New York State Electric & Gas Corporation

Bridge Street Former Manufactured Gas Plant
Plattsburgh, New York

REMEDIAL INVESTIGATION REPORT

JANUARY 15, 2004

Prepared For:
New York State Electric & Gas Corporation
Kirkwood Industrial Park
Binghamton, New York

URS Corporation - New York
28 Corporate Drive, Suite 200
Clifton Park, New York 12065

EXECUTIVE SUMMARY

On behalf of NYSEG (New York State Electric and Gas Corporation), URS Corporation – New York (URS) has prepared this *Remedial Investigation Report (RI)* for NYSEG's former manufactured gas plant (MGP) on Bridge Street in the City of Plattsburgh, Clinton County, New York (site ID #5-10-016). The investigation was performed as required by the Order on Consent (Index Number DO-0002-9309) between the New York State Department of Environmental Conservation (NYSDEC) and NYSEG. This *RI* was performed in accordance with:

- The requirements of the Order on Consent
- *Work Plan for a Preliminary Site Assessment at the Plattsburgh-Bridge Street Former Manufactured Gas Plant Site*, dated March 23, 1999
- *Work Plan for Supplemental Sampling and Analysis at NYSEG's Plattsburgh-Bridge Street Former MGP Site*, dated October 6, 1999
- *Work Plan for Supplemental Indoor Air Sampling at 140 Bridge Street*, dated December 1999
- *Revised Bedrock Investigation Work Plan*, dated November 7, 2001
- *Supplemental Bedrock Investigation Work Plan*, dated June 20, 2002

BACKGROUND

The Plattsburgh-Bridge Street MGP Site (the site), an approximately 0.5-acre lot, is located at 140 Bridge Street in the City of Plattsburgh, Clinton County, New York. The property is near the outlet of the Saranac River, which flows eastward and discharges to the Cumberland Bay of Lake Champlain. The topography in the area is generally flat. The nearest surface water body, Cumberland Bay, is approximately 1,000 feet east of the site.

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. In 2000, NYSEG purchased the former MGP property. In 2001, NYSEG performed an Interim Remedial Measure (IRM) to remove the former gas holder and its contents. During the 2001 IRM, the soils at the site were excavated to the bedrock surface and the excavations were backfilled with clean sands. In addition, the former apartment building on the site and the neighboring firehouse, owned by the City of Plattsburgh, were razed. Following the 2001 IRM, the site was graded and seeded and is currently vacant.

Prior to the 2001 IRM, there was an apartment house, which included three residential apartments (two on the ground floor and one on the second floor) at the site. There was an automobile garage at the southern end of the apartment complex. Most of the property was formerly covered by asphalt and the apartment building. There were three small soil and grass covered areas on the property. There was an open area, which was used as a flower garden, between the former apartment building and a fire station that was formerly adjacent to the west side of the site. There was an open area behind (south) the apartment building that was used as a playground by residents of the former apartment building. The former apartment building and the former firehouse were demolished in 2001 as part of the IRM.

From 1860 to 1896, several different operators used the site to produce gas using various processes. For most of these 36 years, the waste disposal practices are uncertain. None of the historical maps indicate the presence of either tar wells or other onsite disposal structures commonly used at MGP plants at the turn of the century.

From 1896 to 1918, the property was vacant. From 1918 to approximately 1949, the site was used as an automobile dealership and service center. From 1949 to 1985, the use of the property is uncertain. The on-site buildings were converted to apartments in the early 1970s. In 1985, Mr. David Meath purchased the site. NYSEG purchased the site in 2000.

In February 1992, NYSEG retained Engineering Science to complete a site screening evaluation using Electric Power Research Institute's (EPRI's) Site Screening and Priority Setting System. The surface soil samples that were collected as part of Engineering Science's investigation revealed that there were relatively low levels of polycyclic aromatic hydrocarbons (PAHs) in the surficial soil.

In 1994, NYSEG signed a multi-site Order on Consent with the NYSDEC to investigate and, where necessary, remediate 33 former MGP sites, including the Bridge Street site. In July 1999 NYSEG initiated a preliminary site assessment as required by the Order on Consent. During the assessment, potentially hazardous waste was identified within the foundation of an on-site gas holder. That discovery elevated the project to a remedial investigation.

CURRENT INVESTIGATION RESULTS

A total of 19 surface soil samples, five near surface soil samples, 45 subsurface soil samples, nine overburden groundwater samples from five monitoring wells, 12 bedrock groundwater samples from 12 bedrock monitoring wells, and seven air samples were collected as part of the remedial investigation. The remainder of this Executive Summary provides the reader with an overview of both the scope and results for each of these media.

Soil Investigation

Prior to the 2001 IRM, there was between four and 12 feet of fill and sand overlying the bedrock beneath the investigation area. The soil investigations focused on three general areas:

- The crawl space;
- The surface soil (both on-site and off-site); and
- The subsurface soil.

The Crawl Space

There was approximately three inches of soil in a crawl space beneath the north end of the former building. The soil in the crawl space contained metals and elevated levels of polyaromatic hydrocarons (PAHs). The most notable metal was mercury, which ranged in concentration between 15.5 mg/kg and 68.7 mg/kg. The source of the mercury is unknown. Mercury is not commonly associated with MGP sites. The former apartment building was used as a car dealership, which likely used pressure gauges and instruments containing mercury.

The soils beneath the concrete slab of the crawl space contained metals and elevated levels of PAHs. The PAH concentrations beneath the slab were greater than the levels detected in the soil in the crawl space. The soils in and beneath the crawl space were removed during the 2001 IRM.

Surface Soil

In July and October 1999, six surface soil and three near surface soil samples were collected onsite and 13 surface soil and two near surface soil samples were collected offsite. All 24 surface soil and near surface soil samples contained PAHs. In general, the PAHs are most concentrated around the eastern and western sides of the former gas holder and approximately 75 feet offsite to the southeast. The on-site soils were removed during the 2001 IRM. The soils to the southeast have apparently been recently placed there, thus the PAHs detected southeast of the site are not related to MGP activities.

Subsurface Soil

Prior to the 2001 IRM, subsurface soil samples were collected from the 29 soil borings that were advanced onsite and five subsurface soil samples were collected from the seven soil borings that have been advanced offsite. These 36 soil borings were advanced during the 1999 investigations to locate the former holder and evaluate the soil quality at and near the site.

The subsurface soil samples indicated that there were PAHs and metals at concentrations that exceed NYSDEC's recommended soil cleanup objectives (RSCOs) beneath most of the former apartment building at the former MGP site and near the southern property boundary. The greatest concentration of PAHs were at a depth of eight to ten feet near the base of the former gas holder. Furthermore, it appeared that some of the PAHs may have migrated downgradient of the former gas holder and down the slope of the bedrock (to the northeast).

The former gas holder, its contents, and site soils were removed during the 2001 IRM. Post-excavation sampling indicated that the majority of the soils that remain at the site meet the site-specific cleanup objectives, which were based on total benzene and PAH concentrations. The primary exception was at the north side of the site along Bridge Street where further soil removal was not possible because of the proximity of the excavation to Bridge Street and the associated subsurface infrastructure. Post-excavation samples of the material on the bedrock surface and within fractures showed that residual MGP-related material was in the upper weathered portion of the bedrock. Based on these findings, NYSEG and the NYSDEC agreed that investigation of the bedrock beneath the site was warranted.

Groundwater Investigation

In July 1999, URS installed five overburden monitoring wells to investigate the groundwater. All five monitoring wells are screened in the clayey silty sand unit that is above bedrock. The upgradient monitoring well (MW-99-01) was dry. The two on-site monitoring wells (MW-99-01 and MW-99-02) were removed during the 2001 IRM because they were in the targeted excavation area.

The depth to groundwater in the four wells ranges from approximately 4.40 feet to 7.70 feet. The overburden shallow groundwater flows generally to the north. Based upon field observations, the shallow unconsolidated soils above the bedrock south and west of the site are dry.

Four of the shallow monitoring wells in the investigation area have been sampled twice, once in October 1999 and once in April 2000. The fifth overburden monitoring well (MW-99-01) was not sampled because it was dry during both sampling events. Acetone (14 µg/L) and benzene (2.0 µg/L) were found in one off-site well (MW-99-05). In addition, PAHs have been found in the groundwater at MW-99-05. Metals have been found in all four of these shallow monitoring wells. Fuel oil-like and sewage-like odors were observed during purging of MW-99-05, suggesting that the contamination found at MW-99-05 is not MGP-related, but from a leaky sanitary sewer line near the well and/or an off-site source of petroleum contamination. A sample collected in March of 2002 and analyzed for fecal coliform could not confirm that groundwater at MW-99-05 was impacted by the sewer.

Indoor Air Evaluation

An indoor air sample, which was collected from within the crawl space in July 1999, was analyzed for volatile organic compounds (VOCs). The air sample contained VOCs (acetone, chloromethane, ethanol, methylene chloride, styrene, toluene and xylenes) at concentrations that were less than the NYSDOH's levels of concern. With the exception of xylene, these VOCs were also detected in the ambient air sample collected outside of the crawl space.

In addition to the air samples that were collected to evaluate the crawl space, five air samples were collected at the site in February 2000. The three air samples collected from inside the apartments and the one air sample collected in the garage contained trace levels of these eight VOCs: chloroform, Freon-11, Freon-12, methylene chloride, 1,2-dichlorobenzene, 1,4-dichlorobenzene, 2-propanol, and hexane. The concentrations of all of the VOCs detected in these four air samples were less than NYSDOH's levels of concern. These eight VOCs were not detected in the ambient air sample collected outside of the apartment complex. Furthermore, the apartment building and site soils were removed during the 2001 IRM, eliminating potential future exposure pathways.

Bedrock Investigation

The top of the bedrock slopes toward the northeast. The bedrock was apparently excavated during construction of the former gas holder, creating a socket in the top of the bedrock.

Between November 2001 and May 2003, the bedrock investigation was completed to evaluate the extent of MGP-related contamination in the bedrock beneath the site. A total of 12 bedrock monitoring wells and one angled bedrock boring were installed during the investigation. Each of the 12 monitoring wells was sampled for the presence of MGP-related contaminants. A packer was placed in the angled boring to evaluate the presence of NAPL in the shallow and deep portions of the bedrock beneath the former holder.

Based on the core, the bedrock beneath the site was found to be very competent, with the exception of a weathered zone at the surface and some vertical and horizontal fractures. A near horizontal bedding plane fracture zone that generally slopes to the northeast was found beneath the site at a depth of about 35 feet beneath the holder. This fracture and the weathered bedrock surface are the primary pathway for MGP-related NAPL and dissolved contaminants to migrate in the bedrock beneath the site. Benzene, PAHs, phenols, and cyanide were detected at concentrations that exceed the NYSDEC's groundwater standards in bedrock groundwater samples collected on-site. Benzene, phenol, and cyanide were detected at concentrations that exceed the NYSDEC's groundwater standards in groundwater samples from at least one off-site bedrock monitoring well. Traces of NAPL were found in on-site bedrock monitoring wells that either intersect the bedding plane fracture or the upper weathered bedrock zone. The area in which NAPL was observed was limited to the east and northeast of the former gas holder. None of the wells have recoverable amounts of NAPL.

RECOMMENDATIONS

Based on the data collected during this investigation, URS makes these recommendations.

- No further soil or groundwater investigation is needed to delineate nature and extent of contamination.
- NAPL in the bedrock has been fully delineated. The bedrock groundwater monitoring wells, which have historically shown the presence of NAPL, should be monitored periodically for the continued presence of NAPL.
- A site management plan should be developed to control future use of the site and manage future risks the site may pose.

TABLE OF CONTENTS

TABLES

FIGURES

APPENDICES

ACRONYMS

ASP	Analytical Services Protocol
ASTM	American Society for Testing and Materials
B/N	base-neutral extractable
BNA	base, neutral, and acid extractable
BTEX	benzene, toluene, ethylbenzene, and xylenes
°C	degree Celsius
CLP	Contract Laboratory Procedure
DQO	data quality objectives
DUSR	Data Usability Study Review
EPRI	Electric Power Research Institute
FSP	Field Sampling Plan
GC/ms	Gas Chromatograph/mass spectrometer
HASP	Health and Safety Plan
HDPE	high density polyethylene
HSA	hollow stem auger
IAQ	indoor air quality
IRM	Interim Remedial Measure
MGP	Manufactured Gas Plant
L	liter
LOC	levels of concern
mg	milligram
µg	microgram
MS	matrix spike
MSB	matrix spike blank
MSD	matrix spike duplicate
NAPL	Non-aqueous phase liquid
NYSDEC	New York State Department of Environmental Conservation
NYSDOH	New York State Department of Health
NYSEG	New York State Electric and Gas Corporation
PAH	polycyclic aromatic hydrocarbon
PID	photoionization detector

ppm	part per million
PSA	Preliminary Site Assessment
PVC	polyvinyl chloride
QA	quality assurance
QC	quality control
RPD	relative percent difference
RQD	rock quality dynamic
RSCO	Recommended Soil Cleanup Objective
SCGs	Standards, Criteria, and Guidance Values
SI	site investigation
Site	NYSEG's Bridge Street Plattsburgh former MGP site (site ID #5-10-016)
SSPS	Site Screening and Priority Setting System
SVOC	semivolatile organic compound
TAL	Target Analyte List
TCL	Target Compound List
TCLP	Toxicity Characteristic Leaching Procedure
TIC	tentatively identified compound
TOC	total organic carbon
TPH	total petroleum hydrocarbon
URS	URS Corporation – New York
USCS	Unified Soil Classification System
USEPA	US Environmental Protection Agency
USGS	US Geological Survey
VOA	volatile organic analyte
VOC	volatile organic compound
VTSR	validate time of sample receipt

1.0 INTRODUCTION

On behalf of NYSEG (New York State Electric and Gas Corporation), URS Corporation – New York (URS) has prepared this *Remedial Investigation (RI) Report* for NYSEG's former Manufactured Gas Plant (MGP) on Bridge Street in the City of Plattsburgh, Clinton County, New York (Site ID #5-10-016). The location of the site is shown on Figure 1. NYSEG submits this document as required by Order on Consent Index Number DO-0002-9309 (the Order). This RI was preformed in accordance with:

- The requirements of the Order on Consent.

- *Work Plan for a Preliminary Site Assessment (PSA) at the Plattsburgh-Bridge Street Former MGP Site, Plattsburgh, New York (PSA Work Plan)*, dated June 1999. This work plan*,* which was approved by the NYSDEC on July 9, 1999 included a *Field Sampling Plan* (*FSP*), a *Quality Assurance/Quality Control* (*QA/QC*) plan, and a *Health and Safety Plan* (*HASP*).

- *Work Plan for Supplemental Sampling and Analysis at NYSEG's Plattsburgh-Bridge Street Former MGP Site (Supplemental Work Plan)*, dated October 6, 1999. Based on the findings of the PSA, NYSEG submitted this work plan to fill data gaps. On October 8, 1999, the NYSDEC approved the *Supplemental Work Plan*.

- *Work Plan for Supplemental Indoor Air Sampling at 140 Bridge Street (Supplemental Indoor Air Sampling Work Plan)*, dated December 1999. The NYSDEC verbally approved the *Supplemental Indoor Air Sampling Work Plan* on January 5, 2000.

- *Revised Bedrock Investigation Work Plan*, dated November 7, 2001. Based on the findings of the April through June 2001 Interim Remedial Measure (IRM), this work plan was prepared to investigate the impacts to the bedrock beneath the former gas holder. The NYSDEC approved this workplan on November 13, 2001.

- *Supplemental Bedrock Investigation Work Plan*, dated June 20, 2002. Based on the findings of the initial bedrock investigation, the June 2002 work plan was submitted to fill data gaps. The NYSDEC approved the *Supplemental Bedrock Investigation Work Plan*, with its August 8, 2002 addendum, on August 29, 2002.

This report presents the results of the investigation that was outlined in these five NYSDEC-approved work plans.

The *PSA Work Plan* was initiated and completed in July 1999. In October 1999, URS began the work in the *Supplemental Work Plan*. The work completed as part of the *Supplemental Work Plan* included the collection of additional soil samples and soil borings at the site and at the adjacent properties to further evaluate the soil quality or confirm the results obtained during the PSA. Since the location of the holder was confirmed in October 1999 and coal tar was observed in the former gas holder, the NYSDEC and NYSEG agreed that this PSA must now be considered a remedial investigation (RI). In February 2000, URS completed the indoor air quality assessment at the apartment complex that was outlined in the *Supplemental Indoor Air Sampling Work Plan*.

NYSEG submitted a *Draft Remedial Investigation Report,* dated June 2000, to the NYSDEC for review. The June 2000 report included data collected through February 2000. The NYSDEC provided comments to the June 2000 report in a letter. NYSEG submitted a revised *Remedial Investigation Report*, dated December 15, 2000, which incorporated the NYSDEC's comments.

During April through June 2001, NYSEG implemented an interim remedial measure (IRM) to remove the former gas holder and impacted soils at the site. Overburden soils were excavated to bedrock across most of the site and the neighboring former firehouse property and backfilled with clean sand. In addition, the former gas holder foundation and its contents were removed and disposed at an off-site facility. During the IRM, MGP-related NAPLs were observed on the weathered bedrock surface. The data from the 2001 IRM is included in this report.

Because MGP-related material was found in the weathered bedrock surface and in the bottom of the former gas holder during the 2001 IRM, NYSEG and the NYSDEC agreed that investigation of the bedrock beneath the site was warranted. The initial bedrock investigation began in November 2001 and was completed in February 2002. The supplemental bedrock investigation began in September 2002 and was completed in April 2003. The data from these investigations are included in this report.

This report contains eight sections. Section 2.0 provides background information for the site. Section 3.0 summarizes the site investigation. Section 4.0 describes the geology and hydrogeology of the study area. The results of the investigation activities are discussed in Section 5.0. Conclusions are presented in Section 6.0. Recommendations are included in Section 7.0. A list of references for materials used to prepare this report is provided in Section 8.0.

2.0 BACKGROUND

The Plattsburgh-Bridge Street MGP Site (the site), an approximately 0.5-acre lot, is located at 140 Bridge Street in the City of Plattsburgh, New York (Figure 1). The property is near the outlet of the Saranac River, which flows eastward and discharges to the Cumberland Bay of Lake Champlain. The topography in the area is generally flat. The nearest surface water body, Cumberland Bay, is approximately 1,000 feet east of the site.

As shown in Figure 2, the site is bounded by Bridge Street on the north, an apartment building on the east, residences to the west, and a warehouse facility to the southwest of the site. There are residences southeast of the site, which are not shown on Figure 2. The site is currently vacant. Following the 2001 Interim Remedial Measure (IRM), the site was graded and seeded (see Section 2.4). Currently, the access to the property is unrestricted.

Prior to the 2001 IRM, there was an apartment house, which included three residential apartments (two on the ground floor and one on the second floor) at the site. There was an automobile garage at the southern end of the apartment complex. Most of the property was covered by asphalt and the apartment building. There were three small soil and grass covered areas on the property. There was an open area between the former apartment and the former fire station to the west that was used as a flower garden and there was an open area behind (south of) the apartment building that was used as a playground for residents of the former apartment building. The former firehouse was also demolished in 2001. The adjacent properties are primarily residential with some nearby commercial and industrial development.

2.1 OPERATIONAL HISTORY

A historical records search was conducted in 1999 by the city historian (Mr. James Bailey) and the city clerk (Mr. Keith Herklo) to obtain information regarding the former plant's layout and processes. URS conducted a search of the special collections at SUNY Plattsburgh.

The available historical information is provided in Appendix A. A copy of Engineering Science, Inc.'s 1992 investigation is in Appendix H. Based on all of these sources of historical information, there is limited information that documents the former plant's layout or the volumes of waste that were historically generated at the gas plant.

The former gas plant operated from 1860 to 1896. The plant consisted of one main building with a gas holder and a coal shed. The plant was destroyed by fire and rebuilt on at least two occasions. Over the 36 years of operation, the gas plant was either rebuilt or converted to as many as four different processes to manufacture the coal gas. The remainder of this section includes a summary of the information derived from the historical records search.

The plant was operated using bituminous coal and pine stumps from 1860 until 1871. The plant was destroyed by fire in 1865 and again in 1871.

Between 1871 and 1882, the site was owned and operated by the Plattsburgh Gas and Light Company. The plant was operated using the Aubin Process during this time. This process produced gas from resin.

Sometime between 1882 and 1888, the property was purchased by M.P. Lowe. During this time, the plant was converted to use the water gas process.

In 1888, Mr. Almon Thomas purchased the site. The plant was upgraded to use the carburetted water gas (CWG) process. The CWG process passed water gas through a carburetor where a spray of oil was added to the water gas mixture prior to thermally cracking the oil in a superheater.

In 1889, Mr. H.M. Pierson and Mr. G. Cole purchased the site. In 1890, the plant was sold to the Plattsburgh Light, Heat, and Power Company. Throughout this time, the CWG process continued at the site. In 1896, the Bridge Street gas plant was abandoned and the operations were moved to the Saranac Street site, which is approximately one half mile southwest of the Bridge Street site.

Sometime, between 1896 and 1927, one of the owners built an extension to the original building over the gas holder. This extension was part of the apartment house and garage that were demolished as part of the 2001 IRM. Prior to the 2001 IRM, there was no information that described the construction of the gas holder or its demolition. Furthermore, it was not known whether the subsurface portion of the holder was still intact. Historical maps do not indicate the presence of tar wells or other disposal structures.

From the end of active operations 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 and the subsequent addition were converted into an apartment building in the early 1970s. Mr. David Meath purchased the property in 1985. NYSEG purchased the property in 2000.

As shown in Figure 2, a medical office, which was formerly a lumber yard and an equipment/boat storage facility, is currently to the northeast. There are currently offices, which were formerly horse stables, to the northwest. An apartment complex is east of the site. The apartment complex was formerly a lumberyard. A former heavy equipment dealer, which is currently a warehouse facility, is to the southwest. Residences and a former volunteer fire station are west of the site.

2.2 PREVIOUS ENVIRONMENTAL INVESTIGATIONS

In February of 1992, NYSEG retained Engineering Science (ESE) to complete a site screening evaluation of the site using the Site Screening and Priority Setting System (SSPS), which was developed by the Electric Power Research Institute (EPRI). The results of this sampling, and the results of the site screening are presented in Engineering Science's report, entitled *Prioritization* *of Former Manufactured Gas Plant Site; Plattsburgh-Bridge Street Site,* dated February 1992, which is included in Appendix H of this report.

This site, along with the other former MGPs where NYSEG retains the environmental liability, were evaluated using the SSPS. This prioritization program was used to identify and rank the potential threats posed by the former MGPs. The program involved some data compilation, some field sampling, and a reconnaissance of the old gas plants. This information was fed into EPRI's model to provide a quantitative measure of the risks posed by each site, and a relative ranking of the need for additional evaluation of each site.

During the site screening evaluation, Engineering Science collected three composite surface soil samples (designated SS-1, SS-2, and SS-3) at the Bridge Street site. One composite sample represented the soil quality along the eastern property boundary (SS-1), one composite sample represented the soil quality along the western property boundary (SS-3), and one composite soil sample represented the soil quality along the southern property boundary (SS-2). These three soil samples were analyzed for volatile organic compounds (VOCs), semivolatile organic compounds (SVOCs), and metals. In addition, indoor air quality was evaluated using a photoionization detector (PID). No VOCs were detected in the air inside the building using the PID.

One composite surface soil sample (SS-2) contained polycyclic aromatic hydrocarbons (PAHs). Total PAHs in sample SS-2 were 11.4 parts per million (ppm). One composite surface soil sample (SS-3) contained VOCs, and that was limited to a single compound (1,1,1-trichloroethane), which is unlikely to be associated with the former MGP. Cyanides were not detected in any of the three composite surface soil samples.

2.3 AREAS OF CURRENT INVESTIGATION

As the investigation has progressed through several iterative phases, URS, NYSEG, and NYSDEC collectively identified seven areas of concern:

- The former gas holder;
- The crawl space in the basement of the building;
- Indoor Air Quality;
- The overall soil quality at the site and at the neighboring properties;
- The sewer system;
- Groundwater quality in the overburden; and
- The bedrock beneath the site.

The remainder of this section describes each of these seven areas of concern and then discusses, in general, the technical approach that URS has used to investigate these seven areas. Section 3.0 contains the scope of work for the different phases of investigation that URS and NYSEG used to investigate these areas.

2.3.1 Former Gas Holder

There is little historical information regarding the location and construction of the former gas holder. Sometime between 1896 and 1927, an extension to the original building was apparently constructed over the former location of the gas holder. In the early 1970's the onsite buildings were converted to apartments.

At many MGP sites, the gas holder foundations contain MGP-derived residues and wastes. Therefore, the nature of the material that potentially remained within, and underneath, the former gas holder was investigated.

In July 1999, twelve borings were advanced to determine the location of the former gas holder. This attempt was unsuccessful because it was later learned that the former gas holder was located further south than believed in July 1999. In October 1999, based on additional historical information, six additional soil borings were advanced either around, or into, what we believe is the foundation of the former gas holder.

In the spring of 2001, NYSEG excavated the former gas holder as part of a NYSDEC approved IRM (see Section 2.4).

2.3.2 The Crawl Space Beneath the Building

There was a crawl space area beneath the northern end of the former apartment building. This crawl space was approximately 36 feet by 16 feet. There was approximately three inches of soil in the crawl space over a concrete floor. As part of this investigation, NYSEG investigated the quality of the soil in the crawl space. In addition, several air samples were collected from around, and in, the crawl space.

2.3.3 Indoor Air

The *PSA Work Plan* proposed soil gas sampling within the crawl space and in predetermined areas outside of the building. On May 7, 1999, during a visit to the site, URS found that the crawl space was wet and contained approximately three-inches of soil over a concrete slab. There was standing water in a sump near the northwestern corner of the crawl space and in a hole in the concrete floor along the north wall of the crawl space. Thus, soil gas sampling underneath the concrete slab was not feasible because of the presence of a high water table. The NYSDEC, NYSDOH, and NYSEG agreed that indoor air sampling methods could be used to evaluate whether the site was impacting air quality in the former crawl space and the apartment building.

2.3.4 Soil Quality at the Site and at the Neighboring Properties

There is no information that documents the historical waste disposal practices at the site. It is possible that MGP-derived wastes were also disposed on adjacent properties, or that soils containing such wastes were placed on those properties after the MGP ceased operation.

In 1992, Engineering Science's three composite surface soil samples indicated that there were PAHs in the shallow soil. The lateral and vertical extent of MGP-related contamination in the overburden soils beneath the site was uncertain. As part of this investigation, URS collected 24 surface soil samples and 15 subsurface soil samples. All 39 of these soil samples were analyzed for PAHs. Data collected during the 2001 IRM was also used to evaluate the extent of contamination on-site.

2.3.5 Storm Sewer System

The NYSDEC indicated in their approval letter for the *Supplemental Work Plan* that the storm sewer line along Bridge Street may be a potential migration pathway for MGP constituents to exit from the site. A catch basin to the storm sewer is at the northeast corner of the site. This basin is at the easternmost end of the sewer line along Bridge Street. The water in the sewer flows to the west and the sewer line turns north and crosses Bridge Street, approximately 50 feet northwest of the site. If the storm sewer was excavated into bedrock, then the bedrock trench could provide a potential migration pathway for MGP-related contaminants. As part of this investigation, URS surveyed the manhole and invert elevations near the site to compare to bedrock elevations and assess whether the storm sewer trench was excavated into bedrock.

2.3.6 Overburden Groundwater Quality And Flow

To investigate the groundwater quality in the overburden beneath the site, URS installed five shallow monitoring wells. One of the monitoring wells (MW-99-01) was dry during the two (October 1999 and April 2000) sampling events. As part of this investigation, the four wells that produce groundwater were sampled two times each to evaluate the nature and extent of MGP-related contamination in the shallow groundwater.

2.3.7 Bedrock

During the 2001 IRM, the foundation for the former gas holder was found and excavated. The bottom of the holder was found to be partially constructed in a socket that was apparently blasted into the bedrock. The floor of the holder was concrete on top of the bedrock. During excavation, MGP-impacted soils were found on the bedrock surface and in fractures observed on the weathered surface of the bedrock. The extent to which MGP-related material impacted bedrock was not delineated during the IRM. Therefore, NYSEG and the NYSDEC agreed that additional investigation of the nature and extent of impacts to the bedrock and groundwater in the bedrock was needed. As part of this investigation, URS installed twelve bedrock monitoring wells and one angled bedrock boring.

2.4 INTERIM REMEDIAL MEASURE

On April 23 through June 8, 2001, NYSEG executed the NYSDEC approved *Interim Remedial Measures Work Plan for Activities at Plattsburgh Bridge Street Former Manufactured Gas Site, City of Plattsburgh, Clinton County, New York*, dated April 2001. During the IRM, NYSEG located and removed the former gas holder foundation as well as impacted soils at the site. The soil across the site and the adjacent former firehouse property was removed down to bedrock. A thin layer of fractured rock and concrete from the northeast corner of the former gas holder remains in the depression of the bedrock. A total of 5,268 tons of soils and 48,400 gallons of water were removed from the site and properly treated or disposed.

NYSEG's *Interim Remedial Measures Final Engineering Report*, dated March 2002, indicated that no other MGP-related structures were found during the IRM. Some piping was found on the northwest side of the former gas holder where the former valve box was likely located. The foundation of the former gas holder was found to be constructed in a bedrock socket that was apparently blasted into bedrock. The walls of the foundation were constructed of brick and stone. The concrete floor of the former gas holder, which was approximately 14 feet below the ground surface, was removed during the IRM to expose the bedrock surface.

There was some NAPL observed on the bedrock surface and in fractures in the weathered bedrock. The most significant impacts were reported to be near the suspected valve box area where NAPL was observed in bedrock fractures. It was uncertain whether the NAPL was coming from the bedrock or was from soil that had been excavated from the holder bottom and placed on the bedrock shelf prior to removal from the site.

Post-excavation soil samples collected from the sidewalls of the excavation on the east, south, and west mostly met cleanup objectives. Post excavation soil samples from the northern portion of the excavation along Bridge Street exceeded cleanup objectives for all parameters except naphthalene and may be due to non-MGP sources. Excavation could not be extended further north because of the presence of the Bridge Street roadway. Post-excavation samples collected from the bedrock surface, which consisted of residual soils and weathered bedrock, exceeded cleanup objectives, which were based on concentrations of benzene and total concentrations of PAHs. Further excavation of the bedrock surface was not possible. The post-excavation sample analytical results are discussed in Section 5.2.

3.0 SCOPE OF WORK

This section contains an overview of the scope of work that was performed during the PSA and Remedial Investigation. More specifically, this section contains the scope of work for these tasks:

- Historical Records Review
- Evaluation of the Indoor Air Quality in the Former Building
- Soil Investigation
- Overburden Groundwater Investigation
- Limited Data Validation
- Bedrock Investigation

The remainder of this section restates the scope of work for each of these investigative programs.

3.1 HISTORICAL RECORDS REVIEW

URS reviewed information provided by NYSEG and other sources available in the public domain, including the SUNY Plattsburgh special collections, the city of Plattsburg historian (Mr. James Bailey), and the city clerk's office. This information included:

- The 1992 Site Prioritization Report;
- Aerial photographs;
- Local water and sewer maps;
- Tax maps; and
- Published geology.

URS also conducted personal interviews with residents in the immediate vicinity of the site, including Alexander Edwards, of the CPA firm on the corner of Bridge Street and Dock Street, R. Bertolli, of the residence adjacent to the former volunteer fire department, Keith Herklo, of the residence adjacent to R. Bertolli's, the City of Plattsburgh Water & Sewer Department, the city historian, and the city clerk. The information we gathered is discussed in detail in Section 2.1.

3.2 EVALUATION OF THE INDOOR AIR QUALITY IN THE FORMER BUILDING

On July 29, 1999, a six liter summa canister was used to retrieve a representative air sample from the crawl space over a two hour period, in order to evaluate whether the site was impacting air quality in the former crawl space. A separate sample of outside ambient air was also collected at the same time using the same sampling method. Both air samples were analyzed for VOCs using United States Environmental Protection Agency (USEPA) Method TO-14. The analytical results are summarized in Table 2 and discussed in Section 5.1.

During drilling on October 13, 2000, MGP contamination was found near the center of the former gas holder, at a depth of approximately 10 feet below the ground surface (bgs). Although the real time air monitoring with a PID inside the garage and apartments did not indicate any volatile organic air contaminants in air during the 1992 SSPS (Appendix H), this field instrument generally does not have a detection limit low enough to fully evaluate indoor air exposures.

On February 1, 2000, an indoor air quality (IAQ) assessment was conducted for each of the three former apartments and the garage at the site. The IAQ assessment was conducted using New York State Department of Health (NYSDOH) protocols. Prior to collecting any air samples, a product inventory was gathered for each apartment, a schematic diagram of each apartment was created, and the apartment area was ventilated. Inventories of household products in each apartment were completed and are provided in Appendix E. A six-liter summa canister was centrally located in each of the three former apartments to retrieve a representative air sample over an eight-hour time interval. In addition, six-liter summa canisters were used to retrieve representative air samples from the garage and of the ambient air (outside of the former building). All five air samples were analyzed for VOCs using USEPA Method TO-14. The analytical results are summarized in Table 2 and are discussed in Section 5.1.

3.3 SOIL INVESTIGATION

There have been six different sampling events where soil data have been collected at the site:

- 1992 SSPS Investigation - During this investigation, ESE collected three surface soil samples that were analyzed for VOCs, SVOCs, and metals.
- July 12 and 13, 1999 Investigation - During this investigation, URS collected five shallow surface soil samples and advanced 26 soil borings.
- Late July 1999 Investigation - During this investigation of the crawl space, URS collected one soil sample from above and two soil samples from beneath the concrete floor of the crawl space.
- October 1999 Investigation - During this investigation, URS collected three subsurface soil samples from borings PB-SB-16, PB-SB-18, and PB-SB-20 and five more soil samples from the crawl space. Four of the five soil samples from the crawl space were analyzed for mercury only.
- May through June 2001 IRM Post Excavation Sampling – NYSEG collected a total of 15 sidewall samples and eight bottom samples during the 2001 IRM.
- 2001 though 2002 Bedrock Investigation – During the bedrock investigation, URS collected seven soil samples. Sample “Soil-1” was collected from the material that was used to backfill the former gas holder. Samples SB-01-3A, SB-01-4A, and SB-01-11 were collected at the bedrock surface north of Bridge Street. Samples DS-1, DS-2, and DS-3 were collected at the bedrock surface along the south side of Dock Street, which is approximately 200 feet north of the site.

Tables 3 and 4 summarize the sample depths and laboratory analyses for each soil sample collected during the 1999 sampling events. Sample locations are shown on Figure 3.

To integrate all of the data generated during these multiple field programs, the soil data is discussed in three subsections:

- The soil in and beneath the former crawl space
- The surface soil
- The subsurface soil

The remainder of this section discusses the scope of work for each of these investigations.

3.3.1 Soil Quality in and Beneath Former Crawl Space

URS collected a total of eight soil samples from the former crawl space.

Soil Samples

On July 19, 1999, URS collected a soil sample (PB-SS-CR-01) from the former crawl space. On July 28, 1999, URS collected two soil samples (PB-CS-01 and PB-CS-02) from beneath the concrete slab. The locations of the three samples are shown in Figure 3. The objective of this investigation was to evaluate the quality of the soil above and beneath the concrete slab in the former crawl space.

Soil sample PB-SS-CR-01 was analyzed for target contaminant list (TCL) VOCs using analytical services protocol (ASP) Method 95-1, TCL SVOCs using ASP Method 95-2, TAL metals using ASP Method CLP-M, total organic carbon (TOC) using the Lloyd Kahn Method, TPH using Method 310.13, reactive sulfide, and total and reactive cyanides using USEPA Method SW9012A. Soil samples PB-CS-01 and PB-CS-02 were analyzed for TCL VOCs using ASP Method 95-1, TCL SVOCs using ASP Method 95-2, TAL metals using ASP Method CLP-M, TOC using the Lloyd Kahn Method, reactive sulfide, and total and reactive cyanides using Method SW9012A.

The analytical laboratory (Upstate Laboratories of East Syracuse, New York) provided ASP Category B Quality Assurance/Quality Control (QA/QC) deliverable packages. The entire ASP Category B deliverable packages are on file with URS. The analytical results for these three soil samples are summarized in Table 5 and are discussed in Section 5.2.

On October 14, 1999, URS collected sample PB-CR-SED-01 of the soil from the base of the ladder in the former crawl space. In addition, we collected four sediment samples (PB-CR-SED-N, PB-CR-SED-S, PB-CR-SED-E, and PB-CR-SED-W) from approximately two feet to the north, south, east, and west, respectively, from where the ladder sample was collected. The purpose of these samples was to verify the elevated concentrations of mercury detected in the July 1999 crawl space soil samples.

As shown in Table 4, sample PB-CR-SED-01 was analyzed for TAL Metals using Method CLP-M. The remaining four samples PB-CR-SED-N, PB-CR-SED-S, PB-CR-SED-E, and PB-CR-SED-W were analyzed for mercury using ASP Method CLP-M. The analytical laboratory (Upstate Laboratories) provided an ASP Category B QA/QC deliverable package. The entire ASP Category B deliverable package is on file with URS. The analytical results for these five samples are summarized in Table 5 and are discussed in Section 5.2.

3.3.2 Surface Soil Quality

Surface and near surface soil samples were collected and analyzed to evaluate the lateral extent of the PAHs in the soil both onsite and offsite prior to the 2001 IRM. The near surface soil in several gardens near the site was investigated to evaluate the soil quality in these gardens.

Surface Soil

On July 12, 1999, URS collected 14 surface soil samples (PB-SS-1 through PB-SS-14) from the site and the neighboring properties to evaluate the surface soil quality at, and near, the former MPG plant. The sampling locations were agreed upon in the field by the NYSDEC, NYSDOH, and NYSEG. The 14 surface soil sampling locations are shown in Figure 3. Figure 3 also shows the extent of the excavation during the 2001 IRM. Soil samples collected within the excavation boundary are representative of pre-IRM conditions.

Four of the fourteen surface soil samples (PB-SS-1, PB-SS-6, PB-SS-7, and PB-SS-9) were collected from the site to confirm the presence of the VOCs and PAHs that ESE detected during the SSPS. Two samples (PB-SS-1 and PB-SS-6) were collected from the eastern property boundary, one sample (PB-SS-9) was collected from the western property boundary, and one sample (PB-SS-7) was collected from the southern (rear) property boundary.

Ten of the 14 surface soil samples (PB-SS-2 through PB-SS-5, PB-SS-8, and PB-SS-10 through PB-SS-14) were collected from properties adjacent to the former MGP plant. Surface soil sample PB-SS-2 was collected from the south side of the apartment complex, approximately 75 feet east of the former MGP site. As shown in Figure 3, four surface soil samples PB-SS-4, PB-SS-5, PB-SS-7, and PB-SS-8 were collected from locations south of the southern boundary of the former MGP site and south of the parking lot of the apartment building east of the former MGP site. Soil samples PB-SS-10 and PB-SS-13 were collected at the rear of the two residential properties west of the former MGP site. Surface soil samples PB-SS-11 and PB-SS-12 were collected from gardens west of the site. Surface soil sample PB-SS-14 was collected from the north side of Bridge Street, northwest of the former MGP site.

Each surface soil sample consisted of five grab samples taken with a stainless steel shovel at the corners and center of a one meter square area from a depth of 0 to 1 inch (0 to 0.1 feet) below the ground surface. The grass or sod was removed prior to sampling. The five grab samples were mixed in a clean, decontaminated, stainless-steel bowl using a clean, decontaminated, stainless-steel scoop to create a composite sample that was representative of the entire one square meter area.

As shown on Table 3, all 14 surface soil samples were analyzed for TCL SVOCs, TAL metals, TOC, TPH, reactive cyanide, reactive sulfide, and total cyanides. The air just above the soil at each sampling location was screened with a PID to determine if VOC analysis was necessary. No PID readings were detected above background levels, thus, the surface soil samples were not analyzed for VOCs. Sample analytical methodology and data deliverables met the requirements of ASP Category B. The surface soil analytical results are summarized in Table 6 and are discussed in Section 5.2.

Because the analytical results indicated that there were elevated concentrations of PAHs at surface soil location PB-SS-4, URS collected three additional surface soil samples (PB-SS-15 through PB-SS-17) on October 13, 1999. URS also collected surface soil samples PB-SS-18 and PB-SS-19 from the garden west of the former apartment building at the site because the July 1999 surface soil sample (PB-SS-9) and two near surface soil samples (PB-NSS-01 and PB-NSS-02) from the garden contained elevated concentrations of PAHs. As sown on Table 3, the five surface soil samples collected in October 1999 were analyzed for TCL SVOCs, TAL metals, TOC, TPH, reactive sulfide and cyanide, and total cyanides. The analytical results are summarized in Table 6 and are discussed in Section 5.2.

Near Surface Soil

On July 12, 1999, URS collected three near surface soil samples (PB-NSS-01 through PB-NSS-03) to investigate the potential for exposure pathways from MGP residues to humans. Two of the near surface soil samples (PB-NSS-01 and PB-NSS-02) were collected from within the former garden area. These two samples were collected with a stainless steel hand auger from a depth of four to eight inches. Near surface soil sample PB-NSS-03 was collected from the ground surface to a depth of 12 inches from a representative location in the vegetable garden that is west of the site. These sampling locations were agreed upon by NYSDEC, NYSDOH, and NYSEG. Figure 3 shows the locations of these three near surface sample locations.

As shown on Table 3, these three near surface soil samples were analyzed for TCL VOCs, TCL SVOCs, TAL metals, TOC, TPH, reactive cyanide, reactive sulfide, and total and reactive cyanides. Upstate Laboratories used analytical methods and supplied data deliverable packages that complied with the requirements of ASP Category B. The near surface soil analytical results are summarized in Table 7. The analytical results are discussed in Section 5.2.

Because the analytical results from surface soil location PB-SS-4 indicated the presence of elevated concentrations of PAHs, URS collected one near surface soil sample (PB-NSS-04) on October 13, 1999 near the location of PB-SS-4 to confirm the original results. Also on October 13, 1999, URS collected one additional near surface soil sample PB-NSS-05 from the perennial garden west of the former apartment building, because the July 1999 surface soil and near surface soil samples (PB-SS-9, PB-NSS-01 and PB-NSS-02) collected from the onsite garden area contained elevated concentrations of PAHs. The near surface soil analytical results are summarized in Table 7 and are discussed in Section 5.2.

3.3.3 Subsurface Soil Investigation

To date, there have been four field programs that have generated subsurface analytical data:

- July 1999 – Twelve soil borings were advanced at the site to investigate the presumed location of the former gas holder. Fourteen additional soil borings were advanced, five of which were completed as monitoring wells to investigate the downgradient subsurface conditions. One well is dry.

- October 13, 1999 – Ten additional borings were advanced to collect additional data regarding the location of the former gas holder.
- May through June 2001 – NYSEG excavated and removed the former gas holder and site soils down to bedrock. NYSEG also collected a total of 23 post-excavation samples.
- November 2001 through January 2002 – URS collected soil samples as part of the bedrock investigation north of the site along Dock Street and Bridge Street as well as from the material used to backfill the former gas holder.

The focus of the early rounds of investigation was to identify the location of the former gas holder. The former gas holder was originally thought to be beneath the northern portion of the former onsite apartment complex. Historical drawings of the site indicate that a small portion of the former gas holder may have extended beyond the west side of the building addition that was added sometime between 1896 and 1927. The July 1999 investigation focused on the northern portion of the site. The former gas holder was not located. Based on additional information gathered during the records search after the initial round of soil borings, it was determined that the holder may be further south. In October 1999, additional soil borings were advanced and confirmed the former gas holder location on the southern portion of the former apartment building.

July 1999 Investigation

On July 13, 1999, URS advanced 12 soil borings (W-1 through W-11 and W-3A) along the northern portion of the west side of the former apartment building to investigate the western portion of the former gas holder. Figure 3 shows the locations of these 12 soil borings. Due to the restricted space between the on-site building and the adjacent fire house, the borings were advanced using a Geoprobe® direct-push sampling device that was mounted on an all terrain vehicle.

Continuous soil sampling was conducted with two-inch diameter samplers. Each of the 12 soil borings was advanced until refusal. The total depths of the borings ranged from six to eight feet below the ground surface (bgs). The samples were visually inspected for signs of contamination and screened in the field with a PID. The former gas holder was not found during the drilling of these 12 soil borings.

Soil borings W-3 and W-3A exhibited the highest PID readings (9.5 and 26 ppm, respectively) of all the soil samples retrieved. Traces of oil were observed in the soil samples collected from a depth of four to seven feet bgs from these two borings. Based on the PID readings, discrete grab samples from five to seven feet bgs from soil borings W-3 and W-3A were homogenized to produce one representative composite soil sample (PB-SB-1).

As shown on Table 3, soil sample PB-SB-1 was analyzed for TCL VOCs using ASP Method 95-1, TCL SVOCs using ASP Method 95-2, TAL metals using Method CLP-M, TOC using the Lloyd Kahn Method, TPH using USEPA Method 310.13, reactive sulfide, and total and reactive cyanide using USEPA Method SW9012A. In addition, to evaluate whether the traces of oil in the soil could leach to groundwater, soil sample PB-SB-1 was processed using the Toxicity

Characteristic Leachate Procedure (TCLP) Method 1311. The resultant leachate was analyzed for benzene (Method 8260B).

On July 13, 1999, 14 additional soil borings (PB-SB-2 through PB-SB-13, including PB-SB-6A and PB-SB-6B) were advanced at both onsite and offsite locations. Nine of the 14 soil borings (PB-SB-2 through PB-SB-6, PB-SB-6A, PB-SB-6B, PB-SB-12, and PB-SB-13) were advanced with the Geoprobe. The remaining five soil borings (PB-SB-7 through PB-SB-11) were advanced using 4-1/4-inch hollow-stem augers and completed as two-inch monitoring wells (MW-99-01 through MW-99-05). These boring locations are shown in Figure 3.

Soil borings PB-SB-2 through PB-SB-6, PB-SB-6A, and PB-SB-6B were advanced north of the former apartment building and north of the former firehouse. The total depths of soil borings PB-SB-2 through PB-SB-6, PB-SB-6A, and PB-SB-6B were between 7 feet bgs and 9.5 feet bgs. Soil boring PB-SB-12 was advanced to a depth of four feet bgs west of the former apartment building on a nearby property. Bedrock was encountered at four feet bgs near the southeast corner of the MGP site at soil boring PB-SB-13.

Each soil boring was advanced with the Geoprobe and continuously sampled with two-inch diameter samplers until refusal. Each soil sample was field-screened with a PID. The soil sample exhibiting the highest PID reading was selected for laboratory analyses. At soil borings where no elevated PID readings were detected, the soil sample at the bottom of the boring was selected. With the exception of the three soil borings (PB-SB-3, PB-SB-6B and PB-SB-13), that were not sampled, one soil sample from each boring was selected for laboratory analyses. As shown in Table 3, the 11 remaining soil samples were analyzed for TCL VOCs, TCL SVOCs, TAL metals, TPH, reactive and total cyanides, reactive sulfide, and TOC. Soil samples from soil borings PB-SB-7, PB-SB-8, and PB-SB-9 were not analyzed for TPH. The analytical results are summarized in Table 8 and discussed in Section 5.2. Upstate Laboratories provided an ASP Category B QA/QC deliverable package. The entire ASP Category B deliverable package is on file with URS.

The total depths of the borings advanced with hollow-stem augers ranged from 8 feet bgs to 13 feet bgs. During drilling of these five borings, each soil boring was continuously sampled using two-inch diameter, two-foot long split-spoon samplers. Each soil sample was field screened with a PID and the soil sample exhibiting the highest PID reading from each boring was selected for laboratory analysis. The five soil samples were analyzed for TCL VOCs, TCL SVOCs, TAL metals, reactive and total cyanides, reactive sulfide, and TOC. The analytical results are summarized in Table 8 and are discussed in Section 5.2. Upstate Laboratories provided an ASP Category B QA/QC deliverable package which is on file with URS.

Boring PB-SB-7, which was completed as monitoring well MW-99-01, was advanced near the southern (rear) property boundary of the former MGP site. Monitoring well MW-99-01 is upgradient of the former MGP site. Boring PB-SB-8 was completed as monitoring well MW-99-02 in the driveway adjacent to the east side of the former apartment building and east of the former gas holder. Borings PB-SB-9 through PB-SB-11 were completed as downgradient monitoring wells MW-99-03 through MW-99-05, respectively. All three of these wells are along the north side of Bridge Street on the City of Plattsburgh's property. The location of these five monitoring wells are shown in Figures 3 and 4.

October 1999 Investigation

Based on the July 1999 analytical results, ten additional (Geoprobe) soil borings (PB-SB-14 through PB-SB-23) were advanced on October 13, 1999. Soil boring PB-SB-14 was advanced adjacent to surface soil sampling location PB-SS-6, southeast of the site. Soil borings PB-SB-22 and PB-SB-23 were advanced adjacent to soil boring locations PB-SB-5 and PB-SB-6, respectively, which are north of the former apartment complex. No elevated PID readings or visual evidence of contamination were reported at these three borings, therefore, no soil samples were submitted for laboratory analyses from these three borings.

Soil borings PB-SB-15 through PB-SB-21 were advanced within and adjacent to the location of the former gas holder inside the garage of the former apartment complex. Upon further review of historical drawings, it was discovered that the holder could possibly be located further south than originally anticipated. As shown in Figure 3, four of the seven soil borings, PB-SB-15 through PB-SB-18 were advanced near the expected location of the former gas holder to approximately 12 feet bgs. Soil boring PB-SB-19 was advanced to six feet bgs within the area containing the remains of the brick wall of the former gas holder. The remaining two soil borings PB-SB-20 and PB-SB-21 were advanced outside of the holder, south of the former brick wall.

Each soil boring was continuously sampled with two-inch diameter samplers. Each soil sample was screened in the field with a PID. No elevated PID readings or visual evidence of contamination were reported at four soil boring locations (PB-SB-15, PB-SB-17, PB-SB-19, and PB-SB-21), therefore, no soil samples were submitted for laboratory analyses from these four borings.

The soil samples exhibiting the highest PID reading from borings PB-SB-16 (10 to 12 feet bgs), PB-SB-18 (8 to 10 feet bgs), and PB-SB-20 (4 to 6 feet bgs) were selected for laboratory analyses. As shown on Table 3, these three soil samples were analyzed for TCL VOCs, TCL SVOCs, TAL metals, reactive and total cyanides, and reactive sulfide. Upstate Laboratories provided an ASP Category B QA/QC deliverable package. The entire ASP Category B deliverable package is on file with URS. The analytical results are summarized in Table 8 and are discussed in Section 5.2.

2001 IRM Post-Excavation Sampling

During the 2001 IRM, NYSEG collected a total of 23 soil samples. Sample numbers 1, 2, 3, 8, 10, 12, 13, and 15 were collected from the bottom of the excavation. The bottom samples were of residual soils trapped in the top of the bedrock surface. Post excavation soil sample numbers 4, 5, 6, 7, 9, 11, 14, 16, 17, 18, 19, 20, 21, 22, and 23 were collected from the sidewalls of the excavation.

Sample numbers 1, 2, 4, 5, 6, 7, 8, 9, 10, 11, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, and 23 were analyzed for total BTEX by USEPA Method 8260, total PAHs by USEPA Method 8270, mercury, and lead. Sample numbers 3 and 12 were analyzed for TCL VOCs by USEPA Method 8260, TCL SVOCs (including PAHs) by USEPA Method 8270, mercury, and lead. Adirondack Environmental Services, Inc. (AES) of Albany, New York, provided an ASP Category B QA/QC deliverable package. Dataval, Inc. of Endwell, New York prepared a data usability summary report. The analytical results are summarized in Table 9 and are discussed in Section 5.2. The sampling locations are shown in Appendix I.

2001 – 2002 Bedrock Investigation Soil Samples

On November 15, 2001, NYSEG re-excavated the area near the northwest side of the former gas holder. The purpose was to examine the fractures where NAPL was observed during the IRM. One soil sample (Soil-1) was collected from the bottom of the former gas holder. The sample was collected from the bucket of the backhoe used to excavate the holder. The sample was comprised of the fill material used to backfill the site that was in contact with the bedrock. The sample was analyzed for TCL VOCs by USEPA Method 8260 and SVOCs by USEPA Method 8270. AES provided a summary deliverable package.

Odors were detected in soils at the top of the bedrock during the installation of bedrock monitoring well MW-11B, north of the site on the north side of Bridge Street. A sample was collected from this location (SB-01-11). Two additional borings were advanced along Bridge Street (SB-01-03A and SB-01-04A). Soil samples were collected from the bedrock surface from both borings. All three samples were analyzed for TCL VOCs by USEPA Method 8260B and TCL SVOCs by USEPA Method 8270C. Analytical results are summarized on Table 8 and are discussed in Section 5.2.

Since the odors were detected in the soils at MW-11B, three soil borings (DS-1, DS-2, and DS-3) were advanced along Dock Street north of the site to evaluate the extent of impacts to the north of the site. Soil samples were collected from each boring from the bedrock surface using a truck-mounted GeoProbe™ equipped with a macrocore™ sampler. As shown on Table 3, all three samples were analyzed for TCL VOCs by USEPA Method 8260B, TCL SVOCs by USEPA Method 8270C, and total amenable cyanide by USEPA Method 9012. The sample from DS-1 was also analyzed for metals and TPH by USEPA Method 8015. AES provided a standard summary deliverable package. The analytical results are summarized on Table 8 and are discussed in Section 5.2.

3.4 OVERBURDEN GROUNDWATER INVESTIGATION

On July 13 and 14, 1999, the five overburden monitoring wells (MW-99-01 through MW-99-05) were installed. Monitoring well MW-99-01 was installed along the rear property boundary of the former MGP site and was intended to be an upgradient well. Monitoring well MW-99-02 was installed east of the former gas holder. Monitoring well MW-99-03 was installed northeast and downgradient of the site near the Medical Arts Building. Monitoring well MW-99-04 was installed directly across Bridge Street and downgradient of the former MGP site. Monitoring well MW-99-05 was installed northwest and downgradient of the site. The locations of these five monitoring wells are shown in Figure 3.

These five monitoring wells were constructed of two-inch diameter Schedule 40 PVC riser pipe and five-foot long 0.010-inch slot size well screens. Well construction details are provided in Table 10. The monitoring wells were finished as flushmount installations with locking curb boxes and concrete aprons.

Upon completion, four monitoring wells (MW-99-02 through MW-99-05) were developed to obtain representative aquifer samples. Well development logs are provided in Appendix D. During the drilling of the boring for MW-99-01, the top of the bedrock (refusal) was encountered at eight feet bgs. The fill above the bedrock was dry. No groundwater had entered this well as of the 2001 IRM. Monitoring wells MW-99-01 and MW-99-02 were abandoned because the two wells were located in the area that was excavated during the 2001 IRM.

Well development for monitoring wells MW-99-02 through MW-99-05 began on July 22, 1999 and continued through August 3, 1999. During the development, URS measured the field pH, temperature, conductivity, and turbidity of the purged water. Between six and eight gallons of water was removed from each monitoring well. Each well went dry during development after approximately a half-gallon of water was collected and recharge was noted to be very slow in monitoring well MW-99-02. Therefore, it was necessary to bail the wells several times over a two-week period in order to fully develop the overburden monitoring wells.

In October 1999, an initial round of groundwater samples was collected from monitoring wells MW-99-02 through MW-99-05. A second groundwater sampling event was completed in April 2000. Based on sewage odors in the purge water, the groundwater in monitoring well MW-99-05 was suspected to be impacted by a potentially leaky sanitary sewer. In March 2002, URS collected a groundwater sample from MW-99-05 to investigate this suspicion.

During the October 1999 and April 2000 groundwater sampling events, the groundwater samples were analyzed for TCL VOCs, TCL SVOCs, TAL metals, TPH, total sulfur, and total cyanide by Upstate Laboratories. Sample analytical methodology and data deliverables met the requirements of the ASP Category B requirements. The sample collected in March 2002 from monitoring well MW-99-05 was analyzed for fecal coliform by Method SM18 9222D by Champlain Labs in Plattsburgh, New York. The analytical results are summarized in Table 11 and discussed in Section 5.3.

Prior to purging the wells, each well was checked for NAPL (LNAPL and DNAPL) using an interface probe. NAPL was not detected at these four wells either prior to purging or during the groundwater sampling events.

Prior to sampling, each monitoring well was purged of at least three well volumes. Purging was conducted using dedicated high density polyethylene tubing and a footvalve. Well purge water and well development water were contained and transported to NYSEG’s Saranac Street MGP site for treatment in their on-site treatment facility. The groundwater samples were collected with dedicated, disposable Teflon bailers. A well purging/sampling log for each well sampled was completed and included the following information: date, time, purge volume, water quality information (pH, specific conductance, temperature, and turbidity), groundwater elevation, well

PID headspace readings, nonaqueous phase liquid presence, and analytical parameters/QC sampling. The purge logs are in Appendix D of this report.

3.5 LIMITED DATA VALIDATION

A limited data validation was performed by URS chemists on the analytical data packages collected during the 1999 investigation for completeness and for compliance with the required holding times and quality control criteria. The data was reviewed for compliance with the intent of *USEPA Region II CLP Organic Data Review, SOP No. HW-6, Rev. 11*, June 1996, *USEPA Region II Evaluation of Metals Data for the Contract Laboratory Program (CLP), SOP No. HW-2, Rev. XI*, January 1992, and the NYSDEC's guidance for a Data Usability Study Review (DUSR).

URS' limited data validation included a review of these eight criteria:

- Holding times
- Data completeness
- Comparison of surrogate, spike, and duplicate recoveries to validation criteria
- Blank contamination
- 10% quantitation check that reported sample results are correct
- Proper sample analysis
- Sample chromatograms
- NYSDEC ASP Sample Preparation and Analysis Summary Forms

Where identified, discrepancies with the data and these criteria were qualified by the URS chemists by applying validation qualifiers to the data. Validation qualifiers applied to the data include "R" (rejected), "U" (not-detected), "J" (estimated concentration), "UJ" (estimated quantitation limit), "B" (detected below the contract required detection limit, or CRDL for inorganics only), and "D" (diluted analysis).

In general, the following statements can be made regarding the usability of the data: organic data that are not qualified, or that are qualified "U", are usable as reported; data that are qualified "J" or "UJ" are usable, but should be considered estimated values; and data that are qualified "R" are not usable, and no determination can be made regarding the presence or absence of these analytes in the affected samples.

In addition, many of the analyses (primarily the VOC and/or SVOC fractions of various samples) were diluted due to elevated levels of target compounds and/or matrix interference. The quantitation limits for the non-detected compounds in these samples are, therefore, higher than what would have been reported from an undiluted analysis. The reported quantitation limits should be compared to the site action levels to fully determine the usability of the data.

3.6 BEDROCK INVESTIGATION

This section describes the scope of the bedrock investigation. The primary purpose of the bedrock investigation was to evaluate the nature and extent of MGP-related contamination in the bedrock beneath and near the site.

3.6.1 Test Pit Investigation

On November 15, 2001, URS excavated the northwest side area of the former gas holder to evaluate the fractures near the location where tarry substances were observed in the bedrock during the 2001 IRM. The purpose of excavating the former gas holder was to evaluate whether fractures near the former gas holder contained NAPL and to evaluate the relative number and orientation of fractures in the bedrock. While the excavation was open, URS measured the orientation of fractures and bedding planes of the bedrock exposed in the bottom of the excavation.

3.6.2 Bedrock Monitoring Well Installation

Bedrock monitoring wells were installed to evaluate the nature and extent of MGP-related contamination in the bedrock. Between November 2001 and October 2002, a total of twelve bedrock monitoring wells and one angled bedrock boring were installed at the site.

November 2001 – February 2002 Investigation

In November and December 2001, nine bedrock monitoring wells (MW-1B, MW-2B, MW-6B, MW-7BS, MW-7BD, MW-8B, MW-8BD, MW-9B, and MW-11B) were installed at the site. The well locations are shown on Figure 3. Well construction details are summarized on Table 10. Boring logs are in Appendix B and well construction diagrams are in Appendix C.

One monitoring well, MW-6B, was placed at the northwest corner of the former gas holder. This location corresponds to the area where tarry substances were observed during the IRM. A valve box was observed on the northwest corner of the former gas holder during the 2001 IRM. Two bedrock monitoring wells, MW-7BS and MW-7BD, were placed approximately 60 feet northeast of MW-6B near the bedrock topographic low (Figure 3). This location was chosen because DNAPL, if present, would likely have flowed across the bedrock surface towards this trough. Two monitoring wells, MW-8B and MW-8BD, were placed approximately 40 feet north of MW-6B. The location of MW-8B and MW-8BD corresponds to the area of the elevated detection of PAHs from the IRM post-excavation sampling point at the weathered bedrock surface. One monitoring well, MW-2B, was placed approximately 60 feet southeast of MW-6B near former overburden monitoring well MW-99-02. This location was chosen to evaluate the bedrock conditions along NYSEG’s eastern property boundary. One monitoring well, MW-1B, was placed on the south side of the site near former overburden monitoring well MW-99-01. One monitoring well, MW-9B, was placed on the western property boundary near the former firehouse. The purpose of this monitoring well was to evaluate the horizontal extent of the contaminants to the west of the holder. Because indications of NAPL were observed during drilling at the MW-7 cluster, MW-11B was installed on the north side of Bridge Street between overburden monitoring wells MW-99-03 and MW-99-04 to evaluate the lateral extent of MGP-related contaminants to the north of the site.

Seven of the nine bedrock monitoring wells were constructed with a six-inch diameter steel overburden casing and a 5 7/8-inch diameter open-hole interval. Two monitoring wells (MW-7BD and MW-8BD) were completed with a four-inch diameter intermediate steel casing followed by a 3 7/8-inch diameter open-hole interval to evaluate impacts in the deeper bedrock zone. The well construction details are summarized in Table 10. Well construction logs are in Appendix C.

In January 2002, following installation, the wells were developed by bailing up to five well volumes. Wells MW-6B, MW-7BD, MW-8B, MW-8BD, MW-9B, and MW-11B were bailed dry after removing one well volume.

The nine bedrock monitoring wells were sampled between February and March 2002. Prior to sampling, wells were purged of up to three well volumes using a Waterra Hydrolift-II pump or a new disposable bailer. The samples were analyzed at Adirondack Environmental Services (AES) for benzene, toluene, ethylbenzene, and xylenes (BTEX) by USEPA Method 8021, SVOCs by USEPA Method 8270, metals (Al, Sb, As, Ba, Cd, Cr, Cu, Fe, Pb, Ni, Mn, Hg, Ag, Vn, and Zn) by USEPA Methods 6010/7000, total and acid dissociable cyanides by USEPA Method 335.3, and total phenol by USEPA Method 9065/420.2. The laboratory provided standard summary deliverable package. The results are summarized on Table 12 and are discussed in Section 5.4.

September 2002 Investigation

Based on the results of the first set of nine bedrock monitoring wells, NYSEG installed three additional monitoring wells (MW-3B, MW-7DD, and MW-10B) and one angled monitoring well at the site. The well locations are shown on Figure 3. Well construction details are summarized on Table 10. Boring logs are in Appendix B and well construction diagrams are in Appendix C.

Monitoring well MW-7DD was installed on the northeast corner of the site near monitoring wells MW-7BS and MW-7BD. The purpose of MW-7DD was to assess the vertical extent of LNAPL found at that location. MW-3B was installed north of Bridge Street near overburden monitoring well MW-99-03. Monitoring well MW-10B was installed east of the site near the apartment complex. MW-3B and MW-10B were installed to evaluate the off-site extent of MGP-related contamination.

These three bedrock monitoring wells were sampled in December 2002. Prior to sampling, wells were purged of up to three well volumes using a Waterra Hydrolift-II pump or a new disposable bailer. Groundwater samples were then collected using a disposable bailer. The samples were analyzed at Adirondack Environmental Services (AES) for BTEX by USEPA Method 8021, SVOCs by USEPA Method 8270, metals (Al, Sb, As, Ba, Cd, Cr, Cu, Fe, Pb, Ni, Mn, Hg, Ag, Vn, and Zn) by USEPA Methods 6010/7000, total and acid dissociable cyanides by USEPA Method 335.3, and total phenol by USEPA Method 9065/420.2. The laboratory provided standard summary deliverable package. The results are summarized on Table 12 and are discussed in Section 5.4.

Angled Boring

In September 2002, the angled boring was installed near MW-9B at an angle of approximately 60 degrees from horizontal and oriented approximately 287^o. The purpose of the angled boring was to evaluate whether there were vertical or near-vertical fractures beneath the former gas holder that could act as pathways for MGP-related contamination.

The total length of the angled boring is 106.1 feet. Based on the angle of the boring (60^o from horizontal), the bottom of the angle boring is at a depth of approximately 92 feet bgs and 53 feet to the southeast of the starting point. During development, NAPL was found in the angled boring in October 2002. The NAPL was believed to have entered the boring through a fracture that was observed in the bedrock core at 45 feet (along the length of core). In December 2002, URS placed an inflatable packer in the boring at 56 feet (along the length of core) to evaluate whether the NAPL was entering the boring above or below the fracture observed at 45 feet.

4.0 PHYSICAL CHARACTERISTICS OF THE STUDY AREA

This section describes some of the surface features at the site. Then, this section describes the geology and hydrogeology near the site.

4.1 SURFACE FEATURES

The former NYSEG MGP site is located at 140 Bridge Street on the south side of the street (Figure 1). The site is currently vacant. The ground surface gently slopes to the northeast. The elevations range from approximately 120 to approximately 123 feet above mean sea level (msl). A system of storm sewers and catch basins carry runoff west along Bridge Street and eventually discharge into the City of Plattsburgh's waste water treatment facility.

As shown on Figure 2, there was an apartment building on the site. There was also a vacant volunteer firehouse west of the site. The apartment building and the firehouse were removed during the 2001 IRM.

There is an apartment complex east of the site. There is a multi-family housing unit south of the site. To the west of the former apartment building, there was a narrow strip of land approximately 10 to 15 feet wide that separated the former apartments from a former volunteer fire station. This area had been partially developed into a flower garden when the former apartment building existed. Now the area west of the site is residential housing. North of the site are commercial structures (CPA firm and medical offices).

4.2 GEOLOGY AND HYDROGEOLOGY

The geology and hydrogeology at the Bridge Street site was characterized by advancing soil borings and excavations. Overburden monitoring wells were installed in five of these soil borings. A total of 12 bedrock monitoring wells and one angled bedrock boring were installed during the bedrock investigation. The locations of these borings and wells are shown in Figure 3. Several sources of geologic literature were also used to supplement our understanding of the geology of the area. The following subsections describe the geology and hydrogeology beneath the Bridge Street site.

4.2.1 Regional Geology

The Bridge Street former MGP site is located within the St. Lawrence-Champlain Lowlands physiographic province of New York State (VanDiver 1985). 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.

During the most recent Pleistocene glacial retreat, approximately 10,000 years ago (Wisconsin Age), the Laurentide ice mass retreated northward through the Champlain Valley, leaving behind large glacial deposits. Lake Champlain, once a proglacial lake, experienced a series of temporary water level fluctuations during the glacial retreat. These fluctuations are recognized from the different beach terraces found in the area. Isostatic uplift and drainage eventually outpaced the melting ice, and Lake Champlain gradually arrived at its present-day surface elevation of 95 feet msl.

The unconsolidated overburden deposits near the east side of Plattsburgh have been mapped as alluvial sediments and glacial till. These two sedimentary deposits are:

- Alluvial sediments - recent deposits occurring primarily in river valleys. These alluvial sediments are composed of sand and gravel with varying amounts of silt on the floodplains. For the Bridge Street site, these deposits are probably associated with older pathways of the Saranac River.

- Glacial till - this discontinuous deposit consists of boulders to silt and clay that is typically well-graded. The till was not encountered at the site.

The bedrock underlying the overburden material belong to the Early Ordovician- or Cambrian-aged Montreal member of the Trenton Group. The Montreal member consists of nearly black microcrystalline calcareous shales and limestones with medium to micritic textures (Isachsen and Fisher 1970).

The groundwater near Plattsburgh is found in both the overburden deposits and in the bedrock. The Adirondack Mountains, west of Plattsburgh, are the major recharge area for the region. Lake Champlain is the regional discharge area. Locally, some groundwater discharges into the Saranac River, which is approximately 1,400 feet north of the site.

The residents who live in the City of Plattsburgh receive their domestic water from a municipal supply system that is operated by the City. URS conducted historical and contemporary record reviews that 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 operation.

4.2.2 Site Geology

The geology beneath and near the site is based on 41 soil borings, bedrock cores from the 12 bedrock monitoring wells and the angled boring, and observations during the 2001 IRM. Boring logs are in Appendix B. Most of the soil borings were advanced to a depth of six to ten feet.

Overburden

Currently, the overburden at the site consists of a fine-to medium-coarse sand that was used to backfill the site following the 2001 IRM. Prior to excavation, the stratigraphic sequence at the Bridge Street site was comprised of, from the ground surface down:

- Fill;
- Stratified sand and gravel deposits; and
- Clayey, silty sand.

The fill was a mixture of medium- to coarse-grained sand, gravel, and silty clay with coal, cinders, and ash. Fragments of limestone and concrete were found at most of the drilling locations. The average thickness of the fill was found to be five feet. The fill was thickest (over ten feet) within the former gas holder.

Underlying the fill, there was a brown medium- to coarse-grained sand with some gravel and silty clay, with a trace of silt. Where encountered, the sand unit was two to five feet thick. This sand unit was not encountered near the former gas holder or north of the building along Bridge Street. The water table is at a depth of between six to eight feet bgs in this sand unit.

The sand unit was underlain by a brown to dark brown clayey silty sand. The clayey silty sand was encountered in the six soil borings advanced north of the building along Bridge Street and north of Bridge Street. The thickness of this unit ranged from 0.5 feet 8.5 feet.

Bedrock Geology

The bedrock encountered at the site is a calcareous shale. During the bedrock investigation, bedrock cores were collected and logged to evaluate the fractures beneath the site. With the exception of the upper portion of the bedrock, the shale was found to be very competent (RQD's greater than 90%). Figure 5 is a top of bedrock map that is based on the drilling locations where the top of the bedrock was reached. In addition, the bedrock surface was surveyed on the bottom of the excavation during the 2001 IRM. As shown, the top of the bedrock surface generally slopes toward the northeast. The top of the bedrock is between five and 11.5 feet bgs. There is a natural bedrock trough that trends to the northeast from the former gas holder. The former gas holder was in a bedrock socket that was apparently blasted out during construction of the former MGP facility. It appears that at least five feet of bedrock was excavated to construct the former gas holder.

During the November 2001 test pit investigation, URS measured the strike and dip of bedding planes and fractures exposed when the former gas holder was excavated. The average strike and dip of the bedding plane were 308° and 7°, respectively. Two fracture traces were observed. These fracture traces were oriented at 27°, which is approximately perpendicular to the strike of the bedding. The fracture traces are also approximately parallel to the orientation of the bedrock trough on the northeast portion of the site.

Indications of extensive vertical fracturing was not found during the IRM, the test pit investigation, or in the angled boring. However, a near horizontal fracture that is oriented with bedding was observed in the bedrock core at the angled boring, MW-3B, MW-7BD, and MW-10B. This fracture is believed to be the primary pathway for NAPL migration beneath the site. Traces of tar (Section 5.5) were found in MW-7BD and the upper portion of the angled boring, which intersect the fracture. Based on the core logs for MW-3B, MW-7BD, and MW-10B, the fracture has a strike of 297° and a dip of 5.6°. Figure 6 presents a structure contour map for the this bedding plane fracture.

4.2.3 Hydrogeology

The groundwater elevation data collected at the site between October 1999 and April 2003 is summarized in Table 1. Based on the October 20, 1999 data, the saturated thickness of the water within the overburden (above the bedrock) ranges from zero beneath the southwest corner of the property to five or six feet beneath the northeast corner of the property.

Figure 4 is an overburden water table elevation map for October 20, 1999. The sand that overlies the bedrock was inferred to be dry west of the site. As shown, the groundwater flows radially to the northwest, north, and northeast away from the former MGP site.

Groundwater movement in the bedrock is limited. As stated in Section 4.2.2, the shale beneath the site had a relatively high RQD (greater than 90%). Hydrographs showing water elevation in bedrock monitoring wells are in Appendix G. With the exception of bedrock monitoring wells that were open to the upper weathered portion of the bedrock surface (MW-1B, MW-2B, MW-3B, MW-7BS, and MW-11B), the bedrock monitoring wells produce little water. As of April 2003, water levels in monitoring wells MW-6B, MW-7BD, MW-7DD, MW-8B, MW-8BD, MW-9B, and MW-10B are still recovering and have not stabilized.

4.3 CONCEPTUAL SITE MODEL

URS has developed a conceptual model for the site based on the results of the current investigation. The model presents our understanding of migration of contaminants at the site. The components of the model include the former gas holder socket, the weathered bedrock surface, and bedrock fractures. Each of these components are shown in Figure 7 and discussed in the remainder of this section.

Based on borings advanced prior to the 2001 IRM, the geology of the site consisted of a surficial fill unit over a stratified sand unit with variable amounts of gravel, silt, and clay. The sand unit was not encountered in the former gas holder or along Bridge Street north of the former apartment building. The bedrock was overlain by the sand unit and consists of calcareous shale. The overburden material was excavated and removed during the 2001 IRM. Groundwater flow in the overburden is generally to the northeast.

With the exception of the upper weathered portion of the shale, there are generally few fractures in the bedrock. Wells that are not open to the weathered zone produced very little water during development and sampling. The bedrock sloped generally to the northeast. The foundation of the former gas holder was excavated into the top of bedrock. There is a natural trough on the top of bedrock that trends generally to the northeast away from the former gas holder (Figure 5). There is a fracture in the bedrock that is gently dipping to the northeast and is generally oriented with bedding of the shale (Figure 6). Some high angle fractures were observed in the bedrock core.

The former gas holder socket, the bedrock surface, and the fractures are believed to be important mechanisms that control the migration of contaminants vertically and horizontally away from the former MGP facility (Figure 7). The MGP-related contaminants, which included both NAPL and dissolved phase contaminants, migrated along the bedrock surface in the direction of the trough. Some material migrated downward into the upper weathered bedrock surface. Some material migrated downward through vertical or high angle fractures from the bottom of the former gas holder and from the upper weathered zone. The material continued downward migration until it encountered the bedding plane fracture. The bedding plane, similar to the bedrock surface, provided a pathway for the lateral movement of NAPL and dissolved phase contaminants.

5.0 RESULTS OF INVESTIGATION

This section presents the results of the evaluation of the air quality, soil investigation, and the groundwater investigation outlined in Section 4.0. The analytical data are summarized in Tables 2, 5 through 9, and 11 through 13. All of the analytical data that were collected during the various phases of the investigation were compared to applicable regulatory standards, criteria, and guidance (SCGs).

5.1 INDOOR AIR QUALITY EVALUATION

URS completed two rounds of air sampling at the on-site former apartment building. The first indoor air sampling round was conducted in July 1999. The second air sampling round was conducted in February 2000. The apartment building was demolished during the 2001 IRM. Therefore, the following discussion of indoor air quality is representative of past conditions.

Air Survey – Crawl Space

One crawl space air sample (PS-CS - inside) and one ambient air sample (PS-CS - outside) from outside of the building were collected on July 29, 1999. As shown on Table 2, six VOCs (acetone, chloromethane, methylene chloride, styrene, toluene, and xylenes) were detected in the crawl space air sample at concentrations comparable to and on the same order of magnitude as the ambient air. Ethanol was detected at a concentration of 41 ppbv in the crawl space and 4.6 ppbv in the ambient air. Xylenes, which were detected at 0.93 ppbv, was the only VOC detected in the crawl space that was not detected in the ambient air. The results of the indoor air quality evaluation were sent to the New York State Department of Health to evaluate whether contaminants in the apartment complex exceeded NYSDOH levels of concern (LOC). All detections were below the NYSDOH LOC. The LOC is based on a NYSDOH database for residential indoor air quality. There are no standards for indoor air quality.

Indoor Air Survey - Apartments

Due to the discovery of coal tar in the former gas holder during the October 1999 soil boring investigation, the potential for the residual MGP-contamination to affect the indoor air quality was investigated at the site. The February 1, 2000 indoor air sampling event was completed for all three apartments, the garage area, and the outside ambient air. Indoor air quality sampling measured levels of VOCs at levels low enough to be compared to outdoor (ambient) air levels. The analytical method used to achieve these low detection limits was EPA Method TO-14.

In Apartment 1 (located on the ground level of the northern end of the building), the air sample was collected in the centrally located kitchen. Nine VOCs were detected in this air sample. The air sample from Apartment 2 (the upstairs apartment) was collected in the kitchen located in the northern part of the apartment. Twelve VOCs were detected in this air sample. The air sample from Apartment 3 (located on the ground level south of Apartment 1) was collected in the centrally located living room. Sixteen VOCs were detected in this air sample. The garage (located on the ground level south of Apartment 1) had nine VOCs detected in the air sample. The outside air had four VOCs detected.

As shown on Table 2, 11 of the 19 compounds detected in apartment air samples collected in February 2000 were either ingredients contained in products on the premises or were detected in the ambient air sample. With the exception of benzene and ethylbenzene, the detected VOCs are not related to MGP residues. The eight compounds detected in apartment air, and not in the ambient air or found in the products inventory, include: Freon 11, Freon 12, chloroform, 1,2-dichlorobenzene, 1,4-dichlorobenzene, methylene chloride, 2-propanol, and hexane. Two of the four VOCs detected in the ambient outdoor air sample were at higher concentrations than the indoor air concentrations, including chloromethane (2.5 ppbv) and 1,4-dioxane (25.0 ppbv). The results of the indoor air quality evaluation were sent to the New York State Department of Health to evaluate whether contaminants in the apartment complex exceeded NYSDOH levels of concern (LOC). All detections were below the NYSDOH LOC. The LOC is based on a NYSDOH database for residential indoor air quality. There are no standards for indoor air quality.

5.2 SOIL INVESTIGATION

A total of 69 soil samples were collected from both onsite and offsite locations to evaluate soil quality near the former MGP site. These 69 soil samples include 19 surface soil samples, five near surface soil samples, and 45 subsurface soil samples, to evaluate the soil quality at and near the former MGP site. The 19 surface soil samples were collected from the ground surface to one-inch bgs or one-inch below the sod, if present. Four of the five near surface soil samples were collected from four to eight inches bgs and the fifth near surface soil sample (PB-NSS-03) was collected from the ground surface to one-foot bgs. Fifteen subsurface soil samples were collected prior to the 2001 IRM. Twenty-three of the subsurface soil samples were collected during the 2001 IRM and seven of the 45 subsurface soil samples were collected during the bedrock investigation. The 45 subsurface soil samples were collected from various depth intervals between three feet and 15 feet bgs.

A summary of soil samples collected, including sample depths and analyses is in Table 3 and Table 4. The analytical results for the soil samples collected from the crawl space are summarized on Table 5. The surface soil analytical results are summarized in Table 6. Table 7 presents the near surface soil analytical results. The subsurface soil data is presented in Table 8. The subsurface soil sample analytical results were compared to the NYSDEC's proposed *Technical and Administrative Guidance Memorandum" (TAGM): Determination of Soil Cleanup Objectives and Cleanup Levels* (HWR-94-4046), dated April 1995.

5.2.1 Soil Quality – Crawl Space

In July 1999, URS collected three soil samples from the former crawl space for analysis of VOCs, SVOCs, metals, total and reactive cyanide, and reactive sulfide. In October 1999, URS collected five additional soil samples from the crawl space for analysis of mercury. The analytical results for these eight samples are presented in Table 5. During the 2001 IRM, the apartment building, including the crawl space, were removed along with the soils at the site. Therefore, the discussion of the crawl space samples are representative of past conditions.

Traces of VOCs (chloroform, tetrachloroethene, ethylbenzene, and xylenes) were detected in the three samples collected in July 1999. None of the VOCs were detected at concentrations that exceed the NYSDEC's Recommended Soil Cleanup Objective (RSCO).

Several SVOCs, including seven polycyclic aromatic hydrocarbons (PAHs) were detected in all three samples collected in July 1999. Only PAHs were detected above the NYSDEC's RSCO. Several metals including copper, iron, mercury, nickel, and zinc were detected in all three samples collected in July 1999 at concentrations that exceed the NYSDEC's RSCO. Arsenic, barium, and selenium were also detected at concentrations that exceed NYSDEC's RSCO in sample PB-SS-CR01. Selenium was also detected above NYSDEC's RSCO is soil sample PB-CS-01.

The TOC concentrations were 29,100 mg/kg in sample PB-SS-CR-01, 49,300 mg/kg in soil samples PB-CS-01, and 48,800 mg/kg PB-CS-02. Total cyanides were only detected at 3.2 mg/kg in sample PB-SS-CR-01. Reactive cyanide and sulfide were not detected in any of the three samples.

As shown in Table 5, mercury was detected at concentrations that exceed the NYSDEC's RSCO of 0.1 mg/kg in all five soil samples collected from the crawl space during the October 1999 investigation. The range of mercury concentrations was 15.5 mg/kg at PB-CR-SED-S to 68.7 mg/kg at PB-CR-SED-W. The source of mercury is unknown. Mercury is not commonly associated with MGP sites. The mercury may be associated with the use of the property as an automobile repair shop. Vacuum gauges, which are often found at automobile repair shops, contain mercury. In addition, six metals (arsenic, beryllium, copper, iron, nickel, and zinc) were detected at concentrations that exceed NYSDEC's RSCO in sediment sample PB-CR-SED01.

5.2.2 Soil Quality

The following discussion summarizes the soil analytical results for this investigation. Most of the soil samples were collected prior to the 2001 IRM. Therefore, many of the soil samples were collected within the area that was excavated in 2001 and are representative of past conditions. The area that was excavated during the 2001 IRM is shown on Figures 2, 3, 8, 9, and 10. The soil samples collected prior to 2001 and within the area excavated are denoted with an asterisk (*) on Tables 6, 7, and 8.

Volatile Organic Compounds

The surface soil samples were not analyzed for VOCs. However, all sample locations were screened with a PID prior to sample collection. No PID readings in excess of background levels were detected at any of the surface soil sample locations. The surface soil samples were collected between 0 and 1 inch below the ground surface.

The five near surface soil samples PB-NSS-01 through PB-NSS-05 were analyzed for VOCs. Six VOCs including chloroform, chloromethane, ethylbenzene, tetrachloroethene, toluene, and xylenes were detected in some of the near surface soil samples. As shown in Table 7, no VOCs were detected at concentrations that exceeded the NYSDEC's RSCO in the near surface soils.

No VOCs were detected in two (PB-SB-5 and PB-SB-11) of the 15 subsurface soil samples collected in 1999 and analyzed for VOCs. The seven VOCs detected in at least one of the remaining 13 subsurface soil samples that were collected prior to the 2001 IRM are summarized below.

Summary of VOCs detected in Subsurface Soils (1999)

Compound	Number of Detections out of 15	Number of Exceedences out of 15	NYSDEC RSCO[a] (mg/kg)	Maximum Detection and Sample Location (mg/kg)
Benzene	11	5	0.006	100 at PB-SB-16
Carbon Disulfide	2	0	2.7	0.019 at PB-SB-7
Ethylbenzene	10	2	5.5	210 at PB-SB-16
Styrene	7	0	None applicable	160 at PB-SB-16
Tetrachloroethene	1	0	1.4	0.002 at PB-SB-12
Toluene	13	4	1.5	240 at PB-SB-16
Xylenes	13	4	1.2	530 at PB-SB-16

Note:
a – NYSDEC Recommended Soil Cleanup Objective from TAGM HWR-94-4046, dated April 1995

As shown, only benzene, ethylbenzene, toluene, and xylenes (BTEX) were detected at concentrations that exceed NYSDEC's RSCO. The maximum concentrations of the BTEX and styrene were detected in subsurface soil sample PB-SB-16, which was from the approximate center of the former gas holder. This material was removed during the 2001 IRM.

Figure 8 shows the distribution of VOCs in the subsurface soil. As shown, the VOCs are centered around the former gas holder and extend to the northeast (down slope along the bedrock surface outwards to PB-SB-2) and to the north-northwest outwards to PB-SB-6. The limit of the 2001 IRM excavation is also shown. VOCs were not detected at concentrations that exceed the NYSDEC's RSCOs in borings outside of the IRM excavation area. Post excavation samples show that sidewall concentrations were below cleanup criteria at all locations for VOCs. However, VOCs were detected in soil boring PB-SB-2, which is on the northeast corner of the site along the boundary of the excavation, at concentrations that exceed NYSDEC's RSCOs. Further excavation was not possible because of the presence of Bridge Street.

TCLP-Benzene

Benzene was not detected in the TCLP leachate from soil sample PB-SB-1 (collected from soil borings W-3 and W-3A). This indicates that the potential for benzene to leach from the soil to the groundwater is low. Although there was visible coal tar present at PB-SB-16, a TCLP benzene sample was not collected from PB-SB-16. Based on the concentration of total benzene in the sample (100 mg/kg), NYSDEC, NYSDOH, and NYSEG were in agreement that the sample would likely be classified as hazardous waste. The soils at this location were removed during the 2001 IRM.

Semivolatile Organic Compounds

As shown in Table 6, at least one SVOC was detected at concentrations that exceed the NYSDEC's RSCO in each of the 24 surface and near surface soil samples collected in 1999. The total SVOC concentrations range from 1.08 mg/kg at PB-SS-2 to 286 mg/kg at PB-SS-4. These eight SVOCs were detected at concentrations that exceed the NYSDEC's RSCO in at least one of the 19 surface soil and five near surface samples collected prior to the 2001 IRM:

Summary of SVOCs Detected Above RSCOs in Surface and Near Surface Soils (1999)

Compound	Number of Detections (out of 24)	Number of Exceedences (out of 24)	NYSDEC RSCO[a] (mg/kg)	Maximum Detected Concentration and Sample Location (mg/kg)
Anthracene	19	1	50	59 at PB-SS-4
Benzo(a)anthracene	24	18	0.224	16 at PB-SS-4 and PB-SS-2
Chrysene	24	13	0.400	19 at PB-SS-4
Benzo(b)fluoranthene	24	22	0.224	23 at PB-SS-4
Benzo(k)fluoranthene	24	11	0.224	7.8 at PB-NSS-02
Benzo(a)pyrene	24	24	0.061	18 at PB-SS-4
Dibenzo(a,h)anthracene	7	4	0.014	1.9 at PB-NSS-02
Indeno(1,2,3-cd)pyrene	23	1	3.2	4.1 at PB-NSS-02

Note:
a – NYSDEC Recommended Soil Cleanup Objective from TAGM HWR-94-4046, dated April 1995

These eight SVOCs are PAHs, which are potentially indicative of MGP-wastes, as well as many other sources resulting from the incomplete combustion of fossil fuels.

As shown in Table 7, with the exception of anthracene, these PAHs were detected at concentrations that exceed the NYSDEC's RSCO in at least one of the near surface soil samples. The total SVOC concentrations range from 0.857 mg/kg at PB-NSS-05 to 162 mg/kg at PB-NSS-02. Other SVOCs were detected in the both the surface soil and near surface soil samples but at concentrations below the NYSDEC's RSCO.

The distribution of total PAHs in the surface and near surface soils is shown in Figure 9. Total PAHs of 162 mg/kg were detected in near surface soil sample PB-NSS-02 (4-8 inches bgs), which is located in the former garden that was in close proximity to the former gas holder. The former gas holder is a potential source of these PAHs. Along the east side of the former MGP site total PAHs were detected at 31.8 mg/kg in surface soil sample PB-SS-6 and near the northeast corner of the apartment building total PAHs were detected at 15.5 mg/kg in surface soil sample PB-SS-1.

There is one offsite investigation area that shows that the surface soil quality has been potentially impacted by PAHs not associated with site activities. This area, which appears to be limited in areal extent, is near soil sample PB-SS-4 (286 mg/kg) to the southeast of the former MGP site. This area also includes samples PB-SS-3, PB-SS-5, PB-SS-15, PB-SS-16, PB-SS-17, and PB-NSS-04. This area was formerly a lumber storage yard. Landscaping plastic was found at sampling location PB-SS-17 below the depth from which the sample submitted for analysis was collected. This suggests that the affected soils have been recently imported to the site and placed on top of the plastic. Therefore, the impacted soil is not a result of MGP site wastes. The likely source of those PAHs is runoff from the large parking area associated with the apartment complex east of the MGP site.

There are isolated areas of surface soil east, west, and north of the site that have potentially been impacted by PAHs. Based on historic and current activities near the site, it is not certain that the PAHs are related to past MGP activities at the site. These areas include PB-SS-6 east of the site, PB-SS-14 north of the site, and the gardens west of the site.

The following 17 SVOCs were detected at concentrations that exceed the NYSDEC's RSCO in at least one of the subsurface surface soil samples collected prior to the 2001 IRM.

Summary of SVOCs Detected Above RSCOs in Subsurface Soils (1999)

Compound	Number of Detections (out of 15)	Number of Exceedences (out of 15)	NYSDEC RSCO (mg/kg)	Maximum Detected Concentration and Sample Location (mg/kg)
Anthracene	11	1	50	130 at PB-SB-12
Acenaphthylene	10	2	41	180 at PB-SB-12
Acenaphthene	8	1	50	160 at PB-SB-16
Benzo(a)anthracene	12	7	0.224	87 at PB-SB-16
Benzo(b)fluoranthrene	11	9	0.224	84 at PB-SB-16
Benzo(k)fluoranthrene	9	5	0.224	33 at PB-SB-16
Benzo(a)pyrene	11	11	0.061	91 at PB-SB-16
Chrysene	12	5	0.400	75 at PB-SB-16
Dibenzo(a,h)anthracene	4	4	0.014	1.10 at PB-SB-2
Fluorene	8	1	50	130 at PB-SB-16
Fluoranthene	12	1	50	230 at PB-SB-16
2-Methylnaphthalene	9	2	36.4	220 at PB-SB-16
2-Methylphenol	2	1	0.900	28 at PB-SB-2
Naphthalene	12	12	13	110 at PB-SB-2
Phenol	2	2	0.030	66 at PB-SB-2
Pyrene	12	1	50	330 at PB-SB-16
Phenanthrene	11	2	50	550 at PB-SB-16
Indeno(1,2,3-cd)pyrene	11	1	3.2	28 at PB-SB-16

Note:
a – NYSDEC Recommended Soil Cleanup Objective from TAGM HWR-94-4046, dated April 1995

Most of these SVOCs are PAHs. The distribution of total PAHs in the subsurface soil samples prior to the 2001 IRM is shown in Figure 10. The area of elevated levels of PAHs in subsurface soils is centered around the former gas holder. As shown, most of the locations at which SVOCs were detected at concentrations that exceed the NYSDEC's RSCOs are in the area that was excavated during the 2001 IRM. The post-excavation samples show that some PAHs were detected at concentrations that exceed the NYSDEC's RSCO in sidewall samples (4, 6, 7, 9, 14, 16, 17, 18, 19, 21, 22, and 23). PAHs were also detected at PB-SB-2 at concentrations that exceed the NYSDEC's RSCOs. Soil boring PB-SB-02 is on the northeast corner of the site along the boundary of the 2001 excavation.

Soil samples SB-01-03A, SB-01-04A, SB-01-11, DS-1, DS-2, and DS-3 were collected in 2002 as part of the bedrock investigation. No PAHs were detected in SB-01-03A along Bridge Street or in DS-1, DS-2, and DS-3 along Dock Street. PAHs were detected in two (SB-01-11 [10 to 11 feet bgs] at 318 mg/kg and SB-01-04A [12 to 13 feet bgs] at 13.4 mg/kg) of the three soil samples collected along Bridge Street during the bedrock investigation. The following PAHs were detected at concentrations that exceed the NYSDEC's RSCOs in subsurface soils in samples SB-01-11 an SB-01-04A.

Summary of SVOCs Detected Above RSCOs at SB-01-11 and SB-01-04A (2002)

Compound	RSCO[(a)] (mg/kg)	SB-01-11 (mg/kg)	SB-01-04A (mg/kg)
Benzo(a)anthracene	0.224	18	1.3
Benzo(a)pyrene	0.061	12	1.1
Benzo(b)fluoranthene	0.224	9.7	0.8
Benzo(k)fluoranthene	0.224	10	0.73
Chrysene	0.4	15	1.3
Dibenzo(a,h)anthracene	0.014	ND	0.093
Ideno(1,2,3-cd)pyrene	3.2	4.3	0.4
Naphthalene	13	37	1.0
Phenanthrene	50	55	1.4

Note:
a – NYSDEC Recommended Soil Cleanup Objective from TAGM HWR-94-4046, dated April 1995

The soil boring locations at which SVOCs other than PAHs were detected (phenols) at elevated concentrations were soil borings PB-SB-2 at the northeast corner of the site and downslope of the former gas holder along the bedrock surface, and soil boring PB-SB-16 inside the former gas holder. The source of the SVOCs found at PB-SB-16 and PB-SB-2 appears to be the former gas holder. In addition, the lateral distribution of these compounds appears to follow groundwater flow to the northeast.

In summary, elevated concentrations of PAHs were found in subsurface soils near the former gas holder and downgradient or down slope of the former gas holder. The most impacted soils were removed during the 2001 IRM. Some soils with concentrations of PAHs that slightly exceed the NYSDEC's RSCOs remain in surface soils and in subsurface soils. In the surface soils, PAHs were found in wide areas suggesting that PAHs in surficial soils may have also originated from sources other than the MGP. It is commonly accepted that there are many sources of PAHs, and these compounds are ubiquitous in the environment.

Metals

Arsenic was detected in six of the 19 surface soil samples (PB-SS-4, PB-SS-8, PB-SS-11, PB-SS-15, PB-SS-16, PB-SS-17), three of the five near surface soil samples (PB-NSS-02, PB-NSS-03 and PB-NSS-04), and one subsurface soil sample (PB-SB-2). Arsenic, which is a naturally occurring element, is a common impurity of coal and, thus, may be associated with MGP sites due to their use of coal as a feed stock. The maximum detected arsenic concentration was 5.1 mg/kg at sampling locations PB-NSS-04. None of the detected concentrations of arsenic exceed the RSCO of 7.5 mg/kg.

Lead was detected in all five near surface soil samples, in all 19 surface soil samples, and in all 15 subsurface soil samples. Like arsenic, lead can be associated with MGP sites because it is a common impurity of coal. Lead was detected in the surface soil samples at concentrations that range from 9.2 mg/kg in PB-SS-2 to 385 mg/kg in PB-SS-13. The lead concentrations range from 12.9 mg/kg in PB-NSS-05 to 1,000 in PB-NSS-02 in the near surface soil samples. Lead was detected in the subsurface soil samples at concentrations that range from 4.0 mg/kg in PB-SB-11 (MW-99-05) to 26,100 mg/kg in PB-SB-2. The residential screening level for lead is 400 mg/kg according to the USEPA Interim Lead Hazard Guidance, dated July 1994. Only four soil samples had lead concentrations that exceed 400 mg/kg. These four soil sample locations were PB-NSS-02 (4 to 8 inches bgs - 1,000 mg/kg), which is in the garden area west of the former apartment building, PB-SB-2 (3 to 3.5 feet bgs - 26,100 mg/kg) at the northeast corner of the site, PB-SB-8 (MW-99-02) (6 to 8.5 feet bgs - 1,540 mg/kg) east of the former gas holder, and PB-SB-16 (10 to 12 feet bgs - 419 mg/kg), which is within the former gas holder. The soils at and near sample locations PB-NSS-01, PB-SB-8, and PB-SB-16 were removed during the 2001 IRM. Soil boring PB-SB-2 is along the northern limit of the excavation where further removal was not possible because of the presence of Bridge Street.

Copper, iron, mercury, selenium, and zinc were detected at concentrations that exceed the NYSDEC's RSCO in at least four of the surface soil samples, near surface soil samples, and subsurface soil samples collected during the 1999 investigation. These metals are not typically associated with MGP wastes. The maximum detected concentrations of metals are found in surface soil and subsurface soil samples collected at locations to the north and west of the former MGP site and are probably associated with regional fill material. These soil analytical data for the TAL metals that were detected at concentrations greater than the NYSDEC's RSCOs are summarized below.

Summary of Metals Detected Above RSCOs in Soils (1999)

Metal	Number of Detections (out of 39)	Number of Exceedences (out of 39)	NYSDEC RSCO[a] (mg/kg)	Maximum Detected Concentration and Sample Location (mg/kg)
Beryllium	4	4	0.16	0.82 at PB-SB-6A
Copper	39	9	25	80.6 at PB-SS-11
Iron	39	39	2,000	19,600 at PB-SB-6A
Lead	39	4	400[b]	26,100 at PB-SB-2
Mercury	17	17	0.1	0.88 at PB-SB-2
Nickel	25	9	13	35 at PB-SB-9
Selenium	29	27	2.0	16.7 at PB-SB-11
Zinc	39	37	20	495 at PB-SS-10

Notes:
a – NYSDEC Recommended Soil Cleanup Objective from TAGM HWR-94-4046, dated April 1995
b - Residential screening level from USEPA Interim Lead Hazard Guidance, dated July 1994.

Total and Reactive Cyanide

Total cyanide was not detected in 38 of the 39 soil samples submitted for analyses during the 1999 investigation. Total cyanide was detected at a concentration of 8.1 mg/kg at soil boring PB-SB-16 in the former gas holder. Reactive cyanides were not detected in any of the 39 samples analyzed.

Concentrations of total cyanide in the three soil samples collected from along Dock Street in 2002 ranged from 0.19 mg/kg at DS-1 to 9.0 mg/kg at DS-3. Concentrations of amenable cyanide at these three soil borings ranged from 0.26 mg/kg at DS-1 to 9.5 mg/kg at DS-2.

Reactive Sulfide

Reactive sulfide was not detected in any of the 39 soil samples submitted for analyses.

Total Petroleum Hydrocarbons

TPH was not detected in the 19 surface soil samples or in the five near surface soil samples. Gasoline was identified in subsurface soil samples PB-SB-6, which was collected near the northwest corner of the former MGP site and PB-SB-16, which was collected inside of the former gas holder. Unidentified hydrocarbons were also detected in the soil samples from borings PB-SB-1, PB-SB-2, and PB-SB-5. BTEX and PAHs found on the northeast corner of the site could potentially be from a leaking UST nearby. No such USTs were identified, however, diesel odors detected during the 2001 IRM near the north end of the former firehouse suggests that a UST may have been located at the fire house.

Total Organic Carbon

Total organic carbon (TOC) was detected in all 39 soil samples analyzed during the investigation. The range of TOC in the surface soil and near surface soil samples was 11,500 mg/kg in PB-SS-6 to 39,300 mg/kg in PB-NSS-04. The range of TOC in the subsurface soil samples was 2,880 mg/kg in PB-SB-20 to 83,600 mg/kg in PB-SB-2.

5.3 OVERBURDEN GROUNDWATER

Monitoring wells MW-99-02 through MW-99-05 have been sampled twice to date. MW-99-01 has not been sampled because it has been dry during both sampling events. The first groundwater sampling round was completed in October 1999. The second round was completed in April 2000.

The October 1999 and April 2000 groundwater analytical data is summarized in Table 11. Groundwater sample analytical results were compared to NYSDEC Division of Water “Technical and Operational Guidance Series” (TOGS 1.1.1), *Ambient Water Quality Standards and Guidance Values* (NYSDEC 1998a). The ambient water quality standards and guidance values are derived from Article 17 of the Environmental Conservation Law and 6 NYCRR Parts 700-706, Water Quality Regulations.

As shown in Table 11, neither total cyanide nor TPH was detected in any of the groundwater samples during both sampling events.

Volatile Organic Compounds

As shown in Table 11, no VOCs were detected in the groundwater samples from MW-99-02, MW-99-03, and MW-99-04 during either sampling event.

Acetone was detected at a concentration of 14 µg/L and total BTEX was detected at a concentration of 9 µg/L in the groundwater sample collected from monitoring well MW-99-05 during the first sampling event (October 1999). Benzene was detected at a concentration of 2.0 µg/L and was the only VOC detected above its groundwater standard (1.0 µg/L for benzene). The guidance value for acetone is 50 µg/L. No VOCs were detected in the groundwater sample collected from monitoring well MW-99-05 during the April 2000 sampling event.

During the April 2000 sampling event, field observations (sewage-like odors and elevated temperature) suggested that there is a leak from the adjacent sanitary sewer. The water collected from MW-99-05 had a strong sewage odor, elevated turbidity, and elevated temperature readings. Fecal coliform was not detected in the sample collected from MW-99-05 in March 2002. Therefore, it could not be confirmed that the groundwater at MW-99-05 was impacted by water from the sanitary sewer.

Semivolatile Organic Compounds

As shown in Table 11, no SVOCs were detected in the groundwater samples from MW-99-02, MW-99-03, and MW-99-04 during either sampling event.

During both groundwater sampling events, most of the SVOCs that were detected in monitoring well MW-99-05 were PAHs. The total PAH concentration at MW-99-05 was 250 µg/L in the October 1999 groundwater sample and 59 µg/L in the April 2000 groundwater sample.

Four of the PAHs (acenaphthene, benzo(a)anthracene, chrysene and naphthalene) detected in MW-99-05 during the first sampling event were detected at concentrations that exceed the NYSDEC's groundwater standards. As shown in Table 11, acenaphthene was detected at 27 µg/L, which exceeds the groundwater standard of 20 µg/L, and naphthalene was detected at 31 µg/L, which exceeds the groundwater standard of 10 µg/L. Benzo(a)anthracene and chrysene were both detected at 1.0 µg/L, which exceeds the NYSDEC's groundwater standard of 0.002 µg/L for both compounds. Also, one other SVOC (di-n-butylphthalate, a common sampling artifact and laboratory contaminant) was detected at 71 µg/L, which exceeds the NYSDEC's groundwater standard of 50 µg/L. Di-n-butylphthalate was also detected in the laboratory blank associated with this sample. The four previously detected PAHs were not detected at concentrations that exceed groundwater standards in MW-99-05 in the second sampling event. Di-n-butyl phthalate was not detected in the April 2000 groundwater sample collected from monitoring well MW-99-05.

Metals

Similar to concentrations of PAHs and VOCs, the concentrations of TAL metals tended to be lower during the April 2000 versus the October 1999 event. However, the overall results of the two sampling events were similar and of the same order-of-magnitude. Numerous metals were detected at concentrations that exceeded their respective groundwater standards or guidance values in the onsite monitoring well and the downgradient monitoring wells. The maximum detected concentrations of individual metals were generally detected in the groundwater samples that were collected from MW-99-05.

At monitoring well MW-99-02, nine metals including antimony, cadmium, chromium, iron, lead, magnesium, manganese, mercury, and sodium were detected at concentrations that exceed NYSDEC's groundwater standards or guidance values during one or both sampling events.

At monitoring well MW-99-03, four metals, including iron, magnesium, manganese, and sodium were detected at concentrations that exceed the NYSDEC's groundwater standards or guidance values during one or both sampling events.

At monitoring well MW-99-04, nine metals, including beryllium, cadmium, chromium, iron, lead, magnesium, manganese, sodium, and thallium were detected at concentrations that exceed NYSDEC's groundwater standards or guidance values during one or both sampling events.

At monitoring well MW-99-05, twelve metals including antimony, arsenic, beryllium, cadmium, chromium, iron, lead, magnesium, manganese, mercury, sodium, and thallium were detected at concentrations that exceed NYSDEC's groundwater standards or guidance values during one or both sampling events.

The analytical data for TAL metals detected in the overburden groundwater is summarized below.

Summary of Metals Detected in Overburden Groundwater (1999 – 2000)

Metal	Number of Detections (out of 8)	Number of Exceedences (out of 8)	NYSDEC Groundwater Standard or Guidance Value[(a)] (µg/L)	Maximum Detected Concentration and Sample Location (µg/L)
Antimony	5	1	3.0	6.3 at MW-99-02
Arsenic	3	1	25	25.4 at MW-99-05
Beryllium	8	2	[3.0]	4.3 at MW-99-05
Cadmium	6	2	5.0	12.3 at MW-99-05
Chromium	8	3	50	137 at MW-99-05
Iron	8	8	300	147,000 at MW-99-05
Lead	8	6	25	392 at MW-99-02
Magnesium	8	4	[35,000]	53,700 at MW-99-05
Manganese	8	8	300	6,670 L at MW-99-05
Mercury	6	2	0.7	1.4 at MW-99-05
Sodium	8	8	[20,000]	777,000 at MW-99-03
Thallium	2	2	[0.5]	5.4 at MW-99-05

Notes:
(a) NYSDEC Ambient Water Quality Standard (TOGS 1.1.1, NYSDEC, 1998)
[] indicates guidance value

Total Petroleum Hydrocarbons

As shown in Table 11, TPH was not detected in the overburden groundwater samples collected from MW-99-02 and MW-99-04 during either sampling event. Gasoline was reported present in the sample collected from MW-99-03 in October 1999. Gasoline was not detected at MW-99-03 in April 2000. No VOCs or SVOCs were detected at MW-99-03 during either sampling event. Traces of No. 2 fuel oil (1.1 mg/L) was found in the groundwater sample from MW-99-05 during the April 2000 sampling event. The fuel oil detected in the groundwater, the gasoline detected in the soil near the northwest corner of the site, or the sanitary sewer system are the most probable sources of the organic compounds detected in MW-99-05.

General Chemistry Parameters

As shown in Table 11, total cyanide was not detected in the groundwater samples from MW-99-02 through MW-99-05 during either sampling event.

Sulfide was detected in the onsite monitoring well MW-99-02 at 41 mg/L (October 1999) and at 43 mg/L (April 2000). The sulfide concentrations in the groundwater from the three offsite wells (MW-99-03, MW-99-04, and MW-99-05) ranged from 13 mg/L at MW-99-04 to 115 mg/L at MW-99-03.

5.4 BEDROCK GROUNDWATER

Groundwater samples have been collected from each of the twelve bedrock monitoring wells on site. Monitoring wells MW-1B, MW-2B, MW-6B, MW-7BS, MW-7BD, MW-8B, MW-8BD, MW-9B, and MW-11B were sampled in January and February 2002. MW-3B, MW-7DD, and MW-10B were sampled in October 2002. The analytical results are summarized in Table 12.

Benzene, Toluene, Ethybenzene, and Xylene

BTEX compounds were found in eight of the 12 bedrock groundwater samples. Where detected, concentrations of total BTEX ranged from 1 µg/L at MW-6B to 8,200 µg/L at MW-2B. No BTEX compounds were detected at MW-7DD, MW-8B, MW-8BD), and MW-11B. The following BTEX compounds were detected in one or more bedrock groundwater samples.

Summary of BTEX Compounds Detected in Bedrock Groundwater (2002)

Compound	Number of Detects (out of 12)	NYSDEC GW Standard$^{(a)}$ (µg/L)	Number of Exceedences (out of 12)	Maximum Concentration (µg/L)
Benzene	8	1	7	1,300 at MW-2B* and MW-7BD*
Ethylbenzene	3	5	3	1,500 at MW-2B*
Toluene	4	5	3	2,600 at MW-2B*
Xylene, total	4	5	4	2,800 at MW-2B*

Notes:
(a) NYSDEC Ambient Water Quality Standard (TOGS 1.1.1, NYSDEC, 1998)
*- NAPL has been detected in the monitoring well. The concentration may not be representative of groundwater quality.
[] indicates guidance value

As shown, the maximum concentration of most compounds was detected at MW-2B.

Figure 11 shows the distribution of BTEX compounds in bedrock groundwater. As shown, benzene was found at concentrations above the NYSDEC's groundwater standard at MW-1B, MW-2B, MW-3B, MW-7BS, MW-7BD, MW-9B, and MW-10B.

Semivolatile Organic Compounds

SVOCs were found in eight of the 12 bedrock groundwater samples. Where detected, concentrations of total SVOCs ranged from 10 µg/L in the duplicate sample from MW-10B to 10,900 µg/L at MW-7BS. The following compounds were detected in one or more bedrock groundwater sample.

Summary of SVOCs Detected in Bedrock Groundwater (2002)

Compound	Number of Samples	Number of Detects	NYSDEC GW Standard$^{(a)}$ (µg/L)	Number of Exceedences	Maximum Concentration (µg/L)
2-Methylnaphthalene	12	3	NS	0	640 at MW-7BD*
Acenaphthene	12	3	[20]	3	160 at MW-7BD*
Acenaphthylene	12	3	NS	0	920 at MW-7BD*
Anthracene	12	2	[50]	1	240 at MW-7BD*
Benzo(a)anthracene	12	1	[0.002]	1	100** at MW-7BD*
Benzo(a)pyrene	12	1	[0.002]	1	40** at MW-7BD*
Benzo(b)fluoranthene	12	1	[0.002]	1	44** at MW-7BD*
Benzo(k)fluoranthene	12	1	[0.002]	1	48** at MW-7BD*
Chrysene	12	1	[0.002]	1	100** at MW-7BD*
Dibenzofuran	4	2	NS	0	10 at MW-10B
Fluoranthene	12	2	[50]	1	300** at MW-7BD*
Fluorene	12	3	[50]	1	300 at MW-7BD*
Naphthalene	12	4	[10]	3	6,400 at MW-7BD*
Phenanthrene	12	3	[50]	3	1,000** at MW-7BD*

Compound	Number of Samples	Number of Detects	NYSDEC GW Standard$^{(a)}$ (µg/L)	Number of Exceedences	Maximum Concentration (µg/L)
Pyrene	12	2	[50]	1	560** at MW-7BD*
bis(2-Ethylhexyl)phthalate	12	1	5	1	44 at MW-7BD*
Phenol	12	4	1	4	140 at MW-7DD

Notes:
(a)NYSDEC Ambient Water Quality Standard (TOGS 1.1.1, NYSDEC, 1998)
NS – No standard
[ ] indicates guidance value
* - NAPL has been detected in the monitoring well. The concentration may not be representative of groundwater quality.
** - Maximum detected concentration is greater than reported solubility in water.

With the exception of bis(2-Ethylhexyl)phthalate at MW-7BD and phenol at MW-6B, MW-7DD, MW-9B, and MW-11B, the SVOCs detected in bedrock groundwater are PAHs. PAHs were detected at concentrations that exceed the NYSDEC's groundwater standards at only three locations (MW-2B, MW-7BS, and MW-7BD). Concentrations of some PAHs in these three monitoring wells exceed solubility limits in water. NAPL has been consistently detected in these three wells and was observed during sampling.

Metals

The following metals were detected in the 11 bedrock groundwater samples collected from the site. Because of low well yield, a sufficient quantity of water was not available from MW-8BD for metals analysis.

Summary of Metals Detected in Bedrock Groundwater (2002)

Compound	Number of Detects (out of 11)	NYSDEC GW Standard$^{(a)}$ (µg/L)	Number of Exceedences (out of 11)	Maximum Concentration (µg/L)
Aluminum	10	NS	0	19,000 at MW-2B
Arsenic	1	25	0	6 at MW-7BS
Barium	10	1000	0	670 at MW-2B
Chromium	3	50	0	46 at MW-7DD
Copper	6	200	0	49 at MW-2B
Iron	11	300	7	128,000 at MW-7BD
Lead	1	25	1	38 at MW-2B
Manganese	6	300	2	1,440 at MW-7BD
Zinc	3	[2000]	1	4,140 at MW-7BD

Notes:
(b) NYSDEC Ambient Water Quality Standard (TOGS 1.1.1, NYSDEC, 1998)
[] indicates guidance value
NS – No standard

As shown, only four metals (iron, lead, manganese, and zinc) were detected at concentrations that exceed the NYSDEC's groundwater standard or guidance values.

Cyanide

Cyanide was not detected at concentrations that exceed the NYSDEC's groundwater standard (200µg/L) in any of the eleven bedrock groundwater samples. Total cyanides were detected in four of the eleven bedrock groundwater samples. A sample from MW-8BD was not collected for cyanide analysis because of low well yield and insufficient water volume. Cyanide was not detected in MW-1B, MW-2B, MW-6B, MW-7BD, MW-8B, MW-10B, and MW-11B. Where detected, concentrations of total cyanide ranged from 20 μg/L at MW-7DD to 130 μg/L at MW-9B.

Phenol

Groundwater samples from all 12 bedrock monitoring wells were analyzed for phenolic compounds using USEPA Method 9065/420.2, USEPA Method 8270, or both. USEPA Method 8270 is a gas chromatograph/mass spectrometer (GC/MS) method capable of quantifying individual SVOCs including phenolics. Method 9065/420.2 is a spectrophotometric method capable of quantifying total phenolic compounds but not individual phenolic compounds. Variations in reported concentrations where both methods were used are the result of the differences in analytical methods.

Samples were collected in January and February 2002 from MW-1B, MW-2B, MW-6B, MW-7BS, MW-7BD, MW-8B, MW-8BD, MW-9B, and MW-11B for analysis of total phenols by USEPA Method 9065/420.2. Groundwater samples from these nine wells, as well as MW-3B, MW-7DD, and MW-10B were analyzed for BNA SVOCs, including phenolic compounds, by USEPA Method 8270.

Phenols were detected in seven of the nine groundwater samples analyzed for total phenols by USEPA Method 9065/420.2. Phenols were not detected in MW-1B and MW-8B. Where detected, concentrations of total phenol ranged from 7 μg/L at MW-8BD to 247 μg/L at MW-11B and exceed the NYSDEC groundwater standard of 1 μg/L.

Phenol was detected in four of the twelve bedrock groundwater samples analyzed for BNA SVOCs by USEPA Method 8270. No other phenolic compounds were detected. Concentrations of phenol ranged from 42 μg/L at MW-9B to 140 μg/L at MW-7DD and exceed the NYSDEC groundwater standard of 1 μg/L.

Phenolics were detected using either method in eight of the 12 bedrock monitoring wells. No phenolics were detected in MW-1B, MW-3B, MW-8B, and MW-10B. Because phenol is more soluble in water than most PAHs, phenol is detected over a larger area than PAHs.

5.5 NAPL OBSERVATIONS

Table 13 and Figure 12 summarize the distribution of NAPL observed in the bedrock monitoring wells. No NAPL has been observed in any of the overburden monitoring wells or in bedrock monitoring wells MW-1B, MW-3B, MW-7DD, MW-8B, MW-9B, and MW-10B.

Tar- or petroleum-like odors were detected in MW-6B (four times), MW-8BD (once), and MW-11B (twice). A sheen was also observed once in each of these three monitoring wells. On June 7, 2002 a slight sheen (a very thin rainbow pattern coating some of the water droplets on the probe) was observed in some rock cuttings from the bottom of MW-11B that stuck to the interface probe. Sheens and odors have not been detected at MW-11B since. On August 22, 2002, a slight sheen was observed on the interface probe used in MW-6B. Tar-like odors have been detected on three other occasions and tar was observed in a fracture in the core at a depth of 14.4 feet bgs that corresponds approximately with the bottom of the former gas holder. On September 23, 2002, an LNAPL sheen (a rainbow sheen was detected on the interface probe), which had a petroleum-like odor, was detected in MW-8BD. During development, a sheen with a fuel oil-like odor was detected in MW-8B. There was a fuel oil tank at the former firehouse near MW-8B and 8BD. Therefore, the sheens and odors at MW-8B and MW-8BD may not be MGP-related.

Droplets of NAPL have been consistently found in MW-2B, MW-7BS, MW-7BD and the upper portion of the angled boring. The quantity of LNAPL or tar observed in these four wells has been limited to a few droplets. Recoverable quantities of LNAPL and tar have not been observed.

The open hole interval of MW-2B and MW-7BS are in the upper portion of the bedrock. The upper portion of the bedrock is more weathered and fractured as indicated by the relatively low RQDs of the upper five feet reported in the core logs. Groundwater levels in these two wells have also stabilized since installation indicating that the upper weathered portion of the bedrock is hydraulically connected with the overburden (Section 4.2.3). Therefore, the NAPL observed in MW-2B and MW-7BS is most likely from residual material found in cracks in the bedrock surface during the 2001 IRM.

The open-hole interval in monitoring well MW-7BD and the upper portion of the angled boring both intersect the bedding plane fracture discussed in Section 4.0 and depicted on Figure 6. Based on core data, this fracture is approximately aligned with bedding and dips to the northeast. This fracture is likely a primary pathway for lateral contaminant migration.

As shown on the hydrographs in Appendix G, groundwater levels in several wells that do not intersect the bedding plane fracture or the upper weathered zone are still recovering after the wells were installed in 2002. The slow recovery rate demonstrates that the shale is relatively impermeable and that the fractures are the likely groundwater (and contaminant) migration pathways at the site.

In October 2002, NAPL was detected in the angled boring. Tar sheens were observed in the core in a fracture at approximately 45 feet along the core. In order to verify whether the tar found in the angled boring entered through the fracture, URS placed a packer below the fracture in December 2002. Since installing the packer, tar droplets were only detected in the portion of the boring above the packer. Therefore, the NAPL observed in October 2002 was attributed to the upper portion of the angled boring.

In summary, although indications and traces of NAPL have been detected in some bedrock monitoring wells, none of the wells contain recoverable quantities of NAPL, and NAPL was only found in wells that are either open to the weathered upper portion of the bedrock or the bedding plane fracture.

6.0 CONCLUSIONS

Based on the data collected during this investigation, URS concludes:

The Former Gas Holder

- The former MGP operated from 1860 to 1896. The former gas holder foundation was not removed from the site when the former apartment building was built.

- The foundation of the former gas holder was at least five feet below the top of the bedrock (i.e. approximately 12 feet bgs). Coal tar-impacted soils were observed from approximately ten to twelve feet bgs in one of the soil borings that were advanced within the limits of the former gas holder.

- The lateral extent of the coal tar appears to have been limited to the holder, and possibly, a few other small areas. This conclusion is based on the observations that the soil borings outside of the holder contained little or no indications of coal tar and that there was no detection of organic compounds in MW-99-02.

- The gas holder foundation and its contents, with the exception of an area on the northeast portion of the former gas holder, were removed during the 2001 IRM and disposed of at a permitted off-site facility. A thin layer of fractured stone and concrete that was at the northeast corner of the former gas holder remain in the bedrock depression.

The Crawl Space

- The soil in the former crawl space contained elevated levels of some PAHs and mercury, and traces of VOCs. There were also elevated concentrations of other metals, including: arsenic, barium, copper, nickel, selenium, and zinc, in the thin layer of soil in the crawl space. While the PAHs, VOCs, lead, and arsenic may be attributed to historic MGP activities, the other metals that were found may have been in the fill when it was used to develop the site and surrounding areas for commercial purposes after the MGP closed. The soils in the crawl space were removed during the 2001 IRM and disposed of at a permitted off-site facility.

- The air quality in the former crawl space did not appear to have been impacted by the soils in the former crawl space. Furthermore, the building has been demolished, thus, eliminating this potential route of exposure.

- The air quality in the former apartments or garage did not appear to have been impacted by the residual MGP contamination detected in the soil beneath the apartment complex. Furthermore, the apartment complex has been demolished and the site soils have been removed, eliminating this potential route of exposure.

Soil Investigation

- Prior to the 2001 IRM, the average thickness of the fill at the site was five feet. Although the source of the fill is unknown, the presence of landscaping plastic beneath portions of areas near the site indicate that at least some of the fill has been imported since the MGP operations ceased.

- The stratified sands beneath the fill were up to 8.5 feet thick.

- The top of the bedrock beneath the site is between five and 11.5 feet bgs and gradually slopes to the northeast.

- The site was backfilled with fine- to medium-coarse grained sands following the 2001 IRM.

- The levels of PAHs in the surface soil at the neighboring properties east and west of the former MGP site are much lower than were detected on-site prior to the 2001 IRM. However, since the surrounding properties have been used for commercial purposes, including: a former lumber yard that burned at least once, a former heavy equipment dealer, and an active rail yard, it is reasonable to assume that at least some of the PAHs found in surface soils are probably from sources other than the historic MGP operations.

- There are elevated levels of PAHs in the surface soil southeast of the site. The source of these PAHs are uncertain. The soils in that area are underlain by a sheet of plastic sheeting, suggesting relatively recent placement, and therefore, a source other than the MGP site. The vertical extent of the impacted soil that is southeast of the site has not been delineated.

- The distributions of BTEX in the subsurface soils are similar to that of PAHs. The source of the BTEX and PAHs in the subsurface soils appear to be the former gas holder. However, the petroleum products found in soil boring PB-SB-6 were identified as gasoline, suggesting that the PAHs and BTEX found on the northwest portion of the site are not related to the former MGP. The impacted soils in the former gas holder were removed in 2001.

- The soils at the site and the contents of the former gas holder were removed during the 2001 IRM. However, levels of PAHs that slightly exceed the NYSDEC RSCOs were detected in post excavation sidewall samples. Specifically, PAHs (totals up to 197 mg/kg) were found in post-excavation sidewall samples along Bridge Street where further excavation was not possible because of the roadway and underground utilities.

The Sewer Investigation

- The catch basin near the northeastern corner of the site is the easternmost end of the sewer line along Bridge Street. The water in the sewer flows to the west and the sewer line turns north and crosses Bridge Street northwest of the site. Based on an evaluation of the top of bedrock and the invert elevations, the sewer does not appear to be a migratory pathway for contaminants to leave the site.

Overburden Groundwater Investigation

- The shallow groundwater beneath the site flows generally to the north with components of flow to the northwest toward the Saranac River and to the northeast toward the Cumberland Bay.

- The depth to groundwater on the east side of the site is less than five feet. The depth to groundwater is approximately six to eight feet on the north side of the site.

- Based on the water table elevation and the top of bedrock elevation, the water table west of the former MGP plant is probably below the top of the bedrock.

- The overburden groundwater within the sedimentary materials above the bedrock on the east, north, and northeast sides of the site has not been impacted by either VOCs or PAHs.

- The overburden groundwater within the sedimentary material above the bedrock northwest of the former MGP plant site has been impacted by low levels of number 2 fuel oil, PAHs, and BTEX. The common laboratory contaminants or sampling artifacts, acetone and di-n-butylphthalate, were also reported in the sample. The presence of fuel oil in the groundwater suggests that the source of the groundwater impacts are not MGP-related. Furthermore, sewage-like odors and elevated groundwater temperature at MW-99-05 during purging suggested that the impacts at this well are related to the sanitary sewer.

- Several metals were detected in overburden groundwater samples at concentrations that exceed the NYSDEC's groundwater standards or guidance values.

- It does not appear that the former MGP has impacted overburden groundwater quality outside of the former gas holder.

Bedrock Groundwater

- Vertical and horizontal fractures are the primary contaminant migration pathway for groundwater. There are limited number of vertical fractures beneath the site. There is a near horizontal bedding plane fracture beneath the site in which NAPL has been found.

- Groundwater impacts (benzene, PAHs, phenol, and metals) were found in bedrock groundwater at and near the site at concentrations that exceed groundwater standards. Benzene was found at MW-1B (south), MW-2B (east), MW-3B, MW-7BS, and MW-7BD (northeast), and MW-9B (west) at concentrations that exceed the groundwater standards. PAHs were found at MW-2B, MW-7BS, and MW-7BD at concentrations that exceed groundwater standards. Phenols were detected in all wells except MW-1B (south), MW-10B (northeast), and MW-8B (northwest) at concentrations that exceed the NYSDEC's groundwater standards.

- Iron, manganese, zinc, and lead were detected in at least one bedrock groundwater sample at concentrations that exceed the NYSDEC's groundwater standards or guidance values.

- LNAPL and tar droplets were found in four on-site monitoring wells (MW-2B, MW-7BS, MW-7BD, and the angled boring). Sheens were detected one or more times at monitoring wells MW-6B, MW-8B, MW-8BD, and MW-11B. MW-2B, MW-7BS, MW-8B, and MW-11B screen the weathered upper portion of the bedrock where NAPL was observed during the 2001 IRM. MW-6B, MW-7BD and the angled boring screen a bedding plane fracture. MW-3B and MW-10B also screen the bedding plane fracture off-site to the east, but no LNAPL or tar has been observed in these locations. None of the wells have recoverable amounts of NAPL.

7.0 RECOMMENDATIONS

Based on the data collected during this investigation, URS makes these recommendations.

- No further soil or groundwater investigation is needed to delineate nature and extent of contamination.

- NAPL in the bedrock has been fully delineated. The bedrock groundwater monitoring wells, which have historically shown the presence of NAPL, should be monitored periodically for the continued presence of NAPL.

- A site management plan should be developed to control future use of the site and to manage future risks the site may pose.

8.0 REFERENCES

Engineering-Science, Inc., February 1992. *Prioritization of Former Manufactured Gas Plant Site, Plattsburgh-Bridge Street Site (NYSEG Code CGPB).* Prepared for NYSEG, Binghamton, New York.

NYSEG, March 23,1999. *Scope-Of-Work for a Preliminary Site Assessment at the Plattsburgh-Bridge Street Former Manufactured Gas Plant Site.*

United States Environmental Protection Agency, 1989 and 1991. *Guidance for Conducting Remedial Investigations and Feasibility Studies Under CERCLA.* And *Guidance for Performing Preliminary Assessments Under CERCLA*

New York State Department of Health (NYSDOH). 1999. Residential Indoor Air Quality Database.

New York State Department of Environmental Conservation (NYSDEC). 1991. *Quality Assurance Project Plan Guidance*

Comprehensive Environmental Response Compensation and Liability Act (CERCLA) Quality Assurance Manual, Final Copy , Revision I, October 1989.

National Enforcement Investigations Center of USEPA Office of Enforcement. *NEIC Policies and Procedures.* Washington: USEPA.

New York State Department of Environmental Conservation (NYSDEC). 1995. *Analytical Services Protocol*, (ASP) 10/95 Edition. Albany: NYSDEC

USEPA. 1987. *A Compendium of Superfund Field Operations Methods*, EPA/540/P-87-001, (OSWER Directive 9355.0-14). December. Cincinnati, OH: USEPA.

USEPA. 1994. *Guidance for the Data Quality Objective Process*, EPA QA/G-4. September. Washington: USEPA.

New York State Department of Environmental Conservation. April 1995. *Proposed – Division of Technical and Administrative Guidance Memorandum: Determination of Soil Cleanup Objective and Cleanup Levels, HWR-94-4046.*

Isachsen, Y.W. and Fisher, D.W., 1970, *Geologic Map of New York Adirondack Sheet*.

TABLES

TABLE 1
SUMMARY OF WATER ELEVATIONS

NYESEG FORMER MGP SITE
BRIDGE STREET PLATTSBURGH, NEW YORK

Well Number	Installation Date	Measuring Point Elevation (feet msl[1])	Ground Surface Elevation (feet msl)	Water Elevation (feet msl)										
				10/20/99	1/25-30/01	3/6/02	4/10/02	8/22/02	9/23/02	10/16/02	12/17/02	1/23/03	2/25/03	4/16/03
Overburden Monitoring Wells														
MW-99-01[2]	7/13/1999	122.54	122.90	Dry	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM
MW-99-02[2]	7/13/1999	121.16	121.45	116.33	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM
MW-99-03	7/13/1999	120.11	120.14	114.88	NM	114.63	115.42	112.84	112.36	113.89	114.86	112.96	NM	115.39
MW-99-04	7/13/1999	119.33	120.53	114.95	NM	115.90	115.95	114.80	114.52	115.45	NM	NM	NM	116.19
MW-99-05	7/14/1999	120.94	120.94	113.26	112.76	112.74	112.73	112.13	112.09	112.79	NM	112.42	112.91	NM
Bedrock Monitoring Wells														
MW-1B	12/3/2001	122.80	123.30	NM	108.04	110.78	113.64	116.27	115.80	115.69	115.93	NM	NM	116.09
MW-2B	12/7/2001	122.32	122.72	NM	85.62	112.83	117.88	115.93	114.04	115.67	116.39	114.97	NM	117.30
MW-3B	9/1/2002	120.11	120.14	NM	NM	NM	NM	NM	NM	80.41	107.02	104.94	102.50	105.99
MW-6B	12/5/2001	121.90	122.47	NM	88.35	88.83	92.72	110.31	111.35	111.73	113.25	NM	114.14	114.70
MW-7BD	1/9/2002	121.06	121.30	NM	NM	80.26	85.64	101.38	102.81	104.01	106.23	106.91	107.35	108.73
MW-7BS	12/13/2001	120.72	120.86	NM	116.96	118.03	117.91	116.17	115.92	117.02	117.79	116.30	115.82	118.20
MW-7DD	9/1/2002	121.33	122.72	NM	NM	NM	NM	NM	NM	Dry	38.02	39.12	NM	40.02
MW-8B	12/12/2001	120.55	121.32	NM	92.83	90.20	90.16	89.22	89.20	88.73	89.29	NM	NM	83.44
MW-8BD	12/12/2001	120.74	121.32	NM	NM	NM	83.67	84.10	84.14	84.12	84.13	84.19	84.21	84.34
MW-9B	12/19/2001	121.06	121.72	NM	88.15	88.41	89.15	92.76	93.15	93.46	94.08	94.32	95.56	96.81
MW-10B	9/1/2002	122.15	122.60	NM	NM	NM	NM	NM	NM	113.57	NM	114.40	NM	115.00
MW-11B	1/9/2002	119.81	120.36	NM	89.50	99.16	107.66	115.93	115.46	115.86	117.07	116.96	117.29	116.92

Notes:
1 - Feet above mean sea level. National geodetic vertcal datum of 1929 (NGVD29)
2 - Well abandoned during 2001 IRM
NM - Not measured

TABLE 2
INDOOR AIR ANALYTICAL RESULTS

NYSEG FORMER MGP SITE
BRIDGE STREET PLATTSBURGH, NEW YORK

Parameter	Crawl Space 7/29/1999	Crawl Space Outside 7/29/1999	Ambient Air 2/1/2000	Apartment 1 2/1/2000	Apartment 2 2/1/2000	Apartment 3 2/1/2000	Garage 2/1/2000
1,1,1-Trichloroethane	0.92U	0.84U	0.96U	1U	4.9U	0.76U	0.94U
1,1,2,2-Tetrachloroethane	0.92U	0.84U	0.96U	1U	4.9U	0.76U	0.94U
1,1,2-Trichloroethane	0.92U	0.84U	0.96U	1U	4.9U	0.76U	0.94U
1,1-Dichloroethane	0.92U	0.84U	0.96U	1U	4.9U	0.76U	0.94U
1,1-Dichloroethene	0.92U	0.84U	0.96U	1U	4.9U	0.76U	0.94U
1,2,4-Trichlorobenzene	0.92U	0.84U	0.96U	1U	4.9U	0.76U	0.94U
1,2,4-Trimethylbenzene	0.92U	0.84U	0.96U	1U	4.9U	0.76U	**1.2***
1,2-Dichlorobenzene	0.92U	0.84U	0.96U	1U	4.9U	**3.2**	0.94U
1,2-Dichloroethane	0.92U	0.84U	0.96U	1U	4.9U	0.76U	0.94U
1,2-Dichloroethene (cis)	0.92U	0.84U	0.96U	1U	4.9U	0.76U	0.94U
1,2-Dichloroethene (trans)	3.7U	3.4U	3.8U	4U	20U	3U	3.7U
1,2-Dichloropropane	0.92U	0.84U	0.96U	1U	4.9U	0.76U	0.94U
1,3,5-Trimethylbenzene	0.92U	0.84U	0.96U	1U	4.9U	0.76U	0.94U
1,3-Butadiene	3.7U	3.4U	3.8U	4U	20U	3U	3.7U
1,3-Dichlorobenzene	0.92U	0.84U	0.96U	1U	4.9U	0.76U	0.94U
1,3-Dichloropropene (cis)	0.92U	0.84U	0.96U	1U	4.9U	0.76U	0.94U
1,3-Dichloropropene (trans)	0.92U	0.84U	0.96U	1U	4.9U	0.76U	0.94U
1,4-Dichlorobenzene	0.92U	0.84U	0.96U	**2.6**	4.9U	0.76U	0.94U
1,4-Dioxane	3.7U	3.4U	**25**	4U	20U	**6.1+**	3.7U
2-Hexanone	3.7U	3.4U	3.8U	4U	20U	3U	3.7U
2-Propanol	3.7U	3.4U	3.8U	**48**	**20**	**31**	3.7U
4-Ethyltoluene	3.7U	3.4U	3.8U	4U	20U	3U	3.7U
4-Methyl-2-Pentanone	3.7U	3.4U	3.8U	4U	20U	3U	3.7U
Acetone	**8.7**	**13**	3.8U	**19**	**50***	**37***	**5.3***
Benzene	0.92U	0.84U	0.96U	**1.1***	4.9U	**2***	**3.2***
Bromodichloromethane	3.7U	3.4U	3.8U	4U	20U	3U	3.7U
Bromoform	3.7U	3.4U	3.8U	4U	20U	3U	3.7U

TABLE 2
INDOOR AIR ANALYTICAL RESULTS

NYESEG FORMER MGP SITE
BRIDGE STREET PLATTSBURGH, NEW YORK

Parameter	Crawl Space 7/29/1999	Crawl Space Outside 7/29/1999	Ambient Air 2/1/2000	Apartment 1 2/1/2000	Apartment 2 2/1/2000	Apartment 3 2/1/2000	Garage 2/1/2000
Bromomethane	0.92U	0.84U	0.96U	1U	4.9U	0.76U	0.94U
Carbon Disulfide	3.7U	3.4U	3.8U	4U	20U	3U	3.7U
Carbon Tetrachloride	0.92U	0.84U	0.96U	1U	4.9U	0.76U	0.94U
Chlorobenzene	0.92U	0.84U	0.96U	1U	4.9U	0.76U	0.94U
Chloroethane	0.92U	0.84U	0.96U	1U	4.9U	0.76U	0.94U
Chloroform	0.92U	0.84U	0.96U	**1.8**	4.9U	0.76U	0.94U
Chloromethane	**3.1**	**0.95**	**2.5**	**1.4+**	4.9U	**1.1+**	**1.4+**
Chlorotoluene	0.92U	0.84U	0.96U	1U	4.9U	0.76U	0.94U
Cyclohexane	3.7U	3.4U	3.8U	4U	20U	3U	3.7U
Dibromochloromethane	3.7U	3.4U	3.8U	4U	20U	3U	3.7U
Ethanol	**41**	**4.6**	**9.3**	**1200+**	**3300+**	**420+**	**120+**
Ethylbenzene	0.92U	0.84U	0.96U	1U	4.9U	**3.9***	**1.6***
Ethylene Dibromide	0.92U	0.84U	0.96U	1U	4.9U	0.76U	0.94U
Freon 11	0.92U	0.84U	0.96U	1U	4.9U	**1.4**	**0.95**
Freon 113	0.92U	0.84U	0.96U	1U	4.9U	0.76U	0.94U
Freon 114	0.92U	0.84U	0.96U	1U	4.9U	0.76U	0.94U
Freon 12	0.92U	0.84U	0.96U	1U	4.9U	**2.6**	0.94U
Heptane	3.7U	3.4U	3.8U	4U	20U	3U	3.7U
Hexachlorobutadiene	0.92U	0.84U	0.96U	1U	4.9U	0.76U	0.94U
Hexane	3.7U	3.4U	3.8U	4U	20U	**4.6**	3.7U
Methyl ethyl ketone (2-Butanone)	3.7U	3.4U	3.8U	4U	20U	3U	3.7U
Methyl-t-Butyl Ether	3.7U	3.4U	3.8U	4U	20U	3U	3.7U
Methylene Chloride	**1.2**	**1.2**	0.96U	1U	4.9U	**3**	0.94U
Naphthalene	92U	84U	19U	20U	98U	15U	19U
Propylene	3.7U	3.4U	3.8U	4U	20U	3U	3.7U
Styrene	0.92U	**3.7**	0.96U	1U	4.9U	0.76U	0.94U
Tetrachloroethene	0.92U	0.84U	0.96U	1U	4.9U	**1.6***	0.94U

TABLE 2
INDOOR AIR ANALYTICAL RESULTS

NYESEG FORMER MGP SITE
BRIDGE STREET PLATTSBURGH, NEW YORK

Parameter	**Crawl Space 7/29/1999**	**Crawl Space Outside 7/29/1999**	**Ambient Air 2/1/2000**	**Apartment 1 2/1/2000**	**Apartment 2 2/1/2000**	**Apartment 3 2/1/2000**	**Garage 2/1/2000**
Tetrahydrofuran	3.7U	3.4U	3.8U	4U	20U	3U	3.7U
Toluene	**2.1**	**1.2**	**1.7**	**5.8+**	**8.1+**	**44+***	**16+**
Trichloroethene	0.92U	0.84U	0.96U	1U	4.9U	**3.4***	0.94U
Vinyl Acetate	3.7U	3.4U	3.8U	4U	20U	3U	3.7U
Vinyl Chloride	0.92U	0.84U	0.96U	1U	4.9U	0.76U	0.94U
Xylene (total)	**0.93**	0.84U	0.96U	**1.4***	4.9U	**18.7***	**7.6***

Notes:

Concentrations shown in parts per billion by volume (ppbv)
J - Estimated concentration
U - Not detected
+ - Parameter was found in ambient air
* - Parameter found in one or more products identified on inventory list

Apartment 1 was located on the ground level on the north end of the building.
Apartment 2 was located on the second floor.
Apartment 3 was located on the ground level on the south end of the building.
The garage was located on the ground floor south of apartment 1.
The crawl space was located on the north end of the building.

TABLE 3
SOIL SAMPLE SUMMARY

NYSEG-BRIDGE ST.
PLATTSBURGH, NEW YORK

Sample ID	Onsite/ Offsite	Location Description	Date	Depth Interval	VOC	SVOC	TAL Metals	TPH	TOC	TCN	RCN	RS	TCLP Benzene
July 1999 Investigation													
PB-SS-1	Onsite	NE corner of site	7/12/1999	0-1 in		X	X	X	X	X	X	X	
PB-SS-2	Offsite	East of site	7/12/1999	0-1 in		X	X	X	X	X	X	X	
PB-SS-3	Offsite	SE of site	7/12/1999	0-1 in		X	X	X	X	X	X	X	
PB-SS-4	Offsite	SE of site	7/12/1999	0-1 in		X	X	X	X	X	X	X	
PB-SS-5	Offsite	near SE corner of site	7/12/1999	0-1 in		X	X	X	X	X	X	X	
PB-SS-6	Onsite	East of building	7/12/1999	0-1 in		X	X	X	X	X	X	X	
PB-SS-7	Onsite	Southern boundary	7/12/1999	0-1 in		X	X	X	X	X	X	X	
PB-SS-8	Offsite	South of site	7/12/1999	0-1 in		X	X	X	X	X	X	X	
PB-SS-9	Onsite	West of building, garden	7/12/1999	0-1 in		X	X	X	X	X	X	X	
PB-SS-10	Offsite	West of site	7/12/1999	0-1 in		X	X	X	X	X	X	X	
PB-SS-11	Offsite	West of site	7/12/1999	0-1 in		X	X	X	X	X	X	X	
PB-SS-12	Offsite	West of site	7/12/1999	0-1 in		X	X	X	X	X	X	X	
PB-SS-13	Offsite	West of site	7/12/1999	0-1 in		X	X	X	X	X	X	X	
PB-SS-14	Offsite	North of Bridge St	7/12/1999	0-1 in		X	X	X	X	X	X	X	
PB-NSS-01	Onsite	West of building, garden	7/12/1999	4.0-8.0 in	X	X	X	X	X	X	X	X	
PB-NSS-02	Onsite	West of building, garden	7/12/1999	4.0-8.0 in	X	X	X	X	X	X	X	X	
PB-NSS-03	Offsite	West of site, vegetable garden	7/12/1999	0-1 ft	X	X	X	X	X	X	X	X	
PB-SB-1	Onsite	W-3/W-3A western boundary	7/13/1999	5.0-7.0 ft	X	X	X	X	X	X	X	X	X
PB-SB-2	Onsite	NE corner of site	7/13/1999	3.0-3.5 ft	X	X	X	X	X	X	X	X	
PB-SB-4	Onsite	N of Building	7/13/1999	5.5-7.0 ft	X	X	X	X	X	X	X	X	
PB-SB-5	Onsite	N of Building	7/13/1999	6.0-7.5 ft	X	X	X	X	X	X	X	X	
PB-SB-6	Onsite	NW corner of building	7/13/1999	5.0-7.5 ft	X	X	X	X	X	X	X	X	
PB-SB-6A	Offsite	N of firestation	7/13/1999	6.0-7.5 ft	X	X	X	X	X	X	X	X	
PB-SB-7	Onsite	Well, southern boundary	7/13/1999	6.0-7.0 ft	X	X	X		X	X	X	X	
PB-SB-8	Onsite	Well,east of Building	7/13/1999	6.0-8.5 ft	X	X	X		X	X	X	X	
PB-SB-9	Offsite	Well NE of site, north of Bridge St.	7/13/1999	10-13 ft	X	X	X		X	X	X	X	
PB-SB-10	Offsite	Well North of Bridge St	7/14/1999	8.0-10 ft	X	X	X	X	X	X	X	X	
PB-SB-11	Offsite	Well NW of site, north of Bridge St.	7/14/1999	8-11.5 ft	X	X	X	X	X	X	X	X	
PB-SB-12	Offsite	West of site	7/13/1999	1.0-3.0 ft	X	X	X	X	X	X	X	X	
October 1999 Investigation													
PB-SS-15	Offsite	SW of site	10/13/1999	0-1 in		X	X	X	X	X	X	X	
PB-SS-16	Offsite	SW of site	10/13/1999	0-1 in		X	X		X	X	X	X	
PB-SS-17	Offsite	SW of site	10/13/1999	0-1 in		X	X		X	X	X	X	
PB-SS-18	Onsite	Former gas holder	10/13/1999	0-1 in		X	X		X	X	X	X	
PB-SS-19	Onsite	Former gas holder	10/13/1999	0-1 in		X	X		X	X	X	X	
PB-NSS-04	Offsite	SW of site	10/13/1999	4-8 in	X	X	X	X	X	X	X	X	
PB-NSS-05	Onsite	West of building, garden	10/13/1999	4-8 in	X	X	X	X	X	X	X	X	
PB-SB-16	Onsite	Former gas holder	10/13/1999	10-12 ft	X	X	X	X		X	X	X	
PB-SB-18	Onsite	Former gas holder	10/13/1999	8-10 ft	X	X	X	X		X	X	X	
PB-SB-20	Onsite	Former gas holder	10/13/1999	4-6 ft	X	X	X	X		X	X	X	

TABLE 3
SOIL SAMPLE SUMMARY

NYSEG-BRIDGE ST.
PLATTSBURGH, NEW YORK

Sample ID	Onsite/ Offsite	Location Description	Date	Depth Interval	VOC	SVOC	TAL Metals	TPH	TOC	TCN	RCN	RS	TCLP Benzene
2001-2002 Bedrock Investigation													
Soil-1	Onsite	New Fill in Former gas holder	11/15/2001	15 ft	X	X							
SB-01-11	Offsite	North of Bridge St	12/19/2001	10-11 ft	X	X							
SB-01-03A	Offsite	North of Bridge St	12/21/2001	12-13 ft	X	X							
SB-01-04A	Offsite	North of Bridge St	12/21/2001	12-13 ft	X	X							
DS-1	Offsite	Dock Street	1/22/2002	13-14 ft	X	X	X	X		X			
DS-2	Offsite	Dock Street	1/22/2002	17-18 ft	X	X				X			
DS-3	Offsite	Dock Street	1/22/2002	16-17 ft	X	X				X			

Notes:
All 1999 analyses performed by Upstate Laboratories, Inc. of East Syracuse, New York.
2001 and 2002 analyses performed by Adirondack Environmental Services in Albany, New York.
Target Compound List (TCL) Volatile Organic Compounds (VOCs) by Analytical Services Protocol (ASP) Method 95-1
TCL Semivolatile Organic Compounds (SVOCs) by ASP Method 95-2
Target Analyte List (TAL) Metals by ASP Method CLP-M
Total Petroleum Hydrocarbons (TPH) by NYSDOH Method 310.13
Total Organic Carbon (TOC) by Lloyd-Kahn Method
Total Cyanide (TCN) by Method SW9012A
Reactive Sulfide (RS) and Reactive Cyanide (RCN) by USEPA SW-846 Section 7.3
Toxicity Characteristic Leachate Procedure (TCLP) Method 1311 for benzene using Method 8260B

TABLE 4
CRAWL SPACE SAMPLE SUMMARY

NYSEG-BRIDGE ST.
PLATTSBURGH, NEW YORK

Sample ID	Date	Sample Media	VOC	SVOC	TAL Metals	Mercury only	TPH	TOC	TCN	RCN	Reactive Sulfide
PB-SS CRAWL-01	7/19/1999	Soil	X	X	X		X	X	X	X	X
PB-CS-01	7/28/1999	Soil	X	X	X			X	X	X	X
PB-CS-02	7/28/1999	Soil	X	X	X			X	X	X	X
PB-CR-SED01	10/14/1999	Soil			X						
PB-CR-SED N	10/14/1999	Soil				X					
PB-CR-SED W	10/14/1999	Soil				X					
PB-CR-SED S	10/14/1999	Soil				X					
PB-CR-SED E	10/14/1999	Soil				X					

Notes:
All analyses performed by Upstate Laboratories, Inc. of East Syracuse, New York.
Target Compound List (TCL) Volatile Organic Compounds (VOCs) by Analytical Services Protocol (ASP) Method 95-1
TCL Semivolatile Organic Compounds (SVOCs) by ASP Method 95-2
Target Analyte List (TAL) Metals by ASP Method CLP-M
Total Petroleum Hydrocarbons (TPH) by NYSDOH Method 310.13
Total Organic Carbon (TOC) by Lloyd-Kahn Method
Total Cyanide (TCN) by Method SW9012A
Reactive Sulfide (RS) and Reactive Cyanide (RCN) by USEPA SW-846 Section 7.3

TABLE 5
CRAWL SPACE SOIL ANALYTICAL RESULTS

NYESEG FORMER MGP SITE
BRIDGE STREET PLATTSBURGH, NEW YORK

PARAMETER	**NYSDEC RSCO (mg/kg)**	**PB-CR-SED-01* 10/14/1999**	**PB-CR-SED-E* 10/14/1999**	**PB-CR-SED-N* 10/14/1999**	**PB-CR-SED-S* 10/14/1999**	**PB-CR-SED-W* 10/14/1999**	**PB-CS-01* 7/28/1999**	**PB-CS-02* 7/28/1999**	**PB-SS-CR-01* 7/19/1999**
Volatile Organic Compounds									
1,1,1-Trichloroethane	0.8	NA	NA	NA	NA	NA	0.15U	0.014U	0.011U
1,1,2,2-Tetrachloroethane	0.6	NA	NA	NA	NA	NA	0.15U	0.014U	0.011U
1,1,2-Trichloroethane	NS	NA	NA	NA	NA	NA	0.15U	0.014U	0.011U
1,1-Dichloroethane	0.2	NA	NA	NA	NA	NA	0.15U	0.014U	0.011U
1,1-Dichloroethene	0.4	NA	NA	NA	NA	NA	0.15U	0.014U	0.011U
1,2-Dichloroethane	0.1	NA	NA	NA	NA	NA	0.15U	0.014U	0.011U
1,2-Dichloroethene (cis)	NS	NA	NA	NA	NA	NA	0.15U	0.014U	0.011U
1,2-Dichloroethene (trans)	0.3	NA	NA	NA	NA	NA	0.15U	0.014U	0.011U
1,2-Dichloropropane	NS	NA	NA	NA	NA	NA	0.15U	0.014U	0.011U
1,3-Dichloropropene (cis)	NS	NA	NA	NA	NA	NA	0.15U	0.014U	0.011U
1,3-Dichloropropene (trans)	NS	NA	NA	NA	NA	NA	0.15U	0.014U	0.011U
2-Hexanone	NS	NA	NA	NA	NA	NA	0.15U	0.014U	0.011U
4-Methyl-2-Pentanone	1	NA	NA	NA	NA	NA	0.15U	0.014U	0.011U
Acetone	0.2	NA	NA	NA	NA	NA	0.18U	0.014U	0.025U
Benzene	0.06	NA	NA	NA	NA	NA	0.15U	0.014U	0.011U
Bromodichloromethane	NS	NA	NA	NA	NA	NA	0.15U	0.014U	0.011U
Bromoform	NS	NA	NA	NA	NA	NA	0.15U	0.014U	0.011U
Bromomethane	NS	NA	NA	NA	NA	NA	0.15U	0.014U	0.011U
Carbon Disulfide	2.7	NA	NA	NA	NA	NA	0.15U	0.014U	0.011U
Carbon Tetrachloride	0.6	NA	NA	NA	NA	NA	0.15U	0.014U	0.011U
Chlorobenzene	1.7	NA	NA	NA	NA	NA	0.15U	0.014U	0.011U
Chloroethane	1.9	NA	NA	NA	NA	NA	0.15U	0.014U	0.011U
Chloroform	0.3	NA	NA	NA	NA	NA	0.15U	**0.003J**	0.011U
Chloromethane	NS	NA	NA	NA	NA	NA	0.15U	0.014U	0.011U
Dibromochloromethane	NS	NA	NA	NA	NA	NA	0.15U	0.014U	0.011U
Ethylbenzene	5.5	NA	NA	NA	NA	NA	**0.022J**	0.014U	0.011U
Methyl ethyl ketone (2-Butanone)	0.3	NA	NA	NA	NA	NA	0.15U	0.014U	0.011U
Methylene Chloride	0.1	NA	NA	NA	NA	NA	0.34U	0.048U	0.033U
Styrene	NS	NA	NA	NA	NA	NA	0.15U	0.014U	0.011U

TABLE 5
CRAWL SPACE SOIL ANALYTICAL RESULTS

NYESEG FORMER MGP SITE
BRIDGE STREET PLATTSBURGH, NEW YORK

PARAMETER	NYSDEC RSCO (mg/kg)	PB-CR-SED-01* 10/14/1999	PB-CR-SED-E* 10/14/1999	PB-CR-SED-N* 10/14/1999	PB-CR-SED-S* 10/14/1999	PB-CR-SED-W* 10/14/1999	PB-CS-01* 7/28/1999	PB-CS-02* 7/28/1999	PB-SS-CR-01* 7/19/1999
Tetrachloroethene	1.4	NA	NA	NA	NA	NA	0.15U	**0.004J**	0.011U
Toluene	1.5	NA	NA	NA	NA	NA	0.15U	0.014U	0.011U
Trichloroethene	0.7	NA	NA	NA	NA	NA	0.15U	0.014U	0.011U
Vinyl Chloride	0.2	NA	NA	NA	NA	NA	0.15U	0.014U	0.011U
Xylene (total)	1.2	NA	NA	NA	NA	NA	**0.146J**	0.014U	0.011U
Total VOCs	*10*	*NA*	*NA*	*NA*	*NA*	*NA*	*0.168*	*0.007*	*ND*
Semivolatile Organic Compounds									
1,2,4-Trichlorobenzene	3.4	NA	NA	NA	NA	NA	0.49U	0.48U	0.36U
1,2-Dichlorobenzene	7.9	NA	NA	NA	NA	NA	0.49U	0.48U	0.36U
1,3-Dichlorobenzene	1.6	NA	NA	NA	NA	NA	0.49U	0.48U	0.36U
1,4-Dichlorobenzene	8.5	NA	NA	NA	NA	NA	0.49U	0.48U	0.36U
2,2'-oxybis(1-Chloropropane)	NS	NA	NA	NA	NA	NA	0.49U	0.48U	0.36U
2,4,5-Trichlorophenol	0.1	NA	NA	NA	NA	NA	2.5U	2.4U	1.8U
2,4,6-Trichlorophenol	NS	NA	NA	NA	NA	NA	0.49U	0.48U	0.36U
2,4-Dichlorophenol	0.4	NA	NA	NA	NA	NA	0.49U	0.48U	0.36U
2,4-Dimethylphenol	NS	NA	NA	NA	NA	NA	0.49U	0.48U	0.36U
2,4-Dinitrophenol	0.2	NA	NA	NA	NA	NA	2.5U	2.4U	1.8U
2,4-Dinitrotoluene	NS	NA	NA	NA	NA	NA	0.49U	0.48U	0.36U
2,6-Dinitrotoluene	1	NA	NA	NA	NA	NA	0.49U	0.48U	0.36U
2-Chloronaphthalene	NS	NA	NA	NA	NA	NA	0.49U	0.48U	0.36U
2-Chlorophenol	0.8	NA	NA	NA	NA	NA	0.49U	0.48U	0.36U
2-Methylnaphthalene	36.4	NA	NA	NA	NA	NA	**0.46J**	**4.3J**	**0.041J**
2-Methylphenol (o-cresol)	0.1	NA	NA	NA	NA	NA	0.49U	0.48U	0.36U
2-Nitroaniline	0.43	NA	NA	NA	NA	NA	2.5U	2.4U	1.8U
2-Nitrophenol	0.33	NA	NA	NA	NA	NA	0.49U	0.48U	0.36U
3 & 4-Methylphenol (m, p-cresol)	NS	NA	NA	NA	NA	NA	0.49U	0.48U	0.36U
3,3'-Dichlorobenzidine	NS	NA	NA	NA	NA	NA	0.49U	0.48U	0.36U
3-Nitroaniline	0.5	NA	NA	NA	NA	NA	2.5U	2.4U	1.8U
4,6-Dinitro-2-Methylphenol	NS	NA	NA	NA	NA	NA	2.5U	2.4U	1.8U
4-Bromophenyl-phenylether	NS	NA	NA	NA	NA	NA	0.49U	0.48U	0.36U

TABLE 5
CRAWL SPACE SOIL ANALYTICAL RESULTS

NYESEG FORMER MGP SITE
BRIDGE STREET PLATTSBURGH, NEW YORK

PARAMETER	NYSDEC RSCO (mg/kg)	PB-CR-SED-01* 10/14/1999	PB-CR-SED-E* 10/14/1999	PB-CR-SED-N* 10/14/1999	PB-CR-SED-S* 10/14/1999	PB-CR-SED-W* 10/14/1999	PB-CS-01* 7/28/1999	PB-CS-02* 7/28/1999	PB-SS-CR-01* 7/19/1999
4-Chloro-3-Methylphenol	0.24	NA	NA	NA	NA	NA	0.49U	0.48U	0.36U
4-Chloroaniline	0.22	NA	NA	NA	NA	NA	0.49U	0.48U	0.36U
4-Chlorophenyl-phenylether	NS	NA	NA	NA	NA	NA	0.49U	0.48U	0.36U
4-Nitroaniline	NS	NA	NA	NA	NA	NA	2.5U	2.4U	1.8U
4-Nitrophenol	0.1	NA	NA	NA	NA	NA	2.5U	2.4U	1.8U
Acenaphthene	50*	NA	NA	NA	NA	NA	**0.34J**	**6.7D**	**0.04J**
Acenaphthylene	41	NA	NA	NA	NA	NA	**4.4DJ**	**1.9**	**0.3J**
Anthracene	50*	NA	NA	NA	NA	NA	**1.9**	**2.9**	**0.19J**
Benzo(a)anthracene	0.224	NA	NA	NA	NA	NA	**9.4D**	**4.3J**	**0.91**
Benzo(a)pyrene	0.061	NA	NA	NA	NA	NA	**15D**	**7.9D**	**1.3J**
Benzo(b)fluoranthene	0.224	NA	NA	NA	NA	NA	**15D**	**6.9D**	**1.8J**
Benzo(g,h,i)perylene	50*	NA	NA	NA	NA	NA	**12D**	**3.2J**	**0.61J**
Benzo(k)fluoranthene	0.224	NA	NA	NA	NA	NA	**3.3J**	**1.9J**	**0.55J**
bis(2-Chloroethoxy)methane	NS	NA	NA	NA	NA	NA	0.49U	0.48U	0.36U
bis(2-Chloroethyl)ether	NS	NA	NA	NA	NA	NA	0.49U	0.48U	0.36U
bis(2-Ethylhexyl)phthalate	50*	NA	NA	NA	NA	NA	0.49U	0.48U	0.36U
Butylbenzylphthalate	50*	NA	NA	NA	NA	NA	0.49U	0.48U	0.36U
Carbazole	NS	NA	NA	NA	NA	NA	**0.45J**	**0.22J**	**0.067J**
Chrysene	0.4	NA	NA	NA	NA	NA	**12D**	**4.7J**	**1.1**
Di-n-butylphthalate	8.1	NA	NA	NA	NA	NA	0.49U	0.48U	0.36U
Di-n-octylphthalate	50*	NA	NA	NA	NA	NA	0.49U	0.48U	0.36U
Dibenzo(a,h)anthracene	NS	NA	NA	NA	NA	NA	0.49U	**0.49J**	0.36U
Dibenzofuran	6.2	NA	NA	NA	NA	NA	**0.18J**	**0.28J**	0.36U
Diethylphthalate	7.1	NA	NA	NA	NA	NA	0.49U	0.48U	0.36U
Dimethylphthalate	2	NA	NA	NA	NA	NA	0.49U	0.48U	0.36U
Fluoranthene	50*	NA	NA	NA	NA	NA	**16D**	**5.9D**	**1.5**
Fluorene	50*	NA	NA	NA	NA	NA	**0.84J**	**2.2**	**0.075J**
Hexachlorobenzene	0.41	NA	NA	NA	NA	NA	0.49U	0.48U	0.36U
Hexachlorobutadiene	NS	NA	NA	NA	NA	NA	0.49U	0.48U	0.36U
Hexachlorocyclopentadiene	NS	NA	NA	NA	NA	NA	0.49U	0.48U	0.36U

TABLE 5
CRAWL SPACE SOIL ANALYTICAL RESULTS

NYESEG FORMER MGP SITE
BRIDGE STREET PLATTSBURGH, NEW YORK

PARAMETER	**NYSDEC RSCO (mg/kg)**	**PB-CR-SED-01* 10/14/1999**	**PB-CR-SED-E* 10/14/1999**	**PB-CR-SED-N* 10/14/1999**	**PB-CR-SED-S* 10/14/1999**	**PB-CR-SED-W* 10/14/1999**	**PB-CS-01* 7/28/1999**	**PB-CS-02* 7/28/1999**	**PB-SS-CR-01* 7/19/1999**
Hexachloroethane	NS	NA	NA	NA	NA	NA	0.49U	0.48U	0.36U
Indeno(1,2,3-cd)pyrene	3.2	NA	NA	NA	NA	NA	**8.6D**	**2.4J**	**0.47J**
Isophorone	4.4	NA	NA	NA	NA	NA	0.49U	0.48U	0.36U
N-Nitroso-di-n-propylamine	NS	NA	NA	NA	NA	NA	0.49U	0.48U	0.36U
N-Nitrosodimethylamine	NS	NA	NA	NA	NA	NA	0.49U	0.48U	0.36U
N-Nitrosodiphenylamine	NS	NA	NA	NA	NA	NA	0.49U	0.48U	0.36U
Naphthalene	13	NA	NA	NA	NA	NA	**0.8**	**8.5D**	**0.073J**
Nitrobenzene	0.2	NA	NA	NA	NA	NA	0.49U	0.48U	0.36U
Pentachlorophenol	1	NA	NA	NA	NA	NA	2.5U	2.4U	1.8U
Phenanthrene	50*	NA	NA	NA	NA	NA	**6.8D**	**7.9D**	**0.86**
Phenol	0.03	NA	NA	NA	NA	NA	0.49U	0.48U	0.36U
Pyrene	50*	NA	NA	NA	NA	NA	**25D**	**9.3D**	**2.8**
Total PAHs	*NS*	*NA*	*NA*	*NA*	*NA*	*NA*	*132.5*	*81.9*	*12.7*
Total SVOCs	*500*	*NA*	*NA*	*NA*	*NA*	*NA*	*132.5*	*81.9*	*12.7*
Metals									
Aluminum	SB	**4,960**	NA	NA	NA	NA	**5,610**	**6,040**	**5,140**
Antimony	SB	**3.7BJ**	NA	NA	NA	NA	4.3U	4.3U	3.2U
Arsenic	7.5 or SB	**25.8J**	NA	NA	NA	NA	2.9U	**6.2**	**22.6**
Barium	300 or SB	**2,620**	NA	NA	NA	NA	**175**	**145**	**2,110**
Beryllium	0.16 or SB	0.62U	NA	NA	NA	NA	0.86U	0.86U	0.65U
Cadmium	1	**8.8**	NA	NA	NA	NA	**1.9**	**2.6**	**8.4**
Calcium	SB	**53,700**	NA	NA	NA	NA	**27,400**	**39,400**	**54,500J**
Chromium	10	**3.3J**	NA	NA	NA	NA	**20.9**	**41.1**	**30.9**
Cobalt	30 or SB	**6.6B**	NA	NA	NA	NA	5.7U	**6.4B**	**6B**
Copper	25 or SB	**175**	NA	NA	NA	NA	**47.8**	**112**	**204**
Iron	2000 or SB	**35,200**	NA	NA	NA	NA	**10,400**	**12,800**	**34,500**
Lead	SB	**2,820**	NA	NA	NA	NA	434R	831R	**4040J**
Magnesium	SB	**4,220**	NA	NA	NA	NA	**2,540**	**3,360**	**4,170**
Manganese	SB	**336**	NA	NA	NA	NA	**169J**	**191J**	**300J**
Mercury	0.1	**49J**	**23.7**	**18.2J**	**15.5**	**68.7**	**1.6**	**4.8**	**40.2J**

TABLE 5
CRAWL SPACE SOIL ANALYTICAL RESULTS

NYESEG FORMER MGP SITE
BRIDGE STREET PLATTSBURGH, NEW YORK

PARAMETER	NYSDEC RSCO (mg/kg)	PB-CR-SED-01* 10/14/1999	PB-CR-SED-E* 10/14/1999	PB-CR-SED-N* 10/14/1999	PB-CR-SED-S* 10/14/1999	PB-CR-SED-W* 10/14/1999	PB-CS-01* 7/28/1999	PB-CS-02* 7/28/1999	PB-SS-CR-01* 7/19/1999
Nickel	13 or SB	**35.9**	NA	NA	NA	NA	**13.5**	**15.7**	**26**
Potassium	SB	**1,360**	NA	NA	NA	NA	**660B**	**1,000B**	**1,140**
Selenium	2 or SB	1U	NA	NA	NA	NA	**9.4J**	1.4U	**6.9J**
Silver	SB	2.1U	NA	NA	NA	NA	2.9U	2.9U	2.2U
Sodium	SB	**2,180**	NA	NA	NA	NA	287U	288U	**479B**
Thallium	SB	2.1U	NA	NA	NA	NA	**6.5**	**5.8**	**4.5**
Vanadium	150 or SB	**17.9**	NA	NA	NA	NA	**14.7**	**19.2**	**16.5**
Zinc	20 or SB	**3,190J**	NA	NA	NA	NA	**310J**	**461J**	**2,830J**
Total Petroleum Hydrocarbons									
Fuel Oil # 2 (Diesel)	NS	NA	NA	NA	NA	NA	NA	NA	3.5U
Gasoline	NS	NA	NA	NA	NA	NA	NA	NA	ND
Kerosene	NS	NA	NA	NA	NA	NA	NA	NA	3.5U
Lubricating Oil	NS	NA	NA	NA	NA	NA	NA	NA	Present
Unidentified Hydrocarbons	NS	NA	NA	NA	NA	NA	NA	NA	ND
General Chemistry									
Cyanide, reactive	NS	NA	NA	NA	NA	NA	1U	1U	3.1U
Cyanide, total	NS	NA	NA	NA	NA	NA	2.9U	2.8U	**3.2**
Sulfide, reactive	NS	NA	NA	NA	NA	NA	50U	50U	50U
Total Organic Carbon (TOC)	NS	NA	NA	NA	NA	NA	**49,294**	**48,817**	**29,142**

Notes:

Concentrations shown in mg/kg

NA - Not Analyzed

ND - Not Detected

NS - No RSCO established in TAGM 4046

[] - Indicates guidance value

* - Indicates soil boring located within area excavated and removed during the June 2001 IRM

B - (metals) - Indicates concentration is estimated between the PQL and the MDL

D - Surrogate or matrix spike recoveries were not obtained because the exteract was diluted for analysis

J - (organics) - Indicates concentration is estimated between the PQL and the method detection limit (MDL)

R - Rejected value

U - Parameter not detected above the practical quantitation limit (PQL) specified

SB - Site Background

TABLE 6
SURFACE SOIL ANALYTICAL RESULTS

NYESEG FORMER MGP SITE
BRIDGE STREET PLATTSBURGH, NEW YORK

Parameter	NYSDEC RSCO (mg/kg)	PB-SS-1* 7/12/1999 0-0.1'	PB-SS-2 7/12/1999 0-0.1'	PB-SS-3 7/12/1999 0-0.1'	PB-SS-4 7/12/1999 0-0.1'	PB-SS-5 7/12/1999 0-0.1'	PB-SS-6* 7/12/1999 0-0.1'	PB-SS-7* 7/12/1999 0-0.1'	PB-SS-8 7/12/1999 0-0.1'	PB-SS-9* 7/12/1999 0-0.1'	PB-SS-10 7/12/1999 0-0.1'
Semivolatile Organic Compounds											
1,2,4-Trichlorobenzene	3.4	0.4U	0.39U	0.42U	0.39U	0.37U	0.39U	0.39U	0.42U	0.44U	0.44U
1,2-Dichlorobenzene	7.9	0.4U	0.39U	0.42U	0.39U	0.37U	0.39U	0.39U	0.42U	0.44U	0.44U
1,3-Dichlorobenzene	1.6	0.4U	0.39U	0.42U	0.39U	0.37U	0.39U	0.39U	0.42U	0.44U	0.44U
1,4-Dichlorobenzene	8.5	0.4U	0.39U	0.42U	0.39U	0.37U	0.39U	0.39U	0.42U	0.44U	0.44U
2,2'-oxybis(1-Chloropropane)	NS	0.4U	0.39U	0.42U	0.39U	0.37U	0.39U	0.39U	0.42U	0.44U	0.44U
2,4,5-Trichlorophenol	0.1	4U	2U	2.1U	1.9U	1.9U	2U	2U	2.1U	2.2U	2.2U
2,4,6-Trichlorophenol	NS	0.4U	0.39U	0.42U	0.39U	0.37U	0.39U	0.39U	0.42U	0.44U	0.44U
2,4-Dichlorophenol	0.4	0.4U	0.39U	0.42U	0.39U	0.37U	0.39U	0.39U	0.42U	0.44U	0.44U
2,4-Dimethylphenol	NS	0.4U	0.39U	0.42U	0.39U	0.37U	0.39U	0.39U	0.42U	0.44U	0.44U
2,4-Dinitrophenol	0.2	2U	2U	2.1U	1.9U	1.9U	2U	2U	2.1U	2.2U	2.2U
2,4-Dinitrotoluene	NS	0.4U	0.39U	0.42U	0.39U	0.37U	0.39U	0.39U	0.42U	0.44U	0.44U
2,6-Dinitrotoluene	1	0.79U	0.39U	0.42U	0.39U	0.37U	0.39U	0.39U	0.42U	0.44U	0.44U
2-Chloronaphthalene	NS	0.79U	0.39U	0.42U	0.39U	0.37U	0.39U	0.39U	0.42U	0.44U	0.44U
2-Chlorophenol	0.8	0.4U	0.39U	0.42U	0.39U	0.37U	0.39U	0.39U	0.42U	0.44U	0.44U
2-Methylnaphthalene	36.4	0.4U	0.39U	0.42U	**0.66**	0.37U	0.39U	0.39U	0.42U	0.44U	0.44U
2-Methylphenol (o-cresol)	0.1	0.4U	0.39U	0.42U	0.39U	0.37U	0.39U	0.39U	0.42U	0.44U	0.44U
2-Nitroaniline	0.43	4U	2U	2.1U	1.9U	1.9U	2U	2U	2.1U	2.2U	2.2U
2-Nitrophenol	0.33	0.4U	0.39U	0.42U	0.39U	0.37U	0.39U	0.39U	0.42U	0.44U	0.44U
3 & 4-Methylphenol (m, p-cresol)	NS	0.4U	0.39U	0.42U	**0.16J**	0.37U	0.39U	0.39U	0.42U	0.44U	0.44U
3,3'-Dichlorobenzidine	NS	0.4U	0.39U	0.42U	0.39U	0.37U	0.39U	0.39U	0.42U	0.44U	0.44U
3-Nitroaniline	0.5	2U	2U	2.1U	1.9U	1.9U	2U	2U	2.1U	2.2U	2.2U
4,6-Dinitro-2-Methylphenol	NS	2U	2U	2.1U	1.9U	1.9U	2U	2U	2.1U	2.2U	2.2U
4-Bromophenyl-phenylether	NS	0.4U	0.39U	0.42U	0.39U	0.37U	0.39U	0.39U	0.42U	0.44U	0.44U
4-Chloro-3-Methylphenol	0.24	0.4U	0.39U	0.42U	0.39U	0.37U	0.39U	0.39U	0.42U	0.44U	0.44U
4-Chloroaniline	0.22	0.4U	0.39U	0.42U	0.39U	0.37U	0.39U	0.39U	0.42U	0.44U	0.44U
4-Chlorophenyl-phenylether	NS	0.4U	0.39U	0.42U	0.39U	0.37U	0.39U	0.39U	0.42U	0.44U	0.44U
4-Methylphenol (p-cresol)	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Nitroaniline	NS	2U	2U	2.1U	1.9U	1.9U	2U	2U	2.1U	2.2U	2.2U
4-Nitrophenol	0.1	2U	2U	2.1U	**0.082J**	1.9U	2U	2U	2.1U	2.2U	2.2U

TABLE 6
SURFACE SOIL ANALYTICAL RESULTS

NYESEG FORMER MGP SITE
BRIDGE STREET PLATTSBURGH, NEW YORK

Parameter	**NYSDEC RSCO (mg/kg)**	**PB-SS-1* 7/12/1999 0-0.1'**	**PB-SS-2 7/12/1999 0-0.1'**	**PB-SS-3 7/12/1999 0-0.1'**	**PB-SS-4 7/12/1999 0-0.1'**	**PB-SS-5 7/12/1999 0-0.1'**	**PB-SS-6* 7/12/1999 0-0.1'**	**PB-SS-7* 7/12/1999 0-0.1'**	**PB-SS-8 7/12/1999 0-0.1'**	**PB-SS-9* 7/12/1999 0-0.1'**	**PB-SS-10 7/12/1999 0-0.1'**
Acenaphthene	50*	**0.056J**	0.39U	0.42U	**0.88**	0.37U	**0.11J**	0.39U	0.42U	0.44U	0.44U
Acenaphthylene	41	**0.047J**	0.39U	**0.076J**	**1.9**	**0.23J**	0.39U	**0.21J**	0.42U	**0.084J**	**0.084J**
Anthracene	50*	**0.27J**	0.39U	**0.074J**	**59J**	**0.48**	**0.5**	**0.087J**	0.42U	0.44U	**0.058J**
Benzo(a)anthracene	0.224	**1.2**	**0.082J**	**0.28J**	**16DJ**	**2.2**	**2.9**	**0.47**	**0.14J**	**0.17J**	**0.23J**
Benzo(a)pyrene	0.061	**0.83**	**0.092J**	**0.24J**	**18DJ**	**0.8**	**2**	**0.78**	**0.16J**	**0.26J**	**0.23J**
Benzo(b)fluoranthene	0.224	**1.4**	**0.16J**	**0.43J**	**23DJ**	**1.3**	**4.6D**	**0.94**	**0.3J**	**0.31J**	**0.42J**
Benzo(g,h,i)perylene	50*	**0.31J**	**0.044J**	**0.096J**	**2J**	**0.27J**	**0.68**	**0.48**	**0.064J**	**0.14J**	**0.12J**
Benzo(k)fluoranthene	0.224	**0.58**	**0.052J**	**0.17J**	**2.4J**	**0.48**	**1.3**	**0.4**	**0.095J**	**0.13J**	**0.16J**
bis(2-Chloroethoxy)methane	NS	0.4U	0.39U	0.42U	0.39U	0.37U	0.39U	0.39U	0.42U	0.44U	0.44U
bis(2-Chloroethyl)ether	NS	0.4U	0.39U	0.42U	0.39U	0.37U	0.39U	0.39U	0.42U	0.44U	0.44U
bis(2-Ethylhexyl)phthalate	50*	0.4U	0.6U	0.42U	0.39U	0.37U	0.39U	0.39U	0.42U	0.44U	0.44U
Butylbenzylphthalate	50*	0.4U	**0.06J**	0.42U	0.39U	0.37U	**0.13J**	0.39U	0.42U	0.44U	0.44U
Carbazole	NS	**0.25J**	0.39U	**0.048J**	**5.1J**	**0.14J**	**0.49**	0.39U	0.42U	0.44U	0.44U
Chrysene	0.4	**1.4**	**0.11J**	**0.34J**	**19DJ**	**2**	**3.2D**	**0.53**	**0.17J**	**0.2J**	**0.28J**
Di-n-butylphthalate	8.1	**0.063J**	0.39U	**0.067J**	**0.13J**	**0.047J**	**0.077J**	**0.067J**	**0.068J**	0.44U	**0.07J**
Di-n-octylphthalate	50*	0.4U	0.39U	0.42U	0.39U	0.37U	0.39U	0.39U	0.42U	0.44U	0.44U
Dibenz(a,h)anthracene	NS	**0.16J**	0.39U	0.42U	0.39U	**0.1J**	0.39U	0.39U	0.42U	0.44U	0.44U
Dibenzofuran	6.2	0.4U	0.39U	0.42U	**1.5**	0.37U	**0.063J**	0.39U	0.42U	0.44U	0.44U
Diethylphthalate	7.1	**0.061J**	0.39U	**0.065J**	**0.042J**	**0.043J**	**0.076J**	**0.065J**	**0.069J**	0.44U	**0.065J**
Dimethylphthalate	2	0.79U	0.39U	0.42U	0.39U	0.37U	0.39U	0.39U	0.42U	0.44U	0.44U
Fluoranthene	50*	**3.1**	**0.16J**	**0.49**	**50D**	**2.4**	**6.1D**	**0.64**	**0.28J**	**0.21J**	**0.45**
Fluorene	50*	**0.077J**	0.39U	0.42U	**1.9**	**0.13J**	**0.14J**	0.39U	0.42U	0.44U	0.44U
Hexachlorobenzene	0.41	0.4U	0.39U	0.42U	0.39U	0.37U	0.39U	0.39U	0.42U	0.44U	0.44U
Hexachlorobutadiene	NS	0.4U	0.39U	0.42U	0.39U	0.37U	0.39U	0.39U	0.42U	0.44U	0.44U
Hexachlorocyclopentadiene	NS	0.4U	0.39U	0.42U	0.39U	0.37U	0.39U	0.39U	0.42U	0.44U	0.44U
Hexachloroethane	NS	0.4U	0.39U	0.42U	0.39U	0.37U	0.39U	0.39U	0.42U	0.44U	0.44U
Indeno(1,2,3-cd)pyrene	3.2	**0.33J**	**0.047J**	**0.087J**	**2.1J**	**0.3J**	**0.76**	**0.34J**	**0.065J**	**0.12J**	**0.096J**
Isophorone	4.4	0.4U	0.39U	0.42U	0.39U	0.37U	0.39U	0.39U	0.42U	0.44U	0.44U
N-Nitroso-di-n-propylamine	NS	0.4U	0.39U	0.42U	0.39U	0.37U	0.39U	0.39U	0.42U	0.44U	0.44U
N-Nitrosodimethylamine	NS	0.4U	0.39U	0.42U	0.39U	0.37U	0.39U	0.39U	0.42U	0.44U	0.44U

TABLE 6
SURFACE SOIL ANALYTICAL RESULTS

NYESEG FORMER MGP SITE
BRIDGE STREET PLATTSBURGH, NEW YORK

Parameter	**NYSDEC RSCO (mg/kg)**	**PB-SS-1* 7/12/1999 0-0.1'**	**PB-SS-2 7/12/1999 0-0.1'**	**PB-SS-3 7/12/1999 0-0.1'**	**PB-SS-4 7/12/1999 0-0.1'**	**PB-SS-5 7/12/1999 0-0.1'**	**PB-SS-6* 7/12/1999 0-0.1'**	**PB-SS-7* 7/12/1999 0-0.1'**	**PB-SS-8 7/12/1999 0-0.1'**	**PB-SS-9* 7/12/1999 0-0.1'**	**PB-SS-10 7/12/1999 0-0.1'**
N-Nitrosodiphenylamine	NS	0.4U	0.39U	0.42U	0.39U	0.37U	0.39U	0.39U	0.42U	0.44U	0.44U
Naphthalene	13	0.4U	0.39U	0.42U	**1.3**	**0.051J**	0.39U	0.39U	0.42U	0.44U	0.44U
Nitrobenzene	0.2	0.4U	0.39U	0.42U	0.39U	0.37U	0.39U	0.39U	0.42U	0.44U	0.44U
Pentachlorophenol	1	2U	2U	2.1U	1.9U	1.9U	2U	2U	2.1U	2.2U	2.2U
Phenanthrene	50*	**1.4**	**0.084J**	**0.3J**	**40**	**1.3**	**2.6**	**0.16J**	**0.14J**	**0.1J**	**0.24J**
Phenol	0.03	0.4U	0.39U	0.42U	0.39U	0.37U	0.39U	0.39U	0.42U	0.44U	0.44U
Pyrene	50*	**4.1D**	**0.19J**	**0.75**	**41D**	**4.3D**	**6D**	**1.5**	**0.33J**	**0.35J**	**0.66**
Total PAHs	*NS*	*15.5*	*1.02*	*31.4*	*285.7*	*16.5*	*31.8*	*6.54*	*1.74*	*2.07*	*3.03*
Total SVOCs	*500*	*15.6*	*1.08*	*3.51*	*286.2*	*16.6*	*31.7*	*6.67*	*1.88*	*2.07*	*3.16*
Metals											
Aluminum	SB	**5,470**	**3,980**	**3,630**	**4,990**	**4,590**	**5,420**	**3,930**	**5,870**	**5,940**	**9,730**
Antimony	SB	3.6U	3.5U	3.8U	3.5U	3.4U	3.6U	3.5U	3.8U	4U	4U
Arsenic	7.5 or SB	2.4U	2.4U	2.5U	**3**	2.3U	2.4U	2.3U	**3.6**	2.6U	2.6U
Barium	300 or SB	**43.1B**	**33.7B**	**77.5**	**109**	**69.4**	**68.8**	**35.7B**	**119**	**54.1**	**172**
Beryllium	0.16 or SB	0.71U	0.71U	0.76U	0.7U	0.68U	0.71U	0.7U	0.76U	0.79U	0.79U
Cadmium	1	1.2U	1.2U	**1.6**	**1.8**	**1.1**	**1.2**	1.2U	**1.8**	**1.3**	**2.9**
Calcium	SB	**5,860**	**5,960**	**9,460**	**4,970**	**19,200**	**5,830**	**3,580**	**7,760**	**5,160**	**24,000**
Chromium	10	**8.2**	**6.9**	**7.2**	**10.2**	**7.2**	**8.4**	**6.1**	**9.6**	**9.2**	**15.6**
Cobalt	30 or SB	**2.6B**	**3B**	**3.6B**	**3.6B**	**2.7B**	**7.2B**	2.3U	**4.9B**	**2.9B**	**6.6B**
Copper	25 or SB	**6.4**	**6.7**	**23.3J**	**17.8**	**11.2**	**5.6B**	**3.9BJ**	**23.8J**	**6.4B**	**69.2J**
Iron	2000 or SB	**7,790**	**7,080**	**9,370**	**11,300**	**8,240**	**10,100**	**6,190**	**12,700**	**10,200**	**16,000**
Lead	SB	**45.9**	**9.2**	**160**	**272**	**93**	**12**	**9.9**	**160**	**33.4**	**366**
Magnesium	SB	**1,680**	**1,990**	**1,430**	**1,410**	**2,130**	**1,730**	**1100B**	**2,090**	**1,730**	**2,930**
Manganese	SB	**86.9**	**177**	**244**	**331**	**186**	**459**	**62.3**	**336**	**100**	**375**
Mercury	0.1	0.12U	0.12U	**0.25**	**0.23**	0.11U	0.12U	0.12U	**0.29**	**0.48**	0.13U
Nickel	13 or SB	7.1U	7.1U	**10.3**	**7.9B**	6.8U	7.1U	7U	**11.6**	7.9U	**15.6**
Potassium	SB	**961B**	**1,130B**	**848B**	**1,230**	**908B**	**1,110B**	**961B**	**1,210**	**1,010B**	**1,490**

TABLE 6
SURFACE SOIL ANALYTICAL RESULTS

NYESEG FORMER MGP SITE
BRIDGE STREET PLATTSBURGH, NEW YORK

Parameter	NYSDEC RSCO (mg/kg)	PB-SS-1* 7/12/1999 0-0.1'	PB-SS-2 7/12/1999 0-0.1'	PB-SS-3 7/12/1999 0-0.1'	PB-SS-4 7/12/1999 0-0.1'	PB-SS-5 7/12/1999 0-0.1'	PB-SS-6* 7/12/1999 0-0.1'	PB-SS-7* 7/12/1999 0-0.1'	PB-SS-8 7/12/1999 0-0.1'	PB-SS-9* 7/12/1999 0-0.1'	PB-SS-10 7/12/1999 0-0.1'
Selenium	2 or SB	**2.7J**	**3.3J**	**2.1J**	**1.4J**	**7.4J**	**2.8J**	**2J**	**3.5J**	**2.2J**	**6.4J**
Silver	SB	2.4U	2.4U	2.5U	2.3U	2.3U	2.4U	2.3U	2.5U	2.6U	2.6U
Sodium	SB	238U	236U	253U	233U	225U	237U	234U	253U	265U	264U
Thallium	SB	2.4U	2.4U	2.5U	2.3U	**2.6**	2.4U	2.3U	2.5U	2.6U	**4.6**
Vanadium	150 or SB	**12.2**	**10.7B**	**14.4**	**15**	**10.9B**	**15.1**	**9.8B**	**14.3**	**13.8**	**15.4**
Zinc	20 or SB	**42.1J**	**39.7J**	**148J**	**316J**	**100J**	**47.7J**	**27.6J**	**127J**	**64.2J**	**495J**
Total Petroleum Hydrocarbons											
Fuel Oil # 2 (Diesel)	NS	3.9U	3.9U	4.2U	3.8U	3.7U	3.9U	3.9U	4.2U	4.4U	4.3U
Gasoline	NS	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Kerosene	NS	3.9U	3.9U	4.2U	3.8U	3.7U	3.9U	3.9U	4.2U	4.4U	4.3U
Lubricating Oil	NS	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Unidentified Hydrocarbons	NS	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
General Chemistry											
Cyanide, reactive	NS	1U	1U	1U	1U	1U	1U	1U	1U	1U	1U
Cyanide, total	NS	2.4U	2.1U	2.4U	2.1U	2.2U	2.2U	2.3U	2.5U	2.3U	2.4U
Sulfide, reactive	NS	50U	50U	50U	50U	50U	50U	50U	50U	50U	50U
Total Organic Carbon (TOC)	NS	**11,486**	**13,391**	**32,140**	**26,904**	**22,383**	**11,450**	**19,614**	**29,212**	**12,811**	**38,575**

Notes:
Concentrations shown in mg/kg
NA - Not Analyzed
ND - Not Detected
NS - No RSCO established
[] - Indicates guidance value
* - Indicates soil boring located within area excavated and removed during the June 2001 IRM
B - (metals) - Indicates concentration is estimated between the PQL and the MDL
D - Surrogate or matrix spike recoveries were not obtained because the exteract was diluted for analysis
J - (organics) - Indicates concentration is estimated between the PQL and the method detection limit (MDL)
U - Parameter not detected above the practical quantitation limit (PQL) specified
SB - Site Background

TABLE 6
SURFACE SOIL ANALYTICAL RESULTS

NYESEG FORMER MGP SITE
BRIDGE STREET PLATTSBURGH, NEW YORK

Parameter	NYSDEC RSCO (mg/kg)	PB-SS-11 7/12/1999 0-0.1'	PB-SS-12 7/12/1999 0-0.1'	PB-SS-13 7/12/1999 0-0.1'	PB-SS-14 7/12/1999 0-0.1'	PB-SS-15 10/13/1999 0-0.1'	PB-SS-16 10/13/1999 0-0.1'	PB-SS-17 10/13/1999 0-0.1'	PB-SS-18* 10/13/1999 0-0.1'	PB-SS-19* 10/13/1999 0-0.1'
Semivolatile Organic Compounds										
1,2,4-Trichlorobenzene	3.4	0.39U	0.4U	0.43U	0.35U	0.41U	0.4U	0.39U	0.43U	0.4U
1,2-Dichlorobenzene	7.9	0.39U	0.4U	0.43U	0.35U	0.41U	0.4U	0.39U	0.43U	0.4U
1,3-Dichlorobenzene	1.6	0.39U	0.4U	0.43U	0.35U	0.41U	0.4U	0.39U	0.43U	0.4U
1,4-Dichlorobenzene	8.5	0.39U	0.4U	0.43U	0.35U	0.41U	0.4U	0.39U	0.43U	0.4U
2,2'-oxybis(1-Chloropropane)	NS	0.39U	0.4U	0.43U	0.35U	0.41U	0.4U	0.39U	0.43U	0.4U
2,4,5-Trichlorophenol	0.1	2U	2U	2.2U	1.8U	0.99U	0.96U	0.95U	1U	0.96U
2,4,6-Trichlorophenol	NS	0.39U	0.4U	0.43U	0.35U	0.41U	0.4U	0.39U	0.43U	0.4U
2,4-Dichlorophenol	0.4	0.39U	0.4U	0.43U	0.35U	0.41U	0.4U	0.39U	0.43U	0.4U
2,4-Dimethylphenol	NS	0.39U	0.4U	0.43U	0.35U	0.41U	0.4U	0.39U	0.43U	0.4U
2,4-Dinitrophenol	0.2	2U	2U	2.2U	1.8U	0.99U	0.96U	0.95U	1U	0.96U
2,4-Dinitrotoluene	NS	0.39U	0.4U	0.43U	0.35U	0.41U	0.4U	0.39U	0.43U	0.4U
2,6-Dinitrotoluene	1	0.39U	0.4U	0.43U	0.35U	0.41U	0.4U	0.39U	0.43U	0.4U
2-Chloronaphthalene	NS	0.39U	0.4U	0.43U	0.35U	0.41U	0.4U	0.39U	0.43U	0.4U
2-Chlorophenol	0.8	0.39U	0.4U	0.43U	0.35U	0.41U	0.4U	0.39U	0.43U	0.4U
2-Methylnaphthalene	36.4	0.39U	0.4U	0.43U	0.35U	0.41U	**0.16J**	0.39U	0.43U	0.4U
2-Methylphenol (o-cresol)	0.1	0.39U	0.4U	0.43U	0.35U	0.41U	0.4U	0.39U	0.43U	0.4U
2-Nitroaniline	0.43	2U	2U	2.2U	1.8U	0.99U	0.96U	0.95U	1U	0.96U
2-Nitrophenol	0.33	0.39U	0.4U	0.43U	0.35U	0.41U	0.4U	0.39U	0.43U	0.4U
3 & 4-Methylphenol (m, p-cresol)	NS	0.39U	0.4U	0.43U	0.35U	NA	NA	NA	NA	NA
3,3'-Dichlorobenzidine	NS	0.39U	0.4U	0.43U	0.35U	0.41U	0.4U	0.39U	0.43U	0.4U
3-Nitroaniline	0.5	2U	2U	2.2U	1.8U	0.99U	0.96U	0.95U	1U	0.96U
4,6-Dinitro-2-Methylphenol	NS	2U	2U	2.2U	1.8U	0.99U	0.96U	0.95U	1U	0.96U
4-Bromophenyl-phenylether	NS	0.39U	0.4U	0.43U	0.35U	0.41U	0.4U	0.39U	0.43U	0.4U
4-Chloro-3-Methylphenol	0.24	0.39U	0.4U	0.43U	0.35U	0.41U	0.4U	0.39U	0.43U	0.4U
4-Chloroaniline	0.22	0.39U	0.4U	0.43U	0.35U	0.41U	0.4U	0.39U	0.43U	0.4U
4-Chlorophenyl-phenylether	NS	0.39U	0.4U	0.43U	0.35U	0.41U	0.4U	0.39U	0.43U	0.4U
4-Methylphenol (p-cresol)	NS	NA	NA	NA	NA	0.41U	0.4U	0.39U	0.43U	0.4U
4-Nitroaniline	NS	2U	2U	2.2U	1.8U	0.99U	0.96U	0.95U	1U	0.96U
4-Nitrophenol	0.1	2U	2U	2.2U	1.8U	0.99U	0.96U	0.95U	1U	0.96U

TABLE 6
SURFACE SOIL ANALYTICAL RESULTS

NYESEG FORMER MGP SITE
BRIDGE STREET PLATTSBURGH, NEW YORK

Parameter	NYSDEC RSCO (mg/kg)	PB-SS-11 7/12/1999 0-0.1'	PB-SS-12 7/12/1999 0-0.1'	PB-SS-13 7/12/1999 0-0.1'	PB-SS-14 7/12/1999 0-0.1'	PB-SS-15 10/13/1999 0-0.1'	PB-SS-16 10/13/1999 0-0.1'	PB-SS-17 10/13/1999 0-0.1'	PB-SS-18* 10/13/1999 0-0.1'	PB-SS-19* 10/13/1999 0-0.1'
Acenaphthene	50*	0.39U	0.4U	**0.052J**	0.35U	0.41U	**0.36J**	0.39U	**0.061J**	0.4U
Acenaphthylene	41	**0.084J**	**0.075J**	**0.11J**	**0.12J**	0.41U	**0.97**	0.39U	0.43U	**0.088J**
Anthracene	50*	**0.055J**	**0.045J**	**0.2J**	**0.07J**	**0.044J**	**1.9**	**0.048J**	**0.24J**	**0.095J**
Benzo(a)anthracene	0.224	**0.3J**	**0.24J**	**0.64**	**0.31J**	**0.2J**	**5.5DJ**	**0.35J**	**0.52**	**0.67**
Benzo(a)pyrene	0.061	**0.27J**	**0.21J**	**0.45J**	**0.32J**	**0.21J**	**6.1DJ**	**0.36J**	**0.51J**	**1**
Benzo(b)fluoranthene	0.224	**0.51J**	**0.43J**	**0.77J**	**0.55**	**0.38J**	**7.6DJ**	**0.78J**	**0.82J**	**1.4J**
Benzo(g,h,i)perylene	50*	**0.12J**	**0.094J**	**0.17J**	**0.22J**	**0.085J**	**1.7J**	**0.16J**	**0.16J**	**0.66**
Benzo(k)fluoranthene	0.224	**0.18J**	**0.13J**	**0.25J**	**0.2J**	**0.16J**	**2.6J**	**0.18J**	**0.32J**	**0.46**
bis(2-Chloroethoxy)methane	NS	0.39U	0.4U	0.43U	0.35U	0.41U	0.4U	0.39U	0.43U	0.4U
bis(2-Chloroethyl)ether	NS	0.39U	0.4U	0.43U	0.35U	0.41U	0.4U	0.39U	0.43U	0.4U
bis(2-Ethylhexyl)phthalate	50*	0.39U	0.4U	0.43U	0.35U	0.41U	**0.74BJ**	0.39U	0.43U	0.4U
Butylbenzylphthalate	50*	0.39U	0.4U	**0.052J**	**0.09J**	0.41U	0.4U	0.39U	0.43U	0.4U
Carbazole	NS	0.39U	0.4U	**0.063J**	**0.082J**	0.41U	**0.6**	0.39U	**0.045J**	0.4U
Chrysene	0.4	**0.38J**	**0.31J**	**0.7**	**0.47**	**0.24J**	**5.8DJ**	**0.36J**	**0.54**	**0.66**
Di-n-butylphthalate	8.1	**0.056J**	**0.063J**	**0.067J**	0.35U	0.41U	0.4U	**0.043J**	0.43U	**0.043J**
Di-n-octylphthalate	50*	0.39U	0.4U	0.43U	0.35U	0.41U	0.4U	0.39U	0.43U	0.4U
Dibenz(a,h)anthracene	NS	0.39U	0.4U	0.43U	0.35U	0.41U	**0.63J**	0.39U	0.43U	0.4U
Dibenzofuran	6.2	0.39U	0.4U	0.43U	0.35U	0.41U	**0.61**	0.39U	0.43U	0.4U
Diethylphthalate	7.1	**0.051J**	**0.059J**	**0.061J**	0.35U	0.41U	0.4U	0.39U	0.43U	0.4U
Dimethylphthalate	2	0.39U	0.4U	0.43U	0.35U	0.41U	0.4U	0.39U	0.43U	0.4U
Fluoranthene	50*	**0.43**	**0.35J**	**1.1**	**0.8**	**0.47**	**13D**	**0.71**	**1**	**0.93**
Fluorene	50*	0.39U	0.4U	**0.056J**	0.35U	0.41U	**1.1**	0.39U	**0.084J**	0.4U
Hexachlorobenzene	0.41	0.39U	0.4U	0.43U	0.35U	0.41U	0.4U	0.39U	0.43U	0.4U
Hexachlorobutadiene	NS	0.39U	0.4U	0.43U	0.35U	0.41U	0.4U	0.39U	0.43U	0.4U
Hexachlorocyclopentadiene	NS	0.39U	0.4U	0.43U	0.35U	0.41U	0.4U	0.39U	0.43U	0.4U
Hexachloroethane	NS	0.39U	0.4U	0.43U	0.35U	0.41U	0.4U	0.39U	0.43U	0.4U
Indeno(1,2,3-cd)pyrene	3.2	**0.12J**	**0.099J**	**0.17J**	**0.18J**	**0.089J**	**1.7J**	**0.18J**	0.16J	0.4U
Isophorone	4.4	0.39U	0.4U	0.43U	0.35U	0.41U	0.4U	0.39U	0.43U	0.4U
N-Nitroso-di-n-propylamine	NS	0.39U	0.4U	0.43U	0.35U	0.41U	0.4U	0.39U	0.43U	0.4U
N-Nitrosodimethylamine	NS	0.39U	0.4U	0.43U	0.35U	NA	NA	NA	NA	NA

TABLE 6
SURFACE SOIL ANALYTICAL RESULTS

NYESEG FORMER MGP SITE
BRIDGE STREET PLATTSBURGH, NEW YORK

Parameter	**NYSDEC RSCO (mg/kg)**	**PB-SS-11 7/12/1999 0-0.1'**	**PB-SS-12 7/12/1999 0-0.1'**	**PB-SS-13 7/12/1999 0-0.1'**	**PB-SS-14 7/12/1999 0-0.1'**	**PB-SS-15 10/13/1999 0-0.1'**	**PB-SS-16 10/13/1999 0-0.1'**	**PB-SS-17 10/13/1999 0-0.1'**	**PB-SS-18* 10/13/1999 0-0.1'**	**PB-SS-19* 10/13/1999 0-0.1'**
N-Nitrosodiphenylamine	NS	0.39U	0.4U	0.43U	0.35U	0.41U	0.4U	0.39U	0.43U	0.4U
Naphthalene	13	0.39U	0.4U	0.43U	0.35U	0.41U	**0.27J**	0.39U	0.43U	**0.053J**
Nitrobenzene	0.2	0.39U	0.4U	0.43U	0.35U	0.41U	0.4U	0.39U	0.43U	0.4U
Pentachlorophenol	1	2U	2U	2.2U	1.8U	0.99U	0.96U	0.95U	1U	0.96U
Phenanthrene	50*	**0.23J**	**0.16J**	**0.72**	**0.54**	**0.26J**	**11D**	**0.34J**	**0.73**	**0.33J**
Phenol	0.03	0.39U	0.4U	0.43U	0.35U	0.41U	0.4U	0.39U	0.43U	0.4U
Pyrene	50*	**0.77**	0.55	**1.7**	**1**	**0.51**	**19DJ**	**0.68**	**1.2**	**1.1**
Total PAHs	*NS*	*3.45*	*2.69*	*7.20*	*4.86*	*2.65*	*80.6*	*4.15*	*6.39*	*7.45*
Total SVOCs	*500*	*3.56*	*2.82*	*7.33*	*4.95*	*2.65*	*81.3*	*4.19*	*6.39*	*7.49*
Metals										
Aluminum	SB	**6,800**	**6,760**	**9,190**	**2,750**	**4,640**	**4,520**	**3,750**	**3,980**	**4,850**
Antimony	SB	3.5U	3.6U	3.9U	3.2U	3.7U	3.6U	3.6U	3.9U	3.6U
Arsenic	7.5 or SB	**2.8**	2.4U	2.6U	2.1U	**5.1J**	**3.5J**	**2.7J**	2.6U	2.4U
Barium	300 or SB	**161**	**152**	**250**	**48.3**	**65.6**	**103**	**109**	**33.5B**	**43.5B**
Beryllium	0.16 or SB	0.7U	0.71U	0.78U	0.64U	0.75U	0.72U	0.71U	0.78U	0.72U
Cadmium	1	**2.8**	**2.3**	**2.6**	**2.8**	1.2U	**1.4**	**1.5**	1.3U	1.2U
Calcium	SB	**23,100**	**19,000**	**24,000**	**34,000**	**4,030**	**6,450**	**16,700**	**4,160**	**5,990**
Chromium	10	**13.9**	**13.1**	**18.3**	**14**	**7.6**	**10.5**	**8.7**	**6.6**	**8.5**
Cobalt	30 or SB	**6.8B**	**5.7B**	**7.1B**	**3B**	5U	4.8U	4.8U	5.2U	4.8U
Copper	25 or SB	**80.6**	**54.9J**	**71J**	**23.3J**	**11.3**	**20.8**	**15.1**	**6.8**	**8.9**
Iron	2000 or SB	**17,500**	**15,000**	**17,900**	**12,100**	**8,330**	**10,500**	**10,600**	**6,430**	**8,040**
Lead	SB	**261**	**202**	**385**	**211**	**106**	**219**	**258**	**113**	**177**
Magnesium	SB	**3,090**	**2,930**	**3,320**	**3,800**	**1,370**	**1,330**	**2,040**	**1,220B**	**1,740**
Manganese	SB	**455**	**405**	**338**	**146**	**206**	**237**	**288**	**75**	**104**
Mercury	0.1	**0.52**	0.12U	**0.26**	0.11U	**0.19**	**0.31**	**0.2**	0.09U	**0.47**
Nickel	13 or SB	**15.3**	**13.1**	**17.3**	**10.8**	7.5U	**7.6B**	**7.3B**	7.8U	7.2U
Potassium	SB	**1,840**	**1,840**	**2,190**	**791B**	**1,440**	**1,720**	**1,390**	**1,110B**	**1,430**

TABLE 6
SURFACE SOIL ANALYTICAL RESULTS

NYESEG FORMER MGP SITE
BRIDGE STREET PLATTSBURGH, NEW YORK

Parameter	**NYSDEC RSCO (mg/kg)**	**PB-SS-11 7/12/1999 0-0.1'**	**PB-SS-12 7/12/1999 0-0.1'**	**PB-SS-13 7/12/1999 0-0.1'**	**PB-SS-14 7/12/1999 0-0.1'**	**PB-SS-15 10/13/1999 0-0.1'**	**PB-SS-16 10/13/1999 0-0.1'**	**PB-SS-17 10/13/1999 0-0.1'**	**PB-SS-18* 10/13/1999 0-0.1'**	**PB-SS-19* 10/13/1999 0-0.1'**
Selenium	2 or SB	**6.3J**	**7J**	**5.6J**	**9.2J**	1.2U	1.2U	1.2U	1.3U	1.2U
Silver	SB	2.3U	2.4U	2.6U	2.1U	2.5U	2.4U	2.4U	2.6U	2.4U
Sodium	SB	235U	238U	259U	213U	250U	240U	238U	259U	240U
Thallium	SB	**3.3**	**2.4**	**2.7**	**4.4**	2.5U	2.4U	2.4U	2.6U	2.4U
Vanadium	150 or SB	**15.2**	**15.1**	**20.9**	**10.4B**	**14.4**	**14.7**	**13.1**	**9.2B**	**12.6**
Zinc	20 or SB	**295J**	**265J**	**325J**	**172J**	**120J**	**237J**	**258J**	**31.6J**	**52.6J**
Total Petroleum Hydrocarbons										
Fuel Oil # 2 (Diesel)	NS	3.9U	3.9U	4.3U	3.5U	NA	NA	NA	NA	NA
Gasoline	NS	ND	ND	ND	ND	NA	NA	NA	NA	NA
Kerosene	NS	3.9U	3.9U	4.3U	3.5U	NA	NA	NA	NA	NA
Lubricating Oil	NS	ND	ND	ND	ND	NA	NA	NA	NA	NA
Unidentified Hydrocarbons	NS	ND	ND	ND	ND	NA	NA	NA	NA	NA
General Chemistry										
Cyanide, reactive	NS	1U	1U	1U	1U	2.3U	2.3U	2.4U	2.6U	2.2U
Cyanide, total	NS	2.1U	2.3U	2.4U	1.8U	2.2U	2.2U	2.3U	2.5U	2.2U
Sulfide, reactive	NS	50U	50U	50U	50U	50U	50U	50U	50U	50U
Total Organic Carbon (TOC)	NS	**29,917**	**20,352**	**35,276**	**15,454**	**24,200**	**37,800**	**27,600**	**17,600**	**24,200**

Notes:
Concentrations shown in mg/kg
NA - Not Analyzed
ND - Not Detected
NS - No RSCO established
[] - Indicates guidance value
* - Indicates soil boring located within area excavated and removed during the June 2001 IRM
B - (metals) - Indicates concentration is estimated between the PQL and the MDL
D - Surrogate or matrix spike recoveries were not obtained because the exteract was diluted for analysis
J - (organics) - Indicates concentration is estimated between the PQL and the method detection limit (MDL)
U - Parameter not detected above the practical quantitation limit (PQL) specified
SB - Site Background

TABLE 7
NEAR SURFACE SOIL ANALYTICAL RESULTS

NYESEG FORMER MGP SITE
BRIDGE STREET PLATTSBURGH, NEW YORK

Parameter	NYSDEC RSCO	PB-NSS-01* 7/12/1999 0.3'-0.7'	PB-NSS-02* 7/12/1999 0.3'-0.7'	PB-NSS-03 7/12/1999 0-1'	PB-NSS-04 10/13/1999 0.3'-0.7'	PB-NSS-05* 10/13/1999 0.3'-0.7'
Volatile Organic Compounds						
1,1,1-Trichloroethane	0.8	0.012U	0.013U	0.013U	0.013U	0.012U
1,1,2,2-Tetrachloroethane	0.6	0.012U	0.013U	0.013U	0.013U	0.012U
1,1,2-Trichloroethane	NS	0.012U	0.013U	0.013U	0.013U	0.012U
1,1-Dichloroethane	0.2	0.012U	0.013U	0.013U	0.013U	0.012U
1,1-Dichloroethene	0.4	0.012U	0.013U	0.013U	0.013U	0.012U
1,2-Dichloroethane	0.1	0.012U	0.013U	0.013U	0.013U	0.012U
1,2-Dichloroethene (cis)	NS	0.012U	0.013U	0.013U	0.013U	0.012U
1,2-Dichloroethene (trans)	0.3	0.012U	0.013U	0.013U	0.013U	0.012U
1,2-Dichloropropane	NS	0.012U	0.013U	0.013U	0.013U	0.012U
1,3-Dichloropropene (cis)	NS	0.012U	0.013U	0.013U	0.013U	0.012U
1,3-Dichloropropene (trans)	NS	0.012U	0.013U	0.013U	0.013U	0.012U
2-Hexanone	NS	0.012U	0.013U	0.013U	0.013U	0.012U
4-Methyl-2-Pentanone	1	0.012U	0.013U	0.013U	0.013U	0.012U
Acetone	0.2	0.012U	0.013U	0.013U	0.013U	0.012U
Benzene	0.06	0.012U	0.013U	0.013U	0.013U	0.012U
Bromodichloromethane	NS	0.012U	0.013U	0.013U	0.013U	0.012U
Bromoform	NS	0.012U	0.013U	0.013U	0.013U	0.012U
Bromomethane	NS	0.012U	0.013U	0.013U	0.013U	0.012U
Carbon Disulfide	2.7	0.012U	0.013U	0.013U	0.013U	0.012U
Carbon Tetrachloride	0.6	0.012U	0.013U	0.013U	0.013U	0.012U
Chlorobenzene	1.7	0.012U	0.013U	0.013U	0.013U	0.012U
Chloroethane	1.9	0.012U	0.013U	0.013U	0.013U	0.012U
Chloroform	0.3	0.012U	0.013U	0.013U	**0.002J**	0.012U
Chloromethane	NS	0.012U	0.013U	0.013U	**0.004J**	**0.004J**
Dibromochloromethane	NS	0.012U	0.013U	0.013U	0.013U	0.012U
Ethylbenzene	5.5	0.012U	0.013U	0.013U	0.013U	0.012U
Methyl ethyl ketone (2-Butanone)	0.3	0.012U	0.013U	0.013U	0.013U	0.012U
Methylene Chloride	0.1	0.012U	0.017U	0.016U	0.02U	0.014U
Styrene	NS	0.012U	0.013U	0.013U	0.013U	0.012U

TABLE 7
NEAR SURFACE SOIL ANALYTICAL RESULTS

NYESEG FORMER MGP SITE
BRIDGE STREET PLATTSBURGH, NEW YORK

Parameter	NYSDEC RSCO	PB-NSS-01* 7/12/1999 0.3'-0.7'	PB-NSS-02* 7/12/1999 0.3'-0.7'	PB-NSS-03 7/12/1999 0-1'	PB-NSS-04 10/13/1999 0.3'-0.7'	PB-NSS-05* 10/13/1999 0.3'-0.7'
Tetrachloroethene	1.4	0.012U	0.013U	**0.006J**	0.013U	0.012U
Toluene	1.5	**0.003J**	**0.005J**	**0.007J**	0.013U	0.012U
Trichloroethene	0.7	0.012U	0.013U	0.013U	0.013U	0.012U
Vinyl Chloride	0.2	0.012U	0.013U	0.013U	0.013U	0.012U
Xylene (total)	1.2	**0.002J**	**0.002J**	**0.003J**	0.013U	0.012U
Total VOCs	*10*	*0.005*	*0.007*	*0.016*	*0.006*	*0.004*
Semivolatile Organic Compounds						
1,2,4-Trichlorobenzene	3.4	0.41U	0.43U	0.43U	0.42U	0.4U
1,2-Dichlorobenzene	7.9	0.41U	0.43U	0.43U	0.42U	0.4U
1,3-Dichlorobenzene	1.6	0.41U	0.43U	0.43U	0.42U	0.4U
1,4-Dichlorobenzene	8.5	0.41U	0.43U	0.43U	0.42U	0.4U
2,2'-oxybis(1-Chloropropane)	NS	0.41U	0.43U	0.43U	0.42U	0.4U
2,4,5-Trichlorophenol	0.1	2.1U	2.2U	2.1U	1U	0.96U
2,4,6-Trichlorophenol	NS	0.41U	0.43U	0.43U	0.42U	0.4U
2,4-Dichlorophenol	0.4	0.41U	0.43U	0.43U	0.42U	0.4U
2,4-Dimethylphenol	NS	0.41U	**0.086J**	0.43U	0.42U	0.4U
2,4-Dinitrophenol	0.2	2.1U	2.2U	2.1U	1U	0.96U
2,4-Dinitrotoluene	NS	0.41U	0.43U	0.43U	0.42U	0.4U
2,6-Dinitrotoluene	1	0.41U	0.43U	0.43U	0.42U	0.4U
2-Chloronaphthalene	NS	0.41U	0.43U	0.43U	0.42U	0.4U
2-Chlorophenol	0.8	0.41U	0.43U	0.43U	0.42U	0.4U
2-Methylnaphthalene	36.4	0.41U	**0.21J**	0.43U	0.42U	0.4U
2-Methylphenol (o-cresol)	0.1	0.41U	0.43U	0.43U	0.42U	0.4U
2-Nitroaniline	0.43	2.1U	2.2U	2.1U	1U	0.96U
2-Nitrophenol	0.33	0.41U	0.43U	0.43U	0.42U	0.4U
3 & 4-Methylphenol (m, p-cresol)	NS	0.41U	**0.19J**	0.43U	NA	NA
3,3'-Dichlorobenzidine	NS	0.41U	0.43U	0.43U	0.42U	0.4U
3-Nitroaniline	0.5	2.1U	2.2U	2.1U	1U	0.96U
4,6-Dinitro-2-Methylphenol	NS	2.1U	2.2U	2.1U	1U	0.96U
4-Bromophenyl-phenylether	NS	0.41U	0.43U	0.43U	0.42U	0.4U

TABLE 7
NEAR SURFACE SOIL ANALYTICAL RESULTS

NYESEG FORMER MGP SITE
BRIDGE STREET PLATTSBURGH, NEW YORK

Parameter	NYSDEC RSCO	PB-NSS-01* 7/12/1999 0.3'-0.7'	PB-NSS-02* 7/12/1999 0.3'-0.7'	PB-NSS-03 7/12/1999 0-1'	PB-NSS-04 10/13/1999 0.3'-0.7'	PB-NSS-05* 10/13/1999 0.3'-0.7'
4-Chloro-3-Methylphenol	0.24	0.41U	0.43U	0.43U	0.42U	0.4U
4-Chloroaniline	0.22	0.41U	0.43U	0.43U	0.42U	0.4U
4-Chlorophenyl-phenylether	NS	0.41U	0.43U	0.43U	0.42U	0.4U
4-Methylphenol (p-cresol)	0.9	NA	NA	NA	0.42U	0.4U
4-Nitroaniline	NS	2.1U	2.2U	2.1U	1U	0.96U
4-Nitrophenol	0.1	2.1U	2.2U	2.1U	1U	0.96U
Acenaphthene	50*	0.41U	**0.29J**	0.43U	**0.057J**	0.4U
Acenaphthylene	41	**0.068J**	**2.5**	**0.043J**	**0.3J**	0.4U
Anthracene	50*	**0.061J**	**4.5D**	0.43U	**0.28J**	0.4U
Benzo(a)anthracene	0.224	**0.37J**	**16**	**0.13J**	**1.2J**	**0.083J**
Benzo(a)pyrene	0.061	**0.35J**	**15DJ**	**0.16J**	**1.3J**	**0.1J**
Benzo(b)fluoranthene	0.224	**0.62**	**20DJ**	**0.28J**	**2.1J**	**0.14J**
Benzo(g,h,i)perylene	50*	**0.13J**	**3.9J**	**0.084J**	**0.72J**	0.4U
Benzo(k)fluoranthene	0.224	**0.22J**	**7.8DJ**	**0.083J**	**0.75J**	**0.045J**
bis(2-Chloroethoxy)methane	NS	0.41U	0.43U	0.43U	0.42U	0.4U
bis(2-Chloroethyl)ether	NS	0.41U	0.43U	0.43U	0.42U	0.4U
bis(2-Ethylhexyl)phthalate	50*	0.41U	0.43U	0.43U	0.42U	0.4U
Butylbenzylphthalate	50*	0.41U	0.43U	0.43U	0.42U	0.4U
Carbazole	NS	0.41U	**0.52J**	0.43U	**0.1J**	0.4U
Chrysene	0.4	**0.43**	**16**	**0.16J**	**1.4J**	**0.091J**
Di-n-butylphthalate	8.1	**0.062J**	0.43U	0.43U	0.42U	0.4U
Di-n-octylphthalate	50*	0.41U	0.43U	0.43U	0.42U	0.4U
Dibenzo(a,h)anthracene	NS	0.41U	**1.9J**	0.43U	0.42U	0.4U
Dibenzofuran	6.2	0.41U	**0.44**	0.43U	**0.078J**	0.4U
Diethylphthalate	7.1	**0.062J**	0.43U	0.43U	0.42U	0.4U
Dimethylphthalate	2	0.41U	0.43U	0.43U	0.42U	0.4U
Fluoranthene	50*	**0.46**	**23D**	**0.26J**	**1.9**	**0.13J**
Fluorene	50*	0.41U	**0.67J**	0.43U	**0.14J**	0.4U
Hexachlorobenzene	0.41	0.41U	0.43U	0.43U	0.42U	0.4U
Hexachlorobutadiene	NS	0.41U	0.43U	0.43U	0.42U	0.4U

TABLE 7
NEAR SURFACE SOIL ANALYTICAL RESULTS

NYESEG FORMER MGP SITE
BRIDGE STREET PLATTSBURGH, NEW YORK

Parameter	**NYSDEC RSCO**	**PB-NSS-01* 7/12/1999 0.3'-0.7'**	**PB-NSS-02* 7/12/1999 0.3'-0.7'**	**PB-NSS-03 7/12/1999 0-1'**	**PB-NSS-04 10/13/1999 0.3'-0.7'**	**PB-NSS-05* 10/13/1999 0.3'-0.7'**
Hexachlorocyclopentadiene	NS	0.41U	0.43U	0.43U	0.42U	0.4U
Hexachloroethane	NS	0.41U	0.43U	0.43U	0.42U	0.4U
Indeno(1,2,3-cd)pyrene	3.2	**0.13J**	**4.1J**	**0.084J**	**0.59J**	**0.05J**
Isophorone	4.4	0.41U	0.43U	0.43U	0.42U	0.4U
N-Nitroso-di-n-propylamine	NS	0.41U	0.43U	0.43U	0.42U	0.4U
N-Nitrosodimethylamine	NS	0.41U	0.43U	0.43U	NA	NA
N-Nitrosodiphenylamine	NS	0.41U	0.43U	0.43U	0.42U	0.4U
Naphthalene	13	0.41U	**0.28J**	0.43U	**0.081J**	0.4U
Nitrobenzene	0.2	0.41U	0.43U	0.43U	0.42U	0.4U
Pentachlorophenol	1	2.1U	2.2U	2.1U	1U	0.96U
Phenanthrene	50*	**0.16J**	**16D**	**0.13J**	**1.5**	**0.068J**
Phenol	0.03	0.41U	0.43U	0.43U	0.42U	0.4U
Pyrene	50*	**0.8**	**29D**	**0.28J**	**2.1D**	**0.15J**
Total PAHs	*NS*	*3.80*	*162.1*	*1.69*	*14.6*	*0.857*
Total SVOCs	*500*	*3.92*	*162.4*	*1.69*	*14.6*	*0.857*
Metals						
Aluminum	SB	**4,070**	**6,550**	**4,090**	**3,830**	**6,270**
Antimony	SB	3.7U	3.9U	3.9U	3.8U	3.6U
Arsenic	7.5 or SB	2.5U	**3.8**	**3.1**	**5.1J**	2.4U
Barium	300 or SB	**49B**	**96.5**	**155**	**105**	**53.9**
Beryllium	0.16 or SB	0.74U	0.78U	0.77U	0.76U	0.72U
Cadmium	1	1.2U	**2.2**	1.3U	**1.4**	1.2U
Calcium	SB	**3,600**	**4,430**	**12,800**	**5,820**	**3,330**
Chromium	10	**8.6**	**12.2**	**8.6**	**11.4**	**10.3**
Cobalt	30 or SB	**2.5B**	**5.3B**	**4.3B**	5.1U	4.8U
Copper	25 or SB	**8**	**26.2J**	**32J**	**15.3**	**4.1B**
Iron	2000 or SB	**6,880**	**13,400**	**6,390**	**9,700**	**9,630**
Lead	SB	**137**	**1,000**	**169**	**250**	**12.9**
Magnesium	SB	**1,320**	**2,050**	**1,810**	**1,130B**	**1,790**
Manganese	SB	**91.8**	**223**	**293**	**265**	**133**

TABLE 7
NEAR SURFACE SOIL ANALYTICAL RESULTS

NYESEG FORMER MGP SITE
BRIDGE STREET PLATTSBURGH, NEW YORK

Parameter	**NYSDEC RSCO**	**PB-NSS-01* 7/12/1999 0.3'-0.7'**	**PB-NSS-02* 7/12/1999 0.3'-0.7'**	**PB-NSS-03 7/12/1999 0-1'**	**PB-NSS-04 10/13/1999 0.3'-0.7'**	**PB-NSS-05* 10/13/1999 0.3'-0.7'**
Mercury	0.1	0.12U	**0.43**	**0.39**	**0.24**	0.08U
Nickel	13 or SB	7.4U	**12.5**	**9.1B**	**8.1B**	7.2U
Potassium	SB	**988B**	**1,140B**	**1,510**	**1,120B**	**1,010B**
Selenium	2 or SB	**2.1J**	**3.3J**	**5J**	1.3U	1.2U
Silver	SB	2.5U	2.6U	2.6U	2.5U	2.4U
Sodium	SB	247U	259U	257U	253U	241U
Thallium	SB	2.5U	2.6U	**2.6**	2.5U	2.4U
Vanadium	150 or SB	**12.9**	**24.6**	**14.4**	**14.7**	**15.3**
Zinc	20 or SB	**94.8J**	**359J**	**173J**	**227J**	**32.9J**
Total Petroleum Hydrocarbons						
Fuel Oil # 2 (Diesel)	NS	4.1U	4.3U	4.2U	4.1U	4.0U
Gasoline	NS	ND	ND	ND	ND	ND
Kerosene	NS	4.1U	4.3U	4.2U	4.1U	4.0U
Lubricating Oil	NS	ND	ND	ND	ND	ND
Unidentified Hydrocarbons	NS	ND	ND	ND	NA	NA
General Chemistry						
Cyanide, reactive	NS	1U	1U	1U	2.4U	2.2U
Cyanide, total	NS	2.4U	2.5U	2.4U	2.3U	2.1U
Sulfide, reactive	NS	50U	50U	50U	50U	50U
Total Organic Carbon (TOC)	NS	**11,908**	**35,079**	**39,220**	**39,300**	**20,900**

Notes:

Concentrations shown in mg/kg.
NA - Not Analyzed
ND - Not Detected
NS - No RSCO estalished

U - Parameter not detected above the practical quantitation limit (PQL) specified
[] - Indicates guidance value
* - Indicates soil boring located within area excavated and removed during the June 2001 IRM
B - (metals) - Indicates concentration is estimated between the PQL and the MDL
D - Surrogate or matrix spike recoveries were not obtained because the exteract was diluted for analysis
J - (organics) - Indicates concentration is estimated between the PQL and the method detection limit (MDL)
SB - Site Background

TABLE 8
SUBSURFACE SOIL ANALYTICAL RESULTS

NYESEG FORMER MGP SITE
BRIDGE STREET PLATTSBURGH, NEW YORK

Parameter	NYSDEC RSCO (mg/kg)	PB-SB-1* 7/13/1999 5'-7'	PB-SB-2 7/13/1999 3'-3.5'	PB-SB-4* 7/13/1999 5.5'-7'	PB-SB-5* 7/13/1999 6'-7.5'	PB-SB-6A 7/13/1999 6'-7.5'	PB-SB-6* 7/13/1999 5'-7.5'	PB-SB-7 7/13/1999 6'-7'	PB-SB-8 7/13/1999 6'-8.5'
Volatile Organic Compounds									
1,1,1,2-Tetrachloroethane	NS	NA	NA	NA	NA	NA	NA	NA	NA
1,1,1-Trichloroethane	0.8	0.053U	0.12U	0.043U	0.058U	0.013U	0.06U	0.011U	0.012U
1,1,2,2-Tetrachloroethane	0.6	0.053U	0.12U	0.043U	0.058U	0.013U	0.06U	0.011U	0.012U
1,1,2-Trichloroethane	NS	0.053U	0.12U	0.043U	0.058U	0.013U	0.06U	0.011U	0.012U
1,1-Dichloroethane	0.2	0.053U	0.12U	0.043U	0.058U	0.013U	0.06U	0.011U	0.012U
1,1-Dichloroethene	0.4	0.053U	0.12U	0.043U	0.058U	0.013U	0.06U	0.011U	0.012U
1,1-Dichloropropene	NS	NA	NA	NA	NA	NA	NA	NA	NA
1,2,3-Trichlorobenzene	NS	NA	NA	NA	NA	NA	NA	NA	NA
1,2,3-Trichloropropane	0.4	NA	NA	NA	NA	NA	NA	NA	NA
1,2,4-Trichlorobenzene	3.4	NA	NA	NA	NA	NA	NA	NA	NA
1,2,4-Trimethylbenzene	NS	NA	NA	NA	NA	NA	NA	NA	NA
1,2-Dibromo-3-chloropropane	NS	NA	NA	NA	NA	NA	NA	NA	NA
1,2-Dibromoethane	NS	NA	NA	NA	NA	NA	NA	NA	NA
1,2-Dichlorobenzene	7.9	NA	NA	NA	NA	NA	NA	NA	NA
1,2-Dichloroethane	0.1	0.053U	0.12U	0.043U	0.058U	0.013U	0.06U	0.011U	0.012U
1,2-Dichloroethene (cis)	NS	0.053U	0.12U	0.043U	0.058U	0.013U	0.06U	0.011U	0.012U
1,2-Dichloroethene (trans)	0.3	0.053U	0.12U	0.043U	0.058U	0.013U	0.06U	0.011U	0.012U
1,2-Dichloroethene, total	NS	NA	NA	NA	NA	NA	NA	NA	NA
1,2-Dichloropropane	NS	0.053U	0.12U	0.043U	0.058U	0.013U	0.06U	0.011U	0.012U
1,3,5-Trimethylbenzene	NS	NA	NA	NA	NA	NA	NA	NA	NA
1,3-Dichlorobenzene	1.6	NA	NA	NA	NA	NA	NA	NA	NA
1,3-Dichloropropane	0.3	NA	NA	NA	NA	NA	NA	NA	NA
1,3-Dichloropropene (cis)	NS	0.053U	0.12U	0.043U	0.058U	0.013U	0.06U	0.011U	0.012U
1,3-Dichloropropene (trans)	NS	0.053U	0.12U	0.043U	0.058U	0.013U	0.06U	0.011U	0.012U
1,4-Dichlorobenzene	8.5	NA	NA	NA	NA	NA	NA	NA	NA
2,2-Dichloropropane	NS	NA	NA	NA	NA	NA	NA	NA	NA
2-Butanone	0.3	0.053U	**1.7J**	0.043U	0.058U	0.013U	0.06U	0.011U	0.012U
2-Chloroethylvinylether	NS	NA	NA	NA	NA	NA	NA	NA	NA
2-Chlorotoluene	NS	NA	NA	NA	NA	NA	NA	NA	NA

TABLE 8
SUBSURFACE SOIL ANALYTICAL RESULTS

NYESEG FORMER MGP SITE
BRIDGE STREET PLATTSBURGH, NEW YORK

Parameter	NYSDEC RSCO (mg/kg)	PB-SB-1* 7/13/1999 5'-7'	PB-SB-2 7/13/1999 3'-3.5'	PB-SB-4* 7/13/1999 5.5'-7'	PB-SB-5* 7/13/1999 6'-7.5'	PB-SB-6A 7/13/1999 6'-7.5'	PB-SB-6* 7/13/1999 5'-7.5'	PB-SB-7 7/13/1999 6'-7'	PB-SB-8 7/13/1999 6'-8.5'
2-Hexanone	NS	0.053U	0.12U	0.043U	0.058U	0.013U	0.06U	0.011U	0.012U
4-Chlorotoluene	NS	NA	NA	NA	NA	NA	NA	NA	NA
4-Isopropyltoluene	NS	NA	NA	NA	NA	NA	NA	NA	NA
4-Methyl-2-Pentanone	1	0.053U	0.12U	0.043U	0.058U	0.013U	0.06U	0.011U	0.012U
Acetone	0.2	0.092U	2.1U	0.18U	0.17U	0.029U	0.06U	0.034U	0.082U
Benzene	0.06	0.00003U	**9.1J**	**0.019J**	0.058U	**0.009J**	**2.7J**	**0.049**	1.2D
Bromobenzene	NS	NA	NA	NA	NA	NA	NA	NA	NA
Bromochloromethane	NS	NA	NA	NA	NA	NA	NA	NA	NA
Bromodichloromethane	NS	0.053U	0.12U	0.043U	0.058U	0.013U	0.06U	0.011U	0.012U
Bromoform	NS	0.053U	0.12U	0.043U	0.058U	0.013U	0.06U	0.011U	0.012U
Bromomethane	NS	0.053U	0.12U	0.043U	0.058U	0.013U	0.06U	0.011U	0.012U
Carbon Disulfide	2.7	0.053U	0.12U	0.043U	0.058U	0.013U	0.06U	**0.002J**	0.012U
Carbon Tetrachloride	0.6	0.053U	0.12U	0.043U	0.058U	0.013U	0.06U	0.011U	0.012U
Chlorobenzene	1.7	0.053U	0.12U	0.043U	0.058U	0.013U	0.06U	0.011U	0.012U
Chloroethane	1.9	0.053U	0.12U	0.043U	0.058U	0.013U	0.06U	0.011U	0.012U
Chloroform	0.3	0.053U	0.12U	0.043U	0.058U	0.013U	0.06U	0.011U	0.012U
Chloromethane	NS	0.053U	0.12U	0.043U	0.058U	0.013U	0.06U	0.011U	0.012U
cis-1,2-Dichloroethene	0.25	NA	NA	NA	NA	NA	NA	NA	NA
cis-1,3-Dichloropropene	NS	NA	NA	NA	NA	NA	NA	NA	NA
Dibromochloromethane	NS	0.053U	0.12U	0.043U	0.058U	0.013U	0.06U	0.011U	0.012U
Dibromomethane	NS	NA	NA	NA	NA	NA	NA	NA	NA
Dichlorodifluoromethane	NS	NA	NA	NA	NA	NA	NA	NA	NA
Ethylbenzene	5.5	**0.26**	**4.4J**	**0.16**	0.042R	**0.006J**	**38J**	**0.01J**	**0.05J**
Hexachlorobutadiene	NS	NA	NA	NA	NA	NA	NA	NA	NA
Isopropylbenzene	5	NA	NA	NA	NA	NA	NA	NA	NA
m&p-Xylene	1.2	NA	NA	NA	NA	NA	NA	NA	NA
Methyl-tert-butyl ether	NS	NA	NA	NA	NA	NA	NA	NA	NA
Methylene Chloride	0.1	0.053U	0.16U	0.043U	0.059U	0.013U	0.06U	0.018U	0.012U
n-Butylbenzene	18	NA	NA	NA	NA	NA	NA	NA	NA
n-Propylbenzene	NS	NA	NA	NA	NA	NA	NA	NA	NA

TABLE 8
SUBSURFACE SOIL ANALYTICAL RESULTS

NYESEG FORMER MGP SITE
BRIDGE STREET PLATTSBURGH, NEW YORK

Parameter	**NYSDEC RSCO (mg/kg)**	**PB-SB-1* 7/13/1999 5'-7'**	**PB-SB-2 7/13/1999 3'-3.5'**	**PB-SB-4* 7/13/1999 5.5'-7'**	**PB-SB-5* 7/13/1999 6'-7.5'**	**PB-SB-6A 7/13/1999 6'-7.5'**	**PB-SB-6* 7/13/1999 5'-7.5'**	**PB-SB-7 7/13/1999 6'-7'**	**PB-SB-8 7/13/1999 6'-8.5'**
Naphthalene	13	NA	NA	NA	NA	NA	NA	NA	NA
o-Xylene	1.2	NA	NA	NA	NA	NA	NA	NA	NA
sec-Butylbenzene	NS	NA	NA	NA	NA	NA	NA	NA	NA
Styrene	NS	**0.074**	**13J**	0.043U	0.058U	0.013U	0.06U	**0.006J**	**0.005J**
tert-Butylbenzene	NS	NA	NA	NA	NA	NA	NA	NA	NA
Tetrachloroethene	1.4	0.053U	0.12U	0.043U	0.058U	0.013U	0.06U	0.011U	0.012U
Toluene	1.5	**0.26**	**27J**	**0.012J**	0.013R	**0.011J**	**53J**	**0.043**	**0.22D**
trans-1,2-Dichloroethene	0.3	NA	NA	NA	NA	NA	NA	NA	NA
trans-1,3-Dichloropropene	NS	NA	NA	NA	NA	NA	NA	NA	NA
Trichloroethene	0.7	0.053U	0.12U	0.043U	0.058U	0.013U	0.06U	0.011U	0.012U
Trichlorofluoromethane	NS	NA	NA	NA	NA	NA	NA	NA	NA
Vinyl Acetate	NS	NA	NA	NA	NA	NA	NA	NA	NA
Vinyl Chloride	0.2	0.053U	0.12U	0.043U	0.058U	0.013U	0.06U	0.011U	0.012U
Xylene (total)	1.2	**0.87**	**39.9J**	**0.177**	0.081R	**0.017J**	**199J**	**0.053**	**0.071J**
Total VOCs	*10*	*1.46*	*95.1*	*0.368*	*ND*	*0.043*	*292.7*	*0.163*	*1.55*
Semivolatile Organic Compounds									
1,2,4-Trichlorobenzene	3.4	0.35U	0.4U	0.43U	0.39U	0.44U	0.4U	0.35U	0.39U
1,2-Dichlorobenzene	7.9	0.35U	0.4U	0.43U	0.39U	0.44U	0.4U	0.35U	0.39U
1,2-Diphenylhydrazine	NS	NA	NA	NA	NA	NA	NA	NA	NA
1,3-Dichlorobenzene	1.6	0.35U	0.4U	0.43U	0.39U	0.44U	0.4U	0.35U	0.39U
1,4-Dichlorobenzene	8.5	0.35U	0.4U	0.43U	0.39U	0.44U	0.4U	0.35U	0.39U
2,2'-oxybis(1-Chloropropane)	NS	0.35U	0.4U	0.43U	0.39U	0.44U	0.4U	0.35U	0.39U
2,4,5-Trichlorophenol	0.1	1.8U	200U	2.1U	1.9U	2.2U	2U	1.8U	2U
2,4,6-Trichlorophenol	NS	0.35U	40U	0.43U	0.39U	0.44U	0.4U	0.35U	0.39U
2,4-Dichlorophenol	0.4	0.35U	40U	0.43U	0.39U	0.44U	0.4U	0.35U	0.39U
2,4-Dimethylphenol	NS	0.35U	**35DJ**	0.43U	0.39U	0.44U	0.4U	**0.11J**	0.39U
2,4-Dinitrophenol	0.2	1.8U	200U	2.1U	1.9U	2.2U	2U	1.8U	2U
2,4-Dinitrotoluene	NS	0.35U	0.4U	0.43U	0.39U	0.44U	0.4U	0.35U	0.39U
2,6-Dinitrotoluene	1	0.35U	0.4U	0.43U	0.39U	0.44U	0.4U	0.35U	0.39U
2-Chloronaphthalene	NS	0.35U	0.4U	0.43U	0.39U	0.44U	0.4U	0.35U	0.39U

TABLE 8
SUBSURFACE SOIL ANALYTICAL RESULTS

NYESEG FORMER MGP SITE
BRIDGE STREET PLATTSBURGH, NEW YORK

Parameter	NYSDEC RSCO (mg/kg)	PB-SB-1* 7/13/1999 5'-7'	PB-SB-2 7/13/1999 3'-3.5'	PB-SB-4* 7/13/1999 5.5'-7'	PB-SB-5* 7/13/1999 6'-7.5'	PB-SB-6A 7/13/1999 6'-7.5'	PB-SB-6* 7/13/1999 5'-7.5'	PB-SB-7 7/13/1999 6'-7'	PB-SB-8 7/13/1999 6'-8.5'
2-Chlorophenol	0.8	0.35U	40U	0.43U	0.39U	0.44U	0.4U	0.35U	0.39U
2-Methylnaphthalene	36.4	**2.6**	**79D**	**0.18J**	**4.3DJ**	0.44U	20D	**0.65**	**0.16J**
2-Methylphenol	0.1	NA	NA	NA	NA	NA	NA	NA	NA
2-Nitroaniline	0.43	1.8U	200U	2.1U	1.9U	2.2U	2U	1.8U	2U
2-Nitrophenol	0.33	0.35U	40U	0.43U	0.39U	0.44U	0.4U	0.35U	0.39U
3 & 4-Methylphenol (m, p-cresol)	NS	0.35U	**82D**	0.43U	0.39U	0.44U	0.4U	**0.16J**	0.39U
3,3'-Dichlorobenzidine	NS	0.35U	0.4U	0.43U	0.39U	0.44U	0.4U	0.35U	0.39U
3-Nitroaniline	0.5	1.8U	2U	2.1U	1.9U	2.2U	2U	1.8U	2U
4,6-Dinitro-2-methylphenol	NS	1.8U	200U	2.1U	1.9U	2.2U	2U	1.8U	2U
4-Bromophenyl-phenylether	NS	0.35U	0.4U	0.43U	0.39U	0.44U	0.4U	0.35U	0.39U
4-Chloro-3-methylphenol	0.24	0.35U	40U	0.43U	0.39U	0.44U	0.4U	0.35U	0.39U
4-Chloroaniline	0.22	0.35U	0.4U	0.43U	0.39U	0.44U	0.4U	0.35U	0.39U
4-Chlorophenyl-phenylether	NS	0.35U	0.4U	0.43U	0.39U	0.44U	0.4U	0.35U	0.39U
4-Methylphenol	0.9	NA	NA	NA	NA	NA	NA	NA	NA
4-Nitroaniline	NS	1.8U	2U	2.1U	1.9U	2.2U	2U	1.8U	2U
4-Nitrophenol	0.1	1.8U	200U	2.1U	1.9U	2.2U	2U	1.8U	2U
Acenaphthene	50*	**5.2D**	**27DJ**	**0.48**	**6.8DJ**	0.44U	0.4U	**0.4**	**0.076J**
Acenaphthylene	41	**0.74**	**70D**	0.43U	**1.1**	0.44U	0.4U	**1**	**0.18J**
Anthracene	50*	**2.3**	**30DJ**	**0.11J**	**31J**	0.44U	**0.097J**	**6.5D**	**0.096J**
Benzidine	NS	NA	NA	NA	NA	NA	NA	NA	NA
Benzo(a)anthracene	0.224	**1.5**	**19DJ**	**0.083J**	**2.4**	0.44U	**0.19J**	**6.7D**	**0.32J**
Benzo(a)pyrene	0.061	**0.77**	**15DJ**	**0.14J**	**3**	0.44U	**0.66**	**2.5**	**0.35J**
Benzo(b)fluoranthene	0.224	**0.77**	**14DJ**	**0.11J**	**2.9**	0.44U	**0.49**	**6.6D**	**0.47J**
Benzo(g,h,i)perylene	50*	**0.15J**	**4.8DJ**	**0.081J**	**0.92**	0.44U	**0.62**	**0.71**	**0.22J**
Benzo(k)fluoranthene	0.224	**0.28J**	**2.4**	0.43U	**1.1**	0.44U	**0.16J**	**1.3**	**0.21J**
Benzoic Acid	2.7	NA	NA	NA	NA	NA	NA	NA	NA
Benzyl Alcohol	NS	NA	NA	NA	NA	NA	NA	NA	NA
bis(2-Chloroethoxy)methane	NS	0.35U	0.4U	0.43U	0.39U	0.44U	0.4U	0.35U	0.39U
bis(2-Chloroethyl)ether	NS	0.35U	0.4U	0.43U	0.39U	0.44U	0.4U	0.35U	0.39U
bis(2-Chloroisopropyl)ether	NS	NA	NA	NA	NA	NA	NA	NA	NA

TABLE 8
SUBSURFACE SOIL ANALYTICAL RESULTS

NYESEG FORMER MGP SITE
BRIDGE STREET PLATTSBURGH, NEW YORK

Parameter	NYSDEC RSCO (mg/kg)	PB-SB-1* 7/13/1999 5'-7'	PB-SB-2 7/13/1999 3'-3.5'	PB-SB-4* 7/13/1999 5.5'-7'	PB-SB-5* 7/13/1999 6'-7.5'	PB-SB-6A 7/13/1999 6'-7.5'	PB-SB-6* 7/13/1999 5'-7.5'	PB-SB-7 7/13/1999 6'-7'	PB-SB-8 7/13/1999 6'-8.5'
bis(2-Ethylhexyl)phthalate	50*	0.35U	0.4U	0.43U	0.39U	0.44U	0.4U	0.35U	0.39U
Bromophenylphenylether	NS	NA	NA	NA	NA	NA	NA	NA	NA
Butylbenzylphthalate	50*	0.35U	0.4U	0.43U	0.39U	0.44U	0.4U	0.35U	0.39U
Carbazole	NS	0.35U	0.4U	0.43U	0.39U	0.44U	0.4U	**0.64**	**0.044J**
Chlorophenylphenylether	NS	NA	NA	NA	NA	NA	NA	NA	NA
Chrysene	0.4	**1.4**	**20DJ**	**0.082J**	**2DJ**	0.44U	**0.22J**	**5.3D**	**0.21J**
Di-n-butylphthalate	8.1	0.35U	0.4U	0.43U	0.39U	0.44U	0.4U	0.35U	0.39U
Di-n-octylphthalate	50*	0.35U	0.4U	0.43U	0.39U	0.44U	0.4U	0.35U	0.39U
Dibenzo(a,h)anthracene	0.014	**0.06J**	**1.1**	0.43U	0.39U	0.44U	0.4U	**0.21J**	0.39U
Dibenzofuran	6.2	0.35U	0.4U	0.43U	**0.5**	0.44U	0.4U	**0.81**	0.39U
Diethylphthalate	7.1	0.35U	0.4U	0.43U	0.39U	0.44U	0.4U	0.35U	0.39U
Dimethylphthalate	2	0.35U	0.4U	0.43U	0.39U	0.44U	0.4U	0.35U	0.39U
Fluoranthene	50*	**2.3**	**28DJ**	**0.21J**	**9.6D**	0.44U	**0.22J**	13D	**0.44**
Fluorene	50*	**1.7**	**31DJ**	**0.1J**	**4.4DJ**	0.44U	0.4U	**1.8**	**0.069J**
Hexachlorobenzene	0.41	0.35U	0.4U	0.43U	0.39U	0.44U	0.4U	0.35U	0.39U
Hexachlorobutadiene	NS	0.35U	0.4U	0.43U	0.39U	0.44U	0.4U	0.35U	0.39U
Hexachlorocyclopentadiene	NS	0.35U	0.4U	0.43U	0.39U	0.44U	4U	0.35U	0.39U
Hexachloroethane	NS	0.35U	0.4U	0.43U	0.39U	0.44U	0.4U	0.35U	0.39U
Indeno(1,2,3-cd)pyrene	3.2	**0.15J**	**2.7**	**0.056J**	**0.74**	0.44U	**0.42**	**0.7**	**0.14J**
Isophorone	4.4	0.35U	0.4U	0.43U	0.39U	0.44U	0.4U	0.35U	0.39U
N-Nitroso-di-n-propylamine	NS	0.35U	0.4U	0.43U	0.39U	0.44U	0.4U	0.35U	0.39U
N-Nitrosodimethylamine	NS	0.35U	0.4U	0.43U	0.39U	0.44U	0.4U	0.35U	0.39U
N-Nitrosodiphenylamine	NS	0.35U	0.4U	0.43U	0.39U	0.44U	0.4U	0.35U	0.39U
Naphthalene	13	**2.6**	**110D**	**1.2**	**5.8DJ**	**0.063J**	**19D**	**1.4**	**1.2**
Nitrobenzene	0.2	0.35U	**0.4U**	0.43U	0.39U	0.44U	0.4U	0.35U	0.39U

TABLE 8
SUBSURFACE SOIL ANALYTICAL RESULTS

NYESEG FORMER MGP SITE
BRIDGE STREET PLATTSBURGH, NEW YORK

Parameter	NYSDEC RSCO (mg/kg)	PB-SB-1* 7/13/1999 5'-7'	PB-SB-2 7/13/1999 3'-3.5'	PB-SB-4* 7/13/1999 5.5'-7'	PB-SB-5* 7/13/1999 6'-7.5'	PB-SB-6A 7/13/1999 6'-7.5'	PB-SB-6* 7/13/1999 5'-7.5'	PB-SB-7 7/13/1999 6'-7'	PB-SB-8 7/13/1999 6'-8.5'
Pentachlorophenol	1	1.8U	200U	2.1U	1.9U	2.2U	2U	1.8U	2U
Phenanthrene	50*	**12D**	**150D**	0.43U	**19**	0.44U	**0.3J**	**12D**	**0.37J**
Phenol	0.03	0.35U	**66D**	0.43U	0.39U	0.44U	0.4U	**0.11J**	0.39U
Pyrene	50*	**4.5D**	**47D**	**0.32J**	**11D**	0.44U	**0.53**	**11D**	**0.74**
Total PAHs	*NS*	*39.0*	*651*	*3.15*	*107*	*0.063*	*42.9*	*73.2*	*5.30*
Total SVOCs	*500*	*39.0*	*834*	*3.15*	*107*	*0.063*	*42.9*	*73.6*	*5.30*
Metals									
Aluminum	SB	**3,020**	**3,140**	**9,560**	**4,310**	**7,880**	**8,680**	**4,980**	**4,440**
Antimony	SB	3.2U	**34.5**	3.8U	3.5U	4U	3.5U	3.2U	3.5U
Arsenic	7.5 or SB	2.1U	**2.6J**	2.6U	2.3U	2.7U	2.4U	2.1U	2.4U
Barium	300 or SB	**10.6B**	**63.8**	**69.9**	**23.1B**	**40.7B**	**48.7**	**13.2B**	**34.6B**
Beryllium	0.16 or SB	0.63U	0.72U	**0.8B**	0.7U	**0.82B**	**0.79B**	0.63U	0.71U
Cadmium	1	1.1U	1.2U	1.3U	1.2U	**1.6**	**1.4**	**1.1**	1.2U
Calcium	SB	**209,000J**	**37,400J**	**7,490J**	**1,550**	**115,000J**	**6,060J**	**192,000J**	**129,000J**
Chromium	10	**5.8**	**6**	**18.5**	**8**	**16.8**	**13.8**	**8.4**	**9.4**
Cobalt	30 or SB	**4.8B**	4.8U	5.1U	4.7U	**7.1B**	**6.5B**	**6.5B**	4.7U
Copper	25 or SB	**8**	**46.8**	**54.4**	**4.3B**	**7.1**	**3.7B**	**9**	**21.4**
Iron	2000 or SB	**10,700**	**7,780**	**7,110**	**8,490**	**19,600**	**18,300**	**13,500**	**12,400**
Lead	SB	**13.9J**	**26,100J**	**11.5J**	**5.1**	**11.4J**	**15.5J**	**9.5J**	**1,540J**
Magnesium	SB	**3,250**	**2,630**	**2,100**	**1,540**	**4,260**	**1,890**	**4,570**	**4,260**
Manganese	SB	**208J**	**243J**	**66J**	**52.2J**	**230J**	**129J**	**206J**	**174J**
Mercury	0.1	0.1U	**0.88J**	0.13U	0.12U	0.13U	0.12U	0.11U	**0.14J**
Nickel	13 or SB	**10.7**	7.2U	**35**	**8.5B**	**14.5**	**12.9**	**13.7**	**11.1**
Potassium	SB	**905B**	**939B**	**1,080B**	**812B**	**1,400**	**796**	**1,060**	**962B**
Selenium	2 or SB	**13J**	**9.6J**	**4.5J**	**2.1J**	**12.1J**	**1.5J**	**12.7J**	**14.5J**
Silver	SB	2.1U	2.4U	2.6U	2.3U	2.7U	2.4U	2.1U	2.4U
Sodium	SB	212U	239U	256U	233U	265U	**244B**	210U	235U
Thallium	SB	**9.5**	**7**	2.6U	2.3U	**7.8**	2.4U	**8.5**	**7.9**
Vanadium	150 or SB	6.3U	**8.7B**	**9.8B**	**13.7**	**11.6B**	**17.5**	6.3U	**7.2B**
Zinc	20 or SB	**31.3J**	**58.2J**	**56.1J**	**19.8**	**45.2J**	**24.1J**	**33.5J**	**72.1J**

TABLE 8
SUBSURFACE SOIL ANALYTICAL RESULTS

NYESEG FORMER MGP SITE
BRIDGE STREET PLATTSBURGH, NEW YORK

Parameter	**NYSDEC RSCO (mg/kg)**	**PB-SB-1* 7/13/1999 5'-7'**	**PB-SB-2 7/13/1999 3'-3.5'**	**PB-SB-4* 7/13/1999 5.5'-7'**	**PB-SB-5* 7/13/1999 6'-7.5'**	**PB-SB-6A 7/13/1999 6'-7.5'**	**PB-SB-6* 7/13/1999 5'-7.5'**	**PB-SB-7 7/13/1999 6'-7'**	**PB-SB-8 7/13/1999 6'-8.5'**
Total Petroleum Hydrocarbons									
Diesel Range Organics	NS	NA	NA	NA	NA	NA	NA	NA	NA
Gasoline Range Organics	NS	NA	NA	NA	NA	NA	NA	NA	NA
Fuel Oil # 2 (Diesel)	NS	3.5U	7.8U	4.2U	3.8U	4.4U	3.9U	NA	NA
Gasoline	NS	ND	ND	ND	ND	ND	Present	NA	NA
Kerosene	NS	3.5U	7.8U	4.2U	3.8U	4.4U	3.9U	NA	NA
Lubricating Oil	NS	ND	ND	ND	ND	ND	ND	NA	NA
Unidentified Hydrocarbons	NS	Present	Present	ND	Present	ND	ND	NA	NA
General Chemistry									
Cyanide, reactive	NS	1U	1U	1U	1U	1U	1U	1U	1U
Cyanide, amenable	NS	NA	NA	NA	NA	NA	NA	NA	NA
Cyanide, total	NS	2U	2U	2.3U	2.3U	2.5U	2.3U	2U	2.3U
Sulfide, reactive	NS	50U	50U	50U	50U	50U	50U	50U	50U
Total Organic Carbon (TOC)	NS	**5,748**	**83,603**	**17,523**	**3,535**	**8,531**	**5,333**	**11,111**	**6,199**

Notes:
Concentrations shown in mg/kg
NA - Not Analyzed
ND - Not Detected
NS - No RSCO estalished
[] - Indicates guidance value
* - Indicates sample location within area excavated and removed during the June 2001 IRM
B - (metals) - Indicates concentration is estimated between the PQL
D - Surrogate or matrix spike recoveries were not obtained because the extract was diluted for analysis
J - (organics) - Indicates concentration is estimated between the PQL
U - Parameter not detected above the practical quantitation limit
SB - Site Background

TABLE 8
SUBSURFACE SOIL ANALYTICAL RESULTS

NYESEG FORMER MGP SITE
BRIDGE STREET PLATTSBURGH, NEW YORK

Parameter	NYSDEC RSCO (mg/kg)	PB-SB-9 7/13/1999 10'-13'	PB-SB-10 7/14/1999 8'-10'	PB-SB-11 7/14/1999 8'-11.5'	PB-SB-12 7/13/1999 1'-3'	PB-SB-16* 10/13/1999 10'-12'	PB-SB-18* 10/13/1999 8'-10'	PB-SB-20* 10/13/1999 4'-6'
Volatile Organic Compounds								
1,1,1,2-Tetrachloroethane	NS	NA	NA	NA	NA	NA	NA	NA
1,1,1-Trichloroethane	0.8	0.012U	0.029U	0.012U	0.012U	0.22U	0.14U	0.011U
1,1,2,2-Tetrachloroethane	0.6	0.012U	0.029U	0.012U	0.012U	0.22U	0.14U	0.011U
1,1,2-Trichloroethane	NS	0.012U	0.029U	0.012U	0.012U	0.22U	0.14U	0.011U
1,1-Dichloroethane	0.2	0.012U	0.029U	0.012U	0.012U	0.22U	0.14U	0.011U
1,1-Dichloroethene	0.4	0.012U	0.029U	0.012U	0.012U	0.22U	0.14U	0.011U
1,1-Dichloropropene	NS	NA	NA	NA	NA	NA	NA	NA
1,2,3-Trichlorobenzene	NS	NA	NA	NA	NA	NA	NA	NA
1,2,3-Trichloropropane	0.4	NA	NA	NA	NA	NA	NA	NA
1,2,4-Trichlorobenzene	3.4	NA	NA	NA	NA	NA	NA	NA
1,2,4-Trimethylbenzene	NS	NA	NA	NA	NA	NA	NA	NA
1,2-Dibromo-3-chloropropane	NS	NA	NA	NA	NA	NA	NA	NA
1,2-Dibromoethane	NS	NA	NA	NA	NA	NA	NA	NA
1,2-Dichlorobenzene	7.9	NA	NA	NA	NA	NA	NA	NA
1,2-Dichloroethane	0.1	0.012U	0.029U	0.012U	0.012U	0.22U	0.14U	0.011U
1,2-Dichloroethene (cis)	NS	0.012U	0.029U	0.012U	0.012U	0.22U	0.14U	0.011U
1,2-Dichloroethene (trans)	0.3	0.012U	0.029U	0.012U	0.012U	0.22U	0.14U	0.011U
1,2-Dichloroethene, total	NS	NA	NA	NA	NA	NA	NA	NA
1,2-Dichloropropane	NS	0.012U	0.029U	0.012U	0.012U	0.22U	0.14U	0.011U
1,3,5-Trimethylbenzene	NS	NA	NA	NA	NA	NA	NA	NA
1,3-Dichlorobenzene	1.6	NA	NA	NA	NA	NA	NA	NA
1,3-Dichloropropane	0.3	NA	NA	NA	NA	NA	NA	NA
1,3-Dichloropropene (cis)	NS	0.012U	0.029U	0.012U	0.012U	0.22U	0.14U	0.011U
1,3-Dichloropropene (trans)	NS	0.012U	0.029U	0.012U	0.012U	0.22U	0.14U	0.011U
1,4-Dichlorobenzene	8.5	NA	NA	NA	NA	NA	NA	NA
2,2-Dichloropropane	NS	NA	NA	NA	NA	NA	NA	NA
2-Butanone	0.3	0.012U	0.029U	0.012U	0.012U	0.22U	**0.092J**	0.011U
2-Chloroethylvinylether	NS	NA	NA	NA	NA	NA	NA	NA
2-Chlorotoluene	NS	NA	NA	NA	NA	NA	NA	NA

TABLE 8
SUBSURFACE SOIL ANALYTICAL RESULTS

NYESEG FORMER MGP SITE
BRIDGE STREET PLATTSBURGH, NEW YORK

Parameter	NYSDEC RSCO (mg/kg)	PB-SB-9 7/13/1999 10'-13'	PB-SB-10 7/14/1999 8'-10'	PB-SB-11 7/14/1999 8'-11.5'	PB-SB-12 7/13/1999 1'-3'	PB-SB-16* 10/13/1999 10'-12'	PB-SB-18* 10/13/1999 8'-10'	PB-SB-20* 10/13/1999 4'-6'
2-Hexanone	NS	0.012U	0.029U	0.012U	0.012U	0.22U	0.14U	0.011U
4-Chlorotoluene	NS	NA	NA	NA	NA	NA	NA	NA
4-Isopropyltoluene	NS	NA	NA	NA	NA	NA	NA	NA
4-Methyl-2-Pentanone	1	0.012U	0.029U	0.012U	0.012U	0.22U	0.14U	0.011U
Acetone	0.2	0.023U	0.084U	0.03U	0.012U	0.22U	0.58U	0.037U
Benzene	0.06	0.012U	**0.01J**	0.012U	0.012U	**100DJ**	**2.4**	**0.008J**
Bromobenzene	NS	NA	NA	NA	NA	NA	NA	NA
Bromochloromethane	NS	NA	NA	NA	NA	NA	NA	NA
Bromodichloromethane	NS	0.012U	0.029U	0.012U	0.012U	0.22U	0.14U	0.011U
Bromoform	NS	0.012U	0.029U	0.012U	0.012U	0.22U	0.14U	0.011U
Bromomethane	NS	0.012U	0.029U	0.012U	0.012U	0.22U	0.14U	0.011U
Carbon Disulfide	2.7	0.012U	0.029U	0.012U	0.012U	**0.19J**	**0.054J**	0.011U
Carbon Tetrachloride	0.6	0.012U	0.029U	0.012U	0.012U	0.22U	0.14U	0.011U
Chlorobenzene	1.7	0.012U	0.029U	0.012U	0.012U	0.22U	0.14U	0.011U
Chloroethane	1.9	0.012U	0.029U	0.012U	0.012U	0.22U	0.14U	0.011U
Chloroform	0.3	0.012U	0.029U	0.012U	0.012U	0.22U	0.14U	0.011U
Chloromethane	NS	0.012U	0.029U	0.012U	0.012U	0.22U	0.14U	0.011U
cis-1,2-Dichloroethene	0.25	NA	NA	NA	NA	NA	NA	NA
cis-1,3-Dichloropropene	NS	NA	NA	NA	NA	NA	NA	NA
Dibromochloromethane	NS	0.012U	0.029U	0.012U	0.012U	0.22U	0.14U	0.011U
Dibromomethane	NS	NA	NA	NA	NA	NA	NA	NA
Dichlorodifluoromethane	NS	NA	NA	NA	NA	NA	NA	NA
Ethylbenzene	5.5	0.012U	**0.022J**	0.012U	**0.002J**	**210DJ**	**0.55**	**0.007J**
Hexachlorobutadiene	NS	NA	NA	NA	NA	NA	NA	NA
Isopropylbenzene	5	NA	NA	NA	NA	NA	NA	NA
m&p-Xylene	1.2	NA	NA	NA	NA	NA	NA	NA
Methyl-tert-butyl ether	NS	NA	NA	NA	NA	NA	NA	NA
Methylene Chloride	0.1	0.012U	0.029U	0.012U	0.013U	0.22U	0.14U	0.027U
n-Butylbenzene	18	NA	NA	NA	NA	NA	NA	NA
n-Propylbenzene	NS	NA	NA	NA	NA	NA	NA	NA

TABLE 8
SUBSURFACE SOIL ANALYTICAL RESULTS

NYESEG FORMER MGP SITE
BRIDGE STREET PLATTSBURGH, NEW YORK

Parameter	NYSDEC RSCO (mg/kg)	PB-SB-9 7/13/1999 10'-13'	PB-SB-10 7/14/1999 8'-10'	PB-SB-11 7/14/1999 8'-11.5'	PB-SB-12 7/13/1999 1'-3'	PB-SB-16* 10/13/1999 10'-12'	PB-SB-18* 10/13/1999 8'-10'	PB-SB-20* 10/13/1999 4'-6'
Naphthalene	13	NA	NA	NA	NA	NA	NA	NA
o-Xylene	1.2	NA	NA	NA	NA	NA	NA	NA
sec-Butylbenzene	NS	NA	NA	NA	NA	NA	NA	NA
Styrene	NS	0.012U	**0.018J**	0.012U	0.012U	**160DJ**	**1.9**	**0.003J**
tert-Butylbenzene	NS	NA	NA	NA	NA	NA	NA	NA
Tetrachloroethene	1.4	0.012U	0.029U	0.012U	**0.002J**	0.22U	0.14U	0.011U
Toluene	1.5	**0.004J**	**0.023J**	0.012U	**0.006J**	**240DJ**	**2**	**0.018J**
trans-1,2-Dichloroethene	0.3	NA	NA	NA	NA	NA	NA	NA
trans-1,3-Dichloropropene	NS	NA	NA	NA	NA	NA	NA	NA
Trichloroethene	0.7	0.012U	0.029U	0.012U	0.012U	0.22U	0.14U	0.011U
Trichlorofluoromethane	NS	NA	NA	NA	NA	NA	NA	NA
Vinyl Acetate	NS	NA	NA	NA	NA	NA	NA	NA
Vinyl Chloride	0.2	0.012U	0.029U	0.012U	0.012U	0.22U	0.14U	0.011U
Xylene (total)	1.2	**0.002J**	**0.056J**	0.012U	**0.011J**	**530DJ**	**2.65J**	**0.016J**
Total VOCs	*10*	*0.006*	*0.129*	*ND*	*0.021*	*1240*	*9.65*	*0.052*
Semivolatile Organic Compounds								
1,2,4-Trichlorobenzene	3.4	0.41U	0.38U	0.4U	0.39U	72U	0.45U	0.35U
1,2-Dichlorobenzene	7.9	0.41U	0.38U	0.4U	0.39U	72U	0.45U	0.35U
1,2-Diphenylhydrazine	NS	NA	NA	NA	NA	NA	NA	NA
1,3-Dichlorobenzene	1.6	0.41U	0.38U	0.4U	0.39U	72U	0.45U	0.35U
1,4-Dichlorobenzene	8.5	0.41U	0.38U	0.4U	0.39U	72U	0.45U	0.35U
2,2'-oxybis(1-Chloropropane)	NS	0.41U	0.38U	0.4U	0.39U	72U	0.45U	0.35U
2,4,5-Trichlorophenol	0.1	2U	1.9U	2U	1.9U	170U	1.1U	0.84U
2,4,6-Trichlorophenol	NS	0.41U	0.38U	0.4U	0.39U	72U	0.45U	0.35U
2,4-Dichlorophenol	0.4	0.41U	0.38U	0.4U	0.39U	72U	0.45U	0.35U
2,4-Dimethylphenol	NS	0.41U	0.38U	0.4U	0.39U	72U	0.45U	0.35U
2,4-Dinitrophenol	0.2	2U	1.9U	2U	1.9U	170U	1.1U	0.84U
2,4-Dinitrotoluene	NS	0.41U	0.38U	0.4U	0.39U	72U	0.45U	0.35U
2,6-Dinitrotoluene	1	0.41U	0.38U	0.4U	0.39U	72U	**0.35J**	0.35U
2-Chloronaphthalene	NS	0.41U	0.38U	0.4U	0.39U	72U	0.45U	0.35U

TABLE 8
SUBSURFACE SOIL ANALYTICAL RESULTS

NYESEG FORMER MGP SITE
BRIDGE STREET PLATTSBURGH, NEW YORK

Parameter	NYSDEC RSCO (mg/kg)	PB-SB-9 7/13/1999 10'-13'	PB-SB-10 7/14/1999 8'-10'	PB-SB-11 7/14/1999 8'-11.5'	PB-SB-12 7/13/1999 1'-3'	PB-SB-16* 10/13/1999 10'-12'	PB-SB-18* 10/13/1999 8'-10'	PB-SB-20* 10/13/1999 4'-6'
2-Chlorophenol	0.8	0.41U	0.38U	0.4U	0.39U	72U	0.45U	0.35U
2-Methylnaphthalene	36.4	0.41U	0.38U	0.4U	0.39U	**220J**	**1.6J**	**0.069J**
2-Methylphenol	0.1	NA	NA	NA	NA	NA	NA	NA
2-Nitroaniline	0.43	2U	1.9U	2U	1.9U	170U	1.1U	0.84U
2-Nitrophenol	0.33	0.41U	0.38U	0.4U	0.39U	72U	0.45U	0.35U
3 & 4-Methylphenol (m, p-cresol)	NS	0.41U	0.38U	0.4U	0.39U	NA	NA	NA
3,3'-Dichlorobenzidine	NS	0.41U	0.38U	0.4U	0.39U	72U	0.45U	0.35U
3-Nitroaniline	0.5	2U	1.9U	2U	1.9U	170U	1.1U	0.84U
4,6-Dinitro-2-methylphenol	NS	2U	1.9U	2U	1.9U	170U	1.1U	0.84U
4-Bromophenyl-phenylether	NS	0.41U	0.38U	0.4U	0.39U	72U	0.45U	0.35U
4-Chloro-3-methylphenol	0.24	0.41U	0.38U	0.4U	0.39U	72U	0.45U	0.35U
4-Chloroaniline	0.22	0.41U	0.38U	0.4U	0.39U	72U	0.45U	0.35U
4-Chlorophenyl-phenylether	NS	0.41U	0.38U	0.4U	0.39U	72U	0.45U	0.35U
4-Methylphenol	0.9	NA	NA	NA	NA	72U	0.45U	0.35U
4-Nitroaniline	NS	2U	1.9U	2U	1.9U	170U	1.1U	0.84U
4-Nitrophenol	0.1	2U	1.9U	2U	1.9U	170U	1.1U	0.84U
Acenaphthene	50*	0.41U	0.38U	0.4U	0.39U	**160J**	**0.42J**	0.35U
Acenaphthylene	41	**0.058J**	0.38U	0.4U	**0.053J**	**180J**	**3.3**	**0.049J**
Anthracene	50*	**0.13J**	0.38U	0.4U	**0.076J**	**130J**	**0.67**	0.35U
Benzidine	NS	NA	NA	NA	NA	NA	NA	NA
Benzo(a)anthracene	0.224	**0.2J**	0.38U	0.4U	**0.31J**	**87J**	**0.15J**	**0.081J**
Benzo(a)pyrene	0.061	**0.39J**	0.38U	0.4U	**0.26J**	**91J**	**0.089J**	0.35U
Benzo(b)fluoranthene	0.224	**0.53**	0.38U	0.4U	**0.38J**	**84J**	**0.11J**	0.35U
Benzo(g,h,i)perylene	50*	**0.27J**	0.38U	0.4U	**0.085J**	**31J**	0.45U	0.35U
Benzo(k)fluoranthene	0.224	**0.21J**	0.38U	0.4U	**0.17J**	**33J**	0.45U	0.35U
Benzoic Acid	2.7	NA	NA	NA	NA	NA	NA	NA
Benzyl Alcohol	NS	NA	NA	NA	NA	NA	NA	NA
bis(2-Chloroethoxy)methane	NS	0.41U	0.38U	0.4U	0.39U	72U	0.45U	0.35U
bis(2-Chloroethyl)ether	NS	0.41U	0.38U	0.4U	0.39U	72U	0.45U	0.35U
bis(2-Chloroisopropyl)ether	NS	NA	NA	NA	NA	NA	NA	NA

TABLE 8
SUBSURFACE SOIL ANALYTICAL RESULTS

NYESEG FORMER MGP SITE
BRIDGE STREET PLATTSBURGH, NEW YORK

Parameter	NYSDEC RSCO (mg/kg)	PB-SB-9 7/13/1999 10'-13'	PB-SB-10 7/14/1999 8'-10'	PB-SB-11 7/14/1999 8'-11.5'	PB-SB-12 7/13/1999 1'-3'	PB-SB-16* 10/13/1999 10'-12'	PB-SB-18* 10/13/1999 8'-10'	PB-SB-20* 10/13/1999 4'-6'
bis(2-Ethylhexyl)phthalate	50*	0.41U	0.38U	0.4U	0.78U	72U	0.45U	0.35U
Bromophenylphenylether	NS	NA	NA	NA	NA	NA	NA	NA
Butylbenzylphthalate	50*	0.41U	0.38U	0.4U	0.39U	72U	0.45U	0.35U
Carbazole	NS	0.41U	0.38U	0.4U	0.39U	72U	**0.057J**	0.35U
Chlorophenylphenylether	NS	NA	NA	NA	NA	NA	NA	NA
Chrysene	0.4	**0.21J**	0.38U	0.4U	**0.35J**	**75J**	**0.15J**	**0.1J**
Di-n-butylphthalate	8.1	0.41U	0.38U	0.4U	0.39U	72U	0.45U	**0.049J**
Di-n-octylphthalate	50*	0.41U	0.38U	0.4U	0.39U	72U	0.45U	0.35U
Dibenzo(a,h)anthracene	0.014	**0.084J**	0.38U	0.4U	0.39U	72U	0.45U	0.35U
Dibenzofuran	6.2	0.41U	0.38U	0.4U	0.39U	72U	**0.067J**	0.35U
Diethylphthalate	7.1	0.41U	0.38U	0.4U	0.39U	72U	0.45U	0.35U
Dimethylphthalate	2	0.41U	0.38U	0.4U	0.39U	72U	0.45U	0.35U
Fluoranthene	50*	**0.29J**	0.38U	0.4U	**0.51**	**230J**	**1.1**	**0.14J**
Fluorene	50*	0.41U	0.38U	0.4U	0.39U	**130J**	**1.1**	0.35U
Hexachlorobenzene	0.41	0.41U	0.38U	0.4U	0.39U	72U	0.45U	0.35U
Hexachlorobutadiene	NS	0.41U	0.38U	0.4U	0.39U	72U	0.45U	0.35U
Hexachlorocyclopentadiene	NS	0.41U	0.38U	0.4U	0.39U	72U	0.45U	0.35U
Hexachloroethane	NS	0.41U	0.38U	0.4U	0.39U	72U	0.45U	0.35U
Indeno(1,2,3-cd)pyrene	3.2	**0.22J**	0.38U	0.4U	**0.087J**	**28J**	0.45U	**0.057J**
Isophorone	4.4	0.41U	0.38U	0.4U	0.39U	72U	0.45U	0.35U
N-Nitroso-di-n-propylamine	NS	0.41U	0.38U	0.4U	0.39U	72U	0.45U	0.35U
N-Nitrosodimethylamine	NS	0.41U	0.38U	0.4U	0.39U	NA	NA	NA
N-Nitrosodiphenylamine	NS	0.41U	0.38U	0.4U	0.39U	72U	0.45U	0.35U
Naphthalene	13	**0.075J**	0.38U	0.4U	0.39U	**1,100DJ**	**13D**	**0.27J**
Nitrobenzene	0.2	0.41U	0.38U	0.4U	0.39U	72U	0.45U	0.35U

TABLE 8
SUBSURFACE SOIL ANALYTICAL RESULTS

NYESEG FORMER MGP SITE
BRIDGE STREET PLATTSBURGH, NEW YORK

Parameter	**NYSDEC RSCO (mg/kg)**	**PB-SB-9 7/13/1999 10'-13'**	**PB-SB-10 7/14/1999 8'-10'**	**PB-SB-11 7/14/1999 8'-11.5'**	**PB-SB-12 7/13/1999 1'-3'**	**PB-SB-16* 10/13/1999 10'-12'**	**PB-SB-18* 10/13/1999 8'-10'**	**PB-SB-20* 10/13/1999 4'-6'**
Pentachlorophenol	1	2U	1.9U	2U	1.9U	170U	1.1U	0.84U
Phenanthrene	50*	**0.23J**	0.38U	0.4U	**0.37J**	**550J**	**3.1**	**0.13J**
Phenol	0.03	0.41U	0.38U	0.4U	0.39U	72U	0.45U	0.35U
Pyrene	50*	**0.37J**	0.38U	0.4U	**0.74**	**330J**	**1.6**	**0.24J**
Total PAHs	*NS*	*3.27*	*ND*	*ND*	*3.39*	*3,459*	*26.5*	*1.14*
Total SVOCs	*500*	*3.27*	*ND*	*ND*	*3.39*	*3,459*	*26.5*	*1.19*
Metals								
Aluminum	SB	**12,500**	**4,590**	**2,050**	**5,650**	**6150J**	**7,850**	**4,950**
Antimony	SB	3.7U	3.4U	3.6U	3.5U	6.5U	4.1U	3.2U
Arsenic	7.5 or SB	2.4U	2.3U	2.4U	2.3U	4.3U	2.7U	2.1U
Barium	300 or SB	**90.9**	**18.6B**	**29.1B**	**107**	**93.6J**	**55.8**	**16.6B**
Beryllium	0.16 or SB	0.73U	**0.79B**	0.72U	0.69U	1.3U	0.82U	0.64U
Cadmium	1	**1.2**	1.1U	1.2U	1.2U	2.2U	1.4U	1.1U
Calcium	SB	**4,300J**	**3,010J**	**131,000J**	**10,600J**	**108,000J**	**65,700**	**18,700**
Chromium	10	**21.8**	**10.1**	**6.4**	**10.7**	**11.2J**	**14.5J**	**9**
Cobalt	30 or SB	**9.8B**	4.6U	4.8U	**5.1B**	8.6U	**7.3B**	**5.2B**
Copper	25 or SB	**17.2**	**6.8**	**7.4**	**36.8**	**23.9J**	**9.2**	**16.9**
Iron	2000 or SB	**16,000**	**12,800**	**6,190**	**11,600**	**19,000J**	**16,900**	**11,000**
Lead	SB	**14.1J**	**8.5J**	**4**	**185J**	**419J**	**22**	**44.5**
Magnesium	SB	**4,510**	**2,290**	**5,710**	**2,350**	**5260J**	**5,030**	**3,840**
Manganese	SB	**131J**	**88.4J**	**292J**	**287J**	**331J**	**167**	**203**
Mercury	0.1	0.05U	0.11U	0.12U	**0.17J**	**0.55J**	0.13U	0.1U
Nickel	13 or SB	**26.2**	**11**	7.2U	**10.3**	13U	**13.9**	**12**
Potassium	SB	**1940**	**1,110B**	**1,230**	**1,250**	**2,550J**	**1,910**	**636B**
Selenium	2 or SB	**6J**	**4.1J**	**16.9J**	**6.5J**	**2.2U**	1.4U	1.1U
Silver	SB	2.4U	2.3U	2.4U	2.3U	**10.2J**	2.7U	2.1U
Sodium	SB	244U	229U	241U	231U	432U	272U	213U
Thallium	SB	2.4U	2.3U	**9.5**	2.3U	**7.2J**	2.7U	**6.4J**
Vanadium	150 or SB	**21.6**	**10.6B**	**13.6**	**13.9**	**22.9J**	**9.9B**	6.4U
Zinc	20 or SB	**52.6J**	**30.8J**	**16.9**	**154J**	**187J**	**48.2J**	**35.5J**

TABLE 8
SUBSURFACE SOIL ANALYTICAL RESULTS

NYESEG FORMER MGP SITE
BRIDGE STREET PLATTSBURGH, NEW YORK

Parameter	NYSDEC RSCO (mg/kg)	PB-SB-9 7/13/1999 10'-13'	PB-SB-10 7/14/1999 8'-10'	PB-SB-11 7/14/1999 8'-11.5'	PB-SB-12 7/13/1999 1'-3'	PB-SB-16* 10/13/1999 10'-12'	PB-SB-18* 10/13/1999 8'-10'	PB-SB-20* 10/13/1999 4'-6'
Total Petroleum Hydrocarbons								
Diesel Range Organics	NS	NA	NA	NA	NA	NA	NA	NA
Gasoline Range Organics	NS	NA	NA	NA	NA	NA	NA	NA
Fuel Oil # 2 (Diesel)	NS	NA	3.8U	3.9U	3.8U	7.1U	4.5U	3.5U
Gasoline	NS	NA	ND	ND	ND	Present	ND	ND
Kerosene	NS	NA	3.8U	3.9U	3.8U	7.1U	4.5U	3.5U
Lubricating Oil	NS	NA	ND	ND	ND	ND	ND	ND
Unidentified Hydrocarbons	NS	NA	ND	ND	ND	NA	NA	NA
General Chemistry								
Cyanide, reactive	NS	1U	1.1U	1U	1U	4U	2.5U	2.2U
Cyanide, amenable	NS	NA	NA	NA	NA	NA	NA	NA
Cyanide, total	NS	2.2U	2.2U	2.2U	2.3U	**8.1J**	2.4U	2.1U
Sulfide, reactive	NS	50U	50U	50U	50U	50U	50U	50U
Total Organic Carbon (TOC)	NS	**8,336**	**3,797**	**3,026**	**12,557**	**63,600**	**12,000**	**2,880**

Notes:
Concentrations shown in mg/kg
NA - Not Analyzed
ND - Not Detected
NS - No RSCO estalished
[] - Indicates guidance value
* - Indicates sample location within area excavated and removed during the June 2001 IRM
B - (metals) - Indicates concentration is estimated between the PQL
D - Surrogate or matrix spike recoveries were not obtained because the extract was diluted for analysis
J - (organics) - Indicates concentration is estimated between the PQL
U - Parameter not detected above the practical quantitation limit
SB - Site Background

TABLE 8
SUBSURFACE SOIL ANALYTICAL RESULTS

NYESEG FORMER MGP SITE
BRIDGE STREET PLATTSBURGH, NEW YORK

Parameter	NYSDEC RSCO (mg/kg)	DS-1 1/22/2002 13'-14'	DS-2 1/22/2002 16'-17'	DS-3 1/22/2002 17'-18'	SB-01-11 12/19/2001 10'-11'	SB-01-3A 12/21/2001 12'-13'	SB-01-4A 12/21/2001 12'-13'	Soil-1 11/15/2001 15'
Volatile Organic Compounds								
1,1,1,2-Tetrachloroethane	NS	0.001U	0.001U	0.001U	NA	NA	NA	NA
1,1,1-Trichloroethane	0.8	0.001U	0.001U	0.001U	0.005U	0.005U	0.005U	0.005U
1,1,2,2-Tetrachloroethane	0.6	0.001U	0.001U	0.001U	0.005U	0.005U	0.005U	0.005U
1,1,2-Trichloroethane	NS	0.001U	0.001U	0.001U	0.005U	0.005U	0.005U	0.005U
1,1-Dichloroethane	0.2	0.001U	0.001U	0.001U	0.005U	0.005U	0.005U	0.005U
1,1-Dichloroethene	0.4	0.001U	0.001U	0.001U	0.005U	0.005U	0.005U	0.005U
1,1-Dichloropropene	NS	0.001U	0.001U	0.001U	NA	NA	NA	NA
1,2,3-Trichlorobenzene	NS	0.001U	0.001U	0.001U	NA	NA	NA	NA
1,2,3-Trichloropropane	0.4	0.001U	0.001U	0.001U	NA	NA	NA	NA
1,2,4-Trichlorobenzene	3.4	0.001U	0.001U	0.001U	NA	NA	NA	NA
1,2,4-Trimethylbenzene	NS	**0.022**	0.001U	0.001U	NA	NA	NA	NA
1,2-Dibromo-3-chloropropane	NS	0.001U	0.001U	0.001U	NA	NA	NA	NA
1,2-Dibromoethane	NS	0.001U	0.001U	0.001U	NA	NA	NA	NA
1,2-Dichlorobenzene	7.9	0.001U	0.001U	0.001U	NA	NA	NA	NA
1,2-Dichloroethane	0.1	0.001U	0.001U	0.001U	0.005U	0.005U	0.005U	0.005U
1,2-Dichloroethene (cis)	NS	NA	NA	NA	NA	NA	NA	NA
1,2-Dichloroethene (trans)	0.3	NA	NA	NA	NA	NA	NA	NA
1,2-Dichloroethene, total	NS	NA	NA	NA	0.005U	0.005U	0.005U	0.005U
1,2-Dichloropropane	NS	0.001U	0.001U	0.001U	0.005U	0.005U	0.005U	0.005U
1,3,5-Trimethylbenzene	NS	0.001U	0.001U	0.001U	NA	NA	NA	NA
1,3-Dichlorobenzene	1.6	0.001U	0.001U	0.001U	NA	NA	NA	NA
1,3-Dichloropropane	0.3	0.001U	0.001U	0.001U	NA	NA	NA	NA
1,3-Dichloropropene (cis)	NS	NA	NA	NA	NA	NA	NA	NA
1,3-Dichloropropene (trans)	NS	NA	NA	NA	NA	NA	NA	NA
1,4-Dichlorobenzene	8.5	0.001U	0.001U	0.001U	NA	NA	NA	NA
2,2-Dichloropropane	NS	0.001U	0.001U	0.001U	NA	NA	NA	NA
2-Butanone	0.3	NA	NA	NA	0.01U	0.01U	0.01U	NA
2-Chloroethylvinylether	NS	NA	NA	NA	0.01U	0.01U	0.01U	0.01U
2-Chlorotoluene	NS	0.001U	0.001U	0.001U	NA	NA	NA	NA

TABLE 8
SUBSURFACE SOIL ANALYTICAL RESULTS

NYESEG FORMER MGP SITE
BRIDGE STREET PLATTSBURGH, NEW YORK

Parameter	**NYSDEC RSCO (mg/kg)**	**DS-1 1/22/2002 13'-14'**	**DS-2 1/22/2002 16'-17'**	**DS-3 1/22/2002 17'-18'**	**SB-01-11 12/19/2001 10'-11'**	**SB-01-3A 12/21/2001 12'-13'**	**SB-01-4A 12/21/2001 12'-13'**	**Soil-1 11/15/2001 15'**
2-Hexanone	NS	NA	NA	NA	0.01U	0.01U	0.01U	NA
4-Chlorotoluene	NS	0.001U	0.001U	0.001U	NA	NA	NA	NA
4-Isopropyltoluene	NS	0.001U	0.001U	0.001U	NA	NA	NA	NA
4-Methyl-2-Pentanone	1	NA	NA	NA	0.01U	0.01U	0.01U	NA
Acetone	0.2	NA	NA	NA	0.01U	0.01U	0.01U	NA
Benzene	0.06	**0.011**	0.001U	0.001U	**0.008**	**0.002J**	0.005U	**0.019**
Bromobenzene	NS	0.001U	0.001U	0.001U	NA	NA	NA	NA
Bromochloromethane	NS	0.001U	0.001U	0.001U	NA	NA	NA	NA
Bromodichloromethane	NS	0.001U	0.001U	0.001U	0.005U	0.005U	0.005U	0.005U
Bromoform	NS	0.001U	0.001U	0.001U	0.005U	0.005U	0.005U	0.005U
Bromomethane	NS	0.001U	0.001U	0.001U	0.01U	0.01U	0.01U	0.01U
Carbon Disulfide	2.7	NA	NA	NA	0.005U	0.005U	0.005U	NA
Carbon Tetrachloride	0.6	0.001U	0.001U	0.001U	0.005U	0.005U	0.005U	0.005U
Chlorobenzene	1.7	0.001U	0.001U	0.001U	0.005U	0.005U	0.005U	0.005U
Chloroethane	1.9	0.001U	0.001U	0.001U	0.01U	0.01U	0.01U	0.01U
Chloroform	0.3	0.001U	0.001U	0.001U	0.005U	0.005U	0.005U	0.005U
Chloromethane	NS	0.001U	0.001U	0.001U	0.01U	0.01U	0.01U	0.01U
cis-1,2-Dichloroethene	0.25	0.001U	0.001U	0.001U	NA	NA	NA	NA
cis-1,3-Dichloropropene	NS	0.001U	0.001U	0.001U	0.005U	0.005U	0.005U	0.005U
Dibromochloromethane	NS	0.001U	0.001U	0.001U	0.005U	0.005U	0.005U	0.005U
Dibromomethane	NS	0.001U	0.001U	0.001U	NA	NA	NA	NA
Dichlorodifluoromethane	NS	0.001U	0.001U	0.001U	NA	NA	NA	NA
Ethylbenzene	5.5	**0.021**	**0.007**	0.001U	**0.001J**	0.005U	0.005U	**0.0046J**
Hexachlorobutadiene	NS	0.001U	0.001U	0.001U	NA	NA	NA	NA
Isopropylbenzene	5	**0.004**	0.001U	0.001U	NA	NA	NA	NA
m&p-Xylene	1.2	**0.037**	**0.007**	0.001U	NA	NA	NA	NA
Methyl-tert-butyl ether	NS	0.001U	0.001U	0.001U	NA	NA	NA	NA
Methylene Chloride	0.1	0.001U	0.001U	0.001U	0.005U	0.005U	**0.038**	0.005U
n-Butylbenzene	18	0.001U	0.001U	0.001U	NA	NA	NA	NA
n-Propylbenzene	NS	**0.003**	0.001U	0.001U	NA	NA	NA	NA

TABLE 8
SUBSURFACE SOIL ANALYTICAL RESULTS

NYESEG FORMER MGP SITE
BRIDGE STREET PLATTSBURGH, NEW YORK

Parameter	NYSDEC RSCO (mg/kg)	DS-1 1/22/2002 13'-14'	DS-2 1/22/2002 16'-17'	DS-3 1/22/2002 17'-18'	SB-01-11 12/19/2001 10'-11'	SB-01-3A 12/21/2001 12'-13'	SB-01-4A 12/21/2001 12'-13'	Soil-1 11/15/2001 15'
Naphthalene	13	**0.004**	**0.001**	0.001U	NA	NA	NA	NA
o-Xylene	1.2	0.001U	0.001U	0.001U	NA	NA	NA	NA
sec-Butylbenzene	NS	0.001U	0.001U	0.001U	NA	NA	NA	NA
Styrene	NS	0.001U	0.001U	0.001U	0.005U	0.005U	0.005U	NA
tert-Butylbenzene	NS	0.001U	0.001U	0.001U	NA	NA	NA	NA
Tetrachloroethene	1.4	0.001U	0.001U	0.001U	0.005U	0.005U	0.005U	0.005U
Toluene	1.5	**0.001J**	0.001U	0.001U	**0.003J**	0.005U	0.005U	**0.017**
trans-1,2-Dichloroethene	0.3	0.001U	0.001U	0.001U	NA	NA	NA	NA
trans-1,3-Dichloropropene	NS	0.001U	0.001U	0.001U	0.005U	0.005U	0.005U	0.005U
Trichloroethene	0.7	0.001U	0.001U	0.001U	0.005U	0.005U	0.005U	0.005U
Trichlorofluoromethane	NS	0.001U	0.001U	0.001U	NA	NA	NA	0.005U
Vinyl Acetate	NS	NA	NA	NA	0.01U	0.01U	0.01U	NA
Vinyl Chloride	0.2	0.001U	0.001U	0.001U	0.01U	0.01U	0.01U	0.01U
Xylene (total)	1.2	NA	NA	NA	**0.008**	0.005U	0.005U	**0.013**
Total VOCs	*10*	*0.103*	*0.015*	*ND*	*0.02*	*0.002*	*0.038*	0.0536
Semivolatile Organic Compounds								
1,2,4-Trichlorobenzene	3.4	0.37U	0.36U	0.38U	3.3U	0.33U	0.33U	0.33U
1,2-Dichlorobenzene	7.9	0.37U	0.36U	0.38U	3.3U	0.33U	0.33U	0.33U
1,2-Diphenylhydrazine	NS	NA	NA	NA	NA	NA	NA	0.33U
1,3-Dichlorobenzene	1.6	0.37U	0.36U	0.38U	3.3U	0.33U	0.33U	0.33U
1,4-Dichlorobenzene	8.5	0.37U	0.36U	0.38U	3.3U	0.33U	0.33U	0.33U
2,2'-oxybis(1-Chloropropane)	NS	NA	NA	NA	NA	NA	NA	NA
2,4,5-Trichlorophenol	0.1	0.37U	0.36U	0.38U	3.3U	0.33U	0.33U	NA
2,4,6-Trichlorophenol	NS	0.37U	0.36U	0.38U	3.3U	0.33U	0.33U	0.33U
2,4-Dichlorophenol	0.4	0.37U	0.36U	0.38U	3.3U	0.33U	0.33U	0.33U
2,4-Dimethylphenol	NS	0.37U	0.36U	0.38U	3.3U	0.33U	0.33U	0.33U
2,4-Dinitrophenol	0.2	1.9U	1.8U	1.9U	16U	1.65U	1.65U	1.65U
2,4-Dinitrotoluene	NS	0.37U	0.36U	0.38U	3.3U	0.33U	0.33U	0.33U
2,6-Dinitrotoluene	1	0.37U	0.36U	0.38U	3.3U	0.33U	0.33U	0.33U
2-Chloronaphthalene	NS	0.37U	0.36U	0.38U	3.3U	0.33U	0.33U	0.33U

TABLE 8
SUBSURFACE SOIL ANALYTICAL RESULTS

NYESEG FORMER MGP SITE
BRIDGE STREET PLATTSBURGH, NEW YORK

Parameter	NYSDEC RSCO (mg/kg)	DS-1 1/22/2002 13'-14'	DS-2 1/22/2002 16'-17'	DS-3 1/22/2002 17'-18'	SB-01-11 12/19/2001 10'-11'	SB-01-3A 12/21/2001 12'-13'	SB-01-4A 12/21/2001 12'-13'	Soil-1 11/15/2001 15'
2-Chlorophenol	0.8	0.37U	0.36U	0.38U	3.3U	0.33U	0.33U	0.33U
2-Methylnaphthalene	36.4	0.37U	0.36U	0.38U	**6.7**	0.33U	**0.7**	**0.63**
2-Methylphenol	0.1	0.37U	0.36U	0.38U	3.3U	0.33U	0.33U	NA
2-Nitroaniline	0.43	1.9U	1.8U	1.9U	16U	1.65U	1.65U	NA
2-Nitrophenol	0.33	0.37U	0.36U	0.38U	3.3U	0.33U	0.33U	0.33U
3 & 4-Methylphenol (m, p-cresol)	NS	NA	NA	NA	NA	NA	NA	NA
3,3'-Dichlorobenzidine	NS	0.75U	0.72U	0.77U	6.6U	0.66U	0.66U	0.33U
3-Nitroaniline	0.5	1.9U	1.8U	1.9U	16U	1.65U	1.65U	NA
4,6-Dinitro-2-methylphenol	NS	1.9U	1.8U	1.9U	16U	1.65U	1.65U	1.65U
4-Bromophenyl-phenylether	NS	0.37U	0.36U	0.38U	3.3U	0.33U	0.33U	NA
4-Chloro-3-methylphenol	0.24	0.37U	0.36U	0.38U	3.3U	0.33U	0.33U	0.33U
4-Chloroaniline	0.22	0.37U	0.36U	0.38U	3.3U	0.33U	0.33U	NA
4-Chlorophenyl-phenylether	NS	0.37U	0.36U	0.38U	3.3U	0.33U	0.33U	NA
4-Methylphenol	0.9	0.37U	0.36U	0.38U	3.3U	0.33U	0.33U	NA
4-Nitroaniline	NS	1.9U	1.8U	1.9U	16U	1.65U	1.65U	NA
4-Nitrophenol	0.1	1.9U	1.8U	1.9U	16U	1.65U	1.65U	1.65U
Acenaphthene	50*	0.37U	0.36U	0.38U	**10**	0.33U	**0.67**	**0.25J**
Acenaphthylene	41	0.37U	0.36U	0.38U	**22**	0.33U	**0.63**	**0.77**
Anthracene	50*	0.37U	0.36U	0.38U	**31**	0.33U	**0.43**	**0.31J**
Benzidine	NS	NA	NA	NA	NA	NA	NA	2.64U
Benzo(a)anthracene	0.224	0.37U	0.36U	0.38U	**18**	0.33U	**1.3**	**0.21J**
Benzo(a)pyrene	0.061	0.37U	0.36U	0.38U	**12**	0.33U	**1.1**	**0.18J**
Benzo(b)fluoranthene	0.224	0.37U	0.36U	0.38U	**9.7**	0.33U	**0.8**	**0.09J**
Benzo(g,h,i)perylene	50*	0.37U	0.36U	0.38U	**3.3**	0.33U	**0.33**	**0.086J**
Benzo(k)fluoranthene	0.224	0.37U	0.36U	0.38U	**10**	0.33U	**0.73**	**0.11J**
Benzoic Acid	2.7	NA	NA	NA	16U	1.65U	1.65U	NA
Benzyl Alcohol	NS	NA	NA	NA	3.3U	0.33U	0.33U	NA
bis(2-Chloroethoxy)methane	NS	0.37U	0.36U	0.38U	3.3U	0.33U	0.33U	0.33U
bis(2-Chloroethyl)ether	NS	0.37U	0.36U	0.38U	3.3U	0.33U	0.33U	0.33U
bis(2-Chloroisopropyl)ether	NS	0.37U	0.36U	0.38U	3.3U	0.33U	0.33U	0.33U

TABLE 8
SUBSURFACE SOIL ANALYTICAL RESULTS

NYESEG FORMER MGP SITE
BRIDGE STREET PLATTSBURGH, NEW YORK

Parameter	NYSDEC RSCO (mg/kg)	DS-1 1/22/2002 13'-14'	DS-2 1/22/2002 16'-17'	DS-3 1/22/2002 17'-18'	SB-01-11 12/19/2001 10'-11'	SB-01-3A 12/21/2001 12'-13'	SB-01-4A 12/21/2001 12'-13'	Soil-1 11/15/2001 15'
bis(2-Ethylhexyl)phthalate	50*	0.37U	0.36U	0.38U	3.3U	0.33U	**0.29J**	0.33U
Bromophenylphenylether	NS	NA	NA	NA	NA	NA	NA	0.33U
Butylbenzylphthalate	50*	0.37U	0.36U	0.38U	3.3U	0.33U	0.33U	0.33U
Carbazole	NS	0.37U	0.36U	0.38U	NA	NA	NA	NA
Chlorophenylphenylether	NS	NA	NA	NA	NA	NA	NA	0.33U
Chrysene	0.4	0.37U	0.36U	0.38U	**15**	0.33U	**1.3**	**0.2J**
Di-n-butylphthalate	8.1	0.37U	0.36U	0.38U	3.3U	0.33U	0.33U	0.33U
Di-n-octylphthalate	50*	0.37U	0.36U	0.38U	3.3U	0.33U	0.33U	0.33U
Dibenzo(a,h)anthracene	0.014	0.37U	0.36U	0.38U	3.3U	0.33U	**0.093J**	0.33U
Dibenzofuran	6.2	0.37U	0.36U	0.38U	NA	NA	NA	NA
Diethylphthalate	7.1	0.37U	0.36U	0.38U	3.3U	0.33U	0.33U	0.33U
Dimethylphthalate	2	0.37U	0.36U	0.38U	3.3U	0.33U	0.33U	0.33U
Fluoranthene	50*	0.37U	0.36U	0.38U	**31**	0.33U	**1.2**	**0.4**
Fluorene	50*	0.37U	0.36U	0.38U	**27**	0.33U	**0.26J**	**0.37**
Hexachlorobenzene	0.41	0.37U	0.36U	0.38U	3.3U	0.33U	0.33U	0.33U
Hexachlorobutadiene	NS	0.37U	0.36U	0.38U	3.3U	0.33U	0.33U	0.33U
Hexachlorocyclopentadiene	NS	0.37U	0.36U	0.38U	3.3U	0.33U	0.33U	0.33U
Hexachloroethane	NS	0.37U	0.36U	0.38U	3.3U	0.33U	0.33U	0.33U
Indeno(1,2,3-cd)pyrene	3.2	0.37U	0.36U	0.38U	**4.3**	0.33U	**0.4**	**0.067J**
Isophorone	4.4	0.37U	0.36U	0.38U	3.3U	0.33U	0.33U	0.33U
N-Nitroso-di-n-propylamine	NS	0.37U	0.36U	0.38U	3.3U	0.33U	0.33U	0.33U
N-Nitrosodimethylamine	NS	NA	NA	NA	NA	NA	NA	0.33U
N-Nitrosodiphenylamine	NS	0.37U	0.36U	0.38U	3.3U	0.33U	0.33U	0.33U
Naphthalene	13	0.37U	0.36U	0.38U	**37**	0.33U	**1**	**0.93**
Nitrobenzene	0.2	0.37U	0.36U	0.38U	3.3U	0.33U	0.33U	0.33U

TABLE 8
SUBSURFACE SOIL ANALYTICAL RESULTS

NYESEG FORMER MGP SITE
BRIDGE STREET PLATTSBURGH, NEW YORK

Parameter	NYSDEC RSCO (mg/kg)	DS-1 1/22/2002 13'-14'	DS-2 1/22/2002 16'-17'	DS-3 1/22/2002 17'-18'	SB-01-11 12/19/2001 10'-11'	SB-01-3A 12/21/2001 12'-13'	SB-01-4A 12/21/2001 12'-13'	Soil-1 11/15/2001 15'
Pentachlorophenol	1	1.9U	1.8U	1.9U	16U	1.65U	1.65U	1.65U
Phenanthrene	50*	0.37U	0.36U	0.38U	**55**	0.33U	**1.4**	**1.3**
Phenol	0.03	0.37U	0.36U	0.38U	3.3U	0.33U	0.33U	0.33U
Pyrene	50*	0.37U	0.36U	0.38U	**26**	0.33U	**1.1**	**0.53**
Total PAHs	*NS*	*ND*	*ND*	*ND*	*318*	*ND*	*13.4*	*6.43*
Total SVOCs	*500*	*ND*	*ND*	*ND*	*318*	*ND*	*13.7*	*6.43*
			Metals					
Aluminum	SB	**1,260**	NA	NA	NA	NA	NA	NA
Antimony	SB	2.2U	NA	NA	NA	NA	NA	NA
Arsenic	7.5 or SB	0.7U	NA	NA	NA	NA	NA	NA
Barium	300 or SB	**10.8B**	NA	NA	NA	NA	NA	NA
Beryllium	0.16 or SB	NA	NA	NA	NA	NA	NA	NA
Cadmium	1	0.067U	NA	NA	NA	NA	NA	NA
Calcium	SB	NA	NA	NA	NA	NA	NA	NA
Chromium	10	**1.2B**	NA	NA	NA	NA	NA	NA
Cobalt	30 or SB	NA	NA	NA	NA	NA	NA	NA
Copper	25 or SB	**3.5B**	NA	NA	NA	NA	NA	NA
Iron	2000 or SB	**4,560**	NA	NA	NA	NA	NA	NA
Lead	SB	0.31U	NA	NA	NA	NA	NA	NA
Magnesium	SB	NA	NA	NA	NA	NA	NA	NA
Manganese	SB	**122**	NA	NA	NA	NA	NA	NA
Mercury	0.1	**0.017B**	NA	NA	NA	NA	NA	NA
Nickel	13 or SB	**3.8B**	NA	NA	NA	NA	NA	NA
Potassium	SB	NA	NA	NA	NA	NA	NA	NA
Selenium	2 or SB	0.58U	NA	NA	NA	NA	NA	NA
Silver	SB	0.52U	NA	NA	NA	NA	NA	NA
Sodium	SB	NA	NA	NA	NA	NA	NA	NA
Thallium	SB	NA	NA	NA	NA	NA	NA	NA
Vanadium	150 or SB	**4.1B**	NA	NA	NA	NA	NA	NA
Zinc	20 or SB	**11.8**	NA	NA	NA	NA	NA	NA

TABLE 8
SUBSURFACE SOIL ANALYTICAL RESULTS

NYESEG FORMER MGP SITE
BRIDGE STREET PLATTSBURGH, NEW YORK

Parameter	**NYSDEC RSCO (mg/kg)**	**DS-1 1/22/2002 13'-14'**	**DS-2 1/22/2002 16'-17'**	**DS-3 1/22/2002 17'-18'**	**SB-01-11 12/19/2001 10'-11'**	**SB-01-3A 12/21/2001 12'-13'**	**SB-01-4A 12/21/2001 12'-13'**	**Soil-1 11/15/2001 15'**
Total Petroleum Hydrocarbons								
Diesel Range Organics	NS	11U	NA	NA	NA	NA	NA	NA
Gasoline Range Organics	NS	11U	NA	NA	NA	NA	NA	NA
Fuel Oil # 2 (Diesel)	NS	NA	NA	NA	NA	NA	NA	NA
Gasoline	NS	NA	NA	NA	NA	NA	NA	NA
Kerosene	NS	NA	NA	NA	NA	NA	NA	NA
Lubricating Oil	NS	NA	NA	NA	NA	NA	NA	NA
Unidentified Hydrocarbons	NS	NA	NA	NA	NA	NA	NA	NA
General Chemistry								
Cyanide, reactive	NS	NA	NA	NA	NA	NA	NA	NA
Cyanide, amenable	NS	**0.26**	**9.5**	**3.8**	NA	NA	NA	NA
Cyanide, total	NS	**0.19**	**0.39**	**9**	NA	NA	NA	NA
Sulfide, reactive	NS	NA	NA	NA	NA	NA	NA	NA
Total Organic Carbon (TOC)	NS	NA	NA	NA	NA	NA	NA	NA

Notes:
Concentrations shown in mg/kg
NA - Not Analyzed
ND - Not Detected
NS - No RSCO estalished
[] - Indicates guidance value
* - Indicates sample location within area excavated and removed during the June 2001 IRM
B - (metals) - Indicates concentration is estimated between the PQL
D - Surrogate or matrix spike recoveries were not obtained because the extract was diluted for analysis
J - (organics) - Indicates concentration is estimated between the PQL
U - Parameter not detected above the practical quantitation limit
SB - Site Background

TABLE 9
POST EXCAVATION SOIL ANALYTICAL RESULTS

NYESEG FORMER MGP SITE
BRIDGE STREET PLATTSBURGH, NEW YORK

Parameter	NYSDEC RSCO (mg/kg)	1 (BM) 5/10/2001 5'	2 (BM) 5/10/2001 6'	3 (BM) 5/10/2001 4'	4 (SW) 5/10/2001 3'	5 (SW) 5/10/2001 3'	6 (SW) 6/1/2001 2'	7 (SW) 5/10/2001 2'	8 (BM) 5/21/2001 6'	9 (SW) 5/21/2001 4'	10 (BM) 5/2/2001 7'	11 (SW) 5/30/2001 4'
Volatile Organic Compounds												
1,1,1-Trichloroethane	0.8	NA	NA	0.005U	NA	NA	NA	NA	NA	NA	NA	NA
1,1,2,2-Tetrachloroethane	0.6	NA	NA	0.005U	NA	NA	NA	NA	NA	NA	NA	NA
1,1,2-Trichloroethane	NS	NA	NA	0.005U	NA	NA	NA	NA	NA	NA	NA	NA
1,1-Dichloroethane	0.2	NA	NA	0.005U	NA	NA	NA	NA	NA	NA	NA	NA
1,1-Dichloroethene	0.4	NA	NA	0.005U	NA	NA	NA	NA	NA	NA	NA	NA
1,2-Dichloroethane	0.1	NA	NA	0.005U	NA	NA	NA	NA	NA	NA	NA	NA
1,2-Dichloropropane	NS	NA	NA	0.005U	NA	NA	NA	NA	NA	NA	NA	NA
2-Butanone	0.3	NA	NA	0.011U	NA	NA	NA	NA	NA	NA	NA	NA
2-Hexanone	NS	NA	NA	0.011U	NA	NA	NA	NA	NA	NA	NA	NA
4-Methyl-2-Pentanone	1	NA	NA	0.011U	NA	NA	NA	NA	NA	NA	NA	NA
Acetone	0.2	NA	NA	0.011U	NA	NA	NA	NA	NA	NA	NA	NA
Benzene	0.06	0.005U	0.005U	0.005U	0.006U	0.005U	0.006U	0.006U	**0.54J**	0.005U	0.006U	0.006U
Bromodichloromethane	NS	NA	NA	0.005U	NA	NA	NA	NA	NA	NA	NA	NA
Bromoform	NS	NA	NA	0.005U	NA	NA	NA	NA	NA	NA	NA	NA
Bromomethane	NS	NA	NA	0.011U	NA	NA	NA	NA	NA	NA	NA	NA
Carbon Disulfide	2.7	NA	NA	0.005U	NA	NA	NA	NA	NA	NA	NA	NA
Carbon Tetrachloride	0.6	NA	NA	0.005U	NA	NA	NA	NA	NA	NA	NA	NA
Chlorobenzene	1.7	NA	NA	0.005U	NA	NA	NA	NA	NA	NA	NA	NA
Chloroethane	1.9	NA	NA	0.011U	NA	NA	NA	NA	NA	NA	NA	NA
Chloroform	0.3	NA	NA	0.005U	NA	NA	NA	NA	NA	NA	NA	NA
Chloromethane	NS	NA	NA	0.011U	NA	NA	NA	NA	NA	NA	NA	NA
cis-1,2-Dichloroethene	0.25	NA	NA	0.005U	NA	NA	NA	NA	NA	NA	NA	NA
cis-1,3-Dichloropropene	NS	NA	NA	0.005U	NA	NA	NA	NA	NA	NA	NA	NA
Dibromochloromethane	NS	NA	NA	0.005U	NA	NA	NA	NA	NA	NA	NA	NA
Ethylbenzene	5.5	0.005U	0.005U	0.005U	0.006U	0.005U	0.006U	0.006U	**24**	0.005U	0.006U	0.006U
m&p-Xylene	1.2	0.005U	0.005U	0.005U	0.006U	0.005U	0.006U	0.006U	**57**	0.005U	0.006U	0.006U
Methylene Chloride	0.1	NA	NA	0.005U	NA	NA	NA	NA	NA	NA	NA	NA
o-Xylene	1.2	0.005U	0.005U	0.005U	0.006U	0.005U	0.006U	0.006U	**13**	0.005U	0.006U	0.006U
Styrene	NS	NA	NA	0.005U	NA	NA	NA	NA	NA	NA	NA	NA

TABLE 9
POST EXCAVATION SOIL ANALYTICAL RESULTS

NYESEG FORMER MGP SITE
BRIDGE STREET PLATTSBURGH, NEW YORK

Parameter	NYSDEC RSCO (mg/kg)	1 (BM) 5/10/2001 5'	2 (BM) 5/10/2001 6'	3 (BM) 5/10/2001 4'	4 (SW) 5/10/2001 3'	5 (SW) 5/10/2001 3'	6 (SW) 6/1/2001 2'	7 (SW) 5/10/2001 2'	8 (BM) 5/21/2001 6'	9 (SW) 5/21/2001 4'	10 (BM) 5/2/2001 7'	11 (SW) 5/30/2001 4'
Tetrachloroethene	1.4	NA	NA	0.005U	NA	NA	NA	NA	NA	NA	NA	NA
Toluene	1.5	0.005U	0.005U	0.005U	0.006U	0.005U	0.006U	0.006U	**7.4**	0.005U	0.006U	0.006U
trans-1,2-Dichloroethene	0.3	NA	NA	0.005U	NA	NA	NA	NA	NA	NA	NA	NA
trans-1,3-Dichloropropene	NS	NA	NA	0.005U	NA	NA	NA	NA	NA	NA	NA	NA
Trichloroethene	0.7	NA	NA	0.005U	NA	NA	NA	NA	NA	NA	NA	NA
Vinyl Chloride	0.2	NA	NA	0.011U	NA	NA	NA	NA	NA	NA	NA	NA
Total VOCs	*10*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*102*	*ND*	*ND*	*ND*
Semivolatile Organic Compounds												
1,2,4-Trichlorobenzene	3.4	NA	NA	1.8U	NA	NA	NA	NA	NA	NA	NA	NA
1,2-Dichlorobenzene	7.9	NA	NA	1.8U	NA	NA	NA	NA	NA	NA	NA	NA
1,3-Dichlorobenzene	1.6	NA	NA	1.8U	NA	NA	NA	NA	NA	NA	NA	NA
1,4-Dichlorobenzene	8.5	NA	NA	1.8U	NA	NA	NA	NA	NA	NA	NA	NA
2,4,5-Trichlorophenol	0.1	NA	NA	1.8U	NA	NA	NA	NA	NA	NA	NA	NA
2,4,6-Trichlorophenol	NS	NA	NA	1.8U	NA	NA	NA	NA	NA	NA	NA	NA
2,4-Dichlorophenol	0.4	NA	NA	1.8U	NA	NA	NA	NA	NA	NA	NA	NA
2,4-Dimethylphenol	NS	NA	NA	1.8U	NA	NA	NA	NA	NA	NA	NA	NA
2,4-Dinitrophenol	0.2	NA	NA	8.9U	NA	NA	NA	NA	NA	NA	NA	NA
2,4-Dinitrotoluene	NS	NA	NA	1.8U	NA	NA	NA	NA	NA	NA	NA	NA
2,6-Dinitrotoluene	1	NA	NA	1.8U	NA	NA	NA	NA	NA	NA	NA	NA
2-Chloronaphthalene	NS	NA	NA	1.8U	NA	NA	NA	NA	NA	NA	NA	NA
2-Chlorophenol	0.8	NA	NA	1.8U	NA	NA	NA	NA	NA	NA	NA	NA
2-Methylnaphthalene	36.4	0.36U	**0.33J**	**0.21J**	0.39U	0.36U	0.39U	0.37U	**45**	0.37U	0.39U	0.42U
2-Methylphenol	0.1	NA	NA	1.8U	NA	NA	NA	NA	NA	NA	NA	NA
2-Nitroaniline	0.43	NA	NA	8.9U	NA	NA	NA	NA	NA	NA	NA	NA
2-Nitrophenol	0.33	NA	NA	1.8U	NA	NA	NA	NA	NA	NA	NA	NA
3,3'-Dichlorobenzidine	NS	NA	NA	3.5U	NA	NA	NA	NA	NA	NA	NA	NA
3-Nitroaniline	0.5	NA	NA	8.9U	NA	NA	NA	NA	NA	NA	NA	NA
4,6-Dinitro-2-methylphenol	NS	NA	NA	8.9U	NA	NA	NA	NA	NA	NA	NA	NA
4-Bromophenyl-phenylether	NS	NA	NA	1.8U	NA	NA	NA	NA	NA	NA	NA	NA
4-Chloro-3-methylphenol	0.24	NA	NA	1.8U	NA	NA	NA	NA	NA	NA	NA	NA

TABLE 9
POST EXCAVATION SOIL ANALYTICAL RESULTS

NYESEG FORMER MGP SITE
BRIDGE STREET PLATTSBURGH, NEW YORK

Parameter	**NYSDEC RSCO (mg/kg)**	**1 (BM) 5/10/2001 5'**	**2 (BM) 5/10/2001 6'**	**3 (BM) 5/10/2001 4'**	**4 (SW) 5/10/2001 3'**	**5 (SW) 5/10/2001 3'**	**6 (SW) 6/1/2001 2'**	**7 (SW) 5/10/2001 2'**	**8 (BM) 5/21/2001 6'**	**9 (SW) 5/21/2001 4'**	**10 (BM) 5/2/2001 7'**	**11 (SW) 5/30/2001 4'**
4-Chloroaniline	0.22	NA	NA	1.8U	NA	NA	NA	NA	NA	NA	NA	NA
4-Chlorophenyl-phenylether	NS	NA	NA	1.8U	NA	NA	NA	NA	NA	NA	NA	NA
4-Methylphenol	0.9	NA	NA	1.8U	NA	NA	NA	NA	NA	NA	NA	NA
4-Nitroaniline	NS	NA	NA	8.9U	NA	NA	NA	NA	NA	NA	NA	NA
4-Nitrophenol	0.1	NA	NA	8.9U	NA	NA	NA	NA	NA	NA	NA	NA
Acenaphthene	50*	0.36U	**0.37J**	**0.2J**	0.39U	0.36U	0.39U	0.37U	**51**	0.37U	0.39U	0.42U
Acenaphthylene	41	**0.14J**	**1.5J**	**1.2J**	0.39U	0.36U	0.39U	0.37U	**6.7J**	0.37U	**0.066J**	0.42U
Anthracene	50*	**0.67**	**8.2**	**3**	0.071U	0.36U	**0.21J**	**0.055J**	**21**	**0.37J**	0.39U	0.42U
Benzo(a)anthracene	0.224	**1.6**	**18**	**6.3**	**0.069J**	0.36U	**0.35J**	**0.3J**	**17**	**0.14J**	**0.1J**	0.42U
Benzo(a)pyrene	0.061	**1.6**	**14**	**6.5**	**0.085J**	**0.029J**	**0.31J**	**0.29J**	**12**	**0.16J**	**0.13J**	0.42U
Benzo(b)fluoranthene	0.224	**1.7**	**18**	**7.7**	**0.096J**	**0.029J**	**0.36J**	**0.39**	**10**	**0.17J**	**0.12J**	0.42U
Benzo(g,h,i)perylene	50*	**1.1**	**9.3**	**2.7**	**0.14J**	**0.044J**	**0.14J**	**0.22J**	**4.2J**	**0.086J**	**0.16J**	0.42U
Benzo(k)fluoranthene	0.224	**0.73**	**7.1**	**2.5**	**0.057J**	0.36U	**0.15J**	**0.15J**	**6J**	**0.11J**	**0.076J**	0.42U
bis(2-Chloroethoxy)methane	NS	NA	NA	1.8U	NA	NA	NA	NA	NA	NA	NA	NA
bis(2-Chloroethyl)ether	NS	NA	NA	1.8U	NA	NA	NA	NA	NA	NA	NA	NA
bis(2-Chloroisopropyl)ether	NS	NA	NA	1.8U	NA	NA	NA	NA	NA	NA	NA	NA
bis(2-Ethylhexyl)phthalate	50*	NA	NA	1.8U	NA	NA	NA	NA	NA	NA	NA	NA
Butylbenzylphthalate	50*	NA	NA	1.8U	NA	NA	NA	NA	NA	NA	NA	NA
Carbazole	NS	NA	NA	**0.54J**	NA	NA	NA	NA	NA	NA	NA	NA
Chrysene	0.4	**1.4**	**15**	**5.7**	**0.057J**	0.36U	**0.3J**	**0.28J**	**16**	**0.14J**	**0.11J**	0.42U
Di-n-butylphthalate	8.1	NA	NA	1.8U	NA	NA	NA	NA	NA	NA	NA	NA
Di-n-octylphthalate	50*	NA	NA	1.8U	NA	NA	NA	NA	NA	NA	NA	NA
Dibenzo(a,h)anthracene	0.014	**0.27J**	**2.8J**	**0.56J**	**0.047J**	0.36U	**0.044J**	**0.064J**	**1.1J**	0.37U	0.39U	0.42U
Dibenzofuran	6.2	0.36U	**0.57J**	**0.45J**	0.39U	0.36U	0.39U	0.37U	**2.5J**	0.37U	0.39U	0.42U
Diethylphthalate	7.1	NA	NA	1.8U	NA	NA	NA	NA	NA	NA	NA	NA
Dimethylphthalate	2	NA	NA	1.8U	NA	NA	NA	NA	NA	NA	NA	NA
Fluoranthene	50*	**2.5**	**25**	**12**	**0.071J**	0.36U	**0.68**	**0.47**	**26**	**0.16J**	**0.068J**	0.42U
Fluorene	50*	**0.17J**	**1.9J**	**1.2J**	0.39U	0.36U	0.39U	0.37U	**24**	0.37U	0.39U	0.42U
Hexachlorobenzene	0.41	NA	NA	1.8U	NA	NA	NA	NA	NA	NA	NA	NA
Hexachlorobutadiene	NS	NA	NA	1.8U	NA	NA	NA	NA	NA	NA	NA	NA

TABLE 9
POST EXCAVATION SOIL ANALYTICAL RESULTS

NYESEG FORMER MGP SITE
BRIDGE STREET PLATTSBURGH, NEW YORK

Parameter	NYSDEC RSCO (mg/kg)	1 (BM) 5/10/2001 5'	2 (BM) 5/10/2001 6'	3 (BM) 5/10/2001 4'	4 (SW) 5/10/2001 3'	5 (SW) 5/10/2001 3'	6 (SW) 6/1/2001 2'	7 (SW) 5/10/2001 2'	8 (BM) 5/21/2001 6'	9 (SW) 5/21/2001 4'	10 (BM) 5/2/2001 7'	11 (SW) 5/30/2001 4'
Hexachlorocyclopentadiene	NS	NA	NA	1.8U	NA	NA	NA	NA	NA	NA	NA	NA
Hexachloroethane	NS	NA	NA	1.8U	NA	NA	NA	NA	NA	NA	NA	NA
Indeno(1,2,3-cd)pyrene	3.2	**0.96**	**9**	**2.7**	**0.12J**	0.36U	**0.17J**	**0.21J**	**3.9J**	**0.095J**	**0.057J**	0.42U
Isophorone	4.4	NA	NA	1.8U	NA	NA	NA	NA	NA	NA	NA	NA
N-Nitroso-di-n-propylamine	NS	NA	NA	1.8U	NA	NA	NA	NA	NA	NA	NA	NA
N-Nitrosodiphenylamine	NS	NA	NA	1.8U	NA	NA	NA	NA	NA	NA	NA	NA
Naphthalene	13	**0.061J**	**0.91J**	**0.3J**	0.39U	0.36U	0.39U	0.37U	**98**	0.37U	**0.17J**	0.42U
Nitrobenzene	0.2	NA	NA	1.8U	NA	NA	NA	NA	NA	NA	NA	NA
Pentachlorophenol	1	NA	NA	8.9U	NA	NA	NA	NA	NA	NA	NA	NA
Phenanthrene	50*	**1.1**	**14**	**7.6**	**0.39J**	0.36U	**0.34J**	**0.16J**	**88**	**0.043J**	**0.11J**	0.42U
Phenol	0.03	NA	NA	1.8U	NA	NA	NA	NA	NA	NA	NA	NA
Pyrene	50*	**1.9**	**27**	**11**	**0.059J**	0.36U	**0.58**	**0.42**	**34**	**0.19J**	**0.14J**	0.42U
Total PAHs	*NS*	*15.9*	*173*	*72.4*	*1.19*	*0.102*	*3.63*	*3.01*	*466*	*1.66*	*1.31*	*ND*
Total SVOCs	*500*	*15.9*	*173*	*71.8*	*1.19*	*0.102*	*3.63*	*3.01*	*466*	*1.66*	*1.31*	*ND*
Metals												
Lead	SB	**16.5E**	**998E**	**216E**	**6.3E**	**6.9E**	**9**	**35.5E**	**56.6***	**33.4***	**1,280E***	NA
Mercury	0.1	**0.16*N**	**0.74*N**	**0.41*N**	**0.14*N**	**0.16*N**	**0.1B**	**0.18*N**	**0.57***	**0.59***	**1.2*N**	NA

Notes:
Concentrations shown in mg/kg.
NA - Not Analyzed
ND - Not Detected
NS - No RSCO established
* - Indicates sample location within area excavated and removed during the June 2001 IRM
B - (metals) - Indicates concentration is estimated between the PQL and the MDL
E - Serial dilution exceeds the control limits
N - Spike recovery exceeds the upper or lower control limits
U - Not detected above PQL shown
J - Estimated value above MDL but less than the PQL
BM - Excavation bottom sample
SW - Excavation sidewall sample

TABLE 9
POST EXCAVATION SOIL ANALYTICAL RESULTS

NYESEG FORMER MGP SITE
BRIDGE STREET PLATTSBURGH, NEW YORK

Parameter	NYSDEC RSCO (mg/kg)	12 (BM) 5/30/2001 8'	13 (BM) 5/30/2001 8'	14 (SW) 5/31/2001 4'	15 (BM) 5/31/2001 6'	16 (SW) 5/31/2001 2'	17 (SW) 5/31/2001 3'	18 (SW) 6/1/2001 2'	19 (SW) 6/1/2001 3'	20 (SW) 6/1/2001 3'	21 (SW) 6/1/2001 4'	22 (SW) 6/1/2001 3'	23 (SW) 6/2/2001 3'
Volatile Organic Compounds													
1,1,1-Trichloroethane	0.8	1.8U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,1,2,2-Tetrachloroethane	0.6	1.8U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,1,2-Trichloroethane	NS	1.8U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,1-Dichloroethane	0.2	1.8U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,1-Dichloroethene	0.4	1.8U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2-Dichloroethane	0.1	1.8U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2-Dichloropropane	NS	1.8U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Butanone	0.3	3.6U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Hexanone	NS	3.6U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Methyl-2-Pentanone	1	3.6U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Acetone	0.2	3.6U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzene	0.06	**4.3**	**0.014**	0.006U	**2.6**	0.006U	0.006U	0.006U	0.006U	0.005U	0.006U	0.006U	0.006U
Bromodichloromethane	NS	1.8U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Bromoform	NS	1.8U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Bromomethane	NS	3.6U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Carbon Disulfide	2.7	1.8U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Carbon Tetrachloride	0.6	1.8U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chlorobenzene	1.7	1.8U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chloroethane	1.9	3.6U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chloroform	0.3	**1.4BJ**	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chloromethane	NS	3.6U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
cis-1,2-Dichloroethene	0.25	1.8U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
cis-1,3-Dichloropropene	NS	1.8U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Dibromochloromethane	NS	1.8U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Ethylbenzene	5.5	**71**	**0.044**	0.006U	**5.4**	0.006U	0.006U	0.006U	0.006U	0.005U	0.006U	0.006U	0.006U
m&p-Xylene	1.2	**120**	**0.065**	0.006U	**34**	0.006U	0.006U	0.006U	0.006U	0.005U	0.006U	0.006U	0.006U
Methylene Chloride	0.1	1.8U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
o-Xylene	1.2	**27**	**0.026**	0.006U	13	0.006U	0.006U	0.006U	0.006U	0.005U	0.006U	0.006U	0.006U
Styrene	NS	1.8U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

TABLE 9
POST EXCAVATION SOIL ANALYTICAL RESULTS

NYESEG FORMER MGP SITE
BRIDGE STREET PLATTSBURGH, NEW YORK

Parameter	NYSDEC RSCO (mg/kg)	12 (BM) 5/30/2001 8'	13 (BM) 5/30/2001 8'	14 (SW) 5/31/2001 4'	15 (BM) 5/31/2001 6'	16 (SW) 5/31/2001 2'	17 (SW) 5/31/2001 3'	18 (SW) 6/1/2001 2'	19 (SW) 6/1/2001 3'	20 (SW) 6/1/2001 3'	21 (SW) 6/1/2001 4'	22 (SW) 6/1/2001 3'	23 (SW) 6/2/2001 3'
Tetrachloroethene	1.4	1.8U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Toluene	1.5	**21**	**0.025**	0.006U	**3.2**	0.006U	0.006U	0.006U	0.006U	0.005U	**0.003J**	**0.002J**	0.006U
trans-1,2-Dichloroethene	0.3	1.8U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
trans-1,3-Dichloropropene	NS	1.8U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Trichloroethene	0.7	1.8U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Vinyl Chloride	0.2	3.6U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Total VOCs	*10*	*243*	*0.174*	*ND*	*58.2*	*ND*	*ND*	*ND*	*ND*	*ND*	*0.003*	*0.002*	*ND*
Semivolatile Organic Compounds													
1,2,4-Trichlorobenzene	3.4	140U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2-Dichlorobenzene	7.9	140U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,3-Dichlorobenzene	1.6	140U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,4-Dichlorobenzene	8.5	140U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,4,5-Trichlorophenol	0.1	140U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,4,6-Trichlorophenol	NS	140U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,4-Dichlorophenol	0.4	140U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,4-Dimethylphenol	NS	140U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,4-Dinitrophenol	0.2	710U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,4-Dinitrotoluene	NS	140U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,6-Dinitrotoluene	1	140U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Chloronaphthalene	NS	140U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Chlorophenol	0.8	140U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Methylnaphthalene	36.4	**910**	0.48U	**2.2**	**14**	**0.24J**	**0.3J**	0.37U	0.39U	0.36U	0.41U	0.4U	0.38U
2-Methylphenol	0.1	140U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Nitroaniline	0.43	710U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Nitrophenol	0.33	140U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
3,3'-Dichlorobenzidine	NS	140U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
3-Nitroaniline	0.5	140U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4,6-Dinitro-2-methylphenol	NS	710U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Bromophenyl-phenylether	NS	140U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Chloro-3-methylphenol	0.24	140U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

TABLE 9
POST EXCAVATION SOIL ANALYTICAL RESULTS

NYESEG FORMER MGP SITE
BRIDGE STREET PLATTSBURGH, NEW YORK

Parameter	NYSDEC RSCO (mg/kg)	12 (BM) 5/30/2001 8'	13 (BM) 5/30/2001 8'	14 (SW) 5/31/2001 4'	15 (BM) 5/31/2001 6'	16 (SW) 5/31/2001 2'	17 (SW) 5/31/2001 3'	18 (SW) 6/1/2001 2'	19 (SW) 6/1/2001 3'	20 (SW) 6/1/2001 3'	21 (SW) 6/1/2001 4'	22 (SW) 6/1/2001 3'	23 (SW) 6/2/2001 3'
4-Chloroaniline	0.22	140U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Chlorophenyl-phenylether	NS	140U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Methylphenol	0.9	140U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Nitroaniline	NS	710U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Nitrophenol	0.1	710U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Acenaphthene	50*	**440**	**1.2**	**3.9**	**23**	**0.78**	**0.047J**	0.37U	0.39U	0.36U	0.41U	0.4U	0.38U
Acenaphthylene	41	**530**	**0.48**	**1.9J**	**4.4J**	**0.21J**	**0.5**	0.37U	0.39U	0.36U	0.41U	0.4U	0.38U
Anthracene	50*	**270**	**3.2**	**9.7**	**23**	**1.4**	**0.24J**	0.37U	**0.22J**	0.36U	**0.054J**	0.4U	0.38U
Benzo(a)anthracene	0.224	**170**	**2.1**	**17**	**26**	**2**	**2**	**0.067J**	**0.64**	0.36U	**0.22J**	**0.095J**	**0.066J**
Benzo(a)pyrene	0.061	**100J**	**1.8**	**18**	**27**	**1.8**	**4.9**	**0.063J**	**0.53**	0.36U	**0.26J**	**0.14J**	**0.079J**
Benzo(b)fluoranthene	0.224	140U	**2**	**20**	**22**	**1.5**	**4**	**0.088J**	**0.69**	0.36U	**0.31J**	**0.15J**	**0.11J**
Benzo(g,h,i)perylene	50*	**34J**	**0.91**	**7**	**8BJ**	**0.51**	**3.3**	0.37U	**0.31J**	0.36U	**0.17J**	**0.096J**	**0.061J**
Benzo(k)fluoranthene	0.224	**130J**	**0.94**	**12**	**15**	**0.91**	**3.1**	**0.04J**	**0.31J**	0.36U	**0.12J**	**0.057J**	**0.059J**
bis(2-Chloroethoxy)methane	NS	140U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
bis(2-Chloroethyl)ether	NS	140U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
bis(2-Chloroisopropyl)ether	NS	140U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
bis(2-Ethylhexyl)phthalate	50*	140U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Butylbenzylphthalate	50*	140U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Carbazole	NS	140U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chrysene	0.4	**190**	**1.5**	**13**	**21**	**1.5**	**2**	**0.06J**	**0.61**	0.36U	**0.26J**	**0.11J**	**0.068J**
Di-n-butylphthalate	8.1	140U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Di-n-octylphthalate	50*	140U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Dibenzo(a,h)anthracene	0.014	**23J**	**0.14J**	**0.73J**	**1.8J**	**0.13J**	**0.6**	0.37U	**0.077J**	0.36U	0.41U	0.4U	0.38U
Dibenzofuran	6.2	**33J**	**0.8**	**1.8J**	11U	**0.32J**	0.43U	0.37U	0.39U	0.36U	0.41U	0.4U	0.38U
Diethylphthalate	7.1	140U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Dimethylphthalate	2	140U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Fluoranthene	50*	**300**	**4**	**27**	**52**	**3.3**	**0.85**	**0.094J**	**1.1**	0.36U	**0.27J**	**0.084J**	**0.084J**
Fluorene	50*	**360**	**1.4**	**4.4**	**15**	**0.87**	0.43U	0.37U	0.39U	0.36U	0.41U	0.4U	0.38U
Hexachlorobenzene	0.41	140U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Hexachlorobutadiene	NS	140U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

TABLE 9
POST EXCAVATION SOIL ANALYTICAL RESULTS

NYESEG FORMER MGP SITE
BRIDGE STREET PLATTSBURGH, NEW YORK

Parameter	NYSDEC RSCO (mg/kg)	12 (BM) 5/30/2001 8'	13 (BM) 5/30/2001 8'	14 (SW) 5/31/2001 4'	15 (BM) 5/31/2001 6'	16 (SW) 5/31/2001 2'	17 (SW) 5/31/2001 3'	18 (SW) 6/1/2001 2'	19 (SW) 6/1/2001 3'	20 (SW) 6/1/2001 3'	21 (SW) 6/1/2001 4'	22 (SW) 6/1/2001 3'	23 (SW) 6/2/2001 3'
Hexachlorocyclopentadiene	NS	140U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Hexachloroethane	NS	140U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Indeno(1,2,3-cd)pyrene	3.2	**28J**	**0.7**	**8.7**	**11J**	**0.63**	**3.4**	0.37U	**0.35J**	0.36U	**0.18J**	**0.1J**	**0.063J**
Isophorone	4.4	140U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
N-Nitroso-di-n-propylamine	NS	140U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
N-Nitrosodiphenylamine	NS	140U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Naphthalene	13	**2,100**	**1.8**	**2.6**	**28**	**0.3J**	0.43U	0.37U	0.39U	0.36U	0.41U	0.4U	0.38U
Nitrobenzene	0.2	140U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Pentachlorophenol	1	710U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Phenanthrene	50*	**1,100**	**6.1**	**22**	**68**	**3.7**	**0.29J**	**0.04J**	**0.46**	0.36U	**0.11J**	0.4U	0.38U
Phenol	0.03	140U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Pyrene	50*	**500**	**2.7**	**25**	**61**	**3**	**2.5**	**0.094J**	**1**	0.36U	**0.33J**	**0.13J**	**0.11J**
Total PAHs	*NS*	*7,218*	*31.8*	*197*	*420*	*23.1*	*28.0*	*0.546*	*6.30*	*ND*	*2.28*	*0.962*	*0.700*
Total SVOCs	*500*	*7,218*	*31.8*	*197*	*420*	*23.1*	*28.0*	*0.546*	*6.30*	*ND*	*2.28*	*0.962*	*0.700*
Metals													
Lead	SB	**52.9***	**128***	NA	NA	NA	**1,060**	**6.4**	**9.5**	**4.9**	**88**	**12.1**	**32.1**
Mercury	0.1	**0.29**	**0.22**	NA	NA	NA	**0.58***	**0.11**	**0.085B**	**0.057B**	**0.43**	**0.15**	**0.098B**

Notes:
Concentrations shown in mg/kg.
NA - Not Analyzed
ND - Not Detected
NS - No RSCO established
* - Indicates sample location within area excavated and removed during the June 2001 IRM
B - (metals) - Indicates concentration is estimated between the PQL and the MDL
E - Serial dilution exceeds the control limits
N - Spike recovery exceeds the upper or lower control limits
U - Not detected above PQL shown
J - Estimated value above MDL but less than the PQL
BM - Excavation bottom sample
SW - Excavation sidewall sample

TABLE 10
SUMMARY OF MONITORING WELL INFORMATION

NYESEG FORMER MGP SITE
BRIDGE STREET PLATTSBURGH, NEW YORK

Well	Ground Surface Elevation (feet msl[1])	Measuring Point Elevation (feet msl)	Coordinate[2]		Installation Date	Casing Diameter (inches)	Casing Material	Screen Diameter (inches)	Screen Material	Screen Depth (feet bgs)		Screen Elevation (feet msl)		Comments
			Northing	Easting						Top	Bottom	Top	Bottom	
Overburden Monitoring Wells														
MW-99-01	122.90	122.54	2137763.26	766356.38	7/13/1999	2	PVC	2	PVC	2.7	7.7	120.2	115.2	Well abandoned in 2001
MW-99-02	121.45	121.16	2137848.03	766416.11	7/13/1999	2	PVC	2	PVC	3.0	8.0	118.5	113.5	Well abandoned in 2001
MW-99-03	120.14	120.11	2137926.23	766514.87	7/13/1999	2	PVC	2	PVC	6.0	12.0	114.1	108.1	
MW-99-04	120.53	119.33	2137965.04	766424.11	7/13/1999	2	PVC	2	PVC	5.0	10.0	115.5	110.5	
MW-99-05	120.94	120.94	2137980.20	766351.18	7/14/1999	2	PVC	2	PVC	6.0	11.0	114.9	109.9	
Bedrock Monitoring Wells														
Angled Boring	122.00	121.57	2137864.48	766362.83	9/1/2002	4	PVC	3 7/8	Open hole	9.6	106.1	113.7	30.1	Screen elevation adjusted for drillling angle of 60° from horizontal
MW-10B	122.60	122.15	2137830.66	766564.59	9/1/2002	4	PVC	3 7/8	Open hole	24.9	62.0	97.7	60.6	
MW-11B	120.36	119.81	2137941.43	766469.23	1/9/2002	4	Steel	3 7/8	Open hole	15.5	41.5	104.9	78.9	
MW-1B	123.30	122.80	2137777.03	766373.30	12/3/2001	4	Steel	3 7/8	Open hole	13.0	38.5	110.3	84.8	
MW-2B	122.72	122.32	2137830.36	766426.33	12/7/2001	4	Steel	3 7/8	Open hole	16.0	40.0	106.7	82.7	
MW-3B	120.14	120.11	2137926.23	766514.87	9/1/2002	4	PVC	3 7/8	Open hole	17.5	61.0	102.6	59.1	
MW-6B	122.47	121.90	2137867.07	766380.10	12/5/2001	4	Steel	3 7/8	Open hole	13.2	38.5	109.3	84.0	
MW-7BD	121.30	121.06	2137889.92	766431.68	1/9/2002	4	Steel	3 7/8	Open hole	40.0	50.0	81.3	71.3	
MW-7BS	120.86	120.72	2137897.80	766435.76	12/13/2001	4	Steel	3 7/8	Open hole	9.5	14.5	111.4	106.4	
MW-7DD	122.72	121.33	2137866.37	766431.68	9/1/2002	4	PVC	3 7/8	Open hole	70.5	85.5	52.2	37.2	
MW-8B	121.32	120.55	2137903.83	766406.69	12/12/2001	4	Steel	3 7/8	Open hole	7.9	40.0	113.4	81.3	
MW-8BD	121.32	120.74	2137903.69	766401.14	12/12/2001	4	Steel	3 7/8	Open hole	28.0	38.0	93.3	83.3	
MW-9B	121.72	121.06	2137865.69	766341.94	12/19/2001	4	Steel	3 7/8	Open hole	9.9	36.0	111.8	85.7	

Notes:
1 - Feet above mean sea level. National geodetic vertcal datum of 1929 (NGVD29)
2 - New York State Plane - East. North American Datum 1927 (NAD27).

TABLE 11
OVERBURDEN GROUNDWATER ANALYTICAL RESULTS

NYESEG FORMER MGP SITE
BRIDGE STREET PLATTSBURGH, NEW YORK

Parameter	NYSDEC GW Standard	MW-99-02 10/20/1999	MW-99-02 4/4/2000	MW-99-03 10/20/1999	MW-99-03 4/4/2000	MW-99-04 10/20/1999	MW-99-04 4/4/2000	MW-99-05 10/20/1999	MW-99-05 4/4/2000	MW-99-05 1/30/2002
Volatile Organic Compounds										
1,1,1-Trichloroethane	5	10U	10U	10U	10U	10U	10U	10U	10U	NA
1,1,2,2-Tetrachloroethane	5	10U	10U	10U	10U	10U	10U	10U	10U	NA
1,1,2-Trichloroethane	1	10U	10U	10U	10U	10U	10U	10U	10U	NA
1,1-Dichloroethane	5	10U	10U	10U	10U	10U	10U	10U	10U	NA
1,1-Dichloroethene	5	10U	10U	10U	10U	10U	10U	10U	10U	NA
1,2-Dichloroethane	0.6	10U	10U	10U	10U	10U	10U	10U	10U	NA
1,2-Dichloroethene (cis)	5	10U	10U	10U	10U	10U	10U	10U	10U	NA
1,2-Dichloroethene (trans)	5	10U	10U	10U	10U	10U	10U	10U	10U	NA
1,2-Dichloropropane	1	10U	10U	10U	10U	10U	10U	10U	10U	NA
1,3-Dichloropropene (cis)	5	10U	10U	10U	10U	10U	10U	10U	10U	NA
1,3-Dichloropropene (trans)	5	10U	10U	10U	10U	10U	10U	10U	10U	NA
2-Hexanone	[50]	10U	10U	10U	10U	10U	10U	10U	10U	NA
4-Methyl-2-Pentanone	NS	10U	10U	10U	10U	10U	10U	10U	10U	NA
Acetone	[50]	10U	10U	10U	10U	10U	10U	**14**	10U	NA
Benzene	1	10U	10U	10U	10U	10U	10U	**2J**	10U	NA
Bromodichloromethane	[50]	10U	10U	10U	10U	10U	10U	10U	10U	NA
Bromoform	[50]	10U	10U	10U	10U	10U	10U	10U	10U	NA
Bromomethane	5	10U	10U	10U	10U	10U	10U	10U	10U	NA
Carbon Disulfide	NS	10U	10U	10U	10U	10U	10U	10U	10U	NA
Carbon Tetrachloride	5	10U	10U	10U	10U	10U	10U	10U	10U	NA
Chlorobenzene	5	10U	10U	10U	10U	10U	10U	10U	10U	NA
Chloroethane	5	10U	10U	10U	10U	10U	10U	10U	10U	NA
Chloroform	7	10U	10U	10U	10U	10U	10U	10U	10U	NA
Chloromethane	NS	10U	10U	10U	10U	10U	10U	10U	10U	NA
Dibromochloromethane	[50]	10U	10U	10U	10U	10U	10U	10U	10U	NA
Ethylbenzene	5	10U	10U	10U	10U	10U	10U	**2J**	10U	NA
Methyl ethyl ketone (2-Butanone)	5	10U	10U	10U	10U	10U	10U	10U	10U	NA
Methylene Chloride	5	11U	10U	11U	10U	11U	10U	11U	10U	NA

TABLE 11
OVERBURDEN GROUNDWATER ANALYTICAL RESULTS

NYESEG FORMER MGP SITE
BRIDGE STREET PLATTSBURGH, NEW YORK

Parameter	NYSDEC GW Standard	MW-99-02 10/20/1999	MW-99-02 4/4/2000	MW-99-03 10/20/1999	MW-99-03 4/4/2000	MW-99-04 10/20/1999	MW-99-04 4/4/2000	MW-99-05 10/20/1999	MW-99-05 4/4/2000	MW-99-05 1/30/2002
Styrene	5	10U	10U	10U	10U	10U	10U	10U	10U	NA
Tetrachloroethene	5	10U	10U	10U	10U	10U	10U	10U	10U	NA
Toluene	5	10U	10U	10U	10U	10U	10U	**1J**	10U	NA
Trichloroethene	5	10U	10U	10U	10U	10U	10U	10U	10U	NA
Vinyl Chloride	2	10U	10U	10U	10U	10U	10U	10U	10U	NA
Xylene (total)	5	10U	10U	10U	10U	10U	10U	**4J**	10U	NA
Total VOCs	*NS*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*23*	*ND*	*NA*
Semivolatile Organic Compounds										
1,2,4-Trichlorobenzene	5	10U	10U	10U	10U	10U	10U	10U	11U	NA
1,2-Dichlorobenzene	3	10U	10U	10U	10U	10U	10U	10U	11U	NA
1,3-Dichlorobenzene	3	10U	10U	10U	10U	10U	10U	10U	11U	NA
1,4-Dichlorobenzene	3	10U	10U	10U	10U	10U	10U	10U	11U	NA
2,2'-oxybis(1-Chloropropane)	NS	10U	10U	10U	10U	10U	10U	10U	11U	NA
2,4,5-Trichlorophenol	NS	25U	26U	25U	26U	25U	26U	25U	27U	NA
2,4,6-Trichlorophenol	NS	10U	10U	10U	10U	10U	10U	10U	11U	NA
2,4-Dichlorophenol	5	10U	10U	10U	10U	10U	10U	10U	11U	NA
2,4-Dimethylphenol	[50]	10U	10U	10U	10U	10U	10U	10U	11U	NA
2,4-Dinitrophenol	[10]	25U	26U	25U	26U	25U	26U	25U	27U	NA
2,4-Dinitrotoluene	5	10U	10U	10U	10U	10U	10U	10U	11U	NA
2,6-Dinitrotoluene	5	10U	10U	10U	10U	10U	10U	10U	11U	NA
2-Chloronaphthalene	[10]	10U	10U	10U	10U	10U	10U	10U	11U	NA
2-Chlorophenol	NS	10U	10U	10U	10U	10U	10U	10U	11U	NA
2-Methylnaphthalene	NS	10U	10U	10U	10U	10U	10U	10U	11U	NA
2-Methylphenol (o-cresol)	1**	10U	10U	10U	10U	10U	10U	10U	11U	NA
2-Nitroaniline	5	25U	26U	25U	26U	25U	26U	25U	27U	NA
2-Nitrophenol	NS	10U	10U	10U	10U	10U	10U	10U	11U	NA
3,3'-Dichlorobenzidine	5	10U	10U	10U	10U	10U	10U	10U	11U	NA
3-Nitroaniline	5	25U	26U	25U	26U	25U	26U	25U	27U	NA
4,6-Dinitro-2-Methylphenol	NS	25U	26U	25U	26U	25U	26U	25U	27U	NA

TABLE 11
OVERBURDEN GROUNDWATER ANALYTICAL RESULTS

NYESEG FORMER MGP SITE
BRIDGE STREET PLATTSBURGH, NEW YORK

Parameter	NYSDEC GW Standard	MW-99-02 10/20/1999	MW-99-02 4/4/2000	MW-99-03 10/20/1999	MW-99-03 4/4/2000	MW-99-04 10/20/1999	MW-99-04 4/4/2000	MW-99-05 10/20/1999	MW-99-05 4/4/2000	MW-99-05 1/30/2002
4-Bromophenyl-phenylether	NS	10U	10U	10U	10U	10U	10U	10U	11U	NA
4-Chloro-3-Methylphenol	NS	10U	10U	10U	10U	10U	10U	10U	11U	NA
4-Chloroaniline	5	10U	10U	10U	10U	10U	10U	10U	11U	NA
4-Chlorophenyl-phenylether	NS	10U	10U	10U	10U	10U	10U	10U	11U	NA
4-Methylphenol (p-cresol)	1**	10U	10U	10U	10U	10U	10U	10U	11U	NA
4-Nitroaniline	5	25U	26U	25U	26U	25U	26U	25U	27U	NA
4-Nitrophenol	NS	25U	26U	25U	26U	25U	26U	25U	27U	NA
Acenaphthene	[20]	10U	10U	10U	10U	10U	10U	**27**	**13**	NA
Acenaphthylene	NS	10U	10U	10U	10U	10U	10U	**37**	**17**	NA
Anthracene	[50]	10U	10U	10U	10U	10U	10U	**7J**	**3J**	NA
Benzo(a)anthracene	[0.002]	10U	10U	10U	10U	10U	10U	**1J**	11U	NA
Benzo(a)pyrene	[0.002]	10U	10U	10U	10U	10U	10U	10U	11U	NA
Benzo(b)fluoranthene	[0.002]	10U	10U	10U	10U	10U	10U	10U	11U	NA
Benzo(g,h,i)perylene	NS	10U	10U	10U	10U	10U	10U	10U	11U	NA
Benzo(k)fluoranthene	[0.002]	10U	10U	10U	10U	10U	10U	10U	11U	NA
bis(2-Chloroethoxy)methane	5	10U	10U	10U	10U	10U	10U	10U	11U	NA
bis(2-Chloroethyl)ether	1	10U	10U	10U	10U	10U	10U	10U	11U	NA
bis(2-Ethylhexyl)phthalate	5	10U	10U	10U	10U	10U	10U	10U	11U	NA
Butylbenzylphthalate	[50]	10U	10U	10U	10U	10U	10U	10U	11U	NA
Carbazole	NS	10U	10U	10U	10U	10U	10U	10U	11U	NA
Chrysene	[0.002]	10U	10U	10U	10U	10U	10U	**1J**	11U	NA
Di-n-butylphthalate	50	29U	10U	20U	10U	26U	10U	**71B**	11U	NA
Di-n-octylphthalate	[50]	10U	10U	10U	10U	10U	10U	10U	11U	NA
Dibenzo(a,h)anthracene	NS	10U	10U	10U	10U	10U	10U	10U	11U	NA
Dibenzofuran	NS	10U	10U	10U	10U	10U	10U	**5J**	**2J**	NA
Diethylphthalate	[50]	10U	10U	10U	10U	10U	10U	10U	11U	NA
Dimethylphthalate	[50]	10U	10U	10U	10U	10U	10U	10U	11U	NA
Fluoranthene	[50]	10U	10U	10U	10U	10U	10U	**7J**	**5J**	NA
Fluorene	[50]	10U	10U	10U	10U	10U	10U	**18**	**3J**	NA

TABLE 11
OVERBURDEN GROUNDWATER ANALYTICAL RESULTS

NYESEG FORMER MGP SITE
BRIDGE STREET PLATTSBURGH, NEW YORK

Parameter	NYSDEC GW Standard	MW-99-02 10/20/1999	MW-99-02 4/4/2000	MW-99-03 10/20/1999	MW-99-03 4/4/2000	MW-99-04 10/20/1999	MW-99-04 4/4/2000	MW-99-05 10/20/1999	MW-99-05 4/4/2000	MW-99-05 1/30/2002
Hexachlorobenzene	0.04	10U	10U	10U	10U	10U	10U	10U	11U	NA
Hexachlorobutadiene	0.5	10U	10U	10U	10U	10U	10U	10U	11U	NA
Hexachlorocyclopentadiene	5	10U	10U	10U	10U	10U	10U	10U	11U	NA
Hexachloroethane	5	10U	10U	10U	10U	10U	10U	10U	11U	NA
Indeno(1,2,3-cd)pyrene	[0.002]	10U	10U	10U	10U	10U	10U	10U	11U	NA
Isophorone	[50]	10U	10U	10U	10U	10U	10U	10U	11U	NA
N-Nitroso-di-n-propylamine	NS	10U	10U	10U	10U	10U	10U	10U	11U	NA
N-Nitrosodiphenylamine	[50]	10U	10U	10U	10U	10U	10U	10U	11U	NA
Naphthalene	[10]	10U	10U	10U	10U	10U	10U	**31**	**9J**	NA
Nitrobenzene	0.4	10U	10U	10U	10U	10U	10U	10U	11U	NA
Pentachlorophenol	1**	25U	26U	25U	26U	25U	26U	25U	27U	NA
Phenanthrene	[50]	10U	10U	10U	10U	10U	10U	**40**	**3J**	NA
Phenol	1**	10U	10U	10U	10U	10U	10U	10U	11U	NA
Pyrene	[50]	10U	10U	10U	10U	10U	10U	**5J**	**4J**	NA
Total PAHs	*NS*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*250*	*59*	*NA*
Total SVOCs	*NS*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*250*	*59*	*NA*
Metals										
Aluminum	NS	**43,600**	**24,400**	**3,650**	**1,790**	**16,300**	**21,600**	**53,000**	**58,900**	NA
Antimony	3	15U	**6.3B**	15U	2.5U	15U	2.5U	15U	2.5U	NA
Arsenic	25	10U	**7B**	10U	2.5U	10U	**3.8B**	10U	**25.4**	NA
Barium	1000	**272J**	**174B**	**415J**	**312**	**210J**	**258**	**512J**	**502**	NA
Beryllium	[3]	**3BJ**	**1.8B**	3U	**0.17B**	3U	**0.94B**	**3.8BJ**	**4.3B**	NA
Cadmium	5	**6.4J**	0.3U	5U	0.3U	5U	**0.32B**	**12.3J**	**0.79B**	NA
Calcium	NS	**869,000**	**430,000**	**364,000**	**333,000**	**126,000**	**157,000**	**316,000**	**354,000**	NA
Chromium	50	**77.9**	**43**	**9.3B**	**6.2B**	**28.1**	**39.5**	**106**	**137**	NA
Cobalt	NS	**31.4BJ**	**12.6B**	20U	1.7U	20U	**11B**	**34.6BJ**	**30.8B**	NA
Copper	200	**66.3**	**30.4**	**23.2B**	**5.3B**	**21B**	**17.1B**	**61.7**	**74.4**	NA
Iron	300	**77,000**	**36,900**	**6,890**	**3,180**	**18,400**	**35,900**	**120,000**	**147,000**	NA
Lead	25	**392**	**165**	**9.3J**	**2B**	**33.8**	**35.3**	**285**	**241**	NA

TABLE 11
OVERBURDEN GROUNDWATER ANALYTICAL RESULTS

NYESEG FORMER MGP SITE
BRIDGE STREET PLATTSBURGH, NEW YORK

Parameter	**NYSDEC GW Standard**	**MW-99-02 10/20/1999**	**MW-99-02 4/4/2000**	**MW-99-03 10/20/1999**	**MW-99-03 4/4/2000**	**MW-99-04 10/20/1999**	**MW-99-04 4/4/2000**	**MW-99-05 10/20/1999**	**MW-99-05 4/4/2000**	**MW-99-05 1/30/2002**
Magnesium	[35,000]	**40,200**	**29,100**	**37,900**	**33,800**	**19,100**	**25,300**	**44,900**	**53,700**	NA
Manganese	300	**1,510**	**599**	**1,070**	**966**	**398**	**1,390**	**6,760**	**5,910**	NA
Mercury	0.7	**0.73J**	**0.22**	0.2U	0.11U	0.2U	0.11U	**1.4J**	**0.48**	NA
Nickel	100	**96.6J**	**49.2**	30U	**7.5B**	30U	**26.1B**	**78.5J**	**81.9**	NA
Potassium	NS	**21,800**	**13,700**	**15,700**	**9,510**	**13,100**	**22,400**	**36,300**	**29,700**	NA
Selenium	10	5U	3U	5U	3U	5U	**3.3B**	5U	**5.9**	NA
Silver	50	10U	0.78U	10U	0.78U	10U	0.78U	10U	0.78U	NA
Sodium	[20,000]	**65,500**	**76,900**	**777,000**	**1,070,000**	**106,000B**	**160,000**	**440,000**	**554,000**	NA
Thallium	[0.5]	10U	5.1U	13.7R	5.1U	10U	**5.2B**	10U	**5.4B**	NA
Vanadium	NS	**58.8J**	**31.9B**	30U	**3.7B**	30U	**30.7B**	**117J**	**119**	NA
Zinc	[2,000]	**222**	**104**	**86.1**	**24.3**	**158**	**1180**	**320**	**1390**	NA
Total Petroleum Hydrocarbons										
#6 Fuel Oil	NS	NA	0.12U	NA	0.12U	NA	0.12U	NA	0.67U	NA
Fuel Oil # 2 (Diesel)	NS	0.1U	0.051U	0.1U	0.051U	0.1U	0.051U	0.1U	**1.1**	NA
Gasoline	NS	ND	0.051U	Present	0.051U	ND	0.051U	ND	0.28U	NA
Kerosene	NS	0.1U	0.051U	0.1U	0.051U	0.1U	0.051U	0.1U	0.28U	NA
Lubricating Oil	NS	ND	0.26U	ND	0.26U	ND	0.26U	ND	1.4U	NA
Mineral Spirits	NS	NA	0.01U	NA	0.01U	NA	0.01U	NA	0.056U	NA
General Chemistry										
Cyanide, total	200	10U	10U	10U	10U	10U	10U	10U	10U	NA
Sulfur, total	NS	**41**	**43**	**57**	**115**	**14**	**13**	**51**	**58**	NA
Fecal Coliform (CFU/100mL)	NS	NA	NA	NA	NA	NA	NA	NA	NA	1U

Notes:

Concentrations shown in ug/L, unless otherwise indicated

NA - Not Analyzed

ND - Not Detected

NS - No groundwater standard or guidance value estalished

[] - Indicates guidance value

** - Indicates the standard applies to the sum of the compounds

B - (metals) - Indicates concentration is estimated between the PQL and the MDL

R - Rejected value

J - (organics) indicates concentration is estimated between the PQL and the method detection limit (MDL)

U - Parameter not detected above the practical quantitation limit (PQL) specified

TABLE 12
BEDROCK GROUNDWATER ANALYTICAL RESULTS

NYSEG FORMER MGP SITE
BRIDGE STREET PLATTSBURGH, NEW YORK

Parameter	**NYSDEC GW Standard** $^{(a)}$	**MW-1B 1/28/02**	**MW-1B (Duplicate) 1/28/02**	**MW-2B 1/30/02**	**MW-3B 10/4/02**	**MW-6B 1/28/02**	**MW-7BS 1/29/02**
Volatile Organic Compounds							
Benzene	1	**4**	**4**	**1,300**	**64**	**1**	**1,300**
Ethylbenzene	5	<1	<1	**1,500**	<1	<1	**930**
Toluene	5	<1	<1	**2,600**	**4**	<1	**1,900**
Xylene, total	5	<1	<1	**2,800**	<1	<1	**2,300**
Total BTEX	*NS*	*4*	*4*	*8,200*	*68*	*1*	*6,430*
Semivolatile Organic Compounds							
Acenaphthene	[20]	<10	<10	**26J**	<10	<10	**160J**
Acenaphthylene	NS	<10	<10	**280**	<10	<10	**920**
Anthracene	[50]	<10	<10	<200	<10	<10	**240J**
Benzidine	5	<80	<80	<1600	<80	<80	<3200
Benzo(a)anthracene	[0.002]	<10	<10	<200	<10	<10	**100J**
Benzo(a)pyrene	[0.002]	<10	<10	<200	<10	<10	**40J**
Benzo(b)fluoranthene	[0.002]	<10	<10	<200	<10	<10	**44J**
Benzo(g,h,i)perylene	NS	<10	<10	<200	<10	<10	<400
Benzo(k)fluoranthene	[0.002]	<10	<10	<200	<10	<10	**48J**
Bromophenylphenylether	NS	<10	<10	<200	<10	<10	<400
Butylbenzylphthalate	[50]	<10	<10	<200	<10	<10	<400
bis(2-Chloroethoxy)methane	5	<10	<10	<200	<10	<10	<400
bis(2-Chloroethyl)ether	1.0	<10	<10	<200	<10	<10	<400
bis(2-Chloroisopropyl)ether	NS	<10	<10	<200	<10	<10	<400
4-Chloro-3-methylphenol	NS	<10	<10	<200	<10	<10	<400
2-Chloronaphthalene	[10]	<10	<10	<200	<10	<10	<400
2-Chlorophenol	NS	<10	<10	<200	<10	<10	<400
Chlorophenylphenylether	NS	<10	<10	<200	<10	<10	<400

TABLE 12
BEDROCK GROUNDWATER ANALYTICAL RESULTS

NYSEG FORMER MGP SITE
BRIDGE STREET PLATTSBURGH, NEW YORK

Parameter	NYSDEC GW Standard $^{(a)}$	MW-1B 1/28/02	MW-1B (Duplicate) 1/28/02	MW-2B 1/30/02	MW-3B 10/4/02	MW-6B 1/28/02	MW-7BS 1/29/02
Chrysene	[0.002]	<10	<10	<200	<10	<10	**100J**
Dibenzo(a,h)anthracene	NS	<10	<10	<200	<10	<10	<400
Dibenzofuran	NS	NA	NA	NA	<10	NA	NA
Di-n-butylphthalate	50	<10	<10	<200	<10	<10	<400
1,2-Dichlorobenzene	3	<10	<10	<200	<10	<10	<400
1,3-Dichlorobenzene	3	<10	<10	<200	<10	<10	<400
1,4-Dichlorobenzene	3	<10	<10	<200	<10	<10	<400
3,3'-Dichlorobenzidine	5	<20	<20	<400	<20	<20	<800
2,4-Dichlorophenol	5	<10	<10	<200	<10	<10	<400
Diethylphthalate	[50]	<10	<10	<200	<10	<10	<400
2,4-Dimethylphenol	[50]	<10	<10	<200	<10	<10	<400
Dimethylphthalate	[50]	<10	<10	<200	<10	<10	<400
4,6-Dinitro-2-methylphenol	NS	<50	<50	<1000	<50	<50	<2000
2,4-Dinitrophenol	[10]	<50	<50	<1000	<50	<50	<2000
2,4-Dinitrotoluene	5	<10	<10	<200	<10	<10	<400
2,6-Dinitrotoluene	5	<10	<10	<200	<10	<10	<400
Di-n-octylphthalate	[50]	<10	<10	<200	<10	<10	<400
1,2-Diphenylhydrazine	ND	<10	<10	<200	<10	<10	<400
bis(2-Ethylhexyl)phthalate	5	<10	<10	<200	<10	<10	**44J**
Fluoranthene	[50]	<10	<10	<200	<10	<10	**300J**
Fluorene	[50]	<10	<10	**34J**	<10	<10	**300J**
Hexachlorobenzene	0.04	<10	<10	<200	<10	<10	<400
Hexachlorobutadiene	0.5	<10	<10	<200	<10	<10	<400
Hexachlorocyclopentadiene	5	<10	<10	<200	<10	<10	<400
Hexachloroethane	5	<10	<10	<200	<10	<10	<400
Indeno(1,2,3-cd)pyrene	[0.002]	<10	<10	<200	<10	<10	<400

TABLE 12
BEDROCK GROUNDWATER ANALYTICAL RESULTS

NYSEG FORMER MGP SITE
BRIDGE STREET PLATTSBURGH, NEW YORK

Parameter	**NYSDEC GW Standard (a)**	**MW-1B 1/28/02**	**MW-1B (Duplicate) 1/28/02**	**MW-2B 1/30/02**	**MW-3B 10/4/02**	**MW-6B 1/28/02**	**MW-7BS 1/29/02**
Isophorone	[50]	<10	<10	<200	<10	<10	<400
2-Methylnaphthalene	NS	<10	<10	**170J**	<10	<10	**640**
Naphthalene	[10]	<10	<10	**3,000**	<10	<10	**6,400**
Nitrobenzene	0.4	<10	<10	<200	<10	<10	<400
2-Nitrophenol	NS	<10	<10	<200	<10	<10	<400
4-Nitrophenol	NS	<50	<50	<1000	<50	<50	<2000
N-Nitrosodimethylamine	NS	<10	<10	<200	<10	<10	<400
N-Nitrosodiphenylamine	[50]	<10	<10	<200	<10	<10	<400
N-Nitroso-di-n-propylamine	NS	<10	<10	<200	<10	<10	<400
Pentachlorophenol	1**	<50	<50	<1000	<50	<50	<2000
Phenanthrene	[50]	<10	<10	**68J**	<10	<10	**1,000**
Phenol	1**	<10	<10	<200	<10	**68**	<400
Pyrene	[50]	<10	<10	<200	<10	<10	**560**
1,2,4-Trichlorobenzene	5	<10	<10	<200	<10	<10	<400
2,4,6-Trichlorophenol	NS	<10	<10	<200	<10	<10	<400
Total PAHs	*NS*	*ND*	*ND*	*3,578*	*ND*	*ND*	*10,852*
Total Phenols	*NS*	*ND*	*ND*	*ND*	*ND*	*68.0*	*ND*
Total SVOCs	*NS*	*ND*	*ND*	*3,578*	*ND*	*68.0*	*10,896*
Metals							
Aluminum	100	**400**	**500**	**19,000**	**800**	**800**	**5,400**
Antimony	3	<60	<60	<60	<60	<60	<60
Arsenic	25	<5	<5	<5	<5	<5	<5
Barium	1,000	**40**	**40**	**670**	**10**	**110**	**120**
Cadmium	5	<5	<5	<5	<5	<5	<5
Chromium	50	<5	**8**	**20**	<5	<5	<5
Copper	200	<5	<6	**49**	<5	**29**	**34**
Iron	300	**920**	**370**	**24,000**	**2,090**	**150**	**128,000**
Lead	25	<5	<5	**38**	<5	<5	<5
Manganese	300	<20	<20	**380**	**30**	<20	**1,440**

TABLE 12
BEDROCK GROUNDWATER ANALYTICAL RESULTS

NYSEG FORMER MGP SITE
BRIDGE STREET PLATTSBURGH, NEW YORK

Parameter	NYSDEC GW Standard [(a)]	MW-1B 1/28/02	MW-1B (Duplicate) 1/28/02	MW-2B 1/30/02	MW-3B 10/4/02	MW-6B 1/28/02	MW-7BS 1/29/02
Mercury	0.7	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
Nickel	100	<50	<50	<50	<50	<50	<50
Selenium	10	<5	<5	<5	<5	<5	<5
Silver	50	<20	<20	<20	<20	<20	<20
Vanadium	14	<50	<50	<50	<50	<50	<50
Zinc	[2,000]	<10	<10	**70**	<10	<10	**4,140**
Phenols							
Total Phenols	1	<2	NA	**36**	NA	**234**	**28**
Cyanide							
Cyanide, free	NS	<10	<10	<10	NA	<10	<10
Cyanide, total	200	<10	<10	<10	**110**	<10	**40**

Notes:
Concentrations shown in ug/L
Samples analyzed by Adirondack Environmental Services in Albany, New York.
(a) New York State Groundwater Quality Standard from Division of Water Technical and Operational Guidance Series (NYSDEC, TOGS 1.1.1)
NA - Not Analyzed
ND - Not Detected
NS - No standard or guidnce value set
[ ] - Indicates a Guidance Value
** - Indicates that the standard applies to the sum of these substances
< - Indicates the parameter was not detected above the PQL shown
J - Indicates an estimated concentration between the MDL and PQL

TABLE 12
BEDROCK GROUNDWATER ANALYTICAL RESULTS

NYSEG FORMER MGP SITE
BRIDGE STREET PLATTSBURGH, NEW YORK

Parameter	**NYSDEC GW Standard** [(a)]	**MW-7BD 1/30/02**	**MW-7DD 10/16/02**	**MW-8BD 2/26/02**	**MW-8B 12/28/01**	**MW-9B 1/30/02**	**MW-10B 10/4/02**	**MW-10B (Duplicate) 10/4/02**	**MW-11B 1/28/02**
Volatile Organic Compounds									
Benzene	1	**86**	<0.5	<0.5	<0.5	**3**	**6**	**6**	<0.5
Ethylbenzene	5	**79**	<1	<1	<1	<1	<1	<1	<1
Toluene	5	**45**	<1	<1	<1	<1	<1	<1	<1
Xylene, total	5	**111**	<1	<1	<1	**8**	<1	<1	<1
Total BTEX	*NS*	*321*	*ND*	*ND*	*ND*	*11*	*6*	*6*	*ND*
Semivolatile Organic Compounds									
Acenaphthene	[20]	**114**	<10	<17	<10	<10	<10	<10	<10
Acenaphthylene	NS	**35**	<10	<17	<10	<10	<10	<10	<10
Anthracene	[50]	**23**	<10	<17	<10	<10	<10	<10	<10
Benzidine	5	<80	<80	<130	<80	<80	<80	<80	<80
Benzo(a)anthracene	[0.002]	<10	<10	<17	<10	<10	<10	<10	<10
Benzo(a)pyrene	[0.002]	<10	<10	<17	<10	<10	<10	<10	<10
Benzo(b)fluoranthene	[0.002]	<10	<10	<17	<10	<10	<10	<10	<10
Benzo(g,h,i)perylene	NS	<10	<10	<17	<10	<10	<10	<10	<10
Benzo(k)fluoranthene	[0.002]	<10	<10	<17	<10	<10	<10	<10	<10
Bromophenylphenylether	NS	<10	<10	<17	<10	<10	<10	<10	<10
Butylbenzylphthalate	[50]	<10	<10	<17	<10	<10	<10	<10	<10
bis(2-Chloroethoxy)methane	5	<10	<10	<17	<10	<10	<10	<10	<10
bis(2-Chloroethyl)ether	1.0	<10	<10	<17	<10	<10	<10	<10	<10
bis(2-Chloroisopropyl)ether	NS	<10	<10	<17	<10	<10	<10	<10	<10
4-Chloro-3-methylphenol	NS	<10	<10	<17	<10	<10	<10	<10	<10
2-Chloronaphthalene	[10]	<10	<10	<17	<10	<10	<10	<10	<10
2-Chlorophenol	NS	<10	<10	<17	<10	<10	<10	<10	<10
Chlorophenylphenylether	NS	<10	<10	<17	<10	<10	<10	<10	<10

TABLE 12
BEDROCK GROUNDWATER ANALYTICAL RESULTS

NYSEG FORMER MGP SITE
BRIDGE STREET PLATTSBURGH, NEW YORK

Parameter	NYSDEC GW Standard $^{(a)}$	MW-7BD 1/30/02	MW-7DD 10/16/02	MW-8BD 2/26/02	MW-8B 12/28/01	MW-9B 1/30/02	MW-10B 10/4/02	MW-10B (Duplicate) 10/4/02	MW-11B 1/28/02
Chrysene	[0.002]	<10	<10	<17	<10	<10	<10	<10	<10
Dibenzo(a,h)anthracene	NS	<10	<10	<17	<10	<10	<10	<10	<10
Dibenzofuran	NS	**2.9J**	<10	NA	NA	NA	<10	**10**	NA
Di-n-butylphthalate	50	<10	<10	<17	<10	<10	<10	<10	<10
1,2-Dichlorobenzene	3	<10	<10	<17	<10	<10	<10	<10	<10
1,3-Dichlorobenzene	3	<10	<10	<17	<10	<10	<10	<10	<10
1,4-Dichlorobenzene	3	<10	<10	<17	<10	<10	<10	<10	<10
3,3'-Dichlorobenzidine	5	<20	<20	<33	<20	<20	<20	<20	<20
2,4-Dichlorophenol	5	<10	<10	<17	<10	<10	<10	<10	<10
Diethylphthalate	[50]	<10	<10	<17	<10	<10	<10	<10	<10
2,4-Dimethylphenol	[50]	<10	<10	<17	<10	<10	<10	<10	<10
Dimethylphthalate	[50]	<10	<10	<17	<10	<10	<10	<10	<10
4,6-Dinitro-2-methylphenol	NS	<50	<50	<83	<50	<50	<50	<50	<50
2,4-Dinitrophenol	[10]	<50	<50	<83	<50	<50	<50	<50	<50
2,4-Dinitrotoluene	5	<10	<10	<17	<10	<10	<10	<10	<10
2,6-Dinitrotoluene	5	<10	<10	<17	<10	<10	<10	<10	<10
Di-n-octylphthalate	[50]	<10	<10	<17	<10	<10	<10	<10	<10
1,2-Diphenylhydrazine	ND	<10	<10	<17	<10	<10	<10	<10	<10
bis(2-Ethylhexyl)phthalate	5	<10	<10	<17	<10	<10	<10	<10	<10
Fluoranthene	[50]	**6J**	<10	<17	<10	<10	<10	<10	<10
Fluorene	[50]	**33**	<10	<17	<10	<10	<10	<10	<10
Hexachlorobenzene	0.04	<10	<10	<17	<10	<10	<10	<10	<10
Hexachlorobutadiene	0.5	<10	<10	<17	<10	<10	<10	<10	<10
Hexachlorocyclopentadiene	5	<10	<10	<17	<10	<10	<10	<10	<10
Hexachloroethane	5	<10	<10	<17	<10	<10	<10	<10	<10
Indeno(1,2,3-cd)pyrene	[0.002]	<10	<10	<17	<10	<10	<10	<10	<10

TABLE 12
BEDROCK GROUNDWATER ANALYTICAL RESULTS

NYSEG FORMER MGP SITE
BRIDGE STREET PLATTSBURGH, NEW YORK

Parameter	NYSDEC GW Standard $^{(a)}$	MW-7BD 1/30/02	MW-7DD 10/16/02	MW-8BD 2/26/02	MW-8B 12/28/01	MW-9B 1/30/02	MW-10B 10/4/02	MW-10B (Duplicate) 10/4/02	MW-11B 1/28/02
Isophorone	[50]	<10	<10	<17	<10	<10	<10	<10	<10
2-Methylnaphthalene	NS	**69**	<10	<17	<10	<10	<10	<10	<10
Naphthalene	[10]	**380**	<10	<17	<10	**4.5J**	<10	<10	<10
Nitrobenzene	0.4	<10	<10	<17	<10	<10	<10	<10	<10
2-Nitrophenol	NS	<10	<10	<17	<10	<10	<10	<10	<10
4-Nitrophenol	NS	<50	<50	<83	<50	<50	<50	<50	<50
N-Nitrosodimethylamine	NS	<10	<10	<17	<10	<10	<10	<10	<10
N-Nitrosodiphenylamine	[50]	<10	<10	<17	<10	<10	<10	<10	<10
N-Nitroso-di-n-propylamine	NS	<10	<10	<17	<10	<10	<10	<10	<10
Pentachlorophenol	1**	<50	<50	<83	<50	<50	<50	<50	<50
Phenanthrene	[50]	**61**	<10	<17	<10	<10	<10	<10	<10
Phenol	1**	<10	**140**	<17	<10	**42**	<10	<10	**73**
Pyrene	[50]	**6J**	<10	<17	NA	<10	<10	<10	<10
1,2,4-Trichlorobenzene	5	<10	<10	<17	<10	<10	<10	<10	<10
2,4,6-Trichlorophenol	NS	<10	<10	<17	<10	<10	<10	<10	<10
Total PAHs	*NS*	*730*	*ND*	*ND*	*ND*	*4.50*	*ND*	*10*	*ND*
Total Phenols	*NS*	*ND*	*140*	*ND*	*ND*	*42.0*	*ND*	*ND*	*73.0*
Total SVOCs	*NS*	*730*	*140*	*ND*	*ND*	*46.5*	*ND*	*10*	*73.0*
Metals									
Aluminum	100	<100	**1,500**	NA	**700**	**2000**	**900**	**2400**	**1500**
Antimony	3	<60	<60	NA	<60	<60	<60	<60	<60
Arsenic	25	**6**	<5	NA	<5	<5	<5	<5	<5
Barium	1,000	**30**	<10	NA	**90**	**20**	**350**	**380**	**10**
Cadmium	5	<5	<5	NA	<5	<5	<5	<5	<5
Chromium	50	<5	**46**	NA	<5	**11**	<5	<5	<5
Copper	200	<5	**14**	NA	<50	**29**	<5	<5	**18**
Iron	300	**190**	**250**	NA	**490**	**3340**	**2840**	**9420**	**140**
Lead	25	<5	<5	NA	<5	<5	<5	<5	<5
Manganese	300	**160**	<20	NA	<20	**80**	**100**	**330**	<20

TABLE 12
BEDROCK GROUNDWATER ANALYTICAL RESULTS

NYSEG FORMER MGP SITE
BRIDGE STREET PLATTSBURGH, NEW YORK

Parameter	**NYSDEC GW Standard $^{(a)}$**	**MW-7BD 1/30/02**	**MW-7DD 10/16/02**	**MW-8BD 2/26/02**	**MW-8B 12/28/01**	**MW-9B 1/30/02**	**MW-10B 10/4/02**	**MW-10B (Duplicate) 10/4/02**	**MW-11B 1/28/02**
Mercury	0.7	<0.4	<0.4	NA	<0.4	<0.4	<0.4	<0.4	<0.4
Nickel	100	<50	<50	NA	<50	<50	<50	<50	<50
Selenium	10	<5	<5	NA	<5	<5	<5	<5	<5
Silver	50	<20	<20	NA	<20	<20	<20	<20	<20
Vanadium	14	<50	<50	NA	<50	<50	<50	<50	<50
Zinc	[2,000]	<10	<10	NA	<10	**80**	<50	<10	<10
Phenols									
Total Phenols	1	**207**	NS	**7**	<2	**123**	NA	NA	**247**
Cyanide									
Cyanide, free	NS	<10	NA	NA	<10	**130**	NA	NA	<10
Cyanide, total	200	<10	**20**	NA	<10	**130**	<10	<10	<10

Notes:
Concentrations shown in ug/L
Samples analyzed by Adirondack Environmental Services in Albany, New York.
(a) New York State Groundwater Quality Standard from Division of Water Technical and Operational Guidance Series (NYSDEC, TOGS 1.1.1)
NA - Not Analyzed
ND - Not Detected
NS - No standard or guidnce value set
[ ] - Indicates a Guidance Value
** - Indicates that the standard applies to the sum of these substances
< - Indicates the parameter was not detected above the PQL shown
J - Indicates an estimated concentration between the MDL and PQL

TABLE 13
SUMMARY OF NAPL OBSERVATIONS IN COMPLETED BEDROCK WELLS

NYSEG FORMER MGP SITE
BRIDGE STREET PLATTSBURGH, NEW YORK

Well	Date	Odor	Sheen	Comments
MW-1B	1/10/02	No	No	No indications
	1/24/02	No	No	No indications
	1/28/02	No	No	No indications
	3/6/02	No	No	No indications
	4/10/02	No	No	No indications
	6/7/02	No	No	No indications
	8/22/02	No	No	No indications
	9/23/02	No	No	No indications
	10/16/02	No	No	No indications
	2/25/03	No	No	No indications
	3/6/02	No	No	No indications
	4/16/03	No	No	No indications
MW-2B	1/10/02	No	No	No indications
	1/29/02	Yes	Yes	Sheen and odor during sampling
	3/6/02	Yes	Yes	LNAPL (Not Measurable)
	4/10/02	Yes	Yes	Product on string (DNAPL)
	6/7/02	Yes	Yes	Trace DNAPL
	8/22/02	Yes	Yes	Trace DNAPL
	9/23/02	Yes	No	Trace DNAPL
	10/16/02	Yes	Yes	Trace DNAPL
	1/23/03	Yes	Yes	Trace DNAPL
	2/25/03			Roadbox filled with ice
	4/16/03	Yes	Yes	Trace NAPL
MW-3B	10/16/02	No	No	No indications
	1/23/03	No	No	Sulfur odor
	2/25/03	No	No	No indications
	4/16/03	No	No	No indications
MW-6B	1/10/02	No	No	No indications
	1/24/02	No	No	No indications
	1/28/02	No	No	No indications
	3/6/02	No	No	No indications
	4/10/02	Yes	No	Very slight odor on string from bottom
	6/7/02	No	No	No indications
	8/22/02	Yes	Yes	Trace
	9/23/02	Yes	No	Slight odor
	10/16/02	Yes	No	Slight odor
	1/23/03	No	No	No indications
	2/25/03	No	No	No indications
	4/16/03	No	No	No indications

TABLE 13
SUMMARY OF NAPL OBSERVATIONS IN COMPLETED BEDROCK WELLS

NYSEG FORMER MGP SITE
BRIDGE STREET PLATTSBURGH, NEW YORK

Well	Date	Odor	Sheen	Comments
MW-7BD	1/24/02	Yes	Yes	Sheen and odor on bailer
	1/29/02	Yes	Yes	Sheen and odor during sampling
	3/6/02	Yes	Yes	LNAPL (Not Measurable)
	4/10/02	Yes	Yes	Product on string (Not Measurable)
	6/7/02	Yes	No	Trace DNAPL
	8/22/02	Yes	Yes	Trace DNAPL
	9/23/02	Yes	No	Trace DNAPL
	10/16/02	Yes	Yes	Trace DNAPL
	1/23/03	No	No	Trace DNAPL
	2/25/03	No	No	Trace DNAPL
	4/16/03	Yes	Yes	Trace DNAPL
MW-7BS	1/10/02	Yes	Yes	Sheen, odor, unmeasurable NAPL
	1/29/02	Yes	Yes	Trace NAPL during purging
	3/6/02	Yes	Yes	LNAPL (Not Measurable)
	4/10/02	Yes	Yes	Product on string (DNAPL)
	6/7/02	Yes	Yes	Trace DNAPL
	8/22/02	Yes	Yes	Trace DNAPL
	9/23/02	Yes	No	Trace DNAPL
	10/16/02	Yes	Yes	Trace DNAPL
	1/23/03	Yes	Yes	Trace DNAPL
	2/25/03	Yes	Yes	Trace DNAPL
	4/16/03	Yes	Yes	Trace DNAPL
MW-7DD	10/16/02	No	No	No indications
	1/23/03	No	No	No indications
	2/25/03			Could not locate
	4/16/03	No	No	No indications
MW-8B	1/10/02	No	No	No indications
	1/24/02	No	No	No indications
	1/25/02	No	No	No indications
	3/6/02	No	No	No indications
	4/10/02	No	No	No indications
	6/7/02	No	No	No indications
	8/22/02	No	No	No indications
	9/23/02	No	No	No indications
	10/16/02	No	No	No indications
	2/25/03	No	No	No indications
	4/16/03	No	No	No indications

TABLE 13
SUMMARY OF NAPL OBSERVATIONS IN COMPLETED BEDROCK WELLS

NYSEG FORMER MGP SITE
BRIDGE STREET PLATTSBURGH, NEW YORK

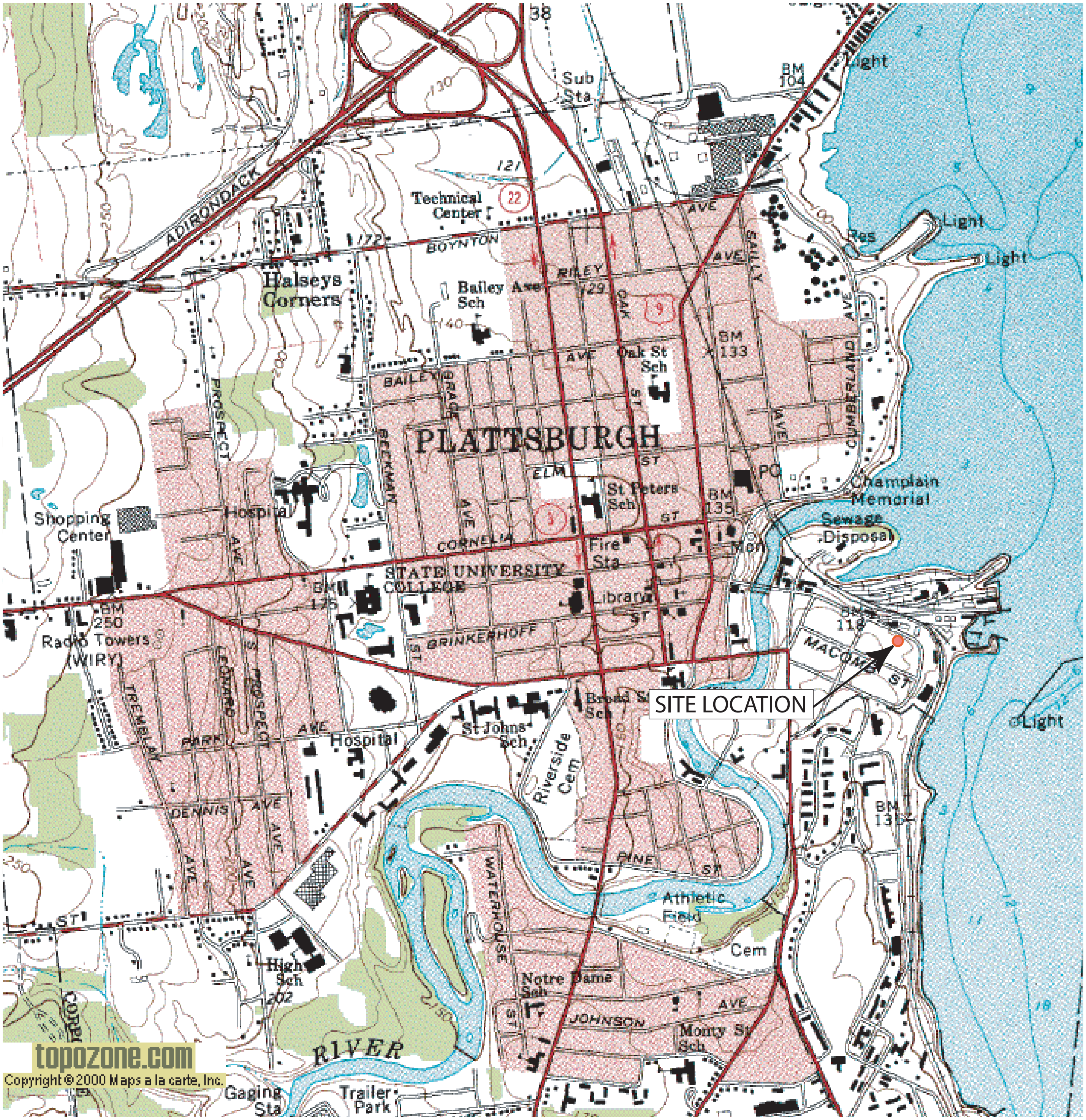
Well	Date	Odor	Sheen	Comments
MW-8BD	1/10/02	No	No	No indications
	1/24/02	Yes	Yes	Fuel oil type odor
	1/29/02	No	No	No indications
	3/6/02	No	No	No indications
	4/10/02	No	No	No indications
	6/7/02	No	No	No indications
	8/22/02	No	No	No indications
	9/23/02	No	Yes	Slight blue/silver sheen
	10/16/02	No	No	No indications
	1/23/03	No	No	No indications
	2/25/03	No	No	No indications
	4/16/03	No	No	No indications
MW-9B	1/10/02	No	No	No indications
	1/24/02	No	No	No indications
	3/6/02	No	No	No indications
	4/10/02	No	No	No indications
	6/7/02	No	No	No indications
	8/22/02	No	No	No indications
	9/23/02	No	No	No indications
	10/16/02	No	No	No indications
	1/23/03	No	No	No indications
	2/25/03	No	No	No indications
	4/16/03	No	No	No indications
MW-10B	10/16/02	No	No	No indications
	1/23/03	No	No	Sulfur odor
	2/25/03			Road box filled with ice
	4/16/03	No	No	No indications
MW-11B	1/11/02	No	Yes	Non MGP/iron type sheen noted, no odor
	1/25/02	No	No	No indications
	3/6/02	No	No	No indications
	4/10/02	Yes	No	Slight odor
	6/7/02	Yes	Yes	
	8/22/02	No	No	No indications
	9/23/02	No	No	No indications
	10/16/02	No	No	No indications
	1/23/03	No	No	No indications
	2/25/03	No	No	No indications
	4/16/03	No	No	No indications
Angle Boring	10/16/02	Yes	Yes	Trace NAPL on probe
	4/16/03	No	No	No accumulation below Packer
		Yes	Yes	Trace NAPL above packer

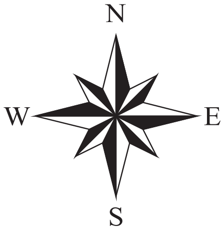
TABLE 13
SUMMARY OF NAPL OBSERVATIONS IN COMPLETED BEDROCK WELLS

NYSEG FORMER MGP SITE
BRIDGE STREET PLATTSBURGH, NEW YORK

Well	Date	Odor	Sheen	Comments
MW-99-03	3/6/02	No	No	No indications
	4/10/02	No	No	No indications
	9/23/02	No	No	No indications
	10/16/02	No	No	No indications
	1/23/03	No	No	No indications
	2/25/03			Road box filled with ice
	4/16/03	No	No	No indications
MW-99-04	3/6/02	No	No	No indications
	4/10/02	No	No	No indications
	8/22/02	No	No	No indications
	9/23/02	No	No	No indications
	10/16/02	No	No	No indications
	2/25/03			Could not locate in snowbank
	4/16/03	No	No	No indications
MW-99-05	3/6/02	No	No	No indications
	4/10/02	No	No	No indications
	8/22/02	No	No	No indications
	9/23/02	No	No	No indications
	10/16/02	No	No	No indications
	1/23/03	No	No	No indications
	2/25/03	No	No	No indications
	4/16/03	No	No	No indications

FIGURES





SCALE: 1:24,000

SOURCE: USGS, 1966

FIGURE
1

SITE LOCATION MAP

NYSEG

NEW YORK STATE ELECTRIC AND GAS
FORMER MANUFACTURED GAS PLANT
BRIDGE STREET
PLATTSBURGH, NEW YORK

URS

28 CORPORATE DRIVE, SUITE 200
CLIFTON PARK, NEW YORK 12065

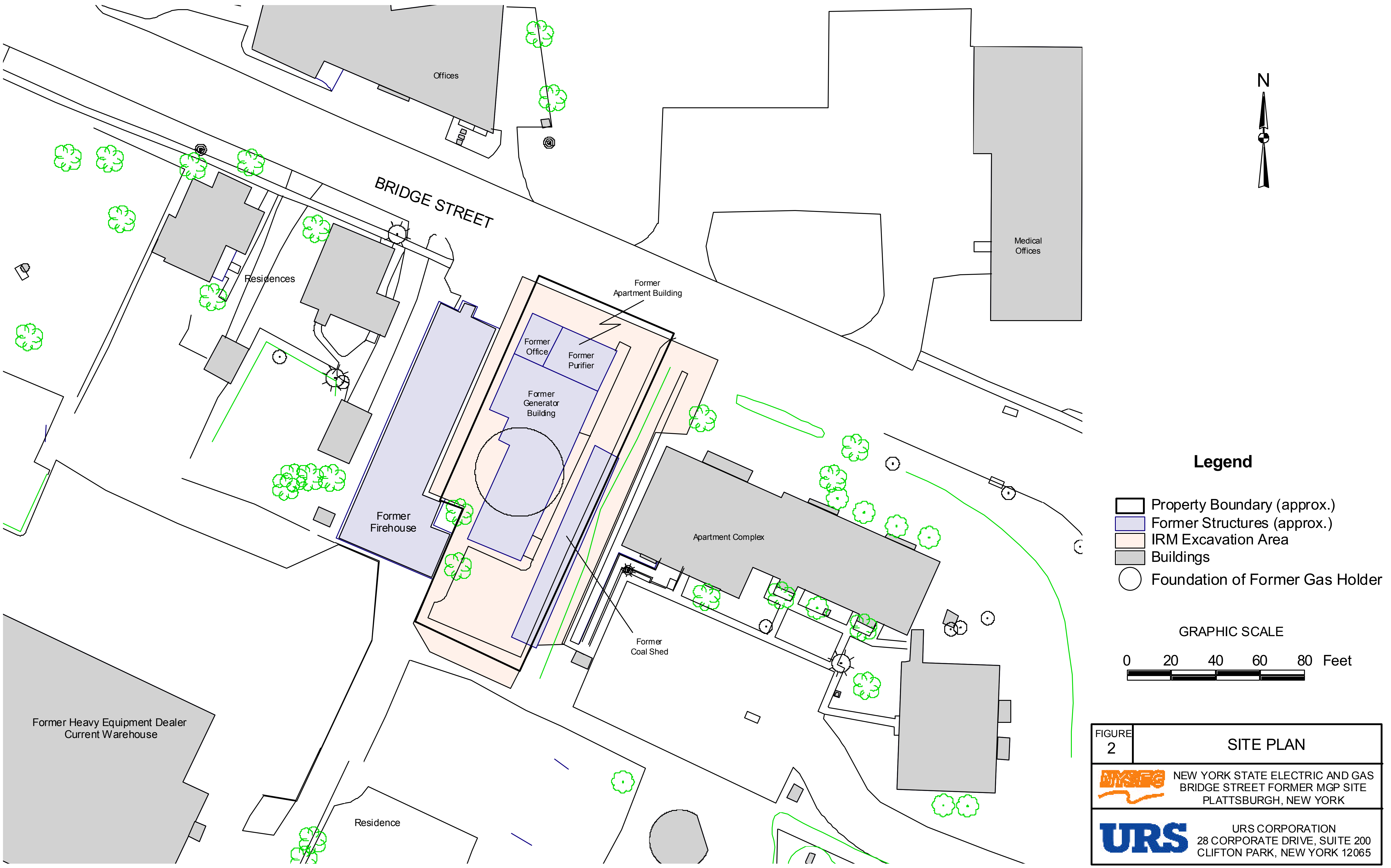


FIGURE
2

SITE PLAN

NEW YORK STATE ELECTRIC AND GAS
BRIDGE STREET FORMER MGP SITE
PLATTSBURGH, NEW YORK

URS CORPORATION
28 CORPORATE DRIVE, SUITE 200
CLIFTON PARK, NEW YORK 12065

P:\Database\NYSEG\Bridge Street\ArcView\bridgestreet.apr\Fig. 2 - SITE PLAN

FIGURE
3

MONITORING WELLS AND SAMPLING LOCATIONS

NYSEG

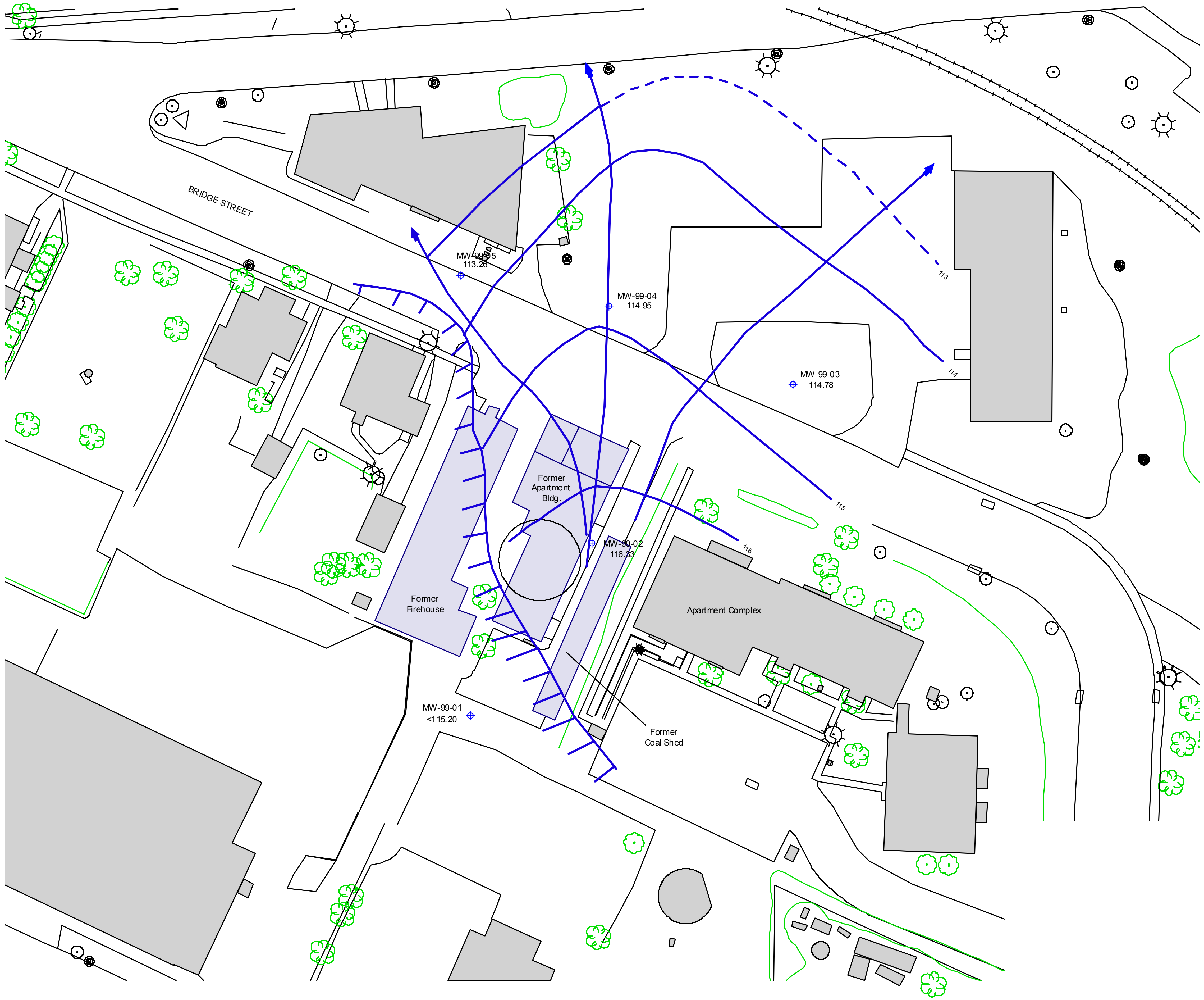
NEW YORK STATE ELECTRIC AND GAS
BRIDGE STREET FORMER MGP SITE
PLATTSBURGH, NEW YORK

URS

URS CORPORATION
28 CORPORATE DRIVE, SUITE 200
CLIFTON PARK, NEW YORK 12065

SIZE D: 22X34

P:\Database\NYSEG\Bridge Street\ArcView\bridgestreet.apr\Fig. 3 - SAMPLING LOCATIONS 6/2/03



Legend

⌖ *MW-99-02* *116.33*	Monitoring Well and Groundwater Elevation (ft)
115	Groundwater Elevation Contour
←	Approximate Groundwater Flow Direction
///	Dry, Water Table Below Top of Bedrock
▭	Former Structures (approx.)
▭	Buildings
○	Foundation of Former Gas Holder

GRAPHIC SCALE

0 20 40 60 80 Feet

FIGURE 4

OVERBURDEN GROUNDWATER
ELEVATION CONTOUR MAP
OCTOBER 20, 1999

NYSEG

NEW YORK STATE ELECTRIC AND GAS
BRIDGE STREET FORMER MGP SITE
PLATTSBURGH, NEW YORK

URS

URS CORPORATION
28 CORPORATE DRIVE, SUITE 200
CLIFTON PARK, NEW YORK 12065

P:\Database\NYSEG\Bridge Street\ArcView\bridgestreet.apr\Fig. 4 - GW Elevation Map 10-99

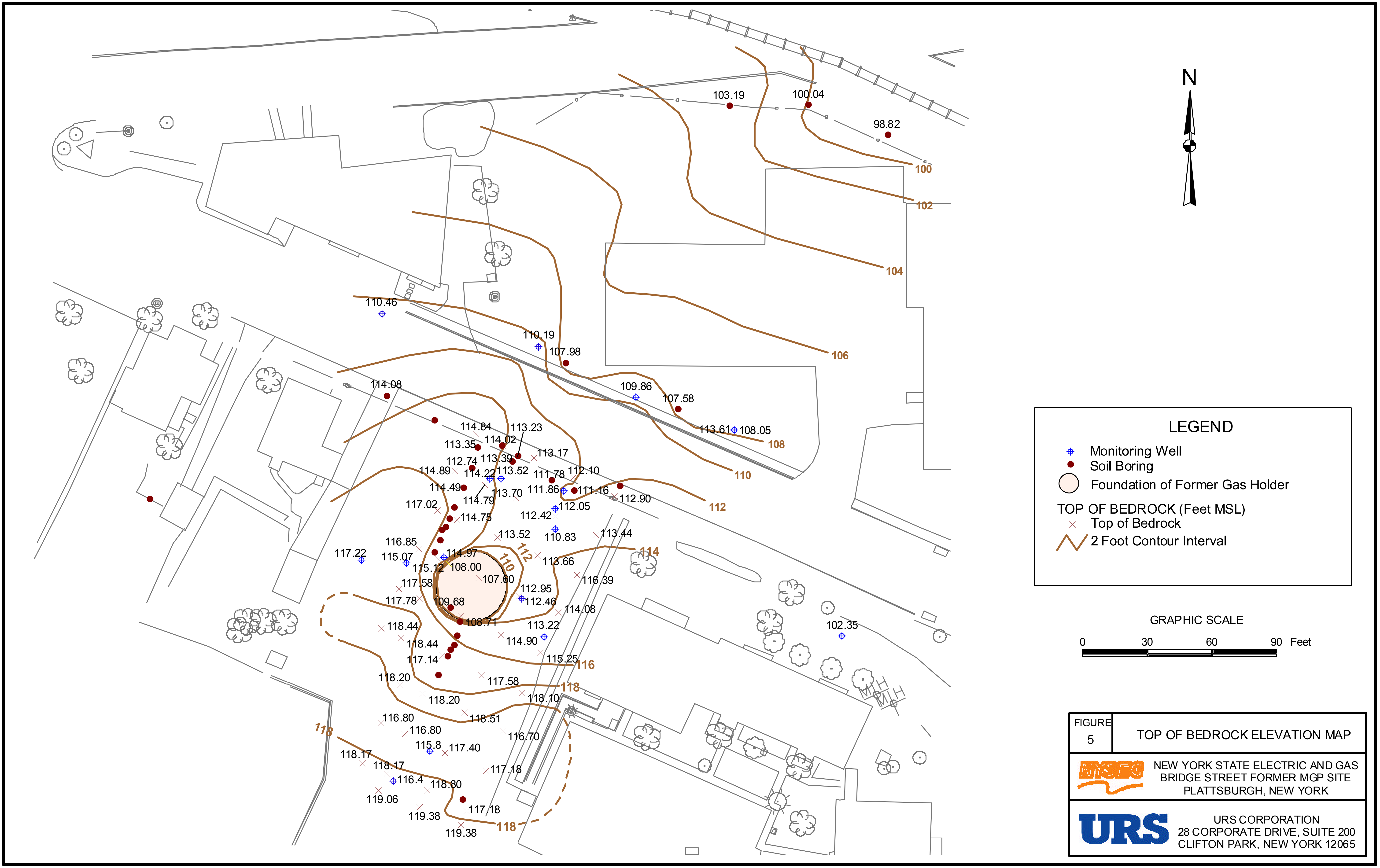
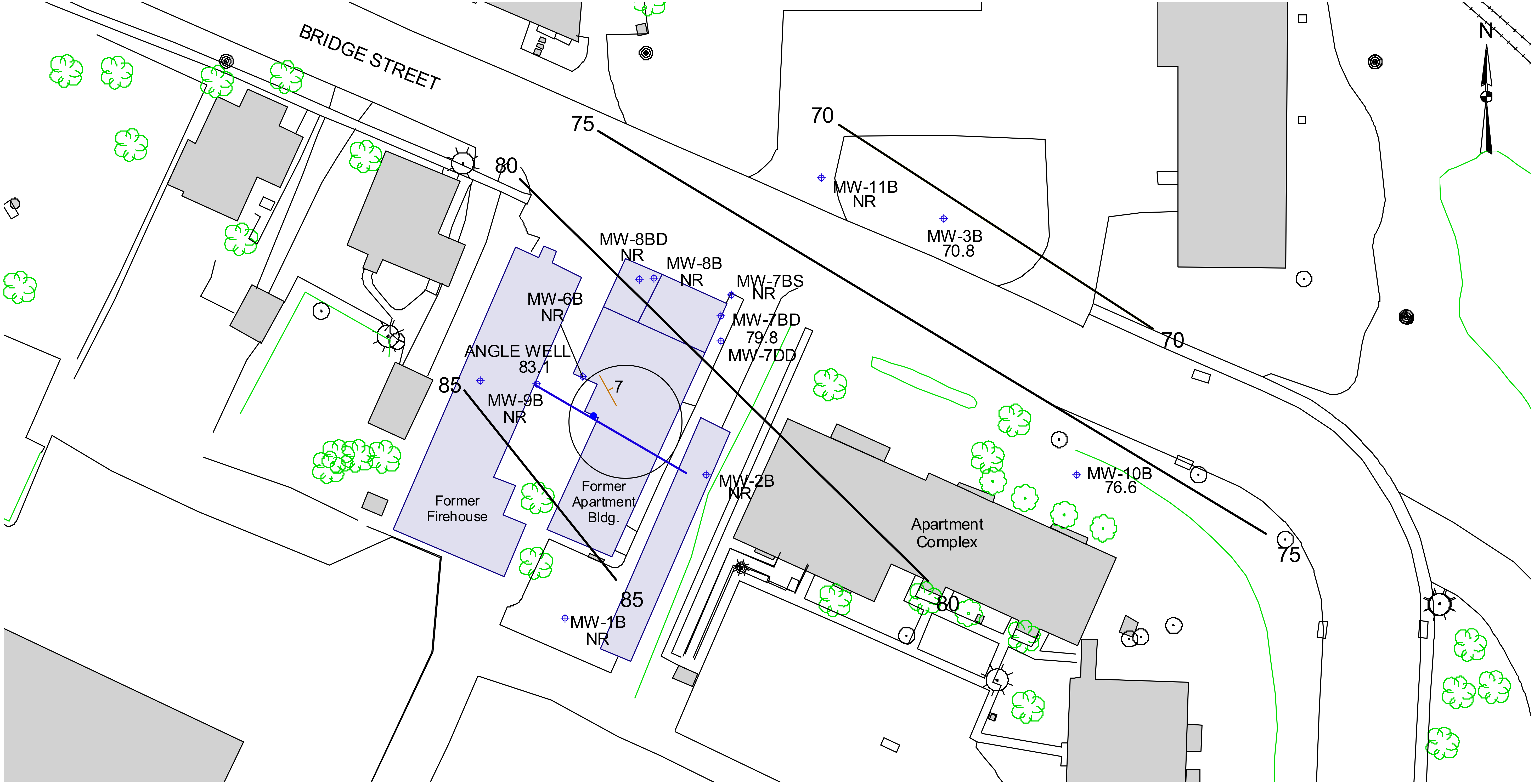


FIGURE 5	TOP OF BEDROCK ELEVATION MAP

NYSEG
NEW YORK STATE ELECTRIC AND GAS
BRIDGE STREET FORMER MGP SITE
PLATTSBURGH, NEW YORK

URS
URS CORPORATION
28 CORPORATE DRIVE, SUITE 200
CLIFTON PARK, NEW YORK 12065

p:database/NYSEG/bridge st/arcview/bedrock.apr/Fig. 5-Top of Bedrock



Legend

Bedding Plane Fracture Contour (feet msl)

Measured Strike and Dip of Bedding at Bedrock Surface (degrees)

⌖ Monitoring Well with Elevation of Bedding Plane Fracture (feet msl)

▭ Former Structures (approx.)

○ Foundation of Former Gas Holder

Note:
NR - Fracture Zone Not Reached

GRAPHIC SCALE

0 25 50 75 100 Feet

FIGURE
6

BEDDING PLANE FRACTURE
STRUCTURE CONTOUR MAP

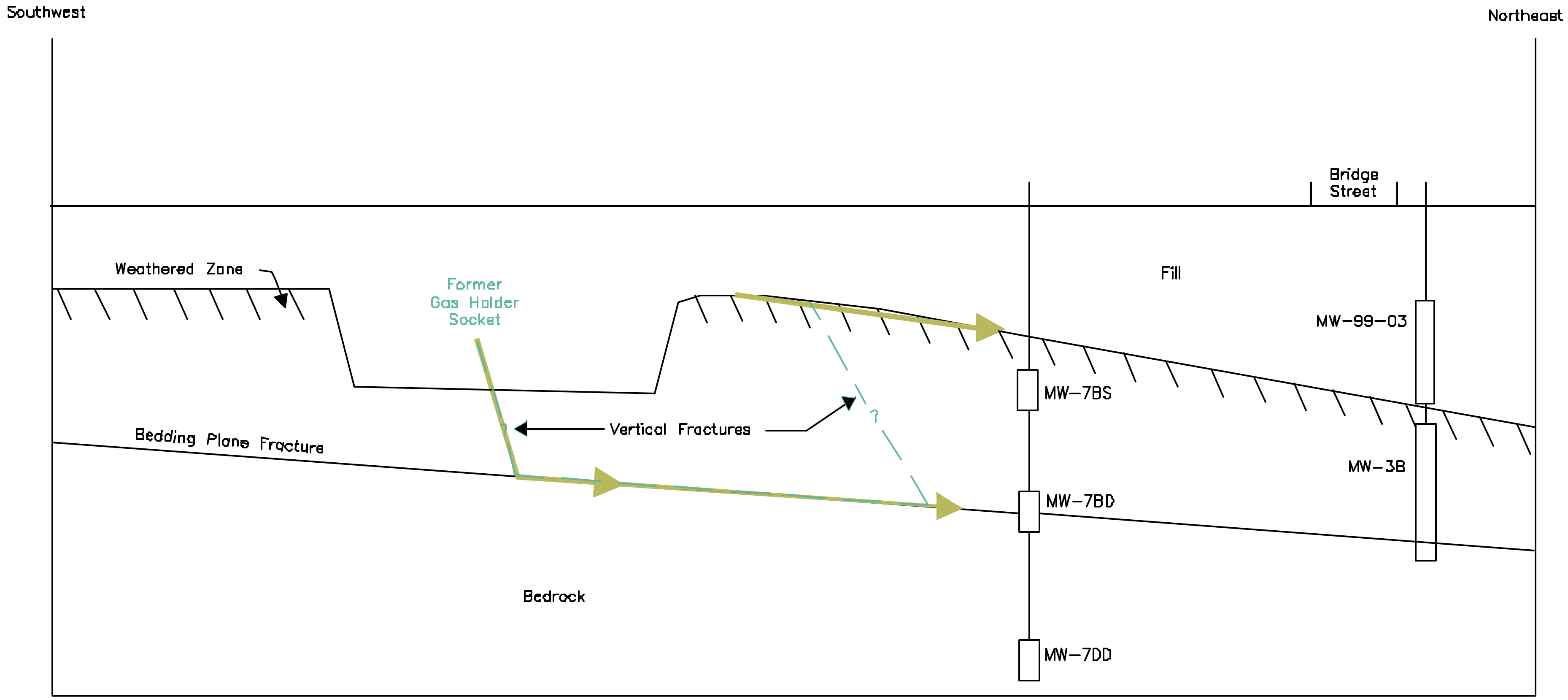
NYSEG

NEW YORK STATE ELECTRIC AND GAS
BRIDGE STREET FORMER MGP SITE
PLATTSBURGH, NEW YORK

URS

URS CORPORATION
28 CORPORATE DRIVE, SUITE 200
CLIFTON PARK, NEW YORK 12065

P:\Database\NYSEG\Bridge Street\ArcView\bs 2003 report.apr\Fig. 6Bedding Plane



LEGEND:

→ Contaminant Migration Pathway

Note: Not to Scale

FIGURE
7

CONCEPTUAL SITE MODEL

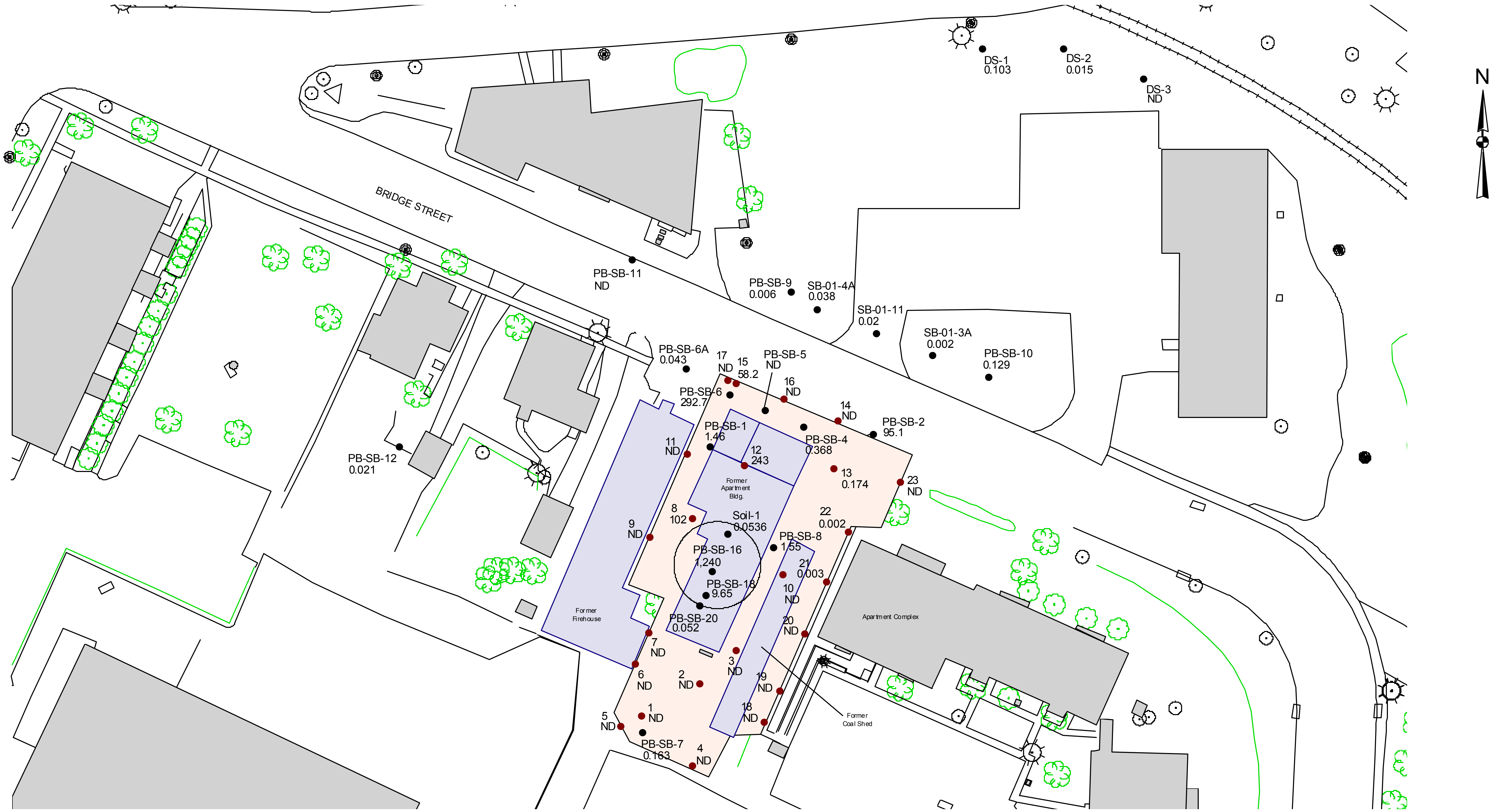
NYSEG

NEW YORK STATE ELECTRIC AND GAS
BRIDGE STRET FORMER MGP SITE
PLATTSBURGH, NEW YORK

URS

URS CORPORATION
28 CORPORATE DRIVE, SUITE 200
CLIFTON PARK, NEW YORK 12065

P: Database/NYSEG/Bridge St/Basemap/Fig 7 Conceptual Site Model.dwg



LEGEND

● Post-Excavation Soil Samples
● Subsurface Soil Samples
▨ Buildings
▨ Former Structures (approx.)
▨ IRM Excavation Area

○ Foundation of Former Gas Holder

Note:
Total VOCs in mg/kg
ND = Not Detected

GRAPHIC SCALE

0 25 50 75 100 Feet

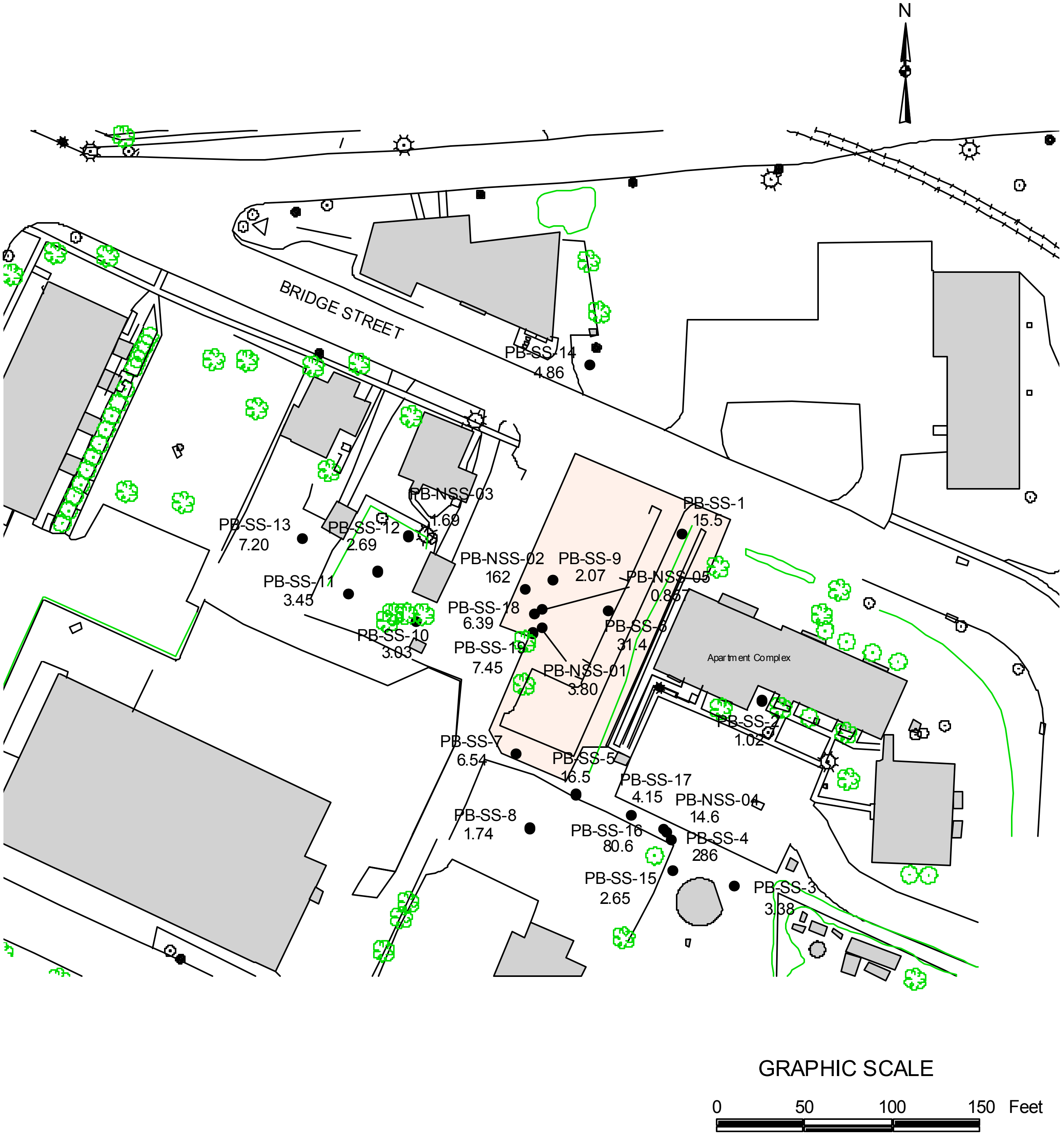
FIGURE
8

TOTAL VOCs IN SUBSURFACE SOIL

NEW YORK STATE ELECTRIC AND GAS
BRIDGE STREET FORMER MGP SITE
PLATTSBURGH, NEW YORK

URS CORPORATION
28 CORPORATE DRIVE, SUITE 200
CLIFTON PARK, NEW YORK 12065

P:\Database\NYSEG\Bridge Street\ArcView\bridgestreet.apr\Fig. 8 - TOTAL VOCS SUBSURFACE SOIL



LEGEND

● Surface Soil Samples
🟧 IRM Excavation Area
▨ Buildings

Note: Total PAHs in mg/kg

FIGURE
9

TOTAL PAHs IN SURFACE AND NEAR SURFACE SOIL

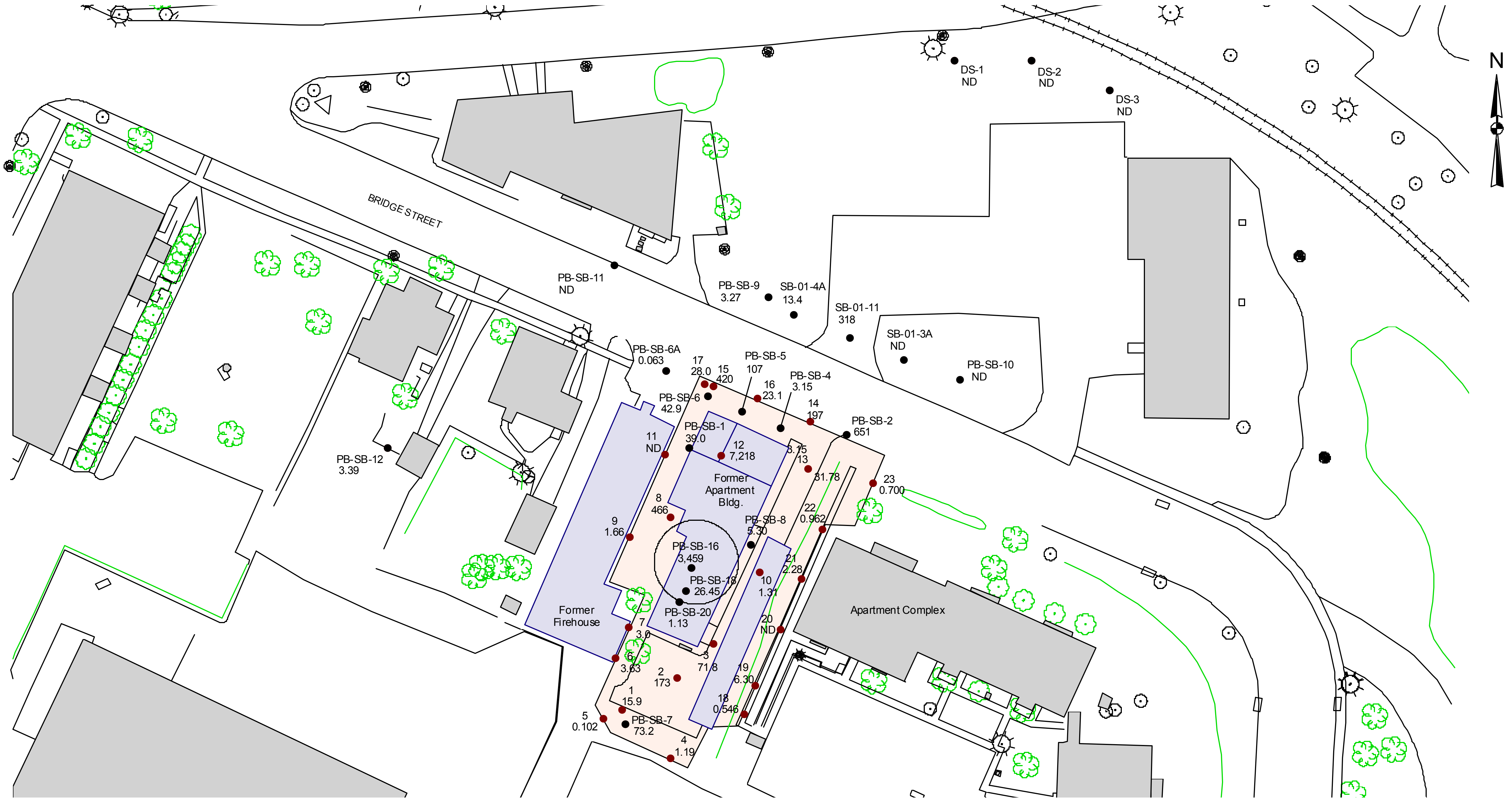
NYSEG

NEW YORK STATE ELECTRIC AND GAS
BRIDGE STREET FORMER MGP SITE
PLATTSBURGH, NEW YORK

URS

URS CORPORATION
28 CORPORATE DRIVE, SUITE 200
CLIFTON PARK, NEW YORK 12065

P:\Database\NYSEG\Bridge Street\ArcView\bridgestreet.apr\Fig. 9 - TOTAL PAHS SURFACE SOIL



LEGEND

- ● Post-Excavation Soil Samples
- ● Subsurface Soil Samples
- ▨ Buildings
- ▨ Former Structures (approx.)
- ▨ IRM Excavation Area
- ○ Foundation of Former Gas Holder

Note: Total PAHs in mg/kg

GRAPHIC SCALE (FEET)

0 25 50 75 Feet

FIGURE
10

TOTAL PAHs IN SUBSURFACE SOIL

NYSEG

NEW YORK STATE ELECTRIC AND GAS
BRIDGE STREET FORMER MGP SITE
PLATTSBURGH, NEW YORK

URS

URS CORPORATION
28 CORPORATE DRIVE, SUITE 200
CLIFTON PARK, NEW YORK 12065

P:\Database\NYSEG\Bridge Street\ArcView\bridgestreet.apr\Fig. 10 - TOTAL PAHs SUBSURFACE SOIL 6/2/03

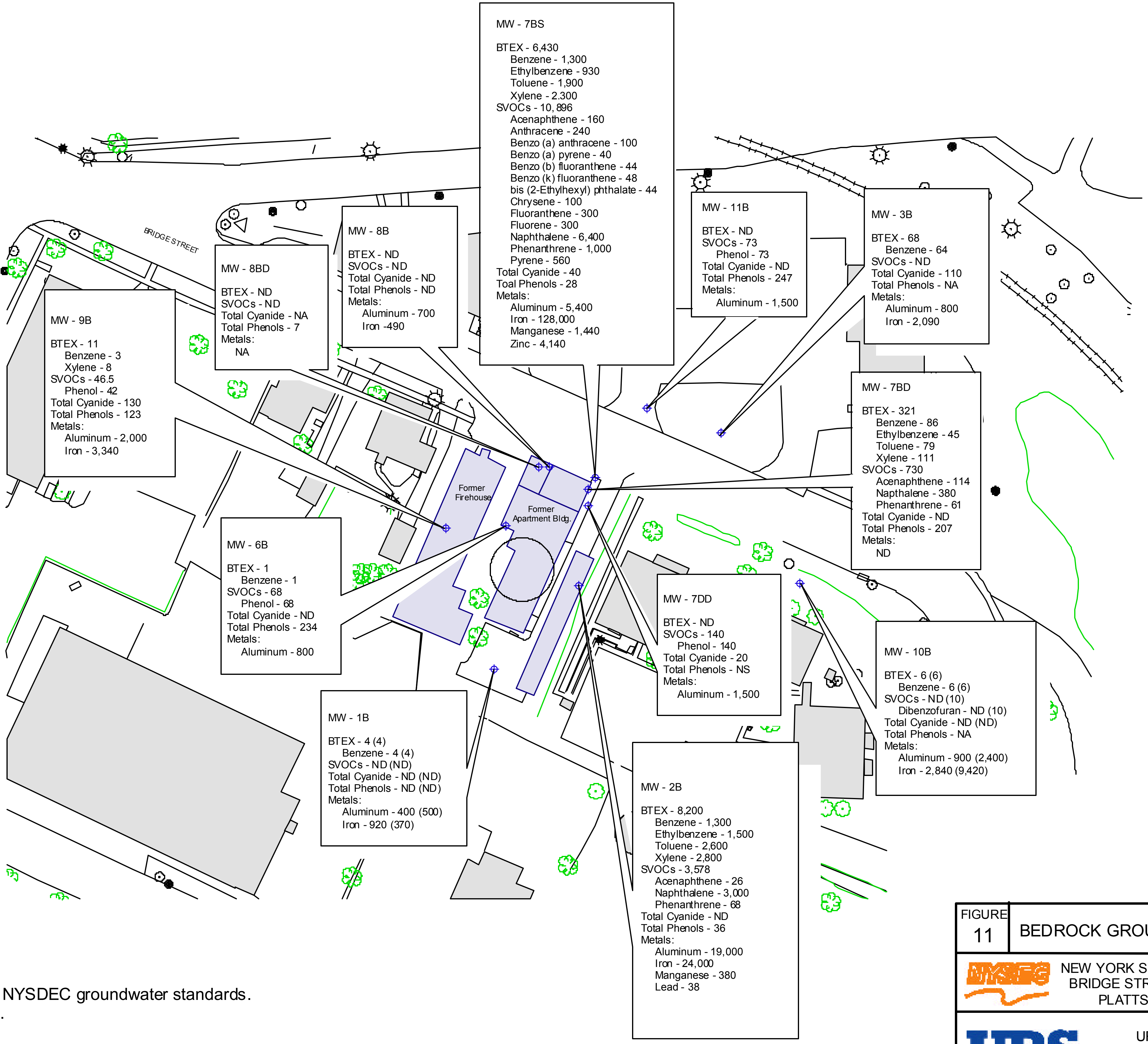
N

Legend

⌖ Bedrock Monitoring Well
▭ Former Structures (approx.)
▭ Buildings
○ Foundation of Former Gas Holder

GRAPHIC SCALE

0 40 80 Feet



MW - 7BS

BTEX - 6,430
Benzene - 1,300
Ethylbenzene - 930
Toluene - 1,900
Xylene - 2.300
SVOCs - 10, 896
Acenaphthene - 160
Anthracene - 240
Benzo (a) anthracene - 100
Benzo (a) pyrene - 40
Benzo (b) fluoranthene - 44
Benzo (k) fluoranthene - 48
bis (2-Ethylhexyl) phthalate - 44
Chrysene - 100
Fluoranthene - 300
Fluorene - 300
Naphthalene - 6,400
Phenanthrene - 1,000
Pyrene - 560
Total Cyanide - 40
Toal Phenols - 28
Metals:
Aluminum - 5,400
Iron - 128,000
Manganese - 1,440
Zinc - 4,140

MW - 9B

BTEX - 11
Benzene - 3
Xylene - 8
SVOCs - 46.5
Phenol - 42
Total Cyanide - 130
Total Phenols - 123
Metals:
Aluminum - 2,000
Iron - 3,340

MW - 8BD

BTEX - ND
SVOCs - ND
Total Cyanide - NA
Total Phenols - 7
Metals:
NA

MW - 8B

BTEX - ND
SVOCs - ND
Total Cyanide - ND
Total Phenols - ND
Metals:
Aluminum - 700
Iron -490

MW - 11B

BTEX - ND
SVOCs - 73
Phenol - 73
Total Cyanide - ND
Total Phenols - 247
Metals:
Aluminum - 1,500

MW - 3B

BTEX - 68
Benzene - 64
SVOCs - ND
Total Cyanide - 110
Total Phenols - NA
Metals:
Aluminum - 800
Iron - 2,090

MW - 7BD

BTEX - 321
Benzene - 86
Ethylbenzene - 45
Toluene - 79
Xylene - 111
SVOCs - 730
Acenaphthene - 114
Napthalene - 380
Phenanthrene - 61
Total Cyanide - ND
Total Phenols - 207
Metals:
ND

MW - 6B

BTEX - 1
Benzene - 1
SVOCs - 68
Phenol - 68
Total Cyanide - ND
Total Phenols - 234
Metals:
Aluminum - 800

MW - 7DD

BTEX - ND
SVOCs - 140
Phenol - 140
Total Cyanide - 20
Total Phenols - NS
Metals:
Aluminum - 1,500

MW - 10B

BTEX - 6 (6)
Benzene - 6 (6)
SVOCs - ND (10)
Dibenzofuran - ND (10)
Total Cyanide - ND (ND)
Total Phenols - NA
Metals:
Aluminum - 900 (2,400)
Iron - 2,840 (9,420)

MW - 1B

BTEX - 4 (4)
Benzene - 4 (4)
SVOCs - ND (ND)
Total Cyanide - ND (ND)
Total Phenols - ND (ND)
Metals:
Aluminum - 400 (500)
Iron - 920 (370)

MW - 2B

BTEX - 8,200
Benzene - 1,300
Ethylbenzene - 1,500
Toluene - 2,600
Xylene - 2,800
SVOCs - 3,578
Acenaphthene - 26
Naphthalene - 3,000
Phenanthrene - 68
Total Cyanide - ND
Total Phenols - 36
Metals:
Aluminum - 19,000
Iron - 24,000
Manganese - 380
Lead - 38

Notes:
Concentrations shown in ug/L.
Specific compounds listed if concentration exceeds NYSDEC groundwater standards.
ND - Not detected above practical quantitation limit.
NA - Not analyzed.
NS - No Standard or guidance value set.
( ) - Indicates results of duplicate analysis.

FIGURE
11

BEDROCK GROUNDWATER QUALITY

NEW YORK STATE ELECTRIC AND GAS
BRIDGE STREET FORMER MGP SITE
PLATTSBURGH, NEW YORK

URS CORPORATION
28 CORPORATE DRIVE, SUITE 200
CLIFTON PARK, NEW YORK 12065

P:\Database\NYSEG\Bridge Street\ArcView\bridgestreet.apr\Fig. 11 - BEDROCK GW QUALITY

Legend

⊕ Monitoring Well Locations:
⊕ Frequently Detected
⊕ Rarely Detected

○ Foundation of Former Gas Holder
🟪 Former Structures (approx.)
⬜ Buildings

Note:
ND = Not Detected

GRAPHIC SCALE (FEET)
0 50 100 Feet

FIGURE
12

SUMMARY OF
NAPL OBSERVATIONS

NEW YORK STATE ELECTRIC AND GAS
BRIDGE STREET FORMER MGP SITE
PLATTSBURGH, NEW YORK

URS CORPORATION
28 CORPORATE DRIVE, SUITE 200
CLIFTON PARK, NEW YORK 12065

P:\Database\NYSEG\Bridge Street\ArcView\bridgestreet.apr\Summary NAPL Observations Fig 12

APPENDIX A

HISTORIC RECORDS AND MAPS

Transcript of Plattsburgh Republican Dec. 2, 1882 Newspaper Article

Plattsburgh Gas Company

The New Process in Operation

The new gas company has taken possession of the old works in this village on Bridge Street, and are furnishing gas by means of the system known as the Improved Lowe Water Gas Process, which was invented by T.S.C. Lowe of Norristown, PA, and first furnished to the public in Phenixville in 1873. A visit to the works on Wednesday of this week disclosed a pretty thorough transformation of the inside of the factory, nearly all of the old apparatus being out of use, and in their place three tall wrought iron cylinders.

One of these is a simple tubular steam boiler ten feet high with a fire box at the bottom and an escape line leading out of the top of the building. This furnishes steam for the generator and also for an upright engine which drives the fan wheel for the blast.

The second cylinder is also of boiler iron, four feet in diameter and about 16 feet high, at the bottom of which is a coal grate, with ash hole below, and above this for eight feet, the cylinder is lined with fire brick, having the diameter inside about 29 inches. The upper section is completely filled with fire brick, with open spaces between them so arranged as to allow the unobstructed passage of a current of gas through to the top, this section being known as the superheater.

Near this stands another wrought iron cylinder 10 feet high, and 36 inches in diameter. This is filled with water to a depth of three feet and about thirty inches from the bottom is a diaphragm or circular plate of iron placed parallel with the bottom and of a little less diameter than the inside of the cylinder, leaving a free space all around, between the inside of the cylinder and outside of the diaphragm. Above this, the cylinder is filled in with small blocks of wood, and through these, water is allowed to percolate slowly down into the lower section, from the top of which it escapes through an overflow pipe.

This constitutes the apparatus, and its operation is as follows: the lower part of the generator is charged with about 200 pounds(?) of anthracite coal, the fire is lighted at the bottom, the engine is started and the blast from the fan blower is driven into the fire forcing the flame up through the mass(?) of coal at the same time another pipe directs a current of air into the cylinder above the surface of the coal, thus furnishing all the elements of combustion in abundance, and in about 30 minutes the process of generation is in full blast, the surface of each individual coal glowing with heat, the flame forcing its way up through the interstices of the fire brick, and superheating the whole mass to from 1200 to 1500 degrees. And now the top of the furnace is tightly closed and steam directed(?) into the bottom of the burning coal from the steam boiler, under a pressure of 80 pounds to the inch. Now steam is simply water in another form, and water, as every school boy knows, is composed of hydrogen and oxygen, and as the steam is forced through the burning mass of coal the oxygen enters into the process of combustion, leaving the hydrogen free, which unites with the sulfur of the coal, and forming sulfuretted hydrogen, the pressure of the steam together with its own buoyancy sending it flying up to the surface. But, hydrogen gas alone does not illuminate; carbon must be added to accomplish this, and at the surface of the mass of coal a pipe leads in from a reservoir in the top of the building through which a stream of kerosene oil, or some other product of petroleum runs down into the flame, this adds the needed carbon, and these gases after being forced up through the superheated fire brick are transformed into "fixed" carburetted hydrogen. From a pipe leading out of the top of the superheater, the gas is next forced into the bottom of the "wash box", and on rising through the center strikes the underside of the diaphragm, rolling outward, over and over in small bubbles, after which it finds its way through the mass of saturated blocks, passing back and forth, this operation thoroughly "washing" and "scrubbing" the gas nearly free from sulfur. After this, the gas is passed through slacked lime, to free it from the last taint of sulfuretted hydrogen, and it goes through into the gasometer, ready for use.

We found the works in charge of Mr. K. A. Lankin(?), from the company's shops of Norristown, PA, who will remain here until everything is in good working order. At present, although not entirely complete, the works are furnishing an excellent quality of gas, a five foot burner giving 19-1/2 candle power under pressure of 21 inches, or about two candle power better than the old works. The price of gas has been reduced from $3.50 to $2.75(?) per thousand feet, with a deduction for quantity consumption of 20,000, 15,000 and 5,000 cubic feet of 20, 15 and 10 percent respectively.

The first gas works in Plattsburgh were erected in 1860 by the "Plattsburgh Gas Light Company" which was organized under the general law of 1848, authorizing the formation of such companies, the amount of capital stock being $16,000 in 220 shares of $72.73 each. The first board of directors was composed as follows: Gerald D. Blake, Peter S. Palmer, Henry S. Johnson, Eric Nichols and Edwin M. Crosby. Gas was first made by what was known as the "Aubin Process" in which resin was used as the base. After a short time, however, the price of resin went up to so high a figure in consequence of the breaking out of the Southern Rebellion that its use was abandoned, and subsequently, for several years soft Canada fir(?) and fat pine were substituted, the latter having been obtained mainly from old pine stumps and roots which were found on the sand plains southward - the relics of the first growth of timber. On the 23rd of December, 1865, the gas works were burned and the following week the property was mortgaged to Bently M. Sherman(?) and Andrew Williams, with the proceeds of which the works were rebuilt and put in operation under the management of H.Q. Hawley of Albany. During the summer of 1871, the works were again burned, when the property was purchased by Almon Thomas and Harry N. Hansom, who reconstructed the works for the manufacture of coal gas which they furnished to the public until the fall of 1876, since which Mr. Thomas has owned and operated the works until the end of November 1880, when he sold out to the Plattsburgh Gas Company, which is represented by Andrew Williams, President; Adolf Gleim, Vice President; and P. Bourge(?), Secretary and Treasurer.

Readers Note: The microfilm from which this transcript was made is of poor quality. Uncertain words are followed by (?).

HISTORY OF GAS COMPANY -- PLATTSBURGH

(C :140

The first gas works in Plattsburg were erected in 1860 by the Plattsburg Gas Light Company, and were located on Bridge Street, East of the Fouquet House. Gas was at first made by what was known as the "Aubin" process, in which resin was used as the base. After a short time, however, the price of resin went up to so high a figure in consequence of breaking out of the Southern Rebellion that its use was abandoned, and subsequently for several years bituminous coal from Canada and fat pine were substituted, the latter having been obtained mainly from old pine stumps and roots which were found on the sand plains southward, the relics of the first growth of timber.

On December 23rd, 1865 the Gas Works were burned but were immediately rebuilt and put in operation again.

During the summer of 1871 the works were again burned and were again reconstructed for the manufacture of coal gas.

The Company changed hands in November 1882, and came into the possession of Mr. L. P. Lowe and others, Lowe being the inventor of what is known as the "Water Gas" process.

In 1888 the Company came into the possession of Mr. Almon Thomas, who in December of that year sold it to Mr. H. M. Pierson and Mr. George M. Cole, both of New York. They immediately commenced to improve the property and on January 1st, 1890 they sold the same to the Plattsburg Light, Heat and Power Company, which had been organized in December 1889.

During the year 1896 the old Gas Works on Bridge Street, East of the Fouquet House, were abandoned and a new plant built at the present site on Saranac St., which has been increased in capacity very materially since that time. Commencing 1889 new mains were laid covering almost the entire city, the bulk of which has been done since 1896.

At the beginning of 1896 one 3' gas machine was installed along with a 10,000 cu.ft. holder. Some two or three years later as the demand increased another 3' machine was installed alongside of the first one and a new 50'000 cu.ft. holder was erected.

About that time the present tar pond was made which is still in the original location. During that period all of the surplus waste water and tar was drained into this pond. Later as the load built up and the demand increased it was necessary to provide some means of separation and at that time a small tar separator was installed in back of the present plant. This, according to Mr. Moray, was installed about 1905. The plant operated this way for some 30 years before any other attempt was made to increase the size of the separators. During this period the dikes around the tar pond, being more or less porous as they were constructed of surplus ashes and accumulation from the Gas Plant, became saturated and consequently give off a certain amount of oily tar during periods of heavy rain or spring run-off which is noticeable at times in the river. This condition is beyond our control.

EMG 1.19.5.6

In 1928 a new 6' gas generator and 200,000 cu.ft. holder were installed and at that time no other provisions were made to take care of the excess accumulation of tar which was created by the installation of the new generator. As a result, all of this refuse dumped into the present pond.

8

In 1938 two other larger separators were installed near the pond and arrangements were made to pump any accumulation of tar back into the Gas Plant which was stored in our relief holder and later dehydrated and burned in our boiler.

In 1944 another 6' gas generator and accessories were installed and at that time provisions were made for another larger tar separator and it was installed in back of the present plant. The accumulation from all of these tar separators was pumped back into our storage tank which is the old 10,000 cu.ft. original holder. A chemical is added to cause the emulsion to settle and any excess water is drained off and allowed to flow back into the tar pond.

The procedure is religiously adhered to and the only time we have noticed any appreciable amount of discoloration in the waste water that might flow back into the river would be during a heavy rain storm or in the spring run-off.

We realize that we have elaborated on some of the history of the first gas works and locations, and some of the information we have mentioned was acquired by questioning Mr. Moray, who at this time is getting old and it is difficult for him to remember dates. We hope this information will be of value to you and if there is anything else we might be able to add please advise.

A. L.SPRING

ALS/cm

The following article has been retyped from the *Plattsburgh Republican*, December 21, 1889. A copy of the original article is attched.

The Plattsburgh Gas Works, under the present management of the proprietors Messrs. Pierson & Cole, are turning out the best quality of illuminating and heating gas ever produced here, and a personal inspection of the works on Monday of this week enables us to present some notes of public interest.

The gas produced here is what is known as "water gas," the plant for which was put in several years ago by Professor Lowe, the pioneer in the introduction and manufacture of this gas. To say that he did not make a full success of the enterprise here is to repeat what is well known in Plattsburgh. The gas produced gave poor light, was laden with impurities, and the products of its combustion were deterious to the health and trying to the patience of the consumer.

The process by which the gas is made is very simple. Steam is driven upward by pressure through anthracite coal, heated to a cherry red. This liberates the hydrogen – the main element sought, the very life of the fire itself, and feeder of the origin and source of all our light, the combustion going on in the sun. The water by this process is separated into its two elements, oxygen and hydrogen, the hydrogen going free and the oxygen combining with carbon and forming, first carbonic acid, and directly afterwards carbonix oxide. Now hydrogen gas alone is of no use as an illuminant. It burns readily but with a faint blue flame making an intense heat but little light. For illuminating purposes the hydrogen must be charged with carbon, making carburetted hydrogen, or hydro-carbon. But chemically pure carbon would not be available for the purpose on account of expense, and the thing to be sought is the cheapest and best method of supplying the carbon. Petroleum, and its products, are used for this purpose. Crude petroleum is vaporized by heat and thrown into contact with the hydrogen in spaces between fire brick in a heated chamber, and the carbon and hydrogen there form a mechanical union and the resulting product is carburetted hydrogen.

So far all is plain work and so far the earlier the earlier manufactures of water gas went without stumbling. But just here arose the main difficulty, which has required many years of patient study and practical investigation to overcome. In this work Messrs. H. M. & J. S. Pierson of Brooklyn have been engaged for the last fourteen years, and they have attained a success which establishes water gas on a solid basis. Prof. Lowe, two years ago, received a gold medal from the Franklin Institute for his invention of water gas and on being congratulated said that the present state of perfection which had been attained in the manufacture of water gas was due mainly to the work of Messrs. Pierson.

The success lies in the improved and effectual methods of "scrubbing," "washing," condensing, and purifying the gas. The products of the combustion of the petroleum leave the newly formed gas laden with impurities, which make themselves manifest in tar in the pipes, soot on the burners, and unburned gases. To this subsequent and final stage of the manufacture Mr. H. M. Pierson, the head of Plattsburgh Gas Works, has devoted himself. It is not necessary to go into details here. Mr. Pierson has multiplied the "scrubbing" and the "washing" processes five-fold and to-day is producing a gas which stands unequalled as an illuminant, for perfect combustion leaving no foul gases, and consuming a minimal amount of air, the proof of all which lies not in theoretical deductions but in actual results. The water gas, as perfected by him is now in use in Burlington, Rutland, St. Johnsbury, and Brattleburo, Vt., in Middletown, Ct., Saratoga and in many cities of North and South Carolina, and Wisconsin, and other Western States, in all of which cases the works were put in by Mr. Pierson himself, and besides these, this gas is in actual and successful use in over three hundred and seventy-five towns in the States and Canada.

The secret of the success of water gas over all other illuminating gas yet produced lies in its excellence combined with its cheapness. Coal gas requires bituminous coal in large quantities, one ton making some 10,000 [cubic] feet. Water gas also requires coal – anthracite – but one ton with a less expensive plant produces 50,000 [cubic] feet. This is the secret of success. Plattsburgh to-day has the cheapest gas of any town outside of large cities. Burlington is paying $8.25 per thousand feet for gas of 19 to 20 candle power, while here the price is practically $3.00 per thousand feet for gas of 24 candle power – that is to say, a burner which burns 4 feet of gas per hour will make the light equal to 24 spermaceti candles.

The present company is not composed of foreigners, nor aliens. Plattsburgh's hope lies in the attraction of outside capital here, as our excellent Board of Trade have fully set forth. The Plattsburgh Gas Co. have invested their money here; they pay heavy taxes here; they employ none but home labor.

They have spent large amounts of money in putting in new pipes and perfecting their works and to-day they can deliver 20,000 feet of gas per hour at the corner of Margaret and Bridge Streets, if required. They have put in new "drips" extending far below the frost line and have thus insured against the trouble which has hitherto been so prevalent in cold weather, caused by "sweating" and freezing. They found the pipes to a considerable extent obstructed with tar and other impurities resulting from poor gas by the imperfect process used by their predecessors, and this will they have to a great extent corrected and will soon have entirely obviated.

The results so far are very satisfactory. The use of gas is extending and increasing. The Williams Manufacturing Co. are using it for tempering, etc., instead of the old forge fire, and its use for cooking and heating is gaining ground, and is sure to extend as its superiority and economy become known. The company has gas stores of all sizes....[remaining text is unreadable].

Plattsburgh

The Plattsburgh Republican Dec. 21, 1889

page 1 UTILITY—"The Greatest Good of the Greatest Number."—BENT

PLATTSBURGH, CLINTON CO., N. Y., SATURDAY MORNING, DEC

The Y. M. C. A. Convention.

The convention of the Young Men's Christian Associations of this district held in Plattsburgh on Friday, Saturday and Sunday last was a full success in every respect, the attendance being good at all the meetings, the speaking was to the points suggested in the most excellent programme, and the public interest was maintained throughout. The mission of the Young Men's Christian Association was so plainly set forth during the proceedings as to sweep away the ground most completely which could possibly stand for foundation of complaint of interference with older ecclesiastical organizations. Considerable has been said about the "broad church," but here is a broad church indeed, but lacking the ordinary [illegible]cation carried along with the ex[illegible]on, suggesting, in fact, no sinister [illegible] Here is a platform on which all [illegible]aring the name "Christian" can [illegible]nd, and do good practical Christian work, throwing aside for the time all differences in creed and service, and uniting in work for the Master, under whose teachings the best and most enduring civilizations of the world have grown up. Such a movement can not fail of strengthening instead of weakening (as some have feared) the best elements of all branches of the Christian church.

In judging of a movement we mark results. And one good result is already manifest from this important gathering in Plattsburgh, of the representatives of Y. M. C. A's of the country round about us. That result is a very perceptible quickening of the manifestation of the want of a Y. M. C. A. building in Plattsburgh, with all the name implies. Plattsburgh has no more pressing need than this to-day. We have an abundance of good churches. Our schools are excellent. Good society is not lacking. But one thing is too much lacking. Up to within a short time there was no place in the town except the saloons, where young men of limited means were welcome to gather of an evening for entertainment. This condition of a village is virtually the offering of a premium for drunkenness and dissoluteness and profligacy. Young men will find their [illegible]ment somewhere. They will not [illegible] chimney corners during the long [illegible] evenings like their grandsires [illegible]ung shoulders do not bear old heads. [illegible]oung men will have their amusements and their places to spend their evenings. Do you suppose they all love evil [illegible] than good associations? Not at all. [illegible] attendance at the reading room [illegible] M. C. A. [illegible]

Plattsburgh Gas Works.

The Plattsburgh Gas Works, under the present management of the proprietors, Messrs. Pierson & Cole, are turning out the best quality of illuminating and heating gas ever produced here, and a personal inspection of the works on Monday of this week enables us to present some notes of public interest.

The gas produced here is what is known as "water gas," the plant for which was put in several years ago by Professor Lowe, the pioneer in the introduction and manufacture of this gas. To say that he did not make a full success of the enterprise here is to repeat what is well known in Plattsburgh. The gas produced gave poor light, was laden with impurities and the products of its combustion were deleterious to the health and trying to the patience of the consumer.

The process by which the gas is made is very simple. Steam is driven by pressure upward through anthracite coal, heated to a cherry red. This liberates the hydrogen—the main element sought, the very life of fire itself, and feeder of the origin and source of all our light, the combustion going on in the sun. The water is by this process separated into its two elements, oxygen and hydrogen, the hydrogen going free, and the oxygen combining with the carbon and forming, first carbonic acid, and directly afterwards carbonic oxide. Now hydrogen gas alone is of no use as an illuminant. It burns readily, but only with a faint blue flame, making an intense heat, but little light. For illuminating purposes the hydrogen gas must be charged with carbon, making carburetted hydrogen, or a hydro-carbon. But chemically pure carbon would not be available for the purpose on account of expense, and the thing to be sought is the cheapest and best method of supplying the carbon. Petroleum, and its products are used for this purpose. Crude petroleum is vaporized by heat and thrown into contact with the hydrogen gas in spaces between fire brick in a heated chamber and the carbon and hydrogen there form a mechanical union and the resulting product is carburetted hydrogen.

So far all is plain work and so far the earlier manufacturers of water gas went without stumbling. But just here arose the main difficulty, which has required many years of patient study and practice [illegible] to overcome. In this work Messrs. [illegible] Pierson of Brooklyn have been engaged for the last four [illegible] years and they have attained a [illegible]

The Third National Bank of Malone Suspends.

The Third National Bank of Malone closed its doors, Dec. 18th, notice being given that depositors would be paid in full. The holding by the bank of a considerable amount of the Salmon River Co's notes was the cause. The business of the bank will be placed in the hands of a government receiver.

Temperance Anniversary.

The 16th anniversary of the Temperance Crusade will be observed in the Peristrome Presbyterian church, Monday evening, Dec. 23d, at 7.30 o'clock. The pastors of the several churches will aid in the services. There will be a solo by Mrs. L. W. Velsey. The public generally are cordially invited to attend.

For New U. S. Buildings at Platts.—Congressman Merrill on Thursday of this week introduced in the House of Representatives a bill providing for new buildings for the Military Post in Plattsburgh.

The Mooers Milk Suit.

The milk suit spoken of in last week's Republican as being in progress at Mooers has come to an end after continuing about six days with the result of a verdict of guilty by the jury. There seems to be a division of public opinion in regard to the case and at first there was much sympathy for the accused, but it seems to us that all parties who take a careful and unbiased view of the case can not help concurring with the jury in their verdict. Now as we understand the statute milk must contain at least 12 per cent of solids and from all tests made by experts no healthy cow can give milk below this standard. The Legislature in making this law for the protection of the public against fraud or adulteration [illegible] were very careful not to place the standard at such a per cent that it would endanger any party who might be selling his milk as it came from the cows, [illegible]

Jacques [illegible] telegraph construction for the [illegible] Canal Co. committed suicide [illegible] while on his way [illegible] He had been suffering from sever[illegible]

[illegible]

VERMONT.

Dog [illegible] Charlotte, Dec. 11. [illegible]

Howard [illegible]

[illegible]

[illegible] result is a very perceptible quickening of the manifestation of the want of a Y. M. C. A. building in Plattsburgh, with all the name implies. Plattsburgh has no more pressing need than this to-day. We have an abundance of good churches; Our [illegible]ls are excellent. Good society is [illegible]king. But one thing is too much [illegible] Up to within a short time there [illegible]ace in the town except the [illegible], where young men of limited means were welcome to gather of an evening for entertainment. This condition of a village is virtually the offering of a premium for drunkenness, and dissoluteness and profligacy. Young men will find their amusement somewhere. They will not sit in the chimney corners during the long winter evenings like their grandsires. Young shoulders do not bear old heads; Young men will have their amusements and their places to spend their evenings. Do you suppose they all love evil rather than good associations? Not at all. The attendance at the reading room of the Y. M. C. A. in the D. & H. R. R. station depicts it. That room and library is a good step. But a better step yet would be a much better room in central location of Plattsburgh—a reading room and library worthy of the largest town in Northeastern New York with good substantial building. Such a building Plattsburgh needs to-day, and it is a cheering sign that willing hands already are being raised in its favor and with something inside of the hands to help the good work. Room for more such hands!

I. O. O. F.

At [illegible] p. m. Wednesday evening a [illegible]id pulled out of Plattsburgh, [illegible] filled with jolly good fellows [illegible]n a business and pleasure trip [illegible]oint for the purpose of insti[illegible] [illegible]ar Lodge of Odd Fellows at that [illegible]burgh. The company consisted of D. D. G. M. E. E. Grosbeck accompanied by Brothers B. D. Curtis, Chas. Pardo, H. K. Averill, John Smeeton, H. W. Hubbard, H. G. Larkin, Thomas Kiley, Thomas Bullard, J. H. Percy, W. B. Mopers, M. Anderson, W. H. Bentley, H. E. Bently, Chas. Burdo, Earnest Hall, F. E. Vail, James Kidd, J. E. Stratton, Frank Shields, B. J. Simonds, A. E. Ormsby, G. W. Cunningham, F. Mead, of McDonough Lodge No. 310.

Brothers, L. F. Persons, R. T. Mace, H. J. Shields, C. J. Reynolds, N. T. Hewitt, E. A. Palmer, of Keeseville Lodge No. 55, and Brothers J. T. Beach, of Green Mountain Lodge No. 1, Burlington, Vt., and E. [illegible] Botsford of Neshoba Lodge No. 74, of Malone.

These were met at Rouses Point by a delegation from Missisquoi Lodge No. 889 of Swanton, consisting of Brothers O. F. Atwood, E. P. Adams, D. Sargeant, F. L. Cox and W. P. Welch, and G. P. Wheeler of Keyderass Lodge No. 270, Ballston Springs, D. D. Palmer of Brier Hill Lodge No. 470, and several Brothers from the Point, who conducted the visitors to their Lodge Room and there D. D. G. M. Grosbeck proceeded to institute Wood Lodge, No. 663, I. O. O. F. after which followed the installation of officers for the newly instituted Lodge; the following was the result of the balloting:

N. G.—Thomas Hanlon.
V. G.—A. H. Wolcutt.
Sec.—Fred Farley.
Tr[illegible] Geo. Chilton.

A[illegible]s followed the initiation of several [illegible] into that Mystic Order, [illegible]ferring of the "Oriental De[illegible] several of the Brethern pres[illegible] [illegible]d after several speeches of good [illegible], the company was invited by the Bretheren of Wood Lodge to a banquet at the Frontier House, which space will not allow to tell of the good things that [illegible] had prepared for his guests. Suffice to say that the company came away from the Point with hearty wishes of good will [illegible]

[illegible] illuminating purposes the hydrogen gas must be charged with carbon, making carburetted hydrogen, or a hydro-carbon. But chemically pure carbon would not be available for the purpose on account of expense, and the thing to be sought is the cheapest and best method of supplying the carbon. Petroleum, and its products are used for this purpose. Crude petroleum is vaporized by heat and thrown into contact with the hydrogen gas in spaces between fire brick in a heated chamber, and the carbon and hydrogen there form a mechanical union and the resulting product is carburetted hydrogen.

So far all is plain work and so far the earlier manufacturers of water gas went without stumbling. But just here arose the main difficulty, which has required many years of patient study and practical investigation to overcome. In this work Messrs. H. M. & J. S. Pierson of Brooklyn, have been engaged for the last fourteen years, and they have attained a success which establishes water gas on a solid basis. Prof. Lowe, two years ago, received a gold medal from the Franklin Institute for his invention of water gas, and on being congratulated said that the present state of perfection which had been attained in the manufacture of water gas was due mainly to the work of Messrs. Pierson.

The whole secret of this success lies in the improved and effectual methods of "scrubbing," "washing," condensing and purifying the gas. The products of combustion of the petroleum leave the newly formed gas laden with impurities, which make themselves manifest in tar in the pipes, soot on the burners, and unburned gases. To this subsequent and final stage of the manufacture Mr. H. M. Pierson, the head of the Plattsburgh Gas Works, has devoted himself. It is not necessary to go into details here. Mr. Pierson has multiplied the "washing" and the "scrubbing" processes five-fold and to-day is producing a gas which stands unequalled as an illuminant, for perfect combustion, leaving no foul gases, and consuming a minimum amount of air, the proof of all which lies not in theoretical deductions but in actual results. The water gas, as perfected by him is now in use in Burlington, Rutland, St. Johnsbury and Brattleboro, Vt., in Middletown, Ct., Saratoga and in many cities of North and South Carolina, and Wisconsin, and other Western States, in all of which cases the works were put in by Mr. Pierson himself, and besides these, this gas is in actual and successful use in over three hundred and seventy-five towns and cities of the States and Canada.

The secret of the success of water gas over all other illuminating gas yet produced lies in its excellence, combined with its cheapness. Coal gas requires bituminous coal in large quantities, one ton making some 10,000 feet. Water gas also requires coal—anthracite—but one ton with a less expensive plant produces 60,000 feet. This is the secret of success. Plattsburgh to-day has the cheapest gas of any town outside of large cities. Burlington is paying [illegible] per thousand feet for gas of 19 to 20 candle power, while here the price is practically [illegible] per thousand feet for gas of 24 candle power—that is in [illegible] will make a light equal to 24 [illegible]

[illegible] of solids and from all tests made by chemists no healthy cow can give milk below that standard. The Legislature in making that law for the protection of the public against fraud or adulteration of milk were very careful not to place the standard at such a per cent that it would endanger any party who might be selling his milk as it came from the cows, including strippings, provided the cows were in a healthy condition, and if they were were not the owner should see to it that such milk was not sold as it would be dangerous to human health. Now if all parties sending milk to a butter factory sent milk only up to and no higher than the standard fixed by statute how could the party buying such milk pay 80 cents per hundred for it and expect to get a profit from the business of making butter? For as we see 12 per cent of solids would not be over three per cent of butter fat which would be only 3 lbs., of butter from 100 lbs. of milk worth perhaps say 60 cts., less the cost of making, so it must be plain to any ordinary mind that milk must be considerably above the standard in order for the factory man to pay 80 cts., per hundred pounds at the price of butter this season. Some seem to lose sight of the fact that the law is designed to protect the consumer or purchaser against avarice or the neglect of the vendor. Statutes have not only been enacted for the benefit of milk consumers but it is as unlawful to sell many other kinds of adulterated food as well as milk and it is declared a misdemeanor even though the party may not know that such article is impure or adulterated.

Now in this important milk suit all the farming community should feel a deep interest and should be desirous of understanding it as it is. The law may at first thought appear arbitrary but such is not the case as it protects alike each individual who sells the milk as much as it the purchaser. And as we understand it in this case Mr. Hart was not charged with watering his milk, neither skimming it, but that he had been selling adulterated milk, or in other words milk below the standard allowed by statute and consequently declared adulterated and such was the fact shown conclusively on the trial and the jury rendered their decision from the above fact that the milk was below the standard not taking into consideration how it came so or who caused it to be so. That question is still left with the public but there seems to be a change of sentiment since the case in its different bearings have been ventilated and the law better understood. There is certainly something very strange about this case. We do not want to think Mr. Hart guilty of adulterating this milk neither would we have thought some of the other parties personally guilty had they not acknowledged it by their own acts as very few men will make a claim if no foundation for such claim exists.

We have nothing but the kindest of feelings for all parties concerned yet we [illegible] sympathy with fraud wherever found, but we will venture this opinion, that no party sending their milk as it came from the cow with all the strippings [illegible] Boomhower's factory will ever be found guilty of adulterating the milk [illegible] that condition. We sincerely hope that this case may be a lesson to all [illegible] whenever the wrong [illegible] may be righted and never occur again [illegible]

THE WEEK.

VICINITY NEWS.

The Catholic fair proceeds [illegible] were $3,000 [illegible]

Malignant diphtheria is raging at [illegible]

W. [illegible] has been appointed postmaster of Port Henry.

Guy W. Clark has been appointed postmaster of Sandy Hill [illegible]

[illegible] postmaster of Glens Falls.

[illegible]

Two tramps took possession of [illegible] house, Dec. 13, in his absence and assaulted his wife and robbed the house, and frightened a daughter [illegible] nearly to death and escaped.

A 10 year old son of Geo. Wright [illegible] attacked by a bear in the woods [illegible] miles southeast of [illegible] and nearly killed, being saved by [illegible] father who was attracted by the screams.

WOMEN.

Mrs. Charlotte Jackson who has just [illegible] at Goshen, N. Y., aged 77, was the [illegible] of Noah Webster, of dictionary fame, formerly taught school in that village.

[illegible]

... ainier of Inter ... Lodge 170, and several Brothers from the ... t. who conducted the visitors to their ... e Room, and there D. D. G. M. Gros... proceeded to institute Wood Lodge, ...503, I. O. O. F. after which followed ...stallation of officers for the newly ...uted ...ge; the following was the ... t of ... llating:

O ... nna Hanlon.
(... Wolcott.
: ... 'arley.
...Geo. Chilton.

... ...his followed the initiation of sev... ...andidates into that Mystic Order, ...he conferring of the "Oriental De... upon several of the Brethern pres... ...and after several speeches of good ... the company was invited by the ...ern of Wood Lodge to a banquet at ...rontier House, which space will not ... to tell of the good things that "mine ... had prepared for his guests. Suffice ... that the company came away from ...oint with hearty wishes of good will ... their entertainers and prediction, ...he chapter, there founded will be an ... to the Fraternity and that "Friend... Love and Truth" will long remain ...unsullied motto. SILETCE.

...Plattsburgh Boy Out West.

... publish below a few extracts from a ...e letter from our former townsman ...Stiles, which will, no doubt, interest ...any friends in this locality. Since ...sidence in Menominee Mr. Stiles has ...lected sheriff of that county and ...now the incumbent of that office. ...ys:

... live in the dwelling part of the ...y court house. The house is heated ...am and lighted by electric lights, with ... comfortable salary, amounting in ... about $5,000 per year. ... city has about 14,000 inhabitants, ... streets and walks, elegant water ... and ...tric light plants, splendid ...s; ...out 2,400 daily attendance ... ...enty-eight graded teach... ...en churches, and eighteen ... which cut yearly about ... feet of lumber, planing mills, ...hops and all "bang up" good ...f people. Quite a number of the ...g class are French Canadians, ...s and Bohemians. ...o wish to speak of the mining in... ... of our county. The output this ...ar was over two and a half million ...of iron; employing an army of ...y workmen, which under our new ...voting will, in my estimation, give ...ajority in the future. ... The mines ...l as the mills, are nearly all owned ...epublicans, who have heretofore ... their men like droves of sheep ...a your friend "Jack" has turned them ... [illegible]

The secret of the success of water gas over all other illuminating gas yet produced lies in its excellence, combined with its cheapness. Coal gas requires bituminous coal in large quantities, one ton making some 10,000 feet. Water gas also requires coal—anthracite—but one ton with a less expensive plant produces 60,000 feet. This is the secret of success. Plattsburgh to-day has the cheapest gas of any town outside of large cities. Burlington is paying $2.25 per thousand feet for gas of 19 to 20 candle power, while here the price is practically $2.00 per thousand feet for gas of 24 candle power—that is to say, a burner which burns 4 feet per hour will make a light equal to 24 spermaceti candles.

The present company is not composed of foreigners, nor aliens. Plattsburgh's hope lies in the attraction of outside capital here, as our excellent Board of Trade have fully set forth. The Plattsburgh Gas Co. have invested their money here; they pay heavy taxes here; they employ none but home labor.

They have spent large amounts of money in putting in new pipe and perfecting their works and to-day they can deliver 20,000 feet of gas per hour at the corner of Margaret and Bridge Streets, if required. They have put in new "drips" extending far below the frost line and have thus insured against the trouble which has hitherto been so prevalent in cold weather, caused by "sweating" and freezing. They found the pipes to a considerable extent obstructed with tar and other impurities resulting from poor gas by the imperfect process used by their predecessors, and this evil they have to a great extent corrected and will soon have it entirely obviated.

The results so far are very satisfactory. The use of gas is extending and increasing. The Williams Manufacturing Co. are using it for tempering steel instead of the old forge fire, and its use for cooking and heating is gaining ground, and is sure to extend as its superiority and economy become known. [illegible]

that condition. We sincerely hope that this case may be a lesson to all and wherever the wrong is that it may be righted and never occur again in our community.

AN OBSERVER.

THE WEEK.

VICINITY NEWS.

The Catholic bazar proceeds of Malone were $8,000.

Malignant diphtheria is raging at Brasher Iron Works.

W. H. Esty has been appointed postmaster of Port Henry.

Guy W. Clark has been appointed postmaster of Sandy Hill.

Wm. H. Rockwell has been appointed postmaster of Glens Falls.

The new Deaf Mute buildings at Malone has been wired for 100 incandescent lights.

A reward of $1,000 is offered by the sheriff of Washington county for the murder of Maggie Harrigan.

There will be racing on the Malone track Dec. 31, and Jan. 1, under management of the Gentlemen's Driving Club.

Three men were killed in Williams' slate quarry at Granville, Dec. 17, by a premature blast, caused by careless tamping.

D. D. Connell and W. B. Potter have filed a claim 4,000 feet square on the south side of the river in Moreau for a gold and silver mine.

The Lake George Boat Club have adopted plans for a $10,000 club house on the shore of Basin Bay. The club numbers over 100 members.

The Ticonderoga Railroad Company has been incorporated with a capital of $30,000 to construct a two-mile railroad in Ticonderoga, Essex county.

W. B. Alvord of Chateaugay has been appointed deputy collector and inspector of customs with headquarters at [illegible], succeeds Mr. T. W. [illegible].

A bill of $700 has been sent to the supervisors of Franklin county, by a New York chemist for analyzing the stomach of [illegible] of that county who was thought to have been poisoned.

Frank Hyde, aged [illegible], son of [illegible] Hyde of Bangor committed suicide at Hutchinson, [illegible] Dec. 14 after attempting to murder Mrs. W. [illegible]

[illegible]

GENERAL NEWS.

[illegible]

Large part of New Carlisle, O., Dec. 1 loss $30,000.

Cotton Oil mill at Dallas, Tex., Dec. 1 loss $30,000.

Oklahoma House Kansas City, Dec. 1 one man killed.

Hoerger's distillery at Pekin, Ill. Dec. 13; not in the Trust, loss $40,000.

Exchange elevator in Buffalo, with 200,000 bushels of barley, Dec. 18, loss $120,000, insurance $100,000.

CURRENT FUN.

Nine children did his mother have
Until he went to skate;
Now he has found a watery grave,
And his mother has but eight.

Where are you going, my pretty maid?
Going to Sunday school, she said.
Have you been of late, my pretty maid?
Not for about a year, she said.
Then why do you go, my pretty maid?
Christmas is coming, sir, she said.

Small comfort: Baby.

Sound sleep: Snoring.

Has sand: Man of grit.

Falling off: Bicycle riding.

Made to order: Waiter girls.

Cold and distant: Alaskans.

A smart aleck: Alecktricity.

Sky blue color: Storm cloud.

Burning question: Price of coal.

Caledonian sports: Scotch dudes.

Money talks: Talks what? Cents.

Roomers of war: Military lodgers.

Blew laws: Those governing storms.

Loose habits: Daddy's clothes for the son.

Something to blow about: Cold in the head.

Interested [illegible] Medical student.

The [illegible]

[illegible]

[illegible] distinction, and the campaign was the most disastrously planned [illegible] Lord Howe has ever been held in loving [illegible] by Americans, and a few years since a monument was erected near the spot where he fell, chiefly through the instrumentality of Ticonderoga's noted Divine, Rev. Joseph Cook.

That the remains of Lord Howe were taken to Albany and buried in St. Peter's church seems a well authenticated fact in history.

—Watson, in his history of Essex county says:

"The next day (July 7) a sturdy barge received [illegible] the body of the young lord, who but yesterday had led the brilliant pageant. Philip Schuyler, then just entering upon his distinguished career, escorted the remains with all the tenderness and reverence due the illustrious dead. The body was conveyed to Albany and buried in St. Peter's Episcopal Church, which stood in the middle of State street. Its obsequies were performed with every pomp of military display and all the solemnities of religious rituals. An heraldic insignia marked the location of the grave. Forty-four years had elapsed, and, in the progress of improvement, that edifice was demolished and the grave of Howe exposed. A double coffin was revealed. The outer one, which was made of white pine, was nearly decayed; but the other, formed of heavy mahogany, was almost entire. In a few spots it was wasted, and the pressure of the earth had forced some soil into the interior. When the lid was uncovered, the remains appeared clothed in a rich silk damask cerement, in which they were enshrouded on his interment. The teeth were bright and perfect, the hair stiffened by the dressing of the period, the queue entire, the ribbon and double brace apparently new and jet black. All, on exposure, shrunk into dust, and the relics of the high-bred and gallant peer were conveyed by vulgar hands to the common charnel-house and mingled with the promiscuous dead.

—All cotemporaneous history agrees substantially with the above facts, and yet the developments in Ticonderoga a few weeks since seem to flatly contradict this. Thursday, Oct. 3, while laborers were digging a trench for a sewer in Ticonderoga village, near the spot where Lord Howe fell, they suddenly came upon a decayed coffin and human remains some four feet below the surface, and at the head of the coffin was found a stone, from seven to nine inches in diameter, one side flat and the other rounded, and on the flat side are rudely cut, as with a bayonet or some rude instrument, the words: "In mem. of Ld Howe, Killed Trout brook."

It is held that Ld was the common abbreviation for Lord in those days and that the remains are unmistakably the remains of Lord Howe, hastily buried on the retreat of the British army, and undiscovered since, till this "chance blow" of a workman brought them to light. The remains have been carefully preserved, and it is reported claimed by the relatives of the deceased.

We acknowledge, with thanks, a copy of the Plattsburgh Sentinel Almanac for 1890. It is beautifully illustrated, [illegible] —Port Henry [illegible]

The Plattsburgh Sentinel [illegible] for 1890, is a very handsome almanac and contains much general information.—[illegible]

We are in receipt of the Plattsburgh Sentinel Almanac for the year 1890, which in every way reflects credit upon the management of that enterprising journal. It contains many handsome cuts appropriate to the different months of the calendar, besides portraits and short sketches of the lives of many celebrated authors and poets. These features, combined with other useful statistics, make it a book of [illegible] practical value.—Malone Gazette.

The Plattsburgh Sentinel has issued a neat Almanac for 1890, containing many pleasing illustrations, among them portraits of distinguished authors and poets. The Sentinel is enterprising, and its subscribers will enjoy the new almanac.—St. Albans Messenger.

The Plattsburgh Sentinel, a Republican paper always true to its colors and never sleeping at its Clinton county post, stands in the front rank of rural journalism. It has just issued a year book which delights our eyes as we turn its beautiful pages. Thanks, brother Lansing, for your kind remembrance.—Ballston Journal.

Clinton Co. Farmers' Association.

The monthly meeting of the Clinton County Farmers' Association will be held at Plattsburgh, Jan. 14th, 1890.

Among the special features of the meeting will be an address by H. Gordon of Chazy, subject,—"The needs of farmers' associations." Also N. R. Weaver of Schuyler Falls, subject,—"How to make farming pay." These, with discussions upon the subjects from the question box, it is hoped will make the meeting instructive and profitable.

Farmers' wives and daughters are requested to attend. T. Armstrong, Pres.

UNDER "LA GRIPPE."

Sad is my lot and mournful my song,
I'm wiping my nose the whole day long,
My head is enlarged and I feel all wrong—
I've got the influenza.

The salty tears from my eyes run fast,
My happy days, alas! have passed,
How long, O Lord, will this trouble last—
This Russian influenza!

I will take back all I've ever said
'Bout the wicked czar, and will praise instead,
If he will only take back this dread,
Vile Russian influenza.

Donation at West Chazy.

There will be a donation and oyster supper and other refreshments given at the M. E. parsonage, in West Chazy, on Jan. 8th, evening, for the benefit of Rev. John Quay. All are cordially invited.

By Order of Com.

[illegible] The water of that place [illegible] and there was a strong [illegible] at the [illegible] His father, William [illegible] of South Hero.

ACROSS THE LAKE.

—The house of Con [illegible], near the lake in Milton, occupied by [illegible], was burned last week with all its contents.

—The schooner J. Q. [illegible] has taken a large quantity of timber and planks to Shelburne Harbor to be used in rebuilding the Steamer Vermont during the winter.

—A. J. Fuller, of Brandon, was waylaid by three men one night last week on his way home from Rutland. They took him out of his carriage and robbed him of his money, amounting to $11, and his overcoat.

Walter H. Benedict Post.

A public installation and camp fire of Walter H. Benedict Post, G. A. R., will be held at Fraternity Hall on Wednesday evening, Jan. 8th. All members of the Grand Army, the Ladies' Relief Corps and other kindred associations, with such friends as they may bring with them, will be cordially welcomed. There will be a good time, with speeches, army songs, etc.

Electric Light and Gas Companies Consolidate.

The Plattsburgh Gas Co. and the Plattsburgh Electric Light Co. have been consolidated, the new company filing articles of incorporation at Albany on Monday. The capital is $100,000. The trustees are: A. L. [illegible], John H. Myers, George M. Cole, [illegible] A. Kellogg, of Plattsburgh, and H. M. Pierson of Brooklyn.

Fatally Burned by Escaping Steam.

Engineer William Swift was fatally burned by steam at the Barnes box factory at Rouses Point, Tuesday afternoon, by the bursting of a steam-pipe. He died at 3 o'clock Wednesday morning.

The Plattsburgh Republican
Jan. 3, 1890 P. 1, column

1889

Platt M. K. Mrs. h 14 McComb
Platt William M. clerk, bds Witherill House
Plattsburgh Board of Trade, room 40 Clinton
PLATTSBURGH DOCK CO., wholesale and retail dealers in coal, flour, oil, cement, lime, etc., foot of Bridge. (See page 88)
PLATTSBURGH FURNITURE CO. 18 and 20 Bridge. (See page 89)
PLATTSBURGH GAS WORKS, office below Fouquet House
Plattsburgh Novelty and Plating Works, 22 Bridge
PLATTSBURGH WATER WORKS, C. D. Boynton, superintendent, Winslow's Block
PLATTSBURGH WOOD CO. kindling wood, near The Williams Mfg. Co.'s Works,
Plummer Carrie Miss, domestic, 112 Margaret
Poitras Dominick, h 89 Platt
Poitras Sylvia, widow, h 73 Platt
POST OFFICE, R. R. Grant, P. M. Custom House [Square
Poyer Leon, laborer, h 74 Platt
Poyer Leon Mrs. tailoress, h 74 Platt
Pratt Joseph, clerk, 32 River, bds do
Premore John, laborer, h 60 Miller
Premore Joseph, laborer, h 13 Weed

Prentice Charles
Prentice Henry M
Prescott Peter, lal
Prescott Sophia,
Provo Julia, widov
Prindle Elizabeth,
Provost Louis, ca
Putnam George (F
Putnam & Thomas
grocers, 51 S.
Purdy F. E. lumbe
Putraw Harry, tel
Putraw Jennie Mis
Putraw Joseph, h

Quirk Michael, cle

Rabedoux Edward
Rabedoux Esimir,
Rabedoux Joseph,
Rabedoux Josephi
Rabedoux Moses,
Rabedoux Peter, h
Raby George, labo
Raby Henry R. up
Raby Milo, labore
Ramsay B. S. conf
Ramsay Charles C.

Notes on Plattsburgh Map Search

Operating Company: Plattsburgh Light Heat & Power Co.

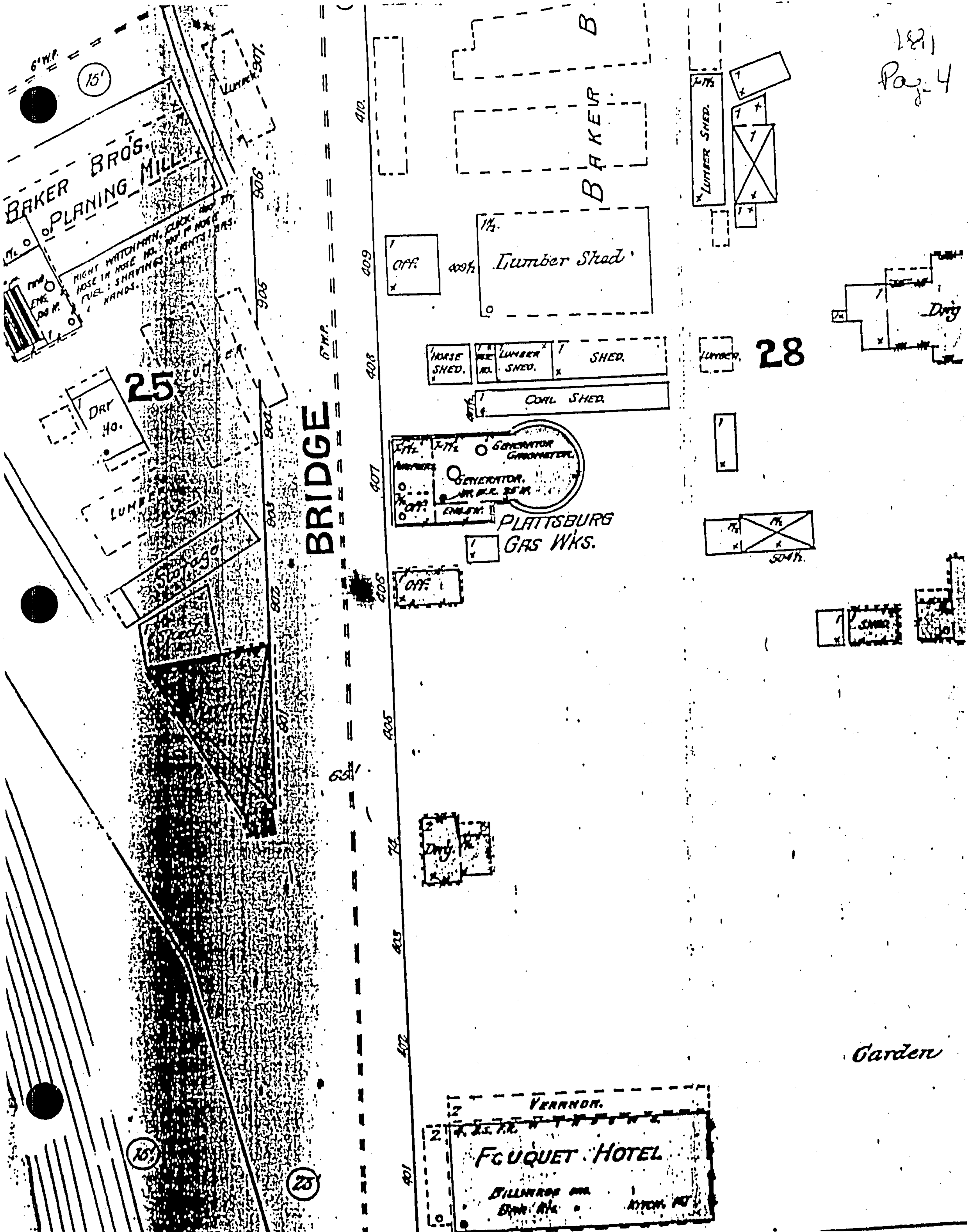
Supplied Location: Bridge Street, Directly East of Old Fouquet House

Search of Maps:

Map 1884	Index lists Plattsburgh Gas Works which can be seen on both the overview map and the Bridge Street map has the supplied location. See pages 1, 2 and 3.
Map 1891	Detailed map of gas plant. See page 4.
Map 1896	Index lists Plattsburgh Light Heat & Power Co. as owners of a site which appears on sheet 9. This is not the location of the formerly identified gas plant which is now shown to be vacant. See pages 5, 6, 7 and 8.
Map 1902	Original gas plant is shown as being used for storage while facilities at newly identified sites have been expanded. See pages 9 and 10.
Map 1909	Bridge Street gas plant shown as being used for storage, Plattsburgh Light, Heat & Power Co. seen unchanged. See pages 11 and 12.
Map 1918	Map of former Bridge Street gas plant being used for auto repair. Plattsburgh Gas & Electric Company shown as owners of Plattsburgh Light, Heat & Power Co. plant.
Map 1927	Original gas plant site shows no change but Plattsburgh Gas & Electric Co. site shows expanded facilities. See pages 15 and 16.
Map 1949	Original gas plant site shows a change to the shape of the structure. The Plattsburgh Gas & Electric Co. site is now owned by New York State Electric & Gas Corp. Division of Associated Gas & Electric System and is listed on the index. See pages 17, 18 and 19.

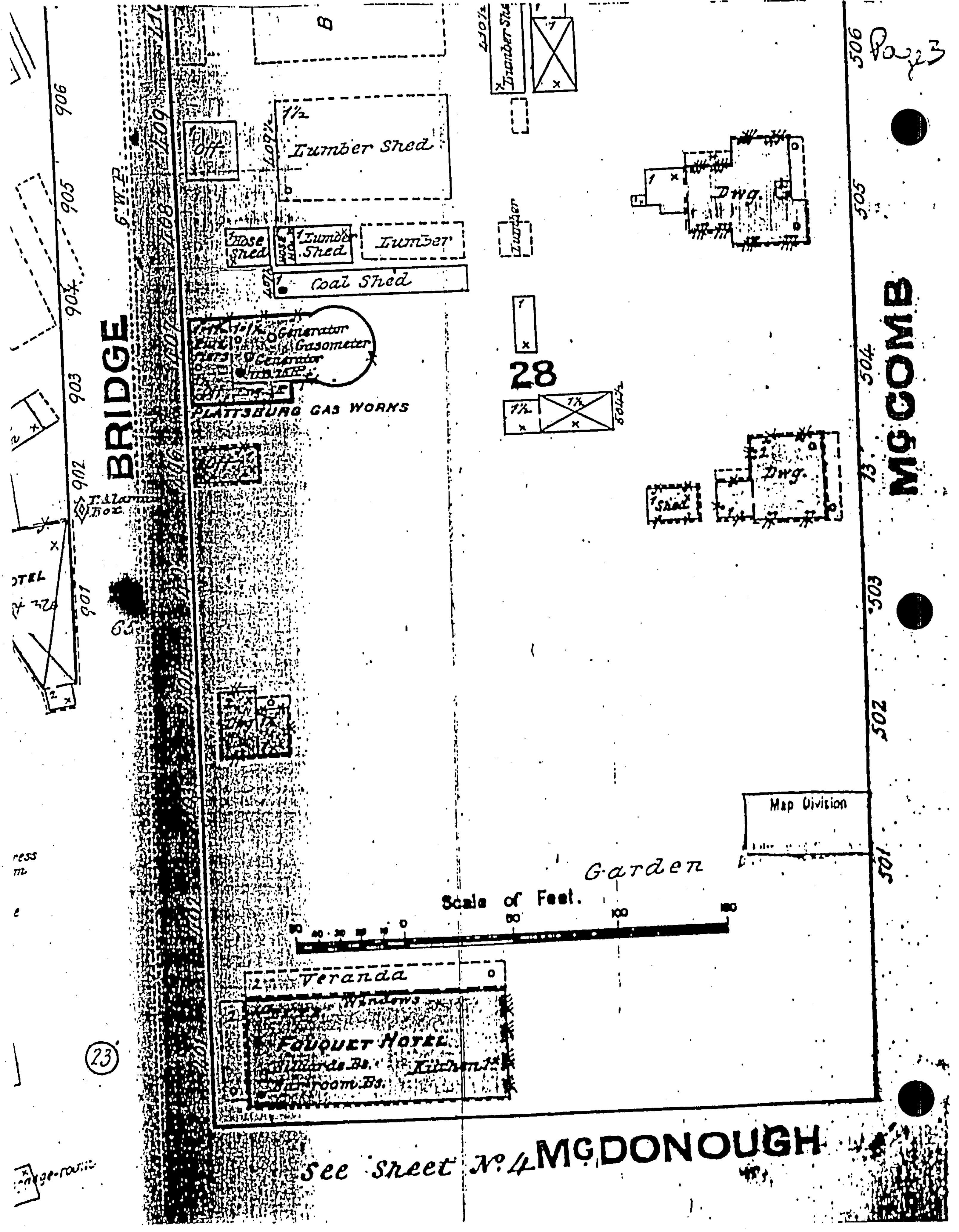
PLATTSBURGH - BRIDGE STREET

1891
Page 4



6" W.P.
15'
LUMBER 907
BAKER BROS. PLANING MILL
NIGHT WATCHMAN, CLOCK; HOSE IN HOSE HO. 200 FT HOSE
FUEL: SHAVINGS; LIGHTS: GAS
4 HANDS
ENG.
906
905
25
DRY HO.
LUMBER
902
903
Storage
802
801
BRIDGE
6" W.P.
63'
410
409
408
407
406
405
74
403
402
401
BAKER
Off.
409½
Lumber Shed
HORSE SHED.
LUMBER SHED.
SHED.
COAL SHED.
GENERATOR
GASOMETER
GENERATOR
ENGINE
Off.
PLATTSBURG GAS WKS.
Off.
LUMBER SHED.
LUMBER
28
Dwg
504½
SHED
Dwg.
Garden
VERANDA
FOUQUET HOTEL
BILLIARDS
15'
23

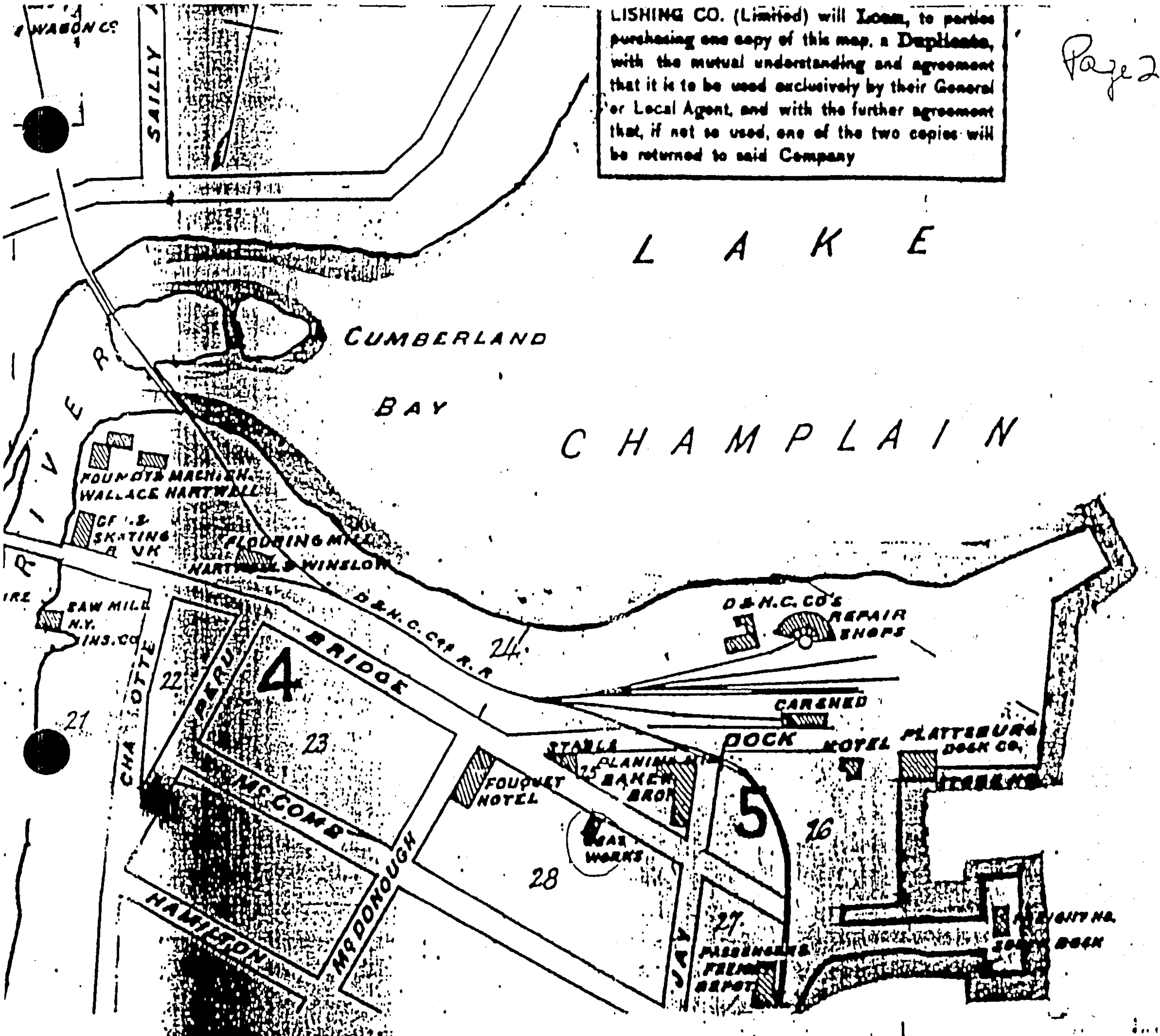
Page 3

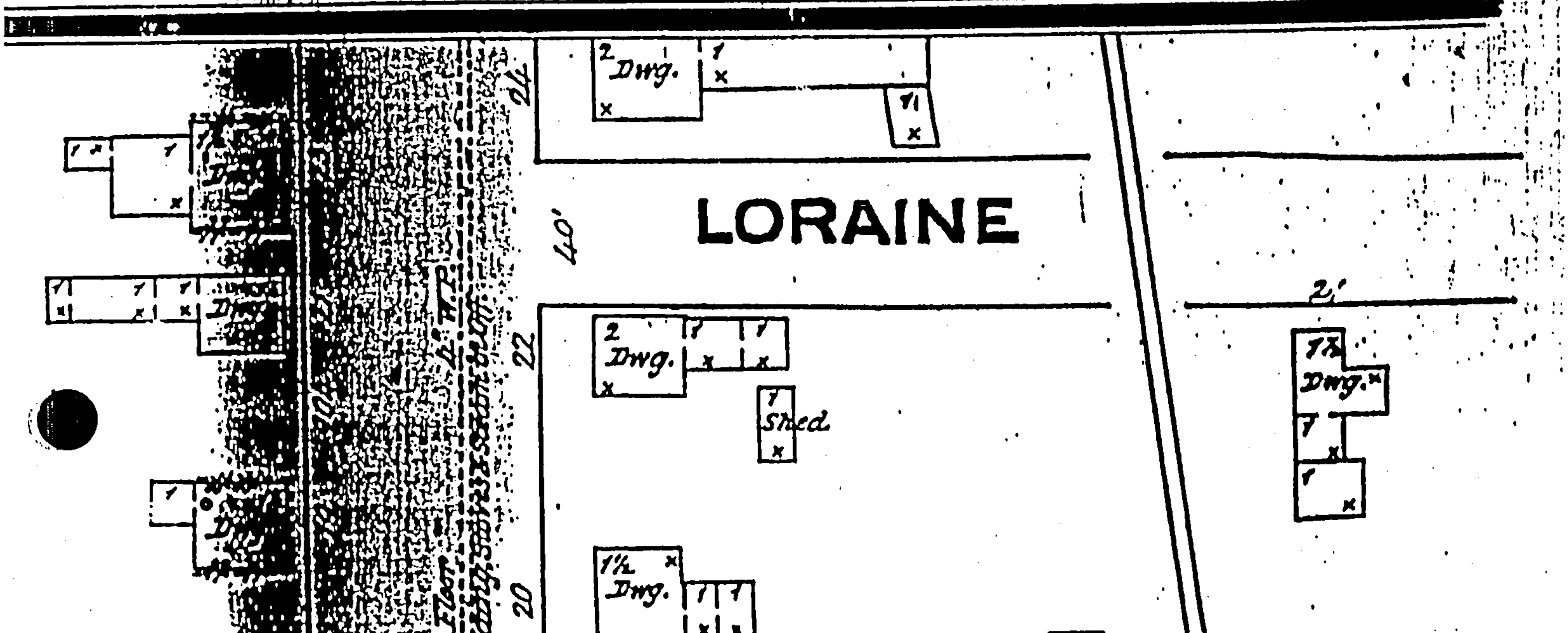


BRIDGE
MC COMB
See Sheet No 4 MC DONOUGH
Fouquet Hotel
Billiards Rs.
Bar room Rs.
Kitchen
Windows
Veranda
Garden
Scale of Feet.
Map Division
PLATTSBURG GAS WORKS
Generator
Gasometer
Coal Shed
Lumber Shed
Lumber
Hose Shed
Off.
Dwg.
Dwg.
Shed
28
23
F. Alarm Box
501
502
503
504
505
506
13
901
902
903
904
905
906

Page 2

LISHING CO. (Limited) will Loan, to parties purchasing one copy of this map, a Duplicate, with the mutual understanding and agreement that it is to be used exclusively by their General or Local Agent, and with the further agreement that, if not so used, one of the two copies will be returned to said Company



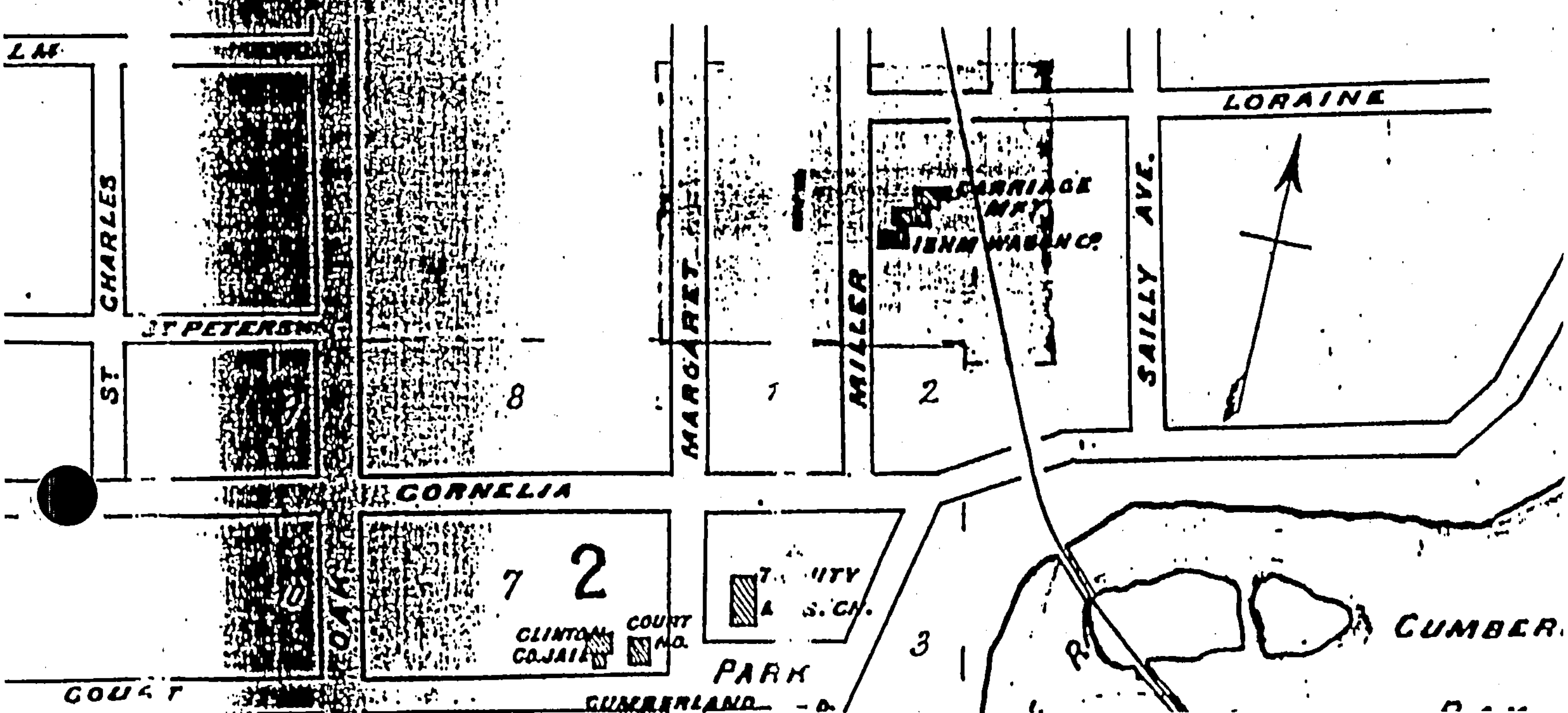


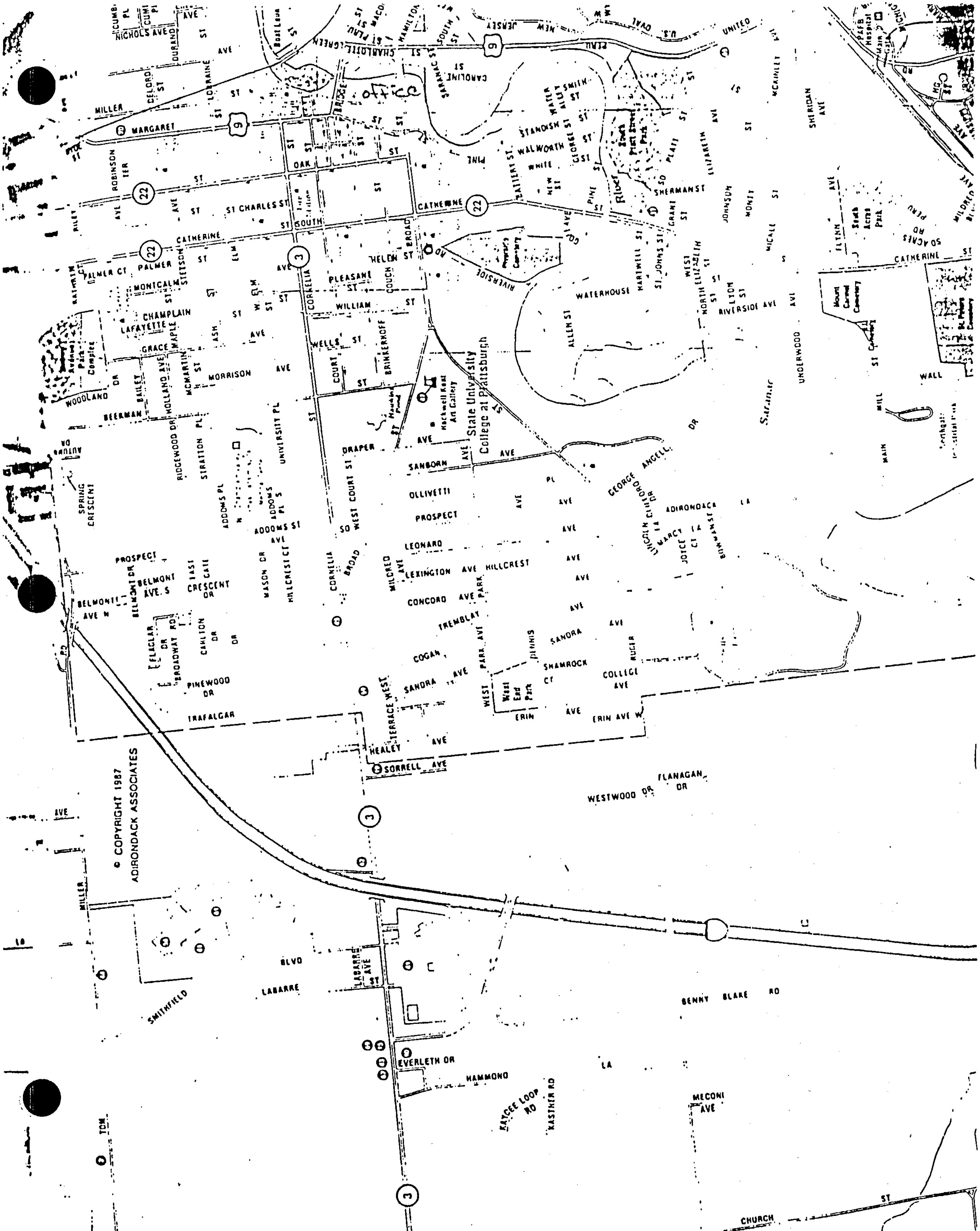
Plattsburgh 1884
Page 1

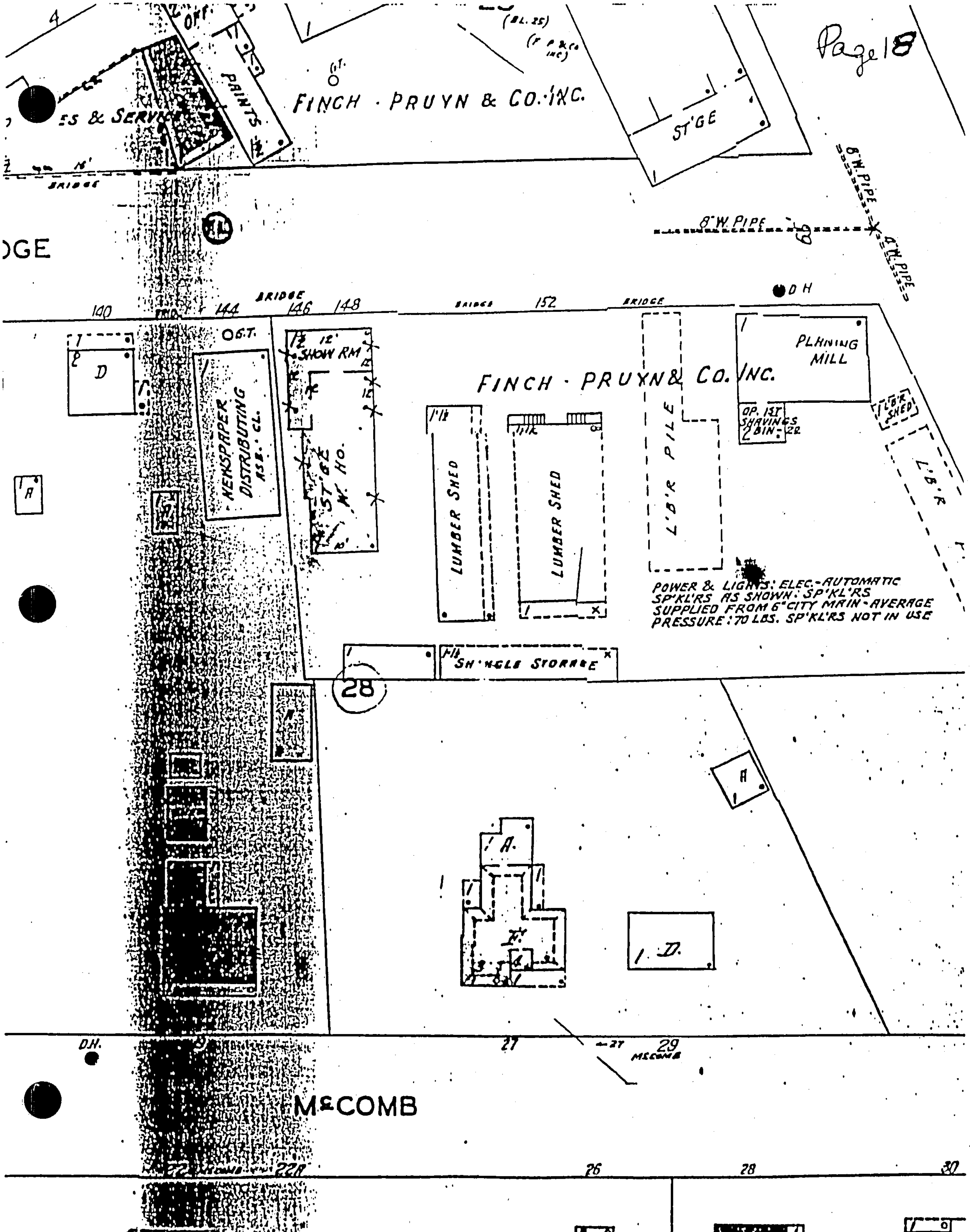
INDEX.

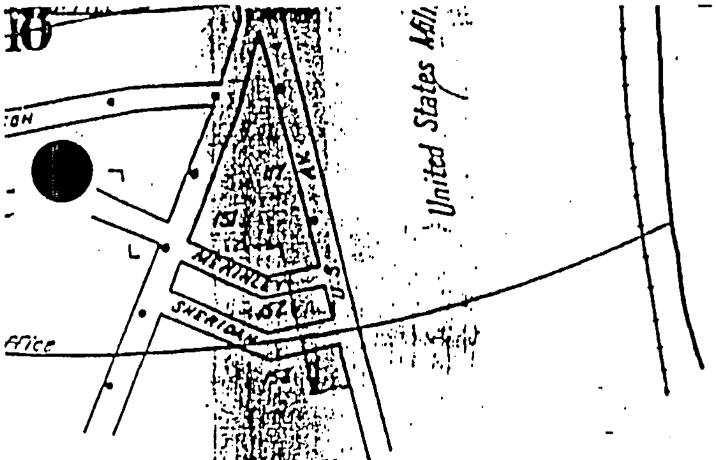
SPECIALS.

NOT




office
State University College at Plattsburgh
Myers Fine Arts Building
Hawkins Pond
Margaret St
Catherine St
Cornelia St
Broad St
Court St
Bridge St
Oak St
South St
Charlotte St
Hamilton St
Caroline St
Saranac St
Standish St
Walworth St
Water St
Smith St
George St
Pine St
White St
Platt St
Sherman St
Elizabeth St
Johnson St
Montcalm
Monty St
McKinley St
Sheridan Ave
Riverside Dr
Riverside Ave
Waterhouse St
Hartwell St
St. Johns St
North Elizabeth St
Lyon St
Allen St
Underwood
Saranac River
Peru St
New Jersey
United
U.S. Oval
Miller St
Lorraine St
Gelford St
Durand St
Nichols Ave
Cumberland Pl
Robinson Ter
Riley Ave
St Charles St
Palmer Ct
Palmer St
Stetson St
Elm St
W. Elm St
Champlain
Lafayette
Maple St
Ash St
Grace
McMartin St
Morrison Ave
Holland Ave
Bailey
Beerman
Woodland Dr
Hawkins Pond
Helen St
Pleasant St
Couch St
William St
Wells St
Brinkerhoff St
Draper Ave
Sanborn Ave
Olivetti
Prospect Ave
Leonard Ave
Lexington Ave
Hillcrest Ave
Concord Ave
Park Ave
Tremblay Ave
Cogan Ave
Sandra Ave
West Terrace
Healey Ave
Sorrell Ave
Erin Ave
Erin Ave W
College Ave
Shamrock Ct
Dennis
Rugar
West End Park
George Angell Dr
Lincoln Clifford Dr
Adirondack La
Marcy La
Joyce Ct
Bunnanse
Ridgewood Dr
Stratton Pl
University Pl
Addoms Pl
Addoms St
Mason Dr
Hillcrest Ct
West Court St
Spring Crescent
Autumn Dr
Belmont Ave N
Belmont Ave S
Belmont Dr
East Gate
Crescent Dr
Carlton Dr
Flaglar Dr
Broadway Rd
Pinewood Dr
Trafalgar
Westwood Dr
Flanagan Dr
Labarre St
Labarre Ave
Blvd
Smithfield
Benny Blake Rd
Everleth Dr
Hammond La
Kaycee Loop Rd
Kastner Rd
Meconi Ave
Church St
Tom
Mill
Main
Wall
South Acres Park
So Acres Rd
Flynn Ave
Mount Carmel Cemetery
St. Peters Cemetery
Mildred Ave
Peru
PAFB Hospital
Riverside Cemetery
Macdonough
Boat Launch
Kent Art Gallery
Melissa Park
Fox St
Ave
3
9
22


4
OFF.
PAINTS
ES & SERV
(BL. 25)
(F. P. & CO. INC.)
G.T.
FINCH · PRUYN & CO. INC.
ST'GE
BRIDGE
8" W. PIPE
8" W. PIPE
8" W. PIPE
DGE
D H
BRIDGE
100
144
146
148
BRIDGE
152
BRIDGE
O.G.T.
D
A
NEWSPAPER DISTRIBUTING ASB. CL.
12' SHOW RM
ST'GE W. HO.
FINCH · PRUYN & CO. INC.
LUMBER SHED
LUMBER SHED
L'B'R PILE
PLANING MILL
OP. 1ST SHAVINGS BIN
L'B'R SHED
L'B'R
POWER & LIGHTS: ELEC.-AUTOMATIC SP'KL'RS AS SHOWN: SP'KL'RS SUPPLIED FROM 6" CITY MAIN - AVERAGE PRESSURE: 70 LBS. SP'KL'RS NOT IN USE
SHINGLE STORAGE
28
A
A
D
D.H.
27
27 McCOMB
29
McCOMB
22R
26
28
30



LOCATION OF THIS TOWN AS ABOVE UNDERLINED

1949 Page 17

CORRECTION		
REVN NO.	DATE OF CORRECTION	ATTAC
3	9-40	[illegible]
4	9-45	[illegible]
5	5-49	[illegible]

0 feet to an inch
(Approx.)

ADDITIONAL INDEX, MAY, 1949

r Add'l Index of
ich is now void.

STREETS

B

....3-189 13
....3-116 13

C

....1-140

....1-106 13

M

....1-112

P

l. of Bailey Ave.,
Bailey Ave.,

S	sheet
Stratton Place,	13
W	
Weed Street Extension,	11
SPECIALS	
A	
American Legion Clubhouse,	15
Associated Gas & Elec. System,	10
B	
Berst-Foster-Dixfield Co., Hydro Electric Plts.,	20
C	
Champlain Theatre,	4
Valley Girl Scouts Council,	7
Chateaugay Ore & Iron Co.,	21
City of Plattsburg Municipal Light'g Plt., &c.,	6
Repair Shops,	10
County Dairymen's Co-op. Assn., Inc.,	11
Cumberland Hotel,	2

D	sheet
Diamond Match Co., B.F.D. Co. Div.,	11
F	
First Church of the Nazarene,	4
G	
General Ice Cream Corp., National Dairy Products Corp. Division,	6
Guy's Products, Inc., Ice Cream Mfg.,	6
I	
Imperial Paper & Color Co., Pittsburgh Paper Mill Div.,	20
Irona Creamery, Inc.,	12
J	
Junior High School,	3
K	
Kent Falls Hydro Elec. Plant,	20
L	
Linney Auditorium,	21
Lyon Mountain School,	21

Pl

M

Miller, C., Building,
Myers, M.P., & Co., Hardware

N

N.Y. State Electric & Gas Corp.
Telephone Co., Offices,

P

Pal Blade Co., Razor Blades Mf
Plattsburg Coal Co.,
Foundry & Machine C
Laundry,
State Normal School,
Public Library,

S

Salvation Army,
Samuel F. Vilas Home (Old Ladi
Socony-Vacuum Oil Co.,
System Properties, Inc., Factor
Bldg

V

Vilas, S.F., Home (Old Ladies),

W

Windsor Hotel,

* Indicates only one side of Street shown

Central Ave.

17
19
17
18
6
17

1-18 7
19-60 8
701-719, arbitrary 7
18
19
5 & 17
19
12

8 & 9
1-100 18

1-106 *13
2-106 *14
19
Havon, 19
16
1-44 15
1-24 12

		21
(arbitrary), at Lyon Mountain,		21
		16
O		
	1-9	*17
	2-16	*8
	11-17	*4
	18-51	4
	52-148	*15
	53-149	*14
	150-195	12
Turnpike Road,		20
P		
	1-80	14
	1-60	16
Park Ave.	1-16	6
	17-29	*7
	18-30	*6
	31-74	7
	1-52	18
		3, 10 & 17
		17 & 18
Platt St.	1-20	5
Pleasant		6
Prospect Ave.	1-30	2 & 4
R		
Railroad, at Lyon Mountain,		21
	1-80	12
	1-80	2
	1-36	2
	37-70	3

Wadhams Ave., at Cliff Haven,		18 & 17
Walworth,		16
Water Alley,		18
Waterhouse,	1-40	12
Weed,		18 & 16
Wells,		17
White,	1-9	*16
Williams,	1-8	*17
"	10-45	16
Woods Mills Road,		20
SPECIALS		
A		
Academy St. Pierre,		14
Aird-Don Co., Heating Supplies, &c.,		10
Allpreat Laundry, Steam Laundry,		10
Armour & Co.,		6
B		
Beth Israel Synagogue,		4
Broad Street School,		17
C		
Catholic Summer School of America,		18
Cavanagh, J., Co., Notions, Tin & Woodenwares,		7
Champlain Valley Hospital,		16
" Oil Co.,		11
Children Home of Northern N. Y.,		14
Church of the Nazarene,		4

Methodist Episcopal C
National Bank,
Presbyterian Church,
Foote, C. H., Wholesale Gr
Fouquet House and Garage

G

General Ice Cream Corp'n,

H

Hamilton Street School,
Hotel Champlain,

I

International Paper Co., G
"C" and "D",

L

Library,

M

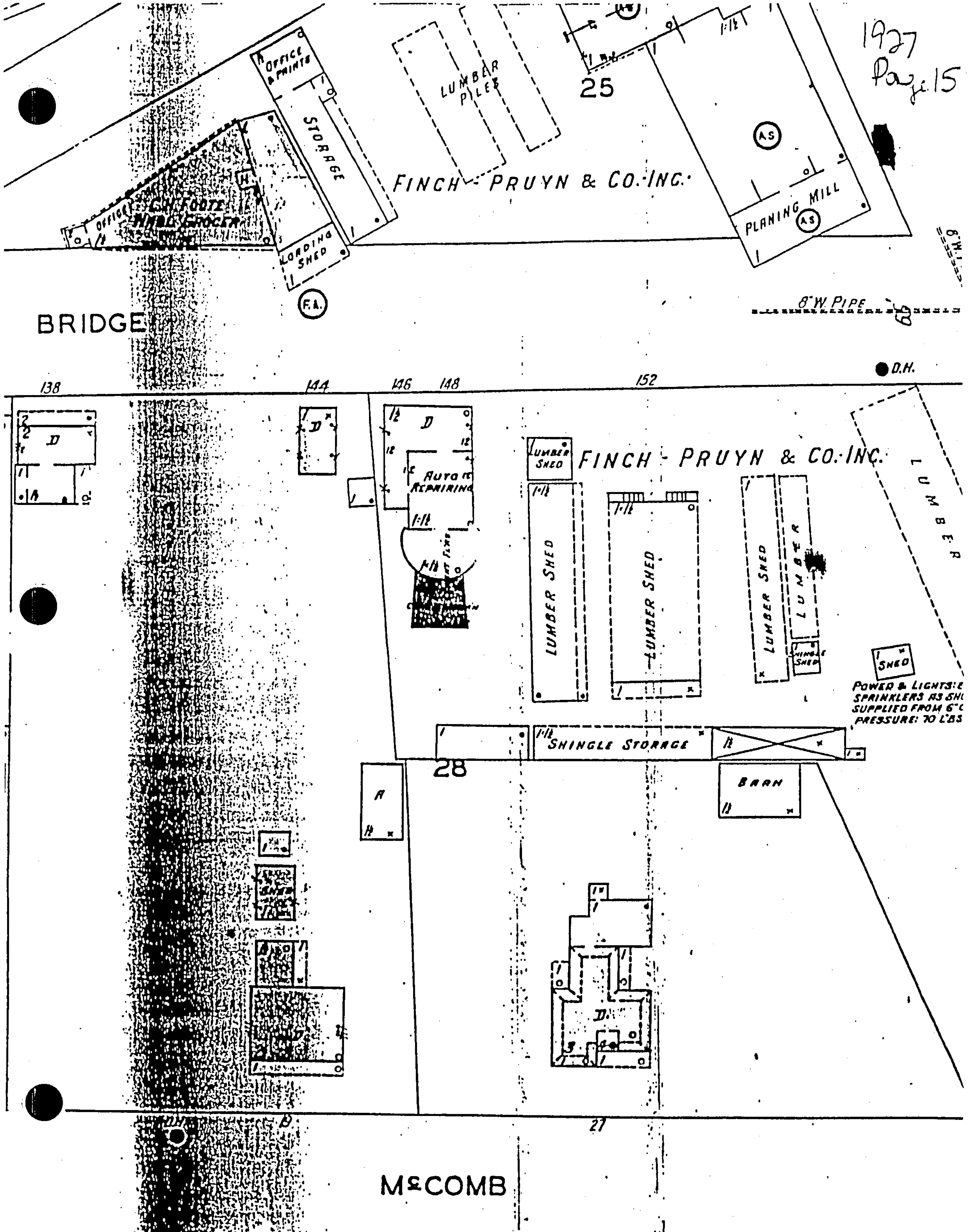
Marshall, A. H., & Co., Aut
Mason, A., & Sons, Lumbe
Masonic Temple,
Merchants National Bank,
Methodist Church,
Miller, C. M., Property,
Moore, E. G., Co., Whole
Mount Assumption Institu

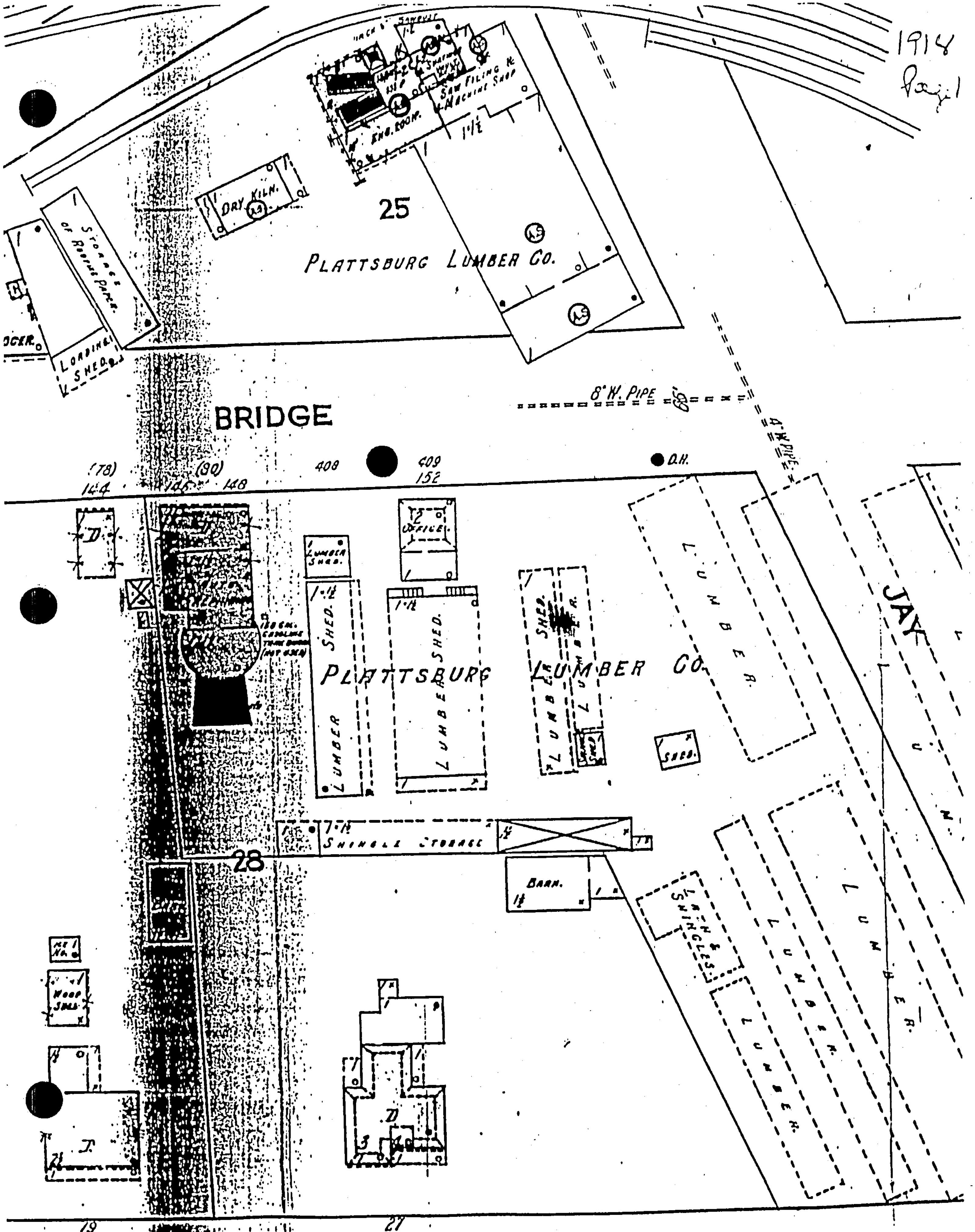
N

National Tape Co., Cotto
New Cumberland Hotel,

* Indicates only one side of Street shown.

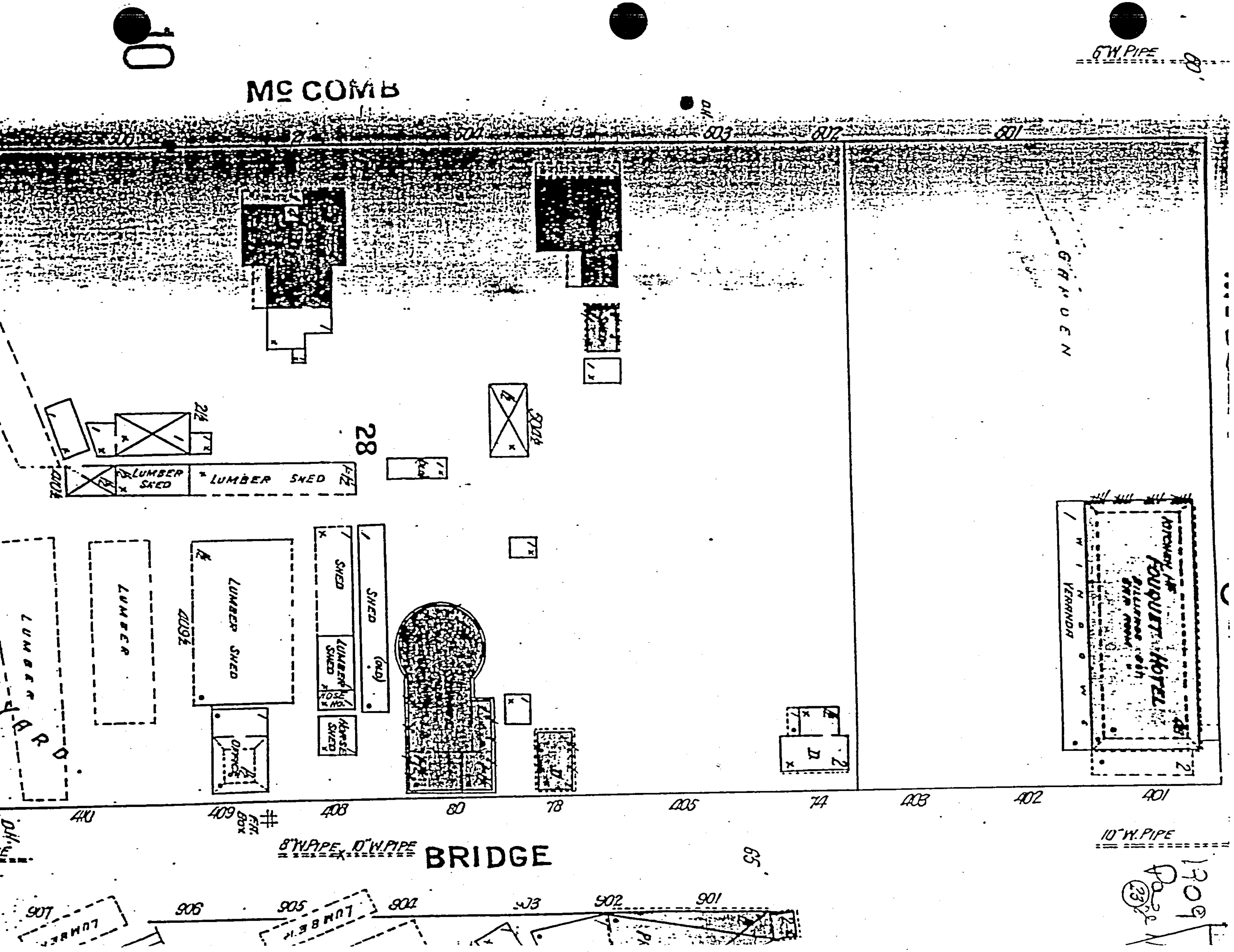
1927
Page 15


OFFICE & PAINTS
STORAGE
LUMBER PILES
25
1:1½
A.S.
FINCH - PRUYN & CO. INC.
PLANING MILL
A.S.
OFFICE
FOOTE
GROCER
H
LOADING SHED
F.A.
8" W. PIPE
8" W.P.
BRIDGE
D.H.
138
144
146
148
152
D
D
D
AUTO REPAIRING
FINCH - PRUYN & CO. INC.
LUMBER SHED
LUMBER SHED
LUMBER SHED
LUMBER SHED
LUMBER
LUMBER
SHINGLE SHED
SHED
POWER & LIGHTS: E
SPRINKLERS AS SHO
SUPPLIED FROM 6" C
PRESSURE: 70 LBS
SHINGLE STORAGE
28
BARN
A
SHED
D
27
McCOMB



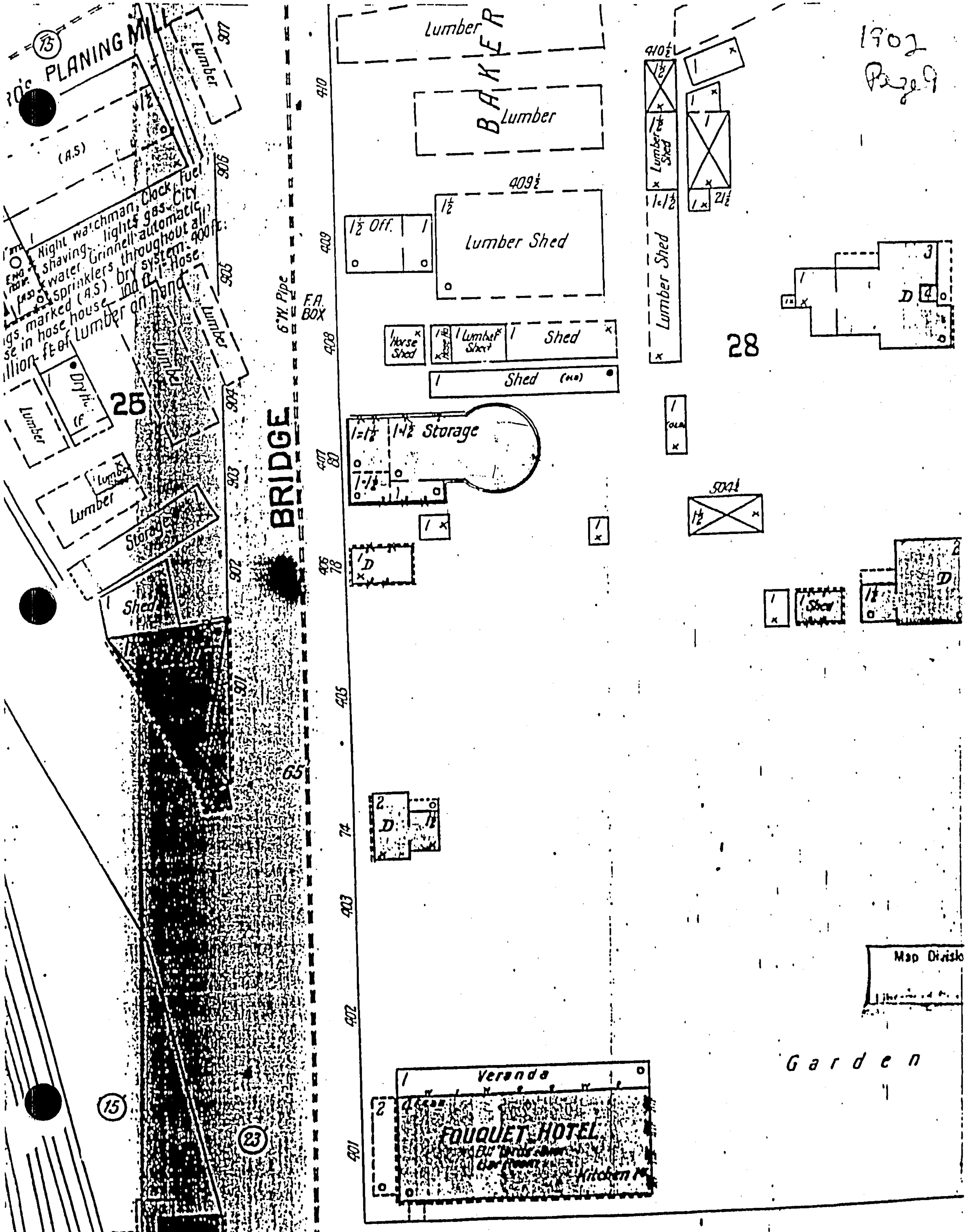
DRY KILN
SAW FILING & MACHINE SHOP
ENG. ROOM
SHAFTING
25
PLATTSBURG LUMBER CO.
STORAGE OF ROOFING PAPER
LOADING SHED
BRIDGE
8" W. PIPE
4" W. PIPE
O.H.
(78)
144
(80)
146
148
408
409
152
D
OFFICE
LUMBER SHED
LUMBER SHED
LUMBER SHED
SHED
PLATTSBURG LUMBER CO.
LUMBER
LUMBER
LUMBER
LUMBER
SHED
SHINGLE STORAGE
28
BARN
LATH & SHINGLES
JAY
WOOD SHED
D
19
27

1914
Page 1

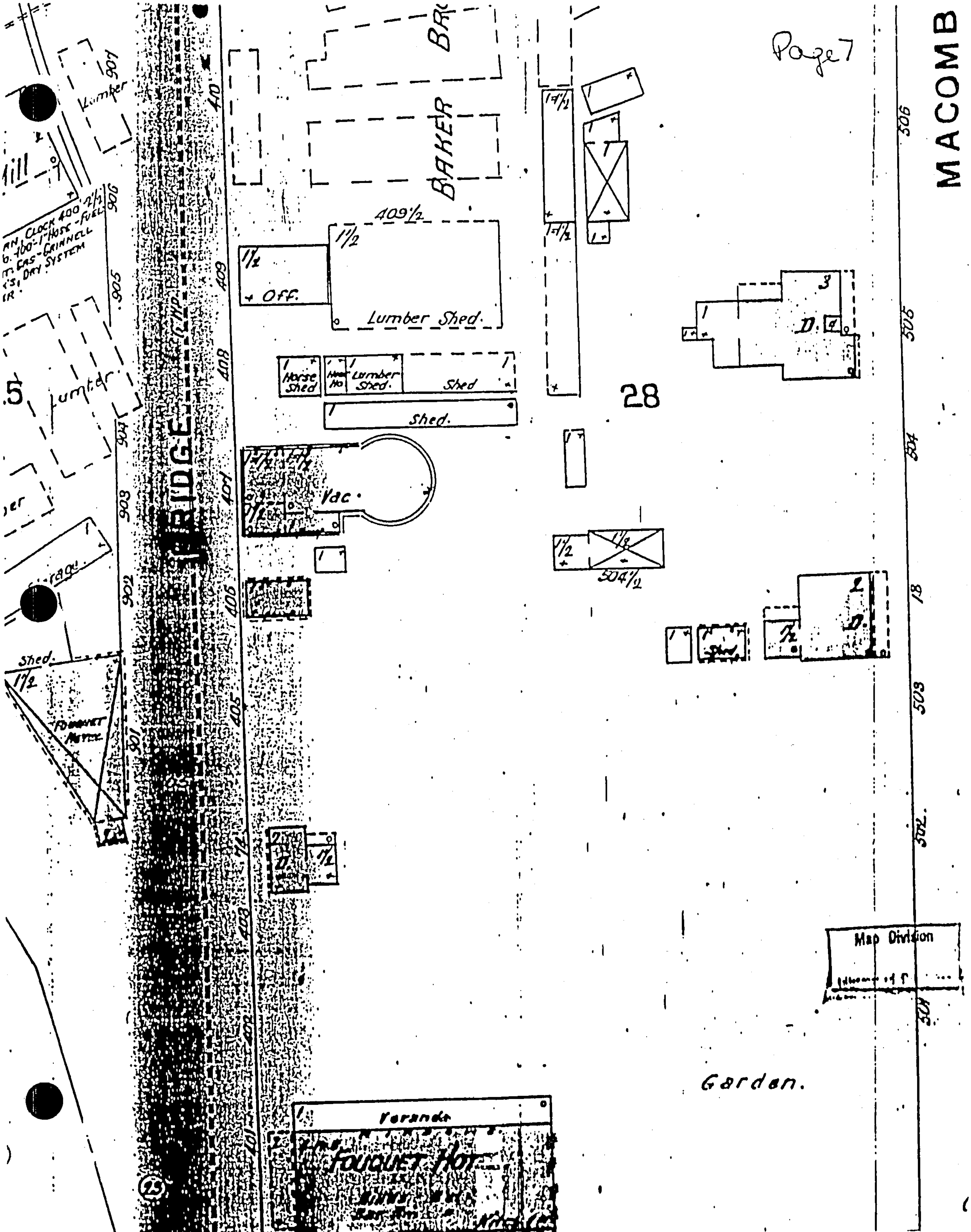

10
McCOMB
6"W. PIPE
80'
D.H.
801
802
803
13
804
12
806
GARDEN
KITCHEN HF
FOUQUET HOTEL
BILLIARDS & DIN
DIN ROOM
WINDOWS
VERANDA
401
402
403
74
405
78
80
408
409
410
28
SHED
LUMBER SHED
LUMBER SHED
SHED
SHED (OLD)
LUMBER SHED
HOSE HO.
HORSE SHED
LUMBER SHED
409½
OFFICE
LUMBER
LUMBER
YARD
2½
410½
F.A. BOX
8"W.PIPE
10"W.PIPE
BRIDGE
65'
10"W.PIPE
901
902
903
904
905
906
907
LUMBER
LUMBER

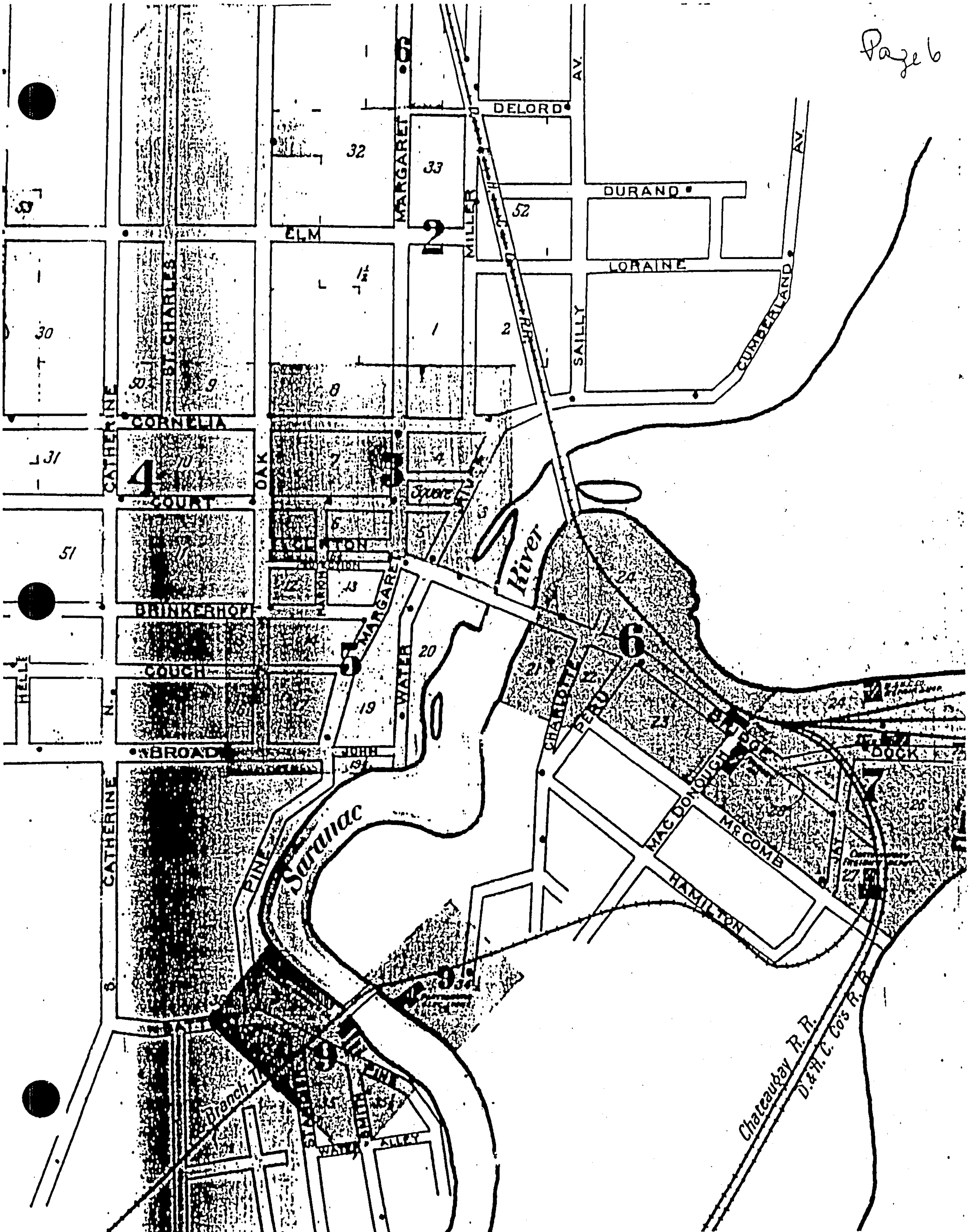
1909
Page 23

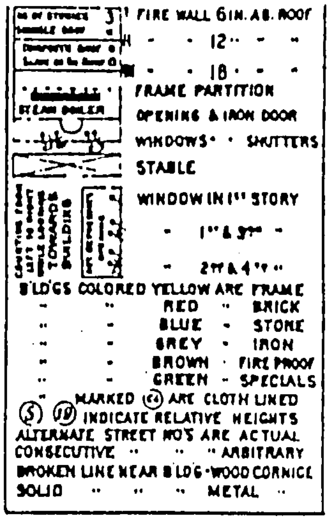
1902
Page 9


PLANING MILL
73
(A.S)
Night watchman, Clock, fuel shaving, lights gas, City water, Grinnell automatic sprinklers throughout all bldgs marked (A.S). Dry system. 400 ft. hose in hose house. 100 ft. 1" hose. million ft of lumber on hand
Lumber
Dry
25
Storage
Shed
15
23
907
906
905
904
903
902
901
BRIDGE
6" W. Pipe
F.A. BOX
65
410
409
408
407
406
405
74
403
402
401
BAKER
Lumber
409½
1½ Off.
Lumber Shed
Horse Shed
Lumber Shed
Shed
Storage
D
410½
Lumber Shed
504½
28
Map Division
Veranda
FOUQUET HOTEL
Kitchen
Garden

Page 7

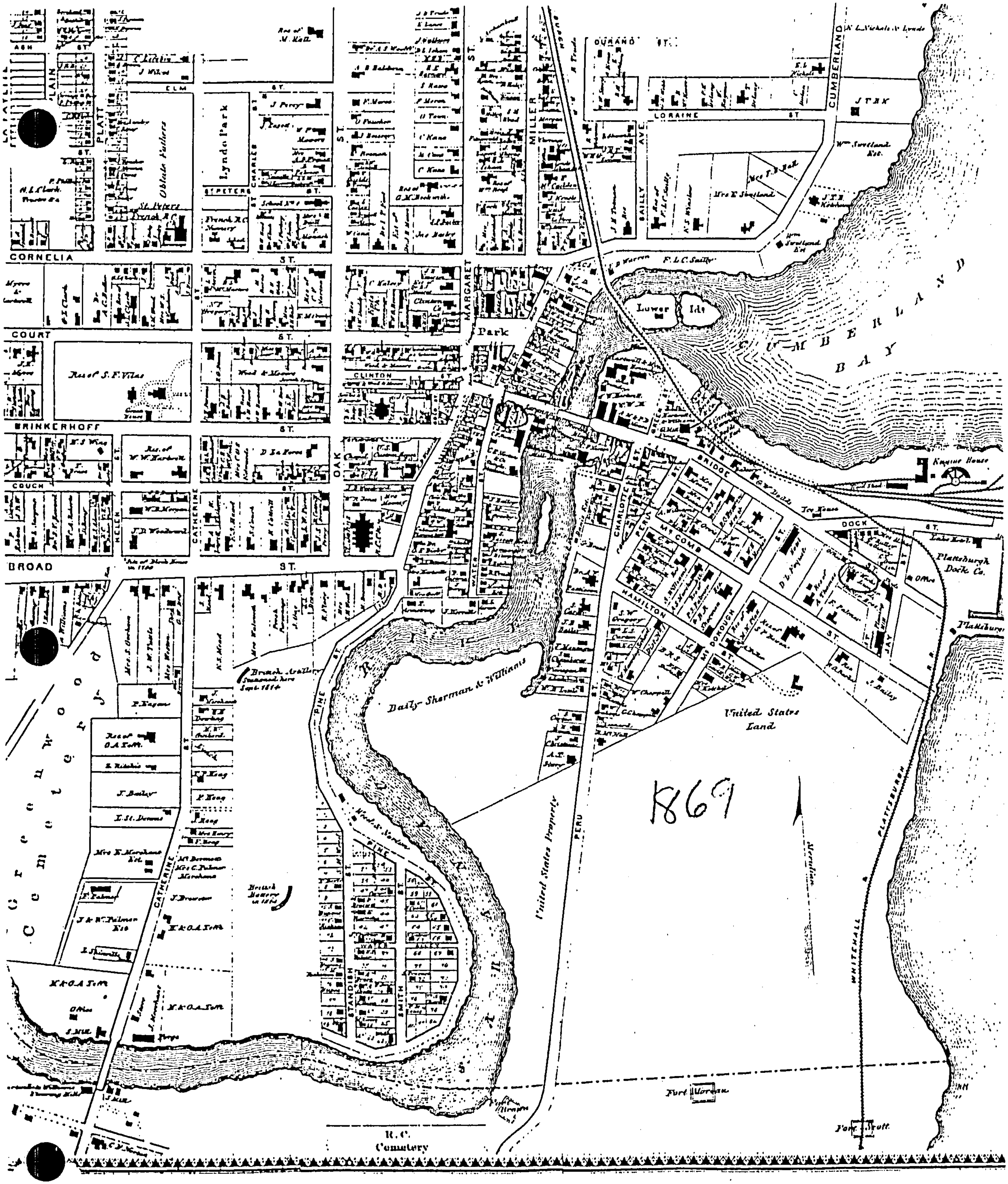

MACOMB
BRIDGE
BAKER
BR
28
409½
Lumber Shed
Off.
1½
Horse Shed
Hose Ho.
Lumber Shed
Shed
Shed
Vac.
504½
Veranda
Fouquet Hot
Garden.
Lumber
Lumber
Mill
Garage
Shed
Fouquet Hotel
CLOCK 400 ... 1 HOSE - FUEL ... GRINNELL ... DRY SYSTEM
410
409
408
407
406
405
404
403
402
401
506
505
504
503
502
501
18
907
906
905
904
903
902
901
25
D.


DELORD
AV.
DURAND
LORAINE
SAILLY
CUMBERLAND
AV.
MARGARET
MILLER
ELM
ST. CHARLES
CATHERINE
CORNELIA
COURT
OAK
RIVER
Spur
BRINKERHOFF
COUCH
N.
MARGARET
WATER
BROAD
CATHERINE
S.
PINE
Saranac
River
CHARLOTTE
PERU
MAC DONOUGH
McCOMB
HAMILTON
BRIDGE
DOCK
Branch
ALLEY
Chateaugay R.R.
D.&H.C. Cos R.R.
6
2
4
3
5
6
7
9
9
32
33
52
30
31
51
1
2
1½
8
9
10
7
4
5
6
12
13
14
20
19
21
22
23
24
24
25



4516
Page 5

Map Divi



CORNELIA ST.
COURT ST.
BRINKERHOFF ST.
COUCH ST.
BROAD ST.
ELM ST.
ASH ST.
PLATT
OAK ST.
CATHERINE
CHARLES
MARGARET ST.
MILLER ST.
ST. PETERS
CLINTON
DURAND ST.
LORAINE ST.
CUMBERLAND
SAILLY AVE.
BRIDGE ST.
DOCK ST.
MACOMB
HAMILTON
MARGOROUGH
CHARLOTTE
PERU
PERU ST.
PINE ST.
STANDISH
SMITH
JAY
WHITEHALL & PLATTSBURGH R.R.
Lynde Park
Oblate Fathers
St. Peters Frnch R.C.
Res. of S. F. Vilas
Res. of W. W. Hartwell
Park
Lower Idt
CUMBERLAND BAY
Engine House
Plattsburgh Dock Co.
Daily Sherman & Williams
United States Land
United States Property
Meridian
Fort Moreau
Fort Brown
Fort Scott
R. C. Cemetery
Greenwood Cemetery
British Battery in 1814
Branch Artillery Stationed here Sept. 1814
Res. of O. A. Tefft
Mrs. E. Marchant Est.
J. & W. Palmer Est.
Wm. Swetland Est.
Mrs. E. Swetland
J. Bailey
Forge
Office

1869

APPENDIX B

BEDROCK CORE LOGS AND SOIL BORING LOGS

Beth Guidetti
Assistant Geologist

NEW YORK STATE ELECTRIC & GAS
BRIDGE STREET FORMER MGP SITE

BEDROCK CORE LOGGING

WELL NO.:	MW-1B	DATE LOGGED:	1/7/2002	ELEVATION = TD = 38.1'

RUN #	DEPTH (ft. bgs)	ELEVATION (ft. msl)	HF	HO	LF	LO	ANGLE OF		MARKER		FAULTS		COMMENTS AND DESCRIPTION
							Fracture	Bedding	Type	Form	SS	BC	
1	7.7-12.7												Run 1 RQD = 71%
	8.5-9.3												Low RQD zone, stained brownish yellow.
	9.3				X		17		cc				cc
	10.2					X	36						
	10.8-10.9		X				55						Low RQD zone, cc, several parallel fractures.
2	13.1-23.1												Run 2 RQD = 100%
	13.1-13.3												Angular limestone fragments in grout matrix.
	13.8					X	12						
	14.5					X	~46						
	21.7												Intense deformation.
	22.0												Intense deformation.
	22.2					X	4						
	22.9-23.1												Recovery shattered (mechanically).
3	23.1-33.1												Run 3 RQD = 100%
	25.2			X			52						Intense deformation.
	26.3												Pair of light gray bands.
	27.0												Intense deformation.
	28.9-29.3												Intense deformation.
	31.2					X							Jagged break in core.
	31.3				X		9		cc				3/8 inch cc.
	32.7					X	37						
	33.3			X			~65						Intense deformation, v. thin cc.

BEDROCK CORE LOGGING

WELL NO.:	MW-1B	DATE LOGGED:	1/7/2002	ELEVATION = TD = 38.1'

RUN #	DEPTH (ft. bgs)	ELEVATION (ft. msl)	HF	HO	LF	LO	ANGLE OF		MARKER		FAULTS		COMMENTS AND DESCRIPTION
							Fracture	Bedding	Type	Form	SS	BC	
4	33.1-38.1												Run 4 RQD = 98%
	34.8			X									Intense deformation, curving fracture, v. thin cc.
	35.0-36.1			X			80						
	36.8												Large cc fossil.

BEDROCK CORE LOGGING

WELL NO.: MW-2B
DATE LOGGED: 1/4/2002
ELEVATION = TD = 40.0'

RUN #	DEPTH (ft. bgs)	ELEVATION (ft. msl)	HF	HO	LF	LO	ANGLE OF		MARKER		FAULTS		COMMENTS AND DESCRIPTION
							Fracture	Bedding	Type	Form	SS	BC	
1	10.5-15.5												Run 1 RQD = 96%
	10.7							12					Light gray bands.
	11.2					X	42						cc inclusions.
	11.8												Approximately horizontal wavy fracture, cc inclusions.
	14.3					X	28						Set of two fractures, stepping.
	15.3					X	35						cc inclusions.
2	16.0-24.0												Run 2 RQD = 98%
	21.7			X			68						Stepping.
	21.7			X			65						
3	24.0-33.9												Run 3 RQD = 100%
	27.1												Intense defomation, light gray limestone inclusions.
	27.5												Intense defomation.
	28.3												Intense defomation.
	28.9					X	15						
	31.0			X			~62						Follows fabric.
	31.2					X	~40						
	32.3		X				78		cc				cc, py layers along fracture plane.
	33.4					X	25						
4	33.9-40.0												Run 4 RQD = 100%
	35.7			X					cc				Undulating fracture in 4 inch zone of intense deformation,
													light gray inclusions, py/cc layers.
	36.9					X	39						

BEDROCK CORE LOGGING

WELL NO.:	MW-2B	DATE LOGGED:	1/4/2002	ELEVATION = TD = 40.0'

RUN #	DEPTH (ft. bgs)	ELEVATION (ft. msl)	HF	HO	LF	LO	ANGLE OF		MARKER		FAULTS		COMMENTS AND DESCRIPTION
							Fracture	Bedding	Type	Form	SS	BC	
	37.4					X	27						
	37.7				X		35						cc vein.
	37.8						7		cc				1/4 inch cc.
	38.5					X	26						
	38.9					X	35						

NEW YORK STATE ELECTRIC & GAS
BRIDGE STREET FORMER MGP SITE

BEDROCK CORE LOGGING

WELL NO.: MW-3B
DATE LOGGED: 11/14/2002
ELEVATION = TD = 61.0'

RUN #	DEPTH (ft. bgs)	ELEVATION (ft. msl)	HF	HO	LF	LO	ANGLE OF		MARKER		FAULTS		COMMENTS AND DESCRIPTION
							Fracture	Bedding	Type	Form	SS	BC	
1	12.4 - 17.4												Run 1 RQD = 100%, massive, gray, few fossils
	14.1		X										Fracture along dark gray flow structure, py
2	17.5 - 21.0												Run 2 RQD = 100%, massive, gray, few fossils
3	21.0 -26.0												Run 3 RQD = 100%, massive, gray, few fossils
	21.7							7					1/4 inch light gray bed, wavy
4	26.0 - 31.0												Run 4 RQD = 100%, massive, gray, few fossils
	28.9			X			43						
	30.5			X			59						
5	31.0 - 36.0												Run 5 RQD = 100%, massive, gray, few fossils
	32.5					X	23						
	34.8					X	11						
	35.8			X			53						
6	36.0 - 41.0												Run 6 RQD = 100%, massive, gray, few fossils
	38.0												Jagged mechanical break
	39.5							7					Bottom of light gray bed
	40.6												Jagged mechanical break
7	41.0 - 46.0												Run 7 RQD = 100%, massive, gray, few fossils
	41.6												Light gray inclusions
	44.0 - 44.6												Light gray with dark gray flow structure
	44.5						33						Wavy
	45.6						42						Curving
8	46.0 - 51.0												Run 8 RQD = 100%, massive, gray, few fossils

BEDROCK CORE LOGGING

WELL NO.:	MW-3B	DATE LOGGED:	11/14/2002	ELEVATION = TD = 61.0'

RUN #	DEPTH (ft. bgs)	ELEVATION (ft. msl)	HF	HO	LF	LO	ANGLE OF		MARKER		FAULTS		COMMENTS AND DESCRIPTION
							Fracture	Bedding	Type	Form	SS	BC	
	46.5												Light gray, wavy
	47.4												Light gray, wavy
	48.6												Dark gray flow structure
	49.3				X		7						1/4 inch calcite-filled fault, motion ~90° from dip,
													cc veins below, slight sheen (silver/blue) observed
													during drilling Run 9
9	51.0 - 56.0												Run 9 RQD = 100%, massive, gray, few fossils
	51.8 - 52.2												light gray with dark gray flow structure, wavy top & bottom
	53.2			X			78						
10	56.0 - 61.0												Run 10 RQD = 100%, massive, gray, few fossils
	56.0												Dark gray flow structure
	56.5			X			74						
	56.7												Light gray inclusions with dark gray flow structure
	57.3							10					1/2 inch light gray bed
	58.2 - 58.6												Light gray inclusions with dark gray flow structure
	59.2			X			60						Curving

NEW YORK STATE ELECTRIC & GAS
BRIDGE STREET FORMER MGP SITE

BEDROCK CORE LOGGING

WELL NO.:	MW-6B	DATE LOGGED:	1/7/2002	ELEVATION = TD = 38.2'

RUN #	DEPTH (ft. bgs)	ELEVATION (ft. msl)	HF	HO	LF	LO	ANGLE OF		MARKER		FAULTS		COMMENTS AND DESCRIPTION
							Fracture	Bedding	Type	Form	SS	BC	
1	7.4-12.4												Run 1 RQD = 96%
	7.3-7.9												Broken when setting casing.
	8.3			X			54						
	8.8			X			66						
	9.8			X			46						
	9.8				X		19						1/16 inch cc.
	10.1			X			72						Intense deformation.
	12.2				X		29						Set of 3 v. thin cc, py.
2	13.2-22.9												Run 2 RQD = 100%
	14.4			X			41						NAPL/tar stain on fracture, intense deformation.
	19.5					X	11						
	22.0					X	37						Jagged.
3	22.2-32.2												Run 3 RQD = 100%
	25.3		X				70						py
	27.0												Intense deformation.
	30.2												Intense deformation.
	30.8												Intense deformation, py.
	31.6					X	7						
4	32.2-34.5												Run 4 RQD = 100%
	32.2												Intense deformation.
	32.9					X	8						
	33.7			X			55						Intense deformation, py.

BEDROCK CORE LOGGING

WELL NO.:	MW-6B	DATE LOGGED:	1/7/2002	ELEVATION = TD = 38.2'

RUN #	DEPTH (ft. bgs)	ELEVATION (ft. msl)	HF	HO	LF	LO	ANGLE OF		MARKER		FAULTS		COMMENTS AND DESCRIPTION
							Fracture	Bedding	Type	Form	SS	BC	
5	34.5-38.2												Run 5 RQD = 35%
	34.8					X	32						
	35.8					X	~11						
	35.8-38.2												No recovery.

BEDROCK CORE LOGGING

WELL NO.:	MW-7BS	DATE LOGGED:	1/4/2002	ELEVATION = TD = 13.5'

RUN #	DEPTH (ft. bgs)	ELEVATION (ft. msl)	HF	HO	LF	LO	ANGLE OF		MARKER		FAULTS		COMMENTS AND DESCRIPTION
							Fracture	Bedding	Type	Form	SS	BC	
1	9.4-14.4												Run 1 RQD = 64%
	9.3-10.1												Low RQD zone, stained brownish yellow and rust.
	10.8					X	20						Stained brownish yellow.
	11.1				X		11		cc				1/16 inch cc.
	12.0				X		11		cc				minor cc
	12.5								cc/py				1/8 inch (two cc bands separated by py band).

BEDROCK CORE LOGGING

WELL NO.:	MW-7BD	DATE LOGGED:	1/4/2002 and 2/5/2002	ELEVATION = TD = 48.7'

RUN #	DEPTH (ft. bgs)	ELEVATION (ft. msl)	HF	HO	LF	LO	ANGLE OF		MARKER		FAULTS		COMMENTS AND DESCRIPTION
							Fracture	Bedding	Type	Form	SS	BC	
1	9.5-14.5												Run 1 RQD - 67%
	9.9			X			76						NAPL stains along fracture.
	10.3			X			58						
	10.3-11.2												Low RQD zone, NAPL staining on core.
	11.2												NAPL
	10.9					X	15		cc				1/16 inch cc layers.
2	14.5-24.5												Run 2 RQD = 100%
	15.0												Intense deformation.
	17.1												Intense deformation.
	23.8												Intense deformation.
3	24.5-34.5												Run 3 RQD = 100%
	27.3												Intense deformation.
	28.4												Intense deformation.
	30.3												Intense deformation.
	31.3												Intense deformation.
	32.5												Intense deformation.
	32.9												Small fractures, wavy cc.
	34.0												Intense deformation, core shattered (mechanical).
4	34.5-40.0												Run 4 RQD = 97%
	36.3					X	24						
	36.6					X	~0						
	37.3					X	13						Intense deformation, light gray inclusions, py.

BEDROCK CORE LOGGING

WELL NO.: MW-7BD
DATE LOGGED: 1/4/2002 and 2/5/2002
ELEVATION = TD = 48.7'

RUN #	DEPTH (ft. bgs)	ELEVATION (ft. msl)	HF	HO	LF	LO	ANGLE OF		MARKER		FAULTS		COMMENTS AND DESCRIPTION
							Fracture	Bedding	Type	Form	SS	BC	
	38.3												Intense deformation.
5	40.0-46.0												Run 5 RQD = 72%
	40.0-41.1												Core chewed and broken (mechanical), rig broke down.
	41.8												Thin cc layer.
	42.6						29						
	42.6-43.0			X									Very low RQD zone, vertical fracture, looks mechanical.
	44.2							~0					Intense deformation, visible bedding curving with slight
													offset, light gray rock.
	45.2			X									Curving fracture.
	45.5												Break in core (core spun).
	45.6		X										Vertical fracture, py, cc.
6	46.0-49.5												Run 6 RQD = 77%.
	46.2					X	24						
	48.3												Intense deformation.

Beth Guidetti
Assistant Geologist

NEW YORK STATE ELECTRIC & GAS
BRIDGE STREET FORMER MGP SITE

BEDROCK CORE LOGGING

WELL NO.: MW-7DD
DATE LOGGED: 11/14/2002
ELEVATION = TD = 85.5'

RUN #	DEPTH (ft. bgs)	ELEVATION (ft. msl)	HF	HO	LF	LO	ANGLE OF		MARKER		FAULTS		COMMENTS AND DESCRIPTION
							Fracture	Bedding	Type	Form	SS	BC	
1	13.5 - 15.5												Run 1 RQD = 100%, massive, gray, few fossils
	14.5												Dark gray flow structure, py
2	15.5 - 20.5												Run 2 RQD = 100%, massive, gray, few fossils
	19.5			X			57						Very thin fracture, not continuous across core
3	20.5 - 25.5												Run 3 RQD = 100%, massive, gray, few fossils
	24.8 - 25.2												Dark gray flow structure
4	25.5 - 30.5												Run 4 RQD = 100%, massive, gray, few fossils
	25.8 - 26.5												Dark gray flow structure
	27.6												Minor discontinuous fracture
	27.8 - 28.2												Dark gray flow structure
	29.6												Dark gray flow structure
	30.1							18					1/4 inch dark gray bed and flow structure
5	30.5 - 35.5												Run 5 RQD = 100%, massive, gray, few fossils
	31.5 - 32.7												Intense flow structure, light to dark gray
	33.0							6					1/4 inch light gray bed, flow structure
	33.9												Light gray inclusions, dark gray flow structure
	33.9 - 36.4												Minor flow structure
6	35.5 - 40.5												Run 6 RQD = 100%, massive, gray, few fossils
	36.4 - 36.9												Intense flow structure
	39.7		X				55						py, very intense flow structure
7	40.5 - 45.5												Run 7 RQD = 100%, massive, gray, few fossils, with minor
													flow structures

BEDROCK CORE LOGGING

WELL NO.:	MW-7DD	DATE LOGGED:	11/14/2002	ELEVATION = TD = 85.5'

RUN #	DEPTH (ft. bgs)	ELEVATION (ft. msl)	HF	HO	LF	LO	ANGLE OF		MARKER		FAULTS		COMMENTS AND DESCRIPTION
							Fracture	Bedding	Type	Form	SS	BC	
	41.8				X		8				X		1/4 inch calcite-filled fault, tar odor, slight odor and sheen
													on water, motion ~90° from dip
	43.4 - 44.4						75						Mechanical fracture
	45.2												Dark gray flow structure
8	45.5 - 50.5												Run 8 RQD = 100%, massive, gray, few fossils, with minor
													flow structures
	45.5												Intense flow structure, py
	48.1												Intense flow structure, py
9	50.5 - 55.5												Run 9 RQD = 100%, massive, gray, few fossils, with some
													light gray bedding
	50.8							6					1 inch thick light gray bed with dark gray flow structures
	52.7						29						Mechanical fracture
	53.4												Dark gray flow structure
	54.2						22						Mechanical fracture
	53.9 - 55.3												Light gray, some inclusions
10	55.5 - 60.5												Run 10 RQD = 96%, massive, gray, few fossils, with some
													light gray bedding
	57.4 - 58.3							5					Light gray bed, flow structures on top, planar on bottom
	58.4												Jagged mechanical fracture
	58.7							7					1/8 inch light gray bed
	59.1												Dark gray flow structure
11	60.5 - 65.5												Run 11 RQD = 96%, massive, gray, few fossils with some

BEDROCK CORE LOGGING

WELL NO.: MW-7DD | DATE LOGGED: 11/14/2002 | ELEVATION = TD = 85.5'

RUN #	DEPTH (ft. bgs)	ELEVATION (ft. msl)	HF	HO	LF	LO	ANGLE OF		MARKER		FAULTS		COMMENTS AND DESCRIPTION
							Fracture	Bedding	Type	Form	SS	BC	
													light gray bedding
	64.6 - 65							9					Light gray bed gradation at top, minor gradation
													at bottom
12	65.5 - 70.5												Run 12 RQD = 98%, massive, gray, few fossils with some
													light gray bedding
	67.0			X			52						Mechanical fracture
	67.4			X			64						Irregular
	67.8			X			52						Dark gray flow structure
	68.2			X			54						Two fractures
	68.8			X			69						
	69.2 - 70.1							6					Light gray bedding
13	70.5 - 75.5												Run 13 RQD = 100%, massive, gray, few fossils with some
													light gray bedding, dark gray flow structures.
	71.8							7					1/8 inch light gray bed
	73.3												Irregular light gray "bed," flow str.
14	75.5 - 80.5												Run 14 RQD = 100%, massive, gray, few fossils with some
													light gray bedding
	75.5 - 75.9							0					Light gray bed
	77.6							5					1 inch light gray bed
	78.7 - 79.7												Light gray, gradational contacts
15	80.5 - 85.5												Run 15 RQD = 88%, massive, gray, few fossils with some
													light gray bedding

BEDROCK CORE LOGGING

WELL NO.:	MW-7DD	DATE LOGGED:	11/14/2002	ELEVATION = TD = 85.5'

RUN #	DEPTH (ft. bgs)	ELEVATION (ft. msl)	HF	HO	LF	LO	ANGLE OF		MARKER		FAULTS		COMMENTS AND DESCRIPTION
							Fracture	Bedding	Type	Form	SS	BC	
	80.3 - 81.4							4					Light gray bed
	82.0						70						Little py
	82.0 - 83.0							11					Light gray bed, planar top & bottom, fine-grained at
													bottom
	84.6 - 85.5						90						Anastomosing near vertical fractures, py

BEDROCK CORE LOGGING

WELL NO.:	MW-8BS	DATE LOGGED:	1/7/2002	ELEVATION = TD = 37.7'

RUN #	DEPTH (ft. bgs)	ELEVATION (ft. msl)	HF	HO	LF	LO	ANGLE OF		MARKER		FAULTS		COMMENTS AND DESCRIPTION
							Fracture	Bedding	Type	Form	SS	BC	
1	7.8-12.8												Run 1 RQD = 80%
	7.8												Sheen, trace NAPL, MGP odors.
	7.8-8.9												Nearly vertical fractures, stained yellowish brown.
	8.9					X	21						Stained yellowish brown.
	9.4												Horizontal fractures - core spun.
	9.8					X	0						
	11.3-11.5				X		~11						Set of 5 v. thin cc.
	11.8							~5					1/4 inch fossiliferous layer.
2	13.0-19.0												Run 2 RQD = 100%
	13.0-13.5												Rock fragments in grout (discarded).
	15.4												Set of 2 v. thin cc.
	15.7												Intense deformation.
	18.4												Intense deformation.
3	19.0-29.0												Run 3 RQD = 100%
	19.5					X	46						
	22.0			X			76						
	28.0												Intense deformation.
4	29.0-38.0												Run 4 RQD = 97%
	32.3												Intense deformation.
	34.0					X	5						
	34.2												Intense deformation.
	34.3					X	12						

BEDROCK CORE LOGGING

WELL NO.: MW-8BS
DATE LOGGED: 1/7/2002
ELEVATION = TD = 37.7'

RUN #	DEPTH (ft. bgs)	ELEVATION (ft. msl)	HF	HO	LF	LO	ANGLE OF		MARKER		FAULTS		COMMENTS AND DESCRIPTION
							Fracture	Bedding	Type	Form	SS	BC	
	34.5					X	12						
	35.3												Intense deformation.
	37.4												Intense deformation.

BEDROCK CORE LOGGING

WELL NO.:	MW-9B	DATE LOGGED:	1/7/2002	ELEVATION = TD = 35.3'

RUN #	DEPTH (ft. bgs)	ELEVATION (ft. msl)	HF	HO	LF	LO	ANGLE OF		MARKER		FAULTS		COMMENTS AND DESCRIPTION
							Fracture	Bedding	Type	Form	SS	BC	
1	4.6-6.7												Run 1 RQD = 19%, larger pieces show intense
													deformation, brown staining on all pieces.
	~5.5					X	33						
2	6.7-9.6												Run 2 RQD = 66%
	6.7-7.2												Low RQD zone, larger pieces show intense deformation,
													brown staning on all pieces.
	7.2			X			52						Yellowish brown staining.
	8.2		X				48						Yellowish brown staining, v. thin cc.
3	9.6-18.6												Run 3 RQD = 97%
	10.9			X			57						Set of fractures, intense deformation, py.
	13.8												Intense deformation.
	16.2			X			62						
	17.8							16					1/4" light gray layer.
4	18.6-27.6												Run 4 RQD = 99%
	18.8												Intense deformation.
	21.9					X	37						
	24.3					X	15						
	25.3			X			53						
5	27.6-35.6												Run 5 RQD = 96%
	29.4												Intense deformation.
	30.5							17					1/8 inch light gray layer.
	30.8					X	46						

BEDROCK CORE LOGGING

WELL NO.:	MW-9B	DATE LOGGED:	1/7/2002	ELEVATION = TD = 35.3'

RUN #	DEPTH (ft. bgs)	ELEVATION (ft. msl)	HF	HO	LF	LO	ANGLE OF		MARKER		FAULTS		COMMENTS AND DESCRIPTION
							Fracture	Bedding	Type	Form	SS	BC	
	30.8-31.8												Intense deformation.
	32.5												Intense deformation.
	34.5												Intense deformation.

BEDROCK CORE LOGGING

WELL NO.:	MW-10B	DATE LOGGED:	11/14/2002	ELEVATION = TD = 62.0'

RUN #	DEPTH (ft. bgs)	ELEVATION (ft. msl)	HF	HO	LF	LO	ANGLE OF		MARKER		FAULTS		COMMENTS AND DESCRIPTION
							Fracture	Bedding	Type	Form	SS	BC	
1	19.9 - 24.9												Run 1 RQD = 100%, massive, gray, few fossils
	20.5					X	32						
	21.4							13					Light gray bed, 1/4 inch
	21.6							15					Light gray bed, 1/8 inch
	24.1 - 24.9		X				79						Thin cc
2	24.9 - 29.7												Run 2 RQD = 91%, massive, gray, few fossils
	28.0 - 28.3												Core broken
	29.1 - 29.7												Core broken
3	29.7 - 35.0												Run 3 RQD = 100%, massive, gray, few fossils
	31.0 - 33.0							10					Several light gray beds
	30.7					X	35						
	32.8					X	11						
	34.1			X			70						Mechanical fracture
4	35.0 - 40.2												Run 4 RQD = 100%, massive, gray, few fossils
	36.4												Jagged mechanical fracture
	36.7							12					1/2 inch light gray bed
	37.2												Irregular light gray band
	37.5							18					2 inch light gray bed
	38.3							9					Thin light gray bed
	37.9					X	19						Set of two fractures
5	40.2 - 45.0												Run 5 RQD = 100%, massive, gray, few fossils
	41.0 - 41.5												Dark gray flow structure

NEW YORK STATE ELECTRIC & GAS
BRIDGE STREET FORMER MGP SITE

BEDROCK CORE LOGGING

WELL NO.: MW-10B

DATE LOGGED: 11/14/2002

ELEVATION = TD = 62.0'

RUN #	DEPTH (ft. bgs)	ELEVATION (ft. msl)	HF	HO	LF	LO	ANGLE OF		MARKER		FAULTS		COMMENTS AND DESCRIPTION
							Fracture	Bedding	Type	Form	SS	BC	
	41.6							16					Thin light gray bed
	43.5 - 44.3												Light gray bands and flow structure
6	45.0 - 50.0												Run 6 RQD = 100%, massive, gray, few fossils
	46.0				X		9				X		1/4 inch calcite-filled fault, motion ~90o to dip
	48.9 - 50.0												Light gray with dark gray flow structure
7	50.0 - 55.0												Run 7 RQD = 100%, massive, gray, few fossils
	53.8 - 54.3												Light gray beds and inclusions, wavy
8	55.0 - 60.0												Run 8 RQD = 100%, massive, gray, few fossils
	57.7 - 58.4							9					Light gray beds & inclusions grad top planar bottom
	58.7							11					1/2 inch light gray bed
9	60.0 - 62.0												Run 9 RQD = 100%, massive, gray, few fossils
	60.3 - 60.6												Dark gray fossiliferous, flow structure
	60.6 - 61.3							13					Light gray bed with dark gray flow structure
	61.3 - 62.0												Light gray beds and inclusions

BEDROCK CORE LOGGING

WELL NO.: MW-11B **DATE LOGGED:** 2/5/2002 **ELEVATION =** **TD = 41.5'**

RUN #	DEPTH (ft. bgs)	ELEVATION (ft. msl)	HF	HO	LF	LO	ANGLE OF		MARKER		FAULTS		COMMENTS AND DESCRIPTION
							Fracture	Bedding	Type	Form	SS	BC	
1	10.5-15.3												Run 1 RQD = 76%.
	10.7					X	25						
	11.8-11.9				X		8						Set of three thin cc, bottom cc 1/16" thick.
	12.7												Intense deformation.
	13.2			X			~59						Curving vertical fracture.
	13.5					X	4						
	13.7					X	6						
	14.0-14.4				X		20						Set of 5 thin cc, second down in 1/16" thick.
	14.7					X	28						
	15.0					X	7						
2	15.3-24.3												Run 2 RQD = 97%.
	18.7				X		9						1/16" cc.
	19.7							3					1/4" light gray bed.
	20.0												Large fossil, py, intense deformation.
	20.3					X	33						Curving.
	21.8												Intense deformation.
	22.8					X	32						Set of 2 fractures.
	23.9					X	42						
3	24.3-33.7												Run 3 RQD = 100%.
	24.6					X	25						
	26.1					X	5						Bedding?
	30.4					X	24						

NEW YORK STATE ELECTRIC & GAS
BRIDGE STREET FORMER MGP SITE

BEDROCK CORE LOGGING

WELL NO.:	MW-11B	DATE LOGGED:	2/5/2002	ELEVATION =	TD = 41.5'

RUN #	DEPTH (ft. bgs)	ELEVATION (ft. msl)	HF	HO	LF	LO	ANGLE OF		MARKER		FAULTS		COMMENTS AND DESCRIPTION
							Fracture	Bedding	Type	Form	SS	BC	
	31.5												Intense deformation.
	31.8					X	19						Jagged.
	32.2					X	14						Jagged.
	32.6												Intense deformation.
	33.1					X	20						Jagged.
4	33.7-41.5												Run 4 RQD = 96%.
	33.7												Intense deformation.
	35.0					X	7						
	36.4												Intense deformation.
	37.0							17					
	37.4-38.3												Intense deformation.
	38.3												Set of 2 ~ hoizontal wavy breaks.
	38.7							9					
	38.7-39.6												Intense deformation.
	39.6												Jagged fracture.
	40.5					X	44						Intense deformation.
	41.0			X			43						
	41.1												Intense deformation.
	41.4					X							Curving, jagged fracture.

Beth Guidetti
Assistant Geologist

NEW YORK STATE ELECTRIC & GAS
BRIDGE STREET FORMER MGP SITE

BEDROCK CORE LOGGING

WELL NO.: ANGLE BORING

DATE LOGGED: 11/25/2002

ELEVATION = TD = 106.1

RUN #	DEPTH (ft. bgs)	ELEVATION (ft. msl)	HF	HO	LF	LO	ANGLE OF		MARKER		FAULTS		COMMENTS AND DESCRIPTION
							Fracture	Bedding	Type	Form	SS	BC	
1	7.5 - 9.6												Run 1 RQD = 100%, massive, gray, few fossils
	7.5 - 8.1												Dark gray flow structures
	8.8												Jagged mechanical break
2	9.7- 14.7												Run 2 RQD = 100%, massive, gray, few fossils
3	14.7 - 19.7												Run 3 RQD = 100%, massive, gray, few fossils
	15.2					X	21						
4	19.7 - 24.7												Run 4 RQD = 100%, massive, gray, few fossils
	21.2					X	13						Odor
5	24.7 - 29.7												Run 5 RQD = 100%, massive gray, few fossils
	26.0			X			66						
	28.5 - 29												Dark gray flow structures
6	29.7 - 34.7												Run 6 RQD = 100%, massive, gray, few fossils
	32 - 39.2												Vague bedding structures begin
	34.2							22					
7	34.7 - 39.7												Run 7 RQD = 100%, massive, gray, few fossils
	35.4					X	27						
	37.0			X			60						
8	39.7 - 44.7												Run 8 RQD = 100%, massive, gray, few fossils
	42.5 - 43.4							28					Light gray bed
	42.2												Dark gray flow structures
9	44.7 - 49.7												Run 9 RQD = 100%, massive, gray, few fossils, MGP
													(Tar) odor observed on circulation water during Run 9

BEDROCK CORE LOGGING

WELL NO.:	ANGLE BORING	DATE LOGGED:	11/25/2002	ELEVATION = TD = 106.1

RUN #	DEPTH (ft. bgs)	ELEVATION (ft. msl)	HF	HO	LF	LO	ANGLE OF		MARKER		FAULTS		COMMENTS AND DESCRIPTION
							Fracture	Bedding	Type	Form	SS	BC	
													(44.7-49.7).
	45.4				X		26				X		1/4 inch cc bed, motion approximately equal to
													dip of fracture.
		46.8 - 47.4											Dark gray flow structures
		47.8 - 48.4					Top	27					Light gray bedding with dark gray flow structures
							Bottom	49					
10	49.7 - 54.7												Run 10 RQD = 100%, massive, gray, few fossils
	49.9							30					Minor bedding
	52.5 - 52.7							23					Light gray bed
	53.1 - 53.4												Light gray bed with dark gray flow structures
	54.8							33					1/2 inch set of light gray beds
	54.1 - 55.2												Wavy, cross-bedded, light gray beds
11	54.7 - 59.7												Run 11 RQD = 100%, massive, gray, few fossils
	57.5							33					
	59.4 - 60.1												Wavy, cross-bedded, light gray beds
12	59.7 - 64.7												Run 12 RQD = 100%, massive, gray, few fossils
	61.0							31					1/4 inch set of light gray beds
	62.3 - 62.5												2 inch fossiliferous layer
	62.5 - 63.4												Light gray layer, wavy top
	63.4							18					Dark gray flow structures, wavy to 63.1. Fractured along
													contact.
	64.0 - 64.7												Light gray with dark flow structures

BEDROCK CORE LOGGING

WELL NO.:	ANGLE BORING	DATE LOGGED:	11/25/2002	ELEVATION = TD = 106.1

RUN #	DEPTH (ft. bgs)	ELEVATION (ft. msl)	HF	HO	LF	LO	ANGLE OF		MARKER		FAULTS		COMMENTS AND DESCRIPTION
							Fracture	Bedding	Type	Form	SS	BC	
13	64.7 - 69.7												Run 13 RQD = 100%, massive, gray, few fossils with
													thicker beds
	66.0 - 66.3							21					Light gray bed with dark flow structures
14	69.7 - 74.7												Run 14 RQD = 100%, massive, gray, few fossils with
													thicker beds
	70.6 - 71.0							27					Light gray bed
15	74.7 - 79.7												Run 15 RQD = 100%, massive, gray, few fossils with
													thicker beds
	75.0												Dark gray flow structures
	75.9 - 76.8							24					Light gray beds
	79.3 - 79.7												Mechanically broken
16	79.7 - 84.7												Run 16 RQD = 100%, massive, gray, few fossils with
													thicker beds, light gray bedding throughout.
	80.2							23					
	81.3												Dark gray flow structures
	83.0			X			67						Along dark gray flow structures, py
	83.6							27					
	84.1 - 85.4												Dark gray flow structures.
17	84.7 - 89.7												Run 17 RQD = 100%, massive, gray, few fossils with
													thicker beds, light gray bedding throughout.
	86.7			X			55						Jagged fracture.
	87.3							19					

BEDROCK CORE LOGGING

WELL NO.:	ANGLE BORING	DATE LOGGED:	11/25/2002	ELEVATION = TD = 106.1

RUN #	DEPTH (ft. bgs)	ELEVATION (ft. msl)	HF	HO	LF	LO	ANGLE OF		MARKER		FAULTS		COMMENTS AND DESCRIPTION
							Fracture	Bedding	Type	Form	SS	BC	
	87.9						41						Very thin cc perpendicular to bedding
	88.8 - 89.7												Mechanical fracture along dark gray flow structures
18	89.7 - 94.7												Run 18 RQD = 100%, massive, gray, few fossils, less
													bedding
	90.3 - 91.3												Several mechanical fractures
	93.5							21					Follow trend of dark gray flow structures
19	94.7 - 99.7												Run 19 RQD = 100%, massive, gray, few fossils
	96.0				X		30				X		1/4 inch cc filled fracture, motion parallel to dip
	96.0 - 97.6												Dark gray flow structure, several mechanical fractures
20	99.7 - 104.7												Run 20 RQD = 100%, massive, gray, few fossils
	100.1												Dark gray flow structures
	106.7												Dark gray flow structures
	102.4 - 103.0												Several deformed cc beds, folded and faulted
	103.6						20						Very thin cc
	104.0												Dark gray flow structures
21	104.7 - 106.1												Run 21 RQD = 100%, massive gray, few fossils
	105.4							23					
	106.0												Thin cc beds

NEW YORK STATE ELECTRIC & GAS
MECHANICVILLE FORMER MGP SITE

BEDROCK CORE LOGGING

Explanation

1. Well No. = identifies a bedrock well at the Mechanicville Fomer MGP Site.

2. Elevation = surface elevation in feet relative to mean sea level.

3. TD = total depth of well boring in feet below grade.

4. Run # = identifies the portion of rock core that was retrieved from a given core barrel.

5. Depth = depth or depth interval of a stratigraphic marker or fracture in feet below grade.

6. Elevation = depth or depth interval of a stratigraphic marker or fracture in feet relative to mean sea level.
   [ ] elevation below sea level.

7. HF = high angle filled fracture (>30° inclination); the fracture is annealed, typically with calcite.
   HO = high angle open fracture (>30° inclination); the fracture may be mineral-coated or -stained.
   LF = low angle filled fracture (<30° inclination); the fracture is annealed, typically with calcite.
   LO = low angle open fracture (<30° inclination); the fracture may be mineral-coated or -stained.

8. Angle = approximate or average inclination of fracture or bedding from horizontal.

9. Marker Type = identifies the lithology or mineralogy of a stratigraphic marker:
   cc calcite band or vein
   py pyrite band or pyrite layer, consisting of finely to densely disseminated pyrite

10. Marker Form = identifies the thickness of a given stratigraphic marker (in inches)

11. Faults = identifies features of brittle deformation, if present:
    SS polished slickenside surfaces, frequently with slickenfibers or striations
    BC breccia, ranging in thickness from less than 0.1 inches to several feet; typically annealed with calcite or an anastomosing set of thin calcite veins

12. HIF = depth of High Intensity Fractures in feet relative to mean sea level, fracture intensity is greater than 1 fracture/inch.
    LI fracture intensity is less intense (1 fracture/1-6 inches).
    SI fracture intensity is semi-intense (1 fracture/6-8 inches).

13. IPC = depth of Intense Pencil Cleavage in feet relative to mean sea level.
    V vertical fractures
    M minor pencil cleavage
    VM very minor pencil cleavage

14. Comments = describes the characteristics of a stratigraphic marker or a fracture:
    cc calcite annealed fracture
    gra graphite annealed or coated fracture
    tight fracture is not annealed, and does not appear as open fracture
    v. thin very thin hairline fracture, typically less than 0.02 inch thick
    GB general bedding

LOG OF BORING

URS
Clifton Park, New York

NYSEG
Bridge St. Former MGP Site
Plattsburgh, New York

PROJECT:	NYSEG	**ELEVATION:**	120.48
BORING NO.:	SB-4A	**BORING LOCATION:**	N 2137957.241/ E 766436.317
DATE:	12/21/01	**METHOD OF DRILLING:**	3.25 inch Hollow Stem Auger
BORING DIAMETER:	6 inches	**SAMPLE TYPE:**	2 inch Split Spoons
BORING DEPTH:	12.5 ft.	**SURFACE CONDITIONS:**	Grass

page 1 of 1

Depth / Elevation	Soil Symbols	Soil Description	Sample Depth (ft bg)	Driven / Recovery (in.)	Blows per/ (6 in.)	PID (ppm)	Well Construction	Well Description
0 / 120	△	Brown medium SAND. Dark brown medium SAND, some concrete fragments.	0-2	24/8	1,2,3,8	0		
	△	Dark brown to black, medium to course SAND, some asphalt, trace wood chips, dry to damp.	2-4	24/12	7,8,6,5	0		Soil Boring - No well installed.
5 / 115	△	Grey brown silty course SAND, little wood chips, wet, musty foul odor.	4-6	24/8	1,3,1,1	0		
	△ ⋯		6-8	24/15	3,3,2,2	0		
	⋯	Dark brown medium SAND, some organic fibers and odor, moist.	8-10	24/18	3,2,1,2	0		Borehole backfilled with cuttings.
10 / 110	⋯	Grey gravelly SAND, wet. Olive grey clayey SAND, damp. Refusal at 12.5'.	10-12	24/15	3,2,1,1	0		
	⋯		12-12.5	6/6	5,50/0			Refusal at 12.5'.

LOG OF BORING

URS
Clifton Park, New York

NYSEG
Bridge St. Former MGP Site
Plattsburgh, New York

PROJECT: NYSEG
BORING NO.: SB-3A
DATE: 12/21/01
BORING DIAMETER: 6 inch
BORING DEPTH: 12.7 ft.

ELEVATION: 120.28
BORING LOCATION: N 2137935.586/ E 766488.643
METHOD OF DRILLING: 3.25 inch Hollow Stem Auger
SAMPLE TYPE: 2 inch Split Spoons
SURFACE CONDITIONS: Snow

page 1 of 1

Depth / Elevation	Soil Symbols	Soil Description	Sample Depth (ft bg)	Driven / Recovery (in.)	Blows per/ (6 in.)	PID (ppm)	Well Construction	Well Description
0 / 120	△	Snow to frozen material. Brown medium SAND, little brick, dry.	0-2	24/18	1,1,3,5	0		
	△	Same as above. Damp.	2-4	24/6	7,5,5,3	0		Soil Boring - No well installed.
5 / 115	△	Brown medium SAND, little wood chips moist. Wet at 5.5'.	4-6	24/8	1,3,3,4	0		
	⁘	Light brown to olive grey clayey SAND, damp to wet.	6-8	24/24	3,5,4,3	0		
	⁘	Light brown silty SAND, wet.	8-10	24/20	2,3,5,12	0		Boring backfilled with cuttings.
10 / 110	⁘	Light brown fine SAND, wet. Rock fragments in nose of split spoon.	10-12	24/20	3,4,4,8	0		
			12-12.7	8/8	5, 50/.2	0		Refusal at 12.7'.

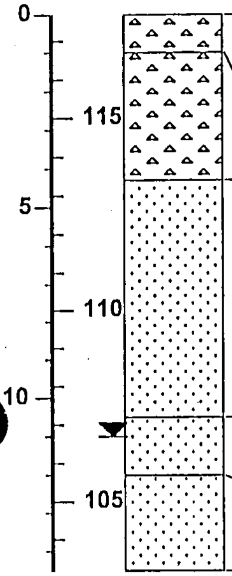
LOG OF BORING

URS
Clifton Park, New York

NYSEG
Bridge St. Former MGP Site
Plattsburgh, New York

PROJECT:	NYSEG	**ELEVATION:**	117.69
BORING NO.:	DS-1	**BORING LOCATION:**	N 2138076.550/ E 766512.339
DATE:	1/22/02	**METHOD OF DRILLING:**	Geoprobe
BORING DIAMETER:	2 inches	**SAMPLE TYPE:**	4 ft macrocore
BORING DEPTH:	14.5 ft.	**SURFACE CONDITIONS:**	Sand

page 1 of 1



Depth / Elevation	Soil Symbols	Soil Description	Sample Depth (ft bg)	Driven / Recovery (in.)	Blows per/ (6 in.)	PID (ppm)	Well Construction	Well Description
		Dark brown SAND, organic fibers, dry.						
		Dark brown medium SAND, some coal-like material and brick fragments, dry.	0-4	48/24	NA	NA		Soil Boring - No well installed.
		Light brown clayey SAND, trace fine gravel, dry.	4-8	48/40	NA	NA		
			8-12	48/48	NA	NA		Borehole backfilled with bentonite chips.
		Light brown fine SAND, trace silt. Wet at 11.0'.						
		Light grey fine SAND, moist. Slight musty/ petroleum odor.	12-14.5	30/30	NA	NA		Refusal at 14.5'

LOG OF BORING

URS
Clifton Park, New York

NYSEG
Bridge St. Former MGP Site
Plattsburgh, New York

PROJECT: NYSEG
BORING NO.: DS-2
DATE: 1/22/02
BORING DIAMETER: 2 inches
BORING DEPTH: 16.6 ft.

ELEVATION: 116.64
BORING LOCATION: N 2138076.866/ E 766548.953
METHOD OF DRILLING: Geoprobe
SAMPLE TYPE: 4 ft macrocore
SURFACE CONDITIONS: Sand

Depth / Elevation	Soil Symbols	Soil Description	Sample Depth (ft bg)	Driven / Recovery (in.)	Blows per/ (6 in.)	PID (ppm)	Well Construction	Well Description
0 115		Dark brown to black medium SAND, some coal like material, little wood and brick, dry. Brown medium SAND, trace fine gravel, dry.	0-4	48/24	NA	NA		Soil Boring - No well installed.
5 110		Light brown grey medium SAND, moist. Grey brown fine SAND and SILT, dry.	4-8	48/30	NA	NA		
10 105		Light brown fine SAND, wet at 11'.	8-12	48/30	NA	NA		
			12-16	48/48	NA	NA		Borehole backfilled with bentonite chips.
15		Grey medium SAND, trace silt, moist. Refusal at 16.6'.	16-16.6	7/7	NA	NA		Refusal at 16.6'.

LOG OF BORING

URS
Clifton Park, New York

NYSEG
Bridge St. Former MGP Site
Plattsburgh, New York

PROJECT: NYSEG
BORING NO.: DS-3
DATE: 1/22/02
BORING DIAMETER: 2 inches
BORING DEPTH: 17.6 ft

ELEVATION: 116.42
BORING LOCATION: N 2138063.108/ E 766585.779
METHOD OF DRILLING: Geoprobe
SAMPLE TYPE: 4 ft macrocore
SURFACE CONDITIONS: Sand

page 1 of 1

Depth / Elevation	Soil Symbols	Soil Description	Sample Depth (ft bg)	Driven / Recovery (in.)	Blows per/ (6 in.)	PID (ppm)	Well Construction	Well Description
0	△	Light brown medium SAND, dry.						
115	△	Dark brown to black, coarse SAND, some coal like material, trace brick, dry.	0-4	48/36	NA	NA		Soil Boring - No well installed.
5	△	Brown medium SAND, little brick, trace wood dry.						
110	△	Light brown silty SAND, moist.	4-8	48/48	NA	NA		
	△	Light brown silty SAND, moist, trace organic fibers.						
10 ▼ 105	⁙	Light brown gravelly SAND, moist to wet at 11'.	8-12	48/48	NA	NA		
15	⁙	Grey gravelly SAND, moist.	12-16	48/36	NA	NA		Borehole backfilled with bentonite chips.
100	⁙	Grey fine SAND, moist.	16-17.6	19/NA	NA	NA		Refusal at 17.6'.

NYSEG PLATTSBURGH- BRIDGE STREET FORMER MGP PLANT

Job No.: 99-085
Boring No.: PB-SB-2
Date: 7-13-99
Geoprobe Contractor: Zebra Environmental
Geologist: David Sheppard
Location: near ϕ pole & catch basin

Sample Id.: PBSB 2 (3'-5')
Time: 0830
Depth: 3.0 - 3.5'
Parameters: TCL VOCs & SVOCs, TAL Metals, R-CN, T-CN, R-Sulfide, TOC, TPH.
HNU PID Background Reading: 0.2 ppm.

Boring No	Depth (ft)	PID Borehole (ppm)	PID Sample (ppm)	Description
1	0-4	54	32 (36"-48")	0-6" Sandy loam - brown 6"-24" Br.-Bk fill - sand & gravel 24-36 moist BR. sand & silt w/ trace clay 36-48 Blk. coal w/brick - PETRO. ODOR
2	4-8	26	5.4 (48"-53")	4-4.5 Blk. coal w/bricks - some sand 4.5-6 Moist br-blk. silty clay w/sand 6-7.5 Moist br. med. sand
3	8-9.5 refusal	1.6	ND	8-9 Wet br. sand and gravel 9-9.5 Wet br. sand w/ gravel. (▽ @ 8.5')

NYSEG PLATTSBURGH- BRIDGE STREET FORMER MGP PLANT

Job No.: 99-085
Boring No.: PB-SB-3
Date: 7-13-99
Geoprobe Contractor: Zebra Environmental
Geologist: David Sheppard
Location: NE corner of site blg.

Sample Id.: PB-SB-3-
Time: 0955 [illegible]
Depth: 8'-9' [illegible]
Parameters: ~~TCL VOCs & SVOCs, TAL Metals,~~
R-CN, T-CN, ~~R-Sulfide, TOC, TPH.~~
HNU PID Background Reading: 0.2 ppm.

Boring No	Depth (ft)	PID Borehole (ppm)	PID Sample (ppm)	Description
1	0-4	ND	ND	0-2" asphalt/concrete mix } dry 2"-2' sand & gravel mix } dry 2'-2.5' gravel } dry 2.5'-4.0' Br. silty clay w/ gravel & brick.
2	4-8	ND	ND	4.0-5.5' moist - wet, sand with gravel & brick fragmants, some silt. 6.5'-6.5' Moist br. clay 6.5-7.0' Moist br. clayey med sand. 7.0-8.0' moist br. clayey sand.
3	8-9.5 (refusal)	ND	ND	8.0-8.5' wet br. clay-sand w/ shells. 8.5'-9.0' wet silty clay w/ some sand. 9.0-9.5' gravel (▽ @ 8.0')

NYSEG PLATTSBURGH- BRIDGE STREET FORMER MGP PLANT

Job No.: 99-085
Boring No.: PB-SB-4
Date: 7-13-99
Geoprobe Contractor: Zebra Environmental
Geologist: David Sheppard
Location: ≈12' west of SB-3

Sample Id.: PB-SB-4
Time: 1020
Depth: 5.5'-7.0'
Parameters: TCL VOCs & SVOCs, TAL Metals, R-CN, T-CN, R-Sulfide, TOC, TPH.
HNU PID Background Reading: 0.2 ppm.

Boring No	Depth (ft)	PID Borehole (ppm)	PID Sample (ppm)	Description.
1	0-4	4.0	0.2	0.0-0.5' Asphalt 0.5'-1.5' moist br. silty sand w/ gravel. 1.5'-4.0' moist black med. sand w/ gravel & brick.
2	4-9	3.8	3.6	5.0-5.5' gravel w/ tr. clay. 5.5-6.0' blk. sand & gravel (fill) 6.0'-7.0' moist br. silty sand with trace clay & gravel (PETRO ODOR) 7.0'-8.0' moist DK. BR. silty clay w/ gravel
3				8.0'-9.0' moist, wet br. clayey sand with brick (∇@ 8')

NYSEG PLATTSBURGH- BRIDGE STREET FORMER MGP PLANT

Job No.: 99-085
Boring No.: PB - SB - 5
Date: 7-13-99
Geoprobe Contractor: Zebra Environmental
Geologist: David Sheppard
Location: ~18' W of SB-4

Sample Id.: PB - SB - 5
Time: 1050
Depth: 6.0' - 7.5'
Parameters: TCL VOCs & SVOCs, TAL Metals, R-CN, T-CN, R-Sulfide, TOC, TPH.
HNU PID Background Reading: 0.2 ppm.

Boring No	Depth (ft)	PID Borehole (ppm)	PID Sample (ppm)	Description
1	0-4	1.4	0.2	0-0.5' Asphalt/Concrete 0.5-2' moist br. med sand w/blk. coal & brick powder. 2-4' moist blk. sand & gravel, brick fill (sl. odor)
2	4-7.5	0.4	28	4-5' moist br-blk. fill (brick, sand, wood, gravel.) 5'-6' moist br. m. sand w/silt 6-7.5' moist-wet med. sand w/ PET. SHEEN & ODOR.
3				(NO WATER ENCOUNTERED).

NYSEG PLATTSBURGH- BRIDGE STREET FORMER MGP PLANT

Job No.: 99-085
Boring No.: PB-SB-6
Date: 7-13-99
Geoprobe Contractor: Zebra Environmental
Geologist: David Sheppard
Location: ~15' W of SB-5

Sample Id.: PB-SB-6
Time: 1120
Depth: 5.0'-7.5'
Parameters: TCL VOCs & SVOCs, TAL Metals, R-CN, T-CN, R-Sulfide, TOC, TPH.
HNU PID Background Reading: 0.2 ppm.

Boring No	Depth (ft)	PID Borehole (ppm)	PID Sample (ppm)	Description
1	0-4	24	0.2	0-1' asphalt/concrete/ gravel. 1-2' moist br. sand w/gravel. 2-3' moist br-blk, silty sand w/gravel, trace clay. 3-4' moist br c-sand & gravel
2	4-7.5 (refusal)	34	190 (5'-7.5')	4-5' moist c-sand & gravel 5-6' moist br. silty sand w/gravel 6'-7' moist br. silty sand w/gravel (PETRO. SHEEN) 7'-7.5' same as above.
3				(No water encountered)

NYSEG PLATTSBURGH- BRIDGE STREET FORMER MGP PLANT

Job No.: 99-085
Boring No.: PB-SB-6A
Date: 7-13-99
Geoprobe Contractor: Zebra Environmental
Geologist: David Sheppard
Location: ~ 21' W of SB-6
(in front of Rescue Hose #5)

Sample Id.: PB-SB-6A
Time: 1145
Depth: 6.0' - 7.5'
Parameters: TCL VOCs & SVOCs, TAL Metals,
R-CN, T-CN, R-Sulfide, TOC, TPH.
HNU PID Background Reading: 0.2 ppm.

Boring No	Depth (ft)	PID Borehole (ppm)	PID Sample (ppm)	Description
1	0-4	–	0.8	0-1.5' asphalt/concrete/gravel 1.5-4' Fill (med/coarse sand, coal, gravel & brick frag.)
2	4-8 (refusal)	34	52 (6-7.5')	4-5' sand & gravel with clay 5-6' moist clayey sand w/silt. & gravel. 6-7.5' Br-Blk. clay w/sand & tr. silt.
3				7.5-8' wet gravel. (∇ @ 8')

NYSEG PLATTSBURGH- BRIDGE STREET FORMER MGP PLANT

Job No.: 99-085
Boring No.: PB-SB-6B
Date: 7-13-99
Geoprobe Contractor: Zebra Environmental
Geologist: David Sheppard
Location: ~19' W of 6A
(in grass next to man hole).

Sample Id.: No sample
Time: collected.
Depth:
Parameters: TCL VOCs & SVOCs, TAL Metals, R-CN, T-CN, R-Sulfide, TOC, TPH.
HNU PID Background Reading: 0.2 ppm.

Boring No	Depth (ft)	PID Borehole (ppm)	PID Sample (ppm)	Description
1	0-4	ND	ND	0-1' grass surface, sandy loam. 1-4' Br-Blk-dry fill (med/coarse sand & gravel & brick frag - some coal).
2	4-7 (refusal)	ND	ND	4-6' moist br. clay w/sand & silt. 6-7' dry dk br. sand w/ p-gravel, some clay, trace silt.
3				No water encountered.

TEST BORING LOG

URS Greiner

PROJECT:	Plattsburgh / Bridge St. former MGP	SHEET:	1 OF 1
CLIENT:	NYSEG	JOB NO.:	99-085
BORING CONTRACTOR:	Northern Technical Service	BORING LOCATION:	N: 2137763.255 / E: 766356.376

GROUND WATER:					CAS.	SAMP	CORE	TUBE		
DATE	TIME	LEV	TYPE	TYPE	HSA	SS			GROUND ELEVATION:	122.90
NOT				DIA.	4¼	2"			DATE STARTED:	7-13-99
ENCOUNTERED.				WT.		140			DATE FINISHED:	7-13-99
				FALL		30"			DRILLER:	Chris Wheeler
									GEOLOGIST:	Paul Pavone
				* PENETROMETER READING					REVIEWED BY:	Scott Fischer

DEPTH FEET	STRATA	SAMPLE		BLOWS PER 6"		DESCRIPTION					REMARKS
		NO.	TYPE			RECOVERY RQD %	COLOR	CONSISTENCY HARDNESS	MATERIAL DESCRIPTION	CLASS USCS	
		1	SS	4 5	5 13	70	Brown	MEDIUM DENSE	4" SOD, coarse/MED sand, trace gravel.	SW	
		2	SS	13 18	28 21	70		DENSE	MED./FINE SAND, trace silt.	SM	
5		3	SS	28 55	47 80	80	gray		SILTY SAND, rock fragments.		
		4	SS	98 —	100+ —	80					dry to 8' bgs.
10									Boring completed @ ~8' depth.		Collected soil sample for off-site analysis @ 6-7' depth.
15											No PETRO. or Solvent odors.
20											
25											
30											
35											

COMMENTS: Boring MW-99-01 was advanced with a CME-55 drill rig on an International chassis using 4¼" HSA.

PROJECT NO.: 0500035670.00.00000

BORING NO.: MW-99-01

URGF-031/1 OF 1/TBL

PB-SB-7

TEST BORING LOG

URS Greiner

OJECT: Bridge Street MGP		SHEET: 1 OF 1	
CLIENT: NYSEG		JOB NO.: 99-085	
BORING CONTRACTOR: Northern Technical Services		BORING LOCATION: N: 2137848.030/E: 766416.111	

GROUND WATER:					CAS.	SAMP	CORE	TUBE		
DATE	TIME	LEV	TYPE	TYPE	HSA	SS			GROUND ELEVATION:	121.45
water	in	4¼"	HSA	DIA.	4½"	2"			DATE STARTED:	7-13-99
@	~ 6' depth.			WT.		140#			DATE FINISHED:	7-13-99
				FALL		30"			DRILLER:	Chris Wheeler
				* PENETROMETER READING					GEOLOGIST:	Paul Pavone
									REVIEWED BY:	Scott Fischer

DEPTH FEET	STRATA	SAMPLE NO.	SAMPLE TYPE	BLOWS PER 6"		DESCRIPTION RECOVERY RQD %	COLOR	CONSISTENCY HARDNESS	MATERIAL DESCRIPTION	CLASS USCS	REMARKS
		1	SS	5 5	5 6	50	BLACK	Loose MED. DENSE	Fill (bricks, coal, ash) M/C sand, trace gravel	SW	dry
		2	SS	4 6	5 6	30					
5		3	SS	3 2	2 4	60			[5.5'-6' wood]		moist
		4	SS	8 62	24 82	50		DENSE	Silty sand (brick)		WET
		5	SS	12	100+	20			[7'-8' black, limestone frags.] trace clay.	SM	WET
10											
15											
20											
25											
30											

Boring completed @ ~ 8.5'

Soil Sample collected for off-site analysis 6-8.5' depth.

No PETRO./SOLVENT ODORS.

COMMENTS: Boring MW-99-02 was advanced with a CME-55 drill rig using 4¼" HSA.

PROJECT NO.: 05000035670.00

BORING NO.: MW-99-02

PB-SB-08

TEST BORING LOG

URS Greiner

PROJECT: Bridge Street MGP site							SHEET: 1 OF 1
CLIENT: NYSEG							JOB NO.: 99-085
BORING CONTRACTOR: Northern Technical Services							BORING LOCATION: N: 2137965.331 / E: 766424.345
GROUND WATER:				CAS.	SAMP	CORE	TUBE
DATE	TIME	LEV	TYPE	TYPE	HSA	SS	
Water @ 26' depth				DIA.	4¼"	2"	
in HSA.				WT.		140#	
				FALL		30"	
				* PENETROMETER READING			

GROUND ELEVATION: 120.55
DATE STARTED: 7-14-99
DATE FINISHED: 7-14-99
DRILLER: Chris Wheeler
GEOLOGIST: Paul Pavone
REVIEWED BY: Scott Fischer

DEPTH FEET	STRATA	SAMPLE NO.	SAMPLE TYPE	SAMPLE BLOWS PER 6"	DESCRIPTION RECOVERY RQD %	DESCRIPTION COLOR	DESCRIPTION CONSISTENCY HARDNESS	DESCRIPTION MATERIAL DESCRIPTION	DESCRIPTION CLASS USCS	REMARKS
		1	SS	2 3 6 10	60	Brown	LOOSE MED. DENSE	4" SOD, SANDYLOAM MED/COARSES. , Some FINE SAND and silt.	SW	dry
		2	SS	6 5 5 6	60					
5		3	SS	5 5 4 5	70		LOOSE	SILTY SAND, trace clay	SM	
		4	SS	4 7 9 9	80		MEDIUM DENSE			WET
		5	SS	6 8 8 9	90					
10		6	SS	10 12 13 13	90					
		7	SS	8 100+ — —	80		DENSE	(gravel @ 12')		NO PETRO. or SOLVENT ODORS.
15										
20										
25										
30										
35										

Boring Completed @ 13' depth.

Collect Soil Sample for off-site analysis @ 10-13' depth.

COMMENTS: Boring MW-99-03 was advanced with a CME-55 drillrig mounted on an International chassis using 4¼" HSA.

PROJECT NO.: 0500035670.00.00000

BORING NO.: MW-99-03

UNGF-031/1 OF 1/TBL

PB-SB-09

TEST BORING LOG

URS Greiner

JECT: Bridge Street MGP site

CLIENT: NYSEG

BORING CONTRACTOR: Northern Technical Services

SHEET: 1 OF 1

JOB NO.: 99-085

BORING LOCATION: N: 2137925.826 / E: 766514.825

GROUND ELEVATION: 120.19

DATE STARTED: 7-13-99

DATE FINISHED: 7-13-99

DRILLER: Chris Wheeler

GEOLOGIST: Paul Pavone

REVIEWED BY: Scott Fischer

GROUND WATER:

DATE	TIME	LEV	TYPE
Water encountered			
@~6' depth in			
HSA.			

	CAS.	SAMP	CORE	TUBE
TYPE	HSA	SS		
DIA.	4¼"	2"		
WT.		140#		
FALL		30"		

* PENETROMETER READING

DEPTH FEET	STRATA	SAMPLE NO.	SAMPLE TYPE	SAMPLE BLOWS PER 6"	DESCRIPTION RECOVERY RQD %	COLOR	CONSISTENCY HARDNESS	MATERIAL DESCRIPTION	CLASS USCS	REMARKS
		1	SS	3 5 14 6	70	BROWN	Loose MED DENSE	0-1' Sandy loam	SW	dry
		2	SS	3 4 5 3	60		LOOSE	M/C SAND, trace silt.		
5		3	SS	5 4 3 3	50			SILTY SAND, trace clay and gravel	SM	
		4	SS	2 2 4 4	60	gray				WET
		5	SS	2 1 2 2	95			[8' - WOOD debris]		
		6	SS	100+ — — —	80		DENSE			
15										No Petro. or Solvent odors
20										
25										
30										

Boring Completed @ 10.5' depth.

Soil Sample collected for off-site analysis @ 8' to 10' depth.

COMMENTS: Boring MW-99-04 was advanced with a CME-55 drill rig mounted on an International chassis using 4¼" HSA.

PROJECT NO.: 05000356070.00.

BORING NO.: MW-99-04

URDF-031/1 OF 1/TBL

PB-SB-10

TEST BORING LOG

URS Greiner

PROJECT: Bridge Street MGP
SHEET: 1 OF 1
CLIENT: NYSEG
JOB NO.: 99-085
BORING CONTRACTOR: Northern Technical Services
BORING LOCATION: N: 2137980.115 / E: 766351.156
GROUND ELEVATION: 121.46
DATE STARTED: 7-14-99
DATE FINISHED: 7-14-99
DRILLER: Chris Wheeler
GEOLOGIST: Paul Pavone
REVIEWED BY: Scott Fisher

GROUND WATER:

DATE	TIME	LEV	TYPE
Groundwater encountered @ ~9' depth in HSA.			

	CAS.	SAMP	CORE	TUBE
TYPE	HSA	SS		
DIA.	4¼"	2"		
WT.		140#		
FALL		30"		

* PENETROMETER READING

DEPTH FEET	STRATA	SAMPLE NO.	SAMPLE TYPE	SAMPLE BLOWS PER 6"		DESCRIPTION RECOVERY RQD %	COLOR	CONSISTENCY HARDNESS	MATERIAL DESCRIPTION	CLASS USCS	REMARKS
		1	SS	— 2	— 11	30	DK.BR	Loose	0-6" asphalt road subbase + gravel.	GW	dry
		2	SS	3 3	3 3	60	↓	↓	FINE SAND, some silt. ↓	SP ↓	
5		3	SS	2 3	3 3	50			Silty SAND	SM	
		4	SS	3 4	4 3	30	↓				PETRO. ODOR @ 6'-8' soil cuttings.
		5	SS	3 3	3 5	60	gray		• trace gravel		WET.
10		6	SS	2 100+	2	10	↓	↓ Very Dense	↓ • trace clay	↓	

15

20

25

30

35

Boring completed @ 11.5' depth.

Soil Sample collected @ 8-11.5' depth for analysis.

COMMENTS: Boring MW-99-05 was advanced with a CME-55 drillrig mounted on an International chassis using 4¼" HSA.

PROJECT NO.: 05000035670.00.00000
BORING NO.: MW-99-05

P.B-SB-11

NYSEG PLATTSBURGH- BRIDGE STREET FORMER MGP PLANT

Job No.: 99-085
Boring No.: PB-SB-12
Date: 7-13-99
Geoprobe Contractor: Zebra Environmental
Geologist: David Sheppard
Location: Backyard of Lot 11.

Sample Id.: PB-SB-12
Time: 1645
Depth: 1-3'
Parameters: TCL VOCs & SVOCs, TAL Metals, R-CN, T-CN, R-Sulfide, TOC, TPH.
HNU PID Background Reading: 0.2 ppm.

Boring No	Depth (ft)	PID Borehole (ppm)	PID Sample (ppm)	Description
1	0-4'	ND	ND	0-1' grass/sandy loam. 1-3' sandy silt w/ trace brick fill & gravel. 3-4' Br. moist clayey silt.
2				
3				

NYSEG PLATTSBURGH- BRIDGE STREET FORMER MGP PLANT

Job No.: 99-085
Boring No.: PB- SB- 13
Date: 7-13-99
Geoprobe Contractor: Zebra Environmental
Geologist: David Sheppard
Location: SE corner of site property.

Sample Id.:
Time:
Depth:
Parameters: TCL VOCs & SVOCs, TAL Metals, R-CN, T-CN, R-Sulfide, TOC, TPH.
HNU PID Background Reading: 0.2 ppm.

Boring No	Depth (ft)	PID Borehole (ppm)	PID Sample (ppm)	Description
1	0-4'	ND	ND	0-1' grass / sandy loam 1-4' coarse sand & gravel, trace silt. (4' refusal)
2				
3				

TEST BORING LOG

URS Greiner

OJECT: Former Bridge Street MGP
SHEET: 1 OF 1
CLIENT: NYSEG
JOB NO.: 99-085
BORING CONTRACTOR: Zebra Environmental
BORING LOCATION:
GROUND ELEVATION:
DATE STARTED: 10-13-00
DATE FINISHED: 10-13-00
DRILLER: MATT
GEOLOGIST: Paul Pavone
REVIEWED BY:

GROUND WATER:

DATE	TIME	LEV	TYPE
not Encountered			

	CAS.	SAMP	CORE	TUBE
TYPE			PLASTIC SLEEVE	
DIA.				2"
WT.				
FALL				

* PENETROMETER READING

DEPTH FEET	STRATA	SAMPLE NO.	SAMPLE TYPE	BLOWS PER 6"	RECOVERY RQD %	COLOR	CONSISTENCY HARDNESS	MATERIAL DESCRIPTION	CLASS USCS	REMARKS
		1	PS		50			MEDIUM SAND AND GRAVEL, Some silt. BRICK FRAGMENTS	SW	ND-PID READINGS NO. PETRO. ODORS
5		2	PS		80			MEDIUM and FINE SAND trace silt and clay. (angular limestone fragments)		moist at 5' depth.
0										
15										
20										
25										
30										

Boring completed at 6.5' depth.

No environmental sample collected.

COMMENTS:

URS PROJECT NO.: 0500035670.00

BORING NO.: PB-SB-14 (adjacent to SS-4)

TEST BORING LOG

URS Greiner

OJECT: Former Bridge Street MGP
CLIENT: NYSEG
BORING CONTRACTOR: Zebra Environmental

SHEET: 1 OF 1
JOB NO.: 99-085
BORING LOCATION:
GROUND ELEVATION:
DATE STARTED: 10/13/99
DATE FINISHED: 10/13/99
DRILLER: MATT
GEOLOGIST: Paul Pavone
REVIEWED BY:

GROUND WATER:					CAS.	SAMP	CORE	TUBE
DATE	TIME	LEV	TYPE	TYPE				PLASTIC SLEEVE
NOT ENCOUNTERED				DIA.				2"
				WT.				
				FALL				
				* PENETROMETER READING				

DEPTH FEET	STRATA	SAMPLE NO.	SAMPLE TYPE	BLOWS PER 6"	RECOVERY RQD %	COLOR	CONSISTENCY HARDNESS	MATERIAL DESCRIPTION	CLASS USCS	REMARKS
		1	PS		80	brown		0-3' coarse and medium SAND; brick fragments 3'-4', FINE SAND, some silt, trace clay	SW	
5		2	PS		90	↓		FINE SAND, trace silt (7'depth; wood fragments, ash, CINDER). (8'depth; slight odor.	SP	HNUPID READINGS 8-10'depth 80ppm. 10'-11' 10ppm
		3	PS		90	↓		Silty SAND, some clay 10-11' slightly oily, trace gravel.		
							Boring	Completed at 12' depth.		
15										
20										
25										
30										
35										

COMMENTS:

URS PROJECT NO.: 05000035670.00

BORING NO.: PB-SB-15

TEST BORING LOG

URS Greiner

JECT: Former Bridge St. MGP
CLIENT: NYSEG
BORING CONTRACTOR: Zebra Environmental
SHEET: 1 OF 1
JOB NO.: 99 - 085
BORING LOCATION:
GROUND ELEVATION:
DATE STARTED: 10-13-99
DATE FINISHED: 10-13-99
DRILLER: MATT
GEOLOGIST: PAUL PAVONE
REVIEWED BY:

GROUND WATER:

DATE	TIME	LEV	TYPE
NOT ENCOUNTERED			

	CAS.	SAMP	CORE	TUBE
TYPE			PLASTIC SLEEVE	
DIA.				2"
WT.				
FALL				

* PENETROMETER READING

DEPTH FEET	STRATA	SAMPLE NO.	SAMPLE TYPE	BLOWS PER 6"	RECOVERY RQD %	COLOR	CONSISTENCY HARDNESS	MATERIAL DESCRIPTION	CLASS USCS	Any PID (ppm) / Background	REMARKS
		1	PS		80	Brown		FILL: Silty SAND, some gravel - brick fragments		0.8 / 0.2	
5		2	PS		90	↓		FINE SAND; brick fragments, cinder 7-8' depth Silty SAND, trace clay	SP	0.2 / 0.2	
		3	PS		90	↓		FINE SAND, brick frags. 10.3'-11.2' depth - coal tar 11.2'-12' wood fragments, and tar.		300 / 0.2	
15											
20											
25											
30											

Boring completed at 12' depth.

Sample collected at 10-12' depth.

COMMENTS:

PROJECT NO.: 0500035670.00.
BORING NO.: PB-SB-16

TEST BORING LOG

URS Greiner

OJECT: Former Bridge Street MGP
SHEET: 1 OF 1
CLIENT: NYSEG
JOB NO.: 99-085
BORING CONTRACTOR: Zebra Env.
BORING LOCATION:
GROUND ELEVATION:
DATE STARTED: 10-13-99
DATE FINISHED: 10-13-99
DRILLER: Matt
GEOLOGIST: Paul Pavone
REVIEWED BY:

GROUND WATER:					CAS.	SAMP	CORE	TUBE
DATE	TIME	LEV	TYPE	TYPE				Plastic sleeve
NOT ENCOUNTERED				DIA.				2"
				WT.				
				FALL				
				* PENETROMETER READING				

DEPTH FEET	STRATA	SAMPLE NO.	SAMPLE TYPE	BLOWS PER 6"	RECOVERY RQD %	COLOR	CONSISTENCY HARDNESS	MATERIAL DESCRIPTION	CLASS USCS	PID Reading / background ppm	REMARKS
		1	PS		80	brown		FINESAND ; brick frags.	SP	0.2 0.2	
5		2	PS		90	↓		FINE SAND ; brick + concrete fragments, trace silt.		0.2 0.2	
		3	PS		90	↓		FINESAND, trace silt. trace gravel. [10.3' to 10.8' coal tar] brick fragments & concrete frag.		0.2	
					Boring completed at 12' depth.						
15											
20											
25											
30											
5											

COMMENTS:

URS PROJECT NO.: 05000356 70.00.
BORING NO.: PB-SB-17

TEST BORING LOG

URS Greiner

...JECT: Former Bridge St. MGP
CLIENT: NYSEG
BORING CONTRACTOR: Zebra Environmental

SHEET: 1 OF 1
JOB NO.: 99-085
BORING LOCATION:
GROUND ELEVATION:
DATE STARTED: 10-13-99
DATE FINISHED: 10-13-99
DRILLER: MATT
GEOLOGIST: PAUL PAVONE
REVIEWED BY:

GROUND WATER:					CAS.	SAMP	CORE	TUBE
DATE	TIME	LEV	TYPE	TYPE			PLASTIC	SLEEVE
				DIA.				2"
				WT.				
				FALL				
				* PENETROMETER READING				

DEPTH FEET	STRATA	SAMPLE			DESCRIPTION						
		NO.	TYPE	BLOWS PER 6"	RECOVERY RQD %	COLOR	CONSISTENCY HARDNESS	MATERIAL DESCRIPTION	CLASS USCS	HNU PID (ppm) / background	REMARKS
		1	PS		90	Brown		FINE SAND, CONCRETE, brick frags., trace silt.	SP	ND / 0.2	
5		2	PS		90			FINE SAND, limestone frags. 7' depth - silty SAND, trace clay 7-8' depth - coal tar, wood.		240 / 0.2	WET @ 5' depth.
		3	PS		90			FINE SAND, some silt, trace clay. 9.3' depth - limestone stone fragments		0.5 / 0.2	
15											
20											
25											
30											
35											

Boring Completed at 10' depth.
Sample collected at 8-10' depth.

COMMENTS:

PROJECT NO.:

BORING NO.: PB-SB-18

TEST BORING LOG

URS Greiner

JECT: Former Bridge Street MGP site

SHEET: 1 OF 1

CLIENT: NYSEG

JOB NO.: 99-085

BORING CONTRACTOR: Zebra

BORING LOCATION:

GROUND ELEVATION:

DATE STARTED: 10-13-99

DATE FINISHED: 10-13-99

DRILLER: MATT

GEOLOGIST: Paul Pavone

REVIEWED BY:

GROUND WATER:					CAS.	SAMP	CORE	TUBE
DATE	TIME	LEV	TYPE	TYPE				PLASTIC SLEEVE
				DIA.				2"
NOT ENCOUNTERED				WT.				
				FALL				
				* PENETROMETER READING				

DEPTH FEET	STRATA	SAMPLE				DESCRIPTION					
		NO.	TYPE	BLOWS PER 6"		RECOVERY RQD %	COLOR	CONSISTENCY HARDNESS	MATERIAL DESCRIPTION	CLASS USCS	PID READING Background	REMARKS
		1	PS				brown		FINESAND, concrete frags. [3'-4' depth limestone frags]		0.2 / 0.2	
5		2	PS						SILTY SAND, LIMESTONE FRAGMENTS,		0.2 / 0.2	dry
							Boring completed at 6' depth.					
15												
20												
25												
30												
3												

COMMENTS:

URS PROJECT NO.: 05000035670.00

BORING NO.: PB-SB-19

TEST BORING LOG

URS Greiner

JECT: Former Bridge Street MGP site
CLIENT: NYSEG
BORING CONTRACTOR: Zebra Environmental

SHEET: 1 OF 1
JOB NO.: 99-085
BORING LOCATION:
GROUND ELEVATION:
DATE STARTED: 10-13-99
DATE FINISHED: 10-13-99
DRILLER: MATT
GEOLOGIST: Paul Pavone
REVIEWED BY:

GROUND WATER:					CAS.	SAMP	CORE	TUBE
DATE	TIME	LEV	TYPE	TYPE			PLASTIC SLEEVE	
NOT ENCOUNTERED				DIA.				2"
				WT.				
				FALL				
				* PENETROMETER READING				

DEPTH FEET	STRATA	SAMPLE NO.	SAMPLE TYPE	BLOWS PER 6"	RECOVERY RQD %	COLOR	CONSISTENCY HARDNESS	MATERIAL DESCRIPTION	CLASS USCS	REMARKS
		1	PS		75	Brown		Fine Sand, some silt, concrete fragments.		dry; ND PID Reading
5		2	PS		80			FINE SAND, trace silt limestone frags, on bottom.		dry; ND PID Reading
						Boring Completed at 6' depth. Environmental sample collect at 4-6' depth.				
15										
20										
25										
30										

COMMENTS:

URS PROJECT NO.: 05000035670.00

BORING NO.: PB-SB-20

TEST BORING LOG

URS Greiner

JECT: Former Bridge Street MGP site
CLIENT: NYSEG
BORING CONTRACTOR: Zebra Environmental
SHEET: 1 OF 1
JOB NO.: 99-085
BORING LOCATION:
GROUND ELEVATION:
DATE STARTED: 10-13-99
DATE FINISHED: 10-13-99
DRILLER: MATT
GEOLOGIST: PAUL PAVONE
REVIEWED BY:

GROUND WATER:

DATE	TIME	LEV	TYPE		CAS.	SAMP	CORE	TUBE
				TYPE			PLASTIC SLEEVE	
Not Encountered				DIA.				2"
				WT.				
				FALL				

* PENETROMETER READING

DEPTH FEET	STRATA	SAMPLE NO.	SAMPLE TYPE	BLOWS PER 6"	RECOVERY RQD %	COLOR	CONSISTENCY HARDNESS	MATERIAL DESCRIPTION	CLASS USCS	REMARKS
		1	PS		75	Brown ↓		0-1' brick c̄ concrete fragments · Silty SAND		ND PID READING
								4-5' angular limestone fragments		ND PID READING dry
		2	PS		80					
5						Boring complete at 5' depth. (Auger refusal).				
15										
20										
25										
30										

COMMENTS:

URS PROJECT NO.: 0500035670.00,
BORING NO.: PB-SB-21

TEST BORING LOG

URS Greiner

OJECT: former Bridge Street MGP site	SHEET: 1 OF 1
CLIENT: NYSEG	JOB NO.: 99-085
BORING CONTRACTOR: Zebra Environmental	BORING LOCATION:
	GROUND ELEVATION:
	DATE STARTED: 10-13-99
	DATE FINISHED: 10-13-99
	DRILLER: MATT
	GEOLOGIST: PAUL PAVONE
	REVIEWED BY:

GROUND WATER:					CAS.	SAMP	CORE	TUBE
DATE	TIME	LEV	TYPE	TYPE			PLASTIC SLEEVE	
NOT ENCOUNTERED				DIA.				2"
				WT.				
				FALL				
				* PENETROMETER READING				

DEPTH FEET	STRATA	SAMPLE			DESCRIPTION					REMARKS
		NO.	TYPE	BLOWS PER 6"	RECOVERY RQD %	COLOR	CONSISTENCY HARDNESS	MATERIAL DESCRIPTION	CLASS USCS	
		1	PS		65	Brown		3" asphalt, FINE SAND trace silt & CINDER 3'-4' depth - SILTY SAND Brick frag. trace gravel		ND PID READING
5		2	PS		60	↓		0.6' FINE SAND, trace silt. 1.3' Silty SAND, some clay. 2.3' SILTY SAND, gravel, Brick frag. & CINDER.		ND PID READINGS
					Boring completed at 7.5' depth.					
15										
20										
25										
30										

COMMENTS: (ADJACENT TO SB-5)

URS PROJECT NO.: 05000035670.00.

BORING NO.: PB-SB-22

TEST BORING LOG

URS Greiner

NECT: former Bridge street MGP

CLIENT: NYSEG

BORING CONTRACTOR: Zebra Environmental

SHEET: 1 OF 1

JOB NO.: 98-085

BORING LOCATION:

GROUND ELEVATION:

DATE STARTED: 10-13-99

DATE FINISHED: 10-13-99

DRILLER: MATT

GEOLOGIST: PAUL PAVONE

REVIEWED BY:

GROUND WATER:					CAS.	SAMP	CORE	TUBE
DATE	TIME	LEV	TYPE	TYPE				PLASTIC SLEEVE
NOT	encountered.			DIA.				2"
				WT.				
				FALL				
				* PENETROMETER READING				

DEPTH FEET	STRATA	SAMPLE			DESCRIPTION					REMARKS
		NO.	TYPE	BLOWS PER 6"	RECOVERY RQD %	COLOR	CONSISTENCY HARDNESS	MATERIAL DESCRIPTION	CLASS USCS	
		1	PS		60	brown		3" asphalt; Silty SAND brick fragments [2.3'-2.8' depth, black decayed wood frag.]		ND PID READING dry
5		2	PS		38	↓		6.8' to 7.0' depth slightly stain soils SANDSTONE fragments		0.3 PPM PID READING
						Boring completed at 7' depth				
15										
20										
25										
30										

COMMENTS:

URS PROJECT NO.: 05000356070.00.

BORING NO.: PB-SB-23

NYSEG PLATTSBURGH- BRIDGE STREET FORMER MGP PLANT

Job No.: 99-085
Boring No.: W1
Date: 7-13-99
Geoprobe Contractor: Zebra Environmental
Geologist: David Sheppard
Location: ~4' in from NW corner of site blg.

Sample Id.: No sample collected.
Time:
Depth:
Parameters: TCL VOCs & SVOCs, TAL Metals, R-CN, T-CN, R-Sulfide, TOC, TPH.
HNU PID Background Reading: 0.2 ppm.

Boring No	Depth (ft)	PID Borehole (ppm)	PID Sample (ppm)	Description
1	0-4	—	ND	0-1' grass, moist sandy loam. 1-4' gravel, brick fill w/some coarse sand.
2	4-8	28	165	4-5' gravel/brick fill w/some coarse sand. 5'-6' wet med. sand w/silt and clay (PETRO. ODOR) 6-8' Dry to wet med. sand & gravel. (PETRO. ODOR).
3				

NYSEG PLATTSBURGH- BRIDGE STREET FORMER MGP PLANT

Job No.: 99-085
Boring No.: W 2
Date: 7-13-99
Geoprobe Contractor: Zebra Environmental
Geologist: David Sheppard
Location: ~ 14' from NW corner of bldg.

Sample Id.: No sample
Time: collected.
Depth:
Parameters: TCL VOCs & SVOCs, TAL Metals, R-CN, T-CN, R-Sulfide, TOC, TPH.
HNU PID Background Reading: 0.2 ppm.

Boring No	Depth (ft)	PID Borehole (ppm)	PID Sample (ppm)	Description
1	0-4	—	5	0-1' grass / sandy loam 1-4' fill, dry to moist - bricks, coal, coarse sand, cinders
2	4-6.5	35	185	4-5' moist br. silty clay w/trace gravel. 5-6.5' moist - wet sandy silt & clay. Dry br. sand & gravel @ 6.5'
3				

NYSEG PLATTSBURGH- BRIDGE STREET FORMER MGP PLANT

Job No.: 99-085
Boring No.: W 3
Date: 7-13-99
Geoprobe Contractor: Zebra Environmental
Geologist: David Sheppard
Location: 18.5' from NW corner of bldg.

Sample Id.: PB-SB-1
Time:
Depth: 5-7'
Parameters: TCL VOCs & SVOCs, TAL Metals, R-CN, T-CN, R-Sulfide, TOC, TPH.
HNU PID Background Reading: 0.2 ppm.

Boring No	Depth (ft)	PID Borehole (ppm)	PID Sample (ppm)	Description
1	0-4	ND	ND	0-1' grass / sandy loam 1-4' brick & concrete fill w/ sand & gravel.
2	4-7	ND	9.5 (5-7')	4-5' moist br. silty clay 5-6' dry gravel (concrete debris) 6-7' dry br. sandy gravel, trace oil w/ gravel.
3				

NYSEG PLATTSBURGH- BRIDGE STREET FORMER MGP PLANT

Job No.: 99-085
Boring No.: W-3A
Date: 7-13-99
Geoprobe Contractor: Zebra Environmental
Geologist: David Sheppard
Location: 2' south of W3 (20.5' from NW corner of bldg.

Sample Id.: PB-SB-1
Time:
Depth: 5'-7' (composited with W3.)
Parameters: TCL VOCs & SVOCs, TAL Metals, R-CN, T-CN, R-Sulfide, TOC, TPH.
HNU PID Background Reading: 0.2 ppm.

Boring No	Depth (ft)	PID Borehole (ppm)	PID Sample (ppm)	Description
1	0-4	ND	ND	0-1' grass / sandy loam 1-4' brick & concrete fill w/ sand & gravel.
2	4-7	ND	26	4-5' moist Br. silty clay 5-6' dry gravel (concrete debris) 6-7' dry Br. sandy gravel, trace oil w/gravel.
3				

NYSEG PLATTSBURGH- BRIDGE STREET FORMER MGP PLANT

Job No.: 99-085
Boring No.: W4
Date: 7-13-99
Geoprobe Contractor: Zebra Environmental
Geologist: David Sheppard
Location: 24' from NW corner of bldg.

Sample Id.: No sample collected.
Time:
Depth:
Parameters: TCL VOCs & SVOCs, TAL Metals, R-CN, T-CN, R-Sulfide, TOC, TPH.
HNU PID Background Reading: 0.2 ppm.

Boring No	Depth (ft)	PID Borehole (ppm)	PID Sample (ppm)	Description
1	0-4	ND	ND	0-1' grass & sandy loam. 1-4' brick fill w/ coal, ash, cinders - some med. sand & gravel.
2	4-7	ND	3.4	4-7' moist to dry med. sand and gravel mix. (possibly concrete).
3				

NYSEG PLATTSBURGH- BRIDGE STREET FORMER MGP PLANT

Job No.: 99-085
Boring No.: W5
Date: 7-13-99
Geoprobe Contractor: Zebra Environmental
Geologist: David Sheppard
Location: ~ 30' from NW corner of bldg.

Sample Id.: No SAMPLE
Time: COLLECTED.
Depth:
Parameters: TCL VOCs & SVOCs, TAL Metals, R-CN, T-CN, R-Sulfide, TOC, TPH.
HNU PID Background Reading: 0.2 ppm.

Boring No	Depth (ft)	PID Borehole (ppm)	PID Sample (ppm)	Description
1	0-4	ND	ND	0-1' grass / sandy loam. 1-4' Fill - gravel, brick, cinder, med. sand, blk. staining.
2	4-7	ND	2.8 (6-7')	4-5' moist br. clay 5-6' dry br. coarse-med. sand & gravel w/trace clay. 6-7' gravel (dry).
3				

NYSEG PLATTSBURGH- BRIDGE STREET FORMER MGP PLANT

Job No.: 99-085
Boring No.: W6
Date: 7-13-99
Geoprobe Contractor: Zebra Environmental
Geologist: David Sheppard
Location: 34' from NW corner of bldg.

Sample Id.: No sample collected.
Time:
Depth:
Parameters: TCL VOCs & SVOCs, TAL Metals, R-CN, T-CN, R-Sulfide, TOC, TPH.
HNU PID Background Reading: 0.2 ppm.

Boring No	Depth (ft)	PID Borehole (ppm)	PID Sample (ppm)	Description
1	0-4	ND	ND	0-1' grass / sandy loam 1-4' Fill (gravel, brick, cinder, med. sand, blk. staining).
2	4-6.5	ND	8.5 (5-6.5')	4-5' moist Br. clay 5'-6' dry Br. coarse-med. sand & gravel w/ trace clay 6'-6.5' gravel (dry).
3				

NYSEG PLATTSBURGH- BRIDGE STREET FORMER MGP PLANT

Job No.: 99-085
Boring No.: W 7
Date: 7-13-99
Geoprobe Contractor: Zebra Environmental
Geologist: David Sheppard
Location: 37.5' from NW corner of bldg.

Sample Id.: No Sample collected.
Time:
Depth:
Parameters: TCL VOCs & SVOCs, TAL Metals, R-CN, T-CN, R-Sulfide, TOC, TPH.
HNU PID Background Reading: 0.2 ppm.

Boring No	Depth (ft)	PID Borehole (ppm)	PID Sample (ppm)	Description
1	0-4'	ND	ND	0-1' grass / sandy loam. 1-4' Fill (gravel, brick, CINDER, med sand).
2	4-6'	ND	ND	4-5' moist Br. clay 4-6' dry Br. coarse-med. sand & gravel, trace clay.
3				

NYSEG PLATTSBURGH- BRIDGE STREET FORMER MGP PLANT

Job No.: 99-085
Boring No.: W 8
Date: 7-13-99
Geoprobe Contractor: Zebra Environmental
Geologist: David Sheppard
Location: 41' from NW corner of bldg.

Sample Id.: No Sample
Time: Collected.
Depth:
Parameters: TCL VOCs & SVOCs, TAL Metals, R-CN, T-CN, R-Sulfide, TOC, TPH.
HNU PID Background Reading: 0.2 ppm.

Boring No	Depth (ft)	PID Borehole (ppm)	PID Sample (ppm)	Description
1	0-4	ND	ND	0-1' grass / sandy loam. 1-4' Fill (gravel, brick, cinder, med. sand).
2	4-6	ND	ND	4-5' Br. silty clay w/ sand and gravel. 5-6' dry Br./gray sand & gravel.
3				

NYSEG PLATTSBURGH- BRIDGE STREET FORMER MGP PLANT

Job No.: 99-085
Boring No.: W 9
Date: 7-13-99
Geoprobe Contractor: Zebra Environmental
Geologist: David Sheppard
Location: 46.5' from NW corner of BLdg.

Sample Id.: No sample
Time: collected.
Depth:
Parameters: TCL VOCs & SVOCs, TAL Metals, R-CN, T-CN, R-Sulfide, TOC, TPH.
HNU PID Background Reading: 0.2 ppm.

Boring No	Depth (ft)	PID Borehole (ppm)	PID Sample (ppm)	Description
1	0-4	ND	ND	0-1' grass / sandy loam. 1-4' Fill (gravel, brick, cinder, MED SAND.)
2	4-7	ND	ND	4-5' Br. silty clay w/sand & gravel. 5'-6' Dry Br./gray sand & gravel.
3				

NYSEG PLATTSBURGH- BRIDGE STREET FORMER MGP PLANT

Job No.: 99-085
Boring No.: W10
Date: 7-13-99
Geoprobe Contractor: Zebra Environmental
Geologist: David Sheppard
Location: 48.5' from NW corner of bldg.

Sample Id.: No sample collected.
Time:
Depth:
Parameters: TCL VOCs & SVOCs, TAL Metals, R-CN, T-CN, R-Sulfide, TOC, TPH.
HNU PID Background Reading: 0.2 ppm.

Boring No	Depth (ft)	PID Borehole (ppm)	PID Sample (ppm)	Description
1	0-4	ND	ND	0-1' grass/sandy loam. 1-4' Fill (gravel, brick, med. Sand).
2	4-6	ND	ND	4-6' dry sandy gravel.
3				

NYSEG PLATTSBURGH- BRIDGE STREET FORMER MGP PLANT

Job No.: 99-085
Boring No.: W 11
Date: 7-13-99
Geoprobe Contractor: Zebra Environmental
Geologist: David Sheppard
Location: 56.5 from NW corner of bldg.

Sample Id.: No Sample collected.
Time:
Depth:
Parameters: TCL VOCs & SVOCs, TAL Metals, R-CN, T-CN, R-Sulfide, TOC, TPH.
HNU PID Background Reading: 0.2 ppm.

Boring No	Depth (ft)	PID Borehole (ppm)	PID Sample (ppm)	Description
1	0-4	ND	ND	0-1' grass/sandy loam 1'-4' Fill (gravel, brick, med. sand).
2	4-6	ND	ND	4-6' dry sandy gravel.
3				

APPENDIX C

WELL CONSTRUCTION DIAGRAMS

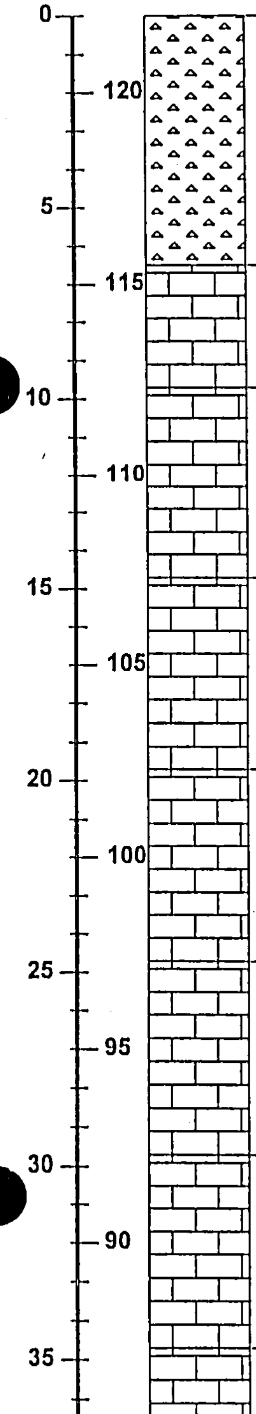
LOG OF BORING

URS
Clifton Park, New York

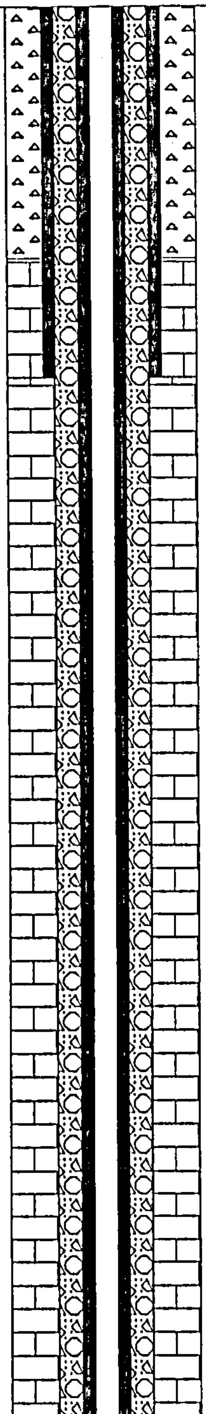
NYSEG
Bridge St. Former MGP Site
Plattsburgh, New York

PROJECT: NYSEG
BORING NO.: Angled Boring
DATE: 9/13/02
BORING DIAMETER: 3.88 in.
BORING DEPTH: 106.1 feet
ELEVATION: GRD. 122.00 / MPE 121.57
BORING LOCATION: N 2137864.48 / E 766362.83
METHOD OF DRILLING: HQ Core, 30 degrees from vertical
SAMPLE TYPE: 5 ft. HQ Core Barrel
SURFACE CONDITIONS: Grass

page 1 of 3



Soil Description	Rec / Run	% Rec	> 4" / Run	% RQD	Well Description
Overburden					Bedrock encountered at 6.5'
R-1: 7.5-9.6'.	2.1/2.1	100	2.1/2.1	100	4 inch PVC casing set at 9.6'
R-2: 9.7-14.7'.	5/5	100	5/5	100	
R-3: 14.7-19.7'.	5/5	100	5/5	100	
R-4: 19.7-24.7'.	5/5	100	5/5	100	
R-5: 24.7-29.7'.	5/5	100	5/5	100	
R-6: 29.7-34.7'.	5/5	100	5/5	100	1 inch Schedule 40 PVC riser: 0-53 feet.
R-7: 34.7-39.7'.					



LOG OF BORING

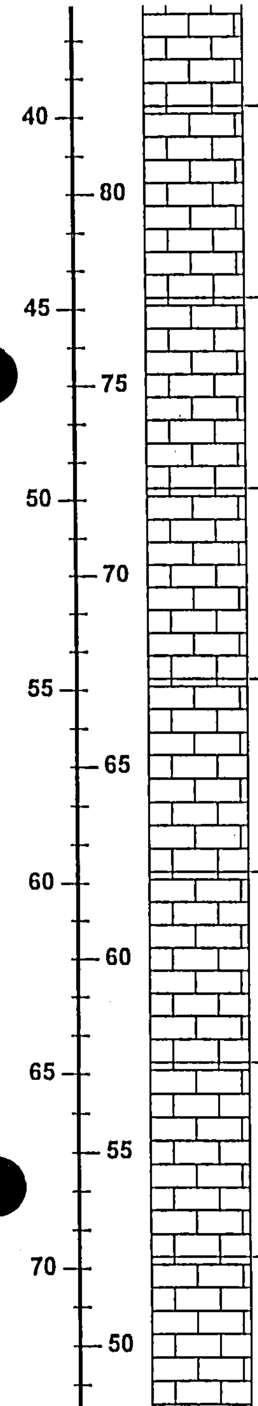
URS
Clifton Park, New York

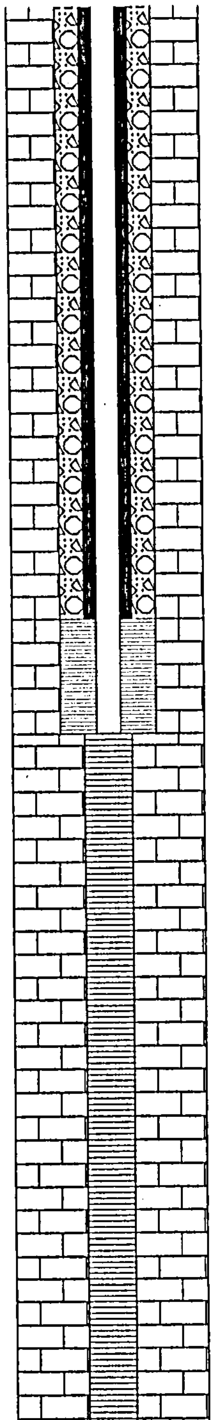
NYSEG
Bridge St. Former MGP Site
Plattsburgh, New York

PROJECT: NYSEG
BORING NO.: Angled Boring
DATE: 9/13/02
BORING DIAMETER: 3.88 in.
BORING DEPTH: 106.1 feet

ELEVATION: GRD. 122.00 / MPE 121.57
BORING LOCATION: N 2137864.48 / E 766362.83
METHOD OF DRILLING: HQ Core, 30 degrees from vertical
SAMPLE TYPE: 5 ft. HQ Core Barrel
SURFACE CONDITIONS: Grass

page 2 of 3





Depth / Elevation	Soil Symbols	Soil Description	Rec / Run	% Rec	> 4" / Run	% RQD	Well Construction	Well Description
			5/5	100	5/5	100		
40 / 80		R-8: 39.7-44.7'.	5/5	100	5/5	100		
45 / 75		R-9: 44.7-49.7'.	5/5	100	5/5	100		
50 / 70		R-10: 49.7-54.7'.	5/5	100	5/5	100		
55 / 65		R-11: 54.7-59.7'.	5/5	100	5/5	100		**Inflatable Packer: 53-56 feet.**
60 / 60		R-12: 59.7-64.7'.	5/5	100	5/5	100		
65 / 55		R-13: 64.7-69.7'.	5/5	100	5/5	100		
70 / 50		R-14: 69.7-74.7'.	5/5	100	5/5	100		

LOG OF BORING

URS
Clifton Park, New York

NYSEG
Bridge St. Former MGP Site
Plattsburgh, New York

PROJECT: NYSEG
BORING NO.: Angled Boring
DATE: 9/13/02
BORING DIAMETER: 3.88 in.
BORING DEPTH: 106.1 feet
ELEVATION: GRD. 122.00 / MPE 121.57
BORING LOCATION: N 2137864.48 / E 766362.83
METHOD OF DRILLING: HQ Core, 30 degrees from vertical
SAMPLE TYPE: 5 ft. HQ Core Barrel
SURFACE CONDITIONS: Grass

Depth / Elevation	Soil Symbols	Soil Description	Rec / Run	% Rec	> 4" / Run	% RQD	Well Construction	Well Description
75 45		R-15: 74.7-79.7'.	5/5	100	5/5	100		
80 40		R-16: 79.7-84.7'.	5/5	100	5/5	100		
85 35		R-17: 84.7-89.7	5/5	100	5/5	100		2 Inch Schedule 40 PVC Slot 0.010 inch Screen: 56-106.1 feet.
90 30		R-18: 89.7-94.7'.	5/5	100	5/5	100		
95 25		R-19: 94.7-99.7'.	5/5	100	5/5	100		
100 20		R-20: 99.7-104.7'.	5/5	100	5/5	100		
05		R-21: 104.7-106.1'.	1.4/1.4	100	1.4/1.4	100		End of boring at 106.1'.

LOG OF BORING

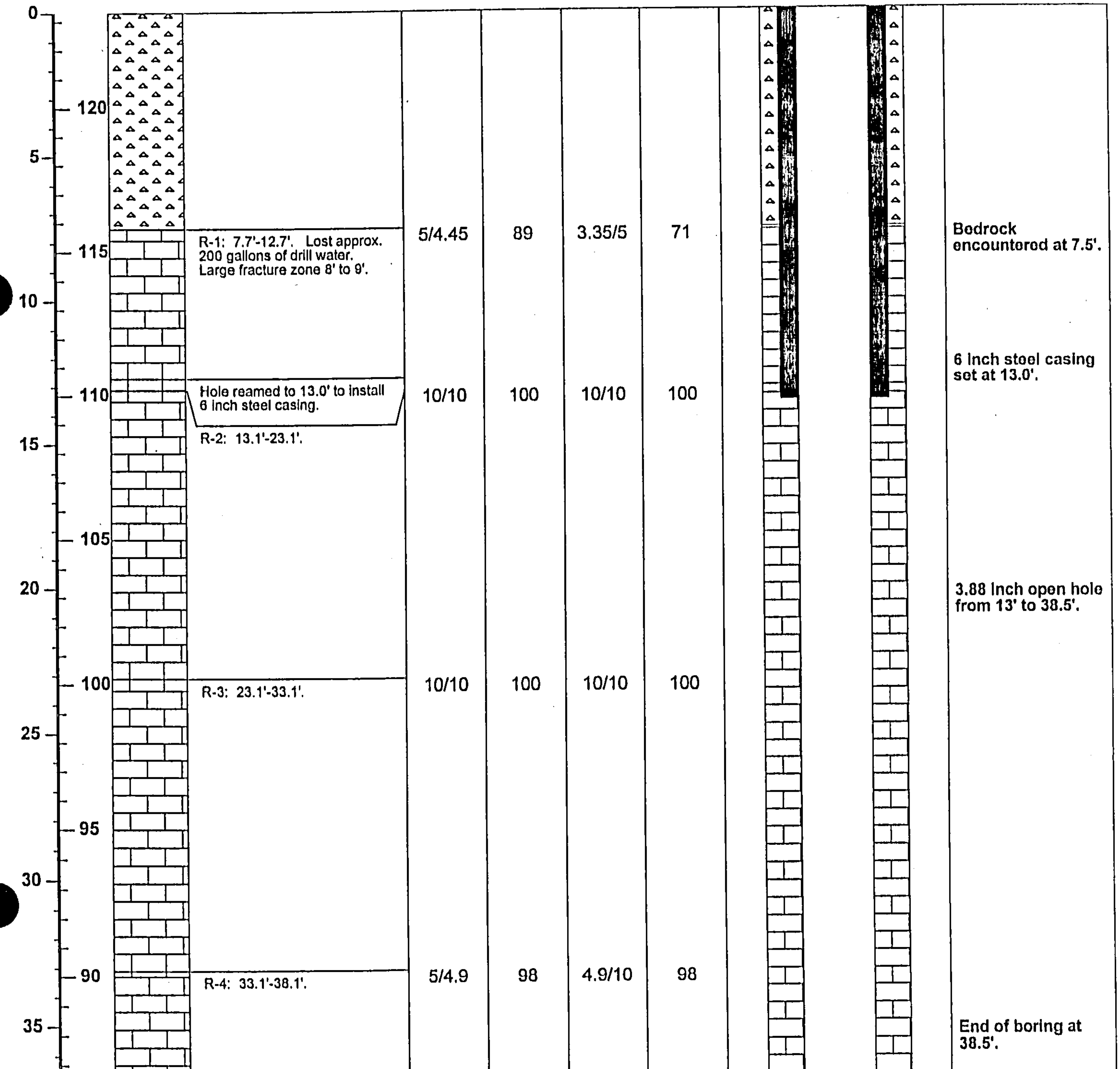
URS
Clifton Park, New York

NYSEG
Bridge St. Former MGP Site
Plattsburgh, New York

PROJECT:	NYSEG
BORING NO.:	MW-1B
DATE:	12/3/01
BORING DIAMETER:	3.88 in.
BORING DEPTH:	38.5 ft.
ELEVATION:	123.3
BORING LOCATION:	N 2137777.030/ E 766373.304
METHOD OF DRILLING:	NX drill steel
SAMPLE TYPE:	10 ft. Core Barrel
SURFACE CONDITIONS:	Grass

page 1 of 2

Depth Elevation	Soil Symbols	Soil Description	Rec / Run	% Rec	> 4" / Run	% RQD	Well Construction	Well Description
		R-1: 7.7'-12.7'. Lost approx. 200 gallons of drill water. Large fracture zone 8' to 9'.	5/4.45	89	3.35/5	71		Bedrock encountered at 7.5'.
								6 inch steel casing set at 13.0'.
		Hole reamed to 13.0' to install 6 inch steel casing. R-2: 13.1'-23.1'.	10/10	100	10/10	100		
								3.88 inch open hole from 13' to 38.5'.
		R-3: 23.1'-33.1'.	10/10	100	10/10	100		
		R-4: 33.1'-38.1'.	5/4.9	98	4.9/10	98		End of boring at 38.5'.



LOG OF BORING

URS
Clifton Park, New York

NYSEG
Bridge St. Former MGP Site
Plattsburgh, New York

PROJECT: NYSEG
BORING NO.: MW-1B
DATE: 12/3/01
BORING DIAMETER: 3.88 in.
BORING DEPTH: 38.5 ft.

ELEVATION: 123.3
BORING LOCATION: N 2137777.030/ E 766373.304
METHOD OF DRILLING: NX drill steel
SAMPLE TYPE: 10 ft. Core Barrel
SURFACE CONDITIONS: Grass

Depth Elevation	Soil Symbols	Soil Description	Rec / Run	% Rec	> 4" / Run	% RQD	Well Construction	Well Description
85		Hole reamed to 38.5'. End of boring.						

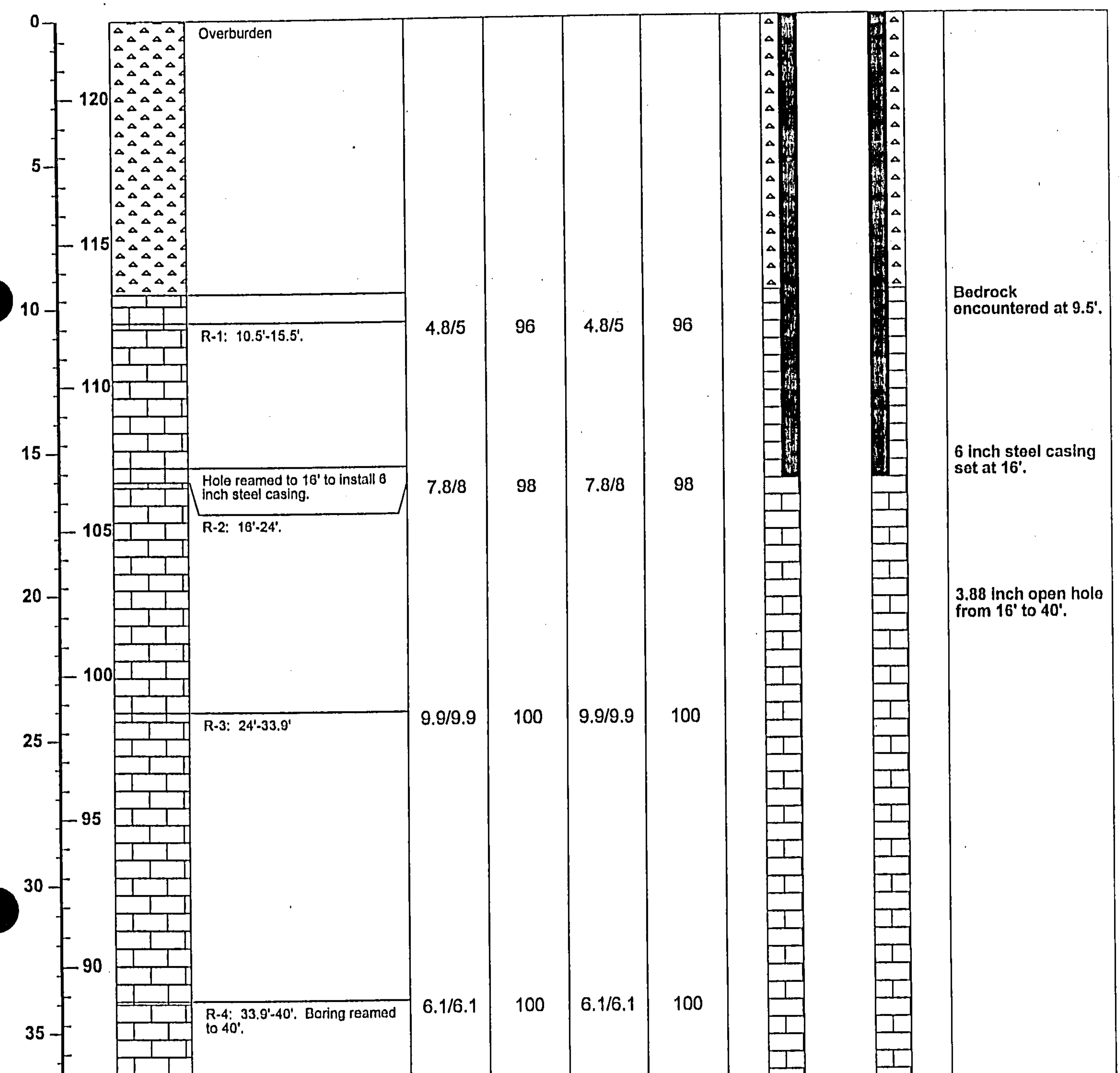
LOG OF BORING

URS
Clifton Park, New York

NYSEG
Bridge St. Former MGP Site
Plattsburgh, New York

PROJECT: NYSEG
BORING NO.: MW-2B
DATE: 12/7/01
BORING DIAMETER: 3.88 in.
BORING DEPTH: 40 ft.

ELEVATION: 122.72
BORING LOCATION: N 2137830.356/ E 766426.331
METHOD OF DRILLING: NX drill steel
SAMPLE TYPE: 10 ft. Core Barrel
SURFACE CONDITIONS: Grass



Depth / Elevation	Soil Symbols	Soil Description	Rec / Run	% Rec	> 4" / Run	% RQD	Well Construction	Well Description
0		Overburden						
								Bedrock encountered at 9.5'.
		R-1: 10.5'-15.5'.	4.8/5	96	4.8/5	96		
								6 inch steel casing set at 16'.
		Hole reamed to 16' to install 6 inch steel casing. R-2: 16'-24'.	7.8/8	98	7.8/8	98		
								3.88 inch open hole from 16' to 40'.
		R-3: 24'-33.9'	9.9/9.9	100	9.9/9.9	100		
		R-4: 33.9'-40'. Boring reamed to 40'.	6.1/6.1	100	6.1/6.1	100		

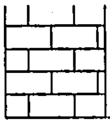
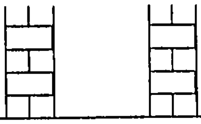
LOG OF BORING

URS
Clifton Park, New York

NYSEG
Bridge St. Former MGP Site
Plattsburgh, New York

PROJECT:	NYSEG	**ELEVATION:**	122.72
BORING NO.:	MW-2B	**BORING LOCATION:**	N 2137830.356/ E 766426.331
DATE:	12/7/01	**METHOD OF DRILLING:**	NX drill steel
BORING DIAMETER:	3.88 in.	**SAMPLE TYPE:**	10 ft. Core Barrel
BORING DEPTH:	40 ft.	**SURFACE CONDITIONS:**	Grass

page 2 of 2

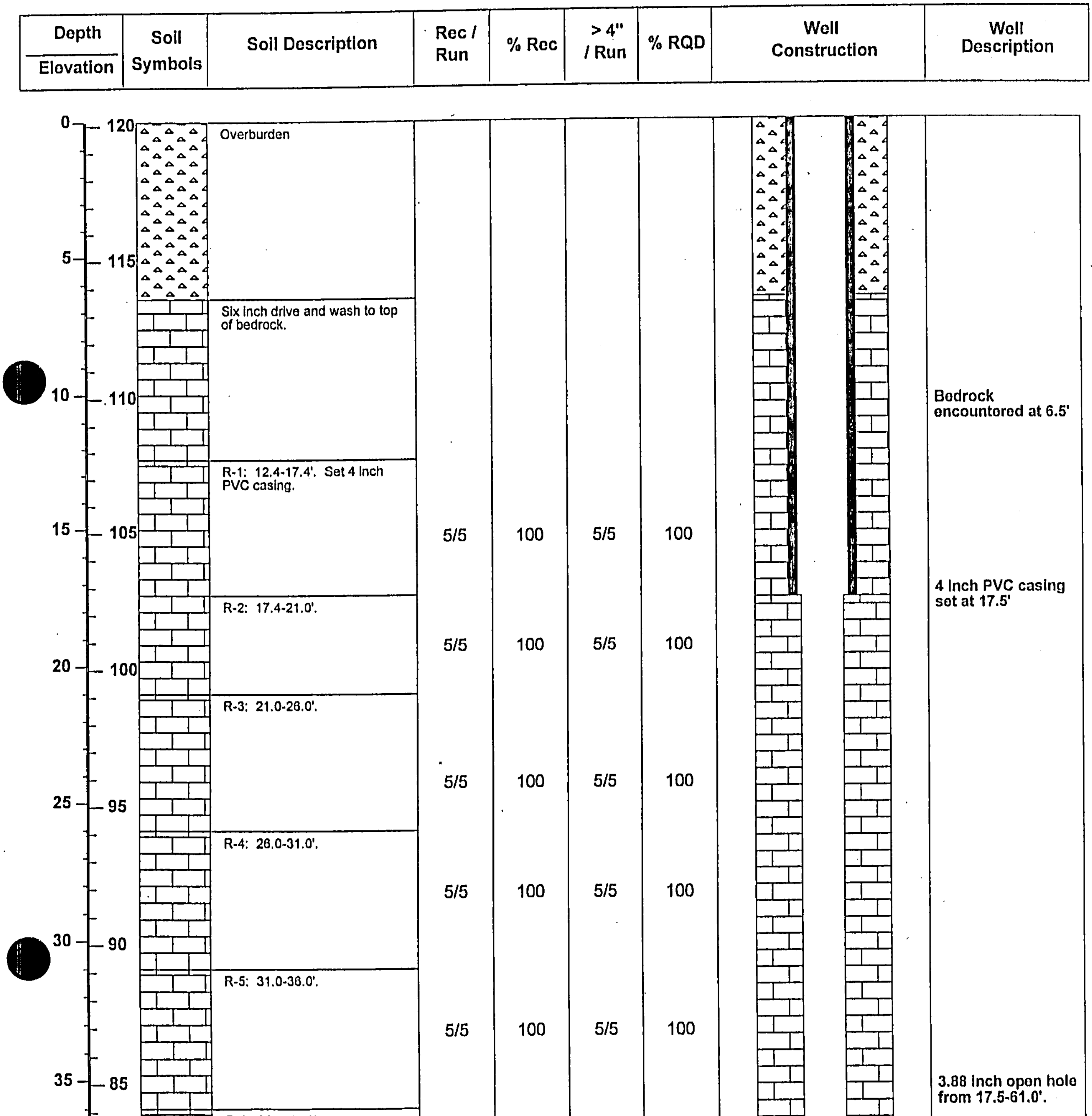
Depth / Elevation	Soil Symbols	Soil Description	Rec / Run	% Rec	> 4" / Run	% RQD	Well Construction	Well Description
85 40								End of boring at 40'.

LOG OF BORING

URS
Clifton Park, New York

NYSEG
Bridge St. Former MGP Site
Plattsburgh, New York

PROJECT:	NYSEG	**ELEVATION:**	GRD. 120.14 / MPE 120.11
BORING NO.:	MW-3B	**BORING LOCATION:**	N 2137926.23 / E 766514.87
DATE:	9/17/02	**METHOD OF DRILLING:**	HQ Core
BORING DIAMETER:	3.88 in.	**SAMPLE TYPE:**	5 ft. HQ Core Barrel
BORING DEPTH:	61 Feet	**SURFACE CONDITIONS:**	Grass



Soil Description	Rec / Run	% Rec	> 4" / Run	% RQD	Well Description
Overburden					
Six inch drive and wash to top of bedrock.					Bedrock encountered at 6.5'
R-1: 12.4-17.4'. Set 4 inch PVC casing.	5/5	100	5/5	100	4 Inch PVC casing set at 17.5'
R-2: 17.4-21.0'.	5/5	100	5/5	100	
R-3: 21.0-26.0'.	5/5	100	5/5	100	
R-4: 26.0-31.0'.	5/5	100	5/5	100	
R-5: 31.0-36.0'.	5/5	100	5/5	100	3.88 inch open hole from 17.5-61.0'.

LOG OF BORING

URS
Clifton Park, New York

NYSEG
Bridge St. Former MGP Site
Plattsburgh, New York

PROJECT: NYSEG
BORING NO.: MW-3B
DATE: 9/17/02
BORING DIAMETER: 3.88 in.
BORING DEPTH: 61 Feet

ELEVATION: GRD. 120.14 / MPE 120.11
BORING LOCATION: N 2137926.23 / E 766514.87
METHOD OF DRILLING: HQ Core
SAMPLE TYPE: 5 ft. HQ Core Barrel
SURFACE CONDITIONS: Grass

Depth	Elevation	Soil Symbols	Soil Description	Rec / Run	% Rec	> 4" / Run	% RQD	Well Construction	Well Description
				5/5	100	5/5	100		
40	80								
			R-7: 41.0-46.0'.	5/5	100	5/5	100		
45	75								
			R-8: 46.0-51.0'.	5/5	100	5/5	100		
50	70								
			R-9: 51.0-56.0'.	5/5	100	5/5	100		
55	65								
			R-10: 56.0-61.0'.	5/5	100	5/5	100		
60	60			5/5	100	5/5	100		End of boring at 61'.

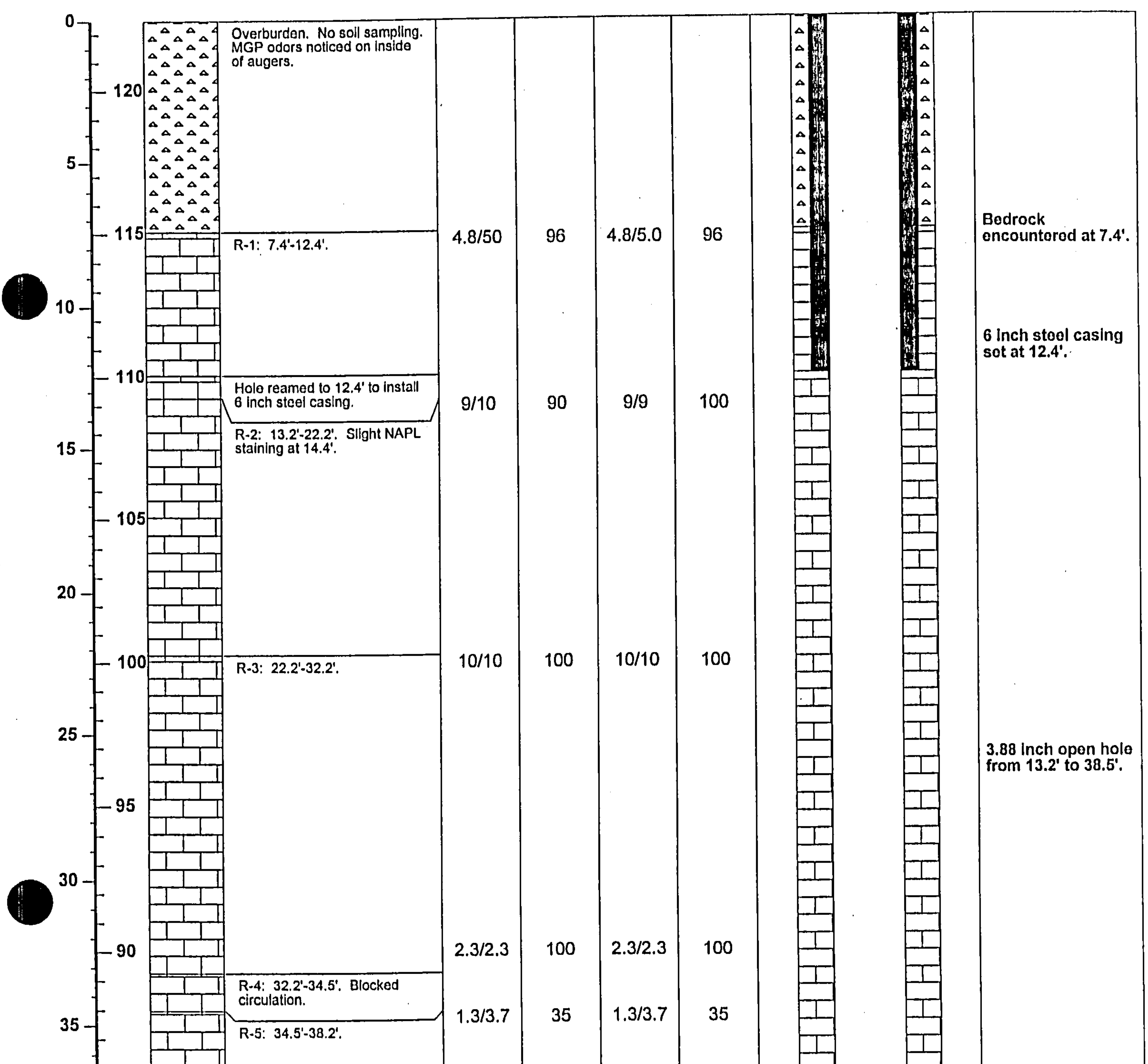
LOG OF BORING

URS
Clifton Park, New York

NYSEG
Bridge St. Former MGP Site
Plattsburgh, New York

PROJECT:	NYSEG	**ELEVATION:**	122.47
BORING NO.:	MW-6B	**BORING LOCATION:**	N 2137867.065/ E 766380.104
DATE:	12/5/01	**METHOD OF DRILLING:**	NX drill steel
BORING DIAMETER:	3.88 in.	**SAMPLE TYPE:**	10 ft. Core Barrel
BORING DEPTH:	38.5 ft.	**SURFACE CONDITIONS:**	Sand

page 1 of 2



Depth / Elevation	Soil Symbols	Soil Description	Rec / Run	% Rec	> 4" / Run	% RQD	Well Construction	Well Description
		Overburden. No soil sampling. MGP odors noticed on inside of augers.						
		R-1: 7.4'-12.4'.	4.8/50	96	4.8/5.0	96		Bedrock encountered at 7.4'. 6 inch steel casing set at 12.4'.
		Hole reamed to 12.4' to install 6 inch steel casing.						
		R-2: 13.2'-22.2'. Slight NAPL staining at 14.4'.	9/10	90	9/9	100		
		R-3: 22.2'-32.2'.	10/10	100	10/10	100		3.88 inch open hole from 13.2' to 38.5'.
			2.3/2.3	100	2.3/2.3	100		
		R-4: 32.2'-34.5'. Blocked circulation.						
		R-5: 34.5'-38.2'.	1.3/3.7	35	1.3/3.7	35		

LOG OF BORING

URS
Clifton Park, New York

NYSEG
Bridge St. Former MGP Site
Plattsburgh, New York

PROJECT:	NYSEG	**ELEVATION:**	122.47
BORING NO.:	MW-6B	**BORING LOCATION:**	N 2137867.065/ E 766380.104
DATE:	12/5/01	**METHOD OF DRILLING:**	NX drill steel
BORING DIAMETER:	3.88 in.	**SAMPLE TYPE:**	10 ft. Core Barrel
BORING DEPTH:	38.5 ft.	**SURFACE CONDITIONS:**	Sand

page 2 of 2

Depth / Elevation	Soil Symbols	Soil Description	Rec / Run	% Rec	> 4" / Run	% RQD	Well Construction	Well Description
85		Hole reamed to 38.5'. End of boring.						End of boring at 38.5'

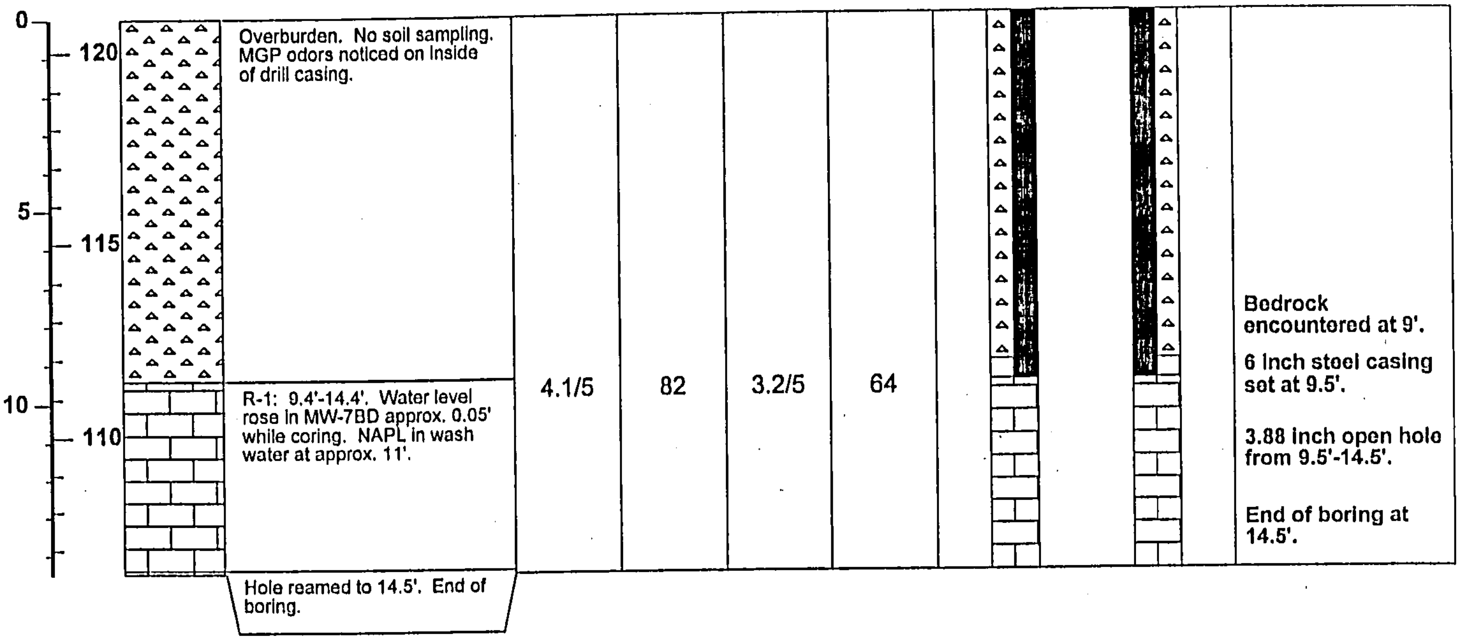
LOG OF BORING

URS
Clifton Park, New York

NYSEG
Bridge St. Former MGP Site
Plattsburgh, New York

PROJECT:	NYSEG	**ELEVATION:**	120.86
BORING NO.:	MW-7BS	**BORING LOCATION:**	N 2137897.795/ E 766435.762
DATE:	12/13/01	**METHOD OF DRILLING:**	NX drill steel
BORING DIAMETER:	3.88 in.	**SAMPLE TYPE:**	10 ft. Core Barrel
BORING DEPTH:	14.5 ft.	**SURFACE CONDITIONS:**	Sand

page 1 of 1



Depth Elevation	Soil Symbols	Soil Description	Rec / Run	% Rec	> 4" / Run	% RQD	Well Construction	Well Description
		Overburden. No soil sampling. MGP odors noticed on inside of drill casing.						
		R-1: 9.4'-14.4'. Water level rose in MW-7BD approx. 0.05' while coring. NAPL in wash water at approx. 11'.	4.1/5	82	3.2/5	64		Bedrock encountered at 9'. 6 inch steel casing set at 9.5'. 3.88 inch open hole from 9.5'-14.5'. End of boring at 14.5'.
		Hole reamed to 14.5'. End of boring.						

LOG OF BORING

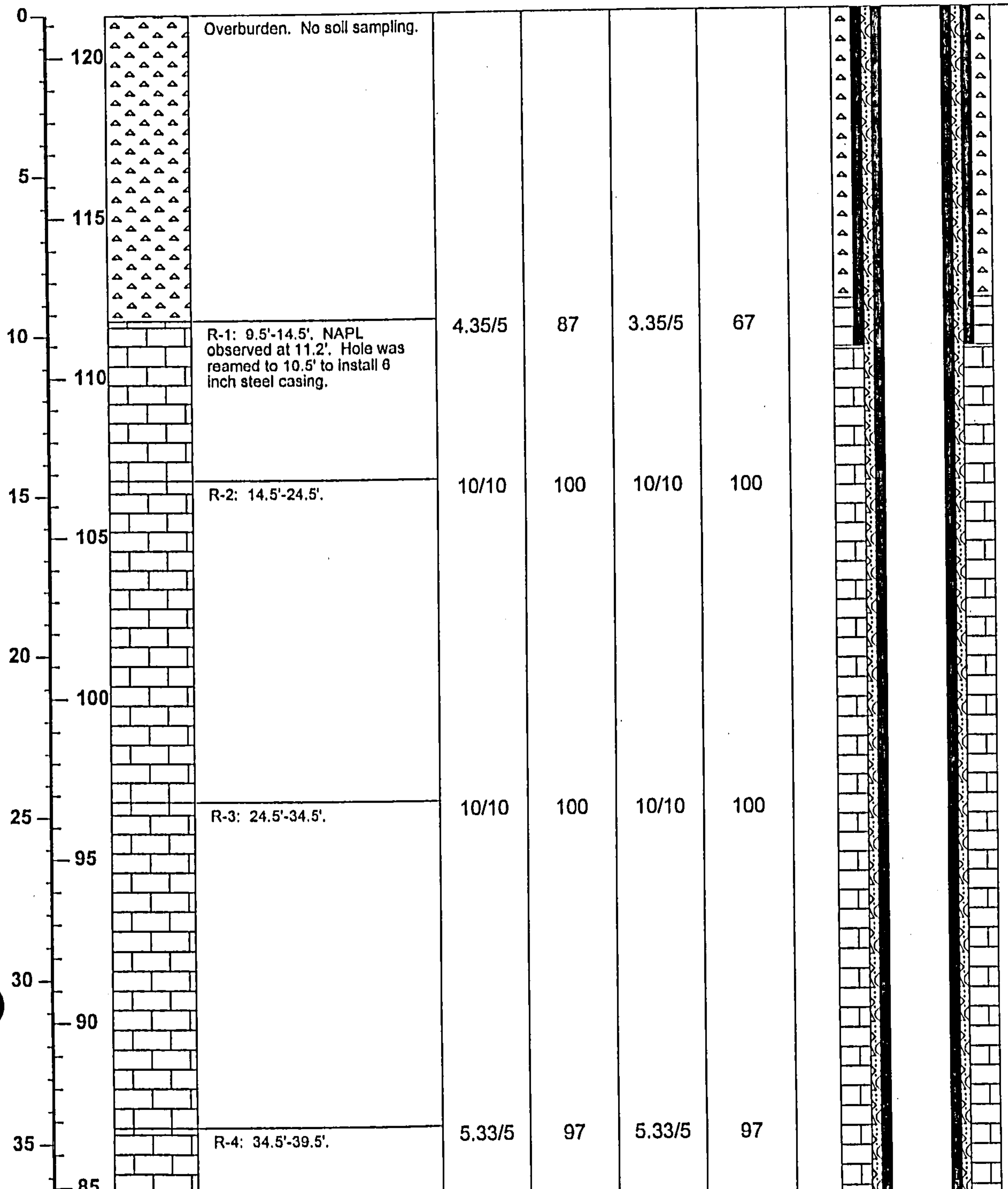
URS
Clifton Park, New York

NYSEG
Bridge St. Former MGP Site
Plattsburgh, New York

PROJECT:	NYSEG	**ELEVATION:**	121.30
BORING NO.:	MW-7BD	**BORING LOCATION:**	N 2137889.92/ E 766431.683
DATE:	1/9/02	**METHOD OF DRILLING:**	NX drill steel
BORING DIAMETER:	3.88 in.	**SAMPLE TYPE:**	10 ft. Core Barrel
BORING DEPTH:	50 ft.	**SURFACE CONDITIONS:**	Sand

page 1 of 2

Depth / Elevation	Soil Symbols	Soil Description	Rec / Run	% Rec	> 4" / Run	% RQD	Well Construction	Well Description
0 / 121.30		Overburden. No soil sampling.						Grouted annulus 0'-9'. Bedrock encountered at 9'.
10		R-1: 9.5'-14.5'. NAPL observed at 11.2'. Hole was reamed to 10.5' to install 6 inch steel casing.	4.35/5	87	3.35/5	67		6 inch steel casing set at 10.5'
15		R-2: 14.5'-24.5'.	10/10	100	10/10	100		Bentonite chip annulus 9'-30'.
25		R-3: 24.5'-34.5'.	10/10	100	10/10	100		
35		R-4: 34.5'-39.5'.	5.33/5	97	5.33/5	97		Grouted annulus 30'-40'.



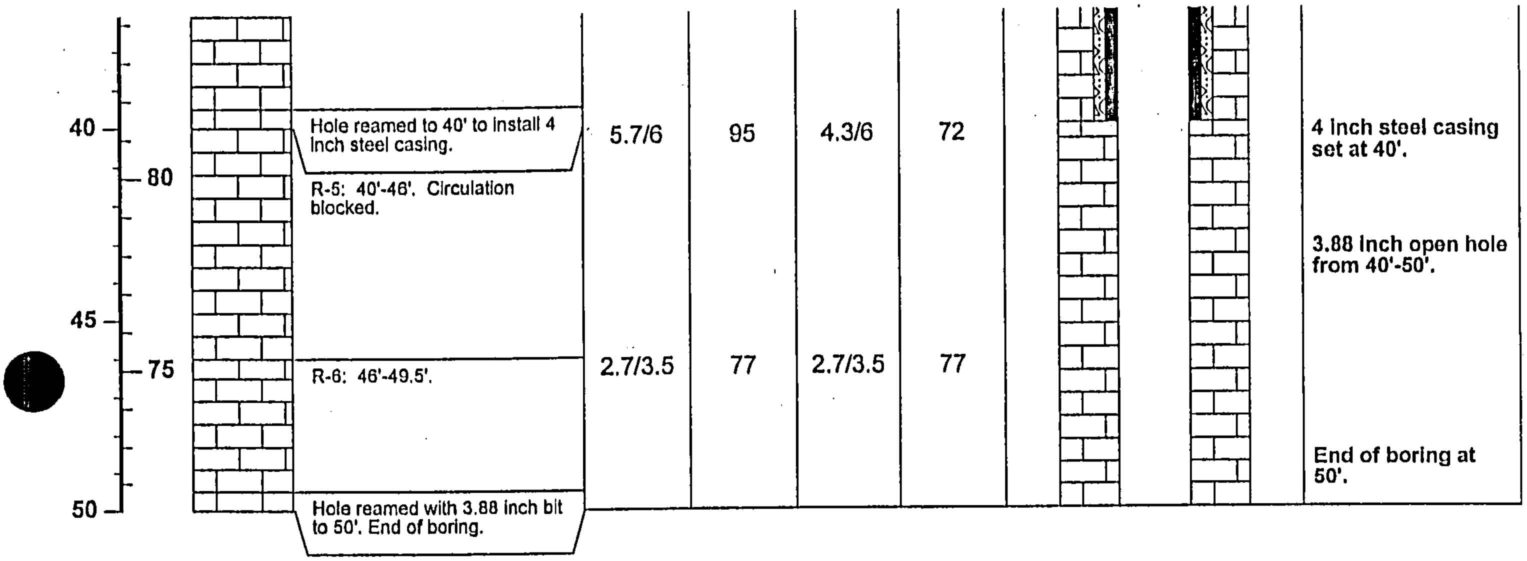
LOG OF BORING

URS
Clifton Park, New York

NYSEG
Bridge St. Former MGP Site
Plattsburgh, New York

PROJECT:	NYSEG	**ELEVATION:**	121.30
BORING NO.:	MW-7BD	**BORING LOCATION:**	N 2137889.92/ E 766431.683
DATE:	1/9/02	**METHOD OF DRILLING:**	NX drill steel
BORING DIAMETER:	3.88 in.	**SAMPLE TYPE:**	10 ft. Core Barrel
BORING DEPTH:	50 ft.	**SURFACE CONDITIONS:**	Sand

page 2 of 2



Depth / Elevation	Soil Symbols	Soil Description	Rec / Run	% Rec	> 4" / Run	% RQD	Well Construction	Well Description
40 / 80		Hole reamed to 40' to install 4 inch steel casing. R-5: 40'-46'. Circulation blocked.	5.7/6	95	4.3/6	72		4 inch steel casing set at 40'. 3.88 inch open hole from 40'-50'.
45 / 75		R-6: 46'-49.5'.	2.7/3.5	77	2.7/3.5	77		End of boring at 50'.
50		Hole reamed with 3.88 inch bit to 50'. End of boring.						

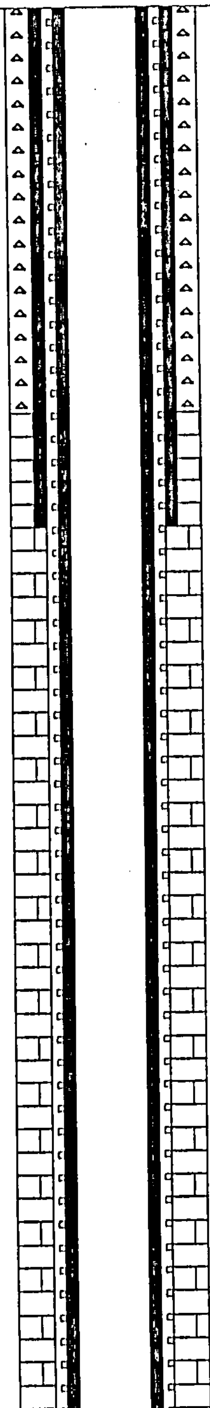
LOG OF BORING

URS
Clifton Park, New York

NYSEG
Bridge St. Former MGP Site
Plattsburgh, New York

PROJECT: NYSEG
BORING NO.: MW-7DD
DATE: 9/4/02
BORING DIAMETER: 3.88 in.
BORING DEPTH: 85.5 feet

ELEVATION: GRD. 122.72 / MPE 121.33
BORING LOCATION: N 2137866.37 / E 766431.68
METHOD OF DRILLING: HQ Core
SAMPLE TYPE: 5 ft. HQ Core Barrel
SURFACE CONDITIONS: Grass



Depth Elevation	Soil Symbols	Soil Description	Rec / Run	% Rec	> 4" / Run	% RQD	Well Construction	Well Description
0 120 5 115 10		Overburden						Bedrock encountered at 10.5'.
110		8 inch O.D. auger to three feet into bedrock.						6 inch steel casing set at 13.5'
15		R-1: 13.5-15.5'.	2/2	100	2/2	100		
105 20		R-2: 15.5-20.5'.	5/5	100	5/5	91		
100 25		R-3: 20.5-25.5'.	5/5	100	5/5	100		
95 30		R-4: 25.5-30.5'.	5/5	100	5/5	100		Bentonite (0-60')
90 35		R-5: 30.5-35.5'.	5/5	100	5/5	100		
		R-6: 35.5-40.5'.						

LOG OF BORING

URS
Clifton Park, New York

NYSEG
Bridge St. Former MGP Site
Plattsburgh, New York

PROJECT:	NYSEG	**ELEVATION:**	GRD. 122.72 / MPE 121.33
BORING NO.:	MW-7DD	**BORING LOCATION:**	N 2137866.37 / E 766431.68
DATE:	9/4/02	**METHOD OF DRILLING:**	HQ Core
BORING DIAMETER:	3.88 in.	**SAMPLE TYPE:**	5 ft. HQ Core Barrel
BORING DEPTH:	85.5 feet	**SURFACE CONDITIONS:**	Grass

Depth / Elevation	Soil Symbols	Soil Description	Rec / Run	% Rec	> 4" / Run	% RQD	Well Construction	Well Description
85 40			5/5	100	5/5	100		4 inch PVC casing set to 70.5'.
80 45		R-7: 40.5-45.5'.	5/5	100	5/5	100		
75 50		R-8: 45.5-50.5'.	5/5	100	5/5	100		
70 55		R-9: 50.5-55.5'.	5/5	100	5/5	100		
65 60		R-10 55.5-60.5'.	5/5	100	4.8/5	96		
60 65		R-11 60.5-65.5'.	5/5	100	4.8/5	96		Grout (60-70')
55 70		R-12 65.5-70.5'.	5/5	100	4.9/5	98		
50		R-13 70.5-75.5'.	5/5	100	5/5	100		

LOG OF BORING

URS
Clifton Park, New York

NYSEG
Bridge St. Former MGP Site
Plattsburgh, New York

PROJECT: NYSEG
BORING NO.: MW-7DD
DATE: 9/4/02
BORING DIAMETER: 3.88 in.
BORING DEPTH: 85.5 feet

ELEVATION: GRD. 122.72 / MPE 121.33
BORING LOCATION: N 2137866.37 / E 766431.68
METHOD OF DRILLING: HQ Core
SAMPLE TYPE: 5 ft. HQ Core Barrel
SURFACE CONDITIONS: Grass

page 3 of 3

Depth / Elevation	Soil Symbols	Soil Description	Rec / Run	% Rec	> 4" / Run	% RQD	Well Construction	Well Description
75								
45		R-14 75.5-80.5'.	5/5	100	5/5	100		3.88 inch open hole from 70.5'-85.5'.
80 40 85		R-15 80.5-85.5'.	5/5	100	4.4/5	88		End of boring at 85.5'.

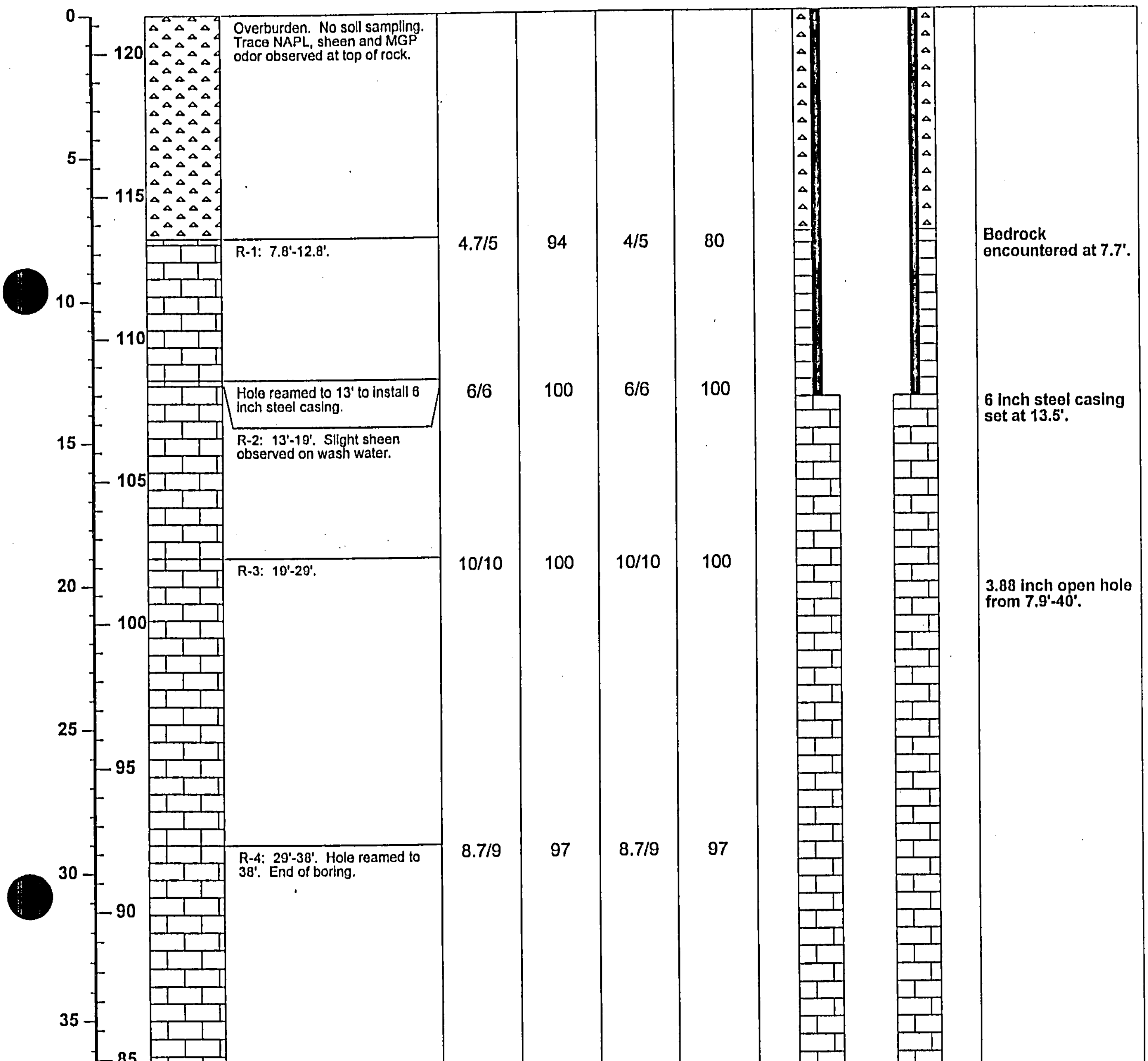
LOG OF BORING

URS
Clifton Park, New York

NYSEG
Bridge St. Former MGP Site
Plattsburgh, New York

PROJECT: NYSEG
BORING NO.: MW-8B
DATE: 12/12/01
BORING DIAMETER: 3.88 in.
BORING DEPTH: 38 ft.
ELEVATION: 121.32
BORING LOCATION: N 2137903.828/ E 766406.693
METHOD OF DRILLING: NX drill steel
SAMPLE TYPE: 10 ft. Core Barrel
SURFACE CONDITIONS: Grass

page 1 of 2



Depth / Elevation	Soil Symbols	Soil Description	Rec / Run	% Rec	> 4" / Run	% RQD	Well Construction	Well Description
		Overburden. No soil sampling. Trace NAPL, sheen and MGP odor observed at top of rock.						
		R-1: 7.8'-12.8'.	4.7/5	94	4/5	80		Bedrock encountered at 7.7'.
		Hole reamed to 13' to install 6 inch steel casing. R-2: 13'-19'. Slight sheen observed on wash water.	6/6	100	6/6	100		6 inch steel casing set at 13.5'.
		R-3: 19'-29'.	10/10	100	10/10	100		3.88 inch open hole from 7.9'-40'.
		R-4: 29'-38'. Hole reamed to 38'. End of boring.	8.7/9	97	8.7/9	97		

LOG OF BORING

URS
Clifton Park, New York

NYSEG
Bridge St. Former MGP Site
Plattsburgh, New York

PROJECT:	NYSEG	**ELEVATION:**	121.32
BORING NO.:	MW-8B	**BORING LOCATION:**	N 2137903.828/ E 766406.693
DATE:	12/12/01	**METHOD OF DRILLING:**	NX drill steel
BORING DIAMETER:	3.88 in.	**SAMPLE TYPE:**	10 ft. Core Barrel
BORING DEPTH:	38 ft.	**SURFACE CONDITIONS:**	Grass

Depth / Elevation	Soil Symbols	Soil Description	Rec / Run	% Rec	> 4" / Run	% RQD	Well Construction	Well Description
								End of boring at 38'

LOG OF BORING

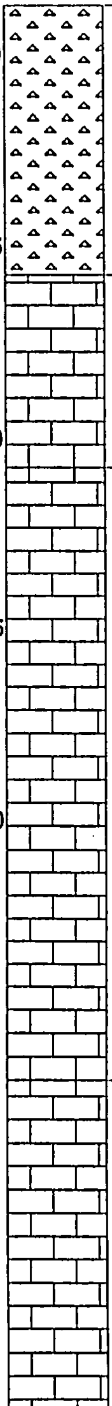
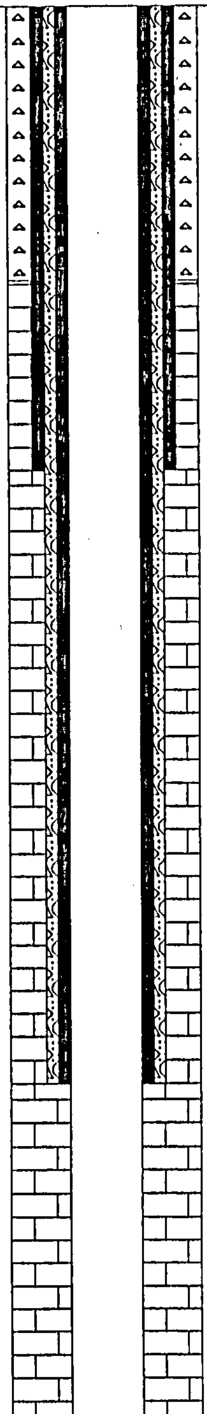
URS
Clifton Park, New York

Bridge St. Former MGP Site
Plattsburgh, New York

PROJECT: NYSEG
BORING NO.: MW-8BD
DATE: 12/12/01
BORING DIAMETER: 3.88 in.
BORING DEPTH: 38 ft.

ELEVATION: 121.32
BORING LOCATION: N 2137903.687/ E 766401.136
METHOD OF DRILLING: Roller bit with water
SAMPLE TYPE: No samples taken
SURFACE CONDITIONS: Grass

page 1 of 2

Depth Elevation	Soil Symbols	Soil Description	Rec / Run	% Rec	> 4" / Run	% RQD	Well Construction	Well Description
0 120 5 115		Eight inch drive and wash to top of bedrock at 7.1'. Eight inch roller bit to 12.1'. Slight sheen and MGP odor observed on wash water at top of rock. Set 6 inch casing at 12'.						Bedrock encountered at 7.1'.
10 110		Hole reamed to 12' to install 6 inch steel casing.						
15 105 20 100 25 95		6 inch roller bit from 12' - 28'. Set 4 inch steel casing at 28'. No MGP indicators observed.	NA	NA	NA	NA		6 inch steel casing set at 12'. Grouted annulus from 0'-28'.
30 90 35 85		3.88 inch roller bit from 28'-38'. No MGP indicators observed.	NA	NA	NA	NA		4 inch steel casing set at 28'. 3.88 inch open hole from 28'-38'.

LOG OF BORING

URS
Clifton Park, New York

NYSEG
Bridge St. Former MGP Site
Plattsburgh, New York

PROJECT:	NYSEG	**ELEVATION:**	121.32
BORING NO.:	MW-8BD	**BORING LOCATION:**	N 2137903.687/ E 766401.136
DATE:	12/12/01	**METHOD OF DRILLING:**	Roller bit with water
BORING DIAMETER:	3.88 in.	**SAMPLE TYPE:**	No samples taken
BORING DEPTH:	38 ft.	**SURFACE CONDITIONS:**	Grass

Depth Elevation	Soil Symbols	Soil Description	Rec / Run	% Rec	> 4" / Run	% RQD	Well Construction	Well Description
								End of boring at 38'.

LOG OF BORING

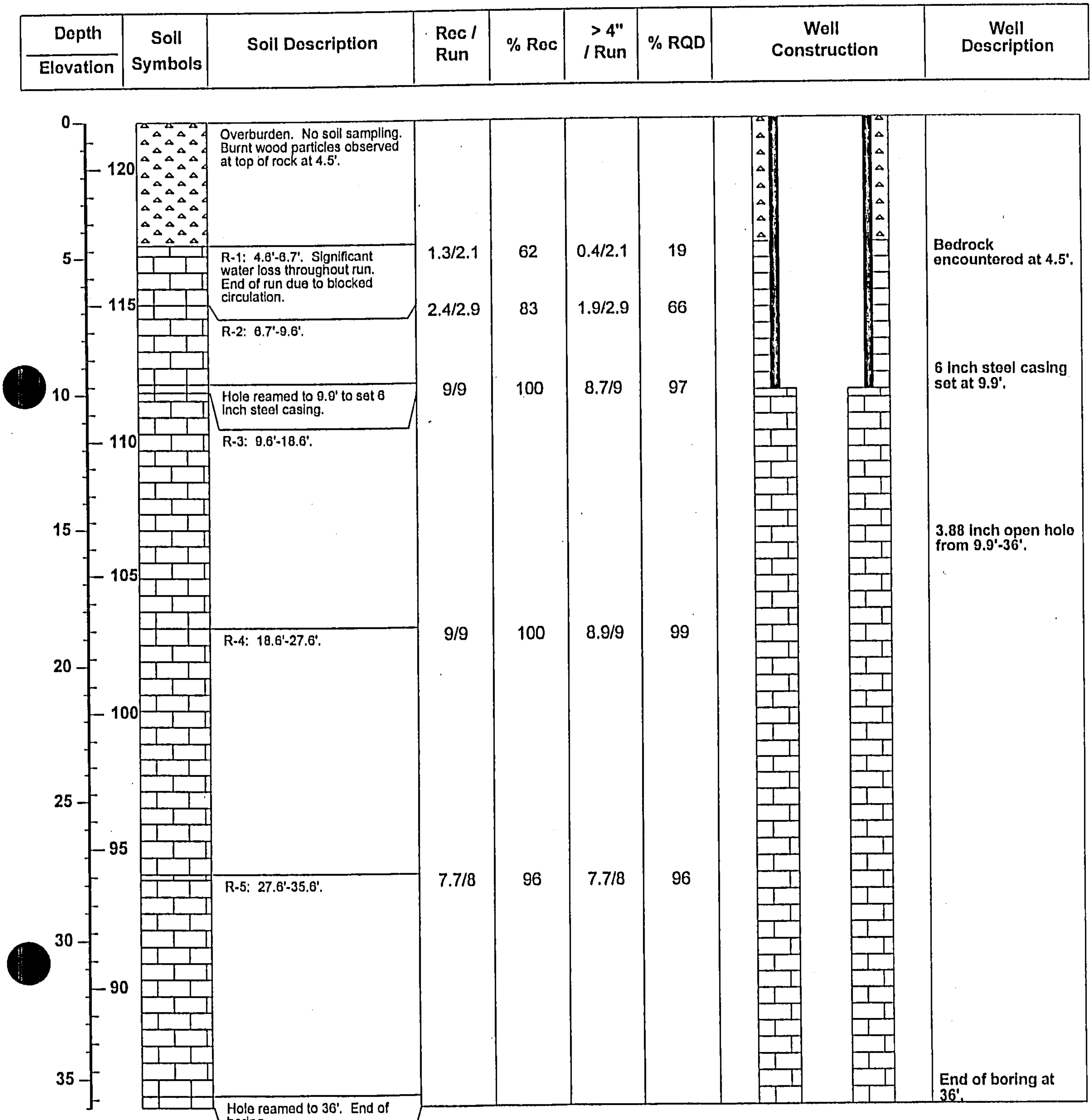
URS
Clifton Park, New York

NYSEG
Bridge St. Former MGP Site
Plattsburgh, New York

PROJECT: NYSEG
BORING NO.: MW-9B
DATE: 12/19/01
BORING DIAMETER: 3.88 in.
BORING DEPTH: 36 ft.

ELEVATION: 121.72
BORING LOCATION: N 2137865.686/ E 766341.942
METHOD OF DRILLING: NX drill steel
SAMPLE TYPE: 10 ft. Core Barrel
SURFACE CONDITIONS: Grass

page 1 of 2



Soil Description	Rec / Run	% Rec	> 4" / Run	% RQD	Well Description
Overburden. No soil sampling. Burnt wood particles observed at top of rock at 4.5'.					
R-1: 4.6'-6.7'. Significant water loss throughout run. End of run due to blocked circulation.	1.3/2.1	62	0.4/2.1	19	Bedrock encountered at 4.5'.
R-2: 6.7'-9.6'.	2.4/2.9	83	1.9/2.9	66	
Hole reamed to 9.9' to set 6 inch steel casing.	9/9	100	8.7/9	97	6 inch steel casing set at 9.9'.
R-3: 9.6'-18.6'.					3.88 inch open hole from 9.9'-36'.
R-4: 18.6'-27.6'.	9/9	100	8.9/9	99	
R-5: 27.6'-35.6'.	7.7/8	96	7.7/8	96	
Hole reamed to 36'. End of					End of boring at 36'.

LOG OF BORING

URS
Clifton Park, New York

NYSEG
Bridge St. Former MGP Site
Plattsburgh, New York

PROJECT:	NYSEG	**ELEVATION:**	121.72
BORING NO.:	MW-9B	**BORING LOCATION:**	N 2137865.686/ E 766341.942
DATE:	12/19/01	**METHOD OF DRILLING:**	NX drill steel
BORING DIAMETER:	3.88 in.	**SAMPLE TYPE:**	10 ft. Core Barrel
BORING DEPTH:	36 ft.	**SURFACE CONDITIONS:**	Grass

Depth Elevation	Soil Symbols	Soil Description	Rec / Run	% Rec	> 4" / Run	% RQD	Well Construction	Well Description

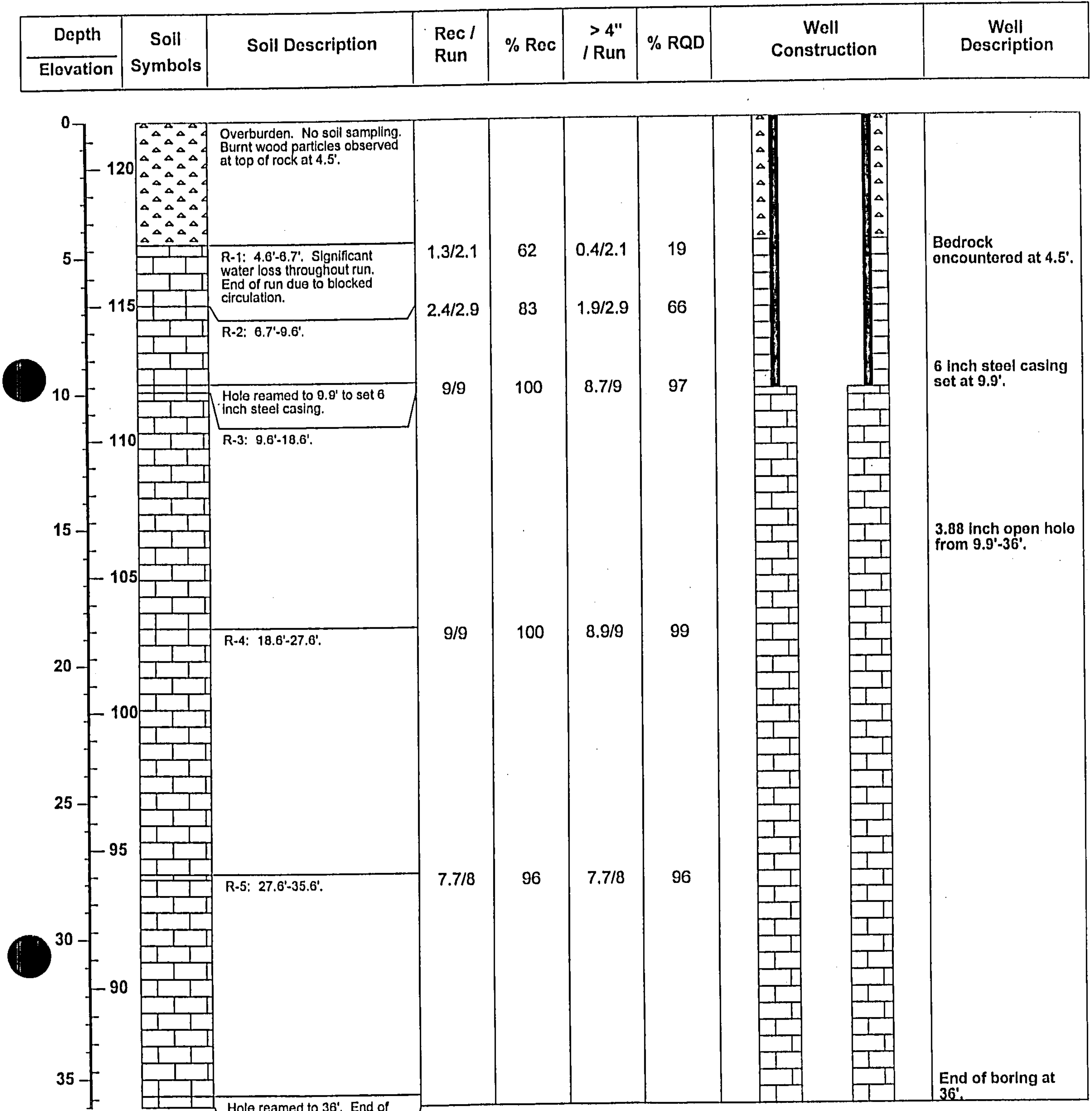
LOG OF BORING

URS
Clifton Park, New York

NYSEG
Bridge St. Former MGP Site
Plattsburgh, New York

PROJECT: NYSEG
BORING NO.: MW-9B
DATE: 12/19/01
BORING DIAMETER: 3.88 in.
BORING DEPTH: 36 ft.

ELEVATION: 121.72
BORING LOCATION: N 2137865.686/ E 766341.942
METHOD OF DRILLING: NX drill steel
SAMPLE TYPE: 10 ft. Core Barrel
SURFACE CONDITIONS: Grass



Soil Description	Rec / Run	% Rec	> 4" / Run	% RQD	Well Description
Overburden. No soil sampling. Burnt wood particles observed at top of rock at 4.5'.					
R-1: 4.6'-6.7'. Significant water loss throughout run. End of run due to blocked circulation.	1.3/2.1	62	0.4/2.1	19	Bedrock encountered at 4.5'.
R-2: 6.7'-9.6'.	2.4/2.9	83	1.9/2.9	66	
Hole reamed to 9.9' to set 6 inch steel casing. R-3: 9.6'-18.6'.	9/9	100	8.7/9	97	6 inch steel casing set at 9.9'.
					3.88 inch open hole from 9.9'-36'.
R-4: 18.6'-27.6'.	9/9	100	8.9/9	99	
R-5: 27.6'-35.6'.	7.7/8	96	7.7/8	96	
Hole reamed to 36'. End of					End of boring at 36'.

LOG OF BORING

URS
Clifton Park, New York

NYSEG
Bridge St. Former MGP Site
Plattsburgh, New York

PROJECT: NYSEG
BORING NO.: MW-9B
DATE: 12/19/01
BORING DIAMETER: 3.88 in.
BORING DEPTH: 36 ft.
ELEVATION: 121.72
BORING LOCATION: N 2137865.686/ E 766341.942
METHOD OF DRILLING: NX drill steel
SAMPLE TYPE: 10 ft. Core Barrel
SURFACE CONDITIONS: Grass

page 2 of 2

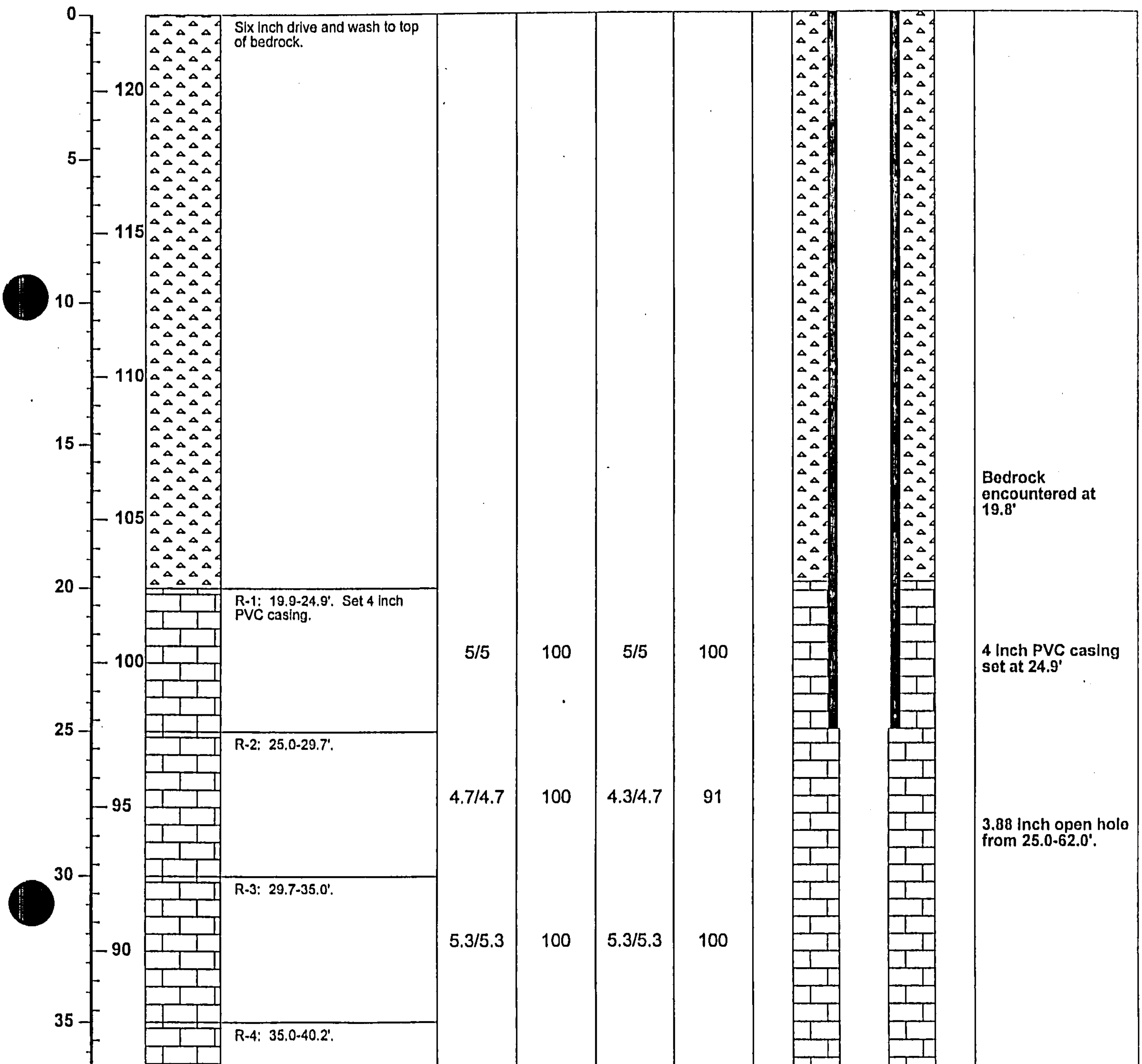
Depth Elevation	Soil Symbols	Soil Description	Rec / Run	% Rec	> 4" / Run	% RQD	Well Construction	Well Description

LOG OF BORING

URS
Clifton Park, New York

NYSEG
Bridge St. Former MGP Site
Plattsburgh, New York

PROJECT:	NYSEG	**ELEVATION:**	GRD. 122.60 / MPE 122.15
BORING NO.:	MW-10B	**BORING LOCATION:**	N 2137830.66 / E 766564.59
DATE:	9/17/02	**METHOD OF DRILLING:**	HQ Core
BORING DIAMETER:	3.88 in.	**SAMPLE TYPE:**	5 ft. HQ Core Barrel
BORING DEPTH:	62 feet	**SURFACE CONDITIONS:**	Grass



Depth / Elevation	Soil Symbols	Soil Description	Rec / Run	% Rec	> 4" / Run	% RQD	Well Construction	Well Description
0		Six inch drive and wash to top of bedrock.						Bedrock encountered at 19.8'
19.9		R-1: 19.9-24.9'. Set 4 inch PVC casing.	5/5	100	5/5	100		4 inch PVC casing set at 24.9'
25		R-2: 25.0-29.7'.	4.7/4.7	100	4.3/4.7	91		3.88 inch open hole from 25.0-62.0'.
29.7		R-3: 29.7-35.0'.	5.3/5.3	100	5.3/5.3	100		
35		R-4: 35.0-40.2'.						

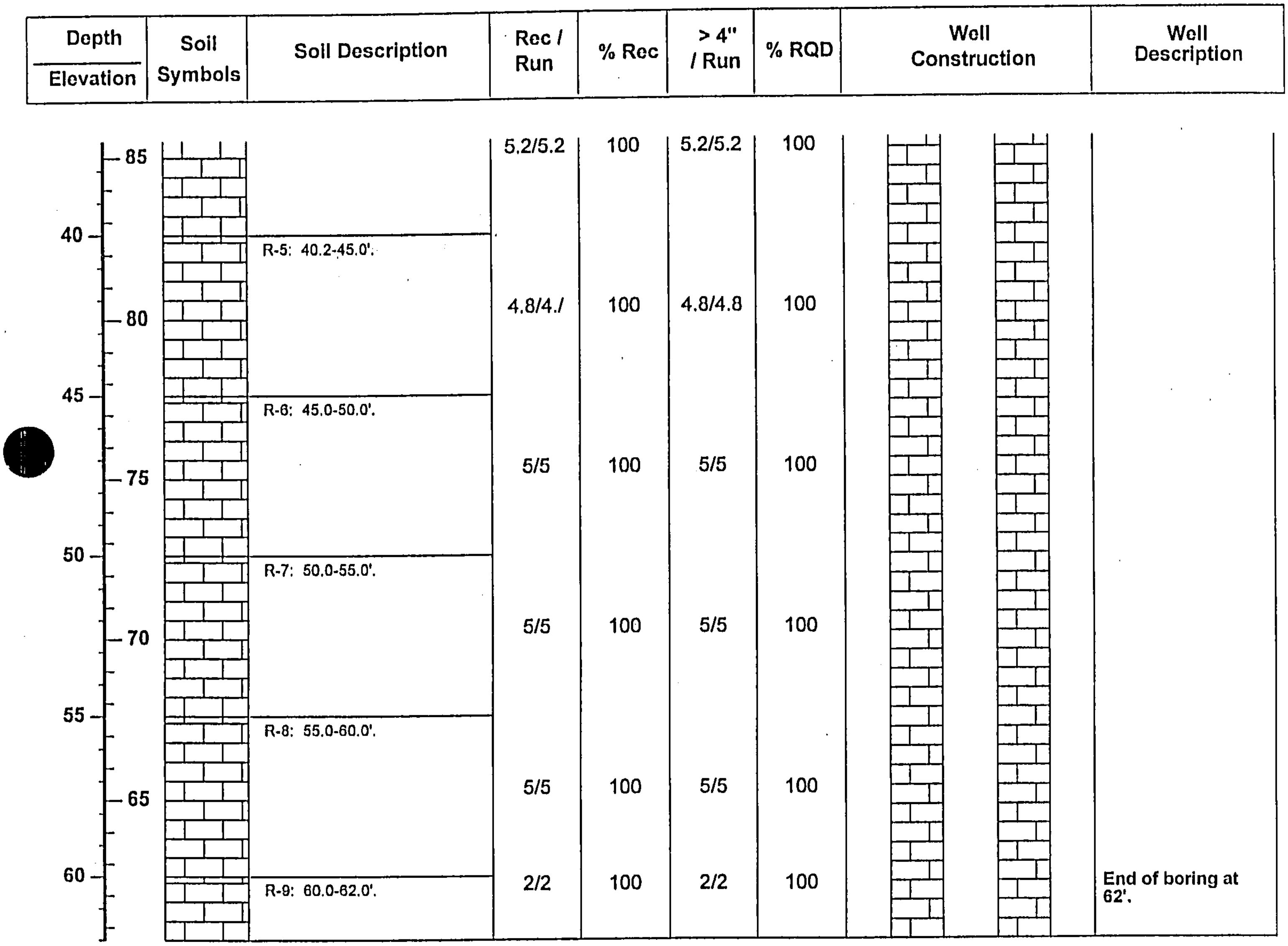
LOG OF BORING

URS
Clifton Park, New York

NYSEG
Bridge St. Former MGP Site
Plattsburgh, New York

PROJECT: NYSEG
BORING NO.: MW-10B
DATE: 9/17/02
BORING DIAMETER: 3.88 in.
BORING DEPTH: 62 feet

ELEVATION: GRD. 122.60 / MPE 122.15
BORING LOCATION: N 2137830.66 / E 766564.59
METHOD OF DRILLING: HQ Core
SAMPLE TYPE: 5 ft. HQ Core Barrel
SURFACE CONDITIONS: Grass



Depth Elevation	Soil Symbols	Soil Description	Rec / Run	% Rec	> 4" / Run	% RQD	Well Construction	Well Description
85			5.2/5.2	100	5.2/5.2	100		
40 80		R-5: 40.2-45.0'.	4.8/4./	100	4.8/4.8	100		
45 75		R-6: 45.0-50.0'.	5/5	100	5/5	100		
50 70		R-7: 50.0-55.0'.	5/5	100	5/5	100		
55 65		R-8: 55.0-60.0'.	5/5	100	5/5	100		
60		R-9: 60.0-62.0'.	2/2	100	2/2	100		End of boring at 62'.

LOG OF BORING

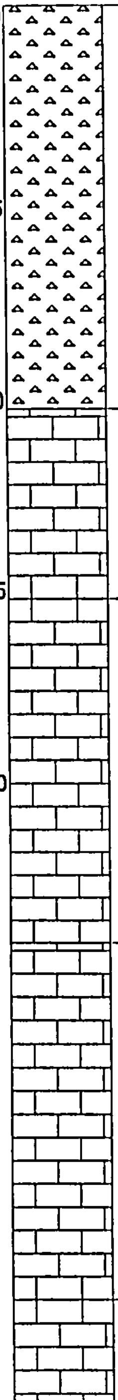
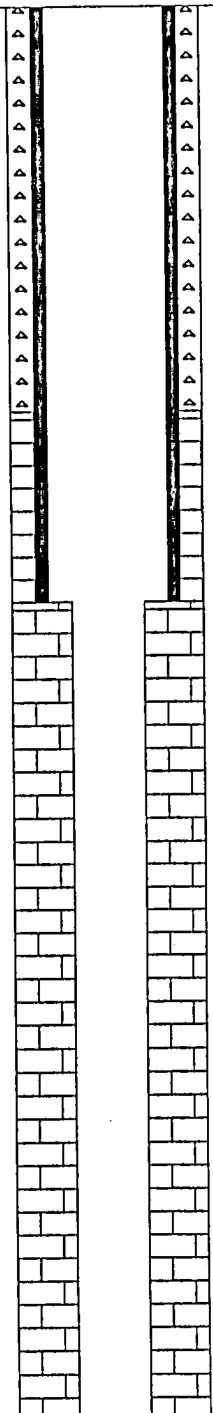
URS
Clifton Park, New York

NYSEG
Bridge St. Former MGP Site
Plattsburgh, New York

PROJECT: NYSEG
BORING NO.: MW-11B
DATE: 1/9/02
BORING DIAMETER: 3.88 in.
BORING DEPTH: 41.5 ft.

ELEVATION: 120.36
BORING LOCATION: N 2137941.428/ E 766469.225
METHOD OF DRILLING: NX drill steel
SAMPLE TYPE: 10 ft. Core Barrel
SURFACE CONDITIONS: Grass

page 1 of 2

Depth / Elevation	Soil Symbols	Soil Description	Rec / Run	% Rec	> 4" / Run	% RQD	Well Construction	Well Description
0 / 120		Eight inch drive and wash to top of bedrock at 10.5'.						
5 / 115								
10 / 110		R-1: 10.5'-15.5'. Set 6 inch steel casing.	4.7/5	94	3.8/5	76		Bedrock encountered at 10.5'
15 / 105		R-2: 15.5'-24.5'.	9/9	100	8.9/9	99		6 inch steel casing set at 15.5'.
20 / 100								
25 / 95		R-3: 24.5'-33.7'.	9.2/9.2	100	9.2/9.2	100		
30 / 90								
35 / 85		R-4: 33.7'-41.5'. End of boring.	7.8/7.8	100	7.8/7.8	100		3.88 inch open hole from 15.5'-41.5'.

LOG OF BORING

URS
Clifton Park, New York

NYSEG
Bridge St. Former MGP Site
Plattsburgh, New York

PROJECT:	NYSEG	**ELEVATION:**	120.36
BORING NO.:	MW-11B	**BORING LOCATION:**	N 2137941.428/ E 766469.225
DATE:	1/9/02	**METHOD OF DRILLING:**	NX drill steel
BORING DIAMETER:	3.88 in.	**SAMPLE TYPE:**	10 ft. Core Barrel
BORING DEPTH:	41.5 ft.	**SURFACE CONDITIONS:**	Grass

page 2 of 2

Depth Elevation	Soil Symbols	Soil Description	Rec / Run	% Rec	> 4" / Run	% RQD	Well Construction	Well Description
40 80								End of boring at 41.5'.

DRILLING SUMMARY

ologist:
Paul Pavone

Drilling Company:
Northern Technical Service

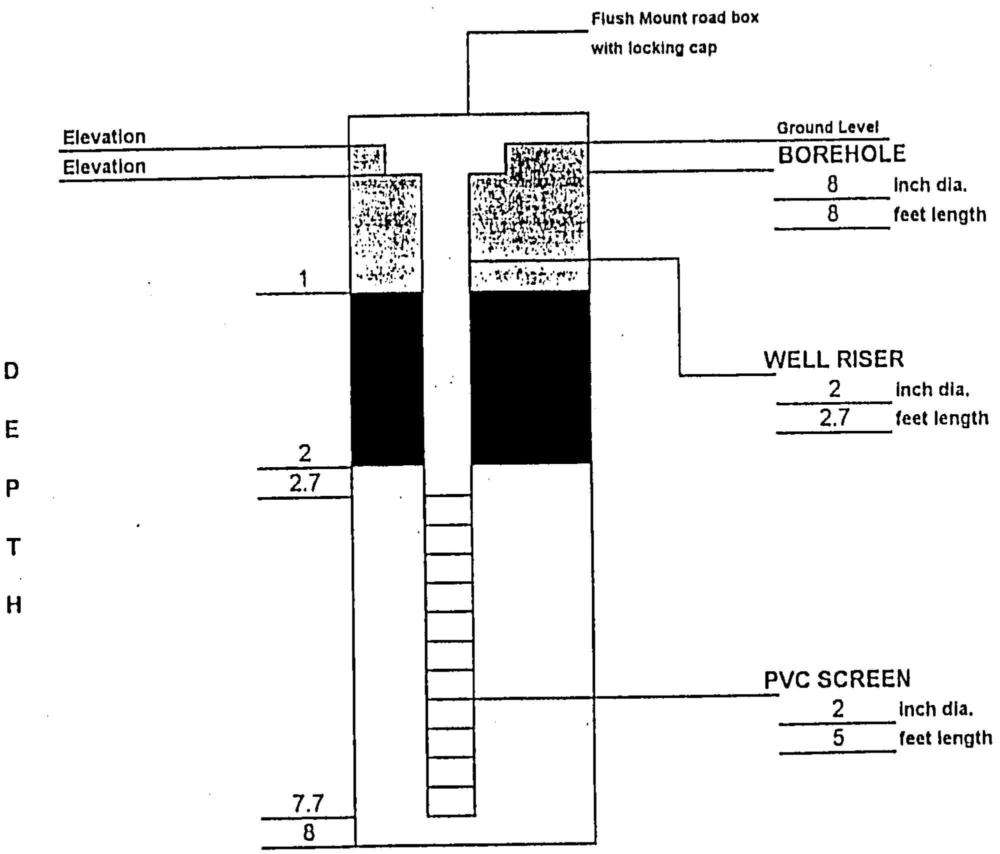
Driller:
Chris Wheeler

Rig Make/Model:
CME-55

Date:
7/13/99

GEOLOGIC LOG

Depth(ft.)	Description
0.0-2.0	SOD, coarse to medium sand, trace gravel.
2.0-4.0	Medium to dine sand, trace silt
4.0-8.0'	Silty sand, some gravel, rock fragments



WELL DESIGN

CASING MATERIAL

Surface: Steel

Monitor: Schedule 40 PVC

SCREEN MATERIAL

Type: Schedule 40 PVC

Slot Size: 0.010-inch

SEAL MATERIAL

Seal Type #1: sand
Setting: 0.0-1.0'

Seal Type #2: Bentonite
Setting: 1.0-2.0'

FILTER MATERIAL

Type: RJ Glass #1
Filter sand

Setting: 2.0-8.0'

ROCK CORING

Cored Interval: none

Core Diameter: none

Reamed Diameter: none

LEGEND

▓ Cement/Bentonite Grout

■ Bentonite Seal

☐ Silica Sandpack

Client: NYSEG

Location: Bridge Street MPG

Project Number: 0500035670.00

URS Greiner Woodward Clyde

MONITORING WELL CONSTRUCTION DETAILS

Well Number: MW-99-01

DRILLING SUMMARY

eologist:
ul Pavone

Drilling Company:
Northern Technical Service

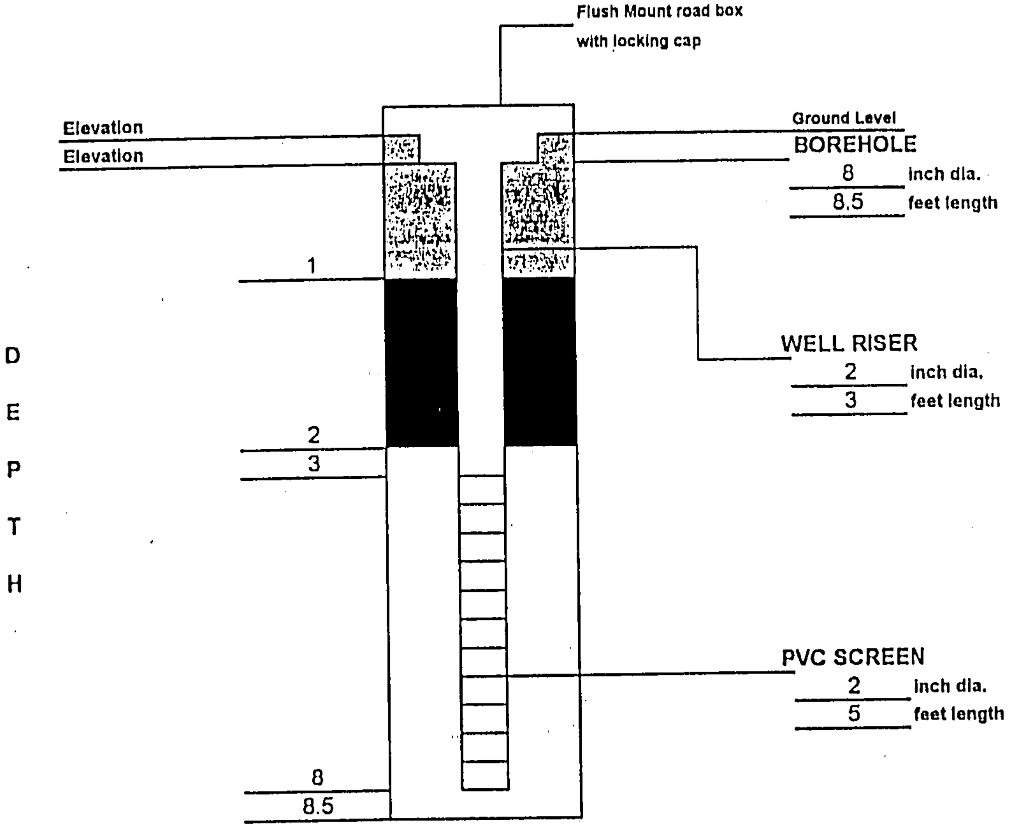
Driller:
Chris Wheeler

Rig Make/Model:
CME-55

Date:
7/13/99

GEOLOGIC LOG

Depth(ft.)	Description
0.0-6.0	Fill: medium to coarse sand, brick, coal, ash
6.0-8.5	Silty sand, trace gravel and clay



WELL DESIGN

CASING MATERIAL

Surface: Steel

Monitor: Schedule 40 PVC

SCREEN MATERIAL

Type: Schedule 40 PVC

Slot Size: 0.010-inch

SEAL MATERIAL

Seal Type #1: sand
Setting: 0.0-1.0'

Seal Type #2: Bentonite
Setting: 1.0-2.0'

FILTER MATERIAL

Type: RJ Glass #1
Filter sand

Setting: 2.0-8.5'

ROCK CORING

Cored Interval: none

Core Diameter: none

Reamed Diameter: none

LEGEND

▨ Cement/Bentonite Grout

■ Bentonite Seal

☐ Silica Sandpack

Client: NYSEG

Location: Bridge Street MPG

Project Number: 0500035670.00

URS Greiner Woodward Clyde

MONITORING WELL CONSTRUCTION DETAILS

Well Number: MW-99-02

DRILLING SUMMARY

Geologist:
l Pavone

Drilling Company:
Northern Technical Service

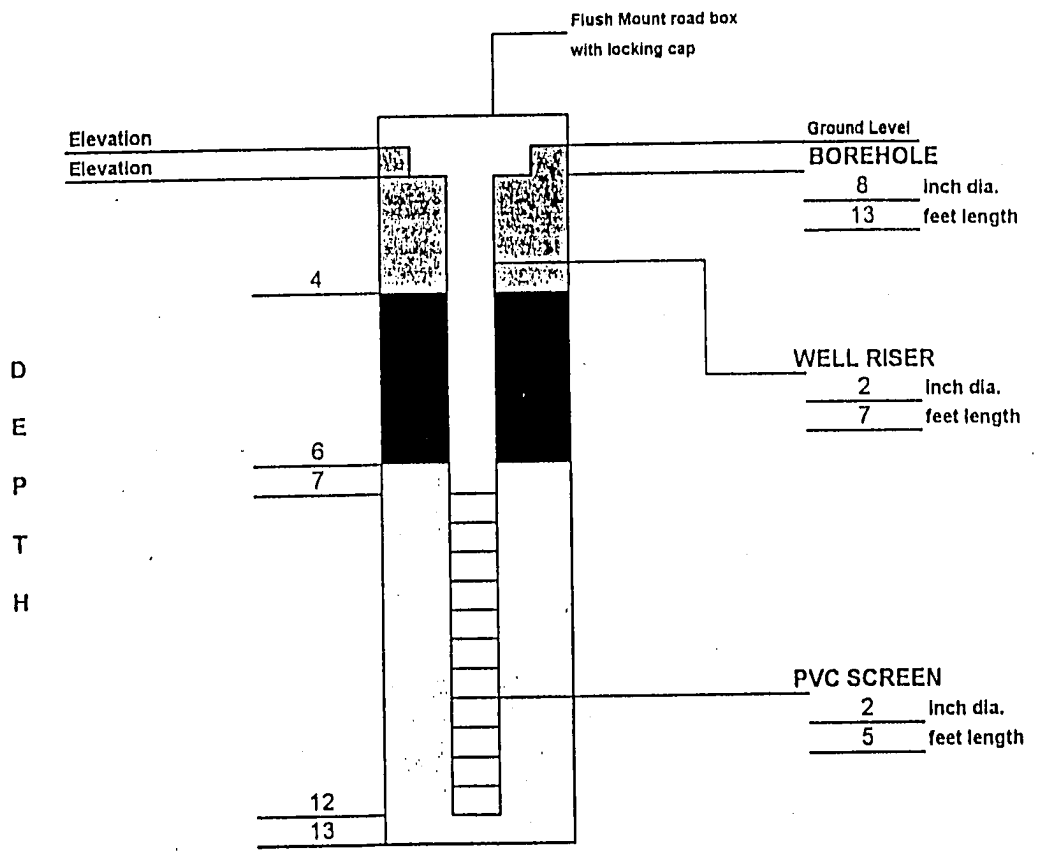
Driller:
Chris Wheeler

Rig Make/Model:
CME-55

Date:
7/14/99

GEOLOGIC LOG

Depth(ft.)	Description
0.0-4.0	SOD; sandy loam, medium to coarse sand, some fine sand, trace silt
4.0-13.0	Silty sand, trace clay



WELL DESIGN

CASING MATERIAL

Surface: Steel

Monitor: Schedule 40 PVC

SCREEN MATERIAL

Type: Schedule 40 PVC

Slot Size: 0.010-inch

SEAL MATERIAL

Seal Type #1: sand
Setting: 0.0-4.0'

Seal Type #2: Bentonite
Setting: 4.0-6.0'

FILTER MATERIAL

Type: RJ Glass #1
Filter sand

Setting: 6.0-13.0'

ROCK CORING

Cored Interval: none

Core Diameter: none

Reamed Diameter: none

LEGEND

▨ Cement/Bentonite Grout
■ Bentonite Seal
☐ Silica Sandpack

Client: NYSEG

Location: Bridge Street MPG

Project Number: 0500035670.00

Well Number: MW-99-03

URS Greiner Woodward Clyde

MONITORING WELL CONSTRUCTION DETAILS

DRILLING SUMMARY

Geologist:
l Pavone

Drilling Company:
Northern Technical Service

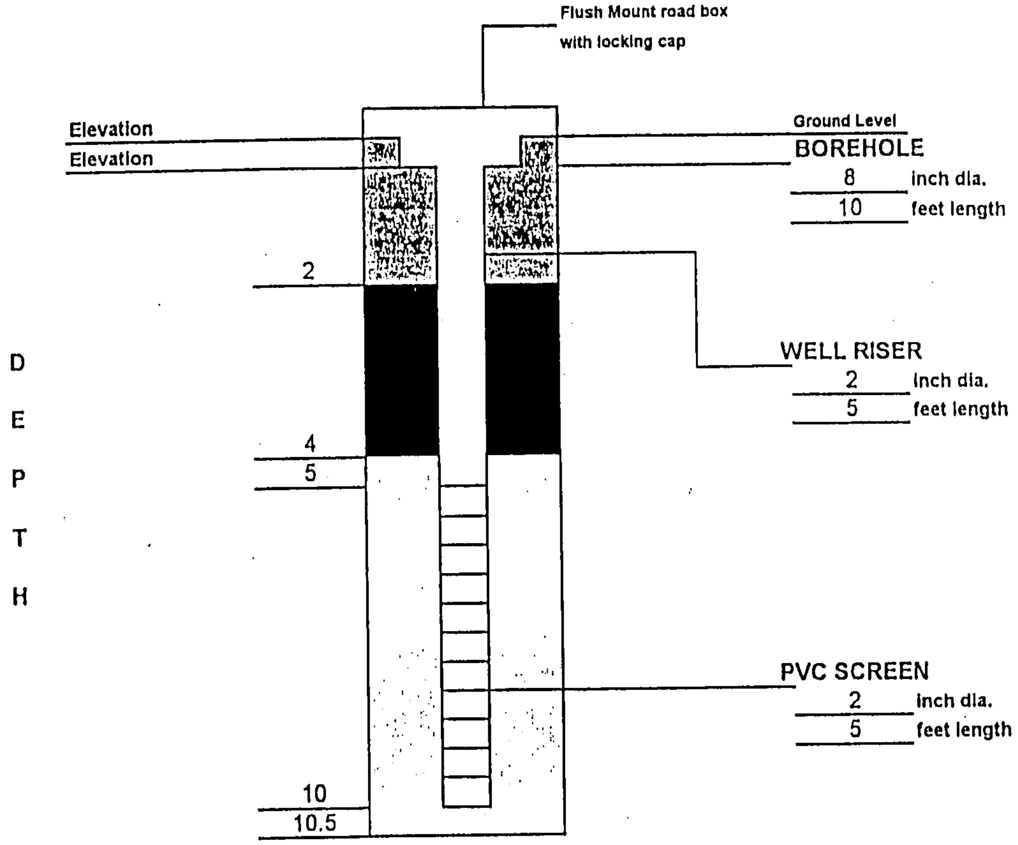
Driller:
Chris Wheeler

Rig Make/Model:
CME-55

Date:
7/13/99

GEOLOGIC LOG

Depth(ft.)	Description
0.0-1.0	SOD; sandy loam
2.0-4.0	Medium to coarse sand, trace silt
4.0-10.0	Silty sand, trace clay and gravel



WELL DESIGN

CASING MATERIAL

Surface: Steel

Monitor: Schedule 40 PVC

SCREEN MATERIAL

Type: Schedule 40 PVC

Slot Size: 0.010-inch

SEAL MATERIAL

Seal Type #1: sand
Setting: 0.0-2.0'

Seal Type #2: Bentonite
Setting: 2.0-4.0'

FILTER MATERIAL

Type: RJ Glass #1
Filter sand

Setting: 4.0-10.5'

ROCK CORING

Cored Interval: none

Core Diameter: none

Reamed Diameter: none

LEGEND

▨ Cement/Bentonite Grout
■ Bentonite Seal
☐ Silica Sandpack

Client: NYSEG

Location: Bridge Street MPG

Project Number: 0500035670.00

URS Greiner Woodward Clyde

MONITORING WELL CONSTRUCTION DETAILS

Well Number: MW-99-04

DRILLING SUMMARY

Geologist:
ul Pavone

illing Company:
Northern Technical Service

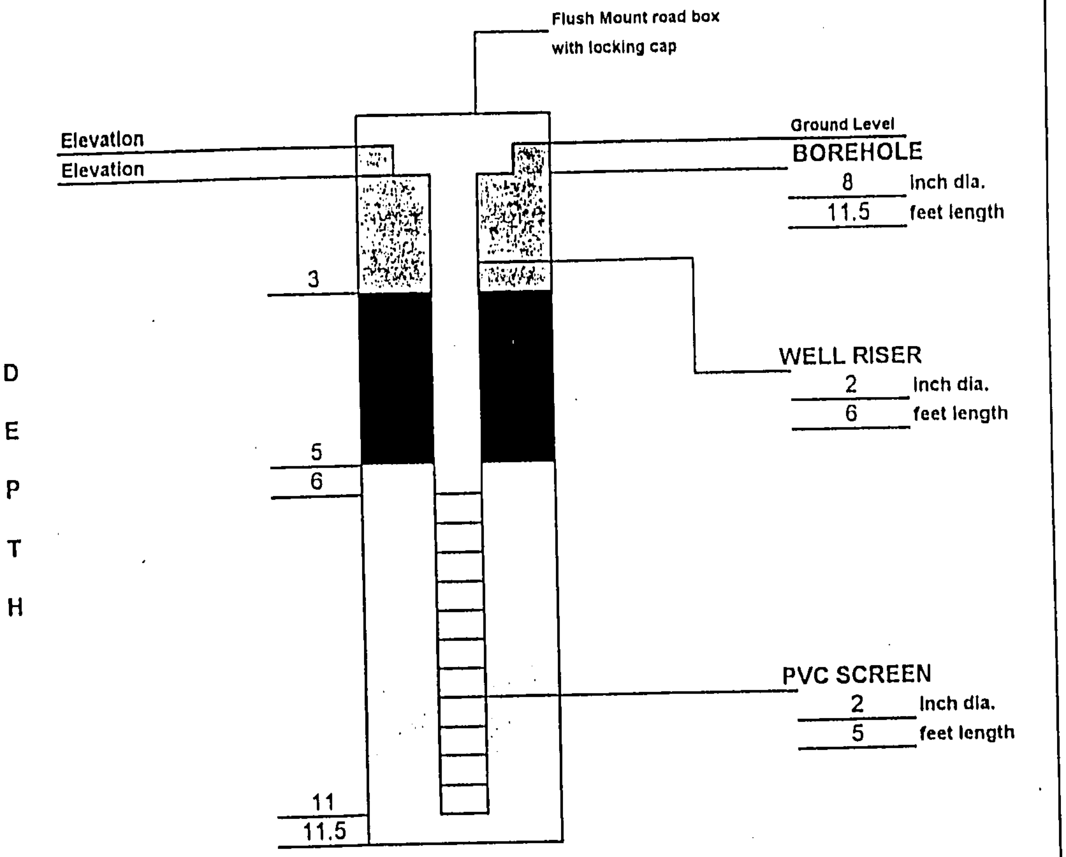
Driller:
Chris Wheeler

Rig Make/Model:
CME-55

Date:
7/14/99

GEOLOGIC LOG

Depth(ft.)	Description
0.0-0.5	Asphalt
0.5-2.0	Road subase and gravel
2.0-4.0	Fine sand, some silt
4.0-11.5	Silty sand, trace silt and clay



BOREHOLE
8 inch dia.
11.5 feet length

WELL RISER
2 inch dia.
6 feet length

PVC SCREEN
2 inch dia.
5 feet length

WELL DESIGN

CASING MATERIAL

Surface: Steel

Monitor: Schedule 40 PVC

SCREEN MATERIAL

Type: Schedule 40 PVC

Slot Size: 0.010-inch

SEAL MATERIAL

Seal Type #1: sand
Setting: 0.0-3.0'

Seal Type #2: Bentonite
Setting: 3.0-5.0'

FILTER MATERIAL

Type: RJ Glass #1
Filter sand

Setting: 5.0-11.5'

ROCK CORING

Cored Interval: none

Core Diameter: none

Reamed Diameter: none

LEGEND

▨	Cement/Bentonite Grout
■	Bentonite Seal
☐	Silica Sandpack

Client: NYSEG

Location: Bridge Street MPG

Project Number: 0500035670.00

Well Number: MW-99-05

URS Greiner Woodward Clyde

MONITORING WELL
CONSTRUCTION DETAILS

APPENDIX D

WELL DEVELOPMENT AND PURGING LOGS

GROUNDWATER SAMPLING DATA SHEET

WELL NO: mw-1B

Field Personnel:
Eric Lovenduski

Date: 1/25/02
Job No.: 05-00035927.02 00002
Location: Plattsburgh, New York

Total Well Depth (from top of casing): 40.25 feet

Depth to Water Surface Before Purging (from top of casing): - 14.76 feet

Height of Water Column: = 25.49 feet

Well Diameter (d): 3.875 inches Gals per ft: (d^2 x 0.0408) = x 0.6126

Volume of Water Column Before Purging: = 15.6 gallons 59.05 Liters

Volume of Water Equal to three Well Volumes: 47 gallons
(Volume of Column by 3.0)

Purging Method: [✓ Bailer]/Waterra Pump/Submersible Pump/Peristaltic Pump

	Time	Well Volumes (~~Gallons~~) L	Specific Conduct. (mmhos/cm or µmhos)	Temp. (°F or °C)	pH (SU)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Redox Potential (mV)
	1100	1.0	965	11.56	11.28	Sl. Cloudy	—	—
	1115	12.0	1101	[illegible]	.164	Sl. Cloudy	—	—
	1129	17.0	1209	11.08	11.44	Cloudy	—	—
	1142	25.0	1026	11.24	11.32	Sl. Cloudy	—	—
	1158	40.0	1056	11.22	11.19	Sl. Cloudy	—	—
	1221	54.0	1102	11.01	11.11	Sl. Cloudy	—	—
1	—	—						
1/28/02 2	— 1120	—	1016	10.85	11.29	~100NTU		

Total Volume of Water Purged: 57.0 ~~gallons~~ 57.0 Liters

Sampling Data:
- Sampling Method: [✓ Bailer] or Pump
- Depth of Pump intake or bailer: ~ 39.5' feet bgs
- Sample Date/Time: 1/28/02 1120
- Color: slightly cloudy grey
- Odor: NONE
- Sheen/Appearance: NONE/ sl. cloudy grey

Notes:
1 - Field parameters obtained before sampling
2 - Field papameters obtained after sampling

Purged 58 liters, well dry SAMPLED w/ New bailer for
BTEX
PAH SVOCs
Phenols
Cyanide
Metals
DUP-1/28/02 also collected for all analyses

GWSamplingForms.xls/gw sample sheet

URS

GROUNDWATER SAMPLING DATA SHEET

WELL NO: MW-2B

Field Personnel:
Eric Lovenduski

Date: 1/27/02
Job No.: 05-00035927.02 00002
Location: Plattsburgh, New York

Total Well Depth (from top of casing): 36.75 feet BGS

Depth to Water Surface Before Purging (from top of casing): -21.32 feet BGS

Height of Water Column: =15.43 feet

Well Diameter (d): 4 inches Gals per ft: (d^2 x 0.0408) = x 0.653

Volume of Water Column Before Purging: = 10.1 gallons

Volume of Water Equal to three Well Volumes: (Volume of Column by 3.0) 30.2 gallons

Purging Method: [✓ Bailer]/Waterra Pump/Submersible Pump/Peristaltic Pump

	Time	Well Volumes (Gallons)	Specific Conduct. (mmhos/cm or μmhos)	Temp. (°F or °C)	pH (SU)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Redox Potential (mV)
	Well was purged using a disposable bailer. No parameters collected.							
	Approx 8.5 gallons was removed. Cloudy yellow, strong MGP odor,							
	definite sheen and trace LNAPL							
1								
2								

Total Volume of Water Purged: ~8.5 gallons

Sampling Data:

- Sampling Method: [✓ Bailer] or Pump
- Depth of Pump intake or bailer: 36.75 feet
- Sample Date/Time: 1/30/02 1240
- Color: Cloudy yellow
- Odor: Strong MGP odor
- Sheen/Appearance: Heavy sheen, trace LNAPL

Notes:
1 - Field parameters obtained before sampling
2 - Field papameters obtained after sampling

SAMPLE ID BSGDD0207
Analysed for ~~B~~ BTEX
SVOCs
Total Phenols
Cyanide
Metals

GROUNDWATER SAMPLING DATA SHEET

WELL NO: MW-3B

Field Personnel:
Eric Lovenduski

Date: 10/03/02
Job No.: 05-00035927.02 00002
Location: Plattsburgh, New York

Total Well Depth (from top of casing): 60.81 feet

Depth to Water Surface Before Purging (from top of casing): -42.85 feet

Height of Water Column: =17.96 feet

Well Diameter (d): 4 inches Gals per ft: (d^2 x 0.0408) = x 0.653

Volume of Water Column Before Purging: = 11.7 gallons

Volume of Water Equal to three Well Volumes: 35.1 gallons
(Volume of Column by 3.0)

Purging Method: [✓ Bailer]/Waterra Pump/Submersible Pump/Peristaltic Pump

	Time	Well Volumes (Gallons)	Specific Conduct. (mmhos/cm or [✓ µmhos])	Temp. (°F or [✓ °C])	pH (SU)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Redox Potential (mV)
	0924	0.2 gal	137.5	10.7	8.18	33	—	—
	0958	11.2 gal	276.5	10.7	8.76	332	—	—
10/4/02	1130	SAMPLE	121.2	11.7	7.19	152	—	—
1								
2								

Total Volume of Water Purged: 11.5 gallons

Sampling Data:
- Sampling Method: [✓ Bailer] or Pump
- Depth of Pump intake or bailer: ~58 feet
- Sample Date/Time: 10/04/02 1130
- Color: Sl. cloudy grey brown
- Odor: sl. Sulfur
- Sheen/Appearance: no/ Cloudy

Notes:
1 - Field parameters obtained before sampling
2 - Field papameters obtained after sampling

10/03/02 1000 End of PURGE - well is dry. Cloudy grey/brown, slight sulfur odor, no Y, no Z
10/04/02 Return to collect Samples DTW = 56.75'
SVOCs - 2 Liter
VOCs 2 voas w/ HCl
Metals 1 250ml w/ HNO3
Cyanide 1 250ml plastic w/ NaOH
Ascorbic
"BSGDD0203"

GROUNDWATER SAMPLING DATA SHEET

WELL NO: MW-6B

Field Personnel:
Eric Lovenduski

Date: 1/25/02
Job No.: 05-00035927.02 00002
Location: Plattsburgh, New York

Total Well Depth (from top of casing): 39.0 feet

Depth to Water Surface Before Purging (from top of casing): - 33.55 feet

Height of Water Column: = 5.45 feet

Well Diameter (d): ~~4~~ 3.875 inches   Gals per ft: (d^2 x 0.0408) = x ~~0.653~~ 0.6126

Volume of Water Column Before Purging: = ~~3.56~~ 3.34 gallons ~~=13.47~~

Volume of Water Equal to three Well Volumes: 10.7 gallons
(Volume of Column by 3.0)

Purging Method: [✓ Bailer]/Waterra Pump/Submersible Pump/Peristaltic Pump

	Time	Well Volumes ~~(Gallons)~~ L	Specific Conduct. (mmhos/cm or μmhos)	Temp (°F or [✓ °C])	pH (SU)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Redox Potential (mV)
	1007	1.0	4547	11.45	12.20	Sl. cloudy		
	1013	4.0	4430	11.73	12.19	Sl. cloudy		
	1019	6.55	4482	11.79	12.20	Sl. cloudy		
1								
2								

Total Volume of Water Purged: 7.4 ~~gallons~~ L

Sampling Data:
- Sampling Method: [✓ Bailer] or Pump
- Depth of Pump intake or bailer: ~~33.57~~ feet bgs
- Sample Date/Time: 1/28/02 1240
- Color: Cloudy Gray
- Odor: None
- Sheen/Appearance: None / Cloudy Grey some suspended particles

Notes:
1 - Field parameters obtained before sampling
2 - Field papameters obtained after sampling

Well went dry aft 7.4 Liters - Slightly cloudy brown/gray no [illegible] + [illegible] this remove 1/24/02 for NAPL

1/28/02 Sampled for SVOC
Cyanide
Metals
BTEX

NOT ENOUGH WATER IN WELL to fill phenol bottle

Returned on 1/30/02 Collected sample for total phenol. Just enough water in well to fill the 1L sample bottle.

GWSamplingForms.xls/gw sample sheet

URS

GROUNDWATER SAMPLING DATA SHEET

WELL NO: MW-7BS

Field Personnel:
Eric Lovenduski

Date: 1/29/02
Job No.: 05-00035927.02 00002
Location: Plattsburgh, New York

Total Well Depth (from top of casing): 14.4' feet BGS

Depth to Water Surface Before Purging (from top of casing): - 3.76 feet

Height of Water Column: = 10.64 feet

Well Diameter (d): 4 inches Gals per ft: (d^2 x 0.0408) = x 0.653

Volume of Water Column Before Purging: = 6.95 gallons 26.3 L

Volume of Water Equal to three Well Volumes: 20.8 gallons 79 L
(Volume of Column by 3.0)

Purging Method: Bailer/Waterra Pump/Submersible Pump/[✓ Peristaltic Pump]

TRIPLE CHECK # 1

	Time	Well Volumes (Gallons)	Specific Conduct. (mmhos/cm or µmhos)	Temp. (°F or [✓ °C])	pH (SU)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Redox Potential (mV)
pump on @	0955	0.75L	1018	8.9	11.69	Clear		
4.2'	1002	3L	1107	6.1	12.03	Clear		
4.25'	1010	6L	1132	5.0	12.11	Clear		
4.25'	1017	9L	1112	5.1	11.78	Clear		
4.25'	1025	12L	953	6.0	11.72	Clear		
4.31	1032	15L	965	6.2	11.85	Clear		
4.31 1	1039	18L	950	5.7	11.82	Clear		
4.15 2	1051	21L	611	6.1	11.11	Clear		

Total Volume of Water Purged: ↓ SEE BACK ↓ 31 ~~gallons~~ liters

Sampling Data:
- Sampling Method: Bailer or [✓ Pump]
- Depth of Pump intake or bailer: ~13.5 feet BGS
- Sample Date/Time: 1/29/02 1130
- Color: Clear
- Odor: MGP ODOR
- Sheen/Appearance: no / Clear

Notes:
1 - Field parameters obtained before sampling
2 - Field papameters obtained after sampling

Sampled for BTEX
ID: Total Phenol
BSGD1M0207 SVOCs
Metals
Cyanide

Also collected MS & MSD
for all analyses

MW-7BS continued

1/29/02

Time	DTW	Liters	Sp. Cond	pH	Temp	Turb
1103	4.14'	24	701	9.46	6.7	Clear
1113	4.15'	27	708	8.33	6.6	Clear
1124	4.15'	30	708	8.76	6.6	Clear

GROUNDWATER SAMPLING DATA SHEET

WELL NO: MW-7BD

Field Personnel:
Eric Lovenduski

Date: 1/29/02
Job No.: 05-00035927.02 00002
Location: Plattsburgh, New York

Total Well Depth (from top of casing): 47.24 feet BGS

Depth to Water Surface Before Purging (from top of casing): - 42.05 feet BGS

Height of Water Column: = 7.19 feet

Well Diameter (d): 4 inches Gals per ft: (d^2 x 0.0408) = x 0.653

Volume of Water Column Before Purging: = 4.7 gallons

Volume of Water Equal to three Well Volumes: 14.1 gallons
(Volume of Column by 3.0)

Purging Method: [✓ Bailer]/Waterra Pump/Submersible Pump/Peristaltic Pump

Time	Well Volumes (Gallons)	Specific Conduct. (mmhos/cm or µmhos)	Temp. (°F or °C)	pH (SU)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Redox Potential (mV)
NO PARAMETERS COLLECTED. Well was purged using a disposable bailer.							
Approx. 4 gallons of slightly cloudy yellow water w/ a strong MGP odor,							
heavy sheen and small amounts of LNAPL was removed. Well was dry							
~~following~~ after 4 gallons.							
1							
2							

Total Volume of Water Purged: ~ 4 gallons

Sampling Data:

- Sampling Method: [✓ Bailer] or Pump
- Depth of Pump intake or [✓ bailer]: 47.24 feet BGS
- Sample Date/Time: 1/30/02 1330
- Color: Cloudy yellow
- Odor: Strong MGP odor
- Sheen/Appearance: HEAVY SHEEN, trace LNAPL, cloudy yellow

Notes:
1 - Field parameters obtained before sampling
2 - Field papameters obtained after sampling

Sample ID BSGDD0207
Analyses: BTEX
Total Phenols
Metals
Cyanide

GROUNDWATER SAMPLING DATA SHEET

WELL NO: MW-7DD

Field Personnel:
Eric Lovenduski

Date: 10/03/02
Job No.: 05-00035927.02 00002
Location: Plattsburgh, New York

Total Well Depth (from top of casing): 85.30 feet

Depth to Water Surface Before Purging (from top of casing): - 83.20 feet

Height of Water Column: = 2.10 feet

Well Diameter (d): ~~0.654~~ 4 inches   Gals per ft: (d^2 x 0.0408) = x 0.653

Volume of Water Column Before Purging: = 1.4 gallons

Volume of Water Equal to three Well Volumes: 4.1 gallons
(Volume of Column by 3.0)

Purging Method: [✓ Bailer]/Waterra Pump/Submersible Pump/Peristaltic Pump

Time	Well Volumes (Gallons)	Specific Conduct. (mmhos/cm or [✓ µmhos])	Temp. (°F or [✓ °C])	pH (SU)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Redox Potential (mV)
1030	0.1	145	10.6	12.89	>300	–	–
1							
2							

Total Volume of Water Purged: ______ gallons

Sampling Data:
- Sampling Method: Bailer or Pump
- Depth of Pump intake or bailer: ______ feet
- Sample Date/Time:
- Color:
- Odor:
- Sheen/Appearance:

Notes:
1 - Field parameters obtained before sampling
2 - Field papameters obtained after sampling

1040 Well purged dry @ 1.2 gal. Cloudy, gray brown, no [illegible].
10/04/02 DTW - 84.7' bgs [illegible] 1110 Sample collected

GROUNDWATER SAMPLING DATA SHEET

WELL NO: MW-8B

Field Personnel:
~~Eric Lovenduski~~ CM

Date: 12/28/01
Job No.: 05-00035927.02 00002
Location: Plattsburgh, New York

Total Well Depth (from top of casing): 38.0 feet

Depth to Water Surface Before Purging (from top of casing): - 27.72 feet

Height of Water Column: = 10.28 feet

Well Diameter (d): 4 inches Gals per ft: (d^2 x 0.0408) = x 0.653

Volume of Water Column Before Purging: = 6.71 gallons 25.4 L

Volume of Water Equal to three Well Volumes: 20.1 gallons
(Volume of Column by 3.0)

Purging Method: Bailer/Waterra Pump/Submersible Pump/[✓ Peristaltic Pump]

DTW	Time	Well Volumes (~~Gallons~~) L	Specific Conduct. (mmhos/cm or µmhos)	Temp. (°F or °C)	pH (SU)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Redox Potential (mV)
28.1	938	1	3700	5.75	12.94	25.2	223	-132.5
28.98	1007	2.75	3660	5.23	10.99	21.9	232	-132.1
29.03	1013	2.85	3617	4.44	10.74	19.5	241	-131.2
29.13	1018	2.90	3612	3.72	11.15	19.6	252	-130.1
29.13	1028	~~2.98~~ 3.0	3627	2.42	11.28	19.3	268	-128.1
29.25	1050	~~3.0~~ 3.01	3610	2.30	12.29	18.8	278	-127.5
29.243	1056	3.03	3636	1.81	12.50	16.4	281	-128
29.253	1101	3.03	3649	1.48	12.55	15.5	279	-128
29.25	1106	3.04	3630	1.71	12.71	14.8	266	-127

Total Volume of Water Purged: 3.04 L ~~gallons~~

Sampling Data:

- Sampling Method: Bailer or [✓ Pump]
- Depth of Pump intake or bailer: ~32.0 feet bgs
- Sample Date/Time: 12/28/01
- Color: NA
- Odor: NA
- Sheen/Appearance: NA

Notes:
1 - Field parameters obtained before sampling
2 - Field papameters obtained after sampling

* Generator ran out of gas @ 1030 - Pump off for ~20min. Lines froze

SAMPLED FOR BTEX
PAH
Phenols
Cyanide
Metals

GROUNDWATER SAMPLING DATA SHEET

WELL NO: MW-9B

Field Personnel:
Eric Lovenduski

Date: 1/25/02
Job No.: 05-00035927.02 00002
Location: Plattsburgh, New York

Total Well Depth (from top of casing): 35.05 feet bgs

Depth to Water Surface Before Purging (from top of casing): 32.91 feet

Height of Water Column: = 2.14 feet

Well Diameter (d): 4 inches Gals per ft: (d^2 x 0.0408) = x 0.653

Volume of Water Column Before Purging: = 1.4 gallons

Volume of Water Equal to three Well Volumes: 4.2 gallons
(Volume of Column by 3.0)

Purging Method: [✓ Bailer]/Waterra Pump/Submersible Pump/Peristaltic Pump

	Time	Well Volumes (~~Gallons~~) Liters	Specific Conduct. (mmhos/cm or µmhos)	Temp. (°F or [✓ °C])	pH (SU)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Redox Potential (mV)
	937	0.9	2217	11.69	11.48	Cloudy	—	—
	945	1.7	2234	11.02	11.91	Cloudy	—	—
1								
2								

Total Volume of Water Purged: 1.7 ~~gallons~~ L

Sampling Data:
- Sampling Method: [✓ Bailer] or Pump
- Depth of Pump intake or [✓ bailer]: 35.05 feet bgs
- Sample Date/Time: 1/30/02 1140
- Color: Cloudy grey
- Odor: no
- Sheen/Appearance: No/ Cloudy grey

Notes:
1 - Field parameters obtained before sampling
2 - Field papameters obtained after sampling

1/25/02 well went dry after 1.7 liters
Sampled on 1/30/02 using disp. bailer for BTEX
SVOCs
ED: BSGDD0209 Total Phenol
Cyanide
Metals

GROUNDWATER SAMPLING DATA SHEET

WELL NO: MW-10B

Field Personnel:
Eric Lovenduski

Date: 10/03/02
Job No.: 05-00035927.02 00002
Location: Plattsburgh, New York

Total Well Depth (from top of casing): 61.60 feet

Depth to Water Surface Before Purging (from top of casing): - 8.05 feet

Height of Water Column: = 53.55 feet

Well Diameter (d): 4 inches Gals per ft: (d^2 x 0.0408) = x 0.653

Volume of Water Column Before Purging: = 35 gallons

Volume of Water Equal to three Well Volumes: ______ gallons
(Volume of Column by 3.0)

Purging Method: [✓ Bailer]/Waterra Pump/Submersible Pump/Peristaltic Pump

	Time	Well Volumes (Gallons)	Specific Conduct. (mmhos/cm or µmhos)	Temp. (°F or [✓ °C])	pH (SU)	Turbidity (NTU)	Dissolved. Oxygen (mg/L)	Redox Potential (mV)
	1050	0.25	440	10.2	6.98	7300	—	—
	1230	35.2	407	10.9	7.77	7300	—	—
1								
10/4/02 2	1215	SAMPLE	78.6	12.5	7.18	7300	—	—

Total Volume of Water Purged: 35.5 gallons

Sampling Data:

- Sampling Method: [✓ Bailer] or Pump
- Depth of Pump intake or bailer: ~55' feet
- Sample Date/Time: 10/04/02 1200
- Color: Cloudy gry
- Odor: Sulfur
- Sheen/Appearance: NO/Cloudy

Notes:
1 - Field parameters obtained before sampling
2 - Field papameters obtained after sampling
10/3/02 Purged dry @ 35.5 gal
10/4/02 Sampled for SVOCs 2 1 L glass
"BSGDD0210" VOCs 2 VOAs w/ HCl
Metals 1 250ml plastic w/ HNO3
Cyanide 1 250ml plastic w/ NaOH + ascorbic

DUP-10/04/02

GROUNDWATER SAMPLING DATA SHEET

WELL NO: MW-11B

Field Personnel:
Eric Lovenduski

Date: 1/25/02
Job No.: 05-00035927.02 00002
Location: Plattsburgh, New York

Total Well Depth (from top of casing): 39.1' feet bgs

Depth to Water Surface Before Purging (from top of casing): -30.31 feet

Height of Water Column: = 8.79 feet

Well Diameter (d): 3.875 inches Gals per ft: (d^2 x 0.0408) = x 0.6126

Volume of Water Column Before Purging: = 5.38 gallons x3.785 = 20.4 Liters

Volume of Water Equal to three Well Volumes: ______ gallons
(Volume of Column by 3.0)

Purging Method: [✓ Bailer]/Waterra Pump/Submersible Pump/Peristaltic Pump

	Time	Well Volumes ~~(Gallons)~~ L	Specific Conduct. (mmhos/cm or µmhos)	Temp. (°F or [✓ °C])	pH (SU)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Redox Potential (mV)
1/25/02	1311	1.0	4948	11.39	12.05	Sl. Cloudy		
	1315	4.0	3196	11.26	11.95	Sl. Cloudy		
	1324	10.0	3199	11.26	11.99	Sl. Cloudy		
	1312	17.5	2982	11.08	12.08	Cloudy		
1								
1/28/02 2	1310		3615	11.41	12.31	Cloudy		

Total Volume of Water Purged: 18 ~~gallons~~ Liters

Sampling Data:

- Sampling Method: [✓ Bailer] or Pump
- Depth of Pump intake or bailer: ~39 feet BGS
- Sample Date/Time: 1/28/02 1310
- Color: Cloudy Gray
- Odor: None
- Sheen/Appearance: No/Cloudy Gray

Notes:
1 - Field parameters obtained before sampling
2 - Field papameters obtained after sampling

2 liters removed on 1/24/02 for NAIL ✓
Purged 17.9 liters, well went dry. ⇒ NO XYZ, cloudy Brown/gray water

BSGDD0211 Sampled for
BTEX,
SVOC
Cyanide
Phenols
Metals

14

WELL DEVELOPMENT LOG

URS Greiner

PROJECT TITLE: NYSEG - Plattsburgh Bridge Street

WELL NO.: PB-MW-99-02

PROJECT NO.: 500035670.00

STAFF: Paul Pavone

START:

DATE(S): 07-22-99 thru 10-11-99

STOP:

			WELL ID.	VOL. (GAL/FT)
1. TOTAL CASING AND SCREEN LENGTH (FT.)	=	7.40	1"	0.04
2. WATER LEVEL BELOW TOP OF CASING (FT.)	=	5.55	2"	0.17
3. NUMBER OF FEET STANDING WATER (#1 - #2)	=	1.85	3"	0.38
4. VOLUME OF WATER/FOOT OF CASING (GAL.)	=	0.17	4"	0.66
5. VOLUME OF WATER IN CASING (GAL.)(#3 x #4)	=	0.32	5"	1.04
6. VOLUME OF WATER TO REMOVE (GAL.)(#5 x 3)	=	0.96	6"	1.50
7. VOLUME OF WATER REMOVED (GAL.)	=	7	8"	2.60

OR

V=0.0408 x (CASING DIAMETER)^2

	ACCUMULATED VOLUME PURGED (GALLONS)										
PARAMETERS	0	1	2	5	7						
pH	6.82	6.59	6.62	6.51	6.84						
SPEC. COND. (umhos)	112	844	961	885	914						
TEMPERATURE (°C)	12.5	11.5	10.9	10.4	11.6						
TURBIDITY (NTU)	>100	>100	>100	98	94						

COMMENTS:

PROJECT ________ Continued From Page ________

Well Development

2" PVC

[LOCATED EAST OF SITE Bldg.]

BP- MW99-02

LNAPL: ~~0~~
DNAPL: ~~0~~

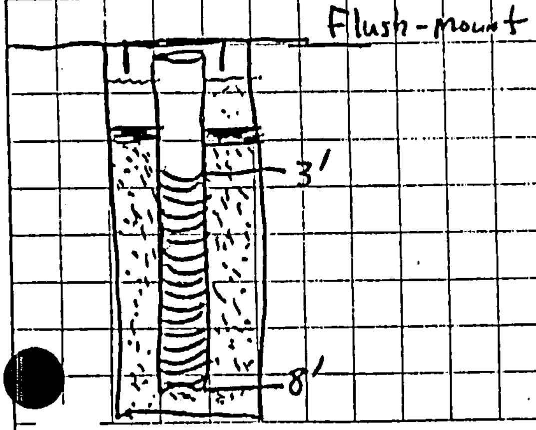
DTW: 5.55' BTOR
DTB: 7.40'
Vol 1x: 0.3145 gals
Vol 3x: 0.9435 gals

1.85
~~0~~.17

HNU PID @ 0.2 back-ground
Headspace: 0.4

Parameters	GALLONS				
	0	1	2	5	7
pH	6.82			6.49	
TEMP (°C)	22.5			10.8	
COND (mV)	102			785	
Turb. (NTUs)	>100			>100	
DO	0.22			—	
Eh	—			—	

7-22-99: 1500 hrs dry in ½ gal
– slow recharge
dk gray, silty



8-3-99 5.38' BTOR
7.40'

1143 0.5 gal
1151 0.5 gal

Continued on Page

Read and Understood By

7-22-99

Signed Date Signed Date

WELL DEVELOPMENT LOG

URS Greiner

PROJECT TITLE: NYSEG - Plattsburgh Bridge Street
WELL NO.: PB-MW-99-03

PROJECT NO.: 500035670.00

STAFF: Paul Pavone
START:

DATE(S): 07-22-99 thru 10-11-99
STOP:

			WELL ID.	VOL. (GAL/FT)
1. TOTAL CASING AND SCREEN LENGTH (FT.)	=	11.46	1"	0.04
2. WATER LEVEL BELOW TOP OF CASING (FT.)	=	5.63	2"	0.17
3. NUMBER OF FEET STANDING WATER (#1 - #2)	=	5.83	3"	0.38
4. VOLUME OF WATER/FOOT OF CASING (GAL.)	=	0.17	4"	0.66
5. VOLUME OF WATER IN CASING (GAL.)(#3 x #4)	=	0.99	5"	1.04
6. VOLUME OF WATER TO REMOVE (GAL.)(#5 x 3)	=	2.97	6"	1.50
7. VOLUME OF WATER REMOVED (GAL.)	=		8"	2.60

OR

V=0.0408 x (CASING DIAMETER)^2

PARAMETERS	ACCUMULATED VOLUME PURGED (GALLONS)										
	0	2	5	10							
pH	6.33										
SPEC. COND. (umhos)	766										
TEMPERATURE (°C)	11.1										
TURBIDITY (NTU)	>100										

COMMENTS: Hnu PID 0.5 ppm

PROJECT

Notebook No.

Continued From Page

PB-MW99-03

near
Platts. Pad sign
[illegible]. NE corner
of site

DTW: 5.63'
DTB: 11.46' BTOR
Vol 1x 0.99 gals

HWU HEADSPACE
PID 0.8 ppm
(BACKground 0.3)

GALLONS

Parameters	0	5
pH	6.33	6.40
TEMP(°C)	25.1	10.6
COND(mV)	766	510
TURB	>100	85
Eh	–	–
DO	1.15	176

START 1110 purge

1 gal dry
1 gal dry
1 gal dry

Continued on Page

Read and Understood By

Date

Signed

Date

WELL DEVELOPMENT LOG

URS Greiner

PROJECT TITLE: NYSEG - Plattsburgh Bridge Street
WELL NO.: PB-MW-99-04

PROJECT NO.: 500035670.00

STAFF: Paul Pavone
START:

DATE(S): 07-22-99 thru 10-11-99
STOP:

			WELL ID.	VOL. (GAL/FT)
1. TOTAL CASING AND SCREEN LENGTH (FT.)	=	9.34	1"	0.04
2. WATER LEVEL BELOW TOP OF CASING (FT.)	=	4.83	2"	0.17
3. NUMBER OF FEET STANDING WATER (#1 - #2)	=	4.51	3"	0.38
4. VOLUME OF WATER/FOOT OF CASING (GAL.)	=	0.17	4"	0.66
5. VOLUME OF WATER IN CASING (GAL.)(#3 x #4)	=	0.77	5"	1.04
6. VOLUME OF WATER TO REMOVE (GAL.)(#5 x 3)	=	2.30	6"	1.50
7. VOLUME OF WATER REMOVED (GAL.)	=		8"	2.60

OR
V=0.0408 x (CASING DIAMETER)²

PARAMETERS	ACCUMULATED VOLUME PURGED (GALLONS)										
	0	2	5	8							
pH	6.85										
SPEC. COND. (umhos)	204										
TEMPERATURE (°C)	12.8										
TURBIDITY (NTU)	>100										

COMMENTS: Hnu PID 0.4 ppm

Notebook No.

Continued From Page

PROJECT

PB - MW99 - 04

due NOR
for 14D
Bside

DTW: 4.83' BTOR
DTB: 9.34' BTOR
Vol 1x 0.766 gals

HNU PID HEADSPACE : 0.8 ppm (site
(0.4 Bkgrd.)

	Gallons										
Parameters	0		5								
pH	6.82		6.84								
TEMP(°C)	20.8		10.6								
Cond (mu)	1230		1080								
Turb	>100		85								
Eh	—		—								
DO	0.30		—								

START 1100 - purge 1gal dry.
1gal dry
1gal dry

[illegible]

Continued on Page

8-3-99

Read and Understood By

Signed Date Signed Date

WELL DEVELOPMENT LOG

URS Greiner

PROJECT TITLE: NYSEG - Plattsburgh Bridge Street
WELL NO.: PB-MW-99-05

PROJECT NO.: 500035670.00

STAFF: Paul Pavono
START:

DATE(S): 07-22-99 thru 10-11-99
STOP:

			WELL ID.	VOL. (GAL/FT)
1. TOTAL CASING AND SCREEN LENGTH (FT.)	=	10.90	1"	0.04
2. WATER LEVEL BELOW TOP OF CASING (FT.)	=	8.31	2"	0.17
3. NUMBER OF FEET STANDING WATER (#1 - #2)	=	2.59	3"	0.38
4. VOLUME OF WATER/FOOT OF CASING (GAL.)	=	0.17	4"	0.66
5. VOLUME OF WATER IN CASING (GAL.)(#3 x #4)	=	0.44	5"	1.04
6. VOLUME OF WATER TO REMOVE (GAL.)(#5 x 3)	=	1.32	6"	1.50
7. VOLUME OF WATER REMOVED (GAL.)	=		8"	2.60

OR
V=0.0408 x (CASING DIAMETER)^2

	ACCUMULATED VOLUME PURGED (GALLONS)										
PARAMETERS	0	1	3	5							
pH	6.85										
SPEC. COND. (umhos)	204										
TEMPERATURE (°C)	12.8										
TURBIDITY (NTU)	>100	>100									

COMMENTS:

Notebook No.

Continued From Page

OJECT

PB-MW99-05

West
of site
in road

DTW: 8.31' BTOR
DTB: 10.90' BTOR
Vol. 1x: 0.44 gals

HNU PID
Headspace: 2.4 ppm
(0.4 ppm background)

GALLONS

Parameters	0	5
pH	6.85	6.70
Temp	22.8	10.9
Turb	>100	>100
COND.	204	226
DO	0.24	—
Eh	—	—

1130 ½ gal dry
½ gal dry

Continued on Page

Read and Understood By

8-3-99

Signed

Date

Well Id MW-99-02
DTW 4.83' (BTOR)
DTB 7.40' (BTOR)
Vol 1x 0.44 gals
Vol 3x 1.3 gals
Vol purged dry
Method HDPE TUBING /w footvalve

start 0930
stop 0932

HNU PIP 0.2 CND
0.2 BK.gs

Parameters

	I	F	S
pH	6.46	dry	6.48
TEMP (°C)	10.8		10.5
COND (ms)	963		854
DO	—		—
TURB. (NTUs)	96		>100
Eh (Rmv)	+65.6		85.4
Obs	gray, no odor		gray

Well Sample Id PB MW9902
DTW 4.83' BTOR
TIME 1030
Parameters ~~VOC SVOC TPH c~~
Method teflon bailer
QA/QC NONE

[VOC & SVOC clear
rest high turbidity]

2x40ml 95-1 VOC
1x 1lt 95-2 SVOC
1x 1lt 310-13 TPH
1x 1lt poly T-CN (NaOH
500ml poly METALS Sulfur (HNO3

Continued on Pag

Read and Understood By

Paul Pavone 10/20/99
Date

Signed
Dat

Notebook No. ____________

PROJECT ______________________ Continued From Page ________

ll Id MW-99-03
DTW 5.23 BTOR
DTB 11.45 BTOR start 0940
Vol 1x 1.06 g
Vol 3x 3.17 g stop 0944
Vol purged (dry)
Method HDPE TUBING PID: BKG. 0.4
w/ Foot Valve READ 0.6

Parameters

	I	F	S
pH	6.43	dry	6.52
TEMP (°C)	10.2		10.4
COND (ms)	433		514
DO	—		—
Turb (NTU)	35		46
Eh (RmV)	+116.3		99.8
Obs	clear no odor		clear

Well Sample Id PB MW 99 03
DTW [illegible]' BTOR 5.43'
TIME 1045
Parameters
Method
QA/QC NONE

Continued on Page

Read and Understood By

Paul G Pavone 10/20/99
Signed Date

Signed Date

Notebook No. ____________
Continued From Page ____________

42
PROJECT ____________

Well Id MW-99-04
DTW 4.38 BTOR
DTB 9.33 BTOR
Vol 1X 0.84 gal
Vol 3x 2.52 gal
Vol purged dry
Method HDPE tubing w/ footvalve

start 0955
stop

PID BKGD 0.4
READ 0.6 ppm

Parameters

	I	F	S
pH	6.92		6.84
TEMP (°C)	10.4		10.4
COND (ms)	1013		~~[illegible]~~ 954
Eh (Rmv)	116.6		98.4
Turb (NTUs)	84		70
DO	—		—
Obs	grayish tint No odor		gray tint

Sample Id PB MW 99 04
DTW 4.39' BTOR
TIME 1055
Parameters
Method Teflon bailer
QA/QC ~~MS/MSD~~

Continued on Page

Paul E Pavone
10/20/99
Signed
Date

Read and Understood By
Signed
Date

Notebook No. ______

Continued From Page ______

PROJECT Well Purging

Well Id MW-99-05

DTW 7.68'

DTB 10.89'

Vol 1X 0.55 g

Vol 3X 1.64 gal

Vol purged dry (purged to dry)

method HDPE tubing w/ foot valve

Start 1115

stop 1205

PID BK 0.3
READ 2.4 ppm

2.1 ppm

Parameters

	I	E	S
pH	6.57		6.64
TEMP(°C)	10.6		10.5
COND	265		255
Eh	26.6		20.4
Turb.	>100		>100
DO	—		—
Obs-	Brownish gray sl. petro odor		br./gray (wor sl. sewage smell

Sample Id PB MW 99 05

DTW 7.78'

TIME 1115

Parameters

Method

QA/QC. MS/MSD

Continued on Page

Read and Understood By

Paul Parsons 10/20/99

Signed Date

Signed Date

GROUNDWATER SAMPLING DATA SHEET

WELL NO: MW-99-05

Field Personnel:
Eric Lovenduski

Date: 1/30/02
Job No.: 05-00035927.02 00002
Location: Plattsburgh, New York

Total Well Depth (from top of casing): 11.0' ~~7.4~~ feet

Depth to Water Surface Before Purging (from top of casing): - 8.18 feet

Height of Water Column: = 2.82 feet

Well Diameter (d): 2 inches Gals per ft: ($d^2 \times 0.0408$) = x 0.163

Volume of Water Column Before Purging: = 0.46 gallons = 1.74 Liters

Volume of Water Equal to three Well Volumes: ______ gallons 5.22 L
(Volume of Column by 3.0)

Purging Method: Bailer/Waterra Pump/Submersible Pump/[✓ Peristaltic Pump]

Time	Well Volumes (~~Gallons~~) L.	Specific Conduct. (mmhos/cm or µmhos)	Temp. (°F or °C)	pH (SU)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Redox Potential (mV)
933	0.1 L	3.15 ms	6.4	6.87	Sl. yellow		
935	1.0	3.69 ms	6.5	7.06	Sl. Yellow		
939	2.0	3.86	7.1	6.89	Sl. yellow	Petro-odor	
941	3.2 L	4.19	7.7	6.77	Sl. yellow	Petro odor	
1							
2							

Total Volume of Water Purged: 3.75 ~~gallons~~ Liters

Sampling Data:
- Sampling Method: Bailer or [✓ Pump]
- Depth of Pump intake or bailer: 10.9 feet
- Sample Date/Time: 1/30/02 0955
- Color: Slightly yellow
- Odor: Petroleum
- Sheen/Appearance: NO / slightly yellow/clear

Notes:
1 - Field parameters obtained before sampling
2 - Field papameters obtained after sampling

Pump off @ 0943 3.6 Liters pump on again 0955 - collected sample
1 for total fecal coliform - Alchemy Lab - P-burgh
1 for TPH "HOLD" ⟸ NOT Analysed - discarded

EJL
1/31/02

APPENDIX E

HOUSEHOLD PRODUCTS INVENTORY FOR IAQ

Household Products Inventory

Homeowner:

Address: Apt 1

Telephone:

Location in Home:

Collector:

Date:

Product	Dispenser	EPA Reg. No.	Manufacturer	Ingredient
Clorox	liq	—		Bleach
Mobil	liq	—	Oil	recycled
Quaker State	liq	—		
Slick 50	liq	—	DuPont	—
WD 40	spray	—	WD 40	—
Propane	liq		16 oz.	fuel Propane
Techron	liq	—	Chevron	NAPTHA —
Fresh Step			Clorox	CAT litter

Household Products Inventory

meowner: Apt, #1

Address:

Telephone:

Location in Home:

Collector:

Date:

Product	Dispenser	EPA Reg. No.	Manufacturer	Ingredient
Ayler-Care	Powder	4822 - 433	Johnson WAx	Benzyl benzoate
mr musle	oven cleaner	—	Johnson Wax	—
Resolve	spray	—	Beckitt & Coleman	—
lot Shot	spray	4688-114-8845	Spectrum Group	—
sol	spray	—	Lysol	Alkyl
N. -Clean	spray	—	Dow	—
rmor all	Spray	—	Armor All	— Vinyle
Febreze	spray	—	P & G	
Index	Spray	—	Johnson Wax	—
Westleys lecche-Wite	Spray	—	Westleys	—
ledge	spray	—	Johnson Wax	—
undry	Spray	~~820-17~~ 8220 -17	Lawn Seat Kay	—
RAId	Spray	4822-271	Johnson & Sons	
antastik	spray		Dow	
tatic Guard	spray		Alberto-Culver	DOT 2P
Flea Halt	Spray	1021-1622-270	Furnam pet	—
mor all	spray	—	Armor	Wheel cleaner —

Household Products Inventory

Homeowner:

Address:

Apt. 1

Telephone:

Location in Home:

Collector:

Date:

Product	Dispenser	EPA Reg. No.	Manufacturer	Ingredient
ODO ban	liq	6836-165-66243	Clean Control Co.	Alkyl.
Lysol	Spray	777-66	Reckitt-Colman	Alkyl
Four Paws Repellent	spray	1B799-1	Four Paws	—
Brasso	liq.	—	Brasso	—
Mr. Clean	Liq	3573-63	P&G	—
Rubbing Alcohol	liq	—	SWAN.	70% isopropy
Clorox wipes	wipes	5813-58	Clorox	—
Soft Scrub	liq	—	Clorox	—
H_2O_2	liq	—	Swan	3%
Tilex	liq	—	Clorox	—
Niagara	spray	—	Best Foods	—
De-Solv-it	spray	—	Orange Solve	—
Resolve	granual		L&F products	carpet cleaner
TIDE	liq	—	P&G	Bleach
Lysol	liq	777-81-675	Lysol	Hydrogen Chl
Bathroom clean	liq	3696-138	Dow	
Clorex clean-up	spray	—	—	Sodium hydroxid

Some ingredients not listed on container

Apt 2

Household Products Inventory

Homeowner:

Address:

Telephone:

Location in Home:

Collector:

Date:

Product	Dispenser	EPA Reg. No.	Manufacturer	Ingredient
Bathroom Cleaner	spray	—	Dow	n-Alkyl
green thumb wasp/hornet	Spray	—	True-Value	tetramethrin
ENDUST	spray	—	Kiwi Brands	
Pledge	"	—	J & J	
breeze	"	—	P & G	
Connoisseurs Jewelry Clean	liq	—	Connoisseurs	Ammonia
Hydrogen Peroxide	liq.	—	Swan	3% H_2O_2
polish remover	paste	—	EQUATE	ACETONE
Clairol Herbal Ess	spray	—	clairol	Alcohol DENAT.
Rubbing Alcohol	liq	—	SWAN	70% ISOPROPYL
Hand cleaner	liq	—	gojo	Pumice
Lysol	liq	—	L&F Products	Alkyl. (67%)
INSULATING FOAM	liq	—	DAP	Ethylene glycol.
Finesse	liq	—	Helene Curtis	Butane
Bathroom Cleaner	spray	—	P&G	Dipropylene glycol butyl ether
Parson	liq	—	The Dial Co	Ammonia
r. Clean	liq	3573-MO-1	P&G	
409	spray		clorox	
#01900220				
WINDOX	"		clorox	
			cloro	

Household Products Inventory

meowner:

Address: Apt 3

Telephone:

Location in Home:

Collector:

Date:

Product	Dispenser	EPA Reg. No.	Manufacturer	Ingredient
Bonemeal ~~Agway~~	box		Agway	
WILT Proof	spray		WILT Proof Products, Inc.	Pineoleene 25%
Round-up	"		The Solaris Group	Isopropylamine salt 0.96%
Cloud cover	"		EASY GARDENER	Acrylic Copolymer Emulsion 2%
racle Gro				
Green light	spray	11688-9-869		Neem oil 90% Rose Defense
green magic	powder	—	Gardener's Supply —	3-6-12
Orthene (ortho)	liquid.	—	Ortho	Acephate 9.4%
Glitter spray	spray	—	Sherwin Williams	Acetone
plastic-cote	spray	—	plasti-cote	enamel
Tru-test easy color	spray	—	Tru-test	metallic spray
Krat spray	spray	—	Accent	paint — 1-methoxy Acetone
Classic metal	spray	—	plasti-cote	
Rust-oleum	spray	—	Rust-oleum	Toluene / xylene
Woolite	liq	—	Woolite	—
Clorox	liq.		Clorox	bleach
Wet iron spray	spray	—	Bon Ami	—
Insect #01900220 Spray	spray		Schultz	Pyrethrins .02%

Steel is clean SLEE		Ceello	Apt 3
Shine cleaner		Armstrong	
Morn-glo	liq.		
Twinkle Copper	paste		
Pledge	liq.		
Shout carpet clean	—	Johnson WAX	
oven-Cleaner	spray	Dow	
Mr. Clean	—	—	—
K2R spot remover	—	—	—
tongue oil	liq	—	—
stick glue	paste	—	—
Snuggle	liq	level Broth-	—
Fish Fert.	liq	Alaska F.F.Co	—
Whitefly/Mealy Bug	spray	Dexol Ind	methoprene 0.19
Weed-B-Gon	spray	Ortho	2-4 Dichloro phenoxy acetic Acid (0.2%)
Clean shower	spray	clean shower L.P	—
BATHROOM Cleaner	spray	Dow	—
isopropyl alcohol	—	—	—
nail polish remover			non-acetone
Lysol	liq		
Glass Cleaner			
Bug Stop	spray	Spectrum group	EPA 9688-111-884
WAX/acrylic removal	liq.	Parsons	
Raid		Johnson WAX	
rarso metal		Dow	
Fantastick			
OLD ENG Furni Polish			

Household Products Inventory

Homeowner: Garage

Address:

Telephone:

Location in Home:

Collector:

Date:

Product	Dispenser	EPA Reg. No.	Manufacturer	Ingredient
(CANS) Glidden PAINT	PAINT CAN (1/2 GALLON)	—	Glidden	LATEX PAINT
Acetone	CAN (1QT)	—		ACETONE (EMPTY)
USED OIL	PLASTIC CAN	—	—	MOBIL OIL
MOTOR BOAT OUTBOARD	MOTOR	—	—	—
asoline plastic	5 gal can			(empty.)

* motor boat in garage

"REFERENCE-QUESTION #7"

APPENDIX F

PROJECT CORRESPONDENCE

Post-it® Fax Note 7671
Date 1/7
# of pages ▶ 2
To Paul Pavone
From Dave Crosby
Co./Dept URS
Co. DEC
Phone #
Phone # (518)457-9285
Fax # (518)566-0106
Fax # 457-7743

New York State Department of Environmen
Division of Environmental Remediation
Bureau of Construction Services, Room 267
50 Wolf Road, Albany, New York 12233-7010
Phone: (518) 457-9280 • **FAX:** (518) 457-7743
Website: www.dec.state.ny.us

Commissioner

JAN 07 2000

FAX

Mr. Tracy L. Blazicek
Project Environmental Specialist
New York State Electric and Gas Corporation
Corporate Drive-Kirkwood Industrial Park
P.O. Box 5224
Binghamton, New York 13902-5224

Dear Mr. Blazicek:

Re: Plattsburgh Bridge Street Former MGP Site
Preliminary Site Assessment

The New York State Departments of Conservation and Health have completed the review of your consultant's Work Plan for Supplemental Indoor Air Sampling at the Plattsburgh Bridge Street Manufactured Gas Plant (MGP) Site, dated December 15, 1999 and presents the following comments.

1. The Department requests that New York State Electric and Gas (NYSEG) be sensitive to the possible inconvenience to the tenants when conducting the indoor air survey. The sampling crew should be cognizant to the wishes and concerns of the residents when discussing chemicals found within the apartments and to activities that should not be conducted prior to collecting the sample.

2. The Photoionization Detector (PID) should be calibrated with a 10 ppm calibration gas standard in addition to the higher concentration calibration gas standard that is usually used. This will indicate whether the meter is reading properly at lower concentrations.

3. Section 1.0, Introduction: The statement that real time air monitoring indicated no VOC air contamination should be qualified that a PID, in general, does not provide the detection limits to properly evaluate indoor air exposures. Further, for completeness, the work plan should discuss the previous indoor air results in the crawl space below the apartments that showed low levels of BTEX compounds and how the crawl space samples were similar to ambient air on the day the samples were collected.

4. Does the TO-14 method measure for naphthalene? If not, how can we quantify the potential impact for this relatively volatile compound?

Please respond to these comments at your earliest convenience so that the indoor air sampling program can go forward. Please provide the Department a schedule of the planned investigative activities so we can arrange for field oversight.

As we discussed on January 4, 2000, the Department believes that the preliminary finding of the preliminary site assessment indicates the need to expand the project to a remedial investigation because there is coal tar below a residential apartment complex on a site that is not owned or controlled by NYSEG. As such, the Department has concluded that a remedial investigation and feasibility study should be conducted.

The Department appreciates NYSEG's efforts in conducting a remedial program for the Plattsburgh-Bridge Street Former MGP site. If you have any questions, please feel free to contact me at 518-457-9285.

Sincerely,

David A. Crosby

David A. Crosby, P.E.
Senior Environmental Engineer
Central Field Services Section
Bureau of Construction Services
Division of Environmental Remediation

cc: Paul Pavone, URS-GWC ✓
Joseph Simone - NYSEG
Mike Rivara/Richard Fedigan - NYSDOH, Albany
Edward Snizec - Clinton Co. DOH

New York State Department of Environmental Conservation
Division of Environmental Remediation
Bureau of Construction Services, Room 257
50 Wolf Road, Albany, New York 12233 7010
Phone: (518) 457-9280 • FAX: (518) 457-7743
Website: www.dec.state.ny.us

John P. Cahill
Commissioner

JUL 09 1999

Post-it® Fax Note 7671	Date 7/9/99	# of pages ▶ 2
To Paul Pavone	From Dave Crosby	
Co./Dept. URS Greiner	Co. NYSDEC	
Phone #	Phone # (518) 457-4285	
Fax # (518) [illegible]	Fax #	

FAX

Tracy L. Blazicek
Project Environmental Specialist
New York State Electric and Gas Corporation
Corporate Drive-Kirkwood Industrial Park
P.O. Box 5224
Binghamton, New York 13902-5224

Dear Mr. Blazicek:

Re: Plattsburgh Bridge Street Former MGP Site
Preliminary Site Assessment

The New York State Department of Conservation has completed the review of your June 28, 1999 response to Department's comments on the Preliminary Site Assessment (PSA) work plan. Your response adequately address the Department's comments of June 24,1999 and the PSA is approved pending incorporation of the agreed to comments. Please provide copies of the revised PSA Work Plan to the site distribution list and the document repositories.

It is our understanding the field work will start on Monday, July 12, 1999. Please advise this office if there is a change in the schedule.

The Department appreciates NYSEG's efforts in conducting a remedial program for the Plattsburgh-Bridge Street Former MGP site. If you have any questions, please feel free to contact me at (518) 457-9285.

Sincerely,

David A. Crosby, P.E.
Senior Environmental Engineer
Central Field Services Section
Bureau of Construction Services
Division of Environmental Remediation

cc: Paul Pavone - URS, GWC
Joseph Simone - NYSEG
Mike Rivara/Richard Fedigan - NYSDOH, Albany
Edward Snizek - Clinton Co. DOH

NYSEG

13 September 1999

Plattsburgh Bridge Street MGP Site

Jan Lezak
140 Bridge Street
Apartment # 1
Plattsburgh, NY 12901

Subject: Former Manufactured Gas Plant Site at 140 Bridge Street

Dear Ms. Lezak:

As you know, NYSEG in conjunction with the New York State Departments of Environmental Conservation (DEC) and Health (DOH), is conducting a preliminary environmental investigation of the former manufactured gas plant site located at 140 Bridge Street. Field work was conducted in July, and preliminary results from the sampling are now available for discussion.

As part of the investigative process, it was discovered that the former gas holder is located further toward the back of the building than we previously thought. This discovery will require us to return to the site to collect some additional samples targeted at characterizing any by-products that may be present in or near the former gas holder.

Representatives from NYSEG, DEC, DOH, and URS Greiner Corp. (NYSEG's environmental consultant on the project) would like to meet with you, the other tenants, and the owner of the building to discuss the data that we have so far, and the additional testing that must be done. It is expected that the meeting should take about an hour, and would be held at the 140 Bridge Street location. We propose to hold the meeting on Wednesday, 29 September 1999 at 6:00 P.M. Please call me at 800-241-0620, extension 8839 to confirm your intent to attend this meeting, or to suggest any alternative date/time if necessary. Your RSVP by Wednesday, 22 September 1999 would be appreciated.

Sincerely,

Tracy L. Blazicek, CHMM
Project Environmental Specialist
Licensing & Environmental Operations

cc: David Crosby - NYSDEC Albany
Richard Fedigan - NYSDOH Albany
Paul Pavone - URS Greiner
J.M. Simone

Meetltrl.wp

New York State Electric & Gas Corporation Corporate Drive-Kirkwood Industrial Park, P.O. Box 5224, Binghamton, New York 13902-5224 (607) 729-2551

NYSEG

13 September 1999

Plattsburgh Bridge Street MGP Site

Dan Burke
140 Bridge Street
Apartment # 2
Plattsburgh, NY 12901

Subject: Former Manufactured Gas Plant Site at 140 Bridge Street

Dear Mr. Burke:

As you know, NYSEG in conjunction with the New York State Departments of Environmental Conservation (DEC) and Health (DOH), is conducting a preliminary environmental investigation of the former manufactured gas plant site located at 140 Bridge Street. Field work was conducted in July, and preliminary results from the sampling are now available for discussion.

As part of the investigative process, it was discovered that the former gas holder is located further toward the back of the building than we previously thought. This discovery will require us to return to the site to collect some additional samples targeted at characterizing any by-products that may be present in or near the former gas holder.

Representatives from NYSEG, DEC, DOH, and URS Greiner Corp. (NYSEG's environmental consultant on the project) would like to meet with you, the other tenants, and the owner of the building to discuss the data that we have so far, and the additional testing that must be done. It is expected that the meeting should take about an hour, and would be held at the 140 Bridge Street location. We propose to hold the meeting on Wednesday, 29 September 1999 at 6:00 P.M. Please call me at 800-241-0620, extension 8839 to confirm your intent to attend this meeting, or to suggest any alternative date/time if necessary. Your RSVP by Wednesday, 22 September 1999 would be appreciated.

Sincerely,

Tracy L. Blazicek, CHMM
Project Environmental Specialist
Licensing & Environmental Operations

cc: David Crosby - NYSDEC Albany
Richard Fedigan - NYSDOH Albany
Paul Pavone - URS Greiner
J.M Simone

Meetltr2.wp

An Equal Opportunity Employer

New York State Electric & Gas Corporation Corporate Drive-Kirkwood Industrial Park, P.O. Box 5224, Binghamton, New York 13902-5224 (607) 729-2551

NYSEG

March 15, 2000

Ms. Jan Lezak
140 Bride Street, Apartment 1
Plattsburgh, NY 12901

Subject: Results of Indoor Air Testing in Your Apartment

Dear Ms. Lezak:

As you know, on February 1st NYSEG collected a sample of the air from inside your apartment as part of the on-going investigation of the former manufactured gas plant site located at 140 Bridge Street in Plattsburgh. A total of five (5) samples were collected as part of the indoor air study. One sample was collected from each of the three apartments in the building, one from the garage at the rear of the building, and one from ambient air just outside the building. All of the samples were collected over an 8-hour period using a Summa canister. The samples were sent to Air Toxics, Ltd., a commercial laboratory specializing in analyzing air samples where they were analyzed using the Environmental Protection Agency's TO-14 Method. The samples were needed to help NYSEG and the New York State Departments of Environmental Conservation and Health determine if the former manufactured gas plant has impacted the quality of the air in your apartment.

Attached with this letter you will find copies of the results from your apartment, the garage, and the outside air. The results provided with this letter show only the compounds that were detected in the air samples. The full data packages, showing all of the compounds that were analyzed for, is available upon request. The results of the sampling from inside your apartment have not been provided to the tenants of the other two apartments. All of the results will eventually become part of the public record when the site investigation report is placed into the document repository at the Plattsburgh Public Library, but I wanted you to have the first opportunity to review the results from your own apartment. There was no significant difference in the results from the three apartments, and our conclusions about the sample results (presented below) are the same for all the apartments.

As was expected, a number of compounds were detected in the air sample from your apartment. The TO-14 method is very sensitive and can detect compounds in air at very low levels. And, many of the compounds on the method's analyte list are found in common household products. The product inventory that was conducted prior to sampling identified several household products in each apartment which contained compounds detected in the air samples. Although some of the compounds that were detected in your air sample were above what may be typically expected, there is no immediate health concern.

An Equal Opportunity Employer

New York State Electric & Gas Corporation Corporate Drive-Kirkwood Industrial Park, P.O. Box 5224, Binghamton, New York 13902-5224 (607) 729-2551

Please feel free to call Rich Fedigan of the New York State Health Department at 518-402-7890, or me at 800-241-0620, extension 8839 if you have questions or would like to discuss the results.

Sincerely,

Tracy L. Blazicek, CHMM
Project Environmental Specialist
Licensing & Environmental Operations

cc: <u>w/ attachments</u>:
David A. Crosby - NYSDEC Albany
Richard J. Fedigan - NYSDOH Albany
David Meath

cc: <u>w/o attachments</u>:
Paul Pavone - URS Consultants
J.M. Simone

tlb\lezakair.doc

NYSEG

March 15, 2000

Ms. Sheila Payne
140 Bride Street, Apartment 3
Plattsburgh, NY 12901

Subject: Results of Indoor Air Testing in Your Apartment

Dear Ms. Payne:

As you know, on February 1st NYSEG collected a sample of the air from inside your apartment as part of the on-going investigation of the former manufactured gas plant site located at 140 Bridge Street in Plattsburgh. A total of five (5) samples were collected as part of the indoor air study. One sample was collected from each of the three apartments in the building, one from the garage at the rear of the building, and one from ambient air just outside the building. All of the samples were collected over an 8-hour period using a Summa canister. The samples were sent to Air Toxics, Ltd., a commercial laboratory specializing in analyzing air samples where they were analyzed using the Environmental Protection Agency's TO-14 Method. The samples were needed to help NYSEG and the New York State Departments of Environmental Conservation and Health determine if the former manufactured gas plant has impacted the quality of the air in your apartment.

Attached with this letter you will find copies of the results from your apartment, the garage, and the outside air. The tables of results provided with this letter shows only the compounds that were detected in your air sample. The full data package, showing all of the compounds that were analyzed for, is available upon request. The results of the sampling from inside your apartment have not been provided to the tenants of the other two apartments. All of the results will eventually become part of the public record when the site investigation report is placed into the document repository at the Plattsburgh Public Library, but I wanted you to have the first opportunity to review the results from your own apartment. There was no significant difference in the results from the three apartments, and our conclusions about the sample results (presented below) are the same for all the apartments.

As was expected, a number of compounds were detected in the air sample from your apartment. The TO-14 method is very sensitive and can detect compounds in air at very low levels. And, many of the compounds on the method's analyte list are found in common household products. The product inventory that was conducted prior to sampling identified several household products in each apartment which contained compounds detected in the air samples. Although some of the compounds that were detected in your air sample were above what may be typically expected, there is no immediate health concern.

An Equal Opportunity Employer

Please feel free to call Rich Fedigan of the New York State Health Department at 518-402-7890, or me at 800-241-0620, extension 8839 if you have questions or would like to discuss the results.

Sincerely,

Tracy Blazicek

Tracy L. Blazicek, CHMM
Project Environmental Specialist
Licensing & Environmental Operations

cc: w/ attachments:
David A. Crosby - NYSDEC Albany
Richard J. Fedigan - NYSDOH Albany
David Meath

cc: w/o attachments:
Paul Pavone - URS Consultants
J.M. Simone

NYSEG

March 15, 2000

Mr. & Mrs. Dan Burke
140 Bride Street, Apartment 2
Plattsburgh, NY 12901

Subject: Results of Indoor Air Testing in Your Apartment

Dear Mr. & Mrs. Burke:

As you know, on February 1st NYSEG collected a sample of the air from inside your apartment as part of the on-going investigation of the former manufactured gas plant site located at 140 Bridge Street in Plattsburgh. A total of five (5) samples were collected as part of the indoor air study. One sample was collected from each of the three apartments in the building, one from the garage at the rear of the building, and one from ambient air just outside the building. All of the samples were collected over an 8-hour period using a Summa canister. The samples were sent to Air Toxics, Ltd., a commercial laboratory specializing in analyzing air samples where they were analyzed using the Environmental Protection Agency's TO-14 Method. The samples were needed to help NYSEG and the New York State Departments of Environmental Conservation and Health determine if the former manufactured gas plant has impacted the quality of the air in your apartment.

Attached with this letter you will find copies of the results from your apartment, the garage, and the outside air. The results provided with this letter show only the compounds that were detected in the air samples. The full data packages, showing all of the compounds that were analyzed for, is available upon request. The results of the sampling from inside your apartment have not been provided to the tenants of the other two apartments. All of the results will eventually become part of the public record when the site investigation report is placed into the document repository at the Plattsburgh Public Library, but I wanted you to have the first opportunity to review the results from your own apartment. There was no significant difference in the results from the three apartments, and our conclusions about the sample results (presented below) are the same for all the apartments.

As was expected, a number of compounds were detected in the air sample from your apartment. The TO-14 method is very sensitive and can detect compounds in air at very low levels. And, many of the compounds on the method's analyte list are found in common household products. The product inventory that was conducted prior to sampling identified several household products in each apartment which contained compounds detected in the air samples. Although some of the compounds that were detected in your air sample were above what may be typically expected, there is no immediate health concern.

An Equal Opportunity Employer

New York State Electric & Gas Corporation Corporate Drive-Kirkwood Industrial Park, P.O. Box 5224, Binghamton, New York 13902-5224 (607) 729-2551

Please feel free to call Rich Fedigan of the New York State Health Department at 518-402-7890, or me at 800-241-0620, extension 8839 if you have questions or would like to discuss the results.

Sincerely,

Tracy Blazicek

Tracy L. Blazicek, CHMM
Project Environmental Specialist
Licensing & Environmental Operations

cc: w/ attachments:
David A. Crosby - NYSDEC Albany
Richard J. Fedigan - NYSDOH Albany
David Meath

cc: w/o attachments:
Paul Pavone - URS Consultants
J.M. Simone

Bridge Street MGP Site

From: tlblazicek@nyseg.com
To: dacrosby@gw.dec.state.ny.us
Cc: ursgplt@together.net; jmsimono@nyseg.com
Subject: Bridge Street MGP Site
Date: Thursday, July 22, 1999 10:30:33

Hi Dave:

I have an update on the Bridge Street work to share with you, it will certainly require direct discussion, but wanted to get you something to think about for now.

This morning Paul Pavone attempted to collect the two groundwater samples from beneath the crawl space slab as we discussed yesterday. He was not able to get the samples because the holes go dry after collecting less than 40ml, and it appeared to him that recovery would be unrealistly slow. Keep in mind that we need to collect two 40ml vials for VOA's, 1 liter for SVOC's and other misc. parameters, and 1 liter for metals. At the rate the holes recharge, collecting one sample will take many days.

Another issue of concern is the turbidity of what water he was able to collect. The high turbidity would certainly bias the sample results, likely to the point that I wouldn't accept the results as meaningful enough to base any decisions on.

At this point I have concluded that collecting a meaningful groundwater sample from beneath the slab is unrealistic.

I know that you and Rich Fedigan are anxious to get some information to the residents of the apartment building, and so am I, but I suggest that we wait until we get the analytical results from the samples that have been collected so far to help us determine if additional testing is necessary, and how the residents should be made aware of the findings. Bear in mind that we have repeatedly taken realtime air samples with a PID in the crawl space and in the apartment above it, and all results have been ND. I don't feel there is any type of exposure to the residents that requires immediate action.

Please call me on Friday to discuss this.

Tracy

New York State Department of Environmental Conservation
Division of Environmental Remediation
Bureau of Western Remedial Action, 11th Floor
625 Broadway, Albany, New York 12233-7010
Phone: (518) 402-9662 • **FAX:** (518) 402-9679
Website: www.dec.state.ny.us

Erin M. Crotty
Commissioner

November 13, 2001

Tracy L. Blazicek, CHMM
New York State Electric and Gas
Senior Environmental Specialist
Licensing and Environmental Operations
Corporate Drive, Kirkwood Industrial Park
P.O. Box 5224
Binghamton, NY 13902-5224

Dear Mr. Blazicek;

Re: Bridge Street, Plattsburgh, Former MGP Site

Thank you for your letter of November 9, 2001, detailing New York State Electric and Gas's (NYSEG's) responses to our concerns regarding the proposed scope of work for the bedrock investigation at the referenced former manufactured gas plant (MGP) site.

Based on that letter, the New York State Department of Environmental Conservation accepts the Revised Bedrock Investigation Work Plan for this site, dated November 7, 2001, and approves the proposed work plan with your letter of November 9, 2001 taking precedence where minor discrepancies between these documents exist.

As always, please feel free to contact me should you have any concerns with this letter or the project. I may be reached at the address in the letterhead, or by telephone at (518) 402-9662.

Sincerely,

P.E.

John A. Helmeset, P.E.
Environmental Engineer 2
MGP Remedial Section
Division of Environmental Remediation

cc: R. Schick
L. Rafferty, NYSDOH
P. Pavone, URS
S. Hulseapple, URS ✓

New York State Department of Environmental Conservation
Division of Environmental Remediation
Bureau of Western Remedial Action
625 Broadway, Albany, New York 12233-7017
Phone: (518) 402-9662 • **FAX:** (518) 402-9679
Website: www.dec.state.ny.us

Erin M. Crotty
Commissioner

August 29, 2002

Tracy Blazicek
New York State Electric and Gas
Corporate Drive-Kirkwood Industrial Park
P.O. BOX 5224
Binghamton, NY 13902-5224

Dear Mr. Blazicek:

Re: Bridge St., Former MGP Site, Plattsburgh (C), Clinton County,
Site ID # 5-10-016

Our office has received and reviewed Mr. Hulseapple's letter of August 8, 2002. This letter is an addendum to the proposed phase of bedrock investigation for the referenced former Manufactured Gas Plant (MGP) site, which was detailed in his previous letter of June 20, 2002.

Based on this review, we find the addendum addresses our previously noted concerns. Therefore, we are pleased to issue an approval for the proposed work. Please advise us to the details of the field work schedule, which is to begin on September 3, 2002.

As always, please feel free to contact me should you have any questions or concerns. I can be reached at the address in the letterhead, or by telephone at (518) 402-9662.

Sincerely,

John A. Helmeset, P.E.
Environmental Engineer 2
MGP Remedial Section
Division of Environmental Remediation

cc: G. Cross
S. Hulseapple, URS ✓
P. Pavone, URS
L. Rafferty, DOH

RECEIVED
SEP - 4 2002

New York State Department of Environmental Conservation
Division of Environmental Remediation
Bureau of Western Remedial Action
25 Broadway, Albany, New York 12233-7017
Phone: (518) 402-9662 • **FAX:** (518) 402-9679
Website: www.dec.state.ny.us

Erin M. Crotty
Commissioner

July 29, 2002

Tracy Blazicek
New York State Electric and Gas
Corporate Drive-Kirkwood Industrial Park
P.O. Box 5224
Binghamton, NY 13902-5224

Dear Mr. Blazicek:

Re: Bridge St, Former MGP Site, Plattsburgh (C), Clinton County,
Site ID # 5-10-016

The NYSDEC has received and reviewed Mr. John Hulseapple's, (of the URS Corporation) letter of June 20, 2002, submitted on behalf of New York State Electric and Gas (NYSEG). This letter serves as a work plan for another phase of bedrock investigation for the above referenced former Manufactured Gas Plant (MGP) site.

Based on this review, we agree with the scope and will issue an approval for the proposed work once you address the following comments enclosed with this letter. Therefore, please advise us to your acceptance and inclusion of the requested modifications within two weeks of the receipt of this letter.

As always, please feel free to contact me should you have any questions or concerns. I can be reached at the address in the letterhead, or by telephone at (518) 402-9662.

Sincerely,

P.E.

John A. Helmeset, P.E.
Environmental Engineer 2
MGP Remedial Section
Division of Environmental Remediation

cc:
[illegible] Hulseapple, URS ✓
P. Pavone, URS
L. Rafferty, DOH

RECEIVED
JUL 31 2002

Enclosure A
Additional Bedrock Investigation
Bridge Street, Plattsburgh

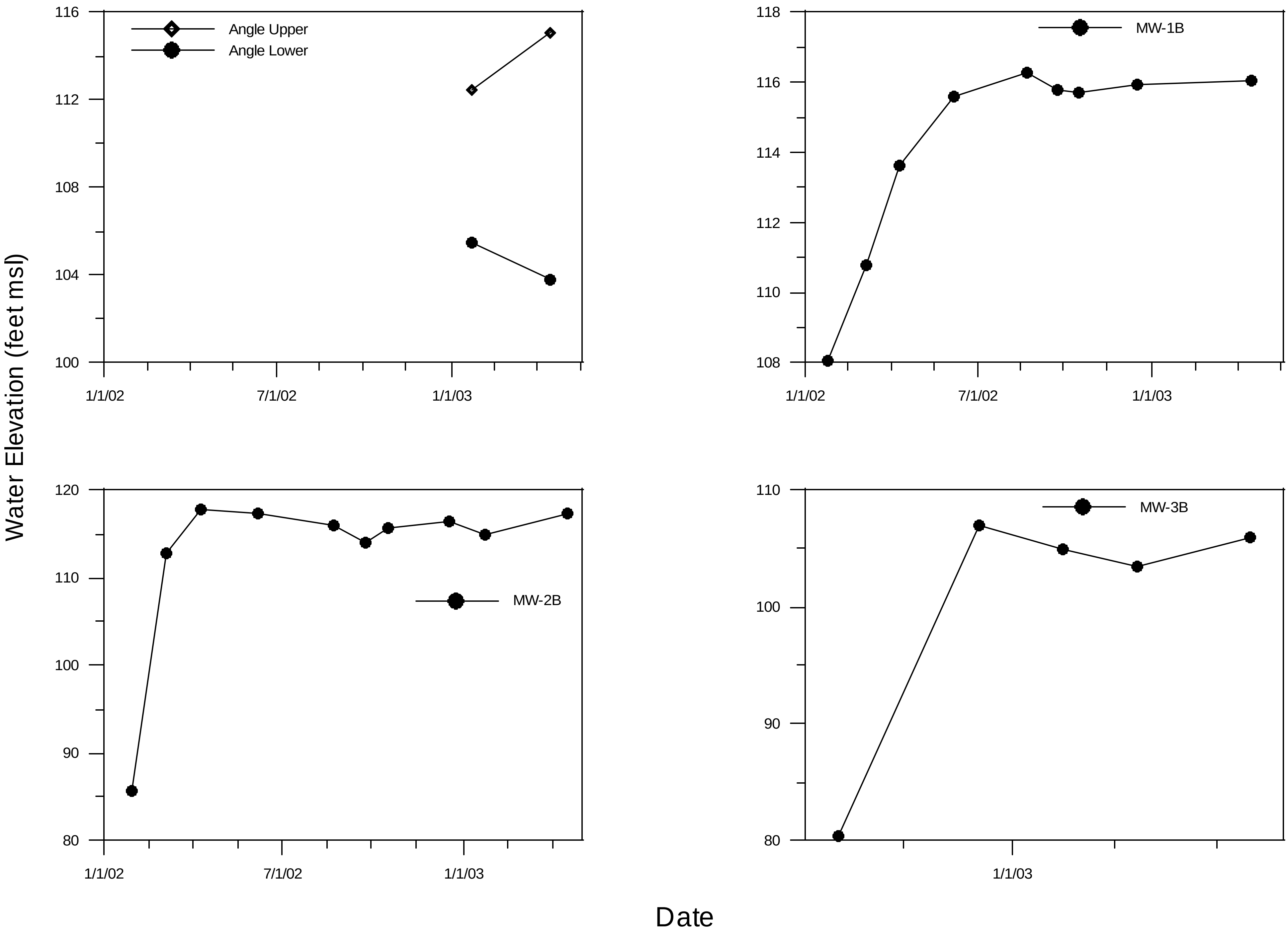
1. Please include the relevant portions of the text for the well construction procedures as detailed in the November 7, 2001 work plan. This effort is needed, as the November 7, 2001 work plan was approved as modified by a November 9, 2001 letter from Mr. T. Blazicek of NYSEG, thus creating a fairly ambiguous situation that is best corrected by including the relevant text with this document, which the field personnel will be following.

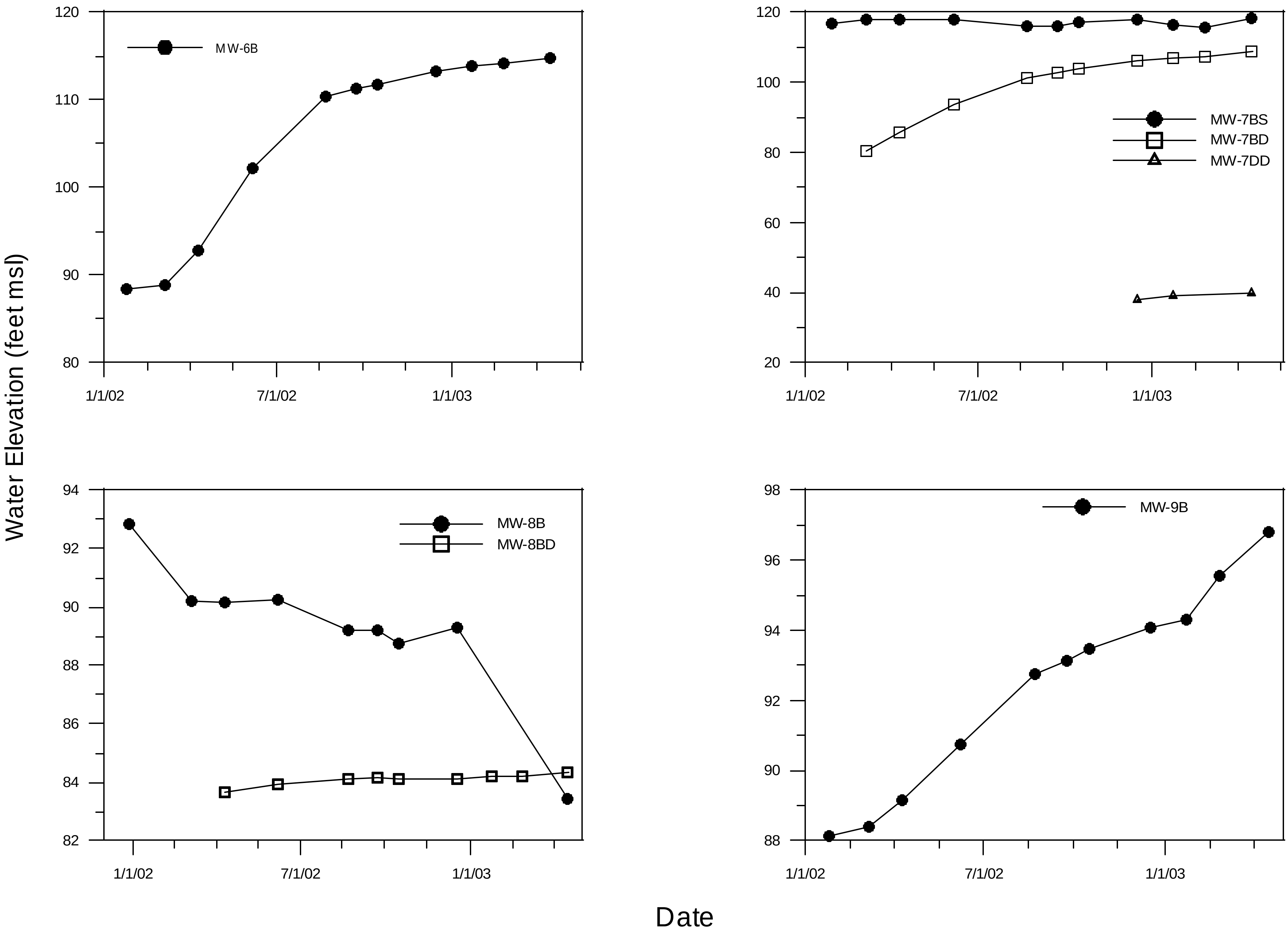
2. We are concerned that the two existing shallow wells in monitoring well 7 cluster may be grouted up by the installation of the planned deep well for this cluster, unless proper care is taken. Therefore, the work plan should highlight this concern and require that extreme care be exercised during this well installation to minimize grout pressure to avoid grout leakage into the surrounding formation. In addition, the existing shallow wells must be monitored continuously with pressure transducers during installation of the planned well, and the pH of these wells must be sampled prior to and after the installation of the deep well.

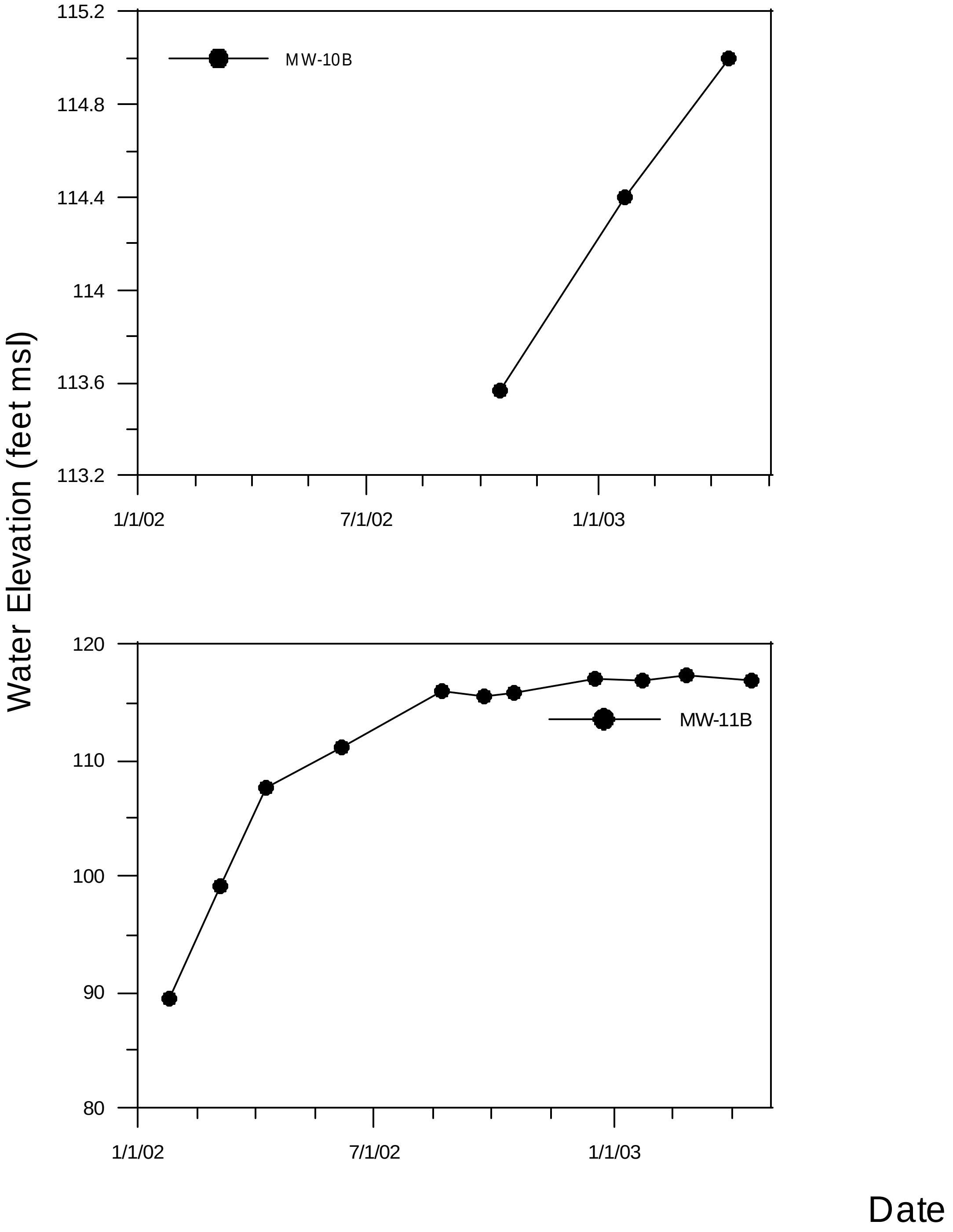
3. Please include a schedule in the work plan, that includes the submittal date for a letter report documenting the results of the planned field work. We expect that such a letter report would be submitted within 30 days of the completion of field activities.

APPENDIX G

BEDROCK MONITORING WELL HYDROGRAPHS


Water Elevation (feet msl)
Date
Angle Upper
Angle Lower
116
112
108
104
100
1/1/02
7/1/02
1/1/03
MW-1B
118
116
114
112
110
108
1/1/02
7/1/02
1/1/03
MW-2B
120
110
100
90
80
1/1/02
7/1/02
1/1/03
MW-3B
110
100
90
80
1/1/03


Water Elevation (feet msl)
Date
MW-6B
120
110
100
90
80
1/1/02
7/1/02
1/1/03
MW-7BS
MW-7BD
MW-7DD
120
100
80
60
40
20
1/1/02
7/1/02
1/1/03
MW-8B
MW-8BD
94
92
90
88
86
84
82
1/1/02
7/1/02
1/1/03
MW-9B
98
96
94
92
90
88
1/1/02
7/1/02
1/1/03


115.2
114.8
114.4
114
113.6
113.2
MW-10B
1/1/02
7/1/02
1/1/03
120
110
100
90
80
MW-11B
1/1/02
7/1/02
1/1/03
Water Elevation (feet msl)
Date

APPENDIX H

PLATTSBURGH BRIDGE STREET PRIORITIZATION REPORT
FEBRUARY 1992

PRIORITIZATION OF FORMER MANUFACTURED GAS PLANT SITE
Plattsburgh-Bridge Street Site (NYSEG Code CGPB)

PREPARED FOR

NYSEG

NEW YORK STATE ELECTRIC & GAS
Binghamton, New York

PREPARED BY

ES

ENGINEERING-SCIENCE
Liverpool, New York

FEBRUARY 1992
SY156.60

Report for the

PRIORITIZATION OF FORMER
MANUFACTURED GAS PLANT SITES
PLATTSBURGH - BRIDGE STREET SITE

PLATTSBURGH, N.Y.

Submitted To:

NEW YORK STATE ELECTRIC & GAS COMPANY
4500 VESTAL PARKWAY EAST
P.O. BOX 3607
BINGHAMTON, N.Y. 13902-3607

WILLIAM GARY CHRISTOPHER
61930

Prepared by:

ENGINEERING-SCIENCE, INC.
290 Elwood Davis Road
Suite 312
Liverpool, New York 13088

Prepared by:
David L. Chaffin

Reviewed by:
George H. Moreau

Reviewed by: Susan K. Fullerton, P.E.
Susan K. Fullerton

Reviewed by:
Charlie A. Spiers

FEBRUARY 1992

"LEGAL NOTICE"

"This report was prepared by Engineering-Science, Inc. as an account of work sponsored by New York State Electric & Gas Corporation (NYSEG). Neither NYSEG, nor any person acting on its behalf: (a) make any warranty, express or implied, with respect to the use of any information, apparatus, equipment, method, design, system, program or process disclosed in this report or that such use may not infringe privately owned rights; or (b) assumes any liability with respect to the use of, or for any damages, losses, costs, expenses or claims, resulting from or arising out of the use of any information, apparatus, equipment, method, design, system, program or process disclosed in this report."

TABLE OF CONTENTS

LIST OF FIGURES

LIST OF TABLES

FACT SHEET
PLATTSBURGH-BRIDGE STREET MGP SITE

NYSEG Contact

Main Office - James C. Hylind, NYSEG, 4500 Vestal Parkway East, P.O. Box 3607, Binghamton, N.Y. 13902-3607. Phone: (607) 729-2551.

Northeast Regional Office - Steven Svec, NYSEG, R.D. 3, Box 526A, Plattsburgh, NY 12901 (518) 563-5300.

Location

The site is located at 146 Bridge Street in the City of Plattsburgh.

Site Owner

The current site owner is Mr. David Meath.

Site Description

The site is occupied by an apartment house and an adjacent paved parking area. It is approximately 0.5 acres in size. The site is not gated or fenced and is freely accessible from Bridge Street. It is bounded by Bridge Street on the north, an apartment building on the east, residences to the south, and a fire station to the west.

Site History and Background

The former Bridge Street MGP operated from 1860 to 1896. The site was owned by Plattsburgh Gas Light Company between 1860 and 1882. After 1882, the facility was subsequently purchased and operated by M.P. Lowe between 1882 and 1888, Mr. Almon Thomas in 1888, and H.M. Pierson and George Cole between 1889 and 1890. The facility was acquired by Plattsburgh Light Heat and Power Co. in 1890 and continued operations until 1896, when the Bridge St. gas works was abandoned and replaced by a new gas and power works constructed on Saranac St.

Years of Operation

The site operated as a gas plant from 1860 to 1896.

Processes Used

The plant was first operated by the Plattsburgh Gas Light Co. using the Aubin process, producing gas from resin, and was converted to using bituminous coal and pine stumps until the plant burned in December 1865. The plant was reconstructed immediately and operated until 1871 when the plant burned again and was rebuilt for the manufacture of coal gas. In 1882, when the property was acquired by M.P. Lowe, the facility was converted to the water gas process. The process was updated to an improved carburetted water gas (CWG) system in 1888. The CWG system was used until the plant was abandoned in 1896.

Land Use History

The site has been used as commercial and residential property. In the immediate vicinity of the site, land use has remained largely residential in nature with some commercial and industrial development nearby.

Findings

Site surface soil analyses revealed the presence of polycyclic aromatic hydrocarbons (PAHs) at concentrations slightly above typical background levels.

EXECUTIVE SUMMARY

INTRODUCTION

NYSEG wishes to take a responsible approach in addressing potential threats associated with past manufactured gas plant (MGP) operations. For this reason, NYSEG has undertaken a site evaluation and prioritization program to identify and rank potential threats posed by former MGP sites. This program involved data compilation, field sampling to characterize and quantify direct exposure pathways, and inspection at the sites, followed by application of a site ranking model developed by the Electric Power Research Institute (EPRI). This computer-based ranking system provides a quantitative measure of the current risks posed by the site and a relative ranking of the need for further detailed evaluation of the site.

The scope of work was developed to meet the following objectives:

- Determine if there is any imminent threat to human health or the environment.
- Establish a relative ranking of former MGP sites.

This report presents the results for the Plattsburgh-Bridge Street MGP site (NYSEG Code CGPB) located in the City of Plattsburgh, Clinton County, New York. This 0.5 acre site is bounded by Bridge Street on the north, an apartment building on the east, residences to the south, and a fire station to the west. MGP operations occurred on-site during the period 1860 to 1896, and the site is currently occupied by an apartment building owned by Mr. David Meath.

Three composite surface soil samples were collected at measured intervals along three transects within three open areas on-site. No surface water or sediment samples were collected because the nearest surface water, Cumberland Bay, is off-site, approximately 1000 feet to the east. The work plan initially called for two indoor air quality samples to be collected; however these samples were not collected due to the absence of MGP residue odors inside the building, and photoionization detector readings did not detect the presence of volatile organic compounds. The presence of MGP residue odors would have been cause for collecting indoor air samples.

SURFACE SOIL SAMPLE RESULTS

Three composite surface soil samples were collected to determine whether contamination is present in the open areas on-site. The three composite soil samples were collected at measured intervals along three transects. Sample SS-1 was collected from the lawn area on the east side of the property, adjacent to the driveway. Sample SS-2 was obtained from the lawn area adjacent to the parking lot, on the south side of the building. Sample SS-3 was collected from the lawn area located between the building and the adjacent fire station, on the west side of the property.

One volatile organic compound (VOC) and four polycyclic aromatic hydrocarbon (PAH) compounds were detected in on-site soil samples SS-3 and SS-2, respectively. The VOC, 1,1,1-trichloroethane, is not considered to be associated with MGP residues or processes, and its presence is not attributed to the former MGP site. The PAH compounds detected in SS-2 are commonly associated with MGP residues and combustion processes. However, the concentrations detected were only slightly higher than typical background levels. Two of the PAHs are considered to be probable human carcinogens and consequently could pose a direct contact threat through ingestion or dermal exposure. However, the sample concentrations are very low, and the corresponding risk via ingestion is only quantifiable if certain amounts of soil are ingested over a long period of time. The levels at which these compounds pose a risk via dermal contact have not been established in the currently available research on human health impacts.

SSPS RANKING

The SSPS ranking scores for the Plattsburgh-Bridge Street site are as follows:

	Actual Risk	Perceived Risk	Clean-Up
Primary Scores:	19.3	29.6	8.0
Secondary Scores			
Groundwater:	0.0	0.0	
Surface Water:	0.9	6.1	
Direct Contact:	38.6	51.1	
Air:	2.4	3.2	

CONCLUSIONS

One composite surface soil sample contained relatively low concentrations of PAHs, two of which are carcinogenic. The total concentration of PAHs in SS-2 was 11.4 parts per million (ppm) and the concentration of the carcinogenic PAHs was 4.4 ppm. The presence of these PAHs cannot be conclusively attributed to the former MGP because a background sample was not collected, and a railroad yard is located close to the site. The area where Sample SS-2 was collected is vegetated, reducing the potential for dermal contact, ingestion or fugitive dust generation.

RECOMMENDATIONS

The potential surficial exposure pathways at this site are direct contact with surface soils and inhalation of dust. The surface soil sample results indicate PAHs are present at low concentrations, only slightly above typical background levels. Further sampling and analysis is not necessary, based on those results. Indoor air sampling is would be a precautionary measure since there are residents occupying the building which was apparently constructed over the location of the former holder. If there are MGP residues beneath the building associated with the former holder, and the vapors migrate out of the soil, a possible exposure pathway would be inhalation. Indoor air sampling could identify whether a health threat exists. However, air monitoring inside the building with a photoionization detector did not detect the presence of volatile organic compounds during this investigation. Although MGP residues in the subsurface could also impact groundwater quality, the lack of groundwater use downgradient of the site makes additional investigation unnecessary at this time.

REPORT ORGANIZATION

This report consists of four sections. The first section contains introductory material describing the overall program and the nature of the impacts to human health and the environment associated with residues which may be found at former MGP sites. A brief history of the site and related background information is also provided. Section 2 describes the program methodology, including the computer-based system used to identify and rank the potential human health and environmental impacts associated with the site. The results of this computer methodology form the basis for determining the priority for further site investigation. The scope of work in Section 3 provides a summary of site activities and the specific procedures used to collect the analytical data used as inputs to the site ranking computer model. Section 4 presents a summary of site results including analytical results, the results of computer prioritization, and the identification of on-site residues offering a direct exposure potential. A fact sheet which summarizes site background information, operational history and processes, and historical land use is included as a preface to this report.

PROJECT ACTIVITIES

Although not present at all sites, MGP by-products and residues remain at or near some MGP facilities in accordance with generally-accepted practices at the time. Some of these residues can represent a potential human health hazard from direct exposure. The mere presence of these materials at former MGP sites is not, however, a necessary indication that a significant human or environmental threat is present. The existence of such a potential impact will depend on the type, quantity, and nature of the material present. Also, such residues are often buried or otherwise separated from direct exposure pathways. These residues, therefore, usually do not present a direct contact hazard unless disturbed or exposed in some way, or unless they have entered groundwater or surface waters that are used locally.

The primary objectives of this MGP prioritization program are two-fold: identify concerns at the individual sites and establish priorities for further investigation. In meeting these objectives, NYSEG has concentrated on evaluating direct exposure pathways as the most reliable indicators of the potential impacts at the site and the need for further investigative response. Where direct exposure pathways are not present, remedial action may be deferred.

Site prioritization has been carried out using the results of the Electric Power Research Institute (EPRI) Site Screening and Priority-Setting System (SSPS). The SSPS is a computer-based ranking system which addresses a wide range of individual site characteristics and provides internal weighting factors to establish severity of impacts and the need for follow-on response. The SSPS generates a listing of scores for each site, providing a uniform format to determine and compare overall risks between sites.

DESCRIPTION OF PROCESSING STEPS AND WASTE TYPES FROM MGP OPERATIONS

The following description of processing steps and waste types from MGP operations is drawn primarily from "Management of Manufactured Gas Plant Sites, Volume 1, Wastes and Chemicals of Interest," Gas Research Institute (GRI-87/0260.1), October 1987.

Description of Processing Steps

The MGP industry involved diverse operations and gas production feedstocks. All systems used the same fundamental sequence of operations including:

- Gas Production and Heat Recovery
- Tar-Oil-Water Separation
- Gas Clean-up
- Wastewater Treatment
- Tar-Hydrocarbon Processing

Using these basic processing steps, one of three general gas production processes were used depending on the primary gas production feedstock used. These processes included:

- Coal carbonization,
- Water gas or carburetted water gas (CWG), and
- Oil gasification

A generic process diagram for each of the primary production processes, utilizing the five basic steps previously described, is shown in Figure 1.1. Each of these steps is described below.

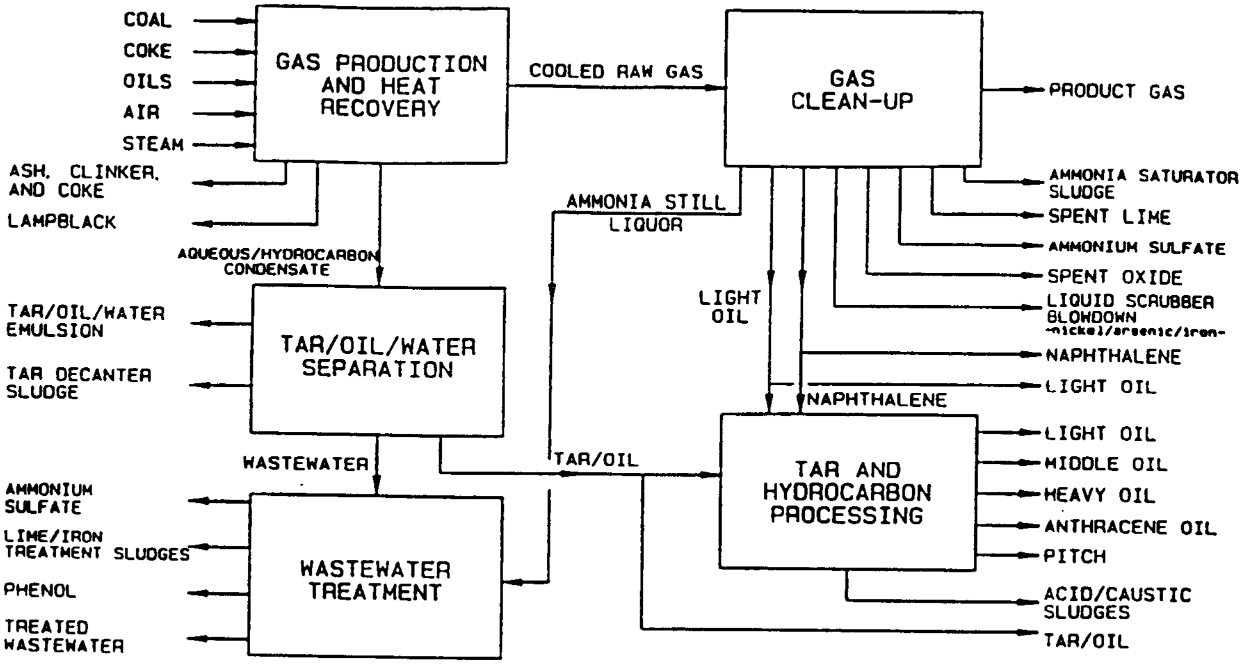
Gas Production and Heat Recovery - The three gas production processes used volatilization to produce gas. Processes differed in the nature of the raw material used for gas production, the nature of the heating process, and the nature of the spent by-products.

In the coal carbonization process, only coal was used in gas production. Solid end products from coal carbonization, depending on the extent of gas production, could consist of coal, coke, or ash. Coal ash may have been high in metals including iron, copper, lead, zinc, and others. In the CWG process, the coal or coke used to produce gas was reduced to ash, and petroleum products (which were subsequently "cracked") and steam were added to increase the heat yield of the gas. Various petroleum products, without coal or coke, were used in the oil gasification process.

After being produced, the gas was passed through heat recovery cooling and condensation for the removal of condensible impurities. By-products of the quench process included solid residue carry-over from the gas production, condensed

FIGURE 1.1

GENERIC PROCESS AND ENVIRONMENTAL FLOWSHEET: MANUFACTURED GAS PRODUCTION



SOURCE:
MANAGEMENT OF MANUFACTURED GAS PLANT SITES.-
VOLUME 1, WASTES AND CHEMICALS OF INTEREST,
GAS RESEARCH INSTITUTE OCTOBER, 1987

hydrocarbons, and quench water. Substantial quantities of ammonia were also known to be present in the aqueous condensate from the raw MGP gas.

Tar-Oil-Water Separation - The hydrocarbons and quench water, water evolved from the gas production material and carry over solids, often formed emulsions after condensation. These emulsions were not common to coal carbonization systems, but were fairly common in CWG and oil gasification systems. These emulsions were primarily associated with petroleum stocks used either as feedstock to the oil gas process or as a carburetion oil in the CWG process. In coal gas systems, tar separation/decantation often evolved hydrocarbons which settled as a heavy, semi-solid sludge in the bottom of the separator.

The nature of the recovered hydrocarbons varied with the feedstock used. Coal tar was the primary hydrocarbon by-product from the coal carbonization process and contained a wide diversity of compounds, many with very high molecular weight. Primary components of coal tar consisted of light oils (benzene, naphtha, etc.), middle oils (tar oils, phenols, tar bases, naphthalenes), heavy oils (methyl napththales), anthracene oil, and pitch. Tars from the other processes also contained high concentrations of many of the same compounds.

Wastewater Treatment - Wastewater treatment was employed to remove organic and inorganic contaminants from process and quench waters. Treatment was usually limited to the aqueous stream from the tar-oil-water separator. For coal carbonization processes, ammonia liquor from gas clean-up operations was often included with separator water prior to treatment.

Wastewater treatment was often rudimentary and consisted primarily of precipitation reactions (with lime or ferric sulfate) to remove organic and inorganic solids. For ammonia (i.e., coal carbonization streams) waters, organic extraction was sometimes practiced for phenol recovery. Treated wastewater was generally discharged to local sewers or to surface waters; solid residues, containing high concentrations of metals and organics, may have remained on-site, following generally accepted practices of the time.

Gas Clean-Up - Gas clean-up operations were sometimes employed depending on the number of contaminants and the intended use of the product gas. Clean-up was often required for coal carbonization gasses because both organic and inorganic impurities had to be removed to ensure proper combustion.

Coal carbonization, CWG, and oil gasification products were treated for removal of light oil and naphthalene by scrubbing with a hydrocarbon wash oil.

Inorganics were normally stripped from the product gas using lime, ferric oxide and/or wood chips. These "purifier box" steps removed sulfur from the gas but also concentrated the cyanide present in the coal carbonization product gas. Other metals were also likely to be present on these spent adsorbents.

Aqueous-based processes were also used for gas clean-up, chiefly for removal of sulfur. High ammonia liquors from the tar-oil-water separator, subsequently discharged to wastewater treatment, were often used for sulfur removal. Other sulfur removal liquors were also used and periodically discharged as their removal capacity became exhausted. Metal catalysts were often used in these liquors and included arsenic, nickel, and iron.

Characteristics of By-Products from MGP Operations

Table 1.1 provides a summary of the residual materials which may have been generated at the former MGP sites. A wide range of characteristics and concentrations is possible at various sites within each of these product matrices. Differences arise due to the raw feedstock used and the variant treatment and gas production processes employed. Specific and detailed information in the types of by-products which may be present at any one site is difficult to determine.

ES has developed some general guidelines on the chemical characteristics of the residues expected at MGP sites. In general, five major classes of chemicals may be present as shown in Table 1.2. The actual chemical make-up of each of the residues depends on the process and raw feedstock used.

Of the major chemical classes and individual compounds identified, several are significant in terms of quantities generated and concentrations present. Polycyclic aromatic hydrocarbons (PAHs), a common component of the major organic residuals from all combustion operations, are typically expected to be most widely present. This is because high concentrations were present in the residues, and PAHs do not freely migrate and tend to biodegrade slower than many other organic compounds.

High concentrations of volatiles are less frequently encountered because they have higher rates of biodegradation, mobility, and volatilization. All of these factors tend to decrease concentrations, especially over the long period since MGP operations at the site ceased. Phenolic compounds also tend to be more biologically degradable and mobile than the PAHs. The presence of phenolic compounds is an indicator of residuals from coal carbonization. Significant quantities of phenol were not generated in the CWG or oil gas processes.

The inorganic materials present have a number of sources including the feedstock, purifier residues and other residues from gas clean-up. The presence of these materials is indicative of the coal carbonization process. Although all the metallic compounds listed in Table 1.2 may be present, those most likely to be present in large quantities include aluminum, iron, nickel, chromium, copper, and lead. Sulfur and cyanide may also be present if purifier residues remain on-site.

PLATTSBURGH SITE HISTORY AND BACKGROUND

The site of the former manufactured gas plant at 146 Bridge Street is located near the outlet of the Saranac River into the Cumberland Bay of Lake Champlain in the City of Plattsburgh, NY. The site is known to have been an active MGP beginning in 1860, and was owned and operated by the Plattsburgh Gas Light Company. The earliest records obtained indicate that the facility was erected in a commercial/industrial area that included a Delaware and Hudson Chateauguay Co. railroad yard, the Plattsburgh Dock Company works, a lumber yard and planing mill, and the Paul Smiths Fouquet Hotel. The facility consisted of one main building with a gas holder and a coal shed (Figure 1.2). The MGP was operated by

TABLE 1.1

COMMON RESIDUAL MATERIALS AT FORMER MGP SITES[1]

Free tars, oils, and lampblack (from oil gasification)

Organic residues and metals in soils, surface water, sediments and/or groundwater

Metals in purifier residues

Mixed residuals and fill

Wood chips from purifier boxes

---

(1) From "Management of Manufactured Gas Plant Sites, Volume 1, Wastes and Chemicals of Interest, Gas Research Institute, October 1987".

TABLE 1.2

CHEMICAL COMPONENTS OF MGP RESIDUES(1)

Inorganics	Metals	Volatile Aromatics	Phenolics	Polycyclic Aromatic Hydrocarbons
Ammonia	Aluminum	Benzene	Phenol	Acenaphthene
Cyanide	Antimony	Ethyl Benzene	2-Methylphenol	Acenaphthylene
Nitrate	Arsenic	Toluene	4-Methylphenol	Anthracene
Sulfate	Barium	Total Xylenes	2,4-Dimethylphenol	Benzo(a)anthracene
Sulfide	Cadmium			Benzo(a)pyrene
Thiocyanates	Chromium			Benzo(b)fluoranthene
	Copper			Benzo(g,h,i)perylene
	Iron			Benzo(k)fluoranthene
	Lead			Indeno(1,2,3-cd)pyrene
	Manganese			Chrysene
	Mercury			Dibenz(a,h)anthracene
	Nickel			Dibenzofuran
	Selenium			Fluoranthene
	Silver			Fluorene
	Vanadium			Naphthalene
	Zinc			Phenanthrene
				Pyrene
				2-Methylnaphthalene

(1) Management of Manufactured Gas Plant Sites, Volume I, Wastes and Chemicals of Interest, Gas Research Institute, October 1987.

the Plattsburgh Gas Light Co. and was acquired by M.P. Lowe in 1882. In 1888, the property ownership was transferred to Mr. Almon Thomas who sold the property in 1889 to Mr. H.M. Pierson and Mr. George Cole. The plant was again sold in January, 1890 to the Plattsburgh Light, Heat and Power Company which had been organized in December of 1889. The plant remained in operation until the construction of a new power and gas works on Saranac St. in 1896. Review of historical information indicates that there was no expansion or construction of other buildings on-site for the duration of MGP operations.

Property maps indicate that the building was used as an automobile dealership and service center from 1918 to at least 1949. The building has since been converted to, and is presently used as, an apartment building containing three apartments (Figure 1.3). The date of that conversion is not known. Deed search information does not provide evidence of land use for the property, and the ownership was transferred numerous times between the period 1875 and 1985, when it was purchased by the present owner.

Years of Operation

Gas production is documented as occurring continuously from 1860 until relocation of the gas works to the Saranac St. location in 1896. The building stood vacant and was used for storage from the end of its operational period in 1896 until 1918.

There is no information available which describes the gas holder construction or its demolition. It is not known whether the subsurface portion of the holder is still intact, although the Sanborn maps for the site apparently show an extension of the building over the former holder location in 1927 (Appendix C).

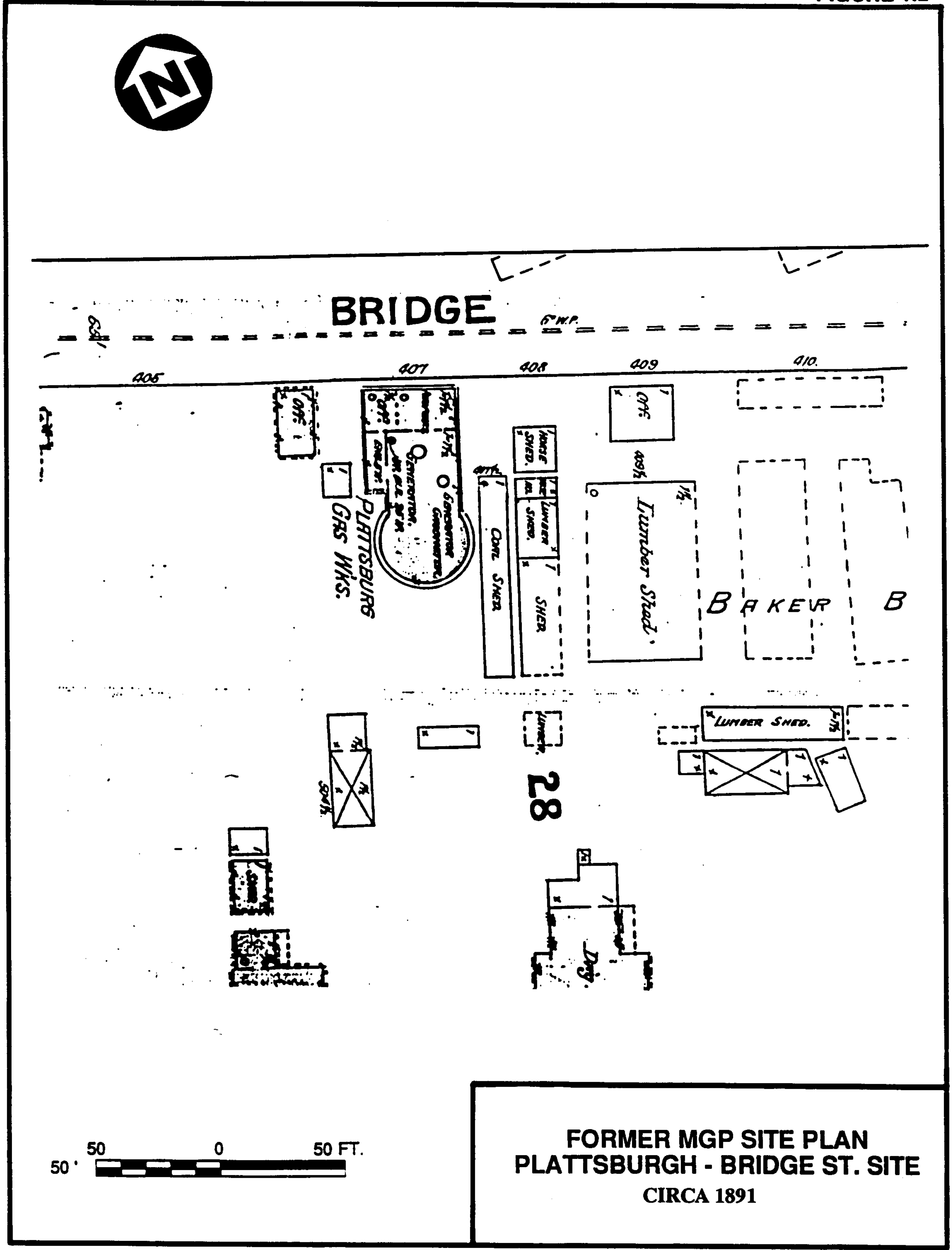
Processes Used

The plant was first operated by the Plattsburgh Gas Light Co. using the Aubin process, producing gas from resin, and was converted to using bituminous coal and pine stumps until the plant burned in December 1865. The plant was reconstructed immediately and operated until 1871, when the plant burned again and was rebuilt for coal gas manufacturing. In 1882, the property was acquired by M.P. Lowe who converted the facility to the water gas process, which was subsequently updated to an improved carburetted water gas (CWG) system in 1888. The plant was acquired by Plattsburgh Light Heat and Power Co. in January 1890, who continued CWG operations until the plant was abandoned in 1896.

Land Use History

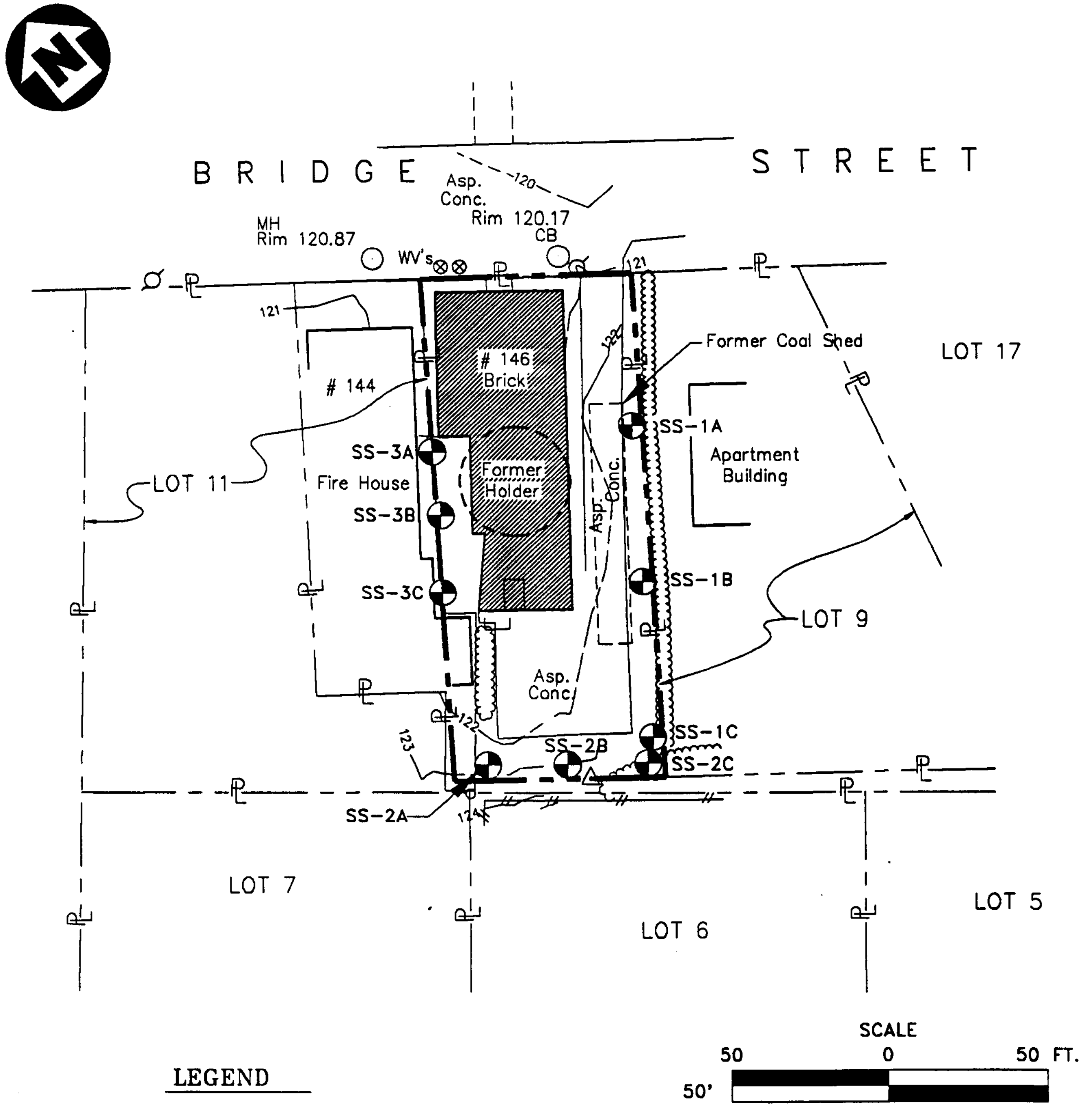
Existing mapping information gives no indication of any substantial changes in the uses of the area surrounding the plant property. The land use in the immediate vicinity of the site has remained largely residential, with some commercial and industrial development during the period of plant operations, and since its abandonment.

FIGURE 1.2



FORMER MGP SITE PLAN
PLATTSBURGH - BRIDGE ST. SITE
CIRCA 1891

FIGURE 1.3



LEGEND

◐ SS	COMPOSITE SOIL SAMPLE LOCATIONS (I.E. SAMPLES SS-1A, SS-1B, SS-1C WERE COMPOSITED TO FORM SAMPLE SS-1)
--411--	ONE FOOT CONTOUR INTERVAL
Ø UP	UTILITY POLE
⊗ WV	WATER VALVE
○ MH	MANHOLE
○ CB	CATCH BASIN
— PL —	CURRENT PROPERTY LINE (1991)
━ PL ━	ORIGINAL PROPERTY LINE OF LOT 10

SITE PLAN

NYSEG
Plattsburgh-Bridge Street

000850|D:\SY156\SY156003.DWG

REVISED DATE: 8/14/91

ES ENGINEERING-SCIENCE

ENVIRONMENTAL SETTING

The Plattsburgh-Bridge Street MGP site is located at 146 Bridge Street in the City of Plattsburgh, Clinton County, New York. This 0.5 acre site is bounded by Bridge Street to the north, an apartment building to the east, residences to the south and a fire station to the west. The former MGP structure is currently a three-unit apartment building owned by a private citizen, Mr. David Meath. The apartment building does not have a basement, based on an on-site inspection.

Most of the site is covered by asphalt pavement and the apartment building. Three small areas of open ground are present on-site and the surface soils in these areas have been sampled, as described in Section 3 (Figure 1.3). The open area between the apartment building and the fire station is used as a play area by children.

The topography of the site and surrounding area is generally flat. The nearest surface water body is Cumberland Bay, located about 1000 feet east of the site. The surface water use is recreational in the near-site vicinity. There is no site-specific data on the depth to groundwater, but based on the elevation of Cumberland Bay, the depth to groundwater on-site is probably less than 30 feet. The site is served by the City of Plattsburgh water system, which has surface water reservoirs as its source. These reservoirs are located seven miles upstream of the site. Although groundwater is used as a drinking water source outside the City of Plattsburgh, there are no identified drinking water wells downgradient of the site. The nearest sensitive environment is a freshwater wetland located approximately 1.25 miles north of the site.

SECTION 2

METHODOLOGY

This section describes the Site Screening and Priority-Setting (SSPS) system used during this MGP prioritization project. The description is taken from a draft report which describes the SSPS and provides a case-study application (Setting Priorities Among Contaminated Sites, Draft Report, May 1989, Decision Focus, Inc., Los Atlos, California).

The SSPS is a screening tool that allows utilities to assign risk-based priorities among their sites. User-supplied information determines scores for various site attributes. These values are combined to form final scores that an environmental manager can use to compare sites. The SSPS is a menu-driven program designed for IBM-compatible PCs.

To help utilities organize and plan actions at former and existing MGPs, EPRI developed the SSPS as a priority-setting tool to facilitate a first-level screening of sites. The goal of the screening is to divide the sites into two groups:

- sites where the risks are highest
- sites where the risks are lower and actions can be deferred

Priority-setting is a first step in the overall risk management process. On the basis of this first screening, attention and resources can be directed to high-priority sites. During a first screening, no attempt is made to determine what the ultimate level of remedial action should be; rather, sites are identified which require a more complete investigation and risk analysis.

The structure and assumptions incorporated in the SSPS are similar to those of the U. S. Environmental Protection Agency's (USEPA's) Hazard Ranking System (HRS), the system used by the USEPA to determine which waste sites to list on the Superfund National Priorities List. However, the SSPS has been modified to include more of the information that is typically available when a utility is beginning to set priorities among its sites, and the SSPS follows risk analysis principles more closely.

Similar to the HRS, the SSPS develops subscores for each of four exposure pathways: surface water, groundwater, air, and direct contact. The subscores account for various site characteristics such as site size and current land use, waste containment, nearby surface water and groundwater use, soil and hydrological factors, net precipitation, wind speed, waste characteristics, and the population which could potentially be exposed.

From the subscores, the SSPS creates three different scores: actual risk, perceived risk, and cleanup effort. Each of these scores represents a different set of concerns that may be important in setting priorities. The actual risk score corresponds to the health risk posed by the site to the surrounding community. The perceived score is a measure of the level of public concern that the site is likely to generate and the potential economic and legal impacts resulting from that concern. This score is similar to the actual risk score, but strongly emphasizes those site and community characteristics that will be of most concern to the public. The cleanup effort score represents the anticipated cost of remediating the site. This latter score has little value beyond very rough cost estimation because the nature and extent of contamination at the site has yet to be fully characterized.

For this MGP prioritization project, a revised and unpublished version of the SSPS was used. Major changes in the revised version include additional data inputs and a revised format for calculating waste quantities. The scoring is being provided to NYSEG on disk and a summary of the data inputs and scoring rationale is provided in Appendix F of this report. Appendix F identifies the site-specific data used in the scoring and the default values used when site-specific data were not available.

In general terms, the SSPS should be interpreted as providing priority rankings of groups of sites, as opposed to rankings based on absolute scores. Since this is a first level screening, groups of sites are identified as having low, moderate, and high risks relative to one another. Evaluation of the individual pathway scores can be used to distinguish differences in sites having essentially the same risk score and to determine at which sites remediation can be most effectively or cost-efficiently implemented.

The SSPS ranking scores for the Plattsburgh-Bridge Street site are as follows:

	Actual Risk	Perceived Risk	Clean-Up
Primary Scores:	19.3	29.6	8.0
Secondary Scores			
Groundwater:	0.0	0.0	
Surface Water:	0.9	6.1	
Direct Contact:	38.6	51.1	
Air:	2.4	3.2	

These scores are preliminary because many assumptions were made and default values were used (see Section 4).

SECTION 3

SCOPE OF WORK

INTRODUCTION

The scope of work at the Plattsburgh-Bridge Street site consisted of five parts:

Part 1 - Literature and Records Search
Part 2 - On-Site Evaluation
Part 3 - Site Survey and Mapping
Part 4- Sampling and Analysis
Part 5- Report Preparation

In addition to these parts, a program preparation part was performed which included preparing a site-specific Health and Safety Plan (HASP) (presented in Appendix A), and a project-specific Quality Assurance Project Plan (QAPP) (presented in Appendix B). The basis for the scope of work at each site is described in the Work Plan presented in Appendix C.

The objectives and descriptions of the activities for Parts 1 through 5 are described in this section.

PART 1-LITERATURE AND RECORDS SEARCH

There were two objectives for this part: to develop a history of ownership and land use for the former MGP site property and to generate site characterization data for the SSPS scoring.

Most of the site information was made available by NYSEG either by direct delivery of documents to ES or by review of NYSEG's central files in Binghamton, N.Y. The subcontract surveyor, Modi Associates, reviewed the local deed information to determine property lines of the site during the period of MGP operations. A brief history of the Plattsburgh MGP site was presented in Section 1.

Additional research was performed by ES to develop the data base for the SSPS scoring. A summary of the types of information developed for the SSPS data base is presented on Table 3.1.

PART 2 - ON-SITE EVALUATION

The Plattsburgh-Bridge Street site is located at 146 Bridge Street in the City of Plattsburgh, Clinton County, New York. Access to the site is possible along Bridge Street. The site is presently owned by Mr. David Meath who operates an apartment building which is the former gas plant building. The former gas plant produced gas

TABLE 3.1

SSPS DATA BASE

REQUIRED INFORMATION AND SOURCES

Type of Information	Source
Local Geologic Information	USGS Reports NYSGS Reports NYS Museum and Science Services Bulletins Soil Surveys Groundwater Resources Reports
Groundwater Use	County Health Departments New York State Health Department Atlas of Community Water System Sources Groundwater Resources Reports
Soil Type, Characteristics	Soil Surveys
Aquifers	NYSDEC Publications USGS Publications Groundwater Resources Reports
Land Use	Local/County Records U.S. Department of the Interior (Historic Places, National Parks)
Surface Water Use	NYSDEC (6NYCRR)
Population	Census Data
Wetlands	NYSDEC Wetlands Maps
Precipitation	Climatic Atlas of the U.S.
Endangered Species	NYSDEC Wildlife Resources Center
Toxicity/Persistence Data	USEPA; Sax, 1984

from the processing of resin, coal, and oil during the period of 1860 to 1896. Former waste disposal practices are not known; historical maps do not indicate the presence of tar wells, or other disposal structures. The site is bounded by Bridge Street on the north, an apartment building on the east, residences to the south and a fire station to the west as shown in Figure 3.1. The Plattsburgh-Bridge Street site covers approximately 0.5 acres and is occupied by an apartment house and an adjacent paved parking area.

The initial site visit for this investigation was made on October 18, 1990 by Mr. William Lilley (ES) and Mr. James Hylind (NYSEG) after consultation with the local NYSEG contact, Mr. Steven Svec. NYSEG arranged access with the property owner prior to any on-site activities. The on-site inspection was limited to an examination of the apartment house and identification of surface soil sample locations.

PART 3 - SITE SURVEY AND MAPPING

Modi Associates, a licensed land surveyor, performed a property survey identifying property boundaries, sampling locations, and existing structures. A topographic base map with a scale of one inch to fifty feet and one-foot topographic contour intervals, drawn to NYSEG CADD/sketch standards (including those originally specified in the project proposal and those later identified by NYSEG on December 19, 1990), was prepared. The base map and surveyor field notes are presented in Appendix D. The base map presents a current site plan depicting the structures, sample locations, and pertinent off-site features such as nearby residences, streets and known utilities.

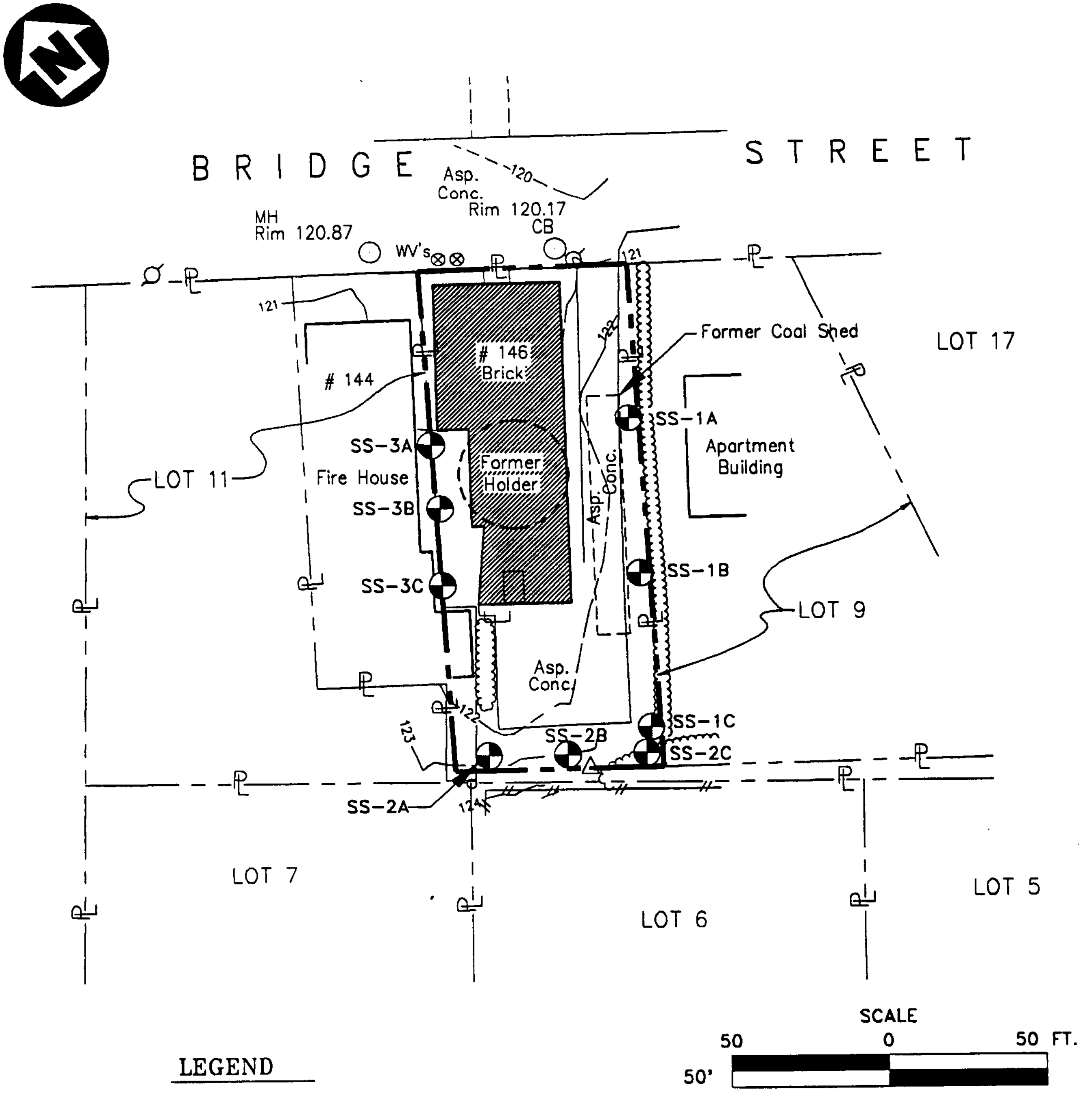
During the site survey, an on-site reference point was established to allow identification of the exact locations from which samples were collected. This was done to allow revisions and additions to the base map to be made should additional investigations be conducted at the site in the future. A USGS datum was used for vertical elevations.

PART 4 - SAMPLING AND ANALYSIS

The objective of Part 4 was to obtain representative samples and perform analyses to determine the potential for (on-site) direct exposure to hazardous contaminants at the site. The only media sampled were those which provided on-site direct exposure pathways. The only potential on-site direct exposure pathways at the Plattsburgh-Bridge Street site are surface soil and air.

Three composite samples were collected to characterize the surface soils at the site (Tables 3.2 and 3.3). The sample locations are shown on Figure 3.1. The sampling methodology, equipment decontamination procedures, and analytical protocols for Part 4 are described in detail in the project QAPP. Dedicated sampling apparatus was used for each site and no sample equipment decontamination occurred on the site. The analytical methods utilized are presented on Table 3.2.

FIGURE 3.1



LEGEND

⊕SS	COMPOSITE SOIL SAMPLE LOCATIONS (I.E. SAMPLES SS-1A, SS-1B, SS-1C WERE COMPOSITED TO FORM SAMPLE SS-1)
-411-	ONE FOOT CONTOUR INTERVAL
ØUP	UTILITY POLE
⊗WV	WATER VALVE
○MH	MANHOLE
○CB	CATCH BASIN
—PL—	CURRENT PROPERTY LINE (1991)
━PL━	ORIGINAL PROPERTY LINE OF LOT 10

SITE PLAN

NYSEG
Plattsburgh-Bridge Street

000850|D:\SY156\SY156003.DWG REVISED DATE: 8/14/91 ES ENGINEERING-SCIENCE

TABLE 3.2

SUMMARY OF ANALYTICAL METHODS

Soil Matrix	
Volatile Organics	EPA Method 8240
Semivolatile Organics	EPA Method 8270
Metals:	
Lead	EPA Method 7421
Chromium	EPA Method 7191
Iron, zinc, aluminum, cadmium, antimony, copper, cobalt, manganese, and nickel	EPA Method 6010
Cyanide (Total and Amenable*)	EPA Method 9010

* Amendable cyanide analyzed only if total cyanide was detected.

TABLE 3.3

SUMMARY OF SAMPLES COLLECTED

Composite Surface Soil Samples	Trip Blank	Field Duplicate		Wash Blank	Matrix Spike/ Matrix Spike Duplicates	
		Water	Soil		Water	Soil
3	0	0	1	0	0	2

Two indoor air quality samples originally included in the work plan were not collected from the apartment building since the criteria described in Section 1 of the Work Plan (Appendix C) were not met, notably no MGP residue odors were found in the building. Also, the photoionization detector readings did not indicate that volatile organic compounds were present.

The three composite surface soil samples were collected at measured intervals along transects within three areas. Sample SS-1 was collected from the lawn area on the east side of the property, adjacent to the driveway. Sample SS-2 was obtained from the lawn area adjacent to the parking lot on the south side of the building; Sample SS-3 was collected from the lawn area located between the building and the adjacent fire station. The surface samples were collected from the upper six inches of soil.

Air Monitoring

A Photovac photoionization detector (PID) was used to monitor for volatile organic compounds present in the air. This monitoring was performed as a health and safety measure during on-site field work and to support the decision whether to sample indoor air. Air in the breathing zone (four to five feet above the ground) was monitored during sampling activities as a preliminary means of determining the presence of volatile organic compounds (VOCs).

The PID was calibrated daily to a standard of 100 ppm isobutylene. The PID is equipped with a 10.6 ev lamp, suitable for detecting most volatile organic compounds commonly found at MGP sites such as toluene, xylene, ethylbenzene, and benzene. Because the PID is not calibrated to all of these specific compounds, it provides readings of total ionizables present (i.e volatile organic compounds with a ionization potential at or below 10.6 ev) relative to the isobutylene standard. The readings that the PID provides are best used for background-downgradient comparisons.

No PID readings above background were noted during the on-site monitoring.

Quality Assurance/Quality Control

All sampling procedures were in accordance with the Quality Assurance Project Plan. In addition to the media sampled, several types of quality control samples were collected to document the precision and accuracy of the sampling and analytical methods. These consisted of matrix spike and matrix spike duplicate samples. Matrix spike (MS) and matrix spike duplicate (MSD) samples of surface soil were collected at location SS-2. The MS and MSD samples were analyzed for the same parameters as the other samples to allow the laboratory to identify analytical interferences caused by the sample matrix (i.e., sediment or surface water). The laboratory interprets the MS/MSD results and qualifies the sample results accordingly by assigning "flags" to the data. In addition, a field duplicate surface soil sample was collected at SS-1 and assigned the designation SS-1 Dup. The duplicate sample was analyzed for the same parameters as the other surface soil samples to measure the representativeness of the sampling methods.

Prior to performing on-site sampling, all sampling equipment was precleaned by successive rinses with detergent (Alconox), distilled water, methanol, and distilled water. No on-site decontamination occurred.

The semivolatile analyses were conducted at a five-fold dilution. This dilution was necessary because the sample extracts were discolored, indicating the presence of resinous organic matter which could interfere with the analysis.

PART 5 - REPORT PREPARATION

This report summarizes the work conducted, presents results, including any discovery of an imminent threat to human health or the environment, and presents the SSPS input data and scores.

SECTION 4

DATA ASSESSMENT

INTRODUCTION

This section presents the results and interpretations of the analytical data for three composite surface soil samples collected at the Plattsburgh-Bridge Street site (Figure 4.1). All samples were analyzed for organic and inorganic constituents associated with former MPG sites, such as volatile and semivolatile organic compounds, eleven metals and cyanide. The analytical results are summarized on Table 4.1. A complete listing of results is presented in Appendix E.

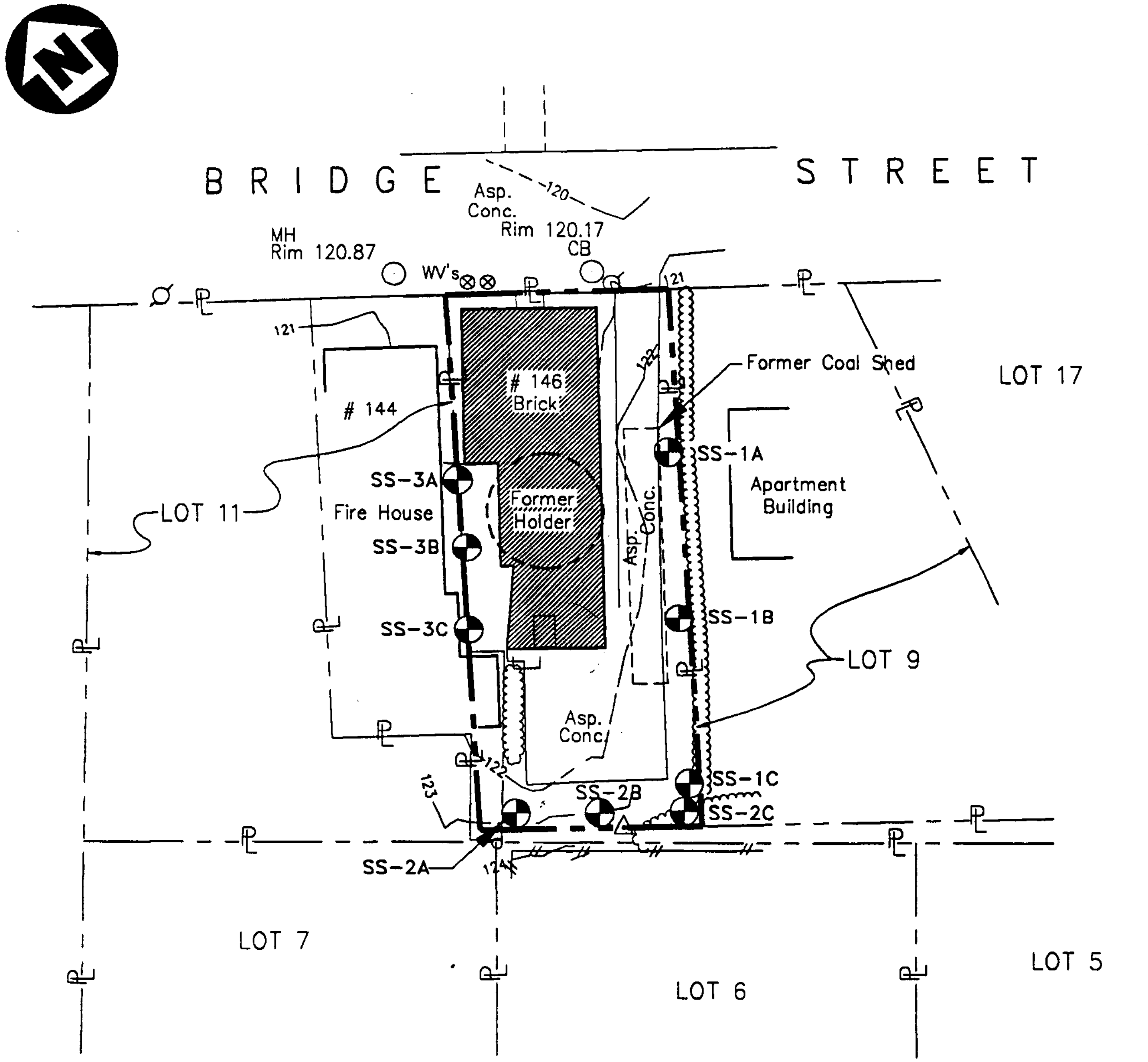
SURFACE SOIL RESULTS

Three composite surface soil samples were collected from lawn areas on the site; each composite sample consisted of soils collected from three discrete locations (i.e. SS-1 was collected from SS-1A, SS-1B and SS-1C as shown on Figure 4.1). Sample SS-1 was collected from the soils adjacent to the property driveway, on the east border of the site. SS-1 Dup was also collected as a duplicate sample for quality control analysis. Sample SS-2 was collected from the lawn area behind the present parking lot on the south side of the site. Matrix spike and matrix spike duplicate samples were obtained from the SS-2 location. Sample SS-3 was collected in the small area of lawn and exposed soils located between the 146 Bridge St. building and adjacent fire station, located to the west of the property.

One volatile organic compound (VOC) was identified in one of the three samples; sample SS-3 contained 1,1,1-trichloroethane at a concentration of .012 parts per million (ppm). This compound is not one of the volatile compounds typically associated with MGP residues and its presence is not attributed to the former MGP site.

Four polycyclic aromatic hydrocarbons (PAHs) were detected in sample SS-2. The PAHs detected in the SS-2 sample were flouranthene, pyrene, benzo(a)anthracene, and benzo(b)fluoranthene. Benzo(a)anthracene and benzo(b)fluoranthene have been identified as carcinogenic. The total concentration of PAHs in SS-2 was 11.4 ppm and the total concentration of carcinogenic PAHs was 4.4 ppm. Because of the historical and present land use in the site vicinity (i.e railroad yards), the potential exists for PAHs to be present due to sources other than the former MGP. For instance, the SS-2 sample location is near the present parking lot and vehicle exhaust could contribute PAHs. Also, the surface soils may contain fill material which does not originate from this site. The total concentration of PAHs detected in SS-2 is only slightly above the typical background level of PAHs (Edwards, 1983; Journal of Environmental Quality, Vol. 12, No. 4, Pgs 427-441).

FIGURE 4.1



SCALE
50 0 50 FT.
50'

LEGEND

⊕ SS	COMPOSITE SOIL SAMPLE LOCATIONS (I.E. SAMPLES SS-1A, SS-1B, SS-1C WERE COMPOSITED TO FORM SAMPLE SS-1)
-411-	ONE FOOT CONTOUR INTERVAL
Ø UP	UTILITY POLE
⊗ WV	WATER VALVE
○ MH	MANHOLE
○ CB	CATCH BASIN
— PL —	CURRENT PROPERTY LINE (1991)
━ PL ━	ORIGINAL PROPERTY LINE OF LOT 10

SITE PLAN

NYSEG
Plattsburgh–Bridge Street

000850|D:\SY156\SY156003.DWG

REVISED DATE: 8/14/91

ES ENGINEERING-SCIENCE

Table 4.1
New York State Electric & Gas
Plattsburgh – Bridge Street
Soil Samples (ppm)
Analytical Results

Parameter	Natural Occur. Ranges (1)	SS–1	SS–1 Duplicate	SS–2	SS–3
Volatile Organics					
1,1,1–Trichloroethane		N.D.	N.D.	N.D.	0.012
Semivolatile Organics					
Fluoranthene		N.D.	N.D.	2.9	N.D.
Pyrene		N.D.	N.D.	4.1	N.D.
Benzo(a)anthracene		N.D.	N.D.	1.9	N.D.
Benzo(b)flouranthene		N.D.	N.D.	2.5	N.D.
Total PAHs		N.D.	N.D.	11.4	N.D.
Metals					
Aluminum	700–>100,000	12000	7100	5100	7000
Antimony		N.D.	N.D.	N.D.	N.D.
Cadmium		N.D.	N.D.	N.D.	N.D.
Chromium	1–2,000	17	10	7.4	11
Cobalt		N.D.	N.D.	N.D.	N.D.
Copper	1–700	9.4	7.0	6.1	7.7
Iron	100–>100,000	14000	8800	7100	10000
Lead	<10–700	10	9.8	18	61
Manganese	50–50,000	130	76	67	140
Nickel	<5–7,000	9.7	N.D.	N.D.	N.D.
Zinc	<5–3,500	39	28	33	49
Cyanide:					
Total		N.D.	N.D.	N.D.	N.D.
Amenable		N.A.	N.A.	N.A.	N.A.

FOOTNOTES:

(1) Ranges for New York State soils from U.S.G.S. Professional Paper 1270, 1984.

N.D. Not Detected.

N.A. Not Analyzed.

EJS/SY156.60.03/0001

Eight metals, aluminum, chromium, copper, iron, lead, manganese, nickel, and zinc, were detected in the surface soil samples. Comparison with the naturally-occurring ranges in New York State soils (provided in Table 4.3) shows that all sample results are within the referenced ranges. Cyanide was not detected in any of the surface soil samples.

SSPS RANKING SCORES

The SSPS ranking scores for the Plattsburgh-Bridge Street site are as follows:

	Actual Risk	Perceived Risk	Clean-Up
Primary Scores	19.3	29.6	8.0
Secondary Scores			
Groundwater	0.0	0.0	
Surface Water	0.9	6.1	
Direct Contact	38.6	51.1	
Air	2.4	3.2	

These scores are considered preliminary since many assumptions were made, and default values were used, in scoring the site. For instance, the groundwater score is not based on site-specific data, but rather on statistical data derived from many former MGP sites. To properly evaluate the Plattsburgh-Bridge Street SSPS scores, they must be compared to other sites similarly scored using the same general assumptions and default values.

The Plattsburgh-Bridge Street scores reflect the fact that direct contact is the principal surficial exposure pathway, for both actual and perceived risk, based on the available data. The direct contact scores are relatively high due to the presence of on-site residences, and assumptions which were included in the score. Direct contact includes skin contact with contaminated soil, ingestion of contaminated soil, and inhalation of contaminated fugitive dust.

The low groundwater pathway scores reflect the lack of downgradient groundwater use within proximity of the site. Groundwater is documented as a drinking water source in the general region, outside the City of Plattsburgh. However, the assumed groundwater gradient is toward nearby Lake Champlain, and there are no identified groundwater wells between the site and the lake, resulting in a low score for this pathway. Additional site-specific groundwater data would be required to assess whether contamination exists in the groundwater.

CONCLUSIONS

Based on the limited data collected at the Plattsburgh-Bridge Street site, the most significant risk is direct contact with surface soils contaminated with low concentrations of PAHs. It cannot be determined conclusively whether the PAHs are attributable to the former MGP, or to some other source. Direct contact could occur through ingestion, inhalation of fugitive dust and dermal exposure. Because the area where the contaminated soils are located is vegetated, and the concentrations are low and only slightly above typical background levels, direct contact is not considered an imminent threat. However, removal of the vegetative cover, or subsurface excavation could increase the potential for exposure.

RECOMMENDATIONS

The potential surficial exposure pathways at this site are direct contact with surface soils and inhalation of contaminated dust. The surface soil sample results indicate PAHs are present at low concentrations, only slightly above typical background levels. Further sampling and analysis is not necessary, based on those results. Indoor air sampling would be a precautionary measure since there are residents occupying the building which was apparently constructed over the location of the former holder. If there are MGP residues beneath the building associated with the former holder, and the vapors migrate out of the soil, a possible exposure pathway would be inhalation. Indoor air sampling could identify whether a health threat exists. However, air monitoring inside the building with a PID did not detect the presence of volatile organic compounds during this investigation. Although MGP residues in the subsurface could also impact groundwater quality, the lack of groundwater use downgradient of the site makes additional investigation unnecessary at this time.

APPENDIX A

HEALTH AND SAFETY PLAN

HEALTH AND SAFETY PLAN

For

NYSEG SITE
PLATTSBURGH, NEW YORK

Prepared By:

ENGINEERING-SCIENCE
290 ELWOOD DAVIS ROAD
LIVERPOOL, NY 13088

Reviewed and Approved By:

	Name	Date
Project Manager	Craig H Moore	6/12/91
ES H&S Officer	William [illegible]	6/17/91

JUNE 1991

KLB/SY156.60.02/PLATTS

EMERGENCY CONTACTS

In the event of any situation or unplanned occurrence requiring assistance, the appropriate contact(s) should be made from the list below. For emergency situations, contact should first be made with the site coordinator who will notify emergency personnel who will then contact the appropriate response teams. This emergency contacts list must be in an easily accessible location at the site.

Contingency Contacts	Phone Number
Nearest phone located on-site	Use public phone
Fire Department	(518) 561-2345
Poison Control Center	(518) 561-2000
ES Contract Physician (IMA)	(315) 478-1977 or (315) 432-9705
NYSEG Local Manager Steve Svec	(518) 563-5300 Ext. 831

Medical Emergency

Champlain Valley Physician's Hospital	(518) 561-2000

ROUTE TO HOSPITAL (Map on next page):

West on Bridge Street until a 4-way intersection to City Hall Place.
Right at City Hall to Cornelia Street.
West on Cornelia, past Beekman Street.
Champlain Valley Physician's Hospital will be on the right hand side.

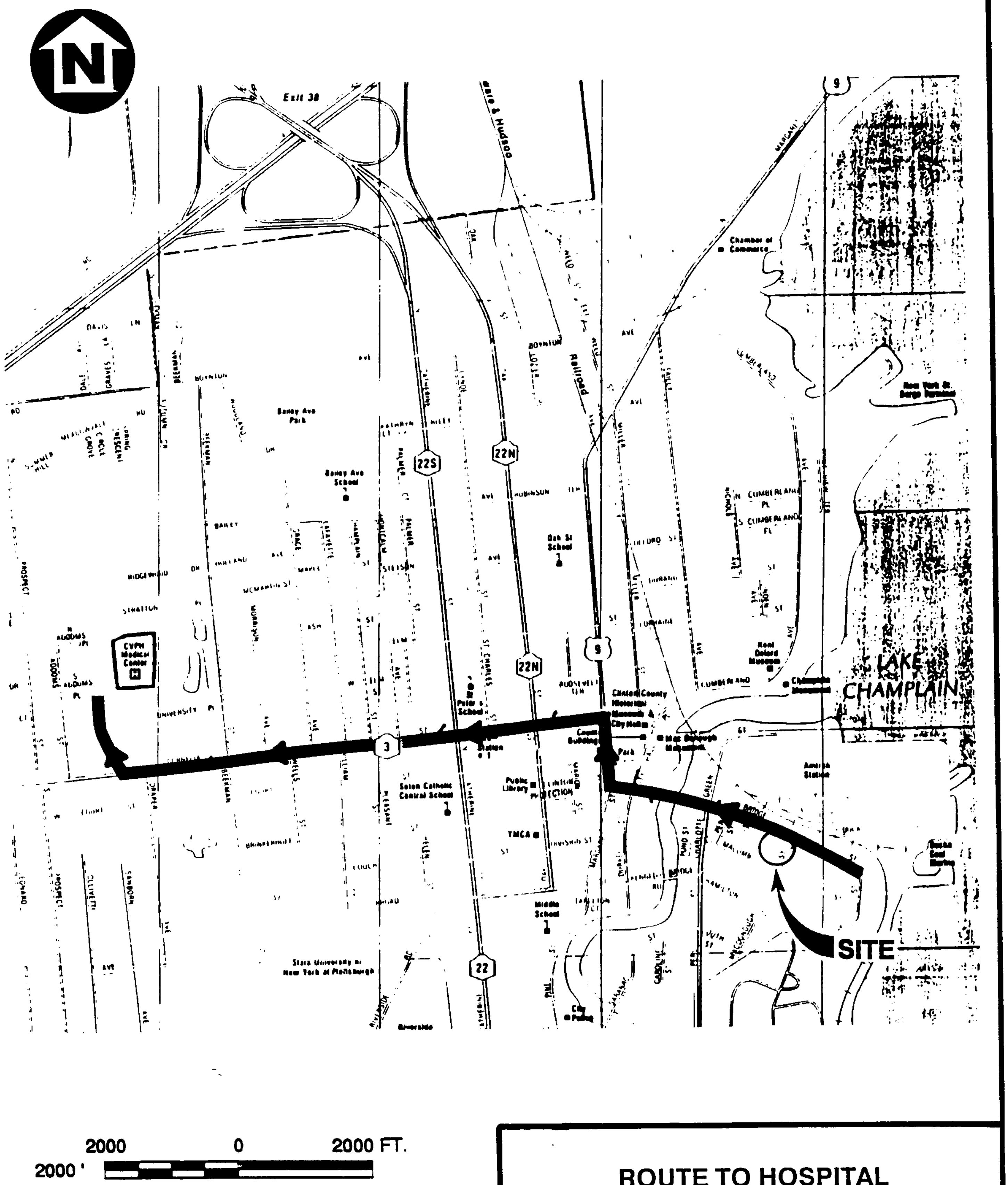
ES Contacts

ES Project Manager:

George Moreau (ES Syracuse)	(315) 451-9560 (Office)

ES Office Health and Safety Representative:

W.L. Bradford	(315) 451-9560 (Office)



ROUTE TO HOSPITAL
PLATTSBURGH, C G P B, N.Y.S.E.& G.
PLATTSBURGH, NEW YORK

TABLE OF CONTENTS

LIST OF TABLES

1. INTRODUCTION

The purpose of this health and safety plan is to establish personnel protection standards and mandatory safety practices and procedures for field investigation efforts. This plan assigns responsibilities, establishes standard operating procedures, and provides for contingencies that may arise while operations are being conducted at hazardous waste sites.

The provisions of the plan are mandatory for all on-site personnel. All ES personnel shall abide by this plan. Health and Safety plans must be prepared by subcontractors and they must conform to this plan as a minimum. Alternately, subcontractor personnel may choose to abide by the provisions of the ES plan. All personnel who engage in project activities must be familiar with this plan and comply with its requirements; these personnel must sign-off on the Plan Acceptance Form (Appendix A) prior to beginning work on the site. The plan acceptance form must be submitted to the Office Health and Safety Officer.

1.2 Site Description

Refer to Section 2 of the project work plan.

1.3 Scope of Work

Field tasks to be conducted at the site may include sampling of one or all of the following: surface water/sediment, surface soil, and/or indoor air monitoring.

1.4 Project Team Organization

Table 1 describes the responsibilities of all on-site personnel associated with this project. The names of principal on-site personnel associated with this project are delineated below:

Project Manager: G.H. Moreau

Field Team Leader: To be assigned

Site Health and Safety Officer: To be assigned

2. RISK ANALYSIS

2.1 Chemical Hazards

Potential contaminants which may be encountered while conducting field tasks at the site include heavy metals, polycyclic aromatic hydrocarbons (PAHs), volatile organics, and cyanide. Some relevant properties of these compounds are shown in Table 1. For protection against exposure to heavy metals, dust generation should be minimized. To minimize exposure to PAHs, dust generation should be minimized and disposable latex gloves will be worn. Direct contact with suspected wastes will be avoided.

In addition to the compounds which may be detected on site, some of the solvents used in the processing of samples are potentially hazardous to human health if they are not used properly. Decontamination solvents will not be used on-

TABLE 1

CHARACTERISTICS OF CHEMICALS WHICH MAY BE DETECTED ON SITE

Compound	Method of Detection	Exposure Limit	IDLH	LEL	Odor Threshold
Benzene	PID(1)/CT(2)	1 ppm	2,000 ppm	1.3%	1-100 ppm
Cyanides	CT	5 mg/m3	50 mg/m3	NC(3)	NR(4)
1,2-Dichloro-ethylene	PID	200 ppm	4,000 ppm	9.7%	275 ppm
Lead	NA(5)	0.15 mg/m3	NR	NR	NR
PAHs	NA	0.2 mg/m3	400 mg/m3	NR	No
PCBs (54% Chlorine)	NA	0.5 mg/m3	5 mg/m3	NC	NR
Trichloro-ethylene	PID	50 ppm	1,000 ppm	11%	10-120 ppm
Vinyl Cloride	PID/CT	1 ppm6	NR	3.6%	> 1,000 ppm
Zinc (Zinc Oxide Dust)	NA	5 mg/m3	NR	NR	NR

(1) Photoionization Detector

(2) Colorimetric Tube

(3) Not combustible.

(4) Not reported

(5) None Available

(6) Value is an ACGIH TLV.

site since only dedicated sampling apparatus will be used. Material Safety Data Sheets for these sample processing compounds are included in Appendix B. Some or all of these compounds may be used in the tasks to be performed at the site.

2.2 Physical Hazards

2.2.1 Heat Stress

The use of protective equipment, if required, may create heat stress. Monitoring of personnel wearing personal protective clothing should commence when the ambient temperature is 70°F or above. Table 2 presents the suggested frequency for such monitoring. Monitoring frequency should increase as ambient temperature increases or as slow recovery rates are observed. Heat stress monitoring should be performed by a person with a current first aid certification who is trained to recognize heat stress symptoms. For monitoring the body's recuperative abilities to excess heat, one or more of the following techniques will be used. Other methods for determining heat stress monitoring, such as the wet bulb globe temperature (WBGT) Index from American Conference of Governmental Industrial Hygienist (ACGIH) TLV Booklet can be used.

To monitor the worker, measure:

- Heart rate. Count the radial pulse during a 30-second period as early as possible in the rest period.
- If the heart rate exceeds 100 beats per minute at the beginning of the rest period, shorten the next work cycle by one-third and keep the rest period the same.
- If the heart rate still exceeds 100 beats per minute at the next rest period, shorten the following work cycle by one-third.
- Oral temperature. Use a clinical thermometer (3 minutes under the tongue) or similar device to measure the oral temperature at the end of the work period (before drinking).
- If oral temperature exceeds 99.6°F (37.6°C), shorten the next work cycle by one-third without changing the rest period.
- If oral temperature still exceeds 99.6°F (37.6°C) at the beginning of the next rest period, shorten the following cycle by one-third.
- Do <u>not</u> permit a worker to wear a semipermeable or impermeable garment when oral temperature exceeds 100.6°F (38.1°C).

2.2.2 Prevention of Heat Stress

Proper training and preventative measures will aid in averting loss of worker productivity and serious illness. Heat stress prevention is particularly important because once a person suffers from heat stroke or heat exhaustion, that person may be predisposed to additional heat related illness. To avoid heat stress the following steps should be taken:

- Adjust work schedules.

TABLE 2

SUGGESTED FREQUENCY OF PHYSIOLOGICAL MONITORING FOR FIT AND ACCLIMATIZED WORKERS[a]

Adjusted Temperature[b]	Normal Work Ensemble[c]	Impermeable Ensemble
90°F (32.2°C) or above	After each 45 minutes of work	After each 15 minutes of work
87.5°F -90°F (30.8° - 32.2°C)	After each 60 minutes of work	After each 30 minutes of work
82.5°F -87.5°F (28.1° - 30.8°C)		After each 60 minutes of work
77.5°F -82.5°F (25.3° - 28.1°C)		After each 90 minutes of work
72.5°F -77.5°F (22.5° - 25.3°C)		After each 120 minutes of work

a For work levels of 250 kilocalories/hour.

b Calculate the adjusted air temperature (ta adj) by using this equation: ta adj °F = ta °F + (13 x 5 sunshine). Measure air temperature (ta) with a standard mercury-in-glass thermometer, with the bulb shielded from radiant heat. Estimate percent sunshine by judging what percent time the sun is not covered by clouds that are thick enough to produce a shadow. (100 percent sunshine = no cloud cover and a sharp, distinct shadow; 0 percent sunshine = no shadows.)

c A normal ensemble consists of cotton overalls or other cotton clothing with long sleeves and pants.

  - Modify work/rest schedules according to monitoring requirements.
  - Mandate work slowdowns as needed.
  - Perform work during cooler hours of the day if possible or at night if adequate lighting can be provided.
- Provide shelter (air-conditioned, if possible) or shaded areas to protect personnel during rest periods.
- Maintain worker's body fluids at normal levels. This is necessary to ensure that the cardiovascular system functions adequately. Daily fluid intake must approximately equal the amount of water lost in sweat, i.e., eight fluid ounces (0.23 liters) of water must be ingested for approximately every eight ounces (0.23 kg) of weight lost. The normal thirst mechanism is not sensitive enough to ensure that enough water will be drunk to replace lost sweat. When heavy sweating occurs, encourage the worker to drink more. The following strategies may be useful:
  - Maintain water temperature 50° to 60°F (10° to 16.6°C).
  - Provide small disposable cups that hold about four ounces (0.1 liter).
  - Have workers drink 16 ounces (0.5 liters) of fluid (preferably water or dilute drinks) before beginning work.
  - Urge workers to drink a cup or two every 15 to 20 minutes, or at each monitoring break. A total of 1 to 1.6 gallons (4 to 6 liters) of fluid per day are recommended, but more may be necessary to maintain body weight.
- Train workers to recognize the symptoms of heat related illness.

2.2.3 Cold-Related Illness

If work on this project begins in the winter months, thermal injury due to cold exposure can become a problem for field personnel. Systemic cold exposure is referred to as hypothermia. Local cold exposure is generally labeled frostbite.

Hypothermia. Hypothermia is defined as a decrease in the patient core temperature below 96°F. The body temperature is normally maintained by a combination of central (brain and spinal cord) and peripheral (skin and muscle) activity. Interferences with any of these mechanisms can result in hypothermia, even in the absence of what normally is considered a "cold" ambient temperature. Symptoms of hypothermia include: shivering, apathy, listlessness, sleepiness, and unconsciousness.

Frostbite. Frostbite is both a general and medical term given to areas of local cold injury. Unlike systemic hypothermia, frostbite rarely occurs unless the ambient temperatures are less than freezing and usually less than 20°F. Symptoms of frostbite are: a sudden blanching or whitening of the skin; the skin has a waxy or white appearance and is firm to the touch; tissues are cold, pale, and solid.

2.2.4 Prevention of Cold Related Illness

- Educate workers to recognize the symptoms of frostbite and hypothermia
- Identify and limit known risk factors:
- Assure the availability of enclosed, heated environment on or adjacent to the site.
- Assure the availability of dry changes of clothing.
- Develop the capability for temperature recording at the site.
- Assure the availability of warm drinks.

Monitoring

Start (oral) temperature recording a the job site:

- At the Field Team Leader's discretion when suspicion is based on changes in a worker's performance or mental status.
- At a worker's request.
- As a screening measure, two times per shift, under unusually hazardous conditions (e.g., wind-chill less than 20°F, or wind-chill less than 30°F with precipitation).
- As a screening measure whenever any one worker on the site develops hypothermia.

Any person developing moderate hypothermia (a core temperature of 92°F) cannot return to work for 48 hours.

3. PERSONNEL PROTECTION AND MONITORING

3.1 Medical Surveillance

Engineering-Science will utilize the services of a licensed occupational health physician with knowledge and/or experience in the hazards associated with the project to provide the medical examinations and surveillance specified herein.

Personnel involved in this operation have undergone medical surveillance prior to employment at ES, and thereafter at 12-month intervals. The 12-month medical examination includes a complete medical and work history and a standard occupational physical, examination of all major organ systems, complete blood count with differential (CBC), and a SMAC/23 blood chemistry screen which includes calcium, phosphorous, glucose, uric acid, BUN, creatinine, albumin, SGPT, SGOT, LDH, globulin, A/G ratio, alkaline phosphates, total protein, total bilirubin, triglyceride, cholesterol, and a creatinine/BUN ratio. Additionally a pulmonary function test will be performed by trained personnel to record Forced Vital Capacity (FVC) and Forced Expiratory Volume in second ($FEV_{1.0}$). An audiogram and visual acuity measurement, including color perception, is provided. The medical exam is performed under the direction of a licensed Occupational Health Physician. A medical certification as to the fitness or unfitness for employment on hazardous waste projects, or any restrictions on his/her utilization that may be indicated, is provided by the physician. This evaluation will be repeated as indicated by substandard performance or evidence of particular stress that is evident by injury or time loss illness on the part of any worker.

3.2 Site Specific Training

The Site Health and Safety Officer will be responsible for developing a site specific occupational hazard training program and providing training to all ES personnel that are to work at the site. This training will consist of the following topics:

- Names of personnel responsible for site safety and health.
- Safety, health, and other hazards at the site.
- Proper use of personal protective equipment.
- Work practices by which the employee can minimize risk from hazards.
- Safe use of engineering controls and equipment on the site.
- Acute effects of compounds at the site.
- Decontamination procedures.

3.3 Personal Protective Equipment and Action Levels

3.3.1 Conditions for Level D

Level D protection will be worn for initial entry on-site and initially for all activities. Level D protection will consist of:

- Coveralls
- Safety boots
- Nitrile outer and PVC inner gloves (must be worn during all sampling activities)
- Hard hat (must be worn during drilling activities)
- Splash goggles (must be worn if a splash hazard is present)
- 5-minute escape SCBA

3.3.2 Conditions for Level C

If any exposure limit is exceeded the personel will retreat.

3.4 Monitoring Requirements

Monitoring for organic vapors in the breathing zone will be conducted with a Photovac-TIP II photoionization detector. A Draeger bellows equipped with the appropriate tubes will be used to monitor for cyanide. Readings will be taken under the following circumstances.

- Upon initial entry onto the site.
- When weather conditions change.

- When work begins on another portion of the site.

Specific monitoring for carcinogenic compounds, namely vinyl chloride and benzene, will not be conducted because of the remote chance that these compounds could be present in significant quantity. Because of the volatility of these compounds, the long period of time (50+ years) since MGP operations ceased, and the fact that only non-intrusive sampling will be practiced, no measurable quantity of these compounds is expected. Furthermore, the subsurface structures in which air will be sampled are distant from the site of actual plant operations. Specific monitoring for vinyl chloride, benzene or other compounds is therefore not considered necessary beyond normal PID screening.

4. WORK ZONES AND DECONTAMINATION

4.1 Site Work Zones

To reduce the spread of hazardous materials by workers from the contaminated areas to the clean areas, zones will be delineated at the site. The flow of personnel between the zones should be controlled. The establishment of the work zones will help ensure that personnel are properly protected against the hazards present where they are working, work activities and contamination are confined to the appropriate areas, and personnel can be located and evacuated in an emergency.

4.1.1 Exclusion Zone

Exclusion zones will be established at the site during any activity when Level C protection is established as a result of conditions discussed in Section 3. Unprotected onlookers should be located 50 feet upwind of drilling or soil sampling activities. In the event that volatile organics are detected in the breathing zone as discussed in Section 3, all personnel within the exclusion zone must don Level C protection.

All personnel within the exclusion zone will be required to use the specified level of protection. No food, drink, or smoking will be allowed in the exclusion or decontamination zones.

4.1.2 Decontamination Zone

Should it be necessary to establish an exclusion zone, the decontamination zone will be utilized. This zone will be established between the exclusion zone and the support zone, and will include the personnel and equipment necessary for decontamination of equipment and personnel (discussed below). Personnel and equipment in the exclusion zone must pass through this zone before entering the support zone. This zone should always be located upwind of the exclusion zone.

4.1.3 Support Zone

The support zone will include the remaining areas of the job site. Break areas, operational direction and support facilities (to include supplies, equipment storage and maintenance areas) will be located in this area. No equipment or personnel will be permitted to enter the support zone from the exclusion zone without passing through the personnel or equipment decontamination station. Eating, smoking, and drinking will be allowed only in this area.

4.2 Decontamination

Due to the low level of contaminants expected, any water used will be disposed of on-site.

4.2.1 Decontamination of Personnel

Decontamination will not be necessary if only Level D protection is used. However, disposable gloves used during sampling activities should be removed and bagged; personnel should be encouraged to remove clothing and shower as soon as is practicable at the end of the day. All clothing should be machine-washed. All personnel will wash hands and face prior to eating and before and after using the restroom.

4.2.2 Decontamination of Equipment

Only dedicated sampling equipment will be used at each site (i.e. decontamination of equipment will not take place on-site, enough sampling equipment will be utilized to collect all samples in a single round of sampling).

Equipment decontamination will take place off-site and will consist of steam cleaning or successive rinses of clean water, alconox solution, clean water, methanol and clean water.

5. SAMPLE SHIPMENT

Samples collected in this study, with the exception of any drum samples, tank samples, or other concentrated wastes, will be classified as research samples. In general, samples collected from streams, ponds, or wells and are not expected to be grossly contaminated with high levels of hazardous materials.

The sample tag will be legibly written and completed with an indelible pencil or waterproof ink. The information will also be recorded in a log book. As a minimum, it will include:

- Exact location of sample
- Time and date sample was collected
- Name of sampler witnesses (if necessary)
- Project codes, sample station number, and identifying code (if applicable.
- Type of sample (if known)
- Tag number (if sequential tag system is used)
- Laboratory number (if applicable)
- Any other pertinent information (CFR 40 261.4)

Info to accompany samples:

1) Sample collectors name, address, phone

2) Laboratory name, address, phone
3) Quantity of sample
4) Date of shipment
5) Description of sample, (ie) Research sample-soil, Research sample-water

5.1 Environmental Samples

Environmental samples will be packaged and shipped according to the following procedure:

Packaging

1. Place sample container, properly identified as research samples and with a sealed lid, in a polyethylene bag, and seal bag;
2. Place sample in a fiberboard container or metal picnic cooler which has been lined with a large polyethylene bag.
3. Pack with enough noncombustible, absorbent, cushioning material to minimize the possibility of the container breaking.
4. Seal large bag.
5. Seal or close outside container

Marking/Labeling

Sample containers must have a completed sample identification tag and the outside container must be marked "Research Sample". The appropriate side of the container must be marked "This End Up" and arrows should be drawn accordingly. No DOT marking labeling is required.

Shipping Papers

No DOT shipping papers are required.

Transportation

There are no DOT restrictions on mode of transportation.

5.2 Hazardous Samples

Drum samples, tank samples, sludge samples, and grossly contaminated soil samples will be shipped as DOT Hazardous Materials. The designation "Flammable Liquid" or "Flammable Solid" will be used. The samples will be transported as follows:

1. Collect sample in a 16-ounce or smaller glass or polyethylene container with nonmetallic teflon-lined screw cap. Allow sufficient air space (approximately 10% by volume) so container is not liquid full at 54 °C (130 °F). If collecting a solid material, the container plus contents should not exceed 1 pound net weight. if sampling for volatile organic analysis, fill VOA container to septum but place the VOA container inside a 16-ounce or smaller container so the required air space may be provided. large quantities, up to 3.786 liters

(1 gallon), may be collected if the sample's flash point is 23 °C (75 °F) or higher. In this case, the flash point must be marked on the outside container (e.g., carton, cooler), and shipping papers should state that "Flash point is 73 °F or higher."

2. Seal sample and place in a 4-mil-thick polyethylene bag, one sample per bag.
3. Place sealed bag inside a metal can with noncombustible, absorbent cushioning material (e.g., vermiculite or earth) to prevent breakage, one bag per can. Pressure-close the can and use clips, tape or other positive means to hold the lid securely.
4. Mark the can with:

   Name and address of originator

   "Flammable Liquid N.O.S. UN 1993"

   (or "Flammable Solid N.O.S. UN 1325)

   NOTE: UN numbers are now required in proper shipping names.
5. Place one or more metal cans in a strong outside container such as a picnic cooler or fiberboard box. Preservatives are not used for hazardous waste site samples.
6. Prepare for shipping:

   "Flammable Liquid, N.O.S. UN 1993" or "Flammable Solid, N.O.S. UN 1325"; "Cargo Aircraft Only (if more than 1 quart net per outside package); "Limited Quantity" or "Ltd. Qty."; "Laboratory Samples"; "Net Weight ~" or "Net Volume ~" (of hazardous contents) should be indicated on shipping papers and on outside of shipping container. "This Side Up" or "This End Up" should also be on container. Sign shipper certification.
7. Stand by for possible carrier requests to open outside containers for inspection or modify packaging. It is wise to contact carrier before packing to ascertain local packaging requirements and not to leave area before the carrier vehicle (aircraft, truck) is on its way.

6. ACCIDENT PREVENTION AND CONTINGENCY PLAN

6.1 Accident Prevention

All field personnel will receive health and safety training as required by 29 CFR 1910.120 prior to the initiation of any site activities. On a day-to-day basis, individual personnel should be constantly alert for indicators of potentially hazardous situations and for signs and symptoms in themselves and others that warn of hazardous conditions and exposures. Rapid recognition of dangerous situations can avert an emergency. Before daily work assignments, regular meeting should be held. Discussion should include:

- Tasks to be performed.
- Time constraints (e.g., rest breaks, cartridge changes).

- Hazards that may be encountered, including their effects, how to recognize symptoms or monitor them, concentration limits, or other danger signals.
- Emergency procedures.

6.2 Contingency Plan

6.2.1 Emergency Procedures

In the event that an emergency develops on site, the procedures delineated herein are to be immediately followed. Emergency conditions are considered to exist if:

- Any member of the field crew is involved in an accident or experiences any adverse effects or symptoms of exposure while on site.
- A condition is discovered that suggests the existence of a situation more hazardous than anticipated.

General emergency procedures, and specific procedures for personal injury and chemical exposure, are described in the health and safety plan.

6.2.2 Chemical Exposure

If a member of the field crew demonstrates symptoms of chemical exposure the procedures outlined below should be followed:

- Another team member (buddy) should remove the individual from the immediate area of contamination. The buddy should communicate to the Field Team Leader (via voice and hand signals) of the chemical exposure. The Field Team Leader should contact the appropriate emergency response agency.
- Precautions should be taken to avoid exposure of other individuals to the chemical.
- If the chemical is on the individual's clothing, the chemical should be neutralized or removed if it is safe to do so.
- If the chemical has contacted the skin, the skin should be washed with copious amounts of water.
- In case of eye contact, an emergency eye wash should be used. Eyes should be washed for at least 15 minutes.
- All chemical exposure incidents must be reported in writing to the Office Health and Safety Representative. The Site Health and Safety Officer or Field Team Leader is responsible for completing the accident report.

6.2.3 Personal Injury

In case of personal injury at the site, the following procedures should be followed:

- Another team member (buddy) should signal the Field Team Leader that an injury has occurred.

- A field team member trained in first aid can administer treatment to an injured worker.
- The victim should then be transported to the nearest hospital or medical center. If necessary, an ambulance should be called to transport the victim.
- For less severe cases, the individual can be taken to the site dispensary.
- The Field Team Leader or Site Health and Safety Officer is responsible for making certain that an accident report form is completed. This form is to be submitted to the Office Health and Safety Representative. Follow-up action should be taken to correct the situation that caused the accident.

6.2.4 Evacuation Procedures

- The Field Team Leader will initiate evacuation procedure by signalling to leave the site.
- All personnel in the work area should evacuate the area and meet in the common designated area.
- All personnel suspected to be in or near the contract work area should be accounted for and the whereabouts or missing persons determined immediately.
- Further instruction will then be given by the Field Team Leader.

6.2.5 Procedures Implemented in the Event of a Major Fire, Explosion, or On-Site Health Emergency Crisis

- Notify the paramedics and/or fire department, as necessary;
- Signal the evacuation procedure previously outlined and implement the entire procedure;
- Isolate the area;
- Stay upwind of any fire;
- Keep the area surrounding the problem source clear after the incident occurs;
- Complete accident report for and distribute to appropriate personnel.

APPENDIX A

HEALTH AND SAFETY PLAN ACCEPTANCE FORM

PLAN ACCEPTANCE FORM

PROJECT HEALTH AND SAFETY PLAN

I have read and agree to abide by the contents of the Health and Safety Plan for the following project:

PLATSBURG MGP SITE

RANDY U. YOUNGMAN
Name (print)

Signature

5/28/91
Date

Return to Office Health and Safety Representative <u>before</u> starting to work on subject project work site.

PLAN ACCEPTANCE FORM

PROJECT HEALTH AND SAFETY PLAN

I have read and agree to abide by the contents of the Health and Safety Plan for the following project:

NYSEG - PLATTSBURGH M.G.P. SITE

COREY AVERILL
Name (print)

Signature

5/29/91
Date

Return to Office Health and Safety Representative <u>before</u> starting to work on subject project work site.

APPENDIX B

MATERIAL SAFETY DATA SHEETS

File 1; Entry 1; Accession No. 132015
J.T.BAKER INC. 222 RED SCHOOL LANE, PHILLIPSBURG, NJ 08865
MATERIAL SAFETY DATA SHEET
24-HOUR EMERGENCY TELEPHONE -- (201) 859-2151

M2015 -05
METHANOL
EFFECTIVE: 09/14/87
ISSUED: 1
0/27/87

SECTION I - PRODUCT IDENTIFICATION

PRODUCT NAME: METHANOL
FORMULA: CH3OH
FORMULA WT: 32.04
CAS NO.: 67-56-1
NIOSH/RTECS NO.: PC1400000
COMMON SYNONYMS: METHYL ALCOHOL; WOOD ALCOHOL; CARBINOL; METHYLOL; WOOD SPIRIT
PRODUCT CODES: 9049,9072,9075,9076,9071,5217,9074,P704,9093,5536,9068,9073
9091,9263,9069,9070,5370,9127

PRECAUTIONARY LABELLING

BAKER SAF-T-DATA(TM) SYSTEM

HEALTH - 3 SEVERE (POISON)
FLAMMABILITY - 3 SEVERE (FLAMMABLE)
REACTIVITY - 1 SLIGHT
CONTACT - 1 SLIGHT
HAZARD RATINGS ARE 0 TO 4 (0 = NO HAZARD; 4 = EXTREME HAZARD).

LABORATORY PROTECTIVE EQUIPMENT

GOGGLES & SHIELD; LAB COAT & APRON; VENT HOOD; PROPER GLOVES; CLASS B EXTINGUISHER

PRECAUTIONARY LABEL STATEMENTS

POISON DANGER
FLAMMABLE
HARMFUL IF INHALED
CANNOT BE MADE NON-POISONOUS

MAY BE FATAL OR CAUSE BLINDNESS IF SWALLOWED
KEEP AWAY FROM HEAT, SPARKS, FLAME. DO NOT GET IN EYES, ON SKIN, ON CLOTHING.
AVOID BREATHING VAPOR. KEEP IN TIGHTLY CLOSED CONTAINER. USE WITH
ADEQUATE VENTILATION. WASH THOROUGHLY AFTER HANDLING. IN CASE OF FIRE,

USE ALCOHOL FOAM, DRY CHEMICAL, CARBON DIOXIDE - WATER MAY BE INEFFECTIVE.
FLUSH SPILL AREA WITH WATER SPRAY.

SAF-T-DATA(TM) STORAGE COLOR CODE: RED (FLAMMABLE)

==
========

SECTION II - HAZARDOUS COMPONENTS

==
========

COMPONENT % CAS NO.

METHANOL 90-100
67-56-1

==
========

SECTION III - PHYSICAL DATA

==
========

BOILING POINT: 65 C (149 F) VAPOR PRESSURE(MM HG)
: 96

MELTING POINT: -98 C (-144 F) VAPOR DENSITY(AIR=1):
1.11

SPECIFIC GRAVITY: 0.79 EVAPORATION RATE:
4.6
(H2O=1) (BUTYL ACETATE=1)

SOLUBILITY(H2O): COMPLETE (IN ALL PROPORTIONS) % VOLATILES BY VOLUME
: 100

APPEARANCE & ODOR: CLEAR, COLORLESS LIQUID WITH CHARACTERISTIC PUNGENT ODOR.

==
========

SECTION IV - FIRE AND EXPLOSION HAZARD DATA

==
========

FLASH POINT (CLOSED CUP 12 C (54 F) NFPA 704M RATING: 1-
3-0

FLAMMABLE LIMITS: UPPER - 36.0 % LOWER - 6.0 %

FIRE EXTINGUISHING MEDIA

USE ALCOHOL FOAM, DRY CHEMICAL OR CARBON DIOXIDE.
(WATER MAY BE INEFFECTIVE.)

SPECIAL FIRE-FIGHTING PROCEDURES

FIREFIGHTERS SHOULD WEAR PROPER PROTECTIVE EQUIPMENT AND SELF-CONTAINED BREATHING APPARATUS WITH FULL FACEPIECE OPERATED IN POSITIVE PRESSURE MODE.
MOVE CONTAINERS FROM FIRE AREA IF IT CAN BE DONE WITHOUT RISK. USE WATER TO KEEP FIRE-EXPOSED CONTAINERS COOL.

UNUSUAL FIRE & EXPLOSION HAZARDS

VAPORS MAY FLOW ALONG SURFACES TO DISTANT IGNITION SOURCES AND FLASH BACK.
CLOSED CONTAINERS EXPOSED TO HEAT MAY EXPLODE. CONTACT WITH STRONG OXIDIZERS MAY CAUSE FIRE.
BURNS WITH A CLEAR, ALMOST INVISIBLE FLAME.

TOXIC GASES PRODUCED

CARBON MONOXIDE, CARBON DIOXIDE, FORMALDEHYDE

SECTION V - HEALTH HAZARD DATA

TLV LISTED DENOTES (TLV-SKIN).

THRESHOLD LIMIT VALUE (TLV/TWA): 260 MG/M3 (200 PPM)

SHORT-TERM EXPOSURE LIMIT (STEL): 310 MG/M3 (250 PPM)

PERMISSIBLE EXPOSURE LIMIT (PEL): 260 MG/M3 (200 PPM)

TOXICITY: LD50 (ORAL-RAT)(MG/KG) - 5628
LD50 (IPR-RAT)(MG/KG) - 9540

LD50 (SCU-MOUSE)(MG/KG) - 9800
LD50 (SKN-RABBIT) (G/KG) - 20

CARCINOGENICITY: NTP: NO IARC: NO Z LIST: NO OSHA REG: NO

EFFECTS OF OVEREXPOSURE

INHALATION AND INGESTION ARE HARMFUL AND MAY BE FATAL.
INHALATION MAY CAUSE HEADACHE, NAUSEA, VOMITING, DIZZINESS, NARCOSIS,

SUFFOCATION, LOWER BLOOD PRESSURE, CENTRAL NERVOUS SYSTEM DEPRESSION. LIQUID MAY BE IRRITATING TO SKIN AND EYES. PROLONGED SKIN CONTACT MAY

RESULT IN DERMATITIS. EYE CONTACT MAY RESULT IN TEMPORARY CORNEAL DAMAGE.
INGESTION MAY CAUSE BLINDNESS.
INGESTION MAY CAUSE NAUSEA, VOMITING, HEADACHES, DIZZINESS, GASTROINTESTINAL IRRITATION, CENTRAL NERVOUS SYSTEM DEPRESSION AND HEARING LOSS.
CHRONIC EFFECTS OF OVEREXPOSURE MAY INCLUDE KIDNEY AND/OR LIVER DAMAGE.

TARGET ORGANS

EYES, SKIN, CENTRAL NERVOUS SYSTEM, GI TRACT, RESPIRATORY SYSTEM, LUNGS

MEDICAL CONDITIONS GENERALLY AGGRAVATED BY EXPOSURE

EYE DISORDERS, SKIN DISORDERS, LIVER OR KIDNEY DISORDERS

ROUTES OF ENTRY

INHALATION, INGESTION, EYE CONTACT, SKIN CONTACT, ABSORPTION

EMERGENCY AND FIRST AID PROCEDURES

CALL A PHYSICIAN.
IF SWALLOWED, IF CONSCIOUS, GIVE LARGE AMOUNTS OF WATER. INDUCE VOMITING.
IF INHALED, REMOVE TO FRESH AIR. IF NOT BREATHING, GIVE ARTIFICIAL RESPIRATION. IF BREATHING IS DIFFICULT, GIVE OXYGEN.
IN CASE OF CONTACT, IMMEDIATELY FLUSH EYES OR SKIN WITH PLENTY OF WATER FOR
AT LEAST 15 MINUTES WHILE REMOVING CONTAMINATED CLOTHING AND SHOES.
WASH CLOTHING BEFORE RE-USE.

SECTION VI - REACTIVITY DATA

STABILITY: STABLE HAZARDOUS POLYMERIZATION: WILL NOT OCCUR

CONDITIONS TO AVOID: HEAT, FLAME, OTHER SOURCES OF IGNITION

INCOMPATIBLES: STRONG OXIDIZING AGENTS, STRONG ACIDS, ZINC, ALUMINUM,
MAGNESIUM

DECOMPOSITION PRODUCTS: CARBON MONOXIDE, CARBON DIOXIDE, FORMALDEHYDE

SECTION VII - SPILL AND DISPOSAL PROCEDURES

==

STEPS TO BE TAKEN IN THE EVENT OF A SPILL OR DISCHARGE

WEAR SELF-CONTAINED BREATHING APPARATUS AND FULL PROTECTIVE CLOTHING. SHUT OFF IGNITION SOURCES; NO FLARES, SMOKING OR FLAMES IN AREA. STOP LEAK IF YOU CAN DO SO WITHOUT RISK. USE WATER SPRAY TO REDUCE VAPORS. TAKE UP WITH SAND OR OTHER NON-COMBUSTIBLE ABSORBENT MATERIAL AND PLACE INTO CONTAINER FOR LATER DISPOSAL. FLUSH AREA WITH WATER.

J. T. BAKER SOLUSORB(R) SOLVENT ADSORBENT IS RECOMMENDED FOR SPILLS OF THIS PRODUCT.

DISPOSAL PROCEDURE

DISPOSE IN ACCORDANCE WITH ALL APPLICABLE FEDERAL, STATE, AND LOCAL ENVIRONMENTAL REGULATIONS.

EPA HAZARDOUS WASTE NUMBER: U154 (TOXIC WASTE)

==

SECTION VIII - PROTECTIVE EQUIPMENT

==

VENTILATION: USE GENERAL OR LOCAL EXHAUST VENTILATION TO MEET TLV REQUIREMENTS.

RESPIRATORY PROTECTION: RESPIRATORY PROTECTION REQUIRED IF AIRBORNE CONCENTRATION EXCEEDS TLV. AT CONCENTRATIONS ABOVE 200 PPM, A SELF-CONTAINED BREATHING APPARATUS IS ADVISED.

EYE/SKIN PROTECTION: SAFETY GOGGLES AND FACE SHIELD, UNIFORM, PROTECTIVE SUIT, RUBBER GLOVES ARE RECOMMENDED.

==

SECTION IX - STORAGE AND HANDLING PRECAUTIONS

==

SAF-T-DATA(TM) STORAGE COLOR CODE: RED (FLAMMABLE)

SPECIAL PRECAUTIONS

BOND AND GROUND CONTAINERS WHEN TRANSFERRING LIQUID. KEEP CONTAINER TIGHTLY CLOSED. STORE IN A COOL, DRY, WELL-VENTILATED, FLAMMABLE LIQUID STORAGE AREA.

APPENDIX C

RESPIRATORY USAGE LOG

AIR PURIFYING

RESPIRATOR LOG

SITE: ______________________________

LOCATION: ___________________________

DATES OF INVESTIGATION: ______________

User	Date of Use	Cleaned and Inspected Prior To Use (Initials)	Cartridges Changed Prior to Use (Yes, NO, N/A)	Total Hours on Cartridge

____

Site Health and Safety Officer or
ES Project Manager

Date

Return to Office Health and Safety Representative at the completion of field activities.

APPENDIX B

QUALITY ASSURANCE PLAN

SECTION 1

TITLE PAGE

QUALITY ASSURANCE PROJECT PLAN
for the
PRIORITIZATION OF FORMER MANUFACTURED GAS PLANT SITES

Prepared for

NEW YORK STATE ELECTRIC AND GAS CORPORATION

Prepared By:

ENGINEERING-SCIENCE
290 ELWOOD DAVIS ROAD, LIVERPOOL, NY 13088

CLIENT:	New York State Electric and Gas
LOCATION:	Binghamton, New York

Approved By: (Project Manager)	G.H. Moreau (Name)	G H Moreau (Signature)	4/10/91 (Date)
Approved By: (NYSEG Project Manager)	J.C. Hylind (Name)	James C. Hylind (Signature)	4/4/91 (Date)
Approved By: (Project QA Officer)	W. L. Bradford (Name)	W L Bradford (Signature)	4/10/91 (Date)

QUALITY ASSURANCE PROJECT PLAN

for the

PRIORITIZATION OF FORMER MANUFACTURED GAS PLANT SITES

Prepared For

NEW YORK STATE ELECTRIC AND GAS CORPORATION

NOVEMBER 1990

Prepared by

ENGINEERING-SCIENCE, INC.
290 ELWOOD DAVIS ROAD, SUITE 312
LIVERPOOL, NEW YORK 13088

SECTION 2

TABLE OF CONTENTS

TABLE OF CONTENTS-CONTINUED

LIST OF FIGURES

LIST OF TABLES

SECTION 3

PROJECT DESCRIPTION

3.1 INTRODUCTION

NYSEG wishes to take a responsible approach in addressing threats associated with past MGP operations by undertaking a site evaluation and prioritization program to identify and rank current threats posed by former MGP sites. This program will involve data compilation, field sampling and inspection at the sites, followed by application of a site ranking model developed by the Electric Power Research Institute (EPRI). The field sampling program will be focused on characterizing and, to the extent possible, quantifying direct exposure pathways at the site. The data developed as a result of this field program will provide the necessary inputs to the EPRI-developed Site Screening and Priority Setting (SSPS) system. This computer-based ranking system will provide a quantitative measure of the current risks posed by the site and this will provide a relative ranking of the need for further detailed evaluation or remediation at the site.

3.2 OBJECTIVES

The scope of work for each site will include a technical and management effort developed to meet the following objectives:

- Determine if there is any imminent threat to human health or environment.
- Establish a relative ranking of former MGP sites.

3.3 SCOPE OF WORK

The scope of work consists of a program preparation task, incorporating preparation of program-wide planning documents such as this Quality Assurance Project Plan (QAPP) and Health and Safety Plan (subsequently modified to address site specific conditions), and five other parts. The five individual parts to be completed at this site are as follows:

Part 1 - Literature and Records Search
Part 2 - On-Site Evaluation
Part 3 - Site Survey and Mapping
Part 4 - Sampling and Analysis
Part 5 - Report Preparation

These five parts are described in the project Work Plan which also provides site-specific information, including information on the site location, size, history, and the number, location and rationale for collection of samples.

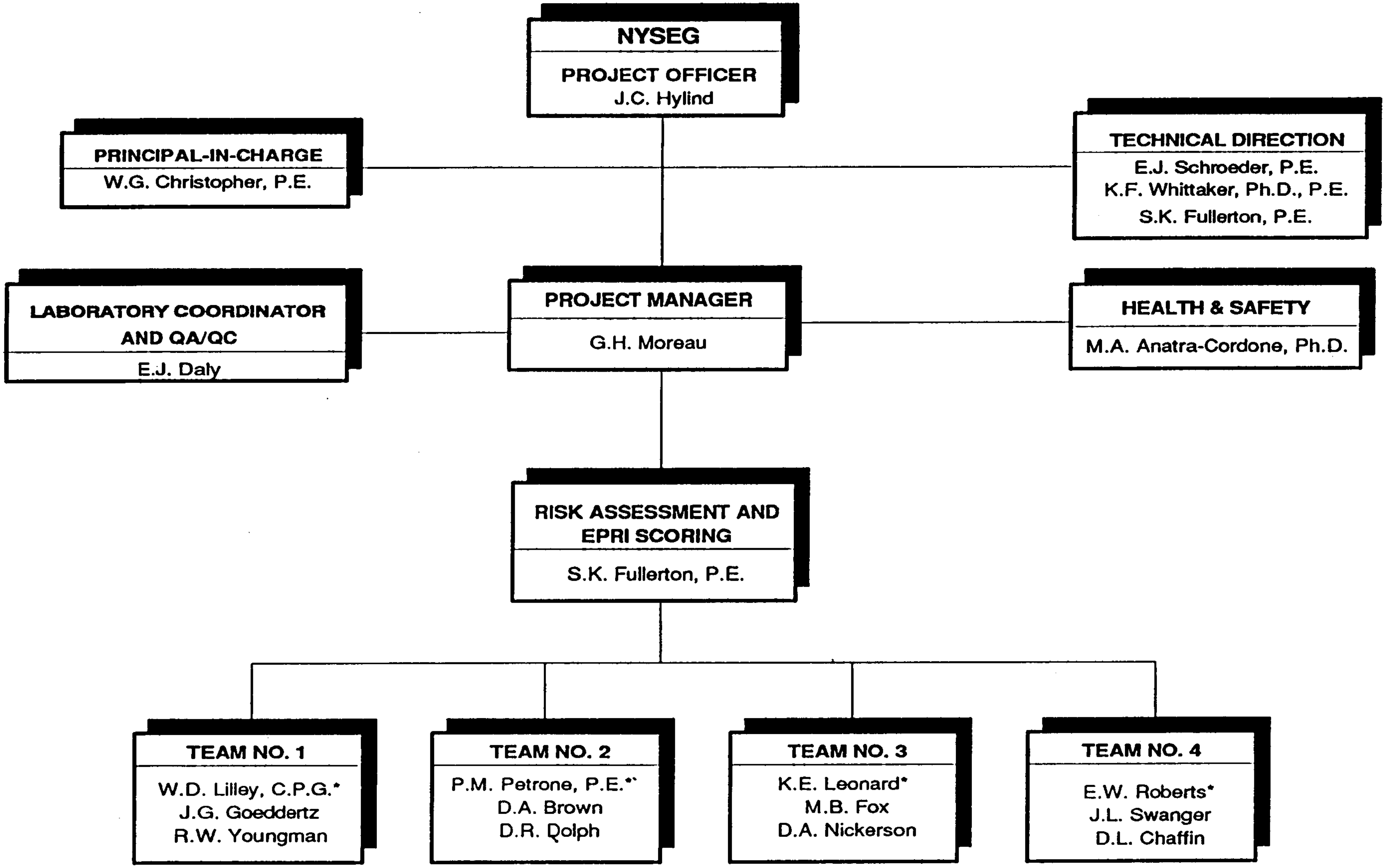
SECTION 4

PROJECT ORGANIZATION

The organization of the project management team and areas of responsibility are shown in Figure 4.1. Specific responsibilities for each key member of the project management team are described in the Management Plan for the project which is available in ES files.

FIGURE 4.1

PROJECT ORGANIZATION



* - TEAM LEADER

SECTION 5

QA/QC OBJECTIVES FOR MEASUREMENT OF DATA

The quality assurance/quality control objectives for all measurement data include representativeness, completeness, comparability, precision, and accuracy. The QA objectives for each of these areas in relation to the operation of field instrumentation are summarized on Table 5.1. Quality Assurance Procedures for the field instruments are presented in Table 5.2. QA objectives related the laboratory chemical analysis are discussed below.

5.1 REPRESENTATIVENESS

Samples taken must be representative of the population, and where appropriate, the population will be characterized statistically to express the degree to which the data accurately and precisely represent a characteristic of a population, parameter variations at a sampling point, a process, or environmental condition.

Sampling devices will be precleaned before entering a site by steam cleaning or by rinsing successively with Alconox detergent/water, tap water, methanol and a final rinse with distilled water. Decontamination will not take place on-site, enough precleaned (dedicated) sampling equipment will be brought to the site to allow collection of all samples.

To assess the representativeness of the sample collection procedures, one sample per site will be collected in duplicate. One of the duplicates will be given a "coded" or false sample identifier, and both it and the original sample will be analyzed. Comparisons of the results from the original sample and its coded field duplicate will allow for an evaluation of the representativeness of the sampling methods.

All samples will be packed with ice in coolers and shipped via overnight delivery to the analytical laboratory.

5.2 COMPLETENESS

The analyses performed must be appropriate and inclusive. The parameters selected for analysis were chosen to meet the objectives of the study.

Completeness of the analyses will be assessed by comparing the number of parameters intended to be analyzed with the number of parameters successfully determined and validated. The project objectives are to achieve 95% completeness for laboratory data and 90% for field data.

TABLE 5.1

QA OBJECTIVES FOR FIELD INSTRUMENTS

	Parameter			
Objective	**pH**	**Temperature**	**Specific Conductivity**	**Photovac Tip**
Precision(1)	0.1 units	0.1 Degree	±15%	1 ppm
Accuracy scale	±0.05 units	0.5 Degree	±5% of Standard	±1% of the meter
Completeness	90%	90%	90%	90%
Representativeness	Field measurement of field blanks and duplicates(2)			
Comparability	Field measurement of duplicate samples(2)			

(1) Precision will be evaluated by calcuation and comparison of standard deviation.

(2) One duplicate sample per site.

TABLE 5.2
QUALITY ASSURANCE PROCEDURES FOR FIELD ANALYSIS AND EQUIPMENT

Parameter	General	Daily	Quarterly
1. **pH** Electrode Method	Enter the make, model, serial and/or ID number for each meter in a log book.	1. Calibrate the system against standard buffer solution of known pH value at the start of a sampling run. 2. Periodically check the buffers during the sample run and record the data in the log sheet or book. 3. Be on the alert for erratic meter response arising from weak batteries, cracked electrode, fouling, etc. 4. Check response and linearity following highly acidic or alkaline samples. Allow additional time for equilibration. 5. Check against the closest reference solution each time a violation is found. 6. Rinse electrodes thoroughly between samples and after calibration. 7. Recalibrate after every 5 to 10 samples or after very high or low readings.	Take all meters to the laboratory for maintenance, calibration and quality control checks.

TABLE 5.2--CONTINUED
QUALITY ASSURANCE PROCEDURES FOR FIELD ANALYSIS AND EQUIPMENT

Parameter	General	Daily	Quarterly
2. **CONDUCTIVITY**	Enter the make, model, serial and/or ID number for each meter in a log book.	1. Standardize with KCl standards having similar specific conductance values to those anticipated in the samples. Calculate the cell constant using two different standards. Cell Constant $= \frac{\text{Standard Value}}{\text{Actual Value}}$ Specific Conductance = Reading multiplied by Cell Constant 2. Rinse cell after each sample to prevent carryover. 3. Recalibrate after very high or low readings or after every 5 to 10 samples.	1. Take all meters to lab for maintenance, calibration and quality control checks. 2. Check temperature compensation. 3. Check date of last platinizing and replatinize if necessary. 4. Analyze NBS or EPA reference standard and record actual vs. observed readings in the log.
3. **TIP-II***	Enter make, model and serial number for each instrument in a log book.	1. Zero instrument with span knob set on "5" well upwind of site. 2. Fill calibration bag and calibrate instrument with 100 ppm isobutylene. 3. If "low bat" indicator appears, recharge 16 hours. 4. Recalibrate at mid-day and at the end of the day.	Take all instruments to the laboratory for maintenance, calibration, and quality control checks.

*Total ionizables present.

Adapted from "Handbook for Sampling and Sample Preservation of Water and Wastewater," EPA 600/4-82-029, September 1982.

5.3 COMPARABILITY

Consistency in the acquisition, preparation, handling, and analysis of samples is necessary in order for the results to be compared where appropriate. Additionally, the results obtained from analyses of the samples will be compared with the results obtained in previous studies, if available.

To ensure the comparability of analytical results with those obtained in previous or future testing, all samples will be analyzed by USEPA-approved methods. The method-specific holding times for various analyses will be strictly adhered to.

5.4 PRECISION AND ACCURACY

The validity of the data produced will be assessed for precision and accuracy. Analytical methods which will be used may include gas chromatography/mass spectrometry (GC/MS), gas chromatography (GC), calorimetry, atomic absorption spectroscopy (AAS), and gravimetric and titrametric techniques. The following outlines the procedures for evaluating precision and accuracy, routine monitoring procedures, and corrective actions to maintain analytical quality control.

The requirements of QA/QC are both method-specific and matrix-dependent. The procedures to be used are described on this basis in Sections 8 and 11. The number of duplicate, spiked, and blank samples analyzed will be dependent upon the total number of samples of each matrix to be analyzed.

Quality assurance audit samples will be prepared and submitted by the laboratory QA manager when required by the analytical method. The degree of accuracy and the recovery of analyte to be expected for the analysis of QA samples and spiked samples is dependent upon the matrix, method of analysis, and compound or element being determined. The concentration of the analyte relative to the detection limit is also a major factor in determining the accuracy of the measurement. The lower end of the analytical range for most analyses is generally accepted to be five times the detection limit. At or above this level, the determination of spike recoveries for metals in water samples will be expected to range from 75 to 125 percent. The recovery of organic surrogate compounds and matrix spiking compounds determined by GC/MS will be compared to the guidelines for recovery of individual compounds as established by the applicable USEPA method protocol.

The quality of results obtained for inorganic ion parameters will be assessed by comparison of QC data with laboratory control charts for each test as applicable.

SECTION 6

SAMPLING PROCEDURES

6.1 INTRODUCTION

Representative sampling of surface water, sediment, surface soil, and air will be conducted as described in the project work plan. The sampling program has been developed for these investigations to provide data necessary to identify the extent and severity of environmental contamination and to determineor contact with contaminated media. All samples will be handled in accordance with the site-specific Health and Safety Plan and this Quality Assurance Project Plan.

The number of samples collected, the type of container and the sample preservation method depends upon the sample matrix and the analytical parameters desired. The required sample preservation and analytical holding times for water and soil samples will be consistent with those required by the USEPA methods. These holding times, unless otherwise noted, apply to verified time of sample receipt by the analytical laboratory.

The necessary sample containers and preservatives will be provided by the laboratory. Water samples for volatile organic analysis will be collected in glass vials with no air bubbles remaining. Sample labels will be affixed to all containers to identify the sample identification number, the date of collection and any sample preservatives.

After the bottles for a given sample location have been filled, they will be placed in a shipping cooler. Samples requiring cooling (4°C) will be covered with crushed ice in plastic bags or ice packs. Containers will be packed carefully in the cooler to prevent breakage. Each cooler will then be sealed for overnight shipment to the laboratory.

A chain of custody record will be filled out and shall accompany each sample to provide documentation and to track sample possession. Chain of custody procedures are discussed in Section 7.

The following parameters will be measured in the field for water samples: pH, temperature and specific conductivity. Temperature will be measured immediately upon sample collection, as it is subject to the most rapid change. Conductivity and pH will be measured with electronic probes, which will be rinsed with distilled water between each sample.

6.2 SURFACE SOIL SAMPLES

The surface soil samples will be collected from the top six inches of soil using a bucket auger or stainless steel spatula which has been decontaminated with Alconox detergent/water, tap water, methanol and final rinse with distilled water. The sampling location and sample description will be recorded on the Field Surface

FIGURE 6.1

FIELD SURFACE SAMPLING RECORD

Site ______________________ Site No. __________ Date: __/__/__

Samplers: ______________________ of ______________________

______________________ of ______________________

SAMPLING: Time __________ ____ a.m.

____ p.m.

Sample Type: ______________________

Sampling Method: ______________________

Depth of Sample: ______________________

Description of Sampling Point:

Drainage Direction: ______________________

Upstream From: ______________________

Downstream From: ______________________

Physical Appearance/Odor: ______________________

____

Wildlife Observed: ______________________

Sampling Description:

Suspended Matter: ______________________

Color/Stain: ______________________

Odor: ______________________

Other: ______________________

Texture: ______________________

Analyze for: ______________________

Retrigerated: Date: __/__/__ Time ____ a.m.

____ p.m.

Field Tests:

Temperature (C°/°F) __________ Weather __________

pH __________ __________

Conductivity __________ __________

Comments: ______________________

____

Sample Record. Background soil samples will be collected wherever possible for comparison of contaminant levels.

Surface soil samples will be taken on either a grab or composite basis. Grab samples only will be taken for volatile organics. Composite samples will be collected by taking equal (determined by visual inspection) amounts of soil from a minimum of three sample locations. Each sample will be transferred to a stainless steel mixing bowl and the contents of the bowl will be homogeneously mixed for a minimum of at least 1 minute using a stainless steel spatula. The composited samples will then be transferred to the sampling jar. Sufficient sample will be collected at all locations to allow shipment of duplicate samples if appropriate.

6.3 AIR QUALITY MONITORING

Air quality monitoring for organic vapors with a Photovac Tip II photoionization detector will be implemented at each location, before, during, and after sampling. The purpose of air quality monitoring is three-fold: 1) to determine whether the use of respirators is needed while on-site, 2) to locate potential "hot-spots" from which vapors may emanate, and 3) to provide evidence regarding the locations of the areas of high contamination.

Indoor air monitoring will be conducted at certain sites, as described in the Work Plan. Air samples will only be taken in enclosed structures and only where there is a distinct odor of MGP residues as confirmed by on-scene NYSEG representatives. This method is considered acceptable by NYSEG since the odor threshold for many coal tar residues is well below existing analytical limits. The sampling method is described in Attachment 1.

SECTION 7

SAMPLE CUSTODY

The program for sample custody and sample transfer is in compliance with the applicable USEPA methods. Sample chain-of-custody is initiated by the laboratory with selection and preparation of the sample containers. To reduce the chance for error, the number of personnel handling the samples is minimized.

On-site monitoring data will be controlled and entered in permanent log books. Personnel involved in the chain-of-custody and transfer of samples will be trained in the proper procedures prior to implementation.

7.1 FIELD SAMPLE CUSTODY

Sample custody and documentation procedures described in this section will be followed throughout all project sample collection efforts. Components of sample custody procedures include the use of field log books, sample labels and chain-of-custody forms.

7.1.1 Field Log Books

The Project Manager will control all field log books. Each field log book will receive a serialized number and be issued to the field team leader. Field log books will be maintained by the field team leader and other team members to provide a daily record of significant events, observations, and measurements during the field investigation. All entries will be signed and dated.

All information (except chain-of-custody forms) pertinent to field survey and/or sampling activities will be recorded in the log books. The books will be bound with consecutively numbered pages. Entries in the log book, supplemented by the sampling records, will include at a minimum the following information:

- Name and title of author, date and time of entry, and physical/environmental conditions during field activity.
- Purpose of sampling activity.
- Location of sampling activity.
- Name and address of field contact.
- Name and title of field crew.
- Name and title of any site visitors.
- Sample media (e.g., soil, sediment, ground water etc.).
- Sample collection method.
- Number and volume of sample(s) taken.
- Description of sampling point(s).

- Preservatives used.
- Date and time of collection.
- Sample identification number(s).
- Sample distribution (e.g., laboratory).
- Field observations.
- Any field measurements made, such as pH, temperature, conductivity, water level, etc.
- References for all maps and photographs of the sampling site(s).
- Information pertaining to sample documentation such as:
  - Bottle lot numbers
  - Dates and method of sample shipments
  - Chain-of-Custody Record numbers
  - Federal Express (or other carrier) shipment number, location of shipper, and date and time of shipment.

All original data recorded in Field Log Books and Chain-of-Custody Records will be written with waterproof ink. None of these accountable serialized documents will be destroyed.

If an error is made on an accountable document assigned to one individual, that individual will make all corrections simply by crossing a line through the error and entering the correct information. The erroneous information will not be erased. Any subsequent error discovered on an accountable document will be corrected by the person who made the entry. All subsequent corrections will be initialed and dated.

7.1.2 Custody Seals

When sample bottles are shipped to the laboratory, they will be placed in containers sealed with signed custody seals. Clear tape will be placed over the seals to ensure that seals are not accidentally broken during shipment.

7.2 CHAIN-OF-CUSTODY RECORDS

All samples will be accompanied by a chain-of-custody record, an example of which is shown on Figure 7.1. A chain-of-custody record accompanies each sample container from initial selection and preparation at the laboratory, to the field for sample containment and preservation, and through its return to the laboratory. If samples are split and sent to different laboratories, a copy of the chain-of-custody record will be sent with each sample.

FIGURE 7.1

CHAIN OF CUSTODY RECORD

PROJECT NO.

PROJECT NAME

SAMPLERS (Signatures)

STA. NO.	DATE	TIME	COMP.	GRAB	STATION LOCATION	NO. OF CONTAINERS							REMARKS

Relinquished by: (Signature)	Date/Time	Received by: (Signature)	Relinquished by: (Signature)	Date/Time	Received by: (Signature)
Relinquished by: (Signature)	Date/Time	Received by: (Signature)	Relinquished by: (Signature)	Date/Time	Received by: (Signature)
Relinquished by: (Signature)	Date/Time	Received for lab. by: (Signature)	Date/Time	Remarks	

ENGINEERING-SCIENCE INC.
290 Elwood Davis Road, Suite 312
Liverpool, New York 13088
Telephone: (315) 451-9560

The "remarks" column on this form is used to record specific considerations associated with sample acquisition such as: sample type, container type, and sample preservation methods. The analyses to be performed are written in the diagonal spaces at the top of the form. The number of containers for each type of analysis are written in the appropriate column under the analysis to be performed. When transferring samples, individuals relinquishing and receiving the samples will sign, date and note the time on the record.

The laboratory will maintain one file copy of each record, and the completed original will be returned to the Project Manager. This record will be used to document sample custody transfer from the sampler to a shipper, and to the laboratory.

7.3 SHIPPING OF SAMPLES

Samples will be delivered to the designated laboratory for analysis as soon as practical after collection, and generally within 24 hours of sample collection. Prior to sample shipment, the Field Team Leader (or a designee) will contact the laboratory to inform them of shipments. Shipments will be sent for overnight delivery by common carrier and a bill of lading (such as a Federal Express Airbill) will be used to document sample shipment to the laboratory. Bills of lading will be retained as part of the permanent documentation (as per 40 CFR 261.4).

7.4 LABORATORY SAMPLE CUSTODY

The Project Manager will notify the laboratory of upcoming field sampling activities and the subsequent transfer of samples to the laboratory. This notification will include information concerning the number and type of samples to be shipped as well as the anticipated date of arrival.

The laboratory sample custody program will, at a minimum, meet the following criteria:

- The laboratory will designate a sample custodian who is responsible for maintaining custody of the samples and for maintaining all associated records documenting that custody.
- Upon receipt of the samples, the custodian will check the original chain-of-custody and requests for analysis documents and compare them with the labeled contents of each sample container for correctness and traceability. The sample custodian signs the chain-of-custody and records the date and time received. Samples are then logged into a data management/sample tracking system.
- Care is exercised to annotate any labeling or descriptive errors. In the event of discrepant documentation, the laboratory will immediately contact the Project Manager as part of the corrective action process. A qualitative assessment of each sample container is performed to note any anomalies, such as broken or leaking bottles. This assessment is recorded as part of the incoming chain-of-custody procedure.

- The samples are stored in a secured area and at a temperature of approximately 4°C if necessary until analyses commence.
- A laboratory chain-of-custody record accompanies the sample or sample fraction through final analysis for control.
- A copy of the laboratory chain-of-custody form will accompany the analytical report and will become a permanent part of the project records.
- The pH of incoming water samples will be checked by the laboratory when preservatives have been used.

SECTION 8

CALIBRATION PROCEDURES AND FREQUENCY

8.1 FIELD INSTRUMENTS

All field analytical equipment will be calibrated immediately prior to each day's use. The calibration procedures will conform to manufacturer's standard instructions. This calibration will ensure that the equipment is functioning within the allowable tolerances established by the manufacturer and required by the project. Records of all instrument calibration will be maintained by the Field Team Leader. Copies of all of the instrument manuals will be maintained on-site by the Field Team Leader. Additional details of instrument calibration and maintenance may be found in Table 5.2.

8.1.1 Portable Photoionization Analyzer

The photoionization analyzer will be a Photovac TIP II, equipped with a 10.6 EV lamp. Calibration procedures are provided in Table 5.2. Calibration will be performed at the beginning and end of each day of use with a standard calibration gas of a concentration within the expected range of use. The calibration gas has an approximate concentration of 100 parts per million of isobutylene. If the unit experiences abnormal perturbation or erratic readings additional calibration will be required. All calibration data will be recorded in field notebooks and on calibration log sheets to be maintained on-site.

A battery check will be completed at the beginning and end of each working day. If erratic readings are experienced, the battery will be checked for proper voltage. This information will also be recorded in field notebooks and on the calibration log sheets.

8.1.2 pH Meter

Calibration of the pH meter will be performed at the start of each day of use and as required during the work day as required by this plan. Standard buffer solutions, traceable to the National Institute of Standards and Technology (NIST, formerly the National Bureau of Standards), which bracket the expected pH range will be used. These standards will most likely be pH of 7.0 and 10.0 standard units. The use of the pH calibration and slope knobs will be used to set the meter to display the value of the standard being checked. The calibration data will be recorded in the field book. The meter will be recalibrated after very high (>10) or very low (<4) readings.

8.1.3 Specific Conductivity Meter

Calibration checks using the conductivity standard will be performed at the start of each day of use and as required during the work day as required by this plan. The portable conductivity meter will either be calibrated using a reference solution of 0.01 N KCl (specific conductance, 1413 umhos/cm at 25°C) or a calibration resistor on a daily basis. Readings within 5 percent are acceptable. If the unit has a thermometer, it will be calibrated against the field laboratory thermometer on a weekly basis. Specific methods for performing calibration of each of these instruments is provided in Table 5.2 of this plan.

8.2 LABORATORY INSTRUMENTS

Calibration of laboratory equipment will be based on approved, written procedures. Records of calibration, repairs, or replacement will be filed and maintained by the designated laboratory personnel performing quality control activities. These records shall be filed at the location where the work is performed and will be subject to QA audit. For all instruments, the laboratory shall maintain a factory-trained repair staff with in-house spare parts or shall maintain service contracts with vendors. Calibration procedures and frequencies specified by the USEPA methods have precedence for instrument operation, maintenance, and internal Quality Assurance, unless procedures documented by the analytical laboratory are more stringent than the USEPA methods <u>and</u> are acceptable to USEPA.

SECTION 9

ANALYTICAL PROCEDURES

Sample preparation and analytical procedures shall conform to the applicable USEPA methods. The analytical laboratory proposed for this work is the Engineering-Science, Inc. laboratory in Berkeley, CA. which is a NYSDEC-approved laboratory. Table 9.1 lists the analytical methods.

9.1 VOLATILE ORGANICS (VOA)

For the analysis of water samples for volatile organic compounds (VOCs), no sample preparation is required. A measured portion of the sample is placed in the purge and trap apparatus and the sample analysis is performed by gas chromatography/mass spectrometry, EPA Method 624. Soil samples will be analyzed by Method 8240. The list of volatile organic compounds to be analyzed and the reporting limits to be used by the laboratory is presented in Table 9.2.

9.2 SEMIVOLATILE ORGANIC COMPOUNDS

The extraction procedures used for preparation of water samples for the analysis of semivolatile organic compounds are as described in EPA Method 625. Soil samples will be analyzed by Method 8270. The list of semivolatiles and their reporting limits are presented in Tables 9.3 and 9.4.

The samples will be analyzed as specified in the method. Instrument calibration, compound identification, and quantitation will be performed as described in Section 8 of this document, and in the EPA Method 625.

9.3 METALS

Water, sediment, and soil samples will be analyzed for the metals listed in Table 9.5 and 9.6. The reporting limits for these metals are as also specified in those same tables. The detection limits for individual samples may be higher due to the sample matrix interferences, which will in turn affect the reporting limit. The procedures for these analyses will be as described in the methods referenced on Table 9.1.

TABLE 9.1

SUMMARY OF ANALYTICAL METHODS

Water Matrices	
Volatile Organics	EPA Method 624
Semivolatile Organics	EPA Method 625
Metals:	
Lead	EPA Method 7421 (GF)(1)
Chromium	EPA Method 7191 (GF)
Iron, Zinc, Aluminum, Cadmium, Antimony, Copper, Cobalt, Manganese, and Nickel	EPA Method 200.7 (ICP)(2)
Cyanide (Total and Amenable)	EPA Method 335
Soil Matrices	
Volatile Organics	EPA Method 8240
Semivolatile Organics	EPA Method 8270
Metals:	
Lead	EPA Method 7421
Chromium	EPA Method 7191
Iron, Zinc, Aluminum, Cadmium, Antimony, Copper, Cobalt, Manganese, and Nickel	EPA Method 6010
Cyanide (Total and Amenable)	EPA Method 9010

(1) Graphite Furnace Method
(2) Inductively - Coupled Plasma Method

TABLE 9.2

REPORTING LIMITS FOR EPA METHODS 624 (WATER) AND 8240 (SOIL)

Compound	Reporting Limit (ppm)(1)
Chloromethane	0.010
Bromomethane	0.010
Vinyl Chloride	0.010
Chloroethane	0.010
Methylene Chloride	0.005
Acrolein	0.010
Acetone	0.100
Acrylonitrile	0.010
Carbon Disulfide	0.010
Trichlorofluoromethane	0.010
1,1-Dichloroethene	0.005
1,1-Dichloroethane	0.005
trans-1,2-Dichloroethene	0.005
Chloroform	0.005
1,2-Dichloroethane	0.005
2-Butanone	0.100
1,1,1-Trichloroethane	0.005
Carbon Tetrachloride	0.005
Vinyl Acetate	0.050
Bromodichloromethane	0.005
1,2-Dichloropropane	0.005
cis-1,3-Dichloropropene	0.005
Trichloroethene	0.005
Benzene	0.005
Dibromochloromethane	0.005
1,1,2-Trichloroethane	0.005
trans-1,3-Dichloropropene	0.005
2-Chloroethylvinylether	0.010
Bromoform	0.005
2-Hexanone	0.050
4-Methyl-2-pentanone	0.050
Tetrachloroethene	0.005
1,1,2,2-Tetrachloroethane	0.005
Toluene	0.005
Chlorobenzene	0.005
Ethylbenzene	0.005
Styrene	0.005
m/p-Xylene	0.005
o-Xylene	0.005
1,3-Dichlorobenzene	0.005
1,2/1,4-Dichlorobenzene	0.005

(1) Concentrations reported by laboratory in μg/l for water, μg/kg for soil.

TABLE 9.3

REPORTING LIMITS FOR EPA METHOD 625 (WATER)

Compound	Reporting Limit (ppm)(1)
N-Nitroso-Dimethylamine	0.010
Phenol	0.010
bis(2-Chloroethyl)ether	0.010
2-Chlorophenol	0.010
1,3-Dichlorobenzene	0.010
1,4-Dichlorobenzene	0.010
Benzyl Alcohol	0.010
1,2-Dichlorobenzene	0.010
2-Methylphenol	0.010
bis(2-chloroisopropyl)Ether	0.010
4-methylphenol	0.010
N-Nitroso-Di-n-Propylamine	0.010
Hexachloroethane	0.010
Nitrobenzene	0.010
Isophorone	0.010
2-Nitrophenol	0.010
2,4-Dimethylphenol	0.010
bis(2-Chloroethoxy)methane	0.010
2,4-Dichlorophenol	0.010
Benzoic Acid	0.050
1,2,4-Trichlorobenzene	0.010
Naphthalene	0.010
4-Chloroaniline	0.010
Hexachlorobutadiene	0.010
4-Chloro-3-Methylphenol	0.010
2-Methylnaphthalene	0.010
Hexachlorocyclopentadiene	0.010
2,4,6-Trichlorophenol	0.010
2,4,5-Trichlorophenol	0.050
2-Chloronaphthalene	0.010
2-Nitroaniline	0.050
Dimethylphthalate	0.010
Acenaphthylene	0.010
2,6-Dinitrotoluene	0.010
3-Nitroaniline	0.050
Acenaphthene	0.010
2,4-Dinitrophenol	0.050
Dibenzofuran	0.010

TABLE 9.3

CONTINUED

Compound	**Reporting Limit (ppm)[(1)]**
4-Nitrophenol	0.050
2,4-Dinitrotoluene	0.010
Fluorene	0.010
Diethylphthalate	0.010
4-chlorophenyl-phenylether	0.010
4-Nitroaniline	0.050
4,6-Dinitro-2-methylphenol	0.050
N-Nitrosodiphenylamine	0.010
4-Bromophenyl-phenylether	0.010
Hexachlorobenzene	0.010
Pentachlorophenol	0.050
Phenanthrene	0.010
Anthracene	0.010
Di-n-Butylphthalate	0.010
Fluoranthene	0.010
Pyrene	0.010
Butylbenzylphthalate	0.010
Benzo(a)Anthracene	0.010
3,3'-Dichlorobenzidine	0.020
Chrysene	0.010
bis(2-Ethylhexyl)phthalate	0.010
Di-n-octylphthalate	0.010
Benzo(b)Fluoranthene	0.010
Benzo(k)Fluoranthene	0.010
Benzo(a)Pyrene	0.010
Indeno(1,2,3-cd)Pyrene	0.010
Dibenz(a,h)Anthracene	0.010
Benzo(g,h,i)Perylene	0.010

(1) Water concentrations reported by laboratory in μg/L.

TABLE 9.4

REPORTING LIMITS FOR EPA METHOD 8270 (SOIL)

Compound	Reporting Limit (ppm)[(1)]
N-Nitroso-Dimethylamine	0.330
Phenol	0.330
bis(2-Chloroethyl)ether	0.330
2-Chlorophenol	0.330
1,3-Dichlorobenzene	0.330
1,4-Dichlorobenzene	0.330
Benzyl Alcohol	0.330
1,2-Dichlorobenzene	0.330
2-Methylphenol	0.330
bis(2-Chloroisopropyl)Ether	0.330
4-Methylphenol	0.330
N-Nitroso-Di-n-Propylamine	0.330
Hexachloroethane	0.330
Nitrobenzene	0.330
Isophorone	0.330
2-Nitrophenol	0.330
2,4-Dimethylphenol	0.330
bis(2-Chloroethoxy)Methane	0.330
2,4-Dichlorophenol	0.330
Benzoic Acid	1.600
1,2,4-Trichlorobenzene	0.330
Naphthalene	0.330
4-Chloroaniline	0.330
Hexachlorobutadiene	0.330
4-Chloro-3-Methylphenol	0.330
2-Methylnaphthalene	0.330
Hexachlorocyclopentadiene	0.330
2,4,6-Trichlorophenol	0.330
2,4,5-Trichlorophenol	1.600
2-Chloronaphthalene	0.330
2-Nitroaniline	1.600
Dimethylphthalate	0.330
Acenaphthylene	0.330
2,6-Dinitrotoluene	0.330
3-Nitroaniline	1.600
Acenaphthene	0.330
2,4-Dinitrophenol	1.600
Dibenzofuran	0.330
4-Nitrophenol	1.600
2,4-Dinitrotoluene	0.330
Fluorene	0.330
Diethylphthalate	0.330

TABLE 9.4

CONTINUED

Compound	Reporting Limit (ppm)(1)
4-Chlorophenyl-Phenylether	0.330
4-Nitroaniline	1.600
4,6-Dinitro-2-Methylphenol	1.600
N-Nitrosodiphenylamine	0.330
4-Bromophenyl-phenylether	0.330
Hexachlorobenzene	0.330
Pentachlorophenol	1.600
Phenanthrene	0.330
Anthracene	0.330
Di-n-Butylphthalate	0.330
Fluoranthene	0.330
Pyrene	0.330
Butylbenzylphthalate	0.330
Benzo(a)Anthracene	0.330
3,3'-Dichlorobenzidine	0.660
Chrysene	0.330
bis(2-Ethylhexyl)phthalate	0.330
Di-n-octylphthalate	0.330
Benzo(b)Fluoranthene	0.330
Benzo(k)Fluoranthene	0.330
Benzo(a)Pyrene	0.330
Indeno(1,2,3-cd)Pyrene	0.330
Dibenz(a,h)Anthracene	0.330
Benzo(g,h,i)Perylene	0.330

(1) Soil concentrations reported by laboratory in $\mu g/kg$.

TABLE 9.5

METALS REPORTING LIMITS
FOR
WATER MATRICES

Analyte	Report Limit (ppm) (1)	Method
Aluminum	0.2	ICP
Antimony	0.1	ICP
Cadmium	0.005	GF-AA
Chromium	0.005	GF-AA
Cobalt	0.05	ICP
Copper	0.03	ICP
Iron	0.05	ICP
Lead	0.003	GF-AA
Manganese	0.02	ICP
Nickel	0.04	ICP
Zinc	0.02	ICP

(1) Water concentrations reported by laboratory in mg/L.

TABLE 9.6

METALS REPORTING LIMITS
FOR
SOIL MATRICES

Analyte	**Report Limit (ppm) (1)**	**Method**
Aluminum	40	ICP
Antimony	20	ICP
Cadmium	1	ICP
Chromium	1	GF-AA
Cobalt	10	ICP
Copper	6	ICP
Iron	10	ICP
Lead	0.6	GF-AA
Manganese	4	ICP
Nickel	8	ICP
Zinc	4	ICP

(1) Soil concentrations reported by laboratory in mg/kg.

SECTION 10

DATA REDUCTION, VALIDATION AND REPORTING

10.1 DATA REDUCTION

10.1.1 Field Data

Field measurements will be made by competent field geologists, engineers, environmental scientists, and/or technicians.

Field data will be validated using four different procedures:

- Routine checks will be made during the processing of data. An example is looking for errors in identification codes.
- Internal consistency of a data set will be evaluated. This step will involve plotting the data and testing for outliers.
- Checks for consistency of the data set over time will be performed. This can be accomplished by visually comparing data sets against gross upper limits obtained from historical data sets, or by testing for historical consistency. Anomalous data will be identified.
- Checks may be made for consistency with parallel data sets, that is, data sets obtained presumably from the same population (for example, from the same volume of soil).

The purpose of these validation checks and tests is to identify outliers; that is, an observation that does not conform to the pattern established by other observations. Outliers may be the result of transcription errors or instrument breakdowns. Outliers may also be manifestations of a greater degree of spatial or temporal variability than expected.

After an outlier has been identified, a decision concerning its fate must be rendered. Obvious mistakes in data will be corrected when possible, and the correct value will be inserted. If the correct value cannot be obtained, the data may be excluded. An attempt will be made to explain the existence of the outlier. If no plausible explanation can be found for the outlier, it may be excluded, but a note to that effect will be included in the report. Also, an attempt will be made to determine the effect of the outlier when both included and excluded in the data set.

10.1.2 Laboratory Data

The procedures used for calculations and data reduction are specified in each analysis method referenced previously. Raw data are entered in bound laboratory notebooks. A separate book is maintained for each analytical procedure. The data entered are sufficient to document all factors used to arrive at the reported value for each sample. Calculations may include factors such as sample dilution ratios or conversion to dry-weight basis for solid samples. These data are stored in client files and traceable to original entries in bound notebooks. Instrument chart recordings and calculator print-outs are labeled and attached to their respective pages or are cross-referenced and stored in the project file.

About 10 percent of all calculations will be checked from the raw data to final value stages prior to reporting of a group of samples. Results obtained from extreme ends of standard curves generated by linear regression programs will be checked against graphically produced standard curves if the correlation coefficient of a program curve is less than 0.995.

Concentration units will be listed on reports and any special conditions noted. The analysis report includes the unique sample number given each sample, details of sample receipt and report preparation.

10.2 DATA REVIEW AND VALIDATION

Data will be reviewed and validated in terms of analytical holding times according to the analytical method requirements and using EPA guidance as published in:

- "Laboratory Data Validation: Functional Guidelines for Evaluating Inorganics Analyses," July, 1988.
- "Laboratory Data Validation: Functional Guidelines for Evaluating Organics Analyses," February, 1988.

10.3 REPORTING

For all analyses, as a minimum, the laboratory report will show traceability to sample analyzed, and will contain the following information:

- Project identification
- Field sample number
- Laboratory sample number
- Sample matrix description
- Date and time of sample collection
- Analytical method description and reference citation
- Individual parameter results
- Date of analysis (extraction, first run, and subsequent runs)
- Detection limits achieved
- Dilution or concentration factors

Completed copies of the original chain-of-custody records for the appropriate samples will be included in the analytical results reports. The following units shall be used in reporting. Parameters determined in water samples will be reported in units of ug/L. Organic parameters determined in soil and sediment samples will be reported in units of ug/Kg dry weight. Inorganic parameters determined in soil and sediment samples will be reported in units of mg/Kg dry weight. The percentage of moisture will be presented with the results of the soil and sediment samples.

Quality control reports will be prepared which summarize the results of samples analyzed by the laboratory for quality control purposes. These reports will summarize all the quality control data results for the samples, including results for method blanks, duplicates, and matrix spikes. Spike concentrations, percent recoveries and relative percent differences will be reported. These reports will be used to prepare a summary quality assurance report.

Completed copies of the chain-of-custody sheets accompanying each sample from time of initial bottle preparation to completion of analysis shall be attached to the report of analytical testing.

10.4 DATA HANDLING

Two copies of the analytical data will be provided by the laboratory, and sent to the ES-Syracuse office. The Project Manager will immediately arrange for filing of one package, as delivered. The second, or working copy, will be used to generate summary tables. These tables will form the foundation of a working database for assessment of the site contamination condition.

SECTION 11

INTERNAL QUALITY CONTROL CHECKS AND FREQUENCY

11.1 QUALITY ASSURANCE BATCHING

Each set of samples will be analyzed concurrently with blanks, matrix spikes (MS) and matrix spike duplicates (MSD) (organic samples), spike duplicates (metals), surrogate spikes and replicates at the frequency required by the analytical methods. For planning purposes, it has been assumed that MS, MSD and spike duplicate samples will be collected for each sample matrix (soil, aqueous) at each site.

11.2 ORGANIC STANDARDS AND SURROGATES

As required by the EPA methods, all standard and surrogate compounds are checked by the method of mass spectrometry for correct identification and gas chromatography for degree of purity and concentration. When the compounds pass the identity and purity tests, they are certified for use in standard and surrogate solutions. Concentrations of the solutions are checked for accuracy before release for laboratory use. Standard solutions are replaced monthly or earlier based upon data indicating deterioration.

11.3 ORGANIC BLANKS, SPIKED BLANK, AND MATRIX SPIKE

Analysis of blank samples verifies that the analytical method does not introduce contaminants. The blank water can be generated by reverse osmosis and Super-Q™ filtration systems, or distillation of water containing $KMn0_4$. The spiked blank is generated by addition of standard solutions to the blank water. The matrix spike is generated by addition of surrogate standard to each sample.

11.4 TRIP AND FIELD BLANKS

Trip blanks and field blanks will be utilized in accordance with the specifications in Section 5 of this QA/QC Project Plan. These blanks will be analyzed to provide a check on sample bottle preparation and to evaluate the possibility of cross contamination of the samples.

11.5 FIELD MEASUREMENTS

Aqueous samples collected during this project will be measured in the field for pH, temperature and specific conductance. Quality control checks for the field instruments are presented in Table 5.2.

SECTION 12

QUALITY ASSURANCE PERFORMANCE AUDITS, SYSTEMS AUDITS, AND FREQUENCY

Quality assurance audits are performed by the project quality assurance group under the direction and approval of the Project Quality Assurance Manager (PQAM). Functioning as an independent body and reporting directly to company quality assurance management the PQAM will plan, schedule, and approve system and performance audits based upon company procedure customized to the project requirements. These audits will be implemented to evaluate the capability and performance of project and subcontractor personnel, items, activities, and documentation of the measurement system(s). At times, the PQAM may request additional personnel with specific expertise from company and/or project groups to assist in conducting performance audits. However, these personnel will not have responsibility for the project work associated with the performance audit.

12.1 SYSTEM AUDITS

System audits, performed by the PQAM or designated auditors, will encompass evaluation of measurement system components to ascertain their appropriate selection and application. In addition, field and laboratory quality control procedures and associated documentation may be system-audited. These audits may be performed at least once during the performance of the project. However, if conditions adverse to quality are detected between planned audits, or if the Project Manager requests the PQAM to perform unscheduled audits, these activities will be instituted.

12.2 PERFORMANCE AUDITS

Performance audits may be conducted to determine the accuracy and implementation of the measurement system(s) and parameter(s). As in system audits, the PQAM or assigned alternate will exercise planned and scheduled performance audits with the understanding that unplanned audits may be implemented for reasons stipulated in system audits above. Performance audits are most desirable and may be performed once the measurement systems are operational and initially generating measurement data.

12.3 QA MANAGEMENT ASSESSMENT

In addition to ongoing system and performance audits, quality assurance management assessments will be performed regularly by Engineering-Science. Such assessments will inform both company and project management that overall quality assurance requirements have been properly implemented and audited by the project QA group.

12.4 FORMALIZED AUDITS

Formalized audits refer to any system or performance audit that is documented and implemented by the QA group. These audits encompass documented activities performed by qualified lead auditors to a written procedure or checklists to objectively verify that quality assurance requirements have been developed, documented, and instituted in accordance with contractual and project criteria. Formalized audits may be performed on project and subcontractor work at various locations.

Audit reports will be written by lead auditors after gathering and evaluating all resultant data. Items, activities, and documents determined by lead auditors to be in noncompliance shall be identified at exit interviews conducted with the involved management. Noncompliances will be logged, documented, and controlled through audit findings which are attached to and are a part of the integral audit report. These audit finding forms are directed to management to satisfactorily resolve the noncompliance in a specified and timely manner. All audit checklists, audit reports, audit findings, and acceptable resolutions are approved by the PQAM prior to issue. QA verification of acceptable resolutions may be determined by re-audit or documented surveillance of the item or activity. Upon verification acceptance, the PQAM will close out the audit report and findings.

It is the Project Manager's overall responsibility to ensure that all corrective actions necessary to resolve audit findings are acted upon promptly and satisfactorily.

SECTION 13

PREVENTATIVE MAINTENANCE PROCEDURES AND SCHEDULES

13.1 PREVENTIVE MAINTENANCE PROCEDURES

Equipment, instruments, tools, gauges, and other items requiring preventive maintenance will be serviced in accordance with the manufacturer's specified recommendations and written procedure developed by the operators.

13.2 SCHEDULES

Written procedures where applicable will identify the schedule for servicing critical items in order to minimize the downtime of the measurement system. It will be the responsibility of the operator to adhere to this maintenance schedule and to arrange any necessary and prompt service as required. Service to the equipment, instruments, tools, gauges, etc. shall be performed by qualified personnel.

In the absence of any manufacturer's recommended maintenance criteria, a maintenance procedure will be developed by the operator based upon experience and previous use of the equipment.

13.3 RECORDS

Logs shall be established to record and control maintenance and service procedures and schedules. All maintenance records will be documented and traceable to the specific equipment, instruments, tools, and gauges. Records produced shall be reviewed, maintained, and filed by the operators at the laboratories and by the data and sample control personnel when and if equipment, instruments, tools, and gauges are used at the sites. The project QA group may audit these records to verify complete adherence to these procedures.

13.4 SPARE PARTS

A list of critical spare parts will be identified by the operator. These spare parts will be stored for availability and use in order to reduce the downtime. In lieu of maintaining an inventory of spare parts a service contract for rapid instrument repair or backup instruments will be available.

SECTION 14

ASSESSMENT PROCEDURES FOR DATA ACCEPTABILITY

Procedures used to assess data precision and accuracy are in accordance with the applicable EPA methods. Completeness is recorded by comparing the number of parameters initially analyzed for with the number of parameters successfully completed and validated.

Accuracy

The percent recovery (%) is calculated as below:

$$\% = \frac{S_s - S_o}{S} \times 100$$

S_s = Value obtained by analyzing the sample with the spike added.

S_o = The background value, i.e.; the value obtained by analyzing the sample.

S = Concentration of the spike added to the sample.

Precision

The relative percent difference (RPD) is calculated as below:

$$RPD = \frac{V_1 - V_2}{0.5(V_1 + V_2)} \times 100$$

V_1, V_2 = The 2 values obtained by analyzing the duplicate samples.

SECTION 15

CORRECTIVE ACTION

The following procedures have been established to assure that conditions adverse to quality, such as malfunctions, deficiencies, deviations, and errors, are promptly investigated, documented, evaluated, and corrected.

15.1 INITIATION OF CORRECTIVE ACTION

When a significant condition adverse to quality is noted at regional, site, laboratory, or subcontractor locations, the cause of the condition will be determined and corrective action taken to preclude repetition. Condition identification, cause, reference documents, and corrective action planned to be taken will be documented and reported to the site investigation team leaders, project managers, chief scientist, project QA manager, document control supervisors, and involved subcontractor management, as a minimum. Implementation of corrective action is verified by documented follow-up action. All project personnel have the responsibility, as part of the normal work duties, to promptly identify, solicit approved correction, and report conditions adverse to quality.

Corrective actions may be initiated as a result of:

- Nonattainment of predetermined acceptance standards.
- Determination of deficient procedures or data.
- Detection of faulty equipment or instrumentation.
- Poor sample custody documentation (samples and corresponding analytical results not clearly documented and tracked).
- Violation of quality assurance requirements.
- Circumvention of designated approvals.
- System and performance audits.
- Management assessment.
- Laboratory/field comparison studies.

15.2 PROCEDURE DESCRIPTION

Project management and staff, such as field investigation teams, remedial response planning personnel, and laboratory groups, monitor on-going work performance in the normal course of daily responsibilities.

Work is audited at the regional offices, sites, laboratories, and subcontractor locations by the Project QA Manager (PQAM) and/or designated lead auditors. Items, activities, or documents ascertained to be noncompliance with quality assurance requirements will be documented and corrective actions mandated through audit finding sheets attached to the audit report. Audit findings are logged, maintained, and controlled by the PQAM.

Technicians assigned quality assurance functions at the regional levels will also control noncompliance corrective actions by having the responsibility of issuing and controlling the appropriate Corrective Action Request Form. All project personnel can identify a noncompliance; however, the technician is responsible for documenting, numbering, logging, and verifying the closeout action. It is the Project Manager's responsibility to ensure that all recommended corrective actions are produced, accepted, and received in a timely manner.

The Corrective Action Request (CAR) identifies the adverse condition, reference document(s), and recommended corrective action(s) to be administered. The issued CAR is directed to the responsible manager in charge of the item or activity for action. The individual to whom the CAR is addressed returns the requested response promptly to the technician in charge, affixing his or her signature and date to the corrective action block, after stating the cause of the conditions and corrective action to be taken. The technician maintains the log for status control of CARs and responses, confirms the adequacy of the intended corrective action, and verifies its implementation. The technician will issue and distribute CARs to specified personnel, including the originator, responsible project management involved with the condition, the Project Manager, involved subcontractor, and the PQAM, as a minimum. CARs are transmitted to the project file for the records.

SECTION 16

QUALITY ASSURANCE REPORTS

The procedure for reporting results was described in Section 10. The frequency of the performance audits and the system audits was described in Section 12.

During the course of the project, the PQAM may prepare at least one quality assurance report which will discuss:

- The periodic assessment of measurement data accuracy, precision and completeness.
- Results of performance audits.
- Results of system audits.
- Significant QA/QC problems and action taken.

A final report prepared at the completion of the project may include a separate section summarizing data quality information.

APPENDIX A

SPECIFIC AIR SAMPLING METHODOLOGY

FOR NYSEG SITES

a) Collect a total of two sample tubes at each location
  1) Tube 1(1) - Maximum volume for toluene
    Flow = 50 ml/min
    Operation Time = 160 minutes
    Total Volume = 8 liters
  2) Tube 2(2) - Required volume for napthalene
    Flow = 200 ml/min (maximum flow for air sampling pump)(3)
    Operation Time = 500 minutes
    Total Value = 100 liters (recommended minimum volume for naphtahalene)

b) Nominal Detection Limit
  1) Tube 1 = $.01\text{mg}/_{8\text{ liters}}$ = $1.2\text{ mg}/_{\text{m3}}$ air
  2) Tube 2 = $.01\text{mg}/_{100\text{ liters}}$ = $.1\text{ mg}/_{\text{m3}}$ air.

1) Analyzed for all compounds except napthalene
2) Analyzed for all compounds
3) If large flow pumps are available, sampling times will be proportionately reduced

ATTACHMENT 1

INDOOR AIR MONITORING METHODOLOGY

REAGENTS:

1. Eluent: Carbon disulfide*, chromatographic quality containing (optional) suitable internal standard.
2. Analytes, reagent grade*
3. Nitrogen or helium, purified
4. Hydrogen, prepurified.
5. Air, filtered.
6. Naphthalene calibration stock solution, 0.40 g/mL in CS_2.

*See Special Precautions.

EQUIPMENT:

1. Sampler: glass tube, 7 cm long, 6 mm OD, 4 mm ID, flame-sealed ends, containing two sections of activated (600 °C) coconut shell charcoal (front = 100 mg, back = 50 mg) separated by a 2-mm urethane foam plug. A silylated glass wool plug precedes the front section and a 3-mm urethane foam plug follows the back section. Pressure drop across the tube at 1 L/min airflow must be less than 3.4 kPa. Tubes are commercially available.
2. Personal sampling pumps, 0.01 to 1 L/min (Table 3), with flexible connecting tubing.
3. Gas chromatograph, FID, integrator, and column (page 1501-1).
4. Vials, glass, 1-mL, with PTFE-lined caps.
5. Pipet, 1-mL, and pipet bulb.
6. Syringes, 5-, 10-, 25- and 100-µL.
7. Volumetric flasks, 10-mL.

SPECIAL PRECAUTIONS: Carbon disulfide is toxic and extremely flammable (flash point = -30 °C); benzene is a suspect carcinogen. Prepare samples and standards in a well-ventilated hood.

SAMPLING:

1. Calibrate each personal sampling pump with a representative sampler in line.
2. Break the ends of the sampler immediately before sampling. Attach sampler to personal sampling pump with flexible tubing.
3. Sample at an accurately known flow rate between 0.01 and 0.2 L/min (to 1 L/min for naphthalene or styrene) for a total sample size as shown in Table 3. *
4. Cap the samplers with plastic (not rubber) caps and pack securely for shipment.

SAMPLE PREPARATION:

5. Place the front and back sorbent sections of the sampler tube in separate vials. Discard the glass wool and foam plugs.
6. Add 1.0 mL eluent to each vial. Attach crimp cap to each vial immediately.
7. Allow to stand at least 30 min with occasional agitation.

CALIBRATION AND QUALITY CONTROL:

8. Calibrate daily with at least five working standards over the appropriate range (ca. 0.01 to 10 mg analyte per sample; see Table 4).
   a. Add known amounts of analyte (calibration stock solution for naphthalene) to eluent in 10-mL volumetric flasks and dilute to the mark.
   b. Analyze together with samples and blanks (steps 11, 12 and 13).
   c. Prepare calibration graph (peak area of analyte vs. mg analyte).

See Appendix A

9. Determine desorption efficiency (DE) at least once for each batch of charcoal used for sampling in the calibration range (step 8). Prepare three tubes at each of five levels plus three media blanks.
   a. Remove and discard back sorbent section of a media blank sampler.
   b. Inject a known amount of analyte (calibration stock solution for naphthalene) directly onto front sorbent section with a microliter syringe.
   c. Cap the tube. Allow to stand overnight.
   d. Desorb (steps 5 through 7) and analyze together with working standards (steps 11, 12 and 13).
   e. Prepare a graph of DE vs. mg analyte recovered.
10. Analyze three quality control blind spikes and three analyst spikes to insure that the calibration graph and DE graph are in control.

MEASUREMENT:

11. Set gas chromatograph according to manufacturer's recommendations and to conditions given on page 1501-1. Select appropriate column temperature:

	Approximate Retention Time (min), at Indicated Column Temperature			
Substance[a]	50 °C	100 °C	150 °C	Programmed[b]
benzene	2.5			2.5
toluene	4.3	1.1		4.2
xylene (para)	7.0	1.4		5.2
ethylbenzene	7.0	1.4		5.5
xylene (meta)	7.2	1.5		5.6
cumene	8.3	1.6		6.0
xylene (ortho)	10	1.9		6.5
styrene	16	2.6		7.6
α-methylstyrene		3.2	1.0	8.1
vinyltoluene (meta)		3.8	1.2	8.5
naphthalene		25	4.3	12

[a] Data not available for p-tert-butyltoluene and p-vinyltoluene.
[b] Temperature program: 50 °C for 3 min, then 15 °C/min to 200 °C.

NOTE: Alternatively, column and temperature may be taken from Table 4.

12. Inject sample aliquot manually using solvent flush technique or with autosampler.
    NOTE: If peak area is above the linear range of the working standards, dilute with eluent, reanalyze and apply the appropriate dilution factor in calculations.
13. Measure peak area.

CALCULATIONS:

14. Determine the mass, mg (corrected for DE) of analyte found in the sample front (W_f) and back (W_b) sorbent sections, and in the average media blank front (B_f) and back (B_b) sorbent sections.
    NOTE: If $W_b > W_f/10$, report breakthrough and possible sample loss.

15. Calculate concentration, C, of analyte in the air volume sampled, V (L):

$$C = \frac{(W_f + W_b - B_f - B_b) \cdot 10^3}{V}, \text{ mg/m}^3.$$

EVALUATION OF METHOD:

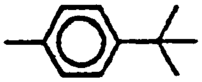
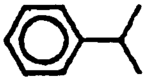
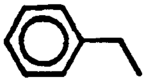
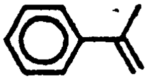
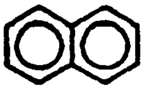
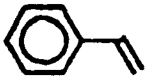
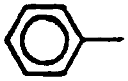
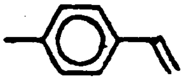
Precisions and biases listed in Table 3 were determined by analyzing generated atmospheres containing one-half, one, and two times the OSHA standard. Generated concentrations were independently verified. Breakthrough capacities were determined in dry air. Storage stability was not assessed. Measurement precisions given in Table 4 were determined by spiking sampling media with amounts corresponding to one-half, one, and two times the OSHA standard for nominal air volumes. Desorption efficiencies for spiked samplers containing only one compound exceeded 75%. Reference [12] provides more specific information.

REFERENCES:

[1] User check, UBTL, NIOSH Sequence #4121-S (unpublished, December 7, 1983).
[2] NIOSH Manual of Analytical Methods, 2nd. ed., V. 1, P&CAM 127, U.S. Department of Health, Education, and Welfare, Publ. (NIOSH) 77-157-A (1977).
[3] Ibid, V. 2, S22, S23, S25, S26, S29, S30, U.S. Department of Health, Education, and Welfare, Publ. (NIOSH) 77-157-B (1977).
[4] Ibid, V. 3, S292, S311, S318, S343, U.S. Department of Health, Education, and Welfare, Publ. (NIOSH) 77-157-C (1977).
[5] R. D. Dreisbach. "Physical Properties of Chemical Compounds"; Advances in Chemistry Series, No. 15; American Chemical Society, Washington (1955).
[6] Code of Federal Regulations; Title 29 (Labor), Parts 1900 to 1910; U.S. Government Printing Office, Washington (1980); 29 CFR 1910.1000.
[7] Update Criteria and Recommendations for a Revised Benzene Standard, U.S. Department of Health, Education, and Welfare, (August 1976).
[8] Criteria for a Recommended Standard....Occupational Exposure to Toluene, U.S. Department of Health, Education, and Welfare, Publ. (NIOSH) 73-11023 (1973).
[9] Criteria for a Recommended Standard....Occupational Exposure to Xylene, U.S. Department of Health, Education, and Welfare, Publ. (NIOSH) 75-168 (1975).
[10] TLVs - Threshold Limit Values for Chemical Substances and Physical Agents in the Work Environment with Intended Changes for 1983-84, ACGIH, Cincinnati, OH (1983).
[11] Criteria for a Recommended Standard...Occupational Exposure to Styrene, U.S. Department of Health and Human Services, Publ. (NIOSH) 83-119 (1983).
[12] Documentation of the NIOSH Validation Tests, S22, S23, S25, S26, S29, S30, S292, S311, S318, S343, U.S. Department of Health, Education, and Welfare; Publ. (NIOSH) 77-185 (1977).

METHOD REVISED BY: R. Alan Lunsford, Ph.D., and Julie R. Okenfuss; based on results of NIOSH Contract CDC-99-74-45.

Table 1. Synonyms, formula, molecular weight, properties [5].

Name/Synonyms	Structure	Empirical Formula	Molecular Weight	Boiling Point (°C)	Vapor Pressure @ 25 °C (mm Hg)	Vapor Pressure @ 25 °C (kPa)	Density @ 20 °C (g/mL)
benzene CAS #71-43-2		C_6H_6	78.11	80.1	95.2	12.7	0.879
p-tert-butyltoluene CAS #98-51-1 1-tert-butyl-4-methylbenzene		$C_{11}H_{16}$	148.25	192.8	0.7	0.09	0.861
cumene CAS #98-82-8 isopropylbenzene		C_9H_{12}	120.20	152.4	4.7	0.62	0.862
ethylbenzene CAS #100-41-4		C_8H_{10}	106.17	136.2	9.6	1.28	0.867
α-methylstyrene CAS #98-83-9 isopropenylbenzene (1-methylethenyl)-benzene		C_9H_{10}	118.18	165.4	2.5	0.33	0.911
naphthalene CAS #91-20-3		$C_{10}H_8$	128.18	80.2[a]	0.2	0.03	1.025
styrene CAS #100-42-5 vinylbenzene		C_8H_8	104.15	145.2	6.1	0.81	0.906
toluene CAS #108-88-3 methylbenzene		C_7H_8	92.14	110.6	28.4	3.79	0.867
vinyltoluene[b]		C_9H_{10}	118.18	167.7	1.6	0.22	0.898
CAS #25013-15-4			(meta)	171.6	1.9	0.26	0.911
methylstyrene	(p-vinyltoluene)		(para)	172.8	1.8	0.24	0.911
methylvinylbenzene			(ortho)	169.8	1.8	0.24	0.904
xylene[c]		C_8H_{10}	106.17				
CAS #1330-20-7			(ortho)	144.4	6.7	0.89	0.880
dimethylbenzene	(p-xylene)		(meta)	139.1	8.4	1.12	0.864
			(para)	138.4	8.8	1.18	0.861

---

[a] Melting point.

[b] Commercial mixture of meta and para isomers.

[c] Mixture of isomers.

Table 2. Permissible exposure limits, ppm [6-11].

Substance	OSHA			NIOSH		ACGIH		mg/m^3
	TWA	C	Peak	TWA	C	TLV	STEL	per ppm
benzene	10	25	50[a]	1		10**	25**	3.19
p-*tert*-butyltoluene	10					10	20	6.06
cumene	50 (skin)					50	75 (skin)	4.91
ethylbenzene	100					100	125	4.34
α-methylstyrene		100				50	100	4.83
naphthalene	10					10	15	5.24
styrene	100	200	600[b]	50	100	50	100	4.26
toluene	200	300	500[a]	100	200*	100	150 (skin)	3.77
vinyltoluene	100					50	100	4.83
xylene	100			100	200*	100	150	4.34

---

[a] Maximum duration 10 min in 8 hr.

[b] Maximum duration 5 min in any 3 hr.

**ACGIH: suspect carcinogen [10].

* 10-min sample.

Table 3. Sampling flowrate[a], volume, capacity, range, overall bias and precision [3,4,12].

Substance	Sampling			Breakthrough Volume @ Concentration		Range at VOL-NOM	Overall	
	Flowrate (L/min)	Volume (L) VOL-NOM	VOL-MAX[b]	(L)	(mg/m^3)	(mg/m^3)	Bias (%)	Precision (s_r)
benzene	≤0.20	2[c]	30	>45	149	42- 165	0.8	0.059
p-*tert*-butyltoluene	≤0.20	10	29	44	112	29- 119	-10.4	0.071[d]
cumene	≤0.20	10	30	>45	480	120- 480	4.6	0.059
ethylbenzene	≤0.20	10	24	35	917	222- 884	-8.1	0.089[d]
α-methylstyrene	≤0.20	3[f]	30	>45	940	236- 943	-10.8	0.061[d]
naphthalene[e]	≤1.0	200	200	>240	81	19- 83	-0.5	0.055
styrene	≤1.0	5[g]	14	21	1710	426-1710	-10.7	0.058[d]
toluene	≤0.20	2[c]	8	12	2294	548-2190	3.8	0.052
vinyltoluene	≤0.20	10	24	36	952	256- 970	-9.5	0.061[d]
xylene	≤0.20	12	23	35	870	218- 870	-2.1	0.060

[a] Minimum recommended flow is 0.01 L/min.

[b] Approximately two-thirds the breakthrough volume, except for naphthalene.

[c] 10-min sample.

[d] Corrected value, calculated from data in Reference 12.

[e] Naphthalene shows poor desorption efficiency at low loading; 100-L minimum volume is recommended.

[f] 15-min sample.

[g] 5-min sample.

Table 4. Measurement range, precision and conditions[a] [3,4,12].

	Desorption Volume	Measurement		Carrier Flow	Column Parameters[b]		
		Range	Precision		t	Length	
Substance	(mL)	(mg)	(s_r)	(mL/min)	(°C)	(m)	Packing[c]
benzene	1.0	0.09- 0.35	0.036	50	115	0.9	A
p-*tert*-butyltoluene	0.5	0.27- 1.09	0.021[d]	50	115	3.0	B
cumene	0.5	0.86- 3.46	0.010	50	99	3.0	B
ethylbenzene	0.5	2.17- 8.67	0.010	50	85	3.0	B
α-methylstyrene	0.5	0.69- 3.57	0.011	50	115	3.0	B
naphthalene	1.0	4.96-19.7	0.019	30	125	3.0	C
styrene	0.5	2.17- 8.49	0.013[d]	50	109	3.0	B
toluene	1.0	1.13- 4.51	0.011	50	155	0.9	D
vinyltoluene	0.5	2.41- 9.64	0.008	50	120	3.0	B
xylene	1.0	2.60-10.4	0.010	50	180	0.9	D

[a] Injection volume, 5.0 µL; nitrogen carrier gas.

[b] All columns stainless steel, 3.2 mm outside diameter.

[c] A, 50/80 mesh Porapak P; B, 10% FFAP on 80/100 mesh Chromosorb W AW-DMCS;
C, 10% OV-101 on 100/120 mesh Supelcoport; D, 50/80 mesh Porapak Q.

[d] Corrected value, calculated from data in [12].

APPENDIX C

SCOPE OF WORK

SECTION 1

SCOPE OF WORK

INTRODUCTION

This Work Plan consist of two sections, the first of which describes the scope of work. The scope of work includes a program preparation part, for preparation of program wide planning documents such as a Quality Assurance Project Plan (QAPP) and Health and Safety Plan (HASP) and five other parts. The program-wide QAPP has already been completed and will not be discussed here. The program-wide HASP has also been completed and modified as appropriate on a site-by-site so that a separate HASP is available for each site to be investigated. The following scope of work will therefore concentrate on the five remaining parts to be completed at the site as follows:

Part 1 - Literature and Records Search

Part 2 - On-Site Evaluation

Part 3 - Site Survey and Mapping

Part 4 - Sampling and Analysis

Part 5 - Report Preparation

These five parts are described in this initial section. Section 2 of this Work Plan provides site-specific information including the site location, size, history, and the number, location, and rationale for collection of samples.

OBJECTIVES

The scope of work includes a technical and management effort developed to meet the following objectives:

- Determine if there is any imminent threat to human health or environment.
- Establish a relative ranking of former MGP sites.

SCOPE OF WORK

Program Preparation Part

A Quality Assurance Project Plan (QAPP) and a Health and Safety Project Plan (HASP) has been prepared. The QAPP defines the data quality objectives, sampling and analysis methods, quality control requirements for laboratory and on-site activities, etc. The HASP describes safe work (i.e. sampling and inspection) procedures at the site, on-site monitoring requirements, and methods to conform with relevant OSHA requirements as referenced in 29 CFR 1910.120.

Part 1 - Literature and Records Search

A literature and records search will develop a site history. Upon initial review of available information, it is apparent that a large portion of this information has already been developed by NYSEG. Some additional investigation may be required, however, to develop a local historical record noting any description of the operations, processes used, by-products, disposal methods, etc. Also included will be a review and summary local geology and identification of groundwater use in the area, soil type, depth to groundwater, aquifers, present site use, etc.

The first step in Part 1 will be a comprehensive identification of the most recent reference documents applicable to MGP sites available through National Technical Information Service (NTIS), Gas Research Institute (GRI), and the Electric Power Research Institute (EPRI). This activity will ensure that the most up-to-date information available is incorporated into the program. ES believes that most of the applicable documents are already in our possession.

ES will work with NYSEG to generate as complete a site history as possible. NYSEG records will be supplemented by appropriate village, town, or county records which provide information on the site features, operations, disposal methods, etc. Sanborn maps will be used to identify site features dating back to the late 1800's. These maps can be invaluable for determining locations of former structures and therefore likely locations of on-site waste disposal. Sanborn maps and other sources will also be used to develop a composite historical site plan, showing additional on-site features and structures over time which may also indicate potential waste sources. This will be particularly valuable in assessing potential groundwater impacts of sites located in areas where local residents rely on groundwater wells for drinking, bathing, cooking, etc. The results of a map search prepared by NYSEG are included in this Appendix as Attachment A.

Another excellent source of information is historical aerial photography. There are several agencies in New York State, including the Department of Transportation and Soil Conservation Service, that have readily-available aerial photographs taken over the past several decades. ES will contact and, if appropriate visit the Central Photographic files of these agencies to determine what relevant photographs are available. Most of these photographs will not show the site during its operating period, but may identify where structures were, when they were razed, and identify areas of stressed vegetation or other useful indicators of past waste disposal operations.

Another critical component of Part 1 will be the compilation of the database for the SSPS system scoring. This compilation will rely on data sources such as New York State Wetlands Maps, New York State Department of Transportation Topographic Maps, New York State Atlas of Community Water System Sources and others. ES also has access to the resources of the Syracuse University library system (including the on-line computer database) to obtain U.S. census data, Sanborn maps, regional geology and groundwater resources reports and surface water basin reports. A summary of the major database information requirements and sources is presented in Table 1.1.

TABLE 1.1

REQUIRED INFORMATION AND SOURCES

Type of Information	Source
Local Geologic Information	USGS Reports NYSGS Reports NYS Museum and Science Services Bulletins Soil Surveys Groundwater Resources Reports
Groundwater Use	County Health Departments New York State Health Department Atlas of Community Water System Sources Groundwater Resources Reports
Soil Type, Characteristics	Soil Surveys
Aquifers	NYSDEC Publications USGS Publications Groundwater Resources Reports
Land Use	Local/County Records U.S. Department of the Interior (Historic Places, National Parks)
Surface Water Use	NYSDEC (6NYCRR)
Population	Census Data
Wetlands	NYSDEC Wetlands Maps
Precipitation	Climatic Atlas of the U.S.
Endangered Species	NYSDEC Wildlife Resources Center
Toxicity/Persistence Data	USEPA; Sax, 1984

Part 2 - On-Site Evaluation

An on-site visual evaluation will establish areas warranting further study and has identified specific sampling locations. NYSEG will contact the property owners regarding access and sampling prior to any on-site activities. All field personnel will receive health and safety training as required by 29 CFR 1910.120.

The on-site evaluation consists of a careful and comprehensive "walk-over" of all areas of the site as well as inspection of adjacent properties or structures where additional sampling may be warranted. Annotated photographs (a minimum of three perspectives) will document conditions and sampling protocols at each site. Any obvious signs of MGP activities or residues on-site (e.g., tarry soil, blue/green stained soil, MGP odors, sheens, stressed vegetation, etc.) were be noted and incorporated into site sampling protocols. For that reason, some modifications to the site specific work plans provided in Section 2 of the document were needed. This documentation will be provided to NYSEG in the form of a revised site work plan submitted within two weeks of the completion of the on-site evaluation part.

Area managers, their representatives or Environmental Matters Group (EMG) staff should be present for on site activities. ES will not commence any on-site inspection or sampling unless specific approval of the date and time for site inspection/sampling has been received by the NYSEG area manager or corporate contact. All contact with the public will be made by NYSEG personnel.

Part 2 will provide critical information on the present site condition, identification of potential migration pathways, and confirmation of data gathered during Part 1. ES will utilize our established Site Inspection Report and Checklist to ensure that our site visit investigates on-site features, visual evidence of contamination of potential waste sources, on-site and surrounding land use, potential migration pathways, and other conditions needed to both assess imminent risks to human receptors and to complete the SSPS site ranking methodology. The site visit will also allow confirmation and revision as necessary of existing maps showing public water supplies, utility locations (i.e., buried pipelines, sewers, or other migration conduits) and other on-site and nearby features.

The site inspection will also note site conditions which could impact the use of soil vapor surveys or other geophysical methods which might be used if the site warrants further investigation in the future. Photoionization detector (PID) monitoring over the site will determine the presence of volatile organic compound sources.

Part 3 - Site Survey and Mapping

A licensed land surveyor will perform a property survey of the site with a base map and sketches identifying property boundaries, sampling locations and former or existing structures. Surveyor field notes will be included in an appendix of the final report and will also be made available on computer disc (as requested on the original RFP) according to a format to be specified by NYSEG. A topographic base map on a scale of one inch to fifty feet with one foot contour intervals, and drawn to NYSEG CADD/sketch standards, will be prepared. NYSEG specifications are included in Appendix D (Attachment A). The base map will be used to present a composite historical site plan and a current site plan depicting the present site features, the sample locations, and pertinent off-site features such as nearby residences, streets, known utilities, etc.

During the site survey, an on-site datum will be referenced to allow identification of the exact locations from which samples were collected. This will also allow revisions and additions to the base map to be made should additional investigations be conducted at the site in the future. The surveyor will use a USGS datum for vertical evaluations. If one is not available in close proximity to the site, an assumed datum will be used.

Part 4 - Sampling and Analysis

Part 4 will provide representative samples and analyses to determine the potential for direct exposure to hazardous contaminants at the site. Field samples will be collected only from those matrices which present direct exposure pathways. The soil samples will be collected to identify the direct contact pathway hazards. The water samples will be collected to identify direct contact and possible ingestion pathway hazards. Air samples will be collected to identify any inhalation pathway hazards. Data collection, sampling and analysis will be inclusive of and consistent with all the requirements of the SSPS ranking program, supplied on a proprietary basis by NYSEG. NYSEG will supply default answers to appropriate questions as directed by the SSPS software.

The sampling methodology, equipment decontamination procedures and analytical protocols have been described in detail in the project QAPP. The surface soil and sediment samples will be collected with stainless steel trowels, bucket augers, or split spoons, depending on the site conditions. The surface water samples will be collected by dipping the sample bottle beneath the water surface, if the water is deep enough, or by using a small glass or stainless steel beaker jar. Surface water samples will be collected from near the banks of the water body, and attempts will be made to composite the sample throughout the depth of the water. Air samples will be collected on charcoal absorbent tubes (as specified by NIOSH Method 1501) and will only be collected in indoor air space where a "coal tar" odor is present, where inhalation by human receptors is likely, and where interfering hydrocarbon compounds are not likely to be present. Dedicated sampling apparatus will be used for each site and no sampler decontamination will occur on the site.

The samples will be collected on-site, downstream or downgradient of the site to determine if the site is contributing to contaminatin in the area. Visual evidence, odors, elevated PID readings or other evidence that contamination is present will be evaluated to assess whether there is a direct exposure pathway present. Annotated photos from three perspectives will be taken at each sampling event/site.

The analytical methods to be utilized are presented on Table 1.2.

Appropriate quality control samples will be collected, consistent with the requirements of the SSPS, the analytical methodology and the QAPP. At a minimum, it is anticipated that a trip blank will be prepared and analyzed by

TABLE 1.2

SUMMARY OF ANALYTICAL METHODS

Water Matrices	
Volatile Organics	EPA Method 624
Semivolatile Organics	EPA Method 625
Metals:	
Lead	EPA Method 7421 (GF)(1)
Chromium	EPA Method 7191 (GF)
Iron, Zinc, Aluminum, Cadmium, Antimony, Copper, Cobalt, Manganese, and Nickel	EPA Method 200.7 (ICP)(2)
Cyanide (Total and Amenable)	EPA Method 335
Soil Matrices	
Volatile Organics	EPA Method 8240
Semivolatile Organics	EPA Method 8270
Metals:	
Lead	EPA Method 7421
Chromium	EPA Method 7191
Iron, Zinc, Aluminum, Cadmium, Antimony, Copper, Cobalt, Manganese, and Nickel	EPA Method 6010
Cyanide (Total and Amenable)	EPA Method 9010

(1) Graphite Furnace Method
(2) Inductively - Coupled Plasma Method

Method 624 to determine the influence of bottle preparation and shipping on sample integrity. Sampling duplicates of either water or soil matrixes and several sampler blanks (to determine the existence of contamination of sampling apparatus) will also be analyzed. In addition, matrix spike (MS) and matrix spike duplicate (MSD) water and soil samples will be collected and analyzed for all applicable analytical parameters. The MS and MSD samples will allow the laboratory to perform a quality control analysis to identify analytical interferences caused by the sample matrix.

The analytical data package will include the analytical results and quality control data summaries. This level of documentation and reporting will be necessary should the reports be submitted for agency review. Raw data, chromatographs, etc. will not be included, however they will be available from the laboratory at additional cost should that data be requested by NYSEG.

Part 5 - Reporting

A brief, but detailed report will be generated for the site summarizing the work effort, noting any discovery of an imminent threat to human health or the environment, summarizing the SSPS ranking results, and referencing all data. Appendices to the report will include field data, surveyor notes, sampling data, analytical data, QA/QC, and the Health and Safety Plan. The analytical data and survey field notes will be included on floppy disk; NYSEG will provide appropriate database format. In addition to the text, a concise single page fact sheet for the site will be included in the report.

The report will contain copies of the specific references used to develop the SSPS ranking to demonstrate what information was used and how it was used to score the site.

At least five copies of the draft report will be presented to NYSEG for review and comment. ES will provide five copies of a final report incorporating NYSEG's comments as appropriate.

SECTION 2

SITE SPECIFIC INFORMATION

The Plattsburgh site is located at #146 Bridge Street in the City of Plattsburgh, Clinton County, New York. Access to the site is possible along Bridge Street. The site is presently owned by David Meath. The former gas plant produced gas from the processing of resin, coal, and oil during the period of 1860-1882. Former waste disposal practices are not known; historical maps do not indicate the presence of tar wells, or other disposal structures. The 0.5 acre site is bounded by Bridge Street on the north, an apartment building on the east, residences to the south, and a fire station to the west.

Three surface soil samples and QC samples will be collected to determine whether contamination exists in the remaining open areas on-site (Tables 2.1 and 2.2). The three composite soil samples will be collected at measured intervals along transects within three areas. Sample #1 will be collected from the lawn area on the east side of the property, adjacent to the driveway, Sample #2 will be obtained from the lawn area adjacent to the parking lot on the south side of the building, and Sample #3 will be collected from the lawn area located between the building and the adjacent fire station. Surface water and sediment samples will not be taken since there are no surface water bodies on or adjacent to the site. The approximate sample locations are shown on Figure 2.1.

Two indoor air quality samples will be collected from enclosed structures, if there is a distinct odor of coal tar as confirmed by on-scene NYSEG representatives. This method is considered acceptable by NYSEG since the odor threshold for many coal tar contaminants is well below the existing analytical limits.

TABLE 2.1
SUMMARY OF FIELD SAMPLES

PLATTSBURGH SITE

Indoor Air	Sediment	Surface Water	Surface Soil	Total
2	0	0	3	3

Notes: Air sample to be analyzed by NIOSH Method 1501.

Soil and sediment samples to be analyzed for volatile (EPA Method 8240) and semivolatile (EPA Method 8270) organic compounds, metals and cyanide, surface water samples to be analyzed for volatile (EPA Method 624) and semivolatile (EPA Method 625) organic compounds, metals and cyanide.

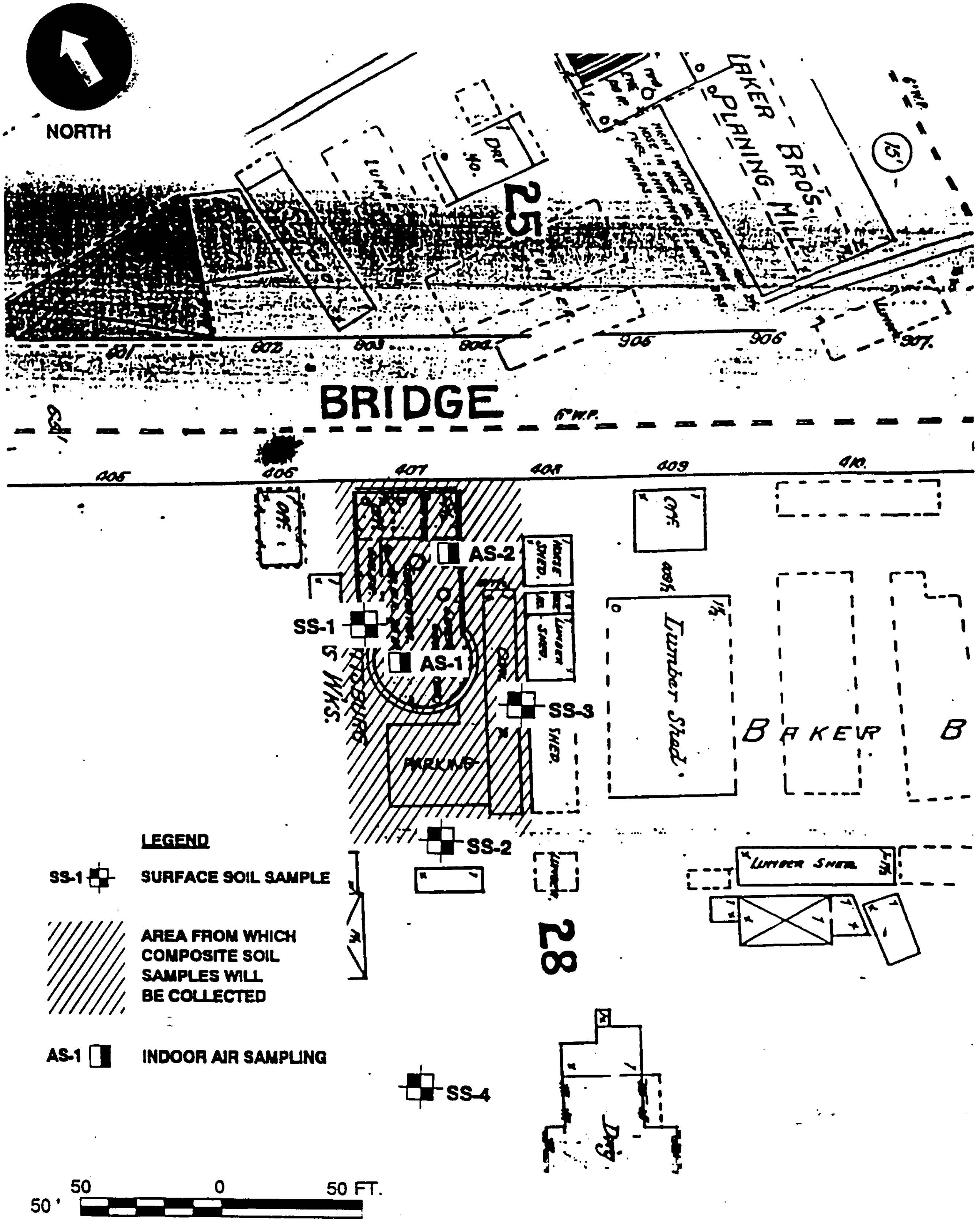
TABLE 2.2
SUMMARY OF QUALITY CONTROL SAMPLES

PLATTSBURGH SITE

Trip Blank	Field Duplicate		Wash Blank	Matrix Spike/Matrix Spike Duplicates	
	Water	Soil		Water	Soil
0	0	1	0	0	1

Notes: Trip Blank to be analyzed by EPA Method 624.
Field duplicates, wash blanks, matrix spike and matrix spike duplicate samples.

PLATTSBURGH SITE PLAN



ATTACHMENT A

NYSEG MAP SEARCH

Notes on Plattsburgh Map Search

Operating Company: Plattsburgh Light Heat & Power Co.

Supplied Location: Bridge Street, Directly East of Old Fouquet House

Search of Maps:

Map 1884	Index lists Plattsburgh Gas Works which can be seen on both the overview map and the Bridge Street map has the supplied location. See pages 1, 2 and 3.
Map 1891	Detailed map of gas plant. See page 4.
Map 1896	Index lists Plattsburgh Light Heat & Power Co. as owners of a site which appears on sheet 9. This is not the location of the formerly identified gas plant which is now shown to be vacant. See pages 5, 6, 7 and 8.
Map 1902	Original gas plant is shown as being used for storage while facilities at newly identified sites have been expanded. See pages 9 and 10.
Map 1909	Bridge Street gas plant shown as being used for storage, Plattsburgh Light, Heat & Power Co. seen unchanged. See pages 11 and 12.
Map 1918	Map of former Bridge Street gas plant being used for auto repair. Plattsburgh Gas & Electric Company shown as owners of Plattsburgh Light, Heat & Power Co. plant.
Map 1927	Original gas plant site shows no change but Plattsburgh Gas & Electric Co. site shows expanded facilities. See pages 15 and 16.
Map 1949	Original gas plant site shows a change to the shape of the structure. The Plattsburgh Gas & Electric Co. site is now owned by New York State Electric & Gas Corp. Division of Associated Gas & Electric System and is listed on the index. See pages 17, 18 and 19.

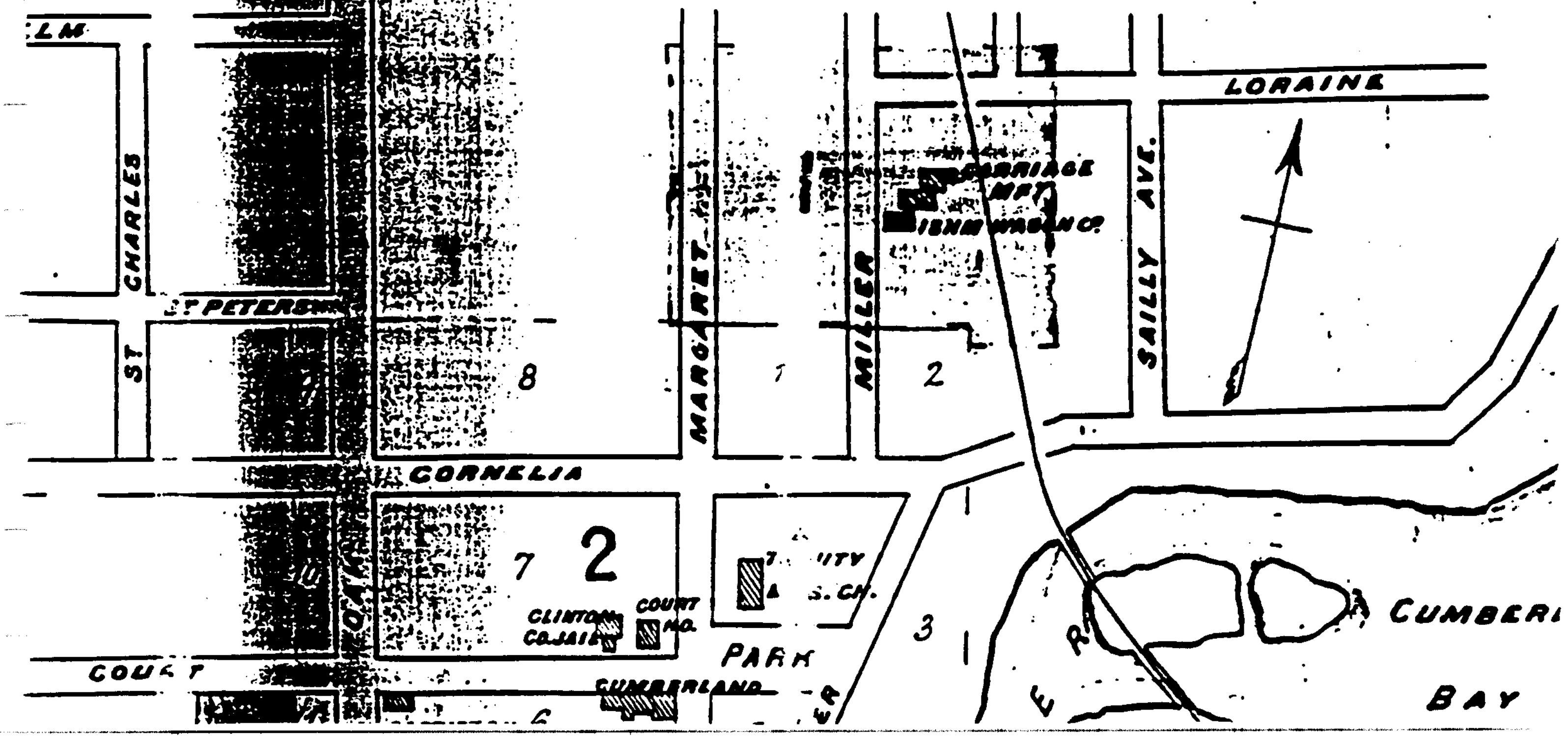
Plattsburgh 1884
Paget

1884

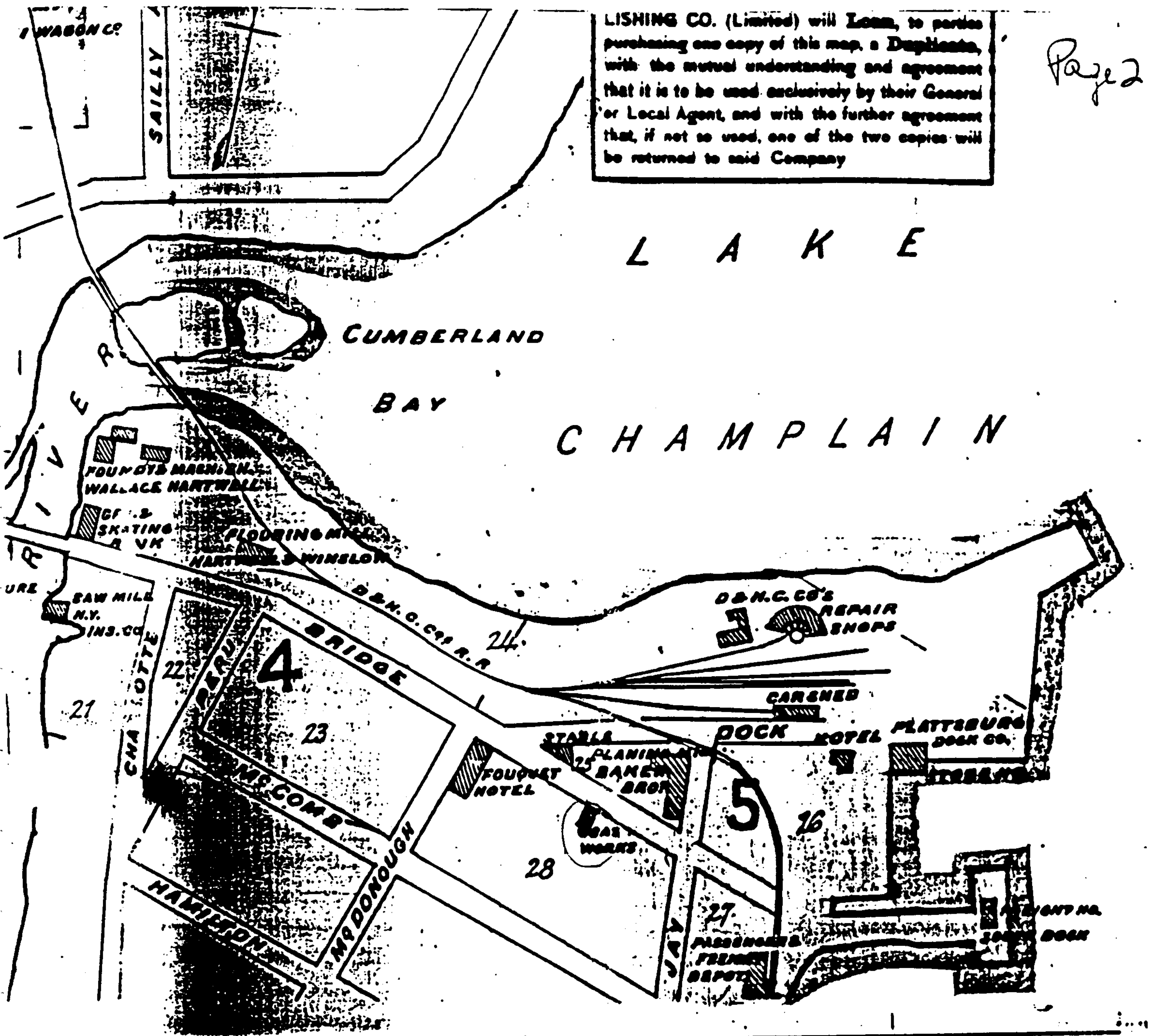
INDEX.

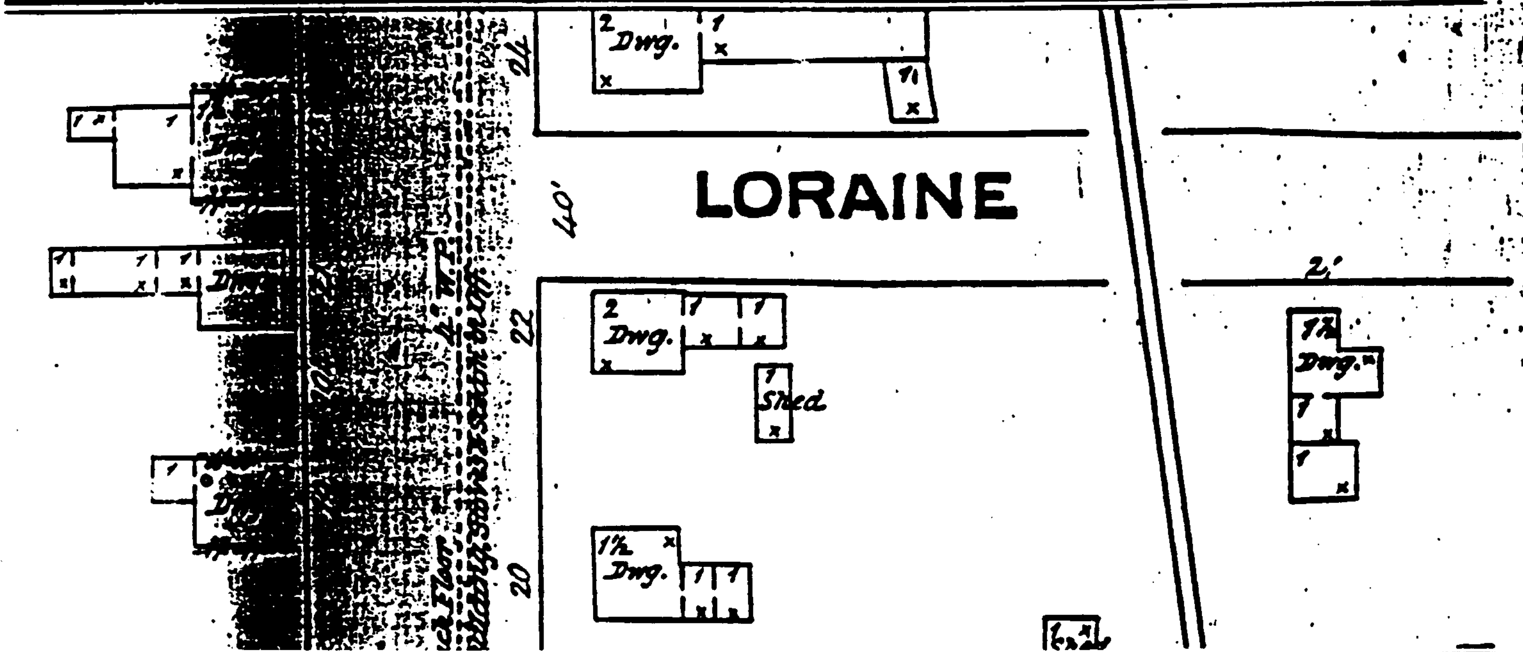
SPECIALS.

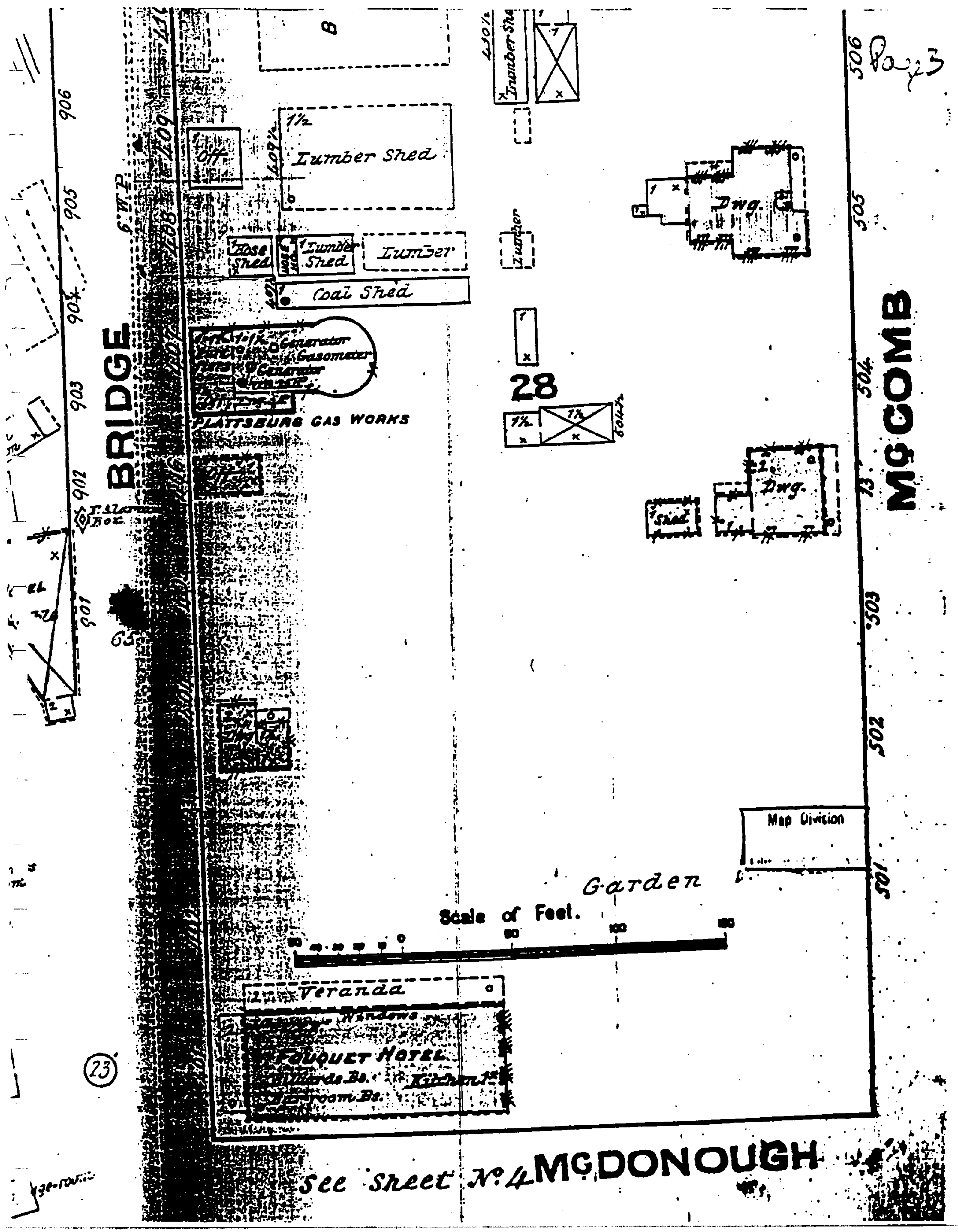
NOT



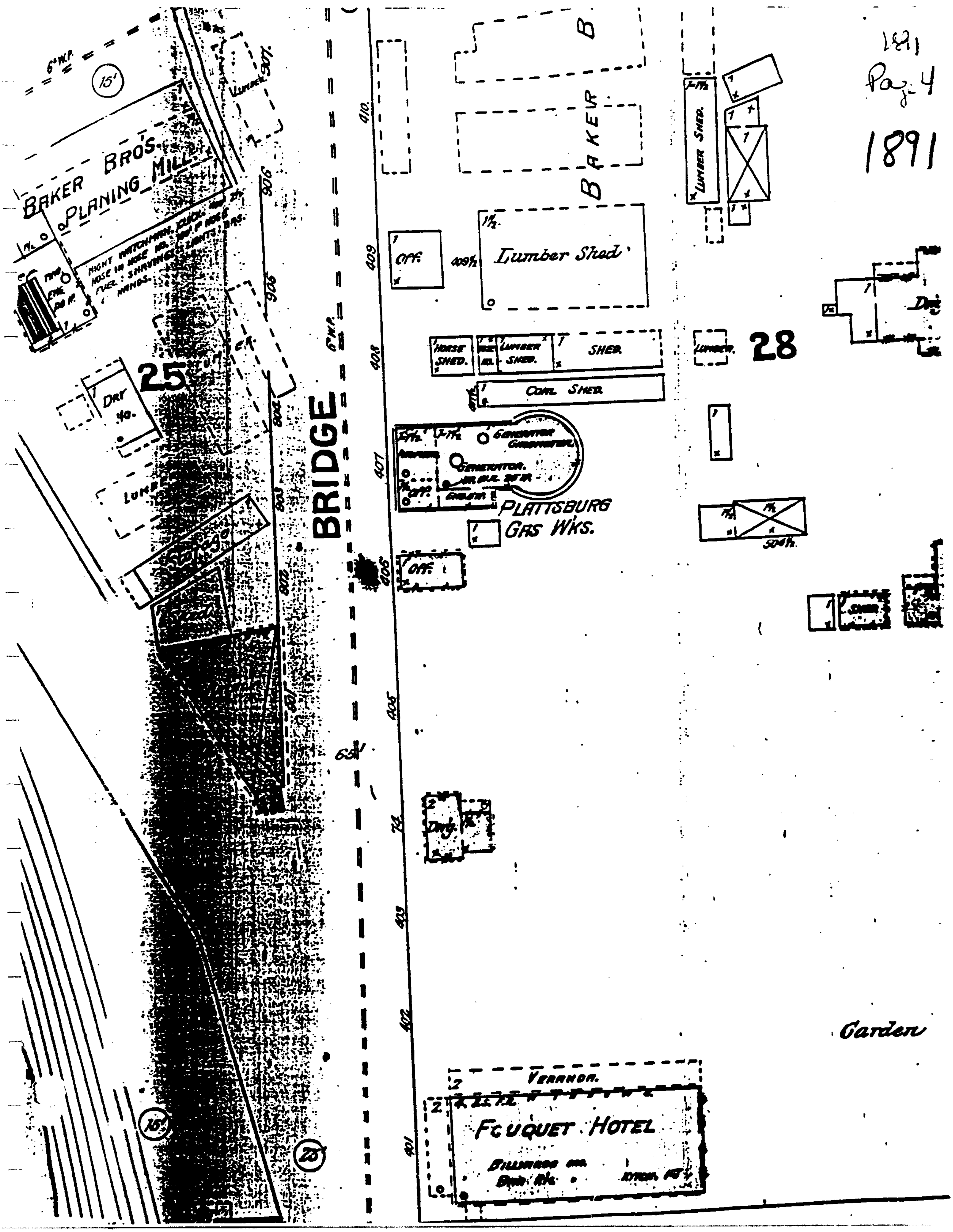
LISHING CO. (Limited) will **Loan**, to parties purchasing one copy of this map, a **Duplicate**, with the mutual understanding and agreement that it is to be used exclusively by their General or Local Agent, and with the further agreement that, if not so used, one of the two copies will be returned to said Company

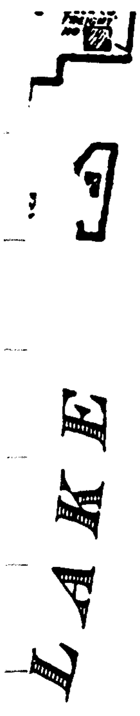


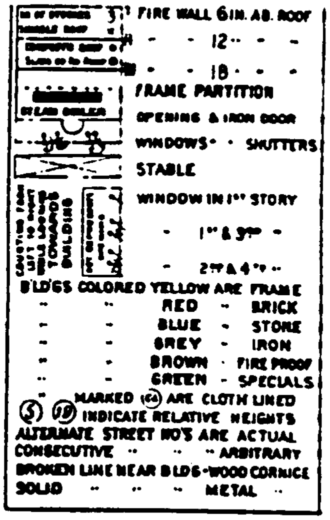



BRIDGE
McCOMB
McDONOUGH
See Sheet No. 4
28
23
PLATTSBURG GAS WORKS
Generator
Gasometer
Generator
Off.
Lumber Shed
Lumber Shed
Lumber
Lumber
Lumber Shed
Hose Shed
Coal Shed
Dwg.
Dwg.
Shed
B
Garden
Scale of Feet.
50 40 30 20 10 0 50 100 150
Veranda
Windows
FOUQUET HOTEL
Billiards Bs.
Kitchen
Bar room Bs.
Map Division
906
905
904
903
902
901
506
505
504
503
502
501
6 W.P.
65
F. A. Alarm Box

1891
Pag. 4
1891





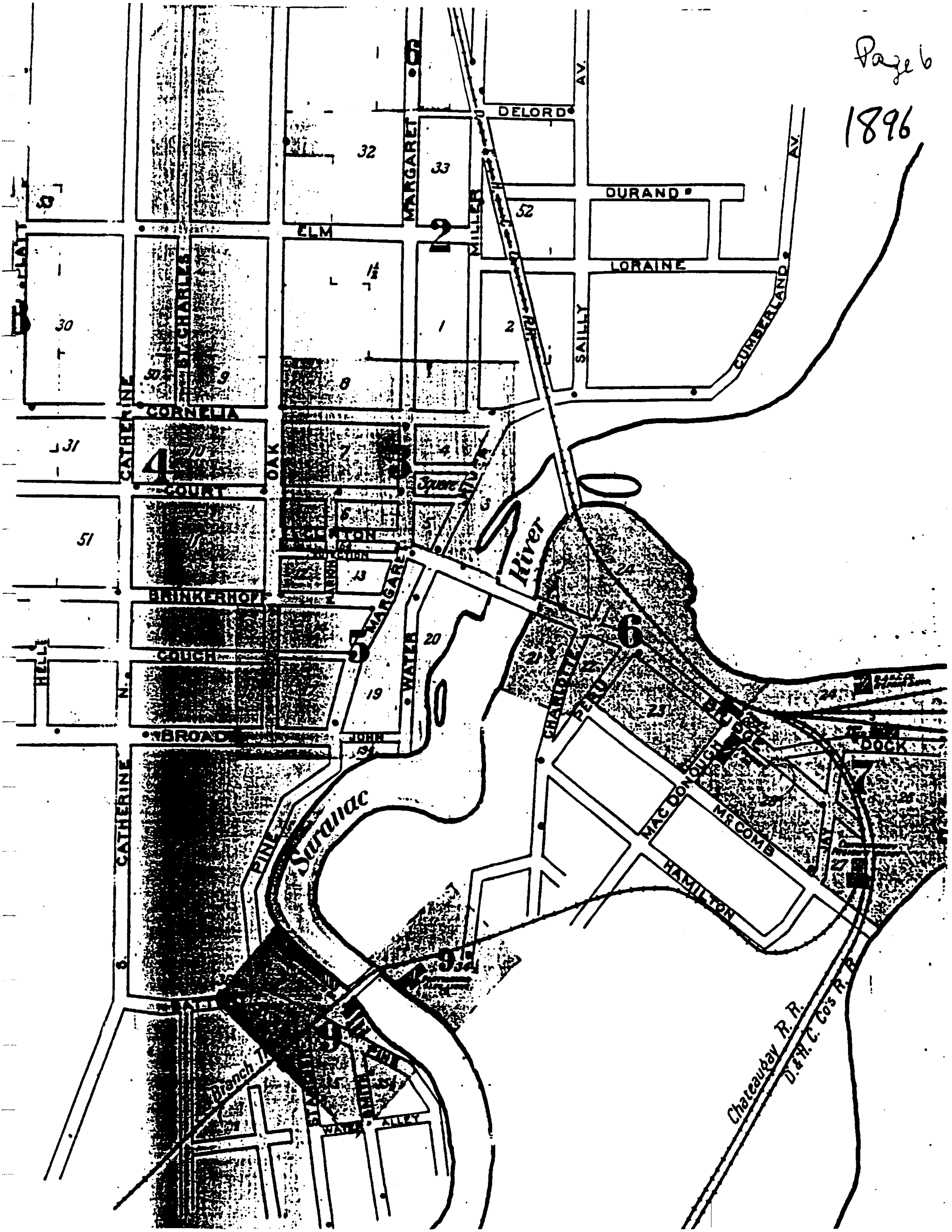


Vol 6
Page 5
1896

Map Divis

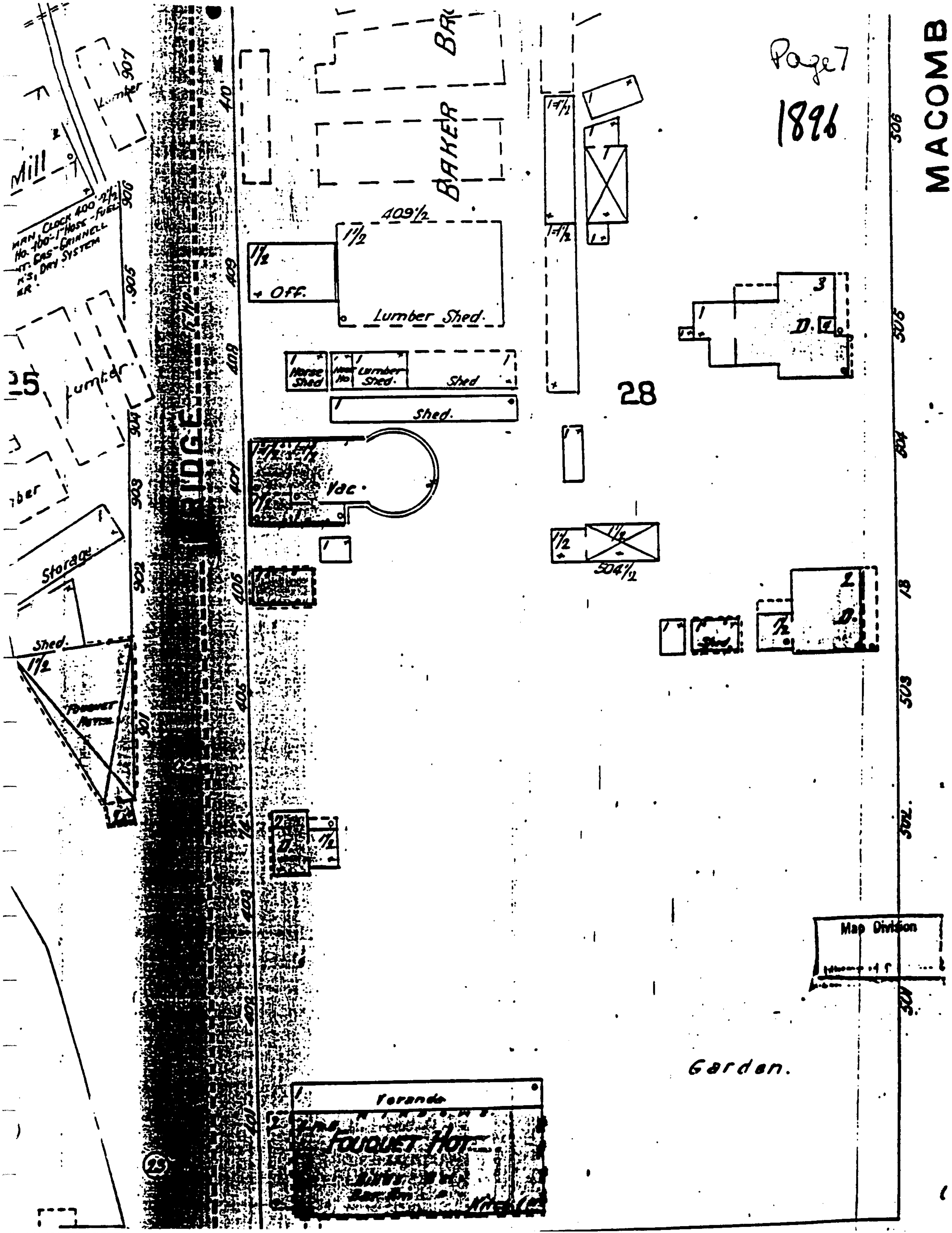
Page 6

1896

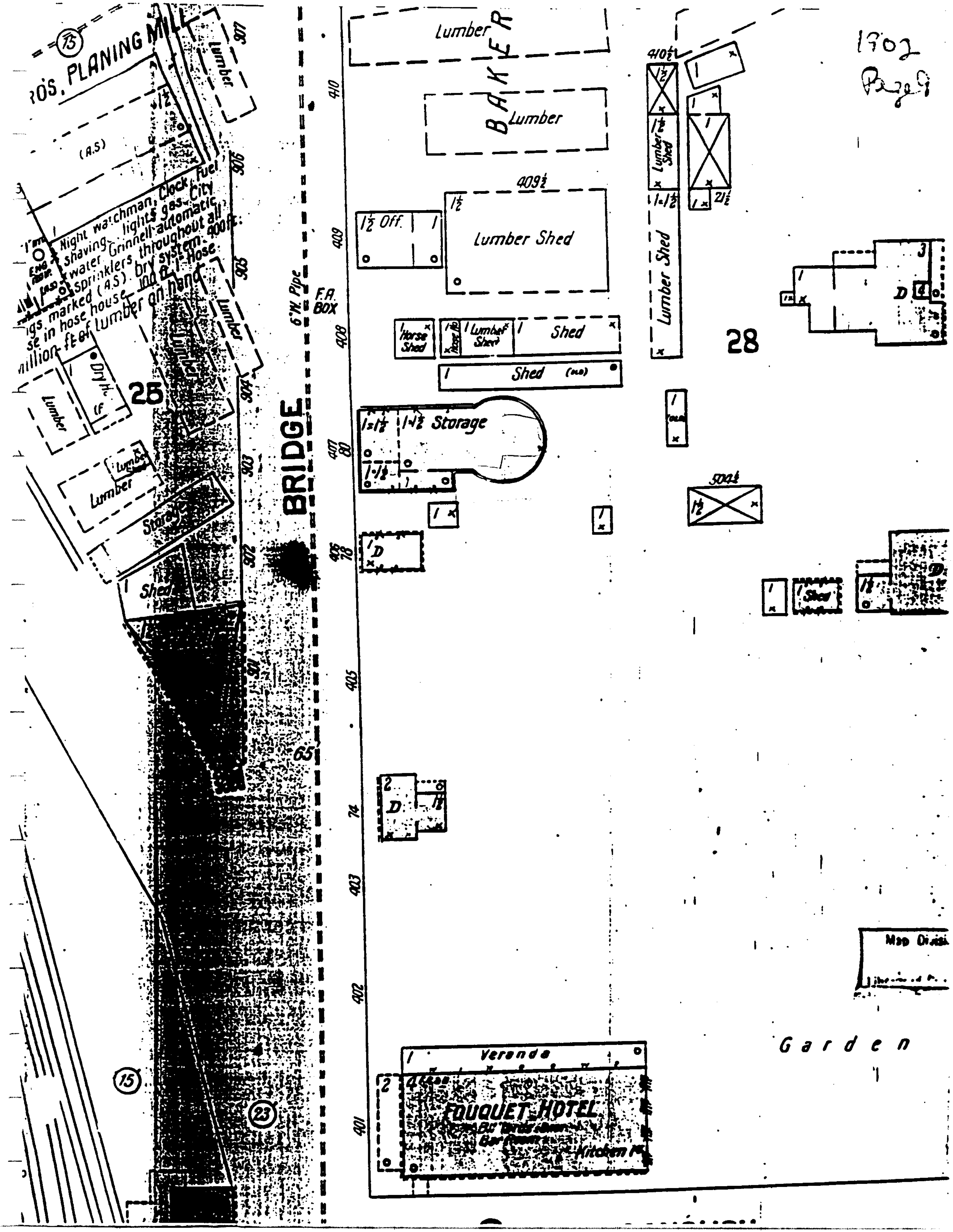

DELORD
AV.
DURAND
LORAINE
CUMBERLAND AV.
SAILLY
MILLER
MARGARET
ELM
ST. CHARLES
CATHERINE
CORNELIA
COURT
OAK
BRINKERHOFF
COUCH
BROAD
N.
CATHERINE
PINE
MARGARET
WATER
JOHN
Square
River
Saranac
PERU
BRIDGE
DOCK
MAC DONOUGH
MC COMB
HAMILTON
JAY
ALLEY
Branch
Chateaugay R.R.
D.&H.C. Co's R.R.
1
2
3
4
5
6
7
8
9
30
31
32
33
51
52
1½
19
20
21
22
23
24
25
27

Page 7

1896

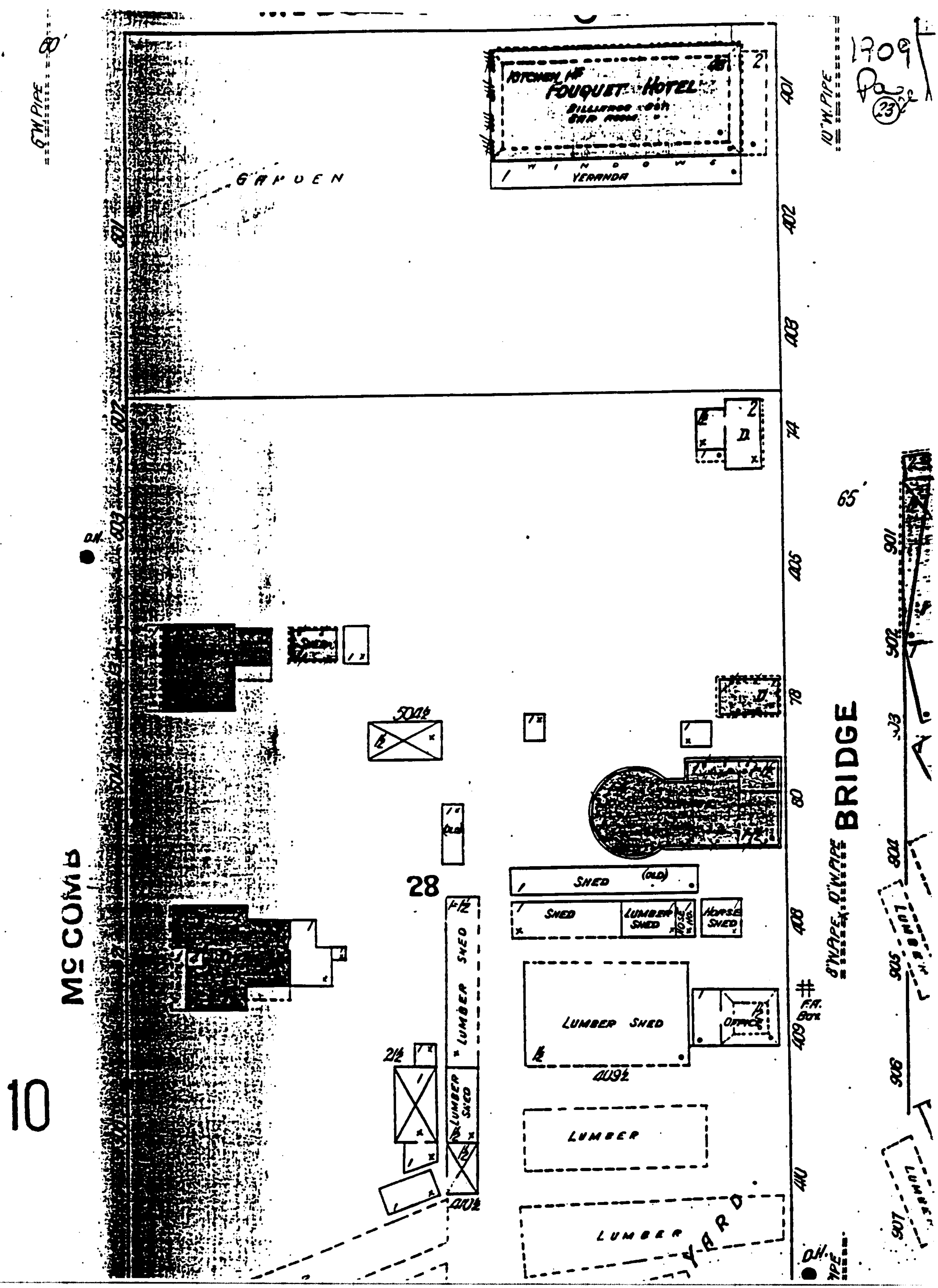


MACOMB
BRIDGE
BAKER
28
25
Mill
Lumber
Storage
Shed.
Fouquet Hotel
Off.
Lumber Shed.
Horse Shed
Lumber Shed.
Shed
Shed.
Vac.
D.
Verandah
Garden.
Map Division
409½
504½
409
408
407
406
405
404
403
401
901
902
903
904
905
906
506
505
504
503
502
501

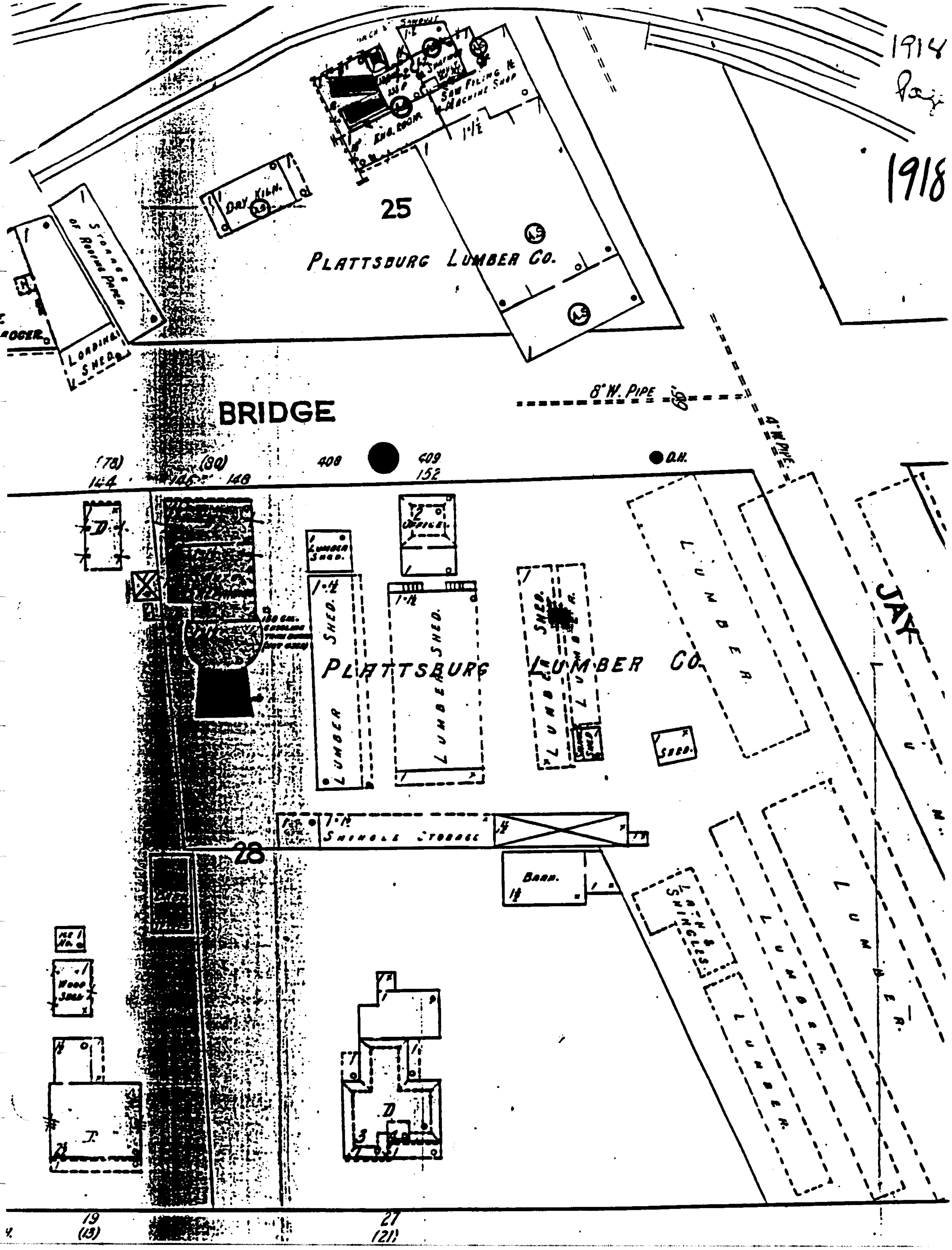


75
ROS, PLANING MILL
Lumber
(A.S)
Night watchman, Clock, Fuel shaving, lights gas, City water Grinnell automatic Sprinklers throughout all bldgs marked (A.S). Dry system. Hose in hose house 100 ft 1" Hose 400 ft. million ft of Lumber on hand
Dry Ho.
25
Lumber
Storage
Shed
15
23
907
906
905
904
903
902
901
BRIDGE
65
6" W. Pipe
F.A. BOX
BAKER
410
409
408
407
80
406
78
405
74
403
402
401
Lumber
Lumber
409½
1½ Off.
Lumber Shed
Horse Shed
Lumber Shed
Shed
Shed
1-1½ Storage
D
D
410½
Lumber Shed
Lumber Shed
28
504½
Shed
Veranda
FOUQUET HOTEL
Bar Room
Kitchen
Garden
Map Divisi

1902
Page 9


10
McCOMB
BRIDGE
28
FOUQUET HOTEL
KITCHEN
BILLIARDS
VERANDA
W I N D O W S
G A R D E N
6" W. PIPE
10" W. PIPE
8" W. PIPE
10" W. PIPE
80'
65'
D.H.
401
402
403
74
405
78
80
408
409
410
409½
410½
504½
801
802
803
901
902
903
904
905
906
907
SHED
SHED (OLD)
LUMBER SHED
HORSE SHED
OFFICE
LUMBER
YARD
F.A. BOX

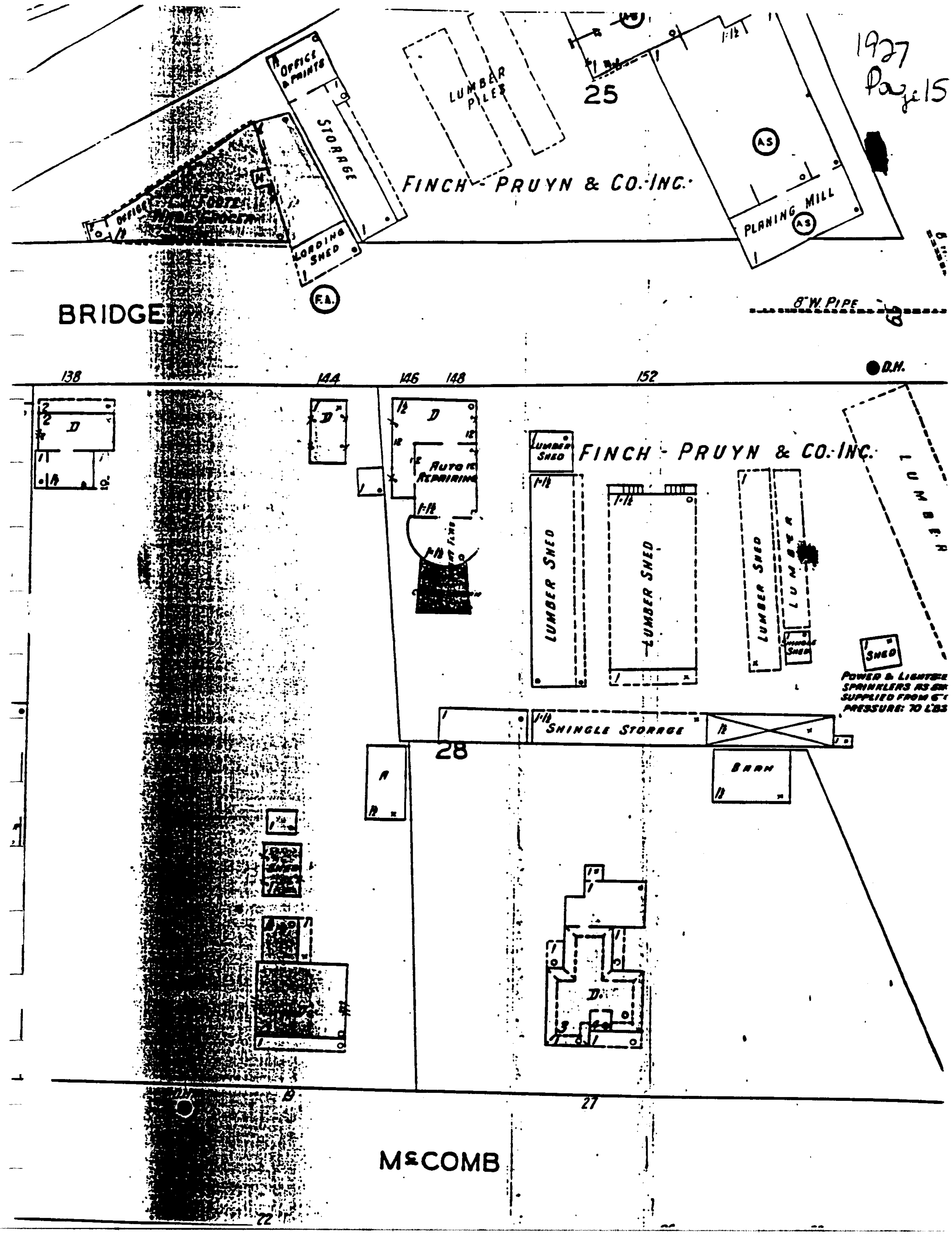
1709
Page 23



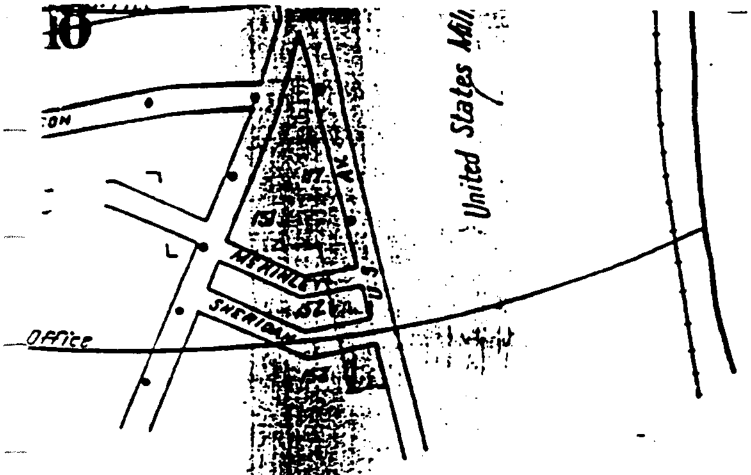
1914
Page

1918

1927
Page 15



OFFICE & PAINTS
STORAGE
LUMBER PILES
25
A.S
FINCH - PRUYN & CO. INC.
OFFICE
LOADING SHED
PLANING MILL
A.S
F.A.
BRIDGE
8" W. PIPE
D.H.
138
144
146
148
152
D
D
D
Auto Repairing
LUMBER SHED
FINCH - PRUYN & CO. INC.
LUMBER SHED
LUMBER SHED
LUMBER SHED
LUMBER
SHINGLE SHED
SHED
LUMBER
POWER & LIGHT
SPRINKLERS AS SH
SUPPLIED FROM 6"
PRESSURE: 70 LBS
SHINGLE STORAGE
28
BARN
A
D
19
27
McCOMB
22



00 feet to an inch
(Approx.)

LOCATION OF THIS TOWN AS ABOVE UNDERLINED

1949 Page 17

CORRECTION

REVN NO.	DATE OF CORRECTION	ATTA
3	9-40	[illegible]
4	9-45	[illegible]
5	5-49	[illegible]

1949

ADDITIONAL INDEX, MAY, 1949

…ver Add'l Index of
which is now void.

STREETS

B

…-189
…-116

C

…t,
…1-140

G

…1-106

H

M

…ne,
…1-112

P

N. of Bailey Ave.,
of Bailey Ave.,

S

	sheet
Stratton Place,	13

W

Wood Street Extension,	11

SPECIALS

A

American Legion Clubhouse,	15
Associated Gas & Elec. System,	10

B

Berst-Foster-Dixfield Co., Hydro Electric Plts.,	20

C

Champlain Theatre,	4
Valley Girl Scouts Council,	7
Chateaugay Ore & Iron Co.,	21
City of Plattsburg Municipal Light'g Plt., &c.,	6
Repair Shops,	10
County Dairymen's Co-op. Assn., Inc.,	11
Cumberland Hotel,	2

D

	sheet
Diamond Match Co., B.F.D. Co. Div.,	11

F

First Church of the Nazarene,	4

G

General Ice Cream Corp., National Dairy Products Corp. Division,	6
Guy's Products, Inc., Ice Cream Mfg.,	6

I

Imperial Paper & Color Co., Pittsburgh Paper Mill Div.,	20
Irona Creamery, Inc.,	12

J

Junior High School,	3

K

Kent Falls Hydro Elec. Plant,	20

L

Linney Auditorium,	21
Lyon Mountain School,	21

M

Miller, C., Building,
Myers, M.P., & Co., Hardware

N

N.Y. State Electric & Gas Corp.
Telephone Co., Offices,

P

Pal Blade Co., Razor Blades M
Plattsburg Coal Co.,
Foundry & Machine
Laundry,
State Normal School
Public Library,

S

Salvation Army,
Samuel F. Vilas Home (Old La
Socony-Vacuum Oil Co.,
System Properties, Inc., Factor

V

Vilas, S.F., Home (Old Ladies)

W

Windsor Hotel,

* Indicates only one side of Street shown

…Mountain, 21
16

Central Ave.

O

17 … 1-9 *17
19 … 2-16 *8
17 … 11-17 *4
15 … 18-51 4
6 … 52-148 *15
17 … 53-149 *14
… 150-195 12
…Turnpike Road, 20

P

…1-18 7 … 1-80 14
…19-50 8 … Park Ave., 1-50 16
…701-719, arbitrary 7 … 1-16 6
18 … 17-29 *7
19 … 18-80 *6
5 & 17 … 31-74 7
19 … 1-52 18
12 … 2, 10 & 17
… 17 & 18
…3 & 9 … 1-20 5
…1-100 18 … 6
… Avenue Ave., 1-30 2 & 4

R

…1-105 *13
…2-106 *14
19 … at Lyon Mountain, 21
Haven, 19 … 1-80 12
16 … 1-80 2
…1-44 15 … 1-36 2
…1-24 13 … 37-70 3

Wadhams Ave., at Cliff Haven,		
Walworth,		18 & 21
Water Alley,		16
Waterhouse,		18
Weed,	1-40	12
Wells,		18 & 16
White,		17
Williams,	1-9	*16
"	2-8	*17
"	10-45	16
Woods Mills Road,		20

SPECIALS

A

Academy St. Pierre,	14
Aird-Don Co., Heating Supplies, &c.,	10
Allprest Laundry, Steam Laundry,	10
Armour & Co.,	6

B

Beth Israel Synagogue,	4
Broad Street School,	17

C

Catholic Summer School of America,	18
Cavanagh, J., Co., Notions, Tin & Woodenwares,	7
Champlain Valley Hospital,	16
" " Oil Co.,	11
Children Home of Northern N. Y.,	14
Church of the Nazarene,	4

Methodist Episcopal
National Bank,
Presbyterian Church,
Foote, C. H., Wholesale G
Fouquet House and Garage

G

General Ice Cream Corp'n,

H

Hamilton Street School,
Hotel Champlain,

I

International Paper Co.,
"C" and "D",

L

Library,

M

Marshall, A. H., & Co., Au
Mason, A., & Sons, Lumbe
Masonic Temple,
Merchants National Bank
Methodist Church,
Miller, C. M., Property,
Moore, E. G., Co., Whole
Mount Assumption Institu

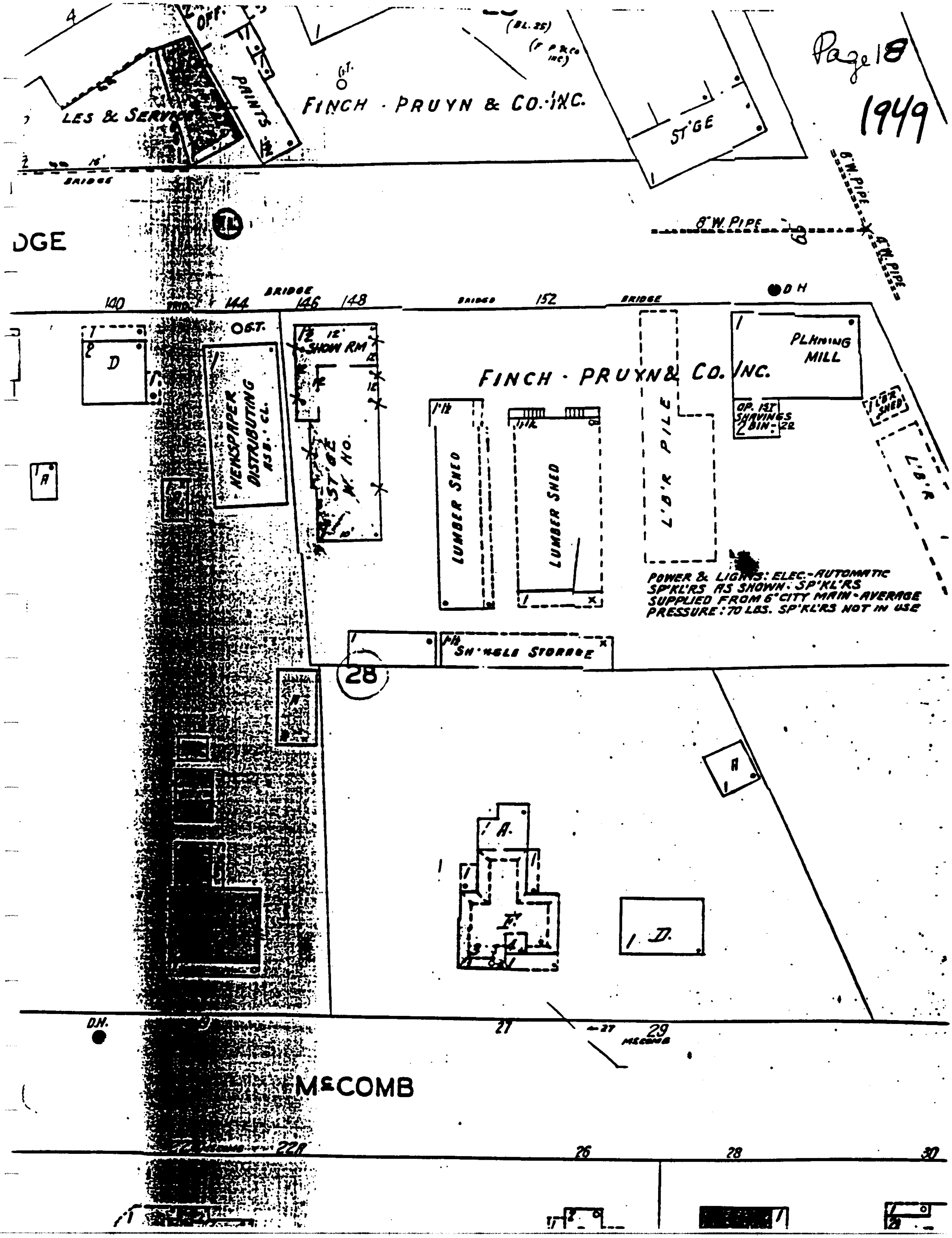
N

National Tape Co., Cotton
New Cumberland Hotel,

* Indicates only one side of Street shown.

Page 18

1949



POWER & LIGHTS: ELEC.-AUTOMATIC SP'KL'RS AS SHOWN. SP'KL'RS SUPPLIED FROM 6" CITY MAIN-AVERAGE PRESSURE: 70 LBS. SP'KL'RS NOT IN USE

APPENDIX D

BASE MAP AND SURVEYORS FIELD NOTES

NYSEG PLATTSBURG NA#90.204-60

VERTICAL CONTROL

B9109

75°F
PARTLY CLDY
SHOWERS

6/12/91

REGER
VALENTINE
⊼ WILD NA2
25' GLASS ROD

STA	+	HI	−	ROD	ELEV	
BM L362	1^{42}	119^{63}			118^{208}	STAMPED "L362 1955" USC&GS BRASS CAP STANDARD DISK SET VERTICALLY IN NE COR TOWN [illegible]. RECORD EL.
TP#1			2^{23}		117^{40}	TOP OF REWALL
	2^{11}	119^{51}				
BM L362			1^{30}		118^{21}	CLOSURE FLAT
		END RUN				
TP#1	12^{20}	129^{60}			117^{40}	TOP OF REWALL
[illegible]			9^{47}		120^{13}	CENTER OF CB GRATE, NE COR LOT 16.1, BLOCK 2 CITY OF PLATTSBURG MAP 207.20.
	9^{38}	129^{51}				
TP#1			12^{11}		117^{40}	TOP OF REWALL
			CLOSURE FLAT			
		END RUN				

HZ CONTROL & TOPO

STA	HZ ∠	SLOPE DIST	Z ∠
∧ @ IPF NE COR BLOCK 2 ①			
BS IPF ON N. E BLOCK 2 ⑥			
FS TOPO & HZ CNTRL			
ALL ∠'S RT			
(5) IPF ON E	0—	371.16 377.168	0—
(9B) FC. [illegible]	2-03 35	331.24	0-
~~IPF~~ PEW OVER	246 43 55		
② CP-1	65 43 50		
[illegible]	179 54 55	419.535	
M)	245 43 55	418.53	0—

∧ @ CP-1 (SPIKE) ②

BS IPF NE COR BL 2 ① HD = 418.54

FS TOPO & CONTROL — ALL ∠'S RT

STA	HZ ∠	SLOPE DIST	Z ∠
⑩ IPF FC CIRC	240 53 05		
SE COR	123 54 55		
	179 58 50		
⑧ M)	240 05 05	53.24	0-
⑨ IPF	301 ~~44 40~~ 44-40		
[illegible]	127 44 20		
	179 59 50		
10 M	307 44 35	186.68	0-
E [illegible], 31?	[illegible] 10 [illegible]	204.34	0-

SEVERE CLEAR
70°F
ATM 1037 MB

6/13/91

RECIER
VALENTINE
∧ TOPCON GTS-3

3

REMARKS

FND IN GOOD SHAPE

FND MRKR: ALUMC. S/W SO. SIDE; GOOD SHAPE

MAG. [illegible] NE COR TO [illegible] ON N. E, BLK 1
308°

~~[illegible] COR BLOCK 1~~

ON [illegible] IN GOOD SHAPE

6/13/91

[illegible] CONTROL & TOPO (CONT.)

STA	HZ ∡	SLOPE DIST	Z ∡
③ IPF BENT OVER	298 53 05		
SW COR	118 53 00		
	179 59 50	782.205	
M1	298 53 07.5	782.[illegible]	0—

⊼ @ SW COR BL 2 ③ IPF BENT OVER
BS CP-1 ② HD = 782.19
FS TOPO & CNTRL - ALL ∡'S RT

STA	HZ ∡	SLOPE DIST	Z ∡
11 IPF 2)	357-12 00		
4)	177 14 55		
3)	180 00 00		
M1	357-14 57.5	44[illegible]	0—
12 [illegible] (TMP [illegible]	357-12-15	[illegible]	0—
13 ℄ MACOMB RD [illegible] = 3½°	64-45-20	33.44	0—
14 ℄ MACDONOUGH [illegible] 3½°	177-38-10	24.04	0—
15 [illegible]	182 16 10	184.[illegible]	0—
16 —"—	261-47-25	175.[illegible]	0—
17 —"—	268 34 15	30.54	0—
18 ℄ [illegible]	260-24-26	208.20	0—
④ CP-2 2)	26[illegible] 01-30		
4)	8[illegible]		0—
3)	18[illegible] 00	226.[illegible]	

CREW PG 3

REMARKS

IPF BENT OVER NEAR SW COR BL 2

[illegible] BL 2 [illegible]

SOUTH END OF ROW OF [illegible]

FOUGHET [illegible], BCU[illegible]

6/17/91

CREW R. 3

STA	H∠	SLOPE DIST	Z∠
H∠ CONTROL & TOPO (CONT.)			
⊼ @ CP-2 (SPIKE) ④			
BS IPF @ SW COR BLZ ③ HD = 326.82			
FS TOPO & CONTROL - ALL ∠'S RT			
19 FC, [illegible]	241-15-25	13.10	0-
20 COR BLDG	295-35-00	69.20	0-
IPF ⑤ 2)	271-26-[illegible]		
ON N. PL 4)	91-26-[illegible]		
3)	179-33-55	227.085	
M)	271-26-575	227.09	0-
⊼ @ IPF ON N. PL BLZ ⑤			
BS CP-2 ④ (SPIKE) HD = 227.08			
FS TOPO & CONTROL - ALL ∠ 5 RT			
21 NW BLDG	346-53-25	54.10	0-
22 —	328-48-20	23.42	0-
23 NW —	190-02-13	13.93	0-
24 NE —	181-23-40	[illegible]	0-
25 [illegible] S/W	175-[illegible]-20	45.20	0—
⑥ CP-3 2)	157-17-00		
[illegible] 4)	337-17-00		
3)	179-[illegible]-50		
M)	157-17-05	162.155	0—

REMARKS

ROCKWOOD [illegible]

FIELD [illegible] # [illegible]

~~#140~~ [illegible]

#140

#140

6-13-91

6

CREW PG. 5

HZ CONTROL & TOPO (CONT.)

STA	HZ ∡	SLOPE DIST	Z ∡	REMARKS
LEF ①	2) [illegible]-55-[illegible]			TOWER [illegible]
NE COR	1) 357-55-20			
BLD	3) 179-59-50			
	M) 177-55-25	377.16 377.14	0—	
Λ @ CP-3 ⑥ (SPIKE) I UP = 4.74				SEE PG. 10 FOR LEVELS
BS IPF ON N PL ⑤ PL 2 HD = [illegible]				
FS TOPO & CONTROL - ALL ∡'S RT				
LEF ①	2) 214-57-15	223.08	0—	
NE COR	4) 34-57-10			✓ IN
	3) 179-59-50			
	M) 214-57-17.5			
⑦ CP-4	2) 290-27-20			
SPIKE	4) 110-27-15			
	2) [illegible]-59-50			
	M 290-27-22.5	219.83 219.84	0—	
26 NW COR 1440 [illegible]	334-11-40	110.60	89-11-00	TH = 4.4
27 NE COR [illegible] A/C	324-41-25	88.42	88-43-40	"
28 COR A/C	330-55-20	75.34	88-58-35	"
29 A/C	336-58—	66.16	89-~~0-10~~ 00-55	"
30 A/C	347-25-20	55.86	88-58-40	"
31 E[illegible]	2-32-45	48.22	~~2-32-45~~ 89-07-30	"

6/13/91 7

CREW [illegible]

HZ CONTROL & TOPO (CONT.)

[illegible]	HZ ∠	SLOPE DIST	Z ∠	REMARKS
32 MH [illegible]	[illegible] 41-30	63.96	88 50 05	TN 4[illegible]
33 [illegible] A/C CON. CONC	320-40-25	7.28	88 59-40	″ SW C END
34 NW COR #146 [illegible]	324 40-10	74.74	89 08 25	″ NW END [illegible]
35 NE ″	292-16-30	62.48	88 45 15	″
36 NE COR [illegible]	314-46-25	62.40	88 48 50	″
37 NW ″ CN A/C	307-35-35	59.50	88 53-15	″
38 W/V COVR	312 22 —	55 40	88 50 —	″
39 ″	306 23 45	53.66	88 54-45	″
40 PP w/ OHE	355-23-15	123.68	89 14-10	″
41 A/C	[illegible]8-23-[illegible]	51.24	88-[illegible]	″
42 ″	329-02 25	36.08	88 47 —	″
43 EP@	345-11 45	26.04	88 53-40	″ [illegible] GRAV. DRIVE
44 EP	225 08-35	[illegible]	90-02 50	″
45 A/C	243 0[illegible] —	46.18	89-12 05	″
46 EP	[illegible] 27 45	[illegible]	89 15 40	″
47 N. EDG [illegible]	260 49-45	[illegible]30	88 17-15	″
48 [illegible] 4[illegible]	267 12 30	62.62	88 [illegible] —	″
49 [illegible]	228 56 —	57 40	88 51-40	″
50 EP [illegible]	272 1[illegible]	[illegible]	89 05 [illegible]	″
51 EP/EP [illegible]	267 03 30	51.20	89 08 —	″
52 [illegible] CRKM ALA [illegible]	272 09-10	51.84	89 30 05	″
53 EP CK/COR [illegible]	286 49 30	51.90	88 52 20	″
54 E. WAL [illegible]	237-59-10	74.98	88 53 —	″
55 [illegible] TOP RAMP	288 21-10	84.16	88 21-40	″

5/13/91

CREW PG 3

TOPO (CONT.)

STA	HZ ∢	SLOPE DIST	Z ∢	REMARKS
56 COR SLAB	290-53-20	62.36	88-46-05	TH 4.2
57 " RT. TURN	290-59 —	84.00	88-23-45	
58 3°W ON ℄	292-04 —	85.80	87-40-20	TH - 5 21
59 — " —	291-57 —	92.28	87-[illegible]	"
60 — " —	291-55 —	94.98	88-07-20	"
61 COR STAIR TO O60	289-02-50	101.72	88-40-15	TH 4.2 , [illegible]
62 A/C	285-24 —	102.16	89-04-10	"
63 EP [illegible]	282-16-20	103.20	89-05-[illegible]	"
64 ℄ 4°W [illegible]	277-47-45	104.80	86-[illegible]-15	FULL FOOT - 8 47
65 COR CONC/EP ENTRY [illegible]	290-04-20	153.34	89-03-20	TH 4.71
66 — " —	290-10-40	163.06	89-16-10	"
67 ℄ 10°W GAR DECK	291-45 —	158.14	89-13-15	"
68 SE COR BLDG	291-40-50	165.[illegible]4	88-52-50	FULL FOOT [illegible]
69 A/C	287-42-25	16[illegible].32	89-[illegible]-10	TH 4.71
70 EP	285-51-20	16[illegible]	89-[illegible]	"
71 ℄ 4°W [illegible]	282-19 —	16[illegible]	89-36-40	"
72 METER BOX @ UGC	291-44 —	79.16	88-[illegible]	"
73 COR [illegible] BLDG	[illegible]	= 13.64	73-33-45	6 SEED - ~~[illegible]~~ 22%
74 " —	276-15-40	14.06	84-39-50	4 " - [illegible]

6/13 '4 9

CREW 7G3

TOPO (CONT) STA	HZ ∡	SLOPE DIST	Z ∡	REMARKS
⊼@	① CP 4 (SPIKE)	HI=	4.80	
BS	⑥ CP 23 (SPIKE)	HD=	219.82	
FS	TOPO ALL 45, ET			
75 CCR A/C	0-28-45	50.62	92-33-10	TH: 4"
76 —"—	43-41-40	19.48	95-00-50	"
77 —"—	295-15-40	31.48	92-40—	
78	331-13 15	57.80	91-57-20	
79 [illegible] #146	329 54-20	63.58	90-33-05	TH: 0.9'
80 COR [illegible]	325-51-45	63.72	94-10-20	TH: 1.2' [illegible] 11° WEST
81 —"—	327-05-45	85.86	93-3?-45	TH 1.3, [illegible] CCR 36 [illegible]
82 COR #146	337-05-15	87.20	82-19-00	5 SACK [illegible] 33 [illegible]
83 ON [illegible] NW COR	338-?1—	119.42	84-2?-55	5 " [illegible] 9? [illegible]
84 [illegible] CONC [illegible] SW COR TCO	33?-52—	110.68	83-57-20	5 "
85 W [illegible] 6"	336 12-40	122.?0	83-03-05	6 " 22
86 TO COR #146 COR BLDG NE	311-06-20	47.60	94-2?-?0	TH: 2.5
87 N. END LINE 3" DIA IRON PIPE	264 44-00	38.00	93-09-00	TH: 3°, LINE TO [illegible] ON M[illegible]
88 COR [illegible] FENCE	260 ~~35 45~~ 08—	34.18	88-29-35	/ SECT, RUNS [illegible]
89 ON [illegible] FENCE	216 36—	8.50	81-17-40	/
90 END [illegible]	148-30—	5.0?	75-00-50	/
91 [illegible] 4"	91-17—	23.2	89-16—	/
92 [illegible] TO N[illegible]	106-57—	26.?4	88-16—	/
93 EP	332-35—	15.32	93-06-20	/
94 COR CONC [illegible]	345 37-40	50.94	91-32-05	/
95 —"—	346-44—	52.10	91-24-15	/
96 10" [illegible]	27? 12	?1.?	93 0? —	/
97				

6-[illegible]

CREW PG3

VERTICAL CONTROL (CONT.)

STA	+	HI	−	ROD	ELEV
TBM#1 CB	6^{41}'	126^{54}			120^{13}
CP. 3⑥				7^{00}'	119^{54}
CP. 4⑦				2^{79}'	123^{75}
TBM, CB			6^{41}		120^{13}

REMARKS

NYSEG CADD/SKETCH STANDARDS

VENDOR DRAWING REQUIREMENTS

1.0 PURPOSE

To establish and identify basic Drawing requirements for Vendors and/or Outside consultants to follow in providing drawings to the NYSEG Generation Dept.

2.0 DRAWINGS

Ultimately most drawings produced by outside parties are indexed, microfilmed, distributed and maintained per NYSEG Generation Dept. documentation procedures. Due to this the following guidelines are required of outside firms to follow in regard to submitting their drawings and/or sub-vendor or third party drawings which will be submitted as final drawings to NYSEG.

2.1.1 DRAWING SIZES

All drawing sizes are in increments of 8 1/2 x 11 inches as shown in Fig No. 1. (The exceptions are the special sizes as shown).

NYSEG Drawing Size Designation	Overall size in inches		
S	8 1/2	x	11
SS	11	x	17
B	17	x	22
C	22	X	34
D	34	X	44
DD	11	x	34
R	34	x	By any lgth over 44"
(Special sizes)			
Bills of Mat'l	11	x	17
Circuit Schedules	11	x	22

Fig No. 1

2.1.2 Drawing Requirements

Each drawing requires certain basic information such as:

A. Border lines (all 4 sides)

B. Title block & vendor dwg no.

C. Approval and signature panels

D. Revision block

E. Scale (if req"d)

F. Cross reference info

G. Purchase order, Job and Shop order numbers if applicable.

H. A blank area 1/2" x 4" long in the lower right hand corner of Dwg for future entry of NYSEG dwg/and or filing number.
(Drawing Numbers may be furnished upon request).

2.1.3 Microfilming requirements.

All drawings both manual and computer generated documents shall be prepared for eventual microfilming. Drawings shall conform to microfilming standards as specified by the American National Standards Institute per (ANSI) Standard Y14.1.

2.1.4 Multisheet Drawings

Standard cut sheet sizes S, SS, B, C, D etc; are preferred over extended roll sizes. When a standard sheet is not large enough to contain all the required information a multisheet drawing should be used in lieu of a roll size drawing.

2.1.5 Drawing Submittals

All drawings submitted to NYSEG shall be via a Document Transmittal Form stating the Drawing number, Title, Revision level and disposition of the drawing. All Drawings submitted are to be of Archival quality on a reproducible material such as Vellum, sepia or Mylar material.

2.1.6 MICROFILM APERTURE CARDS

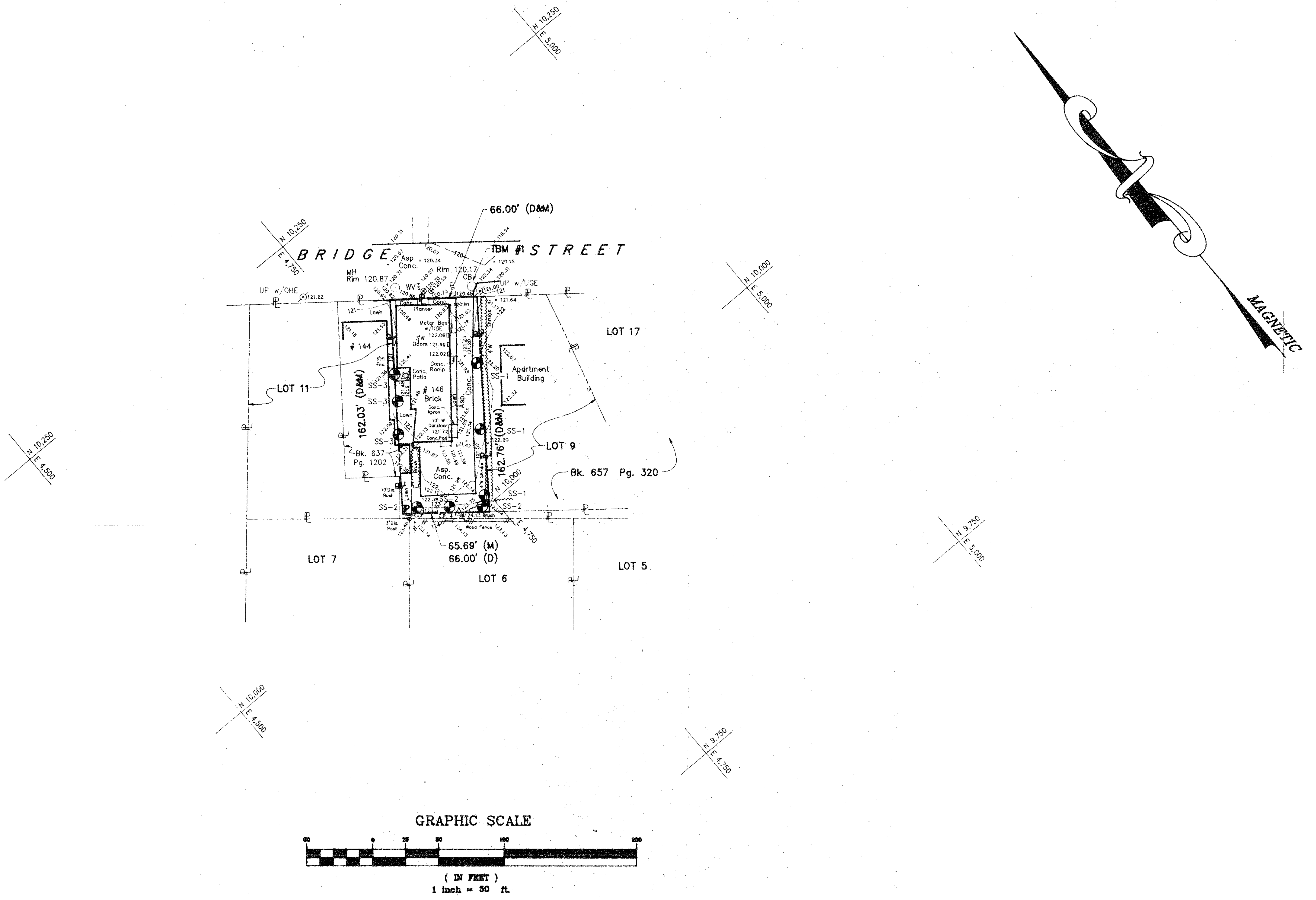
All drawings submitted in micrographic form shall be a 35 MM Silver or diazo negative mounted in a 3.25" x 7.375" manila aperture card. The card shall contain all pertinent information such as:

A. Drawing number
B. Sheet no.
C. Revision level
D. Drawing title
E. Plant or location

2.1.7 CADD

All CADD drawings shall be furnished on magnetic tape at 1600 BPI (Bits Per Inch) in Intergraph VMS Backup Format. All drawings submitted via CADD shall be fully compatible, contiguous and interpreted by NYSEGS Generation Dept Intergraph CADD System.
(For Cadd systems other then Intergraph please contact the Generation Dept. CADD System personnel).

Standard NYSEG drawing formats, Font and Cell libraries containing standard symbology for Electrical, I&C, Civil and Mechanical Drawings may be furnished upon request.



L E G E N D

○ IPF	IRON PIPE FOUND
○ IRF	IRON ROD FOUND
● SS	SOIL SAMPLING
---411---	ONE FOOT CONTOUR INTERVAL
UP	UTILITY POLE
WV	WATER VALVE
MH	MANHOLE
CB	CATCH BASIN
----℄----	CURRENT PROPERTY LINE (1991)
——℄——	ORIGINAL PROPERTY LINE OF LOT 10

NOTES :

1. ELEVATIONS BASED ON NATIONAL GEODETIC VERTICAL DATUM OF 1929.
2. ELEVATIONS SHOWN ALONG CURB LINES ARE TAKEN AT THE TOP OF CURB. AVERAGE CURB HEIGHT IS 0.5'.
3. THIS IS A SURVEY OF LOT 10 OF THE SUBDIVISION OF THE HOMESTEAD OF ZEPHANIAH PLATT.
4. SURVEY IS DONE WITHOUT BENEFIT OF AN ABSTRACT OF TITLE AND IS SUBJECT TO ANY FACTS AN UP TO DATE ABSTRACT OF TITLE WOULD SHOW.
5. LOCATION OF SOIL SAMPLES PUT ON DRAWING WITH INFORMATION SUPPLIED BY ENGINEERING SCIENCE, INC. DATED JUNE 18, 1991.

BENCHMARKS

1. B.M. L362 : STANDARD U.S.C.& G.S. BRASS DISK STAMPED "L362 1955" SET VERTICALLY IN NORTHEAST CORNER OF TRAIN DEPOT. RECORD ELEV. = 118.208
2. T.B.M. #1 : CENTER OF CB GRATE, NORTHEAST CORNER LOT 10 OF THE SUBDIVISION OF THE HOMESTEAD OF ZEPHANIAH PLATT. MAP 207.20. ELEV. = 120.13

REVISIONS

1. ADDED NORTHERLY SS-3.
JUNE 26, 1991

Alterations or additions to this survey map are prohibited except as provided in Section 7209 Subdivision 2 of the N.Y.S. Education Law.

The undersigned hereby certifies that this is a correct map made from an actual survey.

DOUGLAS JAY REITH 049904
LICENSED LAND SURVEYOR

MGP PRIORITIZATION

NEW YORK STATE ELECTRIC & GAS SITE
CITY OF PLATTSBURGH
CLINTON COUNTY
STATE OF NEW YORK

DRAWING TITLE

SAMPLING LOCATIONS
PLATTSBURGH SITE
CGPB CODE

modi associates
CONSULTING ENGINEERS & LAND SURVEYORS
6260 SOUTH BAY ROAD
CICERO, N.Y. 13039 (315)699-9006

DATE	SCALE	PROJECT NO.
JUNE 24, 1991	1" = 50'	90.204-60

APPENDIX E

ANALYTICAL DATA

&

LABORATORY PERSONNEL/CERTIFICATION INFORMATION

Laboratory Director: Richard L. Merrell (see enclosed resume)
Certification Information: (See enclosed Certification of Approval from NYSDOH

ES ENGINEERING-SCIENCE

Biographical Data

RICHARD L. MERRELL

Lab Director

EXPERIENCE SUMMARY

Twenty-five years experience in analytical chemistry with 17 years in laboratory management. Responsible for all operations of 3 chemistry labs within a region employing over 200 people with annual sales over 12 million. Analytical laboratory experience includes combined gas chromotography-mass spectrometry, gas chromotography, mass spectrometry, thermal analysis, infrared spectrometry, wet chemical analysis and physical testing.

EXPERIENCE RECORD

1989-Date	Engineering-Science, Inc. **Director - Berkeley Lab.** Responsible for overall management of ES lab services including overall profitability.
1987-1989	IT - Corporation. **Regional Lab Director.** Responsible for overall management of the Western region including profitability.
1983-1987	IT - Corporation. **Lab Manager.** Responsible for overall management of the Cerritos lab including profitability.
1977-1983	IT - Corporation. **Lab Manager.** Responsible for lot production and scheduling, salary and personnel administration and policy.
1972-1977	IT - Corporation. **Group Leader - Mass Spectrometry.** Responsible for all aspects of the operation of the mass spectrometry groups.
1968-1972	IT - Corporation. **Chemist.** Performed a variety of analyses using MS, GC, GC-MS, IR and thermal analyses.
1967-68	Shell Chemical Co. **GC Section Supervisor.** Supervised and scheduled several technicians in the GC area that were performing routine analyses.
1966-67	Shell Chemical Co. **Chemist.** Calibrated and repaired process GCs used for process control in a styrene and butadine plant.
1965-66	Chevron Research. **Lab Technician.** Performed many physical and wet chemical analyses of crude oil, core samples and soil samples.
1963-64	General Dynamics. **Lab Technician.** Performed many wet chemical analyses on electroplating solutions.

EDUCATION

B.S. in Chemistry, 1966, Brigham Young University, Provo, Utah

BART - Warm Springs Project - 1991

Mr. Merrell as Laboratory Director of the Engineering Science Berkeley Laboratory (ESBL), Mr. Merrell has had overall responsibility for ESBL's analytical portion of the project. The project technically includes various organic and inorganic analysis. He is responsible to assure that the analytical quality of the project is maintained as well as being responsible for managing the project so all the data is delivered to the client on schedule, complete and within financial budgets.

Purity/Wastech and Selma/Wastech, SITES Projects 1989-1990

Mr. Merrell has had overall responsibility for ESBL's analytical portion of these SITES projects. He is responsible to assure that the analytical quality of the project is maintained according to the project's specific QAPP. Also, he is responsible for managing the project so all the data is delivered to the client on schedule, complete, and within financial budgets.

The project technically included total analysis of the waste for organic and inorganic characterization. Also the waste was treated and analyzed by the Toxic Characteristic Leaching Procedure (TCLP) and the California Assessment Manuals (CAM) Leaching procedure to determine how effective the treating procedure was in stablizing the waste.

Moffett Naval Air Station 1987-1989

Mr. Merrell as the Western Regional Laboratory Director for International Technology Analytical Services (ITAS) was responsible for development and implementation of the sampling and analysis plan at the Moffett Naval Air Station, as part of their HAZWRAP program. His Field Analytical Service group worked with the ITAS laboratories to establish the methods, detection limits, holding times, QC criteria, sample containers, and preservatives that were specifically required for the project. The project was a multi-million dollar analytical project that involved the analysis of both soils and waters for a wider variety of parameters including volatile organic compounds (VOC), base neutral acid extractable (BNA), HSL metals, PCBs and anions.

HAZWRAP Projects 1987 to Present

Mr. Merrell as both the Western Regional Laboratory Director of ITAS and the Laboratory Director of ESBL has had overall analytical responsibilities for many HAZWRAP projects similar in scope of work to the Moffett Naval Air

Station outlined above. These sites included Offutt AFB, Rickenbacker ANGB, Duluth ANGB, Castle AFB, Concord Naval Weapons Station, Mare Island, Mather AFB, McClellan AFB and San diego Naval Facilities.

Rocky Mountain Arsenal 1987-1989

Mr. Merrell as the Western Regional Laboratory Director of ITAS had overall responsibility for the analytical portion of the Rocky Mountain Arsenal F Basin clean up and the review of the QA/QC and sampling and analysis plans. The analysis included primarily air monitoring samples for many HSL volatile and base neutral/acid extractable organics and several metals. This was to ensure the safety of the workers and surrounding residents. Many rapid turn around analysis were necessary on this project.

U.S. Environmental Protection Agency Contract Laboratory Program (EPA CLP) 1980-1989

Mr. Merrell as the Laboratory Manager of IT Cerritos Laboratory and later the Western Regional Laboratory Director of ITAS had overall responsibility for the laboratory's performance in the CLP program. His IT Cerritos laboratory has been a participant in the CLP since its inception in 1980. The Cerritos laboratory has had as many as 13 bid lots at one time. They were required to perform full organic CLP analysis on as many as 390 water and soil samples per month from known or suspected hazardous waste sites. These analyses for HSL compounds includes volatile organics, base neutral/acid extractable organics, pesticides and PCBs. CLP protocols are designed to be stand alone legally defendable methodologies and are currently used when the most rigorous QA/QC requirements are needed.

PROPERTY OF
NEW YORK STATE DEPARTMENT OF HEALTH

DAVID AXELROD, M.D. *COMMISSIONER*

Expires 12:01 AM April 1, 1991
ISSUED September 20, 1990

INTERIM CERTIFICATE OF APPROVAL FOR LABORATORY SERVICE

(Issued in accordance with the Laws of New York State)

pursuant to Section 502 of the Public Health Law

Laboratory ID. Number 11178

Director: Mr. Richard Merrell

Laboratory Name: Engineering Science, Inc.
Number & Street: 660 Bancroft Way
City, State, Zip : Berkeley CA 94710
VALID AT THIS ADDRESS ONLY

is hereby APPROVED as an Environmental Laboratory for the category

ENVIRONMENTAL ANALYSES/SOLID AND HAZARDOUS WASTE

All approved subcategories and/or analytes are listed below:

- Characteristic Testing :
  - Corrosivity
  - Ignitability
  - Reactivity
  - Toxicity - Metals Only
- Nitroaromatics Isophorone (ALL)
- Phthalate Esters (ALL)
- Purgeable Aromatics (ALL)
- Miscellaneous :
  - Cyanide, Total
  - Hydrogen Ion (pH)
  - Sulfide (as S)
- Metals I (ALL)
- Polynuclear Aromatic Hydrocarbons (ALL)
- Priority Pollutant Phenols (ALL)
- Purgeable Halocarbons (ALL)
- Acrolein and Acrylonitrile (ALL)
- Chlorinated Hydrocarbon Pesticides
- Chlorinated Hydrocarbons (ALL)
- Haloethers (ALL)
- Metals II (ALL)
- Polychlorinated Biphenyls (ALL)

Herbert W. Dicke

Herbert W. Dickerman, M.D., Ph.D.
Director
Wadsworth Center for Laboratories and Research

PROPERTY OF

NEW YORK STATE DEPARTMENT OF HEALTH

DAVID AXELROD, M.D. *COMMISSIONER*

Expires 12:01 AM April 1, 1991
ISSUED September 20, 1990

INTERIM CERTIFICATE OF APPROVAL FOR LABORATORY SERVICE

(Issued in accordance with the Laws of New York State)

pursuant to Section 502 of the Public Health Law

Laboratory ID. Number 11178

Director: Mr. Richard L Merrell

Laboratory Name: Engineering Science, Inc.
Number & Street: 600 Bancroft Way
City,State,Zip : Berkeley CA 94710

VALID AT THIS ADDRESS ONLY

is hereby APPROVED as an Environmental Laboratory for the category

NON-POTABLE WATER

All approved subcategories and analytes are listed on the attached addendum

Herbert W. Dickerman, M.D., Ph.D.
Director
Wadsworth Center for Laboratories and Research

FORM LR 23.F

7447

ES
ENGINEERING-SCIENCE, INC.

BERKELEY LABORATORY
600 BANCROFT WAY
BERKELEY, CA 94710
Tel: (415) 841-7353

Report Date: 6/13/91

Work Order No.:2945

Client:

Randy Youngman
ES Syracuse/ NYSEG/Plattsburg
290 Elwood Davis Road
Liverpool, NY. 13088

Date of Sample Receipt: 5/30/91

Your soil samples identified as:

SS-1
SS-1 DUPLICATE
SS-2
SS-3

were analyzed for volatile organics by EPA Method 8240, semivolatile organics by EPA Method 8270, total cyanide and 11 client specified metals.

The analytical reports for the samples listed above are attached.

CASE NARRATIVE
WORK ORDER NO. 2945
EPA METHOD 8240

These four soil samples were analyzed by EPA Method 8240. CLP compounds, spiking amounts, and QC acceptance criteria were used for the internal standards, surrogates, and matrix spike/spike duplicates.

All samples were analyzed within EPA Data Validation Technical Holding Times.

One blank was analyzed with this sample and met CLP acceptance criteria for internal standard areas, surrogates and contamination.

The continuing calibration checks (CCC) used for quantifying these samples met CLP acceptance criteria.

All internal standard areas were within CLP acceptance criteria with the following exceptions:

> Samples 2945-03 and 2945-03MSD chlorobenzene-D5 was below criteria.

All surrogate recoveries were within CLP acceptance criteria with the following exceptions:

> Sample 2945-03 toluene-d8 was above criteria.

All matrix spike/spike duplicate recoveries and relative percent differences were within CLP acceptance criteria with the following exceptions:

> Toluene recovery was higher than criteria in the MSD.

ES-ENGINEERING SCIENCE, INC.

600 Bancroft Way
Berkeley, CA. 94710

GC/MS ANALYTICAL REPORT
VOLATILE ORGANICS

Work Order No: 2945

Date Analyzed: 06/03/91

Laboratory ID: 2945-01

Matrix: SOIL

Client ID: SS-1

Level:LOW

Dilution Fact: 1.0

Compound	Analytical Results ug/Kg	Reporting Limit
Chloromethane	ND	10
Bromomethane	ND	10
Vinyl Chloride	ND	10
Chloroethane	ND	10
Methylene Chloride	ND	5
Acetone	ND	50
Carbon Disulfide	ND	10
Trichlorofluoromethane	ND	10
1,1-Dichloroethene	ND	5
1,1-Dichloroethane	ND	5
1,2-Dichloroethene (Total)	ND	5
Chloroform	ND	5
1,2-Dichloroethane	ND	5
2-Butanone	ND	50
1,1,1-Trichloroethane	ND	5
Carbon Tetrachloride	ND	5
Vinyl Acetate	ND	50
Bromodichloromethane	ND	5
1,2-Dichloropropane	ND	5
cis-1,3-Dichloropropene	ND	5
Trichloroethene	ND	5
Benzene	ND	5
Dibromochloromethane	ND	5
1,1,2-Trichloroethane	ND	5
trans-1,3-Dichloropropene	ND	5
2-Chloroethylvinylether	ND	10
Bromoform	ND	5
2-Hexanone	ND	50
4-Methyl-2-pentanone	ND	50
Tetrachloroethene	ND	5
1,1,2,2-Tetrachloroethane	ND	5
Toluene	ND	5
Chlorobenzene	ND	5
Ethylbenzene	ND	5
Styrene	ND	5
Total Xylenes	ND	5
1,3-Dichlorobenzene	ND	5
1,4-Dichlorobenzene	ND	5
1,2-Dichlorobenzene	ND	5

Analyst: EWSmith

Group Leader:

ES-ENGINEERING SCIENCE, INC.

600 Bancroft Way
Berkeley, CA. 94710

GC/MS ANALYTICAL REPORT
VOLATILE ORGANICS

Work Order No: 2945

Date Analyzed: 06/03/91

Laboratory ID: 2945-02

Matrix: SOIL

Client ID: SS-1DUP

Level:LOW

Dilution Fact: 1.0

Compound	Analytical Results ug/Kg	Reporting Limit
Chloromethane	ND	10
Bromomethane	ND	10
Vinyl Chloride	ND	10
Chloroethane	ND	10
Methylene Chloride	ND	5
Acetone	ND	50
Carbon Disulfide	ND	10
Trichlorofluoromethane	ND	10
1,1-Dichloroethene	ND	5
1,1-Dichloroethane	ND	5
1,2-Dichloroethene (Total)	ND	5
Chloroform	ND	5
1,2-Dichloroethane	ND	5
2-Butanone	ND	50
1,1,1-Trichloroethane	ND	5
Carbon Tetrachloride	ND	5
Vinyl Acetate	ND	50
Bromodichloromethane	ND	5
1,2-Dichloropropane	ND	5
cis-1,3-Dichloropropene	ND	5
Trichloroethene	ND	5
Benzene	ND	5
Dibromochloromethane	ND	5
1,1,2-Trichloroethane	ND	5
trans-1,3-Dichloropropene	ND	5
2-Chloroethylvinylether	ND	10
Bromoform	ND	5
2-Hexanone	ND	50
4-Methyl-2-pentanone	ND	50
Tetrachloroethene	ND	5
1,1,2,2-Tetrachloroethane	ND	5
Toluene	ND	5
Chlorobenzene	ND	5
Ethylbenzene	ND	5
Styrene	ND	5
Total Xylenes	ND	5
1,3-Dichlorobenzene	ND	5
1,4-Dichlorobenzene	ND	5
1,2-Dichlorobenzene	ND	5

Analyst:

Group Leader:

ES-ENGINEERING SCIENCE, INC.

600 Bancroft Way
Berkeley, CA. 94710

GC/MS ANALYTICAL REPORT
VOLATILE ORGANICS

Work Order No: 2945

Date Analyzed: 06/03/91

Laboratory ID: 2945-03

Matrix: SOIL

Client ID: SS-2

Level:LOW

Dilution Fact: 1.0

Compound	Analytical Results ug/Kg	Reporting Limit
Chloromethane	ND	10
Bromomethane	ND	10
Vinyl Chloride	ND	10
Chloroethane	ND	10
Methylene Chloride	ND	5
Acetone	ND	50
Carbon Disulfide	ND	10
Trichlorofluoromethane	ND	10
1,1-Dichloroethene	ND	5
1,1-Dichloroethane	ND	5
1,2-Dichloroethene (Total)	ND	5
Chloroform	ND	5
1,2-Dichloroethane	ND	5
2-Butanone	ND	50
1,1,1-Trichloroethane	ND	5
Carbon Tetrachloride	ND	5
Vinyl Acetate	ND	50
Bromodichloromethane	ND	5
1,2-Dichloropropane	ND	5
cis-1,3-Dichloropropene	ND	5
Trichloroethene	ND	5
Benzene	ND	5
Dibromochloromethane	ND	5
1,1,2-Trichloroethane	ND	5
trans-1,3-Dichloropropene	ND	5
2-Chloroethylvinylether	ND	10
Bromoform	ND	5
2-Hexanone	ND	50
4-Methyl-2-pentanone	ND	50
Tetrachloroethene	ND	5
1,1,2,2-Tetrachloroethane	ND	5
Toluene	ND	5
Chlorobenzene	ND	5
Ethylbenzene	ND	5
Styrene	ND	5
Total Xylenes	ND	5
1,3-Dichlorobenzene	ND	5
1,4-Dichlorobenzene	ND	5
1,2-Dichlorobenzene	ND	5

Analyst: G Schmitt

Group Leader:

ES-ENGINEERING SCIENCE, INC.

600 Bancroft Way
Berkeley, CA. 94710

GC/MS ANALYTICAL REPORT
VOLATILE ORGANICS

Work Order No: 2945

Date Analyzed: 06/03/91

Laboratory ID: 2945-04

Matrix: SOIL

Client ID: SS-3

Level:LOW

Dilution Fact: 1.0

Compound	Analytical Results ug/Kg	Reporting Limit
Chloromethane	ND	10
Bromomethane	ND	10
Vinyl Chloride	ND	10
Chloroethane	ND	10
Methylene Chloride	ND	5
Acetone	ND	50
Carbon Disulfide	ND	10
Trichlorofluoromethane	ND	10
1,1-Dichloroethene	ND	5
1,1-Dichloroethane	ND	5
1,2-Dichloroethene (Total)	ND	5
Chloroform	ND	5
1,2-Dichloroethane	ND	5
2-Butanone	ND	50
1,1,1-Trichloroethane	12	5
Carbon Tetrachloride	ND	5
Vinyl Acetate	ND	50
Bromodichloromethane	ND	5
1,2-Dichloropropane	ND	5
cis-1,3-Dichloropropene	ND	5
Trichloroethene	ND	5
Benzene	ND	5
Dibromochloromethane	ND	5
1,1,2-Trichloroethane	ND	5
trans-1,3-Dichloropropene	ND	5
2-Chloroethylvinylether	ND	10
Bromoform	ND	5
2-Hexanone	ND	50
4-Methyl-2-pentanone	ND	50
Tetrachloroethene	ND	5
1,1,2,2-Tetrachloroethane	ND	5
Toluene	ND	5
Chlorobenzene	ND	5
Ethylbenzene	ND	5
Styrene	ND	5
Total Xylenes	ND	5
1,3-Dichlorobenzene	ND	5
1,4-Dichlorobenzene	ND	5
1,2-Dichlorobenzene	ND	5

Analyst:

Group Leader:

ES-ENGINEERING SCIENCE, INC.

600 Bancroft Way
Berkeley, CA. 94710

GC/MS ANALYTICAL REPORT
VOLATILE ORGANICS

Work Order No: 2945

Date Analyzed: 06/03/91

Laboratory ID: MSVM2910603

Matrix: SOIL

Client ID: VBLANK

Level:LOW

Dilution Fact: 1.0

Compound	Analytical Results ug/Kg	Reporting Limit
Chloromethane	ND	10
Bromomethane	ND	10
Vinyl Chloride	ND	10
Chloroethane	ND	10
Methylene Chloride	9	5
Acetone	ND	50
Carbon Disulfide	ND	10
Trichlorofluoromethane	ND	10
1,1-Dichloroethene	ND	5
1,1-Dichloroethane	ND	5
1,2-Dichloroethene (Total)	ND	5
Chloroform	ND	5
1,2-Dichloroethane	ND	5
2-Butanone	ND	50
1,1,1-Trichloroethane	ND	5
Carbon Tetrachloride	ND	5
Vinyl Acetate	ND	50
Bromodichloromethane	ND	5
1,2-Dichloropropane	ND	5
cis-1,3-Dichloropropene	ND	5
Trichloroethene	ND	5
Benzene	ND	5
Dibromochloromethane	ND	5
1,1,2-Trichloroethane	ND	5
trans-1,3-Dichloropropene	ND	5
2-Chloroethylvinylether	ND	10
Bromoform	ND	5
2-Hexanone	ND	50
4-Methyl-2-pentanone	ND	50
Tetrachloroethene	ND	5
1,1,2,2-Tetrachloroethane	ND	5
Toluene	ND	5
Chlorobenzene	ND	5
Ethylbenzene	ND	5
Styrene	ND	5
Total Xylenes	ND	5
1,3-Dichlorobenzene	ND	5
1,4-Dichlorobenzene	ND	5
1,2-Dichlorobenzene	ND	5

Analyst:

Group Leader:

ES-ENGINEERING SCIENCE, INC.

600 Bancroft Way
Berkeley,CA 94710

SOIL VOLATILE SURROGATE RECOVERY

WORK ORDER NO: 2945

DATE ANALYZED: 06/03/91

LEVEL: LOW

LABORATORY ID	S1 (DCE)	S2 (TOL)	S3 (BFB)	Total Out
MSVM2910603	105	109	101	0
2945-01	99	115	86	0
2945-03	117	145 *	109	1
2945-03MS	97	118	85	0
2945-03MSD	101	133	89	0
2945-02	92	115	79	0
2945-04	86	121	81	0

	QC LIMITS
S1(DCE)= 1,2-Dichloroethane-d4	(70-121)
S2(TOL)= Toluene-d8	(84-138)
S3(BFB)= Bromofluorobenzene	(59-113)

D =Surrogate Diluted Out
* =Surrogate Outside QC Limit

ANALYST:

Quality control:

ES-ENGINEERING SCIENCE, INC.

600 Bancroft Way
Berkeley, CA. 94710

Matrix Spike/Spike Duplicate Recovery

Volatile Organics

Work Order: 2945

QC Sample : 2945-03

Instrument: VMS-2

Level: LOW

Analysis Date: 06/03/91

Matrix: SOIL

Units: ug/Kg

Cor. Fact: 1

% Moisture: NA

Compound	Conc. Sample	Conc. Spiked	Conc. MS	Percent Recovered
1,1-Dichloroethene	0	50	62	124
Trichloroethene	0	50	57	113
Benzene	0	50	59	119
Toluene	0	50	63	126
Chlorobenzene	0	50	57	115

Compound	Conc. MSD	Percent Recovered	RPD	Criteria RPD %REC
1,1-Dichloroethene	67	135	8	22 (59-172)
Trichloroethene	61	122	7	24 (62-137)
Benzene	66	132	11	21 (66-142)
Toluene	71	142 *	12	21 (59-139)
Chlorobenzene	65	129	12	21 (60-133)

ANALYST:

Quality Control:

* = Value Outside QC Limit

$$\text{Percent Recovery} = \frac{\text{Conc. MS}|\text{MSD} - \text{Conc. Sample}}{\text{Conc. Spiked}} * 100$$

$$\text{RPD} = \left(\frac{\text{Conc. MS} - \text{Conc. MSD}}{(\text{Conc. MS} + \text{Conc. MSD})/2}\right) * 100$$

ES-ENGINEERING SCIENCE, INC.

600 Bancroft Way
Berkeley, CA. 94710

GC/MS ANALYTICAL REPORT
SEMIVOLATILE ORGANICS

Work Order No: 2945
Date Extracted: 06/03/91
Laboratory ID: 2945-01
Date Analyzed: 06/05/91
Client ID: SS-1
Dilution Fact: 5.0
Matrix: SOIL
Level: LOW

Compound	Analytical Results ug/Kg	Reporting Limit
N-Nitroso-Dimethylamine	ND	1700
Phenol	ND	1700
bis(2-Chloroethyl)ether	ND	1700
2-Chlorophenol	ND	1700
1,3-Dichlorobenzene	ND	1700
1,4-Dichlorobenzene	ND	1700
Benzyl Alcohol	ND	1700
1,2-Dichlorobenzene	ND	1700
2-Methylphenol	ND	1700
bis(2-chloroisopropyl)Ether	ND	1700
4-Methylphenol	ND	1700
N-Nitroso-Di-n-Propylamine	ND	1700
Hexachloroethane	ND	1700
Nitrobenzene	ND	1700
Isophorone	ND	1700
2-Nitrophenol	ND	1700
2,4-Dimethylphenol	ND	1700
bis(2-Chloroethoxy)methane	ND	1700
2,4-Dichlorophenol	ND	1700
Benzoic Acid	ND	8000
1,2,4-Trichlorobenzene	ND	1700
Naphthalene	ND	1700
4-Chloroaniline	ND	1700
Hexachlorobutadiene	ND	1700
4-Chloro-3-Methylphenol	ND	1700
2-Methylnaphthalene	ND	1700
Hexachlorocyclopentadiene	ND	1700
2,4,6-Trichlorophenol	ND	1700
2,4,5-Trichlorophenol	ND	8000
2-Chloronaphthalene	ND	1700
2-Nitroaniline	ND	8000
Dimethylphthalate	ND	1700
Acenaphthylene	ND	1700
2,6-Dinitrotoluene	ND	1700
3-Nitroaniline	ND	8000
Acenaphthene	ND	1700
2,4-Dinitrophenol	ND	8000
Dibenzofuran	ND	1700
4-Nitrophenol	ND	8000

ES-ENGINEERING SCIENCE, INC.

600 Bancroft Way
Berkeley, CA. 94710

GC/MS ANALYTICAL REPORT
SEMIVOLATILE ORGANICS

Work Order No: 2945

Date Extracted: 06/03/91

Laboratory ID: 2945-01

Date Analyzed: 06/05/91

Client ID: SS-1

Dilution Fact: 5.0

Matrix: SOIL

Level:LOW

Compound	Analytical Results ug/Kg	Reporting Limit
2,4-Dinitrotoluene	ND	1700
Fluorene	ND	1700
Diethylphthalate	ND	1700
4-Chlorophenyl-phenylether	ND	1700
4-Nitroaniline	ND	8000
4,6-Dinitro-2-Methylphenol	ND	8000
N-Nitrosodiphenylamine	ND	1700
4-Bromophenyl-phenylether	ND	1700
Hexachlorobenzene	ND	1700
Pentachlorophenol	ND	8000
Phenanthrene	ND	1700
Anthracene	ND	1700
Di-n-Butylphthalate	ND	1700
Fluoranthene	ND	1700
Pyrene	ND	1700
Butylbenzylphthalate	ND	1700
Benzo(a)Anthracene	ND	1700
3,3'-Dichlorobenzidine	ND	3300
Chrysene	ND	1700
bis(2-Ethylhexyl)Phthalate	ND	1700
Di-n-octylphthalate	ND	1700
Benzo(b)Fluoranthene	ND	1700
Benzo(k)Fluoranthene	ND	1700
Benzo(a)Pyrene	ND	1700
Indeno(1,2,3-cd)Pyrene	ND	1700
Dibenz(a,h)Anthracene	ND	1700
Benzo(g,h,i)Perylene	ND	1700

Analyst: K Leibner

Group Leader:

ES-ENGINEERING SCIENCE, INC.

600 Bancroft Way
Berkeley, CA. 94710

GC/MS ANALYTICAL REPORT
SEMIVOLATILE ORGANICS

Work Order No: 2949

Date Extracted: 06/03/91

Laboratory ID: 2949-02

Date Analyzed: 06/06/91

Client ID: SS-1DUP

Dilution Fact: 5.0

Matrix: SOIL

Level:LOW

Compound	Analytical Results ug/Kg	Reporting Limit
N-Nitroso-Dimethylamine	ND	1700
Phenol	ND	1700
bis(2-Chloroethyl)ether	ND	1700
2-Chlorophenol	ND	1700
1,3-Dichlorobenzene	ND	1700
1,4-Dichlorobenzene	ND	1700
Benzyl Alcohol	ND	1700
1,2-Dichlorobenzene	ND	1700
2-Methylphenol	ND	1700
bis(2-chloroisopropyl)Ether	ND	1700
4-Methylphenol	ND	1700
N-Nitroso-Di-n-Propylamine	ND	1700
Hexachloroethane	ND	1700
Nitrobenzene	ND	1700
Isophorone	ND	1700
2-Nitrophenol	ND	1700
2,4-Dimethylphenol	ND	1700
bis(2-Chloroethoxy)methane	ND	1700
2,4-Dichlorophenol	ND	1700
Benzoic Acid	ND	8000
1,2,4-Trichlorobenzene	ND	1700
Naphthalene	ND	1700
4-Chloroaniline	ND	1700
Hexachlorobutadiene	ND	1700
4-Chloro-3-Methylphenol	ND	1700
2-Methylnaphthalene	ND	1700
Hexachlorocyclopentadiene	ND	1700
2,4,6-Trichlorophenol	ND	1700
2,4,5-Trichlorophenol	ND	8000
2-Chloronaphthalene	ND	1700
2-Nitroaniline	ND	8000
Dimethylphthalate	ND	1700
Acenaphthylene	ND	1700
2,6-Dinitrotoluene	ND	1700
3-Nitroaniline	ND	8000
Acenaphthene	ND	1700
2,4-Dinitrophenol	ND	8000
Dibenzofuran	ND	1700
4-Nitrophenol	ND	8000

ES-ENGINEERING SCIENCE, INC.

600 Bancroft Way
Berkeley, CA. 94710

GC/MS ANALYTICAL REPORT
SEMIVOLATILE ORGANICS

Work Order No: 2949

Date Extracted: 06/03/91

Laboratory ID: 2949-02

Date Analyzed: 06/06/91

Client ID: SS-1DUP

Dilution Fact: 5.0

Matrix: SOIL

Level: LOW

Compound	Analytical Results ug/Kg	Reporting Limit
2,4-Dinitrotoluene	ND	1700
Fluorene	ND	1700
Diethylphthalate	ND	1700
4-Chlorophenyl-phenylether	ND	1700
4-Nitroaniline	ND	8000
4,6-Dinitro-2-Methylphenol	ND	8000
N-Nitrosodiphenylamine	ND	1700
4-Bromophenyl-phenylether	ND	1700
Hexachlorobenzene	ND	1700
Pentachlorophenol	ND	8000
Phenanthrene	ND	1700
Anthracene	ND	1700
Di-n-Butylphthalate	ND	1700
Fluoranthene	ND	1700
Pyrene	ND	1700
Butylbenzylphthalate	ND	1700
Benzo(a)Anthracene	ND	1700
3,3'-Dichlorobenzidine	ND	3300
Chrysene	ND	1700
bis(2-Ethylhexyl)Phthalate	ND	1700
Di-n-octylphthalate	ND	1700
Benzo(b)Fluoranthene	ND	1700
Benzo(k)Fluoranthene	ND	1700
Benzo(a)Pyrene	ND	1700
Indeno(1,2,3-cd)Pyrene	ND	1700
Dibenz(a,h)Anthracene	ND	1700
Benzo(g,h,i)Perylene	ND	1700

Analyst:

Group Leader:

ES-ENGINEERING SCIENCE, INC.

600 Bancroft Way
Berkeley, CA. 94710

GC/MS ANALYTICAL REPORT
SEMIVOLATILE ORGANICS

Work Order No: 2945

Date Extracted: 06/03/91

Laboratory ID: 2945-03

Date Analyzed: 06/05/91

Client ID: SS-2

Dilution Fact: 5.0

Matrix: SOIL

Level:LOW

Compound	Analytical Results ug/Kg	Reporting Limit
N-Nitroso-Dimethylamine	ND	1700
Phenol	ND	1700
bis(2-Chloroethyl)ether	ND	1700
2-Chlorophenol	ND	1700
1,3-Dichlorobenzene	ND	1700
1,4-Dichlorobenzene	ND	1700
Benzyl Alcohol	ND	1700
1,2-Dichlorobenzene	ND	1700
2-Methylphenol	ND	1700
bis(2-chloroisopropyl)Ether	ND	1700
4-Methylphenol	ND	1700
N-Nitroso-Di-n-Propylamine	ND	1700
Hexachloroethane	ND	1700
Nitrobenzene	ND	1700
Isophorone	ND	1700
2-Nitrophenol	ND	1700
2,4-Dimethylphenol	ND	1700
bis(2-Chloroethoxy)methane	ND	1700
2,4-Dichlorophenol	ND	1700
Benzoic Acid	ND	8000
1,2,4-Trichlorobenzene	ND	1700
Naphthalene	ND	1700
4-Chloroaniline	ND	1700
Hexachlorobutadiene	ND	1700
4-Chloro-3-Methylphenol	ND	1700
2-Methylnaphthalene	ND	1700
Hexachlorocyclopentadiene	ND	1700
2,4,6-Trichlorophenol	ND	1700
2,4,5-Trichlorophenol	ND	8000
2-Chloronaphthalene	ND	1700
2-Nitroaniline	ND	8000
Dimethylphthalate	ND	1700
Acenaphthylene	ND	1700
2,6-Dinitrotoluene	ND	1700
3-Nitroaniline	ND	8000
Acenaphthene	ND	1700
2,4-Dinitrophenol	ND	8000
Dibenzofuran	ND	1700
4-Nitrophenol	ND	8000

ES-ENGINEERING SCIENCE, INC.

600 Bancroft Way
Berkeley, CA. 94710

GC/MS ANALYTICAL REPORT
SEMIVOLATILE ORGANICS

Work Order No: 2945

Date Extracted: 06/03/91

Laboratory ID: 2945-03

Date Analyzed: 06/05/91

Client ID: SS-2

Dilution Fact: 5.0

Matrix: SOIL

Level: LOW

Compound	Analytical Results ug/Kg	Reporting Limit
2,4-Dinitrotoluene	ND	1700
Fluorene	ND	1700
Diethylphthalate	ND	1700
4-Chlorophenyl-phenylether	ND	1700
4-Nitroaniline	ND	8000
4,6-Dinitro-2-Methylphenol	ND	8000
N-Nitrosodiphenylamine	ND	1700
4-Bromophenyl-phenylether	ND	1700
Hexachlorobenzene	ND	1700
Pentachlorophenol	ND	8000
Phenanthrene	ND	1700
Anthracene	ND	1700
Di-n-Butylphthalate	ND	1700
Fluoranthene	2900	1700
Pyrene	4100	1700
Butylbenzylphthalate	ND	1700
Benzo(a)Anthracene	1900	1700
3,3'-Dichlorobenzidine	ND	3300
Chrysene	ND	1700
bis(2-Ethylhexyl)Phthalate	ND	1700
Di-n-octylphthalate	ND	1700
Benzo(b)Fluoranthene	2500	1700
Benzo(k)Fluoranthene	ND	1700
Benzo(a)Pyrene	ND	1700
Indeno(1,2,3-cd)Pyrene	ND	1700
Dibenz(a,h)Anthracene	ND	1700
Benzo(g,h,i)Perylene	ND	1700

Analyst: K Leitner

Group Leader:

ES-ENGINEERING SCIENCE, INC.

600 Bancroft Way
Berkeley, CA. 94710

GC/MS ANALYTICAL REPORT
SEMIVOLATILE ORGANICS

Work Order No: 2945

Date Extracted: 06/03/91

Laboratory ID: 2945-04

Date Analyzed: 06/05/91

Client ID: SS-3

Dilution Fact: 5.0

Matrix: SOIL

Level:LOW

Compound	Analytical Results ug/Kg	Reporting Limit
N-Nitroso-Dimethylamine	ND	1700
Phenol	ND	1700
bis(2-Chloroethyl)ether	ND	1700
2-Chlorophenol	ND	1700
1,3-Dichlorobenzene	ND	1700
1,4-Dichlorobenzene	ND	1700
Benzyl Alcohol	ND	1700
1,2-Dichlorobenzene	ND	1700
2-Methylphenol	ND	1700
bis(2-chloroisopropyl)Ether	ND	1700
4-Methylphenol	ND	1700
N-Nitroso-Di-n-Propylamine	ND	1700
Hexachloroethane	ND	1700
Nitrobenzene	ND	1700
Isophorone	ND	1700
2-Nitrophenol	ND	1700
2,4-Dimethylphenol	ND	1700
bis(2-Chloroethoxy)methane	ND	1700
2,4-Dichlorophenol	ND	1700
Benzoic Acid	ND	8000
1,2,4-Trichlorobenzene	ND	1700
Naphthalene	ND	1700
4-Chloroaniline	ND	1700
Hexachlorobutadiene	ND	1700
4-Chloro-3-Methylphenol	ND	1700
2-Methylnaphthalene	ND	1700
Hexachlorocyclopentadiene	ND	1700
2,4,6-Trichlorophenol	ND	1700
2,4,5-Trichlorophenol	ND	8000
2-Chloronaphthalene	ND	1700
2-Nitroaniline	ND	8000
Dimethylphthalate	ND	1700
Acenaphthylene	ND	1700
2,6-Dinitrotoluene	ND	1700
3-Nitroaniline	ND	8000
Acenaphthene	ND	1700
2,4-Dinitrophenol	ND	8000
Dibenzofuran	ND	1700
4-Nitrophenol	ND	8000

ES-ENGINEERING SCIENCE, INC.

600 Bancroft Way
Berkeley, CA. 94710

GC/MS ANALYTICAL REPORT
SEMIVOLATILE ORGANICS

Work Order No: 2945

Date Extracted: 06/03/91

Laboratory ID: 2945-04

Date Analyzed: 06/05/91

Client ID: SS-3

Dilution Fact: 5.0

Matrix: SOIL

Level: LOW

Compound	Analytical Results ug/Kg	Reporting Limit
2,4-Dinitrotoluene	ND	1700
Fluorene	ND	1700
Diethylphthalate	ND	1700
4-Chlorophenyl-phenylether	ND	1700
4-Nitroaniline	ND	8000
4,6-Dinitro-2-Methylphenol	ND	8000
N-Nitrosodiphenylamine	ND	1700
4-Bromophenyl-phenylether	ND	1700
Hexachlorobenzene	ND	1700
Pentachlorophenol	ND	8000
Phenanthrene	ND	1700
Anthracene	ND	1700
Di-n-Butylphthalate	ND	1700
Fluoranthene	ND	1700
Pyrene	ND	1700
Butylbenzylphthalate	ND	1700
Benzo(a)Anthracene	ND	1700
3,3'-Dichlorobenzidine	ND	3300
Chrysene	ND	1700
bis(2-Ethylhexyl)Phthalate	ND	1700
Di-n-octylphthalate	ND	1700
Benzo(b)Fluoranthene	ND	1700
Benzo(k)Fluoranthene	ND	1700
Benzo(a)Pyrene	ND	1700
Indeno(1,2,3-cd)Pyrene	ND	1700
Dibenz(a,h)Anthracene	ND	1700
Benzo(g,h,i)Perylene	ND	1700

Analyst: K Leibner

Group Leader:

ES-ENGINEERING SCIENCE, INC.

600 Bancroft Way
Berkeley, CA. 94710

GC/MS ANALYTICAL REPORT
SEMIVOLATILE ORGANICS

Work Order No: 2945

Date Extracted: 06/03/91

Laboratory ID: MSBNA910603

Date Analyzed: 06/04/91

Client ID: SBLANK

Dilution Fact: 1.0

Matrix: SOIL

Level:LOW

Compound	Analytical Results ug/Kg	Reporting Limit
N-Nitroso-Dimethylamine	ND	330
Phenol	ND	330
bis(2-Chloroethyl)ether	ND	330
2-Chlorophenol	ND	330
1,3-Dichlorobenzene	ND	330
1,4-Dichlorobenzene	ND	330
Benzyl Alcohol	ND	330
1,2-Dichlorobenzene	ND	330
2-Methylphenol	ND	330
bis(2-chloroisopropyl)Ether	ND	330
4-Methylphenol	ND	330
N-Nitroso-Di-n-Propylamine	ND	330
Hexachloroethane	ND	330
Nitrobenzene	ND	330
Isophorone	ND	330
2-Nitrophenol	ND	330
2,4-Dimethylphenol	ND	330
bis(2-Chloroethoxy)methane	ND	330
2,4-Dichlorophenol	ND	330
Benzoic Acid	ND	1600
1,2,4-Trichlorobenzene	ND	330
Naphthalene	ND	330
4-Chloroaniline	ND	330
Hexachlorobutadiene	ND	330
4-Chloro-3-Methylphenol	ND	330
2-Methylnaphthalene	ND	330
Hexachlorocyclopentadiene	ND	330
2,4,6-Trichlorophenol	ND	330
2,4,5-Trichlorophenol	ND	1600
2-Chloronaphthalene	ND	330
2-Nitroaniline	ND	1600
Dimethylphthalate	ND	330
Acenaphthylene	ND	330
2,6-Dinitrotoluene	ND	330
3-Nitroaniline	ND	1600
Acenaphthene	ND	330
2,4-Dinitrophenol	ND	1600
Dibenzofuran	ND	330
4-Nitrophenol	ND	1600

ES-ENGINEERING SCIENCE, INC.

600 Bancroft Way
Berkeley, CA. 94710

GC/MS ANALYTICAL REPORT
SEMIVOLATILE ORGANICS

Work Order No: 2945

Date Extracted: 06/03/91

Laboratory ID: MSBNA910603

Date Analyzed: 06/04/91

Client ID: SBLANK

Dilution Fact: 1.0

Matrix: SOIL

Level:LOW

Compound	Analytical Results ug/Kg	Reporting Limit
2,4-Dinitrotoluene	ND	330
Fluorene	ND	330
Diethylphthalate	ND	330
4-Chlorophenyl-phenylether	ND	330
4-Nitroaniline	ND	1600
4,6-Dinitro-2-Methylphenol	ND	1600
N-Nitrosodiphenylamine	ND	330
4-Bromophenyl-phenylether	ND	330
Hexachlorobenzene	ND	330
Pentachlorophenol	ND	1600
Phenanthrene	ND	330
Anthracene	ND	330
Di-n-Butylphthalate	ND	330
Fluoranthene	ND	330
Pyrene	ND	330
Butylbenzylphthalate	ND	330
Benzo(a)Anthracene	ND	330
3,3'-Dichlorobenzidine	ND	660
Chrysene	ND	330
bis(2-Ethylhexyl)Phthalate	ND	330
Di-n-octylphthalate	ND	330
Benzo(b)Fluoranthene	ND	330
Benzo(k)Fluoranthene	ND	330
Benzo(a)Pyrene	ND	330
Indeno(1,2,3-cd)Pyrene	ND	330
Dibenz(a,h)Anthracene	ND	330
Benzo(g,h,i)Perylene	ND	330

Analyst:

Group Leader:

ES-ENGINEERING SCIENCE, INC.

600 Bancroft Way
Berkeley,CA 94710

SOIL SEMIVOLATILE SURROGATE RECOVERY

WORK ORDER NO: 2945

DATE ANALYZED: 06/04/91

LEVEL: LOW

LABORATORY ID	S1 NBZ	S2 FBP	S3 TPH	S4 PHL	S5 2FP	S6 TBP	TOT OUT
MSBNA910603	62	66	64	82	60	62	0

	QC LIMITS
S1(NBZ)= Nitrobenzene-d5	(23-120)
S2(FBP)= 2-Fluorobiphenyl	(30-115)
S3(TPH)= Terphenyl-d14	(18-137)
S4(PHL)= Phenol-d5	(24-113)
S5(2FP)= 2-Fluorophenol	(25-121)
S6(TBP)= 2,4,6-Tribromophenol	(19-122)

D =Surrogate Diluted Out
* =Surrogate Outside QC Limit

ANALYST

Quality Control:

ES-ENGINEERING SCIENCE, INC.

600 Bancroft Way
Berkeley,CA 94710

SOIL SEMIVOLATILE SURROGATE RECOVERY

WORK ORDER NO: 2945

DATE ANALYZED: 06/05/91

LEVEL: LOW

LABORATORY ID	S1 NBZ	S2 FBP	S3 TPH	S4 PHL	S5 2FP	S6 TBP	TOT OUT
2945-01	57	88	95	81	74	77	0
2945-02	83	99	107	101	102	87	0
2945-03	72	101	115	96	85	87	0
2945-03MS	79	91	89	94	96	77	0
2945-03MSD	86	109	114	112	100	92	0
2945-04	68	90	98	91	86	79	0

	QC LIMITS
S1(NBZ)= Nitrobenzene-d5	(23-120)
S2(FBP)= 2-Fluorobiphenyl	(30-115)
S3(TPH)= Terphenyl-d14	(18-137)
S4(PHL)= Phenol-d5	(24-113)
S5(2FP)= 2-Fluorophenol	(25-121)
S6(TBP)= 2,4,6-Tribromophenol	(19-122)

D =Surrogate Diluted Out
* =Surrogate Outside QC Limit

ANALYST: K Leibner

Quality Control:

ES-ENGINEERING SCIENCE, INC.

600 Bancroft Way
Berkeley, CA. 94710

Matrix Spike/Spike Duplicate Recovery

Semivolatile Organics

Ext. Date : 06/03/91

Analysis Date: 06/05/91

Work order: 2945

Matrix: SOIL

QC Sample : 2945-03

Units: ug/Kg

Instrument: EMS-2

Cor. Fact: 165

Level: LOW

% Moisture: NA

Compound	Conc. Sample	Conc. Spiked	Conc. MS	Percent Recovered
1,2,4-Trichlorobenzene	0	1650	1549	94
Acenapthene	0	1650	1686	102
2,4-Dinitrotoluene	0	1650	1252	76
Pyrene	4100	1650	2709	NC
N-Nitrosodipropylamine	0	1650	1708	104
1,4-Dichlorobenzene	0	1650	1635	99
Pentachlorophenol	0	3300	5503	167 *
Phenol	0	3300	3222	98 *
2-Chlorophenol	0	3300	3056	93
4-Chloro-m-cresol	0	3300	2934	89
4-Nitrophenol	0	3300	1992	60

Compound	Conc. MSD	Percent Recovered	RPD	Criteria RPD	%REC
1,2,4-Trichlorobenzene	1582	96	2	23	(38-107)
Acenapthene	1896	115	12	19	(31-137)
2,4-Dinitrotoluene	1399	85	11	47	(28-89)
Pyrene	3711	NC	31	36	(35-142)
N-Nitrosodipropylamine	1693	103	1	38	(41-126)
1,4-Dichlorobenzene	1469	89	11	27	(28-104)
Pentachlorophenol	6222	189 *	12	47	(17-109)
Phenol	3498	106 *	8	35	(26-90)
2-Chlorophenol	3199	97	5	50	(25-102)
4-Chloro-m-cresol	3307	100	12	33	(26-103)
4-Nitrophenol	2228	68	11	50	(11-114)

ANALYST: K Leibner

Quality Control:

* = Value Outside QC Limits

$$\text{Percent Recovery} = \frac{\text{Conc. MS|MSD} - \text{Conc. Sample}}{\text{Conc. Spiked}} * 100$$

$$\text{RPD} = \left(\frac{\text{Conc. MS} - \text{Conc. MSD}}{(\text{Conc. MS} + \text{Conc. MSD})/2}\right) * 100$$

ES-ENGINEERING SCIENCE, INC.

600 Bancroft Way
Berkeley, CA. 94710

Matrix Spike/Spike Duplicate Recovery

Semivolatile Organics

Ext. Date : 05/22/91

Analysis Date: 05/23/91

Work order: 2945

Matrix: SOIL

QC Sample : MSBNA910522

Units: ug/Kg

Instrument: EMS-2

Cor. Fact: 33

Level: LOW

% Moisture: NA

Compound	Conc. Sample	Conc. Spiked	Conc. MS	Percent Recovered
1,2,4-Trichlorobenzene	0	1650	1195	72
Acenapthene	0	1650	1265	77
2,4-Dinitrotoluene	0	1650	1143	69
Pyrene	0	1650	1104	67
N-Nitrosodipropylamine	0	1650	1361	82
1,4-Dichlorobenzene	0	1650	1135	69
Pentachlorophenol	0	2475	2090	84
Phenol	0	2475	1514	61
2-Chlorophenol	0	2475	1508	61
4-Chloro-m-cresol	0	2475	1656	67
4-Nitrophenol	0	2475	2093	85

Compound	Conc. MSD	Percent Recovered	RPD	Criteria RPD %REC
1,2,4-Trichlorobenzene	1186	72	1	23 (38-107)
Acenapthene	1310	79	4	19 (31-137)
2,4-Dinitrotoluene	1300	79	13	47 (28-89)
Pyrene	1206	73	9	36 (35-142)
N-Nitrosodipropylamine	1336	81	2	38 (41-126)
1,4-Dichlorobenzene	1124	68	1	27 (28-104)
Pentachlorophenol	2276	92	8	47 (17-109)
Phenol	1634	66	8	35 (26-90)
2-Chlorophenol	1500	61	1	50 (25-102)
4-Chloro-m-cresol	1815	73	9	33 (26-103)
4-Nitrophenol	1474	60	35	50 (11-114)

ANALYST: K Leibner

Quality Control:

* = Value Outside QC Limits

$$\text{Percent Recovery} = \frac{\text{Conc. MS}|\text{MSD} - \text{Conc. Sample}}{\text{Conc. Spiked}} * 100$$

$$\text{RPD} = \left(\frac{\text{Conc. MS} - \text{Conc. MSD}}{(\text{Conc. MS} + \text{Conc. MSD})/2}\right) * 100$$

CASE NARRATIVE
WORK ORDER NO.2945
INORGANICS

All samples were analyzed for total cyanide. Since no total cyanide was detected in any sample, none of the samples were analyzed for amenable cyanide.

All samples were analyzed for chromium using ICP as well as graphite furnace atomic absorption. The chromium results obtained using both techniques are presented in this report. The ICP chromium results are presented for comparison purposes; you will not be charged for these analyses.

ES-ENGINEERING-SCIENCE, INC.

600 Bancroft Way
Berkeley, CA 94710

INORGANICS ANALYTICAL REPORT

Client: ES SYRACUSE
Project: NYSEG/PLATTSBURG

Work Order: 2945
Matrix: SOLID

Client's ID:	SS-1	SS-1 DUPLICATE				
	0945	1000				
Sample Date:	05/29/91	05/29/91				
% Moisture:	16.6	15.7				
Lab ID:	2945.01 C	2945.02 C				
Parameter	------------Results	------------	Method	Normal Report Limit	Units	Date Analyzed
Aluminum	12,000.	7100.	ICP	40	mg/Kg	06/07/91
Antimony	ND	ND	ICP	12	(PPM)	06/07/91
Cadmium	ND	ND	ICP	1	in Soil	06/07/91
Chromium	17.	10.	ICP	2	Dry	06/07/91
Chromium	16.	13.	GF-AA	2	"	06/07/91
Cobalt	ND	ND	ICP	10	"	06/07/91
Copper	9.4	7.0	ICP	5	"	06/07/91
Iron	14,000.	8800.	ICP	20	"	06/07/91
Lead	10.	9.8	GF-AA	.6	"	06/06/91
Manganese	130.	76.	ICP	3	"	06/07/91
Nickel	9.7	ND	ICP	8	"	06/07/91
Zinc	39.	28.	ICP	4	"	06/07/91
Cyanide, Tot.	ND	ND	Color	.5	"	06/04/91

Note: Since no total cyanide was detected, amenable cyanide was not analyzed.

ND- Not Detected

ANALYST: John Gomez

GROUP LEADER:

ES-ENGINEERING-SCIENCE, INC.

600 Bancroft Way
Berkeley, CA 94710

INORGANICS ANALYTICAL REPORT

Client: ES SYRACUSE
Project: NYSEG/PLATTSBURG

Work Order: 2945
Matrix: SOLID

Client's ID:	SS-2	SS-3				
	1010	1040				
Sample Date:	05/29/91	05/29/91				
% Moisture:	15.3	16.5				
Lab ID:	2945.03	2945.04				
	C	C				
Parameter	-----------Results	------------	Method	Normal Report Limit	Units	Date Analyzed
Aluminum	5100.	7000.	ICP	40	mg/Kg	06/07/91
Antimony	ND	ND	ICP	12	(PPM)	06/07/91
Cadmium	ND	ND	ICP	1	in Soil	06/07/91
Chromium	7.4	11.	ICP	2	Dry	06/07/91
Chromium	13.	13.	GF-AA	2	"	06/07/91
Cobalt	ND	ND	ICP	10	"	06/07/91
Copper	6.1	7.7	ICP	5	"	06/07/91
Iron	7100.	10,000.	ICP	20	"	06/07/91
Lead	18.	61.	GF-AA	.6	"	06/06/91
Manganese	67.	140.	ICP	3	"	06/07/91
Nickel	ND	ND	ICP	8	"	06/07/91
Zinc	33.	49.	ICP	4	"	06/07/91
Cyanide, Tot.	ND	ND	Color	.5	"	06/04/91

Note: Since no total cyanide was detected, amenable cyanide was not analyzed.

ND- Not Detected

ANALYST: John Gong

GROUP LEADER:

ES-ENGINEERING-SCIENCE, INC.

600 Bancroft Way
Berkeley, CA 94710

INORGANICS ANALYTICAL REPORT

Client: ES SYRACUSE
Project: NYSEG/PLATTSBURG

Work Order: 2945
Matrix: SOLID

Client's ID: Prep Blank

Sample Date:
% Moisture: 0.0
Lab ID: Prep Blank

Parameter	-----------Results------------	Method	Normal Report Limit	Units	Date Analyzed
Aluminum	ND	ICP	40	mg/Kg	06/07/91
Antimony	ND	ICP	12	(PPM)	06/07/91
Cadmium	ND	ICP	1	in Soil	06/07/91
Chromium	ND	ICP	2	Dry	06/07/91
Chromium	ND	GF-AA	2	"	06/07/91
Cobalt	ND	ICP	10	"	06/07/91
Copper	ND	ICP	5	"	06/07/91
Iron	ND	ICP	20	"	06/07/91
Lead	ND	GF-AA	.6	"	06/06/91
Manganese	ND	ICP	3	"	06/07/91
Nickel	ND	ICP	8	"	06/07/91
Zinc	ND	ICP	4	"	06/07/91
Cyanide, Tot.	ND	Color	.5	"	06/04/91

Note: Since no total cyanide was detected, amenable cyanide was not analyzed.

ND- Not Detected

ANALYST: John Gomez

GROUP LEADER:

ES-ENGINEERING-SCIENCE, INC.

600 Bancroft Way
Berkeley, CA 94710

INORGANICS QC SUMMARY - LAB CONTROL SAMPLE - SOIL

Work Order: 2945

% Moisture: 0

Lab ID of LCS:
ICP: 399.02 LCS
GF-AA: 399.03 LCS
Mercury: 395.08 LCS

Matrix: Soil

Units: mg/Kg Dry

Parameter	Date Analyzed LCS	LCS Result	Conc Added	% Rec LCS	-QC Limits- -- % Rec -- Low	High
Aluminum ICP	06/07/91	406.160	400	102	80	120
Antimony ICP	06/07/91	94.968	100	95	80	120
Cadmium ICP	06/07/91	10.074	10	101	80	120
Chromium GF	06/07/91	5.1160	5	102	80	120
Chromium ICP	06/07/91	39.292	40	98	79	127
Cobalt ICP	06/07/91	95.528	100	96	80	120
Copper ICP	06/07/91	50.800	50	102	80	120
Iron ICP	06/07/91	201.300	200	101	80	120
Lead GF	06/06/91	4.3900	4	110	72	145
Manganese ICP	06/07/91	93.348	100	93	80	120
Nickel ICP	06/07/91	96.178	100	96	67	127
Zinc ICP	06/07/91	96.908	100	97	79	121
Cyanide, Total	06/04/91	10.050	10	101	80	120

Note: Since no total cyanide was detected, amenable cyanide was not analyzed.

ANALYST: John Gomez Date 6-10-91 REVIEWER: Date 6/10/91
File:M1QCLCSS

ES-ENGINEERING-SCIENCE, INC.

600 Bancroft Way
Berkeley, CA 94710

INORGANIC QC SUMMARY - MS and MSD
SOIL - mg/Kg Dry Basis

Work Order: 2945

% Moisture: 15.3

Matrix: Soil

Units: mg/Kg Dry

	ICP	GF-AA	Cyanide
Lab ID Spiked:	2945.03	2945.03	2945.03
QC Batch:	399.02	399.03	395.08

Parameter	Date Analyzed MS	----------Results----------			RPD	RPD QC Limit	---Conc Added---		Percent Recovered	
		Unspiked Sample	MS	MSD			MS	MSD	MS	MSD
Aluminum ICP	06/07/91	5102.458	5868.695	5776.642	2	20	462.995	458.500	NC	NC
Antimony ICP	06/07/91	.701	94.627	93.447	1	20	115.749	114.625	81	81
Cadmium ICP	06/07/91	.087	11.836	11.953	1	20	11.575	11.463	102	104
Chromium ICP	06/07/91	7.439	52.457	52.374	0	20	46.300	45.850	97	98
Chromium GF	06/07/91	12.7059	16.1585	16.2220	0	20	5.787	5.903	60 N	60 N
Cobalt ICP	06/07/91	2.258	111.820	111.950	0	20	115.749	114.625	95	96
Copper ICP	06/07/91	6.086	64.771	65.515	1	20	57.874	57.313	101	104
Iron ICP	06/07/91	7074.941	8233.905	8644.330	5	20	231.498	229.250	NC	NC
Lead GF	06/06/91	18.0446	51.8323	31.7639	48 *	20	4.630	4.723	730 N	291 N
Manganese ICP	06/07/91	67.329	182.744	180.901	1	20	115.749	114.625	100	99
Nickel ICP	06/07/91	2.852	114.790	115.565	1	20	115.749	114.625	97	98
Zinc ICP	06/07/91	32.562	145.364	145.743	0	20	115.749	114.625	97	99
Cyanide, Total	06/04/91	.000	29.185	29.858	2	20	29.516	29.516	99	101

Note: Since no total cyanide was detected, amenable cyanide was not analyzed.

NC- Not Calculated; sample concentration is greater than four times that of spike added.
* or N = Outside QC Limit: QC Limits for % Rec: 75 - 125

ANALYST: John Gomez Date 6-10-91 REVIEWER: Date 6/10/91
File:M1QCMSSD

ENGINEERING SCIENCE, INC.

CHAIN OF CUSTODY RECORD

Proj. No. 54156.60.01

Project Name NYSEG/PLATTSBURG

SAMPLERS (Signature)

STA. NO.	DATE	TIME			STATION LOCATION	NO. OF CONTAINERS	METALS	CN	VOA	SEMIVOLATILES			REMARKS
SS-1	5/29	0945				4	1	1	1	1			
SS-1	5/29	1000			DUPLICATE	4	1	1	1	1			
SS-2	5/29	1010				4	1	1	1	1			
SS-2	5/29	1020			MS	4	1	1	1	1			
SS-2	5/29	1030			MSD	4	1	1	1	1			
SS-3	5/29	1040				4	1	1	1	1			

Relinquished by: (Signature)	Date/Time 5/29/91 1200	Received by: (Signature)	Relinquished by: (Signature)	Date/Time	Received by: (Signature)
Relinquished by: (Signature)	Date/Time	Received by: (Signature)	Relinquished by: (Signature)	Date/Time	Received by: (Signature)
Relinquished by: (Signature)	Date/Time	Received for Laboratory by: (Signature)	Date/Time 5/30/91	Remarks	

Distribution: Original Accompanies Shipment; Copy to Coordinators Field Files

APPENDIX F

SSPS SCORING DATA

SSPS DATA ENTRY FORM

Site Name: NYSEG-Plattsburgh (CGPB)

Type of Site: Former manufactured gas plant (MGP) site

The SSPS ranking scores for the Plattsburgh site are as follows:

	Actual Risk	Perceived Risk	Clean-Up
Primary Scores	19.3	29.6	8.0
Secondary Site Scores			
Groundwater	0.0	0.0	
Surface Water	0.9	6.1	
Direct Contact	38.6	51.1	
Air	2.4	3.2	

Q1) Site Description Former MGP Site in Plattsburgh, N.Y.

Comments:

Q2) Service Region: Plattsburgh
Service Division: Plattsburgh
Neighborhood Type: R/C

Comments:

Q3) How is the surface water used?

____ Not currently used (score = 1)
____ Industrial (2)
X Recreational (3)
____ Irrigation, food prep., or fishing (4)
____ Drinking water (5)

Select the appropriate answer with the highest score.

Comments: Cumberland State Park Beach is a Class B surface water, which is part of Lake Champlain. (NYSDOT Plattsburgh, NY-VT Quadrangle, 1966; NYSDEC Surface Water Classifications)

Score: 3

Q4) For each distance, check the appropriate row to indicate the number of people using the downstream surface water for the highest scoring purpose above:

		Distance		
Population	Within 5 km	Within 3 km	Within 1 km	Within 1/2 km
0	___(0)	___(0)	X(0)	X(0)
1 to 100	___(1)	___(2)	___(3)	___(4)
101 to 1,000	___(2)	___(3)	___(4)	___(6)
1,001 to 10,000	___(3)	___(4)	___(6)	___(8)
10,001 to 100,000	___(4)	X (6)	___(8)	___(10)
100,001 and up	X (6)	___(8)	___(10)	___(12)

Comments: Plattsburgh Municipal Beach within 3 km. serving 83,000 users/year. Cumberland State Park Beach within 5 km. serving over 141,000 people. (Letters to City Hall and Point AuRoche State Park, dated 5/91.)

Score: 6

Q5) Check the appropriate downstream distance from the site to the nearest of each type of sensitive surface water environment

	Distance				
Target	Outside 4 km	Within 4 km	Within 2 km	Within 1 km	Within 1/2 km
Coastal wetland	X (0)	___(1)	___(6)	___(12)	___(16)
Freshwater wetland	X (0)	___(1)	___(3)	___(7)	___(16)
Endangered species	X (0)	___(1)	___(3)	___(8)	___(16)

Comments: Sensitive surface water environments exist outside of 4 km of the site. (NYSDEC Freshwater Wetland Map, Plattsburgh, NY-VT Quadrangle; NYSDEC Wildlife Division, 5/91)

Score: 0

Q6) What is the average slope across the site:

X Less than 3%

___ 3% or greater

___ 5% or greater

___ 8% or greater

What is the average slope between the site and the nearest body of surface water?

X Less than 3%

___ 3% or greater

___ 5% or greater

___ 8% or greater

Comments: (E-S Site Observations, 1991).

Score: 0

Q7) What is the expected maximum 24-hour rainfall over a year?

___ Less than 2 cm (0)
___ Less than 5 cm (1)
X Less than 8 cm (2)
___ 8 cm or greater (3)

Comments: 5.08 cm. (USDOC Technical Paper #40).

Score: 2

Q8) What is the distance to the nearest body of surface water?

___ Greater than 2 km (0)
___ Less than 2 km (1)
X Less than 1/2 km (2)
___ Less than 100 meters (3)

Comments: Nearest body of surface water, Cumberland Bay, is approximately 300 meters away (USGS Plattsburgh Quadrangle, 1966).

Score: 2

Q9) What is the physical state of the wastes within one-tenth of one meter (10 cm) of the site surface?

X Solid, consolidated and stabilized (0)
___ Solid, unconsolidated and unstabilized (1)
___ Powder or fine material (2)
___ Liquid, gas, or sludge (3)

Comments: Default score-no known wastes identified within referenced area, other than the noted type.

Score: 0

Q10) How well is the site designed to reduce runoff?

___ Runoff blocked by high terrain (score = 0)
X Waste covered (1)
___ Exposed waste, sound diversion system (2)
___ Exposed waste, poor diversion system (3)
___ Site in surface water (4)

Select the appropriate answer with the highest score.

Comments: (ES site observations, 1991).

Score: 1

Q11) Fill out the table below describing the wastes present within one-tenth of a meter (10 cm) of the site surface. If not known exactly, approximations must be made. Include up to six chemicals.

Chemical Waste Name	Concentration (ppm)	Established Values (ppm)	Persistence (0-3)	Quantity (kg)
Arsenic	0	6.5	3	0
Lead	61	15	3	0.89
Cyanide	0	50	3	0
PAHs	7.0	10	3	.07
C-PAHs	4.4	10	3	.044

Chemical Waste:	Types of wastes were determined by mutual consent. They are defined below with C-PAHs and PAHs broken down into the specific compounds detected in the surface soils. Arsenic Cyanide Lead PAHs C-PAHs: Benzo(a)anthracene, benzo(k)fluoranthene, benzo(b)-fluoranthene, benzo(a) pyrene, chrysene, indeno(1,2,3-cd) pyrene
Concentration:	The highest concentration detected in any of the samples used. If none was detected, concentration = 0. C-PAHs: Concentration represents the sum of the highest concentrations of all C-PAHs detected. PAHs: Concentration represents the sum of the highest concentrations of all PAHs detected, not including C-PAHs.
Established Values:	Aresenic and Lead - Used the background concentrations for arsenic and lead from Shacklette and Boerngen (USGS, 1984). Cyanide, C-PAHs, PAHs-used default values: Cyanide - 50 ppm (domestic land use) 500 ppm (industrial land use) C-PAHs - 10 ppm PAHs - 10 ppm
Persistence:	Based on values supplied in the SSPS help screen.
Quantity:	The quantity of waste represents the summation of the concentration of waste detected in each surface soil sample multiplied by the volume of soil contaminated. For each sample this volume was assumed to be 10 m^3 (10m x 10m x 10cm).

Q12) What is the physical state of all of the wastes at the site surface?

X Solid, consolidated and stabilized (0)
__ Solid, unconsolidated and unstabilized (1)
__ Powder or fine material (2)
__ Liquid, gas, or sludge (3)

Comments: Default score-based on ES site observations.

Score: 0

Q13) What is the distance from the bottom of the site to the top of the water table?

__ Greater than 15 m (0)
__ Less than 15 m (1)
__ Less than 5 m (2)
X Less than 1 m (3)
__ Site in water table (6)

Comments: Default value-depth to top of water table is unknown and depth of bottom of site is unknown.

Score: 3

Q14) What is expected annual net precipitation?

__ Less than -25 cm (0)
__ Greater than -25 cm (1)
__ Greater than 10 cm (2)
X Greater than 25 cm (3)

Comments: 30.14 cm. net precipitation (USDOC, 1983)

Score: 3

Q15) What is the permeability of the soil between the site and the water table?

__ Less than 1 x 10^{-7} (0)
__ Greater than 1 x 10^{-7} (1)
__ Greater than 1 x 10^{-5} (2)
X Greater than 1 x 10^{-3} (3)

Comments: Soils mapped for site have permeability range of greater than 1 x 10^{-3} cm/sec based on being mapped as fill material. (Permeability of fill is assumed to be 1 x 10^{-3} cm/sec).

Score: 3

Q16) What is the mobility of the primary chemicals in the saturated zone?

X Greater than 10,000 (0)
__ Less than 10,000 (1)
__ Less than 100 (2)
__ Less than 1 (3)

Comments: Default value of greater than 10,000 assuming the primary contaminant which could be present on site is benzene.

Score: 0

Q17) How well is the site designed to reduce leaching and subsurface release?

__ Non-permeable barrier and no ponding (0)
__ Non-permeable barrier and ponding (1)
X Inadequate barrier and no ponding (2)
__ Inadequate barrier and ponding (3)

Comments: (ES site observations, 1991).

Score: 2

Q18) Fill out the table below describing all of the wastes present at the site. If data are not known exactly, approximations must be made. Include up to six chemicals

Chemical Waste Name	Concentration (ppm)	Established Value (ppm)	Persistence (0-3)	Quantity (kg)
VOA	0.012	1	2	.002
PAH's	11.4	10	3	2.00
Cyanide	0	50	3	0
Lead	61	15	3	10.7

Chemical Waste:	Determined to be volatile organics, PAHs, cyanide, as arrived at by mutual consent.
Concentration:	Used the geometric mean concentrations for tar waste, and conversion factor for tar (gallons) to tar (weight in kilograms) from the GRI EPRI data base. Cyanide concentration represents level detected in surface soil samples. Metals concentration represents the highest level detected in surface soil samples which exceeded the referenced naturally-occurring value (USGS, 1984).

Established Values: Determined by mutual consent as follows:
Volatile Organics - 1 ppm
PAHs - 10 ppm
Cyanide - 50 ppm (domestic land use)
500 ppm (industrial land use)

Persistence: Based on values supplied in the SSPS help screen.

Quantity: Used the Radian report to determine the average gas production for the years that the site was in operation to be 153 MCF. This average was multiplied by the years of operation (40) and then by a constant (7.3) representing the assumption that 730 gallons of tar are produced for every 1,000,000 ft^3 of gas manufactured (Radian report) and approximately 1% is lost as waste onsite. Multiply the resulting value times 3.9368 (converting gallons to kilograms), times the concentration of the waste, divided by 1,000,000 (concentration conversion factor).

Q19) Fill out the table below describing wastes that have been detected in the nearest body of surface water. If wastes have not been detected, enter zeros for the concentrations. If a waste release was detected by sight or smell but not sampled analytically, an approximation must be made. Include up to six chemicals.

Chemical Waste Name	Concentration (ppb)	Government Standard (ppb)
VOA	0	0
PAHs	0	0
C-PAHs	0	0
Cyanide	0	0
Lead	0	0

Chemical Waste: Determined to be volatile organics, C-PAHs, PAHs, metals, and cyanide.

Concentration: Determined from Surface Water Sample Analysis.

Government Standard: Based on NYSDEC surface water classifications or as a default, drinking water standards. Only considered elements which exceeded NYSDEC ambient water quality standards and guidance values for Class D surface waters.

Q20) How is the groundwater used?

____ Not currently used (score = 1)
____ Industrial with alternative (2)
_X_ Drinking water with alternative or industrial with no alternative (6)
____ Drinking water with no alternative (9)

Select the appropriate answer with the highest score.

Comments: Groundwater is used as municipal drinking water supply in addition to surface water impoundments. (NYSDOH, 1982).

Score: 6

Q21) For each distance, check the appropriate row to indicate the number of people using the downgradient water for the highest scoring purpose above:

		Distance			
Population	Within 5 km	Within 3 km	Within 1 km	Within 1/2 km	On-site
0	X(0)	X(0)	X(0)	X(0)	X(0)
1 to 100	__(4)	__(6)	__(8)	__(10)	__(20)
101 to 1,000	__(8)	__(12)	__(16)	__(20)	__(30)
1,001 to 10,000	__(12)	__(18)	__(24)	__(30)	__(40)
10,001 to 100,000	__(16)	__(24)	__(32)	__(35)	__(45)
100,001 and up	__(20)	__(30)	__(35)	__(40)	__(50)

Comments: Identified intakes are upstream and upgradient of the site (NYSDOH,1982).

Score: 0

Q22) What is the distance from the bottom of the site to the top of the aquifer in use?

__ Greater than 50 m (0)
__ Less than 50 m (1)
__ Less than 25 m (2)
X Less than 5 m (3)
__ Site in aquifer (6)

Comments: Default value; depth to bottom of site and depth to water table are unknown. Since groundwater is used for drinking water, the default value of less than 5 meters is assigned.

Score: 3

Q23) Fill out the table below describing wastes that have been detected in the groundwater. If wastes have not been detected, enter zeros for the concentrations. If a waste release was detected by sight or smell but not sampled analytically, an approximation must be made. Include up to six chemicals.

Chemical Waste Name	Concentration (ppb)	Government Standard (ppb)
Benzene	195.6	0.0
Xylene	214.1	5.0
Toluene	94.1	5.0
Cyanide	106.1	100.0
Napthalene	237.6	10.0
Benzo(a)pyrene	32.9	0.0

Chemical Waste:	Benzene, xylene, toluene, cyanide, naphthalene, benzo(a)pyrene as determined by mutual consent.
Concentration:	Geometric mean concentration derived from the GRI EPRI data base.
Government Standard:	NYSDEC Class GA standards for groundwater quality (6NYCRR Part 703.5).

Score: 100.0

Q24) Indicate the distance from the site to the nearest instance of each of the land uses below:

Land Use	Distance Outside 4 km	Within 4 km	Within 2 km	Within 1 km	Within 1/2 km	On-site
Commercial/ Industrial	__(0)	__(1)	__(2)	__(3)	X(6)	__(9)
National Parks	X(0)	__(1)	__(1)	__(2)	__(3)	__(4)
Agriculture	X(0)	__(1)	__(1)	__(2)	__(4)	__(6)
Residential	__(0)	__(1)	__(3)	__(5)	__(8)	X(15)

Comments: Residences exist within 1/2 km. to the east (ES site observations, 1991).

Score: 15

Q25) Indicate the number of people living or working within each of the specified distances.

	Distance				
Population	Within 5 km	Within 3 km	Within 1 km	Within 1/2 km	On-site
0	__(0)	__(0)	__(0)	__(0)	__(0)
1 to 100	__(9)	__(12)	__(15)	__(18)	X(28)
101 to 1,000	__(12)	__(15)	__(18)	X(21)	__(31)
1,001 to 10,000	__(15)	__(18)	X(21)	__(24)	__(34)
10,001 to 100,000	X(18)	X(21)	__(24)	__(27)	__(37)
100,001 and up	__(21)	__(24)	__(27)	__(30)	__(40)

Comments: (Donnelly Marketing Information Services, 1990 projection).

Score: 28

Q26) Check the appropriate distance from the site to the nearest of each type of sensitive environments, without regard to direction.

	Distance				
Target	Outside 2 km	Within 2 km	Within 1 km	Within 1/2 km	On-site
Coastal wetland	X(0)	__(1)	__(2)	__(3)	__(6)
Freshwater wetland	__(0)	X_(0)	__(1)	__(2)	__(6)
Endangered species	X(0)	__(0)	__(1)	__(2)	__(6)

Comments: No sensitive environments have been identified within 1 km. (NYSDEC, 5/91 and NYSDEC Freshwater Wetland Maps, Plattsburgh, NY-VT).

Score: 0

Q27) What is the vapor pressure of the primary wastes?

__ 1 x 10^{-5} mm Hg or less (0)
__ Greater than 1 x 10^{-5} mm Hg (1)
__ Greater than 1 x 10^{-3} mm Hg (2)
X Greater than 10 mm Hg (3)

Comments: Default values for benzene, assumed to be on-site.

Score: 3

Q28) What natural or artificial characteristics of the site prevent volitization?

X Covered by more than 10 cm of soil or other impermeable barrier (1)
___ Covered by 1 to 10 cm of soil (3)
___ Uncovered contaminated soil (7)
___ Covered by less than 1 cm soil (8)
___ Uncovered pure contaminants (10)

Select the appropriate answer with the highest score.

Comments: Approximately 75% of area on-site is paved. (ES site observations, 1991).

Score: 1

Q29) What is the average wind speed at this time?

___ Less than 2 m/s (1)
___ More than 2 m/s (2)
X More than 4 m/s (3)
___ More than 6 m/s (4)

Comments: Default value for New York State

Score: 3

Q30) What natural or artificial characteristics of the site prevent dust production?

___ Urban (score = 1)
___ Woodland or forest (2)
X Grassland (4)
___ Open field (10)

Select the appropriate answer with the highest score.

Comments: Default value tied to Question #29.

Score: 4

Q31) Fill out the table below describing the wastes present at the surface of the site. If data are not known exactly, approximations must be made. Include up to six chemicals.

Chemical Waste Name	Concentration (ppm)	Established Values (ppm)	Persistence (0-3)	Contaminated area (m^2)
Arsenic	0	6.5	3	0
Lead	61	15	3	300
Cyanide	0	50	3	0
Total PAHs	7.0	10	3	100
Total C-PAHs	4.4	10	3	100

Chemical Waste:	Wastes are defined below with C-PAHs and PAHs broken down into the specific compounds detected in the surface soils at the site. Arsenic Cyanide Lead PAHs C-PAHs: Benzo(a)anthracene, benzo(k)fluoranthene, benzo(b) fluoranthene, benzo(a) pyrene, chrysene, indeno(1,2,3-cd) pyrene
Concentration:	The highest concentration detected in any of the samples was used. If none was detected, concentration = 0. C-PAHs: Concentration represents the sum of the highest concentrations of all C-PAHs detected. PAHs: Concentration represents the sum of the highest concentrations of all PAHs detected (not including C-PAHs).
Established Values:	Metals-Used the background concentrations for New York State soils from Shacklette and Boerngen (USGS, 1984). Cyanide, C-PAHs, PAHs-used default values assigned at the NYSEG 12/12/90 meeting: Cyanide - 50 ppm (domestic land use) 500 ppm (industrial land use) C-PAHs - 10 ppm PAHs - 10 ppm
Persistence:	Based on values supplied in the SSPS help screen.
Contaminated Area:	Assumed 100 square meters for composite samples (SS-1 through SS-4). Area provided is a summation for all samples where the chemical waste was detected.

Q32) Fill out the table below describing wastes that have been detected in the air. If wastes have not been detected, enter zeros for the concentrations. If a waste release was detected by sight or smell but not sampled analytically, an approximation must be made. Include up to six chemicals

Chemical Waste Name	Concentration (ppm)	Government Standard (ppm)
*	0	Not Applicable
*	0	N/A
*	0	N/A
*	0	N/A
*	0	N/A
*	0	N/A

Concentration:	Enter the average concentration of the waste in the air.
Government standard:	Enter an applicable government standard, limit, or guideline for air concentrations of the specified chemical.

Comments: *No air sampling conducted

Score: 0

Q33) What steps have been taken to reduce access to the site?

__ Full barrier and a guard (0)
__ Full barrier (1)
__ Guard (2)
__ Incomplete barrier (3)
X No barrier, no guard (4)

Comments: ES site observations, 1990.

Score: 4

Q34) What is the distance from the site to the nearest residence or gathering point for children?

__ 100 m or more (1)
__ 10 m to 100 m (2)
__ 0 to 10 meters (5)
X On-site (10)

Comments: No restrictions to public access, nearest residence is on-site (ES site observations, 1991).

Score: 10

Q35) What is the distance from the site to the nearest groundwater well in use?

- __ 10 km or more (1)
- X 1 km to 10 km (3)
- __ 100 m to 1 km (6)
- __ less than 100 m (10)

Comments: Used score for distance from site to well #24 (NYSDOH, 1982).

Score: 3

Q36) What are the characteristics of the site wastes?

- __ Other types of wastes (score = 1)
- __ Acute, deadly toxins (4)
- X Carcinogens (7)
- __ Radioactive wastes (10)

Select the appropriate answer with the highest score.

Comments: Default value for carcinogenic PAHs presently on-site.

Score: 7

Q37) Is off-site contamination evident?

- X No (score = 1)
- __ Yes, has been measured (7)
- __ Yes, is visible (9)
- __ Yes, has been smelled (10)

Select the appropriate answer with the highest score.

Comments: No observations of off-site contamination were made, default value is assigned.

Score: 1

Q38) Describe the area near the site:

- __ Rural (1)
- __ Agricultural (2)
- __ Industrial (3)
- __ Commercial (4)
- X Residential/Commercial (8)
- __ Residential (9)
- __ Urban (10)

Comments: ES site observations, 1991.

Score: 8

Q39) What is the total volume of soil that is contaminated above regulatory limits?

- X Less than 10 m^3 (1)
- __ More than 10 m^3 (2)
- __ More than 100 m^3 (3)
- __ More than 1,000 m^3 (4)
- __ More than 10,000 m^3 (5)

Comments: Default value-no applicable regulatory limits for soils in New York State.

Score: 1

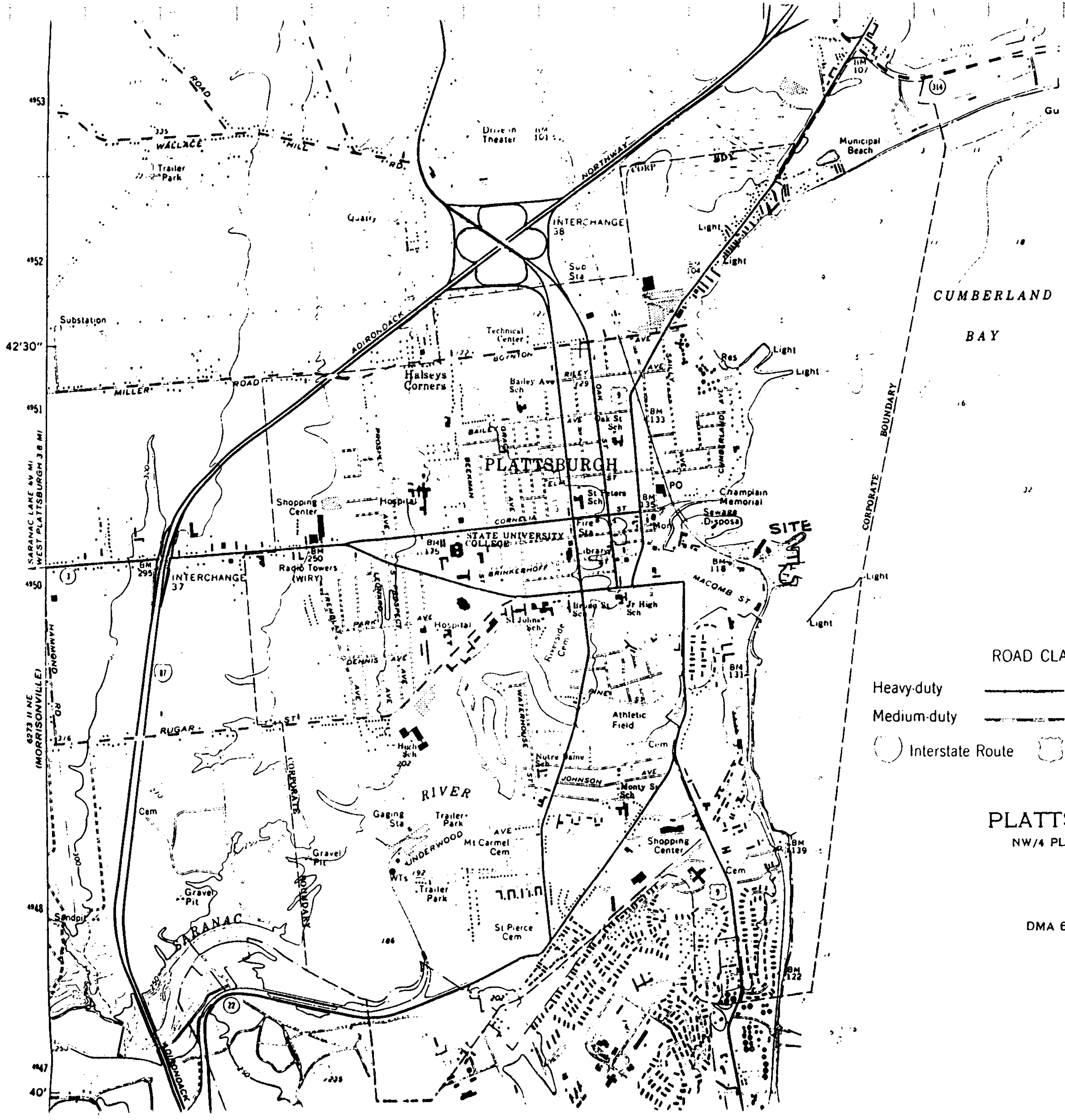
Q40) How is on-site land used?

- __ Other (1)
- __ Agricultural (2)
- X Residential (6)
- __ Industrial (9)

Comments: On-site land use is residential.

Score: 6

"REFERENCE-QUESTION #3"



ROAD CLASSIFICATION

Heavy-duty
Light-duty
Medium-duty
Unimproved dirt
Interstate Route
U. S. Route
State Route

PLATTSBURGH, N.Y.—VT.

NW/4 PLATTSBURGH 15' QUADRANGLE
44073-F4-TF-024

1966

DMA 6373 III NW—SERIES V821

WATER QUALITY REGULATIONS

SURFACE WATER AND GROUNDWATER
CLASSIFICATIONS AND STANDARDS

New York State
Codes, Rules and Regulations
Title 6, Chapter X
Parts 700-705

New York State Department of Environmental Conservation

TABLE I (contd.)

Item No.	Waters Index Number	Name	Description	Map Ref. No.	Class	Standards
3	C, portion as described	Lake Champlain	Portion of Cumberland Bay, which is located east of City of Plattsburgh and on westerly side of Lake Champlain. Included is that portion lying westerly of line beginning at landpoint to be found on westerly shore of peninsula called Cumberland Head 0.75 mile south-southeasterly of northmost part of Cumberland Bay proper and extending from this point in a southwesterly direction to shore end of south line of City of Plattsburgh.	B-26	B	B
4	C, portion as described	Lake Champlain	That portion of Cumberland Bay lying easterly and southerly of line from south line of City of Plattsburgh and extending to Cumberland Head as described in preceding item and westerly of line beginning at Cumberland Head lighthouse and extending southwesterly to northmost point of Crab Island, thence running northwesterly to shore at south line of City of Plattsburgh.	B-26	A	A

CLASS "B"

Best usage of waters. Primary contact recreation and any other uses except as a source of water supply for drinking, culinary or food processing purposes.

Quality Standards for Class "B" Waters

Items	*Specifications*
1. Coliform.	The monthly median coliform value for 100 ml of sample shall not exceed 2,400 from a minimum of five examinations, and provided that not more than 20 percent of the samples shall exceed a coliform value of 5,000 for 100 ml of sample and the monthly geometric mean fecal coliform value for 100 ml of sample shall not exceed 200 from a minimum of five examinations. This standard shall be met during all periods when disinfection is practiced.
2. pH	Shall be between 6.5 and 8.5.
3. Total dissolved solids.	None at concentrations which will be detrimental to the growth and propagation of aquatic life. Waters having present levels less than 500 milligrams per liter shall be kept below this limit.
4. Dissolved oxygen.	For cold waters suitable for trout spawning, the DO concentration shall not be less than 7.0 mg/l from other than natural conditions. For trout waters, the minimum daily average shall not be less than 6.0 mg/l. At no time shall the DO concentration be less than 5.0 mg/l. For non-trout waters, the minimum daily average shall not be less than 5.0 mg/l. At no time shall the DO concentration be less than 4.0 mg/l.

CLASS "C"

Best usage of waters. The waters are suitable for fishing and fish propagation. The water quality shall be suitable for primary and secondary contact recreation even though other factors may limit the use for that purpose.

Quality Standards for Class "C" Waters

Items	*Specifications*
1. Coliform.	The monthly median coliform value for 100 ml of sample shall not exceed 2,400 from a minimum of five examinations, and provided that not more than 20 percent of the samples shall exceed a coliform value of 5,000 for 100 ml of sample and the monthly geometric mean fecal coliform value for 100 ml of sample shall not exceed 200 from a minimum of five examinations. This standard shall be met during all periods when disinfection is practiced.
2. pH	Shall be between 6.5 and 8.5.
3. Total dissolved solids.	None at concentrations which will be detrimental to the growth and propagation of aquatic life. Waters having present levels less than 500 milligrams per liter shall be kept below this limit.
4. Dissolved oxygen.	For cold waters suitable for trout spawning, the DO concentration shall not be less than 7.0 mg/l from other than natural conditions. For trout waters, the minimum daily average shall not be less than 6.0 mg/l. At no time shall the DO concentration be less than 5.0 mg/l. For non-trout waters, the minimum daily average shall not be less than 5.0 mg/l. At no time shall the DO concentration be less than 4.0 mg/l.

CLASS "D"

Best usage of waters. The waters are suitable for fishing. The water quality shall be suitable for primary and secondary contact recreation even though other factors may limit the use for that purpose. Due to such natural conditions as intermittency of flow, water conditions not conducive to propagation of game fishery or stream bed conditions, the waters will not support fish propagation.

Conditions related to best usage of waters. The waters must be suitable for fish survival.

Quality Standards for Class "D" Waters

Items	*Specifications*
1. pH	Shall be between 6.0 and 9.5.
2. Dissolved oxygen.	Shall not be less than 3 milligrams per liter at any time.
3. Coliform.	The monthly median coliform value for 100 ml of sample shall not exceed 2,400 from a minimum of five examinations and provided that not more than 20 percent of the samples shall exceed a coliform value of 5,000 for 100 ml of sample and the monthly geometric mean fecal coliform value for 100 ml of sample shall not exceed 200 from a minimum of five examinations. This standard shall be met during all periods when disinfection is practiced.

Historical Note

Sec. added by renum. and amd. 701.4, filed July 3, 1985; amd. filed Sept. 20, 1985 eff. 30 days after filing.

701.20 Classes and standards for saline surface waters. The following items and specifications shall be the standards applicable to all New York saline surface waters which are assigned the classification of SA, SB, SC or SD, in addition to the specific standards which are found in this section under the heading of each such classification.

"REFERENCE-QUESTION #4"

ES

ENGINEERING-SCIENCE, INC.

290 ELWOOD DAVIS ROAD
SUITE 312
LIVERPOOL, NY 13088
TEL: (315) 451-9560
FAX: (315) 451-9570

May 21, 1991

Mr. Brian Bissonette
City Hall
Plattsburgh, New York 12901

Dear Mr. Bissonette:

This letter is to document and verify the information provided by our office on 5-15-91 regarding use of the Plattsburgh Municipal Beach on Cumberland Bay.

1. Open season runs from Memorial Day through Labor Day each year.
2. 1990 paid admissions indicate that approximately 64,000 persons used the beach during the summer (exclusive of children under ~~12~~ 5 years and some local residents).
3. Five year average use indicates that approximately 83,000 persons use the beach annually.

Please indicate any errors I may have made in recording the information above and return a signed copy to this office.

Thank you very much for your time and consideration.

Yours truly,

ENGINEERING-SCIENCE, INC.

Randy W. Youngman

RWY/klb

I agree that the information provided above is accurate. with changes

Signature: ______________________

ES
ENGINEERING-SCIENCE, INC.

290 ELWOOD DAVIS ROAD
SUITE 312
LIVERPOOL, NY 13088
TEL: (315) 451-9560
FAX: (315) 451-9570

May 21, 1991

Point AuRoche State Park
RD 2, Box 278
Plattsburgh, New York 12901

Attn: Glenda

Dear Glenda:

Please review the following information supplied by your office on 5-15-91 regarding attendance at Cumberland State Park Beach.

1. From 4-30-90 thru 10-14-90 attendance was in excess of 141,000.

If the information above is accurate as I have recorded it please indicate so with your signature and return to this office. If you have any questions, please call me at (315) 451-9560.

Thank you for your time and consideration.

Sincerely,

ENGINEERING-SCIENCE, INC.

Randy W. Youngman

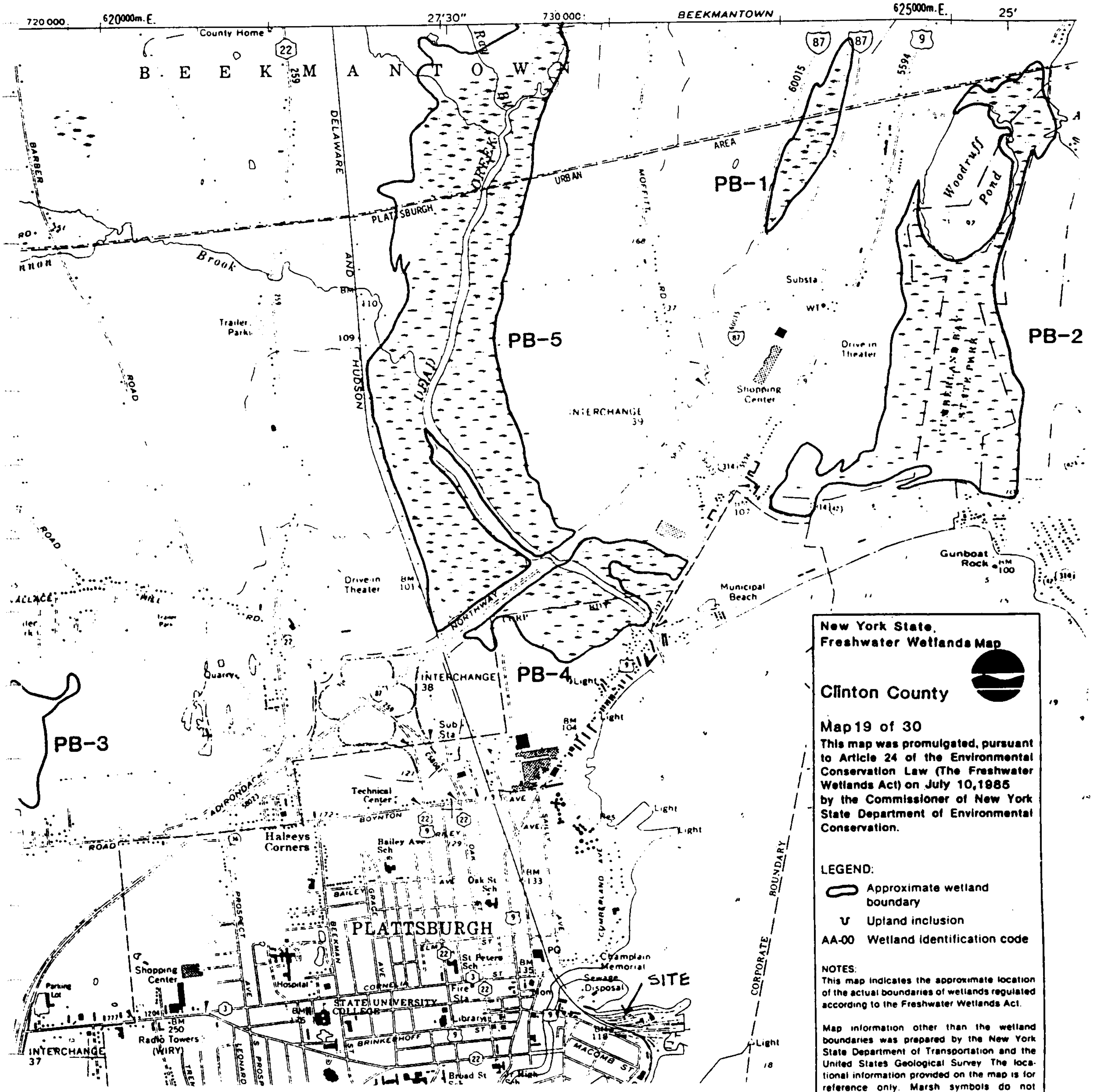
RWY/klb

I agree that the information presented is accurate.

Signature: Richard Rendle - Park Manager

"REFERENCE-QUESTION #5"

YORK STATE
OF TRANSPORTATION



New York State, Freshwater Wetlands Map

Clinton County

Map 19 of 30

This map was promulgated, pursuant to Article 24 of the Environmental Conservation Law (The Freshwater Wetlands Act) on July 10,1985 by the Commissioner of New York State Department of Environmental Conservation.

LEGEND:

⬭	Approximate wetland boundary
ʊ	Upland inclusion
AA-00	Wetland identification code

NOTES:
This map indicates the approximate location of the actual boundaries of wetlands regulated according to the Freshwater Wetlands Act.

Map information other than the wetland boundaries was prepared by the New York State Department of Transportation and the United States Geological Survey. The locational information provided on the map is for reference only. Marsh symbols do not necessarily indicate the location of a regulated wetland.

Adjacent areas of the regulated wetlands are those areas within 100 feet of the boundary of the wetland. These areas are subject to regulation pursuant to the Freshwater Wetlands Act but are not delineated on this map. An adjacent area may be extended by special order of the Commissioner of the New York State Department of Environmental Conservation or the local regulatory authority.

Copies of Freshwater Wetlands Maps are available from the regional offices of the Department of Environmental Conservation. Maps are available for inspection at these offices and local government clerk's offices.

New York State Department of Environmental Conservation
Wildlife Resources Center
Information Services
700 Troy-Schenectady Road
Latham, New York 12110

Thomas C. Jorling
Commissioner

May 30, 1991

Randy W. Youngman
ES Engineering-Science, Inc.
290 Elwood Davis Road, Suite 312
Liverpool, New York 13088

Dear Mr. Youngman:

We have reviewed the Significant Habitat Unit and the NY Natural Heritage Program files with respect to your request for biological information concerning the hazardous waste site investigation for New York State Electric and Gas Corporation, City of Plattsburgh, Clinton County.

Enclosed is a computer printout covering the area you requested to be reviewed by our staff. The information contained in this report is confidential and may not be released to the public without permission from the Significant Habitat Unit.

Our files are continually growing as new habitats and occurrences of rare species and communities are discovered. In most cases, site-specific or comprehensive surveys for plant and animal occurrences have not been conducted. For these reasons, we can only provide data which have been assembled from our files. We cannot provide a definitive statement on the presence or absence of species, habitats or natural communities. This information should not be substituted for on-site surveys that may be required for environmental assessment.

This response applies only to known occurrences of rare animals, plants and natural communities and/or significant wildlife habitats. You should contact our regional office, Division of Regulatory Affairs, at the address enclosed for information regarding any regulated areas or permits that may be required (e.g., regulated wetlands) under State Law.

If this project is still active one year from now we recommend that you contact us again so that we may update this response.

Sincerely,

Burrell Buffington

Burrell Buffington
Significant Habitat Unit

Encs.
cc: Reg. 5, Wildlife Mgr.

New York Heritage Program is supported in
part by The Nature Conservancy

"REFERENCE-QUESTION #6"

ENGINEERING-SCIENCE SITE SCREENING AND PRIORITIZATION FIELD INSPECTION FORM FOR NEW YORK STATE ELECTRIC AND GAS PROPERTIES

1. Site Name:
NYSEG PLATTSBURGH MGP.

2. Site Location:
146 BRIDGE ST.

3. Site Description:
3 APT. BUILDING PAVED LOT

4. Site Status:
CURRENTLY OCCUPIED RESIDENCES (3)

5. Inspection Date/Time:
5·3~~0~~·91 0900
29

6. Weather:
CLOUDY, HUMID 78 °F

7. On-site Personnel
R. YOUNGMAN (ES)
C. AVERILL (ES)
S. NYLIND (NYSEG)

---

8. Accessibility:
___ Full Fence
X Incomplete Fence
___ No Limits to Access

9. Average Site Slope:
0 % (See Site Sketch)

10. Slope Aspect:
N/A

11. Distance to Nearest Surface Water:
1000 [✓ Ft] Miles

12. Slope Between Site and Surface Water:
< 1 %

13. Surface Water Type:
___ Stream ___ Pond
___ River X Lake
___ Wetland ___ Reservoir

14. Name of Surface Water:
LAKE CHAMPLAIN

15. Direction of Flow or Drainage:
NORTH

16. Land Use:
___ Rural ___ Commercial
___ Agriculture X Residential
___ Industrial ___ Urban

17. Distance To:
Commercial 1/2 Km Ft. Mi.
Agricultural >4 Km Ft. Mi.
Residential 0 [✓ Ft] Mi.
School ___ Ft. Mi.

18. Adjacent Property Types:
RR. YARD North
COMM/INDUST. South
RESIDENCE East
FIRE HOUSE West

19. Additional Observations:
- SAMPLING OF SURFACE SOILS CONDUCTED 5·~~30~~ 29·91
- OBSERVATIONS CONDUCTED IN APT. 1
- SEE SAMPLING RECORDS IN JOB FILE

LML/FORMS/RWYSITE

5/30/91

ary

WEATHER BUR
F. W. REICHELDERFER, C

TECHNICAL PAPER NO. 40

RAINFALL FREQUENCY ATLAS OF THE UNITED STATES

for Durations from 30 Minutes to 24 Hours and Return Periods from 1 to 100 Years

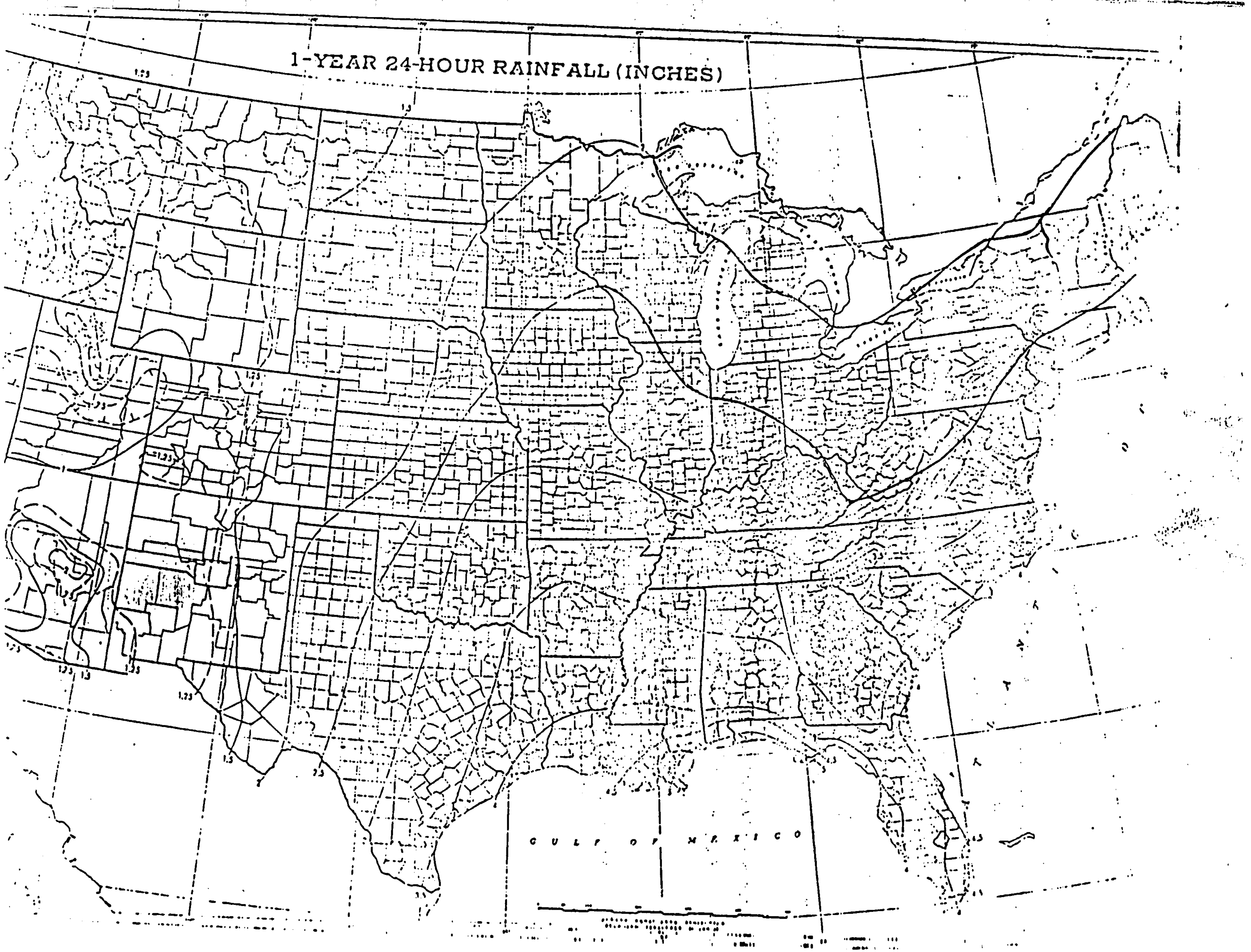
Prepared by
DAVID M. HERSHFIELD
Cooperative Studies Section, Hydrologic Services Division
for
Engineering Division, Soil Conservation Service
U.S. Department of Agriculture

DEPARTMENT OF COMMERCE ★ UNITED STATES OF AMERICA ★

WASHINGTON, D.C.
May 1961

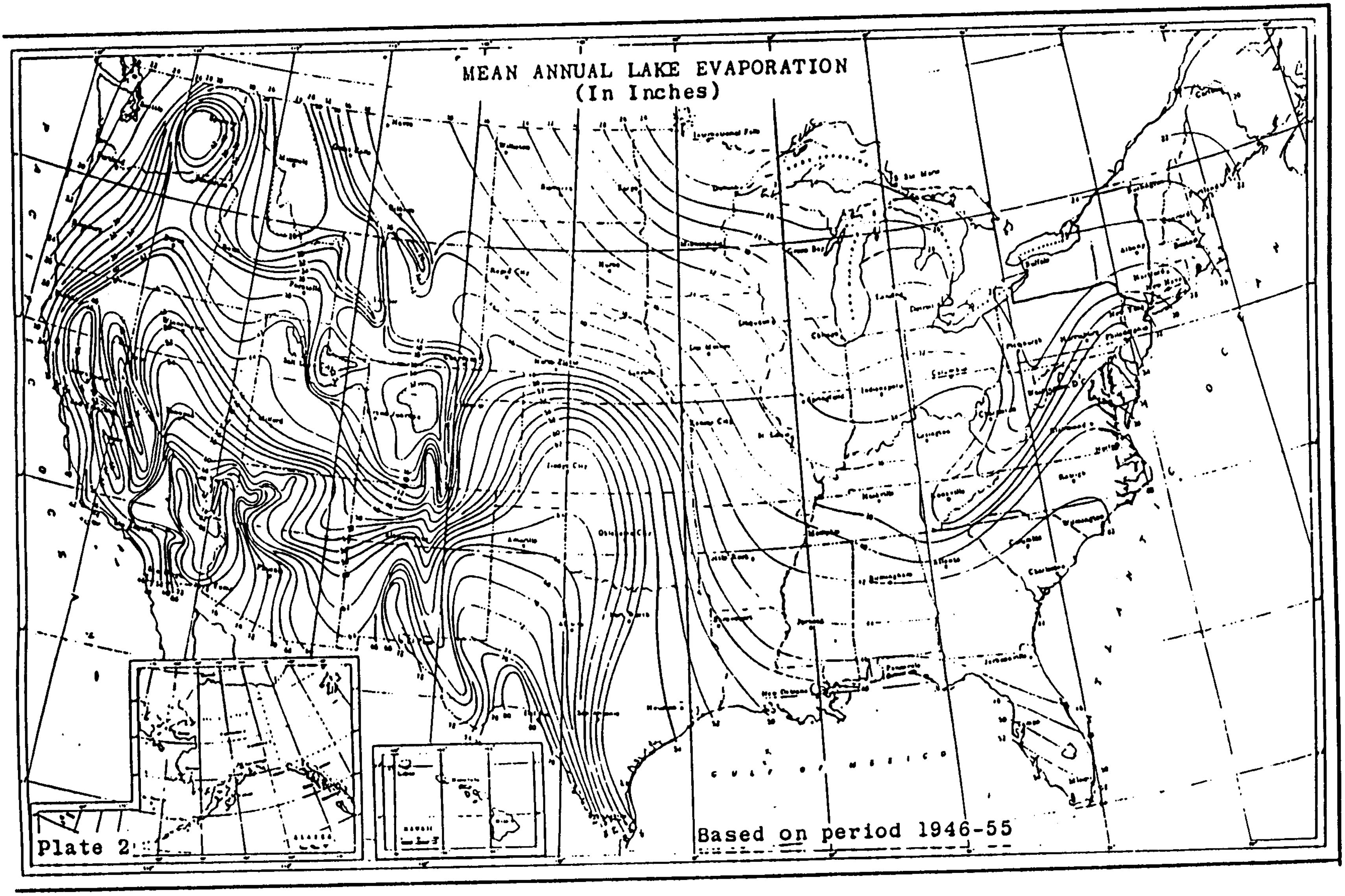
For sale by the Superintendent of Documents, U.S. Government Printing Office, Washington 25, D.C. Price $1.25

1-YEAR 24-HOUR RAINFALL (INCHES)



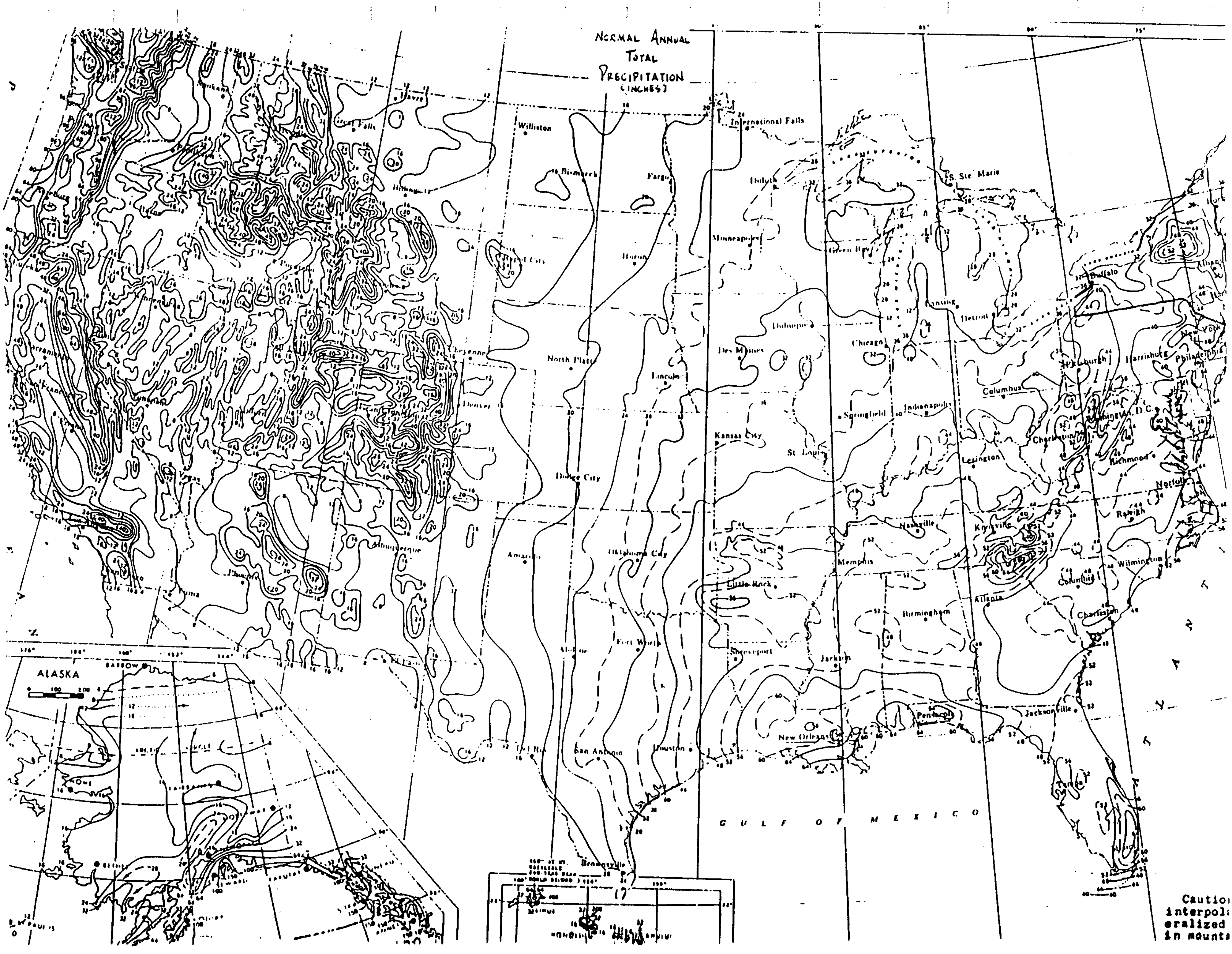
"REFERENCE-QUESTION #14

MEAN ANNUAL LAKE EVAPORATION
(In Inches)



Based on period 1946-55

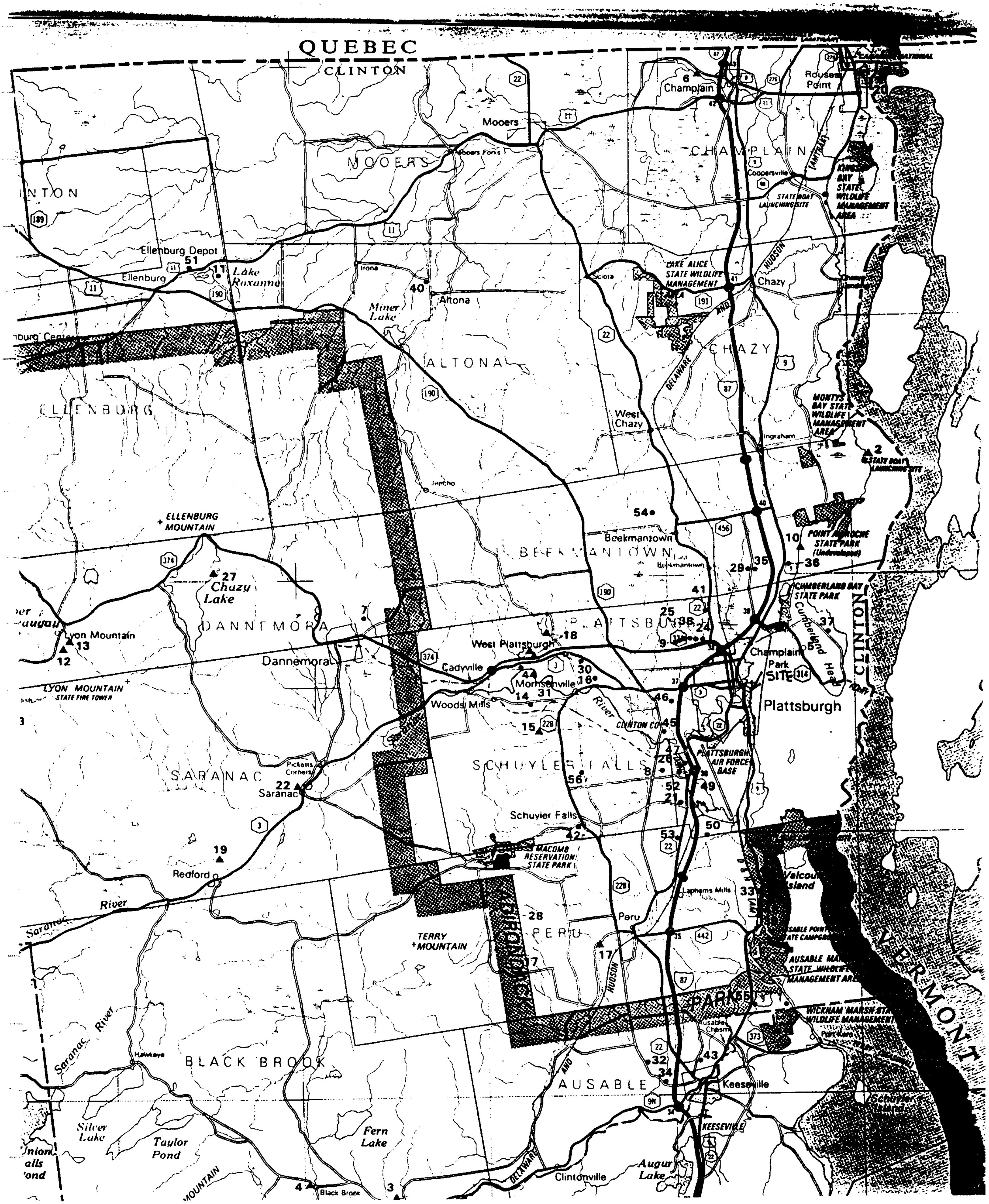
Plate 2



NORMAL ANNUAL
TOTAL
PRECIPITATION
(INCHES)

Caution: interpol... eralized ... in mounta...

"REFERENCE-QUESTION #21"


QUEBEC
CLINTON
Champlain
Rouses Point
Mooers
Mooers Forks
MOOERS
CHAMPLAIN
Coopersville
KINGS BAY STATE WILDLIFE MANAGEMENT AREA
STATE BOAT LAUNCHING SITE
INTON
Ellenburg Depot
Ellenburg
Lake Roxanne
Irona
Altona
Miner Lake
Sciota
LAKE ALICE STATE WILDLIFE MANAGEMENT AREA
Chazy
HUDSON
DELAWARE AND
CHAZY
ALTONA
ELLENBURG
West Chazy
Ingraham
MONTYS BAY STATE WILDLIFE MANAGEMENT AREA
STATE BOAT LAUNCHING SITE
Jericho
ELLENBURG MOUNTAIN
Beekmantown
East Beekmantown
BEEKMANTOWN
POINT AU ROCHE STATE PARK (Undeveloped)
Chazy Lake
DANNEMORA
PLATTSBURGH
CUMBERLAND BAY STATE PARK
Cumberland Head
Lyon Mountain
West Plattsburgh
Cadyville
Dannemora
Champlain Park Site
Morrisonville
LYON MOUNTAIN STATE FIRE TOWER
Woods Mills
Plattsburgh
River
CLINTON CO
PLATTSBURGH AIR FORCE BASE
SCHUYLER FALLS
SARANAC
Pickets Corners
Saranac
Schuyler Falls
MACOMB RESERVATION STATE PARK
Redford
Saranac River
Valcour Island
Laphams Mills
ADIRONDACK
TERRY MOUNTAIN
PERU
Peru
SABLE POINT STATE CAMPGROUND
AUSABLE MARSH STATE WILDLIFE MANAGEMENT AREA
PARK
VERMONT
WICKHAM MARSH STATE WILDLIFE MANAGEMENT
Port Kent
Ausable Chasm
Saranac River
Hawkeye
BLACK BROOK
AUSABLE
Keeseville
KEESEVILLE
Schuyler Island
Silver Lake
Taylor Pond
Union Falls Pond
Fern Lake
Clintonville
Augur Lake
Black Brook
MOUNTAIN
11
9
22
87
190
191
374
3
228
456
314
442
373
9N
2
3
4
6
7
8
9
10
12
13
14
15
16
17
18
19
20
21
22
24
25
26
27
28
29
30
31
32
33
34
35
36
37
38
40
41
42
43
44
45
46
47
49
50
51
52
53
54
55
56

CLINTON COUNTY

ID NO	COMMUNITY WATER SYSTEM	POPULATION	SOURCE
Municipal Community			
1	Ausable Heights Subdivision	20.	Wells
2	B Porter Reed Water Supply	280.	Lake Champlain
3	Black Brook Water District #1	950.	Palmer Brook
4	Black Brook Water District #2	100.	Spring
5	Champlain Park Water District	1000.	Wells
6	Champlain Village	1500.	Great Chazy River
7	Dannemora Water District #2	100.	Wells (Springs)
8	Downs Country Homes Subdivision	80.	Wells
9	Guys Cedar Park Water District	252.	Wells
10	Hobbs Subdivision	150.	Lake Champlain
11	Lake Roxanne Water Co.	15.	Wells
12	Lyon Mountain High Water District	600.	Separator Brook
13	Lyon Mountain Low Water District	600.	Separator Brook
14	Monto Subdivision	70.	Wells
15	Morrisonville Water District	800.	Riley Brook Reservoir
16	Morrisonville Water Districts #1 & #2	1200.	Wells
17	Peru Water District	2000.	Furnace Brook Reservoir, Little AuSable River
18	Plattsburg City	35000.	Mead & Patterson Reservoirs, West Brook
19	Redford Water District	400.	Mud Pond Brook
20	Rouses Point Village	2500.	Lake Champlain
21	Salmon River Water District	33.	Wells
22	Saranac Water District	150.	Spring
23	Standish Water District	150.	Wells
24	Thunderbird Estates Subdivision	60.	Wells
25	Thunderbird Heights Water District	540.	Wells
Non-Municipal Community			
26	Abinaki Mobile Home Court	309.	Wells
27	Clinton Correctional Facility	4000.	Chazy Lake
28	Country Village Mobile Park	42.	Wells
29	Filion Mobile Home Park	70.	Wells
30	Four Season's Trailer Court	72.	Wells
31	Garden City Extension Mobile Home Park	20.	Wells
32	Gramps Trailer Park	27.	Wells
33	Green Acres Mobile Home Park	50.	Wells
34	Keeseville Country Gardens	70.	Wells
35	Koko's Trailer Park	87.	Wells
36	Ladue's Trailer Court	54.	Wells
37	Locklin's Trailer Court	54.	Wells
38	Maple Pond Trailer Park	141.	Wells
39	Masons Trailer Court	15.	Wells
40	Mitchell's Trailer Park	27.	Wells
41	Northway Court	123.	Wells
42	Ormsby Mobile Home Park	135.	Wells
43	Pine Grove Trailer Court	90.	Wells
44	Pine Haven Colony	96.	Wells
45	Pine Rest Trailer Park East	306.	Wells
46	Pleasant Acres Mobile Home Community	72.	Wells
47	Pleasant Ridge Trailer Park	50.	Wells
48	Pray's Beach & Motel Trailer Park	177.	Wells
49	Quality Mobile Home Park	75.	Wells
50	Roads End Mobile Park	20.	Wells
51	Rubados Trailer Court	69.	Wells
52	Rustic Mobile Home	25.	Wells
53	South Acres Mobile Home Park	147.	Wells
54	Stony Acres Trailer Park	225.	Wells
55	Sunvalley Trailer Court	45.	Wells
56	Weeping Meadows Mobile Home Park	25.	Wells

"REFERENCE-QUESTION #25"

Donnelley Marketing Information Services
A Company of The Dun & Bradstreet Corporation

ENGINEERING SCIENCES
BRIDGE ST/JAY ST, PLATTSBURGH, NY

AmericanProfile 05/14/91
**** Trend Report ****

	1970 Census	1980 Census	1990 Estimate	1995 Projection
Total Population	476	528	504	489
White	96.2%	96.2%	98.0%	98.4%
Black	3.4%	2.1%	0.4%	0.0%
Other	0.4%	1.7%	1.6%	1.6%
-				
Spanish	1.7%	2.1%	2.2%	2.0%
Total Households	125	221	230	229
Household Population	436	500	476	461
Average Household Size	3.49	2.26	2.07	2.01
Total Population by Age	476	528	504	489
0 - 5	10.9%	5.5%	6.2%	5.9%
6 - 13	18.5%	7.6%	7.9%	8.4%
14 - 17	7.6%	4.7%	3.8%	3.9%
18 - 24	15.2%	25.4%	7.3%	6.5%
25 - 34	13.1%	15.4%	29.2%	14.5%
35 - 44	11.4%	6.6%	14.9%	29.2%
45 - 54	8.6%	8.2%	6.5%	9.4%
55 - 64	7.2%	8.5%	7.7%	6.5%
65 +	7.6%	18.0%	16.5%	15.5%
Female Population by Age	235	286	265	255
0 - 5	11.1%	5.2%	5.7%	5.5%
6 - 13	18.3%	6.3%	7.5%	7.8%
14 - 17	7.7%	4.2%	3.4%	3.9%
18 - 24	15.3%	24.1%	6.4%	6.3%
25 - 34	11.9%	13.3%	28.7%	14.1%
35 - 44	10.6%	5.6%	13.2%	27.5%
45 - 54	8.5%	7.7%	5.7%	8.6%
55 - 64	7.7%	9.8%	7.5%	6.3%
65 +	8.9%	23.8%	21.9%	20.0%
Median Age Total Pop.	23.9	29.3	33.4	38.6
Median Age Adult Pop.	37.8	35.3	37.9	41.7
Household Income:				
$ 0 - $ 7,499	48.4%	43.3%	16.6%	13.5%
$ 7,500 - $ 9,999	19.8%	11.5%	14.4%	6.5%
$10,000 - $14,999	19.8%	18.0%	14.8%	17.4%
$15,000 - $24,999	9.5%	18.9%	21.4%	19.6%
$25,000 - $34,999	1.6%	5.5%	12.7%	14.3%
$35,000 - $49,999	0.8%	2.8%	12.7%	13.0%
$50,000 - $74,999	0.0%	0.0%	5.7%	10.4%
$75,000 +	-	0.0%	1.7%	5.2%
total	100.0%	100.0%	100.0%	100.0%
Median Household Income	$ 7,120	$ 8,900	$ 16,837	$ 21,222
Aggregate HH Inc($000)	1,140	2,447	5,191	6,585
Median Family Income	-	$ 12,955	$ 24,508	$ 30,891

1. 1. 0 : Ring: 0.3 mile(s): 44.6958 73.4447

(800) 866 - 2255

Donnelley Marketing Information Services
A Company of The Dun & Bradstreet Corporation

ENGINEERING SCIENCES
BRIDGE ST/JAY ST, PLATTSBURGH, NY

AmericanProfile 05/14/91
**** Trend Report ****

	1970 Census	1980 Census	1990 Estimate	1995 Projection
Total Population	25,171	27,882	26,534	25,861
White	96.3%	93.6%	93.9%	93.9%
Black	3.3%	3.9%	3.5%	3.4%
Other	0.4%	2.5%	2.6%	2.7%
-				
Spanish	1.6%	2.0%	2.0%	2.0%
Total Households	6,615	8,347	8,575	8,529
Household Population	23,027	22,805*	21,464	20,791
Average Household Size	3.48	2.73	2.50	2.44
Total Population by Age	25,171	27,882	26,534	25,861
0 - 5	11.1%	8.2%	8.2%	8.1%
6 - 13	18.4%	9.7%	9.3%	9.3%
14 - 17	7.5%	5.6%	8.6%	8.5%
18 - 24	15.0%	31.4%	21.3%	20.9%
25 - 34	13.1%	16.0%	21.5%	16.4%
35 - 44	11.4%	8.3%	10.9%	15.9%
45 - 54	8.8%	6.2%	6.0%	7.2%
55 - 64	7.2%	5.6%	5.4%	5.0%
65 +	7.4%	8.9%	8.8%	8.7%
Female Population by Age	12,456	14,327*	13,556	13,162
0 - 5	11.2%	7.7%	7.7%	7.7%
6 - 13	18.3%	9.2%	8.8%	8.9%
14 - 17	7.6%	5.4%	8.9%	8.8%
18 - 24	15.2%	30.7%	19.2%	18.8%
25 - 34	12.0%	14.4%	21.6%	15.6%
35 - 44	10.8%	7.9%	10.3%	16.3%
45 - 54	8.8%	6.4%	6.2%	7.4%
55 - 64	7.5%	6.4%	5.8%	5.5%
65 +	8.7%	11.8%	11.5%	11.1%
Median Age Total Pop.	24.1	23.9	26.3	26.9
Median Age Adult Pop.	38.0	29.2	32.3	34.9
Household Income:				
$ 0 - $ 7,499	48.5%	26.0%	9.3%	7.4%
$ 7,500 - $ 9,999	19.8%	12.6%	8.6%	3.5%
$10,000 - $14,999	19.7%	19.8%	10.6%	11.3%
$15,000 - $24,999	9.9%	24.1%	23.8%	18.5%
$25,000 - $34,999	1.4%	10.4%	13.7%	15.7%
$35,000 - $49,999	0.5%	5.0%	16.4%	15.0%
$50,000 - $74,999	0.2%	1.3%	11.6%	15.4%
$75,000 +	-	0.8%	6.1%	13.2%
total	100.0%	100.0%	100.0%	100.0%
Median Household Income	$ 7,223	$ 12,870	$ 24,049	$ 30,890
Aggregate HH Inc($000)	60,214	132,673	285,603	360,936
Median Family Income	-	$ 15,555*	$ 29,066*	$ 37,334*

1. 4. 0 : Ring: 3.1 mile(s): 44.6958 73.4447

* - Indicates suppression has occurred

(800) 866 - 2255

Donnelley Marketing Information Services
A Company of The Dun & Bradstreet Corporation

ENGINEERING SCIENCES
BRIDGE ST/JAY ST, PLATTSBURGH, NY

AmericanProfile 05/14/91
**** Trend Report ****

	1970 Census	1980 Census	1990 Estimate	1995 Projection
Total Population	17,600	19,494	18,749	18,261
White	96.3%	96.8%	97.8%	98.3%
Black	3.3%	1.5%	0.6%	0.2%
Other	0.4%	1.7%	1.6%	1.6%
-				
Spanish	1.6%	1.4%	1.4%	1.4%
Total Households	4,626	6,347	6,592	6,552
Household Population	16,102	15,945*	15,207	14,719
Average Household Size	3.48	2.51	2.31	2.25
Total Population by Age	17,600	19,494	18,749	18,261
0 - 5	11.1%	5.3%	5.5%	5.4%
6 - 13	18.4%	8.3%	7.8%	7.9%
14 - 17	7.5%	5.8%	9.3%	9.2%
18 - 24	15.0%	32.4%	18.9%	18.5%
25 - 34	13.1%	12.8%	20.6%	13.3%
35 - 44	11.4%	7.7%	11.4%	18.5%
45 - 54	8.8%	7.9%	7.5%	9.1%
55 - 64	7.2%	7.5%	7.0%	6.5%
65 +	7.5%	12.3%	12.0%	11.6%
Female Population by Age	8,711	10,804*	10,285	9,967
0 - 5	11.2%	4.6%	4.9%	4.8%
6 - 13	18.3%	7.5%	6.9%	7.0%
14 - 17	7.6%	5.1%	9.7%	9.6%
18 - 24	15.2%	33.6%	18.6%	18.2%
25 - 34	12.0%	11.3%	20.7%	12.7%
35 - 44	10.7%	7.2%	10.3%	18.4%
45 - 54	8.8%	7.5%	7.3%	8.7%
55 - 64	7.5%	7.9%	7.0%	6.6%
65 +	8.7%	15.3%	14.7%	14.0%
Median Age Total Pop.	24.0	24.6	29.1	31.8
Median Age Adult Pop.	38.0	31.2	34.6	38.8
Household Income:				
$ 0 - $ 7,499	48.5%	30.1%	10.2%	8.1%
$ 7,500 - $ 9,999	19.8%	11.5%	9.9%	3.9%
$10,000 - $14,999	19.7%	15.4%	10.3%	12.1%
$15,000 - $24,999	9.9%	23.1%	19.2%	15.6%
$25,000 - $34,999	1.4%	11.7%	13.0%	13.5%
$35,000 - $49,999	0.5%	5.6%	16.9%	14.7%
$50,000 - $74,999	0.2%	1.6%	13.1%	16.5%
$75,000 +	-	1.1%	7.3%	15.5%
total	100.0%	100.0%	100.0%	100.0%
Median Household Income	$ 7,223	$ 12,750	$ 25,268	$ 32,587
Aggregate HH Inc($000)	42,104	103,011	232,400	294,928
Median Family Income	-	$ 18,005*	$ 35,682*	$ 46,018*

1. 3. 0 : Ring: 1.86 mile(s): 44.6958 73.4447

* - Indicates suppression has occurred

(800) 866 - 2255

Donnelley Marketing Information Services
A Company of The Dun & Bradstreet Corporation

ENGINEERING SCIENCES
BRIDGE ST/JAY ST, PLATTSBURGH, NY

AmericanProfile 05/14/91
**** Trend Report ****

	1970 Census	1980 Census	1990 Estimate	1995 Projection
Total Population	1,831	2,029	1,935	1,879
White	96.3%	96.2%	97.9%	98.4%
Black	3.3%	2.1%	0.5%	0.0%
Other	0.4%	1.7%	1.6%	1.6%
-				
Spanish	1.6%	2.1%	2.1%	2.1%
Total Households	481	850	883	879
Household Population	1,675	1,921	1,827	1,771
Average Household Size	3.48	2.26	2.07	2.01
Total Population by Age	1,831	2,029	1,935	1,879
0 - 5	11.0%	5.6%	6.1%	6.1%
6 - 13	18.4%	7.7%	7.9%	8.3%
14 - 17	7.5%	4.8%	3.7%	3.9%
18 - 24	15.1%	25.2%	7.4%	6.5%
25 - 34	13.1%	15.3%	29.1%	14.5%
35 - 44	11.4%	6.6%	15.1%	29.2%
45 - 54	8.7%	8.1%	6.5%	9.5%
55 - 64	7.1%	8.6%	7.7%	6.4%
65 +	7.5%	18.0%	16.6%	15.6%
Female Population by Age	905	1,101	1,021	979
0 - 5	11.2%	5.4%	5.7%	5.7%
6 - 13	18.2%	6.4%	7.6%	7.8%
14 - 17	7.6%	4.4%	3.3%	3.9%
18 - 24	15.2%	24.0%	6.4%	6.1%
25 - 34	12.2%	13.2%	28.5%	14.3%
35 - 44	10.7%	5.5%	13.3%	27.3%
45 - 54	8.6%	7.5%	5.6%	8.7%
55 - 64	7.5%	9.8%	7.6%	6.1%
65 +	8.7%	23.8%	21.9%	20.1%
Median Age Total Pop.	24.0	29.3	33.5	38.7
Median Age Adult Pop.	37.8	35.6	38.1	41.8
Household Income:				
$ 0 - $ 7,499	48.5%	43.3%	16.6%	13.4%
$ 7,500 - $ 9,999	19.7%	11.8%	14.4%	6.4%
$10,000 - $14,999	19.7%	17.9%	14.9%	17.4%
$15,000 - $24,999	10.0%	18.7%	21.5%	19.7%
$25,000 - $34,999	1.5%	5.6%	12.7%	14.5%
$35,000 - $49,999	0.4%	2.8%	12.6%	13.1%
$50,000 - $74,999	0.2%	0.0%	5.5%	10.5%
$75,000 +	-	0.0%	1.8%	5.0%
total	100.0%	100.0%	100.0%	100.0%
Median Household Income	$ 7,189	$ 8,903	$ 16,842	$ 21,416
Aggregate HH Inc($000)	4,380	9,403	19,946	25,305
Median Family Income	-	$ 13,133	$ 24,844	$ 31,591

1. 2. 0 : Ring: 0.62 mile(s): 44.6958 73.4447

(800) 866 - 225

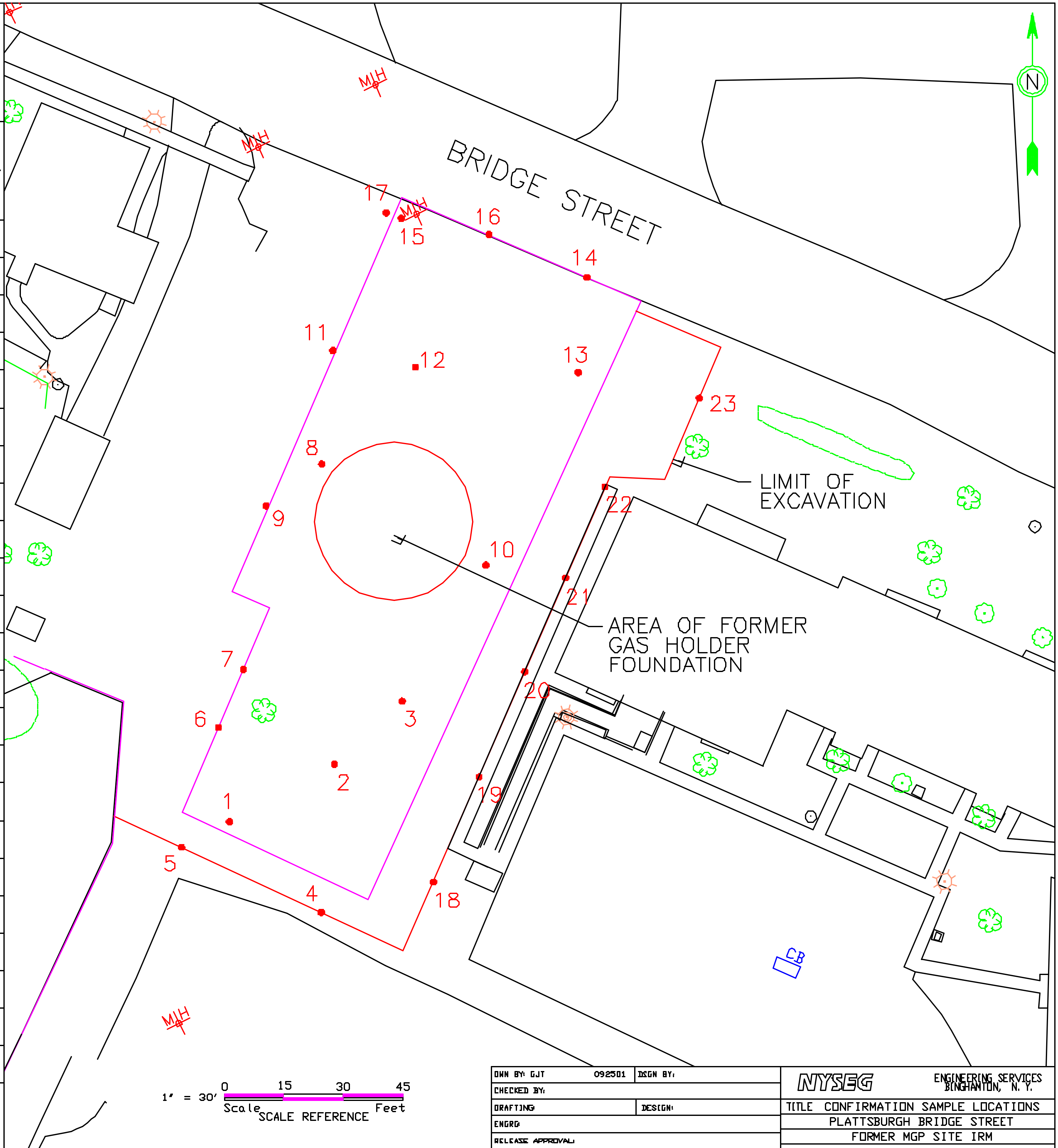
APPENDIX I

2001 INTERIM REMEDIAL MEASURE POST-EXCAVATION SAMPLING LOCATIONS

NEW YORK STATE ELECTRIC & GAS CORPORATION
RESULTS OF EXCAVATION ENDPOINT CONFIRMATION SAMPLING
PLATTSBURGH BRIDGE ST. FORMER MGP
INTERIM REMEDIAL MEASURES PROJECT

MAP NO.	SAMPLE ID	COLLECT DATE	DEPTH BELOW EXISTING GRADE (ft)	TOTAL BENZENE (ppm)	TOTAL PAH (ppm)	TOTAL cPAH (ppm)	NAPHTHALENE (ppm)	TOTAL LEAD (ppm)	TOTAL MERCURY (ppm)
1	PLVCBM0508	5/10/01	5	<0. 005	19.68	10.39	0.068	16.5	0.16
2	PLVCBM0609	5/10/01	6	<0. 005	160.5	80.50	0.710	998	0.74
3	PLVCBM0410	5/10/01	4	<0. 005	98.25	45.50	0.370	216	0.41
4	PLVCSW0313	5/10/01	3	<0. 006	0.133	<0. 380	<0. 380	6.35	0.14
5	PLVCSW0314	5/10/01	3	<0. 006	<0. 390	<0. 390	<0. 390	6.83	0.16
6	PLVCSW0238	6/01/01	2	<0. 006	3.580	1.630	<0. 390	8.99	0.10
7	PLVCSW0216	5/10/01	2	<0. 007	3.570	1.970	<0. 370	35.5	0.18
8	PLVCBM0619	5/21/01	6	0. 500	724.8	104.0	150.0	56.6	0.567
9	PLVCSW0420	5/21/01	4	<0. 0055	1.499	0.885	<0. 360	36.7	0.588
10	PLVCBM0721	5/22/01	7	<0. 006	1.325	0.488	0.180	1,280	1.23
11	PLVCSW0422	5/30/01	4	<0. 006	<0. 420	<0. 420	<0. 420	7.85	0.14
12	PLVCBM0823	5/30/01	8	3. 0	7,699	698.0	2,400	52.8	0.29
13	PLVCBM0824	5/30/01	8	0. 014	156.7	45.00	8.700	128	0.22
14	PLVCSW0425	5/31/01	4	<0. 006	191.2	77.90	2.300	2,340	2.14
15	PLVCBM0826	5/31/01	8	2. 600	350.2	108.8	22.00	246	0.38
16	PLVCSW0227	5/31/01	2	<0. 006	23.09	8.160	0.290	1,650	1.38
17	PLVCSW0328	5/31/01	3	<0. 006	24.86	18.16	0.350	1,060	0.58
18	PLVCSW0232	6/01/01	2	<0. 005	0.891	0.278	<0. 370	6.37	0.11
19	PLVCSW0333	6/01/01	3	<0. 006	6.297	3.207	<0. 380	9.53	0.08
20	PLVCSW0334	6/01/01	3	<0. 005	<0. 350	<0. 350	<0. 350	4.95	0.06
21	PLVCSW0435	6/01/01	4	<0. 006	2.273	1.340	<0. 410	88.0	0.43
22	PLVCSW0336	6/01/01	3	<0. 006	0.819	0.511	<0. 390	12.1	0.15
23	PLVCSW0337	6/02/01	3	<0. 006	0.697	0.442	<0. 380	32.1	0.098

(ppm) – means parts per million
PAH– means Polycyclic Aromatic Hydrocarbons
cPAH – means Carcinogenic Polycyclic Aromatic Hydrocarbons



CADD DRAWING DO NOT REVISE MANUALLY	SYM	ZONE	REVISION	DATE	BY	CHK	APP

DWN BY: GJT 092501
DSGN BY:
CHECKED BY:
DRAFTING
DESIGN:
ENGRG:
RELEASE APPROVAL:
AUTHORIZED BY:
MATERIAL OR SPEC:

NYSEG
ENGINEERING SERVICES
BINGHAMTON, N. Y.

TITLE CONFIRMATION SAMPLE LOCATIONS
PLATTSBURGH BRIDGE STREET
FORMER MGP SITE IRM

SCALE 1"=30'
DWG NO FIGURE 7
REV

Date/Time Plotted:
$$$$$$$YTIME$$$$$

NYSEG

BRIDGE STREET
FORMER MGP SITE
PLATTSBURGH,
NEW YORK

REMEDIAL INVESTIGATION REPORT

JANUARY 15, 2004

Prepared for:
New York State Electric
& Gas Corporation
Binghamton, New York

Prepared by:
URS
URS Corporation – New York
28 Corporate Drive, Suite 200
Clifton Park, NY 12065