Division of Environmental Remediation

Well Installation Scope of Work

Niagara Sanitation Site
Wheatfield, Niagara County, New York
Site Number 932054

May 2021

New York State Department of Environmental Conservation
Region 9
270 Michigan Avenue
Buffalo, New York 14203

TABLE OF CONTENTS

LIST OF FIGURES
(Following Text)

LIST OF APPENDICES

1.0 OBJECTIVES

On July 21, 2020, National Fuel Gas (NFG) encountered municipal landfill waste in an excavation completed on their property east of the Compressor Station on Nash Road, and west of the Niagara Sanitation Landfill (Site No. 932054). Four excavations were being completed by National Fuel to facilitate repairs to their high-pressure 24-inch gas pipeline. These excavations were inspected by a staff member of the New York State Department of Environmental Conservation (NYSDEC) on July 21st and July 22nd. All four excavations contained municipal waste from about 6-inches to 9-feet depth. The bottom of the waste material was not determined. There were no odors, sheens, discoloration, or elevated PID readings. As a result, samples were not collected for analysis.

These findings indicate that municipal landfill waste extends much farther west onto NFG's property than documented during the 2017 Remedial Investigation. Based upon the findings from the NFG excavations and the westward extent of hummocky topography, the landfill waste may extend about 545 feet west of the western Niagara Sanitation Landfill fenceline.

The New York State Department of Environmental Conservation is proposing to install four (4) monitoring wells along the National Fuel Gas property to determine if the municipal landfill waste has adversely impacted groundwater in this area. The specific responsibilities of the NYSDEC and its Contractors are given in Section 3.0 of this Scope of Work. The NYSDEC is the lead agency for this investigation.

2.0 SITE HISTORY AND BACKGROUND

2.1 Site Description

The Niagara Sanitation Site, also known as the Nash Road Landfill, is an inactive landfill located on Nash Road in the Town of Wheatfield, Niagara County, New York (Figure 1). The property is owned by the Town of Wheatfield, and is adjacent to the municipal boundary that separates the Town of Wheatfield from the City of North Tonawanda (Figure 2). The landfill is located approximately 1,400 feet east of Nash Road (Figures 1 and 2). The portion of the property that was landfilled is rectangular in shape and consists of approximately 18.7 acres of a single 20.8 acre parcel (Figures 1 and 2). The property is zoned for Public Service use.

The site is bordered by vacant land and the Holy Infant Shrine to the north; a cemetery and property that contains a motel and livery service to the east; a utility right-of-way (both overhead electric and underground natural gas and brine lines) and residences to the south; and residences and Nash Road to the west (Figure 1).

2.2 Site Features

The property is vacant and overgrown with mature trees, dense brush, and patches of phragmites. The site is poorly drained and contains wetlands on the western, northern and eastern portions of the property (Figure 3). Access to the site is now restricted by a fence, but the property has historically been used for hiking and off-road vehicles by nearby residents.

Historic landfilling activities have resulted in irregular ground surface topography (Figure 4). Numerous mounds can be observed throughout the site, with waste protruding from some of them. Evidence of partially buried waste includes tires, metal, plastic debris, ash.

2.3 Site History

Available records indicate that the site was operated as a landfill by the Niagara Sanitation Company from approximately 1955 to 1968. The landfill accepted both municipal and industrial solid wastes, including caustic materials, plating tank sludge, fly ash, salt solids, graphite, carbon, scrap adhesives and miscellaneous laboratory chemicals. NYSDEC records

indicate that the Bell Aerospace, Carborundum, Graphite Specialties, and Greif Brothers disposed of waste at the site.

Records also indicate that approximately 1,600 cubic yards of waste that was generated during construction of the LaSalle Expressway in Niagara Falls near what was later to become the Love Canal Site was landfilled in a trench at this site between June 6 and July 15, 1968. The disposal trench reportedly measured 100 feet by 30 feet, and was 27 feet in depth. The waste debris was placed in the bottom 15 feet of the trench and covered with 12 feet of excavated soil.

The NYSDEC completed a Phase I Investigation (historical records review and site walk over) of the site in 1983, a Phase II Investigation (on-site data collection) in 1985, and an expanded Phase II Investigation in 1989. In association with these investigations, the New York State Department of Health (NYSDOH) completed surface soil sampling in 1991 to evaluate potential exposure risks. At that time, it was determined that the site did not pose a significant threat to public health or the environment because the exposure was limited; the wastes were buried, contained or sufficiently covered to avoid significant exposure. Groundwater as a potential exposure path was also limited because the area was served by public water and the closest private well was located approximately one mile away. As a result, the site was designated as Class 3 (action can be deferred) in the NYSDEC Registry of Inactive Hazardous Waste Disposal Sites (Registry).

NYSDEC continuously monitors and evaluates sites on the Registry of Inactive Hazardous Waste Sites. In 2013, as part of these efforts, the NYSDEC completed a Site Characterization Study to re-evaluate the Class 3 Registry designation for the site, to confirm the location of the LaSalle Expressway wastes, and to re-evaluate the potential for direct contact exposures. The investigation was heavily focused on the eastern portion of the site where the LaSalle Expressway wastes were thought to have been buried. Later in 2013, Glenn Spring Holdings, an affiliate of the Occidental Chemical Corporation, began an Interim Remedial Measure (IRM) to characterize and remove these wastes. These wastes were excavated from the site during the Fall/Winter of 2014 and the Winter/Spring of 2015, and transported out of state for incineration.

In 2014, the NYSDEC completed a Supplemental Site Characterization Study to characterize the municipal and industrial waste in the remainder of the landfill. This investigation was followed by a detailed Remedial Investigation by the NYSDEC in 2017. The

results of these investigations are discussed in the 2019 Remedial Investigation Report prepared by LiRo Engineers, Inc.

2.4 Site Geology and Hydrogeology

There are seven stratigraphic units underlying the site, which are described as follows:

- Fill material (glass, refuse, etc.) mixed with fine sand and clay that ranges in thickness from 0 to 16 feet;
- An upper gray sand deposit that ranges in thickness from 0 to 8 feet;
- A gray-brown silty clay that ranges in thickness from 3 to 7 feet;
- A layered red-gray lacustrine clay containing thin sand seams. This deposit ranges in thickness from 17 to 32 feet;
- A lower red-brown sand deposit that ranges in thickness from 3 to 6 feet. This deposit is thickest in the northern portion of the site, and thins to the south, east and west;
- A pink, very dense till that ranges in thickness from 22 to 42 feet; and
- Dolostone bedrock at depths ranging from 65 to 71 feet below ground surface.

The gray-brown silty clay deposit and underlying red-gray layered clay act as an aquitard, preventing the downward migration of groundwater in the fill and upper sand deposit to the lower water-bearing zones (Figure 5).

Monitoring wells have been installed at the site in all six overburden zones. Bedrock wells, however, have not been installed at the site.

A groundwater contour map for the fill/upper sand deposit, which is the water-bearing zone of interest for this Scope of Work, is shown as Figure 6. This figure shows that groundwater is mounded over the wetland in the eastern portion of the site and flows to the south and east.

3.0 SCOPE OF WORK

The following activities will be completed as part of the monitoring well installation program: (1) the completion of soil borings to facilitate the construction of monitoring wells; (2) the collection of soil/fill samples from the soil borings for chemical analysis; (3) the collection of groundwater samples from the new monitoring wells for chemical analysis; (4) the completion of a site survey; (5) the completion of Data Usability Summary Reports (DUSRs); (6) the preparation of the electronic data deliverable (EDD) files for upload to EQuIS; and (7) the preparation of a project report. The NYSDEC will task a Standby Spill Contractor to complete the following activities as part of this work. These activities are listed in the general order in which they should be completed:

- Provide and mobilize to the site a rotary drill rig to install two (2) conventional overburden monitoring wells along the gravel access road with stick-up protective casings with locking caps;

- Provide a technician to install two (2) hand drilled overburden monitoring wells with stick up protective casings with and locking caps along the northern boundary of the National Fuel Gas property;

- Provide a geologist to complete stratigraphic logs and well construction diagrams during the soil boring and well installation activities;

- Provide a technician during the soil boring activities to collect samples, complete the appropriate paperwork, and transport the samples and paperwork to a NYSDEC contract lab for analysis;

- Provide a technician and appropriate equipment to develop, purge and sample the new monitoring wells. The technician will also complete the appropriate paperwork, and transport the samples and paperwork to a NYSDEC contract lab for analysis;

- Subcontract with a surveyor licensed in the State of New York to survey the locations of the newly installed monitoring wells, the NFG excavations (if they can be located), various site features (e.g., ditches, pipeline markers, etc.) and topography;

- Subcontract with a company that is qualified to complete a Data Usability Summary Report (DUSR) to determine if the analytical data meets the criteria for data quality and use;

- Prepare the electronic data deliverable (EDD) files supplied by the lab and/or qualified by the data validator during the DUSR process for upload to the NYSDEC's Environmental Information Management System (EIMS; currently EQuIS); and

- Prepare a letter report that describes the well installation activities.

Specific details of the work to be completed during the well installation program, including those activities to be conducted by the Standby Spill Contractor, are described in the following subsections in the general order in which they should be completed.

3.1 Overburden Monitoring Wells

During the well installation program, four (4) monitoring wells will be installed to monitor the upper sand deposit. Two (2) of these wells will be installed along the site's gravel access road with the remaining two (2) wells installed along the northern boundary of the National Fuel Gas property. The approximate locations of these wells are shown on Figure 7.

The Drilling Subcontractor will be responsible for identifying and avoiding all underground utility lines in the areas where monitoring wells are to be installed.

3.1.1 Drilling Methods

A rotary drill rig with hollow stem augers will be required to complete soil borings along the gravel access road, and to install the overburden monitoring wells. This drilling method is proposed due to the presence of gravel and stone of the road, and the suspected deeper depth of the upper sand deposit that would preclude hand installation.

A 4-inch diameter hand auger (or larger) will used to install two (2) microwells along the northern boundary of the National Fuel Gas property. This drilling method is proposed as standard rotary or Geoprobe rigs cannot be driven across the NFG gas pipeline.

3.1.2 Soil Sample Collection and Analysis

Soil samples obtained with the rotary drill rig will be collected continuously using the standard split-spoon sampling method (rotary drill rig) or from the hand auger for the manual borings. Augering will proceed as the soil boring is advanced. Each soil boring will be advanced to the native silty clay deposit that underlies the upper sand deposit for the purpose of geologic logging and soil/fill sample collection. Samples will be screened for organic vapors using a PID supplied by the Standby Spill Contractor. At least one sample will be collected from each soil boring from the most contaminated interval (based upon instrument readings, visible staining, odors, etc.) for chemical analysis. Additional samples may be collected if multiple or distinct zones of gross contamination are encountered. If no evidence of contamination is documented, the sample will be collected from the top of the native silty clay deposit.

Samples will be collected by the Standby Spill Contractor in consultation with the NYSDEC field representative and placed into laboratory supplied, pre-cleaned sample jars. The jars will be labeled with a unique sample identification code, packed in a cooler with ice, and shipped under chain-of-custody control to a NYSDEC contract lab for analysis. The Standby Spill Contractor will be responsible for obtaining the appropriate sample bottles from the lab. All invoicing from the lab will be completed in accordance with its Standby Contract with the NYSDEC.

A minimum of four (4) soil/fill samples, one from each soil boring, will be collected and analyzed for TCL semi-volatile organic compounds, TCL pesticides, TCL PCBs and TAL metals. Samples will also be analyzed for TCL volatile organic compounds based upon the PID screening results.

3.1.3 Well Construction

The overburden monitoring wells along the gravel access road will be installed by advancing 6¼-inch inner diameter hollow stem augers (or other appropriate size) with continuous split spoon sampling. The depth of these wells is expected to be 20 feet or less. These wells will be constructed of 2-inch diameter threaded/flush joint Schedule 40 PVC screen (10 slot), threaded bottom plugs, and flush-threaded PVC riser pipe. The wells will be constructed with 5-feet, 7-feet or 10-feet long screens depending upon the thickness of the upper sand deposit at each location. An appropriately graded silica sand filter pack will be placed around

the screen and extend to approximately 2' above the screen (or less depending upon the depth that the upper sand deposit is encountered). A seal of bentonite chips will be placed above the filter pack to grade and will be allowed to hydrate prior to installation of the protective casing. The wells will be completed by placing a steel, stick up protective casing with locking hinged lid over the riser and extending approximately 2' below grade. The protective casing will ensure that the wells are not damaged or tampered with if long-term water level measurements or sampling are required. A 2-feet by 2-feet by 6-inch thick concrete well pad will be installed at the surface around the protective casing.

The overburden monitoring wells along the northern boundary of the National Fuel Gas property will be installed by advancing a 4-inch diameter hand auger (or larger) to the native silty clay deposit. The depth of these wells is expected to be 10 feet or less. These wells will be constructed like those installed with the rotary drill rig wells except that 1-inch diameter threaded/flush joint Schedule 40 PVC screen (10 slot), threaded bottom plugs, and flush-threaded PVC riser pipe will be used.

3.1.4 Geologic Logging and Well Construction Diagrams

All geologic logging will be completed by a geologist employed by the Standby Spill Contractor. The geologist will also be responsible for completing well construction diagrams. At the completion of the well installation field activities, the Standby Spill Contractor will computer generate these logs and diagrams.

3.1.5 Well Development

Each newly installed monitoring well will be developed by bailing, pumping or other appropriate method. Well development will continue until either water clarity has improved (below 50 NTU) or until the wells are purged dry and cannot sustain further development.

During development the purged water will be monitored for pH, temperature, specific conductivity, oxidation-reduction potential (ORP) or redox potential (Eh), dissolved oxygen, and turbidity. These data will be recorded on Well Development Logs. Well development water does not need to be containerized. All well development activities will be completed by the Standby Spill Contractor. At the completion of the well installation field activities, the Standby Spill

Contractor will computer generate the Well Development Logs.

3.1.6 Groundwater Sample Collection and Analysis

Groundwater samples will be collected by the Standby Spill Contractor from each newly installed monitoring well using low-flow groundwater sampling procedures. Prior to sampling, the wells will be purged until field parameters (i.e., pH, temperature, specific conductivity, oxidation-reduction potential (ORP) or redox potential (Eh), dissolved oxygen, and turbidity) stabilize. These data will be recorded on Well Purge and Sampling Logs. At the completion of the well installation field activities, the Standby Spill Contractor will computer generate the Well Purge and Sampling Logs.

Groundwater samples will be placed into laboratory supplied, pre-cleaned sample jars. The jars will be labeled with a unique sample identification code, packed in a cooler with ice, and shipped under chain-of-custody control to a NYSDEC contract lab for analysis. The Standby Spill Contractor will be responsible for obtaining the appropriate sample bottles from the lab. All invoicing from the lab will be completed in accordance with its Standby Contract with the NYSDEC.

All samples will be analyzed for TCL volatile organic compounds, TCL semi-volatile organic compounds, TCL pesticides, TCL PCBs and TAL metals.

3.1.7 Completion of the Wells Installation Program

To the extent possible, the site will be restored to conditions similar to those encountered prior to the start of the well installation activities. All excess material will be spread on the ground surface near each well location, unless gross contamination is encountered; grossly contaminated materials will be containerized in 55-gallon steel drums for later disposal. The Drilling Subcontractor will supply the drums if needed.

3.1.8 Decontamination

The drill rig and its equipment (e.g., hollow stem augers, rods, split-spoon samplers) will be decontaminated at a designated location on the Niagara Sanitation Landfill with a high-

pressure steam cleaner prior to the implementation of any field activities, between well locations, and before leaving the site. Construction of a decon pad will not be required. Reusable sampling equipment (e.g., hand auger, sampling bowls and spoons) will also be decontaminated with Alconox and potable water between sampling locations. Used PPE, disposable sampling equipment, and garbage generated during the well installation program will be bagged and removed from the site at the end of each workday.

3.2 Site Survey and Mapping

The licensed surveyor retained by the Standby Spill Contractor will complete a survey of the site after all well installation field activities are complete. This survey should include the following:

- Horizontal locations and vertical elevations of all monitoring wells installed during the well installation program. This will include the ground surface elevation and the elevation of the inner PVC riser of each well;
- Horizontal locations and ground surface elevations of the excavations completed by National Fuel Gas in 2020 (if they can be located);
- The locations of site features that include the ditches that mark the northern boundary of the National Fuel Gas property, pipeline markers, etc.; and
- Spot elevations for the purpose of completing topographic contouring.

Vertical control should be established to the nearest ±0.1 foot for all ground surface elevations, while monitoring well riser elevations should be reported to the nearest ±0.01 foot. Elevations should be determined relative to the North American Vertical Datum of 1988 (NAVD 88), with reference made to an existing monument in the vicinity of the site. Horizontal coordinates should be given in the State Plane East Zone (feet), North American Datum (NAD) of 1983 to an accuracy of ±0.5 foot. Horizontal coordinates should also be provided in latitude and longitude to avoid conversion errors from the State Plane coordinate system.

At the completion of all surveying activities, a final site survey map should be prepared as a sheet with a maximum size of 24" x 36" and at a sufficient scale to show necessary details.

Topographic contours should be plotted at appropriate intervals. The survey should also be provided to the Standby Spill Contractor and the NYSDEC in both hard copy and electronic formats (AutoCAD and PDF) on CD or via e-mail.

3.3 Health & Safety

It is anticipated that all field work can be performed in Level D personal protective equipment with Level C backup. All field work will be conducted in accordance with the Standby Spill Contractor's Corporate Health & Safety Plan. The Standby Spill Contractor will provide appropriate personal protective equipment (PPE) suitable for working in and around contaminated liquids, wastes and soils.

All field personnel will be informed of the location of the hospital listed in the Generic Health and Safety Plan included as Appendix A, and be made aware of the list of emergency contacts contained therein. Field supervisory personnel will become thoroughly familiar with the route to the hospital.

The Standby Spill Contractor will be responsible for clearly delineating the work area to prevent unauthorized access. During all intrusive activities, continuous air monitoring will be conducted for organic vapors by the Standby Spill Contractor to determine the necessity to upgrade personal protective equipment. The contractor will also comply with the NYSDOH Community Air Monitoring Plan (CAMP) during all intrusive activities. The General NYSDOH CAMP is included as Appendix B.

3.4 Data Usability Summary Reports (DUSRs)

Data Usability Summary Reports (DUSRs) will be prepared for all analytical results by an Environmental Scientist having a Bachelor's Degree in a relevant natural or physical science or field of engineering and also having experience in environmental sampling, analysis and data review. The DUSRs provide a thorough evaluation of analytical data without the costly and time-consuming process of third-party data validation. The primary objective of the DUSRs is to determine if the analytical data meets the criteria for data quality and use. The Standby Spill Contractor will retain an individual qualified to complete a DUSR. The Standby Spill Contractor or the NYSDEC will provide the DUSR Subcontractor with the necessary analytical data.

DUSRs are developed by reviewing and evaluating the analytical data packages. During this review the following questions must be asked and answered:

- Is the data package complete as defined under the requirements for the NYSDEC ASP Category B or USEPA CLP deliverables?
- Have all holding times been met?
- Do all QC data: blanks, instrument tunings, calibration standards, calibration verifications, surrogate recoveries, spike recoveries, replicate analyses, laboratory controls and sample data fall within the protocol required limits and specifications?
- Have all data been generated using established and agreed upon analytical protocols?
- Does an evaluation of the raw data confirm the results provided in the data summary sheets and quality control verification forms?
- Have the correct data qualifiers been used?

Any Quality Control exceedances must be numerically specified in the DUSRs with the corresponding QC summary sheet from the data package attached to the DUSRs. All data that would be rejected by the EPA Region 2 Data Validation Guidelines must also be rejected in the DUSRs.

Once the data packages have been reviewed and the above questions asked and answered the DUSRs proceed to describe the samples and the analytical parameters. Data deficiencies, analytical protocol deviations and quality control problems are identified and their effect on the data will be discussed. The DUSRs will also include recommendations on resampling/reanalysis. All data qualifications must be documented following the NYSDEC ASP (2005 revision) guidelines.

3.5 EQuIS

Once the DUSRs are complete the Standby Spill Contractor will prepare the electronic

data deliverable (EDD) files supplied by the lab and/or qualified by the data validator during the DUSR process for upload to the NYSDEC's Environmental Information Management System (EIMS). The EIMS currently uses the database software application EQuIS™ from EarthSoft® Inc.

3.6 Report Preparation

Following the completion of all well installation activities, the Standby Spill Contractor will prepare a letter report that includes the following:

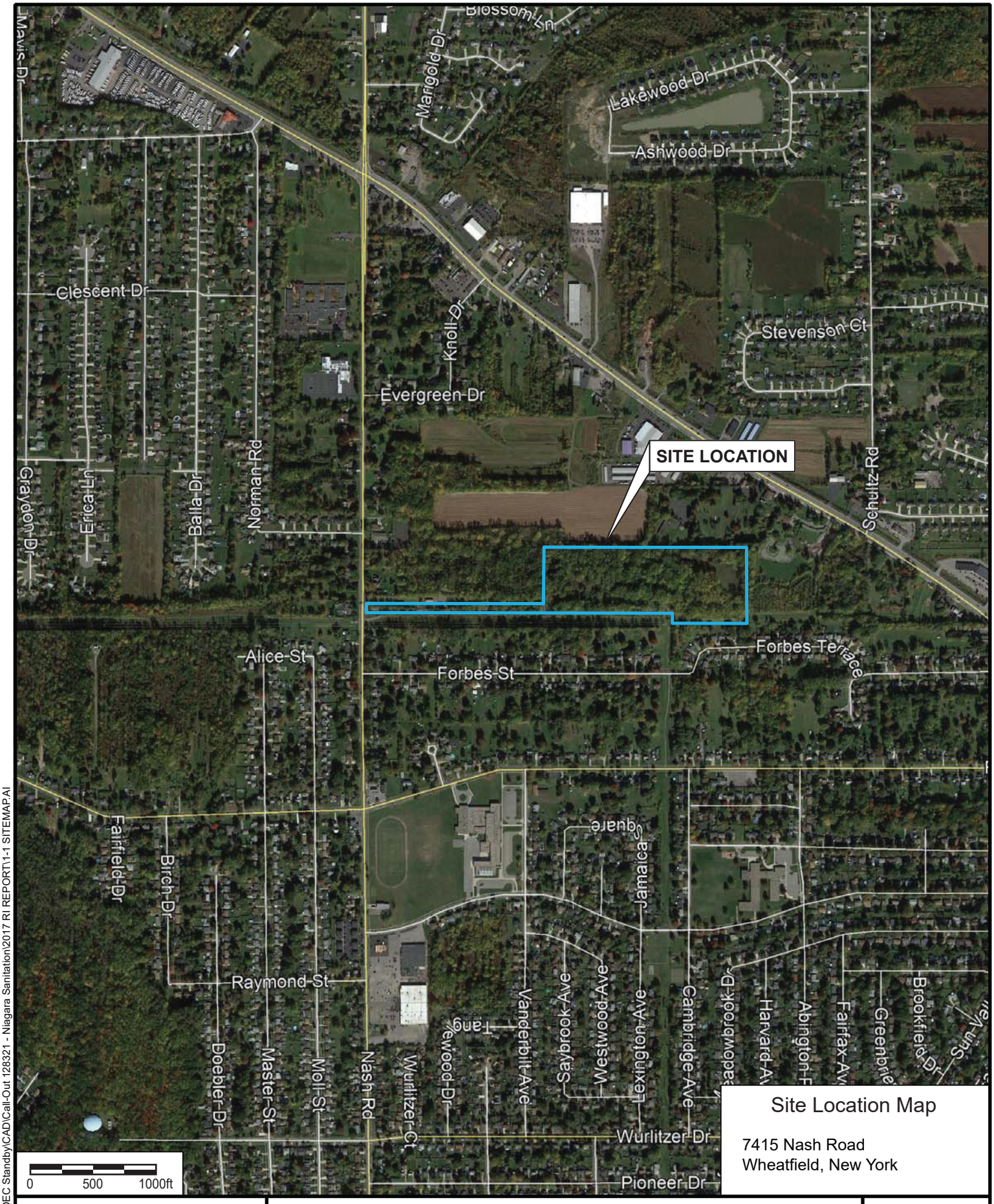
- A description of the well installation activities;
- Soil boring logs and well construction diagrams;
- Well development logs;
- Well purge and sampling logs;
- Tabulated coordinates and elevations of the soil borings/wells, the NFG excavations (if located), and the pipeline markers; and
- Data Usability Summary Reports.

The NYSDEC will prepare a Well Installation Summary Report that includes the following:

- Executive Summary and Introductory sections;
- A Site Description and History section that describes the salient features of the Niagara Sanitation Site, and presents a summary of both disposal and remedial history;
- A Study Objectives and Scope of Work section that describes the objectives of the well installation activities that were completed;
- An Investigation Results section that describes the findings of the well installation program, including a summary of the analytical results obtained from the soil/fill and groundwater samples;

- A References section that contains a list of references utilized or cited in the report; and

- Soil boring logs, well construction diagrams, field sampling logs, well development logs, raw analytical data (i.e., lab reports) and the DUSRs will be incorporated into the report as appendices.



Site Location Map

7415 Nash Road
Wheatfield, New York

J:\17-013-0289 NYSDEC Standby\CAD\Call-Out 128321 - Niagara Sanitation\2017 RI REPORT\1-1 SITEMAP.AI

LiRo-Engineers, Inc.
690 Delaware Ave.
Buffalo, New York

7415 NASH ROAD
SITE LOCATION MAP

FIGURE NO.

1

DETAIL A

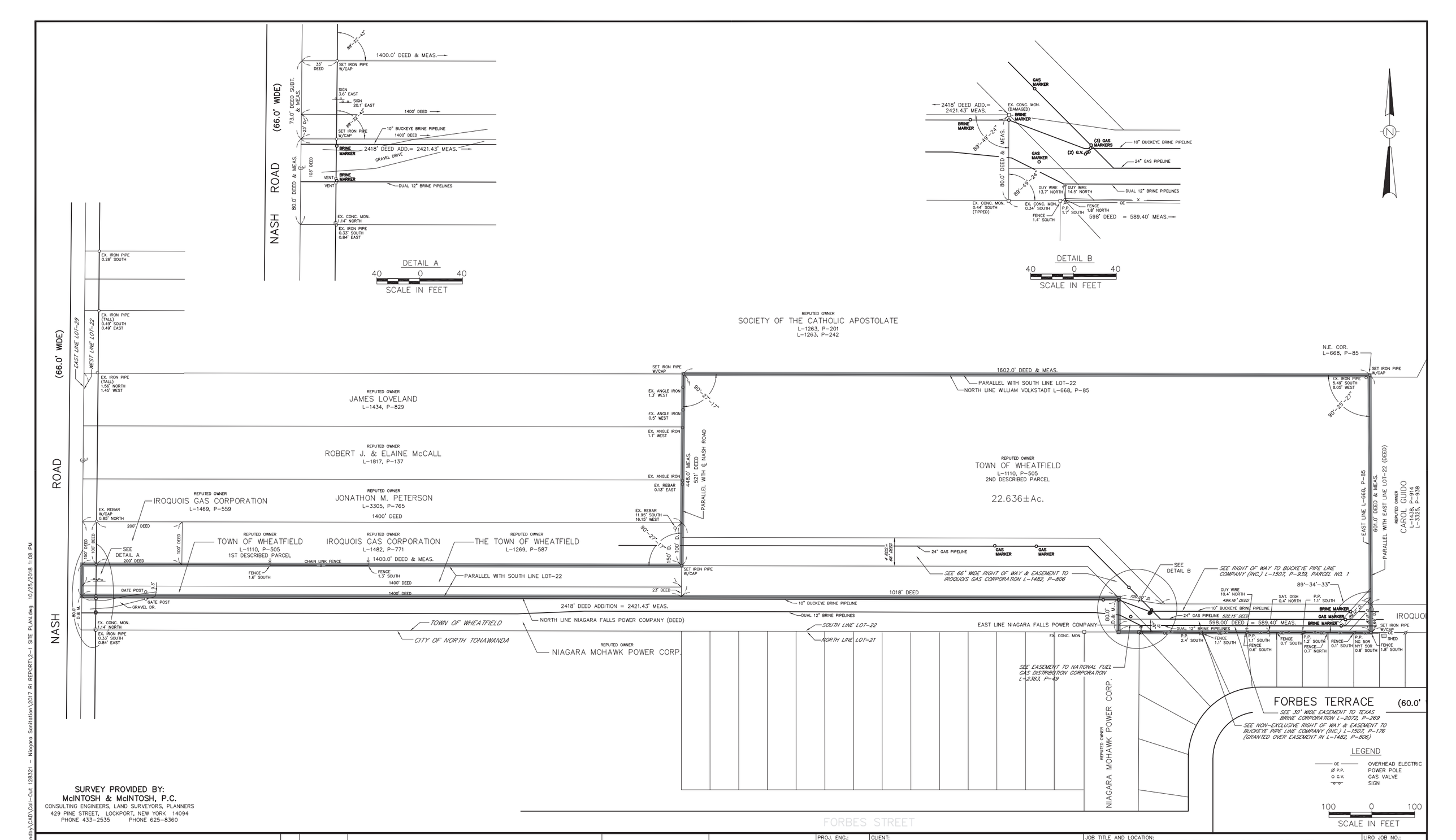
40 0 40

SCALE IN FEET

DETAIL B

40 0 40

SCALE IN FEET



SURVEY PROVIDED BY:
McINTOSH & McINTOSH, P.C.
CONSULTING ENGINEERS, LAND SURVEYORS, PLANNERS
429 PINE STREET, LOCKPORT, NEW YORK 14094
PHONE 433-2535 PHONE 625-8360

WARNING

IT IS A VIOLATION OF SECTION 7209, SUBDIVISION 2, OF THE NEW YORK STATE EDUCATION LAW FOR ANY PERSON, OTHER THAN THOSE WHOSE SEAL APPEARS ON THIS DRAWING, TO ALTER IN ANY WAY AN ITEM ON THIS DRAWING. IF AN ITEM IS ALTERED, THE ALTERING ENGINEER SHALL AFFIX TO THE ITEM HIS SEAL AND THE NOTATION "ALTERED BY" FOLLOWED BY HIS SIGNATURE AND THE DATE OF SUCH ALTERATION, AND A SPECIFIC DESCRIPTION OF THE ALTERATION.

NO.	DATE	DESCRIPTION
		REVISIONS

Lilo Engineers, Inc.
690 Delaware Avenue
Buffalo, New York

PROJ. ENG.:	
DESIGNED BY:	
CHECKED BY:	
DRAWN BY:	
CLIENT:	NEW YORK STATE OF OPPORTUNITY. Department of Environmental Conservation
DATE:	FEBRUARY 2019
SCALE:	AS SHOWN

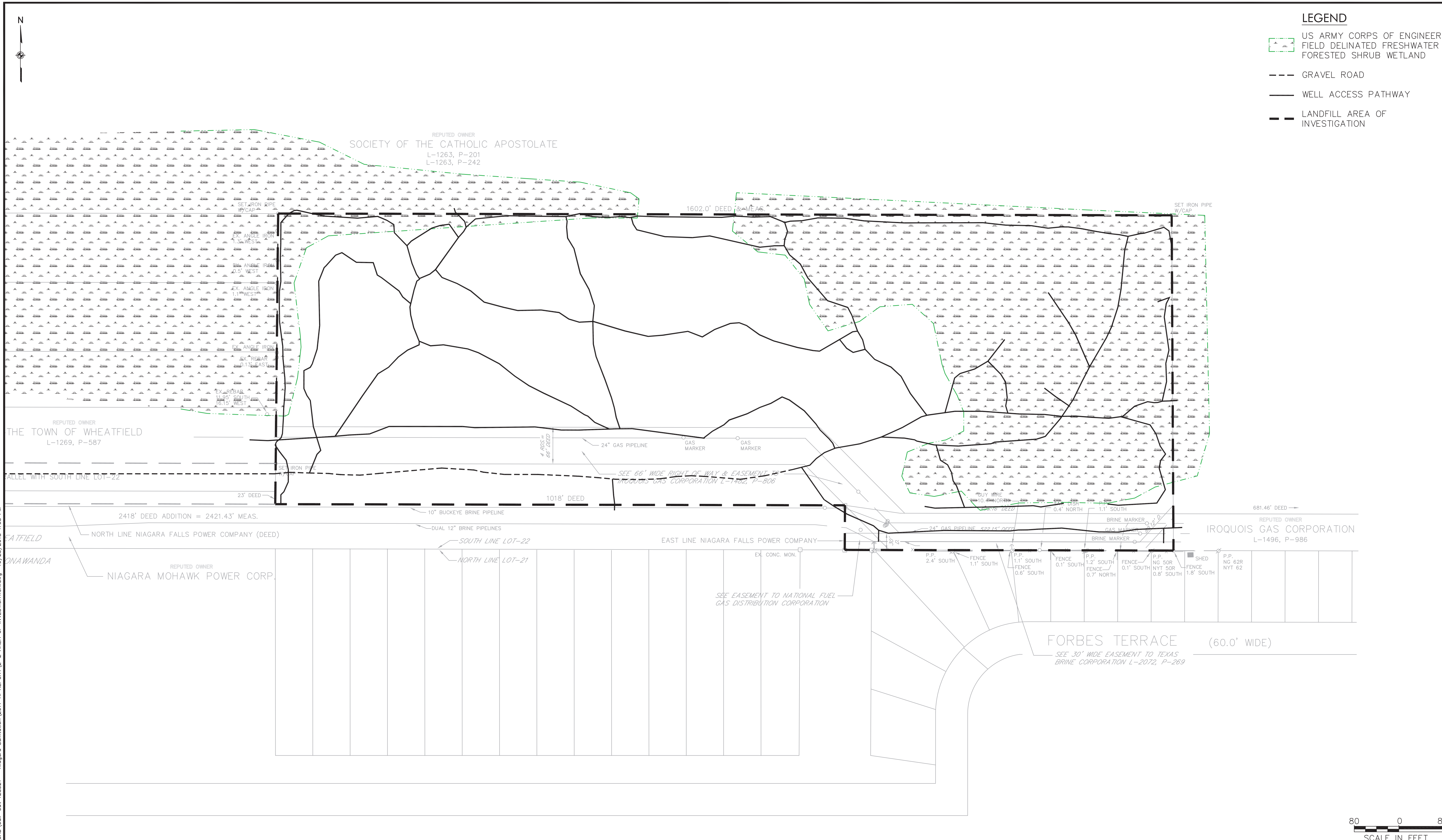
JOB TITLE AND LOCATION:
NIAGARA SANITATION / NASH ROAD LANDFILL SITE
7415 NASH ROAD
TOWN OF WHEATFIELD, NIAGARA COUNTY, NEW YORK
NYSDEC SITE NUMBER 932054

LIRO JOB NO.: 17-013-0289
SHEET OF

DRAWING TITLE: Site Boundary Map

FIGURE NO. 2

J:\17-013-0289 NYSDEC Standby\CAD\Call-Out 128321 - Niagara Sanitation\2017 RI REPORT\2-1 SITE PLAN.dwg 10/25/2018 1:08 PM


N
LEGEND
US ARMY CORPS OF ENGINEERS FIELD DELINATED FRESHWATER FORESTED SHRUB WETLAND
GRAVEL ROAD
WELL ACCESS PATHWAY
LANDFILL AREA OF INVESTIGATION
REPUTED OWNER
SOCIETY OF THE CATHOLIC APOSTOLATE
L-1263, P-201
L-1263, P-242
1602.0' DEED & MEAS.
SET IRON PIPE W/CAP
REPUTED OWNER
THE TOWN OF WHEATFIELD
L-1269, P-587
24" GAS PIPELINE
GAS MARKER
SEE 66' WIDE RIGHT OF WAY & EASEMENT TO IROQUOIS GAS CORPORATION L-1482, P-806
1018' DEED
23' DEED
2418' DEED ADDITION = 2421.43' MEAS.
10" BUCKEYE BRINE PIPELINE
DUAL 12" BRINE PIPELINES
NORTH LINE NIAGARA FALLS POWER COMPANY (DEED)
SOUTH LINE LOT-22
NORTH LINE LOT-21
EAST LINE NIAGARA FALLS POWER COMPANY
EX. CONC. MON.
REPUTED OWNER
NIAGARA MOHAWK POWER CORP.
SEE EASEMENT TO NATIONAL FUEL GAS DISTRIBUTION CORPORATION
681.46' DEED
BRINE MARKER
GAS MARKER
REPUTED OWNER
IROQUOIS GAS CORPORATION
L-1496, P-986
SHED
FORBES TERRACE (60.0' WIDE)
SEE 30' WIDE EASEMENT TO TEXAS BRINE CORPORATION L-2072, P-269
80 0 80
SCALE IN FEET

WARNING

IT IS A VIOLATION OF SECTION 7209, SUBDIVISION 2, OF THE NEW YORK STATE EDUCATION LAW FOR ANY PERSON, OTHER THAN THOSE WHOSE SEAL APPEARS ON THIS DRAWING, TO ALTER IN ANY WAY AN ITEM ON THIS DRAWING. IF AN ITEM IS ALTERED, THE ALTERING ENGINEER SHALL AFFIX TO THE ITEM HIS SEAL AND THE NOTATION "ALTERED BY" FOLLOWED BY HIS SIGNATURE AND THE DATE OF SUCH ALTERATION, AND A SPECIFIC DESCRIPTION OF THE ALTERATION.

NO.	DATE	DESCRIPTION

REVISIONS

LiRo Engineers, Inc.
690 Delaware Avenue
Buffalo, New York

PROJ. ENG.:	CLIENT: NEW YORK STATE OF OPPORTUNITY — Department of Environmental Conservation
DESIGNED BY:	
CHECKED BY:	
DRAWN BY:	DATE: FEBRUARY 2019
SCALE:	AS SHOWN

JOB TITLE AND LOCATION:
NIAGARA SANITATION / NASH ROAD LANDFILL SITE
7415 NASH ROAD
TOWN OF WHEATFIELD, NIAGARA COUNTY, NEW YORK
NYSDEC SITE NUMBER 932054

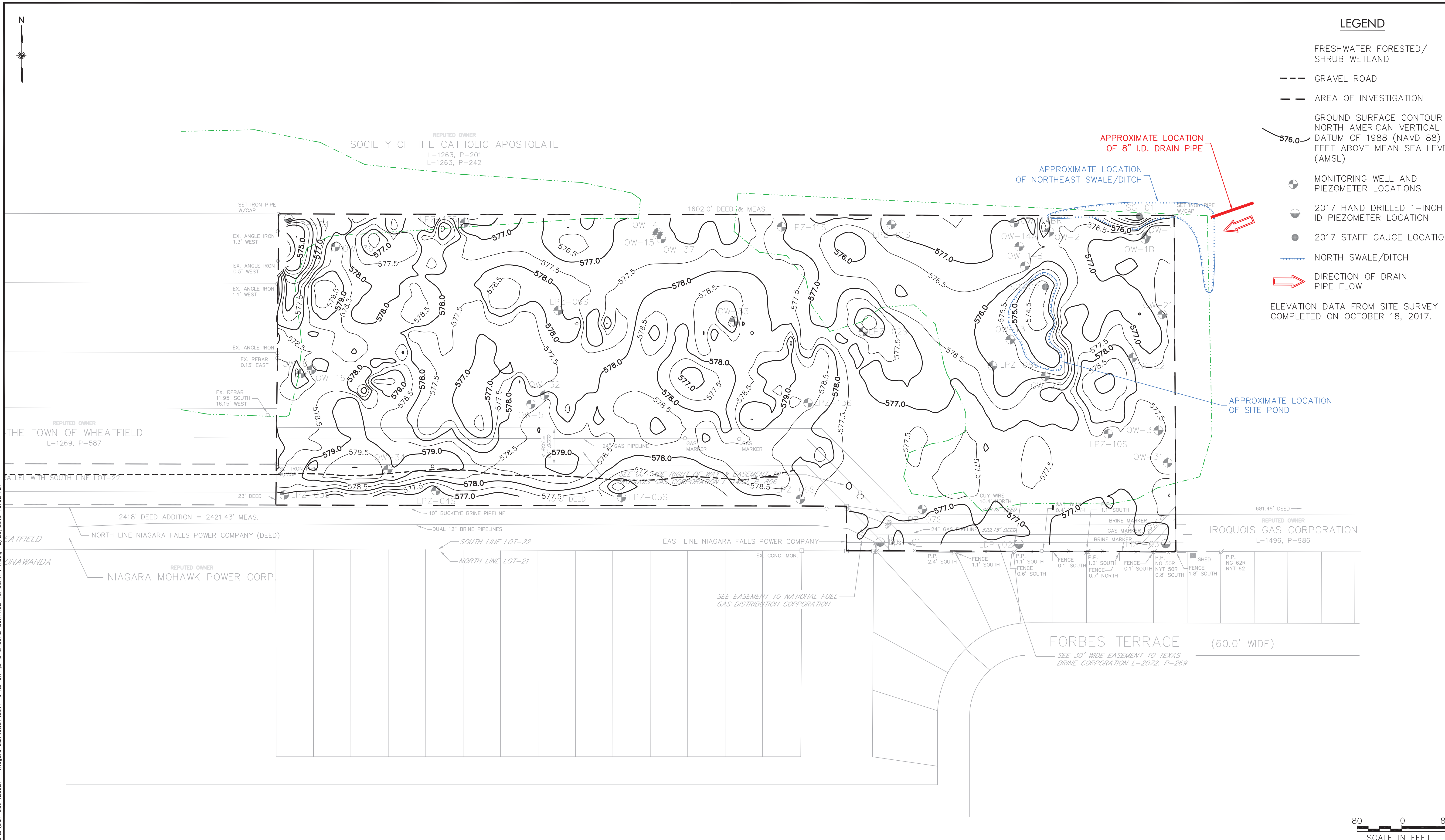
LIRO JOB NO.: 17-013-0289

SHEET OF

DRAWING TITLE:
Wetland Delineation Map

FIGURE NO. 3

J:\17-013-0289 NYSDEC Standby\CAD\Call-Out 128321 – Niagara Sanitation\2017 RI REPORT\2-2 AREA OF INVESTIGATION.dwg 10/25/2018 1:08 PM


N
LEGEND
FRESHWATER FORESTED/ SHRUB WETLAND
GRAVEL ROAD
AREA OF INVESTIGATION
576.0
GROUND SURFACE CONTOUR NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD 88) FEET ABOVE MEAN SEA LEVEL (AMSL)
MONITORING WELL AND PIEZOMETER LOCATIONS
2017 HAND DRILLED 1-INCH ID PIEZOMETER LOCATION
2017 STAFF GAUGE LOCATION
NORTH SWALE/DITCH
DIRECTION OF DRAIN PIPE FLOW
ELEVATION DATA FROM SITE SURVEY COMPLETED ON OCTOBER 18, 2017.
APPROXIMATE LOCATION OF 8" I.D. DRAIN PIPE
APPROXIMATE LOCATION OF NORTHEAST SWALE/DITCH
APPROXIMATE LOCATION OF SITE POND
REPUTED OWNER
SOCIETY OF THE CATHOLIC APOSTOLATE
L-1263, P-201
L-1263, P-242
1602.0' DEED & MEAS.
SET IRON PIPE W/CAP
THE TOWN OF WHEATFIELD
L-1269, P-587
2418' DEED ADDITION = 2421.43' MEAS.
NORTH LINE NIAGARA FALLS POWER COMPANY (DEED)
10" BUCKEYE BRINE PIPELINE
DUAL 12" BRINE PIPELINES
SOUTH LINE LOT-22
NORTH LINE LOT-21
NIAGARA MOHAWK POWER CORP.
EAST LINE NIAGARA FALLS POWER COMPANY
EX. CONC. MON.
SEE EASEMENT TO NATIONAL FUEL GAS DISTRIBUTION CORPORATION
24" GAS PIPELINE
GAS MARKER
BRINE MARKER
IROQUOIS GAS CORPORATION
L-1496, P-986
681.46' DEED
FORBES TERRACE (60.0' WIDE)
SEE 30' WIDE EASEMENT TO TEXAS BRINE CORPORATION L-2072, P-269
SHED
80 0 80
SCALE IN FEET

WARNING
IT IS A VIOLATION OF SECTION 7209, SUBDIVISION 2, OF THE NEW YORK STATE EDUCATION LAW FOR ANY PERSON, OTHER THAN THOSE WHOSE SEAL APPEARS ON THIS DRAWING, TO ALTER IN ANY WAY AN ITEM ON THIS DRAWING. IF AN ITEM IS ALTERED, THE ALTERING ENGINEER SHALL AFFIX TO THE ITEM HIS SEAL AND THE NOTATION "ALTERED BY" FOLLOWED BY HIS SIGNATURE AND THE DATE OF SUCH ALTERATION, AND A SPECIFIC DESCRIPTION OF THE ALTERATION.

NO.	DATE	DESCRIPTION
		REVISIONS

LiRo Engineers, Inc.
690 Delaware Avenue
Buffalo, New York

PROJ. ENG.:
DESIGNED BY:
CHECKED BY:
DRAWN BY:

CLIENT: NEW YORK STATE OF OPPORTUNITY | Department of Environmental Conservation

DATE: FEBRUARY 2019
SCALE: AS SHOWN

JOB TITLE AND LOCATION:
NIAGARA SANITATION / NASH ROAD LANDFILL SITE
7415 NASH ROAD
TOWN OF WHEATFIELD, NIAGARA COUNTY, NEW YORK
NYSDEC SITE NUMBER 932054

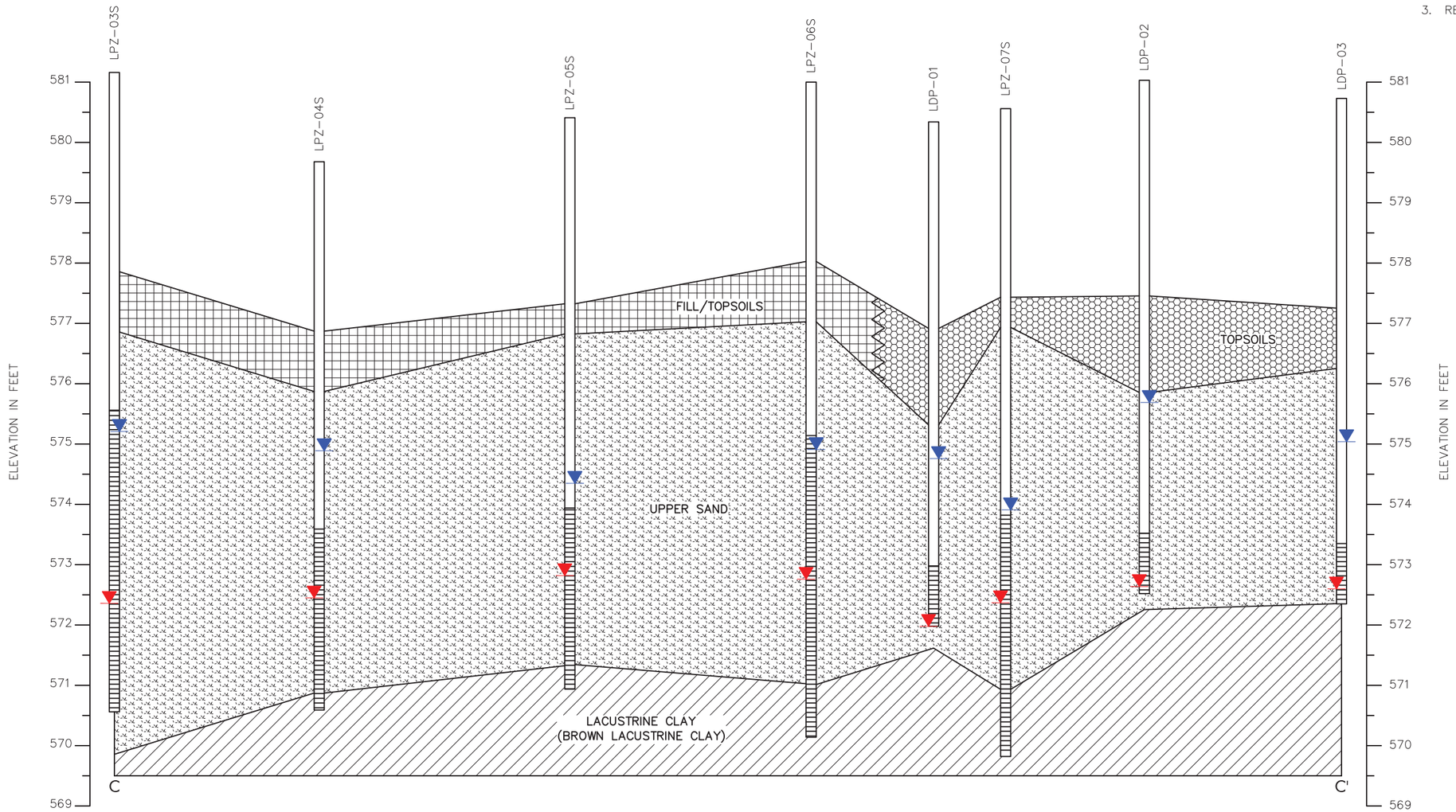
DRAWING TITLE:
Site Topographic Map

LIRO JOB NO.: 17-013-0289
SHEET OF
FIGURE NO. 4

J:\17-013-0289 NYSDEC Standby\CAD\Call-Out 128321 - Niagara Sanitation\2017 RI REPORT\2-3 GROUND SURFACE TOPOGRAPHY.dwg 2/25/2019 10:02 AM

NOTES:

1. ELEVATIONS IN FEET ABOVE MEAN SEA LEVEL.
2. WATER LEVELS MEASURED ON SEPTEMBER 25, 2017 AND OCTOBER 17, 2017.
3. REFER TO FIGURE 5 FOR DESCRIPTION OF UNITS.



LEGEND

- WATER LEVEL RECORDED SEPTEMBER 25, 2017
- WATER LEVEL RECORDED OCTOBER 10, 2017
- SCREENED INTERVAL

80 0 80
HORIZONTAL SCALE IN FEET

1 0 1
VERTICAL SCALE IN FEET

NO.	DATE	DESCRIPTION

REVISIONS

Liffo Engineers, Inc.
690 Delaware Avenue
Buffalo, New York

PROJ. ENG.:
DESIGNED BY:
CHECKED BY:
DRAWN BY:

CLIENT: NEW YORK STATE OF OPPORTUNITY Department of Environmental Conservation

DATE: FEBRUARY 2019
SCALE: AS SHOWN

JOB TITLE AND LOCATION:
NIAGARA SANITATION / NASH ROAD LANDFILL SITE
7415 NASH ROAD
TOWN OF WHEATFIELD, NIAGARA COUNTY, NEW YORK
NYSDEC SITE NUMBER 932054

DRAWING TITLE: Geologic Cross-Section

LIRO JOB NO.: 17-013-0289
SHEET OF
FIGURE NO. 5

N

LEGEND

- FRESHWATER FORESTED/ SHRUB WETLAND
- GRAVEL ROAD
- LIMITS OF 2014/2015 IRM EXCAVATION
- MONITORING WELL AND PIEZOMETER LOCATIONS
- 2017 HAND DRILLED 1–INCH ID PIEZOMETER LOCATION
- 2017 STAFF GAUGE LOCATION
- (573.67) GROUNDWATER ELEVATION (FT. MSL)
- 573.00 GROUNDWATER CONTOUR (FT. MSL)
- INTERPRETED GROUNDWATER FLOW DIRECTION

LDP–04 (572.81)
LPZ–12S (573.34)
OW–4
OW–15
LPZ–11S (573.53)
LPZ–01S (573.76)
OW–14A (573.67)
OW–2
SG–01 (DRY)
OW–1
OW–1B (573.07)
OW–14B (574.24)
SG–02 (DRY)
OW–11
OW–21 (572.77)
LPZ–09S (573.77)
LPZ–02S (574.02)
OW–13 (573.34)
OW–12
OW–22 (572.99)
LPZ–08S (574.14)
OW–23
OW–6
OW–16 (573.34)
OW–5
LPZ–13S (573.02)
OW–3
LPZ–10S (573.26)
LPZ–03S (572.36)
LPZ–04S (572.45)
LPZ–05S (572.82)
LPZ–06S (572.76)
LPZ–07S (572.37)
LDP–01 (DRY)
LDP–02 (572.64)
LDP–03 (572.60)

573.00
573.50
574.00
572.50

80 0 80
SCALE IN FEET

NO.	DATE	DESCRIPTION
		REVISIONS

LiRo Engineers, Inc.
690 Delaware Avenue
Buffalo, New York

PROJ. ENG.:
DESIGNED BY:
CHECKED BY:
DRAWN BY:

CLIENT: NEW YORK STATE OF OPPORTUNITY Department of Environmental Conservation

DATE: FEBRUARY 2019
SCALE: AS SHOWN

JOB TITLE AND LOCATION:
NIAGARA SANITATION / NASH ROAD LANDFILL SITE
7415 NASH ROAD
TOWN OF WHEATFIELD, NIAGARA COUNTY, NEW YORK
NYSDEC SITE NUMBER 932054

DRAWING TITLE:
Groundwater Contour Map Fill/Upper Sand Deposit

LIRO JOB NO.: 17–013–0289
SHEET OF
FIGURE NO. 6

L:\17-013-0289 NYSDEC Standby\CADD\Cad-Out 128321 – Niagara Sanitation\2017 RI REPORT\4-8 CONTOUR SEPT 25.dwg 2/25/2019 10:41 AM

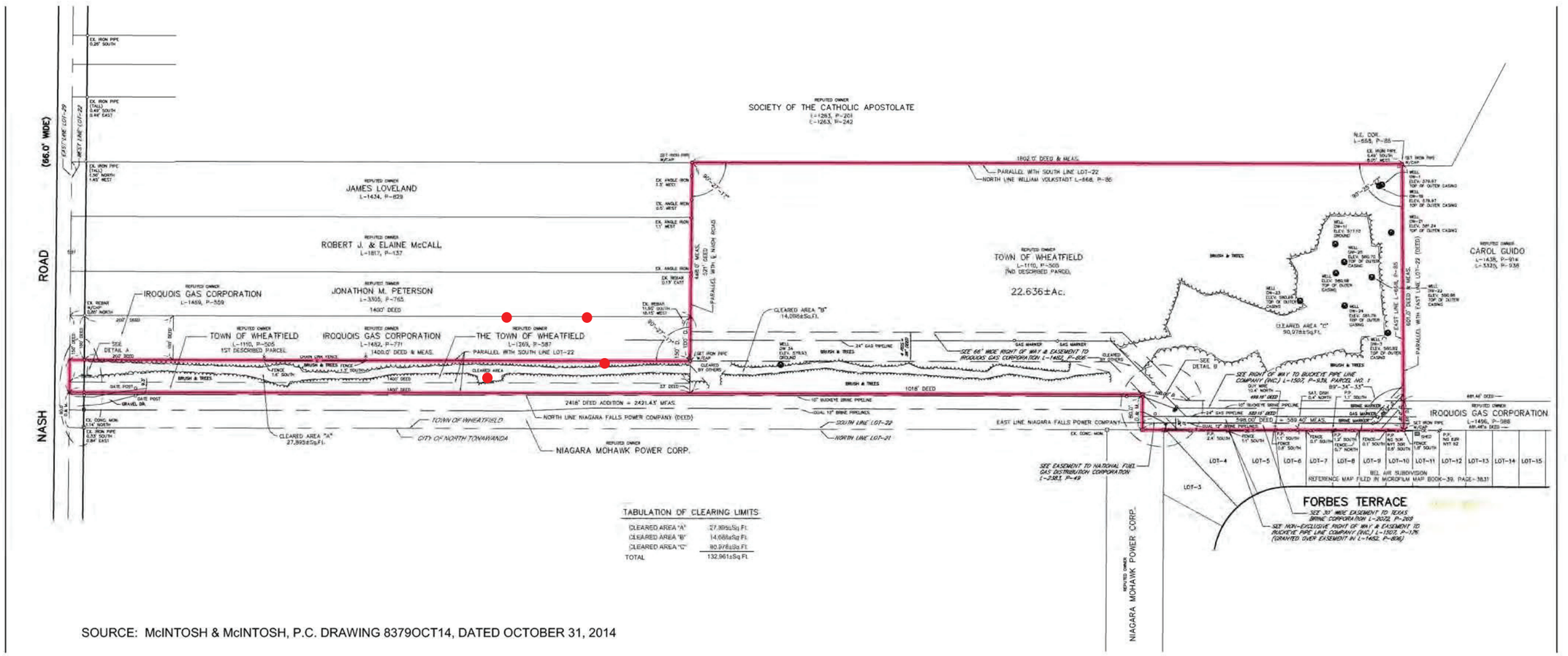


Figure 7
Proposed Monitoring Well Location Map

APPENDIX A

GENERIC HEALTH AND SAFETY PLAN

FOR THE NIAGARA SANITATION SITE

This Health and Safety Plan was developed for use by all personnel involved in the investigation of the Niagara Sanitation Site. This plan provides only general guidance that should be supplemented by the Standby Investigation & Remediation Contractor's Corporate Health and Safety Plan.

General Health and Safety Guidelines

All work should be conducted in accordance with standard health and safety procedures for hazardous waste site work. All Personnel must have the 40-hour HAZWOPER training certification as required by 29 CFR 1910.120, and maintain this training by taking the annual 8-hour Refresher Course. The Standby Investigation & Remediation Contractor will provide, as necessary, appropriate personal protective equipment (PPE) suitable for working in and around contaminated liquids, wastes and soils. The Standby Investigation & Remediation Contractor will supply a photoionization detector (PID) for monitoring organic vapors, when necessary, which will be utilized to determine the necessity to upgrade PPE requirements.

It is anticipated that all field work can be performed in Level D personal protective equipment: steel toe shoes/boots, hard hat and latex gloves. The Standby Investigation & Remediation Contractor will ensure that sufficient personal protective equipment is available for all personnel prior to entering the exclusion zone. All appropriate PPE will be donned, used and removed as described in the 40-hour training course. Air monitoring will be conducted with a PID. An air-purifying respirator must be worn whenever there are sustained organic vapor concentrations of 5 ppm or above in the breathing zone.

Emergency Telephone Numbers

This section includes a list of emergency telephone numbers for use by all personnel involved in the investigation.

Emergency Services	911
Degraff Memorial Hospital	(716) 694-4500
National Poison Control Center	(800) 222-1222
NYSDEC Contact: Glenn M. May	(716) 851-7220

NYSDOH Contact: Jacquelyn Nealon	(518) 402-7860
Underground Facilities Protective Org. (UFPO)	(800) 962-7962

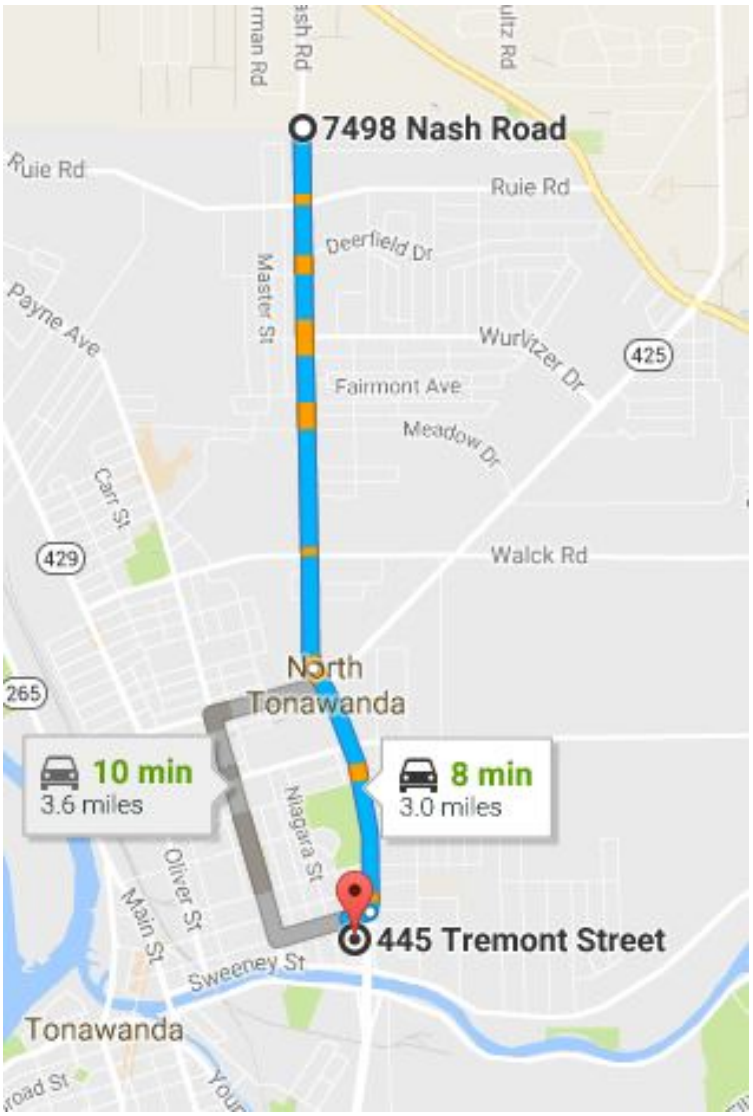
Medical Assistance

The primary source of medical assistance during the investigation of the Niagara Sanitation Site is the following:

Degraff Memorial Hospital
445 Tremont Street
North Tonawanda, New York 14120
Phone: (716) 694-4500

This hospital is located approximately 4.6 miles south of the Site. All personnel should be familiar with the location of this hospital and know how to get there from the Site. Directions to the hospital are given on the following page.

Driving Direction to Hospital



Start out heading SOUTH on NASH ROAD toward FORBES STREET for 2.0 miles.
Continue onto NY-425 S (Twin Cities Memorial Expressway) for 0.9 miles.
Turn RIGHT onto TREMONT STREET
Degraff Memorial Hospital is on the LEFT.

APPENDIX B

NEW YORK STATE DEPARTMENT OF HEALTH

COMMUNITY AIR MONITORING PLAN

Overview

A Community Air Monitoring Plan (CAMP) requires real-time monitoring for volatile organic compounds (VOCs) and particulates (i.e., dust) at the downwind perimeter of each designated work area when certain activities are in progress at contaminated sites. The CAMP is not intended for use in establishing action levels for worker respiratory protection. Rather, its intent is to provide a measure of protection for the downwind community (i.e., off-site receptors including residences and businesses and on-site workers not directly involved with the subject work activities) from potential airborne contaminant releases as a direct result of investigative and remedial work activities. The action levels specified herein require increased monitoring, corrective actions to abate emissions, and/or work shutdown. Additionally, the CAMP helps to confirm that work activities did not spread contamination off-site through the air.

The generic CAMP presented below will be sufficient to cover many, if not most, sites. Specific requirements should be reviewed for each situation in consultation with NYSDOH to ensure proper applicability. In some cases, a separate site-specific CAMP or supplement may be required. Depending upon the nature of contamination, chemical-specific monitoring with appropriately-sensitive methods may be required. Depending upon the proximity of potentially exposed individuals, more stringent monitoring or response levels than those presented below may be required. Special requirements will be necessary for work within 20 feet of potentially exposed individuals or structures and for indoor work with co-located residences or facilities. These requirements should be determined in consultation with NYSDOH.

Reliance on the CAMP should not preclude simple, common-sense measures to keep VOCs, dust, and odors at a minimum around the work areas.

Community Air Monitoring Plan

Depending upon the nature of known or potential contaminants at each site, real-time air monitoring for VOCs and/or particulate levels at the perimeter of the exclusion zone or work area will be necessary. Most sites will involve VOC and particulate monitoring; sites known to be contaminated with heavy metals alone may only require particulate monitoring. If radiological contamination is a concern, additional monitoring requirements may be necessary per consultation with appropriate NYSDEC and NYSDOH staff.

- **Continuous monitoring** will be required for all ground intrusive activities and during the demolition of contaminated or potentially contaminated structures. Ground intrusive activities include, but are not limited to, soil/waste excavation and handling, test pitting or trenching, and the installation of soil borings or monitoring wells;

- **Periodic monitoring** for VOCs will be required during non-intrusive activities such as the collection of soil and sediment samples or the collection of groundwater samples from existing monitoring wells. "Periodic" monitoring during sample collection might reasonably consist of taking a reading upon arrival at a sample location, monitoring while opening a well cap or overturning soil, monitoring during well bailing/purging, and taking a reading prior to leaving a sample location. In some instances, depending upon the proximity of potentially exposed individuals, continuous monitoring may be required during sampling activities. Examples of such situations include groundwater sampling at wells on the curb of a busy urban street, in the midst of a public park, or adjacent to a school or residence.

VOC Monitoring, Response Levels, and Actions

Volatile organic compounds (VOCs) must be monitored at the downwind perimeter of the immediate work area (i.e., the exclusion zone) on a continuous basis or as otherwise specified. Upwind concentrations should be measured at the start of each workday and periodically thereafter to establish background conditions, particularly if wind direction changes. The monitoring work should be performed using equipment appropriate to measure the types of contaminants known or suspected to be present. The equipment should be calibrated at least daily for the contaminant(s) of concern or for an appropriate surrogate. The equipment should be capable of calculating 15-minute running average concentrations, which will be compared to the levels specified below.

- If the ambient air concentration of total organic vapors at the downwind perimeter of the work area or exclusion zone exceeds 5 parts per million (ppm) above background for the 15-minute average, work activities must be temporarily halted and monitoring continued. If the total organic vapor level readily decreases (per instantaneous readings) below 5 ppm over background, work activities can resume with continued monitoring;

- If total organic vapor levels at the downwind perimeter of the work area or exclusion zone persist at levels in excess of 5 ppm over background but less than 25 ppm, work activities must be halted, the source of vapors identified, corrective actions taken to abate emissions, and monitoring continued. After these steps, work activities can resume provided that the total organic vapor level 200 feet downwind of the exclusion zone or half the distance to the nearest potential receptor or residential/commercial structure, whichever is less - but in no case less than 20 feet, is below 5 ppm over background for the 15-minute average;

- If the organic vapor level is above 25 ppm at the perimeter of the work area, activities must be shutdown; and

- All 15-minute readings must be recorded and available for NYSDEC and NYSDOH review. Instantaneous readings, if any, used for decision purposes should also be recorded.

Particulate Monitoring, Response Levels, and Actions

Particulate concentrations should be monitored continuously at the upwind and downwind perimeters of the exclusion zone at temporary particulate monitoring stations. The particulate monitoring should be performed using real-time monitoring equipment capable of measuring particulate matter less than 10 micrometers in size (PM-10) and capable of integrating over a period of 15 minutes (or less) for comparison to the airborne particulate action level. The equipment must be equipped with an audible alarm to indicate exceedances of the action level. In addition, fugitive dust migration should be visually assessed during all work activities.

- If the downwind PM-10 particulate level is 100 micrograms per cubic meter ($\mu g/m^3$) greater than background (upwind perimeter) for the 15-minute period or if airborne dust is observed leaving the work area, then dust suppression techniques must be employed. Work may continue with dust suppression techniques provided that downwind PM-10 particulate levels do not exceed 150 $\mu g/m^3$ above the upwind level and provided that no visible dust is migrating from the work area;

- If, after implementation of dust suppression techniques, downwind PM-10 particulate levels are greater than 150 µg/m^3 above the upwind level, work must be stopped and a re-evaluation of activities initiated. Work can resume provided that dust suppression measures and other controls are successful in reducing the downwind PM-10 particulate concentration to within 150 µg/m^3 of the upwind level and in preventing visible dust migration; and
- All readings must be recorded and available for NYSDEC and NYSDOH review.