PROPOSED RECORD OF DECISION AMENDMENT
FORMER FULTON MANUFACTURED GAS PLANT SITE

Fulton / Oswego County / Registry No. 738034 January 2022

Prepared by the New York State Department of Environmental Conservation
Division of Environmental Remediation

SECTION 1: PURPOSE AND SUMMARY OF THE PROPOSED RECORD OF DECISION AMENDMENT

The New York State Department of Environmental Conservation (the Department), in consultation with the New York State Department of Health (NYSDOH), is proposing an amendment to the Record of Decision (ROD) for the above referenced site. The disposal of manufactured gas plant (MGP) waste at this site, as more fully described in the original ROD document and Section 6 of this document, has caused the contamination of various environmental media. The proposed amendment is intended to attain the remedial action objectives identified for this site for the protection of public health and the environment. This amendment identifies the new information which has led to this proposed amendment and discusses the reasons for the preferred remedy.

The Department has issued this document in accordance with the requirements of New York State Environmental Conservation Law and Title 6 of the Official Compilation of Codes, Rules and Regulations of the State of New York (6 NYCRR) Part 375 Environmental Remediation Programs. This document is a summary of the information that can be found in the site-related reports and documents in the document repository identified below.

On March 24, 2009, the New York State Department of Environmental Conservation (Department) signed a ROD which selected a remedy to clean up the Former Fulton MGP site. Refer to Figure 1 for a site location map. The components of the remedy as described in the 2009 ROD are depicted on Figure 5.

There are several factors which have led to this proposed amendment. The site is comprised of three tax parcels: two zoned residential and one zoned commercial. National Grid has been working with the City of Fulton regarding rezoning of the two residential use parcels to include commercial use, which has led to a delay in implementation of the remedial action. Additionally, remedial technologies have been refined since issuance of the 2009 ROD, e.g., in-situ stabilization (ISS) is now a proven technology to immobilize impacted material to curtail contaminant migration. ISS is a process that uses a stabilizing agent which chemically changes contamination to make it less soluble. Contaminated soil is mixed in place with stabilizing agents, such as Portland cement using an excavator or augers. The stabilized soil is then covered to prevent direct exposure. This treatment changes the contamination from a soluble form to a stable, insoluble compound to reduce or eliminate the matrix as a source of groundwater contamination. In addition, a pre-design investigation performed in 2019 has determined that rehabilitation of the storm sewer could result in collapse of the pipe during construction. Furthermore, the 2009 remedy did not address impacted material below the groundwater table on the off-site parcel south of Area 2, owned by the City of Fulton.

The remedy selected in the 2009 ROD remains unchanged with respect to Area 1 (see Figure 2).

In Area 2, the 2009 ROD included rehabilitation of a section of storm sewer located just south/southwest of Area 2 (see Figures 3-6) to reduce groundwater infiltration into the storm sewer and prevent off-site migration of impacted groundwater. Measures to reduce migration of groundwater through soil bedding underneath the sewer line will be implemented. However, pre-design investigation performed in 2019 has determined that rehabilitation of the storm sewer could result in collapse of the pipe during construction. In lieu of rehabilitation of the storm sewer, excavation of further MGP-impacted soil to depths of up to seven feet below grade, or to the extent practicable due to dewatering limitations, and enhanced aerobic biodegradation of contaminants in groundwater in-situ as set forth in the 2009 ROD, the amended remedy proposes ISS of MGP-impacted soil from approximately four feet below ground surface (bgs) to the full depth of identified impacts in Area 2 (i.e., 28 feet bgs). The area subject to ISS is proposed to include MGP-impacted material extending off the National Grid property and onto the City of Fulton-owned property to the south of Area 2. See Figure 6 for the extent of proposed ISS. At least the top four feet of soil in Area 2 and off-site on the City of Fulton owned property to the south of Area 2 will be excavated and disposed off-site to allow for bulking of the soil subject to ISS. ISS adjacent to the storm sewer will control the migration of MGP residuals. Therefore, rehabilitation of the sewer and the risk associated with damage to or collapse of the sewer during rehabilitation can be eliminated. This alternate remedy achieves the remedial goals presented in the 2009 ROD, addresses more MGP-impacted material, and addresses concerns identified during inspection of the storm sewer, while enhancing the remedy for the site.

SECTION 2: CITIZEN PARTICIPATION

The Department seeks input from the community on this proposed ROD Amendment. This is an opportunity for public participation in the remedy selection process. The information here is a summary of what can be found in greater detail in reports that have been placed in the Administrative Record for the site. The public is encouraged to review the reports and documents, which are available at the following repositories:

Access project documents through the DECInfo Locator
https://www.dec.ny.gov/data/DecDocs/738034 (click the excavator icon, then click Document Folder link) and at these locations:

Fulton Public Library
160 South First Street
Fulton, NY 13069
Phone: (315) 592-5159
Hours: M & F – 9 am to 5 pm
T, W & Th – 9 am to 6 pm

NYSDEC Regional Office
615 Erie Boulevard West
Syracuse, NY 13204
Phone: (315) 426-7365
Hours: 8:30 am to 4:45 pm

**Repositories may be temporarily unavailable due to COVID-19 precautions. If you cannot access the repository, please contact the NYSDEC Project Manager, listed below, for assistance.*

A public comment period has been set for January 19 through February 17, 2022, to provide an opportunity for you to comment on these proposed changes. A virtual public meeting is scheduled for February 10, 2022 at 6:30 PM via Webex (virtual platform). The public is encouraged to participate in the virtual public meeting using the following link: **https://meetny.webex.com/meetny/onstage/g.php?MTID=e8e22ec247be189e232c13b2596f9e0f0** and use event passcode: Welcome1 or join by phone at 1-518-549-0500 and use access code: 161 234 7466.

During the meeting, a description of the original ROD and the circumstances that have led to proposed changes in the ROD will be presented. After the presentation, a question-and-answer period will be held, during which you can submit verbal or written comments on the proposal. We encourage you to review this summary and attend the meeting.

Written comments may also be sent to:

Greta White, P.G., Project Manager
NYS Dept. of Environmental Conservation
Division of Environmental Remediation
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Albany, NY 12233-7014
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The Department may modify or reject the proposed changes based on new information or public comments. Therefore, the public is encouraged to review and comment on this proposal. Comments will be summarized and addressed in the responsiveness summary section of the final version of the ROD Amendment. This ROD Amendment is the Department's final selection of the remedy for the site.

Receive Site Citizen Participation Information By Email
Please note that the Department's Division of Environmental Remediation (DER) is "going paperless" relative to citizen participation information. The ultimate goal is to distribute citizen participation information about contaminated sites electronically by way of county email listservs. Information will be distributed for all sites that are being investigated and cleaned up in a particular county under the State Superfund Program, Environmental Restoration Program, Brownfield Cleanup Program, Voluntary Cleanup Program, and Resource Conservation and Recovery Act Program. We encourage the public to sign up for one or more county listservs at http://www.dec.ny.gov/chemical/61092.html.

SECTION 3: SITE DESCRIPTION AND HISTORY

Location: The Former Fulton MGP site occupies approximately 1.04 acres in a residential section of the City of Fulton, Oswego County, New York, approximately 10 miles south of Lake Ontario.

Site Features: The Oswego River (which at this point is also a branch of the New York State Barge Canal) adjoins the site's western boundary. South First Street passes through the site, dividing it into parcels designated Areas 1 and 2. Area 1 lies to the east of South First Street, with Area 2 to

the west. Both areas are currently vacant, and both are currently owned by National Grid.

Current Zoning: Area 1 consists of one parcel (Tax Map No. 253.25-05-08), which includes active overhead electric utility transmission lines owned by National Grid and is currently zoned as R-1 Residential. Area 2 consists of two parcels, one of which is zoned as C-1 Commercial (Tax Map No. 253.33-02-01) with active overhead electric transmission lines and the second parcel is zoned as R-1 Residential (Tax Map No. 253.33-02-02). Due to the nature of the properties with critical electric utility transmission lines, National Grid is unlikely to sell the properties or re-purpose them for another use. Both properties are anticipated to undergo a zone change from residential to commercial, which National Grid is seeking from the City of Fulton.

Past Uses of the Site: The site operated as an MGP producing manufactured gas from 1903 to 1932. The former MGP facility included a gas holder, gas tank, oil tank, oil house, coke shed, tar well, and concentrator house. In general, Area 2 of the Fulton site contained the gas production facilities, and Area 1 contained facilities for storing and distributing the gas.

Site Geology and Hydrogeology: Fill ranges in thickness from 0.5 to 15 feet. In general, fill thickness increases towards the river. The unit underlying the fill is a series of discontinuous layers of silt, silt and fine sand, sand, clay, and gravel. The thickness of this unit and the individual layers varies across the site. Some of the deposits close to the river may be local, native material that was placed in the former Oswego canal. A glacial till unit overlies bedrock at the site.

Fill consisting of sand, gravel, and various debris such as brick fragments, asphalt pieces, cinders, glass, etc. (0.5 to 15 feet thick), sand and silt (variable), sand and gravel (variable), till (ranges from 5.3 to 28.5 feet below ground surface [ft bgs]). Bedrock is approximately 36.5 ft bgs.

The depth to ground water is 1.5 to 8 ft bgs and the groundwater flow direction is southwest toward the Oswego River.

SECTION 4: LAND USE AND PHYSICAL SETTING

The Department may consider the current, intended, and reasonably anticipated future land use of the site and its surroundings when evaluating a remedy for soil remediation. The Former Fulton MGP site is currently zoned for residential (Area 1 and the southern half of Area 2) and commercial (northern half of Area 1) use and is located in an area of residential use. However, as noted above, National Grid has petitioned the City of Fulton to change the residentially-zoned portions of the site to commercial, consistent with their reasonably anticipated future use.

SECTION 5: ENFORCEMENT STATUS

Potentially Responsible Parties (PRPs) are those who may be legally liable for contamination at a site. This may include past or present owners and operators, waste generators, and haulers.

The Department and Niagara Mohawk Power Corporation (now the National Grid Company) entered into multi-site Consent Orders D0-0001-9210 and A4-0473-0203 on December 12, 1992 and November 11, 2003. The Orders obligate the responsible party to implement a full remedial program for 33 former MGP sites across the State, including the Former Fulton MGP site.

SECTION 6: SITE CONTAMINATION

6.1: Summary of Environmental Assessment

Nature and Extent of Contamination: Volatile organic compounds [VOCs], semi-volatile organic compounds [SVOCs], metals, cyanide, & polychlorinated biphenyls [PCBs]/pesticides) were analyzed for during the Preliminary Site Assessment (PSA). Analysis of samples collected during the Remedial Investigation (RI) and the Pre-design investigation (PDI) included one or more of the identified contaminants of concern (COC) for the site which are benzene, toluene, ethylbenzene, and xylene (BTEX), polycyclic aromatic hydrocarbons (PAHs), and cyanide with the predominant COC being PAHs. The soil data were compared to Part 375 Residential Soil Cleanup Objectives (SCOs). Groundwater data were compared to the Class GA standards and guidance values provided in the NYSDEC Technical and Operation Guidance Series 1.1.1 (TOGS 1.1.1) titled Ambient Water Quality Standards and Guidance Values and Groundwater Effluent Limits dated June 1998 and associated addenda.

Surface Soil: BTEX compounds in surface soil are consistent with background values. PAHS are elevated as compared to background at two locations in Area 1 and one location adjacent to the pavement in Area 2. Cyanide was found to be present above Residential Use SCOs in two samples collected from a localized area within Area 1. Although PAHs in one off-site surface soil sample were above SCOs, the source was deemed to be connected to debris located in this area. Concentrations observed at other off-site areas are within background ranges.

Subsurface Soil: In Area 1, both analytical (above Residential SCOs) and visual evidence of MGP-impacted material was reported in subsurface soil. In general, these observations are noted in the vicinity of the northeastern concrete gas holder pad. Impacts are limited to the upper 12 ft bgs. Subsurface soil from the adjacent properties bordering Area 1 did not exhibit MGP-impacted material.

In Area 2, analytical and visual evidence of MGP-impacted material was reported in subsurface soil. These observations begin four ft bgs and, in the southern corner of the area, extend to depths up to at least 28 ft bgs. The widest zone of observed MGP-impacted material was between four to 12 ft bgs. The MGP-impacted material extends off the National Grid property and on to the City of Fulton-owned property to the south but was not observed adjacent to the Oswego River.

Groundwater: Concentrations of BTEX compounds, PAHs and cyanide above the groundwater screening criteria (NYSDEC TOGS) were not observed in Area 1 and were limited to the shallow groundwater (eight to 15 ft) beneath Area 2. Constituent concentrations in off-site wells, including those between Area 2 and the Oswego River, were below the screening criteria. Groundwater with constituent concentrations above the criteria may be captured via seepage into or along the backfill of the storm sewer located directly southwest of Area 2.

Soil Vapor & Indoor Air: A soil vapor program was completed at the site in 2008 using the procedures outlined in the NYSDOH document *Guidance for Evaluating Soil Vapor Intrusion in New York State,* dated October 2006. The program concluded that detections of BTEX in soil vapor samples at property boundaries were transient in nature and did not indicate migration of soil vapor

from the MGP source areas. Elevated concentrations of MGP-indicator compounds identified at a single location were found to be representative of material observed at the sample location and not indicative of vapor migration. Therefore, vapor migration is not considered to be an exposure pathway at this site.

6.2: Interim Remedial Measures

An IRM is conducted at a site when a source of contamination or exposure pathway can be effectively addressed before issuance of the Record of Decision.

There were no IRMs performed at this site during the RI.

6.3: Summary of Human Exposure Pathways

No one is expected to drink the contaminated groundwater because public water serves the area. The site is vacant; however, trespassers can come into contact with contaminated surface soil in a small section within Area 1. The potential for soil vapor intrusion was investigated and no further action is necessary.

SECTION 7: SUMMARY OF ORIGINAL REMEDY AND PROPOSED AMENDMENT

7.1 Original Remedy

The remedy selected for the 2009 ROD included removal and excavation of former MGP related subsurface structures and the impacted soil surrounding them to the extent practicable in both Area 1 and Area 2, followed by backfilling with clean soil over a demarcation layer, installation of a minimum of two feet of soil cover, groundwater treatment through introduction of oxygen (or other amendment) into the subsurface post excavation, storm sewer rehabilitation and institutional controls including an environmental easement.

7.2 Elements of the Remedy Already Performed

No remedial elements have been performed to date. A pre-design investigation of the storm sewer was performed during August 2019, as well as an additional round of groundwater monitoring. Results of the storm sewer investigation are presented in Section 7.3. Review of the groundwater quality data indicates that the groundwater quality remains relatively unchanged since 2005.

7.3 New Information

As an element of the pre-design work, an investigation to assess the condition of the storm sewer adjacent to Area 2 was performed in August 2019. The investigation consisted of cleaning the storm sewer and then conducting a closed-circuit television (CCTV) inspection. Various cracks in the pipe were documented and obstructions were encountered and removed. Encrustations were encountered, as well as a large rock, which was unable to be removed due to its distance from the manhole invert. Encrustations were not removed due to concern that doing so would jeopardize the integrity of the 24-inch diameter vitrified clay pipe. Several fractures were observed, including a hinge fracture. It is estimated that the storm sewer may have been installed sometime between 1914 and 1936, making the estimated age of the storm sewer between 85 and 107 years old. The

age and condition of the storm sewer indicate the next stage of deterioration would be a collapse. In-situ stabilization technologies have developed into a proven remedial technology since issuance of the 2009 ROD. ISS of MGP-impacted materials in Area 2 will control migration of contamination, therefore, rehabilitation of the storm sewer and the associated risk of damage to, or collapse of, the storm sewer during remedial construction can be eliminated. In addition, the proposed ISS remedy will address more MGP-impacted material than contemplated in the 2009 ROD, including off-site impacts and impacted media below the groundwater table, and preclude the need for enhanced in-situ aerobic biodegradation of contaminants in groundwater in Area 2.

7.4 Proposed Changes to the Original Remedy

A summary of the changes to the original ROD as proposed in this document are shown in the Table on the following page(s):

SUMMARY OF PROPOSED REMEDY CHANGES
Former Fulton MGP (No. 738034) Record of Decision Amendment

Media:	March 2009 ROD	Amended ROD
Groundwater	(1) Groundwater treatment through introduction of oxygen (or other nutrients, if necessary) in Areas 1 and 2 to enhance aerobic biodegradation of contaminants in groundwater in-situ; (2) Rehabilitation of the storm sewer adjacent to and west of Area 2 to reduce groundwater infiltration into the storm sewer and prevent off-site migration of impacted groundwater. Measures to reduce migration of groundwater through soil beddings underneath the sewer line will be implemented; (3) An institutional control in the form of an Environmental Easement (EE) will be required for the site. The EE will restrict the use of the site to restricted residential use, which will include commercial/industrial uses, and restrict the use of groundwater at the site. (4) A Site Management Plan (SMP) will be developed and implemented. The SMP will include: (a) an institutional control/engineering control (IC/EC) plan which will maintain use restrictions regarding site development and groundwater use; (b) a monitoring plan to monitor the effectiveness of the oxygen injection in groundwater and to monitor the effectiveness of the selected remedy; and (c) an operation and maintenance plan to provide the detailed procedures necessary to operate and maintain the remedy, including the oxygen injection and cover system.	(1) Element 1 will be performed in Area 1 only. (2) ISS treatment of soil in Area 2 will be performed in lieu of Element 2 (refer to Soil Element 4, below). (3) The environmental easement shall also cover the ISS treated off-site City of Fulton owned property south of Area 2. (4) Element 4 will remain unchanged.
Soil	(1) Excavation and off-site disposal of all former MGP related structures and foundations in Areas 1 and 2 determined to contain MGP related contaminated materials to their full depth. Impacted soil in the immediate vicinity of the structures will be removed to the extent practicable. (2) Excavation and removal of approximately 2,822 cubic yards of MGP grossly contaminated soil. Material will be removed to depths up to 7 feet bgs or to the extent practicable due to dewatering limitations. The material to be removed would include soil containing visible coal tar or separate phase materials. The actual depth of removal would be based on visual observations in the field; with the concurrence of the NYSDEC. A visible demarcation barrier will be installed at the bottom of any excavation to mark the extent of soil removal prior to backfilling. (3) Excavation areas will be backfilled with clean soil from off-site locations that meet NYSDEC's backfill criteria for intended site use. Excavated soil may be used to backfill the lower portions of the excavation if they meet NYSDEC criteria.	(1) Unchanged. (2) Element 2 will be performed in Area 1 only. The estimated amount of material to be excavated is approximately 2,650 cubic yards. (3) Unchanged. (4) The soil cover area shall additionally include the ISS treated area on the adjacent City of Fulton owned property to the south of Area 2. (5) New: Excavation of up to four (4) feet of the upper soil from Area 2

Soil, Continued	(4) Installation and maintenance of soil cover over Areas 1 and 2. The soil cover shall consist of a minimum of two (2) feet of clean material that meets NYSDEC's backfill criteria and will be required in the top two (2) feet of Areas 1 and 2. National Grid may propose to use other forms of cover such as asphalt or other paving materials to meet the next intended use of the property subject to NYSDEC approval. The type and nature of soil cover to be installed will be determined pursuant to 6 NYCRR subpart 375.	and the off-site, adjacent City of Fulton owned property south of Area 2 to account for the bulking factor associated with soil subject to ISS. (6) New: ISS of MGP-impacted soil from approximately four (4) feet below ground surface to the full depth (i.e. 28 ft bgs) of identified impacts. The area subject to ISS is proposed to include MGP-impacted material extending off-site onto the adjacent City of Fulton owned property to the south of Area 2.

SECTION 8: EVALUATION OF PROPOSED CHANGES

8.1 Remedial Objectives

Remedial action objectives (RAOs) for the cleanup of the site were established in the original ROD. The objectives selected for this site are:

Groundwater

RAOs for Public Health Protection

- Prevent ingestion of groundwater with contaminant levels exceeding drinking water standards.
- Prevent contact with, or inhalation of volatiles, from contaminated groundwater.

RAOs for Environmental Protection

- Remove the source of ground or surface water contamination.
- Restore the groundwater aquifer to pre-disposal/pre-release conditions, to the extent practicable.

Soil

RAOs for Public Health Protection

- Prevent ingestion/direct contact with contaminated soil.
- Prevent inhalation of or exposure from contaminants volatilizing from contaminants in soil.

RAOs for Environmental Protection

- Prevent migration of contaminants that would result in groundwater, surface water or sediment contamination, including potential infiltration of COCs into the storm sewer.

8.2 Evaluation Criteria

The criteria used to compare the remedial alternatives are defined in the regulation that directs the remediation of inactive hazardous waste sites in New York State (6 NYCRR Part 375). For each criterion, a brief description is provided. A detailed discussion of the evaluation criteria and comparative analysis is contained in the original Feasibility Study.

The first two evaluation criteria are called threshold criteria and must be satisfied in order for an alternative to be considered for selection.

1. Protection of Public Health and the Environment. This criterion is an overall evaluation of each alternatives ability to protect public health and the environment. The amended ROD would be more protective of human health and the environment via ISS of deeper impacted materials as well as those impacted materials extending off-site and onto the City of Fulton-owned property to the south of Area 2.

2. Compliance with New York State Standards, Criteria, and Guidance (SCGs). Compliance with SCGs addresses whether a remedy will meet environmental laws, regulations, and other standards and criteria. In addition, this criterion includes the consideration of guidance which the Department has determined to be applicable on a case-specific basis.

Title 6 of New York Codes, Rules and Regulations (6 NYCRR) Part 375-6 Remedial Program Soil Cleanup Objectives (SCOs), effective December 14, 2006, has been used in preparing this ROD Amendment. Remedial actions conducted in New York State are required to attain SCGs to the extent practicable as per DER-10 (NYSDEC, 2010). Remedy evaluation must consider applicable SCGs.

The NYSDEC DER-10 includes a complete list of SCGs. The SCGs for soil and groundwater include the 6 NYCRR Part 375-6 SCOs for restricted residential use and commercial use and the NYSDEC Division of Water Technical and Operational Guidance Series – Water Quality Standards (WQS) – 6 NYCRR 700 to 706 (NYSDEC, 1998). The tables found in Exhibits A and B list the applicable SCGs. For a full listing of all SCGs see: http://www.dec.ny.gov/regulations/61794.html

Implementation of both the 2009 ROD and the proposed amendment would prevent the direct contact/ingestion of MGP-impacted soil exceeding SCOs and groundwater, the inhalation of volatiles from impacted soil and groundwater, and will remove/immobilize additional MGP-impacted soil. Compliance with groundwater SCGs, achieving groundwater RAOs or soil RAOs related to groundwater contamination would not be achieved but would be addressed by a SMP. In addition to oxygen injection, it is expected that natural attenuation processes (biodegradation, volatilization, adsorption, chemical reactions and dilution) will result in reduced concentrations of MGP-related constituents in groundwater over time.

The next five "primary balancing criteria" are used to compare the positive and negative aspects of each of the remedial strategies.

3. Short-term Effectiveness. The potential short-term adverse impacts of the remedial action upon the community, the workers, and the environment during the construction and/or implementation are evaluated. The length of time needed to achieve the remedial objectives is also estimated and compared against the other alternatives.

The short-term risks of exposure and safety concerns associated with both remedies include dust and odors during the implementation of the remedial action and construction-related health and safety issues. Noise and truck traffic in the area may also be a disturbance to the surrounding community during remedial construction.

A health and safety plan (HASP) would be prepared by the selected remedial contractor to address health and safety issues, and a community air monitoring plan (CAMP) would be implemented during intrusive remedial activities. Odor and dust control measures would be implemented by the selected remedial contractor during the remedial action in accordance with New York State Department of Health (NYSDOH) guidelines.

4. Long-term Effectiveness and Permanence. This criterion evaluates the long-term effectiveness of the remedial alternatives after implementation. If wastes or treated residuals remain on-site after the selected remedy has been implemented, the following items are evaluated: 1) the magnitude of the remaining risks, 2) the adequacy of the engineering and/or institutional controls intended to limit the risk, and 3) the reliability of these controls.

Remedial excavation of MGP-impacted soil that exceed SCOs and backfilling with certified clean material that meets the requirements in Appendix 5 of DER-10 or with site soil not exceeding SCOs would be effective in the long term. However, there is a potential for dissolved phase constituents in groundwater to migrate into the clean fill from unremediated materials. The environment and conditions to which the solidified material is exposed can affect the stability of the treated material. However, since the ISS formation would be below grade and overlain by a cover system, infiltration and disturbance would be minimized. Therefore, the degradation of the ISS formation and its stability is anticipated to be minimal and relatively slow. The relatively low permeability of the solidified material would also limit migration of dissolved phase constituents from unremediated areas outside the solidified mass. A site management plan would be implemented to provide for the continued protectiveness of the remedy.

5. Reduction of Toxicity, Mobility or Volume. Preference is given to alternatives that permanently and significantly reduce the toxicity, mobility or volume of the wastes at the site.

Under the amended remedy, MGP-impacted soil exceeding SCOs and/or NAPL-impacts would be removed and/or treated to the extent practicable, addressing a greater volume of impacted material than the 2009 remedy. Removal of soil is estimated to reduce the volume of MGP-related constituents in the subsurface. In addition, excavated material would be replaced with clean fill meeting the requirements of 6 NYCRR Part 375-6.7(d), which would reduce adverse impacts to groundwater. ISS of the deeper materials and those off-site would reduce the mobility of constituents in impacted soil through the solidification of these constituents. By minimizing the mobility of constituents of interest in soil, ISS would limit the potential future migration of constituents from soil to groundwater. In addition, since ISS would extend to soil below the water table, saturated soil that might otherwise result in groundwater quality impacts would be contained (and/or completely bound) within the solidified matrix.

6. Implementability. The technical feasibility and administrative feasibility of implementing each alternative are evaluated. Technical feasibility includes the difficulties associated with the construction of the remedy and the ability to monitor its effectiveness. For administrative feasibility, the availability of the necessary personnel and materials is evaluated along with potential difficulties in obtaining specific operating approvals, access for construction, institutional controls, and so forth.

While both remedies are technically implementable, the challenges presented by the 2009 remedy with respect to the storm sewer, its depth and deteriorated condition, render the 2009 remedy more difficult to implement.

The additional excavation areas and depths proposed under the original ROD compared to the newly proposed remedy would require more trucks travelling to and from the site during the implementation of the remedial action and there is a greater potential for odor emissions. Odor and dust control measures would be implemented during implementation of the remedial construction activities in accordance with a CAMP. Such measures could include the use of foam and bio-oxidant compounds on odorous materials and a site perimeter misting system.

The ISS technology has been implemented on several former MGP sites across New York State. The challenges associated with the implementability of ISS techniques which may be encountered at the site include subsurface obstructions, large subsurface voids, and dense/stiff soil. A pre-

design investigation will be conducted to best determine how to implement this remedy, whether ISS be performed via jet-grouting, auger mixing, or excavator-based mixing.

7. Cost-Effectiveness. Capital costs and annual operation, maintenance, and monitoring costs are estimated for each alternative and compared on a present worth basis. Although cost-effectiveness is the last balancing criterion evaluated, where two or more alternatives have met the requirements of the other criteria, it can be used as the basis for the final decision.

Both the original and proposed amended ROD require long-term monitoring and maintenance to ensure their long-term effectiveness and have the potential for implementability issues that could increase capital cost. The 2009 remedy had an estimated capital cost of $3,583,000 at that time, a present-day value of $5,430,000. Although the proposed amended remedy capital costs are $4,731,000, it is the most cost-effective alternative as it provides an added protection of human health and environment and provides the best balance of the other threshold and balancing criteria.

This final criterion is considered a modifying criterion and is considered after evaluating those above. It is focused upon after public comments on the proposed ROD amendment have been received.

8. Community Acceptance. Concerns of the community regarding the proposed changes are evaluated. A responsiveness summary will be prepared that describes public comments received and the manner in which the Department will address the concerns raised. If the final remedy differs significantly from the proposed remedy, notices to the public will be issued describing the differences and reasons for the changes.

SECTION 9: PROPOSED AMENDED REMEDY

The Department is proposing to amend the Record of Decision (ROD) for the Former Fulton MGP Site. The changes to the selected remedy are summarized in Section 7.3 above.

The estimated present worth cost to carry out the amended remedy is $4,999,000. The estimated present worth to complete the original remedy is $5,430,000. The cost to construct the amended remedy is estimated to be $4,731,000 and the estimated average annual cost for 30 years is $22,000.

The elements of the proposed amended remedy listed below are identified as *unchanged, modified or new* when compared to the March 2009 ROD remedy:

1. A remedial design program will be implemented to provide the details necessary for the construction, operation, maintenance, and monitoring of the remedial program. *Unchanged*
2. Excavation and removal of all former MGP related structures and foundations in Areas 1 and 2 determined to contain MGP related contaminated materials to their full depth (i.e. 28 ft bgs). Impacted soil in the immediate vicinity of the structures will be removed to the extent practicable. *Modified*
3. Excavation and removal of approximately 2,822 cubic yards of MGP grossly contaminated soils. Materials will be removed to depths up to 7 feet bgs or to the extent practicable due to dewatering limitations. The material to be removed would include soil containing visible coal tar or separate phase materials. The actual depth of removal would be based on visual

observations in the field; with the concurrence of the NYSDEC. A visible demarcation barrier will be installed at the bottom of the excavation to mark the extent of soil removal prior to backfilling. *Modified*

4. Excavation of up to four (4) feet of the upper soil from Area 2 and the adjacent, City of Fulton owned property south of Area 2 to account for the bulking factor associated with soils subject to ISS. *New*
5. ISS of MGP-impacted soils from approximately four (4) feet below ground surface to the full depth (i.e. 28 ft bgs) of identified impacts, the limits of which will be determined during the pre-design investigation. The area subject to ISS is proposed to include MGP-impacted material extending off-site onto the adjacent City of Fulton-owned property to the south of Area 2. *New*
6. Excavation areas will be backfilled with clean soil from off-site locations that meet NYSDEC's backfill criteria for intended site use. Excavated soil may be used to backfill the lower portions of the excavation if they meet NYSDEC criteria. *Unchanged*
7. Installation and maintenance of site cover. A minimum of two (2) feet of clean material that meets NYSDEC's backfill criteria will be required in the top two (2) feet of Areas 1 and 2, as well as the adjacent, City of Fulton owned property south of Area 2 that will receive ISS treatment. National Grid may propose to use other forms of cover such as asphalt or other paving materials to meet the next intended use of the property subject to NYSDEC approval. The type and nature of soil cover to be installed will be determined pursuant to 6 NYCRR subpart 375. *Modified*
8. Groundwater treatment through introduction of oxygen (or other nutrients, if necessary) in Areas 1 and 2 to enhance aerobic biodegradation of contaminants in groundwater in-situ. *Modified*
9. Rehabilitation of the storm sewer adjacent to and west of Area 2 to reduce groundwater infiltration into the storm sewer and prevent off-site migration of impacted groundwater. Measures to reduce migration of groundwater through soil beddings underneath the sewer line will be implemented. *Modified*
10. An institutional control in the form of an environmental easement will be required for both the site and the adjacent City of Fulton owned property south of Area 2. The environmental easement will:
    a. restrict use to restricted residential, which will include commercial/industrial uses;
    b. restrict the use of groundwater;
    c. require management in accordance with the provisions of the Site Management Plan, to be approved by the Department; and
    d. require the property owner complete and submit to the Department a periodic certification. *Unchanged*
11. A site management plan (SMP) will be developed and implemented. The SMP will identify the institutional controls and engineering controls (IC/ECs) required for the proposed remedy and detail their implementation. The SMP for the proposed remedy will include:
    a. An IC/EC control plan to establish the controls and procedures necessary to; (i) manage remaining contaminated soils that may be excavated from the site during future activities, including procedures for soil characterization, handling, health and safety of workers and the community as well as, disposal/reuse in accordance with applicable Department regulations and procedures; (ii) evaluate the potential for soil vapor intrusion for any future buildings developed on the site, including mitigation of any impacts identified (iii) maintain use restrictions regarding site development or groundwater use identified in the environmental easement(s); and

(iv) require the property owner to provide an institutional control/engineering control (IC/EC) certification on a periodic basis;

b. A monitoring plan to monitor the effectiveness of the oxygen injection in groundwater and to monitor the effectiveness of the selected remedy and the trend of contaminant concentrations in the groundwater; and
c. An operation and maintenance plan to provide the detailed procedures necessary to operate and maintain the remedy, including the oxygen injection and cover system. The operation of the components of the remedy will continue until the remedial objectives have been achieved, or until the Department determines that continued operation is technically impracticable or not feasible. *Unchanged*

9.1 Next Steps

As described above, there will be a virtual public meeting and comment period on the proposed changes to the selected remedy. At the close of the comment period, the Department will evaluate the comments received and prepare a responsiveness summary which will be made available to the public. A notice describing the Department's final decision will be sent to all persons on the site mailing list.

If you have questions or need additional information you may contact any of the following:

Project Related Questions
Greta White, P.G.
Project Manager
NYSDEC
625 Broadway, 12th Floor
Albany, NY 12233-7014
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Greta.white@dec.ny.gov

Site-Related Health Questions
Gregory Rys
New York State Department of Health
Bureau of Environmental Exposure Investigation
5665 NYS Route 5
Herkimer, NY 13350
315-619-3194
BEEI@health.state.ny.us

Exhibit A

Nature and Extent of Contamination

This section describes the findings of the Remedial Investigation (RI) for all environmental media that were evaluated. As described in Section 6.1, samples were collected from various environmental media to characterize the nature and extent of contamination.

For each medium for which contamination was identified, a table summarizes the findings of the investigation. The tables present the range of contamination found at the site in the media and compares the data with the applicable Standard, Criteria or Guidance values (SCGs) for the site. The contaminants are arranged into three categories; volatile organic compounds (VOCs), semi-volatile organic compounds (SVOCs), and inorganics (cyanide). For comparison purposes, the SCGs are provided for each medium that allows for unrestricted use. For soil, if applicable, the restricted use SCGs identified in Section 4 and Section 6.1.1 are also presented.

Waste/Source Areas

As described in the RI report, waste/source materials were identified at the site and are impacting groundwater and soil.

Wastes are defined in 6 NYCRR Part 375-1.2 (aw) and include solid, industrial and/or hazardous wastes. Source Areas are defined in 6 NYCRR Part 375 (au). Source areas are areas of concern at a site where substantial quantities of contaminants are found which can migrate and release significant levels of contaminants to another environmental medium. Wastes and source areas were identified at the site and include the locations of former MGP-related structures, including the gas holders and oil/gas tanks in Area 1, and coke sheds and purifiers in Area 2. Refer to Figure 2 for a Site Features map indicating these areas. These features led to coal tar impacts at the site, including: elevated concentrations of VOCs, particularly benzene, toluene, ethyl benzene, and xylene (commonly and collectively referred to as BTEX); SVOCs, particularly polycyclic aromatic hydrocarbons (PAHs); and metals (cyanide). Impacted soil has been observed to depths of up to 28 feet below ground surface (ft bgs), with the highest levels of contamination found between four and 12 ft bgs.

The waste/source areas identified will be addressed in the remedy selection process.

Groundwater

Groundwater samples were collected from monitoring wells both on- and off-site. No significant groundwater contamination was detected in Area 1. Groundwater contamination was observed in Area 2, largely limited to the shallow zone immediately below the water table. The sole exception was one location, MW-6, where PAHs were detected above SCG values in the deep groundwater zone. The location of this monitoring well, along with a figure that presents the nature and extent of groundwater contamination, can be viewed on Figure 3. Monitoring wells placed between the site and the Oswego River did not identify any site-related contaminants, thus, it appears that site-related groundwater contamination does not reach the river. These contaminants are known to be biodegradable by ordinary soil bacteria, and this degradation process may explain the lack of observed impacts. Some contaminated groundwater may be infiltrating into the storm sewer located adjacent and southwest of Area 2. Analytical results of samples obtained from storm sewer manholes located upstream and downstream of the site show the presence of low-level concentrations. Total BTEX concentrations in groundwater range from non-detect to a maximum of 2,219 part per billion (ppb). Total PAH concentrations range from non-detect to 3,929 ppb. The table below indicates those compounds found to exceed groundwater and drinking water SCGs.

Table #1 - Groundwater

Detected Constituents	Concentration Range Detected (ppb)[a]	SCG[b] (ppb)	Frequency Exceeding SCG
VOCs			
Benzene	ND - 970	1	7 of 23
Toluene	ND - 100	5	2 of 23
Ethylbenzene	ND - 650	5	5 of 23
Xylenes (total)	ND - 700	5	5 of 23
Total BTEX	ND - 2,219	NA	NA
SVOCs			
Acenaphthene	2.1 J - 320	20	6 of 23
Anthracene	3.6-160	50	1 of 5
Benzo(a)anthracene	3.4 J - 85	0.002	6 of 23
Benzo(a)pyrene	1.8 - 74	ND	7 of 23
Benzo(b)fluoranthene	1.8 - 65	0.002	7 of 23
Benzo(k)fluoranthene	1.8 - 23	0.002	6 of 23
Chrysene	3.1 - 74	0.002	6 of 23
Fluoranthene	3.8 to 220	50	1 of 23
Fluorene	2.1 to 210	50	1 of 23
Indeno(1,2,3-cd)pyrene	1.9 – 40	0.002	7 of 23
Naphthalene	1.4 J – 2,000	10	6 of 23
Pyrene	3.6 – 210	50	1 of 23
Total PAH	ND – 3,928.4	NA	NA
Inorganics			
Cyanide	ND – 310	200	2 of 14

a - ppb: parts per billion, which is equivalent to micrograms per liter, ug/L, in water.
b- SCG: Standard Criteria or Guidance - Ambient Water Quality Standards and Guidance Values (TOGs 1.1.1), 6 NYCRR Part 703, Surface water and Groundwater Quality Standards, and Part 5 of the New York State Sanitary Code (10 NYCRR Part 5).

The primary groundwater contaminants are BTEX compounds and SVOCs, namely PAHs, associated with operation of the former manufactured gas plant. The primary groundwater contamination is associated with the former gas production and tar handling and storage features.

Based on the findings of the RI, the presence of coal tar has resulted in the contamination of groundwater. The site contaminants that are considered to be the primary contaminants of concern which will drive the remediation of groundwater to be addressed by the remedy selection process are:

- benzene;
- ethylbenzene;
- toluene;
- xylenes, total;
- acenaphthene;
- anthracene;
- benzo(a)anthracene;
- benzo(a)pyrene;
- benzo(b)fluoranthene;
- benzo(k)fluoranthene;
- chrysene;
- fluoranthene;
- fluorene;
- indeno(1,2,3-cd)pyrene;
- naphthalene;
- pyrene; and
- cyanide.

Soil

Surface and subsurface soil samples were collected at the site during the RI. Surface soil samples were collected from a depth of 0-2 inches to assess direct human exposure both on-site and in background areas nearby, beyond the area of potential influence of the former MGP. Subsurface soil samples were collected from depths of 0.2 to 34 feet to assess soil contamination impacts to groundwater. The results indicate that soil at the site exceeds the unrestricted SCG for volatile and semi-volatile organics and cyanide. Tables 2A and 2B below summarize the soil data of representative MGP compounds in surface and subsurface soil, respectively.

The levels of VOCs detected in surface soil at the site are comparable to sampling results obtained from background samples. BTEX concentrations range from non-detect to 0.00366 ppm.

Concentrations of PAHs found in on-site soil were higher than those found in background samples. On-site surface soil shows total PAH concentrations ranging from 7.6 ppm to 149 ppm.

Cyanide was detected in on-site surface soil at concentrations above the Part 375 Unrestricted Use SCO of 27 ppm. Cyanide concentrations detected on-site ranged from non-detect to 810 ppm.

Subsurface soil contamination was generally limited to the site boundaries. The heaviest contamination in subsurface soil was found immediately adjacent to former MGP structures that contained tar. Refer to Figure 4 for a representation of the lateral extent of observed impacts. Subsurface contamination was observed at depths ranging from four to 28 ft bgs, with the highest levels of contamination found between four and 12 feet. Total subsurface soil PAH concentrations range from non-detect to 11,341 ppm.

Table #2A - Surface Soil

Detected Constituents	Concentration Range Detected (ppm)[a]	Unrestricted SCG[b] (ppm)	Frequency Exceeding Unrestricted SCG	Restricted Use Commercial SCG[c] (ppm)	Frequency Exceeding Restricted Use Commercial SCG	Protection of Groundwater SCG[d] (ppm)	Frequency Exceeding Prot. Of GW SCG
SVOCs							
Benzo(a) anthracene	0.6 to 14	1	6 of 8	5.6	1 of 8	1	6 of 8
Benzo(a) pyrene	0.63 – 19	1	6 of 8	1	6 of 8	22	0 of 8
Benzo(b) fluoranthene	0.88 – 50	1	7 of 8	5.6	4 of 8	1.7	7 of 8
Benzo(k) fluoranthene	0.027 – 8.2	0.8	5 of 8	56	0 of 8	1.7	3 of 8
Chrysene	0.69 – 14	1	6 of 8	56	0 of 8	3.9	6 of 8
Indeno(1,2,3-cd)pyrene	0.027 – 11	0.5	7 of 8	5.6	1 of 8	8.2	1of 8
Total PAH	7.6 – 148.8	NA	NA	NA	NA	NA	NA
INORGANICS							
Cyanide	ND - 810	27	2 of 10	27	2 of 10	40	2 of 10

Table #2B - Subsurface Soil

Detected Constituents	Concentration Range Detected (ppm)[a]	Unrestricted SCG[b] (ppm)	Frequency Exceeding Unrestricted SCG	Restricted Use Commercial SCG[c] (ppm)	Frequency Exceeding Restricted SCG	Protection of Groundwater SCG[d] (ppm)	Frequency Exceeding Prot. Of GW SCG
VOCs							
Benzene	ND - 11	0.06	9 of 81	44	0 of 81	0.06	9 of 81
Toluene	ND - 20	0.06	5 of 81	500	0 of 81	0.7	8 of 81
Ethylbenzene	ND-60	0.7	9 of 81	390	0 of 81	1	5 of 81
Xylenes (total)	ND-120	1	13 of 81	500	0 of 81	1.6	8 of 81
Total BTEX	ND-191	NA	NA	NA	NA	NA	NA
SVOCs							
Acenaphthene	ND-450	20	12 of 130	500	0 of 130	98	1 of 130
Anthracene	ND-470	100	8 of 130	500	0 of 130	1000	0 of 130
Benzo(a) anthracene	ND - 950	1	43 of 130	5.6	26 of 130	1	43 of 130

Detected Constituents	Concentration Range Detected (ppm)[a]	Unrestricted SCG[b] (ppm)	Frequency Exceeding Unrestricted SCG	Restricted Use Commercial SCG[c] (ppm)	Frequency Exceeding Restricted SCG	Protection of Groundwater SCG[d] (ppm)	Frequency Exceeding Prot. Of GW SCG
Benzo(a) pyrene	ND - 770	1	43 of 130	1	43 of 130	22	15 of 130
Benzo(b) fluoranthene	ND - 770	1	44 of 130	5.6	27 of 130	1.7	39 of 130
Benzo(k) fluoranthene	ND - 410	0.8	38 of 130	56	9 of 130	1.7	30 of 130
Chrysene	ND - 900	1	42 of 130	56	10 of 130	3.9	42 of 130
Dibenz(a,h) anthracene	ND - 55	0.33	23 of 130	0.56	19 of 130	1000	0 of 130
Fluoranthene	ND - 1800	100	13 of 130	500	6 of 130	1000	3 of 130
Fluorene	ND - 420	30	12 of 130	500	0 of 130	386	1 of 130
Indeno(1,2,3-cd)pyrene	0- 430	0.5	40 of 130	5.6	19 of 130	8.2	16 of 130
Naphthalene	0 – 1600	12	20 of 130	200	6 of 130	12	20 of 130
Pyrene	0 – 1,600	100	12 of 130	500	4 of 130	1000	3 of 130
Total PAH	0 – 11,341	NA	NA	NA	NA	NA	NA
INORGANICS							
Cyanide	ND – 2,000	27	1 of 26	27	1 of 26	40	1 of 26

a - ppm: parts per million, which is equivalent to milligrams per kilogram, mg/kg, in soil;
b - SCG: Part 375-6.8(a), Unrestricted Soil Cleanup Objectives.
c - SCG: Part 375-6.8(b), Restricted Use Soil Cleanup Objectives for the Protection of Public Health for Commercial Use.
d - SCG: Part 375-6.8(b), Restricted Use Soil Cleanup Objectives for the Protection of Groundwater.

The primary soil contaminants are BTEX compounds and SVOCs, namely PAHs, associated with operation of the former manufactured gas plant. The primary soil contamination is associated with the former MGP structures including gas production and tar handling and storage features.

Based on the findings of the Remedial Investigation, the presence of coal tar has resulted in the contamination of soil. The site contaminants identified in soil which are considered to be the primary contaminants of concern, to be addressed by the remedy selection process are:

- benzene;
- ethylbenzene;
- toluene;
- xylenes, total;
- acenaphthene;
- anthracene;
- benzo(a)anthracene;

- benzo(a)pyrene;
- benzo(b)fluoranthene;
- benzo(k)fluoranthene;
- chrysene;
- dibenz(a,h)anthracene;
- fluoranthene;
- fluorene;
- indeno(1,2,3-cd)pyrene;
- naphthalene;
- pyrene; and
- cyanide.

Sediments

Sediment samples collected from the Oswego River during the RI showed no evidence of site-related contamination. Concentrations of constituents detected were below criteria and comparable with upstream background levels.

No site-related sediment contamination of concern was identified during the RI. Therefore, no remedial alternatives need to be evaluated for sediment.

Soil Vapor

The evaluation of the potential for soil vapor intrusion resulting from the presence of site-related soil or groundwater contamination was evaluated by the sampling of soil vapor. At this site no buildings are present in impacted areas, so only soil vapor was evaluated. Analytical results from the soil vapor investigation indicated that there is no complete pathway for soil vapor intrusion. Therefore, no remedial alternatives need to be evaluated for soil vapor.

Exhibit B

Description of Remedial Alternatives

The following alternatives were considered based on the remedial action objectives (see Section 6.5) to address the contaminated media identified at the site as described in Exhibit A.

Alternative 1: No Action

The No Action Alternative is evaluated as a procedural requirement and as a basis for comparison. This alternative leaves the site in its present condition and does not provide any additional protection to public health and the environment.

Alternative 2 (remedy selected in 2009): Limited Excavation, Soil Cover and Sewer Rehabilitation

This alternative would include removal of MGP-related structures and foundations to full depth and impacted soil immediately surrounding the foundations to the extent practicable (refer to Figure 5). The components of Alternative 2 would include the following:

- Removal of former MGP structures and foundations and surrounding soil in Areas 1 and 2 determined to contain MGP related contaminants/coal tar;
- Excavation of grossly contaminated soil in Areas 1 and 2 to a depth of up to 7 feet below ground surface. A visible demarcation barrier would be installed at the bottom of the excavation to mark the extent of soil removal prior to backfilling;
- Installation and maintenance of soil cover over Areas 1 and 2. The soil cover shall consist of a minimum of two feet of clean material that meets NYSDEC's backfill criteria and would be required in the top two feet of the excavated area;
- Enhancement of natural biodegradation processes in groundwater through introduction of oxygen (or other nutrients) into soil in Areas 1 and 2, if deemed necessary;
- Rehabilitation of the adjacent storm sewer west of Area 2 to reduce groundwater infiltration into the storm sewer; and prevent off-site migration of impacted groundwater;
- Institutional Controls including an Environmental Easement to restrict future use of the site consistent with the proposed remedy; and
- A Site Management Plan that would include groundwater monitoring.

The cost to implement Alternative 2 (remedy selected in 2009), based on the Site Management Plan, for a period of 30 years has been estimated as follows:

Present Worth (2009/2021): ..... *$3,943,000/$5,430,000*
Capital Cost: *$3,583,000*
Annual Costs: *$24,000*

Alternative 3 (amended remedy): Limited Excavation, Soil Stabilization and Soil Cover

This Alternative would include a combination of excavation, ISS, and a soil cover (refer to Figure 6). The components of Alternative 3 would include the following:

- Removal of former MGP structures and foundations in Areas 1 and 2, and those surrounding soils in Areas 1 determined to contain MGP-related contaminants/coal tar;
- Excavation of grossly contaminated soil in Areas 1 to a depth of up to 7 feet below ground surface. A visible demarcation barrier would be installed at the bottom of the excavation to mark the extent of soil removal prior to backfilling;
- In-situ stabilization to the full depth of impacted soil in Area 2 (anticipated to be upwards of 28 ft bgs), including those impacted soil on the City of Fulton owned property immediately adjacent to the south of Area 2;
- Excavation of the top four (4) feet of material above areas of ISS to allow for bulking of ISS treated materials;
- Installation and maintenance of soil cover over Areas 1 and 2, as well as the ISS treated area on the City of Fulton owned property south of Area 2. The soil cover shall consist of a minimum of two feet of clean material that meets NYSDEC's backfill criteria and would be required in the top two feet of excavated areas;
- Enhancement of natural biodegradation processes in groundwater through introduction of oxygen (or other nutrients) into soil in Areas 1 and 2, if deemed necessary;
- Institutional Controls including an environmental easement(s) to restrict future use of the area consistent with the proposed remedy; and
- A site management plan that would include groundwater monitoring and operation and maintenance.

The cost to implement Alternative 3 (amended remedy), based on the Site Management Plan, for a period of 30 years has been estimated as follows:

Present Worth: *$4,999,000*
Capital Cost: *$4,731,000*
Annual Costs: *$22,000*

Exhibit C

Remedial Alternative Costs

Remedial Alternative	Capital Cost ($)	Annual Costs ($)	Total Present Worth ($)
No Action	0	0	0
Limited Excavation, Soil Cover, Sewer Rehabilitation (remedy selected in 2009)	3,583,000	24,000	3,943,000/5,430,000
Limited Excavation, Soil Stabilization, Soil Cover (amended remedy)	4,731,000	22,000	4,999,000

Exhibit D

SUMMARY OF THE AMENDED REMEDY

The Department has selected Alternative 3, Limited Excavation, Soil Stabilization and Soil Cover as the amended remedy for this site. Alternative 3 would achieve the remediation goals for the site by removing all former MGP-related structures and foundations in both Areas 1 and 2, including surrounding impacted soil in Area 1 to approximately seven (7) ft bgs, or to the extent practicable; oxygen enhancement treatment of groundwater, if deemed necessary; ISS of impacted soil in Area 2, as well as off-site impacted soil on the adjacent City of Fulton owned property to the south of Area 2; excavation of the top four (4) feet of soil from Area 2 and the adjacent City of Fulton owned property to the south of Area 2 to allow for bulking of the ISS treated materials; installation of a soil cover in both Areas 1 and 2 and the ISS treated area on the adjacent City of Fulton owned property to the south of Area 2; and, an environmental easement(s) and site management plan. The elements of this remedy are described in Section 7. The amended remedy is depicted in Figure 6.

Basis for Selection

The amended remedy is based on the results of the RI, the 2019 Pre-Design Investigation and the evaluation of alternatives. The criteria to which potential remedial alternatives are compared are defined in 6 NYCRR Part 375. A detailed discussion of the evaluation criteria and comparative analysis is included in the Feasibility Study.

The first two evaluation criteria are termed "threshold criteria" and must be satisfied in order for an alternative to be considered for selection.

1. Protection of Human Health and the Environment. This criterion is an overall evaluation of each alternative's ability to protect public health and the environment.

Alternative 3 (the amended remedy) would satisfy this criterion by removing contaminated structures and soil from above the water table in Area 1, removing contaminated structures in Area 2 along with consolidating impacted soil below the water table there and on the adjacent off-site City of Fulton owned property south of Area 2, and installing a soil cover over these areas. Alternative 3 addresses the source of the groundwater contamination, which is the most significant threat to public health and the environment. Alternative 1 (no action) does not provide any protection to public health and the environment and will not be evaluated further. Alternative 2 (remedy selected in 2009) also complies with this criterion but to a lesser degree or with lower certainty than Alternative 3. Both Alternatives 2 and 3 include a restriction of groundwater use in the remediated areas to further protect human health.

2. Compliance with New York State Standards, Criteria, and Guidance (SCGs). Compliance with SCGs addresses whether a remedy will meet environmental laws, regulations, and other standards and criteria. In addition, this criterion includes the consideration of guidance which the Department has determined to be applicable on a case-specific basis.

Alternative 3 complies with SCGs to the extent practicable. It addresses source areas of contamination and complies with the Restricted Use SCOs at the surface through construction of a cover system. It also creates the conditions necessary to restore groundwater quality to the extent practicable. Alternative 2 also complies with this criterion but to a lesser degree or with lower certainty. Because Alternatives 2 and 3 satisfy the threshold criteria, the remaining criteria are particularly important in selecting a final remedy for the site. Although some levels of contamination will remain under these alternatives, the combination of excavation, groundwater

treatment, ISS and site cover of Alternative 3 will address the SCGs and meet remedial action objectives established for the site.

The next six "primary balancing criteria" are used to compare the positive and negative aspects of each of the remedial strategies.

3. Long-term Effectiveness and Permanence. This criterion evaluates the long-term effectiveness of the remedial alternatives after implementation. If wastes or treated residuals remain on-site after the selected remedy has been implemented, the following items are evaluated: 1) the magnitude of the remaining risks, 2) the adequacy of the engineering and/or institutional controls intended to limit the risk, and 3) the reliability of these controls.

Long-term effectiveness is best accomplished by those alternatives involving excavation of the contaminated overburden soil (Alternatives 2 and 3). Since Alternative 2 only addresses impacted soil above the water table, it is not as desirable in the long-term as Alternative 3, which addresses impacted soil to the full depth in Area 2 and the off-site adjacent City of Fulton owned property through ISS treatment. A cover system can be effective long-term at preventing direct exposure to soil impacts provided long-term maintenance and monitoring programs are specified in an institutional control and associated SMP. The institutional control is effective in the long-term, through the implementation of site-use restrictions and the SMP which includes an excavation plan and an evaluation for potential soil vapor intrusion for any future buildings developed on-site. Both Alternatives 2 and 3 include a cover system and institutional control.

4. Reduction of Toxicity, Mobility or Volume. Preference is given to alternatives that permanently and significantly reduce the toxicity, mobility or volume of the wastes at the site.

While Alternative 2 includes more excavation and off-site disposal of impacted material, the Alternative 3 ISS treatment of impacted material treats more volume of contamination, including impacted material below the water table, having a greater effect at reducing toxicity and mobility. By minimizing the mobility of constituents of interest in soil, ISS would limit the potential future migration of constituents from soil to groundwater. The institutional controls associated with both Alternatives 2 and 3 will not aid in reducing the toxicity, mobility or volume of contaminants remaining; however, they include implementation of site-use restrictions and a SMP which includes an excavation plan and an evaluation for potential soil vapor intrusion for any future buildings developed on-site.

5. Short-term Impacts and Effectiveness. The potential short-term adverse impacts of the remedial action upon the community, the workers, and the environment during the construction and/or implementation are evaluated. The length of time needed to achieve the remedial objectives is also estimated and compared against the other alternatives.

The short-term risks of exposure and safety concerns associated with Alternatives 2 and 3 include dust and odors during implementation of the remedial action and construction-related health and safety issues, as well as noise and truck traffic disturbance to the surrounding community. A health and safety plan (HASP) would be prepared by the selected remedial contractor to address health and safety issues, and a community air monitoring plan (CAMP) would be implemented during intrusive remedial activities. Odor and dust control measures would be implemented by the selected remedial contractor during the remedial action in accordance with New York State Department of Health (NYSDOH) guidelines. Alternative 2 has the potential to damage or cause collapse of the storm sewer during rehabilitation potentially compromising the function of the storm sewer and causing significant delays to remediation due to its depth (approximately 25 ft bgs).

6. Implementability. The technical and administrative feasibility of implementing each alternative are evaluated. Technical feasibility includes the difficulties associated with the construction of the remedy and the ability to monitor its effectiveness. For administrative feasibility, the availability of the necessary personnel and materials is evaluated along with potential difficulties in obtaining specific operating approvals, access for construction, institutional controls, and so forth.

Alternatives 2 and 3 are favorable in that they are readily implementable and would permanently reduce the toxicity, mobility and volume of impacted material at the site. Alternative 3 addresses more of the impacts, including impacts below the water table. While sewer rehabilitation of Alternative 2 is implementable, there are significant concerns regarding potential damage or collapse of the sewer during rehabilitation.

7. Cost-Effectiveness. Capital costs and annual operation, maintenance, and monitoring costs are estimated for each alternative and compared on a present worth basis. Although cost-effectiveness is the last balancing criterion evaluated, where two or more alternatives have met the requirements of the other criteria, it can be used as the basis for the final decision.

The present worth and capital costs of Alternative 3 are higher than Alternative 2 while the annual costs for long-term maintenance are relatively similar. Alternative 3 addresses more of the impacts, including those impacts below the water table in Area 2 and the adjacent City of Fulton owned property to the south of Area 2, regarding toxicity, mobility and volume than Alternative 2.

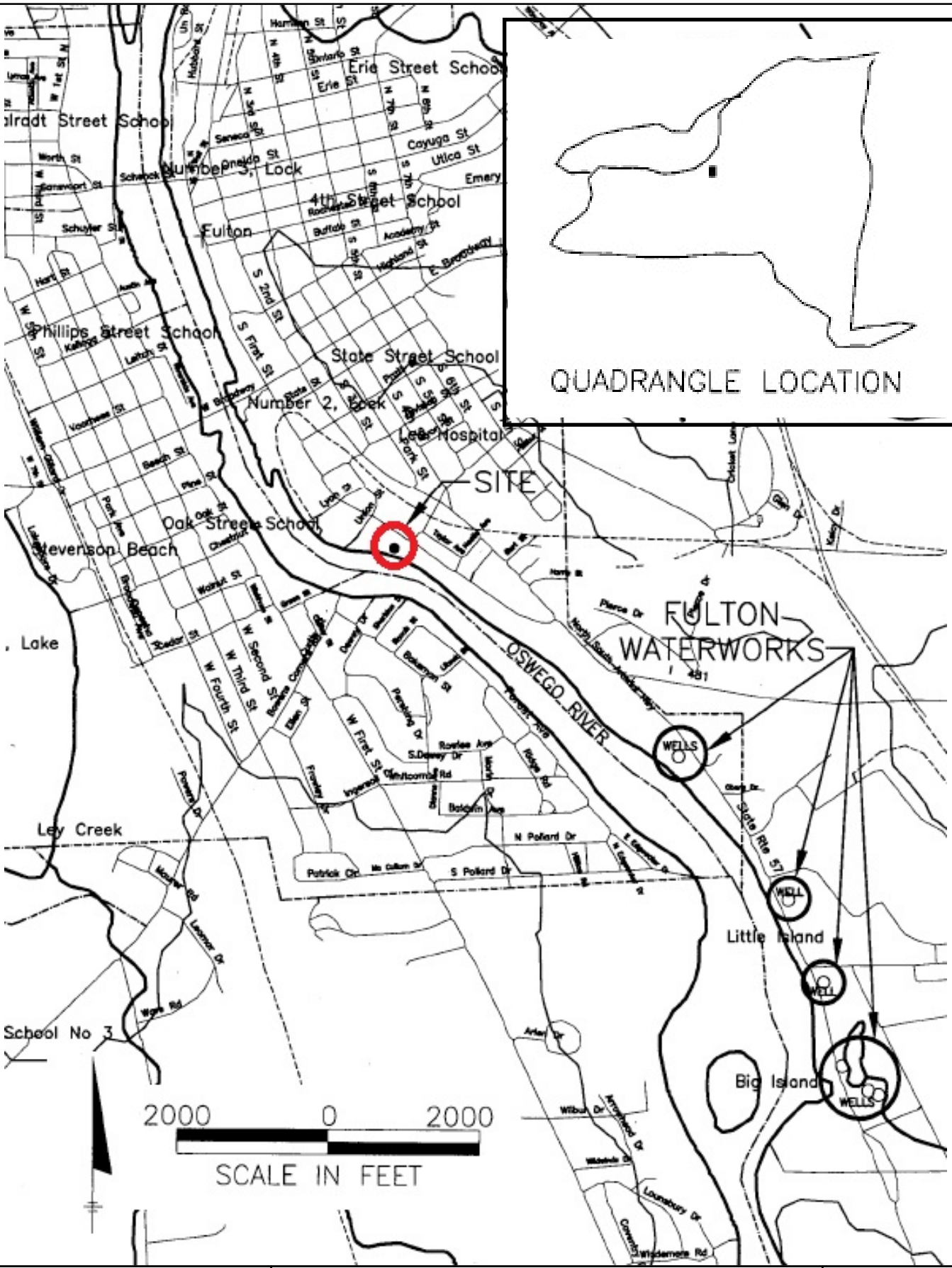
8. Land Use. When cleanup to pre-disposal conditions is determined to be infeasible, the Department may consider the current, intended, and reasonable anticipated future land use of the site and its surroundings in the selection of the soil remedy.

The cover system and institutional control of Alternatives 2 and 3 are consistent with the current land use. Alternative 3 addresses more contaminated soil. Residual contamination would be controllable with implementation of a site management plan. Both alternatives include in the institutional control a provision for the evaluation of the potential for soil vapor intrusion for any building developed on-site.

The final criterion, Community Acceptance, is considered a "modifying criterion" and is taken into account after evaluating those above. It is evaluated after public comments on the Proposed Record of Decision have been received.

9. Community Acceptance. Concerns of the community regarding the investigation, the evaluation of alternatives, and this amendment are evaluated. A responsiveness summary will be prepared that describes public comments received and the manner in which the Department will address the concerns raised. Should further amendments to the ROD be required, notices to the public will be issued describing the differences and reasons for the changes.

Alternative 3 has been selected as the amended remedy because, as described above, it satisfies the threshold criteria and provides the best balance of the balancing criterion.



NEW YORK STATE Department of Environmental Conservation	**FORMER FULTON MGP** SOUTH FIRST STREET FULTON, NEW YORK	DATE **AUGUST 2021**
		SITE NO. **738034**
	SITE LOCATION	FIGURE **1**

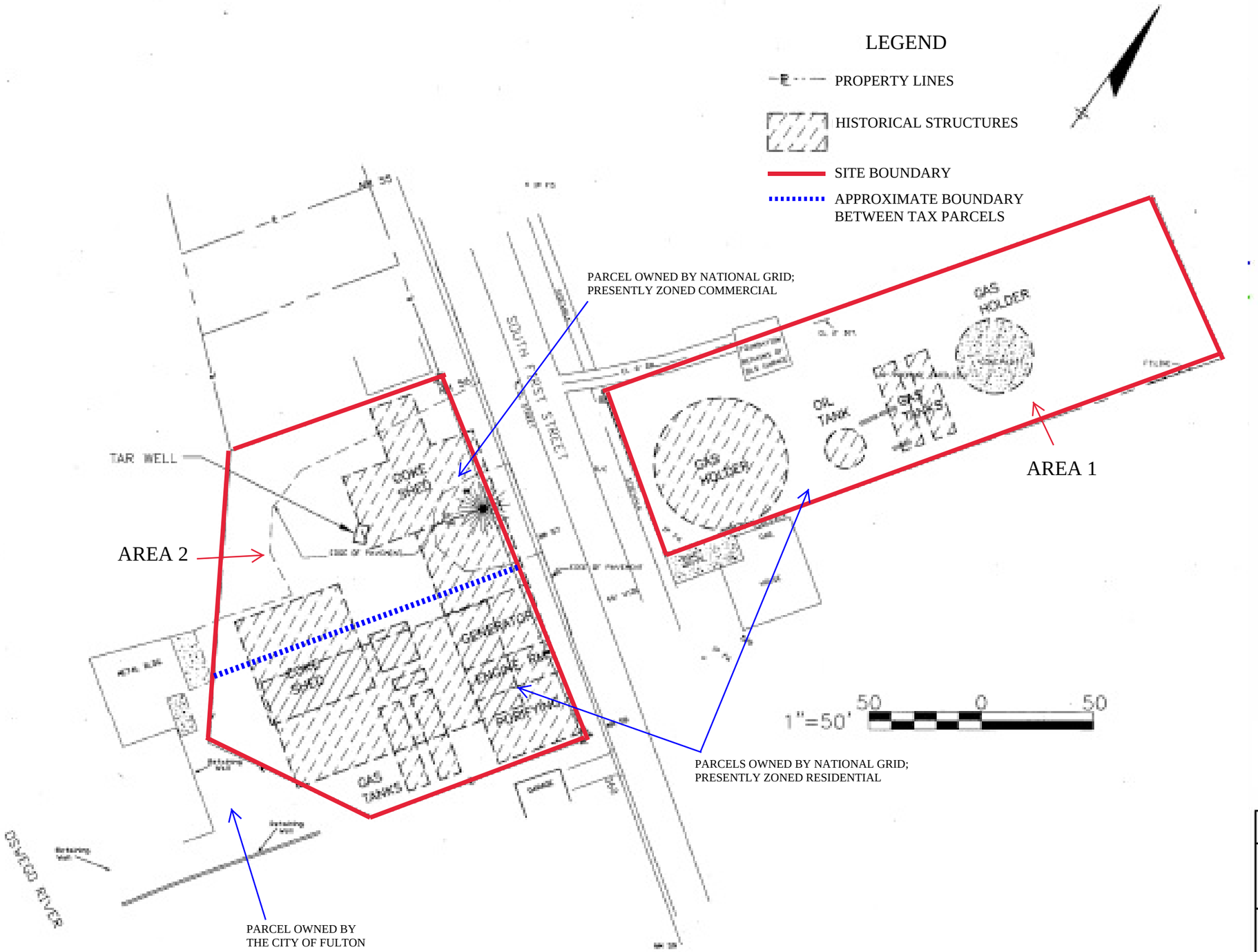


FIGURE 2

FORMER FULTON MGP
SOUTH FIRST STREET
FULTON, NEW YORK

SITE FEATURES

SITE NO. 738034

NORTH

LEGEND

- SITE BOUNDARY
- BURIED WELL
- MONITORING WELL (MW)
- PIEZOMETER (PZ)
- MW/PZ WITH NAPL
- APPROXIMATE BOUNDARY OF FORMER CANAL
- SEWER LINE
- APPROXIMATE TAX PARCEL BOUNDARY
- MW WITH AT LEAST ONE COMPOUND ABOVE NYSDEC TOGS 1.1.1

27 / 112.8
TOTAL VOCs (PPB) — TOTAL PAHs (PPB)

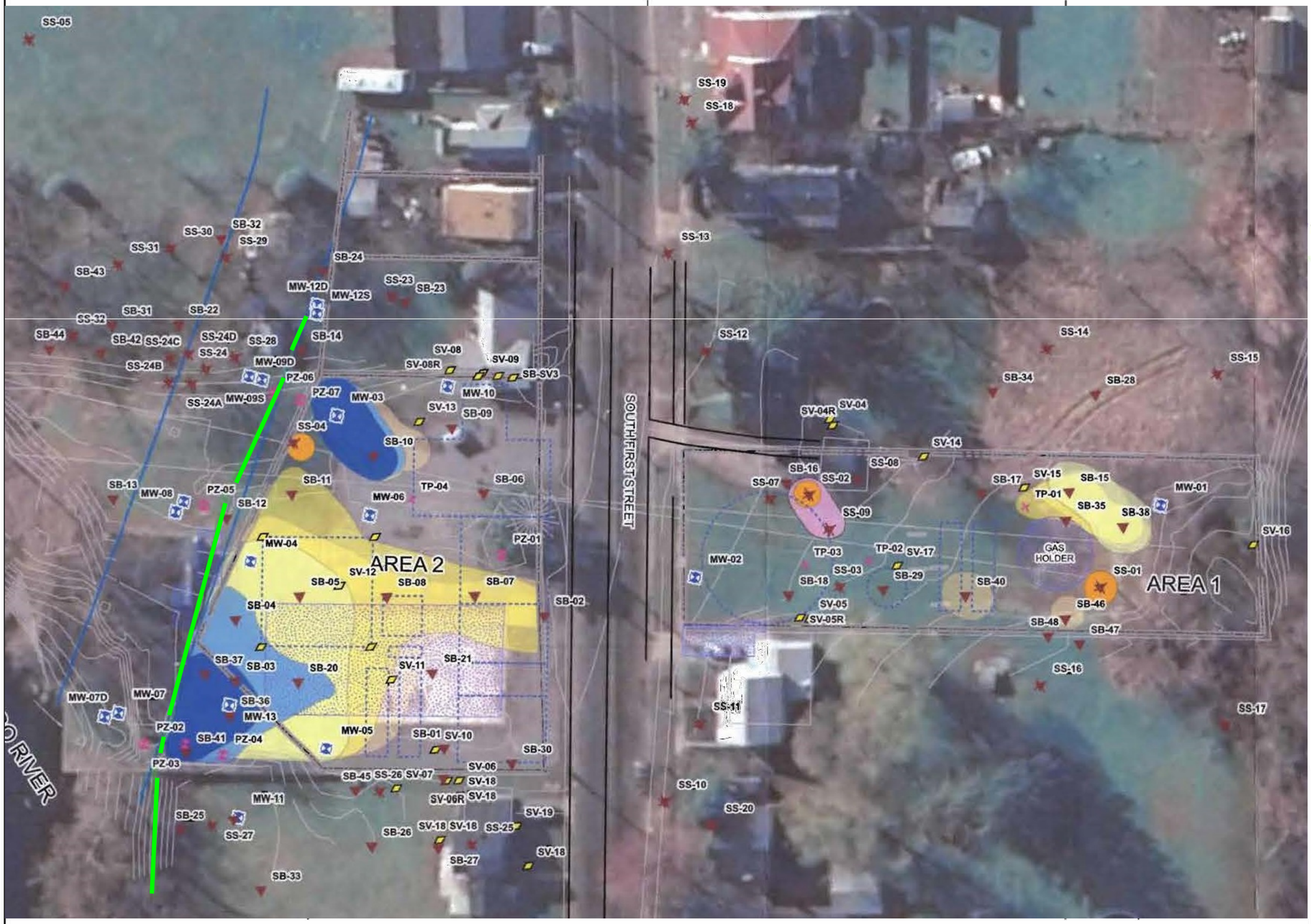
MW-12D 0 / 0
MW-12S 14.5 / 112.8
MW-09S 0 / 0
MW-09D 0.75 / 42
MW-10 0 / 0
PZ-06 0 / 25.8
PZ-07 12 / 25.6
MW-03 0 / 5.4
MW-08D 0 / 0
MW-08 0 / 0
PZ-05 0 / 0
MW-06
MW-04 2,237 / 1,656
PZ-01 2.8 / 5.9
AREA 2
MW-07D 0 / 0
MW-07 0 / 0
MW-13 838 / 266.4
PZ-03 30 / 64.5
PZ-02 0 / 0
PZ-04 9.7 / 200
MW-05 526 / 462
MW-11 0 / 21.3
OSWEGO RIVER
RIVER FLOW DIRECTION
PARCEL OWNED BY THE CITY OF FULTON
SOUTH FIRST STREET
AREA 1
MW-01
MW-02 0 / 0
50' 0 50'

FIGURE 3

FORMER FULTON MGP
SOUTH FIRST STREET
FULTON, NEW YORK

GROUNDWATER IMPACTS

SITE NO. 738034



LEGEND

- HISTORICAL BUILDINGS
- CONCRETE PAD
- HISTORICAL FEATURES
- PAVED AREA
- PROPERTY LINE
- APPROX. BOUNDARY OF FORMER CANAL
- APPROX. SEWER LINE

SAMPLE LOCATIONS

- MONITORING WELL
- PIEZOMETER
- SOIL BORING
- SOIL VAPOR
- SURFACE SOIL
- TEST PIT

MGP IMPACT DEPTH INTERVALS

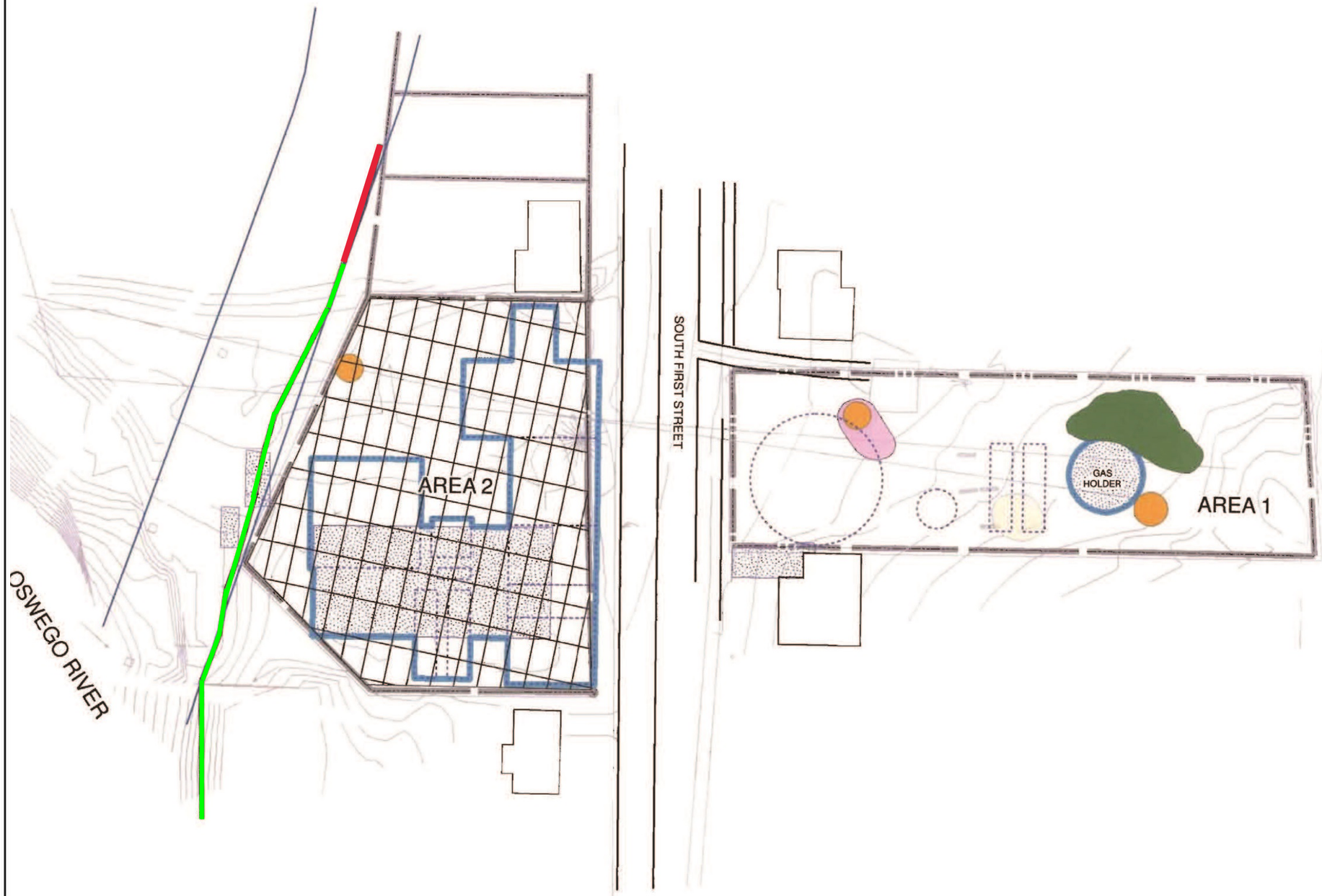
- >16 FT
- 12-16 FT
- 8-12 FT
- 4-8 FT
- 0-4 FT
- SURFACE SOIL (TOTAL CPAH & PAH)
- 0-2 FT CYANIDE

FIGURE 4

FORMER FULTON MGP
SOUTH FIRST STREET
FULTON, NEW YORK

SOIL MGP IMPACTS

SITE NO. 738034



LEGEND

- EXISTING BUILDINGS
- SURFACE RESTORATION
- HISTORICAL BUILDINGS
- APPROX. BOUNDARY OF FORMER CANAL
- APPROX. SEWERLINE LENGTH TO BE REHABILITATED
- APPROX. SEWERLINE LENGTH TO BE REPLACED
- MGP RELATED STRUCTURE (AND ADJACENT SOIL) TO BE REMOVED

MGP IMPACTED MATERIAL TO BE REMOVED

- 0-4 FT
- 0-7 FT
- SURFACE SOIL (TOTAL CPAH & PAH)
- 0-2 FT CYANIDE
- CONCRETE PAD
- ELEVATION CONTOURS
- PAVED AREA
- PROPERTY LINE

FIGURE 5

FORMER FULTON MGP
SOUTH FIRST STREET
FULTON, NEW YORK

2009 REMEDY

SITE NO. 738034

LEGEND

- EXISTING BUILDINGS
- SURFACE RESTORATION
- HISTORICAL BUILDINGS
- APPROX. BOUNDARY OF FORMER CANAL
- APPROX. SEWERLINE
- APPROX. AREA OF ISS TREATMENT, INCLUDING REMOVAL OF THE TOP FOUR FEET OF MATERIAL; MAY BE MODIFIED BASED ON PDI RESULTS

MGP IMPACTED MATERIAL TO BE REMOVED

- 0-7 FT
- SURFACE SOIL (TOTAL CPAH & PAH)
- 0-2 FT CYANIDE
- CONCRETE PAD
- ELEVATION CONTOURS
- PAVED AREA
- PROPERTY LINE

FIGURE 6

FORMER FULTON MGP
SOUTH FIRST STREET
FULTON, NEW YORK

AMENDED REMEDY

SITE NO. 738034