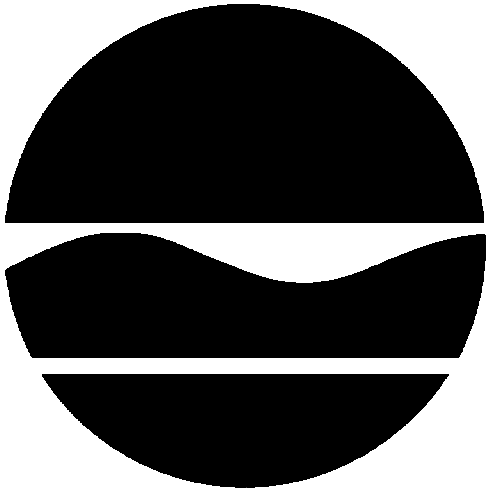
PROPOSED REMEDIAL ACTION PLAN
Fort Plain Former MGP Site
Operable Unit No. 1
Canajoharie (T), Montgomery County, New York
Site No. 4-29-007

February 2008



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 Fort Plain Former Manufactured Gas Plant (MGP) Site, Operable Unit No. 1. 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, production of manufactured gas and the generation of related by products have resulted in the disposal of hazardous wastes, including coal gas tars containing benzene, toluene, ethylbenzene and xylene, as well as a number of polycyclic aromatic hydrocarbons. These wastes have contaminated the soil and groundwater at the site, and have resulted in:

- a significant threat to human health associated with exposure to hazardous wastes, contaminated site soils and contaminated groundwater.

- a significant environmental threat associated with the impacts of contaminants to the groundwater.

To eliminate or mitigate these threats, the Department proposes excavation of MGP source material from the former northern gas holder and surrounding impacted soils to the silt confining layer, removal of accumulated water from within the former southern gas holder, enhanced natural attenuation of contaminated groundwater, site management, and an environmental easement with periodic certification.

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 May 2004 "Remedial Investigation (RI) Report", the September 2007 "Feasibility Study" (FS), and other relevant documents. The public is encouraged to review the project documents, which are available at the following repositories:

Fort Plain Free Library
19 Willett Street
Fort Plain, NY 13339
(518) 993-4646

NYSDEC- Division of Environmental Remediation
625 Broadway, 11th Floor
Albany, NY 12233-7014
(518) 402-9662
Attn: Bernard Franklin

The Department seeks input from the community on all PRAPs. A public comment period has been set from February 25, 2008 to March 26, 2008 to provide an opportunity for public participation in the remedy selection process. A public meeting is scheduled for March 12, 2008 at the Fort Plain Fireman's Home 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. Franklin at the above address through March 26, 2008.

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 Fort Plain MGP site is located at 14 Hancock Street in the Village of Fort Plain, Montgomery County, New York (Figure 1). The site is a rectangle of less than one-half acre, and is bordered on the northeast by Hancock Street (State Route 5S), on the southeast by a residence, on the southwest by a steep wooded bank leading up to Clinton Avenue, and on the northwest by a parking lot. The site is owned by National Grid, which currently maintains two transformer banks on the premises. A 6-foot high chain link fence, with a locked access gate and "No Trespassing" signs secure the site perimeter. The site topography is generally flat, with a slight slope toward Hancock Street. Otsquago Creek is located approximately 300 feet north of the site, and flows to the northeast, eventually reaching the Mohawk River approximately 1200 feet northeast of the site (Figure 2). Formerly, the Erie Canal is believed to have been situated along Hancock Street (Route 5S), to the east/northeast of the site. It is believed that the former west bank of the canal ran parallel with the east side of Hancock Street, and was located approximately ten to twenty feet east of Hancock Street.

Site geology consists of fill materials from the ground surface to depths ranging from 6 to 18 feet. A layer of native silt and clay was encountered below the fill layer. Groundwater beneath the site flows to the northeast, across Hancock Street and towards a neighboring commercial property that is currently occupied by a small restaurant/diner and the adjoining parking lot. The depth to groundwater is approximately 7 to 10 feet.

SECTION 3: SITE HISTORY

3.1: Operational/Disposal History

Gas production from both coal and oil was conducted at the site from 1868 to 1920. A "gasometer", a large gas holding tank associated with manufactured gas was present at the southern end of the property in 1891, along with a single building that housed a coal shed, generators, and dynamo room. By 1901, in addition to the gasometer, a gas holder was present at the north end of the property, along with a coal storage shed, generators, electrical transformers, and repair shop. By 1919 the adjacent Erie Canal had been filled in. By 1926 most of the above grade gas plant facilities had been removed. In 1996, the transformer building, the last structure, was removed from the site.

3.2: Remedial History

In December 1992 Niagara Mohawk entered into an Order on Consent with the Department, requiring an environmental investigation and, where necessary, remediation of 21 Former MGP sites owned or operated by Niagara Mohawk and its predecessor companies. Included among the 21 sites is the Fort Plain Site. A chronology of the remedial history is as follows:

Preliminary Site Assessment, Phase I	July 1997 - December 1997
Preliminary Site Assessment, Phase II	May 1999 - March 2000
Preliminary Site Assessment, Phase III	May 2000 - February 2002
Remedial Investigation	June 2003 - December 2006
Feasibility Study	March 2007 - January 2008

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.

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The Department and the Niagara Mohawk Power Corporation (National Grid) entered into a Consent Order D0-0001-9210 on December 7, 1992 and subsequent Consent Order A4-0473-0000 on November 07, 2003. The Orders obligate the responsible party to implement a full remedial program.

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 June 2003 and December 2006. The field activities and findings of the investigation are described in the RI report. The objective was to fully delineate the extent of MGP-related impact in soils, groundwater and soil vapor on-site and off-site through soil borings, test pits, groundwater monitoring wells and soil vapor samples.

5.1.1: Standards, Criteria, and Guidance (SCGs)

To determine whether the soil, groundwater, and soil vapor contain 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 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"; and 6 NYCRR Subpart 375-6 Remedial Program Soil Cleanup Objectives.

- 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 November 2006. 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 and soil vapor samples were collected to characterize the nature and extent of contamination. As seen in Figures 3,4,5, and 6, the main categories of contaminants that exceed their SCGs are volatile organic compounds (VOCs), particularly benzene, toluene, ethyl benzene and xylene (BTEX), and semivolatile organic compounds (SVOCs), particularly polycyclic aromatic hydrocarbons (PAHs). 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. Air samples are reported in micrograms per cubic meter ($\mu g/m^3$).

Coal tar is a reddish brown oily liquid by-product which formed as a condensate as the gas cooled and which does not readily dissolve in water. Materials such as coal tar are commonly referred to as non-aqueous phase liquids, or NAPLs. The terms NAPL and coal tar are used interchangeably in this document. Although most coal tars are slightly more dense than water, the difference in density is slight. Consequently, this tar can either float or sink when in contact with water. Coal tar was found during the on-site remedial investigations.

Specific volatile organic compounds (VOCs) of concern are benzene, toluene, ethylbenzene, and xylenes. These are referred to collectively as BTEX in this document. Semivolatile organic compounds of concern are the polycyclic aromatic hydrocarbons (PAHs). The specific PAH compounds of concern at this site, which are typically found at MGP sites, are:

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

benzo(g,h,i)perylene 2-methylnaphthalene

Total PAH (TPAHs) concentrations referred to in this document are the summation of the individual PAH concentrations listed above. The italicized PAHs are probable human carcinogens. The summation of the italicized PAHs is referred to in this document as carcinogenic polycyclic aromatic hydrocarbons (cPAHs).

Tars contain high levels of PAH compounds, often approaching percent levels. Tars also exceed SCGs for BTEX by several orders of magnitude. In certain tar samples, enough benzene may be present to require that the material be managed as a hazardous waste.

Figures 3, 4, 5 and 6 summarize the degree of contamination for the contaminants of concern in soils and groundwater and compare 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.

Waste Materials

The RI data indicate that coal tar is the major type of waste present at the site. Tars generated at the MGP were disposed, spilled or leaked from one or more gas holders, and possibly other structures that no longer exist, at various locations throughout the site. Tar is visible as sheen on a water surface or as a NAPL in soil or water.

Visual observations of sheens or NAPL in the subsurface were generally limited to the locations of former MGP structures, locations downgradient of the structures, and the gravel and sand water-bearing interval located immediately above the silt confining layer. Generally the NAPL was observed at depths ranging from six to 16 feet below the ground surface onsite, and 18 to 25 feet below ground offsite. Figure 7 depicts the locations where NAPL was observed in the subsurface. The greatest NAPL impacts were encountered near the northern gas holder. Lesser impacts were observed at the site within the saturated portion of the sandy gravel layer. Observations of NAPL were generally consistent with the northeasterly flow of groundwater from the former MGP structures and the contour of the silt confining layer. Evidence of NAPL was found in the former southern gas holder, however it was not as extensive as in the northern holder, and total PAH concentrations were less than 500 ppm. Soil samples collected adjacent to the southern holder did not contain evidence of NAPL.

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

Surface Soil (0-2 inches)

Surface soil samples were collected from four on-site and two background locations. Six of seventeen PAHs exceeded Part 375-6.8(a) soil cleanup objectives for unrestricted use, and four of these exceeded soil cleanup objectives for commercial use. None of the surface soil samples exceeded soil cleanup objectives for BTEX.

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

Subsurface Soil

Approximately 46 subsurface soil borings and 4 test pits were used to determine the location of MGP structures and MGP impacts. Soil boring SB-2, located in the northern holder, contained the highest concentrations of total BTEX at138 ppm at a depth of five to six feet. Soil boring SB-4, located just outside

the northern holder, contained the highest concentrations of total PAHs at 877ppm. Offsite soil boring SB-10A, located in the restaurant parking lot, had the highest concentrations of both total BTEX at 139 ppm and total PAH at 1383 ppm at a depth of 24-25 feet. All of these detections were from samples collected in areas containing NAPL.

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

Groundwater

Groundwater in contact with MGP source material is contaminated with MGP-related BTEX and PAH contaminants, both on-site and off-site. The on-site well showing contamination, (MW-4) is located immediately downgradient of the former northern gas holder, and is screened to collect groundwater in the fill, from 7 to 17 feet below ground surface (bgs). The two offsite wells showing contamination (MW-7 and MW-10) are screened from 15 to 25 feet bgs. The locations of these wells are shown on Figures 5 and 6. The most recent (July 2007) sampling results identified the following levels in these wells:

Contaminant	Standard (ppb)	MW-4	MW-7	MW-10
Benzene	1	1900	110	61
Ethyl benzene	5	920	5	72
Toluene	5	1900	0.6	5
Xylenes	5	760	5	26
Acenapthene	20	5	46	40
Benzo(a)anthracene	0.002	Not Detected	Not Detected	0.2
Naphthalene	10	540	1	65

Groundwater sampling conducted between 2003 and 2007 suggests that the extent of the groundwater plume has not increased over time. Geochemical data collected in July 2007 indicated that conditions favoring aerobic degradation are present at the perimeter of the plume, where contaminant concentrations are low. Together, these observations suggest that aerobic degradation processes are limiting the extent of the groundwater plume. However, where contaminant concentrations are high, aerobic conditions are not present, and contaminant concentrations in the center of the plume have increased slightly in recent years.

Groundwater samples collected immediately downgradient of the former southern gas holder did not exceed ambient quality standards.

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

Surface Water

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

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

Soil Vapor/Sub-Slab Vapor/Air

To evaluate the potential for exposure from soil vapor intrusion, soil vapor samples were taken and analyzed for VOCs. Seven samples were taken from the MGP site property, three samples were taken from the parking lot of the restaurant, and two ambient air samples were taken for comparison.

The pattern of vapor-phase contaminants beneath the restaurant parking lot indicates that attenuation of MGP-related contamination is occurring between the deep and shallow horizons. In samples taken from 3' and 9' feet below grade, levels of MGP-related contaminants are equivalent to site background levels. Only at the 14' horizon, just above the water table, do levels of benzene and toluene significantly exceed background. However, levels of n-alkanes and chlorinated hydrocarbons, which are not associated with MGP operations at the site, exceed background levels in the shallow horizon beneath the restaurant. These compounds were found at much lower levels beneath the MGP site, and are attributed to the former automotive repair shop that occupied the property prior to the restaurant. Therefore, soil vapor intrusion from MGP contamination was considered to be unlikely.

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.

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

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.

The site is enclosed with a chain link fence along the perimeter, however, direct exposure to contaminants could occur to those who would trespass. Under current use and daily operations, there are no existing exposure routes, on or off-site, to subsurface soil. Construction or maintenance workers performing invasive activities face possible exposure by ingestion, direct contact, or inhalation. Human exposure to contaminated groundwater is not likely since the area is supplied with public water. A soil vapor investigation concluded that exposures due to soil vapor intrusion from MGP contaminants are unlikely.

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.

Subsurface soil contamination at the site has negatively impacted the groundwater resource in the unconsolidated geologic units in the vicinity of the norther holder, and beneath the adjacent off-site parking lot. The impacted soil has been an ongoing leaching source of contamination, resulting in the migration of both dissolved phase and NAPL contamination into the groundwater.

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

- Site contamination has adversely impacted the groundwater resource above the confining silt layer so as to render the upper aquifer unusable without treatment.

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:

- ingestion of groundwater with contaminant levels exceeding drinking water standards.
- contact with, or inhalation of volatiles, from contaminated groundwater.
- ingestion/direct contact with contaminated soil.
- inhalation of or exposure from contaminants volatilizing from contaminants in soil.
- migration of contaminants that would result in groundwater contamination.
- the release of contaminants from soil into groundwater that may create exceedances of groundwater quality standards .

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

- ambient groundwater quality standards.
- soil cleanup objectives.

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 Fort Plain

Former MGP Site 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 NAPL, contaminated soils and groundwater at the site.

SOIL REMEDIATION ALTERNATIVES

Alternative SM1: No Action

The No Action Alternative is evaluated as a procedural requirement and as a basis for comparison. It requires continued monitoring only, allowing the site to remain in an unremediated state. This alternative would leave the site in its present condition and would not provide any additional protection to human health or the environment.

Alternative SM1 serves as the baseline for comparison of the overall effectiveness of the other remedial alternatives. The No Action alternative would not involve the implementation of active remedial measures to remove, treat, or contain MGP source subsurface soil at the site. The site would be allowed to remain in its current condition. The existing cover material (i.e., gravel) and fencing on the former MGP property would be maintained. Institutional controls would be implemented to limit disturbance of the ground cover materials, place health and safety requirements on subsurface activities, and restrict groundwater use and/or groundwater extraction at the site.

There is no time period involved in remedial design and implementation. The remedial goals for the site would not be met.

Present Worth: $190,000
Capital Cost: $70,000
Annual Costs:: $10,000

Alternative SM2 - Excavation of Source Material Above the Water Table

Alternative SM2 would involve the removal of the northern gas holder and the excavation and off-site disposal of MGP source material located above the groundwater table on the former MGP property. It is anticipated that installation of temporary sheet pile walls, or other structural support, would be required prior to excavation to stabilize the steep hillside.

The depth to the water table on the former MGP property is approximately 8 feet below grade in the area of the former northern gas holder. The approximate extent of MGP source material located above the groundwater is shown on Figure 8. Under this alternative, approximately 600 in-place cubic yards (cy) of soil would be excavated to access and remove approximately 450 cy of MGP source material, which

represents approximately 60% of the source material present on the property. MGP source material is defined as soil that contains any of the following: 1) Visible tar or oil; 2) a total BTEX concentration over 10 ppm; or 3) a total PAH concentration of 500 ppm with the presence of sheens or odors.

Excavation would be performed using conventional construction equipment, such as backhoes, front-end loaders, dump trucks, etc. Due to the small size of the former MGP site, constraints with on-site equipment maneuverability, and overhead utilities, vehicle and pedestrian traffic along Hancock Street would be diverted during implementation of SM2. A section of Hancock Street would be used as a work area and equipment staging area, as shown on Figure 8.

The existing concrete slab located to the north of the gas holder would be demolished, as required, to access MGP source material in that area. The excavated MGP source material and debris would be segregated and loaded directly into trucks for transportation/disposal.

Excavated MGP source material would be transported for off-site treatment by low temperature thermal desorption (LTTD) and disposal. Demolition debris, such as concrete slabs, would be transported off-site for disposal at a permitted landfill. Any separate phase NAPL that is encountered during excavation activities would be segregated, placed in containers and disposed off-site.

To address the reported presence of contamination in the former southern gas holder, this alternative would include the installation of a monitoring/extraction well in the holder. The well would be gauged for NAPL and sampled, and any NAPL or groundwater that exceeds ambient water quality standards that may have accumulated within the holder would be pumped out and disposed off-site.

A soil cover would be constructed over the site to prevent exposure to remaining contaminated soils. This cover would consist of a minimum of 12 inches of clean soil underlain by an indicator such as orange plastic snow fence to demarcate the cover soil from the subsurface soil. The top six inches of the soil cover would consist of either: crushed stone (the existing cover), topsoil, concrete, or asphalt. Site restoration would include the installation of fencing to prevent unauthorized access.

An environmental easement would be placed on the property, and a site management plan would be developed to control future land use, excavations and groundwater use. The easement and site management plan would restrict the property to commercial use, and would require the property owner to periodically certify that the institutional and engineering controls (IC/ECs) necessary to protect public health and the environment are still in place and are effective. The certification would be prepared and submitted by a professional engineer or other environmental professional acceptable to the Department.

Alternative SM2 would require 6 months to design and 2 months to implement.

Present Worth: . . . . . $ 1,410,000
Capital Cost: . . . . . $ 1,290,000
Annual Costs: $10,000

Alternative SM3 - Full Excavation of Northern Holder and MGP Source Material

Alternative SM3 would involve the removal of the northern gas holder structure and its contents, and excavation of MGP source material at the site to the depth of the silt and clay confining layer (approximately 13 to 15 feet below grade). This alternative would include similar construction components as Alternative SM2, except that excavation below the water table would require a more extensive containment structure, and a de-watering system to remove and treat groundwater during excavation. A

temporary sheet pile wall or other containment structure would be required for both excavation sidewall stability and de-watering purposes. Water generated during de-watering activities would be pre-treated on-site and disposed into the sanitary sewer, or transported directly off-site for disposal. Under this alternative, approximately 1,000 in-place cy of soil would require excavation to access and remove approximately 720 cy of MGP source material, which represents nearly all of the source material present on the property.

This excavation would include the former MGP subsurface structures and adjoining areas that contain MGP source material, as defined in Alternative SM2. The existing concrete slab located to the north of the gas holder would be demolished, as required, to access MGP source material in that area. Excavation would be conducted as described in Alternative SM2, including diversion of vehicle and pedestrian traffic along a section of Hancock Street, as shown on Figure 9.

Excavated MGP source material would be transported for off-site treatment by low temperature thermal desorption (LTTD) and disposal. Demolition debris, such as concrete slabs, would be transported off-site for disposal at a permitted landfill. Any separate phase NAPL that is encountered during excavation activities would be segregated, placed in containers and disposed off-site. Soil excavated from below the groundwater table would be staged in a temporary staging area to allow the soil to de-water prior to transportation from the site. Water generated during de-watering activities would be collected and transferred to an on-site storage tank prior to direct off-site disposal or on-site treatment and discharge to either the sanitary sewer or surface water.

To address the reported presence of contamination in the former southern gas holder, this alternative would include the installation of a monitoring/extraction well in the holder. After the well is gauged for NAPL and sampled, any NAPL and groundwater that exceeds ambient standards that may have accumulated within the holder would be pumped out and disposed off-site.

A soil cover would be constructed over the site to prevent exposure to remaining contaminated soils. This cover would consist of a minimum of 12 inches of clean soil underlain by an indicator such as orange plastic snow fence to demarcate the cover soil from the subsurface soil. The top six inches of the soil cover would consist of either: crushed stone (the existing cover), topsoil, concrete, or asphalt.

An environmental easement would be placed on the property, and a site management plan would be developed to control future land use, excavations and groundwater use. The easement and site management plan would restrict the property to commercial use, and would require the property owner to periodically certify that the institutional and engineering controls (IC/ECs) necessary to protect public health and the environment are still in place and are effective. Land use would be restricted to commercial use. The certification would be prepared and submitted by a professional engineer or other environmental professional acceptable to the Department.

Alternative SM3 would require 12 months to design and 4 months to implement. The remedial action objectives for on-site soils would be met when remedial construction is completed. For on-site groundwater, RAOs are expected to be achieved within 5 years.

Present Worth: . . . . . $ 2,520,000
Capital Cost: . . . . . $ 2,390,000
Annual Costs $10,000

Alternative SM4 – Excavate All MGP-Contaminated Soil Where Feasible

This alternative would include the removal of the northern gas holder and its contents, along with the excavation of all soil both on-site and off-site that contains any visual evidence of MGP contamination, where such excavation is feasible. This excavation would occur down to the silt and clay confining layer, and would include both the former MGP property and the commercial properties located east of Hancock Street.

Demolition of Hancock Street, temporary relocation of utilities that exist beneath Hancock Street (including a sewer line, storm sewer, water supply line, and gas line), and relocation of the overhead electrical lines that exist along the east side of Hancock Street is not feasible. In addition, excavation of soil from beneath State Street, or beneath the electrical lines at the southern end of the restaurant parking area is also not feasible and is not included in this alternative. As a result, excavation under this alternative would be limited to the approximate areas shown on Figure 10.

Under this alternative, approximately 4,600 cy of soil and debris would be excavated to access and remove approximately 1,500 cy of soil and debris for off-site for disposal. The depth of excavation would range from approximately eight to 16 feet bgs on the former MGP property, and from approximately 19 to 24 feet bgs in the properties located east of Hancock Street. Excavation conducted on the properties located east of Hancock Street would also involve the excavation and removal of the former Erie Canal structure and fill material.

Installation of temporary sheet pile walls would be required for excavation sidewall stability and for de-watering purposes. Excavated MGP source material would be transported for off-site treatment by low temperature thermal desorption (LTTD) and disposal. Demolition debris, such as concrete slabs, would be transported off-site for disposal at a permitted landfill. Any separate phase NAPL that is encountered during excavation activities would be segregated, placed in containers and disposed off-site. Soil excavated from below the groundwater table would be staged in a temporary staging area to allow the soil to de-water prior to transportation from the site. Water generated during de-watering activities would be treated on-site and either disposed in the sanitary sewer or transported off site for disposal. Excavated areas would be backfilled with clean backfill. Due to space limitations at the site and the presence of overhead obstructions, it may be necessary to stage and load trucks in Hancock Street. It is anticipated that for logistical, health, and safety reasons, during construction activities in the restaurant parking area, operation of the restaurant would be temporarily suspended.

To address the reported presence of light non-aqueous phase liquid (LNAPL) in the former southern gas holder, this alternative would include the installation of a monitoring/extraction well in the holder. After the well is gauged for NAPL and sampled, any NAPL and groundwater that exceeds ambient standards that may have accumulated within the holder would be pumped out and disposed off-site.

A soil cover would be constructed over the site to prevent exposure to remaining contaminated soils. This cover would consist of a minimum of 12 inches of clean soil underlain by an indicator such as orange plastic snow fence to demarcate the cover soil from the subsurface soil. The top six inches of the soil cover would consist of either: crushed stone (the existing on-site cover), topsoil, concrete, or asphalt.

MGP source material and soil containing contaminants above the soil cleanup objectives for commercial use would remain at locations that could not be feasibly accessed (e.g., beneath Hancock Street, beneath underground utilities adjacent to Hancock Street and State Street, beneath/adjacent to the electrical substation, and beneath overhead electric distribution lines. Therefore an environmental easement and site management plan would also be required for this alternative. In addition to the elements described in

Alternatives SM2 and SM3 the easement developed under this alternative would contain a provision that if these critical utilities were relocated or replaced, the MGP source material beneath them would be excavated.

This alternative would require one year to design and 7 months to implement . The RAOs for soils would be met at the end of the implementation of the remedy and for onsite groundwater within 5 years, a reasonable time frame.

Present Worth: . . . . . $ 7,710,000
Capital Cost: . . . . . $ 7,590,000
Annual Costs: $10,000

GROUNDWATER REMEDIATION ALTERNATIVES

Alternative GW1: No Action

Alternative GW1 would not involve any remedial measures to remove, treat, or contain MGP-impacted groundwater. However, this alternative would include the implementation of an environmental easement to limit the use of groundwater at the site that contains MGP-related constituents above NYSDEC ambient water quality standards and guidance values. The No Action alternative serves as the baseline for comparison of the overall effectiveness of the other remedial alternatives. The site groundwater would be allowed to remain in its current condition.

This alternative would require 3 months to implement the environmental easement. The RAOs for the site would not be met in a reasonable time frame.

Present Worth: $0
Capital Cost: $0
Annual Costs: $0

Alternative GW2 – Monitored Natural Attenuation

Under Alternative GW2, groundwater monitoring would be conducted to document naturally occurring chemical, biological and/or physical processes that effect concentration of MGP contaminants dissolved in groundwater in response to any source removal actions. In addition, this alternative would include implementation of an environmental easement to limit the use of groundwater at the site that contains MGP-related constituents above NYSDEC ambient water quality standards and guidance values. Under Alternative GW2, a groundwater monitoring program would be conducted to monitor natural degradation of dissolved MGP-related contaminants at the site. This monitoring program would be a component of the site management plan that would be developed for the site.

The groundwater monitoring program would be conducted to monitor dissolved BTEX and PAHs in groundwater. Conceptually, groundwater sampling of eight existing monitoring wells would be conducted semi-annually for a five year period to document natural attenuation. Monitoring wells previously lost or abandoned during excavation activities would be replaced as necessary to monitor the plume. After a five year monitoring period following the completion of source control measures, an evaluation of the remedy effectiveness would be made. Based on the analytical results and trends in groundwater contaminant concentrations, modifications to the monitoring program may be made at that time.

This alternative would require an estimated six months to develop a site management plan that includes a monitored natural attenuation work plan. The RAOs would not be met in a reasonable time frame.

Present Worth: $620,000
Capital Cost: $75,000
Annual Costs: (years 1-5) $66,000
Annual Costs: (years 6-30) $33,000

Alternative GW3 – Enhanced Natural Attenuation

Alternative GW3 would include the application of an oxygen-releasing compound and possibly other amendments, such as nutrients, to the groundwater to stimulate the bacterial degradation of MGP contaminants that are dissolved in groundwater. These amendments may be introduced through application wells installed in the affected area and/or by blending them into the backfill of an on-site excavation below the water table. Application wells, if needed, would be installed on both the former MGP property and off-site properties east of Hancock Street, as shown on Figure 11.

Similar to Alternative GW2, concentrations of dissolved MGP-related COCs in groundwater would be monitored to document natural attenuation and decreasing trends in concentrations. However, under Alternative GW3, natural degradation would be enhanced by stimulating the indigenous bacteria using an oxygen delivery system. Under most conditions, natural aerobic biodegradation of BTEX and some PAHs should occur. By adding oxygen and/or other amendments (i.e., nutrients) to the groundwater via direct blending into clean fill and/or vertical application wells, the degradation of these hydrocarbons may be enhanced. An oxygen-releasing compound would be utilized to deliver oxygen to the groundwater through the use of application wells and/or as blended into clean backfill to start the enhanced bioremediation. The remedial design would determine the total of number of application wells that would be needed on the former MGP property, and/or east of Hancock Street.

A groundwater monitoring program would be conducted to monitor dissolved BTEX and PAHs in groundwater, along with certain geochemical parameters. Groundwater sampling would be conducted as necessary to document natural attenuation and geochemical conditions, and would be conducted using approximately eight monitoring wells. Also, sufficient NAPL recovery wells would be installed where they would be capable of collecting mobile NAPL from the top of the confining silt layer.

The results of the groundwater monitoring would be summarized annually for the first five years. After a five year period, an evaluation of the long-term monitoring and need for additional oxygen enhancement would be conducted. Based on the analytical results and trends in groundwater concentrations, modifications could be made to the monitoring program. It is assumed that annual sampling to document MNA and enhanced oxygenation would be conducted for an additional 25 years, for a total of 30 years.

The time frame to design the remedy is one year and to implement the remedy is 3 months. The RAOs for onsite groundwater should be achieved within 3 years, and offsite groundwater in approximately 30 years.

Present Worth: $1,420,000
Capital Cost: $550,000
Annual Costs: (years 1-5) $70,000
Annual Costs: (years 6-30) $70,000

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 #1.

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 Alternatives SM3 and GW3 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.

Alternatives SM3 (excavation to the confining silt layer) and GW3 (enhanced monitored natural attenuation) are being proposed because, as described below, they satisfy the threshold criteria and provide the best balance of the primary balancing criteria described in Section 7.2. This remedy would achieve the remediation goals for the site by removing the soils that create the most significant threat to public health and the environment, greatly reducing the source of contamination to groundwater, and creating the conditions needed to restore groundwater quality to the extent practicable. As discussed in detail below, this remedy would provide the best balance of long-term effectiveness, short-term impacts, and cost-effectiveness.

Achieving long-term effectiveness would best be accomplished by excavation and removal of the contaminated overburden soils, both above and below the water table (Alternatives SM3 and SM4). Alternative SM3 is preferred because it would remove nearly of all of the MGP source material from on-site, and almost all contaminated soil above the water table. Although Alternative SM4 would also remove more MGP contamination from beneath the off-site restaurant parking lot area, and would provide the highest long term effectiveness, contamination in this area is considerably deeper, and the short term impacts associated with this removal would be severe. Because it would not be feasible to remove MGP contamination from beneath Hancock Street, the benefit of removing the remaining off-site contamination is diminished. This off-site contamination would require long term management, and the impacts to groundwater would be mitigated by the groundwater remedy component GW3. Although the natural attenuation processes included in Alternative GW2 have limited the overall extent of the groundwater plume, these processes have not reduced contaminant levels in the areas of higher contaminant concentrations. These areas occur on an off-site property and under Hancock Street, where the reliability of institutional controls would be less certain than for the on-site property. As a result, the Department prefers Alternative GW3 because it would provide better long term effectiveness, and better environmental protection, by increasing the rate and degree of natural attenuation of the groundwater plume.

Alternatives SM2 (excavation above the water table), and GW2 (monitored natural attenuation), both have short-term impacts which can easily be controlled. However, because SM2 would leave source material in place below the water table, it is unlikely that the remedial goals for groundwater would be achieved in a reasonable time frame compared to the proposed remedy.

The no action alternatives (SM1 and GW1) would be the easiest alternatives to implement because they would only require development of an environmental easement for the site. Of the alternatives that involve construction, Alternative SM2 would be the most readily implementable because it would require a simpler excavation support structure, and would not require extensive de-watering. Alternative SM3 would be somewhat more difficult to implement due to the need for stronger excavation support and a de-watering treatment system. However these components can be implemented using available construction techniques. Alternative SM4 would be the most difficult to implement because it would require the deepest excavation over a large area on the off-site property, and would involve excavating large volumes of clean soil to access

MGP source material at depth. All of the excavation alternatives would be somewhat difficult to implement due to the limited space available on the site, and the projected need to close a portion of Hancock Street and divert traffic. Groundwater Alternatives GW2 and GW3 would both be readily implementable, although Alternative GW3 would require additional design and construction activities.

Reduction in contaminant volume would be achieved by excavation and off-site treatment for each of the soil remediation alternatives. Under Alternative SM2, a total of approximately 600 in-place cubic yards (cy) of soil would be excavated to access and remove approximately 450 cy of MGP source material, which is the lowest volume of the three excavation alternatives. Under Alternative SM3, a total of approximately 1,000 in-place cy of soil would be excavated to access and remove approximately 720 cy of MGP source material. Under Alternative SM4, a total of approximately 4,600 in-place cy of soil would be excavated to access and remove approximately 1,500 cy of MGP source material, which would provide the greatest reduction in contaminant volume. The Department prefers Alternative SM3 because it would provide permanent reduction of a significantly greater volume of contamination than Alternative SM2, but in a more efficient manner than SM4. The groundwater alternatives GW1 and GW2 would provide the same degree of contaminant reduction through natural attenuation processes, except that these processes would be monitored under Alternative GW2. Alternative GW3 would provide a greater degree of contaminant reduction than Alternative GW2, because these degradation processes would be enhanced to provide a higher degree of contaminant breakdown.

As shown in Table 1, the cost of the alternatives varies significantly. Excavation above the groundwater table (Alternative SM2) would be the least expensive excavation alternative because extensive excavation support and dewatering would not be required. Alternative SM3 would cost 80% more ($1.11 million) than SM2, and would remove an estimated 60% more MGP source material. The cost of Alternative SM4 would be significantly greater than SM3 due to the need for much deeper soil excavation and the removal of a much greater volume of clean soil to access the MGP source material. Alternative SM4 would cost 206% more ($5.19 million) than SM3 for the removal of an additional 108% of MGP source material. The Department believes that it would not be cost effective to require this additional removal, in light of the limited additional long-term effectiveness and severe short-term impacts that would be associated with Alternative SM4. However, because Alternative SM3 would provide a significant environmental benefit by removing MGP source material from below the water table on-site, the Department believes that the additional costs are justified. In-situ groundwater treatment through enhanced bioremediation (Alternative GW3) is the most costly groundwater alternative, but the Department believes that the better long term effectiveness and additional degree of contaminant reduction through treatment justify this cost.

The estimated present worth cost to implement the remedy is $3,940,000. The cost to construct the remedy is estimated to be $2,940,000 and the estimated average annual costs for 30 years is $80,000.

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. Excavation of MGP source material from the above and below the groundwater on the site. Source material is defined as soil that contains one or more of the following: visible NAPL, tar or oil, total BTEX over 10 ppm; or the presence of sheens or odors with total PAHs over 500 ppm. Excavation of 1,000 cubic yards of contaminated soils to a depth of 15 feet below the ground surface is estimated. Soil excavation would proceed deeper if soils exceed one or more of the above criteria. Treatment and/or disposal of excavated materials meeting the above criteria would occur at an off-site facility. It may be necessary to close a portion of Hancock Street for part of the construction period for use

as a work area and equipment staging area. The duration and extent of this closure would be minimized.

3. A soil cover would be constructed over the site to prevent exposure to contaminated soils. This cover would consist of a minimum of 12 inches of clean soil underlain by an indicator such as orange plastic snow fence to demarcate the cover soil from the subsurface soil. The top six inches of the soil cover would consist of: a) crushed stone, or similar clean material, consistent with the existing surface cover; b) soil of sufficient quality to support vegetation; or c) a paving system or concrete at least 6 inches thick. Clean soil would constitute soil that meets the Division of Environmental Remediation's criteria for backfill or local site background.

4. Sampling of water and NAPL that has collected in the former southern gas holder and removal of NAPL and accumulated water in the holder that exceeds ambient standards. Groundwater extracted during construction would also be sent off-site, or treated on-site and discharged in compliance with applicable discharge standards.

5. Enhanced natural attenuation of contaminated groundwater by addition of amendments and nutrients as necessary to stimulate indigenous bacteria to degrade dissolved contaminants. These would be introduced through application wells installed on the off-site property and/or blended into the clean backfill of the on-site excavation.

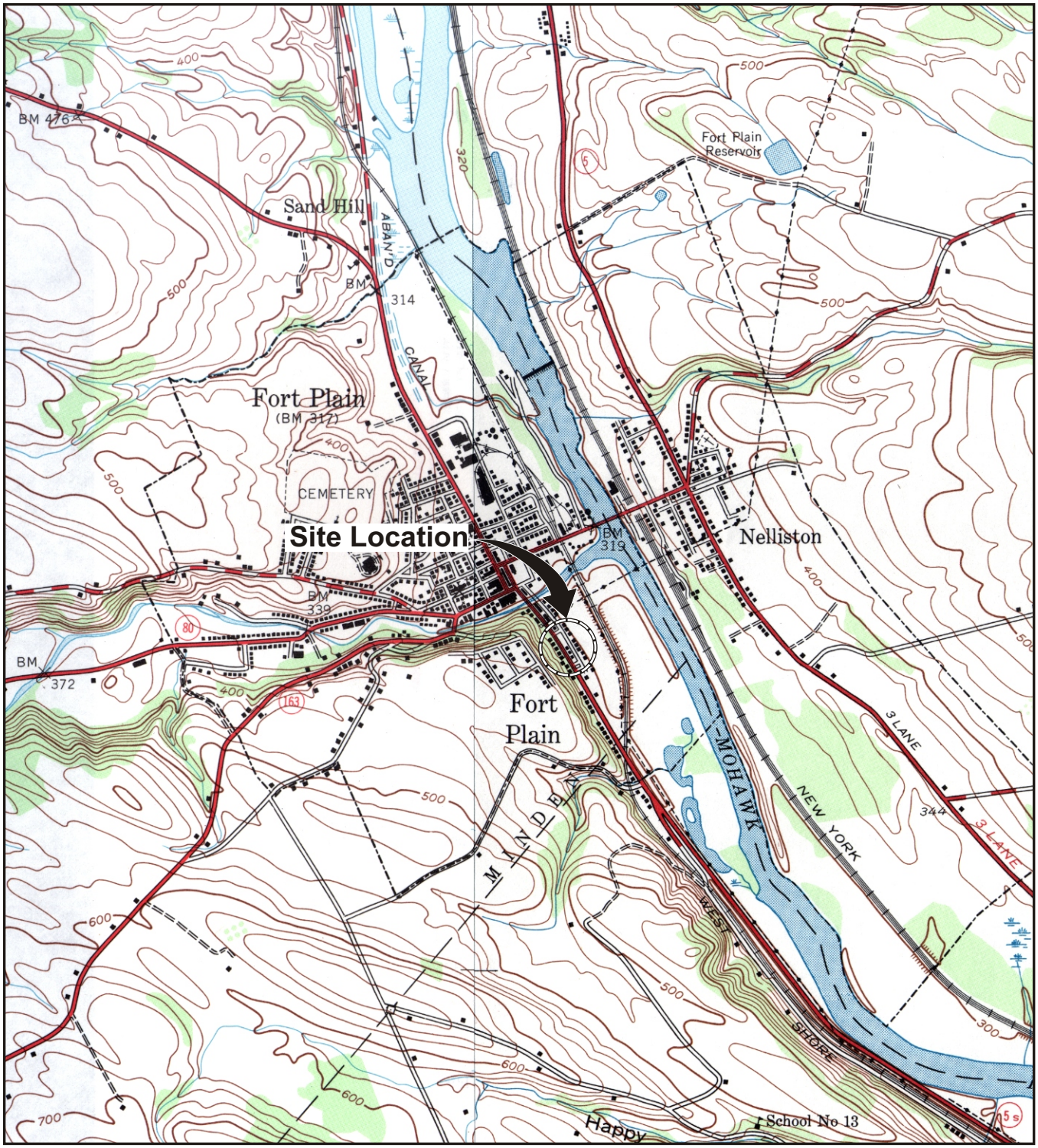
6. Imposition of an institutional control in the form of an environmental easement that would require (a) limiting the use and development of the property to commercial use, which would also permit industrial use; (b) compliance with the approved site management plan; (c) restricting the use of groundwater 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.

7. 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 as a typical security measure; (f) provisions for the continued proper operation and maintenance of the components of the remedy.

8. 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
Remedial Alternative Costs

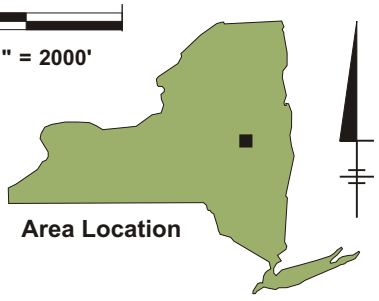
Remedial Alternative	Capital Cost ($)	Annual Costs ($)	Total Present Worth ($)
SM1	70,000	10,000	190,000
SM2	1,290,000	10,000	1,410,000
SM3	2,390,000	10,000	2,520,000
SM4	7,590,000	10,000	7,710,000
GW1	0	0	0
GW2	75,000	39,000	620,000
GW3	550,000	70,000	1,420,000
SM3 and GW3	2,940,000	80,000	3,940,000



REFERENCE: BASE MAP USGS 7.5 MIN. QUADS., CANAJOHARIE, AND FORT PLAIN NY, 1944.

2000' 0 2000'

Approximate Scale: 1" = 2000'



NATIONAL GRID
FORT PLAIN, NEW YORK
FORT PLAIN FORMER MGP SITE

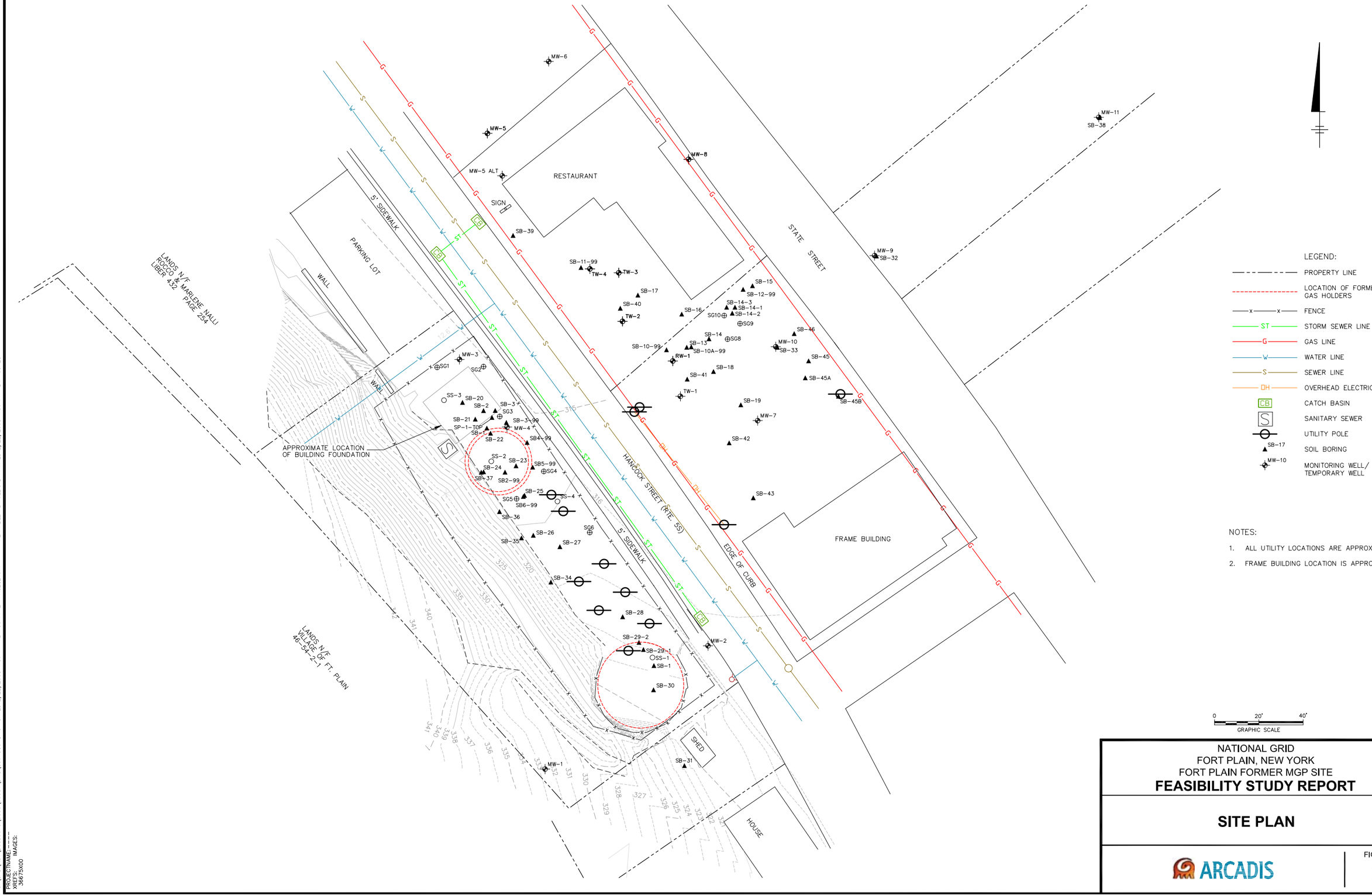
FEASIBILITY STUDY REPORT

SITE LOCATION MAP

ARCADIS

FIGURE
1

8/30/07-SYR-KLS
36675004/36675N01.CDR



LEGEND:

- PROPERTY LINE
- LOCATION OF FORMER GAS HOLDERS
- FENCE
- STORM SEWER LINE
- GAS LINE
- WATER LINE
- SEWER LINE
- OVERHEAD ELECTRIC
- CATCH BASIN
- SANITARY SEWER
- UTILITY POLE
- SOIL BORING
- MONITORING WELL/ TEMPORARY WELL

NOTES:

1. ALL UTILITY LOCATIONS ARE APPROXIMATE.
2. FRAME BUILDING LOCATION IS APPROXIMATE.

0 20' 40'
GRAPHIC SCALE

NATIONAL GRID
FORT PLAIN, NEW YORK
FORT PLAIN FORMER MGP SITE

FEASIBILITY STUDY REPORT

SITE PLAN

ARCADIS

FIGURE
2

SYR-85-TJR DWW WLJ LAYER: ON=*; OFF=*REF*
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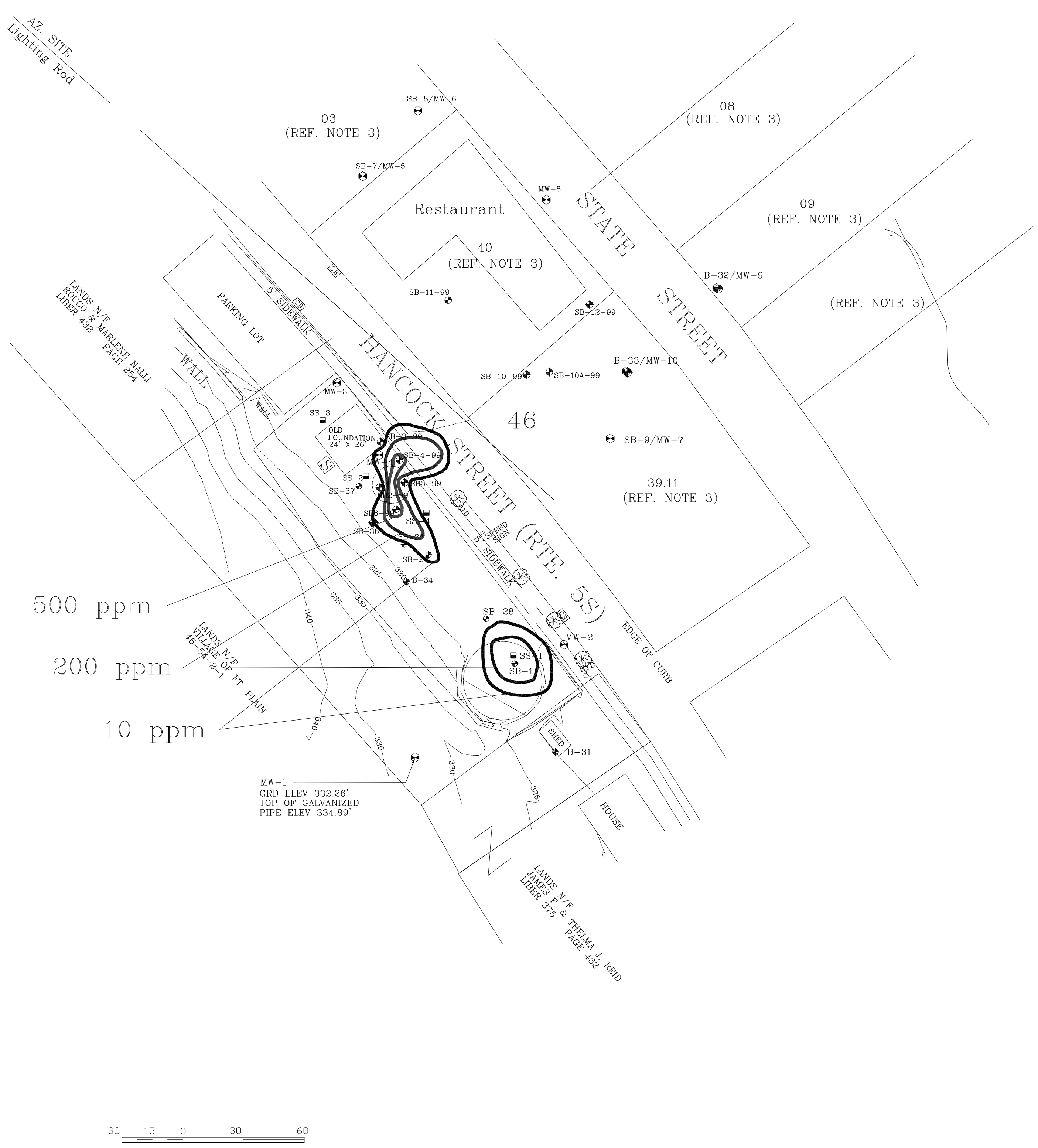
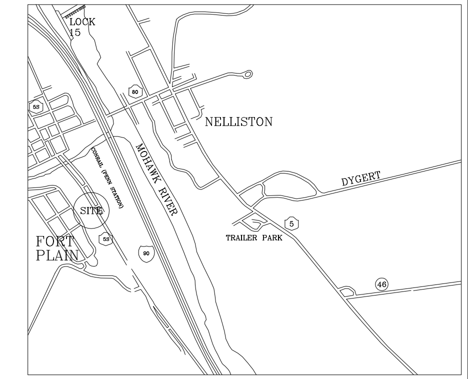




LOCATION SKETCH
NTS

TOTAL PAH's	0-10 ft	
MW-3	8-10 ft	0.164
SB-6-99	7-9 ft	556.2
SB-2-99	5-6 ft	3.519
SB-5-99	8-9 ft	19.52
B-36	2-4 ft	3.693
SB-27	0-2 ft	164.36
	2-4 ft	24.016
	4-6 ft	86.64
	6-8 ft	70.27
	8-10 ft	21.303
SB-26	4-6 ft	22.083
MW-4	8-10 ft	140.1
SB-4-99	6-7 ft	877.0
SB-3-99	8-12 ft	35.305
SS-1	0-2 ft	249.9
SB-1	0-8 ft	444.3
SS-2	0-2 ft	269.17
B-34	4-6 ft	0.791
SB-28	2-4 ft	10.254

REFERENCE

1: NEW YORK STATE DEPARTMENT OF TRANSPORTATION CONSTRUCTION PLANS DRAWING CP-10 & CP-11 DATED 10 1993
2: NEW YORK POWERE & LIGHT CORP. DRAWING NO. F-2883 TITLED FORT PLAIN-SUBSTATION DATED 7/9/36
3: VILLAGE OF FORT PLAIN TAX MAP, SECTION NO. 046.54 DATED 03/20/96
4: NIAGARA MOHAWK POWER CORPORATION File Index 21.0-M3.13-M49, Project No. 3517, Titled TOPOGRAPHIC SURVEY of FT. PLAIN SUBSTATION Drawing No.D-32472-E, 9/22/97

LEGEND

POLE
NMPC PROPERTY LINE
NON NMPC PROPERTY LINE
FENCE
CATCH BASIN
HYDRANT
DECIDUOUS TREE
SOIL BORING
SOIL SAMPLE
MONITOR WELL
FORMER STRUCTURE ACCORDING TO 1929 NYP&L CORP. DRAWING G-664
NA - NOT ANALYZED
ND - NONDETECT

BENCH MARK

STATION J32 ELEV. 312.06',(NAVD 88)

PROJECT BENCH MARK IS A PK IN EAST SIDE OF NM. POLE 128 1/2, ELEV 317.46'

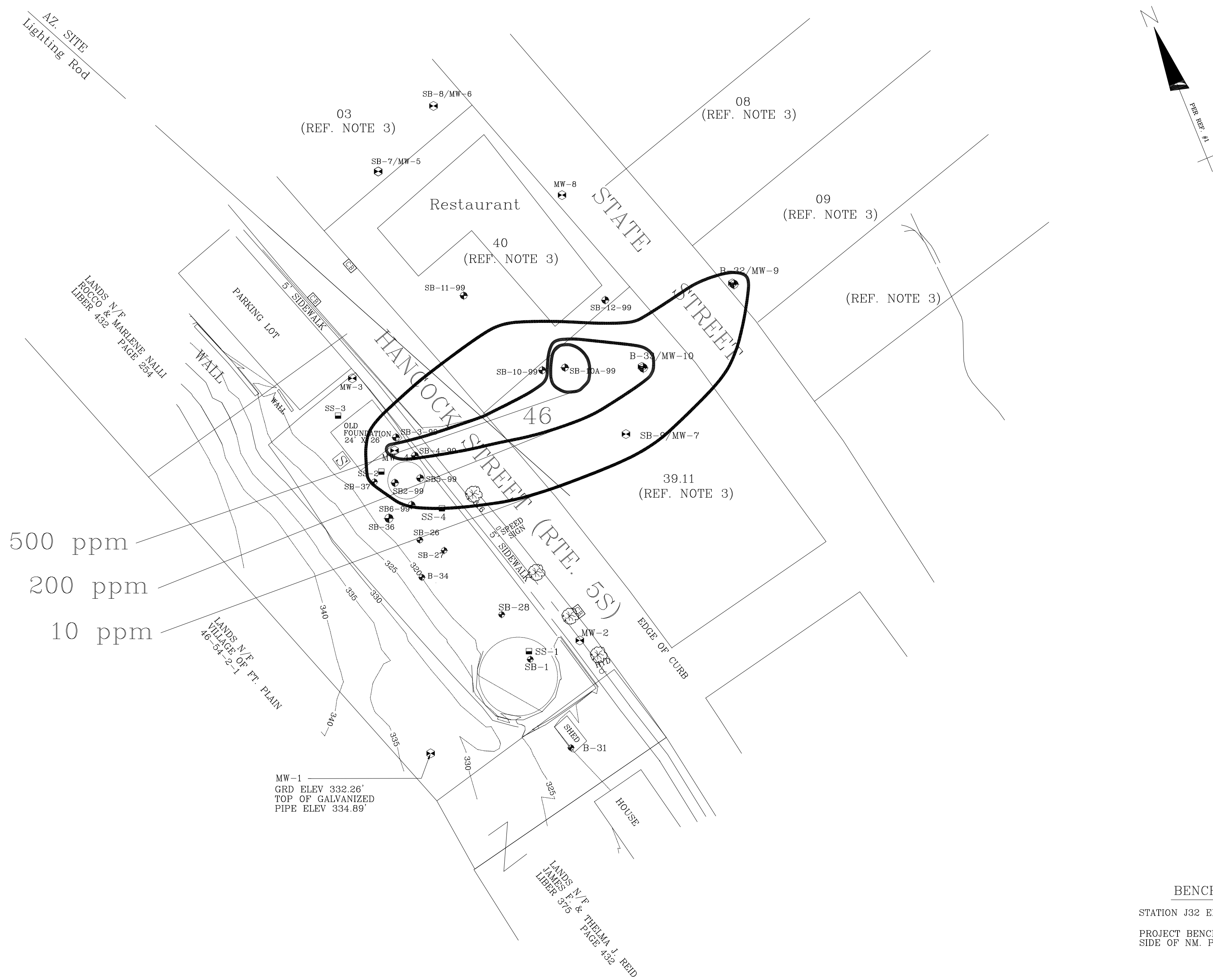
FIGURE 3

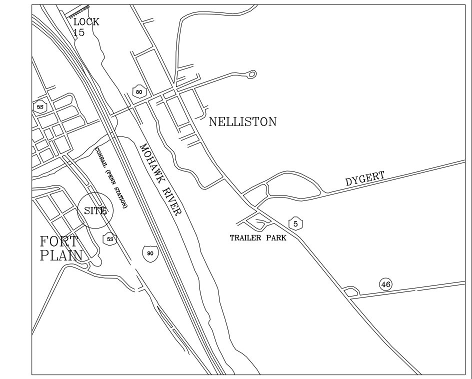
TOTAL PAH CONTOURS in mg/kg (ppm) for SOILS from 0-10 ft DEEP COLLECTED DURING the REMEDIAL INVESTIGATION

Stearns & Wheler Companies

NIAGARA MOHAWK POWER CORPORATION
A NATIONAL GRID COMPANY
SUPPLEMENTAL REMEDIAL INVESTIGATION (SRI)
FT. PLAIN SUBSTATION
Village of FT. Plain
Montgomery County, New York

DATE: 10/2003 JOB No.: L10060





LOCATION SKETCH
NTS

TOTAL PAH's	> 15 ft	
MW-3	18-20 ft	0.151
SB-26	15-15.5 ft	0.022
MW-4	18-20 ft	53.8
	14-16 ft	249.51
SB-10A-99	24-25 ft	1,391.0
B-33	20-22 ft	235.6
SB-9-99	16-19 ft	0.106
SB-10-99	24-27 ft	72.340
SB-12-99	24-27 ft	0.063
B-32	24-26 ft	14.65
SB-7-99	15-21 ft	0.475
SB-8-99	24-26 ft	0.129
SB-11-99	24-24 ft	0.239

REFERENCE

1: NEW YORK STATE DEPARTMENT OF TRANSPORTATION CONSTRUCTION PLANS DRAWING CP-10 & CP-11 DATED 10'1993
2: NEW YORK POWERE & LIGHT CORP. DRAWING NO. F-2883 TITLED FORT PLAIN-SUBSTATION DATED 7/9/36
3: VILLAGE OF FORT PLAIN TAX MAP, SECTION NO. 046.54 DATED 03/20/96
4: NIAGARA MOHAWK POWER CORPORATION File Index 21.0-M3.13-M49, Project No. 3517, Titled TOPOGRAPHIC SURVEY of FT. PLAIN SUBSTATION Drawing No.D-32472-E, 9/22/97

LEGEND

POLE
NMPC PROPERTY LINE
NON NMPC PROPERTY LINE
FENCE
CATCH BASIN
HYDRANT
DECIDUOUS TREE
SOIL BORING
SOIL SAMPLE
MONITOR WELL
FORMER STRUCTURE ACCORDING TO 1929 NYP&L CORP. DRAWING G-664
NA - NOT ANALYZED
ND - NONDETECT

BENCH MARK

STATION J32 ELEV. 312.06',(NAVD 88)

PROJECT BENCH MARK IS A PK IN EAST SIDE OF NM. POLE 128 1/2, ELEV 317.46'

30 15 0 30 60
SCALE:1" = 30'

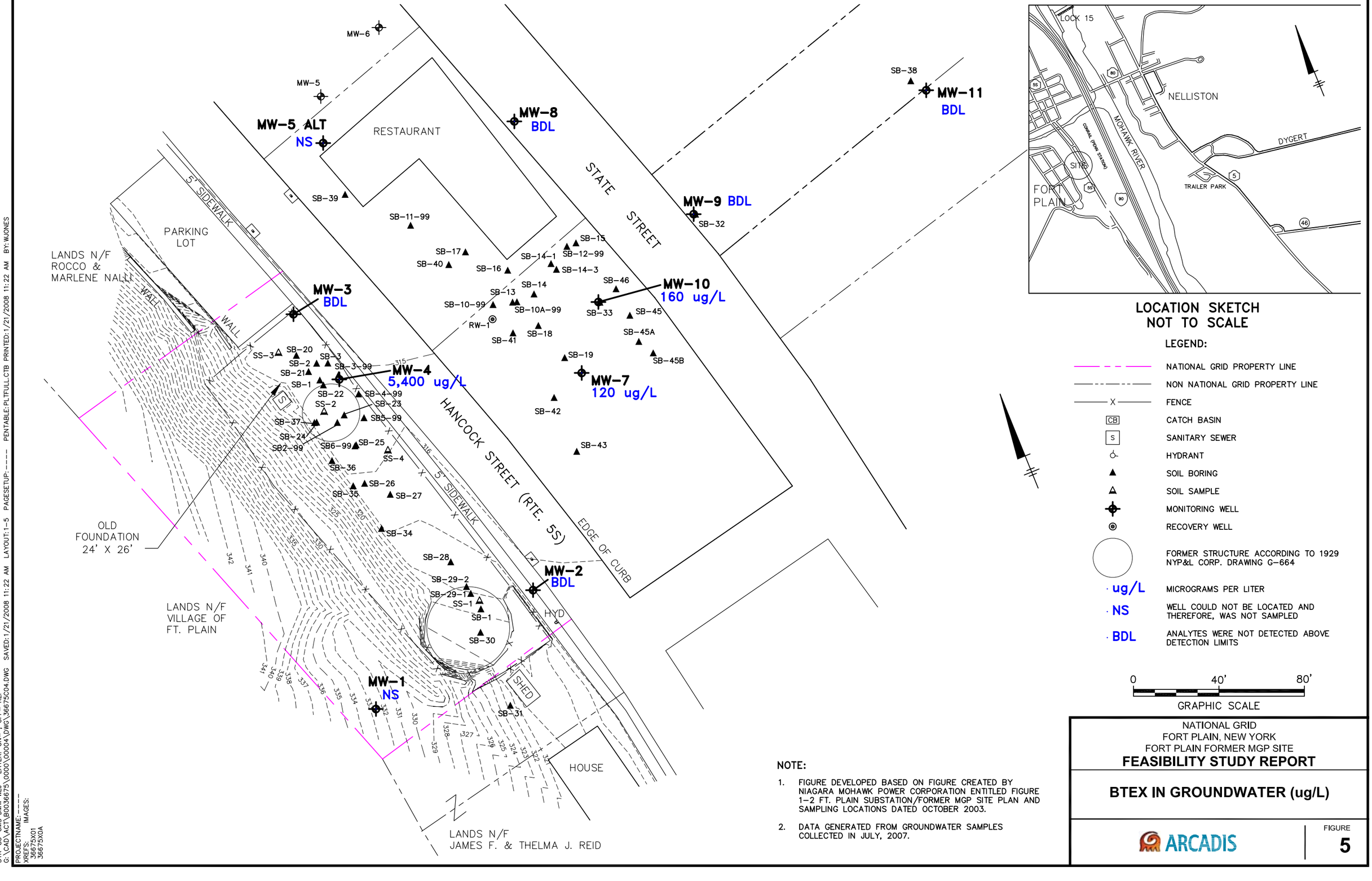
FIGURE 4

Stearns & Wheler Companies

NIAGARA MOHAWK POWER CORPORATION
A NATIONAL GRID COMPANY
SUPPLEMENTAL REMEDIAL INVESTIGATION (SRI)
FT. PLAIN SUBSTATION
Village of FT. Plain
Montgomery County, New York

TOTAL PAH CONTOURS in mg/kg (ppm) for SOILS GREATER THAN 15 ft DEEP COLLECTED DURING the REMEDIAL INVESTIGATION

DATE: 10/2003 JOB No.: L10060



LOCATION SKETCH
NOT TO SCALE

LEGEND:

- NATIONAL GRID PROPERTY LINE
- NON NATIONAL GRID PROPERTY LINE
- FENCE
- CB — CATCH BASIN
- S — SANITARY SEWER
- HYDRANT
- SOIL BORING
- SOIL SAMPLE
- MONITORING WELL
- RECOVERY WELL
- FORMER STRUCTURE ACCORDING TO 1929 NYP&L CORP. DRAWING G-664
- ug/L — MICROGRAMS PER LITER
- NS — WELL COULD NOT BE LOCATED AND THEREFORE, WAS NOT SAMPLED
- BDL — ANALYTES WERE NOT DETECTED ABOVE DETECTION LIMITS

0 40' 80'

GRAPHIC SCALE

NOTE:

1. FIGURE DEVELOPED BASED ON FIGURE CREATED BY NIAGARA MOHAWK POWER CORPORATION ENTITLED FIGURE 1-2 FT. PLAIN SUBSTATION/FORMER MGP SITE PLAN AND SAMPLING LOCATIONS DATED OCTOBER 2003.
2. DATA GENERATED FROM GROUNDWATER SAMPLES COLLECTED IN JULY, 2007.

NATIONAL GRID
FORT PLAIN, NEW YORK
FORT PLAIN FORMER MGP SITE

FEASIBILITY STUDY REPORT

BTEX IN GROUNDWATER (ug/L)

ARCADIS

FIGURE 5

SYR-85-GMS DMW WLJ LAYER: ON=*; OFF=*REF*
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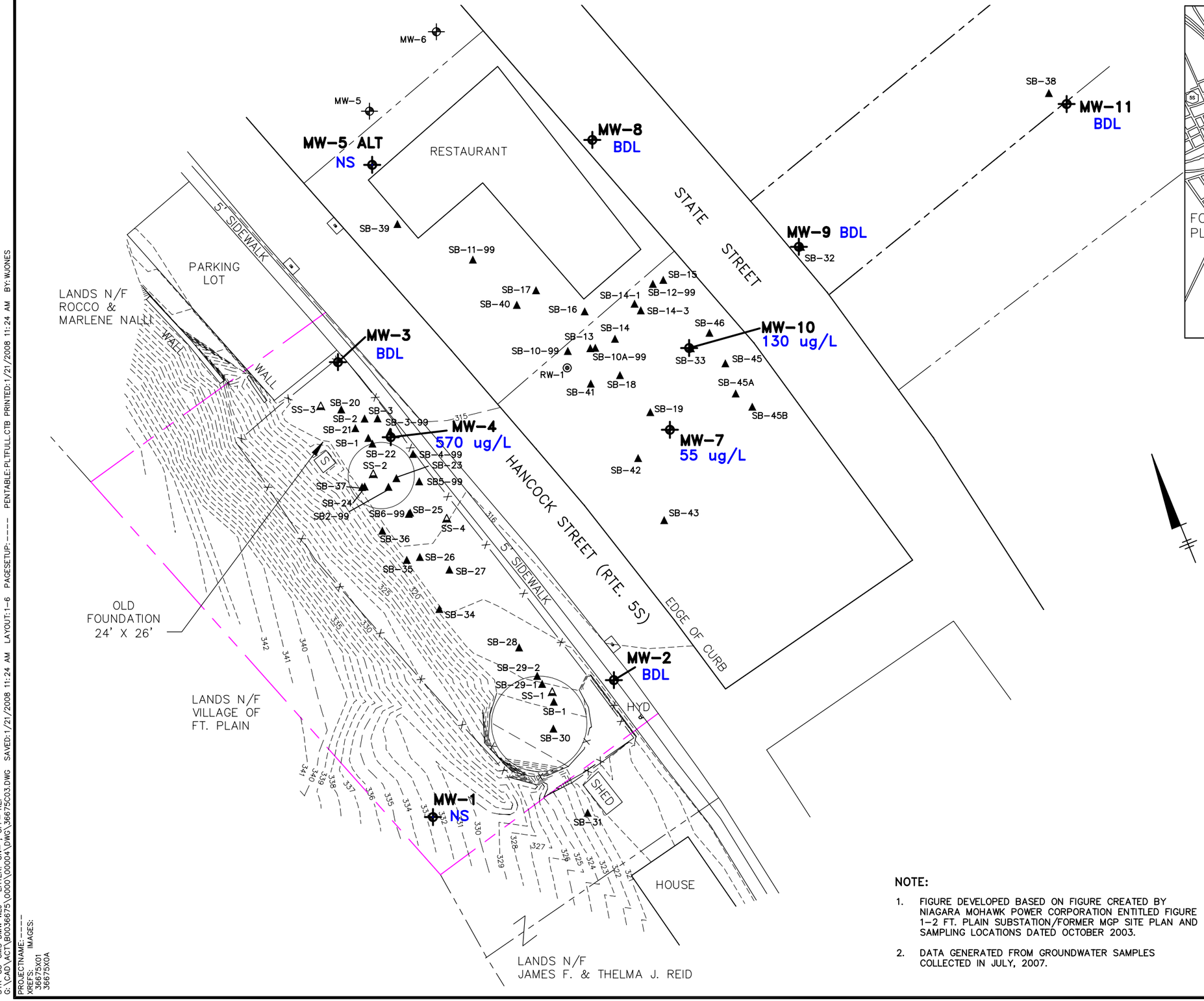
PENTABLE:PLTFULL.CTB PRINTED:1/21/2008 11:22 AM BY:WJONES
PROJECTNAME:----
XREFS: IMAGES:
36675X01
36675X0A



LOCATION SKETCH
NOT TO SCALE

LEGEND:

- NATIONAL GRID PROPERTY LINE
- NON NATIONAL GRID PROPERTY LINE
- FENCE
- CB — CATCH BASIN
- S — SANITARY SEWER
- HYDRANT
- SOIL BORING
- SOIL SAMPLE
- MONITORING WELL
- RECOVERY WELL
- FORMER STRUCTURE ACCORDING TO 1929 NYP&L CORP. DRAWING G-664
- ug/L — MICROGRAMS PER LITER
- NS — WELL COULD NOT BE LOCATED AND THEREFORE, WAS NOT SAMPLED
- BDL — ANALYTES WERE NOT DETECTED ABOVE DETECTION LIMITS

0 40' 80'

GRAPHIC SCALE

NOTE:

1. FIGURE DEVELOPED BASED ON FIGURE CREATED BY NIAGARA MOHAWK POWER CORPORATION ENTITLED FIGURE 1-2 FT. PLAIN SUBSTATION/FORMER MGP SITE PLAN AND SAMPLING LOCATIONS DATED OCTOBER 2003.
2. DATA GENERATED FROM GROUNDWATER SAMPLES COLLECTED IN JULY, 2007.

NATIONAL GRID
FORT PLAIN, NEW YORK
FORT PLAIN FORMER MGP SITE

FEASIBILITY STUDY REPORT

PAHs IN GROUNDWATER (ug/L)

ARCADIS

FIGURE 6

SYR-85-GMS DMW WLJ LAYER: ON=*; OFF=*REF*
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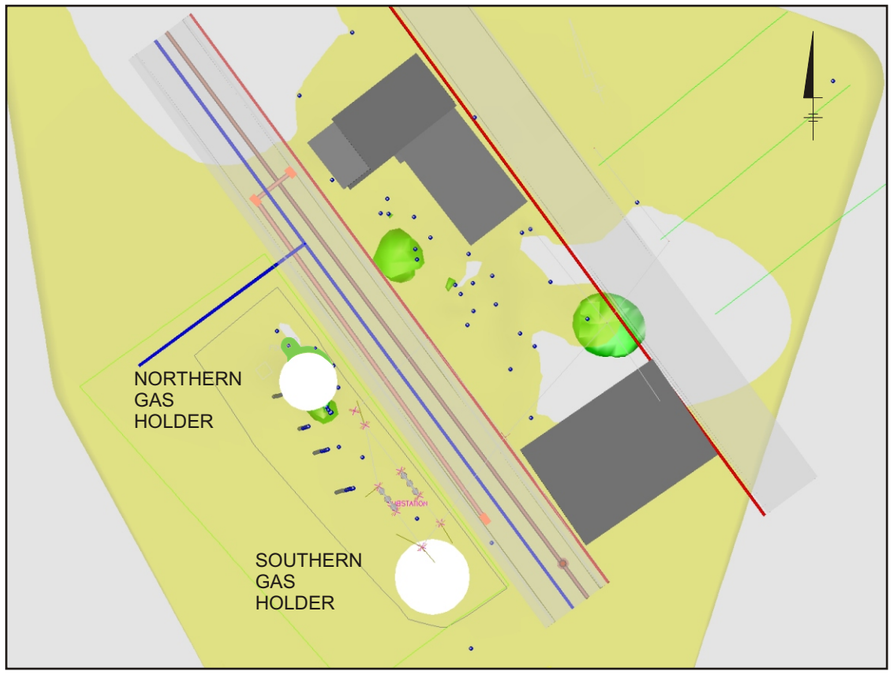
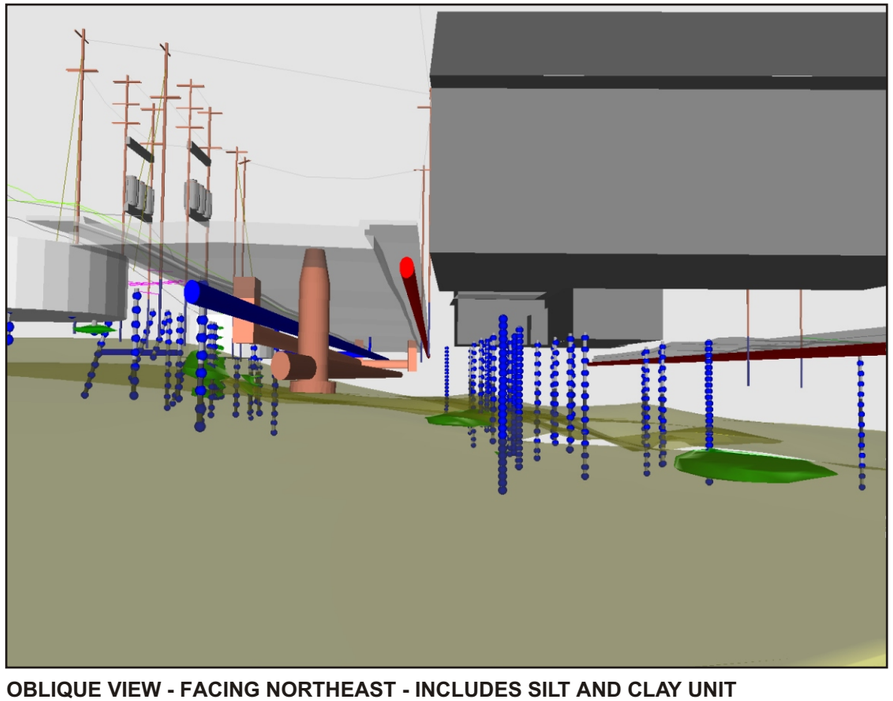


PLAN VIEW - INCLUDES SILT AND CLAY UNIT



OBLIQUE VIEW - FACING NORTHEAST - INCLUDES SILT AND CLAY UNIT

LEGEND:

- VISUAL EVIDENCE OF SHEEN AND/OR NAPL
- BOREHOLE TRACE
- SAMPLE LOCATION
- GAS LINE
- STORM SEWER LINE
- WATER LINE
- SEWER LINE
- UTILITY POLE
- TRANSFORMER

NOTES:

1. ALL UTILITY AND BUILDING LOCATIONS ARE APPROXIMATE.

Area Location

NATIONAL GRID
FORT PLAIN, NEW YORK
FORT PLAIN FORMER MGP SITE

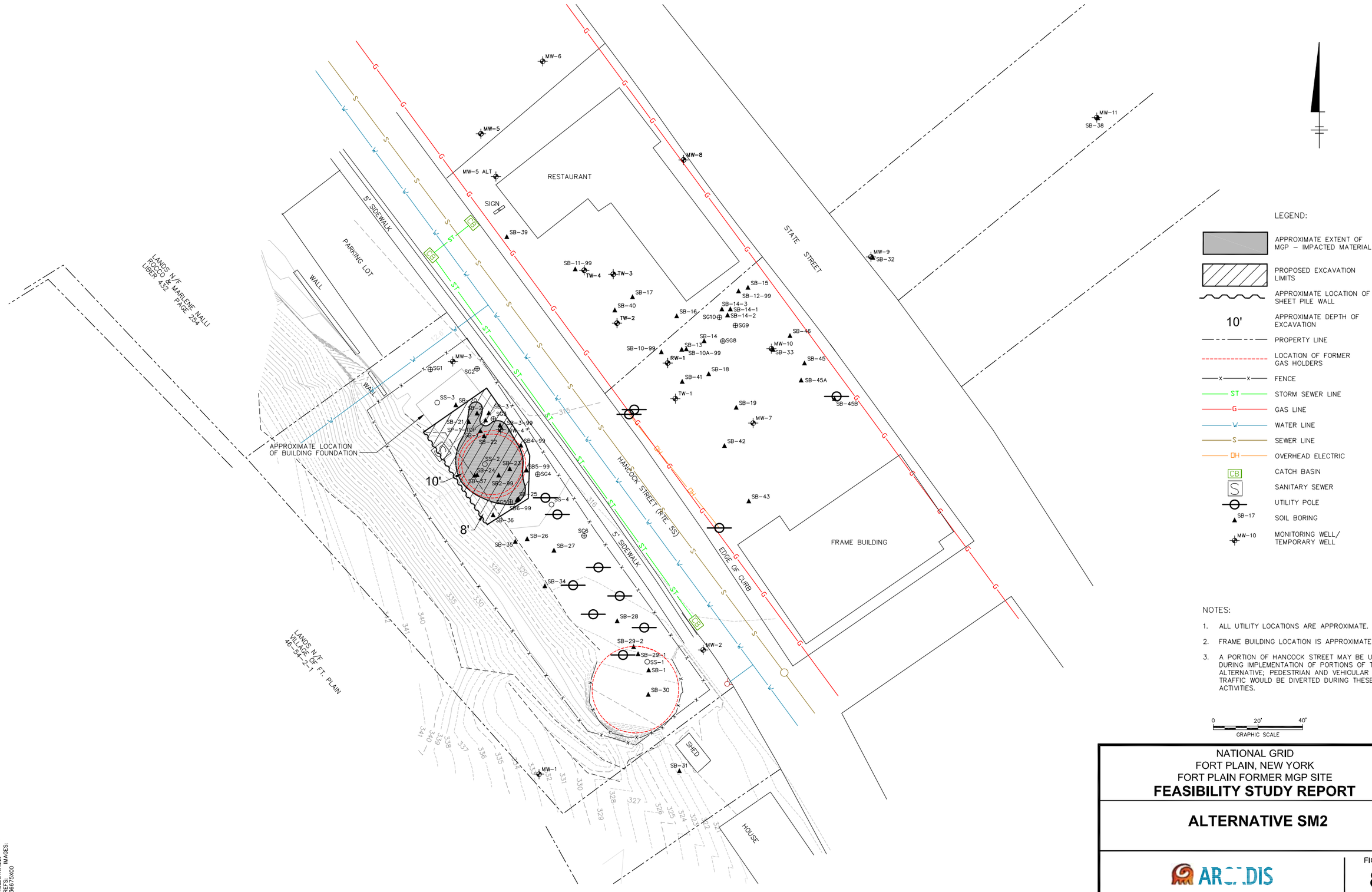
FEASIBILITY STUDY REPORT

VISUAL EVIDENCE OF MGP IMPACTS

ARCADIS BBL
Infrastructure, environment, facilities

FIGURE
7

9/25/07-85-KLS
36675004/36675G07.CDR



NATIONAL GRID
FORT PLAIN, NEW YORK
FORT PLAIN FORMER MGP SITE

FEASIBILITY STUDY REPORT

ALTERNATIVE SM2

ARCADIS

FIGURE
8

SYR-85-TJR AMS WLJ LAYER: ON=*; OFF=*REF*
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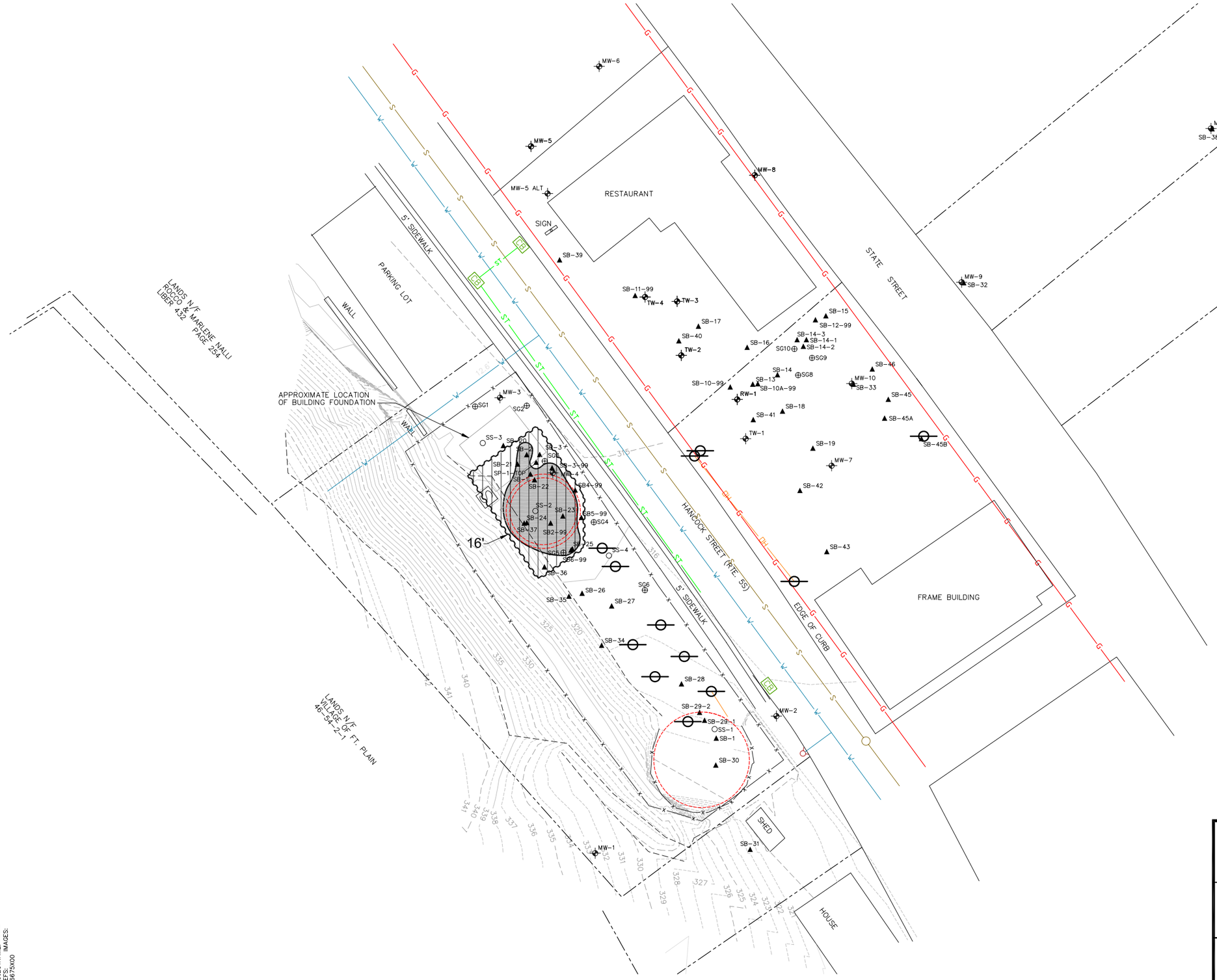

LEGEND:

- APPROXIMATE EXTENT OF MGP – IMPACTED MATERIAL
- PROPOSED EXCAVATION LIMITS
- APPROXIMATE LOCATION OF SHEET PILE WALL
- 16' — APPROXIMATE DEPTH OF SILT AND CLAY CONFINING UNIT
- PROPERTY LINE
- LOCATION OF FORMER GAS HOLDERS
- FENCE
- ST — STORM SEWER LINE
- G — GAS LINE
- W — WATER LINE
- S — SEWER LINE
- OH — OVERHEAD ELECTRIC
- CB — CATCH BASIN
- S — SANITARY SEWER
- UTILITY POLE
- SB-17 — SOIL BORING
- MW-10 — MONITORING WELL/ TEMPORARY WELL

NOTES:

1. ALL UTILITY LOCATIONS ARE APPROXIMATE.
2. FRAME BUILDING LOCATION IS APPROXIMATE.
3. A PORTION OF HANCOCK STREET MAY BE USED DURING IMPLEMENTATION OF PORTIONS OF THIS ALTERNATIVE; PEDESTRIAN AND VEHICULAR TRAFFIC WOULD BE DIVERTED DURING THESE ACTIVITIES.

0 20' 40'
GRAPHIC SCALE

NATIONAL GRID
FORT PLAIN, NEW YORK
FORT PLAIN FORMER MGP SITE

FEASIBILITY STUDY REPORT

ALTERNATIVE SM3

ARCADIS

FIGURE 9

SYR-85-TJR DWW JHR LAYER: ON=*,OFF=*REF*
G:\CAD\ACT\B0036675\0000\00004\DWG\36675G05.DWG SAVED:2/22/2008 1:54 PM LAYOUT:5-2 PAGESETUP:---- PENTABLE:PLTFULL.CTB PRINTED:2/22/2008 1:54 PM BY:WJONES
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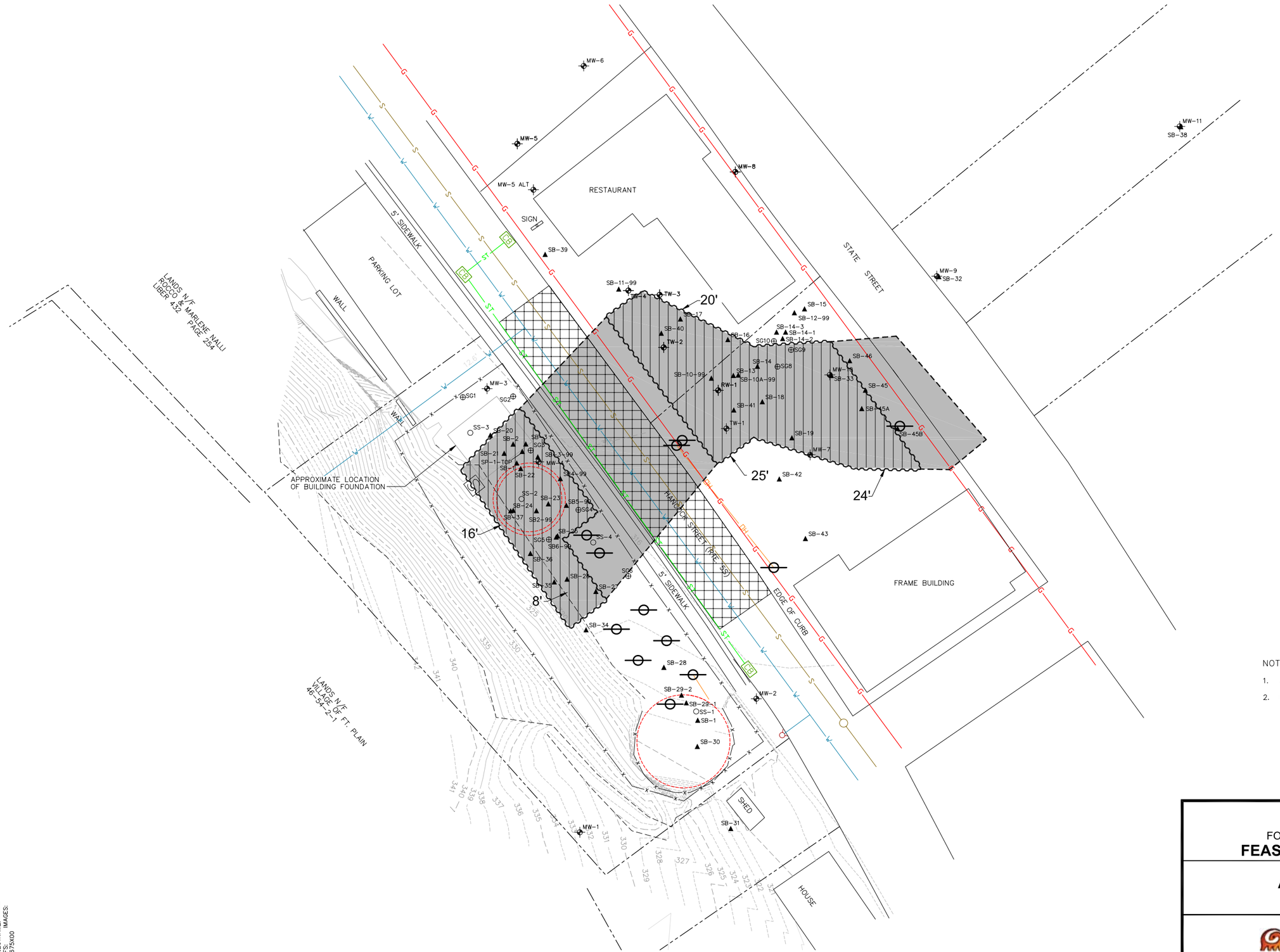

LEGEND:

- PROBABLE LIMITS OF SOIL CONTAINING CONSTITUENTS GREATER THAN 6 NYCRR PART 375 COMMERCIAL SOIL CLEANUP OBJECTIVES
- FEASIBLE EXCAVATION AREAS
- APPROXIMATE LOCATION OF SHEET PILE WALL
- 8' — APPROXIMATE DEPTH OF BOTTOM OF SOIL CONTAINING CONSTITUENTS GREATER THAN 6 NYCRR PART 375 COMMERCIAL SOIL CLEANUP OBJECTIVES
- PROPOSED WORK AREA IN HANCOCK STREET
- PROPERTY LINE
- LOCATION OF FORMER GAS HOLDERS
- FENCE
- STORM SEWER LINE
- GAS LINE
- WATER LINE
- SEWER LINE
- OVERHEAD ELECTRIC
- CB — CATCH BASIN
- S — SANITARY SEWER
- UTILITY POLE
- SB-17 — SOIL BORING
- MW-10 — MONITORING WELL/ TEMPORARY WELL

NOTES:

1. ALL UTILITY LOCATIONS ARE APPROXIMATE.
2. FRAME BUILDING LOCATION IS APPROXIMATE.

0 20' 40'
GRAPHIC SCALE

NATIONAL GRID
FORT PLAIN, NEW YORK
FORT PLAIN FORMER MGP SITE

FEASIBILITY STUDY REPORT

ALTERNATIVE SM4

ARCADIS

FIGURE 10

SYR-85-TJR AMS WJ LAYER: ON=*, OFF=*REF*
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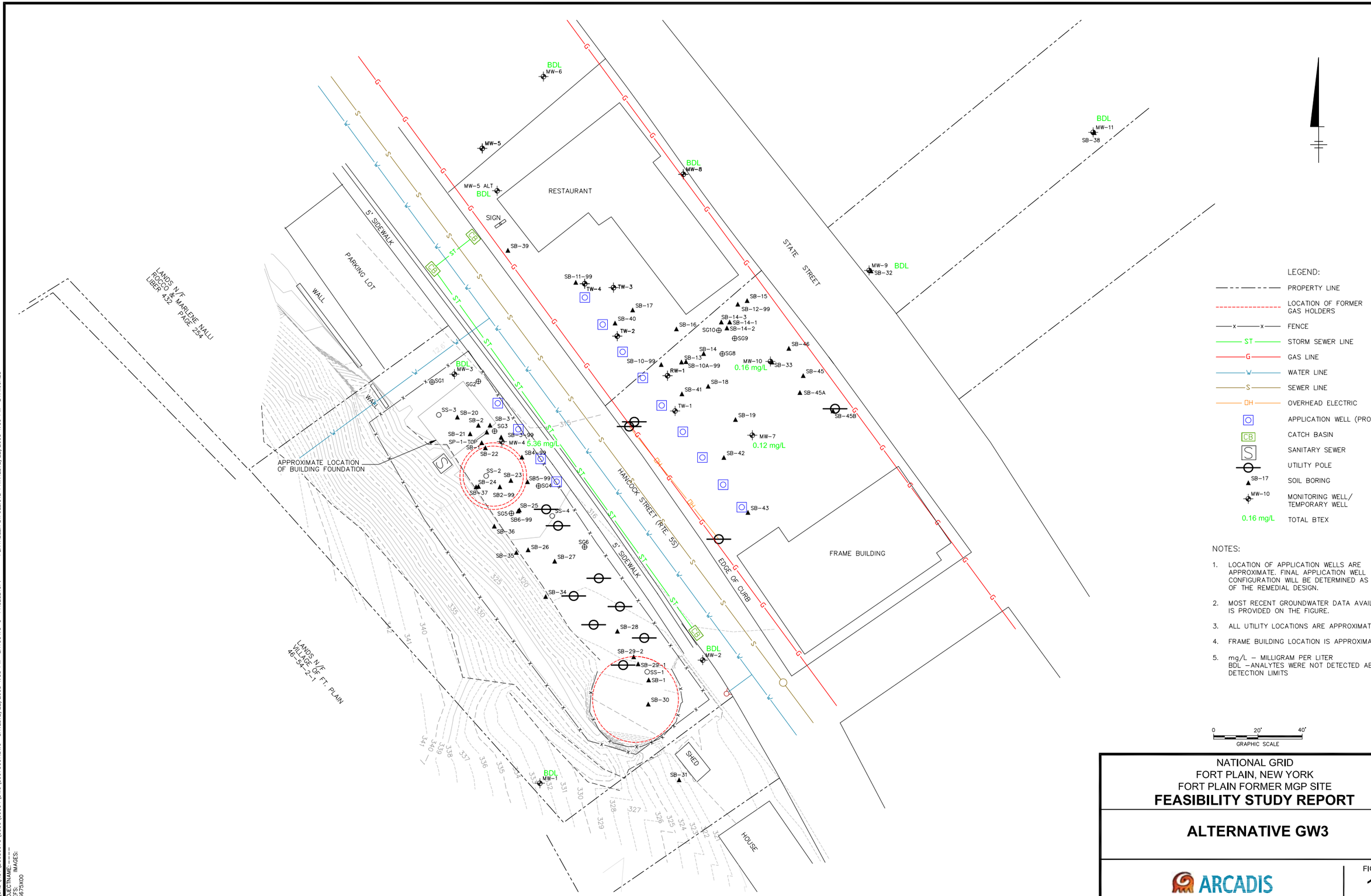

LEGEND:

- PROPERTY LINE
- LOCATION OF FORMER GAS HOLDERS
- FENCE
- STORM SEWER LINE
- GAS LINE
- WATER LINE
- SEWER LINE
- OVERHEAD ELECTRIC
- APPLICATION WELL (PROPOSED)
- CATCH BASIN
- SANITARY SEWER
- UTILITY POLE
- SOIL BORING
- MONITORING WELL/ TEMPORARY WELL
- 0.16 mg/L TOTAL BTEX

NOTES:

1. LOCATION OF APPLICATION WELLS ARE APPROXIMATE. FINAL APPLICATION WELL CONFIGURATION WILL BE DETERMINED AS PART OF THE REMEDIAL DESIGN.
2. MOST RECENT GROUNDWATER DATA AVAILABLE IS PROVIDED ON THE FIGURE.
3. ALL UTILITY LOCATIONS ARE APPROXIMATE.
4. FRAME BUILDING LOCATION IS APPROXIMATE.
5. mg/L – MILLIGRAM PER LITER
   BDL –ANALYTES WERE NOT DETECTED ABOVE DETECTION LIMITS

0 20' 40'
GRAPHIC SCALE

NATIONAL GRID
FORT PLAIN, NEW YORK
FORT PLAIN FORMER MGP SITE

FEASIBILITY STUDY REPORT

ALTERNATIVE GW3

ARCADIS

FIGURE
11

SYR-85-TJR DWW WLJ LAYER: ON=*; OFF=*REF*
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