Department of Environmental Conservation

Division of Environmental Remediation

Record of Decision

NYSEG Bridge Street
Former MGP Site, Plattsburgh,
Clinton County, New York
Site Number 5-10-016

March 2004

New York State Department of Environmental Conservation
GEORGE E. PATAKI, *Governor* ERIN M. CROTTY, *Commissioner*

DECLARATION STATEMENT - RECORD OF DECISION

NYSEG Bridge Street Former MGP Site
Plattsburgh, Clinton County, New York
Site No. 5-10-016

Statement of Purpose and Basis

The Record of Decision (ROD) presents the selected remedy for the NYSEG Bridge Street Former Manufactured Gas Plant (MGP) site. The selected remedial program was chosen in accordance with the New York State Environmental Conservation Law and is not inconsistent with the National Oil and Hazardous Substances Pollution Contingency Plan of March 8, 1990 (40CFR300), as amended.

This decision is based on the Administrative Record of the New York State Department of Environmental Conservation (NYSDEC) for the NYSEG Bridge Street Former MGP site, and the public's input to the Proposed Remedial Action Plan (PRAP) presented by the NYSDEC. A listing of the documents included as a part of the Administrative Record is included in Appendix B of the ROD.

Assessment of the Site

Actual or threatened release of hazardous waste constituents from this site have been addressed by implementing the interim remedial measure identified in this ROD. The removal of contaminated soil and waste from the site has significantly reduced the threat to public health and the environment. Therefore, a groundwater monitoring program will be implemented to monitor the effectiveness of previous remedial actions in preventing further contamination of the groundwater.

Description of Selected Remedy

Based on the results of the Remedial Investigation (RI) for the NYSEG Bridge Street Former MGP site and the criteria identified for evaluation of alternatives, the NYSDEC has selected No Further Action with institutional controls, in the form of environmental easements, and continued monitoring as the remedy. The components of the remedy are as follows:

- Development of a site management plan to assure the existing backfill over the bedrock is maintained and to restrict the excavation of bedrock.

- The property owner would provide an annual certification that the institutional controls are unchanged. Additional, operation, maintenance and monitoring requirements must be completed.

- An institutional control would be imposed, in the form of an environmental easement, to limit the use and development of the parcel as appropriate.

- Since the remedy results in MGP waste remaining in bedrock at the site, a long term bedrock monitoring program would be instituted.

New York State Department of Health Acceptance

The New York State Department of Health (NYSDOH) concurs that the remedy selected for this site is protective of human health.

Declaration

The selected remedy is protective of human health and the environment, complies with State and Federal requirements that are legally applicable or relevant and appropriate to the remedial action to the extent practicable, and is cost effective. This remedy utilizes permanent solutions and alternative treatment or resource recovery technologies, to the maximum extent practicable, and satisfies the preference for remedies that reduce toxicity, mobility, or volume as a principal element.

_____ _____

Date

Dale A. Desnoyers, Director
Division of Environmental Remediation

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RECORD OF DECISION

NYSEG Bridge Street Former MGP Site
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SECTION 1: SUMMARY OF THE RECORD OF DECISION

The New York State Department of Environmental Conservation (NYSDEC), in consultation with the New York State Department of Health (NYSDOH), has selected a remedy for the NYSEG Bridge Street Former Manufactured Gas Plant (MGP) Site. The presence of hazardous waste at the site has created significant threats to human health and/or the environment that are addressed by this remedy. As more fully described in Sections 3 and 5 of this document, the historic production of manufactured gas and the generation of related by products have resulted in the disposal of hazardous wastes, including coal gas tars and carburetted water gas tars. These wastes have contaminated the overburden soils, groundwater, and bedrock at the site, and have resulted in:

- a significant threat to human health associated with potential exposure to the contaminated overburden soils, contaminated groundwater, and bedrock on the site.

- a significant environmental threat associated with the impacts of contaminants to the groundwater, soils and bedrock on the site.

During the course of the investigation certain actions, known as an interim remedial measure (IRM), were undertaken at the Bridge Street Former MGP Site in response to the threats identified above. An IRM is conducted at a site when a source of contamination or exposure pathway can be effectively addressed before completion of the remedial investigation/feasibility study (RI/FS). The IRM undertaken at this site included the complete removal of all of the former structures, including the existing apartment building, and overburden soils at the site.

Based on the implementation of the above IRM, the findings of the investigation of this site indicate that the site no longer poses a significant threat to human health or the environment, therefore No Further Action was selected as the remedy for this site. The NYSDEC also selected institutional controls in the form of an environmental easement, and continued monitoring to ensure the selected remedy remains effective.

The selected remedy, discussed in detail in Section 6, is intended to attain the remediation goals identified for this site. 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.

SECTION 2: SITE LOCATION AND DESCRIPTION

The NYSEG Plattsburgh Bridge Street MGP Site is located at 140 Bridge Street in the downtown area of the City of Plattsburgh, Clinton County, New York (see Figure 1). The site is bounded by Bridge Street to the north, an apartment complex to the east, residences to the west and southeast, and a warehouse facility to the southwest.

The property is approximately 0.5 acres and is near the outlet of the Saranac River, which flows eastward and discharges to Cumberland Bay of Lake Champlain. The nearest surface water body, Cumberland Bay, is approximately 1,000 feet east of the site.

The site is approximately one half mile north east of the Saranac Street former Manufactured Gas Plant site, which is the successor to this plant site.

SECTION 3: SITE HISTORY

3.1: Operational/Disposal History

A former manufactured gas plant (MGP) is a facility where gas for lighting and heating homes and businesses was produced. The former gas plant operated from 1860 to 1896 at the Bridge Street Site. In 1896 the plant was abandoned and the operations were moved to the Saranac Street Site.

The Bridge Street Plant was relatively small and consisted of one main building with a gas holder and a coal shed (see Figure 2). The plant was destroyed by fire and rebuilt on at least two occasions in 1865 and 1871.

Over the 36 years of operation, the gas plant was either rebuilt or converted to as many as four different processes to manufacture coal gas. Research suggests the plant utilized bituminous coal and pine stumps from 1860 until 1871, resin using the Aubin process from 1871 to 1882, bituminous coal with the water gas process from 1882 to 1889, and then carburetted water gas from 1889 to 1896.

Manufactured gas was produced by heating an organic fuel (i.e. coal) in retorts or beehive ovens, carbonizing the fuel in the absence of air. The carburetted water gas process involved the passage of steam through burning coal. This formed a gaseous mixture (water gas or blue gas), which was then passed through a superheater with an oil spray. The oil spray would generate additional gas, enhancing the heat and light capacity of the overall gas mixture. In each process, the gas produced was condensed and purified prior to distribution.

The production of manufactured gas created many by-products, some of which remain on the site. A dense, oily liquid known as tar would condense out of the gas at various stages during its production, purification, and distribution. Although much of the tar produced by plants was typically reused or sold, recovery of the tar was incomplete. Significant amounts of tar leaked or was discharged from storage and processing facilities over the life of the plant, contaminating subsurface soils and groundwater on the site.

From the end of gas manufacturing operations at the site in 1896 until 1918, the property and building remained vacant and were used as a warehouse. Historical information indicates that the building was used as an automobile dealership and service center from 1918 to approximately 1949.

The original building was modified sometime between 1896 and 1927 to extend over the former gas holder. This modified building was then converted into an apartment building in the early 1970's. NYSEG purchased the property in 2000.

3.2: Remedial History

In February 1992, New York State Electric and Gas (NYSEG) completed a site screening of the Bridge Street Site. The results of this screening are presented in the, "Prioritization Report of Former Manufactured Gas Plant Site; Plattsburgh Bridge Street Site." This report is included as Appendix H of the Remedial Investigation (RI) Report.

In 1994, NYSEG subsequently entered into a legal agreement with the NYSDEC to implement a complete investigation and remedial program for the site, see Section 4.

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.

The NYSDEC and New York State Electric and Gas (NYSEG) entered into a Consent Order on March 30, 1994. The Order, D0-0002-9309, obligates NYSEG to implement a full remedial program for thirty three former MGP sites across New York.

SECTION 5: SITE CONTAMINATION

A remedial investigation study (RI) has been conducted to define the nature and extent of the contamination at the site and to evaluate the effectiveness of the IRM in addressing this contamination. The IRM was completed for this site to address the significant threats to human health and the environment posed by the site.

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, which included several supplemental investigative efforts, was conducted between March 1994 and August 2003**.** The field activities and findings of the investigation are described in the RI report. Please also refer to Figure 3.

The following activities were conducted during the RI:

- Multiple searches of historical information. These efforts included the city historian, city clerk, SUNY Plattsburgh special collections, aerial photographs, local records and local maps.

- Collection and analysis of five indoor air samples from the former building located directly over the former gas holder foundation on the site and two ambient outdoor air samples.

- Collection and analysis of 8 soil samples from the crawl space beneath the former site building.
- Installation and sampling of 5 shallow and 12 bedrock monitoring wells.
- Collection and analysis of 9 shallow groundwater samples and 12 bedrock groundwater samples.
- Several rounds of groundwater elevation readings and checks for the accumulation of Non Aqueous Phase Liquid (NAPL).
- A survey of public and private water supply wells in the area around the site.
- Collection and analysis of surface soil samples.
- Installation of approximately 41 soil borings.
- Collection and analysis of approximately 22 subsurface soil samples, and 23 confirmation subsurface soil samples during the IRM, for a total of approximately 45 subsurface samples.
- The entire bedrock surface of the site, including beneath the former gas holder, was visually observed and inspected during the IRM soil removal at the site.
- Installation and sampling of one test pit in the clean IRM backfill to assess the potential mobility of NAPL in the bedrock adjacent to the former gas holder.
- Installation of an angled boring to assess the mobility of NAPL in the bedrock beneath the former gas holder.

To determine whether the soil, bedrock and groundwater contains contamination at levels of concern, data from the investigation were compared to the following SCGs:

- Groundwater, drinking water, and surface water SCGs are based on NYSDEC "Ambient Water Quality Standards and Guidance Values" and Part 5 of the New York State Sanitary Code.
- Soil SCGs are based on the NYSDEC "Technical and Administrative Guidance Memorandum (TAGM) 4046; Determination of Soil Cleanup Objectives and Cleanup Levels".
- The New York State Department of Health Database is a summary of indoor and outdoor air sample results in control homes collected and analyzed by the NYS DOH from 1989 through 1996 which was used to compare indoor and outdoor air sample results with "typical" indoor and outdoor air concentrations (i.e., background concentrations). In addition, the NYS DOH compared the concentrations of VOCs detected in the apartment building to levels detected in outdoor air samples.

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 required remediation. These are summarized below, in Section 5.1.3. More complete information can be found in the RI report.

5.1.1: Site Geology and Hydrogeology

The Bridge Street site lies within the Lake Champlain Valley, which trends north-south between the Adirondack Mountains to the west and the Green Mountains to the east.

The Bridge Street site was underlain by a relatively thin (roughly 10 foot thick) soil cover, which in turn overlied the limestone bedrock. The soils were made up of three identifiable layers; however, not all of the layers were present at every portion of the site.

A thin layer of man-made fill materials was found immediately below the ground surface. The fill consisted of a mix of sand, gravel, cinders, and ash with some visible pieces of rock and concrete building rubble. Inside the excavation for the former gas holder, the fill extended all the way to bedrock. Elsewhere, the fill layer was roughly five feet thick and generally laid above the water table.

Underlying the fill, a layer of brown, medium-grained sand and gravel was encountered in the southern portion of the site. Where present, this unit ranged from two to five feet thick.

In the northern portion of the site, the sand layer was underlain by a finer-grained layer of darker brown, clay-rich silty sand which laid directly on top of the bedrock.

These natural soil deposits were probably associated with older pathways of the Saranac River. All soil and fill on the site were removed in their entirety by the IRM at the site, with the exception of some soils that are located in bedrock fractures (see Figures 4 and 5).

The bedrock beneath the site is a dark gray limestone, identified as the Montreal member of the Trenton group. This rock unit is quite massive, with relatively few fractures. The few fractures that were encountered were of two types. The most common fractures are bedding planes, which at this site dip gently, roughly 7 degrees to the northeast. A few near-vertical fractures were also identified, which cut across the site on an orientation of roughly 27 degrees (north-northeast). Aside from these widely spaced fractures, the bedrock beneath the site is remarkably solid, and does not appear to transmit groundwater or other liquids readily.

The water table beneath the site occurs at an average depth of 6 to 8 feet, generally in the medium-grained sand unit. Groundwater movement through the medium grained sand and the underlying finer grained sand is quite rapid, with the direction of movement generally to the north toward Lake Champlain The underlying bedrock does not transmit groundwater well, except where it is fractured. What water movement there is in the bedrock is probably directed generally north toward the Lake; however, this flow is controlled by the availability of fractures, so the precise flow direction at each location is difficult to determine. Lake Champlain is located approximately 1,000 feet north of the site.

The residents of the City of Plattsburgh receive their domestic water from a municipal supply system that is operated by the City. Historical and contemporary record reviews revealed that there are no private water wells downgradient of the site. According to the Plattsburgh Water and Sewer Department, historically, the MGP used municipal water as part of its process.

5.1.2: Nature of Contamination

As described in the RI report, several groundwater, air, and soil samples were collected to characterize the nature and extent of contamination. As summarized in Table 1, the main categories of contaminants which exceed their SCGs are volatile organic compounds (VOCs), and semivolatile organic compounds (SVOCs). These contaminants have contaminated the overburden soils, groundwater and bedrock on the site.

Specific volatile organic compounds of concern are benzene, toluene, ethylbenzene, and xylenes. These are referred to collectively as BTEX in this document. Benzene is a known carcinogen.

The specific semivolatile organic compounds of concern in soil and groundwater are the following polycyclic aromatic hydrocarbons (PAHs):

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

PAH concentrations referred to in this document are the summation of the individual PAHs listed above (i.e. total PAHs or TPAHs). The italicized PAHs are probable human carcinogens. The summation of the italicized PAHs is referred to in this document as cPAHs.

Tar is the major type of waste present at this site, and is typically found at former MGP sites. This tar is the predominant source of the BTEX, PAHs, and phenols identified in various media at the site and discussed further in Section 5.1.3. MGP tars contain high levels of PAH compounds, often greater than 100,000 parts per million. These tars also may exceed SCGs for BTEX by several orders of magnitude. In certain tar or heavily contaminated soil samples, enough benzene may be present to require that the material be managed as a hazardous waste.

These tars are reddish brown to black, oily liquids which do not readily dissolve in water. Materials such as this are commonly referred to as a non-aqueous phase liquid, or NAPL. Although most tars are slightly more dense than water (DNAPL), the difference in density is slight. Consequently, they typically sink when in contact with water.

Light non-aqueous phase liquids (LNAPL) is another form of contamination known to exist at this site. LNAPLs are liquids that do not readily dissolve in water, and float on the water's surface as they are less dense than water. Due to the closeness of the density of MGP tars to that of water and the variability of their physical properties depending on the specific MGP plant processes, they are also sometimes observed as LNAPLs. Additionally, LNAPLs in the form of various petroleum products were used as a feedstock in the carburetted water gas process at MGPs.

Typically site groundwater that comes into contact with the NAPL or impacted media, such as soil, results in the contamination of the groundwater and aqueous phase migration of the contaminants.

Certain metals were also found in excess of SCGs. Notably, mercury was detected in the crawl space soils of the former site building. The likely source of this mercury is from early pressure gauges, possibly used in the MGP equipment, the automotive dealership, or one of the many other activities that occurred at the site after the MGP ceased operations. Regardless, this area of contamination was removed and properly disposed of as part of the soil removal IRM.

With the exception of this mercury, the metals values were consistent with typical background concentrations or coincided with areas of identified site impacts (BTEX/PAHs).

During the RI, a soil sample (PB-SB-01) was tested for Toxicity Characteristic Leaching Protocol (TCLP). The TCLP test is used to identify materials which are hazardous waste, based on the comparison of the test results with TCLP criteria. The sample results were indicative of non hazardous material. However, a soil sample (SB-16) subsequently collected from the former gas holder with visible tar did contain a concentration of 100 ppm of benzene. Based on this result, NYSDEC, NYSDOH, and NYSEG were in agreement that the sample and the contaminated soil within the former gas holder that the sample represented would be classified as hazardous waste.

5.1.3: Extent of Contamination

This section describes the findings of the investigation for all environmental media that were investigated. It should be noted that the majority of the sampling data was collected prior to the 2001 IRM soil removal at the site. Therefore, many of the soil samples were collected within the area that was excavated and are representative of past conditions. The details of this IRM are presented in Section 5.2.

Chemical concentrations are reported in parts per billion (ppb) for water, parts per million (ppm) for soil, and micrograms per cubic meter ($\mu g/m^3$) for air samples. For comparison purposes, where applicable, SCGs are provided for each medium.

Table 1 summarizes the levels detected for the contaminants of concern in soil, groundwater, and air. Table 1 also compares the site data with the SCGs for the site. The following are the media which were investigated and a summary of the findings of the investigation.

MGP Waste Materials

Tars and petroleum product were disposed, spilled or leaked from the gas holder, piping, and other structures on the site. Most significantly, the former gas holder was built into the bedrock at the site and directly introduced tars into the bedrock under the site. Additionally, during the IRM soil removal several small structures with NAPL were found and removed.

These tars and petroleum products subsequently migrated a limited distance away from these structures through the subsurface. This migration resulted in tar contamination of certain areas of the site, at various depths below the ground surface in the overlying soils and in the bedrock. The areas of significant NAPL contamination found were: within the former gas holder, subsurface soils in the vicinity of former plant structures and piping, the weathered top of the bedrock across the site, and the bedrock fractures associated with the former gas holder. The limited extent of the NAPL contamination that was present prior to and after the IRM is more fully detailed in the the bedrock section below, and the RI and IRM Reports.

Surface Soil

Generally, those soils that were present during the MGP plants operation history are not the same as those that are presently on the surface of the site. At this site, the limited surface soils appear to be fill that was placed after MGP operations at the site ceased. At the time of the investigation, the majority of the site was covered by the former site building and asphalt.

Approximately 22 surface soil samples were collected and analyzed for SVOCs from on-site and off-site locations. These samples consistently found PAHs varying from 1 to 285 ppm. Generally, these levels seem consistent with urban fill and historical events in this area which include: several large fires on the former plant site, a large fire in a former lumber yard that adjoined the site, and an active railroad yard. Further, the IRM replaced the existing on site surface soils and surface covers with several feet of clean fill and grass. Additional details regarding these samples and the surface soils removed by the IRM can be found in the RI and IRM reports.

Subsurface Soil

During the RI, the soil removal IRM, and after completion of the IRM, samples were collected and analyzed from approximately 45 subsurface soil locations. The results of these samples found the overburden soils on-site to be contaminated by BTEX and PAHs with levels varying from non-detect to 1,240 ppm, and non-detect to 7,218 ppm respectively. Generally, the subsurface soils contaminated with BTEX and PAHs were in the vicinity of former MGP structures, petroleum spills, or they contained other wastes (i.e. ash, coal dust, and cinders). As evidenced by the physical observations of these soils during the IRM, these areas of contamination were generally isolated and limited in size.

All of the site soils, including those contaminated areas, were removed as part of the soil removal IRM. The only contaminated soils that remain on the site are a limited amount within the fractures in the bedrock which could not be removed and some behind a very small section of the gas holder wall that was left in place as a physical marker.

Table 1B, Table 1C, and Figure 6 present the pre-IRM and post-IRM subsurface TPAH values at the site. All of the on site soils, whose contaminant levels are represented by the pre-IRM samples identified as the black locations within the site boundaries on Figure 6, were removed by the IRM, except for sample PB-SB-2. Soil excavation at this location was limited to avoid undermining or damaging Bridge Street. All the red sample points on Figure 6 are IRM post excavation samples, and represent the conditions after the site soils were removed by the IRM. The post IRM samples from the sidewalls of the IRM excavation area show these soils only contained low levels of TPAHs, less than 20 ppm, Those remaining post excavation samples collected from interior locations of the IRM excavation area were collected from within the fractures in the underlying bedrock. The contaminant levels those samples contain represent the condition of the impacted underlying bedrock, which is discussed below.

Additional details regarding these samples and visual observations can be found in the RI and IRM reports.

Bedrock

The bedrock underlying the site is a very competent limestone, with the exception of a limited thickness of the weathered stone at the overburden/bedrock interface. As depicted in Figure 7, the migration of the NAPL in the bedrock is limited by the few small interconnected fractures found in the bedrock.

Essentially, wells that do not intersect the weathered surface or a primary bedding fracture in the bedrock do not receive meaningful groundwater. To illustrate this, several of the bedrock wells where water was removed during sampling did not refill, despite more than 12 months of recharge time. This impermeability means that the fractures control the groundwater and contaminant migration at the site.

Of the few fractures observed below the weathered zone during the bedrock coring, one fracture was observed at the site that lies along the bedding plane of the rock. This fracture was observed approximately eleven feet below the bedrock surface. As this fracture is a bedding plane fracture, it essentially extends horizontally across the site and would be expected to intersect and transmit any significant quantities of NAPL which had migrated from the holder down through the fractures above it in the bedrock.

The post-IRM RI only found NAPL in bedrock wells that either intersected the weathered surface of the bedrock, or intersected the bedding plane fracture. However, in each case NAPL was only found intermittently and in very small quantities. Monitoring wells intersecting the bedding plane fracture off-site have no observations of NAPL.

One of these off-site wells, MW-3B, has levels of benzene and cyanide, 68 ppb and 110 ppb respectively. This confirms the well is keyed into the contaminated fractures. The levels and presence of only these compounds is consistent with being at the edge of the contaminant migration, as these compounds are more soluble, and thus mobile, in groundwater than the other site contaminants. This also indicates that the NAPL contamination in the bedrock is very limited in depth, quantity and mobility. Please refer to Table 1D.

Additionally, during the post-IRM RI bedrock investigation a test pit was excavated into the IRM backfill that was placed into the bedrock depression of the former gas holder foundation. The purpose of this test pit was to examine the backfill from the IRM for the possible presence of NAPL seeping from the rock, that was observed at this location during the IRM. A sample of the backfill was found to only contain low levels of contaminants, 0.05 ppm of BTEX and 6.43 ppm of PAHs. In conjunction with physical observations, it was concluded that significant recontamination of the backfill was not occurring.

Additional details of the bedrock contamination can be found in the RI Report.

Groundwater

Two rounds of samples were collected from the overburden (shallow) groundwater wells, MW-01 through MW-05, prior to the IRM. All of the shallow groundwater sample results were below drinking water limits for BTEX and PAHs, with the exception of MW-5. This well was located across Bridge Street, and appeared to have been impacted by a leaking sanitary sewer. Although several of the compounds detected in this well were consistent with the on-site contaminants, physical observations (i.e. odor and temperature) and other detected compounds indicated another source of contamination.

The lack of impacts to the shallow groundwater is attributed to the majority of the NAPL contamination at the site being located in the bedrock. This is consistent with conditions visually observed during the IRM and RI. All the shallow wells have now been decommissioned as several of these wells were damaged and they failed to identify a contaminated media.

The bedrock monitoring wells, MW-1B through MW-11B, were installed after the IRM. These wells were all sampled once and have been regularly checked for the presence of NAPL. The sample results identified significant levels of contamination by BTEX and PAHs. As detailed in Table 1D, these contaminant levels exceed applicable SCGs. Concentrations of some of the PAHs detected exceeded their solubility limit in one well, MW-7BS. This coincides with the visual observations of NAPL in the fractures and weathered fringe of the bedrock during the IRM and RI, and visual observations of trace NAPL during the well monitoring events. Phenols were also detected in exceedance of groundwater standards.

As noted in the bedrock discussion and illustrated by Figures 7 and 8, the bedrock wells furthest from the site appear to delineate the extent of the significant groundwater and NAPL contamination.

Additional details regarding these samples can be found in the RI report.

Air

Two rounds of air sampling were conducted at the former on-site building. The first round was conducted in July 1999, the second sampling in February 2000.

The July 1999 sampling consisted of an air sample collected from the crawl space of the on-site building, and an air sample from the ambient air outside the building. The results are included in Table 1F. These results were evaluated by the NYSDOH and determined to be below levels of concern.

The February 2000 sampling consisted of air samples collected from each of the three apartments and the garage in the on-site building, and an ambient air sample collected from outside the building. The results are presented in Table 1F. The NYSDOH determined that all detections were below levels of concern.

Additional details regarding these samples can be found in the RI report. It should also be noted that the on site building was razed as part of the soil removal IRM.

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.

The goal of the IRM was to remove the former gas holder foundation, associated piping and other MGP structures, adjoining coal tar contaminated soils, and site wide surface soils.

The IRM included the razing of the existing site building and the firehouse that was located next door. The entire site was then excavated down to the bedrock, approximately 4 to 10 feet, achieving the IRM goal. As the gas holder foundation was constructed approximately 5 feet into the bedrock, the bedrock in this vicinity was also power washed. Removed materials were characterized and properly disposed of at appropriate off-site facilities. The entire site was then backfilled with clean sand fill and seeded.

During the removal activities, real time air quality data were collected to assess compliance with the community air monitoring plan. The results indicate that the project did not exceed the action levels specified in the plan. However, a sustained VOC reading of 5 ppm, (the community air monitoring plan action limit), was measured on May 4. 2001. Work was suspended and Biosolve and polyethylene sheeting were employed as corrective measures. These measures effectively reduced the VOC levels and work resumed.

Confirmatory samples and visual observations were made during the IRM removal. This data was utilized to assess the extent of the contamination remaining at the site after the IRM and to complete the remedial investigation of the site. Additional details regarding this work and the resulting data can be found in the IRM report.

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.

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.

There are no known completed exposure pathways at the site, however, potential exposure pathways exist. These are:

- Dermal contact with contaminated subsurface soil or groundwater
- Ingestion of groundwater
- Inhalation of vapors in indoor air

Although the site is accessible to the public, dermal contact with contaminated soil is not likely since the remaining contamination is subsurface and is limited to the bedrock and soils beneath Bridge Street. Excavation in these areas is considered unlikely, however, if subsurface contaminated soil is brought to the surface through excavation or other site activities, exposures could occur.

No one is currently using the site groundwater for drinking or other uses, but groundwater could be used in the future. Although dermal contact with or ingestion of contaminated groundwater are potential exposure pathways, they are not expected because the surrounding area is serviced by public water.

If the site were developed, soil vapors associated with residual contamination could impact indoor air. This is not considered a likely pathway of exposure since a former on-site apartment building, located directly over the source of contamination did not appear impacted by site-related contamination according to indoor air samples collected in 2000. Moreover, the IRM decreased the potential for vapor migration. Groundwater will be routinely sampled on-site and at nearby properties to monitor residual contamination associated with the site. If groundwater sample results should increase to a level of concern near an occupied building, the potential for soil vapor intrusion will be evaluated.

5.4: Summary of Environmental Impacts

This section summarizes the 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.

As the site was an extensively developed commercial parcel located in the City of Plattsburgh, no significant wildlife resources were present on the site or are considered to be likely in the future. Additionally, the IRM has eliminated the potential for exposure to site soil contamination and shallow groundwater by removing the contaminated soils from the site.

The nearest significant wildlife resources are associated with Lake Champlain, located 1,000 feet to the north of the site. As the NAPL contaminant's extent is limited in the bedrock and the bedrock groundwater contaminant levels dissipate rapidly with distance, they are not expected to have a significant impact beyond the immediate area around the site. Therefore a viable exposure pathway to fish and wildlife receptors is not present, although monitoring will be necessary to assure site conditions do not change.

However, as contaminants remain in the bedrock at the site and groundwater in the bedrock the potential for future impact remains.

SECTION 6: SUMMARY OF THE REMEDIATION GOALS AND SELECTED REMEDY

Goals for the remedial program have been established through the remedy selection process stated in 6 NYCRR Part 375-1.10. 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.

Prior to the completion of the IRM described in Section 5.2, the remediation goals for this site were to eliminate or reduce to the extent practicable:

- the presence of NAPL and MGP related contaminants as continuing sources to soil, groundwater and bedrock;

- the migration of NAPL and MGP related contaminants that would result in additional soil, groundwater or bedrock contamination;

- the potential for ingestion of groundwater with contaminant levels exceeding drinking water standards;

- the potential for human ingestion/direct contact with contaminated soil;

- the potential for human inhalation of contaminant vapors from the bedrock.

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

- recommended soil cleanup objectives in TAGM 4046;

- ambient groundwater quality standards.

The NYSDEC believes that the IRM has accomplished these remediation goals provided that it continues to be operated and maintained in a manner consistent with the design.

The selected remedy is based on the results of the RI and the evaluation of the results of the completed IRM. The completed soil removal IRM at the site achieved the remediation goals for the site soils as it permanently removed the sources of NAPL and MGP related contaminants at the site. Further, this IRM eliminated the potential for ingestion/direct contact with contaminated site soils and achieved the recommended remedial action objective for soil cleanup objectives in TAGM 4046.

The IRM did not excavate the contaminated bedrock at the site, beyond the weathered top, as the bedrock is too competent for excavation equipment to remove, without blasting. Additional efforts to eliminate or mitigate the NAPL in the bedrock were evaluated, but were deemed inefficient, unnecessary, and unimplementable, due to the limited volume of NAPL remaining and the lack of uncontrollable exposure pathways.

NAPL contamination in bedrock is an extremely difficult condition to remediate due to the difficulty in locating NAPL bearing fractures and then physically removing the NAPL from these fractures. At this site, the effort is further complicated by the discontinuity and small volume of NAPL present, low NAPL mobility, and the apparent lack of interconnection between the NAPL bearing fractures all of which serve to limit the potential for migration and subsequent future exposure.

In consideration of the presence of public water service in the area, the lack of a viable pathway to fish and wildlife resources, the lack of a viable pathway for contact or inhalation, the complete removal of source areas from the site, further efforts to eliminate this area of residual contamination is not warranted, particularly when other measures can provide for the attainment of the remediation goals at the site.

Therefore, No Further Action is being selected as the site remedy because, as described below, it will achieve the remaining remediation goals for the site by controlling and reducing the potential exposure to the contaminants that remain in the bedrock and bedrock groundwater beneath the site.

The completed IRM removed the MGP structures, associated contamination and all soil above the bedrock over the site area. The IRM also placed an effective barrier to potential direct contact with the contaminants

that remain in the bedrock beneath the site, in the form of the 4-10 feet of clean backfill placed over the bedrock. To maintain this cover an environmental easement will be implemented, thus reducing the potential for future exposures to contaminants and vapors. This environmental easement will restrict the use of the site to commercial or industrial development, restrict the use of bedrock groundwater at the site, and require development of a site management plan which will restrict the uncontrolled excavation of the soil and/or bedrock on the site. The site management plan will also call for the annual certification by the property owner that the remedy remains in place and effective.

With these institutional controls, the work completed under the IRM will result in a remediation of this site that will be protective of human health and the environment, since pathways for exposure to the contaminants that remain in the bedrock and groundwater at the site will be addressed. Long term monitoring of the bedrock groundwater will assure that the NAPL and contaminated groundwater in the bedrock have not migrated beyond the immediate site vicinity.

Coupled with the completed source removal of NAPL and NAPL contaminated structures at the site, this long term monitoring will provide documentation of the expected improvement in bedrock groundwater conditions due to attenuation and dilution. It is expected that these mechanisms will eventually provide for the attainment of ambient water quality standards.

Therefore, the NYSDEC concludes that the completed IRM has achieved the remediation goals for the site and that No Further Action is needed, in conjunction with the bedrock groundwater monitoring, institutional controls, and engineering controls as listed below:

1. Development of a site management plan to assure the existing backfill over the bedrock is maintained to a minimum cover of two feet, and to restrict the uncontrolled excavation of the bedrock at the site.

2. The property owner will provide an annual certification, prepared and submitted by a professional engineer or environmental professional acceptable to the NYSDEC, which will certify that the institutional controls and engineering controls put in place are unchanged from the previous certification, comply with any operation and maintenance plan, and have not been impaired.

3. An institutional control will be imposed, in the form of an environmental easement, which will; (a) require compliance with the approved site management plan, and the operation, maintenance and management plan, (b) limit the use and development of the property to commercial or industrial uses only, (c) restrict use of groundwater as a source of potable or process water, without necessary water quality treatment as determined by the Clinton County Department of Health and, (d) require the property owner to complete and submit to the NYSDEC an annual certification.

4. Since the remedy results in MGP waste remaining at the site, a long term operations, maintenance and monitoring program will be instituted. Initially a monitoring plan will be developed which will include assessing the presence of soil vapors and sampling of the existing bedrock monitoring wells on an annual basis. Analysis will include BTEX, PAHs, cyanide and phenol. These wells will also be checked for NAPL accumulation. Annual inspection of the general site conditions will also be performed. In the third year, this monitoring program and the effectiveness of the remedy will be

re-evaluated. Provided that the site groundwater conditions were improving and the site remedy was physically secure, the monitoring interval could be extended at that time.

5. This proposed remedy will also provide for the decommissioning of the angled boring beneath the gas holder and any monitoring wells not required by the long-term monitoring plan.

SECTION 7: HIGHLIGHTS OF COMMUNITY PARTICIPATION

As part of the remedial investigation process, a number of Citizen Participation activities were undertaken to inform and educate the public about conditions at the site and the potential remedial alternatives. The following public participation activities were conducted for the site:

- Repositories for documents pertaining to the site were established.
- A public contact list, which included nearby property owners, elected officials, local media and other interested parties, was established.
- A public meeting was held on June 30, 1999 to present the work plan intended to complete a preliminary assessment of the site. This meeting was preceded by a fact sheet.
- A fact sheet was mailed in December 2000 to advise interested parties that an Interim Remedial Measure (IRM) was planned for the site. This IRM was intended to remove the former gas holder foundation and any coal tar from the site.
- A public meeting was held on March 29, 2001 to present the IRM to remove the former gas holder foundation and any coal tar from the site. This meeting was preceded by a fact sheet.
- A fact sheet was mailed in October 2001, to advise interested parties that additional investigation would be performed at the site to complete the Remedial Investigation (RI) of the site.
- A public meeting was held on February 5, 2004 to present and receive comment on the Proposed Remedial Action Plan (PRAP). This meeting was preceded by a fact sheet.
- A responsiveness summary (Appendix A) was prepared to address the comments received during the public comment period for the PRAP.

In general, the public comments received for the PRAP were questions regarding the distribution of contaminants associated with the site and on the long term monitoring of the site. These comments with responses are presented in Appendix A. Based on the nature of these comments, the NYSDEC considers them supportive of the selected remedy.

TABLE 1 A
Nature and Extent of Surface Soil Concentrations
NYSEG Plattsburgh - Bridge Street MGP Site
March 1994 - August 2003

SURFACE SOIL	Contaminants of Concern	Concentration Range Detected (ppm)[a]	SCG[b] (ppm)[a]	Frequency of Exceeding SCG
Volatile Organic Compounds (VOCs)	Benzene	NT	0.06	NA
	Toluene	NT	1.5	NA
	Ethylbenzene	NT	5.5	NA
	Xylene	NT	1.2	NA
	BTEX	NT	10	NA
Semivolatile Organic Compounds	Total cPAHs	.543 - 80.5	10	3/19
	Total PAHs	1.02 - 285.7	500	0/19
	Phenol	ND	0.03	0/19
Inorganic	Cyanide	ND	NA	NA

TABLE 1 B
Nature and Extent of Subsurface Soil Contamination
NYSEG Plattsburgh - Bridge Street MGP Site
March 1994 - August 2003

SUBSURFACE SOIL	Contaminants of Concern	Concentration Range Detected (ppm)[a]	SCG[b] (ppm)[a]	Frequency of Exceeding SCG
Volatile Organic Compounds (VOCs)	Benzene	ND - 100	0.06	7/45
	Toluene	ND - 240	1.5	7/45
	Ethylbenzene	ND - 210	5.5	4/45
	Xylene	ND - 530	1.2	7/45
	BTEX	ND - 1,240	10	6/45
Semivolatile Organic Compounds	Total cPAHs	ND - 641	10	12/45
	Total PAHs	ND - 7,218	500	3/45
	Phenol	ND - 66	.03	4/24
Inorganic	Cyanide	ND - 9	NA	NA

TABLE 1 C
Post IRM Subsurface Soil Contamination
NYSEG Plattsburgh - Bridge Street MGP Site
May 2001 - November 2001

SUBSURFACE SOIL	Contaminants of Concern	Concentration Range Detected (ppm)[a]	SCG[b] (ppm)[a]	Frequency of Exceeding SCG
Volatile Organic Compounds (VOCs)	Benzene	ND - 4.3	0.06	3/24
	Toluene	ND - 21	1.5	3/24
	Ethylbenzene	ND - 71	5.5	2/24
	Xylene	ND - 147	1.2	3/24
	BTEX	ND - 243	10	3/24
Semivolatile Organic Compounds	Total cPAHs	ND - 641	10	7/24
	Total PAHs	ND - 7,218	500	1/24
	Phenol	ND	.03	0/2
Inorganic	Cyanide	ND - 9	NA	NA

TABLE 1 D
Nature and Extent of Bedrock Groundwater Contamination
NYSEG Plattsburgh - Bridge Street MGP Site
March 1994 - August 2003

GROUNDWATER	Contaminants of Concern	Concentration Range Detected (ppb)[a]	SCG[b] (ppb)[a]	Frequency of Exceeding SCG
Volatile Organic Compounds (VOCs)	Benzene	ND - 1,300	1	8/12
	Toluene	ND - 1,500	5	3/12
	Ethylbenzene	ND - 2,600	5	3/12
	Xylene	ND - 2,800	5	4/12
	BTEX	ND - 8,200	NA	NA
Semivolatile Organic Compounds	Total cPAHs	ND - 332	NA	NA
	Total PAHs	ND - 10,896	NA	NA
	Phenol	ND - 140	1	4/12
Inorganic	Cyanide	ND - 130	NA	NA

TABLE 1 E
Nature and Extent of Shallow Groundwater Contamination
NYSEG Plattsburgh - Bridge Street MGP Site
March 1994 - August 2003

GROUNDWATER	Contaminants of Concern	Concentration Range Detected (ppb)[a]	SCG[b] (ppb)[a]	Frequency of Exceeding SCG
Volatile Organic Compounds (VOCs)	Benzene	ND - 2	1	1/8
	Toluene	ND - 1	5	0/8
	Ethylbenzene	ND - 2	5	0/8
	Xylene	ND - 4	5	0/8
	BTEX	ND - 9	NA	NA
Semivolatile Organic Compounds	Total cPAHs	ND - 2	NA	NA
	Total PAHs	ND - 250	NA	NA
	Phenol	ND	1	0/8
Inorganic	Cyanide	ND	NA	NA

TABLE 1 F
Nature and Extent of Air Concentrations
NYSEG Plattsburgh - Bridge Street MGP Site
March 1994 - August 2003

AIR	Contaminants of Concern	Concentration Range Detected (ppbv)[a]	Ambient Air Range (ppb)[a]	Frequency of Exceeding SCG
Volatile Organic Compounds (VOCs)	Benzene	ND - 3.2	ND	19/50
	Toluene	2.1 - 44	1.2 - 1.7	18/50
	Ethylbenzene	ND - 3.9	ND	10/50
	Xylene	ND - 18.7	ND	13/50
	BTEX	ND - 2724	1.2 - 1.7	NA
Semivolatile Organic Compounds	Total cPAHs	NT	NA	NA
	Total PAHs	NT	NA	NA
	Phenol	NT	NA	NA
Inorganic	Cyanide	NT	NA	NA

For Table 1A-F

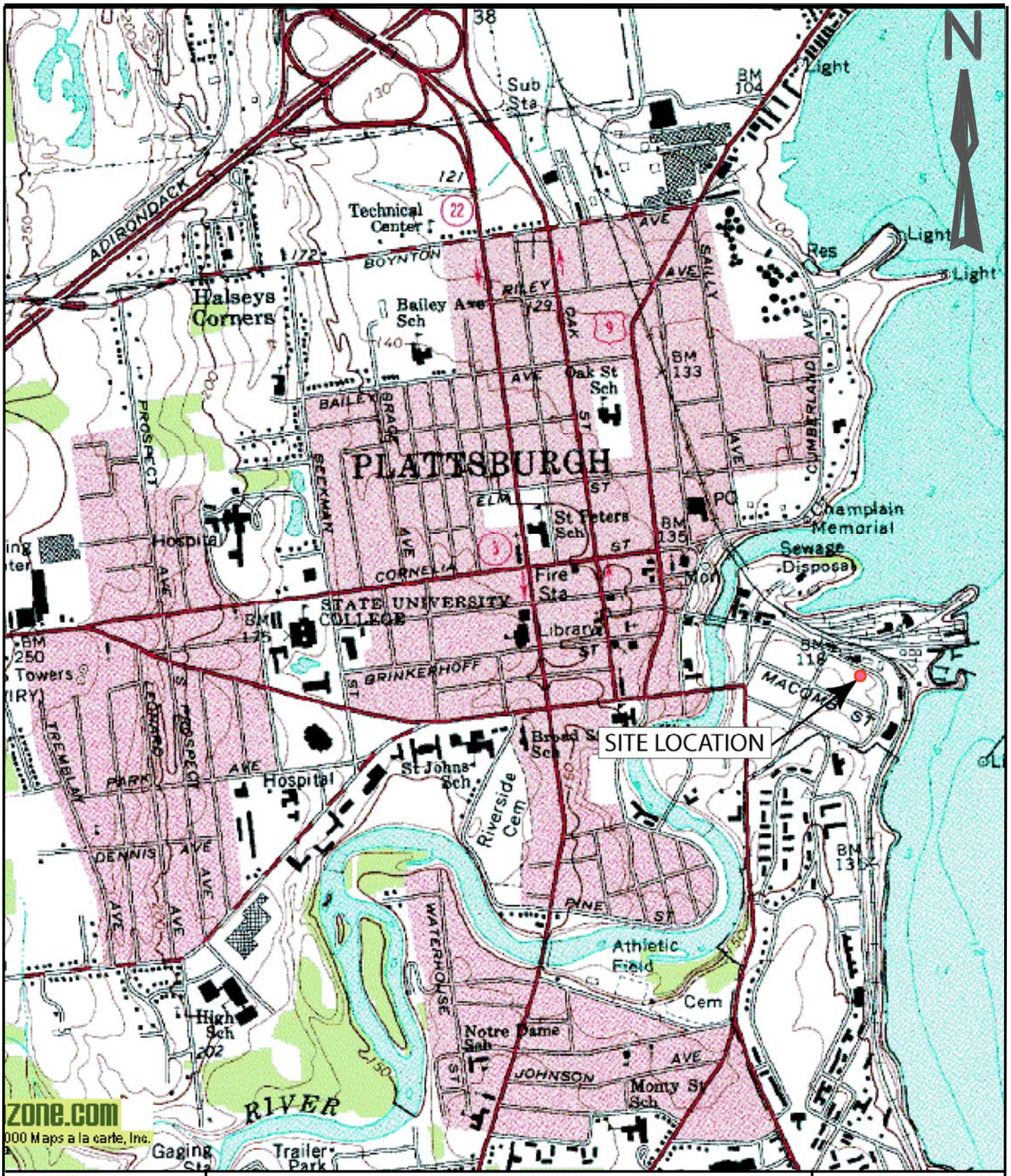
[a] ppb = parts per billion, which is equivalent to micrograms per liter, µg/l, in water;
ppm = parts per million, which is equivalent to milligrams per kilogram, mg/kg, in soil;
$\mu g/m^3$ = micrograms per cubic meter
ppbv = parts per billion by volume

[b] SCG = standards, criteria, and guidance values;

[c] LEL = Lowest Effects Level and SEL = Severe Effects Level. A sediment is considered to be contaminated if either of these criteria is exceeded. If both criteria are exceeded, the sediment is severely impacted. If only the LEL is exceeded, the impact is considered to be moderate.

NT - Not tested for this parameter
ND - Not Detected
NA - None Available

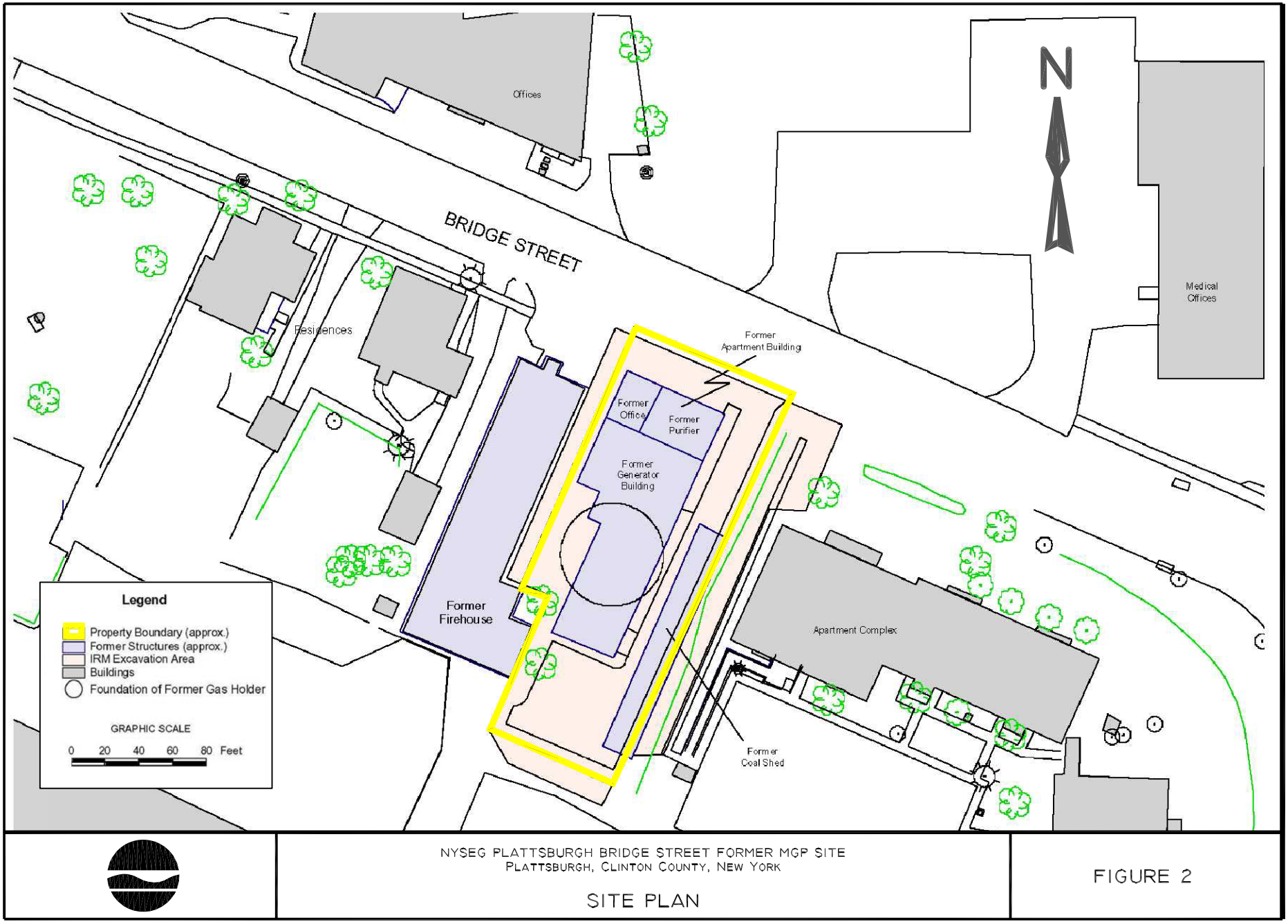
BTEX indicates the summation of benzene, toluene, ethylbenzene and xylene
Total PAH indicates the total of all PAH compounds identified
Total cPAH indicates the total of the seven PAH compounds that are considered carcinogenic



NYSEG PLATTSBURGH BRIDGE STREET FORMER MGP SITE
PLATTSBURGH, CLINTON COUNTY, NEW YORK

SITE LOCATION

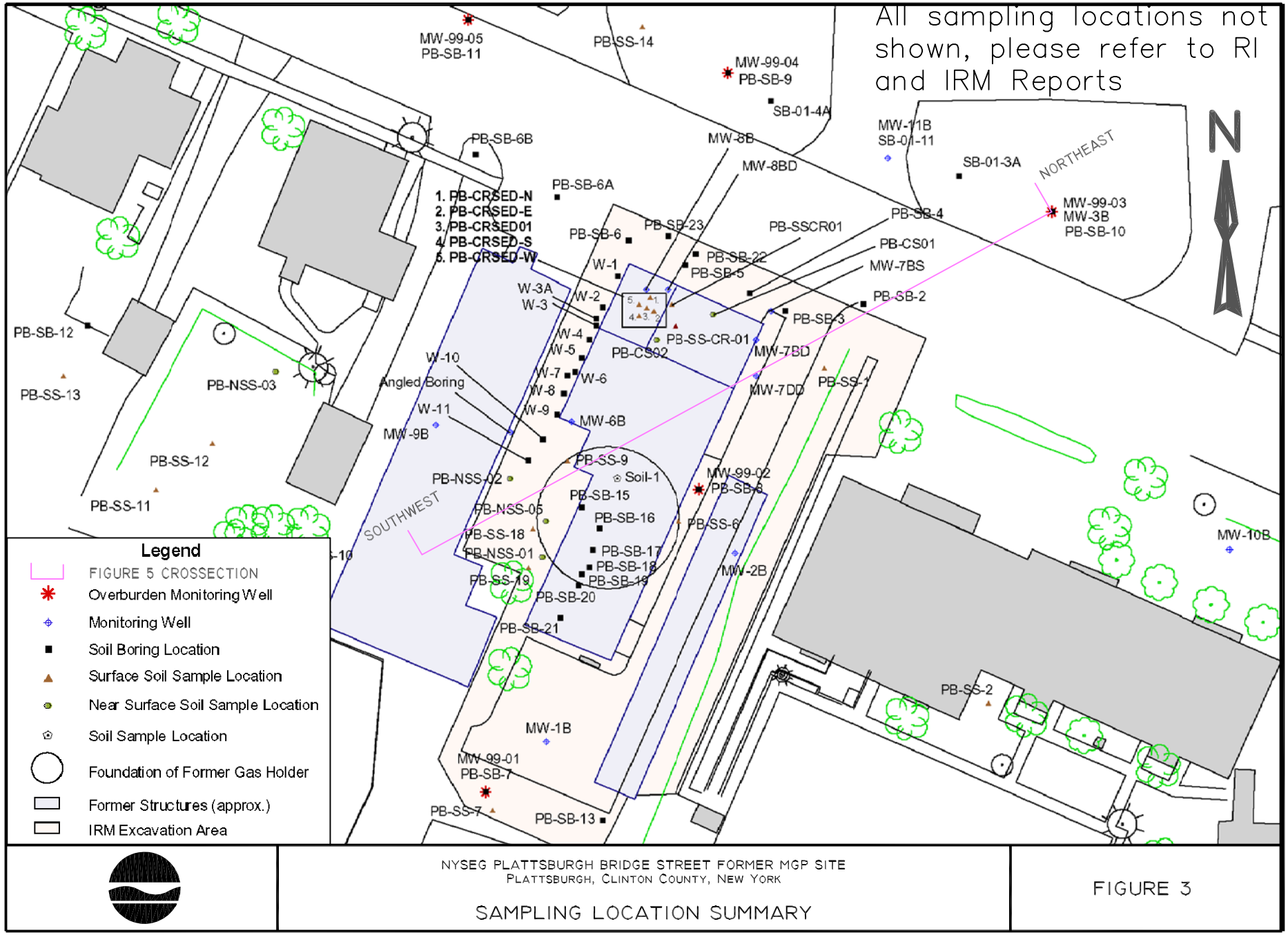
FIGURE 1



NYSEG PLATTSBURGH BRIDGE STREET FORMER MGP SITE
PLATTSBURGH, CLINTON COUNTY, NEW YORK

SITE PLAN

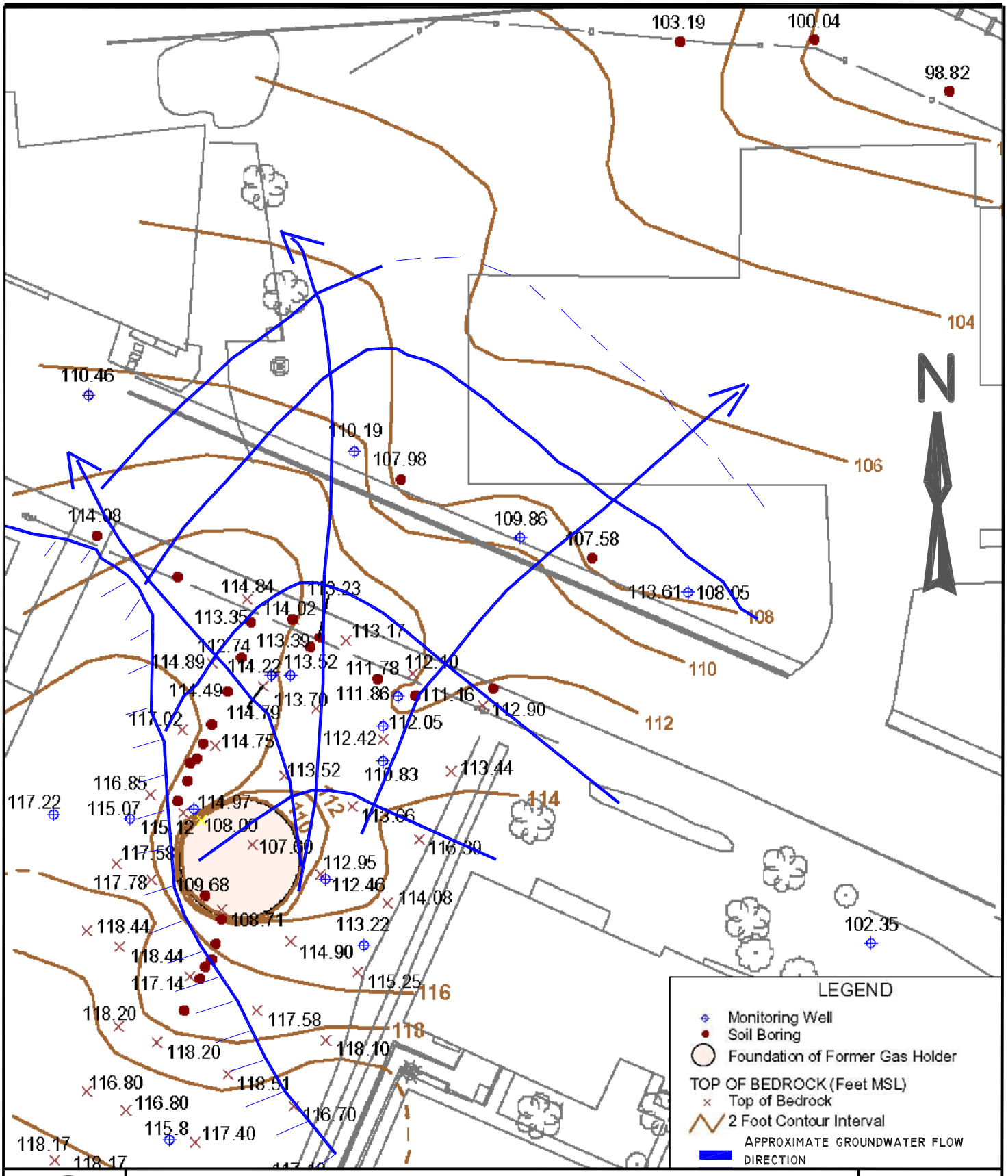
FIGURE 2



NYSEG PLATTSBURGH BRIDGE STREET FORMER MGP SITE
PLATTSBURGH, CLINTON COUNTY, NEW YORK

SAMPLING LOCATION SUMMARY

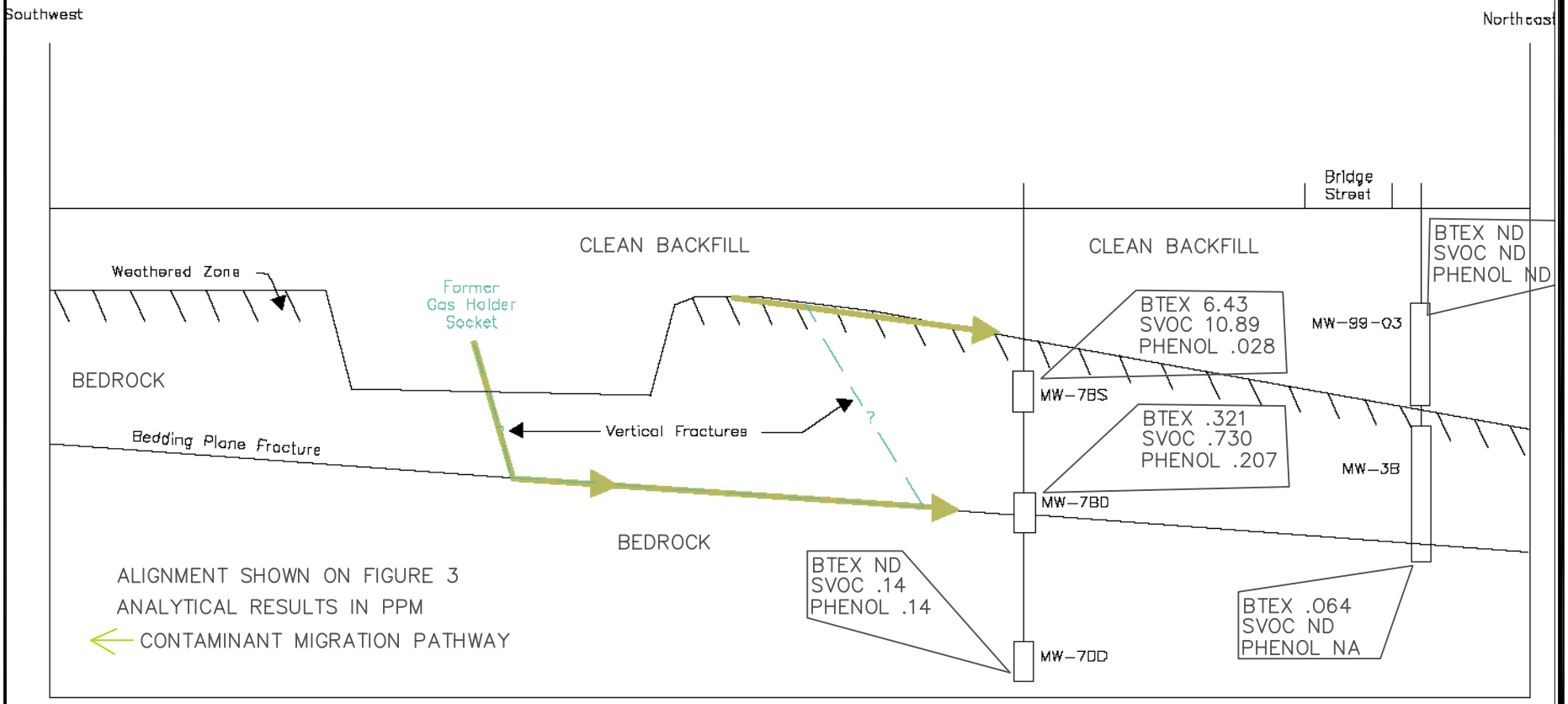
FIGURE 3



NYSEG PLATTSBURGH BRIDGE STREET FORMER MGP SITE
PLATTSBURGH, CLINTON COUNTY, NEW YORK

TOP OF BEDROCK AND SHALLOW GROUNDWATER FLOW DIRECTION

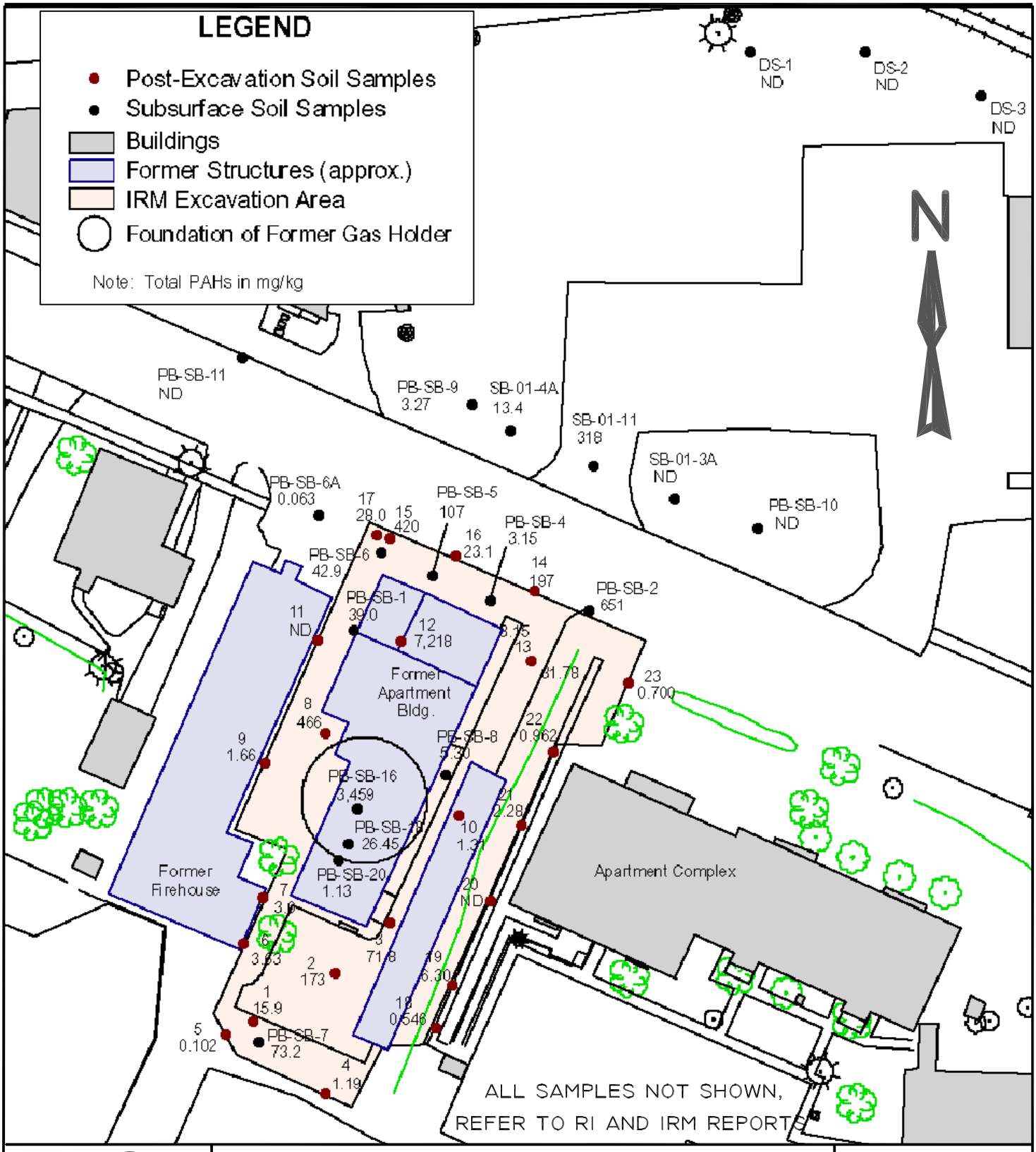
FIGURE 4



NYSEG PLATTSBURGH BRIDGE STREET FORMER MGP SITE
PLATTSBURGH, CLINTON COUNTY, NEW YORK

BEDROCK CROSS SECTION

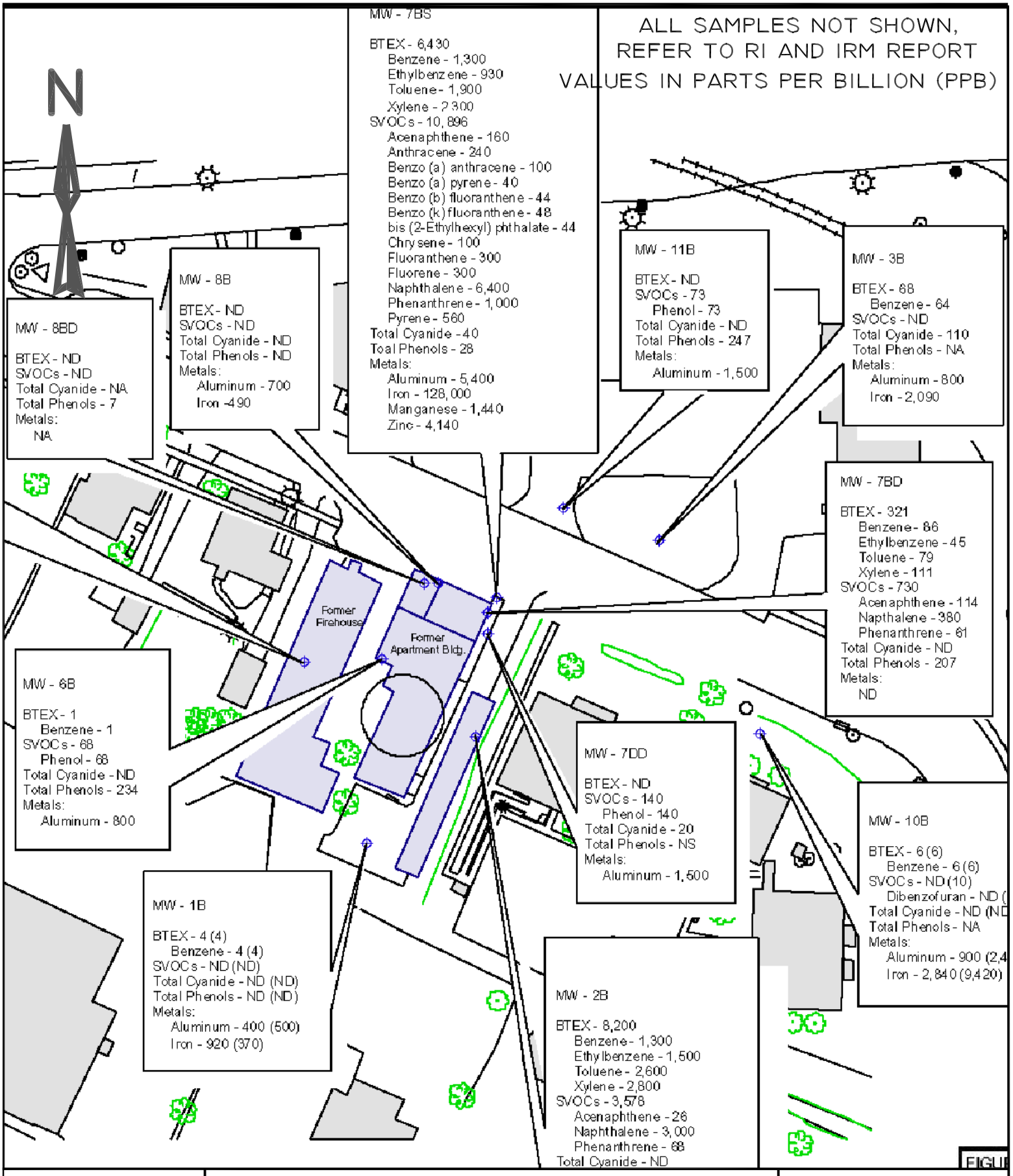
FIGURE 5



NYSEG PLATTSBURGH BRIDGE STREET FORMER MGP SITE
PLATTSBURGH, CLINTON COUNTY, NEW YORK

SUMMATION OF SUBSURFACE TPAH VALUES

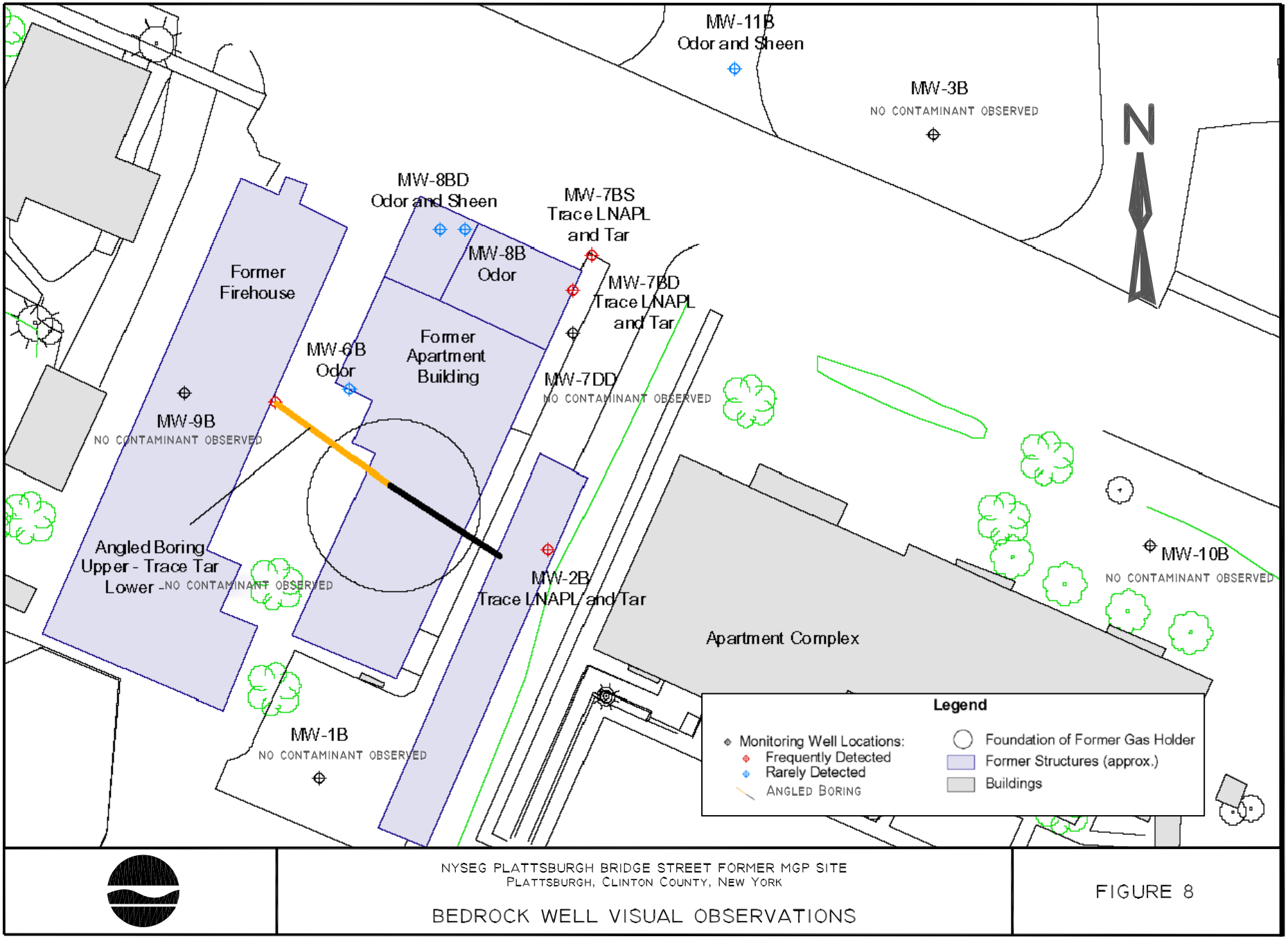
FIGURE 6



NYSEG PLATTSBURGH BRIDGE STREET FORMER MGP SITE
PLATTSBURGH, CLINTON COUNTY, NEW YORK

SUMMATION OF BEDROCK GROUNDWATER

FIGURE 7



NYSEG PLATTSBURGH BRIDGE STREET FORMER MGP SITE
PLATTSBURGH, CLINTON COUNTY, NEW YORK

BEDROCK WELL VISUAL OBSERVATIONS

FIGURE 8

APPENDIX A

Responsiveness Summary

RESPONSIVENESS SUMMARY

NYSEG Bridge Street Former MGP Site
Plattsburgh, Clinton County, New York
Site No. 5-10-016

The Proposed Remedial Action Plan (PRAP) for the NYSEG Bridge Street Former Manufactured Gas Plant (MGP) site, was prepared by the New York State Department of Environmental Conservation (NYSDEC) in consultation with the New York State Department of Health (NYSDOH) and was issued to the document repositories on January 24, 2004. The PRAP outlined the remedial measures proposed for the contaminated overburden soils, groundwater and bedrock at the NYSEG Bridge Street Former MGP site.

The release of the PRAP was announced by sending a notice to the public contact list, informing the public of the opportunity to comment on the proposed remedy.

A public meeting was held on **February 5, 2004**, which included a presentation of the Remedial Investigation (RI), as well as a discussion of the proposed remedy. The meeting provided an opportunity for citizens to discuss their concerns, ask questions and comment on the proposed remedy. These comments have become part of the Administrative Record for this site. The public comment period for the PRAP ended on February 26, 2004.

This responsiveness summary responds to all questions and comments raised during the public comment period. The following are the comments received, with the NYSDEC's responses:

COMMENT 1: Please tell me a little more about the monitoring plan? What part of the process is this plan? Is this plan included in the remedy?

RESPONSE 1: Since the remedy results in a limited amount of Manufactured Gas Plant (MGP) waste remaining in the bedrock at the site, it needs to be monitored appropriately. The long term monitoring plan is the last part of the implementation of the selected remedy, and its objective is to ensure the remedy as constructed is effective and remains effective over the long term. The plan has yet to be developed, however, the fourth bullet in Section 6 of the Record of Decision (ROD), Summary of the Remediation Goals and Selected Remedy, details the conceptual components of this plan. Conceptually, the Operation, Maintenance and Monitoring (OM&M) Plan will include sampling and analysis for BTEX (benzene, toluene, ethylbenzene and xylene), poly aromatic hydrocarbons (PAHs), and cyanide from the bedrock monitoring wells. Additional aspects of the plan are: the bedrock wells will be checked for the accumulation of non aqueous phase liquid (NAPL), and the general site conditions will be inspected.

COMMENT 2: When will the Operations, Maintenance, and Monitoring (OM&M) Plan be developed?

RESPONSE 2: The OM&M Plan will be developed by New York State Electric and Gas (NYSEG) and submitted to the NYSDEC for approval within 90 days of the issuance of the Record of Decision (ROD).

COMMENT 3: Does the New York State Department of Environmental Conservation dictate what the monitoring plan is, or does New York State Electric and Gas (NYSEG) prepare it and submit it for review and approval?

RESPONSE 3: NYSEG will prepare it in accordance with guidance developed by the NYSDEC and then submit it for NYSDEC review and approval .

COMMENT 4: How long will the OM&M continue at this site? Will it be perpetual?

RESPONSE 4: As detailed on page 15 of the Record of Decision (ROD), this plan would be evaluated after three years. This approach is based on the need for evaluating the resulting monitoring data to provide for an informed decision on the appropriate length of the monitoring plan. Due to the nature of non aqueous phase liquid (NAPL) contamination in bedrock, monitoring of the site may be required for a long period of time. The potential for a long monitoring program was considered in the remedial selection process and is directly related to the persistent and difficult nature of this type of contamination.

COMMENT 5: How will it be decided if OM&M will no longer be needed for the site?

RESPONSE 5: As the Interim Remediation Measure (IRM) removed the majority of the contamination at the site, it is expected that the contaminant levels in the underlying bedrock will decline, however, the rate of this decline cannot be predicted with certainty. Therefore, after three years, the continued monitoring and the frequency of this monitoring will be based on the actual monitoring data collected. Some requirements of the plan, such as the environmental easement, are expected to remain in place for the foreseeable future.

COMMENT 6: Will there be a monitoring value that triggers additional site work?

RESPONSE 6: No values will be set that would result in specific actions at the site. Instead, the data will be periodically reviewed for conformance with the expectation that the levels will decline with time. If the remedy fails to perform satisfactorily, the NYSDEC would reevaluate the need for further remedial action at the site.

COMMENT 7: What are the deed restrictions? What are the institutional controls? How will they be applied? Will they actually be attached to the deed?

RESPONSE 7: Institutional controls are measures which will eliminate or control potential exposure to contaminants on the site. The institutional controls for this site are detailed in the ROD and include: compliance with the site management plan, limitations on the use of the property for commercial or industrial use only, restrictions on the use of groundwater as a source of potable or process water, and a requirement for an annual

certification to the NYSDEC. Consistent with the newly passed environmental laws, NYSEG is required by the ROD to place an environmental easement on the parcel to provide these restrictions.

COMMENT 8: How will the deed restrictions/institutional controls be enforced? What enforcement mechanism is available to make sure the long term monitoring and operation plan implementation is acceptable, adequate, and so forth?

RESPONSE 8: NYSEG is the property owner and responsible party for the site. They are under a consent order with the NYSDEC, with various provisions including enforcement, to complete, operate and maintain the remediation of this site. Additionally, the selected remedy requires an annual certification that the site remedy is being properly maintained.

COMMENT 9: What if thirty years from now we are all gone and the property ownership changes hands. Is there any expectation for local enforcement?

RESPONSE 9: Until the restriction is lifted, it is NYSEG's burden to ensure the institutional controls are in force and to annually certify to the state that the site remedy is being properly maintained. Further, through the environmental easement the NYSDEC will have control over the permissible use of the site and anyone who reviews the site deed, such as a purchaser, would be aware of the institutional controls. Additionally, the local municipality can enforce the environmental easement even though the NYSDEC expects to track and enforce these institutional controls.

COMMENT 10: Could NYSEG sell the property? Could that person then develop it?

RESPONSE 10: Yes, NYSEG could sell the property. However, the environmental easement would remain in effect and the new owner(s), or NYSEG, could then develop the site provided the development is consistent with the existing institutional controls. Additionally, the property could be developed with additional remedial work under NYSDEC oversight provided that the final remediation would still be protective of public health and the environment under the intended use.

COMMENT 11: Could the site still be used? Do you know of some similar sites where this has worked?

RESPONSE 11: Yes, one of the primary goals of the remediation was to provide for the future use of the parcel in ways that are consistent with the completed remediation efforts. For example, the site can be used for a variety of commercial and industrial uses which utilize public water. Similarly, the site could be used for a parking lot or park. The NYSDEC has successfully overseen the remediation of sites with similar situations, i.e. Riverlink Park in Amsterdam, and the Gowanus Site in the Bronx.

COMMENT 12: Where does the site groundwater flow? Does the contamination flow above the bedrock or off site?

RESPONSE 12: Site groundwater is found in two units, an overburden groundwater and a bedrock groundwater. The interaction between the two is limited.

The overburden/shallow groundwater was found to flow radially to the north from the site, towards the Saranac River and Cumberland Bay. No site related contaminants were identified in the shallow groundwater.

The bedrock groundwater is restricted in flow, volume, and direction by the limited availability of fractures in the bedrock beneath the site. Those few fractures found underneath the site do not readily transmit water or contaminants. To illustrate, bedrock groundwater flow direction at the site could not be accurately mapped as several of the wells had not fully refilled with groundwater after a year of monitoring. Regionally, the water in the bedrock flows towards Lake Champlain. However, contaminated bedrock groundwater at the site is not anticipated to flow into Lake Champlain as the limited availability of fractures results in little groundwater and contaminant flow from the site. This limited impact is the reason No Further Action is considered appropriate for the minimal bedrock contamination that remains at the site after the completed IRM excavation of overburden soils and contaminated structures.

COMMENT 13: Is the site groundwater a health concern?

RESPONSE 13: As described in the ROD, the area is connected to public water, which is routinely monitored and, if necessary, treated to ensure quality and compliance with New York State Department of Health (NYSDOH) drinking water standards. As such, the site groundwater has not affected the public water supply.

The overburden/shallow groundwater was found to contain no site related contaminants. Therefore, this groundwater does not appear to present any site related health concerns.

The bedrock groundwater did contain levels of site contaminants which exceeded acceptable drinking water values. However, no one would be expected to come into contact and be potentially exposed to these contaminants unless this contaminated water was pumped up from the bedrock. For this reason, the remedy will restrict the use of this groundwater as a source of potable or process water without necessary water quality treatment as determined by the Clinton County Department of Health.

COMMENT 14: What will happen to the contamination in the groundwater? Where will this contamination go?

RESPONSE 14: The contamination should diminish due to: consumption by microorganisms, and dilution. The BTEX compounds are particularly amenable to consumption by microorganisms, called biodegradation. The PAH compounds are more persistant in the environment. However, with the IRM's removal of the source and the majority of the contamination at the site, they are expected to decrease with time.

COMMENT 15: Will this contamination get into Lake Champlain?

RESPONSE 15: Please refer back to RESPONSE 12.

COMMENT 16: What is the danger with the contaminants with respect to health?

RESPONSE 16: In order for a person or wildlife to be exposed to a chemical, a chemical needs to contact and enter the body (i.e., skin absorption, ingestion, and/or inhalation). The residual contamination present at the site is subsurface, below clean backfill material brought to the site during implementation of the IRM. Implementation of a site management plan included in the ROD will ensure that backfill material is maintained and will restrict uncontrolled future excavation to eliminate the potential for direct contact by the public with residual contamination. In addition, institutional controls restricting the future use of groundwater on-site as a source of potable or process water without proper treatment will eliminate the potential for ingestion of contamination associated with groundwater. Instituting a long term monitoring plan, including soil vapor investigation, will ensure that inhalation of volatilized residual contamination will not occur. Currently, there are no known completed exposure pathways related to the site. Without a completed pathway of exposure, a health effect associated with a chemical cannot occur. If land use changes on-site in the future, implementation of the controls described above will protect the public from being exposed to residual contamination.

COMMENT 17: What chemical concerns do the contaminants pose?

RESPONSE 17: Residual contamination including BTEX (benzene, toluene, ethylbenzene, and xylene) compounds and PAHs (polycyclic aromatic hydrocarbons) are present at the site. There are no known completed exposure pathways associated with the site. Without a completed pathway of exposure, no adverse health outcome associated with on-site contamination can result (see RESPONSE 16).

Removal efforts were made to reduce BTEX (benzene, toluene, ethylbenzene and xylene) and PAH (polycyclic aromatic hydrocarbon) contamination present at the site, to protect the environment and public health. The Department of Health and Human Services (DHHS) classifies benzene as a known human carcinogen. Six of the PAHs are considered probably human carcinogens. Health effects associated with exposure to a chemical depend on the dose, duration of the contact, how one is exposed, personal traits and habits, and other factors. For more information regarding the toxicity of site-related chemicals you may contact the NYSDOH or visit the following website: http://www.atsdr.cdc.gov/tfacts85.html

COMMENT 18: These contaminants must be pretty dangerous to go through all this trouble to take care of them. Are they dangerous carcinogens?

RESPONSE 18: The Department of Health and Human Services (DHHS) classifies benzene as a known human carcinogen. In addition, six of the PAH compounds are considered probably human carcinogens (refer to Response 17). Prior to implementation of the

IRM, the NYSDEC determined that on-site contamination, in concert with other site features, posed a significant threat to human health and the environment. The IRM removed the majority of contamination at the site and reduced the potential for exposure to the public and the environment. In addition, implementation of the controls described in the ROD will protect the public from being exposed to residual contamination in the future.

Please also see RESPONSE 16.

COMMENT 19: What is the difference between these concerns and those presented by driveway sealer?

RESPONSE 19: There are many materials that we use that can pose a variety of health and environmental concerns if not handled carefully and used properly. Driveway sealer may contain many of the same chemicals as coal tar, although it does have some different chemical properties. The NYSDEC recommends that anyone using any chemical compound follow the instructions or health warning information provided by the manufacturer. The NYSDEC also recommends reviewing the Material Safety and Data Sheets (MSDS) for any materials of potential concern.

COMMENT 20: I do not mean to make light of the problem that your attempting to remediate, but obviously there are similarities between driveway sealer and coal tar. Driveway sealer hardens when the volatiles in it dissipate. The plant here closed in 1897, hasn't the tar here solidified?

RESPONSE 20: When the site was closed, it was capped with soil. This cap limits the waste's exposure to air, and prevents the dissipation of the volatiles into the air. Additionally, coal tar is not exactly the same as driveway sealer. Coal tar was actually tried for road paving operations in the late 1800s with little success as it did not solidify very well, presumably due to the volatile content.

APPENDIX B

Administrative Record

Administrative Record

NYSEG Bridge Street Former MGP Site
Site No. 5-10-016

1. Order on Consent, Index No. D0-0002-9309, between NYSDEC and New York State Electric and Gas Corporation (NYSEG), executed on March 30, 1994.

2. "Interim Remedial Measures Final Engineering Report for Activities at Plattsburgh Bridge Street Former Manufactured Gas Plant Site", March 2002, NYSEG Licensing and Environmental Operations Department.

3. "Remedial Investigation Report, Bridge Street Former Manufactured Gas Plant Site", January 2004, URS Corporation.

4. Letter dated January 20, 2004 from J. Helmeset of the NYSDEC to T. Blazicek of NYSEG.

5. Proposed Remedial Action Plan for the NYSEG Bridge Street Former Manufactured Gas Plant (MGP) site, dated January, 2004, prepared by the New York State Department of Environmental Conservation (NYSDEC).