	56 2nd Avenue	632365.50	670895.90	8.50	8.25	PE CMT	SS Mesh	0.44	NA	0.25	Intermediate	84.60	- 84.85	-76.10	- -76.35	0.00	84.85
CGMW-19 CH6	2/7/2005	56 2nd Avenue	632365.50	670895.90	8.50	8.25	PE CMT	SS Mesh	0.44	NA	0.25	Deep	115.60	- 115.85	-107.10	- -107.35	0.00	115.85
CGMW-19 CH7	2/7/2005	56 2nd Avenue	632365.50	670895.90	8.50	8.25	PE CMT	SS Mesh	0.38	NA	0.25	Deep	116.60	- 116.85	-108.10	- -108.35	0.00	116.85
CGMW-22 CH1	3/30/2005	37 9th Street	631973.28	671002.23	6.05	5.57	PE CMT	SS Mesh	0.44	NA	0.25	Shallow	11.73	- 11.98	-5.68	- -5.93	0.00	11.98
CGMW-22 CH2	3/30/2005	37 9th Street	631973.28	671002.23	6.05	5.57	PE CMT	SS Mesh	0.44	NA	0.25	Intermediate	27.80	- 28.05	-21.75	- -22.00	0.00	28.05
CGMW-22 CH3	3/30/2005	37 9th Street	631973.28	671002.23	6.05	5.57	PE CMT	SS Mesh	0.44	NA	0.25	Intermediate	39.78	- 40.03	-33.73	- -33.98	0.00	40.03
CGMW-22 CH4	3/30/2005	37 9th Street	631973.28	671002.23	6.05	5.57	PE CMT	SS Mesh	0.44	NA	0.25	Intermediate	51.89	- 52.14	-45.84	- -46.09	0.00	52.14
CGMW-22 CH5	3/30/2005	37 9th Street	631973.28	671002.23	6.05	5.57	PE CMT	SS Mesh	0.44	NA	0.25	Intermediate	63.90	- 64.15	-57.85	- -58.10	0.00	64.15
CGMW-22 CH6	3/30/2005	37 9th Street	631973.28	671002.23	6.05	5.57	PE CMT	SS Mesh	0.44	NA	0.25	Intermediate	81.83	- 82.08	-75.78	- -76.03	0.00	82.08
CGMW-22 CH7	3/30/2005	37 9th Street	631973.28	671002.23	6.05	5.57	PE CMT	SS Mesh	0.38	NA	0.25	Intermediate	96.83	- 97.08	-90.78	- -91.03	0.00	97.08
CGMW-23	6/7/2006	Nelson Street ROW	631427.99	671647.76	24.72	24.32	Sch. 40 PVC	Sch. 40 PVC	2.00	0.010	10.00	Shallow	17.28	- 27.28	7.44	- -2.56	0.00	27.28
CGMW-24	10/14/2010	Luquer Street ROW	631494.48	671868.50	30.53	30.36	Sch. 40 PVC	Sch. 40 PVC	2.00	0.010	10.00	Shallow	18.00	- 28.00	12.53	- 2.53	0.00	28.00
CGMW-25R	2/3/2022	4th Place ROW	631611.68	672157.11	38.54	38.37	Sch. 40 PVC	Sch. 40 PVC	2.00	0.010	10.00	Shallow	36.20	- 46.20	2.34	- -7.66	2.00	48.20
CGMW-29	6/9/2006	7th Street ROW	632988.95	670748.65	9.02	8.65	Sch. 40 PVC	Sch. 40 PVC	2.00	0.010	10.00	Shallow	3.09	- 13.09	5.93	- -4.07	0.00	13.09
CGMW-32	6/6/2006	9th Street ROW	632060.43	670721.71	5.88	5.52	Sch. 40 PVC	Sch. 40 PVC	2.00	0.010	10.00	Shallow	2.64	- 12.64	3.24	- -6.76	0.00	12.64
CGMW-34S	11/3/2009	Parcel III	631917.98	671456.58	16.46	17.91	Sch. 40 PVC	Sch. 40 PVC	2.00	0.010	10.00	Shallow	12.76	- 22.76	3.70	- -6.30	2.00	24.76
CGMW-34I	11/4/2009	Parcel III	631925.32	671453.66	16.48	16.29	Sch. 40 PVC	Sch. 40 PVC	2.00	0.010	10.00	Intermediate	51.38	- 61.38	-34.90	- -44.90	2.00	63.38
CGMW-35	11/10/2009	Parcel III	631817.70	671578.61	15.00	16.26	Sch. 40 PVC	Sch. 40 PVC	2.00	0.010	10.00	Shallow	6.00	- 16.00	9.00	- -1.00	2.00	18.00
CGMW-36	12/2/2009	Parcel III	631781.24	671478.52	16.59	16.29	Sch. 40 PVC	Sch. 40 PVC	2.00	0.010	10.00	Shallow	5.97	- 15.97	10.62	- 0.62	2.00	17.97
CGMW-37	11/5/2009	Parcel III	631669.24	671620.23	16.58	16.58	Sch. 40 PVC	Sch. 40 PVC	2.00	0.010	10.00	Shallow	5.38	- 15.38	11.20	- 1.20	2.00	17.38
CGMW-38	11/10/2009	Parcel III	631634.63	671518.34	15.19	17.48	Sch. 40 PVC	Sch. 40 PVC	2.00	0.010	10.00	Shallow	4.79	- 14.79	10.40	- 0.40	2.00	16.79
CGMW-39	1/21/2010	Parcel III	631681.61	671314.32	15.71	15.28	Sch. 40 PVC	Sch. 40 PVC	2.00	0.010	10.00	Shallow	9.61	- 19.61	6.10	- -3.90	2.00	21.61
CGMW-40D	11/30/2009	Parcel III	631819.79	671336.35	17.72	17.16	Sch. 40 PVC	Sch. 40 PVC	2.00	0.010	10.00	Deep	94.65	- 104.65	-76.93	- -86.93	2.00	106.65
CGMW-41I	1/7/2010	Parcel III	631885.64	671253.53	16.44	15.83	Sch. 40 PVC	Sch. 40 PVC	2.00	0.010	10.00	Intermediate	51.22	- 61.22	-34.78	- -44.78	2.00	63.22
CGMW-42I	12/16/2009	Parcel III	631946.53	671524.61	16.28	18.20	Sch. 40 PVC	Sch. 40 PVC	2.00	0.010	10.00	Intermediate	34.92	- 44.92	-18.64	- -28.64	2.00	46.92
CGMW-43D	1/14/2010	Parcel III	631789.44	671287.15	17.61	17.13	Sch. 40 PVC	Sch. 40 PVC	2.00	0.010	10.00	Deep	85.71	- 95.71	-68.10	- -78.10	2.00	97.71
CGMW-44	11/20/2012	9th Street ROW	631318.07	671129.74	14.78	14.36	Sch. 40 PVC	Sch. 40 PVC	2.00	0.010	10.00	Shallow	9.92	- 19.92	4.86	- -5.14	2.00	21.92
CGMW-46	5/20/2013	Garnet Street ROW	631264.25	670880.67	11.20	10.86	Sch. 40 PVC	Sch. 40 PVC	2.00	0.010	10.00	Shallow	8.92	- 18.92	2.28	- -7.72	0.00	18.92
CGMW-47	5/20/2013	Centre Street ROW	631193.76	670640.51	8.19	7.67	Sch. 40 PVC	Sch. 40 PVC	2.00	0.010	10.00	Shallow	7.87	- 17.87	0.32	- -9.68	0.00	17.87
CGMW-48	1/18/2022	Parcel I	632000.69	671911.72	25.99	25.49	Sch. 40 PVC	Sch. 40 PVC	2.00	0.010	10.00	Shallow	20.14	- 30.14	5.85	- -4.15	2.00	32.14
CGMW-49	1/24/2022	Parcel I	632170.96	671812.02	17.83	17.74	Sch. 40 PVC	Sch. 40 PVC	2.00	0.010	10.00	Shallow	9.10	- 19.10	8.73	- -1.27	2.00	21.10
CGMW-50	1/19/2022	Parcel I	631748.11	671886.69	27.37	27.04	Sch. 40 PVC	Sch. 40 PVC	2.00	0.010	10.00	Shallow	21.00	- 31.00	6.37	- -3.63	2.00	33.00
CGMW-51S	2/16/2022	Parcel I	632178.77	671643.56	12.60	12.17	Sch. 40 PVC	Sch. 40 PVC	2.00	0.010	10.00	Shallow	6.10	- 16.10	6.50	- -3.50	2.00	18.10
CGMW-51I	2/17/2022	Parcel I	632172.08	671624.37	12.86	12.55	Sch. 40 PVC	Sch. 40 PVC	2.00	0.010	10.00	Intermediate	34.00	- 44.00	-21.14	- -31.14	2.00	46.00
CGMW-52S	1/20/2022	Parcel I	631705.52	671766.16	24.04	23.77	Sch. 40 PVC	Sch. 40 PVC	2.00	0.010	10.00	Shallow	17.60	- 27.60	6.44	- -3.56	2.00	29.60
CGMW-52I	1/20/2022	Parcel I	631701.15	671755.23	23.91	23.19	Sch. 40 PVC	Sch. 40 PVC	2.00	0.010	10.00	Intermediate	70.20	- 80.20	-46.29	- -56.29	2.00	82.20
CGMW-53S	1/14/2022	Parcel I	631894.31	671614.24	19.91	19.64	Sch. 40 PVC	Sch. 40 PVC	2.00	0.010	10.00	Shallow	8.20	- 18.20	11.71	- 1.71	2.00	20.20
CGMW-53I	1/14/2022	Parcel I	631880.70	671627.22	19.69	19.26	Sch. 40 PVC	Sch. 40 PVC	2.00	0.010	10.00	Intermediate	56.45	- 66.45	-36.76	- -46.76	2.00	68.45
CGMW-54	1/24/2022	Parcel II	632335.05	671751.18	11.41	10.95	Sch. 40 PVC	Sch. 40 PVC	2.00	0.010	10.00	Shallow	3.20	- 13.20	8.21	- -1.79	2.00	15.20
CGMW-55S	1/25/2022	Parcel II	632510.82	671770.37	10.04	9.81	Sch. 40 PVC	Sch. 40 PVC	2.00	0.010	10.00	Shallow	5.10	- 15.10	4.94	- -5.06	2.00	17.10

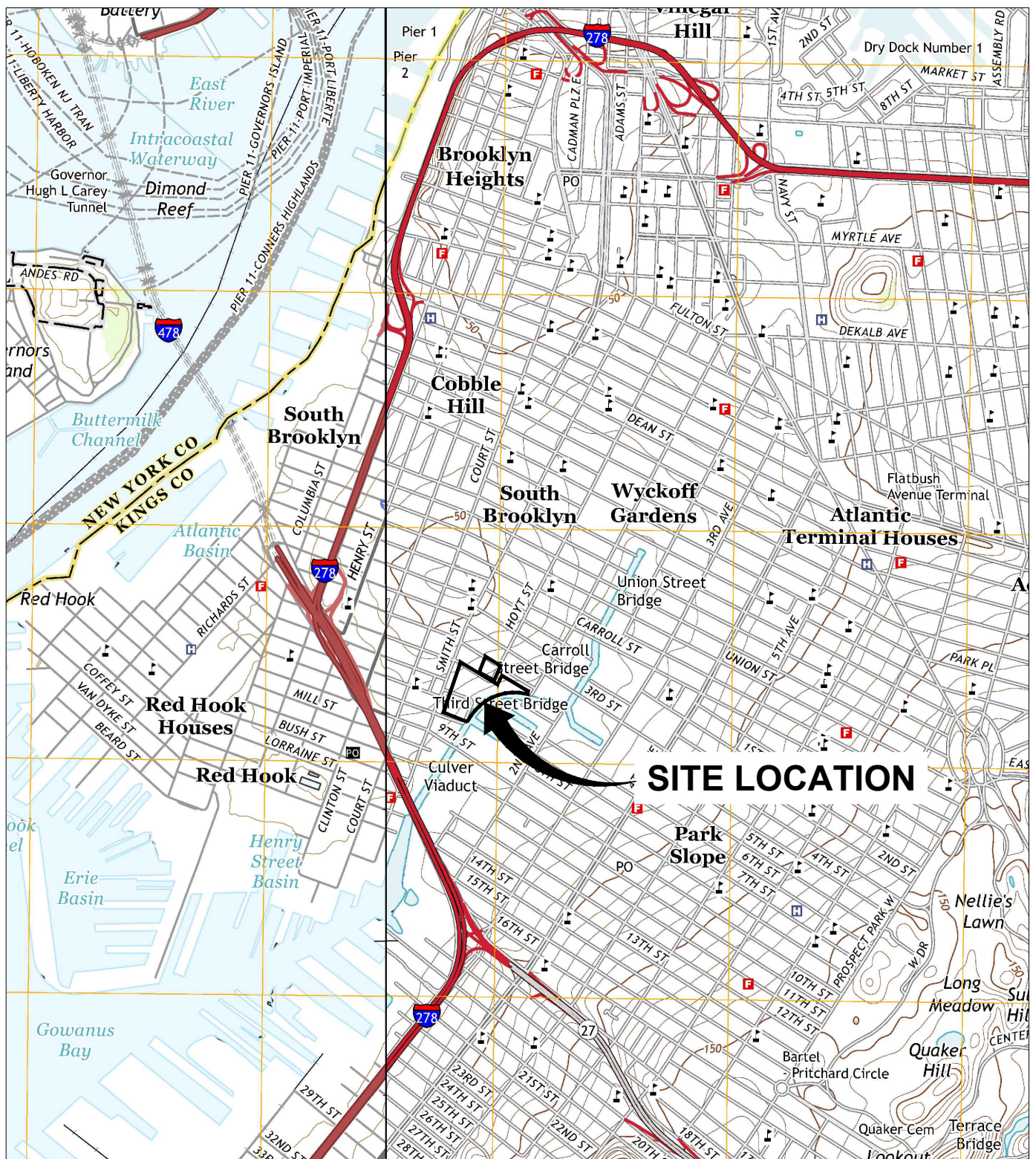
Table 2
Piezometer and Monitoring Well Construction Summary
Supplemental Off-Site Investigation Work Plan

National Grid
Former Citizens Gas Works Manufactured Gas Plant Site
Borough of Brooklyn, Kings County, New York
NYSDEC Site No. 224012

Location ID	Date Completed	Property or General Location	Easting (feet NAD83)	Northing (feet NAD83)	Ground Surface Elevation (feet NAVD88)	Measuring Point Elevation (feet NAVD88)	Casing Type	Screen Type	Nominal Diameter (inches)	Screen Slot Size (inches)	Screen Length (feet)	Screened Zone ³	Screened Interval				Sump Length (feet)	Total Depth (feet bgs)
													Depth (feet bgs)		Elevation (feet NAVD88)			
Monitoring Wells (continued)																		
Existing Monitoring Wells* (continued)																		
CGMW-55I	1/25/2022	Parcel II	632541.89	671758.17	9.26	9.00	Sch. 40 PVC	Sch. 40 PVC	2.00	0.010	10.00	Intermediate	55.95	- 65.95	-46.69	- -56.69	2.00	67.95
CGMW-56	1/25/2022	Parcel II	632682.06	671699.03	7.49	7.08	Sch. 40 PVC	Sch. 40 PVC	2.00	0.010	10.00	Shallow	3.30	- 13.30	4.19	- -5.81	2.00	15.30
CGMW-57	1/13/2022	Parcel II	632393.14	671621.31	10.88	10.42	Sch. 40 PVC	Sch. 40 PVC	2.00	0.010	10.00	Shallow	11.00	- 21.00	-0.12	- -10.12	2.00	23.00
CGMW-58	1/19/2022	Parcel III	632159.69	671492.14	10.36	10.02	Sch. 40 PVC	Sch. 40 PVC	2.00	0.010	10.00	Shallow	10.83	- 20.83	-0.47	- -10.47	2.00	22.83
CGMW-59	1/18/2022	Parcel III	632039.45	671351.46	9.97	9.46	Sch. 40 PVC	Sch. 40 PVC	2.00	0.010	10.00	Shallow	10.80	- 20.80	-0.83	- -10.83	2.00	22.80
CGMW-60	3/14/2022	Huntington Street ROW	631812.79	671217.34	11.31	10.95	Sch. 40 PVC	Sch. 40 PVC	2.00	0.010	10.00	Shallow	10.15	- 20.15	1.16	- -8.84	2.00	22.15
Proposed Monitoring Wells																		
CGMW-12I	--	4th Street ROW	632691.02	671814.90	9.63	--	Sch. 40 PVC	Sch. 40 PVC	2.00	0.010	10.00	Intermediate	55.00	- 65.00	-45.37	- -55.37	2.00	67.00
CGMW-12D	--	4th Street ROW	632691.02	671814.90	9.63	--	Sch. 40 PVC	Sch. 40 PVC	2.00	0.010	10.00	Deep	118.00	- 128.00	-108.37	- -118.37	2.00	130.00
CGMW-61I	--	Huntington Street ROW	631742.44	671244.25	13.36	--	Sch. 40 PVC	Sch. 40 PVC	2.00	0.010	10.00	Intermediate	59.00	- 69.00	-45.64	- -55.64	2.00	71.00
CGMW-61D	--	Huntington Street ROW	631742.44	671244.25	13.36	--	Sch. 40 PVC	Sch. 40 PVC	2.00	0.010	10.00	Deep	118.00	- 128.00	-104.64	- -114.64	2.00	130.00
CGMW-62I	--	Nelson Street ROW	631325.26	671693.86	28.42	--	Sch. 40 PVC	Sch. 40 PVC	2.00	0.010	10.00	Intermediate	74.00	- 84.00	-45.58	- -55.58	2.00	86.00
CGMW-62D	--	Nelson Street ROW	631325.26	671693.86	28.42	--	Sch. 40 PVC	Sch. 40 PVC	2.00	0.010	10.00	Deep	133.00	- 143.00	-104.58	- -114.58	2.00	145.00
CGMW-63	--	Luquer Street ROW	631500.91	671858.13	29.29	--	Sch. 40 PVC	Sch. 40 PVC	2.00	0.010	10.00	Shallow	28.00	- 38.00	1.29	- -8.71	2.00	40.00
CGMW-64I	--	Luquer Street ROW	631350.50	671911.53	35.06	--	Sch. 40 PVC	Sch. 40 PVC	2.00	0.010	10.00	Intermediate	80.00	- 90.00	-44.94	- -54.94	2.00	92.00
CGMW-64D	--	Luquer Street ROW	631350.50	671911.53	35.06	--	Sch. 40 PVC	Sch. 40 PVC	2.00	0.010	10.00	Deep	138.00	- 148.00	-102.94	- -112.94	2.00	150.00
CGMW-65S	--	469 Smith Street	631741.46	671009.61	11.00	--	Sch. 40 PVC	Sch. 40 PVC	2.00	0.010	10.00	Shallow	9.00	- 19.00	2.00	- -8.00	2.00	21.00
CGMW-65I	--	469 Smith Street	631741.46	671009.61	11.00	--	Sch. 40 PVC	Sch. 40 PVC	2.00	0.010	10.00	Intermediate	56.00	- 66.00	-45.00	- -55.00	2.00	68.00
CGMW-65D	--	469 Smith Street	631741.46	671009.61	11.00	--	Sch. 40 PVC	Sch. 40 PVC	2.00	0.010	10.00	Deep	118.00	- 128.00	-107.00	- -117.00	2.00	130.00

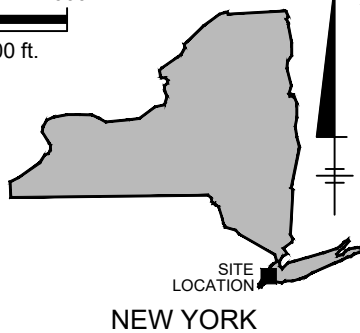
- Notes:**
- Horizontal reference datum is the North American Datum of 1983 (NAD83), New York State Plane East Zone.
 - Vertical reference datum is the North American Vertical Datum of 1988 (NAVD88).
 - As described in the *Final Remedial Investigation Report* (GEI Consultants, Inc. 2005), the shallow zone generally extends from the water table (approximately elevation 16.0 feet to approximately elevation -2.0 feet NAVD88) to the bottom of the discontinuous alluvial/marsh deposits (approximately elevation -10.0 feet to approximately elevation -24.0 feet NAVD88), the intermediate zone generally extends from the bottom of the discontinuous alluvial/marsh deposits (approximately elevation -10.0 feet to approximately elevation -24.0 feet NAVD88) to the bottom of the discontinuous glacial silt and glacial clay layers (approximately elevation -90.0 feet NAVD88), and the deep zone generally extends from the bottom of the discontinuous glacial silt and glacial clay layers (approximately elevation -90.0 feet) to the vertical extent of subsurface exploration at the Site (approximately elevation -135.0 feet NAVD88).
 - With the exceptions of monitoring wells CGMW-05S, CGMW-05I, CGMW-19, CGMW-22, and CGMW-35, the horizontal locations, ground surface elevations, and measuring point elevations listed in this table reflect surveys conducted by Louis J. Weber & Associates, Inc. on March 1, March 31, and April 18, 2022. Screened intervals and well depths for piezometers and monitoring wells installed between 2003 and 2013 have been adjusted based on the ground surface elevations recorded during those 2022 surveys.
 - bgs: below ground surface.
 - CMT: continuous multichannel tubing.
 - NA: not available.
 - PE: polyethylene.
 - PVC: polyvinyl chloride.
 - ROW: right-of-way.
 - Sch.: Schedule.
 - SS: stainless steel.

Figures



REFERENCE: BASE MAP USGS 7.5. MIN. TOPO. QUAD., BROOKLYN, NY, 2013, AND JERSEY CITY, NY-NJ, 2014.

Approximate Scale: 1 in. = 2000 ft.



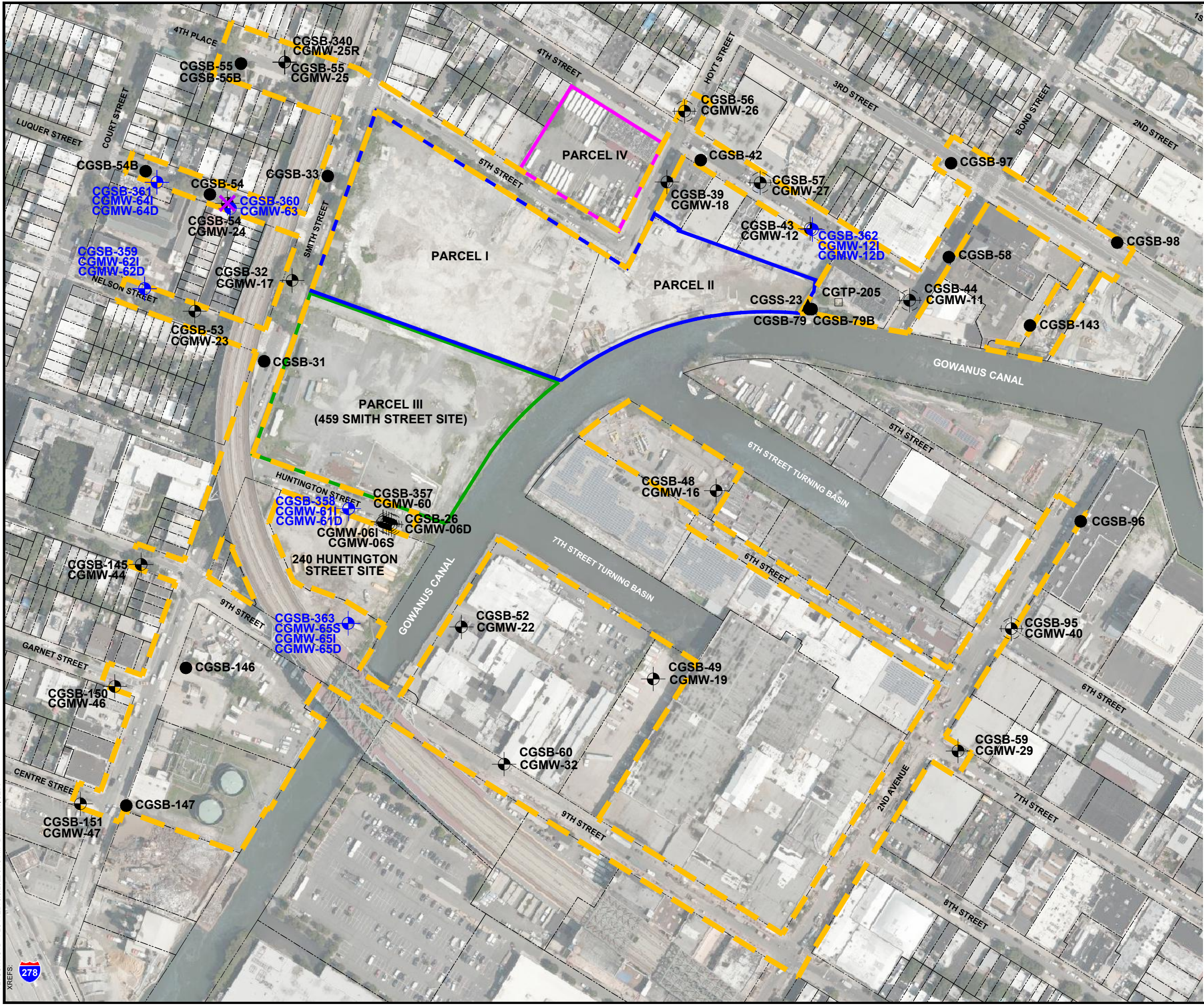
NATIONAL GRID
FORMER CITIZENS GAS WORKS MANUFACTURED GAS PLANT SITE
BOROUGH OF BROOKLYN, KINGS COUNTY, NEW YORK
SUPPLEMENTAL OFF-SITE INVESTIGATION WORK PLAN

SITE LOCATION MAP



FIGURE

1



LEGEND:

- LIMIT OF BROWNFIELD CLEANUP PROGRAM SITE NO. C224012 (PARCELS I AND II)
- LIMIT OF BROWNFIELD CLEANUP PROGRAM SITE NO. C224012B (PARCEL III)
- LIMIT OF STATE SUPERFUND SITE NO. 224012 (PARCEL IV)
- - - - - APPROXIMATE LIMIT OF OFF-SITE INVESTIGATION AREA
- - - - - PROPERTY LINE (APPROXIMATE)
- CGSS-23 ▲ SURFACE SOIL SAMPLE
- CGSB-31 ● SOIL BORING
- CGTP-205 □ TEST PIT
- CGMW-17 ● EXISTING MONITORING WELL
- CGMW-26 ● FORMER MONITORING WELL
- CGMW-63 ● PROPOSED MONITORING WELL
- ✕ EXISTING MONITORING WELL TO BE DECOMMISSIONED

NOTES:

- HORIZONTAL REFERENCE DATUM IS THE NORTH AMERICAN DATUM OF 1983 (NAD83), NEW YORK STATE PLANE EAST ZONE.
- AERIAL IMAGE PROVIDED BY BING MAPS.
- PARCEL BOUNDARIES DOWNLOADED FROM GIS OPEN DATA PORTAL, REVISED JULY 7, 2021 (www.data.cityofnewyork.us).

0 100' 200'
GRAPHIC SCALE

NATIONAL GRID
FORMER CITIZENS GAS WORKS MANUFACTURED GAS PLANT SITE
BOROUGH OF BROOKLYN, KINGS COUNTY, NEW YORK
SUPPLEMENTAL OFF-SITE INVESTIGATION WORK PLAN

OFF-SITE INVESTIGATION PLAN



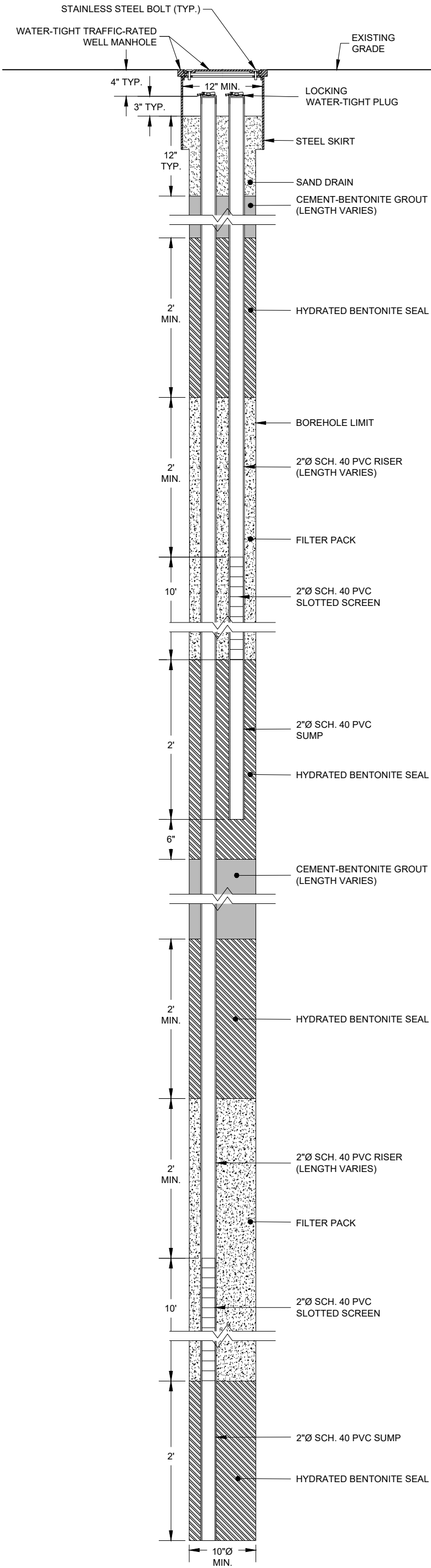


0 100' 200'

GRAPHIC SCALE

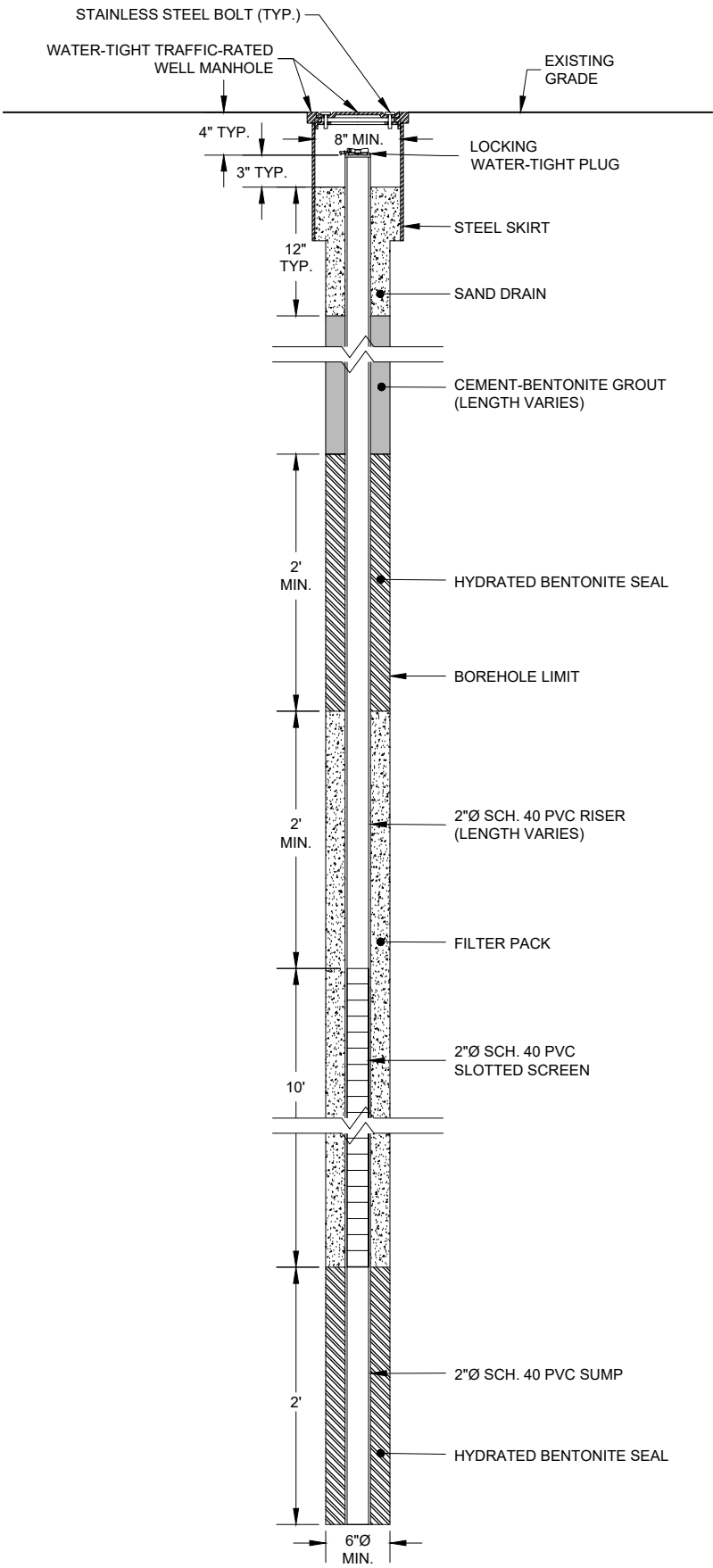
PIEZOMETER AND MONITORING WELL PLAN





SECTION

**TYPICAL NESTED
MONITORING WELL PAIR**



SECTION

**TYPICAL
MONITORING WELL**



NATIONAL GRID
FORMER CITIZENS GAS WORKS MANUFACTURED GAS PLANT SITE
BOROUGH OF BROOKLYN, KINGS COUNTY, NEW YORK
SUPPLEMENTAL OFF-SITE INVESTIGATION WORK PLAN

**TYPICAL MONITORING WELL
CONSTRUCTION DETAILS**