PROPOSED REMEDIAL ACTION PLAN
NYSEG - Geneva -Border City MGP

Town of Waterloo, Seneca County New York
Site No. 850008

February 2009

Prepared by:

Division of Environmental Remediation
New York State Department of Environmental Conservation

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SECTION 1: SUMMARY AND PURPOSE OF THE PROPOSED PLAN

The New York State Department of Environmental Conservation (the Department), in consultation with the New York State Department of Health (NYSDOH), is proposing a remedy for the NYSEG - Geneva-Border City MGP Site. The presence of hazardous waste has created significant threats to human health and/or the environment that are addressed by this proposed remedy. As more fully described in Sections 3 and 5 of this document, historic operation of a coal coking operation and coal gasification facility and disposal of associated wastes has resulted in the disposal of hazardous wastes, including MGP tar, SVOCs, VOCs, and purifier waste. These wastes have contaminated the groundwater, subsurface soil, surface soil and sediment at the site, and have resulted in:

- a significant threat to human health associated with potential exposure to groundwater, subsurface and surface soils.
- a significant environmental threat associated with the current and potential impacts of contaminants to groundwater resources, subsurface soil and sediment.

To eliminate or mitigate these threats, the Department proposes a remedy including source material removal on the main site, removal of contaminated sediments in the boundary drainage ways and former settling basin, an engineered cap in the Eastern Waste Disposal Area (EWDA) and a site management plan.

The proposed remedy, discussed in detail in Section 8, is intended to attain the remediation goals identified for this site in Section 6. The remedy must conform with officially promulgated standards and criteria that are directly applicable, or that are relevant and appropriate. The selection of a remedy must also take into consideration guidance, as appropriate. Standards, criteria and guidance are hereafter called SCGs.

This Proposed Remedial Action Plan (PRAP) identifies the preferred remedy, summarizes the other alternatives considered, and discusses the reasons for this preference. The Department will select a final remedy for the site only after careful consideration of all comments received during the public comment period.

The Department has issued this PRAP as a component of the Citizen Participation Plan developed pursuant to the 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. This document is a summary of the information that can be found in greater detail in the August 2007 “Final Remedial Investigation (RI) Report”, the December 2008 “Feasibility Study” (FS), and other relevant documents. The public is encouraged to review the project documents, which are available at the following repositories:

Geneva Public Library	New York State DEC	New York State DEC
244 Main Street	Region 8 Headquarters	Central Office
Geneva, NY 14456	Avon Office	625 Broadway
(315) 789-5303	6274 Avon-Lima Rd. (Rtes. 5 and 20)	Albany, NY 12233-7014
Hours: Mon.-Thurs. 10-8	Avon, NY 14414-9519	Hours: Mon-Fri. 8:30-4:30
Fri. 10-6, Sat. 10-5	(585) 226-2466	Contact: Douglas MacNeal, P.E.
	Hours: Mon.-Fri. 8:30-4:45	
	Contact: Lisa LoMaestro Silvestri	

The Department seeks input from the community on all PRAPs. A public comment period has been set from February 27, 2009 to March 30, 2009 to provide an opportunity for public participation in the remedy selection process. A public meeting is scheduled for March 19, 2009 at the NYSEG Service Center beginning at 7:00 PM.

At the meeting, the results of the RI/FS will be presented along with a summary of the proposed remedy. After the presentation, a question-and-answer period will be held, during which verbal or written comments may be submitted on the PRAP. Written comments may also be sent to Mr. Douglas MacNeal at the above address through March 30, 2009.

The Department may modify the proposed remedy or select another of the alternatives presented in this PRAP, based on new information or public comments. Therefore, the public is encouraged to review and comment on all of the alternatives identified here.

Comments will be summarized and addressed in the responsiveness summary section of the Record of Decision (ROD). The ROD is the Department's final selection of the remedy for this site.

SECTION 2: SITE LOCATION AND DESCRIPTION

The site occupies approximately 15 acres in the Town of Waterloo, Seneca County. A location map is shown on Figure 1. Private homes, and a railroad right-of-way are found along its borders. New York State Route 5 and US Route 20 (combined) lie roughly 750 feet to the south, with Seneca Lake roughly 1500 feet south

For the purposes of discussion, the site is divided into 2 areas: the Main Site and the Eastern Waste Disposal Area (EWDA). The main site is currently in use as a NYSEG service center, and also contains both an electrical substation and a gas regulator station.

The EWDA is east of the main site and is no longer in use. It is overgrown with mixed trees.

SECTION 3: SITE HISTORY

3.1: Operational/Disposal History

The site operated as a manufactured gas plant (MGP) from roughly 1901 through 1934. Plants such as this produced a combustible gas mixture by heating coal and/or petroleum feedstocks. The gas was cooled, purified, and then distributed throughout the surrounding area through a network of underground piping. Customers used the gas in much the same way that natural gas is used today. Initially, gas was produced as a by-product of coal coking, a process known as coal carbonization. In 1909 the plant expanded and additional gas was produced using petroleum products, using what was known as a water gas process. Both processes remained in use until the plant was shut down and replaced by piped natural gas in 1934. Many, but not all, of the above-ground MGP structures were subsequently demolished. However, subsurface structures including building foundations, and some tar-handling and storage structures, were left in place.

Liquid wastes from both gas manufacturing processes leaked from piping and storage vessels, resulting in the contamination of soils on the site. Groundwater which comes into contact with these wastes also becomes contaminated, and has moved past the site boundary into some off-site areas.

The MGP processes also produced a solid waste material known as purifier waste. This material was composed of iron filings mixed with wood chips. Manufactured gas was blown through the mixture to remove impurities prior to sale. Although purifier waste was recycled to some extent, it eventually became unusable and had to be disposed of.

The MGP also disposed of its quenching water (used to cool the hot coke after it had been removed from the ovens) by injecting it into a bedrock aquifer deep beneath the site.

3.2: Remedial History

In 1986, the Department first listed the site as a Class 2a site in the Registry of Inactive Hazardous Waste Disposal Sites in New York (the Registry). Class 2a was a temporary classification assigned to a site that had inadequate and/or insufficient data for inclusion in any of the other classifications. In 1989, the Department reclassified the site as a Class 2, which indicates a site where the presence of hazardous waste presents a significant threat to the public health or the environment and action is required.

In 1984, 21 soil borings were completed on the site, in preparation for the construction of a new service garage. MGP tar was found in two of the borings. In 1986, a preliminary site assessment was performed, including an assessment of the site's history and a geophysical survey to locate subsurface structures remaining from the former MGP and to analyze the air quality in the building. This was followed by additional rounds of investigative work in 1987 and a risk assessment in 1989.

A comprehensive investigation of the site was performed in several stages between 2002 and 2005 to fully delineate the nature and extent of contamination at the site.

SECTION 4: 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. New York State Electric and Gas, the current owner and former operator of the site, is the only PRP identified for the site.

The Department and NYSEG entered into a multi-site Consent Order on March 30, 1994. The consent Order (index number DO-0002-9309) obligates NYSEG to implement a full remedial program for 33 former MGP sites across the State, including the NYSEG-Geneva-Border City site. After the remedy is selected, NYSEG will be required to implement the selected remedy pursuant to the Consent Order.
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SECTION 5: SITE CONTAMINATION

A remedial investigation/feasibility study (RI/FS) has been conducted to evaluate the alternatives for addressing the significant threats to human health and the environment.

5.1: Summary of the Remedial Investigation

The purpose of the RI was to define the nature and extent of any contamination resulting from previous activities at the site. The RI was conducted between November 2002 and December 2005. The field activities and findings of the investigation are described in the RI report.

During the RI, samples were collected from surface soil, subsurface soil, sediment, groundwater, surface water, soil vapor and indoor air. Subsurface soil samples were collected during the installation of 48 soil borings and 21 overburden monitoring wells. Groundwater was collected from 21 overburden monitoring wells and 7 bedrock wells. Surface water samples were collected from the onsite drainage ways, offsite drainage ways, and Seneca Lake. Sediment samples were collected from the same areas as the surface water samples, and also from a former settling basin at the south end of the property. Soil vapor samples were collected just outside the two office buildings on site and indoor air samples were collected in the main service building.

5.1.1: Standards, Criteria, and Guidance (SCGs)

To determine whether the soil, groundwater, sediment and soil vapor contain contamination at levels of concern, data from the investigation were compared to the following standards, criteria, and guidance (SCGs):

- Groundwater, drinking water, and surface water SCGs are based on the Department's "Ambient Water Quality Standards and Guidance Values" and Part 5 of the New York State Sanitary Code.

- Soil SCGs are based on the Department's Cleanup Objectives ("Technical and Administrative Guidance Memorandum [TAGM] 4046; Determination of Soil Cleanup Objectives and Cleanup Levels." and 6NYCRR Part 375-6 "Remedial Program Soil Cleanup Objectives").

- Sediment SCGs are based on the Department's "Technical Guidance for Screening Contaminated Sediments."

- Concentrations of VOCs in air were compared to typical background levels of VOCs in indoor and outdoor air using the background levels provided in the NYSDOH guidance document titled "Guidance for Evaluating Soil Vapor Intrusion in the State of New York," dated October 2006. SCGs have not been established for these media. The background levels are not SCGs and are used only as a general tool to assist in data evaluation.

Based on the RI results, in comparison to the SCGs and potential public health and environmental exposure routes, certain media and areas of the site require remediation. These are summarized in Section 5.1.2. More complete information can be found in the RI report.

5.1.2: Nature and Extent of Contamination

As described in the RI report, many soil, groundwater, surface water, soil vapor, indoor air and sediment samples were collected to characterize the nature and extent of contamination. As seen in Figures 3, 4 and 5 and summarized in Table 1, the main categories of contaminants that exceed their SCGs are volatile organic compounds (VOCs), semivolatile organic compounds (SVOCs), and inorganics (metals). For comparison purposes, where applicable, SCGs are provided for each medium.

Chemical concentrations are reported in parts per billion (ppb) for water and parts per million (ppm) for waste, soil, and sediment. Soil vapor and air samples are reported in micrograms per cubic meter ($\mu g/m^3$).

Figures 3, 4, and 5 and Table 1 summarize the degree of contamination for the contaminants of concern in surface and subsurface soils, groundwater, sediment, soil vapor, and indoor air and compares the data with the SCGs for the site. The following are the media which were investigated and a summary of the findings of the investigation.

The principal waste product produced at the former MGP site was coal tar, which is an oily, dark colored liquid with a strong, objectionable odor. Unlike most materials labeled as "tar", this is not a viscous material. Rather, it has a physical consistency similar to motor oil, which enables it to move through the subsurface. Coal tar is referred to as a dense non-aqueous phase liquid or DNAPL, since it is heavier than water and will not readily dissolve in water. When released into the subsurface, it will sink through the groundwater until it reaches some impermeable material which it cannot penetrate. It can, under certain conditions, move laterally away from the point where it was initially released.

The tar contains high levels of volatile and semi-volatile organic compounds (VOCs and SVOCs). The principal coal tar VOCs are benzene, toluene, ethylbenzene, and xylenes. These compounds, collectively known as BTEX, are slightly soluble in water. Groundwater which comes into contact with tar or tar-contaminated soils will become contaminated with BTEX compounds. This contaminated groundwater can then move through the subsurface along with the ordinary groundwater flow.

The principal coal tar SVOCs are a group of compounds known as polycyclic aromatic hydrocarbons, commonly abbreviated as PAHs. PAH compounds are generally less soluble than BTEX, and are consequently less likely to dissolve in groundwater. This makes PAH compounds less mobile in the subsurface, so the highest levels of PAHs are normally found in close proximity to the tar from which they are derived. The specific semivolatile organic compounds of concern in soil and groundwater are the following polycyclic aromatic hydrocarbons (PAHs):

acenaphthene	acenaphthylene	dibenzo(a,h)anthracene	chrysene
anthracene	benzo(a)anthracene	fluoranthene	fluorene
benzo(a)pyrene	benzo(b)fluoranthene	indeno(1,2,3-cd) pyrene	2-methylnaphthalene
benzo(g,h,i)perylene	benzo(k)fluoranthene	naphthalene	phenanthrene
pyrene			

All of the BTEX and PAH contaminants which dissolve in groundwater are subject to degradation by natural processes. Common soil bacteria are capable of using these chemical compounds as a food source, converting them to carbon dioxide and water. This degradation process takes place more rapidly when abundant oxygen is present in the groundwater, and can in many cases be expedited by the introduction of additional oxygen. The PAH compounds which do not dissolve in water are far less likely to be degraded by microbes. Fortunately, the lower solubility of these compounds also makes them much less likely to be transported off site by groundwater flow.

The gas purification structures are still intact in the basement of the building labelled "meter lab" on Figure 3. A substantial volume of purifier waste is still present in these structures. The purifier waste contains cyanide compounds; however, these compounds are chemically complexed with iron and are considered far more stable and less toxic than free cyanide. Some purifier waste is also found in the EWDA.

Waste Materials

On this site, MGP tar is the most common waste material. Tar was found in subsurface soils at depths of 0-10 feet below ground surface (bgs) on areas across the site. The extent of MGP tar is shown on Figure 3.

Tar in the western portion of the site appeared to be from a leaking tar storage vessel. Most of this tar-contaminated soil was removed during the interim remedial measure (IRM) in 2004.

Immediately east of the main Service Building, a subsurface vault was found during the RI. This vault is still partially full of tar. The location of the vault is shown on Figure 3.

In the EWDA, intermittent surface dumping of purifier waste and tars resulted in some small, shallow "hot-spots" of tar mixed with purifier waste.

The remaining waste identified during the RI/FS, that was not addressed during the 2004 IRM, will be addressed in the remedy selection process.

Surface Soil {0-2 inches}

Surface soil, defined as the uppermost 2" of soil at the ground surface, is contaminated with SVOCs and cyanide in various areas of the site. The areas with the highest levels of contaminants are around areas to the west of the main Service Building, the EWDA, and the area south of the main service building, by the former settling basin.

The area to the west of the Service Building has already been addressed during the 2004 IRM. The extent of the remaining surface soil contamination is shown on Figure 4. Surface soil contamination identified during the RI/FS that was not addressed during the 2004 IRM, will be addressed in the remedy selection process.

Subsurface Soil

Subsurface soil on and around the site is contaminated with SVOCs, VOCs, and cyanide. The areas of highest contamination were found around historic plant structures, the EWDA, and in areas where MGP tar was present. Some subsurface soil contamination is found at depths beyond where the tar was found, but is still genearlly confined to depths less than 20 feet bgs.

Most of the subsurface contamination on the west side of the site was addressed during the IRM is 2004. The remaining subsurface soil contamination is shown on Figure 4. Subsurface soil contamination identified during the RI/FS that was not addressed during the 2004 IRM, will be addressed in the remedy selection process.

Groundwater

Some of the contamination found in on-site soils has dissolved in groundwater, leading to groundwater contamination. In general, SVOCs and cyanide are only slightly soluble in water, and are thus found primarily in close proximity to identifiable deposits of tar or purifier waste. VOCs, primarily benzene, toluene, ethylbenzene, and xylene are more soluble and more mobile in groundwater. Consequently, VOCs have reached higher concentrations in the groundwater, have migrated more readily, and are found farther from the source areas.

All of the site groundwater contaminants can be digested by soil bacteria. Thus, the concentrations of contaminants tend to decrease sharply with distance from the source areas.

Groundwater at the site is found in 4 aquifers. Three of these are in the overburden soils, with the fourth in the underlying bedrock. Groundwater sampling locations are shown on Figure 5.

The shallow overburden groundwater (0-15' bgs) is minimally contaminated, with only two shallow wells showing contaminants above standards for cyanide. One of these wells is in the EWDA in close proximity to purifier waste. The other is due south of the main site area, just beyond the site boundary. It should be noted that this is the groundwater which would be encountered during routine excavation activities.

The intermediate overburden groundwater (15-35' bgs) is more heavily contaminated. This is believed to be derived from source areas associated with historic subsurface structures. However, this contamination is only found close to source areas and does not appear to extend off-site.

The deep overburden groundwater (35 -100' bgs) is only minimally affected by site related contaminants, with benzene found in one well during a single sampling event.

Bedrock groundwater is contaminated with SVOCs, VOCs, and cyanide. This results from the historic practice of injecting quench water from the MGP coking operation directly into the bedrock aquifer at depths of roughly 300 feet bgs. However, the only contaminant found off-site is benzene. Although the bedrock aquifer is highly permeable and capable of producing large quantities of water, the quality of this groundwater is very low, even in the absence of MGP contamination. The water is highly saline (salty), and would require extensive treatment to be drinkable. Furthermore it is not considered an acceptable public water supply. At present, this groundwater is not being used, and it appears unlikely that it will be used in the future.

Groundwater contamination identified during the RI/FS will be addressed in the remedy selection process.

Surface Water

Surface water samples were collected from the drainage ways around the site, the former settling basin onsite, the drainage structures south of the site on the New York State Park (Park), and Seneca Lake. No VOCs were detected. SVOCs were detected only in the former settling basin. Cyanide was detected in the former settling basin and in a few isolated locations; however, the levels are very low. Surface water sampling locations are shown on Figure 2 and the results are on Table 1.

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

Sediments

Sediment samples were collected from the same locations as the surface water samples. SVOCs were the only contaminants of concern found. Only three areas showed levels of contaminants that would require action. These areas were in the former settling basin, and in two isolated spots in the drainage ways around the site. Although elevated levels of SVOCs were also found south of the site, in the drainage structures of the Park and in Seneca Lake, these contaminants appear to be from highway runoff and are not considered site-related. Sediment sample locations and results are shown on Figure 4.

Sediment contamination identified during the RI/FS will be addressed in the remedy selection process.

Soil Vapor/Sub-Slab Vapor/Air

Indoor air sampling was conducted in the main service center buildings to assess the potential for exposure to the workers and visitors to the buildings. Additionally soil vapor sampling was conducted to assess the extent of soil vapor contamination around the main service buildings. The locations of these samples are shown on Figure 2.

The Department and NYSDOH have determined no actions are necessary to address exposures to site-related contaminants due to soil vapor intrusion.

5.2: Interim Remedial Measures

An interim remedial measure (IRM) is conducted at a site when a source of contamination or exposure pathway can be effectively addressed before completion of the RI/FS.

In 2004, an IRM was performed in the western portion of the site. This IRM addressed MGP tar in the shallow subsurface which was seeping to the surface. A defined area of soil and MGP tar was removed down to an average depth of three feet bgs. In one area, the excavation proceeded deeper, to a maximum depth of 12 feet bgs. The contaminated soil and tar were removed, and the excavation was backfilled with clean fill from an off site commercial source. The area of the IRM is noted on Figure 2. No further action in the IRM area is necessary.

5.3: Summary of Human Exposure Pathways:

This section describes the types of human exposures that may present added health risks to persons at or around the site. A more detailed discussion of the human exposure pathways can be found in Section 6 of the RI report. An exposure pathway describes the means by which an individual may be exposed to contaminants originating from a site. An exposure pathway has five elements: [1] a contaminant source, [2] contaminant release and transport mechanisms, [3] a point of exposure, [4] a route of exposure, and [5] a receptor population.

The source of contamination is the location where contaminants were released to the environment (any waste disposal area or point of discharge). Contaminant release and transport mechanisms carry contaminants from the source to a point where people may be exposed. The exposure point is a location where actual or potential human contact with a contaminated medium may occur. The route of exposure is the manner in which a contaminant actually enters or contacts the body (e.g., ingestion, inhalation, or direct contact). The receptor population is the people who are, or may be, exposed to contaminants at a point of exposure.

An exposure pathway is complete when all five elements of an exposure pathway exist. An exposure pathway is considered a potential pathway when one or more of the elements currently does not exist, but could in the future.

No completed exposure pathways have been identified at this site. Groundwater at the site is not used for drinking water purposes since the area is served by public water. Although exposures to contaminated soil by the general public are unlikely because the majority of the site is covered with stone and public access is limited by fencing, workers who complete ground-intrusive activities on-site or off-site could potentially be exposed through dermal contact and/or incidental ingestion. Similarly, these workers may also be exposed to coal tar in the subsurface and contaminated groundwater. The Department and NYSDOH have determined no actions are necessary to address exposures to site-related contaminants due to soil vapor intrusion.

5.4: Summary of Environmental Assessment

This section summarizes the assessment of existing and potential future environmental impacts presented by the site. Environmental impacts include existing and potential future exposure pathways to fish and wildlife receptors, as well as damage to natural resources such as aquifers and wetlands.

The Fish and Wildlife Impact Analysis, which is included in the RI report, presents a detailed discussion of the existing and potential impacts from the site to fish and wildlife receptors.

The following environmental exposure pathways and ecological risks have been identified:

- Sediments in the former settling basin and the adjacent drainage ways contained levels of SVOCs that are suspected to affect the survival of benthic organisms. This results in reduced availability of food for forage species.

Site contamination has also impacted the groundwater resource in both the overburden soils and bedrock.

SECTION 6: SUMMARY OF THE REMEDIATION GOALS

Goals for the remedial program have been established through the remedy selection process stated in 6 NYCRR Part 375. At a minimum, the remedy selected must eliminate or mitigate all significant threats to public health and/or the environment presented by the hazardous waste disposed at the site through the proper application of scientific and engineering principles.

The remediation goals for this site are to eliminate or reduce to the extent practicable:

- exposures of persons at or around the site to VOCs, SVOCs, and cyanide in soil, groundwater, and sediment;

- environmental exposures of flora or fauna to VOCs, SVOCs, and cyanide in soil, groundwater, and sediment;

- the release of contaminants from soil into groundwater that may create exceedances of groundwater quality standards; and

- the release of contaminants from surbsurface soil and groundwater into surface soil, sediment, groundwater, and soil vapor through contaminant migration, dissolution, and vaporization,

Further, the remediation goals for the site include attaining to the extent practicable:

- ambient groundwater quality standards and

- sediment quality guidelines

- site-specific cleanup objective of total VOCs less than 10 parts per million (ppm) and total SVOCs less than 1,000 ppm

SECTION 7: SUMMARY OF THE EVALUATION OF ALTERNATIVES

The selected remedy must be protective of human health and the environment, be cost-effective, comply with other statutory requirements, and utilize permanent solutions, alternative technologies or resource recovery technologies to the maximum extent practicable. Potential remedial alternatives for the NYSEG - Geneva-Border City MGP were identified, screened and evaluated in the FS report ,which is available at the document repositories established for this site.

A summary of the remedial alternatives that were considered for this site is discussed below. The present worth represents the amount of money invested in the current year that would be sufficient to cover all present and future costs associated with the alternative. This enables the costs of remedial alternatives to be compared on a common basis. As a convention, a time frame of 30 years is used to evaluate present worth costs for alternatives with an indefinite duration. This does not imply that operation, maintenance, or monitoring would cease after 30 years if remediation goals are not achieved.

7.1: Description of Remedial Alternatives

The following potential remedies were considered to address the contaminated soils, sediments, and groundwater at the site.

Alternative 1: No Further Action

Present Worth: *$0*
Capital Cost: *$0*
Annual Costs:
(Years 1-30): *$0*

The No Further Action Alternative is evaluated as a procedural requirement and as a baseline for comparison with other, more active alternatives. It recognizes the remediation already conducted under the IRM completed in 2004. This alternative would leave the site in its present condition and would not provide any additional protection to human health or the environment.

The remaining alternatives seek to achieve SCGs via a variety of remediation strategies. All of them include the following common elements:

- Removal and off-site disposal of the contents of intact purifier structures as shown on Figure 6;
- Removal and off-site disposal of the subsurface vault and its contents as shown on Figure 6;
- Removal and off-site disposal of sediment "hot-spots" in the adjacent drainage ways and the former settling basin as shown on Figure 6;
- A site management plan that includes monitoring of overburden and bedrock groundwater contamination and usage, with a contingency for active remediation if necessary, and use of inspections or other steps, as necessary, to ensure the effectiveness of the remedy; and
- An environmental easement to ensure the long-term protection of public health and the environment

Alternative 2: Capping

Present Worth: *$1,600,000*
Capital Cost: *$1,200,000*
Annual Costs:
(Years 1-30): *$30,000*

Under this alternative, areas where source material is present in the subsurface on the main site would be covered with an asphalt cover. Source material is defined as material containing tar or oil in any form, or soils with an MGP odor or sheen and total PAHs above 1,000 ppm, or purifier waste with a reactive cyanide more than 250 ppm or reactive sulfide more than 500 ppm. Disposal areas in the EWDA would be consolidated and placed under a low permeability synthetic cap. The common elements referenced above would also be a part of this remedial alternative. The extent of the covered areas on the main site and the capped areas in the EWDA are shown on Figure 6.

Alternative 3: Source Removal

Present Worth: *$4,300,000*
Capital Cost: *$3,900,000*
Annual Costs:
(Years 1-30): *$25,000*

Under this alternative, areas where source material is present in the subsurface, as defined in Alternative 2, on the main site and disposal areas in the EWDA would be excavated, with contaminated soil and debris treated and disposed off-site. Removal of source material would also remove the source of overburden groundwater contamination and would aid in the reduction of the groundwater contamination. The common elements referenced above would also be a part of this remedial alternative. The extent of the removal areas are shown on Figure 6.

Alternative 4A: In-Situ Stabilization in the EWDA and Capping

Present Worth: *$2,200,000*
Capital Cost: *$1,800,000*
Annual Costs:
(Years 1-30): *$25,000*

Under this alternative, areas where source material is present in the subsurface, as identified in Alternative 2, on the main site would be covered with an asphalt cover. Disposal areas in the EWDA would be treated with in-situ stabilization. In-situ stabilization involves mixing the contaminated materials with cement and other materials to create a solid, impermeable mass. Mixing can be performed with a conventional backhoe or with overlapping, large diameter augers. The resulting, hardened material is isolated from contact with groundwater, greatly reducing the potential for generating groundwater contamination, and aiding in the reduction of groundwater contamination. Some pre-excavation of subsurface obstructions (such as building debris, foundations, or large boulders) is typically required. The common elements referenced above would also be a part of this remedial alternative.

The extent of the capped and ISS areas are shown on Figure 6.

Alternative 4B: In-Situ Stabilization in the EWDA and Source Removal

Present Worth: *$3,800,000*
Capital Cost: *$3,500,000*
Annual Costs:
(Years 1-30): *$25,000*

This Alternative builds on 4A, with the areas scheduled for capping in 4A removed instead. Areas where source material is present in the subsurface on the main site (as defined in Alternative 2) would be excavated and disposed off-site. Disposal areas in the EWDA would be treated with in-situ stabilization as in alternative 4A. This treatment consists of injecting and mixing stabilizing agents (e.g. cement) in the disposal areas in the EWDA. This creates an impermeable mass. The resulting, hardened material is isolated from contact with groundwater, greatly reducing the potential for generating groundwater contamination, and aiding in the reduction of groundwater contamination. Removal of source material would also remove the source of overburden groundwater contamination and would aid in the reduction of the groundwater contamination. The common elements referenced above would also be a part of this remedial alternative. The extent of the removal and ISS areas are shown on Figure 6.

Alternative 5: Capping in the EWDA and Source Removal

Present Worth: *$3,300,000*
Capital Cost: *$2,900,000*
Annual Costs:
(Years 1-30): *$30,000*

Under this alternative, areas where source material is present in the subsurface (as defined in Alternative 2) on the main site would be excavated and disposed off-site. Removal of source material would also remove the source of overburden groundwater contamination and would aid in the reduction of the groundwater contamination. Disposal areas in the EWDA would be consolidated and placed under a low permeability synthetic cap. The common elements referenced above would also be a part of this remedial alternative. The extent of the capping and excavation areas are shown on Figure 6.

Alternative 6: Restoration to Pre-Release Conditions

Present Worth: *$28,000,000*
Capital Cost: *$17,000,000*
Annual Costs:
(Years 1-30): *$700,000*

This alternative seeks to achieve the maximum possible level of remediation. All soils above unrestricted soil cleanup objectives (SCOs) would be removed and disposed off-site. A total of approximately 9600 cubic yards would be removed. The excavated area would be restored to its original grade with clean imported soil from off site sources. Excavation support and dewatering requirements would be correspondingly larger than in the other excavation alternatives.

Furthermore, to address the bedrock groundwater contamination, an extraction and treatment system would be employed to collect contaminated groundwater from the bedrock, treat it on the surface, and the pump it back into the bedrock. An estimated pumping rate of 1,000 gallons per minute would be required. The extent of the removal area is shown on Figure 7.

7.2 Evaluation of Remedial Alternatives

The criteria to which potential remedial alternatives are compared are defined in 6 NYCRR Part 375, which governs the remediation of inactive hazardous waste disposal sites in New York A detailed discussion of the evaluation criteria and comparative analysis is included in the FS report.

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.

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.

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.

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.

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.

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.

7. Cost-Effectivness. 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 costs for each alternative are presented in Table 2.

This final criterion is considered a "modifying criterion" and is taken into account after evaluating those above. It is evaluated after public comments on the Proposed Remedial Action Plan have been received.

8. Community Acceptance - Concerns of the community regarding the RI/FS reports and the PRAP 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 selected remedy differs significantly from the proposed remedy, notices to the public will be issued describing the differences and reasons for the changes.

SECTION 8: SUMMARY OF THE PROPOSED REMEDY

The Department is proposing Alternative 5, Capping in the EWDA and Source Removal as the remedy for this site. The elements of this remedy are described at the end of this section.

The proposed remedy is based on the results of the RI and the evaluation of alternatives presented in the FS. Alternative 5 is being proposed because it satisfies the two threshold criteria and provides the best balance of the remaining balancing criteria. It achieves the remediation goals for the site by removing source material on the main site and in the sediments, thus eliminating the main threat of exposure and reducing the potential for groundwater contamination. Capping the EWDA would minimize the potential for groundwater contamination and minimize the chances of exposure; while also minimizing the short-term effects of a removal. Monitoring of the bedrock groundwater and regular analysis of potential exposures pathways would mitigate the potential for exposure.

Alternative 1 would not involve any active remedial measures, and fails to meet the threshold criterion of protectiveness. Consequently, it is not considered further. The remaining alternatives achieve the remedial goals by different means, and so the balancing criteria are used to select the preferred one.

Under short-term effectiveness, the principal impact to the surrounding community would be through truck traffic and construction noise. Alternative 6 would produce far more traffic, due to the increased volume of soil removal, and would also produce the greatest noise impacts, due to the need for extensive steel sheeting to support the excavation. The duration of these impacts would also be greatest under Alternative 6. The remaining active alternatives are roughly comparable in their impacts on the neighboring community. The in-situ stabilization component of Alternatives 4A and 4B would require pre-excavation in some areas to remove oversized debris that would interfere with the mixing process, creating more short term impacts.

Long-term effectiveness would be maximized by removing contamination from the site, and either permanently destroying it through off site treatment, or by placing it in a secured, lined landfill. Alternative 5 provides for such removal in the most heavily contaminated areas–the areas of identified source material on the main plant site. In-situ stabilization (Alternatives 4A and 4B) is slightly less effective in this regard, since the contaminants remain in place in the stabilized mass and require continued monitoring following completion. There are also potential uncertainties with the cement stabilization of purifier waste. Such waste generates very strong acidity when in contact with water. At other MGP sites, this acidity has been found to corrode concrete. Consequently, Alternatives 4A and 4B are ranked lower in long-term effectiveness than Alternative 5. Remedies which rely on capping are considered somewhat lower in long term effectiveness. Capping can be effective for reducing contact between groundwater and contaminated soils, but would not be effective at controlling potential future movement of liquid tar from source areas where it is present. Alternative 5 proposes a balanced approach in which the most heavily contaminated source areas on the main site would be removed, while the less concentrated and less mobile contamination in the EWDA is capped. Maintaining the effectiveness of caps in the long term requires that proper monitoring and maintenance procedures be followed. The Site Management Plan proposed would provide for this maintenance to be performed.

Reduction of mobility, toxicity, and volume would be maximized under a removal strategy, where contaminated materials are destroyed through treatment or sequestered in a permitted landfill. Alternative

5 provides reduction by removing the most contaminated material. Alternative 6 would expand this removal significantly, but the additional material that would be removed is not heavily contaminated. Capping would reduce mobility by reducing groundwater contact with some of the contaminated material. It would reduce the potential for direct contact with these materials, but would not actually affect either their toxicity or their volume. In-situ stabilization would reduce the mobility and toxicity of the contaminated materials by immobilizing them in a cement matrix. However, it would actually increase the volume slightly, since the soil has a tendency to expand as it is mixed with cement.

All of the remedial alternatives are considered highly implementable. Excavation, capping, and stabilization of MGP-contaminated soils are all activities that are routinely performed during site cleanup operations.

Cost-effectiveness of Alternatives 2-5 is broadly comparable. The present worth of these Alternatives ranges between 1.6 and 4.3 million dollars. Alternative 6 would require roughly 28 million dollars, a sharp increase which would not produce a corresponding improvement in any of the other balancing criteria.

The estimated present worth cost to implement the remedy is $ 3,300,000. The cost to construct the remedy is estimated to be $2,900,000 and the estimated average annual monitoring and maintenance costs for 30 years is $ 30,000.

The elements of the proposed remedy are as follows:

1. A remedial design program would be implemented to provide the details necessary for the construction, operation, maintenance, and monitoring of the remedial program.

2. The removal and off-site treatment and disposal of soils, within the main site, defined as source material (defined as containing visible tars or oils, or stained or odorous soils with a total PAH level over 1,000 ppm). The approximate extent of this removal is shown on Figure 6.

3. The placement of a demarcation barrier at the bottom of the excavation and a minimum of 12 inches of clean soil over the top of the excavated areas which are not located under asphalted areas. All excavated areas will be restored to their original grade, so additional clean soil cover will be required in some locations.

4. The removal and off-site disposal of an on-site subsurface vault and its contents.

5. The removal and off-site disposal of the contents of several intact purifier waste structures on site.

6. The removal and off-site disposal of impacted sediments from the two perimeter drainage ways and from the former settling basin, as shown on Figure 6.

7. Purifier waste in the EWDA would be consolidated and included beneath a low permeability cap in the EWDA, as shown on Figure 6. The cap would be constructed with a 40-mil HDPE liner with a sand protection layer underneath the cap and a geocomposite drainage layer and a minimum of two feet of clean fill which includes a minimum of 6 inches of topsoil above it. However, purifier waste material with a reactive cyanide level over 250 ppm or a reactive sulfide level over 500 ppm would be subject to removal and off-site disposal.

8. Implementation of a groundwater management plan for the contaminated groundwater in the overburden and the bedrock, as a section of the Site Management Plan. This would require long-term monitoring of contaminant levels in the groundwater as well as monitoring for the potential for off-site usage of groundwater. Additional, active, remedial measures may be taken, if technically justified, as directed by the Department.

9. Imposition of an institutional control in the form of an environmental easement that would require (a) limiting the use and development of the property to commercial use, which would also permit industrial use; (b) compliance with the approved site management plan and groundwater management plan; (c) restricting the use of groundwater as a source of potable or process water, without necessary water quality treatment as determined by NYSDOH; and (d) the property owner to complete and submit to the Department a periodic certification of institutional and engineering controls.

10. Development of a site management plan which would include the following institutional and engineering controls: (a) management of the final cover system to restrict excavation below the soil cover's demarcation layer, pavement, or buildings. Excavated soil would be tested, properly handled to protect the health and safety of workers and the nearby community, and would be properly managed in a manner acceptable to the Department; (b) continued evaluation of the potential for vapor intrusion for any buildings developed on the site, including provision for mitigation of any impacts identified; (c) monitoring of groundwater; (d) identification of any use restrictions on the site; (e) fencing to control site access; (f) provisions for the continued proper operation and maintenance of the components of the remedy; and (g) a long-term monitoring program would be instituted.. This monitoring would include annual inspections of the engineered cap in the EWDA, annual certifcations of the groundwater and land use restrictions, and regular monitoring of the groundwater and groundwater use down gradient of the site. This program would allow the effectiveness of the engineered cap and the adaptive management to be monitored and would be a component of the long-term management for the site.

11. The property owner would provide a periodic certification of institutional and engineering controls, prepared and submitted by a professional engineer or such other expert acceptable to the Department, until the Department notifies the property owner in writing that this certification is no longer needed. This submittal would: (a) contain certification that the institutional controls and engineering controls put in place are still in place and are either unchanged from the previous certification or are compliant with Department-approved modifications; (b) allow the Department access to the site; and (c) state that nothing has occurred that would impair the ability of the control to protect public health or the environment, or constitute a violation or failure to comply with the site management plan unless otherwise approved by the Department.

TABLE 1
Nature and Extent of Contamination
November 2002 - December 2005

SURFACE SOIL	Contaminants of Concern	Concentration Range Detected (ppm)[a]	SCG[b] (ppm)[a]	Frequency of Exceeding SCG
Semivolatile Organic Compounds (SVOCs) also known as Polycyclic Aromatic Hydrocarbons (PAHs)	Benzo(a)anthracene	ND-46.0	1.0	7 of 16
	Benzo(a)pyrene	ND-39.0	1.0	7 fo 16
	Benzo(b)fluoranthene	ND-31.0	1.7	6 of 16
	Benzo(k)fluoranthene	ND-45.0	1.7	6 of 16
	Chrysene	ND-45.0	1.0	40 of 16
	Dibenz(a,h)anthracene	ND-6.0	0.56	4 of 16
	Indeno(1,2,3-cd)pyrene	ND-15.0	5.6	1 of 16

SUBSURFACE SOIL	Contaminants of Concern	Concentration Range Detected (ppm)[a]	SCG[b] (ppm)[a]	Frequency of Exceeding SCG
Volatile Organic Compounds (VOCs)	Benzene	ND-54.0	0.06	6 of 43
	Toluene	ND-140	0.7	1 of 43
	Ethylbenzene	ND-11	1.0	1 of 43
	Xylene	ND-270	1.6	3 of 43
Semivolatile Organic Compounds (SVOCs) also known as Polycyclic Aromatic Hydrocarbons (PAHs)	2-Methylnaphthalene	ND-800	36.4	1 of 43
	Acenaphthylene	ND-690	107	1 of 43
	Anthracene	ND-640	500	1 of 43
	Benzo(a)anthracene	ND-530	1.0	7 of 43
	Benzo(a)pyrene	ND-360	1.0	7 of 43
	Benzo(b)fluoranthene	ND-270	1.7	6 of 43
	Benzo(k)fluoranthene	ND-360	1.7	5 of 43
	Chrysene	ND-450	1.0	7 of 43
	Dibenz(a,h)anthracene	ND-71.0	0.56	5 of 43
	Fluoranthene	ND-1,100	500	1 of 43
	Fluorene	ND-630	500	1 of 43
	Indeno(1,2,3-cd)pyrene	ND-160	5.6	4 of 43

SUBSURFACE SOIL	Contaminants of Concern	Concentration Range Detected (ppm)[a]	SCG[b] (ppm)[a]	Frequency of Exceeding SCG
	Naphthalene	ND-2,600	12	2 of 43
	Phenanthrene	ND-1,900	500	1 of 43
	Pyrene	ND-930	500	1 of 43

SEDIMENTS	Contaminants of Concern	Concentration Range Detected (ppm)[a]	SCG[b] (ppm)[a]	Frequency of Exceeding SCG
Semivolatile Organic Compounds (SVOCs)	Total SVOCs	ND-214	4	10 of 32
Inorganic Compounds	Cyanide	ND-93.3	-	-

SHALLOW OVERBURDEN GROUNDWATER	Contaminants of Concern	Concentration Range Detected (ppb)[a]	SCG[b] (ppb)[a]	Frequency of Exceeding SCG
Volatile Organic Compounds (VOCs)	Benzene	ND-115	1	4 of 17
	Toluene	ND-50.5	5	5 of 17
	Xylene	ND-52	5	1 of 17
Semivolatile Organic Compounds (SVOCs) also known as Polycyclic Aromatic Hydrocarbons (PAHs)	2-Methylnaphthalene	ND-1	-	-
	Benzo(a)anthracene	ND-3	0.002	1 of 17
	Benzo(a)pyrene	ND-2	ND	1 of 17
	Benzo(b)fluoranthene	ND-7	0.002	2 of 17
	Benzo(k)fluoranthene	ND-0.8	0.002	1 of 17
	Chrysene	ND-4	0.002	2 of 17
	Indeno(1,2,3-cd)pyrene	ND-0.7	0.002	1 of 17
	Naphthalene	ND-180	10	2 of 17
Inorganic Compounds	Cyanide	ND-11,100	200	3 of 17

INTERMEDIATE OVERBURDEN GROUNDWATER	Contaminants of Concern	Concentration Range Detected (ppb)[a]	SCG[b] (ppb)[a]	Frequency of Exceeding SCG
Volatile Organic Compounds (VOCs)	Benzene	ND-1,700	1	14 of 31
	Toluene	ND-1,400	5	11 of 31
	Ethylbenzene	ND-62	5	1 of 31

INTERMEDIATE OVERBURDEN GROUNDWATER	Contaminants of Concern	Concentration Range Detected (ppb)[a]	SCG[b] (ppb)[a]	Frequency of Exceeding SCG
	Xylene	ND-1,000	5	6 of 31
Semivolatile Organic Compounds (SVOCs)	2-Methylnaphthalene	ND-5,400	-	-
	Acenaphthene	ND-520	20	2 of 31
	Acenaphthylene	ND-4,300	50	1 of 31
	Anthracene	ND-2,800	50	1 of 31
	Benzo(a)anthracene	ND-2,600	0.002	5 of 31
	Benzo(a)pyrene	ND-1,800	ND	5 of 31
	Benzo(b)fluoranthene	ND-1,100	0.002	5 of 31
	Benzo(g,h,i)perylene	ND-790	50	1 of 31
	Benzo(k)fluoranthene	ND-1,900	0.002	4 of 31
	Chrysene	ND-2,300	0.002	5 of 31
	Dibenz(a,h)anthracene	ND-300	50	1 of 31
	Fluoranthene	ND-6,200	50	1 of 31
	Fluorene	ND-3,600	50	1 of 31
	Indeno(1,2,3-cd)pyrene	ND-850	0.002	5 of 31
	Naphthalene	ND-23,000	10	10 of 31
	Phenanthrene	ND-11,000	50	1 of 31
	Pyrene	ND-4,400	50	1 of 31
Inorganic Compounds	Cyanide	ND-666	200	2 of 31

BEDROCK GROUNDWATER	Contaminants of Concern	Concentration Range Detected (ppb)[a]	SCG[b] (ppb)[a]	Frequency of Exceeding SCG
Volatile Organic Compounds (VOCs)	Benzene	ND-1,600	1	7 of 9
	Toluene	ND-1,240	5	2 of 9
	Ethylbenzene	ND-112	5	2 of 9
	Xylene	ND-1,850	5	2 of 9
Semivolatile Organic Compounds (SVOCs)	2-Methylnaphthalene	ND-13.4	-	-
	Naphthalene	ND-764	10	2 of 9
Inorganic Compounds	Cyanide	ND-1,210	200	1 of 8

SURFACE WATER	Contaminants of Concern	Concentration Range Detected (ppb)[a]	SCG[b] (ppb)[a]	Frequency of Exceeding SCG
Semivolatile Organic Compounds (SVOCs)	Acenaphthylene	ND-1.88	-	-
	Benzo(a)anthracene	ND-3.75	0.03	1 of 16
	Benzo(a)pyrene	ND-3.29	0.0012	1 of 16
	Benzo(b)fluoranthene	ND-3.58	0.002	1 of 16
	Benzo(g,h,i)perylene	ND-4.15	-	-
	Benzo(k)fluoranthene	ND-3.52	0.002	1 of 16
	Chrysene	ND-4.72	0.002	1 of 16
	Indeno(1,2,3-cd)pyrene	ND-4.29	0.002	1 of 16
	Pyrene	ND-6.65	4.6	1 of 16
Inorganic Compounds	Cyanide	ND-254	5.2[c]	6 of 16

SOIL VAPOR	Contaminants of Concern	Concentration Range Detected (µg/m³)[a]	SCG[b] (µg/m³)[a]	Frequency of Exceeding SCG
Volatile Organic Compounds (VOCs)	1,1,1-Trichloroethane	8.8-31	-	-
	Benzene	2.4-12	-	-
	Carbon Disulfide	ND-9.3	-	-
	Carbon Tetrachloride	ND-4.0	-	-
	Chloromethane	ND-2.1	-	-
	Cyclohexane	ND-19	-	-
	Dichlorodifluoromethane	2.8-3.2	-	-
	Ethylbenzene	3.7-6.0	-	-
	Hexachlorobutadiene	ND-45	-	-
	m&p-Xylene	15-22	-	-
	n-Butane	3.0-15	-	-
	n-Heptane	2.1-15	-	-
	n-Hexane	2.5-14	-	-
	n-Octane	ND-11	-	-
	o-Xylene	4.9-7.7	-	-
	Pentane	ND-15	-	-

SOIL VAPOR	Contaminants of Concern	Concentration Range Detected ($\mu g/m^3$)[a]	SCG[b] ($\mu g/m^3$)[a]	Frequency of Exceeding SCG
	Tetrachloroethene	ND-26	-	-
	Toluene	ND-9.5	-	-

[a] ppb = parts per billion, which is equivalent to micrograms per liter, ug/L, in water;
ppm = parts per million, which is equivalent to milligrams per kilogram, mg/kg, in soil;
ug/m^3 = micrograms per cubic meter

[b] SCG = standards, criteria, and guidance values; {list SCGs for each medium}

[c] ND=Not detected

[d] This SCG is for free cyanide, but the result is total cyanide.

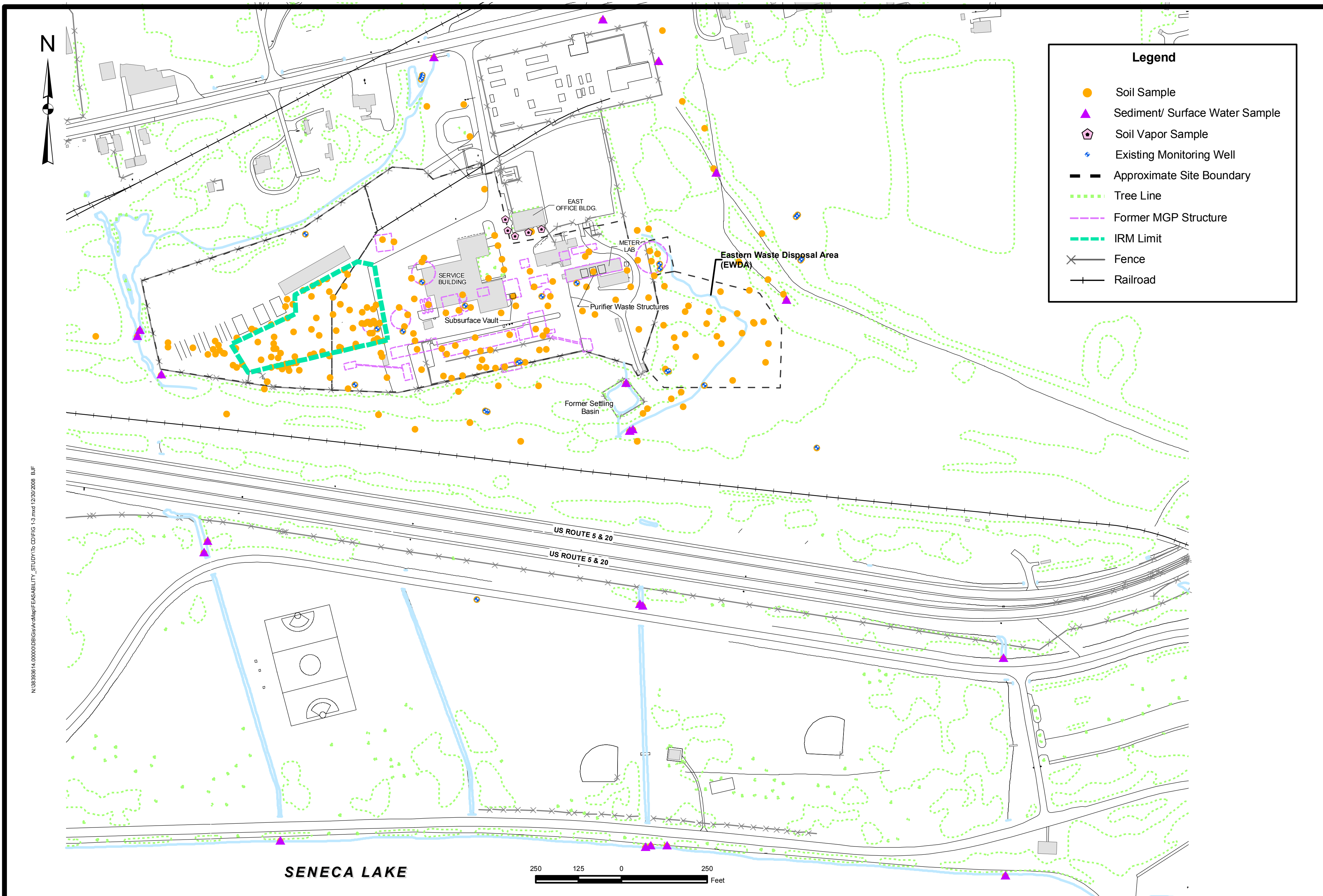
[e] Phenolics are a type of SVOC which were found over the entire site as well as off-site. Their presence is ubiquitous in the area and is not site related.

Table 2
Remedial Alternative Costs

Remedial Alternative	Capital Cost ($)	Annual Costs ($)	Total Present Worth ($)
No Action	0	0	0
Capping	1,200,000	30,000	1,600,000
Source Removal	3,900,000	25,000	4,300,000
ISS EWDA, Capping	1,800,000	25,000	2,200,000
ISS EWDA, Source Removal	3,500,000	25,000	3,800,000
Capping EWDA, Source Removal	2,900,000	30,000	3,300,000
Restoration to Pre-release	17,000,000	700,000	28,000,000

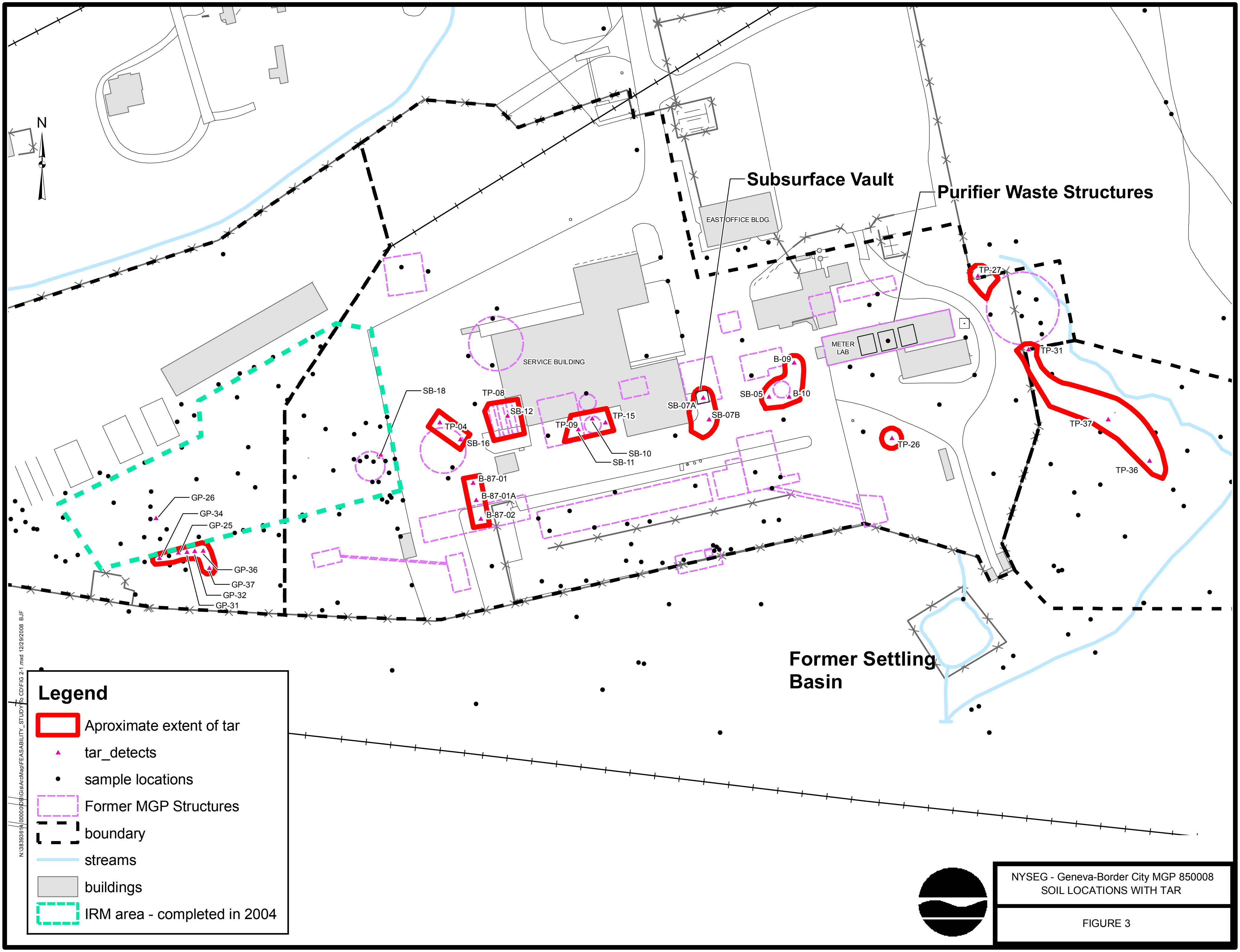
NYSEG-Geneva-Border City MGP 850008
Site Location Map

FIGURE 1



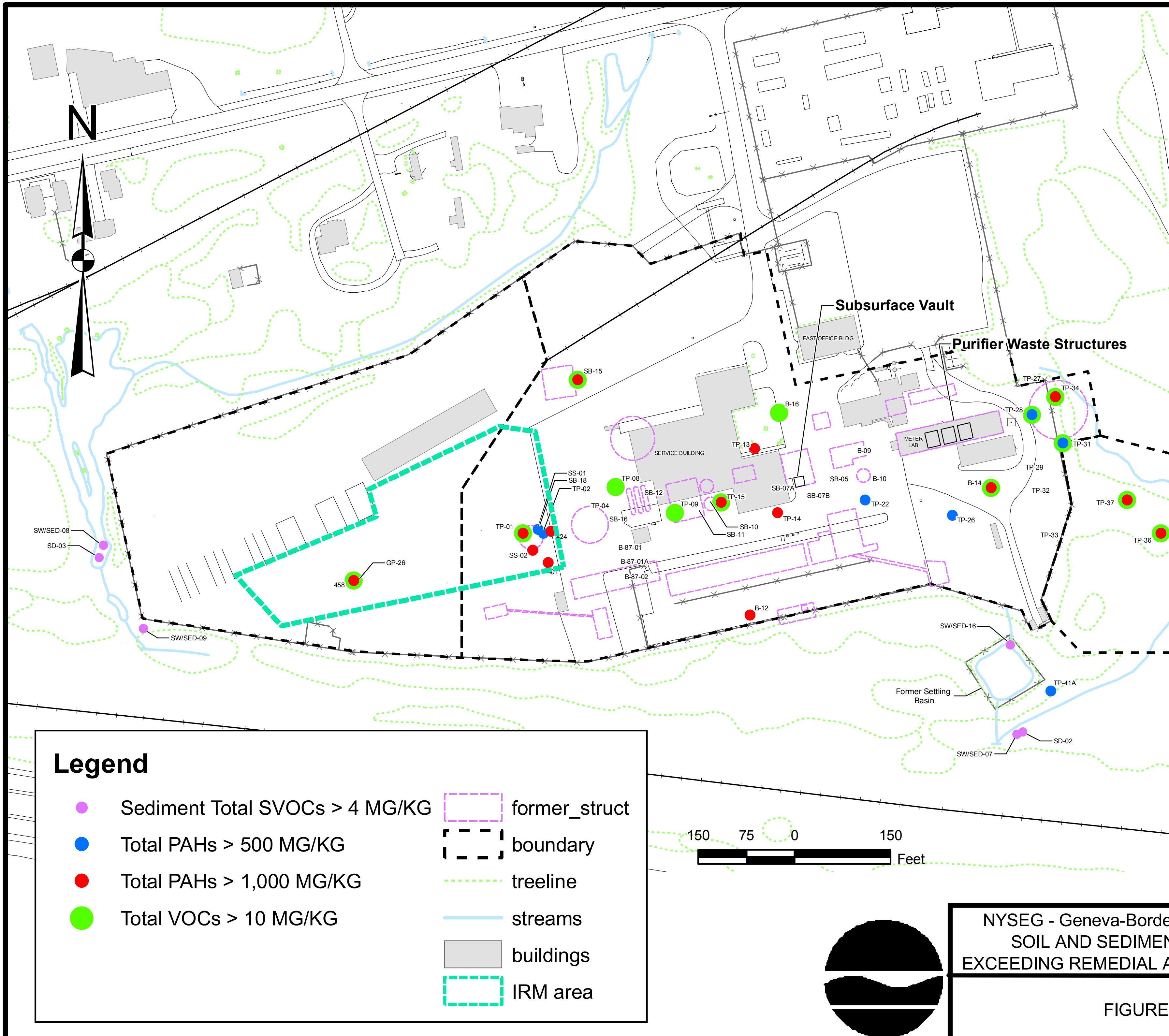
NYSEG - Geneva-Border City MGP 850008
SITE LAYOUT AND SAMPLE LOCATIONS

FIGURE 2



NYSEG - Geneva-Border City MGP 850008
SOIL LOCATIONS WITH TAR

FIGURE 3



Location ID	Max. Depth (ft)
401	5.5
424	5.5
458	12
B-09	4
B-10	5.5
B-12	8
B-14	0
B-16	0
B-87-01	6
B-87-01A	5
B-87-02	2
GP-25	24
GP-26	10
GP-31	4
GP-32	8
GP-34	8
GP-36	6
GP-37	4
SB-05	4
SB-07A	10
SB-07B	6
SB-10	9.5
SB-11	12
SB-12	12
SB-15	10
SB-16	6
SB-18	4
SD-02	0
SD-03	0
SS-01	0
SS-02	0
SW/SED-07	1
SW/SED-08	1
SW/SED-09	1
SW/SED-11	1
SW/SED-13	1
SW/SED-16	1
TP-01	2
TP-02	2
TP-04	7.5
TP-08	3
TP-09	4
TP-13	5
TP-14	5
TP-15	5
TP-22	3
TP-26	3.5
TP-27	4
TP-28	2
TP-29	4
TP-31	4.5
TP-32	6
TP-33	6
TP-34	2
TP-36	8
TP-37	6
TP-41A	0.5
WC-01	0

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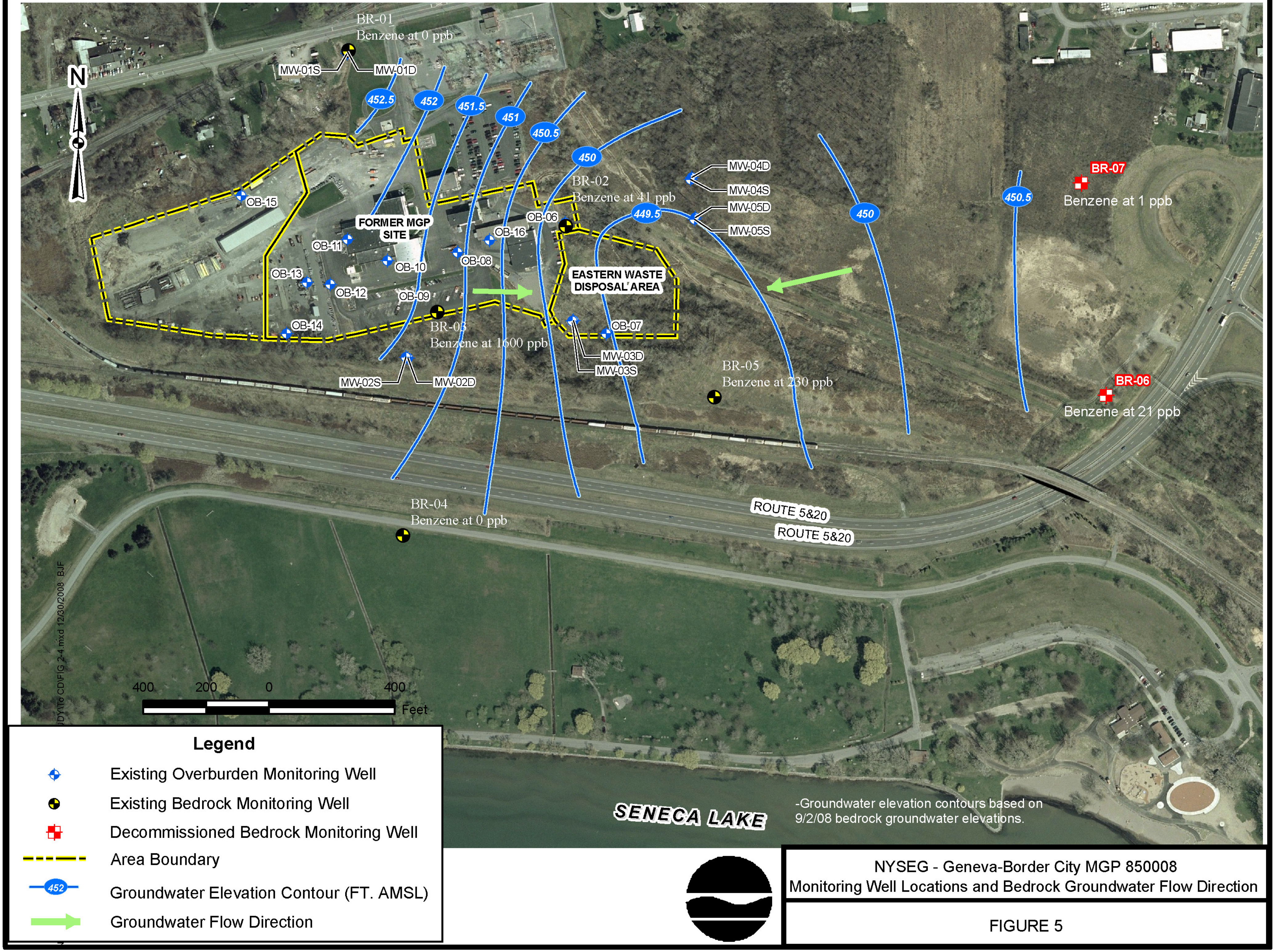
SOIL AND SEDIMENT LOCATIONS
EXCEEDING REMEDIAL ACTION OBJECTIVES

FIGURE 4



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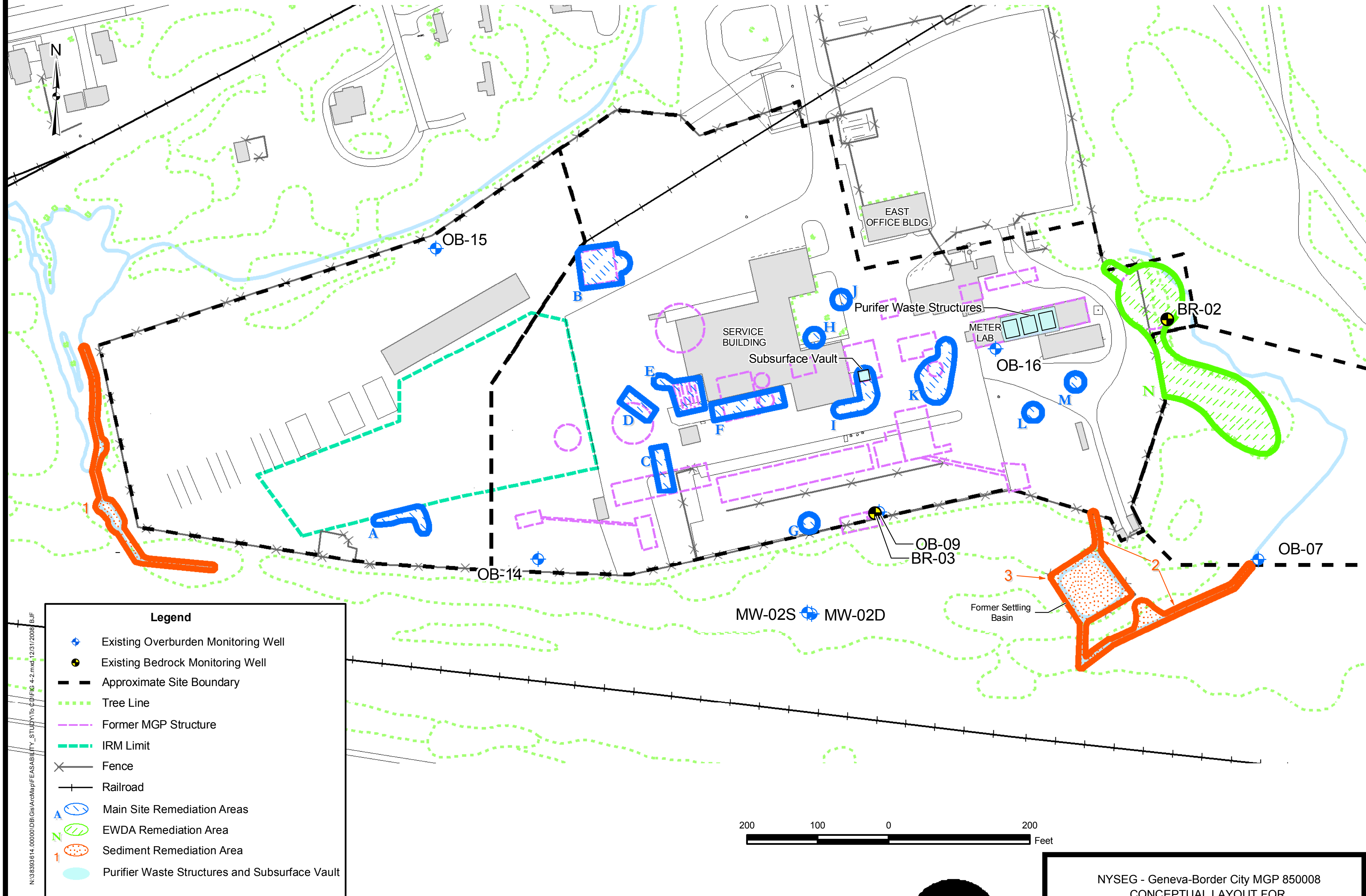
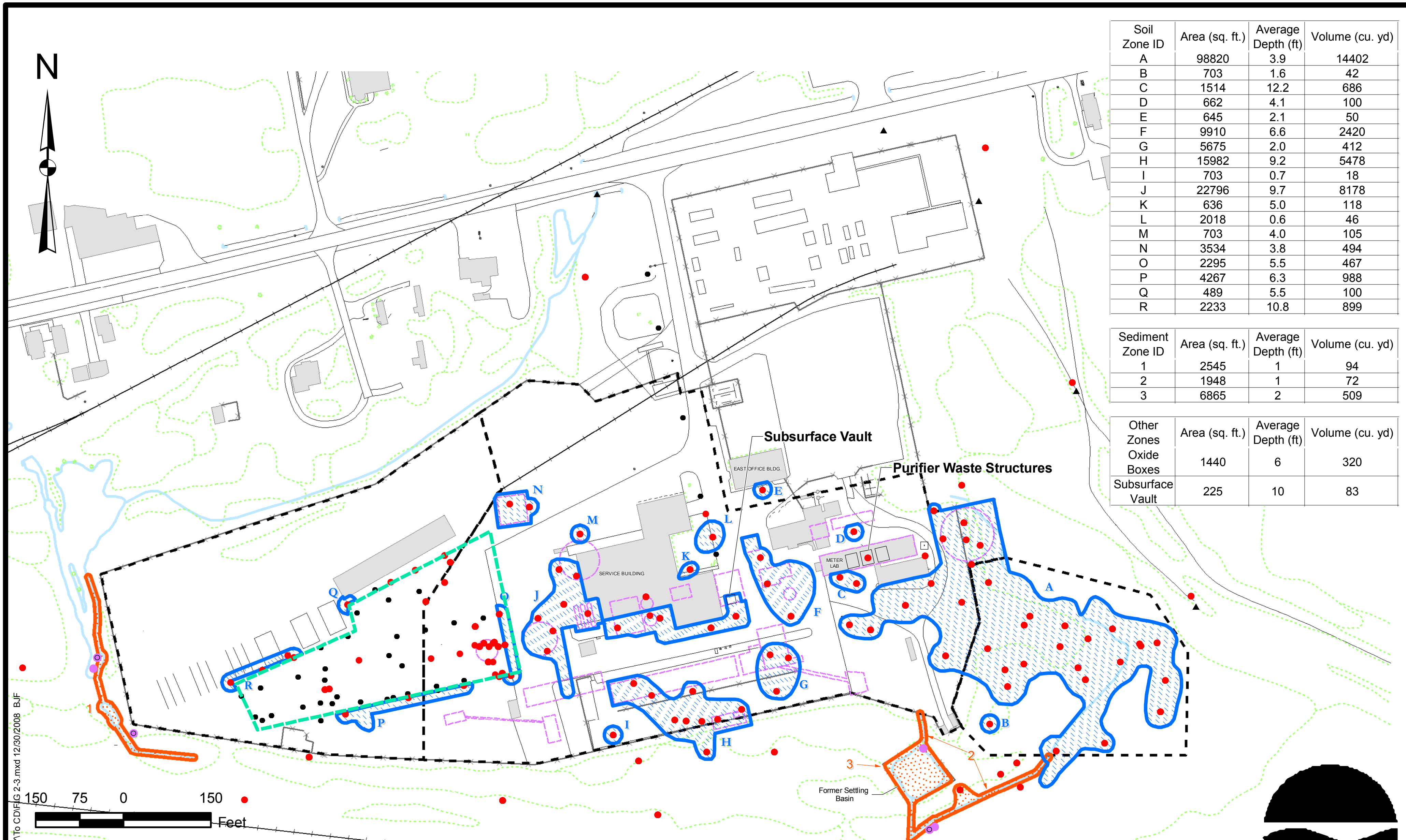
Monitoring Well Locations and Bedrock Groundwater Flow Direction

FIGURE 5



NYSEG - Geneva-Border City MGP 850008
CONCEPTUAL LAYOUT FOR
ALTERNATIVES 2, 3, 4A, 4B AND 5

FIGURE 6



Soil Zone ID	Area (sq. ft.)	Average Depth (ft)	Volume (cu. yd)
A	98820	3.9	14402
B	703	1.6	42
C	1514	12.2	686
D	662	4.1	100
E	645	2.1	50
F	9910	6.6	2420
G	5675	2.0	412
H	15982	9.2	5478
I	703	0.7	18
J	22796	9.7	8178
K	636	5.0	118
L	2018	0.6	46
M	703	4.0	105
N	3534	3.8	494
O	2295	5.5	467
P	4267	6.3	988
Q	489	5.5	100
R	2233	10.8	899

Sediment Zone ID	Area (sq. ft.)	Average Depth (ft)	Volume (cu. yd)
1	2545	1	94
2	1948	1	72
3	6865	2	509

Other Zones	Area (sq. ft.)	Average Depth (ft)	Volume (cu. yd)
Oxide Boxes	1440	6	320
Subsurface Vault	225	10	83

Soils
- No Parameters Exceed SCGs
- At Least One Parameter Exceeds SCGs
- A Proposed Soil Remediation Area

Sediments
- Non-exceedance
- PCBs Present
- Total SVOCs > 4 MG/KG
- 1 Proposed Sediment Remediation Area

Basemap
- Approximate Site Boundary
- Tree Line
- Former MGP Structure
- IRM Limit
- Fence
- Railroad

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Alternative 6

FIGURE 7